



284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Cover Page

Order ID : N3259

Project ID : Fresh Kills Landfill Leachate Treatment Plant

Client : Inframark

Lab Sample Number

N3259-01
N3259-02

Client Sample Number

BI-WEEKLY-INFLUENT
BI-WEEKLY-INFLUENT

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature : _____

Date: 6/21/2022

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

DATA REPORTING QUALIFIERS- INORGANIC

For reporting results, the following " Results Qualifiers" are used:

J	Indicates the reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL), but greater than or equal to the Instrument Detection Limit (IDL).
U	Indicates the analyte was analyzed for, but not detected.
ND	Indicates the analyte was analyzed for, but not detected
E	Indicates the reported value is estimated because of the presence of interference
M	Indicates Duplicate injection precision not met.
N	Indicates the spiked sample recovery is not within control limits.
S	Indicates the reported value was determined by the Method of Standard Addition (MSA).
*	Indicates that the duplicate analysis is not within control limits.
+	Indicates the correlation coefficient for the MSA is less than 0.995.
D	Indicates the reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the calibration range.
M	Method qualifiers "P" for ICP instrument "PM" for ICP when Microwave Digestion is used "CV" for Manual Cold Vapor AA "AV" for automated Cold Vapor AA "CA" for MIDI-Distillation Spectrophotometric "AS" for Semi -Automated Spectrophotometric "C" for Manual Spectrophotometric "T" for Titrimetric "NR" for analyte not required to be analyzed
OR	Indicates the analyte's concentration exceeds the calibrated range of the instrument for that specific analysis.
Q	Indicates the LCS did not meet the control limits requirements
H	Sample Analysis Out Of Hold Time

APPENDIX A**QA REVIEW GENERAL DOCUMENTATION**

Project #: N3259

Completed

For thorough review, the report must have the following:

GENERAL:

Are all original paperwork present (chain of custody, record of communication,airbill, sample management lab chronicle, login page)

☒

Check chain-of-custody for proper relinquish/return of samples

☒

Is the chain of custody signed and complete

☒

Check internal chain-of-custody for proper relinquish/return of samples /sample extracts

☒

Collect information for each project id from server. Were all requirements followed

☒**COVER PAGE:**

Do numbers of samples correspond to the number of samples in the Chain of Custody on login page

☒

Do lab numbers and client Ids on cover page agree with the Chain of Custody

☒**CHAIN OF CUSTODY:**

Do requested analyses on Chain of Custody agree with form I results

☒

Do requested analyses on Chain of Custody agree with the log-in page

☒

Were the correct method log-in for analysis according to the Analytical Request and Chain of Castody

☒

Were the samples received within hold time

☒

Were any problems found with the samples at arrival recorded in the Sample Management Laboratory Chronicle

☒**ANALYTICAL:**

Was method requirement followed?

☒

Was client requirement followed?

☒

Does the case narrative summarize all QC failure?

☒

All runlogs and manual integration are reviewed for requirements

☒

All manual calculations and /or hand notations verified

☒

1st Level QA Review Signature: SOHIL JODHANI

Date: 06/21/2022

2nd Level QA Review Signature: _____

Date: _____



284 Sheffield Street, Mountainside, New Jersey - 07092

Phone: (908) 789 8900 Fax: (908) 789 8922

LAB CHRONICLE

OrderID: N3259	OrderDate: 6/8/2022 12:24:00 PM
Client: Inframark	Project: Fresh Kills Landfill Leachate Treatment Plant
Contact: Kevin Russell	Location: N11

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
N3259-01	BI-WEEKLY-INFLUENT	Water			06/08/22			06/08/22
			Metals Group3	200.7		06/09/22	06/10/22	
			Metals Group3	200.7		06/09/22	06/14/22	



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Hit Summary Sheet
SW-846

SDG No.: N3259

Order ID: N3259

Client: Inframark

Project ID: Fresh Kills Landfill Leachate Treatment Pla

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
Client ID : BI-WEEKLY-INFLUENT								
N3259-01	BI-WEEKLY-INFLUENT	Water	Aluminum	111.000		15.0	50.0	ug/L
N3259-01	BI-WEEKLY-INFLUENT	Water	Arsenic	16.400		3.08	10.0	ug/L
N3259-01	BI-WEEKLY-INFLUENT	Water	Iron	13,500.000	D	132	500	ug/L
N3259-01	BI-WEEKLY-INFLUENT	Water	Zinc	7.240	J	2.33	20.0	ug/L

SAMPLE DATA

Report of Analysis

Client:	Inframark	Date Collected:	06/08/22
Project:	Fresh Kills Landfill Leachate Treatment Plant	Date Received:	06/08/22
Client Sample ID:	BI-WEEKLY-INFLUENT	SDG No.:	N3259
Lab Sample ID:	N3259-01	Matrix:	Water
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7429-90-5	Aluminum	111		1	15.0	50.0	ug/L	06/09/22 09:10	06/10/22 19:09	EPA 200.7
7440-38-2	Arsenic	16.4		1	3.08	10.0	ug/L	06/09/22 09:10	06/10/22 19:09	EPA 200.7
7440-50-8	Copper	10.0	U	1	4.99	10.0	ug/L	06/09/22 09:10	06/10/22 19:09	EPA 200.7
7439-89-6	Iron	13500	D	10	132	500	ug/L	06/09/22 09:10	06/14/22 16:41	EPA 200.7
7440-66-6	Zinc	7.24	J	1	2.33	20.0	ug/L	06/09/22 09:10	06/10/22 19:09	EPA 200.7

Color Before:	Yellow	Clarity Before:	Cloudy	Texture:
Color After:	Yellow	Clarity After:	Cloudy	Artifacts:
Comments:	Metals Group3			

U = Not Detected
 LOQ = Limit of Quantitation
 MDL = Method Detection Limit
 LOD = Limit of Detection
 D = Dilution
 Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
 B = Analyte Found in Associated Method Blank
 * = indicates the duplicate analysis is not within control limits.
 E = Indicates the reported value is estimated because of the presence of interference.
 OR = Over Range
 N =Spiked sample recovery not within control limits

METAL
CALIBRATION
DATA



Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Inframark **SDG No.:** N3259
Contract: INFR01 **Lab Code:** CHEM **Case No.:** N3259 **SAS No.:** N3259
Initial Calibration Source: EPA
Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
ICV01	Aluminum	2590	2500	104	95 - 105	P	06/10/2022	15:53	LB120624
	Arsenic	1000	1000	100	95 - 105	P	06/10/2022	15:53	LB120624
	Copper	527	510	103	95 - 105	P	06/10/2022	15:53	LB120624
	Iron	10500	10000	104	95 - 105	P	06/10/2022	15:53	LB120624
	Zinc	1020	1000	102	95 - 105	P	06/10/2022	15:53	LB120624



- 2a -

Client:	<u>Inframark</u>	SDG No.:	<u>N3259</u>				
Contract:	<u>INFR01</u>	Lab Code:	<u>CHEM</u>	Case No.:	<u>N3259</u>	SAS No.:	<u>N3259</u>
Initial Calibration Source:	<u>EPA</u>						
Continuing Calibration Source:	<u>Inorganic Ventures</u>						

Sample ID	Analyte	Result	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
		ug/L							
LLICV01	Aluminum	109	100	109	80 - 120	P	06/10/2022	15:57	LB120624
	Arsenic	18.0	20.0	90	80 - 120	P	06/10/2022	15:57	LB120624
	Copper	23.2	20.0	116	80 - 120	P	06/10/2022	15:57	LB120624
	Iron	116	100	116	80 - 120	P	06/10/2022	15:57	LB120624
	Zinc	37.6	40.0	94	80 - 120	P	06/10/2022	15:57	LB120624



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Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Inframark **SDG No.:** N3259
Contract: INFR01 **Lab Code:** CHEM **Case No.:** N3259 **SAS No.:** N3259
Initial Calibration Source: EPA
Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV01	Aluminum	9990	10000	100	90 - 110	P	06/10/2022	16:25	LB120624
	Arsenic	5020	5000	100	90 - 110	P	06/10/2022	16:25	LB120624
	Copper	1260	1250	100	90 - 110	P	06/10/2022	16:25	LB120624
	Iron	4970	5000	100	90 - 110	P	06/10/2022	16:25	LB120624
	Zinc	2510	2500	100	90 - 110	P	06/10/2022	16:25	LB120624



- 2a -

Client:	<u>Inframark</u>	SDG No.:	<u>N3259</u>				
Contract:	<u>INFR01</u>	Lab Code:	<u>CHEM</u>	Case No.:	<u>N3259</u>	SAS No.:	<u>N3259</u>
Initial Calibration Source:	<u>EPA</u>						
Continuing Calibration Source:	Inorganic Ventures						

Sample ID	Analyte	Result	True Value	%	Acceptance	M	Analysis Date	Analysis Time	Run Number
		ug/L		Recovery	Window (%R)				
LLCCV01	Aluminum	107	100	107	80 - 120	P	06/10/2022	16:29	LB120624
	Arsenic	19.0	20.0	95	80 - 120	P	06/10/2022	16:29	LB120624
	Copper	22.6	20.0	113	80 - 120	P	06/10/2022	16:29	LB120624
	Iron	112	100	112	80 - 120	P	06/10/2022	16:29	LB120624
	Zinc	36.4	40.0	91	80 - 120	P	06/10/2022	16:29	LB120624



- 2a -

Client:	<u>Inframark</u>	SDG No.:	<u>N3259</u>				
Contract:	<u>INFR01</u>	Lab Code:	<u>CHEM</u>	Case No.:	<u>N3259</u>	SAS No.:	<u>N3259</u>
Initial Calibration Source:	<u>EPA</u>						
Continuing Calibration Source:	Inorganic Ventures						

Sample ID	Analyte	Result	True Value	%	Acceptance	M	Analysis Date	Analysis Time	Run Number
		ug/L		Recovery	Window (%R)				
CCV02	Aluminum	10200	10000	102	90 - 110	P	06/10/2022	17:15	LB120624
	Arsenic	5140	5000	103	90 - 110	P	06/10/2022	17:15	LB120624
	Copper	1280	1250	102	90 - 110	P	06/10/2022	17:15	LB120624
	Iron	5070	5000	101	90 - 110	P	06/10/2022	17:15	LB120624
	Zinc	2540	2500	102	90 - 110	P	06/10/2022	17:15	LB120624
CCV03	Aluminum	10300	10000	102	90 - 110	P	06/10/2022	18:05	LB120624
	Arsenic	5140	5000	103	90 - 110	P	06/10/2022	18:05	LB120624
	Copper	1280	1250	103	90 - 110	P	06/10/2022	18:05	LB120624
	Iron	5040	5000	101	90 - 110	P	06/10/2022	18:05	LB120624
	Zinc	2530	2500	101	90 - 110	P	06/10/2022	18:05	LB120624
CCV04	Aluminum	10100	10000	101	90 - 110	P	06/10/2022	18:56	LB120624
	Arsenic	5170	5000	103	90 - 110	P	06/10/2022	18:56	LB120624
	Copper	1260	1250	101	90 - 110	P	06/10/2022	18:56	LB120624
	Iron	5100	5000	102	90 - 110	P	06/10/2022	18:56	LB120624
	Zinc	2530	2500	101	90 - 110	P	06/10/2022	18:56	LB120624
CCV05	Aluminum	10100	10000	101	90 - 110	P	06/10/2022	19:47	LB120624
	Arsenic	5160	5000	103	90 - 110	P	06/10/2022	19:47	LB120624
	Copper	1260	1250	101	90 - 110	P	06/10/2022	19:47	LB120624
	Iron	5030	5000	101	90 - 110	P	06/10/2022	19:47	LB120624
	Zinc	2520	2500	101	90 - 110	P	06/10/2022	19:47	LB120624
CCV06	Aluminum	10000	10000	100	90 - 110	P	06/10/2022	20:25	LB120624
	Arsenic	5130	5000	103	90 - 110	P	06/10/2022	20:25	LB120624
	Copper	1250	1250	100	90 - 110	P	06/10/2022	20:25	LB120624
	Iron	5030	5000	101	90 - 110	P	06/10/2022	20:25	LB120624
	Zinc	2520	2500	101	90 - 110	P	06/10/2022	20:25	LB120624



- 2a -

Client:	<u>Inframark</u>	SDG No.:	<u>N3259</u>				
Contract:	<u>INFR01</u>	Lab Code:	<u>CHEM</u>	Case No.:	<u>N3259</u>	SAS No.:	<u>N3259</u>
Initial Calibration Source:	<u>EPA</u>						
Continuing Calibration Source:	Inorganic Ventures						

Sample ID	Analyte	Result	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
		ug/L							
ICV01	Aluminum	2580	2500	103	95 - 105	P	06/14/2022	14:57	LB120678
	Arsenic	1010	1000	101	95 - 105	P	06/14/2022	14:57	LB120678
	Copper	524	510	103	95 - 105	P	06/14/2022	14:57	LB120678
	Iron	10500	10000	105	95 - 105	P	06/14/2022	14:57	LB120678
	Zinc	1050	1000	105	95 - 105	P	06/14/2022	14:57	LB120678



- 2a -

Client:	<u>Inframark</u>	SDG No.:	<u>N3259</u>				
Contract:	<u>INFR01</u>	Lab Code:	<u>CHEM</u>	Case No.:	<u>N3259</u>	SAS No.:	<u>N3259</u>
Initial Calibration Source:	<u>EPA</u>						
Continuing Calibration Source:	<u>Inorganic Ventures</u>						

Sample ID	Analyte	Result	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
		ug/L							
LLICV01	Aluminum	108	100	108	80 - 120	P	06/14/2022	15:01	LB120678
	Arsenic	14.6	20.0	73	80 - 120	P	06/14/2022	15:01	LB120678
	Copper	23.3	20.0	116	80 - 120	P	06/14/2022	15:01	LB120678
	Iron	103	100	103	80 - 120	P	06/14/2022	15:01	LB120678
	Zinc	36.8	40.0	92	80 - 120	P	06/14/2022	15:01	LB120678



- 2a -

Client:	<u>Inframark</u>	SDG No.:	<u>N3259</u>				
Contract:	<u>INFR01</u>	Lab Code:	<u>CHEM</u>	Case No.:	<u>N3259</u>	SAS No.:	<u>N3259</u>
Initial Calibration Source:	<u>EPA</u>						
Continuing Calibration Source:	Inorganic Ventures						

Sample ID	Analyte	Result	True Value	%	Acceptance	M	Analysis Date	Analysis Time	Run Number
		ug/L		Recovery	Window (%R)				
CCV01	Aluminum	9720	10000	97	90 - 110	P	06/14/2022	15:28	LB120678
	Arsenic	4970	5000	99	90 - 110	P	06/14/2022	15:28	LB120678
	Copper	1220	1250	98	90 - 110	P	06/14/2022	15:28	LB120678
	Iron	4890	5000	98	90 - 110	P	06/14/2022	15:28	LB120678
	Zinc	2480	2500	99	90 - 110	P	06/14/2022	15:28	LB120678



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Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Inframark **SDG No.:** N3259
Contract: INFR01 **Lab Code:** CHEM **Case No.:** N3259 **SAS No.:** N3259
Initial Calibration Source: EPA
Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
LLCCV01	Aluminum	108	100	108	80 - 120	P	06/14/2022	15:32	LB120678
	Arsenic	20.3	20.0	102	80 - 120	P	06/14/2022	15:32	LB120678
	Copper	21.1	20.0	105	80 - 120	P	06/14/2022	15:32	LB120678
	Iron	101	100	101	80 - 120	P	06/14/2022	15:32	LB120678
	Zinc	37.1	40.0	93	80 - 120	P	06/14/2022	15:32	LB120678



- 2a -

Client:	<u>Inframark</u>	SDG No.:	<u>N3259</u>				
Contract:	<u>INFR01</u>	Lab Code:	<u>CHEM</u>	Case No.:	<u>N3259</u>	SAS No.:	<u>N3259</u>
Initial Calibration Source:	<u>EPA</u>						
Continuing Calibration Source:	<u>Inorganic Ventures</u>						

Sample ID	Analyte	Result	True Value	%	Acceptance	M	Analysis Date	Analysis Time	Run Number
		ug/L		Recovery	Window (%R)				
CCV02	Aluminum	9750	10000	98	90 - 110	P	06/14/2022	16:26	LB120678
	Arsenic	5080	5000	102	90 - 110	P	06/14/2022	16:26	LB120678
	Copper	1210	1250	97	90 - 110	P	06/14/2022	16:26	LB120678
	Iron	4910	5000	98	90 - 110	P	06/14/2022	16:26	LB120678
	Zinc	2510	2500	100	90 - 110	P	06/14/2022	16:26	LB120678
CCV03	Aluminum	10100	10000	100	90 - 110	P	06/14/2022	17:16	LB120678
	Arsenic	5170	5000	103	90 - 110	P	06/14/2022	17:16	LB120678
	Copper	1270	1250	102	90 - 110	P	06/14/2022	17:16	LB120678
	Iron	5060	5000	101	90 - 110	P	06/14/2022	17:16	LB120678
	Zinc	2580	2500	103	90 - 110	P	06/14/2022	17:16	LB120678
CCV04	Aluminum	9870	10000	99	90 - 110	P	06/14/2022	18:13	LB120678
	Arsenic	5100	5000	102	90 - 110	P	06/14/2022	18:13	LB120678
	Copper	1240	1250	99	90 - 110	P	06/14/2022	18:13	LB120678
	Iron	4950	5000	99	90 - 110	P	06/14/2022	18:13	LB120678
	Zinc	2490	2500	100	90 - 110	P	06/14/2022	18:13	LB120678
CCV05	Aluminum	9940	10000	99	90 - 110	P	06/14/2022	19:07	LB120678
	Arsenic	5150	5000	103	90 - 110	P	06/14/2022	19:07	LB120678
	Copper	1250	1250	100	90 - 110	P	06/14/2022	19:07	LB120678
	Iron	5040	5000	101	90 - 110	P	06/14/2022	19:07	LB120678
	Zinc	2550	2500	102	90 - 110	P	06/14/2022	19:07	LB120678
CCV06	Aluminum	9940	10000	99	90 - 110	P	06/14/2022	19:31	LB120678
	Arsenic	5170	5000	103	90 - 110	P	06/14/2022	19:31	LB120678
	Copper	1260	1250	101	90 - 110	P	06/14/2022	19:31	LB120678
	Iron	4990	5000	100	90 - 110	P	06/14/2022	19:31	LB120678
	Zinc	2540	2500	102	90 - 110	P	06/14/2022	19:31	LB120678



- 2a -

Client:	<u>Inframark</u>	SDG No.:	<u>N3259</u>				
Contract:	<u>INFR01</u>	Lab Code:	<u>CHEM</u>	Case No.:	<u>N3259</u>	SAS No.:	<u>N3259</u>
Initial Calibration Source:	<u>EPA</u>						
Continuing Calibration Source:	<u>Inorganic Ventures</u>						

Sample ID	Analyte	Result	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
		ug/L							
ICV01	Aluminum	2560	2500	102	95 - 105	P	06/15/2022	14:35	LB120705
	Arsenic	1000	1000	100	95 - 105	P	06/15/2022	14:35	LB120705
	Copper	512	510	100	95 - 105	P	06/15/2022	14:35	LB120705
	Iron	10400	10000	104	95 - 105	P	06/15/2022	14:35	LB120705
	Zinc	1020	1000	102	95 - 105	P	06/15/2022	14:35	LB120705



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Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Inframark **SDG No.:** N3259
Contract: INFR01 **Lab Code:** CHEM **Case No.:** N3259 **SAS No.:** N3259
Initial Calibration Source: EPA
Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
LLICV01	Aluminum	96.7	100	97	80 - 120	P	06/15/2022	14:39	LB120705
	Arsenic	23.2	20.0	116	80 - 120	P	06/15/2022	14:39	LB120705
	Copper	21.1	20.0	106	80 - 120	P	06/15/2022	14:39	LB120705
	Iron	109	100	109	80 - 120	P	06/15/2022	14:39	LB120705
	Zinc	37.3	40.0	93	80 - 120	P	06/15/2022	14:39	LB120705



Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Inframark **SDG No.:** N3259
Contract: INFR01 **Lab Code:** CHEM **Case No.:** N3259 **SAS No.:** N3259
Initial Calibration Source: EPA
Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV01	Aluminum	9680	10000	97	90 - 110	P	06/15/2022	15:15	LB120705
	Arsenic	5200	5000	104	90 - 110	P	06/15/2022	15:15	LB120705
	Copper	1200	1250	96	90 - 110	P	06/15/2022	15:15	LB120705
	Iron	4860	5000	97	90 - 110	P	06/15/2022	15:15	LB120705
	Zinc	2550	2500	102	90 - 110	P	06/15/2022	15:15	LB120705



- 2a -

Client:	<u>Inframark</u>	SDG No.:	<u>N3259</u>				
Contract:	<u>INFR01</u>	Lab Code:	<u>CHEM</u>	Case No.:	<u>N3259</u>	SAS No.:	<u>N3259</u>
Initial Calibration Source:	<u>EPA</u>						
Continuing Calibration Source:	Inorganic Ventures						

Sample ID	Analyte	Result	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
		ug/L							
LLCCV01	Aluminum	109	100	110	80 - 120	P	06/15/2022	15:18	LB120705
	Arsenic	21.9	20.0	110	80 - 120	P	06/15/2022	15:18	LB120705
	Copper	19.6	20.0	98	80 - 120	P	06/15/2022	15:18	LB120705
	Iron	101	100	101	80 - 120	P	06/15/2022	15:18	LB120705
	Zinc	36.5	40.0	91	80 - 120	P	06/15/2022	15:18	LB120705



Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Inframark SDG No.: N3259
Contract: INFR01 Lab Code: CHEM Case No.: N3259 SAS No.: N3259
Initial Calibration Source: EPA
Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV02	Aluminum	9810	10000	98	90 - 110	P	06/15/2022	16:04	LB120705
	Arsenic	5220	5000	104	90 - 110	P	06/15/2022	16:04	LB120705
	Copper	1210	1250	97	90 - 110	P	06/15/2022	16:04	LB120705
	Iron	4990	5000	100	90 - 110	P	06/15/2022	16:04	LB120705
	Zinc	2600	2500	104	90 - 110	P	06/15/2022	16:04	LB120705
CCV03	Aluminum	9540	10000	95	90 - 110	P	06/15/2022	16:50	LB120705
	Arsenic	5160	5000	103	90 - 110	P	06/15/2022	16:50	LB120705
	Copper	1200	1250	96	90 - 110	P	06/15/2022	16:50	LB120705
	Iron	4840	5000	97	90 - 110	P	06/15/2022	16:50	LB120705
	Zinc	2550	2500	102	90 - 110	P	06/15/2022	16:50	LB120705
CCV04	Aluminum	9540	10000	95	90 - 110	P	06/15/2022	17:36	LB120705
	Arsenic	5160	5000	103	90 - 110	P	06/15/2022	17:36	LB120705
	Copper	1190	1250	95	90 - 110	P	06/15/2022	17:36	LB120705
	Iron	4790	5000	96	90 - 110	P	06/15/2022	17:36	LB120705
	Zinc	2550	2500	102	90 - 110	P	06/15/2022	17:36	LB120705
CCV05	Aluminum	9590	10000	96	90 - 110	P	06/15/2022	18:25	LB120705
	Arsenic	5130	5000	103	90 - 110	P	06/15/2022	18:25	LB120705
	Copper	1200	1250	96	90 - 110	P	06/15/2022	18:25	LB120705
	Iron	4810	5000	96	90 - 110	P	06/15/2022	18:25	LB120705
	Zinc	2520	2500	101	90 - 110	P	06/15/2022	18:25	LB120705
CCV06	Aluminum	10000	10000	100	90 - 110	P	06/15/2022	19:09	LB120705
	Arsenic	5340	5000	107	90 - 110	P	06/15/2022	19:09	LB120705
	Copper	1230	1250	99	90 - 110	P	06/15/2022	19:09	LB120705
	Iron	5040	5000	101	90 - 110	P	06/15/2022	19:09	LB120705
	Zinc	2620	2500	105	90 - 110	P	06/15/2022	19:09	LB120705
CCV07	Aluminum	9550	10000	96	90 - 110	P	06/15/2022	19:58	LB120705
	Arsenic	5150	5000	103	90 - 110	P	06/15/2022	19:58	LB120705
	Copper	1180	1250	95	90 - 110	P	06/15/2022	19:58	LB120705
	Iron	4880	5000	98	90 - 110	P	06/15/2022	19:58	LB120705
	Zinc	2540	2500	102	90 - 110	P	06/15/2022	19:58	LB120705
CCV08	Aluminum	9330	10000	93	90 - 110	P	06/15/2022	20:44	LB120705
	Arsenic	5070	5000	101	90 - 110	P	06/15/2022	20:44	LB120705
	Copper	1150	1250	92	90 - 110	P	06/15/2022	20:44	LB120705
	Iron	4680	5000	94	90 - 110	P	06/15/2022	20:44	LB120705



- 2a -

Client:	<u>Inframark</u>	SDG No.:	<u>N3259</u>				
Contract:	<u>INFR01</u>	Lab Code:	<u>CHEM</u>	Case No.:	<u>N3259</u>	SAS No.:	<u>N3259</u>
Initial Calibration Source:	<u>EPA</u>						
Continuing Calibration Source:	<u>Inorganic Ventures</u>						

Sample ID	Analyte	Result	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
		ug/L							
CCV08	Zinc	2490	2500	100	90 - 110	P	06/15/2022	20:44	LB120705
CCV09	Aluminum	9490	10000	95	90 - 110	P	06/15/2022	21:30	LB120705
	Arsenic	5180	5000	104	90 - 110	P	06/15/2022	21:30	LB120705
	Copper	1170	1250	93	90 - 110	P	06/15/2022	21:30	LB120705
	Iron	4830	5000	97	90 - 110	P	06/15/2022	21:30	LB120705
	Zinc	2570	2500	103	90 - 110	P	06/15/2022	21:30	LB120705
CCV10	Aluminum	9350	10000	94	90 - 110	P	06/15/2022	21:57	LB120705
	Arsenic	5170	5000	103	90 - 110	P	06/15/2022	21:57	LB120705
	Copper	1150	1250	92	90 - 110	P	06/15/2022	21:57	LB120705
	Iron	4770	5000	95	90 - 110	P	06/15/2022	21:57	LB120705
	Zinc	2540	2500	102	90 - 110	P	06/15/2022	21:57	LB120705



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Metals

- 2b -

CRDL STANDARD FOR AA & ICP

Client: Inframark **SDG No.:** N3259
Contract: INFR01 **Lab Code:** CHEM **Case No.:** N3259 **SAS No.:** N3259
Initial Calibration Source: _____
Continuing Calibration Source: _____

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CRI01	Aluminum	110	100	110	40 - 160	P	06/10/2022	16:05	LB120624
	Arsenic	20.6	20.0	103	40 - 160	P	06/10/2022	16:05	LB120624
	Copper	23.1	20.0	115	40 - 160	P	06/10/2022	16:05	LB120624
	Iron	111	100	111	40 - 160	P	06/10/2022	16:05	LB120624
	Zinc	36.5	40.0	91	40 - 160	P	06/10/2022	16:05	LB120624
CRI01	Aluminum	105	100	105	40 - 160	P	06/14/2022	15:09	LB120678
	Arsenic	20.7	20.0	104	40 - 160	P	06/14/2022	15:09	LB120678
	Copper	21.8	20.0	109	40 - 160	P	06/14/2022	15:09	LB120678
	Iron	102	100	102	40 - 160	P	06/14/2022	15:09	LB120678
	Zinc	36.0	40.0	90	40 - 160	P	06/14/2022	15:09	LB120678
CRI01	Aluminum	100	100	100	40 - 160	P	06/15/2022	14:47	LB120705
	Arsenic	19.3	20.0	97	40 - 160	P	06/15/2022	14:47	LB120705
	Copper	20.2	20.0	101	40 - 160	P	06/15/2022	14:47	LB120705
	Iron	93.6	100	94	40 - 160	P	06/15/2022	14:47	LB120705
	Zinc	37.0	40.0	93	40 - 160	P	06/15/2022	14:47	LB120705



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Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Inframark **SDG No.:** N3259
Contract: INFR01 **Lab Code:** CHEM **Case No.:** N3259 **SAS No.:** N3259

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB01	Aluminum	100	+/-100	U	100	P	06/10/2022	16:01	LB120624
	Arsenic	20.0	+/-20.0	U	20.0	P	06/10/2022	16:01	LB120624
	Copper	20.0	+/-20.0	U	20.0	P	06/10/2022	16:01	LB120624
	Iron	100	+/-100	U	100	P	06/10/2022	16:01	LB120624
	Zinc	40.0	+/-40.0	U	40.0	P	06/10/2022	16:01	LB120624



Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client:	Inframark				SDG No.:	N3259			
Contract:	INFR01	Lab Code:	CHEM	Case No.:	N3259	SAS No.:	N3259		
Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB01	Aluminum	100	+/-100	U	100	P	06/10/2022	16:33	LB120624
	Arsenic	20.0	+/-20.0	U	20.0	P	06/10/2022	16:33	LB120624
	Copper	20.0	+/-20.0	U	20.0	P	06/10/2022	16:33	LB120624
	Iron	100	+/-100	U	100	P	06/10/2022	16:33	LB120624
	Zinc	40.0	+/-40.0	U	40.0	P	06/10/2022	16:33	LB120624
CCB02	Aluminum	100	+/-100	U	100	P	06/10/2022	17:19	LB120624
	Arsenic	20.0	+/-20.0	U	20.0	P	06/10/2022	17:19	LB120624
	Copper	20.0	+/-20.0	U	20.0	P	06/10/2022	17:19	LB120624
	Iron	100	+/-100	U	100	P	06/10/2022	17:19	LB120624
	Zinc	40.0	+/-40.0	U	40.0	P	06/10/2022	17:19	LB120624
CCB03	Aluminum	100	+/-100	U	100	P	06/10/2022	18:09	LB120624
	Arsenic	20.0	+/-20.0	U	20.0	P	06/10/2022	18:09	LB120624
	Copper	20.0	+/-20.0	U	20.0	P	06/10/2022	18:09	LB120624
	Iron	100	+/-100	U	100	P	06/10/2022	18:09	LB120624
	Zinc	40.0	+/-40.0	U	40.0	P	06/10/2022	18:09	LB120624
CCB04	Aluminum	100	+/-100	U	100	P	06/10/2022	19:00	LB120624
	Arsenic	20.0	+/-20.0	U	20.0	P	06/10/2022	19:00	LB120624
	Copper	20.0	+/-20.0	U	20.0	P	06/10/2022	19:00	LB120624
	Iron	100	+/-100	U	100	P	06/10/2022	19:00	LB120624
	Zinc	40.0	+/-40.0	U	40.0	P	06/10/2022	19:00	LB120624
CCB05	Aluminum	100	+/-100	U	100	P	06/10/2022	19:50	LB120624
	Arsenic	20.0	+/-20.0	U	20.0	P	06/10/2022	19:50	LB120624
	Copper	20.0	+/-20.0	U	20.0	P	06/10/2022	19:50	LB120624
	Iron	100	+/-100	U	100	P	06/10/2022	19:50	LB120624
	Zinc	40.0	+/-40.0	U	40.0	P	06/10/2022	19:50	LB120624
CCB06	Aluminum	100	+/-100	U	100	P	06/10/2022	20:28	LB120624
	Arsenic	20.0	+/-20.0	U	20.0	P	06/10/2022	20:28	LB120624
	Copper	20.0	+/-20.0	U	20.0	P	06/10/2022	20:28	LB120624
	Iron	100	+/-100	U	100	P	06/10/2022	20:28	LB120624
	Zinc	40.0	+/-40.0	U	40.0	P	06/10/2022	20:28	LB120624

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Inframark

SDG No.: N3259

Contract: INFR01

Lab Code: CHEM

Case No.: N3259

SAS No.: N3259

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB01	Aluminum	100	+/-100	U	100	P	06/14/2022	15:05	LB120678
	Arsenic	20.0	+/-20.0	U	20.0	P	06/14/2022	15:05	LB120678
	Copper	20.0	+/-20.0	U	20.0	P	06/14/2022	15:05	LB120678
	Iron	100	+/-100	U	100	P	06/14/2022	15:05	LB120678
	Zinc	40.0	+/-40.0	U	40.0	P	06/14/2022	15:05	LB120678



Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Inframark SDG No.: N3259
Contract: INFR01 Lab Code: CHEM Case No.: N3259 SAS No.: N3259

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB01	Aluminum	100	+/-100	U	100	P	06/14/2022	15:36	LB120678
	Arsenic	20.0	+/-20.0	U	20.0	P	06/14/2022	15:36	LB120678
	Copper	20.0	+/-20.0	U	20.0	P	06/14/2022	15:36	LB120678
	Iron	100	+/-100	U	100	P	06/14/2022	15:36	LB120678
	Zinc	40.0	+/-40.0	U	40.0	P	06/14/2022	15:36	LB120678
CCB02	Aluminum	100	+/-100	U	100	P	06/14/2022	16:30	LB120678
	Arsenic	20.0	+/-20.0	U	20.0	P	06/14/2022	16:30	LB120678
	Copper	20.0	+/-20.0	U	20.0	P	06/14/2022	16:30	LB120678
	Iron	100	+/-100	U	100	P	06/14/2022	16:30	LB120678
	Zinc	40.0	+/-40.0	U	40.0	P	06/14/2022	16:30	LB120678
CCB03	Aluminum	100	+/-100	U	100	P	06/14/2022	17:19	LB120678
	Arsenic	20.0	+/-20.0	U	20.0	P	06/14/2022	17:19	LB120678
	Copper	20.0	+/-20.0	U	20.0	P	06/14/2022	17:19	LB120678
	Iron	100	+/-100	U	100	P	06/14/2022	17:19	LB120678
	Zinc	40.0	+/-40.0	U	40.0	P	06/14/2022	17:19	LB120678
CCB04	Aluminum	100	+/-100	U	100	P	06/14/2022	18:21	LB120678
	Arsenic	20.0	+/-20.0	U	20.0	P	06/14/2022	18:21	LB120678
	Copper	20.0	+/-20.0	U	20.0	P	06/14/2022	18:21	LB120678
	Iron	100	+/-100	U	100	P	06/14/2022	18:21	LB120678
	Zinc	40.0	+/-40.0	U	40.0	P	06/14/2022	18:21	LB120678
CCB05	Aluminum	100	+/-100	U	100	P	06/14/2022	19:11	LB120678
	Arsenic	20.0	+/-20.0	U	20.0	P	06/14/2022	19:11	LB120678
	Copper	20.0	+/-20.0	U	20.0	P	06/14/2022	19:11	LB120678
	Iron	100	+/-100	U	100	P	06/14/2022	19:11	LB120678
	Zinc	40.0	+/-40.0	U	40.0	P	06/14/2022	19:11	LB120678
CCB06	Aluminum	100	+/-100	U	100	P	06/14/2022	19:35	LB120678
	Arsenic	20.0	+/-20.0	U	20.0	P	06/14/2022	19:35	LB120678
	Copper	20.0	+/-20.0	U	20.0	P	06/14/2022	19:35	LB120678
	Iron	100	+/-100	U	100	P	06/14/2022	19:35	LB120678
	Zinc	40.0	+/-40.0	U	40.0	P	06/14/2022	19:35	LB120678

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Inframark

SDG No.: N3259

Contract: INFR01

Lab Code: CHEM

Case No.: N3259

SAS No.: N3259

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB01	Aluminum	100	+/-100	U	100	P	06/15/2022	14:43	LB120705
	Arsenic	20.0	+/-20.0	U	20.0	P	06/15/2022	14:43	LB120705
	Copper	20.0	+/-20.0	U	20.0	P	06/15/2022	14:43	LB120705
	Iron	100	+/-100	U	100	P	06/15/2022	14:43	LB120705
	Zinc	40.0	+/-40.0	U	40.0	P	06/15/2022	14:43	LB120705



Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client:	Inframark				SDG No.:	N3259			
Contract:	INFR01	Lab Code:	CHEM			Case No.:	N3259	SAS No.:	N3259
Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB01	Aluminum	100	+/-100	U	100	P	06/15/2022	15:22	LB120705
	Arsenic	20.0	+/-20.0	U	20.0	P	06/15/2022	15:22	LB120705
	Copper	20.0	+/-20.0	U	20.0	P	06/15/2022	15:22	LB120705
	Iron	100	+/-100	U	100	P	06/15/2022	15:22	LB120705
	Zinc	40.0	+/-40.0	U	40.0	P	06/15/2022	15:22	LB120705
CCB02	Aluminum	100	+/-100	U	100	P	06/15/2022	16:08	LB120705
	Arsenic	20.0	+/-20.0	U	20.0	P	06/15/2022	16:08	LB120705
	Copper	20.0	+/-20.0	U	20.0	P	06/15/2022	16:08	LB120705
	Iron	100	+/-100	U	100	P	06/15/2022	16:08	LB120705
	Zinc	40.0	+/-40.0	U	40.0	P	06/15/2022	16:08	LB120705
CCB03	Aluminum	100	+/-100	U	100	P	06/15/2022	16:54	LB120705
	Arsenic	20.0	+/-20.0	U	20.0	P	06/15/2022	16:54	LB120705
	Copper	20.0	+/-20.0	U	20.0	P	06/15/2022	16:54	LB120705
	Iron	100	+/-100	U	100	P	06/15/2022	16:54	LB120705
	Zinc	40.0	+/-40.0	U	40.0	P	06/15/2022	16:54	LB120705
CCB04	Aluminum	100	+/-100	U	100	P	06/15/2022	17:40	LB120705
	Arsenic	20.0	+/-20.0	U	20.0	P	06/15/2022	17:40	LB120705
	Copper	20.0	+/-20.0	U	20.0	P	06/15/2022	17:40	LB120705
	Iron	100	+/-100	U	100	P	06/15/2022	17:40	LB120705
	Zinc	40.0	+/-40.0	U	40.0	P	06/15/2022	17:40	LB120705
CCB05	Aluminum	100	+/-100	U	100	P	06/15/2022	18:34	LB120705
	Arsenic	20.0	+/-20.0	U	20.0	P	06/15/2022	18:34	LB120705
	Copper	20.0	+/-20.0	U	20.0	P	06/15/2022	18:34	LB120705
	Iron	100	+/-100	U	100	P	06/15/2022	18:34	LB120705
	Zinc	40.0	+/-40.0	U	40.0	P	06/15/2022	18:34	LB120705
CCB06	Aluminum	100	+/-100	U	100	P	06/15/2022	19:12	LB120705
	Arsenic	20.0	+/-20.0	U	20.0	P	06/15/2022	19:12	LB120705
	Copper	20.0	+/-20.0	U	20.0	P	06/15/2022	19:12	LB120705
	Iron	100	+/-100	U	100	P	06/15/2022	19:12	LB120705
	Zinc	40.0	+/-40.0	U	40.0	P	06/15/2022	19:12	LB120705
CCB07	Aluminum	100	+/-100	U	100	P	06/15/2022	20:02	LB120705
	Arsenic	20.0	+/-20.0	U	20.0	P	06/15/2022	20:02	LB120705
	Copper	20.0	+/-20.0	U	20.0	P	06/15/2022	20:02	LB120705
	Iron	100	+/-100	U	100	P	06/15/2022	20:02	LB120705
	Zinc	40.0	+/-40.0	U	40.0	P	06/15/2022	20:02	LB120705
CCB08	Aluminum	100	+/-100	U	100	P	06/15/2022	20:48	LB120705
	Arsenic	20.0	+/-20.0	U	20.0	P	06/15/2022	20:48	LB120705
	Copper	20.0	+/-20.0	U	20.0	P	06/15/2022	20:48	LB120705
	Iron	100	+/-100	U	100	P	06/15/2022	20:48	LB120705
	Zinc	40.0	+/-40.0	U	40.0	P	06/15/2022	20:48	LB120705



Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Inframark **SDG No.:** N3259
Contract: INFR01 **Lab Code:** CHEM **Case No.:** N3259 **SAS No.:** N3259

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB09	Aluminum	100	+/-100	U	100	P	06/15/2022	21:34	LB120705
	Arsenic	20.0	+/-20.0	U	20.0	P	06/15/2022	21:34	LB120705
	Copper	20.0	+/-20.0	U	20.0	P	06/15/2022	21:34	LB120705
	Iron	100	+/-100	U	100	P	06/15/2022	21:34	LB120705
	Zinc	40.0	+/-40.0	U	40.0	P	06/15/2022	21:34	LB120705
CCB10	Aluminum	100	+/-100	U	100	P	06/15/2022	22:01	LB120705
	Arsenic	6.86	+/-20.0	J	20.0	P	06/15/2022	22:01	LB120705
	Copper	20.0	+/-20.0	U	20.0	P	06/15/2022	22:01	LB120705
	Iron	100	+/-100	U	100	P	06/15/2022	22:01	LB120705
	Zinc	40.0	+/-40.0	U	40.0	P	06/15/2022	22:01	LB120705



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Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Inframark

SDG No.: N3259

Contract: INFR01

Lab Code: CHEM

Case No.: N3259

SAS No.: N3259

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
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Metals
- 3b -
PREPARATION BLANK SUMMARY

Client: Inframark

SDG No.: N3259

Instrument: P5

Sample ID	Analyte	Result (ug/L)	Acceptance Limit	Conc Qual	CRQL ug/L	M	Analysis Date	Analysis Time	Run
PB145317BL	WATER			Batch Number:	PB145317		Prep Date:	06/09/2022	
	Aluminum	50.0	<50.0	U	50.0	P	06/15/2022	17:58	LB120705
	Arsenic	10.0	<10.0	U	10.0	P	06/15/2022	17:58	LB120705
	Copper	10.0	<10.0	U	10.0	P	06/15/2022	17:58	LB120705
	Iron	50.0	<50.0	U	50.0	P	06/15/2022	17:58	LB120705
	Zinc	20.0	<20.0	U	20.0	P	06/15/2022	17:58	LB120705

Metals

- 4 -

INTERFERENCE CHECK SAMPLE

Client: Inframark **SDG No.:** N3259
Contract: INFR01 **Lab Code:** CHEM **Case No.:** N3259 **SAS No.:** N3259
ICS Source: EPA **Instrument ID:** P5

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Low Limit (ug/L)	High Limit (ug/L)	Analysis Date	Analysis Time	Run Number
ICSA01	Aluminum	237000	250000	95	210000	290000	06/10/2022	16:09	LB120624
	Arsenic	15.0			-20	20	06/10/2022	16:09	LB120624
	Copper	12.9	2.0	645	-18	22	06/10/2022	16:09	LB120624
	Iron	89100	100000	89	85000	120000	06/10/2022	16:09	LB120624
	Zinc	-0.80			-40	40	06/10/2022	16:09	LB120624
ICSAB01	Aluminum	263000	250000	105	210000	290000	06/10/2022	16:14	LB120624
	Arsenic	103	100	103	85	120	06/10/2022	16:14	LB120624
	Copper	525	510	103	430	590	06/10/2022	16:14	LB120624
	Iron	98800	99000	100	84000	110000	06/10/2022	16:14	LB120624
	Zinc	1020	950	107	810	1100	06/10/2022	16:14	LB120624
ICSA	Aluminum	249000	250000	100	210000	290000	06/10/2022	16:17	LB120624
	Arsenic	-51.0			-20	20	06/10/2022	16:17	LB120624
	Copper	11.0	2.0	550	-18	22	06/10/2022	16:17	LB120624
	Iron	103000	100000	103	85000	120000	06/10/2022	16:17	LB120624
	Zinc	-68.8			-40	40	06/10/2022	16:17	LB120624
ICSAB	Aluminum	244000	250000	98	210000	290000	06/10/2022	16:21	LB120624
	Arsenic	202	100	202	85	120	06/10/2022	16:21	LB120624
	Copper	531	510	104	430	590	06/10/2022	16:21	LB120624
	Iron	101000	99000	102	84000	110000	06/10/2022	16:21	LB120624
	Zinc	896	950	94	810	1100	06/10/2022	16:21	LB120624
ICSA01	Aluminum	263000	250000	105	210000	290000	06/14/2022	15:13	LB120678
	Arsenic	15.1			-20	20	06/14/2022	15:13	LB120678
	Copper	10.7	2.0	534	-18	22	06/14/2022	15:13	LB120678
	Iron	100000	100000	100	85000	120000	06/14/2022	15:13	LB120678
	Zinc	-5.21			-40	40	06/14/2022	15:13	LB120678
ICSAB01	Aluminum	258000	250000	103	210000	290000	06/14/2022	15:16	LB120678
	Arsenic	115	100	115	85	120	06/14/2022	15:16	LB120678
	Copper	512	510	100	430	590	06/14/2022	15:16	LB120678
	Iron	98700	99000	100	84000	110000	06/14/2022	15:16	LB120678
	Zinc	1020	950	107	810	1100	06/14/2022	15:16	LB120678
ICSA	Aluminum	249000	250000	100	210000	290000	06/14/2022	15:20	LB120678
	Arsenic	41.7			-20	20	06/14/2022	15:20	LB120678
	Copper	10.9	2.0	548	-18	22	06/14/2022	15:20	LB120678
	Iron	103000	100000	103	85000	120000	06/14/2022	15:20	LB120678
	Zinc	-129			-40	40	06/14/2022	15:20	LB120678
ICSAB	Aluminum	240000	250000	96	210000	290000	06/14/2022	15:24	LB120678
	Arsenic	143	100	143	85	120	06/14/2022	15:24	LB120678
	Copper	461	510	90	430	590	06/14/2022	15:24	LB120678
	Iron	99100	99000	100	84000	110000	06/14/2022	15:24	LB120678
	Zinc	868	950	91	810	1100	06/14/2022	15:24	LB120678
ICSA01	Aluminum	261000	250000	104	210000	290000	06/15/2022	14:51	LB120705
	Arsenic	12.5			-20	20	06/15/2022	14:51	LB120705

Metals

- 4 -

INTERFERENCE CHECK SAMPLE

Client: Inframark SDG No.: N3259
Contract: INFR01 Lab Code: CHEM Case No.: N3259 SAS No.: N3259
ICS Source: EPA Instrument ID: P5

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Low Limit (ug/L)	High Limit (ug/L)	Analysis Date	Analysis Time	Run Number
ICSA01	Copper	16.4	2.0	820	-18	22	06/15/2022	14:51	LB120705
	Iron	101000	100000	101	85000	120000	06/15/2022	14:51	LB120705
	Zinc	-2.91			-40	40	06/15/2022	14:51	LB120705
ICSAB01	Aluminum	255000	250000	102	210000	290000	06/15/2022	14:55	LB120705
	Arsenic	114	100	114	85	120	06/15/2022	14:55	LB120705
	Copper	501	510	98	430	590	06/15/2022	14:55	LB120705
	Iron	98200	99000	99	84000	110000	06/15/2022	14:55	LB120705
	Zinc	1030	950	108	810	1100	06/15/2022	14:55	LB120705
ICSA	Aluminum	247000	250000	99	210000	290000	06/15/2022	14:59	LB120705
	Arsenic	20.1			-20	20	06/15/2022	14:59	LB120705
	Copper	65.4	2.0	3270	-18	22	06/15/2022	14:59	LB120705
	Iron	102000	100000	102	85000	120000	06/15/2022	14:59	LB120705
	Zinc	-75.5			-40	40	06/15/2022	14:59	LB120705
ICSAB	Aluminum	241000	250000	96	210000	290000	06/15/2022	15:02	LB120705
	Arsenic	173	100	173	85	120	06/15/2022	15:02	LB120705
	Copper	458	510	90	430	590	06/15/2022	15:02	LB120705
	Iron	99700	99000	101	84000	110000	06/15/2022	15:02	LB120705
	Zinc	930	950	98	810	1100	06/15/2022	15:02	LB120705

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metals
- 5a -
MATRIX SPIKE SUMMARY

client: Inframark level: low sdg no.: N3259
contract: INFR01 lab code: CHEM case no.: N3259 sas no.: N3259
matrix: Water sample id: N3252-01 client id: POOL-WATERMS
Percent Solids for Sample: NA Spiked ID: N3252-01MS Percent Solids for Spike Sample: NA

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Aluminum	ug/L	75 - 125	1040		54.1		1000	99		P
Arsenic	ug/L	75 - 125	396		10.0	U	400	99		P
Copper	ug/L	75 - 125	149		10.0	U	150	99		P
Iron	ug/L	75 - 125	1580		38.2	J	1500	103		P
Zinc	ug/L	75 - 125	167		65.0		100	102		P



metals
- 5a -
MATRIX SPIKE DUPLICATE SUMMARY

client: Inframark level: low sdg no.: N3259
contract: INFR01 lab code: CHEM case no.: N3259 sas no.: N3259
matrix: Water sample id: N3252-01 client id: POOL-WATERMSD
Percent Solids for Sample: NA Spiked ID: N3252-01MSD Percent Solids for Spike Sample: NA

Analyte	Units	Acceptance Limit %R	MSD Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Aluminum	ug/L	75 - 125	1060		54.1		1000	100		P
Arsenic	ug/L	75 - 125	394		10.0	U	400	98		P
Copper	ug/L	75 - 125	153		10.0	U	150	102		P
Iron	ug/L	75 - 125	1610		38.2	J	1500	105		P
Zinc	ug/L	75 - 125	168		65.0		100	103		P



Metals
- 5b -

Client: Inframark

SDG No.: N3259

Contract: INFR01

Lab Code: CHEM

Case No.: N3259

SAS No.: N3259

Matrix:

Level: LOW

Client ID:

Sample ID:

Spiked ID:

Analyte	Units	Acceptance Limit %R	C	Sample Result	C	Spike Added	% Recovery	Qual	M
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Metals

- 6 -

DUPLICATE SAMPLE SUMMARY

Client: Inframark **Level:** LOW **SDG No.:** N3259
Contract: INFR01 **Lab Code:** CHEM **Case No.:** N3259 **SAS No.:** N3259
Matrix: Water **Sample ID:** N3252-01 **Client ID:** POOL-WATERDUP
Percent Solids for Sample: NA **Duplicate ID** N3252-01DUP **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Aluminum	ug/L	20	54.1		46.3	J	16		P
Arsenic	ug/L	20	10.0	U	10.0	U			P
Copper	ug/L	20	10.0	U	10.0	U			P
Iron	ug/L	20	38.2	J	38.6	J	1		P
Zinc	ug/L	20	65.0		64.2		1		P



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Metals

- 6 -

DUPLICATE SAMPLE SUMMARY

Client: Inframark **Level:** LOW **SDG No.:** N3259
Contract: INFR01 **Lab Code:** CHEM **Case No.:** N3259 **SAS No.:** N3259
Matrix: Water **Sample ID:** N3252-01MS **Client ID:** POOL-WATERMSD
Percent Solids for Sample: NA **Duplicate ID** N3252-01MSD **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Aluminum	ug/L	20	1040		1060		2		P
Arsenic	ug/L	20	396		394		1		P
Copper	ug/L	20	149		153		3		P
Iron	ug/L	20	1580		1610		2		P
Zinc	ug/L	20	167		168		1		P

“A control limit of +20% RPD for each matrix applies for sample values greater than 10 times Detection Limit”



Metals

- 7 -

LABORATORY CONTROL SAMPLE SUMMARY

Client: Inframark

SDG No.: N3259

Contract: INFR01

Lab Code: CHEM

Case No.: N3259

SAS No.: N3259

Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limits	M
PB145317BS							
Aluminum	ug/L	1000	929		93	85 - 115	P
Arsenic	ug/L	400	377		94	85 - 115	P
Copper	ug/L	150	142		95	85 - 115	P
Iron	ug/L	1500	1480		99	85 - 115	P
Zinc	ug/L	100	99.5		100	85 - 115	P



Metals
-9 -
ICP SERIAL DILUTIONS

SAMPLE NO.

POOL-WATERL

Lab Name: Chemtech Consulting Group Contract: INFR01
Lab Code: CHEM Lb No.: lb120705 Lab Sample ID : N3252-01L SDG No.: N3259
Matrix (soil/water): Water Level (low/med): LOW
Concentration Units: ug/L

Analyte	Initial Sample Result (I)		Serial Dilution Result (S)		% Differ-ence		Q	M
	C		C					
Aluminum	54.1		697		1189			P
Arsenic	10.0	U	50.0	U				P
Copper	10.0	U	50.0	U				P
Iron	38.2	J	250	U	100.0			P
Zinc	65.0		38.6	J	41			P

METAL
PREPARATION &
INSTRUMENT
DATA



Metals

- 11 -

ICP INTERELEMENT CORRECTION FACTORS

Client: Inframark

SDG No.: N3259

Contract: INFR01

Lab Code: CHEM

Case No.: N3259

SAS No.: N3259

Instrument ID:

Date:

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave- Length (nm)	ICP Interelement Correction Factors For:				
		Al	Ca	Fe	Mg	Ag
Aluminum	396.100	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Arsenic	193.759	0.0000000	0.0000000	-0.0000720	0.0000000	0.0000000
Copper	224.700	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Iron	240.488	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Zinc	213.800	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000



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Metals

- 11 -

ICP INTERELEMENT CORRECTION FACTORS

Client: Inframark

SDG No.: N3259

Contract: INFR01

Lab Code: CHEM

Case No.: N3259

SAS No.: N3259

Instrument ID:

Date:

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave- Length (nm)	ICP Interelement Correction Factors For:				
		As	Ba	Be	Cd	Co
Aluminum	396.100	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Arsenic	193.759	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	224.700	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Iron	240.488	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Zinc	213.800	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000



Metals

- 11 -

ICP INTERELEMENT CORRECTION FACTORS

Client: Inframark

SDG No.: N3259

Contract: INFR01

Lab Code: CHEM

Case No.: N3259

SAS No.: N3259

Instrument ID: _____

Date: _____

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave- Length (nm)	ICP Interelement Correction Factors For:				
		Cr	Cu	K	Mn	Mo
Aluminum	396.100	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Arsenic	193.759	0.0000000	0.0000000	0.0000000	0.0000000	0.0001020
Copper	224.700	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Iron	240.488	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Zinc	213.800	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000



Metals

- 11 -

ICP INTERELEMENT CORRECTION FACTORS

Client: Inframark

SDG No.: N3259

Contract: INFR01

Lab Code: CHEM

Case No.: N3259

SAS No.: N3259

Instrument ID: _____

Date: _____

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave- Length (nm)	ICP Interelement Correction Factors For:				
		Na	Ni	Pb	Sb	Se
Aluminum	396.100	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Arsenic	193.759	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	224.700	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Iron	240.488	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Zinc	213.800	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000



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Metals

- 11 -

ICP INTERELEMENT CORRECTION FACTORS

Client: Inframark

SDG No.: N3259

Contract: INFR01

Lab Code: CHEM

Case No.: N3259

SAS No.: N3259

Instrument ID:

Date:

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave- Length (nm)	ICP Interelement Correction Factors For:				
		Sn	Ti	Tl	V	Zn
Aluminum	396.100	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Arsenic	193.759	0.0000000	0.0000000	0.0000000	0.0000000	-0.0004810
Copper	224.700	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Iron	240.488	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Zinc	213.800	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

METAL
PREPARATION &
ANALYICAL
SUMMARY



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Metals

- 13 -

SAMPLE PREPARATION SUMMARY

Client: Inframark **SDG No.:** N3259
Contract: INFR01 **Lab Code:** CHEM **Method:**
Case No.: N3259 **SAS No.:** N3259

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(mL)	Final Sample Volume (mL)	Percent Solids
Batch Number: PB145317							
N3252-01DUP	POOL-WATERDUP	DUP	WATER	06/09/2022	50.0	25.0	
N3252-01MS	POOL-WATERMS	MS	WATER	06/09/2022	50.0	25.0	
N3252-01MSD	POOL-WATERMSD	MSD	WATER	06/09/2022	50.0	25.0	
N3259-01	BI-WEEKLY-INFLUENT	SAM	WATER	06/09/2022	50.0	25.0	
PB145317BL	PB145317BL	MB	WATER	06/09/2022	50.0	25.0	
PB145317BS	PB145317BS	LCS	WATER	06/09/2022	50.0	25.0	



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metals
- 14 -
ANALYSIS RUN LOG

Client: Inframark

Contract: INFR01

Lab code: CHEM Case no.: N3259 Sas no.: N3259

Sdg no.: N3259

Instrument id number: Method:

Run number: LB120624

Start date: 06/10/2022 End date: 06/10/2022

Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	1520	Al,As,Cu,Fe,Zn
S1	S1	1	1523	Al,As,Cu,Fe,Zn
S2	S2	1	1527	Al,As,Cu,Fe,Zn
S3	S3	1	1531	Al,As,Cu,Fe,Zn
S4	S4	1	1535	Al,As,Cu,Fe,Zn
S5	S5	1	1538	Al,As,Cu,Fe,Zn
ICV01	ICV01	1	1553	Al,As,Cu,Fe,Zn
LLICV01	LLICV01	1	1557	Al,As,Cu,Fe,Zn
ICB01	ICB01	1	1601	Al,As,Cu,Fe,Zn
CRI01	CRI01	1	1605	Al,As,Cu,Fe,Zn
ICSA01	ICSA01	1	1609	Al,As,Cu,Fe,Zn
ICSAB01	ICSAB01	1	1614	Al,As,Cu,Fe,Zn
ICSA	ICSA	20	1617	Al,As,Cu,Fe,Zn
ICSAB	ICSAB	20	1621	Al,As,Cu,Fe,Zn
CCV01	CCV01	1	1625	Al,As,Cu,Fe,Zn
LLCCV01	LLCCV01	1	1629	Al,As,Cu,Fe,Zn
CCB01	CCB01	1	1633	Al,As,Cu,Fe,Zn
CCV02	CCV02	1	1715	Al,As,Cu,Fe,Zn
CCB02	CCB02	1	1719	Al,As,Cu,Fe,Zn
CCV03	CCV03	1	1805	Al,As,Cu,Fe,Zn
CCB03	CCB03	1	1809	Al,As,Cu,Fe,Zn
CCV04	CCV04	1	1856	Al,As,Cu,Fe,Zn
CCB04	CCB04	1	1900	Al,As,Cu,Fe,Zn
N3259-01	BI-WEEKLY-INFLUENT	1	1909	Al,As,Cu,Zn
CCV05	CCV05	1	1947	Al,As,Cu,Fe,Zn
CCB05	CCB05	1	1950	Al,As,Cu,Fe,Zn
CCV06	CCV06	1	2025	Al,As,Cu,Fe,Zn
CCB06	CCB06	1	2028	Al,As,Cu,Fe,Zn



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metals
- 14 -
ANALYSIS RUN LOG

Client: Inframark

Contract: INFR01

Lab code: CHEM Case no.: N3259 Sas no.: N3259

Sdg no.: N3259

Instrument id number: Method:

Run number: LB120678

Start date: 06/14/2022 End date: 06/14/2022

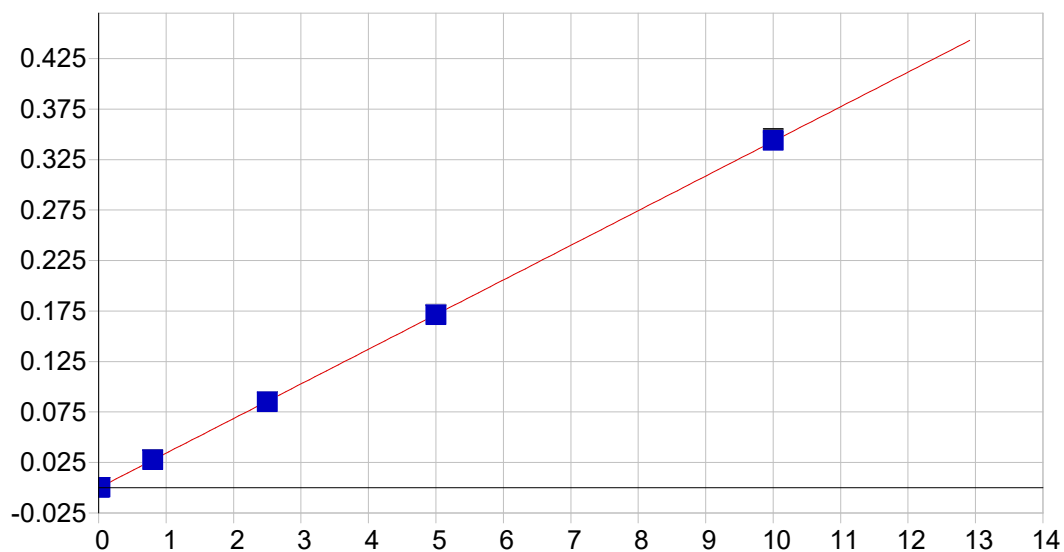
Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	1413	Al,As,Cu,Fe,Zn
S1	S1	1	1417	Al,As,Cu,Fe,Zn
S2	S2	1	1421	Al,As,Cu,Fe,Zn
S3	S3	1	1425	Al,As,Cu,Fe,Zn
S4	S4	1	1428	Al,As,Cu,Fe,Zn
S5	S5	1	1432	Al,As,Cu,Fe,Zn
ICV01	ICV01	1	1457	Al,As,Cu,Fe,Zn
LLICV01	LLICV01	1	1501	Al,As,Cu,Fe,Zn
ICB01	ICB01	1	1505	Al,As,Cu,Fe,Zn
CRI01	CRI01	1	1509	Al,As,Cu,Fe,Zn
ICSA01	ICSA01	1	1513	Al,As,Cu,Fe,Zn
ICSAB01	ICSAB01	1	1516	Al,As,Cu,Fe,Zn
ICSA	ICSA	20	1520	Al,As,Cu,Fe,Zn
ICSAB	ICSAB	20	1524	Al,As,Cu,Fe,Zn
CCV01	CCV01	1	1528	Al,As,Cu,Fe,Zn
LLCCV01	LLCCV01	1	1532	Al,As,Cu,Fe,Zn
CCB01	CCB01	1	1536	Al,As,Cu,Fe,Zn
CCV02	CCV02	1	1626	Al,As,Cu,Fe,Zn
CCB02	CCB02	1	1630	Al,As,Cu,Fe,Zn
N3259-01	BI-WEEKLY-INFLUENT	10	1641	Fe
CCV03	CCV03	1	1716	Al,As,Cu,Fe,Zn
CCB03	CCB03	1	1719	Al,As,Cu,Fe,Zn
CCV04	CCV04	1	1813	Al,As,Cu,Fe,Zn
CCB04	CCB04	1	1821	Al,As,Cu,Fe,Zn
CCV05	CCV05	1	1907	Al,As,Cu,Fe,Zn
CCB05	CCB05	1	1911	Al,As,Cu,Fe,Zn
CCV06	CCV06	1	1931	Al,As,Cu,Fe,Zn
CCB06	CCB06	1	1935	Al,As,Cu,Fe,Zn

metals
- 14 -
ANALYSIS RUN LOG

Client: Inframark
Contract: INFR01
Lab code: CHEM **Case no.:** N3259 **Sas no.:** N3259
Sdg no.: N3259
Instrument id number: **Method:**
Run number: LB120705
Start date: 06/15/2022 **End date:** 06/15/2022

Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	1404	Al,As,Cu,Fe,Zn
S1	S1	1	1408	Al,As,Cu,Fe,Zn
S2	S2	1	1412	Al,As,Cu,Fe,Zn
S3	S3	1	1416	Al,As,Cu,Fe,Zn
S4	S4	1	1420	Al,As,Cu,Fe,Zn
S5	S5	1	1423	Al,As,Cu,Fe,Zn
ICV01	ICV01	1	1435	Al,As,Cu,Fe,Zn
LLICV01	LLICV01	1	1439	Al,As,Cu,Fe,Zn
ICB01	ICB01	1	1443	Al,As,Cu,Fe,Zn
CRI01	CRI01	1	1447	Al,As,Cu,Fe,Zn
ICSA01	ICSA01	1	1451	Al,As,Cu,Fe,Zn
ICSAB01	ICSAB01	1	1455	Al,As,Cu,Fe,Zn
ICSA	ICSA	20	1459	Al,As,Cu,Fe,Zn
ICSAB	ICSAB	20	1502	Al,As,Cu,Fe,Zn
CCV01	CCV01	1	1515	Al,As,Cu,Fe,Zn
LLCCV01	LLCCV01	1	1518	Al,As,Cu,Fe,Zn
CCB01	CCB01	1	1522	Al,As,Cu,Fe,Zn
CCV02	CCV02	1	1604	Al,As,Cu,Fe,Zn
CCB02	CCB02	1	1608	Al,As,Cu,Fe,Zn
CCV03	CCV03	1	1650	Al,As,Cu,Fe,Zn
CCB03	CCB03	1	1654	Al,As,Cu,Fe,Zn
CCV04	CCV04	1	1736	Al,As,Cu,Fe,Zn
CCB04	CCB04	1	1740	Al,As,Cu,Fe,Zn
PB145317BL	PB145317BL	1	1758	Al,As,Cu,Fe,Zn
PB145317BS	PB145317BS	1	1802	Al,As,Cu,Fe,Zn
CCV05	CCV05	1	1825	Al,As,Cu,Fe,Zn
CCB05	CCB05	1	1834	Al,As,Cu,Fe,Zn
N3252-01DUP	POOL-WATERDUP	1	1838	Al,As,Cu,Fe,Zn
N3252-01MS	POOL-WATERMS	1	1842	Al,As,Cu,Fe,Zn
N3252-01MSD	POOL-WATERMSD	1	1846	Al,As,Cu,Fe,Zn
N3252-01L	POOL-WATERL	5	1850	Al,As,Cu,Fe,Zn
CCV06	CCV06	1	1909	Al,As,Cu,Fe,Zn
CCB06	CCB06	1	1912	Al,As,Cu,Fe,Zn
CCV07	CCV07	1	1958	Al,As,Cu,Fe,Zn
CCB07	CCB07	1	2002	Al,As,Cu,Fe,Zn
CCV08	CCV08	1	2044	Al,As,Cu,Fe,Zn
CCB08	CCB08	1	2048	Al,As,Cu,Fe,Zn
CCV09	CCV09	1	2130	Al,As,Cu,Fe,Zn
CCB09	CCB09	1	2134	Al,As,Cu,Fe,Zn
CCV10	CCV10	1	2157	Al,As,Cu,Fe,Zn
CCB10	CCB10	1	2201	Al,As,Cu,Fe,Zn

METAL
RAW DATA

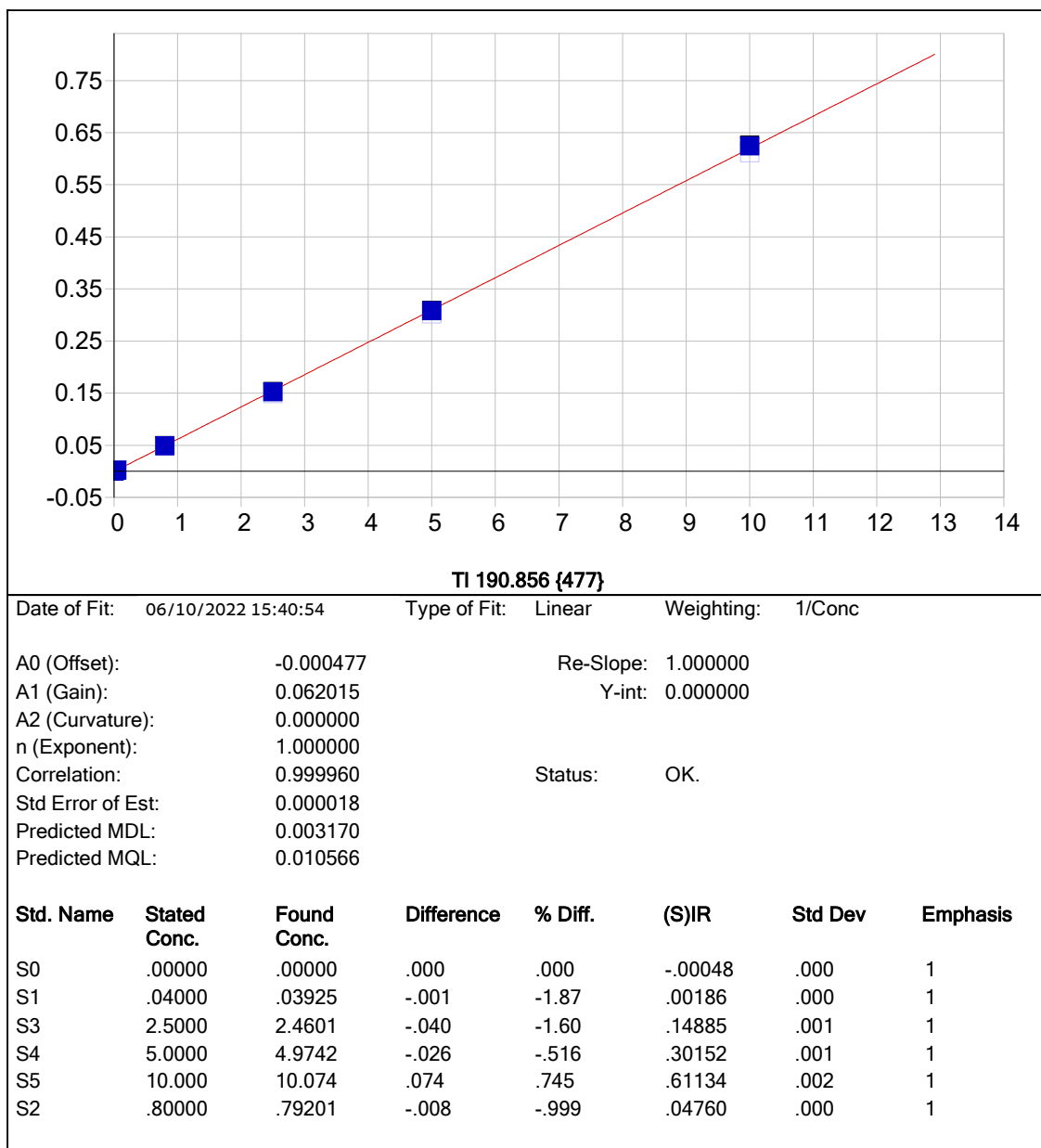


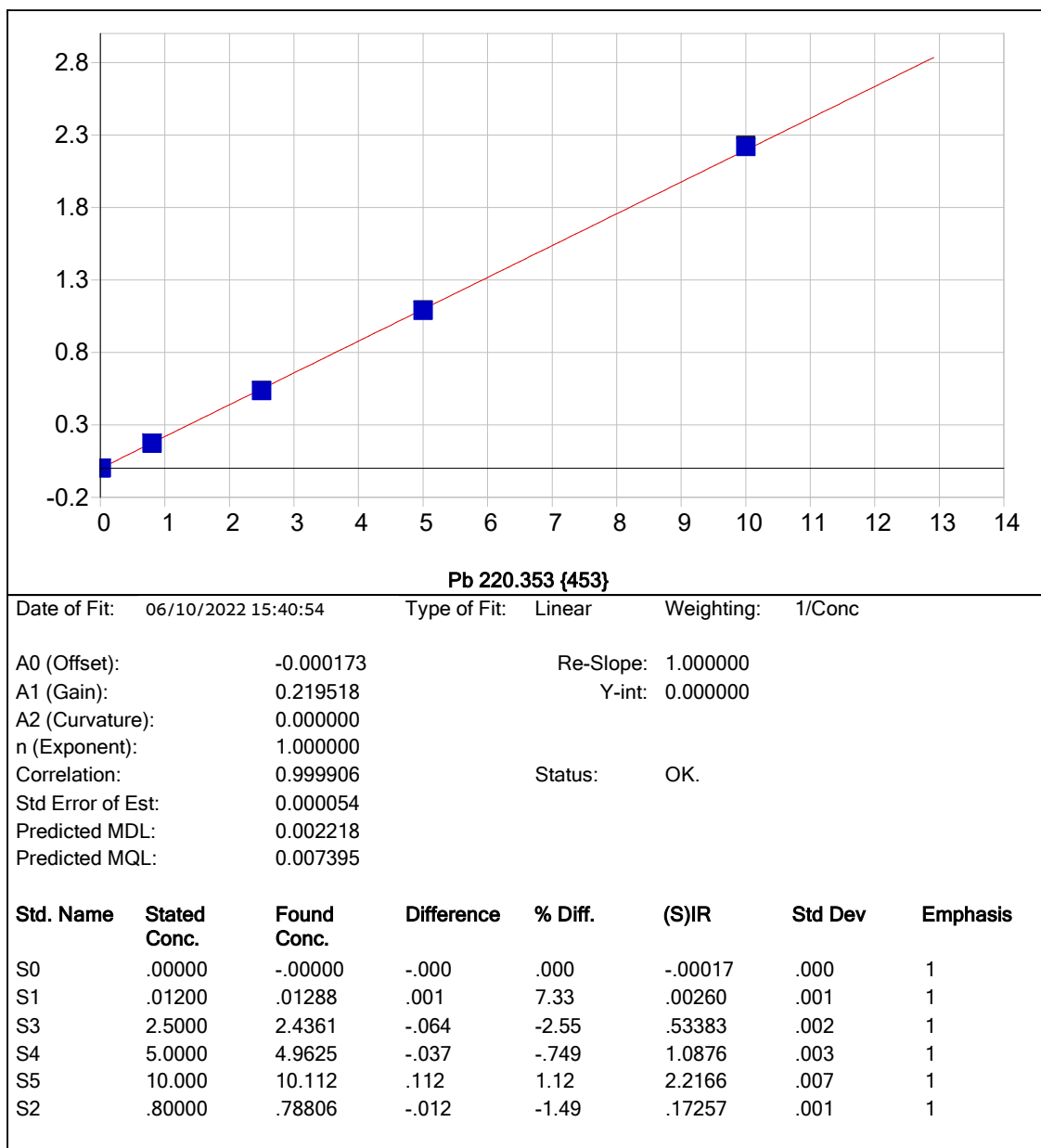
As 189.042 {479}

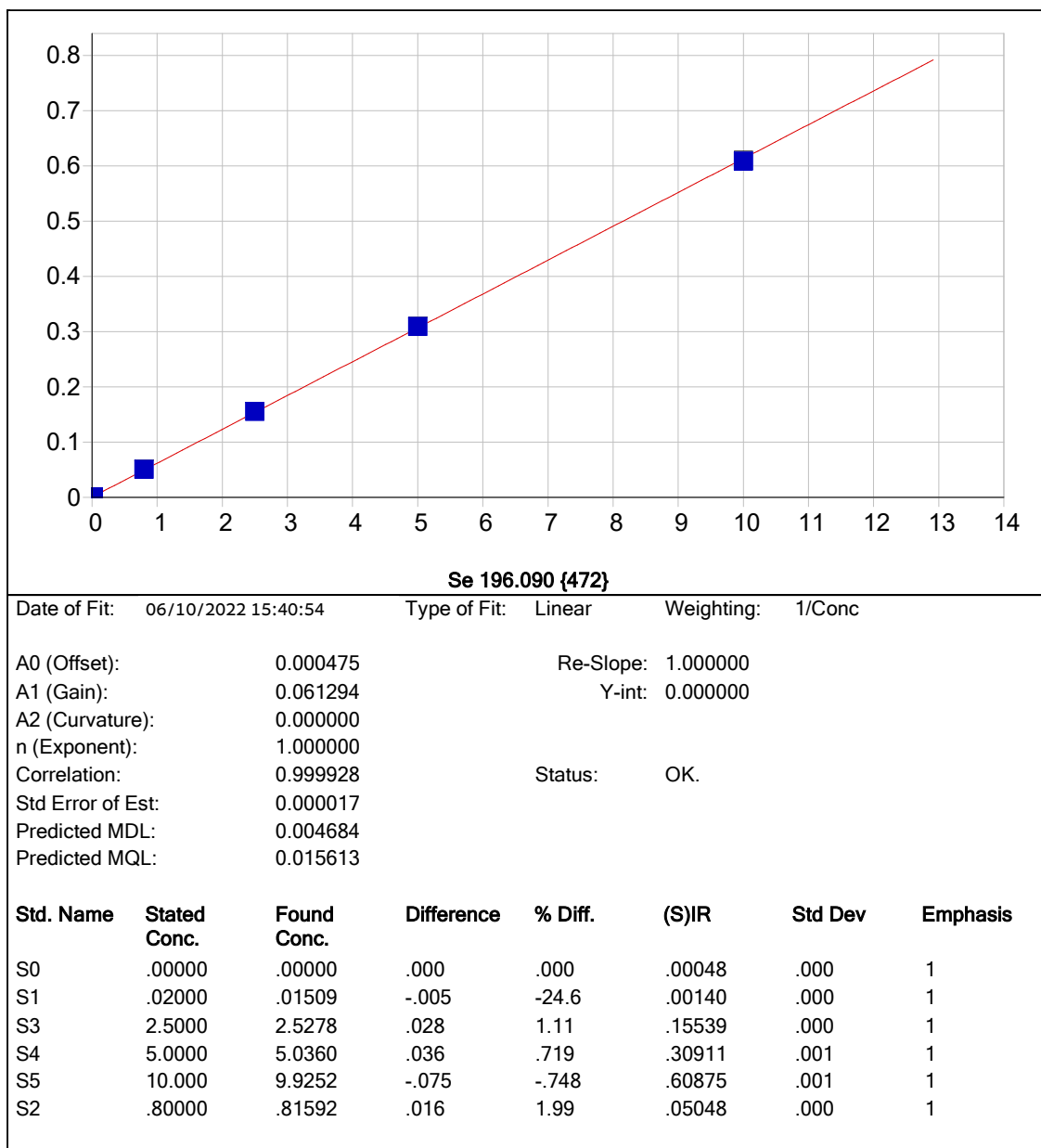
Date of Fit: 06/10/2022 15:40:54 Type of Fit: Linear Weighting: 1/Conc

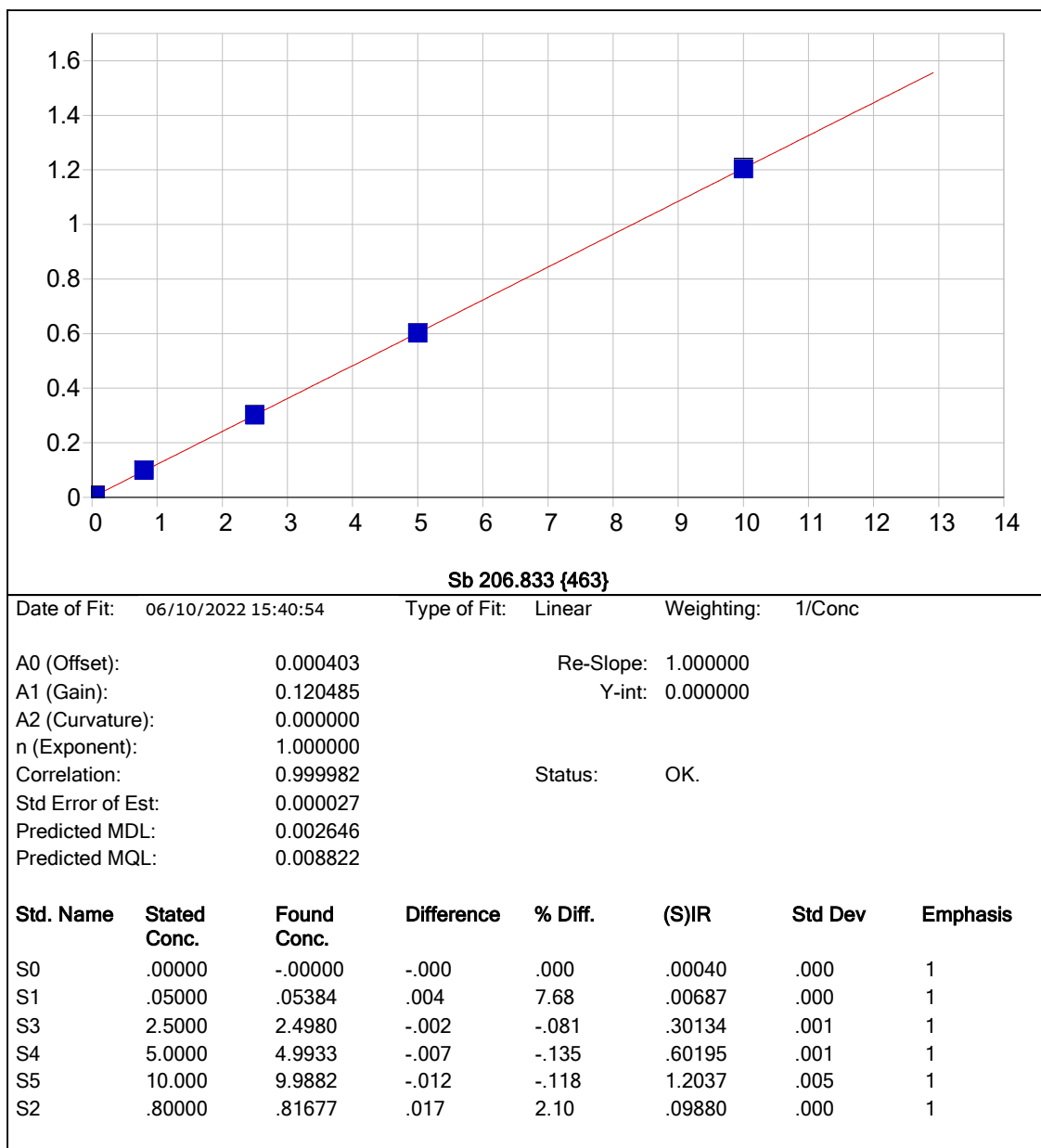
A0 (Offset): -0.000116 Re-Slope: 1.000000
A1 (Gain): 0.034310 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999987 Status: OK.
Std Error of Est: 0.000004
Predicted MDL: 0.005831
Predicted MQL: 0.019437

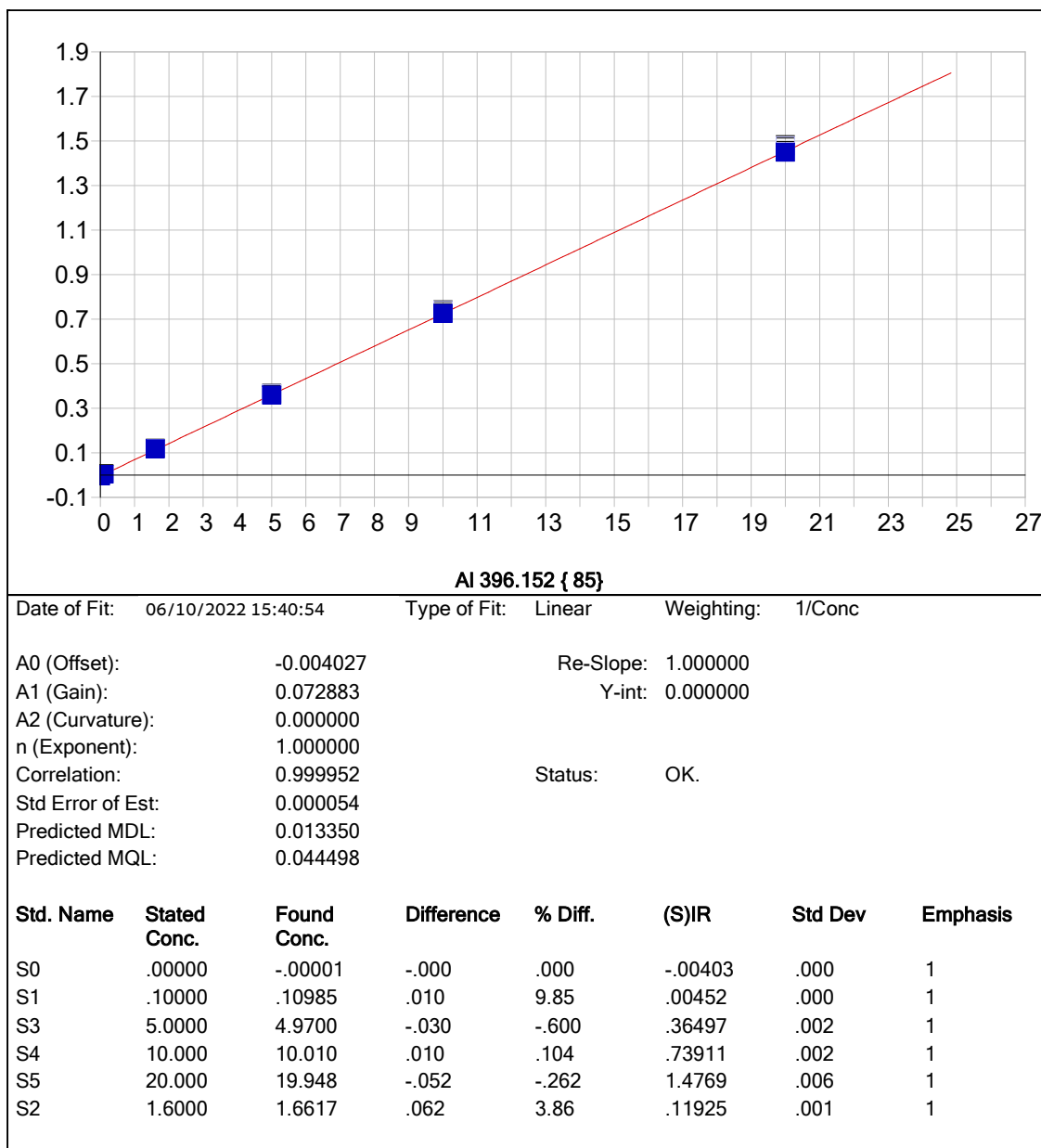
Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00012	.000	1
S1	.02000	.01767	-.002	-11.7	.00050	.000	1
S3	2.5000	2.4837	-.016	-.653	.08521	.000	1
S4	5.0000	4.9910	-.009	-.180	.17135	.000	1
S5	10.000	10.023	.023	.233	.34423	.001	1
S2	.80000	.80443	.004	.553	.02752	.000	1

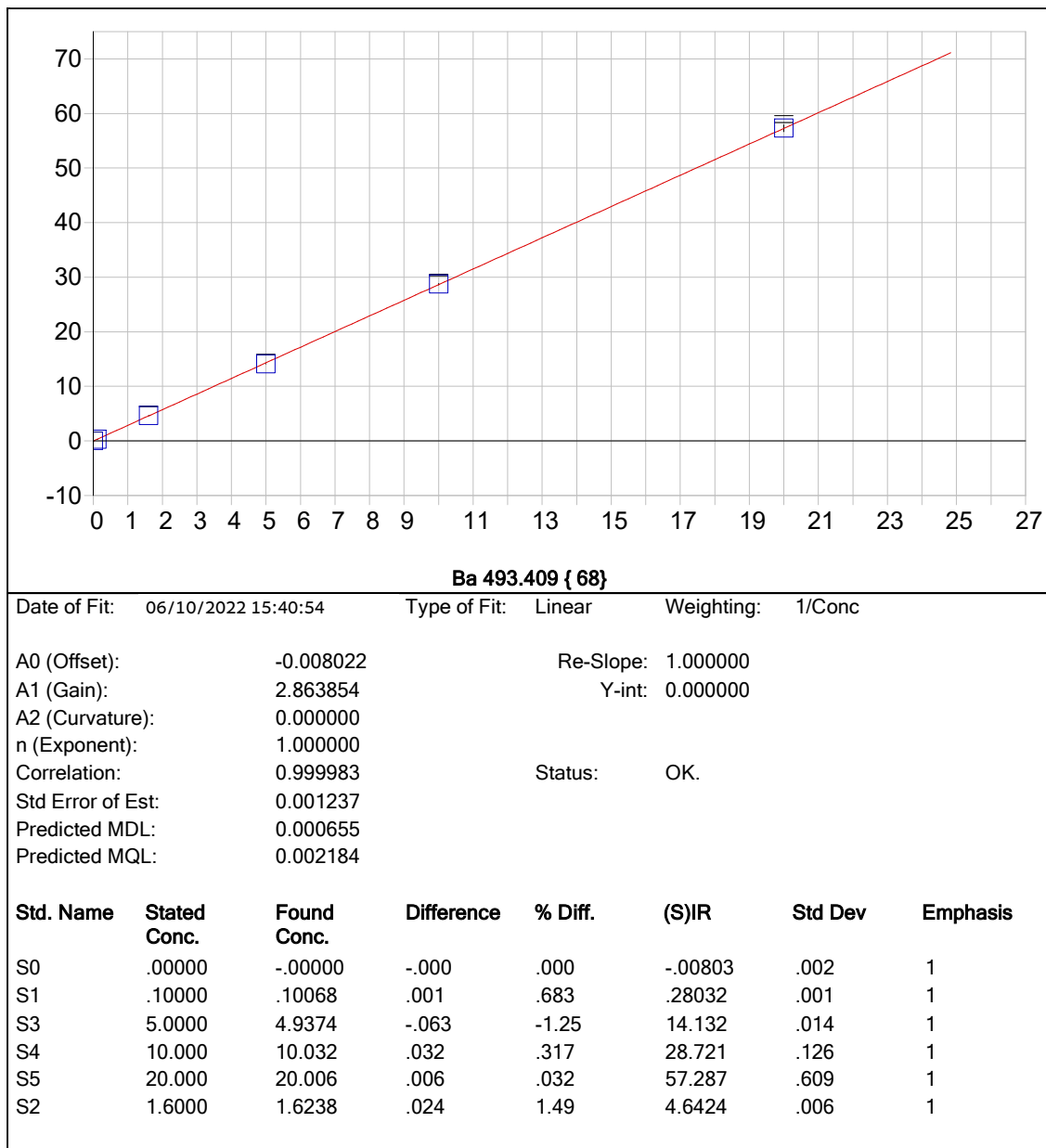


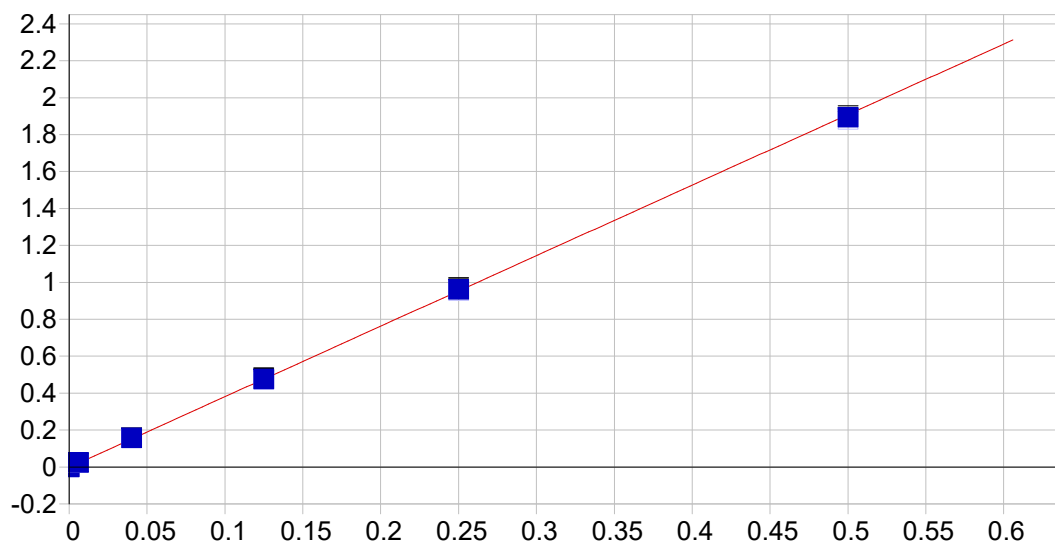










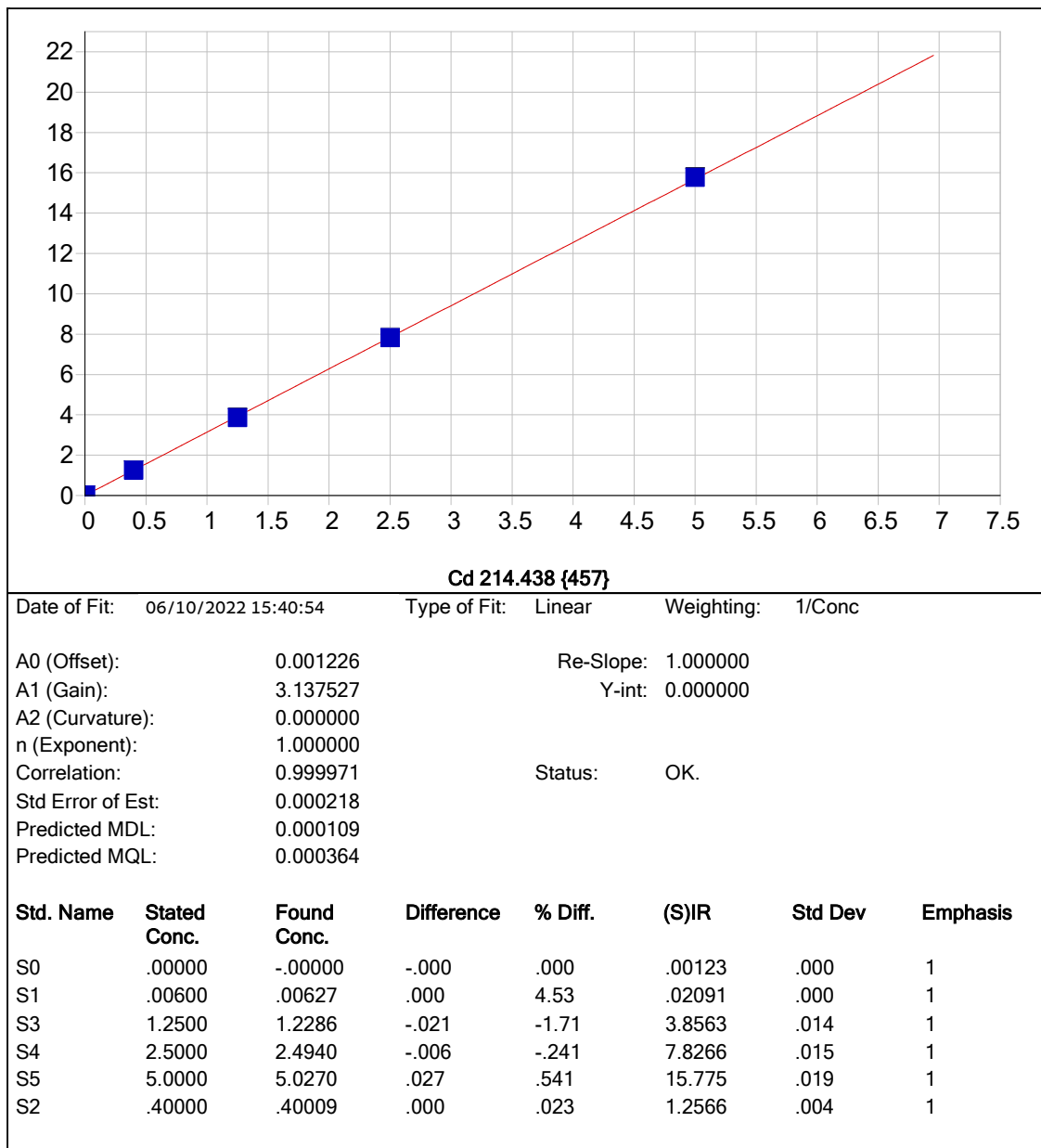


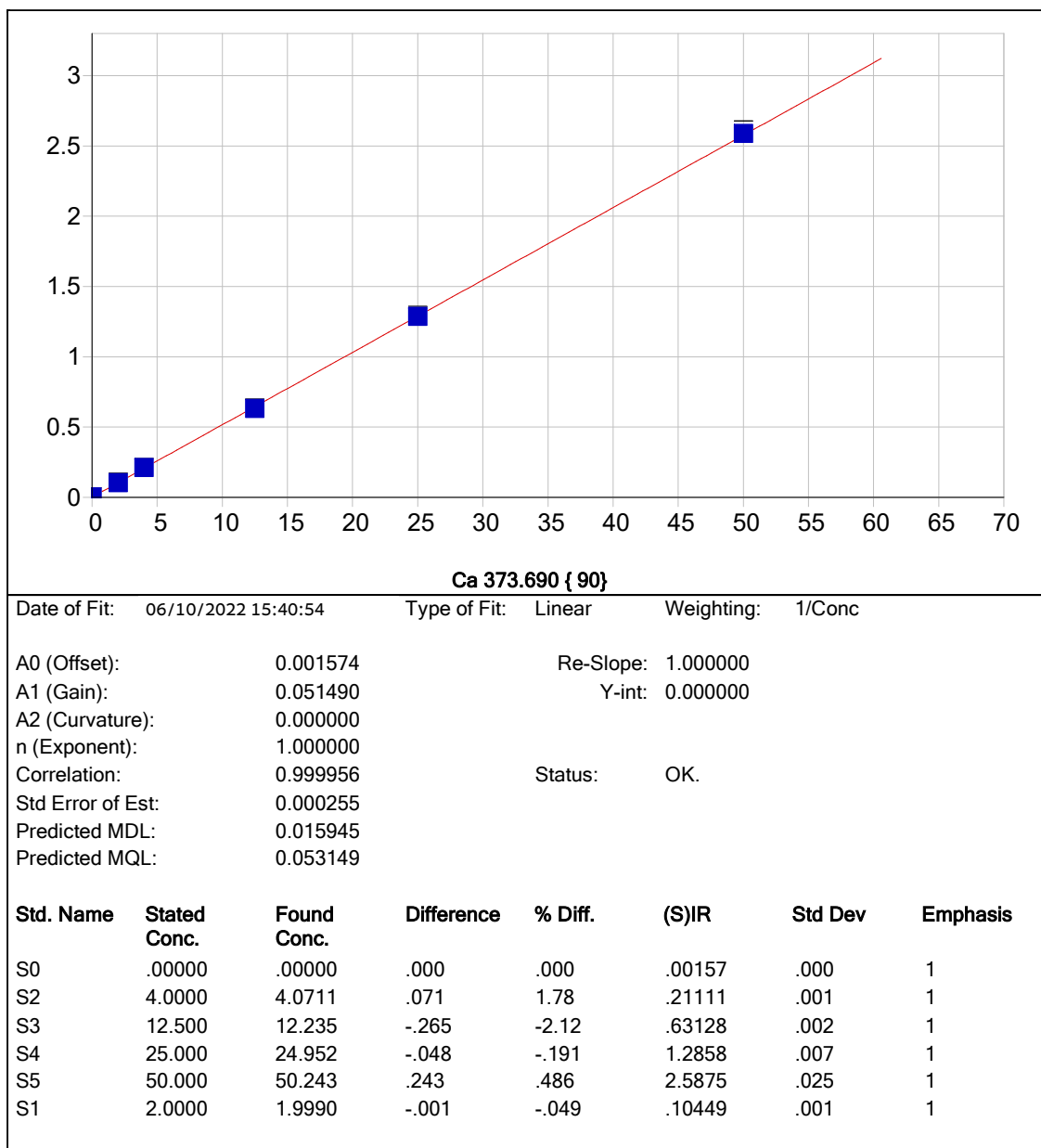
Be 234.861 {144}

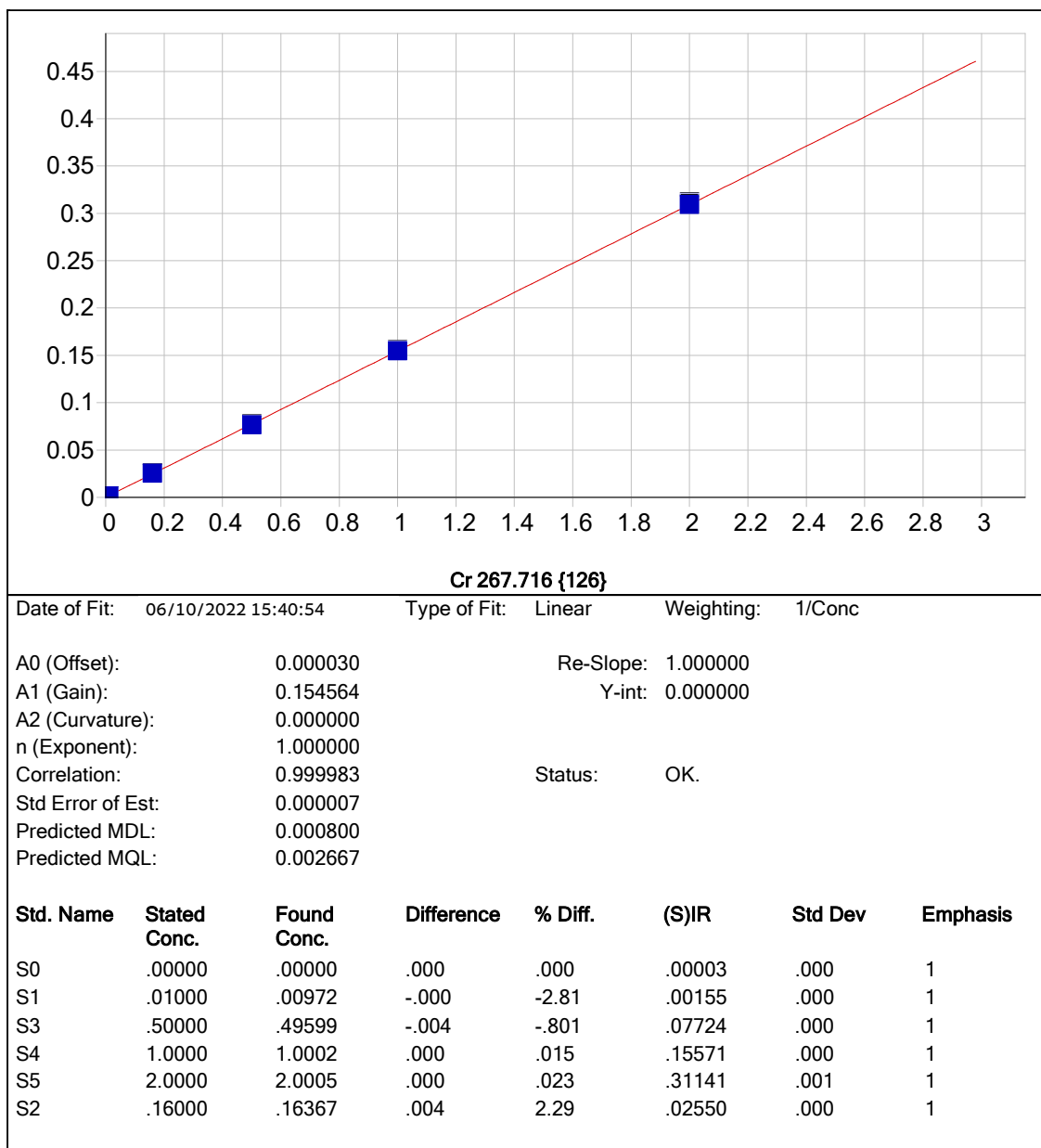
Date of Fit: 06/10/2022 15:40:54 Type of Fit: Linear Weighting: 1/Conc

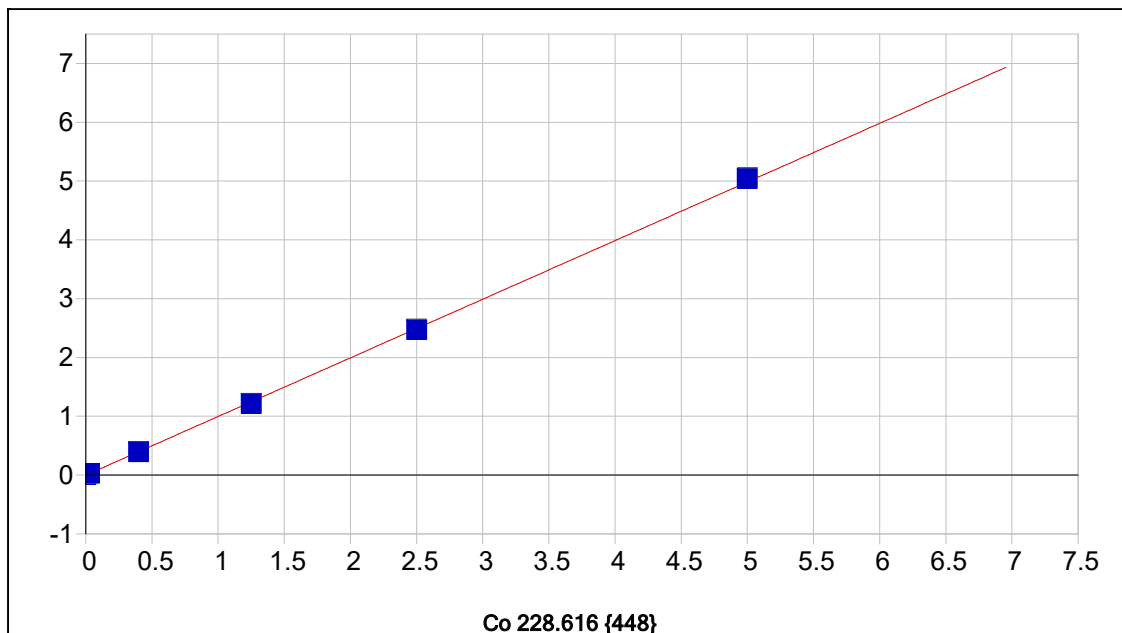
A0 (Offset): -0.001425 Re-Slope: 1.000000
A1 (Gain): 3.819835 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999914 Status: OK.
Std Error of Est: 0.000143
Predicted MDL: 0.000084
Predicted MQL: 0.000281

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00143	.000	1
S1	.00600	.00653	.001	8.89	.02328	.000	1
S3	.12500	.12486	-.000	-.111	.47231	.007	1
S4	.25000	.25191	.002	.765	.95442	.011	1
S5	.50000	.49610	-.004	-.781	1.8807	.009	1
S2	.04000	.04160	.002	4.00	.15646	.000	1





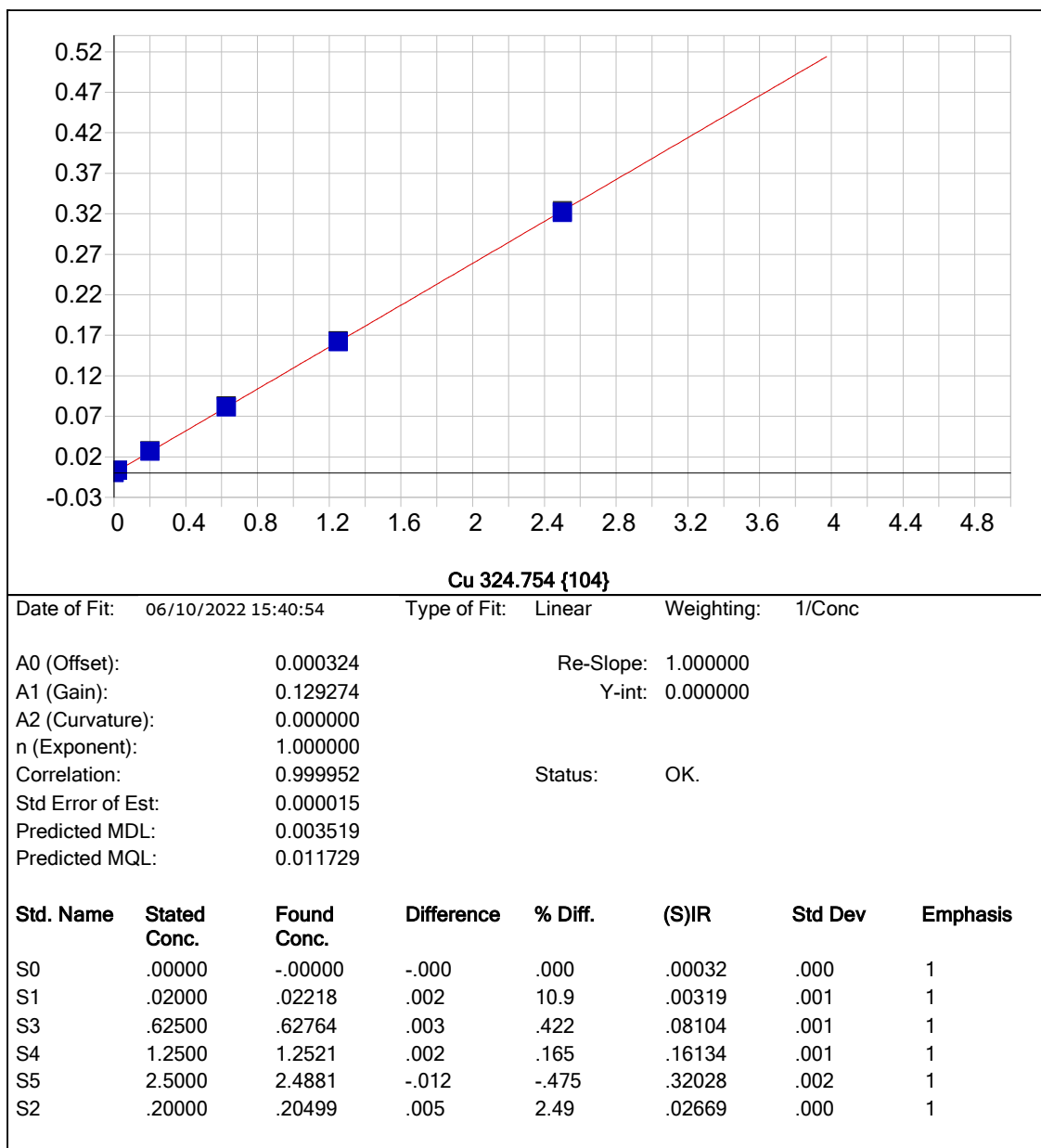


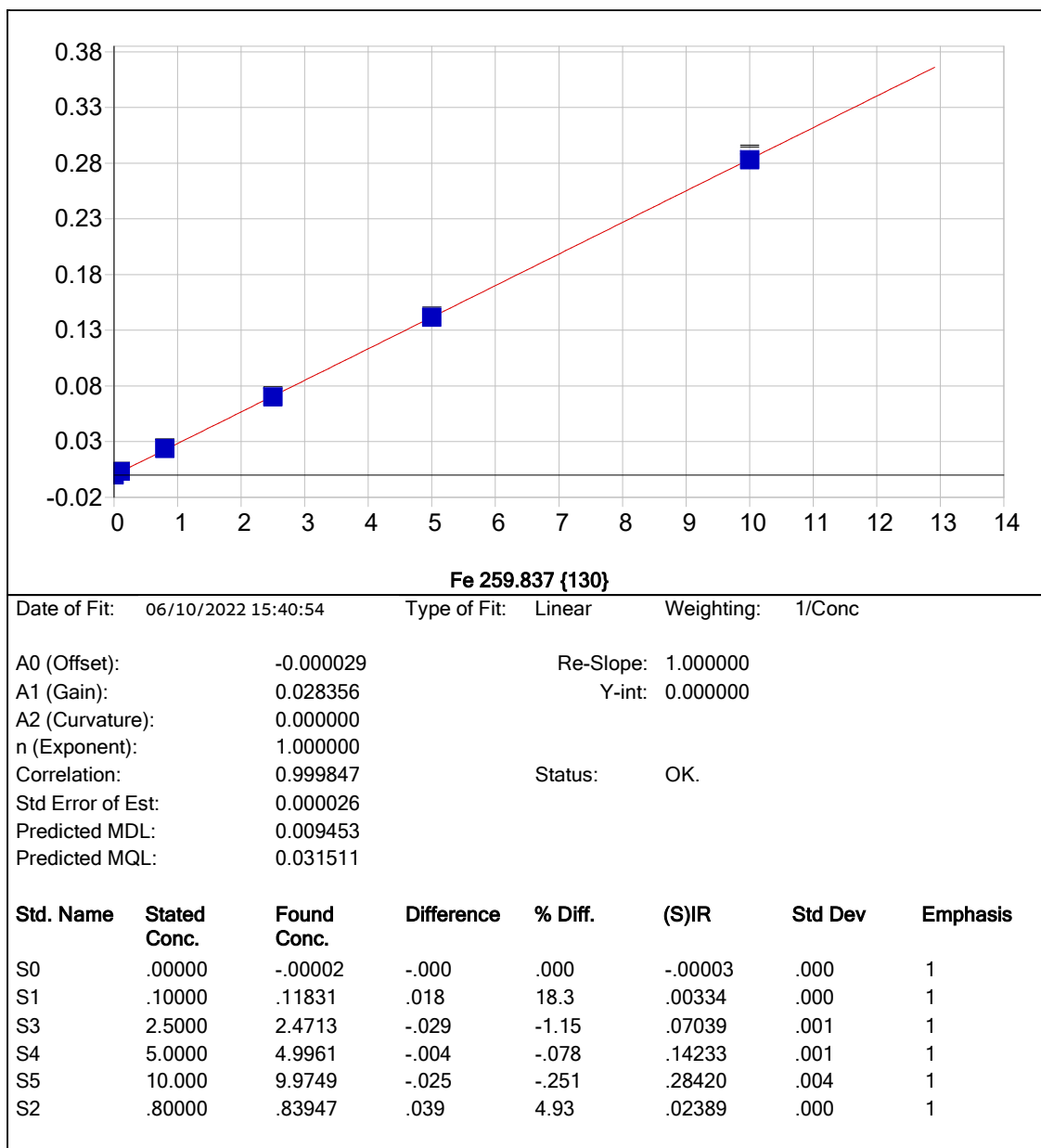


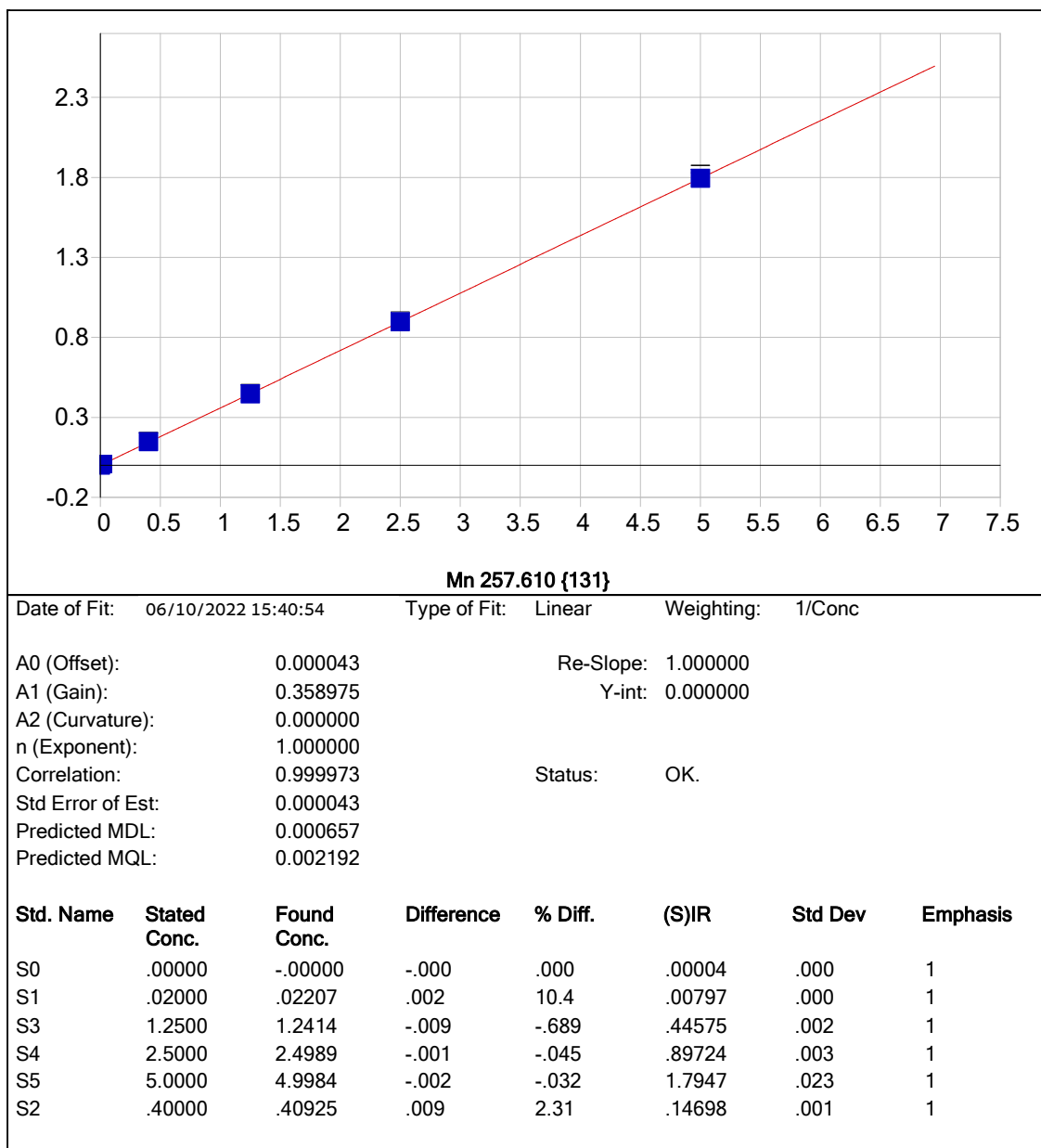
Date of Fit: 06/10/2022 15:40:54 Type of Fit: Linear Weighting: 1/Conc

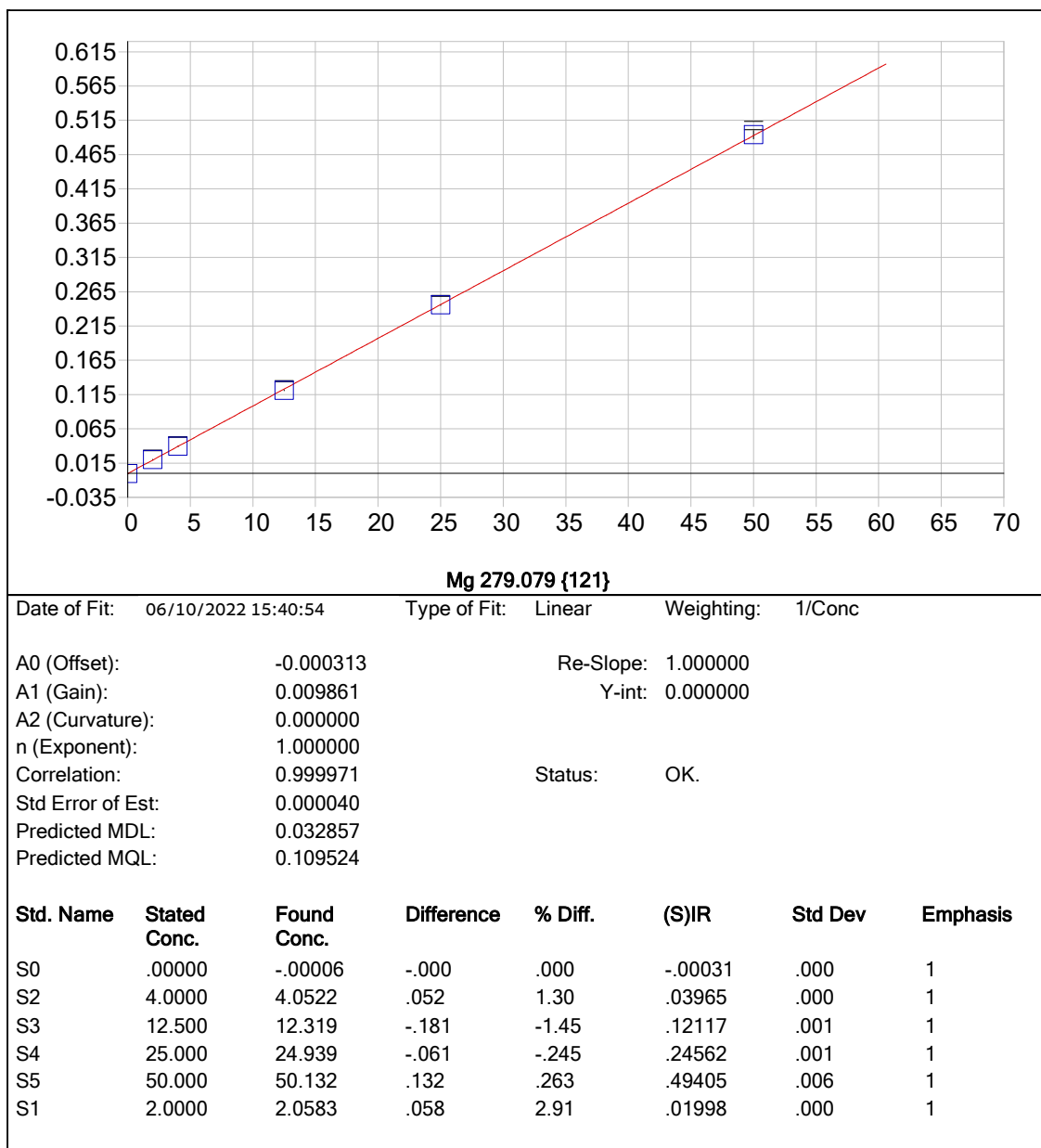
A0 (Offset):	-0.000190	Re-Slope:	1.000000
A1 (Gain):	0.996996	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999913	Status:	OK.
Std Error of Est:	0.000268		
Predicted MDL:	0.000344		
Predicted MQL:	0.001146		

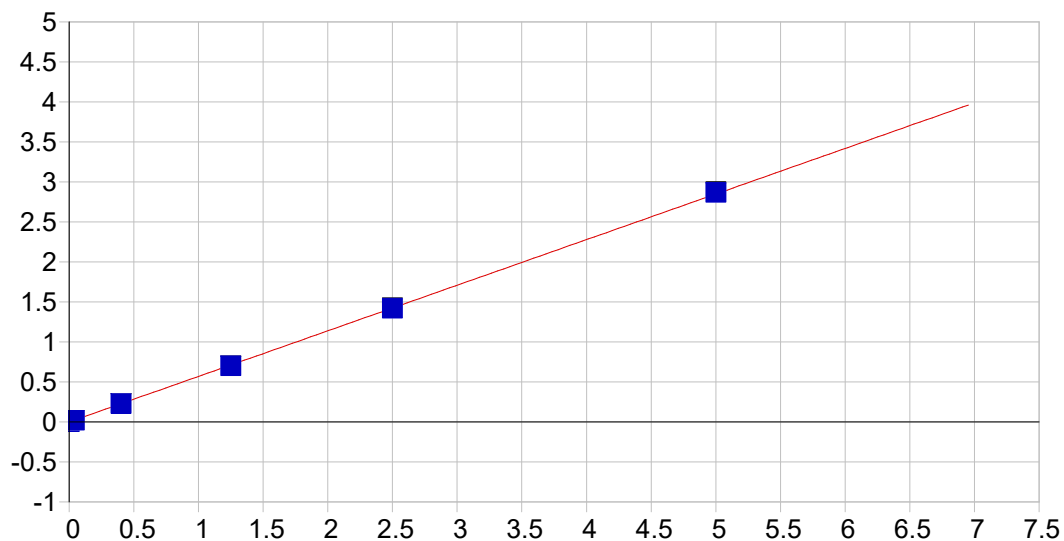
Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00019	.000	1
S1	.03000	.02945	-.001	-1.83	.02908	.001	1
S3	1.2500	1.2181	-.032	-2.55	1.2169	.002	1
S4	2.5000	2.4813	-.019	-.747	2.4789	.006	1
S5	5.0000	5.0551	.055	1.10	5.0501	.009	1
S2	.40000	.39601	-.004	-.998	.39546	.001	1









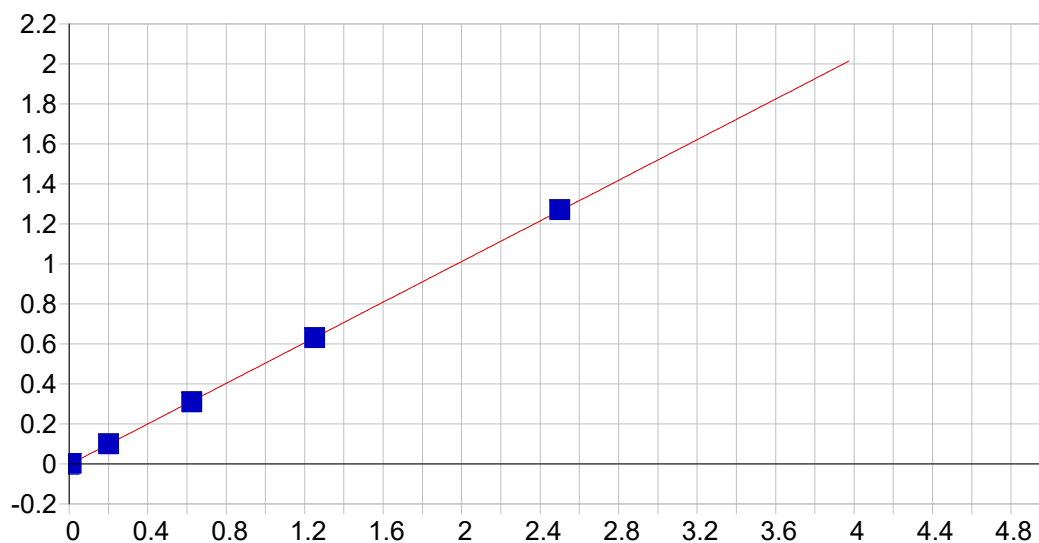


Ni 231.604 {446}

Date of Fit: 06/10/2022 15:40:54 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset): -0.001123 Re-Slope: 1.000000
A1 (Gain): 0.569887 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999964 Status: OK.
Std Error of Est: 0.000114
Predicted MDL: 0.000607
Predicted MQL: 0.002023

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00112	.000	1
S1	.04000	.03898	-.001	-2.54	.02111	.000	1
S3	1.2500	1.2273	-.023	-1.82	.69898	.002	1
S4	2.5000	2.4911	-.009	-.357	1.4199	.005	1
S5	5.0000	5.0315	.031	.629	2.8690	.005	1
S2	.40000	.40120	.001	.301	.22774	.000	1

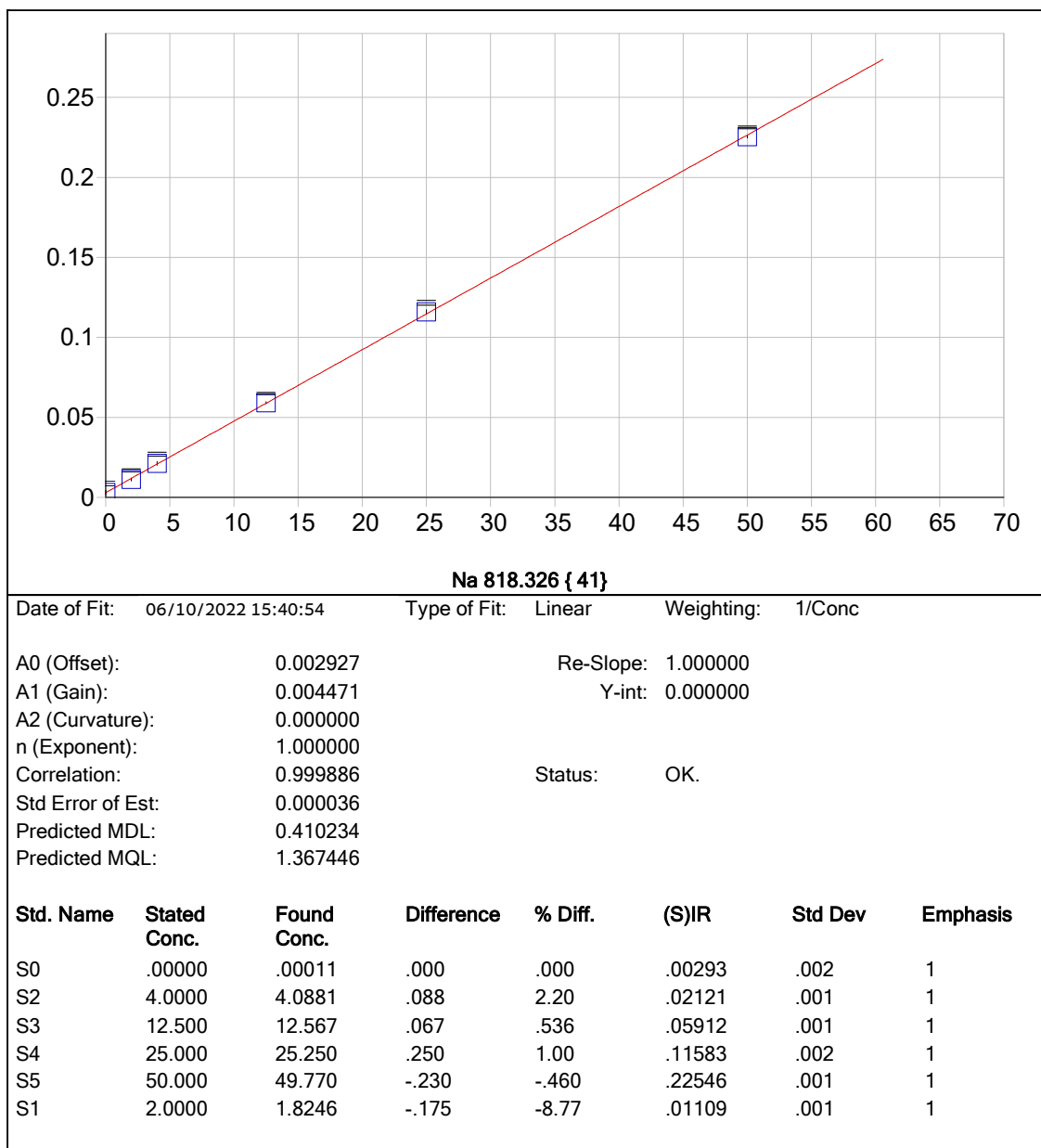


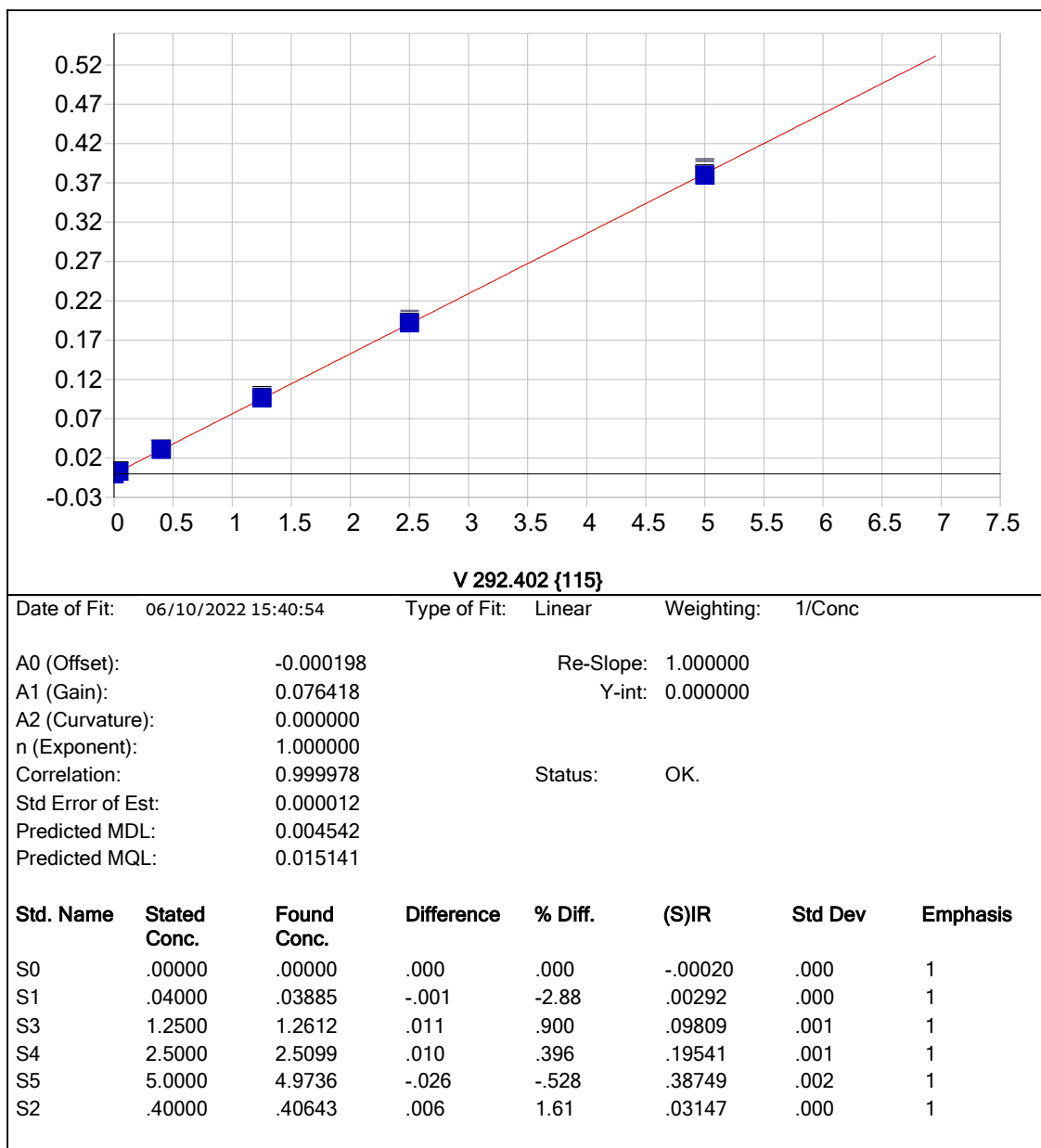
Ag 328.068 {103}

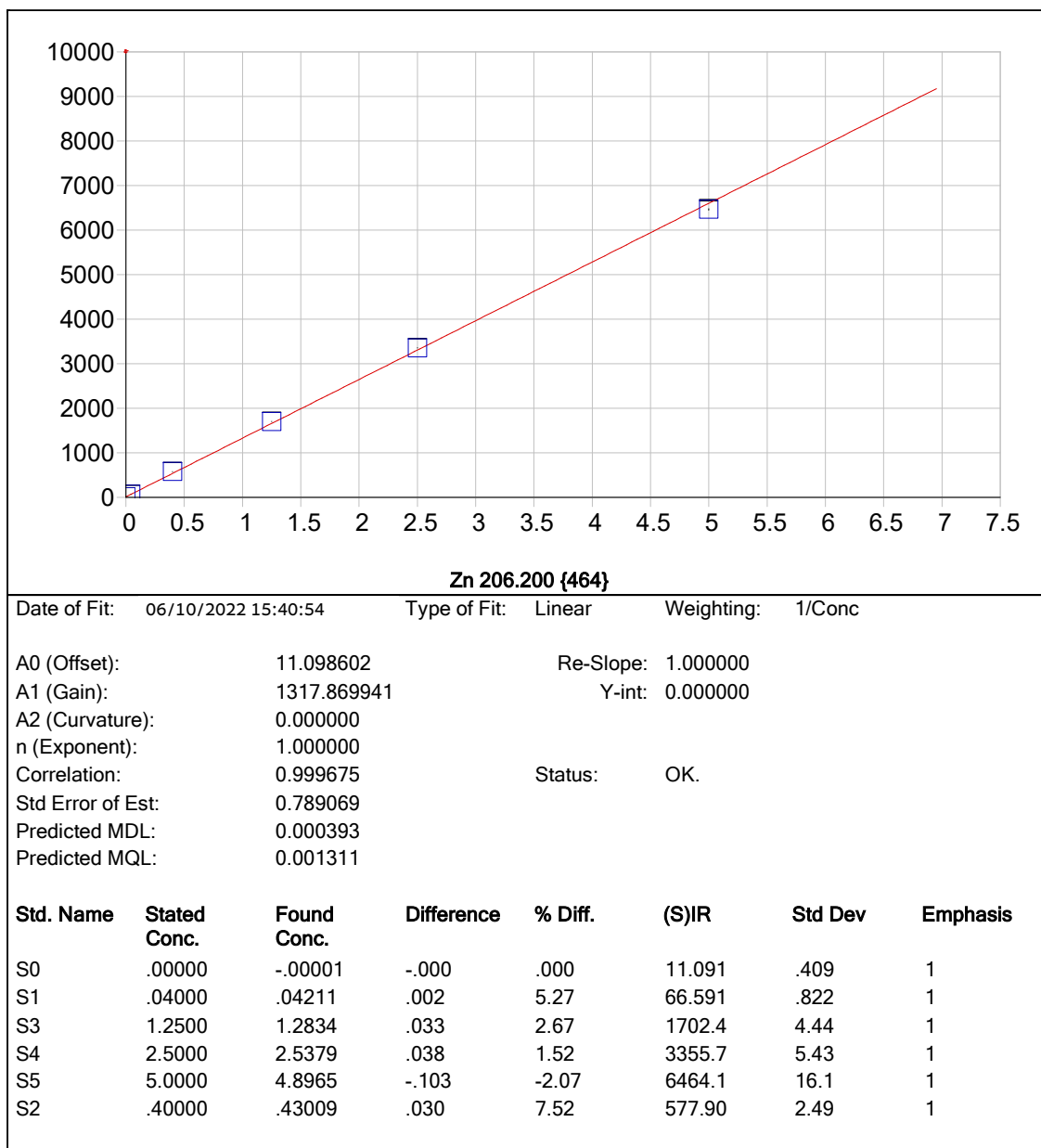
Date of Fit: 06/10/2022 15:40:54 Type of Fit: Linear Weighting: 1/Conc

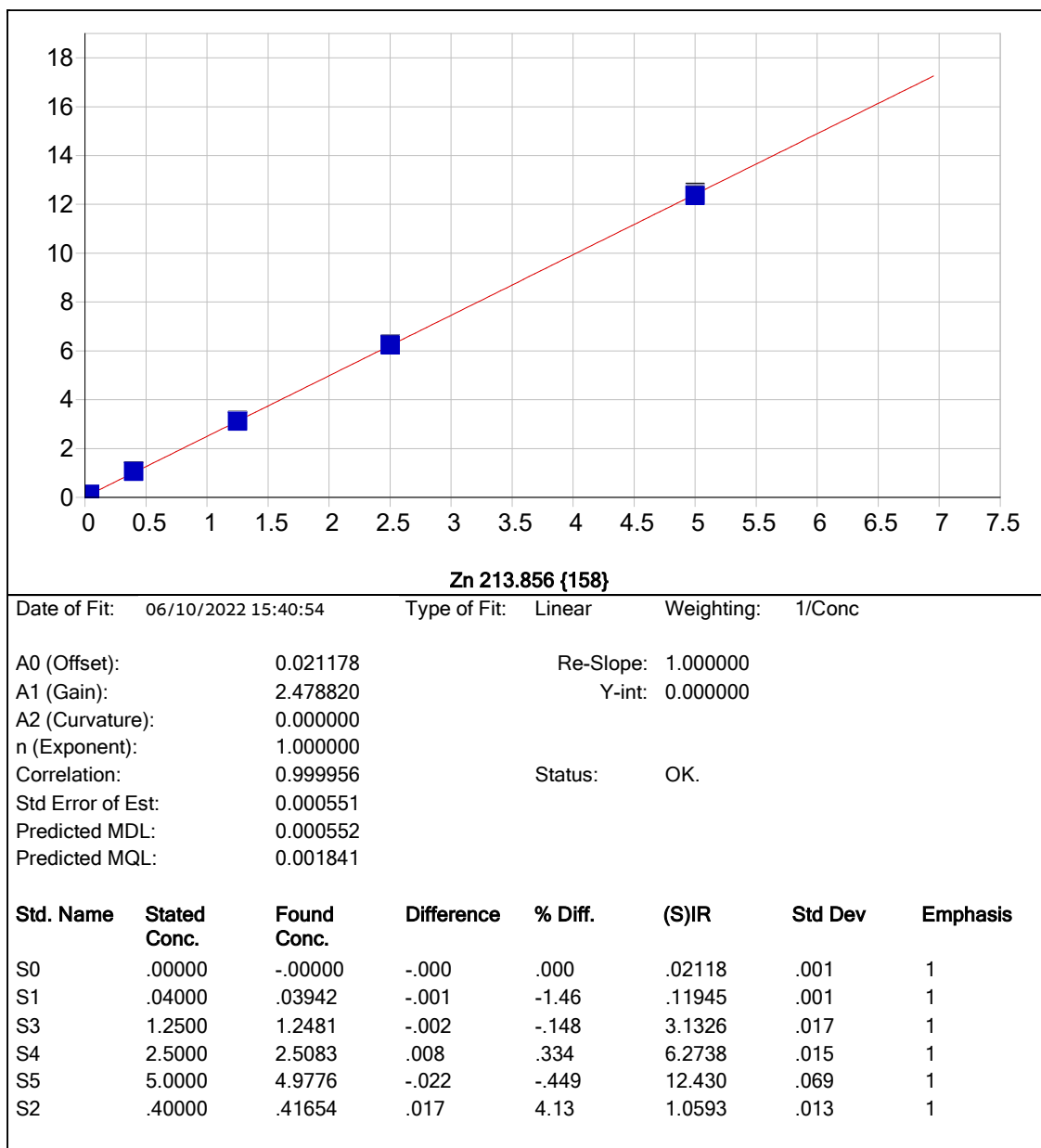
A0 (Offset): -0.003319 Re-Slope: 1.000000
A1 (Gain): 0.507616 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999978 Status: OK.
Std Error of Est: 0.000028
Predicted MDL: 0.000622
Predicted MQL: 0.002073

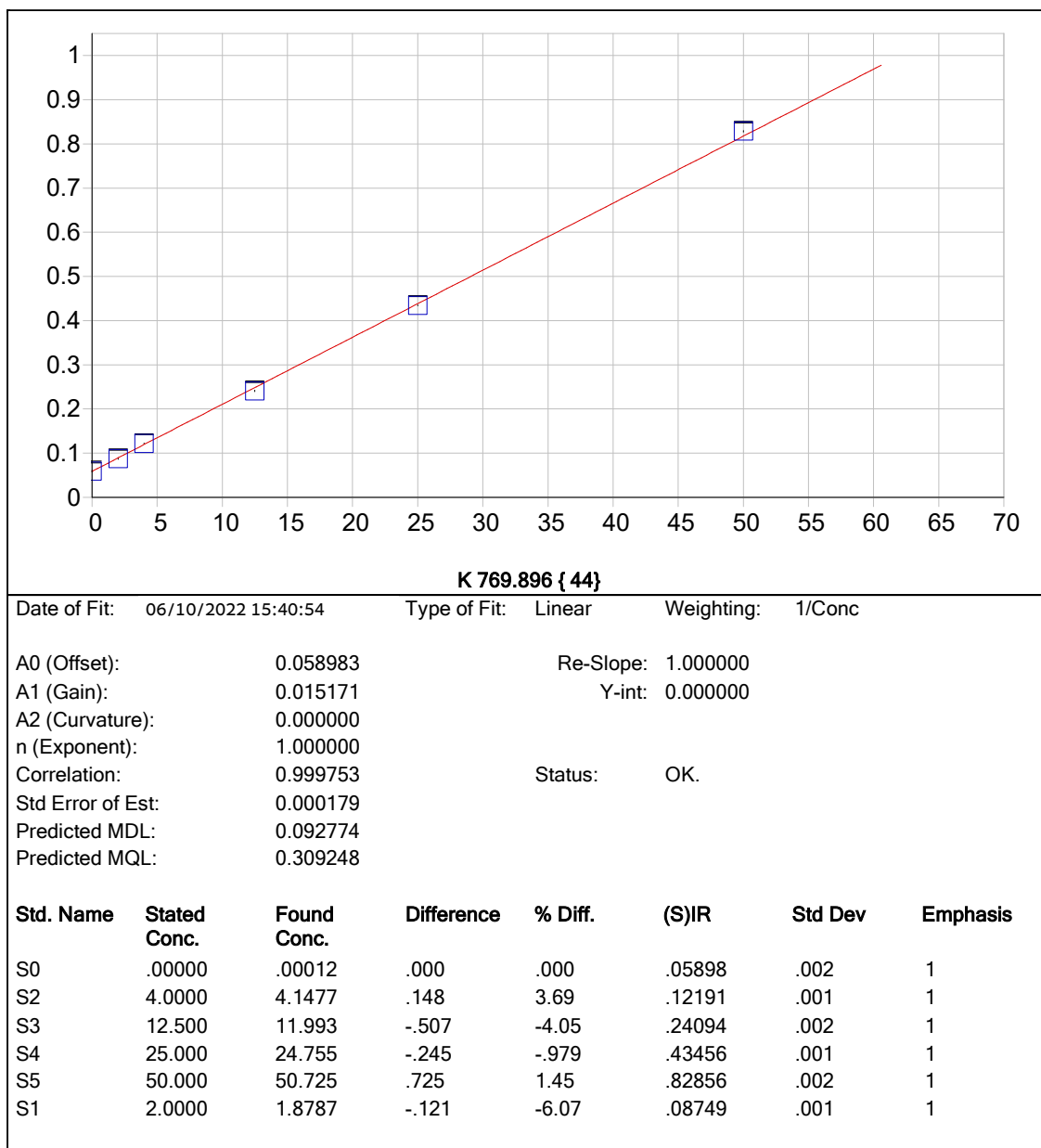
Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00332	.000	1
S1	.01000	.00987	-.000	-1.32	.00168	.000	1
S3	.62500	.61556	-.009	-1.51	.30875	.002	1
S4	1.2500	1.2481	-.002	-.153	.62942	.001	1
S5	2.5000	2.5096	.010	.385	1.2690	.000	1
S2	.20000	.20185	.002	.926	.09902	.001	1

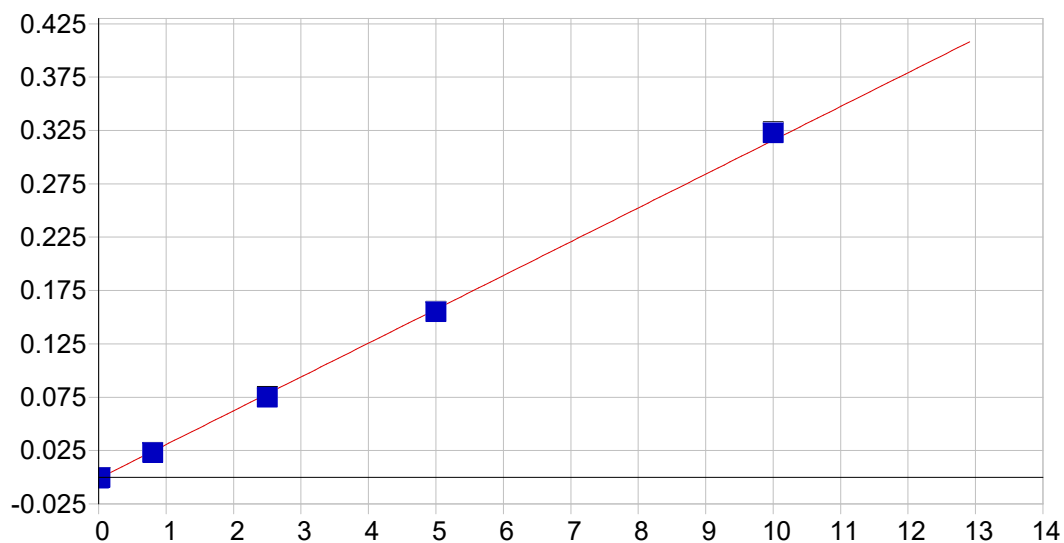










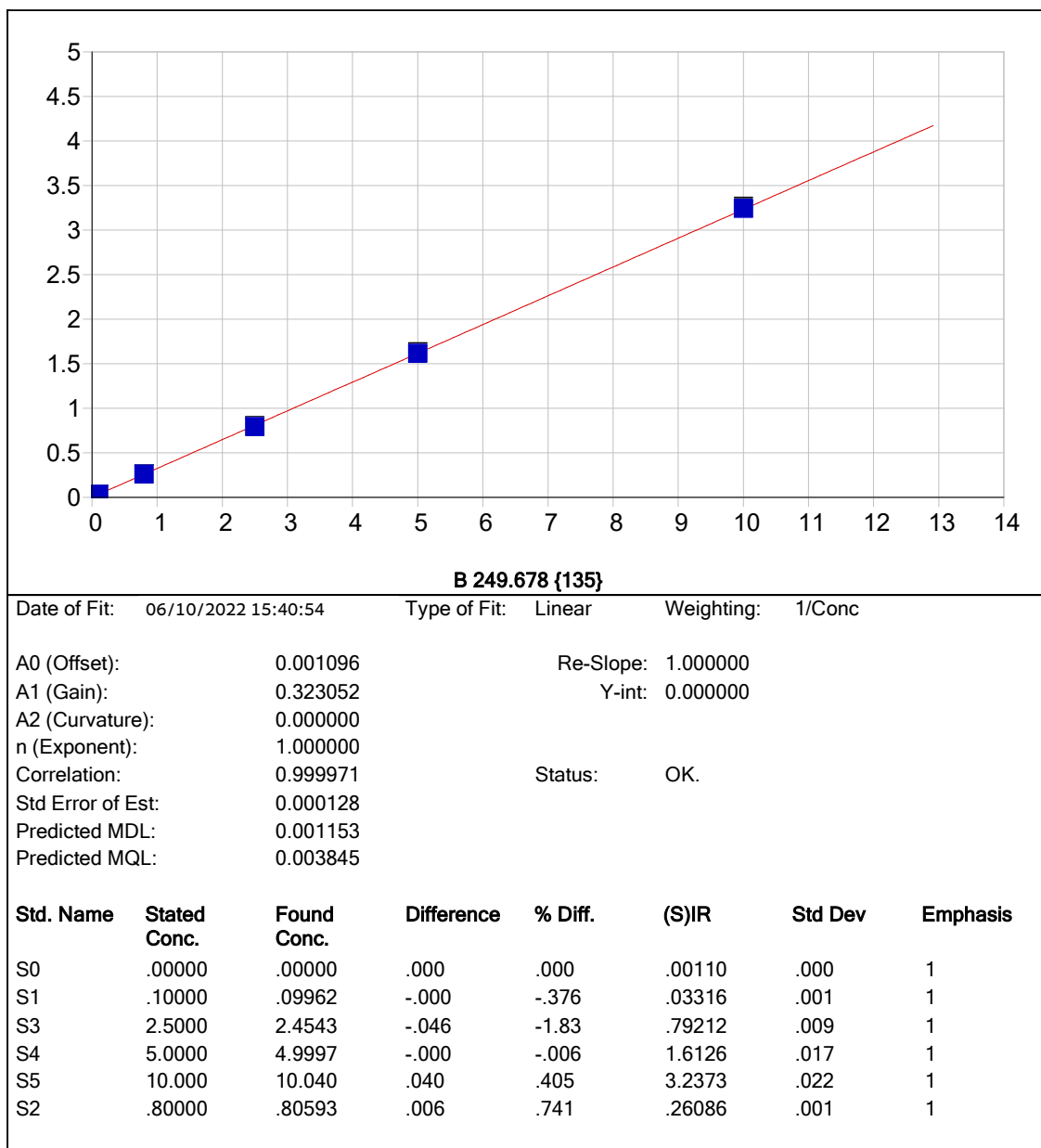


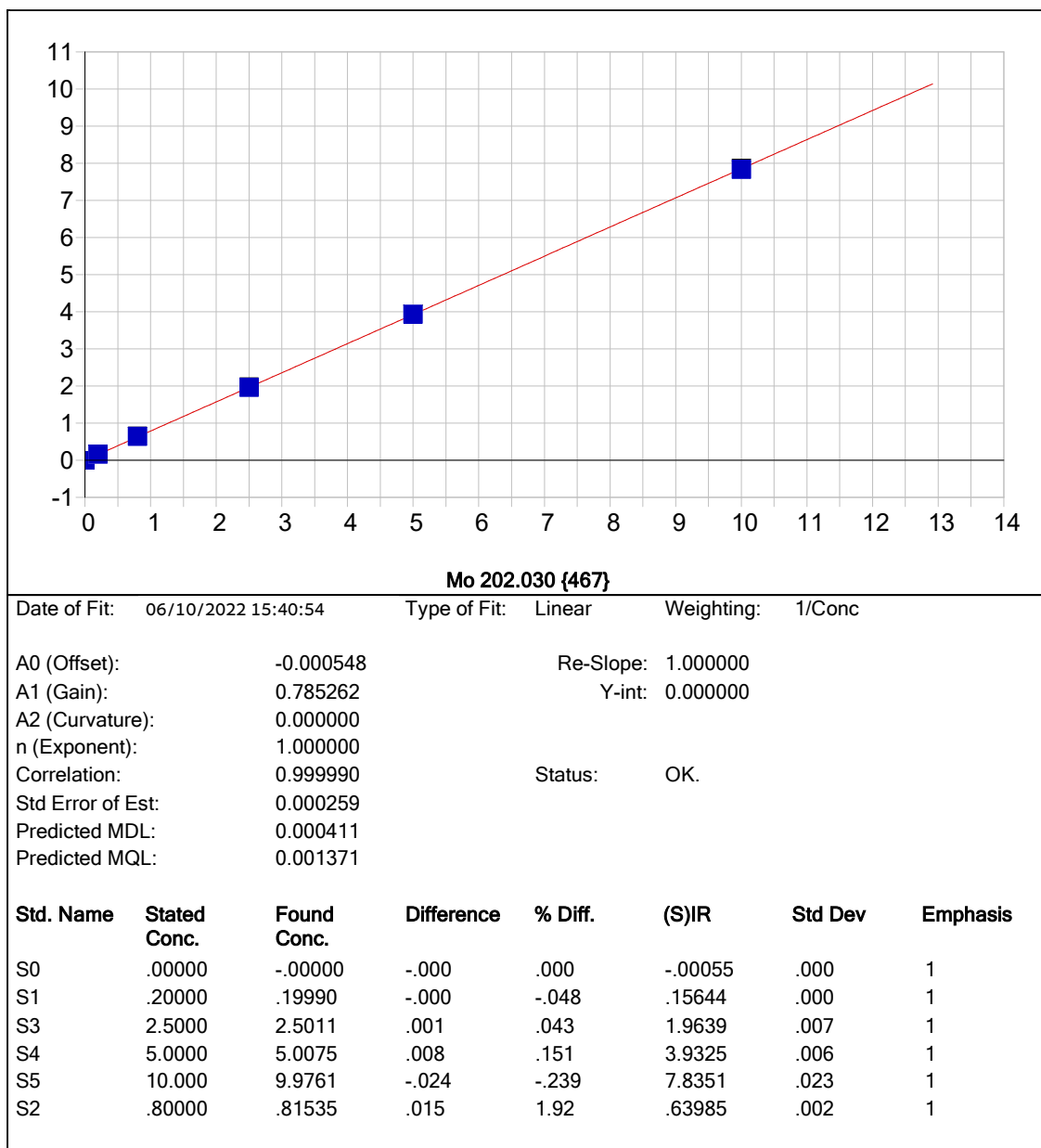
P 177.495 {490}

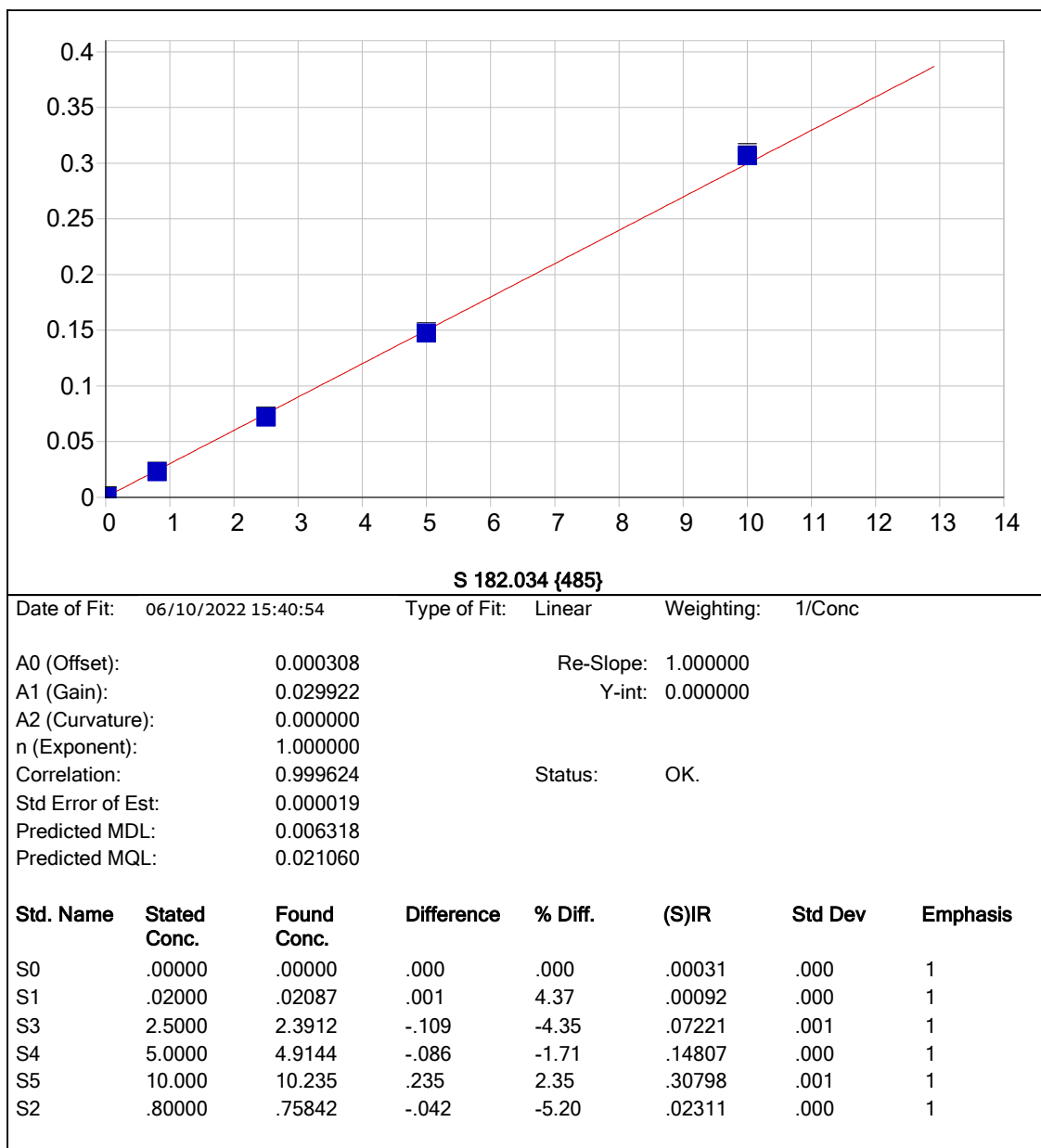
Date of Fit: 06/10/2022 15:40:54 Type of Fit: Linear Weighting: 1/Conc

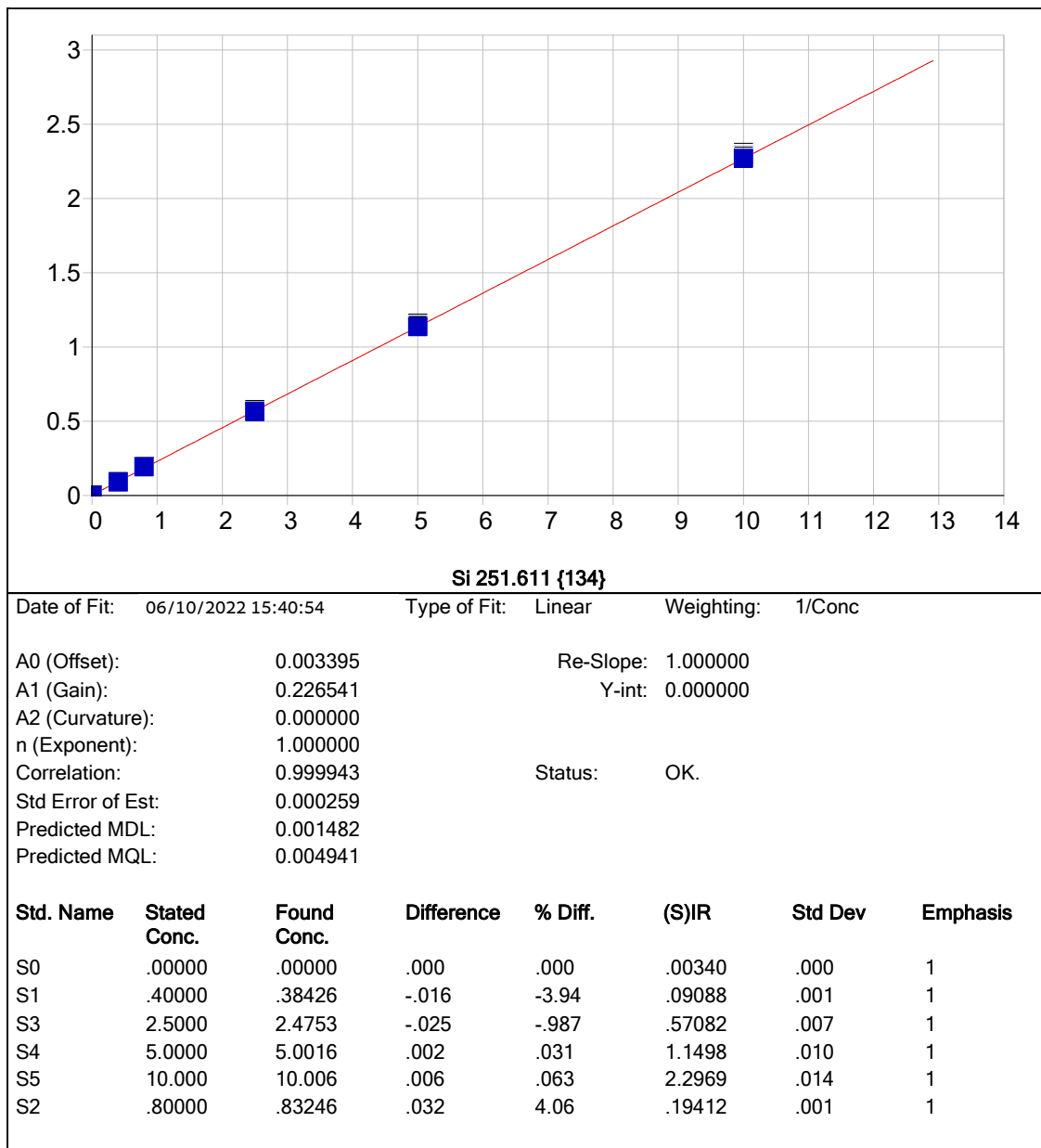
A0 (Offset): -0.001115 Re-Slope: 1.000000
A1 (Gain): 0.031690 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999679 Status: OK.
Std Error of Est: 0.000019
Predicted MDL: 0.004875
Predicted MQL: 0.016249

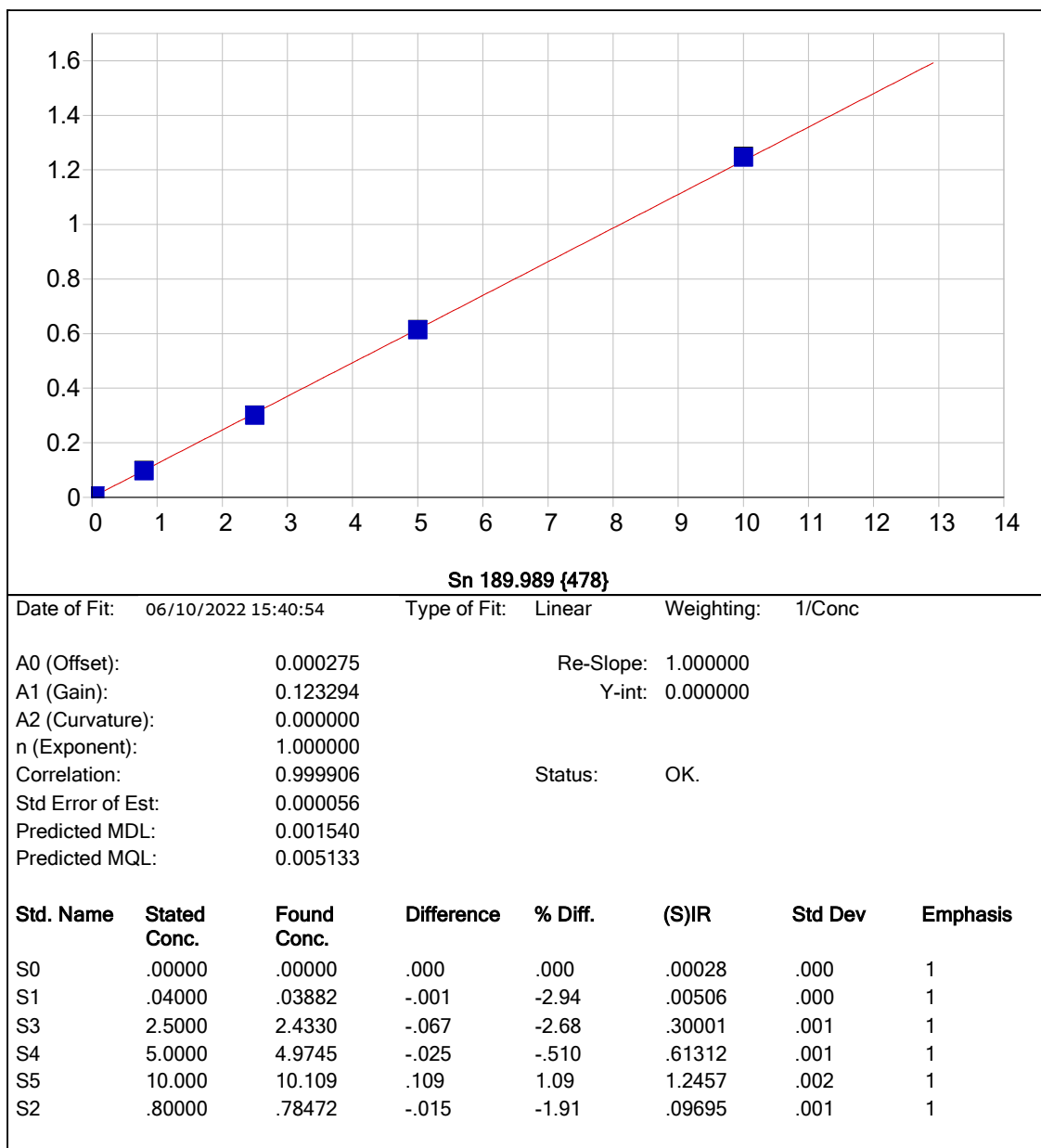
Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00111	.000	1
S1	.02000	.02011	.000	.560	-.00047	.000	1
S3	2.5000	2.3948	-.105	-4.21	.07496	.001	1
S4	5.0000	4.9273	-.073	-1.45	.15540	.000	1
S5	10.000	10.215	.215	2.15	.32332	.001	1
S2	.80000	.76304	-.037	-4.62	.02312	.000	1

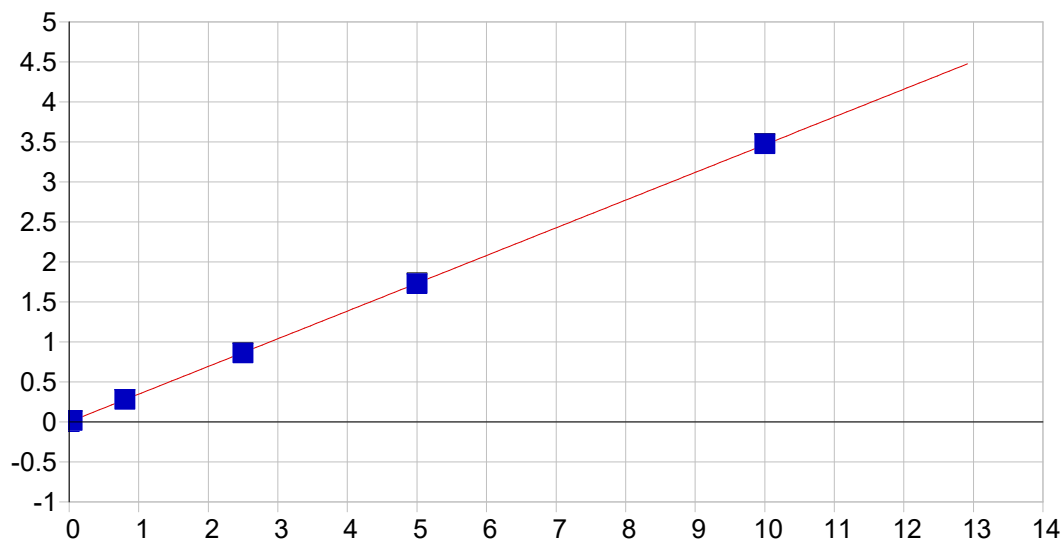










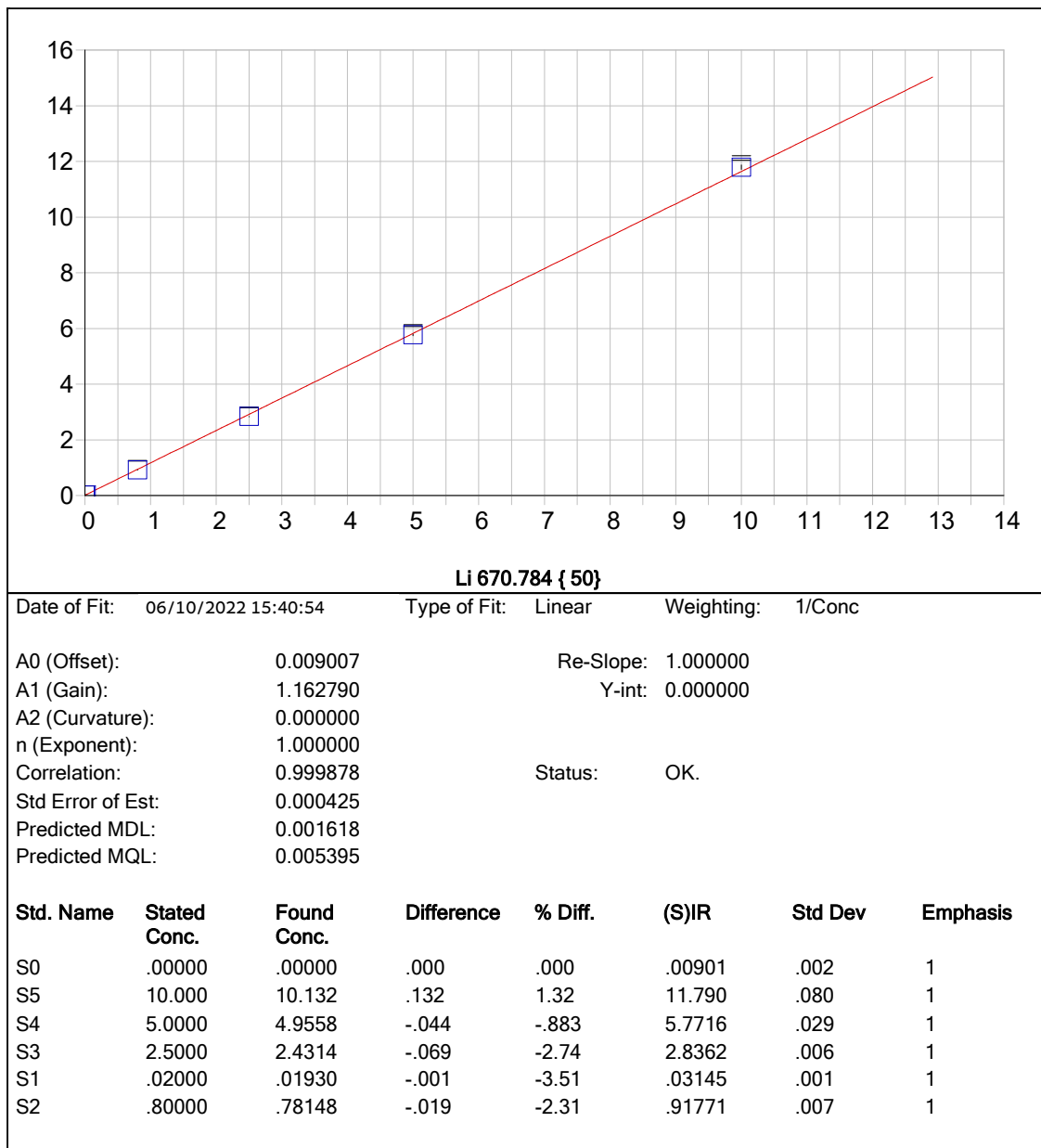


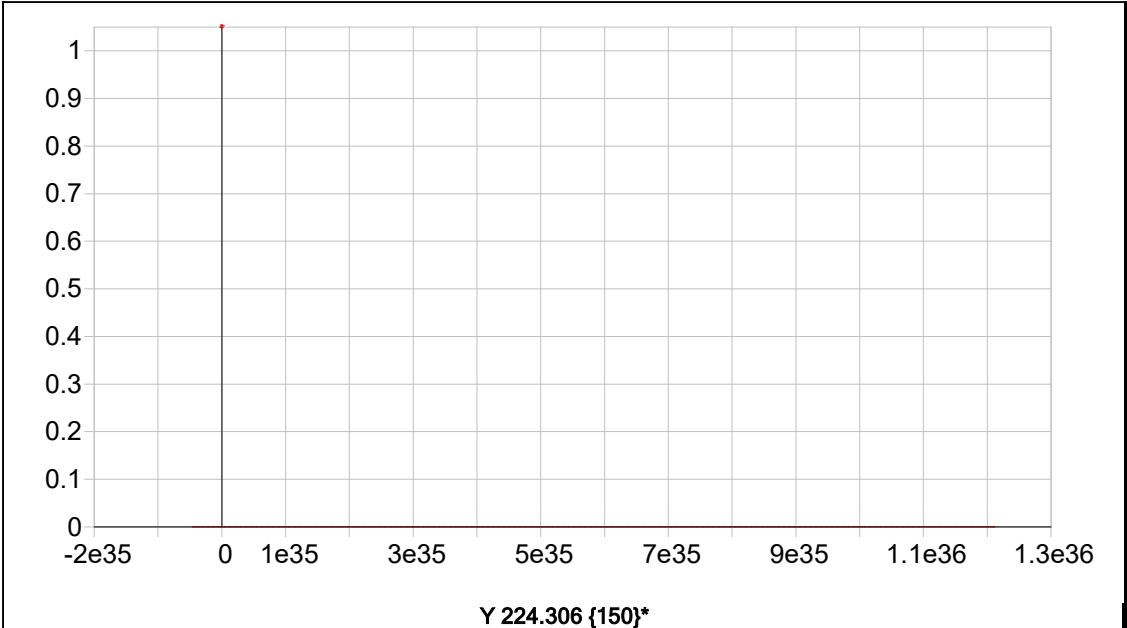
Ti 336.121 {100}

Date of Fit: 06/10/2022 15:40:54 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset): 0.000112 Re-Slope: 1.000000
A1 (Gain): 0.346530 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999991 Status: OK.
Std Error of Est: 0.000049
Predicted MDL: 0.001656
Predicted MQL: 0.005519

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00011	.000	1
S1	.04000	.04083	.001	2.07	.01425	.001	1
S3	2.5000	2.4775	-.022	-.898	.85836	.004	1
S4	5.0000	4.9914	-.009	-.173	1.7292	.006	1
S5	10.000	10.025	.025	.250	3.4729	.007	1
S2	.80000	.80529	.005	.661	.27907	.002	1

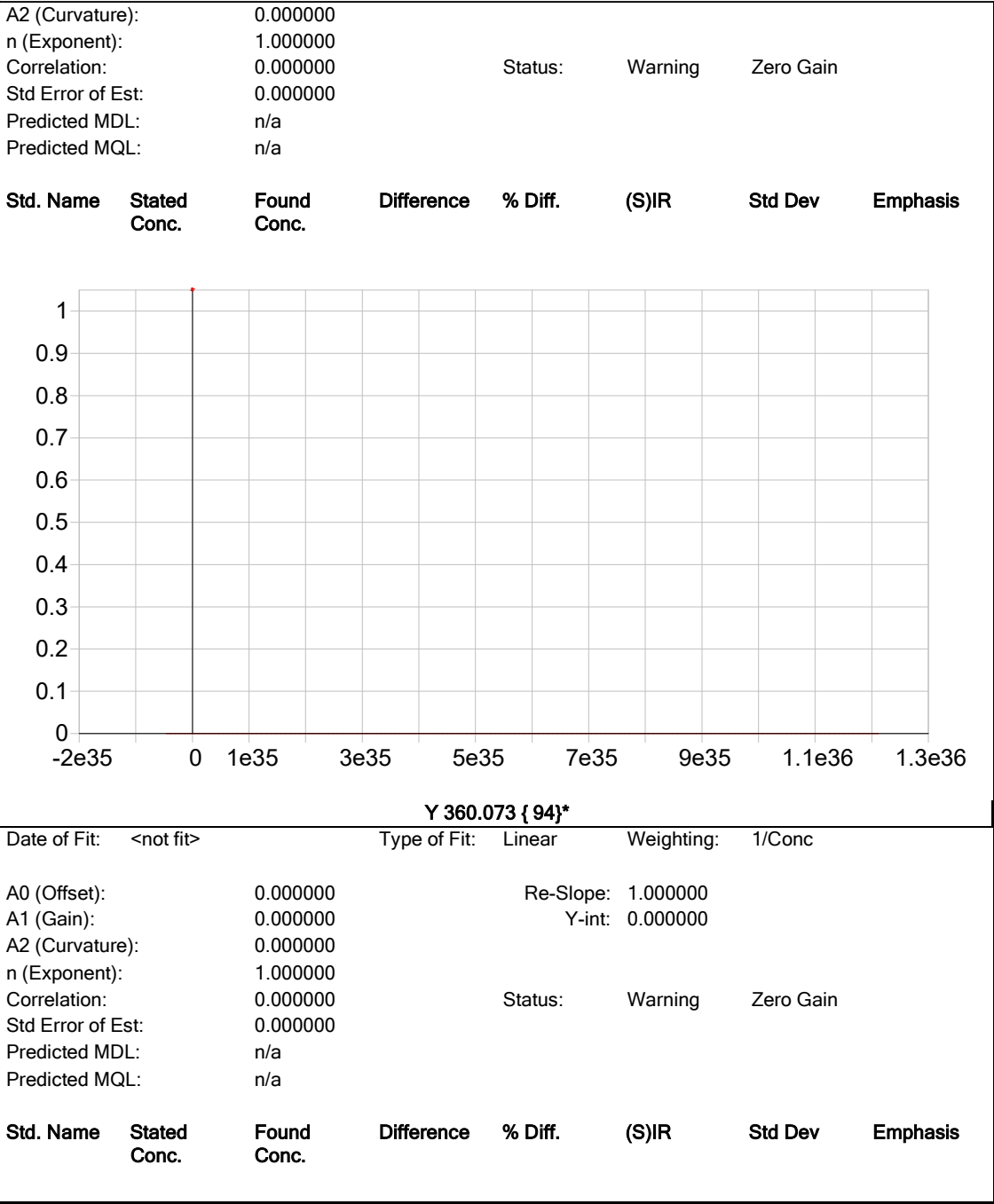


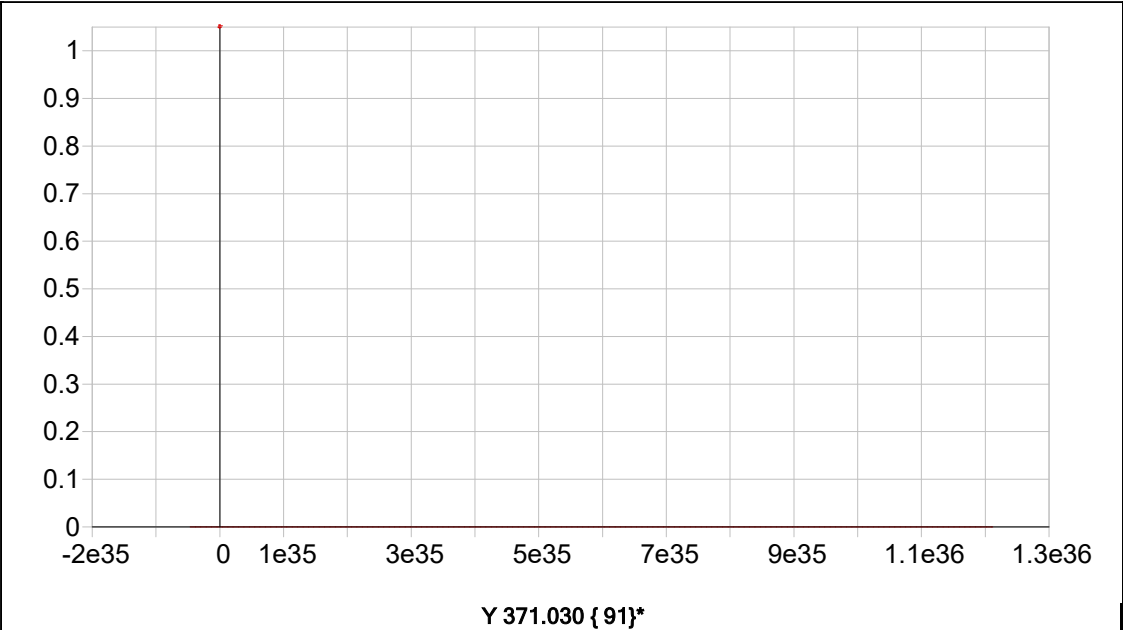


Date of Fit:	<not fit>		Type of Fit:	Linear	Weighting:	1/Conc
A0 (Offset):	0.000000		Re-Slope:	1.000000		
A1 (Gain):	0.000000		Y-int:	0.000000		
A2 (Curvature):	0.000000					
n (Exponent):	1.000000					
Correlation:	0.000000		Status:	Warning	Zero Gain	
Std Error of Est:	0.000000					
Predicted MDL:	n/a					
Predicted MQL:	n/a					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
							
Y 224.306 {450}*							

Date of Fit:	<not fit>		Type of Fit:	Linear	Weighting:	1/Conc
A0 (Offset):	0.000000		Re-Slope:	1.000000		
A1 (Gain):	0.000000		Y-int:	0.000000		

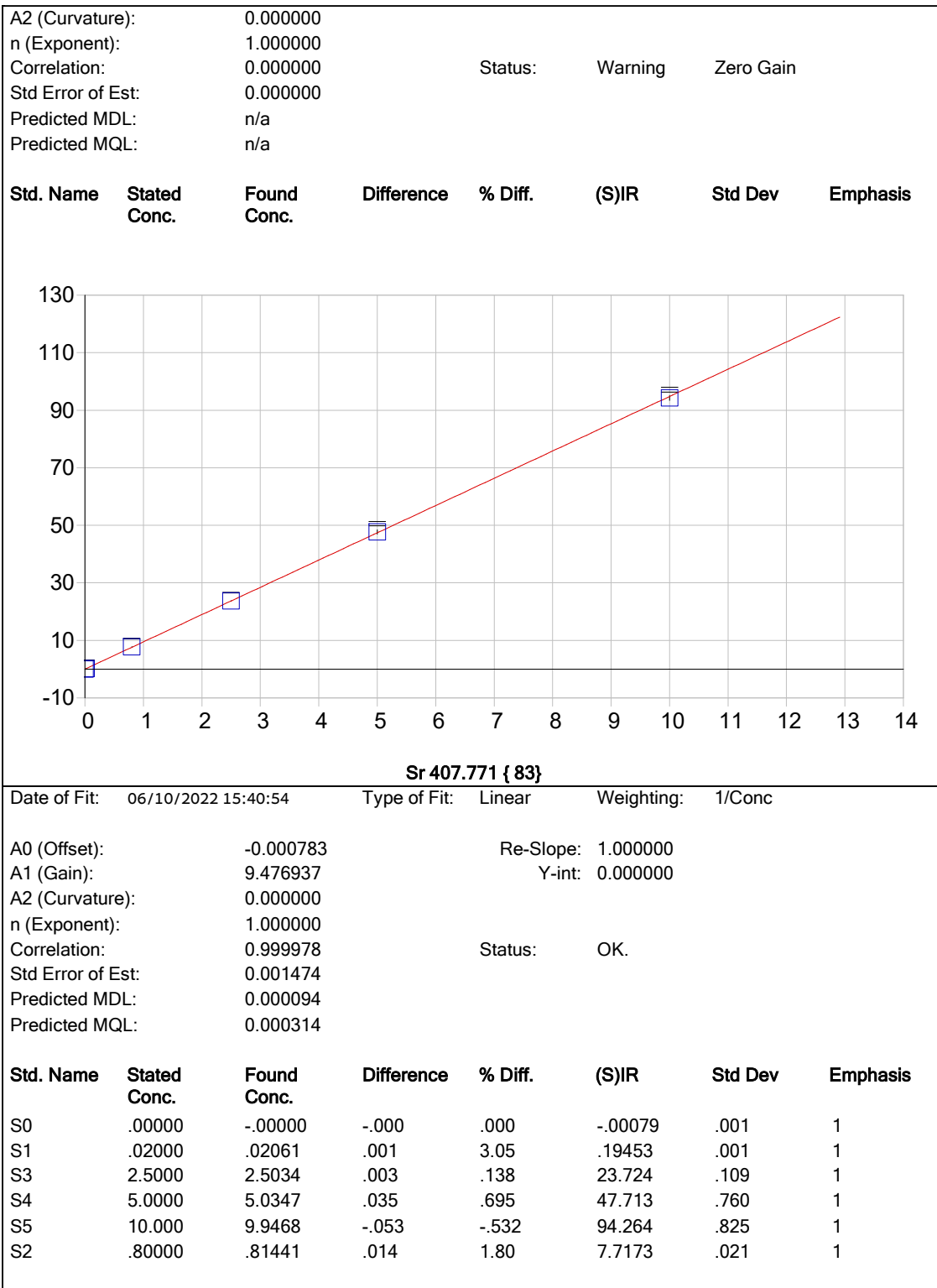




Date of Fit:	<not fit>	Type of Fit:	Linear	Weighting:	1/Conc
A0 (Offset):	0.000000	Re-Slope:	1.000000		
A1 (Gain):	0.000000	Y-int:	0.000000		
A2 (Curvature):	0.000000				
n (Exponent):	1.000000				
Correlation:	0.000000	Status:	Warning	Zero Gain	
Std Error of Est:	0.000000				
Predicted MDL:	n/a				
Predicted MQL:	n/a				

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis

Date of Fit:	<not fit>	Type of Fit:	Linear	Weighting:	1/Conc
A0 (Offset):	0.000000	Re-Slope:	1.000000		
A1 (Gain):	0.000000	Y-int:	0.000000		



Sample Name: S0 Acquired: 06/10/2022 15:20:00 Type: Cal
Method: NON EPA-6010-200.7(v15) Mode: IR Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	Be2348
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00012	-.00048	-.00017	.00048	.00040	-.00403	-.00803	-.00143
Stddev	.00004	.00020	.00015	.00015	.00018	.00049	.00169	.00013
%RSD	38.454	42.859	88.559	30.493	44.484	12.151	21.019	9.2557

#1	-.00007	-.00024	-.00033	.00058	.00048	-.00440	-.00786	-.00130
#2	-.00016	-.00057	-.00016	.00054	.00053	-.00421	-.00979	-.00142
#3	-.00012	-.00062	-.00003	.00031	.00020	-.00347	-.00643	-.00156

Elem	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00123	.00157	.00003	-.00019	.00032	-.00003	.00004	-.00031
Stddev	.00025	.00024	.00002	.00044	.00041	.00025	.00022	.00015
%RSD	20.763	15.106	60.836	234.05	127.38	837.68	534.57	49.117

#1	.00149	.00182	.00001	-.00068	.00068	-.00006	-.00002	-.00014
#2	.00098	.00134	.00004	.00016	-.00013	-.00026	-.00015	-.00035
#3	.00120	.00157	.00004	-.00004	.00042	.00023	.00029	-.00045

Elem	Ni2316	Ag3280	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00112	-.00332	.00293	-.00020	.02118	.05898	-.00111	.00110
Stddev	.00026	.00028	.00152	.00019	.00147	.00193	.00010	.00012
%RSD	22.768	8.5534	51.821	98.153	6.9549	3.2651	9.1572	10.817

#1	-.00084	-.00302	.00283	-.00004	.02237	.05838	-.00123	.00096
#2	-.00120	-.00358	.00146	-.00042	.02162	.06114	-.00103	.00115
#3	-.00133	-.00336	.00449	-.00014	.01953	.05743	-.00109	.00118

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707	Sr4077	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	-.00055	.00031	.00340	.00028	.00011	.00901	-.00079	
Stddev	.00015	.00007	.00028	.00025	.00041	.00178	.00055	
%RSD	26.568	23.515	8.3056	91.151	369.37	19.773	69.612	

#1	-.00072	.00038	.00331	.00049	.00027	.01062	-.00036	
#2	-.00045	.00031	.00371	.00033	.00042	.00710	-.00142	
#3	-.00048	.00023	.00317	.00000	-.00036	.00931	-.00060	

Sample Name: S0 Acquired: 06/10/2022 15:20:00 Type: Cal
Method: NON EPA-6010-200.7(v15) Mode: IR Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	969.00	1621.9	21111.	6943.3	2023.0
Stddev	11.63	4.3	131.	47.7	3.3
%RSD	1.1998	.26498	.62262	.68664	.16230
#1	955.75	1617.5	20978.	6907.2	2021.2
#2	977.48	1621.9	21115.	6925.4	2021.0
#3	973.77	1626.1	21241.	6997.4	2026.8

Sample Name: S1 Acquired: 06/10/2022 15:23:53 Type: Cal
Method: NON EPA-6010-200.7(v15) Mode: IR Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	Be2348
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00050	.00186	.00260	.00140	.00687	.00452	.28032	.02328
Stddev	.00009	.00005	.00058	.00004	.00020	.00027	.00090	.00032
%RSD	18.376	2.4396	22.165	2.5158	2.9571	5.9374	.32119	1.3620
#1	.00049	.00187	.00237	.00136	.00707	.00472	.28095	.02336
#2	.00060	.00181	.00217	.00141	.00688	.00422	.27929	.02354
#3	.00041	.00189	.00325	.00143	.00666	.00463	.28072	.02293
Elem	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02091	.10449	.00155	.02908	.00319	.00334	.00797	.01998
Stddev	.00002	.00080	.00007	.00057	.00063	.00004	.00005	.00034
%RSD	.08052	.76821	4.3386	1.9530	19.685	1.2173	.62907	1.7003
#1	.02089	.10363	.00150	.02842	.00288	.00337	.00798	.01967
#2	.02092	.10521	.00163	.02942	.00278	.00329	.00801	.01995
#3	.02092	.10464	.00153	.02939	.00391	.00335	.00791	.02034
Elem	Ni2316	Ag3280	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02111	.00168	.01109	.00292	.11945	.08749	-.00047	.03316
Stddev	.00008	.00029	.00091	.00031	.00071	.00128	.00004	.00072
%RSD	.39777	17.584	8.2176	10.621	.59683	1.4639	8.1581	2.1604
#1	.02102	.00195	.01003	.00291	.11903	.08627	-.00043	.03266
#2	.02118	.00170	.01164	.00324	.11905	.08736	-.00048	.03282
#3	.02113	.00137	.01158	.00262	.12027	.08883	-.00050	.03398
Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707	Sr4077	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	.15644	.00092	.09088	.00506	.01425	.03145	.19453	
Stddev	.00016	.00019	.00087	.00007	.00060	.00053	.00111	
%RSD	.10174	20.786	.96011	1.3948	4.2420	1.6842	.57258	
#1	.15662	.00080	.09028	.00504	.01494	.03121	.19330	
#2	.15630	.00114	.09048	.00501	.01401	.03205	.19484	
#3	.15641	.00081	.09188	.00514	.01381	.03108	.19546	

Sample Name: S1 Acquired: 06/10/2022 15:23:53 Type: Cal
Method: NON EPA-6010-200.7(v15) Mode: IR Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	990.70	1628.6	21366.	7026.1	2040.6
Stddev	16.16	1.2	255.	43.0	3.4
%RSD	1.6309	.07349	1.1937	.61255	.16888
#1	994.54	1627.3	21333.	7062.0	2038.7
#2	972.97	1629.7	21129.	7037.8	2038.7
#3	1004.6	1629.0	21636.	6978.4	2044.6

Sample Name: S2 Acquired: 06/10/2022 15:27:45 Type: Cal
Method: NON EPA-6010-200.7(v15) Mode: IR Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	Be2348
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02752	.04760	.17257	.05048	.09880	.11925	4.6424	.15646
Stddev	.00020	.00047	.00061	.00043	.00009	.00102	.0060	.00044
%RSD	.74071	.98716	.35378	.84334	.08621	.85881	.12989	.28033

#1	.02761	.04807	.17304	.05077	.09877	.11858	4.6389	.15627
#2	.02729	.04713	.17279	.05068	.09890	.11873	4.6494	.15615
#3	.02767	.04761	.17188	.04999	.09873	.12043	4.6390	.15696

Elem	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1.2566	.21111	.02550	.39546	.02669	.02389	.14698	.03965
Stddev	.0043	.00112	.00017	.00125	.00041	.00026	.00051	.00008
%RSD	.34468	.52832	.68398	.31605	1.5514	1.0762	.34552	.21083

#1	1.2616	.20988	.02553	.39602	.02716	.02368	.14655	.03962
#2	1.2536	.21139	.02532	.39403	.02641	.02380	.14685	.03958
#3	1.2546	.21206	.02566	.39634	.02649	.02417	.14754	.03974

Elem	Ni2316	Ag3280	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.22774	.09902	.02121	.03147	1.0593	.12191	.02312	.26086
Stddev	.00047	.00106	.00118	.00049	.0130	.00115	.00010	.00121
%RSD	.20702	1.0697	5.5413	1.5458	1.2239	.94134	.42824	.46531

#1	.22809	.09873	.01985	.03107	1.0541	.12103	.02301	.26064
#2	.22720	.10019	.02178	.03133	1.0740	.12149	.02315	.25978
#3	.22792	.09813	.02198	.03201	1.0497	.12321	.02321	.26217

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.63985	.02311	.19412	.09695	.27907	.91771	7.7173
Stddev	.00213	.00010	.00121	.00063	.00190	.00669	.0210
%RSD	.33287	.42335	.62236	.65183	.67956	.72892	.27252

#1	.64231	.02312	.19277	.09764	.27705	.91093	7.6948
#2	.63866	.02321	.19510	.09641	.27935	.91790	7.7208
#3	.63858	.02301	.19448	.09679	.28082	.92430	7.7364

Sample Name: S2 Acquired: 06/10/2022 15:27:45 Type: Cal
Method: NON EPA-6010-200.7(v15) Mode: IR Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	981.31	1625.3	21455.	7043.0	2033.4
Stddev	11.43	1.7	59.	21.8	3.0
%RSD	1.1647	.10506	.27462	.30935	.14973
#1	979.32	1625.7	21389.	7044.8	2033.1
#2	971.00	1626.8	21476.	7063.9	2036.6
#3	993.60	1623.5	21501.	7020.4	2030.5

Sample Name: S3 Acquired: 06/10/2022 15:31:30 Type: Cal
Method: NON EPA-6010-200.7(v15) Mode: IR Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	Be2348
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.08521	.14885	.53383	.15539	.30134	.36497	14.132	.47231
Stddev	.00018	.00107	.00177	.00019	.00113	.00159	.014	.00672
%RSD	.20791	.72016	.33230	.11986	.37525	.43517	.09690	1.4238
#1	.08508	.14770	.53220	.15518	.30243	.36316	14.116	.46512
#2	.08513	.14982	.53357	.15546	.30018	.36566	14.140	.47337
#3	.08541	.14903	.53572	.15554	.30141	.36611	14.140	.47845
Elem	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3.8563	.63128	.07724	1.2169	.08104	.07039	.44575	.12117
Stddev	.0142	.00161	.00034	.0024	.00111	.00062	.00169	.00063
%RSD	.36917	.25510	.44374	.20079	1.3643	.88772	.37891	.52275
#1	3.8403	.63002	.07711	1.2142	.07991	.07107	.44510	.12100
#2	3.8609	.63074	.07698	1.2174	.08108	.06985	.44448	.12064
#3	3.8676	.63309	.07763	1.2190	.08212	.07026	.44767	.12187
Elem	Ni2316	Ag3280	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.69898	.30875	.05912	.09809	3.1326	.24094	.07496	.79212
Stddev	.00162	.00236	.00071	.00099	.0171	.00157	.00075	.00912
%RSD	.23118	.76524	1.2016	1.0120	.54685	.65211	1.0035	1.1511
#1	.69743	.30774	.05989	.09696	3.1219	.23915	.07429	.78159
#2	.69884	.31145	.05849	.09848	3.1523	.24159	.07577	.79754
#3	.70066	.30706	.05897	.09882	3.1235	.24208	.07481	.79722
Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707	Sr4077	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	1.9639	.07221	.57082	.30001	.85836	2.8362	23.724	
Stddev	.0066	.00069	.00656	.00068	.00392	.0062	.109	
%RSD	.33346	.95395	1.1487	.22627	.45640	.21941	.45896	
#1	1.9630	.07209	.56349	.29924	.85439	2.8292	23.608	
#2	1.9578	.07295	.57285	.30030	.86222	2.8412	23.741	
#3	1.9708	.07159	.57613	.30050	.85847	2.8382	23.824	

Sample Name: S3 Acquired: 06/10/2022 15:31:30 Type: Cal
Method: NON EPA-6010-200.7(v15) Mode: IR Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	987.11	1611.5	21429.	7048.1	1993.4
Stddev	8.07	4.4	34.	76.3	2.3
%RSD	.81716	.27472	.15668	1.0830	.11540
#1	990.79	1608.5	21444.	7104.7	1995.9
#2	977.86	1616.6	21391.	7078.2	1992.7
#3	992.69	1609.3	21453.	6961.3	1991.5

Sample Name: S4 Acquired: 06/10/2022 15:35:09 Type: Cal
Method: NON EPA-6010-200.7(v15) Mode: IR Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	Be2348
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.17135	.30152	1.0876	.30911	.60195	.73911	28.721	.95442
Stddev	.00047	.00072	.0026	.00082	.00063	.00215	.126	.01101
%RSD	.27535	.23915	.23833	.26627	.10444	.29105	.43723	1.1537

#1	.17174	.30079	1.0859	.30976	.60230	.73684	28.605	.95794
#2	.17083	.30155	1.0865	.30818	.60123	.73936	28.854	.96324
#3	.17147	.30223	1.0906	.30938	.60233	.74112	28.704	.94208

Elem	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7.8266	1.2858	.15571	2.4789	.16134	.14233	.89724	.24562
Stddev	.0148	.0071	.00029	.0056	.00082	.00055	.00314	.00075
%RSD	.18941	.55140	.18740	.22522	.50961	.38970	.35026	.30687

#1	7.8134	1.2821	.15580	2.4724	.16039	.14205	.89701	.24475
#2	7.8238	1.2940	.15594	2.4822	.16178	.14297	.90049	.24600
#3	7.8426	1.2814	.15538	2.4821	.16184	.14198	.89421	.24610

Elem	Ni2316	Ag3280	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1.4199	.62942	.11583	.19541	6.2738	.43456	.15540	1.6126
Stddev	.0047	.00136	.00154	.00085	.0152	.00091	.00030	.0169
%RSD	.33281	.21622	1.3333	.43314	.24196	.20884	.19311	1.0467

#1	1.4152	.63099	.11418	.19446	6.2860	.43355	.15565	1.6199
#2	1.4197	.62853	.11724	.19609	6.2568	.43532	.15507	1.6245
#3	1.4247	.62875	.11606	.19568	6.2787	.43480	.15547	1.5933

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3.9325	.14807	1.1498	.61312	1.7292	5.7716	47.713
Stddev	.0059	.00045	.0102	.00112	.0055	.0287	.760
%RSD	.14880	.30472	.88722	.18216	.31988	.49698	1.5928

#1	3.9366	.14779	1.1536	.61251	1.7234	5.7387	48.074
#2	3.9258	.14782	1.1575	.61244	1.7296	5.7911	48.225
#3	3.9352	.14859	1.1382	.61441	1.7345	5.7850	46.840

Sample Name: S4 Acquired: 06/10/2022 15:35:09 Type: Cal
Method: NON EPA-6010-200.7(v15) Mode: IR Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	968.59	1599.9	21152.	7007.1	1940.3
Stddev	5.29	1.3	20.	66.6	2.5
%RSD	.54564	.07833	.09691	.95087	.12713
#1	962.58	1598.8	21133.	6996.2	1943.1
#2	970.67	1601.3	21174.	6946.6	1939.6
#3	972.52	1599.8	21149.	7078.5	1938.3

Sample Name: S5 Acquired: 06/10/2022 15:38:54 Type: Cal
Method: NON EPA-6010-200.7(v15) Mode: IR Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	Be2348
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.34423	.61134	2.2166	.60875	1.2037	1.4769	57.287	1.8807
Stddev	.00147	.00186	.0072	.00126	.0048	.0055	.609	.0091
%RSD	.42576	.30351	.32531	.20673	.40080	.37395	1.0629	.48432

#1	.34301	.60934	2.2095	.60770	1.2015	1.4706	57.427	1.8837
#2	.34381	.61168	2.2163	.60840	1.2004	1.4810	56.621	1.8705
#3	.34585	.61300	2.2239	.61014	1.2092	1.4791	57.815	1.8880

Elem	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	15.775	2.5875	.31141	5.0501	.32028	.28420	1.7947	.49405
Stddev	.019	.0247	.00085	.0089	.00168	.00361	.0233	.00607
%RSD	.12140	.95288	.27452	.17623	.52403	1.2716	1.2994	1.2288

#1	15.759	2.5859	.31045	5.0409	.32044	.28436	1.7899	.49344
#2	15.769	2.5637	.31168	5.0507	.31852	.28051	1.7741	.48832
#3	15.796	2.6130	.31209	5.0587	.32187	.28774	1.8200	.50041

Elem	Ni2316	Ag3280	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2.8690	1.2690	.22546	.38749	12.430	.82856	.32332	3.2373
Stddev	.0053	.0002	.00081	.00158	.069	.00155	.00053	.0220
%RSD	.18293	.01683	.36029	.40884	.55372	.18671	.16461	.67979

#1	2.8654	1.2688	.22587	.38568	12.497	.82853	.32314	3.2572
#2	2.8665	1.2692	.22599	.38866	12.359	.82702	.32392	3.2137
#3	2.8750	1.2691	.22453	.38811	12.433	.83012	.32291	3.2410

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7.8351	.30798	2.2969	1.2457	3.4729	11.790	94.264
Stddev	.0229	.00126	.0136	.0021	.0074	.080	.825
%RSD	.29281	.40965	.59297	.17196	.21378	.67974	.87561

#1	7.8173	.30654	2.3038	1.2436	3.4644	11.748	93.531
#2	7.8269	.30889	2.2812	1.2455	3.4762	11.740	94.104
#3	7.8610	.30851	2.3056	1.2479	3.4781	11.883	95.158

Sample Name: S5 Acquired: 06/10/2022 15:38:54 Type: Cal
Method: NON EPA-6010-200.7(v15) Mode: IR Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	952.66	1576.2	20855.	6940.3	1865.5
Stddev	5.72	.3	91.	31.7	1.9
%RSD	.60044	.01721	.43858	.45664	.10100
#1	952.39	1576.0	20955.	6933.0	1865.7
#2	958.52	1576.5	20837.	6975.0	1863.5
#3	947.09	1576.2	20775.	6912.9	1867.2

Sample Name: ICV01 Acquired: 06/10/2022 15:53:47 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: ICV01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9996104	1.000249	.9752134	1.052163	.9998181	2.589149
Stddev	.0054426	.008387	.0072485	.002892	.0090715	.020033
%RSD	.5444743	.8384643	.7432682	.2748730	.9073195	.7737277

#1	.9973928	.993814	.9668904	1.049121	.9894577	2.596045
#2	1.005812	.997199	.9786095	1.054878	1.006336	2.604824
#3	.995627	1.009734	.9801402	1.052491	1.003661	2.566579

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5201991	.5227767	.5016133	10.02927	.5240667	.5106352
Stddev	.0017982	.0071249	.0025503	.03392	.0028110	.0014222
%RSD	.3456838	1.362888	.5084105	.3382363	.5363872	.2785205

#1	.5222743	.5259307	.4987576	10.06725	.5209734	.5098091
#2	.5192233	.5146192	.5024182	10.01857	.5247618	.5098192
#3	.5190997	.5277802	.5036639	10.00199	.5264650	.5122775

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5273826	10.45482	.5221898	6.056248	.5158632	.2627687
Stddev	.0029771	.08296	.0023500	.085076	.0021562	.0019272
%RSD	.5644984	.7935448	.4500322	1.404766	.4179800	.7334245

#1	.5306356	10.48040	.5215126	6.028483	.5136833	.2645682
#2	.5267186	10.36208	.5202527	5.988523	.5159113	.2607352
#3	.5247935	10.52199	.5248040	6.151738	.5179949	.2630028

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.24077	.4858799	1.018430	9.341554	F -.000652	2.593846
Stddev	.31617	.0028280	.008375	.228783	.003249	.032839
%RSD	3.087411	.5820448	.8223672	2.449084	498.0415	1.266032

#1	9.94602	.4855909	1.027238	9.444385	-.000781	2.611993
#2	10.20159	.4888414	1.017484	9.079400	.002659	2.555938
#3	10.57471	.4832075	1.010568	9.500878	-.003836	2.613607

Sample Name: ICV01 Acquired: 06/10/2022 15:53:47 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: ICV01 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.625811	F -.006806	2.439127	2.537481	2.582276	F -.000488
Stddev	.005700	.003765	.031001	.015333	.008029	.000152
%RSD	.2170792	55.32067	1.270987	.6042481	.3109320	31.12867

#1	2.619229	-.003535	2.454430	2.520169	2.581506	-.000518
#2	2.629095	-.005962	2.403450	2.542928	2.590663	-.000323
#3	2.629109	-.010922	2.459500	2.549347	2.574660	-.000622

Elem	Sr4077
Units	ppm
Avg	F .0014995
Stddev	.0000582
%RSD	3.883074

#1	.0014586
#2	.0015662
#3	.0014737

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	972.8739	1612.697	21129.37	7074.363	2010.627
Stddev	10.9617	2.455	75.38	40.964	2.400
%RSD	1.126738	.1522423	.3567694	.5790458	.1193769

#1	960.2738	1610.950	21044.94	7058.270	2010.972
#2	980.2173	1615.505	21189.91	7120.930	2012.836
#3	978.1306	1611.637	21153.27	7043.890	2008.073

Sample Name: LLICV01 Acquired: 06/10/2022 15:57:52 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: LLICV01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0180485	.0397985	.0133733	.0196193	.0528795	.1090381	.0996066
Stddev	.0061054	.0008709	.0004706	.0011364	.0019432	.0085350	.0013304
%RSD	33.82755	2.188248	3.518625	5.792314	3.674715	7.827577	1.335649

#1	.0111148	.0397614	.0130269	.0184363	.0542327	.1070513	.0983054
#2	.0226192	.0406874	.0131840	.0207026	.0537529	.1183913	.0995499
#3	.0204115	.0389468	.0139090	.0197189	.0506528	.1016716	.1009644

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0064732	.0061606	1.986410	.0093876	.0293844	.0231583	.1163059
Stddev	.0001267	.0001199	.045524	.0007634	.0001401	.0019274	.0066626
%RSD	1.957663	1.945582	2.291777	8.132267	.4768393	8.322536	5.728550

#1	.0063631	.0061270	1.944296	.0099065	.0292799	.0209722	.1229013
#2	.0064447	.0062937	1.980222	.0097453	.0295436	.0238904	.1164384
#3	.0066117	.0060612	2.034711	.0085110	.0293296	.0246124	.1095780

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0215332	2.038137	.0394409	.0101164	1.698182	.0373840	.0375943
Stddev	.0006999	.029289	.0007310	.0005598	.309487	.0036427	.0002277
%RSD	3.250104	1.437045	1.853433	5.533516	18.22462	9.743966	.6056936

#1	.0210932	2.016527	.0386193	.0101767	1.427076	.0390448	.0378055
#2	.0211662	2.026412	.0396839	.0106436	1.632095	.0399003	.0376243
#3	.0223402	2.071472	.0400194	.0095289	2.035375	.0332069	.0373531

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.646717	.0225271	.1052725	.2019450	.0134846	.3889882	.0412931
Stddev	.066252	.0045617	.0015001	.0014670	.0037643	.0064338	.0008879
%RSD	4.023252	20.25002	1.425009	.7264326	27.91566	1.653996	2.150349

#1	1.606246	.0211453	.1038904	.2011304	.0164048	.3876316	.0415260
#2	1.610730	.0276200	.1050592	.2010660	.0092362	.3833408	.0403119
#3	1.723173	.0188160	.1068679	.2036385	.0148127	.3959921	.0420414

Sample Name: LLICV01 Acquired: 06/10/2022 15:57:52 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: LLICV01 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0378337	.0190900	.0204728
Stddev	.0012690	.0003530	.0001919
%RSD	3.354175	1.848973	.9371882

#1	.0385466	.0194448	.0203340
#2	.0385858	.0187389	.0203925
#3	.0363685	.0190861	.0206917

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	979.5911	1626.808	21330.39	7102.808	2048.582
Stddev	4.9927	9.296	151.70	44.385	9.047
%RSD	.5096711	.5714394	.7111851	.6248997	.4415994

#1	985.0030	1633.194	21391.38	7135.000	2055.777
#2	975.1646	1631.088	21157.69	7121.250	2051.544
#3	978.6056	1616.143	21442.10	7052.175	2038.426

Sample Name: ICB01 Acquired: 06/10/2022 16:01:45 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.002178	-.001140	-.000621	-.002250	.0018133	.0057301	.0001211
Stddev	.003098	.002209	.002434	.000176	.0031146	.0081436	.0005190
%RSD	142.2250	193.8061	392.2187	7.817103	171.7637	142.1183	428.5018
#1	-.005308	-.001729	.000908	-.002166	-.000507	-.003673	.0006390
#2	.000886	-.002994	-.003428	-.002452	.000594	.010433	-.000399
#3	-.002113	.001304	.000657	-.002132	.005353	.010430	.000123
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000041	-.000058	.0057743	.0002234	-.000306	.0003794	.0126447
Stddev	.000098	.000075	.0120895	.0008164	.000485	.0020919	.0062254
%RSD	236.9019	128.9550	209.3656	365.4040	158.3526	551.3469	49.23314
#1	.000029	-.000114	.0080969	.0011571	-.000784	.0012735	.0197862
#2	-.000153	-.000087	.0165340	-.000131	-.000320	.0018756	.0083635
#3	.000001	.000027	-.007308	-.000356	.000186	-.002011	.0097845
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000180	.0416992	-.000390	-.000205	.0283322	-.001152	-.004801
Stddev	.000315	.0156039	.000207	.000205	.1612841	.002669	.000198
%RSD	174.7605	37.42025	52.96498	100.0679	569.2604	231.7241	4.120318
#1	-.000199	.0260595	-.000616	-.000413	.0194980	.001671	-.004950
#2	-.000485	.0417708	-.000344	-.000200	-.128353	-.003634	-.004876
#3	.000144	.0572672	-.000210	-.000003	.193852	-.001491	-.004576
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.031641	.0046007	.0051139	.0004086	-.005422	.0020241	.0002502
Stddev	.062114	.0013009	.0010519	.0000989	.004772	.0006648	.0007952
%RSD	196.3106	28.27573	20.57031	24.19379	88.00449	32.84315	317.8646
#1	-.094749	.0053378	.0047341	.0003049	-.002656	.0013339	-.000288
#2	.029428	.0030987	.0063029	.0004191	-.002679	.0020782	-.000125
#3	-.029601	.0053657	.0043045	.0005018	-.010933	.0026601	.001164

Sample Name: ICB01 Acquired: 06/10/2022 16:01:45 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.000164	-.000798	.0000787
Stddev	.000887	.001174	.0000723
%RSD	541.4085	147.0635	91.89332

#1	.000814	-.000027	.0001564
#2	-.000917	-.002149	.0000133
#3	-.000389	-.000219	.0000664

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	971.8087	1610.649	21233.70	7086.800	2039.554
Stddev	8.5982	4.615	120.07	24.001	7.112
%RSD	.8847629	.2865533	.5654838	.3386690	.3487004

#1	980.8038	1606.191	21357.36	7103.525	2032.192
#2	970.9505	1610.349	21226.18	7097.575	2040.084
#3	963.6718	1615.407	21117.57	7059.300	2046.387

Sample Name: CRI01 Acquired: 06/10/2022 16:05:39 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: CRI01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0205984	.0388564	.0125473	.0204458	.0523498	.1096573	.1009713
Stddev	.0015997	.0008286	.0021348	.0036070	.0026662	.0113897	.0005682
%RSD	7.766098	2.132555	17.01410	17.64172	5.093005	10.38661	.5627410

#1	.0220498	.0385737	.0141255	.0162893	.0496037	.1221847	.1005959
#2	.0208620	.0397894	.0101183	.0227545	.0549281	.0999261	.1016250
#3	.0188832	.0382061	.0133980	.0222936	.0525175	.1068611	.1006931

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0063240	.0061216	1.979396	.0101117	.0294061	.0230536	.1113402
Stddev	.0001963	.0000803	.008762	.0008923	.0002421	.0004801	.0042871
%RSD	3.103885	1.311311	.4426818	8.824330	.8231480	2.082715	3.850490

#1	.0064170	.0062071	1.986724	.0107692	.0296360	.0227051	.1099306
#2	.0060985	.0060479	1.981774	.0104701	.0291535	.0228544	.1079353
#3	.0064566	.0061098	1.969690	.0090960	.0294289	.0236013	.1161546

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0216448	2.044043	.0395893	.0097008	1.794634	.0407867	.0365149
Stddev	.0010253	.033227	.0002364	.0002668	.490967	.0043861	.0006990
%RSD	4.737050	1.625561	.5970053	2.750172	27.35749	10.75375	1.914259

#1	.0204696	2.073810	.0393693	.0099729	2.361441	.0358934	.0359917
#2	.0223572	2.050125	.0395595	.0096899	1.501443	.0421022	.0373088
#3	.0221075	2.008195	.0398392	.0094397	1.521018	.0443645	.0362442

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.808130	.0241832	.1030103	.2024940	.0198666	.3833366	.0383215
Stddev	.114720	.0059683	.0022141	.0008925	.0036882	.0033318	.0028604
%RSD	6.344692	24.67962	2.149442	.4407514	18.56459	.8691715	7.464249

#1	1.737283	.0221162	.1031046	.2032828	.0156945	.3865258	.0400439
#2	1.746620	.0195231	.1007505	.2015252	.0226925	.3798784	.0350196
#3	1.940488	.0309102	.1051758	.2026740	.0212129	.3836056	.0399011

Sample Name: CRI01 Acquired: 06/10/2022 16:05:39 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: CRI01 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0395178	.0194815	.0207155
Stddev	.0001210	.0007129	.0001314
%RSD	.3062805	3.659539	.6341459

#1	.0393783	.0189735	.0207238
#2	.0395807	.0191744	.0208424
#3	.0395945	.0202965	.0205801

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	989.2972	1620.019	21479.35	7136.667	2051.931
Stddev	12.9220	2.477	136.11	25.500	2.538
%RSD	1.306177	.1528839	.6336697	.3573046	.1236743

#1	1001.671	1618.314	21618.33	7109.900	2049.216
#2	990.331	1622.860	21473.41	7160.675	2054.243
#3	975.889	1618.883	21346.31	7139.425	2052.333

Sample Name: ICSA01 Acquired: 06/10/2022 16:09:32 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: ICSA01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0150409	-.012752	.0001116	.0009411	.0097996	236.5792
Stddev	.0077843	.003145	.0016116	.0071802	.0053257	.3339
%RSD	51.75443	24.66493	1444.353	762.9617	54.34591	.1411429
#1	.0235858	-.016367	.0019059	.0092236	.0049738	236.1961
#2	.0131837	-.011245	-.000359	-.003526	.0155135	236.7326
#3	.0083531	-.010643	-.001213	-.002874	.0089115	236.8087
Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0057781	.0008773	-.000728	217.5980	.0440333	-.000522
Stddev	.0005582	.0001113	.000191	1.4423	.0010211	.000170
%RSD	9.659897	12.68627	26.31681	.6628113	2.318993	32.56759
#1	.0055315	.0009875	-.000562	215.9852	.0439836	-.000328
#2	.0064171	.0007649	-.000684	218.0450	.0450783	-.000593
#3	.0053857	.0008796	-.000937	218.7639	.0430378	-.000646
Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0128817	89.13134	.0090757	235.3585	.0021134	-.001230
Stddev	.0034230	.80644	.0007497	1.8601	.0003315	.000450
%RSD	26.57264	.9047778	8.260302	.7903117	15.68348	36.58513
#1	.0138958	88.20717	.0096900	233.4160	.0019237	-.000725
#2	.0090663	89.49451	.0092968	235.5363	.0024961	-.001378
#3	.0156832	89.69233	.0082404	237.1233	.0019204	-.001588
Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7255259	.0003069	-.000804	-.622075	-.007554	.0520249
Stddev	.1945337	.0005264	.000343	.029907	.007904	.0019166
%RSD	26.81279	171.5364	42.63562	4.807647	104.6229	3.683971
#1	.6713894	.0002575	-.000603	-.597154	.001155	.0504847
#2	.9413938	-.000193	-.001200	-.655239	-.014270	.0541713
#3	.5637946	.000856	-.000610	-.613831	-.009548	.0514187

Sample Name: ICSA01 Acquired: 06/10/2022 16:09:32 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: ICSA01 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.000980	-0.003371	-0.001775	-0.002417	-0.000662	W .0004585
Stddev	.000122	.003753	.000637	.000643	.000533	.0005148
%RSD	12.46137	111.3256	35.87458	26.60778	80.51063	112.2881

#1	-0.001114	-0.001567	-0.002120	-0.002307	-0.000273	.0008578
#2	-0.000951	-0.000861	-0.001040	-0.003109	-0.001270	-0.000123
#3	-0.000875	-0.007685	-0.002165	-0.001837	-0.000444	.000640

Elem	Sr4077
Units	ppm
Avg	F .0909162
Stddev	.0002485
%RSD	.2733049

#1	.0906350
#2	.0910074
#3	.0911063

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	926.6636	1523.603	20392.31	7055.529	1782.738
Stddev	9.5973	2.164	98.44	12.620	5.034
%RSD	1.035682	.1420574	.4827143	.1788673	.2823556

#1	916.3840	1525.007	20278.68	7051.748	1777.915
#2	928.2181	1524.691	20451.47	7069.608	1787.959
#3	935.3888	1521.111	20446.79	7045.232	1782.341

Sample Name: ICSAB01 Acquired: 06/10/2022 16:14:03 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: ICSAB01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1033603	.0928523	.0524715	.0577476	.6255991	262.9852
Stddev	.0064965	.0036170	.0041250	.0071215	.0078169	.8634
%RSD	6.285292	3.895451	7.861348	12.33212	1.249500	.3282987

#1	.1065807	.0970281	.0481383	.0528647	.6166062	262.5415
#2	.0958827	.0906927	.0529257	.0544590	.6307658	262.4338
#3	.1076175	.0908362	.0563506	.0659191	.6294252	263.9802

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5120971	.5021947	.9840960	241.5445	.5467287	.5073336
Stddev	.0019205	.0048507	.0026547	1.4611	.0033274	.0025235
%RSD	.3750165	.9658955	.2697609	.6048912	.6086015	.4974052

#1	.5114333	.5025513	.9820093	240.6818	.5429961	.5055684
#2	.5105966	.4971756	.9831946	240.7202	.5493838	.5062084
#3	.5142614	.5068573	.9870840	243.2315	.5478063	.5102239

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5245403	98.82412	.5069281	262.4526	1.009254	.2062581
Stddev	.0039782	.84260	.0045158	2.1648	.004077	.0014689
%RSD	.7584101	.8526264	.8908104	.8248356	.4039318	.7121597

#1	.5264887	98.19828	.5032835	260.9620	1.005566	.2068650
#2	.5271688	98.49190	.5055209	261.4601	1.008565	.2045830
#3	.5199636	99.78219	.5119799	264.9357	1.013632	.2073262

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8156077	.5003742	1.015316	-1.20528	F -.006851	1.048493
Stddev	.2443385	.0036642	.004001	.12646	.007722	.012759
%RSD	29.95784	.7322940	.3940745	10.49235	112.7134	1.216887

#1	.5735375	.5013631	1.010699	-1.14221	-.013189	1.045329
#2	.8111326	.4963170	1.017471	-1.35088	-.009113	1.037613
#3	1.062153	.5034425	1.017777	-1.12276	.001749	1.062536

Sample Name: ICSAB01 Acquired: 06/10/2022 16:14:03 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: ICSAB01 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.038766	F -.008562	.9233906	1.068184	1.015964	F .0015220
Stddev	.003455	.009556	.0054126	.004105	.003994	.0002579
%RSD	.3325749	111.6010	.5861695	.3842567	.3931007	16.94576

#1	1.035372	-.004313	.9244499	1.064102	1.014092	.0018084
#2	1.042278	-.019506	.9175267	1.072311	1.013251	.0014495
#3	1.038648	-.001868	.9281954	1.068139	1.020550	.0013081

Elem	Sr4077
Units	ppm
Avg	F .1009901
Stddev	.0005816
%RSD	.5759163

#1	.1004316
#2	.1009463
#3	.1015924

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	937.6893	1515.825	20449.76	7057.908	1772.741
Stddev	10.3627	5.170	110.20	77.593	1.105
%RSD	1.105134	.3410679	.5388607	1.099378	.0623053

#1	926.3795	1516.084	20346.42	7056.091	1773.997
#2	946.7283	1510.530	20565.72	7136.393	1772.303
#3	939.9600	1520.860	20437.15	6981.239	1771.923

Sample Name: ICSADLX20 Acquired: 06/10/2022 16:17:43 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: ICSA01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.002550	-.002823	-.000528	-.001312	.0023246	12.46668	.0001531
Stddev	.006332	.004365	.001285	.003608	.0022714	.05788	.0002335
%RSD	248.2864	154.6276	243.4721	275.0328	97.71062	.4642947	152.5381

#1	-.008417	-.007654	.000945	-.002999	.0049013	12.40087	.0000908
#2	.004162	-.001651	-.001108	-.003767	.0006127	12.50968	-.000043
#3	-.003395	.000836	-.001421	.002831	.0014597	12.48950	.000411

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001153	-.000059	12.09355	.0023090	-.000812	.0005519	5.149782
Stddev	.0000244	.000160	.03956	.0009715	.000177	.0021028	.017512
%RSD	21.16451	272.8717	.3271540	42.07548	21.85045	381.0131	.3400544

#1	.0001055	-.000174	12.13452	.0013527	-.000652	-.001861	5.158603
#2	.0000972	-.000126	12.05556	.0032951	-.000781	.001993	5.161129
#3	.0001430	.000124	12.09058	.0022791	-.001003	.001524	5.129613

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001683	12.69171	.0000207	.0002469	.0600221	-.001476	-.003441
Stddev	.0006205	.11486	.0008578	.0006675	.1459954	.003326	.000517
%RSD	368.7340	.9050250	4140.830	270.3610	243.2362	225.3562	15.01805

#1	.0008787	12.79728	.0005064	.0009512	.1589259	-.005195	-.002912
#2	-.000106	12.56940	.0005255	-.000376	.1287996	-.000444	-.003944
#3	-.000268	12.70845	-.000970	.000166	-.107659	.001212	-.003468

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.439198	.0005843	.0059346	.0001763	-.005232	-.000288	-.000037
Stddev	.042206	.0058205	.0014594	.0001926	.004486	.001311	.001322
%RSD	9.609736	996.2238	24.59116	109.2226	85.74121	454.6252	3603.030

#1	-.472034	.0060249	.0072893	-.000035	-.008203	.000229	.001016
#2	-.453967	.0012813	.0043893	.000341	-.007421	.000686	.000394
#3	-.391592	-.005553	.0061252	.000223	-.000072	-.001779	-.001521

Sample Name: ICSADLX20 Acquired: 06/10/2022 16:17:43 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: ICSA01 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0005016	-.001459	.0050762
Stddev	.0005584	.000725	.0000210
%RSD	111.3224	49.69711	.4126659

#1	-.000107	-.000622	.0050914
#2	.000622	-.001867	.0050849
#3	.000990	-.001889	.0050523

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	974.8267	1617.168	21426.58	7133.075	2023.990
Stddev	2.5363	2.121	90.07	65.495	4.639
%RSD	.2601813	.1311702	.4203859	.9181823	.2291892

#1	974.5051	1619.272	21404.90	7095.700	2023.008
#2	972.4665	1617.200	21349.32	7208.700	2029.042
#3	977.5085	1615.030	21525.51	7094.825	2019.922

Sample Name: ICSABDLX20 Acquired: 06/10/2022 16:21:36 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: ICSAB01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0100850	.0070681	.0016572	.0030519	.0327721	12.20168	.0250122
Stddev	.0065828	.0012169	.0019241	.0054449	.0009958	.08252	.0004300
%RSD	65.27343	17.21618	116.1064	178.4112	3.038562	.6762912	1.719325
#1	.0170871	.0075493	.0019526	.0020798	.0316319	12.17018	.0253838
#2	.0091454	.0079708	.0034165	.0089173	.0334711	12.29531	.0245412
#3	.0040224	.0056842	-.000398	-.001842	.0332132	12.13956	.0251117
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0254618	.0475674	11.91252	.0271166	.0234874	.0265623	5.050376
Stddev	.0004399	.0002493	.08180	.0004808	.0003651	.0020072	.030771
%RSD	1.727669	.5240851	.6866910	1.772977	1.554335	7.556722	.6092892
#1	.0249605	.0477936	11.85162	.0276252	.0236730	.0247540	5.039914
#2	.0257833	.0476084	11.88044	.0270551	.0230669	.0262109	5.026200
#3	.0256416	.0473001	12.00550	.0266696	.0237224	.0287220	5.085014
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0256070	12.39171	.0487965	.0093447	-.178016	.0221657	.0447999
Stddev	.0002452	.12947	.0005971	.0004858	.297318	.0039682	.0009413
%RSD	.9573990	1.044822	1.223572	5.198548	167.0182	17.90232	2.101225
#1	.0258292	12.31268	.0481857	.0089480	.140626	.0178664	.0444269
#2	.0256478	12.32133	.0488251	.0091995	-.226663	.0256877	.0441022
#3	.0253440	12.54113	.0493788	.0098865	-.448010	.0229430	.0458705
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.369121	.0020667	.0548256	.0512490	-.004254	.0469920	.0483490
Stddev	.082537	.0036489	.0008727	.0001896	.001658	.0013430	.0010929
%RSD	22.36036	176.5538	1.591765	.3699255	38.98575	2.857826	2.260385
#1	-.379456	.0021826	.0541922	.0510903	-.002981	.0456300	.0491688
#2	-.446003	.0056563	.0544636	.0511978	-.006129	.0470308	.0487699
#3	-.281903	-.001639	.0558211	.0514589	-.003651	.0483151	.0471082

Sample Name: ICSABDLX20 Acquired: 06/10/2022 16:21:36 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: ICSAB01 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0483940	.0001289	.0050157
Stddev	.0007843	.0009494	.0000072
%RSD	1.620560	736.2663	.1444453

#1	.0475019	-.000212	.0050209
#2	.0487051	-.000603	.0050074
#3	.0489749	.001202	.0050187

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1003.736	1623.184	21792.97	7250.633	2026.345
Stddev	8.066	2.893	217.89	21.783	3.304
%RSD	.8036107	.1782525	.9998226	.3004281	.1630407

#1	995.476	1625.631	21562.35	7233.675	2022.531
#2	1011.593	1623.930	21995.39	7275.200	2028.334
#3	1004.139	1619.991	21821.16	7243.025	2028.169

Sample Name: CCV01 Acquired: 06/10/2022 16:25:29 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: CCV01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.019705	4.962305	4.901113	5.072555	5.041358	9.985053	10.04016
Stddev	.024744	.034282	.016043	.024470	.033432	.035056	.01951
%RSD	.4929373	.6908582	.3273302	.4823957	.6631524	.3510833	.1943045
#1	5.043212	4.996044	4.919511	5.100241	5.079949	9.950696	10.04427
#2	5.022018	4.963366	4.893786	5.063602	5.021206	10.02077	10.05728
#3	4.993887	4.927504	4.890041	5.053823	5.022918	9.98369	10.01892
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2491731	2.454058	24.60123	.9936955	2.450360	1.255457	4.973994
Stddev	.0013465	.007326	.03165	.0011610	.013663	.005707	.044997
%RSD	.5403866	.2985377	.1286506	.1168356	.5575738	.4545366	.9046429
#1	.2506249	2.462503	24.63368	.9944216	2.465965	1.257768	5.020494
#2	.2489291	2.450274	24.59956	.9923565	2.440550	1.248957	4.930669
#3	.2479652	2.449399	24.57045	.9943085	2.444566	1.259646	4.970818
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.494387	24.74252	2.467756	1.249961	25.03042	2.502486	2.512653
Stddev	.016267	.13627	.012869	.003414	.42127	.026740	.027307
%RSD	.6521536	.5507716	.5214840	.2731577	1.683012	1.068521	1.086776
#1	2.513154	24.89616	2.482561	1.252436	25.03089	2.475979	2.543370
#2	2.484304	24.63625	2.461449	1.251381	25.45145	2.529453	2.491129
#3	2.485704	24.69515	2.459256	1.246065	24.60892	2.502025	2.503459
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	24.39318	4.924133	4.941463	5.047209	4.898197	4.928323	4.934967
Stddev	.13562	.036329	.043067	.021347	.014544	.027541	.022448
%RSD	.5559819	.7377708	.8715451	.4229405	.2969351	.5588250	.4548821
#1	24.34460	4.957959	4.991145	5.071849	4.912094	4.959713	4.960248
#2	24.54641	4.928705	4.914744	5.034321	4.899415	4.908213	4.917370
#3	24.28854	4.885734	4.918500	5.035457	4.883082	4.917043	4.927282

Sample Name: CCV01 Acquired: 06/10/2022 16:25:29 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: CCV01 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.944010	4.974253	5.026510
Stddev	.014582	.012297	.003825
%RSD	.2949389	.2472051	.0760904

#1	4.927452	4.970277	5.030200
#2	4.954937	4.988045	5.022563
#3	4.949640	4.964436	5.026765

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	966.6596	1603.042	21328.75	7152.231	1968.621
Stddev	8.0215	8.564	84.01	43.066	8.862
%RSD	.8298123	.5342225	.3938582	.6021277	.4501646

#1	958.3167	1593.178	21326.83	7103.830	1958.546
#2	967.3468	1607.376	21245.72	7166.550	1972.106
#3	974.3154	1608.573	21413.69	7186.313	1975.211

Sample Name: LLCCV01 Acquired: 06/10/2022 16:29:14 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: LLCCV01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0190283	.0369386	.0131046	.0225660	.0540434	.1069550	.1002295
Stddev	.0034392	.0028976	.0011349	.0011294	.0029282	.0117302	.0006230
%RSD	18.07402	7.844482	8.660040	5.004781	5.418214	10.96745	.6215554

#1	.0156179	.0396919	.0126936	.0237079	.0550862	.1186960	.1002008
#2	.0224956	.0372083	.0143877	.0214495	.0507365	.0952355	.1008664
#3	.0189716	.0339155	.0122324	.0225407	.0563074	.1069336	.0996214

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0065087	.0062176	1.946099	.0099840	.0296624	.0225752	.1123446
Stddev	.0000142	.0000877	.022761	.0004114	.0003659	.0020496	.0031072
%RSD	.2184837	1.410327	1.169548	4.120353	1.233683	9.079053	2.765751

#1	.0064938	.0063144	1.923268	.0104517	.0296838	.0212701	.1146493
#2	.0065221	.0061436	1.968788	.0098223	.0292862	.0249376	.1088109
#3	.0065102	.0061947	1.946242	.0096781	.0300171	.0215179	.1135737

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0215239	2.009009	.0395366	.0103897	2.219923	.0389827	.0363960
Stddev	.0002438	.025714	.0002360	.0001280	.172909	.0040774	.0008913
%RSD	1.132868	1.279958	.5969521	1.231861	7.788962	10.45947	2.448902

#1	.0214632	2.015513	.0393652	.0102484	2.083408	.0427557	.0354744
#2	.0213162	2.030847	.0398058	.0104231	2.414356	.0346573	.0372535
#3	.0217924	1.980667	.0394388	.0104978	2.162004	.0395353	.0364601

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.672459	.0228586	.1118511	.2037292	.0120526	.3860832	.0416378
Stddev	.097774	.0025226	.0011605	.0011322	.0058047	.0021025	.0013163
%RSD	5.846099	11.03582	1.037575	.5557278	48.16121	.5445834	3.161209

#1	1.597651	.0228129	.1112718	.2026195	.0184542	.3844449	.0402137
#2	1.636634	.0254038	.1131873	.2036855	.0071315	.3884540	.0418897
#3	1.783092	.0203592	.1110943	.2048826	.0105722	.3853508	.0428098

Sample Name: LLCCV01 Acquired: 06/10/2022 16:29:14 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: LLCCV01 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0389723	.0194255	.0205233
Stddev	.0010949	.0005237	.0000305
%RSD	2.809498	2.695775	.1484531

#1	.0398522	.0195353	.0205187
#2	.0393184	.0188557	.0204955
#3	.0377461	.0198856	.0205559

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1012.481	1623.991	21921.13	7201.342	2048.972
Stddev	14.803	2.950	256.63	40.929	4.955
%RSD	1.462038	.1816629	1.170712	.5683576	.2418302

#1	995.451	1627.351	21629.33	7171.875	2052.513
#2	1022.267	1622.794	22111.78	7184.075	2051.093
#3	1019.724	1621.826	22022.27	7248.075	2043.309

Sample Name: CCB01 Acquired: 06/10/2022 16:33:10 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: LLCCV01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000072	.0026183	-.000376	.0019621	.0024539	.0203387	.0002860
Stddev	.0045841	.0026582	.001106	.0023290	.0008900	.0133018	.0001489
%RSD	63685.98	101.5238	293.7921	118.7010	36.26779	65.40127	52.07963

#1	.0004463	.0021788	-.001355	.0012946	.0031080	.0198825	.0001458
#2	-.004781	.0002073	-.000596	.0045519	.0028133	.0338627	.0004423
#3	.004356	.0054690	.000823	.0000397	.0014404	.0072709	.0002698

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000009	-.000055	.0087794	-.000010	-.000445	.0013339	.0143381
Stddev	.0001339	.000102	.0066765	.000628	.000185	.0015814	.0095199
%RSD	14301.59	185.1140	76.04801	6571.957	41.52030	118.5582	66.39573

#1	.0000036	.000050	.0120873	.000679	-.000637	-.000478	.0071375
#2	-.000134	-.000153	.0010947	-.000157	-.000429	.002045	.0251316
#3	.000134	-.000062	.0131561	-.000551	-.000269	.002435	.0107453

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007523	.0240047	-.000270	.0001985	.0830878	.0050873	-.005056
Stddev	.0002298	.0274752	.000430	.0005496	.1990092	.0026737	.000337
%RSD	30.54589	114.4574	159.2137	276.8155	239.5170	52.55696	6.668045

#1	.0005051	.0454504	.000022	.0001983	.3038336	.0034984	-.004673
#2	.0007924	.0335290	-.000068	.0007482	.0280151	.0035893	-.005308
#3	.0009595	-.006965	-.000764	-.000351	-.082586	.0081742	-.005188

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.198818	.0048741	.0061510	.0002166	-.003798	-.001071	.0009680
Stddev	.032883	.0006563	.0004036	.0000590	.003067	.000690	.0010050
%RSD	16.53928	13.46610	6.561098	27.25662	80.74197	64.44442	103.8251

#1	-.231432	.0041660	.0060153	.0001834	-.000314	-.000291	.0006725
#2	-.165673	.0049940	.0058327	.0002847	-.004991	-.001317	.0001439
#3	-.199348	.0054622	.0066049	.0001815	-.006089	-.001604	.0020877

Sample Name: CCB01 Acquired: 06/10/2022 16:33:10 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: LLCCV01 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.001194	-.002007	.0000015
Stddev	.000288	.000762	.0000227
%RSD	24.12826	37.95712	1534.734

#1	-.001102	-.001239	.0000084
#2	-.001517	-.002763	.0000199
#3	-.000963	-.002019	-.000024

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	997.0281	1626.301	21732.11	7232.217	2063.398
Stddev	10.0768	4.247	79.37	30.255	3.901
%RSD	1.010687	.2611308	.3652046	.4183362	.1890491

#1	989.8770	1622.430	21716.99	7226.975	2066.112
#2	1008.553	1630.844	21817.95	7204.925	2058.928
#3	992.654	1625.630	21661.39	7264.750	2065.155

Sample Name: PB145317BL Acquired: 06/10/2022 16:37:06 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002467	.0013784	-.000045	-.000498	.0014818	.0133502	.0001215
Stddev	.0025310	.0020478	.001048	.003249	.0014373	.0075047	.0001187
%RSD	1025.785	148.5596	2315.323	651.9650	96.99298	56.21432	97.65054
#1	-.000975	.0037080	.000870	-.002608	.0021117	.0065598	.0000212
#2	-.001442	.0005646	.000183	-.002130	.0024966	.0120829	.0000909
#3	.003157	-.000137	-.001189	.003243	-.000163	.0214078	.0002526
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001099	-.000040	.0059995	-.000368	.0001375	-.000984	.0130014
Stddev	.0000666	.000057	.0148817	.000276	.0001402	.001630	.0071605
%RSD	60.61611	141.7007	248.0471	75.06255	101.9518	165.6120	55.07506
#1	.0001194	-.000096	-.011050	-.000273	-.000014	-.002424	.0088088
#2	.0000390	-.000043	.012667	-.000152	.000263	.000786	.0089260
#3	.0001712	.000018	.016382	-.000679	.000164	-.001315	.0212694
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000573	.0017669	-.000151	.0001385	-.332258	.0031854	-.005672
Stddev	.0008200	.0346037	.000343	.0002564	.202477	.0019691	.000335
%RSD	1431.779	1958.448	226.6419	185.1713	60.93976	61.81433	5.903881
#1	.0005079	.0037917	-.000194	.0001656	-.393702	.0039614	-.006021
#2	.0005531	.0353138	.000211	-.000130	-.106176	.0046482	-.005353
#3	-.000889	-.033805	-.000471	.000380	-.496896	.0009466	-.005644
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.219451	-.000548	.0035504	.0003084	-.004135	-.000026	.0002344
Stddev	.040849	.001934	.0007718	.0002299	.001765	.001341	.0004181
%RSD	18.61412	352.8361	21.73748	74.53333	42.68176	5202.971	178.3998
#1	-.262971	-.000112	.0027663	.0001256	-.002107	.000395	.0006687
#2	-.213442	.001130	.0043092	.0002331	-.004979	.001054	.0001996
#3	-.181939	-.002663	.0035759	.0005665	-.005320	-.001526	-.000165

Sample Name: PB145317BL Acquired: 06/10/2022 16:37:06 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0003512	-.001935	-.000003
Stddev	.0005945	.000992	.000047
%RSD	169.2970	51.25071	1421.030

#1	.0006766	-.002341	.000019
#2	-.000335	-.002659	-.000057
#3	.000712	-.000805	.000028

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	991.0624	1604.549	21663.09	7167.425	2035.448
Stddev	20.0916	1.950	195.08	20.431	6.552
%RSD	2.027281	.1215151	.9005055	.2850550	.3218897

#1	975.4041	1606.242	21466.86	7158.325	2042.192
#2	984.0664	1604.987	21665.42	7153.125	2035.046
#3	1013.717	1602.417	21856.99	7190.825	2029.107

Sample Name: PB145317BS Acquired: 06/10/2022 16:41:00 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7723168	1.952107	.9465338	2.032474	.7997199	2.118033	.2040073
Stddev	.0094186	.005617	.0046616	.012654	.0015293	.017495	.0002957
%RSD	1.219525	.2877439	.4924910	.6225965	.1912322	.8260209	.1449277
#1	.7662086	1.948158	.9411811	2.018000	.8002467	2.101600	.2043387
#2	.7831637	1.949626	.9497017	2.037972	.8009162	2.116073	.2039127
#3	.7675781	1.958537	.9487187	2.041449	.7979968	2.136426	.2037705
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2048025	.1933349	.9887757	.4071120	.1971373	.3116440	3.145933
Stddev	.0005503	.0003861	.0123612	.0014773	.0006951	.0032310	.002837
%RSD	.2686933	.1997289	1.250154	.3628838	.3525982	1.036749	.0901660
#1	.2054286	.1937211	.9955709	.4071445	.1964077	.3127455	3.148716
#2	.2043955	.1929488	.9745075	.4056187	.1972122	.3141802	3.143046
#3	.2045835	.1933350	.9962486	.4085729	.1977919	.3080063	3.146036
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2043258	2.047263	.4995711	.0750902	2.764968	.3156153	.2018641
Stddev	.0018772	.015170	.0010469	.0005580	.272209	.0052263	.0023589
%RSD	.9187320	.7409720	.2095642	.7430606	9.844931	1.655917	1.168545
#1	.2036502	2.064555	.5003165	.0744619	2.971916	.3099833	.2040484
#2	.2028798	2.036194	.4983742	.0752809	2.456610	.3203088	.1993627
#3	.2064472	2.041041	.5000226	.0755278	2.866376	.3165537	.2021811
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.613070	5.908892	.3104228	.3953914	-.012137	.8981502	.6748640
Stddev	.046101	.017404	.0002114	.0005856	.008349	.0056569	.0010118
%RSD	.4795683	.2945424	.0681033	.1480983	68.78975	.6298372	.1499304
#1	9.660474	5.888943	.3102552	.3947161	-.013749	.9032113	.6759075
#2	9.610345	5.920974	.3103529	.3957583	-.003099	.8920434	.6738872
#3	9.568392	5.916759	.3106603	.3956998	-.019562	.8991959	.6747972

Sample Name: PB145317BS Acquired: 06/10/2022 16:41:00 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.1909755	.1974112	.2035025
Stddev	.0019899	.0031796	.0001510
%RSD	1.041985	1.610635	.0742032

#1	.1889863	.1939264	.2034860
#2	.1929662	.2001546	.2036610
#3	.1909741	.1981525	.2033604

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	975.9344	1602.063	21353.74	7064.811	2028.084
Stddev	12.7061	2.034	93.33	34.769	5.799
%RSD	1.301940	.1269384	.4370716	.4921430	.2859383

#1	968.2951	1602.878	21329.68	7052.358	2022.665
#2	990.6019	1599.748	21456.74	7037.984	2034.200
#3	968.9062	1603.562	21274.79	7104.092	2027.386

Sample Name: PB145424BL Acquired: 06/10/2022 16:44:45 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: PBS Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.003025	.0035200	-.001930	-.000484	.0024135	.0165923	-.000943
Stddev	.005785	.0025872	.001119	.003933	.0016848	.0044133	.000327
%RSD	191.1942	73.50043	57.98383	812.2923	69.80631	26.59872	34.71459
#1	-.003441	.0027209	-.000691	.003087	.0033877	.0119589	-.000893
#2	-.008591	.0064125	-.002868	.000159	.0033847	.0170716	-.000644
#3	.002956	.0014266	-.002231	-.004699	.0004681	.0207465	-.001292
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000435	-.000102	.0032306	.0000839	.0001707	.0015584	.0071841
Stddev	.0000414	.000104	.0196715	.0005818	.0002057	.0021647	.0104841
%RSD	95.14433	102.2062	608.9212	693.5370	120.5062	138.9010	145.9342
#1	.0000441	-.000112	-.018699	-.000572	.0003152	-.000404	-.004292
#2	.0000018	-.000200	.019323	.000285	-.000065	.001199	.009583
#3	.0000845	.000007	.009068	.000538	.000262	.003880	.016261
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000575	.0040959	-.000016	.0000055	-.226996	-.000948	-.006181
Stddev	.0008173	.0406485	.000502	.0005648	.293234	.004237	.000129
%RSD	1421.597	992.4270	3141.165	10224.79	129.1801	446.9760	2.089229
#1	.0008798	-.004964	-.000593	.0006289	-.487205	.002958	-.006192
#2	.0000474	.048510	.000228	-.000472	.090737	-.005453	-.006047
#3	-.000755	-.031259	.000317	-.000140	-.284521	-.000349	-.006304
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.339288	.0052506	.0039452	.0001976	-.001710	-.000515	-.001302
Stddev	.083643	.0044969	.0005643	.0000643	.008495	.001252	.001865
%RSD	24.65244	85.64643	14.30393	32.56150	496.7560	243.2394	143.2604
#1	-.426181	.0100844	.0045607	.0001751	.006336	-.001760	-.001487
#2	-.259327	.0044763	.0038228	.0002702	-.000873	.000744	.000649
#3	-.332357	.0011911	.0034522	.0001475	-.010593	-.000529	-.003068

Sample Name: PB145424BL Acquired: 06/10/2022 16:44:45 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: PBS Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.000096	-.002530	-.000005
Stddev	.000428	.001593	.000026
%RSD	446.8471	62.94291	582.5209

#1	.000306	-.004228	.000025
#2	-.000047	-.001069	-.000026
#3	-.000546	-.002293	-.000012

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	986.3407	1607.471	21414.50	7115.183	2035.970
Stddev	2.8181	6.435	77.50	5.843	1.010
%RSD	.2857119	.4003224	.3619032	.0821196	.0496318

#1	985.9559	1604.646	21409.42	7108.500	2036.081
#2	983.7348	1614.835	21494.42	7117.725	2036.921
#3	989.3314	1602.932	21339.67	7119.325	2034.909

Sample Name: PB145424BS Acquired: 06/10/2022 16:48:38 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: LCSS Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7548107	1.943776	.9380174	2.025425	.8103811	2.108210
Stddev	.0060478	.018028	.0012678	.001889	.0019947	.011231
%RSD	.8012400	.9274554	.1351553	.0932740	.2461444	.5327391

#1	.7527903	1.922974	.9391920	2.026812	.8081631	2.099768
#2	.7616101	1.953521	.9381867	2.023274	.8109526	2.103905
#3	.7500318	1.954834	.9366735	2.026191	.8120278	2.120957

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2027302	.2046968	.1914186	.9901278	.4023143	.1953706
Stddev	.0009283	.0017961	.0004878	.0200542	.0008347	.0009557
%RSD	.4579077	.8774566	.2548474	2.025417	.2074630	.4891910

#1	.2021693	.2038265	.1909971	.9912306	.4014273	.1946403
#2	.2022196	.2035016	.1913057	.9695449	.4024312	.1950192
#3	.2038018	.2067623	.1919530	1.009608	.4030843	.1964523

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3134305	3.142190	.2048322	1.985143	.4951384	.0745808
Stddev	.0034212	.025542	.0018401	.019648	.0015327	.0004408
%RSD	1.091535	.8128873	.8983352	.9897598	.3095407	.5910614

#1	.3109858	3.127551	.2036754	1.969990	.4945100	.0741015
#2	.3119653	3.127335	.2038672	1.978096	.4940198	.0746721
#3	.3173402	3.171683	.2069540	2.007342	.4968854	.0749689

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.801207	.3108135	.2027406	9.294376	F 5.876193	.3070755
Stddev	.089459	.0026761	.0010886	.043324	.062385	.0015532
%RSD	3.193573	.8609843	.5369386	.4661318	1.061651	.5058074

#1	2.706448	.3103871	.2039558	9.325601	5.805984	.3052830
#2	2.884201	.3083763	.2024110	9.312613	5.925257	.3080214
#3	2.812971	.3136772	.2018548	9.244915	5.897338	.3079222

Sample Name: PB145424BS Acquired: 06/10/2022 16:48:38 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: LCSS Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3986468	F -.007510	.9185641	.6842321	.1943101	.1943368
Stddev	.0004781	.007355	.0089529	.0026118	.0022721	.0019435
%RSD	.1199297	97.93620	.9746606	.3817179	1.169310	1.000042

#1	.3987778	-.003548	.9145832	.6813585	.1926471	.1965004
#2	.3990457	-.015997	.9122922	.6848760	.1968989	.1937710
#3	.3981169	-.002986	.9288171	.6864617	.1933843	.1927391

Elem	Sr4077
Units	ppm
Avg	.2013121
Stddev	.0009347
%RSD	.4643104

#1	.2007899
#2	.2007552
#3	.2023913

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	972.2691	1601.722	21232.41	7032.064	2020.799
Stddev	2.8787	2.816	32.89	66.680	2.455
%RSD	.2960838	.1757925	.1549139	.9482343	.1214635

#1	971.0618	1598.471	21228.27	6986.277	2023.627
#2	970.1906	1603.318	21201.78	7108.566	2019.536
#3	975.5549	1603.377	21267.17	7001.347	2019.232

Sample Name: N3233-01 Acquired: 06/10/2022 16:52:26 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: CR-1 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0258804	-.033230	.0768077	.0081837	.0110363	94.99509	.2964782
Stddev	.0054311	.002972	.0043883	.0026338	.0005272	.04611	.0010569
%RSD	20.98542	8.943214	5.713407	32.18402	4.777357	.0485383	.3564731

#1	.0271904	-.031040	.0729677	.0110712	.0108399	94.94455	.2956092
#2	.0305367	-.032038	.0815909	.0075668	.0106354	95.03487	.2961707
#3	.0199141	-.036613	.0758644	.0059130	.0116335	95.00585	.2976547

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0077909	-.002504	1.175531	.1140073	.0365548	.0823884	313.8530
Stddev	.0002293	.000083	.069699	.0009759	.0003792	.0024287	.2258
%RSD	2.943615	3.300794	5.929144	.8559684	1.037437	2.947848	.0719426

#1	.0077803	-.002486	1.223269	.1146890	.0368142	.0845105	313.6164
#2	.0075670	-.002432	1.207775	.1144434	.0361196	.0797396	314.0661
#3	.0080253	-.002594	1.095548	.1128894	.0367307	.0829151	313.8764

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9075839	1.966479	.0617033	-.001325	6.338301	.1630395	.2976050
Stddev	.0026124	.018614	.0006927	.000944	.077656	.0061009	.0025554
%RSD	.2878400	.9465527	1.122672	71.25392	1.225191	3.742006	.8586699

#1	.9066387	1.964498	.0625002	-.001056	6.284636	.1634684	.2974300
#2	.9105374	1.986005	.0613652	-.002374	6.302919	.1689147	.3002434
#3	.9055757	1.948936	.0612446	-.000544	6.427347	.1567355	.2951415

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-1.19715	3.248029	.1702462	.0006972	.5713169	3.616419	.0128069
Stddev	.06689	.012025	.0066915	.0001237	.0063673	.033951	.0002614
%RSD	5.587596	.3702389	3.930492	17.73498	1.114502	.9387922	2.040998

#1	-1.18281	3.252569	.1683874	.0007673	.5759522	3.624945	.0125670
#2	-1.27005	3.234394	.1776705	.0007700	.5640567	3.579019	.0127682
#3	-1.13859	3.257123	.1646805	.0005545	.5739417	3.645295	.0130855

Sample Name: N3233-01 Acquired: 06/10/2022 16:52:26 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: CR-1 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.8981907	.0105517	.0186776
Stddev	.0056583	.0012509	.0000405
%RSD	.6299655	11.85532	.2170508

#1	.8935506	.0103233	.0186702
#2	.8965273	.0094307	.0186413
#3	.9044943	.0119011	.0187213

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1059.824	1731.603	22992.60	7586.414	2018.628
Stddev	14.125	3.040	142.19	33.908	.223
%RSD	1.332770	.1755360	.6184002	.4469605	.0110292

#1	1066.086	1731.977	23120.57	7603.806	2018.377
#2	1043.650	1734.438	22839.54	7608.099	2018.802
#3	1069.736	1728.394	23017.70	7547.339	2018.705

Sample Name: N3233-02 Acquired: 06/10/2022 16:56:13 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: CR-2 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0493425	-.011808	.4654052	.0083167	.0085144	99.77418	.3327559
Stddev	.0011065	.003418	.0014974	.0019566	.0058449	.39704	.0005921
%RSD	2.242419	28.94844	.3217334	23.52636	68.64758	.3979436	.1779341

#1	.0506199	-.014232	.4637434	.0065843	.0082171	99.50342	.3326615
#2	.0487226	-.013294	.4658229	.0079270	.0028237	100.2300	.3322167
#3	.0486849	-.007898	.4666495	.0104389	.0145022	99.5891	.3333895

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0047114	-.000061	9.470830	.1341732	.0166573	.1148153	152.1153
Stddev	.0000822	.000092	.021255	.0016573	.0003128	.0020219	1.1952
%RSD	1.744791	150.7652	.2244239	1.235190	1.877960	1.761034	.7857452

#1	.0047138	.000012	9.492690	.1341629	.0163703	.1125262	151.2664
#2	.0046280	-.000031	9.450237	.1358357	.0169907	.1155624	151.5972
#3	.0047924	-.000164	9.469564	.1325212	.0166109	.1163574	153.4821

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6668607	5.924089	.0483405	-.000179	5.100964	.2626514	.3645415
Stddev	.0055119	.041435	.0004657	.000617	.368845	.0032240	.0046099
%RSD	.8265421	.6994245	.9633440	344.1977	7.230894	1.227487	1.264586

#1	.6615285	5.957691	.0479508	-.000749	4.937298	.2590903	.3600315
#2	.6665175	5.877792	.0482146	-.000265	5.523321	.2653718	.3692453
#3	.6725362	5.936783	.0488562	.000476	4.842273	.2634922	.3643478

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.318607	2.191713	.0870998	.0047848	1.378260	4.188524	.0176840
Stddev	.032256	.004851	.0027544	.0002010	.014447	.021260	.0008138
%RSD	10.12402	.2213313	3.162304	4.200885	1.048192	.5075664	4.602118

#1	-.290126	2.192845	.0845770	.0049788	1.394764	4.172246	.0171776
#2	-.353634	2.186397	.0866839	.0045774	1.372112	4.212576	.0172516
#3	-.312060	2.195899	.0900385	.0047981	1.367904	4.180749	.0186227

Sample Name: N3233-02 Acquired: 06/10/2022 16:56:13 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: CR-2 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.9988058	.0348719	.0396736
Stddev	.0033794	.0012982	.0001654
%RSD	.3383391	3.722773	.4169000

#1	.9956719	.0358366	.0394902
#2	1.002386	.0353831	.0397193
#3	.998359	.0333959	.0398114

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1074.069	1747.606	23292.99	7744.654	2030.830
Stddev	21.768	2.056	282.01	23.216	4.553
%RSD	2.026709	.1176393	1.210695	.2997689	.2241831

#1	1071.133	1749.939	23191.92	7746.210	2035.880
#2	1097.156	1746.819	23611.60	7767.052	2027.040
#3	1053.917	1746.059	23075.44	7720.698	2029.570

Sample Name: N3234-02 Acquired: 06/10/2022 17:00:00 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: RB-21499 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0357920	-.021058	.1413340	.0042995	.0132011	134.5864	.6930121
Stddev	.0069482	.002480	.0050471	.0049398	.0019771	.3002	.0009258
%RSD	19.41271	11.77554	3.571042	114.8922	14.97708	.2230860	.1335852

#1	.0419082	-.020038	.1456859	.0096256	.0129027	134.5187	.6935417
#2	.0372306	-.019250	.1358011	.0034045	.0113901	134.3258	.6935515
#3	.0282371	-.023884	.1425149	-.000132	.0153104	134.9148	.6919431

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0070494	-.000152	129.4778	.3148508	.2037656	.9204698	321.7870
Stddev	.0001873	.000096	.2487	.0008028	.0010411	.0027950	1.9784
%RSD	2.657579	63.13133	.1920834	.2549758	.5109120	.3036540	.6148108

#1	.0069889	-.000203	129.4720	.3140421	.2029200	.9234331	320.5295
#2	.0068998	-.000041	129.7293	.3156475	.2034484	.9178807	324.0674
#3	.0072595	-.000211	129.2320	.3148629	.2049283	.9200956	320.7641

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.230473	105.3444	.3625495	-.002601	7.724224	.5699858	.5925788
Stddev	.031537	.7874	.0017029	.000756	.269055	.0055014	.0047637
%RSD	.6029477	.7474858	.4696937	29.08295	3.483266	.9651819	.8038933

#1	5.207897	104.8958	.3607237	-.002700	7.420002	.5657061	.5979611
#2	5.266506	106.2536	.3628304	-.001800	7.821767	.5680602	.5889048
#3	5.217017	104.8837	.3640945	-.003303	7.930902	.5761912	.5908706

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.497368	10.43634	.5902525	.0023009	1.380425	4.064471	.0251263
Stddev	.034843	.11896	.0019546	.0000974	.009962	.055909	.0020519
%RSD	.6338154	1.139868	.3311432	4.231350	.7216797	1.375561	8.166383

#1	5.501898	10.40584	.5911451	.0023680	1.385771	4.048715	.0258430
#2	5.529725	10.33561	.5916014	.0021892	1.386573	4.018131	.0228122
#3	5.460482	10.56759	.5880110	.0023456	1.368931	4.126568	.0267238

Sample Name: N3234-02 Acquired: 06/10/2022 17:00:00 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: RB-21499 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	12.00203	.1817071	.2448656
Stddev	.04247	.0007471	.0004517
%RSD	.3538697	.4111512	.1844612

#1	12.02542	.1808477	.2445006
#2	11.95301	.1822018	.2453707
#3	12.02767	.1820718	.2447255

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1193.500	1945.884	26215.30	8735.567	1874.014
Stddev	7.378	1.993	70.43	11.493	5.987
%RSD	.6182096	.1024171	.2686714	.1315680	.3195006

#1	1186.290	1948.184	26229.95	8748.477	1879.964
#2	1193.175	1944.662	26138.69	8731.779	1874.088
#3	1201.036	1944.807	26277.25	8726.447	1867.990

Sample Name: N3251-01 Acquired: 06/10/2022 17:03:42 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: NB-8-060822 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0257804	-.014495	.1621305	.0029425	.0068560	67.20618	.3824302
Stddev	.0018783	.001103	.0039045	.0039713	.0024661	.35805	.0011423
%RSD	7.285823	7.609149	2.408249	134.9641	35.96961	.5327616	.2986847

#1	.0236189	-.013387	.1640427	.0074101	.0096805	66.87830	.3834116
#2	.0270162	-.014506	.1576384	-.000187	.0057570	67.15201	.3827027
#3	.0267061	-.015592	.1647103	.001604	.0051305	67.58823	.3811764

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0061413	.0018224	222.1196	.1891309	.0774914	.2627919	171.7894
Stddev	.0000539	.0001753	1.4510	.0007338	.0005618	.0018698	1.1926
%RSD	.8771852	9.618403	.6532701	.3879887	.7250158	.7115237	.6942256

#1	.0061745	.0016631	222.0860	.1889192	.0781397	.2635856	171.7761
#2	.0061702	.0017938	223.5872	.1899473	.0771463	.2606561	172.9886
#3	.0060791	.0020102	220.6857	.1885263	.0771883	.2641339	170.6035

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.570390	145.0795	.1074300	-.000364	4.263411	.2477050	.4104560
Stddev	.017151	.7366	.0007061	.000572	.327716	.0017337	.0041362
%RSD	.6672366	.5077295	.6572607	157.2382	7.686718	.6998862	1.007715

#1	2.570195	145.1454	.1079734	-.000056	3.884997	.2464468	.4147223
#2	2.587638	145.7809	.1076846	-.000011	4.452923	.2496825	.4064634
#3	2.553338	144.3121	.1066319	-.001024	4.452313	.2469856	.4101823

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.643734	2.829456	.1199693	.0047443	5.220029	3.115451	.0202206
Stddev	.041738	.022711	.0025569	.0004446	.031512	.047024	.0007757
%RSD	1.145472	.8026470	2.131280	9.371467	.6036828	1.509377	3.836354

#1	3.652745	2.855473	.1228983	.0044558	5.253922	3.151179	.0210017
#2	3.598226	2.819292	.1188267	.0045208	5.191615	3.132998	.0194503
#3	3.680230	2.813603	.1181830	.0052563	5.214552	3.062177	.0202098

Sample Name: N3251-01 Acquired: 06/10/2022 17:03:42 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: NB-8-060822 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.422549	.0809355	.2347828
Stddev	.008859	.0014451	.0006459
%RSD	.3656986	1.785462	.2750971

#1	2.417119	.0817841	.2343209
#2	2.417755	.0792670	.2355209
#3	2.432772	.0817555	.2345067

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1045.189	1710.014	22925.00	7714.810	1878.760
Stddev	10.502	3.242	41.61	30.952	4.196
%RSD	1.004788	.1896069	.1815105	.4011978	.2233487

#1	1034.721	1709.827	22950.09	7744.676	1880.466
#2	1055.724	1713.346	22947.94	7682.876	1881.834
#3	1045.123	1706.870	22876.97	7716.876	1873.979

Sample Name: N3123-07 Acquired: 06/10/2022 17:07:29 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0547498	-.000713	.0251078	.0153175	.0084050	608.0624	.4020850
Stddev	.0055634	.005741	.0041426	.0061366	.0016266	6.0206	.0041737
%RSD	10.16155	805.2343	16.49941	40.06270	19.35207	.9901356	1.038023

#1	.0484631	.005898	.0267741	.0148548	.0076158	612.5241	.4067791
#2	.0567488	-.004449	.0281579	.0216723	.0073237	610.4487	.3987924
#3	.0590376	-.003589	.0203915	.0094253	.0102756	601.2144	.4006836

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0008934	-.002314	50.24413	.0280609	.0076604	.1274680	19.12228
Stddev	.0000572	.000124	.57185	.0007271	.0004596	.0020453	.18759
%RSD	6.401529	5.336911	1.138146	2.590987	6.000022	1.604538	.9809832

#1	.0009586	-.002412	50.89463	.0274133	.0073637	.1279525	19.33545
#2	.0008514	-.002175	50.01714	.0288474	.0081899	.1292275	18.98241
#3	.0008703	-.002355	49.82063	.0279222	.0074277	.1252240	19.04898

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.61506	14.48332	.0359471	.0001620	73.89800	.0108343	.3701042
Stddev	.11513	.11506	.0006387	.0003257	.67864	.0021436	.0029927
%RSD	.9912177	.7944452	1.776701	201.0286	.9183469	19.78535	.8086137

#1	11.74680	14.60639	.0365584	.0000519	73.16250	.0125645	.3667117
#2	11.56459	14.46513	.0359986	.0005285	74.49991	.0115023	.3712306
#3	11.53378	14.37844	.0352842	-.000094	74.03160	.0084363	.3723702

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.602976	41.92392	.0493629	-.000233	39.44625	21.31867	.0039562
Stddev	.090452	.05743	.0014228	.000439	.01900	.34943	.0016501
%RSD	5.642767	.1369777	2.882229	188.7740	.0481720	1.639066	41.70983

#1	1.699325	41.89615	.0509681	.000198	39.42437	21.71528	.0058512
#2	1.519884	41.98996	.0482575	-.000680	39.45866	21.18462	.0028359
#3	1.589721	41.88566	.0488630	-.000215	39.45572	21.05612	.0031817

Sample Name: N3123-07 Acquired: 06/10/2022 17:07:29 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0758588	.0009537	.1752457
Stddev	.0011418	.0007335	.0005631
%RSD	1.505192	76.90815	.3213400

#1	.0745793	.0009643	.1758730
#2	.0762230	.0016819	.1750803
#3	.0767741	.0002150	.1747838

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1096.820	1788.308	23515.07	8092.945	1892.161
Stddev	12.141	3.769	75.33	73.979	.532
%RSD	1.106907	.2107633	.3203342	.9141155	.0280971

#1	1095.216	1790.819	23548.07	8007.719	1891.855
#2	1109.684	1790.132	23568.26	8130.528	1892.775
#3	1085.562	1783.974	23428.87	8140.588	1891.853

Sample Name: N3157-07 Acquired: 06/10/2022 17:11:24 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0575576	.0046535	.0268866	.0217838	.0160248	819.8907	.4756706
Stddev	.0067072	.0064136	.0040587	.0062707	.0026509	8.4211	.0034894
%RSD	11.65307	137.8231	15.09570	28.78612	16.54227	1.027095	.7335676
#1	.0509863	.0120140	.0222814	.0170096	.0157105	810.1868	.4734275
#2	.0572936	.0002655	.0299425	.0288854	.0135451	825.2810	.4796908
#3	.0643930	.0016810	.0284358	.0194562	.0188188	824.2043	.4738936
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0010871	-.003154	51.25605	.0344568	.0088604	.1419075	14.60255
Stddev	.0000494	.000111	.37443	.0004125	.0004805	.0015292	.11933
%RSD	4.541932	3.525717	.7305091	1.197258	5.423323	1.077604	.8171807
#1	.0011316	-.003027	51.00946	.0341286	.0084236	.1405173	14.49277
#2	.0010956	-.003232	51.68691	.0343219	.0093752	.1416596	14.72956
#3	.0010340	-.003203	51.07179	.0349199	.0087824	.1435454	14.58533
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	14.01354	13.92385	.0436275	.0001434	72.01394	.0075631	.4567488
Stddev	.09460	.09618	.0006052	.0003359	.26886	.0009109	.0025792
%RSD	.6750897	.6907449	1.387170	234.2619	.3733404	12.04425	.5646944
#1	13.94504	13.82525	.0441788	-.000036	72.32346	.0073605	.4548384
#2	14.12148	14.01741	.0437238	.000531	71.83847	.0085582	.4596827
#3	13.97410	13.92888	.0429800	-.000064	71.87988	.0067705	.4557253
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.741234	56.36911	.0445614	-.001894	47.03518	25.64942	.0074840
Stddev	.031973	.18632	.0019075	.000726	.14069	.05826	.0017555
%RSD	1.836200	.3305322	4.280574	38.33110	.2991177	.2271230	23.45693
#1	1.754671	56.58394	.0465792	-.002705	47.19373	25.67200	.0056524
#2	1.764294	56.27169	.0443175	-.001305	46.92525	25.58325	.0076477
#3	1.704735	56.25170	.0427877	-.001672	46.98656	25.69300	.0091519

Sample Name: N3157-07 Acquired: 06/10/2022 17:11:24 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0507341	.0013765	.1831747
Stddev	.0013836	.0012159	.0003102
%RSD	2.727083	88.33136	.1693729

#1	.0519697	.0009336	.1833082
#2	.0492393	.0027518	.1833958
#3	.0509932	.0004442	.1828200

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1105.750	1788.963	23568.98	8247.203	1840.145
Stddev	9.289	4.229	100.00	9.039	.731
%RSD	.8400344	.2363940	.4243007	.1096029	.0397307

#1	1114.338	1784.176	23666.87	8244.960	1839.492
#2	1095.891	1790.518	23466.99	8239.496	1840.935
#3	1107.022	1792.194	23573.08	8257.152	1840.008

Sample Name: CCV02 Acquired: 06/10/2022 17:15:18 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: CCV18997 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.142269	5.095865	4.995227	5.185523	5.169445	10.18093	10.22952
Stddev	.037043	.021899	.011848	.025960	.013151	.02185	.02858
%RSD	.7203699	.4297390	.2371905	.5006329	.2544001	.2146543	.2794051

#1	5.123583	5.081442	4.996535	5.192976	5.175915	10.17330	10.26211
#2	5.118290	5.085090	4.982780	5.156651	5.154313	10.20557	10.21774
#3	5.184934	5.121064	5.006368	5.206941	5.178109	10.16391	10.20872

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2534672	2.504218	24.90117	1.007757	2.501312	1.280596	5.066032
Stddev	.0025055	.004712	.08730	.002182	.004849	.004606	.011804
%RSD	.9885067	.1881557	.3505693	.2165644	.1938594	.3596621	.2330099

#1	.2561888	2.505336	24.90475	1.007960	2.505209	1.282410	5.079611
#2	.2512563	2.499048	24.98662	1.005481	2.495882	1.275359	5.060277
#3	.2529566	2.508270	24.81214	1.009832	2.502846	1.284019	5.058210

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.536932	25.23595	2.522932	1.261226	25.17000	2.557023	2.543658
Stddev	.001561	.01630	.004728	.007030	.28332	.006131	.020392
%RSD	.0615450	.0645779	.1873978	.5574085	1.125644	.2397571	.8016844

#1	2.535143	25.23614	2.527016	1.266855	25.49605	2.560078	2.531521
#2	2.537635	25.25216	2.517753	1.263478	25.03028	2.561026	2.532252
#3	2.538018	25.21956	2.524029	1.253346	24.98368	2.549965	2.567201

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	24.70958	5.080755	5.047166	5.178677	5.038870	5.032816	5.042598
Stddev	.09534	.018975	.049669	.017981	.034966	.049675	.020015
%RSD	.3858256	.3734608	.9840932	.3472128	.6939271	.9870245	.3969205

#1	24.69030	5.090616	5.095187	5.180604	5.035817	5.085712	5.033983
#2	24.62535	5.058880	4.995999	5.159811	5.005532	4.987155	5.028333
#3	24.81308	5.092769	5.050312	5.195618	5.075263	5.025581	5.065478

Sample Name: CCV02 Acquired: 06/10/2022 17:15:18 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: CCV18997 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	5.018889	5.056292	5.128525
Stddev	.010725	.009512	.001956
%RSD	.2136976	.1881300	.0381430

#1	5.008638	5.066949	5.130590
#2	5.030033	5.048660	5.128284
#3	5.017996	5.053266	5.126700

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	959.5926	1574.626	21163.33	7006.355	1938.884
Stddev	5.3103	3.862	152.13	29.046	3.418
%RSD	.5533872	.2452467	.7188571	.4145683	.1762726

#1	964.6029	1572.200	21180.59	6974.066	1935.212
#2	954.0261	1579.079	21003.31	7014.641	1941.973
#3	960.1489	1572.599	21306.10	7030.357	1939.466

Sample Name: CCB02 Acquired: 06/10/2022 17:19:03 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: CCB18997 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.002893	.0029752	-.000800	.0026072	.0029308	.0274113	.0002820
Stddev	.006114	.0029352	.001171	.0024570	.0005823	.0037735	.0000670
%RSD	211.3250	98.65536	146.3324	94.24044	19.86695	13.76629	23.74393

#1	-.005710	.0001987	.000370	.0021187	.0022738	.0250238	.0002381
#2	.004121	.0026801	-.000799	.0004311	.0031356	.0254485	.0003590
#3	-.007090	.0060468	-.001971	.0052717	.0033830	.0317617	.0002488

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000025	-.000023	.0015507	.0004518	.0000088	-.001533	.0103184
Stddev	.000101	.000085	.0173822	.0004878	.0001419	.000987	.0046309
%RSD	398.9664	365.5844	1120.909	107.9513	1620.390	64.37904	44.88002

#1	-.000103	.000069	-.001125	.0007293	.0001490	-.000524	.0143407
#2	-.000062	-.000100	.020115	.0007376	.0000121	-.001577	.0052558
#3	.000089	-.000039	-.014339	-.000111	-.000135	-.002496	.0113585

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007867	.0193062	-.000061	.0000167	-.190825	.0036143	-.005962
Stddev	.0009432	.0157845	.000218	.0006047	.534459	.0021479	.000615
%RSD	119.8957	81.75880	358.0331	3624.045	280.0777	59.42833	10.31276

#1	.0018259	.0236211	.000075	.0007124	.421228	.0037763	-.005414
#2	-.000015	.0018130	.000055	-.000383	-.428374	.0013900	-.005844
#3	.000550	.0324847	-.000313	-.000279	-.565330	.0056767	-.006627

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.411974	.0040025	.0120525	.0007331	-.002468	.0013728	.0013129
Stddev	.069336	.0031648	.0004038	.0000432	.005866	.0024623	.0007152
%RSD	16.83026	79.06954	3.350779	5.893946	237.6761	179.3626	54.47153

#1	-.447135	.0047773	.0121978	.0006855	-.004255	.0028669	.0015293
#2	-.456686	.0067079	.0123636	.0007699	.004084	.0027208	.0005145
#3	-.332102	.0005223	.0115961	.0007439	-.007233	-.001469	.0018949

Sample Name: CCB02 Acquired: 06/10/2022 17:19:03 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: CCB18997 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.000298	.0000555	.0001224
Stddev	.001095	.0003366	.0000491
%RSD	367.7249	606.3307	40.11039

#1	.000661	-.000001	.0001256
#2	-.000063	-.000249	.0001697
#3	-.001491	.000417	.0000717

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	977.9916	1613.154	21395.46	7118.500	2044.401
Stddev	3.1448	1.532	35.32	33.256	3.072
%RSD	.3215543	.0949597	.1650610	.4671758	.1502855

#1	978.2728	1613.833	21365.37	7155.575	2041.978
#2	974.7157	1614.229	21434.34	7108.625	2047.857
#3	980.9864	1611.400	21386.68	7091.300	2043.368

Sample Name: N3267-01 Acquired: 06/10/2022 17:23:43 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: OR-2-060822 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0385468	-.028367	.3980005	.0045844	.0093984	129.4434	.6771796
Stddev	.0017695	.004574	.0001772	.0016373	.0016933	.6261	.0024424
%RSD	4.590631	16.12288	.0445228	35.71370	18.01694	.4836781	.3606740

#1	.0385622	-.023146	.3981266	.0058721	.0081733	128.7867	.6743661
#2	.0403086	-.031666	.3980769	.0051392	.0086913	130.0336	.6787551
#3	.0367697	-.030289	.3977979	.0027418	.0113307	129.5099	.6784176

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0074729	.0007980	79.94389	.1603237	.1489746	.9572979	261.2245
Stddev	.0000398	.0001528	.39103	.0022431	.0009169	.0068255	1.0293
%RSD	.5320044	19.14429	.4891250	1.399125	.6154923	.7130019	.3940363

#1	.0074334	.0009739	79.49255	.1629030	.1487779	.9494363	260.0374
#2	.0074723	.0007209	80.15870	.1592392	.1481719	.9617127	261.8695
#3	.0075129	.0006991	80.18042	.1588289	.1499739	.9607447	261.7665

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.485102	55.84405	.2629228	-.000887	17.55990	.3987134	.6026099
Stddev	.031533	.26057	.0015363	.000193	.22471	.0040356	.0081911
%RSD	.5748790	.4666090	.5843163	21.73726	1.279656	1.012156	1.359267

#1	5.448772	55.56819	.2646967	-.000670	17.59244	.3944555	.6067023
#2	5.505370	56.08603	.2620413	-.001038	17.76655	.4024821	.6079482
#3	5.501164	55.87792	.2620303	-.000953	17.32069	.3992024	.5931790

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.867579	9.957652	.2508395	.0064997	8.440230	3.401299	.0223106
Stddev	.006477	.068601	.0018205	.0003422	.053245	.008180	.0009960
%RSD	.0656343	.6889273	.7257590	5.264942	.6308451	.2404944	4.464230

#1	9.868858	9.885096	.2487438	.0068933	8.380195	3.403679	.0225906
#2	9.873320	10.02146	.2520295	.0062723	8.458764	3.392193	.0231366
#3	9.860558	9.96640	.2517452	.0063336	8.481731	3.408026	.0212046

Sample Name: N3267-01 Acquired: 06/10/2022 17:23:43 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: OR-2-060822 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	3.726355	.1145237	.2864105
Stddev	.004979	.0004007	.0007207
%RSD	.1336044	.3498880	.2516204

#1	3.720608	.1141812	.2855788
#2	3.729126	.1149644	.2868503
#3	3.729332	.1144257	.2868024

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1278.740	2058.248	27797.07	9290.274	1917.327
Stddev	14.121	3.371	225.96	44.147	4.130
%RSD	1.104326	.1637783	.8128936	.4751928	.2154077

#1	1294.695	2058.712	27978.19	9322.692	1920.932
#2	1273.679	2061.362	27869.17	9239.995	1918.229
#3	1267.846	2054.669	27543.86	9308.134	1912.821

Sample Name: N3172-07 Acquired: 06/10/2022 17:27:29 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0723210	.0039537	.0406530	.0189187	.0140928	998.9725	.5743235
Stddev	.0053928	.0084048	.0045799	.0118646	.0047839	17.2996	.0026106
%RSD	7.456762	212.5770	11.26574	62.71371	33.94562	1.731742	.4545513

#1	.0688261	.0129848	.0378785	.0177677	.0193526	985.1925	.5729690
#2	.0785318	-.003639	.0381413	.0313169	.0100012	993.3383	.5726686
#3	.0696050	.002516	.0459392	.0076715	.0129246	1018.387	.5773330

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0014597	-.003962	51.44306	.0445379	.0123409	.1981387	27.86384
Stddev	.0000208	.000259	.16773	.0004218	.0002073	.0008892	.11470
%RSD	1.425274	6.539556	.3260483	.9470805	1.679827	.4487660	.4116530

#1	.0014821	-.004261	51.42543	.0440885	.0125515	.1988509	27.92414
#2	.0014409	-.003825	51.28484	.0449252	.0123341	.1984232	27.73156
#3	.0014562	-.003801	51.61891	.0445999	.0121371	.1971421	27.93581

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	16.76406	13.23586	.0606703	.0005607	65.76201	.0147219	.5467988
Stddev	.06137	.04905	.0003685	.0001558	.61980	.0016650	.0018663
%RSD	.3660837	.3705865	.6073436	27.78868	.9424834	11.30938	.3413071

#1	16.77582	13.22325	.0603880	.0006465	65.14448	.0152902	.5466915
#2	16.69766	13.19434	.0610871	.0003809	65.75750	.0160284	.5449886
#3	16.81870	13.28998	.0605358	.0006548	66.38404	.0128472	.5487164

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.599612	72.69505	.0542179	-.001695	52.80710	30.82007	.0023878
Stddev	.025180	.36091	.0004903	.001227	.22184	.20477	.0019918
%RSD	1.574132	.4964709	.9043386	72.38394	.4200897	.6643913	83.41693

#1	1.627252	72.35123	.0543469	-.001644	52.57097	31.05481	.0020742
#2	1.577977	73.07091	.0536760	-.002946	53.01115	30.67817	.0005714
#3	1.593608	72.66303	.0546308	-.000494	52.83917	30.72723	.0045178

Sample Name: N3172-07 Acquired: 06/10/2022 17:27:29 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.1235163	.0029941	.1875713
Stddev	.0020377	.0010299	.0003076
%RSD	1.649718	34.39655	.1639721

#1	.1227499	.0036042	.1877929
#2	.1258261	.0035731	.1872201
#3	.1219730	.0018051	.1877008

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1145.533	1851.595	24367.46	8628.866	1825.919
Stddev	22.712	9.422	226.69	43.457	4.814
%RSD	1.982668	.5088463	.9303094	.5036289	.2636336

#1	1137.325	1856.183	24356.33	8610.884	1831.139
#2	1128.065	1857.845	24146.53	8678.429	1824.966
#3	1171.208	1840.758	24599.51	8597.286	1821.654

Sample Name: N3198-07 Acquired: 06/10/2022 17:31:24 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0956164	-.005397	.0412184	.0174142	.0157071	1179.713	.6646854
Stddev	.0071202	.005731	.0069121	.0072068	.0045624	16.208	.0044373
%RSD	7.446623	106.1884	16.76952	41.38469	29.04662	1.373885	.6675828
#1	.0941991	-.007094	.0420009	.0091388	.0104675	1168.593	.6595660
#2	.1033387	-.010089	.0339483	.0223113	.0178527	1198.309	.6674279
#3	.0893115	.000991	.0477060	.0207923	.0188012	1172.236	.6670624
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0016600	-.004992	52.65062	.0507643	.0143484	.2326409	32.26546
Stddev	.0000690	.000118	.42834	.0005183	.0002665	.0027122	.25737
%RSD	4.158707	2.371613	.8135516	1.020904	1.857458	1.165850	.7976783
#1	.0017388	-.005043	52.27799	.0513437	.0146390	.2346025	32.03150
#2	.0016104	-.004857	53.11860	.0503451	.0141154	.2337745	32.54115
#3	.0016307	-.005076	52.55527	.0506040	.0142908	.2295458	32.22372
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	19.85504	13.06977	.0710831	.0005266	62.96662	.0177931	.6334420
Stddev	.13433	.15699	.0004601	.0003138	.19115	.0050200	.0035566
%RSD	.6765766	1.201138	.6472210	59.59176	.3035733	28.21322	.5614673
#1	19.76220	12.89012	.0712143	.0005696	63.18107	.0224690	.6366327
#2	20.00908	13.13862	.0705717	.0001935	62.81416	.0124883	.6340859
#3	19.79384	13.18057	.0714634	.0008167	62.90463	.0184220	.6296075
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.699489	80.67274	.0561366	-.001503	59.25623	35.76368	.0070360
Stddev	.025585	.37680	.0016192	.000878	.20101	.34451	.0035652
%RSD	1.505460	.4670666	2.884451	58.45815	.3392191	.9633037	50.67168
#1	1.729032	80.23954	.0544154	-.002471	59.02426	35.94417	.0030176
#2	1.684679	80.85426	.0576296	-.000758	59.36525	35.98046	.0098201
#3	1.684756	80.92441	.0563649	-.001279	59.37917	35.36643	.0082703

Sample Name: N3198-07 Acquired: 06/10/2022 17:31:24 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.1454434	.0027227	.1960206
Stddev	.0008660	.0011599	.0007125
%RSD	.5953959	42.60065	.3634943

#1	.1451813	.0025624	.1960186
#2	.1464101	.0016513	.1967342
#3	.1447388	.0039544	.1953091

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1161.997	1887.734	24619.07	8827.809	1789.018
Stddev	16.491	2.367	139.29	79.954	6.305
%RSD	1.419160	.1253949	.5657660	.9057073	.3524204

#1	1155.628	1890.457	24586.21	8814.495	1793.438
#2	1149.641	1886.163	24499.16	8755.348	1791.818
#3	1180.722	1886.583	24771.85	8913.585	1781.798

Sample Name: N3282-01 Acquired: 06/10/2022 17:39:07 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: 125 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0271082	-.022471	.1119070	.0047223	.0065754	189.1232	.4298385
Stddev	.0028580	.001729	.0015895	.0013288	.0007650	.3377	.0018723
%RSD	10.54288	7.696425	1.420373	28.13893	11.63480	.1785465	.4355835
#1	.0238147	-.021458	.1132699	.0058963	.0059065	188.7473	.4285174
#2	.0285731	-.024468	.1122901	.0032797	.0074096	189.2212	.4290170
#3	.0289367	-.021487	.1101609	.0049908	.0064101	189.4010	.4319812
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0080293	-.000629	.5544984	.1683241	.0791804	.1868799	201.6487
Stddev	.0001082	.000176	.0539902	.0012782	.0005039	.0018109	.4378
%RSD	1.347797	27.93491	9.736764	.7593621	.6364034	.9689992	.2171336
#1	.0079049	-.000705	.6144822	.1676000	.0788593	.1865019	201.9008
#2	.0080811	-.000753	.5392170	.1698000	.0789207	.1852879	201.1431
#3	.0081019	-.000428	.5097960	.1675724	.0797612	.1888500	201.9021
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.265262	33.22186	.1882489	-.001302	1.915912	.2625034	.4165316
Stddev	.001537	.09334	.0009678	.000921	.217472	.0028494	.0037374
%RSD	.1214706	.2809628	.5141158	70.76057	11.35084	1.085484	.8972578
#1	1.265177	33.23704	.1871926	-.000248	1.664880	.2592477	.4126124
#2	1.263769	33.12186	.1884613	-.001954	2.047032	.2637196	.4200558
#3	1.266840	33.30668	.1890929	-.001704	2.035824	.2645430	.4169266
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.460171	3.300624	.1176685	.0007249	1.326095	2.880080	.0256813
Stddev	.078585	.036349	.0027167	.0006591	.018393	.079524	.0011496
%RSD	3.194294	1.101275	2.308790	90.91105	1.387030	2.761179	4.476572
#1	2.375347	3.259459	.1205494	-.000035	1.304862	2.808001	.0243628
#2	2.474666	3.314113	.1151529	.001142	1.337161	2.866850	.0264740
#3	2.530499	3.328301	.1173032	.001067	1.336260	2.965390	.0262072

Sample Name: N3282-01 Acquired: 06/10/2022 17:39:07 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: 125 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.570379	.1637025	.0444474
Stddev	.014227	.0015467	.0001204
%RSD	.5534900	.9448383	.2709524

#1	2.554722	.1621638	.0443363
#2	2.573899	.1652572	.0444305
#3	2.582514	.1636864	.0445754

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1140.181	1882.240	24789.92	8358.219	1970.645
Stddev	19.347	4.593	101.07	69.442	7.821
%RSD	1.696843	.2440273	.4076950	.8308184	.3969003

#1	1161.139	1884.883	24863.97	8408.125	1978.651
#2	1136.400	1884.901	24831.02	8387.617	1970.264
#3	1123.003	1876.936	24674.78	8278.913	1963.021

Sample Name: N3295-01 Acquired: 06/10/2022 17:42:52 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: OR-03-060922 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0414489	-.023638	.2861320	.0064962	.0121607	132.5718	.5700532
Stddev	.0023053	.001762	.0042929	.0033171	.0017246	.0246	.0029601
%RSD	5.561857	7.454701	1.500319	51.06161	14.18170	.0185429	.5192593

#1	.0406812	-.025614	.2833434	.0102323	.0122222	132.5997	.5704212
#2	.0396254	-.022229	.2839771	.0053586	.0138537	132.5534	.5669263
#3	.0440402	-.023072	.2910755	.0038976	.0104062	132.5623	.5728120

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0081015	.0002497	115.5749	.2231706	.1249301	.3136538	253.3774
Stddev	.0000787	.0000901	.5462	.0009544	.0004862	.0017942	1.4584
%RSD	.9714986	36.09213	.4725853	.4276461	.3891372	.5720446	.5755880

#1	.0081817	.0001472	115.6344	.2227972	.1244152	.3119862	253.1484
#2	.0080244	.0002856	115.0014	.2224595	.1249939	.3134228	252.0470
#3	.0080984	.0003164	116.0889	.2242553	.1253812	.3155523	254.9367

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.302697	62.36165	.2642299	-.001804	7.999224	.3361332	.7199330
Stddev	.019919	.42570	.0009181	.000157	.027639	.0025716	.0043229
%RSD	.3756473	.6826354	.3474579	8.730728	.3455156	.7650644	.6004628

#1	5.308462	62.51705	.2652704	-.001961	7.976907	.3375996	.7150446
#2	5.280531	61.88008	.2635341	-.001646	7.990625	.3331638	.7232522
#3	5.319098	62.68782	.2638851	-.001804	8.030140	.3376362	.7215021

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.895650	7.034844	.1628433	.0012352	10.66266	1.831747	.0226895
Stddev	.050636	.052988	.0008883	.0003127	.06667	.022334	.0001450
%RSD	.5116967	.7532249	.5454800	25.31415	.6252775	1.219295	.6391867

#1	9.885418	7.041028	.1627939	.0008766	10.66508	1.846147	.0225378
#2	9.850912	6.979036	.1619807	.0014512	10.59482	1.806018	.0227039
#3	9.950621	7.084470	.1637552	.0013779	10.72809	1.843075	.0228268

Sample Name: N3295-01 Acquired: 06/10/2022 17:42:52 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: OR-03-060922 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.247368	.2118885	.2583414
Stddev	.008679	.0014665	.0004402
%RSD	.2043411	.6920867	.1704131

#1	4.241868	.2131645	.2583217
#2	4.257374	.2102865	.2579113
#3	4.242863	.2122146	.2587911

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1133.594	1863.544	24899.18	8391.427	1882.110
Stddev	8.901	4.746	235.47	67.652	5.146
%RSD	.7852122	.2546622	.9457073	.8061989	.2734259

#1	1132.037	1868.504	24662.75	8361.632	1883.195
#2	1143.171	1863.080	25133.69	8468.862	1886.627
#3	1125.574	1859.047	24901.12	8343.787	1876.508

Sample Name: N3296-01 Acquired: 06/10/2022 17:46:36 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: OK-03-060922 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0642222	-.032420	.2649186	.0069257	.0131960	167.8305	.7059579
Stddev	.0047950	.001981	.0030319	.0015274	.0003025	.2843	.0024840
%RSD	7.466234	6.111240	1.144450	22.05381	2.292109	.1694159	.3518663
#1	.0610352	-.034386	.2662329	.0056625	.0130486	168.0144	.7031177
#2	.0697366	-.030424	.2614514	.0064915	.0129955	167.9741	.7070309
#3	.0618947	-.032451	.2670716	.0086232	.0135439	167.5030	.7077250
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0087321	.0012278	166.9521	.2581849	.2002063	.4965207	317.7963
Stddev	.0000858	.0001409	.4404	.0013687	.0010240	.0024849	1.3848
%RSD	.9821081	11.47332	.2637741	.5301129	.5114870	.5004696	.4357567
#1	.0087810	.0011253	166.4441	.2591900	.2005789	.4963221	316.3390
#2	.0086331	.0013885	167.1860	.2566261	.1990481	.4990989	317.9548
#3	.0087822	.0011697	167.2261	.2587385	.2009918	.4941410	319.0951
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.949113	80.89142	.3715429	-.002050	14.00337	.6260643	.7673223
Stddev	.018396	.39930	.0011720	.001239	.18442	.0040614	.0049295
%RSD	.3717012	.4936197	.3154432	60.42168	1.317004	.6487183	.6424347
#1	4.929425	80.44703	.3709423	-.003421	14.20675	.6221337	.7616658
#2	4.952051	81.00719	.3707929	-.001011	13.95634	.6258143	.7707020
#3	4.965863	81.22003	.3728935	-.001718	13.84701	.6302450	.7695990
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.67711	11.74829	.2002086	.0053943	26.11773	1.914139	.0257777
Stddev	.09405	.05679	.0047737	.0004212	.16089	.035240	.0005799
%RSD	.7419061	.4833940	2.384347	7.808552	.6160205	1.841030	2.249628
#1	12.71913	11.72104	.1956467	.0051138	26.03590	1.949765	.0251308
#2	12.56937	11.71027	.1998101	.0058787	26.01420	1.879298	.0262508
#3	12.74283	11.81358	.2051691	.0051906	26.30309	1.913353	.0259516

Sample Name: N3296-01 Acquired: 06/10/2022 17:46:36 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: OK-03-060922 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	6.090481	.1830100	.3075406
Stddev	.017754	.0007083	.0004276
%RSD	.2914976	.3870156	.1390252

#1	6.096901	.1822198	.3078695
#2	6.104131	.1835877	.3076950
#3	6.070410	.1832225	.3070573

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1202.544	1982.129	26459.40	8936.272	1829.852
Stddev	4.116	3.135	91.83	42.208	2.094
%RSD	.3422882	.1581651	.3470728	.4723256	.1144447

#1	1204.382	1982.496	26414.66	8896.839	1830.629
#2	1205.421	1985.065	26565.03	8980.794	1831.447
#3	1197.829	1978.827	26398.52	8931.184	1827.481

Sample Name: N3302-01 Acquired: 06/10/2022 17:50:17 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: I-1 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0432166	-.003190	.1173856	.0024900	.0058286	69.56570	.2392738
Stddev	.0007210	.002392	.0012124	.0023833	.0012753	.29474	.0004575
%RSD	1.668316	75.00253	1.032806	95.71244	21.88042	.4236836	.1911970
#1	.0427273	-.000623	.1187791	-.000127	.0067228	69.45475	.2388809
#2	.0428779	-.005357	.1165724	.003060	.0043682	69.89982	.2391644
#3	.0440446	-.003589	.1168055	.004537	.0063947	69.34255	.2397761
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0043419	-.000721	25.15766	.1273172	.0190909	.0712414	113.6723
Stddev	.0001491	.000113	.03667	.0010448	.0004093	.0011788	.1749
%RSD	3.434869	15.73115	.1457620	.8206708	2.143856	1.654648	.1538852
#1	.0041898	-.000744	25.11534	.1265928	.0187965	.0700119	113.8559
#2	.0044879	-.000822	25.17762	.1268438	.0189180	.0723619	113.6534
#3	.0043480	-.000598	25.18002	.1285149	.0195583	.0713504	113.5076
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5071318	12.37650	.0427623	.0005509	4.545166	.1984606	.2308353
Stddev	.0013909	.12844	.0004899	.0005230	.207860	.0041374	.0008265
%RSD	.2742620	1.037752	1.145511	94.92880	4.573220	2.084725	.3580401
#1	.5067081	12.29611	.0433231	-.000019	4.753690	.1992618	.2307785
#2	.5086852	12.30876	.0425458	.000664	4.543831	.1939813	.2316887
#3	.5060020	12.52462	.0424180	.001008	4.337976	.2021388	.2300386
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.154090	1.903966	.0682350	.0121755	2.311847	2.948412	.0117645
Stddev	.127978	.003608	.0018364	.0004318	.018366	.047850	.0004505
%RSD	11.08909	.1895190	2.691210	3.546256	.7944117	1.622900	3.829656
#1	1.024038	1.900184	.0682075	.0118161	2.290642	2.975063	.0121998
#2	1.279888	1.904342	.0700850	.0126544	2.322697	2.977003	.0117936
#3	1.158345	1.907371	.0664126	.0120560	2.322201	2.893172	.0113001

Sample Name: N3302-01 Acquired: 06/10/2022 17:50:17 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: I-1 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.144013	.0305086	.0914848
Stddev	.012040	.0011529	.0008506
%RSD	1.052423	3.778819	.9297332

#1	1.130513	.0304098	.0910389
#2	1.153641	.0294084	.0924656
#3	1.147884	.0317077	.0909499

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1099.070	1791.298	23741.72	7879.546	2033.369
Stddev	5.153	6.753	29.17	21.091	7.778
%RSD	.4688251	.3769622	.1228750	.2676651	.3825267

#1	1103.287	1796.513	23750.36	7861.033	2039.346
#2	1093.327	1793.710	23709.21	7875.100	2036.184
#3	1100.598	1783.670	23765.60	7902.506	2024.575

Sample Name: N3302-02 Acquired: 06/10/2022 17:54:06 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: I-2 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0591805	-.019372	.1611744	.0055490	.0075047	100.5678	.3409530
Stddev	.0026858	.003920	.0017987	.0030579	.0030688	.1074	.0007914
%RSD	4.538360	20.23448	1.115977	55.10785	40.89158	.1067629	.2321163
#1	.0609207	-.017597	.1627554	.0021226	.0040751	100.4474	.3416335
#2	.0560872	-.023865	.1592175	.0080011	.0084476	100.6027	.3400845
#3	.0605335	-.016653	.1615503	.0065233	.0099914	100.6535	.3411410
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0060159	-.001203	32.72517	.1830492	.0635953	.1155843	169.8390
Stddev	.0000482	.000104	.08611	.0005261	.0005266	.0038899	.3402
%RSD	.8005506	8.665885	.2631397	.2874087	.8280921	3.365415	.2003319
#1	.0059721	-.001258	32.80217	.1828844	.0630386	.1135636	170.2316
#2	.0060675	-.001083	32.63219	.1836379	.0640856	.1200687	169.6564
#3	.0060080	-.001269	32.74116	.1826252	.0636616	.1131206	169.6291
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7428139	19.55813	.0777412	-.000257	5.490842	.3060265	.3229304
Stddev	.0044733	.03467	.0006902	.000198	.308061	.0036088	.0018148
%RSD	.6022118	.1772844	.8877825	77.26794	5.610459	1.179254	.5619660
#1	.7474644	19.56087	.0773561	-.000220	5.183443	.3026333	.3209454
#2	.7385418	19.59135	.0785380	-.000079	5.799562	.3056282	.3233413
#3	.7424355	19.52216	.0773294	-.000471	5.489522	.3098179	.3245045
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.779041	2.795621	.1039069	.0142210	2.408574	1.873650	.0158230
Stddev	.079205	.012797	.0028001	.0004225	.010737	.032951	.0002315
%RSD	2.095904	.4577507	2.694784	2.970583	.4457840	1.758651	1.462874
#1	3.869256	2.781455	.1064774	.0141791	2.396290	1.839414	.0155591
#2	3.746950	2.806345	.1043201	.0138211	2.413267	1.876390	.0159182
#3	3.720918	2.799061	.1009232	.0146629	2.416166	1.905145	.0159917

Sample Name: N3302-02 Acquired: 06/10/2022 17:54:06 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: I-2 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.533981	.0547427	.1597202
Stddev	.003219	.0012958	.0002169
%RSD	.2098356	2.367013	.1358083

#1	1.530731	.0535974	.1599375
#2	1.537168	.0544815	.1595037
#3	1.534044	.0561492	.1597195

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1080.101	1761.300	23447.67	7732.499	2029.060
Stddev	10.033	2.099	21.73	16.141	7.434
%RSD	.9288839	.1191543	.0926856	.2087455	.3663887

#1	1087.311	1763.598	23472.73	7728.467	2032.746
#2	1084.349	1759.485	23434.01	7750.274	2020.503
#3	1068.643	1760.816	23436.25	7718.756	2033.932

Sample Name: N3155-01 Acquired: 06/10/2022 17:57:54 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0110469	.0011111	.0065073	.0045178	.0027045	1.071330
Stddev	.0027371	.0039614	.0008951	.0035354	.0024582	.002118
%RSD	24.77738	356.5228	13.75575	78.25445	90.89336	.1976533

#1	.0137325	.0005999	.0071749	.0073857	.0000513	1.071807
#2	.0082610	.0053034	.0054901	.0055999	.0031574	1.069014
#3	.0111472	-.002570	.0068567	.0005678	.0049047	1.073168

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5381787	.0001103	.0000476	190.4893	.1289223	.0396808
Stddev	.0046289	.0000922	.0000886	1.3289	.0009625	.0005953
%RSD	.8600956	83.65190	186.0968	.6976062	.7466014	1.500253

#1	.5389306	.0000039	.0001344	189.3338	.1298492	.0403440
#2	.5423855	.0001683	.0000512	191.9414	.1279277	.0391925
#3	.5332199	.0001586	-.000043	190.1927	.1289901	.0395059

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0043107	1.698357	.0346133	98.81714	.0711506	.0002895
Stddev	.0027083	.015976	.0005343	.64012	.0010175	.0001731
%RSD	62.82708	.9406805	1.543486	.6477833	1.430081	59.79855

#1	.0013920	1.708884	.0340673	98.20774	.0715769	.0004520
#2	.0067425	1.706212	.0346377	99.48409	.0718856	.0003089
#3	.0047975	1.679974	.0351350	98.75958	.0699893	.0001075

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 2514.538	.0622696	.0202297	F 327.0105	.6792885	5.627052
Stddev	10.911	.0031474	.0003106	.8889	.0125270	.032420
%RSD	.4339029	5.054419	1.535566	.2718291	1.844139	.5761542

#1	2516.673	.0654070	.0202614	327.3928	.6654914	5.653311
#2	2524.223	.0591124	.0199044	327.6443	.6899495	5.590815
#3	2502.718	.0622894	.0205233	325.9944	.6824246	5.637029

Sample Name: N3155-01 Acquired: 06/10/2022 17:57:54 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0054558	65.36483	13.53778	.0455202	.0261302	.1342511
Stddev	.0006065	.11644	.07879	.0014390	.0008089	.0015850
%RSD	11.11694	.1781372	.5820182	3.161321	3.095483	1.180630

#1	.0059232	65.28714	13.59819	.0445345	.0257610	.1343658
#2	.0047704	65.30864	13.44866	.0448545	.0255719	.1357756
#3	.0056738	65.49871	13.56649	.0471716	.0270578	.1326118

Elem	Sr4077
Units	ppm
Avg	1.279822
Stddev	.007758
%RSD	.6062054

#1	1.272246
#2	1.287751
#3	1.279470

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	916.8132	1448.053	19515.15	6934.933	1567.655
Stddev	5.5339	2.298	64.72	34.789	2.155
%RSD	.6036043	.1587156	.3316224	.5016443	.1374508

#1	922.1025	1447.852	19556.11	6896.523	1565.611
#2	917.2735	1445.862	19548.80	6964.325	1569.906
#3	911.0634	1450.445	19440.54	6943.951	1567.449

Sample Name: N3222-01 Acquired: 06/10/2022 18:01:42 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005194	.0030273	.0038223	.0002628	-.000325	.1998726	.0015994
Stddev	.0035509	.0038486	.0003240	.0005504	.001089	.0059871	.0001589
%RSD	683.6706	127.1330	8.476684	209.4387	335.2083	2.995436	9.933074
#1	.0012535	-.000915	.0041956	.0008678	-.001129	.2038468	.0014346
#2	.0036458	.006774	.0036139	-.000209	.000914	.1929866	.0017515
#3	-.003341	.003223	.0036574	.000129	-.000760	.2027845	.0016120
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000041	.0000013	.1121447	.0005154	-.000287	.0901493	.0569047
Stddev	.000019	.0000622	.0100172	.0003455	.000300	.0026757	.0024923
%RSD	45.94814	4714.074	8.932413	67.02619	104.7755	2.968067	4.379713
#1	-.000026	.0000719	.1206563	.0003525	-.000073	.0918941	.0545562
#2	-.000034	-.000045	.1146720	.0009122	-.000156	.0870687	.0566385
#3	-.000062	-.000023	.1011059	.0002815	-.000630	.0914850	.0595194
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0037602	.0408866	.0013575	-.000117	.7840645	-.000171	.0974744
Stddev	.0004584	.0071705	.0004643	.000412	.1456984	.002627	.0006756
%RSD	12.19075	17.53754	34.19971	351.9254	18.58245	1532.959	.6931082
#1	.0038852	.0434016	.0011793	-.000272	.8907175	.002420	.0979970
#2	.0041431	.0464608	.0010087	.000350	.8434184	-.002832	.0977148
#3	.0032523	.0327974	.0018844	-.000430	.6180577	-.000102	.0967115
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-3.26892	.0021673	.0167258	.0001151	.0794344	.6253096	-.000043
Stddev	.05244	.0050648	.0010499	.0003872	.0032076	.0056932	.000823
%RSD	1.604317	233.6950	6.276847	336.4928	4.038078	.9104538	1915.144
#1	-3.20852	-.002962	.0160789	-.000214	.0759543	.6217665	.000895
#2	-3.30294	.007165	.0179371	.000542	.0822723	.6222857	-.000375
#3	-3.29529	.002300	.0161613	.000017	.0800766	.6318767	-.000648

Sample Name: N3222-01 Acquired: 06/10/2022 18:01:42 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.000343	-.001031	.0003433
Stddev	.000360	.001622	.0000453
%RSD	105.1398	157.4172	13.19415

#1	-.000155	.000670	.0003745
#2	-.000758	-.001201	.0003640
#3	-.000115	-.002561	.0002913

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1043.711	1690.372	22694.47	7410.208	2140.109
Stddev	10.478	2.128	160.16	9.938	5.024
%RSD	1.003880	.1258832	.7057269	.1341073	.2347764

#1	1032.744	1691.584	22569.39	7410.150	2144.932
#2	1044.773	1687.915	22639.05	7420.175	2140.490
#3	1053.618	1691.617	22874.99	7400.300	2134.905

Sample Name: CCV03 Acquired: 06/10/2022 18:05:36 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.140252	5.120912	5.013258	5.217238	5.177137	10.25264	10.09660
Stddev	.011249	.027505	.009110	.023122	.022355	.08260	.03782
%RSD	.2188494	.5371150	.1817127	.4431833	.4317972	.8056915	.3745358
#1	5.153049	5.096073	5.002739	5.220729	5.185515	10.18615	10.13267
#2	5.131922	5.116191	5.018529	5.192570	5.151803	10.22665	10.09988
#3	5.135784	5.150472	5.018507	5.238417	5.194091	10.34511	10.05726
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2536854	2.512235	24.75985	1.004800	2.503739	1.282784	5.038272
Stddev	.0012475	.001946	.06162	.003925	.007137	.006724	.011061
%RSD	.4917316	.0774528	.2488851	.3905894	.2850496	.5241360	.2195359
#1	.2523028	2.510188	24.80685	1.002277	2.495690	1.282417	5.044026
#2	.2540268	2.512457	24.78263	1.009322	2.506232	1.276252	5.025521
#3	.2547266	2.514060	24.69008	1.002800	2.509295	1.289684	5.045271
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.534774	25.00624	2.523730	1.258178	25.63254	2.569236	2.529864
Stddev	.000862	.06388	.005115	.008010	.04065	.013129	.016409
%RSD	.0340129	.2554393	.2026692	.6366545	.1585903	.5110053	.6486293
#1	2.534088	25.02587	2.518993	1.264970	25.58656	2.554238	2.525214
#2	2.535742	24.93485	2.523045	1.249345	25.66368	2.574821	2.548097
#3	2.534493	25.05799	2.529153	1.260220	25.64740	2.578649	2.516282
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	24.50296	5.142585	5.026237	5.184366	5.072938	5.059154	5.085213
Stddev	.17506	.043615	.036553	.019930	.038704	.040887	.014457
%RSD	.7144327	.8481129	.7272468	.3844215	.7629561	.8081713	.2842898
#1	24.64359	5.093675	4.985912	5.198679	5.028379	5.012695	5.071233
#2	24.30690	5.156641	5.057196	5.161603	5.098204	5.089655	5.084302
#3	24.55839	5.177438	5.035602	5.192814	5.092230	5.075114	5.100103

Sample Name: CCV03 Acquired: 06/10/2022 18:05:36 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	5.004875	5.029055	5.086247
Stddev	.006711	.004583	.026405
%RSD	.1340849	.0911219	.5191518

#1	4.997218	5.030330	5.096633
#2	5.007668	5.023970	5.056228
#3	5.009737	5.032865	5.105881

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	973.1545	1589.536	21397.49	7111.100	1954.658
Stddev	13.3232	4.885	278.62	22.916	2.885
%RSD	1.369078	.3073434	1.302131	.3222549	.1475811

#1	960.8861	1584.216	21155.47	7099.840	1953.708
#2	987.3275	1593.820	21702.08	7137.468	1952.367
#3	971.2498	1590.574	21334.91	7095.992	1957.897

Sample Name: CCB03 Acquired: 06/10/2022 18:09:21 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0016940	.0014486	-.001825	.0008470	.0025382	.0136841	-.000005
Stddev	.0043550	.0011369	.001774	.0028570	.0001877	.0043603	.000240
%RSD	257.0775	78.48200	97.19657	337.3027	7.394963	31.86399	4872.246

#1	.0061325	.0025139	-.003873	-.000884	.0025278	.0089057	-.000278
#2	.0015221	.0002517	-.000800	.004145	.0027309	.0146995	.000094
#3	-.002572	.0015801	-.000802	-.000720	.0023559	.0174471	.000169

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000395	-.000074	-.002402	-.000484	.0003357	.0003869	.0118426
Stddev	.0001116	.000071	.018016	.000275	.0002007	.0004947	.0040327
%RSD	282.4459	95.48735	749.9520	56.75803	59.77563	127.8595	34.05269

#1	.0001653	-.000010	.017568	-.000550	.0003821	.0009567	.0071867
#2	-.000048	-.000149	-.007342	-.000182	.0001159	.0001370	.0142388
#3	.000001	-.000063	-.017434	-.000720	.0005090	.0000671	.0141023

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004723	.0304360	-.000222	.0003754	-.227863	.0009825	-.006144
Stddev	.0001510	.0394878	.000409	.0001865	.382512	.0011631	.000660
%RSD	31.96221	129.7401	183.7387	49.67042	167.8692	118.3810	10.74468

#1	.0003074	.0586389	.000248	.0004875	-.667061	.0014395	-.005392
#2	.0006037	-.014693	-.000428	.0001602	-.048810	.0018477	-.006629
#3	.0005058	.047363	-.000487	.0004787	.032282	-.000340	-.006411

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.364861	.0018317	.0146757	.0009243	-.006041	.0079415	.0009468
Stddev	.053612	.0014694	.0010986	.0003970	.004586	.0013616	.0009224
%RSD	14.69386	80.22026	7.485947	42.95089	75.91578	17.14570	97.42963

#1	-.421169	.0028697	.0148710	.0010360	-.000860	.0066531	.0010813
#2	-.314429	.0024749	.0156637	.0012534	-.007682	.0093661	.0017945
#3	-.358984	.0001504	.0134926	.0004834	-.009581	.0078052	-.000036

Sample Name: CCB03 Acquired: 06/10/2022 18:09:21 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.000463	-.000311	.0000927
Stddev	.001744	.000648	.0001173
%RSD	376.5341	208.3934	126.5329

#1	.001391	-.000459	.0001604
#2	-.000711	.000398	-.000043
#3	-.002070	-.000872	.000160

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1006.155	1620.267	21720.26	7157.325	2055.331
Stddev	14.919	3.812	184.51	11.920	1.830
%RSD	1.482782	.2352428	.8494651	.1665459	.0890323

#1	994.951	1622.480	21563.12	7170.650	2057.442
#2	1000.425	1622.456	21674.23	7147.675	2054.354
#3	1023.090	1615.866	21923.42	7153.650	2054.197

Sample Name: N3222-02 Acquired: 06/10/2022 18:13:15 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.002124	.0001182	.0036274	.0006488	-.000587	.1383286	.0018187
Stddev	.000725	.0001448	.0008871	.0018514	.002673	.0098250	.0004634
%RSD	34.14732	122.4931	24.45712	285.3552	455.4071	7.102646	25.47886
#1	-.002688	.0001255	.0027273	.0027275	-.002657	.1276762	.0013415
#2	-.001306	-.000030	.0036538	-.000823	-.001534	.1470350	.0018477
#3	-.002379	.000259	.0045010	.000042	.002431	.1402745	.0022668
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000161	.0000461	.1720843	.0006136	.0000007	.0388736	.0717792
Stddev	.0000394	.0000534	.0151519	.0011843	.0000675	.0020960	.0018738
%RSD	244.2941	115.7503	8.804915	192.9865	10348.87	5.391847	2.610556
#1	.0000614	-.000004	.1698645	.0004606	-.000040	.0377163	.0698235
#2	-.000003	.000039	.1581648	.0018670	.000079	.0412931	.0719552
#3	-.000010	.000103	.1882237	-.000487	-.000037	.0376114	.0735588
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0053568	.0762066	.0024553	.0003836	-.032301	-.003630	.0904339
Stddev	.0003600	.0115151	.0006781	.0000465	.736310	.001897	.0008871
%RSD	6.720302	15.11037	27.61956	12.11691	2279.508	52.24785	.9808910
#1	.0049459	.0856279	.0017961	.0003784	-.498776	-.001652	.0912798
#2	.0055083	.0796217	.0024188	.0003400	-.414656	-.003804	.0905114
#3	.0056164	.0633703	.0031509	.0004325	.816528	-.005434	.0895107
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-3.30140	.0065354	.0144745	.0005571	.1040320	.1315590	.0012495
Stddev	.03736	.0010475	.0009700	.0000584	.0018246	.0026521	.0001770
%RSD	1.131679	16.02756	6.701180	10.47470	1.753934	2.015921	14.16601
#1	-3.27873	.0059647	.0135760	.0005353	.1026008	.1344056	.0014186
#2	-3.34452	.0058972	.0143448	.0006232	.1034085	.1311136	.0010655
#3	-3.28095	.0077442	.0155029	.0005127	.1060867	.1291577	.0012644

Sample Name: N3222-02 Acquired: 06/10/2022 18:13:15 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.000207	-.002595	.0005335
Stddev	.000697	.000896	.0000485
%RSD	336.7300	34.52460	9.097191

#1	-.000087	-.003406	.0005749
#2	-.000956	-.002747	.0005454
#3	.000422	-.001633	.0004801

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1038.920	1682.196	22662.03	7304.425	2122.751
Stddev	29.966	.993	467.95	57.693	3.259
%RSD	2.884345	.0590364	2.064915	.7898349	.1535348

#1	1015.840	1682.334	22365.07	7248.850	2125.758
#2	1072.786	1681.141	23201.46	7364.025	2123.208
#3	1028.133	1683.113	22419.57	7300.400	2119.288

Sample Name: N3222-03 Acquired: 06/10/2022 18:17:06 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0028056	.0004121	.0001994	.0018395	.0095837	.0494095	.0004563
Stddev	.0039377	.0014426	.0012732	.0014023	.0008207	.0070747	.0002636
%RSD	140.3499	350.0359	638.4412	76.22783	8.564011	14.31847	57.77169
#1	.0026040	.0001389	-.001267	.0002676	.0102073	.0478663	.0002426
#2	-.001027	-.000874	.000843	.0029616	.0098898	.0432338	.0007509
#3	.006840	.001972	.001022	.0022894	.0086539	.0571284	.0003754
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000010	-.000096	.0932920	.0004393	.0000955	.0013185	.0665758
Stddev	.000086	.000104	.0122843	.0004734	.0001274	.0015675	.0078964
%RSD	834.1768	107.8887	13.16763	107.7637	133.4004	118.8840	11.86082
#1	.000084	-.000094	.0918954	.0001568	.0001920	.0002173	.0746973
#2	-.000084	-.000201	.1062150	.0009858	.0001435	.0006250	.0589255
#3	-.000030	.000006	.0817657	.0001753	-.000049	.0031130	.0661046
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0046999	.0449497	.0010975	.0000655	3.009087	.0005231	.0241379
Stddev	.0005158	.0103598	.0002609	.0005388	.058458	.0025548	.0010535
%RSD	10.97418	23.04756	23.77663	822.4421	1.942718	488.3542	4.364684
#1	.0041772	.0455490	.0013609	.0005451	3.063394	.0003674	.0230867
#2	.0047140	.0343033	.0010927	-.000518	2.947215	.0031522	.0251937
#3	.0052085	.0549969	.0008390	.000169	3.016654	-.001950	.0241334
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-3.06863	.0075320	.0431851	.0004645	.0851255	2.461991	.0003777
Stddev	.11356	.0029668	.0019378	.0000386	.0068058	.075299	.0013815
%RSD	3.700816	39.38962	4.487194	8.312714	7.994976	3.058460	365.7490
#1	-3.18869	.0073006	.0417401	.0005030	.0843661	2.428491	-.000827
#2	-2.96292	.0046877	.0453872	.0004646	.0922791	2.548226	.000075
#3	-3.05428	.0106078	.0424281	.0004258	.0787313	2.409255	.001885

Sample Name: N3222-03 Acquired: 06/10/2022 18:17:06 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.000209	-.002967	.0003059
Stddev	.001304	.001717	.0000360
%RSD	624.4268	57.86644	11.77762

#1	-.001667	-.000985	.0003456
#2	.000197	-.003950	.0002968
#3	.000844	-.003967	.0002752

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1035.360	1685.260	22637.70	7261.767	2146.994
Stddev	10.373	5.194	93.85	225.225	6.647
%RSD	1.001833	.3081741	.4145709	3.101517	.3095775

#1	1046.401	1690.113	22745.82	7359.225	2154.305
#2	1033.859	1685.885	22577.34	7004.225	2145.361
#3	1025.819	1679.783	22589.93	7421.850	2141.316

Sample Name: N3252-01 Acquired: 06/10/2022 18:20:58 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001723	.0018509	-.001481	-.003166	.0013269	.0358177	.0004348
Stddev	.006337	.0013746	.001650	.002215	.0008354	.0029743	.0003357
%RSD	367.7713	74.26407	111.4098	69.96473	62.95707	8.304094	77.21495

#1	.005578	.0003334	-.003384	-.001087	.0021162	.0358312	.0000474
#2	-.005796	.0030125	-.000604	-.002915	.0004521	.0328366	.0006415
#3	-.004952	.0022068	-.000455	-.005495	.0014123	.0387852	.0006154

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000752	-.000053	1.061356	-.000321	-.000044	.0006987	.0834472
Stddev	.0000298	.000092	.006271	.000178	.000197	.0015991	.0034842
%RSD	39.57755	173.3986	.5908562	55.45246	450.6095	228.8834	4.175271

#1	.0001007	.000002	1.054125	-.000377	-.000123	.0009516	.0874033
#2	.0000823	-.000002	1.064648	-.000122	-.000188	.0021563	.0821027
#3	.0000425	-.000160	1.065297	-.000464	.000180	-.001012	.0808357

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0021721	.5295378	.0006951	.0003992	-.312907	-.001257	.1211963
Stddev	.0004259	.0231755	.0004487	.0004568	.372866	.001671	.0015157
%RSD	19.60992	4.376550	64.55792	114.4205	119.1621	132.9215	1.250585

#1	.0018732	.5555335	.0002102	-.000108	.077880	-.000509	.1195560
#2	.0026598	.5110380	.0010958	.000526	-.351796	-.003172	.1225449
#3	.0019832	.5220419	.0007791	.000779	-.664804	-.000091	.1214881

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-3.50952	.0068046	.0020766	.0001785	.1227905	.0901105	-.000548
Stddev	.07074	.0014129	.0014811	.0000100	.0052105	.0022266	.001032
%RSD	2.015685	20.76337	71.32546	5.613292	4.243386	2.470935	188.1992

#1	-3.52330	.0061345	.0003668	.0001671	.1250501	.0923015	.000610
#2	-3.57236	.0084279	.0029646	.0001828	.1168317	.0878500	-.001369
#3	-3.43291	.0058515	.0028984	.0001857	.1264898	.0901801	-.000886

Sample Name: N3252-01 Acquired: 06/10/2022 18:20:58 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.001402	-.004689	.0017883
Stddev	.000753	.001464	.0000756
%RSD	53.70108	31.21369	4.225179

#1	-.002269	-.003100	.0017799
#2	-.000909	-.005983	.0018677
#3	-.001028	-.004984	.0017172

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1036.436	1677.394	22595.95	7402.008	2129.354
Stddev	9.432	6.798	104.15	33.851	.236
%RSD	.9100680	.4052702	.4609433	.4573284	.0110926

#1	1046.947	1683.458	22714.75	7386.175	2129.550
#2	1028.708	1678.678	22552.77	7378.975	2129.420
#3	1033.655	1670.045	22520.33	7440.875	2129.091

Sample Name: N3252-01DUP Acquired: 06/10/2022 18:24:51 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.003264	-.001678	-.000181	-.000847	-.000650	.0602232	.0015142
Stddev	.004503	.002964	.001767	.001498	.002833	.0055864	.0005602
%RSD	137.9752	176.6555	976.9576	176.8359	436.0563	9.276236	36.99430
#1	.000105	-.003702	-.002215	-.001745	-.002780	.0617054	.0021131
#2	-.001517	-.003057	.000701	.000882	-.001735	.0649191	.0014262
#3	-.008378	.001725	.000972	-.001679	.002566	.0540451	.0010032
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000589	-.000024	1.133924	-.000220	.0000967	.0042470	.0854670
Stddev	.0000127	.000038	.007332	.000504	.0001070	.0011739	.0065392
%RSD	21.58768	162.0811	.6465602	228.9727	110.6270	27.64035	7.651140
#1	.0000589	.000008	1.141649	-.000744	.0002074	.0048795	.0783139
#2	.0000462	-.000066	1.133061	.000262	.0000888	.0028925	.0869492
#3	.0000717	-.000012	1.127062	-.000179	-.000006	.0049690	.0911379
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0023318	.5477539	.0003026	.0002999	-.069662	-.001700	.1208002
Stddev	.0006201	.0175297	.0001001	.0005471	.580647	.002618	.0011116
%RSD	26.59342	3.200292	33.07525	182.4266	833.5251	154.0535	.9202108
#1	.0028709	.5659991	.0002131	.0008912	-.634265	.001214	.1213795
#2	.0016541	.5310401	.0002841	.0001970	-.100517	-.003855	.1195186
#3	.0024703	.5462226	.0004106	-.000188	.525798	-.002457	.1215025
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-3.46556	.0100749	.0020392	.0002370	.1424040	.0933939	-.001118
Stddev	.08412	.0032337	.0008227	.0003320	.0036034	.0010827	.000654
%RSD	2.427290	32.09626	40.34241	140.0650	2.530433	1.159325	58.52332
#1	-3.37535	.0070489	.0012438	.0002561	.1382442	.0946231	-.001424
#2	-3.47950	.0134824	.0019872	.0005590	.1444003	.0925813	-.001563
#3	-3.54185	.0096935	.0028867	-.000104	.1445675	.0929774	-.000367

Sample Name: N3252-01DUP Acquired: 06/10/2022 18:24:51 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.000410	-.003156	.0021248
Stddev	.001423	.000246	.0000407
%RSD	346.7864	7.790738	1.917093

#1	-.000233	-.002903	.0021001
#2	.000916	-.003394	.0021025
#3	-.001914	-.003171	.0021718

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1019.507	1664.292	22201.86	7372.950	2106.049
Stddev	5.614	4.260	63.26	9.701	4.799
%RSD	.5506680	.2559684	.2849501	.1315764	.2278860

#1	1017.672	1668.272	22215.75	7374.350	2108.857
#2	1025.810	1664.806	22257.03	7362.625	2108.783
#3	1015.041	1659.799	22132.81	7381.875	2100.507

Sample Name: N3252-01LX5 Acquired: 06/10/2022 18:28:44 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.002660	.0010977	.0001012	-.003621	.0022915	.0341197	-.000567
Stddev	.007493	.0020127	.0009737	.005146	.0013174	.0073499	.000066
%RSD	281.6523	183.3503	961.7531	142.1052	57.49007	21.54151	11.68879
#1	-.007141	.0033774	.0011280	-.002195	.0038045	.0339526	-.000570
#2	.005990	.0003494	-.000015	-.009330	.0013990	.0268547	-.000499
#3	-.006830	-.000434	-.000809	.000661	.0016708	.0415516	-.000632
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000557	-.000091	.2233666	-.000581	-.000230	-.000603	.0261401
Stddev	.0000681	.000065	.0033753	.000532	.000146	.004702	.0061248
%RSD	122.1370	71.71698	1.511084	91.71834	63.36652	780.2706	23.43051
#1	-.000009	-.000131	.2213302	-.001176	-.000101	.002115	.0195951
#2	.000049	-.000126	.2215069	-.000151	-.000200	.002109	.0270922
#3	.000127	-.000016	.2272627	-.000414	-.000388	-.006031	.0317331
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001513	.1179636	.0000969	.0001264	-.000183	-.000373	.0191054
Stddev	.0005061	.0168717	.0004399	.0002939	.415890	.002267	.0005104
%RSD	334.4320	14.30249	454.0337	232.5709	227390.0	608.5635	2.671735
#1	-.000376	.1214857	-.000380	.0000559	-.113013	.000941	.0191225
#2	.000633	.1327963	.000183	.0004491	-.348016	.000931	.0185866
#3	.000197	.0996088	.000487	-.000126	.460480	-.002990	.0196071
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-1.05200	.0047450	.0021380	.0004048	.0220407	.0204912	.0006283
Stddev	.08663	.0057706	.0004697	.0005959	.0078295	.0017076	.0012085
%RSD	8.234583	121.6136	21.96920	147.1904	35.52309	8.333150	192.3542
#1	-1.08271	.0029010	.0024049	.0007972	.0158584	.0217768	.0006534
#2	-.95420	.0001218	.0015957	-.000281	.0194190	.0185537	.0018241
#3	-1.11909	.0112122	.0024135	.000698	.0308446	.0211431	-.000593

Sample Name: N3252-01LX5 Acquired: 06/10/2022 18:28:44 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.001036	-.001871	.0004250
Stddev	.000293	.000523	.0000449
%RSD	28.27281	27.95595	10.57067

#1	-.001284	-.002410	.0004612
#2	-.001110	-.001366	.0003747
#3	-.000713	-.001838	.0004391

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	984.7335	1618.612	21520.03	7118.008	2042.125
Stddev	11.5268	3.970	199.59	52.754	2.748
%RSD	1.170554	.2452839	.9274581	.7411340	.1345671

#1	973.0094	1614.686	21289.70	7177.350	2042.067
#2	996.0524	1618.524	21628.31	7076.425	2039.407
#3	985.1386	1622.625	21642.07	7100.250	2044.902

Sample Name: N3252-01MS Acquired: 06/10/2022 18:32:37 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7510685	1.905362	.9368231	1.925427	.7827203	2.054824	.2034140
Stddev	.0023934	.004133	.0026683	.008291	.0019318	.035331	.0009891
%RSD	.3186628	.2169102	.2848299	.4305962	.2468117	1.719408	.4862356

#1	.7504723	1.909717	.9399037	1.932540	.7841327	2.015549	.2045402
#2	.7490296	1.904874	.9352323	1.927420	.7805188	2.084021	.2026868
#3	.7537036	1.901495	.9353333	1.916322	.7835094	2.064902	.2030148

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2040000	.1894728	2.075716	.4067058	.1942360	.3136378	3.223464
Stddev	.0034329	.0004121	.022364	.0013520	.0002111	.0013172	.015929
%RSD	1.682813	.2174875	1.077406	.3324176	.1086939	.4199712	.4941644

#1	.2057345	.1899437	2.089951	.4078229	.1942414	.3121605	3.241850
#2	.2000460	.1892962	2.049939	.4070917	.1940223	.3140631	3.213805
#3	.2062198	.1891783	2.087257	.4052029	.1944444	.3146898	3.214738

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2081603	2.562657	.4938346	.0748629	3.119246	.3117031	.3196289
Stddev	.0009252	.012171	.0017310	.0005703	.139571	.0008360	.0013236
%RSD	.4444870	.4749247	.3505215	.7617373	4.474522	.2681992	.4141175

#1	.2091226	2.550274	.4957669	.0753996	3.258561	.3122388	.3205916
#2	.2072772	2.574604	.4924258	.0742642	2.979420	.3107398	.3201756
#3	.2080811	2.563094	.4933110	.0749249	3.119756	.3121307	.3181194

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.171199	5.796888	.2992996	.3918276	.1267645	.9896800	.6695648
Stddev	.073047	.018259	.0053687	.0008865	.0023589	.0169436	.0019487
%RSD	1.183683	.3149775	1.793755	.2262527	1.860810	1.712028	.2910398

#1	6.203250	5.808463	.3024535	.3926883	.1282628	1.002676	.6713591
#2	6.222741	5.806361	.2931007	.3918770	.1240454	.970517	.6674918
#3	6.087605	5.775839	.3023447	.3909173	.1279852	.995848	.6698437

Sample Name: N3252-01MS Acquired: 06/10/2022 18:32:37 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.1916932	.1883472	.2033472
Stddev	.0025762	.0010257	.0002931
%RSD	1.343915	.5445558	.1441518

#1	.1887207	.1886814	.2032115
#2	.1930798	.1891641	.2031466
#3	.1932790	.1871961	.2036836

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1025.484	1667.412	22298.79	7242.296	2105.917
Stddev	12.280	4.918	143.27	72.751	3.489
%RSD	1.197471	.2949679	.6424846	1.004534	.1656561

#1	1038.883	1662.016	22464.15	7185.853	2101.989
#2	1014.768	1668.575	22220.35	7324.401	2108.654
#3	1022.800	1671.644	22211.88	7216.633	2107.108

Sample Name: N3252-01MSD Acquired: 06/10/2022 18:36:26 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: ICSAB10996 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7631758	1.923963	.9525904	1.955068	.7946208	2.068092	.2032382
Stddev	.0043470	.008242	.0033715	.003493	.0047691	.014397	.0008913
%RSD	.5695956	.4283811	.3539313	.1786869	.6001702	.6961310	.4385289
#1	.7681790	1.924551	.9538276	1.951328	.7891147	2.052183	.2024949
#2	.7603238	1.915443	.9487751	1.955629	.7972950	2.071873	.2042263
#3	.7610247	1.931896	.9551686	1.958247	.7974527	2.080222	.2029934
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2082446	.1920959	2.092208	.4100055	.1970242	.3167952	3.226016
Stddev	.0011902	.0008049	.011003	.0021492	.0007871	.0011038	.002128
%RSD	.5715429	.4190275	.5258884	.5241959	.3994924	.3484266	.0659507
#1	.2076542	.1913887	2.080784	.4124425	.1966103	.3161153	3.224516
#2	.2096146	.1919271	2.093106	.4091929	.1979319	.3162016	3.225081
#3	.2074651	.1929718	2.102735	.4083810	.1965305	.3180688	3.228451
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2095376	2.539775	.5007907	.0764824	3.323932	.3137271	.3227506
Stddev	.0009802	.068880	.0006637	.0010366	.192843	.0054773	.0003848
%RSD	.4677994	2.712041	.1325318	1.355400	5.801663	1.745885	.1192229
#1	.2091764	2.476800	.5000250	.0776704	3.508228	.3121852	.3230885
#2	.2087893	2.613334	.5011437	.0757618	3.123549	.3198100	.3228314
#3	.2106472	2.529192	.5012032	.0760149	3.340021	.3091859	.3223318
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.323328	5.864565	.3068627	.3971396	.1254601	1.013635	.6811070
Stddev	.015044	.034261	.0027465	.0019312	.0039022	.002271	.0013601
%RSD	.2379140	.5841973	.8950154	.4862733	3.110351	.2240859	.1996887
#1	6.320977	5.834143	.3066228	.3951830	.1226661	1.014937	.6796483
#2	6.309598	5.857873	.3097213	.3971917	.1299186	1.014957	.6823404
#3	6.339410	5.901677	.3042441	.3990443	.1237957	1.011013	.6813322

Sample Name: N3252-01MSD Acquired: 06/10/2022 18:36:26 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: ICSAB10996 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.1943542	.1898902	.2046071
Stddev	.0009716	.0002928	.0005117
%RSD	.4999053	.1541941	.2500638

#1	.1954749	.1901924	.2041627
#2	.1938376	.1896078	.2051664
#3	.1937500	.1898704	.2044921

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1000.433	1645.693	21895.96	7143.456	2074.922
Stddev	8.486	6.050	160.72	22.250	5.633
%RSD	.8482101	.3676013	.7339953	.3114792	.2714821

#1	991.052	1652.622	21715.39	7164.523	2081.211
#2	1002.675	1642.990	21949.18	7120.187	2073.216
#3	1007.574	1641.465	22023.31	7145.658	2070.339

Sample Name: N3252-01A Acquired: 06/10/2022 18:40:14 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: CCV18998 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7741137	1.939374	.9513195	1.985470	.8183034	2.137798	.2078018
Stddev	.0067954	.000699	.0032780	.007629	.0052411	.021734	.0012646
%RSD	.8778333	.0360222	.3445760	.3842520	.6404887	1.016652	.6085608

#1	.7759210	1.938771	.9520888	1.976926	.8132700	2.139038	.2088631
#2	.7798228	1.939211	.9477253	1.991601	.8179102	2.158886	.2064025
#3	.7665974	1.940139	.9541445	1.987883	.8237301	2.115471	.2081396

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2080861	.1925701	2.081867	.4096163	.1977942	.3171966	3.260139
Stddev	.0015910	.0002362	.010025	.0011130	.0003789	.0030707	.016053
%RSD	.7645645	.1226751	.4815254	.2717216	.1915355	.9680873	.4924047

#1	.2088332	.1924126	2.088219	.4101565	.1980884	.3174223	3.267574
#2	.2062592	.1924561	2.070310	.4083363	.1973667	.3201483	3.241716
#3	.2091660	.1928418	2.087072	.4103561	.1979274	.3140192	3.271126

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2094944	2.535202	.5017373	.0755341	3.126989	.3111688	.3261054
Stddev	.0005943	.008250	.0014318	.0008495	.339593	.0084661	.0004276
%RSD	.2836825	.3254011	.2853749	1.124703	10.86005	2.720734	.1311169

#1	.2100130	2.544385	.5019798	.0761307	3.458285	.3149314	.3262035
#2	.2088459	2.528418	.5001998	.0759102	3.143014	.3171014	.3256373
#3	.2096243	2.532802	.5030325	.0745614	2.779668	.3014736	.3264755

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.515954	5.913741	.3073798	.4068515	.1177642	1.024769	.6942069
Stddev	.137328	.002282	.0018801	.0022414	.0060149	.008100	.0009934
%RSD	2.107562	.0385895	.6116584	.5509115	5.107591	.7903951	.1431021

#1	6.433792	5.911151	.3075949	.4057203	.1159296	1.033749	.6953097
#2	6.439578	5.915457	.3054014	.4054011	.1128802	1.018017	.6933820
#3	6.674491	5.914615	.3091431	.4094330	.1244828	1.022539	.6939290

Sample Name: N3252-01A Acquired: 06/10/2022 18:40:14 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: CCV18998 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.1976264	.1922232	.2058229
Stddev	.0025068	.0023509	.0003955
%RSD	1.268470	1.222987	.1921393

#1	.1959931	.1939986	.2054560
#2	.2005127	.1931139	.2057709
#3	.1963735	.1895572	.2062418

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1020.307	1657.091	22255.20	7223.251	2100.723
Stddev	13.459	2.708	127.88	41.059	3.179
%RSD	1.319114	.1634132	.5746037	.5684346	.1513482

#1	1004.795	1660.001	22111.42	7216.791	2104.196
#2	1027.240	1656.624	22356.24	7267.158	2097.955
#3	1028.886	1654.646	22297.94	7185.805	2100.018

Sample Name: LR CHECK 2 Acquired: 06/10/2022 18:48:09 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0041442	.0047319	239.3987	-.003877	-.006143	.1533752	95.88839
Stddev	.0084113	.0033051	.8712	.004367	.002975	.0077686	.73751
%RSD	202.9653	69.84866	.3639135	112.6459	48.43390	5.065096	.7691307

#1	.0092880	.0009777	238.4082	.000286	-.003459	.1544717	95.34831
#2	.0087072	.0072037	239.7417	-.003494	-.005628	.1451166	95.58821
#3	-.005563	.0060142	240.0462	-.008423	-.009342	.1605372	96.72865

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001964	.0003053	.2917899	-.172923	.0049579	260.8718	-.593617
Stddev	.000138	.0000854	.0112546	.002286	.0004796	3.2767	.012032
%RSD	7.031792	27.97240	3.857102	1.321977	9.673772	1.256049	2.026859

#1	-.001976	.0002084	.2841091	-.173062	.0053309	259.7680	-.583253
#2	-.001821	.0003696	.2865517	-.170570	.0051258	258.2896	-.590785
#3	-.002096	.0003380	.3047089	-.175136	.0044169	264.5579	-.606812

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	46.96856	.1294267	47.77115	.0007292	.3457155	-.056461	32.92016
Stddev	.14348	.0217103	.13570	.0004785	.0357756	.005220	.12488
%RSD	.3054803	16.77420	.2840575	65.62280	10.34828	9.245769	.3793466

#1	47.11890	.1086529	47.61953	.0003611	.3817256	-.060936	32.81507
#2	46.83311	.1519657	47.81270	.0012701	.3101791	-.057721	33.05822
#3	46.95367	.1276613	47.88121	.0005563	.3452420	-.050726	32.88718

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-1.83372	-2.05157	-.000347	-.042085	-.749728	.0059609	-.005336
Stddev	.07846	.02993	.000957	.000456	.008437	.0013405	.002090
%RSD	4.278653	1.459087	275.8726	1.083910	1.125380	22.48861	39.17693

#1	-1.82692	-2.07191	-.001392	-.041652	-.748020	.0056162	-.007595
#2	-1.75888	-2.01720	.000487	-.042042	-.742275	.0074402	-.004942
#3	-1.91536	-2.06560	-.000136	-.042561	-.758889	.0048265	-.003470

Sample Name: LR CHECK 2 Acquired: 06/10/2022 18:48:09 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.007437	.0009392	.0015653
Stddev	.001604	.0014941	.0000617
%RSD	21.56514	159.0682	3.939207

#1	-.007039	.0010696	.0015090
#2	-.009202	.0023639	.0016312
#3	-.006070	-.000616	.0015557

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1035.019	1546.850	24884.84	7500.564	2167.106
Stddev	4.075	3.056	43.19	64.765	4.999
%RSD	.3937041	.1975713	.1735489	.8634692	.2306819

#1	1035.757	1549.436	24919.72	7438.685	2170.271
#2	1030.626	1543.478	24836.53	7495.134	2161.343
#3	1038.674	1547.637	24898.25	7567.873	2169.704

Sample Name: LR CHECK 1 Acquired: 06/10/2022 18:52:16 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: TP-1-1-8FT Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0065852	-.158241	.0033563	.0057226	.0551418	2029.566	.0223466
Stddev	.0196145	.009142	.0058613	.0046479	.0056248	3.435	.0003815
%RSD	297.8575	5.777391	174.6358	81.22031	10.20060	.1692321	1.707312

#1	-.004099	-.152862	-.001159	.0063748	.0545476	2025.975	.0227486
#2	.029222	-.153063	.001248	.0007830	.0498378	2032.820	.0223018
#3	-.005368	-.168796	.009980	.0100099	.0610402	2029.902	.0219895

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0075320	-.008727	1840.504	-.082588	.0257652	.1276899	849.1349
Stddev	.0003685	.000754	11.267	.000918	.0003526	.0034089	11.4021
%RSD	4.892380	8.644917	.6121447	1.111661	1.368411	2.669691	1.342789

#1	.0072440	-.008294	1848.984	-.083235	.0256575	.1293769	844.5367
#2	.0079472	-.009598	1844.807	-.082991	.0254790	.1299264	862.1180
#3	.0074047	-.008289	1827.720	-.081537	.0261590	.1237664	840.7498

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.041101	1870.582	.0220714	-.024769	1833.618	.0124155	.1044295
Stddev	.000731	23.773	.0021331	.001068	1.327	.0032259	.0043333
%RSD	1.779267	1.270869	9.664675	4.312631	.0723443	25.98256	4.149543

#1	-.041923	1858.912	.0196851	-.025972	1833.939	.0160929	.1054016
#2	-.040857	1897.934	.0237931	-.023932	1834.756	.0100632	.0996927
#3	-.040522	1854.900	.0227360	-.024403	1832.161	.0110904	.1081943

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1067.039	-.019318	.3800354	-.014348	.0131230	-.001113	.0086255
Stddev	6.928	.000924	.0046111	.000938	.0127161	.001055	.0049261
%RSD	.6492781	4.784449	1.213332	6.539350	96.89951	94.81198	57.11028

#1	1067.679	-.018988	.3748541	-.014086	.0033302	-.001973	.0107343
#2	1073.625	-.020362	.3815639	-.015390	.0274944	-.001429	.0121462
#3	1059.813	-.018605	.3836881	-.013569	.0085443	.000064	.0029961

Sample Name: LR CHECK 1 Acquired: 06/10/2022 18:52:16 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: TP-1-1-8FT Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.039368	.0072944	.0405467
Stddev	.000821	.0008607	.0001221
%RSD	2.086100	11.80009	.3012350

#1	-.039809	.0076371	.0406044
#2	-.038420	.0079310	.0406294
#3	-.039874	.0063151	.0404064

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	823.1191	1345.308	17885.86	6662.065	1346.800
Stddev	7.7109	4.898	16.79	62.525	1.751
%RSD	.9367955	.3641152	.0938575	.9385273	.1300325

#1	830.6725	1346.480	17867.62	6663.594	1347.041
#2	823.4250	1349.513	17889.29	6598.789	1348.418
#3	815.2597	1339.929	17900.66	6723.812	1344.941

Sample Name: CCV04 Acquired: 06/10/2022 18:56:22 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.168667	5.196361	5.088419	5.276172	5.149073	10.07603	10.02235
Stddev	.012627	.010079	.014205	.018554	.016346	.05831	.03002
%RSD	.2443013	.1939706	.2791716	.3516648	.3174569	.5786907	.2995655

#1	5.182315	5.200518	5.072552	5.297496	5.167854	10.00929	9.99769
#2	5.166286	5.203697	5.092754	5.267308	5.141314	10.10166	10.01358
#3	5.157400	5.184868	5.099953	5.263712	5.138052	10.11713	10.05579

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2598529	2.583048	25.13582	1.014461	2.531807	1.259631	5.101667
Stddev	.0005598	.006671	.10003	.001033	.006075	.006440	.032639
%RSD	.2154313	.2582685	.3979703	.1018195	.2399630	.5112286	.6397708

#1	.2600610	2.577038	25.03076	1.013316	2.524793	1.253397	5.067876
#2	.2592189	2.581880	25.14677	1.015323	2.535407	1.259238	5.104108
#3	.2602789	2.590226	25.22992	1.014743	2.535222	1.266258	5.133017

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.541131	25.19418	2.557444	1.261691	24.91695	2.544506	2.525063
Stddev	.010562	.16977	.004943	.004217	.30820	.007670	.020421
%RSD	.4156488	.6738594	.1932668	.3342334	1.236917	.3014477	.8087501

#1	2.530732	24.99844	2.551737	1.261122	24.88292	2.536271	2.541091
#2	2.540812	25.28262	2.560344	1.266163	24.62717	2.545800	2.532029
#3	2.551849	25.30146	2.560251	1.257787	25.24075	2.551447	2.502070

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	24.86688	5.346578	5.101179	5.120934	5.208119	5.112286	5.171174
Stddev	.07317	.012090	.009435	.020082	.006396	.025637	.007639
%RSD	.2942442	.2261301	.1849552	.3921551	.1228169	.5014731	.1477271

#1	24.82048	5.346597	5.098419	5.144050	5.213343	5.085546	5.179963
#2	24.82893	5.358658	5.093432	5.110965	5.210029	5.114657	5.167433
#3	24.95123	5.334478	5.111686	5.107787	5.200985	5.136654	5.166127

Sample Name: CCV04 Acquired: 06/10/2022 18:56:22 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.967563	4.903045	5.043568
Stddev	.035939	.020450	.049715
%RSD	.7234738	.4170937	.9857129

#1	4.926839	4.882752	4.997503
#2	4.981010	4.902736	5.036933
#3	4.994839	4.923649	5.096267

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1038.388	1691.594	22261.86	7367.514	2039.186
Stddev	5.817	3.937	25.22	49.179	3.949
%RSD	.5602294	.2327597	.1132945	.6675063	.1936744

#1	1037.139	1687.066	22281.60	7392.090	2043.648
#2	1033.297	1693.507	22270.54	7399.561	2037.772
#3	1044.728	1694.210	22233.45	7310.892	2036.139

Sample Name: CCB04 Acquired: 06/10/2022 19:00:07 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0017171	-.000048	.0031036	.0006960	.0016598	.0217593	-.000324
Stddev	.0043687	.000317	.0039358	.0053392	.0020609	.0040560	.000364
%RSD	254.4208	655.4250	126.8157	767.1133	124.1634	18.64026	112.4341
#1	-.003184	-.000412	.0027562	-.005456	.0034954	.0233900	-.000558
#2	.003135	.000163	-.000647	.003418	-.000570	.0247462	-.000509
#3	.005201	.000105	.007201	.004126	.002054	.0171418	.000096
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000036	-.000134	.0016604	.0001497	.0000162	.0016199	.0062540
Stddev	.000016	.000100	.0098652	.0003966	.0004058	.0003399	.0017143
%RSD	46.09240	74.23318	594.1533	264.8933	2509.418	20.98412	27.41092
#1	-.000038	-.000216	.0059468	-.000306	.0004748	.0020096	.0082041
#2	-.000051	-.000023	.0086572	.000340	-.000130	.0013839	.0049847
#3	-.000018	-.000163	-.009623	.000415	-.000296	.0014663	.0055733
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006086	.0200775	.0002821	-.000014	-.007575	-.001373	-.004723
Stddev	.0001487	.0125905	.0002676	.000409	.095959	.003494	.000898
%RSD	24.42949	62.70944	94.84728	2835.477	1266.872	254.4940	19.01784
#1	.0007369	.0114704	.0001500	.000451	-.008981	.001642	-.004682
#2	.0006434	.0345278	.0001063	-.000318	.089080	-.005202	-.005641
#3	.0004457	.0142341	.0005900	-.000177	-.102823	-.000558	-.003846
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.240423	.0009239	.0120906	.0010004	-.005035	.0035311	.0021920
Stddev	.025502	.0018239	.0002391	.0007918	.001903	.0008082	.0005131
%RSD	10.60734	197.4206	1.977583	79.15008	37.79769	22.88713	23.40601
#1	-.266673	-.001064	.0122484	.0017280	-.004087	.0034168	.0027373
#2	-.215740	.001316	.0122080	.0011160	-.007225	.0043902	.0017189
#3	-.238856	.002520	.0118155	.0001571	-.003792	.0027861	.0021196

Sample Name: CCB04 Acquired: 06/10/2022 19:00:07 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.000625	.0004705	.0000406
Stddev	.001845	.0015073	.0000222
%RSD	295.3152	320.3517	54.59513

#1	.000738	.0016844	.0000594
#2	-.002725	.0009438	.0000161
#3	.000112	-.001217	.0000464

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1058.637	1726.742	22537.35	7364.875	2143.148
Stddev	14.220	1.175	86.43	10.449	4.424
%RSD	1.343246	.0680321	.3835176	.1418800	.2064106

#1	1044.602	1726.992	22475.01	7368.375	2138.460
#2	1058.274	1727.771	22501.01	7353.125	2147.248
#3	1073.035	1725.462	22636.02	7373.125	2143.735

Sample Name: N3259-01 Acquired: 06/10/2022 19:09:23 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: CCB18998 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0328687	.0014673	.0280394	.0007396	.0004067	.2221535
Stddev	.0049868	.0032104	.0030645	.0007053	.0013594	.0057079
%RSD	15.17194	218.7977	10.92911	95.35242	334.2025	2.569374

#1	.0368561	.0001852	.0305293	.0000958	.0019186	.2218598
#2	.0272772	.0051206	.0246171	.0006297	.0000163	.2280026
#3	.0344729	-.000904	.0289719	.0014934	-.000715	.2165981

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.637704	.0004294	-.000148	213.9600	.1976927	.0476362
Stddev	.003432	.0000914	.000065	.0910	.0028205	.0002125
%RSD	.1301016	21.28119	44.03183	.0425393	1.426692	.4461742

#1	2.640630	.0005263	-.000223	213.8972	.1952443	.0478287
#2	2.638555	.0003448	-.000104	213.9184	.2007768	.0474081
#3	2.633927	.0004171	-.000117	214.0644	.1970571	.0476719

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0084250	27.17533	.9371747	111.6408	.0853140	.0002209
Stddev	.0031402	.09914	.0017590	.0617	.0018839	.0002843
%RSD	37.27199	.3648282	.1876915	.0552996	2.208240	128.7471

#1	.0062096	27.14739	.9361253	111.5896	.0872664	.0001568
#2	.0070469	27.09315	.9392054	111.6234	.0835069	-.000026
#3	.0120186	27.28545	.9361933	111.7093	.0851686	.000532

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 2767.672	.1892156	.0144736	F 354.7003	9.364000	6.473268
Stddev	6.847	.0055300	.0006339	.3167	.015806	.034262
%RSD	.2473816	2.922620	4.379599	.0892900	.1687910	.5292914

#1	2761.431	.1836374	.0138354	354.4244	9.377737	6.498475
#2	2766.589	.1893130	.0151031	354.6304	9.346725	6.434257
#3	2774.995	.1946962	.0144825	355.0461	9.367538	6.487073

Sample Name: N3259-01 Acquired: 06/10/2022 19:09:23 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: CCB18998 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0074274	42.55736	33.27311	.2890297	.2423444	.1414988
Stddev	.0002816	.06832	.20920	.0011952	.0017242	.0024709
%RSD	3.791539	.1605294	.6287287	.4135174	.7114727	1.746216

#1	.0071066	42.61184	33.42598	.2900716	.2405865	.1388883
#2	.0075418	42.48071	33.03470	.2892924	.2424139	.1438012
#3	.0076339	42.57953	33.35866	.2877249	.2440329	.1418067

Elem	Sr4077
Units	ppm
Avg	1.556591
Stddev	.004195
%RSD	.2695162

#1	1.552484
#2	1.556419
#3	1.560869

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	942.0227	1496.181	19899.09	7213.703	1603.072
Stddev	6.0343	5.679	65.73	33.032	4.908
%RSD	.6405701	.3795541	.3303052	.4579116	.3061698

#1	935.2932	1499.656	19846.90	7175.873	1606.025
#2	946.9523	1499.260	19972.91	7236.841	1605.784
#3	943.8225	1489.628	19877.46	7228.394	1597.406

Sample Name: N3261-01 Acquired: 06/10/2022 19:13:11 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0226982	.0027484	.0236842	.0059261	.0039854	1.882041
Stddev	.0022938	.0048385	.0027869	.0028529	.0010799	.006896
%RSD	10.10576	176.0516	11.76696	48.14251	27.09501	.3663991

#1	.0202219	-.002719	.0208815	.0067560	.0034252	1.885835
#2	.0247504	.006477	.0264551	.0082720	.0033008	1.874082
#3	.0231224	.004488	.0237161	.0027502	.0052303	1.886207

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.474312	.0002732	.0000863	202.6994	.1530244	.0429739
Stddev	.008719	.0001250	.0000483	1.3824	.0000709	.0000356
%RSD	.5913831	45.75719	56.01262	.6820037	.0463422	.0827585

#1	1.466145	.0001400	.0000329	201.3400	.1529672	.0429379
#2	1.473296	.0003880	.0000989	202.6544	.1531037	.0430091
#3	1.483494	.0002916	.0001270	204.1037	.1530022	.0429748

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0057024	10.34721	.1259538	103.2425	.0771142	.0000433
Stddev	.0009249	.05552	.0012176	.6729	.0010166	.0000608
%RSD	16.21910	.5365566	.9666944	.6517905	1.318323	140.6493

#1	.0052303	10.29547	.1253977	102.4950	.0771540	.0000205
#2	.0051089	10.34030	.1251135	103.4327	.0781103	.0001122
#3	.0067681	10.40586	.1273501	103.7999	.0760782	-.000003

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 2600.134	.0909735	.0749703	F 337.9706	3.472317	5.993767
Stddev	12.527	.0038242	.0005886	.6919	.007319	.026813
%RSD	.4817702	4.203602	.7851601	.2047142	.2107951	.4473499

#1	2605.020	.0945248	.0755190	338.2578	3.473058	6.022038
#2	2585.900	.0914706	.0743486	337.1814	3.464656	5.968699
#3	2609.480	.0869251	.0750432	338.4726	3.479239	5.990564

Sample Name: N3261-01 Acquired: 06/10/2022 19:13:11 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0076826	37.26713	31.56675	.1167508	.0800428	.1336319
Stddev	.0001650	.03519	.15843	.0003222	.0020391	.0005176
%RSD	2.147595	.0944361	.5018805	.2759254	2.547516	.3873615
#1	.0075273	37.30441	31.72679	.1163865	.0814050	.1332917
#2	.0076647	37.26250	31.40998	.1169980	.0776985	.1333764
#3	.0078558	37.23448	31.56349	.1168678	.0810249	.1342276

Elem	Sr4077
Units	ppm
Avg	1.441821
Stddev	.006154
%RSD	.4267946
#1	1.435921
#2	1.441343
#3	1.448200

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	956.7294	1540.181	20254.17	7321.248	1645.446
Stddev	4.5365	2.749	101.55	12.711	4.963
%RSD	.4741689	.1784619	.5013653	.1736113	.3015955
#1	959.2994	1537.970	20337.13	7333.533	1644.519
#2	951.4914	1539.315	20140.92	7322.061	1641.013
#3	959.3974	1543.258	20284.44	7308.151	1650.807

Sample Name: N3270-06 Acquired: 06/10/2022 19:16:59 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: TP-9A Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1968133	-.017300	.0855130	.0146222	.0181525	106.2892	.1142184
Stddev	.0027853	.003720	.0024437	.0036102	.0036745	.8550	.0004402
%RSD	1.415192	21.50144	2.857669	24.68995	20.24264	.8044324	.3853696

#1	.1996726	-.021346	.0882785	.0163539	.0208863	105.3469	.1141470
#2	.1941084	-.014027	.0836449	.0170403	.0195957	106.5050	.1138182
#3	.1966590	-.016528	.0846155	.0104723	.0139754	107.0156	.1146898

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0076024	-.001949	2.818590	.6890821	.0202975	.0929343	280.3538
Stddev	.0001892	.000111	.039759	.0028931	.0003630	.0028451	.9802
%RSD	2.488845	5.720104	1.410582	.4198474	1.788275	3.061467	.3496473

#1	.0074435	-.002065	2.786679	.6859344	.0203360	.0958139	279.7450
#2	.0075520	-.001939	2.863129	.6916249	.0199169	.0928642	279.8318
#3	.0078117	-.001843	2.805962	.6896872	.0206398	.0901249	281.4846

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1988909	10.13892	.0418683	-.001090	2.891119	.7301456	.1898963
Stddev	.0015725	.03407	.0004875	.000477	.199839	.0142131	.0007660
%RSD	.7906251	.3360122	1.164349	43.79453	6.912151	1.946605	.4033880

#1	.1974519	10.10039	.0414093	-.001636	2.955553	.7141371	.1894643
#2	.1986513	10.16508	.0418156	-.000751	2.667012	.7350181	.1907808
#3	.2005694	10.15128	.0423800	-.000883	3.050791	.7412815	.1894439

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	19.59316	3.065849	.2758403	.0065379	1.463857	4.420191	.0147572
Stddev	.25805	.011871	.0063648	.0003487	.006992	.004107	.0016958
%RSD	1.317020	.3871850	2.307411	5.334223	.4776262	.0929238	11.49113

#1	19.56841	3.078082	.2738676	.0069235	1.467685	4.419508	.0127996
#2	19.34837	3.054378	.2706955	.0062446	1.455787	4.424597	.0157765
#3	19.86268	3.065086	.2829578	.0064457	1.468098	4.416468	.0156954

Sample Name: N3270-06 Acquired: 06/10/2022 19:16:59 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: TP-9A Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.239339	.0243651	.0249344
Stddev	.014575	.0027835	.0000368
%RSD	1.176070	11.42410	.1474905

#1	1.223470	.0235197	.0248921
#2	1.242418	.0221023	.0249584
#3	1.252129	.0274732	.0249529

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1137.223	1812.795	23985.38	8063.138	2082.080
Stddev	16.711	2.420	209.75	18.330	2.710
%RSD	1.469440	.1334696	.8745095	.2273251	.1301607

#1	1130.343	1815.485	23942.59	8055.575	2083.526
#2	1156.275	1812.104	24213.23	8084.039	2083.761
#3	1125.050	1810.796	23800.32	8049.801	2078.954

Sample Name: N3270-06DUP Acquired: 06/10/2022 19:20:49 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: TP-9ADUP Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1908611	-.017202	.0812155	.0098045	.0177793	105.6930	.1146368
Stddev	.0061823	.003216	.0005805	.0009140	.0010362	.2423	.0003358
%RSD	3.239180	18.69551	.7146977	9.322108	5.827957	.2292181	.2928997
#1	.1840883	-.016234	.0807939	.0103281	.0167675	105.4317	.1142968
#2	.1962015	-.014581	.0809750	.0103362	.0188382	105.9101	.1146452
#3	.1922935	-.020790	.0818775	.0087491	.0177321	105.7373	.1149682
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0075577	-.002343	2.478744	.6783353	.0201477	.0936075	279.6537
Stddev	.0001265	.000164	.079074	.0020147	.0000960	.0031525	.9078
%RSD	1.673994	7.008599	3.190075	.2970089	.4763127	3.367769	.3246202
#1	.0076467	-.002154	2.569949	.6804522	.0201880	.0955493	279.1988
#2	.0074129	-.002438	2.436875	.6781124	.0202169	.0899701	279.0632
#3	.0076135	-.002439	2.429410	.6764413	.0200381	.0953031	280.6990
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1993522	10.09524	.0411220	-.001311	2.104813	.7278261	.1938092
Stddev	.0016175	.08130	.0005416	.000270	.224505	.0043138	.0003615
%RSD	.8113654	.8053618	1.317034	20.56509	10.66626	.5926936	.1865173
#1	.1975248	10.01127	.0409450	-.001290	2.322116	.7246837	.1936041
#2	.1999320	10.10088	.0406910	-.001591	2.118583	.7260502	.1935970
#3	.2005999	10.17358	.0417299	-.001053	1.873740	.7327443	.1942266
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	19.51627	3.031982	.2782074	.0064286	1.435256	4.439356	.0146932
Stddev	.06820	.013770	.0077871	.0003084	.007471	.074466	.0013622
%RSD	.3494498	.4541460	2.799043	4.797547	.5205560	1.677395	9.270968
#1	19.47088	3.045778	.2711671	.0063108	1.428544	4.380384	.0159997
#2	19.48324	3.018238	.2768835	.0067785	1.433920	4.414649	.0132814
#3	19.59470	3.031930	.2865716	.0061964	1.443306	4.523035	.0147986

Sample Name: N3270-06DUP Acquired: 06/10/2022 19:20:49 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: TP-9ADUP Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.252624	.0255099	.0246150
Stddev	.007433	.0015838	.0001769
%RSD	.5934305	6.208696	.7187964

#1	1.244183	.0250345	.0244453
#2	1.258190	.0242182	.0246014
#3	1.255500	.0272769	.0247983

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1130.166	1846.853	24204.05	8079.936	2107.941
Stddev	2.357	2.620	25.34	13.453	2.586
%RSD	.2085512	.1418862	.1047117	.1664992	.1226996

#1	1130.830	1846.133	24186.33	8072.983	2110.870
#2	1127.548	1844.669	24192.74	8095.443	2105.970
#3	1132.119	1849.759	24233.08	8071.382	2106.983

Sample Name: N3270-06LX5 Acquired: 06/10/2022 19:24:37 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: CRI Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0413606	-.000847	.0158626	.0006954	.0025673	21.22865	.0239051
Stddev	.0034990	.001131	.0039233	.0051084	.0010847	.14224	.0004821
%RSD	8.459767	133.4695	24.73277	734.5480	42.24980	.6700164	2.016608
#1	.0415807	.000428	.0168774	.0014269	.0017367	21.06461	.0233489
#2	.0377567	-.001730	.0115317	-.004739	.0021707	21.31766	.0242017
#3	.0447443	-.001240	.0191788	.005399	.0037944	21.30369	.0241648
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0015921	-.000579	.5224071	.1390817	.0036575	.0180270	58.00768
Stddev	.0000518	.000023	.0310813	.0011345	.0002612	.0021257	.22820
%RSD	3.254723	3.916435	5.949623	.8156798	7.142273	11.79176	.3933993
#1	.0015434	-.000604	.4866313	.1402298	.0038130	.0204548	58.11424
#2	.0016465	-.000560	.5378233	.1390538	.0033559	.0171261	57.74569
#3	.0015862	-.000574	.5427668	.1379614	.0038035	.0165001	58.16310
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0407768	2.067972	.0079927	-.000053	.5409273	.1515718	.0353087
Stddev	.0004955	.050924	.0002549	.000179	.1359768	.0025186	.0012888
%RSD	1.215209	2.462488	3.189795	337.0296	25.13772	1.661630	3.650187
#1	.0402858	2.121891	.0081261	.000079	.6412701	.1511102	.0367529
#2	.0407676	2.020695	.0081532	.000018	.3861702	.1493159	.0342754
#3	.0412768	2.061331	.0076987	-.000257	.5953417	.1542892	.0348977
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.642122	.5793368	.0638024	.0016196	.2713337	1.014727	.0032288
Stddev	.044671	.0090560	.0030137	.0006394	.0035659	.014996	.0002088
%RSD	1.226508	1.563162	4.723447	39.48188	1.314216	1.477793	6.465252
#1	3.680503	.5861461	.0654113	.0009006	.2672174	1.009994	.0034295
#2	3.593088	.5828049	.0603257	.0018337	.2733030	1.002669	.0032439
#3	3.652776	.5690593	.0656701	.0021246	.2734806	1.031518	.0030129

Sample Name: N3270-06LX5 Acquired: 06/10/2022 19:24:37 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: CRI Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.2577567	.0059546	.0050912
Stddev	.0019792	.0016568	.0001143
%RSD	.7678467	27.82385	2.244978

#1	.2555411	.0040869	.0051730
#2	.2593497	.0065299	.0051399
#3	.2583792	.0072471	.0049606

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1052.113	1726.936	22635.18	7551.178	2114.399
Stddev	21.713	6.238	216.49	73.642	2.803
%RSD	2.063780	.3611938	.9564385	.9752341	.1325599

#1	1027.128	1720.280	22394.39	7466.585	2113.307
#2	1066.423	1727.879	22697.44	7600.967	2112.307
#3	1062.787	1732.648	22813.73	7585.981	2117.584

Sample Name: N3270-06MS Acquired: 06/10/2022 19:28:27 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: TP-9AMS Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8777423	1.883251	.9976509	1.985914	.7585370	93.75599	.2826409
Stddev	.0061505	.010239	.0084176	.009743	.0018801	.27383	.0023335
%RSD	.7007188	.5436727	.8437437	.4905976	.2478531	.2920650	.8256119
#1	.8716296	1.882820	.9908613	1.992272	.7575501	93.55776	.2811681
#2	.8839299	1.873234	.9950223	1.990773	.7607050	93.64178	.2853313
#3	.8776673	1.893698	1.007069	1.974697	.7573559	94.06844	.2814231
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2069468	.1934614	3.294953	.9461192	.2120470	.3577807	228.0556
Stddev	.0009964	.0006533	.017111	.0016108	.0006533	.0028687	2.1184
%RSD	.4814723	.3376696	.5193007	.1702504	.3081068	.8018026	.9288999
#1	.2059372	.1931817	3.294785	.9452881	.2117949	.3544758	226.3081
#2	.2079294	.1929945	3.277927	.9479757	.2115572	.3596277	230.4117
#3	.2069738	.1942079	3.312147	.9450936	.2127888	.3592385	227.4469
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3389228	10.87512	.5276682	.0716708	4.550839	.8516710	.4127571
Stddev	.0032700	.07243	.0024842	.0008934	.026446	.0066838	.0013065
%RSD	.9648174	.6659929	.4707786	1.246610	.5811292	.7847897	.3165181
#1	.3365975	10.83219	.5250793	.0707948	4.575023	.8454192	.4136858
#2	.3426618	10.95875	.5278929	.0725807	4.554895	.8508777	.4112632
#3	.3375091	10.83443	.5300324	.0716369	4.522599	.8587161	.4133223
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	25.81116	8.517149	.5092211	.3550237	1.235062	3.677121	.6924415
Stddev	.07251	.049452	.0064055	.0013810	.005968	.028620	.0018837
%RSD	.2809384	.5806217	1.257894	.3889865	.4832292	.7783372	.2720398
#1	25.78027	8.473912	.5019606	.3566179	1.238042	3.658503	.6915387
#2	25.75921	8.506464	.5140734	.3542578	1.228191	3.710076	.6911792
#3	25.89401	8.571070	.5116294	.3541954	1.238953	3.662782	.6946067

Sample Name: N3270-06MS Acquired: 06/10/2022 19:28:27 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: TP-9AMS Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.199269	.2007884	.2079899
Stddev	.004113	.0015425	.0011887
%RSD	.3429284	.7682316	.5715253

#1	1.197531	.2021763	.2066177
#2	1.196311	.2010613	.2087037
#3	1.203965	.1991277	.2086483

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1133.553	1847.924	24236.35	7983.318	2139.416
Stddev	9.467	.524	85.44	44.851	7.163
%RSD	.8351813	.0283695	.3525244	.5618042	.3348323

#1	1133.670	1848.236	24252.14	8028.174	2146.024
#2	1142.960	1847.319	24312.79	7938.473	2140.420
#3	1124.027	1848.218	24144.11	7983.307	2131.803

Sample Name: N3270-06MSD Acquired: 06/10/2022 19:32:09 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: TP-9AMSD Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8918441	1.899186	1.011968	2.008726	.7642299	96.50200	.2893671
Stddev	.0053330	.005678	.003661	.012582	.0016114	.15990	.0011131
%RSD	.5979695	.2989690	.3617928	.6263831	.2108506	.1656911	.3846719
#1	.8898374	1.892738	1.010127	2.011171	.7625049	96.34385	.2903570
#2	.8978893	1.903441	1.009593	2.019907	.7656964	96.49856	.2881622
#3	.8878057	1.901378	1.016184	1.995101	.7644883	96.66359	.2895822
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2077538	.1946722	3.305803	.9536817	.2141209	.3673171	239.7222
Stddev	.0007943	.0003456	.052575	.0049530	.0004020	.0053250	2.1038
%RSD	.3823298	.1775163	1.590372	.5193577	.1877620	1.449699	.8775951
#1	.2084469	.1943477	3.365923	.9492467	.2136693	.3666839	240.6889
#2	.2068870	.1946335	3.283047	.9527718	.2142539	.3623371	237.3088
#3	.2079274	.1950355	3.268440	.9590266	.2144396	.3729305	241.1688
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3470914	11.29863	.5347737	.0720188	4.764878	.8770190	.4116386
Stddev	.0025602	.06995	.0019499	.0003907	.222991	.0054815	.0023775
%RSD	.7376089	.6191151	.3646146	.5424756	4.679895	.6250145	.5775664
#1	.3488127	11.34427	.5326434	.0720496	4.572915	.8792610	.4112411
#2	.3441494	11.21810	.5352078	.0716137	5.009479	.8707719	.4094850
#3	.3483122	11.33353	.5364700	.0723932	4.712239	.8810241	.4141898
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	26.80715	8.628539	.5257239	.3595125	1.263457	3.724125	.7019916
Stddev	.07725	.059079	.0050908	.0012709	.005345	.018023	.0029600
%RSD	.2881683	.6846965	.9683347	.3535104	.4230069	.4839610	.4216525
#1	26.88867	8.565553	.5295209	.3594581	1.258007	3.743615	.7044166
#2	26.73503	8.682724	.5199391	.3608098	1.268689	3.708061	.6986932
#3	26.79776	8.637338	.5277117	.3582697	1.263677	3.720698	.7028649

Sample Name: N3270-06MSD Acquired: 06/10/2022 19:32:09 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: TP-9AMSD Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.239802	.2078266	.2112339
Stddev	.001771	.0005705	.0010413
%RSD	.1428498	.2744987	.4929781

#1	1.238126	.2077254	.2111698
#2	1.239626	.2073135	.2102261
#3	1.241655	.2084409	.2123058

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1144.766	1838.163	24434.17	7978.216	2132.262
Stddev	8.144	4.517	124.87	36.446	6.797
%RSD	.7114081	.2457079	.5110615	.4568146	.3187759

#1	1138.016	1843.213	24497.21	7956.180	2140.010
#2	1142.472	1834.510	24290.34	8020.284	2129.470
#3	1153.812	1836.766	24514.95	7958.184	2127.304

Sample Name: N3270-06A Acquired: 06/10/2022 19:35:51 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: ICSA10996 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9672534	2.011932	1.090040	2.080068	.8049565	109.2999	.3137383
Stddev	.0074099	.004849	.000570	.001841	.0019533	.9080	.0012161
%RSD	.7660808	.2410045	.0523204	.0885231	.2426572	.8307192	.3876144
#1	.9735792	2.017529	1.089508	2.082193	.8053237	108.4581	.3137753
#2	.9690800	2.008997	1.089972	2.079064	.8067002	110.2621	.3125041
#3	.9591009	2.009270	1.090642	2.078946	.8028457	109.1797	.3149354
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2171684	.2063274	3.538270	1.085299	.2303833	.3922781	287.8214
Stddev	.0008303	.0005022	.045083	.002033	.0008141	.0009547	2.7955
%RSD	.3823452	.2434008	1.274164	.1873646	.3533554	.2433616	.9712510
#1	.2173090	.2067454	3.486356	1.085007	.2311014	.3913878	288.8778
#2	.2179195	.2064665	3.567577	1.083427	.2294989	.3932862	284.6516
#3	.2162768	.2057703	3.560876	1.087463	.2305497	.3921603	289.9346
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4034156	12.20821	.5686112	.0761082	4.982289	1.036745	.3990713
Stddev	.0027382	.12328	.0016247	.0004192	.246195	.015515	.0060095
%RSD	.6787508	1.009772	.2857320	.5507321	4.941405	1.496526	1.505870
#1	.4043140	12.27107	.5695920	.0759916	4.821574	1.021429	.4010307
#2	.4003411	12.06618	.5667358	.0757597	4.859569	1.052452	.4038566
#3	.4055917	12.28740	.5695059	.0765733	5.265723	1.036355	.3923267
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	29.55027	9.507448	.5847302	.4009384	1.422484	5.617140	.7611227
Stddev	.13636	.053748	.0012304	.0004727	.012099	.031577	.0026129
%RSD	.4614407	.5653296	.2104298	.1178857	.8505816	.5621530	.3432922
#1	29.48714	9.568910	.5861509	.4013364	1.430055	5.608565	.7636210
#2	29.70675	9.469253	.5840311	.4004160	1.408529	5.652118	.7584086
#3	29.45692	9.484181	.5840084	.4010628	1.428866	5.590736	.7613386

Sample Name: N3270-06A Acquired: 06/10/2022 19:35:51 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: ICSA10996 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.468840	.2146408	.2255377
Stddev	.016371	.0002668	.0004522
%RSD	1.114524	.1243181	.2005010

#1	1.451866	.2145201	.2250591
#2	1.484532	.2149467	.2255959
#3	1.470122	.2144557	.2259579

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1095.644	1799.102	23639.34	7832.370	2059.143
Stddev	14.982	1.338	86.32	10.824	4.314
%RSD	1.367444	.0743452	.3651475	.1382014	.2094872

#1	1101.037	1800.231	23715.91	7832.910	2054.229
#2	1078.711	1797.624	23545.80	7842.915	2062.305
#3	1107.182	1799.449	23656.32	7821.286	2060.895

Sample Name: N3270-01 Acquired: 06/10/2022 19:39:34 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: TP-1A Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1095627	-.075930	.0995504	.0215759	.0448277	134.5023	.2479356
Stddev	.0137127	.005769	.0029187	.0019376	.0018797	.1692	.0011104
%RSD	12.51586	7.598371	2.931904	8.980247	4.193221	.1258184	.4478389
#1	.0941328	-.080369	.1028849	.0210239	.0455614	134.3793	.2466786
#2	.1203561	-.078013	.0983069	.0199743	.0462300	134.6953	.2487825
#3	.1141993	-.069409	.0974593	.0237296	.0426918	134.4323	.2483458
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0316865	-.001165	6.961298	1.768231	.0473652	.1361357	743.5989
Stddev	.0001383	.000326	.106854	.004307	.0003067	.0028640	5.2801
%RSD	.4364980	27.98849	1.534973	.2435514	.6475438	2.103787	.7100745
#1	.0316790	-.000824	7.058931	1.768131	.0473892	.1346318	737.6046
#2	.0318284	-.001199	6.977816	1.763975	.0470472	.1343368	745.6309
#3	.0315521	-.001473	6.847147	1.772586	.0476593	.1394383	747.5611
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3764773	13.17583	.0985084	-.003945	5.854732	1.752109	.3912260
Stddev	.0013690	.10055	.0008699	.000159	.313538	.005648	.0010743
%RSD	.3636210	.7631617	.8830719	4.039575	5.355295	.3223674	.2745930
#1	.3749217	13.05973	.0985448	-.003817	5.616597	1.751645	.3919209
#2	.3774984	13.23536	.0993596	-.004123	5.737632	1.746708	.3899887
#3	.3770117	13.23238	.0976209	-.003894	6.209966	1.757975	.3917685
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	20.12818	43.72382	.4816905	-.001279	.5672068	3.833128	.0245714
Stddev	.10200	.04730	.0091978	.000498	.0048488	.027860	.0004909
%RSD	.5067449	.1081740	1.909481	38.96652	.8548543	.7268333	1.997894
#1	20.13503	43.67235	.4713845	-.001837	.5700181	3.802165	.0240678
#2	20.22658	43.76538	.4846211	-.000878	.5616079	3.841047	.0250485
#3	20.02293	43.73374	.4890660	-.001121	.5699945	3.856172	.0245978

Sample Name: N3270-01 Acquired: 06/10/2022 19:39:34 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: TP-1A Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.334371	.0370767	.0812541
Stddev	.002942	.0011693	.0003004
%RSD	.1260188	3.153753	.3696686

#1	2.336711	.0357295	.0809180
#2	2.331069	.0376719	.0813483
#3	2.335333	.0378286	.0814961

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1244.448	2041.028	27168.56	9122.602	1999.136
Stddev	10.244	4.893	114.83	31.920	7.105
%RSD	.8231671	.2397168	.4226699	.3499045	.3553807

#1	1254.272	2036.718	27288.37	9158.442	1997.743
#2	1233.830	2040.019	27059.45	9097.228	1992.830
#3	1245.241	2046.346	27157.87	9112.138	2006.833

Sample Name: N3270-02 Acquired: 06/10/2022 19:43:19 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: TP-1B Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1214018	-.097537	.0990279	.0249780	.0424817	157.9683	.2651298
Stddev	.0032157	.001854	.0012096	.0015094	.0009629	.3835	.0005519
%RSD	2.648837	1.901140	1.221508	6.042803	2.266659	.2427921	.2081508
#1	.1192860	-.097905	.0980256	.0239786	.0415592	157.5414	.2656817
#2	.1251023	-.099179	.1003715	.0242411	.0424054	158.0796	.2645780
#3	.1198169	-.095526	.0986867	.0267142	.0434804	158.2838	.2651295
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0359717	-.000922	^ *****	1.702156	.0520978	.1543143	828.9596
Stddev	.0004591	.000032	-----	.002011	.0001697	.0002334	.8655
%RSD	1.276302	3.421709	-----	.1181448	.3256420	.1512541	.1044063
#1	.0358797	-.000922	^ -----	1.700813	.0519098	.1540509	829.9590
#2	.0364698	-.000953	^ -----	1.704468	.0522394	.1543964	828.4639
#3	.0355656	-.000890	^ -----	1.701187	.0521442	.1544955	828.4560
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4511686	13.28452	.1007751	-.005167	6.153840	1.999780	.3734650
Stddev	.0001986	.07920	.0001370	.000518	.226280	.011735	.0029374
%RSD	.0440116	.5961975	.1359664	10.02852	3.677050	.5867910	.7865406
#1	.4513869	13.34597	.1007253	-.004578	5.975035	1.988243	.3707370
#2	.4509987	13.19513	.1009301	-.005552	6.078245	2.011703	.3765746
#3	.4511201	13.31245	.1006699	-.005370	6.408240	1.999393	.3730833
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	20.83490	49.80248	.5125220	-.000900	1.739706	3.748354	.0262797
Stddev	.11711	.34839	.0045803	.000516	.017891	.020108	.0014344
%RSD	.5620739	.6995482	.8936684	57.27356	1.028392	.5364392	5.458169
#1	20.92650	50.00600	.5142926	-.000310	1.733149	3.753282	.0278939
#2	20.70295	49.40020	.5073208	-.001125	1.726018	3.765539	.0251514
#3	20.87524	50.00124	.5159527	-.001265	1.759950	3.726240	.0257938

Sample Name: N3270-02 Acquired: 06/10/2022 19:43:19 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: TP-1B Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.117088	.0419483	.0674215
Stddev	.002178	.0001753	.0000823
%RSD	.1028953	.4179640	.1220763

#1	2.114656	.0417737	.0674249
#2	2.118860	.0419468	.0673376
#3	2.117748	.0421243	.0675021

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1288.216	2111.801	28212.40	9499.915	2003.681
Stddev	10.177	3.336	14.07	37.629	1.802
%RSD	.7900318	.1579714	.0498818	.3960931	.0899333

#1	1295.754	2114.500	28209.44	9456.936	2002.685
#2	1276.639	2112.832	28200.05	9526.929	2005.761
#3	1292.256	2108.071	28227.72	9515.880	2002.598

Sample Name: CCV05 Acquired: 06/10/2022 19:47:02 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.164389	5.158895	5.054585	5.267631	5.159384	10.05879	9.965713
Stddev	.025548	.012386	.005909	.013581	.015012	.01733	.005477
%RSD	.4946959	.2400925	.1169080	.2578267	.2909632	.1723081	.0549590
#1	5.191125	5.144684	5.056108	5.282610	5.176059	10.03883	9.964448
#2	5.161820	5.164608	5.048063	5.264163	5.146945	10.06746	9.960980
#3	5.140223	5.167394	5.059584	5.256120	5.155149	10.07008	9.971712
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2539702	2.543744	24.83440	1.007400	2.512521	1.259277	5.033674
Stddev	.0004335	.007900	.08712	.002256	.005919	.003384	.026921
%RSD	.1707034	.3105694	.3508016	.2239645	.2355743	.2687098	.5348098
#1	.2538165	2.541684	24.75732	1.007722	2.514235	1.263161	5.003770
#2	.2544597	2.537078	24.81695	1.005000	2.505934	1.257710	5.041278
#3	.2536345	2.552470	24.92892	1.009477	2.517394	1.256962	5.055975
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.514809	24.78925	2.537417	1.257551	25.24144	2.531017	2.515617
Stddev	.011606	.09928	.006296	.007510	.20353	.006412	.006098
%RSD	.4614883	.4004852	.2481388	.5971817	.8063210	.2533355	.2424030
#1	2.502487	24.71363	2.538957	1.261361	25.46829	2.524355	2.520778
#2	2.516407	24.75245	2.530493	1.248900	25.18120	2.537146	2.508888
#3	2.525533	24.90167	2.542800	1.262392	25.07483	2.531550	2.517185
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	24.03879	5.285288	5.010882	5.116888	5.178967	5.027319	5.112614
Stddev	.17465	.009993	.007044	.006168	.022211	.012880	.003452
%RSD	.7265168	.1890733	.1405730	.1205437	.4288637	.2561976	.0675235
#1	24.23739	5.295233	5.013975	5.121436	5.163724	5.017323	5.116012
#2	23.96985	5.275247	5.015850	5.109867	5.168726	5.041854	5.109110
#3	23.90914	5.285384	5.002820	5.119362	5.204451	5.022779	5.112719

Sample Name: CCV05 Acquired: 06/10/2022 19:47:02 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.958200	4.889227	5.017290
Stddev	.004407	.002562	.034444
%RSD	.0888765	.0523959	.6865002

#1	4.959881	4.890486	5.030998
#2	4.961518	4.890915	5.042770
#3	4.953200	4.886279	4.978103

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1021.611	1678.992	22173.08	7420.533	2036.483
Stddev	5.727	5.642	107.33	37.824	5.116
%RSD	.5605581	.3360277	.4840346	.5097262	.2511932

#1	1017.124	1672.660	22077.39	7402.030	2030.669
#2	1028.061	1680.834	22289.12	7395.522	2040.294
#3	1019.648	1683.483	22152.72	7464.047	2038.487

Sample Name: CCB05 Acquired: 06/10/2022 19:50:47 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.003424	.0021706	-.001102	.0021813	.0021867	.0152751	-.000388
Stddev	.001053	.0007864	.000697	.0072668	.0004041	.0070777	.000436
%RSD	30.76210	36.23223	63.25750	333.1504	18.48133	46.33512	112.3471
#1	-.004116	.0022729	-.000366	.0036909	.0017804	.0145708	-.000786
#2	-.003945	.0029009	-.001752	.0085746	.0025886	.0226786	-.000457
#3	-.002212	.0013380	-.001189	-.005722	.0021913	.0085758	.000078
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000431	-.000018	-.014711	.0000279	.0001561	.0026536	.0243855
Stddev	.0000722	.000015	.004029	.0011227	.0002469	.0030304	.0043399
%RSD	167.7663	83.86928	27.38414	4021.763	158.1437	114.2008	17.79715
#1	.0001264	-.000002	-.018762	-.000074	.0003991	.0057246	.0283667
#2	-.000002	-.000032	-.014666	-.001040	.0001639	-.000334	.0250309
#3	.000005	-.000020	-.010705	.001198	-.000095	.002570	.0197591
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001053	.0507268	-.000077	.0003147	-.335124	-.000279	-.005538
Stddev	.0004664	.0078460	.000771	.0003303	.574715	.003019	.000214
%RSD	443.0161	15.46711	1007.427	104.9663	171.4930	1082.180	3.868796
#1	-.000006	.0517697	.000767	-.000008	-.998646	-.002001	-.005785
#2	-.000295	.0424115	-.000745	.000300	-.013454	.003207	-.005432
#3	.000617	.0579992	-.000252	.000652	.006727	-.002043	-.005398
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.385700	-.000778	.0130495	.0006681	-.008167	.0076733	.0002193
Stddev	.097953	.004915	.0006701	.0004050	.000717	.0011543	.0017392
%RSD	25.39624	631.5561	5.134887	60.61315	8.780241	15.04279	792.8994
#1	-.406379	-.005045	.0138073	.0010923	-.007441	.0085343	-.001100
#2	-.471662	-.001885	.0125354	.0002855	-.008184	.0063617	-.000432
#3	-.279058	.004595	.0128057	.0006266	-.008875	.0081239	.002190

Sample Name: CCB05 Acquired: 06/10/2022 19:50:47 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.000266	-.001649	.0001051
Stddev	.001870	.001446	.0000537
%RSD	703.1549	87.67317	51.14777

#1	-.002006	-.000015	.0001086
#2	-.000503	-.002763	.0001570
#3	.001712	-.002170	.0000497

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1056.897	1713.465	22439.74	7360.775	2128.341
Stddev	14.388	2.259	108.55	21.131	5.155
%RSD	1.361341	.1318422	.4837264	.2870738	.2422109

#1	1055.004	1710.953	22395.44	7351.875	2123.068
#2	1072.137	1715.330	22563.43	7384.900	2133.369
#3	1043.549	1714.113	22360.35	7345.550	2128.585

Sample Name: N3270-03 Acquired: 06/10/2022 19:54:44 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: TP-1C Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0989806	-.078492	.0905981	.0203246	.0382986	140.0474	.2540263
Stddev	.0030588	.002761	.0036304	.0064949	.0008226	.9985	.0008351
%RSD	3.090323	3.517873	4.007146	31.95562	2.147810	.7129507	.3287509

#1	.0992627	-.075953	.0891561	.0225868	.0387774	139.7819	.2548194
#2	.0957904	-.078091	.0879102	.0130012	.0387696	141.1518	.2531547
#3	.1018885	-.081432	.0947279	.0253858	.0373488	139.2086	.2541046

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0336754	-.001598	5.197667	1.688760	.0486160	.1405789	719.5024
Stddev	.0003152	.000323	.163883	.003280	.0004480	.0042533	4.3023
%RSD	.9359122	20.22458	3.153005	.1942277	.9215919	3.025577	.5979525

#1	.0340263	-.001817	5.150586	1.691128	.0486129	.1406716	720.6298
#2	.0335834	-.001227	5.379937	1.685016	.0481696	.1362799	714.7487
#3	.0334164	-.001749	5.062478	1.690136	.0490657	.1447851	723.1287

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4681145	12.61399	.0981344	-.003413	5.579509	1.601807	.3692424
Stddev	.0020006	.04350	.0001277	.000525	.262408	.017288	.0028160
%RSD	.4273688	.3448614	.1301707	15.36928	4.703066	1.079283	.7626470

#1	.4687530	12.63792	.0981007	-.003120	5.392140	1.597511	.3724880
#2	.4658727	12.56377	.0980269	-.004018	5.466971	1.620838	.3674478
#3	.4697180	12.64026	.0982756	-.003100	5.879416	1.587072	.3677914

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	19.34193	41.69550	.4558139	.0003903	.9706845	3.421553	.0245166
Stddev	.05224	.25943	.0172942	.0006151	.0072641	.019601	.0007307
%RSD	.2700991	.6222047	3.794138	157.5911	.7483530	.5728737	2.980563

#1	19.38748	41.39705	.4664946	.0003863	.9790417	3.412344	.0240774
#2	19.28491	41.82241	.4358609	.0010074	.9658847	3.444063	.0253601
#3	19.35341	41.86705	.4650863	-.000223	.9671272	3.408252	.0241122

Sample Name: N3270-03 Acquired: 06/10/2022 19:54:44 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: TP-1C Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.124405	.0381688	.0763406
Stddev	.016289	.0010222	.0000922
%RSD	.7667722	2.678207	.1207758

#1	2.119387	.0379059	.0764338
#2	2.142613	.0392968	.0762494
#3	2.111215	.0373037	.0763387

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1277.126	2058.729	27616.61	9170.619	2045.222
Stddev	14.589	10.086	272.94	54.074	7.519
%RSD	1.142333	.4898935	.9883093	.5896444	.3676446

#1	1263.210	2070.366	27314.08	9116.977	2053.851
#2	1292.306	2052.525	27844.38	9225.115	2040.074
#3	1275.862	2053.296	27691.35	9169.766	2041.742

Sample Name: N3270-04 Acquired: 06/10/2022 19:58:30 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: TP-1D Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1238098	-.070077	.0866023	.0163893	.0367100	146.6948	.2503412
Stddev	.0034948	.003831	.0038438	.0054712	.0016347	.1887	.0019851
%RSD	2.822738	5.467031	4.438414	33.38255	4.453085	.1286067	.7929568

#1	.1215752	-.066723	.0901291	.0224889	.0351324	146.5063	.2483327
#2	.1220169	-.069256	.0871724	.0147645	.0366011	146.8836	.2503888
#3	.1278372	-.074252	.0825053	.0119147	.0383964	146.6947	.2523020

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0334674	-.002107	6.577826	1.650336	.0476414	.1463976	713.3494
Stddev	.0003083	.000069	.106432	.003910	.0005622	.0039978	1.0577
%RSD	.9213455	3.281670	1.618035	.2369435	1.179997	2.730771	.1482794

#1	.0332413	-.002027	6.696364	1.645867	.0476340	.1509943	714.2896
#2	.0333423	-.002146	6.546650	1.653125	.0470830	.1444666	712.2041
#3	.0338187	-.002148	6.490463	1.652017	.0482073	.1437319	713.5545

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4557376	12.91442	.0939457	-.003812	5.321745	1.707151	.3544549
Stddev	.0011611	.08644	.0007155	.000512	.083779	.009303	.0026410
%RSD	.2547725	.6693309	.7616342	13.43784	1.574275	.5449541	.7450779

#1	.4543975	12.98932	.0946597	-.003254	5.310797	1.717466	.3514115
#2	.4563715	12.81983	.0932287	-.003920	5.410459	1.704592	.3561441
#3	.4564437	12.93411	.0939487	-.004262	5.243978	1.699395	.3558091

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	19.71952	40.05684	.4561337	.0008720	.7330562	3.229234	.0251967
Stddev	.14925	.13559	.0107480	.0003498	.0108632	.016361	.0019726
%RSD	.7568740	.3384970	2.356322	40.11264	1.481909	.5066463	7.828599

#1	19.60272	40.21168	.4671720	.0006511	.7348255	3.210929	.0274736
#2	19.66816	39.95933	.4457017	.0012752	.7214169	3.234342	.0240061
#3	19.88766	39.99951	.4555274	.0006895	.7429262	3.242431	.0241103

Sample Name: N3270-04 Acquired: 06/10/2022 19:58:30 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: TP-1D Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.071550	.0387634	.0765443
Stddev	.005222	.0017293	.0002423
%RSD	.2520803	4.461095	.3165634

#1	2.066103	.0368068	.0766336
#2	2.072035	.0400868	.0762700
#3	2.076513	.0393966	.0767293

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1233.942	2006.524	26844.82	8983.250	2035.185
Stddev	4.935	4.645	64.04	17.537	5.071
%RSD	.3999073	.2314924	.2385510	.1952243	.2491602

#1	1233.963	2010.579	26816.72	8985.589	2030.534
#2	1238.866	2001.456	26918.10	8964.660	2040.591
#3	1228.996	2007.536	26799.63	8999.501	2034.430

Sample Name: N3270-05 Acquired: 06/10/2022 20:02:16 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: TP-1E Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1026341	-.067286	.0923728	.0175932	.0367427	141.9846	.2777287
Stddev	.0028126	.003788	.0025698	.0032175	.0015884	.4892	.0006189
%RSD	2.740398	5.629457	2.782000	18.28847	4.323015	.3445476	.2228387

#1	.1019209	-.068028	.0923009	.0140115	.0379396	141.5412	.2784005
#2	.1002467	-.070648	.0949778	.0185292	.0373479	141.9033	.2776041
#3	.1057346	-.063182	.0898396	.0202389	.0349407	142.5094	.2771817

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0300117	-.001805	5.867398	1.576555	.0480341	.1388226	704.2820
Stddev	.0006304	.000375	.073708	.003673	.0009367	.0013295	5.1279
%RSD	2.100427	20.78107	1.256237	.2329964	1.950068	.9577144	.7281053

#1	.0307360	-.002063	5.783176	1.577046	.0485894	.1402264	710.1287
#2	.0295870	-.001375	5.920136	1.572661	.0485604	.1375826	700.5478
#3	.0297120	-.001977	5.898881	1.579958	.0469527	.1386589	702.1695

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4595232	12.79222	.0988228	-.003284	5.374291	1.822834	.4021278
Stddev	.0032608	.11593	.0006341	.001591	.209796	.018249	.0004997
%RSD	.7096031	.9062527	.6416576	48.44622	3.903694	1.001126	.1242558

#1	.4628197	12.89535	.0984596	-.002291	5.614952	1.801952	.4025997
#2	.4562993	12.81455	.0995550	-.005118	5.229957	1.830835	.4016044
#3	.4594506	12.66674	.0984538	-.002442	5.277965	1.835716	.4021793

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	19.53682	43.28884	.4522873	-.000008	.9973652	3.301575	.0217962
Stddev	.10011	.25603	.0043248	.000701	.0112727	.031322	.0010809
%RSD	.5124293	.5914522	.9562042	8815.841	1.130250	.9486911	4.959082

#1	19.44616	43.04212	.4479027	.000800	.9937191	3.336506	.0207254
#2	19.64426	43.27112	.4524095	-.000467	1.010010	3.292225	.0217764
#3	19.52003	43.55327	.4565497	-.000357	.988367	3.275992	.0228869

Sample Name: N3270-05 Acquired: 06/10/2022 20:02:16 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: TP-1E Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.075744	.0427517	.0885628
Stddev	.001084	.0009090	.0002627
%RSD	.0522274	2.126259	.2966524

#1	2.076217	.0417927	.0888560
#2	2.074504	.0428616	.0883488
#3	2.076511	.0436007	.0884835

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1236.137	2021.801	26980.15	8954.966	2025.747
Stddev	14.959	5.097	118.40	64.614	2.242
%RSD	1.210111	.2521155	.4388301	.7215451	.1106985

#1	1223.097	2027.346	26948.94	8881.879	2028.261
#2	1232.849	2020.739	26880.49	9004.500	2023.954
#3	1252.467	2017.318	27111.03	8978.518	2025.025

Sample Name: N3270-07 Acquired: 06/10/2022 20:06:00 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: TP-9B Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1928385	-.016319	.5379599	.0094111	.0193183	111.4956	.2289272
Stddev	.0021649	.005328	.0044986	.0017498	.0010876	.8844	.0001354
%RSD	1.122653	32.64910	.8362283	18.59313	5.629785	.7931805	.0591395

#1	.1948533	-.022390	.5431278	.0098048	.0204564	110.7830	.2290766
#2	.1931127	-.012423	.5358313	.0109305	.0192091	111.2184	.2288126
#3	.1905496	-.014143	.5349208	.0074980	.0182895	112.4853	.2288926

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0082121	-.002198	4.237313	.6726080	.0201544	.0874276	268.8284
Stddev	.0000529	.000197	.115096	.0028939	.0004241	.0012748	.8583
%RSD	.6444271	8.977446	2.716248	.4302550	2.104120	1.458089	.3192915

#1	.0082702	-.002194	4.201503	.6699432	.0196693	.0859638	268.5015
#2	.0081991	-.002398	4.144379	.6756866	.0204551	.0880251	269.8022
#3	.0081668	-.002003	4.366057	.6721942	.0203387	.0882939	268.1816

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2024186	10.73922	.0441044	-.001002	2.088419	.7350029	.2190854
Stddev	.0018742	.02043	.0007075	.000431	.223690	.0055493	.0025974
%RSD	.9259102	.1902636	1.604228	43.03418	10.71096	.7549969	1.185586

#1	.2006076	10.75976	.0448118	-.001027	2.342759	.7289457	.2206644
#2	.2043502	10.71889	.0433967	-.000559	2.000243	.7362214	.2160875
#3	.2022980	10.73902	.0441047	-.001421	1.922255	.7398416	.2205042

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	18.11626	3.655597	.2544060	.0071836	1.281162	3.787007	.0182668
Stddev	.05629	.013907	.0012282	.0005398	.008515	.030288	.0009741
%RSD	.3107150	.3804420	.4827752	7.514646	.6646094	.7997910	5.332560

#1	18.11428	3.664197	.2554933	.0065705	1.287004	3.792049	.0186757
#2	18.17351	3.663041	.2546508	.0073930	1.285091	3.754514	.0189698
#3	18.06098	3.639552	.2530738	.0075874	1.271393	3.814457	.0171549

Sample Name: N3270-07 Acquired: 06/10/2022 20:06:00 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: TP-9B Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.173109	.0291581	.0972042
Stddev	.005457	.0005267	.0001853
%RSD	.4651902	1.806356	.1905795

#1	1.170539	.0286629	.0970024
#2	1.169411	.0291001	.0973665
#3	1.179376	.0297115	.0972438

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1131.850	1873.425	24348.37	8012.896	2086.142
Stddev	10.753	13.807	125.00	29.660	13.344
%RSD	.9500613	.7369701	.5133924	.3701543	.6396514

#1	1119.966	1857.915	24204.24	7990.565	2070.741
#2	1140.909	1884.374	24413.63	8001.574	2094.263
#3	1134.675	1877.986	24427.23	8046.550	2093.421

Sample Name: N3270-08 Acquired: 06/10/2022 20:09:49 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: TP-9C Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1782556	-.020178	.0808478	.0117820	.0161481	110.9621	.1238702
Stddev	.0031740	.000265	.0003674	.0008576	.0009355	1.1492	.0013283
%RSD	1.780576	1.311680	.4544264	7.278438	5.793288	1.035647	1.072319
#1	.1760029	-.020462	.0804901	.0127564	.0169569	111.6230	.1253969
#2	.1768782	-.020134	.0812242	.0111420	.0151235	111.6281	.1232341
#3	.1818855	-.019938	.0808290	.0114476	.0163638	109.6351	.1229795
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0074980	-.002098	5.487211	.6282479	.0206930	.0886900	272.9627
Stddev	.0002478	.000123	.073074	.0027108	.0001677	.0023916	1.9662
%RSD	3.305453	5.878583	1.331718	.4314772	.8104451	2.696642	.7203083
#1	.0077226	-.002213	5.518442	.6251279	.0205172	.0869057	275.2234
#2	.0072321	-.001968	5.539479	.6300250	.0208512	.0877566	272.0127
#3	.0075392	-.002114	5.403710	.6295909	.0207106	.0914076	271.6518
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2105055	10.93180	.0427936	-.000641	2.178602	.6567154	.2404522
Stddev	.0007518	.09763	.0005042	.001065	.331162	.0117330	.0006459
%RSD	.3571187	.8930894	1.178297	166.0504	15.20066	1.786619	.2686108
#1	.2107698	11.04161	.0433200	.000565	2.496468	.6584729	.2397849
#2	.2110894	10.89899	.0423149	-.001451	2.203761	.6674706	.2404973
#3	.2096572	10.85480	.0427461	-.001038	1.835579	.6442028	.2410743
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	19.62284	2.941600	.2641657	.0076656	1.115579	4.075495	.0150097
Stddev	.28071	.007429	.0020186	.0002242	.003387	.049233	.0007794
%RSD	1.430520	.2525585	.7641494	2.925086	.3036303	1.208032	5.192546
#1	19.85216	2.934793	.2625924	.0077230	1.118504	4.132286	.0154381
#2	19.70656	2.940482	.2664418	.0074183	1.116366	4.044867	.0141101
#3	19.30980	2.949524	.2634630	.0078556	1.111868	4.049332	.0154809

Sample Name: N3270-08 Acquired: 06/10/2022 20:09:49 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: TP-9C Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.075935	.0254107	.0347515
Stddev	.012755	.0017930	.0003401
%RSD	1.185475	7.056079	.9785174

#1	1.085927	.0236754	.0349628
#2	1.080311	.0272563	.0349325
#3	1.061569	.0253003	.0343593

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1136.874	1845.460	24512.79	8072.064	2095.846
Stddev	15.768	.587	213.54	54.484	3.030
%RSD	1.386988	.0318072	.8711302	.6749673	.1445581

#1	1155.029	1845.951	24755.05	8025.374	2098.589
#2	1128.998	1845.619	24431.44	8058.893	2092.594
#3	1126.596	1844.810	24351.88	8131.926	2096.356

Sample Name: N3270-09 Acquired: 06/10/2022 20:13:38 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: TP-9D Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5079637	-.025259	.0844650	.0231924	.0208811	101.4886	.1110868
Stddev	.0012281	.005332	.0011612	.0011351	.0029983	.6217	.0006849
%RSD	.2417725	21.11064	1.374768	4.894242	14.35892	.6126230	.6165793

#1	.5066198	-.021959	.0852482	.0242174	.0198572	101.1760	.1116552
#2	.5082435	-.031410	.0850158	.0233873	.0185288	102.2047	.1103263
#3	.5090277	-.022407	.0831309	.0219725	.0242572	101.0853	.1112787

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0088753	-.002334	3.696101	.7795406	.0194157	.1009538	349.1624
Stddev	.0001563	.000138	.133549	.0014949	.0005335	.0019371	3.0254
%RSD	1.761168	5.919588	3.613250	.1917703	2.748004	1.918767	.8664696

#1	.0090522	-.002315	3.682012	.7785823	.0197540	.0994287	350.8902
#2	.0087556	-.002207	3.836136	.7787763	.0196924	.1002994	345.6690
#3	.0088181	-.002481	3.570154	.7812631	.0188006	.1031333	350.9279

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1722946	9.684133	.0452573	-.001126	2.453469	.7751957	.3154427
Stddev	.0012571	.094135	.0008368	.000934	.335395	.0094463	.0027144
%RSD	.7296443	.9720590	1.848918	82.90678	13.67023	1.218572	.8605008

#1	.1727232	9.750842	.0444271	-.000766	2.185370	.7804455	.3158960
#2	.1708793	9.576456	.0452444	-.002186	2.345482	.7808512	.3179019
#3	.1732815	9.725102	.0461005	-.000426	2.829555	.7642906	.3125302

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	16.41715	4.007658	.2847434	.0113436	1.456327	3.244307	.0182540
Stddev	.06583	.008295	.0039262	.0002829	.007756	.011204	.0015127
%RSD	.4009687	.2069753	1.378858	2.494259	.5325979	.3453578	8.286933

#1	16.49149	4.005453	.2892694	.0113743	1.464264	3.241855	.0166687
#2	16.36624	4.016833	.2822531	.0116099	1.448765	3.234532	.0196817
#3	16.39373	4.000689	.2827077	.0110466	1.455952	3.256535	.0184117

Sample Name: N3270-09 Acquired: 06/10/2022 20:13:38 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: TP-9D Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.014169	.0236623	.0293655
Stddev	.002965	.0010216	.0001321
%RSD	.2923674	4.317194	.4497280

#1	1.010950	.0242404	.0294078
#2	1.014768	.0242637	.0292175
#3	1.016788	.0224828	.0294713

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1165.687	1889.232	25059.01	8314.173	2131.513
Stddev	18.164	3.487	207.51	86.432	1.881
%RSD	1.558211	.1845507	.8280865	1.039578	.0882317

#1	1163.253	1886.535	24907.26	8244.965	2132.137
#2	1148.863	1893.169	24974.28	8411.052	2133.003
#3	1184.945	1887.991	25295.47	8286.501	2129.400

Sample Name: N3270-10 Acquired: 06/10/2022 20:17:26 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: TP-9E Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2286500	-.015813	.0727332	.0113902	.0131031	87.17548	.1054575
Stddev	.0055610	.002124	.0038570	.0067253	.0005638	.23184	.0010798
%RSD	2.432100	13.43180	5.302990	59.04475	4.303051	.2659435	1.023899

#1	.2348946	-.013361	.0686127	.0184429	.0127402	87.13582	.1047228
#2	.2242322	-.017050	.0733299	.0050488	.0137526	87.42458	.1049525
#3	.2268232	-.017029	.0762572	.0106789	.0128164	86.96602	.1066973

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0061795	-.002044	2.128425	.5221354	.0155251	.0868836	241.3936
Stddev	.0001168	.000070	.076588	.0021460	.0004950	.0019449	1.6535
%RSD	1.890947	3.401507	3.598362	.4110010	3.188649	2.238485	.6849857

#1	.0062669	-.002046	2.216205	.5217225	.0158950	.0891228	241.1140
#2	.0060468	-.001973	2.093853	.5244579	.0157175	.0856150	239.8978
#3	.0062247	-.002112	2.075217	.5202260	.0149627	.0859131	243.1691

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1487135	7.944904	.0325333	-.000686	1.704013	.6200202	.1482618
Stddev	.0005570	.082535	.0007129	.000470	.128992	.0022844	.0006115
%RSD	.3745566	1.038837	2.191437	68.58156	7.569894	.3684444	.4124405

#1	.1481062	7.955035	.0317359	-.000157	1.824081	.6177957	.1479537
#2	.1488337	7.857772	.0327547	-.000841	1.567646	.6223602	.1478655
#3	.1492007	8.021907	.0331092	-.001059	1.720311	.6199046	.1489660

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	13.63809	2.738323	.2201122	.0161314	1.409220	5.032825	.0129286
Stddev	.00870	.017436	.0041948	.0000696	.006005	.009953	.0007736
%RSD	.0638073	.6367565	1.905741	.4316380	.4260943	.1977627	5.983281

#1	13.64210	2.758266	.2197368	.0160762	1.415730	5.027395	.0131655
#2	13.62810	2.725957	.2161177	.0162096	1.403899	5.026768	.0120644
#3	13.64406	2.730747	.2244820	.0161083	1.408030	5.044312	.0135561

Sample Name: N3270-10 Acquired: 06/10/2022 20:17:26 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: TP-9E Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.8564541	.0229684	.0191308
Stddev	.0015224	.0016496	.0000981
%RSD	.1777559	7.182234	.5127856

#1	.8581424	.0246381	.0190218
#2	.8551856	.0213395	.0192119
#3	.8560344	.0229276	.0191588

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1127.538	1828.682	24241.48	8085.277	2130.980
Stddev	8.954	.674	66.12	43.952	1.432
%RSD	.7940823	.0368815	.2727429	.5436057	.0671802

#1	1126.794	1829.247	24284.52	8128.121	2130.668
#2	1118.980	1828.863	24165.35	8087.415	2129.730
#3	1136.841	1827.935	24274.57	8040.295	2132.542

Sample Name: N3280-03DLX10 Acquired: 06/10/2022 20:21:15 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.008674	-.028900	.0059972	.0015832	.0064557	.1111757	.0052714
Stddev	.004270	.000682	.0018319	.0040191	.0015663	.0117735	.0001562
%RSD	49.22866	2.359385	30.54522	253.8623	24.26258	10.59000	2.963740

#1	-.009050	-.029637	.0080557	.0004873	.0082530	.0978226	.0051207
#2	-.012744	-.028771	.0053892	.0060366	.0057313	.1156418	.0054326
#3	-.004228	-.028291	.0045466	-.001774	.0053827	.1200627	.0052609

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0022871	-.001865	72.40840	-.023838	.0028826	.0370707	257.2163
Stddev	.0002901	.000186	.18811	.000481	.0001586	.0028661	.8947
%RSD	12.68620	9.958588	.2597844	2.015936	5.500313	7.731470	.3478207

#1	.0026023	-.001706	72.22471	-.023287	.0030244	.0349084	256.8202
#2	.0022278	-.001819	72.39986	-.024172	.0027114	.0359822	256.5880
#3	.0020311	-.002069	72.60063	-.024054	.0029120	.0403217	258.2406

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.427989	23.38213	.0048053	-.001203	125.2209	-.002767	.2827054
Stddev	.017731	.13707	.0002021	.000300	.8096	.002497	.0029217
%RSD	.3266664	.5862218	4.205702	24.95647	.6465081	90.22154	1.033478

#1	5.410608	23.22852	.0050363	-.001118	125.4792	.000019	.2839360
#2	5.427309	23.49197	.0046609	-.001536	125.8698	-.004801	.2848105
#3	5.446051	23.42589	.0047188	-.000954	124.3137	-.003521	.2793697

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.898986	.0019174	.2398330	-.002037	293.2451	.3142958	.0014388
Stddev	.053812	.0017780	.0050575	.000543	.8182	.0056034	.0009131
%RSD	.7800033	92.72910	2.108764	26.66686	.2790161	1.782844	63.46034

#1	6.836859	.0015730	.2359089	-.001498	293.6940	.3112637	.0012091
#2	6.931030	.0003368	.2380495	-.002585	293.7407	.3207619	.0024448
#3	6.929068	.0038424	.2455407	-.002029	292.3007	.3108618	.0006625

Sample Name: N3280-03DLX10 Acquired: 06/10/2022 20:21:15 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.000041	.0209134	.1224190
Stddev	.001851	.0003029	.0003033
%RSD	4521.188	1.448406	.2477321

#1	-.002004	.0208081	.1220923
#2	.001672	.0206772	.1224732
#3	.000209	.0212549	.1226915

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1008.360	1641.152	21869.94	7405.817	1985.097
Stddev	10.633	7.932	87.13	101.739	3.319
%RSD	1.054447	.4833461	.3984190	1.373774	.1671796

#1	1002.150	1632.010	21790.45	7342.205	1984.640
#2	1002.294	1645.236	21856.27	7352.089	1982.030
#3	1020.638	1646.210	21963.10	7523.157	1988.620

Sample Name: CCV06 Acquired: 06/10/2022 20:25:04 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.134437	5.126106	5.015029	5.208183	5.107536	10.02649	9.879826
Stddev	.010989	.014185	.016598	.012255	.010496	.07332	.045123
%RSD	.2140335	.2767228	.3309631	.2353120	.2054979	.7312735	.4567144
#1	5.124471	5.129277	5.024241	5.194216	5.118182	9.94183	9.895746
#2	5.132616	5.110604	4.995868	5.213201	5.107228	10.06994	9.914830
#3	5.146223	5.138438	5.024977	5.217134	5.097197	10.06769	9.828901
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2547730	2.525549	24.70434	1.005824	2.493197	1.253774	5.028099
Stddev	.0019328	.003104	.07493	.003201	.004565	.002017	.026860
%RSD	.7586356	.1229037	.3032942	.3182062	.1831013	.1608856	.5342041
#1	.2565409	2.527488	24.78618	1.002139	2.493654	1.256069	5.053655
#2	.2527094	2.521969	24.68774	1.007906	2.488421	1.252283	5.030541
#3	.2550687	2.527191	24.63911	1.007427	2.497516	1.252970	5.000101
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.505496	24.65578	2.519602	1.257367	24.88378	2.524153	2.522233
Stddev	.012830	.24397	.001967	.012505	.22603	.025884	.010503
%RSD	.5120862	.9895049	.0780837	.9945717	.9083612	1.025434	.4164086
#1	2.510999	24.65708	2.517416	1.265063	24.75557	2.495792	2.510470
#2	2.514656	24.89910	2.521231	1.242938	25.14477	2.530167	2.530669
#3	2.490832	24.41117	2.520160	1.264101	24.75100	2.546500	2.525561
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	23.94459	5.232750	5.014720	5.095123	5.133917	5.028957	5.085682
Stddev	.16610	.022428	.044794	.002676	.021537	.031965	.002694
%RSD	.6936994	.4286007	.8932559	.0525267	.4195033	.6356286	.0529744
#1	23.84269	5.207004	5.044510	5.094634	5.139819	5.049551	5.086021
#2	24.13626	5.248046	4.963206	5.098010	5.110044	4.992132	5.082834
#3	23.85481	5.243199	5.036443	5.092725	5.151887	5.045187	5.088190

Sample Name: CCV06 Acquired: 06/10/2022 20:25:04 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.951509	4.854963	5.015456
Stddev	.021539	.017803	.072783
%RSD	.4349963	.3666931	1.451172

#1	4.926868	4.852444	4.935408
#2	4.966753	4.873891	5.033310
#3	4.960905	4.838554	5.077651

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1034.082	1703.246	22511.65	7479.254	2070.606
Stddev	7.504	2.367	141.29	35.359	3.461
%RSD	.7256290	.1389595	.6276479	.4727651	.1671292

#1	1026.884	1700.770	22362.70	7442.849	2067.929
#2	1041.858	1703.482	22643.78	7481.448	2074.514
#3	1033.504	1705.486	22528.48	7513.465	2069.375

Sample Name: CCB06 Acquired: 06/10/2022 20:28:47 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -.005535	-.001021	-.000416	-.002412	.0008436	F .0273910
Stddev	.002155	.003591	.001566	.001194	.0032333	.0055191
%RSD	38.93135	351.6528	376.0903	49.48336	383.2666	20.14950

#1	-.003212	-.004967	.000795	-.001170	.0034916	.0294639
#2	-.007469	-.000153	.000141	-.002516	-.002760	.0315735
#3	-.005922	.002056	-.002184	-.003551	.001799	.0211355

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000183	.0000527	-.000129	-.009281	-.000200	-.000223
Stddev	.000369	.0000840	.000039	.007977	.000311	.000230
%RSD	202.1125	159.3891	29.89434	85.94540	155.9491	103.2564

#1	-.000521	.0001102	-.000094	-.009243	.000032	-.000027
#2	-.000238	.0000916	-.000171	-.017277	-.000554	-.000165
#3	.000211	-.000044	-.000124	-.001324	-.000077	-.000476

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0028126	.0092090	-.000027	.0118633	-.000173	-.000130
Stddev	.0018876	.0077358	.000539	.0176287	.000226	.000233
%RSD	67.11321	84.00275	2019.895	148.5988	130.5837	178.3234

#1	.0049832	.0013722	-.000457	-.006703	-.000148	.000129
#2	.0018985	.0168397	-.000201	.013917	.000040	-.000200
#3	.0015560	.0094150	.000578	.028375	-.000411	-.000320

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.222373	.0014495	-.005574	-.554908	.0025944	F .0118636
Stddev	.347597	.0018948	.000224	.124771	.0024752	.0009392
%RSD	156.3122	130.7224	4.015108	22.48494	95.40398	7.916244

#1	-.622729	-.000465	-.005579	-.667810	.0046895	.0112743
#2	-.046899	.003324	-.005347	-.575966	-.000137	.0113698
#3	.002507	.001489	-.005795	-.420948	.003230	.0129466

Sample Name: CCB06 Acquired: 06/10/2022 20:28:47 Type: Unk
Method: NON EPA-6010-200.7(v15) Mode: CONC Corr. Factor: 1.000000
User: BIN Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007669	-.004400	.0019335	-.000351	-.000264	-.000925
Stddev	.0001448	.004042	.0016562	.000293	.000590	.001260
%RSD	18.88248	91.86755	85.66041	83.43461	223.0665	136.3237

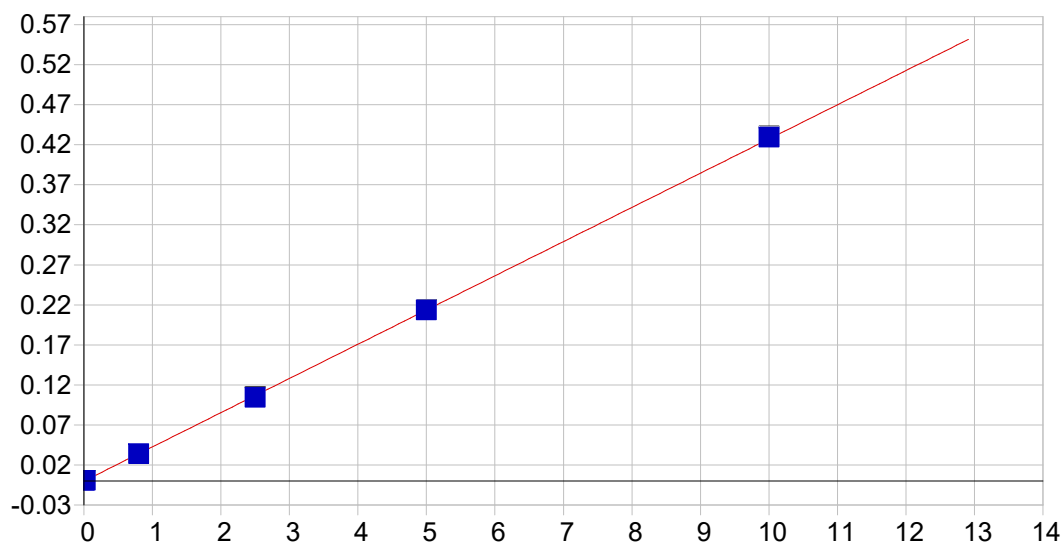
#1	.0008646	-.000917	.0034208	-.000136	.000226	-.001671
#2	.0006006	-.008832	.0022309	-.000233	-.000101	-.001634
#3	.0008357	-.003451	.0001487	-.000685	-.000918	.000531

Elem	Sr4077
Units	ppm
Avg	.0000773
Stddev	.0000769
%RSD	99.57304

#1	.0001648
#2	.0000202
#3	.0000468

Int. Std.	Y_2243	Y_2243	Y_3600	Y_3710	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1072.550	1733.988	22840.65	7502.000	2166.581
Stddev	13.856	.319	183.31	30.637	1.981
%RSD	1.291877	.0183965	.8025398	.4083881	.0914504

#1	1075.185	1734.157	22875.39	7512.050	2168.112
#2	1084.899	1734.186	23004.10	7526.350	2164.343
#3	1057.566	1733.619	22642.46	7467.600	2167.289

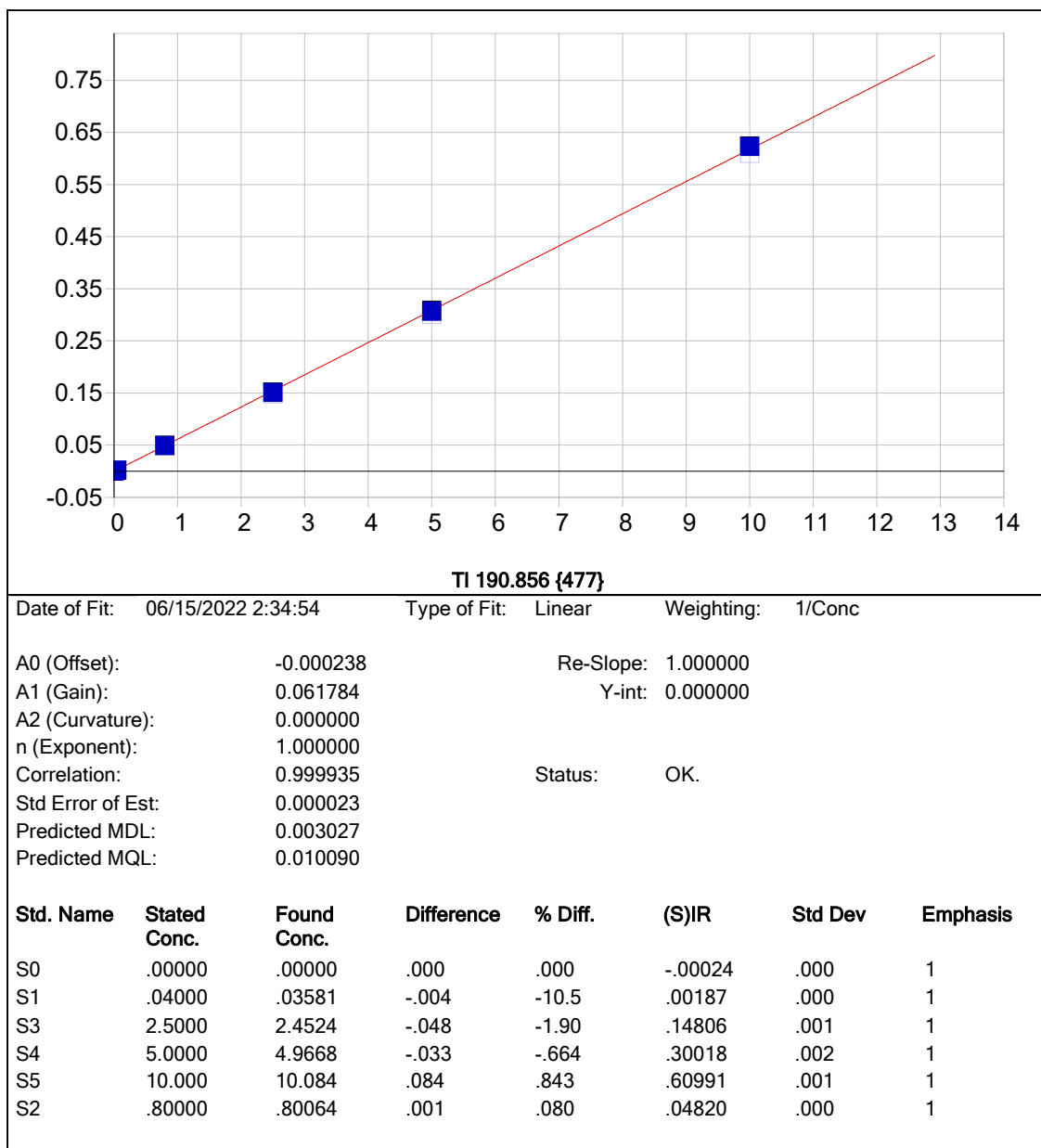


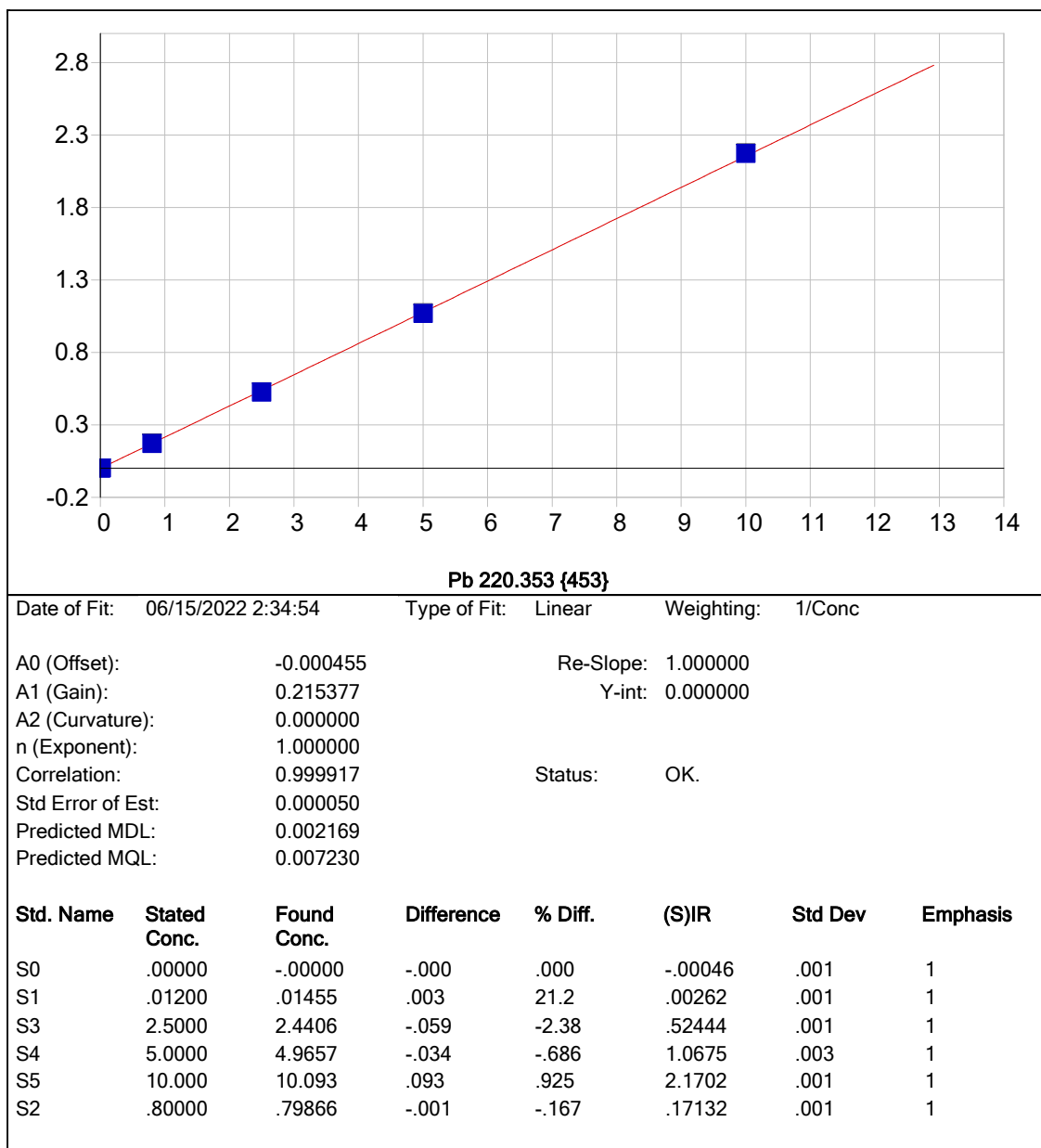
As 189.042 {479}

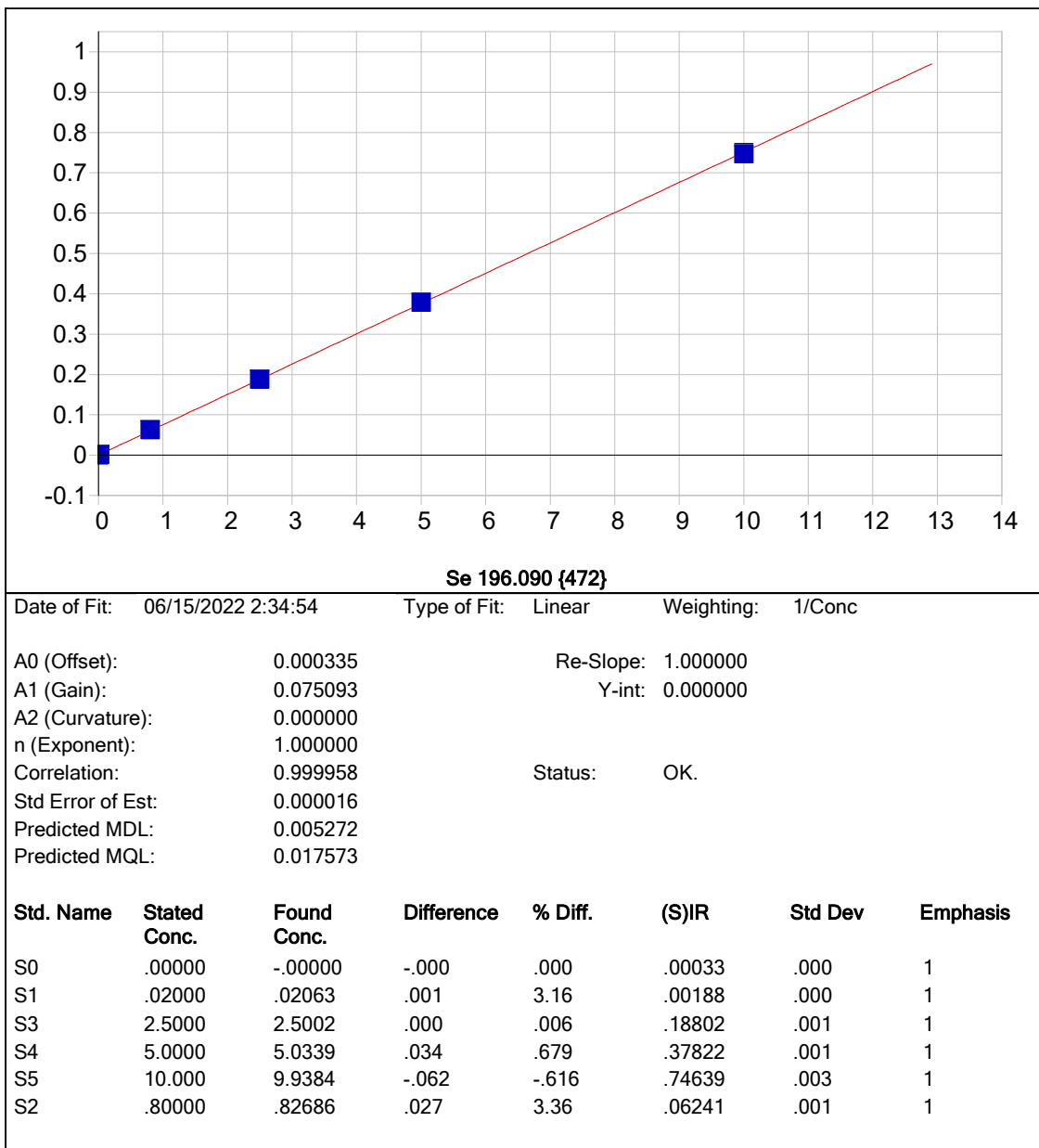
Date of Fit: 06/15/2022 2:34:54 Type of Fit: Linear Weighting: 1/Conc

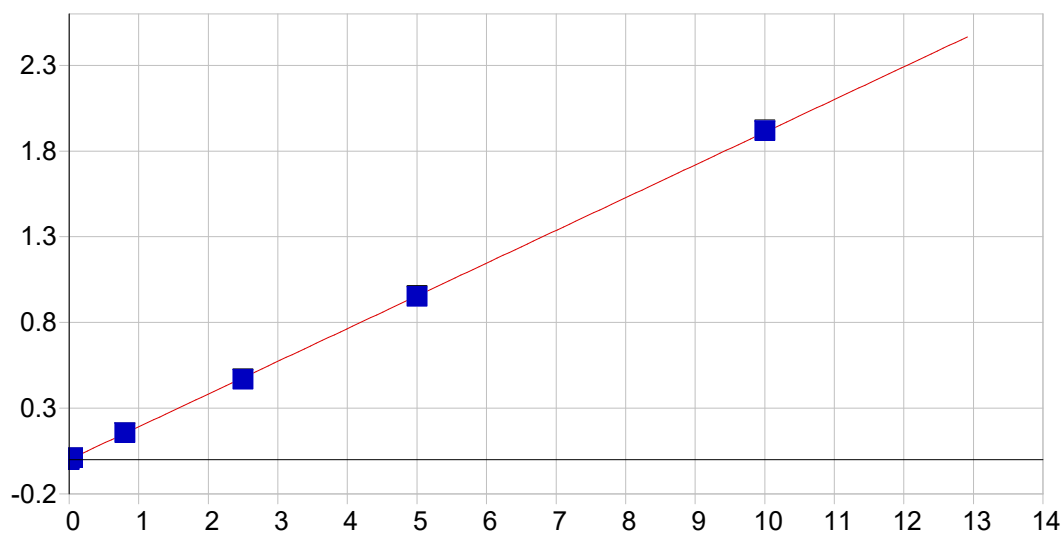
A0 (Offset): -0.000141 Re-Slope: 1.000000
A1 (Gain): 0.042733 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999963 Status: OK.
Std Error of Est: 0.000009
Predicted MDL: 0.005637
Predicted MQL: 0.018791

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00014	.000	1
S1	.02000	.02068	.001	3.38	.00075	.000	1
S3	2.5000	2.4488	-.051	-2.05	.10464	.000	1
S4	5.0000	4.9966	-.003	-.068	.21365	.000	1
S5	10.000	10.052	.052	.515	.42994	.001	1
S2	.80000	.80239	.002	.298	.03419	.000	1







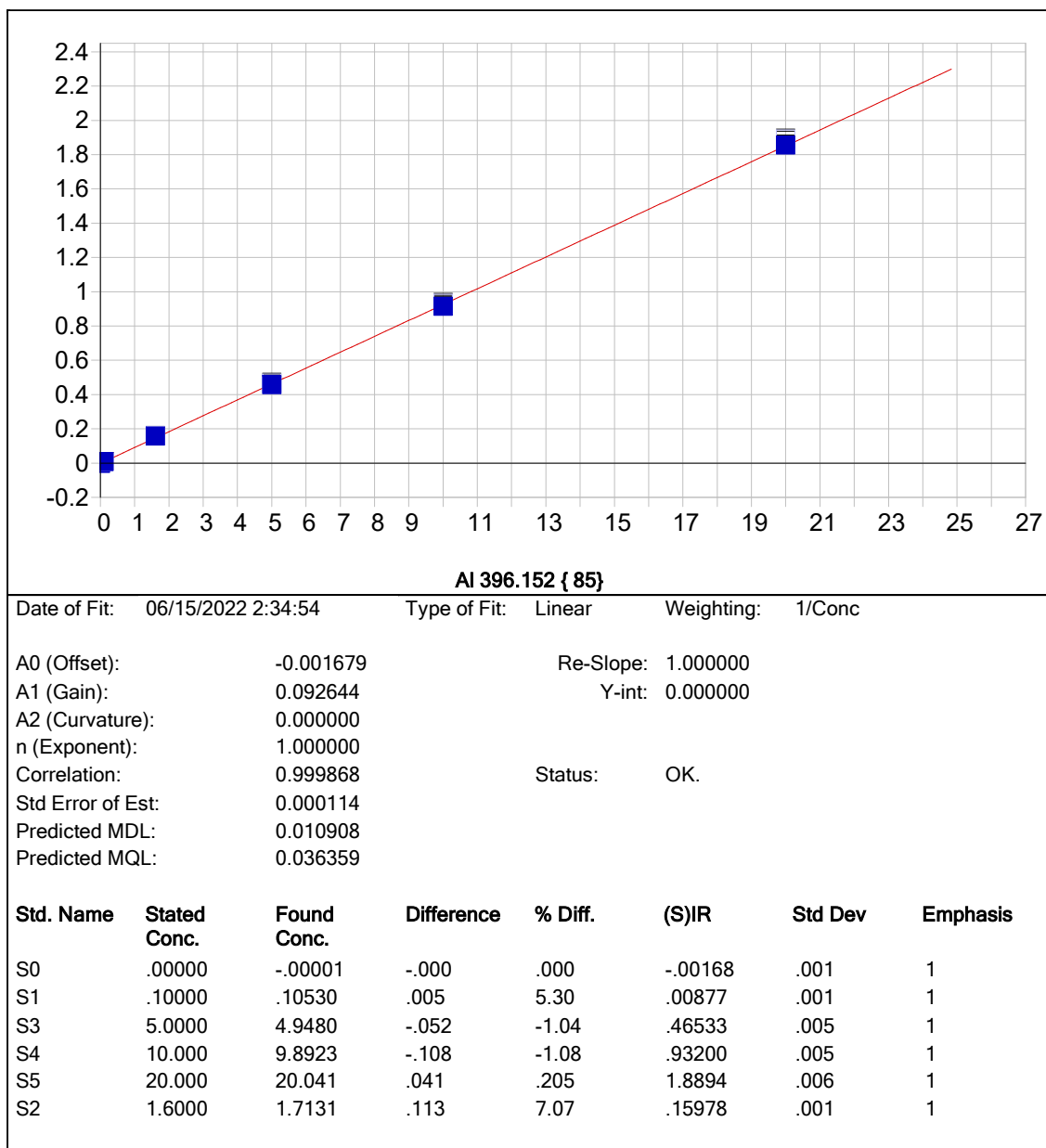


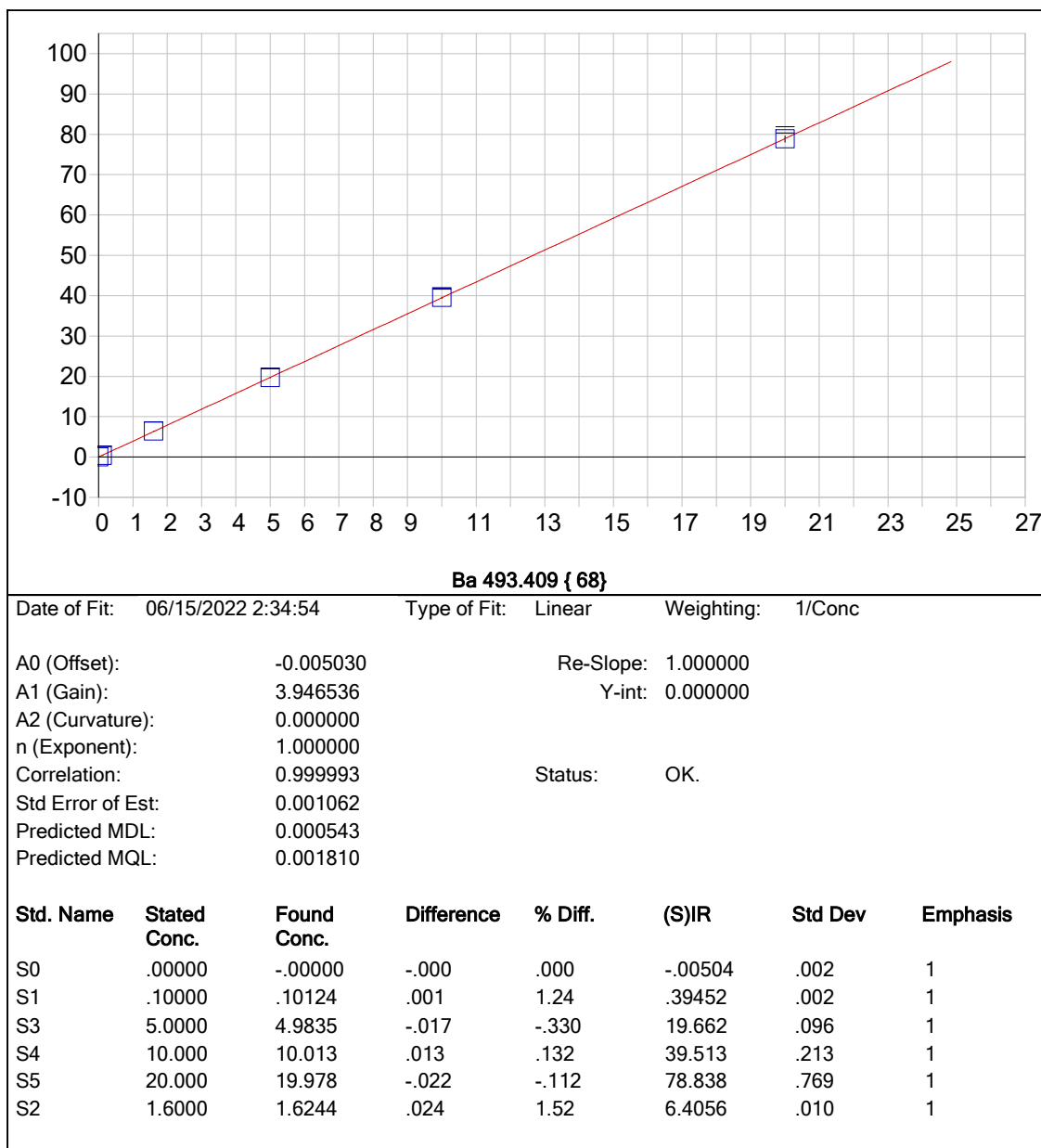
Sb 206.833 {463}

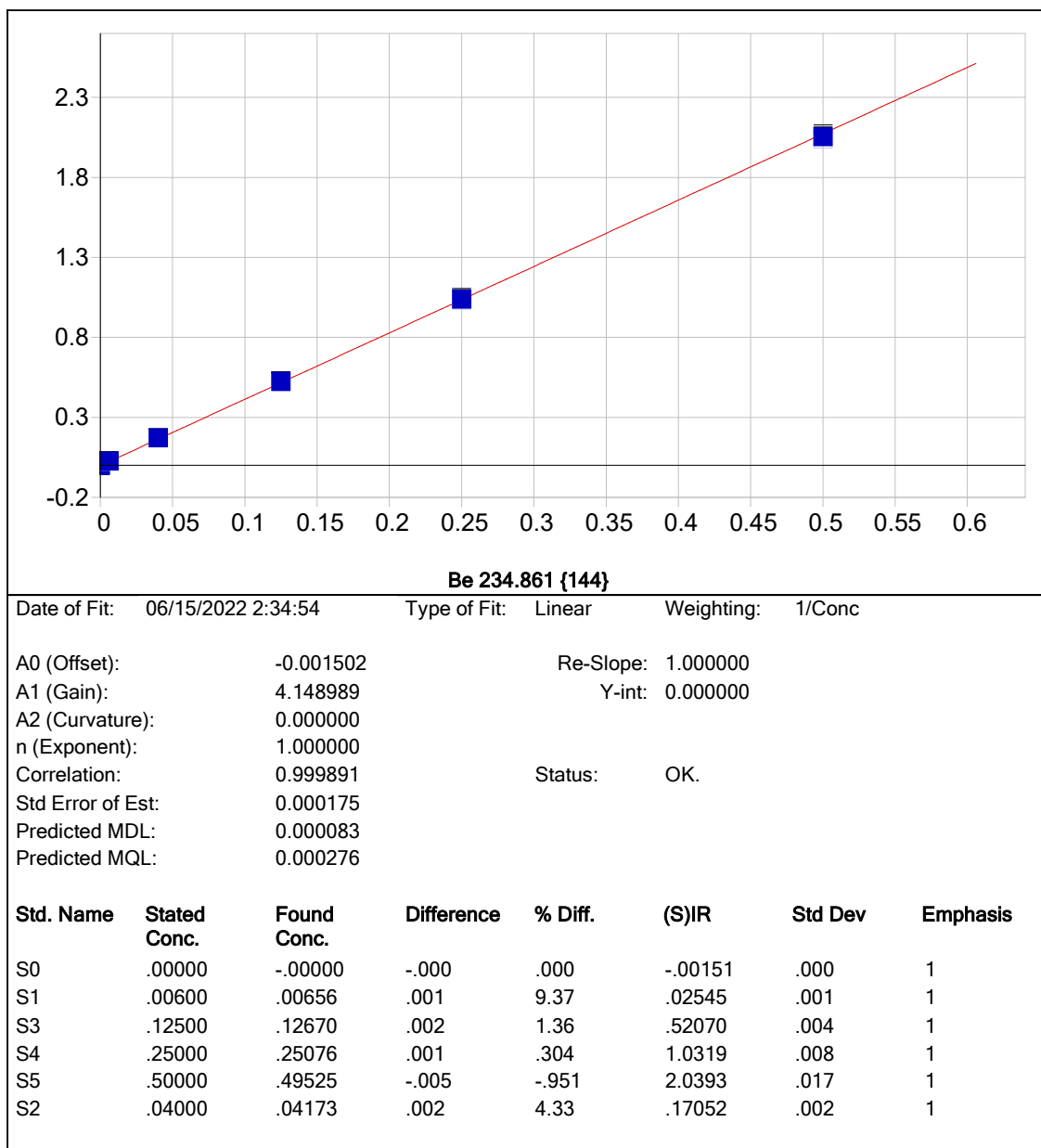
Date of Fit: 06/15/2022 2:34:54 Type of Fit: Linear Weighting: 1/Conc

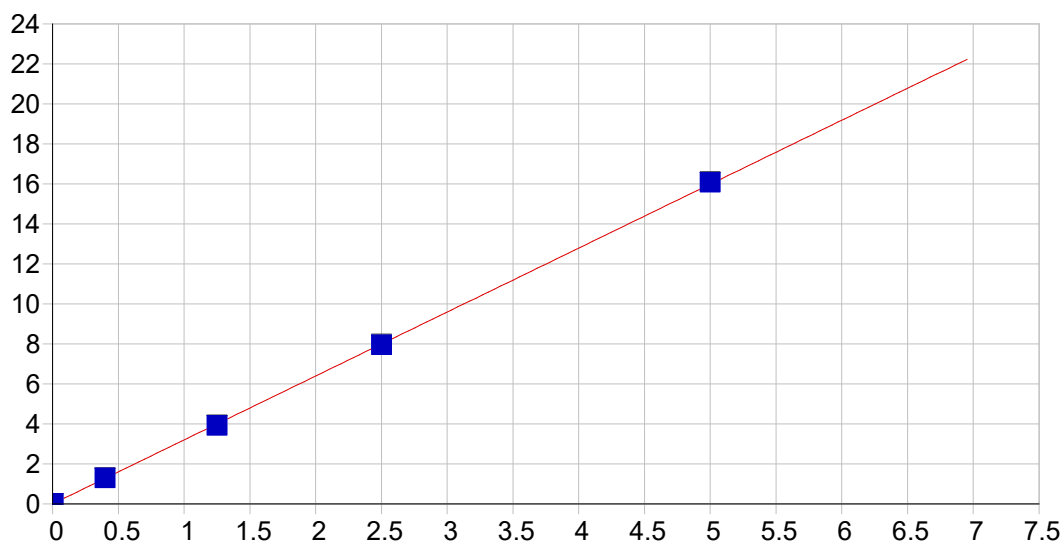
A0 (Offset):	0.000570	Re-Slope:	1.000000
A1 (Gain):	0.190905	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999953	Status:	OK.
Std Error of Est:	0.000069		
Predicted MDL:	0.002261		
Predicted MQL:	0.007538		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00057	.001	1
S1	.05000	.05106	.001	2.13	.01029	.000	1
S3	2.5000	2.4468	-.053	-2.13	.46762	.002	1
S4	5.0000	4.9860	-.014	-.280	.95233	.003	1
S5	10.000	10.051	.051	.512	1.9192	.004	1
S2	.80000	.81494	.015	1.87	.15613	.001	1







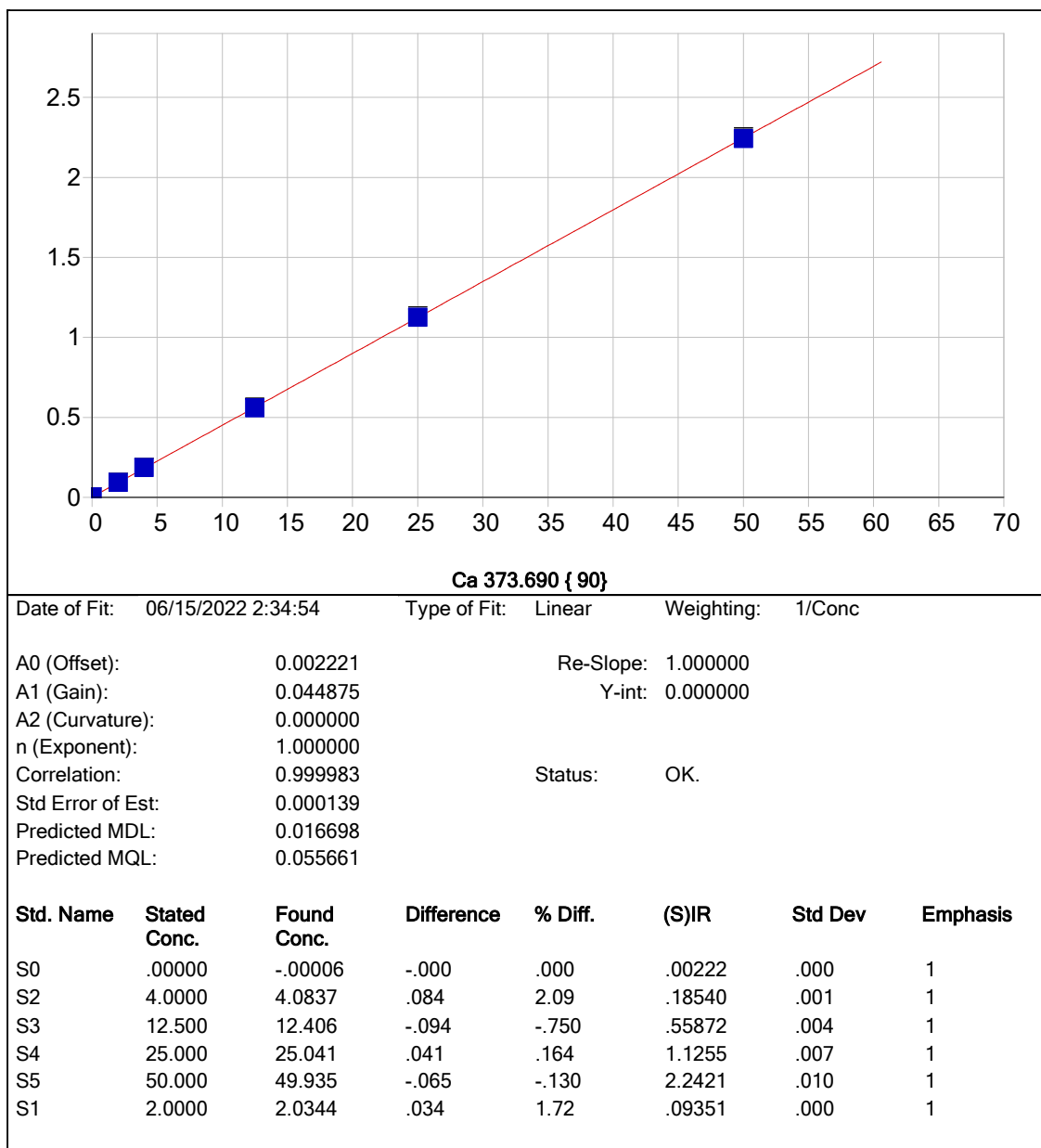


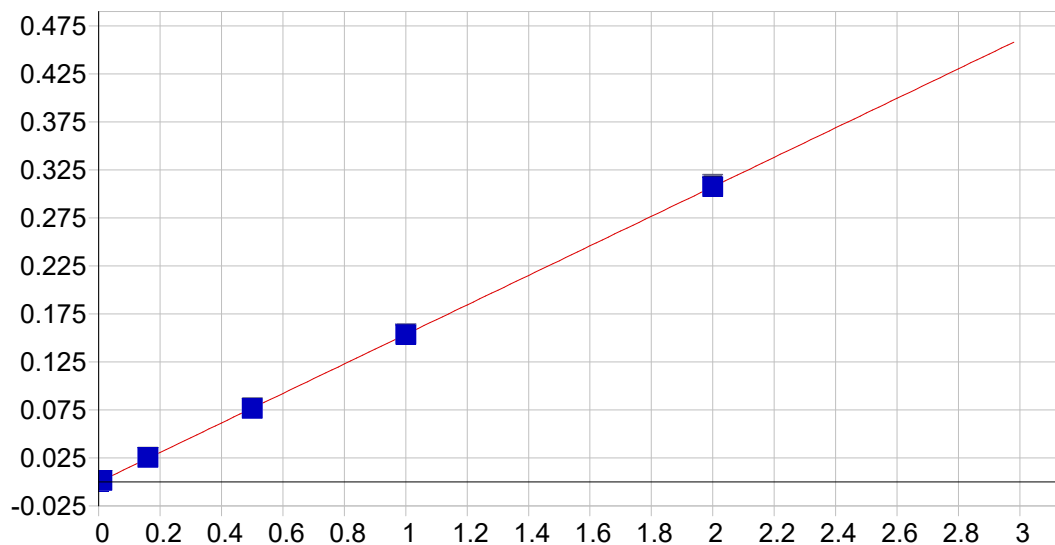
Cd 214.438 {457}

Date of Fit: 06/15/2022 2:34:54 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset): 0.001150 Re-Slope: 1.000000
A1 (Gain): 3.197047 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999963 Status: OK.
Std Error of Est: 0.000250
Predicted MDL: 0.000103
Predicted MQL: 0.000344

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00115	.000	1
S1	.00600	.00628	.000	4.68	.02124	.001	1
S3	1.2500	1.2277	-.022	-1.78	3.9264	.007	1
S4	2.5000	2.4884	-.012	-.465	7.9571	.023	1
S5	5.0000	5.0298	.030	.596	16.083	.018	1
S2	.40000	.40384	.004	.960	1.2923	.003	1



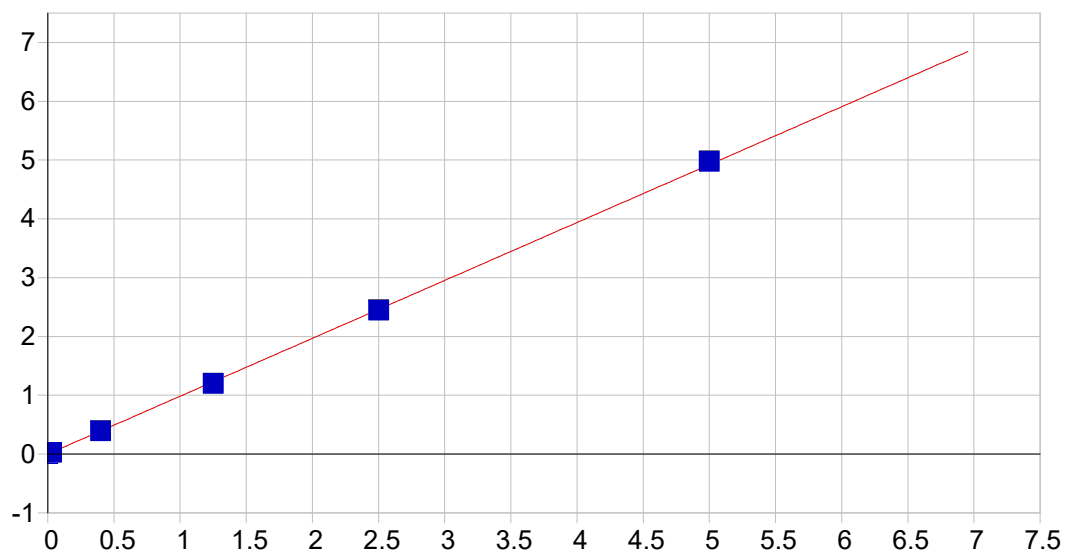


Cr 267.716 {126}

Date of Fit: 06/15/2022 2:34:54 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset): -0.000104 Re-Slope: 1.000000
A1 (Gain): 0.153735 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999974 Status: OK.
Std Error of Est: 0.000008
Predicted MDL: 0.000576
Predicted MQL: 0.001919

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00010	.000	1
S1	.01000	.01020	.000	1.99	.00148	.000	1
S3	.50000	.49719	-.003	-.562	.07687	.000	1
S4	1.0000	.99778	-.002	-.222	.15437	.000	1
S5	2.0000	1.9996	-.000	-.020	.30947	.001	1
S2	.16000	.16522	.005	3.26	.02547	.000	1

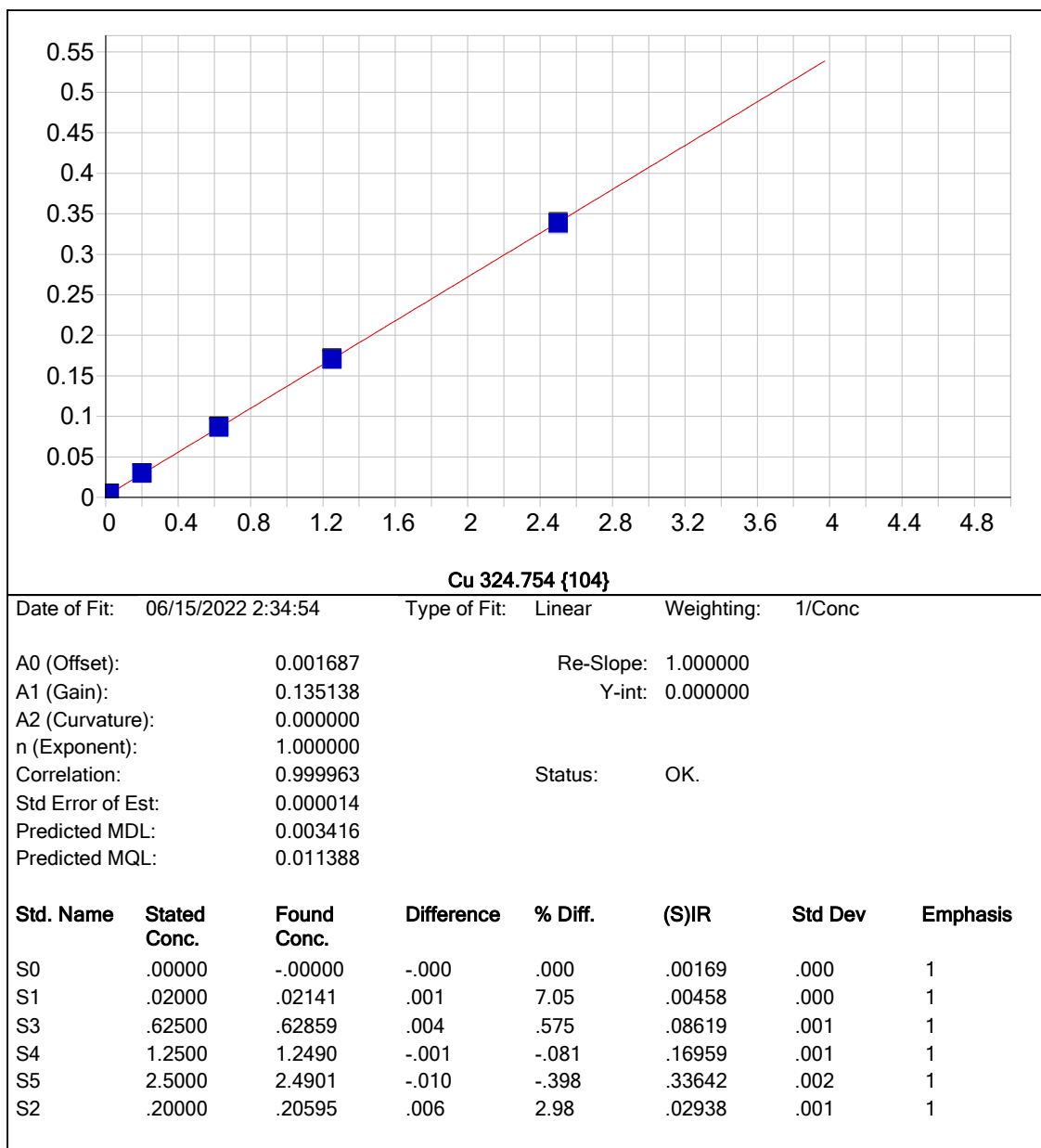


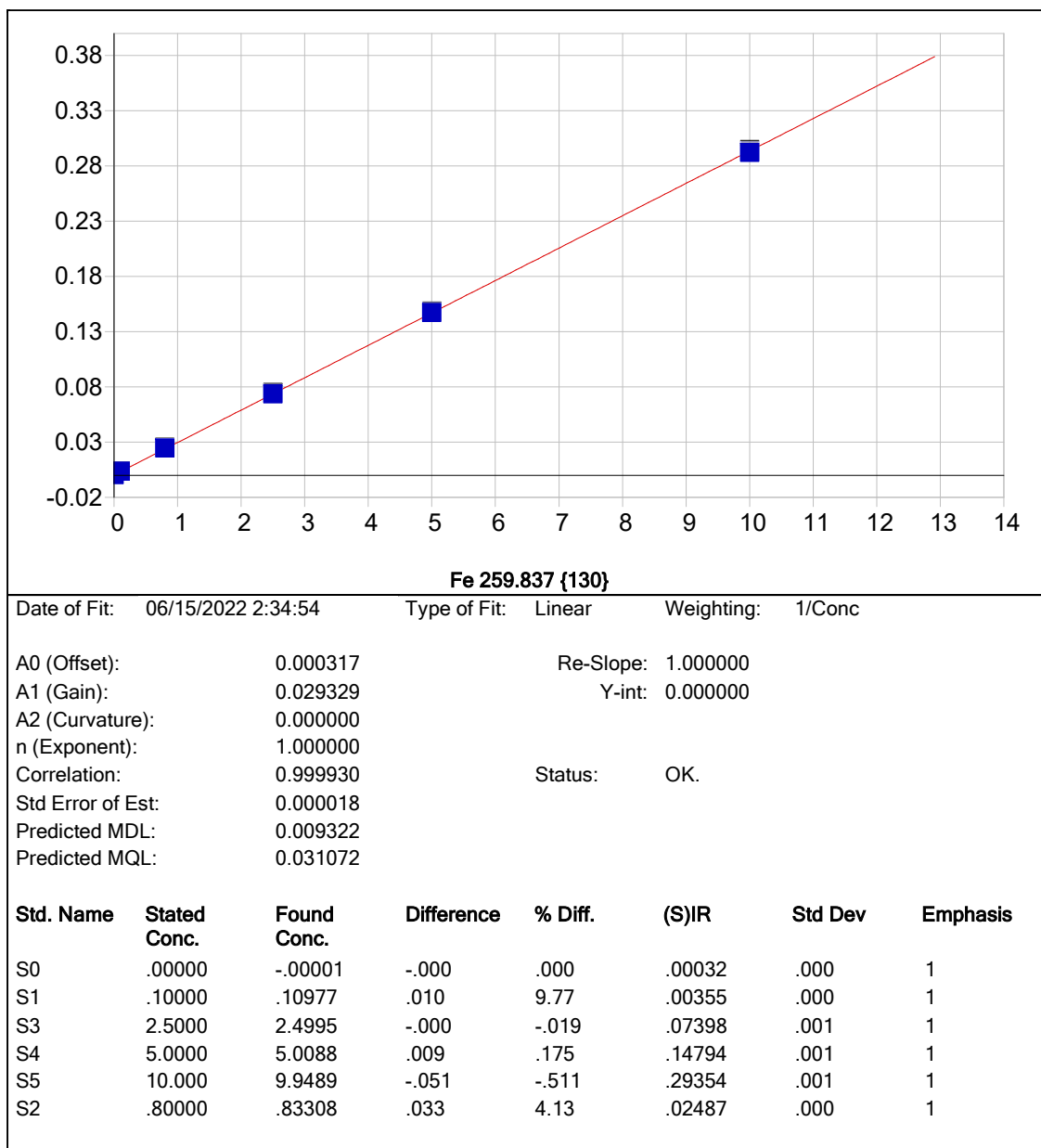
Co 228.616 {448}

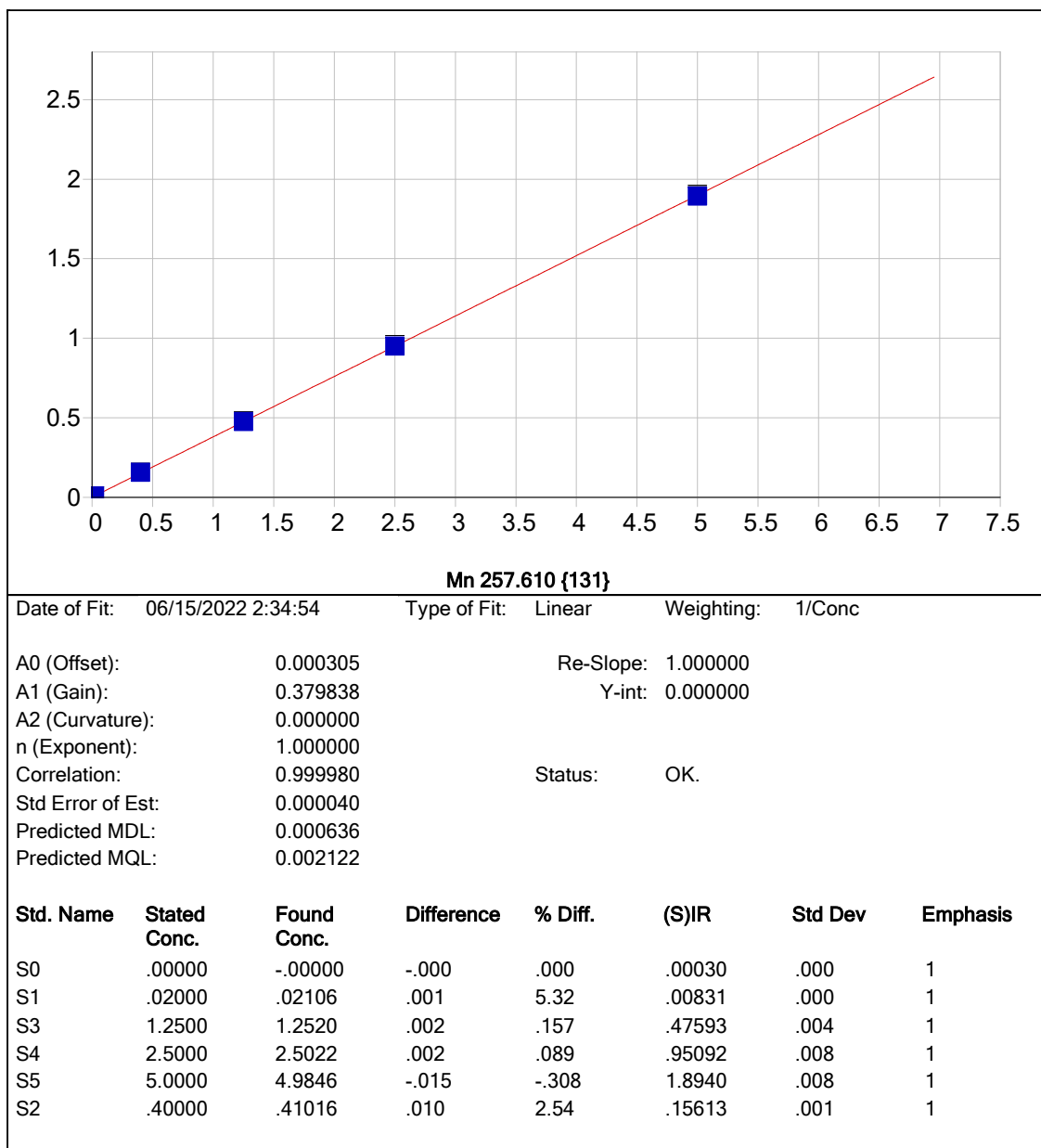
Date of Fit: 06/15/2022 2:34:54 Type of Fit: Linear Weighting: 1/Conc

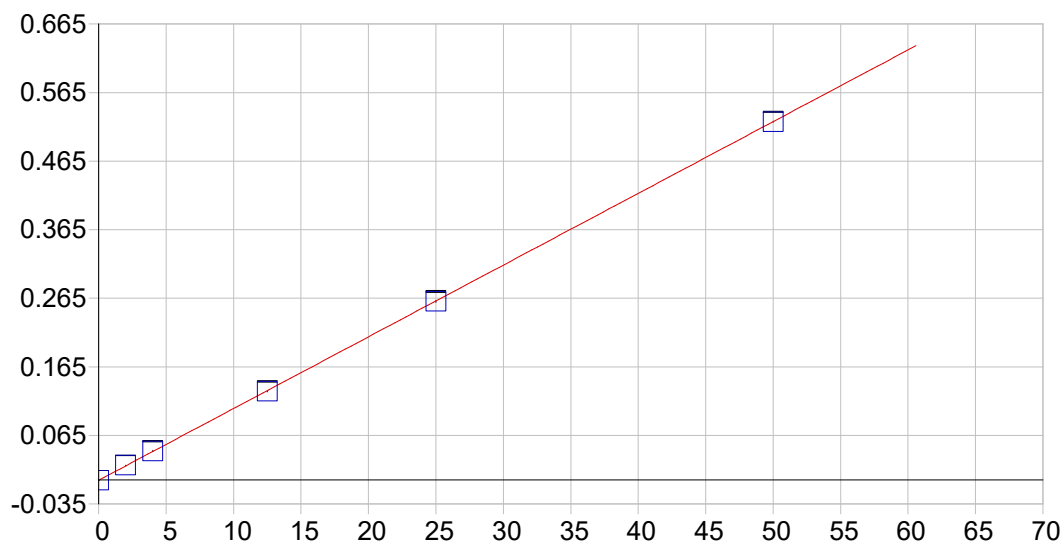
A0 (Offset): -0.000156 Re-Slope: 1.000000
A1 (Gain): 0.984541 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999922 Status: OK.
Std Error of Est: 0.000251
Predicted MDL: 0.000334
Predicted MQL: 0.001114

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00015	.000	1
S1	.03000	.02960	-.000	-1.32	.02890	.000	1
S3	1.2500	1.2185	-.031	-2.52	1.2021	.002	1
S4	2.5000	2.4823	-.018	-.710	2.4489	.009	1
S5	5.0000	5.0508	.051	1.02	4.9828	.005	1
S2	.40000	.39888	-.001	-.280	.39338	.001	1







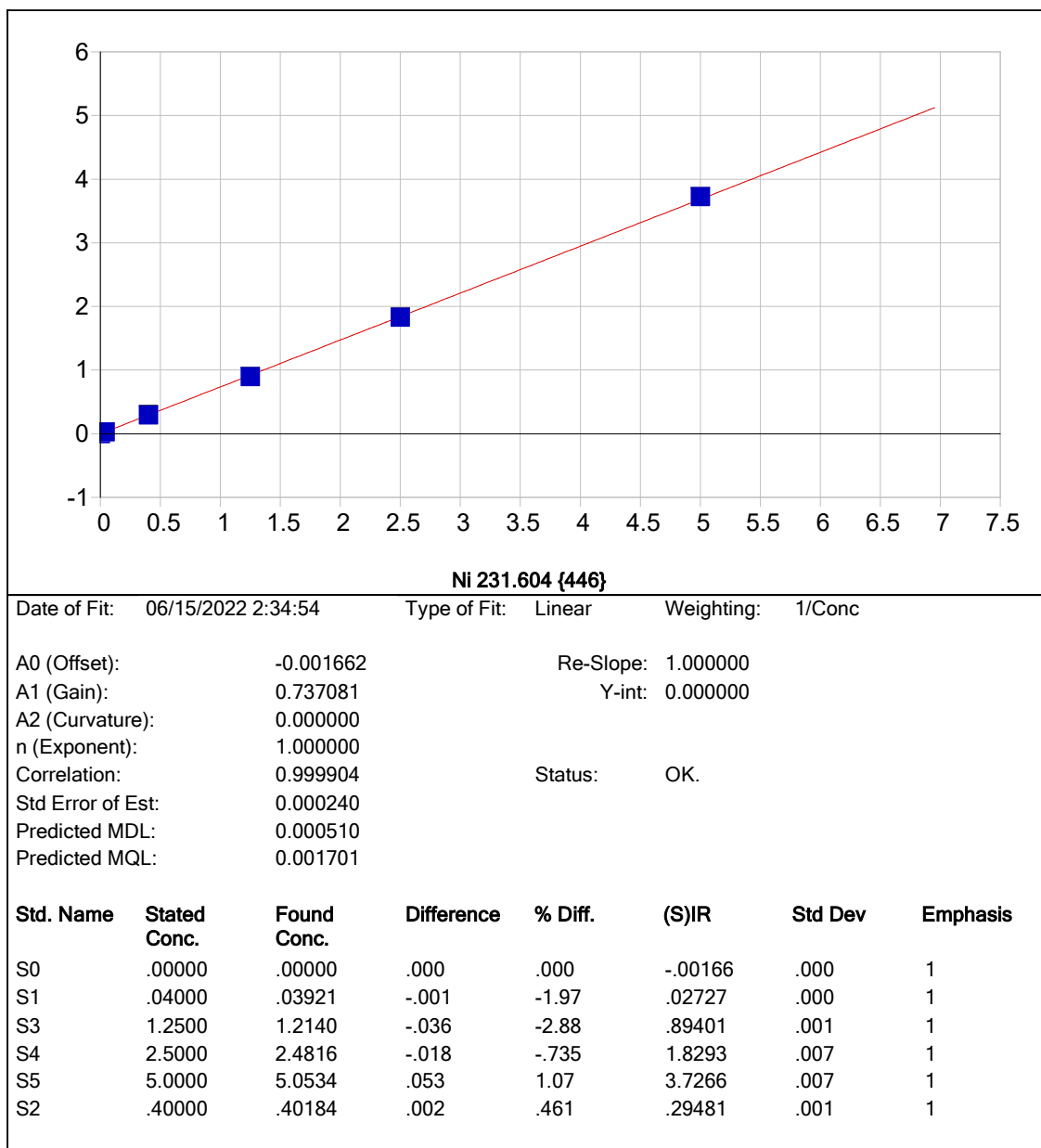


Mg 279.079 {121}

Date of Fit: 06/15/2022 2:34:54 Type of Fit: Linear Weighting: 1/Conc

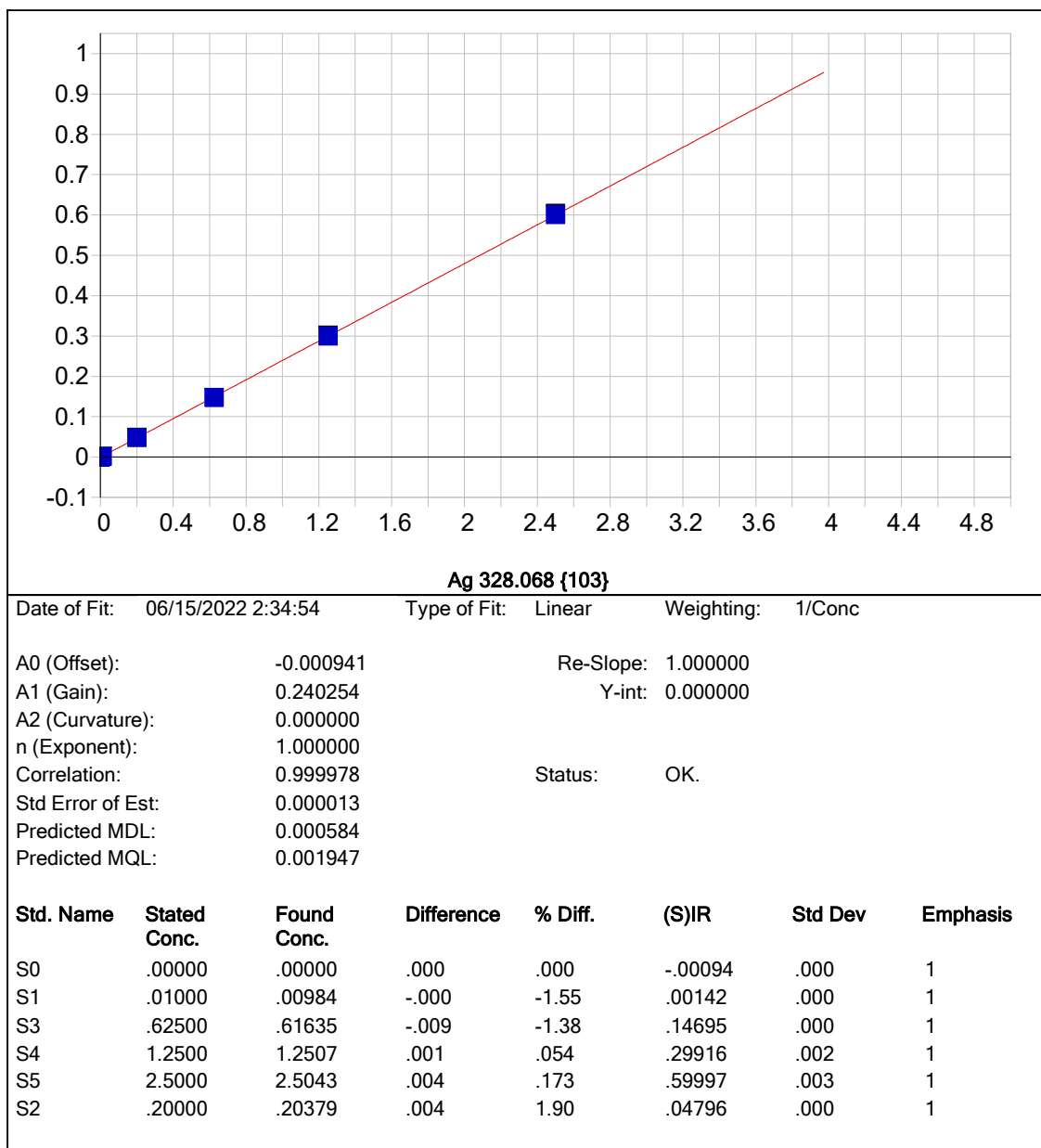
A0 (Offset): -0.000545 Re-Slope: 1.000000
A1 (Gain): 0.010463 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999969 Status: OK.
Std Error of Est: 0.000044
Predicted MDL: 0.032200
Predicted MQL: 0.107333

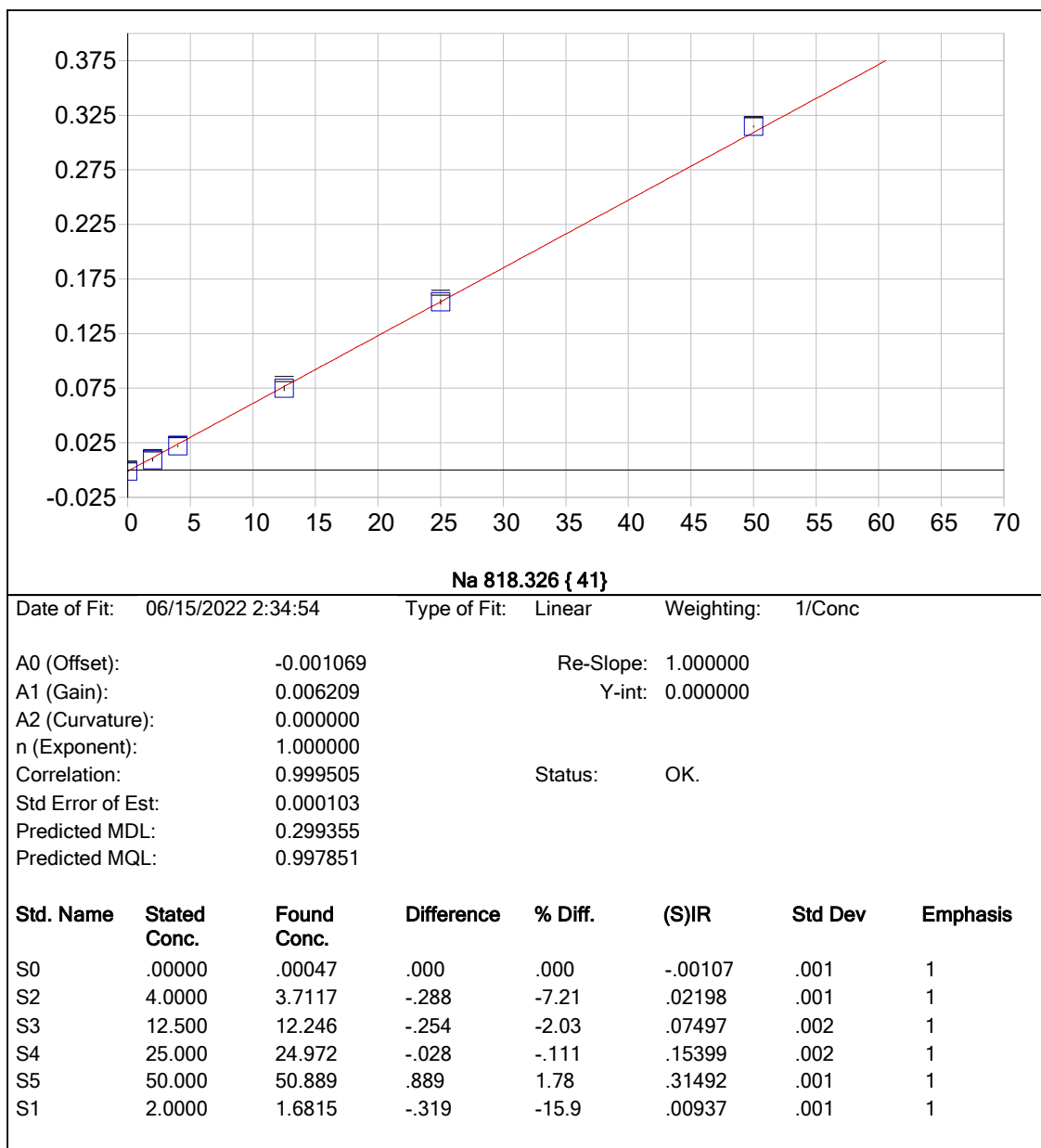
Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00010	-.000	.000	-.00055	.000	1
S2	4.0000	4.0655	.065	1.64	.04199	.001	1
S3	12.500	12.409	-.091	-.725	.12930	.001	1
S4	25.000	24.950	-.050	-.200	.26051	.001	1
S5	50.000	49.986	-.014	-.029	.52246	.001	1
S1	2.0000	2.0896	.090	4.48	.02132	.000	1

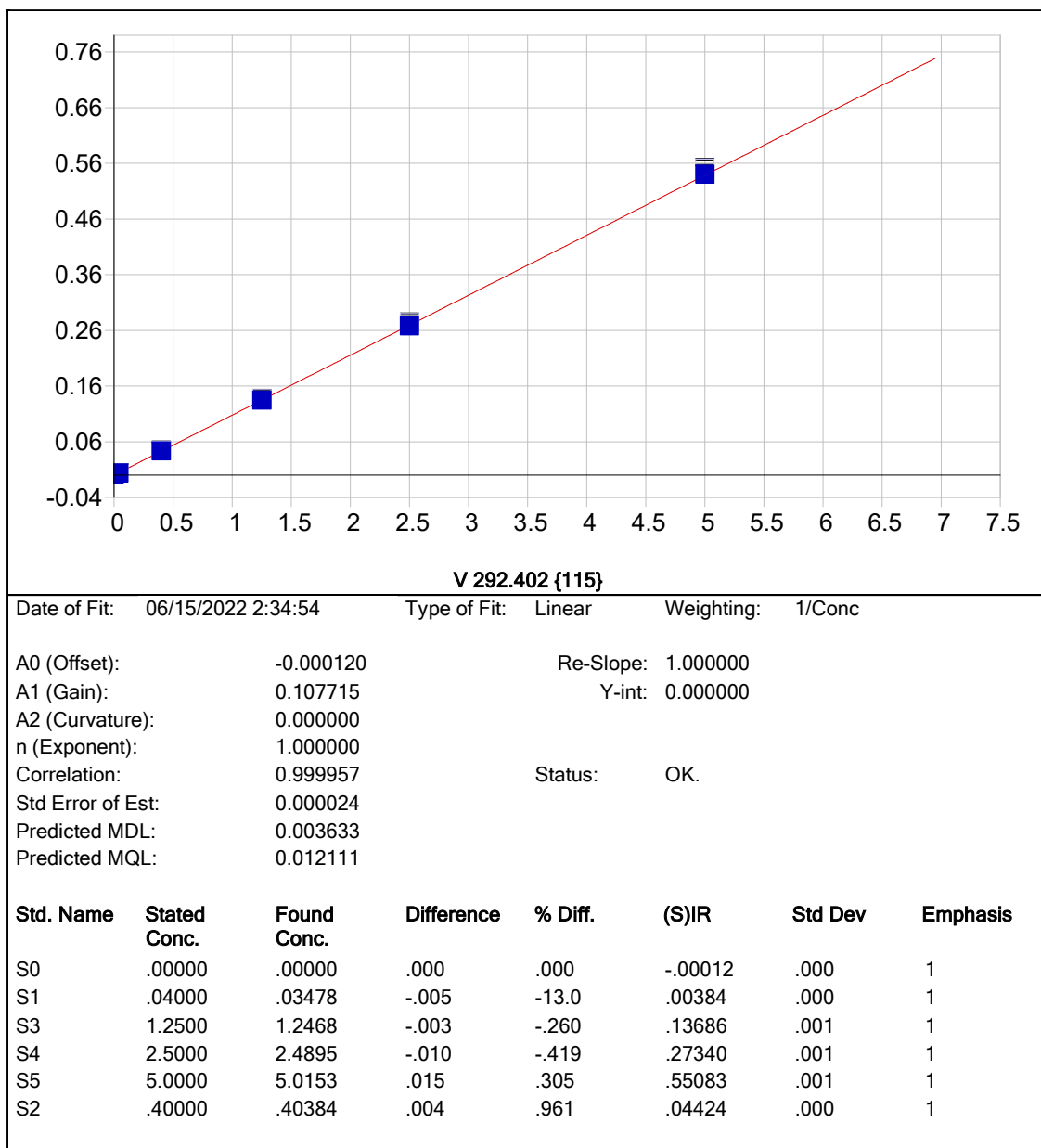


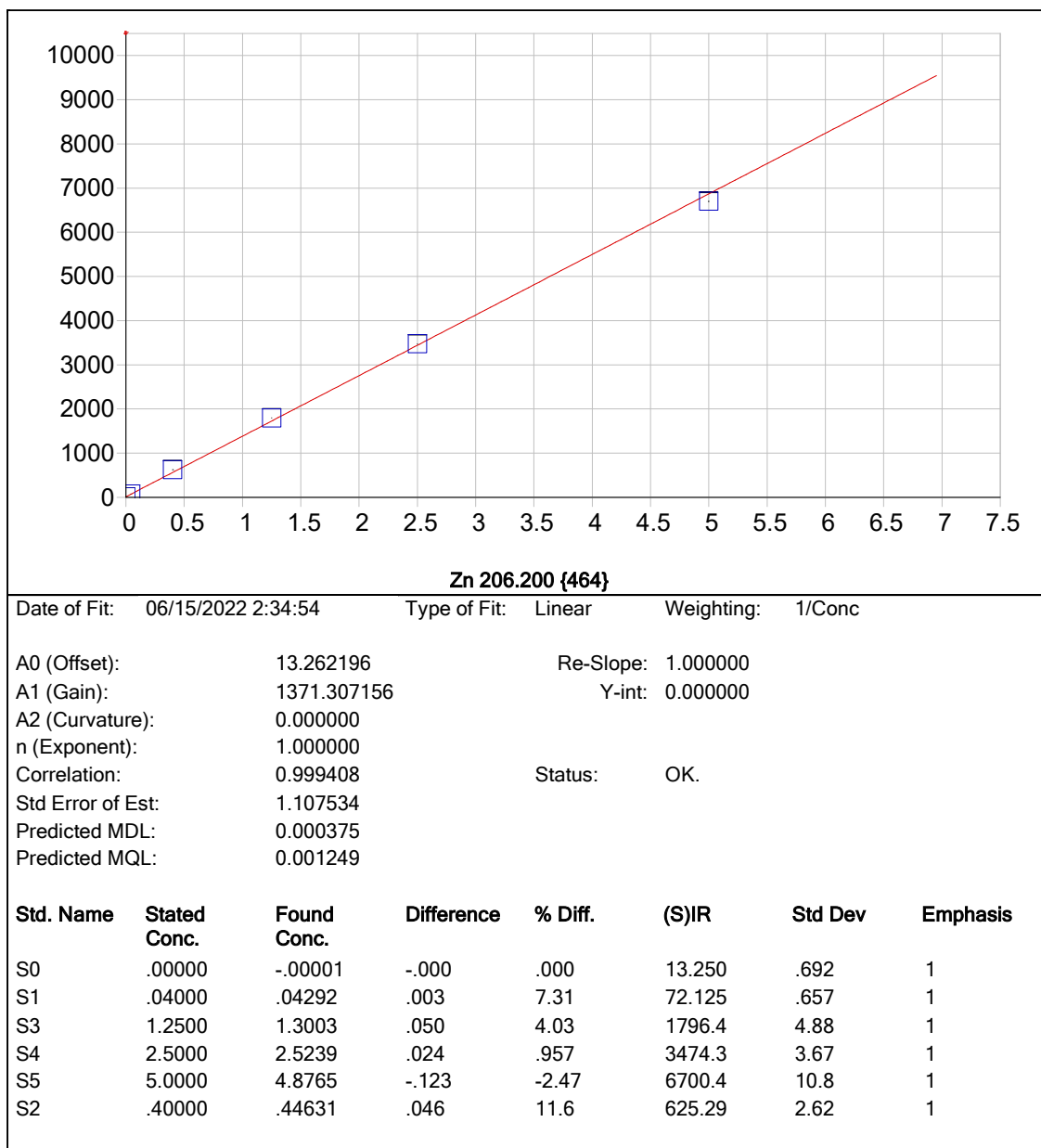
Date of Fit: 06/15/2022 2:34:54 Type of Fit: Linear Weighting: 1/Conc

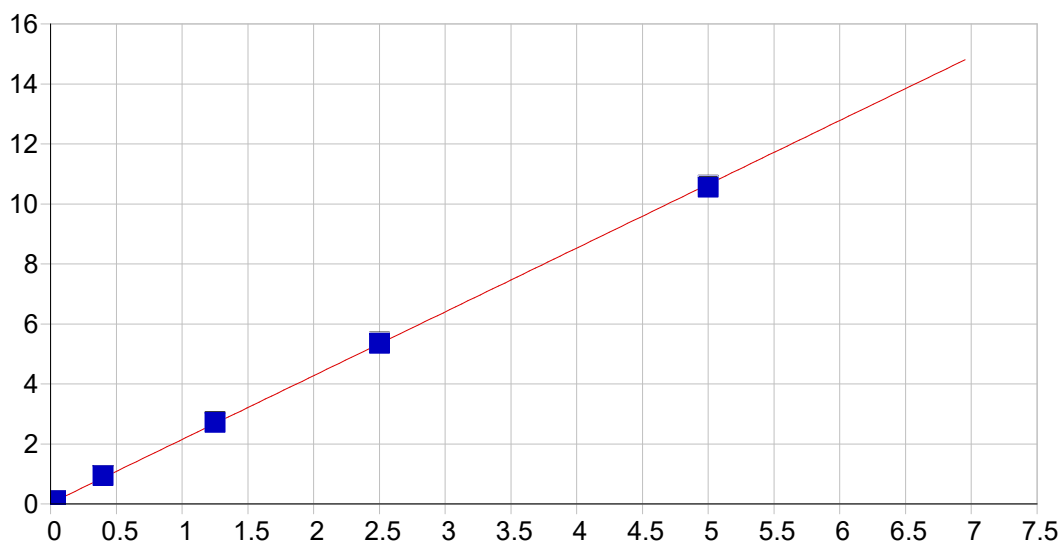
A0 (Offset): -0.001662 Re-Slope: 1.000000
A1 (Gain): 0.737081 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999904 Status: OK.
Std Error of Est: 0.000240
Predicted MDL: 0.000510
Predicted MQL: 0.001701









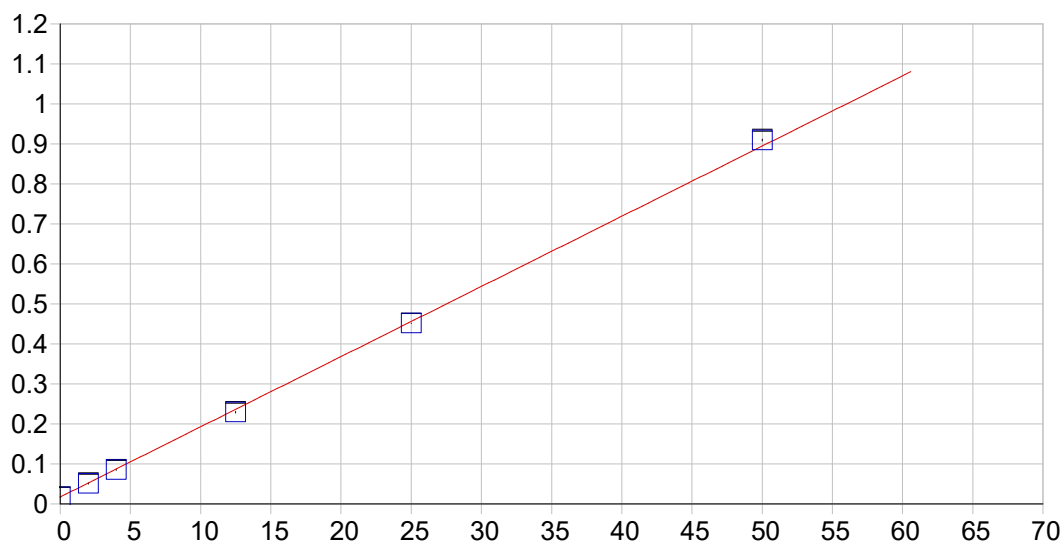


Zn 213.856 {158}

Date of Fit: 06/15/2022 2:34:54 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset): 0.021189 Re-Slope: 1.000000
A1 (Gain): 2.126652 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999837 Status: OK.
Std Error of Est: 0.000906
Predicted MDL: 0.000488
Predicted MQL: 0.001625

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.02118	.001	1
S1	.04000	.04052	.001	1.31	.10785	.002	1
S3	1.2500	1.2629	.013	1.03	2.7219	.015	1
S4	2.5000	2.5037	.004	.146	5.3756	.022	1
S5	5.0000	4.9518	-.048	-.963	10.612	.014	1
S2	.40000	.43111	.031	7.78	.94281	.007	1

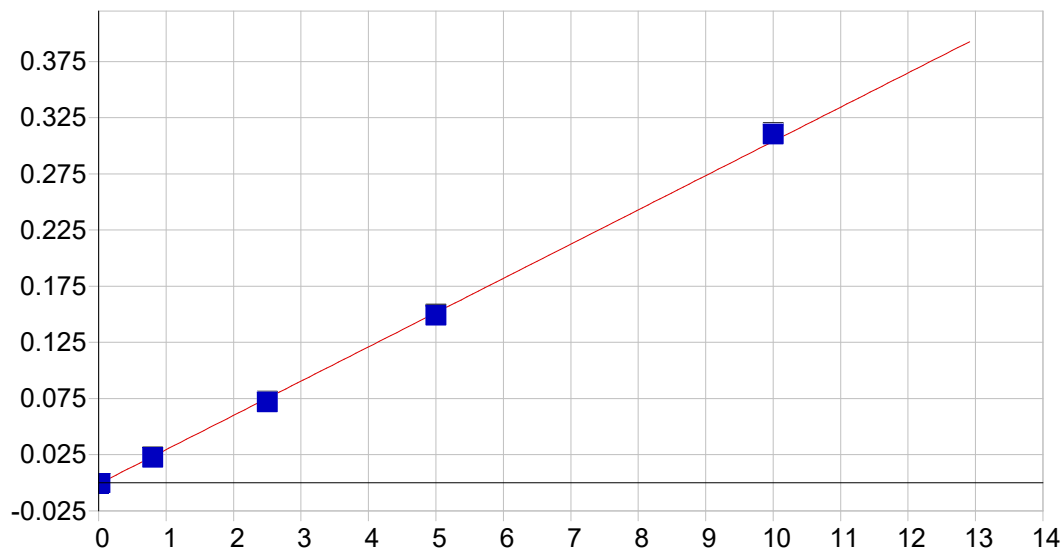


K 769.896 { 44 }

Date of Fit: 06/15/2022 2:34:54 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset): 0.017342 Re-Slope: 1.000000
A1 (Gain): 0.017544 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999799 Status: OK.
Std Error of Est: 0.000186
Predicted MDL: 0.089974
Predicted MQL: 0.299914

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00018	.000	.000	.01735	.001	1
S2	4.0000	3.8720	-.128	-3.20	.08527	.001	1
S3	12.500	12.078	-.422	-3.37	.22925	.002	1
S4	25.000	24.755	-.245	-.978	.45166	.001	1
S5	50.000	50.859	.859	1.72	.90962	.002	1
S1	2.0000	1.9357	-.064	-3.22	.05130	.001	1

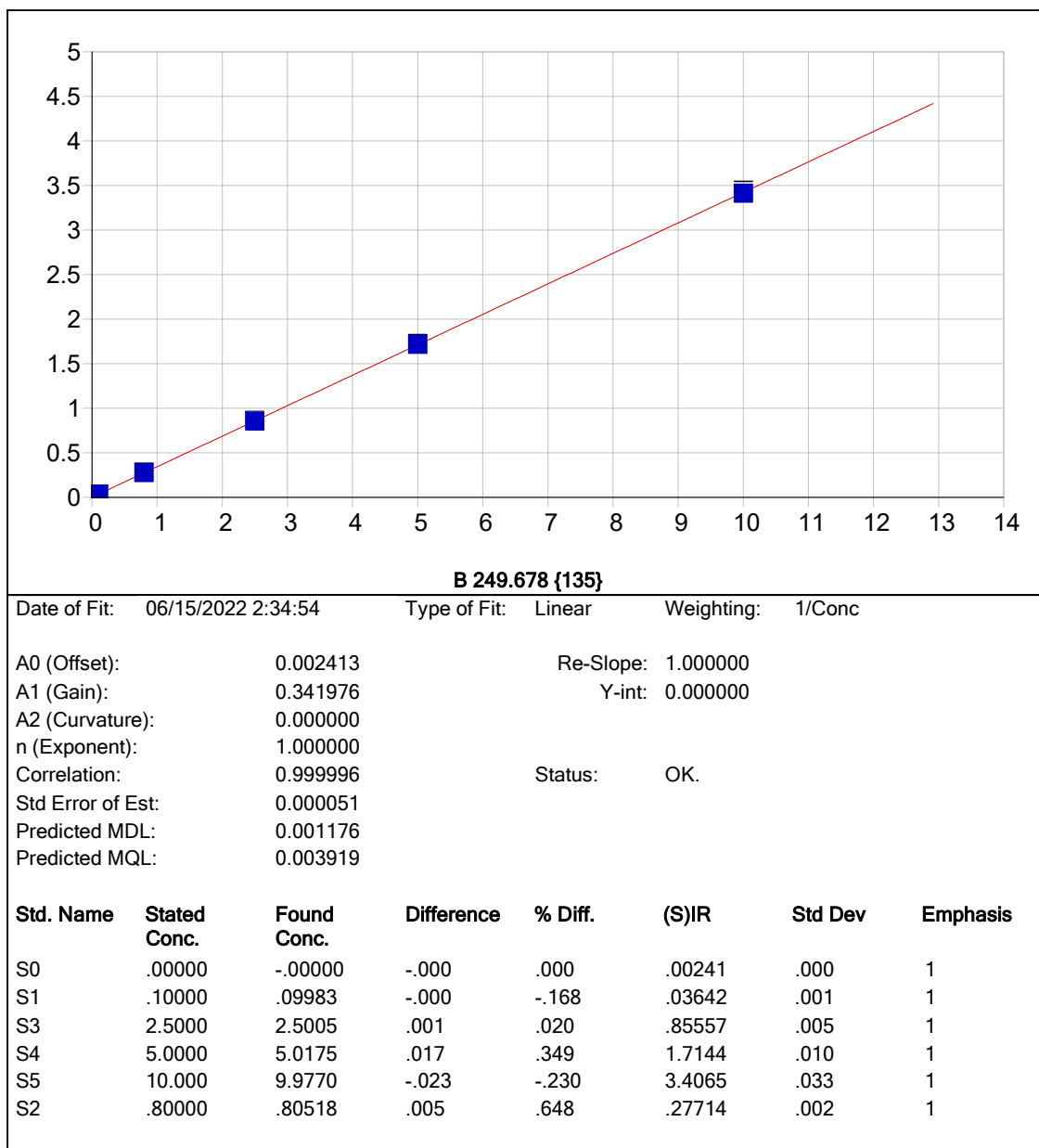


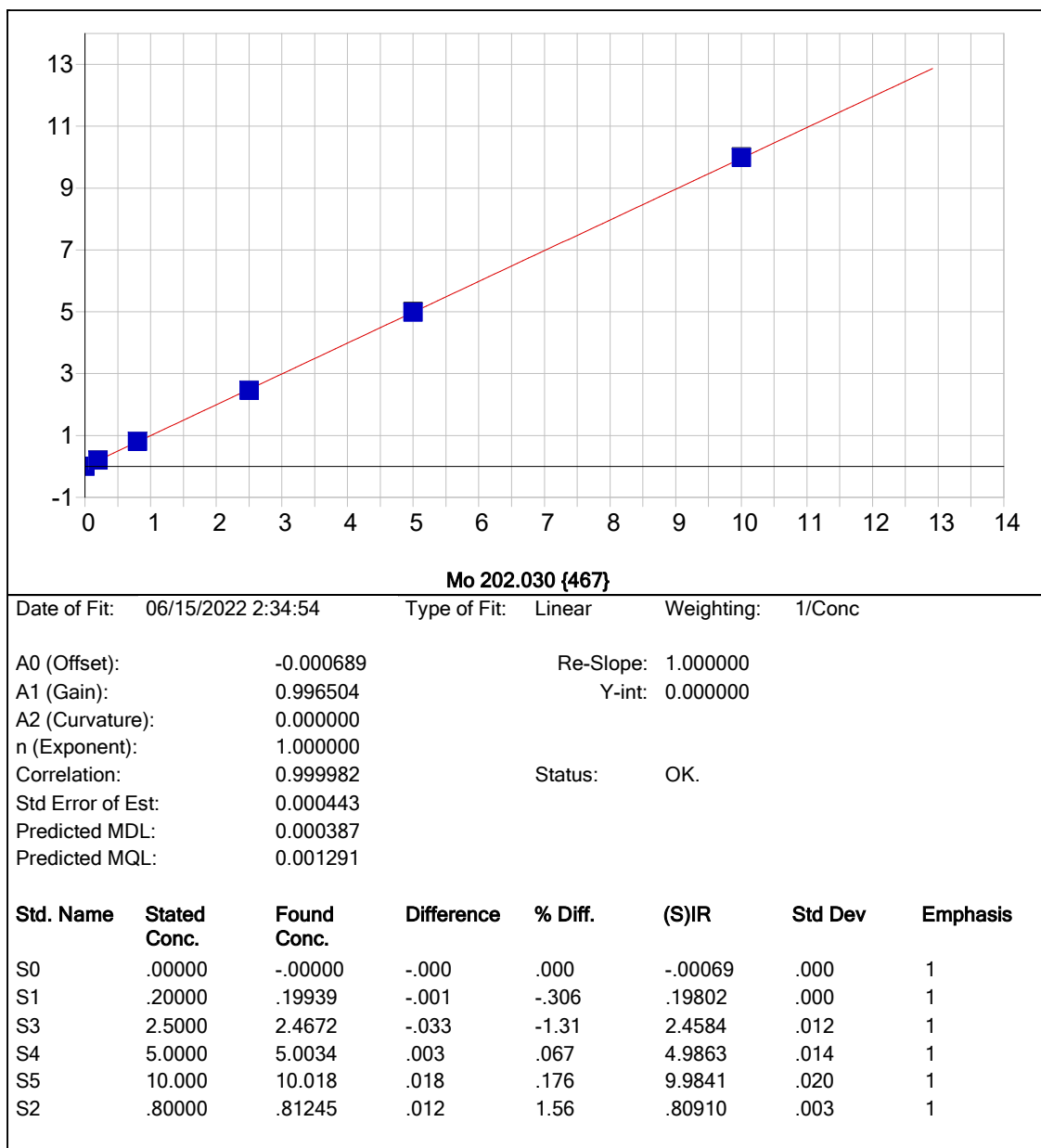
P 177.495 {490}

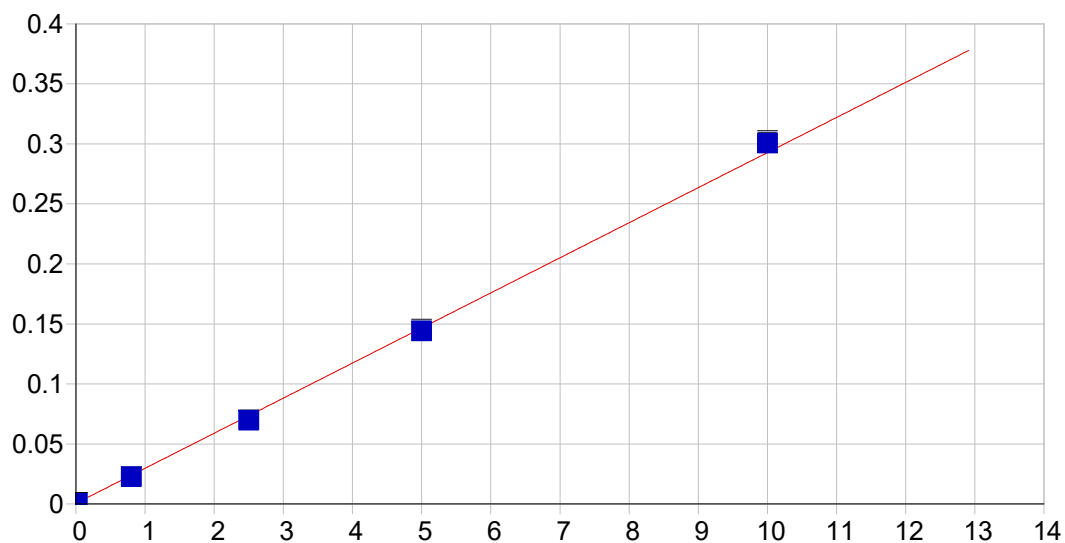
Date of Fit: 06/15/2022 2:34:54 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset): -0.000951 Re-Slope: 1.000000
A1 (Gain): 0.030490 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999688 Status: OK.
Std Error of Est: 0.000018
Predicted MDL: 0.004841
Predicted MQL: 0.016137

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00095	.000	1
S1	.02000	.02158	.002	7.90	-.00029	.000	1
S3	2.5000	2.3926	-.107	-4.30	.07218	.000	1
S4	5.0000	4.9201	-.080	-1.60	.14942	.001	1
S5	10.000	10.213	.213	2.13	.31115	.001	1
S2	.80000	.77251	-.027	-3.44	.02266	.000	1





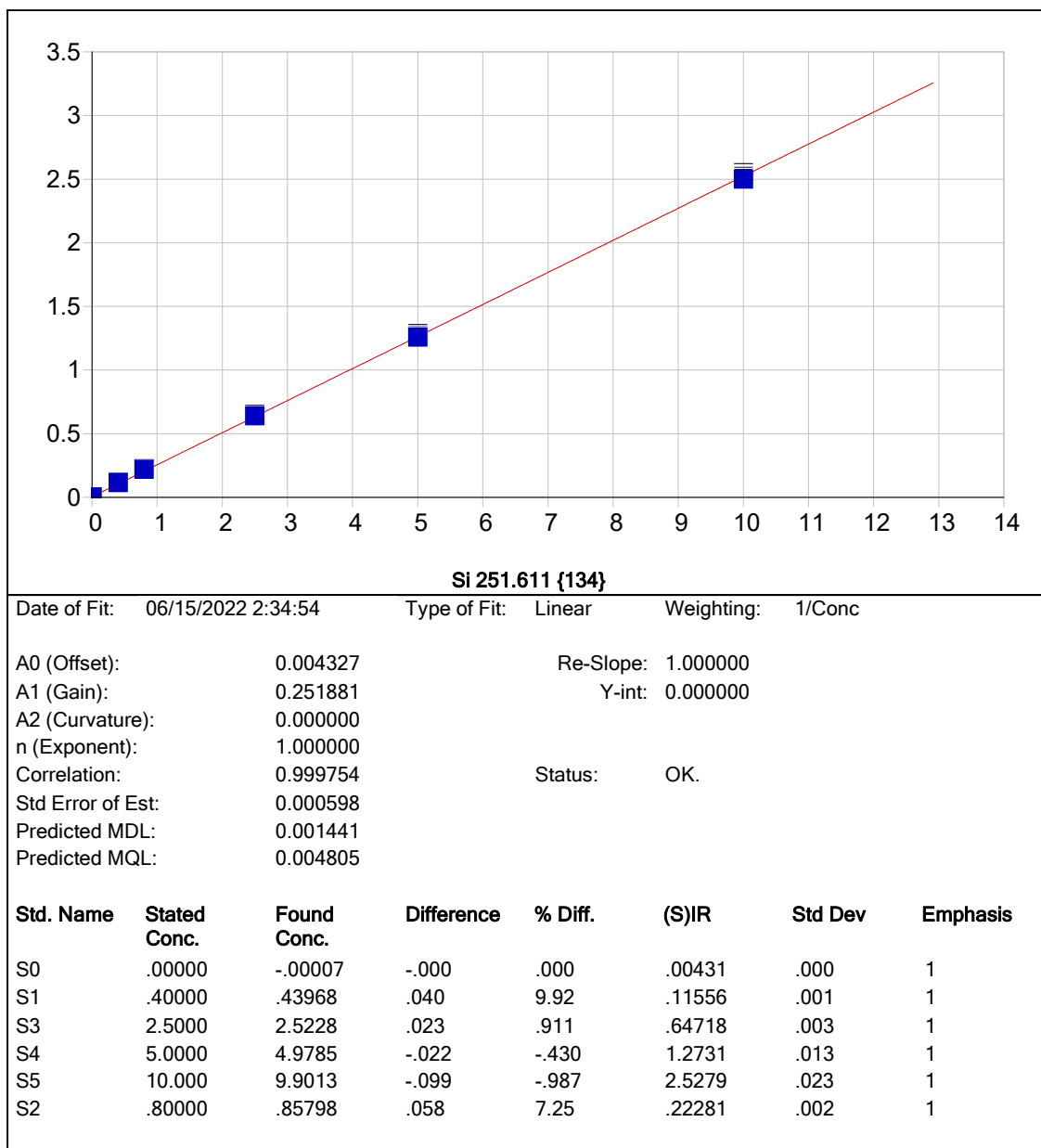


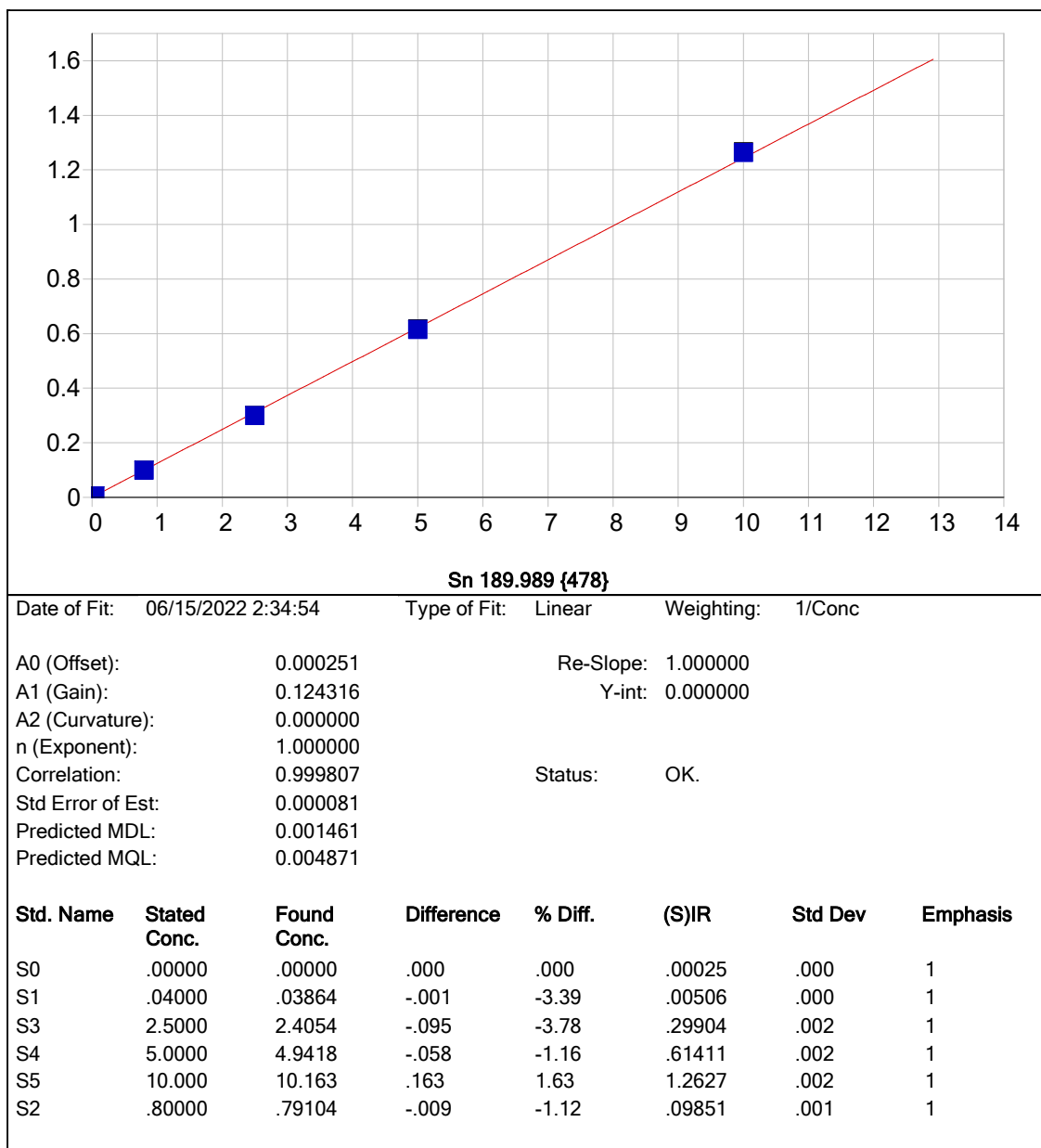
S 182.034 {485}

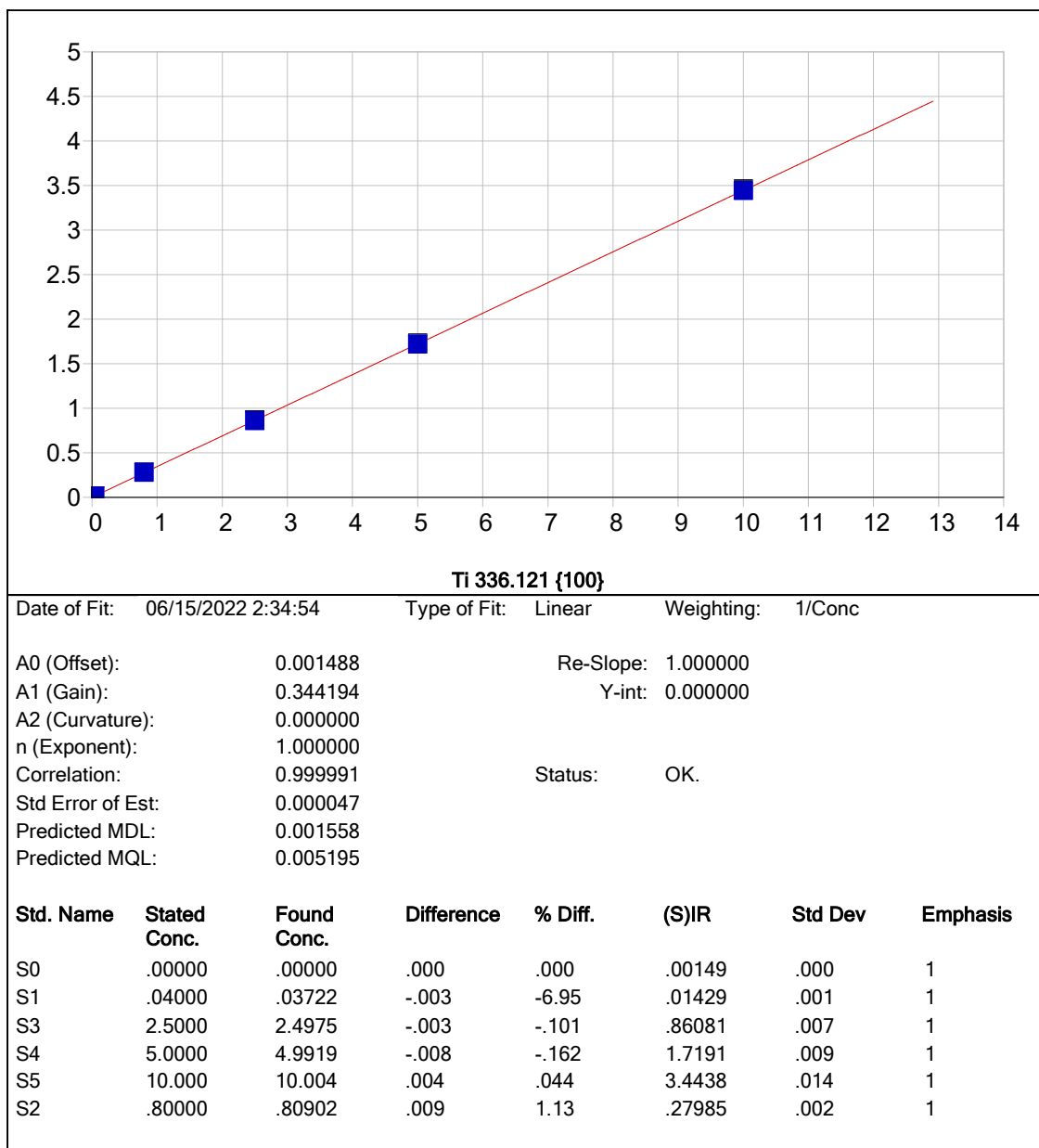
Date of Fit: 06/15/2022 2:34:54 Type of Fit: Linear Weighting: 1/Conc

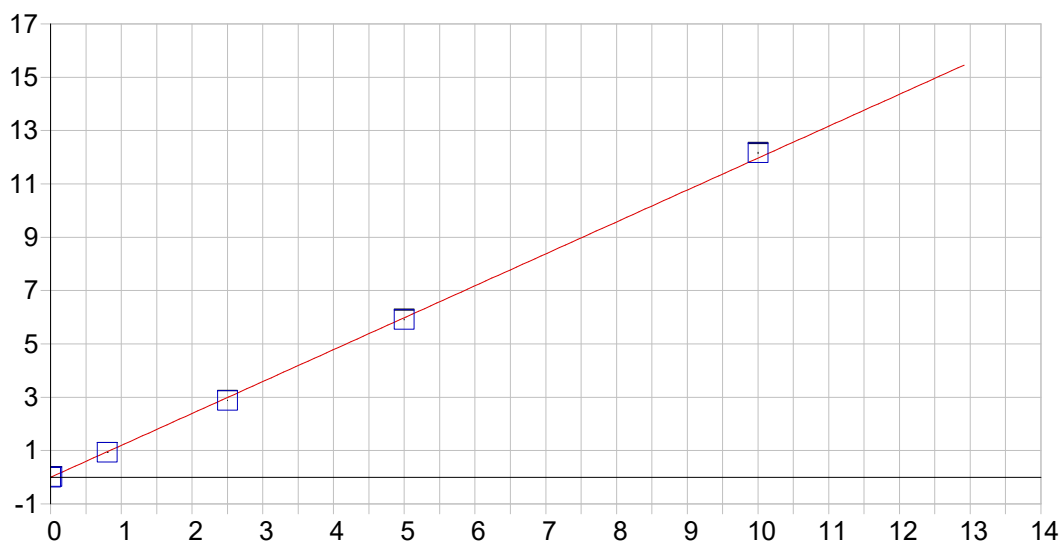
A0 (Offset): 0.000447 Re-Slope: 1.000000
A1 (Gain): 0.029237 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999502 Status: OK.
Std Error of Est: 0.000022
Predicted MDL: 0.006162
Predicted MQL: 0.020542

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00001	.000	.000	.00045	.000	1
S1	.02000	.01579	-.004	-21.0	.00089	.000	1
S3	2.5000	2.3683	-.132	-5.27	.07003	.000	1
S4	5.0000	4.9132	-.087	-1.74	.14479	.001	1
S5	10.000	10.264	.264	2.64	.30192	.001	1
S2	.80000	.75869	-.041	-5.16	.02274	.000	1







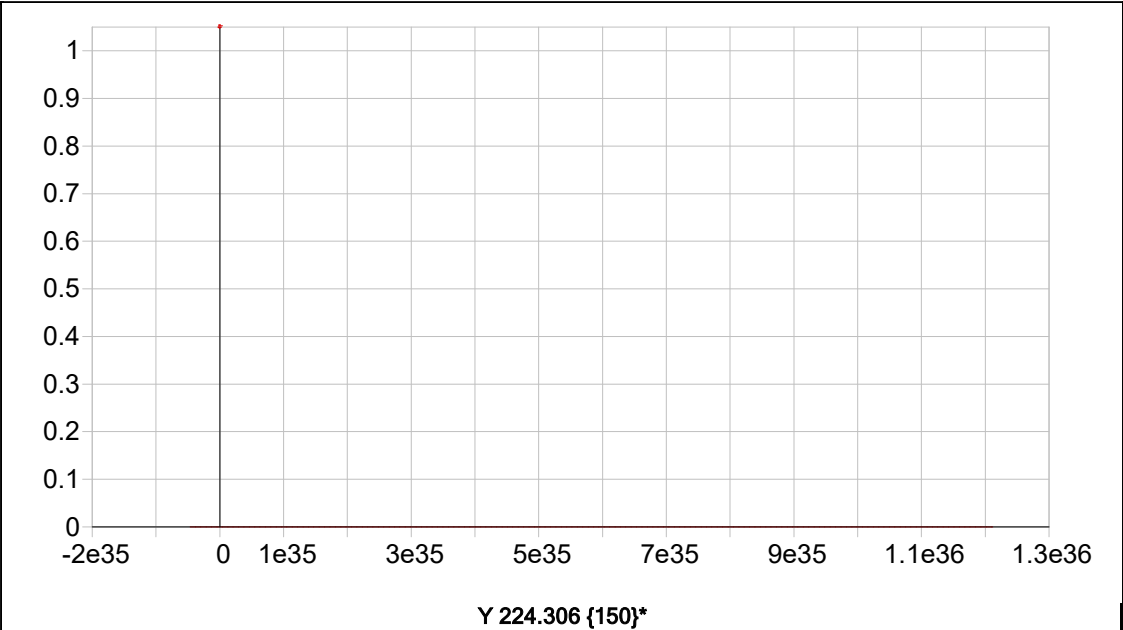


Li 670.784 { 50}

Date of Fit: 06/15/2022 2:34:54 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset): -0.003301 Re-Slope: 1.000000
A1 (Gain): 1.197060 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999800 Status: OK.
Std Error of Est: 0.000561
Predicted MDL: 0.001667
Predicted MQL: 0.005557

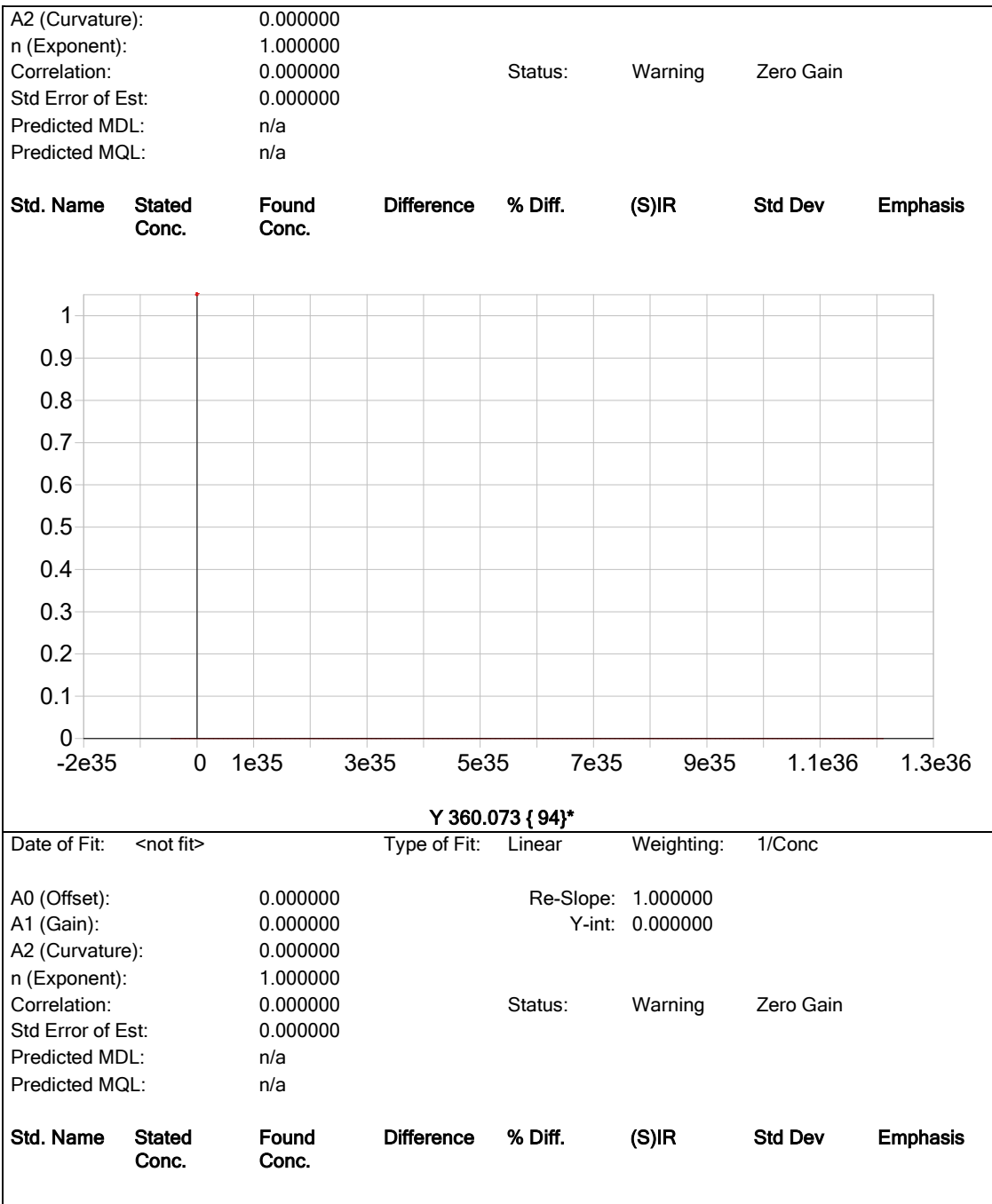
Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00330	.002	1
S5	10.000	10.166	.166	1.66	12.166	.023	1
S4	5.0000	4.9462	-.054	-1.08	5.9176	.023	1
S3	2.5000	2.4059	-.094	-3.77	2.8767	.007	1
S1	.02000	.02065	.001	3.27	.02142	.002	1
S2	.80000	.78139	-.019	-2.33	.93208	.002	1



Date of Fit:	<not fit>	Type of Fit:	Linear	Weighting:	1/Conc
A0 (Offset):	0.000000		Re-Slope:	1.000000	
A1 (Gain):	0.000000		Y-int:	0.000000	
A2 (Curvature):	0.000000				
n (Exponent):	1.000000				
Correlation:	0.000000		Status:	Warning	Zero Gain
Std Error of Est:	0.000000				
Predicted MDL:	n/a				
Predicted MQL:	n/a				

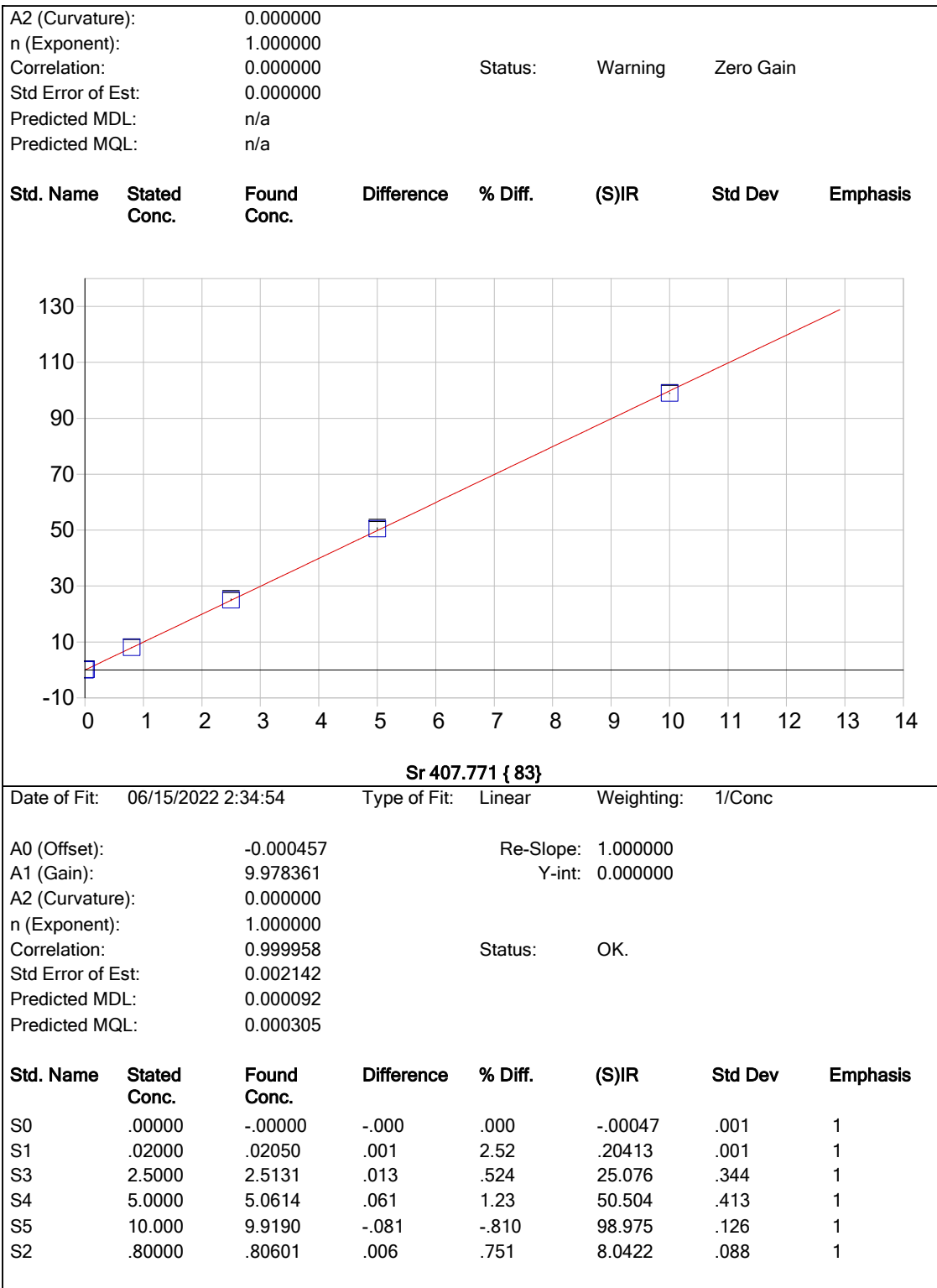
Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
							
Y 224.306 {450}*							

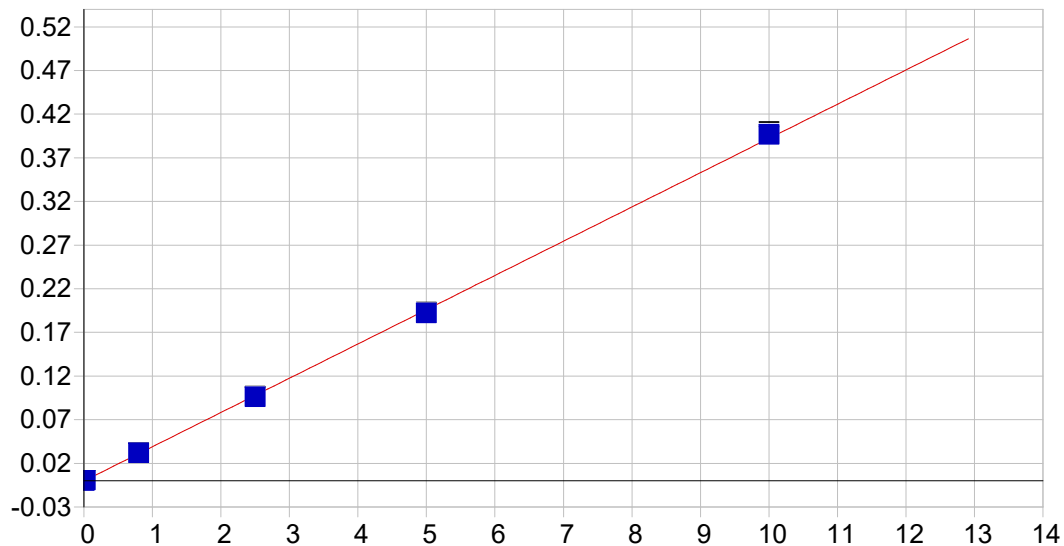
Date of Fit:	<not fit>	Type of Fit:	Linear	Weighting:	1/Conc
A0 (Offset):	0.000000	Re-Slope:	1.000000		
A1 (Gain):	0.000000	Y-int:	0.000000		



The plot shows a function that is zero for all values of the horizontal axis except at $x=0$, where it reaches a value of approximately 1.05. The horizontal axis is labeled $\ln 230.606 \{446\}^*$ and ranges from $-2e35$ to $1.3e36$. The vertical axis ranges from 0 to 1. A red dot marks the point $(0, 1.05)$.

Date of Fit:	<not fit>	Type of Fit:	Linear	Weighting:	1/Conc
A0 (Offset):	0.000000		Re-Slope:	1.000000	
A1 (Gain):	0.000000		Y-int:	0.000000	



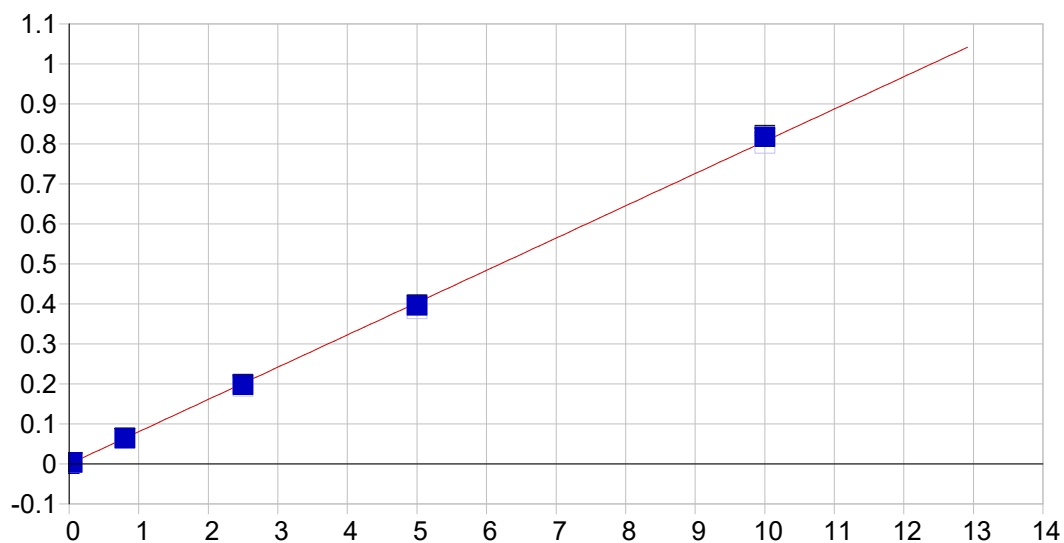


As 189.042 {479}

Date of Fit: 06/16/2022 3:03:53 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset): -0.000212 Re-Slope: 1.000000
A1 (Gain): 0.039235 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999886 Status: OK.
Std Error of Est: 0.000014
Predicted MDL: 0.005436
Predicted MQL: 0.018120

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00021	.000	1
S1	.02000	.02120	.001	5.98	.00063	.000	1
S3	2.5000	2.4585	-.041	-1.66	.09637	.001	1
S4	5.0000	4.9067	-.093	-1.87	.19255	.001	1
S5	10.000	10.118	.118	1.18	.39729	.003	1
S2	.80000	.81515	.015	1.89	.03181	.000	1

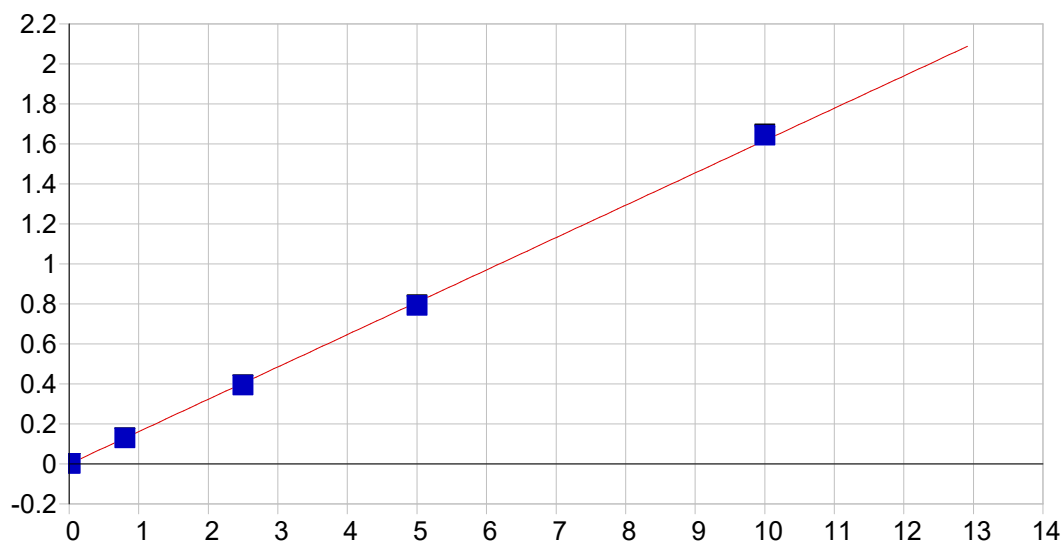


TI 190.856 {477}

Date of Fit: 06/16/2022 3:03:53 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset): -0.000203 Re-Slope: 1.000000
A1 (Gain): 0.080675 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999870 Status: OK.
Std Error of Est: 0.000042
Predicted MDL: 0.002297
Predicted MQL: 0.007658

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00020	.000	1
S1	.04000	.03824	-.002	-4.41	.00275	.000	1
S3	2.5000	2.4531	-.047	-1.88	.19349	.001	1
S4	5.0000	4.9091	-.091	-1.82	.38741	.002	1
S5	10.000	10.140	.140	1.40	.80101	.004	1
S2	.80000	.79924	-.001	-.095	.06293	.000	1

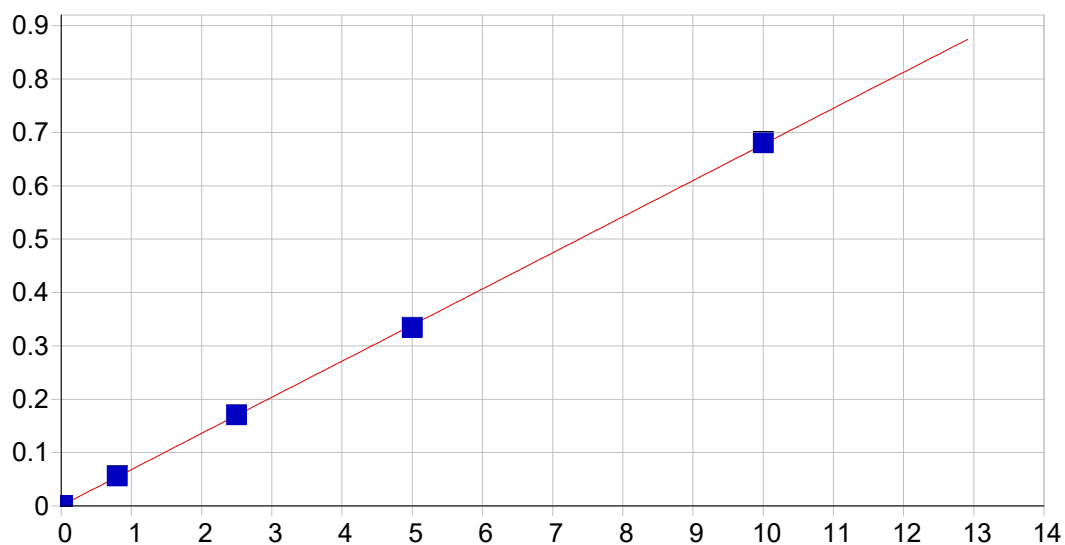


Pb 220.353 {453}

Date of Fit: 06/16/2022 3:03:53 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset): -0.000189 Re-Slope: 1.000000
A1 (Gain): 0.161684 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999826 Status: OK.
Std Error of Est: 0.000055
Predicted MDL: 0.002275
Predicted MQL: 0.007585

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00019	.000	1
S1	.01200	.01246	.000	3.83	.00178	.000	1
S3	2.5000	2.4383	-.062	-2.47	.39347	.001	1
S4	5.0000	4.8974	-.103	-2.05	.79051	.003	1
S5	10.000	10.165	.165	1.65	1.6411	.007	1
S2	.80000	.79882	-.001	-.147	.12879	.001	1

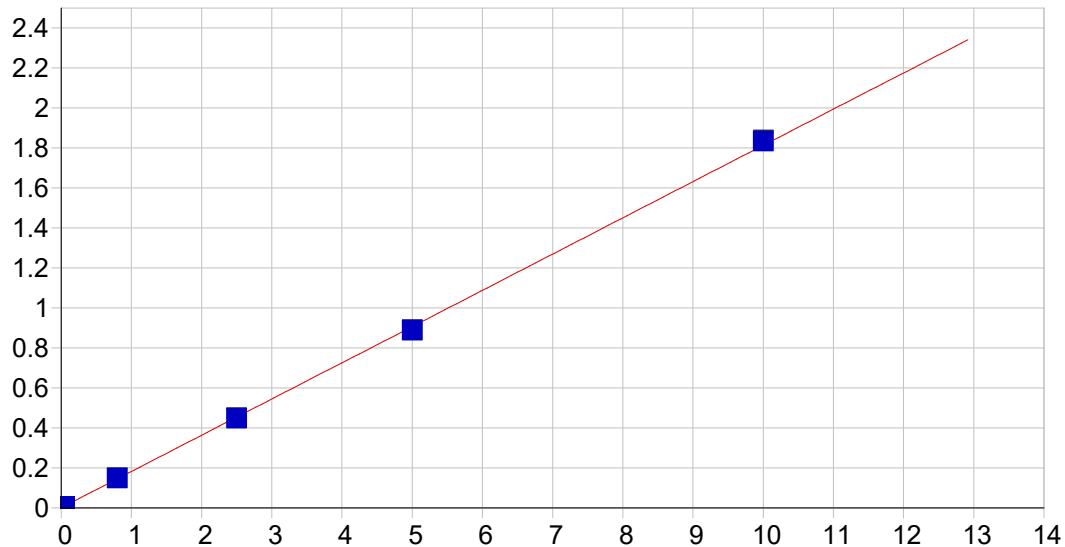


Se 196.090 {472}

Date of Fit: 06/16/2022 3:03:53 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset): 0.000453 Re-Slope: 1.000000
A1 (Gain): 0.067692 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999945 Status: OK.
Std Error of Est: 0.000017
Predicted MDL: 0.004511
Predicted MQL: 0.015038

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00045	.000	1
S1	.02000	.01709	-.003	-14.5	.00161	.000	1
S3	2.5000	2.5079	.008	.316	.17016	.000	1
S4	5.0000	4.9321	-.068	-1.36	.33421	.001	1
S5	10.000	10.044	.044	.440	.68013	.003	1
S2	.80000	.81891	.019	2.36	.05587	.000	1

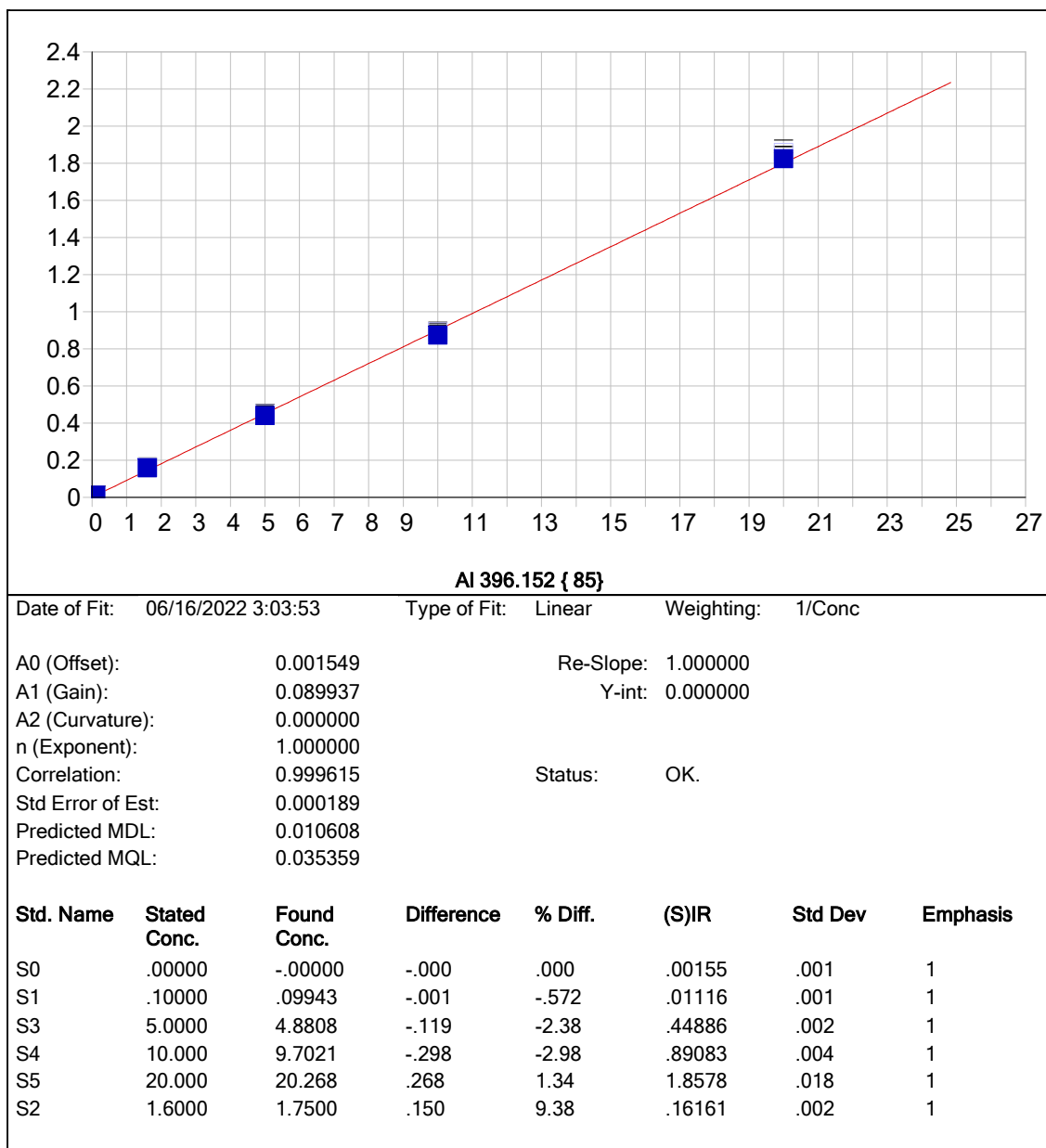


Sb 206.833 {463}

Date of Fit: 06/16/2022 3:03:53 Type of Fit: Linear Weighting: 1/Conc

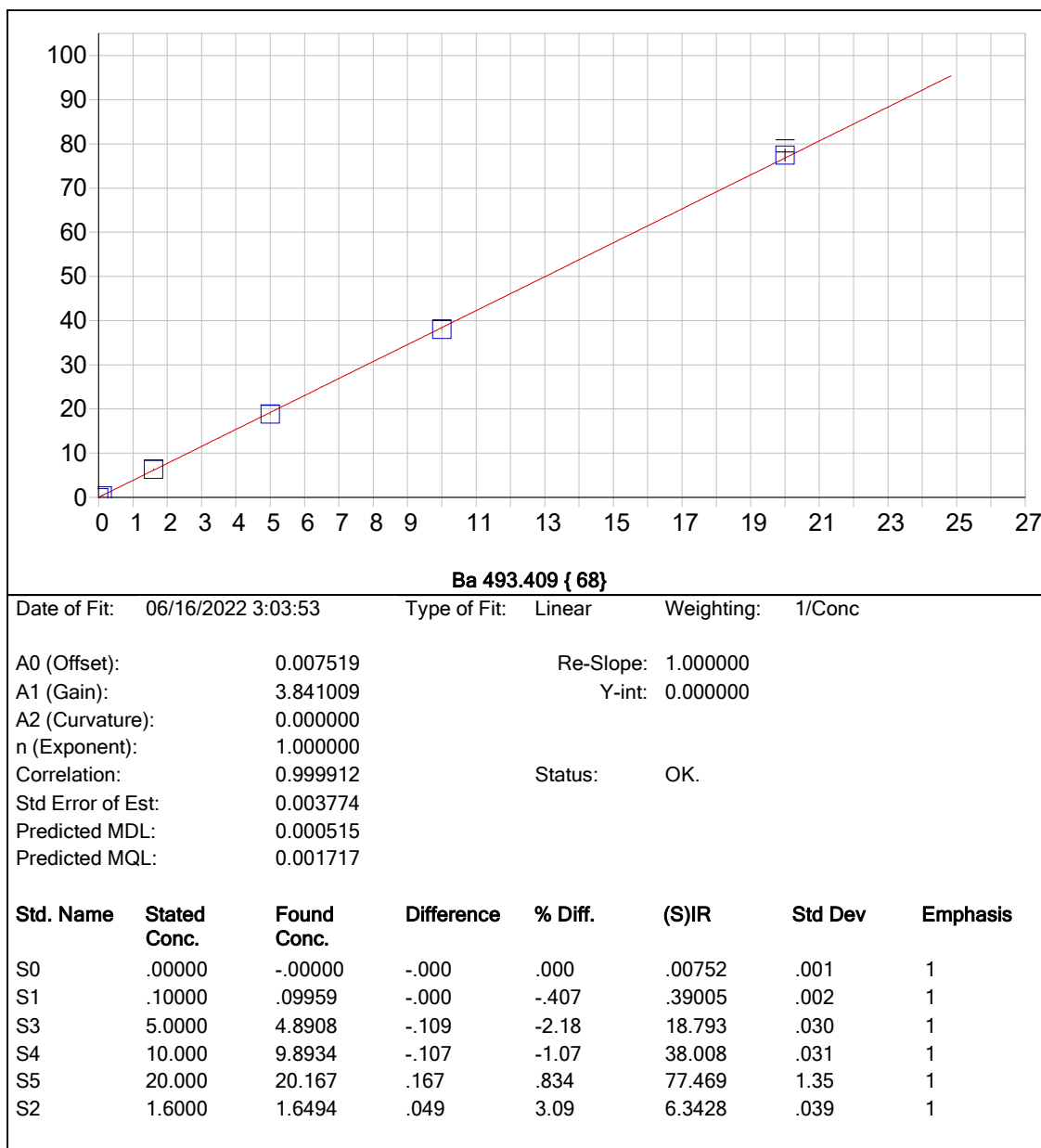
A0 (Offset): 0.000961 Re-Slope: 1.000000
A1 (Gain): 0.181205 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999891 Status: OK.
Std Error of Est: 0.000099
Predicted MDL: 0.002129
Predicted MQL: 0.007097

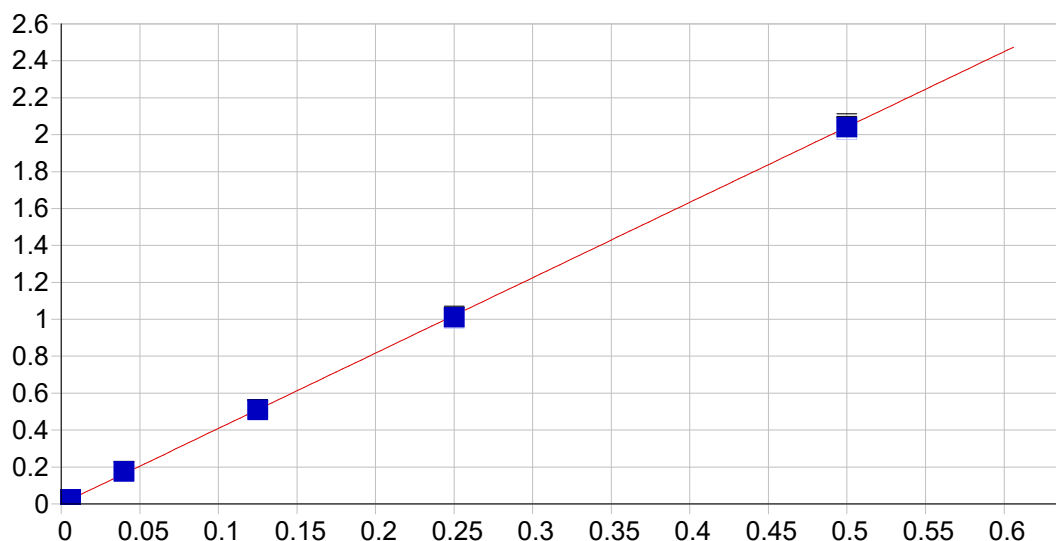
Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00096	.000	1
S1	.05000	.04891	-.001	-2.17	.00980	.000	1
S3	2.5000	2.4702	-.030	-1.19	.44854	.001	1
S4	5.0000	4.8999	-.100	-2.00	.88876	.001	1
S5	10.000	10.116	.116	1.16	1.8339	.005	1
S2	.80000	.81457	.015	1.82	.14855	.000	1



Date of Fit: 06/16/2022 3:03:53 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset): 0.001549 Re-Slope: 1.000000
A1 (Gain): 0.089937 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999615 Status: OK.
Std Error of Est: 0.000189
Predicted MDL: 0.010608
Predicted MQL: 0.035359



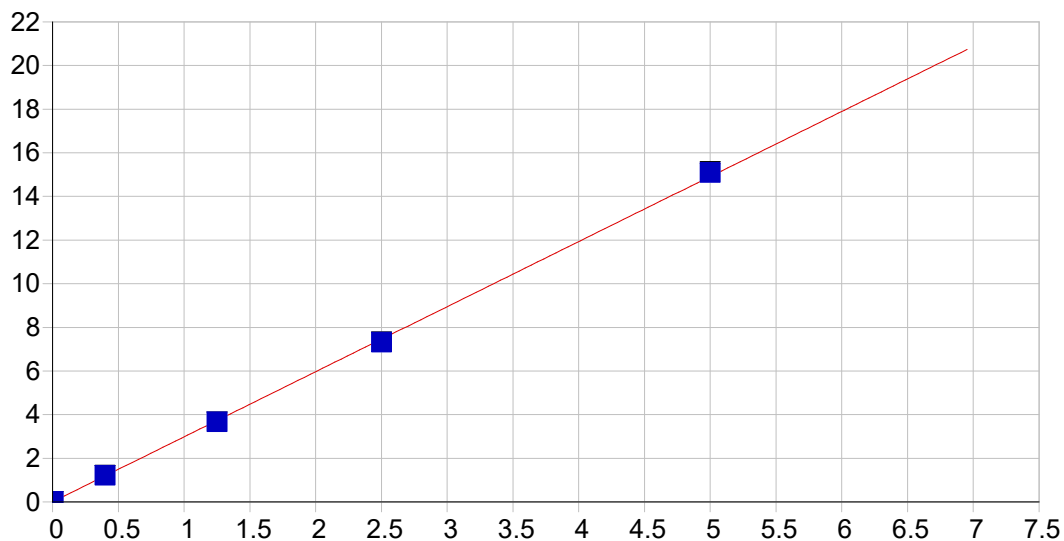


Be 234.861 {144}

Date of Fit: 06/16/2022 3:03:53 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset):	0.000388	Re-Slope:	1.000000
A1 (Gain):	4.082844	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999850	Status:	OK.
Std Error of Est:	0.000202		
Predicted MDL:	0.000082		
Predicted MQL:	0.000275		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00039	.000	1
S1	.00600	.00641	.000	6.78	.02627	.000	1
S3	.12500	.12484	-.000	-.126	.50667	.002	1
S4	.25000	.24734	-.003	-1.06	1.0034	.007	1
S5	.50000	.49947	-.001	-.105	2.0259	.019	1
S2	.04000	.04294	.003	7.34	.17459	.001	1

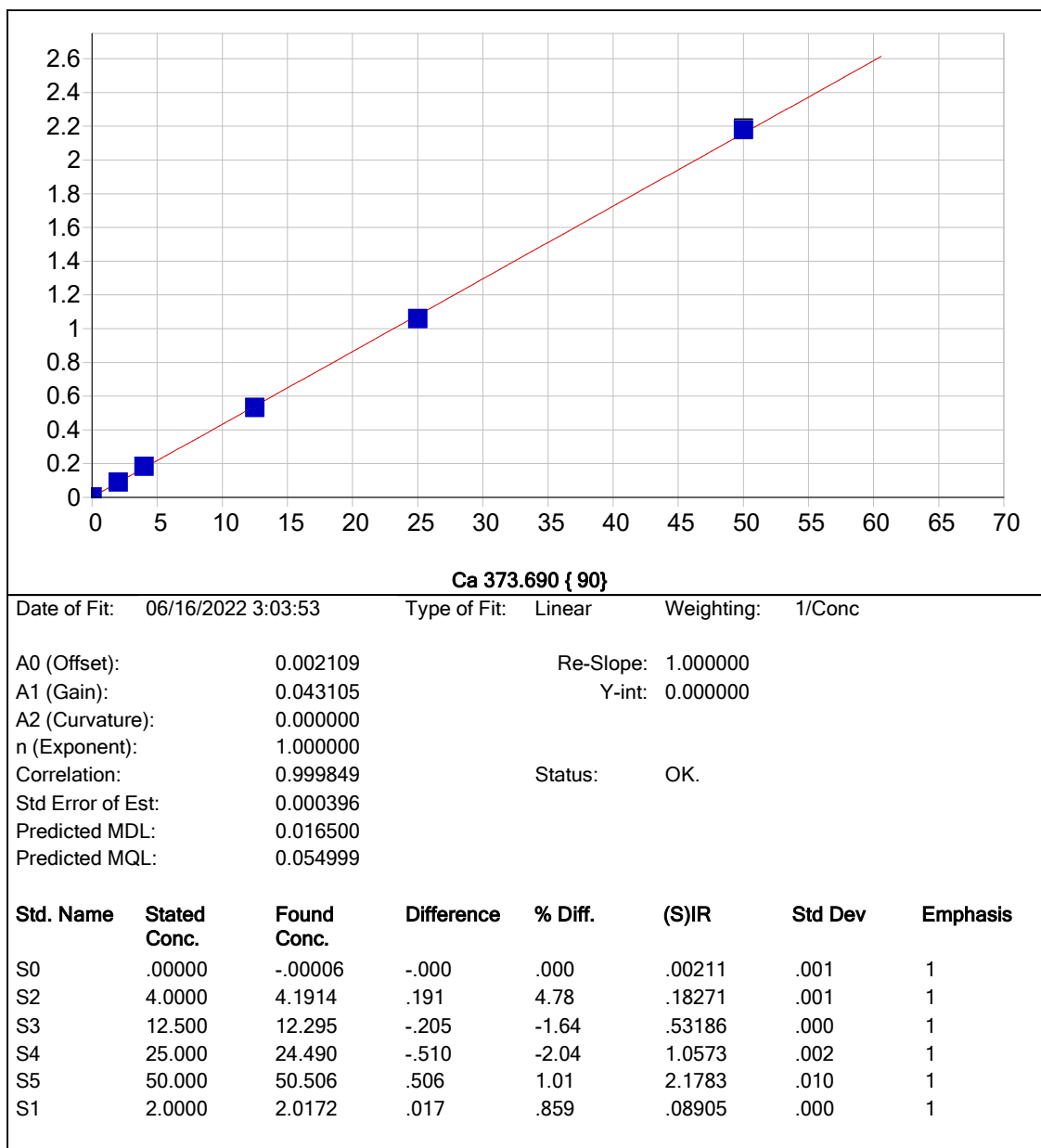


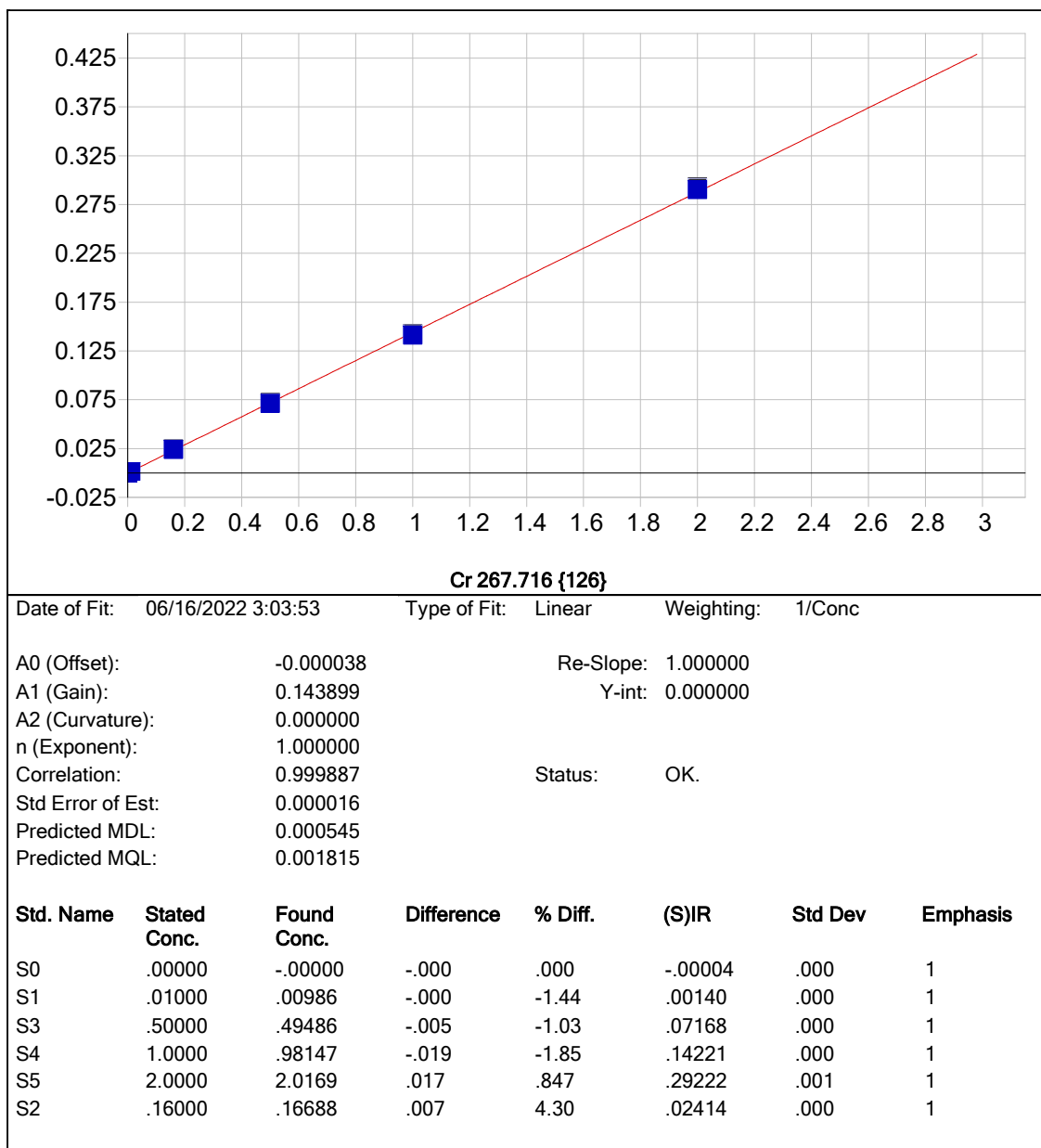
Cd 214.438 {457}

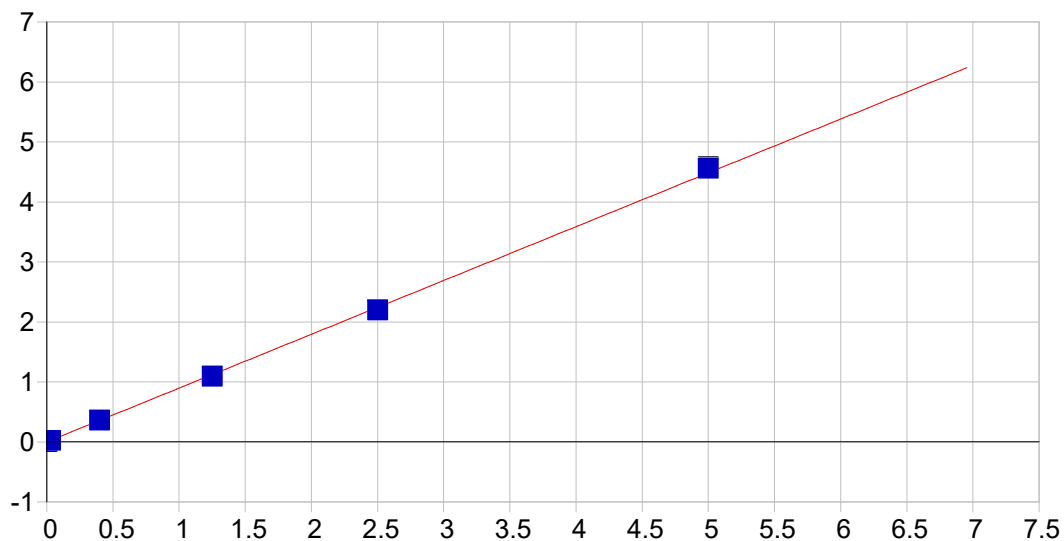
Date of Fit: 06/16/2022 3:03:53 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset): 0.001842 Re-Slope: 1.000000
A1 (Gain): 2.982258 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999889 Status: OK.
Std Error of Est: 0.000403
Predicted MDL: 0.000099
Predicted MQL: 0.000331

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00184	.000	1
S1	.00600	.00608	.000	1.25	.01997	.000	1
S3	1.2500	1.2296	-.020	-1.63	3.6691	.003	1
S4	2.5000	2.4535	-.046	-1.86	7.3193	.018	1
S5	5.0000	5.0598	.060	1.20	15.092	.048	1
S2	.40000	.40698	.007	1.75	1.2156	.001	1





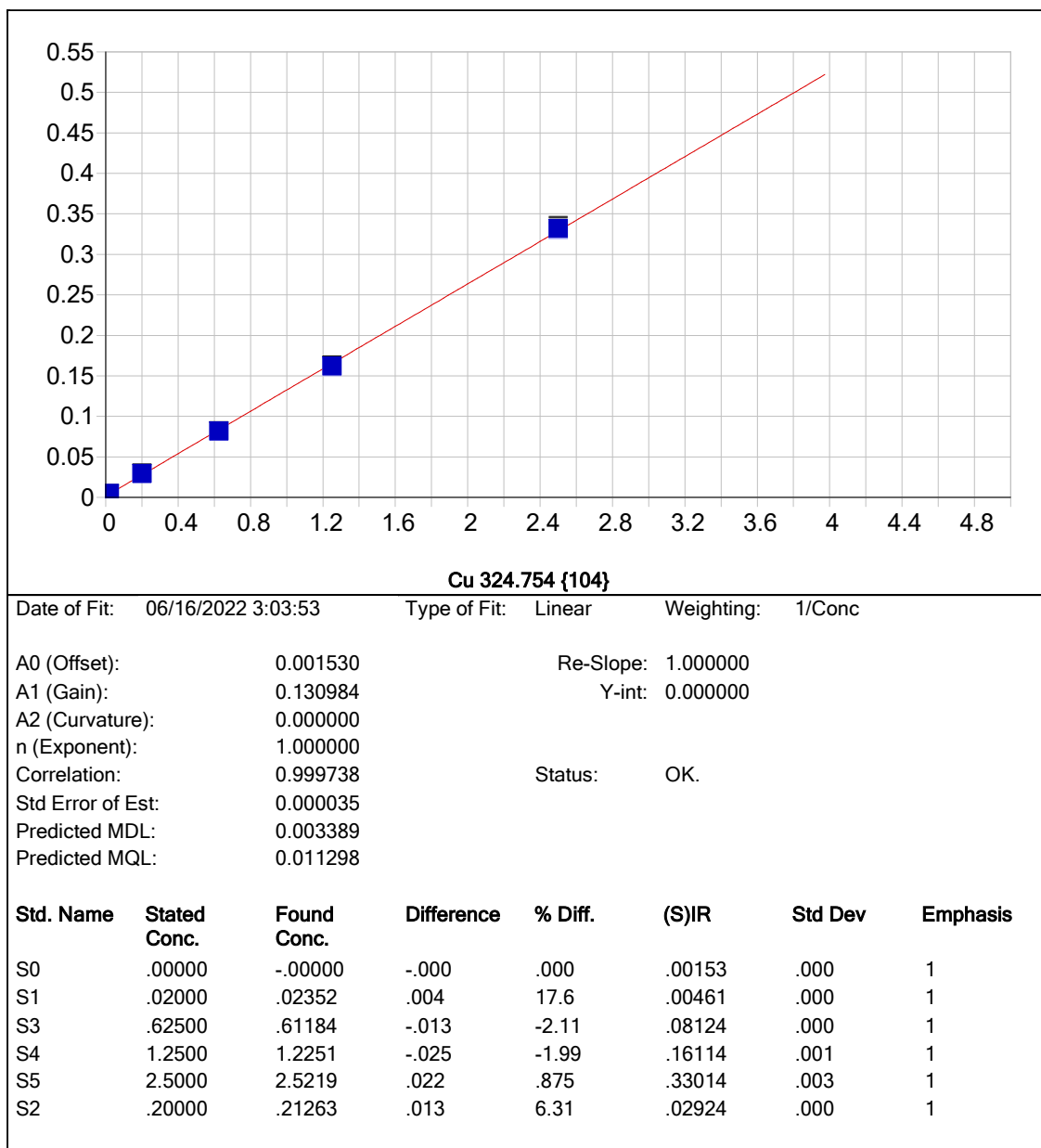


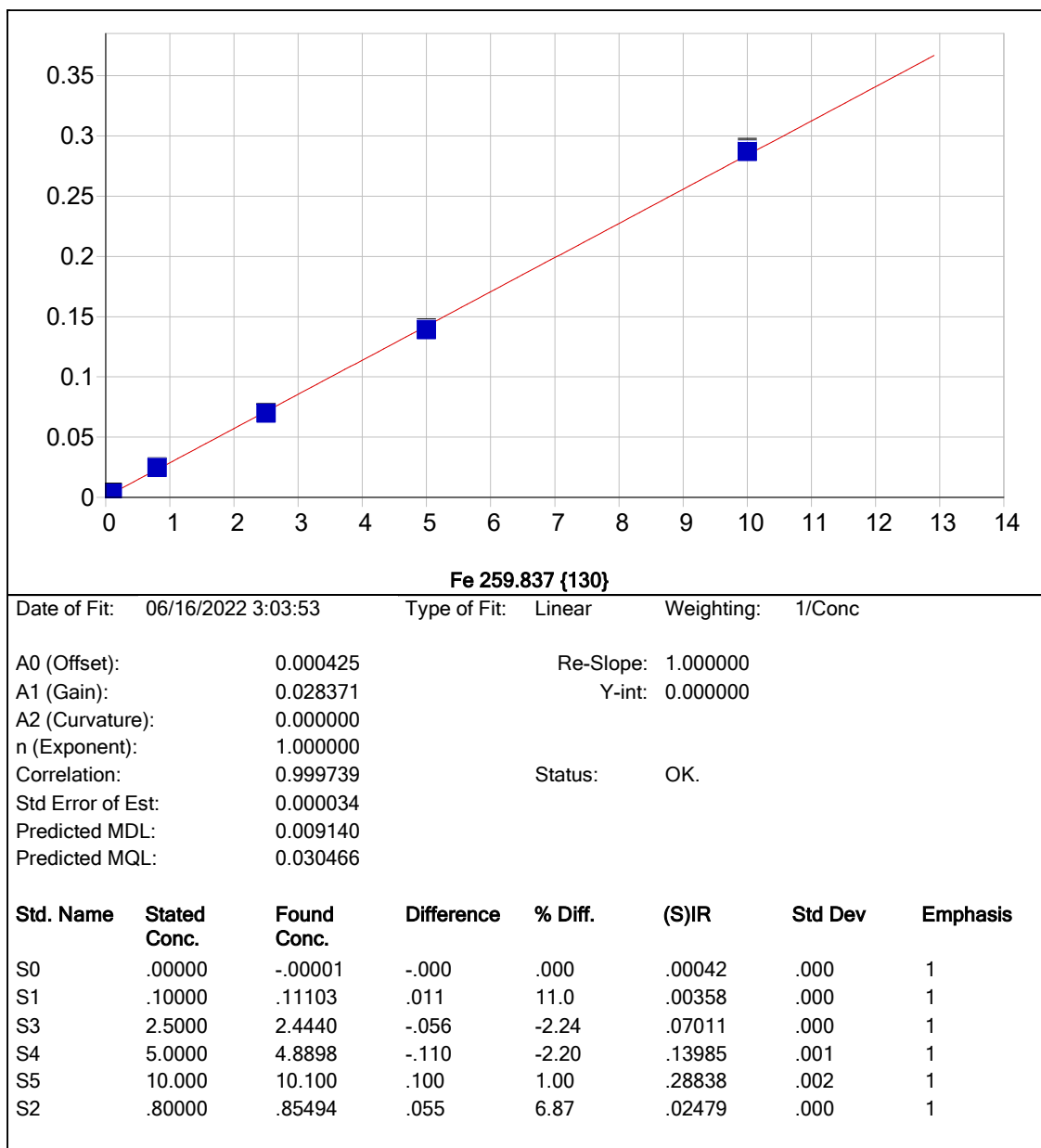
Co 228.616 {448}

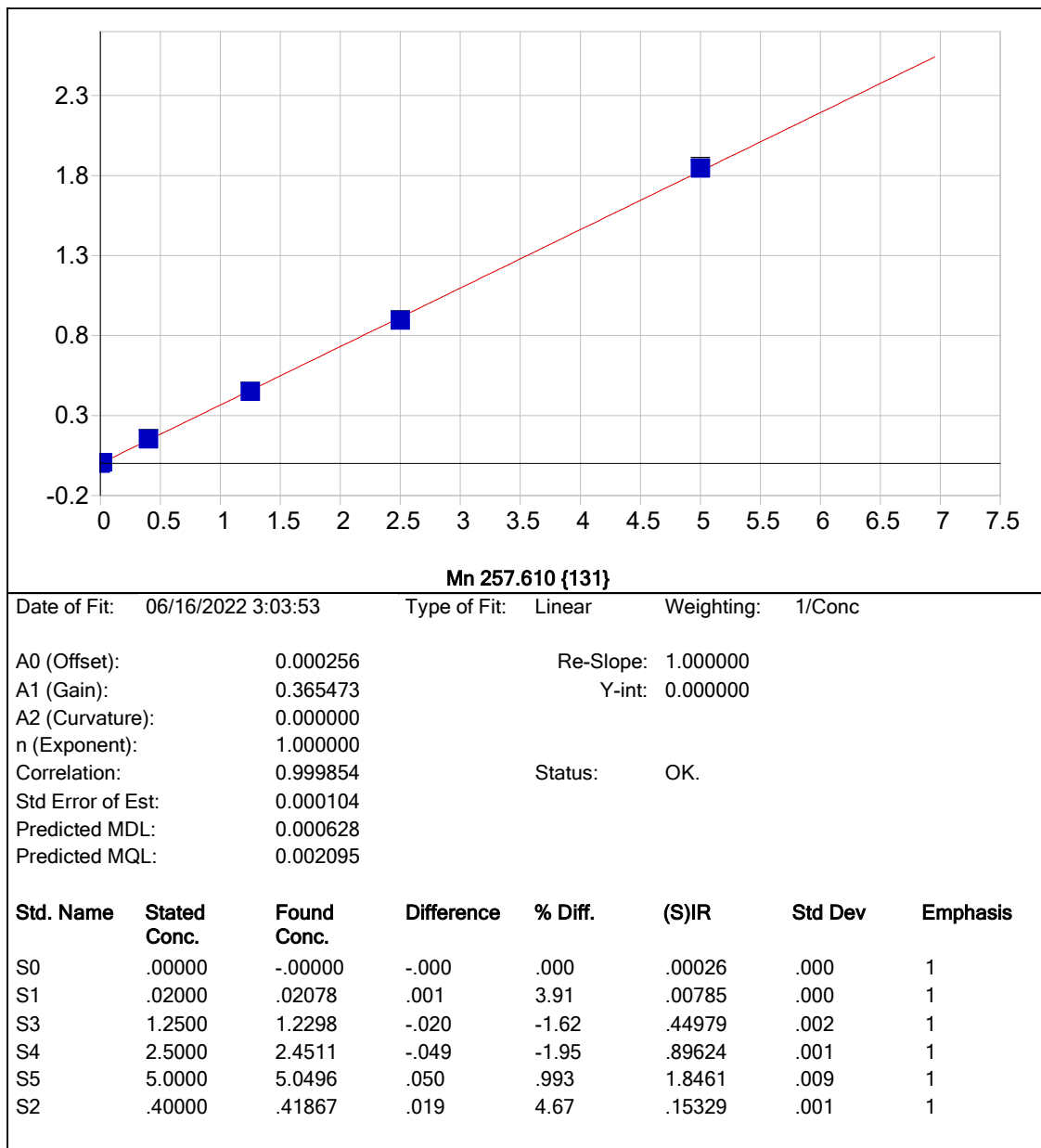
Date of Fit: 06/16/2022 3:03:53 Type of Fit: Linear Weighting: 1/Conc

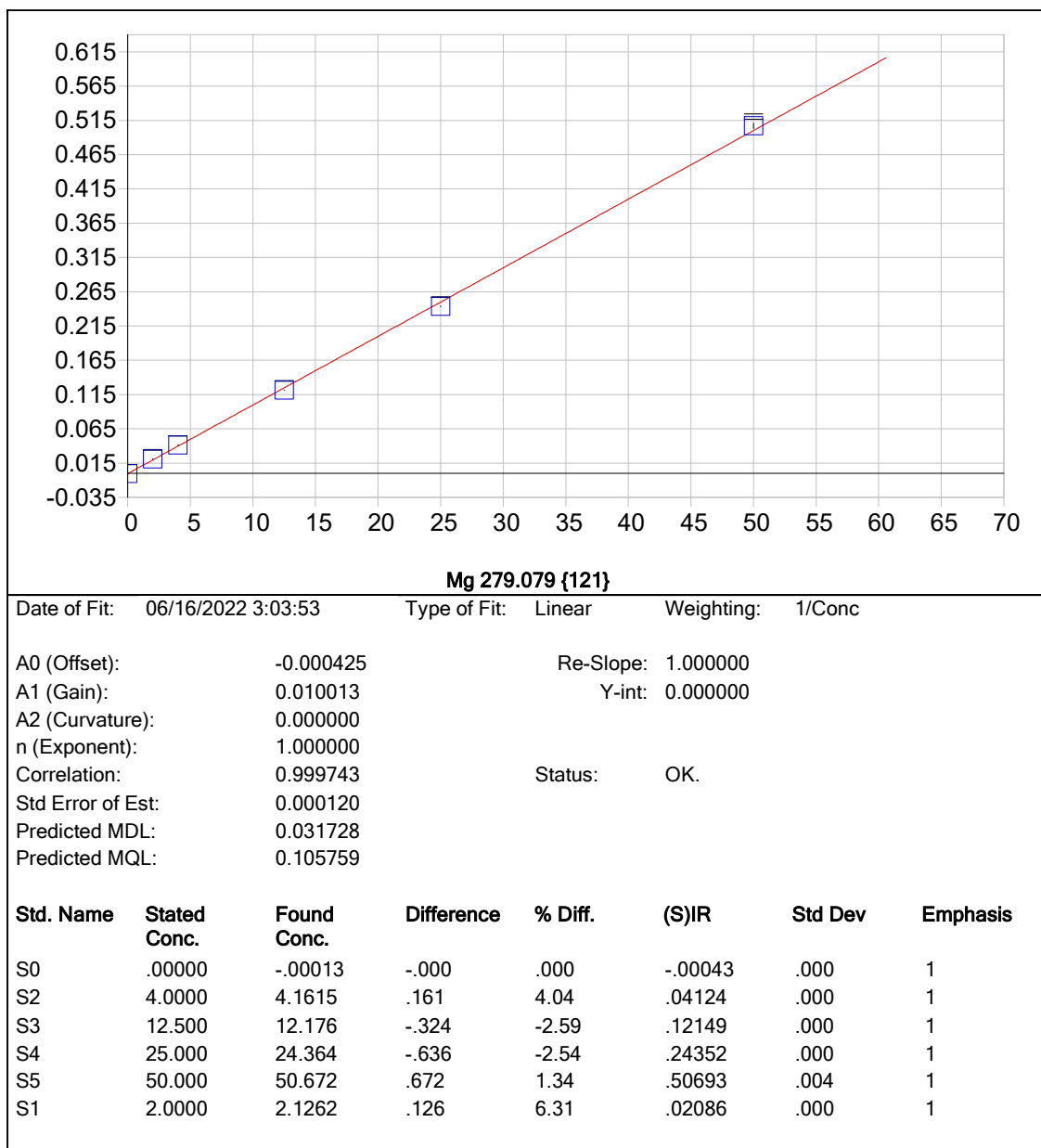
A0 (Offset): -0.000070 Re-Slope: 1.000000
 A1 (Gain): 0.896798 Y-int: 0.000000
 A2 (Curvature): 0.000000
 n (Exponent): 1.000000
 Correlation: 0.999819 Status: OK.
 Std Error of Est: 0.000348
 Predicted MDL: 0.000329
 Predicted MQL: 0.001098

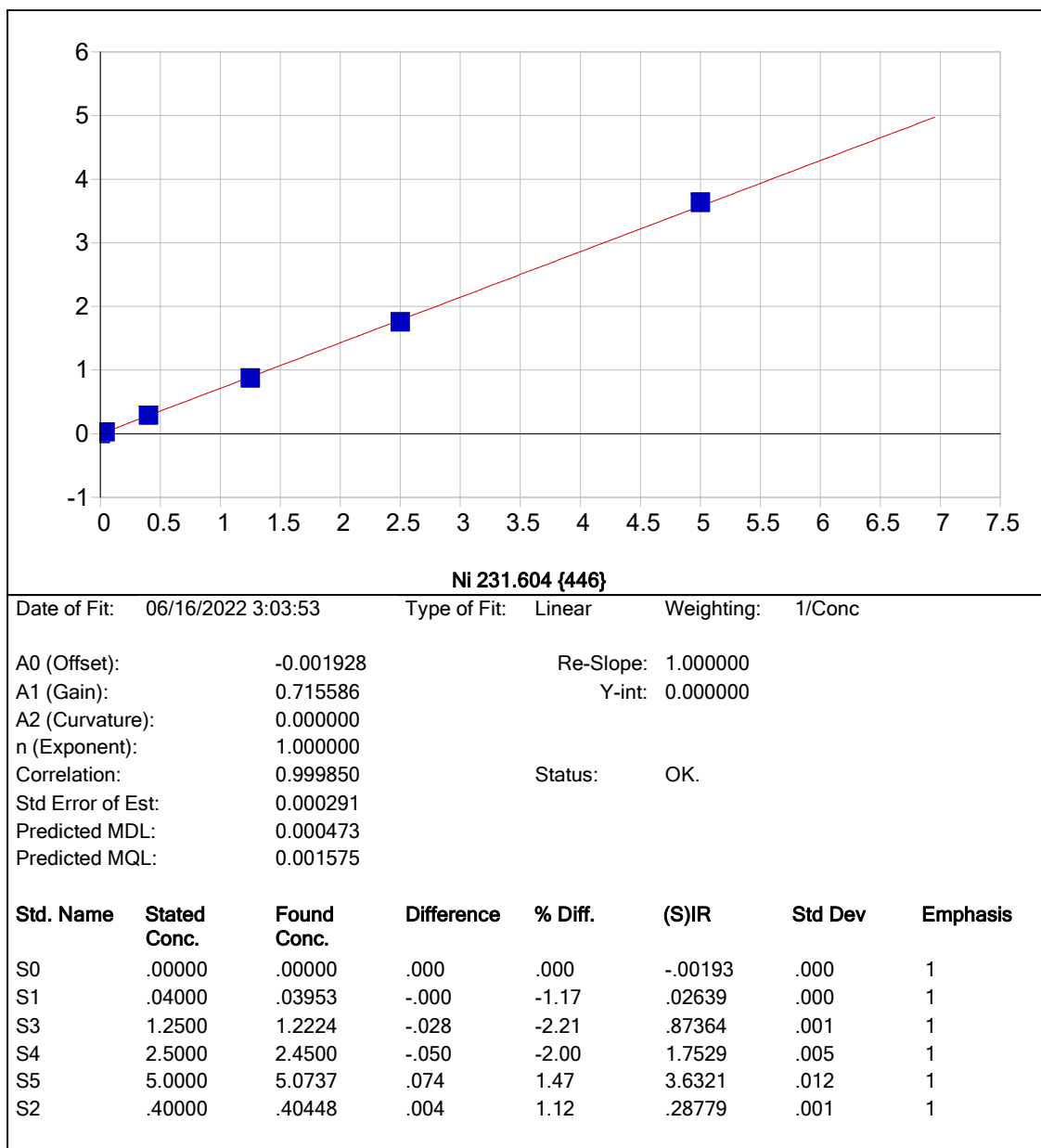
Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00007	.000	1
S1	.03000	.02966	-.000	-1.15	.02644	.000	1
S3	1.2500	1.2182	-.032	-2.54	1.0947	.003	1
S4	2.5000	2.4473	-.053	-2.11	2.1993	.005	1
S5	5.0000	5.0842	.084	1.68	4.5687	.017	1
S2	.40000	.40072	.001	.181	.36005	.000	1

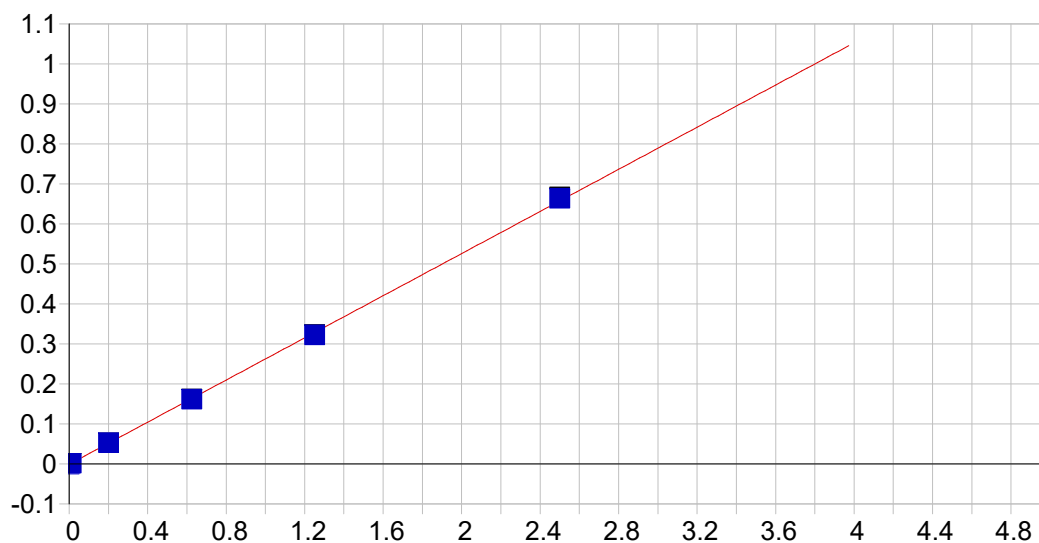










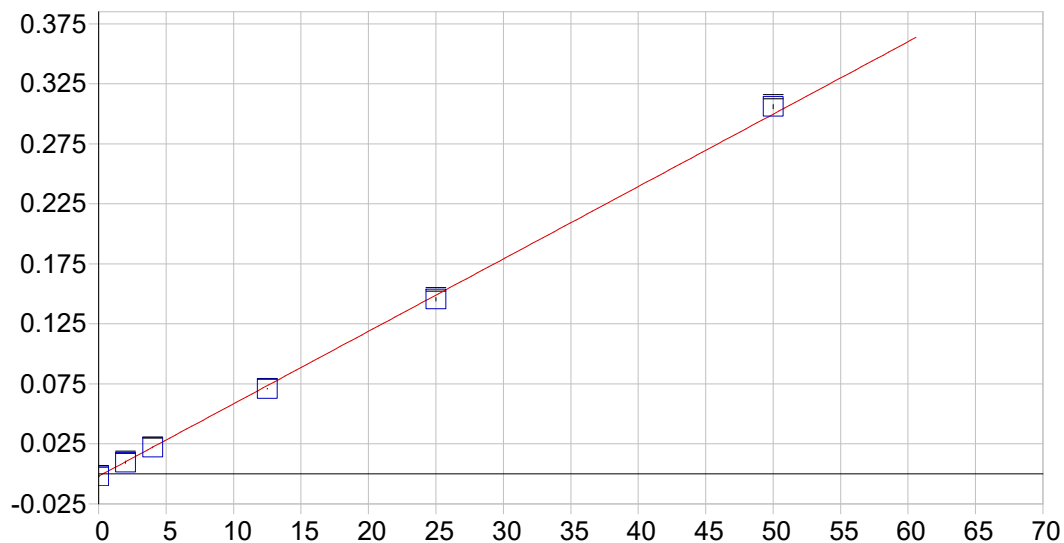


Ag 328.068 {103}

Date of Fit: 06/16/2022 3:03:53 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset): -0.000992 Re-Slope: 1.000000
A1 (Gain): 0.263378 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999908 Status: OK.
Std Error of Est: 0.000030
Predicted MDL: 0.000528
Predicted MQL: 0.001759

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00099	.000	1
S1	.01000	.01032	.000	3.20	.00172	.000	1
S3	.62500	.61757	-.007	-1.19	.16145	.000	1
S4	1.2500	1.2276	-.022	-1.80	.32190	.001	1
S5	2.5000	2.5258	.026	1.03	.66342	.003	1
S2	.20000	.20374	.004	1.87	.05260	.000	1

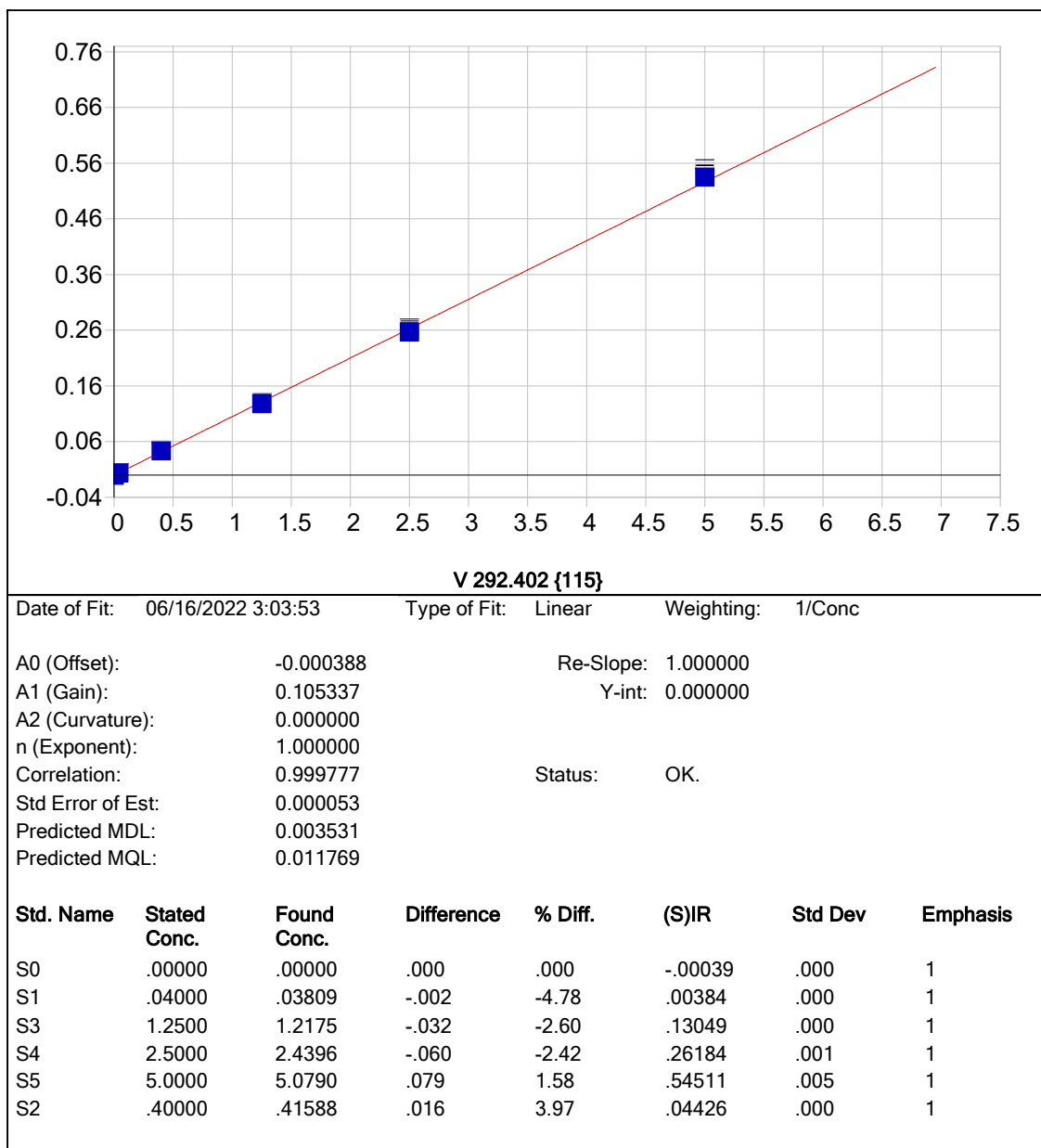


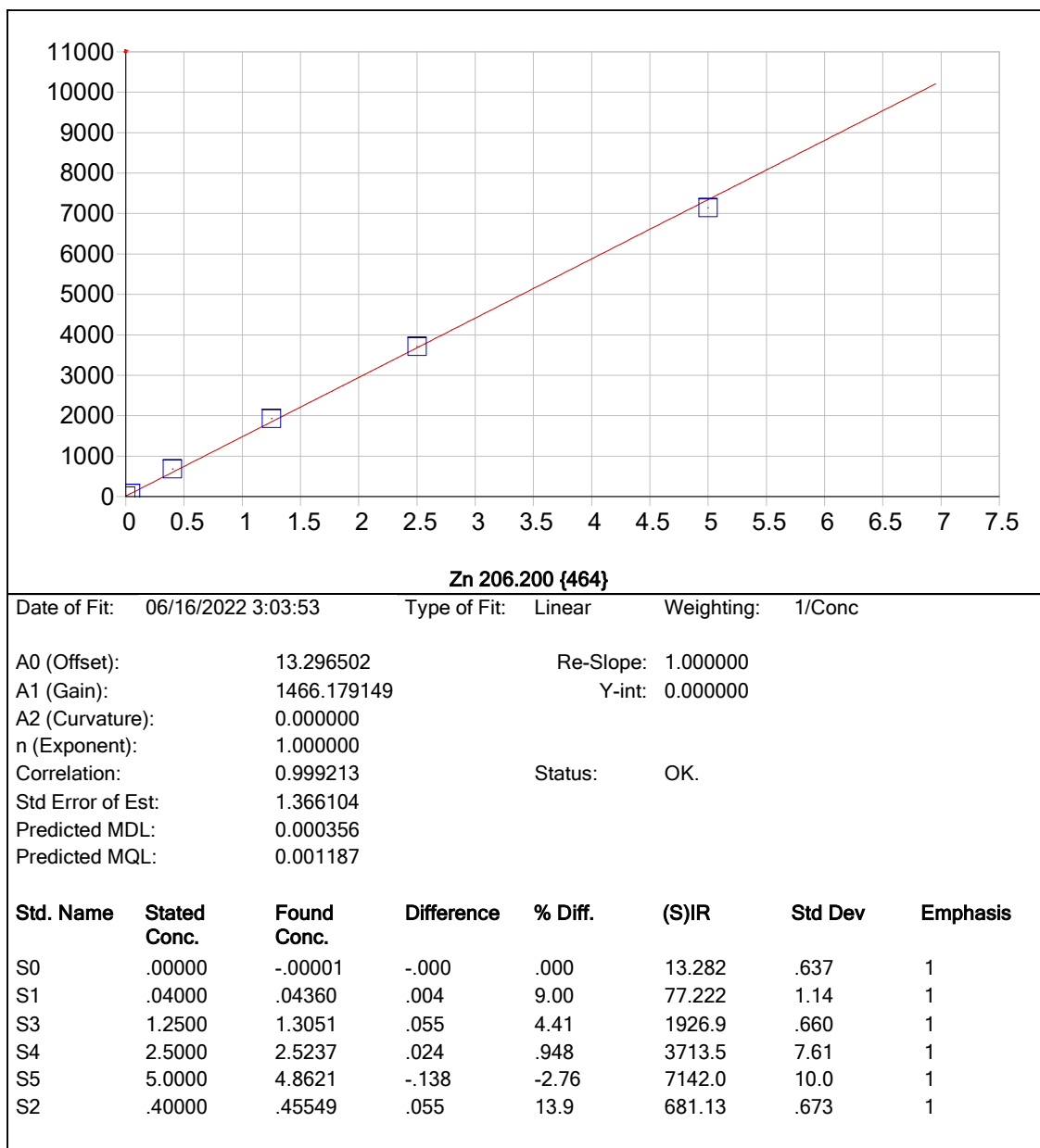
Na 818.326 { 41}

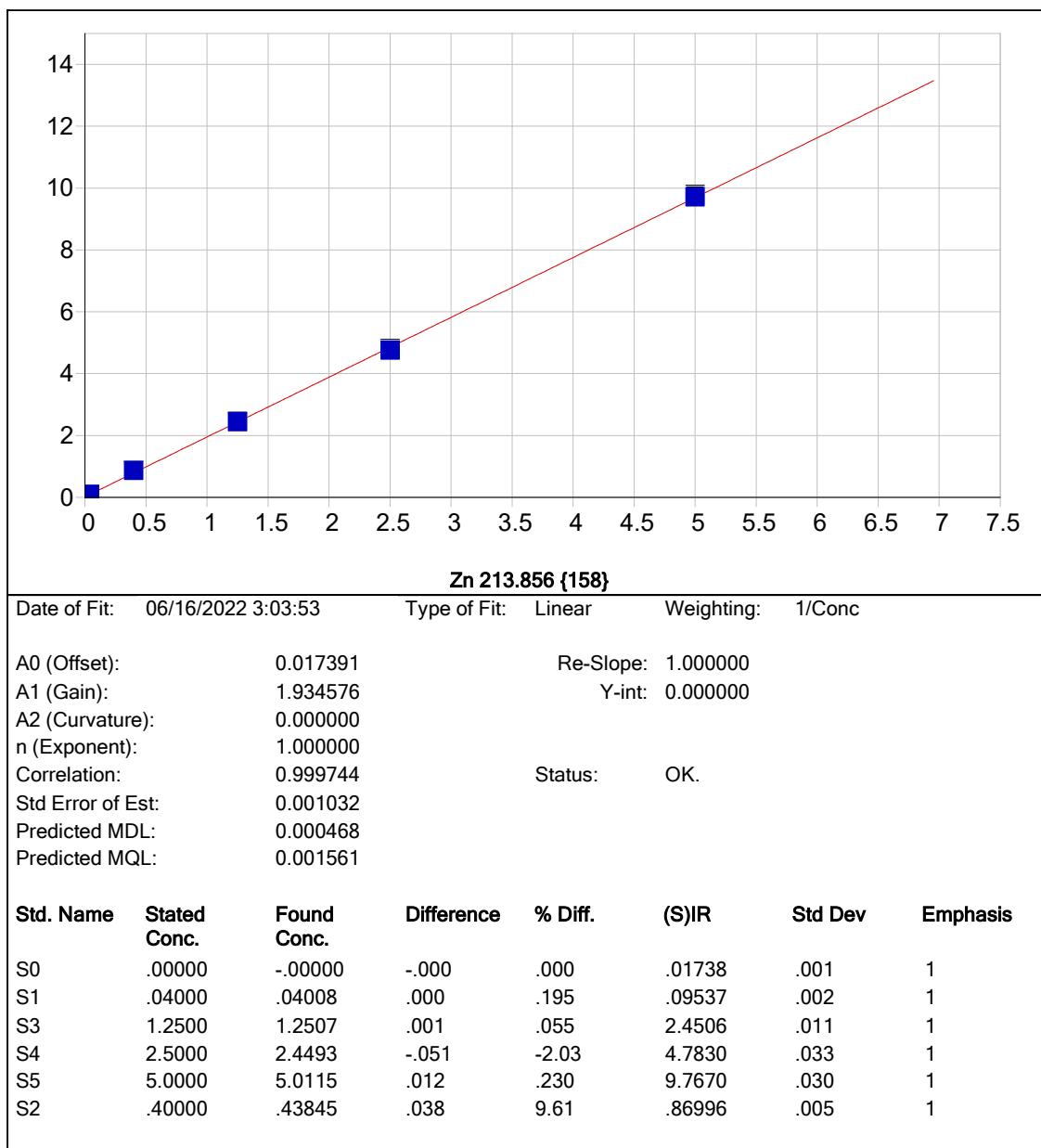
Date of Fit: 06/16/2022 3:03:53 Type of Fit: Linear Weighting: 1/Conc

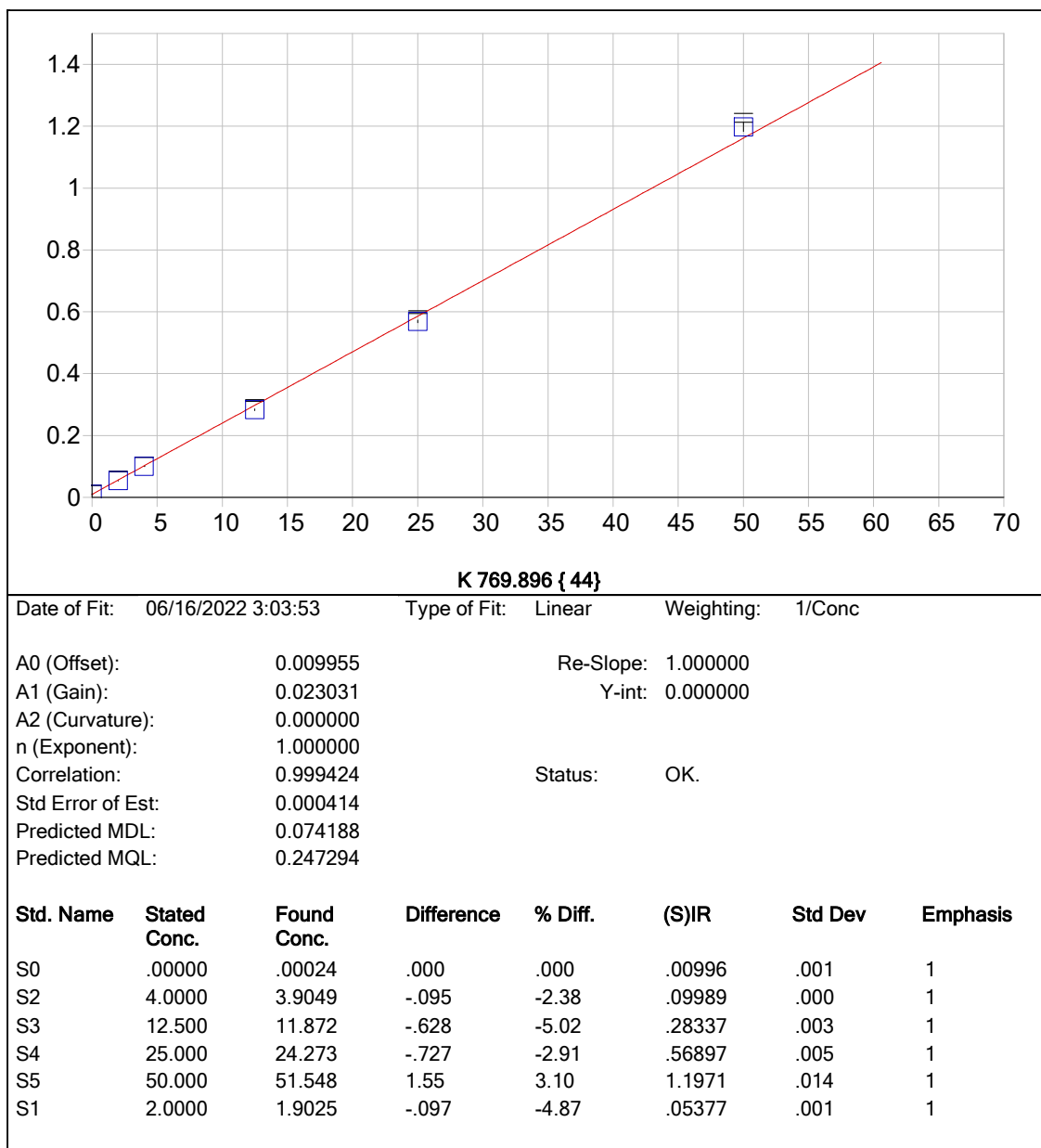
A0 (Offset): -0.001902 Re-Slope: 1.000000
A1 (Gain): 0.006032 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999730 Status: OK.
Std Error of Est: 0.000074
Predicted MDL: 0.296615
Predicted MQL: 0.988715

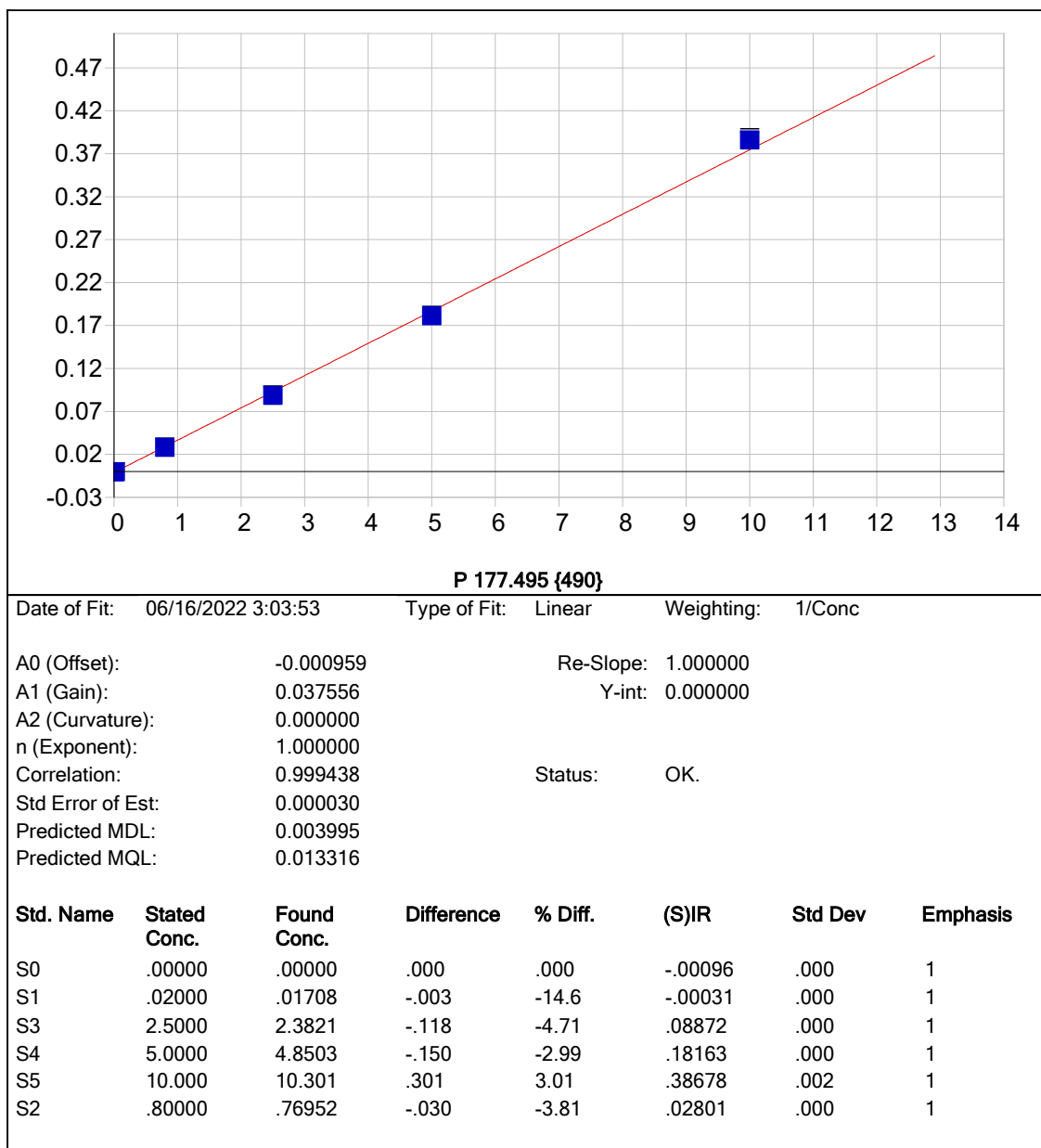
Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00015	.000	.000	-.00190	.001	1
S2	4.0000	3.9753	-.025	-.617	.02208	.000	1
S3	12.500	12.088	-.412	-3.30	.07101	.000	1
S4	25.000	24.444	-.556	-2.22	.14555	.001	1
S5	50.000	51.057	1.06	2.11	.30607	.002	1
S1	2.0000	1.9351	-.065	-3.25	.00977	.001	1





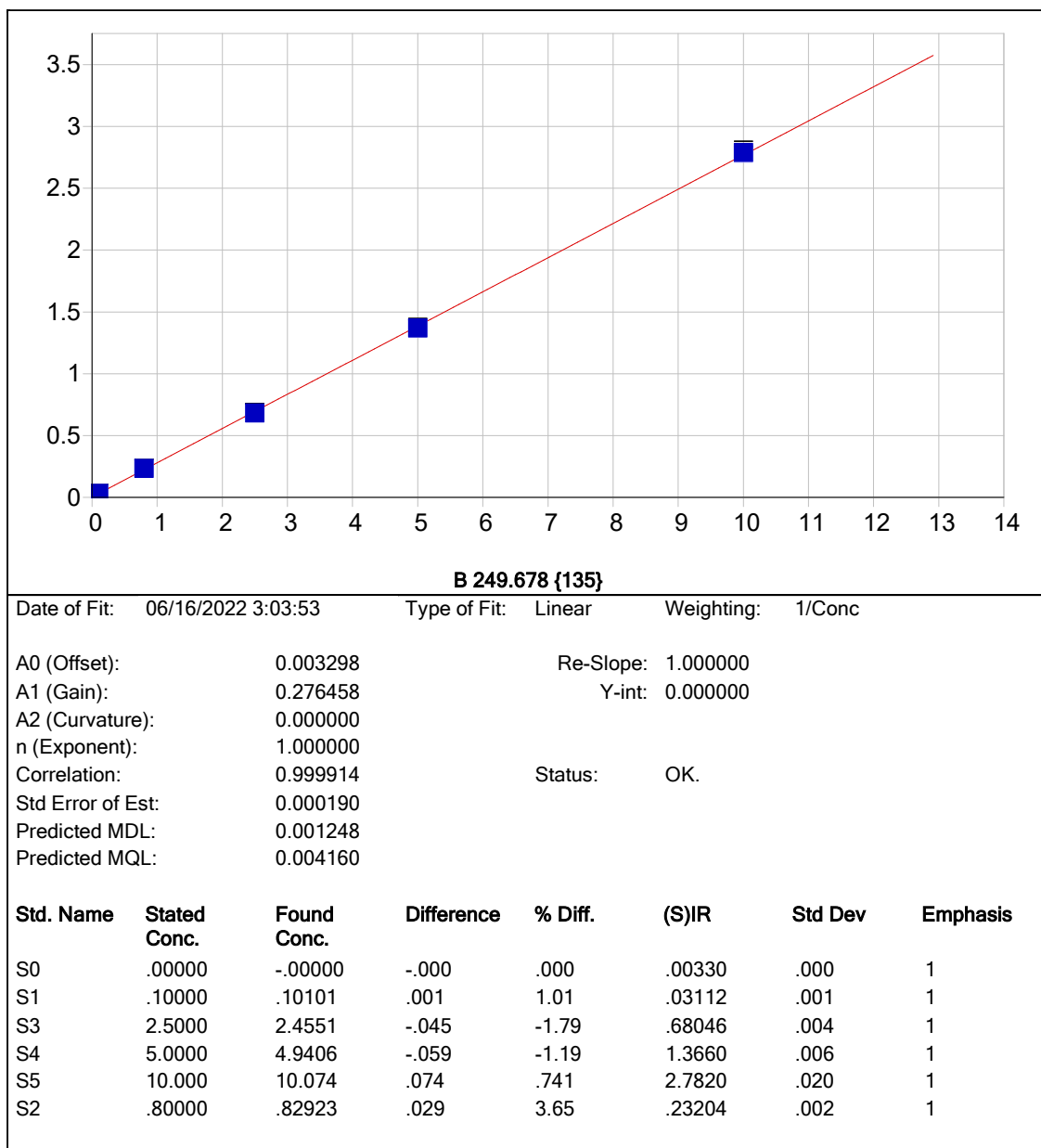


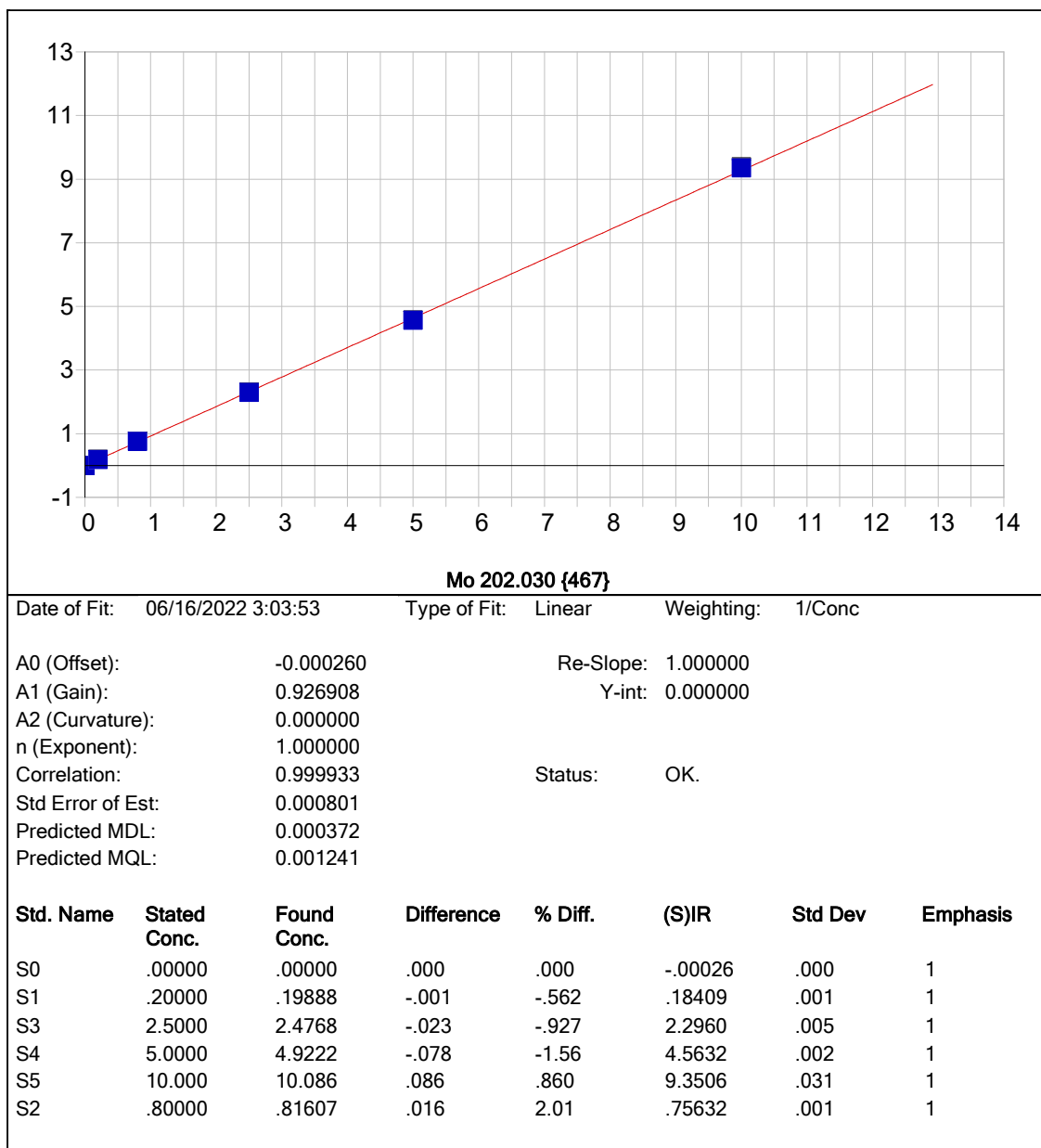


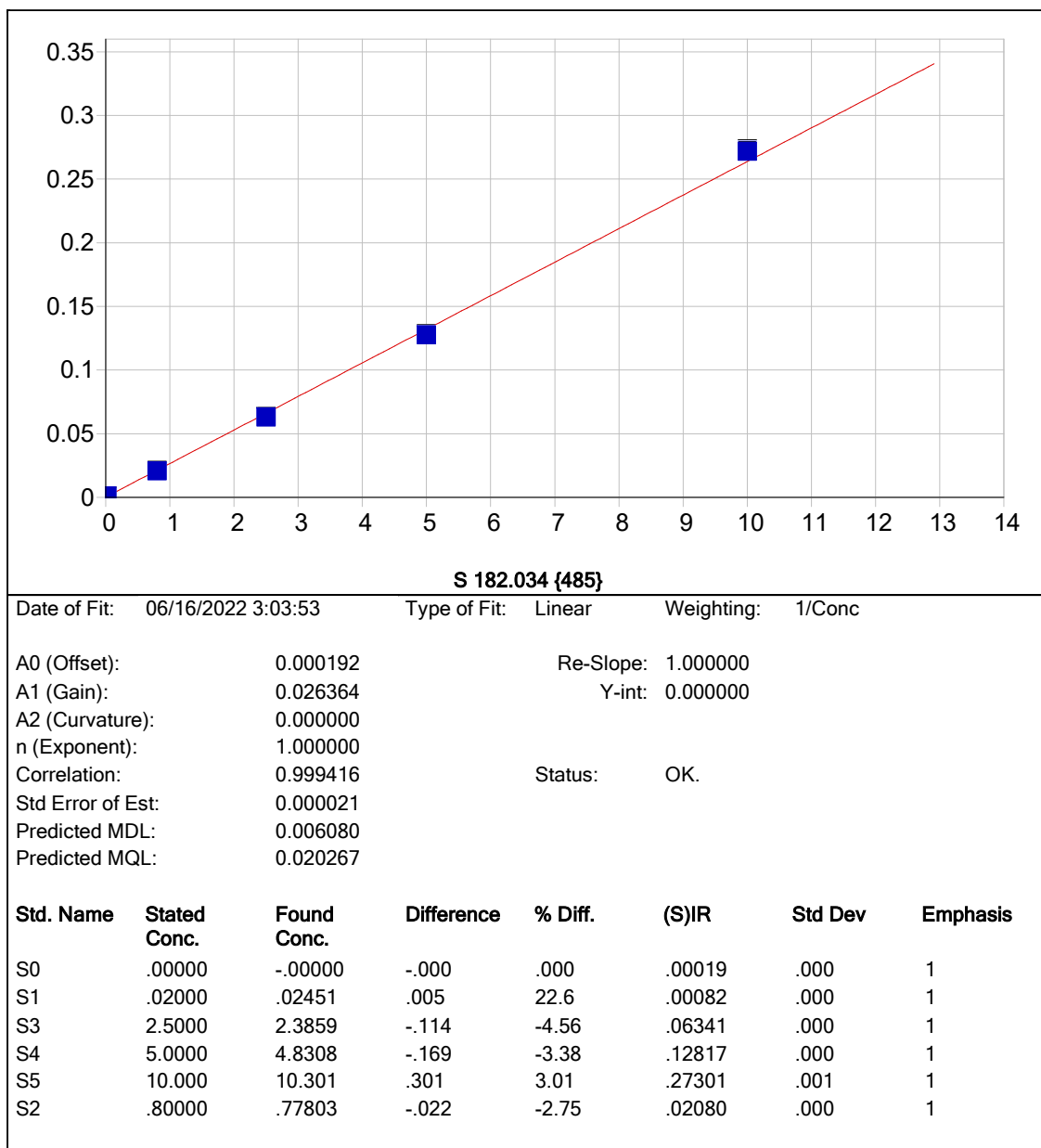


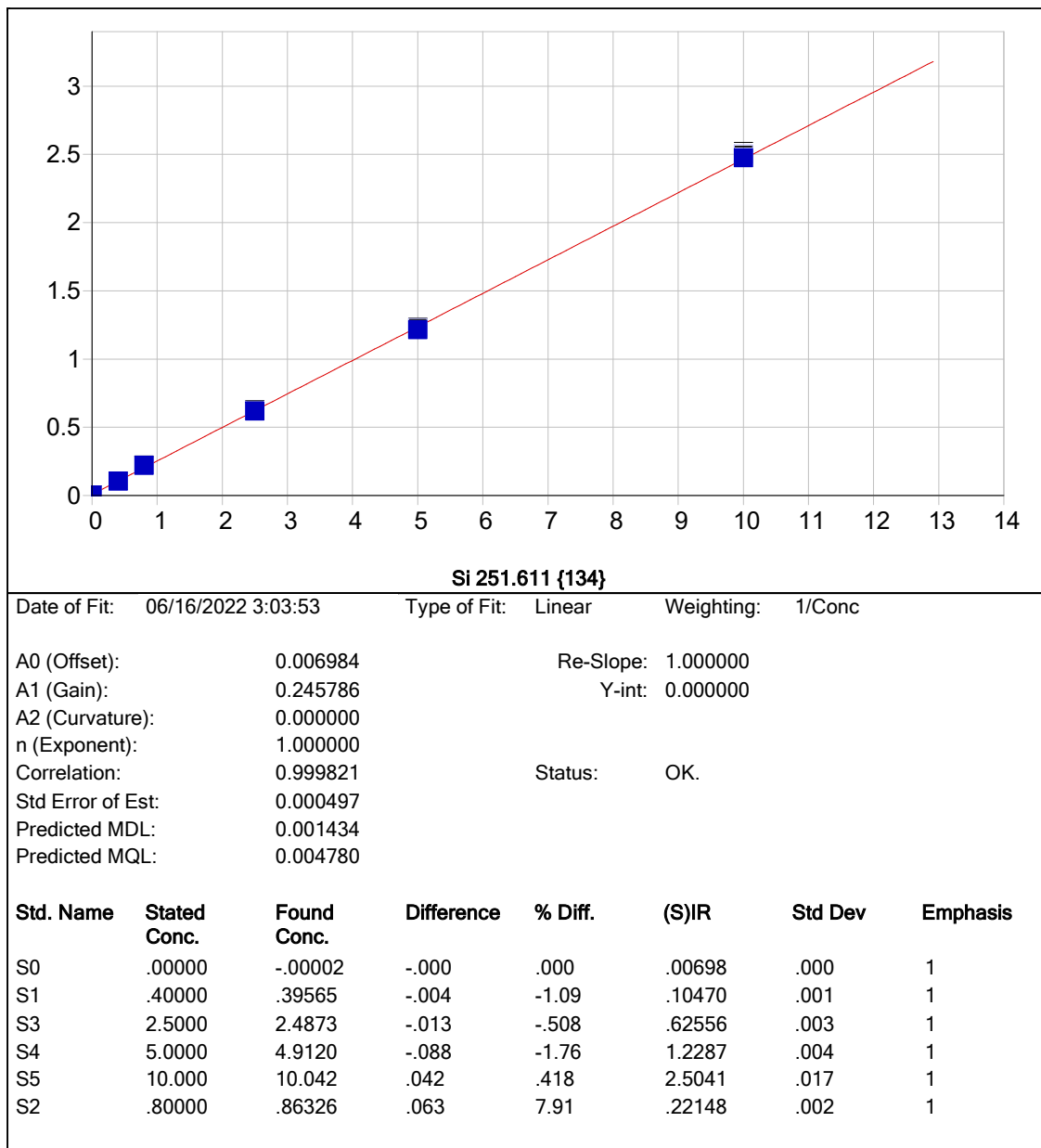
Date of Fit: 06/16/2022 3:03:53 Type of Fit: Linear Weighting: 1/Conc

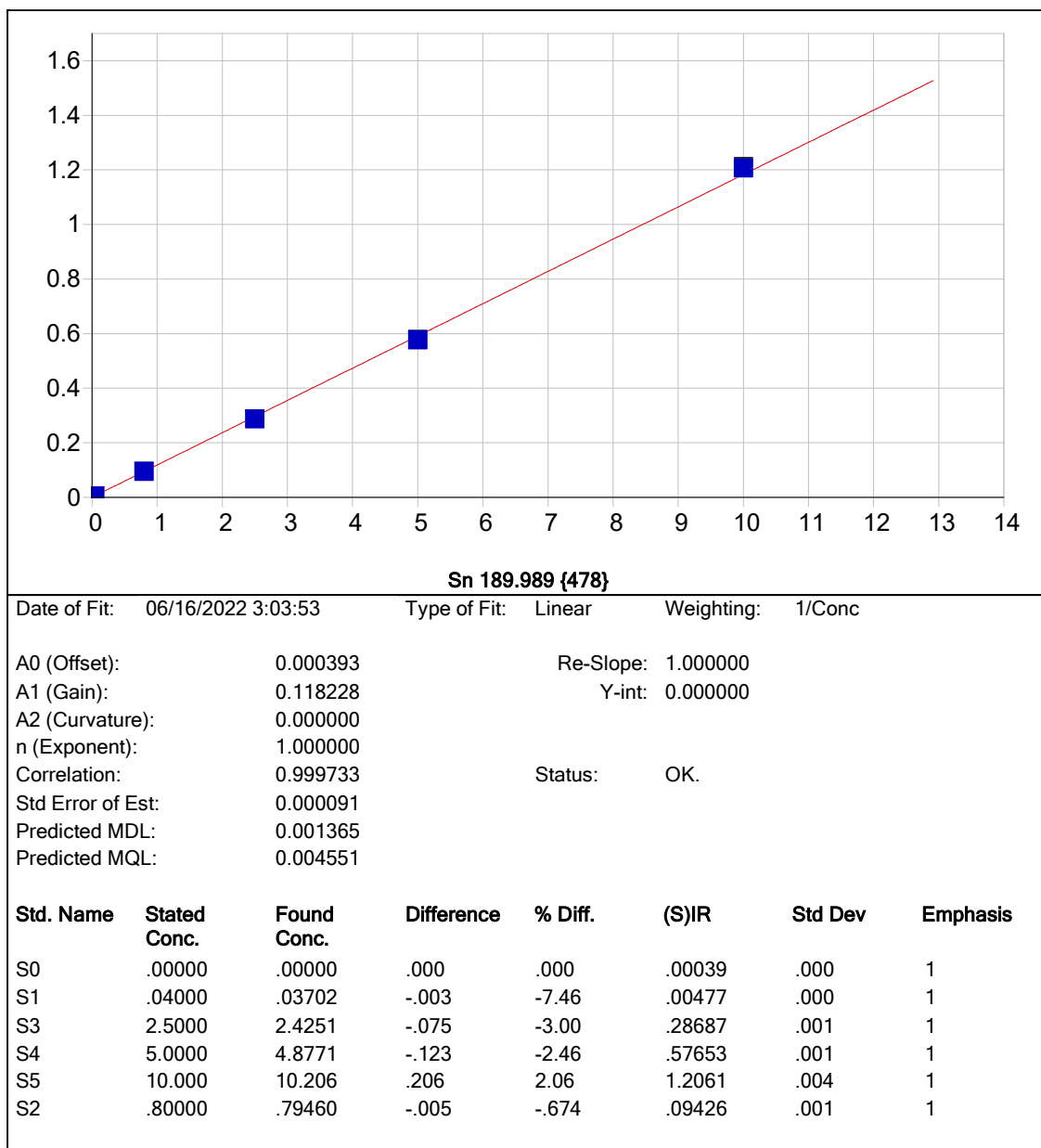
A0 (Offset): -0.000959 Re-Slope: 1.000000
A1 (Gain): 0.037556 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999438 Status: OK.
Std Error of Est: 0.000030
Predicted MDL: 0.003995
Predicted MQL: 0.013316

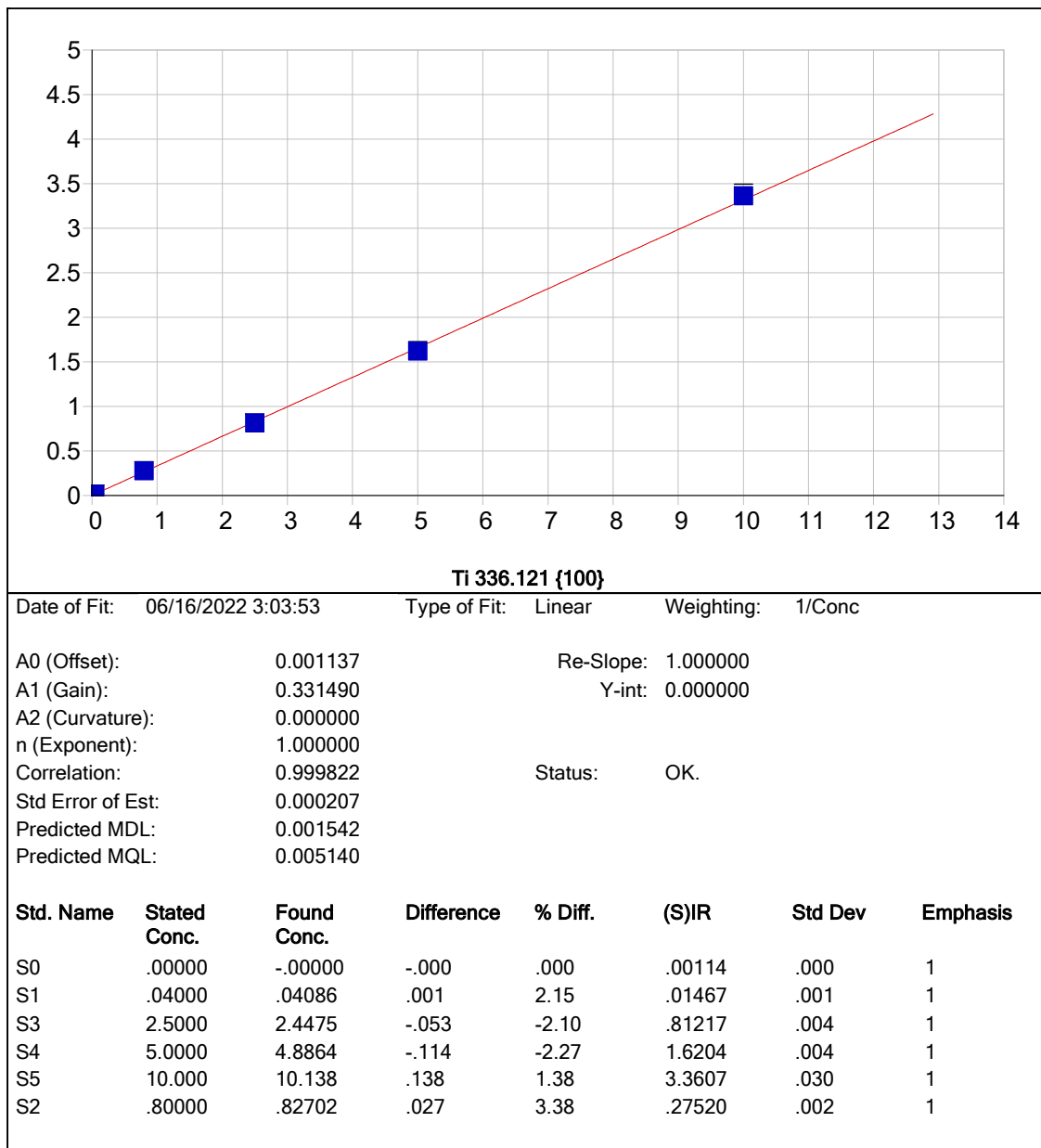


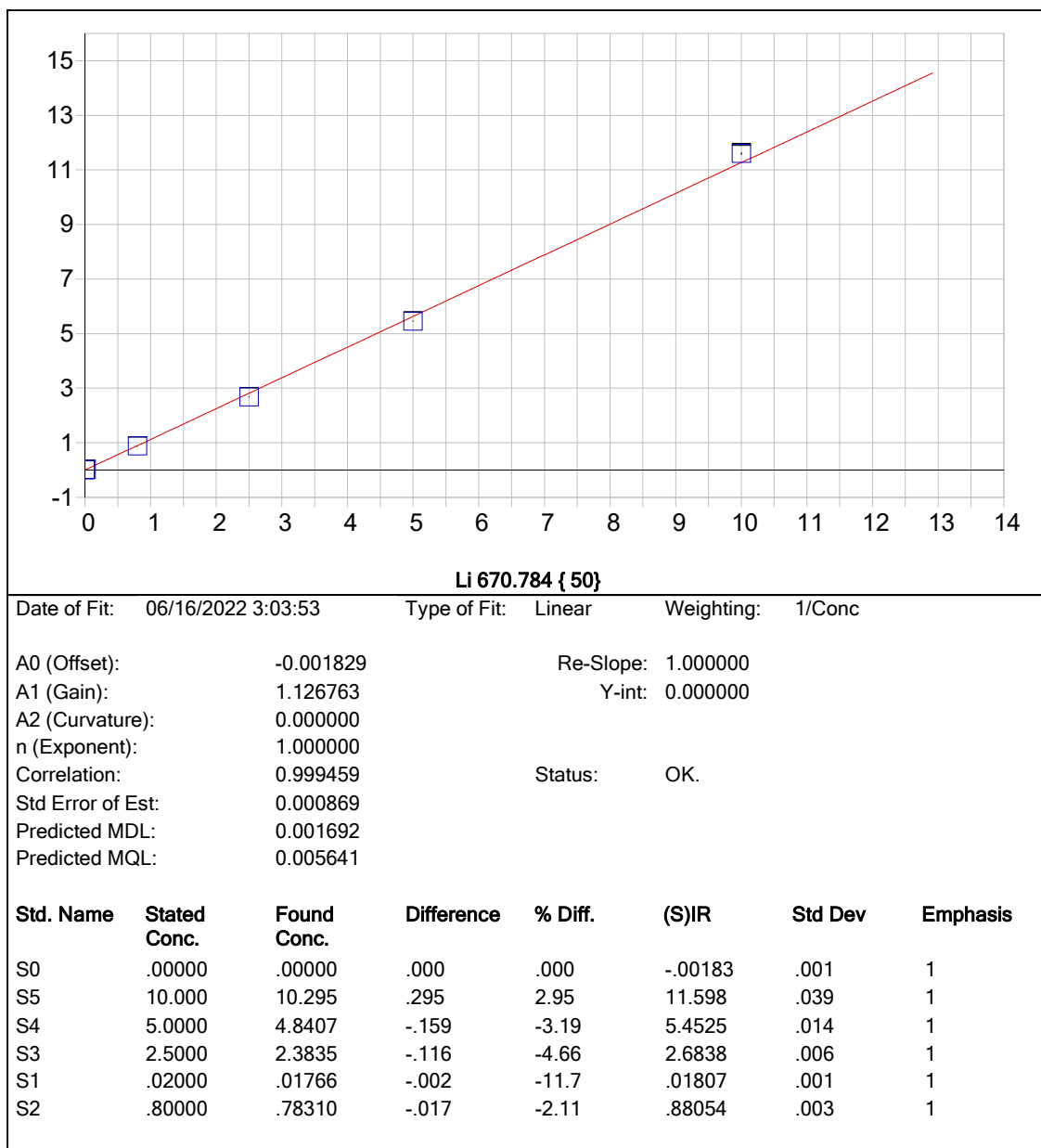


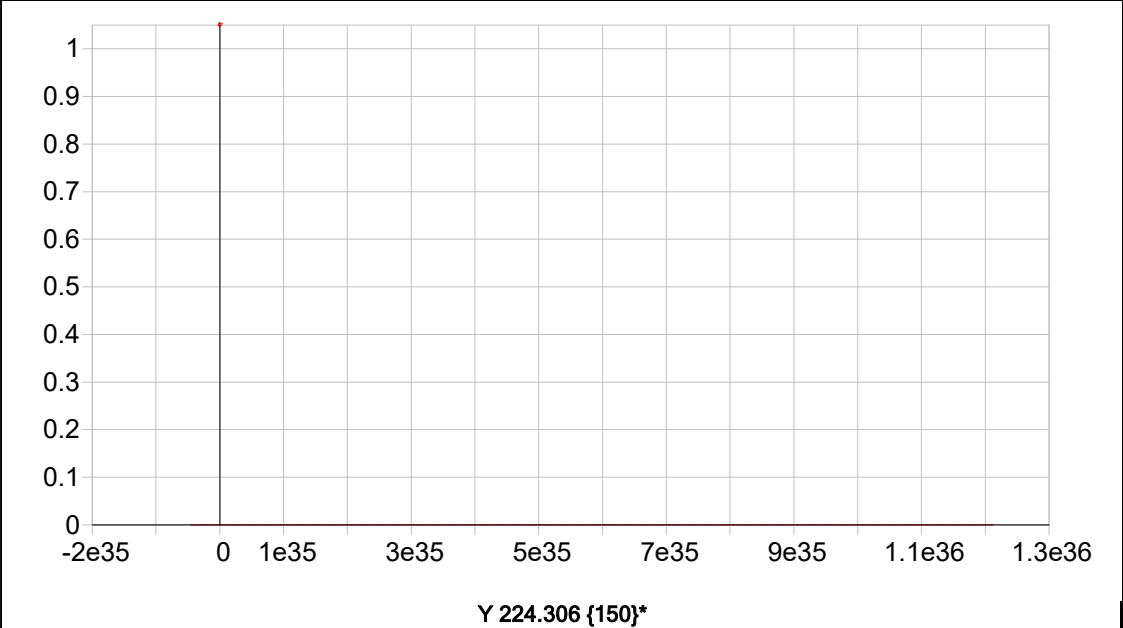






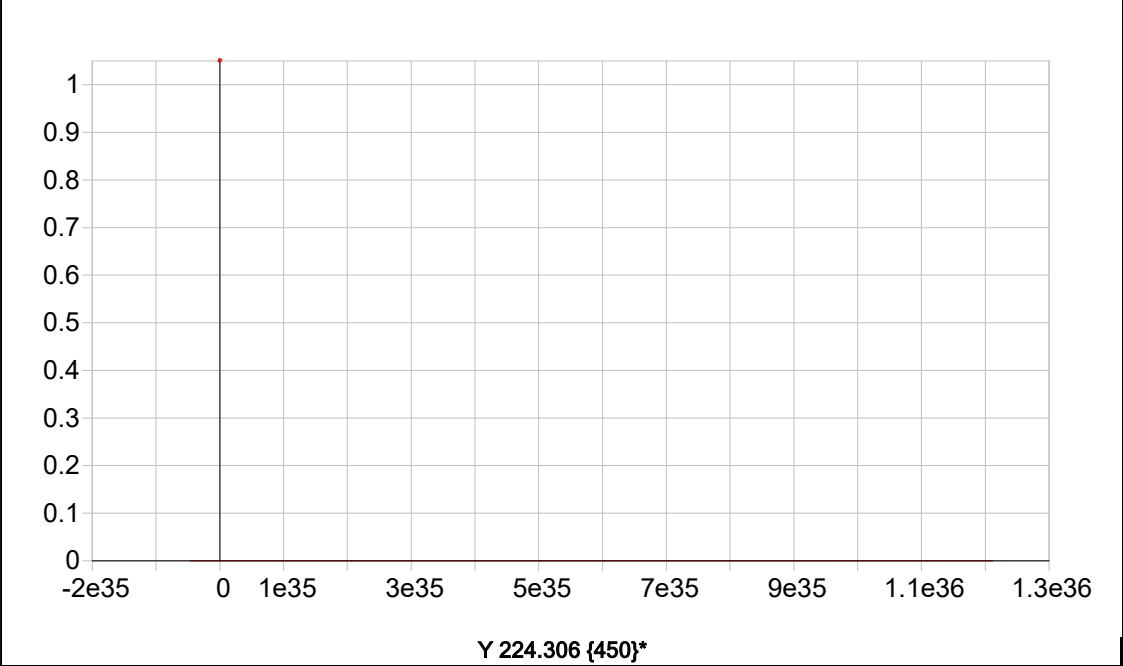




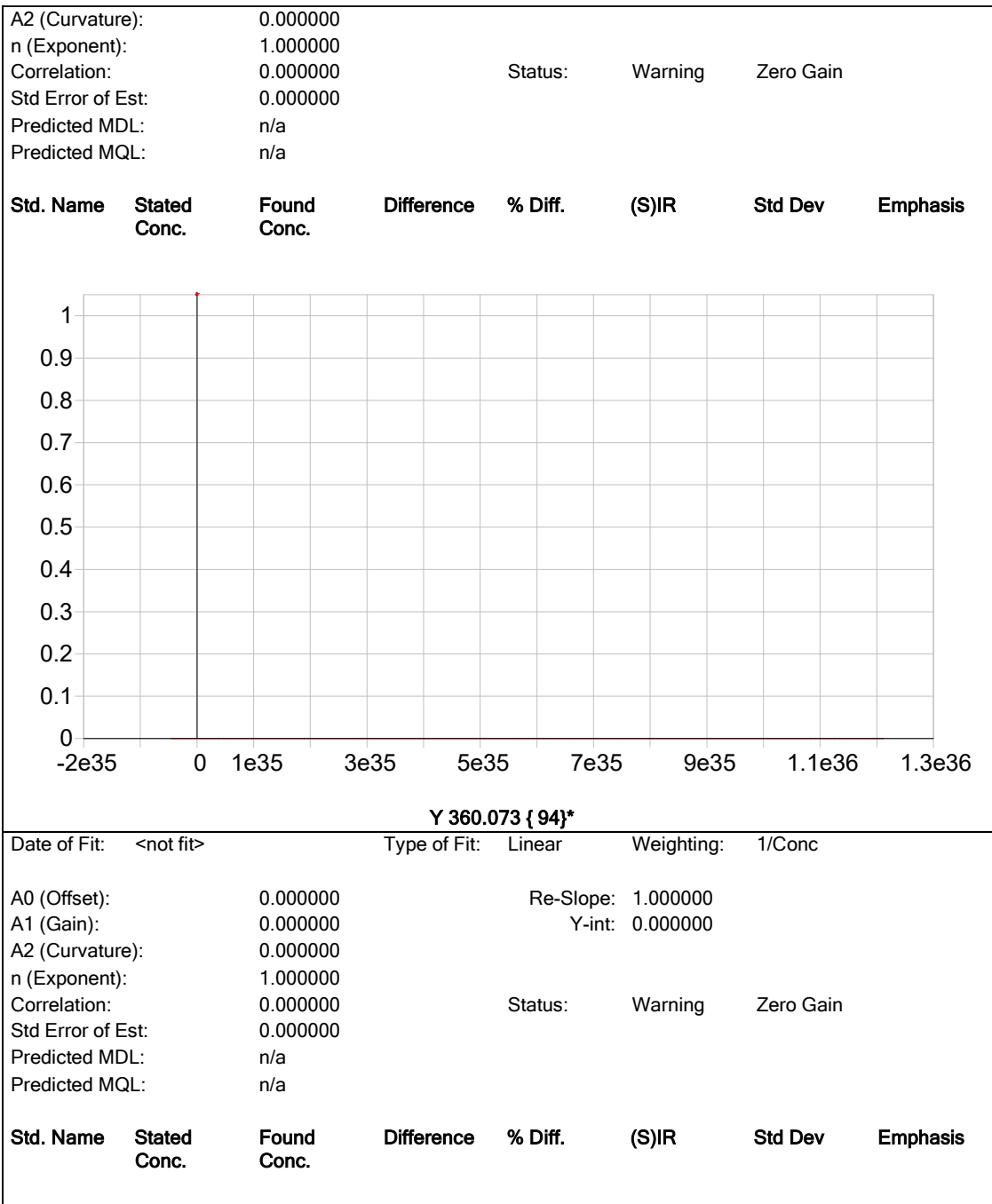


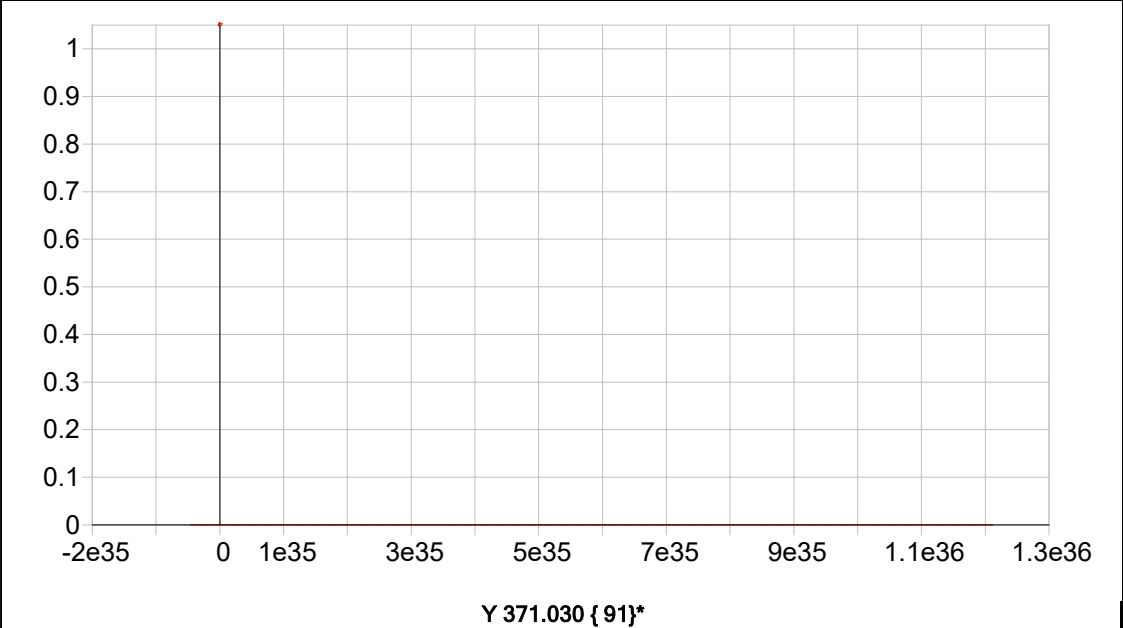
Date of Fit:	<not fit>		Type of Fit:	Linear	Weighting:	1/Conc
A0 (Offset):	0.000000		Re-Slope:	1.000000		
A1 (Gain):	0.000000		Y-int:	0.000000		
A2 (Curvature):	0.000000					
n (Exponent):	1.000000					
Correlation:	0.000000		Status:	Warning	Zero Gain	
Std Error of Est:	0.000000					
Predicted MDL:	n/a					
Predicted MQL:	n/a					

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
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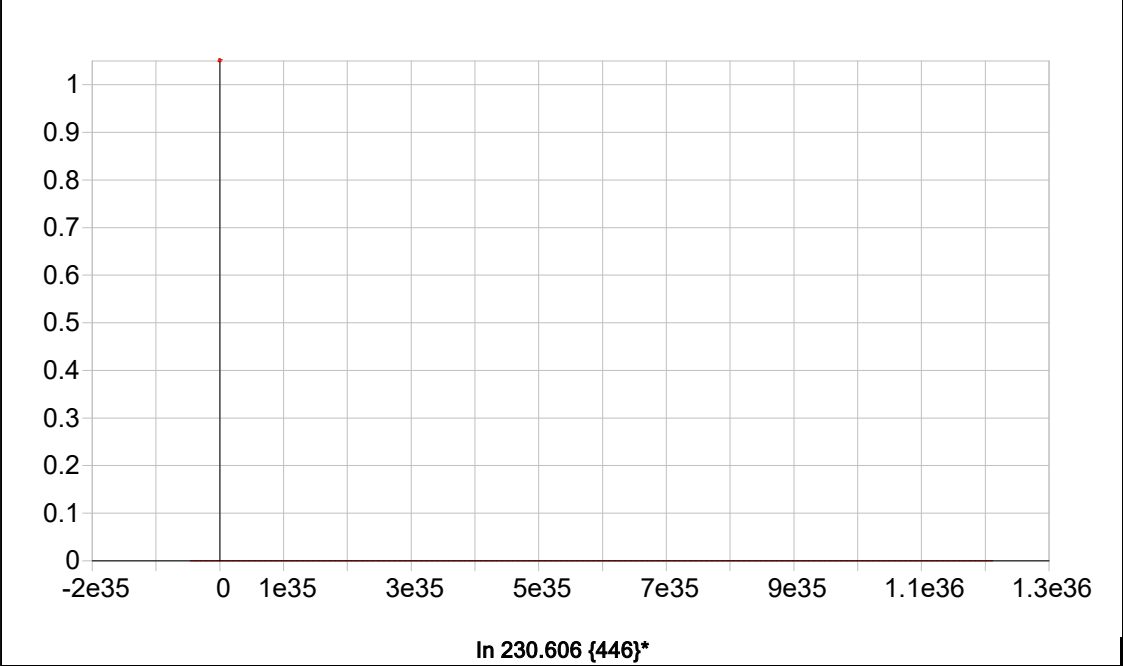
Date of Fit:	<not fit>		Type of Fit:	Linear	Weighting:	1/Conc
A0 (Offset):	0.000000		Re-Slope:	1.000000		
A1 (Gain):	0.000000		Y-int:	0.000000		



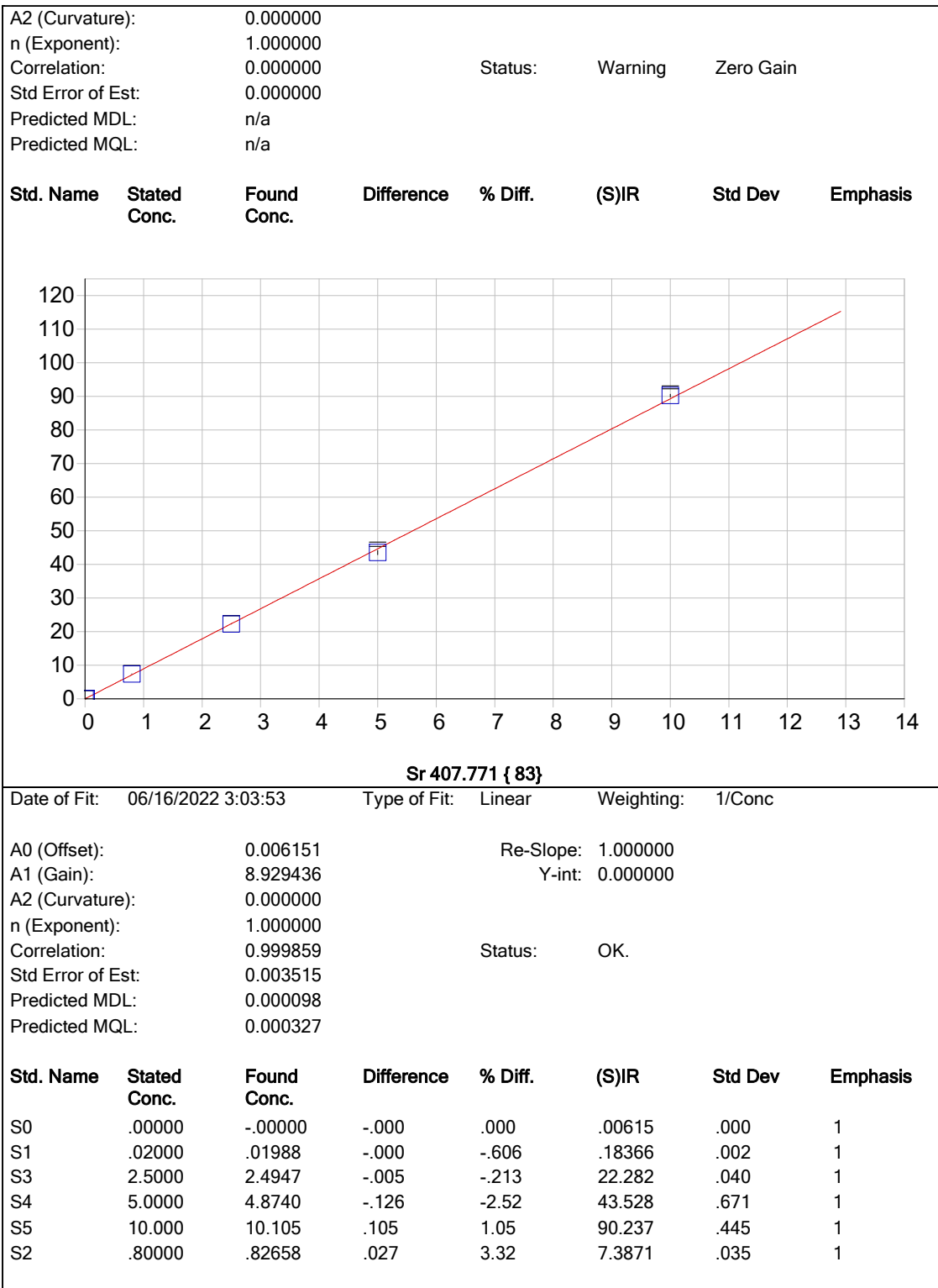


Date of Fit:	<not fit>	Type of Fit:	Linear	Weighting:	1/Conc
A0 (Offset):	0.000000		Re-Slope:	1.000000	
A1 (Gain):	0.000000		Y-int:	0.000000	
A2 (Curvature):	0.000000				
n (Exponent):	1.000000				
Correlation:	0.000000		Status:	Warning	Zero Gain
Std Error of Est:	0.000000				
Predicted MDL:	n/a				
Predicted MQL:	n/a				

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
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Date of Fit:	<not fit>	Type of Fit:	Linear	Weighting:	1/Conc
A0 (Offset):	0.000000	Re-Slope:	1.000000		
A1 (Gain):	0.000000	Y-int:	0.000000		



SOP ID : M200.7-Trace Elements-21

SDG No : N/A

Matrix : WATER

Pipette ID: ICP A

Balance ID : N/A

Filter paper ID : N/A

pH Strip ID : M4909

Hood ID : #3

Block ID/Temp : 1. N/A 2. 95°C 3. N/A 4. N/A

Start Digest Date: 06/09/2022 Time : 09:10 Temp : 95 °C

End Digest Date: 06/09/2022 Time : 12:45 Temp : 95 °C

Digestion tube ID: M5124

Block thermometer ID: MET-DIG#2

Dig Technician Signature: Supervisor Signature: 

Standard Name	MLS USED	STD REF. # FROM LOG
LFS-1	0.25	M5074
LFS-2	0.25	M5079
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

Chemical Used	ML/SAMPLE USED	Lot Number
1:1 HNO3	1.00	MP69533
1:1 HCL	0.50	MP67322
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

Extraction Conformance/Non-Conformance Comments:

N/A

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
06/09/22 13:10	BA/Dig Lab	 (Mutarika)
	Preparation Group	Analysis Group

Lab Sample ID	Client Sample ID	pH	Initial Vol (ml)	Final Vol (ml)	Color Before	Color After	Clarity Before	Clarity After	Comment	Prep Pos
N3123-07	14B-(1-4)-COMP	<2	50	25	Brown	Yellow	Cloudy	Cloudy	N/A	3
N3155-01	MONTHLY-OUTFALL-002	<2	50	25	Brown	Yellow	Cloudy	Cloudy	N/A	4
N3157-07	14B-(1-4)-COMP	<2	50	25	Brown	Yellow	Cloudy	Cloudy	N/A	5
N3172-07	14B-(1-4)COMP	<2	50	25	Brown	Yellow	Cloudy	Cloudy	N/A	6
N3198-07	14B-(1-4)COMP	<2	50	25	Brown	Yellow	Cloudy	Cloudy	N/A	7
N3222-01	CELL-A-POOL-WATER(DE-IONIZED)	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	8
N3222-02	CELL-B/C-POOL-WATER(DE-IONIZED)	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	9
N3222-03	MINI-CELL-POOL-WATER(DE-IONIZED)	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	10
N3227-01	402	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	11
N3252-01	POOL-WATER	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	12
N3252-01DUP	POOL-WATERDUP	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	13
N3252-01MS	POOL-WATERMS	<2	50	25	Colorless	Colorless	Clear	Clear	M5074,M5079	14
N3252-01MSD	POOL-WATERMSD	<2	50	25	Colorless	Colorless	Clear	Clear	M5074,M5079	15
N3258-01	WEEKLY-OUTFALL-002	<2	50	25	Yellow	Yellow	Cloudy	Cloudy	N/A	16
N3259-01	BI-WEEKLY-INFLUENT	<2	50	25	Yellow	Yellow	Cloudy	Cloudy	N/A	17
N3261-01	BI-WEEKLY-DECANT	<2	50	25	Yellow	Yellow	Cloudy	Cloudy	N/A	18
N3263-02	DSW002	<2	50	25	Colorless	Colorless	Cloudy	Cloudy	N/A	19
N3263-04	DSW001	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	20
N3263-06	RWS003	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	21
PB145317BL	PBW317	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	2-1
PB145317BS	LCS317	<2	50	25	Colorless	Colorless	Clear	Clear	M5074,M5079	2

WORKLIST(Hardcopy Internal Chain)

Worklist Name : PB145317

Worklist ID : 160357

Department : Digestion

Date : 06-09-2022 08:33:16

Due Date	Matrix	Sample	Test	Preservative	Customer	Raw Sample Storage Location	Customer Sample	Collect Date	Method
06/14/2022	Water	N3155-01	Metals Group3	1:1 HNO3 to p	INFR01	N11	MONTHLY-OUTFALL-002	06/01/2022	200.7
06/21/2022	Water	N3258-01	Metals Group4	1:1 HNO3 to p	INFR01	N11	WEEKLY-OUTFALL-002	06/08/2022	200.7
06/21/2022	Water	N3259-01	Metals Group3	1:1 HNO3 to p	INFR01	N11	BI-WEEKLY-INFLUENT	06/08/2022	200.7
06/21/2022	Water	N3261-01	Metals Group3	1:1 HNO3 to p	INFR01	N11	BI-WEEKLY-DECANT	06/08/2022	200.7
06/13/2022	Water	N3123-07	Metals ICP-Group1	1:1 HNO3 to p	NEWY17	N11	14B-(1-4)-COMP	06/01/2022	200.7
06/14/2022	Water	N3157-07	Metals ICP-Group1	1:1 HNO3 to p	NEWY17	N11	14B-(1-4)-COMP	06/01/2022	200.7
06/16/2022	Water	N3172-07	Metals ICP-Group1	1:1 HNO3 to p	NEWY17	N11	14B-(1-4)-COMP	06/02/2022	200.7
06/17/2022	Water	N3198-07	Metals ICP-Group1	1:1 HNO3 to p	NEWY17	P11	14B-(1-4)-COMP	06/03/2022	200.7
06/20/2022	Water	N3227-01	Metals Group3	1:1 HNO3 to p	PSEG04	N11	402	06/07/2022	200.7
06/15/2022	Water	N3263-02	Metals Group3	1:1 HNO3 to p	PSEG04	P11	DSN002	06/08/2022	200.7
06/15/2022	Water	N3263-04	Metals Group3	1:1 HNO3 to p	PSEG04	P11	DSN001	06/08/2022	200.7
06/15/2022	Water	N3263-06	Metals Group3	1:1 HNO3 to p	PSEG04	P11	RWS003	06/08/2022	200.7
06/20/2022	Water	N3222-01	Metals Group4	1:1 HNO3 to p	STER09	P11	CELL-A-POOL-WATER(DE-IONIZED)	05/27/2022	200.7
06/20/2022	Water	N3222-02	Metals Group4	1:1 HNO3 to p	STER09	P11	CELL-B/C-POOL-WATER(DE-IONIZED)	05/27/2022	200.7
06/20/2022	Water	N3222-03	Metals Group4	1:1 HNO3 to p	STER09	P11	MINI-CELL-POOL-WATER(DE-IONIZED)	05/27/2022	200.7
06/21/2022	Water	N3252-01	Metals Group4	1:1 HNO3 to p	STER01	N11	POOL-WATER	06/07/2022	200.7

Date/Time

06/09/22 08:45

Raw Sample Received by:

BTCDJ lab

Raw Sample Relinquished by:

KS (cc)

Date/Time

06/09/22 09:50

Raw Sample Received by:

KS (cc)

Raw Sample Relinquished by:

BTCDJ lab



284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Instrument ID: P5

Daily Analysis Runlog For Sequence/QC Batch ID # LB120624

Review By	bin	Review On	6/14/2022 1:14:49 PM
Supervise By	jaswal	Supervise On	6/14/2022 1:27:05 PM

STD. NAME	STD REF.#
ICAL Standard	MP69968,MP69956,MP69955,MP69954,M69953,MP69952
ICV Standard	MP69949,MP69956
CCV Standard	MP69957
ICSA Standard	MP69950,MP69951
CRI Standard	
LCS Standard	M5074,M5079
Chk Standard	MP69948,MP69958,MP69959,MP69788

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	S0	S0	CAL1	06/10/22 15:20		BIN	OK
2	S1	S1	CAL2	06/10/22 15:23		BIN	OK
3	S2	S2	CAL3	06/10/22 15:27		BIN	OK
4	S3	S3	CAL4	06/10/22 15:31		BIN	OK
5	S4	S4	CAL5	06/10/22 15:35		BIN	OK
6	S5	S5	CAL6	06/10/22 15:38		BIN	OK
7	ICV01	ICV01	ICV	06/10/22 15:53	Fail for K,Se,Ag for 95-105%	BIN	OK
8	LLICV01	LLICV01	LLICV	06/10/22 15:57		BIN	OK
9	ICB01	ICB01	ICB	06/10/22 16:01		BIN	OK
10	CRI01	CRI01	CRDL	06/10/22 16:05		BIN	OK
11	ICSA01	ICSA01	ICSA	06/10/22 16:09		BIN	OK
12	ICSAB01	ICSAB01	ICSAB	06/10/22 16:14		BIN	OK
13	ICSADL	ICSADL	ICSA	06/10/22 16:17		BIN	OK
14	ICSABDL	ICSABDL	ICSAB	06/10/22 16:21		BIN	OK
15	CCV01	CCV01	CCV	06/10/22 16:25		BIN	OK
16	LLCCV01	LLCCV01	LLCCV	06/10/22 16:29		BIN	OK
17	CCB01	CCB01	CCB	06/10/22 16:33		BIN	OK
18	PB145317BL	PB145317BL	MB	06/10/22 16:37	ICV fail for Ag	BIN	Not Ok
19	PB145317BS	PB145317BS	LCS	06/10/22 16:41	ICV fail for Ag	BIN	Not Ok
20	PB145424BL	PB145424BL	MB	06/10/22 16:44		BIN	OK



Instrument ID: P5

Daily Analysis Runlog For Sequence/QC Batch ID # LB120624

Review By	bin	Review On	6/14/2022 1:14:49 PM
Supervise By	jaswal	Supervise On	6/14/2022 1:27:05 PM

STD. NAME	STD REF.#
ICAL Standard	MP69968,MP69956,MP69955,MP69954,M69953,MP69952
ICV Standard	MP69949,MP69956
CCV Standard	MP69957
ICSA Standard	MP69950,MP69951
CRI Standard	
LCS Standard	M5074,M5079
Chk Standard	MP69948,MP69958,MP69959,MP69788

21	PB145424BS	PB145424BS	LCS	06/10/22 16:48		BIN	OK
22	N3233-01	CR-1	SAM	06/10/22 16:52		BIN	OK
23	N3233-02	CR-2	SAM	06/10/22 16:56		BIN	OK
24	N3234-02	RB-21499	SAM	06/10/22 17:00		BIN	OK
25	N3251-01	NB-8-060822	SAM	06/10/22 17:03		BIN	OK
26	N3123-07	14B-(1-4)-COMP	SAM	06/10/22 17:07	ICV fail for Ag	BIN	Not Ok
27	N3157-07	14B-(1-4)-COMP	SAM	06/10/22 17:11	ICV fail for Ag	BIN	Not Ok
28	CCV02	CCV02	CCV	06/10/22 17:15		BIN	OK
29	CCB02	CCB02	CCB	06/10/22 17:19		BIN	OK
30	N3267-01	OR-2-060822	SAM	06/10/22 17:23		BIN	OK
31	N3172-07	14B-(1-4)COMP	SAM	06/10/22 17:27	ICV fail for Ag	BIN	Not Ok
32	N3198-07	14B-(1-4)COMP	SAM	06/10/22 17:31	ICV fail for Ag	BIN	Not Ok
33	N3282-01	125	SAM	06/10/22 17:39		BIN	OK
34	N3295-01	OR-03-060922	SAM	06/10/22 17:42		BIN	OK
35	N3296-01	OK-03-060922	SAM	06/10/22 17:46		BIN	OK
36	N3302-01	I-1	SAM	06/10/22 17:50		BIN	OK
37	N3302-02	I-2	SAM	06/10/22 17:54		BIN	OK
38	N3155-01	MONTHLY-OUTFALL	SAM	06/10/22 17:57		BIN	OK
39	N3222-01	CELL-A-POOL-WATE	SAM	06/10/22 18:01		BIN	OK
40	CCV03	CCV03	CCV	06/10/22 18:05		BIN	OK
41	CCB03	CCB03	CCB	06/10/22 18:09		BIN	OK

Instrument ID: P5

Daily Analysis Runlog For Sequence/QC Batch ID # LB120624

Review By	bin	Review On	6/14/2022 1:14:49 PM
Supervise By	jaswal	Supervise On	6/14/2022 1:27:05 PM

STD. NAME	STD REF.#
ICAL Standard	MP69968,MP69956,MP69955,MP69954,M69953,MP69952
ICV Standard	MP69949,MP69956
CCV Standard	MP69957
ICSA Standard	MP69950,MP69951
CRI Standard	
LCS Standard	M5074,M5079
Chk Standard	MP69948,MP69958,MP69959,MP69788

42	N3222-02	CELL-B/C-POOL-WAT	SAM	06/10/22 18:13		BIN	OK
43	N3222-03	MINI-CELL-POOL-WA	SAM	06/10/22 18:17		BIN	OK
44	N3252-01	POOL-WATER	SAM	06/10/22 18:20	ICV fail for Ag	BIN	Not Ok
45	N3252-01DUP	POOL-WATERDUP	DUP	06/10/22 18:24	ICV fail for Ag	BIN	Not Ok
46	N3252-01L	POOL-WATERL	SD	06/10/22 18:28	ICV fail for Ag	BIN	Not Ok
47	N3252-01MS	POOL-WATERMS	MS	06/10/22 18:32	ICV fail for Ag	BIN	Not Ok
48	N3252-01MSD	POOL-WATERMSD	MSD	06/10/22 18:36	ICV fail for Ag	BIN	Not Ok
49	N3252-01A	POOL-WATERA	PS	06/10/22 18:40	ICV fail for Ag, 0.1 ml of LFS-1	BIN	Not Ok
50	LR CHECK 2	LR CHECK 2	HIGH STD	06/10/22 18:48		BIN	OK
51	LR CHECK 1	LR CHECK 1	HIGH STD	06/10/22 18:52		BIN	OK
52	CCV04	CCV04	CCV	06/10/22 18:56		BIN	OK
53	CCB04	CCB04	CCB	06/10/22 19:00		BIN	OK
54	N3259-01	BI-WEEKLY-INFLUEN	SAM	06/10/22 19:09	Fe high	BIN	Dilution
55	N3261-01	BI-WEEKLY-DECANT	SAM	06/10/22 19:13	Fe high	BIN	Dilution
56	N3270-06	TP-9A	SAM	06/10/22 19:16		BIN	OK
57	N3270-06DUP	TP-9ADUP	DUP	06/10/22 19:20		BIN	OK
58	N3270-06L	TP-9AL	SD	06/10/22 19:24		BIN	OK
59	N3270-06MS	TP-9AMS	MS	06/10/22 19:28		BIN	OK
60	N3270-06MSD	TP-9AMSD	MSD	06/10/22 19:32		BIN	OK
61	N3270-06A	TP-9AA	PS	06/10/22 19:35	0.1 ml of LFS-1(M5074) and LF	BIN	OK
62	N3270-01	TP-1A	SAM	06/10/22 19:39		BIN	OK



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Instrument ID: P5

Daily Analysis Runlog For Sequence/QC Batch ID # LB120624

Review By	bin	Review On	6/14/2022 1:14:49 PM
Supervise By	jaswal	Supervise On	6/14/2022 1:27:05 PM

STD. NAME	STD REF.#
ICAL Standard	MP69968,MP69956,MP69955,MP69954,M69953,MP69952
ICV Standard	MP69949,MP69956
CCV Standard	MP69957
ICSA Standard	MP69950,MP69951
CRI Standard	
LCS Standard	M5074,M5079
Chk Standard	MP69948,MP69958,MP69959,MP69788

63	N3270-02	TP-1B	SAM	06/10/22 19:43		BIN	OK
64	CCV05	CCV05	CCV	06/10/22 19:47		BIN	OK
65	CCB05	CCB05	CCB	06/10/22 19:50		BIN	OK
66	N3270-03	TP-1C	SAM	06/10/22 19:54		BIN	OK
67	N3270-04	TP-1D	SAM	06/10/22 19:58		BIN	OK
68	N3270-05	TP-1E	SAM	06/10/22 20:02		BIN	OK
69	N3270-07	TP-9B	SAM	06/10/22 20:06		BIN	OK
70	N3270-08	TP-9C	SAM	06/10/22 20:09		BIN	OK
71	N3270-09	TP-9D	SAM	06/10/22 20:13		BIN	OK
72	N3270-10	TP-9E	SAM	06/10/22 20:17		BIN	OK
73	N3280-03DL	33RD-AVE-CASING-1	SAM	06/10/22 20:21	10X for Fe	BIN	Confirms
74	CCV06	CCV06	CCV	06/10/22 20:25		BIN	OK
75	CCB06	CCB06	CCB	06/10/22 20:28		BIN	OK



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Instrument ID: P5

Daily Analysis Runlog For Sequence/QC Batch ID # LB120678

Review By	bin	Review On	6/15/2022 1:45:48 PM
Supervise By	jaswal	Supervise On	6/15/2022 1:51:43 PM

STD. NAME	STD REF.#
ICAL Standard	MP69968,MP69956,MP69955,MP69954,M69953,MP69952
ICV Standard	MP69949,MP69956
CCV Standard	MP69957
ICSA Standard	MP69950,MP69951
CRI Standard	
LCS Standard	M5074,M5079
Chk Standard	MP69948,MP69958,MP69959,MP69788

Sr#	SampleID	ClientID	QcType	Date	Comment	Operator	Status
1	S0	S0	CAL1	06/14/22 14:13		BIN	OK
2	S1	S1	CAL2	06/14/22 14:17		BIN	OK
3	S2	S2	CAL3	06/14/22 14:21		BIN	OK
4	S3	S3	CAL4	06/14/22 14:25		BIN	OK
5	S4	S4	CAL5	06/14/22 14:28		BIN	OK
6	S5	S5	CAL6	06/14/22 14:32		BIN	OK
7	ICV01	ICV01	ICV	06/14/22 14:57	ICV fail for Mo,Se (200.7) (95-1	BIN	OK
8	LLICV01	LLICV01	LLICV	06/14/22 15:01	LLICV fail for As (80-120)	BIN	OK
9	ICB01	ICB01	ICB	06/14/22 15:05		BIN	OK
10	CRI01	CRI01	CRDL	06/14/22 15:09		BIN	OK
11	ICSA01	ICSA01	ICSA	06/14/22 15:13		BIN	OK
12	ICSAB01	ICSAB01	ICSAB	06/14/22 15:16		BIN	OK
13	ICSADL	ICSADL	ICSA	06/14/22 15:20		BIN	OK
14	ICSABDL	ICSABDL	ICSAB	06/14/22 15:24		BIN	OK
15	CCV01	CCV01	CCV	06/14/22 15:28		BIN	OK
16	LLCCV01	LLCCV01	LLCCV	06/14/22 15:32		BIN	OK
17	CCB01	CCB01	CCB	06/14/22 15:36		BIN	OK
18	PB145317BL	PB145317BL	MB	06/14/22 15:39	Not use - ICV fail for Mo	BIN	Not Ok
19	PB145317BS	PB145317BS	LCS	06/14/22 15:43	Not use - ICV fail for Mo	BIN	Not Ok
20	N3123-07	14B-(1-4)-COMP	SAM	06/14/22 15:47	Not use - ICV fail for Mo	BIN	Not Ok

Daily Analysis Runlog For Sequence/QC Batch ID # LB120678

Review By		bin		Review On		6/15/2022 1:45:48 PM	
Supervise By		jaswal		Supervise On		6/15/2022 1:51:43 PM	
STD. NAME		STD REF.#					
ICAL Standard		MP69968,MP69956,MP69955,MP69954,M69953,MP69952					
ICV Standard		MP69949,MP69956					
CCV Standard		MP69957					
ICSA Standard		MP69950,MP69951					
CRI Standard							
LCS Standard		M5074,M5079					
Chk Standard		MP69948,MP69958,MP69959,MP69788					

21	N3157-07	14B-(1-4)-COMP	SAM	06/14/22 15:51	Not use - ICV fail for Mo	BIN	Not Ok
22	N3172-07	14B-(1-4)COMP	SAM	06/14/22 15:55	Not use - ICV fail for Mo	BIN	Not Ok
23	N3198-07	14B-(1-4)COMP	SAM	06/14/22 15:59	Not use - ICV fail for Mo	BIN	Not Ok
24	N3252-01	POOL-WATER	SAM	06/14/22 16:03	Not use - ICV fail for Mo	BIN	Not Ok
25	N3252-01DUP	POOL-WATERDUP	DUP	06/14/22 16:07	Not use - ICV fail for Mo	BIN	Not Ok
26	N3252-01L	POOL-WATERL	SD	06/14/22 16:10	Not use - ICV fail for Mo	BIN	Not Ok
27	N3252-01MS	POOL-WATERMS	MS	06/14/22 16:14	Not use - ICV fail for Mo	BIN	Not Ok
28	CCV02	CCV02	CCV	06/14/22 16:26		BIN	OK
29	CCB02	CCB02	CCB	06/14/22 16:30		BIN	OK
30	N3252-01MSD	POOL-WATERMSD	MSD	06/14/22 16:33	Not use - ICV fail for Mo	BIN	Not Ok
31	N3252-01A	POOL-WATERA	PS	06/14/22 16:37	Not use - ICV fail for Mo	BIN	Not Ok
32	N3259-01DL	BI-WEEKLY-INFLUEN	SAM	06/14/22 16:41	10x for Fe	BIN	Confirm
33	N3261-01DL	BI-WEEKLY-DECANT	SAM	06/14/22 16:45	10x for Fe	BIN	Confirm
34	PB145468BL	PB145468BL	MB	06/14/22 16:49		BIN	OK
35	PB145462BS	PB145462BS	LCS	06/14/22 16:53		BIN	OK
36	PB145462BL	PB145462BL	MB	06/14/22 17:00		BIN	OK
37	PB145468BS	PB145468BS	LCS	06/14/22 17:04		BIN	OK
38	LR CHECK 1	LR CHECK 1	HIGH STD	06/14/22 17:07		BIN	OK
39	LR CHECK 2	LR CHECK 2	HIGH STD	06/14/22 17:12		BIN	OK
40	CCV03	CCV03	CCV	06/14/22 17:16		BIN	OK
41	CCB03	CCB03	CCB	06/14/22 17:19		BIN	OK

Instrument ID: P5

Daily Analysis Runlog For Sequence/QC Batch ID # LB120678

Review By	bin	Review On	6/15/2022 1:45:48 PM
Supervise By	jaswal	Supervise On	6/15/2022 1:51:43 PM

STD. NAME	STD REF.#
ICAL Standard	MP69968,MP69956,MP69955,MP69954,M69953,MP69952
ICV Standard	MP69949,MP69956
CCV Standard	MP69957
ICSA Standard	MP69950,MP69951
CRI Standard	
LCS Standard	M5074,M5079
Chk Standard	MP69948,MP69958,MP69959,MP69788

42	N3271-01	A-1	SAM	06/14/22 17:27		BIN	OK
43	N3271-02	A-2	SAM	06/14/22 17:31		BIN	OK
44	N3271-03	A-3	SAM	06/14/22 17:34		BIN	OK
45	N3271-04	A-4	SAM	06/14/22 17:38		BIN	OK
46	N3271-05	A-5	SAM	06/14/22 17:42		BIN	OK
47	N3271-06	A-6	SAM	06/14/22 17:46		BIN	OK
48	N3281-01	129	SAM	06/14/22 17:50		BIN	OK
49	N3293-05	30873-76	SAM	06/14/22 17:53		BIN	OK
50	N3309-02	TT-046-IDWGW-2022	SAM	06/14/22 17:57		BIN	OK
51	N3293-18	52322-D	SAM	06/14/22 18:01	K high	BIN	Dilution
52	CCV04	CCV04	CCV	06/14/22 18:13		BIN	OK
53	CCB04	CCB04	CCB	06/14/22 18:21		BIN	OK
54	N3293-11	52322A-C	SAM	06/14/22 18:29		BIN	OK
55	N3293-11DUP	52322A-CDUP	DUP	06/14/22 18:33		BIN	OK
56	N3293-11L	52322A-CL	SD	06/14/22 18:37		BIN	OK
57	N3293-11MS	52322A-CMS	MS	06/14/22 18:41		BIN	OK
58	N3293-11MSD	52322A-CMSD	MSD	06/14/22 18:44		BIN	OK
59	N3293-11A	52322A-CA	PS	06/14/22 18:48	0.1ml of LFS-1(M5074) and LF	BIN	OK
60	N3293-06	40804	SAM	06/14/22 18:52		BIN	OK
61	N3293-07	40808	SAM	06/14/22 18:56		BIN	OK
62	N3299-01	COM-4	SAM	06/14/22 18:59		BIN	OK



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Instrument ID: P5

Daily Analysis Runlog For Sequence/QC Batch ID # LB120678

Review By	bin	Review On	6/15/2022 1:45:48 PM
Supervise By	jaswal	Supervise On	6/15/2022 1:51:43 PM
STD. NAME	STD REF.#		
ICAL Standard	MP69968,MP69956,MP69955,MP69954,M69953,MP69952		
ICV Standard	MP69949,MP69956		
CCV Standard	MP69957		
ICSA Standard	MP69950,MP69951		
CRI Standard			
LCS Standard	M5074,M5079		
Chk Standard	MP69948,MP69958,MP69959,MP69788		

63	N3299-03	SC-15	SAM	06/14/22 19:03	Ca high	BIN	Dilution
64	CCV05	CCV05	CCV	06/14/22 19:07		BIN	OK
65	CCB05	CCB05	CCB	06/14/22 19:11		BIN	OK
66	N3299-04	SC-16	SAM	06/14/22 19:15		BIN	OK
67	N3299-05	SC-17	SAM	06/14/22 19:19		BIN	OK
68	N3299-06	SC-18	SAM	06/14/22 19:23	Ca high	BIN	Dilution
69	N3293-18DL	52322-DDL	SAM	06/14/22 19:27	10x for K	BIN	Confirms
70	CCV06	CCV06	CCV	06/14/22 19:31		BIN	OK
71	CCB06	CCB06	CCB	06/14/22 19:35		BIN	OK



284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Instrument ID: P5

Daily Analysis Runlog For Sequence/QC Batch ID # LB120705

Review By	bin	Review On	6/16/2022 1:11:10 PM
Supervise By	jaswal	Supervise On	6/16/2022 1:16:02 PM

STD. NAME	STD REF.#
ICAL Standard	MP70022,MP69956,MP69955,MP69954,M69953,MP69952
ICV Standard	MP69949,MP69956
CCV Standard	MP69957
ICSA Standard	MP69950,MP69951
CRI Standard	
LCS Standard	M5074,M5079
Chk Standard	MP69948,MP69958,MP69959,MP69788

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	S0	S0	CAL1	06/15/22 14:04		BIN	OK
2	S1	S1	CAL2	06/15/22 14:08		BIN	OK
3	S2	S2	CAL3	06/15/22 14:12		BIN	OK
4	S3	S3	CAL4	06/15/22 14:16		BIN	OK
5	S4	S4	CAL5	06/15/22 14:20		BIN	OK
6	S5	S5	CAL6	06/15/22 14:23		BIN	OK
7	ICV01	ICV01	ICV	06/15/22 14:35		BIN	OK
8	LLICV01	LLICV01	LLICV	06/15/22 14:39	LLICV fail for Na (80-120)	BIN	OK
9	ICB01	ICB01	ICB	06/15/22 14:43		BIN	OK
10	CRI01	CRI01	CRDL	06/15/22 14:47		BIN	OK
11	ICSA01	ICSA01	ICSA	06/15/22 14:51		BIN	OK
12	ICSAB01	ICSAB01	ICSAB	06/15/22 14:55		BIN	OK
13	ICSADL	ICSADL	ICSA	06/15/22 14:59		BIN	OK
14	ICSABDL	ICSABDL	ICSAB	06/15/22 15:02		BIN	OK
15	CCV01	CCV01	CCV	06/15/22 15:15		BIN	OK
16	LLCCV01	LLCCV01	LLCCV	06/15/22 15:18		BIN	OK
17	CCB01	CCB01	CCB	06/15/22 15:22		BIN	OK
18	N3301-03	WC-SO-20220609	SAM	06/15/22 15:26		BIN	OK
19	N3304-01	WC-14A-1A-10	SAM	06/15/22 15:30		BIN	OK
20	N3304-03	WC-14A-1A-9	SAM	06/15/22 15:34		BIN	OK

Instrument ID: P5

Daily Analysis Runlog For Sequence/QC Batch ID # LB120705

Review By	bin	Review On	6/16/2022 1:11:10 PM
Supervise By	jaswal	Supervise On	6/16/2022 1:16:02 PM

STD. NAME	STD REF.#
ICAL Standard	MP70022,MP69956,MP69955,MP69954,M69953,MP69952
ICV Standard	MP69949,MP69956
CCV Standard	MP69957
ICSA Standard	MP69950,MP69951
CRI Standard	
LCS Standard	M5074,M5079
Chk Standard	MP69948,MP69958,MP69959,MP69788

21	N3304-05	WC-14A-1A-6	SAM	06/15/22 15:38		BIN	OK
22	PB145525BL	PB145525BL	MB	06/15/22 15:41		BIN	OK
23	PB145525BS	PB145525BS	LCS	06/15/22 15:45		BIN	OK
24	N3304-02	WC-14A-1A-10-G	SAM	06/15/22 15:49		BIN	OK
25	N3304-04	WC-14A-1A-9-G	SAM	06/15/22 15:53		BIN	OK
26	N3304-06	WC-14A-1A-6-G	SAM	06/15/22 15:56		BIN	OK
27	N3319-01	TR-06-061022	SAM	06/15/22 16:00		BIN	OK
28	CCV02	CCV02	CCV	06/15/22 16:04		BIN	OK
29	CCB02	CCB02	CCB	06/15/22 16:08		BIN	OK
30	N3327-01	EW-WMR-COMP-1	SAM	06/15/22 16:12		BIN	OK
31	N3327-03	EW-WMR-COMP-2	SAM	06/15/22 16:15		BIN	OK
32	N3327-05	EW-WMR-COMP-3	SAM	06/15/22 16:19		BIN	OK
33	N3328-01	BU-02-061022	SAM	06/15/22 16:23		BIN	OK
34	N3175-24	AUD-1714-17	SAM	06/15/22 16:27		BIN	OK
35	N3175-25	AUD-1718-21	SAM	06/15/22 16:30		BIN	OK
36	N3175-26	AUD-1722-25	SAM	06/15/22 16:34		BIN	OK
37	N3175-27	AUD-1726-27	SAM	06/15/22 16:38		BIN	OK
38	N3234-03	RB-21499	SAM	06/15/22 16:42		BIN	OK
39	N3246-01	17156	SAM	06/15/22 16:46		BIN	OK
40	CCV03	CCV03	CCV	06/15/22 16:50		BIN	OK
41	CCB03	CCB03	CCB	06/15/22 16:54		BIN	OK

Instrument ID: P5

Daily Analysis Runlog For Sequence/QC Batch ID # LB120705

Review By	bin	Review On	6/16/2022 1:11:10 PM				
Supervise By	jaswal	Supervise On	6/16/2022 1:16:02 PM				
STD. NAME		STD REF.#					
ICAL Standard		MP70022,MP69956,MP69955,MP69954,M69953,MP69952					
ICV Standard		MP69949,MP69956					
CCV Standard		MP69957					
ICSA Standard		MP69950,MP69951					
CRI Standard							
LCS Standard		M5074,M5079					
Chk Standard		MP69948,MP69958,MP69959,MP69788					

42	N3246-02	17161	SAM	06/15/22 16:57		BIN	OK
43	N3246-03	COMP1-0608	SAM	06/15/22 17:01		BIN	OK
44	N3304-07	WC-14A-1A-10	SAM	06/15/22 17:05		BIN	OK
45	N3304-08	WC-14A-1A-10-G	SAM	06/15/22 17:09		BIN	OK
46	N3304-09	WC-14A-1A-9	SAM	06/15/22 17:13		BIN	OK
47	N3304-10	WC-14A-1A-9-G	SAM	06/15/22 17:17		BIN	OK
48	N3304-11	WC-14A-1A-6	SAM	06/15/22 17:21		BIN	OK
49	N3304-12	WC-14A-1A-6-G	SAM	06/15/22 17:24		BIN	OK
50	N3304-12DUP	WC-14A-1A-6-GDUP	DUP	06/15/22 17:28		BIN	OK
51	N3304-12L	WC-14A-1A-6-GL	SD	06/15/22 17:32		BIN	OK
52	CCV04	CCV04	CCV	06/15/22 17:36		BIN	OK
53	CCB04	CCB04	CCB	06/15/22 17:40		BIN	OK
54	N3304-12MS	WC-14A-1A-6-GMS	MS	06/15/22 17:44		BIN	OK
55	N3304-12MSD	WC-14A-1A-6-GMSD	MSD	06/15/22 17:47		BIN	OK
56	N3304-12A	WC-14A-1A-6-GA	PS	06/15/22 17:54	0.1 ml of LFS-1(M5074) and LF	BIN	OK
57	PB145317BL	PB145317BL	MB	06/15/22 17:58		BIN	OK
58	PB145317BS	PB145317BS	LCS	06/15/22 18:02		BIN	OK
59	N3123-07	14B-(1-4)-COMP	SAM	06/15/22 18:06		BIN	OK
60	N3198-07	14B-(1-4)COMP	SAM	06/15/22 18:09		BIN	OK
61	N3252-01	POOL-WATER	SAM	06/15/22 18:13		BIN	OK
62	LR CHECK 1	LR CHECK 1	HIGH STD	06/15/22 18:17		BIN	OK

Instrument ID: P5

Daily Analysis Runlog For Sequence/QC Batch ID # LB120705

Review By	bin	Review On	6/16/2022 1:11:10 PM
Supervise By	jaswal	Supervise On	6/16/2022 1:16:02 PM

STD. NAME	STD REF.#
ICAL Standard	MP70022,MP69956,MP69955,MP69954,M69953,MP69952
ICV Standard	MP69949,MP69956
CCV Standard	MP69957
ICSA Standard	MP69950,MP69951
CRI Standard	
LCS Standard	M5074,M5079
Chk Standard	MP69948,MP69958,MP69959,MP69788

63	LR CHECK 2	LR CHECK 2	HIGH STD	06/15/22 18:21		BIN	OK
64	CCV05	CCV05	CCV	06/15/22 18:25		BIN	OK
65	CCB05	CCB05	CCB	06/15/22 18:34		BIN	OK
66	N3252-01DUP	POOL-WATERDUP	DUP	06/15/22 18:38		BIN	OK
67	N3252-01MS	POOL-WATERMS	MS	06/15/22 18:42		BIN	OK
68	N3252-01MSD	POOL-WATERMSD	MSD	06/15/22 18:46		BIN	OK
69	N3252-01L	POOL-WATERL	SD	06/15/22 18:50		BIN	OK
70	N3252-01A	POOL-WATERA	PS	06/15/22 18:53	0.1 ml of LFS-1(M5074) and LF	BIN	OK
71	N3334-19	WC-14A-1A-5	SAM	06/15/22 18:57		BIN	OK
72	N3334-20	WC-14A-1A-5	SAM	06/15/22 19:01		BIN	OK
73	N3329-01	PALMYRA-RT-73-CO	SAM	06/15/22 19:05		BIN	OK
74	CCV06	CCV06	CCV	06/15/22 19:09		BIN	OK
75	CCB06	CCB06	CCB	06/15/22 19:12		BIN	OK
76	N3329-03	PALMYRA-RT-73-CO	SAM	06/15/22 19:20		BIN	OK
77	N3329-05	PALMYRA-RT-73-CO	SAM	06/15/22 19:24		BIN	OK
78	N3334-01	WC-14A-1A-7	SAM	06/15/22 19:28		BIN	OK
79	N3334-07	WC-14A-1A-8	SAM	06/15/22 19:32		BIN	OK
80	N3334-13	WC-14A-1A-11	SAM	06/15/22 19:35		BIN	OK
81	N3336-01	HD-02-061322	SAM	06/15/22 19:39		BIN	OK
82	N3337-01	SU-02-061322	SAM	06/15/22 19:43		BIN	OK
83	N3340-01	CS-1	SAM	06/15/22 19:47		BIN	OK

Instrument ID: P5

Daily Analysis Runlog For Sequence/QC Batch ID # LB120705

Review By	bin	Review On	6/16/2022 1:11:10 PM
Supervise By	jaswal	Supervise On	6/16/2022 1:16:02 PM

STD. NAME	STD REF.#
ICAL Standard	MP70022,MP69956,MP69955,MP69954,M69953,MP69952
ICV Standard	MP69949,MP69956
CCV Standard	MP69957
ICSA Standard	MP69950,MP69951
CRI Standard	
LCS Standard	M5074,M5079
Chk Standard	MP69948,MP69958,MP69959,MP69788

84	N3340-02	CS-2	SAM	06/15/22 19:50		BIN	OK
85	N3340-03	CS-3	SAM	06/15/22 19:54		BIN	OK
86	CCV07	CCV07	CCV	06/15/22 19:58		BIN	OK
87	CCB07	CCB07	CCB	06/15/22 20:02		BIN	OK
88	N3340-03DUP	CS-3DUP	DUP	06/15/22 20:06		BIN	OK
89	N3340-03L	CS-3L	SD	06/15/22 20:10		BIN	OK
90	N3340-03MS	CS-3MS	MS	06/15/22 20:13		BIN	OK
91	N3340-03MSD	CS-3MSD	MSD	06/15/22 20:17		BIN	OK
92	N3340-03A	CS-3A	PS	06/15/22 20:21	0.1 ml of LFS-1(M5074) and LF	BIN	OK
93	PB145524BL	PB145524BL	MB	06/15/22 20:25		BIN	OK
94	PB145524BS	PB145524BS	LCS	06/15/22 20:29		BIN	OK
95	PB145458TB	PB145458TB	MB	06/15/22 20:32		BIN	OK
96	N3299-02	COM-4	SAM	06/15/22 20:36		BIN	OK
97	PB145529BL	PB145529BL	MB	06/15/22 20:40		BIN	OK
98	CCV08	CCV08	CCV	06/15/22 20:44		BIN	OK
99	CCB08	CCB08	CCB	06/15/22 20:48		BIN	OK
100	PB145529BS	PB145529BS	LCS	06/15/22 20:52		BIN	OK
101	PB145493TB	PB145493TB	MB	06/15/22 20:55		BIN	OK
102	N3329-02	PALMYRA-RT-73-CO	SAM	06/15/22 20:59	NOT USE - Need to Confirm (B	BIN	Not Ok
103	N3329-04	PALMYRA-RT-73-CO	SAM	06/15/22 21:03		BIN	OK
104	N3329-06	PALMYRA-RT-73-CO	SAM	06/15/22 21:07	NOT USE - Need to Confirm (B	BIN	Not Ok

Instrument ID: P5

Daily Analysis Runlog For Sequence/QC Batch ID # LB120705

Review By	bin	Review On	6/16/2022 1:11:10 PM				
Supervise By	jaswal	Supervise On	6/16/2022 1:16:02 PM				
STD. NAME		STD REF.#					
ICAL Standard		MP70022,MP69956,MP69955,MP69954,M69953,MP69952					
ICV Standard		MP69949,MP69956					
CCV Standard		MP69957					
ICSA Standard		MP69950,MP69951					
CRI Standard							
LCS Standard		M5074,M5079					
Chk Standard		MP69948,MP69958,MP69959,MP69788					

105	N3334-02	WC-14A-1A-7	SAM	06/15/22 21:11		BIN	OK
106	N3334-08	WC-14A-1A-8	SAM	06/15/22 21:15		BIN	OK
107	N3334-14	WC-14A-1A-11	SAM	06/15/22 21:19		BIN	OK
108	N3334-20DUP	WC-14A-1A-5DUP	DUP	06/15/22 21:23		BIN	OK
109	N3334-20L	WC-14A-1A-5L	SD	06/15/22 21:26		BIN	OK
110	CCV09	CCV09	CCV	06/15/22 21:30		BIN	OK
111	CCB09	CCB09	CCB	06/15/22 21:34		BIN	OK
112	N3334-20MS	WC-14A-1A-5MS	MS	06/15/22 21:38		BIN	OK
113	N3334-20MSD	WC-14A-1A-5MSD	MSD	06/15/22 21:42		BIN	OK
114	N3334-20A	WC-14A-1A-5A	PS	06/15/22 21:45	0.1 ml of LFS-1(M5074) and LF	BIN	OK
115	N3299-03DL	SC-15DL	SAM	06/15/22 21:49	10x for Ca	BIN	Confirm
116	N3299-06DL	SC-18DL	SAM	06/15/22 21:53	10x for Ca	BIN	Confirm
117	CCV10	CCV10	CCV	06/15/22 21:57		BIN	OK
118	CCB10	CCB10	CCB	06/15/22 22:01		BIN	OK



Prep Standard - Chemical Standard Summary

Order ID : N3259

Test : Metals Group3

Prepbatch ID : PB145317,

Sequence ID/Qc Batch ID: LB120624, LB120624, LB120624, LB120678, LB120678, LB120678, LB120705, LB120705, LB120705,

Standard ID :

MP67303, MP67322, MP69236, MP69533, MP69788, MP69947, MP69948, MP69949, MP69950, MP69951, MP69952, MP69954, MP69955, MP69956, MP69957, MP69958, MP69959, MP69968, MP70022,

Chemical ID :

M4390, M4516, M4543, M4551, M4589, M4590, M4599, M4628, M4629, M4631, M4644, M4656, M4657, M4705, M4707, M4718, M4768, M4810, M4825, M4844, M4874, M4876, M4877, M4879, M4880, M4881, M4882, M4883, M4884, M4885, M4886, M4887, M4889, M4891, M4901, M4902, M4939, M4960, M4961, M5019, M5020, M5023, M5027, M5066, M5074, M5079, M5100, M5109, M5110, M5126, M5150, M5154, M5168, M5171, M5186, M69953, W2606,

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Metals STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
902	ICP AES CAL BLK (SO/ICB/CCB)	MP67303	12/30/2021	12/30/2022	Bin He	None	METALS_PIPETTE_3 (A)	Sarabjit Jaswal 01/03/2022

FROM 125.00000ml of M5027 + 2350.00000ml of W2606 + 25.00000ml of M5023 = Final Quantity: 2500.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
170	1:1HCL	MP67322	01/03/2022	06/28/2022	Rakeshkumar Patel	None	None	Sarabjit Jaswal 01/04/2022

FROM 1250.00000ml of M5027 + 1250.00000ml of W2606 = Final Quantity: 2500.000 ml

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Metals STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
2950	ICP AES S1/CRI STOCK STD	MP69236	04/29/2022	06/30/2022	Bin He	None	METALS_PIPETTE_3 (A)	Sarabjit Jaswal 04/29/2022

FROM 0.03000ml of M4876 + 0.03000ml of M4877 + 0.05000ml of M4628 + 0.05000ml of M4657 + 0.05000ml of M4810 + 0.05000ml of M4885 + 0.06000ml of M4881 + 0.10000ml of M4629 + 0.10000ml of M4718 + 0.10000ml of M4874 + 0.10000ml of M4880 + 0.10000ml of M4883 + 0.10000ml of M4902 + 0.10000ml of M4939 + 0.15000ml of M4825 + 0.20000ml of M4516 + 0.20000ml of M4707 + 0.20000ml of M4768 + 0.20000ml of M4886 + 0.20000ml of M4889 + 0.20000ml of M4891 + 0.25000ml of M4644 + 0.50000ml of M4551 + 0.50000ml of M4901 + 1.00000ml of M4543 + 1.00000ml of M4631 + 1.00000ml of M4879 + 1.00000ml of M5109 + 1.00000ml of M5110 + 2.00000ml of M4882 + 2.00000ml of M4884 + 87.38000ml of MP67303 = Final Quantity: 100.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
169	1:1HNO3	MP69533	05/13/2022	11/12/2022	Bin He	None	None	Sarabjit Jaswal 05/16/2022

FROM 1250.00000ml of M5154 + 1250.00000ml of W2606 = Final Quantity: 2500.000 ml

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<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
919	ICP AES INTERNAL STD	MP69788	05/27/2022	06/27/2022	Bin He	None	METALS_PIPETTE_3 (A)	Sarabjit Jaswal 05/30/2022
<u>FROM</u>	1.00000ml of M4961 + 10.00000ml of M4960 + 1969.00000ml of W2606 + 20.00000ml of M5168 = Final Quantity: 2000.000 ml							

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
902	ICP AES CAL BLK (SO/ICB/CCB)	MP69947	06/06/2022	06/19/2022	Bin He	None	METALS_PIPETTE_3 (A)	Sarabjit Jaswal 06/08/2022
<u>FROM</u> 125.00000ml of M5150 + 2350.00000ml of W2606 + 25.00000ml of M5171 = Final Quantity: 2500.000 ml								

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Metals STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
513	RINSE SOLN	MP69948	06/06/2022	06/19/2022	Bin He	None	METALS_PIPETTE_3 (A)	Sarabjit Jaswal 06/08/2022

FROM 200.00000ml of M5171 + 9800.00000ml of W2606 = Final Quantity: 10000.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
912	ICP AES ICV SOLN	MP69949	06/06/2022	06/19/2022	Bin He	None	METALS_PIPETTE_3 (A)	Sarabjit Jaswal 06/08/2022

FROM 0.02500ml of M4599 + 0.02500ml of M4656 + 0.02500ml of M5019 + 0.02500ml of M5020 + 0.25000ml of M4590 + 10.00000ml of M5066 + 89.65000ml of MP69947 = Final Quantity: 100.000 ml

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Metals STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
904	ICP AES ICSA SOLN	MP69950	06/06/2022	06/19/2022	Bin He	None	METALS_PIPETTE_3 (A)	Sarabjit Jaswal 06/08/2022

FROM 10.00000ml of M5126 + 90.00000ml of MP69947 = Final Quantity: 100.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3494	ICP AES ICSAB SOLN-1	MP69951	06/06/2022	06/19/2022	Bin He	None	METALS_PIPETTE_3 (A)	Sarabjit Jaswal 06/08/2022

FROM 0.10000ml of M4589 + 0.10000ml of M4629 + 0.10000ml of M4880 + 0.10000ml of M4882 + 0.10000ml of M4939 + 10.00000ml of M4705 + 10.00000ml of M5126 + 79.50000ml of MP69947 = Final Quantity: 100.000 ml

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<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
907	ICP AES STD S (S5)	MP69952	06/06/2022	06/19/2022	Bin He	None	METALS_PIPETTE_3 (A)	Sarabjit Jaswal 06/08/2022
<u>FROM</u>	5.00000ml of M4390 + 5.00000ml of M4589 + 5.00000ml of M4644 + 5.00000ml of M4880 + 5.00000ml of M4882 + 5.00000ml of M4887 + 5.00000ml of M4939 + 5.00000ml of M5100 + 460.00000ml of MP69947 = Final Quantity: 500.000 ml							

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
909	ICP AES STD S3	MP69954	06/06/2022	06/19/2022	Bin He	None	METALS_PIPETTE_3 (A)	Sarabjit Jaswal 06/08/2022
<u>FROM</u> 150.00000ml of MP69947 + 50.00000ml of MP69952 = Final Quantity: 200.000 ml								

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<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3913	ICP AES STD S2	MP69955	06/06/2022	06/19/2022	Bin He	None	METALS_PIPETTE_3 (A)	Sarabjit Jaswal 06/08/2022

FROM 16.00000ml of MP69952 + 184.00000ml of MP69947 = Final Quantity: 200.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
2951	ICP AES S1/CRI WORK STD	MP69956	06/06/2022	06/19/2022	Bin He	None	METALS_PIPETTE_3 (A)	Sarabjit Jaswal 06/08/2022

FROM 196.00000ml of MP69947 + 4.00000ml of MP69236 = Final Quantity: 200.000 ml

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Metals STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
911	ICP AES CCV SOLN	MP69957	06/06/2022	06/19/2022	Bin He	None	METALS_PIPETTE_3 (A)	Sarabjit Jaswal 06/08/2022

FROM 100.00000ml of MP69947 + 100.00000ml of MP69952 = Final Quantity: 200.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3651	LR CHECK 1	MP69958	06/06/2022	06/19/2022	Bin He	None	METALS_PIPETTE_3 (A)	Sarabjit Jaswal 06/08/2022

FROM 10.00000ml of M4543 + 18.00000ml of M4879 + 18.00000ml of M5109 + 18.00000ml of M5110 + 20.00000ml of M4810 + 9.00000ml of M4628 + 7.00000ml of MP69947 = Final Quantity: 100.000 ml

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<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3652	LR CHECK2	MP69959	06/06/2022	06/19/2022	Bin He	None	METALS_PIPETTE_3 (A)	Sarabjit Jaswal 06/08/2022
<u>FROM</u> 10.00000ml of M4551 + 2.50000ml of M4844 + 25.00000ml of M4902 + 3.50000ml of M4891 + 4.50000ml of M4718 + 5.00000ml of M4768 + 49.50000ml of MP69947 = Final Quantity: 100.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
902	ICP AES CAL BLK (SO/ICB/CCB)	MP69968	06/08/2022	06/14/2022	Bin He	None	METALS_PIPETTE_3 (A)	Sarabjit Jaswal 06/10/2022
<u>FROM</u> 125.00000ml of M5150 + 2350.00000ml of W2606 + 25.00000ml of M5171 = Final Quantity: 2500.000 ml								

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<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
902	ICP AES CAL BLK (SO/ICB/CCB)	MP70022	06/15/2022	06/21/2022	Bin He	None	METALS_PIPETTE_3 (A)	
FROM 125.00000ml of M5150 + 2350.00000ml of W2606 + 25.00000ml of M5186 = Final Quantity: 2500.000 ml								

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CLPP-CAL-3 / CLP CAL SOLUTION #3, 125mL	P2-MEB676730	02/13/2023	09/14/2020 / BIN	07/03/2019 / bin	M4390

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57022 / Titanium (Ti) 1000PPM	111819	11/18/2022	03/18/2020 / bin	10/11/2019 / bin	M4516

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57119 / Potassium (K) 10,000PPM	022620	02/26/2023	09/20/2020 / jaswal	04/10/2020 / jaswal	M4543

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57056 / BARIUM 100mL 1000ug/mL	102519	10/25/2022	05/06/2021 / jaswal	02/14/2020 / jaswal	M4551

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	Z9651Q / CHEM-CLP-4/.25L	R2-MEB694243	06/29/2024	07/13/2020 / bin	07/02/2020 / bin	M4589

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CHEM-QC-4 / CHEM-QC-4, Second Source, 1000 ug/ml, B, Mo, Si, Sn, Ti	R2-MEB694244	06/29/2024	07/13/2020 / bin	07/02/2020 / bin	M4590

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGSR10-1 / STRONTIUM 1 X 125 ml	P2-SR681562	08/02/2023	08/24/2020 / bin	08/21/2020 / bin	M4599

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58126 / Fe, 10000 PPM, 500 ml	091619	09/16/2022	08/24/2020 / bin	10/11/2019 / bin	M4628

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGSR1-1 / Strontium, 125 ml, 1000 PPM	p2-sr683295	10/10/2023	08/24/2020 / BIN	08/21/2020 / BIN	M4629

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57042 / Molybdeum, Mo, 100 ml, 1000 PPM	082019	08/20/2022	09/20/2020 / jaswal	10/11/2019 / jaswal	M4631

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57051 / Sb, 1000 PPM, 125 ml	052120	05/21/2023	10/15/2020 / jaswal	10/07/2020 / jaswal	M4644

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57103 / Li, 10000 PPM, 125 ml	010320	01/03/2023	11/11/2020 / bin	10/28/2020 / bin	M4656

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58024 / Chromium, Cr, 500 ml, 1000 PPM	082620	08/26/2023	11/11/2020 / bin	10/28/2020 / bin	M4657

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
EPA	PART B / ICSAB (ICP) STOCK SOLN	SA-1211+ICSB-07	12/31/2022	10/27/2021 / bin	02/20/2020 / bin	M4705

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGV1-1 / VANADIUM 125mL 1000ug/mL	P2-V685591	12/05/2023	11/21/2020 / bin	08/21/2020 / bin	M4707

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58025 / Manganese, Mn, 500 ml, 1000 PPM	070620	07/06/2023	01/14/2021 / bin	01/12/2021 / bin	M4718

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	/ Nickel (Ni) 1000PPM	072420	07/24/2023	02/26/2021 / BIN	10/28/2020 / BIN	M4768

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58113 / Aluminum (Al) 10,000PPM	072519	07/25/2022	05/11/2021 / bin	10/11/2019 / bin	M4810

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57027 / CO, 1000 PPM, 125 ml	020821	02/08/2024	05/23/2021 / jaswal	05/18/2021 / jaswal	M4825

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57182 / Pb, 10000 PPM, 125 ml	032321	03/23/2024	08/09/2021 / bin	05/06/2021 / jaswal	M4844

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	/ Arsenic (As)	012521	01/25/2024	08/06/2021 / jaswal	08/05/2021 / jaswal	M4874

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57004 / Be, 1000 PPM, 125 ml	030221	03/02/2024	08/06/2021 / jaswal	08/05/2021 / jaswal	M4876

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57048 / Cd, 1000 PPM, 125 ml	072821	07/28/2024	08/06/2021 / jaswal	08/05/2021 / jaswal	M4877

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58111 / Na, 10000 PPM, 500 ml	061421	06/14/2024	08/06/2021 / jaswal	08/05/2021 / jaswal	M4879

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57015 / P, 1000 PPM, 125 ml	051121	05/11/2024	08/06/2021 / jaswal	08/05/2021 / jaswal	M4880

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57082 / Pb, 1000 PPM, 125 ml	062221	06/22/2024	08/06/2021 / jaswal	08/05/2021 / jaswal	M4881

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57016 / S, 1000 PPM, 125 ml	051721	05/17/2024	08/06/2021 / jaswal	08/05/2021 / jaswal	M4882

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57034 / Se, 1000 PPM, 125 ml	070221	07/02/2024	08/06/2021 / jaswal	08/05/2021 / jaswal	M4883

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57014 / Si, 1000 PPM, 125 ml	030921	03/09/2024	08/06/2021 / jaswal	08/05/2021 / jaswal	M4884

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57047 / Ag, 1000 PPM, 125 ml	072921	07/29/2024	08/06/2021 / jaswal	08/05/2021 / jaswal	M4885

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57050 / Sn, 1000 PPM, 125 ml	021121	02/11/2024	08/05/2021 / jaswal	08/05/2021 / jaswal	M4886

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57038 / Sr, 1000 PPM, 125 ml	062221	06/22/2024	08/06/2021 / jaswal	08/05/2021 / jaswal	M4887

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57081 / TI, 1000 PPM, 125 ml	073021	07/30/2024	08/06/2021 / jaswal	08/05/2021 / jaswal	M4889

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58030 / Zinc, Zn, 500 ml, 1000 PPM	031921	03/19/2024	08/25/2021 / bin	08/05/2021 / jaswal	M4891

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57005 / B, 1000 PPM, 125 ml	031921	03/19/2024	08/06/2021 / jaswal	08/06/2021 / jaswal	M4901

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58029 / Cu, 1000 PPM, 500 ml	080321	08/03/2024	08/06/2021 / jaswal	08/06/2021 / jaswal	M4902

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57003 / Li, 1000 PPM, 125 ml	030221	03/02/2024	09/23/2021 / bin	09/22/2021 / bin	M4939

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGIN10-5 / INDIUM 1 x 500 ml	100721	10/07/2024	10/09/2021 / jaswal	10/08/2021 / jaswal	M4960

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58139 / Y, 10000 PPM, 500 ml	052521	05/25/2024	10/09/2021 / jaswal	01/25/2019 / jaswal	M4961

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57116 / S, 10000 PPM, 125 ml	011421	01/14/2024	12/13/2021 / bin	12/09/2021 / bin	M5019

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57115 / P, 10000 PPM, 125 ml	032921	03/29/2024	12/13/2021 / bin	12/09/2021 / bin	M5020

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9598-34 / Nitric Acid, Instra-Analyzed (cs/4x2.5L)	0000266572	07/23/2025	12/28/2021 / RAKESHKUM AR	12/16/2021 / RAKESHKUM AR	M5023

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9530-33 / Hydrochloric Acid, Instra-Analyzed (cs/6x2.5L)	0000281827	06/28/2022	12/29/2021 / RAKESHKUM AR	01/20/2021 / RAKESHKUM AR	M5027

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
EPA	ICV-1 / ICV (ICP/ICPMS) STOCK SOLN	ICV1-1014	07/30/2022	01/31/2022 / jaswal	04/20/2021 / jaswal	M5066

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	WW-LFS-1 / Laboratory Fortified Stock Solution 1, 125 ml	P2-MEB686379	04/25/2023	04/25/2022 /	11/08/2021 / bin	M5074

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	WW-LFS-2 / Laboratory Fortified Stock Solution 2, 125 ml	R2-MEB693161	04/25/2023	04/25/2022 /	11/08/2021 / bin	M5079

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CLPP-CAL-1 / CLP CAL SOLUTION #1, 125mL	R2-MEB689870	02/14/2024	03/14/2022 / bin	04/29/2020 / bin	M5100

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58120 / Ca, 10000 PPM, 500 ml	082021	08/20/2024	10/06/2021 / bin	10/05/2021 / bin	M5109

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58112 / Mg, 10000 PPM, 500 ml	022822	02/28/2025	03/30/2022 / bin	03/30/2022 / bin	M5110

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
EPA	PART A / ICSA (ICP) STOCK SOLN	ICSA-1211	10/25/2022	04/25/2022 / bin	04/20/2021 / bin	M5126

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9530-33 / Hydrochloric Acid, Instra-Analyzed (cs/6x2.5L)	0000275677	12/15/2025	05/23/2022 / william	04/19/2022 / JIGNESH	M5150

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9598-34 / Nitric Acid, Instra-Analyzed (cs/4x2.5L)	22B0862001	11/12/2022	05/13/2022 / BIN	04/16/2022 / BIN	M5154

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9598-34 / Nitric Acid, Instra-Analyzed (cs/4x2.5L)	22B0862001	11/25/2022	05/26/2022 / william	04/19/2022 / william	M5168

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9598-34 / Nitric Acid, Instra-Analyzed (cs/4x2.5L)	22B0862001	01/27/2027	06/05/2022 / bin	04/19/2022 / william	M5171



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CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9598-34 / Nitric Acid, Instra-Analyzed (cs/4x2.5L)	22C0462001	12/14/2022	06/15/2022 / william	06/06/2022 / william	M5186

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	DIW / DI Water	Daily Lab-Certified	10/24/2024	10/24/2019 / apatel	10/24/2019 / apatel	W2606

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution	
Catalog Number:	CLPP-CAL-1	
Lot Number:	R2-MEB689870	
Matrix:	5% (v/v) HNO ₃	
Value / Analyte(s):	5 000 µg/mL ea:	Potassium, Sodium,
	Calcium, Magnesium,	
	2 000 µg/mL ea:	Barium,
	Aluminum,	
	1 000 µg/mL ea:	
	Iron,	
	500 µg/mL ea:	Vanadium, Cobalt,
	Nickel, Zinc, Manganese,	
	250 µg/mL ea:	Copper,
	Silver,	
	200 µg/mL ea:	
	Chromium,	
	50 µg/mL ea:	
	Beryllium	

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	2 000 ± 7 µg/mL	Barium, Ba	2 000 ± 9 µg/mL
Beryllium, Be	50.00 ± 0.24 µg/mL	Calcium, Ca	5 000 ± 20 µg/mL
Chromium, Cr	200.0 ± 1.2 µg/mL	Cobalt, Co	500.0 ± 2.4 µg/mL
Copper, Cu	250.0 ± 1.0 µg/mL	Iron, Fe	1 000 ± 4 µg/mL
Magnesium, Mg	5 000 ± 20 µg/mL	Manganese, Mn	500.0 ± 1.9 µg/mL
Nickel, Ni	500.0 ± 2.2 µg/mL	Potassium, K	5 000 ± 18 µg/mL
Silver, Ag	250.0 ± 1.1 µg/mL	Sodium, Na	5 000 ± 18 µg/mL
Vanadium, V	500.0 ± 2.2 µg/mL	Zinc, Zn	500.0 ± 2.1 µg/mL

Density: 1.116 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	160729
Ag	Volhard	999c	999c
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
Ba	ICP Assay	3104a	140909
Ba	Gravimetric		See Sec. 4.2
Be	ICP Assay	3105a	090514
Be	Calculated		See Sec. 4.2
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Co	EDTA	928	928
Co	ICP Assay	traceable to 3113	M2-CO661665
Cr	ICP Assay	3112a	170630
Cr	Calculated		See Sec. 4.2
Cu	ICP Assay	3114	121207
Cu	EDTA	928	928
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
V	ICP Assay	3165	160906
V	EDTA	928	928
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{\text{CRM/RM}}$, where two or more methods of characterization are used is the weighted mean of the results:

$$X_{\text{CRM/RM}} = \sum(w_i)(X_i)$$

X_i = mean of Assay Method i with standard uncertainty $u_{\text{char } i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{\text{char } i}^2) / (\sum(1/u_{\text{char } i}^2))$$

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k (u_{\text{char}}^2 + u_{\text{bb}}^2 + u_{\text{Its}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char}} = [\sum(w_i)^2 (u_{\text{char } i}^2)]^{1/2}$ where $u_{\text{char } i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{Its} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{\text{CRM/RM}}$, where one method of characterization is used is the mean of individual results:

$$X_{\text{CRM/RM}} = (X_a)(u_{\text{char } a})$$

X_a = mean of Assay Method A with

$u_{\text{char } a}$ = the standard uncertainty of characterization Method A

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k (u_{\text{char } a}^2 + u_{\text{bb}}^2 + u_{\text{Its}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char } a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{Its} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- 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/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

February 14, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **February 14, 2024**

- The date after which this CRM/RM should not be used.
- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control



Certifying Officer:

Paul Gaines
CEO, Senior Technical Director



1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution
Catalog Number: CLPP-CAL-3
Lot Number: P2-MEB676730
Matrix: 7% (v/v) HNO₃
Value / Analyte(s): 1 000 µg/mL ea:
Arsenic, Lead, Selenium,
Thallium,
500 µg/mL ea:
Cadmium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Arsenic, As	1 000 ± 7 µg/mL	Cadmium, Cd	500.0 ± 2.2 µg/mL
Lead, Pb	1 000 ± 4 µg/mL	Selenium, Se	1 000 ± 6 µg/mL
Thallium, Tl	1 000 ± 7 µg/mL		

Density: 1.045 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
As	ICP Assay	3103a	100818
Cd	ICP Assay	3108	130116
Cd	EDTA	928	928
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Se	ICP Assay	3149	100901
Tl	ICP Assay	3158	993012

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{\text{CRM/RM}}$, where two or more methods of characterization are used is the weighted mean of the results:

$$X_{\text{CRM/RM}} = \sum(w_i)(X_i)$$

X_i = mean of Assay Method i with standard uncertainty $u_{\text{char } i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{\text{char } i}^2) / (\sum(1/u_{\text{char } i}^2))$$

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k (u_{\text{char}}^2 + u_{\text{bb}}^2 + u_{\text{Its}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char}} = [\sum(w_i)^2 (u_{\text{char } i}^2)]^{1/2}$ where $u_{\text{char } i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{Its} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{\text{CRM/RM}}$, where one method of characterization is used is the mean of individual results:

$$X_{\text{CRM/RM}} = (X_a)(u_{\text{char } a})$$

X_a = mean of Assay Method A with

$u_{\text{char } a}$ = the standard uncertainty of characterization Method A

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k (u_{\text{char } a}^2 + u_{\text{bb}}^2 + u_{\text{Its}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char } a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{Its} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- 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/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

February 13, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **February 13, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Supervisor, Quality Control



Certifying Officer:

Paul Gaines
CEO, Senior Technical Director



Hydrochloric Acid, 36.5–38.0%
 BAKER INSTRA-ANALYZED® Reagent
 For Trace Metal Analysis



Material No.: 9530-33
 Batch No.: 0000281827
 Manufactured Date: 2021/03/30
 Retest Date: 2026/03/29
 Revision No: 1

Certificate of Analysis

Test	Specification	Result
ACS – Assay (as HCl) (by acid–base titrn)	36.5 – 38.0 %	37.6
ACS – Color (APHA)	<= 10	5
ACS – Residue after Ignition	<= 3 ppm	1
ACS – Specific Gravity at 60°/60°F	1.185 – 1.192	1.189
ACS – Bromide (Br)	<= 0.005 %	< 0.005
ACS – Extractable Organic Substances	<= 5 ppm	< 1
ACS – Free Chlorine (as Cl ₂)	<= 0.5 ppm	< 0.5
Phosphate (PO ₄)	<= 0.05 ppm	< 0.03
Sulfate (SO ₄)	<= 0.5 ppm	< 0.3
Sulfite (SO ₃)	<= 0.8 ppm	0.3
Ammonium (NH ₄)	<= 3 ppm	< 1
Trace Impurities – Arsenic (As)	<= 0.010 ppm	< 0.003
Trace Impurities – Aluminum (Al)	<= 10.0 ppb	0.5
Arsenic and Antimony (as As)	<= 5 ppb	< 3
Trace Impurities – Barium (Ba)	<= 1.0 ppb	< 0.2
Trace Impurities – Beryllium (Be)	<= 1.0 ppb	< 0.2
Trace Impurities – Bismuth (Bi)	<= 10.0 ppb	< 1.0
Trace Impurities – Boron (B)	<= 20.0 ppb	< 5.0
Trace Impurities – Cadmium (Cd)	<= 1.0 ppb	< 0.3
Trace Impurities – Calcium (Ca)	<= 50.0 ppb	15.0
Trace Impurities – Chromium (Cr)	<= 1.0 ppb	< 0.4
Trace Impurities – Cobalt (Co)	<= 1.0 ppb	< 0.3
Trace Impurities – Copper (Cu)	<= 1.0 ppb	< 0.1
Trace Impurities – Gallium (Ga)	<= 1.0 ppb	< 0.2

Test	Specification	Result
Trace Impurities – Germanium (Ge)	<= 3.0 ppb	< 2.0
Trace Impurities – Gold (Au)	<= 4.0 ppb	3.0
Heavy Metals (as Pb)	<= 100 ppb	< 50
Trace Impurities – Iron (Fe)	<= 15.0 ppb	1.0
Trace Impurities – Lead (Pb)	<= 1.0 ppb	< 0.5
Trace Impurities – Lithium (Li)	<= 1.0 ppb	< 0.2
Trace Impurities – Magnesium (Mg)	<= 10.0 ppb	< 0.4
Trace Impurities – Manganese (Mn)	<= 1.0 ppb	< 0.4
Trace Impurities – Mercury (Hg)	<= 0.5 ppb	0.2
Trace Impurities – Molybdenum (Mo)	<= 10.0 ppb	< 5.0
Trace Impurities – Nickel (Ni)	<= 4.0 ppb	< 0.3
Trace Impurities – Niobium (Nb)	<= 1.0 ppb	< 0.2
Trace Impurities – Potassium (K)	<= 9.0 ppb	< 2.0
Trace Impurities – Selenium (Se), For Information Only	ppb	1.0
Trace Impurities – Silicon (Si)	<= 100.0 ppb	18.0
Trace Impurities – Silver (Ag)	<= 1.0 ppb	< 0.3
Trace Impurities – Sodium (Na)	<= 100.0 ppb	< 5.0
Trace Impurities – Strontium (Sr)	<= 1.0 ppb	< 0.2
Trace Impurities – Tantalum (Ta)	<= 1.0 ppb	< 0.9
Trace Impurities – Thallium (Tl)	<= 5.0 ppb	< 2.0
Trace Impurities – Tin (Sn)	<= 5.0 ppb	< 0.8
Trace Impurities – Titanium (Ti)	<= 1.0 ppb	< 0.2
Trace Impurities – Vanadium (V)	<= 1.0 ppb	< 0.2
Trace Impurities – Zinc (Zn)	<= 5.0 ppb	0.4
Trace Impurities – Zirconium (Zr)	<= 1.0 ppb	< 0.1

For Laboratory, Research or Manufacturing Use

Product Information (not specifications):

Appearance (clear, fuming liquid)

Meets ACS Specifications

Country of Origin: US

Packaging Site: Phillipsburg Mfg Ctr & DC


Jamie Ethier
Vice President Global Quality

Nitric Acid, 69.0–70.0%
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis



Material No.: 9598-34
Batch No.: 0000266572
Manufactured Date: 2020/07/24
Retest Date: 2025/07/23
Revision No: 1

Certificate of Analysis

Test	Specification	Result
ACS – Assay (HNO ₃)	69.0 – 70.0 %	69.6
Appearance	Passes Test	PT
ACS – Color (APHA)	<= 10	5
ACS – Residue after Ignition	<= 2 ppm	< 1
Chloride (Cl)	<= 0.04 ppm	< 0.03
Phosphate (PO ₄)	<= 0.1 ppm	<0.01
Sulfate (SO ₄)	<= 0.4 ppm	< 0.2
Trace Impurities – Aluminum (Al)	<= 30.0 ppb	< 0.2
Arsenic and Antimony (as As)	<= 5 ppb	< 2
Trace Impurities – Barium (Ba)	<= 1.0 ppb	< 0.2
Trace Impurities – Beryllium (Be)	<= 1.0 ppb	< 0.2
Trace Impurities – Bismuth (Bi)	<= 1.0 ppb	< 1.0
Trace Impurities – Boron (B)	<= 4.0 ppb	< 0.7
Trace Impurities – Cadmium (Cd)	<= 1.0 ppb	< 0.3
Trace Impurities – Calcium (Ca)	<= 50.0 ppb	< 1.0
Trace Impurities – Chromium (Cr)	<= 10.0 ppb	3.0
Trace Impurities – Cobalt (Co)	<= 1.0 ppb	< 0.3
Trace Impurities – Copper (Cu)	<= 1.0 ppb	< 0.1
Trace Impurities – Gallium (Ga)	<= 20.0 ppb	< 0.2
Trace Impurities – Germanium (Ge)	<= 4.0 ppb	< 2.0
Trace Impurities – Gold (Au)	<= 4.0 ppb	0.2
Heavy Metals (as Pb)	<= 100 ppb	< 50
Trace Impurities – Iron (Fe)	<= 10.0 ppb	1.0
Trace Impurities – Lead (Pb)	<= 0.5 ppb	< 0.5

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700
Avantor Performance Materials, LLC
100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone: 610.386.1700

Test	Specification	Result
Trace Impurities – Lithium (Li)	<= 1.0 ppb	< 0.2
Trace Impurities – Magnesium (Mg)	<= 7.0 ppb	< 0.2
Trace Impurities – Manganese (Mn)	<= 1.0 ppb	< 0.4
Trace Impurities – Mercury (Hg)	<= 0.5 ppb	< 0.1
Trace Impurities – Molybdenum (Mo)	<= 5.0 ppb	< 3.0
Trace Impurities – Nickel (Ni)	<= 1.0 ppb	< 0.3
Trace Impurities – Niobium (Nb)	<= 1.0 ppb	0.2
Trace Impurities – Potassium (K)	<= 5.0 ppb	< 2.0
Trace Impurities – Silicon (Si)	<= 20.0 ppb	0.5
Trace Impurities – Silver (Ag)	<= 1.0 ppb	< 0.3
Trace Impurities – Sodium (Na)	<= 200.0 ppb	< 0.5
Trace Impurities – Strontium (Sr)	<= 1.0 ppb	< 0.2
Trace Impurities – Tantalum (Ta)	<= 2.0 ppb	< 0.9
Trace Impurities – Thallium (Tl)	<= 5.0 ppb	< 2.0
Trace Impurities – Tin (Sn)	<= 5.0 ppb	< 0.8
Trace Impurities – Vanadium (V)	<= 1.0 ppb	< 0.2
Trace Impurities – Zinc (Zn)	<= 5.0 ppb	< 0.3
Trace Impurities – Zirconium (Zr)	<= 1.0 ppb	< 0.1

For Laboratory, Research or Manufacturing Use
Meets ACS Specifications

Country of Origin: US
Packaging Site: Phillipsburg Mfg Ctr & DC


Jamie Ethier
Vice President Global Quality

Nitric Acid
CMOS



M5185, M5186, M5187, M5188, M5189, M5190

Material No.: 9606-03

Batch No.: 22C0462001

Manufactured Date: 2022-02-11

Retest Date: 2027-02-10

Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay (HNO ₃)	69.0 - 70.0 %	69.4 %
Appearance	Passes Test	Passes Test
Color (APHA)	≤ 10	5
Residue after Ignition	≤ 2 ppm	< 1 ppm
Chloride (Cl)	≤ 0.08 ppm	< 0.03 ppm
Phosphate (PO ₄)	≤ 0.10 ppm	< 0.03 ppm
Sulfate (SO ₄)	≤ 0.2 ppm	< 0.2 ppm
Trace Impurities - Aluminum (Al)	≤ 40.0 ppb	< 1.0 ppb
Arsenic and Antimony (as As)	≤ 5.0 ppb	< 2.0 ppb
Trace Impurities - Barium (Ba)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Beryllium (Be)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Bismuth (Bi)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities - Boron (B)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities - Cadmium (Cd)	≤ 50 ppb	< 1 ppb
Trace Impurities - Calcium (Ca)	≤ 50.0 ppb	1.2 ppb
Trace Impurities - Chromium (Cr)	≤ 30.0 ppb	1.7 ppb
Trace Impurities - Cobalt (Co)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Copper (Cu)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Gallium (Ga)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Germanium (Ge)	≤ 20 ppb	< 10 ppb
Trace Impurities - Gold (Au)	≤ 20 ppb	< 5 ppb
Heavy Metals (as Pb)	≤ 100 ppb	< 50 ppb
Trace Impurities - Iron (Fe)	≤ 40.0 ppb	< 1.0 ppb
Trace Impurities - Lead (Pb)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities - Lithium (Li)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Magnesium (Mg)	≤ 20 ppb	< 1 ppb
Trace Impurities - Manganese (Mn)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Nickel (Ni)	≤ 20.0 ppb	< 5.0 ppb

>>> Continued on page 2 >>>

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700

Avantor Performance Materials, LLC

100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone 610.386.1700

Nitric Acid
CMOS



Material No.: 9606-03
Batch No.: 22C0462001

Test	Specification	Result
Trace Impurities - Niobium (Nb)	≤ 50.0 ppb	< 1.0 ppb
Trace Impurities - Potassium (K)	≤ 50 ppb	< 10 ppb
Trace Impurities - Silicon (Si)	≤ 50 ppb	< 10 ppb
Trace Impurities - Silver (Ag)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities - Sodium (Na)	≤ 150.0 ppb	< 5.0 ppb
Trace Impurities - Strontium (Sr)	≤ 30.0 ppb	< 1.0 ppb
Trace Impurities - Tantalum (Ta)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities - Thallium (Tl)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities - Tin (Sn)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities - Titanium (Ti)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Vanadium (V)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Zinc (Zn)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities - Zirconium (Zr)	≤ 10.0 ppb	< 1.0 ppb
Particle Count - 0.5 μ m and greater	≤ 60 par/ml	7 par/ml
Particle Count - 1.0 μ m and greater	≤ 10 par/ml	2 par/ml

>>> Continued on page 3 >>>

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700
Avantor Performance Materials, LLC
100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone 610.386.1700

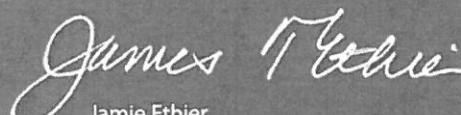
Nitric Acid
CMOS



Material No.: 9606-03
Batch No.: 22C0462001

Test	Specification	Result
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For Microelectronic Use
Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC


Jamie Ethier
Vice President Global Quality

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700
Avantor Performance Materials, LLC
100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone 610.386.1700



Certified Reference Material CRM



CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

57022
111819
Titanium (Ti)

Expiration Date:
Recommended Storage:
Nominal Concentration (µg/mL):
NIST Test Number:

111822
Ambient (20 °C)
1000
6UTB

Volume shown below was diluted to (mL):

1999.61

5E-05 Balance Uncertainty
0.153 Flask Uncertainty

Lot #
Solvent:

18147888 Nitric Acid

M4516

R: 10/11/19
2.0%
BAP

Nitric Acid
40.0 (mL)

Formulated By:	Lawrence Barry	111819
Reviewed By:	Pedro L. Rentas	111819

SDS Information

Expanded
Uncertainty
+/- (µg/mL)

(Solvent Safety Info. On Attached pg.)
LD50
SRM

Final
Conc. (µg/mL)

Initial
Conc. (µg/mL)

Nominal
Conc. (µg/mL)

Part
Number

Lot
Number

Compound

Compound	58122	010819	0.1000	199.9	0.084	1000	10001.0	1000.0	2.2	16962-40-6	2.5 (F) mg/m3	NA	3162a
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[1] Spectrum No.1 [34.693 sec]:57022.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.02	Os	<0.01	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.02	Hg	<0.2	P	<0.2	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

2019/07/04
10:00



Certified Reference Material CRM



R104109120

CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

58119
022620
Potassium (K)

Solvent: 19430153 Nitric Acid
Lot # 14543 M4544
2% Nitric Acid
(mL)

Expiration Date:
Recommended Storage:
Nominal Concentration (µg/mL):
NIST Test Number:

022623
Ambient (20 °C)
10000
6UTB

5E-05 Balance Uncertainty
0.153 Flask Uncertainty

Weight shown below was diluted to (mL):

1999.61

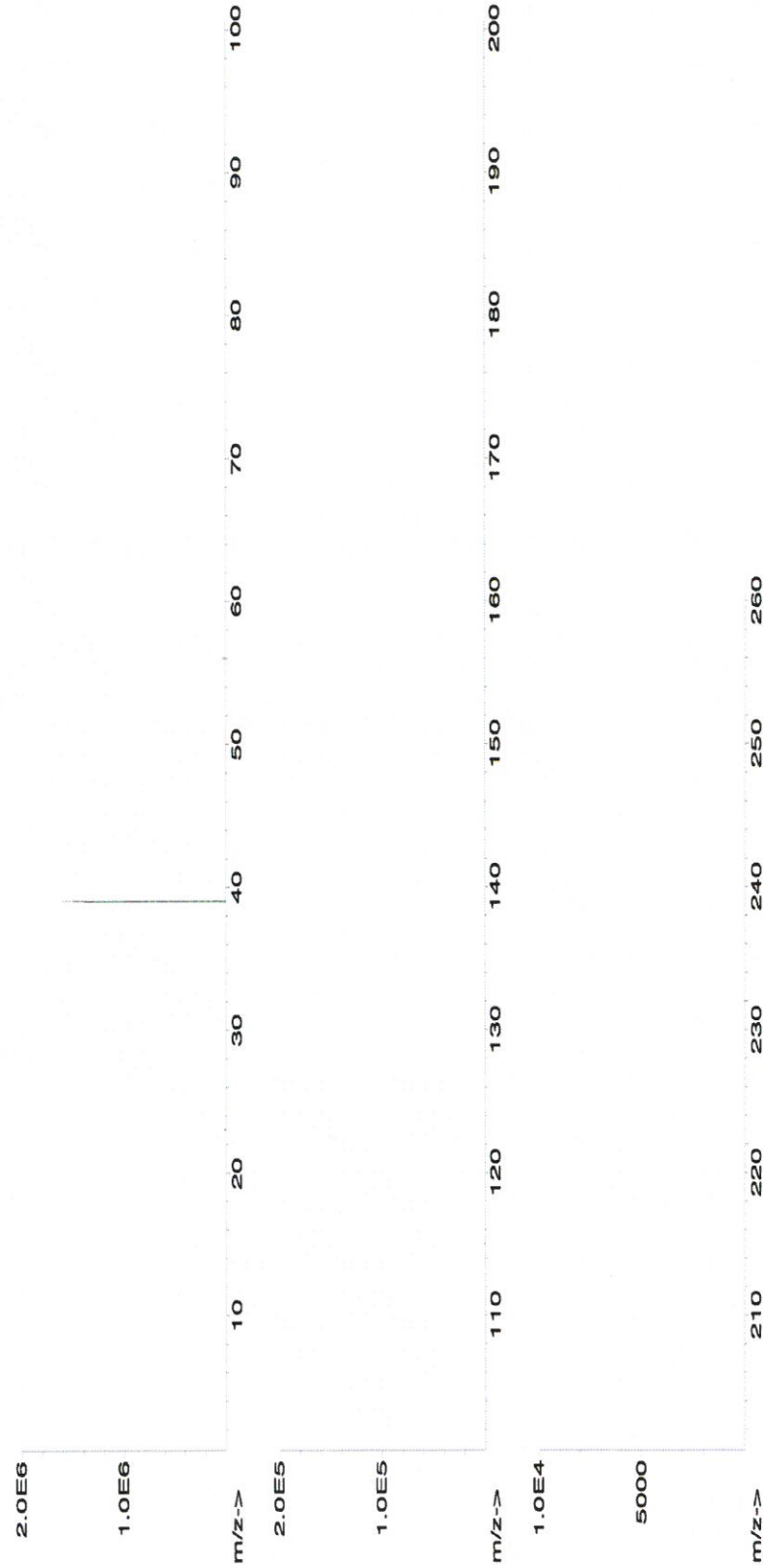
Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	(Solvent Safety Info. On Attached pg.)	NIST SRM
1. Potassium nitrate (K)	IN034 KD012018A1	10000	99.999	0.10	38.1	52.4836	52.4848	10000.2	20.1	7757-79-1	5 mg/m3	orl-rat 3015 mg/kg 3141a

SDS Information

Expanded

Formulated By:	Lawrence Barry	022620
Reviewed By:	Pedro L. Rentas	022620

[1] Spectrum No.1 [35.763 sec]:58119.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Ti	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K		T		Ta	<0.02	Tl	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



R: 02/14/20 - M4550, M4551

CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

57056
102519
Barium (Ba)

Expiration Date:
Recommended Storage:
Nominal Concentration (µg/mL):
NIST Test Number:

102522
Ambient (20 °C)
1000
6UTB

Volume shown below was diluted to (mL):

1999.61

5E-05 Balance Uncertainty
0.153 Flask Uncertainty

Lot #

18147888

Solvent:

Nitric Acid

2.0%

40.0
(mL)

Nitric Acid

Formulated By:	Lawrence Barry	102519
Reviewed By:	Pedro L. Rentas	102519

Expanded

SDS Information

Uncertainty (Solvent Safety Info. On Attached pg.) NIST
+/- (µg/mL) CAS# OSHA PEL (TWA) LD50 SRM

Compound

1. Barium nitrate (Ba) 58156 082019 0.1000 200.0 0.084 1000 10000.0 1000.0 2.2 10022-31-8 0.5 mg/m3 orl-rat 355 mg/kg 3104a

[1] Spectrum No.1 [19.234 sec]:57056Q.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.02	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	T	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.2	Fe	<0.02	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution
Catalog Number: CHEM-CLP-4
Lot Number: R2-MEB694243
Matrix: 3% (v/v) HNO₃
3% (v/v) HF
Value / Analyte(s): 1 000 µg/mL ea:
Boron, Molybdenum,
Silicon, Tin,
Titanium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Boron, B	1 000 ± 7 µg/mL	Molybdenum, Mo	1 000 ± 5 µg/mL
Silicon, Si	1 000 ± 7 µg/mL	Tin, Sn	1 000 ± 5 µg/mL
Titanium, Ti	1 000 ± 7 µg/mL		

Density: 1.031 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
B	ICP Assay	3107	110830
Mo	ICP Assay	3134	130418
Si	ICP Assay	3150	130912
Sn	ICP Assay	3161a	140917
Ti	ICP Assay	3162a	130925

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{\text{CRM/RM}}$, where two or more methods of characterization are used is the weighted mean of the results:

$$X_{\text{CRM/RM}} = \sum(w_i)(X_i)$$

X_i = mean of Assay Method i with standard uncertainty $u_{\text{char } i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{\text{char } i}^2) / (\sum(1/u_{\text{char } i}^2))$$

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k(u_{\text{char}}^2 + u_{\text{bb}}^2 + u_{\text{Its}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char}} = [\sum(w_i)^2(u_{\text{char } i}^2)]^{1/2}$ where $u_{\text{char } i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{Its} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{\text{CRM/RM}}$, where one method of characterization is used is the mean of individual results:

$$X_{\text{CRM/RM}} = (X_a)(u_{\text{char } a})$$

X_a = mean of Assay Method A with

$u_{\text{char } a}$ = the standard uncertainty of characterization Method A

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k(u_{\text{char } a}^2 + u_{\text{bb}}^2 + u_{\text{Its}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char } a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{Its} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- 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/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

HF Note: This standard should not be prepared or stored in glass.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 29, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- June 29, 2024

- The date after which this CRM/RM should not be used.
- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution
 Catalog Number: CHEM-QC-4
 Lot Number: R2-MEB694244
 Matrix: 3% (v/v) HNO₃
 3% (v/v) HF
 Value / Analyte(s): 1 000 µg/mL ea:
 Boron, Molybdenum,
 Silicon, Tin,
 Titanium

Second Source: Whenever possible, this solution was manufactured from a second set of concentrates in our manufacturing facility.

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Boron, B	1 000 ± 7 µg/mL	Molybdenum, Mo	1 000 ± 5 µg/mL
Silicon, Si	1 000 ± 7 µg/mL	Tin, Sn	1 000 ± 4 µg/mL
Titanium, Ti	1 000 ± 6 µg/mL		

Density: 1.030 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
B	ICP Assay	3107	110830
Mo	ICP Assay	3134	130418
Si	ICP Assay	3150	130912
Sn	ICP Assay	3161a	070330
Sn	Calculated		See Sec. 4.2
Ti	ICP Assay	3162a	130925

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{\text{CRM/RM}}$, where two or more methods of characterization are used is the weighted mean of the results:

$$X_{\text{CRM/RM}} = \sum(w_i)(X_i)$$

X_i = mean of Assay Method i with standard uncertainty $u_{\text{char } i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{\text{char } i}^2) / (\sum(1/u_{\text{char } i}^2))$$

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k(u_{\text{char}}^2 + u_{\text{bb}}^2 + u_{\text{Its}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char}} = [\sum(w_i)^2(u_{\text{char } i}^2)]^{1/2}$ where $u_{\text{char } i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{Its} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{\text{CRM/RM}}$, where one method of characterization is used is the mean of individual results:

$$X_{\text{CRM/RM}} = (X_a)(u_{\text{char } a})$$

X_a = mean of Assay Method A with

$u_{\text{char } a}$ = the standard uncertainty of characterization Method A

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k(u_{\text{char } a}^2 + u_{\text{bb}}^2 + u_{\text{Its}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char } a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{Its} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- 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/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

HF Note: This standard should not be prepared or stored in glass.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 29, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **June 29, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution
 Catalog Number: CGSR10
 Lot Number: P2-SR681562
 Matrix: 2% (v/v) HNO₃
 Value / Analyte(s): 10 000 µg/mL ea:
 Strontium
 Starting Material: SrCO₃
 Starting Material Lot#: M2-2192
 Starting Material Purity: 99.9993%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10012 ± 30 µg/mL
Density: 1.030 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1	9992 ± 56 µg/mL ICP Assay NIST SRM Traceable to 3153a Lot Number: K2-SR650985
Assay Method #2	10035 ± 25 µg/mL EDTA NIST SRM 928 Lot Number: 928
Assay Method #3	9997 ± 23 µg/mL Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{\text{CRM/RM}}$, where two or more methods of characterization are used is the weighted mean of the results:

$$X_{\text{CRM/RM}} = \sum(w_i)(X_i)$$

X_i = mean of Assay Method i with standard uncertainty $u_{\text{char } i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{\text{char } i}^2) / (\sum(1/u_{\text{char } i}^2))$$

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k(u_{\text{char}}^2 + u_{\text{bb}}^2 + u_{\text{Its}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char}} = [\sum(w_i)^2(u_{\text{char } i})^2]^{1/2}$ where $u_{\text{char } i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{Its} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{\text{CRM/RM}}$, where one method of characterization is used is the mean of individual results:

$$X_{\text{CRM/RM}} = (X_a)(u_{\text{char } a})$$

X_a = mean of Assay Method A with

$u_{\text{char } a}$ = the standard uncertainty of characterization Method A

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k(u_{\text{char } a}^2 + u_{\text{bb}}^2 + u_{\text{Its}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char } a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{Its} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- 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/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag <	0.001980	M Eu <	0.000495	O Na	0.001954	M Se <	0.013862	O Zn	0.001399
O Al	0.003619	O Fe	0.004005	M Nb <	0.000495	i Si <		M Zr <	0.000495
M As <	0.000495	M Ga <	0.000495	M Nd <	0.000495	M Sm <	0.000495		
M Au <	0.000989	M Gd <	0.000495	O Ni <	0.007631	M Sn <	0.000990		
M B <	0.039606	M Ge <	0.000495	M Os <	0.000494	s Sr <			
M Ba	0.063290	M Hf <	0.000495	i P <		M Ta <	0.000495		
M Be <	0.000990	M Hg <	0.000989	M Pb <	0.002970	M Tb <	0.000495		
M Bi <	0.000495	M Ho <	0.000495	M Pd <	0.003957	M Te <	0.027724		
O Ca	0.041523	M In <	0.000495	M Pr <	0.000495	M Th <	0.000990		
M Cd	0.013068	M Ir <	0.000494	M Pt <	0.002970	M Ti <	0.005940		
M Ce <	0.004950	O K <	0.008184	M Rb <	0.002970	M Tl <	0.000495		
M Co <	0.000495	La <	0.000495	M Re <	0.000495	M Tm <	0.000495		
O Cr <	0.003207	O Li <	0.000884	O Rh <	0.012829	M U <	0.001485		
M Cs <	0.000990	M Lu <	0.002970	M Ru <	0.000989	M V <	0.001980		
M Cu	0.000971	O Mg	0.000627	i S <		M W <	0.003960		
M Dy <	0.000495	O Mn	0.000651	M Sb <	0.014852	O Y <	0.000995		
M Er <	0.000495	M Mo <	0.001980	M Sc <	0.001980	M Yb <	0.000495		

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 87.62 +2 6 Sr(H₂O)₆+2

Chemical Compatibility - Soluble in HCl, and HNO₃. Avoid H₂SO₄, HF and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicate, carbonate, hydroxide, oxide, fluoride, sulfate, oxalate, chromate, arsenate and tungstate in neutral aqueous media.

Stability - 2-100 ppb levels stable for months in 1% HNO₃ / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1 - 3.5% HNO₃ / LDPE container.

Sr Containing Samples (Preparation and Solution) -Metal (Best dissolved in diluted HNO₃); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Dry ash and dissolution in dilute HCl).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 88 amu	1200 ppt	N/A	72Ge16O, 176Yb+2, 176Lu+2 , 176Hf+2
ICP-OES 407.771 nm	0.0004 / 0.00006 µg/mL	1	U, Ce
ICP-OES 421.552 nm	0.0008 / 0.00004 µg/mL	1	Rb
ICP-OES 460.733 nm	0.07 / 0.003 µg/mL	1	Ce

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

August 02, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **August 02, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control



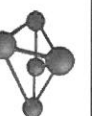
Certifying Officer:

Paul Gaines
CEO, Senior Technical Director





R: 10/11/19
Certified Reference Material CRM
DP: 08/24/20
M 4628



CERTIFIED WEIGHT REPORT:

Part Number: 58126
Lot Number: 091619
Description: Iron (Fe)

Solvent: 18147888 Nitric Acid
Lot #

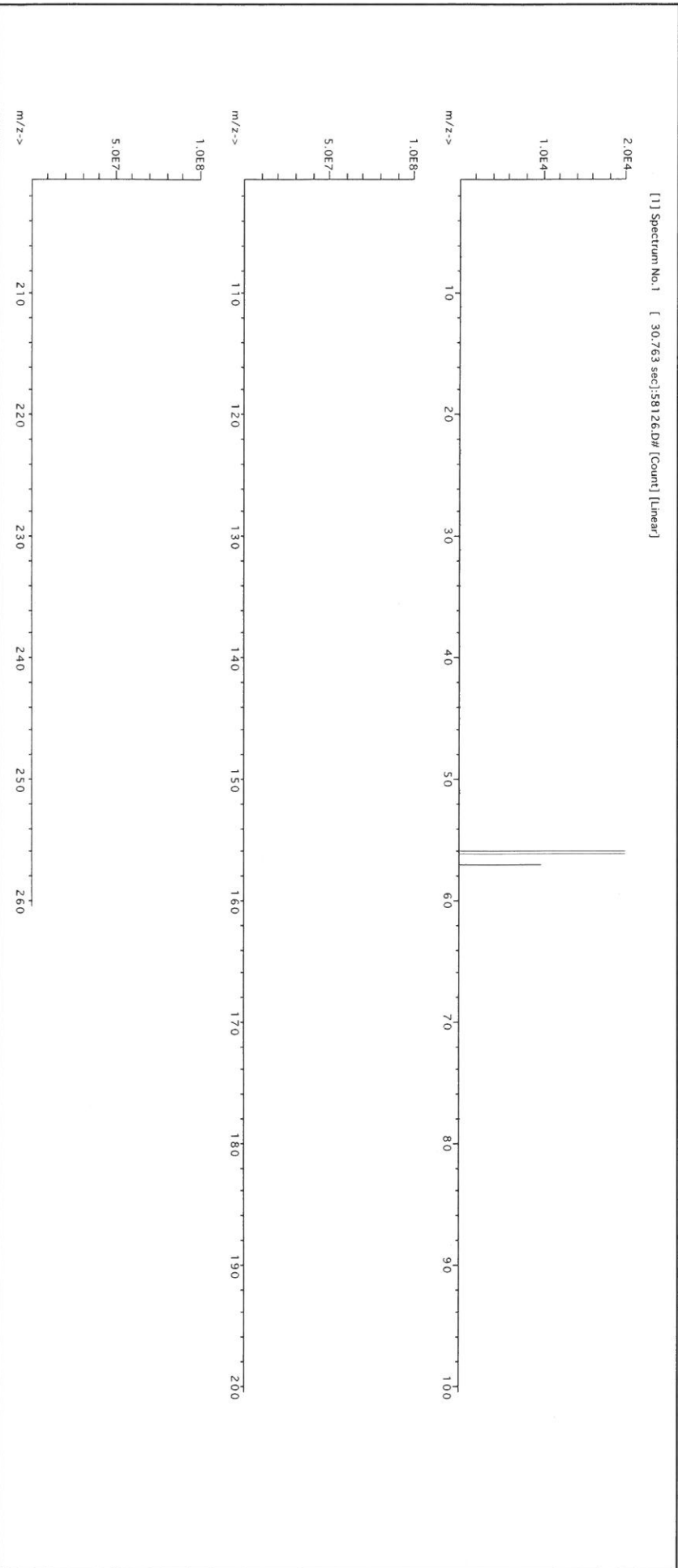
Expiration Date: 091622
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 3000.23 0.252 Flask Uncertainty

<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
Reviewed By:	<i>Pedro L. Rentas</i>
	Pedro L. Rentas
	091619

Compound

RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Iron (Fe) IN346 2E+06 10000 99.99 0.10 100.0 30.0053 30.0090 10001.2 20.1 7439-89-6 5 mg/m3 or-rat 7500mg/kg 3126A





Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS (µg/L)

Al	<0.3	Cd	<0.1	Dy	<0.1	Hf	<0.1	Li	<0.1	Ni	22	Pr	<0.1	Se	<0.5	Tb	<0.1	W	<0.1
Sb	12	Ca	<5	Er	<0.1	Ho	<0.1	Lu	<0.1	Nb	<0.1	Re	<0.1	Si	<10	Te	<0.1	U	<0.3
As	<5	Ce	<0.1	Eu	<0.1	In	<0.1	Mg	<0.5	Os	<0.1	Rh	<0.1	Ag	<5	Tl	<0.1	V	<0.3
Ba	<0.1	Cs	<0.1	Gd	<0.1	Ir	<0.1	Mn	110	Pd	<0.1	Rb	<0.1	Na	<5	Th	<0.1	Yb	<0.1
Be	<0.1	Cr	12	Ga	<3	Fe	T	Hg	<0.1	P	<0.1	Ru	<0.1	Sr	<0.1	Tm	<0.1	Y	<0.1
Bi	<0.1	Co	42	Ge	40	La	<0.1	Mo	5	Pt	<0.1	Sm	<0.1	S	<0.1	Sn	<3	Zn	<0.1
B	<5	Cu	17	Au	<0.1	Pb	<0.3	Nd	<0.1	K	<5	Sc	<0.1	Ta	<0.1	Ti	<0.1	Zr	<0.1

(T) = Target analyte

Physical Characterization:

Certified by:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{\text{CRM/RM}}$, where two or more methods of characterization are used is the weighted mean of the results:

$$X_{\text{CRM/RM}} = \sum(w_i)(X_i)$$

X_i = mean of Assay Method i with standard uncertainty $u_{\text{char } i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{\text{char } i}^2) / (\sum(1/u_{\text{char } i}^2))$$

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k(u_{\text{char}}^2 + u_{\text{bb}}^2 + u_{\text{Its}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char}} = [\sum(w_i)^2(u_{\text{char } i})^2]^{1/2}$ where $u_{\text{char } i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{Its} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{\text{CRM/RM}}$, where one method of characterization is used is the mean of individual results:

$$X_{\text{CRM/RM}} = (X_a)(u_{\text{char } a})$$

X_a = mean of Assay Method A with

$u_{\text{char } a}$ = the standard uncertainty of characterization Method A

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k(u_{\text{char } a}^2 + u_{\text{bb}}^2 + u_{\text{Its}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char } a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{Its} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- 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/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag <	0.001980	M Eu <	0.000495	O Na	0.000201	M Se <	0.013862	O Zn	0.000143
O Al	0.000372	O Fe	0.000412	M Nb <	0.000495	i Si <		M Zr <	0.000495
M As <	0.000495	M Ga <	0.000495	M Nd <	0.000495	M Sm <	0.000495		
M Au <	0.000989	M Gd <	0.000495	O Ni <	0.007631	M Sn <	0.000990		
M B <	0.039606	M Ge <	0.000495	M Os <	0.000494	s Sr <			
M Ba	0.006511	M Hf <	0.000495	i P <		M Ta <	0.000495		
M Be <	0.000990	M Hg <	0.000989	M Pb <	0.002970	M Tb <	0.000495		
M Bi <	0.000495	M Ho <	0.000495	M Pd <	0.003957	M Te <	0.027724		
O Ca	0.004272	M In <	0.000495	M Pr <	0.000495	M Th <	0.000990		
M Cd	0.001344	M Ir <	0.000494	M Pt <	0.002970	M Ti <	0.005940		
M Ce <	0.004950	O K <	0.008184	M Rb <	0.002970	M Tl <	0.000495		
M Co <	0.000495	La <	0.000495	M Re <	0.000495	M Tm <	0.000495		
O Cr <	0.003207	O Li <	0.000884	O Rh <	0.012829	M U <	0.001485		
M Cs <	0.000990	M Lu <	0.002970	M Ru <	0.000989	M V <	0.001980		
M Cu	0.000099	O Mg	0.000064	i S <		M W <	0.003960		
M Dy <	0.000495	O Mn	0.000067	M Sb <	0.014852	O Y <	0.000995		
M Er <	0.000495	M Mo <	0.001980	M Sc <	0.001980	M Yb <	0.000495		

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 87.62 +2 6 Sr(H₂O)₆+2

Chemical Compatibility - Soluble in HCl, and HNO₃. Avoid H₂SO₄, HF and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicate, carbonate, hydroxide, oxide, fluoride, sulfate, oxalate, chromate, arsenate and tungstate in neutral aqueous media.

Stability - 2-100 ppb levels stable for months in 1% HNO₃ / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1 - 3.5% HNO₃ / LDPE container.

Sr Containing Samples (Preparation and Solution) -Metal (Best dissolved in diluted HNO₃); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Dry ash and dissolution in dilute HCl).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 88 amu	1200 ppt	N/A	72Ge16O, 176Yb+2, 176Lu+2 , 176Hf+2
ICP-OES 407.771 nm	0.0004 / 0.00006 µg/mL	1	U, Ce
ICP-OES 421.552 nm	0.0008 / 0.00004 µg/mL	1	Rb
ICP-OES 460.733 nm	0.07 / 0.003 µg/mL	1	Ce

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

October 10, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **October 10, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control



Certifying Officer:

Paul Gaines
CEO, Senior Technical Director





CERTIFIED WEIGHT REPORT:

Part Number: **57042**Lot Number: **082019**Description: **Molybdenum (Mo)**

Lot # MKBQ8597V Solvent: Ammonium hydroxide

0.5% 10.0 (mL) Ammonium hydroxide

Expiration Date: 082022

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): **1000**

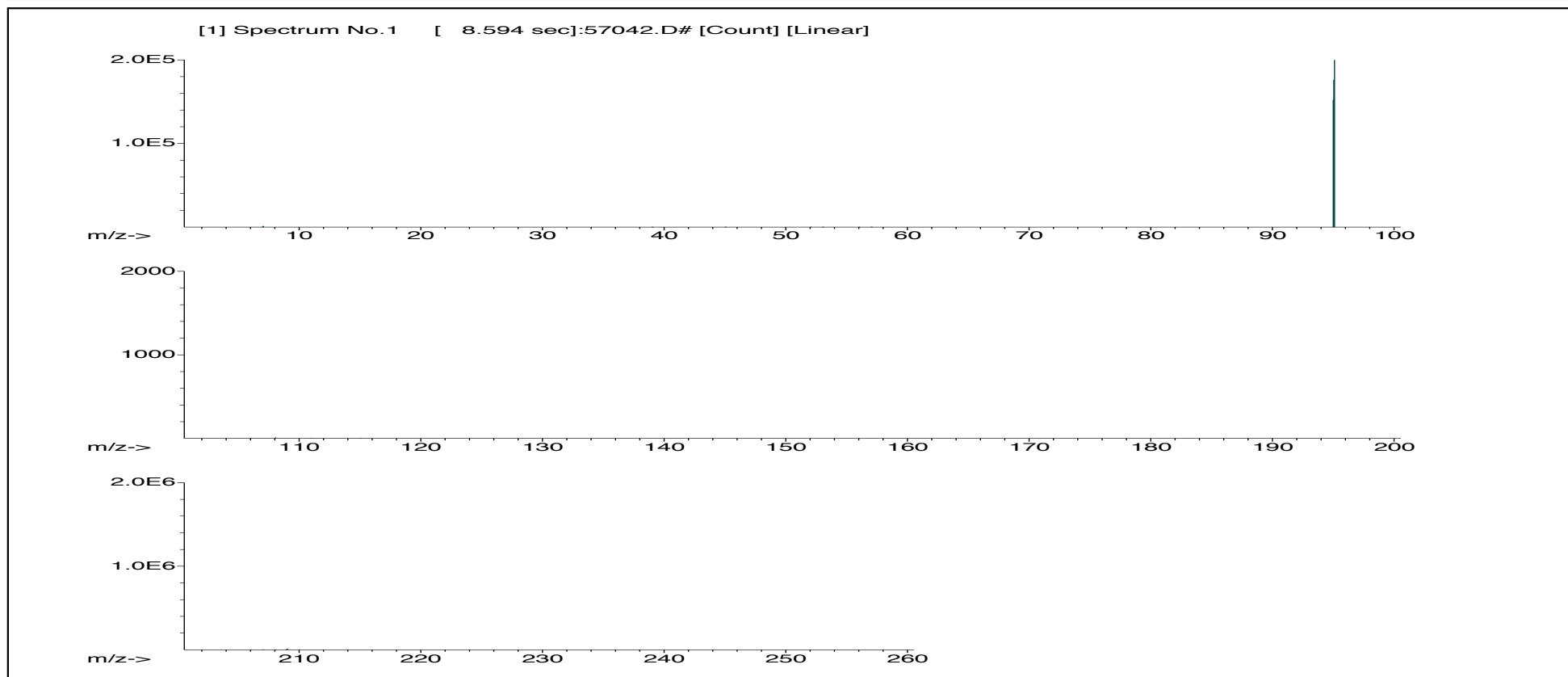
NIST Test Number: 6UTB

5E-05 Balance Uncertainty

Volume shown below was diluted to (mL): 1999.61 0.153 Flask Uncertainty

Formulated By:	Lawrence Barry	082019
Reviewed By:	Pedro L. Rentas	082019

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.)			NIST SRM
										CAS#	OSHA PEL (TWA)	LD50	
1. Ammonium molybdate (Mo)	58142	051619	0.1000	199.9	0.084	1000	10001.2	1000.0	2.2	13106-76-8	5 mg(Mo)/m3	orl-rat 333 mg/kg	3134





Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS ($\mu\text{g/mL}$)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	T	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



Certified Reference Material CRM



CERTIFIED WEIGHT REPORT:

Part Number: 57051
Lot Number: 052120
Description: Antimony (Sb)

Lot # 19430153
Solvent: Nitric Acid

Expiration Date: 052123
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 23060
Volume shown below was diluted to (mL): 1999.61

<i>Lawrence Barry</i>	
Formulated By:	Lawrence Barry
Reviewed By:	<i>Pedro L. Ruelas</i>
	052120

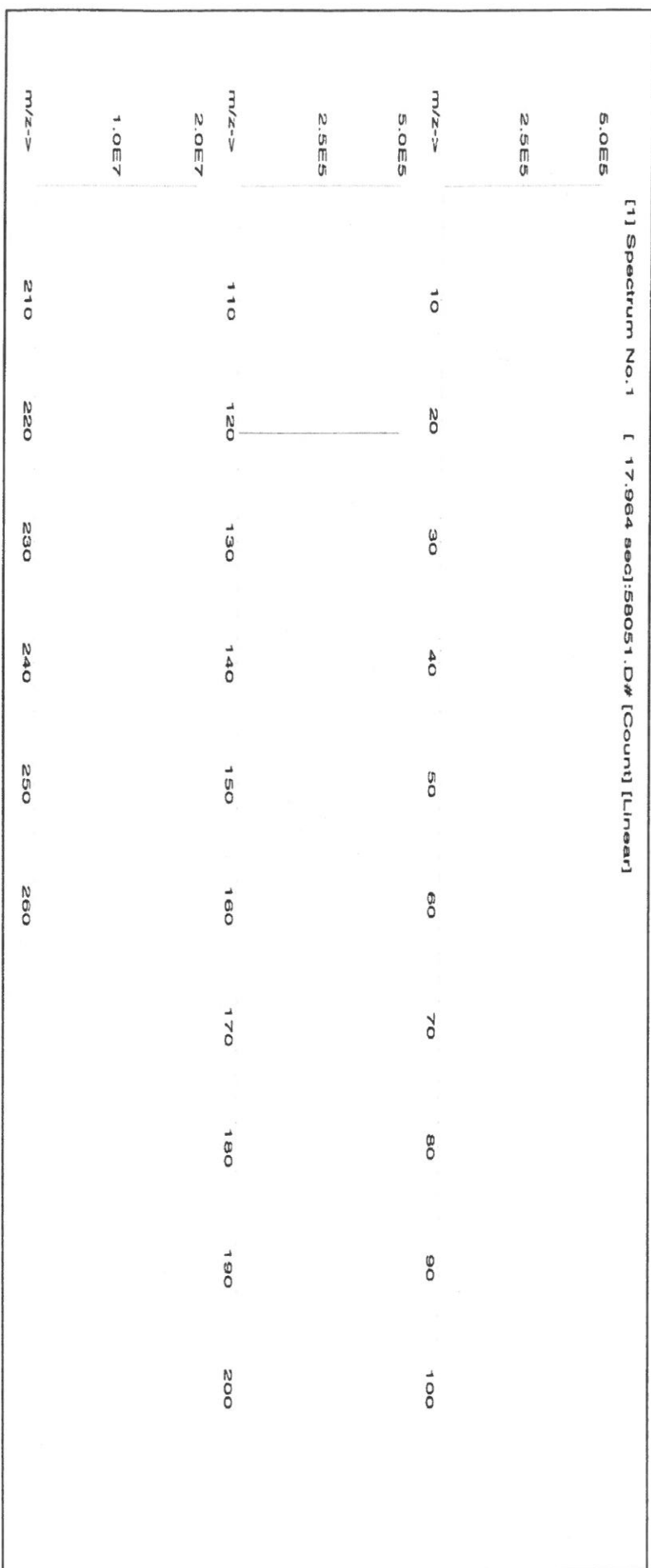
Balance Uncertainty 5E-05
Flask Uncertainty 0.153

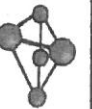
SDS Information

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
----------	-------------	------------	-----------------	-------------------	---------------------	-----------------------	-----------------------	---------------------	----------------------------------	------	----------------	------	----------

1. Antimony (Sb)	58151	091819	0.1000	199.9	0.084	1000	10000.8	1000.0	2.2	7440-36-0	0.5 mg/m ³	or-rat 100 mg/kg	3102a
------------------	-------	--------	--------	-------	-------	------	---------	--------	-----	-----------	-----------------------	------------------	-------

[1] Spectrum No. 1 [17.964 sec]:58051.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	T	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



Certified Reference Material CRM
M14656 **Li 10/28/20**



CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

57103
010320
Lithium (Li)

Solvent: 19430153 Nitric Acid
Lot #

Expiration Date: 010323
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000

2% 20.0 (mL) Nitric Acid

NIST Test Number: 6UTB

Weight shown below was diluted to (mL): 1000.86

5E-05 Balance Uncertainty
0.058 Flask Uncertainty

Formulated By:	Lawrence Barry
	010320
Reviewed By:	Pedro L. Rentas
	010320

Compound

Lot **Nominal** **Purity** **Uncertainty** **Assay**

RM# **Number** **Conc. (µg/mL)** **(%)** **Purity (%)** **(%)** **Target** **Actual**

Expanded
Uncertainty

(Solvent Safety Info. On Attached pg.) **NIST**

SRM

SDS Information

1. Lithium nitrate (Li)

IN019 UZ042018A1

10000

99.999

0.10

10.0

100.0869

100.0918

10000.5

20.0

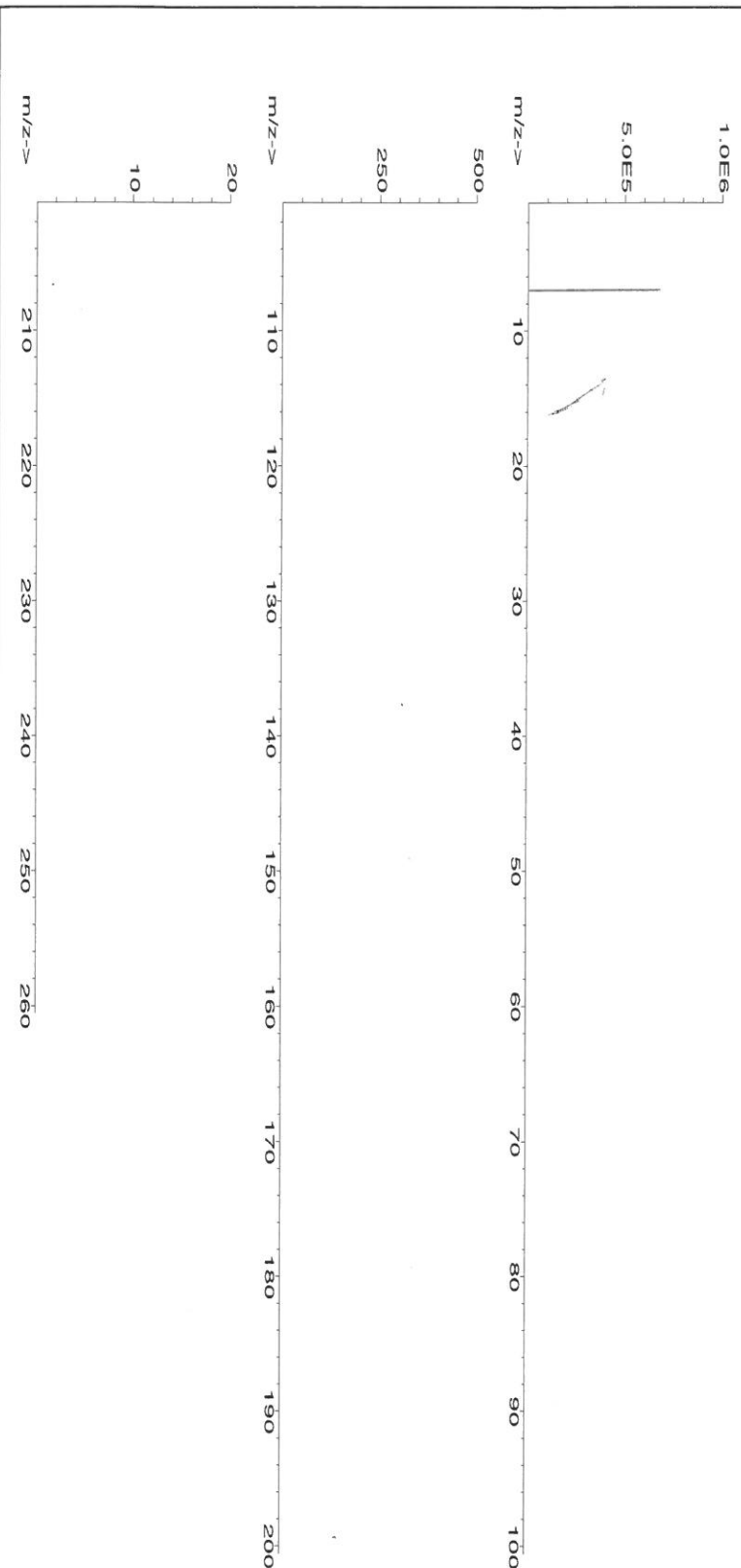
7790-69-4

5 mg/m3

or-rat 1426 mg/kg

NA

[1] Spectrum No. 1 [9.619 sec]:58103.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	T	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Bc	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pl	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * All Standards should be certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number: **58024**
Lot Number: **082620**
Description: **Chromium (Cr)**

Lot # 19410105
Solvent: Nitric Acid

2.0% 40.0
(mL) Nitric Acid

Expiration Date: 082623
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): **1000**

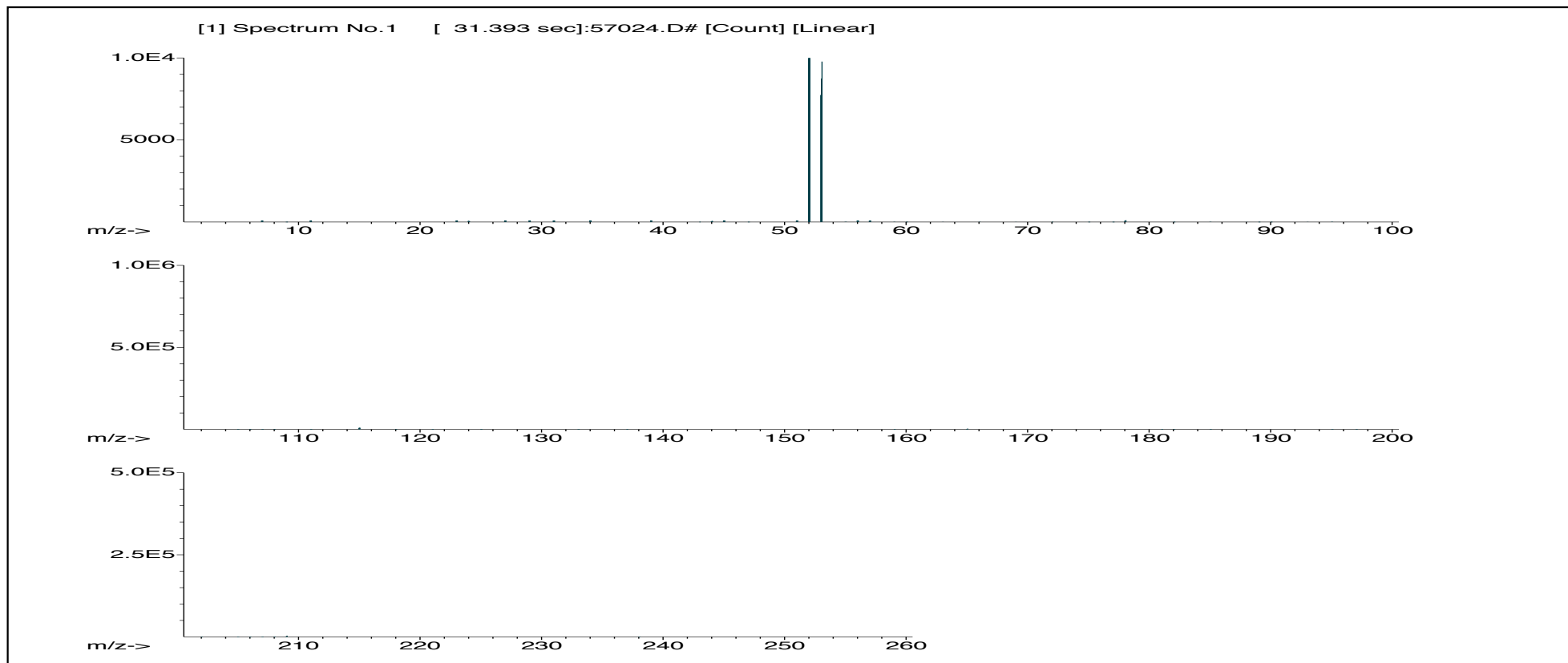
NIST Test Number: 23060

5E-05 Balance Uncertainty

Volume shown below was diluted to (mL): 2000.02 0.058 Flask Uncertainty

Formulated By:	Lawrence Barry	082620
Reviewed By:	Pedro L. Rentas	082620

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.)			NIST SRM
										CAS#	OSHA PEL (TWA)	LD50	
1. Chromium (III) nitrate nonahydrate (Cr)	58124	121619	0.1000	200.0	0.084	1000	10000.2	1000.0	2.2	7789-02-8	0.5 mg(Cr)/m3	ori-rat 3250 mg/kg	3112a





Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS ($\mu\text{g/mL}$)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	T	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



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Instructions for QATS Reference Material: ICP-AES ICS

**QATS LABORATORY INORGANIC REFERENCE MATERIAL
INTERFERENCE CHECK SAMPLE SET FOR ICP-AES (ICSA WITH ICSB)**

NOTE: These instructions are for advisory purposes only. If any apparent conflict exists between these instructions and the analytical protocol or your contract, disregard these instructions.

APPLICATION: For use with CLP SOWs and revisions.

CAUTION: Read instructions carefully before opening bottle(s) and proceeding with the analyses.



(A) SAMPLE DESCRIPTION

Enclosed is a set of one (1) or more bottles of Aqueous Reference Material, each composed of metals at various concentrations and prepared with nitrate salts and oxy-acids of the respective elements in a 5% nitric acid matrix. **For the reference material source in reporting ICSA and ICSAB mixture use "USEPA". For the reference material lot number for the ICSA use "ICSA-1211" and for the ICSAB mixture use "ICSA-1211+ICSB-0710".**

CAUTION: The bottle(s) should be protected from light during storage to ensure the stability of silver which is contained in the ICSB solution. The bottle(s) should be stored at room temperature. **Do not allow the solution(s) to freeze.**

(B) BREAKAGE OR MISSING ITEMS

Check the contents of the shipment carefully for any broken, leaking, or missing items. Check that the seal is intact on each bottle. Refer to the enclosed chain-of-custody record. Report any problems to Mr. Keith Strout, APTIM Federal Services, LLC, at (702) 895-8722. If requested, return the chain-of-custody record with appropriate annotations and signatures to the address provided below.

**QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
APTIM Federal Services, LLC
2700 Chandler Avenue - Building C
Las Vegas, NV 89120**

(C) ANALYSIS OF SAMPLES

The interference check sample set is to be used to verify inter-element and background correction factors of inductively-coupled plasma (ICP) spectrometers. This reference material set consists of two (2) concentrated solutions. The ICSA solution contains the four (4) interferent elements: Al, Ca, Fe, and Mg. The ICSB solution contains the analytes: Ag, As, Sb, Ba, Be,





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APTIM

Instructions for QATS Reference Material: ICP-AES ICS

Cd, Co, Cr, Cu, Mn, Ni, Pb, Ti, Se, V, and Zn. This instruction sheet provides the nominal values for ICP-AES Part A and Part B target analytes when diluted as directed.

Using Class "A" glassware, preparation and analysis must be performed according to the following instructions:

ICSA-1211, Interferents: Pipet 10 mL of the ICSA solution into a 100 mL volumetric flask and dilute to volume with 2% v/v HNO₃. Analyze this ICSA solution by ICP-AES.

ICSB-0710, Analytes, mixed with ICSA-1211, Interferents: Pipet 10 mL of the ICSA solution and 10 mL of the ICSB solution into a 100 mL volumetric flask and dilute to volume with 2% v/v HNO₃. Analyze this ICSAB solution by ICP-AES.

(D) "CERTIFIED VALUE" CONCENTRATIONS OF QATS ICP-AES ICS SOLUTION(S)

The "Certified Value" concentrations of the elements, listed in Table 1 below, were derived from statistically pooled analysis results from the following sources, if available: QATS Laboratory, CLP laboratories, Quarterly Blind (QB) events, CLP pre-award events, and external referee laboratories.

Table 1. "CERTIFIED VALUES" FOR INTERFERENCE CHECK SAMPLE ICP-AES ICSA-1211, AND ICSA-1211 MIXED WITH ICSB-0710

Element	CRQL	Part A (µg/L)	Low Limit (µg/L)	High Limit (µg/L)	Part A +Part B (µg/L)	Low Limit (µg/L)	High Limit (µg/L)
Al	200	254900	203920	305880	246800	197440	296160
Sb	60	(0)*	-60	60	618	494	742
As	10	(0)	-10	10	104	83	125
Ba	200	(6)	-194	206	(537)	337	737
Be	5	(0)	-5	5	495	396	594
Cd	5	(1)	-4	6	972	778	1166
Ca	5000	244500	195600	293400	234900	187920	281880
Cr	10	52	42	62	542	434	650
Co	50	(0)	-50	50	476	381	571
Cu	25	(2)	-23	27	511	409	613
Fe	100	100700	80560	120840	99320	79456	119184
Pb	10	(0)	-10	10	(49)	39	59
Mg	5000	255400	204320	306480	248000	198400	297600
Mn	15	(7)	-8	22	507	406	608
Ni	40	(2)	-38	42	954	763	1145
Se	35	(0)	-35	35	(46)	11	81
Ag	10	(0)	-10	10	201	161	241
Ti	25	(0)	-25	25	(108)	83	133
V	50	(0)	-50	50	491	393	589
Zn	60	(0)	-60	60	952	762	1142

* The acceptance ranges for all analytes in parentheses in the above table were determined using the listed certified value ± 1 times the associated CLP SOW CRQL. The acceptance ranges for all other analytes were determined using the certified value ± 20 percent of the listed certified value.

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution
 Catalog Number: CGV1
 Lot Number: P2-V685591
 Matrix: 2% (v/v) HNO₃
 Value / Analyte(s): 1 000 µg/mL ea:
 Vanadium
 Starting Material: V₂O₅
 Starting Material Lot#: 1782
 Starting Material Purity: 99.9939%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1002 ± 4 µg/mL
Density: 1.016 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1	1004 ± 5 µg/mL ICP Assay NIST SRM 3165 Lot Number: 160906
Assay Method #2	1002 ± 3 µg/mL EDTA NIST SRM 928 Lot Number: 928
Assay Method #3	1000 ± 3 µg/mL Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{\text{CRM/RM}}$, where two or more methods of characterization are used is the weighted mean of the results:

$$X_{\text{CRM/RM}} = \sum(w_i)(X_i)$$

X_i = mean of Assay Method i with standard uncertainty $u_{\text{char } i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{\text{char } i}^2) / (\sum(1/u_{\text{char } i}^2))$$

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k(u_{\text{char}}^2 + u_{\text{bb}}^2 + u_{\text{Its}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char}} = [\sum(w_i)^2(u_{\text{char } i})^2]^{1/2}$ where $u_{\text{char } i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{Its} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{\text{CRM/RM}}$, where one method of characterization is used is the mean of individual results:

$$X_{\text{CRM/RM}} = (X_a)(u_{\text{char } a})$$

X_a = mean of Assay Method A with

$u_{\text{char } a}$ = the standard uncertainty of characterization Method A

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k(u_{\text{char } a}^2 + u_{\text{bb}}^2 + u_{\text{Its}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char } a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{Its} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- 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/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag < 0.000273	M Eu < 0.000118	O Na < 0.010915	M Se < 0.001167	M Zn < 0.006080
M Al < 0.006218	M Fe < 0.023106	M Nb < 0.001479	O Si < 0.036363	M Zr < 0.003181
M As < 0.000540	M Ga < 0.009451	M Nd < 0.000118	M Sm < 0.000118	
M Au < 0.000191	M Gd < 0.000118	M Ni < 0.003169	M Sn < 0.000733	
M B < 0.002950	M Ge < 0.000434	M Os < 0.000150	M Sr < 0.000060	
M Ba < 0.001024	M Hf < 0.000118	O P < 0.056000	M Ta < 0.000118	
M Be < 0.000118	M Hg < 0.000170	M Pb < 0.000241	M Tb < 0.000118	
M Bi < 0.000363	M Ho < 0.000118	M Pd < 0.000140	M Te < 0.002236	
O Ca < 0.011869	M In < 0.000118	M Pr < 0.000118	M Th < 0.000118	
M Cd < 0.000145	M Ir < 0.000118	M Pt < 0.000118	M Ti < 0.001386	
M Ce < 0.000245	M K < 0.002082	M Rb < 0.000118	M Tl < 0.000118	
M Co < 0.000119	La < 0.000118	M Re < 0.000118	M Tm < 0.000118	
O Cr < 0.017206	M Li < 0.000501	M Rh < 0.000118	M U < 0.000395	
M Cs < 0.000477	M Lu < 0.000118	M Ru < 0.000118	s V <	
M Cu < 0.002021	M Mg < 0.000612	n S <	M W < 0.000174	
M Dy < 0.000118	M Mn < 0.000649	M Sb < 0.008706	M Y < 0.000118	
M Er < 0.000118	O Mo < 0.007182	M Sc < 0.000118	M Yb < 0.000118	

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 50.94 +5 6 H2V10O284-

Chemical Compatibility -Soluble in HCl, HNO3, H2SO4, HF, H3PO4 and strong basic media. Stable with most metals and inorganic anions in acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.

V Containing Samples (Preparation and Solution) -Metal (Fusion with NaOH or KOH in NiO or Na2CO3 / KNO3); Oxides (V2O3 - use HCl, V2O4 - use HCl or HNO3, V2O5 - use concentrated acids); Ores (Na2CO3 / KNO3 in PtO caution - nitrates attack Pto followed by water extraction of fuseate); Organic Matrices (Ash at 450 EC followed by dissolving according to V2O5 above) .

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 51 amu	4 ppt	N/A	34S16O1H, 35Cl16O, 38Ar13C, 36Ar15N, 36Ar14N1H, 37Cl14N,36S15N, 33S18O, 34S17O, 102Ru+2,02Pd+2
ICP-OES 290.882 nm	0.008 / 0.0008 µg/mL	1	Hf, Nb
ICP-OES 292.402 nm	0.006 / 0.001 µg/mL	1	Th
ICP-OES 309.311 nm	0.005 / 0.001 µg/mL	1	Mg, U, Th

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

December 05, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **December 05, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control



Certifying Officer:

Paul Gaines
CEO, Senior Technical Director





M478

R: 01/12/24

29

Certified Reference Material CRM



CERTIFIED WEIGHT REPORT:

Part Number: 58025
Lot Number: 070620
Description: Manganese (Mn)

Lot # 19410105
Solvent: Nitric Acid

Expiration Date: 070623
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000

2.0% 40.0 (mL) Nitric Acid

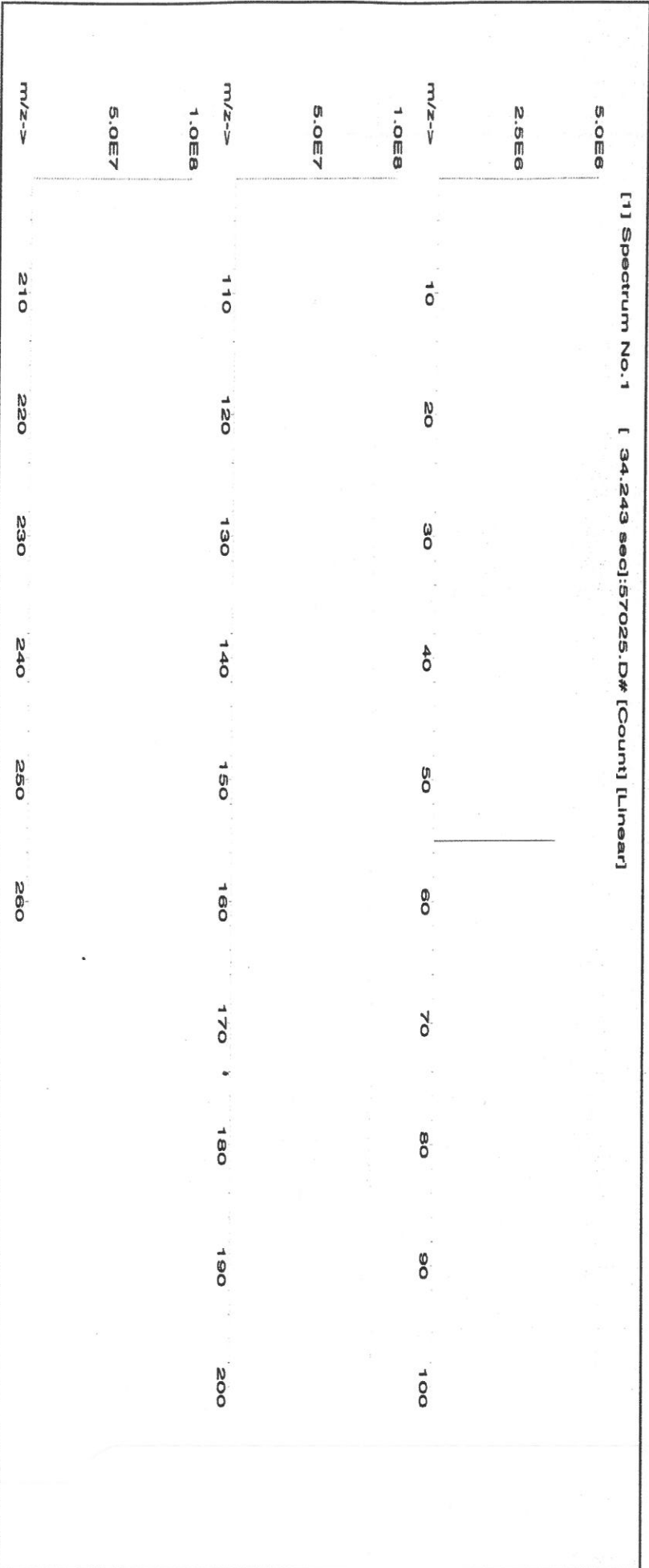
NIST Test Number: 23060

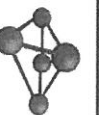
Volume shown below was diluted to (mL): 1999.61

Formulated By:	Lawrence Barry	070620
Reviewed By:	Pedro L. Rentas	070620

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	(Solvent Safety Info. On Attached pg.)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Manganese (II) nitrate tetrahydrate (Mn) 58125 010720 0.1000 199.9 0.084 1000 10000.7 1000.0 2.2 20694-39-7 5 mg/m3 or-ral >300mg/kg 3132





Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	T	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



M4768

R: 10/28/2020
Certified Reference Material CRM



CERTIFIED WEIGHT REPORT:

Part Number: 57028
Lot Number: 072420
Description: Nickel (Ni)

Lot # 19410105
Solvent: Nitric Acid

Expiration Date: 072423

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): 1000

NIST Test Number: 23060

Volume shown below was diluted to (mL): 2000.02

5E-05 Balance Uncertainty
0.058 Flask Uncertainty

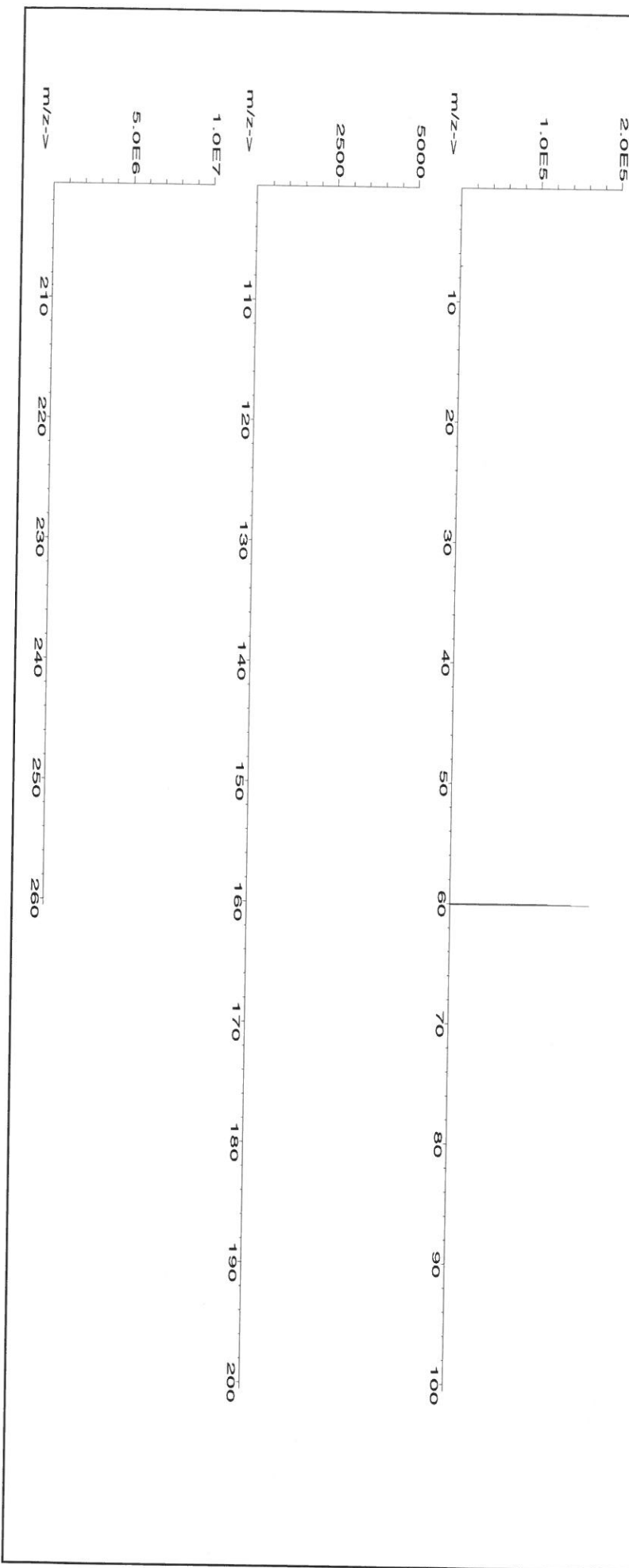
2.0% 40.0 (mL) Nitric Acid

<i>Lawrence Barry</i>	
Formulated By:	Lawrence Barry
	072420
<i>Pedro L. Ruelas</i>	
Reviewed By:	Pedro L. Ruelas
	072420

Compound		Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
----------	--	-------------	------------	-----------------	-------------------	------------------	-----------------------	-----------------------	---------------------	----------------------------------	------	----------------	------	----------

1. Nickel (II) nitrate Hexahydrate (Ni)	58128	082719	0.1000	200.0	0.013	1000	10000.5	1000.0	2.0	13478-00-7	1 mg/m3	orl-rat 1620 mg/kg	3136
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[1] Spectrum No.1 [9.135 sec]:58028.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	T	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Tc	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

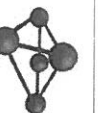
Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
 - * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
 - * All standard containers are meticulously cleaned prior to use.
 - * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
 - * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
 - * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



MA 4810 R: 10/11/19 (134)

Certified Reference Material CRM



CERTIFIED WEIGHT REPORT:

Part Number: 58113
Lot Number: 072519
Description: Aluminum (Al)

Solvent: 1814788 Nitric Acid

Lot #

Expiration Date: 072522
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB

2% 40.0 (mL) Nitric Acid

Weight shown below was diluted to (mL): 1999.61 5E-05 Balance Uncertainty 0.153 Flask Uncertainty

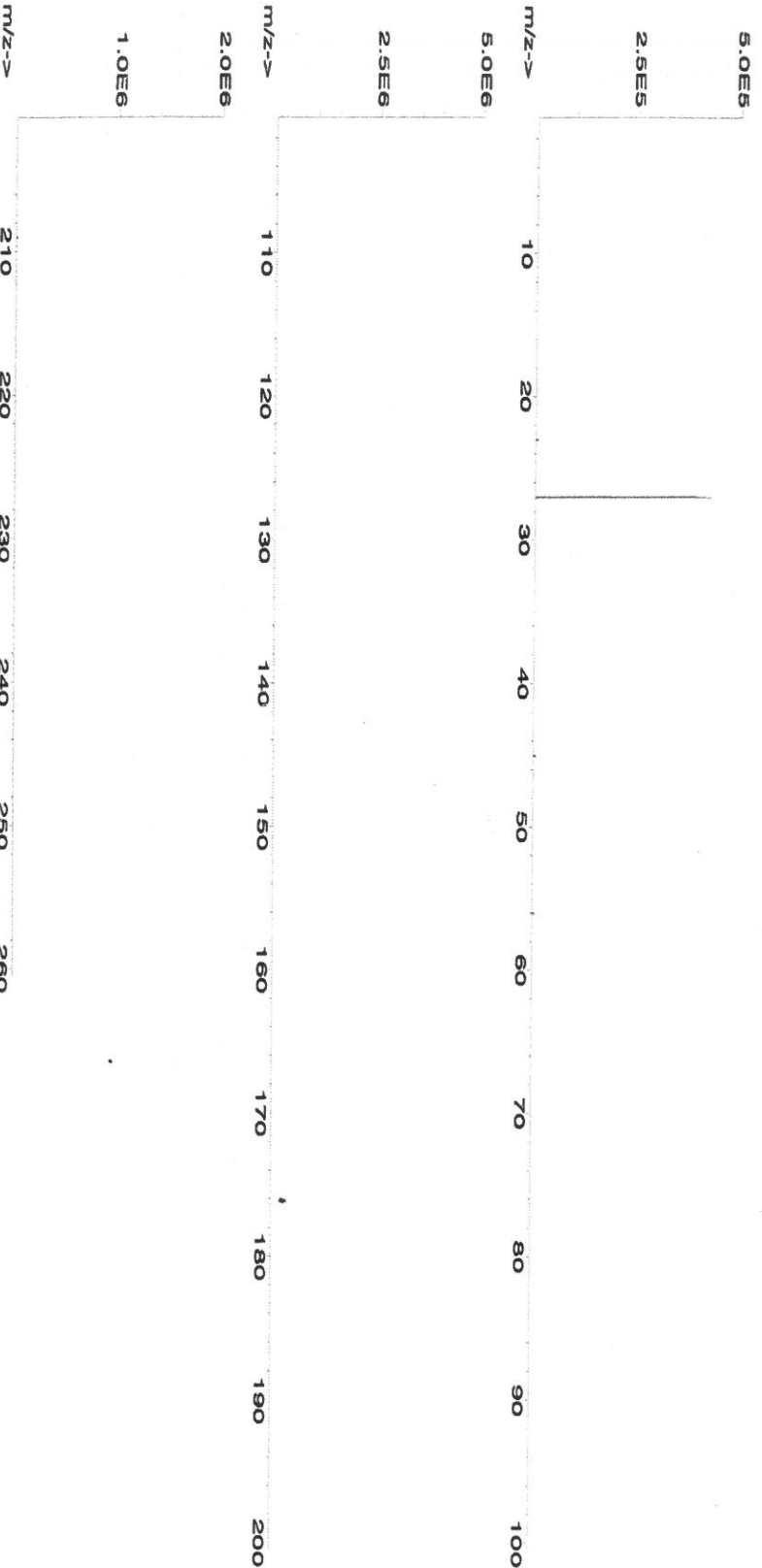
<i>Lawrence Barry</i>	
Formulated By:	Lawrence Barry
	072519
<i>Pedro L. Rentas</i>	
Reviewed By:	Pedro L. Rentas
	072519

Compound

RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Aluminum nitrate nonahydrate (Al) IN022 ALD012018A1 10000 99.999 0.10 6.89 290.3479 290.3529 10000.2 20.1 7784-27-2 2 mg/m3 or-fai 3671 mg/kg 3101a

[1] Spectrum No.1 [15.014 sec]:58113.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	T	Cd	Dy	Hf	Li	Ni	Pr	Se	Tb	W
<0.02	<0.2	<0.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.2	<0.02	<0.02
Sb	Ce	Er	Ho	Lu	Nb	Re	Si	<0.02	Te	U
<0.2	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	Ti	V
As	Cs	Gd	Ir	Mn	Os	Rh	Ag	<0.2	Th	Yb
Ba	Cr	Ga	Fe	Hg	Pd	Ru	Na	<0.02	Tm	Y
Be	Co	Ge	La	Mo	P	Sr	S	<0.02	Sn	Zn
Bi	Cu	Au	Pb	Nd	K	Sc	Ta	<0.02	Tl	Zr
B	<0.02	<0.02	<0.02	<0.02	<0.2	<0.02	<0.02	<0.02	<0.02	<0.02

Physical Characterization:

(T) = Target analyte

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number: **57027**
 Lot Number: **020821**
 Description: **Cobalt (Co)**

Lot # 19410105
 Solvent: Nitric Acid

2.0% 40.0
 (mL) Nitric Acid

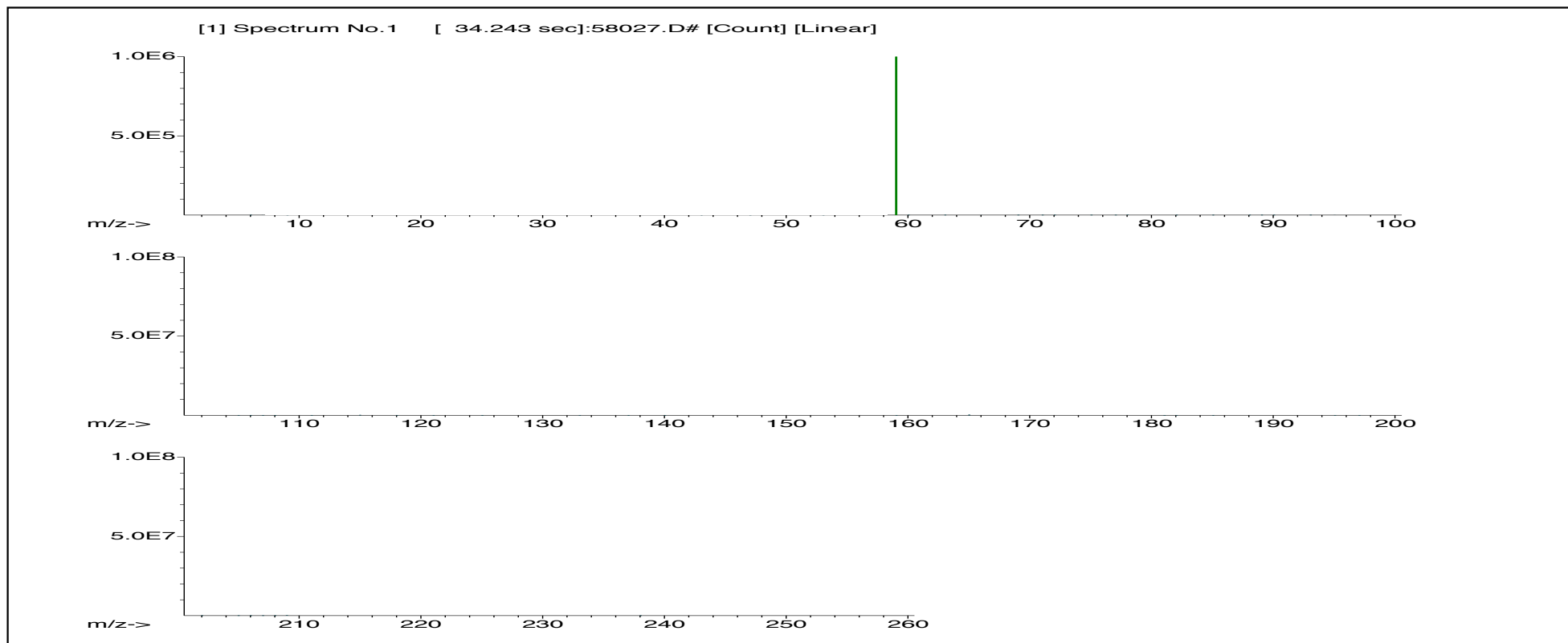
Expiration Date: 020824
 Recommended Storage: Ambient (20 °C)
 Nominal Concentration (µg/mL): **1000**

NIST Test Number: 23060 5E-05 Balance Uncertainty

Volume shown below was diluted to (mL): 1999.78 0.265 Flask Uncertainty

Formulated By:	Lawrence Barry	020821
Reviewed By:	Pedro L. Rentas	020821

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded	SDS Information			NIST SRM
									Uncertainty	(Solvent Safety Info. On Attached pg.)			
									+/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	
Cobalt nitrate hexahydrate (Co)	58127	062320	0.1000	200.0	0.084	1000	10000.1	1000.0	2.2	10026-22-9	5 mg/m3	orl-rat 694 mg/kg	3113





Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS ($\mu\text{g/mL}$)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	T	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number: **57182**
Lot Number: **032321**
Description: **Lead (Pb)**

Lot #
Solvent: 20370011 Nitric Acid

2% 40.0 Nitric Acid
(mL)

Expiration Date: 032324

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): **10000**

NIST Test Number: 6UTB

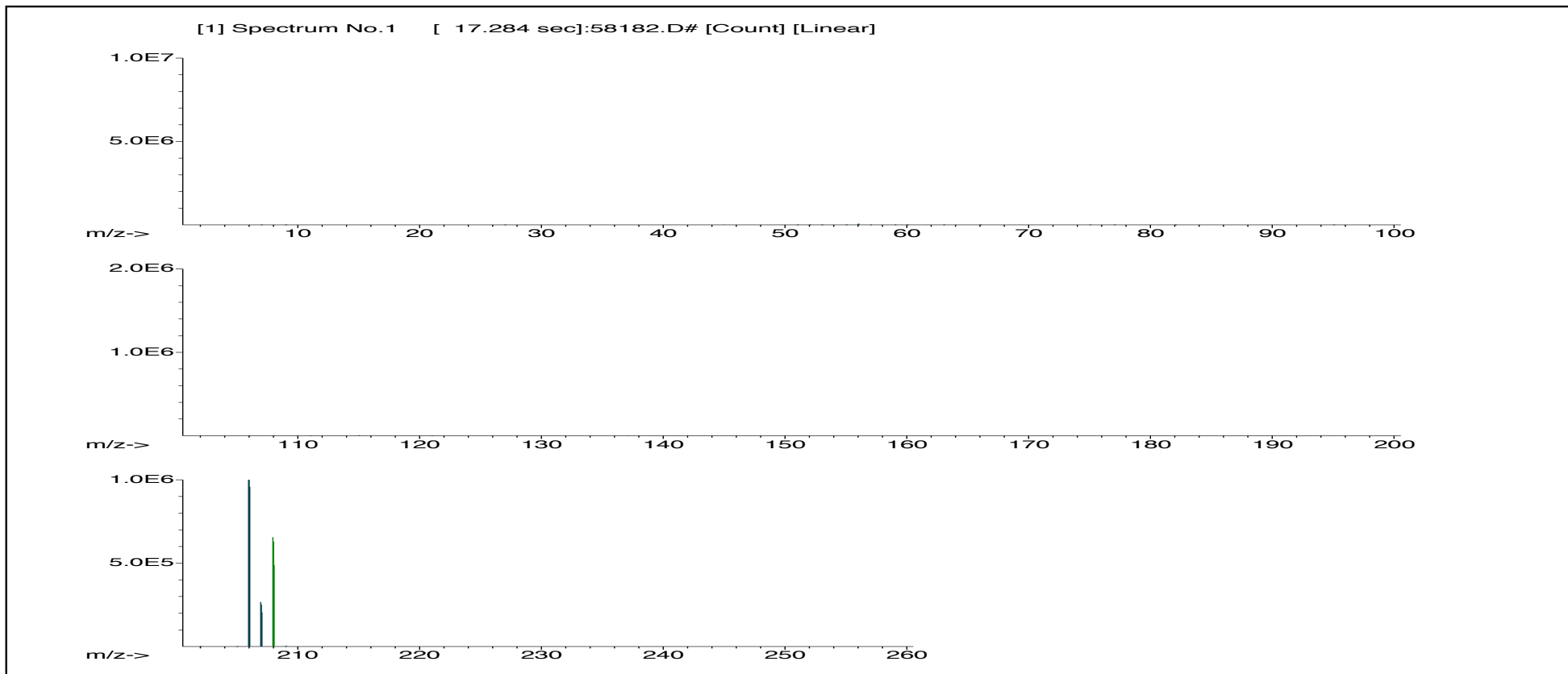
5E-05 Balance Uncertainty

Weight shown below was diluted to (mL): 2000.02 0.058 Flask Uncertainty

Formulated By:	Lawrence Barry	032321
Reviewed By:	Pedro L. Rentas	032321

Compound

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.)			NIST SRM
											CAS#	OSHA PEL (TWA)	LD50	
1. Lead (II) Nitrate (Pb)	IN029	PBD122016A1	10000.0	99.999	0.10	62.5	32.0006	32.0010	10000.1	20.0	10099-74-8	0.05 mg/m3	intrvns-rat 93 mg/kg	3128





Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS ($\mu\text{g/mL}$)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	T	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Certified by:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number: **57033**
Lot Number: **012521**
Description: **Arsenic (As)**

Lot # 19410105
Solvent: Nitric Acid

2.0% 40.0
(mL) Nitric Acid

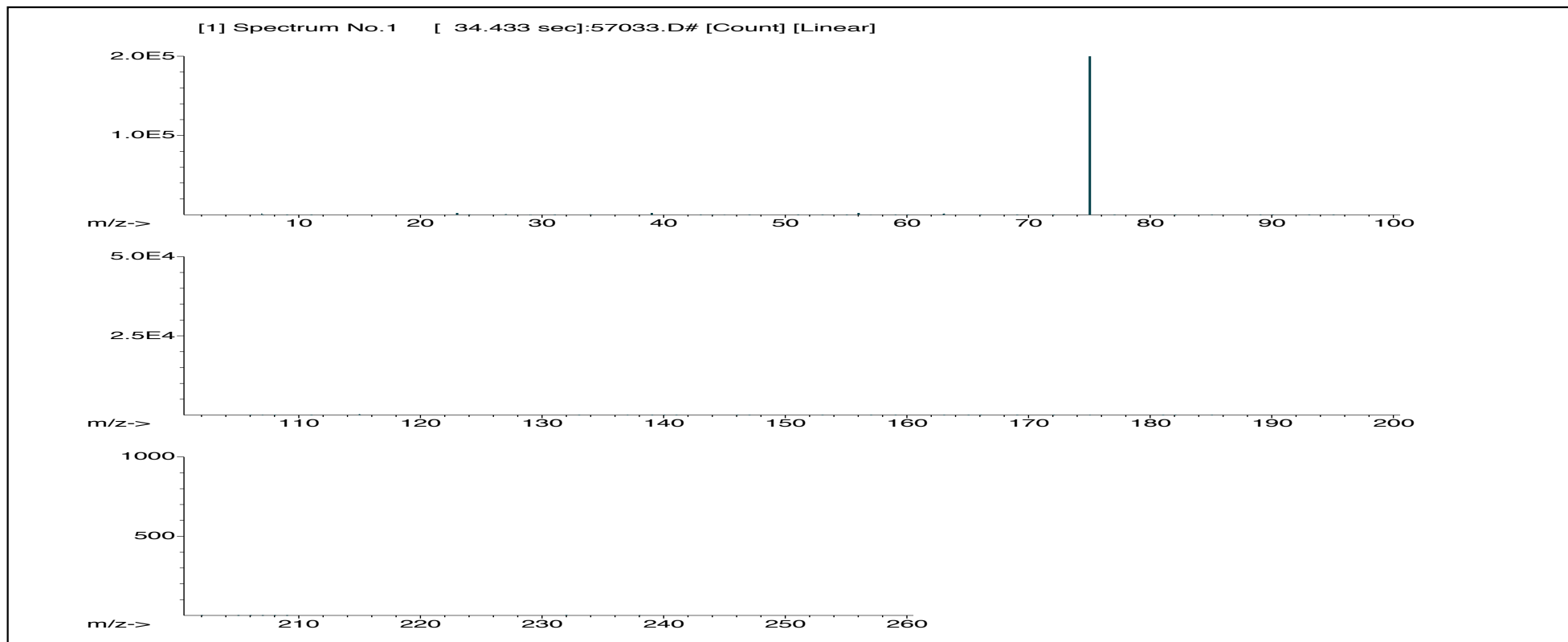
Expiration Date: 012524
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): **1000**

NIST Test Number: 23060 5E-05 Balance Uncertainty

Volume shown below was diluted to (mL): 2000.02 0.058 Flask Uncertainty

Formulated By:	Lawrence Barry	012521
Reviewed By:	Pedro L. Rentas	012521

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.)			NIST SRM
										CAS#	OSHA PEL (TWA)	LD50	
1. Arsenic (As)	58133	092220	0.1000	200.0	0.084	1000	10001.0	1000.0	2.2	7440-38-2	0.2 mg/m3	ori-rat 763 mg/kg	3103a





Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS ($\mu\text{g/mL}$)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	T	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number: **57004**
 Lot Number: **030221**
 Description: **Beryllium (Be)**

Lot # 19410105
 Solvent: Nitric Acid

2.0% 40.0
 (mL) Nitric Acid

Expiration Date: 030224
 Recommended Storage: Ambient (20 °C)
 Nominal Concentration (µg/mL): **1000**

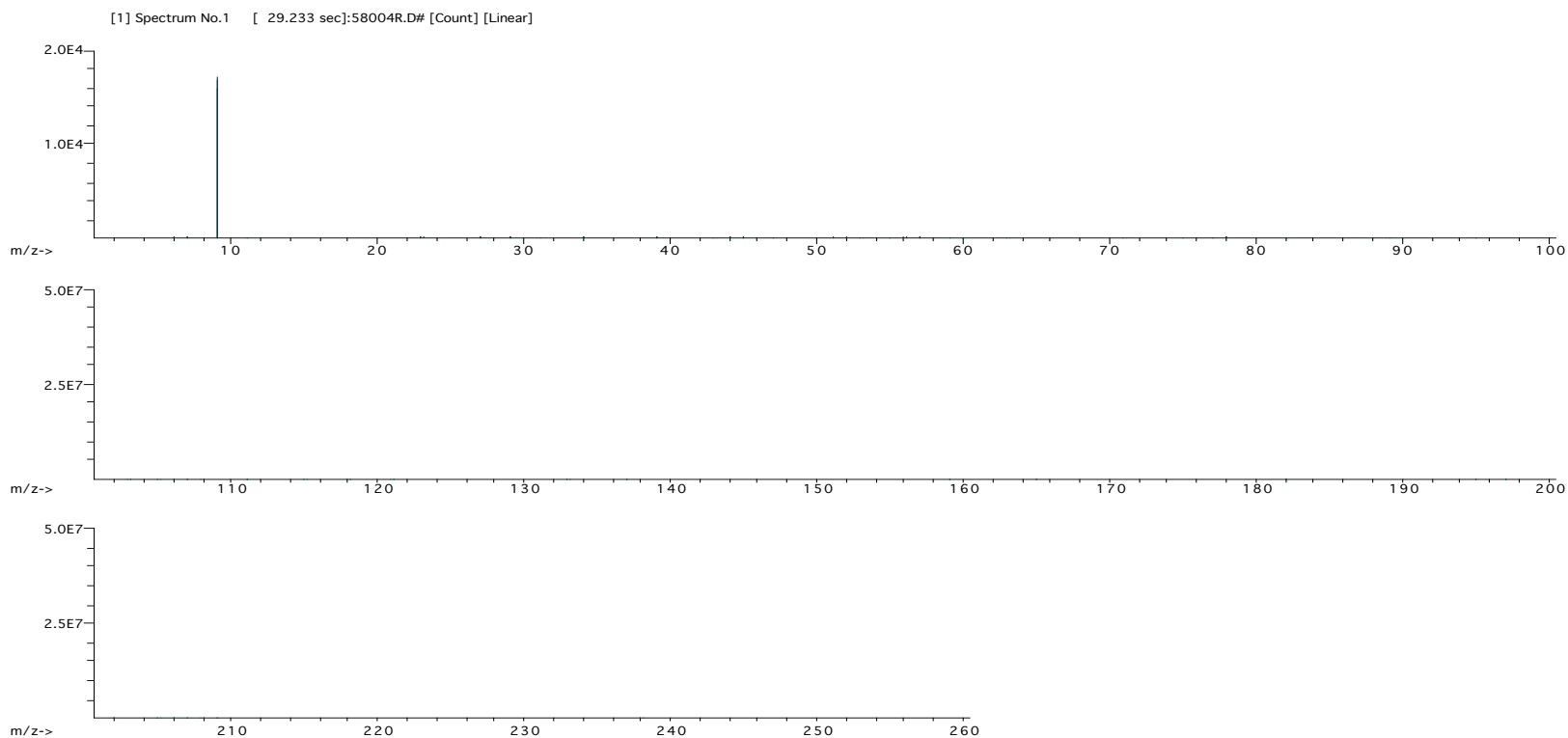
NIST Test Number: 23060

5E-05 Balance Uncertainty

Volume shown below was diluted to (mL): 2000.02 0.058 Flask Uncertainty

Formulated By:	Lawrence Barry	030221
Reviewed By:	Pedro L. Rentas	030221

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information			NIST SRM
										(Solvent Safety Info. On Attached pg.)			
										CAS#	OSHA PEL (TWA)	LD50	
Beryllium acetate basic (Be)	58104	063020	0.1000	200.0	0.084	1000	10000.1	1000.0	2.2	19049-40-2	0.002 mg/m3	orl-rat 28 mg/kg	3105a





Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS ($\mu\text{g/mL}$)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	T	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number: **57048**
Lot Number: **072821**
Description: **Cadmium (Cd)**

Lot # 20370011
Solvent: Nitric Acid

2.0% 40.0 Nitric Acid
(mL)

Expiration Date: 072824
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): **1000**

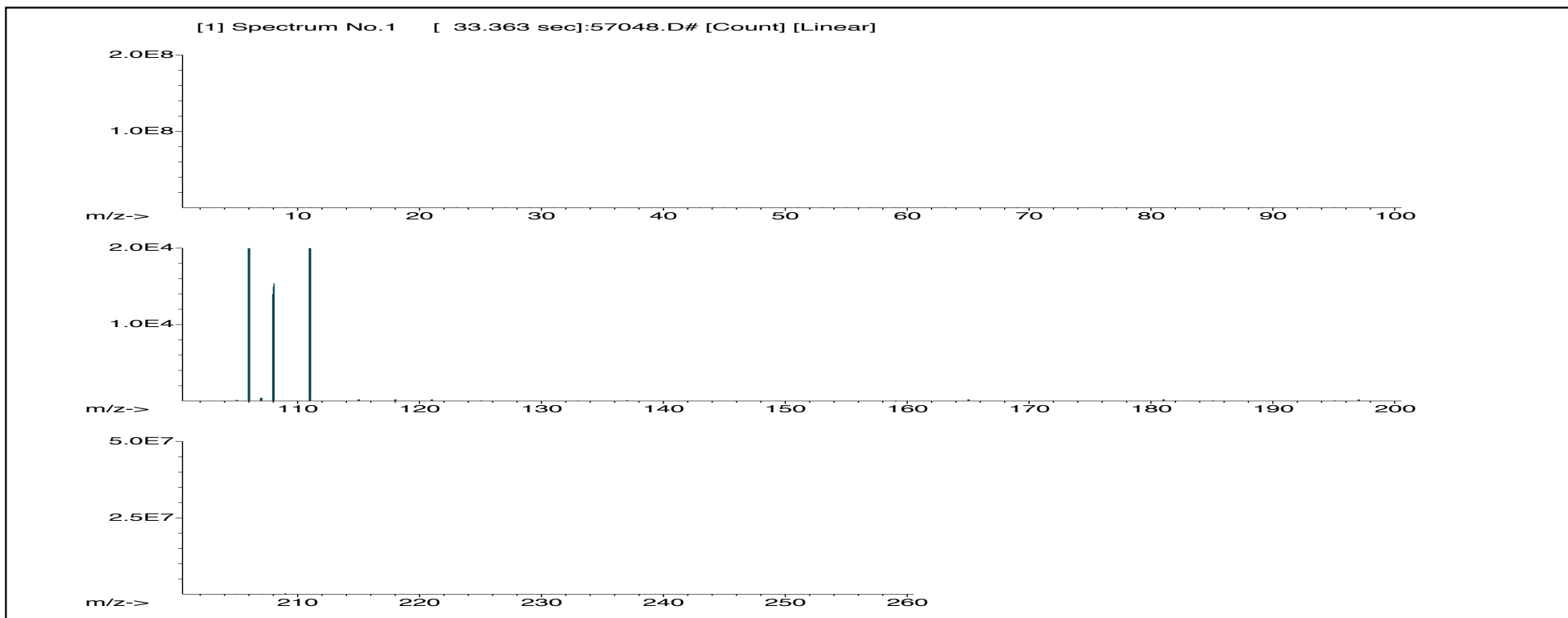
NIST Test Number: 6UTB

5E-05 Balance Uncertainty

Volume shown below was diluted to (mL): 2000.02 0.058 Flask Uncertainty

<i>Giovanni Esposito</i>		
Formulated By:	Giovanni Esposito	072821
<i>Pedro L. Rentas</i>		
Reviewed By:	Pedro L. Rentas	072821

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.)			NIST SRM
										CAS#	OSHA PEL (TWA)	LD50	
1. Cadmium nitrate tetrahydrate (Cd)	58148	010920	0.1000	200.0	0.084	1000	10000.5	1000.0	2.2	10022-68-1	0.2 mg/m3	ori-rat 300 mg/kg	3108





Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS ($\mu\text{g/mL}$)

Al	<0.02	Cd	T	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Lot #

Part Number: **58111**
 Lot Number: **061421**
 Description: **Sodium (Na)**

Solvent: 20370011 Nitric Acid

2% 40.0 Nitric Acid
 (mL)

Expiration Date: 061424

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): **10000**

NIST Test Number: 6UTB

5E-05 Balance Uncertainty

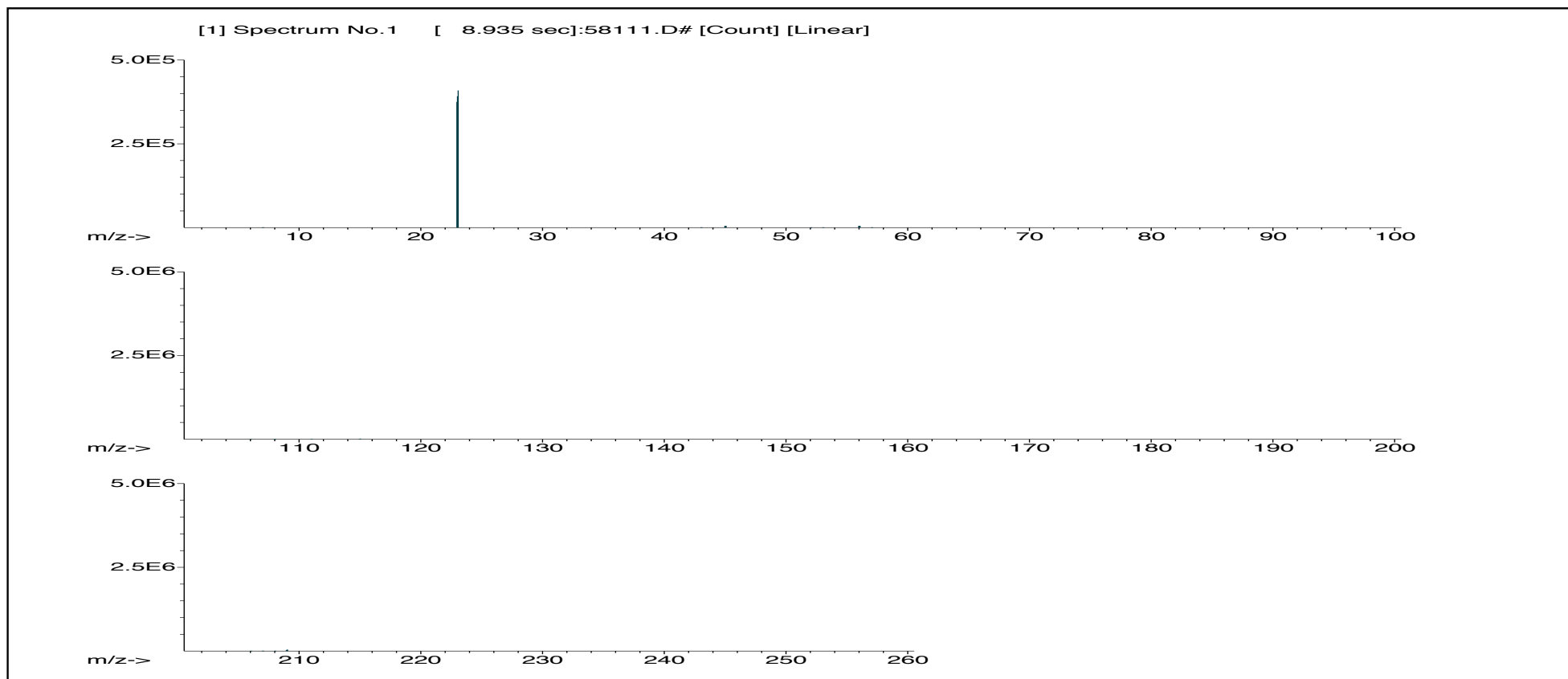
Weight shown below was diluted to (mL): 2000.02 0.058 Flask Uncertainty

<i>Gabriel Helland</i>		
Formulated By:	Gabriel Helland	061421
<i>Pedro L. Rentas</i>		
Reviewed By:	Pedro L. Rentas	061421

SDS Information

Compound

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Sodium nitrate (Na)	IN036	NAV01201511	10000	99.999	0.10	27.0	74.0755	74.0771	10000.2	20.0	7631-99-4	5 mg/m3	ori-rat 3236 mg/kg	3152a





Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS ($\mu\text{g/mL}$)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	T	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Certified by:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number: **57015**
Lot Number: **051121**
Description: **Phosphorous (P)**

Lot # 20370011
Solvent: Nitric Acid

2.0% 40.0
(mL) Nitric Acid

Expiration Date: 051124
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): **1000**

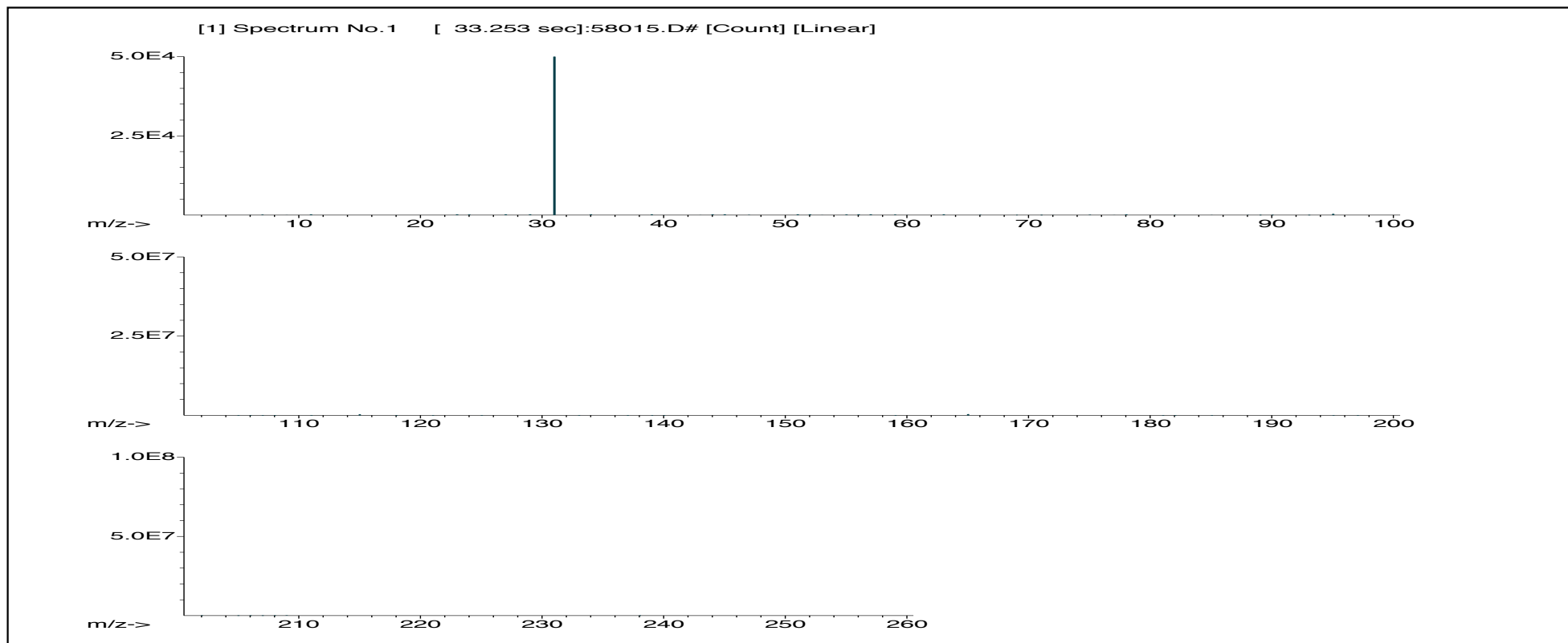
NIST Test Number: 6UTB

5E-05 Balance Uncertainty

Volume shown below was diluted to (mL): 2000.02 0.058 Flask Uncertainty

Formulated By:	Lawrence Barry	051121
Reviewed By:	Pedro L. Rentas	051121

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.)			NIST SRM
										CAS#	OSHA PEL (TWA)	LD50	
1. Ammonium dihydrogen phosphate (P)	58115	121020	0.1000	200.0	0.084	1000	10000.3	1000.0	2.2	7722-76-1	5 mg/m3	NA	3186



**Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):****Trace Metals Verification by ICP-MS ($\mu\text{g/mL}$)**

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	T	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number: **57082**
Lot Number: **062221**
Description: **Lead (Pb)**

Lot # 20370011
Solvent: Nitric Acid

2.0% 40.0
(mL) Nitric Acid

Expiration Date: 062224
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): **1000**

NIST Test Number: 6UTB

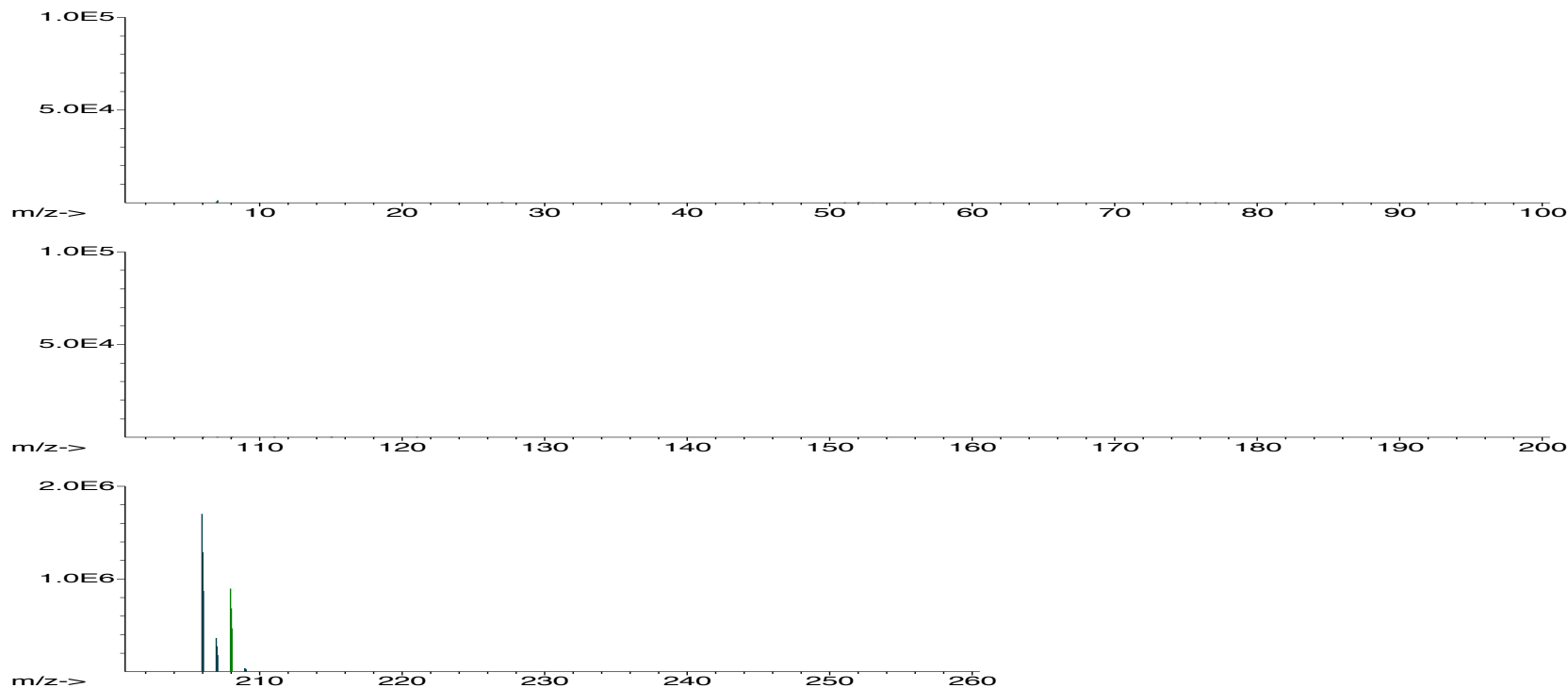
5E-05 Balance Uncertainty

Volume shown below was diluted to (mL): 2000.02 0.058 Flask Uncertainty

Formulated By:	Lawrence Barry	062221
Reviewed By:	Pedro L. Rentas	062221

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded	SDS Information			NIST SRM
									Uncertainty	(Solvent Safety Info. On Attached pg.)			
									+/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	
Lead (II) Nitrate (Pb)	58182	032321	0.1000	200.0	0.084	1000	10000.1	1000.0	2.2	10099-74-8	0.05 mg/m3	intrvns-rat 93 mg/kg	3128

[1] Spectrum No.1 [14.144 sec]:58082.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS ($\mu\text{g/mL}$)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	T	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

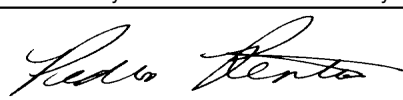


CERTIFIED WEIGHT REPORT:

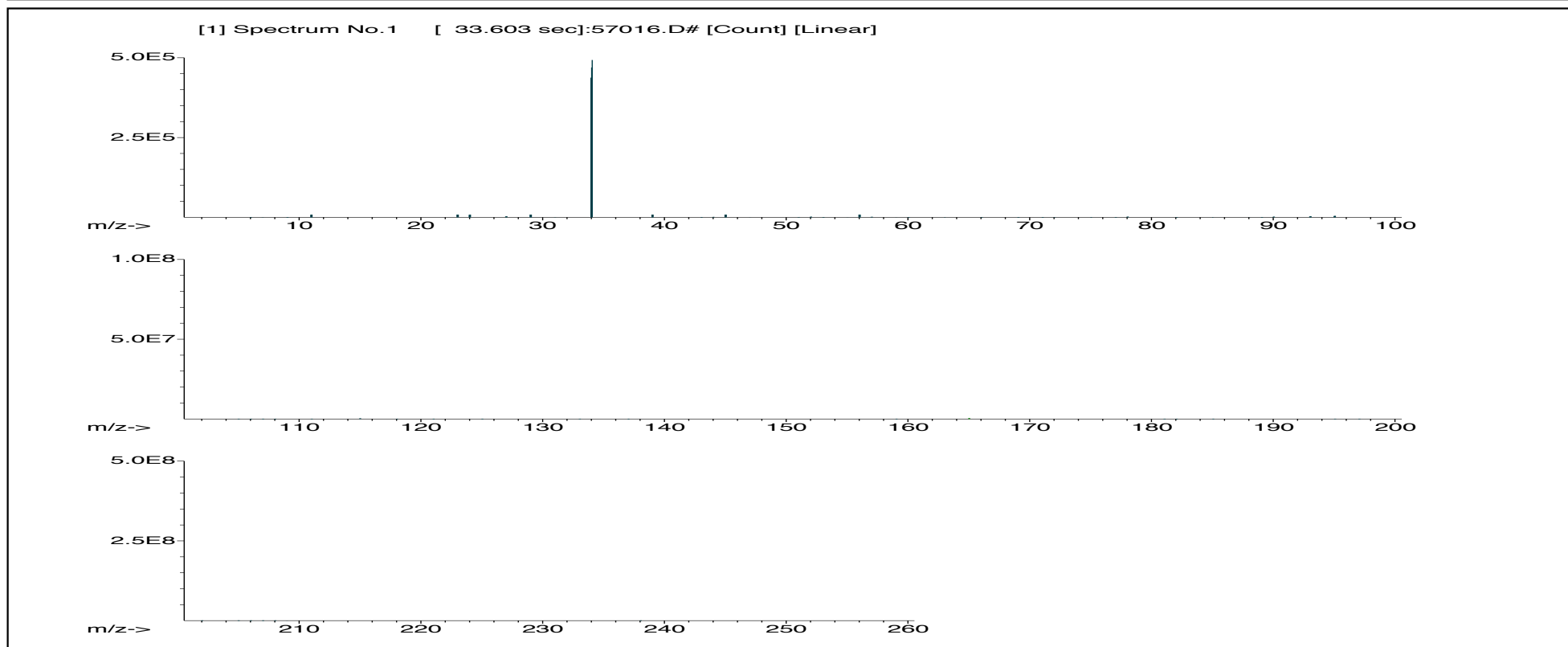
Part Number: **57016**
Lot Number: **051721**
Description: **Sulfur (S)**

Lot # 051721 Solvent: ASTM Type 1 Water

Expiration Date: 051724
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): **1000**
NIST Test Number: 6UTB 5E-05 Balance Uncertainty
Volume shown below was diluted to (mL): 1999.48 0.058 Flask Uncertainty

		
Formulated By:	Lawrence Barry	051721
		
Reviewed By:	Pedro L. Rentas	051721

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information			NIST SRM
										(Solvent Safety Info. On Attached pg.)			
										CAS#	OSHA PEL (TWA)	LD50	
Ammonium sulfate (S)	58116	011421	0.1000	199.9	0.084	1000	10000.2	1000.0	2.2	7783-20-2	NA	NA	3181





Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS ($\mu\text{g/mL}$)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	T	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number: **57034**
 Lot Number: **070221**
 Description: **Selenium (Se)**

Lot # 20370011
 Solvent: Nitric Acid

2.0% 40.0
 (mL) Nitric Acid

Expiration Date: 070224

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): **1000**

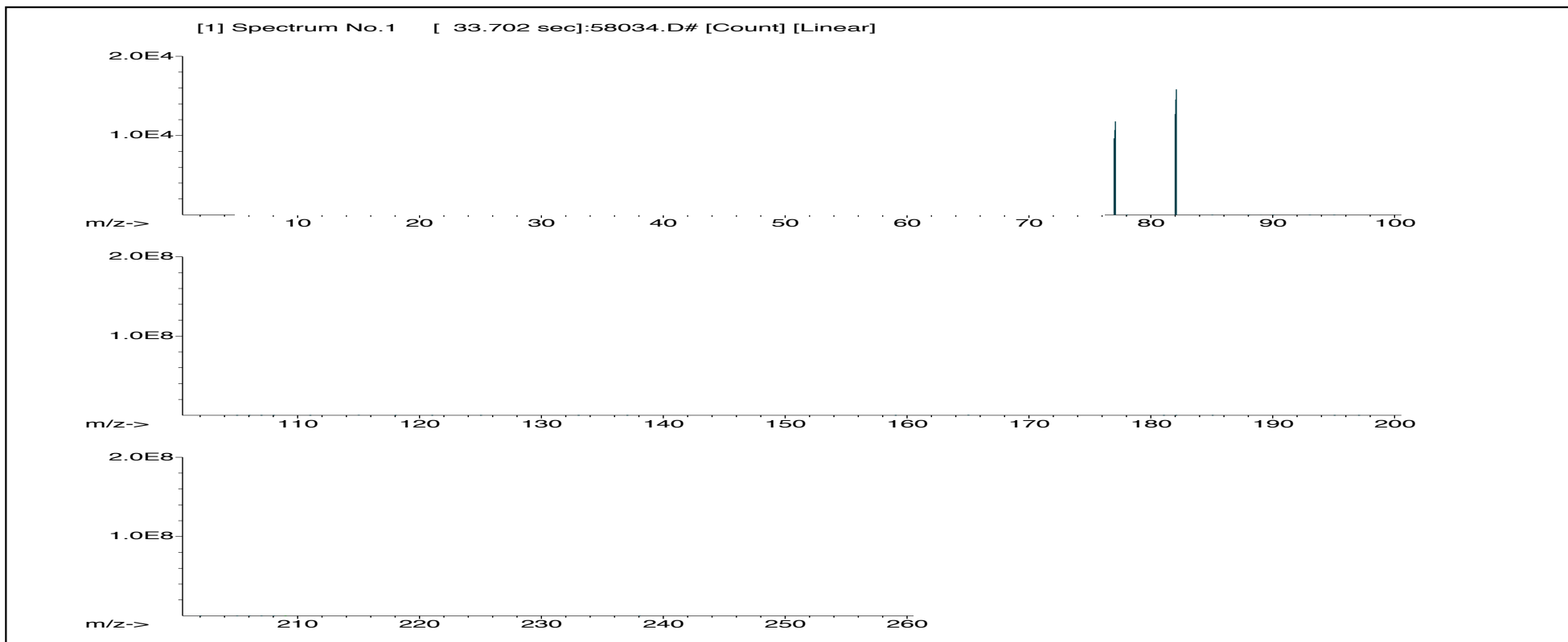
NIST Test Number: 6UTB

5E-05 Balance Uncertainty

Volume shown below was diluted to (mL): 2000.02 0.058 Flask Uncertainty

<i>Giovanni Esposito</i>		
Formulated By:	Giovanni Esposito	070221
<i>Pedro L. Rentas</i>		
Reviewed By:	Pedro L. Rentas	070221

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded	SDS Information			NIST SRM
									Uncertainty	(Solvent Safety Info. On Attached pg.)			
									+/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	
Selenium(IV) oxide (Se)	58134	021621	0.1000	200.0	0.084	1000	10000.2	1000.0	2.2	7446-08-4	0.2 mg/m3	orl-rat 68 mg/kg	3149





Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS ($\mu\text{g/mL}$)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	T	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number: **57014**
 Lot Number: **030921**
 Description: **Silicon (Si)**

Lot # 19410105
 Solvent: Nitric Acid

2.0% 60.0 Nitric Acid
 (mL)

Expiration Date: 030924

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): **1000**

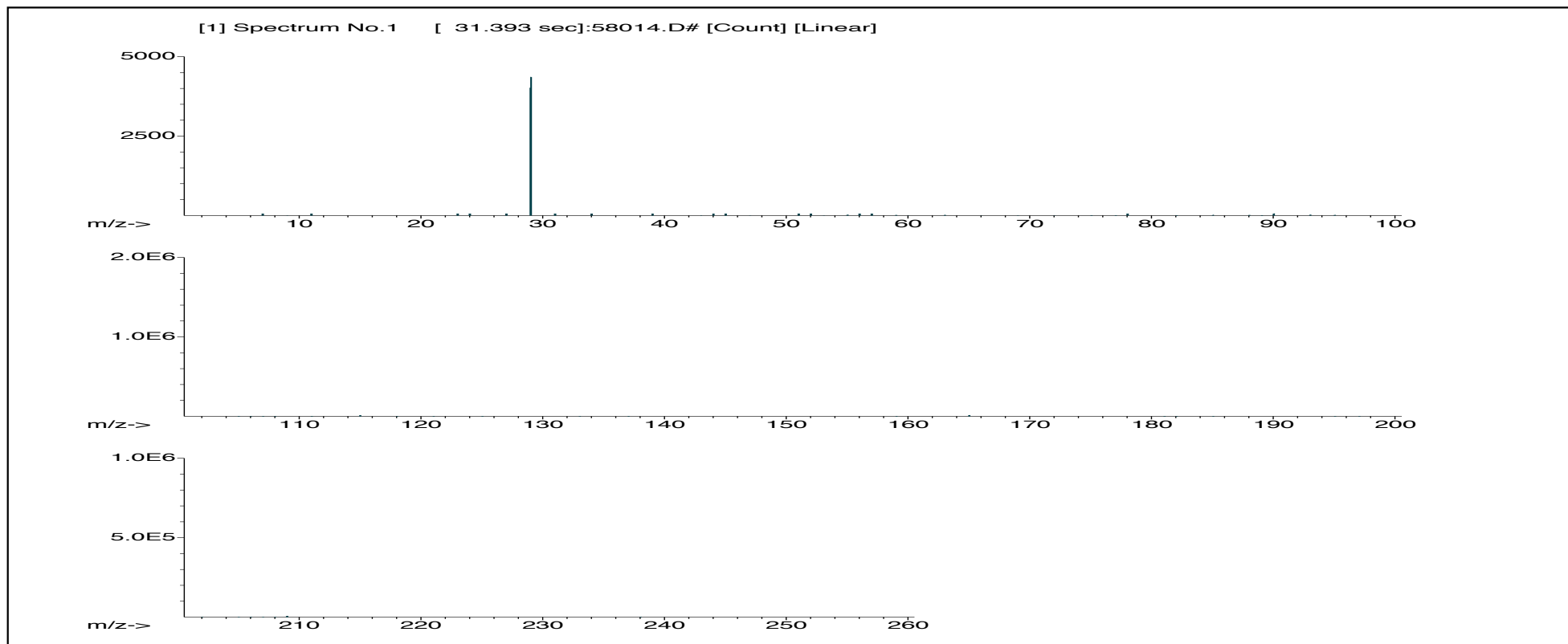
NIST Test Number: 6UTB

5E-05 Balance Uncertainty

Volume shown below was diluted to (mL): 3000.41 0.058 Flask Uncertainty

Formulated By:	Lawrence Barry	030921
Reviewed By:	Pedro L. Rentas	030921

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.)			NIST SRM
										CAS#	OSHA PEL (TWA)	LD50	
1. Ammonium hexafluorosilicate (Si)	58114	070120	0.1000	300.0	0.084	1000	10000.0	1000.0	2.1	16919-19-0	2.50 mg/m3	orl-rat 70 mg/kg	NA



**Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):****Trace Metals Verification by ICP-MS ($\mu\text{g/mL}$)**

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	T	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number: **57047**
 Lot Number: **072921**
 Description: **Silver (Ag)**

Lot # 20370011
 Solvent: Nitric Acid

2.0% 40.0 Nitric Acid
 (mL)

Expiration Date: 072924

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): **1000**

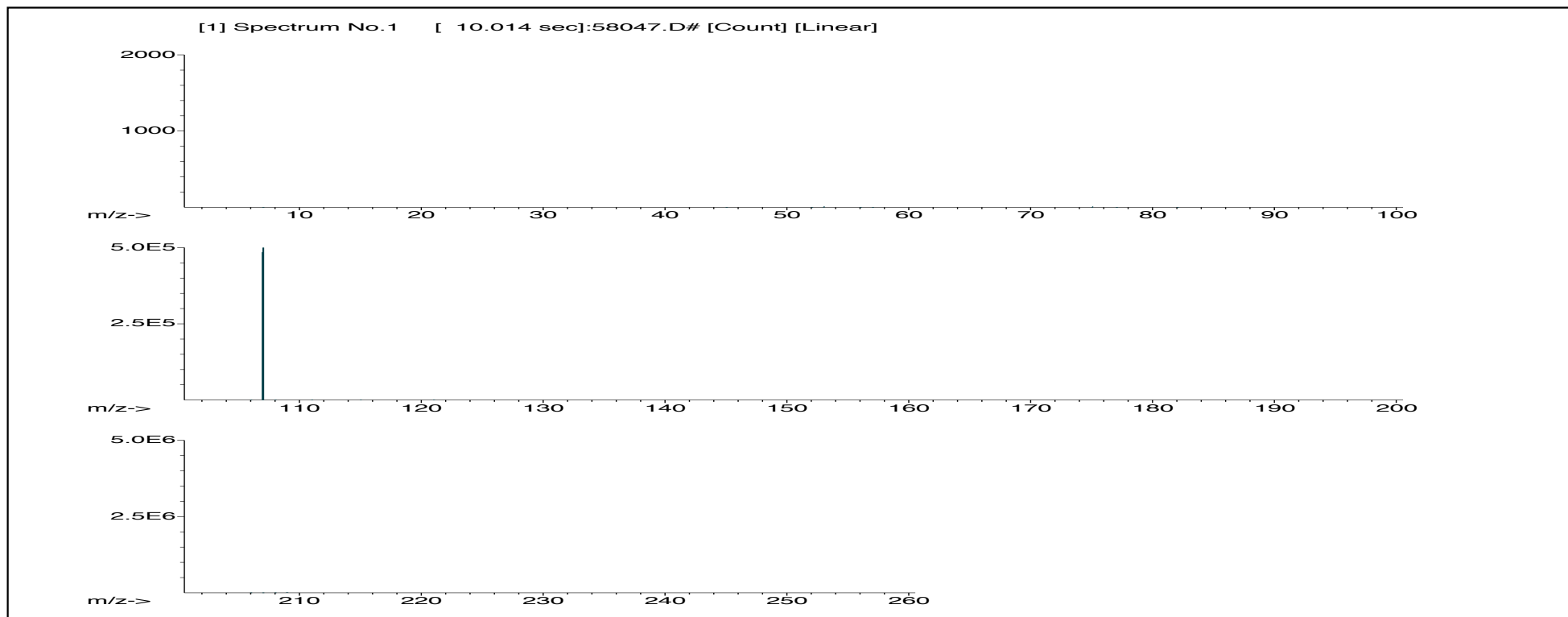
NIST Test Number: 6UTB

5E-05 Balance Uncertainty

Volume shown below was diluted to (mL): 2000.02 0.058 Flask Uncertainty

<i>Giovanni Esposito</i>		
Formulated By:	Giovanni Esposito	072921
<i>Pedro L. Rentas</i>		
Reviewed By:	Pedro L. Rentas	072921

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.)			NIST SRM
										CAS#	OSHA PEL (TWA)	LD50	
1. Silver nitrate (Ag)	58147	010820	0.1000	200.0	0.084	1000	10000.4	1000.0	2.2	7761-88-8	10 ug/m3	N/A	3151





Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS ($\mu\text{g/mL}$)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	T	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number: **57050**
Lot Number: **021121**
Description: **Tin (Sn)**

Lot #
19410105 Nitric Acid
240241 Hydrochloric acid

2.0% 40.0 Nitric Acid
6.0% 120.0 Hydrochloric acid
(mL)

Expiration Date: 021124
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): **1000**

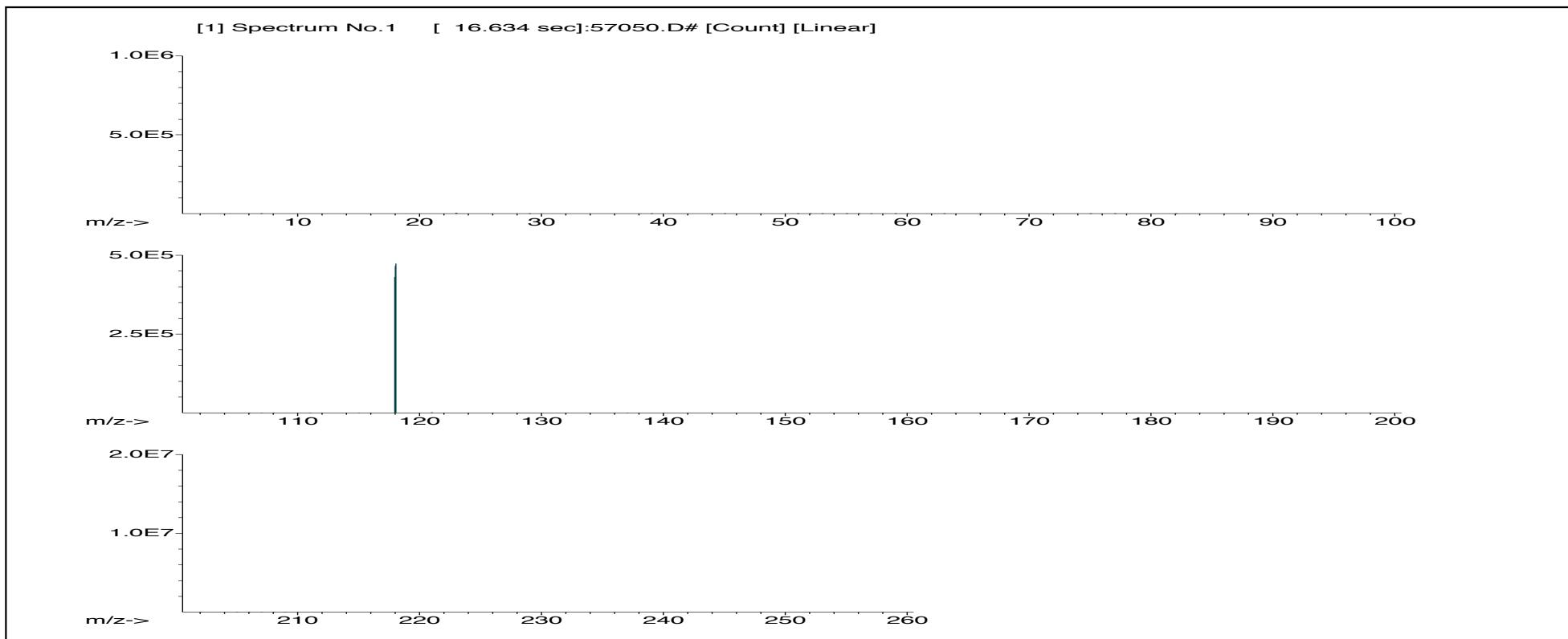
NIST Test Number: 23060

5E-05 Balance Uncertainty

Volume shown below was diluted to (mL): 1999.78 0.265 Flask Uncertainty

Formulated By:	Lawrence Barry	021121
Reviewed By:	Pedro L. Rentas	021121

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information			NIST SRM
										(Solvent Safety Info. On Attached pg.)			
										CAS#	OSHA PEL (TWA)	LD50	
Ammonium hexafluorostannate (IV) (Sn)	58150	041620	0.1000	200.0	0.084	1000	10000.5	1000.0	2.2	16919-24-7	7 mg/m3	NA	3161a





Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS ($\mu\text{g/mL}$)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	T	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number: **57038**
Lot Number: **062221**
Description: **Strontium (Sr)**

Lot # 20370011
Solvent: Nitric Acid

2.0% 20.0
(mL) Nitric Acid

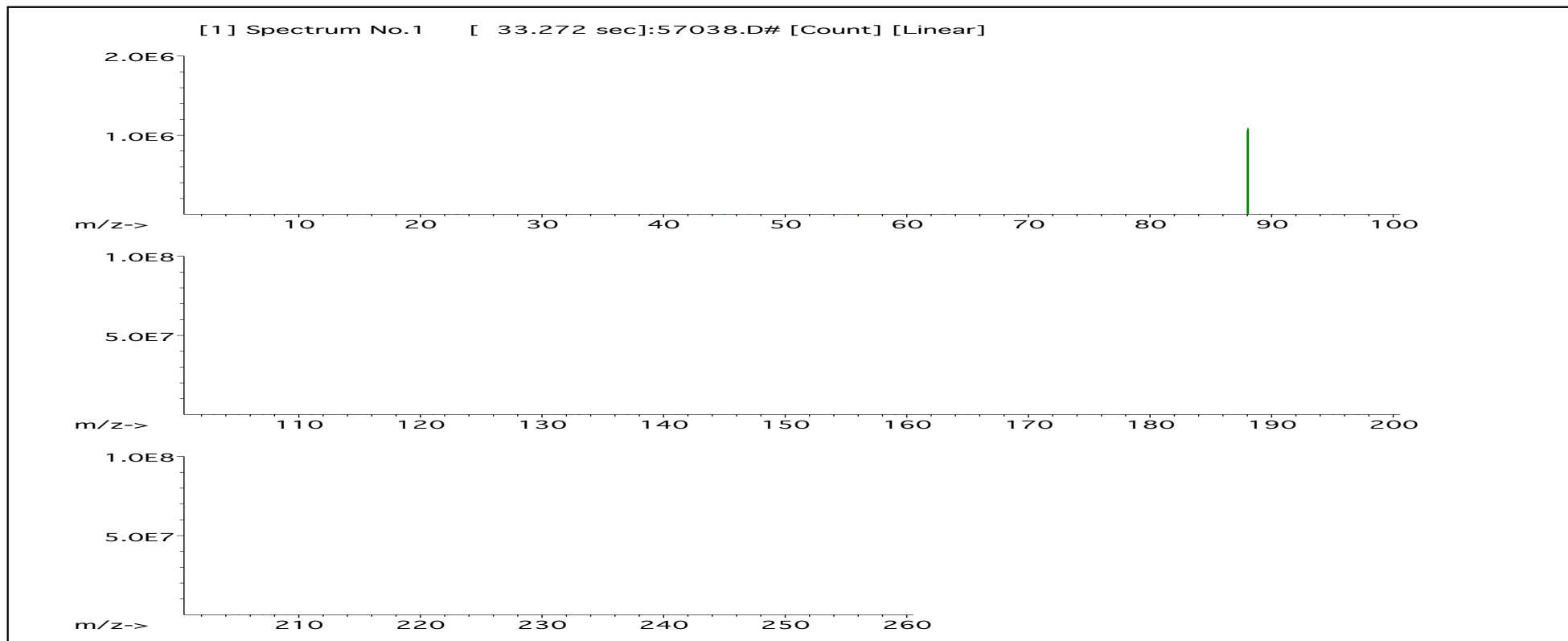
Expiration Date: 062224
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): **1000**
NIST Test Number: 6UTB

5E-05 Balance Uncertainty

Volume shown below was diluted to (mL): 1000.12 0.058 Flask Uncertainty

Formulated By:	Lawrence Barry	062221
Reviewed By:	Pedro L. Rentas	062221

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information			NIST SRM
										(Solvent Safety Info. On Attached pg.)			
										CAS#	OSHA PEL (TWA)	LD50	
Strontium nitrate (Sr)	58138	012720	0.1000	100.0	0.006	1000	10001.3	1000.0	2.0	10042-76-9	NA	orl-rat 2750mg/kg	3153a



**Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):****Trace Metals Verification by ICP-MS ($\mu\text{g/mL}$)**

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	T	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number: **57081**
 Lot Number: **073021**
 Description: **Thallium (Tl)**

Lot # 20370011
 Solvent: Nitric Acid

2.0% 40.0
 (mL) Nitric Acid

Expiration Date: 073024

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): **1000**

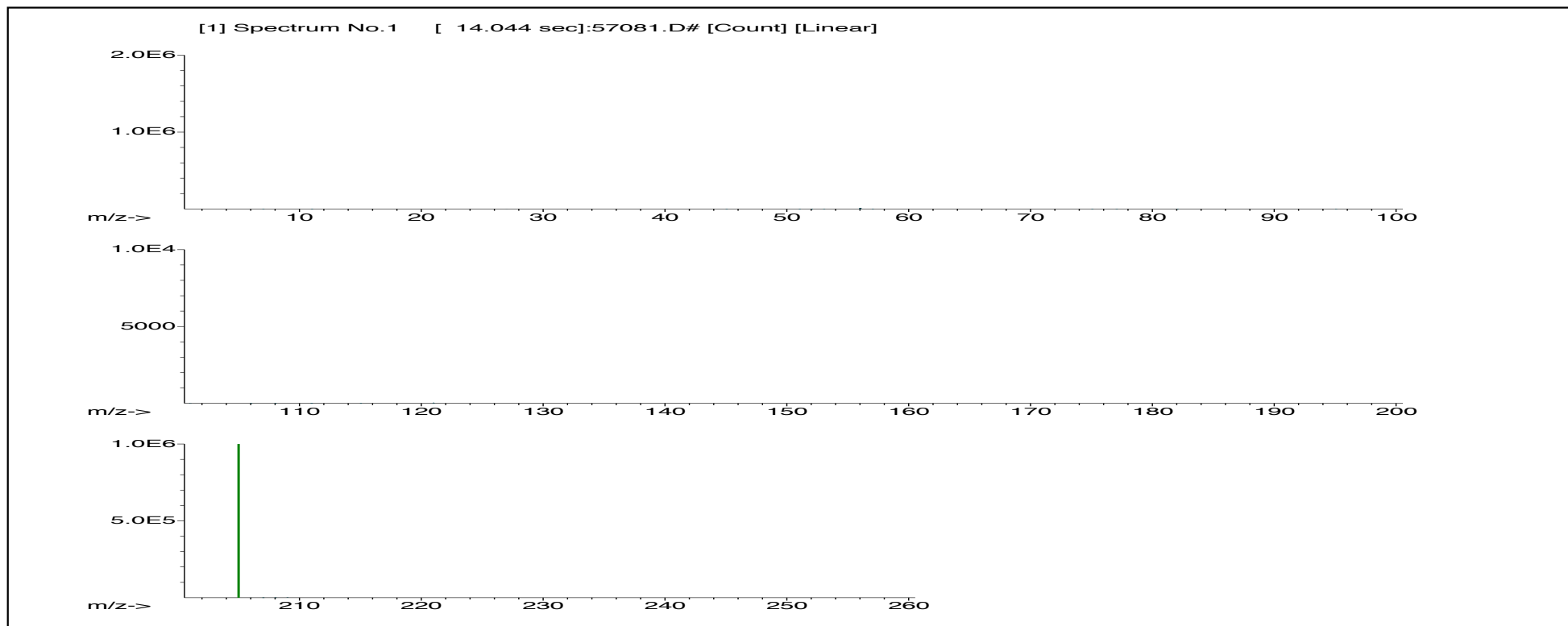
NIST Test Number: 6UTB

5E-05 Balance Uncertainty

Volume shown below was diluted to (mL): 2000.02 0.058 Flask Uncertainty

<i>Giovanni Esposito</i>		
Formulated By:	Giovanni Esposito	073021
<i>Pedro L. Rentas</i>		
Reviewed By:	Pedro L. Rentas	073021

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information			
										(Solvent Safety Info. On Attached pg.)			NIST SRM
										CAS#	OSHA PEL (TWA)	LD50	
Thallium (Tl)	58181	060920	0.1000	200.0	0.084	1000	10001.0	1000.0	2.2	7440-28-0	0.1 mg/m3	orl-rat 6700 mg/kg	3158





Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS ($\mu\text{g/mL}$)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	T	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number: **58030**
 Lot Number: **031921**
 Description: **Zinc (Zn)**

Lot # 20370011
 Solvent: Nitric Acid

2.0% 40.0 (mL) Nitric Acid

Expiration Date: 031924

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): **1000**

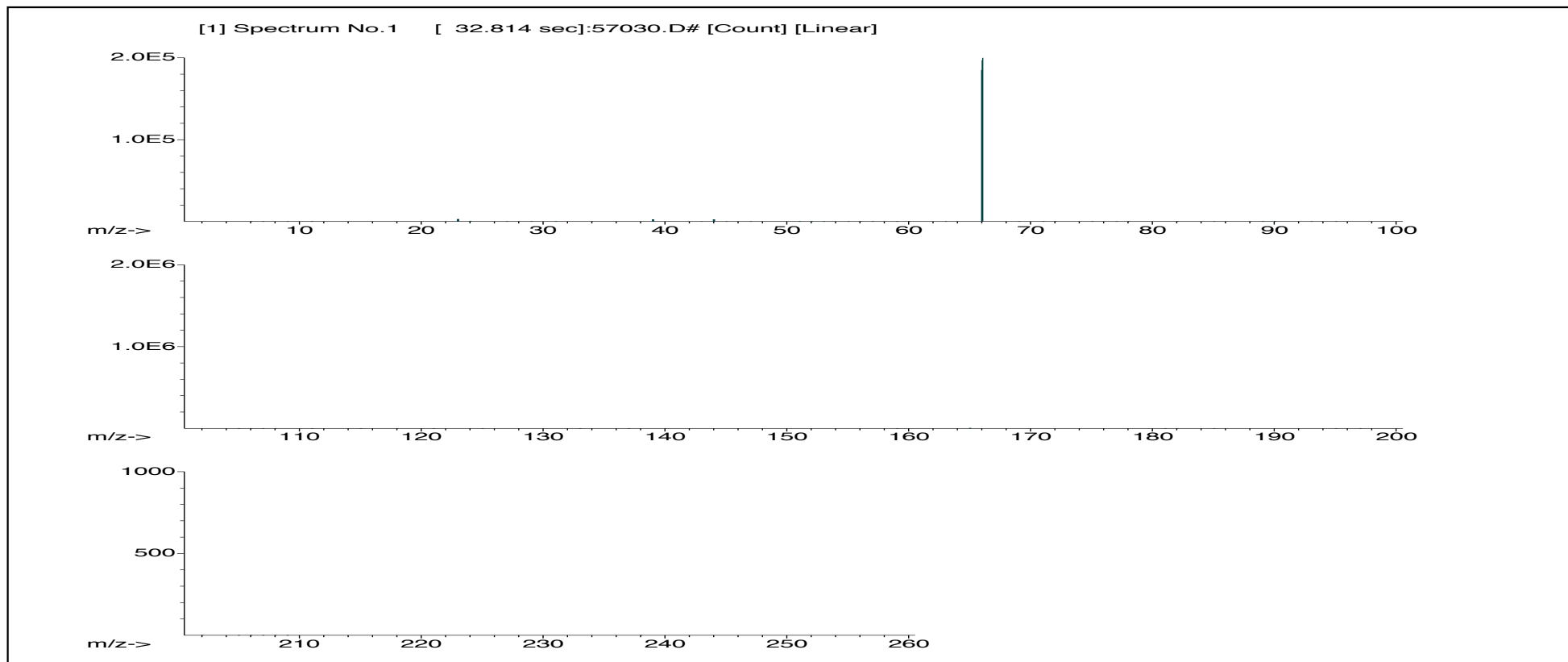
NIST Test Number: 6UTB

5E-05 Balance Uncertainty

Volume shown below was diluted to (mL): 2000.02 0.058 Flask Uncertainty

<i>Giovanni Esposito</i>		
Formulated By:	Giovanni Esposito	031921
<i>Pedro L. Rentas</i>		
Reviewed By:	Pedro L. Rentas	031921

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.)			NIST SRM
										CAS#	OSHA PEL (TWA)	LD50	
1. Zinc nitrate hexahydrate (Zn)	58130	082020	0.1000	200.0	0.084	1000	10000.3	1000.0	2.2	10196-18-6	1 mg/m3	orl-rat 1190mg/kg	3168





Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS ($\mu\text{g/mL}$)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	T
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



Certified Reference Material CRM



CERTIFIED WEIGHT REPORT:

Part Number: **57005**
Lot Number: **031921**
Description: **Boron (B)**

Lot # MKBQ8597V Solvent: Ammonium hydroxide

2.0% 40.0 (mL) Ammonium hydroxide

Expiration Date: 031924
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): **1000**

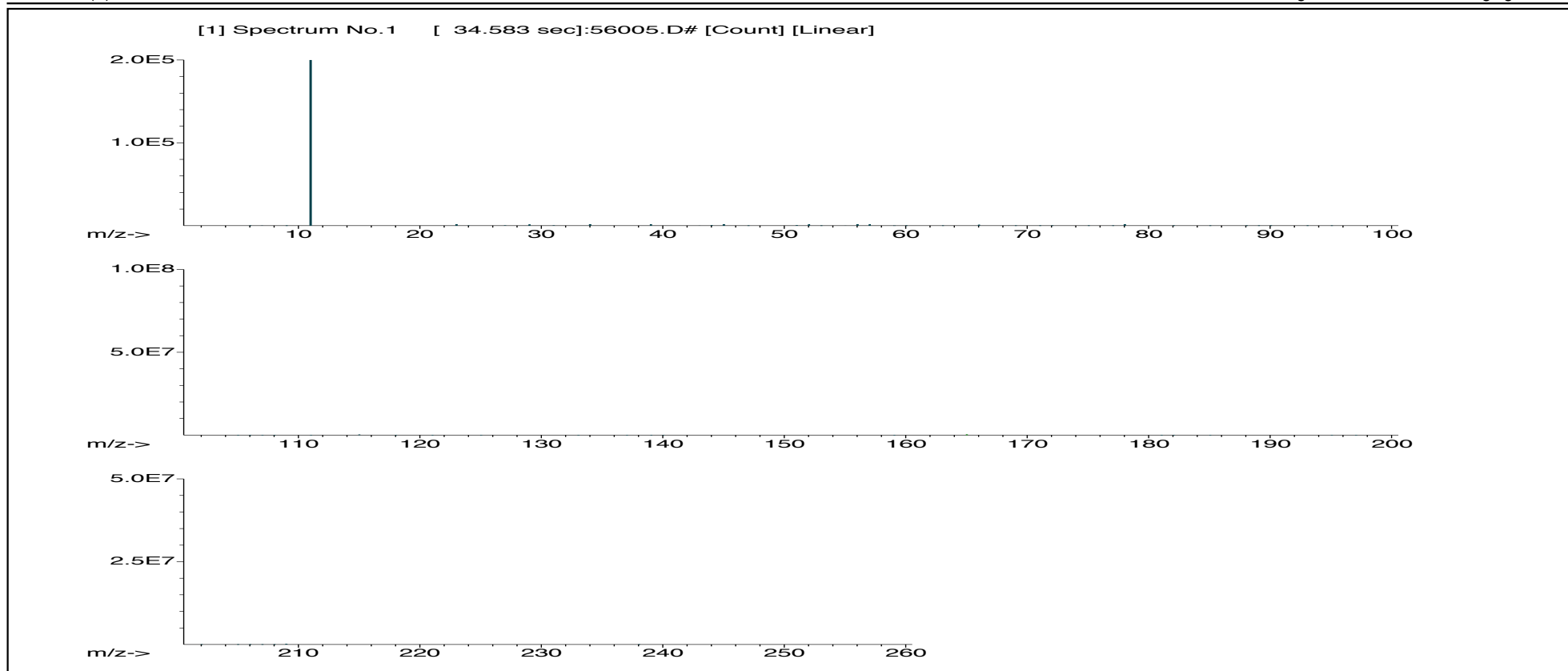
NIST Test Number: 6UTB

5E-05 Balance Uncertainty

Volume shown below was diluted to (mL): 2000.02 0.058 Flask Uncertainty

<i>Giovanni Esposito</i>		
Formulated By:	Giovanni Esposito	031921
<i>Pedro L. Rentas</i>		
Reviewed By:	Pedro L. Rentas	031921

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded	SDS Information			NIST SRM
									Uncertainty	(Solvent Safety Info. On Attached pg.)			
									+/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	
Boric acid (B)	58105	063020	0.1000	200.0	0.084	1000	10000.0	1000.0	2.2	10043-35-3	2 mg/m3	ori-rat 2660 mg/kg	3107





Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS ($\mu\text{g/mL}$)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	T	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number: **58029**
 Lot Number: **080321**
 Description: **Copper (Cu)**

Lot # 20370011
 Solvent: Nitric Acid

2.0% 40.0
 (mL) Nitric Acid

Expiration Date: 080324
 Recommended Storage: Ambient (20 °C)
 Nominal Concentration (µg/mL): **1000**

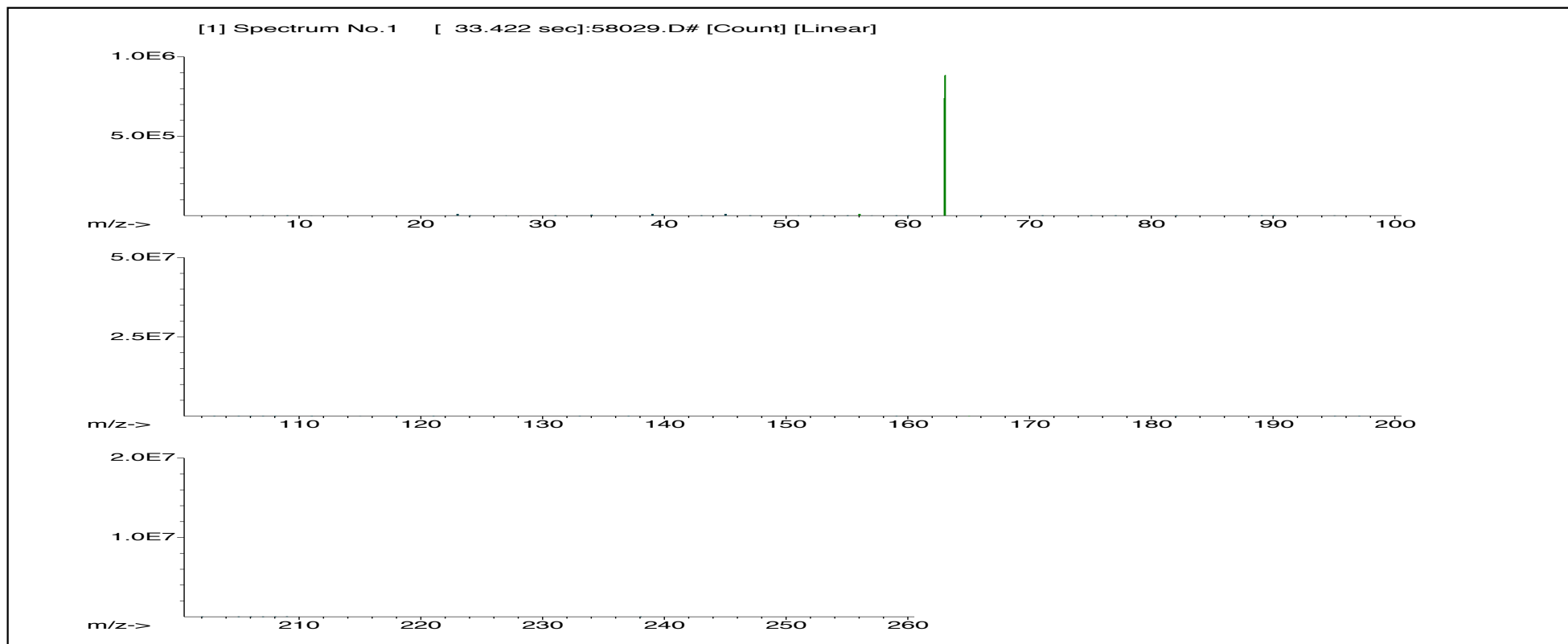
NIST Test Number: 6UTB

5E-05 Balance Uncertainty

Volume shown below was diluted to (mL): 2000.02 0.058 Flask Uncertainty

Formulated By:	Lawrence Barry	080321
Reviewed By:	Pedro L. Rentas	080321

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.)			NIST SRM
										CAS#	OSHA PEL (TWA)	LD50	
1. Copper(II) nitrate trihydrate (Cu)	58129	020821	0.1000	200.0	0.084	1000	10000.1	1000.0	2.2	10031-43-3	1 mg/m3	ori-rat 794 mg/kg	3114





Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS ($\mu\text{g/mL}$)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	T	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



M4939



CERTIFIED WEIGHT REPORT:

Part Number: 57003
Lot Number: 030221
Description: Lithium (Li)

Lot # 19410105
Solvent: Nitric Acid

2.0% 40.0 (mL) Nitric Acid

Expiration Date: 030224

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): 1000

NIST Test Number: 23060

Volume shown below was diluted to (mL): 2000.02

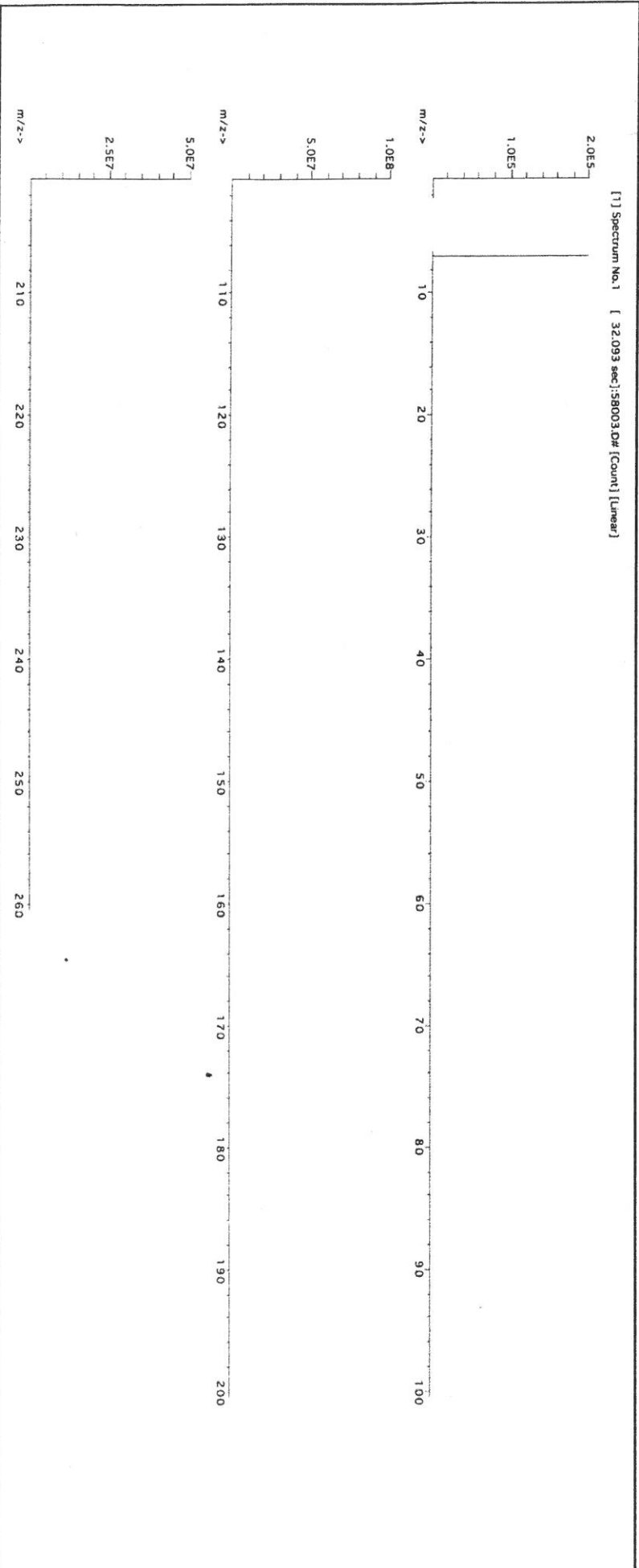
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

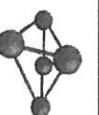
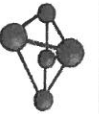
<i>Lawrence Barry</i>	
Formulated By:	Lawrence Barry
Reviewed By:	<i>Patricia Ruelas</i>
	Patricia L. Ruelas
	030221

SDS Information

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty (mL)	Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Lithium nitrate (Li)	58103	010320	0.1000	200.0	0.084	1000	10000.5	1000.0	2.2	7790-69-4	5 mg/m3	or-rat 1426 mg/kg	NA	
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Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	T	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
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- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



MC960 R: 10/08/21
Certified Reference Material CRM



CERTIFIED WEIGHT REPORT:

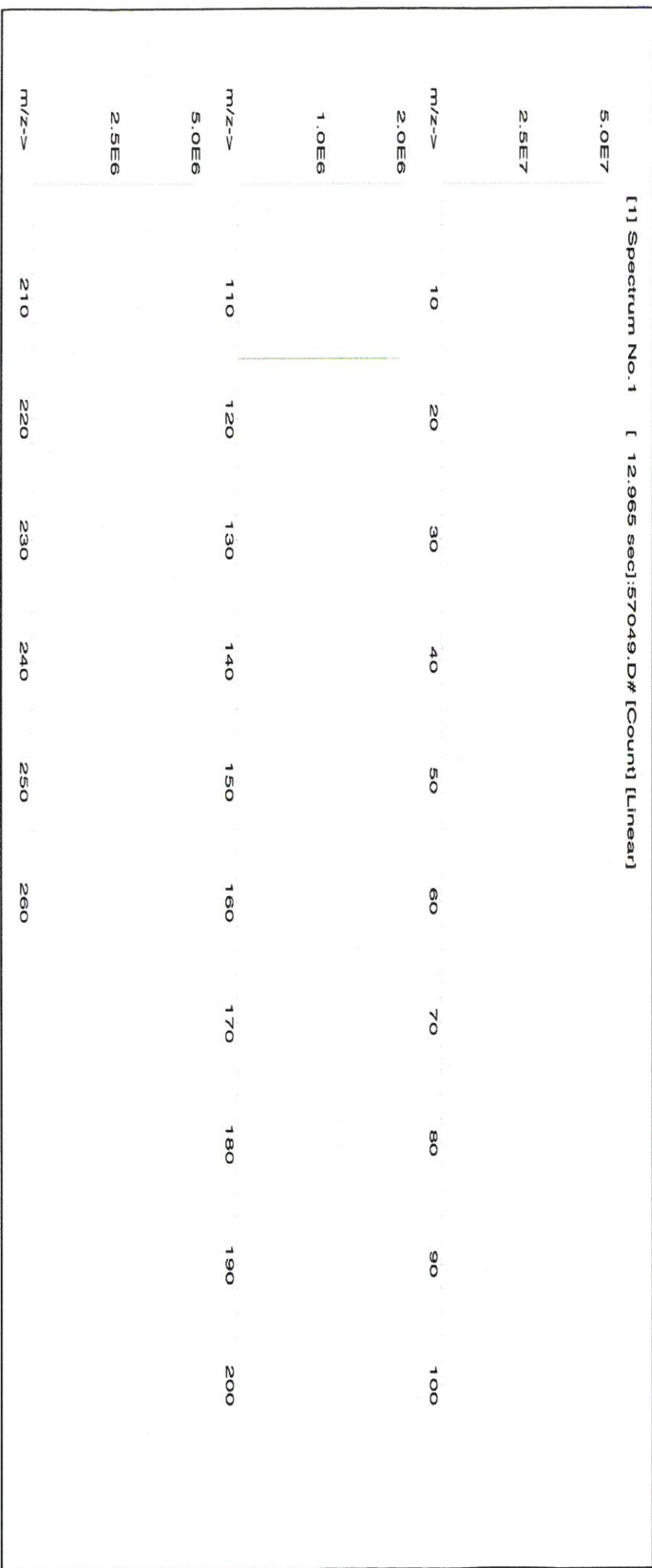
Part Number: 58149
Lot Number: 100721
Description: Indium (In)
Solvent: 20370011 Nitric Acid
Lot #

Expiration Date: 100724
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 500.06
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

<i>Giovanni Caporaso</i>	
Formulated By:	Giovanni Esposito
Reviewed By:	<i>Pedro L. Renteria</i>
	100721

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty		CAS#	SDS Information		NIST SRM
										+/- (µg/mL)	(µg/mL)		(Solvent Safety Info. On Attached pg.)	LD50	

1. Indium Oxide (In)	IN086	W1096A	10000	99.999	0.10	82.6	6.05408	6.05441	10000.6	20.1	1312-43-2	NA	NA	3124a
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Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	T	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

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M4961 **Certified Reference Material CRM**
R: 10/08/21 **(B3)**



CERTIFIED WEIGHT REPORT:

Part Number: 58139
Lot Number: 052521
Description: Yttrium (Y)

Solvent: 20370011 Nitric Acid

Lot #

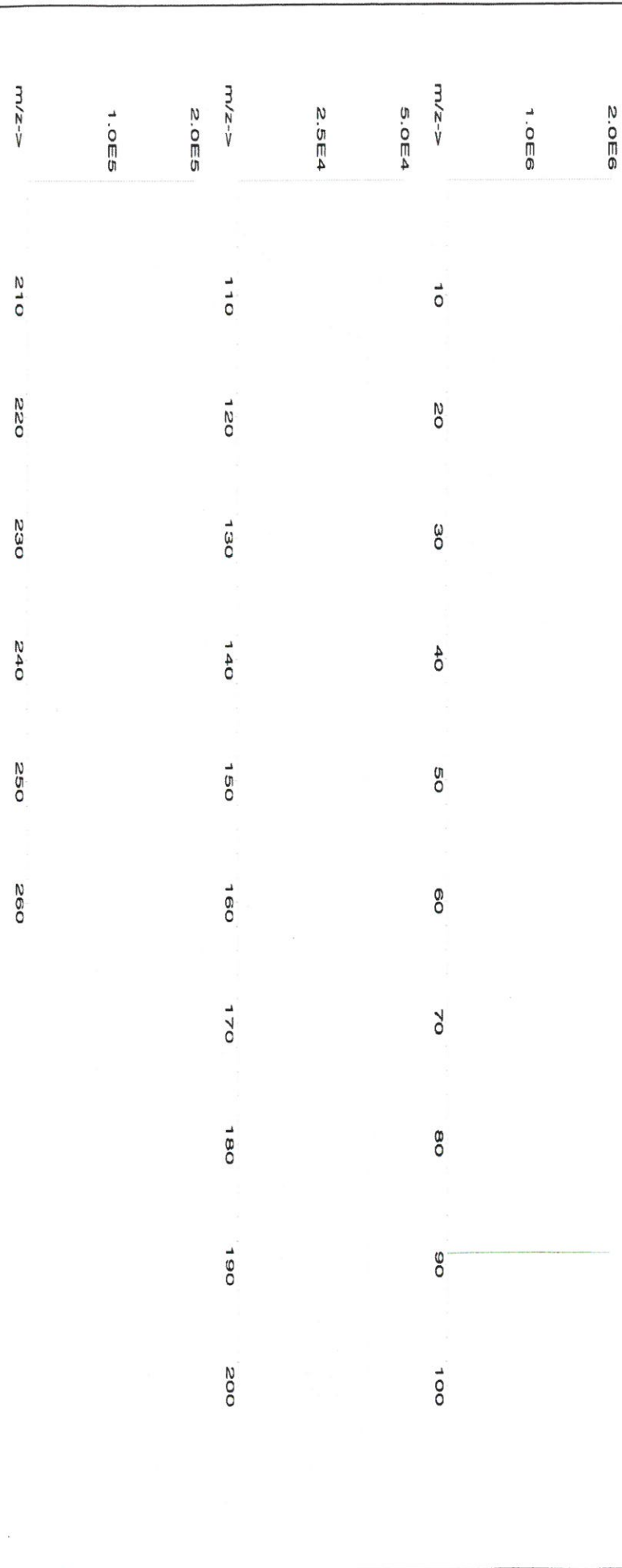
Expiration Date: 052524
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 2000.02
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

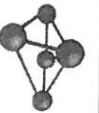
<i>Lawrence Barry</i>	
Formulated By:	Lawrence Barry
Reviewed By:	<i>Pedro L. Rentas</i>
	Pedro L. Rentas
	052521

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Yttrium (III) Oxide (Y)	IN087	YV01201581	10000	99.999	0.10	77.9	25.6744	25.6745	10000.0	20.0	1314-36-9	NA	NA	NA
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[1] Spectrum No. 1 [12.624 sec]:58139.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hi	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Mg	<0.01	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mn	<0.02	Os	<0.02	Rh	<0.02	Ag	<0.02	Ti	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Hg	<0.2	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Mo	<0.02	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Nd	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02			K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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Certified Reference Material CRM

IN 5019 R: 12/09/24 (BP)



CERTIFIED WEIGHT REPORT:

Part Number: 57116

Lot Number: 011421

Description: Sulfur (S)

Lot #

Solvent: 011421 ASTM Type 1 Water

Expiration Date:

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): 10000

NIST Test Number: 23060

Weight shown below was diluted to (mL): 1999.53

5E-05 Balance Uncertainty

0.100 Flask Uncertainty

Formulated By:	Lawrence Barry
Reviewed By:	Pedro L. Rentas
011421	
011421	

SDS Information

Expanded
Uncertainty
+/- (µg/mL)

(Solvent Safety Info. On Attached pg.)

NIST
SRM

CAS#

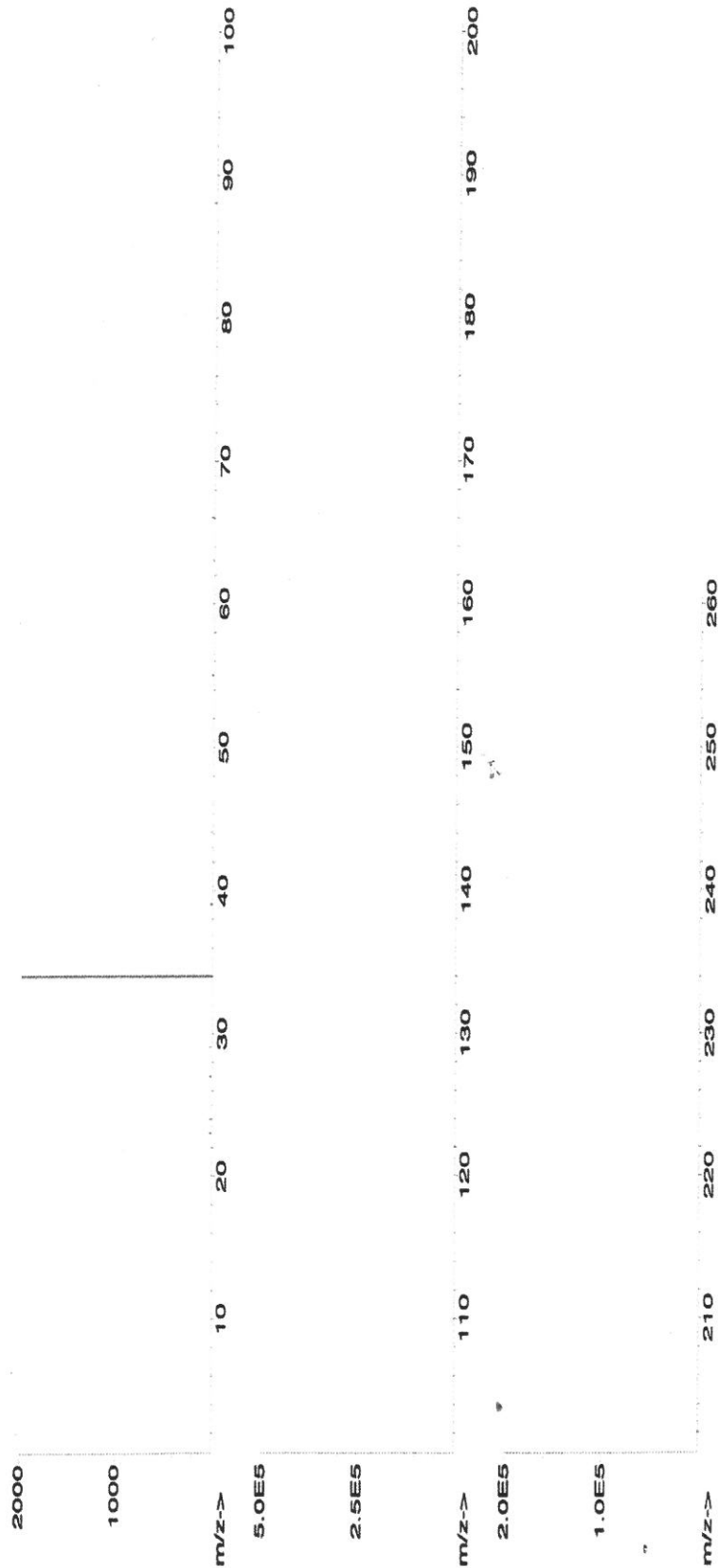
LD50

OSHA PEL (TWA)

Compound

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	LD50	OSHA PEL (TWA)	NIST SRM
1. Ammonium sulfate (S)	IN117	SLBF8912V	10000.0	99.0	0.10	24.3	83.2191	83.2206	10000.2	20.2	7783-20-2	NA	NA	3181

[1] Spectrum No.1 [24.004 sec]:58116.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Tc	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.02	Os	<0.01	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.2	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	T	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.2	Ta	<0.02	Ti	<0.02	Zr	<0.02

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

(T)= Target analyte

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



Certified Reference Material CRM

34

MSD



ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT:

Part Number: 57115
Lot Number: 032921
Description: Phosphorous (P)

Lot #
Solvent: 20370011 Nitric Acid

Expiration Date: 032924

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): 10000

NIST Test Number: 6UTB

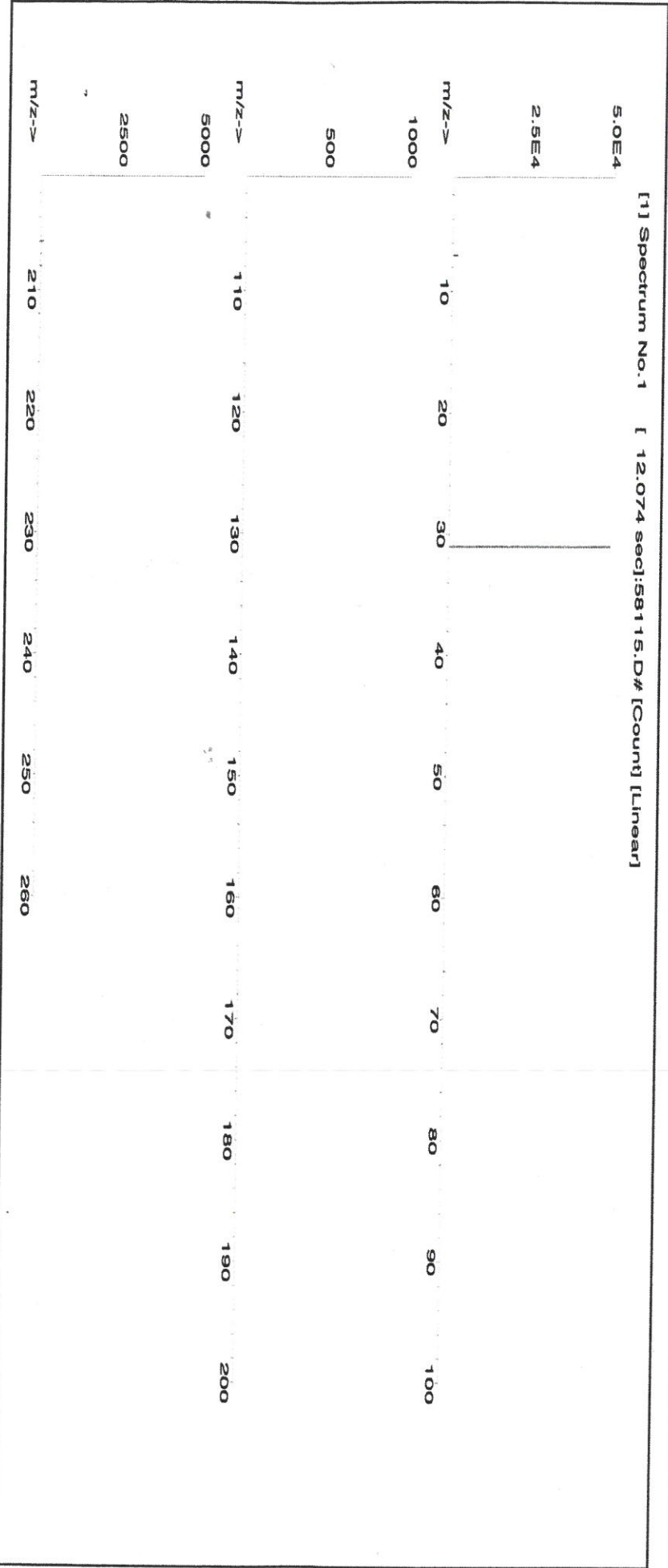
Weight shown below was diluted to (mL): 3000.41

2% 60.0 mL Nitric Acid

Formulated By: Lawrence Barry		032921
Reviewed By: Pedro L. Rientas		032921

Compound	Lot	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM

1. Ammonium dihydrogen phosphate (P) IN008 PUGS2018A1 10000 99.999 0.10 27.3 109.9063 109.9093 10000.3 20.0 7722-76-1 5 mg/m3 NA 3186





Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	T	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
"An ISO 9001:2015 Certified Program"

R: 04/20/21
52

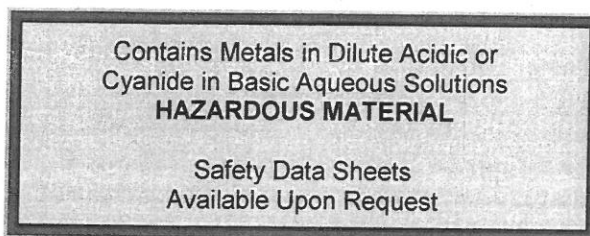
Instructions for QATS Reference Material: *Inorganic ICV Solutions*

QATS LABORATORY INORGANIC REFERENCE MATERIAL
INITIAL CALIBRATION VERIFICATION SOLUTIONS
(ICV1, ICV5, AND ICV6)

NOTE: These instructions are for advisory purposes only. If any apparent conflict exists between these instructions and the analytical protocol or your contract, disregard these instructions.

APPLICATION: For use with the CLP SFAM01.0 SOW and revisions.

CAUTION: Read instructions carefully before opening bottle(s) and proceeding with the analyses.



M5066

(A) **SAMPLE DESCRIPTION**

Enclosed is a set of one (1) or more Aqueous Inorganic Reference Materials containing various analyte concentrations. ICV1 and ICV5 are in a matrix of dilute nitric acid. ICV6 is in a matrix of dilute basic solution. **For the reference material source in reporting ICVs use "USEPA". For the reference material lot number for the ICV1, ICV5, and ICV6 solutions use "ICV1-1014", "ICV5-0415", and "ICV6-0400", respectively.**

(B) **BREAKAGE OR MISSING ITEMS**

Check the contents of the shipment carefully for any broken, leaking, or missing items. Check that the seal is intact on each bottle. Refer to the enclosed chain of custody record. Report any problems to Mr. Keith Strout, APTIM Federal Services, LLC, at (702) 895-8722. If requested, return the chain-of-custody record with appropriate annotations and signatures to the address provided below.

QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
APTIM Federal Services, LLC
2700 Chandler Avenue - Building C
Las Vegas, NV 89120

(C) **ANALYSIS OF SAMPLES**

The Initial Calibration Verification Solutions (ICVs) are to be used to evaluate the accuracy of the initial calibrations of ICP, AA, and Cyanide colorimetric instruments, and are to be used with the CLP SOWs and revisions. The values for each element in the ICVs are listed below in µg/L (ppb) for the resulting solution(s) after the dilution of the concentrate(s) according to the following instructions. Use Class 'A' glassware to prepare the solution(s).

ICV1-1014 For ICP-AES analysis, use a 10-fold dilution by pipetting 10 mL of the ICV1 concentrate into a 100 mL volumetric flask and dilute to volume with 2% (v/v) nitric acid.





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SD

Instructions for QATS Reference Material: *Inorganic ICV Solutions*

ICV1-1014

For ICP-MS analysis, use a 50-fold dilution by pipetting 2 mL of the ICV1 concentrate into a 100 mL volumetric flask and dilute to volume with 1% (v/v) nitric acid.

ICV5-0415

For the cold vapor analysis of mercury by AA, use a 100-fold dilution by pipetting 1 mL of the ICV5 concentrate into a 100 mL volumetric flask and dilute to volume with 2% (v/v) nitric acid. The ICV5 concentrate is prepared in 0.05% (w/v) $K_2Cr_2O_7$ and 5% (v/v) nitric acid.

ICV6-0400

For the analysis of cyanide, use a 100-fold dilution by pipetting 1 mL of the ICV6 concentrate into a 100 mL volumetric flask and dilute to volume with Type II water. Distill this solution along with the samples before analysis. The cyanide concentrate is prepared from $K_3Fe(CN)_6$, Type II water, and 0.1 % sodium hydroxide, and will decompose rapidly if exposed to light.

NOTE: USE TYPE II WATER AND HIGH-PURITY ACIDS FOR ALL DILUTIONS.

(D) CERTIFIED CONCENTRATIONS OF QATS ICV1, ICV5, AND ICV6 SOLUTIONS

M5066

ICV1-1014		
Element	Concentration (µg/L) (after 10-fold dilution)	Concentration (µg/L) (after 50-fold dilution)
Al	2500	500
Sb	1000	200
As	1000	200
Ba	520	100
Be	510	100
Cd	510	100
Ca	10000	2000
Cr	520	100
Co	520	100
Cu	510	100
Fe	10000	2000
Pb	1000	200
Mg	6000	1200
Mn	520	100
Ni	530	110
K	9900	2000
Se	1000	200
Ag	250	50
Na	10000	2000
Tl	1000	210
V	500	100
Zn	1000	200

ICV5-0415		ICV6-0400	
Element	Concentration (µg/L) (after 100-fold dilution)	Analyte	Concentration (µg/L) (after 100-fold dilution)
Hg	4.0	CN ⁻	99

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution		
Catalog Number:	WW-LFS-1		
Lot Number:	P2-MEB686379		
Matrix:	5% (v/v) HNO ₃		
Value / Analyte(s):	1 000 µg/mL ea:		
	Potassium,		
	600 µg/mL ea:		
	Phosphorus,		
	300 µg/mL ea:		
	Sodium,	Iron,	
	200 µg/mL ea:		
	Magnesium,	Aluminum,	Cerium,
	Selenium,	Thallium,	
	100 µg/mL ea:		
	Lead,	Calcium,	
	80 µg/mL ea:		
	Arsenic,		
	70 µg/mL ea:		
	Mercury,		
	50 µg/mL ea:		
	Nickel,		
	40 µg/mL ea:		
	Chromium,		
	30 µg/mL ea:		
	Copper,	Boron,	Vanadium,
	20 µg/mL ea:		
	Zinc,	Strontium,	Barium,
	Beryllium,	Cadmium,	Cobalt,
	Manganese,	Lithium,	
	7.5 µg/mL ea:		
	Silver		

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	200.0 ± 0.7 µg/mL	Arsenic, As	80.0 ± 0.7 µg/mL
Barium, Ba	20.00 ± 0.09 µg/mL	Beryllium, Be	20.00 ± 0.09 µg/mL
Boron, B	30.00 ± 0.18 µg/mL	Cadmium, Cd	20.00 ± 0.09 µg/mL
Calcium, Ca	100.0 ± 0.4 µg/mL	Cerium, Ce	200.0 ± 0.8 µg/mL
Chromium, Cr	40.00 ± 0.23 µg/mL	Cobalt, Co	20.00 ± 0.09 µg/mL
Copper, Cu	30.00 ± 0.13 µg/mL	Iron, Fe	300.0 ± 1.2 µg/mL
Lead, Pb	100.0 ± 0.4 µg/mL	Lithium, Li	20.00 ± 0.09 µg/mL
Magnesium, Mg	200.0 ± 0.9 µg/mL	Manganese, Mn	20.00 ± 0.09 µg/mL
Mercury, Hg	70.0 ± 0.3 µg/mL	Nickel, Ni	49.99 ± 0.22 µg/mL
Phosphorus, P	600.0 ± 3.0 µg/mL	Potassium, K	1 000 ± 4 µg/mL
Selenium, Se	200.0 ± 1.6 µg/mL	Silver, Ag	7.50 ± 0.03 µg/mL
Sodium, Na	300.0 ± 1.2 µg/mL	Strontium, Sr	20.00 ± 0.09 µg/mL
Thallium, Tl	200.0 ± 1.3 µg/mL	Vanadium, V	30.00 ± 0.13 µg/mL
Zinc, Zn	20.00 ± 0.08 µg/mL		

Density: 1.034 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	160729
Ag	Volhard	999c	999c
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
As	ICP Assay	3103a	100818
B	ICP Assay	3107	110830
Ba	ICP Assay	3104a	140909
Ba	Gravimetric		See Sec. 4.2
Be	ICP Assay	3105a	090514
Be	Calculated		See Sec. 4.2
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Cd	ICP Assay	3108	130116
Cd	EDTA	928	928
Cd	Calculated		See Sec. 4.2
Ce	ICP Assay	3110	090504
Ce	EDTA	928	928
Co	EDTA	928	928
Co	ICP Assay	traceable to 3113	M2-CO661665
Cr	ICP Assay	3112a	170630
Cu	ICP Assay	3114	121207
Cu	EDTA	928	928
Cu	Calculated		See Sec. 4.2
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
Hg	ICP Assay	3133	061204
Hg	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Li	ICP Assay	3129a	100714
Li	Calculated		See Sec. 4.2
Li	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Mn	EDTA	928	928
Mn	ICP Assay	Traceable to 3132	N2-MN665236
Mn	Calculated		See Sec. 4.2
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Se	ICP Assay	3149	100901
Sr	EDTA	928	928
Sr	ICP Assay	Traceable to 3153a	K2-SR650985
Sr	Calculated		See Sec. 4.2

Tl	ICP Assay	3158	993012
V	ICP Assay	3165	160906
V	EDTA	928	928
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of $k = 2$.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{\text{CRM/RM}}$, where two or more methods of characterization are used is the weighted mean of the results:

$$X_{\text{CRM/RM}} = \sum (w_i) (X_i)$$

X_i = mean of Assay Method i with standard uncertainty $u_{\text{char } i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{\text{char } i}^2) / (\sum (1/u_{\text{char } i}^2))$$

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k (u_{\text{char}}^2 + u_{\text{bb}}^2 + u_{\text{Its}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char}} = [\sum (w_i)^2 (u_{\text{char } i})^2]^{1/2}$ where $u_{\text{char } i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{Its} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{\text{CRM/RM}}$, where one method of characterization is used is the mean of individual results:

$$X_{\text{CRM/RM}} = (X_a) (u_{\text{char } a})$$

X_a = mean of Assay Method A with

$u_{\text{char } a}$ = the standard uncertainty of characterization Method A

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k (u_{\text{char } a}^2 + u_{\text{bb}}^2 + u_{\text{Its}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char } a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{Its} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- 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/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Low Silver Note: This solution contains "LOW" levels of Silver. Please store this entire bottle inside a sealed glass jar.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

November 05, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **November 05, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control



Certifying Officer:

Paul Gaines
CEO, Senior Technical Director



1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution
 Catalog Number: WW-LFS-2
 Lot Number: R2-MEB693161
 Matrix: 5% (v/v) HNO₃
 tr. HF
 Value / Analyte(s):
 200 µg/mL ea:
 Silica,
 80 µg/mL ea:
 Antimony,
 70 µg/mL ea:
 Tin,
 40 µg/mL ea:
 Molybdenum,
 20 µg/mL ea:
 Titanium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Antimony, Sb	80.0 ± 0.6 µg/mL	Molybdenum, Mo	40.00 ± 0.17 µg/mL
Silica, SiO ₂	200.0 ± 1.5 µg/mL	Tin, Sn	70.0 ± 0.3 µg/mL
Titanium, Ti	20.00 ± 0.12 µg/mL		

Density: 1.024 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Mo	ICP Assay	3134	130418
Mo	Calculated		See Sec. 4.2
Sb	ICP Assay	3102a	140911
SiO ₂	Calculated		See Sec. 4.2
Sn	ICP Assay	3161a	070330
Ti	ICP Assay	3162a	130925
Ti	Calculated		See Sec. 4.2

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{\text{CRM/RM}}$, where two or more methods of characterization are used is the weighted mean of the results:

$$X_{\text{CRM/RM}} = \sum(w_i)(X_i)$$

X_i = mean of Assay Method i with standard uncertainty $u_{\text{char } i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{\text{char } i}^2) / (\sum(1/u_{\text{char } i}^2))$$

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k (u_{\text{char}}^2 + u_{\text{bb}}^2 + u_{\text{Its}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char}} = [\sum(w_i)^2 (u_{\text{char } i})^2]^{1/2}$ where $u_{\text{char } i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{Its} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{\text{CRM/RM}}$, where one method of characterization is used is the mean of individual results:

$$X_{\text{CRM/RM}} = (X_a)(u_{\text{char } a})$$

X_a = mean of Assay Method A with

$u_{\text{char } a}$ = the standard uncertainty of characterization Method A

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k (u_{\text{char } a}^2 + u_{\text{bb}}^2 + u_{\text{Its}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char } a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{Its} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- 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/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

HF Note: This standard should not be prepared or stored in glass.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

May 20, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **May 20, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

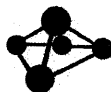
Michael Booth
Manager, Quality Control



Certifying Officer:

Paul Gaines
CEO, Senior Technical Director





M516

BH R: 03/30/2022
Certified Reference Material CRM

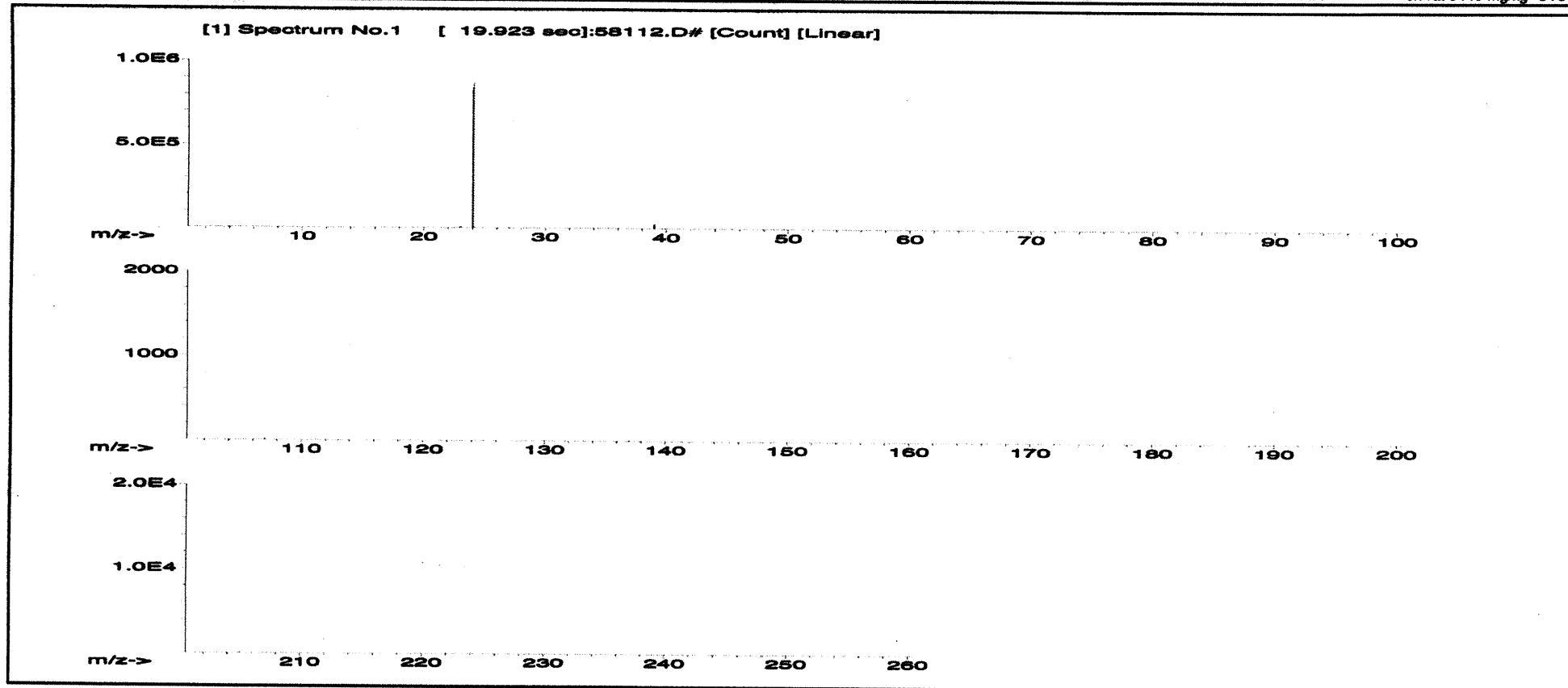


CERTIFIED WEIGHT REPORT:

Part Number: 58112
Lot Number: 022822
Description: Magnesium (Mg)
Expiration Date: 022825
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 2000.02
5E-05 Balance Uncertainty
0.058 Flask Uncertainty
Solvent: 20370011 Nitric Acid
2% 40.0 Nitric Acid (mL)

Formulated By:	Lawrence Barry	022822
Reviewed By:	Pedro L. Rentas	022822

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.)			NIST SRM
											CAS#	OSHA PEL (TWA)	LD50	
1. Magnesium nitrate hexahydrate (Mg)	IN030	MGM052021A1	10000	99.999	0.10	9.40	212.7701	212.7718	10000.1	20.0	13448-18-9	NA	orl-rat 5440 mg/kg	3131a





Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS ($\mu\text{g/mL}$)																			
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	T	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Certified by:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



R: 04/20/21
[Signature]

Instructions for QATS Reference Material: ICP-AES ICS

Cd, Co, Cr, Cu, Mn, Ni, Pb, Tl, Se, V, and Zn. This instruction sheet provides the nominal values for ICP-AES Part A and Part B target analytes when diluted as directed.

Using Class "A" glassware, preparation and analysis must be performed according to the following instructions:

ICSA-1211, Interferents: Pipet 10 mL of the ICSA solution into a 100 mL volumetric flask and dilute to volume with 2% v/v HNO₃. Analyze this ICSA solution by ICP-AES.

ICSB-0710, Analytes, mixed with ICSA-1211, Interferents: Pipet 10 mL of the ICSA solution and 10 mL of the ICSB solution into a 100 mL volumetric flask and dilute to volume with 2% v/v HNO₃. Analyze this ICSAB solution by ICP-AES.

(D) "CERTIFIED VALUE" CONCENTRATIONS OF QATS ICP-AES ICS SOLUTION(S)

The "Certified Value" concentrations of the elements, listed in Table 1 below, were derived from statistically pooled analysis results from the following sources, if available: QATS Laboratory, CLP laboratories, Quarterly Blind (QB)/Proficiency Testing (PT) events, CLP pre-award events, and external referee laboratories.

Table 1. "CERTIFIED VALUES" FOR INTERFERENCE CHECK SAMPLE ICP-AES ICSA-1211, AND ICSA-1211 MIXED WITH ICSB-0710

Element	CRQL	Part A (µg/L)	Low Limit (µg/L)	High Limit (µg/L)	Part A +Part B (µg/L)	Low Limit (µg/L)	High Limit (µg/L)
Al	200	250000	210000	290000	250000	210000	290000
Sb	60	(0.0)	-60	60	620	530	710
As	10	(0.0)	-10	10	100	85	120
Ba	200	(6.0)	-190	210	(540)	340	740
Be	5.0	(0.0)	-5.0	5.0	500	430	580
Cd	5.0	(1.0)	-4.0	6.0	970	820	1100
Ca	5000	240000	200000	280000	230000	200000	260000
Cr	10	(52)	42	62	540	460	620
Co	50	(0.0)	-50	50	480	410	550
Cu	25	(2.0)	-23	27	510	430	590
Fe	100	100000	85000	120000	99000	84000	110000
Pb	10	(0.0)	-10	10	(49)	39	59
Mg	5000	260000	220000	300000	250000	210000	290000
Mn	15	(7.0)	-8.0	22	510	430	590
Ni	40	(2.0)	-38	42	950	810	1100
Se	35	(0.0)	-35	35	(46)	11	81
Ag	10	(0.0)	-10	10	200	170	230
Tl	25	(0.0)	-25	25	(110)	85	140
V	50	(0.0)	-50	50	490	420	560
Zn	60	(0.0)	-60	60	950	810	1100

The acceptance ranges for all analytes in parentheses in the above table were determined using the listed certified value ± 1 times the associated CLP SOW CRQL. The acceptance ranges for all other analytes were determined using the certified value ± 15 percent of the listed certified value.

Hydrochloric Acid, 36.5–38.0%
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis



Material No.: 9530-33
Batch No.: 0000275677
Manufactured Date: 2020/12/16
Retest Date: 2025/12/15
Revision No: 1

Certificate of Analysis

Test	Specification	Result
ACS – Assay (as HCl) (by acid–base titrn)	36.5 – 38.0 %	37.6
ACS – Color (APHA)	<= 10	5
ACS – Residue after Ignition	<= 3 ppm	1
ACS – Specific Gravity at 60°/60°F	1.185 – 1.192	1.190
ACS – Bromide (Br)	<= 0.005 %	< 0.005
ACS – Extractable Organic Substances	<= 5 ppm	1
ACS – Free Chlorine (as Cl ₂)	<= 0.5 ppm	< 0.5
Phosphate (PO ₄)	<= 0.05 ppm	< 0.03
Sulfate (SO ₄)	<= 0.5 ppm	< 0.3
Sulfite (SO ₃)	<= 0.8 ppm	0.3
Ammonium (NH ₄)	<= 3 ppm	< 1
Trace Impurities – Arsenic (As)	<= 0.010 ppm	< 0.003
Trace Impurities – Aluminum (Al)	<= 10.0 ppb	< 0.2
Arsenic and Antimony (as As)	<= 5 ppb	< 3
Trace Impurities – Barium (Ba)	<= 1.0 ppb	< 0.2
Trace Impurities – Beryllium (Be)	<= 1.0 ppb	< 0.2
Trace Impurities – Bismuth (Bi)	<= 10.0 ppb	< 1.0
Trace Impurities – Boron (B)	<= 20.0 ppb	< 5.0
Trace Impurities – Cadmium (Cd)	<= 1.0 ppb	< 0.3
Trace Impurities – Calcium (Ca)	<= 50.0 ppb	29.7
Trace Impurities – Chromium (Cr)	<= 1.0 ppb	< 0.4
Trace Impurities – Cobalt (Co)	<= 1.0 ppb	< 0.3
Trace Impurities – Copper (Cu)	<= 1.0 ppb	< 0.1
Trace Impurities – Gallium (Ga)	<= 1.0 ppb	< 0.2

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700
Avantor Performance Materials, LLC
100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone: 610.386.1700

Test	Specification	Result
Trace Impurities – Germanium (Ge)	<= 3.0 ppb	< 2.0
Trace Impurities – Gold (Au)	<= 4.0 ppb	< 0.2
Heavy Metals (as Pb)	<= 100 ppb	< 50
Trace Impurities – Iron (Fe)	<= 15.0 ppb	< 1
Trace Impurities – Lead (Pb)	<= 1.0 ppb	< 0.5
Trace Impurities – Lithium (Li)	<= 1.0 ppb	0.2
Trace Impurities – Magnesium (Mg)	<= 10.0 ppb	0.4
Trace Impurities – Manganese (Mn)	<= 1.0 ppb	< 0.4
Trace Impurities – Mercury (Hg)	<= 0.5 ppb	0.1
Trace Impurities – Molybdenum (Mo)	<= 10.0 ppb	< 5.0
Trace Impurities – Nickel (Ni)	<= 4.0 ppb	< 0.3
Trace Impurities – Niobium (Nb)	<= 1.0 ppb	< 0.2
Trace Impurities – Potassium (K)	<= 9.0 ppb	< 2.0
Trace Impurities – Selenium (Se), For Information Only	ppb	1.0
Trace Impurities – Silicon (Si)	<= 100.0 ppb	< 10.0
Trace Impurities – Silver (Ag)	<= 1.0 ppb	< 0.3
Trace Impurities – Sodium (Na)	<= 100.0 ppb	< 5.0
Trace Impurities – Strontium (Sr)	<= 1.0 ppb	< 0.2
Trace Impurities – Tantalum (Ta)	<= 1.0 ppb	< 0.9
Trace Impurities – Thallium (Tl)	<= 5.0 ppb	< 2.0
Trace Impurities – Tin (Sn)	<= 5.0 ppb	< 0.8
Trace Impurities – Titanium (Ti)	<= 1.0 ppb	0.2
Trace Impurities – Vanadium (V)	<= 1.0 ppb	< 0.2
Trace Impurities – Zinc (Zn)	<= 5.0 ppb	0.3
Trace Impurities – Zirconium (Zr)	<= 1.0 ppb	< 0.1

For Laboratory, Research or Manufacturing Use

Product Information (not specifications):

Appearance (clear, fuming liquid)

Meets ACS Specifications

Country of Origin: US

Packaging Site: Phillipsburg Mfg Ctr & DC


Jamie Ethier
Vice President Global Quality

Nitric Acid
CMOS



M5154, M5155, M5156, M5157, M5158, M5159 Material No.: 9606-03

Batch No.: 22B0862001

Manufactured Date: 2022-01-28

Retest Date: 2027-01-27

Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay (HNO ₃)	69.0 - 70.0 %	69.7 %
Appearance	Passes Test	Passes Test
Color (APHA)	≤ 10	5
Residue after Ignition	≤ 2 ppm	< 1 ppm
Chloride (Cl)	≤ 0.08 ppm	< 0.03 ppm
Phosphate (PO ₄)	≤ 0.10 ppm	< 0.03 ppm
Sulfate (SO ₄)	≤ 0.2 ppm	< 0.2 ppm
Trace Impurities - Aluminum (Al)	≤ 40.0 ppb	< 1.0 ppb
Arsenic and Antimony (as As)	≤ 5.0 ppb	< 2.0 ppb
Trace Impurities - Barium (Ba)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Beryllium (Be)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Bismuth (Bi)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities - Boron (B)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities - Cadmium (Cd)	≤ 50 ppb	< 1 ppb
Trace Impurities - Calcium (Ca)	≤ 50.0 ppb	1.5 ppb
Trace Impurities - Chromium (Cr)	≤ 30.0 ppb	2.3 ppb
Trace Impurities - Cobalt (Co)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Copper (Cu)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Gallium (Ga)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Germanium (Ge)	≤ 20 ppb	< 10 ppb
Trace Impurities - Gold (Au)	≤ 20 ppb	< 5 ppb
Heavy Metals (as Pb)	≤ 100 ppb	< 50 ppb
Trace Impurities - Iron (Fe)	≤ 40.0 ppb	< 1.0 ppb
Trace Impurities - Lead (Pb)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities - Lithium (Li)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Magnesium (Mg)	≤ 20 ppb	< 1 ppb
Trace Impurities - Manganese (Mn)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Nickel (Ni)	≤ 20.0 ppb	< 5.0 ppb

>>> Continued on page 2 >>>

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700

Avantor Performance Materials, LLC

100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone 610.386.1700

Nitric Acid
CMOS



Material No.: 9606-03
Batch No.: 22B0862001

Test	Specification	Result
Trace Impurities - Niobium (Nb)	≤ 50.0 ppb	< 1.0 ppb
Trace Impurities - Potassium (K)	≤ 50 ppb	< 10 ppb
Trace Impurities - Silicon (Si)	≤ 50 ppb	< 10 ppb
Trace Impurities - Silver (Ag)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities - Sodium (Na)	≤ 150.0 ppb	< 5.0 ppb
Trace Impurities - Strontium (Sr)	≤ 30.0 ppb	< 1.0 ppb
Trace Impurities - Tantalum (Ta)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities - Thallium (Tl)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities - Tin (Sn)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities - Titanium (Ti)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Vanadium (V)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Zinc (Zn)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities - Zirconium (Zr)	≤ 10.0 ppb	< 1.0 ppb
Particle Count - 0.5 µm and greater	≤ 60 par/ml	4 par/ml
Particle Count - 1.0 µm and greater	≤ 10 par/ml	1 par/ml

>>> Continued on page 3 >>>

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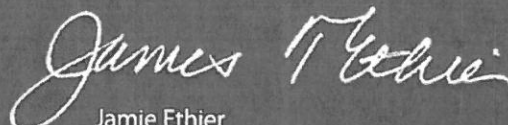
Nitric Acid
CMOS



Material No.: 9606-03
Batch No.: 22B0862001

Test	Specification	Result
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For Microelectronic Use
Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC


Jamie Ethier
Vice President Global Quality

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100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone 610.386.1700

Nitric Acid
CMOS

R! 04/19/22

avantor™



M5166, M5167, M5168, M5169
M5170, M5171

Material No.: 9606-03

Batch No.: 22B0862001

Manufactured Date: 2022-01-28

Retest Date: 2027-01-27

Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay (HNO ₃)	69.0 - 70.0 %	69.7 %
Appearance	Passes Test	Passes Test
Color (APHA)	≤ 10	5
Residue after Ignition	≤ 2 ppm	< 1 ppm
Chloride (Cl)	≤ 0.08 ppm	< 0.03 ppm
Phosphate (PO ₄)	≤ 0.10 ppm	< 0.03 ppm
Sulfate (SO ₄)	≤ 0.2 ppm	< 0.2 ppm
Trace Impurities - Aluminum (Al)	≤ 40.0 ppb	< 1.0 ppb
Arsenic and Antimony (as As)	≤ 5.0 ppb	< 2.0 ppb
Trace Impurities - Barium (Ba)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Beryllium (Be)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Bismuth (Bi)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities - Boron (B)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities - Cadmium (Cd)	≤ 50 ppb	< 1 ppb
Trace Impurities - Calcium (Ca)	≤ 50.0 ppb	1.5 ppb
Trace Impurities - Chromium (Cr)	≤ 30.0 ppb	2.3 ppb
Trace Impurities - Cobalt (Co)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Copper (Cu)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Gallium (Ga)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Germanium (Ge)	≤ 20 ppb	< 10 ppb
Trace Impurities - Gold (Au)	≤ 20 ppb	< 5 ppb
Heavy Metals (as Pb)	≤ 100 ppb	< 50 ppb
Trace Impurities - Iron (Fe)	≤ 40.0 ppb	< 1.0 ppb
Trace Impurities - Lead (Pb)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities - Lithium (Li)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Magnesium (Mg)	≤ 20 ppb	< 1 ppb
Trace Impurities - Manganese (Mn)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Nickel (Ni)	≤ 20.0 ppb	< 5.0 ppb

>>> Continued on page 2 >>>

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Avantor Performance Materials, LLC

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Nitric Acid
CMOS



Material No.: 9606-03
Batch No.: 22B0862001

Test	Specification	Result
Trace Impurities - Niobium (Nb)	≤ 50.0 ppb	< 1.0 ppb
Trace Impurities - Potassium (K)	≤ 50 ppb	< 10 ppb
Trace Impurities - Silicon (Si)	≤ 50 ppb	< 10 ppb
Trace Impurities - Silver (Ag)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities - Sodium (Na)	≤ 150.0 ppb	< 5.0 ppb
Trace Impurities - Strontium (Sr)	≤ 30.0 ppb	< 1.0 ppb
Trace Impurities - Tantalum (Ta)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities - Thallium (Tl)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities - Tin (Sn)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities - Titanium (Ti)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Vanadium (V)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Zinc (Zn)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities - Zirconium (Zr)	≤ 10.0 ppb	< 1.0 ppb
Particle Count - 0.5 μ m and greater	≤ 60 par/ml	4 par/ml
Particle Count - 1.0 μ m and greater	≤ 10 par/ml	1 par/ml

>>> Continued on page 3 >>>

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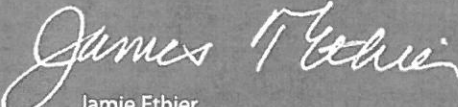
Nitric Acid
CMOS



Material No.: 9606-03
Batch No.: 22B0862001

Test	Specification	Result
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For Microelectronic Use
Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC


Jamie Ethier
Vice President Global Quality

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SHIPPING DOCUMENTS



284 Sheffield Street, Mountainside, NJ 07092
(908) 789-8900 Fax: (908) 78-8922
www.chemtech.net

Chemtech Project Number:

73259/60

COC Number:

[illegible]



284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Laboratory Certification

Certified By	License No.
CAS EPA CLP Contract	68HERH20D0011
Connecticut	PH-0649
DOD ELAP (L-A-B)	L2219
Maine	2020021
Maryland	296
New Hampshire	255421
New Jersey	20012
New York	11376
Pennsylvania	68-00548
Soil Permit	P330-21-00137
Texas	T104704488-22-15