

Cover Page

Order ID : Q1429

Project ID : Quarterly

Client : Tris Pharma, Inc.

Lab Sample Number

Q1429-01
Q1429-02

Client Sample Number

OUTFALL-DSN-001
OUTFALL-DSN-002

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: 3/5/2025

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 #: Q1429

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 Custody

✓

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

✓

QA Review Signature: PRADIP PRAJAPATI

Date: 03/05/2025

LAB CHRONICLE

OrderID:	Q1429	OrderDate:	2/25/2025 1:50:00 PM
Client:	Tris Pharma, Inc.	Project:	Quarterly
Contact:	Nichole Nikki Ferrari	Location:	D11,VOA Ref. #3 Water

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
Q1429-01	OUTFALL-DSN-001	Water	Metals Group3	200.7	02/25/25	02/28/25	03/10/25	02/25/25
Q1429-02	OUTFALL-DSN-002	Water	Metals Group3	200.7	02/25/25	02/28/25	03/10/25	02/25/25



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Fax : 908 789 8922

Hit Summary Sheet
SW-846

SDG No.: Q1429

Order ID: Q1429

Client: Tris Pharma, Inc.

Project ID: Quarterly

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
Client ID : OUTFALL-DSN-001								
Q1429-01	OUTFALL-DSN-001	Water	Copper	61.6		1.52	10.0	ug/L
Q1429-01	OUTFALL-DSN-001	Water	Zinc	12.9	J	1.44	20.0	ug/L
Client ID : OUTFALL-DSN-002								
Q1429-02	OUTFALL-DSN-002	Water	Copper	103		1.52	10.0	ug/L
Q1429-02	OUTFALL-DSN-002	Water	Zinc	56.3		1.44	20.0	ug/L



SAMPLE DATA

Report of Analysis

Client:	Tris Pharma, Inc.	Date Collected:	02/25/25
Project:	Quarterly	Date Received:	02/25/25
Client Sample ID:	OUTFALL-DSN-001	SDG No.:	Q1429
Lab Sample ID:	Q1429-01	Matrix:	Water
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.	Prep Met.
7440-50-8	Copper	61.6		1	1.52	10.0	ug/L	02/28/25 08:45	03/10/25 15:26	EPA 200.7	
7440-66-6	Zinc	12.9	J	1	1.44	20.0	ug/L	02/28/25 08:45	03/10/25 15:26	EPA 200.7	

Color Before:	Colorless	Clarity Before:	Clear	Texture:
Color After:	Colorless	Clarity After:	Clear	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

Report of Analysis

Client:	Tris Pharma, Inc.	Date Collected:	02/25/25
Project:	Quarterly	Date Received:	02/25/25
Client Sample ID:	OUTFALL-DSN-002	SDG No.:	Q1429
Lab Sample ID:	Q1429-02	Matrix:	Water
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.	Prep Met.
7440-50-8	Copper	103		1	1.52	10.0	ug/L	02/28/25 08:45	03/10/25 16:00	EPA 200.7	
7440-66-6	Zinc	56.3		1	1.44	20.0	ug/L	02/28/25 08:45	03/10/25 16:00	EPA 200.7	

Color Before:	Colorless	Clarity Before:	Clear	Texture:
Color After:	Colorless	Clarity After:	Clear	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: Tris Pharma, Inc. **SDG No.:** Q1429
Contract: TRIS02 **Lab Code:** CHEM **Case No.:** Q1429 **SAS No.:** Q1429
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	Copper	515	510	101	95 - 105	P	03/03/2025	19:17	LB134881
	Zinc	990	1000	99	95 - 105	P	03/03/2025	19:17	LB134881

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Tris Pharma, Inc. **SDG No.:** Q1429
Contract: TRIS02 **Lab Code:** CHEM **Case No.:** Q1429 **SAS No.:** Q1429
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	Copper	22.0	20.0	110	80 - 120	P	03/03/2025	19:21	LB134881
	Zinc	40.2	40.0	100	80 - 120	P	03/03/2025	19:21	LB134881

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Tris Pharma, Inc. **SDG No.:** Q1429

Contract: TRIS02 **Lab Code:** CHEM **Case No.:** Q1429 **SAS No.:** Q1429

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	Copper	1190	1250	95	90 - 110	P	03/03/2025	19:57	LB134881
	Zinc	2390	2500	96	90 - 110	P	03/03/2025	19:57	LB134881
CCV02	Copper	1330	1250	106	90 - 110	P	03/03/2025	21:12	LB134881
	Zinc	2630	2500	105	90 - 110	P	03/03/2025	21:12	LB134881
CCV03	Copper	1290	1250	103	90 - 110	P	03/03/2025	22:02	LB134881
	Zinc	2550	2500	102	90 - 110	P	03/03/2025	22:02	LB134881
CCV04	Copper	1250	1250	100	90 - 110	P	03/03/2025	23:07	LB134881
	Zinc	2460	2500	98	90 - 110	P	03/03/2025	23:07	LB134881
CCV05	Copper	1230	1250	98	90 - 110	P	03/04/2025	00:03	LB134881
	Zinc	2420	2500	97	90 - 110	P	03/04/2025	00:03	LB134881

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Tris Pharma, Inc. **SDG No.:** Q1429
Contract: TRIS02 **Lab Code:** CHEM **Case No.:** Q1429 **SAS No.:** Q1429
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	Copper	524	510	103	95 - 105	P	03/10/2025	11:48	LB134965
	Zinc	1040	1000	104	95 - 105	P	03/10/2025	11:48	LB134965

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Tris Pharma, Inc. **SDG No.:** Q1429
Contract: TRIS02 **Lab Code:** CHEM **Case No.:** Q1429 **SAS No.:** Q1429
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	Copper	21.2	20.0	106	80 - 120	P	03/10/2025	11:52	LB134965
	Zinc	40.5	40.0	101	80 - 120	P	03/10/2025	11:52	LB134965

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Tris Pharma, Inc. SDG No.: Q1429
Contract: TRIS02 Lab Code: CHEM Case No.: Q1429 SAS No.: Q1429
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	Copper	1240	1250	99	90 - 110	P	03/10/2025	12:27	LB134965
	Zinc	2470	2500	99	90 - 110	P	03/10/2025	12:27	LB134965
CCV02	Copper	1270	1250	102	90 - 110	P	03/10/2025	13:21	LB134965
	Zinc	2550	2500	102	90 - 110	P	03/10/2025	13:21	LB134965
CCV03	Copper	1300	1250	104	90 - 110	P	03/10/2025	14:11	LB134965
	Zinc	2590	2500	104	90 - 110	P	03/10/2025	14:11	LB134965
CCV04	Copper	1250	1250	100	90 - 110	P	03/10/2025	15:01	LB134965
	Zinc	2510	2500	100	90 - 110	P	03/10/2025	15:01	LB134965
CCV05	Copper	1250	1250	100	90 - 110	P	03/10/2025	15:51	LB134965
	Zinc	2500	2500	100	90 - 110	P	03/10/2025	15:51	LB134965
CCV06	Copper	1250	1250	100	90 - 110	P	03/10/2025	16:48	LB134965
	Zinc	2500	2500	100	90 - 110	P	03/10/2025	16:48	LB134965
CCV07	Copper	1220	1250	98	90 - 110	P	03/10/2025	17:39	LB134965
	Zinc	2410	2500	96	90 - 110	P	03/10/2025	17:39	LB134965
CCV08	Copper	1200	1250	96	90 - 110	P	03/10/2025	18:29	LB134965
	Zinc	2410	2500	96	90 - 110	P	03/10/2025	18:29	LB134965
CCV09	Copper	1210	1250	97	90 - 110	P	03/10/2025	18:46	LB134965
	Zinc	2360	2500	94	90 - 110	P	03/10/2025	18:46	LB134965



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Metals

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CRDL STANDARD FOR AA & ICP

Client: Tris Pharma, Inc. **SDG No.:** Q1429
Contract: TRIS02 **Lab Code:** CHEM **Case No.:** Q1429 **SAS No.:** Q1429
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	Copper	21.8	20.0	109	40 - 160	P	03/03/2025	19:30	LB134881
	Zinc	40.7	40.0	102	40 - 160	P	03/03/2025	19:30	LB134881
CRI01	Copper	21.4	20.0	107	40 - 160	P	03/10/2025	12:01	LB134965
	Zinc	41.3	40.0	103	40 - 160	P	03/10/2025	12:01	LB134965



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Fax : 908 789 8922

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Tris Pharma, Inc. **SDG No.:** Q1429
Contract: TRIS02 **Lab Code:** CHEM **Case No.:** Q1429 **SAS No.:** Q1429

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB01	Copper	20.0	+/-20.0	U	20.0	P	03/03/2025	19:25	LB134881
	Zinc	40.0	+/-40.0	U	40.0	P	03/03/2025	19:25	LB134881

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Tris Pharma, Inc.

SDG No.: Q1429

Contract: TRIS02

Lab Code: CHEM

Case No.: Q1429

SAS No.: Q1429

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB01	Copper	20.0	+/-20.0	U	20.0	P	03/03/2025	20:01	LB134881
	Zinc	8.86	+/-40.0	J	40.0	P	03/03/2025	20:01	LB134881
CCB02	Copper	20.0	+/-20.0	U	20.0	P	03/03/2025	21:16	LB134881
	Zinc	40.0	+/-40.0	U	40.0	P	03/03/2025	21:16	LB134881
CCB03	Copper	20.0	+/-20.0	U	20.0	P	03/03/2025	22:24	LB134881
	Zinc	40.0	+/-40.0	U	40.0	P	03/03/2025	22:24	LB134881
CCB04	Copper	20.0	+/-20.0	U	20.0	P	03/03/2025	23:11	LB134881
	Zinc	40.0	+/-40.0	U	40.0	P	03/03/2025	23:11	LB134881
CCB05	Copper	20.0	+/-20.0	U	20.0	P	03/04/2025	00:08	LB134881
	Zinc	40.0	+/-40.0	U	40.0	P	03/04/2025	00:08	LB134881

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Tris Pharma, Inc.

SDG No.: Q1429

Contract: TRIS02

Lab Code: CHEM

Case No.: Q1429

SAS No.: Q1429

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB01	Copper	20.0	+/-20.0	U	20.0	P	03/10/2025	11:57	LB134965
	Zinc	40.0	+/-40.0	U	40.0	P	03/10/2025	11:57	LB134965

Metals

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INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: <u>Tris Pharma, Inc.</u>		SDG No.: <u>Q1429</u>							
Contract: <u>TRIS02</u>	Lab Code: <u>CHEM</u>	Case No.: <u>Q1429</u>	SAS No.: <u>Q1429</u>						
Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB01	Copper	20.0	+/-20.0	U	20.0	P	03/10/2025	12:34	LB134965
	Zinc	40.0	+/-40.0	U	40.0	P	03/10/2025	12:34	LB134965
CCB02	Copper	20.0	+/-20.0	U	20.0	P	03/10/2025	13:25	LB134965
	Zinc	40.0	+/-40.0	U	40.0	P	03/10/2025	13:25	LB134965
CCB03	Copper	20.0	+/-20.0	U	20.0	P	03/10/2025	14:15	LB134965
	Zinc	40.0	+/-40.0	U	40.0	P	03/10/2025	14:15	LB134965
CCB04	Copper	20.0	+/-20.0	U	20.0	P	03/10/2025	15:05	LB134965
	Zinc	40.0	+/-40.0	U	40.0	P	03/10/2025	15:05	LB134965
CCB05	Copper	20.0	+/-20.0	U	20.0	P	03/10/2025	15:55	LB134965
	Zinc	40.0	+/-40.0	U	40.0	P	03/10/2025	15:55	LB134965
CCB06	Copper	20.0	+/-20.0	U	20.0	P	03/10/2025	16:52	LB134965
	Zinc	40.0	+/-40.0	U	40.0	P	03/10/2025	16:52	LB134965
CCB07	Copper	20.0	+/-20.0	U	20.0	P	03/10/2025	17:44	LB134965
	Zinc	40.0	+/-40.0	U	40.0	P	03/10/2025	17:44	LB134965
CCB08	Copper	20.0	+/-20.0	U	20.0	P	03/10/2025	18:33	LB134965
	Zinc	40.0	+/-40.0	U	40.0	P	03/10/2025	18:33	LB134965
CCB09	Copper	20.0	+/-20.0	U	20.0	P	03/10/2025	18:50	LB134965
	Zinc	40.0	+/-40.0	U	40.0	P	03/10/2025	18:50	LB134965

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Tris Pharma, Inc.

SDG No.: Q1429

Contract: TRIS02

Lab Code: CHEM

Case No.: Q1429

SAS No.: Q1429

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number

Metals
- 3b -
PREPARATION BLANK SUMMARY

Client: Tris Pharma, Inc.

SDG No.: Q1429

Instrument: P4

Sample ID	Analyte	Result (ug/L)	Acceptance Limit	Conc Qual	CRQL ug/L	M	Analysis Date	Analysis Time	Run
PB166926BL		WATER		Batch Number:	PB166926		Prep Date:	02/28/2025	
	Copper	10.0	<10.0	U	10.0	P	03/03/2025	23:55	LB134881
	Zinc	20.0	<20.0	U	20.0	P	03/03/2025	23:55	LB134881

Metals
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INTERFERENCE CHECK SAMPLE

Client: Tris Pharma, Inc. **SDG No.:** Q1429
Contract: TRIS02 **Lab Code:** CHEM **Case No.:** Q1429 **SAS No.:** Q1429
ICS Source: EPA **Instrument ID:** P4

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	-1.27	2.0	64	-18	22	03/03/2025	19:34	LB134881
	Zinc	2.89			-40	40	03/03/2025	19:34	LB134881
ICSAB01	Copper	478	511	94	434	588	03/03/2025	19:38	LB134881
	Zinc	984	952	103	809	1095	03/03/2025	19:38	LB134881
ICSA	Copper	3.20	2.0	160	-18	22	03/03/2025	19:42	LB134881
	Zinc	-2.80			-40	40	03/03/2025	19:42	LB134881
ICSAB	Copper	503	511	98	434	588	03/03/2025	19:46	LB134881
	Zinc	997	952	105	809	1095	03/03/2025	19:46	LB134881
ICSA01	Copper	9.85	2.0	492	-18	22	03/10/2025	12:05	LB134965
	Zinc	2.96			-40	40	03/10/2025	12:05	LB134965
ICSAB01	Copper	518	511	101	434	588	03/10/2025	12:10	LB134965
	Zinc	1070	952	112	809	1095	03/10/2025	12:10	LB134965
ICSA	Copper	3.14	2.0	157	-18	22	03/10/2025	12:14	LB134965
	Zinc	49.6			-40	40	03/10/2025	12:14	LB134965
ICSAB	Copper	531	511	104	434	588	03/10/2025	12:18	LB134965
	Zinc	1060	952	111	809	1095	03/10/2025	12:18	LB134965



METAL

QC

DATA

metals
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MATRIX SPIKE SUMMARY

client: Tris Pharma, Inc. **level:** low **sdg no.:** Q1429
contract: TRIS02 **lab code:** CHEM **case no.:** Q1429 **sas no.:** Q1429
matrix: Water **sample id:** Q1429-01 **client id:** OUTFALL-DSN-001MS
Percent Solids for Sample: NA **Spiked ID:** Q1429-01MS **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Copper	ug/L	75 - 125	234		61.6		150	115		P
Zinc	ug/L	75 - 125	130		12.9	J	100	117		P

metals
- 5a -
MATRIX SPIKE DUPLICATE SUMMARY

client: Tris Pharma, Inc. **level:** low **sdg no.:** Q1429
contract: TRIS02 **lab code:** CHEM **case no.:** Q1429 **sas no.:** Q1429
matrix: Water **sample id:** Q1429-01 **client id:** OUTFALL-DSN-001MSD
Percent Solids for Sample: NA **Spiked ID:** Q1429-01MSD **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit %R	MSD Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Copper	ug/L	75 - 125	231		61.6		150	113		P
Zinc	ug/L	75 - 125	127		12.9	J	100	114		P

Metals

- 5b -

Client: Tris Pharma, Inc.

SDG No.: Q1429

Contract: TRIS02

Lab Code: CHEM

Case No.: Q1429 **SAS No.:** Q1429

Matrix:

Level: LOW

Client ID:

Sample ID:

Spiked ID:

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

.....

Metals

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DUPLICATE SAMPLE SUMMARY

Client: Tris Pharma, Inc. **Level:** LOW **SDG No.:** Q1429
Contract: TRIS02 **Lab Code:** CHEM **Case No.:** Q1429 **SAS No.:** Q1429
Matrix: Water **Sample ID:** Q1429-01 **Client ID:** OUTFALL-DSN-001DUP
Percent Solids for Sample: NA **Duplicate ID** Q1429-01DUP **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Copper	ug/L	20	61.6		60.7		1		P
Zinc	ug/L	20	12.9	J	12.6	J	2		P

Metals

- 6 -

DUPLICATE SAMPLE SUMMARY

Client: Tris Pharma, Inc. **Level:** LOW **SDG No.:** Q1429
Contract: TRIS02 **Lab Code:** CHEM **Case No.:** Q1429 **SAS No.:** Q1429
Matrix: Water **Sample ID:** Q1429-01MS **Client ID:** OUTFALL-DSN-001MSD
Percent Solids for Sample: NA **Duplicate ID** Q1429-01MSD **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Copper	ug/L	20	234		231		1		P
Zinc	ug/L	20	130		127		2		P

Metals

- 7 -

LABORATORY CONTROL SAMPLE SUMMARY

Client: Tris Pharma, Inc.

SDG No.: Q1429

Contract: TRIS02

Lab Code: CHEM

Case No.: Q1429

SAS No.: Q1429

Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limits	M
PB166926BS							
Copper	ug/L	150	160		107	85 - 115	P
Zinc	ug/L	100	104		104	85 - 115	P

Metals

-9 -

ICP SERIAL DILUTIONS

SAMPLE NO.

OUTFALL-DSN-001L

Lab Name: Chemtech Consulting Group

Contract: TRIS02

Lab Code: CHEM **Lb No.:** lb134965 **Lab Sample ID :** Q1429-01L **SDG No.:** Q1429

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
Copper	61.6	C	63.4	C	3		P
Zinc	12.9	J	13.4	J	4		P



METAL PREPARATION & INSTRUMENT DATA



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

Metals

- 11 -

ICP INTERELEMENT CORRECTION FACTORS

Client: Tris Pharma, Inc.

SDG No.: Q1429

Contract: TRIS02

Lab Code: CHEM

Case No.: Q1429

SAS No.: Q1429

Instrument ID:

Date:

Interement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave- Length (nm)	ICP Interement Correction Factors For:				
		Al	Ca	Fe	Mg	Ag
Copper	224.700	0.0000000	0.0000000	0.0007850	0.0000000	0.0000000
Zinc	213.800	0.0000000	0.0000000	0.0001050	0.0000000	0.0000000

Metals

- 11 -

ICP INTERELEMENT CORRECTION FACTORS

Client: Tris Pharma, Inc.

SDG No.: Q1429

Contract: TRIS02

Lab Code: CHEM

Case No.: Q1429

SAS No.: Q1429

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
Copper	224.700	0.0000000	0.0000000	0.0000000	0.0000000	0.0009530
Zinc	213.800	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Metals

- 11 -

ICP INTERELEMENT CORRECTION FACTORS

Client: Tris Pharma, Inc.

SDG No.: Q1429

Contract: TRIS02

Lab Code: CHEM

Case No.: Q1429

SAS No.: Q1429

Instrument ID: _____

Date: _____

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave- Length (nm)	ICP Interement Correction Factors For:				
		Cr	Cu	K	Mn	Mo
Copper	224.700	0.0000000	0.0000000	0.0000000	0.0006510	0.0020500
Zinc	213.800	0.0000000	0.0009010	0.0000000	0.0000000	0.0000000

Metals

- 11 -

ICP INTERELEMENT CORRECTION FACTORS

Client: Tris Pharma, Inc.

SDG No.: Q1429

Contract: TRIS02

Lab Code: CHEM

Case No.: Q1429

SAS No.: Q1429

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
Copper	224.700	0.0000000	-0.0047000	0.0036100	0.0000000	0.0000000
Zinc	213.800	0.0000000	0.0067600	0.0000000	0.0000000	0.0000000

Metals

- 11 -

ICP INTERELEMENT CORRECTION FACTORS

Client: Tris Pharma, Inc.

SDG No.: Q1429

Contract: TRIS02

Lab Code: CHEM

Case No.: Q1429

SAS No.: Q1429

Instrument ID: _____

Date: _____

Interement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave- Length (nm)	ICP Interement Correction Factors For:				
		Sn	Ti	Tl	V	Zn
Copper	224.700	0.0000000	0.0003840	0.0000000	0.0000000	0.0000000
Zinc	213.800	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000



METAL PREPARATION & ANALYICAL SUMMARY

Metals

- 13 -

SAMPLE PREPARATION SUMMARY

Client:	<u>Tris Pharma, Inc.</u>	SDG No.:	<u>Q1429</u>
Contract:	<u>TRIS02</u>	Lab Code:	<u>CHEM</u>
		Method:	<u></u>
		Case No.:	<u>Q1429</u>
		SAS No.:	<u>Q1429</u>

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(mL)	Final Sample Volume (mL)	Percent Solids
Batch Number: PB166926							
PB166926BL	PB166926BL	MB	WATER	02/28/2025	50.0	25.0	
PB166926BS	PB166926BS	LCS	WATER	02/28/2025	50.0	25.0	
Q1429-01	OUTFALL-DSN-001	SAM	WATER	02/28/2025	50.0	25.0	
Q1429-01DUP	OUTFALL-DSN-001DUP	DUP	WATER	02/28/2025	50.0	25.0	
Q1429-01MS	OUTFALL-DSN-001MS	MS	WATER	02/28/2025	50.0	25.0	
Q1429-01MSD	OUTFALL-DSN-001MSD	MSD	WATER	02/28/2025	50.0	25.0	
Q1429-02	OUTFALL-DSN-002	SAM	WATER	02/28/2025	50.0	25.0	

metals
- 14 -
ANALYSIS RUN LOG

Client: Tris Pharma, Inc. **Contract:** TRIS02

Lab code: CHEM **Case no.:** Q1429 **Sas no.:** Q1429 **Sdg no.:** Q1429

Instrument id number: **Method:** **Run number:** LB134881

Start date: 03/03/2025 **End date:** 03/04/2025

Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	1826	Cu,Zn
S1	S1	1	1831	Cu,Zn
S2	S2	1	1835	Cu,Zn
S3	S3	1	1839	Cu,Zn
S4	S4	1	1843	Cu,Zn
S5	S5	1	1847	Cu,Zn
ICV01	ICV01	1	1917	Cu,Zn
LLICV01	LLICV01	1	1921	Cu,Zn
ICB01	ICB01	1	1925	Cu,Zn
CRI01	CRI01	1	1930	Cu,Zn
ICSA01	ICSA01	1	1934	Cu,Zn
ICSAB01	ICSAB01	1	1938	Cu,Zn
ICSA	ICSA	20	1942	Cu,Zn
ICSAB	ICSAB	20	1946	Cu,Zn
CCV01	CCV01	1	1957	Cu,Zn
CCB01	CCB01	1	2001	Cu,Zn
CCV02	CCV02	1	2112	Cu,Zn
CCB02	CCB02	1	2116	Cu,Zn
CCV03	CCV03	1	2202	Cu,Zn
CCB03	CCB03	1	2224	Cu,Zn
CCV04	CCV04	1	2307	Cu,Zn
CCB04	CCB04	1	2311	Cu,Zn
PB166926BL	PB166926BL	1	2355	Cu,Zn
PB166926BS	PB166926BS	1	2359	Cu,Zn
CCV05	CCV05	1	0003	Cu,Zn
CCB05	CCB05	1	0008	Cu,Zn

metals
- 14 -
ANALYSIS RUN LOG

Client: Tris Pharma, Inc. **Contract:** TRIS02

Lab code: CHEM **Case no.:** Q1429 **Sas no.:** Q1429 **Sdg no.:** Q1429

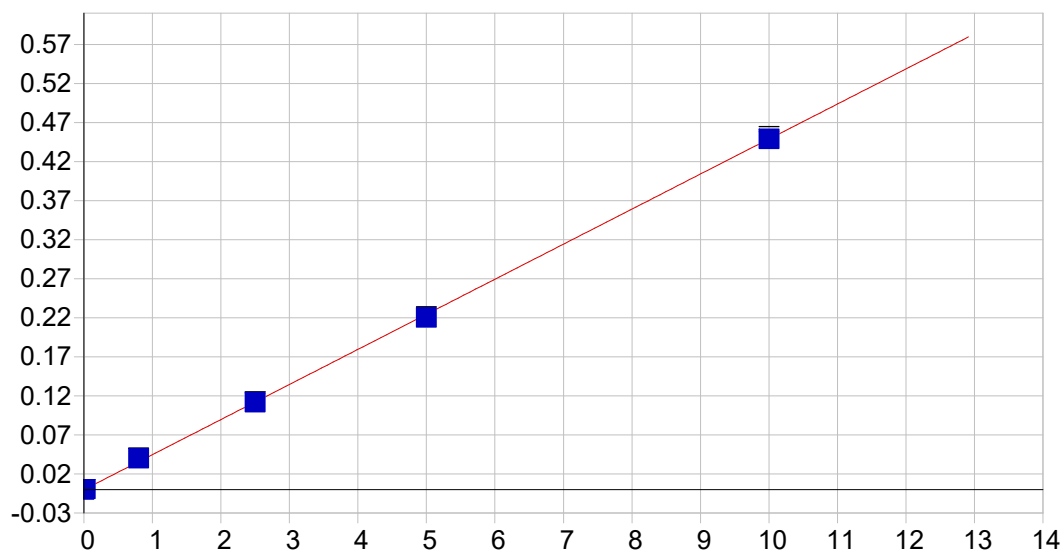
Instrument id number: **Method:** **Run number:** LB134965

Start date: 03/10/2025 **End date:** 03/10/2025

Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	1117	Cu,Zn
S1	S1	1	1122	Cu,Zn
S2	S2	1	1126	Cu,Zn
S3	S3	1	1130	Cu,Zn
S4	S4	1	1134	Cu,Zn
S5	S5	1	1138	Cu,Zn
ICV01	ICV01	1	1148	Cu,Zn
LLICV01	LLICV01	1	1152	Cu,Zn
ICB01	ICB01	1	1157	Cu,Zn
CRI01	CRI01	1	1201	Cu,Zn
ICSA01	ICSA01	1	1205	Cu,Zn
ICSAB01	ICSAB01	1	1210	Cu,Zn
ICSA	ICSA	20	1214	Cu,Zn
ICSAB	ICSAB	20	1218	Cu,Zn
CCV01	CCV01	1	1227	Cu,Zn
CCB01	CCB01	1	1234	Cu,Zn
CCV02	CCV02	1	1321	Cu,Zn
CCB02	CCB02	1	1325	Cu,Zn
CCV03	CCV03	1	1411	Cu,Zn
CCB03	CCB03	1	1415	Cu,Zn
CCV04	CCV04	1	1501	Cu,Zn
CCB04	CCB04	1	1505	Cu,Zn
Q1429-01	OUTFALL-DSN-001	1	1526	Cu,Zn
Q1429-01DUP	OUTFALL-DSN-001DUP	1	1531	Cu,Zn
Q1429-01L	OUTFALL-DSN-001L	5	1535	Cu,Zn
Q1429-01MS	OUTFALL-DSN-001MS	1	1539	Cu,Zn
Q1429-01MSD	OUTFALL-DSN-001MSD	1	1543	Cu,Zn
CCV05	CCV05	1	1551	Cu,Zn
CCB05	CCB05	1	1555	Cu,Zn
Q1429-02	OUTFALL-DSN-002	1	1600	Cu,Zn
CCV06	CCV06	1	1648	Cu,Zn
CCB06	CCB06	1	1652	Cu,Zn
CCV07	CCV07	1	1739	Cu,Zn
CCB07	CCB07	1	1744	Cu,Zn
CCV08	CCV08	1	1829	Cu,Zn
CCB08	CCB08	1	1833	Cu,Zn
CCV09	CCV09	1	1846	Cu,Zn
CCB09	CCB09	1	1850	Cu,Zn



METAL RAW DATA

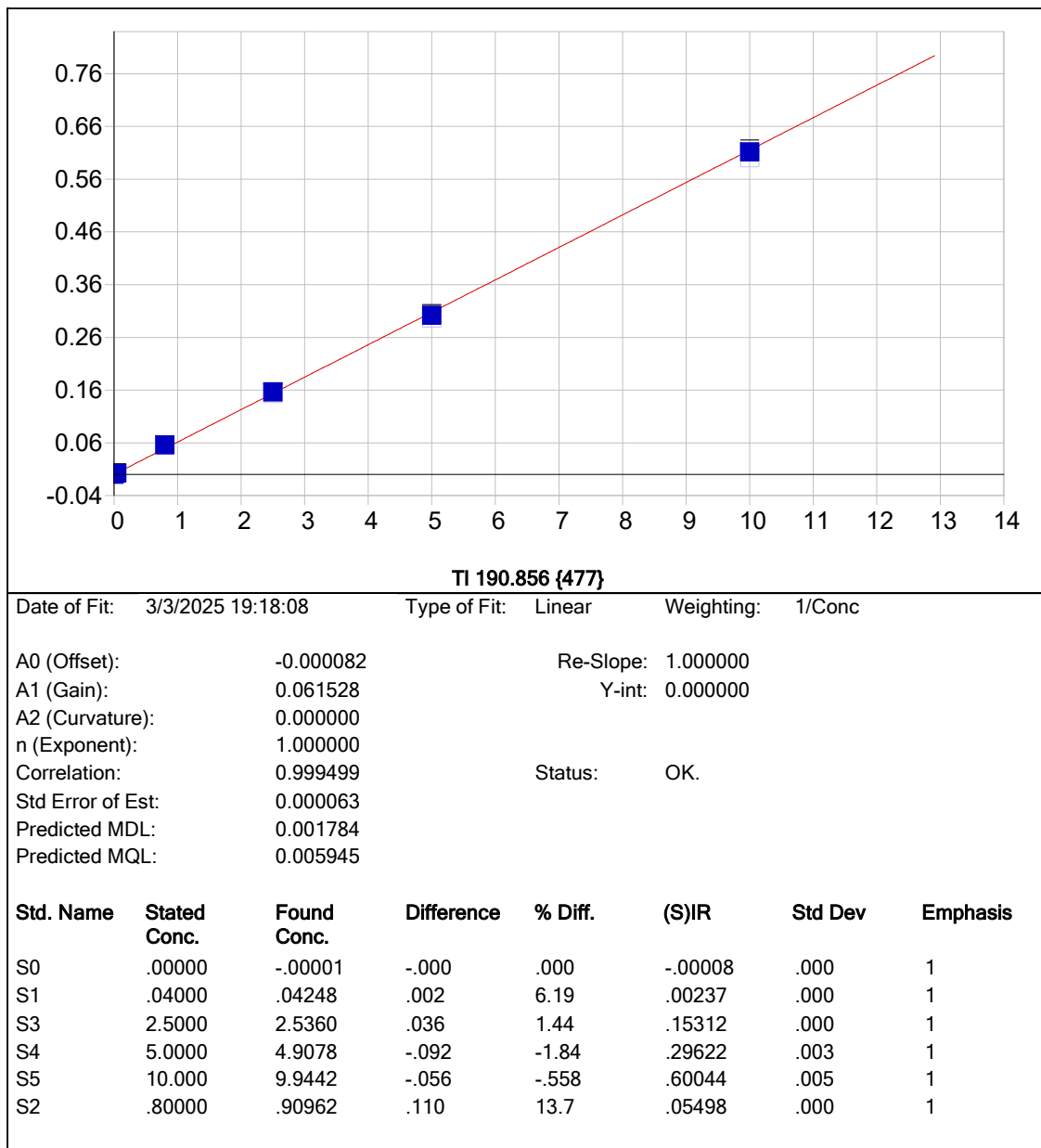


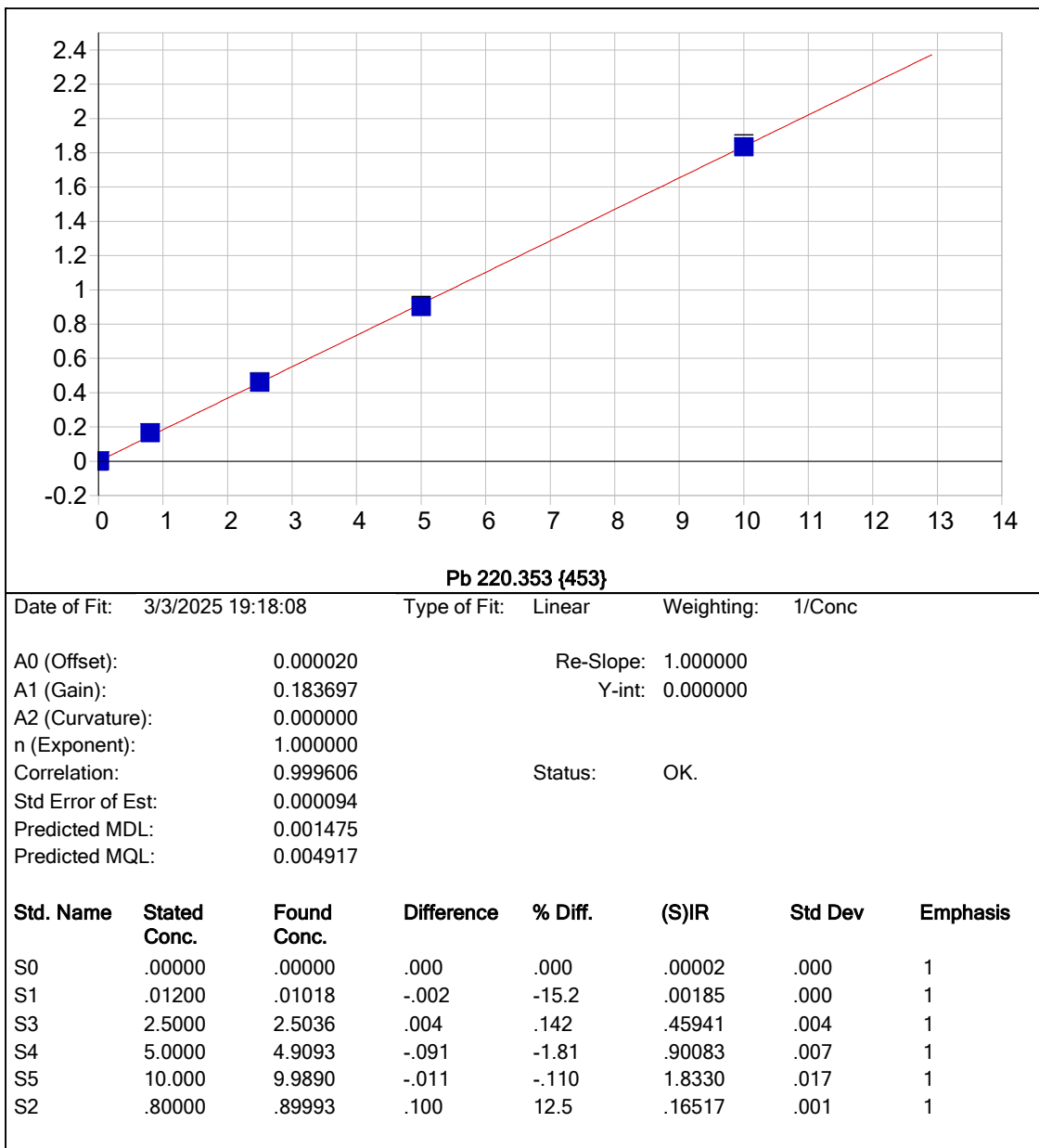
As 189.042 {479}

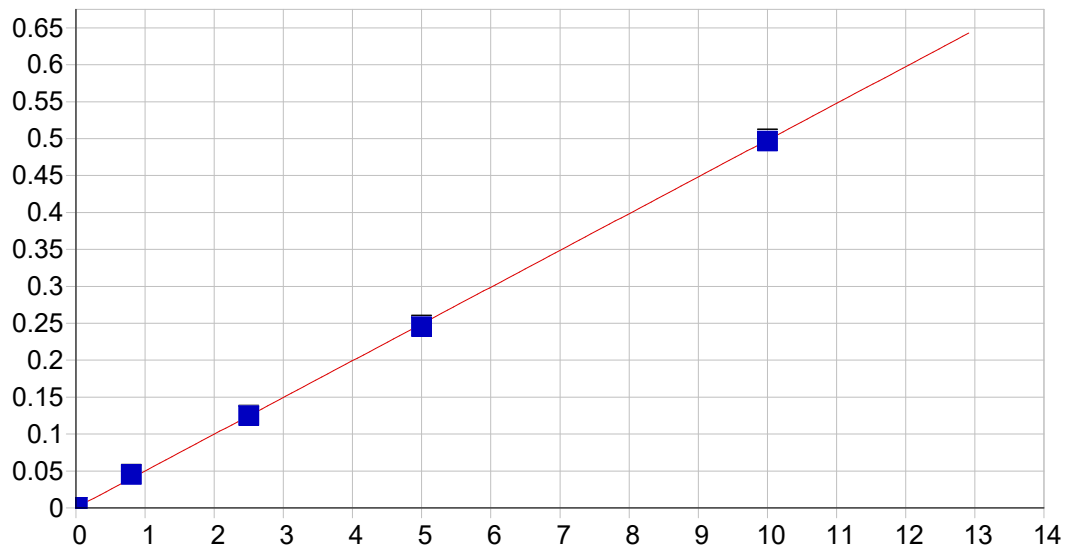
Date of Fit: 3/3/2025 19:18:08 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset): -0.000116 Re-Slope: 1.000000
A1 (Gain): 0.044895 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999634 Status: OK.
Std Error of Est: 0.000028
Predicted MDL: 0.002688
Predicted MQL: 0.008959

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00012	.000	1
S1	.02000	.02112	.001	5.59	.00083	.000	1
S3	2.5000	2.4921	-.008	-.317	.11164	.001	1
S4	5.0000	4.9065	-.094	-1.87	.21992	.001	1
S5	10.000	10.004	.004	.042	.44854	.003	1
S2	.80000	.89614	.096	12.0	.04008	.000	1





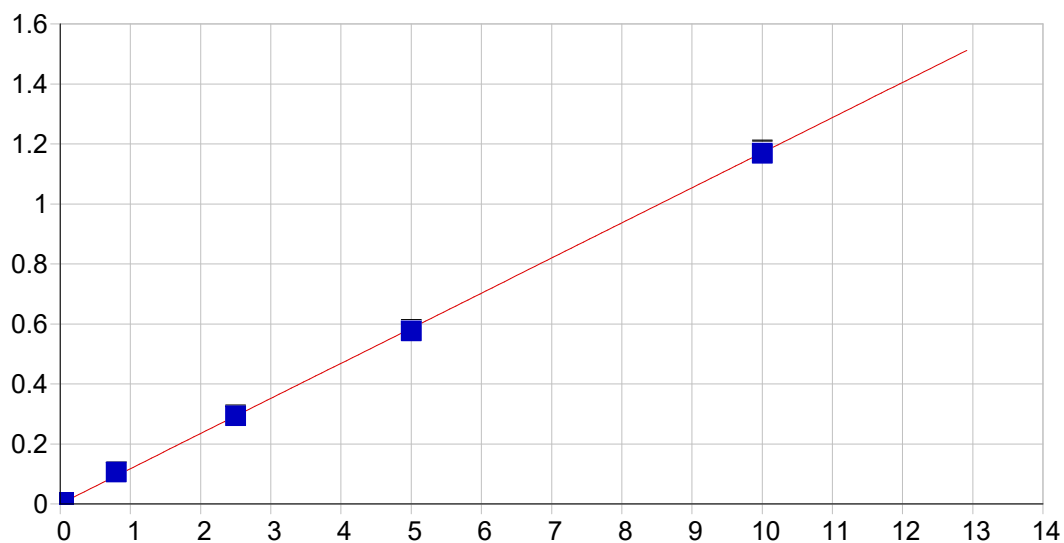


Se 196.090 {472}

Date of Fit: 3/3/2025 19:18:08 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset): 0.000264 Re-Slope: 1.000000
A1 (Gain): 0.049767 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999621 Status: OK.
Std Error of Est: 0.000032
Predicted MDL: 0.002971
Predicted MQL: 0.009905

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00026	.000	1
S1	.02000	.01801	-.002	-9.94	.00116	.000	1
S3	2.5000	2.5011	.001	.046	.12469	.001	1
S4	5.0000	4.9256	-.074	-1.49	.24531	.002	1
S5	10.000	9.9752	-.025	-.248	.49652	.003	1
S2	.80000	.90007	.100	12.5	.04504	.000	1

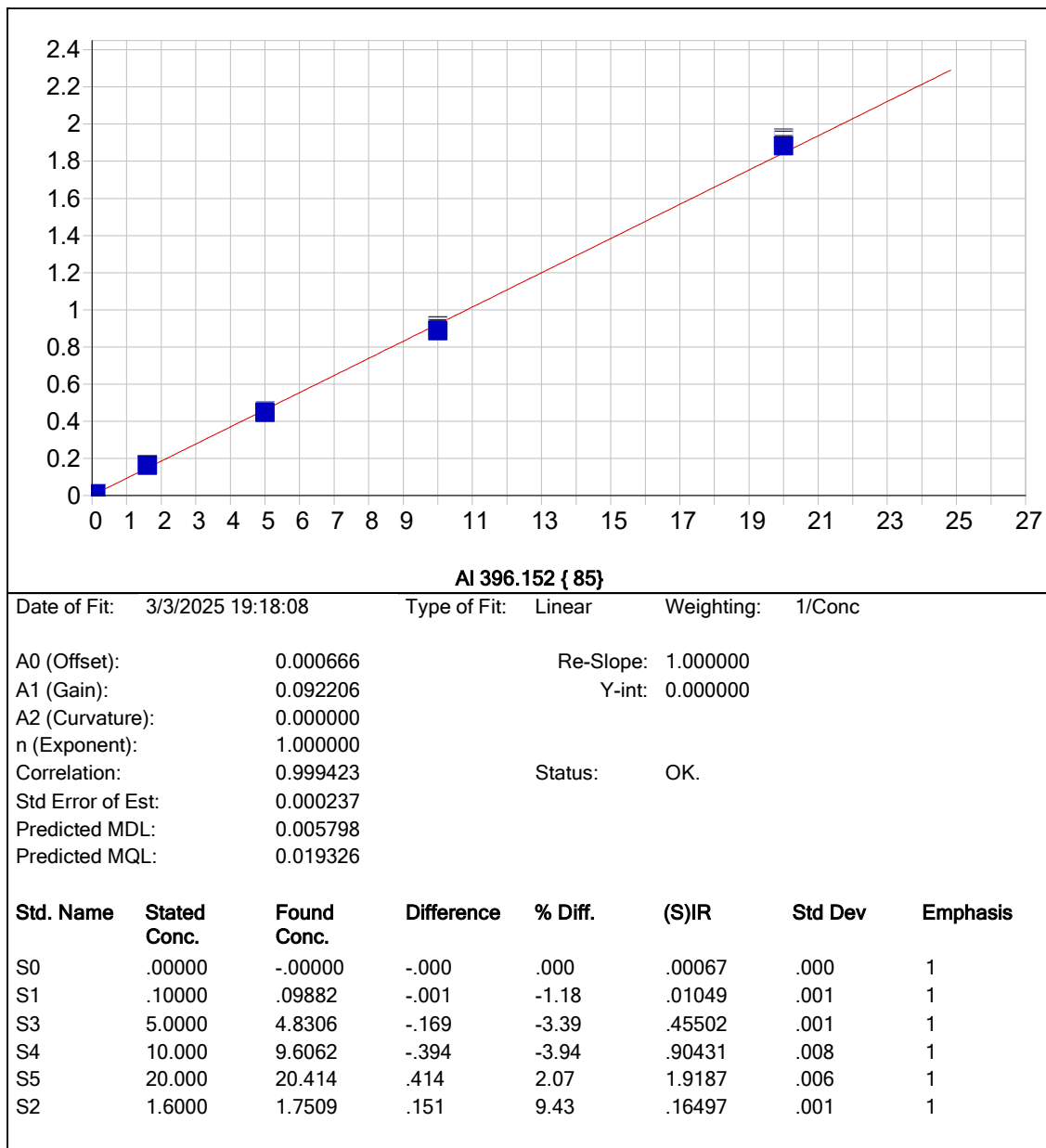


Sb 206.833 {463}

Date of Fit: 3/3/2025 19:18:08 Type of Fit: Linear Weighting: 1/Conc

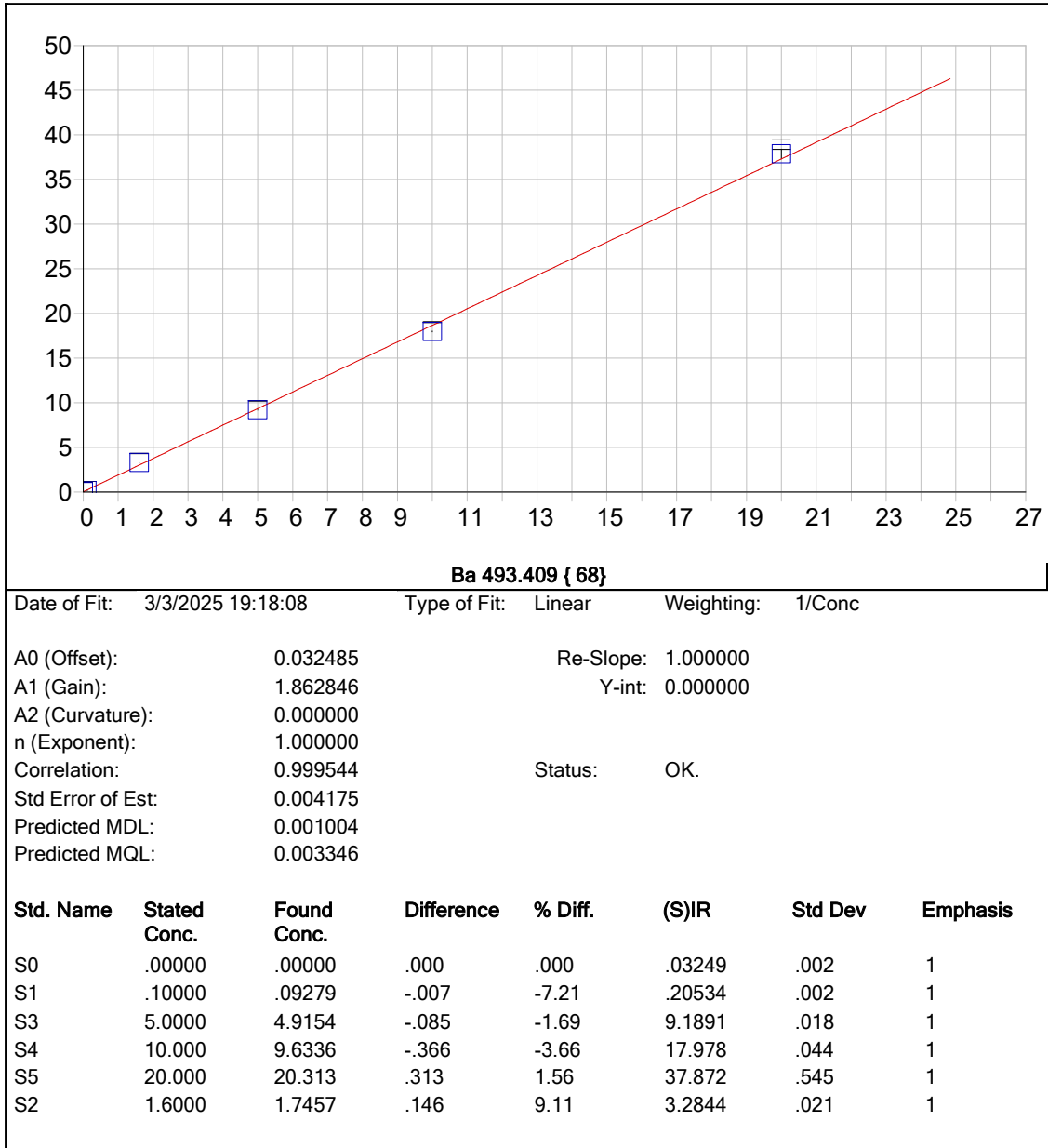
A0 (Offset): 0.000382 Re-Slope: 1.000000
A1 (Gain): 0.117029 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999607 Status: OK.
Std Error of Est: 0.000122
Predicted MDL: 0.001594
Predicted MQL: 0.005314

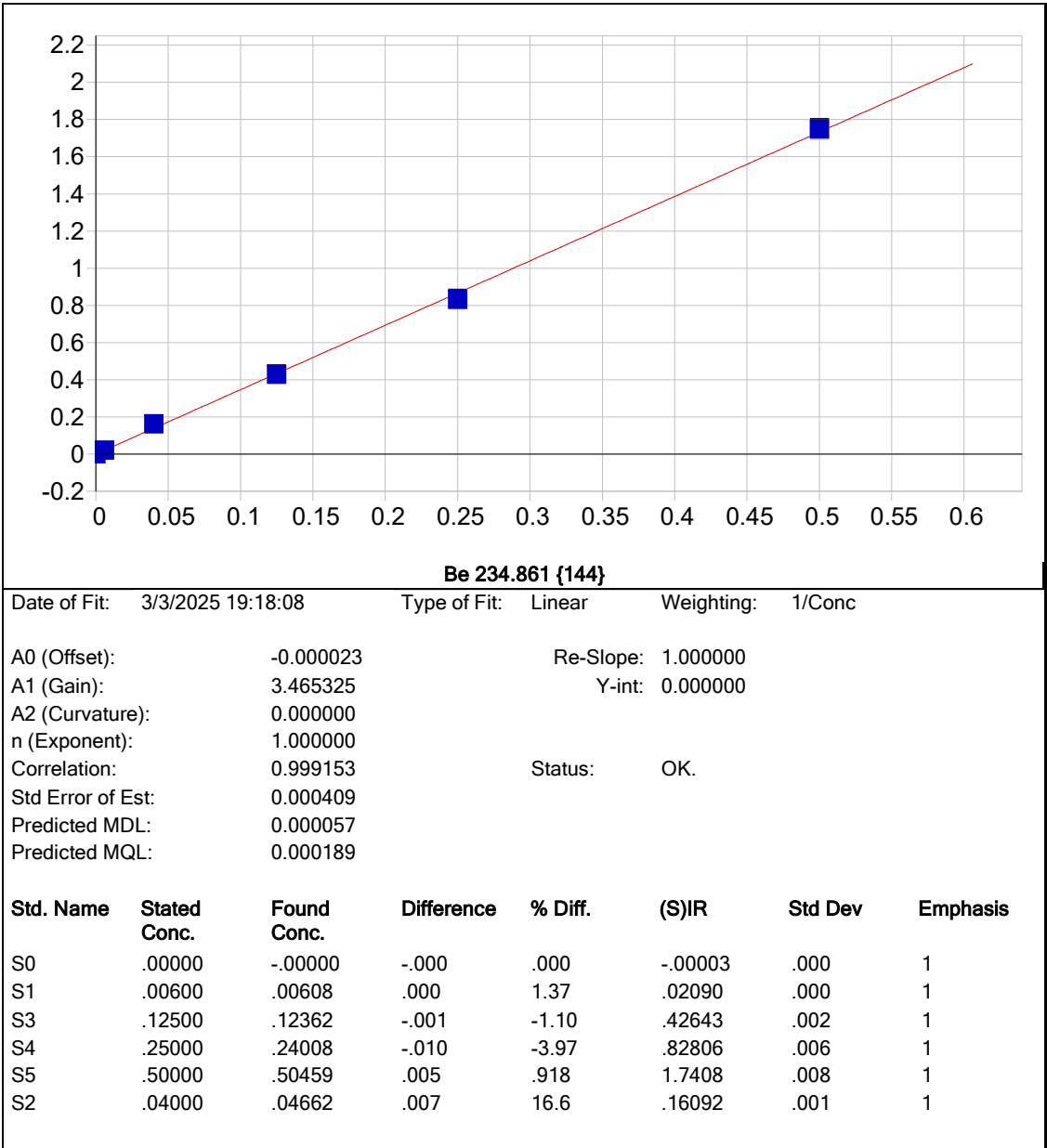
Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00001	-.000	.000	.00038	.000	1
S1	.05000	.05008	.000	.163	.00626	.000	1
S3	2.5000	2.5003	.000	.012	.29378	.002	1
S4	5.0000	4.9189	-.081	-1.62	.57763	.004	1
S5	10.000	9.9782	-.022	-.218	1.1713	.008	1
S2	.80000	.90249	.102	12.8	.10625	.001	1

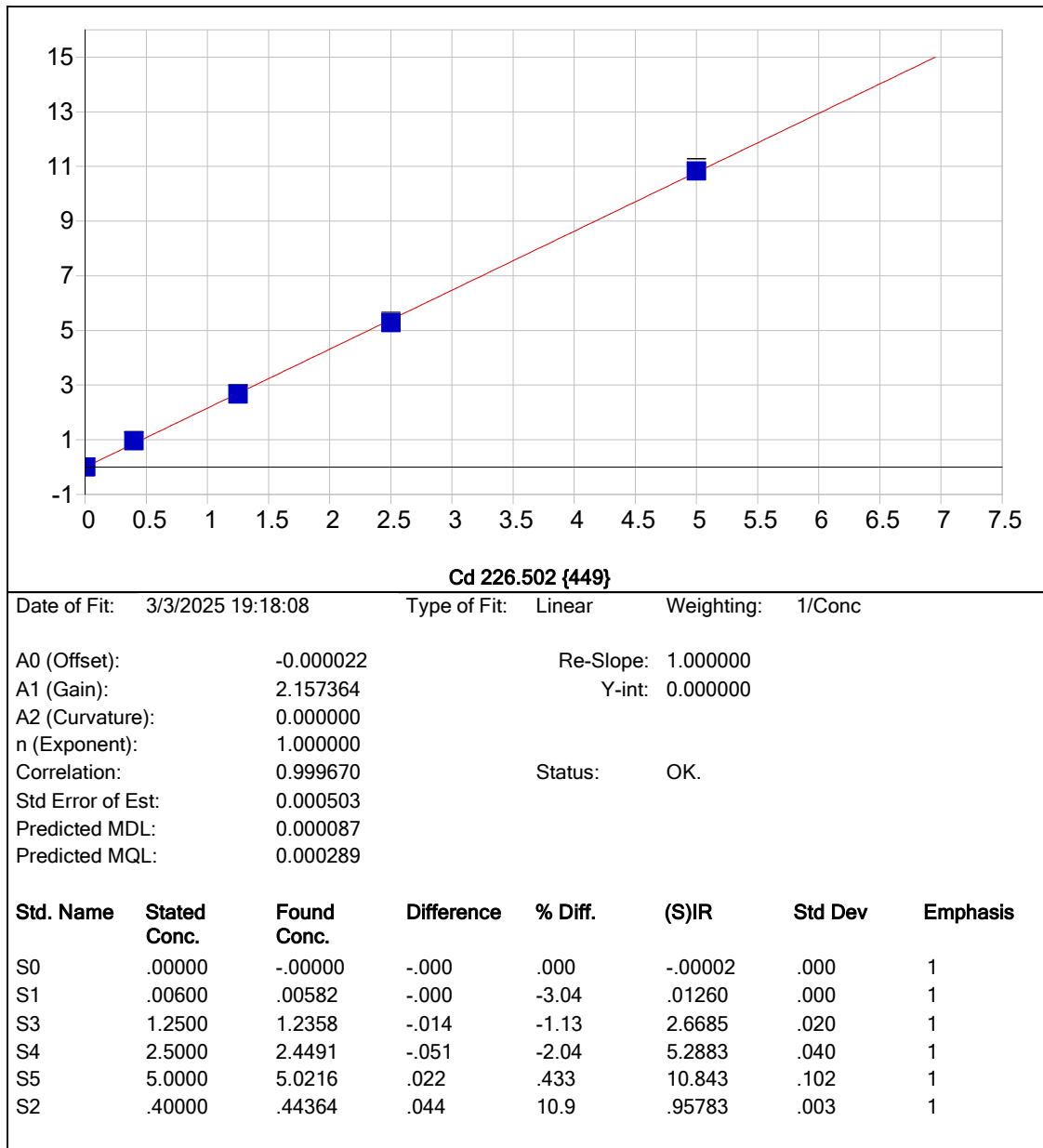


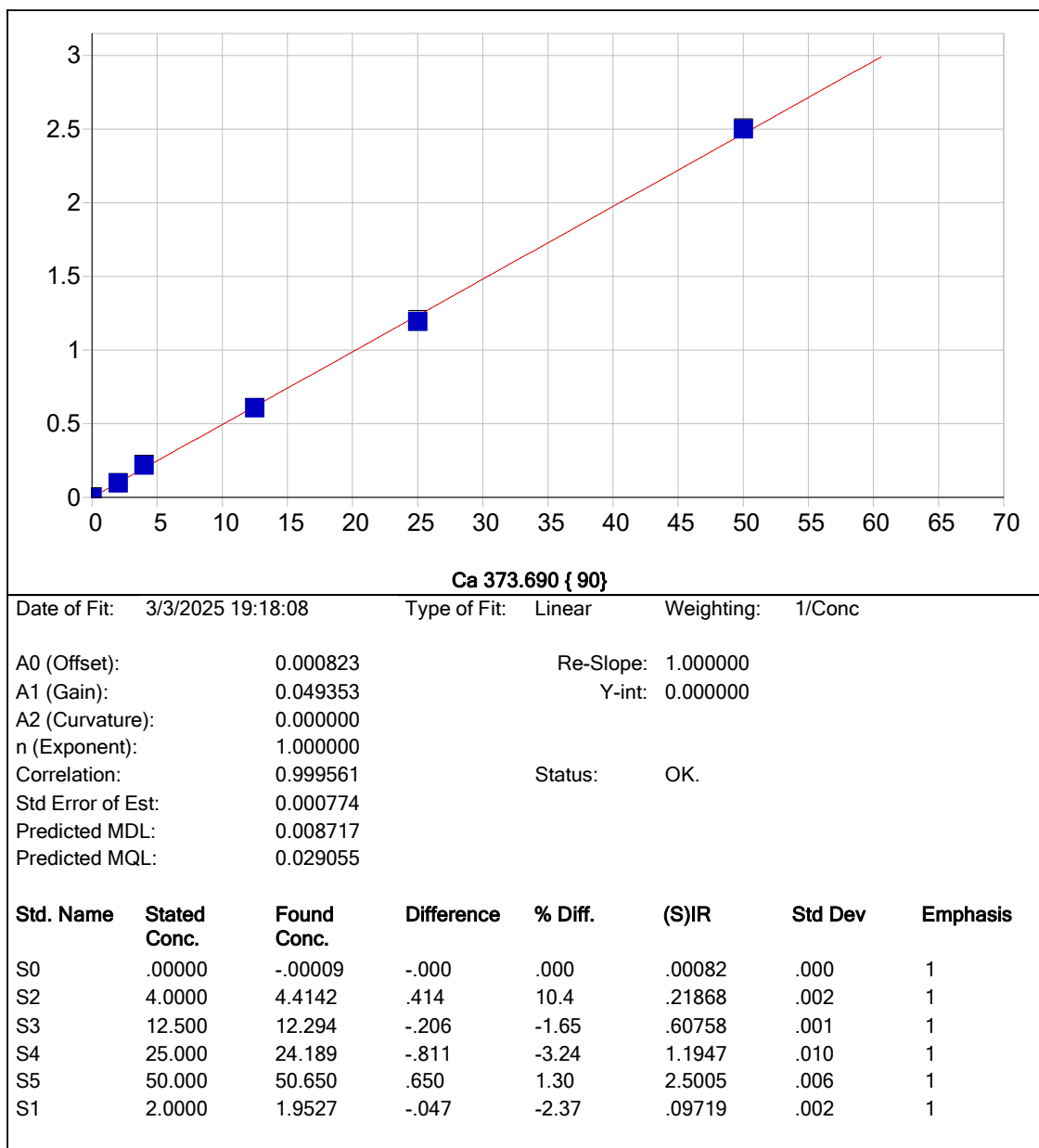
Date of Fit: 3/3/2025 19:18:08 Type of Fit: Linear Weighting: 1/Conc

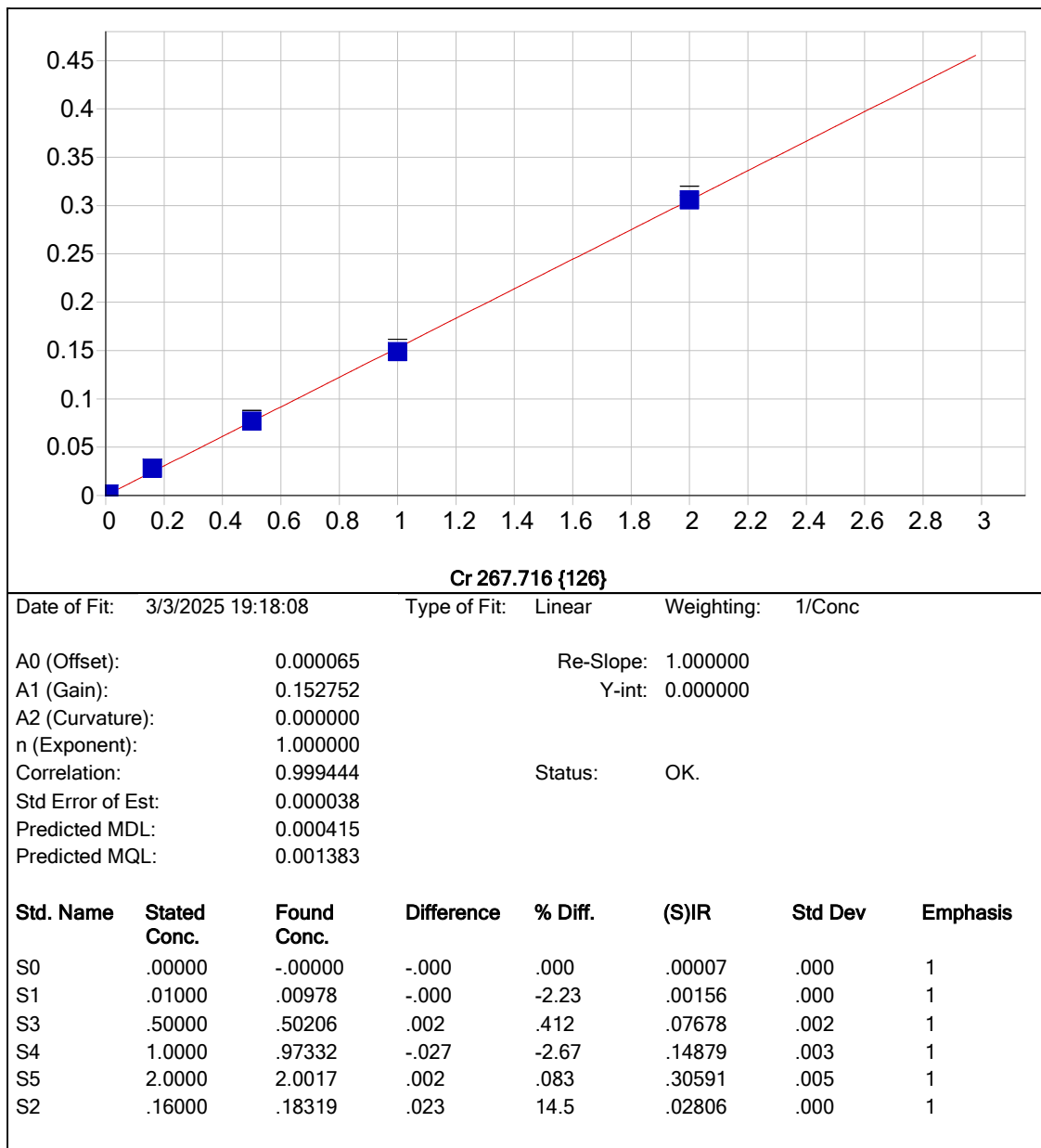
A0 (Offset): 0.000666 Re-Slope: 1.000000
A1 (Gain): 0.092206 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999423 Status: OK.
Std Error of Est: 0.000237
Predicted MDL: 0.005798
Predicted MQL: 0.019326

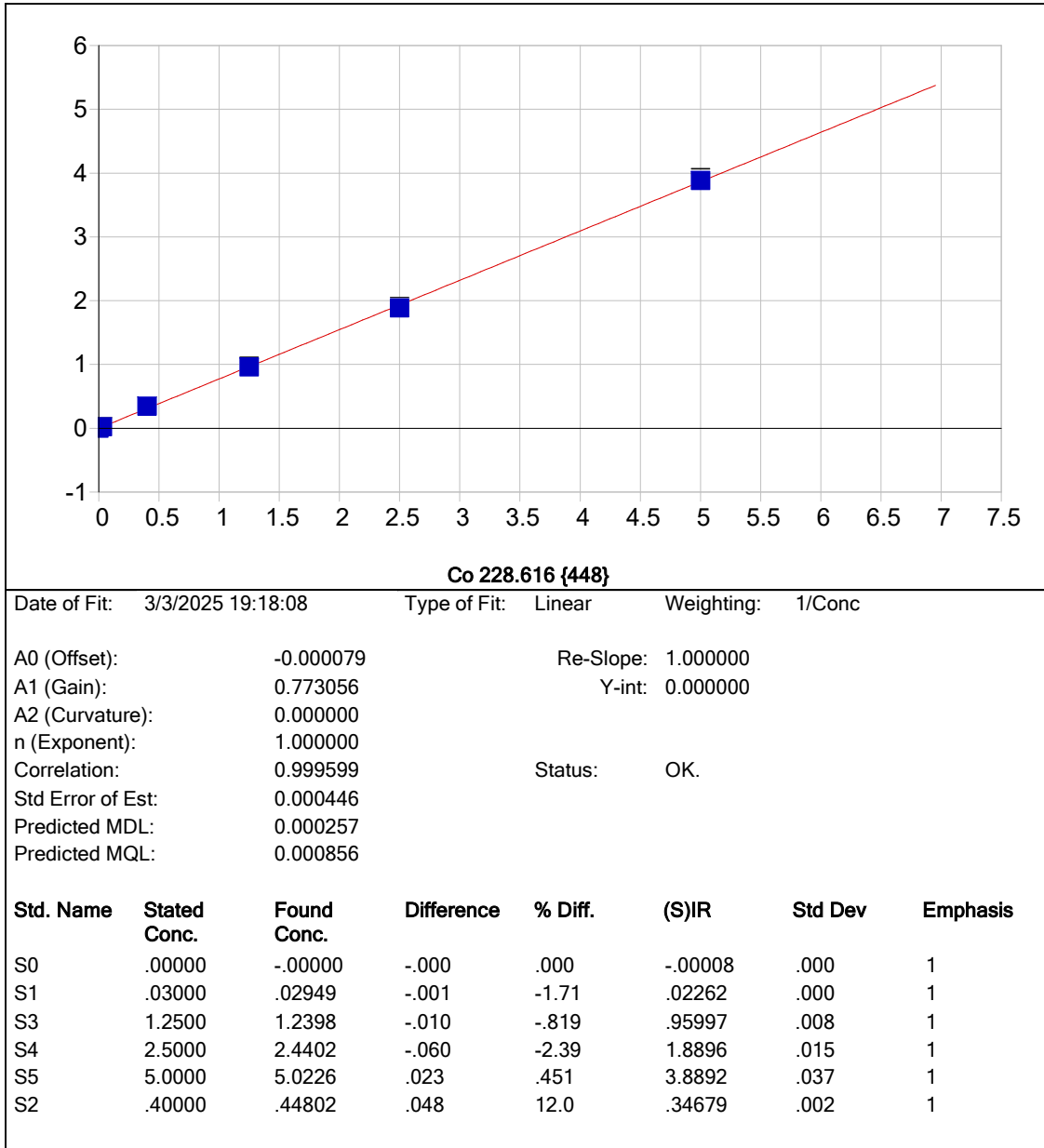


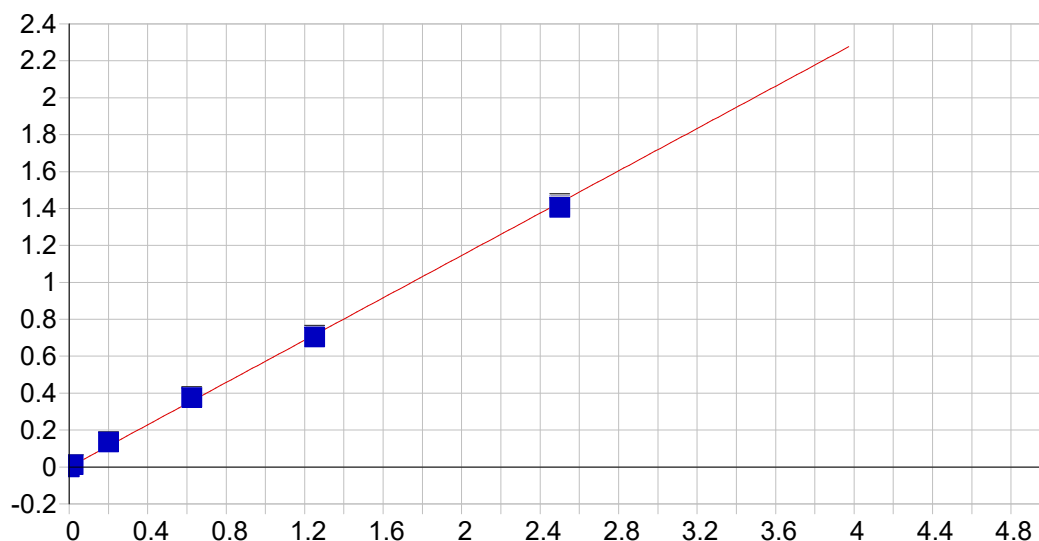










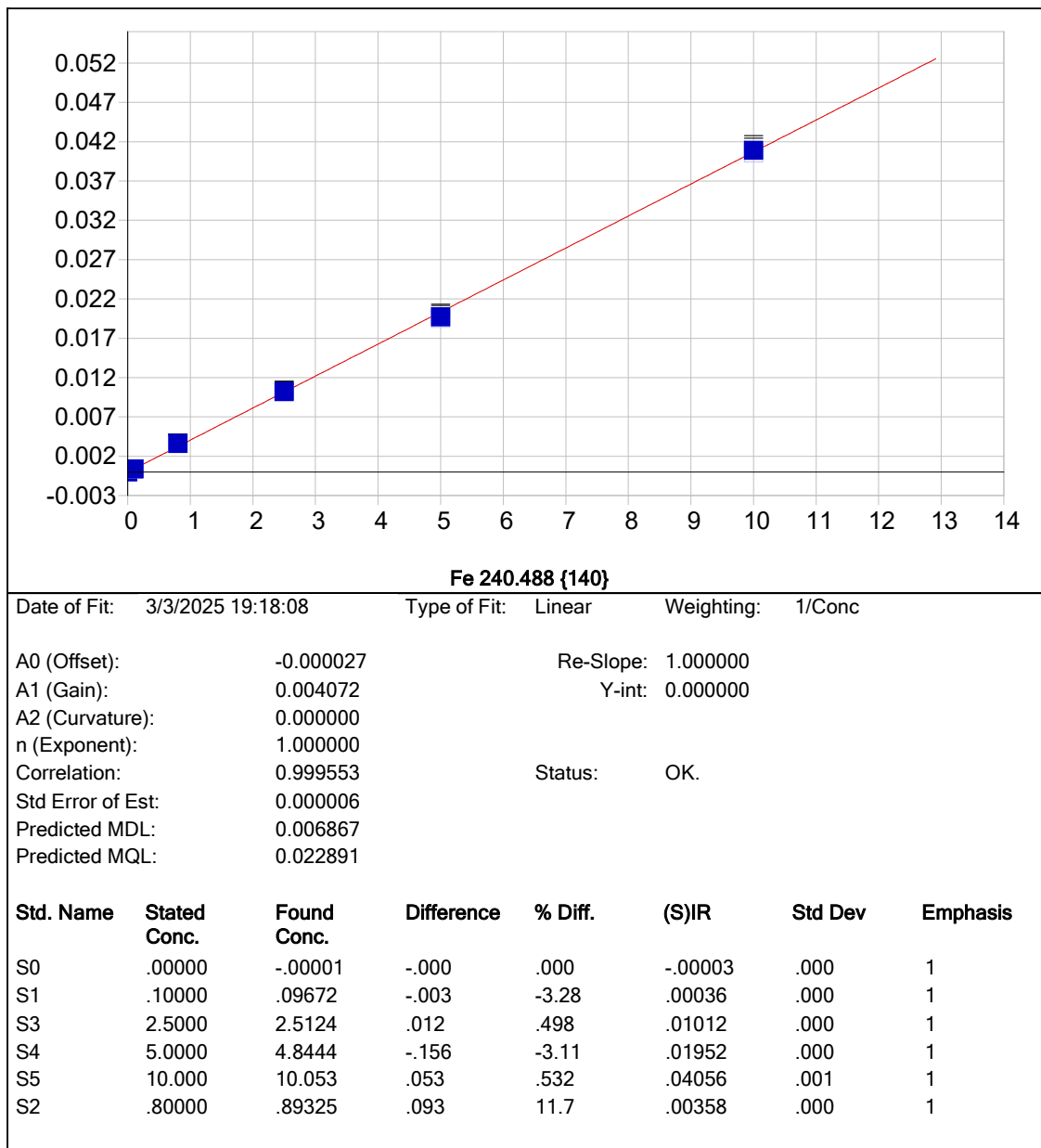


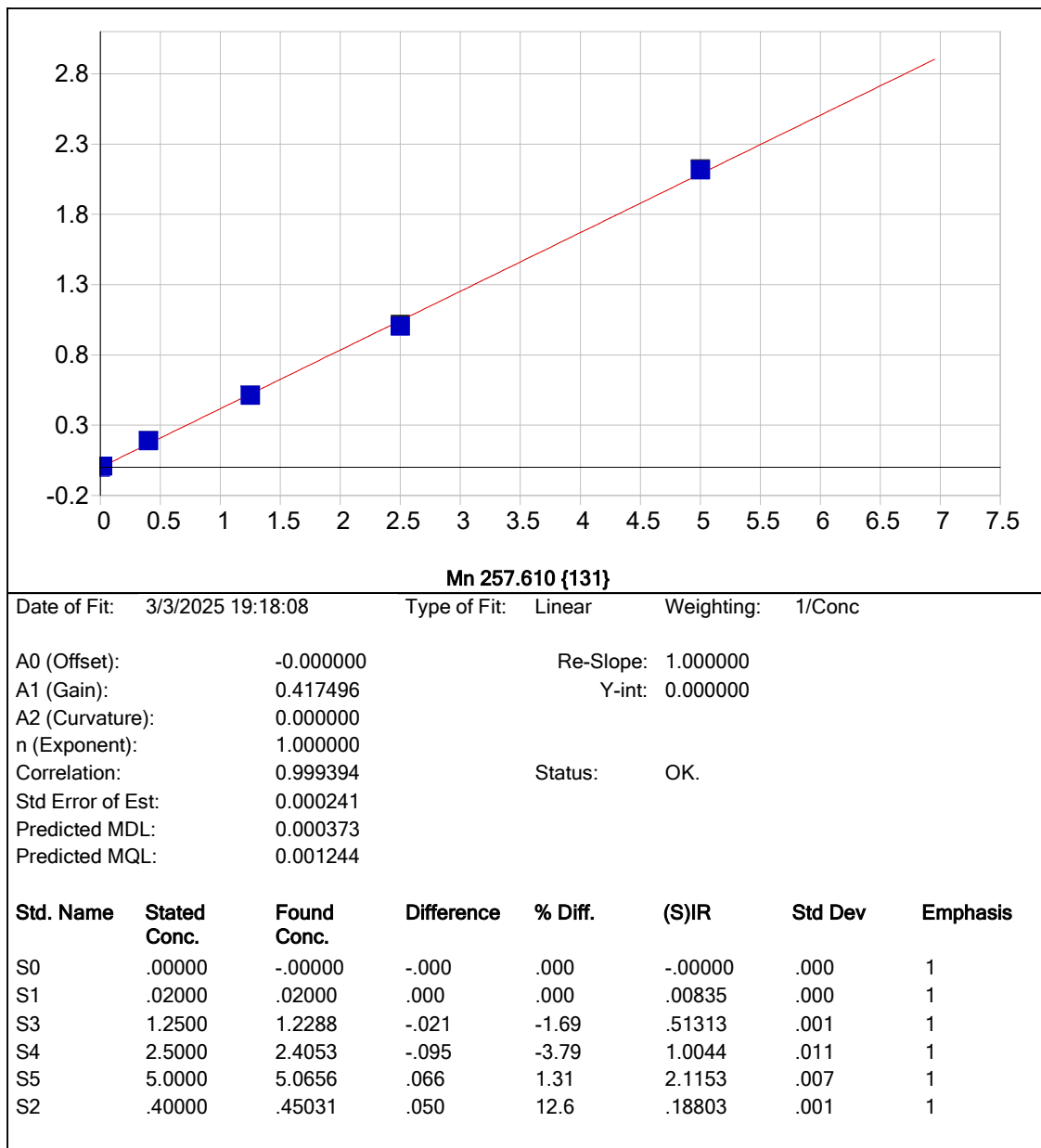
Cu 224.700 {450}

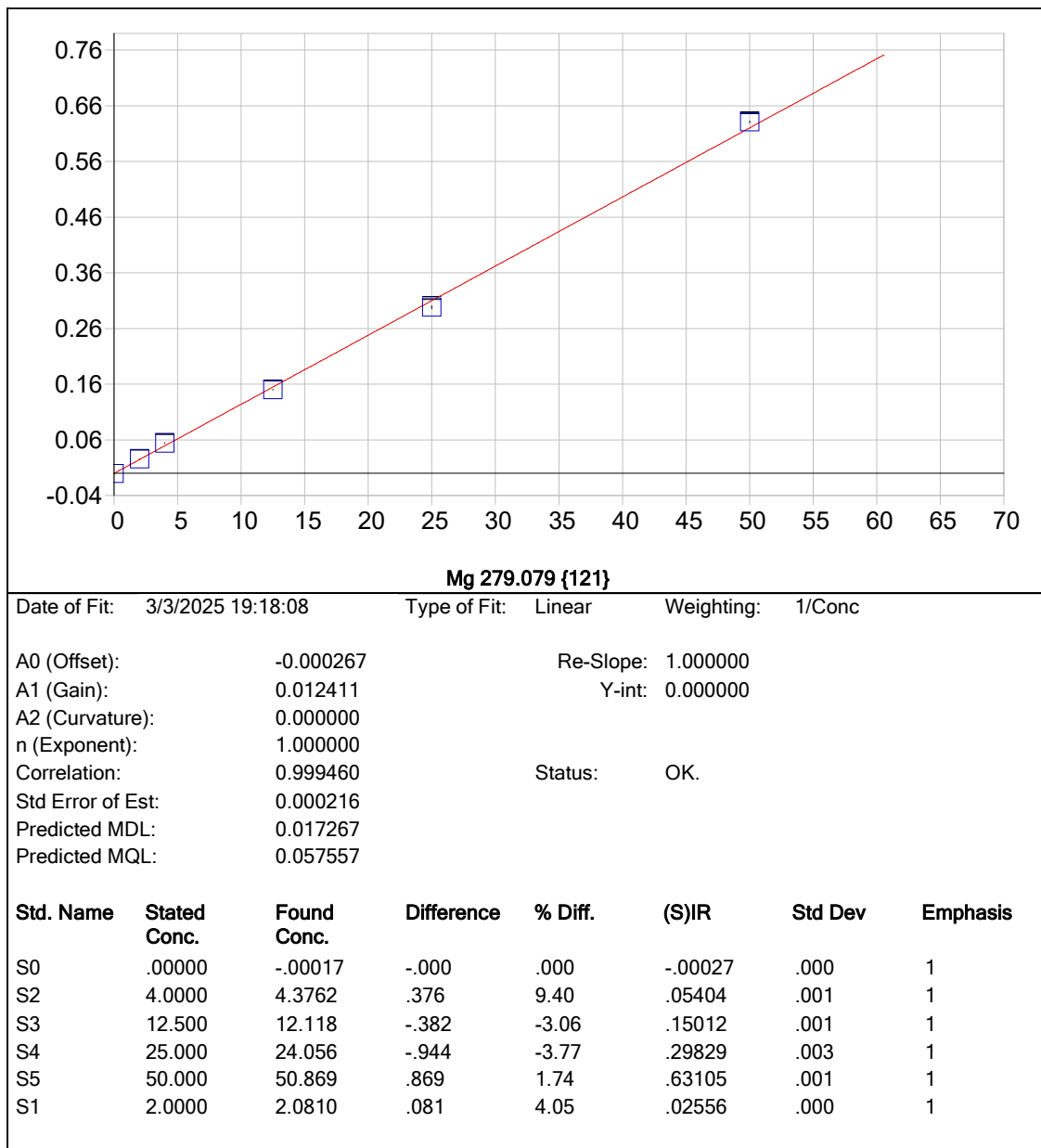
Date of Fit: 3/3/2025 19:18:08 Type of Fit: Linear Weighting: 1/Conc

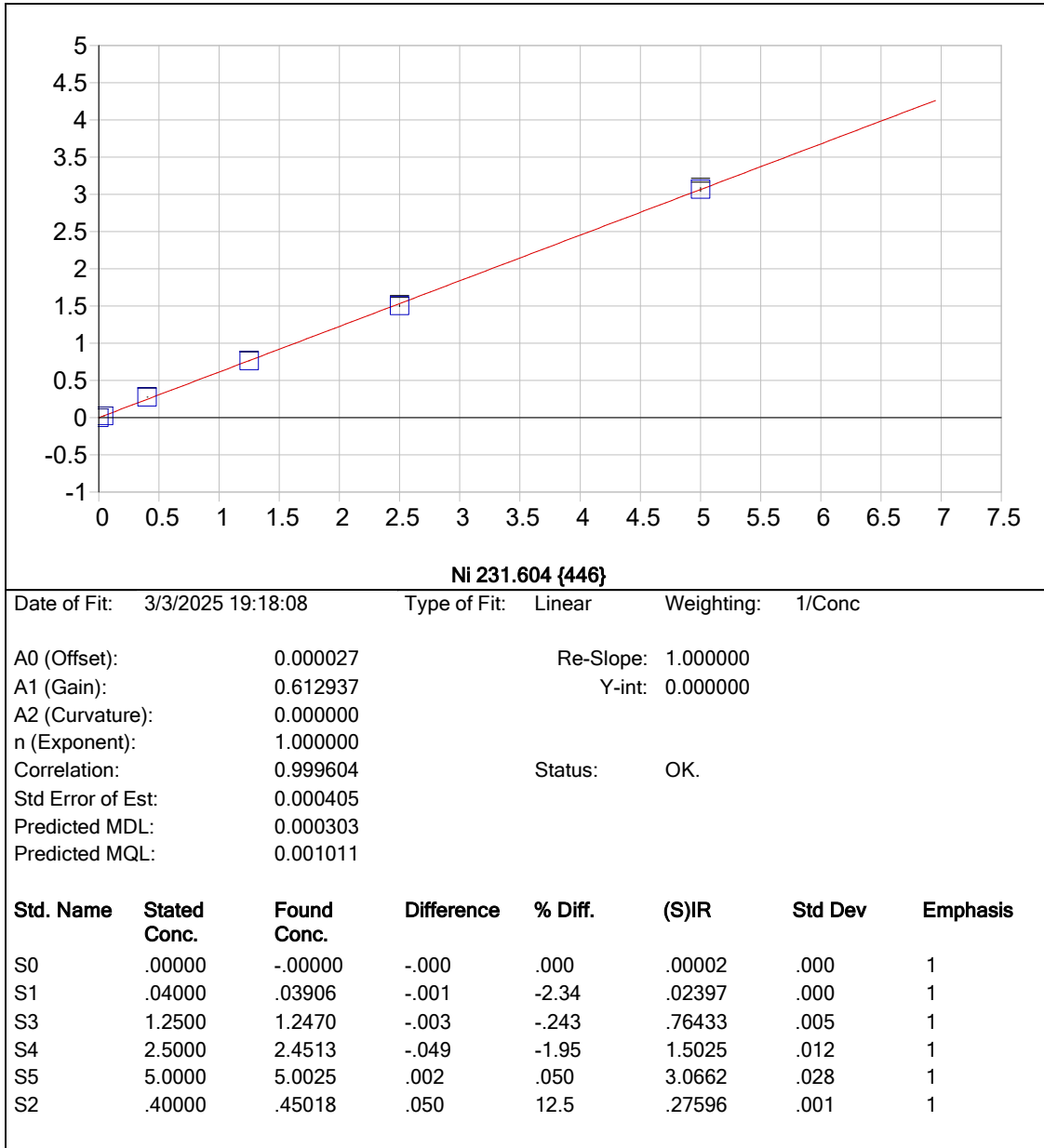
A0 (Offset): -0.000721 Re-Slope: 1.000000
A1 (Gain): 0.573155 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.998998 Status: OK.
Std Error of Est: 0.000303
Predicted MDL: 0.000454
Predicted MQL: 0.001515

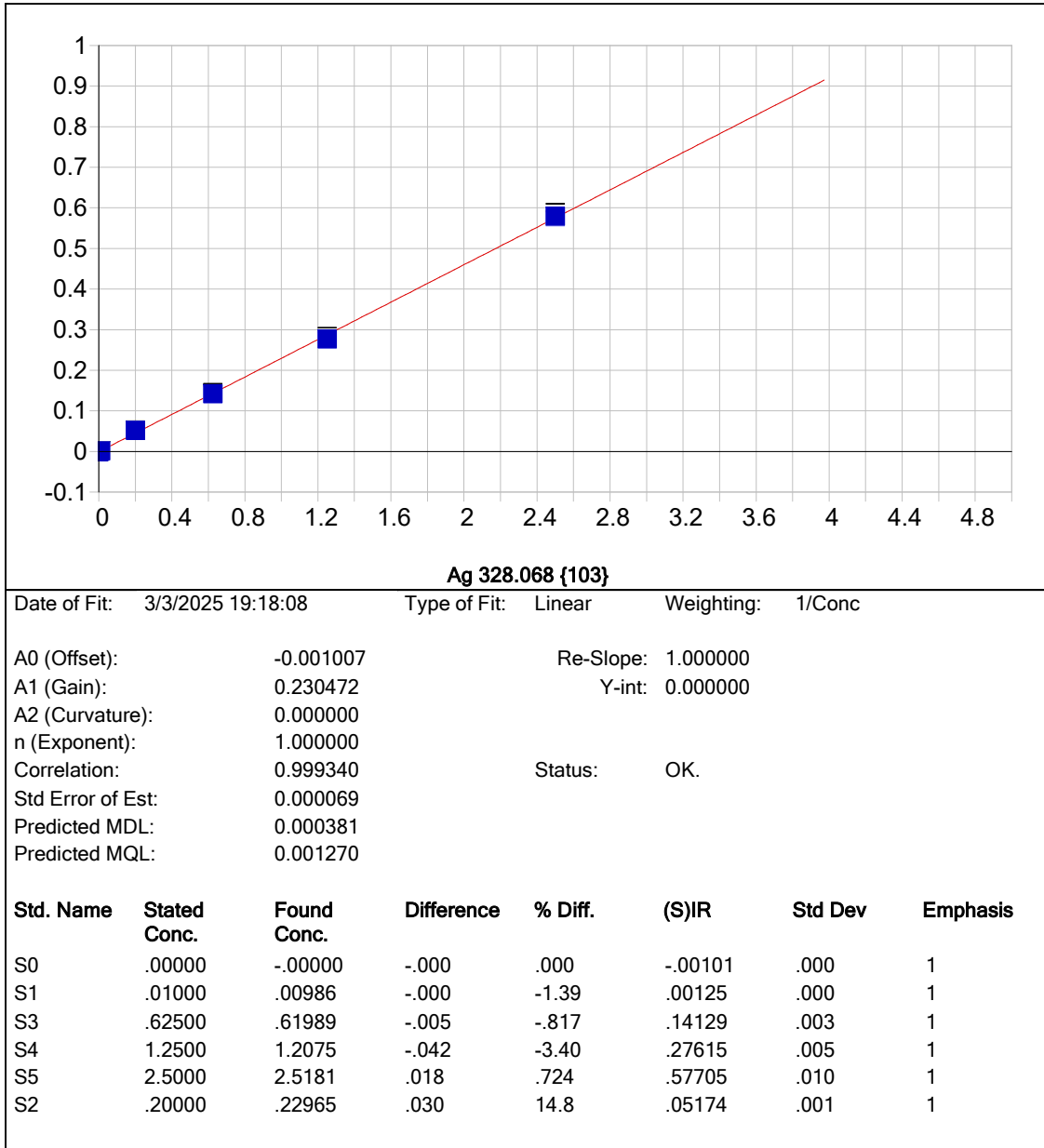
Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00001	-.000	.000	-.00073	.000	1
S1	.02000	.02239	.002	12.0	.01222	.000	1
S3	.62500	.65634	.031	5.01	.37801	.002	1
S4	1.2500	1.2285	-.022	-1.72	.70846	.004	1
S5	2.5000	2.4525	-.047	-1.90	1.4151	.011	1
S2	.20000	.23527	.035	17.6	.13494	.001	1

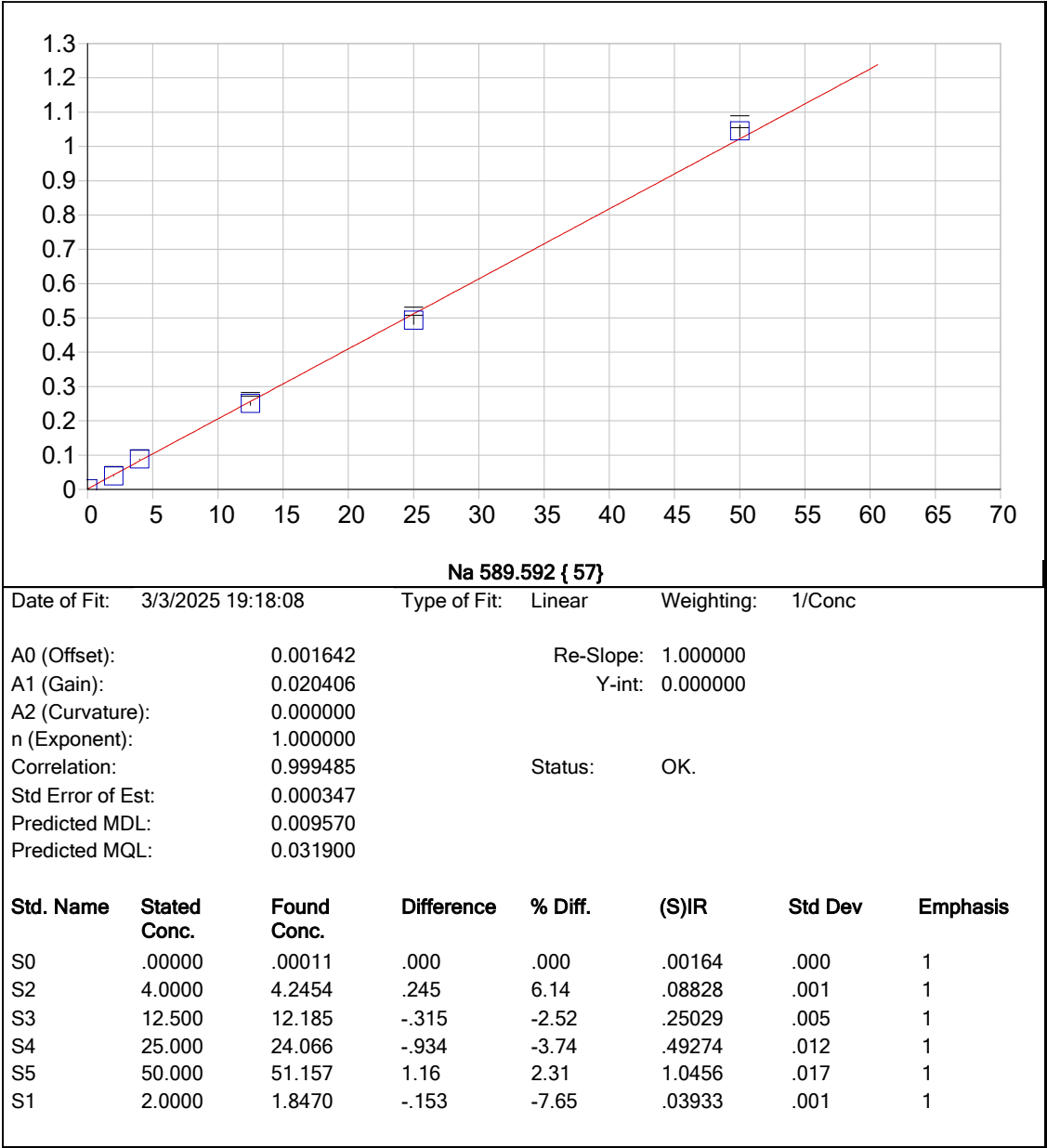


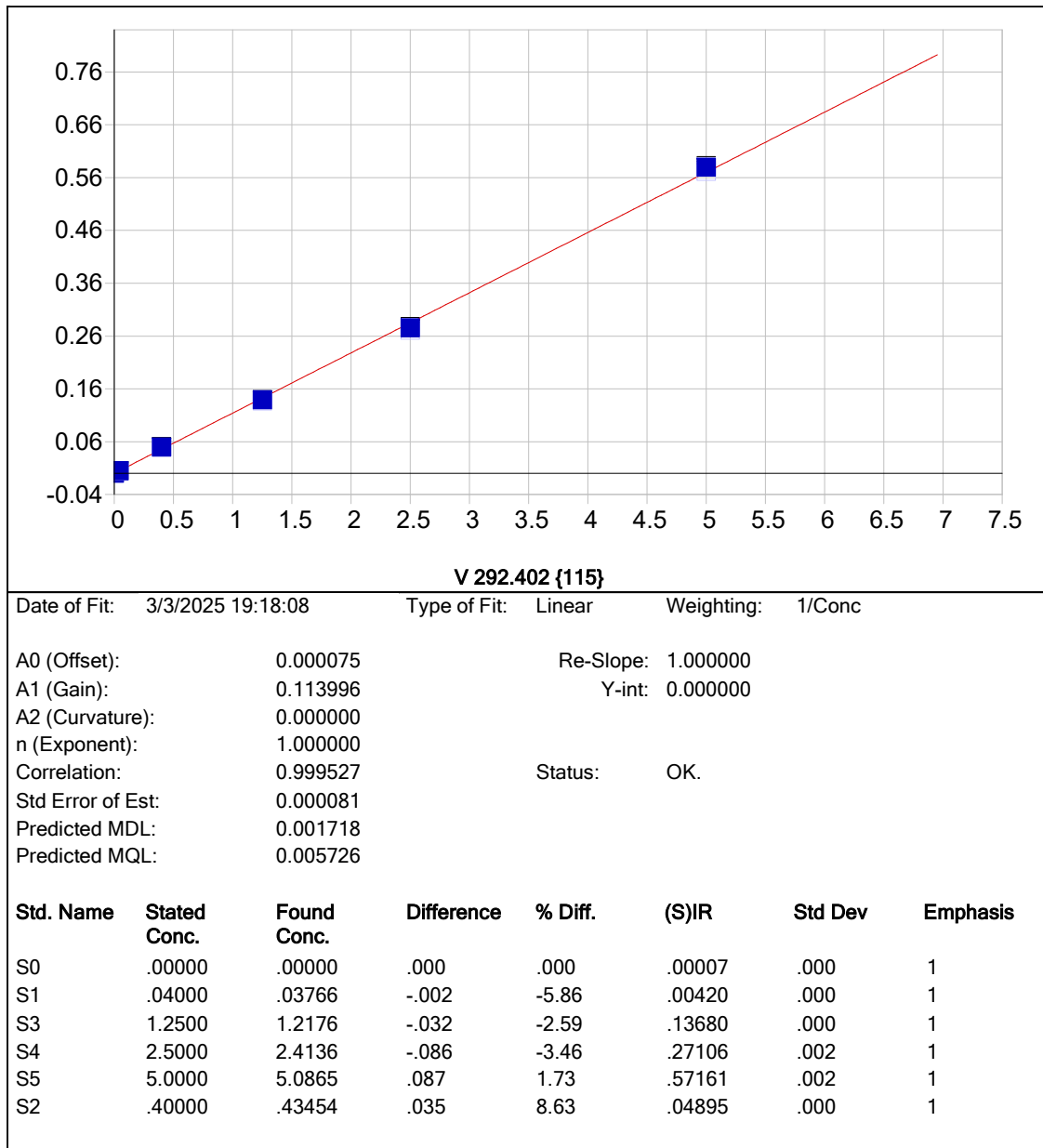


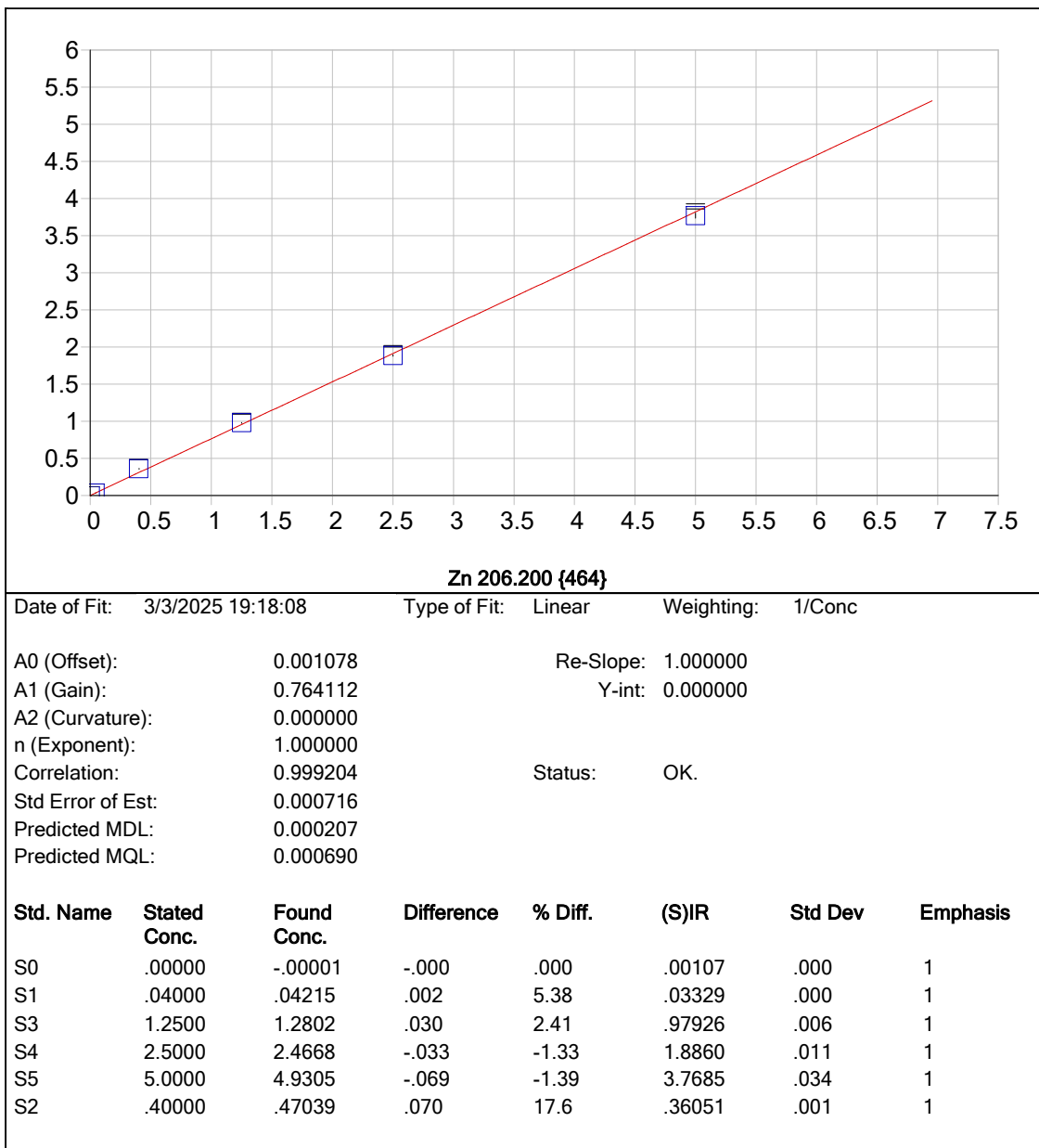


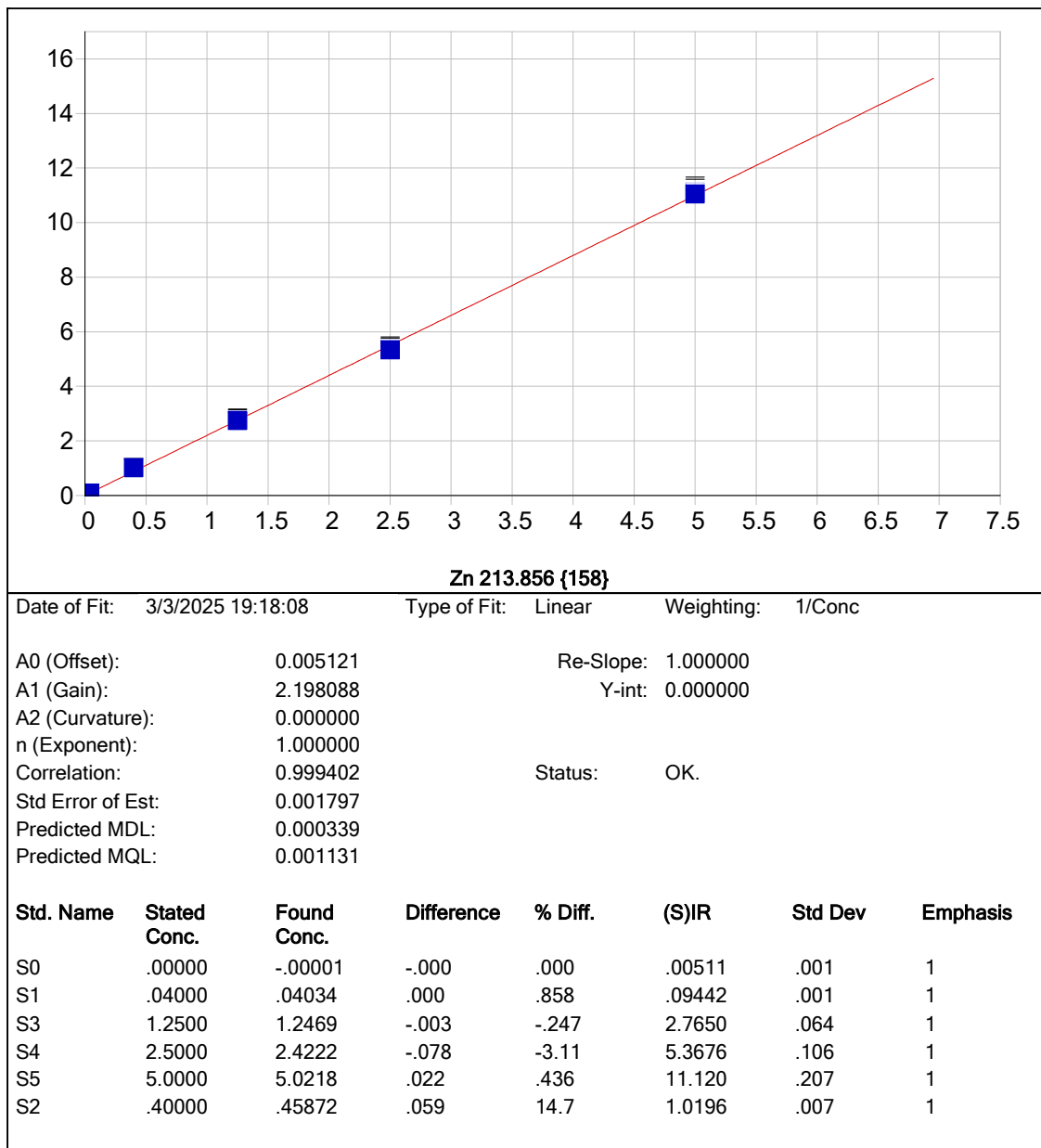


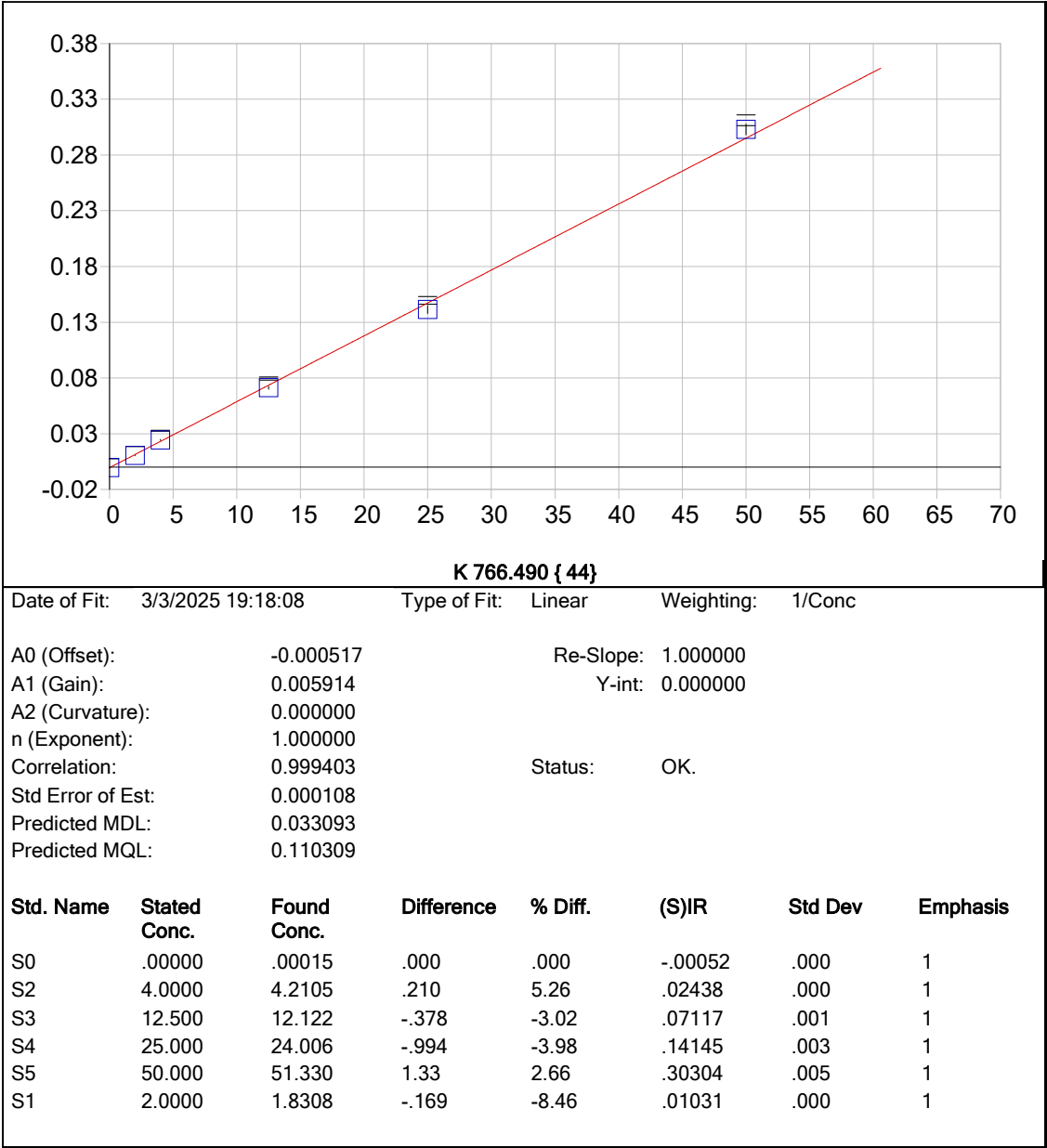


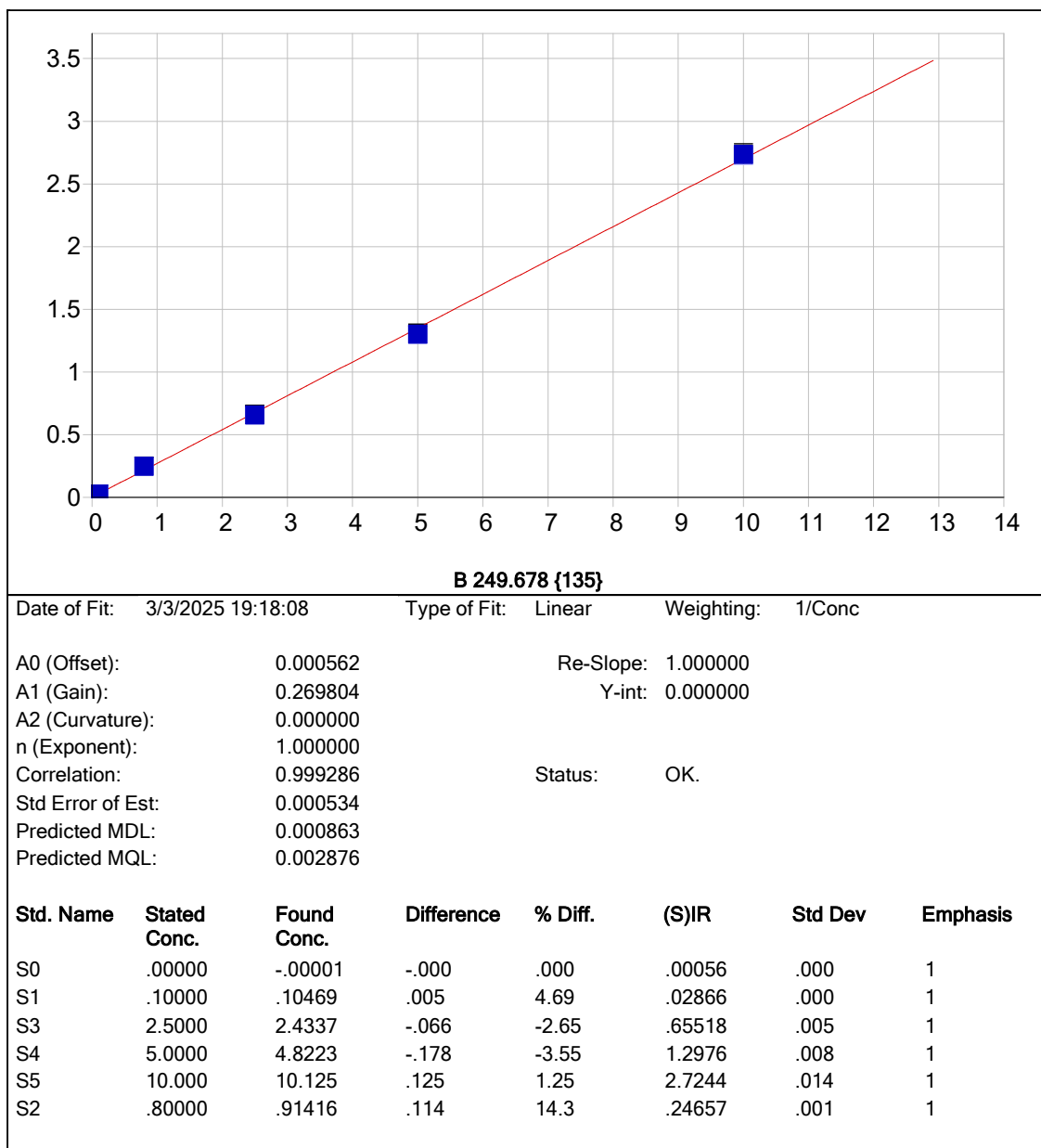


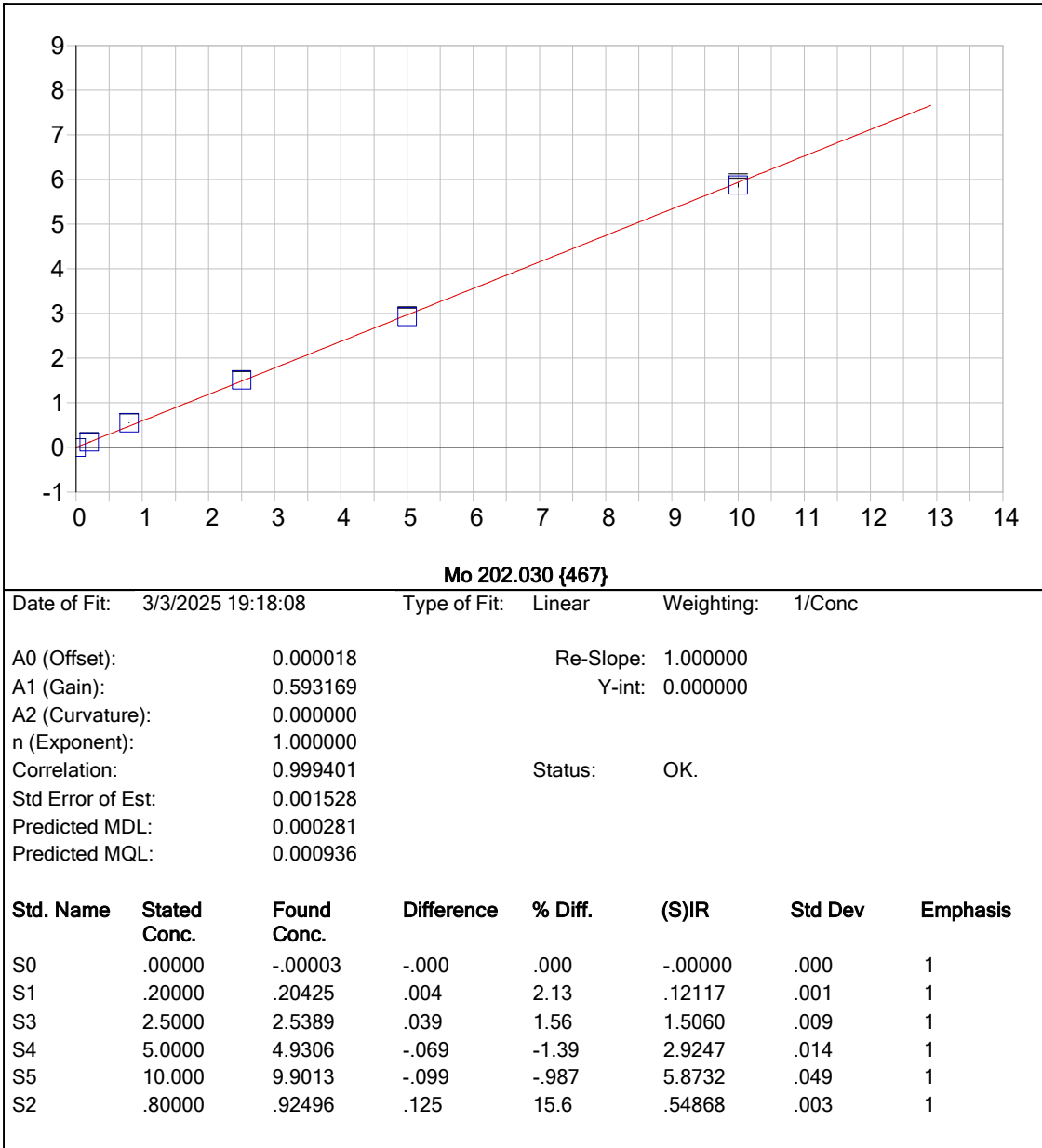


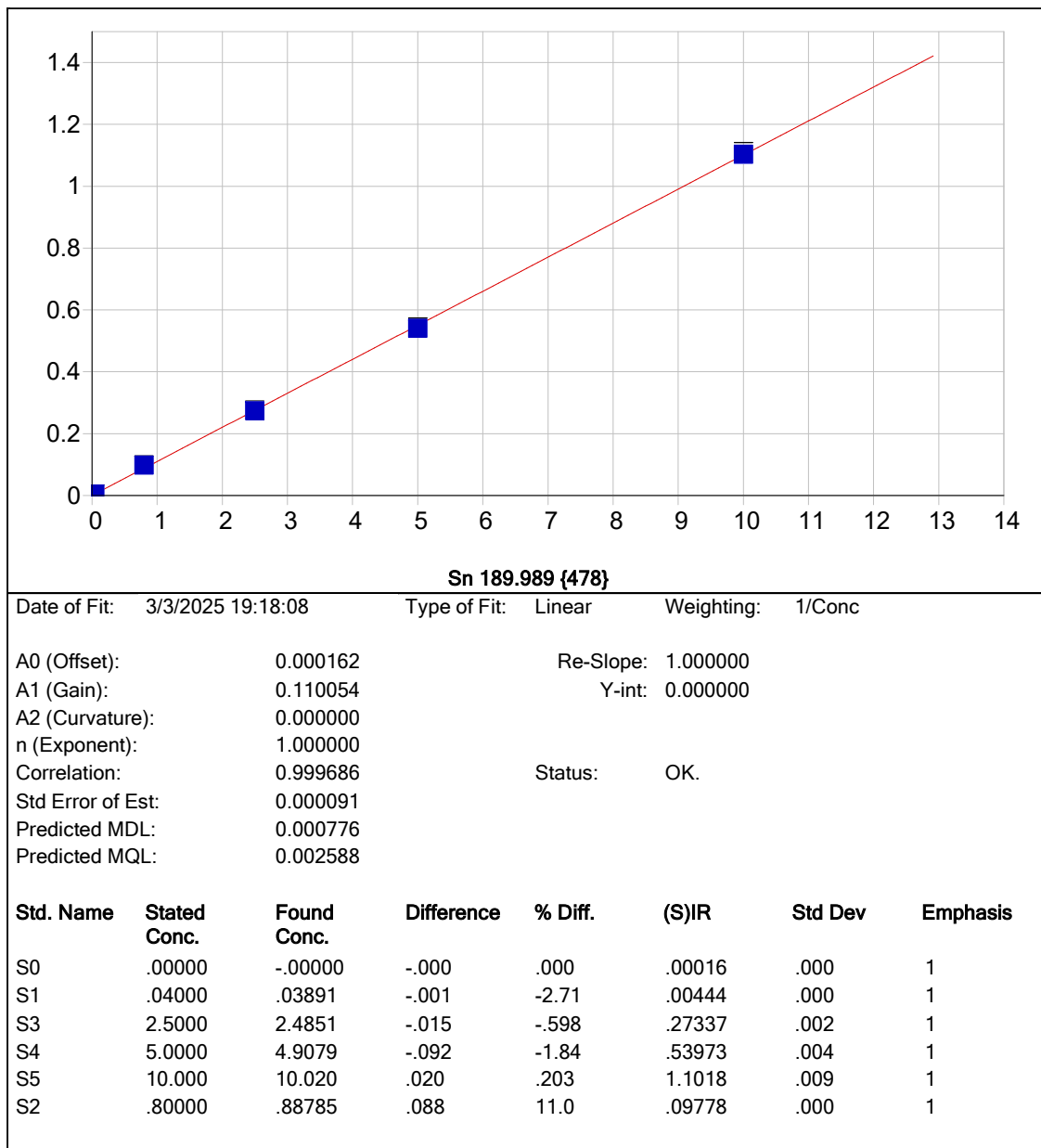






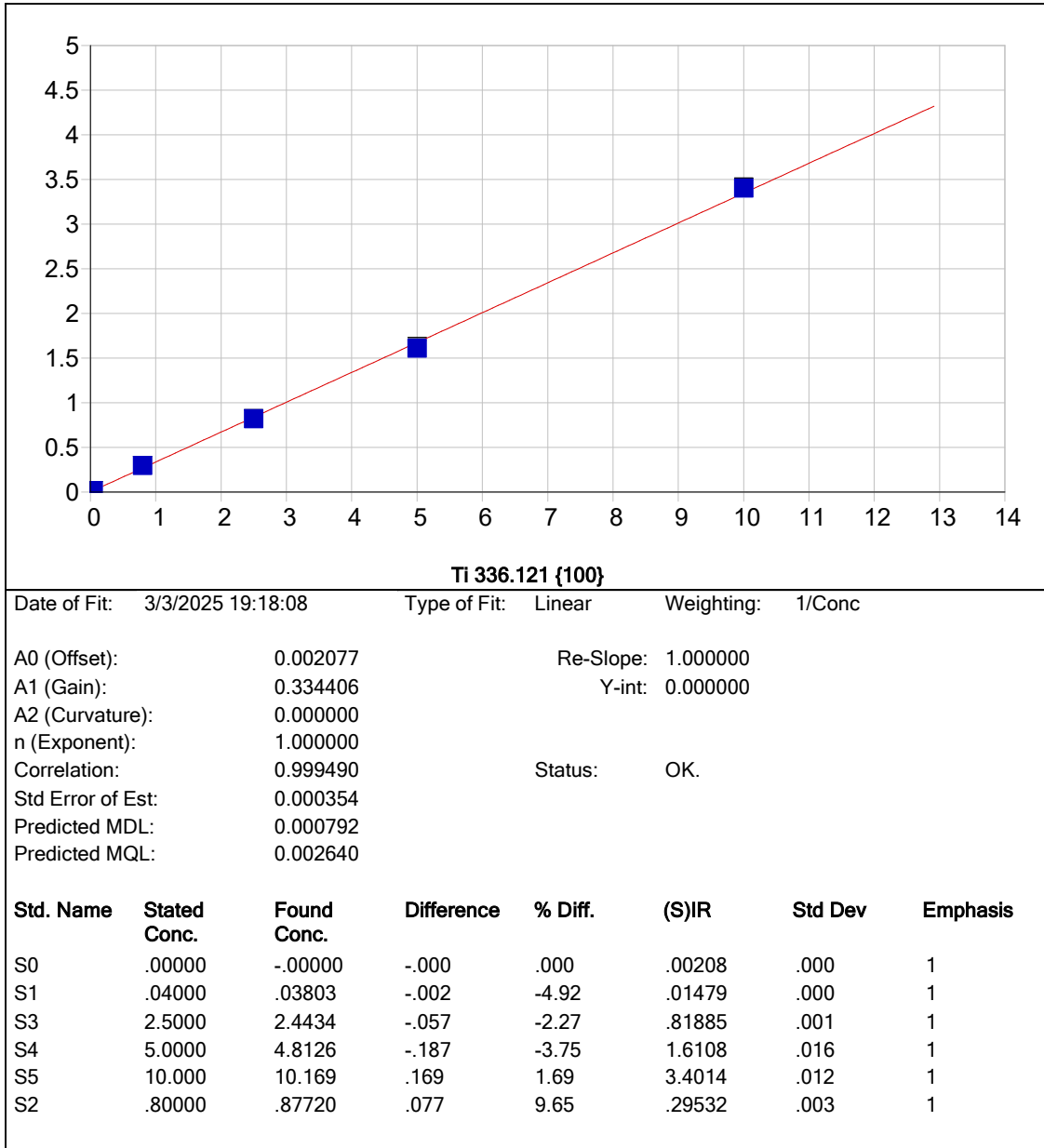


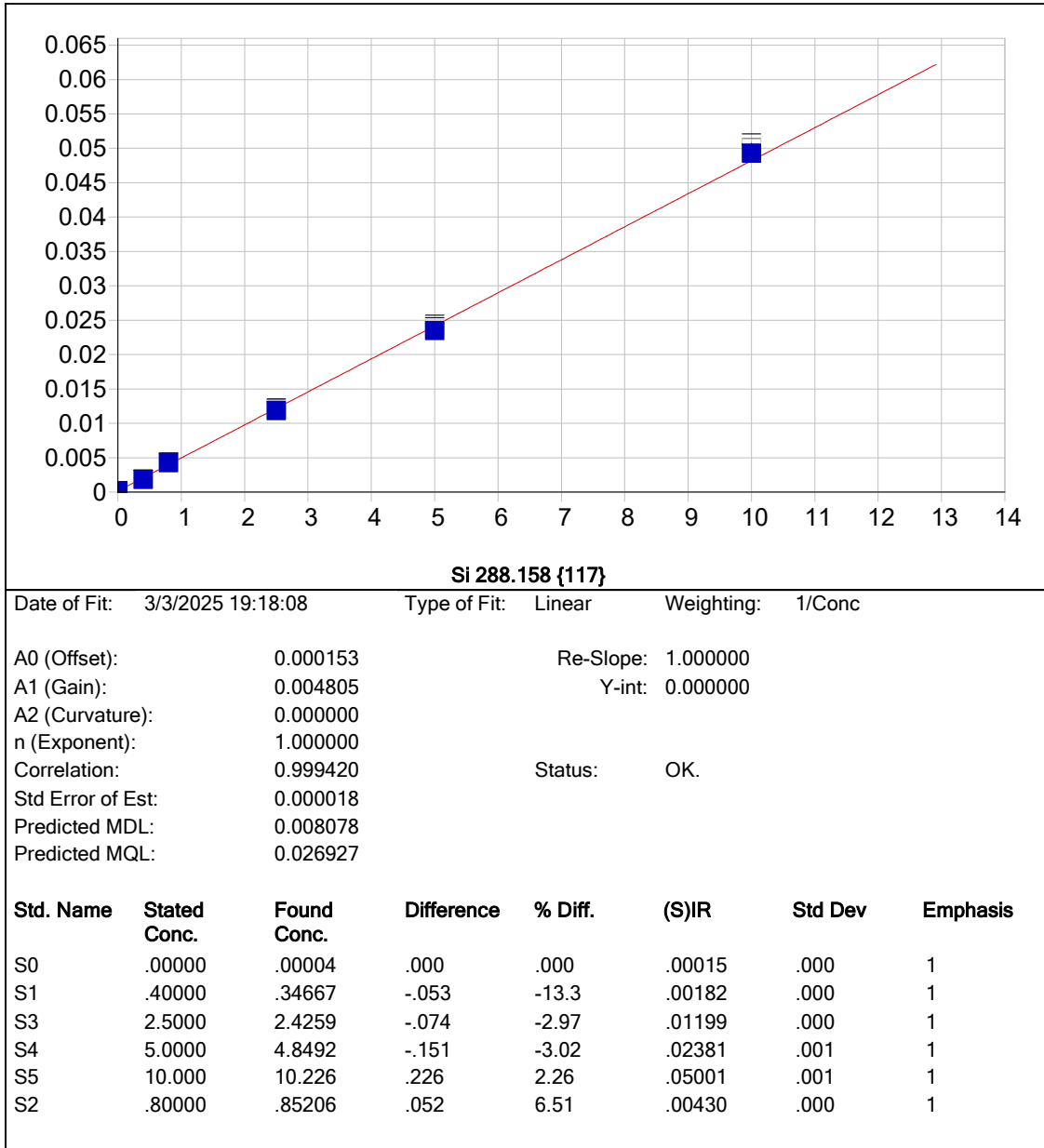


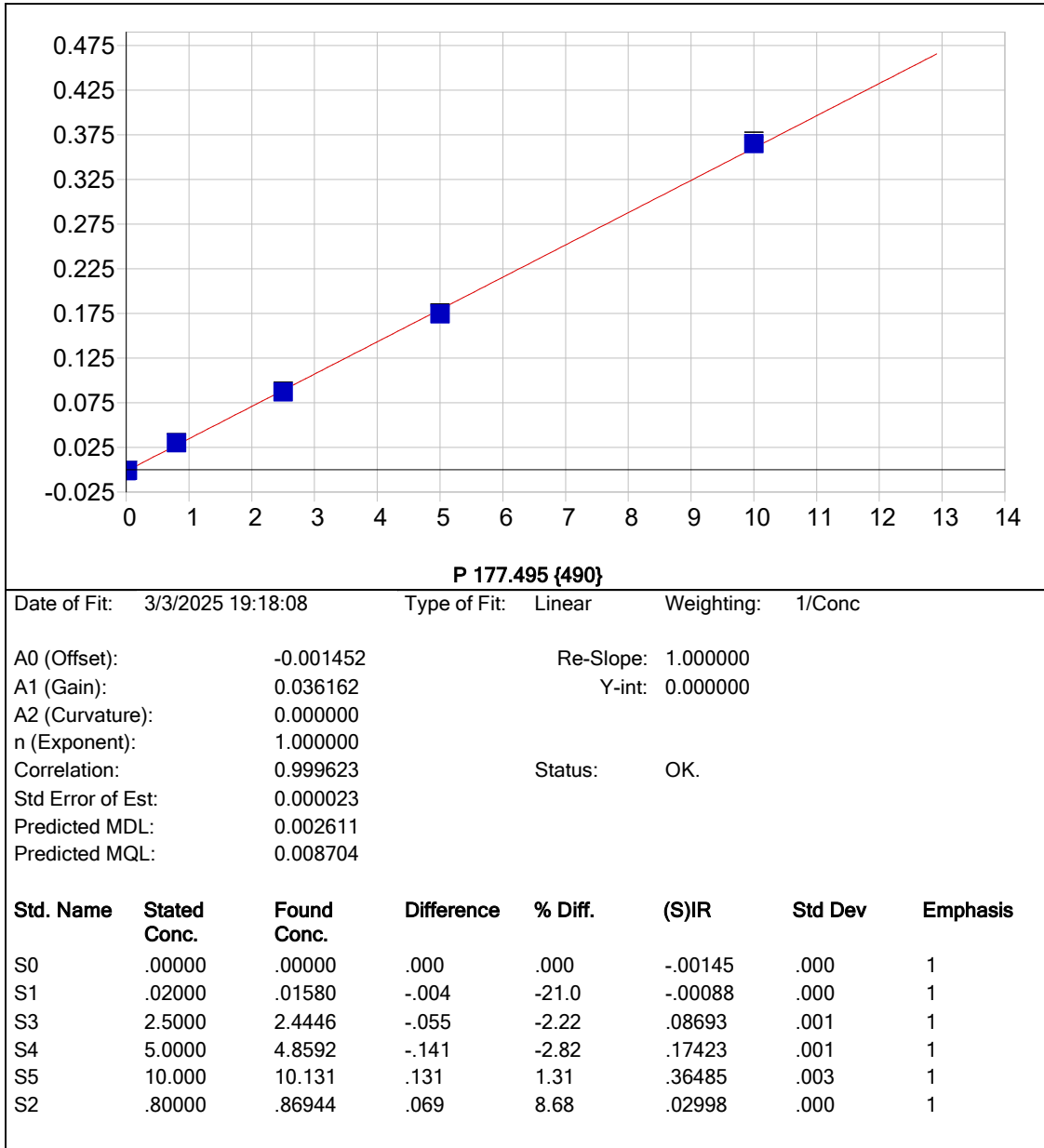


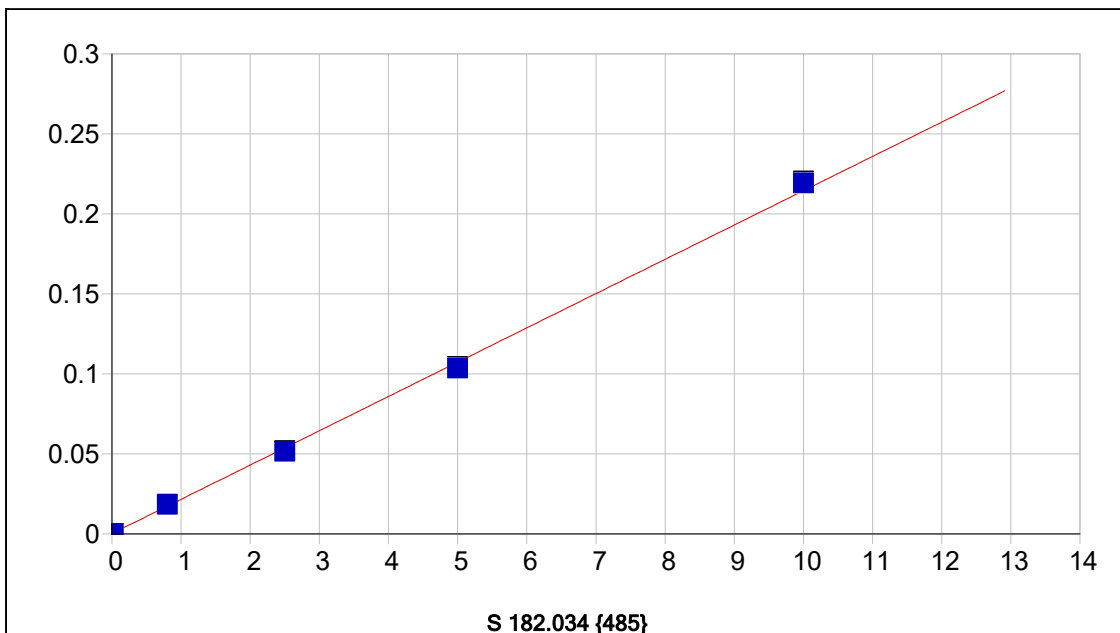
Date of Fit: 3/3/2025 19:18:08 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset): 0.000162 Re-Slope: 1.000000
A1 (Gain): 0.110054 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999686 Status: OK.
Std Error of Est: 0.000091
Predicted MDL: 0.000776
Predicted MQL: 0.002588

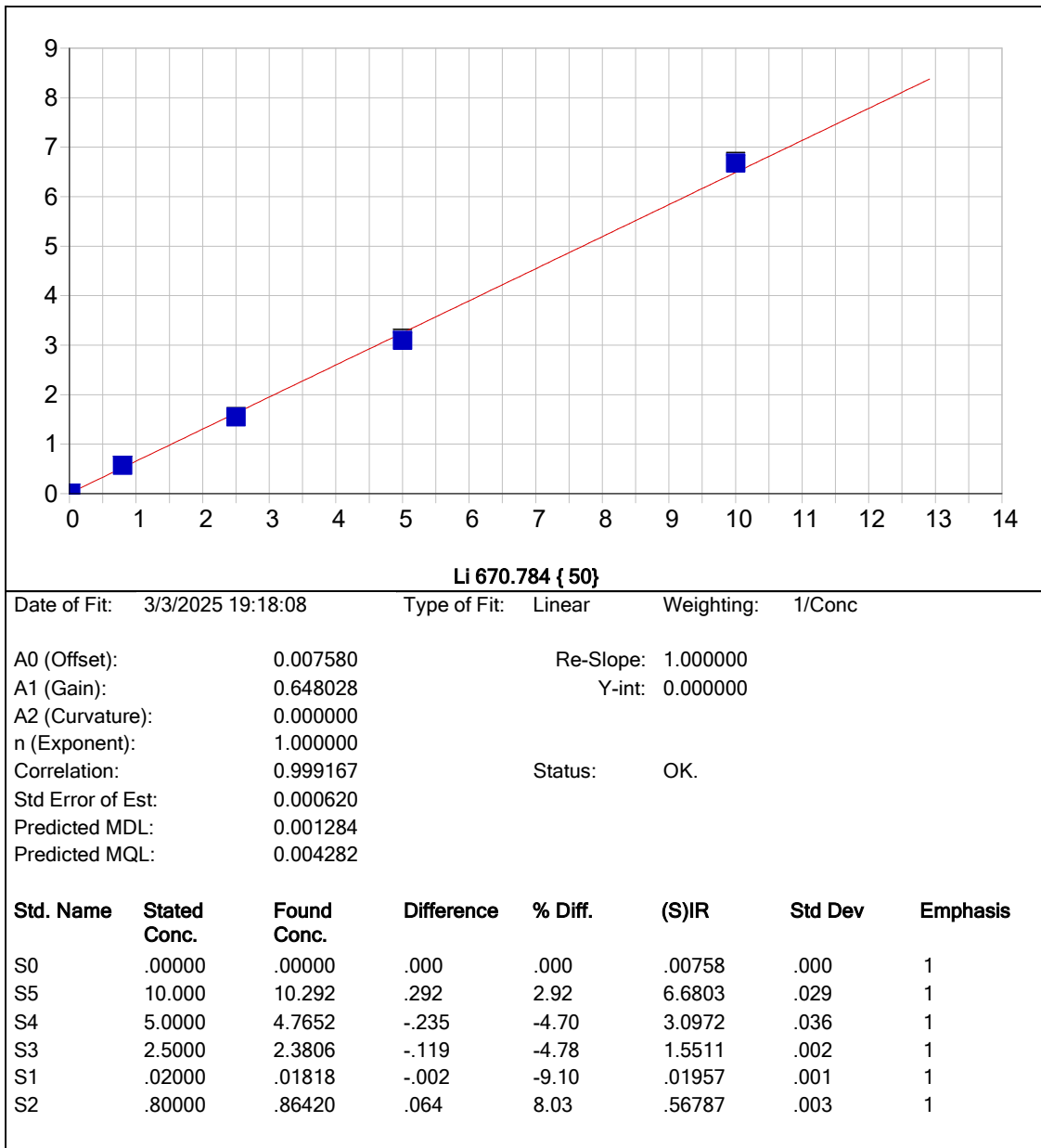


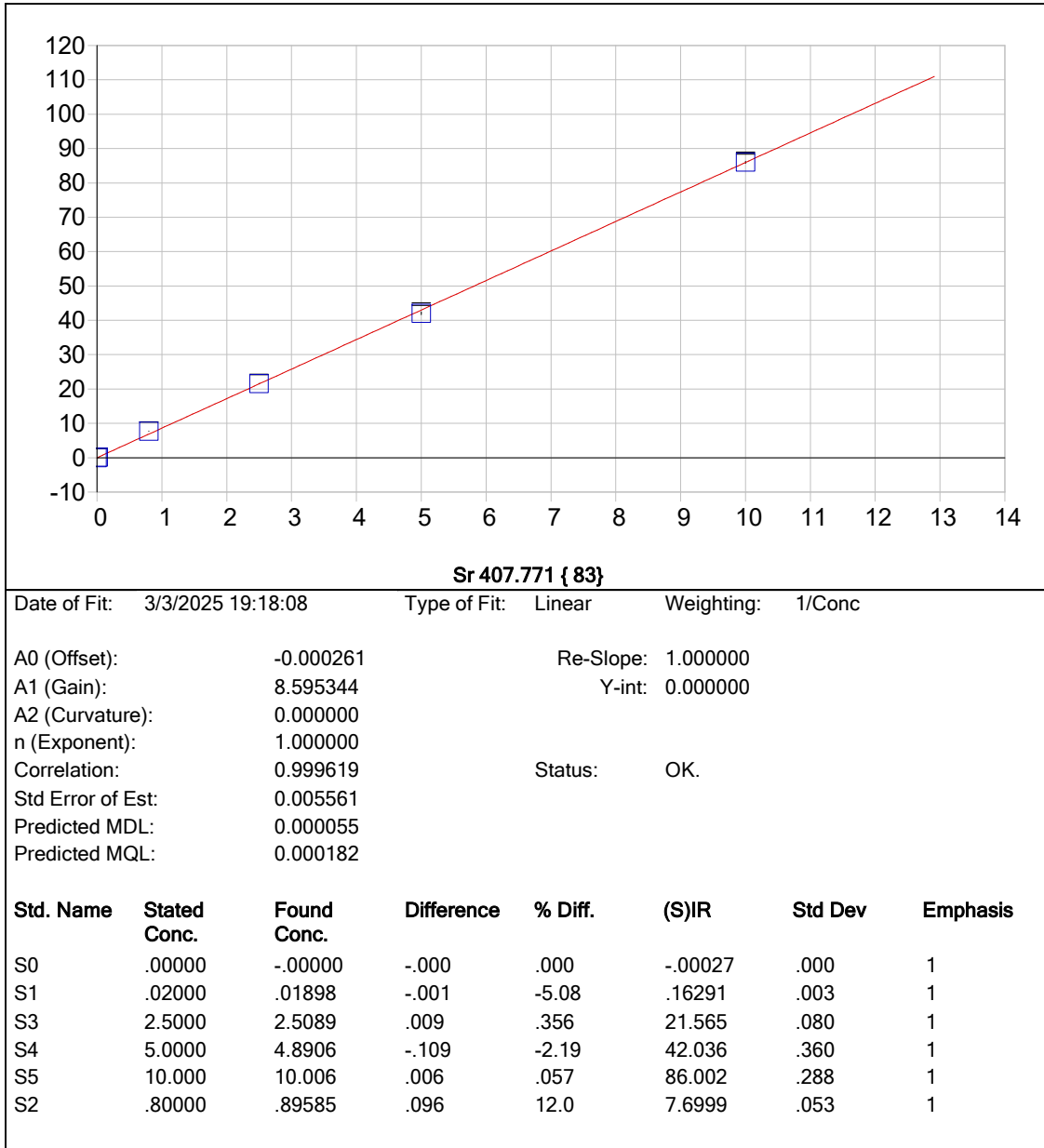






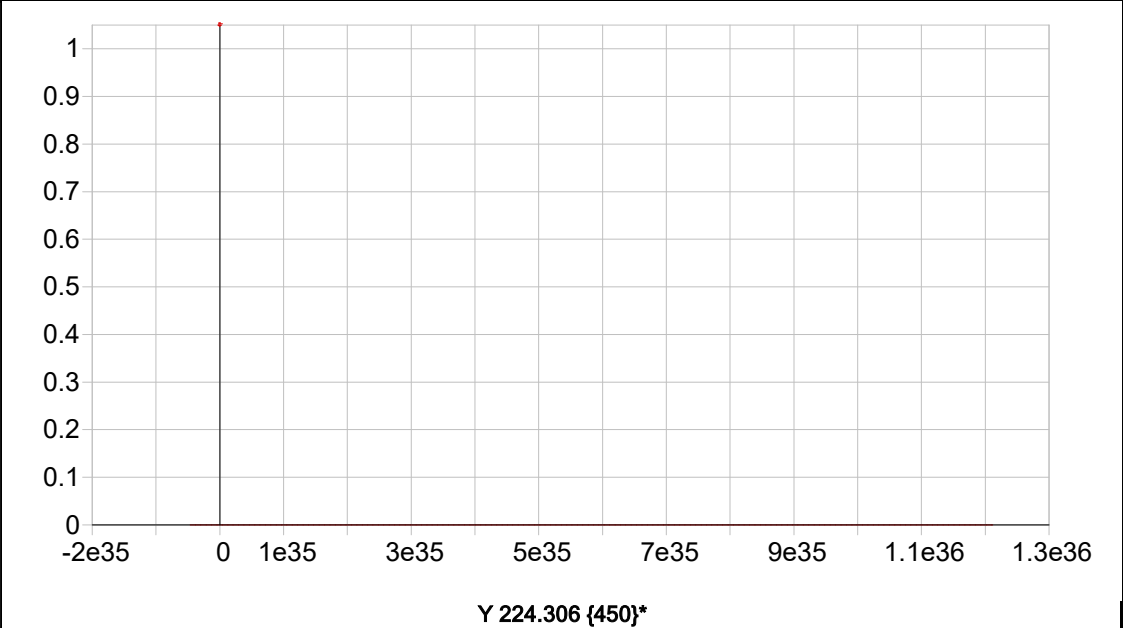
Date of Fit:		3/3/2025 19:18:08		Type of Fit:	Linear	Weighting:	1/Conc
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A1 (Gain):		0.021429		Y-int:		0.000000	
A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.999485		Status:	OK.		
Std Error of Est:		0.000016					
Predicted MDL:		0.003681					
Predicted MQL:		0.012268					
Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00020	.000	1
S1	.02000	.01632	-.004	-18.4	.00053	.000	1
S3	2.5000	2.3997	-.100	-4.01	.05148	.000	1
S4	5.0000	4.8277	-.172	-3.45	.10337	.001	1
S5	10.000	10.227	.227	2.27	.21881	.001	1
S2	.80000	.84878	.049	6.10	.01834	.000	1





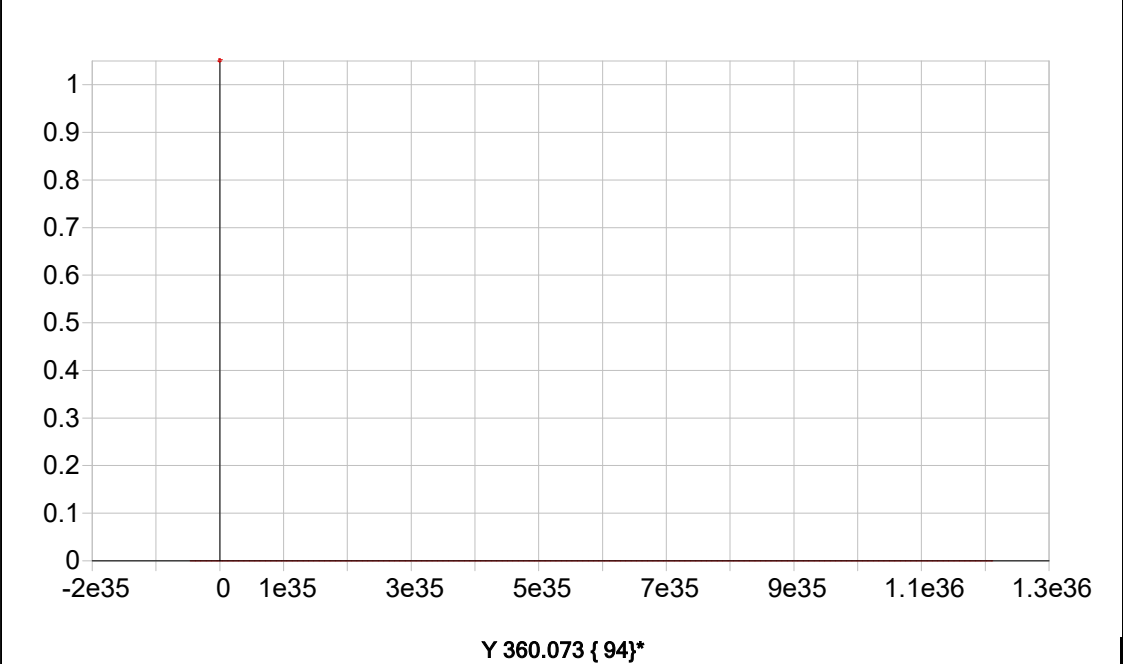
Date of Fit: 3/3/2025 19:18:08 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset): -0.000261 Re-Slope: 1.000000
A1 (Gain): 8.595344 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999619 Status: OK.
Std Error of Est: 0.005561
Predicted MDL: 0.000055
Predicted MQL: 0.000182

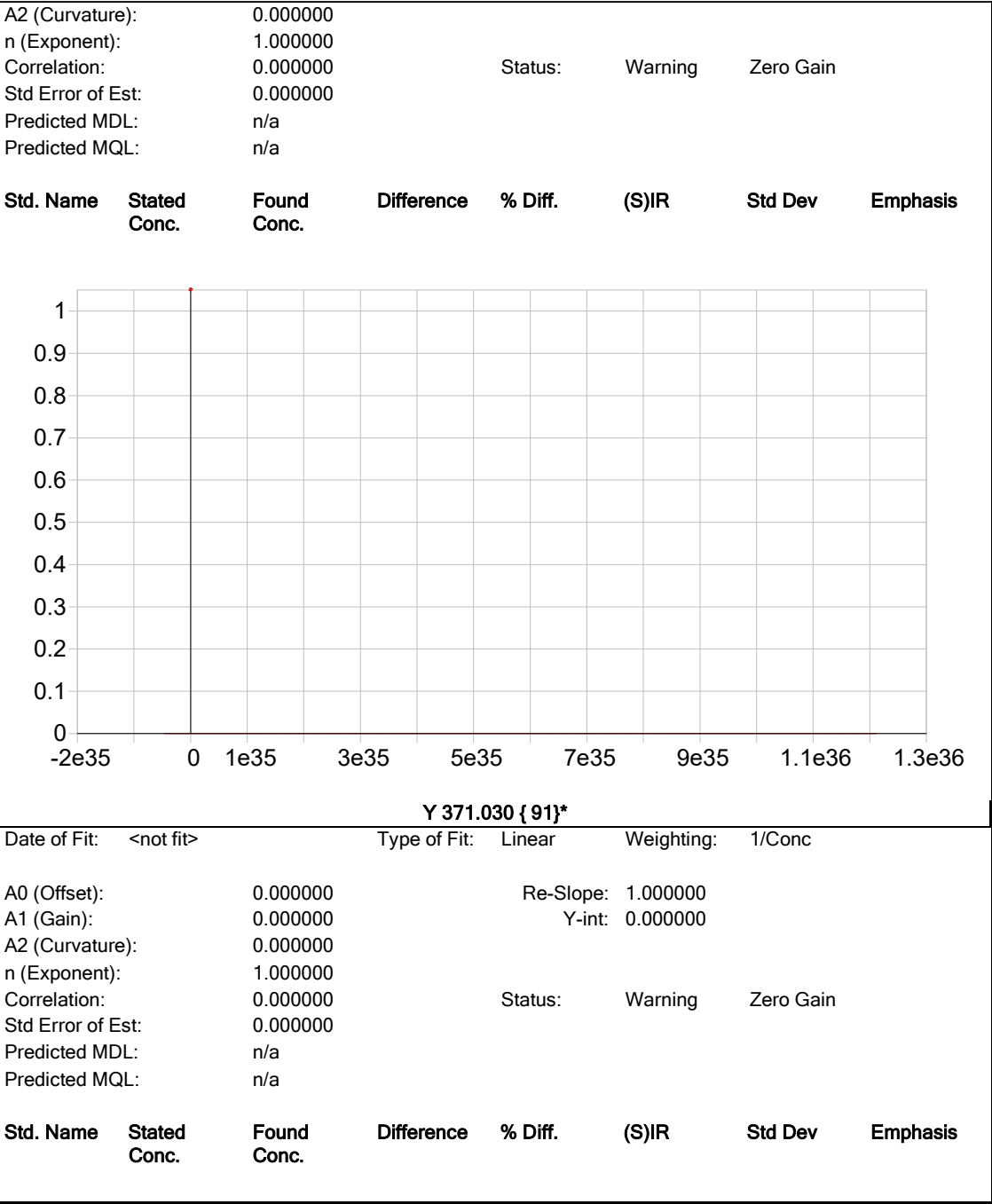


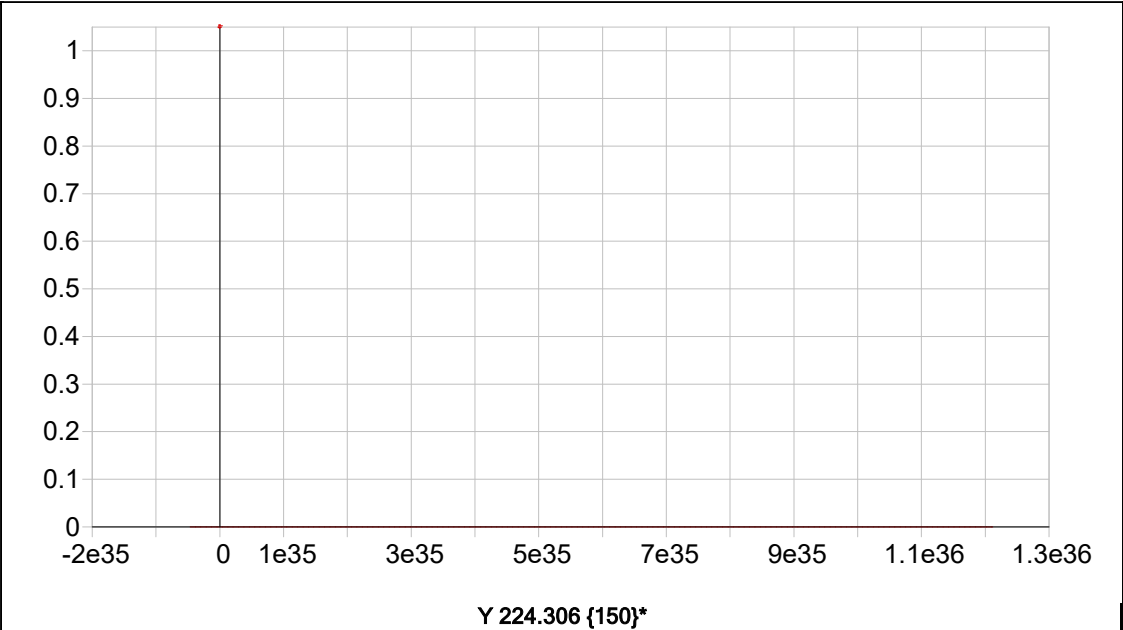
Date of Fit:	3/3/2025 19:18:08	Type of Fit:	Linear	Weighting:	1/Conc
A0 (Offset):	0.000000	Re-Slope:	1.000000		
A1 (Gain):	0.000000	Y-int:	0.000000		
A2 (Curvature):	0.000000				
n (Exponent):	1.000000				
Correlation:	0.000000	Status:	Warning	Zero Gain	
Std Error of Est:	0.000000				
Predicted MDL:	n/a				
Predicted MQL:	n/a				

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



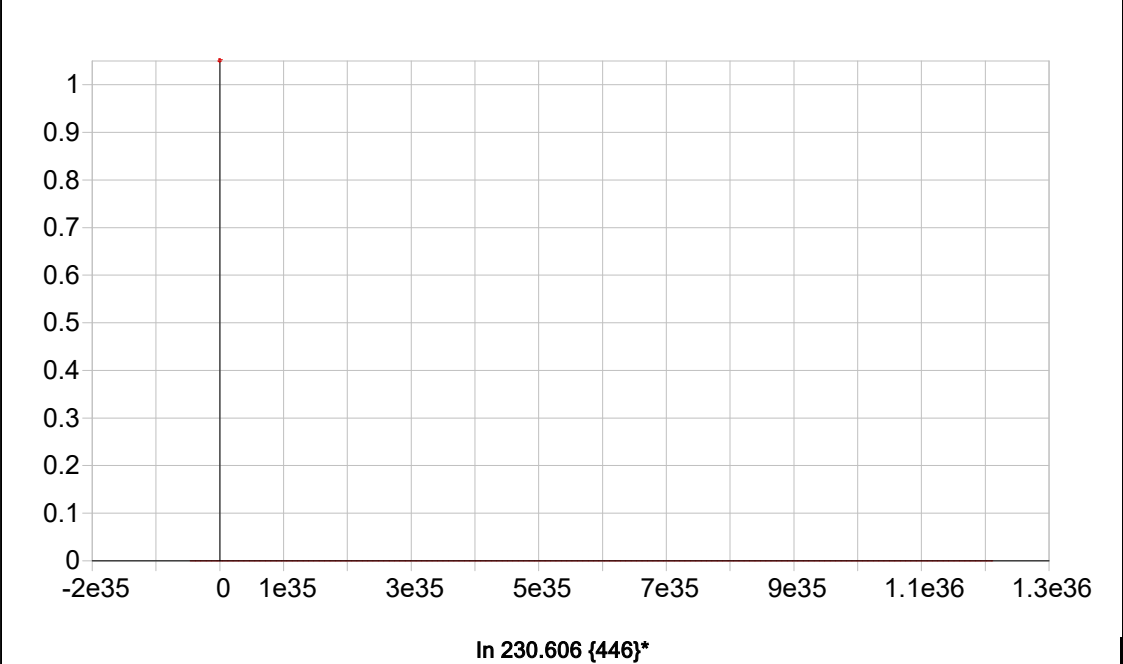
Date of Fit:	<not fit>	Type of Fit:	Linear	Weighting:	1/Conc
A0 (Offset):	0.000000	Re-Slope:	1.000000		
A1 (Gain):	0.000000	Y-int:	0.000000		





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		

A2 (Curvature):		0.000000		Status:	Warning	Zero Gain	
n (Exponent):		1.000000					
Correlation:		0.000000					
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

Sample Name: S0 Acquired: 3/3/2025 18:26:52 Type: Cal
Method: NON EPA-6010-200.7(v2755) Mode: IR Corr. Factor: 1.000000
User: Kareem 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	-.00008	.00002	.00026	.00038	.00067	.03249	-.00003
Stddev	.00005	.00009	.00009	.00021	.00006	.00031	.00171	.00011
%RSD	40.282	111.28	440.10	79.221	15.965	47.267	5.2513	428.64
#1	-.00017	-.00009	.00009	.00013	.00041	.00102	.03057	-.00003
#2	-.00010	.00001	-.00008	.00016	.00042	.00041	.03307	-.00013
#3	-.00008	-.00017	.00006	.00051	.00031	.00058	.03383	.00009
Elem	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00002	.00082	.00007	-.00008	-.00073	-.00003	-.00000	-.00027
Stddev	.00009	.00020	.00003	.00006	.00020	.00003	.00004	.00009
%RSD	408.75	24.064	53.213	71.301	27.816	125.14	3735.3	33.788
#1	-.00007	.00059	.00003	-.00015	-.00065	-.00005	-.00003	-.00016
#2	-.00008	.00093	.00008	-.00004	-.00057	.00001	.00005	-.00032
#3	.00008	.00093	.00009	-.00006	-.00095	-.00004	-.00003	-.00032
Elem	Ni2316	Ag3280	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00002	-.00101	.00164	.00007	.00511	-.00052	.00056	-.00000
Stddev	.00017	.00007	.00004	.00011	.00114	.00019	.00016	.00014
%RSD	675.07	7.2598	2.4711	151.73	22.225	36.387	28.232	6594.5
#1	.00001	-.00096	.00160	.00021	.00396	-.00067	.00038	-.00011
#2	.00020	-.00109	.00167	.00000	.00623	-.00057	.00068	-.00005
#3	-.00013	-.00097	.00166	.00002	.00514	-.00031	.00061	.00015
Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707	Sr4077	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	.00016	.00208	.00015	-.00145	.00020	.00758	-.00027	
Stddev	.00002	.00017	.00002	.00006	.00008	.00034	.00015	
%RSD	14.235	8.1456	13.385	4.0721	40.200	4.4732	54.435	
#1	.00016	.00217	.00014	-.00149	.00027	.00781	-.00019	
#2	.00019	.00188	.00018	-.00148	.00011	.00774	-.00018	
#3	.00014	.00218	.00014	-.00138	.00022	.00719	-.00044	

Sample Name: S0 Acquired: 3/3/2025 18:26:52 Type: Cal
Method: NON EPA-6010-200.7(v2755) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3641.1	79618.	14877.	2375.7	5306.5
Stddev	48.1	1035.	169.	29.5	72.7
%RSD	1.3204	1.2996	1.1342	1.2435	1.3705
#1	3621.9	79626.	14801.	2374.6	5278.9
#2	3605.5	78580.	14759.	2346.7	5251.6
#3	3695.8	80649.	15070.	2405.7	5389.0

Sample Name: S1 Acquired: 3/3/2025 18:31:17 Type: Cal
Method: NON EPA-6010-200.7(v2755) Mode: IR Corr. Factor: 1.000000
User: Kareem 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	.00083	.00237	.00185	.00116	.00626	.01049	.20534	.02090
Stddev	.00001	.00012	.00011	.00012	.00016	.00061	.00194	.00015
%RSD	.86203	4.8630	6.1553	9.9714	2.6271	5.8373	.94613	.73784
#1	.00083	.00231	.00183	.00103	.00630	.01038	.20339	.02072
#2	.00083	.00230	.00174	.00122	.00639	.01115	.20728	.02102
#3	.00082	.00251	.00197	.00123	.00607	.00994	.20535	.02095
Elem	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.01260	.09719	.00156	.02262	.01222	.00036	.00835	.02556
Stddev	.00019	.00151	.00004	.00032	.00018	.00001	.00029	.00040
%RSD	1.5031	1.5582	2.6918	1.4279	1.4687	2.9244	3.4446	1.5752
#1	.01278	.09554	.00151	.02277	.01230	.00037	.00812	.02519
#2	.01261	.09851	.00159	.02284	.01236	.00037	.00868	.02599
#3	.01240	.09753	.00158	.02225	.01202	.00035	.00826	.02550
Elem	Ni2316	Ag3280	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02397	.00125	.03933	.00420	.09442	.01031	.02866	.12117
Stddev	.00028	.00007	.00056	.00017	.00073	.00015	.00048	.00128
%RSD	1.1803	5.6367	1.4130	4.1230	.76862	1.4632	1.6701	1.0597
#1	.02395	.00117	.03869	.00404	.09365	.01031	.02811	.12184
#2	.02426	.00126	.03964	.00438	.09450	.01016	.02889	.12199
#3	.02370	.00131	.03967	.00416	.09509	.01046	.02899	.11969
Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707	Sr4077	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	.00444	.01479	.00182	-.00088	.00053	.01957	.16291	
Stddev	.00010	.00018	.00003	.00012	.00008	.00064	.00280	
%RSD	2.3023	1.1907	1.7616	13.850	15.284	3.2719	1.7161	
#1	.00440	.01459	.00179	-.00077	.00053	.02017	.16010	
#2	.00456	.01484	.00185	-.00087	.00061	.01964	.16569	
#3	.00436	.01493	.00183	-.00101	.00045	.01890	.16293	

Sample Name: S1 Acquired: 3/3/2025 18:31:17 Type: Cal
Method: NON EPA-6010-200.7(v2755) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3656.5	80744.	14704.	2460.9	5223.5
Stddev	41.6	459.	161.	13.7	60.6
%RSD	1.1384	.56862	1.0979	.55537	1.1597
#1	3640.3	81239.	14890.	2466.4	5196.1
#2	3625.4	80661.	14612.	2471.0	5181.4
#3	3703.8	80332.	14610.	2445.4	5292.9

Sample Name: S2 Acquired: 3/3/2025 18:35:36 Type: Cal
Method: NON EPA-6010-200.7(v2755) Mode: IR Corr. Factor: 1.000000
User: Kareem 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	.04008	.05498	.16517	.04504	.10625	.16497	3.2844	.16092
Stddev	.00019	.00015	.00091	.00041	.00090	.00072	.0205	.00105
%RSD	.46559	.26500	.54929	.90619	.84392	.43761	.62541	.65496

#1	.03986	.05503	.16445	.04468	.10537	.16459	3.2926	.16066
#2	.04017	.05481	.16488	.04496	.10623	.16581	3.2996	.16208
#3	.04020	.05509	.16619	.04549	.10716	.16452	3.2610	.16002

Elem	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.95783	.21868	.02806	.34679	.13494	.00358	.18803	.05404
Stddev	.00318	.00241	.00024	.00154	.00054	.00004	.00148	.00095
%RSD	.33206	1.1039	.83813	.44295	.39673	1.2166	.78495	1.7651

#1	.95543	.21837	.02795	.34579	.13437	.00354	.18871	.05382
#2	.95662	.22124	.02789	.34601	.13500	.00358	.18905	.05509
#3	.96144	.21644	.02832	.34856	.13544	.00363	.18634	.05322

Elem	Ni2316	Ag3280	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.27596	.05174	.08828	.04895	1.0196	.02438	.24657	.54868
Stddev	.00111	.00059	.00055	.00031	.0068	.00042	.00074	.00276
%RSD	.40282	1.1347	.62003	.63831	.66993	1.7125	.29875	.50265

#1	.27512	.05154	.08791	.04875	1.0155	.02417	.24660	.54587
#2	.27553	.05127	.08801	.04931	1.0157	.02412	.24729	.54878
#3	.27722	.05240	.08891	.04878	1.0274	.02486	.24582	.55139

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707	Sr4077	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	.09778	.29532	.00430	.02998	.01834	.56787	7.6999	
Stddev	.00027	.00270	.00006	.00009	.00012	.00325	.0534	
%RSD	.27351	.91362	1.3819	.30953	.64666	.57166	.69355	

#1	.09757	.29552	.00425	.02991	.01822	.56877	7.7144	
#2	.09770	.29792	.00430	.02996	.01846	.57056	7.7445	
#3	.09808	.29253	.00436	.03009	.01834	.56426	7.6407	

Sample Name: S2 Acquired: 3/3/2025 18:35:36 Type: Cal
Method: NON EPA-6010-200.7(v2755) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3626.0	79330.	14523.	2434.7	5080.8
Stddev	18.0	377.	133.	18.6	21.0
%RSD	.49519	.47470	.91413	.76255	.41330
#1	3641.1	79446.	14500.	2450.9	5096.7
#2	3630.8	79636.	14403.	2438.8	5088.7
#3	3606.2	78910.	14665.	2414.5	5057.0

Sample Name: S3 Acquired: 3/3/2025 18:39:39 Type: Cal
Method: NON EPA-6010-200.7(v2755) Mode: IR Corr. Factor: 1.000000
User: Kareem 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	.11164	.15312	.45941	.12469	.29378	.45502	9.1891	.42643
Stddev	.00087	.00043	.00356	.00073	.00234	.00089	.0179	.00237
%RSD	.77505	.28150	.77484	.58655	.79714	.19560	.19475	.55578
#1	.11181	.15272	.46123	.12496	.29525	.45542	9.1687	.42631
#2	.11071	.15358	.45531	.12387	.29108	.45400	9.1961	.42412
#3	.11241	.15305	.46170	.12526	.29502	.45565	9.2023	.42885
Elem	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2.6685	.60758	.07678	.95997	.37801	.01012	.51313	.15012
Stddev	.0198	.00107	.00174	.00768	.00218	.00018	.00084	.00084
%RSD	.74249	.17546	2.2624	.79994	.57757	1.8087	.16412	.55747
#1	2.6838	.60864	.07848	.96580	.37897	.01029	.51224	.15105
#2	2.6461	.60651	.07500	.95127	.37551	.00992	.51325	.14941
#3	2.6755	.60758	.07686	.96283	.37954	.01013	.51391	.14990
Elem	Ni2316	Ag3280	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.76433	.14129	.25029	.13680	2.7650	.07117	.65518	1.5060
Stddev	.00527	.00280	.00514	.00030	.0644	.00127	.00507	.0095
%RSD	.69008	1.9783	2.0549	.22067	2.3298	1.7864	.77358	.62762
#1	.76796	.14401	.25576	.13692	2.8248	.07240	.65207	1.5125
#2	.75828	.13842	.24556	.13703	2.6968	.06986	.65245	1.4952
#3	.76676	.14143	.24955	.13646	2.7735	.07126	.66103	1.5104
Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707	Sr4077	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	.27337	.81885	.01199	.08693	.05148	1.5511	21.565	
Stddev	.00205	.00118	.00021	.00063	.00032	.0020	.080	
%RSD	.75055	.14389	1.7929	.72097	.61874	.13088	.36952	
#1	.27460	.81967	.01221	.08755	.05155	1.5494	21.640	
#2	.27100	.81750	.01178	.08630	.05113	1.5505	21.573	
#3	.27451	.81939	.01197	.08695	.05176	1.5533	21.481	

Sample Name: S3 Acquired: 3/3/2025 18:39:39 Type: Cal
Method: NON EPA-6010-200.7(v2755) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3589.1	78586.	14917.	2379.0	4930.7
Stddev	19.9	1625.	29.	54.3	30.1
%RSD	.55551	2.0673	.19504	2.2837	.61045
#1	3572.7	76908.	14906.	2321.9	4905.2
#2	3611.3	80151.	14950.	2430.0	4963.9
#3	3583.3	78700.	14895.	2385.2	4922.9

Sample Name: S4 Acquired: 3/3/2025 18:43:46 Type: Cal
Method: NON EPA-6010-200.7(v2755) Mode: IR Corr. Factor: 1.000000
User: Kareem 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	.21992	.29622	.90083	.24531	.57763	.90431	17.978	.82806
Stddev	.00112	.00293	.00650	.00200	.00356	.00817	.044	.00560
%RSD	.51128	.98880	.72189	.81439	.61600	.90372	.24464	.67663
#1	.21894	.29284	.89743	.24326	.57391	.90100	17.992	.82443
#2	.22115	.29781	.90833	.24726	.58100	.89830	18.014	.82524
#3	.21966	.29802	.89673	.24540	.57798	.91361	17.929	.83451
Elem	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5.2883	1.1947	.14879	1.8896	.70846	.01952	1.0044	.29829
Stddev	.0401	.0103	.00331	.0152	.00420	.00047	.0107	.00263
%RSD	.75922	.86289	2.2252	.80246	.59325	2.4238	1.0657	.88233
#1	5.2674	1.1894	.14810	1.8813	.70548	.01922	.99579	.29617
#2	5.3346	1.1880	.14587	1.9071	.71327	.01928	1.0011	.29747
#3	5.2629	1.2065	.15239	1.8804	.70664	.02007	1.0164	.30123
Elem	Ni2316	Ag3280	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1.5025	.27615	.49274	.27106	5.3676	.14145	1.2976	2.9247
Stddev	.0117	.00538	.01201	.00247	.1055	.00346	.0076	.0141
%RSD	.78114	1.9479	2.4383	.91107	1.9655	2.4482	.58272	.48282
#1	1.4963	.27453	.48917	.26910	5.3374	.14040	1.2934	2.9111
#2	1.5161	.27176	.48292	.27024	5.2805	.13864	1.2932	2.9393
#3	1.4952	.28215	.50614	.27383	5.4849	.14532	1.3064	2.9236
Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707	Sr4077	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	.53973	1.6108	.02381	.17423	.10337	3.0972	42.036	
Stddev	.00416	.0160	.00057	.00119	.00097	.0356	.360	
%RSD	.77129	.99165	2.3903	.68562	.93980	1.1497	.85724	
#1	.53757	1.6036	.02358	.17336	.10234	3.0791	41.692	
#2	.54453	1.5998	.02340	.17560	.10428	3.0742	42.411	
#3	.53709	1.6292	.02446	.17374	.10350	3.1382	42.004	

Sample Name: S4 Acquired: 3/3/2025 18:43:46 Type: Cal
Method: NON EPA-6010-200.7(v2755) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3556.9	77799.	14711.	2338.5	4785.7
Stddev	12.9	1353.	50.	40.6	27.6
%RSD	.36214	1.7387	.33761	1.7343	.57659
#1	3566.1	78114.	14742.	2347.0	4799.1
#2	3542.2	78966.	14739.	2374.2	4753.9
#3	3562.5	76317.	14654.	2294.4	4804.0

Sample Name: S5 Acquired: 3/3/2025 18:47:57 Type: Cal
Method: NON EPA-6010-200.7(v2755) Mode: IR Corr. Factor: 1.000000
User: Kareem 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	.44854	.60044	1.8330	.49652	1.1713	1.9187	37.872	1.7408
Stddev	.00312	.00541	.0170	.00280	.0083	.0059	.545	.0080
%RSD	.69458	.90041	.92759	.56328	.71118	.30546	1.4384	.45959
#1	.44550	.59554	1.8170	.49364	1.1633	1.9119	37.264	1.7318
#2	.45172	.59954	1.8508	.49922	1.1799	1.9223	38.033	1.7472
#3	.44839	.60624	1.8311	.49670	1.1707	1.9218	38.317	1.7433
Elem	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	10.843	2.5005	.30591	3.8892	1.4151	.04056	2.1153	.63105
Stddev	.102	.0057	.00469	.0374	.0112	.00069	.0066	.00144
%RSD	.94496	.22834	1.5333	.96254	.79159	1.7087	.31282	.22849
#1	10.745	2.4947	.30447	3.8542	1.4035	.04024	2.1078	.63054
#2	10.949	2.5009	.31116	3.9286	1.4258	.04135	2.1178	.62993
#3	10.835	2.5061	.30212	3.8848	1.4160	.04009	2.1203	.63268
Elem	Ni2316	Ag3280	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3.0662	.57705	1.0456	.57161	11.120	.30304	2.7244	5.8732
Stddev	.0277	.00952	.0173	.00241	.207	.00481	.0143	.0486
%RSD	.90460	1.6490	1.6543	.42233	1.8637	1.5871	.52517	.82677
#1	3.0410	.57262	1.0401	.56883	11.031	.30156	2.7080	5.8224
#2	3.0959	.58798	1.0649	.57285	11.357	.30842	2.7311	5.9192
#3	3.0618	.57056	1.0317	.57315	10.972	.29915	2.7341	5.8779
Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707	Sr4077	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	1.1018	3.4014	.05001	.36485	.21881	6.6803	86.002	
Stddev	.0093	.0122	.00076	.00266	.00133	.0292	.288	
%RSD	.84300	.35794	1.5133	.72979	.60703	.43764	.33441	
#1	1.0928	3.3875	.04961	.36183	.21734	6.6477	86.229	
#2	1.1114	3.4065	.05088	.36688	.21993	6.7043	85.679	
#3	1.1013	3.4102	.04953	.36582	.21915	6.6889	86.098	

Sample Name: S5 Acquired: 3/3/2025 18:47:57 Type: Cal
Method: NON EPA-6010-200.7(v2755) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3480.6	74561.	13966.	2228.2	4558.1
Stddev	28.7	980.	61.	35.7	42.7
%RSD	.82468	1.3139	.43945	1.6036	.93785
#1	3506.8	74884.	14022.	2244.0	4594.4
#2	3449.9	73460.	13977.	2187.3	4511.0
#3	3485.1	75337.	13900.	2253.3	4568.8

Sample Name: ICV01 Acquired: 3/3/2025 19:17:42 Type: Unk
Method: NON EPA-6010-200.7(v2756) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICV01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9969750	1.018885	.9875285	.9944249	.9727720	2.466231	.5276005
Stddev	.0019205	.010698	.0017425	.0029147	.0043260	.063365	.0125211
%RSD	.1926297	1.049956	.1764468	.2931019	.4447065	2.569312	2.373224
#1	.9983538	1.017122	.9859907	.9915204	.9679016	2.393615	.5133402
#2	.9947815	1.030355	.9871739	.9944047	.9742462	2.510307	.5367950
#3	.9977897	1.009178	.9894211	.9973497	.9761682	2.494771	.5326663
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4849087	.4935883	9.692497	.5101941	.5024811	.5145152	9.591707
Stddev	.0091015	.0019963	.230528	.0143525	.0021890	.0011773	.201705
%RSD	1.876945	.4044441	2.378413	2.813141	.4356305	.2288244	2.102907
#1	.4754177	.4924705	9.431751	.5263873	.5011049	.5137796	9.823439
#2	.4935629	.4958930	9.869256	.5051519	.5050052	.5158731	9.496087
#3	.4857455	.4924012	9.776485	.4990431	.5013331	.5138930	9.455594
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5045369	5.756729	.5409303	.2471856	9.203069	.5102290	.9900575
Stddev	.0126326	.151142	.0033966	.0072054	.176454	.0149466	.0258182
%RSD	2.503807	2.625485	.6279141	2.914975	1.917338	2.929386	2.607751
#1	.4900264	5.599793	.5389793	.2552085	9.405383	.4931107	1.019284
#2	.5130834	5.901320	.5448523	.2450827	9.122836	.5206916	.980539
#3	.5105009	5.769073	.5389593	.2412656	9.080989	.5168846	.970349
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.168915	2.596522	2.432929	2.467737	2.521801	2.337998	2.386435
Stddev	.185835	.049187	.009313	.009120	.055149	.040757	.012235
%RSD	2.026792	1.894356	.3827756	.3695550	2.186875	1.743249	.5126972
#1	9.383100	2.546287	2.425845	2.462337	2.459022	2.384644	2.386772
#2	9.073152	2.644590	2.443477	2.478267	2.562437	2.320090	2.398499
#3	9.050493	2.598688	2.429464	2.462609	2.543944	2.309262	2.374035

Sample Name: ICV01 Acquired: 3/3/2025 19:17:42 Type: Unk
Method: NON EPA-6010-200.7(v2756) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICV01 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.437933	2.496380	2.554070
Stddev	.013101	.054251	.038655
%RSD	.5373644	2.173196	1.513460

#1	2.432975	2.434405	2.520365
#2	2.452788	2.535273	2.596264
#3	2.428034	2.519463	2.545581

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3700.128	80941.15	14817.93	2451.418	5129.366
Stddev	10.370	1918.01	308.69	58.631	20.928
%RSD	.2802711	2.369631	2.083250	2.391716	.4080120

#1	3708.546	78762.44	15161.82	2384.806	5146.602
#2	3688.544	81686.01	14564.78	2474.247	5106.078
#3	3703.295	82374.99	14727.18	2495.199	5135.418

Sample Name: LLICV01 Acquired: 3/3/2025 19:21:31 Type: Unk
Method: NON EPA-6010-200.7(v2757) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: LLICV01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0212237	.0392289	.0116234	.0197489	.0485778	.1026075
Stddev	.0044660	.0014391	.0003611	.0015144	.0007783	.0024293
%RSD	21.04277	3.668373	3.106857	7.668198	1.602191	2.367552
#1	.0162549	.0383327	.0118094	.0214054	.0479577	.1049196
#2	.0249036	.0384652	.0112072	.0184354	.0483243	.1000759
#3	.0225125	.0408888	.0118537	.0194060	.0494512	.1028269
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0909183	.0059397	.0058161	1.934762	.0095857	.0287174
Stddev	.0010057	.0001659	.0000697	.027300	.0003643	.0001898
%RSD	1.106175	2.792890	1.198293	1.411031	3.800889	.6609016
#1	.0916343	.0061216	.0058021	1.931379	.0095830	.0286488
#2	.0897685	.0057967	.0057545	1.909311	.0092227	.0285713
#3	.0913521	.0059007	.0058918	1.963596	.0099514	.0289319
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0220430	.0965204	.0202253	1.934418	.0380592	.0094606
Stddev	.0007219	.0038788	.0004162	.028680	.0004217	.0004528
%RSD	3.275008	4.018587	2.057944	1.482628	1.108030	4.786606
#1	.0227640	.0927550	.0202429	1.956450	.0382158	.0098211
#2	.0213202	.0963030	.0198006	1.901989	.0375816	.0089523
#3	.0220448	.1005033	.0206325	1.944815	.0383803	.0096085
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.792761	.0361703	.0402091	1.763723	.1083479	.2001871
Stddev	.022048	.0013628	.0005847	.009781	.0013999	.0005590
%RSD	1.229820	3.767815	1.454276	.5545589	1.292012	.2792118
#1	1.789491	.0377394	.0406123	1.774754	.1094594	.2002308
#2	1.772530	.0354887	.0395385	1.760309	.1067757	.1996076
#3	1.816260	.0352827	.0404767	1.756107	.1088084	.2007229

Sample Name: LLICV01 Acquired: 3/3/2025 19:21:31 Type: Unk
Method: NON EPA-6010-200.7(v2757) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: LLICV01 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0377041	.0373783	.3524824	.0174180	.0171440	F .0156160
Stddev	.0002519	.0004094	.0034244	.0010379	.0006463	.0013942
%RSD	.6680620	1.095257	.9715171	5.958844	3.770123	8.928255
#1	.0374305	.0369920	.3532232	.0182895	.0177237	.0161725
#2	.0379263	.0373356	.3487482	.0176947	.0164471	.0140295
#3	.0377556	.0378074	.3554758	.0162697	.0172613	.0166461

Elem	Sr4077
Units	ppm
Avg	.0189066
Stddev	.0002251
%RSD	1.190820
#1	.0188141
#2	.0187424
#3	.0191632

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3780.513	82489.08	15116.84	2490.803	5437.595
Stddev	15.385	972.99	199.86	28.590	25.639
%RSD	.4069680	1.179537	1.322099	1.147822	.4715068
#1	3774.336	81585.66	14970.49	2461.866	5431.803
#2	3798.027	83519.22	15344.55	2519.033	5465.635
#3	3769.176	82362.37	15035.47	2491.510	5415.348

Sample Name: ICB01 Acquired: 3/3/2025 19:25:48 Type: Unk
Method: NON EPA-6010-200.7(v2757) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICB01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000064	-.000036	-.001344	-.002651	-.001015	.0044420	.0003840
Stddev	.000853	.001003	.000501	.001449	.000452	.0028497	.0003805
%RSD	1332.301	2781.119	37.25785	54.68232	44.53567	64.15390	99.08257
#1	-.001046	-.000535	-.000827	-.004189	-.000640	.0070421	.0007861
#2	.000494	.001119	-.001379	-.002454	-.001517	.0048883	.0000295
#3	.000360	-.000692	-.001827	-.001310	-.000887	.0013954	.0003365
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000658	.0000271	.0013098	.0000594	.0000692	-.000095	.0008285
Stddev	.0000663	.0000541	.0063346	.0002488	.0000995	.000595	.0005376
%RSD	100.8378	199.7417	483.6384	419.1171	143.8357	624.9360	64.88302
#1	-.000009	.0000603	.0039181	.0002372	.0001824	.000221	.0005129
#2	.000117	.0000562	-.005913	.0001659	.0000292	-.000782	.0005235
#3	.000089	-.000035	.005924	-.000225	-.000004	.000275	.0014493
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000813	.0240386	.0000757	.0000467	-.035281	-.001096	.0000601
Stddev	.0001794	.0119597	.0001494	.0002919	.006111	.001385	.0002569
%RSD	220.7032	49.75191	197.4002	625.2399	17.32002	126.3568	427.5466
#1	.0001420	.0374479	.0002329	-.000174	-.040542	-.001262	.0000300
#2	-.000121	.0201935	-.000064	-.000063	-.036722	-.002391	-.000180
#3	.000222	.0144745	.000059	.000378	-.028578	.000364	.000331
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.052145	.0059394	.0001893	.0002425	-.000101	-.001372	-.001429
Stddev	.003915	.0002250	.0001397	.0006140	.000923	.007690	.001852
%RSD	7.507183	3.788884	73.77717	253.1647	910.3528	560.3243	129.6204
#1	-.049239	.0057516	.0003151	-.000466	-.001160	.000896	-.003505
#2	-.056596	.0061888	.0002139	.000595	.000539	-.009941	.000054
#3	-.050598	.0058777	.0000390	.000599	.000317	.004928	-.000836

Sample Name: ICB01 Acquired: 3/3/2025 19:25:48 Type: Unk
Method: NON EPA-6010-200.7(v2757) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICB01 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.004492	-.003835	-.000034
Stddev	.001810	.000898	.000055
%RSD	40.29957	23.42543	160.3924

#1	-.006162	-.004676	-.000091
#2	-.002568	-.002889	-.000032
#3	-.004745	-.003940	.000019

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3736.971	81375.28	15890.84	2449.310	5414.624
Stddev	7.712	2800.44	406.85	83.246	9.765
%RSD	.2063592	3.441395	2.560258	3.398769	.1803534

#1	3729.148	80862.87	16107.63	2430.480	5403.352
#2	3737.198	84396.54	15421.51	2540.358	5419.977
#3	3744.566	78866.42	16143.38	2377.091	5420.542

Sample Name: CRI01 Acquired: 3/3/2025 19:30:07 Type: Unk
Method: NON EPA-6010-200.7(v2757) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CRI01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0187397	.0379426	.0115418	.0180174	.0484076	.0944659
Stddev	.0011474	.0007021	.0006872	.0002038	.0013105	.0006237
%RSD	6.122710	1.850545	5.953735	1.131362	2.707304	.6602890
#1	.0191755	.0371426	.0122605	.0182504	.0477909	.0950349
#2	.0196054	.0384566	.0108912	.0178720	.0475192	.0937990
#3	.0174383	.0382285	.0114738	.0179298	.0499127	.0945638
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0876479	.0056134	.0056421	1.854387	.0095896	.0279166
Stddev	.0027854	.0000804	.0000192	.052296	.0004253	.0005560
%RSD	3.177922	1.431699	.3397573	2.820115	4.435277	1.991720
#1	.0901321	.0056793	.0056207	1.912197	.0091697	.0275258
#2	.0846366	.0055238	.0056477	1.810370	.0100201	.0276708
#3	.0881749	.0056369	.0056578	1.840594	.0095791	.0285531
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0218330	.0908678	.0191312	1.843095	.0374406	.0098124
Stddev	.0001421	.0019491	.0007391	.027362	.0006126	.0001353
%RSD	.6510539	2.144936	3.863126	1.484585	1.636084	1.378343
#1	.0216722	.0887900	.0198450	1.874570	.0370461	.0098562
#2	.0218846	.0926555	.0183693	1.824977	.0371295	.0099203
#3	.0219420	.0911580	.0191794	1.829737	.0381463	.0096607
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.790046	.0360147	.0407144	1.736153	.0999927	.1946474
Stddev	.037303	.0006700	.0007679	.065107	.0022661	.0022650
%RSD	2.083932	1.860341	1.886151	3.750048	2.266303	1.163643
#1	1.758269	.0360259	.0400071	1.731795	.1018234	.1928092
#2	1.831118	.0353391	.0415312	1.803329	.0974582	.1939551
#3	1.780752	.0366790	.0406048	1.673335	.1006965	.1971777

Sample Name: CRI01 Acquired: 3/3/2025 19:30:07 Type: Unk
Method: NON EPA-6010-200.7(v2757) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CRI01 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0374498	.0359020	.3495252	.0151240	.0162639	F .0138662
Stddev	.0003182	.0011181	.0090434	.0009755	.0016745	.0007118
%RSD	.8497638	3.114437	2.587341	6.449853	10.29584	5.133355
#1	.0377141	.0364291	.3455385	.0151727	.0156961	.0136419
#2	.0370965	.0346177	.3598769	.0141251	.0149471	.0132936
#3	.0375387	.0366592	.3431601	.0160742	.0181484	.0146632

Elem	Sr4077
Units	ppm
Avg	.0181154
Stddev	.0003514
%RSD	1.940033
#1	.0184715
#2	.0177688
#3	.0181059

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3825.470	82211.53	15778.55	2482.880	5450.193
Stddev	34.957	1674.94	329.68	50.424	55.144
%RSD	.9137985	2.037358	2.089401	2.030871	1.011776
#1	3853.870	83297.80	15435.85	2512.092	5497.485
#2	3836.113	80282.59	16093.44	2424.655	5463.473
#3	3786.429	83054.20	15806.38	2511.892	5389.622

Sample Name: ICSA01 Acquired: 3/3/2025 19:34:24 Type: Unk
Method: NON EPA-6010-200.7(v2757) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSA01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0015077	.0113541	.0021632	-.006376	-.001472	237.9240
Stddev	.0012746	.0011118	.0021884	.002731	.002324	2.5572
%RSD	84.53812	9.792525	101.1684	42.83826	157.8691	1.074804
#1	.0001318	.0107221	.0010359	-.004997	-.001069	237.2618
#2	.0026481	.0107023	.0046854	-.004609	.000624	240.7472
#3	.0017433	.0126379	.0007682	-.009521	-.003972	235.7631
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0063148	.0013309	-.002674	227.6675	.0547439	.0014999
Stddev	.0006600	.0000300	.000094	1.8284	.0007024	.0001427
%RSD	10.45134	2.250489	3.512426	.8030820	1.282987	9.515238
#1	.0063899	.0013394	-.002761	226.9645	.0549089	.0016621
#2	.0056204	.0012976	-.002688	229.7430	.0539737	.0013939
#3	.0069339	.0013557	-.002574	226.2950	.0553490	.0014436
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001265	96.94112	.0049099	232.3084	.0028627	.0017685
Stddev	.000622	.62506	.0007868	2.2154	.0002565	.0002108
%RSD	49.15565	.6447850	16.02446	.9536579	8.958484	11.91896
#1	-.001883	97.58453	.0040690	230.8966	.0026413	.0017940
#2	-.001273	96.33619	.0050326	234.8618	.0028030	.0019654
#3	-.000639	96.90263	.0056282	231.1668	.0031437	.0015461
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0097574	.0019827	.0028911	-.081946	F .1141711	.0005430
Stddev	.0050040	.0004530	.0001326	.014526	.0013755	.0006028
%RSD	51.28392	22.84602	4.586052	17.72607	1.204762	111.0159
#1	.0041902	.0018930	.0028517	-.087350	.1156874	.0001378
#2	.0112015	.0024737	.0027826	-.065492	.1138224	.0002555
#3	.0138806	.0015812	.0030389	-.092994	.1130035	.0012358

Sample Name: ICSA01 Acquired: 3/3/2025 19:34:24 Type: Unk
Method: NON EPA-6010-200.7(v2757) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSA01 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.004459	-.002110	.0075354	-.002536	-.015699	.0009875
Stddev	.000188	.000938	.0060504	.000145	.000825	.0013170
%RSD	4.220460	44.45522	80.29220	5.702083	5.253151	133.3632
#1	-.004669	-.002974	.0119004	-.002371	-.016229	.0014624
#2	-.004402	-.002243	.0100770	-.002598	-.016119	-.000501
#3	-.004306	-.001112	.0006288	-.002640	-.014749	.002001

Elem	Sr4077
Units	ppm
Avg	F .0941605
Stddev	.0005699
%RSD	.6051939
#1	.0941286
#2	.0947456
#3	.0936073

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3406.287	73829.81	14856.98	2283.340	4361.931
Stddev	19.472	702.89	43.53	22.922	28.671
%RSD	.5716414	.9520390	.2930196	1.003866	.6572923
#1	3411.265	73148.65	14870.70	2260.041	4369.729
#2	3422.787	74552.58	14808.23	2305.864	4385.897
#3	3384.810	73788.18	14891.99	2284.116	4330.168

Sample Name: ICSAB01 Acquired: 3/3/2025 19:38:39 Type: Unk
Method: NON EPA-6010-200.7(v2757) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSAB01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1089125	.1000000	.0503297	.0390428	.5885307	232.6246
Stddev	.0040454	.0006832	.0013733	.0044161	.0048348	1.9073
%RSD	3.714327	.6832050	2.728641	11.31103	.8215046	.8199030
#1	.1121932	.0994096	.0491393	.0424599	.5859494	230.6861
#2	.1101518	.0998421	.0518323	.0406122	.5855344	234.4991
#3	.1043924	.1007484	.0500176	.0340563	.5941083	232.6885
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4602060	.4742882	.9715383	222.5939	.5343119	.4934475
Stddev	.0034665	.0043738	.0088149	1.6622	.0053153	.0040611
%RSD	.7532572	.9221910	.9073105	.7467592	.9948036	.8229998
#1	.4576047	.4723720	.9661640	221.4419	.5402786	.4914140
#2	.4641413	.4792931	.9667395	224.4994	.5325746	.4908050
#3	.4588719	.4711995	.9817114	221.8403	.5300826	.4981236
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4783382	94.05089	.4619126	227.0546	.9750833	.2062639
Stddev	.0051738	.74328	.0028115	1.8268	.0087320	.0021082
%RSD	1.081629	.7902996	.6086619	.8045647	.8955079	1.022077
#1	.4754989	94.82480	.4611902	225.4198	.9700981	.2084964
#2	.4752056	93.98530	.4650148	229.0264	.9699860	.2059883
#3	.4843100	93.34258	.4595327	226.7176	.9851659	.2043071
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0104891	.4513736	.9835515	-.086211	.9516305	.9335331
Stddev	.0105807	.0054558	.0068178	.026528	.0066897	.0071737
%RSD	100.8729	1.208706	.6931776	30.77041	.7029761	.7684417
#1	.0116328	.4488811	.9914240	-.063235	.9495290	.9294220
#2	-.000617	.4576304	.9796232	-.080156	.9591186	.9293609
#3	.020452	.4476091	.9796074	-.115243	.9462438	.9418165

Sample Name: ICSAB01 Acquired: 3/3/2025 19:38:39 Type: Unk
Method: NON EPA-6010-200.7(v2757) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSAB01 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9386517	.8729641	F .8142856	F -.001435	F -.014273	F .0000771
Stddev	.0082187	.0091338	.0066848	.002967	.007156	.0005809
%RSD	.8755892	1.046298	.8209437	206.7228	50.13820	753.1369
#1	.9349815	.8657694	.8184834	-.001521	-.011691	.0000844
#2	.9329076	.8832400	.8177966	-.004358	-.022361	-.000507
#3	.9480660	.8698829	.8065768	.001574	-.008766	.000654

Elem	Sr4077
Units	ppm
Avg	F .0919541
Stddev	.0008420
%RSD	.9157222
#1	.0911740
#2	.0928468
#3	.0918414

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3391.566	75041.90	15065.34	2294.643	4366.084
Stddev	25.070	720.13	134.52	18.422	33.481
%RSD	.7391801	.9596378	.8928837	.8028376	.7668412
#1	3404.975	74282.61	15116.91	2274.670	4384.404
#2	3407.079	75127.93	14912.68	2298.288	4386.407
#3	3362.643	75715.14	15166.45	2310.970	4327.441

Sample Name: ICSADLX20 Acquired: 3/3/2025 19:42:41 Type: Unk
Method: NON EPA-6010-200.7(v2757) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSADLX20 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0025132	.0010769	.0003054	-.001854	-.002225	11.62133	.0019377
Stddev	.0015817	.0012157	.0014798	.000860	.000495	.32196	.0011166
%RSD	62.93389	112.8940	484.5877	46.40612	22.23013	2.770443	57.62358
#1	.0006944	-.000130	.0001416	-.001125	-.002794	11.99278	.0030706
#2	.0035660	.001059	.0018603	-.002803	-.001986	11.44898	.0019043
#3	.0032793	.002301	-.001086	-.001634	-.001896	11.42223	.0008382
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001229	-.000184	11.61471	.0023533	.0001903	.0001600	4.622948
Stddev	.0000300	.000041	.33913	.0002323	.0000326	.0001827	.084378
%RSD	24.38783	22.41955	2.919794	9.872720	17.12582	114.1503	1.825197
#1	.0001397	-.000232	12.00520	.0025983	.0002183	.0003030	4.677743
#2	.0001407	-.000159	11.39401	.0023254	.0001981	.0002229	4.665321
#3	.0000883	-.000162	11.44494	.0021362	.0001545	-.000046	4.525782
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002607	11.30187	.0002111	-.000470	-.040124	.0005679	-.000140
Stddev	.0001852	.27056	.0001566	.000189	.006635	.0014647	.000058
%RSD	71.01935	2.393940	74.14865	40.11843	16.53686	257.9135	41.44862
#1	.0000573	11.61305	.0000458	-.000254	-.046934	.0022477	-.000077
#2	.0003055	11.12231	.0002305	-.000554	-.039761	-.000442	-.000151
#3	.0004194	11.17024	.0003571	-.000602	-.033678	-.000102	-.000192
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.075903	.0083173	.0002290	-.001515	-.000012	-.000508	-.002628
Stddev	.010003	.0002884	.0000249	.000476	.000311	.001970	.001308
%RSD	13.17809	3.467499	10.87292	31.43167	2641.952	387.9457	49.76162
#1	-.086537	.0080959	.0002027	-.001025	.000153	.001400	-.001143
#2	-.066682	.0086434	.0002320	-.001976	.000183	-.002536	-.003608
#3	-.074491	.0082125	.0002522	-.001544	-.000371	-.000388	-.003131

Sample Name: ICSADLX20 Acquired: 3/3/2025 19:42:41 Type: Unk
Method: NON EPA-6010-200.7(v2757) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSADLX20 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.002818	-.004169	.0046726
Stddev	.002672	.000517	.0001048
%RSD	94.81008	12.39030	2.242512

#1	-.000311	-.004567	.0047925
#2	-.005628	-.004354	.0045984
#3	-.002514	-.003585	.0046270

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3818.311	83905.94	15514.88	2530.002	5357.844
Stddev	11.379	1130.50	402.90	36.878	9.524
%RSD	.2980230	1.347341	2.596892	1.457645	.1777541

#1	3830.830	83239.09	15053.64	2502.597	5365.624
#2	3815.507	83267.51	15798.20	2515.479	5360.686
#3	3808.595	85211.23	15692.80	2571.931	5347.223

Sample Name: ICSABDLX20 Acquired: 3/3/2025 19:46:57 Type: Unk
Method: NON EPA-6010-200.7(v2757) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSABDLX20 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0041818	.0046840	.0014924	.0012851	.0298991	11.71085	.0247083
Stddev	.0018845	.0010709	.0004374	.0007296	.0018665	.19157	.0010843
%RSD	45.06510	22.86341	29.30906	56.77311	6.242509	1.635829	4.388588
#1	.0058367	.0035155	.0019625	.0015977	.0281934	11.69944	.0257862
#2	.0045781	.0049177	.0014173	.0018062	.0296111	11.90786	.0247211
#3	.0021306	.0056188	.0010974	.0004513	.0318928	11.52524	.0236176
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0253174	.0483429	11.65240	.0275752	.0247206	.0251731	4.659389
Stddev	.0002835	.0006953	.15306	.0007147	.0002791	.0005178	.154154
%RSD	1.119947	1.438249	1.313572	2.591629	1.129196	2.056954	3.308457
#1	.0254776	.0475487	11.67349	.0277938	.0243983	.0245783	4.751578
#2	.0254847	.0488421	11.79383	.0281549	.0248824	.0254178	4.745163
#3	.0249900	.0486378	11.48989	.0267767	.0248812	.0255233	4.481426
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0244200	11.35586	.0493159	.0099334	-.037425	.0228789	.0498372
Stddev	.0003911	.17746	.0008766	.0003695	.004727	.0015763	.0019762
%RSD	1.601385	1.562732	1.777530	3.719580	12.62975	6.889683	3.965373
#1	.0248634	11.37784	.0483047	.0102374	-.033050	.0244789	.0516819
#2	.0241241	11.52130	.0498615	.0100406	-.036787	.0213274	.0500781
#3	.0242726	11.16843	.0497814	.0095222	-.042439	.0228304	.0477515
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.063220	.0071110	.0002005	-.000777	-.000051	-.000330	-.002114
Stddev	.014117	.0006032	.0000548	.000585	.000526	.002817	.001520
%RSD	22.32966	8.482609	27.34830	75.28597	1034.882	854.9141	71.91030
#1	-.058967	.0068121	.0002292	-.001444	-.000647	.002854	-.002409
#2	-.051718	.0078052	.0002350	-.000348	.000144	-.002501	-.000468
#3	-.078974	.0067156	.0001373	-.000540	.000350	-.001341	-.003466

Sample Name: ICSABDLX20 Acquired: 3/3/2025 19:46:57 Type: Unk
Method: NON EPA-6010-200.7(v2757) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSABDLX20 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.001533	-.004787	.0046750
Stddev	.004062	.000970	.0000921
%RSD	264.9817	20.26213	1.969353
#1	-.006008	-.004473	.0046510
#2	-.000516	-.004012	.0047767
#3	.001924	-.005874	.0045973

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3825.262	83288.08	15416.71	2532.729	5364.445
Stddev	44.042	2676.81	210.39	73.996	62.543
%RSD	1.151339	3.213922	1.364686	2.921587	1.165889
#1	3875.990	81523.06	15313.23	2483.321	5434.291
#2	3796.781	81973.12	15278.11	2497.064	5313.619
#3	3803.015	86368.06	15658.80	2617.803	5345.426

Sample Name: CCV01 Acquired: 3/3/2025 19:57:02 Type: Unk
Method: NON EPA-6010-200.7(v2758) Mode: CONC Corr. Factor: 1.000000
User: Kareem 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	5.178367	4.820370	4.765871	5.245176	4.698367	9.298023	9.565118
Stddev	.080346	.069911	.068926	.061084	.068644	.387550	.271700
%RSD	1.551566	1.450326	1.446239	1.164584	1.461023	4.168094	2.840531
#1	5.086869	4.741857	4.689057	5.176997	4.620895	9.093621	9.406478
#2	5.210826	4.875884	4.786236	5.263611	4.722588	9.744985	9.878843
#3	5.237404	4.843368	4.822320	5.294919	4.751617	9.055463	9.410031
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2390725	2.380813	23.56700	.9571518	2.379303	1.192822	4.834160
Stddev	.0088821	.032339	.91415	.0116048	.033275	.014370	.086249
%RSD	3.715225	1.358337	3.878939	1.212428	1.398521	1.204719	1.784151
#1	.2324734	2.344606	23.02653	.9443911	2.341758	1.176588	4.768970
#2	.2491714	2.391001	24.62246	.9670740	2.391004	1.197968	4.931959
#3	.2355728	2.406831	23.05200	.9599903	2.405147	1.203912	4.801552
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.364561	23.87573	2.494900	1.188434	23.12819	2.365252	2.393432
Stddev	.094215	.95223	.038871	.013807	.31241	.093282	.029487
%RSD	3.984454	3.988294	1.558021	1.161800	1.350784	3.943842	1.232002
#1	2.313973	23.33202	2.450838	1.173440	22.92120	2.311535	2.360755
#2	2.473264	24.97525	2.509523	1.200624	23.48755	2.472964	2.418055
#3	2.306447	23.31991	2.524339	1.191238	22.97582	2.311256	2.401485
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	23.12604	4.737508	4.788963	4.772658	4.720637	4.607048	4.790591
Stddev	.24042	.176120	.062215	.066995	.184018	.065549	.060756
%RSD	1.039617	3.717576	1.299130	1.403735	3.898169	1.422803	1.268238
#1	22.98482	4.611629	4.719188	4.697252	4.618974	4.545331	4.722196
#2	23.40364	4.938775	4.809039	4.795401	4.933059	4.675853	4.811267
#3	22.98966	4.662121	4.838660	4.825321	4.609879	4.599960	4.838311

Sample Name: CCV01 Acquired: 3/3/2025 19:57:02 Type: Unk
Method: NON EPA-6010-200.7(v2758) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV01 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.681238	4.645955	4.779262
Stddev	.068302	.182757	.153863
%RSD	1.459050	3.933670	3.219398
#1	4.604929	4.543050	4.713969
#2	4.702136	4.856963	4.955006
#3	4.736649	4.537853	4.668813

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3776.646	82054.79	15241.56	2500.711	5060.598
Stddev	45.068	731.36	488.87	21.725	66.017
%RSD	1.193335	.8913128	3.207508	.8687581	1.304527
#1	3826.194	82877.09	15591.55	2525.785	5133.913
#2	3765.653	81477.03	14682.99	2487.509	5042.022
#3	3738.092	81810.26	15450.15	2488.838	5005.860

Sample Name: CCB01 Acquired: 3/3/2025 20:01:13 Type: Unk
Method: NON EPA-6010-200.7(v2758) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000154	.0000581	-.001545	-.009160	.0000281	.0001611	.0009449
Stddev	.002855	.0018487	.000257	.000718	.0009146	.0025161	.0002426
%RSD	1851.926	3184.471	16.65363	7.835352	3258.022	1562.236	25.67330
#1	.002597	.0008161	-.001831	-.008946	-.000948	.0030589	.0007976
#2	-.003102	.0014073	-.001469	-.009960	.000866	-.001468	.0012249
#3	.000043	-.002049	-.001334	-.008574	.000166	-.001107	.0008123
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000104	-.000002	.0047445	-.000307	.0002051	.0001679	.0051246
Stddev	.0000126	.000050	.0098754	.000464	.0001445	.0004158	.0067979
%RSD	120.7231	2156.291	208.1454	151.1410	70.49015	247.6211	132.6513
#1	.0000118	.000055	.0049135	-.000029	.0000408	.0002478	-.002606
#2	-.000003	-.000027	.0145342	-.000843	.0002612	-.000282	.007811
#3	.000022	-.000035	-.005214	-.000049	.0003130	.000538	.010169
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000420	.0114656	.0003871	.0025107	-.035110	-.000367	.0088630
Stddev	.000296	.0100265	.0002790	.0002303	.010700	.001679	.0001835
%RSD	70.42024	87.44879	72.05950	9.173054	30.47641	457.3077	2.070432
#1	-.000081	.0120548	.0007093	.0022449	-.046715	-.001354	.0087545
#2	-.000628	.0011575	.0002240	.0026373	-.032981	.001572	.0087597
#3	-.000551	.0211845	.0002282	.0026500	-.025634	-.001320	.0090749
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.074182	.0119100	.0004681	-.000207	.0003568	-.009622	-.002760
Stddev	.031560	.0009670	.0000615	.000467	.0002055	.010901	.001937
%RSD	42.54354	8.119155	13.14284	226.0377	57.60105	113.2862	70.16769
#1	-.101630	.0114721	.0005390	-.000660	.0003487	-.012837	-.003266
#2	-.081217	.0130185	.0004288	-.000233	.0001555	-.018554	-.004394
#3	-.039698	.0112394	.0004365	.000273	.0005663	.002524	-.000621

Sample Name: CCB01 Acquired: 3/3/2025 20:01:13 Type: Unk
Method: NON EPA-6010-200.7(v2758) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB01 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.002285	-.003094	.0000230
Stddev	.002315	.000330	.0000140
%RSD	101.3091	10.65791	60.83285

#1	-.002231	-.002930	.0000112
#2	.000003	-.003474	.0000194
#3	-.004626	-.002879	.0000384

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3853.488	82275.98	15535.13	2500.427	5574.354
Stddev	27.682	1678.36	22.39	53.909	31.568
%RSD	.7183661	2.039920	.1441389	2.155973	.5663163

#1	3826.508	81735.80	15558.22	2492.473	5542.033
#2	3881.823	84157.92	15513.50	2557.871	5605.112
#3	3852.133	80934.22	15533.66	2450.937	5575.918

Sample Name: Q1420-04 Acquired: 3/3/2025 20:05:33 Type: Unk
Method: NON EPA-6010-200.7(v2758) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0026604	-.004216	.0521762	-.011916	.0010555	.1128740	.6640291
Stddev	.0030800	.000695	.0012041	.002526	.0008260	.0047861	.0159822
%RSD	115.7706	16.49066	2.307778	21.19830	78.25259	4.240238	2.406853
#1	.0020962	-.003414	.0507890	-.011015	.0006268	.1083885	.6685920
#2	.0059835	-.004579	.0527883	-.009964	.0005321	.1123209	.6462617
#3	-.000098	-.004655	.0529514	-.014769	.0020077	.1179127	.6772337
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002244	-.000005	40.37549	.0008046	.0119458	.0568658	6.129556
Stddev	.0000045	.000089	1.05025	.0003291	.0001230	.0004029	.118418
%RSD	2.012095	1670.432	2.601205	40.90475	1.029482	.7084551	1.931920
#1	.0002273	-.000096	40.58847	.0010922	.0119829	.0571929	6.214942
#2	.0002192	-.000003	39.23508	.0008761	.0120459	.0569886	6.179355
#3	.0002267	.000083	41.30293	.0004456	.0118085	.0564158	5.994371
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.810310	4.251283	.0068317	.0016649	366.4644	-.000066	.1682877
Stddev	.044430	.088921	.0003671	.0002298	3.2550	.001503	.0033862
%RSD	2.454279	2.091624	5.373410	13.80469	.8882256	2284.980	2.012154
#1	1.824610	4.273157	.0067939	.0019259	369.1902	-.001789	.1716448
#2	1.760491	4.153467	.0072163	.0015760	367.3426	.000978	.1683453
#3	1.845830	4.327227	.0064851	.0014927	362.8603	.000613	.1648731
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.626798	.0475697	.0004915	-.001423	-.000015	.9093759	.0111887
Stddev	.030573	.0006002	.0001327	.000515	.000595	.0146557	.0008567
%RSD	1.879321	1.261732	26.99932	36.20878	4062.477	1.611623	7.656851
#1	1.658771	.0479341	.0006121	-.001620	-.000654	.9262236	.0113256
#2	1.597850	.0468769	.0005131	-.001811	.000088	.9023332	.0119687
#3	1.623772	.0478980	.0003494	-.000838	.000522	.8995710	.0102718

Sample Name: Q1420-04 Acquired: 3/3/2025 20:05:33 Type: Unk
Method: NON EPA-6010-200.7(v2758) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.5336281	-.009384	.1766188
Stddev	.0066554	.000558	.0039886
%RSD	1.247197	5.942133	2.258305
#1	.5377835	-.009268	.1777882
#2	.5371490	-.009990	.1721762
#3	.5259519	-.008893	.1798919

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3558.277	78078.70	15315.53	2358.461	4689.806
Stddev	7.779	1168.25	370.35	32.133	6.873
%RSD	.2186270	1.496253	2.418146	1.362460	.1465497
#1	3552.028	77018.58	15218.52	2328.810	4681.871
#2	3555.815	77886.32	15724.72	2353.968	4693.830
#3	3566.990	79331.21	15003.33	2392.604	4693.719

Sample Name: Q1420-08 Acquired: 3/3/2025 20:09:58 Type: Unk
Method: NON EPA-6010-200.7(v2758) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.006296	-.004476	.0047844	-.013434	-.001241	.0234870	.4272235
Stddev	.002436	.000315	.0012955	.001785	.001374	.0020281	.0022653
%RSD	38.70073	7.047616	27.07779	13.28760	110.6612	8.635102	.5302302
#1	-.006821	-.004801	.0046308	-.015480	-.001649	.0239399	.4289365
#2	-.003639	-.004171	.0061499	-.012627	.000290	.0212707	.4246551
#3	-.008427	-.004457	.0035726	-.012195	-.002365	.0252504	.4280788
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000068	.0003001	71.43527	.0004648	.0042201	.0159277	.0188911
Stddev	.000026	.0000208	.26021	.0001034	.0003153	.0003895	.0019425
%RSD	37.76478	6.912717	.3642610	22.25744	7.472322	2.445682	10.28235
#1	-.000081	.0003092	71.72799	.0005648	.0042590	.0160035	.0181779
#2	-.000038	.0003148	71.23019	.0003582	.0038871	.0155058	.0174062
#3	-.000084	.0002764	71.34763	.0004713	.0045142	.0162737	.0210894
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9977638	6.516169	.0039993	.0025454	382.5752	-.001177	.0853722
Stddev	.0026713	.062380	.0004627	.0004274	6.8403	.001228	.0019064
%RSD	.2677250	.9573174	11.56882	16.78962	1.787969	104.3336	2.233005
#1	1.000395	6.572476	.0044700	.0020839	379.0887	-.002287	.0849303
#2	.995054	6.449112	.0039826	.0029276	378.1806	.000142	.0837255
#3	.997843	6.526918	.0035451	.0026246	390.4563	-.001386	.0874607
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.645184	.0260233	.0008251	-.002617	-.001731	.8468992	.0211674
Stddev	.025738	.0003128	.0003136	.000108	.000352	.0187588	.0023354
%RSD	1.564438	1.201914	38.00419	4.109336	20.31565	2.215001	11.03299
#1	1.627222	.0256638	.0008894	-.002711	-.002072	.8354490	.0200646
#2	1.633659	.0261735	.0004844	-.002500	-.001752	.8367007	.0195877
#3	1.674670	.0262327	.0011016	-.002639	-.001369	.8685480	.0238500

Sample Name: Q1420-08 Acquired: 3/3/2025 20:09:58 Type: Unk
Method: NON EPA-6010-200.7(v2758) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.6661617	-.016905	.2222971
Stddev	.0038397	.000158	.0011476
%RSD	.5763949	.9372368	.5162590
#1	.6617404	-.016835	.2232105
#2	.6686603	-.016793	.2210089
#3	.6680842	-.017086	.2226719

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3534.985	76808.17	15798.20	2323.352	4648.737
Stddev	16.797	1489.95	63.05	33.549	27.070
%RSD	.4751725	1.939834	.3990943	1.443984	.5823176
#1	3540.116	76793.83	15726.43	2330.139	4652.050
#2	3548.618	78305.24	15823.49	2352.989	4673.998
#3	3516.220	75325.45	15844.67	2286.929	4620.163

Sample Name: Q1442-01 Acquired: 3/3/2025 20:14:22 Type: Unk
Method: NON EPA-6010-200.7(v2758) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.006723	-.002632	-.000115	-.010604	.0015679	.0400165	.2861040
Stddev	.003356	.000822	.000783	.001069	.0004823	.0062857	.0096249
%RSD	49.91855	31.24583	681.7249	10.08401	30.76016	15.70763	3.364111
#1	-.005900	-.002598	-.000990	-.009428	.0015794	.0461801	.2928219
#2	-.003855	-.001827	.000520	-.010865	.0010800	.0402539	.2904126
#3	-.010414	-.003471	.000126	-.011518	.0020444	.0336156	.2750776
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000122	.0000231	11.41671	.0016032	-.000056	.0008100	.2971757
Stddev	.000009	.0000177	.35780	.0003898	.000113	.0002798	.0078797
%RSD	7.391419	76.92761	3.133987	24.31452	201.9711	34.54547	2.651539
#1	-.000119	.0000410	11.70503	.0012300	-.000160	.0011312	.2989156
#2	-.000114	.0000227	11.52882	.0015719	-.000073	.0006801	.3040401
#3	-.000131	.0000055	11.01628	.0020078	.000065	.0006188	.2885715
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0143081	.2907632	.0043856	.0025696	310.4218	-.000022	1.822281
Stddev	.0005755	.0086179	.0001386	.0003526	2.6936	.001430	.031135
%RSD	4.022208	2.963884	3.161335	13.72131	.8677293	6407.638	1.708591
#1	.0142767	.2994538	.0045379	.0029672	307.7083	-.001638	1.791790
#2	.0148987	.2822199	.0043523	.0022949	313.0951	.000490	1.854023
#3	.0137490	.2906159	.0042667	.0024469	310.4621	.001081	1.821031
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8340814	.1379105	.0023409	-.000247	-.000138	.1857401	.1674151
Stddev	.0444210	.0040710	.0001504	.000418	.000946	.0059305	.0026709
%RSD	5.325735	2.951882	6.424254	169.0853	686.1711	3.192887	1.595377
#1	.7828581	.1409980	.0023270	-.000723	.000953	.1796788	.1643398
#2	.8573793	.1394366	.0024978	.000065	-.000644	.1915304	.1687507
#3	.8620068	.1332971	.0021980	-.000084	-.000723	.1860111	.1691547

Sample Name: Q1442-01 Acquired: 3/3/2025 20:14:22 Type: Unk
Method: NON EPA-6010-200.7(v2758) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	3.091311	-.008400	.0123129
Stddev	.022812	.000451	.0004033
%RSD	.7379500	5.372594	3.275259
#1	3.065942	-.007884	.0126292
#2	3.110135	-.008722	.0124508
#3	3.097857	-.008594	.0118588

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3721.269	82561.52	16264.70	2486.412	4981.060
Stddev	27.822	1165.59	401.68	30.590	36.456
%RSD	.7476365	1.411779	2.469623	1.230270	.7319023
#1	3750.043	83831.16	15936.30	2512.780	5019.943
#2	3694.509	81539.92	16145.25	2452.874	4947.649
#3	3719.253	82313.48	16712.56	2493.583	4975.586

Sample Name: Q1442-02 Acquired: 3/3/2025 20:18:47 Type: Unk
Method: NON EPA-6010-200.7(v2758) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0073105	-.002869	-.000777	-.009247	-.000110	.0196151	.4408127
Stddev	.0028165	.001220	.001599	.003112	.001335	.0017641	.0061888
%RSD	38.52683	42.54029	205.6558	33.65378	1210.943	8.993359	1.403943
#1	.0103752	-.003675	-.000648	-.005696	-.001235	.0181668	.4388651
#2	.0067208	-.001465	-.002437	-.011497	-.000460	.0215797	.4477409
#3	.0048355	-.003467	.000753	-.010549	.001365	.0190988	.4358319
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000022	.0012971	15.57480	.0000442	.0017680	.0079119	.1993767
Stddev	.000035	.0000221	.23491	.0003178	.0001392	.0002383	.0122753
%RSD	159.5489	1.705135	1.508246	719.7345	7.874499	3.011969	6.156853
#1	-.000059	.0012751	15.44904	.0004107	.0018905	.0081146	.2114650
#2	-.000016	.0012967	15.84581	-.000126	.0016166	.0079719	.1997425
#3	.000010	.0013194	15.42955	-.000152	.0017970	.0076494	.1869225
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1356569	2.923208	.0102222	.0025630	301.3629	-.000783	1.547937
Stddev	.0028668	.059549	.0004555	.0004663	14.3083	.002652	.088387
%RSD	2.113242	2.037101	4.455603	18.19214	4.747848	338.8728	5.709995
#1	.1338731	2.877240	.0098075	.0028237	298.9392	.001244	1.544970
#2	.1389637	2.990478	.0107096	.0020247	316.7282	.000193	1.637771
#3	.1341338	2.901907	.0101494	.0028406	288.4213	-.003784	1.461071
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.751607	.3306802	.0003283	-.000520	-.000472	3.582085	.0416776
Stddev	.331997	.0080821	.0001532	.000380	.000370	.150657	.0016942
%RSD	4.282945	2.444087	46.66419	72.98839	78.35228	4.205837	4.064960
#1	7.783840	.3268173	.0004822	-.000399	-.000338	3.590393	.0431866
#2	8.066312	.3399689	.0003269	-.000216	-.000188	3.728415	.0398450
#3	7.404669	.3252544	.0001758	-.000946	-.000890	3.427446	.0420014

Sample Name: Q1442-02 Acquired: 3/3/2025 20:18:47 Type: Unk
Method: NON EPA-6010-200.7(v2758) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.118036	-.004398	.1656312
Stddev	.037823	.000726	.0024443
%RSD	1.785746	16.50404	1.475726
#1	2.131215	-.004252	.1647420
#2	2.147505	-.003756	.1683956
#3	2.075386	-.005185	.1637561

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4103.554	85891.18	16679.34	2648.227	5461.849
Stddev	75.759	3745.07	253.05	110.336	99.863
%RSD	1.846182	4.360252	1.517131	4.166422	1.828380
#1	4078.133	85855.90	16888.27	2649.254	5436.001
#2	4043.775	82163.86	16397.97	2537.381	5377.451
#3	4188.755	89653.76	16751.78	2758.047	5572.095

Sample Name: Q1443-01 Acquired: 3/3/2025 20:23:09 Type: Unk
Method: NON EPA-6010-200.7(v2758) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.004062	-.002233	.0019335	-.009043	-.000049	.0135924	.4308548
Stddev	.000504	.000220	.0008687	.004685	.000541	.0035144	.0024009
%RSD	12.40799	9.859851	44.92754	51.81126	1092.217	25.85542	.5572339
#1	-.004562	-.002129	.0011561	-.010852	-.000640	.0168082	.4282936
#2	-.003554	-.002085	.0028711	-.003723	.000071	.0141278	.4312165
#3	-.004068	-.002486	.0017732	-.012554	.000421	.0098410	.4330543
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000099	.0003105	1.012211	.0004071	.0003569	.0103446	.0648539
Stddev	.000031	.0000418	.004093	.0003573	.0000536	.0001045	.0053831
%RSD	31.52773	13.44739	.4043565	87.78959	15.02658	1.009843	8.300263
#1	-.000072	.0002819	1.013110	-.000002	.0002951	.0104523	.0586680
#2	-.000091	.0002912	1.007743	.000563	.0003840	.0103378	.0674194
#3	-.000133	.0003584	1.015780	.000660	.0003916	.0102437	.0684743
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0111162	.1508132	.0070964	.0025067	265.7115	-.000646	.5793207
Stddev	.0001284	.0209897	.0001684	.0003913	1.0637	.000349	.0179300
%RSD	1.155421	13.91766	2.372868	15.60886	.4003036	54.03329	3.095013
#1	.0110581	.1711852	.0071059	.0021796	266.8887	-.000971	.5868132
#2	.0110271	.1292561	.0072599	.0029401	264.8196	-.000691	.5588597
#3	.0112634	.1519983	.0069235	.0024003	265.4261	-.000277	.5922892
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5889307	.1442490	.0003134	.0000744	-.000047	.0399886	.0458171
Stddev	.0093140	.0009514	.0002600	.0007068	.000532	.0047387	.0007514
%RSD	1.581506	.6595545	82.97018	950.4480	1123.362	11.85020	1.639991
#1	.5850135	.1436110	.0006114	.0008850	-.000646	.0396942	.0462503
#2	.5822151	.1437935	.0001960	-.000413	.000370	.0354040	.0462515
#3	.5995635	.1453425	.0001328	-.000249	.000134	.0448677	.0449494

Sample Name: Q1443-01 Acquired: 3/3/2025 20:23:09 Type: Unk
Method: NON EPA-6010-200.7(v2758) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.7243130	-.006021	.0081551
Stddev	.0013415	.000331	.0000546
%RSD	.1852094	5.491574	.6690694
#1	.7257623	-.006401	.0081134
#2	.7231148	-.005795	.0081350
#3	.7240619	-.005867	.0082168

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4068.500	88753.57	16582.36	2703.634	5463.478
Stddev	14.108	2080.09	91.77	61.238	18.292
%RSD	.3467539	2.343670	.5534027	2.265031	.3348022
#1	4052.390	87569.87	16586.69	2676.996	5442.917
#2	4078.649	91155.37	16488.50	2773.680	5469.571
#3	4074.460	87535.46	16671.88	2660.226	5477.945

Sample Name: Q1447-02 Acquired: 3/3/2025 20:27:16 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.002380	-.004524	.0745000	.0022468	.0004108	.0297077	.4746657
Stddev	.000926	.001519	.0021854	.0030995	.0013224	.0067401	.0048754
%RSD	38.93175	33.57067	2.933414	137.9546	321.9349	22.68805	1.027125
#1	-.003382	-.005945	.0770233	.0043121	.0005888	.0220725	.4731842
#2	-.002201	-.002924	.0732666	-.001317	-.000992	.0322190	.4707029
#3	-.001555	-.004702	.0732102	.003745	.001635	.0348316	.4801100
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001513	.0014060	22.87374	.0005333	.0006459	.0116077	.0466596
Stddev	.0000257	.0000482	.28544	.0001940	.0001652	.0001912	.0014398
%RSD	17.00406	3.428098	1.247905	36.37845	25.57322	1.647557	3.085865
#1	.0001246	.0013583	22.76090	.0006995	.0006238	.0115564	.0478214
#2	.0001534	.0014547	22.66197	.0005803	.0004928	.0114473	.0450488
#3	.0001759	.0014052	23.19835	.0003201	.0008210	.0118193	.0471088
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6774501	4.142086	.0060916	-.000356	262.7762	-.000615	.2734494
Stddev	.0084142	.069535	.0001523	.000066	2.3043	.000195	.0051870
%RSD	1.242044	1.678751	2.500601	18.54556	.8768972	31.74085	1.896892
#1	.6736712	4.145763	.0061653	-.000363	264.3908	-.000392	.2794250
#2	.6715879	4.070785	.0059164	-.000418	263.8005	-.000752	.2708144
#3	.6870913	4.209710	.0061930	-.000287	260.1374	-.000702	.2701088
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.785581	.1136312	.0002643	-.000512	-.000528	1.543666	.0141317
Stddev	.053747	.0023619	.0000605	.000097	.000204	.038810	.0016776
%RSD	3.010067	2.078603	22.88159	18.98523	38.53610	2.514155	11.87130
#1	1.840870	.1130314	.0002069	-.000511	-.000761	1.586065	.0136540
#2	1.782351	.1116270	.0003275	-.000609	-.000440	1.535035	.0127448
#3	1.733522	.1162353	.0002586	-.000414	-.000384	1.509898	.0159964

Sample Name: Q1447-02 Acquired: 3/3/2025 20:27:16 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.9730137	-.009023	.1108491
Stddev	.0050428	.000649	.0011383
%RSD	.5182630	7.197056	1.026902
#1	.9770020	-.008911	.1103127
#2	.9673454	-.008436	.1100782
#3	.9746938	-.009720	.1121566

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4136.607	88067.64	17424.29	2673.255	5483.477
Stddev	13.329	1447.25	260.07	39.075	18.707
%RSD	.3222311	1.643336	1.492547	1.461712	.3411534
#1	4121.353	86491.42	17598.64	2630.709	5463.003
#2	4146.009	88374.96	17548.87	2681.519	5499.678
#3	4142.459	89336.54	17125.37	2707.538	5487.750

Sample Name: PB166879TB Acquired: 3/3/2025 20:55:29 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000730	-.003578	-.001329	.0004354	-.000054	.0041642
Stddev	.001210	.001373	.000704	.0016991	.000178	.0017498
%RSD	165.6546	38.38100	52.95608	390.2568	329.2362	42.02014
#1	-.000856	-.003704	-.000688	.0013485	.000076	.0056701
#2	-.001873	-.004883	-.001217	.0014826	.000019	.0045778
#3	.000537	-.002145	-.002082	-.001525	-.000257	.0022446
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000177	-.000100	-.000081	-.002240	.0010151	-.000041
Stddev	.000181	.000009	.000032	.001193	.0002650	.000200
%RSD	102.4288	9.086799	39.44255	53.25511	26.10577	489.8207
#1	-.000002	-.000101	-.000086	-.003393	.0009476	-.000186
#2	-.000364	-.000109	-.000111	-.002315	.0007904	-.000123
#3	-.000166	-.000091	-.000047	-.001011	.0013073	.000187
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005397	.0028240	.0022378	.0041044	.0022655	-.000315
Stddev	.0003904	.0024611	.0001656	.0021964	.0001927	.000181
%RSD	72.34932	87.14835	7.399493	53.51177	8.505058	57.67116
#1	.0000917	.0053656	.0021445	.0065503	.0024825	-.000177
#2	.0007197	.0026543	.0021400	.0034623	.0021143	-.000520
#3	.0008076	.0004522	.0024290	.0023007	.0021998	-.000247
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 291.4568	-.001149	-.000873	-.055504	.0007227	.0002942
Stddev	7.7434	.001098	.000219	.023029	.0005869	.0001159
%RSD	2.656777	95.57868	25.08544	41.49036	81.19830	39.39017
#1	295.2782	-.000197	-.000807	-.055330	.0000878	.0001674
#2	282.5456	-.000899	-.000695	-.032563	.0012452	.0003207
#3	296.5466	-.002351	-.001118	-.078620	.0008353	.0003945

Sample Name: PB166879TB Acquired: 3/3/2025 20:55:29 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000059	.0003378	.0039019	.0012065	F .0187325	-.007435
Stddev	.0006920	.0006822	.0125310	.0023795	.0000535	.000750
%RSD	11802.72	201.9394	321.1528	197.2188	.2853624	10.09374
#1	.0004345	-.000424	-.003704	-.000317	.0187298	-.007030
#2	.0003756	.000544	.018365	.003949	.0187872	-.008301
#3	-.000793	.000893	-.002956	-.000012	.0186804	-.006974

Elem	Sr4077
Units	ppm
Avg	-.000057
Stddev	.000035
%RSD	62.27848
#1	-.000076
#2	-.000016
#3	-.000078

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4078.210	87128.26	17019.05	2686.353	5427.365
Stddev	20.923	614.77	175.58	6.037	28.589
%RSD	.5130554	.7055884	1.031643	.2247394	.5267516
#1	4055.701	87133.45	16979.43	2682.920	5398.466
#2	4097.066	87740.42	16866.67	2693.324	5455.633
#3	4081.863	86510.91	17211.05	2682.815	5427.996

Sample Name: CCV02 Acquired: 3/3/2025 21:12:05 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV02 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.328114	5.294954	5.299967	5.362505	5.341836	10.29425	10.31117
Stddev	.026674	.039160	.016420	.028271	.031219	.04890	.19790
%RSD	.5006239	.7395738	.3098178	.5271964	.5844234	.4750369	1.919261
#1	5.304892	5.255528	5.286400	5.333053	5.310599	10.32914	10.52092
#2	5.322203	5.333842	5.295279	5.365039	5.341874	10.31525	10.12777
#3	5.357248	5.295493	5.318221	5.389424	5.373036	10.23835	10.28483
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2544448	2.635701	25.95148	1.047486	2.627349	1.327711	5.291206
Stddev	.0034085	.006576	.17479	.028173	.006533	.003676	.124364
%RSD	1.339577	.2494951	.6735321	2.689582	.2486533	.2768396	2.350388
#1	.2583733	2.630354	26.15331	1.047727	2.623026	1.324767	5.276940
#2	.2522738	2.633705	25.84985	1.019193	2.624157	1.326535	5.174590
#3	.2526873	2.643043	25.85129	1.075538	2.634864	1.331830	5.422087
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.590549	25.67126	2.653578	1.304942	26.18944	2.592301	2.625168
Stddev	.017150	.21246	.005496	.033700	.62810	.010260	.067277
%RSD	.6620024	.8276359	.2071035	2.582488	2.398289	.3957971	2.562759
#1	2.609902	25.91656	2.650244	1.305551	25.88121	2.604046	2.626796
#2	2.577238	25.55237	2.650570	1.270941	25.77500	2.587776	2.557093
#3	2.584508	25.54485	2.659921	1.338333	26.91210	2.585081	2.691617
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	26.23861	5.199934	5.304692	5.281394	5.177618	5.267593	5.228840
Stddev	.72319	.067844	.018839	.011806	.021802	.124936	.010455
%RSD	2.756217	1.304709	.3551449	.2235470	.4210792	2.371778	.1999556
#1	25.92696	5.277856	5.286367	5.271104	5.201688	5.210689	5.218718
#2	25.72349	5.153973	5.303704	5.278794	5.171969	5.181239	5.239599
#3	27.06538	5.167974	5.324006	5.294284	5.159196	5.410851	5.228202

Sample Name: CCV02 Acquired: 3/3/2025 21:12:05 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV02 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	5.237054	5.160365	5.245299
Stddev	.008809	.005679	.055800
%RSD	.1682014	.1100448	1.063814
#1	5.226883	5.166701	5.292329
#2	5.242126	5.155735	5.183642
#3	5.242154	5.158659	5.259928

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3449.296	75852.17	14528.84	2273.785	4637.978
Stddev	8.914	1921.26	166.34	53.809	7.200
%RSD	.2584249	2.532902	1.144868	2.366500	.1552453
#1	3457.432	75909.15	14336.77	2277.370	4645.124
#2	3450.687	77744.30	14624.89	2325.712	4638.087
#3	3439.768	73903.05	14624.85	2218.273	4630.724

Sample Name: CCB02 Acquired: 3/3/2025 21:16:16 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB02 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011055	-.000375	-.000771	-.001304	-.001117	.0009376	.0004434
Stddev	.0004456	.001183	.000652	.001149	.000615	.0050824	.0010609
%RSD	40.30460	315.0376	84.48978	88.17170	55.04685	542.0680	239.2688
#1	.0005911	-.001375	-.000079	-.002398	-.000433	-.003211	.0016557
#2	.0013708	-.000681	-.001373	-.000106	-.001623	.006607	-.000315
#3	.0013546	.000930	-.000862	-.001406	-.001296	-.000583	-.000010
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000001	.0000345	.0058823	.0000623	.0002285	.0000178	.0006739
Stddev	.000031	.0000504	.0022270	.0003123	.0001325	.0002167	.0027418
%RSD	2257.151	145.9063	37.85853	500.8922	57.97323	1218.506	406.8318
#1	-.000036	.0000922	.0059496	-.000293	.0003287	.0002577	-.002432
#2	.000008	.0000118	.0036224	.000295	.0002786	-.000164	.001696
#3	.000023	-.000000	.0080748	.000185	.0000783	-.000041	.002758
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000002	.0010948	.0000565	-.000221	.0635672	-.000002	-.000423
Stddev	.000292	.0152507	.0002150	.000378	.0079119	.001391	.000280
%RSD	14027.07	1392.972	380.6084	171.2135	12.44652	64829.42	66.20473
#1	.000109	.0182686	.0003046	-.000297	.0555740	.001235	-.000597
#2	-.000334	-.010865	-.000063	-.000555	.0637323	-.001509	-.000570
#3	.000218	-.004119	-.000072	.000189	.0713952	.000267	-.000100
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.009624	.0121376	.0003549	.0002472	.0003940	.0049773	-.002547
Stddev	.005470	.0004684	.0001016	.0006550	.0004561	.0050906	.000635
%RSD	56.84204	3.859448	28.63937	264.9932	115.7561	102.2762	24.93652
#1	-.015702	.0121063	.0002395	-.000200	.0000491	.0100718	-.002730
#2	-.005096	.0116855	.0004309	.000999	.0009111	.0049695	-.003070
#3	-.008073	.0126209	.0003944	-.000057	.0002218	-.000109	-.001840

Sample Name: CCB02 Acquired: 3/3/2025 21:16:16 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB02 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.004619	.0015480	.0001786
Stddev	.000617	.0004819	.0000733
%RSD	13.36761	31.13109	41.01678

#1	-.005246	.0013311	.0002549
#2	-.004601	.0021003	.0001720
#3	-.004011	.0012127	.0001089

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3545.814	78120.48	14822.83	2363.872	5144.077
Stddev	12.675	718.45	59.76	15.564	18.170
%RSD	.3574764	.9196699	.4031897	.6584039	.3532287

#1	3560.142	77293.51	14770.16	2345.951	5163.588
#2	3541.235	78591.15	14810.54	2374.007	5141.005
#3	3536.064	78476.76	14887.78	2371.656	5127.639

Sample Name: Q1457-01 Acquired: 3/3/2025 21:21:02 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0284465	.0038513	.5107820	-.023662	.0010039	91.54635
Stddev	.0038440	.0012211	.0019623	.001431	.0022777	.38301
%RSD	13.51320	31.70674	.3841762	6.047494	226.8761	.4183733
#1	.0240078	.0052613	.5089332	-.022013	.0036061	91.65188
#2	.0306604	.0031384	.5128409	-.024579	.0000336	91.86553
#3	.0306713	.0031542	.5105718	-.024394	-.000628	91.12165
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5816282	.0068157	-.001863	121.9404	.1942111	.1058165
Stddev	.0009314	.0000160	.000751	.3607	.0034021	.0003301
%RSD	.1601307	.2350500	40.31300	.2957885	1.751775	.3119445
#1	.5827036	.0068192	-.001436	122.1808	.1936190	.1061008
#2	.5811030	.0067983	-.001423	122.1148	.1911438	.1058941
#3	.5810780	.0068297	-.002730	121.5257	.1978704	.1054545
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5096672	208.7917	3.329734	50.68333	.1932492	.0069093
Stddev	.0013763	3.5904	.004863	.14471	.0006850	.0002260
%RSD	.2700357	1.719631	.1460602	.2855101	.3544834	3.271208
#1	.5112057	207.5583	3.332644	50.71631	.1939292	.0069655
#2	.5092429	205.9806	3.332438	50.80870	.1925592	.0066605
#3	.5085531	212.8363	3.324120	50.52498	.1932591	.0071019
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.93774	.3122725	.5374665	7.846831	.3092586	.0029395
Stddev	.18299	.0021415	.0099080	.127523	.0087586	.0001864
%RSD	1.532850	.6857903	1.843471	1.625150	2.832130	6.341487
#1	11.87699	.3130710	.5325383	7.823278	.3064074	.0029956
#2	11.79285	.3139000	.5309889	7.732727	.3022808	.0027314
#3	12.14337	.3098464	.5488723	7.984489	.3190875	.0030913

Sample Name: Q1457-01 Acquired: 3/3/2025 21:21:02 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2721439	3.563100	F 12.47448	5.981663	4.120713	.1842714
Stddev	.0012310	.009749	.19070	.012133	.013037	.0011806
%RSD	.4523228	.2736028	1.528714	.2028437	.3163787	.6407031
#1	.2735497	3.563618	12.39273	5.994654	4.134664	.1838124
#2	.2712591	3.572580	12.33829	5.970624	4.108840	.1833891
#3	.2716230	3.553103	12.69243	5.979710	4.118634	.1856126

Elem	Sr4077
Units	ppm
Avg	.4303558
Stddev	.0006935
%RSD	.1611372
#1	.4306333
#2	.4308676
#3	.4295666

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3745.341	82610.54	16338.06	2525.307	4431.871
Stddev	5.326	1188.41	69.78	33.634	5.445
%RSD	.1422100	1.438567	.4270767	1.331897	.1228538
#1	3742.607	83112.02	16326.11	2530.618	4429.404
#2	3751.479	83466.01	16275.03	2555.969	4438.113
#3	3741.937	81253.59	16413.04	2489.332	4428.096

Sample Name: Q1420-01 Acquired: 3/3/2025 21:25:07 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0667399	.0065974	.7591873	-.015489	.0012870	80.10180	1.369034
Stddev	.0018516	.0035822	.0052725	.001492	.0006943	.17043	.001200
%RSD	2.774386	54.29635	.6944917	9.629946	53.94857	.2127620	.0876246
#1	.0688081	.0106552	.7600689	-.013971	.0018912	79.96000	1.370316
#2	.0652362	.0052634	.7535296	-.016952	.0005285	80.29087	1.367940
#3	.0661754	.0038737	.7639635	-.015543	.0014411	80.05452	1.368845
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0067480	-.004128	57.66857	.1501698	.0794100	.2417856	171.3663
Stddev	.0000162	.000235	.13842	.0003149	.0004397	.0007500	.3669
%RSD	.2407375	5.684283	.2400329	.2096747	.5536889	.3102087	.2141014
#1	.0067408	-.004346	57.52314	.1502627	.0796566	.2418983	171.7789
#2	.0067365	-.004158	57.79872	.1498190	.0789023	.2409856	171.0767
#3	.0067665	-.003880	57.68384	.1504278	.0796710	.2424729	171.2433
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.021780	24.05858	.1431217	.0056146	3.007866	.2440017	.6033124
Stddev	.001314	.10470	.0009006	.0004823	.008292	.0010080	.0027447
%RSD	.0434856	.4351925	.6292764	8.590202	.2756613	.4131128	.4549306
#1	3.021735	23.94788	.1430109	.0059430	3.017436	.2451051	.6049999
#2	3.023115	24.15602	.1422816	.0050609	3.003333	.2431291	.6047920
#3	3.020488	24.07185	.1440726	.0058400	3.002829	.2437709	.6001454
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.057397	.2043192	.0019978	.0229966	1.406264	7.668347	5.418761
Stddev	.029352	.0022923	.0001305	.0012259	.002144	.021370	.022199
%RSD	.5803743	1.121921	6.529489	5.330887	.1524611	.2786816	.4096712
#1	5.089585	.2067745	.0020377	.0232322	1.406931	7.693023	5.410089
#2	5.050492	.2022353	.0018521	.0240876	1.403866	7.656079	5.402207
#3	5.032113	.2039477	.0021036	.0216700	1.407996	7.655938	5.443988

Sample Name: Q1420-01 Acquired: 3/3/2025 21:25:07 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.181942	.1476449	.1936178
Stddev	.006032	.0002939	.0001538
%RSD	.2764635	.1990445	.0794134
#1	2.178191	.1476157	.1934602
#2	2.178734	.1473668	.1936259
#3	2.188900	.1479524	.1937674

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3876.525	84860.94	16802.22	2561.128	4709.946
Stddev	16.821	149.24	60.79	7.523	21.346
%RSD	.4339127	.1758619	.3617708	.2937555	.4532043
#1	3873.588	84860.52	16863.55	2554.855	4707.727
#2	3894.621	84711.91	16741.99	2559.059	4732.314
#3	3861.367	85010.38	16801.12	2569.469	4689.796

Sample Name: Q1420-05 Acquired: 3/3/2025 21:29:12 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0327378	.0042807	.3266876	-.015236	.0014411	60.00111	.9658007
Stddev	.0023384	.0010521	.0023537	.002787	.0018207	.13559	.0058462
%RSD	7.142767	24.57792	.7204823	18.29068	126.3444	.2259827	.6053216
#1	.0339705	.0053803	.3265090	-.016654	.0007790	60.01410	.9609191
#2	.0342019	.0041782	.3244283	-.012026	.0035001	60.12974	.9722795
#3	.0300410	.0032836	.3291255	-.017029	.0000440	59.85949	.9642034
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0059169	-.004080	100.2053	.1414509	.0815103	.1648671	162.9229
Stddev	.0000699	.000173	.4288	.0006972	.0003891	.0003866	.9223
%RSD	1.181392	4.236511	.4279296	.4929124	.4773094	.2345117	.5660667
#1	.0058958	-.003881	99.9155	.1407495	.0813236	.1649960	161.8744
#2	.0059949	-.004180	100.6979	.1421439	.0812497	.1644325	163.6083
#3	.0058600	-.004180	100.0026	.1414593	.0819575	.1651728	163.2860
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.509993	34.36047	.1468406	.0051778	2.430427	.2442009	.4442718
Stddev	.022079	.11147	.0004526	.0000248	.003531	.0006761	.0020765
%RSD	.6290331	.3243996	.3082390	.4791862	.1452663	.2768564	.4673933
#1	3.491951	34.27326	.1463211	.0051562	2.428402	.2439324	.4419587
#2	3.534613	34.48605	.1471495	.0052049	2.428376	.2449700	.4448816
#3	3.503414	34.32211	.1470513	.0051723	2.434504	.2437003	.4459751
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.801713	.2013502	.0019305	.0072979	1.843477	6.937923	6.102201
Stddev	.043233	.0013799	.0000524	.0016334	.008355	.014286	.016395
%RSD	.5541516	.6853031	2.712922	22.38238	.4532277	.2059120	.2686719
#1	7.764396	.2003557	.0019900	.0054553	1.840472	6.954419	6.121132
#2	7.791654	.2007693	.0018914	.0085681	1.852919	6.929556	6.092814
#3	7.849090	.2029255	.0019100	.0078702	1.837039	6.929795	6.092656

Sample Name: Q1420-05 Acquired: 3/3/2025 21:29:12 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.102715	.1265217	.3356455
Stddev	.006792	.0018353	.0011056
%RSD	.6159728	1.450548	.3293992
#1	1.095227	.1244033	.3348692
#2	1.104439	.1275326	.3369114
#3	1.108479	.1276293	.3351559

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3744.930	82564.28	16557.10	2473.148	4574.847
Stddev	1.632	425.14	84.53	12.818	4.881
%RSD	.0435776	.5149147	.5105313	.5182729	.1066983
#1	3746.812	83046.35	16624.67	2486.733	4570.219
#2	3744.054	82242.98	16462.32	2461.269	4574.373
#3	3743.922	82403.49	16584.31	2471.443	4579.947

Sample Name: Q1457-01DUP Acquired: 3/3/2025 21:33:21 Type: Unk
Method: NON EPA-6010-200.7(v2759) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0254625	.0003852	.5129400	-.030230	-.000038	91.24031
Stddev	.0018553	.0001258	.0056097	.001399	.001212	.12934
%RSD	7.286476	32.65073	1.093642	4.627678	3156.311	.1417550
#1	.0242481	.0002933	.5176357	-.030036	-.001160	91.35750
#2	.0245413	.0003337	.5144563	-.031715	-.000203	91.26189
#3	.0275981	.0005286	.5067280	-.028938	.001248	91.10154
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5816353	.0065682	.0086923	121.9336	.1938588	.1057605
Stddev	.0007061	.0000245	.0007174	.4488	.0022201	.0011242
%RSD	.1214026	.3727457	8.253818	.3680843	1.145208	1.062983
#1	.5821457	.0065963	.0092818	122.3600	.1943415	.1069470
#2	.5808294	.0065575	.0089015	121.9753	.1914371	.1056233
#3	.5819308	.0065510	.0078934	121.4653	.1957978	.1047112
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5226102	157.8384	3.278418	50.56555	.1937458	-.002010
Stddev	.0055374	2.1330	.013032	.25161	.0021836	.000100
%RSD	1.059559	1.351412	.3975215	.4975874	1.127064	4.987903
#1	.5275192	157.0276	3.292095	50.76659	.1957843	-.002030
#2	.5237039	156.2297	3.277018	50.64666	.1940118	-.001901
#3	.5166076	160.2580	3.266143	50.28339	.1914414	-.002099
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.20592	.3112036	.5393537	7.907487	.1909505	.0031611
Stddev	.18843	.0015582	.0065211	.134140	.0057730	.0002406
%RSD	1.543791	.5006968	1.209056	1.696361	3.023290	7.610596
#1	12.08702	.3104227	.5364061	7.863191	.1878590	.0033156
#2	12.10756	.3129978	.5348268	7.801098	.1873816	.0032839
#3	12.42318	.3101903	.5468282	8.058173	.1976108	.0028839

Sample Name: Q1457-01DUP Acquired: 3/3/2025 21:33:21 Type: Unk
Method: NON EPA-6010-200.7(v2759) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2712187	3.553954	F 12.82354	5.871175	4.102449	.1613811
Stddev	.0034622	.007484	.18684	.078079	.055274	.0001816
%RSD	1.276541	.2105792	1.457014	1.329870	1.347332	.1125503
#1	.2751658	3.562140	12.75995	5.952190	4.158051	.1614515
#2	.2697950	3.552257	12.67679	5.864926	4.101788	.1611748
#3	.2686953	3.547464	13.03387	5.796408	4.047509	.1615170

Elem	Sr4077
Units	ppm
Avg	.4299424
Stddev	.0004577
%RSD	.1064674
#1	.4304691
#2	.4296409
#3	.4297171

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3731.832	82588.31	16756.02	2466.465	4448.200
Stddev	28.268	770.92	128.95	26.397	44.412
%RSD	.7574744	.9334499	.7695641	1.070249	.9984363
#1	3708.031	82781.18	16645.21	2478.401	4405.423
#2	3724.388	83244.49	16725.30	2484.785	4445.091
#3	3763.076	81739.27	16897.56	2436.207	4494.084

Sample Name: Q1457-01LX5 Acquired: 3/3/2025 21:37:24 Type: Unk
Method: NON EPA-6010-200.7(v2759) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0049594	.0016332	.1099085	-.003670	-.000483	20.44669	.1307503
Stddev	.0019564	.0013228	.0017705	.000598	.000524	.22765	.0022419
%RSD	39.44761	80.99112	1.610900	16.29113	108.4839	1.113368	1.714661
#1	.0070730	.0027809	.1119422	-.003241	-.000791	20.19798	.1281942
#2	.0032120	.0019323	.1090725	-.004353	-.000781	20.49738	.1316735
#3	.0045933	.0001865	.1087107	-.003417	.000122	20.64473	.1323832
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0015438	.0009173	27.85369	.0439546	.0220113	.1246127	34.86145
Stddev	.0000481	.0002962	.30031	.0012758	.0002067	.0004245	.77002
%RSD	3.119092	32.28636	1.078170	2.902595	.9388300	.3406473	2.208796
#1	.0014885	.0010213	27.51313	.0428537	.0219744	.1248483	34.43308
#2	.0015670	.0011474	27.96743	.0436574	.0222340	.1248672	34.40087
#3	.0015760	.0005832	28.08053	.0453529	.0218257	.1241227	35.75039
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7627663	11.55486	.0407636	-.000442	2.598358	.0708832	.1209450
Stddev	.0057137	.13712	.0001700	.000292	.066797	.0029384	.0013137
%RSD	.7490802	1.186710	.4169986	66.12311	2.570754	4.145425	1.086199
#1	.7562127	11.39657	.0409083	-.000753	2.555538	.0690590	.1197221
#2	.7653839	11.63742	.0408061	-.000174	2.564209	.0742729	.1207792
#3	.7667023	11.63058	.0405764	-.000398	2.675326	.0693177	.1223337
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.601801	.0428563	.0007790	.0554219	.8128609	2.752143	1.195074
Stddev	.039131	.0018055	.0002940	.0004812	.0070287	.049477	.007892
%RSD	2.442930	4.212979	37.74020	.8682033	.8646857	1.797762	.6604026
#1	1.604882	.0420734	.0006169	.0552549	.8055794	2.713447	1.202961
#2	1.561220	.0415744	.0011183	.0550466	.8133972	2.735090	1.195085
#3	1.639300	.0449212	.0006017	.0559644	.8196061	2.807891	1.187176

Sample Name: Q1457-01LX5 Acquired: 3/3/2025 21:37:24 Type: Unk
Method: NON EPA-6010-200.7(v2759) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.8225291	.0350750	.0959675
Stddev	.0064878	.0002569	.0008887
%RSD	.7887600	.7323476	.9260565
#1	.8297828	.0352117	.0952364
#2	.8205238	.0347787	.0957094
#3	.8172808	.0352347	.0969567

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3556.030	79685.76	15425.06	2374.701	4800.457
Stddev	7.665	1191.08	169.05	24.902	17.585
%RSD	.2155465	1.494724	1.095959	1.048637	.3663272
#1	3547.597	80698.56	15593.26	2395.665	4782.742
#2	3557.921	79985.18	15255.17	2381.263	4800.721
#3	3562.573	78373.53	15426.75	2347.175	4817.909

Sample Name: Q1457-01MS Acquired: 3/3/2025 21:41:38 Type: Unk
Method: NON EPA-6010-200.7(v2759) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7096796	1.836167	1.457767	1.554358	.2639595	103.7136
Stddev	.0106225	.031076	.019749	.016871	.0034909	.2451
%RSD	1.496795	1.692458	1.354743	1.085404	1.322505	.2363412
#1	.7171145	1.871246	1.475098	1.571330	.2669187	103.6577
#2	.7144108	1.825171	1.461936	1.554155	.2648502	103.9818
#3	.6975136	1.812083	1.436266	1.537590	.2601096	103.5013
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7582213	.1745982	.2039164	102.6507	.5530409	.3069998
Stddev	.0029739	.0005105	.0027935	.2836	.0011438	.0035092
%RSD	.3922165	.2923814	1.369909	.2763248	.2068206	1.143074
#1	.7600484	.1740111	.2060624	102.4836	.5536128	.3098462
#2	.7598257	.1749380	.2049290	102.9782	.5517239	.3080743
#3	.7547898	.1748454	.2007579	102.4903	.5537859	.3030790
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7361883	157.5582	3.468978	52.99458	.6957508	.0636793
Stddev	.0073012	.4142	.006645	.17528	.0093586	.0003163
%RSD	.9917645	.2628563	.1915593	.3307456	1.345113	.4967110
#1	.7417896	157.5973	3.466062	52.80196	.7026286	.0633923
#2	.7388444	157.1259	3.476582	53.14470	.6995302	.0640184
#3	.7279308	157.9514	3.464289	53.03707	.6850934	.0636271
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	15.04793	.5732521	.7773480	17.74950	.5009549	.3318932
Stddev	.04978	.0045096	.0013198	.02942	.0015373	.0036588
%RSD	.3308345	.7866714	.1697820	.1657780	.3068673	1.102392
#1	15.06892	.5680485	.7766087	17.77389	.4998104	.3348979
#2	14.99109	.5760217	.7788718	17.75779	.5003520	.3329627
#3	15.08379	.5756862	.7765635	17.71682	.5027022	.3278188

Sample Name: Q1457-01MS Acquired: 3/3/2025 21:41:38 Type: Unk
Method: NON EPA-6010-200.7(v2759) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6855197	3.845617	F 15.31347	F 12.17430	3.361307	.3537020
Stddev	.0111354	.005239	.04842	.15213	.043650	.0008230
%RSD	1.624368	.1362347	.3162051	1.249566	1.298596	.2326904
#1	.6944379	3.847461	15.30761	12.29963	3.394588	.3529197
#2	.6890821	3.849684	15.26825	12.21824	3.377448	.3545605
#3	.6730390	3.839705	15.36456	12.00504	3.311886	.3536260

Elem	Sr4077
Units	ppm
Avg	.5091901
Stddev	.0014159
%RSD	.2780586
#1	.5094960
#2	.5104280
#3	.5076463

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3833.799	84043.91	16545.98	2525.332	4459.057
Stddev	29.349	333.16	10.09	10.442	46.579
%RSD	.7655313	.3964079	.0610004	.4134786	1.044602
#1	3811.752	83948.64	16556.35	2514.837	4423.448
#2	3822.532	84414.33	16545.42	2535.720	4441.953
#3	3867.111	83768.77	16536.19	2525.438	4511.771

Sample Name: LR1 Acquired: 3/3/2025 21:45:38 Type: Unk
Method: NON EPA-6010-200.7(v2759) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.011676	.0770190	.0373506	-.225838	.0021253	2197.734	.0190992
Stddev	.003167	.0063421	.0057666	.006225	.0045932	14.400	.0008645
%RSD	27.12792	8.234496	15.43922	2.756424	216.1225	.6551992	4.526323
#1	-.015249	.0712795	.0334564	-.225960	.0025322	2184.848	.0181020
#2	-.009214	.0759496	.0346201	-.219552	.0065014	2195.078	.0195584
#3	-.010565	.0838278	.0439754	-.232000	-.002658	2213.277	.0196373
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0102733	.0671461	1785.429	.0112553	.0345639	.0210573	942.4406
Stddev	.0000517	.0032829	7.499	.0005609	.0005215	.0039585	13.2023
%RSD	.5028335	4.889122	.4199914	4.983811	1.508781	18.79862	1.400861
#1	.0103059	.0687898	1786.920	.0118295	.0348685	.0243183	928.8396
#2	.0102137	.0633661	1777.296	.0107086	.0348614	.0166530	955.2044
#3	.0103003	.0692825	1792.070	.0112279	.0339617	.0222007	943.2779
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.120983	1875.533	.0238769	-.052791	2131.576	.0167913	.1164647
Stddev	.001357	7.393	.0007676	.001351	21.569	.0021687	.0026770
%RSD	1.121790	.3941555	3.214774	2.558703	1.011858	12.91537	2.298582
#1	-.119455	1883.845	.0247447	-.052133	2107.136	.0178289	.1136179
#2	-.122048	1869.694	.0235991	-.051896	2147.943	.0142988	.1168446
#3	-.121445	1873.059	.0232869	-.054345	2139.650	.0182462	.1189314
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1399.850	.6515070	.0065849	.0029174	-.049261	.1553160	.0831727
Stddev	16.342	.0161744	.0006559	.0012353	.000606	.0051266	.0130623
%RSD	1.167386	2.482615	9.960355	42.34292	1.231180	3.300739	15.70499
#1	1383.515	.6370872	.0064902	.0015953	-.048697	.1609460	.0701021
#2	1399.838	.6689962	.0072830	.0031147	-.049183	.1509169	.0831893
#3	1416.198	.6484376	.0059816	.0040421	-.049902	.1540851	.0962266

Sample Name: LR1 Acquired: 3/3/2025 21:45:38 Type: Unk
Method: NON EPA-6010-200.7(v2759) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.195607	.1067685	.0133371
Stddev	.010649	.0073944	.0001146
%RSD	5.443941	6.925623	.8595008
#1	-.206604	.1005276	.0132223
#2	-.194871	.1149352	.0133375
#3	-.185345	.1048425	.0134516

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2364.121	51862.40	11889.76	1555.289	2826.841
Stddev	19.345	539.71	63.55	19.753	22.354
%RSD	.8182550	1.040651	.5344942	1.270030	.7907893
#1	2371.272	52485.34	11943.95	1578.097	2839.434
#2	2378.873	51535.16	11905.52	1543.720	2840.059
#3	2342.220	51566.71	11819.81	1544.051	2801.031

Sample Name: LR2 Acquired: 3/3/2025 21:50:35 Type: Unk
Method: NON EPA-6010-200.7(v2759) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0110087	-.013296	243.5648	.0084325	-.005541	.1806289
Stddev	.0020265	.002101	1.5369	.0023620	.001699	.0072994
%RSD	18.40770	15.80486	.6309901	28.01032	30.66441	4.041094
#1	.0095077	-.015555	241.8109	.0058262	-.004523	.1885754
#2	.0102047	-.012933	244.2075	.0090397	-.004597	.1790887
#3	.0133139	-.011399	244.6760	.0104317	-.007502	.1742225
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	90.82581	-.002207	-.005133	.2800764	.0139929	-.001636
Stddev	1.12915	.000062	.000053	.0037870	.0005401	.000163
%RSD	1.243208	2.816227	1.022747	1.352120	3.859561	9.971241
#1	89.58424	-.002275	-.005192	.2830525	.0134495	-.001448
#2	91.79137	-.002192	-.005091	.2813628	.0145295	-.001734
#3	91.10182	-.002153	-.005116	.2758138	.0139996	-.001726
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	265.5203	-.007172	43.94746	-.019744	48.72409	.0016718
Stddev	1.9128	.003961	.29626	.011606	.26689	.0004641
%RSD	.7204137	55.23220	.6741131	58.78165	.5477540	27.76077
#1	263.3777	-.007820	44.02627	-.007221	48.41869	.0011473
#2	266.1271	-.002927	44.19635	-.021873	48.84107	.0020292
#3	267.0562	-.010770	43.61977	-.030137	48.91253	.0018389
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3867688	-.011255	F 25.72559	.4877634	.0013742	-.006377
Stddev	.0337359	.001783	.20769	.0368896	.0004363	.000300
%RSD	8.722501	15.83960	.8073215	7.563001	31.74960	4.700098
#1	.4199318	-.011454	25.51571	.5303217	.0011835	-.006696
#2	.3878868	-.012929	25.73006	.4649246	.0018735	-.006101
#3	.3524877	-.009381	25.93101	.4680439	.0010658	-.006336

Sample Name: LR2 Acquired: 3/3/2025 21:50:35 Type: Unk
Method: NON EPA-6010-200.7(v2759) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.004480	-.042057	-.015414	-.174371	-.009592	.0046848
Stddev	.000596	.000369	.000815	.005779	.007070	.0003738
%RSD	13.30320	.8782101	5.290311	3.314247	73.71155	7.978874
#1	-.004877	-.042174	-.014508	-.181035	-.013161	.0048532
#2	-.004768	-.042353	-.016089	-.170734	-.001448	.0049447
#3	-.003795	-.041643	-.015646	-.171345	-.014167	.0042564

Elem	Sr4077
Units	ppm
Avg	.0015958
Stddev	.0000764
%RSD	4.787870
#1	.0015318
#2	.0015751
#3	.0016804

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3224.285	78950.51	15093.63	2274.450	4813.721
Stddev	14.803	449.40	94.24	13.336	20.597
%RSD	.4590991	.5692223	.6243462	.5863490	.4278835
#1	3241.064	79395.30	15023.73	2284.368	4836.869
#2	3218.719	78959.59	15056.36	2279.693	4806.876
#3	3213.072	78496.63	15200.80	2259.289	4797.418

Sample Name: Q1457-01MSD Acquired: 3/3/2025 21:55:14 Type: Unk
Method: NON EPA-6010-200.7(v2759) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7201332	1.877897	1.457073	1.596000	.2717231	103.8909
Stddev	.0063199	.017140	.003067	.004718	.0004729	.3831
%RSD	.8776064	.9127084	.2105169	.2955877	.1740210	.3687458
#1	.7174277	1.858417	1.458567	1.591048	.2712245	104.2255
#2	.7156163	1.884605	1.459108	1.596511	.2721651	103.4730
#3	.7273555	1.890668	1.453545	1.600442	.2717797	103.9743
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7713691	.1692872	.2040008	102.2775	.5409928	.3074383
Stddev	.0019893	.0007673	.0011170	.2243	.0087566	.0010414
%RSD	.2578961	.4532640	.5475651	.2193517	1.618624	.3387430
#1	.7736026	.1700596	.2028029	102.5365	.5469812	.3062498
#2	.7707173	.1685250	.2050139	102.1518	.5309429	.3078741
#3	.7697874	.1692771	.2041856	102.1441	.5450543	.3081911
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7424225	159.6001	3.471248	52.35764	.6990707	.0636686
Stddev	.0024662	1.9333	.011231	.07227	.0026428	.0002639
%RSD	.3321875	1.211339	.3235446	.1380389	.3780414	.4144378
#1	.7396135	160.9645	3.481936	52.39694	.6961435	.0637326
#2	.7442322	157.3878	3.472265	52.27423	.7012812	.0633786
#3	.7434219	160.4481	3.459543	52.40175	.6997874	.0638945
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	15.43380	.5761183	.7726821	18.18594	.5033203	.3360928
Stddev	.23243	.0014314	.0118106	.29856	.0063834	.0017179
%RSD	1.505996	.2484481	1.528517	1.641701	1.268269	.5111405
#1	15.54593	.5777178	.7754504	18.35699	.5089511	.3342822
#2	15.16656	.5749580	.7597333	17.84120	.4963856	.3362962
#3	15.58891	.5756792	.7828626	18.35964	.5046242	.3376999

Sample Name: Q1457-01MSD Acquired: 3/3/2025 21:55:14 Type: Unk
 Method: NON EPA-6010-200.7(v2759) Mode: CONC Corr. Factor: 1.000000
 User: Kareem Custom ID1: Custom ID2: Custom ID3:
 Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6826574	3.869320	F 15.68199	F 12.23918	3.399635	.3576677
Stddev	.0024932	.012241	.22226	.06899	.018084	.0011822
%RSD	.3652263	.3163534	1.417266	.5636778	.5319428	.3305262
#1	.6800675	3.882673	15.81018	12.16078	3.378884	.3586057
#2	.6828634	3.858629	15.42535	12.26615	3.407985	.3580576
#3	.6850412	3.866658	15.81044	12.29061	3.412035	.3563398

Elem	Sr4077
Units	ppm
Avg	.5160978
Stddev	.0016213
%RSD	.3141550
#1	.5179375
#2	.5148775
#3	.5154783

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3821.341	85548.01	17163.49	2530.063	4470.030
Stddev	13.841	1133.28	47.82	31.059	13.354
%RSD	.3621950	1.324734	.2786280	1.227604	.2987431
#1	3837.297	84805.42	17108.28	2514.171	4483.801
#2	3812.586	86852.45	17190.17	2565.853	4457.137
#3	3814.139	84986.16	17192.01	2510.166	4469.153

Sample Name: Q1457-01A Acquired: 3/3/2025 21:59:13 Type: Unk
Method: NON EPA-6010-200.7(v2759) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8303105	1.852498	1.011234	1.932887	.7488371	19.75094
Stddev	.0054900	.007869	.006536	.018739	.0048808	.12330
%RSD	.6612010	.4247860	.6463442	.9695085	.6517803	.6242650
#1	.8239847	1.847398	1.003996	1.915937	.7441000	19.88243
#2	.8331155	1.861561	1.016705	1.953011	.7538499	19.63792
#3	.8338314	1.848535	1.013001	1.929712	.7485614	19.73246
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5486734	.1826565	.1915961	219.1614	.4477088	.2080195
Stddev	.0035164	.0008119	.0013843	1.0762	.0001387	.0018927
%RSD	.6408931	.4444922	.7224926	.4910469	.0309778	.9098742
#1	.5526379	.1835201	.1901157	220.3628	.4476138	.2064008
#2	.5474509	.1819087	.1928584	218.2857	.4476446	.2101006
#3	.5459314	.1825405	.1918144	218.8356	.4478679	.2075573
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4223886	11.31732	.5163115	11.07686	.5119474	.0739026
Stddev	.0032438	.05980	.0020819	.04210	.0039239	.0001500
%RSD	.7679757	.5284238	.4032323	.3800310	.7664721	.2029602
#1	.4190258	11.28481	.5186251	11.11983	.5079765	.0738198
#2	.4254987	11.38633	.5157204	11.03570	.5158226	.0740757
#3	.4226414	11.28081	.5145891	11.07504	.5120431	.0738122
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.345036	.3279399	.8445105	16.48812	.3862118	.4679477
Stddev	.011887	.0007687	.0008255	.05951	.0024794	.0038859
%RSD	.1424457	.2344093	.0977473	.3609341	.6419913	.8304116
#1	8.342300	.3283502	.8452288	16.44862	.3887162	.4638827
#2	8.358053	.3270531	.8436088	16.55657	.3837581	.4716255
#3	8.334755	.3284165	.8446940	16.45917	.3861611	.4683349

Sample Name: Q1457-01A Acquired: 3/3/2025 21:59:13 Type: Unk
Method: NON EPA-6010-200.7(v2759) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5915454	.6692981	F 38.16239	6.507628	4.881507	.1789878
Stddev	.0049337	.0049950	.10256	.049719	.041539	.0013430
%RSD	.8340381	.7463055	.2687386	.7640152	.8509559	.7503213
#1	.5873363	.6747996	38.09577	6.463155	4.840967	.1805043
#2	.5969747	.6650472	38.28049	6.561307	4.923979	.1779488
#3	.5903251	.6680476	38.11091	6.498423	4.879574	.1785103

Elem	Sr4077
Units	ppm
Avg	.5701425
Stddev	.0028648
%RSD	.5024771
#1	.5734484
#2	.5685934
#3	.5683857

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3359.281	75554.15	15423.41	2215.574	4574.762
Stddev	20.539	125.91	112.25	13.858	23.401
%RSD	.6114240	.1666457	.7278164	.6254623	.5115170
#1	3381.485	75468.73	15299.12	2199.822	4598.869
#2	3340.960	75494.97	15517.41	2221.014	4552.138
#3	3355.397	75698.74	15453.70	2225.887	4573.280

Sample Name: CCV03 Acquired: 3/3/2025 22:02:49 Type: Unk
Method: NON EPA-6010-200.7(v2760) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV03 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.144813	5.070683	5.083460	5.180330	5.178238	10.06434	10.14141
Stddev	.046743	.080063	.048943	.043477	.046551	.15342	.08451
%RSD	.9085429	1.578930	.9627846	.8392697	.8989803	1.524355	.8333104
#1	5.101197	4.986766	5.046300	5.153060	5.144267	10.20345	10.21302
#2	5.194155	5.146234	5.138915	5.230469	5.231300	10.08978	10.04820
#3	5.139088	5.079048	5.065165	5.157462	5.159147	9.89979	10.16303
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2489190	2.537608	25.11234	1.024514	2.543103	1.287967	5.189483
Stddev	.0029991	.023895	.40024	.011070	.023194	.010692	.047607
%RSD	1.204845	.9416207	1.593807	1.080539	.9120499	.8301756	.9173655
#1	.2523594	2.516075	25.50532	1.037284	2.521908	1.277824	5.226327
#2	.2475411	2.563315	25.12648	1.017631	2.567880	1.299135	5.206393
#3	.2468564	2.533435	24.70521	1.018626	2.539520	1.286944	5.135730
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.521923	24.88507	2.538927	1.280516	25.94170	2.551616	2.547627
Stddev	.040161	.34115	.025368	.008291	.32697	.041322	.018665
%RSD	1.592461	1.370882	.9991478	.6474958	1.260418	1.619462	.7326511
#1	2.558566	25.23707	2.519647	1.290076	26.22119	2.589389	2.568435
#2	2.528214	24.86222	2.567665	1.276193	26.02180	2.557978	2.542085
#3	2.478988	24.55593	2.529469	1.275281	25.58213	2.507482	2.532360
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	25.88309	5.006276	5.160065	5.080853	5.069112	5.210078	4.977339
Stddev	.32214	.044876	.043609	.043066	.078312	.051875	.058900
%RSD	1.244606	.8963971	.8451238	.8476122	1.544876	.9956666	1.183363
#1	26.07540	5.056794	5.122631	5.039311	5.138761	5.258629	4.914015
#2	26.06268	4.991008	5.207950	5.125296	5.084232	5.216185	5.030490
#3	25.51118	4.971026	5.149615	5.077952	4.984343	5.155420	4.987511

Sample Name: CCV03 Acquired: 3/3/2025 22:02:49 Type: Unk
Method: NON EPA-6010-200.7(v2760) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV03 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	5.053456	5.003796	5.171807
Stddev	.049300	.083871	.064520
%RSD	.9755735	1.676141	1.247530

#1	5.000573	5.071914	5.211990
#2	5.098147	5.029355	5.206046
#3	5.061647	4.910120	5.097385

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3503.828	76577.21	14783.77	2278.968	4738.441
Stddev	25.518	538.92	154.31	15.525	39.105
%RSD	.7282899	.7037556	1.043748	.6812344	.8252747

#1	3521.596	75957.86	14608.91	2263.398	4770.693
#2	3474.587	76834.59	14841.59	2279.057	4694.946
#3	3515.300	76939.18	14900.81	2294.448	4749.685

Sample Name: CCB03 Acquired: 3/3/2025 22:24:14 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB03 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001140	.0000741	-.000989	-.002327	-.001357	.0003918	-.001415
Stddev	.000408	.0013415	.000514	.000749	.000097	.0011154	.001109
%RSD	35.73728	1810.632	51.96542	32.19806	7.117293	284.7306	78.37941
#1	-.000978	.0013791	-.001562	-.003139	-.001442	-.000720	-.002593
#2	-.001604	.0001444	-.000834	-.001664	-.001377	.000385	-.000392
#3	-.000839	-.001301	-.000570	-.002176	-.001252	.001510	-.001259
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000203	-.000019	.0039284	-.000075	.0000990	.0002575	-.001959
Stddev	.0000476	.000049	.0039968	.000053	.0000781	.0003819	.002770
%RSD	234.4703	259.2448	101.7406	71.23720	78.90614	148.3048	141.3529
#1	-.000035	.000037	-.000687	-.000122	.0000567	.0004155	-.003024
#2	.000050	-.000055	.006270	-.000085	.0001891	.0005351	.001185
#3	.000045	-.000039	.006201	-.000017	.0000511	-.000178	-.004039
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000176	.0025623	.0004367	-.000330	.0884672	-.001665	-.000194
Stddev	.000244	.0035695	.0000888	.000282	.0200691	.001398	.000311
%RSD	138.0993	139.3099	20.33651	85.31610	22.68531	83.93888	160.2368
#1	-.000455	.0025259	.0005341	-.000654	.0655037	-.000322	-.000336
#2	-.000002	-.000989	.0004157	-.000144	.0972516	-.001562	-.000408
#3	-.000073	.006150	.0003602	-.000192	.1026463	-.003112	.000162
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0243976	.0022633	.0001426	.0003168	-.000075	-.000995	-.000384
Stddev	.0236278	.0000288	.0001691	.0002021	.000243	.002188	.001177
%RSD	96.84458	1.272523	118.5996	63.78864	324.6343	219.8894	306.7090
#1	.0072950	.0022476	.0003087	.0002298	-.000094	-.001148	.000531
#2	.0145398	.0022457	-.000029	.0001728	-.000308	.001266	-.001712
#3	.0513581	.0022965	.000149	.0005479	.000177	-.003103	.000030

Sample Name: CCB03 Acquired: 3/3/2025 22:24:14 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB03 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.001659	-.000440	-.000017
Stddev	.003708	.000730	.000009
%RSD	223.4698	166.0326	54.26338
#1	.001901	-.000463	-.000012
#2	-.005500	.000302	-.000011
#3	-.001380	-.001157	-.000027

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3643.388	80412.32	15502.27	2392.258	5316.930
Stddev	17.454	178.72	116.27	8.982	22.322
%RSD	.4790500	.2222545	.7500506	.3754583	.4198315
#1	3629.433	80505.20	15409.00	2390.465	5296.335
#2	3637.773	80525.49	15465.27	2402.001	5313.805
#3	3662.958	80206.29	15632.55	2384.308	5340.650

Sample Name: Q1439-01 Acquired: 3/3/2025 22:28:31 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000629	-.003551	-.000856	.0001949	.0006195	.0109113
Stddev	.004441	.001619	.000743	.0015921	.0006671	.0079833
%RSD	706.3036	45.59823	86.75769	816.8216	107.6788	73.16584
#1	-.000180	-.001908	.000000	.0016312	.0006042	.0146703
#2	.003571	-.005145	-.001323	.0004706	-.000040	.0017423
#3	-.005277	-.003599	-.001245	-.001517	.001294	.0163213
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1609062	-.000152	.0000286	118.9451	.0038654	.0001018
Stddev	.0024936	.000027	.0000677	1.4606	.0004267	.0002970
%RSD	1.549726	17.66337	236.8291	1.227989	11.03789	291.8127
#1	.1637375	-.000151	.0000230	120.5326	.0033978	.0000384
#2	.1599448	-.000180	-.000036	117.6581	.0039649	-.000158
#3	.1590365	-.000126	.000099	118.6445	.0042335	.000425
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0022156	.7937897	.3657380	23.10619	.0168063	-.000437
Stddev	.0000959	.0106688	.0050141	.32714	.0007506	.000279
%RSD	4.328693	1.344033	1.370951	1.415812	4.466328	63.94511
#1	.0021169	.8047962	.3711569	23.45683	.0168676	-.000370
#2	.0023085	.7930788	.3612628	22.80917	.0160269	-.000197
#3	.0022215	.7834942	.3647943	23.05256	.0175244	-.000743
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	222.2406	.0063931	.0852438	18.51199	.2742054	.0091903
Stddev	1.4380	.0006648	.0005218	.13334	.0031536	.0001966
%RSD	.6470385	10.39920	.6121212	.7202722	1.150067	2.139518
#1	222.7418	.0066133	.0858356	18.66001	.2775078	.0093576
#2	220.6191	.0069198	.0850456	18.40130	.2712255	.0092396
#3	223.3610	.0056460	.0848501	18.47465	.2738830	.0089737

Sample Name: Q1439-01 Acquired: 3/3/2025 22:28:31 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.003126	-0.002934	F 12.67976	.1453378	F 28.45874	-.015191
Stddev	.000574	.001284	.09507	.0031191	.68010	.000404
%RSD	18.35674	43.77779	.7497818	2.146096	2.389763	2.660921
#1	-0.002879	-0.003921	12.78468	.1464878	28.29050	-.015654
#2	-0.002718	-0.001482	12.59933	.1418070	27.87855	-.015010
#3	-0.003782	-0.003397	12.65528	.1477186	29.20716	-.014909

Elem	Sr4077
Units	ppm
Avg	1.229080
Stddev	.030610
%RSD	2.490471
#1	1.254494
#2	1.237647
#3	1.195099

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3391.856	74330.30	14964.23	2199.316	4576.516
Stddev	64.808	309.11	149.17	10.984	86.338
%RSD	1.910691	.4158580	.9968698	.4994117	1.886553
#1	3405.601	73981.88	14802.41	2187.652	4600.003
#2	3448.689	74571.62	15096.26	2200.835	4648.681
#3	3321.278	74437.39	14994.03	2209.461	4480.865

Sample Name: Q1439-02 Acquired: 3/3/2025 22:33:02 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.002052	-.005296	.0002433	-.002232	.0011409	.0127015
Stddev	.000413	.002171	.0010449	.003983	.0008287	.0021213
%RSD	20.11734	41.00376	429.5011	178.4239	72.64268	16.70126
#1	-.002146	-.003645	.0005555	-.005606	.0015015	.0114705
#2	-.002409	-.007756	.0010964	.002161	.0017282	.0114831
#3	-.001600	-.004487	-.000922	-.003252	.0001929	.0151510
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1670860	-.000144	.0000520	120.2631	.0112330	.0001255
Stddev	.0010057	.000026	.0000297	.6059	.0003967	.0002812
%RSD	.6018801	18.12633	57.06543	.5038476	3.531961	224.0082
#1	.1675358	-.000135	.0000501	120.2592	.0116337	.0004052
#2	.1659339	-.000174	.0000826	119.6591	.0112250	.0001285
#3	.1677881	-.000124	.0000233	120.8710	.0108403	-.000157
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0032727	.8768273	.3708025	23.33146	.0183682	-.000565
Stddev	.0005949	.0031329	.0026502	.11366	.0002114	.000238
%RSD	18.17685	.3572936	.7147300	.4871366	1.150825	42.13201
#1	.0026444	.8793613	.3701317	23.30508	.0182330	-.000745
#2	.0038273	.8733245	.3685521	23.23330	.0182598	-.000295
#3	.0033464	.8777960	.3737237	23.45598	.0186118	-.000656
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	224.1794	.0067464	.0844961	18.67477	.2761558	.0091357
Stddev	5.9840	.0001321	.0008687	.16049	.0020162	.0003230
%RSD	2.669309	1.957365	1.028129	.8594160	.7300799	3.535143
#1	224.5260	.0066649	.0846932	18.75536	.2750854	.0089725
#2	218.0296	.0068988	.0835458	18.48995	.2749006	.0089270
#3	229.9826	.0066756	.0852493	18.77899	.2784815	.0095077

Sample Name: Q1439-02 Acquired: 3/3/2025 22:33:02 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.002875	-.002585	F 12.69983	.1545537	F 29.27465	-.015540
Stddev	.000930	.000982	.12889	.0010024	.30645	.001490
%RSD	32.32902	37.99576	1.014884	.6485589	1.046821	9.590805
#1	-.003812	-.001458	12.73301	.1555665	28.92278	-.016395
#2	-.001953	-.003262	12.55759	.1545324	29.48301	-.013819
#3	-.002860	-.003034	12.80888	.1535621	29.41816	-.016406

Elem	Sr4077
Units	ppm
Avg	1.257241
Stddev	.013076
%RSD	1.040039
#1	1.242634
#2	1.261234
#3	1.267855

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3417.323	76704.32	15327.52	2238.915	4604.059
Stddev	22.763	711.13	63.52	21.114	35.995
%RSD	.6660916	.9271105	.4144434	.9430517	.7818178
#1	3443.446	76586.20	15326.50	2241.965	4645.463
#2	3401.746	77467.12	15391.54	2258.339	4580.205
#3	3406.777	76059.64	15264.51	2216.442	4586.508

Sample Name: Q1440-01 Acquired: 3/3/2025 22:37:33 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0519646	-.001914	.3291139	-.019861	.0005282	132.2807	.7941449
Stddev	.0013421	.002999	.0066566	.003018	.0012081	.4819	.0034876
%RSD	2.582793	156.6775	2.022590	15.19311	228.7330	.3643292	.4391602
#1	.0515593	-.003604	.3366036	-.020768	-.000664	132.6245	.7961957
#2	.0534627	-.003687	.3268657	-.016494	.000496	132.4879	.7961210
#3	.0508718	.001549	.3238726	-.022322	.001752	131.7299	.7901181
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0095995	-.002541	68.42646	.2305085	.1327298	.4792976	239.8715
Stddev	.0000883	.000348	.35077	.0017969	.0022893	.0063177	2.9740
%RSD	.9199996	13.68466	.5126164	.7795159	1.724820	1.318112	1.239828
#1	.0096576	-.002532	68.56251	.2325244	.1348443	.4847216	243.2448
#2	.0094979	-.002198	68.68881	.2299259	.1330467	.4808103	238.7420
#3	.0096431	-.002893	68.02805	.2290753	.1302986	.4723609	237.6277
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.438516	51.18685	.2491419	.0071595	9.639167	.4035826	.5419977
Stddev	.028220	.27333	.0039202	.0005522	.128360	.0011090	.0034730
%RSD	.5188905	.5339829	1.573496	7.712824	1.331651	.2747968	.6407831
#1	5.451773	51.15669	.2523429	.0077568	9.787383	.4047177	.5455848
#2	5.457666	51.47402	.2503133	.0070541	9.564588	.4035284	.5386513
#3	5.406108	50.92986	.2447695	.0066676	9.565529	.4025016	.5417569
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	19.55555	.3311473	.0070549	.0084951	5.525835	5.171931	7.603566
Stddev	.26594	.0064677	.0002240	.0005364	.029178	.053031	.128755
%RSD	1.359922	1.953113	3.174396	6.313688	.5280241	1.025359	1.693356
#1	19.86130	.3384546	.0072791	.0087434	5.546679	5.233049	7.723130
#2	19.37790	.3261582	.0070544	.0078796	5.538336	5.144652	7.620310
#3	19.42746	.3288292	.0068312	.0088623	5.492490	5.138093	7.467258

Sample Name: Q1440-01 Acquired: 3/3/2025 22:37:33 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	5.070526	.2268279	.2157935
Stddev	.098506	.0016944	.0013743
%RSD	1.942723	.7469948	.6368378

#1	5.161333	.2286260	.2169756
#2	5.084444	.2252610	.2161193
#3	4.965801	.2265965	.2142856

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4218.699	91864.06	19267.42	2746.235	4670.847
Stddev	47.748	741.95	88.20	23.142	69.576
%RSD	1.131822	.8076638	.4577861	.8426734	1.489583

#1	4178.208	91014.47	19326.77	2722.355	4609.649
#2	4206.536	92193.27	19166.06	2768.561	4656.370
#3	4271.352	92384.45	19309.41	2747.788	4746.523

Sample Name: Q1441-01 Acquired: 3/3/2025 22:41:37 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0688597	-.022438	.1441752	-.040092	-.000286	212.2663
Stddev	.0010799	.002696	.0031071	.003159	.000372	1.8366
%RSD	1.568204	12.01636	2.155050	7.880158	130.1903	.8652175
#1	.0681791	-.022512	.1467503	-.038759	-.000091	213.3037
#2	.0701048	-.025096	.1450511	-.043700	-.000052	210.1457
#3	.0682951	-.019705	.1407242	-.037818	-.000714	213.3493
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6244620	.0128095	.0152264	59.55996	.2036046	.2829142
Stddev	.0023395	.0000890	.0021651	.27530	.0021766	.0058854
%RSD	.3746483	.6946249	14.21963	.4622173	1.069052	2.080279
#1	.6258513	.0128637	.0176437	59.66780	.2039623	.2897059
#2	.6217609	.0127068	.0145703	59.24707	.2012712	.2793119
#3	.6257738	.0128581	.0134652	59.76501	.2055802	.2797248
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6212290	429.6728	5.017174	51.49283	.2954380	.0080640
Stddev	.0090689	2.1119	.028724	.27262	.0055105	.0003808
%RSD	1.459825	.4915119	.5725111	.5294411	1.865186	4.722277
#1	.6316840	430.1488	5.034157	51.55186	.3017974	.0080004
#2	.6165152	427.3635	4.984010	51.19553	.2920759	.0084727
#3	.6154878	431.5060	5.033355	51.73111	.2924406	.0077190
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.825297	.7652912	.4730843	8.202281	1.409086	.0051155
Stddev	.054301	.0051742	.0063115	.049190	.006964	.0001689
%RSD	.6939124	.6761120	1.334117	.5997173	.4942192	3.301303
#1	7.842965	.7679061	.4744002	8.226772	1.410697	.0053105
#2	7.764363	.7593314	.4662187	8.145653	1.401458	.0050144
#3	7.868564	.7686361	.4786342	8.234419	1.415104	.0050216

Sample Name: Q1441-01 Acquired: 3/3/2025 22:41:37 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.005896	F 12.29225	4.091610	8.129816	2.669832	.2830881
Stddev	.000548	.05502	.041451	.146233	.065026	.0017116
%RSD	9.292924	.4475836	1.013071	1.798725	2.435586	.6046228
#1	-.005628	12.32009	4.108628	8.297184	2.744895	.2838164
#2	-.005534	12.22887	4.044359	8.065498	2.633907	.2811328
#3	-.006526	12.32778	4.121844	8.026767	2.630694	.2843152

Elem	Sr4077
Units	ppm
Avg	.2327790
Stddev	.0008506
%RSD	.3654204
#1	.2332650
#2	.2317968
#3	.2332753

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4914.053	108166.4	22284.85	3270.255	4552.699
Stddev	51.801	935.5	100.76	32.819	74.378
%RSD	1.054148	.8648869	.4521349	1.003566	1.633719
#1	4854.241	108196.5	22273.80	3267.083	4466.822
#2	4943.490	109086.5	22390.67	3304.545	4594.640
#3	4944.429	107216.2	22190.07	3239.137	4596.635

Sample Name: Q1447-02DUP Acquired: 3/3/2025 22:45:57 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.004118	-.006198	.1002152	.0045326	.0017744	.0422540	.6230256
Stddev	.001845	.001105	.0022676	.0009776	.0005330	.0012774	.0054334
%RSD	44.81266	17.82340	2.262713	21.56730	30.03740	3.023216	.8720915
#1	-.003010	-.005488	.1007513	.0046275	.0023654	.0429882	.6211544
#2	-.003095	-.005634	.1021667	.0035111	.0016277	.0407790	.6291473
#3	-.006248	-.007471	.0977276	.0054593	.0013301	.0429948	.6187752
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001437	.0018413	28.73821	.0007939	.0010466	.0153993	.0760872
Stddev	.0000397	.0000397	.20583	.0001803	.0001896	.0000666	.0024861
%RSD	27.66726	2.157958	.7162282	22.70522	18.11605	.4326525	3.267389
#1	.0000980	.0018853	28.65550	.0010002	.0009491	.0153251	.0742811
#2	.0001622	.0018081	28.97253	.0007152	.0012651	.0154539	.0789226
#3	.0001708	.0018306	28.58660	.0006664	.0009256	.0154189	.0750578
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8683290	5.194615	.0079131	-.000249	345.3731	-.000470	.3549751
Stddev	.0070705	.028736	.0001750	.000090	4.5335	.000409	.0037715
%RSD	.8142675	.5531865	2.211969	36.24771	1.312636	86.95289	1.062467
#1	.8650079	5.205357	.0080434	-.000163	340.5173	-.000604	.3506480
#2	.8764487	5.216433	.0077142	-.000343	349.4946	-.000011	.3567126
#3	.8635305	5.162056	.0079818	-.000240	346.1075	-.000795	.3575647
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.377086	.1423015	.0003102	.0018450	-.000341	2.001607	.0201288
Stddev	.037037	.0008786	.0000187	.0009292	.000273	.028686	.0030025
%RSD	1.558097	.6174200	6.020458	50.36163	80.15195	1.433164	14.91643
#1	2.334341	.1418309	.0002889	.0021507	-.000094	1.971696	.0211472
#2	2.397263	.1433152	.0003237	.0025827	-.000293	2.004239	.0167496
#3	2.399654	.1417585	.0003179	.0008015	-.000634	2.028887	.0224897

Sample Name: Q1447-02DUP Acquired: 3/3/2025 22:45:57 Type: Unk
 Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
 User: Kareem Custom ID1: Custom ID2: Custom ID3:
 Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.305546	-.009497	.1439127
Stddev	.009093	.000991	.0010642
%RSD	.6965212	10.43578	.7394642
#1	1.304280	-.010289	.1433164
#2	1.315206	-.008386	.1451413
#3	1.297152	-.009817	.1432804

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3489.085	77465.44	15649.00	2332.596	4638.641
Stddev	14.926	679.57	104.86	15.320	23.573
%RSD	.4277863	.8772604	.6700552	.6567868	.5081795
#1	3484.487	78214.10	15627.04	2350.193	4639.508
#2	3476.999	77294.74	15556.86	2325.366	4614.647
#3	3505.769	76887.50	15763.10	2322.229	4661.769

Sample Name: Q1447-02LX5 Acquired: 3/3/2025 22:50:21 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001012	-.001553	.0215491	-.000307	.0003652	.0102246	.1303193
Stddev	.001937	.000328	.0005684	.001024	.0009704	.0024379	.0018890
%RSD	191.3895	21.09848	2.637651	333.4500	265.7356	23.84396	1.449510
#1	-.003098	-.001383	.0214320	-.000122	-.000284	.0076396	.1282221
#2	-.000671	-.001930	.0210484	.000612	.001481	.0124825	.1308484
#3	.000732	-.001345	.0221670	-.001411	-.000102	.0105516	.1318873
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000447	.0004401	6.279834	-.000031	.0004023	.0036616	.0156158
Stddev	.0000094	.0000130	.086321	.000467	.0000489	.0001854	.0026766
%RSD	21.03271	2.942570	1.374583	1492.435	12.14513	5.062958	17.14027
#1	.0000356	.0004288	6.181216	-.000391	.0004063	.0038637	.0152937
#2	.0000544	.0004542	6.316600	.000496	.0004490	.0036217	.0131148
#3	.0000441	.0004372	6.341685	-.000199	.0003516	.0034994	.0184389
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1915289	1.133872	.0016146	-.000315	72.12762	-.001126	.0790213
Stddev	.0023235	.033544	.0001435	.000152	.49689	.001155	.0004018
%RSD	1.213123	2.958334	8.886628	48.10111	.6889017	102.6479	.5084392
#1	.1891701	1.095404	.0014607	-.000142	71.80115	.000016	.0788303
#2	.1916012	1.149197	.0016382	-.000379	72.69946	-.001098	.0794829
#3	.1938154	1.157017	.0017448	-.000424	71.88224	-.002294	.0787507
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5522779	.0360845	.0000633	.0004290	.0000893	.4205361	.0031702
Stddev	.0119389	.0011954	.0001290	.0011684	.0006898	.0070912	.0040357
%RSD	2.161752	3.312736	204.0392	272.3364	772.4243	1.686226	127.3010
#1	.5385103	.0351775	.0001530	.0005474	.0007910	.4130988	.0002762
#2	.5585470	.0356369	-.000085	-.000794	-.000588	.4212884	.0014541
#3	.5597762	.0374391	.000121	.001534	.000065	.4272211	.0077803

Sample Name: Q1447-02LX5 Acquired: 3/3/2025 22:50:21 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.3097024	.0025607	.0307746
Stddev	.0032345	.0010245	.0004180
%RSD	1.044391	40.00963	1.358373
#1	.3134166	.0016170	.0302938
#2	.3075058	.0036504	.0309780
#3	.3081847	.0024148	.0310520

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3651.313	79373.12	15432.67	2383.274	5022.012
Stddev	36.621	601.61	171.39	27.217	50.298
%RSD	1.002964	.7579500	1.110557	1.141985	1.001560
#1	3622.629	79548.24	15630.56	2383.448	4981.167
#2	3692.563	78703.38	15331.33	2355.970	5078.193
#3	3638.745	79867.73	15336.14	2410.403	5006.676

Sample Name: Q1447-02MS Acquired: 3/3/2025 22:54:40 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9522713	2.118556	1.198020	2.282791	.9362037	2.213077	.8183859
Stddev	.0201083	.033136	.020786	.041532	.0201587	.013571	.0046501
%RSD	2.111612	1.564093	1.735026	1.819350	2.153236	.6132233	.5681992
#1	.9342002	2.083411	1.177907	2.246228	.9150717	2.208669	.8165338
#2	.9486805	2.123029	1.196733	2.274199	.9383168	2.228305	.8236766
#3	.9739330	2.149229	1.219419	2.327948	.9552226	2.202259	.8149473
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2138365	.2303455	28.79219	.4663833	.2328282	.3526676	3.871855
Stddev	.0007135	.0038025	.15637	.0007644	.0034689	.0064918	.031620
%RSD	.3336742	1.650795	.5431142	.1638930	1.489903	1.840755	.8166537
#1	.2130155	.2268376	28.72461	.4672119	.2297097	.3464842	3.877135
#2	.2143073	.2298126	28.97098	.4662323	.2322104	.3520896	3.900502
#3	.2141866	.2343864	28.68097	.4657057	.2365645	.3594290	3.837928
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.047500	7.121775	.5806081	.0854480	341.4965	.3380169	.5795143
Stddev	.005162	.050751	.0102750	.0000737	1.0013	.0037709	.0012069
%RSD	.4928215	.7126115	1.769689	.0862892	.2932178	1.115607	.2082600
#1	1.045356	7.086800	.5708111	.0853911	341.9233	.3358961	.5804390
#2	1.053388	7.179984	.5797109	.0854216	340.3525	.3423707	.5799550
#3	1.043754	7.098543	.5913022	.0855313	342.2138	.3357839	.5781490
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	14.83946	.4299295	.4877698	.8097694	.2211925	2.970383	6.973373
Stddev	.07316	.0017881	.0086891	.0114117	.0013933	.011207	.111495
%RSD	.4930104	.4159010	1.781390	1.409256	.6298869	.3772748	1.598873
#1	14.88602	.4281158	.4793630	.7987741	.2201483	2.971687	6.869465
#2	14.87723	.4316908	.4872304	.8089779	.2227745	2.980881	6.959497
#3	14.75514	.4299819	.4967161	.8215563	.2206546	2.958582	7.091157

Sample Name: Q1447-02MS Acquired: 3/3/2025 22:54:40 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.212369	.2171496	.3597369
Stddev	.014992	.0022581	.0019896
%RSD	1.236612	1.039870	.5530783
#1	1.197160	.2150186	.3583879
#2	1.212812	.2195163	.3620219
#3	1.227135	.2169140	.3588010

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3511.513	76687.53	15719.28	2292.491	4661.478
Stddev	56.009	72.71	54.50	9.743	70.976
%RSD	1.595020	.0948168	.3467096	.4250149	1.522610
#1	3564.207	76716.43	15778.16	2284.533	4727.655
#2	3517.641	76604.81	15670.60	2289.583	4670.258
#3	3452.692	76741.35	15709.09	2303.358	4586.520

Sample Name: Q1447-02MSD Acquired: 3/3/2025 22:58:48 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8944160	1.996975	1.126127	2.140594	.8761601	2.087879	.7578698
Stddev	.0043560	.035296	.006046	.010569	.0023139	.034111	.0104913
%RSD	.4870178	1.767467	.5369273	.4937234	.2641011	1.633754	1.384310
#1	.8981233	2.036782	1.132986	2.151617	.8787499	2.127112	.7697812
#2	.8955062	1.984649	1.123825	2.130547	.8754346	2.071280	.7538264
#3	.8896185	1.969496	1.121569	2.139618	.8742959	2.065244	.7500019
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2069328	.2153381	26.93678	.4348111	.2174724	.3339050	3.369532
Stddev	.0029531	.0010550	.36502	.0167260	.0009679	.0007200	.103044
%RSD	1.427090	.4899262	1.355102	3.846722	.4450873	.2156349	3.058117
#1	.2101408	.2165131	27.35027	.4515565	.2183167	.3346712	3.476112
#2	.2043277	.2150289	26.80078	.4181046	.2176845	.3338014	3.270431
#3	.2063298	.2144722	26.65928	.4347723	.2164160	.3332424	3.362052
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9840091	6.703807	.5462980	.0793062	307.2186	.3157768	.5369668
Stddev	.0085671	.079936	.0023326	.0026686	8.2711	.0036198	.0196662
%RSD	.8706283	1.192398	.4269849	3.364967	2.692256	1.146329	3.662451
#1	.9936897	6.787369	.5489874	.0819963	313.8920	.3199566	.5557353
#2	.9809321	6.628073	.5450817	.0766596	297.9649	.3137084	.5165116
#3	.9774055	6.695979	.5448249	.0792628	309.7989	.3136655	.5386535
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	13.38201	.4177591	.4538932	.7599692	.2070692	2.674323	6.554589
Stddev	.47277	.0080122	.0012670	.0050078	.0026845	.078413	.047615
%RSD	3.532895	1.917901	.2791354	.6589491	1.296416	2.932073	.7264451
#1	13.89642	.4247090	.4552395	.7650543	.2101566	2.753298	6.606613
#2	12.96653	.4089955	.4537158	.7598109	.2052861	2.596484	6.543982
#3	13.28309	.4195727	.4527243	.7550424	.2057647	2.673188	6.513170

Sample Name: Q1447-02MSD Acquired: 3/3/2025 22:58:48 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.150022	.2060470	.3352670
Stddev	.020153	.0028041	.0047479
%RSD	1.752407	1.360914	1.416152

#1	1.171217	.2092429	.3406836
#2	1.147743	.2048996	.3332923
#3	1.131105	.2039987	.3318252

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3508.775	77264.58	15109.75	2298.777	4649.991
Stddev	9.628	2485.71	169.00	73.237	18.090
%RSD	.2743955	3.217146	1.118508	3.185931	.3890236

#1	3499.434	74858.70	14915.90	2228.473	4633.427
#2	3508.223	79823.10	15226.13	2374.632	4647.253
#3	3518.666	77111.94	15187.23	2293.226	4669.294

Sample Name: Q1447-02A Acquired: 3/3/2025 23:02:57 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8768261	1.959559	1.107352	2.103335	.8620896	2.040021	.7563616
Stddev	.0042534	.023615	.008897	.015363	.0084957	.024024	.0075832
%RSD	.4850903	1.205143	.8034553	.7304010	.9854803	1.177630	1.002587
#1	.8800881	1.985648	1.117564	2.120997	.8718878	2.012774	.7476857
#2	.8720154	1.953388	1.103213	2.095934	.8567733	2.049136	.7596741
#3	.8783750	1.939642	1.101277	2.093073	.8576076	2.058155	.7617250
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1972117	.2113603	26.50553	.4227140	.2141135	.3284876	3.382193
Stddev	.0015763	.0014915	.27169	.0020377	.0016615	.0020785	.008647
%RSD	.7993096	.7056453	1.025049	.4820508	.7760043	.6327515	.2556566
#1	.1954363	.2130419	26.19472	.4236530	.2160195	.3307798	3.385063
#2	.1984469	.2108414	26.62396	.4241129	.2133501	.3279574	3.389041
#3	.1977520	.2101976	26.69790	.4203761	.2129709	.3267255	3.372477
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9705121	6.544734	.5364303	.0767072	305.2346	.3118654	.5221337
Stddev	.0093555	.045922	.0043722	.0007133	1.1206	.0021903	.0028901
%RSD	.9639769	.7016615	.8150475	.9298337	.3671268	.7023161	.5535119
#1	.9604350	6.498533	.5412666	.0767697	306.3900	.3100313	.5254700
#2	.9721793	6.590372	.5352663	.0773872	304.1524	.3112743	.5205326
#3	.9789219	6.545296	.5327579	.0759648	305.1615	.3142905	.5203986
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	13.34910	.3966965	.4468076	.7464968	.2053535	2.669049	6.381952
Stddev	.00666	.0037094	.0034201	.0073691	.0021219	.013097	.055615
%RSD	.0499027	.9350796	.7654648	.9871558	1.033275	.4906952	.8714390
#1	13.34836	.3926355	.4506708	.7542236	.2030946	2.667962	6.443389
#2	13.35609	.3975476	.4455861	.7457199	.2056611	2.682655	6.367425
#3	13.34283	.3999064	.4441659	.7395469	.2073047	2.656529	6.335043

Sample Name: Q1447-02A Acquired: 3/3/2025 23:02:57 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.119050	.2004740	.3326633
Stddev	.007812	.0015956	.0032024
%RSD	.6980975	.7959214	.9626598
#1	1.127113	.1986388	.3290612
#2	1.118523	.2012496	.3337407
#3	1.111516	.2015335	.3351881

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3568.653	79324.53	15852.79	2355.867	4739.691
Stddev	24.935	474.94	107.93	11.160	34.232
%RSD	.6987297	.5987301	.6808134	.4737125	.7222410
#1	3539.992	79011.99	15977.38	2344.497	4700.273
#2	3580.603	79090.53	15793.01	2356.299	4756.850
#3	3585.364	79871.06	15787.97	2366.805	4761.949

Sample Name: CCV04 Acquired: 3/3/2025 23:07:05 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV04 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.995263	4.908740	4.951522	5.012632	5.012283	9.716419	9.863081
Stddev	.029011	.044221	.015085	.031331	.032343	.113888	.142281
%RSD	.5807724	.9008576	.3046555	.6250431	.6452772	1.172121	1.442560
#1	5.026920	4.925695	4.968215	5.045609	5.047748	9.808084	9.890676
#2	4.969946	4.858551	4.938865	4.983258	4.984413	9.752249	9.989543
#3	4.988924	4.941974	4.947487	5.009027	5.004690	9.588925	9.709024
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2441884	2.481948	24.13048	.9850529	2.489636	1.254888	4.971853
Stddev	.0040437	.007226	.28929	.0308058	.010857	.006270	.133058
%RSD	1.655971	.2911548	1.198855	3.127325	.4361050	.4996582	2.676217
#1	.2440978	2.490256	24.33625	.9661186	2.501787	1.261558	4.890579
#2	.2482766	2.478463	24.25547	1.020599	2.480888	1.249114	5.125407
#3	.2401908	2.477123	23.79970	.968441	2.486233	1.253992	4.899573
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.434409	24.17156	2.469327	1.228662	25.09324	2.473450	2.460131
Stddev	.032640	.29141	.009708	.037875	.48695	.033393	.073430
%RSD	1.340791	1.205583	.3931546	3.082617	1.940566	1.350062	2.984808
#1	2.453318	24.30108	2.480314	1.203467	24.83898	2.494461	2.413208
#2	2.453191	24.37576	2.461905	1.272218	25.65469	2.490945	2.544753
#3	2.396720	23.83784	2.465764	1.210301	24.78606	2.434945	2.422432
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	24.73261	4.794871	5.018860	4.964692	4.895730	4.933977	4.861852
Stddev	.47993	.074756	.028096	.020624	.063718	.099971	.029402
%RSD	1.940491	1.559091	.5598125	.4154216	1.301502	2.026169	.6047493
#1	24.48152	4.778441	5.049145	4.987756	4.944018	4.860202	4.894929
#2	25.28600	4.876476	4.993642	4.948022	4.919662	5.047754	4.838688
#3	24.43030	4.729697	5.013793	4.958299	4.823511	4.893974	4.851940

Sample Name: CCV04 Acquired: 3/3/2025 23:07:05 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV04 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.928679	4.811530	4.989229
Stddev	.029094	.056254	.070768
%RSD	.5903048	1.169143	1.418412
#1	4.951898	4.864923	4.960025
#2	4.896043	4.816870	5.069926
#3	4.938096	4.752796	4.937738

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3644.919	80432.45	15347.43	2390.856	4915.821
Stddev	15.949	1995.60	185.77	52.260	15.378
%RSD	.4375564	2.481082	1.210448	2.185811	.3128227
#1	3628.323	81693.78	15282.92	2421.326	4899.343
#2	3660.130	78131.70	15202.52	2330.513	4929.790
#3	3646.303	81471.87	15556.87	2420.729	4918.330

Sample Name: CCB04 Acquired: 3/3/2025 23:11:15 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB04 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000512	-.000656	-.000703	-.002482	-.001205	.0027557	-.001785
Stddev	.003021	.000824	.000887	.001283	.000404	.0036071	.000899
%RSD	589.9122	125.5403	126.1864	51.69512	33.47775	130.8971	50.36130
#1	-.002808	-.001256	-.001691	-.003706	-.000753	.0033430	-.000781
#2	-.001639	.000283	.000024	-.002592	-.001528	-.001109	-.002058
#3	.002910	-.000996	-.000441	-.001147	-.001335	.006033	-.002516
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000002	.0000148	.0128954	-.000149	.0001078	-.000096	.0005905
Stddev	.000029	.0000162	.0034533	.000276	.0000468	.000278	.0038943
%RSD	1162.233	109.5992	26.77916	185.0228	43.45152	289.3429	659.4453
#1	-.000034	.0000334	.0098763	.000131	.0001575	.000138	.0042904
#2	.000021	.0000066	.0166608	-.000421	.0000646	-.000023	.0009539
#3	.000006	.0000043	.0121492	-.000158	.0001011	-.000403	-.003473
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000203	-.005134	-.000143	-.000198	.1775047	.0005532	-.000612
Stddev	.000247	.009892	.000083	.000111	.0141628	.0010915	.000455
%RSD	121.6383	192.6663	58.00617	56.19433	7.978854	197.2816	74.33995
#1	-.000311	-.016523	-.000223	-.000118	.1612712	-.000120	-.000160
#2	.000079	-.000186	-.000057	-.000151	.1873366	-.000033	-.000606
#3	-.000377	.001307	-.000150	-.000325	.1839063	.001813	-.001069
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1787477	.0075670	.0003302	-.000194	.0005890	-.001278	-.000525
Stddev	.0180969	.0009811	.0001056	.000461	.0004818	.007197	.002651
%RSD	10.12430	12.96525	31.96460	237.5845	81.80255	563.0948	504.6261
#1	.1607973	.0070615	.0004261	-.000702	.0000408	-.009421	-.001919
#2	.1784580	.0086977	.0003474	-.000077	.0007810	.001353	.002532
#3	.1969877	.0069417	.0002171	.000197	.0009452	.004234	-.002189

Sample Name: CCB04 Acquired: 3/3/2025 23:11:15 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB04 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0000043	.0022593	.0000538
Stddev	.0014133	.0006079	.0000141
%RSD	33173.76	26.90582	26.26148
#1	-.001169	.0026232	.0000500
#2	.001573	.0015575	.0000694
#3	-.000391	.0025971	.0000420

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3744.864	83683.95	15042.15	2490.432	5449.365
Stddev	21.912	751.68	200.66	17.462	32.789
%RSD	.5851225	.8982321	1.334004	.7011687	.6017016
#1	3753.243	84496.94	14820.38	2509.036	5466.886
#2	3761.351	83540.69	15094.91	2487.865	5469.672
#3	3719.999	83014.21	15211.17	2474.396	5411.538

Sample Name: Q1439-02DUP Acquired: 3/3/2025 23:15:36 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.002070	-.005143	-.001997	-.000844	.0000844	.0059209
Stddev	.003698	.001198	.000978	.001779	.0016750	.0065361
%RSD	178.6488	23.29945	48.98172	210.8307	1983.696	110.3916
#1	-.001643	-.006452	-.001739	-.002863	.0019060	.0039363
#2	-.005963	-.004100	-.003078	.000492	-.001389	.0132192
#3	.001396	-.004877	-.001173	-.000160	-.000263	.0006070
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1555890	-.000142	.0000310	112.8260	.0055860	-.000134
Stddev	.0010029	.000061	.0000716	.4743	.0004682	.000135
%RSD	.6445673	43.26877	231.1578	.4203729	8.380859	100.2769
#1	.1546310	-.000081	.0001042	112.3270	.0058756	-.000200
#2	.1566314	-.000140	.0000274	112.8801	.0058366	.000021
#3	.1555045	-.000204	-.000039	113.2709	.0050459	-.000223
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0037329	.8162641	.3564353	21.93382	.0184349	-.000610
Stddev	.0003693	.0138928	.0009858	.10804	.0000567	.000319
%RSD	9.893557	1.701995	.2765733	.4925504	.3077630	52.29211
#1	.0039062	.8259217	.3555821	21.89447	.0184859	-.000959
#2	.0033088	.8225285	.3575145	21.85098	.0184449	-.000539
#3	.0039838	.8003422	.3562093	22.05602	.0183738	-.000333
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	212.8069	.0043622	.0796563	17.59940	.2625646	.0089030
Stddev	3.7285	.0024751	.0019869	.37734	.0007763	.0002577
%RSD	1.752065	56.73985	2.494406	2.144047	.2956775	2.894536
#1	216.8210	.0015273	.0805343	17.84242	.2616684	.0091932
#2	212.1477	.0060939	.0810531	17.79108	.2630315	.0087009
#3	209.4519	.0054655	.0773816	17.16469	.2629939	.0088150

Sample Name: Q1439-02DUP Acquired: 3/3/2025 23:15:36 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.003065	-0.002754	F 12.00292	.1469702	F 27.62087	-.014806
Stddev	.001174	.000420	.24568	.0012468	.09767	.000863
%RSD	38.28274	15.25929	2.046854	.8483032	.3535977	5.827677
#1	-0.003804	-0.002275	12.18985	.1455307	27.50834	-.013835
#2	-0.003680	-0.003059	12.09427	.1476713	27.68362	-.015483
#3	-0.001712	-0.002927	11.72465	.1477086	27.67064	-.015101

Elem	Sr4077
Units	ppm
Avg	1.187273
Stddev	.010025
%RSD	.8443666
#1	1.176135
#2	1.195572
#3	1.190112

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3509.321	77606.19	15590.32	2304.213	4715.241
Stddev	.977	1495.34	87.01	45.806	4.951
%RSD	.0278399	1.926837	.5580993	1.987911	.1049981
#1	3508.205	76396.38	15635.01	2262.740	4719.881
#2	3510.020	77144.18	15645.90	2296.523	4715.813
#3	3509.740	79278.02	15490.05	2353.378	4710.029

Sample Name: Q1439-02LX5 Acquired: 3/3/2025 23:20:06 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000612	.0003748	-.000140	-.000686	-.000803	-.001152	.0356187
Stddev	.001188	.0009593	.001598	.004343	.001213	.006357	.0011746
%RSD	194.1067	255.9399	1144.398	633.3677	151.0839	551.6903	3.297646
#1	.000532	-.000242	-.001413	-.005691	-.002088	-.008448	.0367987
#2	-.001840	-.000114	.001654	.001546	-.000642	.001795	.0344496
#3	-.000528	.001480	-.000660	.002088	.000322	.003196	.0356078
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000049	.0000152	26.45804	.0022596	.0000725	.0009891	.1868947
Stddev	.000043	.0000300	.57241	.0002889	.0000488	.0003022	.0076644
%RSD	88.42213	197.7995	2.163476	12.78462	67.37516	30.54860	4.100914
#1	-.000097	.0000357	26.68891	.0025921	.0000167	.0006453	.1927224
#2	-.000036	.0000290	25.80625	.0020706	.0001075	.0012126	.1782127
#3	-.000013	-.000019	26.87897	.0021161	.0000933	.0011095	.1897489
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0832992	5.163440	.0041629	-.000561	46.13296	.0019041	.0180638
Stddev	.0016565	.087608	.0002708	.000116	.72352	.0007870	.0006279
%RSD	1.988605	1.696693	6.505236	20.62455	1.568332	41.33236	3.475763
#1	.0838627	5.194828	.0038740	-.000528	46.78527	.0027842	.0183925
#2	.0814344	5.064462	.0044110	-.000465	45.35476	.0012681	.0173399
#3	.0846003	5.231030	.0042036	-.000689	46.25885	.0016600	.0184591
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.801450	.0700055	.0021751	-.001668	-.000456	2.614979	.0332966
Stddev	.068734	.0001298	.0001910	.000558	.000685	.041769	.0008514
%RSD	1.808103	.1854001	8.781738	33.46041	150.1980	1.597311	2.557114
#1	3.817086	.0701515	.0020631	-.001764	-.000781	2.648964	.0336499
#2	3.726245	.0699617	.0020666	-.002173	-.000919	2.568348	.0323254
#3	3.861020	.0699033	.0023957	-.001069	.000331	2.627626	.0339146

Sample Name: Q1439-02LX5 Acquired: 3/3/2025 23:20:06 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	6.177850	.0016778	.2732239
Stddev	.052058	.0004873	.0063187
%RSD	.8426630	29.04542	2.312648

#1	6.123629	.0012157	.2755712
#2	6.182485	.0021869	.2660675
#3	6.227436	.0016307	.2780331

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3747.950	81317.26	15343.26	2474.227	5181.744
Stddev	21.003	1159.51	261.96	36.107	35.762
%RSD	.5603876	1.425904	1.707311	1.459308	.6901600

#1	3771.076	80149.03	15209.49	2443.220	5220.171
#2	3742.713	82467.84	15645.10	2513.868	5175.625
#3	3730.061	81334.90	15175.20	2465.593	5149.436

Sample Name: Q1439-02MS Acquired: 3/3/2025 23:24:23 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8127514	1.797306	.9362062	1.897243	1.348344	1.838198
Stddev	.0128613	.003765	.0163044	.031717	.022364	.026025
%RSD	1.582438	.2094737	1.741540	1.671754	1.658598	1.415810

#1	.7987528	1.793016	.9189583	1.861592	1.323133	1.838619
#2	.8240451	1.798837	.9513658	1.922330	1.365790	1.811964
#3	.8154562	1.800064	.9382945	1.907807	1.356110	1.864010

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3379017	.1823150	.1915628	110.3462	.3911544	.1950852
Stddev	.0039044	.0012439	.0033757	1.2257	.0100849	.0031676
%RSD	1.155489	.6822843	1.762198	1.110763	2.578237	1.623699

#1	.3401423	.1833366	.1877717	110.9614	.3818718	.1916687
#2	.3333933	.1809298	.1942431	108.9348	.4018850	.1979245
#3	.3401694	.1826786	.1926737	111.1425	.3897065	.1956624

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2949016	3.829657	.5317829	22.96811	.5029020	.0605779
Stddev	.0050067	.096845	.0068151	.29244	.0085502	.0015161
%RSD	1.697763	2.528810	1.281555	1.273248	1.700166	2.502717

#1	.2891699	3.737598	.5334373	23.16085	.4935839	.0591073
#2	.2984219	3.930666	.5242929	22.63162	.5103869	.0621357
#3	.2971130	3.820706	.5376185	23.11187	.5047351	.0604907

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	212.5326	.2885993	.2748497	27.84811	.5026318	.7023084
Stddev	5.4599	.0033636	.0075740	.68003	.0052055	.0110400
%RSD	2.568989	1.165497	2.755676	2.441932	1.035657	1.571967

#1	206.8475	.2917662	.2670488	27.16319	.5062996	.6900400
#2	217.7354	.2850685	.2821743	28.52315	.4966738	.7114424
#3	213.0150	.2889631	.2753261	27.85798	.5049220	.7054426

Sample Name: Q1439-02MS Acquired: 3/3/2025 23:24:23 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.149245	.3122321	F 13.12328	6.101077	F 27.51254	.1787459
Stddev	.017156	.0025024	.32329	.093114	.41163	.0014928
%RSD	1.492782	.8014622	2.463512	1.526187	1.496160	.8351418
#1	1.130321	.3131771	12.80348	5.994822	27.04234	.1798572
#2	1.163779	.3093948	13.44996	6.168442	27.80786	.1770492
#3	1.153634	.3141245	13.11640	6.139966	27.68741	.1793314

Elem	Sr4077
Units	ppm
Avg	1.350482
Stddev	.027511
%RSD	2.037104
#1	1.353351
#2	1.321649
#3	1.376445

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3492.147	77922.52	15858.40	2345.941	4669.438
Stddev	43.390	1507.33	240.95	43.433	60.399
%RSD	1.242498	1.934399	1.519408	1.851416	1.293506
#1	3541.440	79406.98	15668.81	2391.867	4736.730
#2	3459.732	76393.31	16129.55	2305.528	4619.921
#3	3475.270	77967.26	15776.83	2340.427	4651.663

Sample Name: Q1439-02MSD Acquired: 3/3/2025 23:28:37 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8142249	1.782764	.9282373	1.894358	1.346817	1.875808
Stddev	.0072881	.021004	.0082032	.013193	.006455	.024211
%RSD	.8951022	1.178163	.8837366	.6964243	.4792724	1.290680
#1	.8063765	1.765982	.9193281	1.879195	1.339541	1.861014
#2	.8155187	1.775992	.9299057	1.900669	1.349056	1.903748
#3	.8207795	1.806319	.9354780	1.903209	1.351855	1.862662
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3337335	.1843033	.1904253	111.5143	.3975817	.1943912
Stddev	.0065185	.0026549	.0013070	2.1956	.0105327	.0009638
%RSD	1.953207	1.440518	.6863853	1.968937	2.649201	.4957985
#1	.3286318	.1818087	.1889996	109.6718	.4005868	.1932854
#2	.3410771	.1870937	.1907093	113.9438	.3858730	.1948355
#3	.3314917	.1840074	.1915670	110.9274	.4062853	.1950526
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2925686	3.827506	.5318504	23.37073	.4992557	.0610393
Stddev	.0023637	.059744	.0112378	.50595	.0033140	.0015622
%RSD	.8079119	1.560915	2.112963	2.164886	.6637897	2.559333
#1	.2900361	3.829587	.5222904	22.90247	.4959513	.0618178
#2	.2929535	3.766748	.5442293	23.90741	.4992365	.0592409
#3	.2947163	3.886182	.5290316	23.30230	.5025793	.0620593
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	212.4093	.2894225	.2785886	27.70417	.5099860	.7000223
Stddev	4.7453	.0040239	.0057776	.55644	.0092534	.0043248
%RSD	2.234043	1.390334	2.073898	2.008517	1.814444	.6178156
#1	214.2283	.2865791	.2801525	27.90563	.5002424	.6951095
#2	207.0236	.2940267	.2721900	27.07506	.5186554	.7017024
#3	215.9761	.2876616	.2834234	28.13183	.5110602	.7032550

Sample Name: Q1439-02MSD Acquired: 3/3/2025 23:28:37 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.143666	.3142438	F 13.29397	6.036051	F 27.27557	.1801160
Stddev	.008578	.0071305	.23692	.039104	.19367	.0024673
%RSD	.7500725	2.269090	1.782175	.6478397	.7100532	1.369824
#1	1.134628	.3080057	13.36326	5.992326	27.07039	.1784388
#2	1.144674	.3220167	13.03013	6.048153	27.30112	.1829490
#3	1.151695	.3127089	13.48852	6.067673	27.45519	.1789602

Elem	Sr4077
Units	ppm
Avg	1.336983
Stddev	.009137
%RSD	.6834231
#1	1.328073
#2	1.346332
#3	1.336543

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3505.898	76827.74	15554.84	2259.176	4699.113
Stddev	22.944	1608.22	290.07	38.699	30.670
%RSD	.6544391	2.093278	1.864802	1.712972	.6526768
#1	3532.200	76496.57	15823.18	2243.823	4733.254
#2	3495.497	78575.77	15247.08	2303.196	4690.192
#3	3489.996	75410.89	15594.27	2230.509	4673.892

Sample Name: Q1439-02A Acquired: 3/3/2025 23:32:52 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.257671	2.791737	1.438563	2.941717	.7872943	2.934072
Stddev	.007357	.019358	.002214	.013105	.0014342	.051992
%RSD	.5849979	.6934121	.1539303	.4454824	.1821676	1.772023
#1	1.249532	2.778352	1.436008	2.927105	.7880483	2.875171
#2	1.263851	2.782926	1.439914	2.945613	.7856403	2.973585
#3	1.259631	2.813934	1.439768	2.952431	.7881941	2.953459
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4244217	.2935210	.2956101	109.6016	.6207566	.3029878
Stddev	.0062079	.0038626	.0015319	1.6276	.0023140	.0009585
%RSD	1.462680	1.315965	.5182113	1.485057	.3727665	.3163386
#1	.4174520	.2890925	.2938454	107.7410	.6181212	.3019873
#2	.4293576	.2952755	.2963883	110.7622	.6224557	.3030783
#3	.4264556	.2961950	.2965967	110.3015	.6216929	.3038978
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4476181	5.282715	.6252590	24.06172	.7602897	.0446362
Stddev	.0018522	.044378	.0078328	.34444	.0034667	.0001484
%RSD	.4137819	.8400573	1.252733	1.431465	.4559690	.3325103
#1	.4456327	5.259467	.6166576	23.66805	.7565158	.0446115
#2	.4479221	5.333887	.6319813	24.30755	.7610210	.0447954
#3	.4492994	5.254792	.6271382	24.20958	.7633325	.0445017
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	207.1935	.4497311	.3890322	32.25705	.6634877	.4163041
Stddev	2.2298	.0064077	.0039690	.19977	.0106504	.0019400
%RSD	1.076202	1.424780	1.020228	.6193218	1.605209	.4659954
#1	207.5627	.4423593	.3848258	32.09839	.6512608	.4142296
#2	209.2157	.4528680	.3927110	32.48140	.6684581	.4166093
#3	204.8022	.4539659	.3895599	32.19136	.6707443	.4180734

Sample Name: Q1439-02A Acquired: 3/3/2025 23:32:52 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6694945	.1821523	F 12.31521	9.157906	F 26.49804	.2865991
Stddev	.0015733	.0030276	.09104	.028671	.15162	.0044086
%RSD	.2350008	1.662101	.7392242	.3130714	.5721823	1.538247
#1	.6679183	.1788767	12.22498	9.126676	26.32847	.2820508
#2	.6710649	.1848480	12.40703	9.164007	26.54511	.2908532
#3	.6695004	.1827321	12.31363	9.183035	26.62054	.2868933

Elem	Sr4077
Units	ppm
Avg	1.399364
Stddev	.020655
%RSD	1.476006
#1	1.379987
#2	1.397010
#3	1.421095

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3537.455	77214.35	15254.08	2265.208	4754.603
Stddev	5.814	483.51	231.43	14.472	13.389
%RSD	.1643603	.6261886	1.517162	.6388808	.2815994
#1	3542.123	77731.14	15520.78	2280.528	4769.267
#2	3539.300	76772.99	15106.10	2251.768	4751.512
#3	3530.943	77138.90	15135.37	2263.327	4743.029

Sample Name: PB166904BL Acquired: 3/3/2025 23:42:22 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0008254	-.000129	-.000062	-.002598	-.000163	.0016758	-.000770
Stddev	.0008153	.001126	.000840	.001433	.000814	.0020373	.001852
%RSD	98.77680	875.9187	1359.432	55.15856	499.3888	121.5713	240.6102
#1	.0003154	-.001181	-.000371	-.000957	-.000871	.0035741	.001294
#2	.0017658	.001059	.000889	-.003236	-.000344	.0019297	-.002287
#3	.0003951	-.000263	-.000704	-.003602	.000726	-.000477	-.001315
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000085	-.000005	.0048726	-.000100	.0001081	.0003949	-.002982
Stddev	.0000080	.000027	.0043188	.000122	.0000932	.0003073	.001750
%RSD	95.19156	506.9632	88.63475	121.6260	86.21529	77.81309	58.68045
#1	.0000177	-.000029	.0000482	-.000078	.0001860	.0005539	-.001155
#2	.0000041	-.000011	.0083786	.000009	.0001334	.0005902	-.004643
#3	.0000035	.000024	.0061911	-.000232	.0000049	.0000407	-.003147
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002043	-.001218	-.000128	-.000278	.1608280	-.000897	-.000671
Stddev	.0002933	.018882	.000405	.000276	.0152638	.001015	.000229
%RSD	143.5514	1549.774	316.5573	99.42852	9.490736	113.1276	34.09520
#1	-.000053	.019984	.000290	-.000574	.1450051	-.000415	-.000933
#2	.000142	-.016219	-.000520	-.000233	.1620158	-.002063	-.000576
#3	.000524	-.007421	-.000154	-.000027	.1754632	-.000213	-.000506
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0808074	.0016549	.0002265	.0000331	-.000454	-.007016	.0015299
Stddev	.0113969	.0001080	.0000959	.0006665	.000237	.002908	.0028583
%RSD	14.10378	6.527431	42.32294	2015.308	52.25888	41.45051	186.8222
#1	.0686476	.0015616	.0002423	.0007880	-.000312	-.007800	-.001770
#2	.0912455	.0016298	.0001238	-.000474	-.000727	-.003796	.003136
#3	.0825292	.0017732	.0003136	-.000215	-.000322	-.009451	.003224

Sample Name: PB166904BL Acquired: 3/3/2025 23:42:22 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.000167	.0048502	.0000143
Stddev	.001095	.0004266	.0000175
%RSD	654.1228	8.794837	122.4478
#1	.000201	.0043617	-.000001
#2	.000696	.0051493	.000011
#3	-.001399	.0050397	.000033

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3864.830	86565.60	16044.34	2553.461	5655.935
Stddev	7.618	1304.57	267.41	25.086	17.536
%RSD	.1971070	1.507029	1.666715	.9824485	.3100386
#1	3858.216	88044.60	15755.61	2582.392	5641.295
#2	3863.115	86073.77	16093.93	2540.253	5651.139
#3	3873.159	85578.45	16283.49	2537.739	5675.369

Sample Name: PB166904BS Acquired: 3/3/2025 23:46:41 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7632387	1.807012	.9028418	1.787927	.7848068	1.860958
Stddev	.0108995	.038190	.0157128	.030206	.0129524	.020135
%RSD	1.428060	2.113453	1.740371	1.689428	1.650391	1.081990
#1	.7509130	1.763741	.8847629	1.753055	.7701721	1.879316
#2	.7716054	1.836011	.9132072	1.805971	.7947951	1.864135
#3	.7671978	1.821285	.9105551	1.804754	.7894530	1.839423
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1840783	.1768667	.1784249	.9329516	.3885760	.1869482
Stddev	.0006424	.0007366	.0029003	.0007715	.0020987	.0036294
%RSD	.3489712	.4164717	1.625512	.0826991	.5400943	1.941406
#1	.1847608	.1777051	.1751010	.9334716	.3878201	.1827669
#2	.1834854	.1763233	.1804411	.9320651	.3869599	.1892850
#3	.1839886	.1765717	.1797326	.9333181	.3909479	.1887926
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2953680	2.897224	.1928286	1.856053	.4645251	.0679633
Stddev	.0047258	.022402	.0016491	.010063	.0088238	.0004070
%RSD	1.599955	.7732066	.8552171	.5421851	1.899535	.5987926
#1	.2899215	2.873781	.1947318	1.865657	.4544497	.0680158
#2	.2983820	2.899476	.1919310	1.845586	.4708763	.0675326
#3	.2978004	2.918414	.1918229	1.856915	.4682493	.0683414
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.794390	.2871990	.1860805	9.105745	.2484997	.4213218
Stddev	.005699	.0036956	.0005138	.007033	.0009725	.0072969
%RSD	.2039378	1.286768	.2761064	.0772379	.3913632	1.731911
#1	2.788959	.2911258	.1861199	9.097629	.2493361	.4128993
#2	2.793886	.2837890	.1855481	9.110048	.2474325	.4257344
#3	2.800323	.2866824	.1865734	9.109559	.2487305	.4253317

Sample Name: PB166904BS Acquired: 3/3/2025 23:46:41 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6603122	.1929108	.7857571	4.974770	F -.004420	.1808311
Stddev	.0114042	.0011108	.0063307	.099131	.000466	.0018998
%RSD	1.727089	.5758094	.8056765	1.992665	10.54034	1.050582
#1	.6471476	.1941906	.7838751	4.861202	-.004958	.1815893
#2	.6666218	.1923456	.7805809	5.043942	-.004142	.1822347
#3	.6671673	.1921963	.7928154	5.019168	-.004160	.1786693

Elem	Sr4077
Units	ppm
Avg	.1898651
Stddev	.0014004
%RSD	.7375722
#1	.1912213
#2	.1899495
#3	.1884244

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3784.531	85650.58	16107.91	2501.865	5487.865
Stddev	50.959	385.37	64.88	5.475	75.456
%RSD	1.346513	.4499317	.4027748	.2188227	1.374970
#1	3843.351	85846.29	16033.53	2507.503	5574.757
#2	3756.532	85898.82	16152.86	2501.521	5438.845
#3	3753.710	85206.63	16137.34	2496.570	5449.993

Sample Name: PB166926BL Acquired: 3/3/2025 23:55:38 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0016012	-.000434	-.000513	.0000063	-.000782	.0018998	-.001841
Stddev	.0012158	.000815	.001025	.0013696	.000485	.0024331	.000359
%RSD	75.92798	187.5455	199.9964	21908.86	62.02539	128.0714	19.47994
#1	.0006166	-.001341	-.000121	.0015230	-.000234	.0028320	-.001556
#2	.0029601	-.000198	-.001676	-.001140	-.001158	.0037290	-.002244
#3	.0012269	.000236	.000259	-.000364	-.000954	-.000862	-.001724
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000443	-.000016	.0025975	.0001413	.0001700	-.000292	-.000049
Stddev	.0000240	.000079	.0079166	.0002333	.0003069	.000061	.002287
%RSD	54.08905	506.5208	304.7791	165.1729	180.5164	21.04965	4699.271
#1	.0000546	.000055	-.005278	.0004089	.0001552	-.000254	.001726
#2	.0000169	-.000100	.010554	.0000344	.0004841	-.000259	.000757
#3	.0000614	-.000002	.002517	-.000019	-.000129	-.000362	-.002629
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003246	.0104085	-.000070	-.000214	.0697940	-.000623	-.000567
Stddev	.0000786	.0022583	.000049	.000431	.0172908	.000478	.000230
%RSD	24.20825	21.69672	69.21513	201.7157	24.77411	76.73490	40.53315
#1	.0002465	.0079620	-.000063	-.000676	.0573057	-.000748	-.000702
#2	.0004037	.0124134	-.000026	-.000141	.0625472	-.000095	-.000302
#3	.0003237	.0108501	-.000122	.000176	.0895291	-.001026	-.000697
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0363904	.0013831	.0001041	-.000180	-.000031	-.002068	-.000243
Stddev	.0396127	.0005923	.0001083	.000859	.000102	.001784	.000602
%RSD	108.8548	42.82314	104.0166	476.2055	329.4004	86.24554	247.9685
#1	.0011174	.0015203	.0001406	-.001167	-.000144	-.000055	-.000654
#2	.0792465	.0007342	.0001895	.000398	.000054	-.002698	-.000524
#3	.0288073	.0018947	-.000018	.000228	-.000003	-.003451	.000449

Sample Name: PB166926BL Acquired: 3/3/2025 23:55:38 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.003856	.0002766	-.000008
Stddev	.000395	.0010087	.000036
%RSD	10.23467	364.6606	464.5190
#1	-.004305	.0011415	.000017
#2	-.003564	-.000831	-.000049
#3	-.003699	.000520	.000009

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3888.769	86244.69	15737.15	2594.246	5648.149
Stddev	9.224	383.85	96.47	8.777	15.227
%RSD	.2371926	.4450692	.6130198	.3383410	.2696000
#1	3888.589	86203.07	15760.67	2593.023	5655.062
#2	3898.081	86647.65	15631.10	2603.570	5658.694
#3	3879.636	85883.35	15819.69	2586.144	5630.692

Sample Name: PB166926BS Acquired: 3/3/2025 23:59:57 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8203644	1.963934	.9793112	1.912875	.8268968	2.004253
Stddev	.0054632	.017765	.0050744	.008724	.0046025	.043169
%RSD	.6659456	.9045401	.5181594	.4560760	.5566015	2.153847

#1	.8227463	1.983000	.9813029	1.920221	.8289328	2.050972
#2	.8141147	1.947848	.9735431	1.903232	.8216274	1.995944
#3	.8242323	1.960954	.9830876	1.915171	.8301302	1.965843

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2009016	.1960308	.1944525	1.044728	.4314254	.2036550
Stddev	.0050688	.0036310	.0009384	.019427	.0036415	.0009142
%RSD	2.523040	1.852282	.4826072	1.859561	.8440648	.4488748

#1	.2058001	.1996938	.1953507	1.065813	.4336641	.2044759
#2	.2012265	.1959661	.1934785	1.040819	.4333885	.2026699
#3	.1956781	.1924326	.1945284	1.027553	.4272236	.2038193

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3199994	3.166559	.2244806	2.007469	.5066289	.0750112
Stddev	.0009808	.045934	.0051096	.040612	.0027658	.0008424
%RSD	.3064969	1.450599	2.276191	2.023051	.5459295	1.123027

#1	.3210483	3.190850	.2301470	2.051161	.5095353	.0752635
#2	.3191051	3.195248	.2230710	2.000374	.5040292	.0756986
#3	.3198448	3.113580	.2202237	1.970872	.5063222	.0740715

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.143962	.3103274	.2086732	9.932392	.2739323	.4498041
Stddev	.034358	.0066771	.0016796	.082415	.0042222	.0010022
%RSD	1.092830	2.151616	.8049046	.8297549	1.541342	.2228172

#1	3.178538	.3179728	.2095684	10.01510	.2773832	.4504047
#2	3.143523	.3073668	.2097155	9.93180	.2751895	.4486470
#3	3.109826	.3056424	.2067356	9.85027	.2692243	.4503604

Sample Name: PB166926BS Acquired: 3/3/2025 23:59:57 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7026614	.2058147	.8335462	5.502716	F .0352700	.1970119
Stddev	.0033368	.0041028	.0016560	.038103	.0002117	.0049163
%RSD	.4748776	1.993457	.1986689	.6924336	.6001237	2.495415
#1	.7054793	.2103930	.8318533	5.544045	.0355012	.2026656
#2	.6989768	.2045806	.8336228	5.468983	.0350858	.1946284
#3	.7035281	.2024706	.8351626	5.495121	.0352230	.1937418

Elem	Sr4077
Units	ppm
Avg	.2065900
Stddev	.0048046
%RSD	2.325677
#1	.2118594
#2	.2054584
#3	.2024522

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3828.391	85691.23	16076.35	2545.665	5544.036
Stddev	14.368	574.49	286.28	24.866	26.196
%RSD	.3753109	.6704132	1.780755	.9768128	.4725159
#1	3817.207	85409.47	15771.95	2529.800	5521.634
#2	3844.596	85312.03	16116.92	2532.872	5572.840
#3	3823.369	86352.20	16340.18	2574.323	5537.632

Sample Name: CCV05 Acquired: 3/4/2025 0:03:56 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV05 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.865930	4.864470	4.854889	4.886352	4.902044	9.554145	9.749561
Stddev	.024790	.025281	.022473	.023769	.017747	.144635	.126887
%RSD	.5094675	.5197098	.4629033	.4864350	.3620426	1.513849	1.301461
#1	4.845281	4.848179	4.842685	4.863426	4.884594	9.721129	9.894982
#2	4.893424	4.893594	4.880825	4.910882	4.920075	9.468067	9.692335
#3	4.859085	4.851638	4.841159	4.884746	4.901462	9.473239	9.661366
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2409681	2.431045	23.89378	.9731532	2.432327	1.226607	4.870200
Stddev	.0040800	.009811	.33295	.0337485	.010555	.004623	.158261
%RSD	1.693176	.4035830	1.393451	3.467952	.4339407	.3768746	3.249582
#1	.2455647	2.426578	24.27824	1.007454	2.426270	1.223370	5.033954
#2	.2395642	2.442295	23.70093	.972021	2.444515	1.231902	4.858572
#3	.2377754	2.424261	23.70218	.939985	2.426197	1.224551	4.718073
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.404122	23.95028	2.423035	1.211689	24.24042	2.427954	2.415967
Stddev	.037250	.33873	.009166	.041378	.75235	.034900	.084774
%RSD	1.549435	1.414287	.3782723	3.414867	3.103691	1.437419	3.508910
#1	2.447094	24.33976	2.416147	1.252795	25.00720	2.468080	2.505312
#2	2.381000	23.78660	2.433438	1.212226	24.21069	2.411120	2.405929
#3	2.384273	23.72447	2.419520	1.170045	23.50338	2.404662	2.336658
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	24.08608	4.764753	4.918537	4.867065	4.815763	4.817959	4.818434
Stddev	.65982	.079911	.019517	.023174	.069901	.134004	.031415
%RSD	2.739411	1.677135	.3968142	.4761401	1.451503	2.781347	.6519738
#1	24.76953	4.855151	4.904833	4.854840	4.896467	4.953680	4.801816
#2	24.03595	4.735584	4.940883	4.893792	4.776573	4.814456	4.854667
#3	23.45276	4.703524	4.909893	4.852564	4.774250	4.685741	4.798818

Sample Name: CCV05 Acquired: 3/4/2025 0:03:56 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV05 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.813334	4.713199	4.911078
Stddev	.037052	.070352	.030261
%RSD	.7697765	1.492653	.6161815

#1	4.782514	4.794205	4.945465
#2	4.854443	4.667415	4.888512
#3	4.803045	4.677977	4.899256

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3715.398	81540.71	15462.67	2440.909	5004.772
Stddev	7.930	2320.06	179.90	72.241	10.525
%RSD	.2134467	2.845281	1.163434	2.959585	.2102898

#1	3723.495	79245.69	15255.42	2363.907	5012.885
#2	3707.646	81491.43	15554.12	2451.629	4992.880
#3	3715.053	83885.03	15578.47	2507.191	5008.552

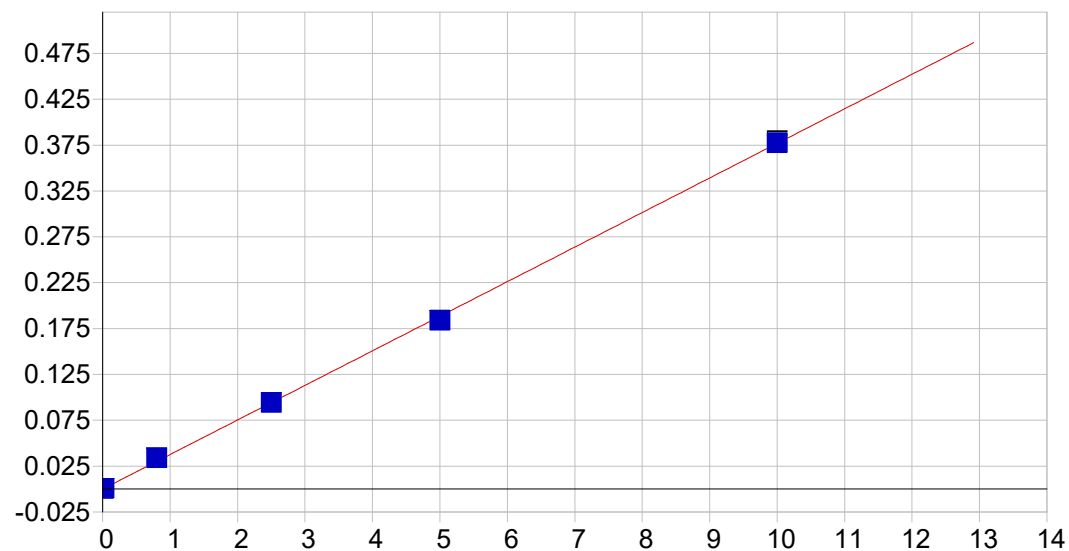
Sample Name: CCB05 Acquired: 3/4/2025 0:08:08 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB05 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005307	.0010761	-.000766	.0008298	-.000689	.0004672	-.000247
Stddev	.0009459	.0000696	.000555	.0014935	.000853	.0021218	.000959
%RSD	178.2179	6.472664	72.40661	179.9868	123.6647	454.1329	388.3696
#1	-.000041	.0011282	-.000736	.0021331	-.001193	-.000620	-.000571
#2	.001623	.0009970	-.001335	.0011561	-.001171	-.000891	-.001002
#3	.000010	.0011031	-.000227	-.000800	.000295	.002912	.000832
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000020	.0000547	.0034637	-.000078	-.000036	.0003640	-.003125
Stddev	.000025	.0000541	.0029012	.000337	.000162	.0001223	.001195
%RSD	127.6739	98.87805	83.76066	430.3924	445.1129	33.59675	38.23082
#1	-.000048	.0000467	.0062736	-.000101	-.000194	.0004957	-.003653
#2	-.000010	.0000050	.0036385	-.000403	.000130	.0003423	-.003964
#3	-.000000	.0001123	.0004790	.000270	-.000045	.0002540	-.001757
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001447	.0000485	-.000322	-.000182	.0647490	-.001209	-.000594
Stddev	.0000854	.0026363	.000103	.000197	.0070136	.000398	.000155
%RSD	59.02282	5432.367	32.00629	108.6387	10.83191	32.96647	26.02307
#1	.0002060	-.002578	-.000212	.000035	.0573667	-.000781	-.000748
#2	.0001810	.002694	-.000338	-.000229	.0655566	-.001569	-.000597
#3	.0000472	.000030	-.000417	-.000351	.0713239	-.001276	-.000438
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0885848	.0056408	.0003385	.0002490	.0007878	.0007222	.0000875
Stddev	.0038407	.0003551	.0000745	.0006118	.0003018	.0067789	.0002087
%RSD	4.335571	6.294779	22.01864	245.7530	38.30241	938.6960	238.5786
#1	.0848276	.0059598	.0003860	.0000028	.0008138	.0031226	.0003182
#2	.0925037	.0057044	.0003767	-.000201	.0004739	-.006930	.0000325
#3	.0884230	.0052582	.0002526	.000945	.0010758	.005974	-.000088

Sample Name: CCB05 Acquired: 3/4/2025 0:08:08 Type: Unk
Method: NON EPA-6010-200.7(v2750) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB05 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.000078	-.002363	.0003186
Stddev	.002023	.000465	.0004436
%RSD	2579.866	19.68194	139.2186
#1	-.001480	-.002132	.0008305
#2	.002241	-.002059	.0000478
#3	-.000996	-.002899	.0000775

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3917.446	86622.49	15880.92	2554.144	5733.333
Stddev	16.098	1052.49	61.62	30.477	25.724
%RSD	.4109297	1.215031	.3880429	1.193246	.4486678
#1	3910.492	87349.03	15951.43	2576.311	5723.243
#2	3935.852	85415.51	15837.37	2519.389	5762.573
#3	3905.994	87102.92	15853.97	2566.732	5714.185

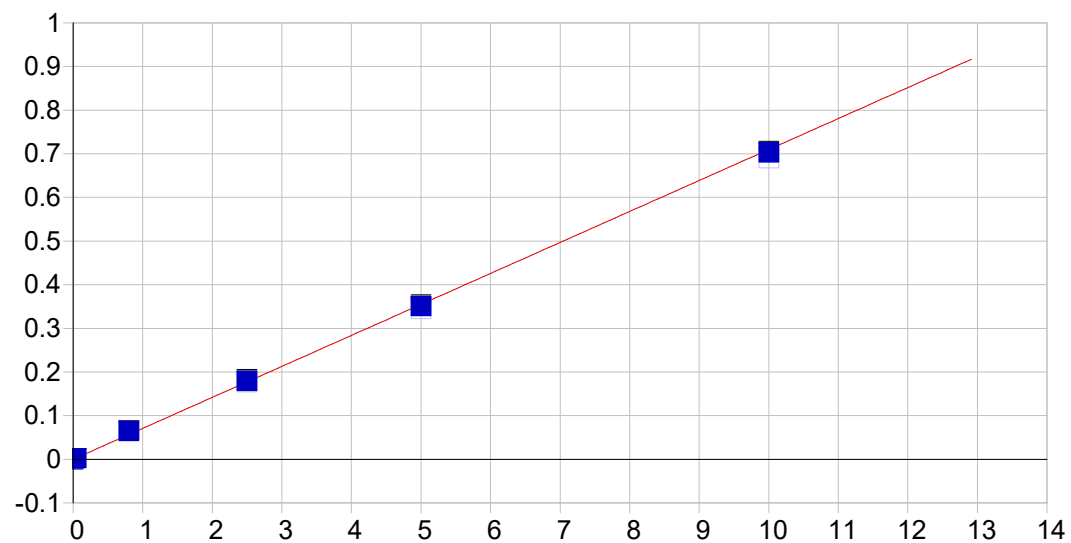


As 189.042 {479}

Date of Fit: 3/10/2025 11:48:10 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset): -0.000051 Re-Slope: 1.000000
 A1 (Gain): 0.037695 Y-int: 0.000000
 A2 (Curvature): 0.000000
 n (Exponent): 1.000000
 Correlation: 0.999574 Status: OK.
 Std Error of Est: 0.000026
 Predicted MDL: 0.003272
 Predicted MQL: 0.010906

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00005	.000	1
S1	.02000	.02083	.001	4.13	.00073	.000	1
S3	2.5000	2.5002	.000	.008	.09409	.000	1
S4	5.0000	4.8800	-.120	-2.40	.18370	.000	1
S5	10.000	10.018	.018	.183	.37718	.002	1
S2	.80000	.90062	.101	12.6	.03387	.000	1

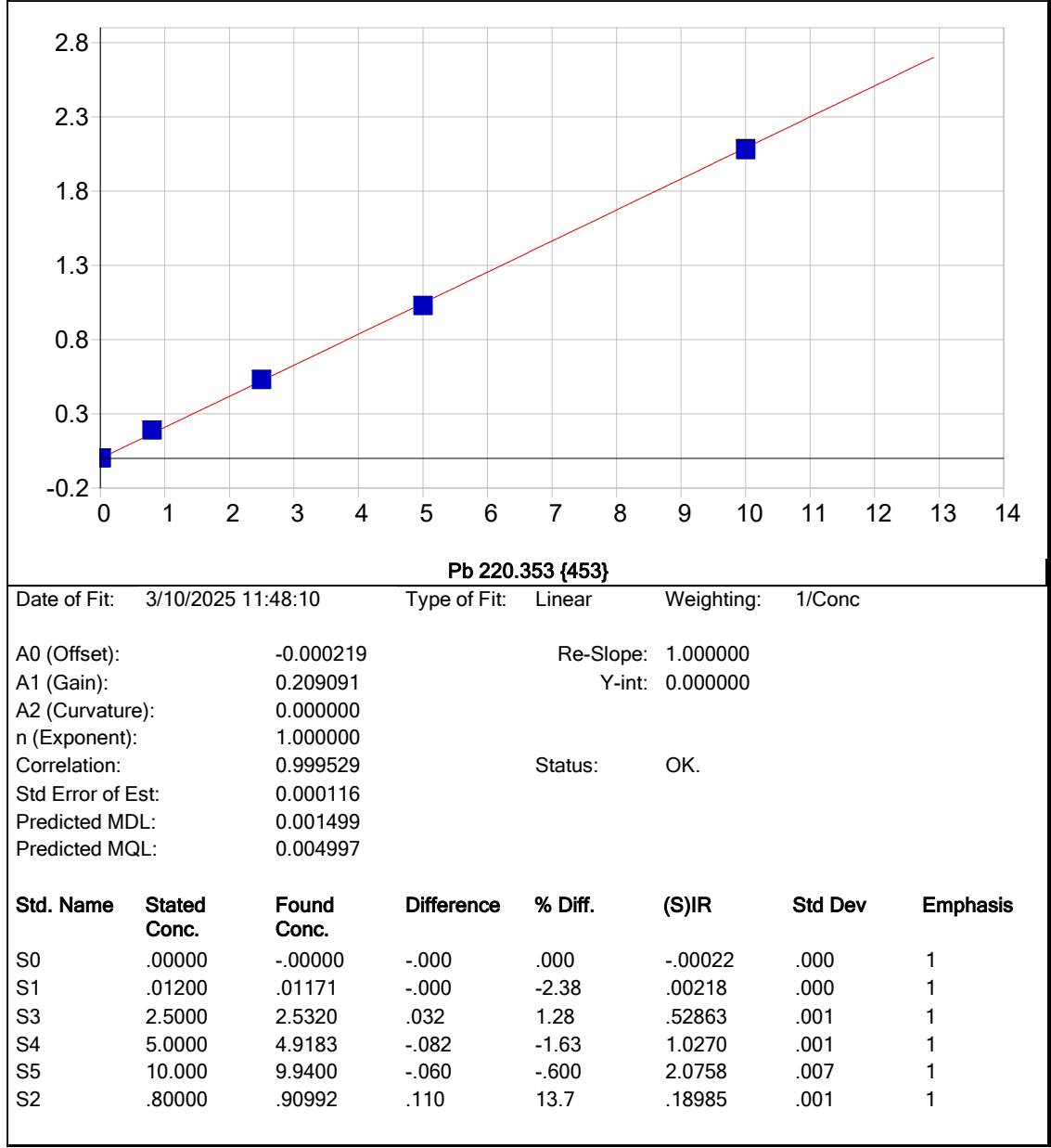


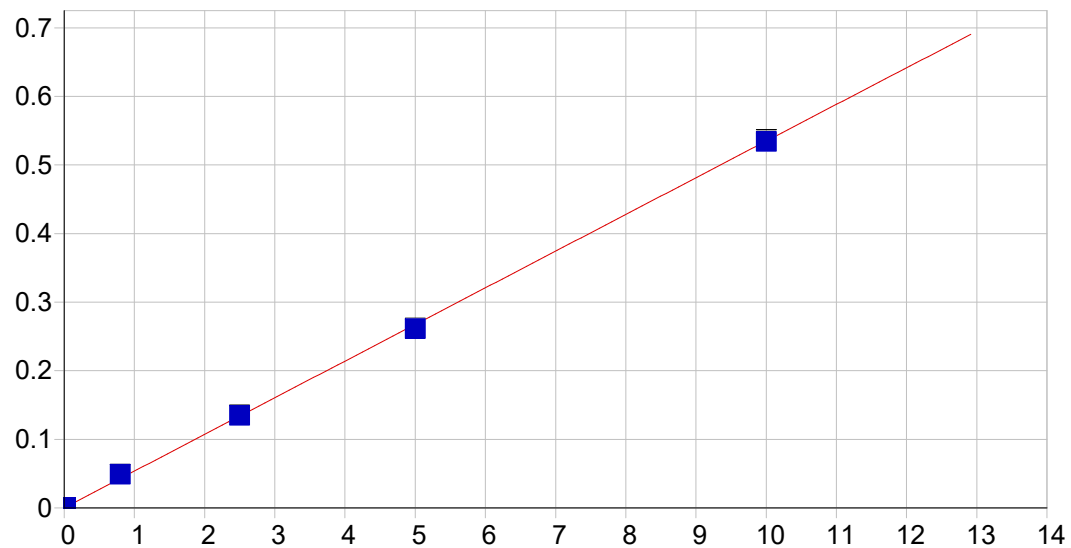
TI 190.856 {477}

Date of Fit: 3/10/2025 11:48:10 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset): -0.000127 Re-Slope: 1.000000
A1 (Gain): 0.070997 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999485 Status: OK.
Std Error of Est: 0.000074
Predicted MDL: 0.001782
Predicted MQL: 0.005939

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00001	-.000	.000	-.00013	.000	1
S1	.04000	.04120	.001	3.00	.00261	.000	1
S3	2.5000	2.5336	.034	1.34	.17648	.003	1
S4	5.0000	4.9449	-.055	-1.10	.34440	.003	1
S5	10.000	9.9065	-.094	-.935	.69012	.003	1
S2	.80000	.91395	.114	14.2	.06371	.001	1



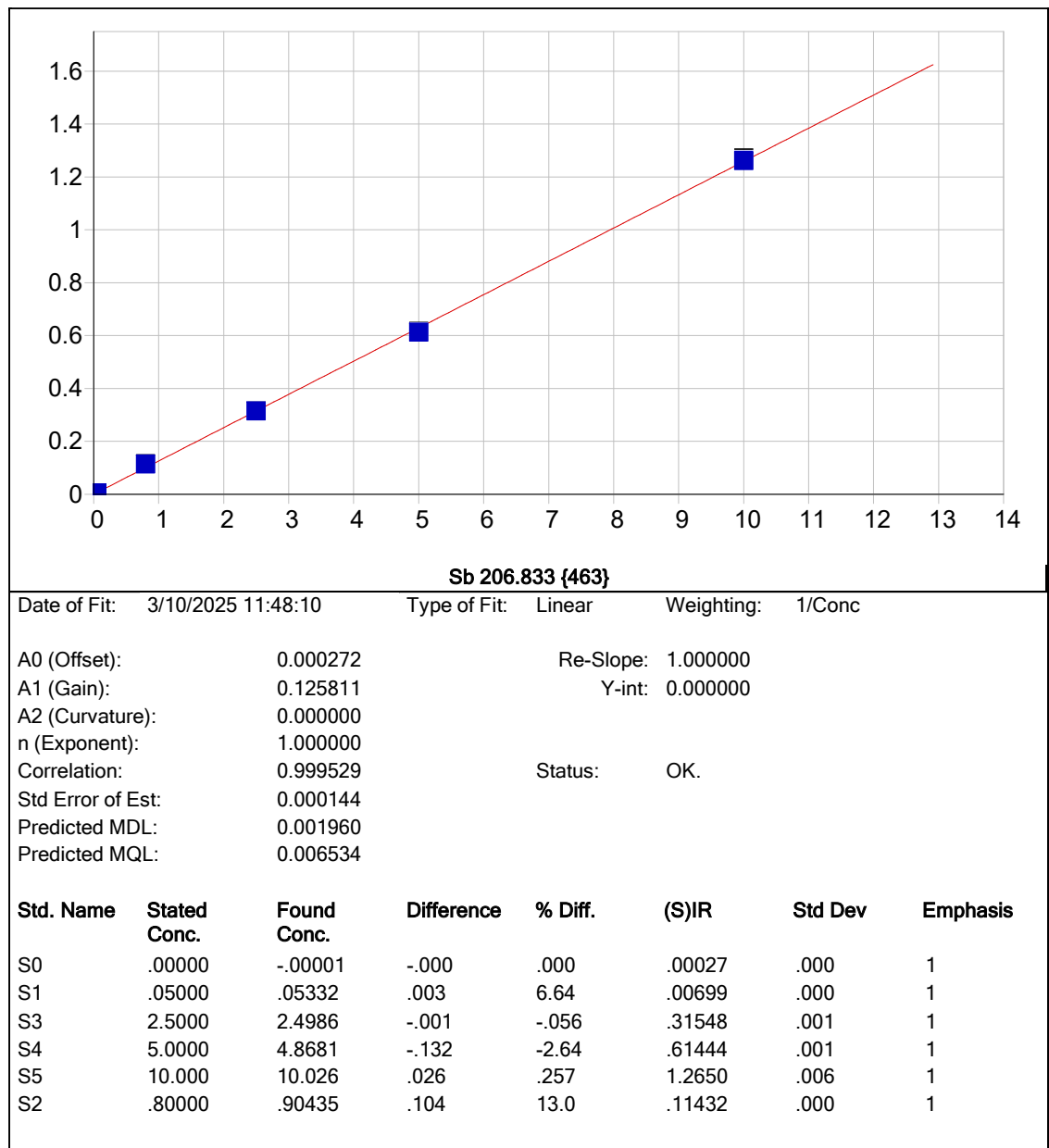


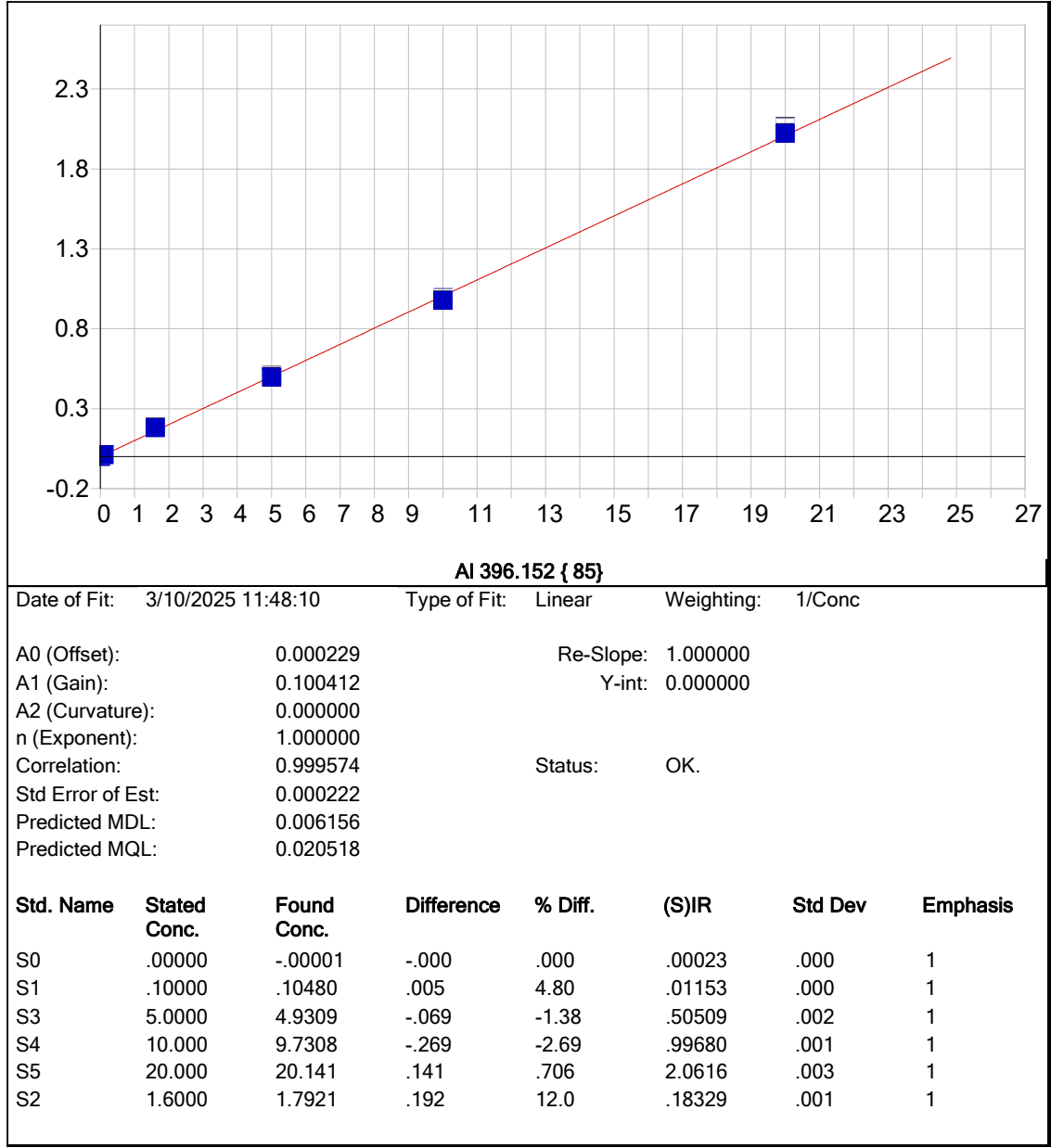
Se 196.090 {472}

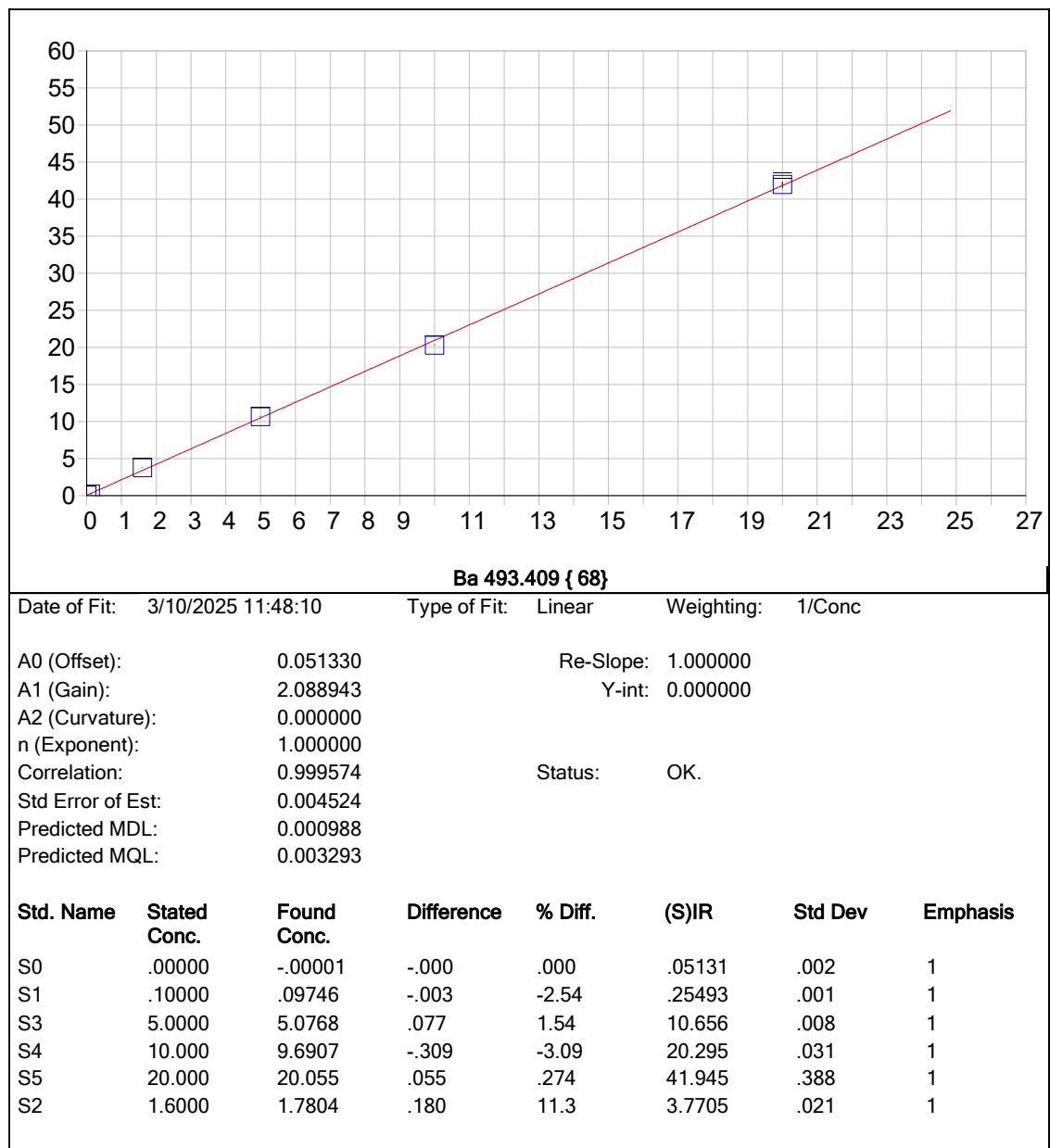
Date of Fit: 3/10/2025 11:48:10 Type of Fit: Linear Weighting: 1/Conc

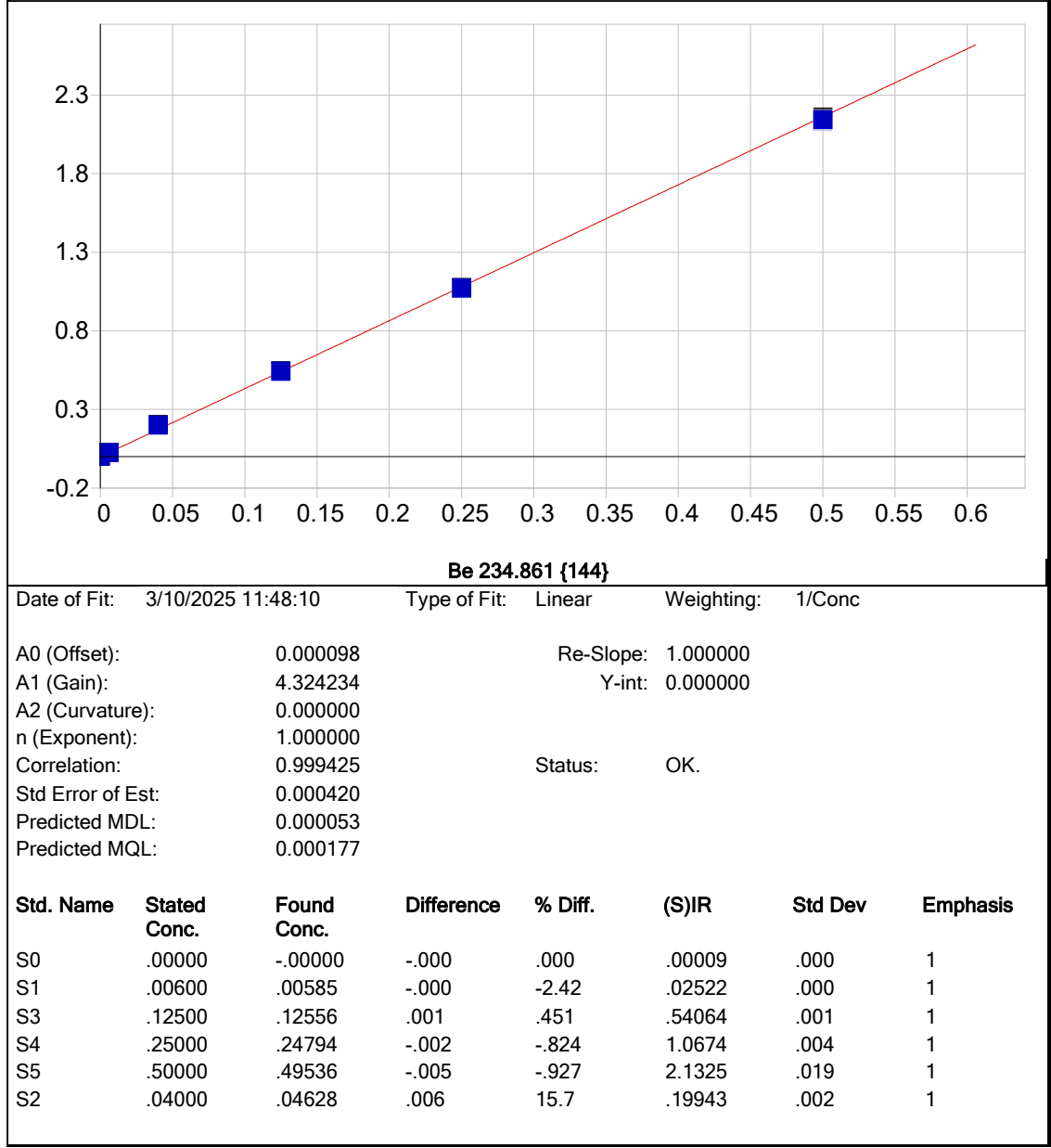
A0 (Offset): 0.000209 Re-Slope: 1.000000
 A1 (Gain): 0.053453 Y-int: 0.000000
 A2 (Curvature): 0.000000
 n (Exponent): 1.000000
 Correlation: 0.999517 Status: OK.
 Std Error of Est: 0.000039
 Predicted MDL: 0.003053
 Predicted MQL: 0.010177

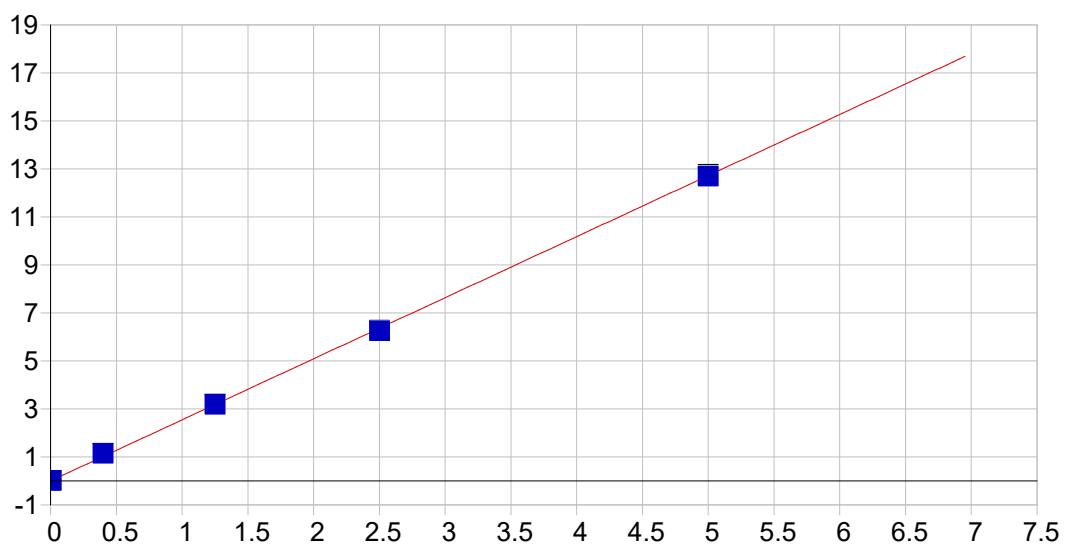
Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00021	.000	1
S1	.02000	.02116	.001	5.80	.00134	.000	1
S3	2.5000	2.5171	.017	.685	.13471	.001	1
S4	5.0000	4.8836	-.116	-2.33	.26116	.001	1
S5	10.000	9.9893	-.011	-.107	.53398	.003	1
S2	.80000	.90884	.109	13.6	.04877	.000	1









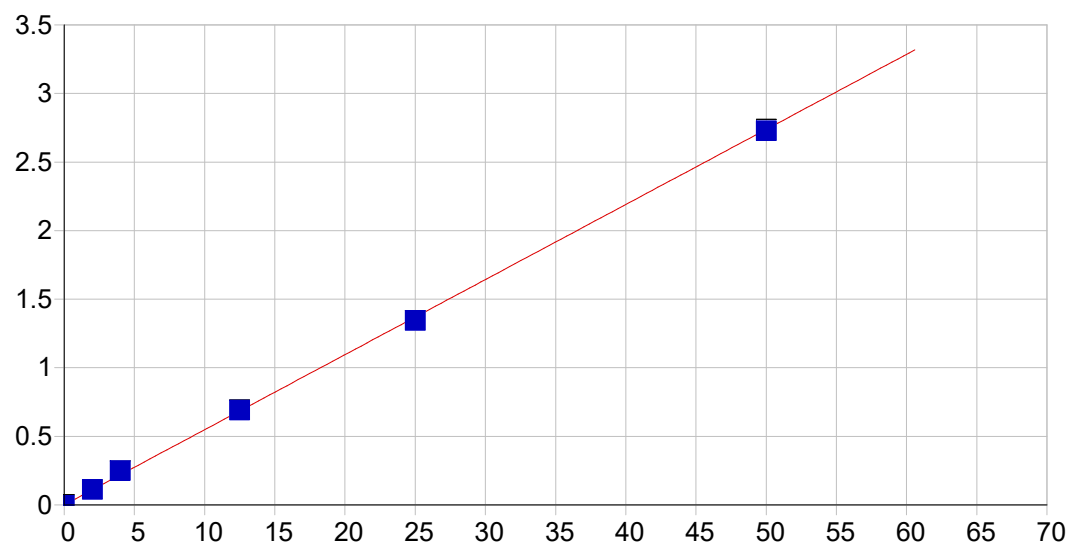


Cd 226.502 {449}

Date of Fit: 3/10/2025 11:48:10 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset):	-0.000157	Re-Slope:	1.000000
A1 (Gain):	2.544685	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999633	Status:	OK.
Std Error of Est:	0.000626		
Predicted MDL:	0.000085		
Predicted MQL:	0.000283		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00016	.000	1
S1	.00600	.00608	.000	1.35	.01540	.000	1
S3	1.2500	1.2522	.002	.177	3.1891	.006	1
S4	2.5000	2.4588	-.041	-1.65	6.2624	.014	1
S5	5.0000	4.9898	-.010	-.204	12.709	.067	1
S2	.40000	.44908	.049	12.3	1.1435	.000	1

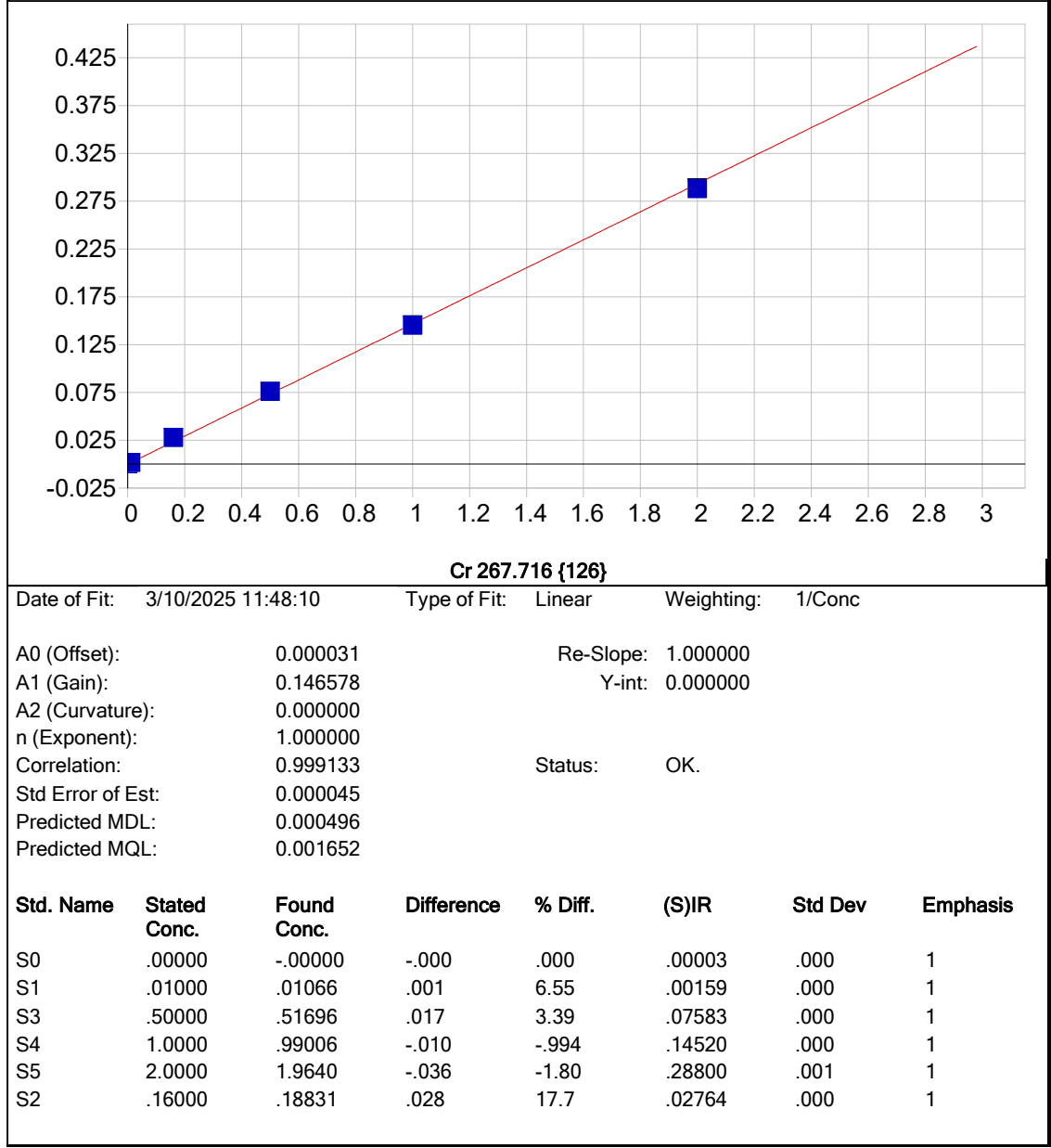


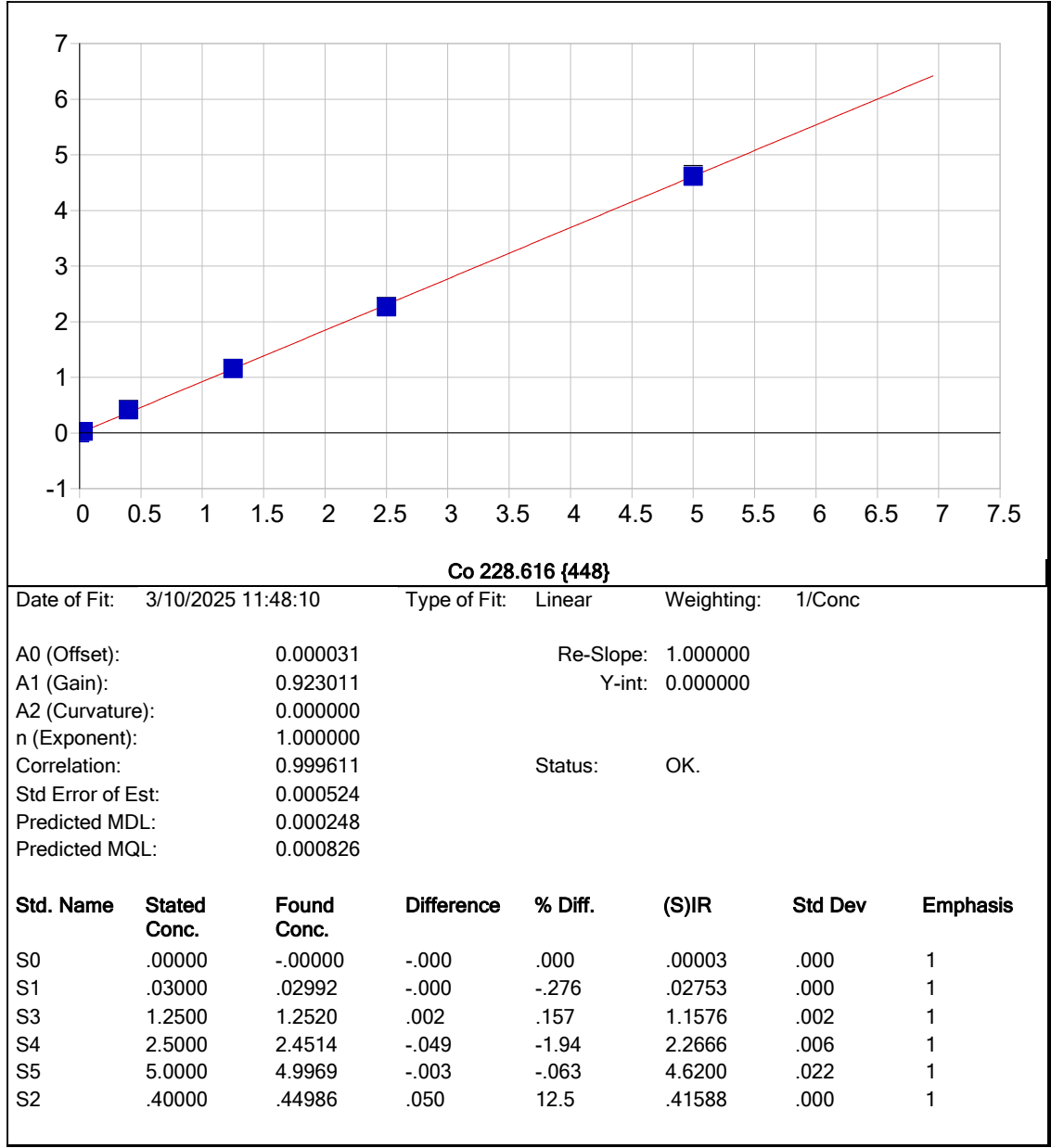
Ca 373.690 { 90}

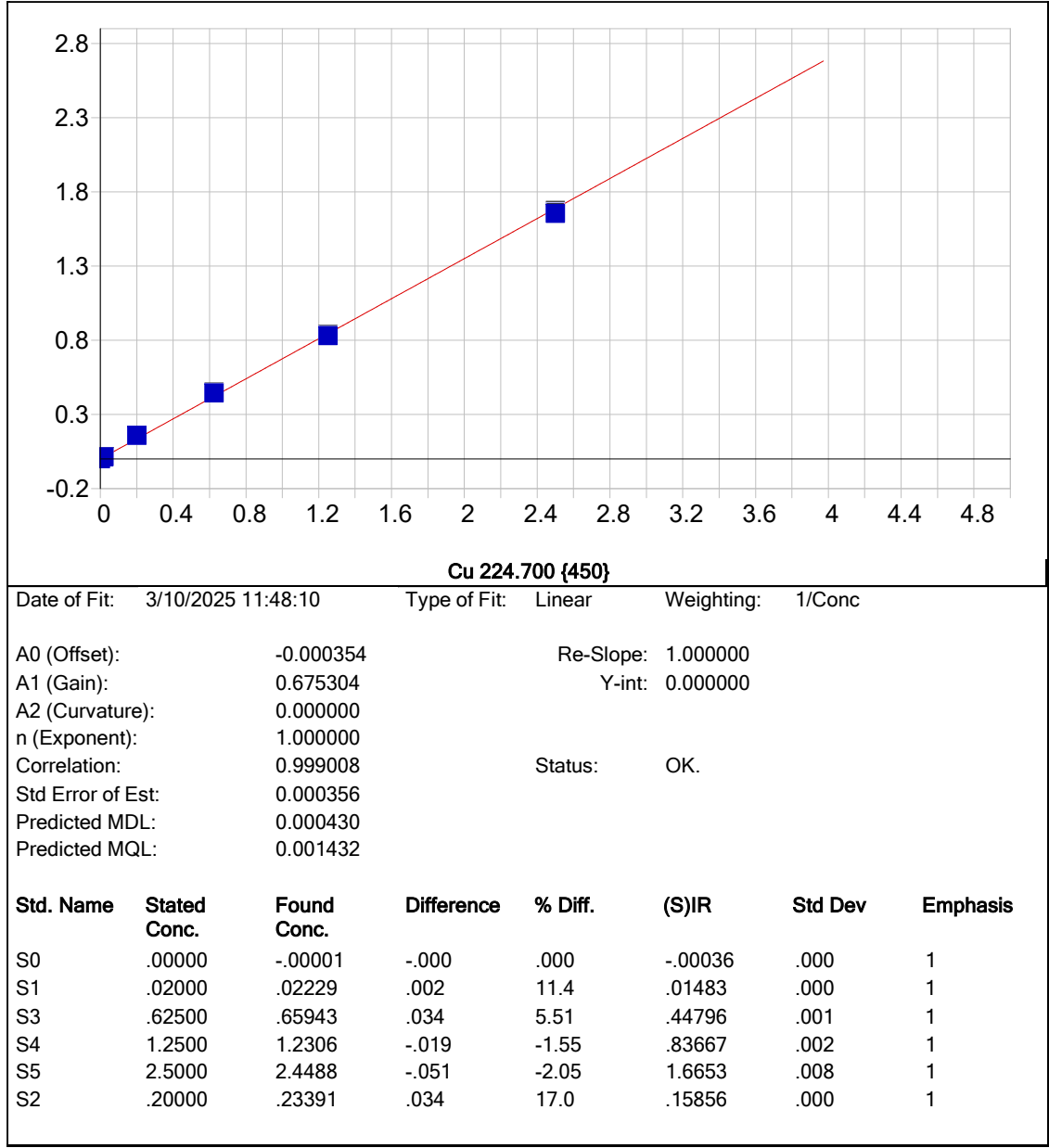
Date of Fit: 3/10/2025 11:48:10 Type of Fit: Linear Weighting: 1/Conc

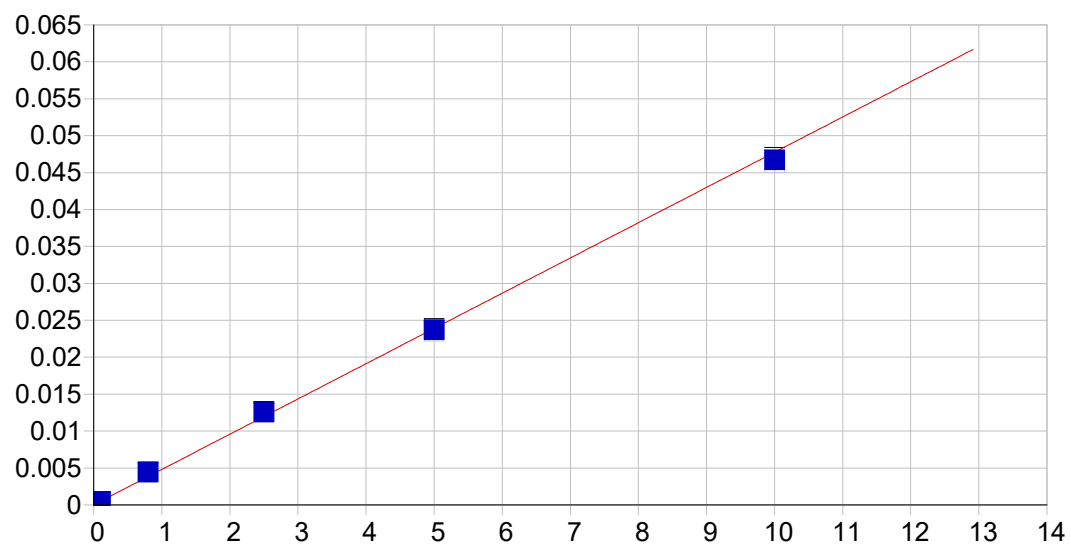
A0 (Offset): 0.000936 Re-Slope: 1.000000
 A1 (Gain): 0.054739 Y-int: 0.000000
 A2 (Curvature): 0.000000
 n (Exponent): 1.000000
 Correlation: 0.999556 Status: OK.
 Std Error of Est: 0.000863
 Predicted MDL: 0.009132
 Predicted MQL: 0.030441

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00027	-.000	.000	.00092	.000	1
S2	4.0000	4.5375	.538	13.4	.24932	.001	1
S3	12.500	12.605	.105	.840	.69093	.001	1
S4	25.000	24.537	-.463	-1.85	1.3441	.001	1
S5	50.000	49.793	-.207	-.414	2.7266	.013	1
S1	2.0000	2.0276	.028	1.38	.11193	.000	1







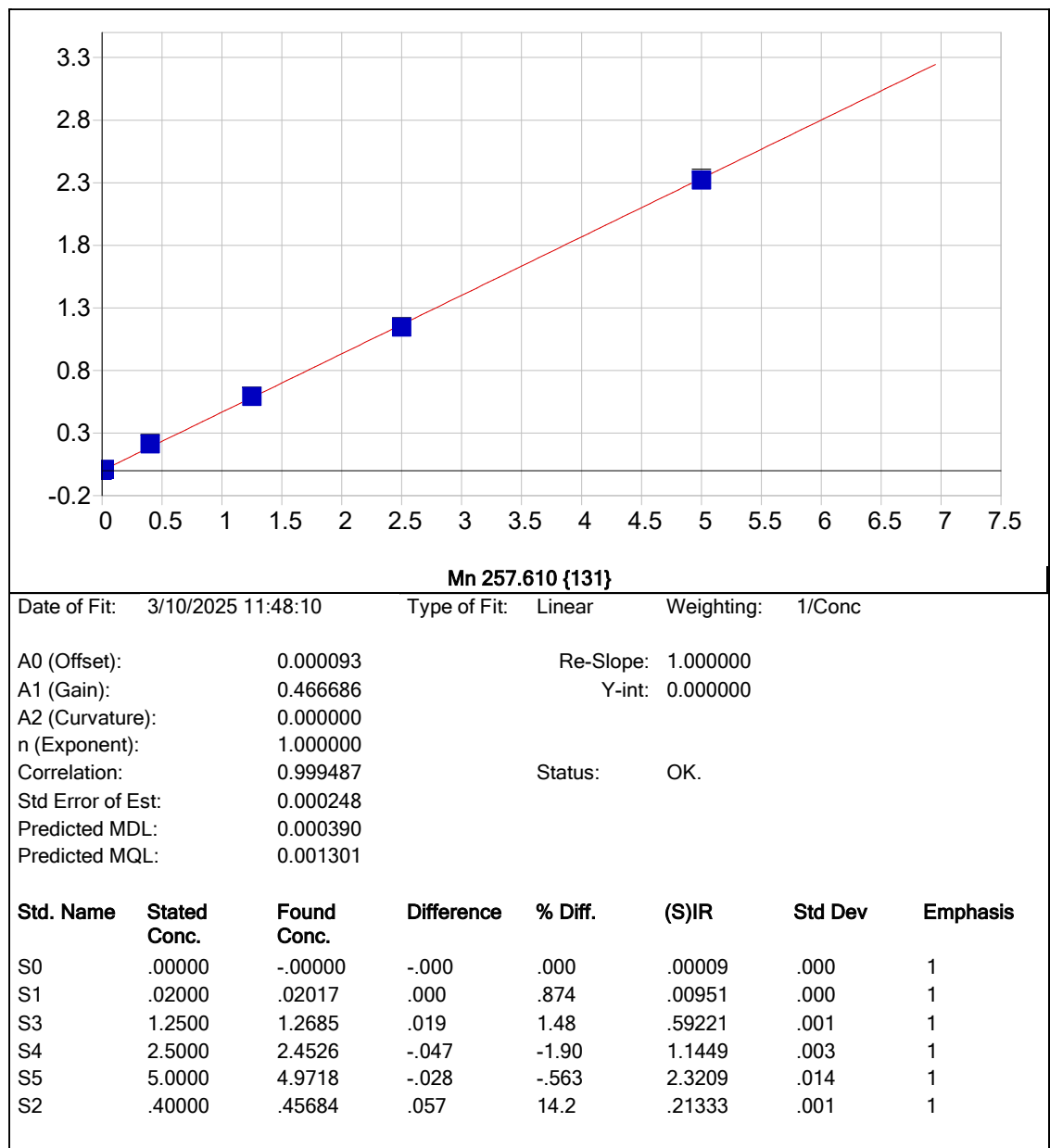


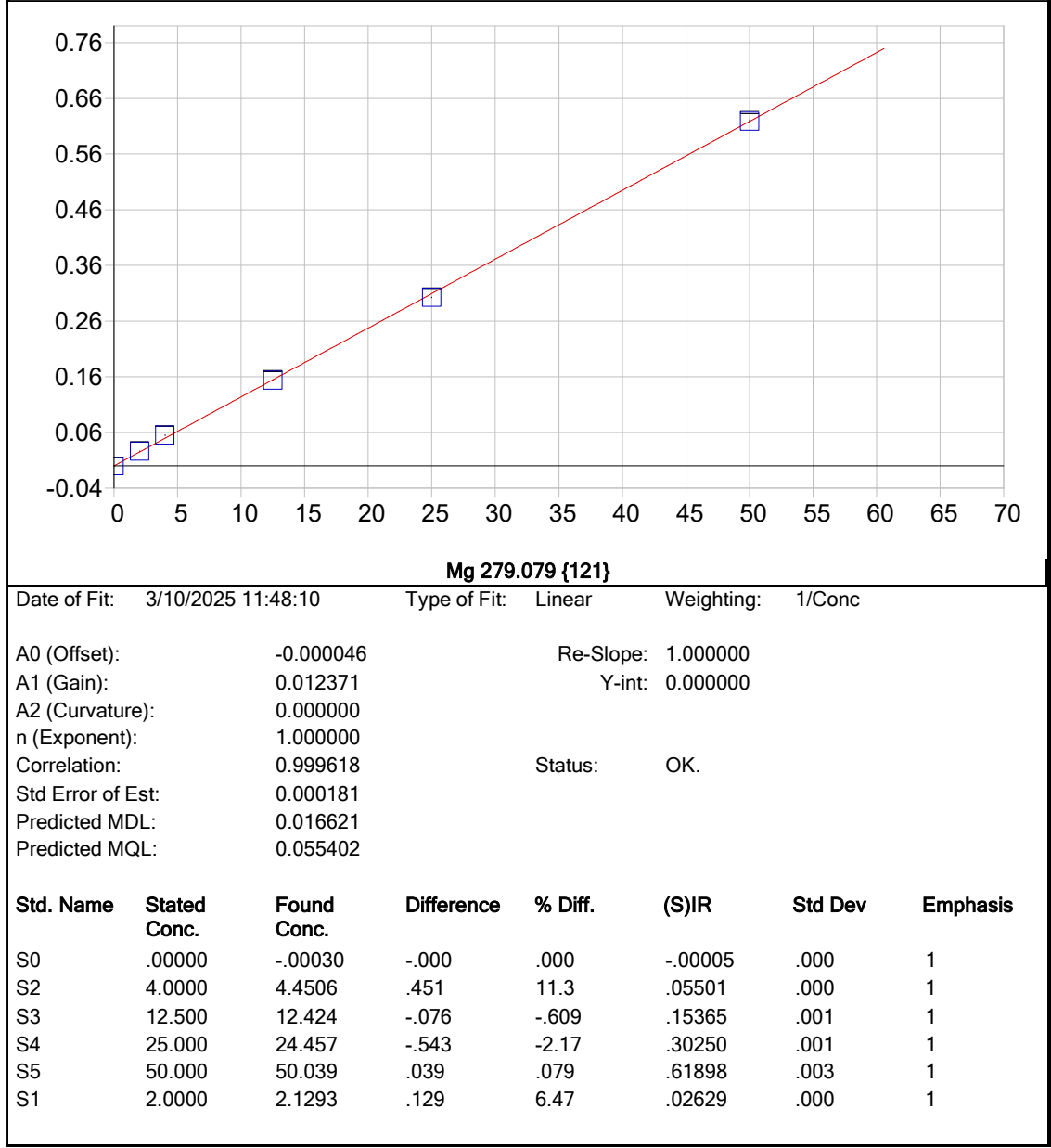
Fe 240.488 {140}

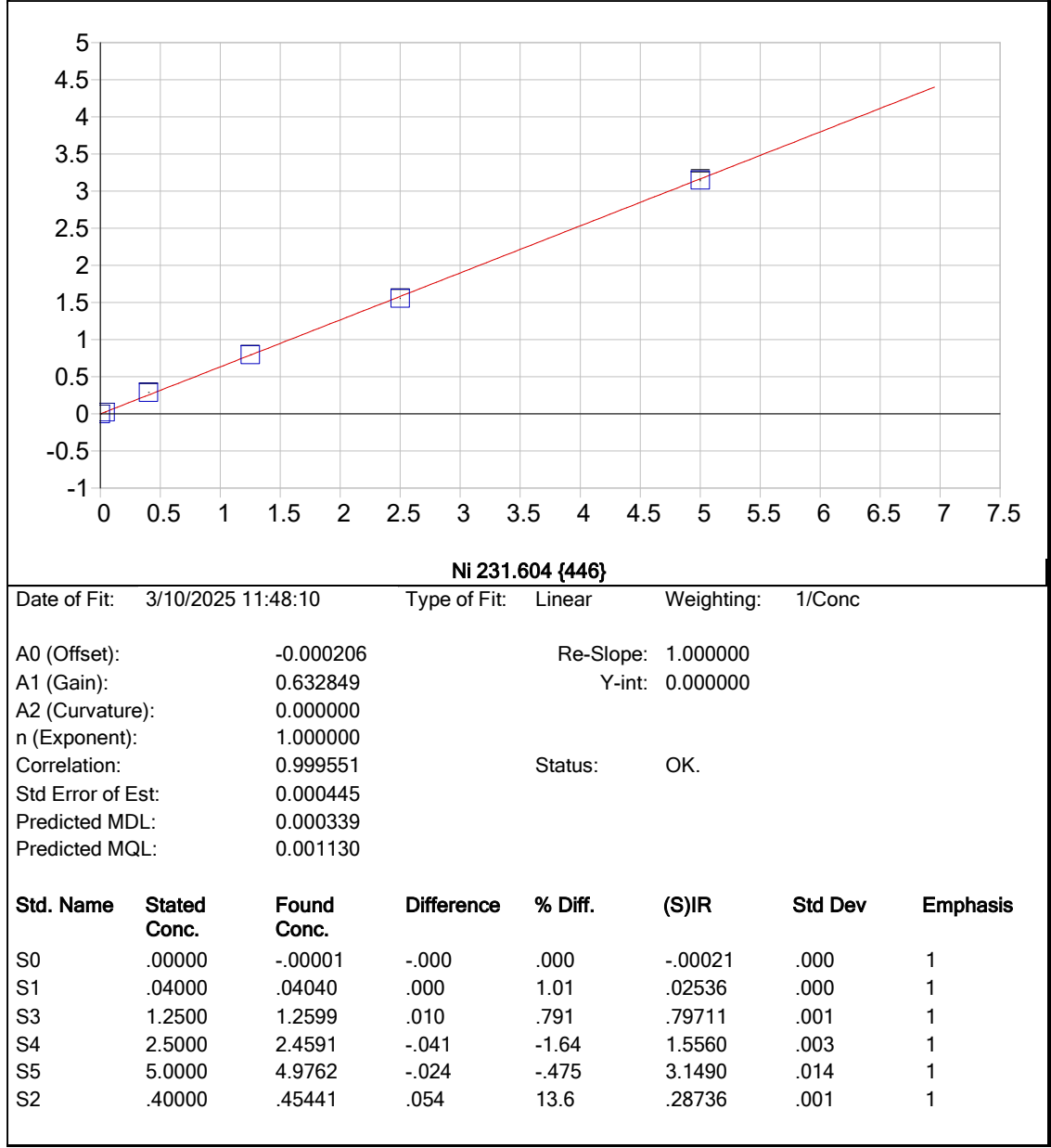
Date of Fit: 3/10/2025 11:48:10 Type of Fit: Linear Weighting: 1/Conc

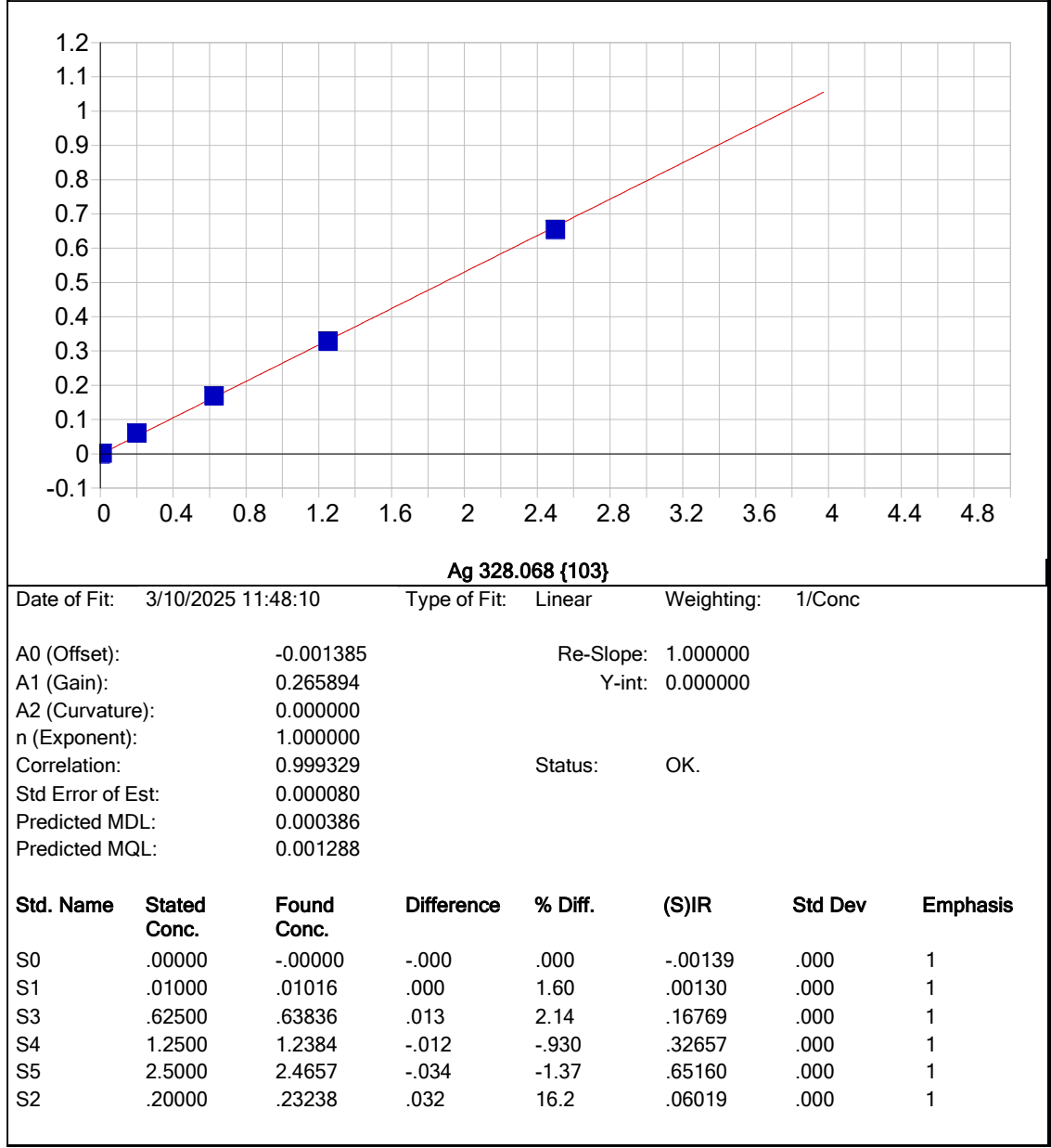
A0 (Offset): 0.000029 Re-Slope: 1.000000
 A1 (Gain): 0.004773 Y-int: 0.000000
 A2 (Curvature): 0.000000
 n (Exponent): 1.000000
 Correlation: 0.999151 Status: OK.
 Std Error of Est: 0.000010
 Predicted MDL: 0.005053
 Predicted MQL: 0.016842

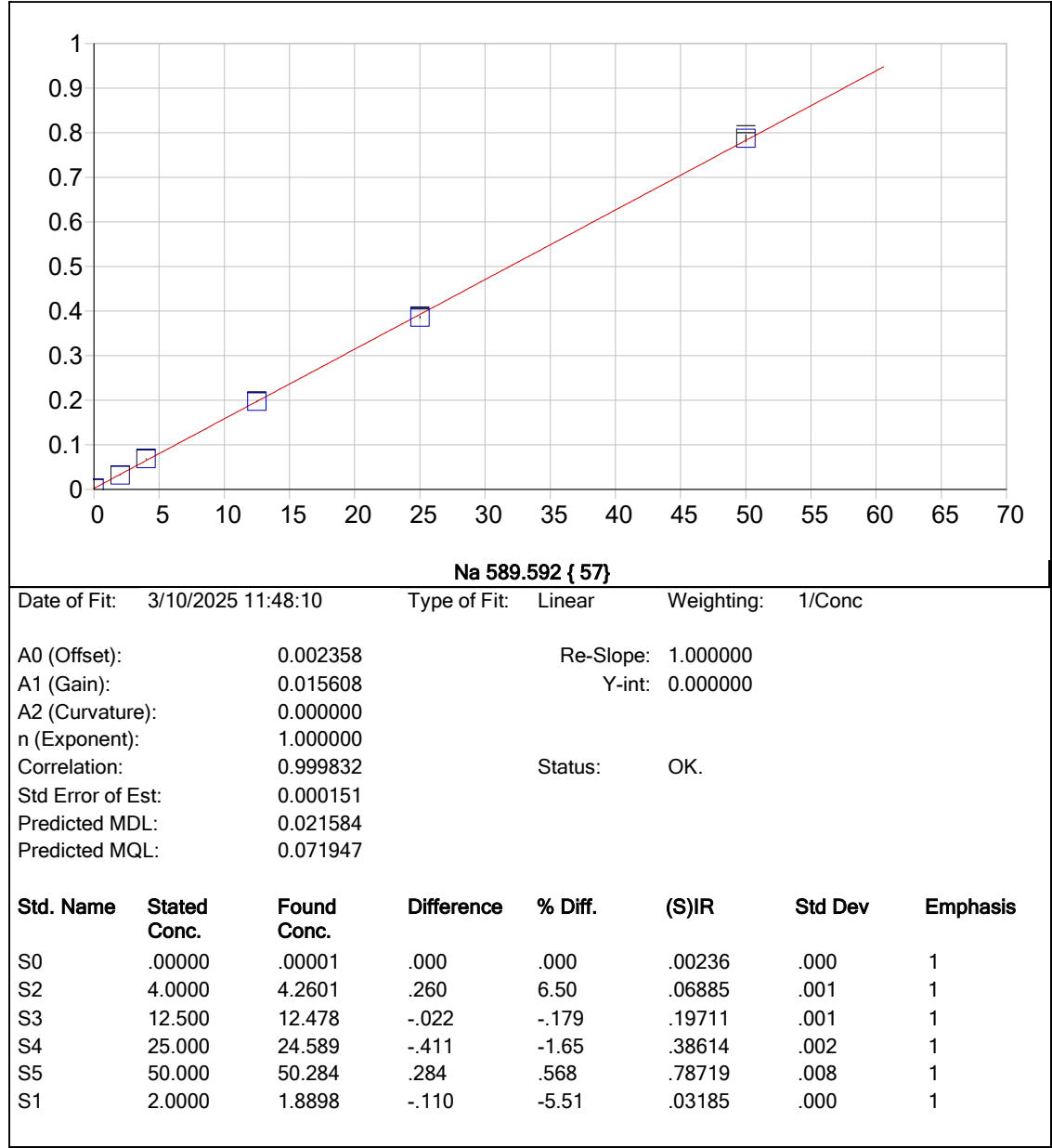
Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00002	-.000	.000	.00003	.000	1
S1	.10000	.10505	.005	5.05	.00052	.000	1
S3	2.5000	2.6279	.128	5.12	.01247	.000	1
S4	5.0000	4.9603	-.040	-.793	.02350	.000	1
S5	10.000	9.7836	-.216	-2.16	.04632	.000	1
S2	.80000	.92309	.123	15.4	.00440	.000	1

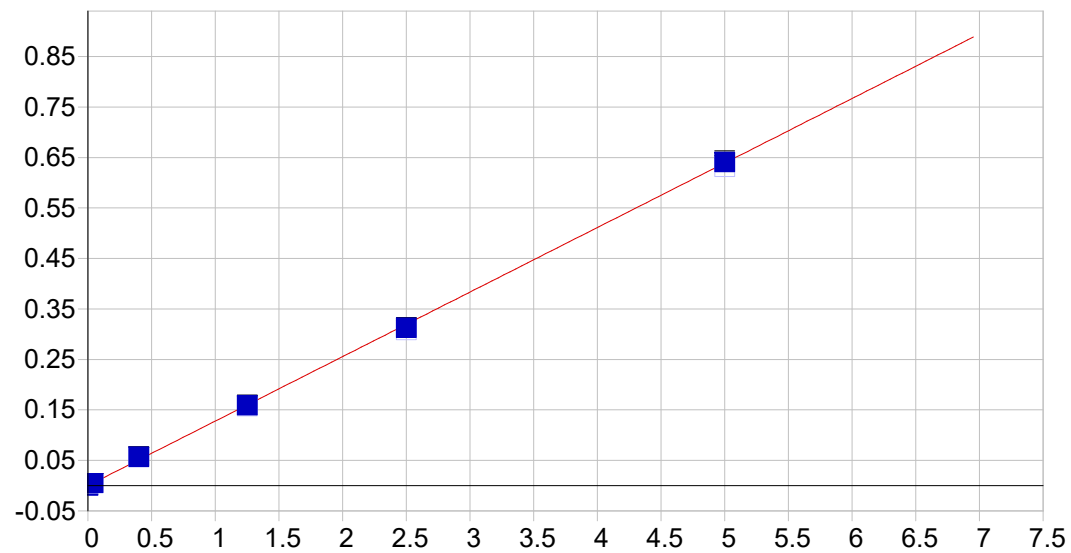










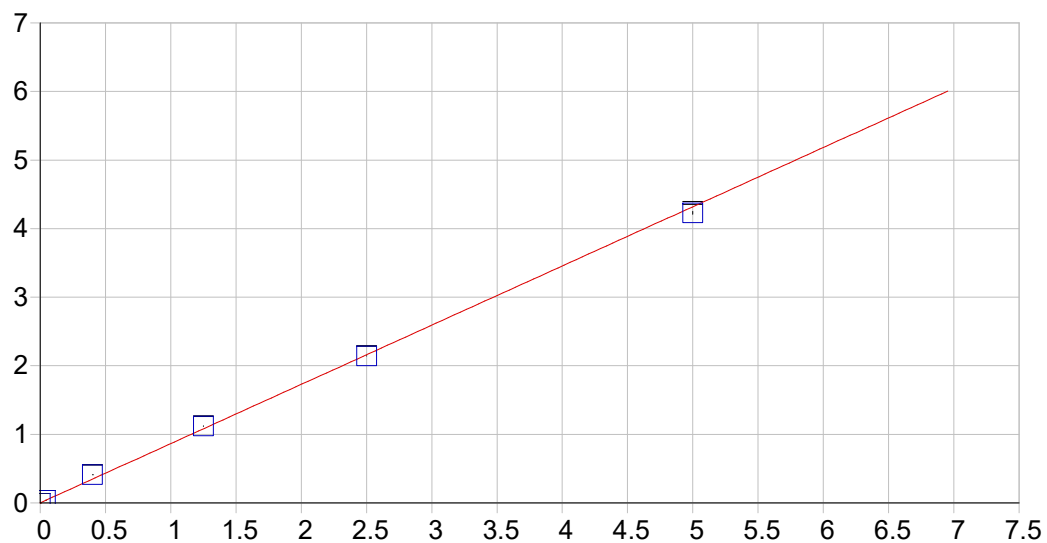


V 292.402 {115}

Date of Fit: 3/10/2025 11:48:10 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset):	0.000077	Re-Slope:	1.000000
A1 (Gain):	0.127789	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999655	Status:	OK.
Std Error of Est:	0.000078		
Predicted MDL:	0.001766		
Predicted MQL:	0.005887		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00008	.000	1
S1	.04000	.03816	-.002	-4.59	.00476	.000	1
S3	1.2500	1.2459	-.004	-.331	.15696	.001	1
S4	2.5000	2.4467	-.053	-2.13	.30808	.001	1
S5	5.0000	5.0151	.015	.302	.63163	.002	1
S2	.40000	.44416	.044	11.0	.05609	.000	1

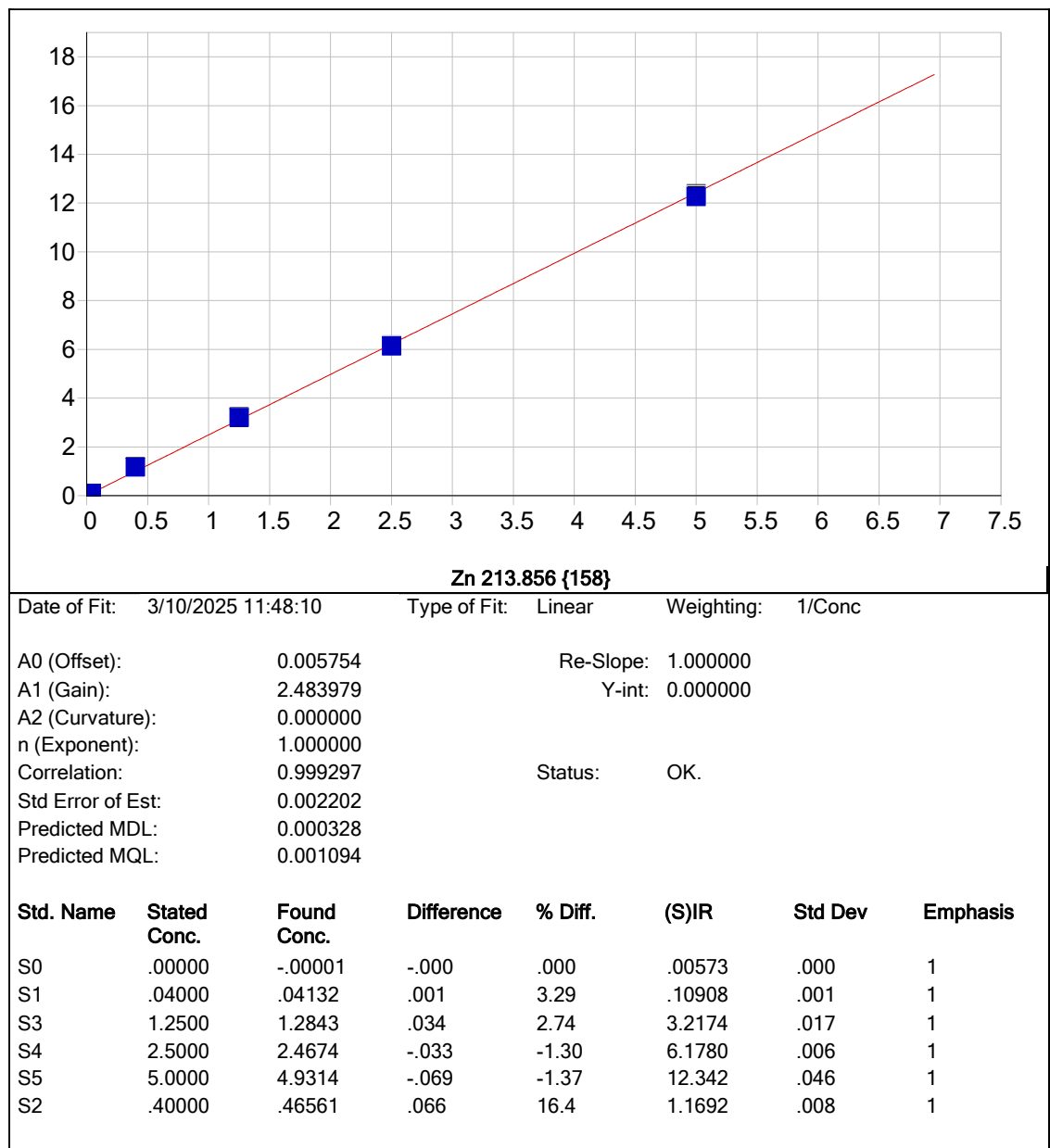


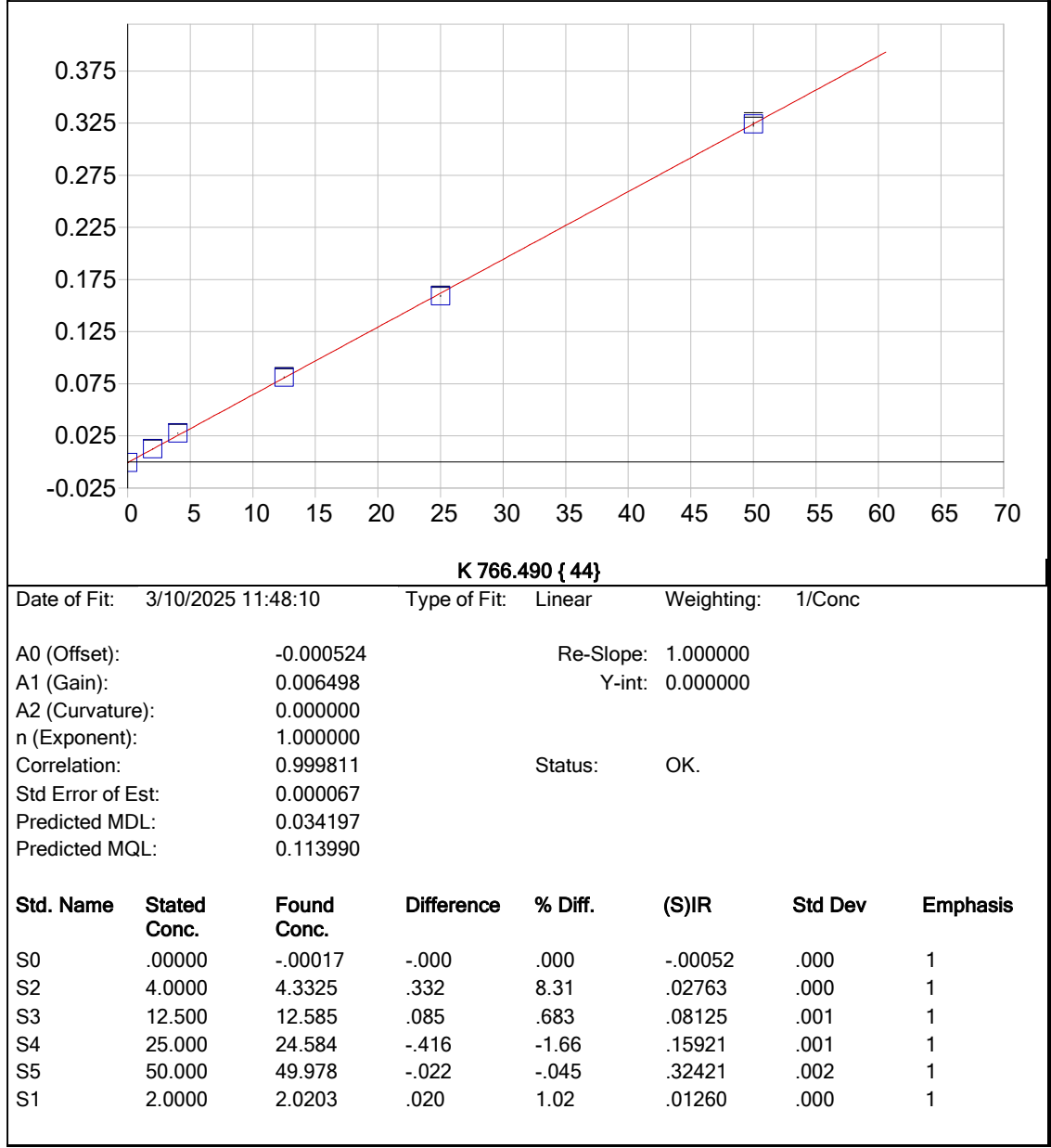
Zn 206.200 {464}

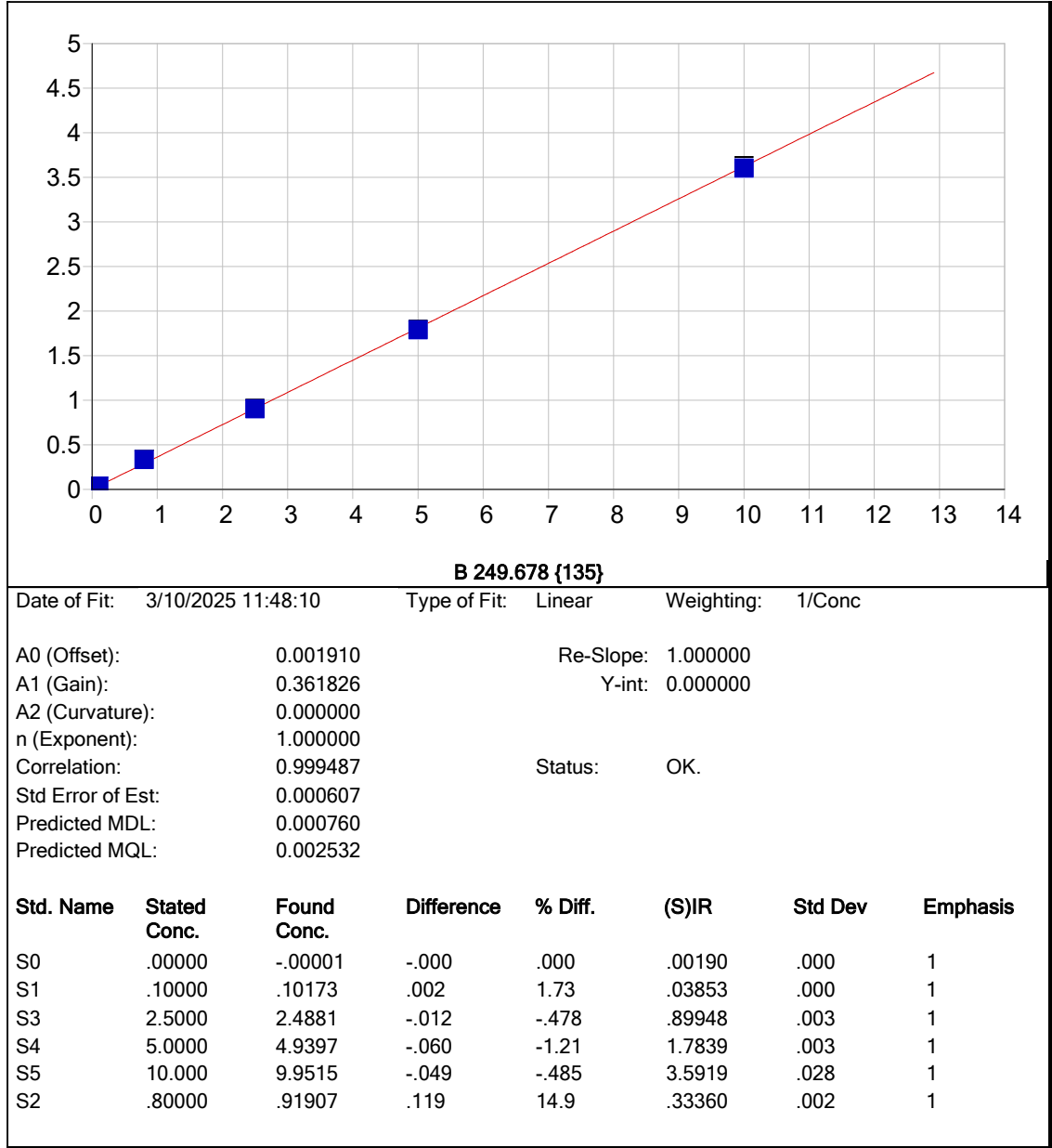
Date of Fit: 3/10/2025 11:48:10 Type of Fit: Linear Weighting: 1/Conc

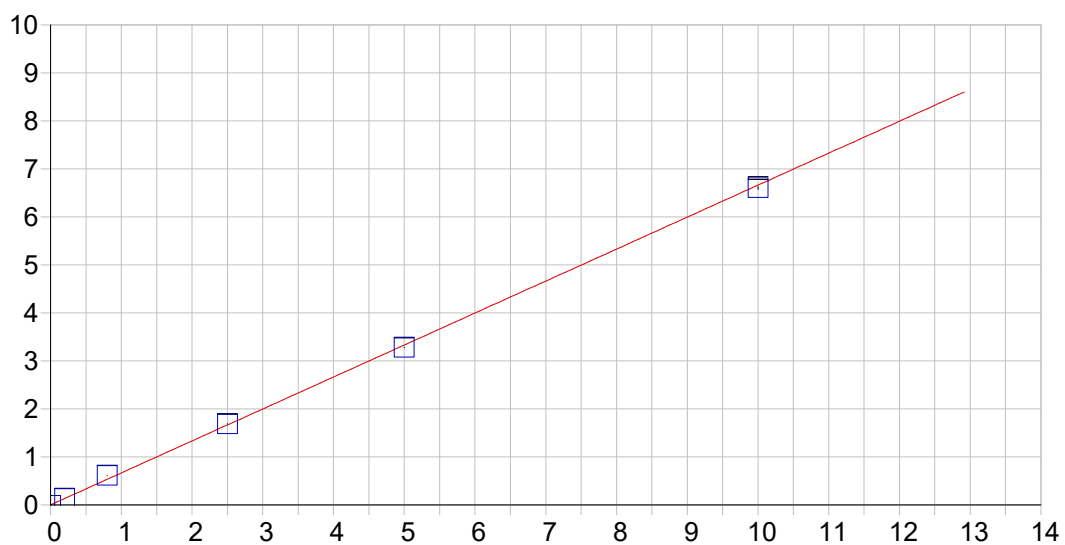
A0 (Offset):	0.001376	Re-Slope:	1.000000
A1 (Gain):	0.863576	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999024	Status:	OK.
Std Error of Est:	0.000896		
Predicted MDL:	0.000203		
Predicted MQL:	0.000676		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00001	-.000	.000	.00137	.000	1
S1	.04000	.04258	.003	6.44	.03814	.000	1
S3	1.2500	1.2953	.045	3.62	1.1199	.003	1
S4	2.5000	2.4811	-.019	-.755	2.1440	.003	1
S5	5.0000	4.8966	-.103	-2.07	4.2299	.023	1
S2	.40000	.47449	.074	18.6	.41114	.001	1







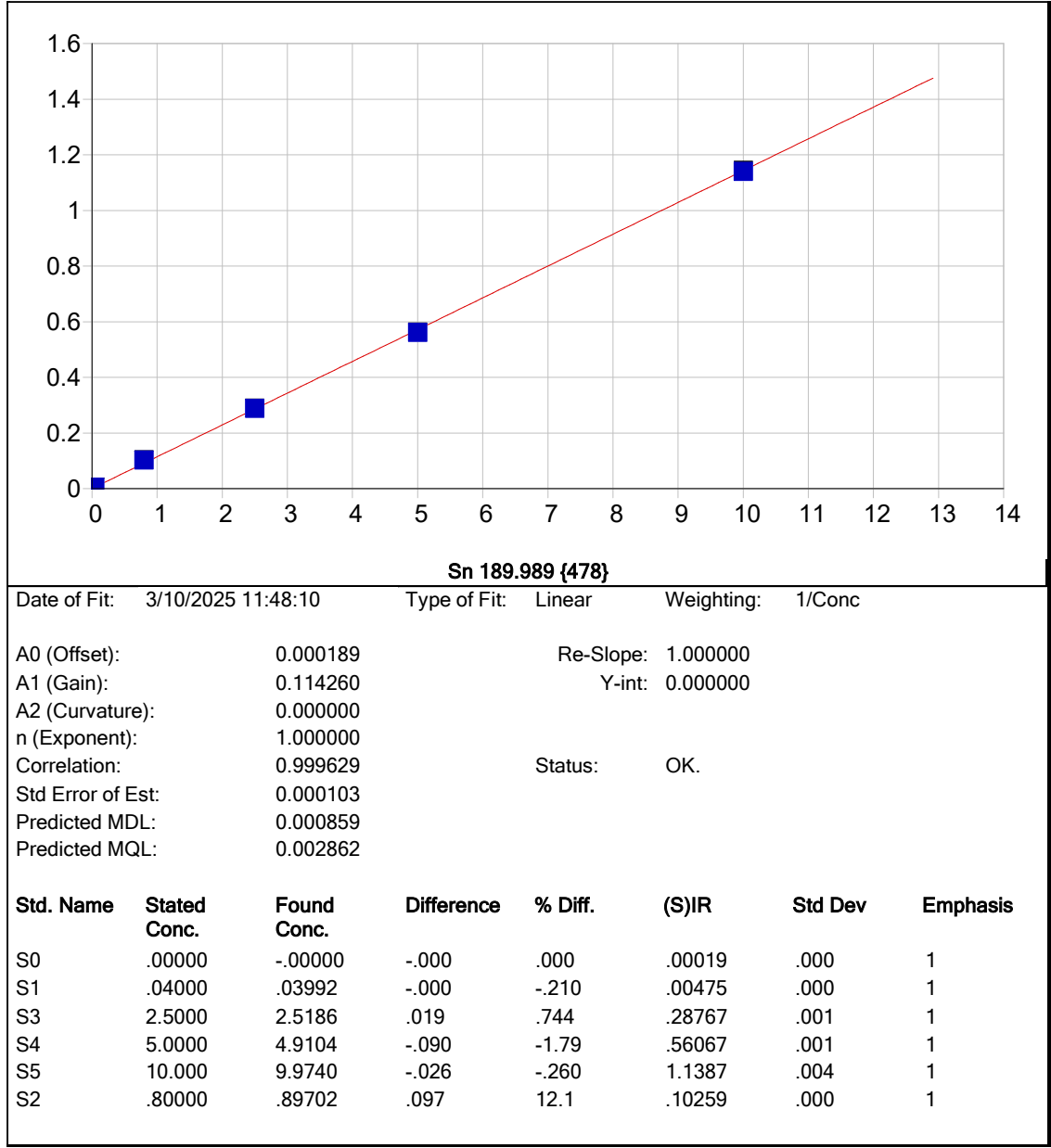


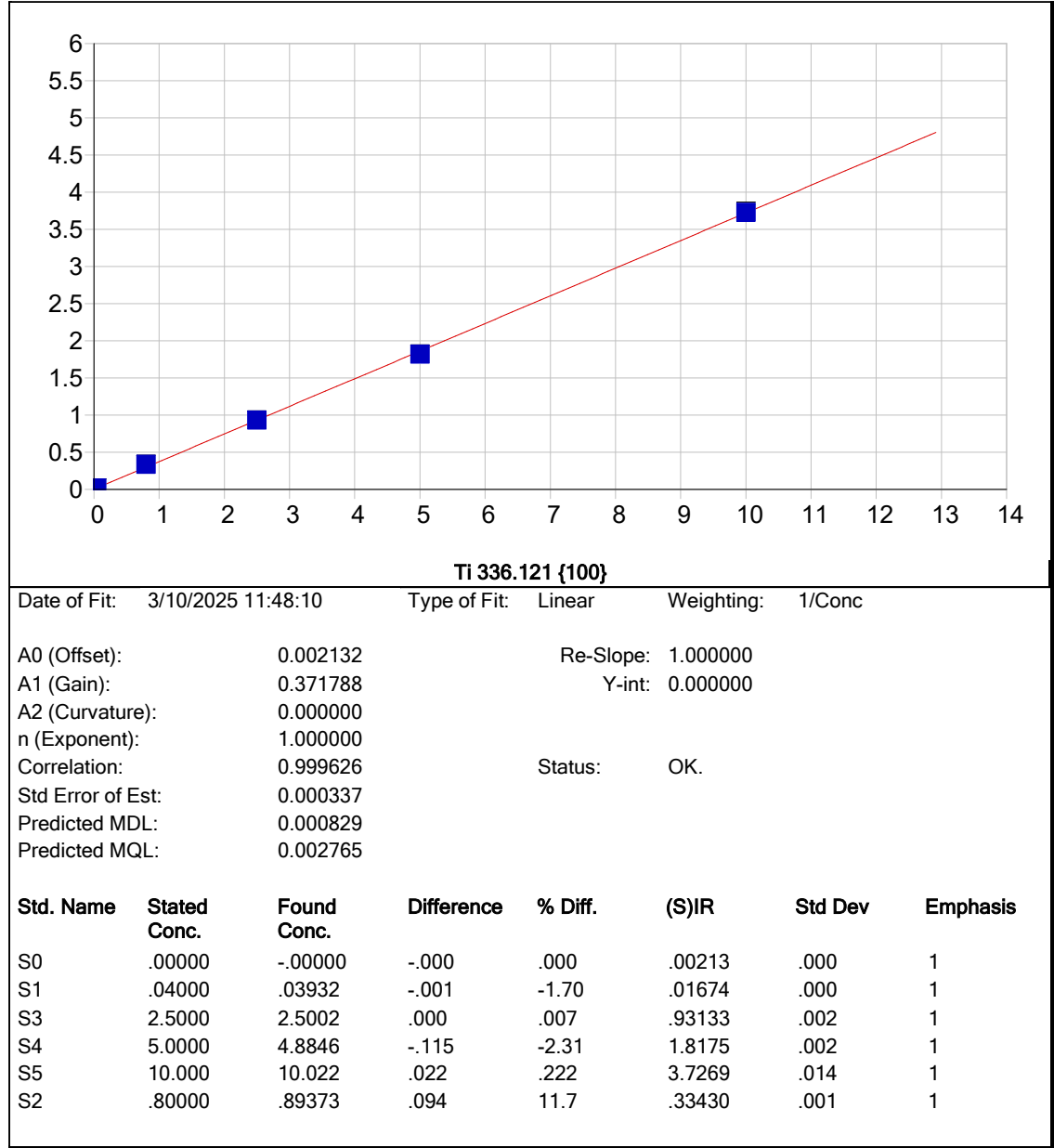
Mo 202.030 {467}

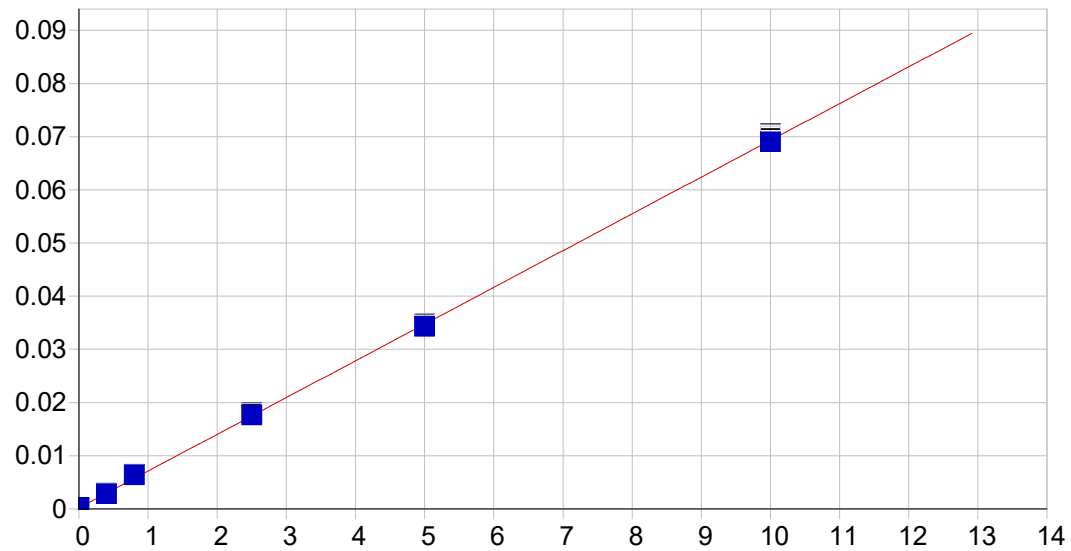
Date of Fit: 3/10/2025 11:48:10 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset): 0.000213 Re-Slope: 1.000000
 A1 (Gain): 0.666153 Y-int: 0.000000
 A2 (Curvature): 0.000000
 n (Exponent): 1.000000
 Correlation: 0.999405 Status: OK.
 Std Error of Est: 0.001712
 Predicted MDL: 0.000275
 Predicted MQL: 0.000917

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00003	-.000	.000	.00019	.000	1
S1	.20000	.20475	.005	2.37	.13661	.001	1
S3	2.5000	2.5335	.034	1.34	1.6879	.004	1
S4	5.0000	4.9218	-.078	-1.56	3.2789	.008	1
S5	10.000	9.9150	-.085	-.850	6.6051	.031	1
S2	.80000	.92498	.125	15.6	.61639	.001	1





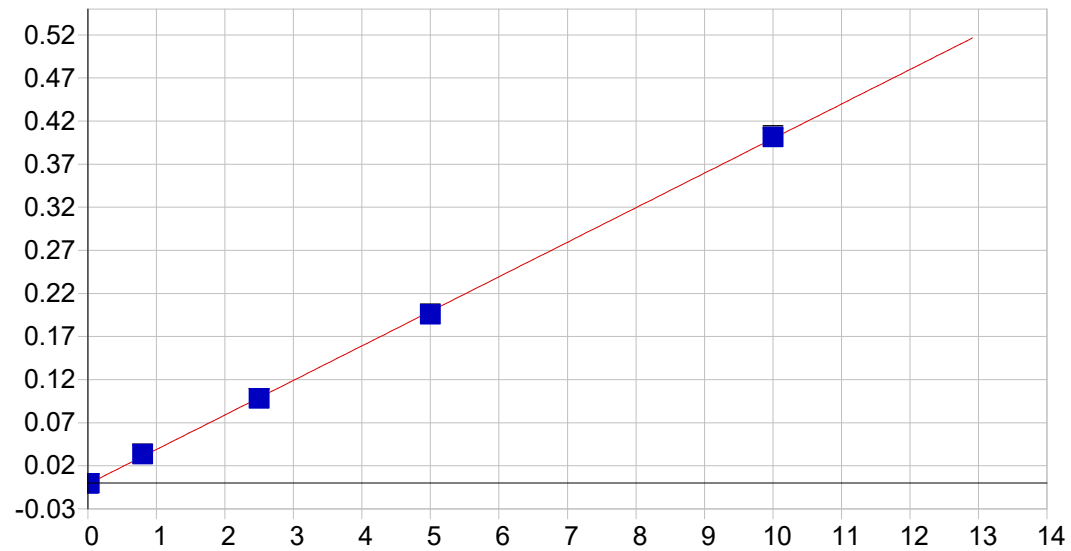


Si 288.158 {117}

Date of Fit: 3/10/2025 11:48:10 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset): 0.000212 Re-Slope: 1.000000
 A1 (Gain): 0.006909 Y-int: 0.000000
 A2 (Curvature): 0.000000
 n (Exponent): 1.000000
 Correlation: 0.999664 Status: OK.
 Std Error of Est: 0.000019
 Predicted MDL: 0.007194
 Predicted MQL: 0.023981

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00003	-.000	.000	.00021	.000	1
S1	.40000	.38241	-.018	-4.40	.00286	.000	1
S3	2.5000	2.5256	.026	1.02	.01792	.000	1
S4	5.0000	4.9346	-.065	-1.31	.03483	.000	1
S5	10.000	9.9638	-.036	-.362	.07009	.000	1
S2	.80000	.89337	.093	11.7	.00647	.000	1

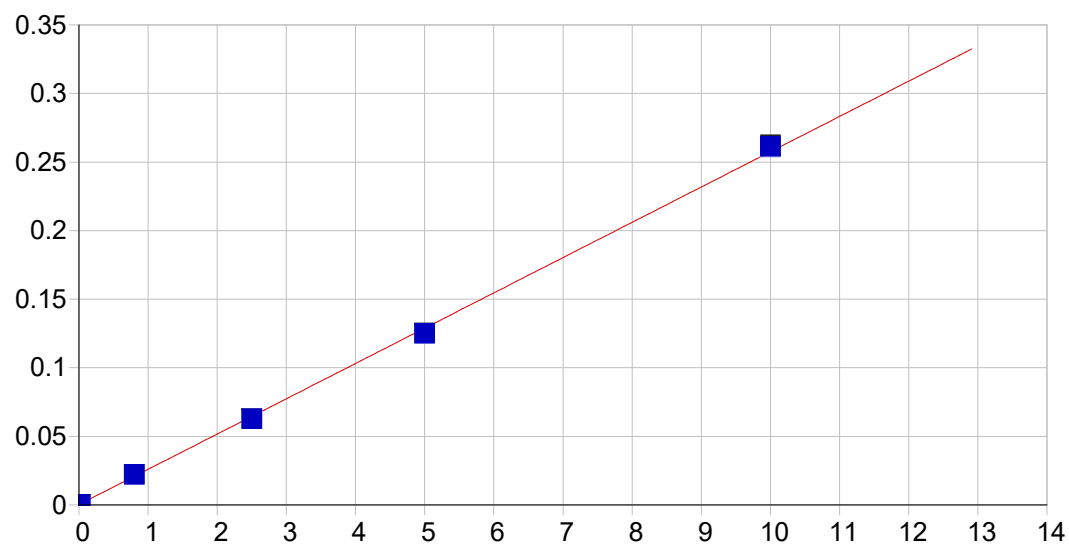


P 177.495 {490}

Date of Fit: 3/10/2025 11:48:10 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset): -0.001180 Re-Slope: 1.000000
A1 (Gain): 0.040086 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999807 Status: OK.
Std Error of Est: 0.000018
Predicted MDL: 0.002613
Predicted MQL: 0.008710

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00118	.000	1
S1	.02000	.01962	-.000	-1.91	-.00039	.000	1
S3	2.5000	2.4741	-.026	-1.04	.09798	.000	1
S4	5.0000	4.9150	-.085	-1.70	.19581	.000	1
S5	10.000	10.047	.047	.474	.40152	.001	1
S2	.80000	.86393	.064	7.99	.03345	.000	1

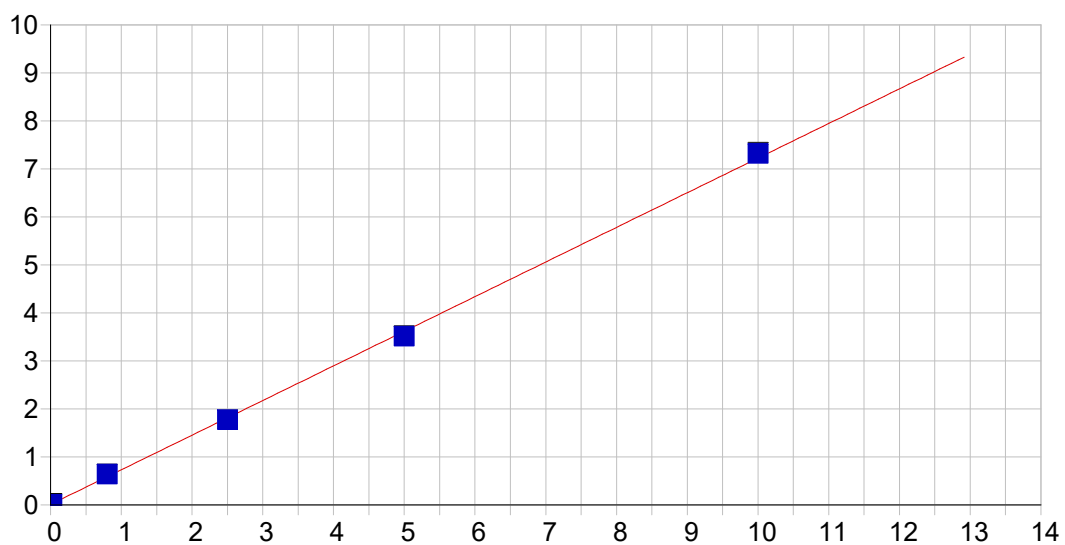


S 182.034 {485}

Date of Fit: 3/10/2025 11:48:10 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset):	0.000206	Re-Slope:	1.000000
A1 (Gain):	0.025730	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999671	Status:	OK.
Std Error of Est:	0.000015		
Predicted MDL:	0.003539		
Predicted MQL:	0.011795		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00021	.000	1
S1	.02000	.02160	.002	7.99	.00074	.000	1
S3	2.5000	2.4355	-.064	-2.58	.06270	.000	1
S4	5.0000	4.8562	-.144	-2.88	.12482	.000	1
S5	10.000	10.152	.152	1.52	.26074	.001	1
S2	.80000	.85502	.055	6.88	.02215	.000	1

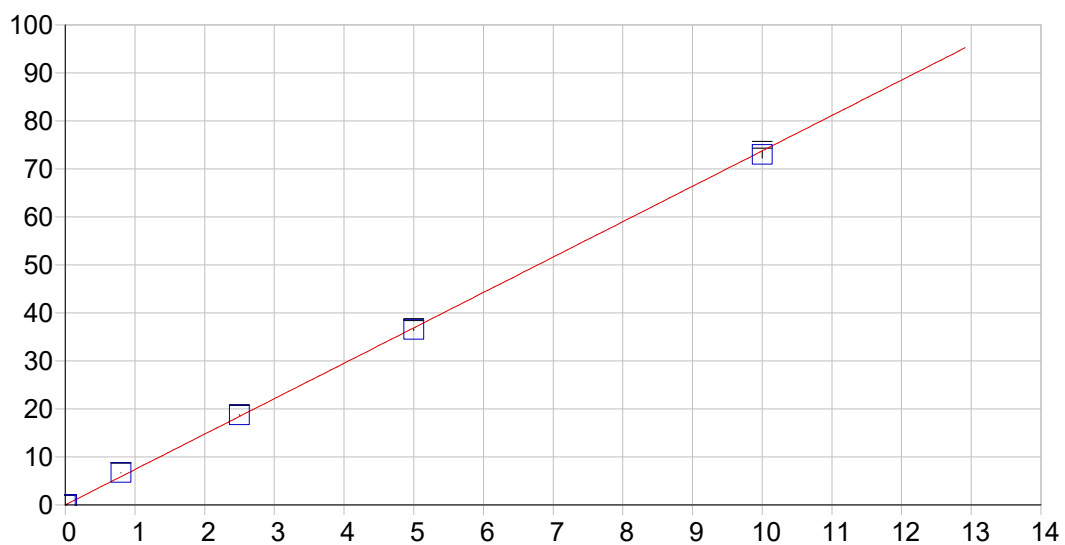


Li 670.784 { 50}

Date of Fit: 3/10/2025 11:48:10 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset): 0.009923 Re-Slope: 1.000000
 A1 (Gain): 0.721515 Y-int: 0.000000
 A2 (Curvature): 0.000000
 n (Exponent): 1.000000
 Correlation: 0.999624 Status: OK.
 Std Error of Est: 0.000464
 Predicted MDL: 0.001332
 Predicted MQL: 0.004442

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00992	.000	1
S5	10.000	10.135	.135	1.35	7.3258	.019	1
S4	5.0000	4.8573	-.143	-2.85	3.5163	.005	1
S3	2.5000	2.4409	-.059	-2.36	1.7720	.003	1
S1	.02000	.01719	-.003	-14.0	.02256	.001	1
S2	.80000	.86995	.070	8.74	.63789	.004	1

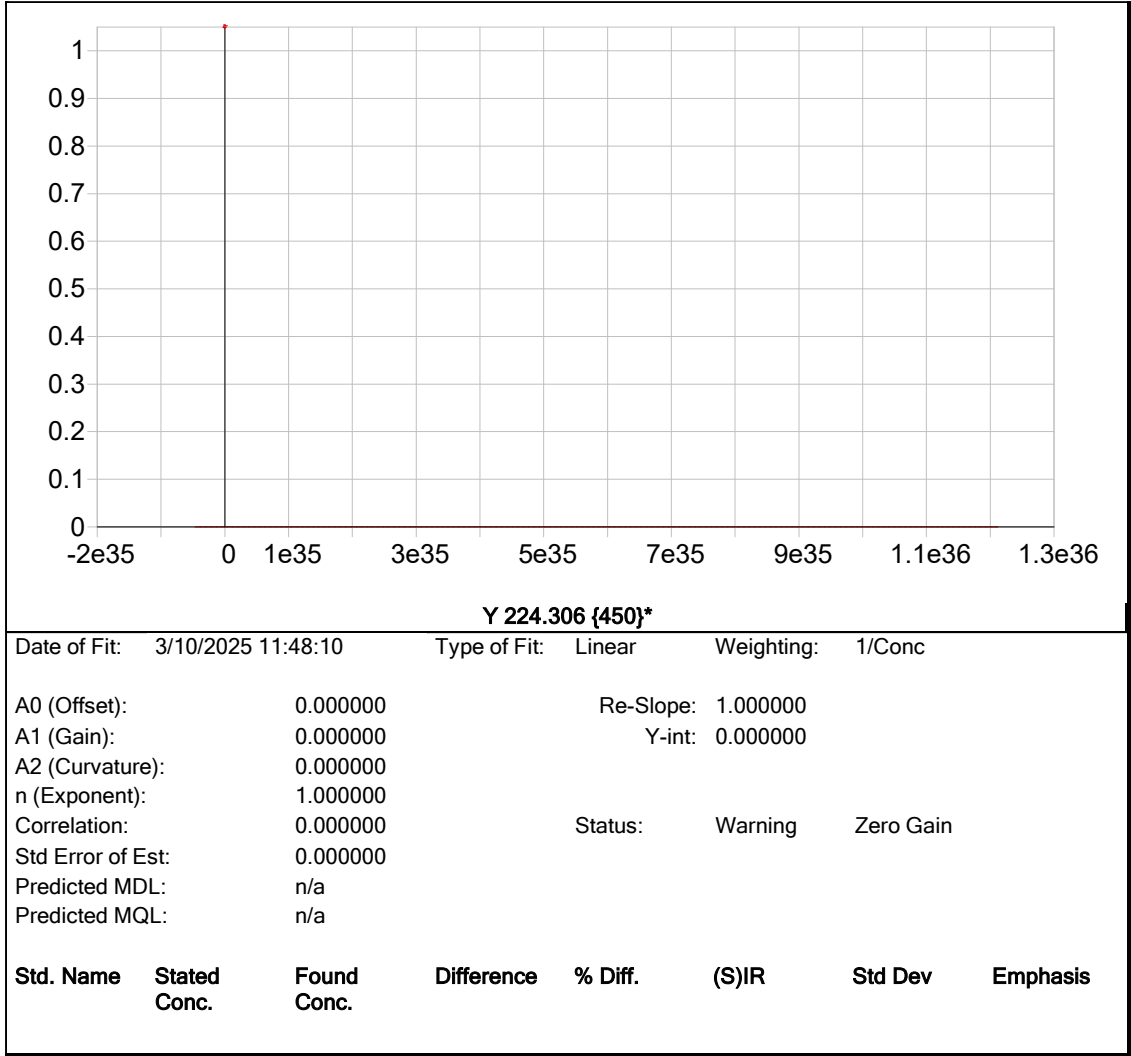


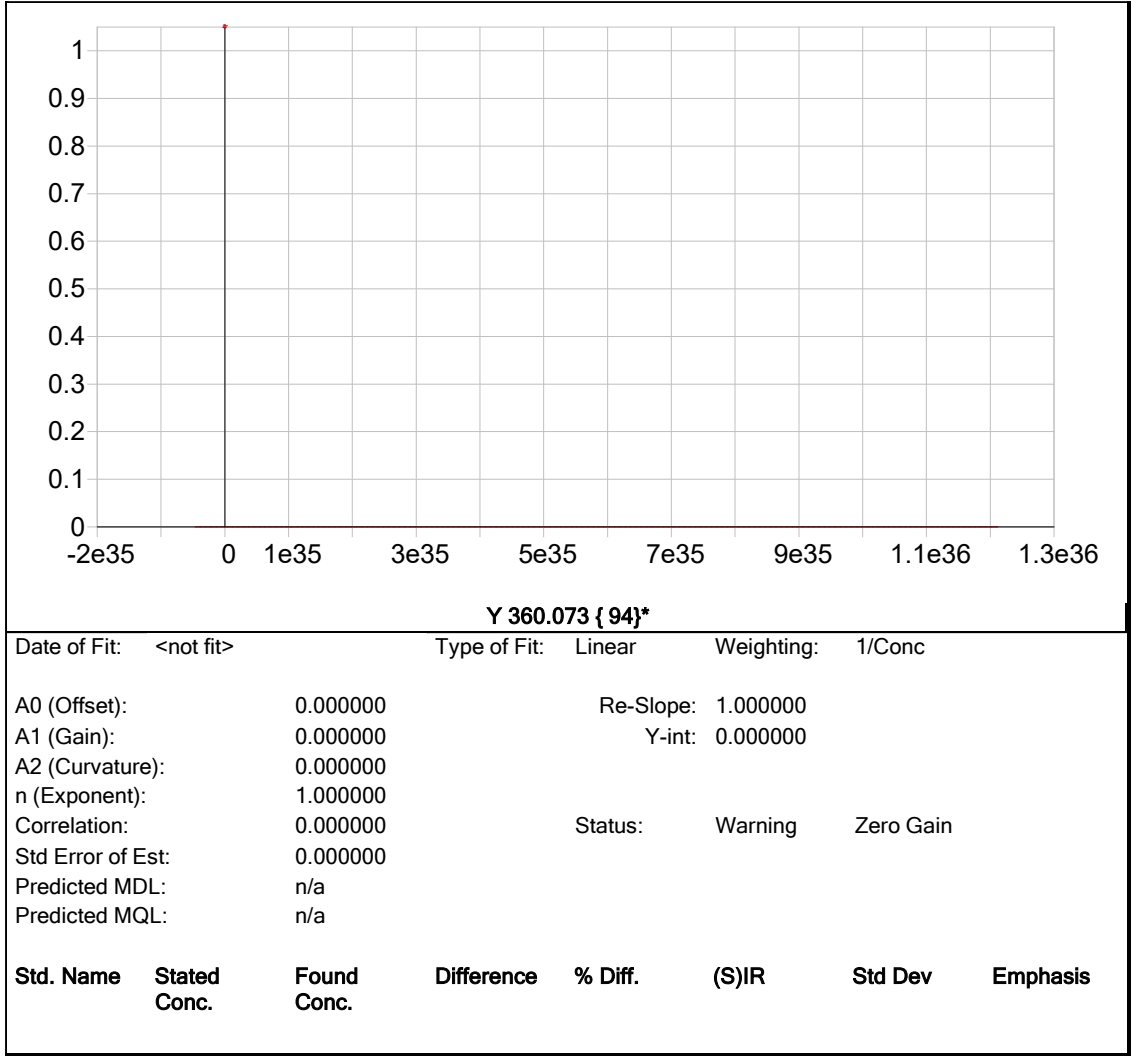
Sr 407.771 { 83}

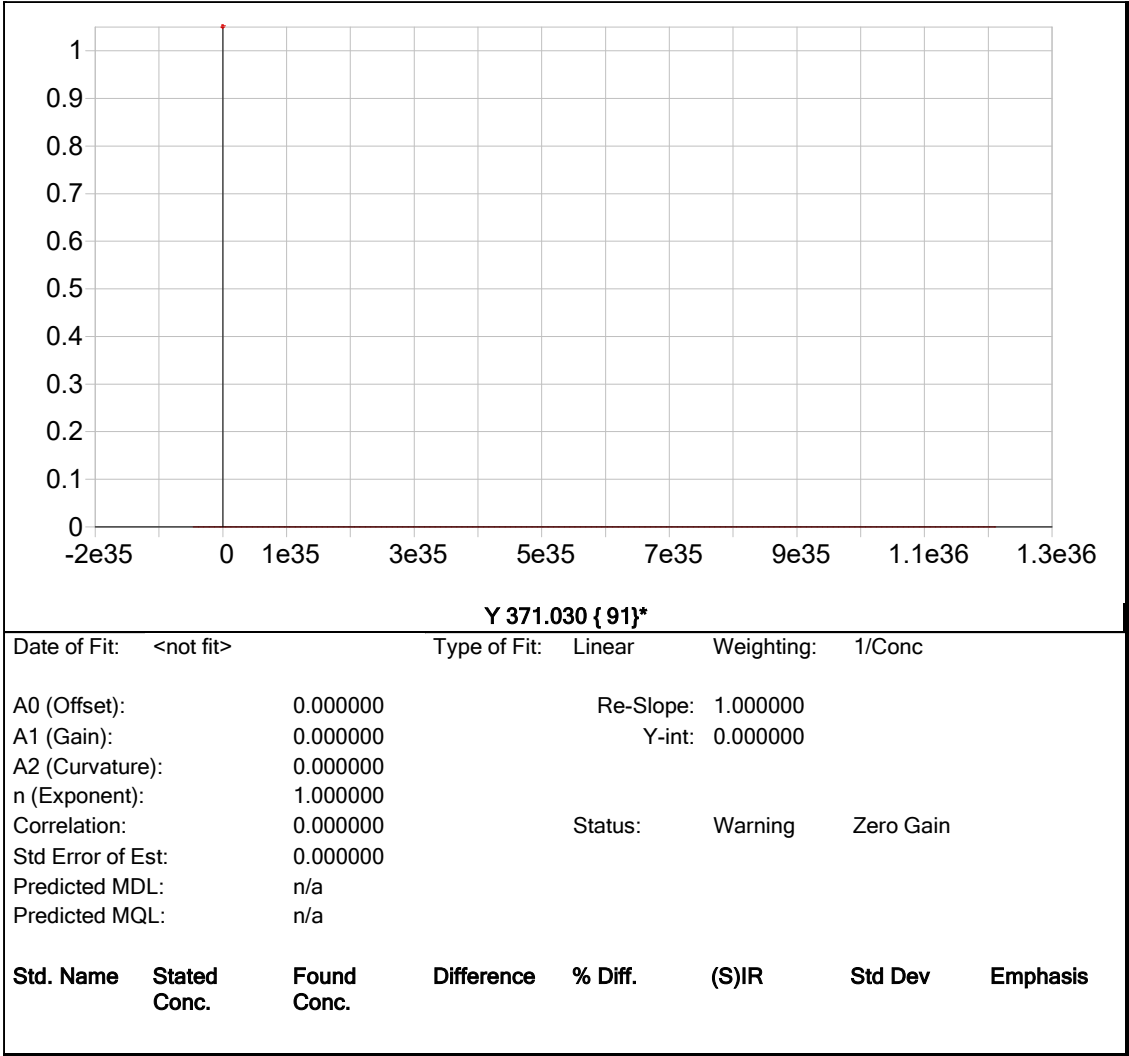
Date of Fit: 3/10/2025 11:48:10 Type of Fit: Linear Weighting: 1/Conc

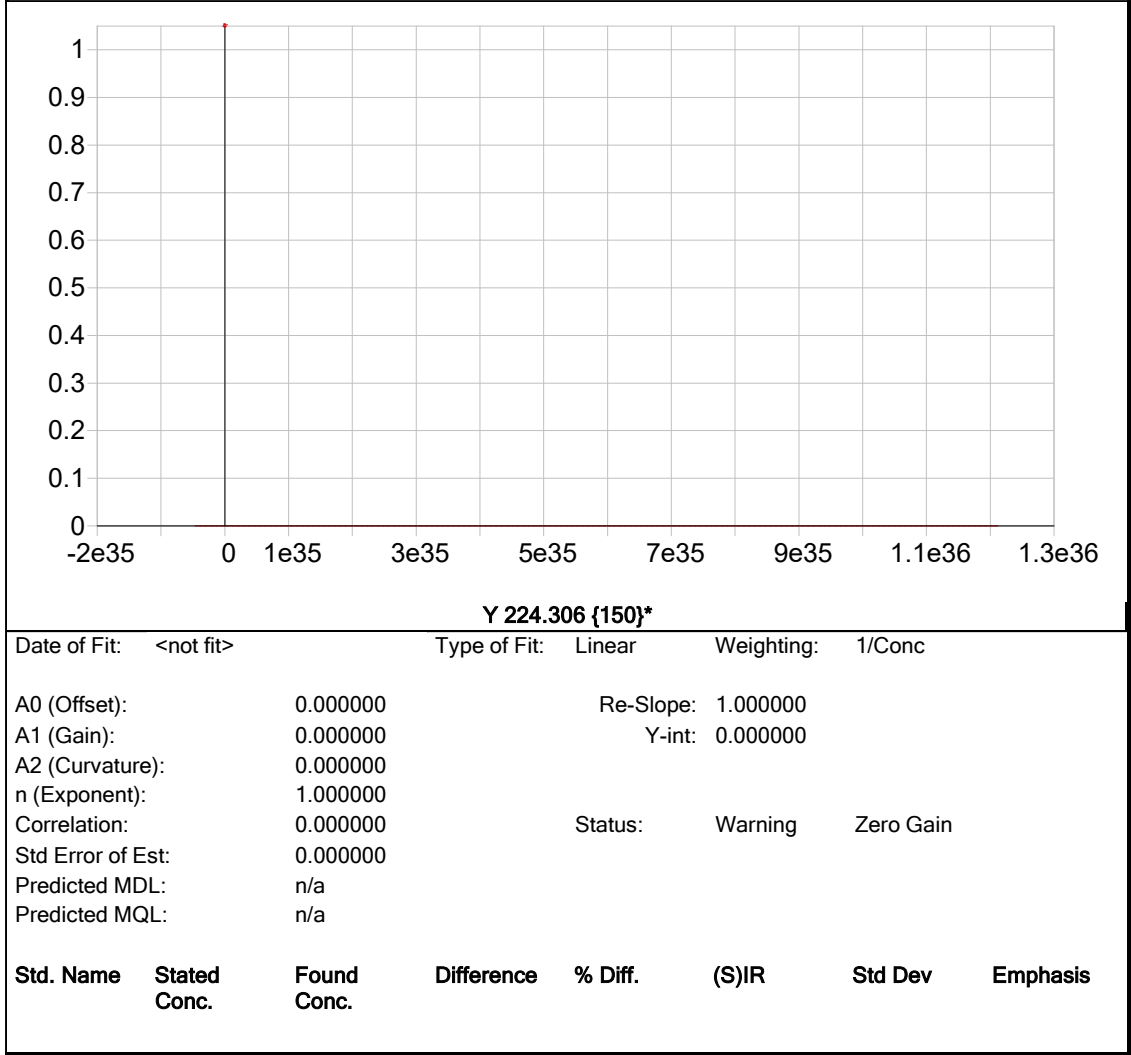
A0 (Offset): 0.000476 Re-Slope: 1.000000
 A1 (Gain): 7.375086 Y-int: 0.000000
 A2 (Curvature): 0.000000
 n (Exponent): 1.000000
 Correlation: 0.999527 Status: OK.
 Std Error of Est: 0.005314
 Predicted MDL: 0.000084
 Predicted MQL: 0.000281

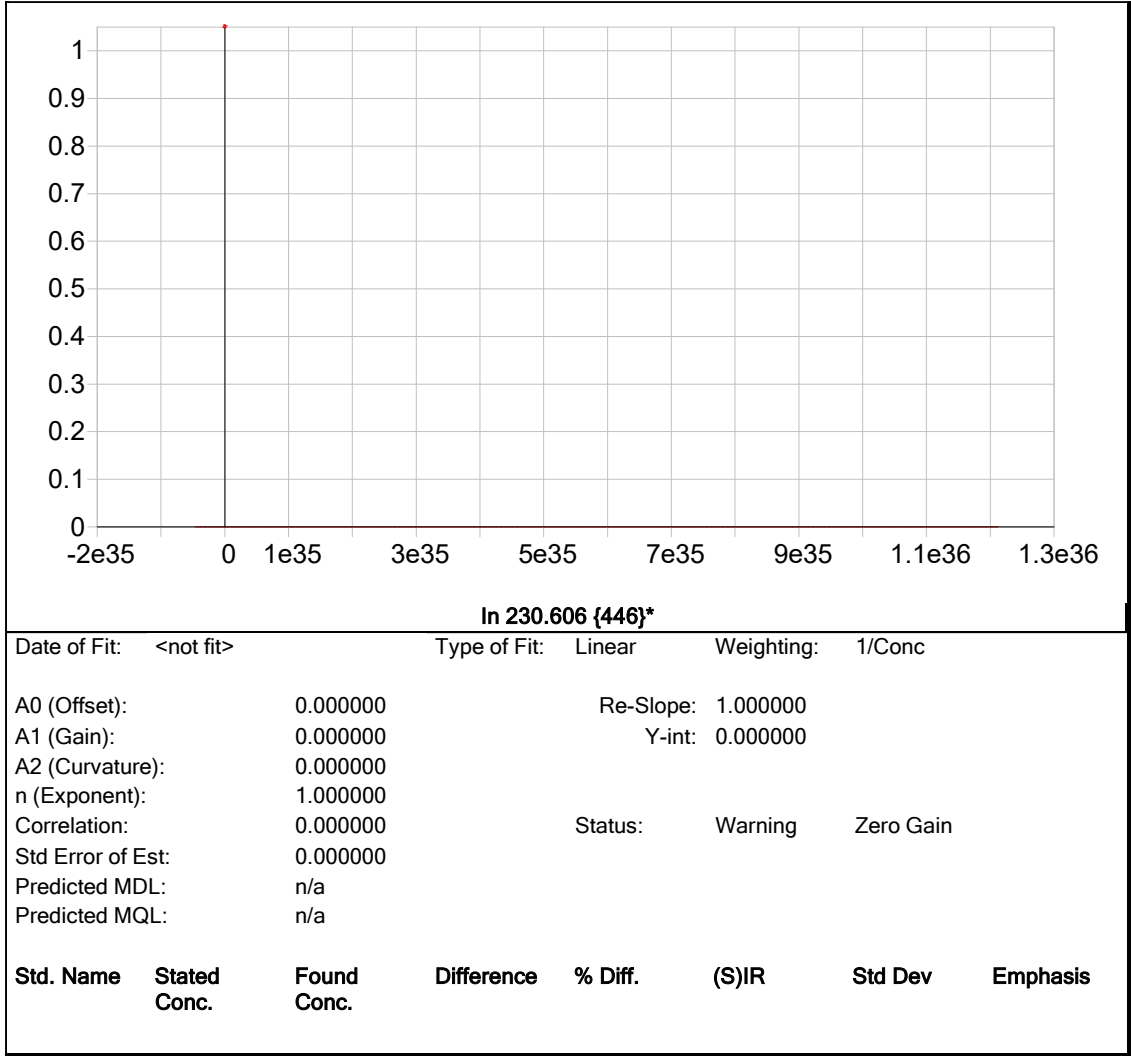
Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00046	.000	1
S1	.02000	.01966	-.000	-1.71	.14545	.001	1
S3	2.5000	2.5411	.041	1.65	18.742	.053	1
S4	5.0000	4.9543	-.046	-.914	36.539	.200	1
S5	10.000	9.8949	-.105	-1.05	72.976	.699	1
S2	.80000	.90999	.110	13.7	6.7117	.038	1











SOP ID : M200.7-Trace Elements-22

SDG No : N/A

Matrix : WATER

Pipette ID: ICP A

Balance ID : N/A

Filter paper ID : N/A

pH Strip ID : M6069

Hood ID : #3

Block ID: 1. HOT BLOCK #1 2. N/A

Start Digest Date: 02/28/2025 Time : 08:45 Temp : 96 °C

End Digest Date: 02/28/2025 Time : 11:50 Temp : 96 °C

Digestion tube ID: M5595

Block thermometer ID: MET-DIG. #1

Dig Technician Signature: *[Signature]*

Supervisor Signature: *[Signature]*

Temp : 1. 96°C 2. N/A

Standard Name	MLS USED	STD REF. # FROM LOG
LFS-1	0.25	M6003
LFS-2	0.25	M6011
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	MP84041
1:1 HCL	0.50	MP84297
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:

HOT BLOCK #1 CELL # 55 : 96 C

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
02/28/25 12:50	<i>[Signature]</i> met dig.	<i>[Signature]</i> (met lab)
	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
PB166926BL	PBW926	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	8
PB166926BS	LCS926	<2	50	25	Colorless	Colorless	Clear	Clear	M6003,M6011	9
Q1429-01MS	OUTFALL-DSN-001MS	<2	50	25	Colorless	Colorless	Clear	Clear	M6003,M6011	12
Q1429-01MSD	OUTFALL-DSN-001MSD	<2	50	25	Colorless	Colorless	Clear	Clear	M6003,M6011	13
Q1429-01DUP	OUTFALL-DSN-001DUP	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	11
Q1429-01	OUTFALL-DSN-001	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	10
Q1429-02	OUTFALL-DSN-002	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	14
Q1439-01	LRSA-MOD	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	15
Q1456-02	EFF-WASTE WATER	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	16

WORKLIST(Hardcopy Internal Chain)

Worklist Name : PB166926

Worklist ID : 187955

Department : Digestion

Date : 02-28-2025 08:20:37

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q1429-01	OUTFALL-DSN-001	Water	Metals Group3	1:1 HNO3 to pH < 2	TRIS02	D11	02/25/2025	200.7
Q1429-02	OUTFALL-DSN-002	Water	Metals Group3	1:1 HNO3 to pH < 2	TRIS02	D11	02/25/2025	200.7
Q1439-01	LRSA-MOD	Water	Metals ICP-Group1	1:1 HNO3 to pH < 2	PSEG04	H33	02/26/2025	200.7
Q1456-02	EFF-WASTE WATER	Water	Metals ICP-Group	1:1 HNO3 to pH < 2	ARDM01	H11	02/27/2025	200.7

Date/Time 02/28/25 8:40

Raw Sample Received by: SPS met d13

Raw Sample Relinquished by: SPS met

Date/Time 02/28/25 9:40

Raw Sample Received by: SPS met

Raw Sample Relinquished by: SPS met-d19

Instrument ID: P4

Daily Analysis Runlog For Sequence/QC Batch ID # LB134881

Review By	kareem	Review On	3/4/2025 12:24:05 PM
Supervise By	Mohan	Supervise On	3/5/2025 4:17:58 PM
STD. NAME	STD REF.#		
ICAL Standard	MP84636,MP84637,MP84638,MP84639,MP84640,MP84642		
ICV Standard	MP84643		
CCV Standard	MP84646		
ICSA Standard	MP84644,MP84721		
CRI Standard	MP84642		
LCS Standard			
Chk Standard	MP84649,MP84650		

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	S0	S0	CAL1	03/03/25 18:26		Kareem	OK
2	S1	S1	CAL2	03/03/25 18:31		Kareem	OK
3	S2	S2	CAL3	03/03/25 18:35		Kareem	OK
4	S3	S3	CAL4	03/03/25 18:39		Kareem	OK
5	S4	S4	CAL5	03/03/25 18:43		Kareem	OK
6	S5	S5	CAL6	03/03/25 18:47		Kareem	OK
7	ICV01	ICV01	ICV	03/03/25 19:17	ICV Fail for K,Na (200.7)	Kareem	OK
8	LLICV01	LLICV01	LLICV	03/03/25 19:21		Kareem	OK
9	ICB01	ICB01	ICB	03/03/25 19:25		Kareem	OK
10	CRI01	CRI01	CRDL	03/03/25 19:30		Kareem	OK
11	ICSA01	ICSA01	ICSA	03/03/25 19:34		Kareem	OK
12	ICSAB01	ICSAB01	ICSAB	03/03/25 19:38		Kareem	OK
13	ICSADL	ICSADL	ICSA	03/03/25 19:42		Kareem	OK
14	ICSABDL	ICSABDL	ICSAB	03/03/25 19:46		Kareem	OK
15	CCV01	CCV01	CCV	03/03/25 19:57		Kareem	OK
16	CCB01	CCB01	CCB	03/03/25 20:01		Kareem	OK
17	Q1420-04	TP-1-WC	SAM	03/03/25 20:05		Kareem	OK
18	Q1420-08	TP-2-WC	SAM	03/03/25 20:09		Kareem	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QC Batch ID # LB134881

Review By	kareem	Review On	3/4/2025 12:24:05 PM
Supervise By	Mohan	Supervise On	3/5/2025 4:17:58 PM

STD. NAME	STD REF.#
ICAL Standard	MP84636,MP84637,MP84638,MP84639,MP84640,MP84642
ICV Standard	MP84643
CCV Standard	MP84646
ICSA Standard	MP84644,MP84721
CRI Standard	MP84642
LCS Standard	
Chk Standard	MP84649,MP84650

19	Q1442-01	280	SAM	03/03/25 20:14		Kareem	OK
20	Q1442-02	281	SAM	03/03/25 20:18		Kareem	OK
21	Q1443-01	3733	SAM	03/03/25 20:23		Kareem	OK
22	Q1447-02	WC1	SAM	03/03/25 20:27		Kareem	OK
23	PB166879TB	PB166879TB	MB	03/03/25 20:55		Kareem	OK
24	CCV02	CCV02	CCV	03/03/25 21:12		Kareem	OK
25	CCB02	CCB02	CCB	03/03/25 21:16		Kareem	OK
26	Q1457-01	HR-0-02272025	SAM	03/03/25 21:21		Kareem	OK
27	Q1420-01	TP-1-WC	SAM	03/03/25 21:25		Kareem	OK
28	Q1420-05	TP-2-WC	SAM	03/03/25 21:29		Kareem	OK
29	Q1457-01DUP	HR-0-02272025DUP	DUP	03/03/25 21:33		Kareem	OK
30	Q1457-01L	HR-0-02272025L	SD	03/03/25 21:37		Kareem	OK
31	Q1457-01MS	HR-0-02272025MS	MS	03/03/25 21:41	0.1 ML M6003 AND M6011	Kareem	OK
32	LR1	LR1	HIGH STD	03/03/25 21:45		Kareem	OK
33	LR2	LR2	HIGH STD	03/03/25 21:50		Kareem	OK
34	Q1457-01MSD	HR-0-02272025MSD	MSD	03/03/25 21:55	0.1 ML M6003 AND M6011	Kareem	OK
35	Q1457-01A	HR-0-02272025A	PS	03/03/25 21:59	0.1 ML M6003 AND M6011	Kareem	OK
36	CCV03	CCV03	CCV	03/03/25 22:02		Kareem	OK
37	CCB03	CCB03	CCB	03/03/25 22:24		Kareem	OK
38	Q1439-01	LRSA-MOD	SAM	03/03/25 22:28		Kareem	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QC Batch ID # LB134881

Review By	kareem	Review On	3/4/2025 12:24:05 PM
Supervise By	Mohan	Supervise On	3/5/2025 4:17:58 PM
STD. NAME	STD REF.#		
ICAL Standard	MP84636,MP84637,MP84638,MP84639,MP84640,MP84642		
ICV Standard	MP84643		
CCV Standard	MP84646		
ICSA Standard	MP84644,MP84721		
CRI Standard	MP84642		
LCS Standard			
Chk Standard	MP84649,MP84650		

39	Q1439-02	LRSA-MOD	SAM	03/03/25 22:33		Kareem	OK
40	Q1440-01	OR-02-022625	SAM	03/03/25 22:37		Kareem	OK
41	Q1441-01	HD-02-022625	SAM	03/03/25 22:41		Kareem	OK
42	Q1447-02DUP	WC1DUP	DUP	03/03/25 22:45		Kareem	OK
43	Q1447-02L	WC1L	SD	03/03/25 22:50		Kareem	OK
44	Q1447-02MS	WC1MS	MS	03/03/25 22:54	0.1 ML M6003 AND M6011	Kareem	OK
45	Q1447-02MSD	WC1MSD	MSD	03/03/25 22:58	0.1 ML M6003 AND M6011	Kareem	OK
46	Q1447-02A	WC1A	PS	03/03/25 23:02	0.1 ML M6003 AND M6011	Kareem	OK
47	CCV04	CCV04	CCV	03/03/25 23:07		Kareem	OK
48	CCB04	CCB04	CCB	03/03/25 23:11		Kareem	OK
49	Q1439-02DUP	LRSA-MODDUP	DUP	03/03/25 23:15		Kareem	OK
50	Q1439-02L	LRSA-MODL	SD	03/03/25 23:20		Kareem	OK
51	Q1439-02MS	LRSA-MODMS	MS	03/03/25 23:24	0.1 ML M6003 AND M6011	Kareem	OK
52	Q1439-02MSD	LRSA-MODMSD	MSD	03/03/25 23:28	0.1 ML M6003 AND M6011	Kareem	OK
53	Q1439-02A	LRSA-MODA	PS	03/03/25 23:32	0.1 ML M6003 AND M6011	Kareem	OK
54	PB166904BL	PB166904BL	MB	03/03/25 23:42		Kareem	OK
55	PB166904BS	PB166904BS	LCS	03/03/25 23:46	0.1 ML M6003 AND M6011	Kareem	OK
56	PB166926BL	PB166926BL	MB	03/03/25 23:55		Kareem	OK
57	PB166926BS	PB166926BS	LCS	03/03/25 23:59	0.1 ML M6003 AND M6011	Kareem	OK
58	CCV05	CCV05	CCV	03/04/25 00:03		Kareem	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QC Batch ID # LB134881

Review By	kareem	Review On	3/4/2025 12:24:05 PM
Supervise By	Mohan	Supervise On	3/5/2025 4:17:58 PM
STD. NAME	STD REF.#		
ICAL Standard	MP84636,MP84637,MP84638,MP84639,MP84640,MP84642		
ICV Standard	MP84643		
CCV Standard	MP84646		
ICSA Standard	MP84644,MP84721		
CRI Standard	MP84642		
LCS Standard			
Chk Standard	MP84649,MP84650		

59	CCB05	CCB05	CCB	03/04/25 00:08		Kareem	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QC Batch ID # LB134965

Review By	Review On
Supervise By	Supervise On

STD. NAME	STD REF.#
ICAL Standard ICV Standard CCV Standard ICSA Standard CRI Standard LCS Standard Chk Standard	

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	S0	S0	CAL1	03/10/25 11:17		Kareem	OK
2	S1	S1	CAL2	03/10/25 11:22		Kareem	OK
3	S2	S2	CAL3	03/10/25 11:26		Kareem	OK
4	S3	S3	CAL4	03/10/25 11:30		Kareem	OK
5	S4	S4	CAL5	03/10/25 11:34		Kareem	OK
6	S5	S5	CAL6	03/10/25 11:38		Kareem	OK
7	ICV01	ICV01	ICV	03/10/25 11:48		Kareem	OK
8	LLICV01	LLICV01	LLICV	03/10/25 11:52		Kareem	OK
9	ICB01	ICB01	ICB	03/10/25 11:57		Kareem	OK
10	CRI01	CRI01	CRDL	03/10/25 12:01		Kareem	OK
11	ICSA01	ICSA01	ICSA	03/10/25 12:05		Kareem	OK
12	ICSAB01	ICSAB01	ICSAB	03/10/25 12:10		Kareem	OK
13	ICSADL	ICSADL	ICSA	03/10/25 12:14		Kareem	OK
14	ICSABDL	ICSABDL	ICSAB	03/10/25 12:18		Kareem	OK
15	CCV01	CCV01	CCV	03/10/25 12:27		Kareem	OK
16	CCB01	CCB01	CCB	03/10/25 12:34		Kareem	OK
17	Q1489-16MSD	TP-4MSD	MSD	03/10/25 12:38		Kareem	OK
18	Q1489-16A	TP-4A	PS	03/10/25 12:42		Kareem	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QC Batch ID # LB134965

Review By	Review On
Supervise By	Supervise On

STD. NAME	STD REF.#
ICAL Standard ICV Standard CCV Standard ICSA Standard CRI Standard LCS Standard Chk Standard	

19	Q1478-13	IDW-SO-COMP-0228	SAM	03/10/25 12:46		Kareem	OK
20	Q1481-01	WC-K1311	SAM	03/10/25 12:51		Kareem	OK
21	Q1489-12	TP-3	SAM	03/10/25 12:55		Kareem	OK
22	Q1489-16	TP-4	SAM	03/10/25 12:59		Kareem	OK
23	Q1489-16DUP	TP-4DUP	DUP	03/10/25 13:04		Kareem	OK
24	Q1489-16L	TP-4L	SD	03/10/25 13:08		Kareem	OK
25	Q1489-16MS	TP-4MS	MS	03/10/25 13:12		Kareem	OK
26	Q1415-05	FB02222025	SAM	03/10/25 13:17		Kareem	OK
27	CCV02	CCV02	CCV	03/10/25 13:21		Kareem	OK
28	CCB02	CCB02	CCB	03/10/25 13:25		Kareem	OK
29	Q1415-05DUP	FB02222025DUP	DUP	03/10/25 13:29		Kareem	OK
30	Q1415-05L	FB02222025L	SD	03/10/25 13:34		Kareem	OK
31	Q1415-05MS	FB02222025MS	MS	03/10/25 13:38		Kareem	OK
32	Q1415-05MSD	FB02222025MSD	MSD	03/10/25 13:42		Kareem	OK
33	Q1415-05A	FB02222025A	PS	03/10/25 13:46		Kareem	OK
34	Q1415-06	B-173-GW01	SAM	03/10/25 13:50		Kareem	OK
35	Q1421-04	P001-CLAY-CF01-01	SAM	03/10/25 13:55	MS/MSD fail for more than 50% parameters	Kareem	Not Ok
36	Q1421-04DUP	P001-CLAY-CF01-01	DUP	03/10/25 13:59	MS/MSD fail for more than 50% parameters	Kareem	Not Ok
37	Q1421-04L	P001-CLAY-CF01-01	SD	03/10/25 14:03	MS/MSD fail for more than 50% parameters	Kareem	Not Ok

Instrument ID: P4

Daily Analysis Runlog For Sequence/QC Batch ID # LB134965

Review By	Review On
Supervise By	Supervise On

STD. NAME	STD REF.#
ICAL Standard ICV Standard CCV Standard ICSA Standard CRI Standard LCS Standard Chk Standard	

38	Q1421-05	P001-CLAY-CF01-01	MS	03/10/25 14:07	MS/MSD fail for more than 50% parameters	Kareem	Not Ok
39	CCV03	CCV03	CCV	03/10/25 14:11		Kareem	OK
40	CCB03	CCB03	CCB	03/10/25 14:15		Kareem	OK
41	Q1421-06	P001-CLAY-CF01-01	MSD	03/10/25 14:20	MS/MSD fail for more than 50% parameters	Kareem	Not Ok
42	Q1421-04A	P001-CLAY-CF01-01	PS	03/10/25 14:24	MS/MSD fail for more than 50% parameters	Kareem	Not Ok
43	Q1421-08	P001-CLAY-CF01-02	SAM	03/10/25 14:28		Kareem	OK
44	Q1421-10	P001-CLAY-CF02-01	SAM	03/10/25 14:32		Kareem	OK
45	Q1421-01	P001-CLAY-CF01-01	SAM	03/10/25 14:36	Fe high	Kareem	Dilution
46	Q1421-01DUP	P001-CLAY-CF01-01	DUP	03/10/25 14:41	Fe high	Kareem	Dilution
47	Q1421-01L	P001-CLAY-CF01-01	SD	03/10/25 14:45		Kareem	OK
48	Q1421-02	P001-CLAY-CF01-01	MS	03/10/25 14:49	Fe high	Kareem	Dilution
49	Q1421-03	P001-CLAY-CF01-01	MSD	03/10/25 14:53	Fe high	Kareem	Dilution
50	Q1421-01A	P001-CLAY-CF01-01	PS	03/10/25 14:57		Kareem	OK
51	CCV04	CCV04	CCV	03/10/25 15:01		Kareem	OK
52	CCB04	CCB04	CCB	03/10/25 15:05		Kareem	OK
53	Q1421-07	P001-CLAY-CF01-02	SAM	03/10/25 15:10	Fe high, Ag (oversaturated)	Kareem	Dilution
54	Q1421-09	P001-CLAY-CF02-01	SAM	03/10/25 15:14		Kareem	OK
55	Q1422-01	B-154-SB01	SAM	03/10/25 15:18		Kareem	OK
56	Q1422-02	B-154-SB02	SAM	03/10/25 15:22		Kareem	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QC Batch ID # LB134965

Review By	Review On
Supervise By	Supervise On

STD. NAME	STD REF.#
ICAL Standard ICV Standard CCV Standard ICSA Standard CRI Standard LCS Standard Chk Standard	

57	Q1429-01	OUTFALL-DSN-001	SAM	03/10/25 15:26		Kareem	OK
58	Q1429-01DUP	OUTFALL-DSN-001D	DUP	03/10/25 15:31		Kareem	OK
59	Q1429-01L	OUTFALL-DSN-001L	SD	03/10/25 15:35		Kareem	OK
60	Q1429-01MS	OUTFALL-DSN-001M	MS	03/10/25 15:39		Kareem	OK
61	Q1429-01MSD	OUTFALL-DSN-001M	MSD	03/10/25 15:43		Kareem	OK
62	Q1429-01A	OUTFALL-DSN-001A	PS	03/10/25 15:47		Kareem	OK
63	CCV05	CCV05	CCV	03/10/25 15:51		Kareem	OK
64	CCB05	CCB05	CCB	03/10/25 15:55		Kareem	OK
65	Q1429-02	OUTFALL-DSN-002	SAM	03/10/25 16:00		Kareem	OK
66	Q1415-02DL	B-172-SB01DL	SAM	03/10/25 16:04	2x for Mn	Kareem	Confirms
67	PB166968TB	PB166968TB	MB	03/10/25 16:08		Kareem	OK
68	PB166990BL	PB166990BL	MB	03/10/25 16:12		Kareem	OK
69	PB166990BS	PB166990BS	LCS	03/10/25 16:17		Kareem	OK
70	PB166878TB	PB166878TB	MB	03/10/25 16:21		Kareem	OK
71	PB166878BL	PB166878BL	MB	03/10/25 16:25		Kareem	OK
72	PB166878BS	PB166878BS	LCS	03/10/25 16:29		Kareem	OK
73	PB166858BL	PB166858BL	MB	03/10/25 16:33		Kareem	OK
74	PB166858BS	PB166858BS	LCS	03/10/25 16:44		Kareem	OK
75	CCV06	CCV06	CCV	03/10/25 16:48		Kareem	OK
76	CCB06	CCB06	CCB	03/10/25 16:52		Kareem	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QC Batch ID # LB134965

Review By	Review On
Supervise By	Supervise On

STD. NAME	STD REF.#
ICAL Standard ICV Standard CCV Standard ICSA Standard CRI Standard LCS Standard Chk Standard	

77	Q1421-01DL	P001-CLAY-CF01-01	SAM	03/10/25 16:56	2x for Fe	Kareem	Confirms
78	Q1421-01DUPDL	P001-CLAY-CF01-01	DUP	03/10/25 17:00	2x for Fe	Kareem	Confirms
79	Q1421-01LDL	P001-CLAY-CF01-01	SD	03/10/25 17:05	NOT REQUIRED	Kareem	Not Ok
80	Q1421-02DL	P001-CLAY-CF01-01	MS	03/10/25 17:09	2x for Fe	Kareem	Confirms
81	Q1421-03DL	P001-CLAY-CF01-01	MSD	03/10/25 17:13	2x for Fe	Kareem	Confirms
82	Q1421-01ADL	P001-CLAY-CF01-01	PS	03/10/25 17:17	NOT REQUIRED	Kareem	Not Ok
83	Q1421-07DL	P001-CLAY-CF01-02	SAM	03/10/25 17:21	2x for Fe,Ag	Kareem	Confirms
84	Q1421-09DL	P001-CLAY-CF02-01	SAM	03/10/25 17:26	NOT USE	Kareem	Not Ok
85	PB166927TB	PB166927TB	MB	03/10/25 17:30		Kareem	OK
86	PB166859BL	PB166859BL	MB	03/10/25 17:34		Kareem	OK
87	CCV07	CCV07	CCV	03/10/25 17:39		Kareem	OK
88	CCB07	CCB07	CCB	03/10/25 17:44		Kareem	OK
89	PB166859BS	PB166859BS	LCS	03/10/25 17:48		Kareem	OK
90	Q1524-01	72-11930-343-COMP	SAM	03/10/25 17:52		Kareem	OK
91	Q1524-01DUP	72-11930-343-COMP	DUP	03/10/25 17:56		Kareem	OK
92	Q1524-01L	72-11930-343-COMP	SD	03/10/25 18:00		Kareem	OK
93	Q1524-01MS	72-11930-343-COMP	MS	03/10/25 18:04		Kareem	OK
94	Q1524-01MSD	72-11930-343-COMP	MSD	03/10/25 18:08		Kareem	OK
95	Q1524-01A	72-11930-343-COMP	PS	03/10/25 18:12		Kareem	OK
96	Q1524-02	VNJ-241	SAM	03/10/25 18:16		Kareem	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QC Batch ID # LB134965

Review By	Review On
Supervise By	Supervise On

STD. NAME	STD REF.#
ICAL Standard ICV Standard CCV Standard ICSA Standard CRI Standard LCS Standard Chk Standard	

97	PB167039BL	PB167039BL	MB	03/10/25 18:20		Kareem	OK
98	PB167039BS	PB167039BS	LCS	03/10/25 18:25		Kareem	OK
99	CCV08	CCV08	CCV	03/10/25 18:29		Kareem	OK
100	CCB08	CCB08	CCB	03/10/25 18:33		Kareem	OK
101	LR1	LR1	HIGH STD	03/10/25 18:37		Kareem	OK
102	LR2	LR2	HIGH STD	03/10/25 18:42		Kareem	OK
103	CCV09	CCV09	CCV	03/10/25 18:46		Kareem	OK
104	CCB09	CCB09	CCB	03/10/25 18:50		Kareem	OK

Prep Standard - Chemical Standard Summary

Order ID : Q1429

Test : Metals Group3

Prepbatch ID : PB166926,

Sequence ID/Qc Batch ID: LB134881, LB134881, LB134965,

Standard ID :

MP84041, MP84297, MP84636, MP84637, MP84638, MP84639, MP84640, MP84641, MP84642, MP84643, MP84644, MP84646, MP84649, MP84650, MP84721,

Chemical ID :

M4884, M5192, M5218, M5288, M5296, M5395, M5429, M5467, M5472, M5496, M5497, M5658, M5747, M5748, M5751, M5789, M5792, M5798, M5799, M5800, M5801, M5811, M5814, M5815, M5816, M5817, M5820, M5875, M5959, M5962, M5970, M5978, M5985, M6003, M6011, M6021, M6023, M6028, M6030, M6032, M6077, M6121, M6126, M6127, M6128, M6144, M6145, M6146, M6150, M6152, M6155, W3112,

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>
169	1:1HNO3	MP84041	01/14/2025	07/14/2025	Eman Mughal	None	None	Sarabjit Jaswal
								01/16/2025

FROM 1250.00000ml of M6126 + 1250.00000ml of W3112 = 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	MP84297	01/31/2025	02/28/2025	Eman Mughal	None	None	Sarabjit Jaswal
								01/31/2025

FROM 1250.00000ml of M6121 + 1250.00000ml of W3112 = Final Quantity: 2500.000 ml

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)	MP84636	02/25/2025	03/25/2025	Kareem Khairalla	None	None	Sarabjit Jaswal
								02/28/2025

FROM 125.00000ml of M5792 + 2350.00000ml of W3112 + 25.00000ml of M5789 = 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>
907	ICP AES STD S (S5)	MP84637	02/25/2025	03/25/2025	Kareem Khairalla	None	None	Sarabjit Jaswal
								02/28/2025

FROM 5.00000ml of M5395 + 5.00000ml of M5467 + 5.00000ml of M5472 + 5.00000ml of M5816 + 5.00000ml of M5820 + 5.00000ml of M5875 + 5.00000ml of M5970 + 5.00000ml of M6077 + 5.00000ml of M6146 + 455.00000ml of MP84636 = Final Quantity: 500.000 ml

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>
910	ICP AES STD S4	MP84638	02/25/2025	03/25/2025	Kareem Khairalla	None	None	Sarabjit Jaswal
								02/28/2025

FROM 50.00000ml of MP84636 + 50.00000ml of MP84637 = 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>
909	ICP AES STD S3	MP84639	02/25/2025	03/25/2025	Kareem Khairalla	None	None	Sarabjit Jaswal
								02/28/2025

FROM 25.00000ml of MP84637 + 75.00000ml of MP84636 = Final Quantity: 100.000 ml

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>
3913	ICP AES STD S2	MP84640	02/25/2025	03/25/2025	Kareem Khairalla	None	None	Sarabjit Jaswal
								02/28/2025

FROM 16.00000ml of MP84637 + 184.00000ml of MP84636 = 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>
2950	ICP AES S1/CRI STOCK STD	MP84641	02/25/2025	03/09/2025	Kareem Khairalla	None	None	Sarabjit Jaswal
								02/28/2025

FROM 0.00200ml of M5816 + 0.00400ml of M5978 + 0.03000ml of M6028 + 0.04000ml of M4884 + 0.05000ml of M5496 + 0.05000ml of M5658 + 0.05000ml of M5811 + 0.05000ml of M6030 + 0.06000ml of M5747 + 0.10000ml of M5472 + 0.10000ml of M5751 + 0.10000ml of M5801 + 0.10000ml of M5820 + 0.10000ml of M5962 + 0.10000ml of M5970 + 0.10000ml of M6128 + 0.15000ml of M5800 + 0.20000ml of M5748 + 0.20000ml of M5799 + 0.20000ml of M6021 + 0.20000ml of M6023 + 0.20000ml of M6145 + 0.25000ml of M5467 + 0.25000ml of M6146 + 0.50000ml of M5798 + 0.50000ml of M5814 + 0.50000ml of M6032 + 1.00000ml of M5192 + 1.00000ml of M5288 + 1.00000ml of M5497 + 1.00000ml of M6127 + 1.00000ml of M6144 + 77.68000ml of MP84636 = Final Quantity: 100.000 ml

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>
2951	ICP AES S1/CRI WORK STD	MP84642	02/25/2025	03/09/2025	Kareem Khairalla	None	None	Sarabjit Jaswal
								02/28/2025

FROM 2.00000ml of MP84641 + 98.00000ml of MP84636 = 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>
912	ICP AES ICV SOLN	MP84643	02/25/2025	03/25/2025	Kareem Khairalla	None	None	Sarabjit Jaswal
								02/28/2025

FROM 0.02500ml of M5429 + 0.02500ml of M5815 + 0.02500ml of M5817 + 0.10000ml of M5467 + 0.25000ml of M5218 + 0.25000ml of M5472 + 10.00000ml of M6150 + 89.77500ml of MP84636 = Final Quantity: 100.000 ml

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	MP84644	02/24/2025	03/25/2025	Kareem Khairalla	None	None	Sarabjit Jaswal
								02/28/2025

FROM 25.00000ml of M6152 + 225.00000ml of MP84636 = Final Quantity: 250.000 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>
911	ICP AES CCV SOLN	MP84646	02/25/2025	03/25/2025	Kareem Khairalla	None	None	Sarabjit Jaswal
								02/28/2025

FROM 50.00000ml of MP84636 + 50.00000ml of MP84637 = Final Quantity: 100.000 ml

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>
919	ICP AES INTERNAL STD	MP84649	02/25/2025	03/25/2025	Kareem Khairalla	None	None	Sarabjit Jaswal
								02/28/2025

FROM 1.00000ml of M5959 + 10.00000ml of M5985 + 1969.00000ml of W3112 + 20.00000ml of M5789 = 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>
513	RINSE SOLN	MP84650	02/25/2025	03/25/2025	Kareem Khairalla	None	None	Sarabjit Jaswal
								02/28/2025

FROM 200.00000ml of M5789 + 9800.00000ml of W3112 = 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>
3494	ICP AES ICSAB SOLN-1	MP84721	02/25/2025	03/25/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 02/28/2025
<u>FROM</u>	0.01000ml of M5815 + 0.01000ml of M5817 + 0.10000ml of M5296 + 0.10000ml of M5472 + 0.10000ml of M5970 + 10.00000ml of M6152 + 10.00000ml of M6155 + 79.50000ml of MP84636 = Final Quantity: 100.000 ml							

CHEMICAL RECEIPT LOG BOOK

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	03/09/2025	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.	57042 / Mo, 1000 PPM, 125 ml	051722	05/17/2025	07/01/2022 / bin	06/17/2022 / jaswal	M5192

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	S2-MEB711674	11/02/2026	07/01/2022 / bin	09/10/2021 / bin	M5218

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58119 / K, 10000 PPM, 500 ml	071122	07/11/2025	09/01/2022 / jaswal	07/21/2022 / jaswal	M5288

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	Z9651Q / CHEM-CLP-4/.25L	S2-MEB711673	11/02/2026	09/19/2022 / jaswal	08/20/2022 / jaswal	M5296

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	T2-MEB714159	01/13/2027	01/30/2024 / bin	09/19/2022 / bin	M5395

CHEMICAL RECEIPT LOG BOOK

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	070622	07/06/2025	01/30/2023 / bin	01/26/2023 / bin	M5429

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57058 / Cerium, 1000PPM, 100ML	020623	02/06/2026	03/06/2023 / bin	03/01/2023 / bin	M5467

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	082922	08/29/2025	01/14/2025 / Jaswal	03/16/2023 / jaswal	M5472

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58113 / Al, 10000 PPM, 500 ml	011623	01/16/2026	08/15/2023 / jaswal	03/17/2023 / bin	M5496

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	031523	03/15/2026	03/18/2023 / bin	03/17/2023 / bin	M5497

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	060523	06/05/2026	08/28/2023 / jaswal	08/25/2023 / jaswal	M5658

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	/ Lead (Pb) 1000PPM	100923	10/09/2026	05/20/2024 / Jaswal	12/20/2023 / jaswal	M5747

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	/ Nickel (Ni) 1000PPM	091223	09/12/2026	01/02/2024 / bin	12/20/2023 / jaswal	M5748

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	071723	07/17/2026	10/01/2024 / Jaswal	08/25/2023 / jaswal	M5751

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)	23G1262003	07/30/2025	02/08/2024 / Al-Terek	06/26/2023 / Al-Terek	M5789

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)	22D1462006	08/05/2025	02/05/2024 / Al-Terek	02/24/2022 / Al-Terek	M5792

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	102523	10/25/2026	02/09/2024 / bin	02/09/2024 / bin	M5798

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	071123	07/11/2026	02/09/2024 / bin	02/09/2024 / bin	M5799

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	091923	09/19/2026	05/31/2024 / bin	02/09/2024 / bin	M5800

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57033 / As, 1000 PPM, 125 ml	111323	11/13/2026	02/09/2024 / bin	02/09/2024 / bin	M5801

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	051523	05/15/2026	02/06/2025 / kareem	01/03/2024 / jaswal	M5811

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	071123	07/11/2026	03/26/2024 / Sohil	01/03/2024 / jaswal	M5814

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	041723	04/17/2026	05/21/2024 / Jaswal	02/09/2024 / jaswal	M5815

CHEMICAL RECEIPT LOG BOOK

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	122923	12/29/2026	05/20/2024 / Jaswal	02/09/2024 / jaswal	M5816

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	071123	07/11/2026	03/01/2024 / jaswal	02/09/2024 / jaswal	M5817

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	091123	09/11/2026	05/01/2024 / jaswal	02/09/2024 / jaswal	M5820

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	T2-MEB714417	01/27/2027	04/19/2024 / jaswal	02/22/2024 / jaswal	M5875

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGY10-1 / YTTRIUM 125mL 10,000ug/mL	V2-Y740548	02/20/2029	07/01/2024 / Jaswal	06/14/2024 / Jaswal	M5959

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	060624	06/06/2027	07/02/2024 / Jaswal	06/14/2024 / Jaswal	M5962

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	061224	06/21/2027	07/01/2024 / Jaswal	07/01/2024 / Jaswal	M5970

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGT11-1 / TITANIUM 125mL 1000ug/mL	T2-TI719972	06/17/2027	08/07/2024 / jaswal	02/22/2024 / Jaswal	M5978

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	U2-IN729349	02/21/2028	10/08/2024 / Jaswal	06/14/2024 / Jaswal	M5985

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	T2-MEB723367	08/26/2025	02/26/2025 / Eman	05/14/2024 / Jaswal	M6003

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	U2-MEB731108	07/14/2025	01/14/2025 / Eman	05/14/2024 / Jaswal	M6011

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57023 / V, 1000 PPM, 125 ml	062424	06/24/2027	09/28/2024 / jaswal	08/05/2024 / Jaswal	M6021

CHEMICAL RECEIPT LOG BOOK

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	0624724	06/27/2027	08/05/2024 / kareem	08/05/2024 / Jaswal	M6023

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	070124	07/01/2027	08/05/2024 / kareem	08/05/2024 / Jaswal	M6028

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	122823	12/28/2026	08/05/2024 / kareem	08/05/2024 / Jaswal	M6030

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57056 / Ba, 1000 PPM, 125 ml	010924	01/09/2027	01/14/2025 / Jaswal	08/05/2024 / Jaswal	M6032

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	Z9651Q / CHEM-CLP-4/.25L	V2-MEB746762	09/06/2029	01/23/2025 / kareem	09/19/2024 / kareem	M6077

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	05/13/2025	11/13/2024 / Eman	10/13/2024 / Eman	M6121

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)	24D1062002	06/03/2025	12/03/2024 / Janvi	11/12/2024 / Janvi	M6126

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	112124	11/21/2027	01/13/2025 / kareem	01/13/2025 / kareem	M6127

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58025 / Mn, 1000 PPM, 500 ml	101124	10/11/2027	01/13/2025 / kareem	01/13/2025 / kareem	M6128

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	072424	07/24/2027	01/23/2025 / kareem	01/13/2025 / Jaswal	M6144

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	121724	12/17/2027	02/04/2025 /	01/13/2025 / Jaswal	M6145

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	071724	07/17/2027	01/31/2025 / kareem	10/18/2024 / kareem	M6146

CHEMICAL RECEIPT LOG BOOK

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	07/07/2025	02/07/2025 / JANVI	04/20/2021 / JANVI	M6150

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	08/24/2025	02/24/2025 / kareem	04/20/2021 / kareem	M6152

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
EPA	PART B / ICSAB (ICP) STOCK SOLN	ICSB-0710	06/20/2025	02/10/2025 / kareem	02/09/2024 / kareem	M6155

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	DIW / DI Water	Daily Lab-Certified	07/03/2029	07/03/2024 / lwona	07/03/2024 / lwona	W3112



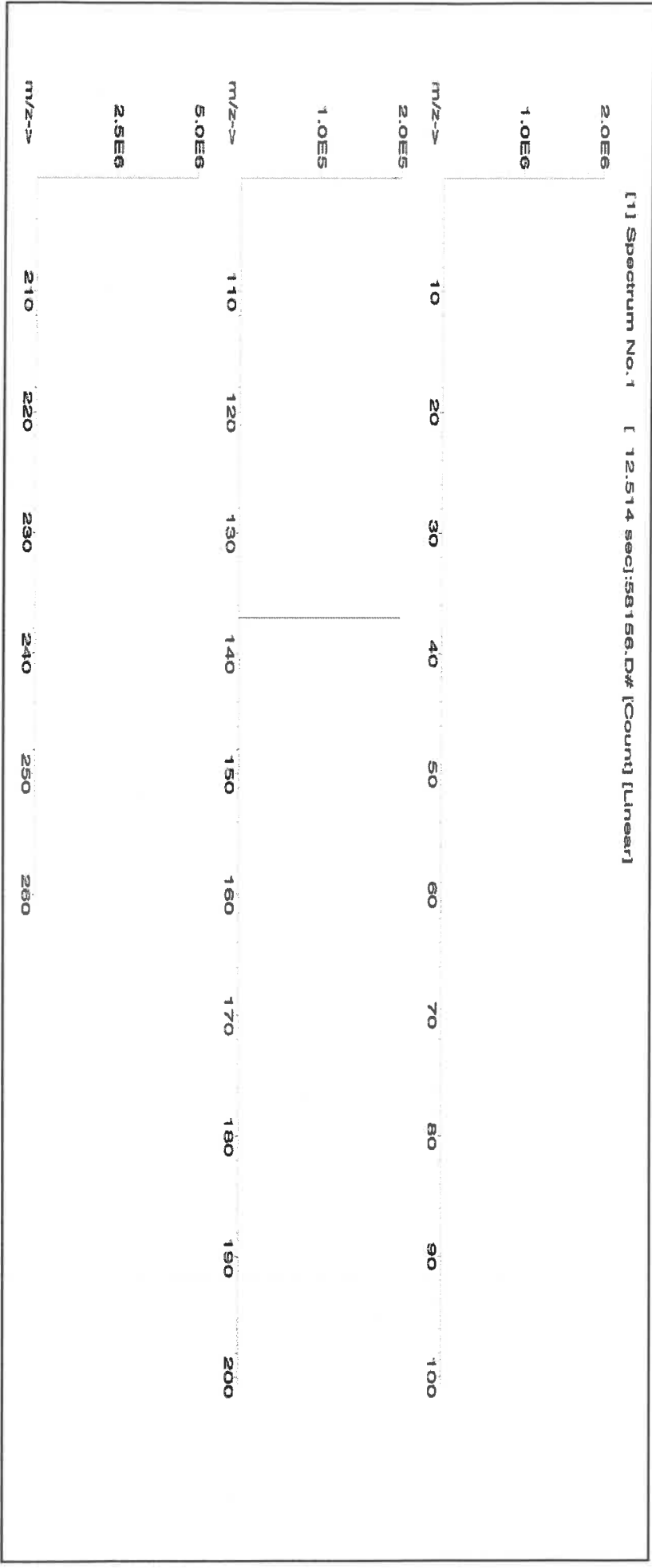
CERTIFIED WEIGHT REPORT:

Part Number: 57056
Lot Number: 010924
Description: Barium (Ba)
Solvent: Nitric Acid
Lot #

Expiration Date: 010927
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 2000.02
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
010924	
<i>Pedro L. Renteria</i>	
Reviewed By:	Pedro L. Renteria
010924	

SDS Information									
Compound	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)
Barium nitrate (Ba)	IN023	BA0022019A1	1000	99.999	0.10	52.3	3.82417	3.82441	1000.1
									2.0
									10022-31-8
									0.5 mg/m ³
									or-hat 355 mg/kg
									3104a





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (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	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	<0.02	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:
Lot Number:
Description:

57048
070124
Cadmium (Cd)

Solvent: 24002546 Nitric Acid

R: 815/24

Lot #

2% 40.0 Nitric Acid (mL)

Expiration Date: 070127

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): 1000

NIST Test Number: 6UTB

SE-05 Balance Uncertainty

Weight shown below was diluted to (mL): 2000.07 0.100 Flask Uncertainty

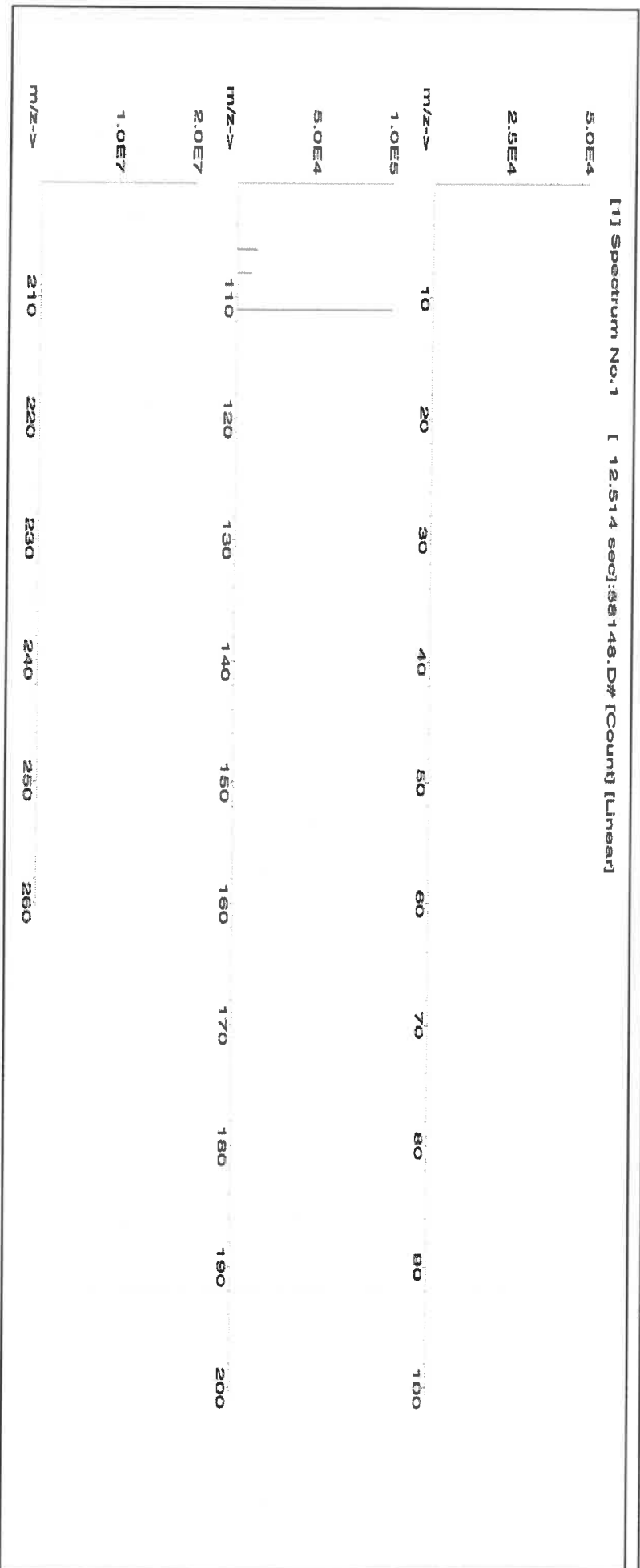
<i>Aleah O'Brady</i>	
Formulated By:	Aleah O'Brady
	070124
<i>Pedro L. Rentas</i>	
Reviewed By:	Pedro L. Rentas
	070124

Compound

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

1. Cadmium nitrate tetrahydrate (Cd) IN024 CDM09221A1 1000 99.999 0.10 36.5 5.4797 5.4804 1000.1 2.0 10022-68-1 0.01 mg/m3 or-rat 60.2mg/kg 3108

[1] Spectrum No.1 [12.514 sec]:\$8148.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.2	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	Ba	<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	Cd	<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	Pr	<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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Certificate of Analysis

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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: S2-MEB711673
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 ± 6 µg/mL	Molybdenum, Mo	1 000 ± 6 µg/mL
Silicon, Si	1 000 ± 7 µg/mL	Tin, Sn	1 000 ± 6 µg/mL
Titanium, Ti	1 000 ± 7 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	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

November 02, 2021

- 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 02, 2026**

- 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





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Certificate of Analysis

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

P: 800-669-6799/540-585-3030
F: 540-585-3012
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1.0 ACCREDITATION / REGISTRATION

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2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution	
Catalog Number:	CLPP-CAL-1	
Lot Number:	T2-MEB714417	
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 ± 0.26 µg/mL	Calcium, Ca	5 000 ± 22 µg/mL
Chromium, Cr	200.0 ± 1.0 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 ± 2.0 µg/mL
Nickel, Ni	500.0 ± 2.2 µg/mL	Potassium, K	5 000 ± 19 µg/mL
Silver, Ag	250.0 ± 1.1 µg/mL	Sodium, Na	5 000 ± 18 µg/mL
Vanadium, V	499.7 ± 2.2 µg/mL	Zinc, Zn	500.0 ± 2.2 µg/mL

Density: 1.118 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	ICP Assay	3113	190630
Co	EDTA	928	928
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	IC 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

Note: This solution contains Silver (Ag), please refer to our Sample Preparation Guide for more information.

<https://www.inorganicventures.com/sample-preparation-guide/samples-containing-silver>

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

January 27, 2022

- 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

- **January 27, 2027**

- 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:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director





Refine your results. Redefine your industry.

Certificate of Analysis

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

P: 800-669-6799/540-585-3030
F: 540-585-3012
info@inorganicventures.com

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: T2-MEB714159
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 ± 8 µg/mL	Cadmium, Cd	500.0 ± 2.1 µg/mL
Lead, Pb	1 000 ± 5 µg/mL	Selenium, Se	1 000 ± 8 µg/mL
Thallium, Tl	1 000 ± 7 µg/mL		

Density: 1.043 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	151215

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

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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

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- 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

January 13, 2022

- 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

- **January 13, 2027**

- 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:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director





CERTIFIED WEIGHT REPORT:

Part Number: 58126
Lot Number: 051523
Description: Iron (Fe)

Solvent: 21110221 Nitric Acid

Lot #

Expiration Date: 051526

5.0% 250.0 Nitric Acid (mL)

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): 10000

NIST Test Number: 6UTB

5E-05 Balance Uncertainty

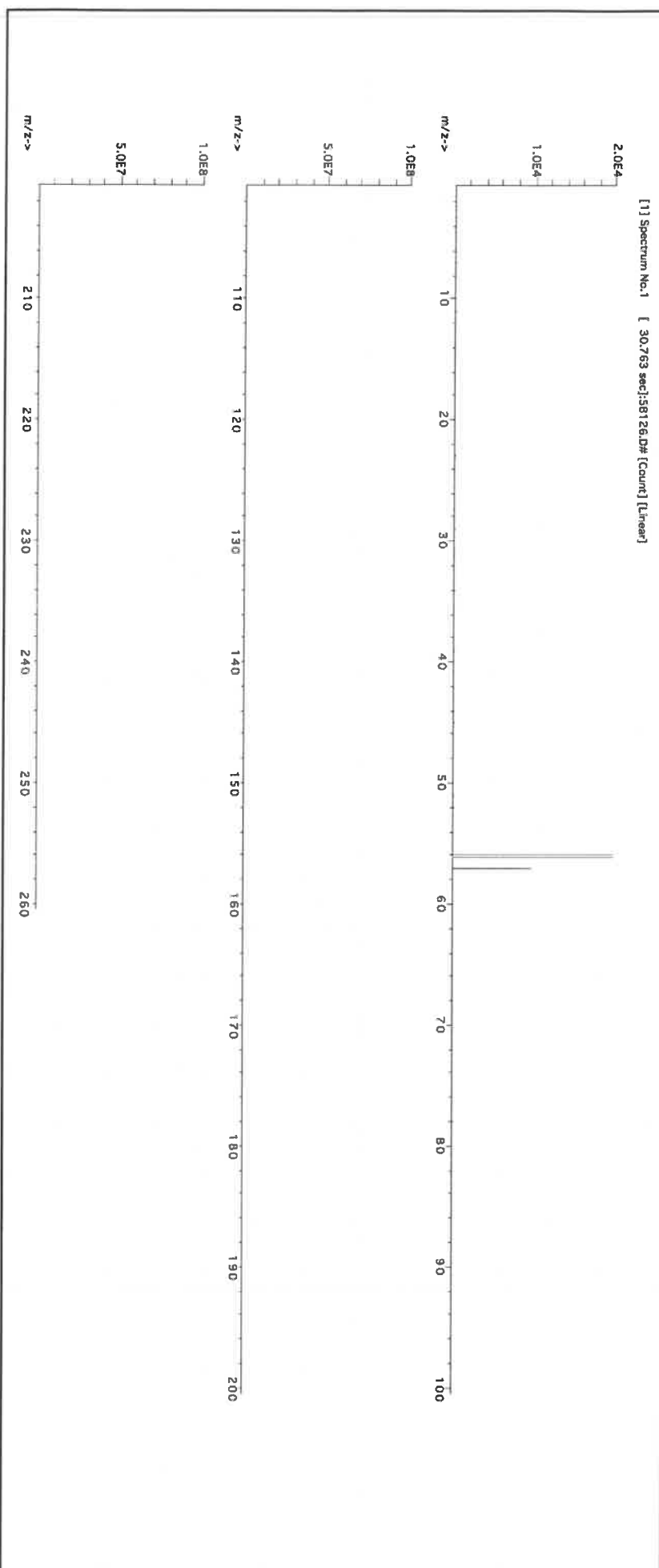
Weight shown below was diluted to (mL): 5000.1 0.12 Flask Uncertainty

<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
	051523
Reviewed By:	<i>Pedro L. Renias</i>
	Pedro L. Renias
	051523

SDS Information

Compound	Lot	Nominal	Purity	Uncertainty	Assay	Target	Actual	Actual	Uncertainty	(Solvent Safety Info. On Attached pg.)	NIST		
	RM#	Number	Conc. (µg/mL)	(%)	Purity (%)	(%)	Weight (g)	Weight (g)	Conc. (µg/mL)			+/- (µg/mL)	CAS#

1. Iron (Fe) IN346 2302010-500 10000 99.995 0.10 100.0 50.0034 50.0111 10001.5 20.0 7439-89-6 5 mg/m3 or-tral 7500mg/kg 3126a





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (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	<0.10	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	Rb	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.10	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.05	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	<0.10	Ge	<0.10	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.10
B	<0.02	Cu	<0.10	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	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).



Refine your results. Redefine your industry.

RD:05/14/2024

Certificate of Analysis

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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:	T2-MEB723367
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 ± 0.13 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 ± 0.30 µg/mL	Cobalt, Co	20.00 ± 0.10 µg/mL
Copper, Cu	30.00 ± 0.13 µg/mL	Iron, Fe	300.0 ± 1.3 µg/mL
Lead, Pb	100.0 ± 0.4 µg/mL	Lithium, Li	20.00 ± 0.08 µg/mL
Magnesium, Mg	200.0 ± 0.8 µg/mL	Manganese, Mn	20.00 ± 0.08 µg/mL
Mercury, Hg	70.0 ± 0.3 µg/mL	Nickel, Ni	50.00 ± 0.22 µg/mL
Phosphorus, P	600.0 ± 2.7 µg/mL	Potassium, K	1 000 ± 4 µg/mL
Selenium, Se	200.0 ± 1.3 µg/mL	Silver, Ag	7.50 ± 0.03 µg/mL
Sodium, Na	300.0 ± 1.4 µg/mL	Strontium, Sr	20.01 ± 0.08 µg/mL
Thallium, Tl	200.0 ± 1.4 µg/mL	Vanadium, V	30.00 ± 0.13 µg/mL
Zinc, Zn	20.00 ± 0.09 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
Ag	Calculated		See Sec. 4.2
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
As	ICP Assay	3103a	100818
B	ICP Assay	3107	190605
Ba	ICP Assay	3104a	140909
Ba	Gravimetric		See Sec. 4.2
Be	ICP Assay	3105a	090514
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Cd	ICP Assay	3108	130116
Cd	EDTA	928	928
Ce	ICP Assay	3110	090504
Ce	EDTA	928	928
Co	ICP Assay	3113	190630
Co	EDTA	928	928
Cr	ICP Assay	3112a	170630
Cu	ICP Assay	3114	121207
Cu	EDTA	928	928
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
Hg	ICP Assay	3133	160921
Hg	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Li	ICP Assay	3129a	100714
Li	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	Traceable to 3152A	S2-NA700842
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
Tl	ICP Assay	3158	151215
V	IC 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:

$$w_i = (1/u_{\text{char } i}^2) / (\sum (1/u_{\text{char } i}^2))$$

$$\text{CRM/RM Expanded Uncertainty (z)} = U_{\text{CRM/RM}} = k (u_{\text{char}}^2 + u_{\text{bb}}^2 + u_{\text{ts}}^2 + u_{\text{ts}}^2)^{1/2}$$

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

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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

$$\text{CRM/RM Expanded Uncertainty (z)} = U_{\text{CRM/RM}} = k (u_{\text{char } a}^2 + u_{\text{bb}}^2 + u_{\text{ts}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char } a}$ = the errors from characterization

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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

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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 30, 2022

- 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 30, 2026

- 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:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director





Refine your results. Redefine your industry.

RD:05/14/2024

Certificate of Analysis

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

P: 800-669-6799/540-585-3030
F: 540-585-3012
info@inorganicventures.com

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: U2-MEB731108
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	80.1 ± 0.6 µg/mL	Molybdenum, Mo	40.03 ± 0.18 µg/mL
Silica, SiO ₂	200.2 ± 1.3 µg/mL	Tin, Sn	70.0 ± 0.4 µg/mL
Titanium, Ti	20.01 ± 0.13 µg/mL		

Density: 1.025 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	ICP Assay	3150	130912
Sn	ICP Assay	3161a	140917
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:

$$w_i = (1/u_{\text{char } i}^2) / (\sum (1/u_{\text{char } i}^2))$$

$$\text{CRM/RM Expanded Uncertainty } (z) = U_{\text{CRM/RM}} = k (u_{\text{char}}^2 + u_{\text{bb}}^2 + u_{\text{ITS}}^2 + u_{\text{TS}}^2)^{1/2}$$

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

$$\text{CRM/RM Expanded Uncertainty } (z) = U_{\text{CRM/RM}} = k (u_{\text{char } a}^2 + u_{\text{bb}}^2 + u_{\text{ITS}}^2 + u_{\text{TS}}^2)^{1/2}$$

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

6.1 This standard is intended for the calibration of analytical instruments and validation of analytical methods as appropriate. This CRM may be used in connection with EPA Methods 6010, 6020 (all versions), Standard Methods 3120 B and USP <232> / ICH Q3D.

6.2 For products attaining traceability through Inorganic Ventures' Primary Certified Reference Materials (PCRM™) see the Limited License to Use PCRM™ in the Inorganic Ventures Terms and Conditions of Sale, <https://www.inorganicventures.com/terms-and-conditions-sale>. The Terms and Conditions contain information on the use of materials traceable to PCRM™ certified reference materials. This Limited License agreement is especially pertinent for laboratories accredited under ISO:17034.

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; info@inorganicventures.com;

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 17, 2023

- 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

- **March 17, 2028**

- 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:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director





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**

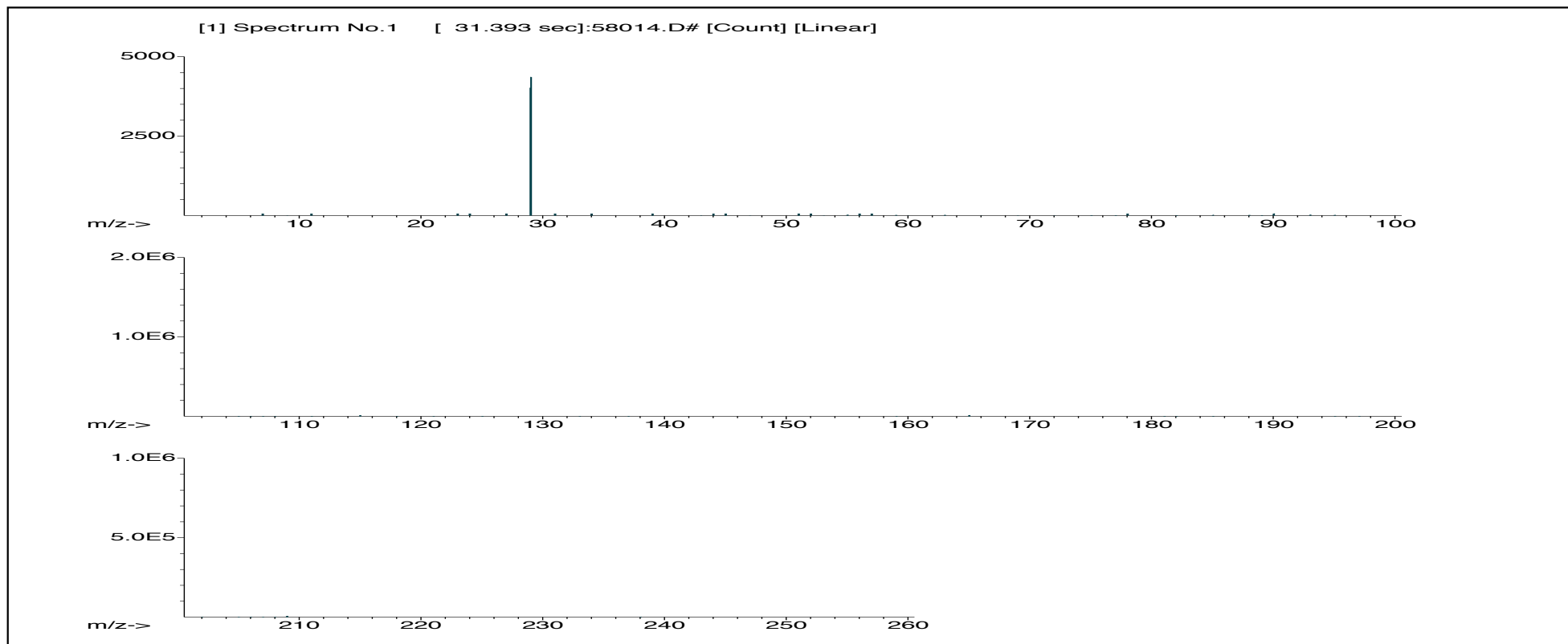
NIST Test Number: 6UTB

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

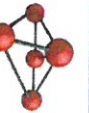
(T)= Target analyte

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:
Lot Number:
Description:

57042
051722
Molybdenum (Mo)

Lot # **Solvent:**
MKB08597V Ammonium hydroxide

0.5% **15.0** **Ammonium hydroxide**
(mL)

Expiration Date: 051725

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL):

1000

NIST Test Number:

6UTB

Volume shown below was diluted to (mL): 3000.41

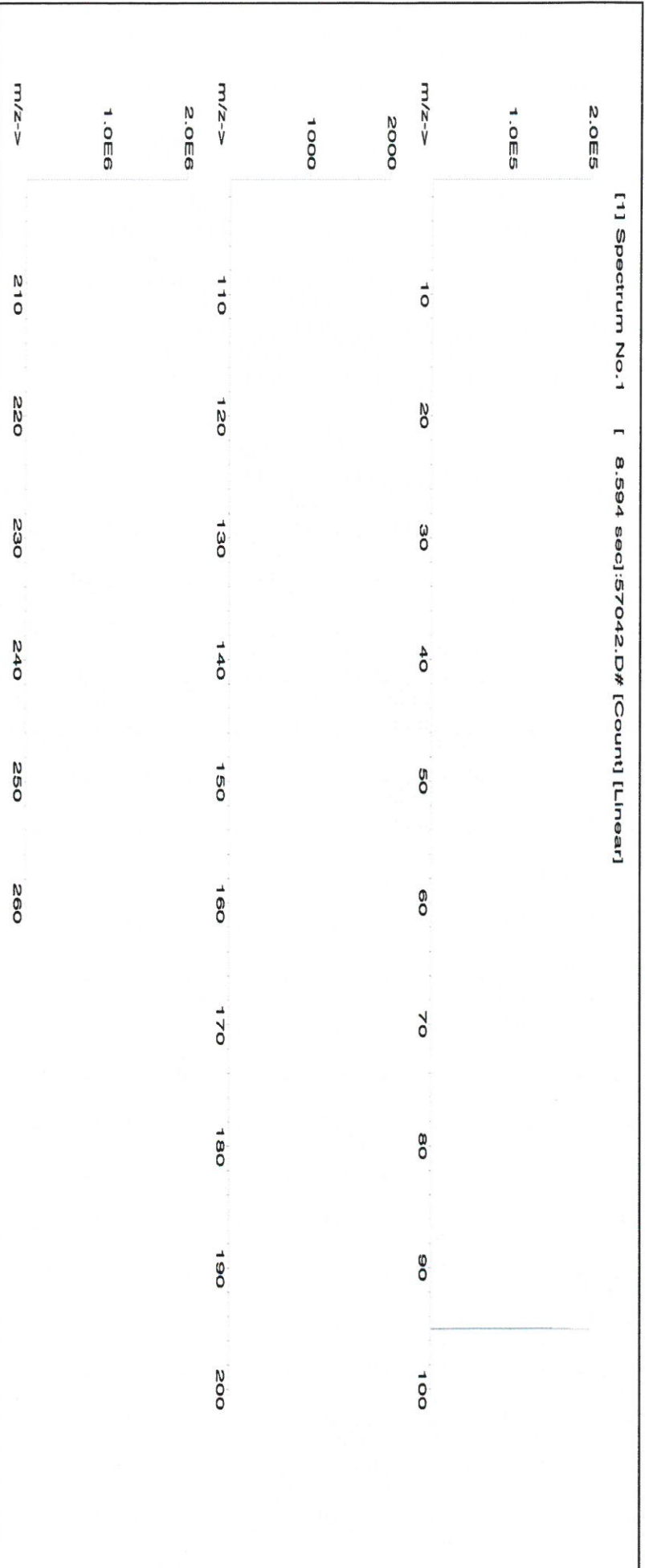
5E-05 **Balance Uncertainty**
0.058 **Flask Uncertainty**

Formulated By:	Lawrence Barry
	051722
Reviewed By:	Pedro L. Rendas
	051722

SDS Information

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)	(Solvent Safety Info. On Attached pg.)	NIST SRM

1. Ammonium molybdate (Mo) 58142 022222 0.1000 300.0 0.084 1000 10001.0 1000.0 2.1 13106-76-8 5 mg(Mo)/m3 or-trat 333 mg/kg 3134





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	<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).

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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: S2-MEB711674
 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 ± 5 µg/mL
Titanium, Ti	1 001 ± 6 µg/mL		

Density: 1.032 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

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

November 02, 2021

- 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 02, 2026**

- 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





Certified Reference Material CRM

M5288 R: 07/21/2022 SA

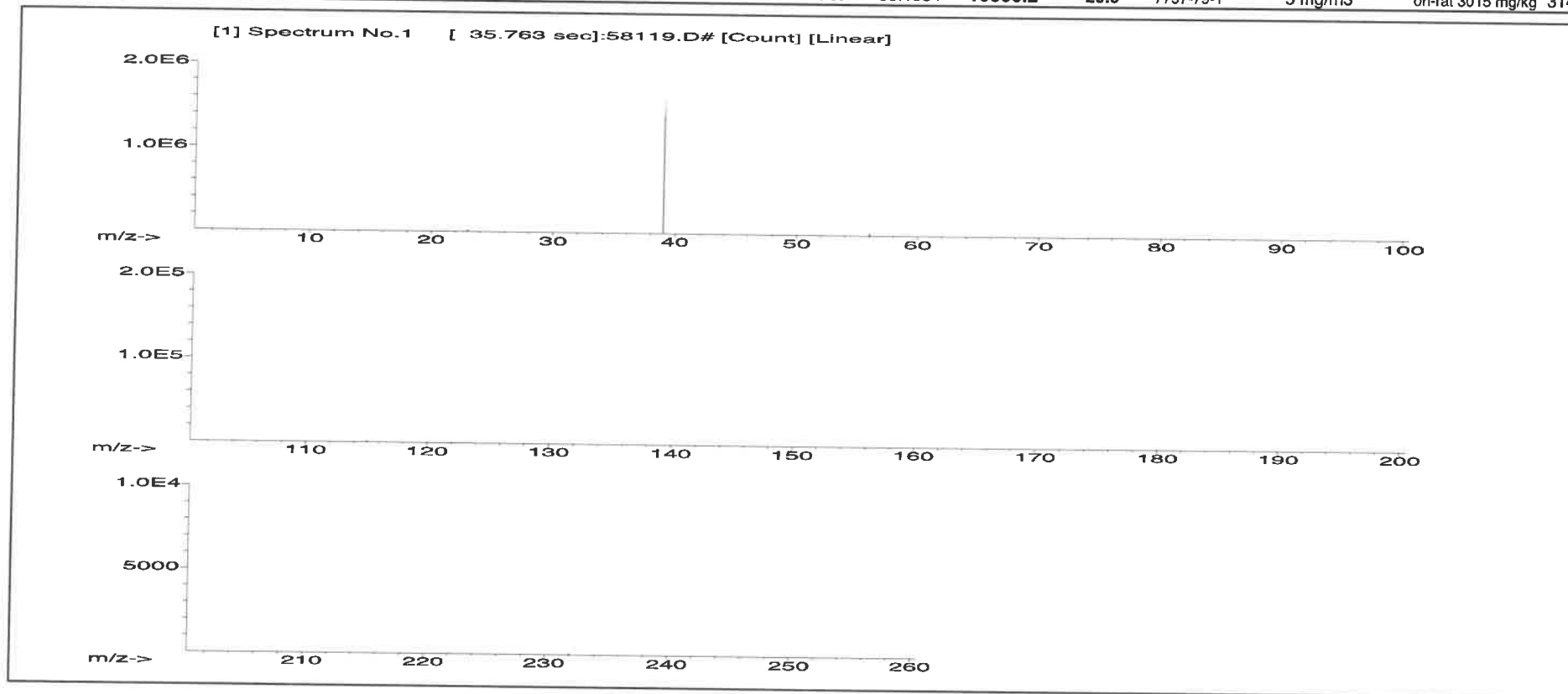


CERTIFIED WEIGHT REPORT:

Part Number: 58119
Lot Number: 071122
Description: Potassium (K)
Solvent: 20510011 Nitric Acid
2% 40.0 Nitric Acid (mL)
Expiration Date: 071125
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

Formulated By:	Lawrence Barry 071122
Reviewed By:	Pedro L. Rentas 071122

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				NIST SRM
											(Solvent Safety Info. On Attached pg.)				
											CAS#	OSHA PEL (TWA)	LD50		
1. Potassium nitrate (K)	IN034	KD022021A1	10000	99.999	0.10	37.6	53.1925	53.1934	10000.2	20.0	7757-79-1	5 mg/m3	ori-rat 3015 mg/kg	3141a	





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (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	<0.02	Nd	<0.02	K	T	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 Reference Material CRM

M5429 R1 0126/23 (B)

CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

57103
070622
Lithium (Li)

Solvent: 20510011 Nitric Acid

Expiration Date:
Recommended Storage:
Nominal Concentration (µg/mL):
NIST Test Number:

070625
Ambient (20 °C)
10000
6UTB

2% 20.0 (mL)

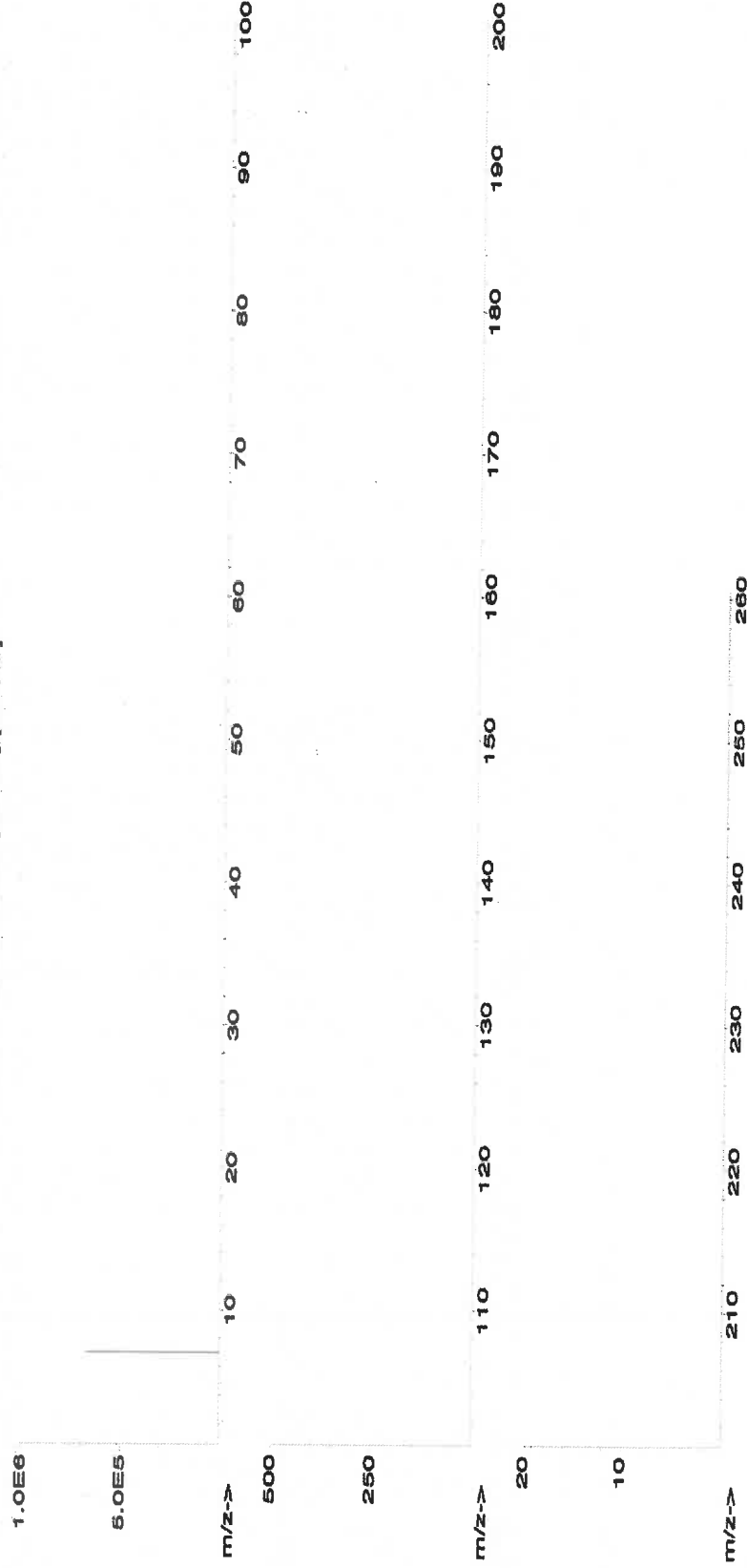
Weight shown below was diluted to (mL): 1000.12
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

<i>Lawrence Barry</i>	
Formulated By:	Lawrence Barry
<i>Pedro L. Rentas</i>	
Reviewed By:	Pedro L. Rentas
070622	

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information		
											(Solvent Safety Info. On Attached pg.)	CAS#	NIST SRM

1. Lithium nitrate (Li)	IN019	L2042019A1	10000	99.999	0.10	10.0	100.0134	100.0173	10000.4	20.0	7790-69-4	5 mg/m3	of-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	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.02	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.2	Ho	<0.02	La	<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	<0.02	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	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).



CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

57058
020623
Cerium (Ce)

Expiration Date:
Recommended Storage:
Nominal Concentration (µg/mL):
NIST Test Number:

020626
Ambient (20 °C)
1000
6UTB

Weight shown below was diluted to (mL):

1000.12 **0.058** **Balance Uncertainty**
Flask Uncertainty

Lot #

Solvent: 21110221 Nitric Acid

2% **20.0** **Nitric Acid**
(mL)

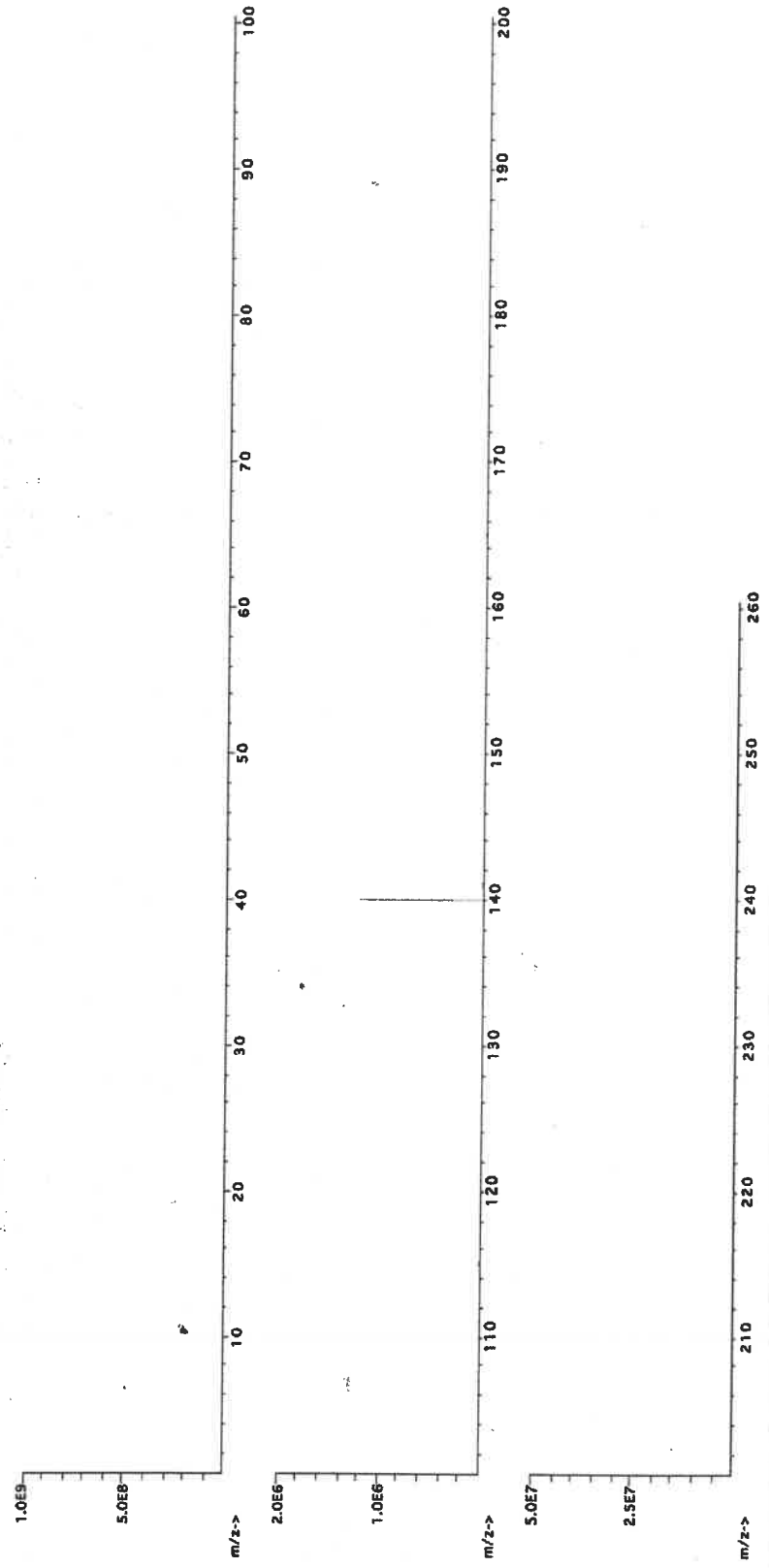
Formulated By:	Lawrence Barry
Reviewed By:	Pedro L. Rentas

SDS Information

Expanded Uncertainty
Actual Weight (g)
Actual Conc. (µg/mL)
CAS#
OSHA PEL (TWA)
LD50
SRM

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	SRM
1. Cerium nitrate hexahydrate (Ce)	IN146	Z512CEB1	1000	99.999	0.10	32.8	3.04919	3.04921	1000.0	2.0	10294-41-4	NA	NA

[1] Spectrum No.1 [43.472 sec]58158.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	<0.02	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	T	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	<0.02	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	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).



Certified Reference Material CRM



CERTIFIED WEIGHT REPORT:

Part Number: **58113**
Lot Number: **011623**
Description: **Aluminum (Al)**

Solvent: **20510011 Nitric Acid**

Lot #

R 17/20/23

Part Number: **58113**
Lot Number: **011623**
Description: **Aluminum (Al)**

Expiration Date: **011626**

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

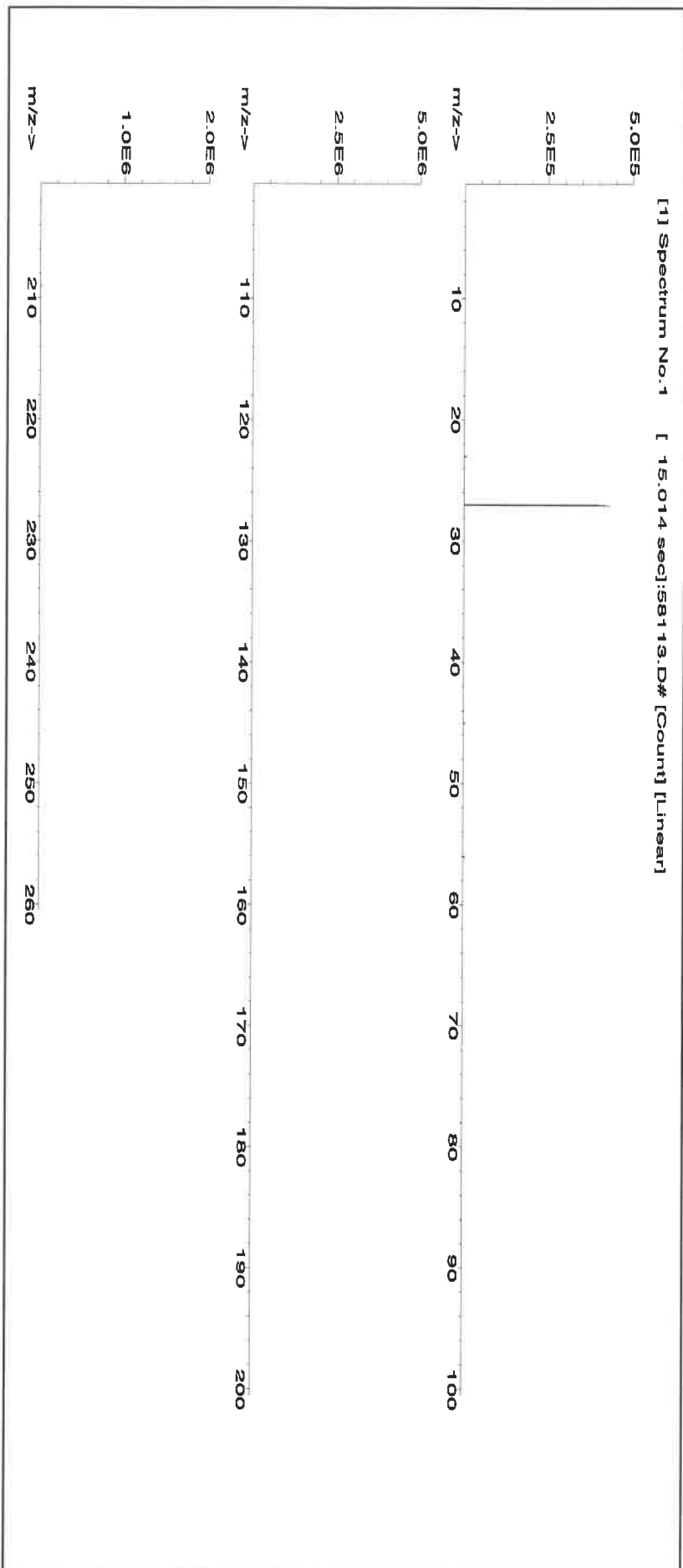
2% 40.0 (mL) Nitric Acid

<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
	011623
<i>Pedro L. Rentas</i>	
Reviewed By:	Pedro L. Rentas
	011623

SDS Information

Compound	Lot	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. Aluminum nitrate nonahydrate (Al)	ALM112021A1	10000	99.999	0.10	7.30	273.9779	274.0078	10001.1	20.0	7784-27-2	2 mg/m3	or-hat 3671 mg/kg	3101a

[1] Spectrum No. 1 [15.014 sec]:58113.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (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	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.02	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	<0.02	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).



CERTIFIED WEIGHT REPORT:

Part Number: 58024
Lot Number: 060523
Description: Chromium (Cr)

Lot # 21110221
Solvent: Nitric Acid

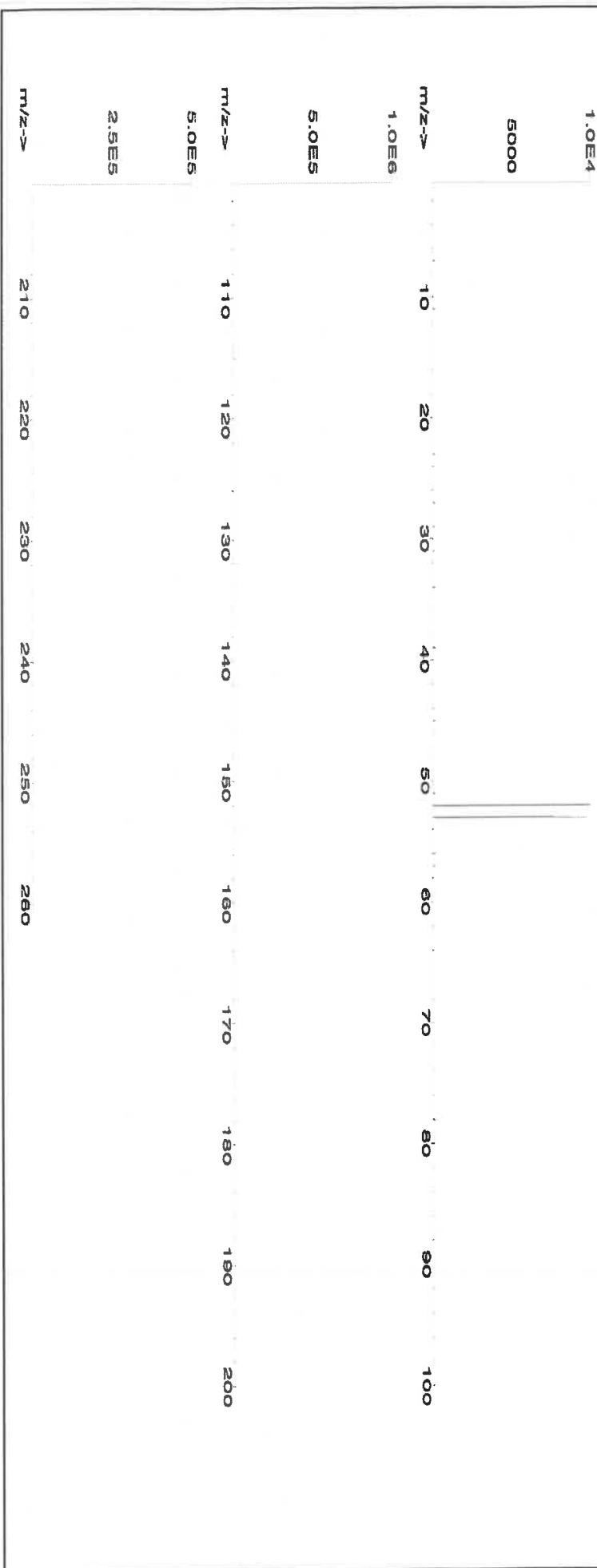
Formulated By:	Lawrence Barry
	060523
Reviewed By:	Pedro L. Ruelas
	060523

Expiration Date: 060526
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Volume shown below was diluted to (mL): 2000.02
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

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. Chromium(III) nitrate nonahydrate (Cr) 58124 071122 0.1000 200.0 0.084 1000 10000.1 1000.0 2.2 7789-02-8 0.5 mg(Cr)/m3 or rat 3250 mg/kg 3112a

[1] Spectrum No.1 [31.393 sec]:57024.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (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	<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).



CERTIFIED WEIGHT REPORT:

Part Number: 57082
Lot Number: 100923
Description: Lead (Pb)

Solvent: 24002546 Nitric Acid

Lot #

R: 12/20/23 MS747

Formulated By:	Lawrence Barry
	100923
Reviewed By:	Pedro L. Rentas
	100923

Expiration Date: 100926
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

2% 60.0 (mL) Nitric Acid

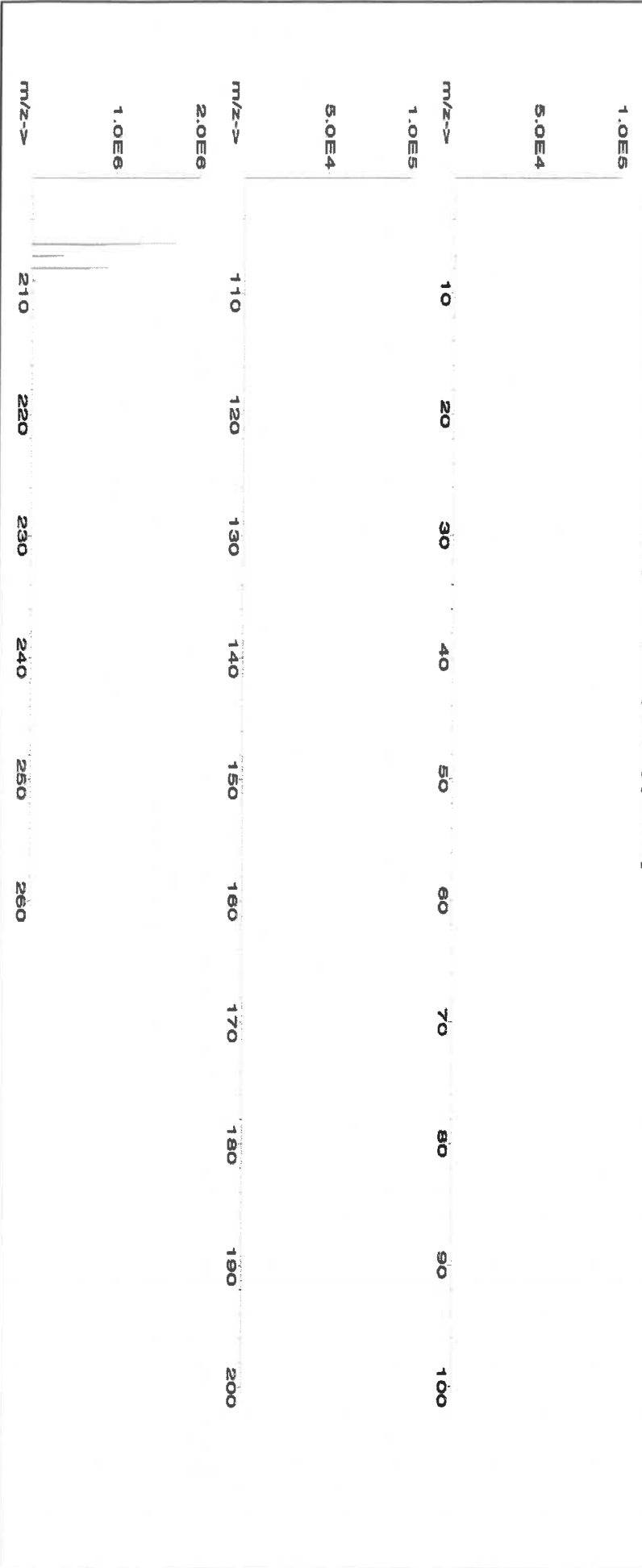
Weight shown below was diluted to (mL): 3000.41 0.06 Flask Uncertainty

Compound	Lot	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded		SDS Information			NIST SRM
									Uncertainty +/- (µg/mL)	CAS#	(Solvent Safety Info. On Attached pg.)			
											OSHA PEL (TWA)	LD50		
RH#	Number													

SDS Information

1. Lead(II) nitrate (Pb) IN029 PB0122016A1 1000 99.999 0.10 62.5 4.80071 4.80077 1000.0 2.0 10099-74-8 0.05 mg/m3 Intyms-ret 89 mg/kg 3128

[1] Spectrum No.1 [14.144 sec]:58082.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (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	Ba	<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

Physical Characterization:

(T) = Target analyte

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: **57028**
Lot Number: **091223**
Description: **Nickel (NI)**

Lot # **24002546** Solvent: **Nitric Acid**

Expiration Date: **091226**
Recommended Storage: **Ambient (20 °C)**
Nominal Concentration (µg/mL): **1000**

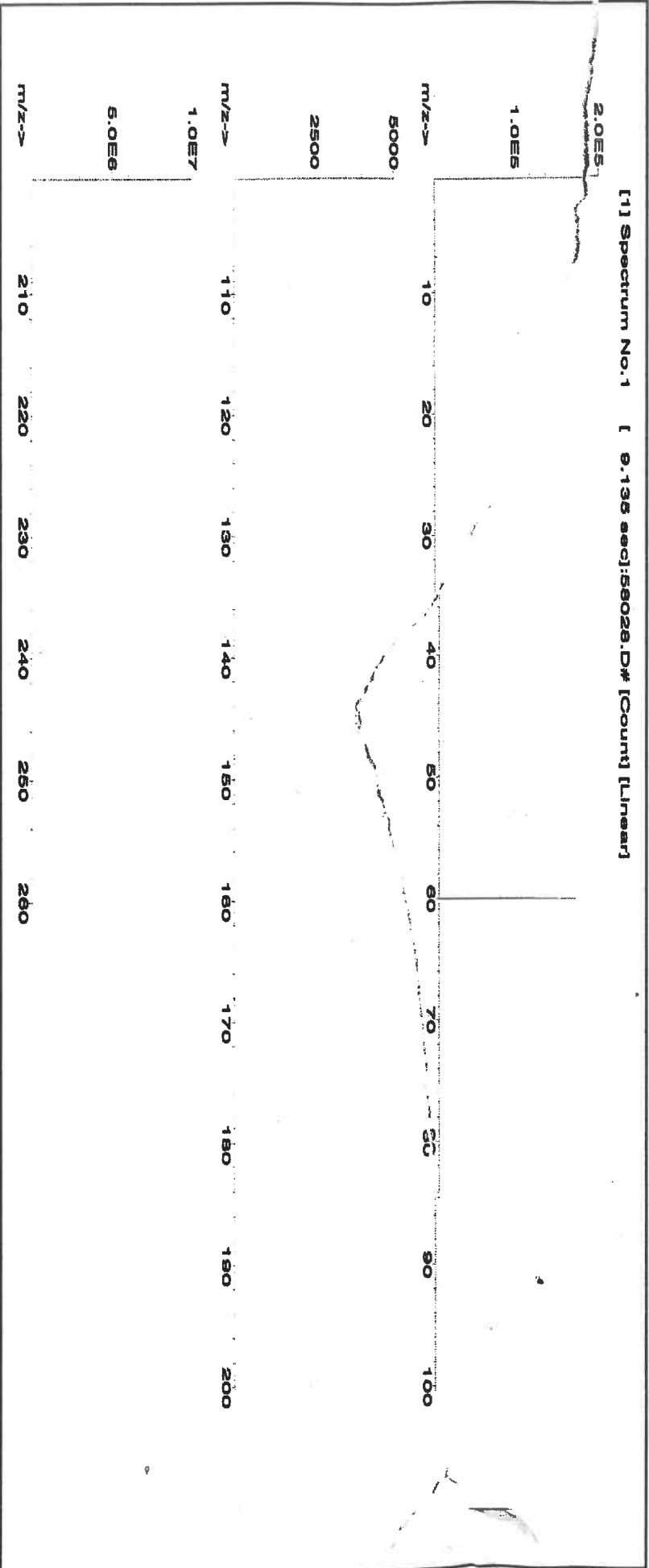
2.0% 40.0 (mL) Nitric Acid

Formulated By:	<i>Lawrence Barry</i>	091223
Reviewed By:	<i>Pedro L. Renteria</i>	091223

NIST Test Number: **6U7B**
Volume shown below was diluted to (mL): **2000.02** Balance Uncertainty: **5E-05** Flask Uncertainty: **0.056**

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 062023 0.1000 200.0 0.084 1000 10000.4 1000.0 2.2 13478-00-7 1 mg/m3 or-rel 1620 mg/kg 3136





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	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	Tb	<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: **58029**
Lot Number: **071723**
Description: **Copper (Cu)**

Lot #: **2110221**
Solvent: **Nitric Acid**

2.0%

40.0 (mL)
Nitric Acid

Formulated By:	Benson Chan	071723
Reviewed By:	Pedro L. Ruelas	071723

Expiration Date: **071726**
Recommended Storage: **Ambient (20 °C)**
Nominal Concentration (µg/mL): **1000**

NIST Test Number: **6L7B**

Volume shown below was diluted to (mL): **2000.02**
Balance Uncertainty: **5E-05**
Flask Uncertainty: **0.058**

SDS Information

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. Copper(II) nitrate trihydrate (Cu) 58129 022723 0.1000 200.0 0.084 1000 10000.5 1000.0 2.2 10031-43-3 1 mg/m3 or rat 794 mg/kg 3114

[1] Spectrum No.1 [33.422 sec]:58029.D# [Count] [Linear]

1.0E6	m/z-->	10	20	30	40	50	60	70	80	90	100
5.0E5	m/z-->	110	120	130	140	150	160	170	180	190	200
2.5E7	m/z-->	210	220	230	240	250	260				



Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (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	Bu	<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	Ru	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	La	<0.2	Hg	<0.2	P	<0.02	Sr	<0.02	S	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	Pb	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	Ta	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	T	Au	<0.02			Nd	<0.02	K	<0.2	Sc	<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: 102523
Description: Beryllium (Be)

Lot # 24002546
Solvent: Nitric Acid

Expiration Date:

102526

2.0%

40.0 (mL)

Nitric Acid

Recommended Storage:
Nominal Concentration (µg/mL):

Ambient (20 °C)

1000

NIST Test Number:

6UTB

Volume shown below was diluted to (mL):

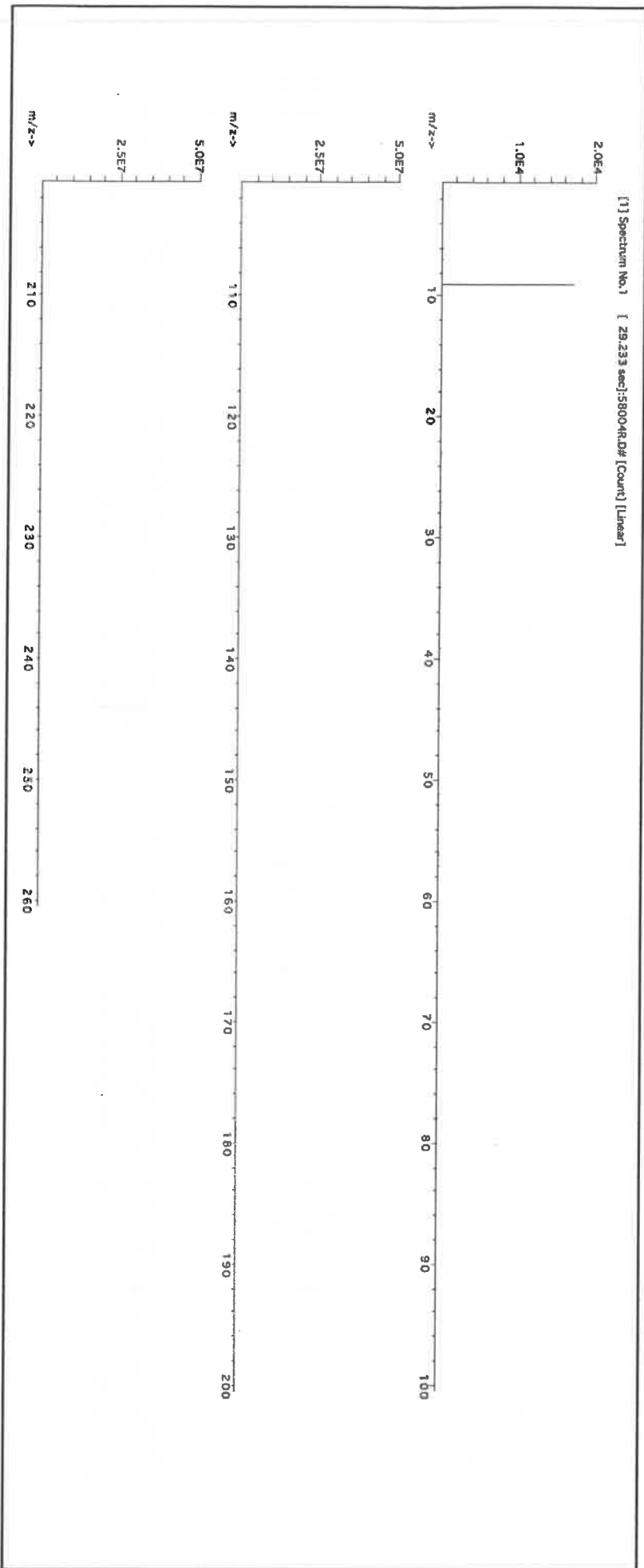
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

Formulated By:	Benson Chan	102523
Reviewed By:	Pedro L. Rentas	102523

SDS Information

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)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM

1. Beryllium nitrate (Be)	58104	091423	0.1000	200.0	0.084	1000	10001.5	1000.0	2.2	13597-99-4	0.2µg/m3	intrinsc-rat 3.16mg/kg	NA





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (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	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	Tc	<0.02	U	<0.02
As	<0.02	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	T	Cr	<0.02	Ga	<0.02	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	Ta	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.02	Sc	<0.02	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).



Certified Reference Material CRM

CERTIFIED WEIGHT REPORT:

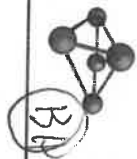
Part Number: 57050
Lot Number: 071123
Description: Tin (Sn)

Solvents: 21110221 Nitric Acid
22D0562008 Hydrochloric acid

Lot #

R-02509124

M599



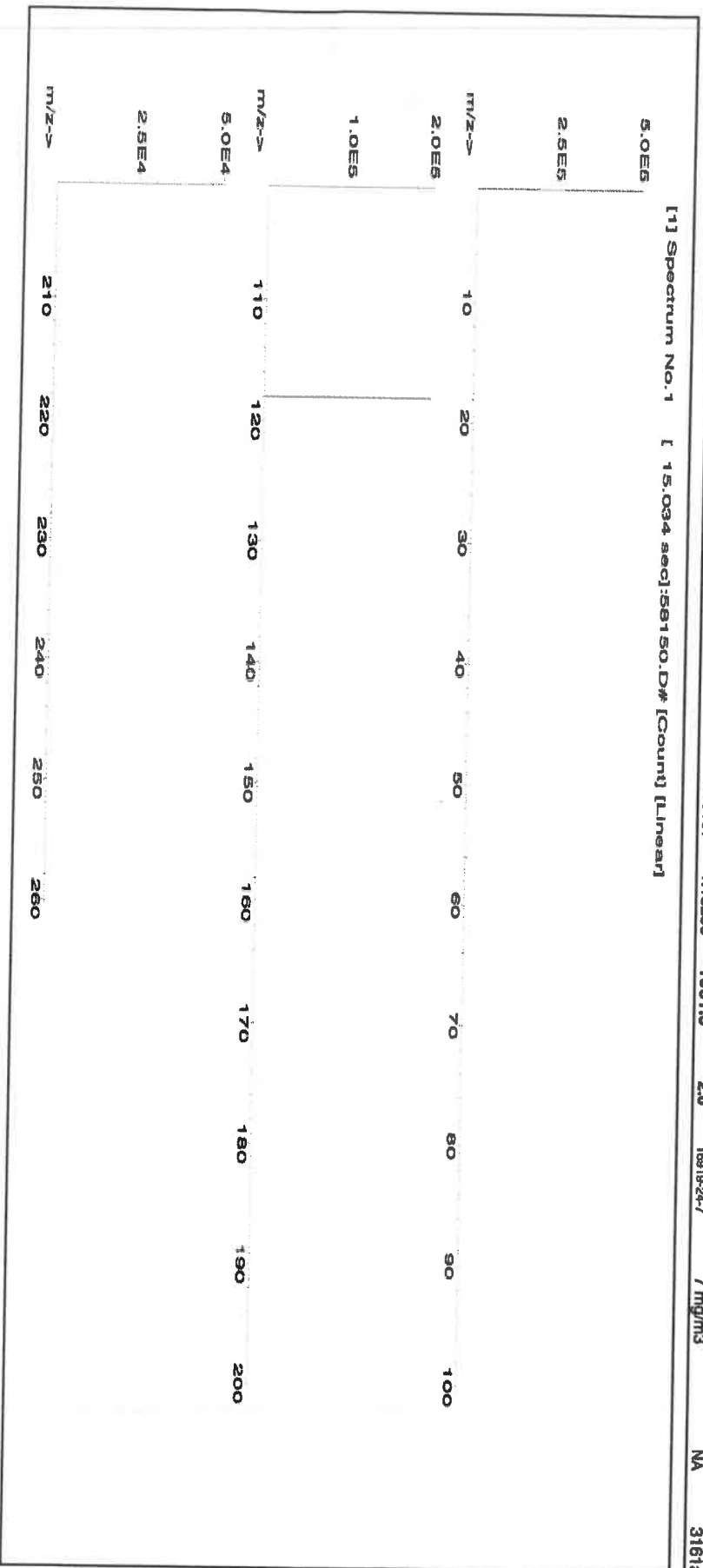
Expiration Date: 071126
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 499.93
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

Formulated By:	Benson Chan	071123
Reviewed By:	Pedro L. Rientas	071123

SDS Information												
Compound		Lot		Nominal	Purity	Uncertainty	Assay	Target	Actual	Actual	Expanded	NIST
RM#	Number	Conc. (µg/ml)	(%)	Purity (%)	(%)	Weight (g)	Weight (g)	Conc. (µg/ml)	+/- (µg/ml)	CAS#	OSHA PEL (TWA)	

1. Ammonium hexafluoroantimonate(V) (Sn) INO10 SMD042023A1 1000 99.999 0.10 44.2 1.13107 1.13286 1001.6 2.0 16919-24-7 7 mg/m3 NA 3161a

[1] Spectrum No. 1 [15.034 sec]:56150.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (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	<500	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	Ta	<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	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: 02/09/24 115800 (54)

CERTIFIED WEIGHT REPORT:

Part Number: 57027
Lot Number: 091923
Description: Cobalt (Co)

Expiration Date: 091926
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

Volume shown below was diluted to (mL): 2000.02

5E-05 Balance Uncertainty
0.058 Flask Uncertainty

Lot # 24002546
Solvent: Nitric Acid

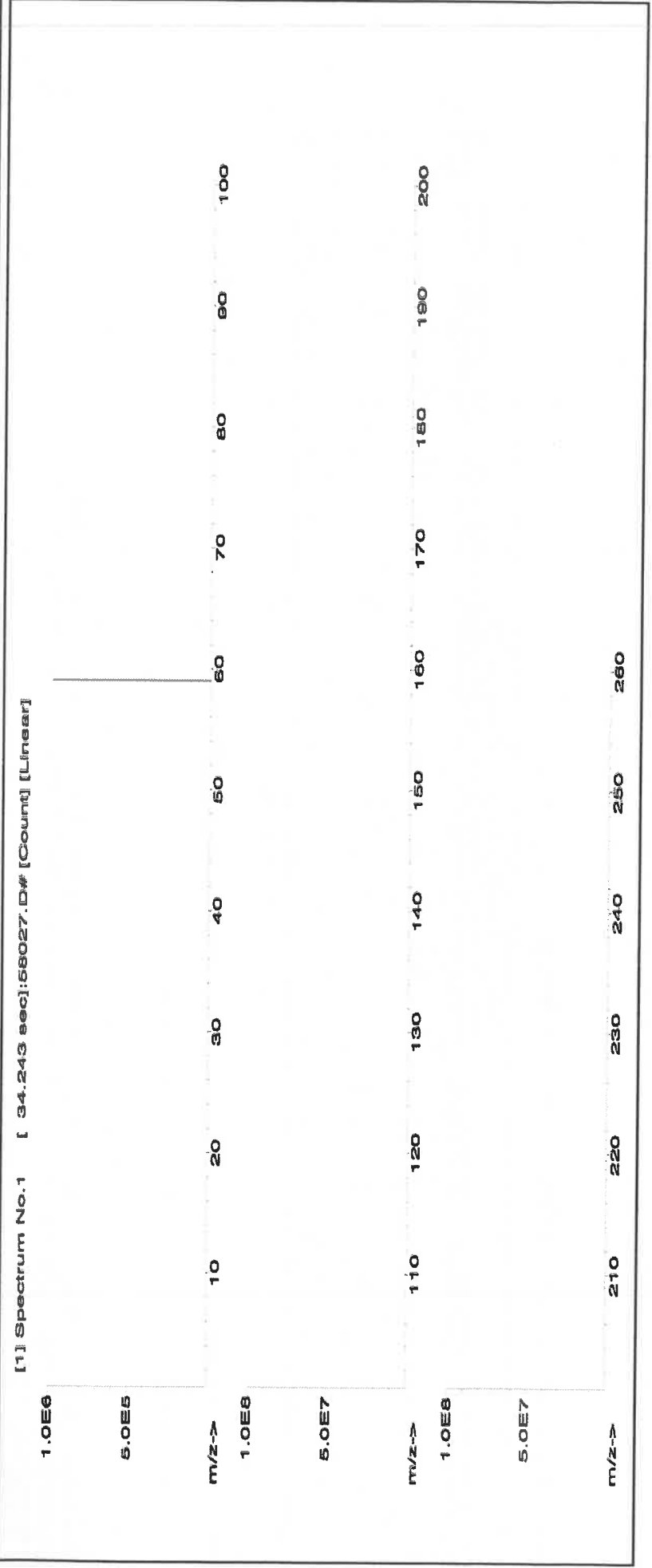
2.0% Nitric Acid
40.0 (mL)

Formulated By:	Lawrence Barry
Reviewed By:	Pedro L. Rentas

SDS Information

Expanded Uncertainty +/- (µg/mL)
(Solvent Safety Info. On Attached pg.)
NIST SRM
CAS# OSHA PEL (TWA) LD50

1. Cobalt(II) nitrate hexahydrate (Co) 58127 050923 0.1000 200.0 0.084 1000 10000.0 1000.0 2.2 10026-22-9 0.02 mg/m3 orl-rat 691 mg/kg 3113





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	<0.2	Na	<0.02	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.
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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).



CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

57033
111323
Arsenic (As)

Lot #
Solvent:

24002546
Nitric Acid

2.0%

80.0

Nitric Acid

Expiration Date:
Recommended Storage:
Nominal Concentration (µg/mL):

111326
Ambient (20 °C)
1000

NIST Test Number:
Volume shown below was diluted to (mL):

6UTB
4000.0

5E-05
Balance Uncertainty
0.06
Flask Uncertainty

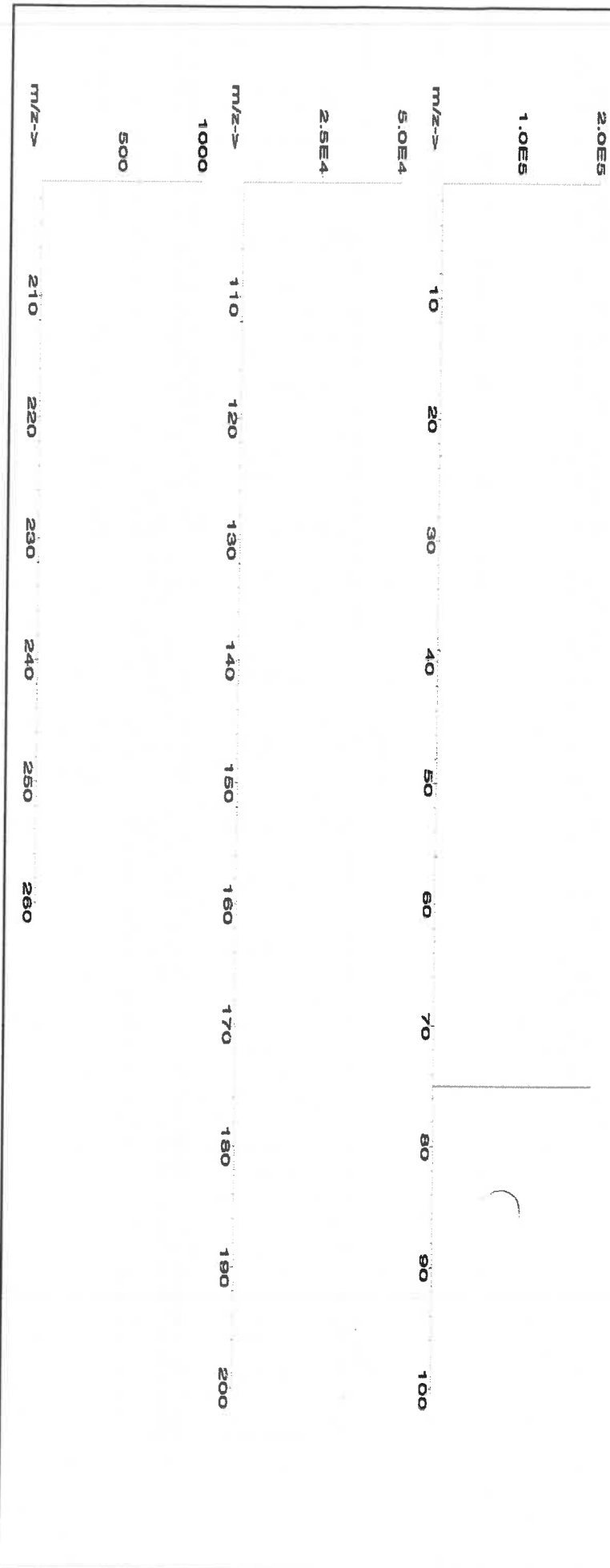
Formulated By:	Lawrence Barry	111323
Reviewed By:	Pedro L. Rendas	111323

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)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM

1. Arsenic (As) 58133 020522 0.1000 400.0 0.084 1000 10001.0 1000.0 2.0 7440-38-2 0.5 mg/m3 or-lat 500 mg/kg 3103a

[1] Spectrum No.1 [34.433 sec]:57033.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (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	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	Tl	<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	Pr	<0.02	Sm	<0.02	S	<0.02	Su	<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.
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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 WEIGHT REPORT:

Part Number: **57005**
Lot Number: **071123**
Description: **Boron (B)**

Solvent: MKB0857V Ammonium hydroxide

Lot #

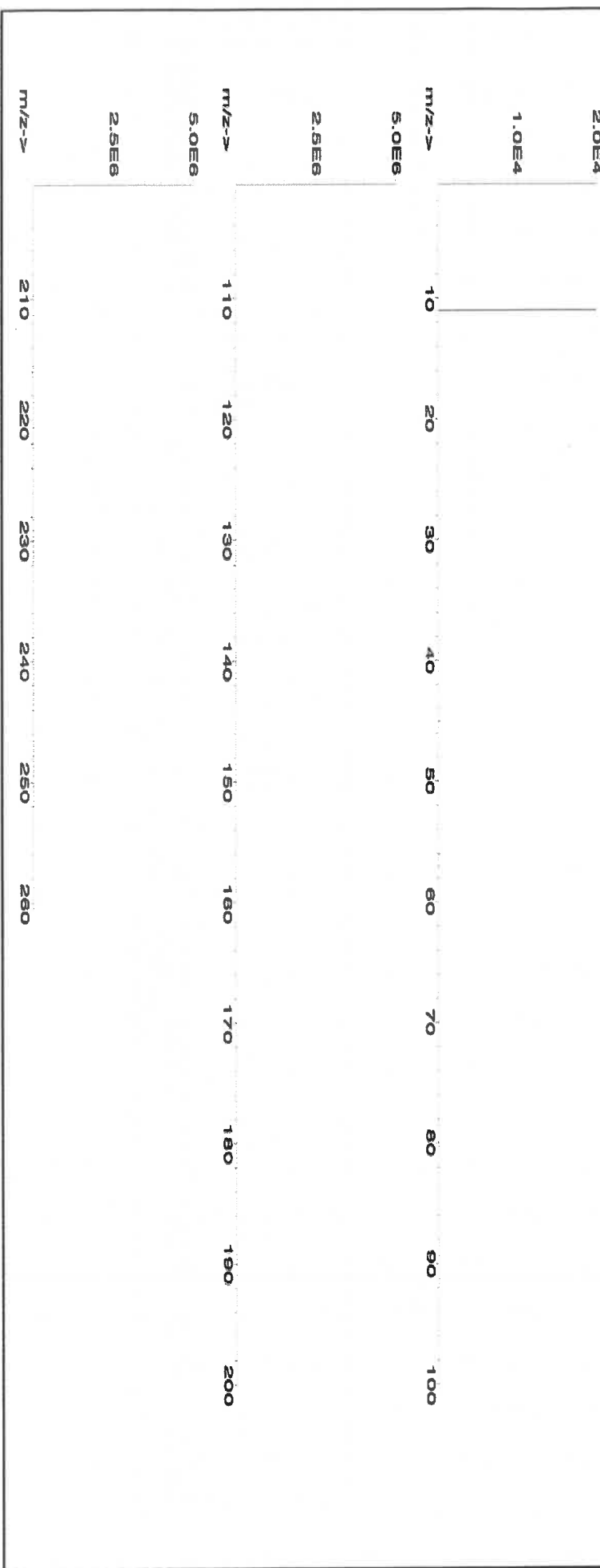
AI: 021009124 M5814

Expiration Date: 071126
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 1999.48 0.058 Balance Uncertainty
2.0% 40.0 Ammonium hydroxide (mL)

Formulated By:	Benson Chan
071123	
Reviewed By:	Pedro L. Rientas
071123	

SDS Information									
Compound	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)
1. Boric acid (B)	IN018 BV082018A1	1000	99.999	0.10	17.3	11.55772	11.56201	1000.4	2.0
								2 mg/m3	10043-35-3
									2 mg/m3
									ort-nat 2660 mg/kg
									3107

[1] Spectrum No. 1 [12.275 sec]:56105.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	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	<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: 57115
Lot Number: 041723
Description: Phosphorous (P)

Solvent: 21110221 Nitric Acid

Lot #

R102109124 M5815

Expiration Date: 041726
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): 2000.02 0.056 Balance Uncertainty Flask Uncertainty

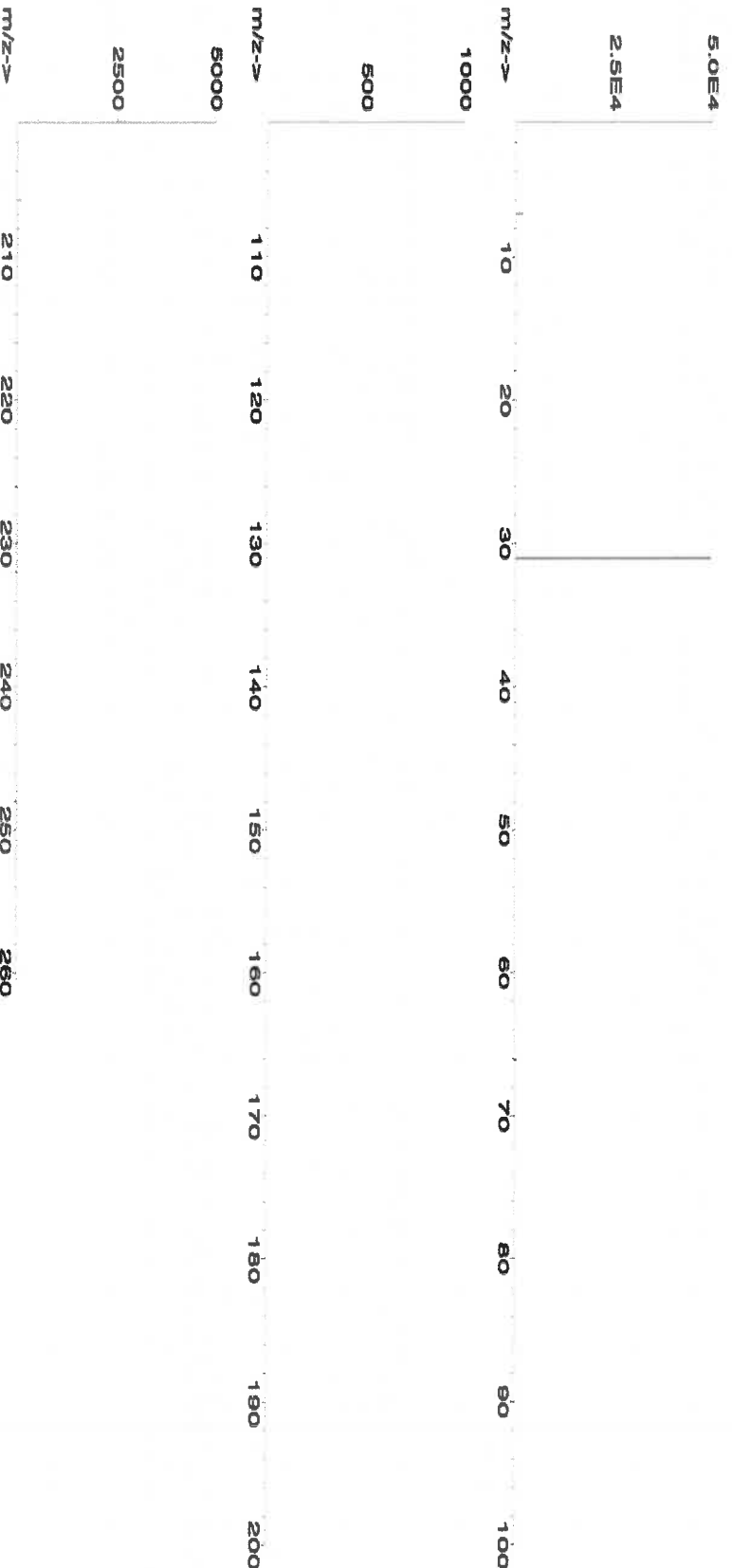
Formulated By:	Lawrence Barry
	041723
Reviewed By:	Pedro L. Rentas
	041723

SDS Information

Compound	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

1. Ammonium dihydrogen phosphate (P) IN008 PVR2019A1 10000 99.999 0.10 27.5 72.7287 72.7289 10000.0 20.0 7722-76-1 5 mg/m3 or-hal->2000mg/kg 3186

[1] Spectrum No.1 [12.074 sec]:58115.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	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).



CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

57016
122923
Sulfur (S)

Lot #

ASTM Type 1 Water

Formulated By:	Benson Chan
122923	
Reviewed By:	Pedro L. Rentas
122923	

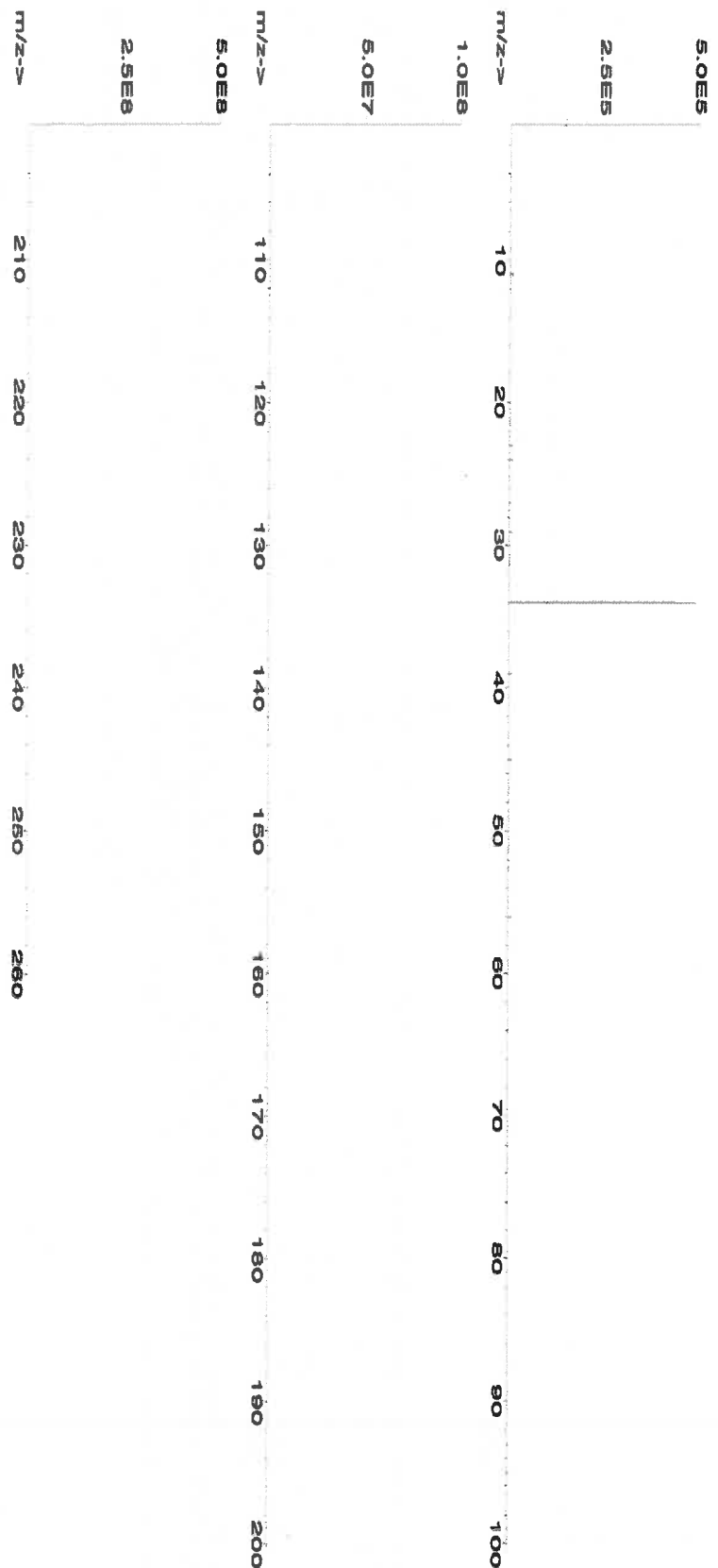
Expiration Date: 122926
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6L7B
Weight shown below was diluted to (mL): 4000.0
SE-05 Balance Uncertainty
0.06 Flask Uncertainty

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

1. Ammonium sulfate (S) IN117 SLBR725V 1000 99.9 0.10 24.3 16.4979 16.4980 1000.0 2.0 7783-20-2 NA 0.01-0.02 4250mg/kg 3181

[1] Spectrum No. 1 [33.603 sec]:57016.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (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	La	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Ba	<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	Ru	<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	S	<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	Ta	<0.02	Ti	<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: **57116**
Lot Number: **071123**
Description: **Sulfur (S)**

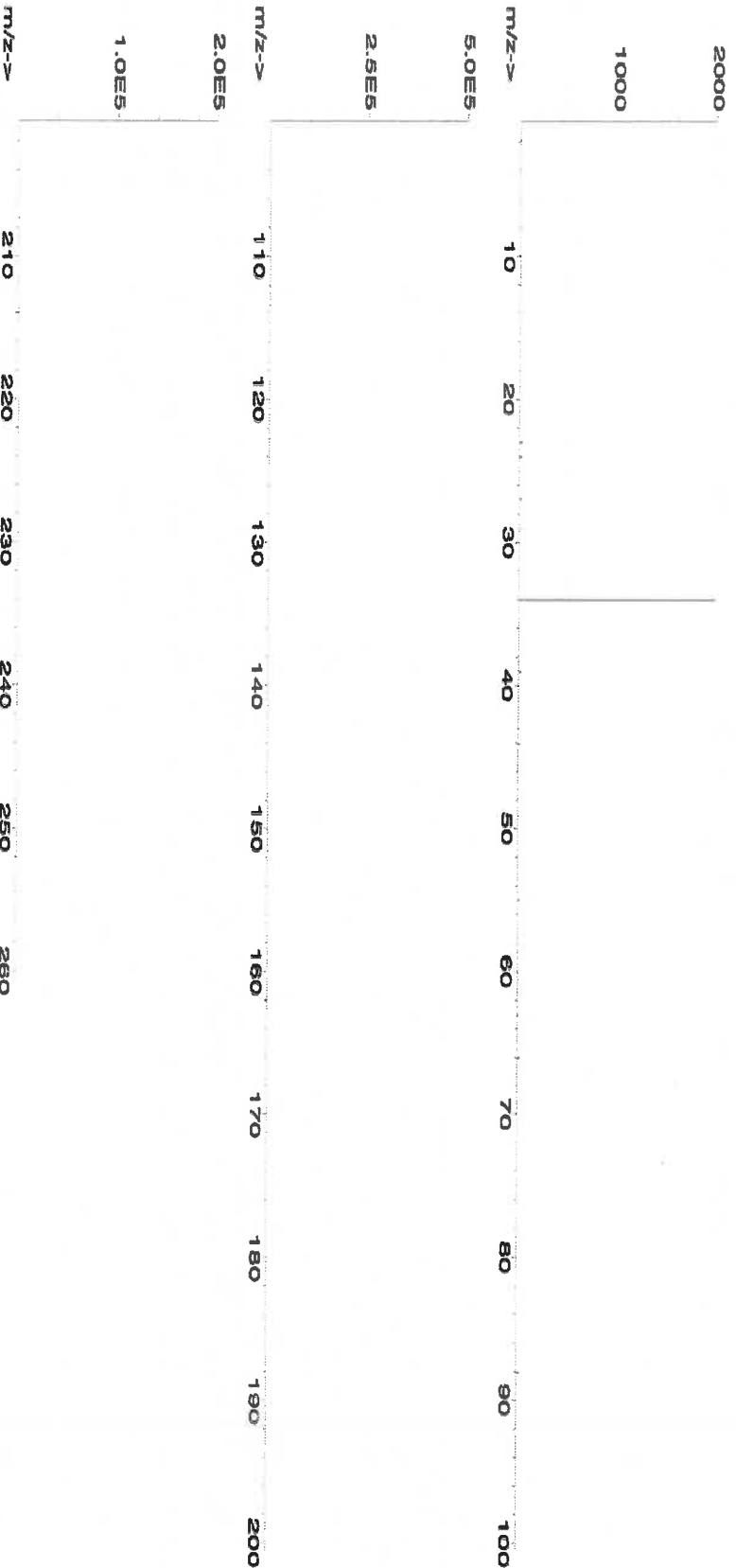
Lot #
Solvent: 071123 ASTM Type 1 Water

Formulated By:	Lawrence Barry
071123	
Reviewed By:	Pedro L. Rentas
071123	

Expiration Date: 071126
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 1999.48 5E-05 Balance Uncertainty 0.058 Flask Uncertainty

SDS Information									
Compound	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)
Ammonium sulfate (S)	IN117 SLBR725V	10000	99.9	0.10	24.3	82.4675	82.4692	10000.1	20.0
						7763-20-2	NA		oral 4250mg/kg 3181

[1] Spectrum No. 1 [24.004 sec]:58116.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (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	Ti	<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

Physical Characterization:

(T)= Target analyte

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.
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- * 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: 091123
Description: Phosphorous (P)

Solvent: 24002546 Nitric Acid

Lot #

R: 02109124 M5820

Formulated By: Lawrence Barry 091123

Reviewed By: Pedro L. Rentas 091123

2% 40.0 (mL) Nitric Acid

Expiration Date: 091126
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6LJB

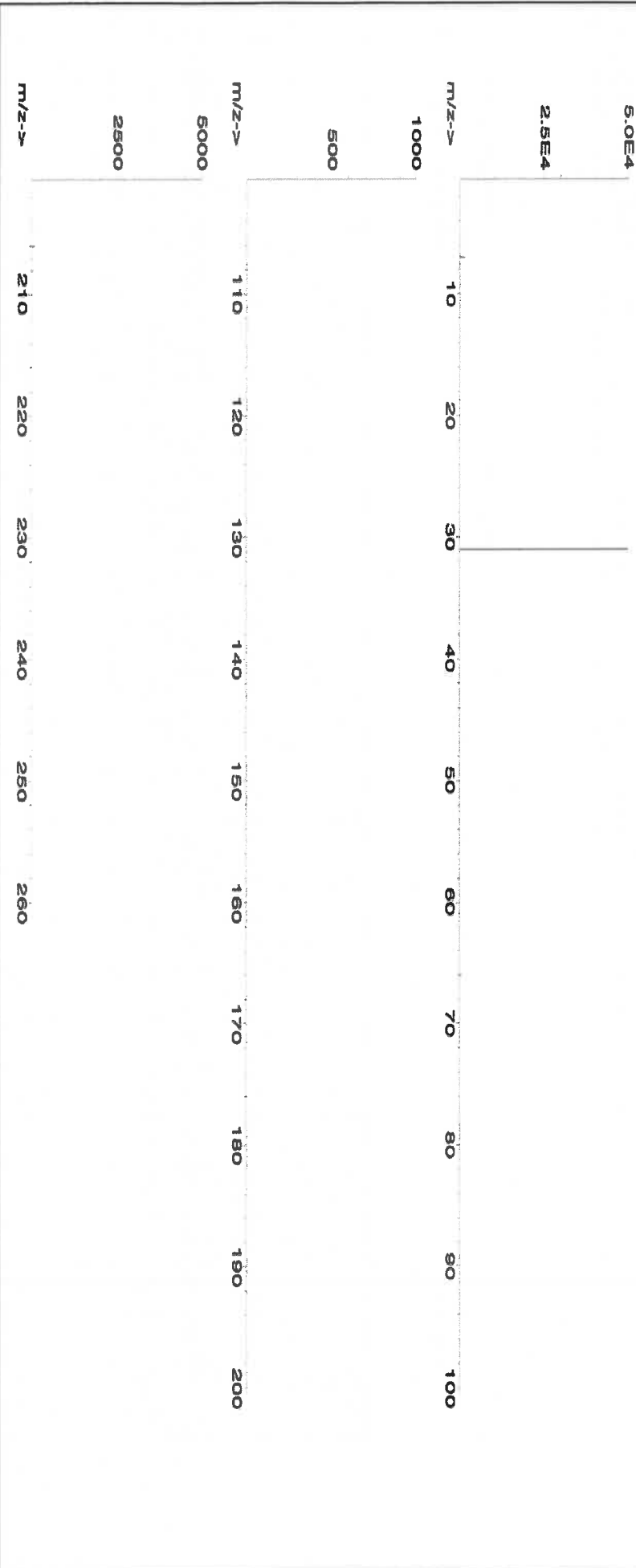
Weight shown below was diluted to (mL): 2000.02 0.058 Balance Uncertainty Flask Uncertainty

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. Ammonium dihydrogen phosphate (P) IN008 PVO82019A1 1000 99.999 0.10 27.5 7.2729 7.2730 1000.0 2.0 7722-76-1 5 mg/m3 xH-rat >2000mg/kg 3186

[1] Spectrum No.1 [12.074 sec]:58115.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (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	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	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	Sa	<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.
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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).



Refine your results. Redefine your industry.

Certificate of Analysis

M5959 R: 6/14/24

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

P: 800-669-6799/540-585-3030

F: 540-585-3012

info@inorganicventures.com

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: CGY10
Lot Number: V2-Y740548
Matrix: 2% (v/v) HNO₃
Value / Analyte(s): 10 000 µg/mL ea:
Yttrium
Starting Material: Yttrium Oxide
Starting Material Lot#: 2661 and 06230520YL
Starting Material Purity: 99.9984%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10000 ± 30 µg/mL
Density: 1.032 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1	10011 ± 25 µg/mL EDTA NIST SRM 928 Lot Number: 928
Assay Method #2	9997 ± 50 µg/mL ICP Assay NIST SRM 3167a Lot Number: 190730
Assay Method #3	9984 ± 31 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, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

X_i = mean of Assay Method i with standard uncertainty $u_{char i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char i}^2) / (\sum(1/u_{char i}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (z) = U_{CRM/RM} = k(u_{char}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2

$u_{char} = [\sum(w_i)^2(u_{char i}^2)]^{1/2}$ where $u_{char i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a)(u_{char a})$$

X_a = mean of Assay Method A with

$u_{char a}$ = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (z) = U_{CRM/RM} = k(u_{char a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2

$u_{char a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = 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 <	0.004600	M Eu	0.009037	M Na	0.086360	M Se <	0.005200	M Zn	0.030125
M Al	0.014862	O Fe	0.002410	M Nb <	0.000570	O Si	0.024100	O Zr <	0.002600
M As <	0.003500	M Ga <	0.000570	M Nd	0.000923	M Sm	0.000461		
M Au <	0.001700	M Gd <	0.003500	M Ni <	0.005700	M Sn <	0.002300		
O B	0.002209	M Ge <	0.005200	M Os <	0.001200	M Sr <	0.004600		
O Ba <	0.002500	M Hf <	0.000570	n P <		M Ta <	0.000570		
O Be <	0.001400	M Hg <	0.000570	M Pb	0.005020	M Tb	0.001044		
M Bi <	0.003500	M Ho	0.009037	M Pd <	0.005100	M Te <	0.002300		
O Ca	0.009841	M In <	0.002300	M Pr <	0.002300	M Th <	0.000570		
M Cd <	0.000570	M Ir <	0.000570	M Pt <	0.000570	M Ti <	0.003500		
M Ce <	0.002300	O K	0.018677	M Rb <	0.000570	M Tl <	0.000570		
M Co <	0.000570	M La	0.000461	M Re <	0.000570	M Tm <	0.003500		
M Cr <	0.004000	O Li <	0.009300	M Rh <	0.008000	M U <	0.000570		
M Cs <	0.000570	M Lu	0.000582	M Ru <	0.000570	M V	0.001265		
M Cu	0.002610	O Mg	0.001486	n S <		M W <	0.002300		
M Dy	0.003815	M Mn	0.000582	M Sb	0.005422	s Y <			
M Er	0.003615	M Mo <	0.005700	M Sc <	0.001200	M Yb	0.001827		

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

6.1 This standard is intended for the calibration of analytical instruments and validation of analytical methods as appropriate. This CRM may be used in connection with EPA Methods 6010, 6020 (all versions), Standard Methods 3120 B and USP <232> / ICH Q3D.

6.2 For products attaining traceability through Inorganic Ventures' Primary Certified Reference Materials (PCRM™) see the Limited License to Use PCRM™ in the Inorganic Ventures Terms and Conditions of Sale, <https://www.inorganicventures.com/terms-and-conditions-sale>. The Terms and Conditions contain information on the use of materials traceable to PCRM™ certified reference materials. This Limited License agreement is especially pertinent for laboratories accredited under ISO:17034.

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 - 88.91 +3 6 Y(OH)(H₂O)_{x+2}

Chemical Compatibility -Soluble in HCl, H₂SO₄ and HNO₃. Avoid HF, H₃PO₄ and neutral to basic media.

Stable with most metals and inorganic anions forming an insoluble carbonate, oxide, oxalate, and fluoride.

Avoid mixing with elements / solutions containing moderate amounts of fluoride.

Stability - 2-100 ppb levels stable for months in 1% HNO₃ / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO₃ / LDPE container.

Y Containing Samples (Preparation and Solution) - Metal (Soluble in acids); Oxide (Dissolve by heating in H₂O / HNO₃); Ores (Carbonate fusion in PtO followed by HCl dissolution); Organic Matrices (Dry ash and dissolve in 1:1 H₂O / HCl or HNO₃).

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 89 amu	0.8 ppt	N/A	73Ge16O, 178Hf+2
ICP-OES 360.073 nm	0.005 / 0.000036 µg/mL	1	Ce, Th
ICP-OES 371.030 nm	0.004 / 0.00007 µg/mL	1	Ce
ICP-OES 377.433 nm	0.005 / 0.0009 µg/mL	1	Ta, 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

February 20, 2024

- 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 20, 2029

- 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 Prepared By:

Uyen Truong
Custom Processing Supervisor



Certificate Approved By:

Muzzammil Khan
Stock Laboratory Supervisor



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director





CERTIFIED WEIGHT REPORT:

MS962 **R10614124**

Lot # **24002546** Solvent: **Nitric Acid**

Part Number: **57034**
Lot Number: **060624**
Description: **Selenium (Se)**

2.0% 40.0 (mL) Nitric Acid

Expiration Date: **060627**

Recommended Storage: **Ambient (20 °C)**

Nominal Concentration (µg/mL): **1000**

NIST Test Number: **6UTB**

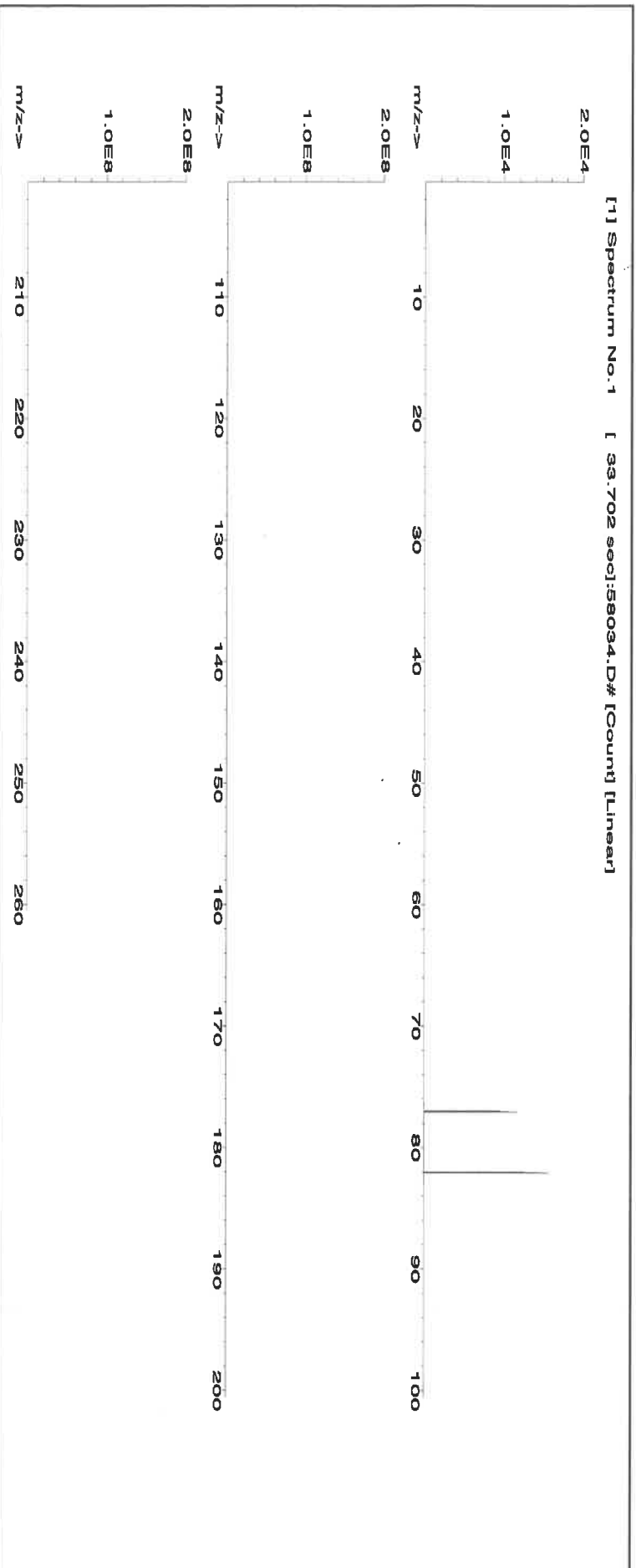
Volume shown below was diluted to (mL): **2000.07** **SE-05** Balance Uncertainty **0.100** Flask Uncertainty

Formulated By:	Benson Chan	060624
Reviewed By:	Pedro L. Rantas	060624

SDS Information

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Pipette (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)	LDSO	NIST SRM

1. Selenium (Se)	58134	071223	0.1000	200.0	0.084	1000	10002.5	1000.0	2.2	7782-49-2	0.2 mg/m3	or-tral 6700 mg/kg	3149





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (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	<0.02	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	Ru	<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	Sr	<0.02	S	<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	Ta	<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			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).

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com



Certified Reference Material CRM

M5970 M5971



ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT:

Part Number: **57003**
Lot Number: **062124**
Description: **Lithium (Li)**
Expiration Date: **06/127**
Recommended Storage: **Ambient (20 °C)**
Nominal Concentration (µg/mL): **1000**
NIST Test Number: **6UTB**
Volume shown below was diluted to (mL): **250.11**
SE-05 Balance Uncertainty
0.016 Flask Uncertainty

Lot # **24002546**
Solvent: **Nitric Acid**

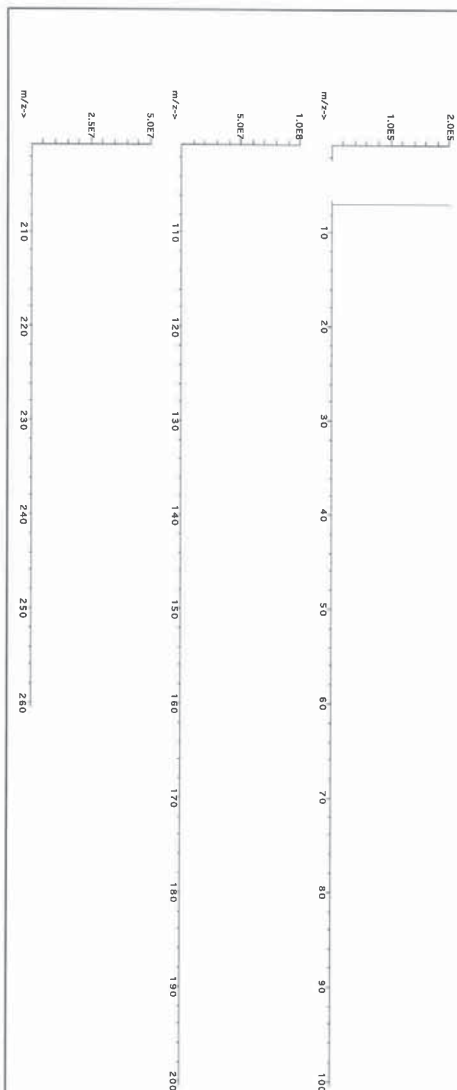
2.0% 5.0 (mL) Nitric Acid

Microvial Capable	
Formulated By:	Giovanni Esposito
	062124
Reviewed By:	Pedro L. Parias
	062124

Compound		Part		Lot		Dilution		Initial		Uncertainty		Nominal		Initial		Final		Expanded		SDS Information		NIST	
Number	Factor	Number	Factor	Number	Factor	Vol. (mL)	Pipette (mL)	Conc. (µg/mL)	Conc. (µg/mL)	Vol. (mL)	Pipette (mL)	Conc. (µg/mL)	Conc. (µg/mL)	Vol. (mL)	Pipette (mL)	Conc. (µg/mL)	Conc. (µg/mL)	Uncertainty	± (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	SM

1. Lithium nitrate (Li) 58103 070622 0.1000 25.0 0.004 1000 10000.4 1000.0 2.0 7790-68-4 5 mg/m3 or-hal 1428 mg/kg NA

[1] Spectrum No. 1 [32.093 sec; 15000.0Hz Count [Lines]



Certificate of Analysis

MS978, MS979



Refine your results. Redefine your industry.

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

R: 2/22/24

P: 800-669-6799/540-585-3030
F: 540-585-3012
info@inorganicventures.com

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: CGT1

Lot Number: T2-T1719972

Matrix: 2% (v/v) HNO₃

Value / Analyte(s): tr. HF

Starting Material: 1 000 µg/mL ea.

Starting Material: Titanium

Starting Material: Ti Metal

Starting Material Lot#: 2094

Starting Material Purity: 99.9975%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1002 ± 5 µg/mL

Density: 1.012 g/mL (measured at 20 ± 4 °C)

Assay Method #1

1002 ± 4 µg/mL

ICP Assay NIST SRM 3162a Lot Number: 130925

- 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, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = (X_p) / (U_{p,ave})$

X_p = mean of Assay Method A with

$U_{p,ave}$ = the standard uncertainty of characterization Method A

$U_p = (U_{CRM/RM})^2 / (U_{CRM/RM})^2$

U_p = the weighting factors for each method calculated using the inverse square of the variance

$U_{CRM/RM} = \sqrt{(U_{CRM/RM})^2 / (U_{CRM/RM})^2}$

$U_{CRM/RM}$ = the mean of Assay Method A with standard uncertainty $U_{CRM/RM}$

$U_{CRM/RM} = \sqrt{(U_{CRM/RM})^2 / (U_{CRM/RM})^2}$

$U_{CRM/RM}$ = the mean of Assay Method A with standard uncertainty $U_{CRM/RM}$

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$U_{CRM/RM}$ = the mean of Assay Method A with standard uncertainty $U_{CRM/RM}$

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 UHPA-filtered Clean Room. An UHPA-filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag	<	0.000536	M Eu	<	0.000268	O Na	<	0.032670	M Se	<	0.001204	O Zn	<	0.003267
M Al	<	0.000872	O Fe	<	0.003225	O Nb	<	0.043560	O Si	<	0.004735	O Zr	<	0.043560
M As	<	0.008586	M Ga	<	0.000268	M Nd	<	0.000268	M Sm	<	0.000268			
M Au	<	0.004577	M Gd	<	0.000268	O Ni	<	0.010890	M Sn	<	0.000986			
O B	<	0.008929	M Ge	<	0.002146	M Os	<	0.000269	O Sr	<	0.000986			
M Ba	<	0.002683	M Hf	<	0.002161	O P	<	0.054450	M Ta	<	0.010560			
M Be	<	0.005366	M Hg	<	0.003231	M Pb	<	0.001073	M Tb	<	0.000268			
M Bi	<	0.001609	M Ho	<	0.000268	M Pd	<	0.000268	M Th	<	0.001341			
O Ca	<	0.000676	M In	<	0.002683	M Pr	<	0.000268	M Tl	<	0.053663			
M Cd	<	0.000268	M Ir	<	0.000269	M Pt	<	0.000536	S Ti	<				
M Co	<	0.000268	M K	<	0.001172	M Rb	<	0.000268	M Tl	<	0.000268			
M Cr	<	0.000752	O Li	<	0.000268	M Re	<	0.000268	M Tm	<	0.000268			
M Cs	<	0.000268	M Lu	<	0.000268	M Rh	<	0.000268	M U	<	0.000268			
O Cu	<	0.010890	O Mg	<	0.005445	I S	<	0.006976	M Y	<	0.002146			
M Dy	<	0.000268	O Mn	<	0.003267	M Sb	<	0.004900	M Yb	<	0.000536			
M Er	<	0.000268	M Mo	<	0.000774	O Sc	<							

6.0 INTENDED USE

M - Checked by ICP-MS
O - Checked by ICP-OES
I - Spectral Interference
n - Not Checked For
s - Solution Standard Element

- 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 - 47.87 ± 4.6 Ti(F)₆-2 media. Unstable at ppm levels with metals that would pull F- away (i.e. Do not mix with Alkaline or Rare Earths or high levels of transition elements unless they are fluorinated). Stable with most inorganic anions with a tendency to hydrolyze forming the hydrated oxide in all dilute acids except HF.

Stability - 2-100 ppb levels stable (Alone or mixed with all other metals) as the Ti(F)₆-2 for months in 1% HNO₃ / LDPE container. 1-10,000 ppm single element solutions as the Ti(F)₆-2 chemically stable for years in 2-5% HNO₃ / trace HF in an LDPE container.

Ti Containing Samples (Preparation and Solution) - Metal (Soluble in H₂O / HF caution - powder reacts violently). Oxide - low temperature history anatase or rutile (Dissolved by heating in 1:1:1 H₂O / HF / H₂SO₄); K₂SiO₃ - no KF if silica not present); Organic Matrices (Dry ash at 450°C in P10 and dissolve by heating with 1:1:1 H₂O / HF / H₂SO₄ or fuse ash with pyrosulfate if oxide is as plastic pigment and likely in brookite crystaline form).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order
ICP-MS 48 amu	14 ppt	N/A
ICP-OES 323.452 nm	0.0054 / 0.00092 µg/mL	14N160180, 32S160, 32S14N, 14N17N2, 36A12C, 48Ca, [96X=2
ICP-OES 334.941 nm	0.0038 / 0.00028 µg/mL	14N17N2, 36A12C, 48Ca, [96X=2
ICP-OES 336.121 nm	0.0053 / 0.00034 µg/mL	14N17N2, 36A12C, 48Ca, [96X=2
HF Note: This standard should not be prepared or stored in glass.		W, Mo, Co
		Nb, Ta, Cr, U
		Ce, Ar, Ni
		Ru]]
		(where X = Zr, Mo,

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: 800.868.6786; 540.585.3030; Fax: 540.585.3030; Email: info@inorganicventures.com

11.0

CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 17, 2022

- 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 17, 2027

- 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:

Thomas Kozlikowski
Manager, Quality Control

TD9784

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

Paul R. Gaines

Certificate of Analysis

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

P: 800-669-6799/540-585-3030
F: 540-585-3012
info@inorganicventures.com

M5985
R: 6/14/24

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: CGIN10
Lot Number: U2-IN729349
Matrix: 5% (v/v) HNO₃
Value / Analyte(s): 10 000 µg/mL ea:
Indium
Starting Material: Indium Metal
Starting Material Lot#: 2511
Starting Material Purity: 99.9995%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10022 ± 30 µg/mL
Density: 1.044 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1	10021 ± 56 µg/mL ICP Assay NIST SRM 3124a Lot Number: 110516
Assay Method #2	10035 ± 25 µg/mL EDTA NIST SRM 928 Lot Number: 928
Assay Method #3	10001 ± 33 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, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum (w_i) (X_i)$$

X_i = mean of Assay Method i with standard uncertainty $u_{char i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char i}^2) / (\sum (1/u_{char i}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (k) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2

$u_{char} = [\sum (w_i)^2 (u_{char i}^2)]^{1/2}$ where $u_{char i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char a})$$

X_a = mean of Assay Method A with

$u_{char a}$ = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (k) = U_{CRM/RM} = k (u_{char a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2

$u_{char a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = 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	<	0.000760	M	Eu	<	0.000760	O	Na	0.012771	M	Se	<	0.023000	M	Zn	<	0.006100
M	Al	0.003385	O	Fe	0.004462	M	Nb	<	0.000760	O	Si	0.024619	M	Zr	<	0.000760		
M	As	<	0.004600	M	Ga	<	0.000760	M	Nd	<	0.000760	M	Sm	<	0.000760			
M	Au	<	0.002300	M	Gd	<	0.000760	O	Ni	<	0.005100	M	Sn	<	0.000760			
O	B	0.003692	M	Ge	<	0.001600	M	Os	<	0.000760	O	Sr	<	0.000610				
M	Ba	<	0.001600	M	Hf	<	0.000760	n	P	<		M	Ta	<	0.000760			
O	Be	<	0.000130	M	Hg	<	0.003100	M	Pb	0.001400	M	Tb	<	0.000760				
M	Bi	<	0.000760	M	Ho	<	0.000760	M	Pd	<	0.001600	M	Te	<	0.000760			
O	Ca	0.004616	s	In	<			M	Pr	<	0.000760	M	Th	<	0.000760			
M	Cd	<	0.000760	M	Ir	<	0.000760	M	Pt	<	0.000760	O	Ti	<	0.001100			
M	Ce	<	0.000760	O	K	0.007078	M	Rb	<	0.000760	M	Tl	<	0.000760				
M	Co	<	0.000760	M	La	<	0.000760	M	Re	<	0.000760	M	Tm	<	0.000760			
O	Cr	<	0.001300	O	Li	<	0.000130	M	Rh	<	0.000760	M	U	<	0.000760			
M	Cs	<	0.000760	M	Lu	<	0.000760	M	Ru	<	0.000760	M	V	<	0.001600			
M	Cu	<	0.003800	O	Mg	0.000707	n	S	<		M	W	<	0.001600				
M	Dy	<	0.000760	O	Mn	0.000149	M	Sb	<	0.000760	M	Y	<	0.000760				
M	Er	<	0.000760	M	Mo	<	0.002300	M	Sc	<	0.000760	M	Yb	<	0.000760			

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

6.1 This standard is intended for the calibration of analytical instruments and validation of analytical methods as appropriate. This CRM may be used in connection with EPA Methods 6010, 6020 (all versions), Standard Methods 3120 B and USP <232> / ICH Q3D.

6.2 For products attaining traceability through Inorganic Ventures' Primary Certified Reference Materials (PCRM™) see the Limited License to Use PCRM™ in the Inorganic Ventures Terms and Conditions of Sale. <https://www.inorganicventures.com/terms-and-conditions-sale>. The Terms and Conditions contain information on the use of materials traceable to PCRM™ certified reference materials. This Limited License agreement is especially pertinent for laboratories accredited under ISO:17034.

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 - 114.82 +3 6 In(H₂O)₆+3

Chemical Compatibility -Soluble in HCl, HNO₃, and H₂SO₄. Avoid neutral and basic media. Stable with most metals and inorganic anions. The oxalate, sulfide, carbonate, hydroxide and phosphate are insoluble in water.

Stability - 2-100 ppb levels stable for months in 1% HNO₃ / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO₃ / LDPE container.

In Containing Samples (Preparation and Solution) -Metal (Best dissolved in HCl / HNO₃); Oxide (Soluble in mineral acids); Ores (Carbonate fusion in PtO followed by HCl dissolution); Organic Matrices (Sulfuric/peroxide digestion or 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 115 amu	1 ppt	n/a	115Sn, 99Ru16O
ICP-OES 158.583 nm	0.05 / 0.002 µg/mL	1	
ICP-OES 230.606 nm	0.1 / 0.03 µg/mL	1	Ni, Os
ICP-OES 325.609 nm	0.2 / 0.05 µg/mL	1	Mn, Mo, 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

February 21, 2023

- 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 21, 2028

- 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:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director





Refine your results. Redefine your industry.

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

Certificate of Analysis

M6074
M6075
M6076
M6077

P: 800-669-6799/540-585-3030

F: 540-585-3012

info@inorganicventures.com

EXP: 9/6/2029

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: V2-MEB746762
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 ± 5 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 ± 6 µg/mL		

Density: 1.033 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
B	ICP Assay	3107	190605
B	Calculated		See Sec. 4.2
Mo	ICP Assay	traceable to 3134	U2-MO739068
Si	ICP Assay	Traceable to 3150	S2-SI702546
Sn	ICP Assay	3161a	140917
Ti	ICP Assay	traceable to 3162a	T2-TI725816

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

6.1 This standard is intended for the calibration of analytical instruments and validation of analytical methods as appropriate. This CRM may be used in connection with EPA Methods 6010, 6020 (all versions), Standard Methods 3120 B and USP <232> / ICH Q3D.

6.2 For products attaining traceability through Inorganic Ventures' Primary Certified Reference Materials (PCRM™) see the Limited License to Use PCRM™ in the Inorganic Ventures Terms and Conditions of Sale. <https://www.inorganicventures.com/terms-and-conditions-sale>. The Terms and Conditions contain information on the use of materials traceable to PCRM™ certified reference materials. This Limited License agreement is especially pertinent for laboratories accredited under ISO:17034.

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

September 06, 2024

- 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

- **September 06, 2029**

- 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:

Joseph Burns
Custom VS Manager



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



Hydrochloric Acid, 36.5-38.0%
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis

avantor™



R → 16/13/24
Met dig

M 6121

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

Material No.: 9530-33
Batch No.: 0000275677

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

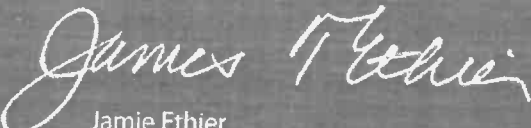
Product Information (not specifications):

Appearance (clear, fuming liquid)

Meets ACS Specifications

Country of Origin: US

Packaging Site: Phillipsburg Mfg Ctr & DC


Jamie Ethier

Vice President Global Quality

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 69%
CMOS



R → 11/12/24

M6126

Material No.: 9606-03
Batch No.: 24D1062002
Manufactured Date: 2024-03-26
Retest Date: 2029-03-25
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	2.3 ppb
Trace Impurities – Chromium (Cr)	≤ 30.0 ppb	< 1.0 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	100 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 >>>

Nitric Acid 69%
CMOS

 **avantor**TM



Material No.: 9606-03
Batch No.: 24D1062002

Test	Specification	Result

For Microelectronic Use

Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC



Jamie Croak
Director Quality Operations, Bioscience Production



CERTIFIED WEIGHT REPORT:

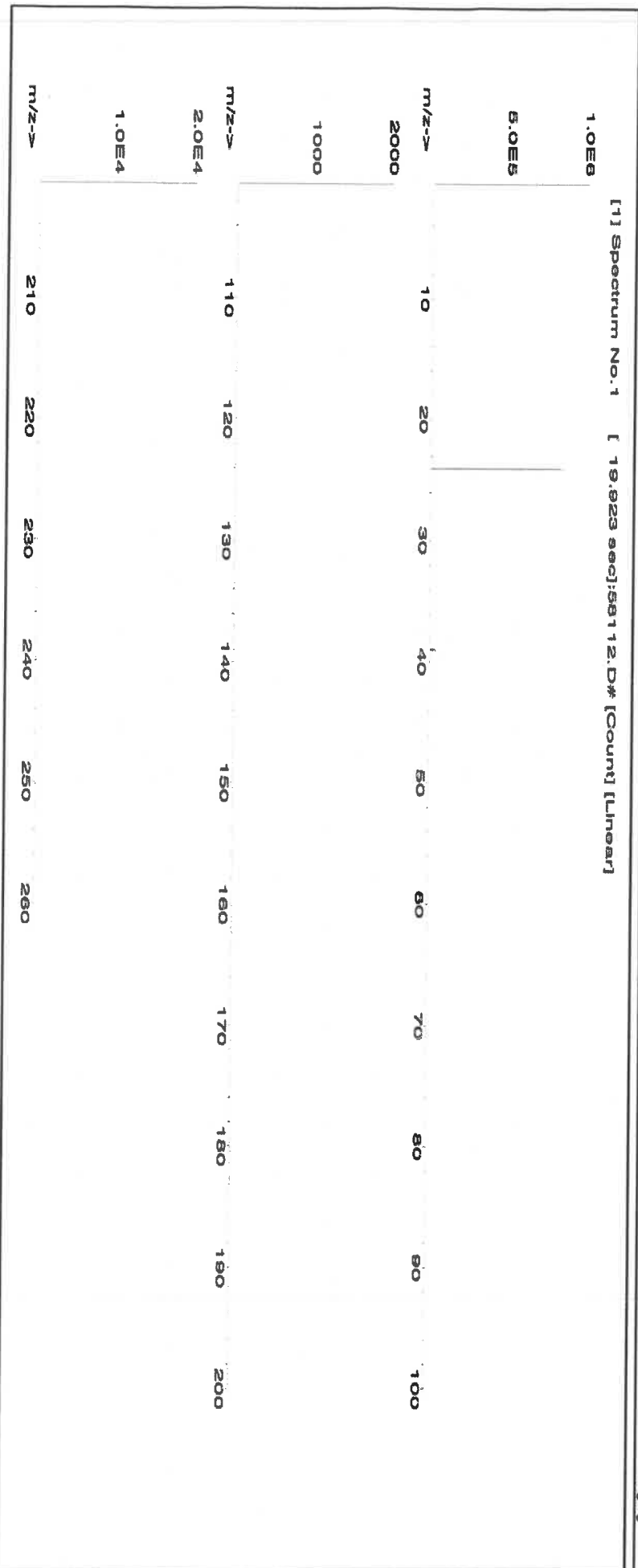
Part Number: 58112
Lot # 112124
Description: Magnesium (Mg)
Lot # 24012496
Solvent: Nitric Acid

Expiration Date: 11/21/27
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6LUB
Weight shown below was diluted to (mL): 2000.07
5E-05 Balance Uncertainty
0.100 Flask Uncertainty

<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
Reviewed By:	Pedro L. Rentas
	112124

Compound	Lot	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. Magnesium nitrate hexahydrate (Mg)	IN030	10000	99.999	0.10	8.51	234.9183	234.9459	10001.2	20.0	13446-18-9	NA		

1. Magnesium nitrate hexahydrate (Mg) IN030 10000 99.999 0.10 8.51 234.9183 234.9459 10001.2 20.0 13446-18-9 NA off-rat 5440 mg/kg 3131a





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (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	Rc	<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	Rb	<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	Ru	<0.02	Na	<0.2	Tm	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Sm	<0.02	Sr	<0.02	Sn	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sc	<0.02	S	<0.02	Ti	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2			Ta	<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: **58025**
Lot Number: **101124**
Description: **Manganese (Mn)**

R-71113128

Lot #: **24002546**
Solvent: **Nitric Acid**

Expiration Date: **101127**

Recommended Storage: **Ambient (20 °C)**

Nominal Concentration (µg/mL): **1000**

NIST Test Number: **6UTB**

Weight shown below was diluted to (mL): **4000.2**

0.10 Flask Uncertainty

2% **80.0** **Nitric Acid**
(mL)

<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
Reviewed By:	<i>Pedro L. Renteria</i>
	Pedro L. Renteria
	101124

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. Manganese(II) nitrate hydrate (Mn) IN031 MMN02020A1 1000 99.999 0.10 20.8 19.2322 19.2344 1000.1 2.0 15710-66-4 5 mg/m3 or-rel >300mg/kg 3132

[1] Spectrum No.1 [34.243 sec]:57025.D# [Count] [Linear]

5.0E6													
2.5E6													
m/z->	10	20	30	40	50	60	70	80	90	100			
1.0E6													
5.0E7													
m/z->	110	120	130	140	150	160	170	180	190	200			
1.0E6													
5.0E7													
m/z->	210	220	230	240	250	260							



Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (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 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: 58111
Lot Number: 072424
Description: Sodium (Na)

Lot # R-1113/25
Solvent: 24002546 Nitric Acid

Expiration Date: 072427
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB

Weight shown below was diluted to (mL): 4000.2
5E-05 Balance Uncertainty
0.10 Flask Uncertainty

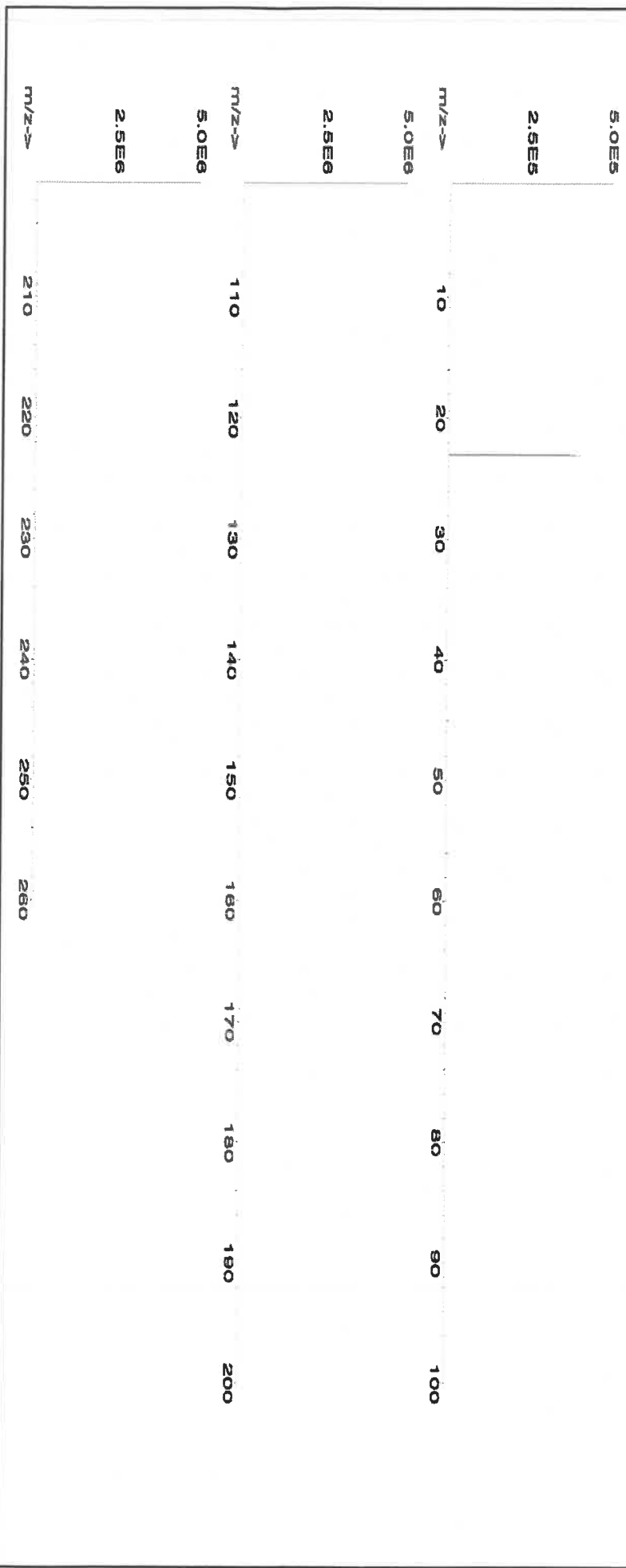
Formulated By:	Benson Chan	072424
Reviewed By:	Pedro L. Renteria	072424

Compound	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

SDS Information

1. Sodium nitrate (Na) IN036 NAV01201511 10000 99.999 0.10 26.9 148.7096 ##### 10000.0 20.0 7631-99-4 5 mg/m3 orl-rat 3430 mg/kg 3152a

[1] Spectrum No. 1 [8.935 sec]: 58111.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (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	T	Tl	<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:
Lot Number:
Description:

58030
121724
Zinc (Zn)

R → 11/13/25 Solvent: 24012496 Nitric Acid

Lot #

Nitric Acid

Expiration Date:

121727

M6145

2%

40.0 (mL)

Nitric Acid

Recommended Storage:

Ambient (20 °C)

Nominal Concentration (µg/mL):

1000

NIST Test Number:

6UTB

5E-05 Balance Uncertainty

Weight shown below was diluted to (mL):

2000.1

0.10 Flask Uncertainty

<i>Aleah O'Brady</i>	
Formulated By:	Aleah O'Brady
Reviewed By:	<i>Pedro L. Rentias</i>
	Pedro L. Rentias
	121724

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

SDS Information

(Solvent Safety Info. On Attached pg.)

1. Zinc nitrate hexahydrate (Zn)

IN016 ZNE032021A1

1000

99.999

0.10

24.3

8.2308

8.2311

1000.0

2.0

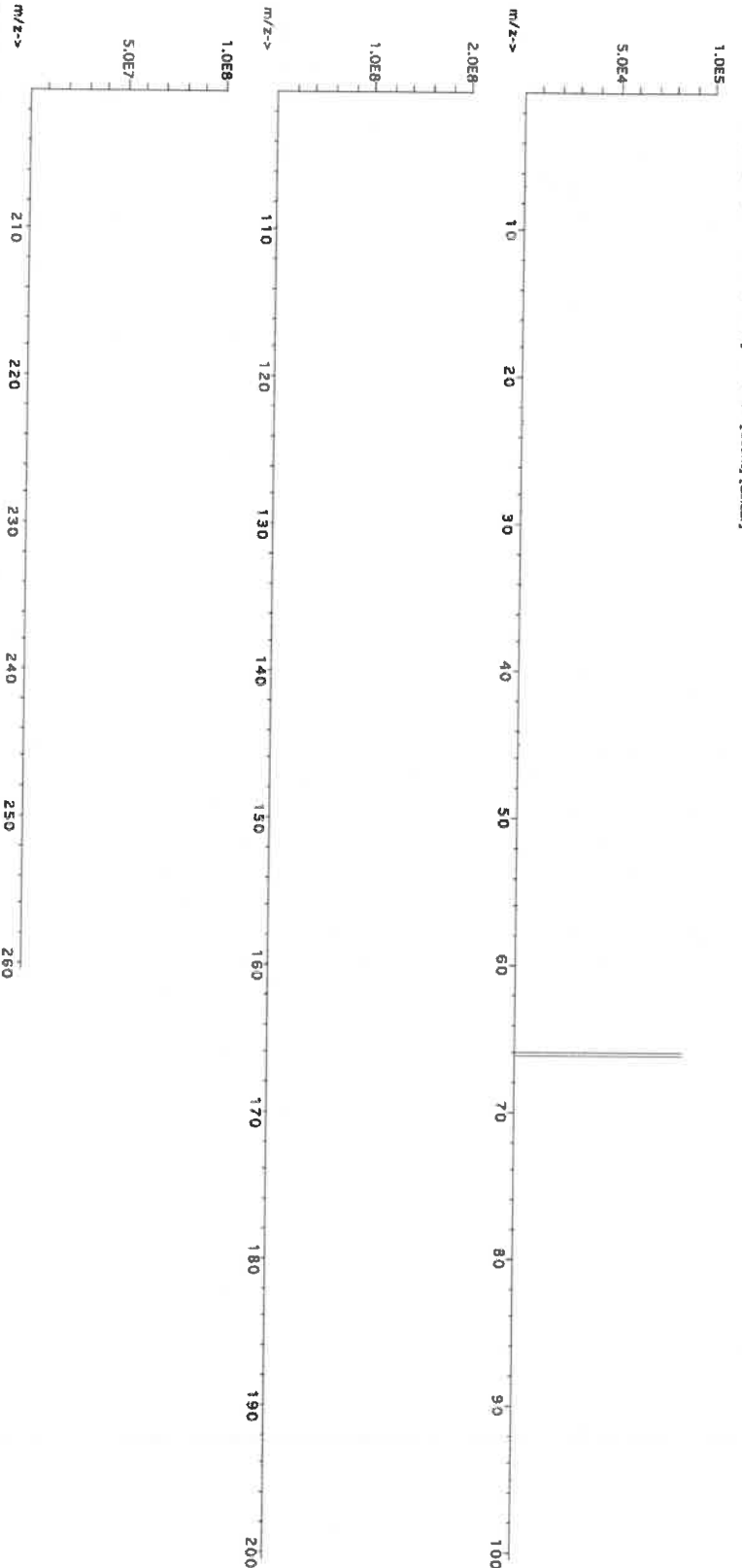
10196-18-6

1 mg/m3

or-rat 1190mg/kg

3168

[1] Spectrum No.1 [31.103 sec;58130.D# [Count] [Lines]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (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	Bu	<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	Md	<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: 4/20/21

Instructions for QATS Reference Material: *Inorganic ICV Solutions*

QATS LABORATORY INORGANIC REFERENCE MATERIAL
INITIAL CALIBRATION VERIFICATION SOLUTIONS
(ICV1, ICV5, AND ICV6)

MG180

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.

Contains Metals in Dilute Acidic or
Cyanide in Basic Aqueous Solutions
HAZARDOUS MATERIAL

Safety Data Sheets
Available Upon Request

(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.





QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
"An ISO 9001:2015 Certified Program"

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) K₂Cr₂O₇ 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 K₃Fe(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

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



Certified Reference Material CRM

M6030



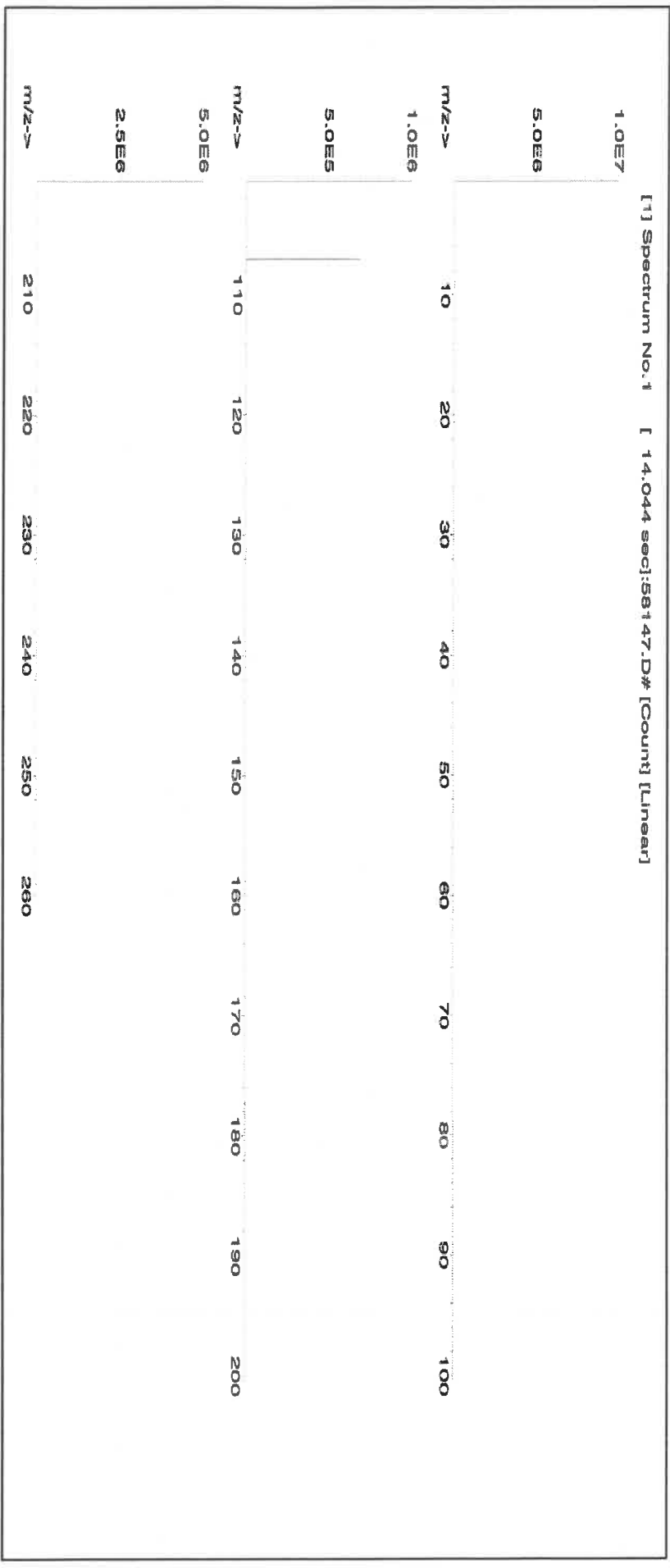
CERTIFIED WEIGHT REPORT:

Part Number: **57047**
Lot Number: **122823**
Description: **Silver (Ag)**
Solvent: 24002546 Nitric Acid
Lot #

Expiration Date: 122826
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 4000.30
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

Formulated By:	Benson Chan
Reviewed By:	
Pedro L. Rentas	
122823	

SDS Information									
Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)
1. Silver nitrate (Ag)	IN035	J0612AGA1	1000.0	99.9996	0.10	63.7	6.27992	6.27998	1000.0
							2.0	7761-88-8	10 µg/mL
									NA
									3151





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (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	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 meqohm 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: 10/18/24
Certified Reference Material CRM



CERTIFIED WEIGHT REPORT:

Part Number:

57051

Lot #
24002546

Solvent:
Nitric Acid

Lot Number:

071724

Description:

Antimony (Sb)

Expiration Date:

071727

Recommended Storage:
Ambient (20 °C)

Nominal Concentration (µg/mL):

1000

NIST Test Number:

6U7B

Volume shown below was diluted to (mL):

2000.26

Balance Uncertainty
0.058

F flask Uncertainty

2.0%

40.0
(mL)

Nitric Acid

Formulated By:

Giovanni Esposito

071724

Reviewed By:

Pedro L. Rentas

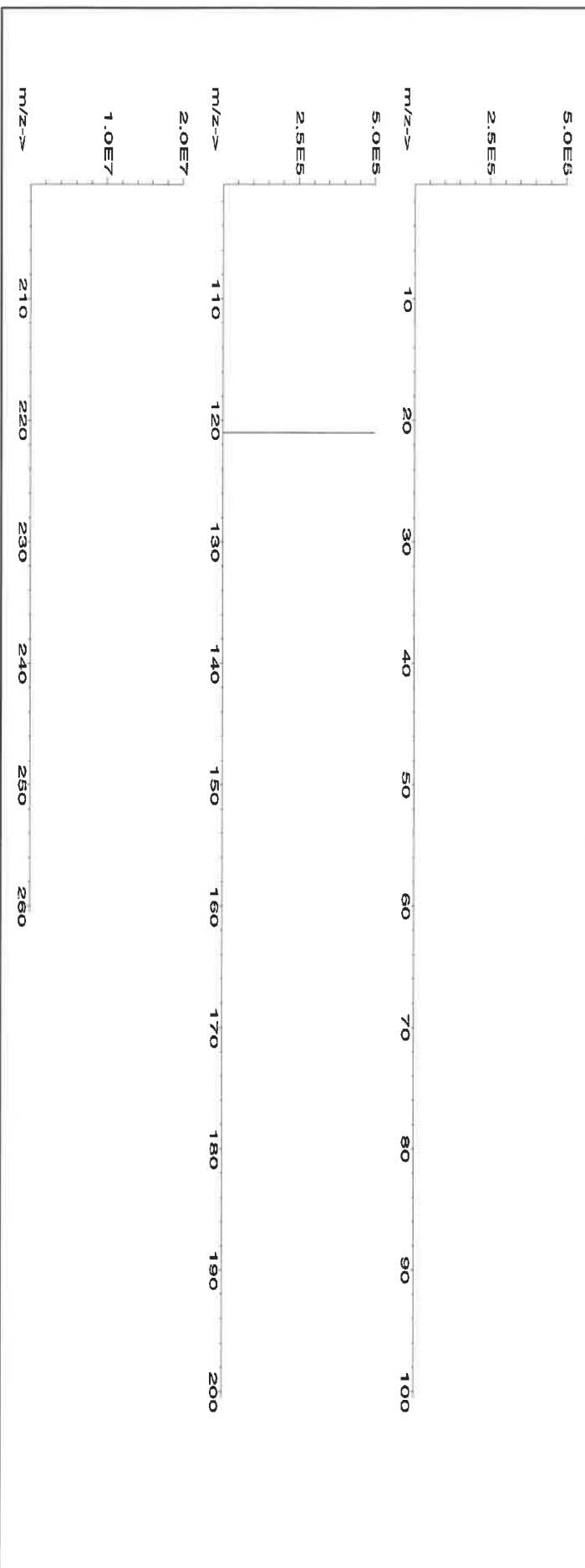
071724

SDS Information

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)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM

1. Antimony (Sb) 58151 060324 0.1000 200.0 0.084 1000 10001.4 1000.0 2.2 7440-36-0 0.5 mg/m3 orl-rat 7000 mg/kg 3102a

[1] Spectrum No.1 [17.964 sec]:58051.D# [Count] [Linear]





Har P. R.



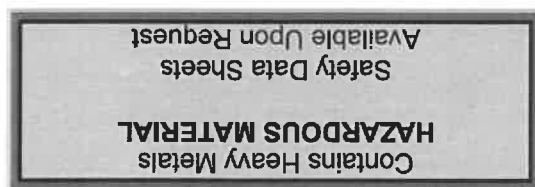
QATS LABORATORY INORGANIC REFERENCE MATERIAL INTERFERENCE CHECK SAMPLE SET FOR ICP-AES (ICSA WITH ICSB)

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 the CLP SFAM01.0 SOW and revisions.

CAUTION: Read instructions carefully before opening bottle(s) and proceeding with the analyses.

M6152



(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) interfering elements: Al, Ca, Fe, and Mg. The ICSB solution contains the analytes: Ag, As, Sb, Ba, Be,





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	255000	216000	294000	247000	209000	285000
Sb	60	(0.0)	-60.0	60.0	618	525	711
As	10	(0.0)	-10.0	10.0	104	88.4	120
Ba	200	(6.0)	-194	206	(537)	337	737
Be	5.0	(0.0)	-5.0	5.0	495	420	570
Cd	5.0	(1.0)	-4.0	6.0	972	826	1120
Ca	5000	245000	208000	282000	235000	199000	271000
Cr	10	(52.0)	42.0	62.0	542	460	624
Co	50	(0.0)	-50.0	50.0	476	404	548
Cu	25	(2.0)	-23.0	27.0	511	434	588
Fe	100	101000	85600	116500	99300	84400	114500
Pb	10	(0.0)	-10.0	10.0	(49.0)	39.0	59.0
Mg	5000	255000	216000	294000	248000	210000	286000
Mn	15	(7.0)	-8.0	22.0	507	430	584
Ni	40	(2.0)	-38.0	42.0	954	810	1100
Se	35	(0.0)	-35.0	35.0	(46.0)	11.0	81.0
Ag	10	(0.0)	-10.0	10.0	201	170	232
Tl	25	(0.0)	-25.0	25.0	(108)	83.0	133
V	50	(0.0)	-50.0	50.0	491	417	565
Zn	60	(0.0)	-60.0	60.0	952	809	1095

The acceptance ranges for all analytes in parentheses in the above table were determined using the listed certified value $\pm$ 1 times the associated CLP SOW CRQL. The acceptance ranges for all other analytes were determined using the certified value $\pm$ 15 percent of the listed certified value.



QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
"An ISO 9001:2015 Certified Program"

R : 04/20/21

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 the CLP SFAM01.0 SOW and revisions.

CAUTION: Read instructions carefully before opening bottle(s) and proceeding with the analyses.



M6155

(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,





QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
"An ISO 9001:2015 Certified Program"

APTIM

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	255000	216000	294000	247000	209000	285000
Sb	60	(0.0)	-60.0	60.0	618	525	711
As	10	(0.0)	-10.0	10.0	104	88.4	120
Ba	200	(6.0)	-194	206	(537)	337	737
Be	5.0	(0.0)	-5.0	5.0	495	420	570
Cd	5.0	(1.0)	-4.0	6.0	972	826	1120
Ca	5000	245000	208000	282000	235000	199000	271000
Cr	10	(52.0)	42.0	62.0	542	460	624
Co	50	(0.0)	-50.0	50.0	476	404	548
Cu	25	(2.0)	-23.0	27.0	511	434	588
Fe	100	101000	85600	116500	99300	84400	114500
Pb	10	(0.0)	-10.0	10.0	(49.0)	39.0	59.0
Mg	5000	255000	216000	294000	248000	210000	286000
Mn	15	(7.0)	-8.0	22.0	507	430	584
Ni	40	(2.0)	-38.0	42.0	954	810	1100
Se	35	(0.0)	-35.0	35.0	(46.0)	11.0	81.0
Ag	10	(0.0)	-10.0	10.0	201	170	232
Tl	25	(0.0)	-25.0	25.0	(108)	83.0	133
V	50	(0.0)	-50.0	50.0	491	417	565
Zn	60	(0.0)	-60.0	60.0	952	809	1095

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.

R: 8/5/24

M6019

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

P: 800-669-6799/540-585-3030
F: 540-585-3012
info@inorganicventures.com

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: CGSR1
Lot Number: U2-SR730227
Matrix: 0.1% (v/v) HNO₃
Value / Analyte(s): 1 000 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: 1001 ± 3 µg/mL
Density: 1.000 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1	998 ± 4 µg/mL ICP Assay NIST SRM Traceable to 3153a Lot Number: K2-SR650985
Assay Method #2	1001 ± 3 µg/mL EDTA NIST SRM 928 Lot Number: 928
Assay Method #3	1001 ± 2 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, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum (w_i) (X_i)$$

X_i = mean of Assay Method i with standard uncertainty $u_{char i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char i}^2) / (\sum (1/u_{char i}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (k) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{ts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2

$u_{char} = [\sum (w_i)^2 (u_{char i}^2)]^{1/2}$ where $u_{char i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{ts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char a})$$

X_a = mean of Assay Method A with

$u_{char a}$ = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (k) = U_{CRM/RM} = k (u_{char a}^2 + u_{bb}^2 + u_{ts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2

$u_{char a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{ts} = 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	0.000200	M	Se	<	0.013862	O	Zn	0.000143	
O	Al	0.000370	O	Fe	0.000410	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	0.006486	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	0.004255	M	In	<	0.000495	M	Pr	<	0.000495	M	Th	<	0.000990				
M	Cd	0.001339	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	M	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	0.000066	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

6.1 This standard is intended for the calibration of analytical instruments and validation of analytical methods as appropriate. This CRM may be used in connection with EPA Methods 6010, 6020 (all versions), Standard Methods 3120 B and USP <232> / ICH Q3D.

6.2 For products attaining traceability through Inorganic Ventures' Primary Certified Reference Materials (PCRM™) see the Limited License to Use PCRM™ in the Inorganic Ventures Terms and Conditions of Sale, <https://www.inorganicventures.com/terms-and-conditions-sale>. The Terms and Conditions contain information on the use of materials traceable to PCRM™ certified reference materials. This Limited License agreement is especially pertinent for laboratories accredited under ISO:17034.

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 PtO 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

March 03, 2023

- 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

- March 03, 2028

- 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:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director





CERTIFIED WEIGHT REPORT:

Part Number: 57081
Lot Number: 062724
Description: Thallium (TI)

Lot #

Solvent: 24002546 Nitric Acid

2% 40.0 Nitric Acid (mL)

Expiration Date:

062727

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL):

1000

NIST Test Number:

6UTB

Weight shown below was diluted to (mL): 2000.1

5E-05 Balance Uncertainty
0.10 Flask Uncertainty

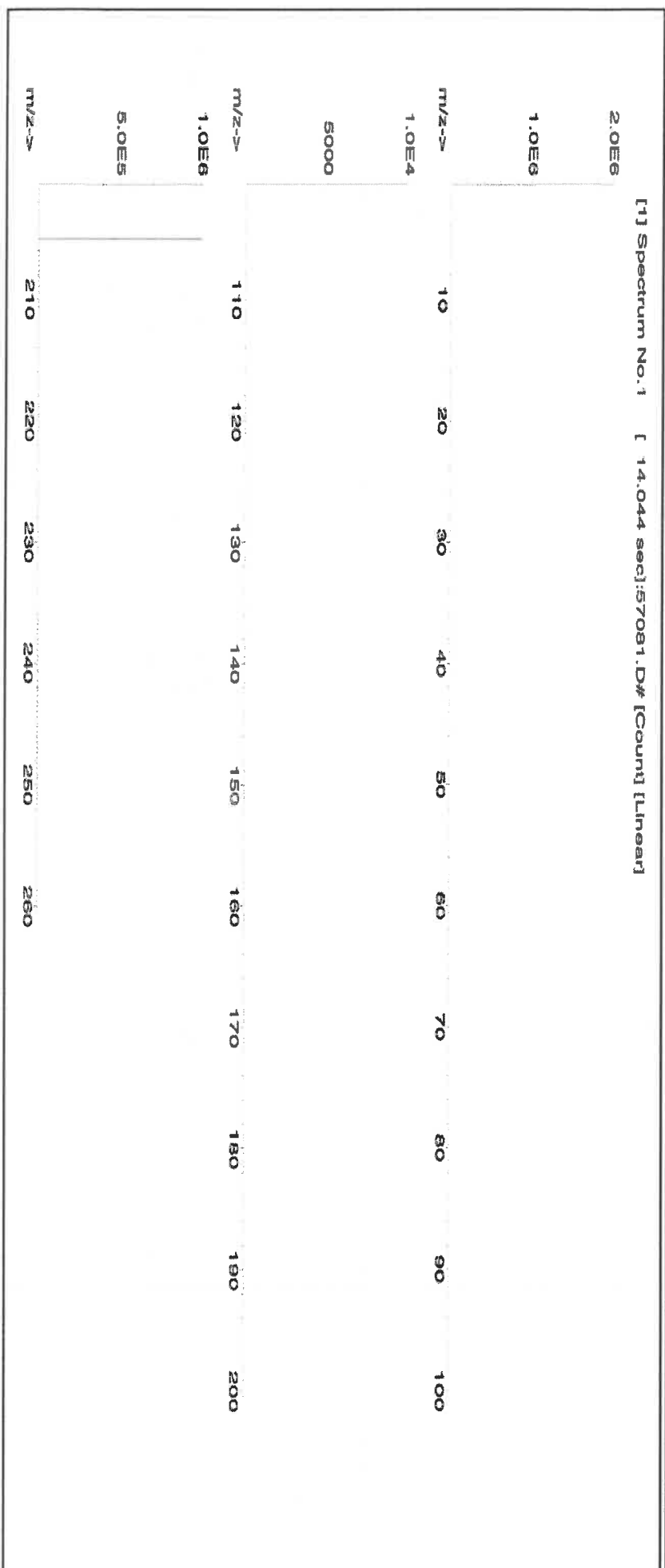
<i>Aleah O'Brady</i>	
Formulated By:	Aleah O'Brady
	062724
Reviewed By:	<i>Pedro L. Renias</i>
	Pedro L. Renias
	062724

SDS Information

Compound	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

1. Thallium nitrate (TI) IN037 BCCF4399 1000 99.999 0.10 77.0 2.5975 2.5977 1000.1 2.0 10102-45-1 0.1 mg/m3 or-mus 15mg/kg 3158

[1] Spectrum No.1 [14.044 sec]:57081.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (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	Sc	<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	Tm	<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	Sn	<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	Ti	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Se	<0.02	Ta	<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 Reference Material CRM

M6021



ANAB ISO 17034 Accredited
AR-1539 Certificate Number
<https://absolutestandards.com>

CERTIFIED WEIGHT REPORT:

Part Number: **57023**
Lot Number: **062424**
Description: **Vanadium (V)**

Lot # **24002546**
Solvent: **Nitric Acid**

Aleah O'Brady	
Formulated By:	Aleah O'Brady
	062424
Reviewed By:	Pedro L. Rantas
	062424

Expiration Date: **062427**
Recommended Storage: **Ambient (20 °C)**
Nominal Concentration (µg/mL): **1000**
NIST Test Number: **6UTB**

Volume shown below was diluted to (mL): **2000.3**
5E-05 Balance Uncertainty
0.06 Flask Uncertainty

Volume shown below was diluted to (mL): **2000.3**

5E-05 Balance Uncertainty
0.06 Flask Uncertainty

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. Ammonium metavanadate (V) 58123 021224 0.1000 200.0 0.084 1000 10000.3 10000.0 2.2 7803-55-6 0.05 mg/m3 or-at 58.1mg/kg 3165

[1] Spectrum No.1 [34.243 sec]:58023.D# [Count] [Linear]

2.0E6	m/z-->	10	20	30	40	50	60	70	80	90	100
1.0E6	m/z-->	10	20	30	40	50	60	70	80	90	100
2.0E7	m/z-->	10	20	30	40	50	60	70	80	90	100
1.0E7	m/z-->	10	20	30	40	50	60	70	80	90	100
5.0E8	m/z-->	110	120	130	140	150	160	170	180	190	200
2.5E8	m/z-->	110	120	130	140	150	160	170	180	190	200



SHIPPING DOCUMENTS

CLIENT INFORMATION

CLIENT PROJECT INFORMATION

CLIENT BILLING INFORMATION

REPORT TO BE SENT TO:

COMPANY: **Tris Pharma, INC**
ADDRESS: **2033 ROUTE 130**
CITY: **Monmouth Junction** STATE: **NJ** ZIP: **0885**
ATTENTION: **Nikki Tierney**
PHONE: **732-823-4938** FAX: **N/A**

PROJECT NAME: **QUARTERLY**
PROJECT NO.: LOCATION:
PROJECT MANAGER: **Nikki Tierney**
e-mail: **nm-tierney@trispharma.com**
PHONE: **SAME** FAX: **N/A**

BILL TO: PO#: **211765**
ADDRESS:
CITY: **SAME** STATE: ZIP:
ATTENTION: PHONE:

ANALYSIS

DATA TURNAROUND INFORMATION

DATA DELIVERABLE INFORMATION

FAX (RUSH) DAYS*
HARDCOPY (DATA PACKAGE): DAYS*
EDD: **10** DAYS*

*TO BE APPROVED BY CHEMTECH

STANDARD HARDCOPY TURNAROUND TIME IS 10 BUSINESS

☒ Level 1 (Results Only) ☐ Level 4 (QC + Full Raw Data)
☐ Level 2 (Results + QC) ☐ NJ Reduced ☐ US EPA CLP
☐ Level 3 (Results + QC) ☐ NYS ASP A ☐ NYS ASP B
+ Raw Data ☐ Other
☐ EDD FORMAT

BOD 5
TSS
METALS GRP 3
COD
VOCMS GRP 1
NON-POLAR MATERIAL

PRESERVATIVES

COMMENTS

ALLIANCE SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE		SAMPLE COLLECTION		# OF BOTTLES	PRESERVATIVES						COMMENTS		
			COMP	GRAB	DATE	TIME		E	E	B	C	A	C			
1. DSN-001	OUTFALL DSN-001	WW		X	2/25/25	9:15am	7	X	X	X	X	X	X			
2. DSN-002	OUTFALL DSN-002	WW		X	2/25/25	9:49am	7	X	X	X	X	X	X			
3.																
4.																
5.																
6.																
7.																
8.																
9.																
10.																

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER: **1. JAA** DATE/TIME: **2/25/25 10:32am** RECEIVED BY: **1320 2-25-25**
RELINQUISHED BY SAMPLER: **2. [Signature]** DATE/TIME: RECEIVED BY:
RELINQUISHED BY SAMPLER: **3. [Signature]** DATE/TIME: **2-25-25** RECEIVED BY:

Conditions of bottles or coolers at receipt: ☐ COMPLIANT ☐ NON COMPLIANT ☐ COOLER TEMP **2.5** °C
Comments:

Page ____ of CLIENT: ☐ Hand Delivered ☐ Other

Shipment Complete
☐ YES ☐ NO

Laboratory Certification

Certified By	License No.
CAS EPA CLP Contract	68HERH20D0011
Connecticut	PH-0830
DOD ELAP (ANAB)	L2219
Maine	2024021
Maryland	296
New Hampshire	255424 Rev 1
New Jersey	20012
New York	11376
Pennsylvania	68-00548
Soil Permit	525-24-234-08441
Texas	T104704488

LOGIN REPORT/SAMPLE TRANSFER

Order ID : Q1429 TRIS02

Order Date : 2/25/2025 1:50:00 PM

Project Mgr :

Client Name : Tris Pharma, Inc.

Project Name : Quarterly

Report Type : Results Only

Client Contact : Nichole Nikki Ferrari

Receive DateTime : 2/25/2025 2:55:00 PM

EDD Type : EXCEL NOCLEANUP

Invoice Name : Tris Pharma, Inc.

Purchase Order :

Hard Copy Date :

Invoice Contact : Nichole Nikki Ferrari

Date Signoff :

LAB ID	CLIENT ID	MATRIX	SAMPLE DATE	SAMPLE TIME	TEST	TEST GROUP	METHOD	FAX DATE	DUE DATES
Q1429-01	OUTFALL-DSN-001	Water	02/25/2025	09:15					
					VOCMS Group1		624.1	10 Bus. Days	
Q1429-02	OUTFALL-DSN-002	Water	02/25/2025	09:49					
					VOCMS Group1		624.1	10 Bus. Days	

Relinquished By :

Date / Time :


2-25-25 1530

Received By :

Date / Time :


02/25/25

Storage Area : VOA Refridgerator Room