

Cover Page

Order ID : Q2409

Project ID : Millville Sewage Treatment Plant - Field Sampling

Client : Coppola Services

Lab Sample Number

Q2409-01
Q2409-02

Client Sample Number

COP-SOIL-PILE
COP-SOIL-PILE

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: 7/3/2025

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 #: Q2409

Completed

For thorough review, the report must have the following:

GENERAL:

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

✓

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

✓

Is the chain of custody signed and complete

✓

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

✓

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

✓

COVER PAGE:

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

✓

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

✓

CHAIN OF CUSTODY:

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

✓

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

✓

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

✓

Were the samples received within hold time

✓

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

✓

ANALYTICAL:

Was method requirement followed?

✓

Was client requirement followed?

✓

Does the case narrative summarize all QC failure?

✓

All runlogs and manual integration are reviewed for requirements

✓

All manual calculations and /or hand notations verified

✓

QA Review Signature: PRADIP PRAJAPATI

Date: 07/03/2025

LAB CHRONICLE

OrderID:	Q2409	OrderDate:	6/24/2025 2:11:50 PM
Client:	Coppola Services	Project:	Millville Sewage Treatment Plant - Field Sampling
Contact:	Jeffrey Simpkins	Location:	D51

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
Q2409-02	COP-SOIL-PILE	TCLP			06/24/25			06/24/25
			TCLP Mercury	7470A		06/26/25	06/26/25	
			TCLPMetals Group1	6010D		06/25/25	06/26/25	
Q2409-05	COP-SOIL-PILE	SOIL			06/24/25			06/24/25
			Mercury	7471B		10/02/25	10/03/25	
			Metals ICP-TAL	6010D		10/02/25	10/02/25	

Hit Summary Sheet
SW-846

SDG No.: Q2409

Order ID: Q2409

Client: Coppola Services

Project ID: Millville Sewage Treatment Plant - Field S

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
Client ID : COP-SOIL-PILE								
Q2409-05	COP-SOIL-PILE	SOIL	Aluminum	3810		0.73	4.36	mg/Kg
Q2409-05	COP-SOIL-PILE	SOIL	Antimony	0.32	J	0.19	2.18	mg/Kg
Q2409-05	COP-SOIL-PILE	SOIL	Arsenic	2.07		0.17	0.87	mg/Kg
Q2409-05	COP-SOIL-PILE	SOIL	Barium	20.5		0.64	4.36	mg/Kg
Q2409-05	COP-SOIL-PILE	SOIL	Beryllium	0.21	J	0.022	0.26	mg/Kg
Q2409-05	COP-SOIL-PILE	SOIL	Cadmium	2.06		0.021	0.26	mg/Kg
Q2409-05	COP-SOIL-PILE	SOIL	Calcium	2310		9.68	87.2	mg/Kg
Q2409-05	COP-SOIL-PILE	SOIL	Chromium	8.68		0.041	0.44	mg/Kg
Q2409-05	COP-SOIL-PILE	SOIL	Cobalt	0.66	J	0.087	1.31	mg/Kg
Q2409-05	COP-SOIL-PILE	SOIL	Copper	18.1		0.19	0.87	mg/Kg
Q2409-05	COP-SOIL-PILE	SOIL	Iron	2880		3.48	4.36	mg/Kg
Q2409-05	COP-SOIL-PILE	SOIL	Lead	51.6		0.11	0.52	mg/Kg
Q2409-05	COP-SOIL-PILE	SOIL	Magnesium	576		10.5	87.2	mg/Kg
Q2409-05	COP-SOIL-PILE	SOIL	Manganese	14.8		0.12	0.87	mg/Kg
Q2409-05	COP-SOIL-PILE	SOIL	Mercury	0.30		0.0070	0.013	mg/Kg
Q2409-05	COP-SOIL-PILE	SOIL	Nickel	2.25		0.11	1.74	mg/Kg
Q2409-05	COP-SOIL-PILE	SOIL	Potassium	116		24.1	87.2	mg/Kg
Q2409-05	COP-SOIL-PILE	SOIL	Selenium	1.16		0.23	0.87	mg/Kg
Q2409-05	COP-SOIL-PILE	SOIL	Silver	1.30		0.11	0.44	mg/Kg
Q2409-05	COP-SOIL-PILE	SOIL	Thallium	0.31	J	0.20	1.74	mg/Kg
Q2409-05	COP-SOIL-PILE	SOIL	Vanadium	7.19		0.22	1.74	mg/Kg
Q2409-05	COP-SOIL-PILE	SOIL	Zinc	30.6		0.20	1.74	mg/Kg



SAMPLE DATA

Report of Analysis

Client:	Coppola Services	Date Collected:	06/24/25
Project:	Millville Sewage Treatment Plant - Field Sampling	Date Received:	06/24/25
Client Sample ID:	COP-SOIL-PILE	SDG No.:	Q2409
Lab Sample ID:	Q2409-05	Matrix:	SOIL
Level (low/med):	low	% Solid:	96.4

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	3810	*	1	0.73	4.36	mg/Kg	10/02/25 15:10	10/02/25 17:53	6010D	SW3050
7440-36-0	Antimony	0.32	JN*	1	0.19	2.18	mg/Kg	10/02/25 15:10	10/02/25 17:53	6010D	SW3050
7440-38-2	Arsenic	2.07	*	1	0.17	0.87	mg/Kg	10/02/25 15:10	10/02/25 17:53	6010D	SW3050
7440-39-3	Barium	20.5	N	1	0.64	4.36	mg/Kg	10/02/25 15:10	10/02/25 17:53	6010D	SW3050
7440-41-7	Beryllium	0.21	J*	1	0.022	0.26	mg/Kg	10/02/25 15:10	10/02/25 17:53	6010D	SW3050
7440-43-9	Cadmium	2.06	*	1	0.021	0.26	mg/Kg	10/02/25 15:10	10/02/25 17:53	6010D	SW3050
7440-70-2	Calcium	2310	*	1	9.68	87.2	mg/Kg	10/02/25 15:10	10/02/25 17:53	6010D	SW3050
7440-47-3	Chromium	8.68	*	1	0.041	0.44	mg/Kg	10/02/25 15:10	10/02/25 17:53	6010D	SW3050
7440-48-4	Cobalt	0.66	J	1	0.087	1.31	mg/Kg	10/02/25 15:10	10/02/25 17:53	6010D	SW3050
7440-50-8	Copper	18.1	N*	1	0.19	0.87	mg/Kg	10/02/25 15:10	10/02/25 17:53	6010D	SW3050
7439-89-6	Iron	2880	*	1	3.48	4.36	mg/Kg	10/02/25 15:10	10/02/25 17:53	6010D	SW3050
7439-92-1	Lead	51.6	N*	1	0.11	0.52	mg/Kg	10/02/25 15:10	10/02/25 17:53	6010D	SW3050
7439-95-4	Magnesium	576	*	1	10.5	87.2	mg/Kg	10/02/25 15:10	10/02/25 17:53	6010D	SW3050
7439-96-5	Manganese	14.8	N*	1	0.12	0.87	mg/Kg	10/02/25 15:10	10/02/25 17:53	6010D	SW3050
7439-97-6	Mercury	0.30		1	0.0070	0.013	mg/Kg	10/02/25 15:10	10/03/25 09:05	7471B	
7440-02-0	Nickel	2.25		1	0.11	1.74	mg/Kg	10/02/25 15:10	10/02/25 17:53	6010D	SW3050
7440-09-7	Potassium	116	N	1	24.1	87.2	mg/Kg	10/02/25 15:10	10/02/25 17:53	6010D	SW3050
7782-49-2	Selenium	1.16		1	0.23	0.87	mg/Kg	10/02/25 15:10	10/02/25 17:53	6010D	SW3050
7440-22-4	Silver	1.30	*	1	0.11	0.44	mg/Kg	10/02/25 15:10	10/02/25 17:53	6010D	SW3050
7440-23-5	Sodium	15.5	UN	1	15.5	87.2	mg/Kg	10/02/25 15:10	10/02/25 17:53	6010D	SW3050
7440-28-0	Thallium	0.31	J	1	0.20	1.74	mg/Kg	10/02/25 15:10	10/02/25 17:53	6010D	SW3050
7440-62-2	Vanadium	7.19		1	0.22	1.74	mg/Kg	10/02/25 15:10	10/02/25 17:53	6010D	SW3050
7440-66-6	Zinc	30.6	N*	1	0.20	1.74	mg/Kg	10/02/25 15:10	10/02/25 17:53	6010D	SW3050

Color Before:	Brown	Clarity Before:	Texture:	Medium
Color After:	Yellow	Clarity After:	Artifacts:	No
Comments:	METALS-TAL			

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: Coppola Services

SDG No.: Q2409

Contract: COPP02

Lab Code: ACE

Initial Calibration Source: EPA

Continuing Calibration Source: PLASMA-PURE

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
ICV56	Mercury	3.85	4.0	96	90 - 110	CV	10/03/2025	08:42	LB137397

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Coppola Services

SDG No.: Q2409

Contract: COPP02

Lab Code: ACE

Initial Calibration Source: EPA

Continuing Calibration Source: PLASMA-PURE

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV75	Mercury	4.99	5.0	100	90 - 110	CV	10/03/2025	08:47	LB137397
CCV76	Mercury	5.02	5.0	100	90 - 110	CV	10/03/2025	09:21	LB137397
CCV77	Mercury	4.85	5.0	97	90 - 110	CV	10/03/2025	09:38	LB137397

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Coppola Services

SDG No.: Q2409

Contract: COPP02

Lab Code: ACE

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
ICV01	Aluminum	7880	8000	99	90 - 110	P	10/02/2025	11:07	LB137406
	Antimony	4080	4000	102	90 - 110	P	10/02/2025	11:07	LB137406
	Arsenic	4010	4000	100	90 - 110	P	10/02/2025	11:07	LB137406
	Barium	7650	8000	96	90 - 110	P	10/02/2025	11:07	LB137406
	Beryllium	201	200	101	90 - 110	P	10/02/2025	11:07	LB137406
	Cadmium	1970	2000	99	90 - 110	P	10/02/2025	11:07	LB137406
	Calcium	19500	20000	98	90 - 110	P	10/02/2025	11:07	LB137406
	Chromium	824	800	103	90 - 110	P	10/02/2025	11:07	LB137406
	Cobalt	1970	2000	99	90 - 110	P	10/02/2025	11:07	LB137406
	Copper	1010	1000	101	90 - 110	P	10/02/2025	11:07	LB137406
	Iron	3990	4000	100	90 - 110	P	10/02/2025	11:07	LB137406
	Lead	3870	4000	97	90 - 110	P	10/02/2025	11:07	LB137406
	Magnesium	19800	20000	99	90 - 110	P	10/02/2025	11:07	LB137406
	Manganese	1940	2000	97	90 - 110	P	10/02/2025	11:07	LB137406
	Nickel	1980	2000	99	90 - 110	P	10/02/2025	11:07	LB137406
	Potassium	19600	20000	98	90 - 110	P	10/02/2025	11:07	LB137406
	Selenium	4040	4000	101	90 - 110	P	10/02/2025	11:07	LB137406
	Silver	987	1000	99	90 - 110	P	10/02/2025	11:07	LB137406
	Sodium	19000	20000	95	90 - 110	P	10/02/2025	11:07	LB137406
	Thallium	3980	4000	100	90 - 110	P	10/02/2025	11:07	LB137406
	Vanadium	1960	2000	98	90 - 110	P	10/02/2025	11:07	LB137406
	Zinc	2010	2000	100	90 - 110	P	10/02/2025	11:07	LB137406

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Coppola Services

SDG No.: Q2409

Contract: COPP02

Lab Code: ACE

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
LLICV01	Aluminum	120	100	120	80 - 120	P	10/02/2025	11:11	LB137406
	Antimony	52.3	50.0	104	80 - 120	P	10/02/2025	11:11	LB137406
	Arsenic	21.7	20.0	108	80 - 120	P	10/02/2025	11:11	LB137406
	Barium	113	100	113	80 - 120	P	10/02/2025	11:11	LB137406
	Beryllium	6.80	6.0	113	80 - 120	P	10/02/2025	11:11	LB137406
	Cadmium	6.03	6.0	100	80 - 120	P	10/02/2025	11:11	LB137406
	Calcium	2110	2000	106	80 - 120	P	10/02/2025	11:11	LB137406
	Chromium	11.2	10.0	112	80 - 120	P	10/02/2025	11:11	LB137406
	Cobalt	30.1	30.0	100	80 - 120	P	10/02/2025	11:11	LB137406
	Copper	22.2	20.0	111	80 - 120	P	10/02/2025	11:11	LB137406
	Iron	104	100	104	80 - 120	P	10/02/2025	11:11	LB137406
	Lead	13.2	12.0	110	80 - 120	P	10/02/2025	11:11	LB137406
	Magnesium	2220	2000	111	80 - 120	P	10/02/2025	11:11	LB137406
	Manganese	21.5	20.0	108	80 - 120	P	10/02/2025	11:11	LB137406
	Nickel	40.4	40.0	101	80 - 120	P	10/02/2025	11:11	LB137406
	Potassium	1770	2000	88	80 - 120	P	10/02/2025	11:11	LB137406
	Selenium	22.8	20.0	114	80 - 120	P	10/02/2025	11:11	LB137406
	Silver	11.0	10.0	110	80 - 120	P	10/02/2025	11:11	LB137406
	Sodium	1690	2000	84	80 - 120	P	10/02/2025	11:11	LB137406
	Thallium	46.1	40.0	115	80 - 120	P	10/02/2025	11:11	LB137406
	Vanadium	42.2	40.0	106	80 - 120	P	10/02/2025	11:11	LB137406
	Zinc	42.4	40.0	106	80 - 120	P	10/02/2025	11:11	LB137406

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Coppola Services

SDG No.: Q2409

Contract: COPP02

Lab Code: ACE

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV01	Aluminum	9910	10000	99	90 - 110	P	10/02/2025	11:58	LB137406
	Antimony	4950	5000	99	90 - 110	P	10/02/2025	11:58	LB137406
	Arsenic	5100	5000	102	90 - 110	P	10/02/2025	11:58	LB137406
	Barium	9630	10000	96	90 - 110	P	10/02/2025	11:58	LB137406
	Beryllium	267	250	107	90 - 110	P	10/02/2025	11:58	LB137406
	Cadmium	2530	2500	101	90 - 110	P	10/02/2025	11:58	LB137406
	Calcium	24800	25000	99	90 - 110	P	10/02/2025	11:58	LB137406
	Chromium	1040	1000	104	90 - 110	P	10/02/2025	11:58	LB137406
	Cobalt	2490	2500	100	90 - 110	P	10/02/2025	11:58	LB137406
	Copper	1260	1250	101	90 - 110	P	10/02/2025	11:58	LB137406
	Iron	4740	5000	95	90 - 110	P	10/02/2025	11:58	LB137406
	Lead	5080	5000	102	90 - 110	P	10/02/2025	11:58	LB137406
	Magnesium	25100	25000	100	90 - 110	P	10/02/2025	11:58	LB137406
	Manganese	2440	2500	98	90 - 110	P	10/02/2025	11:58	LB137406
	Nickel	2500	2500	100	90 - 110	P	10/02/2025	11:58	LB137406
	Potassium	23300	25000	93	90 - 110	P	10/02/2025	11:58	LB137406
	Selenium	5120	5000	102	90 - 110	P	10/02/2025	11:58	LB137406
	Silver	1260	1250	101	90 - 110	P	10/02/2025	11:58	LB137406
	Sodium	22800	25000	91	90 - 110	P	10/02/2025	11:58	LB137406
	Thallium	5080	5000	102	90 - 110	P	10/02/2025	11:58	LB137406
	Vanadium	2470	2500	99	90 - 110	P	10/02/2025	11:58	LB137406
	Zinc	2520	2500	101	90 - 110	P	10/02/2025	11:58	LB137406
CCV02	Aluminum	9450	10000	94	90 - 110	P	10/02/2025	13:48	LB137406
	Antimony	4830	5000	97	90 - 110	P	10/02/2025	13:48	LB137406
	Arsenic	5200	5000	104	90 - 110	P	10/02/2025	13:48	LB137406
	Barium	9090	10000	91	90 - 110	P	10/02/2025	13:48	LB137406
	Beryllium	246	250	98	90 - 110	P	10/02/2025	13:48	LB137406
	Cadmium	2570	2500	103	90 - 110	P	10/02/2025	13:48	LB137406
	Calcium	24000	25000	96	90 - 110	P	10/02/2025	13:48	LB137406
	Chromium	1070	1000	107	90 - 110	P	10/02/2025	13:48	LB137406
	Cobalt	2460	2500	99	90 - 110	P	10/02/2025	13:48	LB137406
	Copper	1260	1250	101	90 - 110	P	10/02/2025	13:48	LB137406
	Iron	5120	5000	102	90 - 110	P	10/02/2025	13:48	LB137406
	Lead	5240	5000	105	90 - 110	P	10/02/2025	13:48	LB137406

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Coppola Services

SDG No.: Q2409

Contract: COPP02

Lab Code: ACE

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV02	Magnesium	24700	25000	99	90 - 110	P	10/02/2025	13:48	LB137406
	Manganese	2330	2500	93	90 - 110	P	10/02/2025	13:48	LB137406
	Nickel	2490	2500	99	90 - 110	P	10/02/2025	13:48	LB137406
	Potassium	23300	25000	93	90 - 110	P	10/02/2025	13:48	LB137406
	Selenium	5320	5000	106	90 - 110	P	10/02/2025	13:48	LB137406
	Silver	1280	1250	102	90 - 110	P	10/02/2025	13:48	LB137406
	Sodium	24800	25000	99	90 - 110	P	10/02/2025	13:48	LB137406
	Thallium	5290	5000	106	90 - 110	P	10/02/2025	13:48	LB137406
	Vanadium	2390	2500	96	90 - 110	P	10/02/2025	13:48	LB137406
	Zinc	2500	2500	100	90 - 110	P	10/02/2025	13:48	LB137406
CCV03	Aluminum	9360	10000	94	90 - 110	P	10/02/2025	14:47	LB137406
	Antimony	4800	5000	96	90 - 110	P	10/02/2025	14:47	LB137406
	Arsenic	5170	5000	104	90 - 110	P	10/02/2025	14:47	LB137406
	Barium	9030	10000	90	90 - 110	P	10/02/2025	14:47	LB137406
	Beryllium	243	250	97	90 - 110	P	10/02/2025	14:47	LB137406
	Cadmium	2560	2500	103	90 - 110	P	10/02/2025	14:47	LB137406
	Calcium	23800	25000	95	90 - 110	P	10/02/2025	14:47	LB137406
	Chromium	1050	1000	105	90 - 110	P	10/02/2025	14:47	LB137406
	Cobalt	2450	2500	98	90 - 110	P	10/02/2025	14:47	LB137406
	Copper	1250	1250	100	90 - 110	P	10/02/2025	14:47	LB137406
	Iron	5080	5000	102	90 - 110	P	10/02/2025	14:47	LB137406
	Lead	5220	5000	104	90 - 110	P	10/02/2025	14:47	LB137406
	Magnesium	24400	25000	98	90 - 110	P	10/02/2025	14:47	LB137406
	Manganese	2320	2500	93	90 - 110	P	10/02/2025	14:47	LB137406
	Nickel	2470	2500	99	90 - 110	P	10/02/2025	14:47	LB137406
	Potassium	24700	25000	99	90 - 110	P	10/02/2025	14:47	LB137406
	Selenium	5300	5000	106	90 - 110	P	10/02/2025	14:47	LB137406
	Silver	1250	1250	100	90 - 110	P	10/02/2025	14:47	LB137406
	Sodium	24400	25000	98	90 - 110	P	10/02/2025	14:47	LB137406
	Thallium	5300	5000	106	90 - 110	P	10/02/2025	14:47	LB137406
	Vanadium	2360	2500	95	90 - 110	P	10/02/2025	14:47	LB137406
	Zinc	2470	2500	99	90 - 110	P	10/02/2025	14:47	LB137406
CCV04	Aluminum	9320	10000	93	90 - 110	P	10/02/2025	15:54	LB137406
	Antimony	4920	5000	98	90 - 110	P	10/02/2025	15:54	LB137406

Metals

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Coppola Services

SDG No.: Q2409

Contract: COPP02

Lab Code: ACE

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
CCV04	Arsenic	5460	5000	109	90 - 110	P	10/02/2025	15:54	LB137406
	Barium	9070	10000	91	90 - 110	P	10/02/2025	15:54	LB137406
	Beryllium	234	250	93	90 - 110	P	10/02/2025	15:54	LB137406
	Cadmium	2660	2500	106	90 - 110	P	10/02/2025	15:54	LB137406
	Calcium	23900	25000	96	90 - 110	P	10/02/2025	15:54	LB137406
	Chromium	1070	1000	107	90 - 110	P	10/02/2025	15:54	LB137406
	Cobalt	2480	2500	99	90 - 110	P	10/02/2025	15:54	LB137406
	Copper	1290	1250	103	90 - 110	P	10/02/2025	15:54	LB137406
	Iron	5300	5000	106	90 - 110	P	10/02/2025	15:54	LB137406
	Lead	5270	5000	106	90 - 110	P	10/02/2025	15:54	LB137406
	Magnesium	24100	25000	97	90 - 110	P	10/02/2025	15:54	LB137406
	Manganese	2340	2500	94	90 - 110	P	10/02/2025	15:54	LB137406
	Nickel	2520	2500	101	90 - 110	P	10/02/2025	15:54	LB137406
	Potassium	24200	25000	97	90 - 110	P	10/02/2025	15:54	LB137406
	Selenium	4900	5000	98	90 - 110	P	10/02/2025	15:54	LB137406
	Silver	1290	1250	103	90 - 110	P	10/02/2025	15:54	LB137406
	Sodium	23300	25000	93	90 - 110	P	10/02/2025	15:54	LB137406
	Thallium	5170	5000	103	90 - 110	P	10/02/2025	15:54	LB137406
	Vanadium	2400	2500	96	90 - 110	P	10/02/2025	15:54	LB137406
	Zinc	2510	2500	100	90 - 110	P	10/02/2025	15:54	LB137406
CCV05	Aluminum	9280	10000	93	90 - 110	P	10/02/2025	17:31	LB137406
	Antimony	4750	5000	95	90 - 110	P	10/02/2025	17:31	LB137406
	Arsenic	5060	5000	101	90 - 110	P	10/02/2025	17:31	LB137406
	Barium	9160	10000	92	90 - 110	P	10/02/2025	17:31	LB137406
	Beryllium	239	250	96	90 - 110	P	10/02/2025	17:31	LB137406
	Cadmium	2530	2500	101	90 - 110	P	10/02/2025	17:31	LB137406
	Calcium	23900	25000	96	90 - 110	P	10/02/2025	17:31	LB137406
	Chromium	1020	1000	102	90 - 110	P	10/02/2025	17:31	LB137406
	Cobalt	2430	2500	97	90 - 110	P	10/02/2025	17:31	LB137406
	Copper	1240	1250	99	90 - 110	P	10/02/2025	17:31	LB137406
	Iron	5480	5000	110	90 - 110	P	10/02/2025	17:31	LB137406
	Lead	5140	5000	103	90 - 110	P	10/02/2025	17:31	LB137406
	Magnesium	24100	25000	97	90 - 110	P	10/02/2025	17:31	LB137406
	Manganese	2350	2500	94	90 - 110	P	10/02/2025	17:31	LB137406

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Coppola Services

SDG No.: Q2409

Contract: COPP02

Lab Code: ACE

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
CCV05	Nickel	2450	2500	98	90 - 110	P	10/02/2025	17:31	LB137406
	Potassium	22500	25000	90	90 - 110	P	10/02/2025	17:31	LB137406
	Selenium	5150	5000	103	90 - 110	P	10/02/2025	17:31	LB137406
	Silver	1230	1250	99	90 - 110	P	10/02/2025	17:31	LB137406
	Sodium	26000	25000	104	90 - 110	P	10/02/2025	17:31	LB137406
	Thallium	4690	5000	94	90 - 110	P	10/02/2025	17:31	LB137406
	Vanadium	2370	2500	95	90 - 110	P	10/02/2025	17:31	LB137406
	Zinc	2430	2500	97	90 - 110	P	10/02/2025	17:31	LB137406
CCV06	Aluminum	9350	10000	94	90 - 110	P	10/02/2025	18:17	LB137406
	Antimony	4830	5000	96	90 - 110	P	10/02/2025	18:17	LB137406
	Arsenic	5210	5000	104	90 - 110	P	10/02/2025	18:17	LB137406
	Barium	9140	10000	91	90 - 110	P	10/02/2025	18:17	LB137406
	Beryllium	252	250	101	90 - 110	P	10/02/2025	18:17	LB137406
	Cadmium	2590	2500	104	90 - 110	P	10/02/2025	18:17	LB137406
	Calcium	24000	25000	96	90 - 110	P	10/02/2025	18:17	LB137406
	Chromium	1040	1000	104	90 - 110	P	10/02/2025	18:17	LB137406
	Cobalt	2460	2500	98	90 - 110	P	10/02/2025	18:17	LB137406
	Copper	1270	1250	101	90 - 110	P	10/02/2025	18:17	LB137406
	Iron	5380	5000	108	90 - 110	P	10/02/2025	18:17	LB137406
	Lead	5290	5000	106	90 - 110	P	10/02/2025	18:17	LB137406
	Magnesium	24400	25000	98	90 - 110	P	10/02/2025	18:17	LB137406
	Manganese	2360	2500	94	90 - 110	P	10/02/2025	18:17	LB137406
	Nickel	2490	2500	100	90 - 110	P	10/02/2025	18:17	LB137406
	Potassium	24700	25000	99	90 - 110	P	10/02/2025	18:17	LB137406
	Selenium	5010	5000	100	90 - 110	P	10/02/2025	18:17	LB137406
	Silver	1250	1250	100	90 - 110	P	10/02/2025	18:17	LB137406
	Sodium	26000	25000	104	90 - 110	P	10/02/2025	18:17	LB137406
	Thallium	4730	5000	94	90 - 110	P	10/02/2025	18:17	LB137406
	Vanadium	2370	2500	95	90 - 110	P	10/02/2025	18:17	LB137406
	Zinc	2450	2500	98	90 - 110	P	10/02/2025	18:17	LB137406

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Coppola Services

SDG No.: Q2409

Contract: COPP02

Lab Code: ACE

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
ICV01	Aluminum	7850	8000	98	90 - 110	P	10/03/2025	12:18	LB137426
	Antimony	4030	4000	101	90 - 110	P	10/03/2025	12:18	LB137426
	Arsenic	3940	4000	99	90 - 110	P	10/03/2025	12:18	LB137426
	Barium	7900	8000	99	90 - 110	P	10/03/2025	12:18	LB137426
	Beryllium	199	200	100	90 - 110	P	10/03/2025	12:18	LB137426
	Cadmium	1950	2000	98	90 - 110	P	10/03/2025	12:18	LB137426
	Calcium	19600	20000	98	90 - 110	P	10/03/2025	12:18	LB137426
	Chromium	799	800	100	90 - 110	P	10/03/2025	12:18	LB137426
	Cobalt	1950	2000	98	90 - 110	P	10/03/2025	12:18	LB137426
	Copper	1010	1000	101	90 - 110	P	10/03/2025	12:18	LB137426
	Iron	3950	4000	99	90 - 110	P	10/03/2025	12:18	LB137426
	Lead	3840	4000	96	90 - 110	P	10/03/2025	12:18	LB137426
	Magnesium	19600	20000	98	90 - 110	P	10/03/2025	12:18	LB137426
	Manganese	1980	2000	99	90 - 110	P	10/03/2025	12:18	LB137426
	Nickel	1960	2000	98	90 - 110	P	10/03/2025	12:18	LB137426
	Potassium	19400	20000	97	90 - 110	P	10/03/2025	12:18	LB137426
	Selenium	3960	4000	99	90 - 110	P	10/03/2025	12:18	LB137426
	Silver	960	1000	96	90 - 110	P	10/03/2025	12:18	LB137426
	Sodium	19300	20000	97	90 - 110	P	10/03/2025	12:18	LB137426
	Thallium	3750	4000	94	90 - 110	P	10/03/2025	12:18	LB137426
	Vanadium	1960	2000	98	90 - 110	P	10/03/2025	12:18	LB137426
	Zinc	1980	2000	99	90 - 110	P	10/03/2025	12:18	LB137426

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Coppola Services

SDG No.: Q2409

Contract: COPP02

Lab Code: ACE

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
LLICV01	Aluminum	114	100	114	80 - 120	P	10/03/2025	13:05	LB137426
	Antimony	53.8	50.0	108	80 - 120	P	10/03/2025	13:05	LB137426
	Arsenic	22.0	20.0	110	80 - 120	P	10/03/2025	13:05	LB137426
	Barium	99.1	100	99	80 - 120	P	10/03/2025	13:05	LB137426
	Beryllium	6.51	6.0	108	80 - 120	P	10/03/2025	13:05	LB137426
	Cadmium	6.05	6.0	101	80 - 120	P	10/03/2025	13:05	LB137426
	Calcium	2060	2000	103	80 - 120	P	10/03/2025	13:05	LB137426
	Chromium	10.4	10.0	104	80 - 120	P	10/03/2025	13:05	LB137426
	Cobalt	30.1	30.0	100	80 - 120	P	10/03/2025	13:05	LB137426
	Copper	21.3	20.0	107	80 - 120	P	10/03/2025	13:05	LB137426
	Iron	92.9	100	93	80 - 120	P	10/03/2025	13:05	LB137426
	Lead	12.8	12.0	107	80 - 120	P	10/03/2025	13:05	LB137426
	Magnesium	2160	2000	108	80 - 120	P	10/03/2025	13:05	LB137426
	Manganese	21.2	20.0	106	80 - 120	P	10/03/2025	13:05	LB137426
	Nickel	41.3	40.0	103	80 - 120	P	10/03/2025	13:05	LB137426
	Potassium	1960	2000	98	80 - 120	P	10/03/2025	13:05	LB137426
	Selenium	19.3	20.0	96	80 - 120	P	10/03/2025	13:05	LB137426
	Silver	10.2	10.0	102	80 - 120	P	10/03/2025	13:05	LB137426
	Sodium	1990	2000	100	80 - 120	P	10/03/2025	13:05	LB137426
	Thallium	41.8	40.0	104	80 - 120	P	10/03/2025	13:05	LB137426
	Vanadium	39.2	40.0	98	80 - 120	P	10/03/2025	13:05	LB137426
	Zinc	42.4	40.0	106	80 - 120	P	10/03/2025	13:05	LB137426

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Coppola Services

SDG No.: Q2409

Contract: COPP02

Lab Code: ACE

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV01	Aluminum	9960	10000	100	90 - 110	P	10/03/2025	13:37	LB137426
	Antimony	5040	5000	101	90 - 110	P	10/03/2025	13:37	LB137426
	Arsenic	5030	5000	100	90 - 110	P	10/03/2025	13:37	LB137426
	Barium	10000	10000	100	90 - 110	P	10/03/2025	13:37	LB137426
	Beryllium	247	250	99	90 - 110	P	10/03/2025	13:37	LB137426
	Cadmium	2490	2500	100	90 - 110	P	10/03/2025	13:37	LB137426
	Calcium	24800	25000	99	90 - 110	P	10/03/2025	13:37	LB137426
	Chromium	989	1000	99	90 - 110	P	10/03/2025	13:37	LB137426
	Cobalt	2480	2500	99	90 - 110	P	10/03/2025	13:37	LB137426
	Copper	1260	1250	101	90 - 110	P	10/03/2025	13:37	LB137426
	Iron	4900	5000	98	90 - 110	P	10/03/2025	13:37	LB137426
	Lead	4940	5000	99	90 - 110	P	10/03/2025	13:37	LB137426
	Magnesium	24700	25000	99	90 - 110	P	10/03/2025	13:37	LB137426
	Manganese	2500	2500	100	90 - 110	P	10/03/2025	13:37	LB137426
	Nickel	2490	2500	100	90 - 110	P	10/03/2025	13:37	LB137426
	Potassium	24200	25000	97	90 - 110	P	10/03/2025	13:37	LB137426
	Selenium	5050	5000	101	90 - 110	P	10/03/2025	13:37	LB137426
	Silver	1230	1250	98	90 - 110	P	10/03/2025	13:37	LB137426
	Sodium	24400	25000	97	90 - 110	P	10/03/2025	13:37	LB137426
	Thallium	4650	5000	93	90 - 110	P	10/03/2025	13:37	LB137426
	Vanadium	2480	2500	99	90 - 110	P	10/03/2025	13:37	LB137426
	Zinc	2480	2500	99	90 - 110	P	10/03/2025	13:37	LB137426
CCV02	Aluminum	9920	10000	99	90 - 110	P	10/03/2025	15:00	LB137426
	Antimony	4990	5000	100	90 - 110	P	10/03/2025	15:00	LB137426
	Arsenic	4990	5000	100	90 - 110	P	10/03/2025	15:00	LB137426
	Barium	9880	10000	99	90 - 110	P	10/03/2025	15:00	LB137426
	Beryllium	244	250	98	90 - 110	P	10/03/2025	15:00	LB137426
	Cadmium	2460	2500	98	90 - 110	P	10/03/2025	15:00	LB137426
	Calcium	24700	25000	99	90 - 110	P	10/03/2025	15:00	LB137426
	Chromium	984	1000	98	90 - 110	P	10/03/2025	15:00	LB137426
	Cobalt	2450	2500	98	90 - 110	P	10/03/2025	15:00	LB137426
	Copper	1240	1250	99	90 - 110	P	10/03/2025	15:00	LB137426
	Iron	4860	5000	97	90 - 110	P	10/03/2025	15:00	LB137426
	Lead	4890	5000	98	90 - 110	P	10/03/2025	15:00	LB137426

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Coppola Services

SDG No.: Q2409

Contract: COPP02

Lab Code: ACE

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV02	Magnesium	24400	25000	98	90 - 110	P	10/03/2025	15:00	LB137426
	Manganese	2440	2500	98	90 - 110	P	10/03/2025	15:00	LB137426
	Nickel	2450	2500	98	90 - 110	P	10/03/2025	15:00	LB137426
	Potassium	24400	25000	98	90 - 110	P	10/03/2025	15:00	LB137426
	Selenium	5040	5000	101	90 - 110	P	10/03/2025	15:00	LB137426
	Silver	1230	1250	98	90 - 110	P	10/03/2025	15:00	LB137426
	Sodium	24300	25000	97	90 - 110	P	10/03/2025	15:00	LB137426
	Thallium	4580	5000	92	90 - 110	P	10/03/2025	15:00	LB137426
	Vanadium	2470	2500	99	90 - 110	P	10/03/2025	15:00	LB137426
	Zinc	2450	2500	98	90 - 110	P	10/03/2025	15:00	LB137426
CCV03	Aluminum	9680	10000	97	90 - 110	P	10/03/2025	15:51	LB137426
	Antimony	5140	5000	103	90 - 110	P	10/03/2025	15:51	LB137426
	Arsenic	5080	5000	102	90 - 110	P	10/03/2025	15:51	LB137426
	Barium	10000	10000	100	90 - 110	P	10/03/2025	15:51	LB137426
	Beryllium	239	250	96	90 - 110	P	10/03/2025	15:51	LB137426
	Cadmium	2440	2500	98	90 - 110	P	10/03/2025	15:51	LB137426
	Calcium	24200	25000	97	90 - 110	P	10/03/2025	15:51	LB137426
	Chromium	972	1000	97	90 - 110	P	10/03/2025	15:51	LB137426
	Cobalt	2450	2500	98	90 - 110	P	10/03/2025	15:51	LB137426
	Copper	1250	1250	100	90 - 110	P	10/03/2025	15:51	LB137426
	Iron	5230	5000	105	90 - 110	P	10/03/2025	15:51	LB137426
	Lead	4860	5000	97	90 - 110	P	10/03/2025	15:51	LB137426
	Magnesium	23500	25000	94	90 - 110	P	10/03/2025	15:51	LB137426
	Manganese	2420	2500	97	90 - 110	P	10/03/2025	15:51	LB137426
	Nickel	2450	2500	98	90 - 110	P	10/03/2025	15:51	LB137426
	Potassium	25700	25000	103	90 - 110	P	10/03/2025	15:51	LB137426
	Selenium	5170	5000	103	90 - 110	P	10/03/2025	15:51	LB137426
	Silver	1240	1250	99	90 - 110	P	10/03/2025	15:51	LB137426
	Sodium	27300	25000	109	90 - 110	P	10/03/2025	15:51	LB137426
	Thallium	5250	5000	105	90 - 110	P	10/03/2025	15:51	LB137426
	Vanadium	2450	2500	98	90 - 110	P	10/03/2025	15:51	LB137426
	Zinc	2490	2500	100	90 - 110	P	10/03/2025	15:51	LB137426
CCV04	Aluminum	9420	10000	94	90 - 110	P	10/03/2025	16:45	LB137426
	Antimony	5020	5000	100	90 - 110	P	10/03/2025	16:45	LB137426

Metals

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Coppola Services

SDG No.: Q2409

Contract: COPP02

Lab Code: ACE

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
CCV04	Arsenic	4930	5000	99	90 - 110	P	10/03/2025	16:45	LB137426
	Barium	9780	10000	98	90 - 110	P	10/03/2025	16:45	LB137426
	Beryllium	234	250	93	90 - 110	P	10/03/2025	16:45	LB137426
	Cadmium	2360	2500	94	90 - 110	P	10/03/2025	16:45	LB137426
	Calcium	23600	25000	94	90 - 110	P	10/03/2025	16:45	LB137426
	Chromium	938	1000	94	90 - 110	P	10/03/2025	16:45	LB137426
	Cobalt	2370	2500	95	90 - 110	P	10/03/2025	16:45	LB137426
	Copper	1210	1250	97	90 - 110	P	10/03/2025	16:45	LB137426
	Iron	5120	5000	102	90 - 110	P	10/03/2025	16:45	LB137426
	Lead	4700	5000	94	90 - 110	P	10/03/2025	16:45	LB137426
	Magnesium	22700	25000	91	90 - 110	P	10/03/2025	16:45	LB137426
	Manganese	2370	2500	95	90 - 110	P	10/03/2025	16:45	LB137426
	Nickel	2370	2500	95	90 - 110	P	10/03/2025	16:45	LB137426
	Potassium	24100	25000	96	90 - 110	P	10/03/2025	16:45	LB137426
	Selenium	5060	5000	101	90 - 110	P	10/03/2025	16:45	LB137426
	Silver	1210	1250	97	90 - 110	P	10/03/2025	16:45	LB137426
	Sodium	25400	25000	102	90 - 110	P	10/03/2025	16:45	LB137426
	Thallium	5250	5000	105	90 - 110	P	10/03/2025	16:45	LB137426
	Vanadium	2390	2500	96	90 - 110	P	10/03/2025	16:45	LB137426
	Zinc	2420	2500	97	90 - 110	P	10/03/2025	16:45	LB137426



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

Metals

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CRDL STANDARD FOR AA & ICP

Client: Coppola Services

SDG No.: Q2409

Contract: COPP02

Lab Code: ACE

Initial Calibration Source: _____

Continuing Calibration Source: _____

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CRI01	Aluminum	116	100	116	65 - 135	P	10/02/2025	11:36	LB137406
	Antimony	53.4	50.0	107	65 - 135	P	10/02/2025	11:36	LB137406
	Arsenic	23.1	20.0	116	65 - 135	P	10/02/2025	11:36	LB137406
	Barium	113	100	113	65 - 135	P	10/02/2025	11:36	LB137406
	Beryllium	6.95	6.0	116	65 - 135	P	10/02/2025	11:36	LB137406
	Cadmium	6.02	6.0	100	65 - 135	P	10/02/2025	11:36	LB137406
	Calcium	2080	2000	104	65 - 135	P	10/02/2025	11:36	LB137406
	Chromium	10.5	10.0	105	65 - 135	P	10/02/2025	11:36	LB137406
	Cobalt	30.2	30.0	101	65 - 135	P	10/02/2025	11:36	LB137406
	Copper	22.5	20.0	112	65 - 135	P	10/02/2025	11:36	LB137406
	Iron	88.5	100	88	65 - 135	P	10/02/2025	11:36	LB137406
	Lead	13.3	12.0	111	65 - 135	P	10/02/2025	11:36	LB137406
	Magnesium	2250	2000	112	65 - 135	P	10/02/2025	11:36	LB137406
	Manganese	21.0	20.0	105	65 - 135	P	10/02/2025	11:36	LB137406
	Nickel	40.8	40.0	102	65 - 135	P	10/02/2025	11:36	LB137406
	Potassium	1530	2000	77	65 - 135	P	10/02/2025	11:36	LB137406
	Selenium	23.8	20.0	119	65 - 135	P	10/02/2025	11:36	LB137406
	Silver	10.3	10.0	103	65 - 135	P	10/02/2025	11:36	LB137406
	Sodium	1490	2000	74	65 - 135	P	10/02/2025	11:36	LB137406
	Thallium	46.6	40.0	117	65 - 135	P	10/02/2025	11:36	LB137406
	Vanadium	37.2	40.0	93	65 - 135	P	10/02/2025	11:36	LB137406
	Zinc	41.5	40.0	104	65 - 135	P	10/02/2025	11:36	LB137406
CRA	Mercury	0.20	0.2	101	70 - 130	CV	10/03/2025	08:52	LB137397
CRI01	Aluminum	118	100	118	65 - 135	P	10/03/2025	13:16	LB137426
	Antimony	50.6	50.0	101	65 - 135	P	10/03/2025	13:16	LB137426
	Arsenic	21.4	20.0	107	65 - 135	P	10/03/2025	13:16	LB137426
	Barium	100	100	100	65 - 135	P	10/03/2025	13:16	LB137426
	Beryllium	6.49	6.0	108	65 - 135	P	10/03/2025	13:16	LB137426
	Cadmium	6.04	6.0	101	65 - 135	P	10/03/2025	13:16	LB137426
	Calcium	2060	2000	103	65 - 135	P	10/03/2025	13:16	LB137426
	Chromium	9.90	10.0	99	65 - 135	P	10/03/2025	13:16	LB137426
	Cobalt	29.7	30.0	99	65 - 135	P	10/03/2025	13:16	LB137426
	Copper	21.2	20.0	106	65 - 135	P	10/03/2025	13:16	LB137426
	Iron	91.2	100	91	65 - 135	P	10/03/2025	13:16	LB137426
	Lead	10.2	12.0	85	65 - 135	P	10/03/2025	13:16	LB137426

Metals

- 2b -

CRDL STANDARD FOR AA & ICP

Client: Coppola Services

SDG No.: Q2409

Contract: COPP02

Lab Code: ACE

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	Magnesium	2140	2000	107	65 - 135	P	10/03/2025	13:16	LB137426
	Manganese	21.0	20.0	105	65 - 135	P	10/03/2025	13:16	LB137426
	Nickel	40.9	40.0	102	65 - 135	P	10/03/2025	13:16	LB137426
	Potassium	1890	2000	94	65 - 135	P	10/03/2025	13:16	LB137426
	Selenium	21.2	20.0	106	65 - 135	P	10/03/2025	13:16	LB137426
	Silver	10.5	10.0	105	65 - 135	P	10/03/2025	13:16	LB137426
	Sodium	1910	2000	95	65 - 135	P	10/03/2025	13:16	LB137426
	Thallium	39.4	40.0	98	65 - 135	P	10/03/2025	13:16	LB137426
	Vanadium	39.8	40.0	100	65 - 135	P	10/03/2025	13:16	LB137426
	Zinc	42.0	40.0	105	65 - 135	P	10/03/2025	13:16	LB137426



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

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Coppola Services

SDG No.: Q2409

Contract: COPP02

Lab Code: ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB56	Mercury	0.076	+/-0.2	U	0.20	CV	10/03/2025	08:45	LB137397

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Coppola Services

SDG No.: Q2409

Contract: COPP02

Lab Code: ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB75	Mercury	0.076	+/-0.2	U	0.20	CV	10/03/2025	08:50	LB137397
CCB76	Mercury	0.076	+/-0.2	U	0.20	CV	10/03/2025	09:23	LB137397
CCB77	Mercury	0.076	+/-0.2	U	0.20	CV	10/03/2025	09:41	LB137397

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Coppola Services

SDG No.: Q2409

Contract: COPP02

Lab Code: ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB01	Aluminum	17.8	+/-50	J	100	P	10/02/2025	11:27	LB137406
	Antimony	6.76	+/-25	U	50.0	P	10/02/2025	11:27	LB137406
	Arsenic	5.12	+/-10	U	20.0	P	10/02/2025	11:27	LB137406
	Barium	15.3	+/-50	J	100	P	10/02/2025	11:27	LB137406
	Beryllium	0.56	+/-3	U	6.00	P	10/02/2025	11:27	LB137406
	Cadmium	0.50	+/-3	U	6.00	P	10/02/2025	11:27	LB137406
	Calcium	234	+/-1000	U	2000	P	10/02/2025	11:27	LB137406
	Chromium	2.12	+/-5	U	10.0	P	10/02/2025	11:27	LB137406
	Cobalt	2.26	+/-15	U	30.0	P	10/02/2025	11:27	LB137406
	Copper	4.60	+/-10	U	20.0	P	10/02/2025	11:27	LB137406
	Iron	23.4	+/-50	U	100	P	10/02/2025	11:27	LB137406
	Lead	3.04	+/-6	J	12.0	P	10/02/2025	11:27	LB137406
	Magnesium	244	+/-1000	U	2000	P	10/02/2025	11:27	LB137406
	Manganese	5.94	+/-10	U	20.0	P	10/02/2025	11:27	LB137406
	Nickel	3.06	+/-20	U	40.0	P	10/02/2025	11:27	LB137406
	Potassium	918	+/-1000	U	2000	P	10/02/2025	11:27	LB137406
	Selenium	9.64	+/-10	U	20.0	P	10/02/2025	11:27	LB137406
	Silver	1.62	+/-5	U	10.0	P	10/02/2025	11:27	LB137406
	Sodium	868	+/-1000	U	2000	P	10/02/2025	11:27	LB137406
	Thallium	4.38	+/-20	U	40.0	P	10/02/2025	11:27	LB137406
	Vanadium	6.26	+/-20	U	40.0	P	10/02/2025	11:27	LB137406
	Zinc	16.7	+/-20	U	40.0	P	10/02/2025	11:27	LB137406

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Coppola Services

SDG No.: Q2409

Contract: COPP02

Lab Code: ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB01	Aluminum	11.3	+/-50	U	100	P	10/02/2025	12:02	LB137406
	Antimony	6.76	+/-25	U	50.0	P	10/02/2025	12:02	LB137406
	Arsenic	5.12	+/-10	U	20.0	P	10/02/2025	12:02	LB137406
	Barium	14.6	+/-50	U	100	P	10/02/2025	12:02	LB137406
	Beryllium	0.56	+/-3	U	6.00	P	10/02/2025	12:02	LB137406
	Cadmium	0.50	+/-3	U	6.00	P	10/02/2025	12:02	LB137406
	Calcium	234	+/-1000	U	2000	P	10/02/2025	12:02	LB137406
	Chromium	2.12	+/-5	U	10.0	P	10/02/2025	12:02	LB137406
	Cobalt	2.26	+/-15	U	30.0	P	10/02/2025	12:02	LB137406
	Copper	4.60	+/-10	U	20.0	P	10/02/2025	12:02	LB137406
	Iron	23.4	+/-50	U	100	P	10/02/2025	12:02	LB137406
	Lead	2.30	+/-6	U	12.0	P	10/02/2025	12:02	LB137406
	Magnesium	244	+/-1000	U	2000	P	10/02/2025	12:02	LB137406
	Manganese	5.94	+/-10	U	20.0	P	10/02/2025	12:02	LB137406
	Nickel	3.06	+/-20	U	40.0	P	10/02/2025	12:02	LB137406
	Potassium	918	+/-1000	U	2000	P	10/02/2025	12:02	LB137406
	Selenium	9.64	+/-10	U	20.0	P	10/02/2025	12:02	LB137406
	Silver	1.62	+/-5	U	10.0	P	10/02/2025	12:02	LB137406
	Sodium	868	+/-1000	U	2000	P	10/02/2025	12:02	LB137406
	Thallium	4.38	+/-20	U	40.0	P	10/02/2025	12:02	LB137406
	Vanadium	6.26	+/-20	U	40.0	P	10/02/2025	12:02	LB137406
	Zinc	16.7	+/-20	U	40.0	P	10/02/2025	12:02	LB137406
CCB02	Aluminum	11.3	+/-50	U	100	P	10/02/2025	13:52	LB137406
	Antimony	7.17	+/-25	J	50.0	P	10/02/2025	13:52	LB137406
	Arsenic	5.12	+/-10	U	20.0	P	10/02/2025	13:52	LB137406
	Barium	36.1	+/-50	J	100	P	10/02/2025	13:52	LB137406
	Beryllium	0.56	+/-3	U	6.00	P	10/02/2025	13:52	LB137406
	Cadmium	0.50	+/-3	U	6.00	P	10/02/2025	13:52	LB137406
	Calcium	234	+/-1000	U	2000	P	10/02/2025	13:52	LB137406
	Chromium	2.12	+/-5	U	10.0	P	10/02/2025	13:52	LB137406
	Cobalt	2.26	+/-15	U	30.0	P	10/02/2025	13:52	LB137406
	Copper	4.60	+/-10	U	20.0	P	10/02/2025	13:52	LB137406
	Iron	23.4	+/-50	U	100	P	10/02/2025	13:52	LB137406
	Lead	2.30	+/-6	U	12.0	P	10/02/2025	13:52	LB137406
	Magnesium	244	+/-1000	U	2000	P	10/02/2025	13:52	LB137406
	Manganese	5.94	+/-10	U	20.0	P	10/02/2025	13:52	LB137406
	Nickel	3.06	+/-20	U	40.0	P	10/02/2025	13:52	LB137406
	Potassium	918	+/-1000	U	2000	P	10/02/2025	13:52	LB137406
	Selenium	9.64	+/-10	U	20.0	P	10/02/2025	13:52	LB137406

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Coppola Services

SDG No.: Q2409

Contract: COPP02

Lab Code: ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB02	Silver	1.62	+/-5	U	10.0	P	10/02/2025	13:52	LB137406
	Sodium	868	+/-1000	U	2000	P	10/02/2025	13:52	LB137406
	Thallium	9.07	+/-20	J	40.0	P	10/02/2025	13:52	LB137406
	Vanadium	6.26	+/-20	U	40.0	P	10/02/2025	13:52	LB137406
	Zinc	16.7	+/-20	U	40.0	P	10/02/2025	13:52	LB137406
CCB03	Aluminum	11.3	+/-50	U	100	P	10/02/2025	14:53	LB137406
	Antimony	9.80	+/-25	J	50.0	P	10/02/2025	14:53	LB137406
	Arsenic	5.12	+/-10	U	20.0	P	10/02/2025	14:53	LB137406
	Barium	35.3	+/-50	J	100	P	10/02/2025	14:53	LB137406
	Beryllium	0.56	+/-3	U	6.00	P	10/02/2025	14:53	LB137406
	Cadmium	0.50	+/-3	U	6.00	P	10/02/2025	14:53	LB137406
	Calcium	234	+/-1000	U	2000	P	10/02/2025	14:53	LB137406
	Chromium	2.12	+/-5	U	10.0	P	10/02/2025	14:53	LB137406
	Cobalt	2.26	+/-15	U	30.0	P	10/02/2025	14:53	LB137406
	Copper	4.60	+/-10	U	20.0	P	10/02/2025	14:53	LB137406
	Iron	23.4	+/-50	U	100	P	10/02/2025	14:53	LB137406
	Lead	4.60	+/-6	J	12.0	P	10/02/2025	14:53	LB137406
	Magnesium	244	+/-1000	U	2000	P	10/02/2025	14:53	LB137406
	Manganese	5.94	+/-10	U	20.0	P	10/02/2025	14:53	LB137406
	Nickel	3.06	+/-20	U	40.0	P	10/02/2025	14:53	LB137406
	Potassium	918	+/-1000	U	2000	P	10/02/2025	14:53	LB137406
	Selenium	9.64	+/-10	U	20.0	P	10/02/2025	14:53	LB137406
	Silver	1.62	+/-5	U	10.0	P	10/02/2025	14:53	LB137406
	Sodium	868	+/-1000	U	2000	P	10/02/2025	14:53	LB137406
	Thallium	8.77	+/-20	J	40.0	P	10/02/2025	14:53	LB137406
	Vanadium	6.26	+/-20	U	40.0	P	10/02/2025	14:53	LB137406
	Zinc	16.7	+/-20	U	40.0	P	10/02/2025	14:53	LB137406
CCB04	Aluminum	11.3	+/-50	U	100	P	10/02/2025	16:05	LB137406
	Antimony	13.8	+/-25	J	50.0	P	10/02/2025	16:05	LB137406
	Arsenic	5.72	+/-10	J	20.0	P	10/02/2025	16:05	LB137406
	Barium	44.2	+/-50	J	100	P	10/02/2025	16:05	LB137406
	Beryllium	0.56	+/-3	U	6.00	P	10/02/2025	16:05	LB137406
	Cadmium	0.50	+/-3	U	6.00	P	10/02/2025	16:05	LB137406
	Calcium	234	+/-1000	U	2000	P	10/02/2025	16:05	LB137406
	Chromium	2.12	+/-5	U	10.0	P	10/02/2025	16:05	LB137406
	Cobalt	2.26	+/-15	U	30.0	P	10/02/2025	16:05	LB137406
	Copper	4.60	+/-10	U	20.0	P	10/02/2025	16:05	LB137406
	Iron	23.4	+/-50	U	100	P	10/02/2025	16:05	LB137406
	Lead	2.67	+/-6	J	12.0	P	10/02/2025	16:05	LB137406

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Coppola Services

SDG No.: Q2409

Contract: COPP02

Lab Code: ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB04	Magnesium	244	+/-1000	U	2000	P	10/02/2025	16:05	LB137406
	Manganese	5.94	+/-10	U	20.0	P	10/02/2025	16:05	LB137406
	Nickel	3.06	+/-20	U	40.0	P	10/02/2025	16:05	LB137406
	Potassium	918	+/-1000	U	2000	P	10/02/2025	16:05	LB137406
	Selenium	9.64	+/-10	U	20.0	P	10/02/2025	16:05	LB137406
	Silver	1.62	+/-5	U	10.0	P	10/02/2025	16:05	LB137406
	Sodium	868	+/-1000	U	2000	P	10/02/2025	16:05	LB137406
	Thallium	17.5	+/-20	J	40.0	P	10/02/2025	16:05	LB137406
	Vanadium	6.26	+/-20	U	40.0	P	10/02/2025	16:05	LB137406
	Zinc	16.7	+/-20	U	40.0	P	10/02/2025	16:05	LB137406
CCB05	Aluminum	20.7	+/-50	J	100	P	10/02/2025	17:35	LB137406
	Antimony	6.76	+/-25	U	50.0	P	10/02/2025	17:35	LB137406
	Arsenic	5.12	+/-10	U	20.0	P	10/02/2025	17:35	LB137406
	Barium	32.0	+/-50	J	100	P	10/02/2025	17:35	LB137406
	Beryllium	0.56	+/-3	U	6.00	P	10/02/2025	17:35	LB137406
	Cadmium	0.50	+/-3	U	6.00	P	10/02/2025	17:35	LB137406
	Calcium	234	+/-1000	U	2000	P	10/02/2025	17:35	LB137406
	Chromium	2.12	+/-5	U	10.0	P	10/02/2025	17:35	LB137406
	Cobalt	2.26	+/-15	U	30.0	P	10/02/2025	17:35	LB137406
	Copper	4.60	+/-10	U	20.0	P	10/02/2025	17:35	LB137406
	Iron	23.4	+/-50	U	100	P	10/02/2025	17:35	LB137406
	Lead	2.81	+/-6	J	12.0	P	10/02/2025	17:35	LB137406
	Magnesium	244	+/-1000	U	2000	P	10/02/2025	17:35	LB137406
	Manganese	5.94	+/-10	U	20.0	P	10/02/2025	17:35	LB137406
	Nickel	3.06	+/-20	U	40.0	P	10/02/2025	17:35	LB137406
	Potassium	918	+/-1000	U	2000	P	10/02/2025	17:35	LB137406
	Selenium	9.64	+/-10	U	20.0	P	10/02/2025	17:35	LB137406
	Silver	1.62	+/-5	U	10.0	P	10/02/2025	17:35	LB137406
	Sodium	868	+/-1000	U	2000	P	10/02/2025	17:35	LB137406
	Thallium	6.83	+/-20	J	40.0	P	10/02/2025	17:35	LB137406
	Vanadium	6.26	+/-20	U	40.0	P	10/02/2025	17:35	LB137406
	Zinc	16.7	+/-20	U	40.0	P	10/02/2025	17:35	LB137406
CCB06	Aluminum	11.3	+/-50	U	100	P	10/02/2025	18:21	LB137406
	Antimony	9.78	+/-25	J	50.0	P	10/02/2025	18:21	LB137406
	Arsenic	5.12	+/-10	U	20.0	P	10/02/2025	18:21	LB137406
	Barium	37.5	+/-50	J	100	P	10/02/2025	18:21	LB137406
	Beryllium	0.56	+/-3	U	6.00	P	10/02/2025	18:21	LB137406
	Cadmium	0.50	+/-3	U	6.00	P	10/02/2025	18:21	LB137406
	Calcium	234	+/-1000	U	2000	P	10/02/2025	18:21	LB137406

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Coppola Services

SDG No.: Q2409

Contract: COPP02

Lab Code: ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB06	Chromium	2.12	+/-5	U	10.0	P	10/02/2025	18:21	LB137406
	Cobalt	2.26	+/-15	U	30.0	P	10/02/2025	18:21	LB137406
	Copper	4.60	+/-10	U	20.0	P	10/02/2025	18:21	LB137406
	Iron	23.4	+/-50	U	100	P	10/02/2025	18:21	LB137406
	Lead	3.53	+/-6	J	12.0	P	10/02/2025	18:21	LB137406
	Magnesium	244	+/-1000	U	2000	P	10/02/2025	18:21	LB137406
	Manganese	5.94	+/-10	U	20.0	P	10/02/2025	18:21	LB137406
	Nickel	3.06	+/-20	U	40.0	P	10/02/2025	18:21	LB137406
	Potassium	918	+/-1000	U	2000	P	10/02/2025	18:21	LB137406
	Selenium	9.64	+/-10	U	20.0	P	10/02/2025	18:21	LB137406
	Silver	1.62	+/-5	U	10.0	P	10/02/2025	18:21	LB137406
	Sodium	868	+/-1000	U	2000	P	10/02/2025	18:21	LB137406
	Thallium	12.0	+/-20	J	40.0	P	10/02/2025	18:21	LB137406
	Vanadium	6.26	+/-20	U	40.0	P	10/02/2025	18:21	LB137406
	Zinc	16.7	+/-20	U	40.0	P	10/02/2025	18:21	LB137406

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Coppola Services

SDG No.: Q2409

Contract: COPP02

Lab Code: ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB01	Aluminum	11.6	+/-50	J	100	P	10/03/2025	13:12	LB137426
	Antimony	6.76	+/-25	U	50.0	P	10/03/2025	13:12	LB137426
	Arsenic	5.12	+/-10	U	20.0	P	10/03/2025	13:12	LB137426
	Barium	14.6	+/-50	U	100	P	10/03/2025	13:12	LB137426
	Beryllium	0.56	+/-3	U	6.00	P	10/03/2025	13:12	LB137426
	Cadmium	0.50	+/-3	U	6.00	P	10/03/2025	13:12	LB137426
	Calcium	234	+/-1000	U	2000	P	10/03/2025	13:12	LB137426
	Chromium	2.12	+/-5	U	10.0	P	10/03/2025	13:12	LB137426
	Cobalt	2.26	+/-15	U	30.0	P	10/03/2025	13:12	LB137426
	Copper	4.60	+/-10	U	20.0	P	10/03/2025	13:12	LB137426
	Iron	23.4	+/-50	U	100	P	10/03/2025	13:12	LB137426
	Lead	2.30	+/-6	U	12.0	P	10/03/2025	13:12	LB137426
	Magnesium	244	+/-1000	U	2000	P	10/03/2025	13:12	LB137426
	Manganese	5.94	+/-10	U	20.0	P	10/03/2025	13:12	LB137426
	Nickel	3.06	+/-20	U	40.0	P	10/03/2025	13:12	LB137426
	Potassium	918	+/-1000	U	2000	P	10/03/2025	13:12	LB137426
	Selenium	9.64	+/-10	U	20.0	P	10/03/2025	13:12	LB137426
	Silver	1.62	+/-5	U	10.0	P	10/03/2025	13:12	LB137426
	Sodium	868	+/-1000	U	2000	P	10/03/2025	13:12	LB137426
	Thallium	4.38	+/-20	U	40.0	P	10/03/2025	13:12	LB137426
	Vanadium	6.26	+/-20	U	40.0	P	10/03/2025	13:12	LB137426
	Zinc	16.7	+/-20	U	40.0	P	10/03/2025	13:12	LB137426

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Coppola Services

SDG No.: Q2409

Contract: COPP02

Lab Code: ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB01	Aluminum	11.3	+/-50	U	100	P	10/03/2025	13:41	LB137426
	Antimony	6.76	+/-25	U	50.0	P	10/03/2025	13:41	LB137426
	Arsenic	5.12	+/-10	U	20.0	P	10/03/2025	13:41	LB137426
	Barium	14.6	+/-50	U	100	P	10/03/2025	13:41	LB137426
	Beryllium	0.56	+/-3	U	6.00	P	10/03/2025	13:41	LB137426
	Cadmium	0.50	+/-3	U	6.00	P	10/03/2025	13:41	LB137426
	Calcium	234	+/-1000	U	2000	P	10/03/2025	13:41	LB137426
	Chromium	2.12	+/-5	U	10.0	P	10/03/2025	13:41	LB137426
	Cobalt	2.26	+/-15	U	30.0	P	10/03/2025	13:41	LB137426
	Copper	4.60	+/-10	U	20.0	P	10/03/2025	13:41	LB137426
	Iron	23.4	+/-50	U	100	P	10/03/2025	13:41	LB137426
	Lead	2.30	+/-6	U	12.0	P	10/03/2025	13:41	LB137426
	Magnesium	244	+/-1000	U	2000	P	10/03/2025	13:41	LB137426
	Manganese	5.94	+/-10	U	20.0	P	10/03/2025	13:41	LB137426
	Nickel	3.06	+/-20	U	40.0	P	10/03/2025	13:41	LB137426
	Potassium	918	+/-1000	U	2000	P	10/03/2025	13:41	LB137426
	Selenium	9.64	+/-10	U	20.0	P	10/03/2025	13:41	LB137426
	Silver	1.62	+/-5	U	10.0	P	10/03/2025	13:41	LB137426
	Sodium	868	+/-1000	U	2000	P	10/03/2025	13:41	LB137426
	Thallium	4.38	+/-20	U	40.0	P	10/03/2025	13:41	LB137426
	Vanadium	6.26	+/-20	U	40.0	P	10/03/2025	13:41	LB137426
	Zinc	16.7	+/-20	U	40.0	P	10/03/2025	13:41	LB137426
CCB02	Aluminum	11.3	+/-50	U	100	P	10/03/2025	15:04	LB137426
	Antimony	6.76	+/-25	U	50.0	P	10/03/2025	15:04	LB137426
	Arsenic	5.12	+/-10	U	20.0	P	10/03/2025	15:04	LB137426
	Barium	14.6	+/-50	U	100	P	10/03/2025	15:04	LB137426
	Beryllium	0.56	+/-3	U	6.00	P	10/03/2025	15:04	LB137426
	Cadmium	0.50	+/-3	U	6.00	P	10/03/2025	15:04	LB137426
	Calcium	234	+/-1000	U	2000	P	10/03/2025	15:04	LB137426
	Chromium	2.12	+/-5	U	10.0	P	10/03/2025	15:04	LB137426
	Cobalt	2.26	+/-15	U	30.0	P	10/03/2025	15:04	LB137426
	Copper	4.60	+/-10	U	20.0	P	10/03/2025	15:04	LB137426
	Iron	23.4	+/-50	U	100	P	10/03/2025	15:04	LB137426
	Lead	2.30	+/-6	U	12.0	P	10/03/2025	15:04	LB137426
	Magnesium	244	+/-1000	U	2000	P	10/03/2025	15:04	LB137426
	Manganese	5.94	+/-10	U	20.0	P	10/03/2025	15:04	LB137426
	Nickel	3.06	+/-20	U	40.0	P	10/03/2025	15:04	LB137426
	Potassium	918	+/-1000	U	2000	P	10/03/2025	15:04	LB137426
	Selenium	9.64	+/-10	U	20.0	P	10/03/2025	15:04	LB137426

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Coppola Services

SDG No.: Q2409

Contract: COPP02

Lab Code: ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB02	Silver	1.62	+/-5	U	10.0	P	10/03/2025	15:04	LB137426
	Sodium	868	+/-1000	U	2000	P	10/03/2025	15:04	LB137426
	Thallium	10.1	+/-20	J	40.0	P	10/03/2025	15:04	LB137426
	Vanadium	6.26	+/-20	U	40.0	P	10/03/2025	15:04	LB137426
	Zinc	16.7	+/-20	U	40.0	P	10/03/2025	15:04	LB137426
CCB03	Aluminum	11.3	+/-50	U	100	P	10/03/2025	16:00	LB137426
	Antimony	6.76	+/-25	U	50.0	P	10/03/2025	16:00	LB137426
	Arsenic	5.12	+/-10	U	20.0	P	10/03/2025	16:00	LB137426
	Barium	14.6	+/-50	U	100	P	10/03/2025	16:00	LB137426
	Beryllium	0.56	+/-3	U	6.00	P	10/03/2025	16:00	LB137426
	Cadmium	0.50	+/-3	U	6.00	P	10/03/2025	16:00	LB137426
	Calcium	234	+/-1000	U	2000	P	10/03/2025	16:00	LB137426
	Chromium	2.12	+/-5	U	10.0	P	10/03/2025	16:00	LB137426
	Cobalt	2.26	+/-15	U	30.0	P	10/03/2025	16:00	LB137426
	Copper	4.60	+/-10	U	20.0	P	10/03/2025	16:00	LB137426
	Iron	23.4	+/-50	U	100	P	10/03/2025	16:00	LB137426
	Lead	2.30	+/-6	U	12.0	P	10/03/2025	16:00	LB137426
	Magnesium	244	+/-1000	U	2000	P	10/03/2025	16:00	LB137426
	Manganese	5.94	+/-10	U	20.0	P	10/03/2025	16:00	LB137426
	Nickel	3.06	+/-20	U	40.0	P	10/03/2025	16:00	LB137426
	Potassium	918	+/-1000	U	2000	P	10/03/2025	16:00	LB137426
	Selenium	9.64	+/-10	U	20.0	P	10/03/2025	16:00	LB137426
	Silver	1.62	+/-5	U	10.0	P	10/03/2025	16:00	LB137426
	Sodium	868	+/-1000	U	2000	P	10/03/2025	16:00	LB137426
	Thallium	4.38	+/-20	U	40.0	P	10/03/2025	16:00	LB137426
	Vanadium	6.26	+/-20	U	40.0	P	10/03/2025	16:00	LB137426
	Zinc	16.7	+/-20	U	40.0	P	10/03/2025	16:00	LB137426
CCB04	Aluminum	11.3	+/-50	U	100	P	10/03/2025	16:49	LB137426
	Antimony	6.76	+/-25	U	50.0	P	10/03/2025	16:49	LB137426
	Arsenic	5.12	+/-10	U	20.0	P	10/03/2025	16:49	LB137426
	Barium	14.6	+/-50	U	100	P	10/03/2025	16:49	LB137426
	Beryllium	0.56	+/-3	U	6.00	P	10/03/2025	16:49	LB137426
	Cadmium	0.50	+/-3	U	6.00	P	10/03/2025	16:49	LB137426
	Calcium	234	+/-1000	U	2000	P	10/03/2025	16:49	LB137426
	Chromium	2.12	+/-5	U	10.0	P	10/03/2025	16:49	LB137426
	Cobalt	2.26	+/-15	U	30.0	P	10/03/2025	16:49	LB137426
	Copper	4.60	+/-10	U	20.0	P	10/03/2025	16:49	LB137426
	Iron	23.4	+/-50	U	100	P	10/03/2025	16:49	LB137426
	Lead	2.30	+/-6	U	12.0	P	10/03/2025	16:49	LB137426

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Coppola Services

SDG No.: Q2409

Contract: COPP02

Lab Code: ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB04	Magnesium	244	+/-1000	U	2000	P	10/03/2025	16:49	LB137426
	Manganese	5.94	+/-10	U	20.0	P	10/03/2025	16:49	LB137426
	Nickel	3.06	+/-20	U	40.0	P	10/03/2025	16:49	LB137426
	Potassium	918	+/-1000	U	2000	P	10/03/2025	16:49	LB137426
	Selenium	9.64	+/-10	U	20.0	P	10/03/2025	16:49	LB137426
	Silver	1.62	+/-5	U	10.0	P	10/03/2025	16:49	LB137426
	Sodium	868	+/-1000	U	2000	P	10/03/2025	16:49	LB137426
	Thallium	4.38	+/-20	U	40.0	P	10/03/2025	16:49	LB137426
	Vanadium	6.26	+/-20	U	40.0	P	10/03/2025	16:49	LB137426
	Zinc	16.7	+/-20	U	40.0	P	10/03/2025	16:49	LB137426

Metals
- 3b -
PREPARATION BLANK SUMMARY

Client: Coppola Services

SDG No.: Q2409

Instrument: CV1

Sample ID	Analyte	Result (mg/Kg)	Acceptance Limit	Conc Qual	CRQL mg/Kg	M	Analysis Date	Analysis Time	Run
PB169964BL		SOLID		Batch Number:	PB169964		Prep Date:	10/02/2025	
	Mercury	0.0070	<0.013	U	0.013	CV	10/03/2025	09:00	LB137397

Metals
- 3b -
PREPARATION BLANK SUMMARY

Client: Coppola Services

SDG No.: Q2409

Instrument: P4

Sample ID	Analyte	Result (mg/Kg)	Acceptance Limit	Conc Qual	CRQL mg/Kg	M	Analysis Date	Analysis Time	Run
PB169963BL	SOLID			Batch Number:	PB169963		Prep Date:	10/02/2025	
	Aluminum	0.84	<2.5	U	5.00	P	10/03/2025	14:24	LB137426
	Antimony	0.22	<1.25	U	2.50	P	10/03/2025	14:24	LB137426
	Arsenic	0.19	<0.5	U	1.00	P	10/03/2025	14:24	LB137426
	Barium	0.73	<2.5	U	5.00	P	10/03/2025	14:24	LB137426
	Beryllium	0.025	<0.15	U	0.30	P	10/03/2025	14:24	LB137426
	Cadmium	0.024	<0.15	U	0.30	P	10/03/2025	14:24	LB137426
	Calcium	11.1	<50	U	100	P	10/03/2025	14:24	LB137426
	Chromium	0.047	<0.25	U	0.50	P	10/03/2025	14:24	LB137426
	Cobalt	0.10	<0.75	U	1.50	P	10/03/2025	14:24	LB137426
	Copper	0.22	<0.5	U	1.00	P	10/03/2025	14:24	LB137426
	Iron	3.99	<2.5	U	5.00	P	10/03/2025	14:24	LB137426
	Lead	0.13	<0.3	U	0.60	P	10/03/2025	14:24	LB137426
	Magnesium	12.0	<50	U	100	P	10/03/2025	14:24	LB137426
	Manganese	0.14	<0.5	U	1.00	P	10/03/2025	14:24	LB137426
	Nickel	0.13	<1	U	2.00	P	10/03/2025	14:24	LB137426
	Potassium	27.7	<50	U	100	P	10/03/2025	14:24	LB137426
	Selenium	0.26	<0.5	U	1.00	P	10/03/2025	14:24	LB137426
	Silver	0.12	<0.25	U	0.50	P	10/03/2025	14:24	LB137426
	Sodium	17.8	<50	U	100	P	10/03/2025	14:24	LB137426
	Thallium	0.23	<1	U	2.00	P	10/03/2025	14:24	LB137426
	Vanadium	0.25	<1	U	2.00	P	10/03/2025	14:24	LB137426
	Zinc	0.23	<1	U	2.00	P	10/03/2025	14:24	LB137426

Metals
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INTERFERENCE CHECK SAMPLE

Client: <u>Coppola Services</u>	SDG No.: <u>Q2409</u>
Contract: <u>COPP02</u>	Lab Code: <u>ACE</u>
ICS Source: <u>EPA</u>	Instrument ID: <u>P4</u>

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Low Limit (ug/L)	High Limit (ug/L)	Analysis Date	Analysis Time	Run Number
ICSA01	Aluminum	245000	255000	96	216000	294000	10/02/2025	11:42	LB137406
	Antimony	1.99			-50	50	10/02/2025	11:42	LB137406
	Arsenic	5.85			-20	20	10/02/2025	11:42	LB137406
	Barium	18.7	6.0	312	-94	106	10/02/2025	11:42	LB137406
	Beryllium	1.98			-6	6	10/02/2025	11:42	LB137406
	Cadmium	-1.23	1.0	123	-5	7	10/02/2025	11:42	LB137406
	Calcium	236000	245000	96	208000	282000	10/02/2025	11:42	LB137406
	Chromium	50.8	52.0	98	42	62	10/02/2025	11:42	LB137406
	Cobalt	0.27			-30	30	10/02/2025	11:42	LB137406
	Copper	3.53	2.0	176	-18	22	10/02/2025	11:42	LB137406
	Iron	96000	101000	95	85600	116500	10/02/2025	11:42	LB137406
	Lead	-7.87			-12	12	10/02/2025	11:42	LB137406
	Magnesium	251000	255000	98	216000	294000	10/02/2025	11:42	LB137406
	Manganese	0.23	7.0	3	-13	27	10/02/2025	11:42	LB137406
	Nickel	3.41	2.0	170	-38	42	10/02/2025	11:42	LB137406
	Potassium	-102			0	0	10/02/2025	11:42	LB137406
	Selenium	-8.13			-20	20	10/02/2025	11:42	LB137406
	Silver	-3.77			-10	10	10/02/2025	11:42	LB137406
	Sodium	-181			0	0	10/02/2025	11:42	LB137406
	Thallium	14.0			-40	40	10/02/2025	11:42	LB137406
	Vanadium	2.54			-40	40	10/02/2025	11:42	LB137406
	Zinc	-0.077			-40	40	10/02/2025	11:42	LB137406
ICSAB01	Aluminum	249000	247000	101	209000	285000	10/02/2025	11:46	LB137406
	Antimony	622	618	101	525	711	10/02/2025	11:46	LB137406
	Arsenic	110	104	106	88.4	120	10/02/2025	11:46	LB137406
	Barium	515	537	96	437	637	10/02/2025	11:46	LB137406
	Beryllium	548	495	111	420	570	10/02/2025	11:46	LB137406
	Cadmium	1040	972	107	826	1120	10/02/2025	11:46	LB137406
	Calcium	240000	235000	102	199000	271000	10/02/2025	11:46	LB137406
	Chromium	594	542	110	460	624	10/02/2025	11:46	LB137406
	Cobalt	515	476	108	404	548	10/02/2025	11:46	LB137406
	Copper	510	511	100	434	588	10/02/2025	11:46	LB137406
	Iron	98300	99300	99	84400	114500	10/02/2025	11:46	LB137406
	Lead	42.6	49.0	87	37	61	10/02/2025	11:46	LB137406
	Magnesium	255000	248000	103	210000	286000	10/02/2025	11:46	LB137406
	Manganese	497	507	98	430	584	10/02/2025	11:46	LB137406
	Nickel	1030	954	108	810	1100	10/02/2025	11:46	LB137406
	Potassium	-265			0	0	10/02/2025	11:46	LB137406
	Selenium	46.7	46.0	102	26	66	10/02/2025	11:46	LB137406
	Silver	212	201	106	170	232	10/02/2025	11:46	LB137406
	Sodium	-229			0	0	10/02/2025	11:46	LB137406
	Thallium	115	108	106	68	148	10/02/2025	11:46	LB137406

Metals
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INTERFERENCE CHECK SAMPLE

Client: Coppola Services

SDG No.: Q2409

Contract: COPP02

Lab Code: ACE

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
ICSAB01	Vanadium	499	491	102	417	565	10/02/2025	11:46	LB137406
	Zinc	1060	952	111	809	1095	10/02/2025	11:46	LB137406
ICSA01	Aluminum	245000	255000	96	216000	294000	10/03/2025	13:20	LB137426
	Antimony	3.52			-50	50	10/03/2025	13:20	LB137426
	Arsenic	8.41			-20	20	10/03/2025	13:20	LB137426
	Barium	1.66	6.0	28	-94	106	10/03/2025	13:20	LB137426
	Beryllium	1.42			-6	6	10/03/2025	13:20	LB137426
	Cadmium	0.91	1.0	91	-5	7	10/03/2025	13:20	LB137426
	Calcium	236000	245000	96	208000	282000	10/03/2025	13:20	LB137426
	Chromium	46.6	52.0	90	42	62	10/03/2025	13:20	LB137426
	Cobalt	0.68			-30	30	10/03/2025	13:20	LB137426
	Copper	3.06	2.0	153	-18	22	10/03/2025	13:20	LB137426
	Iron	99600	101000	99	85600	116500	10/03/2025	13:20	LB137426
	Lead	0.97			-12	12	10/03/2025	13:20	LB137426
	Magnesium	247000	255000	97	216000	294000	10/03/2025	13:20	LB137426
	Manganese	-1.76	7.0	25	-13	27	10/03/2025	13:20	LB137426
	Nickel	3.93	2.0	196	-38	42	10/03/2025	13:20	LB137426
	Potassium	187			0	0	10/03/2025	13:20	LB137426
	Selenium	9.27			-20	20	10/03/2025	13:20	LB137426
	Silver	1.41			-10	10	10/03/2025	13:20	LB137426
	Sodium	127			0	0	10/03/2025	13:20	LB137426
	Thallium	11.3			-40	40	10/03/2025	13:20	LB137426
	Vanadium	4.84			-40	40	10/03/2025	13:20	LB137426
	Zinc	1.66			-40	40	10/03/2025	13:20	LB137426
ICSAB01	Aluminum	247000	247000	100	209000	285000	10/03/2025	13:25	LB137426
	Antimony	609	618	98	525	711	10/03/2025	13:25	LB137426
	Arsenic	110	104	106	88.4	120	10/03/2025	13:25	LB137426
	Barium	496	537	92	437	637	10/03/2025	13:25	LB137426
	Beryllium	516	495	104	420	570	10/03/2025	13:25	LB137426
	Cadmium	980	972	101	826	1120	10/03/2025	13:25	LB137426
	Calcium	235000	235000	100	199000	271000	10/03/2025	13:25	LB137426
	Chromium	553	542	102	460	624	10/03/2025	13:25	LB137426
	Cobalt	491	476	103	404	548	10/03/2025	13:25	LB137426
	Copper	484	511	95	434	588	10/03/2025	13:25	LB137426
	Iron	97500	99300	98	84400	114500	10/03/2025	13:25	LB137426
	Lead	49.1	49.0	100	37	61	10/03/2025	13:25	LB137426
	Magnesium	248000	248000	100	210000	286000	10/03/2025	13:25	LB137426
	Manganese	492	507	97	430	584	10/03/2025	13:25	LB137426
	Nickel	981	954	103	810	1100	10/03/2025	13:25	LB137426
	Potassium	15.2			0	0	10/03/2025	13:25	LB137426
	Selenium	56.4	46.0	123	26	66	10/03/2025	13:25	LB137426
	Silver	208	201	104	170	232	10/03/2025	13:25	LB137426

Metals

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INTERFERENCE CHECK SAMPLE

Client:	<u>Coppola Services</u>	SDG No.:	<u>Q2409</u>
Contract:	<u>COPP02</u>	Lab Code:	<u>ACE</u>
ICS Source:	<u>EPA</u>	Instrument ID:	<u>P4</u>

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
ICSAB01	Sodium	92.2			0	0	10/03/2025	13:25	LB137426
	Thallium	105	108	97	68	148	10/03/2025	13:25	LB137426
	Vanadium	485	491	99	417	565	10/03/2025	13:25	LB137426
	Zinc	1030	952	108	809	1095	10/03/2025	13:25	LB137426



METAL

QC

DATA

metals
- 5a -
MATRIX SPIKE SUMMARY

client: Coppola Services **level:** low **sdg no.:** Q2409
contract: COPP02 **lab code:** ACE
matrix: Solid **sample id:** Q2409-05 **client id:** COP-SOIL-PILEMS

Percent Solids for Sample: 96.4 **Spiked ID:** Q2409-05MS **Percent Solids for Spike Sample:** 96.4

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Aluminum	mg/Kg	75 - 125	3530		3810		92.6	-304		P
Antimony	mg/Kg	75 - 125	6.70		0.32	J	37.0	17	N	P
Arsenic	mg/Kg	75 - 125	39.6		2.07		37.0	101		P
Barium	mg/Kg	75 - 125	25.9		20.5		9.3	58	N	P
Beryllium	mg/Kg	75 - 125	11.7		0.21	J	9.3	123		P
Cadmium	mg/Kg	75 - 125	11.1		2.06		9.3	98		P
Calcium	mg/Kg	75 - 125	1840		2310		46.3	-1022		P
Chromium	mg/Kg	75 - 125	27.7		8.68		18.5	103		P
Cobalt	mg/Kg	75 - 125	9.93		0.66	J	9.3	100		P
Copper	mg/Kg	75 - 125	26.7		18.1		13.9	62	N	P
Iron	mg/Kg	75 - 125	2630		2880		140	-179		P
Lead	mg/Kg	75 - 125	85.5		51.6		46.3	73	N	P
Magnesium	mg/Kg	75 - 125	481		576		92.6	-103		P
Manganese	mg/Kg	75 - 125	22.5		14.8		9.3	82		P
Mercury	mg/Kg	80 - 120	0.52		0.30		0.25	89		CV
Nickel	mg/Kg	75 - 125	25.7		2.25		23.2	101		P
Potassium	mg/Kg	75 - 125	445		116		460	71	N	P
Selenium	mg/Kg	75 - 125	97.6		1.16		92.6	104		P
Silver	mg/Kg	75 - 125	4.02		1.30		3.5	78		P
Sodium	mg/Kg	75 - 125	92.2	J	87.2	U	140	66	N	P
Thallium	mg/Kg	75 - 125	89.3		0.31	J	92.6	96		P
Vanadium	mg/Kg	75 - 125	20.0		7.19		13.9	92		P
Zinc	mg/Kg	75 - 125	32.5		30.6		9.3	21	N	P

metals
- 5a -
MATRIX SPIKE DUPLICATE SUMMARY

client: <u>Coppola Services</u>	level: <u>low</u>	sdg no.: <u>Q2409</u>
contract: <u>COPP02</u>		lab code: <u>ACE</u>
matrix: <u>Solid</u>	sample id: <u>Q2409-05</u>	client id: <u>COP-SOIL-PILEMSD</u>
Percent Solids for Sample: 96.4	Spiked ID: Q2409-05MSD	Percent Solids for Spike Sample: 96.4

Analyte	Units	Acceptance Limit %R	MSD Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Aluminum	mg/Kg	75 - 125	3820		3810		86.4	14		P
Antimony	mg/Kg	75 - 125	4.91		0.32	J	34.6	13	N	P
Arsenic	mg/Kg	75 - 125	37.0		2.07		34.6	101		P
Barium	mg/Kg	75 - 125	26.1		20.5		8.6	65	N	P
Beryllium	mg/Kg	75 - 125	11.0		0.21	J	8.6	125		P
Cadmium	mg/Kg	75 - 125	10.8		2.06		8.6	102		P
Calcium	mg/Kg	75 - 125	1990		2310		43.2	-745		P
Chromium	mg/Kg	75 - 125	26.8		8.68		17.3	105		P
Cobalt	mg/Kg	75 - 125	9.34		0.66	J	8.6	101		P
Copper	mg/Kg	75 - 125	27.8		18.1		13.0	75		P
Iron	mg/Kg	75 - 125	2580		2880		130	-228		P
Lead	mg/Kg	75 - 125	89.4		51.6		43.2	87		P
Magnesium	mg/Kg	75 - 125	471		576		86.4	-121		P
Manganese	mg/Kg	75 - 125	21.2		14.8		8.6	74	N	P
Mercury	mg/Kg	80 - 120	0.56		0.30		0.26	101		CV
Nickel	mg/Kg	75 - 125	24.3		2.25		21.6	102		P
Potassium	mg/Kg	75 - 125	417		116		430	70	N	P
Selenium	mg/Kg	75 - 125	91.0		1.16		86.4	104		P
Silver	mg/Kg	75 - 125	4.16		1.30		3.2	89		P
Sodium	mg/Kg	75 - 125	84.4	J	87.2	U	130	65	N	P
Thallium	mg/Kg	75 - 125	87.7		0.31	J	86.4	101		P
Vanadium	mg/Kg	75 - 125	19.4		7.19		13.0	94		P
Zinc	mg/Kg	75 - 125	35.9		30.6		8.6	62	N	P

Metals
- 5b -
POST DIGEST SPIKE SUMMARY

Client: Coppola Services

SDG No.: Q2409

Contract: COPP02

Lab Code: ACE

Matrix: Solid

Level: LOW

Client ID: COP-SOIL-PILEA

Sample ID: Q2409-05 **Spiked ID:** Q2409-05A

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Antimony	mg/Kg	75 - 125	34.0		0.32	J	34.9	96		P
Barium	mg/Kg	75 - 125	28.2		20.5		8.70	88		P
Copper	mg/Kg	75 - 125	31.2		18.1		13.1	101		P
Lead	mg/Kg	75 - 125	98.0		51.6		43.6	106		P
Manganese	mg/Kg	75 - 125	22.9		14.8		8.70	93		P
Potassium	mg/Kg	75 - 125	446		116		440	75		P
Sodium	mg/Kg	75 - 125	91.4		87.2	U	130	70	N	P
Zinc	mg/Kg	75 - 125	39.1		30.6		8.70	98		P

Metals

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DUPLICATE SAMPLE SUMMARY

Client: Coppola Services **Level:** LOW **SDG No.:** Q2409
Contract: COPP02 **Lab Code:** ACE
Matrix: Solid **Sample ID:** Q2409-05 **Client ID:** COP-SOIL-PILEDUP

Percent Solids for Sample: 96.4 **Duplicate ID** Q2409-05DUP **Percent Solids for Spike Sample:** 96.4

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Aluminum	mg/Kg	20	3810		2970		25	*	P
Antimony	mg/Kg	20	0.32	J	0.39	J	19		P
Arsenic	mg/Kg	20	2.07		1.58		27	*	P
Barium	mg/Kg	20	20.5		16.7		20		P
Beryllium	mg/Kg	20	0.21	J	0.17	J	25	*	P
Cadmium	mg/Kg	20	2.06		1.61		25	*	P
Calcium	mg/Kg	20	2310		1860		22	*	P
Chromium	mg/Kg	20	8.68		6.90		23	*	P
Cobalt	mg/Kg	20	0.66	J	0.46	J	35		P
Copper	mg/Kg	20	18.1		14.0		26	*	P
Iron	mg/Kg	20	2880		2300		22	*	P
Lead	mg/Kg	20	51.6		40.5		24	*	P
Magnesium	mg/Kg	20	576		344		50	*	P
Manganese	mg/Kg	20	14.8		11.9		22	*	P
Mercury	mg/Kg	20	0.30		0.29		5		CV
Nickel	mg/Kg	20	2.25		1.85		20		P
Potassium	mg/Kg	20	116		67.2	J	53		P
Selenium	mg/Kg	20	1.16		1.17		1		P
Silver	mg/Kg	20	1.30		0.96		30	*	P
Sodium	mg/Kg	20	87.2	U	84.7	U			P
Thallium	mg/Kg	20	0.31	J	0.24	J	24		P
Vanadium	mg/Kg	20	7.19		5.90		20		P
Zinc	mg/Kg	20	30.6		24.3		23	*	P

Metals

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DUPLICATE SAMPLE SUMMARY

Client:	<u>Coppola Services</u>	Level:	<u>LOW</u>	SDG No.:	<u>Q2409</u>
Contract:	<u>COPP02</u>			Lab Code:	<u>ACE</u>
Matrix:	<u>Solid</u>	Sample ID:	<u>Q2409-05MS</u>	Client ID:	<u>COP-SOIL-PILEMSD</u>
Percent Solids for Sample:	96.4	Duplicate ID	Q2409-05MSD	Percent Solids for Spike Sample:	96.4

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Aluminum	mg/Kg	20	3530		3820		8		P
Antimony	mg/Kg	20	6.70		4.91		31	*	P
Arsenic	mg/Kg	20	39.6		37.0		7		P
Barium	mg/Kg	20	25.9		26.1		1		P
Beryllium	mg/Kg	20	11.7		11.0		7		P
Cadmium	mg/Kg	20	11.1		10.8		3		P
Calcium	mg/Kg	20	1840		1990		8		P
Chromium	mg/Kg	20	27.7		26.8		3		P
Cobalt	mg/Kg	20	9.93		9.34		6		P
Copper	mg/Kg	20	26.7		27.8		4		P
Iron	mg/Kg	20	2630		2580		2		P
Lead	mg/Kg	20	85.5		89.4		4		P
Magnesium	mg/Kg	20	481		471		2		P
Manganese	mg/Kg	20	22.5		21.2		6		P
Mercury	mg/Kg	20	0.52		0.56		8		CV
Nickel	mg/Kg	20	25.7		24.3		6		P
Potassium	mg/Kg	20	445		417		6		P
Selenium	mg/Kg	20	97.6		91.0		7		P
Silver	mg/Kg	20	4.02		4.16		3		P
Sodium	mg/Kg	20	92.2	J	84.4	J	9		P
Thallium	mg/Kg	20	89.3		87.7		2		P
Vanadium	mg/Kg	20	20.0		19.4		3		P
Zinc	mg/Kg	20	32.5		35.9		10		P

Metals

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LABORATORY CONTROL SAMPLE SUMMARY

Client: Coppola Services

SDG No.: Q2409

Contract: COPP02

Lab Code: ACE

Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limits	M
PB169963BS							
Aluminum	mg/Kg	100	96.2		96	80 - 120	P
Antimony	mg/Kg	40.0	39.7		99	80 - 120	P
Arsenic	mg/Kg	40.0	38.7		97	80 - 120	P
Barium	mg/Kg	10.0	9.29		93	80 - 120	P
Beryllium	mg/Kg	10.0	9.58		96	80 - 120	P
Cadmium	mg/Kg	10.0	9.53		95	80 - 120	P
Calcium	mg/Kg	50.0	48.1	J	96	80 - 120	P
Chromium	mg/Kg	20.0	21.3		106	80 - 120	P
Cobalt	mg/Kg	10.0	9.54		95	80 - 120	P
Copper	mg/Kg	15.0	14.9		99	80 - 120	P
Iron	mg/Kg	150	154		103	80 - 120	P
Lead	mg/Kg	50.0	46.9		94	80 - 120	P
Magnesium	mg/Kg	100	97.0	J	97	80 - 120	P
Manganese	mg/Kg	10.0	9.74		97	80 - 120	P
Nickel	mg/Kg	25.0	25.2		101	80 - 120	P
Potassium	mg/Kg	500	475		95	80 - 120	P
Selenium	mg/Kg	100	99.2		99	80 - 120	P
Silver	mg/Kg	3.8	3.63		96	80 - 120	P
Sodium	mg/Kg	150	141		94	80 - 120	P
Thallium	mg/Kg	100	83.6		84	80 - 120	P
Vanadium	mg/Kg	15.0	14.3		95	80 - 120	P
Zinc	mg/Kg	10.0	9.78		98	80 - 120	P

Metals

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LABORATORY CONTROL SAMPLE SUMMARY

Client: Coppola Services

SDG No.: Q2409

Contract: COPP02

Lab Code: ACE

Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limits	M
PB169964BS Mercury	mg/Kg	0.25	0.27		106	80 - 120	CV

Metals
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ICP SERIAL DILUTIONS

SAMPLE NO.

COP-SOIL-PILEL

Lab Name: Alliance Contract: COPP02
Lab Code: ACE Lb No.: lb137406 Lab Sample ID : Q2409-05L SDG No.: Q2409
Matrix (soil/water): Solid Level (low/med): LOW
Concentration Units: mg/Kg

Analyte	Initial Sample Result (I)			Serial Dilution Result (S)			% Differ- ence	Q	M
	C			C					
Aluminum	3810			4130			9		P
Antimony	0.32	J		10.9	U		100.0		P
Arsenic	2.07			2.51	J		21		P
Barium	20.5			27.8			36		P
Beryllium	0.21	J		0.29	J		36		P
Cadmium	2.06			2.06			0		P
Calcium	2310			2540			10		P
Chromium	8.68			9.59			10		P
Cobalt	0.66	J		0.70	J		7		P
Copper	18.1			19.8			9		P
Iron	2880			3060			6		P
Lead	51.6			54.4			5		P
Magnesium	576			645			12		P
Manganese	14.8			15.8			7		P
Mercury	0.30			0.24			21		CV
Nickel	2.25			2.22	J		1		P
Potassium	116			436	U		100.0		P
Selenium	1.16			5.70			390		P
Silver	1.30			1.35	J		4		P
Sodium	87.2	U		436	U				P
Thallium	0.31	J		1.98	J		538		P
Vanadium	7.19			7.22	J		0		P
Zinc	30.6			32.6			7		P



METAL PREPARATION & INSTRUMENT DATA

Metals

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ICP INTERELEMENT CORRECTION FACTORS

Client: Coppola Services

SDG No.: Q2409

Contract: COPP02

Lab Code: ACE

Instrument ID: _____

Date: _____

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave- Length (nm)	ICP Interelement Correction Factors For:				
		Al	Ca	Fe	Mg	Ag
Aluminum	396.100	0.0000000	-0.0002060	0.0000000	0.0000000	0.0000000
Antimony	206.833	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Arsenic	193.759	0.0000000	0.0000000	-0.0000440	0.0000000	0.0000000
Barium	493.409	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	234.861	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	226.502	0.0000000	0.0000000	0.0000930	0.0000000	0.0000000
Calcium	373.690	0.0000000	0.0000000	-0.0075970	0.0000000	0.0000000
Chromium	267.716	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cobalt	228.616	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	224.700	0.0000000	0.0000000	0.0007850	0.0000000	0.0000000
Iron	240.488	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.353	-0.0000920	0.0000000	0.0000380	0.0000000	0.0000000
Magnesium	279.079	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.610	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Nickel	231.604	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.490	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.090	0.0000000	0.0000000	-0.0001440	0.0000000	0.0000000
Silver	328.068	0.0000000	0.0000000	-0.0001490	0.0000000	0.0000000
Sodium	589.592	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.856	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Vanadium	292.402	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Zinc	213.800	0.0000000	0.0000000	0.0001050	0.0000000	0.0000000

Metals

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ICP INTERELEMENT CORRECTION FACTORS

Client: Coppola Services

SDG No.: Q2409

Contract: COPP02

Lab Code: ACE

Instrument ID: _____

Date: _____

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave- Length (nm)	ICP Interelement Correction Factors For:				
		As	Ba	Be	Cd	Co
Aluminum	396.100	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Antimony	206.833	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Arsenic	193.759	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Barium	493.409	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	234.861	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	226.502	0.0000000	0.0000000	0.0000000	0.0000000	0.0002870
Calcium	373.690	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.716	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cobalt	228.616	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	224.700	0.0000000	0.0000000	0.0000000	0.0000000	0.0009530
Iron	240.488	0.0000000	0.0000000	0.0000000	0.0000000	-0.0039600
Lead	220.353	0.0000000	0.0003170	0.0000000	0.0000000	0.0000000
Magnesium	279.079	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.610	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Nickel	231.604	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.490	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.090	0.0000000	0.0000000	0.0000000	0.0000000	-0.0003570
Silver	328.068	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.592	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.856	0.0000000	0.0000000	0.0000000	0.0000000	0.0054900
Vanadium	292.402	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Zinc	213.800	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Metals

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ICP INTERELEMENT CORRECTION FACTORS

Client: Coppola Services

SDG No.: Q2409

Contract: COPP02

Lab Code: ACE

Instrument ID: _____

Date: _____

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave- Length (nm)	ICP Interelement Correction Factors For:				
		Cr	Cu	K	Mn	Mo
Aluminum	396.100	0.0000000	0.0000000	0.0000590	0.0000000	0.0396900
Antimony	206.833	0.0122000	0.0000000	0.0000000	0.0000000	0.0000000
Arsenic	193.759	-0.0029000	0.0000000	0.0000000	0.0000000	0.0004900
Barium	493.409	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	234.861	0.0000000	0.0000000	0.0000000	-0.0000710	-0.0003400
Cadmium	226.502	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Calcium	373.690	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.716	0.0000000	0.0000000	0.0000070	0.0002200	0.0000000
Cobalt	228.616	0.0000000	0.0000000	0.0000000	0.0000000	-0.0007860
Copper	224.700	0.0000000	0.0000000	0.0000000	0.0006510	0.0020500
Iron	240.488	0.0000000	0.0000000	0.0000730	0.0000000	-0.0015250
Lead	220.353	0.0000000	0.0000000	0.0000000	0.0001400	-0.0008600
Magnesium	279.079	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.610	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Nickel	231.604	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.490	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.090	0.0000000	0.0000000	0.0000000	0.0007460	0.0000000
Silver	328.068	0.0000000	0.0000000	0.0000000	0.0000000	-0.0000120
Sodium	589.592	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.856	0.0000000	0.0000000	0.0000000	0.0017400	-0.0100400
Vanadium	292.402	-0.0025100	0.0000000	0.0000000	0.0000000	-0.0072000
Zinc	213.800	0.0000000	0.0009010	0.0000000	0.0000000	0.0000000

Metals

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ICP INTERELEMENT CORRECTION FACTORS

Client: Coppola Services

SDG No.: Q2409

Contract: COPP02

Lab Code: ACE

Instrument ID: _____

Date: _____

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave- Length (nm)	ICP Interelement Correction Factors For:				
		Na	Ni	Pb	Sb	Se
Aluminum	396.100	0.0000000	0.0000000	0.0012800	0.0000000	0.0000000
Antimony	206.833	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Arsenic	193.759	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Barium	493.409	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	234.861	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	226.502	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Calcium	373.690	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.716	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cobalt	228.616	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	224.700	0.0000000	-0.0047000	0.0036100	0.0000000	0.0000000
Iron	240.488	0.0000000	-0.0017000	0.0000000	0.0000000	0.0000000
Lead	220.353	0.0000000	0.0006580	0.0000000	0.0000000	0.0001290
Magnesium	279.079	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.610	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Nickel	231.604	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.490	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.090	0.0000000	0.0000000	0.0003330	0.0000000	0.0000000
Silver	328.068	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.592	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.856	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Vanadium	292.402	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Zinc	213.800	0.0000000	0.0067600	0.0000000	0.0000000	0.0000000

Metals

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ICP INTERELEMENT CORRECTION FACTORS

Client: Coppola Services

SDG No.: Q2409

Contract: COPP02

Lab Code: ACE

Instrument ID: _____

Date: _____

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave- Length (nm)	ICP Interelement Correction Factors For:				
		Sn	Ti	Tl	V	Zn
Aluminum	396.100	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Antimony	206.833	-0.0035600	-0.0007970	0.0000000	-0.0018900	0.0000000
Arsenic	193.759	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Barium	493.409	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	234.861	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	226.502	0.0000000	0.0000630	0.0001280	0.0000000	0.0000000
Calcium	373.690	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.716	0.0000000	0.0000000	0.0000000	0.0001110	0.0000000
Cobalt	228.616	0.0000000	0.0018800	0.0000000	0.0000000	0.0000000
Copper	224.700	0.0000000	0.0003840	0.0000000	0.0000000	0.0000000
Iron	240.488	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.353	0.0000000	-0.0003610	0.0000000	0.0000000	0.0000000
Magnesium	279.079	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.610	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Nickel	231.604	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.490	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.090	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silver	328.068	0.0000000	-0.0007420	0.0000000	0.0000000	0.0000000
Sodium	589.592	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.856	0.0000000	-0.0039700	0.0000000	-0.0115600	0.0000000
Vanadium	292.402	0.0000000	0.0005320	0.0000000	0.0000000	0.0000000
Zinc	213.800	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000



METAL PREPARATION & ANALYICAL SUMMARY

Metals

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SAMPLE PREPARATION SUMMARY

Client: Coppola Services

SDG No.: Q2409

Contract: COPP02

Lab Code: ACE

Method: _____

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(g)	Final Sample Volume (mL)	Percent Solids
Batch Number: PB169963							
PB169963BL	PB169963BL	MB	SOLID	10/02/2025	2.00	100.0	100.00
PB169963BS	PB169963BS	LCS	SOLID	10/02/2025	2.00	100.0	100.00
Q2409-05	COP-SOIL-PILE	SAM	SOLID	10/02/2025	2.38	100.0	96.40
Q2409-05DUP	COP-SOIL-PILEDUP	DUP	SOLID	10/02/2025	2.45	100.0	96.40
Q2409-05MS	COP-SOIL-PILEMS	MS	SOLID	10/02/2025	2.24	100.0	96.40
Q2409-05MSD	COP-SOIL-PILEMSD	MSD	SOLID	10/02/2025	2.40	100.0	96.40

Metals

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SAMPLE PREPARATION SUMMARY

Client: Coppola Services

SDG No.: Q2409

Contract: COPP02

Lab Code: ACE

Method: _____

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(g)	Final Sample Volume (mL)	Percent Solids
Batch Number: PB169964							
PB169964BL	PB169964BL	MB	SOLID	10/02/2025	0.54	35.0	100.00
PB169964BS	PB169964BS	LCS	SOLID	10/02/2025	0.57	35.0	100.00
Q2409-05	COP-SOIL-PILE	SAM	SOLID	10/02/2025	0.56	35.0	96.40
Q2409-05DUP	COP-SOIL-PILEDUP	DUP	SOLID	10/02/2025	0.55	35.0	96.40
Q2409-05MS	COP-SOIL-PILEMS	MS	SOLID	10/02/2025	0.59	35.0	96.40
Q2409-05MSD	COP-SOIL-PILEMSD	MSD	SOLID	10/02/2025	0.55	35.0	96.40

metals
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ANALYSIS RUN LOG

Client: Coppola Services

Contract: COPP02

Lab code: ACE

Sdg no.: Q2409

Instrument id number: _____

Method: _____

Run number: LB137397

Start date: 10/03/2025

End date: 10/03/2025

Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	0827	HG
S0.2	S0.2	1	0829	HG
S2.5	S2.5	1	0831	HG
S5	S5	1	0834	HG
S7.5	S7.5	1	0836	HG
S10	S10	1	0839	HG
ICV56	ICV56	1	0842	HG
ICB56	ICB56	1	0845	HG
CCV75	CCV75	1	0847	HG
CCB75	CCB75	1	0850	HG
CRA	CRA	1	0852	HG
PB169964BL	PB169964BL	1	0900	HG
PB169964BS	PB169964BS	1	0902	HG
Q2409-05	COP-SOIL-PILE	1	0905	HG
Q2409-05DUP	COP-SOIL-PILEDUP	1	0907	HG
Q2409-05MS	COP-SOIL-PILEMS	1	0910	HG
Q2409-05MSD	COP-SOIL-PILEMSD	1	0916	HG
CCV76	CCV76	1	0921	HG
CCB76	CCB76	1	0923	HG
Q2409-05L	COP-SOIL-PILEL	5	0934	HG
CCV77	CCV77	1	0938	HG
CCB77	CCB77	1	0941	HG

metals
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ANALYSIS RUN LOG

Client: Coppola Services

Contract: COPP02

Lab code: ACE

Sdg no.: Q2409

Instrument id number: _____

Method: _____

Run number: LB137406

Start date: 10/02/2025

End date: 10/02/2025

Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	1037	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
S1	S1	1	1042	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
S2	S2	1	1046	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
S3	S3	1	1050	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
S4	S4	1	1054	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
S5	S5	1	1058	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
ICV01	ICV01	1	1107	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
LLICV01	LLICV01	1	1111	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
ICB01	ICB01	1	1127	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CRI01	CRI01	1	1136	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
ICSA01	ICSA01	1	1142	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
ICSAB01	ICSAB01	1	1146	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCV01	CCV01	1	1158	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCB01	CCB01	1	1202	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCV02	CCV02	1	1348	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCB02	CCB02	1	1352	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCV03	CCV03	1	1447	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCB03	CCB03	1	1453	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCV04	CCV04	1	1554	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCB04	CCB04	1	1605	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCV05	CCV05	1	1731	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCB05	CCB05	1	1735	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q2409-05	COP-SOIL-PILE	1	1753	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q2409-05DUP	COP-SOIL-PILEDUP	1	1757	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q2409-05L	COP-SOIL-PILEL	5	1801	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q2409-05MS	COP-SOIL-PILEMS	1	1805	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q2409-05MSD	COP-SOIL-PILEMSD	1	1809	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q2409-05A	COP-SOIL-PILEA	1	1813	Ba,Cu,K,Mn,Na,Pb,Sb,Zn
CCV06	CCV06	1	1817	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCB06	CCB06	1	1821	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn

metals
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ANALYSIS RUN LOG

Client: Coppola Services

Contract: COPP02

Lab code: ACE

Sdg no.: Q2409

Instrument id number: _____

Method: _____

Run number: LB137426

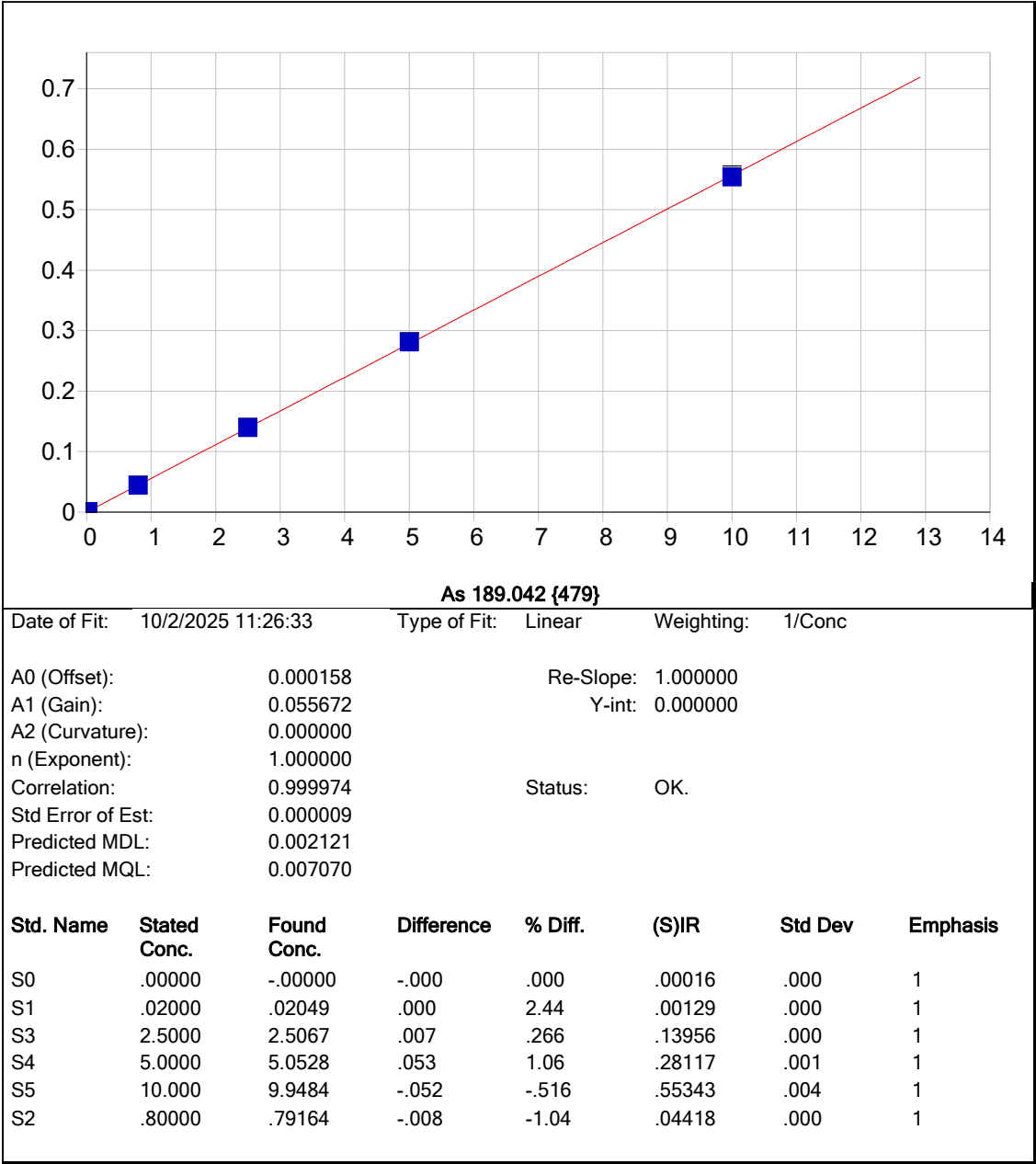
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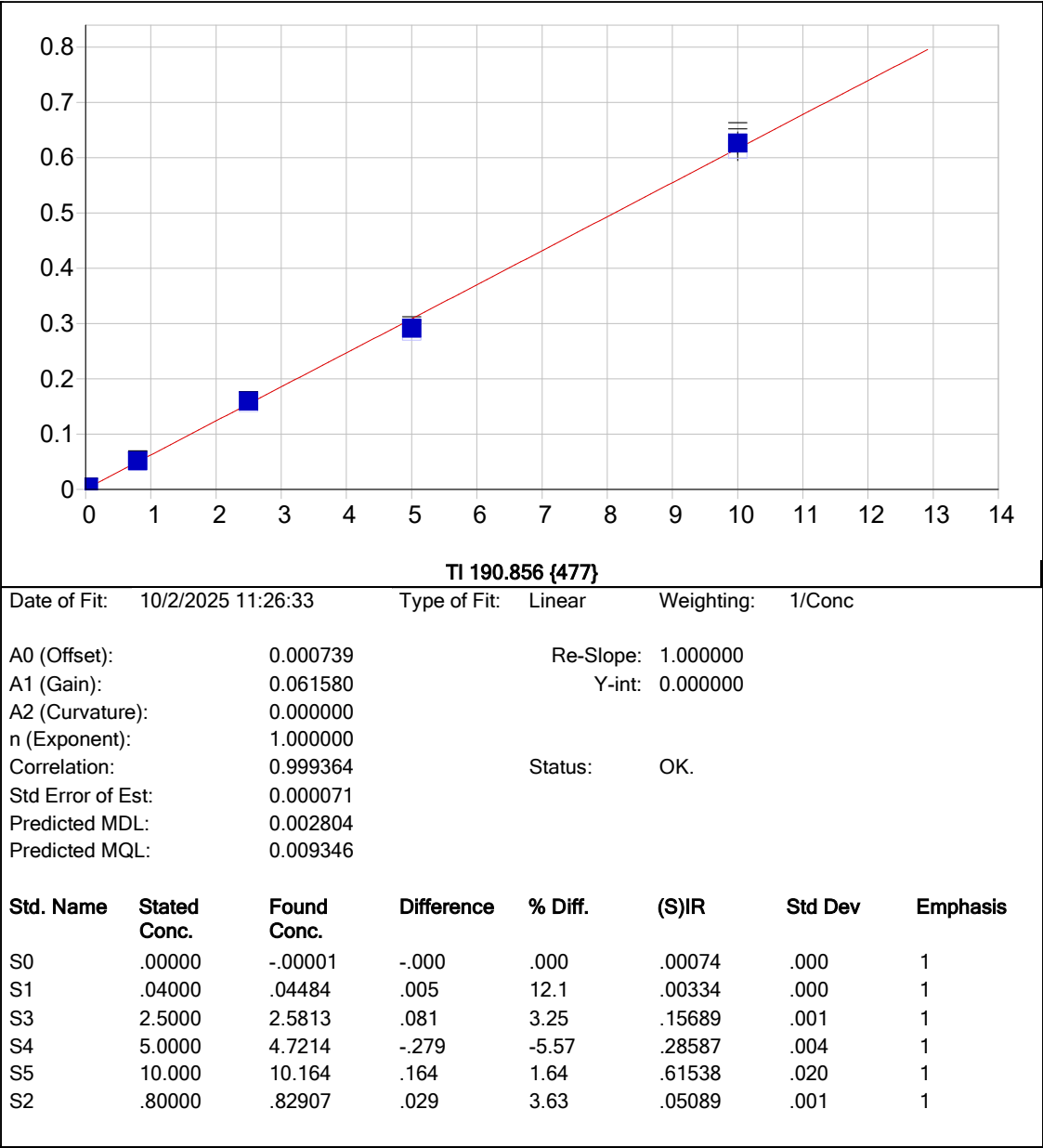
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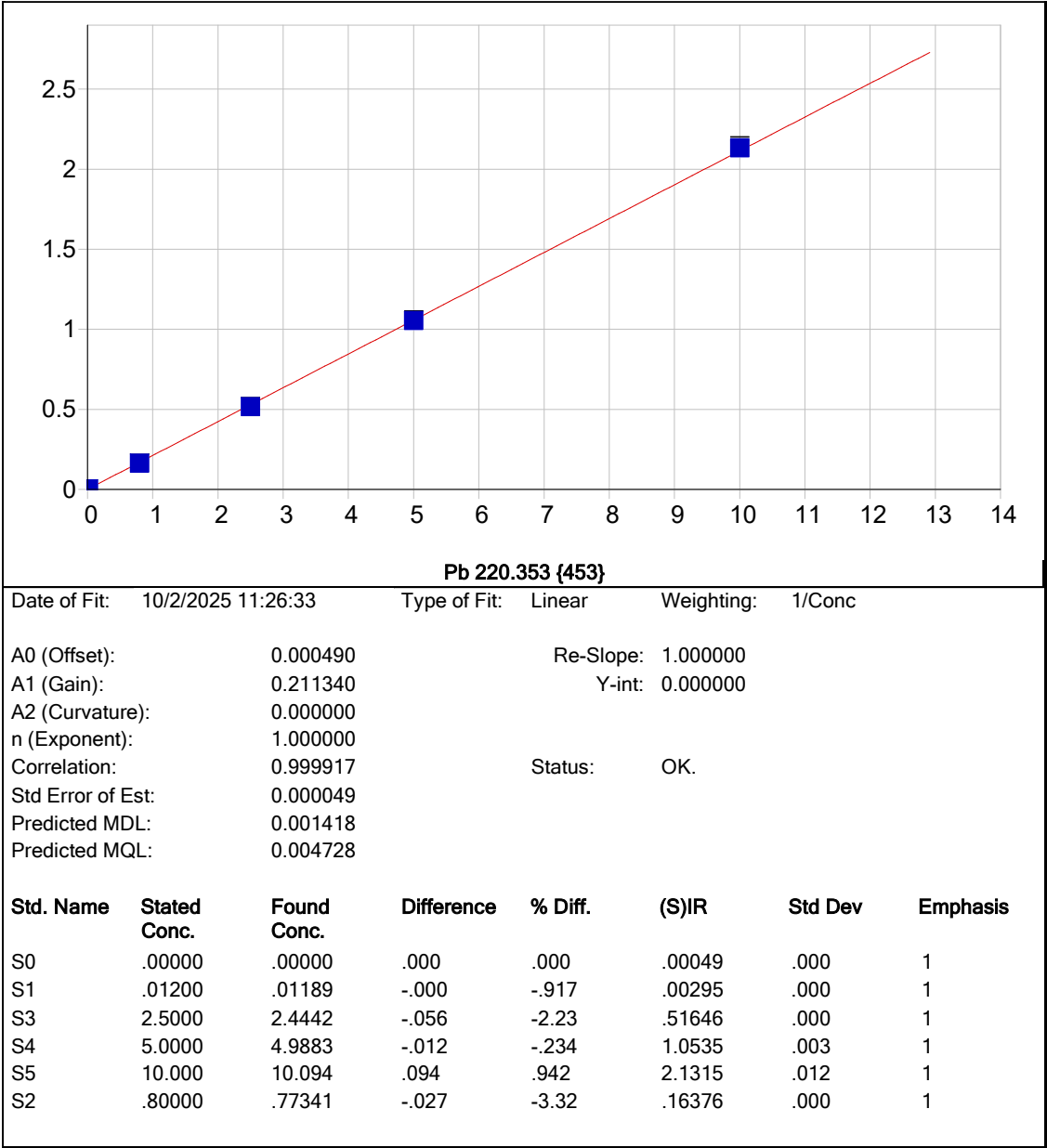
Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	1153	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
S1	S1	1	1158	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
S2	S2	1	1202	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
S3	S3	1	1206	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
S4	S4	1	1210	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
S5	S5	1	1214	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
ICV01	ICV01	1	1218	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
LLICV01	LLICV01	1	1305	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
ICB01	ICB01	1	1312	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CRI01	CRI01	1	1316	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
ICSA01	ICSA01	1	1320	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
ICSAB01	ICSAB01	1	1325	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCV01	CCV01	1	1337	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCB01	CCB01	1	1341	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
PB169963BL	PB169963BL	1	1424	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCV02	CCV02	1	1500	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCB02	CCB02	1	1504	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
PB169963BS	PB169963BS	1	1508	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCV03	CCV03	1	1551	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCB03	CCB03	1	1600	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCV04	CCV04	1	1645	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCB04	CCB04	1	1649	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn

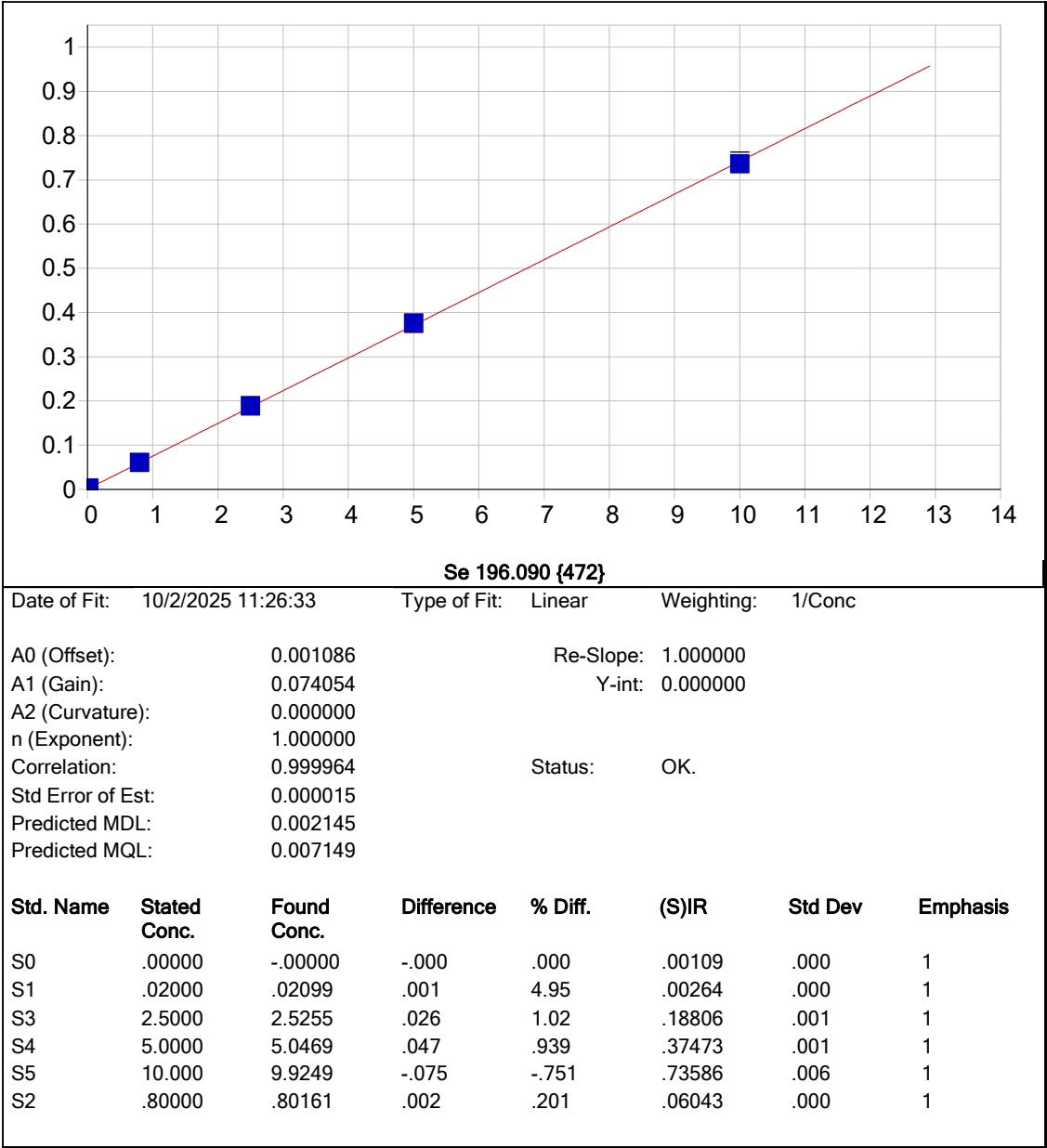


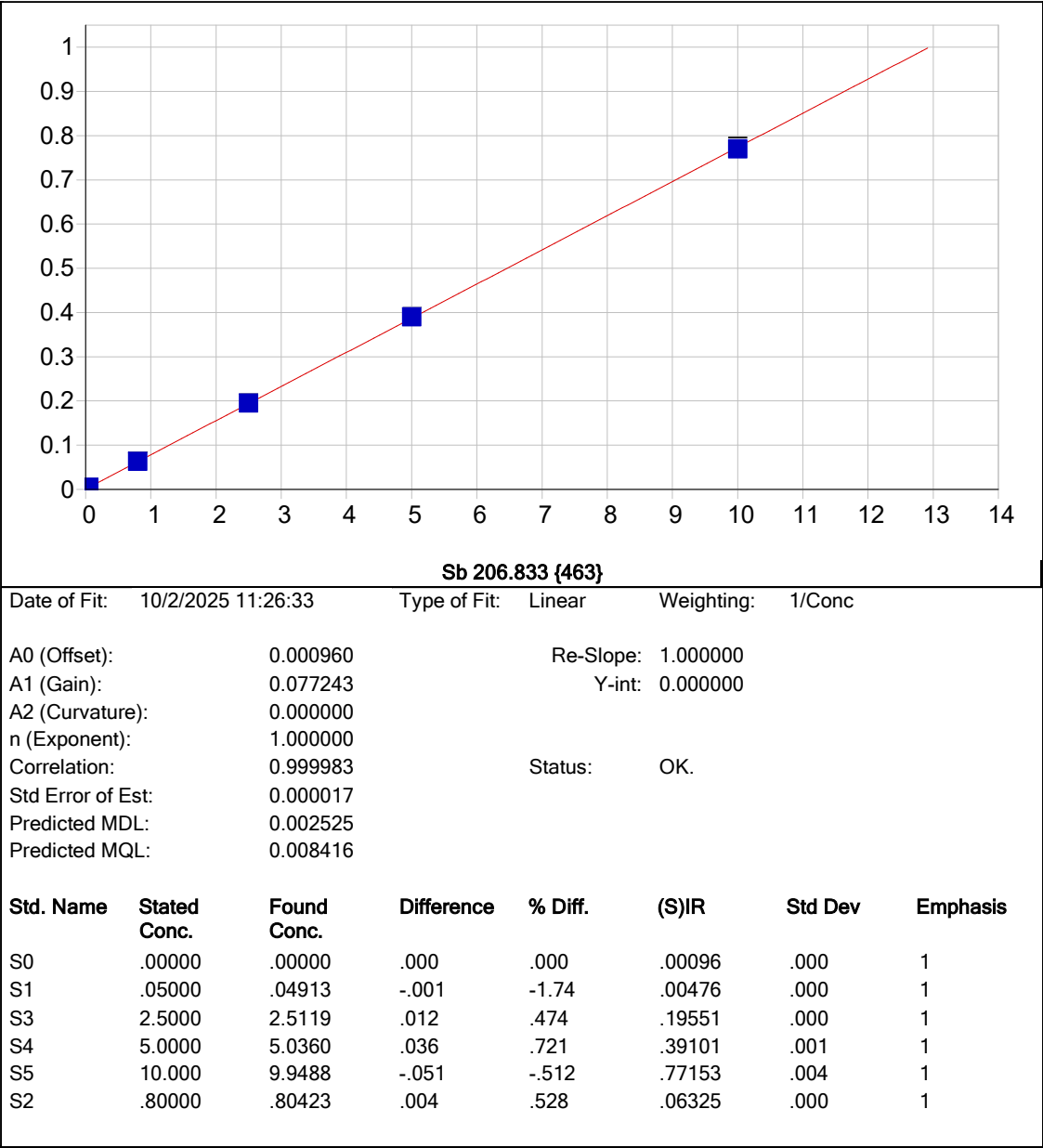
METAL RAW DATA

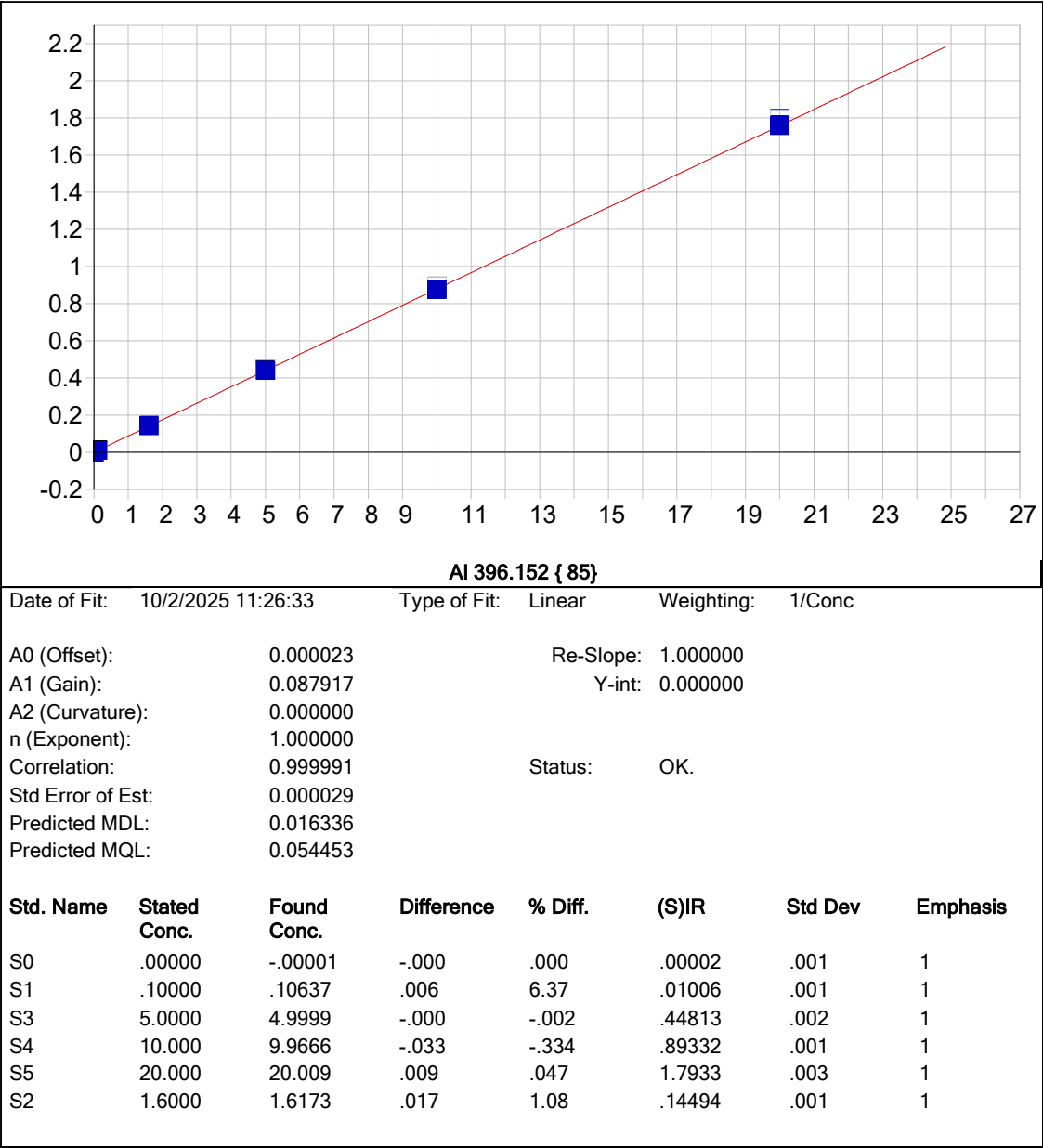


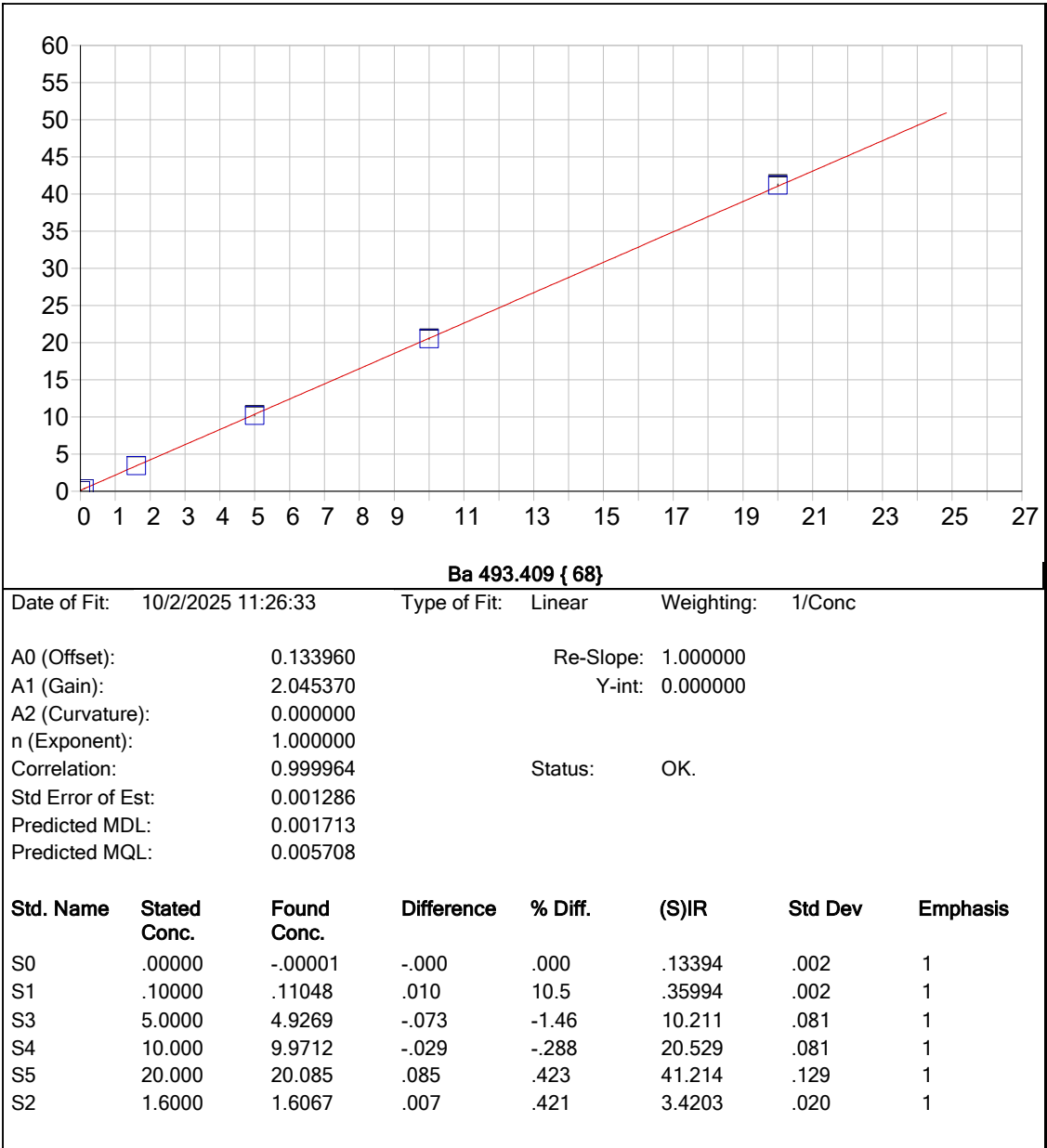


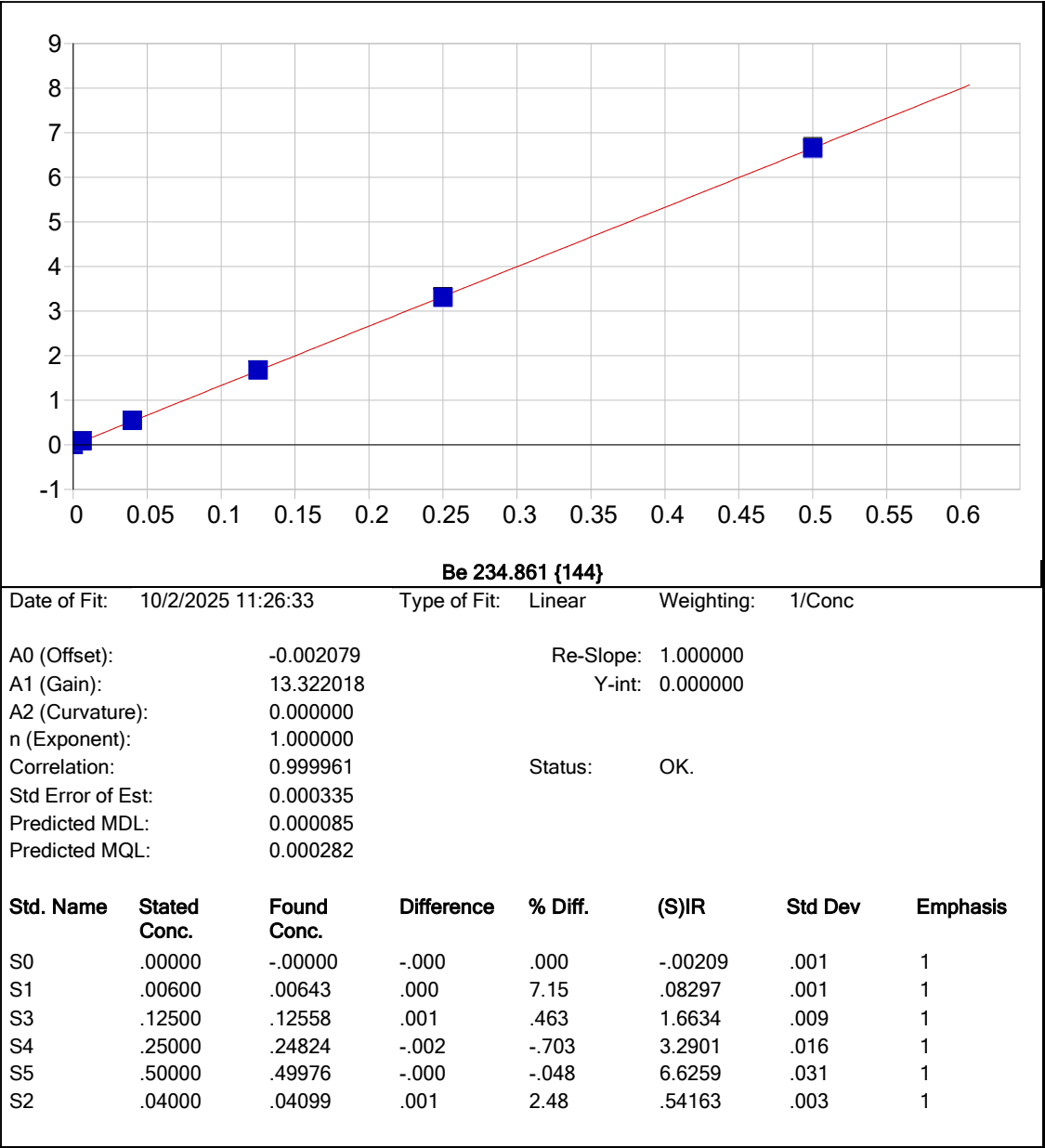


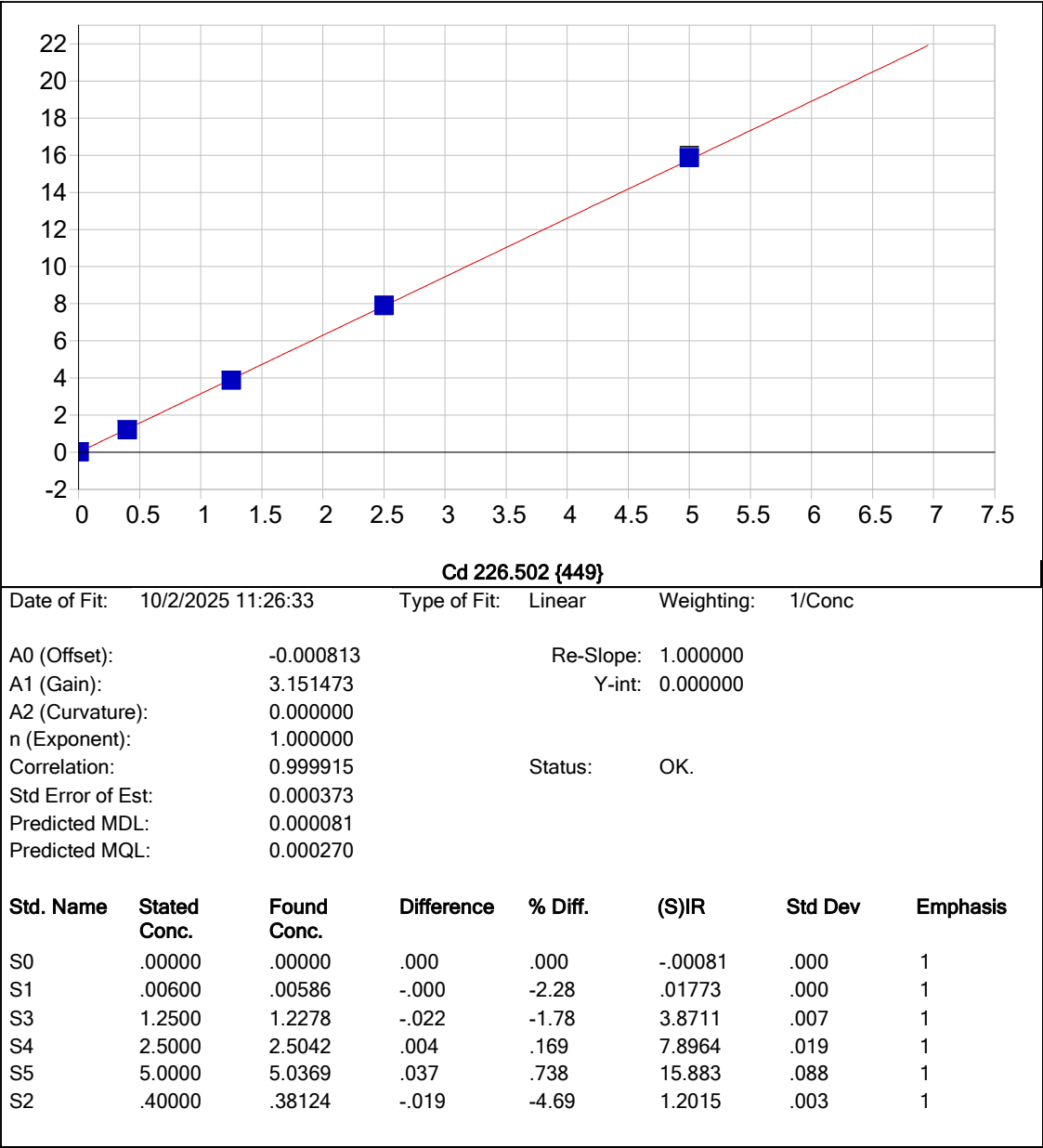


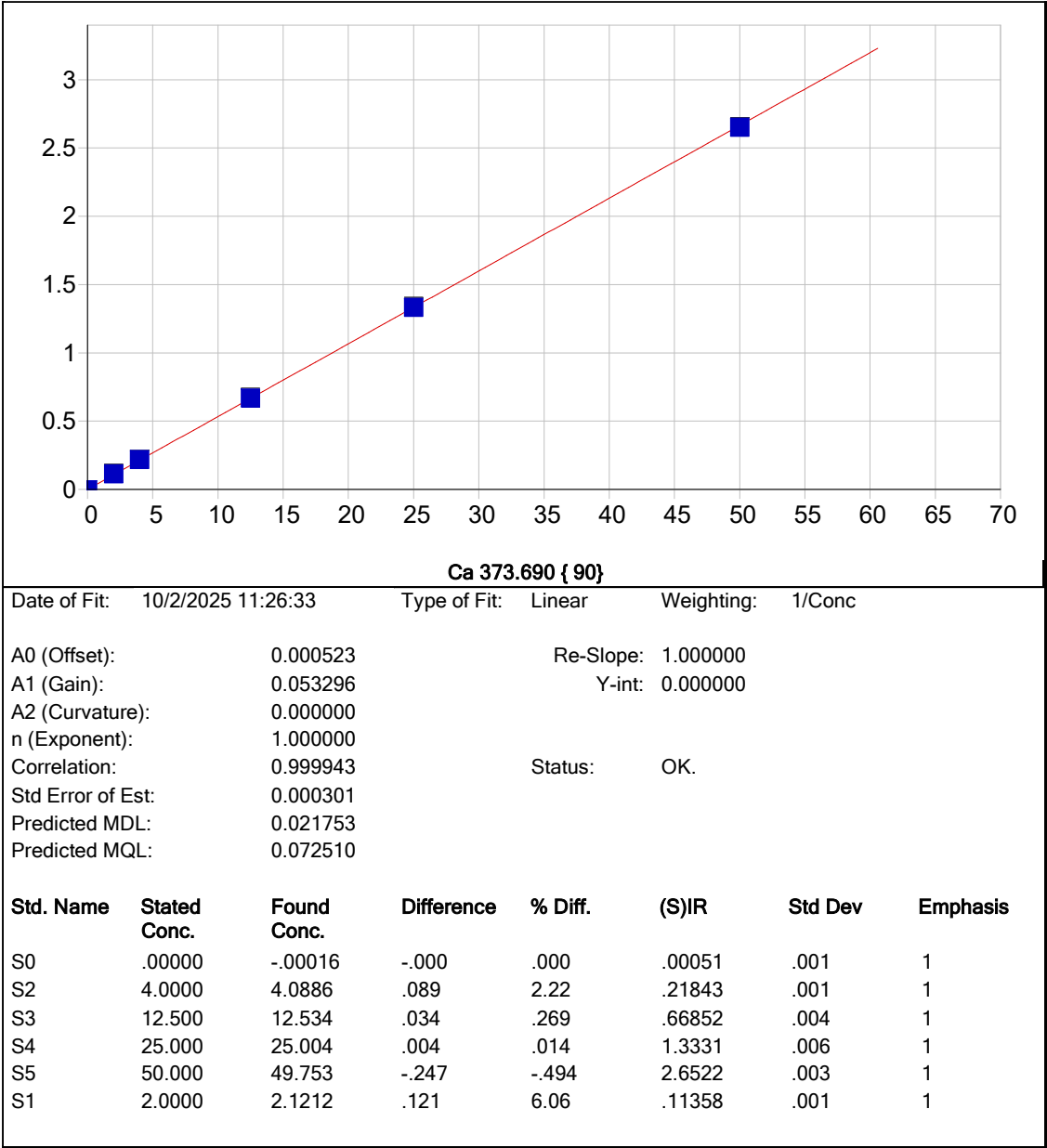


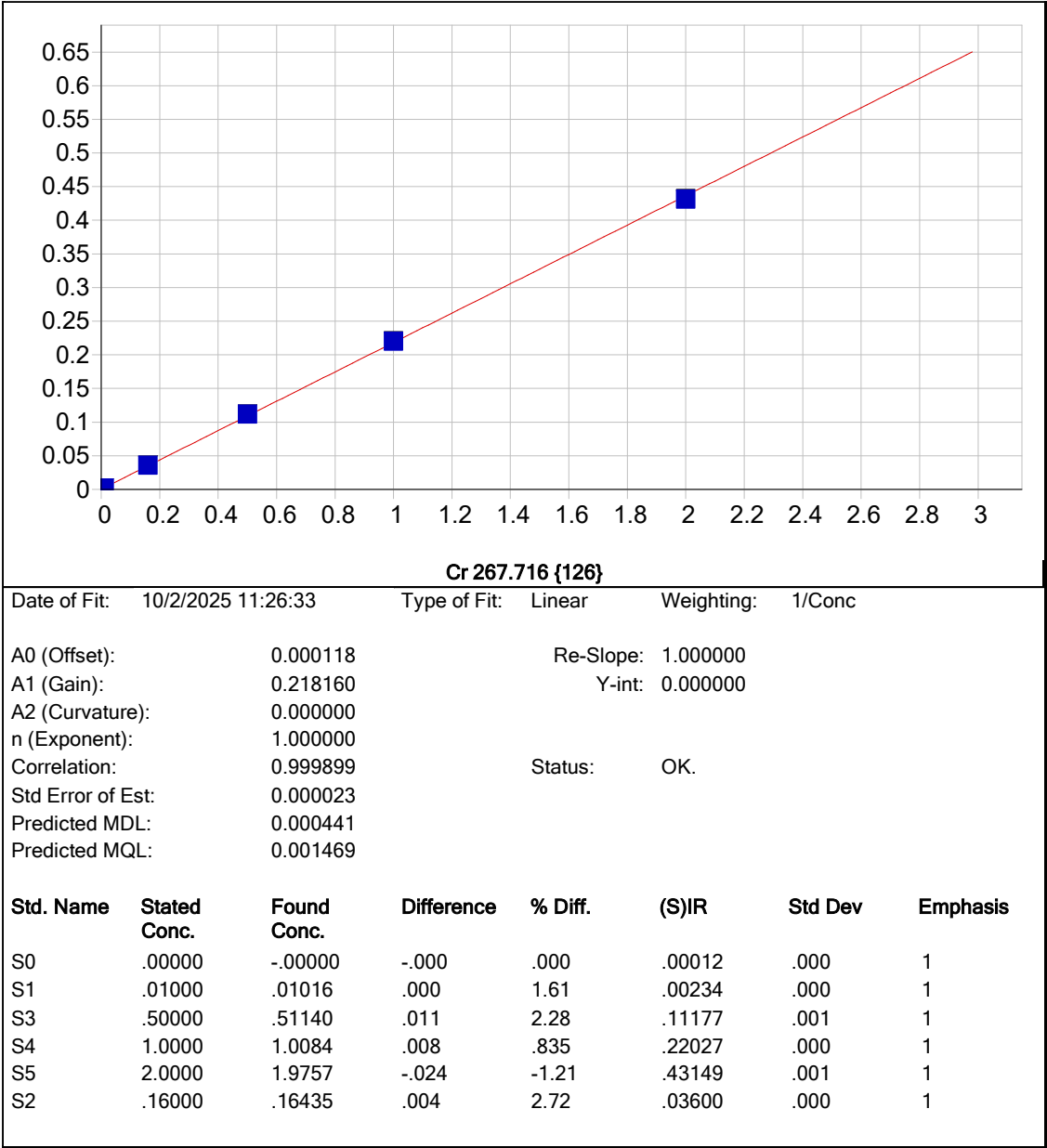


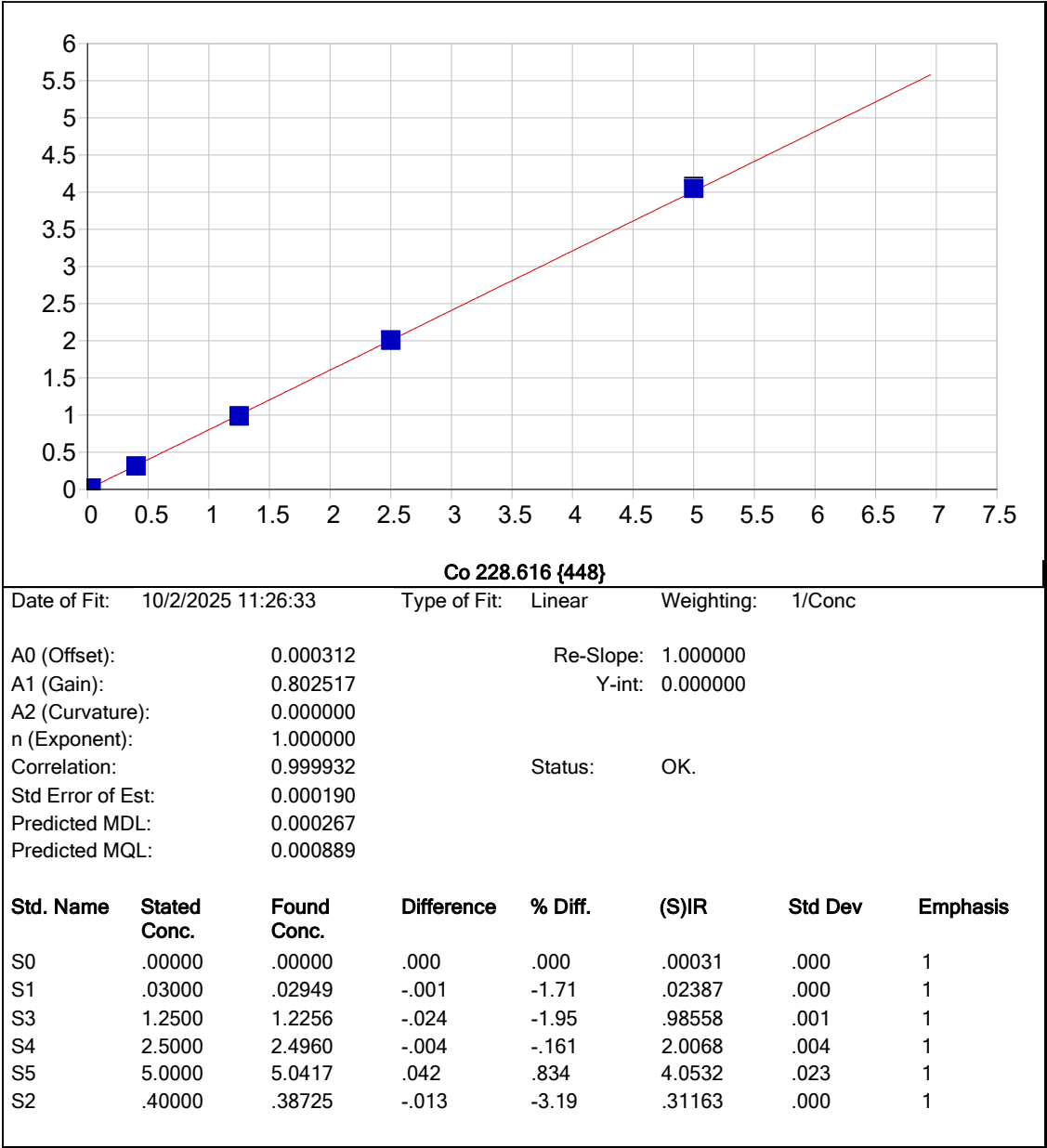


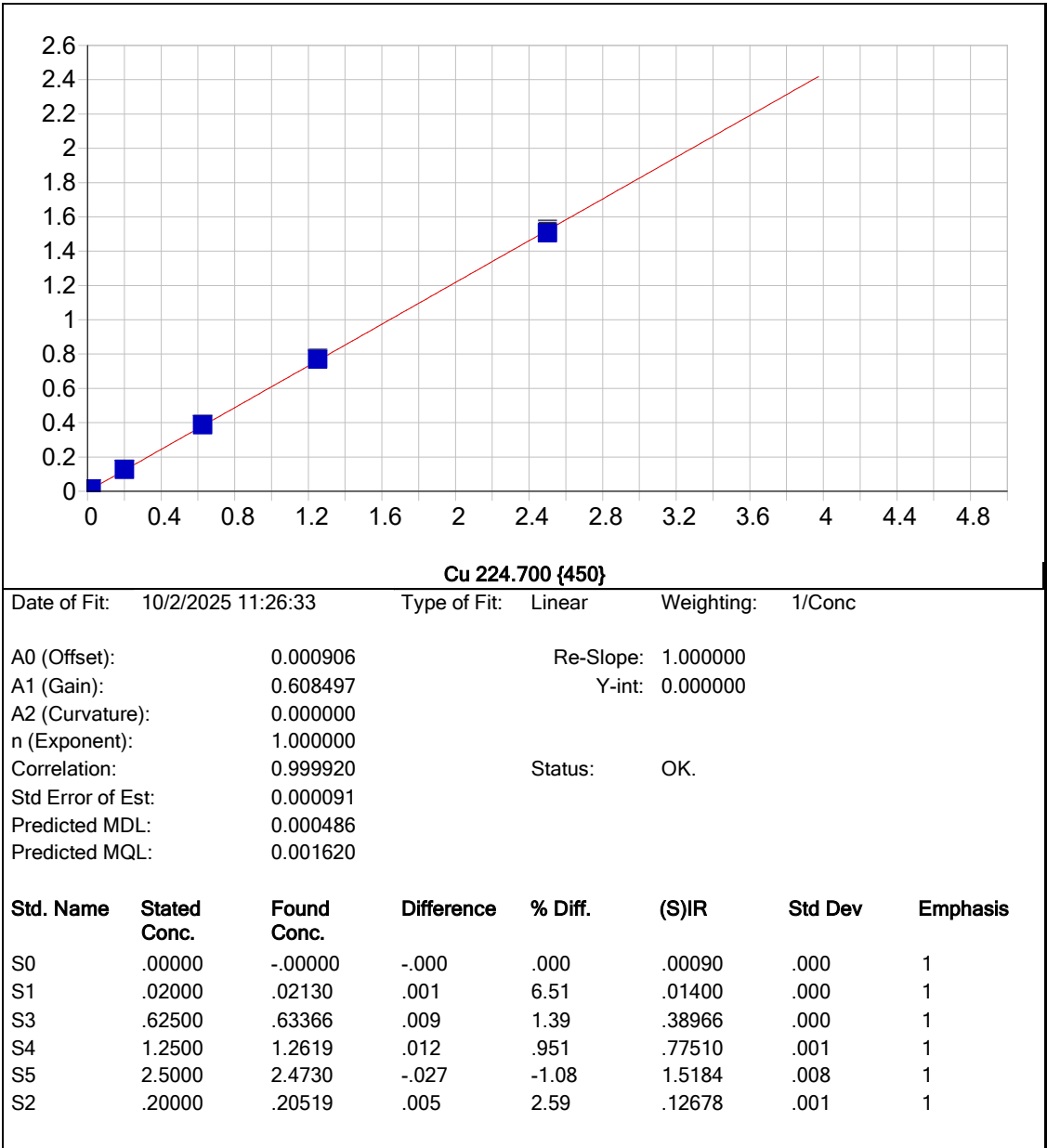


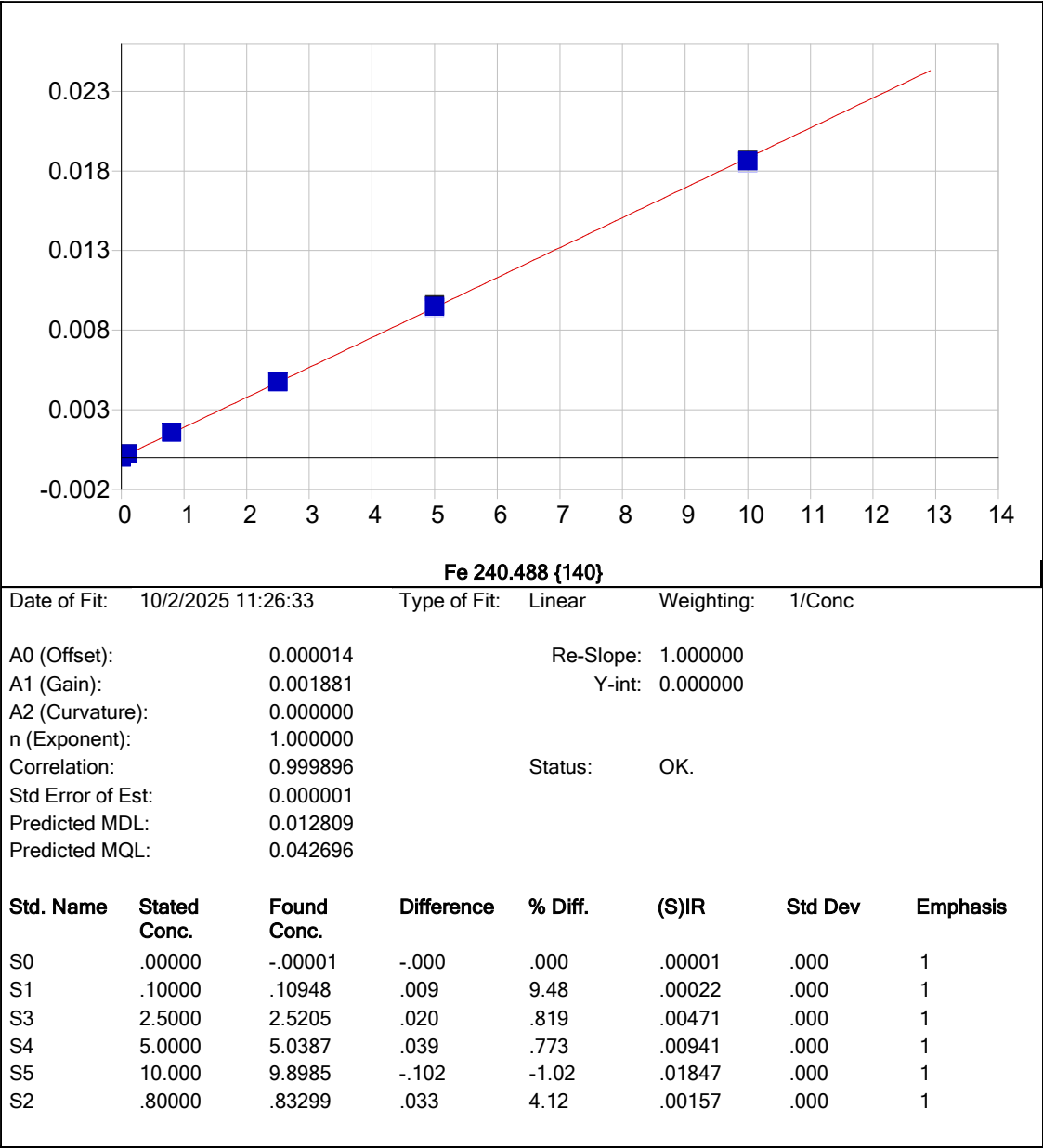


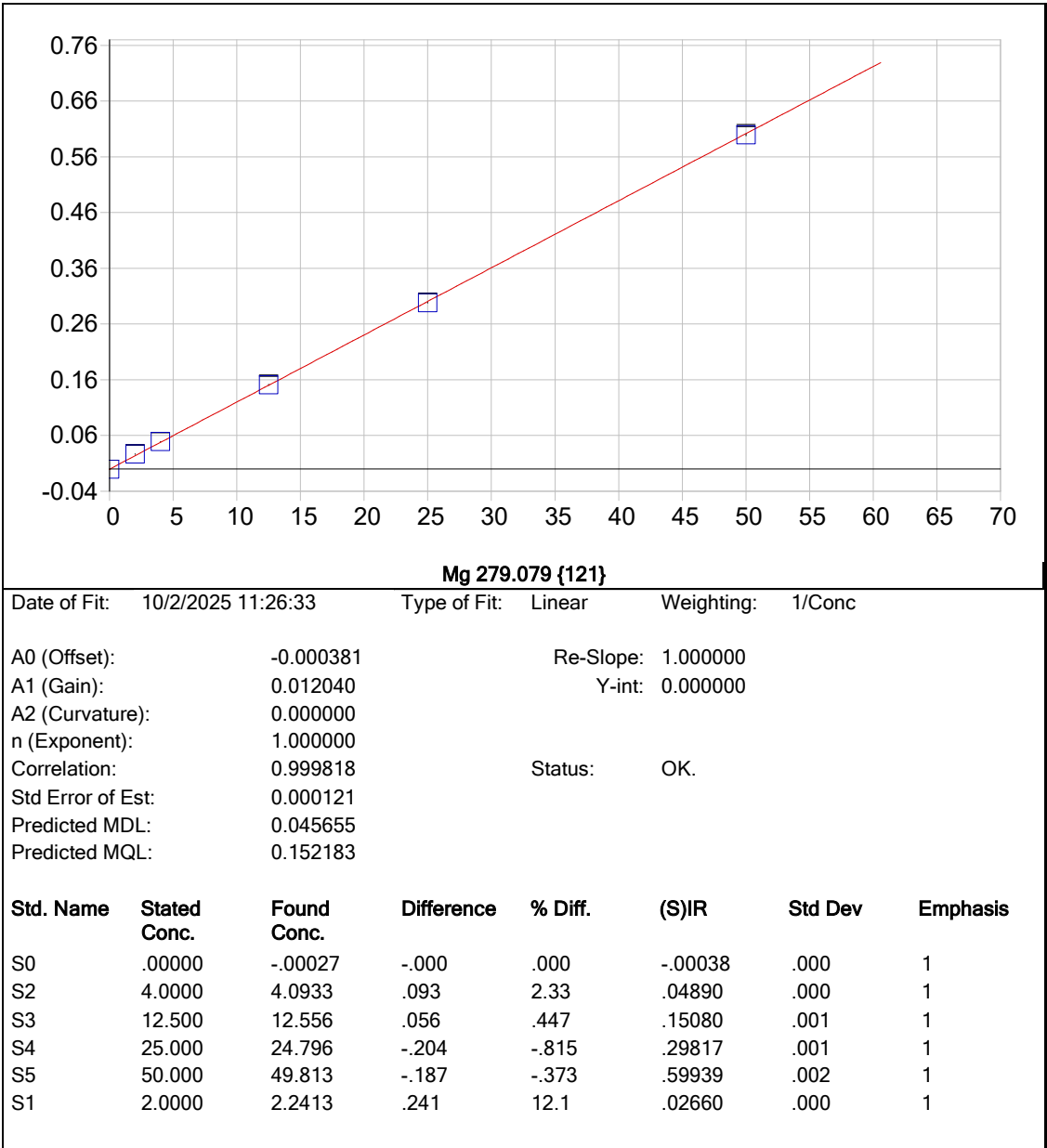


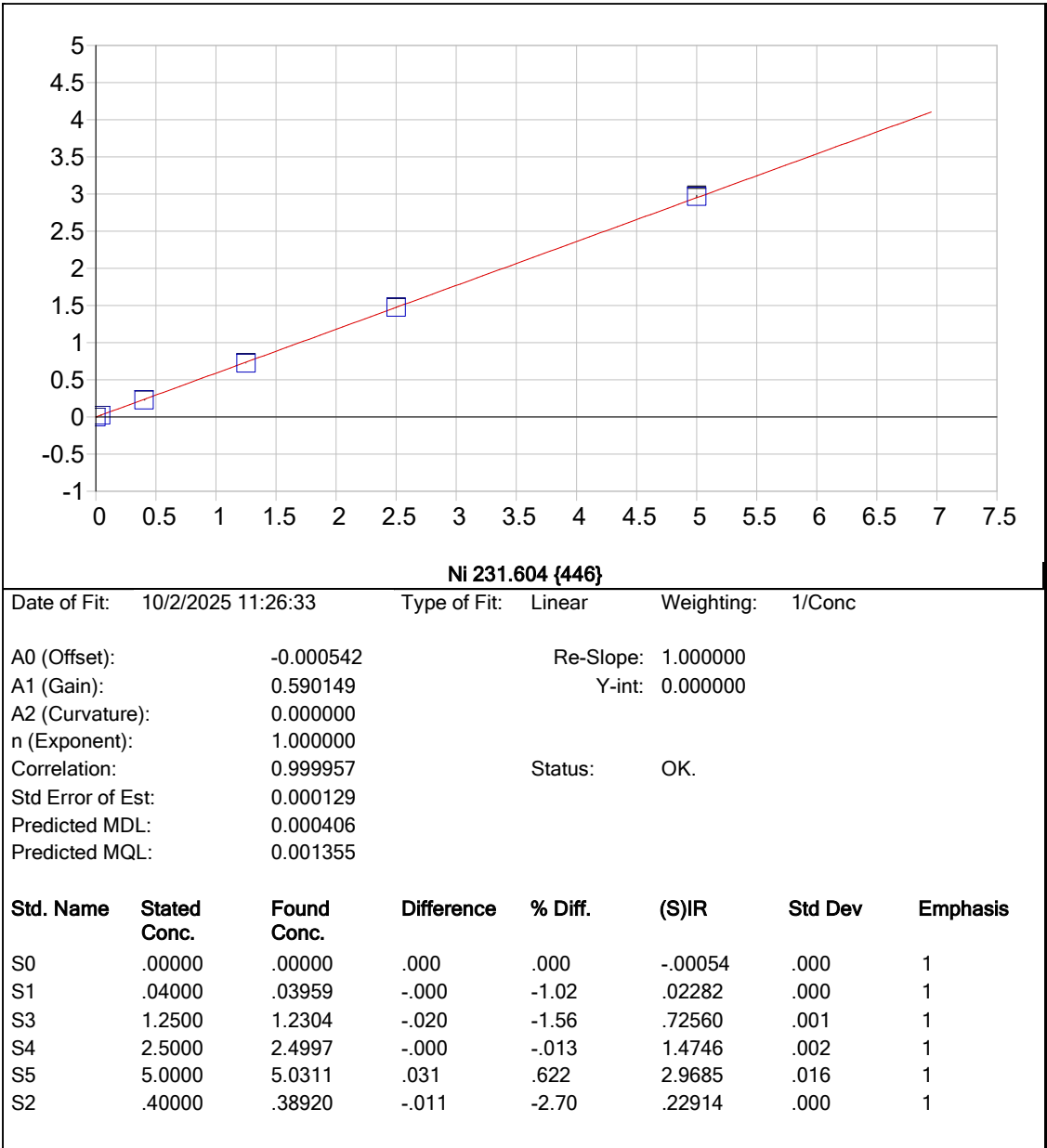


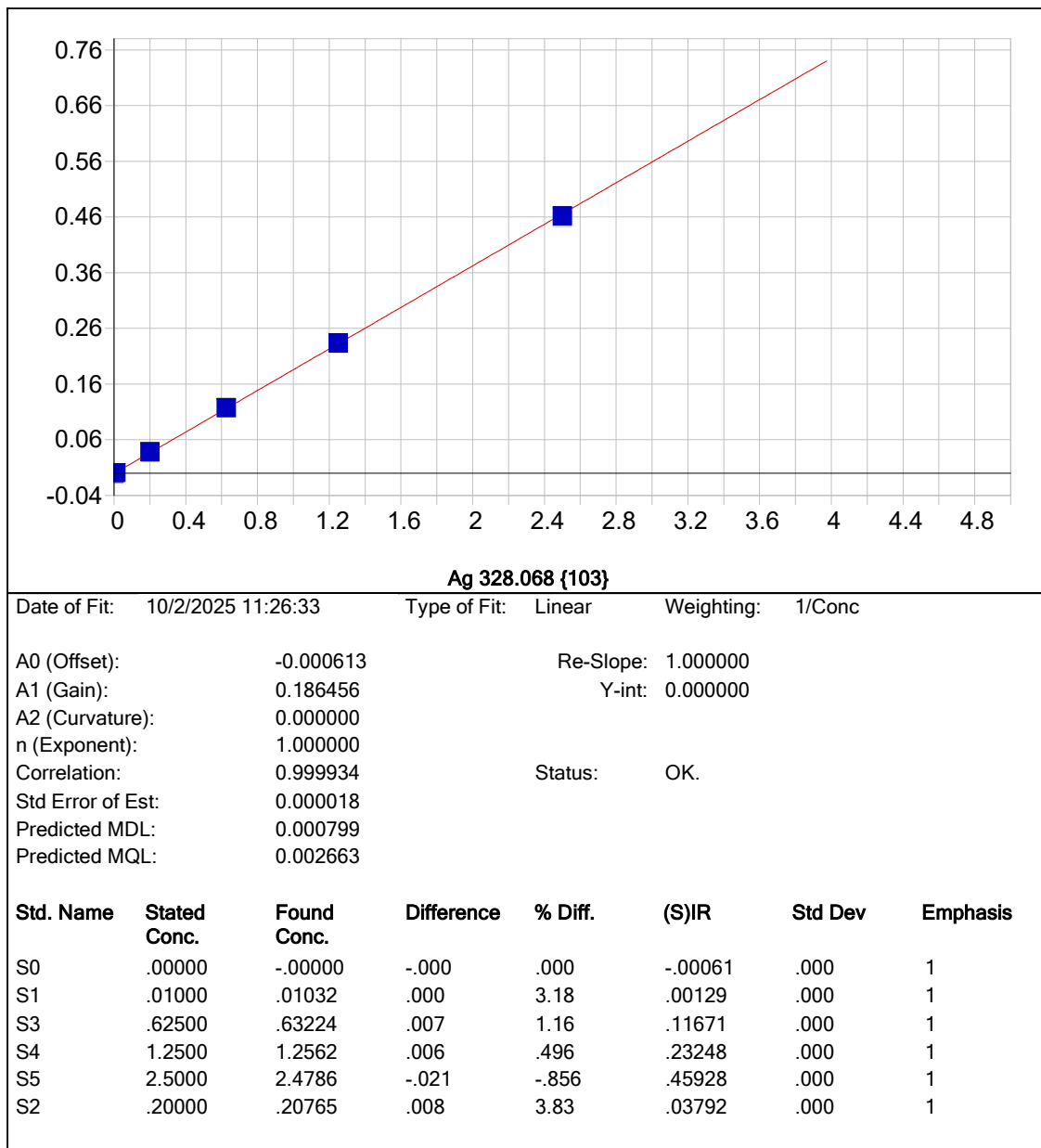


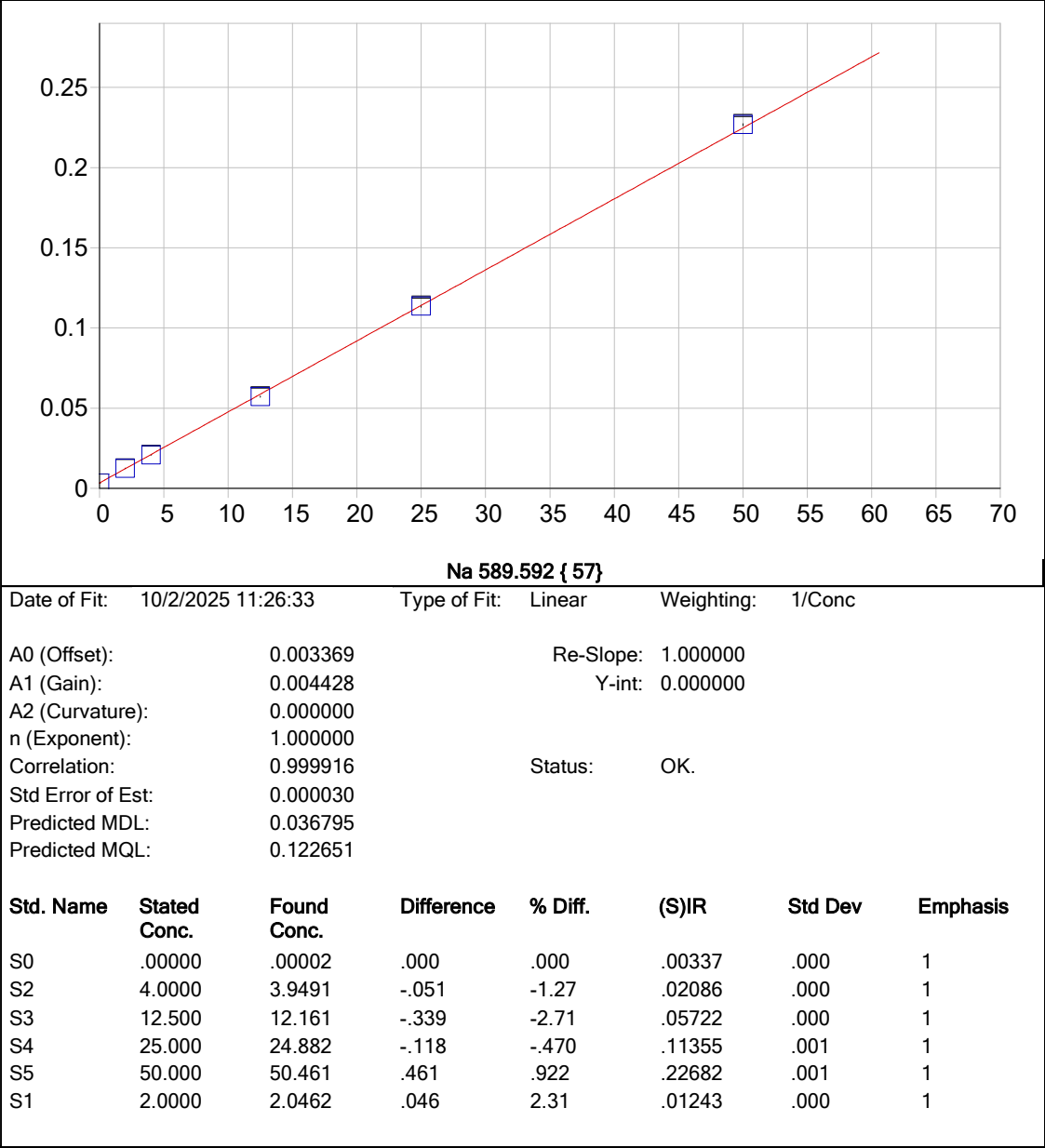


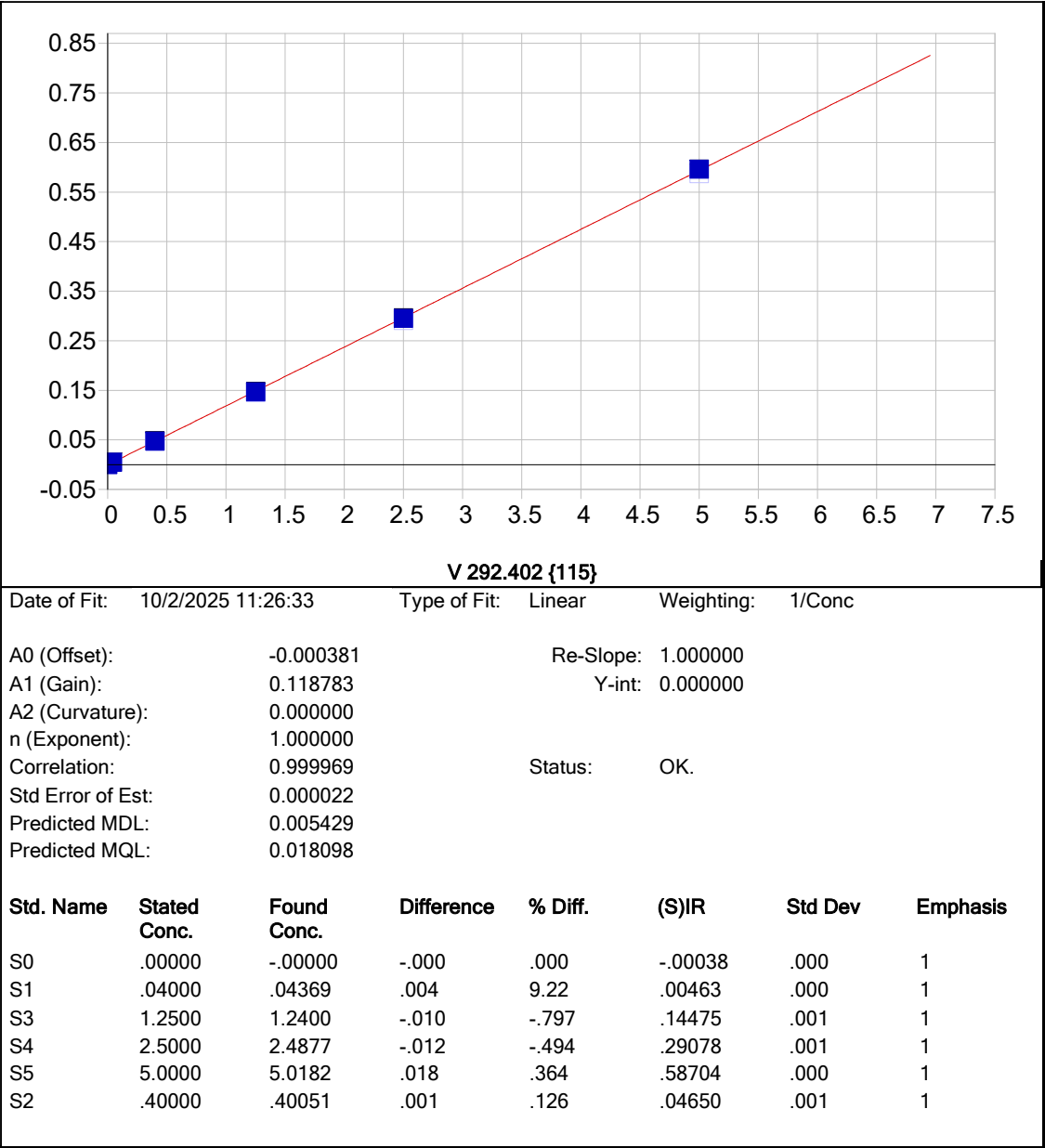


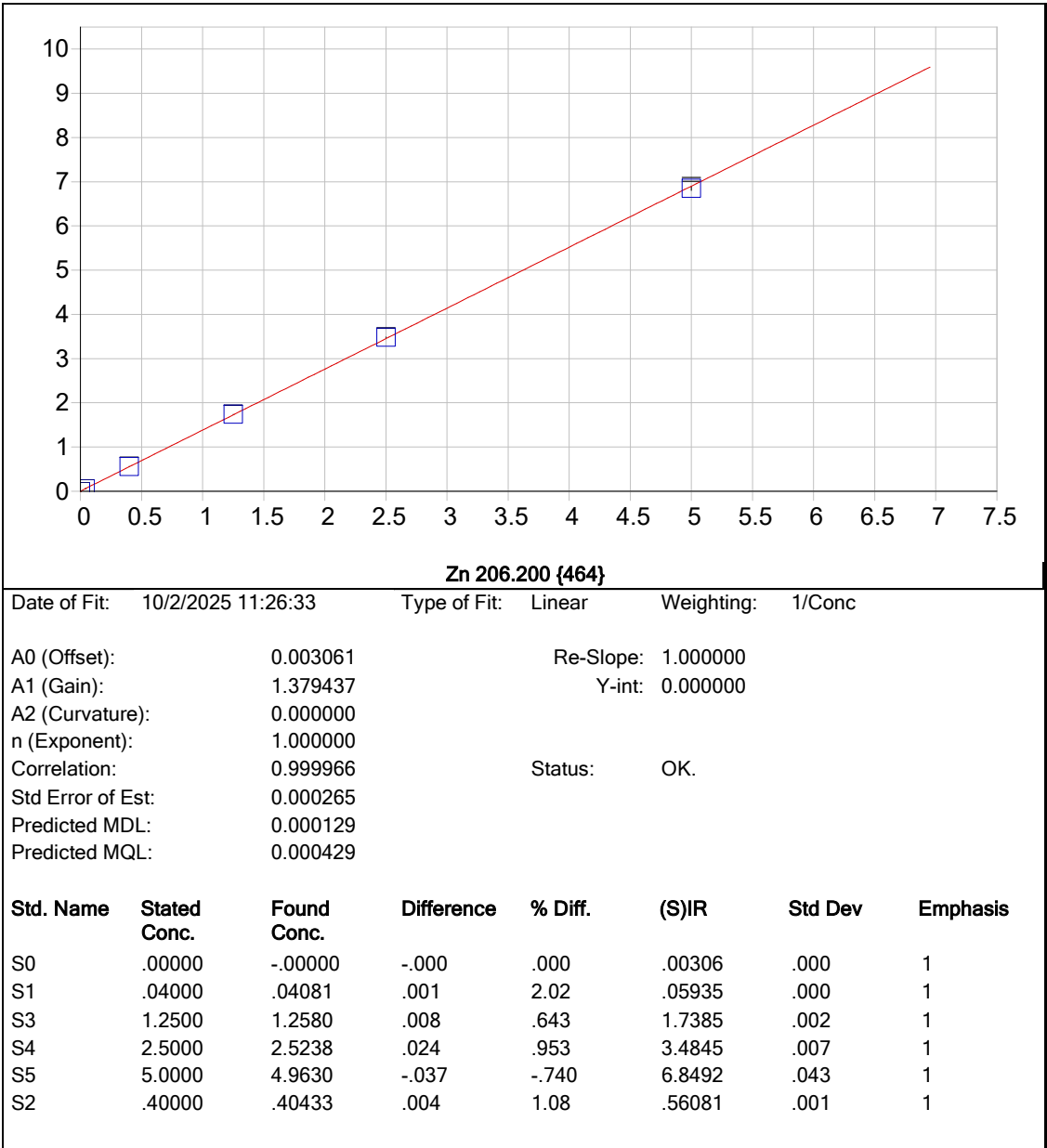


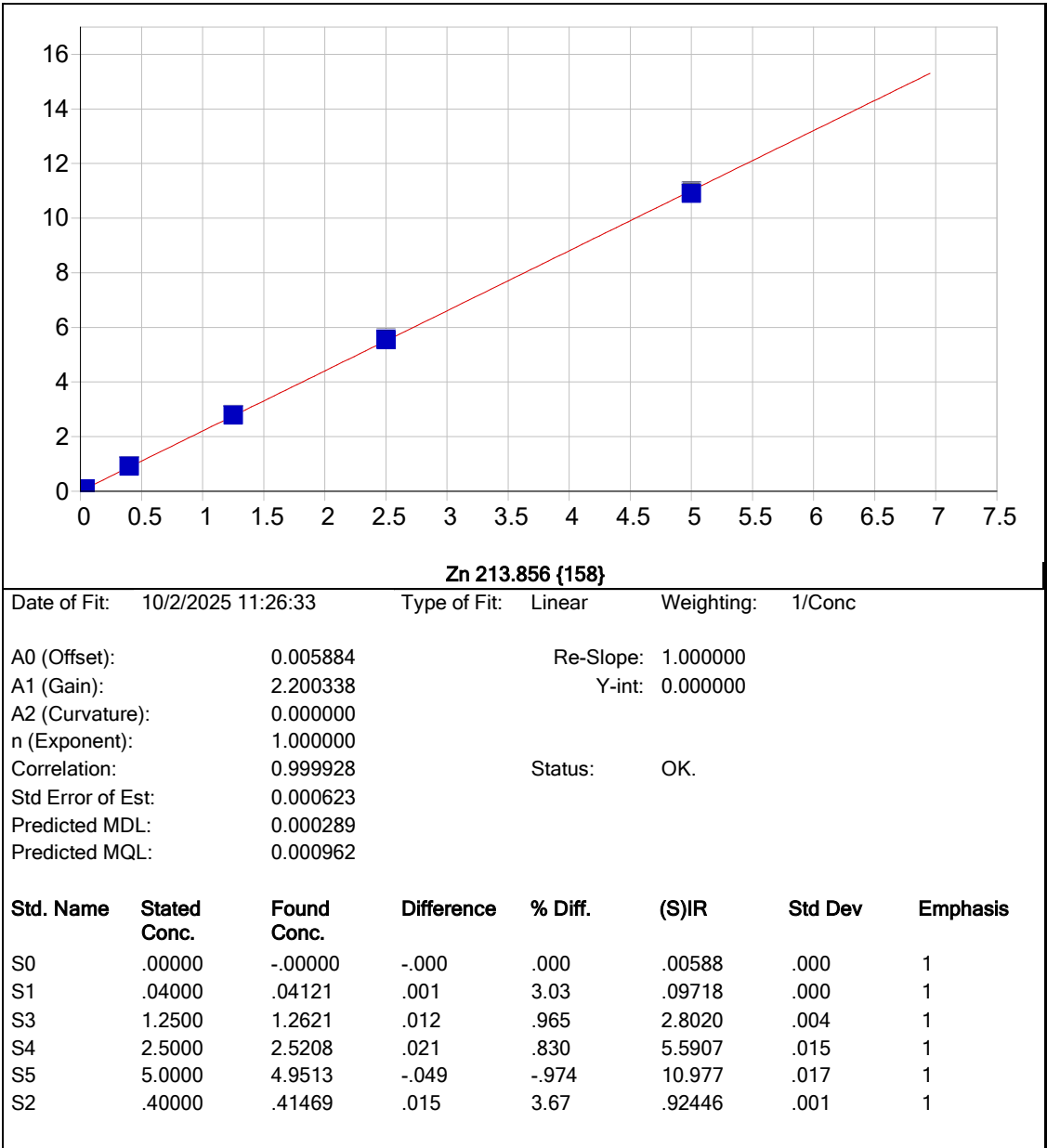


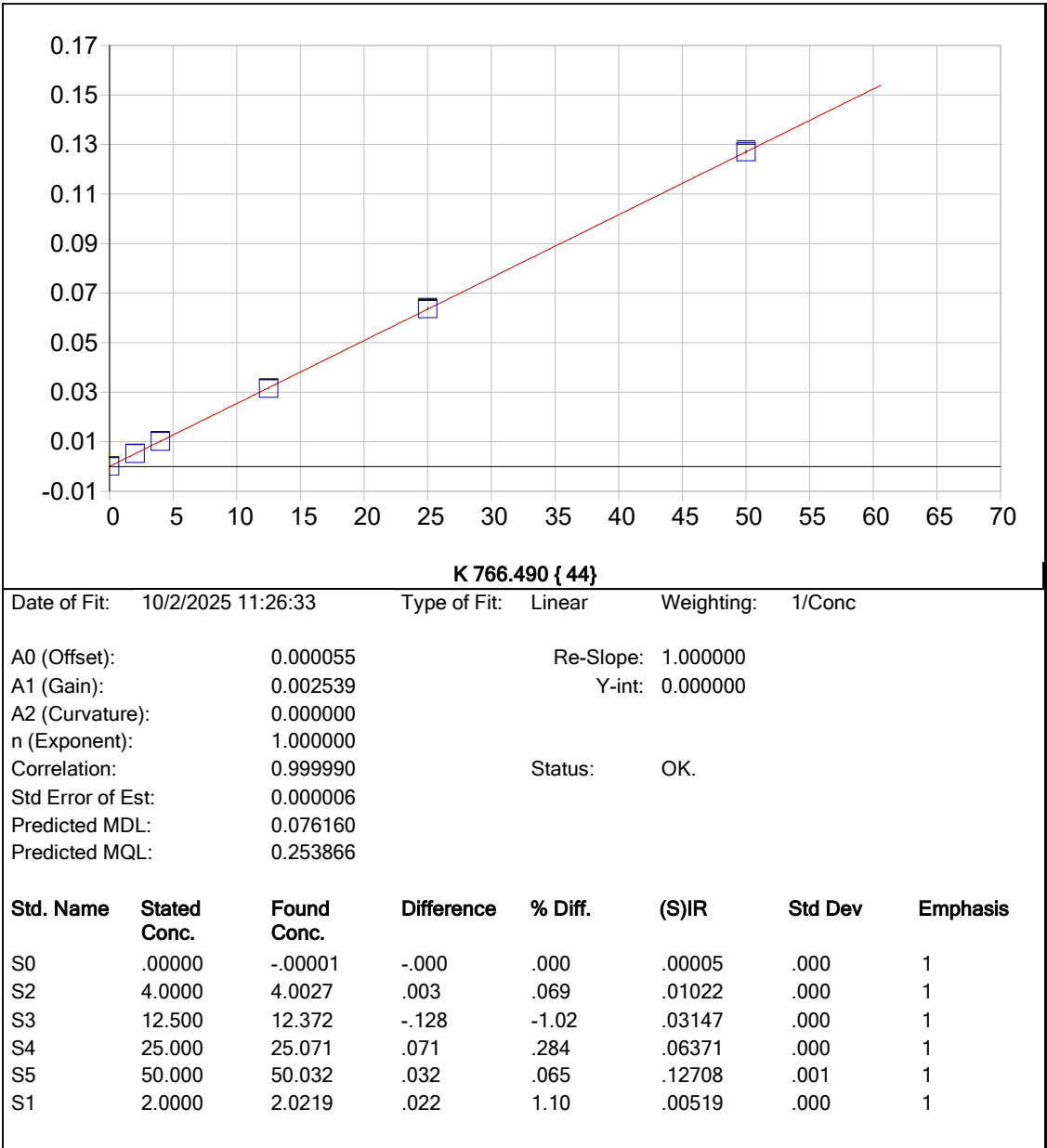


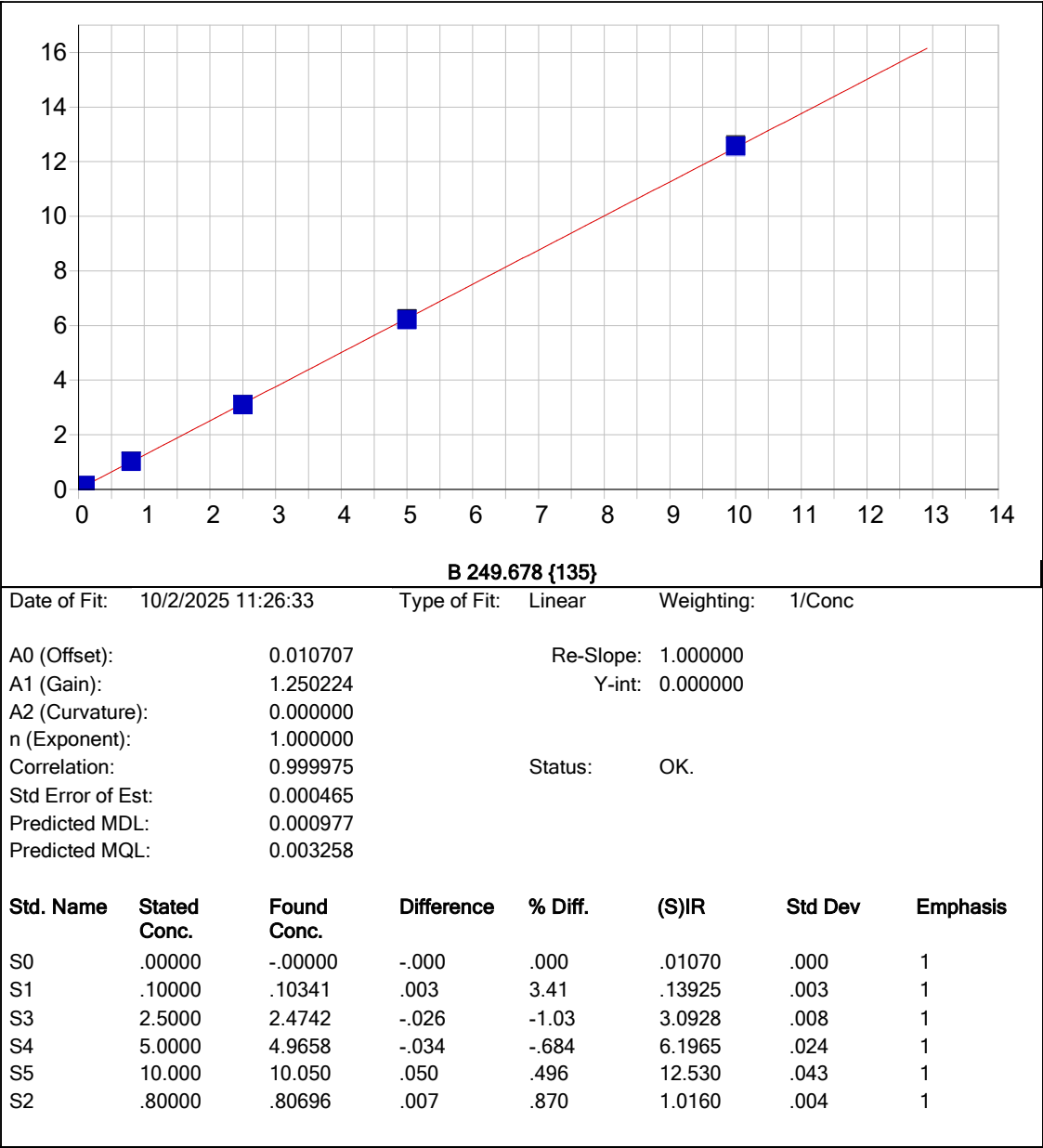


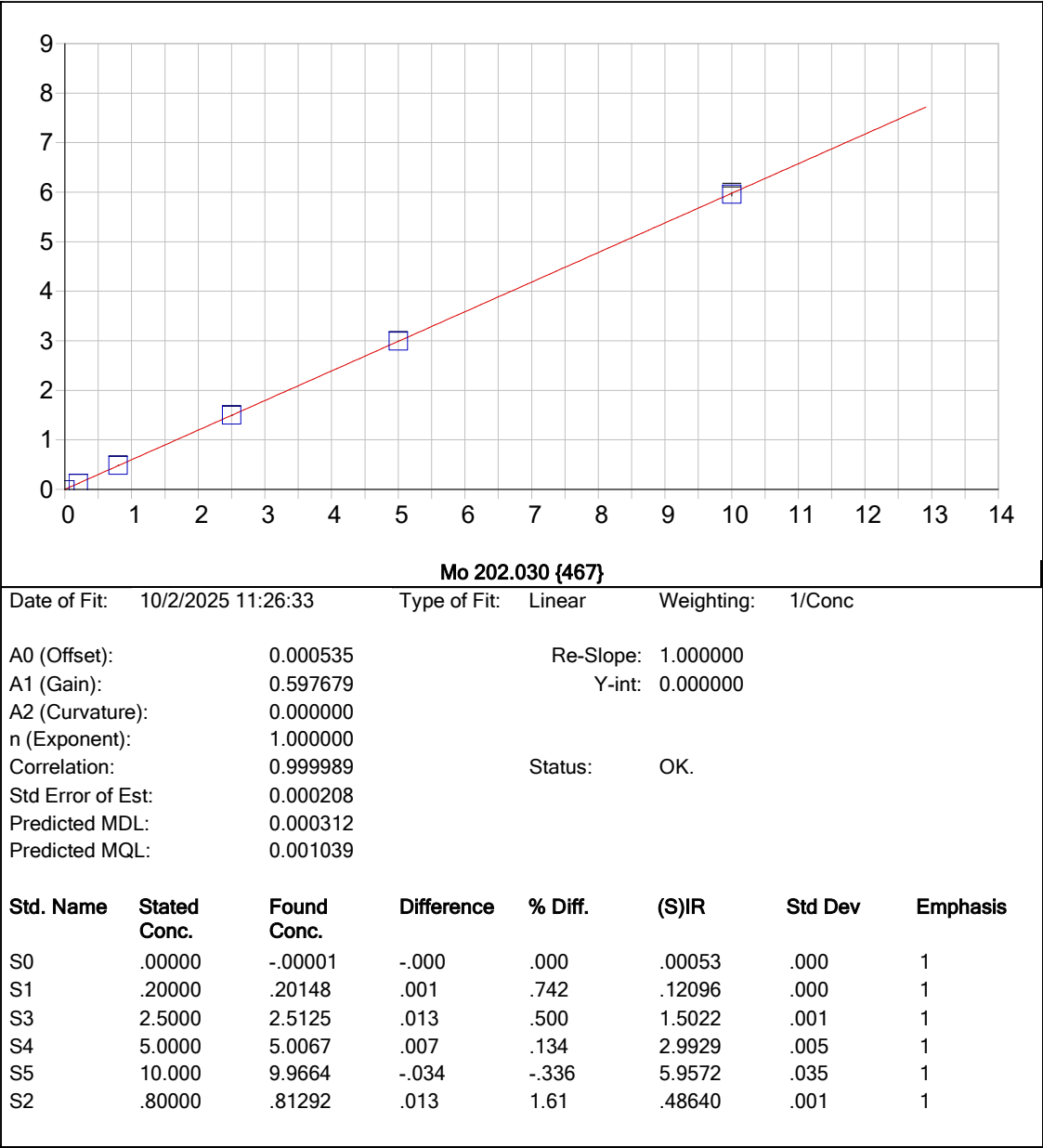


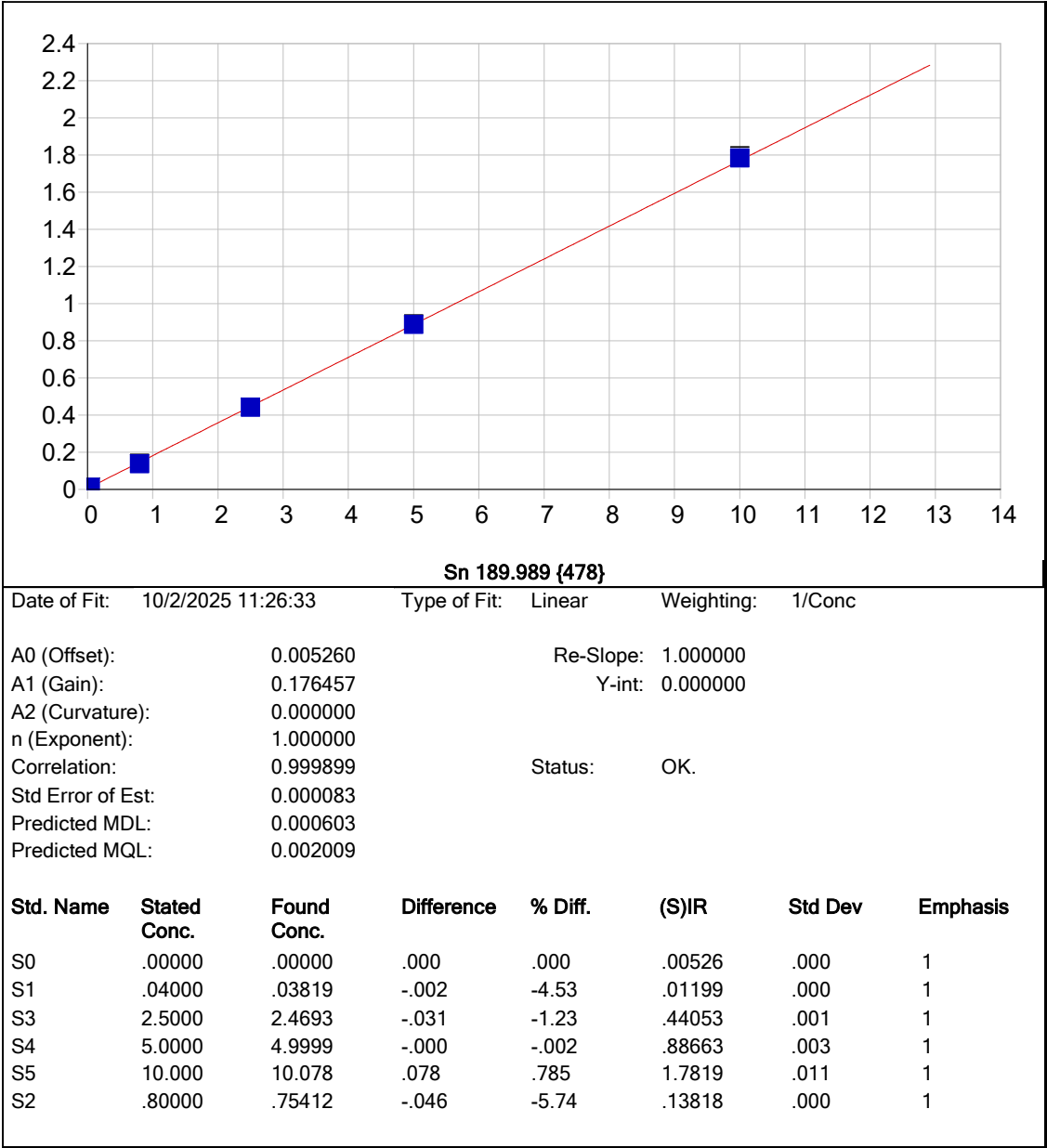


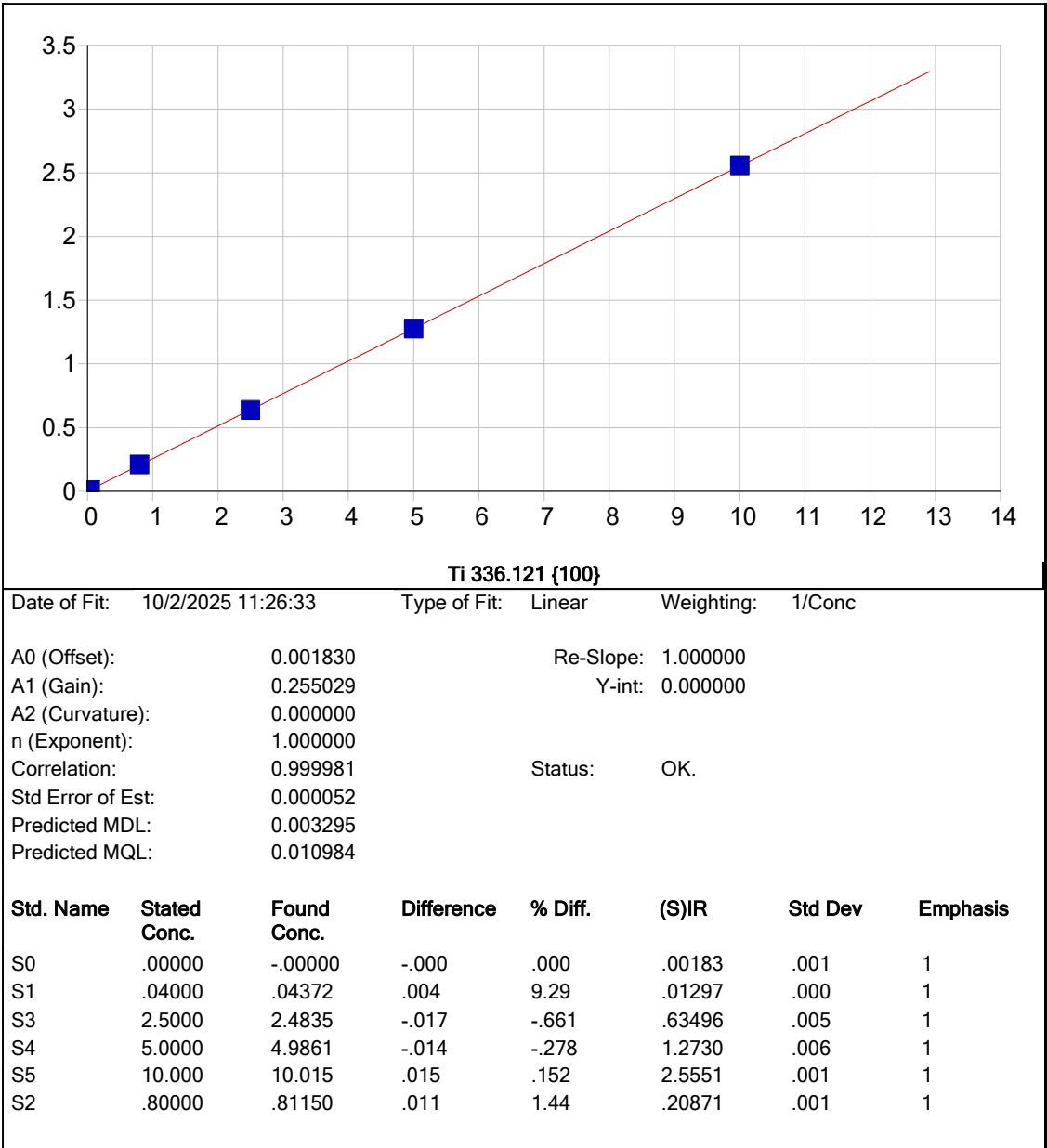


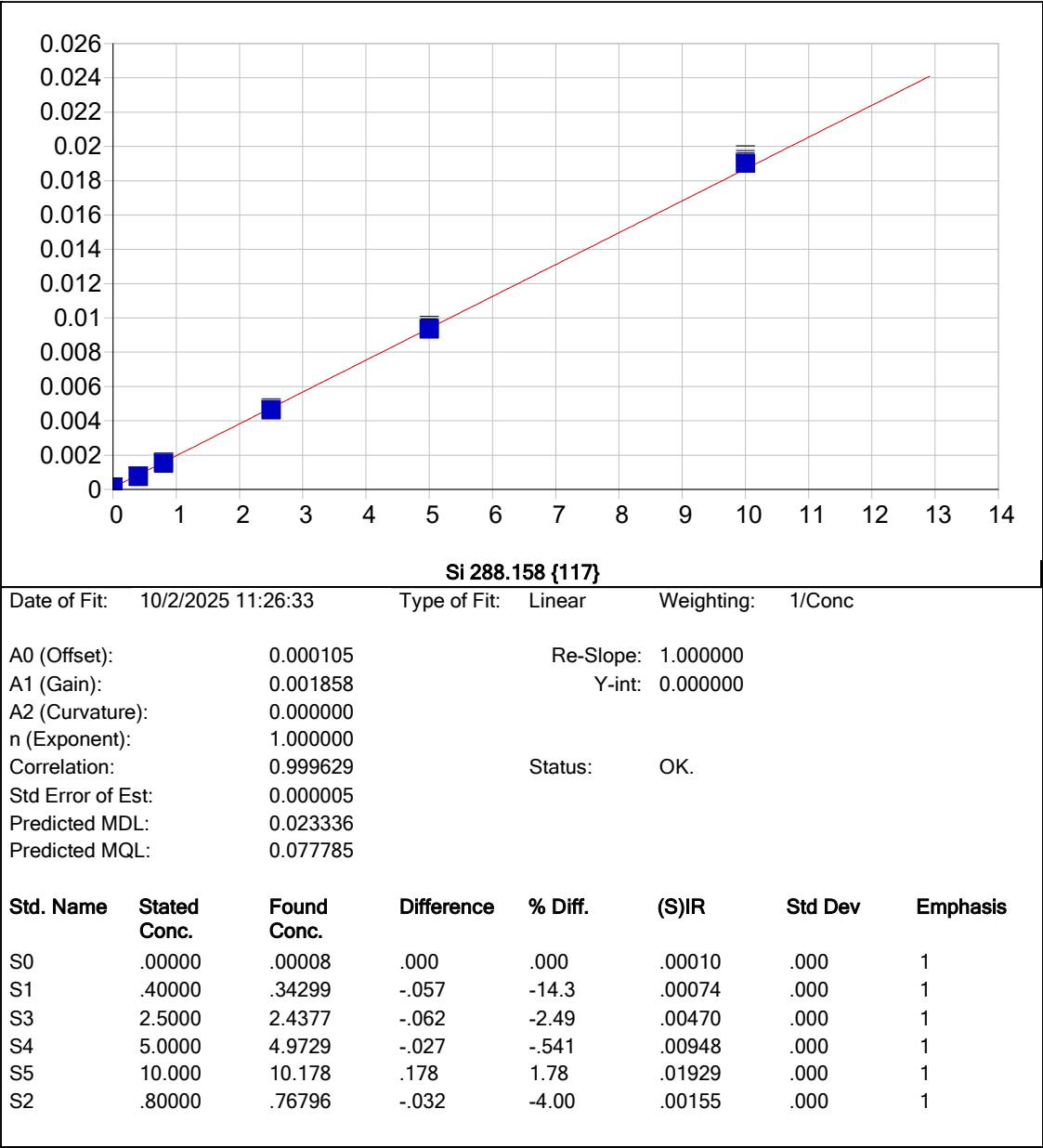


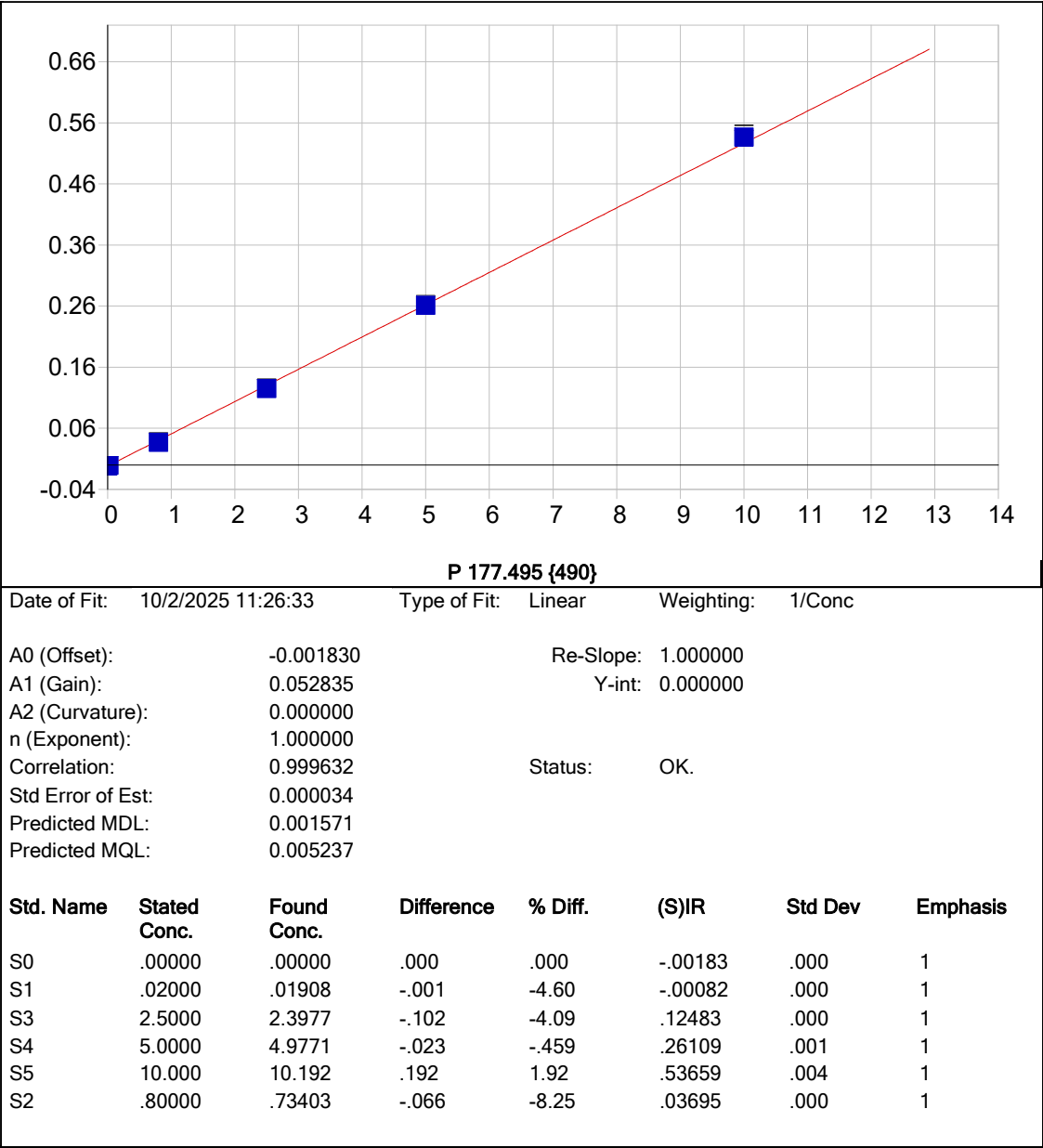


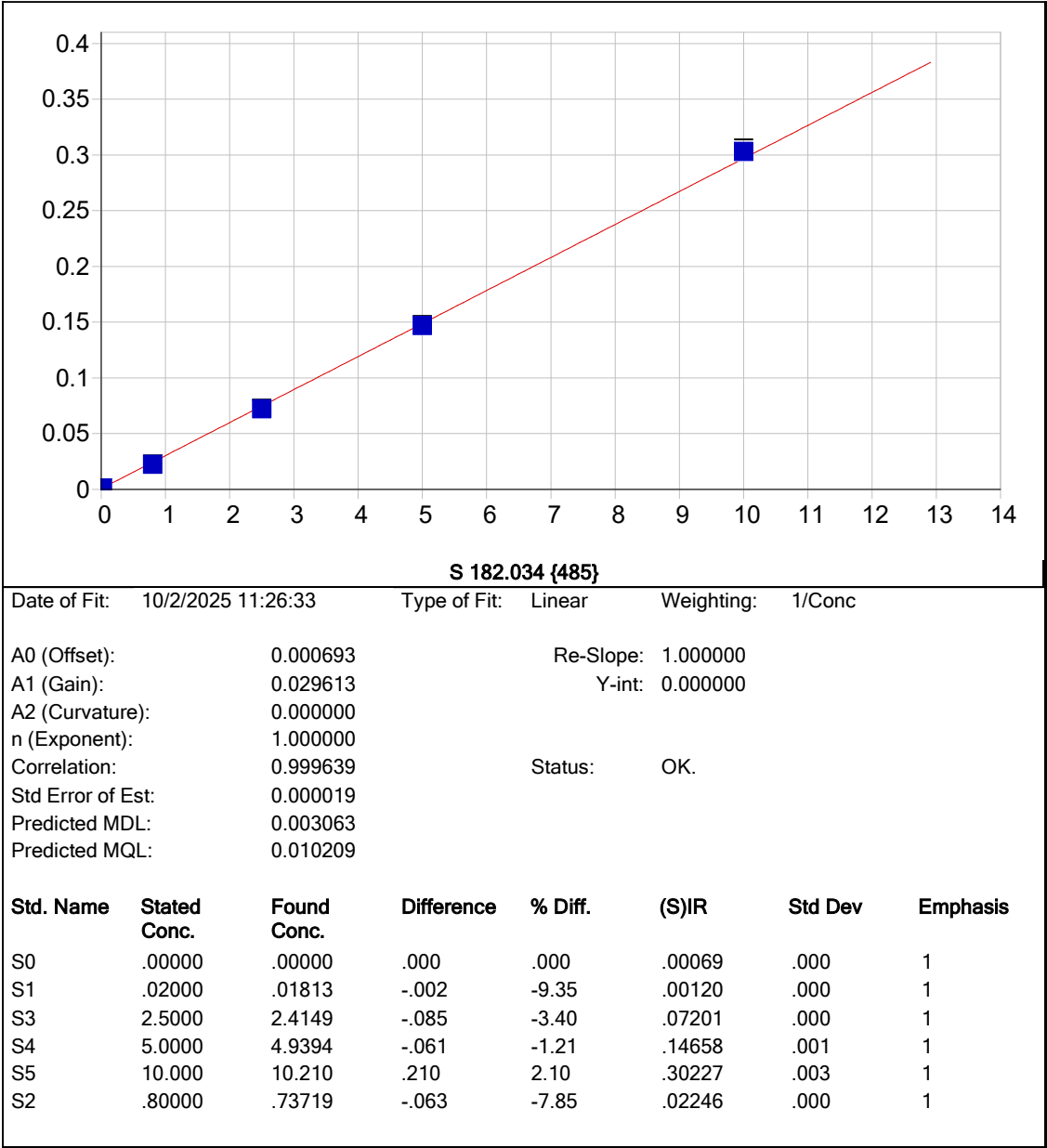


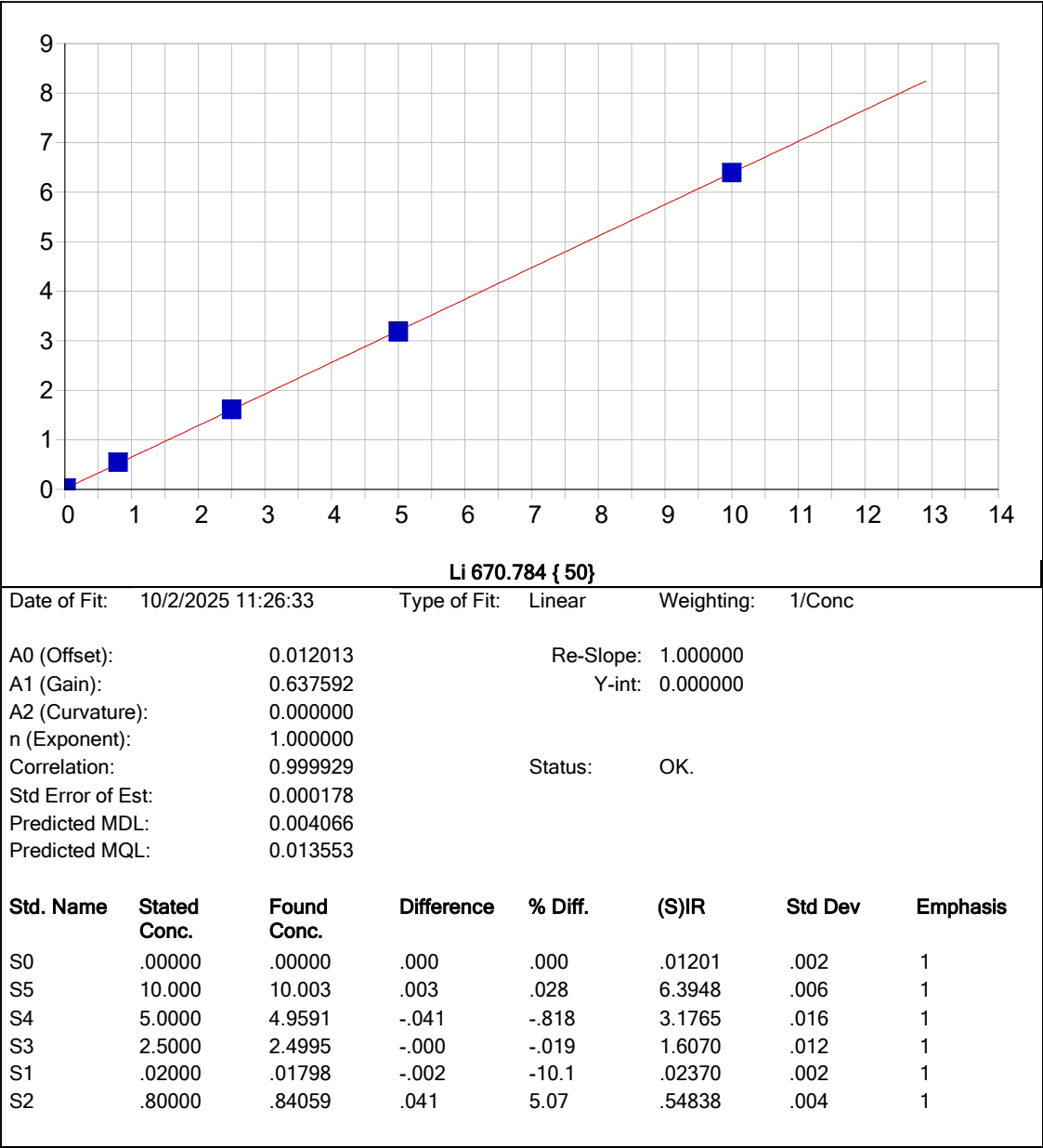


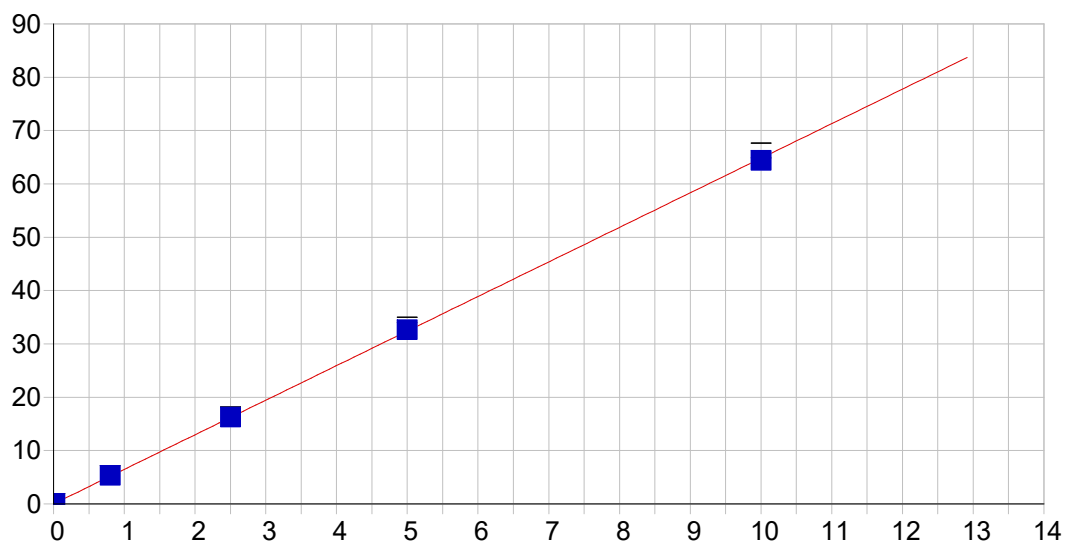












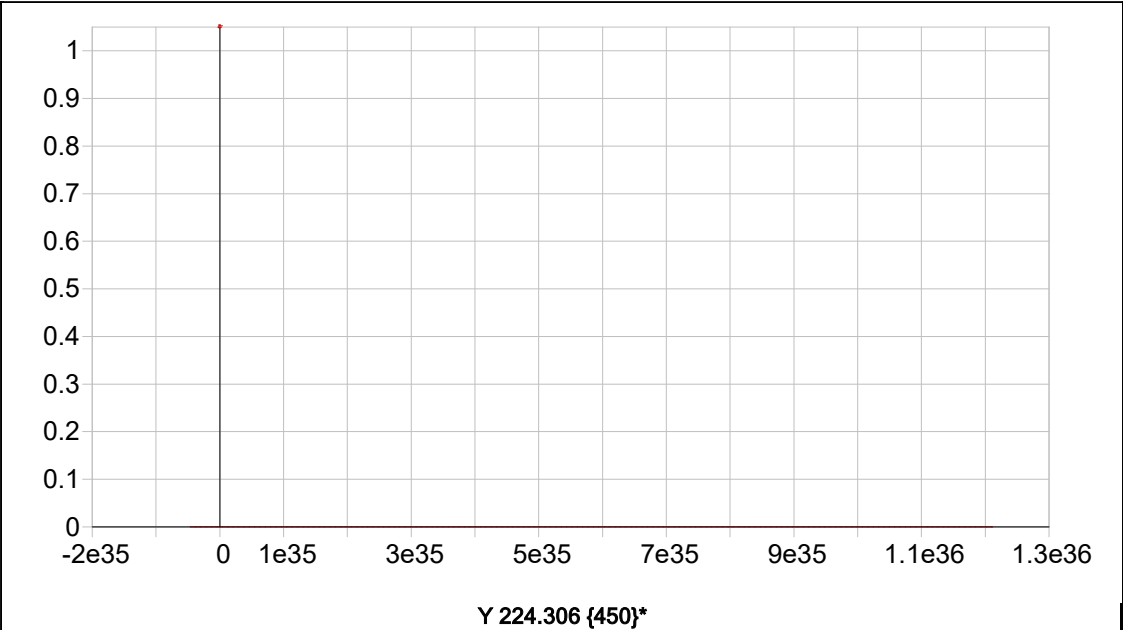
Sr 407.771 { 83}

Date of Fit:	10/2/2025 11:26:33	Type of Fit:	Linear	Weighting:	1/Conc
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A0 (Offset):	0.002421	Re-Slope:	1.000000
A1 (Gain):	6.480995	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999961	Status:	OK.
Std Error of Est:	0.001341		
Predicted MDL:	0.000218		
Predicted MQL:	0.000725		

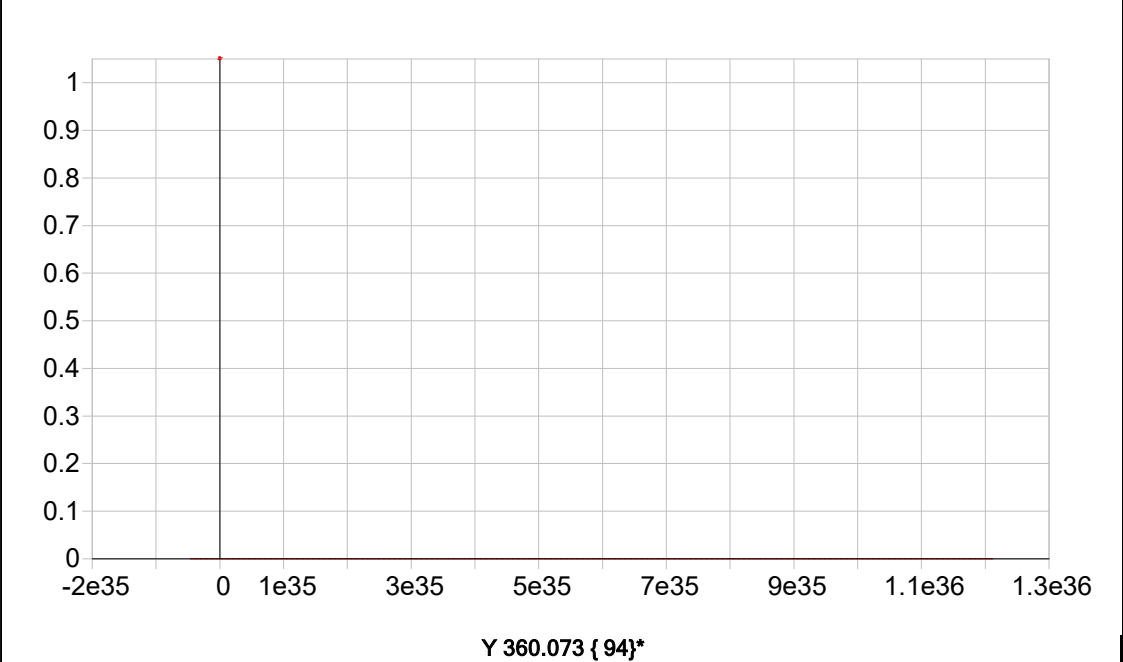
Status: OK.

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)/IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00240	.001	1
S1	.02000	.02214	.002	10.7	.14653	.002	1
S3	2.5000	2.5085	.009	.342	16.276	.130	1
S4	5.0000	5.0365	.037	.731	32.675	.500	1
S5	10.000	9.9335	-.066	-.665	64.444	1.41	1
S2	.80000	.81924	.019	2.40	5.3169	.020	1

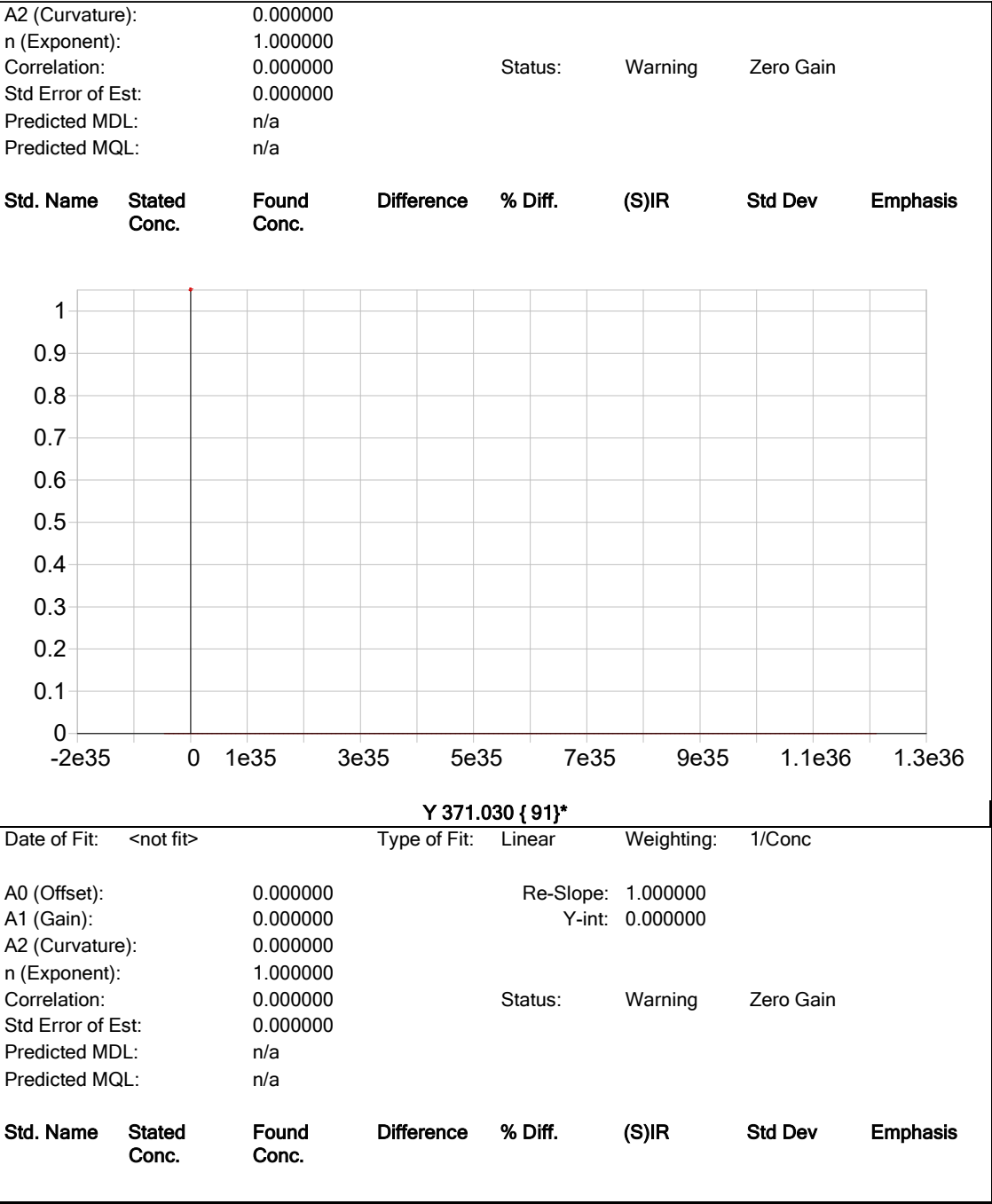


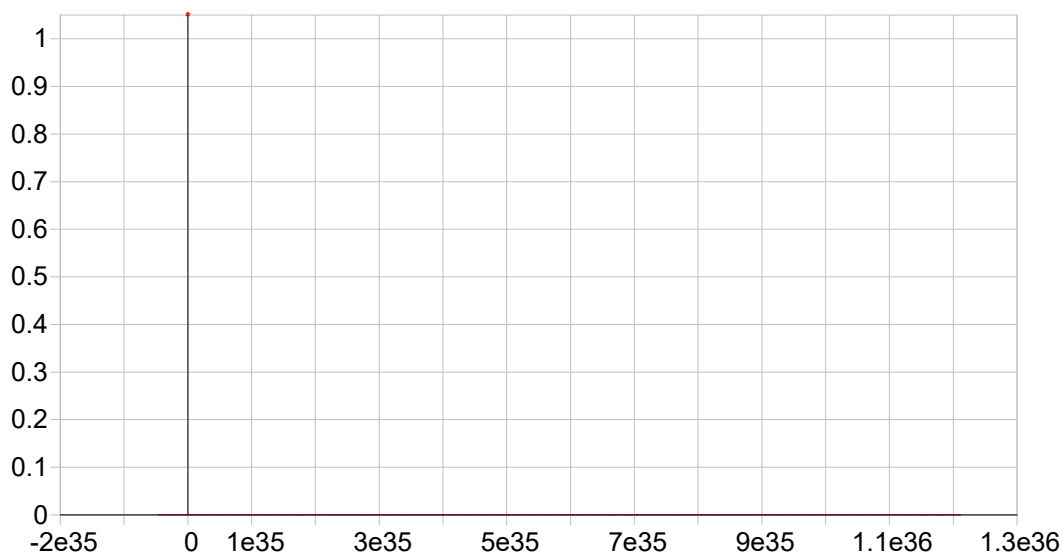
Date of Fit:	10/2/2025 11:26:33	Type of Fit:	Linear	Weighting:	1/Conc
A0 (Offset):	0.000000	Re-Slope:	1.000000		
A1 (Gain):	0.000000	Y-int:	0.000000		
A2 (Curvature):	0.000000				
n (Exponent):	1.000000				
Correlation:	0.000000	Status:	Warning	Zero Gain	
Std Error of Est:	0.000000				
Predicted MDL:	n/a				
Predicted MQL:	n/a				

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
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Date of Fit:	<not fit>	Type of Fit:	Linear	Weighting:	1/Conc
A0 (Offset):	0.000000	Re-Slope:	1.000000		
A1 (Gain):	0.000000	Y-int:	0.000000		



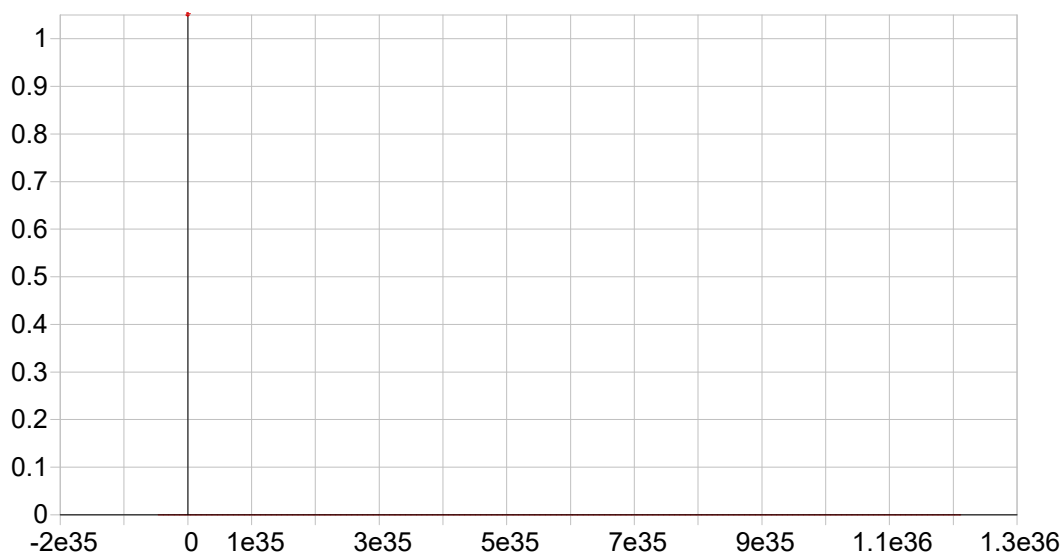


Y 224.306 {150}*

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

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
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In 230.606 {446}*

Date of Fit:	<not fit>	Type of Fit:	Linear	Weighting:	1/Conc
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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: 10/2/2025 10:37:46 Type: Cal
Method: 6010-200.7 NEW(v241) Mode: IR Corr. Factor: 1.000000
User: Jaswal 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	.00016	.00074	.00049	.00109	.00096	.00002	.13394	-.00209
Stddev	.00013	.00008	.00038	.00011	.00010	.00102	.00247	.00100
%RSD	82.603	11.377	77.302	9.9451	10.026	4581.6	1.8424	47.860

#1	.00020	.00083	.00086	.00099	.00103	-.00056	.13117	-.00248
#2	.00026	.00067	.00051	.00120	.00085	-.00057	.13474	-.00095
#3	.00001	.00072	.00010	.00107	.00099	.00120	.13591	-.00283

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	-.00081	.00051	.00012	.00031	.00090	.00001	.00035	-.00038
Stddev	.00014	.00051	.00011	.00027	.00021	.00002	.00032	.00031
%RSD	17.208	98.611	89.731	84.904	22.771	116.53	89.402	81.249

#1	-.00071	.00104	.00002	.00055	.00076	.00002	.00060	-.00003
#2	-.00097	.00048	.00010	.00036	.00114	-.00000	.00046	-.00051
#3	-.00075	.00003	.00023	.00003	.00081	.00003	-.00000	-.00062

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	-.00054	-.00061	.00337	-.00038	.00588	.00005	.01070	.00053
Stddev	.00007	.00007	.00007	.00025	.00046	.00017	.00028	.00009
%RSD	13.816	10.743	1.9295	66.392	7.9013	303.51	2.6196	16.418

#1	-.00046	-.00054	.00344	-.00063	.00620	.00004	.01084	.00060
#2	-.00060	-.00063	.00332	-.00038	.00608	-.00010	.01089	.00043
#3	-.00057	-.00067	.00335	-.00013	.00535	.00023	.01038	.00056

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	.00526	.00183	.00010	-.00183	.00069	.01201	.00240
Stddev	.00005	.00084	.00002	.00007	.00006	.00183	.00056
%RSD	.95730	45.864	21.505	4.0168	8.8059	15.202	23.437

#1	.00532	.00096	.00008	-.00176	.00076	.01412	.00296
#2	.00524	.00264	.00010	-.00190	.00068	.01094	.00183
#3	.00523	.00189	.00013	-.00183	.00064	.01098	.00242

Sample Name: S0 Acquired: 10/2/2025 10:37:46 Type: Cal
Method: 6010-200.7 NEW(v241) Mode: IR Corr. Factor: 1.000000
User: Jaswal 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	7943.0	102640.	5963.2	6399.2	9400.1
Stddev	18.2	472.	18.1	34.8	20.2
%RSD	.22887	.45945	.30416	.54361	.21509
#1	7923.7	102510.	5961.3	6378.2	9381.5
#2	7945.5	102250.	5982.2	6380.0	9397.3
#3	7959.8	103160.	5946.1	6439.3	9421.6

Sample Name: S1 Acquired: 10/2/2025 10:42:02 Type: Cal
Method: 6010-200.7 NEW(v241) Mode: IR Corr. Factor: 1.000000
User: Jaswal 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	.00129	.00334	.00295	.00264	.00476	.01006	.35994	.08297
Stddev	.00004	.00007	.00020	.00008	.00008	.00134	.00235	.00121
%RSD	2.9529	2.0375	6.8186	2.9087	1.7341	13.352	.65379	1.4585

#1	.00134	.00341	.00317	.00270	.00486	.01109	.35911	.08436
#2	.00126	.00327	.00277	.00255	.00473	.01054	.36260	.08247
#3	.00129	.00334	.00292	.00267	.00470	.00854	.35812	.08210

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	.01773	.11358	.00234	.02387	.01400	.00022	.00918	.02660
Stddev	.00010	.00101	.00004	.00012	.00025	.00002	.00039	.00042
%RSD	.56351	.89010	1.6136	.48950	1.7828	9.4011	4.2970	1.5718

#1	.01763	.11402	.00229	.02400	.01375	.00020	.00961	.02699
#2	.01773	.11242	.00236	.02386	.01401	.00021	.00909	.02666
#3	.01783	.11429	.00235	.02377	.01425	.00024	.00883	.02616

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	.02282	.00129	.01243	.00463	.09718	.00519	.13925	.12096
Stddev	.00004	.00005	.00016	.00032	.00023	.00010	.00325	.00027
%RSD	.16909	3.8390	1.2845	6.9633	.23596	2.0146	2.3327	.22336

#1	.02278	.00124	.01241	.00426	.09702	.00530	.14243	.12081
#2	.02285	.00134	.01260	.00482	.09744	.00510	.13938	.12080
#3	.02284	.00129	.01228	.00481	.09707	.00516	.13594	.12127

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	.01199	.01297	.00074	-.00082	.00120	.02370	.14653
Stddev	.00010	.00042	.00004	.00003	.00013	.00157	.00173
%RSD	.79719	3.2010	5.2093	3.1593	10.501	6.6332	1.1783

#1	.01189	.01250	.00070	-.00079	.00129	.02220	.14807
#2	.01208	.01315	.00077	-.00082	.00126	.02358	.14685
#3	.01201	.01326	.00076	-.00085	.00106	.02533	.14466

Sample Name: S1 Acquired: 10/2/2025 10:42:02 Type: Cal
Method: 6010-200.7 NEW(v241) Mode: IR Corr. Factor: 1.000000
User: Jaswal 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	7948.9	99410.	5909.1	6220.8	9446.4
Stddev	10.2	42.	30.2	22.8	17.3
%RSD	.12884	.04262	.51122	.36707	.18281
#1	7937.4	99446.	5886.3	6195.0	9427.1
#2	7957.0	99363.	5897.6	6238.4	9451.7
#3	7952.2	99421.	5943.3	6229.0	9460.3

Sample Name: S2 Acquired: 10/2/2025 10:46:15 Type: Cal
Method: 6010-200.7 NEW(v241) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	Be2348	Cd2265
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.04418	.05089	.16376	.06043	.06325	.14494	3.4203	.54163	1.2015
Stddev	.00015	.00139	.00035	.00037	.00026	.00103	.0204	.00253	.0029
%RSD	.35044	2.7310	.21116	.61146	.40355	.71062	.59560	.46771	.23840

#1	.04409	.05011	.16336	.06013	.06304	.14604	3.4044	.53871	1.1983
#2	.04436	.05250	.16401	.06084	.06353	.14400	3.4433	.54307	1.2024
#3	.04410	.05008	.16390	.06032	.06317	.14479	3.4133	.54312	1.2038

Elem	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.21843	.03600	.31163	.12678	.00157	.16457	.04890	.22914	.03792
Stddev	.00121	.00011	.00032	.00064	.00001	.00043	.00035	.00041	.00003
%RSD	.55545	.31578	.10301	.50594	.54597	.25840	.71463	.17691	.08620

#1	.21976	.03603	.31183	.12647	.00157	.16451	.04923	.22897	.03796
#2	.21737	.03588	.31126	.12751	.00157	.16502	.04853	.22886	.03790
#3	.21816	.03610	.31181	.12635	.00156	.16417	.04895	.22961	.03791

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02086	.04650	.92446	.01022	1.0160	.48640	.13818	.20871	.00155
Stddev	.00020	.00085	.00105	.00017	.0043	.00142	.00050	.00112	.00005
%RSD	.93793	1.8370	.11382	1.6906	.42249	.29139	.35886	.53556	2.9090

#1	.02065	.04587	.92332	.01039	1.0114	.48478	.13762	.20761	.00158
#2	.02088	.04747	.92540	.01021	1.0199	.48741	.13852	.20869	.00150
#3	.02104	.04615	.92466	.01005	1.0166	.48701	.13842	.20984	.00158

Elem	P_1774	S_1820	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.03695	.02246	.54838	5.3169
Stddev	.00038	.00015	.00432	.0202
%RSD	1.0211	.67123	.78854	.37945

#1	.03651	.02233	.54645	5.3022
#2	.03721	.02262	.55333	5.3399
#3	.03711	.02243	.54535	5.3085

Sample Name: S2 Acquired: 10/2/2025 10:46:15 Type: Cal
Method: 6010-200.7 NEW(v241) Mode: IR Corr. Factor: 1.000000
User: Jaswal 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	8031.0	99625.	6112.3	6209.0	9422.2
Stddev	17.7	82.	18.0	3.3	10.0
%RSD	.22040	.08242	.29397	.05293	.10594
#1	8047.9	99661.	6126.6	6212.0	9432.2
#2	8012.6	99682.	6092.1	6209.4	9412.3
#3	8032.6	99530.	6118.1	6205.5	9422.0

Sample Name: S3 Acquired: 10/2/2025 10:50:15 Type: Cal
Method: 6010-200.7 NEW(v241) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	Be2348	Cd2265
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13956	.15689	.51646	.18806	.19551	.44813	10.211	1.6634	3.8711
Stddev	.00014	.00077	.00039	.00069	.00029	.00189	.081	.0086	.0067
%RSD	.09937	.49266	.07606	.36804	.14892	.42150	.79232	.51982	.17237

#1	.13954	.15777	.51612	.18732	.19571	.45029	10.305	1.6729	3.8693
#2	.13944	.15655	.51636	.18869	.19564	.44730	10.166	1.6613	3.8655
#3	.13971	.15635	.51689	.18817	.19517	.44679	10.164	1.6560	3.8785

Elem	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.66852	.11177	.98558	.38966	.00471	.49847	.15080	.72560	.11671
Stddev	.00427	.00055	.00082	.00031	.00001	.00500	.00121	.00128	.00040
%RSD	.63867	.49390	.08285	.07868	.17660	1.0025	.80159	.17704	.33954

#1	.67339	.11154	.98572	.38948	.00471	.50424	.15213	.72668	.11657
#2	.66677	.11240	.98470	.38948	.00472	.49542	.15049	.72418	.11715
#3	.66540	.11138	.98631	.39001	.00471	.49576	.14977	.72595	.11640

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.05722	.14475	2.8020	.03147	3.0928	1.5022	.44053	.63496	.00470
Stddev	.00041	.00053	.0040	.00014	.0082	.0006	.00090	.00511	.00004
%RSD	.72504	.36794	.14464	.44969	.26639	.04037	.20527	.80445	.86174

#1	.05761	.14508	2.8040	.03132	3.1023	1.5021	.44117	.64079	.00466
#2	.05727	.14504	2.8046	.03160	3.0879	1.5017	.43950	.63279	.00474
#3	.05678	.14413	2.7973	.03148	3.0882	1.5029	.44092	.63130	.00471

Elem	P_1774	S_1820	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.12483	.07201	1.6070	16.276
Stddev	.00036	.00022	.0115	.130
%RSD	.28862	.30849	.71842	.79661

#1	.12521	.07227	1.6200	16.425
#2	.12450	.07188	1.5981	16.206
#3	.12479	.07188	1.6028	16.196

Sample Name: S3 Acquired: 10/2/2025 10:50:15 Type: Cal
Method: 6010-200.7 NEW(v241) Mode: IR Corr. Factor: 1.000000
User: Jaswal 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	7801.7	97902.	6038.1	6024.3	8863.6
Stddev	20.2	561.	38.1	43.2	30.6
%RSD	.25950	.57257	.63164	.71645	.34535
#1	7802.0	97949.	5999.6	6000.2	8852.8
#2	7821.8	97319.	6038.9	5998.6	8898.2
#3	7781.3	98437.	6075.9	6074.2	8839.9

Sample Name: S4 Acquired: 10/2/2025 10:54:12 Type: Cal
Method: 6010-200.7 NEW(v241) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	Be2348	Cd2265
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.28117	.28587	1.0535	.37473	.39101	.89332	20.529	3.2901	7.8964
Stddev	.00068	.00416	.0028	.00081	.00073	.00056	.081	.0159	.0189
%RSD	.24031	1.4556	.26604	.21660	.18646	.06229	.39289	.48297	.23886

#1	.28116	.28156	1.0537	.37480	.39145	.89268	20.475	3.2992	7.8956
#2	.28050	.28986	1.0507	.37388	.39017	.89355	20.622	3.2993	7.8779
#3	.28185	.28619	1.0563	.37550	.39141	.89372	20.490	3.2717	7.9156

Elem	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1.3331	.22027	2.0068	.77510	.00941	.99692	.29817	1.4746	.23248
Stddev	.0060	.00042	.0042	.00136	.00010	.00441	.00076	.0025	.00045
%RSD	.44863	.18898	.20834	.17531	1.0317	.44211	.25522	.16785	.19499

#1	1.3306	.21981	2.0080	.77601	.00930	.99266	.29738	1.4747	.23278
#2	1.3399	.22062	2.0021	.77353	.00945	1.0015	.29889	1.4721	.23271
#3	1.3288	.22039	2.0102	.77574	.00948	.99664	.29825	1.4771	.23196

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.11355	.29078	5.5907	.06371	6.1965	2.9929	.88663	1.2730	.00948
Stddev	.00071	.00085	.0153	.00042	.0236	.0048	.00252	.0061	.00007
%RSD	.62852	.29239	.27332	.65734	.38071	.16021	.28439	.48080	.71282

#1	.11273	.29012	5.5834	.06324	6.2049	2.9959	.88645	1.2693	.00941
#2	.11395	.29174	5.6082	.06405	6.2148	2.9874	.88420	1.2800	.00954
#3	.11398	.29048	5.5803	.06383	6.1699	2.9955	.88923	1.2696	.00950

Elem	P_1774	S_1820	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.26109	.14658	3.1765	32.675
Stddev	.00083	.00069	.0155	.500
%RSD	.31655	.47122	.48852	1.5311

#1	.26054	.14616	3.1707	33.185
#2	.26070	.14620	3.1940	32.656
#3	.26204	.14737	3.1647	32.185

Sample Name: S4 Acquired: 10/2/2025 10:54:12 Type: Cal
Method: 6010-200.7 NEW(v241) Mode: IR Corr. Factor: 1.000000
User: Jaswal 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	7630.4	96991.	5965.5	5983.0	8472.4
Stddev	11.3	197.	37.2	24.4	16.1
%RSD	.14809	.20342	.62342	.40786	.18949
#1	7634.9	96830.	5937.1	5980.5	8481.3
#2	7638.7	96931.	5951.8	5960.0	8482.0
#3	7617.5	97211.	6007.6	6008.6	8453.9

Sample Name: S5 Acquired: 10/2/2025 10:58:15 Type: Cal
Method: 6010-200.7 NEW(v241) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	Be2348	Cd2265
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.55343	.61538	2.1315	.73586	.77153	1.7933	41.214	6.6259	15.883
Stddev	.00368	.02047	.0118	.00616	.00410	.0031	.129	.0312	.088
%RSD	.66583	3.3266	.55493	.83726	.53201	.17269	.31280	.47143	.55561

#1	.55007	.59998	2.1186	.73098	.76716	1.7966	41.355	6.6547	15.789
#2	.55285	.60755	2.1339	.73382	.77214	1.7929	41.101	6.5927	15.898
#3	.55737	.63861	2.1419	.74278	.77530	1.7904	41.187	6.6302	15.963

Elem	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2.6522	.43149	4.0532	1.5184	.01847	1.9915	.59939	2.9685	.45928
Stddev	.0034	.00074	.0225	.0079	.00007	.0037	.00188	.0156	.00032
%RSD	.13026	.17134	.55535	.52013	.37646	.18523	.31382	.52701	.06905

#1	2.6557	.43146	4.0283	1.5102	.01840	1.9940	.60142	2.9511	.45959
#2	2.6521	.43077	4.0591	1.5190	.01848	1.9873	.59771	2.9734	.45896
#3	2.6488	.43225	4.0721	1.5259	.01854	1.9933	.59905	2.9812	.45927

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.22682	.58704	10.977	.12708	12.530	5.9572	1.7819	2.5551	.01929
Stddev	.00062	.00016	.017	.00066	.043	.0350	.0109	.0011	.00021
%RSD	.27285	.02798	.15120	.51852	.34656	.58738	.61247	.04334	1.0770

#1	.22617	.58721	10.978	.12633	12.576	5.9230	1.7703	2.5545	.01907
#2	.22690	.58689	10.993	.12737	12.489	5.9557	1.7834	2.5544	.01948
#3	.22740	.58700	10.960	.12755	12.525	5.9930	1.7920	2.5564	.01932

Elem	P_1774	S_1820	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.53659	.30227	6.3948	64.444
Stddev	.00414	.00296	.0055	1.405
%RSD	.77126	.97796	.08661	2.1805

#1	.53255	.29957	6.3970	64.769
#2	.53641	.30182	6.3885	62.905
#3	.54082	.30543	6.3989	65.658

Sample Name: S5 Acquired: 10/2/2025 10:58:15 Type: Cal
Method: 6010-200.7 NEW(v241) Mode: IR Corr. Factor: 1.000000
User: Jaswal 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	7692.7	96547.	5800.5	5974.2	8339.7
Stddev	19.7	458.	22.6	15.9	21.5
%RSD	.25615	.47462	.38985	.26685	.25738
#1	7715.0	96610.	5778.9	5981.3	8363.9
#2	7685.3	96060.	5798.7	5956.0	8323.1
#3	7677.8	96970.	5824.0	5985.4	8332.0

Sample Name: ICV01 Acquired: 10/2/2025 11:07:22 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICV01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.010504	3.982122	3.869810	4.038411	4.083734	7.884692
Stddev	.018374	.035132	.010004	.012755	.011600	.015762
%RSD	.4581396	.8822328	.2585244	.3158366	.2840603	.1999087

#1	4.017100	4.004897	3.866797	4.037684	4.080911	7.889089
#2	3.989743	3.941662	3.861658	4.026035	4.073805	7.897789
#3	4.024670	3.999806	3.880974	4.051513	4.096485	7.867198

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.651655	.2011699	1.971090	19.49550	.8238759	1.972429
Stddev	.012765	.0015770	.004833	.03263	.0033007	.004691
%RSD	.1668205	.7839130	.2452169	.1673715	.4006339	.2378377

#1	7.644612	.2022405	1.969306	19.50418	.8200872	1.971578
#2	7.666389	.2019103	1.967403	19.52291	.8254103	1.968221
#3	7.643964	.1993590	1.976562	19.45941	.8261300	1.977487

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.009452	3.991914	1.935462	19.78302	1.975161	.9870300
Stddev	.002829	.046216	.000619	.12028	.004813	.0022614
%RSD	.2802420	1.157741	.0319926	.6079962	.2436896	.2291120

#1	1.008864	3.944094	1.934931	19.82536	1.974412	.9848968
#2	1.006964	3.995308	1.935313	19.87640	1.970766	.9867924
#3	1.012529	4.036339	1.936142	19.64730	1.980305	.9894009

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	19.03587	1.957589	2.006899	19.55253	3.912031	4.026561
Stddev	.19524	.006543	.001315	.22772	.037345	.011415
%RSD	1.025641	.3342397	.0655188	1.164653	.9546255	.2834983

#1	18.85135	1.953684	2.007960	19.29091	3.946246	4.030383
#2	19.01596	1.965142	2.007308	19.66050	3.917655	4.013725
#3	19.24030	1.953939	2.005428	19.70618	3.872193	4.035575

Sample Name: ICV01 Acquired: 10/2/2025 11:07:22 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICV01 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.009164	3.933565	F 3.631085	F .0023974	F .0292042	F -.004843
Stddev	.012476	.015463	.061009	.0013699	.0005927	.004626
%RSD	.3111880	.3930970	1.680183	57.14206	2.029651	95.51546
#1	4.012767	3.916759	3.564098	.0037681	.0296908	-.005393
#2	3.995283	3.947190	3.645695	.0023958	.0285441	.000033
#3	4.019443	3.936745	3.683463	.0010283	.0293778	-.009170

Elem	Sr4077
Units	ppm
Avg	F -.003439
Stddev	.000059
%RSD	1.716340
#1	-.003500
#2	-.003382
#3	-.003434

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	8038.933	98654.35	6141.017	6126.934	9054.511
Stddev	21.112	827.58	44.186	55.434	20.096
%RSD	.2626252	.8388635	.7195198	.9047530	.2219476
#1	8016.995	99566.44	6142.246	6190.723	9034.492
#2	8059.110	97951.41	6096.230	6099.631	9074.684
#3	8040.694	98445.21	6184.576	6090.447	9054.356

Sample Name: LLICV01 Acquired: 10/2/2025 11:11:20 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: LLICV01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0216894	.0460871	.0131975	.0227769	.0522646	.1198364	.1130984
Stddev	.0007024	.0013825	.0008436	.0011793	.0019457	.0093288	.0019183
%RSD	3.238547	2.999795	6.391832	5.177652	3.722838	7.784587	1.696103

#1	.0220068	.0456107	.0123575	.0230066	.0512044	.1093853	.1128401
#2	.0208843	.0476448	.0140445	.0214996	.0510793	.1273217	.1151327
#3	.0221771	.0450057	.0131905	.0238244	.0545102	.1228023	.1113224

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0068043	.0060276	2.110052	.0112162	.0301083	.0221810	.1041650
Stddev	.0001354	.0000718	.030480	.0000702	.0001964	.0004600	.0074037
%RSD	1.990047	1.190969	1.444517	.6257406	.6521657	2.073861	7.107715

#1	.0069582	.0060086	2.103477	.0112667	.0298829	.0220513	.0956160
#2	.0067036	.0059672	2.083396	.0112458	.0302423	.0226919	.1083934
#3	.0067509	.0061069	2.143283	.0111360	.0301998	.0217998	.1084855

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0215475	2.217155	.0403550	.0110047	1.686488	.0422250	.0423871
Stddev	.0009729	.034717	.0003346	.0008463	.034990	.0032076	.0001094
%RSD	4.514885	1.565825	.8290912	7.690024	2.074728	7.596447	.2580313

#1	.0213795	2.203891	.0405495	.0109442	1.646195	.0458923	.0425078
#2	.0225935	2.256548	.0399686	.0101903	1.709206	.0408409	.0422947
#3	.0206697	2.191025	.0405468	.0118796	1.704064	.0399419	.0423587

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.769748	.1191891	.2038497	.0414877	.0413868	.3596071	.0182253
Stddev	.060756	.0004650	.0003867	.0005632	.0038541	.0086437	.0005381
%RSD	3.433005	.3901451	.1897197	1.357426	9.312475	2.403649	2.952623

#1	1.837412	.1186747	.2039936	.0416516	.0371572	.3590582	.0176791
#2	1.751961	.1193130	.2034117	.0408608	.0423027	.3685122	.0187550
#3	1.719871	.1195797	.2041439	.0419508	.0447004	.3512510	.0182418

Sample Name: LLICV01 Acquired: 10/2/2025 11:11:20 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: LLICV01 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0178532	.0198670	.0214294
Stddev	.0002115	.0022761	.0000672
%RSD	1.184833	11.45651	.3133730

#1	.0176377	.0196055	.0214052
#2	.0178613	.0222626	.0215053
#3	.0180605	.0177330	.0213777

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	8222.637	99523.48	6029.267	6204.944	9751.177
Stddev	15.538	861.25	36.892	40.529	20.726
%RSD	.1889661	.8653702	.6118741	.6531736	.2125501

#1	8240.370	100517.7	6001.811	6251.560	9774.251
#2	8216.133	99007.6	6071.202	6178.057	9734.137
#3	8211.408	99045.1	6014.789	6185.215	9745.143

Sample Name: ICB01 Acquired: 10/2/2025 11:27:08 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal 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	-.000856	.0038102	.0030384	-.003997	.0023852	.0177943	.0152777
Stddev	.001553	.0021148	.0014143	.002583	.0002540	.0191147	.0020396
%RSD	181.3369	55.50342	46.54936	64.62429	10.64968	107.4206	13.35027

#1	.000108	.0046071	.0046709	-.001116	.0025090	.0052483	.0164339
#2	-.002647	.0054107	.0021847	-.004767	.0025535	.0083408	.0164764
#3	-.000030	.0014127	.0022594	-.006106	.0020930	.0397937	.0129226

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000039	-.000138	.0041291	.0008650	-.000127	.0002298	.0029612
Stddev	.000086	.000030	.0345681	.0004816	.000277	.0003779	.0030436
%RSD	218.6366	22.01930	837.1866	55.67490	217.5135	164.4696	102.7830

#1	-.000139	-.000104	.0440037	.0003480	.000190	.0002002	.0011940
#2	.000003	-.000148	-.017378	.0013008	-.000320	-.000132	.0064756
#3	.000018	-.000162	-.014238	.0009463	-.000252	.000622	.0012140

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000564	.0354201	-.000073	-.000633	-.695784	.0021646	-.000880
Stddev	.000633	.0220426	.000160	.000171	.013408	.0046237	.000079
%RSD	112.3215	62.23179	219.6403	26.98357	1.927012	213.6011	8.984620

#1	-.000654	.0458068	-.000170	-.000437	-.699329	.0021255	-.000789
#2	-.001147	.0101031	.000112	-.000714	-.707063	.0068078	-.000933
#3	.000110	.0503504	-.000160	-.000748	-.680960	-.002439	-.000918

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.710999	.0042463	.0000013	F -.028711	.0014029	-.004529	-.002199
Stddev	.084364	.0012661	.0000296	.000232	.0020308	.016359	.000341
%RSD	11.86551	29.81639	2339.214	.8078604	144.7609	361.2109	15.50997

#1	-.805078	.0048985	-.000018	-.028893	.0034302	.000697	-.002522
#2	-.685849	.0027871	.000035	-.028450	.0014100	.008578	-.001842
#3	-.642071	.0050534	-.000013	-.028790	-.000631	-.022863	-.002232

Sample Name: ICB01 Acquired: 10/2/2025 11:27:08 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICB01 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.006413	F -.015674	-.000253
Stddev	.001909	.001521	.000067
%RSD	29.76715	9.701374	26.24419

#1	-.005377	-.013994	-.000251
#2	-.008616	-.016072	-.000188
#3	-.005245	-.016956	-.000321

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	8223.254	102621.4	5749.286	6280.691	9810.663
Stddev	2.157	443.1	30.484	39.215	12.852
%RSD	.0262306	.4317728	.5302138	.6243759	.1309987

#1	8222.714	102315.6	5714.087	6276.434	9820.346
#2	8225.630	102419.1	5767.121	6243.777	9815.561
#3	8221.418	103129.6	5766.649	6321.860	9796.083

Sample Name: CRI01 Acquired: 10/2/2025 11:36:51 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CRI01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0231254	.0466232	.0132879	.0237572	.0534116	.1162570	.1128815
Stddev	.0011278	.0013609	.0007389	.0031150	.0006259	.0219336	.0004956
%RSD	4.877074	2.918989	5.560602	13.11201	1.171897	18.86649	.4390246

#1	.0233459	.0456896	.0141067	.0220249	.0541111	.0925282	.1126805
#2	.0241266	.0459953	.0126708	.0218933	.0532191	.1204537	.1125180
#3	.0219035	.0481847	.0130861	.0273533	.0529045	.1357890	.1134460

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0069523	.0060222	2.082300	.0104810	.0302459	.0224710	.0884834
Stddev	.0000614	.0000931	.002978	.0004430	.0002564	.0001860	.0075588
%RSD	.8833968	1.545268	.1429908	4.227067	.8476596	.8277639	8.542561

#1	.0069427	.0060981	2.080882	.0109904	.0304022	.0223789	.0971158
#2	.0068963	.0059184	2.085721	.0102669	.0299500	.0226851	.0852841
#3	.0070180	.0060502	2.080295	.0101857	.0303856	.0223491	.0830505

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0209677	2.248130	.0407534	.0102978	1.486411	.0372377	.0414577
Stddev	.0010895	.059226	.0005337	.0002742	.019272	.0091694	.0001941
%RSD	5.195855	2.634478	1.309668	2.662768	1.296537	24.62408	.4681356

#1	.0219757	2.239560	.0413153	.0101788	1.465348	.0306371	.0412475
#2	.0198119	2.193655	.0406916	.0101032	1.503162	.0333684	.0414956
#3	.0211156	2.311174	.0402532	.0106114	1.490724	.0477076	.0416301

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.532351	.1125330	.1998926	.0416226	.0389818	.3239771	.0178130
Stddev	.082598	.0013984	.0006383	.0004845	.0018028	.0144118	.0013397
%RSD	5.390276	1.242663	.3193216	1.164136	4.624677	4.448400	7.521132

#1	1.627441	.1130452	.2003297	.0417476	.0389553	.3398107	.0190430
#2	1.491197	.1136032	.2001880	.0420324	.0407976	.3204956	.0163854
#3	1.478416	.1109507	.1991601	.0410878	.0371923	.3116250	.0180106

Sample Name: CRI01 Acquired: 10/2/2025 11:36:51 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CRI01 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0174007	.0184881	.0209090
Stddev	.0019164	.0011463	.0003855
%RSD	11.01307	6.200203	1.843793

#1	.0192184	.0197976	.0213037
#2	.0153990	.0180001	.0205333
#3	.0175848	.0176665	.0208901

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	8102.738	100873.3	5793.211	6240.747	9471.940
Stddev	19.366	345.3	7.498	45.736	26.940
%RSD	.2390045	.3422835	.1294309	.7328673	.2844181

#1	8105.839	101016.3	5784.837	6254.233	9482.508
#2	8082.010	101124.1	5795.494	6278.225	9441.318
#3	8120.367	100479.5	5799.303	6189.784	9491.993

Sample Name: ICSA01 Acquired: 10/2/2025 11:42:04 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSA01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0058495	.0139547	-.007865	-.008133	.0019942	245.4776	.0186577
Stddev	.0013925	.0020037	.002467	.004932	.0018859	.9904	.0002211
%RSD	23.80591	14.35842	31.36852	60.63888	94.56803	.4034621	1.184973

#1	.0072620	.0160101	-.006002	-.002450	.0013388	246.6055	.0188992
#2	.0044779	.0120071	-.010663	-.010658	.0041203	245.0772	.0184653
#3	.0058084	.0138470	-.006931	-.011291	.0005234	244.7500	.0186086

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0019816	-.001226	236.3809	.0507701	.0002724	.0035309	95.96711
Stddev	.0001241	.000180	.8581	.0001130	.0000823	.0007208	1.21403
%RSD	6.263320	14.70838	.3630337	.2225185	30.22927	20.41497	1.265049

#1	.0020515	-.001021	237.2045	.0506710	.0003007	.0039813	94.82632
#2	.0018383	-.001297	236.4461	.0508931	.0003368	.0039118	95.83196
#3	.0020551	-.001360	235.4920	.0507463	.0001796	.0026995	97.24307

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002294	250.6928	.0034141	-.003772	-.180733	.0025376	-.000077
Stddev	.0012815	.9714	.0003224	.000928	.043229	.0026046	.000410
%RSD	558.5745	.3875006	9.442676	24.60167	23.91848	102.6406	535.2997

#1	-.000214	251.7056	.0031591	-.004839	-.230643	.0055450	.000351
#2	.001674	250.6040	.0033068	-.003318	-.156455	.0010492	-.000467
#3	-.000772	249.7688	.0037765	-.003158	-.155102	.0010185	-.000114

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.102202	-.006490	.0006508	-.002046	-.001122	-.006159	-.000945
Stddev	.046239	.006815	.0002356	.000257	.002057	.022197	.001338
%RSD	45.24259	105.0151	36.20479	12.56553	183.2446	360.3981	141.6195

#1	-.105498	-.013153	.0004105	-.002208	.001212	.018596	-.001118
#2	-.146705	-.006784	.0006604	-.002182	-.002668	-.024289	.000472
#3	-.054404	.000468	.0008814	-.001750	-.001911	-.012784	-.002187

Sample Name: ICSA01 Acquired: 10/2/2025 11:42:04 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSA01 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.006561	F -.031118	.0066149
Stddev	.001953	.000688	.0015363
%RSD	29.77179	2.211241	23.22540

#1	-.004716	-.030571	.0080885
#2	-.008607	-.030892	.0067335
#3	-.006361	-.031890	.0050227

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7482.126	89404.01	5517.234	5741.288	8082.288
Stddev	16.715	385.54	73.231	24.628	19.877
%RSD	.2234015	.4312325	1.327305	.4289608	.2459369

#1	7477.108	89430.93	5439.618	5730.154	8077.406
#2	7468.494	89775.39	5526.981	5769.517	8065.306
#3	7500.775	89005.72	5585.102	5724.194	8104.151

Sample Name: ICSAB01 Acquired: 10/2/2025 11:46:10 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSAB01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1104414	.1148952	.0426298	.0467042	.6221278	249.1307
Stddev	.0026458	.0008453	.0026046	.0031048	.0024972	.4365
%RSD	2.395684	.7356926	6.109862	6.647749	.4013899	.1752045

#1	.1117369	.1155636	.0396400	.0438395	.6246661	249.6092
#2	.1073975	.1151770	.0444078	.0462697	.6196739	249.0285
#3	.1121898	.1139450	.0438414	.0500033	.6220435	248.7544

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5147428	.5476138	1.044159	240.0373	.5940481	.5145864
Stddev	.0009081	.0039660	.001305	.1388	.0019871	.0004879
%RSD	.1764237	.7242412	.1250050	.0578211	.3345047	.0948057

#1	.5153158	.5440615	1.043214	240.1974	.5955866	.5141456
#2	.5136958	.5518931	1.043615	239.9644	.5918046	.5145032
#3	.5152169	.5468868	1.045648	239.9502	.5947532	.5151106

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5101702	98.31524	.4973366	254.9160	1.032925	.2122198
Stddev	.0012496	.99117	.0021397	.3421	.001253	.0007450
%RSD	.2449480	1.008152	.4302388	.1342081	.1212637	.3510363

#1	.5088558	99.22451	.4976061	255.2137	1.033026	.2124925
#2	.5113431	97.25867	.4993288	254.9922	1.031625	.2113769
#3	.5103116	98.46253	.4950749	254.5423	1.034124	.2127899

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.229019	.4994687	1.057566	-.265058	1.030921	1.030446
Stddev	.033101	.0045809	.003301	.026968	.004893	.001086
%RSD	14.45328	.9171461	.3121778	10.17441	.4746501	.1054253

#1	-.224672	.4947838	1.057685	-.237682	1.026327	1.029463
#2	-.198306	.4996843	1.054206	-.265894	1.036066	1.031613
#3	-.264078	.5039379	1.060806	-.291598	1.030370	1.030264

Sample Name: ICSAB01 Acquired: 10/2/2025 11:46:10 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal 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	1.059368	.9993518	.9717933	F .0027809	F -.000634	F -.038114
Stddev	.003504	.0021671	.0258255	.0006680	.003690	.001110
%RSD	.3307639	.2168478	2.657511	24.02075	581.7500	2.911197

#1	1.055697	1.001328	.9454007	.0029674	-.003951	-.036832
#2	1.062677	.999694	.9970117	.0033359	.003341	-.038753
#3	1.059731	.997034	.9729675	.0020395	-.001293	-.038756

Elem	Sr4077
Units	ppm
Avg	F .0058375
Stddev	.0009553
%RSD	16.36404

#1	.0050644
#2	.0069054
#3	.0055427

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7434.976	89366.44	5590.968	5699.901	8040.414
Stddev	17.007	651.58	22.481	47.139	19.894
%RSD	.2287423	.7291082	.4021014	.8270145	.2474248

#1	7416.141	88696.96	5585.315	5671.447	8017.445
#2	7439.583	89998.50	5571.852	5754.314	8052.203
#3	7449.205	89403.85	5615.736	5673.943	8051.594

Sample Name: ICSADLX20 Acquired: 10/2/2025 11:50:11 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSA01DLX20 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0008752	.0056413	.0007634	.0048261	.0014293	13.44265	.0182722
Stddev	.0017018	.0008081	.0004317	.0010523	.0001276	.06375	.0010520
%RSD	194.4348	14.32489	56.55001	21.80515	8.927102	.4742723	5.757461

#1	.0028375	.0065449	.0012492	.0060388	.0015009	13.47812	.0180320
#2	-.000016	.0053908	.0006171	.0042850	.0015051	13.48078	.0173611
#3	-.000196	.0049880	.0004238	.0041543	.0012820	13.36904	.0194236

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003059	-.000216	13.13294	.0030125	-.000048	-.000259	5.016671
Stddev	.0000889	.000062	.04329	.0004226	.000248	.000213	.033570
%RSD	29.05078	28.79492	.3296196	14.02756	518.3236	82.31038	.6691607

#1	.0002053	-.000286	13.17721	.0032431	-.000256	-.000374	5.054821
#2	.0003736	-.000193	13.13091	.0025248	.000226	-.000013	5.003541
#3	.0003389	-.000168	13.09071	.0032697	-.000114	-.000389	4.991650

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001856	14.23205	-.000082	-.000511	-.505316	.0011192	-.001285
Stddev	.0009905	.07775	.000304	.000672	.022251	.0051126	.000275
%RSD	533.8022	.5462923	369.9898	131.4283	4.403328	456.7911	21.37929

#1	.0011768	14.29085	.000224	-.000673	-.487648	-.004609	-.001424
#2	.0001842	14.14390	-.000384	.000227	-.530305	.002747	-.000969
#3	-.000804	14.26141	-.000086	-.001087	-.497996	.005219	-.001463

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.572629	-.001185	-.000071	.0010387	.0013041	-.036483	-.004301
Stddev	.081295	.000998	.000122	.0001195	.0019948	.026714	.000928
%RSD	14.19672	84.27481	170.9303	11.50677	152.9654	73.22222	21.58457

#1	-.659638	-.000352	.000066	.0009683	.0019664	-.066642	-.003743
#2	-.559636	-.002292	-.000112	.0011767	.0028835	-.015792	-.005373
#3	-.498614	-.000910	-.000167	.0009710	-.000938	-.027017	-.003788

Sample Name: ICSADLX20 Acquired: 10/2/2025 11:50:11 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSA01DLX20 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.005043	-.010388	.0004004
Stddev	.002916	.003466	.0001453
%RSD	57.81416	33.36879	36.27583
#1	-.007896	-.014367	.0005574
#2	-.002069	-.008772	.0003733
#3	-.005165	-.008024	.0002707

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	8124.972	98353.65	5758.067	6059.383	9540.375
Stddev	12.050	562.32	33.614	2.473	14.258
%RSD	.1483041	.5717286	.5837656	.0408189	.1494472
#1	8129.353	98932.95	5784.758	6061.440	9543.732
#2	8111.345	98317.96	5769.126	6060.072	9524.738
#3	8134.218	97810.02	5720.317	6056.639	9552.655

Sample Name: ICSABDLX20 Acquired: 10/2/2025 11:54:20 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSAB01DLX20 Custom ID2:
Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0067733	.0102947	.0020860	.0080883	.0323017	12.39232	.0408283
Stddev	.0009024	.0022476	.0015431	.0001980	.0017594	.05373	.0006753
%RSD	13.32246	21.83231	73.97457	2.447542	5.446704	.4336062	1.654007

#1	.0057314	.0083174	.0014988	.0079774	.0315291	12.39724	.0415742
#2	.0073059	.0127391	.0009227	.0083169	.0343152	12.33630	.0402584
#3	.0072826	.0098277	.0038365	.0079707	.0310609	12.44343	.0406524

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0281534	.0500036	12.16817	.0300040	.0247234	.0264335	4.656006
Stddev	.0002565	.0000994	.01685	.0001541	.0001808	.0008432	.023849
%RSD	.9111723	.1987500	.1385044	.5136823	.7311961	3.189846	.5122223

#1	.0284452	.0501151	12.18440	.0301169	.0249055	.0254602	4.637917
#2	.0280514	.0499717	12.16935	.0300667	.0245440	.0268984	4.647068
#3	.0279635	.0499242	12.15076	.0298284	.0247207	.0269418	4.683033

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0250708	13.10380	.0499377	.0097210	-.499124	.0248636	.0514555
Stddev	.0008394	.04112	.0002263	.0007112	.022043	.0032327	.0001892
%RSD	3.348227	.3138006	.4531701	7.315588	4.416382	13.00196	.3677893

#1	.0246424	13.05743	.0498531	.0089191	-.480087	.0242135	.0515842
#2	.0245320	13.11815	.0497659	.0099690	-.494010	.0283720	.0512382
#3	.0260380	13.13583	.0501942	.0102749	-.523274	.0220053	.0515441

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.561215	.0518584	.0506941	.0513259	.0525032	.0364536	-.001901
Stddev	.046091	.0016133	.0000607	.0005483	.0026201	.0208528	.001044
%RSD	8.212792	3.110896	.1197167	1.068258	4.990349	57.20384	54.93044

#1	-.609230	.0530289	.0506308	.0508774	.0520621	.0133508	-.002850
#2	-.517324	.0525281	.0507518	.0519371	.0501316	.0538818	-.002069
#3	-.557093	.0500181	.0506996	.0511632	.0553158	.0421282	-.000783

Sample Name: ICSABDLX20 Acquired: 10/2/2025 11:54:20 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSAB01DLX20 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.000005	-.010824	.0004536
Stddev	.001420	.003228	.0001894
%RSD	27460.17	29.82493	41.75145

#1	.001612	-.013389	.0002868
#2	-.000580	-.011883	.0006595
#3	-.001047	-.007199	.0004146

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	8000.901	98096.25	5767.093	6126.877	9319.137
Stddev	6.492	252.71	15.713	32.284	5.189
%RSD	.0811412	.2576189	.2724563	.5269288	.0556796

#1	8007.976	98321.28	5750.423	6122.404	9314.084
#2	7999.509	98144.63	5781.632	6161.165	9324.451
#3	7995.218	97822.85	5769.224	6097.063	9318.875

Sample Name: CCV01 Acquired: 10/2/2025 11:58:26 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal 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	5.095074	5.078578	5.083553	5.122565	4.954245	9.907362	9.628780
Stddev	.016086	.118786	.010034	.018219	.004201	.042041	.112785
%RSD	.3157131	2.338954	.1973795	.3556670	.0847860	.4243429	1.171337

#1	5.084263	4.945182	5.076035	5.109354	4.957247	9.934280	9.693314
#2	5.087399	5.117634	5.079676	5.114992	4.949444	9.928888	9.694478
#3	5.113560	5.172919	5.094947	5.143350	4.956043	9.858917	9.498548

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2674385	2.531834	24.84214	1.041526	2.492503	1.262017	4.738865
Stddev	.0005232	.005023	.14585	.003401	.002001	.001789	.078292
%RSD	.1956354	.1983803	.5871177	.3265632	.0802740	.1417781	1.652120

#1	.2678329	2.527402	24.95503	1.044497	2.490757	1.260165	4.783690
#2	.2676376	2.530812	24.89393	1.042264	2.492065	1.262150	4.784442
#3	.2668450	2.537290	24.67746	1.037816	2.494686	1.263737	4.648462

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.442497	25.07656	2.501977	1.264166	22.84700	2.471087	2.522920
Stddev	.027390	.15062	.002441	.002909	.41364	.005185	.001820
%RSD	1.121392	.6006228	.0975457	.2301268	1.810496	.2098431	.0721401

#1	2.457775	25.19488	2.499940	1.266794	23.15299	2.465140	2.524811
#2	2.458840	25.12778	2.501309	1.264664	23.01162	2.474666	2.521181
#3	2.410876	24.90701	2.504682	1.261040	22.37639	2.473455	2.522767

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	23.28794	5.306156	4.961630	5.101696	4.880227	4.733376	5.172741
Stddev	.17067	.002986	.009781	.014091	.046493	.014820	.019410
%RSD	.7328511	.0562686	.1971415	.2761972	.9526773	.3130955	.3752363

#1	23.41910	5.302760	4.953238	5.090373	4.906731	4.747136	5.151128
#2	23.34974	5.308370	4.959279	5.097240	4.907406	4.735307	5.178413
#3	23.09499	5.307338	4.972373	5.117476	4.826543	4.717685	5.188684

Sample Name: CCV01 Acquired: 10/2/2025 11:58:26 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV01 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	5.042924	4.737169	4.890031
Stddev	.026802	.047647	.037674
%RSD	.5314814	1.005804	.7704185

#1	5.014051	4.768358	4.868980
#2	5.047710	4.760825	4.867587
#3	5.067011	4.682323	4.933525

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7826.667	95018.86	5590.567	5999.996	8657.938
Stddev	13.863	678.40	29.140	36.178	14.488
%RSD	.1771199	.7139587	.5212284	.6029739	.1673361

#1	7841.300	94611.52	5582.972	5985.360	8673.474
#2	7824.971	94643.07	5565.977	5973.430	8655.542
#3	7813.731	95801.99	5622.752	6041.200	8644.798

Sample Name: CCB01 Acquired: 10/2/2025 12:02:30 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal 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	.0003567	.0037152	.0006793	.0053975	.0018821	.0047627	.0138459
Stddev	.0013540	.0038231	.0005961	.0007429	.0016645	.0225533	.0007331
%RSD	379.6408	102.9054	87.75279	13.76389	88.43656	473.5394	5.294778

#1	.0014096	.0054361	.0001158	.0061607	.0031129	-.013465	.0136794
#2	-.001171	-.000666	.0013033	.0053549	-.000012	.029984	.0132104
#3	.000831	.006375	.0006187	.0046768	.002545	-.002231	.0146480

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000982	-.000098	.0147129	.0002381	.0000509	-.000244	-.003273
Stddev	.0000788	.000067	.0190564	.0003163	.0001425	.000449	.011152
%RSD	80.29920	68.13059	129.5216	132.8626	280.2364	184.3046	340.7627

#1	.0001828	-.000162	.0217627	.0004838	.0000918	-.000638	-.014456
#2	.0000847	-.000028	-.006864	.0003494	-.000108	-.000339	.007847
#3	.0000270	-.000105	.029240	-.000119	.000168	.000246	-.003208

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000084	.0314050	-.000540	-.000201	-.516892	.0001021	-.001171
Stddev	.000784	.0137356	.000278	.000966	.031230	.0035251	.000071
%RSD	935.6466	43.73699	51.46562	481.5187	6.041840	3451.911	6.065354

#1	.000739	.0471544	-.000719	-.000980	-.538653	.0009338	-.001200
#2	-.000168	.0251531	-.000220	.000880	-.530913	-.003765	-.001090
#3	-.000823	.0219075	-.000680	-.000501	-.481108	.003137	-.001223

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.541037	.0062511	.0001089	.0020089	-.000567	-.006989	-.003787
Stddev	.051765	.0001541	.0001419	.0008427	.001793	.013407	.000183
%RSD	9.567725	2.464488	130.3278	41.94570	316.1216	191.8212	4.826261

#1	-.563762	.0061986	.0002481	.0011109	.001270	-.019685	-.003602
#2	-.577552	.0061301	.0001143	.0027824	-.002313	.007030	-.003790
#3	-.481797	.0064245	-.000036	.0021334	-.000658	-.008313	-.003968

Sample Name: CCB01 Acquired: 10/2/2025 12:02:30 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB01 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.001723	F -.010724	.0001926
Stddev	.001395	.007489	.0002640
%RSD	80.96196	69.82941	137.0751

#1	-.001571	-.003417	.0000993
#2	-.003188	-.010374	.0004907
#3	-.000410	-.018381	-.000012

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	8058.074	100459.9	5724.615	6253.410	9503.351
Stddev	18.758	249.6	22.907	8.945	12.342
%RSD	.2327792	.2484999	.4001477	.1430493	.1298675

#1	8068.263	100654.2	5750.236	6255.845	9502.980
#2	8036.427	100547.1	5706.112	6243.499	9491.199
#3	8069.532	100178.3	5717.496	6260.886	9515.874

Sample Name: LR-1 Acquired: 10/2/2025 12:06:41 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0021056	.0220187	.0153045	.0048801	.0168759	.3681437	.0327877
Stddev	.0032475	.0034082	.0029130	.0040724	.0050503	.0049898	.0018035
%RSD	154.2321	15.47850	19.03350	83.44937	29.92624	1.355397	5.500470

#1	-.001399	.0231698	.0131258	.0021580	.0223350	.3696441	.0307678
#2	.005013	.0181840	.0186132	.0095618	.0159224	.3625758	.0333591
#3	.002703	.0247023	.0141745	.0029204	.0123703	.3722111	.0342363

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0010206	.0006657	2415.990	.0369462	.0072473	.0066875	.6285023
Stddev	.0000320	.0000589	31.163	.0009112	.0002544	.0004246	.0071180
%RSD	3.137859	8.846110	1.289881	2.466372	3.510715	6.349645	1.132541

#1	.0010121	.0006654	2402.358	.0359898	.0075399	.0068734	.6331108
#2	.0010560	.0007248	2393.966	.0378042	.0071249	.0069876	.6320920
#3	.0009937	.0006070	2451.647	.0370448	.0070773	.0062017	.6203042

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0253247	2204.108	.0281599	-.002628	2352.364	.0113625	.0683965
Stddev	.0013684	1.596	.0005794	.000173	35.949	.0024807	.0004457
%RSD	5.403242	.0724135	2.057570	6.589559	1.528212	21.83266	.6516928

#1	.0258821	2205.830	.0284852	-.002595	2385.477	.0088440	.0681544
#2	.0263265	2203.815	.0285036	-.002815	2357.487	.0138037	.0681242
#3	.0237656	2202.679	.0274910	-.002474	2314.128	.0114397	.0689109

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.026041	.0129748	.0062253	-.019599	-.086922	-.037398	.0141179
Stddev	.963309	.0002917	.0002892	.000333	.002042	.020631	.0024664
%RSD	10.67255	2.248171	4.645557	1.698728	2.349634	55.16616	17.47038

#1	7.992847	.0127351	.0064102	-.019414	-.085765	-.024941	.0151361
#2	9.185782	.0128897	.0063737	-.019399	-.085721	-.026042	.0159122
#3	9.899494	.0132996	.0058920	-.019983	-.089280	-.061213	.0113054

Sample Name: LR-1 Acquired: 10/2/2025 12:06:41 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.2369573	-.354711	.0589026
Stddev	.0039124	.007213	.0004455
%RSD	1.651117	2.033621	.7563355

#1	.2411541	-.361657	.0594165
#2	.2363069	-.347257	.0586264
#3	.2334107	-.355220	.0586648

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5882.183	72253.23	5364.204	4441.631	5942.134
Stddev	13.330	117.20	18.021	12.955	11.109
%RSD	.2266175	.1622129	.3359518	.2916706	.1869455

#1	5894.257	72124.66	5350.129	4450.499	5954.788
#2	5867.878	72280.91	5384.515	4447.630	5933.991
#3	5884.415	72354.12	5357.967	4426.764	5937.622

Sample Name: LR-2 Acquired: 10/2/2025 12:11:03 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0698610	-.118087	-.013388	-.762937	-.122239	1851.132	.0468446
Stddev	.0035368	.010065	.004287	.022231	.013696	9.497	.0008986
%RSD	5.062653	8.523215	32.02059	2.913819	11.20459	.5130130	1.918245

#1	.0685707	-.128963	-.008724	-.787583	-.127822	1848.870	.0459884
#2	.0671504	-.116198	-.014284	-.756831	-.106633	1861.555	.0477803
#3	.0738617	-.109101	-.017156	-.744398	-.132262	1842.971	.0467650

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0539142	-.067666	14.44829	-.263306	.0199309	.0243265	2644.045
Stddev	.0006913	.001085	.19521	.001989	.0001858	.0080955	21.430
%RSD	1.282127	1.602855	1.351077	.7552548	.9321023	33.27838	.8104920

#1	.0540461	-.068478	14.67035	-.264817	.0201069	.0187128	2664.127
#2	.0545300	-.068085	14.30376	-.264047	.0197367	.0206602	2646.525
#3	.0531665	-.066434	14.37076	-.261053	.0199491	.0336065	2621.483

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.451424	.9990549	.0499827	^ *****	6.774691	.0389496	-.000938
Stddev	.001788	.0346635	.0021409	-----	.029661	.0029361	.000950
%RSD	.3959843	3.469631	4.283244	-----	.4378156	7.538113	101.2496

#1	-.453147	1.029378	.0475942	^ -----	6.808885	.0373245	-.001219
#2	-.449578	1.006520	.0517289	^ -----	6.755900	.0371854	-.001716
#3	-.451546	.961267	.0506249	^ -----	6.759289	.0423390	.000120

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1676.706	^ *****	-.015189	-.000183	.0078600	.4780723	.0592185
Stddev	3.240	-----	.000101	.002619	.0020967	.0162567	.0006551
%RSD	.1932445	-----	.6618322	1428.245	26.67507	3.400464	1.106233

#1	1679.690	^ -----	-.015198	.000057	.0057238	.4947281	.0593437
#2	1677.167	^ -----	-.015084	.002307	.0099147	.4772421	.0585098
#3	1673.259	^ -----	-.015284	-.002914	.0079415	.4622466	.0598019

Sample Name: LR-2 Acquired: 10/2/2025 12:11:03 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-438398	.2656549	-2.53507
Stddev	.013415	.0074222	.02060
%RSD	3.059956	2.793922	.8125537

#1	-451170	.2742215	-2.55434
#2	-439602	.2615943	-2.53751
#3	-424422	.2611490	-2.51336

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7062.462	78384.27	5395.054	5218.921	7052.733
Stddev	13.252	402.93	26.157	18.183	8.442
%RSD	.1876426	.5140402	.4848319	.3484125	.1197002

#1	7058.742	78570.03	5372.812	5207.138	7047.170
#2	7051.467	78660.80	5388.479	5239.863	7048.581
#3	7077.176	77921.97	5423.871	5209.762	7062.447

Sample Name: LR-3 Acquired: 10/2/2025 12:42:50 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1072259	.0613871	226.0789	.0386873	.2842126	.0525788	.0261278
Stddev	.0040727	.0010413	2.2393	.0022029	.0086390	.0049266	.0018687
%RSD	3.798230	1.696344	.9905113	5.694146	3.039640	9.370006	7.152283

#1	.1025400	.0620195	226.7998	.0412156	.2937503	.0470886	.0259122
#2	.1092249	.0601852	223.5679	.0376650	.2769124	.0566141	.0243761
#3	.1099129	.0619565	227.8690	.0371813	.2819752	.0540339	.0280949

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.006630	-.002638	.1937233	26.31701	.0086658	54.83723	.0754585
Stddev	.000155	.000100	.0030676	.51800	.0001540	.82575	.0131629
%RSD	2.334638	3.779496	1.583510	1.968315	1.777035	1.505823	17.44390

#1	-.006609	-.002620	.1972318	25.76311	.0088233	55.78144	.0745275
#2	-.006487	-.002549	.1915465	26.78947	.0085155	54.25014	.0627858
#3	-.006795	-.002746	.1923918	26.39845	.0086587	54.48011	.0890621

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	53.44304	-.177083	24.58918	.0051566	-.339611	-.053135	27.51311
Stddev	.12278	.062365	.02675	.0005308	.007287	.006206	.13637
%RSD	.2297446	35.21762	.1087902	10.29423	2.145583	11.68045	.4956551

#1	53.56590	-.211246	24.61557	.0049151	-.347776	-.050672	27.36654
#2	53.32033	-.214902	24.58989	.0057652	-.337290	-.060195	27.63623
#3	53.44290	-.105102	24.56209	.0047894	-.333768	-.048538	27.53657

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.370737	.0117306	-.015637	-.013277	-.049896	-.079294	.1716296
Stddev	.063618	.0011820	.000396	.000072	.002112	.008368	.0038735
%RSD	17.15977	10.07597	2.530689	.5438574	4.231948	10.55274	2.256865

#1	-.444165	.0130181	-.015790	-.013293	-.050212	-.069727	.1677084
#2	-.332168	.0106946	-.015932	-.013198	-.051832	-.085250	.1717268
#3	-.335878	.0114792	-.015187	-.013339	-.047645	-.082905	.1754535

Sample Name: LR-3 Acquired: 10/2/2025 12:42:50 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.1649451	-.012136	.0005394
Stddev	.0017962	.005276	.0004601
%RSD	1.088956	43.47572	85.28935

#1	.1641005	-.015823	.0010149
#2	.1637268	-.006092	.0000964
#3	.1670079	-.014493	.0005071

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7319.678	91233.71	4826.530	5737.916	8966.070
Stddev	17.780	707.40	17.342	74.958	31.633
%RSD	.2429034	.7753664	.3593083	1.306361	.3528114

#1	7334.559	92044.69	4807.205	5822.171	8997.361
#2	7299.989	90912.70	4840.738	5712.950	8934.105
#3	7324.487	90743.74	4831.646	5678.626	8966.745

Sample Name: Q3255-01 Acquired: 10/2/2025 12:55:49 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4563095	-.007876	.4291094	-.052467	.0060025	215.8755
Stddev	.0039087	.001631	.0023671	.003751	.0025231	.1224
%RSD	.8565985	20.70290	.5516410	7.149159	42.03316	.0567211

#1	.4594777	-.009681	.4277261	-.052238	.0056042	216.0100
#2	.4519415	-.006510	.4318427	-.048836	.0037024	215.8461
#3	.4575093	-.007438	.4277595	-.056327	.0087011	215.7705

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.823725	.0238082	.0038660	1496.601	.2807599	.2105034
Stddev	.006303	.0002138	.0002703	10.579	.0013495	.0006924
%RSD	.3456254	.8980705	6.991966	.7068540	.4806584	.3289216

#1	1.816565	.0240503	.0041013	1506.824	.2819867	.2097046
#2	1.826173	.0236450	.0039260	1497.279	.2809787	.2109319
#3	1.828438	.0237294	.0035707	1485.699	.2793144	.2108737

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4171409	250.2435	5.175199	67.80232	.3730310	-.024545
Stddev	.0022584	2.6168	.015960	.07714	.0010123	.001244
%RSD	.5413986	1.045720	.3084010	.1137752	.2713652	5.067067

#1	.4196257	247.2320	5.157041	67.85466	.3722686	-.025974
#2	.4165835	251.9637	5.181550	67.83857	.3726449	-.023709
#3	.4152133	251.5348	5.187007	67.71373	.3741795	-.023951

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	34.97867	.5402258	.5610373	48.04816	.0282950	.0284751
Stddev	.41255	.0129408	.0029471	.52033	.0101311	.0003652
%RSD	1.179433	2.395441	.5252959	1.082932	35.80529	1.282419

#1	34.50602	.5486142	.5614270	47.45406	.0166442	.0288907
#2	35.26646	.5467409	.5637701	48.42280	.0350333	.0283292
#3	35.16354	.5253222	.5579147	48.26763	.0332076	.0282055

Sample Name: Q3255-01 Acquired: 10/2/2025 12:55:49 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0365269	9.079083	5.415063	F 13.53876	F 34.69194	.2361327
Stddev	.0003738	.024587	.033751	.07296	.33093	.0020728
%RSD	1.023214	.2708084	.6232889	.5388781	.9539012	.8778135

#1	.0361743	9.053193	5.377471	13.53036	34.83695	.2337686
#2	.0369187	9.081938	5.442762	13.61556	34.92560	.2376382
#3	.0364877	9.102117	5.424956	13.47037	34.31326	.2369914

Elem	Sr4077
Units	ppm
Avg	F 13.18590
Stddev	.16403
%RSD	1.244014

#1	13.13239
#2	13.05529
#3	13.37000

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	8434.049	97064.87	5669.909	6484.844	7012.425
Stddev	14.735	341.13	24.810	13.674	6.738
%RSD	.1747086	.3514419	.4375804	.2108646	.0960862

#1	8423.925	97455.45	5643.897	6498.755	7011.374
#2	8450.954	96913.83	5693.312	6471.420	7019.627
#3	8427.269	96825.34	5672.519	6484.358	7006.274

Sample Name: Q3256-01 Acquired: 10/2/2025 13:00:03 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1407770	-.009106	3.265757	-.051863	-.000342	144.5312	1.383621
Stddev	.0026180	.001314	.009161	.002808	.004130	.2309	.002016
%RSD	1.859644	14.43452	.2805158	5.415015	1206.002	.1597490	.1457259

#1	.1426973	-.007848	3.274991	-.054945	-.001946	144.7665	1.385078
#2	.1377949	-.010470	3.256671	-.049450	.004349	144.3049	1.384466
#3	.1418386	-.009001	3.265610	-.051193	-.003430	144.5221	1.381320

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0126727	.0058204	235.6341	.2686174	.1019875	.6539182	207.8131
Stddev	.0000915	.0002678	.1595	.0020364	.0006018	.0006638	1.1866
%RSD	.7223104	4.601470	.0677023	.7581087	.5900344	.1015103	.5709757

#1	.0126239	.0061159	235.7899	.2666537	.1025000	.6546815	207.2817
#2	.0127783	.0057516	235.6413	.2684790	.1013249	.6534764	206.9850
#3	.0126158	.0055937	235.4711	.2707194	.1021375	.6535967	209.1724

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.256331	28.98286	.2078156	-.016746	28.36126	.3636956	2.258005
Stddev	.010985	.05163	.0001226	.000764	.10130	.0043467	.007421
%RSD	.3373527	.1781255	.0590073	4.562586	.3571674	1.195150	.3286360

#1	3.264747	28.95653	.2077416	-.015972	28.26871	.3617244	2.250959
#2	3.260343	29.04234	.2077480	-.016766	28.34560	.3606838	2.257305
#3	3.243904	28.94969	.2079571	-.017500	28.46947	.3686787	2.265751

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.34433	.1098749	.0085682	.1676804	2.796682	8.015609	8.843692
Stddev	.04632	.0071216	.0002089	.0010325	.007248	.067818	.096283
%RSD	.4083156	6.481548	2.438098	.6157347	.2591684	.8460749	1.088721

#1	11.30504	.1027823	.0084985	.1685612	2.801864	7.996402	8.925977
#2	11.33255	.1098170	.0088030	.1679359	2.788399	7.959466	8.737801
#3	11.39541	.1170252	.0084029	.1665442	2.799783	8.090959	8.867297

Sample Name: Q3256-01 Acquired: 10/2/2025 13:00:03 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.413980	.1470900	1.063514
Stddev	.058653	.0031148	.003742
%RSD	1.328797	2.117633	.3518549

#1	4.461609	.1446154	1.066542
#2	4.348467	.1505877	1.064670
#3	4.431863	.1460669	1.059331

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	8457.771	97208.37	5449.453	6424.996	8047.356
Stddev	12.722	552.39	16.288	35.006	15.635
%RSD	.1504187	.5682516	.2988866	.5448361	.1942858

#1	8445.046	97236.00	5431.560	6419.568	8030.727
#2	8470.490	97746.43	5453.384	6462.398	8061.758
#3	8457.775	96642.69	5463.416	6393.021	8049.582

Sample Name: Q3256-01DUP Acquired: 10/2/2025 13:04:01 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1192655	-.005734	3.198178	-.048402	.0021221	142.4381	1.363419
Stddev	.0019134	.003083	.000790	.000946	.0025918	.3150	.004385
%RSD	1.604285	53.76841	.0246992	1.953561	122.1331	.2211687	.3216179

#1	.1212958	-.007979	3.197602	-.049002	.0051139	142.2000	1.358448
#2	.1174958	-.007005	3.199078	-.047312	.0005613	142.3191	1.365071
#3	.1190050	-.002219	3.197853	-.048892	.0006911	142.7953	1.366739

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0126882	.0059583	194.1322	.2545085	.0946943	.5688334	191.6748
Stddev	.0001900	.0001833	.6616	.0002508	.0001250	.0015083	1.8576
%RSD	1.497591	3.076186	.3408074	.0985230	.1319772	.2651537	.9691524

#1	.0127437	.0060362	193.4204	.2547973	.0947820	.5698630	190.4197
#2	.0128442	.0060897	194.2478	.2543822	.0947497	.5695352	190.7959
#3	.0124766	.0057489	194.7284	.2543461	.0945512	.5671021	193.8088

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.697173	29.80693	.2085606	-.017192	24.41412	.3360252	2.581233
Stddev	.010687	.22224	.0007680	.000873	.23404	.0071894	.002068
%RSD	.3962382	.7455984	.3682497	5.078747	.9586351	2.139542	.0801313

#1	2.684911	29.56965	.2080022	-.017971	24.23015	.3280426	2.583310
#2	2.704508	30.01022	.2082431	-.017356	24.33468	.3419904	2.579173
#3	2.702100	29.84090	.2094365	-.016248	24.67755	.3380425	2.581215

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.53570	-.133042	.0072152	.1579105	2.501050	4.868109	8.302865
Stddev	.15444	.010652	.0002837	.0004997	.010338	.059171	.032963
%RSD	1.465877	8.006407	3.932206	.3164623	.4133517	1.215488	.3970024

#1	10.48382	-.134773	.0069249	.1579022	2.489794	4.859373	8.337676
#2	10.41388	-.142723	.0072288	.1584143	2.503236	4.813792	8.298789
#3	10.70940	-.121631	.0074919	.1574150	2.510120	4.931163	8.272130

Sample Name: Q3256-01DUP Acquired: 10/2/2025 13:04:01 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.126688	.2098796	.9672823
Stddev	.022502	.0064431	.0044106
%RSD	.5452765	3.069917	.4559766
#1	4.151419	.2120118	.9626738
#2	4.121223	.2026406	.9714639
#3	4.107422	.2149863	.9677092

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	8694.533	102181.7	5559.379	6710.624	8288.433
Stddev	49.915	482.1	22.268	36.891	48.255
%RSD	.5740980	.4718141	.4005446	.5497344	.5821911
#1	8680.379	102410.4	5575.794	6727.983	8286.066
#2	8653.222	102507.0	5534.032	6735.633	8241.405
#3	8749.996	101627.9	5568.312	6668.257	8337.827

Sample Name: CCV02 Acquired: 10/2/2025 13:48:28 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV02 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.199173	5.287565	5.241449	5.318534	4.833843	9.451186
Stddev	.018226	.295676	.027401	.010684	.027098	.146330
%RSD	.3505474	5.591907	.5227660	.2008886	.5605934	1.548274

#1	5.192659	5.300702	5.243640	5.317145	4.828069	9.291702
#2	5.185100	5.576454	5.213019	5.308612	4.810097	9.482594
#3	5.219761	4.985540	5.267688	5.329845	4.863362	9.579262

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.089482	.2455635	2.573881	23.97947	1.074333	2.464254
Stddev	.089931	.0031442	.010542	.27951	.005537	.013587
%RSD	.9894017	1.280415	.4095755	1.165614	.5153887	.5513767

#1	8.988442	.2420150	2.573479	23.66817	1.080446	2.462879
#2	9.119244	.2466730	2.563546	24.06133	1.069654	2.451407
#3	9.160759	.2480027	2.584619	24.20891	1.072899	2.478477

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.262110	5.122069	2.334532	24.71480	2.485705	1.277427
Stddev	.007186	.023181	.029323	.19589	.013798	.003231
%RSD	.5693532	.4525735	1.256072	.7925878	.5551068	.2529394

#1	1.260364	5.145889	2.302005	24.53168	2.483735	1.280315
#2	1.255959	5.099585	2.342648	24.69138	2.472999	1.273937
#3	1.270008	5.120731	2.358942	24.92135	2.500383	1.278028

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	24.83218	2.388302	2.497157	23.29383	4.677955	4.819320
Stddev	.05395	.027748	.001742	.17506	.068255	.015560
%RSD	.2172506	1.161840	.0697427	.7515200	1.459077	.3228771

#1	24.85979	2.357656	2.498348	23.36382	4.599774	4.820972
#2	24.86674	2.411723	2.495158	23.09460	4.708412	4.802999
#3	24.77002	2.395528	2.497964	23.42306	4.725679	4.833989

Sample Name: CCV02 Acquired: 10/2/2025 13:48:28 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV02 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.267696	4.663919	F 4.224088	5.485553	5.304656	F 4.011778
Stddev	.020266	.041516	.031632	.004964	.016558	.028525
%RSD	.3847228	.8901576	.7488527	.0904879	.3121402	.7110398
#1	5.273270	4.617077	4.220819	5.487167	5.302330	3.979011
#2	5.245227	4.678514	4.194217	5.489508	5.322254	4.025259
#3	5.284593	4.696168	4.257228	5.479983	5.289384	4.031064

Elem	Sr4077
Units	ppm
Avg	4.604497
Stddev	.042625
%RSD	.9257238
#1	4.557611
#2	4.614972
#3	4.640908

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7727.668	87325.89	4599.523	5772.921	8498.840
Stddev	27.432	387.33	49.506	47.904	36.138
%RSD	.3549907	.4435471	1.076323	.8298139	.4252104
#1	7696.388	86890.76	4656.270	5719.330	8458.531
#2	7747.634	87453.88	4565.176	5787.849	8528.340
#3	7738.982	87633.03	4577.124	5811.584	8509.650

Sample Name: CCB02 Acquired: 10/2/2025 13:52:23 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal 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	.0024544	.0090732	.0017327	.0061564	.0071677	-.007924	.0361078
Stddev	.0003483	.0039249	.0015279	.0030442	.0041786	.006671	.0018843
%RSD	14.19195	43.25798	88.17809	49.44803	58.29696	84.18105	5.218413

#1	.0028553	.0074553	.0026036	.0080476	.0119927	-.000238	.0382049
#2	.0022824	.0135484	-.000031	.0077771	.0047700	-.012205	.0355615
#3	.0022256	.0062159	.002626	.0026447	.0047405	-.011330	.0345571

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000998	-.000125	.0063778	.0011463	.0001666	.0009059	.0081138
Stddev	.0001857	.000055	.0274685	.0007873	.0001665	.0003047	.0145634
%RSD	186.0691	44.02121	430.6875	68.68456	99.93372	33.63003	179.4892

#1	-.000105	-.000160	.0179548	.0012430	.0001332	.0011306	.0240363
#2	.000256	-.000061	-.024984	.0018808	.0000193	.0005592	-.004532
#3	.000148	-.000152	.026163	.0003151	.0003473	.0010281	.004837

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0009606	.0158437	-.000092	-.000311	-.504966	.0010766	-.000975
Stddev	.0008145	.0916748	.000050	.000746	.036685	.0042098	.000088
%RSD	84.78506	578.6196	53.94864	240.0072	7.264885	391.0265	9.044023

#1	.0001856	.0974209	-.000040	.000549	-.468279	-.003651	-.000944
#2	.0008868	.0334773	-.000097	-.000788	-.541649	.002462	-.001074
#3	.0018095	-.083367	-.000140	-.000694	-.504971	.004419	-.000906

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.667256	.0085404	.0004260	F -.022154	.0025311	.0092140	-.006646
Stddev	.030611	.0013116	.0004107	.000071	.0022042	.0146740	.002343
%RSD	4.587534	15.35707	96.40482	.3185123	87.08486	159.2578	35.24557

#1	-.701616	.0070288	.0004231	-.022091	.0044551	-.007697	-.009332
#2	-.642895	.0092164	.0008382	-.022230	.0030119	.018580	-.005584
#3	-.657258	.0093761	.0000168	-.022142	.0001262	.016759	-.005023

Sample Name: CCB02 Acquired: 10/2/2025 13:52:23 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB02 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0042843	F -.018080	-.000024
Stddev	.0005288	.006490	.000217
%RSD	12.34175	35.89807	899.7711

#1	.0037010	-.010776	-.000257
#2	.0047322	-.020276	.000011
#3	.0044196	-.023187	.000173

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	8024.499	93858.72	4601.172	6099.973	9703.250
Stddev	10.960	386.79	32.955	22.629	5.488
%RSD	.1365759	.4120947	.7162199	.3709649	.0565563

#1	8019.775	94215.98	4563.432	6117.574	9697.144
#2	8016.694	93912.21	4615.822	6107.897	9704.835
#3	8037.028	93447.97	4624.261	6074.448	9707.771

Sample Name: Q3256-01LX5 Acquired: 10/2/2025 14:07:09 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0279249	.0059122	.6288315	-.001714	.0027905	31.95365	.3287960
Stddev	.0018701	.0010996	.0092586	.004667	.0006524	.32914	.0035462
%RSD	6.696853	18.59859	1.472357	272.2391	23.37801	1.030066	1.078547

#1	.0280301	.0057555	.6382498	-.000406	.0021212	32.26963	.3297986
#2	.0297402	.0048995	.6285034	-.006895	.0028259	31.97857	.3317330
#3	.0260045	.0070818	.6197413	.002159	.0034245	31.61276	.3248564

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0037924	.0007046	52.82223	.0601896	.0185811	.1426892	42.81186
Stddev	.0000672	.0000817	.42227	.0001796	.0003953	.0029446	.37075
%RSD	1.770980	11.60027	.7994179	.2983481	2.127413	2.063675	.8660016

#1	.0038275	.0007270	53.08440	.0603585	.0189461	.1457105	42.79585
#2	.0038347	.0006139	53.04717	.0602093	.0186358	.1425295	43.19035
#3	.0037149	.0007727	52.33510	.0600010	.0181612	.1398277	42.44937

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7265089	6.702003	.0380828	-.005035	5.246258	.0853622	.4865067
Stddev	.0099940	.024422	.0008715	.000736	.097880	.0056644	.0023561
%RSD	1.375618	.3643943	2.288431	14.62684	1.865703	6.635756	.4842877

#1	.7313511	6.693639	.0389666	-.004737	5.148753	.0849939	.4887915
#2	.7331594	6.682862	.0380578	-.004494	5.344508	.0798909	.4866433
#3	.7150161	6.729507	.0372241	-.005874	5.245514	.0912018	.4840853

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.964378	.0076459	.0017773	.0343765	.6249012	1.846650	1.613004
Stddev	.087319	.0008850	.0003409	.0003007	.0115875	.029337	.038033
%RSD	4.445126	11.57505	19.18249	.8747052	1.854288	1.588662	2.357917

#1	1.874024	.0066288	.0021624	.0346143	.6337683	1.841050	1.653419
#2	1.970802	.0082405	.0015141	.0344765	.6291452	1.878384	1.607679
#3	2.048307	.0080683	.0016554	.0340385	.6117901	1.820517	1.577913

Sample Name: Q3256-01LX5 Acquired: 10/2/2025 14:07:09 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.8029938	.0293048	.2330920
Stddev	.0152863	.0036036	.0028383
%RSD	1.903663	12.29677	1.217670

#1	.8201604	.0252266	.2349410
#2	.7979674	.0306288	.2345109
#3	.7908536	.0320590	.2298240

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	8124.550	93831.70	4838.881	6147.724	8999.032
Stddev	7.884	278.30	29.612	21.182	9.919
%RSD	.0970331	.2965927	.6119607	.3445439	.1102273

#1	8122.963	94123.38	4812.373	6171.672	8990.868
#2	8133.106	93569.06	4833.430	6140.056	9010.072
#3	8117.580	93802.66	4870.839	6131.444	8996.157

Sample Name: Q3256-01MS Acquired: 10/2/2025 14:11:12 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9224127	2.090728	4.338632	1.926516	.3754469	162.7844
Stddev	.0012405	.096160	.007219	.003806	.0007573	1.1418
%RSD	.1344891	4.599346	.1664001	.1975365	.2017074	.7013909

#1	.9237592	2.087609	4.337585	1.927837	.3762703	163.2364
#2	.9221628	2.188410	4.331993	1.929485	.3752898	161.4859
#3	.9213162	1.996166	4.346317	1.922226	.3747804	163.6310

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.437101	.1998589	.2264959	187.8831	.6860542	.3030938
Stddev	.014083	.0025275	.0004005	1.2700	.0009623	.0005973
%RSD	.9799904	1.264641	.1768091	.6759628	.1402658	.1970565

#1	1.435021	.2026160	.2268601	188.0632	.6855083	.3025704
#2	1.424173	.1976515	.2260670	186.5326	.6871653	.3029665
#3	1.452108	.1993092	.2265606	189.0534	.6854890	.3037444

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.027310	196.4909	2.787506	31.70668	.7366616	.0520447
Stddev	.001381	2.8943	.020953	.20715	.0007274	.0011403
%RSD	.1344255	1.472977	.7516712	.6533280	.0987471	2.191008

#1	1.028902	193.4329	2.783595	31.84856	.7359738	.0509386
#2	1.026597	196.8525	2.768784	31.46897	.7365879	.0519792
#3	1.026431	199.1874	2.810139	31.80251	.7374231	.0532164

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	27.51601	.6475714	2.463914	19.75895	.1289869	.3730994
Stddev	.42021	.0014433	.004014	.20744	.0082477	.0004664
%RSD	1.527159	.2228817	.1629089	1.049837	6.394205	.1250021

#1	27.05764	.6488183	2.463994	19.55920	.1203842	.3736376
#2	27.60736	.6459903	2.467887	19.74433	.1368266	.3728149
#3	27.88304	.6479057	2.459860	19.97331	.1297499	.3728456

Sample Name: Q3256-01MS Acquired: 10/2/2025 14:11:12 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.086170	2.977951	5.849602	F 15.40729	4.636492	.3305231
Stddev	.001369	.024238	.066329	.02512	.009849	.0072782
%RSD	.1260396	.8139142	1.133901	.1630677	.2124262	2.202032

#1	1.087541	2.980524	5.773067	15.40354	4.638581	.3302948
#2	1.084803	2.952529	5.890377	15.43408	4.645129	.3233617
#3	1.086166	3.000800	5.885363	15.38426	4.625766	.3379127

Elem	Sr4077
Units	ppm
Avg	1.096079
Stddev	.008791
%RSD	.8020542

#1	1.098781
#2	1.086254
#3	1.103203

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	8667.392	98335.17	5263.436	6564.633	8227.126
Stddev	14.401	681.62	34.873	57.240	5.480
%RSD	.1661468	.6931588	.6625485	.8719503	.0666037

#1	8660.078	99114.15	5234.824	6629.966	8222.367
#2	8658.115	98043.09	5302.280	6540.634	8225.895
#3	8683.981	97848.26	5253.203	6523.299	8233.117

Sample Name: Q3256-01MSD Acquired: 10/2/2025 14:15:07 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9096222	2.011214	4.706567	1.835509	.3573817	153.9127
Stddev	.0014146	.035204	.003790	.004018	.0041173	.3318
%RSD	.1555099	1.750393	.0805317	.2189162	1.152077	.2155553

#1	.9086449	2.049265	4.705523	1.835302	.3589127	154.0827
#2	.9112442	2.004574	4.703409	1.839626	.3527182	153.5303
#3	.9089774	1.979802	4.710770	1.831598	.3605142	154.1249

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.432322	.1910266	.2138619	209.3024	.9116769	.2914531
Stddev	.002316	.0003607	.0003151	.5135	.0031280	.0004462
%RSD	.1616627	.1888174	.1473325	.2453281	.3431007	.1531045

#1	1.432109	.1906135	.2141149	209.7710	.9081908	.2917318
#2	1.430121	.1912793	.2135090	208.7535	.9142383	.2916890
#3	1.434737	.1911870	.2139617	209.3826	.9126015	.2909384

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.011883	265.2372	2.894495	30.93808	.7062658	.0434593
Stddev	.000758	.4061	.003632	.09905	.0004507	.0002360
%RSD	.0749130	.1530898	.1254761	.3201427	.0638128	.5430477

#1	1.011024	265.4837	2.892333	30.92053	.7067660	.0434970
#2	1.012167	265.4595	2.892464	31.04473	.7058913	.0432066
#3	1.012458	264.7686	2.898688	30.84898	.7061400	.0436741

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	27.94728	.6636607	2.495710	19.78521	.0768268	.3654037
Stddev	.04191	.0037112	.004329	.07831	.0141902	.0004711
%RSD	.1499673	.5591995	.1734415	.3958249	18.47039	.1289345

#1	27.96058	.6649994	2.493676	19.70442	.0923715	.3656198
#2	27.98093	.6594659	2.500681	19.86079	.0735417	.3648633
#3	27.90033	.6665168	2.492773	19.79041	.0645673	.3657281

Sample Name: Q3256-01MSD Acquired: 10/2/2025 14:15:07 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.344544	3.035401	5.832422	F 15.64271	6.484099	.3177071
Stddev	.001720	.008655	.025936	.02362	.013310	.0014132
%RSD	.1279425	.2851467	.4446910	.1509928	.2052771	.4448230

#1	1.342996	3.039830	5.836837	15.66445	6.475779	.3170463
#2	1.344240	3.025427	5.855867	15.61758	6.477068	.3167453
#3	1.346396	3.040945	5.804562	15.64609	6.499451	.3193297

Elem	Sr4077
Units	ppm
Avg	1.143443
Stddev	.003310
%RSD	.2894509

#1	1.146575
#2	1.139981
#3	1.143773

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	8617.932	97784.78	5307.266	6513.884	8244.460
Stddev	24.965	336.84	22.578	27.339	22.780
%RSD	.2896863	.3444734	.4254192	.4197099	.2763010

#1	8615.809	98173.73	5329.039	6539.006	8237.013
#2	8594.096	97590.09	5308.798	6517.879	8226.337
#3	8643.890	97590.51	5283.961	6484.767	8270.032

Sample Name: Q3256-01A Acquired: 10/2/2025 14:19:03 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8682318	2.056882	4.264107	1.831834	.6920127	146.6253
Stddev	.0014378	.119657	.005598	.006152	.0053643	1.1428
%RSD	.1655989	5.817417	.1312799	.3358609	.7751789	.7793835

#1	.8689502	1.939367	4.269825	1.824838	.6916647	147.5685
#2	.8691688	2.052707	4.263857	1.836401	.6975426	146.9528
#3	.8665764	2.178573	4.258638	1.834263	.6868309	145.3545

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.539274	.1921250	.2116666	235.9997	.6461004	.2976613
Stddev	.008516	.0011351	.0001231	1.8980	.0036315	.0006263
%RSD	.5532741	.5908182	.0581783	.8042356	.5620578	.2104173

#1	1.549102	.1929989	.2117851	237.5320	.6464060	.2978857
#2	1.534644	.1925341	.2116754	236.5906	.6495694	.2981445
#3	1.534075	.1908421	.2115392	233.8766	.6423258	.2969536

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9089110	197.8186	3.408371	30.98496	.7020382	.0466951
Stddev	.0013357	1.0126	.026790	.37114	.0006485	.0007179
%RSD	.1469619	.5118987	.7860135	1.197814	.0923785	1.537349

#1	.9081012	197.8267	3.432792	31.23787	.7026866	.0473263
#2	.9104528	198.8272	3.412606	31.15813	.7020386	.0459142
#3	.9081791	196.8020	3.379716	30.55888	.7013895	.0468447

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	28.61118	.6267542	2.422304	18.76872	.3681028	.3621449
Stddev	.06036	.0117689	.004124	.01641	.0045539	.0011395
%RSD	.2109547	1.877750	.1702589	.0874333	1.237116	.3146644

#1	28.59784	.6363074	2.419432	18.75321	.3654024	.3608932
#2	28.67710	.6303477	2.427030	18.78591	.3733605	.3631221
#3	28.55862	.6136075	2.420450	18.76704	.3655454	.3624194

Sample Name: Q3256-01A Acquired: 10/2/2025 14:19:03 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9209872	3.016589	9.762465	F 15.42740	4.413244	.2997605
Stddev	.0017102	.017762	.129696	.11339	.045633	.0022681
%RSD	.1856966	.5888066	1.328518	.7349822	1.033992	.7566448

#1	.9191136	3.026370	9.677607	15.30352	4.368146	.3007518
#2	.9213835	3.027311	9.911760	15.45261	4.412193	.2971655
#3	.9224645	2.996087	9.698027	15.52606	4.459393	.3013643

Elem	Sr4077
Units	ppm
Avg	1.227071
Stddev	.008341
%RSD	.6797700

#1	1.236531
#2	1.223913
#3	1.220771

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	8710.578	98408.59	5197.873	6592.253	8245.515
Stddev	14.416	487.42	40.182	22.932	8.391
%RSD	.1655009	.4953005	.7730453	.3478630	.1017606

#1	8727.046	98467.51	5162.457	6599.191	8252.698
#2	8704.448	97894.39	5189.623	6566.653	8247.555
#3	8700.240	98863.87	5241.540	6610.914	8236.292

Sample Name: Q3256-05 Acquired: 10/2/2025 14:22:58 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1204460	-.015847	6.247165	-.024559	-.006153	137.3600
Stddev	.0041627	.001918	.005217	.006287	.003744	.5432
%RSD	3.456029	12.10504	.0835106	25.59937	60.84464	.3954834

#1	.1252136	-.013664	6.249474	-.027313	-.002950	137.9866
#2	.1185915	-.016616	6.241192	-.028998	-.005239	137.0724
#3	.1175329	-.017262	6.250829	-.017365	-.010268	137.0211

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.450227	.0191680	.0135269	160.4616	.2882612	.1034041
Stddev	.010934	.0001687	.0002222	.6863	.0009059	.0001105
%RSD	.7539529	.8798610	1.642757	.4276873	.3142573	.1068719

#1	1.461621	.0192782	.0132775	161.2281	.2892596	.1033317
#2	1.449242	.0192521	.0135994	160.2523	.2880321	.1035313
#3	1.439819	.0189739	.0137039	159.9042	.2874918	.1033493

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8573567	259.1390	4.592927	28.81025	.2612020	-.022865
Stddev	.0004477	.4775	.029612	.15013	.0003254	.000426
%RSD	.0522164	.1842791	.6447342	.5211105	.1245781	1.861116

#1	.8568549	259.5878	4.625790	28.98016	.2610780	-.022596
#2	.8577153	259.1921	4.584676	28.75506	.2609568	-.022644
#3	.8574997	258.6371	4.568316	28.69552	.2615711	-.023356

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	20.49776	.3640499	3.987129	10.05279	-.236326	.0095148
Stddev	.01790	.0048469	.005529	.02596	.005701	.0003248
%RSD	.0873226	1.331373	.1386629	.2582089	2.412390	3.413784

#1	20.48110	.3691549	3.984181	10.03562	-.241913	.0093717
#2	20.49550	.3634839	3.993507	10.04011	-.236548	.0098867
#3	20.51668	.3595109	3.983699	10.08265	-.230518	.0092862

Sample Name: Q3256-05 Acquired: 10/2/2025 14:22:58 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2497147	2.404384	4.208694	F 10.69638	4.237117	.1373394
Stddev	.0017912	.018933	.025139	.09463	.053524	.0021944
%RSD	.7172913	.7874316	.5973133	.8847321	1.263224	1.597765
#1	.2476465	2.419951	4.199389	10.58713	4.176344	.1379910
#2	.2507639	2.409893	4.189534	10.74889	4.257769	.1391342
#3	.2507338	2.383307	4.237159	10.75310	4.277240	.1348931

Elem	Sr4077
Units	ppm
Avg	.7494648
Stddev	.0053092
%RSD	.7084031
#1	.7552859
#2	.7482197
#3	.7448887

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	8832.520	103185.6	5455.334	6830.887	8243.344
Stddev	39.854	541.1	47.932	42.375	38.421
%RSD	.4512135	.5244025	.8786186	.6203470	.4660878
#1	8838.772	102677.1	5400.617	6789.943	8244.184
#2	8868.878	103754.2	5489.901	6874.561	8281.338
#3	8789.910	103125.4	5475.485	6828.158	8204.509

Sample Name: Q3257-01 Acquired: 10/2/2025 14:26:56 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1738888	-.011892	1.035186	-.044708	-.020751	299.8072
Stddev	.0021883	.004135	.002677	.005356	.006201	.7437
%RSD	1.258445	34.77122	.2585660	11.97979	29.88422	.2480750

#1	.1717683	-.008678	1.035688	-.048834	-.021843	300.5740
#2	.1737592	-.016557	1.037576	-.038655	-.026334	299.0889
#3	.1761391	-.010440	1.032294	-.046635	-.014076	299.7589

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.498991	.0450179	.0071210	58.79098	.5541340	.3949254
Stddev	.013832	.0000716	.0002756	.14831	.0019456	.0008293
%RSD	.3953128	.1590537	3.869606	.2522596	.3511044	.2100013

#1	3.511484	.0450127	.0070518	58.95244	.5558321	.3939982
#2	3.501362	.0449490	.0068867	58.75966	.5520111	.3951813
#3	3.484127	.0450919	.0074246	58.66083	.5545589	.3955965

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7033196	570.3613	33.69099	123.6887	.6857494	^ *****
Stddev	.0035818	2.0057	.17843	.4689	.0006073	-----
%RSD	.5092727	.3516477	.5296132	.3790994	.0885561	-----

#1	.6999486	572.6694	33.87541	124.2286	.6851427	^ ----
#2	.7029298	569.0422	33.67835	123.3827	.6857483	^ ----
#3	.7070804	569.3723	33.51921	123.4550	.6863572	^ ----

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.520341	.8026435	1.938065	26.10422	^ *****	.0084557
Stddev	.053475	.0094917	.008145	.11980	-----	.0006000
%RSD	3.517313	1.182551	.4202692	.4589288	-----	7.095430

#1	1.479077	.8086437	1.944195	26.17796	^ ----	.0077641
#2	1.501191	.8075864	1.928822	25.96599	^ ----	.0087661
#3	1.580754	.7917005	1.941177	26.16871	^ ----	.0088368

Sample Name: Q3257-01 Acquired: 10/2/2025 14:26:56 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0467654	4.509635	3.563139	F 11.68633	4.911301	.9615127
Stddev	.0005827	.019989	.027714	.05145	.017401	.0097938
%RSD	1.246002	.4432500	.7778052	.4402294	.3543145	1.018582

#1	.0474369	4.532692	3.535573	11.74396	4.929829	.9727380
#2	.0464668	4.499030	3.562846	11.66998	4.908771	.9570886
#3	.0463925	4.497183	3.590999	11.64505	4.895303	.9547115

Elem	Sr4077
Units	ppm
Avg	-.268208
Stddev	.001714
%RSD	.6389996

#1	-.269762
#2	-.266370
#3	-.268491

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	8787.701	99218.74	5374.557	6626.744	8197.632
Stddev	31.850	336.19	34.744	13.472	28.730
%RSD	.3624393	.3388372	.6464623	.2032912	.3504646

#1	8769.191	98890.57	5348.794	6616.959	8173.841
#2	8824.478	99203.24	5360.805	6621.164	8229.550
#3	8769.433	99562.41	5414.073	6642.109	8189.505

Sample Name: Q3257-02 Acquired: 10/2/2025 14:30:54 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1225650	-.032261	.5789008	-.088870	-.031549	146.8254
Stddev	.0017146	.001517	.0009124	.006459	.001934	.2552
%RSD	1.398907	4.703436	.1576142	7.268426	6.130813	.1738351

#1	.1217742	-.030775	.5783946	-.095865	-.031255	147.1129
#2	.1245323	-.033808	.5799541	-.083131	-.033613	146.6255
#3	.1213886	-.032198	.5783537	-.087612	-.029778	146.7378

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.291497	.0403686	.0226728	70.21989	.8393111	.4511983
Stddev	.004620	.0002476	.0006267	.10603	.0026401	.0001527
%RSD	.1076658	.6132132	2.764216	.1510023	.3145579	.0338408

#1	4.287216	.0405601	.0233179	70.28985	.8386301	.4510832
#2	4.290880	.0400891	.0220662	70.09789	.8370782	.4513716
#3	4.296395	.0404565	.0226343	70.27194	.8422250	.4511402

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5198254	615.1961	31.90897	122.1876	1.201041	^ *****
Stddev	.0028849	4.4377	.04847	.4189	.001252	-----
%RSD	.5549799	.7213512	.1519120	.3428606	.1042113	-----

#1	.5229260	610.1238	31.93066	122.6491	1.202030	^ ----
#2	.5193301	617.1024	31.85344	121.8312	1.199634	^ ----
#3	.5172203	618.3623	31.94281	122.0825	1.201460	^ ----

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.062959	.6582967	1.176812	17.85941	^ *****	.0145650
Stddev	.060946	.0050450	.004227	.20037	-----	.0003651
%RSD	1.989783	.7663778	.3591671	1.121941	-----	2.506758

#1	2.998667	.6641214	1.181458	17.62814	^ ----	.0145619
#2	3.119891	.6552973	1.173194	17.98079	^ ----	.0142015
#3	3.070319	.6554716	1.175785	17.96930	^ ----	.0149317

Sample Name: Q3257-02 Acquired: 10/2/2025 14:30:54 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0251027	9.789666	2.364146	F 22.37637	1.367956	.7996288
Stddev	.0004365	.001722	.018239	.09110	.010107	.0031239
%RSD	1.738931	.0175907	.7714697	.4071477	.7388492	.3906675

#1	.0246606	9.787854	2.373538	22.38354	1.362516	.7980838
#2	.0255334	9.791281	2.375775	22.28190	1.361735	.8032241
#3	.0251143	9.789863	2.343126	22.46369	1.379618	.7975784

Elem	Sr4077
Units	ppm
Avg	-.196999
Stddev	.004419
%RSD	2.243201

#1	-.191936
#2	-.198983
#3	-.200079

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	10333.04	118741.5	6351.881	7807.849	8113.238
Stddev	50.43	494.5	37.709	28.299	33.090
%RSD	.4880281	.4164528	.5936656	.3624473	.4078504

#1	10290.62	119248.1	6316.304	7834.862	8086.181
#2	10319.70	118716.4	6391.411	7810.266	8103.402
#3	10388.79	118260.1	6347.928	7778.418	8150.130

Sample Name: Q3254-01 Acquired: 10/2/2025 14:34:53 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0014552	.0105875	.0018118	.0096543	.0089324	.0399389
Stddev	.0028800	.0032707	.0018526	.0020592	.0025622	.0112358
%RSD	197.9205	30.89224	102.2496	21.32888	28.68439	28.13243

#1	.0005985	.0137599	.0006485	.0088077	.0107650	.0524750
#2	-.000899	.0107760	.0039482	.0081535	.0060046	.0365654
#3	.004666	.0072266	.0008388	.0120019	.0100276	.0307764

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1534870	.0001488	.0027323	82.85703	.0016005	.0007538
Stddev	.0055355	.0001073	.0001335	.31347	.0005673	.0001890
%RSD	3.606500	72.06419	4.886860	.3783312	35.44807	25.07636

#1	.1582424	.0000568	.0028224	83.21639	.0020606	.0005935
#2	.1548081	.0002666	.0027955	82.63977	.0009666	.0009622
#3	.1474105	.0001230	.0025789	82.71493	.0017742	.0007057

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0024900	.0376153	.1115924	14.56261	.0076687	-.000915
Stddev	.0004701	.0087000	.0014115	.08576	.0001990	.000603
%RSD	18.88058	23.12900	1.264910	.5888742	2.594659	65.89143

#1	.0021978	.0322132	.1128251	14.65632	.0075891	-.000475
#2	.0022399	.0476514	.1100526	14.48805	.0075219	-.001602
#3	.0030323	.0329811	.1118995	14.54346	.0078952	-.000668

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	90.90344	-.000546	.2667899	7.462838	.1054130	.0013441
Stddev	.29756	.005521	.0005621	.059706	.0021590	.0003523
%RSD	.3273313	1011.295	.2106985	.8000409	2.048146	26.21009

#1	90.75019	.002947	.2674129	7.394202	.1051236	.0016357
#2	91.24638	.002326	.2663206	7.502773	.1034133	.0014439
#3	90.71375	-.006911	.2666363	7.491540	.1077021	.0009527

Sample Name: Q3254-01 Acquired: 10/2/2025 14:34:53 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.027126	.0038111	F 12.01771	.0162089	F 19.29934	-.037575
Stddev	.000397	.0007015	.09301	.0019069	.09173	.001177
%RSD	1.464928	18.40747	.7739576	11.76419	.4752878	3.131678

#1	-.027030	.0030558	11.91647	.0140157	19.40513	-.036751
#2	-.027563	.0039352	12.09938	.0174741	19.24190	-.038923
#3	-.026786	.0044423	12.03729	.0171370	19.25099	-.037051

Elem	Sr4077
Units	ppm
Avg	.3695998
Stddev	.0026484
%RSD	.7165658

#1	.3726219
#2	.3676835
#3	.3684938

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7803.786	90704.15	4564.297	5940.244	8504.738
Stddev	14.588	326.57	43.859	20.667	12.487
%RSD	.1869286	.3600332	.9609157	.3479101	.1468286

#1	7787.510	90725.68	4513.779	5946.994	8490.359
#2	7808.171	90367.36	4592.654	5917.046	8512.861
#3	7815.679	91019.43	4586.457	5956.691	8510.994

Sample Name: Q3254-02 Acquired: 10/2/2025 14:38:59 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001579	.0103806	.0026586	.0098103	.0064853	.0336544
Stddev	.001139	.0015274	.0006609	.0002498	.0047685	.0068771
%RSD	72.14698	14.71364	24.85719	2.546230	73.52765	20.43453

#1	-.001727	.0114517	.0022199	.0100424	.0101247	.0398755
#2	-.002637	.0086316	.0034187	.0095459	.0010872	.0262697
#3	-.000373	.0110585	.0023372	.0098426	.0082440	.0348180

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1496698	.0000408	.0027413	83.01590	.0020978	.0006604
Stddev	.0014181	.0001212	.0000447	.29034	.0010441	.0002569
%RSD	.9474595	296.7146	1.630034	.3497398	49.77052	38.90809

#1	.1505871	-.000062	.0027867	83.31925	.0020150	.0004074
#2	.1503858	.000174	.0026974	82.74061	.0010976	.0009211
#3	.1480365	.000010	.0027398	82.98782	.0031808	.0006527

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0023845	.0378059	.1112074	14.43534	.0085664	-.000447
Stddev	.0001844	.0141133	.0007884	.01706	.0000488	.000251
%RSD	7.733016	37.33092	.7089153	.1181650	.5691587	56.15232

#1	.0024413	.0369649	.1120104	14.43188	.0085304	-.000161
#2	.0021784	.0241319	.1111772	14.42028	.0085470	-.000551
#3	.0025338	.0523209	.1104345	14.45386	.0086219	-.000631

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	95.79107	.0055194	.2746744	7.825834	.1005241	.0011708
Stddev	.30146	.0041839	.0015372	.039426	.0019993	.0001553
%RSD	.3147055	75.80289	.5596385	.5037979	1.988841	13.26285

#1	95.44616	.0067179	.2730534	7.787943	.1028264	.0013501
#2	96.00421	.0008671	.2748587	7.866634	.0992258	.0010800
#3	95.92283	.0089732	.2761112	7.822926	.0995200	.0010823

Sample Name: Q3254-02 Acquired: 10/2/2025 14:38:59 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.027330	.0020606	F 12.57418	.0137951	F 19.71504	-.035908
Stddev	.000436	.0034240	.07135	.0006608	.04795	.003030
%RSD	1.597132	166.1624	.5674220	4.789794	.2432328	8.438609

#1	-.026828	.0054143	12.62201	.0130547	19.76028	-.039252
#2	-.027547	.0021970	12.49217	.0140057	19.72008	-.033346
#3	-.027616	-.001430	12.60836	.0143249	19.66477	-.035125

Elem	Sr4077
Units	ppm
Avg	.3729068
Stddev	.0009723
%RSD	.2607466

#1	.3728562
#2	.3739034
#3	.3719607

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7755.252	87807.54	4627.951	5880.768	8419.227
Stddev	12.793	103.77	12.123	16.181	12.711
%RSD	.1649546	.1181822	.2619557	.2751502	.1509743

#1	7741.075	87744.56	4614.048	5862.258	8404.599
#2	7758.745	87927.31	4636.318	5892.224	8427.583
#3	7765.935	87750.74	4633.487	5887.823	8425.498

Sample Name: Q3254-03 Acquired: 10/2/2025 14:43:04 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0031772	.0116837	.0075104	.0006985	.0062373	.1432598
Stddev	.0006718	.0007877	.0017770	.0042278	.0026581	.0356944
%RSD	21.14562	6.741979	23.66060	605.2478	42.61620	24.91584

#1	.0033570	.0116356	.0065281	-.001958	.0032199	.1801909
#2	.0037408	.0124944	.0095617	.005574	.0082328	.1089462
#3	.0024338	.0109211	.0064414	-.001520	.0072592	.1406424

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3214759	.0008050	-.000128	168.5787	.0039786	.0027324
Stddev	.0013842	.0000855	.000159	.3469	.0003746	.0002578
%RSD	.4305687	10.61458	124.1201	.2058066	9.416182	9.433458

#1	.3202484	.0009034	-.000310	168.4114	.0037832	.0029973
#2	.3212031	.0007490	-.000050	168.9776	.0044106	.0027176
#3	.3229762	.0007626	-.000023	168.3472	.0037421	.0024824

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0184966	20.74244	2.360792	40.64298	.0385029	-.003077
Stddev	.0003688	.11394	.002731	.11681	.0005190	.000468
%RSD	1.994047	.5492947	.1156867	.2874141	1.347856	15.20828

#1	.0181311	20.79058	2.363842	40.50818	.0380793	-.002989
#2	.0184899	20.82440	2.358572	40.70630	.0390818	-.002659
#3	.0188687	20.61233	2.359963	40.71446	.0383476	-.003583

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	449.0801	.0043416	.1274628	41.83585	1.850036	.0049359
Stddev	7.2106	.0038491	.0004536	.21676	.011705	.0002061
%RSD	1.605629	88.65603	.3558964	.5181320	.6327051	4.175760

#1	443.0409	.0034804	.1276856	41.82763	1.851251	.0051515
#2	457.0634	.0085483	.1277621	42.05661	1.837771	.0049156
#3	447.1362	.0009960	.1269409	41.62331	1.861086	.0047407

Sample Name: Q3254-03 Acquired: 10/2/2025 14:43:04 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.026063	.0086163	F 16.06858	.0458109	F 25.39992	-.051314
Stddev	.000247	.0016599	.19241	.0014149	.08492	.001853
%RSD	.9494976	19.26407	1.197448	3.088578	.3343226	3.610920

#1	-.025988	.0096213	16.10431	.0473899	25.30708	-.051725
#2	-.026340	.0095272	16.24062	.0453848	25.47366	-.052927
#3	-.025862	.0067005	15.86080	.0446580	25.41903	-.049290

Elem	Sr4077
Units	ppm
Avg	.7701750
Stddev	.0006551
%RSD	.0850548

#1	.7695940
#2	.7700460
#3	.7708849

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7459.171	86091.49	4670.076	5711.103	7779.298
Stddev	11.041	673.39	54.317	66.298	14.721
%RSD	.1480149	.7821767	1.163086	1.160858	.1892315

#1	7471.876	86825.24	4728.279	5787.075	7796.275
#2	7453.726	85501.77	4661.215	5664.959	7770.068
#3	7451.910	85947.47	4620.735	5681.274	7771.552

Sample Name: CCV03 Acquired: 10/2/2025 14:47:16 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV03 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.173196	5.303083	5.218108	5.300187	4.797121	9.360836
Stddev	.019551	.170162	.003793	.027758	.004309	.059923
%RSD	.3779209	3.208735	.0726831	.5237132	.0898148	.6401421

#1	5.173834	5.256962	5.216794	5.301591	4.801758	9.419628
#2	5.192420	5.491551	5.222383	5.327216	4.793242	9.363036
#3	5.153334	5.160736	5.215147	5.271754	4.796361	9.299844

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.029445	.2430143	2.563843	23.79494	1.052727	2.446865
Stddev	.039239	.0014239	.003309	.05661	.002217	.001411
%RSD	.4345654	.5859467	.1290806	.2379274	.2105582	.0576844

#1	9.072942	.2446565	2.561655	23.86014	1.054996	2.445879
#2	8.996712	.2421230	2.567650	23.75832	1.050567	2.448482
#3	9.018681	.2422634	2.562224	23.76634	1.052618	2.446236

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.253496	5.081777	2.323863	24.36410	2.472857	1.254678
Stddev	.001690	.018291	.005828	.11358	.002209	.002222
%RSD	.1347957	.3599320	.2507815	.4661937	.0893120	.1771288

#1	1.254191	5.064148	2.329385	24.48265	2.470922	1.253142
#2	1.254727	5.080518	2.317771	24.25623	2.475264	1.253665
#3	1.251570	5.100665	2.324432	24.35341	2.472387	1.257226

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	24.36797	2.364172	2.466445	24.68637	F 5.984048	4.774389
Stddev	.06127	.010328	.004785	.06989	.032100	.016133
%RSD	.2514223	.4368432	.1939935	.2830990	.5364189	.3379158

#1	24.43431	2.374286	2.468748	24.75232	6.020779	4.778283
#2	24.31352	2.364586	2.460945	24.61312	5.969984	4.788219
#3	24.35609	2.353643	2.469643	24.69368	5.961381	4.756665

Sample Name: CCV03 Acquired: 10/2/2025 14:47:16 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV03 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.242499	4.622056	F 4.074619	5.453567	5.342846	F 3.941543
Stddev	.019628	.017959	.018374	.046236	.048484	.009954
%RSD	.3743966	.3885451	.4509480	.8478196	.9074511	.2525348

#1	5.239475	4.640509	4.056505	5.464728	5.344412	3.953031
#2	5.263463	4.604636	4.093243	5.493202	5.390527	3.935490
#3	5.224558	4.621022	4.074109	5.402772	5.293598	3.936108

Elem	Sr4077
Units	ppm
Avg	4.571356
Stddev	.027631
%RSD	.6044410

#1	4.602722
#2	4.550614
#3	4.560732

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7800.269	89566.15	4648.550	5865.106	8548.749
Stddev	22.300	303.62	43.945	42.909	20.422
%RSD	.2858857	.3389928	.9453522	.7316023	.2388873

#1	7774.548	89234.88	4598.164	5824.362	8525.179
#2	7812.068	89831.19	4678.946	5909.894	8559.912
#3	7814.190	89632.38	4668.541	5861.061	8561.155

Sample Name: CCB03 Acquired: 10/2/2025 14:53:05 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal 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	.0005835	.0087691	.0046036	.0076220	.0098040	-.008234	.0352738
Stddev	.0003289	.0054573	.0007031	.0035768	.0007823	.013025	.0005077
%RSD	56.37281	62.23307	15.27213	46.92698	7.979688	158.1755	1.439334

#1	.0008952	.0029209	.0052383	.0113459	.0100342	-.008962	.0353239
#2	.0006155	.0137257	.0047246	.0042132	.0104455	-.020880	.0347429
#3	.0002397	.0096606	.0038479	.0073070	.0089324	.005139	.0357546

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001550	-.000227	-.026933	.0015431	-.000006	.0006653	-.001707
Stddev	.0001010	.000083	.025343	.0002477	.000114	.0004852	.013065
%RSD	65.18620	36.53671	94.09777	16.05230	1975.084	72.94040	765.4237

#1	.0002681	-.000214	-.029775	.0018107	.000051	.0006063	-.004086
#2	.0001229	-.000152	-.050736	.0014966	.000068	.0011772	-.013419
#3	.0000739	-.000316	-.000288	.0013219	-.000137	.0002122	.012384

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007947	.0611404	-.000221	-.000769	-.637463	-.000991	.0006754
Stddev	.0020458	.0431016	.000640	.000688	.041225	.009375	.0003060
%RSD	257.4178	70.49606	289.4682	89.45736	6.467110	945.6342	45.31058

#1	-.000732	.0455220	-.000388	-.001555	-.629843	-.001949	.0006539
#2	.003119	.0280254	.000486	-.000273	-.681967	.008826	.0009916
#3	-.000003	.1098740	-.000761	-.000480	-.600579	-.009851	.0003807

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.753920	.0053906	.0001213	F -.025571	.0024427	-.008070	-.007049
Stddev	.028221	.0023119	.0002344	.000404	.0053345	.017982	.000388
%RSD	3.743259	42.88878	193.2309	1.580546	218.3878	222.8112	5.505613

#1	-.778569	.0043683	.0000828	-.025520	.0065426	-.028820	-.006964
#2	-.723136	.0080374	-.000091	-.025999	-.003588	.002967	-.006711
#3	-.760056	.0037659	.000373	-.025195	.004374	.001641	-.007473

Sample Name: CCB03 Acquired: 10/2/2025 14:53:05 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB03 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0035816	F -.024088	-.000189
Stddev	.0005774	.005546	.000200
%RSD	16.12110	23.02575	105.5463

#1	.0033208	-.029483	.000001
#2	.0042434	-.024379	-.000398
#3	.0031806	-.018402	-.000171

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	8121.687	94599.38	4516.254	6159.162	9756.485
Stddev	22.118	142.50	27.427	19.037	16.842
%RSD	.2723306	.1506343	.6072928	.3090811	.1726226

#1	8134.464	94454.21	4485.006	6141.598	9773.433
#2	8096.148	94739.04	4527.421	6179.391	9739.752
#3	8134.450	94604.90	4536.336	6156.496	9756.269

Sample Name: Q3254-04 Acquired: 10/2/2025 14:57:25 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0053354	.0138530	.0048880	.0061922	.0052273	.0583782
Stddev	.0017488	.0012039	.0014014	.0014619	.0010458	.0253842
%RSD	32.77779	8.690218	28.67066	23.60790	20.00709	43.48236

#1	.0042476	.0137789	.0060900	.0056936	.0048475	.0448839
#2	.0044059	.0126879	.0033487	.0050449	.0044244	.0876594
#3	.0073527	.0150922	.0052255	.0078381	.0064100	.0425912

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3186170	.0009000	-.000213	166.9521	.0020914	.0026491
Stddev	.0033346	.0000761	.000117	.4901	.0002481	.0004784
%RSD	1.046599	8.455971	55.07155	.2935863	11.86079	18.05810

#1	.3204998	.0008186	-.000079	167.1342	.0018413	.0030030
#2	.3147668	.0009694	-.000260	166.3970	.0023374	.0021048
#3	.3205843	.0009120	-.000299	167.3252	.0020955	.0028394

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0092909	20.03397	2.329216	40.35385	.0360487	-.003725
Stddev	.0002843	.19279	.010793	.21570	.0002970	.000582
%RSD	3.059775	.9623130	.4633785	.5345147	.8240324	15.61517

#1	.0089650	19.83494	2.330203	40.34099	.0357207	-.004213
#2	.0094195	20.04715	2.317963	40.14486	.0362996	-.003881
#3	.0094881	20.21984	2.339481	40.57568	.0361259	-.003082

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	452.7445	.0011441	.1178333	41.15249	1.867860	.0045610
Stddev	8.0526	.0081841	.0004838	.48313	.014579	.0000182
%RSD	1.778624	715.3268	.4105415	1.173996	.7805184	.3999340

#1	452.8724	-.007961	.1174035	40.80839	1.882697	.0045787
#2	460.7324	.003505	.1177393	40.94426	1.867331	.0045621
#3	444.6287	.007888	.1183572	41.70482	1.853553	.0045423

Sample Name: Q3254-04 Acquired: 10/2/2025 14:57:25 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.026678	-.003803	F 15.60970	.0393976	F 24.88908	-.044017
Stddev	.000129	.001282	.12690	.0001849	.07178	.002928
%RSD	.4851142	33.71447	.8129248	.4694258	.2883857	6.652493

#1	-.026680	-.005092	15.51403	.0396023	24.97149	-.041079
#2	-.026547	-.002528	15.56142	.0393481	24.84020	-.046935
#3	-.026806	-.003787	15.75365	.0392425	24.85557	-.044036

Elem	Sr4077
Units	ppm
Avg	.7629318
Stddev	.0032416
%RSD	.4248828

#1	.7637760
#2	.7593516
#3	.7656677

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7471.083	85445.83	4590.950	5734.703	7768.939
Stddev	45.847	247.42	22.116	41.698	44.214
%RSD	.6136577	.2895685	.4817207	.7271095	.5691134

#1	7524.013	85731.01	4567.973	5753.341	7819.973
#2	7443.731	85318.26	4592.789	5763.831	7744.650
#3	7445.506	85288.23	4612.089	5686.937	7742.193

Sample Name: Q3254-05 Acquired: 10/2/2025 15:01:36 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000206	.0143745	.0029864	.0080253	.0053615	.1586605
Stddev	.001631	.0024977	.0011358	.0035405	.0010556	.0276980
%RSD	791.8303	17.37616	38.03170	44.11701	19.68857	17.45742

#1	-.001713	.0158246	.0032998	.0039924	.0062002	.1266803
#2	-.000432	.0158084	.0017268	.0106225	.0041762	.1742855
#3	.001526	.0114903	.0039325	.0094609	.0057082	.1750156

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2893769	.0001205	.0001549	218.7395	.0028242	.0024718
Stddev	.0044794	.0000875	.0000231	.5096	.0002194	.0001389
%RSD	1.547934	72.63943	14.91499	.2329933	7.767042	5.620034

#1	.2887013	.0001792	.0001786	218.2212	.0029291	.0025921
#2	.2941556	.0000199	.0001324	218.7573	.0025721	.0023198
#3	.2852737	.0001624	.0001538	219.2400	.0029715	.0025035

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0036926	3.890782	.9618324	33.58568	.0042854	-.002223
Stddev	.0002682	.036702	.0012141	.15471	.0002177	.000183
%RSD	7.263330	.9433174	.1262292	.4606573	5.079849	8.252094

#1	.0038901	3.852745	.9612769	33.41210	.0040403	-.002082
#2	.0033873	3.893617	.9609955	33.63588	.0044563	-.002157
#3	.0038005	3.925985	.9632249	33.70907	.0043595	-.002431

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	274.0728	.0000111	.0424036	28.84299	1.187548	.0062900
Stddev	2.1391	.0039874	.0005261	.23963	.007721	.0002532
%RSD	.7805000	36047.87	1.240795	.8307948	.6501399	4.025875

#1	272.7786	-.000805	.0430102	28.64529	1.187588	.0062523
#2	272.8979	.004343	.0421289	28.77420	1.195248	.0065600
#3	276.5419	-.003505	.0420716	29.10949	1.179807	.0060578

Sample Name: Q3254-05 Acquired: 10/2/2025 15:01:36 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.015775	.0069582	F 14.20949	.0134436	F 20.93312	-.055315
Stddev	.001803	.0012694	.08171	.0023275	.05127	.006805
%RSD	11.43120	18.24286	.5750555	17.31312	.2449121	12.30247

#1	-.017727	.0056868	14.13712	.0135924	20.87680	-.062881
#2	-.015425	.0069622	14.19325	.0110453	20.94548	-.053371
#3	-.014172	.0082256	14.29810	.0156931	20.97707	-.049694

Elem	Sr4077
Units	ppm
Avg	.9145021
Stddev	.0022789
%RSD	.2491971

#1	.9121879
#2	.9145746
#3	.9167439

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7537.684	86836.02	4501.264	5803.511	7911.392
Stddev	3.345	504.66	12.034	64.321	6.012
%RSD	.0443715	.5811644	.2673485	1.108311	.0759958

#1	7539.579	86752.99	4489.821	5754.823	7916.500
#2	7533.822	87377.05	4513.813	5876.428	7904.766
#3	7539.650	86378.03	4500.158	5779.284	7912.911

Sample Name: Q3254-06 Acquired: 10/2/2025 15:05:40 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002428	.0104437	.0022483	.0084050	.0065511	.0533129
Stddev	.0016052	.0016014	.0020269	.0036453	.0012801	.0155431
%RSD	660.9989	15.33382	90.15162	43.37081	19.53969	29.15453

#1	.0000116	.0121041	.0040240	.0125823	.0052050	.0587680
#2	.0019511	.0089086	.0000401	.0067644	.0066955	.0357776
#3	-.001234	.0103185	.0026808	.0058682	.0077529	.0653932

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3023090	.0002684	.0001463	228.3880	.0027040	.0026236
Stddev	.0045369	.0000954	.0000581	.6548	.0001220	.0004738
%RSD	1.500742	35.52096	39.71528	.2866844	4.513124	18.05706

#1	.3036290	.0002555	.0002095	228.2221	.0027358	.0022213
#2	.2972586	.0001802	.0000952	227.8322	.0028069	.0025038
#3	.3060396	.0003696	.0001343	229.1097	.0025691	.0031458

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0035170	4.040341	.9981160	35.06999	.0053974	-.002176
Stddev	.0005521	.061245	.0044098	.18839	.0001767	.000351
%RSD	15.69663	1.515846	.4418134	.5371905	3.273988	16.11695

#1	.0028838	3.981303	.9982299	34.93244	.0052001	-.002495
#2	.0038974	4.103578	1.002468	34.99282	.0054512	-.001801
#3	.0037698	4.036143	.993650	35.28472	.0055410	-.002231

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	287.0561	.0033808	.0437719	30.52862	1.224008	.0059396
Stddev	3.3304	.0078289	.0000758	.35344	.014656	.0001829
%RSD	1.160185	231.5733	.1731284	1.157745	1.197355	3.079142

#1	284.4828	.0124191	.0438395	30.21460	1.235474	.0061482
#2	290.8177	-.000985	.0436900	30.91139	1.207496	.0058643
#3	285.8679	-.001292	.0437862	30.45986	1.229054	.0058065

Sample Name: Q3254-06 Acquired: 10/2/2025 15:05:40 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.026936	-.004923	F 14.91526	.0068627	F 22.14035	-.057792
Stddev	.000761	.001346	.15835	.0018054	.07421	.004905
%RSD	2.823734	27.34495	1.061635	26.30700	.3351577	8.486826

#1	-.026841	-.005468	14.77990	.0052341	22.12143	-.058783
#2	-.026228	-.003390	15.08939	.0088040	22.22219	-.052468
#3	-.027740	-.005911	14.87650	.0065500	22.07744	-.062126

Elem	Sr4077
Units	ppm
Avg	.9564782
Stddev	.0009989
%RSD	.1044349

#1	.9566499
#2	.9573802
#3	.9554046

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7507.722	86579.09	4556.187	5718.904	7855.592
Stddev	18.099	272.90	40.721	19.651	19.204
%RSD	.2410690	.3152085	.8937626	.3436131	.2444608

#1	7486.824	86565.22	4518.930	5714.686	7833.485
#2	7518.356	86313.38	4599.658	5701.705	7865.147
#3	7517.984	86858.66	4549.974	5740.322	7868.145

Sample Name: Q3254-07 Acquired: 10/2/2025 15:09:43 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0043002	.0174549	.0071372	.0071925	.0064769	.1618486
Stddev	.0015884	.0026728	.0013148	.0055389	.0010213	.0071917
%RSD	36.93756	15.31252	18.42199	77.00915	15.76852	4.443453

#1	.0052261	.0170888	.0057789	.0015679	.0063987	.1571581
#2	.0052084	.0202919	.0072290	.0073682	.0075350	.1701284
#3	.0024661	.0149841	.0084037	.0126415	.0054969	.1582592

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3291723	.0008806	-.000361	169.7999	.0037351	.0027305
Stddev	.0037665	.0001785	.000066	.4594	.0008768	.0002551
%RSD	1.144236	20.27379	18.43769	.2705517	23.47340	9.343311

#1	.3257172	.0010502	-.000347	170.1313	.0046850	.0024885
#2	.3286122	.0006943	-.000302	169.2755	.0029570	.0027061
#3	.3331875	.0008973	-.000433	169.9929	.0035631	.0029970

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0210336	21.62273	2.355202	41.07326	.0400649	-.003453
Stddev	.0001973	.18327	.008105	.22061	.0007804	.001280
%RSD	.9379539	.8475947	.3441227	.5371063	1.947805	37.07736

#1	.0211084	21.59264	2.358289	41.09900	.0404969	-.002676
#2	.0211826	21.81918	2.346007	40.84092	.0405338	-.004930
#3	.0208099	21.45636	2.361310	41.27988	.0391640	-.002752

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	459.2363	.0083240	.1352801	44.36611	1.922952	.0047735
Stddev	5.3568	.0106594	.0007916	.47629	.023349	.0002710
%RSD	1.166453	128.0559	.5851262	1.073536	1.214202	5.676944

#1	464.6057	-.003220	.1344681	44.05770	1.928085	.0046977
#2	453.8922	.010399	.1360495	44.91466	1.897464	.0050743
#3	459.2110	.017793	.1353226	44.12597	1.943306	.0045485

Sample Name: Q3254-07 Acquired: 10/2/2025 15:09:43 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.026078	.0074582	F 16.82971	.0491607	F 26.14009	-.044976
Stddev	.000321	.0011701	.11955	.0003805	.10699	.007855
%RSD	1.229500	15.68851	.7103488	.7739495	.4092846	17.46560

#1	-.026405	.0087498	16.80831	.0487424	26.16391	-.035969
#2	-.026064	.0071555	16.95851	.0492534	26.23315	-.050410
#3	-.025765	.0064692	16.72230	.0494863	26.02320	-.048549

Elem	Sr4077
Units	ppm
Avg	.7666465
Stddev	.0009378
%RSD	.1223268

#1	.7666075
#2	.7657288
#3	.7676032

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7459.258	81343.50	4565.167	5585.436	7746.810
Stddev	15.822	349.96	57.245	24.152	20.695
%RSD	.2121093	.4302213	1.253955	.4324109	.2671361

#1	7477.239	81733.62	4567.267	5612.306	7769.487
#2	7453.067	81239.70	4621.333	5578.467	7728.946
#3	7447.468	81057.19	4506.900	5565.534	7741.996

Sample Name: Q3254-07DUP Acquired: 10/2/2025 15:13:54 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0031438	.0179353	.0089642	.0084020	.0045353	.1513367
Stddev	.0003580	.0035103	.0005723	.0044069	.0039218	.0132829
%RSD	11.38641	19.57186	6.384727	52.45017	86.47411	8.777042

#1	.0031800	.0218890	.0093780	.0067953	.0004106	.1379218
#2	.0034823	.0167317	.0092034	.0133867	.0082165	.1644835
#3	.0027691	.0151851	.0083110	.0050239	.0049786	.1516050

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3351278	.0010168	-.000235	170.4329	.0036983	.0026527
Stddev	.0037151	.0000267	.000085	.3939	.0005249	.0001327
%RSD	1.108563	2.623812	36.13574	.2310963	14.19272	5.002925

#1	.3379409	.0010006	-.000272	170.8082	.0042854	.0025566
#2	.3309165	.0010023	-.000137	170.0228	.0035351	.0025974
#3	.3365260	.0010476	-.000294	170.4678	.0032744	.0028042

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0222276	19.97983	2.379353	41.51657	.0396807	-.003228
Stddev	.0004398	.21465	.015613	.12037	.0003700	.000620
%RSD	1.978631	1.074324	.6561974	.2899324	.9323701	19.21345

#1	.0227174	20.22572	2.394044	41.53550	.0392585	-.003920
#2	.0218666	19.82990	2.362957	41.38786	.0399485	-.003040
#3	.0220988	19.88387	2.381057	41.62635	.0398350	-.002723

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	426.1743	-.003794	.1333371	41.44328	1.998790	.0048150
Stddev	5.7041	.004174	.0009027	.35394	.010849	.0000773
%RSD	1.338452	110.0119	.6770048	.8540311	.5427580	1.604597

#1	432.4899	-.006115	.1340844	41.81577	1.986270	.0047684
#2	421.3972	.001025	.1335929	41.11140	2.004680	.0047723
#3	424.6358	-.006293	.1323342	41.40267	2.005418	.0049041

Sample Name: Q3254-07DUP Acquired: 10/2/2025 15:13:54 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.025677	.0085600	F 15.62765	.0493688	F 26.40360	-.042545
Stddev	.000643	.0020418	.09387	.0013286	.12466	.003258
%RSD	2.505249	23.85301	.6006881	2.691125	.4721352	7.656766

#1	-.024961	.0069705	15.73555	.0509028	26.30280	-.040356
#2	-.026207	.0108628	15.56473	.0486148	26.36501	-.046288
#3	-.025862	.0078467	15.58267	.0485887	26.54299	-.040990

Elem	Sr4077
Units	ppm
Avg	.7695441
Stddev	.0048087
%RSD	.6248761

#1	.7739591
#2	.7644204
#3	.7702530

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7343.330	83038.54	4272.412	5635.322	7614.537
Stddev	37.241	248.18	15.542	37.900	39.158
%RSD	.5071342	.2988749	.3637659	.6725373	.5142583

#1	7377.529	82794.36	4287.220	5591.590	7649.738
#2	7348.807	83290.54	4273.788	5658.618	7621.513
#3	7303.654	83030.72	4256.228	5655.756	7572.359

Sample Name: Q3254-07LX5 Acquired: 10/2/2025 15:18:04 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0066016	.0191785	.0045497	.0178886	.0087271	.0171573	.1002194
Stddev	.0028507	.0048407	.0009148	.0018099	.0061956	.0063661	.0013145
%RSD	43.18126	25.24029	20.10765	10.11764	70.99322	37.10448	1.311649

#1	.0048894	.0170271	.0034952	.0164793	.0081670	.0099156	.1008217
#2	.0098924	.0247220	.0051309	.0199298	.0151837	.0196843	.0987116
#3	.0050231	.0157865	.0050231	.0172568	.0028305	.0218720	.1011248

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004718	-.000427	37.34865	.0023027	.0004478	.0057769	4.117816
Stddev	.0000998	.000200	.19984	.0001589	.0004193	.0006240	.015375
%RSD	21.15911	46.81362	.5350743	6.900613	93.63443	10.80101	.3733758

#1	.0003665	-.000226	37.57739	.0021208	.0000664	.0055084	4.132448
#2	.0004836	-.000428	37.20788	.0024146	.0008968	.0053322	4.101793
#3	.0005651	-.000626	37.26069	.0023726	.0003803	.0064902	4.119206

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5168325	8.952966	.0075705	-.002160	84.76202	.0065601	.0272011
Stddev	.0034161	.037912	.0006524	.000225	.27884	.0059265	.0001598
%RSD	.6609699	.4234591	8.617342	10.40567	.3289706	90.34274	.5873298

#1	.5196020	8.986597	.0072187	-.002359	84.88686	.0027046	.0273078
#2	.5178803	8.960421	.0083233	-.001916	84.95664	.0133843	.0270174
#3	.5130152	8.911880	.0071696	-.002206	84.44258	.0035913	.0272780

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.55404	.4859772	.0009904	-.007118	.0078330	3.145184	.0024719
Stddev	.07552	.0029428	.0002601	.000535	.0048394	.001986	.0010003
%RSD	.6015258	.6055501	26.25603	7.515868	61.78203	.0631285	40.46657

#1	12.63873	.4884501	.0012727	-.006571	.0022501	3.144497	.0024927
#2	12.49369	.4867592	.0007606	-.007640	.0104174	3.147421	.0034616
#3	12.52972	.4827224	.0009380	-.007144	.0108316	3.143632	.0014614

Sample Name: Q3254-07LX5 Acquired: 10/2/2025 15:18:04 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	5.274716	.0372032	.1687977
Stddev	.073335	.0042434	.0012828
%RSD	1.390304	11.40611	.7599785

#1	5.359312	.0351953	.1702789
#2	5.235674	.0343364	.1680445
#3	5.229161	.0420780	.1680697

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7685.764	86907.85	4242.539	5924.419	8268.726
Stddev	26.486	176.81	8.945	20.285	26.441
%RSD	.3446150	.2034503	.2108307	.3423952	.3197699

#1	7675.285	86823.90	4233.156	5906.181	8255.013
#2	7666.121	87111.01	4250.968	5946.267	8251.959
#3	7715.886	86788.66	4243.494	5920.810	8299.206

Sample Name: Q3254-07MS Acquired: 10/2/2025 15:22:09 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8955480	2.226722	1.089925	2.318826	.8007386	2.042902
Stddev	.0010384	.132016	.003310	.011535	.0022408	.039247
%RSD	.1159533	5.928712	.3037058	.4974669	.2798445	1.921122

#1	.8952919	2.079693	1.092175	2.305526	.7981514	2.044370
#2	.8946616	2.265380	1.086124	2.326103	.8020045	2.081394
#3	.8966905	2.335093	1.091475	2.324849	.8020601	2.002942

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5207050	.2089657	.2216480	172.1965	.4412933	.2118858
Stddev	.0037558	.0008094	.0002600	.3585	.0015869	.0001744
%RSD	.7212979	.3873600	.1172852	.2081981	.3595951	.0822881

#1	.5165123	.2080740	.2214414	171.8158	.4428409	.2116846
#2	.5237617	.2096541	.2215626	172.5278	.4396699	.2119923
#3	.5218410	.2091690	.2219399	172.2459	.4413692	.2119807

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3281968	22.32708	2.588934	43.43033	.5690639	.0728915
Stddev	.0004676	.05287	.009054	.08821	.0004817	.0004841
%RSD	.1424645	.2367896	.3497290	.2031151	.0846470	.6641916

#1	.3279110	22.36555	2.578568	43.40193	.5694032	.0734474
#2	.3279430	22.34889	2.595298	43.35981	.5692759	.0726644
#3	.3287364	22.26679	2.592935	43.52925	.5685125	.0725627

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	421.2878	.2988056	.3431186	49.91161	2.404211	.4134033
Stddev	6.0579	.0085235	.0010756	.14066	.013011	.0004304
%RSD	1.437939	2.852509	.3134744	.2818097	.5411851	.1041071

#1	428.1936	.3075637	.3422493	49.86678	2.389790	.4134618
#2	416.8708	.2905380	.3427851	49.79884	2.415071	.4138015
#3	418.7989	.2983152	.3443215	50.06922	2.407771	.4129467

Sample Name: Q3254-07MS Acquired: 10/2/2025 15:22:09 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7869076	.1973708	F 16.20680	7.790988	F 27.16732	.1185852
Stddev	.0012222	.0020255	.06399	.014888	.24273	.0091902
%RSD	.1553218	1.026224	.3948492	.1910893	.8934542	7.749837
#1	.7854987	.1996507	16.27691	7.779225	26.88939	.1079751
#2	.7876844	.1957791	16.15154	7.786011	27.27494	.1240570
#3	.7875396	.1966826	16.19196	7.807726	27.33763	.1237235

Elem	Sr4077
Units	ppm
Avg	.9592156
Stddev	.0039090
%RSD	.4075167
#1	.9548273
#2	.9623246
#3	.9604950

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7288.863	81742.70	4144.622	5630.171	7530.177
Stddev	11.971	496.25	4.760	42.266	9.380
%RSD	.1642425	.6070839	.1148445	.7506991	.1245682
#1	7299.316	81179.91	4139.613	5583.096	7535.567
#2	7291.470	82117.44	4145.168	5664.860	7535.618
#3	7275.803	81930.76	4149.086	5642.558	7519.346

Sample Name: Q3254-07MSD Acquired: 10/2/2025 15:26:13 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9595976	2.112156	1.170510	2.473727	.8691009	2.165198
Stddev	.0041749	.133814	.004048	.005071	.0025340	.023277
%RSD	.4350647	6.335400	.3458655	.2049757	.2915666	1.075050

#1	.9643399	2.253967	1.169702	2.477306	.8675523	2.182868
#2	.9564765	2.094385	1.166927	2.475950	.8720252	2.138823
#3	.9579762	1.988116	1.174902	2.467925	.8677251	2.173903

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5600893	.2242926	.2363775	186.7916	.4670512	.2255546
Stddev	.0016132	.0018669	.0004542	.2505	.0012062	.0005648
%RSD	.2880165	.8323599	.1921593	.1341297	.2582560	.2504063

#1	.5616258	.2222384	.2358619	186.6586	.4658356	.2250471
#2	.5602331	.2247536	.2367187	186.6356	.4670701	.2254536
#3	.5584091	.2258859	.2365518	187.0806	.4682478	.2261631

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3496195	23.89852	2.817725	47.11193	.6070670	.0796870
Stddev	.0016580	.06639	.005033	.11351	.0021489	.0011055
%RSD	.4742325	.2778010	.1786244	.2409387	.3539846	1.387332

#1	.3482580	23.95700	2.817878	46.99948	.6046177	.0805281
#2	.3491347	23.82636	2.812616	47.22647	.6079471	.0784348
#3	.3514659	23.91221	2.822679	47.10985	.6086361	.0800980

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	447.2108	.3100995	.3658441	54.17259	2.640584	.4385731
Stddev	2.9397	.0039964	.0006622	.38273	.022105	.0008155
%RSD	.6573401	1.288737	.1809990	.7065075	.8371344	.1859340

#1	446.0610	.3059219	.3651575	54.33925	2.615119	.4393465
#2	450.5517	.3138858	.3658962	53.73478	2.654826	.4377213
#3	445.0199	.3104909	.3664787	54.44374	2.651808	.4386515

Sample Name: Q3254-07MSD Acquired: 10/2/2025 15:26:13 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8518853	.2161722	F 17.37415	8.149114	F 29.29422	.1168781
Stddev	.0012104	.0045835	.06364	.034693	.30418	.0040014
%RSD	.1420877	2.120286	.3662846	.4257319	1.038375	3.423592
#1	.8515228	.2188179	17.44606	8.185145	29.62069	.1182657
#2	.8532356	.2108797	17.32509	8.146264	29.24320	.1123676
#3	.8508976	.2188191	17.35130	8.115934	29.01877	.1200010

Elem	Sr4077
Units	ppm
Avg	1.038997
Stddev	.007257
%RSD	.6984444
#1	1.041576
#2	1.030803
#3	1.044612

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7215.400	81147.25	4055.238	5574.389	7417.463
Stddev	31.539	297.41	14.338	16.316	32.658
%RSD	.4371070	.3665050	.3535738	.2927015	.4402888
#1	7244.070	80995.25	4065.513	5559.770	7449.126
#2	7220.513	80956.55	4038.857	5571.406	7419.370
#3	7181.617	81489.94	4061.343	5591.991	7383.893

Sample Name: Q3254-07A Acquired: 10/2/2025 15:30:17 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9519969	1.985330	1.168792	2.473925	.3359618	.8389720
Stddev	.1242437	.231414	.148024	.309862	.0895610	.1561123
%RSD	13.05085	11.65621	12.66468	12.52511	26.65809	18.60756

#1	.8230272	1.797865	1.012604	2.151496	.2450941	.6960753
#2	.9620610	1.914153	1.186762	2.500810	.3386351	.8152551
#3	1.070902	2.243972	1.307011	2.769468	.4241563	1.005586

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4059476	.1416215	.2365820	169.4162	.2988978	.2242969
Stddev	.0136973	.0187094	.0301062	.2778	.0400123	.0280671
%RSD	3.374156	13.21087	12.72548	.1639640	13.38663	12.51336

#1	.3925020	.1232412	.2049797	169.5384	.2586958	.1948045
#2	.4054573	.1409797	.2398390	169.6119	.2992797	.2274066
#3	.4198834	.1606435	.2649272	169.0983	.3387177	.2506796

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3492890	20.66097	2.422237	41.78802	.6022147	.0490730
Stddev	.0423890	.14482	.006743	.35589	.0699053	.0074400
%RSD	12.13580	.7009585	.2783899	.8516472	11.60804	15.16112

#1	.3046789	20.49407	2.418930	41.41580	.5288791	.0420091
#2	.3541504	20.73526	2.429995	41.82330	.6096736	.0483705
#3	.3890377	20.75357	2.417785	42.12495	.6680915	.0568393

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	407.9559	.1188488	.2734192	44.89152	2.299392	.1643154
Stddev	3.1135	.0225346	.0186194	.55518	.030883	.0455038
%RSD	.7631954	18.96070	6.809838	1.236706	1.343093	27.69293

#1	410.4588	.0955339	.2550166	44.27234	2.271130	.1191412
#2	408.9394	.1205003	.2729929	45.05729	2.294688	.1636632
#3	404.4694	.1405121	.2922480	45.34493	2.332357	.2101417

Sample Name: Q3254-07A Acquired: 10/2/2025 15:30:17 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2974828	.0214110	F 15.54916	8.129754	F 26.76853	.0056282
Stddev	.0952157	.0063087	.03331	.988490	.19831	.0099981
%RSD	32.00712	29.46482	.2142352	12.15892	.7408469	177.6432

#1	.2038504	.0161438	15.52037	7.122488	26.97157	-.001700
#2	.2943914	.0196865	15.54147	8.168440	26.57531	.001567
#3	.3942065	.0284026	15.58565	9.098333	26.75871	.017018

Elem	Sr4077
Units	ppm
Avg	.8282968
Stddev	.0089183
%RSD	1.076702

#1	.8183980
#2	.8307873
#3	.8357050

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7173.162	78070.42	3995.566	5405.001	7401.605
Stddev	24.052	516.11	26.229	41.317	21.086
%RSD	.3353071	.6610778	.6564460	.7644126	.2848879

#1	7173.684	77679.04	3971.001	5368.350	7399.238
#2	7196.949	77876.89	3992.506	5396.878	7423.775
#3	7148.853	78655.31	4023.190	5449.776	7381.802

Sample Name: Q3254-08 Acquired: 10/2/2025 15:34:12 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0048264	.0218596	.0053290	.0232138	.0092987	.0370957
Stddev	.0073864	.0034838	.0018412	.0024958	.0050059	.0108071
%RSD	153.0412	15.93709	34.55095	10.75137	53.83374	29.13298

#1	-.003251	.0247657	.0044732	.0222428	.0095918	.0300735
#2	.011237	.0179977	.0040714	.0260491	.0041528	.0316731
#3	.006493	.0228156	.0074424	.0213494	.0141516	.0495404

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3467848	.0009941	-.000345	173.2590	.0033802	.0026482
Stddev	.0026672	.0000733	.000056	.4706	.0005652	.0003600
%RSD	.7691272	7.377254	16.30157	.2716283	16.72027	13.59314

#1	.3469783	.0010283	-.000364	173.6488	.0035939	.0022530
#2	.3440261	.0009100	-.000389	172.7362	.0027393	.0027344
#3	.3493501	.0010442	-.000282	173.3920	.0038073	.0029572

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0122240	19.18071	2.425669	42.02620	.0373490	-.004387
Stddev	.0005110	.13214	.016743	.12807	.0004680	.000459
%RSD	4.180111	.6889215	.6902312	.3047288	1.252954	10.47346

#1	.0127190	19.31640	2.435901	42.10527	.0370088	-.004521
#2	.0122544	19.05243	2.406347	42.09488	.0371555	-.003876
#3	.0116984	19.17330	2.434758	41.87844	.0378827	-.004765

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	406.6898	.0056603	.1248877	41.27989	2.164784	.0047764
Stddev	3.5677	.0071911	.0007731	.21032	.008654	.0002504
%RSD	.8772484	127.0445	.6190537	.5094923	.3997475	5.243509

#1	407.7844	.0092069	.1249248	41.18485	2.172274	.0050418
#2	402.7031	.0103892	.1240966	41.13386	2.155311	.0047433
#3	409.5820	-.002615	.1256415	41.52095	2.166768	.0045442

Sample Name: Q3254-08 Acquired: 10/2/2025 15:34:12 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.026499	-.000403	F 15.16459	.0429159	F 28.09551	-.051136
Stddev	.001006	.003186	.07100	.0019581	.28223	.010670
%RSD	3.795408	791.2236	.4682140	4.562720	1.004527	20.86664

#1	-.027463	-.002608	15.13112	.0421247	28.38918	-.052242
#2	-.025456	.003250	15.24614	.0414772	27.82632	-.039956
#3	-.026579	-.001851	15.11651	.0451459	28.07103	-.061211

Elem	Sr4077
Units	ppm
Avg	.7869242
Stddev	.0073344
%RSD	.9320312

#1	.7909223
#2	.7784595
#3	.7913909

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7119.868	78951.41	3875.381	5483.984	7327.871
Stddev	7.218	301.48	19.632	7.657	7.890
%RSD	.1013800	.3818523	.5065742	.1396218	.1076776

#1	7112.105	79045.51	3866.466	5484.163	7319.307
#2	7126.377	79194.62	3897.888	5491.550	7334.847
#3	7121.123	78614.11	3861.788	5476.240	7329.457

Sample Name: CCV04 Acquired: 10/2/2025 15:54:16 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV04 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.460598	5.165748	5.274570	4.901248	4.921082	9.319877
Stddev	.035940	.195298	.019965	.018974	.015561	.055951
%RSD	.6581757	3.780626	.3785108	.3871304	.3162021	.6003366

#1	5.429896	4.946080	5.257495	4.879607	4.908084	9.300898
#2	5.451767	5.231417	5.269694	4.915031	4.916837	9.382849
#3	5.500131	5.319747	5.296521	4.909105	4.938325	9.275885

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.074816	.2336235	2.663105	23.86584	1.066826	2.479181
Stddev	.068337	.0028429	.012634	.15688	.014706	.008727
%RSD	.7530420	1.216894	.4743972	.6573442	1.378452	.3520220

#1	9.085575	.2328556	2.651956	23.87819	1.073274	2.472471
#2	9.137135	.2367716	2.660533	24.01618	1.077206	2.476025
#3	9.001738	.2312434	2.676827	23.70315	1.049998	2.489047

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.288290	5.296431	2.343470	24.14536	2.519794	1.285059
Stddev	.005765	.095040	.022436	.27079	.010479	.012445
%RSD	.4474922	1.794418	.9573757	1.121499	.4158764	.9684629

#1	1.282641	5.375254	2.345290	24.05759	2.510748	1.289600
#2	1.288065	5.323146	2.364940	24.44915	2.517355	1.294596
#3	1.294164	5.190892	2.320179	23.92934	2.531277	1.270981

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	23.25527	2.398854	2.509711	24.17296	5.434850	4.781649
Stddev	.29031	.024734	.013812	.16246	.063591	.016380
%RSD	1.248348	1.031057	.5503296	.6720828	1.170052	.3425558

#1	23.54617	2.390174	2.517562	24.18159	5.402918	4.765758
#2	23.25408	2.426758	2.517809	24.33093	5.508079	4.780712
#3	22.96556	2.379631	2.493764	24.00635	5.393553	4.798477

Sample Name: CCV04 Acquired: 10/2/2025 15:54:16 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV04 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 5.504136	4.685984	F 3.664128	F 6.026209	F 5.746284	F 3.128322
Stddev	.027145	.037774	.037130	.042461	.061997	.025806
%RSD	.4931743	.8060981	1.013338	.7046084	1.078906	.8249044

#1	5.475248	4.690016	3.699307	5.977476	5.684944	3.129702
#2	5.508046	4.721581	3.667762	6.045911	5.744989	3.153410
#3	5.529114	4.646357	3.625315	6.055241	5.808918	3.101854

Elem	Sr4077
Units	ppm
Avg	4.564561
Stddev	.033395
%RSD	.7316245

#1	4.572009
#2	4.593604
#3	4.528071

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7186.475	81123.33	3647.865	5466.335	7827.649
Stddev	18.080	877.84	36.770	50.562	19.715
%RSD	.2515878	1.082110	1.007993	.9249679	.2518667

#1	7207.168	80530.56	3654.753	5418.367	7850.187
#2	7173.728	80707.63	3608.138	5461.493	7813.601
#3	7178.530	82131.81	3680.704	5519.143	7819.158

Sample Name: CCB04 Acquired: 10/2/2025 16:05:32 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB04 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0057208	.0175344	.0026717	.0091018	.0138414	-.026790
Stddev	.0039022	.0018194	.0004715	.0030903	.0011651	.021810
%RSD	68.21193	10.37610	17.64709	33.95249	8.417311	81.41018

#1	.0057282	.0194433	.0022072	.0096325	.0148555	-.050425
#2	.0018148	.0158202	.0031498	.0057805	.0140999	-.022500
#3	.0096193	.0173396	.0026582	.0118923	.0125688	-.007444

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0442226	.0002303	-.000567	-.025679	.0018042	.0001049
Stddev	.0029313	.0001597	.000059	.033509	.0001606	.0005301
%RSD	6.628462	69.32743	10.45295	130.4915	8.901980	505.1630

#1	.0451538	.0003507	-.000595	-.060271	.0018237	.0005746
#2	.0409389	.0000492	-.000499	-.023397	.0016347	-.000470
#3	.0465752	.0002911	-.000607	.006630	.0019542	.000210

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0012188	.0213355	.0018489	-.012887	-.000997	-.000705
Stddev	.0002343	.0094687	.0008906	.060026	.000843	.000475
%RSD	19.22024	44.38005	48.16606	465.8012	84.56999	67.40119

#1	.0013982	.0297997	.0009080	-.081490	-.000025	-.000796
#2	.0013045	.0111097	.0019600	.029974	-.001531	-.001127
#3	.0009538	.0230971	.0026787	.012857	-.001434	-.000191

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.566531	.0009889	-.000953	-.750061	.0106800	.0004632
Stddev	.022391	.0060280	.000308	.074582	.0010175	.0001117
%RSD	3.952238	609.5680	32.25983	9.943451	9.527064	24.10486

#1	-.591502	.0079008	-.001046	-.684347	.0101097	.0005453
#2	-.559847	-.001755	-.000610	-.734714	.0118547	.0005083
#3	-.548243	-.003179	-.001204	-.831123	.0100755	.0003361

Sample Name: CCB04 Acquired: 10/2/2025 16:05:32 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB04 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -.026417	.0054068	-.006872	F -.011394	F .0184804	F -.030926
Stddev	.000616	.0064727	.012584	.001011	.0011539	.006832
%RSD	2.330268	119.7132	183.1248	8.874867	6.243914	22.09304

#1	-.025807	.0038362	-.021070	-.011726	.0174319	-.037304
#2	-.027038	-.000136	-.002450	-.010258	.0197167	-.023715
#3	-.026406	.012520	.002904	-.012197	.0182927	-.031759

Elem	Sr4077
Units	ppm
Avg	-.000164
Stddev	.000161
%RSD	98.61982

#1	-.000003
#2	-.000326
#3	-.000163

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7365.446	85752.86	3620.857	5739.798	8825.908
Stddev	49.319	182.23	19.035	7.156	41.279
%RSD	.6695972	.2125093	.5256981	.1246815	.4677033

#1	7308.977	85790.27	3599.864	5737.198	8778.344
#2	7400.067	85554.82	3636.993	5747.891	8852.380
#3	7387.295	85913.49	3625.713	5734.305	8846.999

Sample Name: Q3245-24 Acquired: 10/2/2025 16:47:11 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001008	-.004181	.0044637	-.009674	-.002698	.0557587	.1770536
Stddev	.001245	.002886	.0014627	.001861	.001445	.0068166	.0026389
%RSD	123.4245	69.02725	32.76920	19.24104	53.57055	12.22522	1.490434

#1	-.002130	-.004482	.0052729	-.009844	-.004365	.0493774	.1743363
#2	-.001226	-.001156	.0053431	-.011444	-.001917	.0549588	.1796064
#3	.000330	-.006905	.0027752	-.007733	-.001811	.0629400	.1772181

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000112	.0003060	1.599732	.0011210	-.000222	-.000295	.0199406
Stddev	.0000218	.0000402	.011503	.0002376	.000210	.000243	.0152198
%RSD	195.2671	13.12000	.7190413	21.19613	94.52148	82.43253	76.32581

#1	.0000248	.0003517	1.595080	.0012292	-.000405	-.000014	.0347118
#2	-.000014	.0002903	1.612832	.0012853	.000007	-.000434	.0208013
#3	.000023	.0002761	1.591283	.0008486	-.000267	-.000436	.0043087

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0107295	.3412988	.0013055	.0000932	310.5134	-.000335	.1331391
Stddev	.0006055	.0180242	.0001140	.0000932	2.5921	.002575	.0008084
%RSD	5.643731	5.281059	8.729712	99.98643	.8347820	769.6182	.6071725

#1	.0112364	.3569717	.0014355	.0000334	311.7752	-.000351	.1330667
#2	.0108931	.3453216	.0012231	.0000456	312.2330	-.002902	.1323693
#3	.0100590	.3216031	.0012578	.0002006	307.5320	.002249	.1339812

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6923818	.0142466	.0001235	-.016208	.0008962	.0539262	.0137408
Stddev	.0231528	.0007751	.0000845	.000441	.0007972	.0079597	.0004915
%RSD	3.343941	5.440289	68.41573	2.720306	88.94672	14.76035	3.576706

#1	.6919196	.0137657	.0001876	-.016619	.0010540	.0516875	.0142998
#2	.7157623	.0151407	.0001550	-.015742	.0016027	.0473256	.0135464
#3	.6694636	.0138334	.0000278	-.016263	.0000320	.0627655	.0133763

Sample Name: Q3245-24 Acquired: 10/2/2025 16:47:11 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.1825533	-.011239	.0085688
Stddev	.0039062	.000984	.0001295
%RSD	2.139765	8.754046	1.511066

#1	.1823320	-.012214	.0084240
#2	.1787624	-.011256	.0086736
#3	.1865655	-.010246	.0086087

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7310.285	100097.4	8424.765	5439.943	8323.492
Stddev	93.753	67.7	74.480	24.336	84.354
%RSD	1.282474	.0676095	.8840616	.4473537	1.013443

#1	7204.685	100175.2	8508.635	5420.858	8226.178
#2	7342.447	100064.6	8399.311	5467.348	8368.528
#3	7383.724	100052.3	8366.348	5431.624	8375.769

Sample Name: Q3245-16 Acquired: 10/2/2025 16:51:27 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001959	.0003118	.0011239	-.002387	-.001900	.0609069	.1046582
Stddev	.001181	.0023093	.0011533	.003183	.004543	.0197435	.0002652
%RSD	60.28408	740.7137	102.6142	133.3421	239.1225	32.41585	.2533527

#1	-.003213	.0028772	.0002096	-.000753	.000893	.0817283	.1045254
#2	-.001799	-.000341	.0007426	-.006056	-.007142	.0424552	.1049636
#3	-.000866	-.001601	.0024195	-.000353	.000549	.0585374	.1044857

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000006	.0000770	.2343913	.0009293	.0001505	.0000776	.0018321
Stddev	.000069	.0000592	.0202547	.0004882	.0001036	.0003217	.0043319
%RSD	1188.550	76.88654	8.641418	52.53574	68.82153	414.4339	236.4420

#1	-.000072	.0001359	.2326719	.0007273	.0000960	-.000281	.0041056
#2	.000066	.0000776	.2554509	.0005745	.0002699	.000340	.0045540
#3	-.000011	.0000175	.2150510	.0014861	.0000856	.000174	-.003163

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0097676	.1236953	.0006079	-.000282	168.2693	.0038748	.0544412
Stddev	.0005313	.0320884	.0001830	.000501	2.1886	.0048005	.0003094
%RSD	5.438956	25.94148	30.10089	177.9036	1.300639	123.8906	.5683612

#1	.0102258	.0868438	.0006343	-.000394	170.6240	.0094167	.0547984
#2	.0091853	.1454586	.0007762	-.000717	166.2974	.0010068	.0542550
#3	.0098919	.1387837	.0004131	.000266	167.8865	.0012008	.0542702

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0798849	.0083488	-.000144	-.017155	.0020762	-.004390	.0068657
Stddev	.0646013	.0008873	.000059	.000283	.0018205	.021260	.0013680
%RSD	80.86798	10.62742	41.40810	1.647204	87.68613	484.2443	19.92540

#1	.0112059	.0073249	-.000169	-.017393	.0009263	-.027901	.0074166
#2	.0890110	.0088290	-.000186	-.016843	.0041751	.001247	.0078724
#3	.1394380	.0088924	-.000076	-.017230	.0011271	.013483	.0053081

Sample Name: Q3245-16 Acquired: 10/2/2025 16:51:27 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.1161750	-.013204	.0026271
Stddev	.0007346	.001778	.0000349
%RSD	.6323400	13.46416	1.327770

#1	.1154246	-.014413	.0026610
#2	.1168927	-.014036	.0026292
#3	.1162076	-.011163	.0025913

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	8003.807	103513.2	7455.516	5978.136	9041.662
Stddev	20.883	729.5	60.471	64.850	39.029
%RSD	.2609144	.7047422	.8110851	1.084789	.4316583

#1	8014.181	102720.1	7480.237	5903.952	9067.732
#2	8017.472	104155.6	7386.601	6024.066	9060.463
#3	7979.768	103663.9	7499.709	6006.389	8996.791

Sample Name: Q3245-08 Acquired: 10/2/2025 16:55:39 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001848	.0017668	.0017024	.0024140	-.001540	.0365913	.0801431
Stddev	.002172	.0032284	.0012783	.0024458	.001857	.0180510	.0006482
%RSD	117.5279	182.7273	75.08758	101.3166	120.5659	49.33132	.8088127

#1	-.004101	.0001230	.0030107	-.000185	-.003395	.0183848	.0802770
#2	.000231	-.000309	.0004565	.002757	.000320	.0544826	.0807139
#3	-.001672	.005486	.0016399	.004670	-.001546	.0369064	.0794384

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000014	.0000072	1.287903	.0017152	.0000397	-.000317	.0146649
Stddev	.0000228	.0000687	.010629	.0003796	.0002206	.000227	.0086286
%RSD	1676.471	959.2168	.8252780	22.13285	555.2948	71.61437	58.83876

#1	-.000025	.0000412	1.294065	.0013888	-.000021	-.000564	.0214249
#2	.000011	-.000072	1.275630	.0016249	-.000144	-.000267	.0176236
#3	.000018	.000052	1.294013	.0021318	.000284	-.000119	.0049461

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0269666	.2086287	.0027744	-.000701	140.0859	.0033151	.0298442
Stddev	.0001484	.0163432	.0007416	.000592	1.3349	.0020085	.0001868
%RSD	.5501375	7.833644	26.72987	84.50144	.9529400	60.58588	.6260780

#1	.0270608	.2171978	.0025734	-.000323	141.3895	.0032593	.0298617
#2	.0270435	.1897830	.0035958	-.000397	140.1465	.0013351	.0296493
#3	.0267956	.2189054	.0021540	-.001384	138.7217	.0053510	.0300218

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0078520	.0076336	.0001559	-.016181	.0028835	.0843420	.0019479
Stddev	.0921727	.0005169	.0001933	.000573	.0017777	.0182030	.0005666
%RSD	1173.873	6.771446	124.0321	3.542501	61.64987	21.58232	29.08831

#1	.0769925	.0074833	-.000055	-.015977	.0014705	.0727590	.0020513
#2	-.096793	.0082090	.000324	-.016828	.0023005	.1053231	.0024557
#3	.043357	.0072085	.000199	-.015737	.0048795	.0749440	.0013367

Sample Name: Q3245-08 Acquired: 10/2/2025 16:55:39 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.1052308	-.010666	.0061585
Stddev	.0027194	.005070	.0001731
%RSD	2.584251	47.53868	2.811253

#1	.1059654	-.012156	.0059629
#2	.1022195	-.005017	.0062920
#3	.1075074	-.014824	.0062205

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	8034.801	99259.74	6692.990	6083.580	8897.282
Stddev	32.162	205.08	28.296	42.320	28.362
%RSD	.4002898	.2066062	.4227664	.6956369	.3187728

#1	8007.895	99025.83	6718.523	6035.049	8879.398
#2	8026.085	99344.71	6697.879	6102.887	8882.463
#3	8070.424	99408.67	6662.568	6112.802	8929.984

Sample Name: Q3245-24DUP Acquired: 10/2/2025 16:59:50 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000328	.0063666	.0052233	.0036143	-.002259	.0315898	.1990507
Stddev	.001798	.0003546	.0017066	.0013242	.002456	.0083334	.0013132
%RSD	547.8820	5.569651	32.67291	36.63854	108.7058	26.37997	.6597110

#1	.000472	.0065623	.0071839	.0025581	-.005073	.0323742	.1998659
#2	-.002387	.0059573	.0044147	.0050999	-.000547	.0395033	.1997504
#3	.000931	.0065801	.0040712	.0031847	-.001158	.0228920	.1975359

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000570	.0001744	1.637050	.0017518	.0002382	.0003369	.0216440
Stddev	.0001206	.0000770	.003679	.0002627	.0001216	.0004992	.0009247
%RSD	211.4957	44.16001	.2247371	14.99374	51.04847	148.1625	4.272201

#1	-.000082	.0002234	1.640894	.0016588	.0003571	.0000393	.0212770
#2	.000136	.0000856	1.633562	.0015482	.0001140	.0000583	.0209591
#3	.000117	.0002140	1.636695	.0020483	.0002437	.0009133	.0226958

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0112210	.3649699	.0012308	-.000692	217.9976	.0034941	.1298676
Stddev	.0011130	.0302129	.0000907	.000546	4.9018	.0004404	.0006354
%RSD	9.919267	8.278181	7.367632	78.90828	2.248544	12.60326	.4892269

#1	.0102815	.3931424	.0012095	-.000884	223.5937	.0039665	.1304701
#2	.0124503	.3687036	.0013303	-.000076	215.9342	.0030949	.1292039
#3	.0109312	.3330637	.0011527	-.001116	214.4647	.0034208	.1299288

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5793166	.0241993	.0001804	-.013465	.0013819	.0137945	.0073141
Stddev	.0336448	.0008774	.0000304	.000245	.0016193	.0249707	.0008555
%RSD	5.807678	3.625784	16.83966	1.818140	117.1792	181.0200	11.69687

#1	.5761097	.0247348	.0002014	-.013208	-.000404	-.014051	.0067932
#2	.6144500	.0246764	.0001943	-.013696	.002754	.034200	.0083015
#3	.5473900	.0231867	.0001456	-.013492	.001796	.021234	.0068477

Sample Name: Q3245-24DUP Acquired: 10/2/2025 16:59:50 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.2104447	-.009699	.0081607
Stddev	.0036721	.000592	.0000687
%RSD	1.744905	6.107156	.8418101

#1	.2071964	-.009192	.0081777
#2	.2097087	-.009554	.0082193
#3	.2144290	-.010350	.0080851

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	8349.799	98751.99	6117.112	6183.332	9101.303
Stddev	74.411	1125.13	6.144	65.316	66.614
%RSD	.8911749	1.139350	.1004378	1.056327	.7319204

#1	8316.665	97490.22	6115.367	6107.959	9070.584
#2	8297.710	99114.77	6123.940	6218.697	9055.591
#3	8435.022	99650.97	6112.029	6223.340	9177.734

Sample Name: Q3245-24LX5 Acquired: 10/2/2025 17:04:00 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011418	.0051264	.0017172	.0095509	.0009715	.0143656	.0581421
Stddev	.0015334	.0015187	.0017011	.0034742	.0010436	.0210635	.0016125
%RSD	134.2966	29.62544	99.06157	36.37543	107.4262	146.6244	2.773295

#1	.0013890	.0055091	.0007412	.0128198	.0000710	.0367205	.0567256
#2	.0025367	.0064171	.0007290	.0059026	.0021153	.0114865	.0578038
#3	-.000500	.0034529	.0036815	.0099303	.0007282	-.005110	.0598969

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001148	-.000085	.3795829	.0011324	-.000065	.0001899	.0016401
Stddev	.0000685	.000040	.0125798	.0006317	.000169	.0001124	.0065941
%RSD	59.67917	47.40640	3.314116	55.78465	261.0988	59.17737	402.0608

#1	.0001536	-.000039	.3922756	.0016621	-.000176	.0002251	-.004875
#2	.0001551	-.000105	.3671191	.0004332	-.000147	.0002805	.008310
#3	.0000357	-.000112	.3793539	.0013020	.000129	.0000642	.001485

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0018961	.1064998	.0003186	-.001264	45.40097	.0005393	.0275677
Stddev	.0005785	.0257986	.0001686	.000455	.35271	.0039532	.0001132
%RSD	30.50977	24.22406	52.92131	35.99661	.7768867	733.0457	.4104643

#1	.0023875	.1351268	.0002043	-.001187	45.32103	-.003080	.0275739
#2	.0012586	.0993232	.0002392	-.001752	45.78680	.004758	.0276777
#3	.0020423	.0850493	.0005122	-.000852	45.09509	-.000060	.0274517

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2413304	.0044866	-.000200	-.006124	.0012145	-.005669	-.001554
Stddev	.0576870	.0004346	.000045	.000469	.0019865	.006045	.000167
%RSD	23.90376	9.687467	22.48911	7.662800	163.5612	106.6252	10.76424

#1	.2067942	.0044698	-.000245	-.005664	.0032498	-.005738	-.001735
#2	.2092708	.0040606	-.000155	-.006105	.0011132	.000410	-.001520
#3	.3079264	.0049294	-.000199	-.006602	-.000719	-.011680	-.001405

Sample Name: Q3245-24LX5 Acquired: 10/2/2025 17:04:00 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0451230	.0026862	.0017429
Stddev	.0029488	.0029329	.0003329
%RSD	6.534918	109.1835	19.10068

#1	.0475235	.0044489	.0020258
#2	.0460139	-.000699	.0018269
#3	.0418315	.004309	.0013761

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	8673.200	103427.7	6128.229	6582.865	9761.764
Stddev	12.545	135.6	35.188	25.806	11.496
%RSD	.1446391	.1311112	.5742018	.3920164	.1177609

#1	8658.723	103503.9	6108.579	6591.196	9748.650
#2	8680.866	103508.0	6168.854	6603.476	9770.099
#3	8680.011	103271.1	6107.254	6553.923	9766.542

Sample Name: Q3245-24MS Acquired: 10/2/2025 17:21:31 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8274306	2.043047	1.022035	2.117740	.7817203	1.874784	.3425778
Stddev	.0021217	.061122	.002975	.006188	.0033648	.011002	.0024130
%RSD	.2564207	2.991718	.2910498	.2922116	.4304297	.5868639	.7043726

#1	.8252927	2.026183	1.018609	2.119390	.7805860	1.886041	.3437318
#2	.8274635	2.110831	1.023960	2.110894	.7855057	1.864056	.3441972
#3	.8295357	1.992127	1.023536	2.122936	.7790693	1.874255	.3398045

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2270035	.2066872	2.133371	.4217875	.2005891	.3011597	2.590914
Stddev	.0024031	.0004596	.014442	.0049380	.0005076	.0010792	.033434
%RSD	1.058622	.2223913	.6769382	1.170719	.2530432	.3583383	1.290422

#1	.2295651	.2063139	2.140246	.4163036	.2000031	.3001012	2.560085
#2	.2247988	.2065471	2.143091	.4258817	.2008927	.3022585	2.626453
#3	.2266465	.2072006	2.116776	.4231772	.2008715	.3011195	2.586203

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1957057	2.205778	.5058627	.0723130	141.9535	.2914848	.2943503
Stddev	.0009456	.074476	.0006674	.0007496	2.2855	.0082349	.0025843
%RSD	.4831761	3.376398	.1319288	1.036603	1.610036	2.825172	.8779767

#1	.1956020	2.231226	.5052685	.0720480	140.1389	.3006061	.2914123
#2	.1966989	2.264194	.5065848	.0731591	144.5203	.2845969	.2962720
#3	.1948163	2.121913	.5057349	.0717319	141.2013	.2892515	.2953665

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.606711	.3505100	.3996465	.7399931	.1933026	.7790194	6.583983
Stddev	.106941	.0031773	.0012277	.0016118	.0014694	.0184984	.019364
%RSD	1.242527	.9064914	.3071991	.2178130	.7601730	2.374580	.2941018

#1	8.497180	.3538005	.4009644	.7381350	.1946034	.7579482	6.578988
#2	8.710858	.3474595	.3985352	.7410143	.1917087	.7925872	6.605354
#3	8.612093	.3502700	.3994400	.7408300	.1935959	.7865229	6.567606

Sample Name: Q3245-24MS Acquired: 10/2/2025 17:21:31 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.1785506	.1596589	.1857658
Stddev	.0024958	.0065306	.0011413
%RSD	1.397784	4.090363	.6143768
#1	.1809858	.1635663	.1864186
#2	.1759984	.1521196	.1864307
#3	.1786674	.1632907	.1844479

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	8237.008	95124.25	5218.668	6246.140	8921.737
Stddev	32.715	804.75	50.392	68.439	39.612
%RSD	.3971692	.8459970	.9656133	1.095697	.4439956
#1	8215.262	95759.40	5160.683	6305.830	8902.889
#2	8221.131	94219.26	5243.462	6171.443	8895.069
#3	8274.632	95394.11	5251.861	6261.146	8967.254

Sample Name: CCV05 Acquired: 10/2/2025 17:31:24 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV05 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.058257	4.689654	5.143387	5.154783	4.748463	9.284757
Stddev	.011025	.237337	.009506	.012727	.013283	.047594
%RSD	.2179699	5.060861	.1848236	.2468973	.2797240	.5126042

#1	5.056551	4.415608	5.145325	5.141217	4.754569	9.337039
#2	5.070036	4.824976	5.151774	5.166460	4.757594	9.243948
#3	5.048184	4.828378	5.133061	5.156671	4.733225	9.273284

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.164970	.2388727	2.529301	23.88131	1.024895	2.425427
Stddev	.039052	.0014130	.003944	.05608	.002578	.004840
%RSD	.4260971	.5915462	.1559214	.2348299	.2515569	.1995618

#1	9.183490	.2393986	2.528514	23.85525	1.021952	2.427037
#2	9.191317	.2399474	2.533579	23.94568	1.025979	2.429257
#3	9.120104	.2372721	2.525811	23.84300	1.026754	2.419987

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.239222	5.475423	2.354733	24.14713	2.452081	1.233742
Stddev	.003940	.046738	.013667	.01604	.003780	.001476
%RSD	.3179318	.8536043	.5803956	.0664284	.1541464	.1196527

#1	1.237766	5.485232	2.359257	24.15312	2.453701	1.233582
#2	1.243682	5.424559	2.365565	24.15931	2.454781	1.235292
#3	1.236217	5.516479	2.339378	24.12895	2.447761	1.232352

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	25.98643	2.369933	2.433391	22.53680	4.595943	4.691228
Stddev	.06388	.005273	.004994	.17749	.017784	.015558
%RSD	.2458135	.2224894	.2052478	.7875656	.3869519	.3316416

#1	25.97499	2.374873	2.432706	22.49691	4.602610	4.685942
#2	26.05526	2.364381	2.428775	22.38264	4.609430	4.708741
#3	25.92905	2.370545	2.438693	22.73084	4.575789	4.679003

Sample Name: CCV05 Acquired: 10/2/2025 17:31:24 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV05 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.137679	4.667963	F 4.024417	5.392253	5.184930	F 3.988608
Stddev	.011672	.020343	.075279	.034498	.034175	.018951
%RSD	.2271841	.4358082	1.870554	.6397608	.6591149	.4751296

#1	5.127425	4.665991	4.006431	5.353325	5.145473	4.001750
#2	5.150380	4.689221	3.959761	5.419033	5.205181	3.997192
#3	5.135230	4.648677	4.107060	5.404401	5.204135	3.966885

Elem	Sr4077
Units	ppm
Avg	4.624047
Stddev	.022117
%RSD	.4782959

#1	4.637446
#2	4.636175
#3	4.598519

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	8044.579	94098.39	4838.801	6169.366	8789.558
Stddev	48.053	258.70	24.013	12.946	43.708
%RSD	.5973278	.2749221	.4962668	.2098432	.4972690

#1	8075.943	94397.07	4843.098	6184.130	8820.885
#2	7989.258	93952.98	4812.929	6164.013	8739.626
#3	8068.536	93945.12	4860.375	6159.955	8808.165

Sample Name: CCB05 Acquired: 10/2/2025 17:35:16 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal 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	.0009838	.0068293	.0028098	-.005284	.0066484	.0206694	.0320052
Stddev	.0020348	.0030005	.0009401	.001480	.0030429	.0018307	.0015042
%RSD	206.8309	43.93494	33.45699	28.01524	45.76933	8.856984	4.699707

#1	-.001134	.0095357	.0023612	-.003791	.0097952	.0196468	.0314307
#2	.002924	.0073494	.0021781	-.005310	.0064288	.0195785	.0308730
#3	.001161	.0036028	.0038902	-.006751	.0037212	.0227829	.0337120

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001268	-.000242	-.015019	.0012116	-.000106	-.000009	-.010022
Stddev	.0001205	.000045	.006762	.0002407	.000160	.000511	.006638
%RSD	95.06145	18.56803	45.02672	19.86648	151.1060	5605.604	66.23639

#1	.0000751	-.000251	-.018771	.0011027	.000079	.000118	-.014832
#2	.0000407	-.000281	-.007212	.0014875	-.000193	-.000572	-.002449
#3	.0002645	-.000193	-.019073	.0010446	-.000204	.000427	-.012785

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004715	-.005563	-.000195	-.001205	-.692335	-.004819	-.000891
Stddev	.0003248	.031005	.000301	.000215	.014533	.003583	.000403
%RSD	68.87942	557.2894	153.8976	17.83897	2.099078	74.36148	45.23479

#1	.0007695	.027369	-.000412	-.001446	-.691878	-.006030	-.000487
#2	.0005196	-.009870	.000148	-.001133	-.707091	-.000787	-.000893
#3	.0001254	-.034190	-.000322	-.001035	-.678037	-.007639	-.001294

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.778975	.0036295	.0006132	F -.027578	.0063324	-.004949	-.006901
Stddev	.072104	.0017950	.0002575	.000523	.0024288	.007547	.000731
%RSD	9.256315	49.45664	41.99787	1.897057	38.35500	152.5194	10.58910

#1	-.751620	.0019734	.0003958	-.027735	.0080003	-.013618	-.006241
#2	-.724551	.0055369	.0005461	-.026994	.0035459	.000157	-.006777
#3	-.860754	.0033782	.0008976	-.028004	.0074511	-.001384	-.007686

Sample Name: CCB05 Acquired: 10/2/2025 17:35:16 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB05 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.001156	F -.019548	.0000329
Stddev	.002699	.006835	.0003206
%RSD	233.3985	34.96408	974.4029

#1	-.003926	-.018638	-.000105
#2	.001466	-.013213	-.000196
#3	-.001009	-.026791	.000399

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	8148.403	97337.33	4808.035	6336.225	9685.934
Stddev	17.405	487.13	29.858	48.029	27.753
%RSD	.2135970	.5004584	.6209999	.7580000	.2865313

#1	8166.242	96803.07	4795.744	6280.766	9717.391
#2	8147.500	97452.06	4842.076	6363.754	9675.506
#3	8131.468	97756.86	4786.283	6364.153	9664.906

Sample Name: Q3245-24MSD Acquired: 10/2/2025 17:45:05 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8695614	1.954514	1.083995	2.239795	.8115646	1.926043	.3571939
Stddev	.0004783	.013101	.001628	.004333	.0028297	.017348	.0037768
%RSD	.0550093	.6702820	.1502261	.1934597	.3486776	.9007278	1.057363

#1	.8690862	1.939560	1.085418	2.244623	.8145358	1.913329	.3569795
#2	.8700428	1.960012	1.082219	2.236244	.8089015	1.945807	.3610734
#3	.8695552	1.963970	1.084349	2.238518	.8112565	1.918993	.3535288

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2481837	.2166749	2.202749	.4390063	.2079800	.3140295	2.505245
Stddev	.0006828	.0000952	.023345	.0008163	.0004028	.0003828	.042556
%RSD	.2751150	.0439187	1.059827	.1859458	.1936584	.1219123	1.698678

#1	.2473990	.2167002	2.220129	.4393143	.2083479	.3142725	2.519232
#2	.2486418	.2165696	2.211905	.4396238	.2080424	.3135882	2.539047
#3	.2485104	.2167547	2.176214	.4380808	.2075496	.3142278	2.457456

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1987117	2.278375	.5256822	.0764257	131.8615	.3019409	.3028780
Stddev	.0035319	.044021	.0004013	.0007263	1.7060	.0014915	.0009182
%RSD	1.777412	1.932139	.0763442	.9502793	1.293766	.4939601	.3031535

#1	.1984258	2.314805	.5261444	.0772348	132.9319	.3022395	.3036094
#2	.2023779	2.229459	.5254797	.0762122	132.7584	.3003228	.3018475
#3	.1953314	2.290860	.5254224	.0758301	129.8941	.3032606	.3031770

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.319028	.3830302	.4089187	.7815952	.1969181	.7870972	7.015113
Stddev	.036052	.0015792	.0003903	.0006402	.0027765	.0375856	.008141
%RSD	.4333722	.4122781	.0954483	.0819040	1.409974	4.775210	.1160482

#1	8.341933	.3815666	.4090960	.7822311	.1938530	.7463931	7.007385
#2	8.337680	.3847039	.4084712	.7816035	.1976365	.7944087	7.023612
#3	8.277471	.3828200	.4091888	.7809509	.1992647	.8204898	7.014341

Sample Name: Q3245-24MSD Acquired: 10/2/2025 17:45:05 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.1914081	.1520672	.1895295
Stddev	.0031042	.0044220	.0020257
%RSD	1.621796	2.907927	1.068821

#1	.1882101	.1491269	.1898956
#2	.1916048	.1571526	.1913473
#3	.1944093	.1499222	.1873457

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7850.603	89912.90	4649.635	5953.707	8444.633
Stddev	23.704	623.85	15.265	30.075	27.320
%RSD	.3019400	.6938353	.3283142	.5051408	.3235198

#1	7850.639	89199.61	4632.445	5919.757	8443.864
#2	7874.289	90182.35	4661.607	5977.008	8472.329
#3	7826.881	90356.73	4654.854	5964.357	8417.705

Sample Name: Q3245-24A Acquired: 10/2/2025 17:49:04 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8476387	2.032978	1.059674	2.188309	.7924881	1.898488	.3561074
Stddev	.0020359	.068847	.002921	.004665	.0007595	.037756	.0007514
%RSD	.2401833	3.386507	.2756619	.2131651	.0958427	1.988749	.2109951

#1	.8452945	1.995928	1.056306	2.184132	.7933154	1.854910	.3558063
#2	.8489637	1.990591	1.061188	2.187451	.7923267	1.921394	.3555532
#3	.8486579	2.112416	1.061527	2.193343	.7918223	1.919160	.3569626

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2471386	.2120485	2.163472	.4259785	.2032517	.3074714	2.387986
Stddev	.0004964	.0003592	.005090	.0007492	.0001086	.0002337	.031806
%RSD	.2008578	.1694102	.2352702	.1758858	.0534210	.0760211	1.331904

#1	.2465816	.2116964	2.160299	.4254889	.2031965	.3072946	2.399349
#2	.2475340	.2120346	2.169343	.4268410	.2033768	.3073833	2.412550
#3	.2473003	.2124144	2.160775	.4256055	.2031819	.3077364	2.352060

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1970541	2.289217	.5122138	.0733102	127.3316	.2893246	.2957344
Stddev	.0014291	.051254	.0010000	.0007725	.4882	.0062847	.0012196
%RSD	.7252400	2.238911	.1952208	1.053715	.3834103	2.172191	.4123816

#1	.1954199	2.231877	.5117922	.0741989	127.8617	.2957143	.2943703
#2	.1976729	2.305195	.5114937	.0727993	127.2326	.2891089	.2967194
#3	.1980696	2.330578	.5133555	.0729325	126.9004	.2831505	.2961135

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.070816	.3862700	.3992229	.7642771	.1909287	.7172831	6.954122
Stddev	.077569	.0010348	.0001407	.0030227	.0036014	.0096113	.050501
%RSD	.9611058	.2678988	.0352371	.3954959	1.886230	1.339959	.7262006

#1	7.998400	.3852432	.3990880	.7608375	.1882414	.7283397	6.904148
#2	8.152674	.3862541	.3992121	.7654836	.1950207	.7109242	6.953085
#3	8.061374	.3873126	.3993687	.7665102	.1895240	.7125853	7.005133

Sample Name: Q3245-24A Acquired: 10/2/2025 17:49:04 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.1914245	.1506228	.1867903
Stddev	.0029684	.0052747	.0003775
%RSD	1.550683	3.501934	.2021189

#1	.1898970	.1475712	.1863934
#2	.1948456	.1567135	.1868327
#3	.1895309	.1475837	.1871449

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7788.128	90176.00	4527.000	6033.292	8379.307
Stddev	19.933	432.72	32.240	18.858	27.139
%RSD	.2559458	.4798642	.7121762	.3125584	.3238788

#1	7805.574	90224.36	4543.982	6025.851	8406.872
#2	7792.408	90582.52	4547.199	6054.735	8378.431
#3	7766.402	89721.13	4489.818	6019.290	8352.616

Sample Name: Q2409-05 Acquired: 10/2/2025 17:53:04 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0474268	.0071192	1.184164	.0266826	.0074375	87.36869
Stddev	.0007734	.0046500	.001840	.0018762	.0035661	.71807
%RSD	1.630754	65.31596	.1553735	7.031698	47.94718	.8218848

#1	.0465500	.0034511	1.186286	.0288487	.0058858	86.54463
#2	.0480121	.0055575	1.183016	.0255668	.0115166	87.70120
#3	.0477183	.0123490	1.183190	.0256322	.0049102	87.86023

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4702279	.0049177	.0472156	53.03813	.1990818	.0150283
Stddev	.0032861	.0000994	.0000712	.34401	.0010373	.0002278
%RSD	.6988409	2.020238	.1507403	.6486011	.5210638	1.515775

#1	.4666884	.0048218	.0472264	52.64231	.1988235	.0149308
#2	.4708133	.0049112	.0471397	53.20718	.2002239	.0152886
#3	.4731820	.0050202	.0472808	53.26490	.1981980	.0148655

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4147220	66.09309	.3400032	13.22113	.0516811	.0297534
Stddev	.0007527	1.07252	.0004820	.07341	.0004426	.0001003
%RSD	.1814987	1.622739	.1417766	.5552462	.8564728	.3369960

#1	.4141207	66.16787	.3397031	13.15348	.0518935	.0298099
#2	.4144792	67.12626	.3397472	13.21072	.0511723	.0298127
#3	.4155662	64.98514	.3405592	13.29919	.0519776	.0296377

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0088673	.1648950	.7012150	2.669670	-.078397	.0051259
Stddev	.0453088	.0059470	.0021847	.106010	.008397	.0002451
%RSD	510.9628	3.606535	.3115608	3.970887	10.71114	4.781728

#1	.0299547	.1671200	.7000297	2.642903	-.073915	.0049429
#2	.0397891	.1694087	.7037362	2.786497	-.073192	.0050304
#3	-.043142	.1581563	.6998790	2.579609	-.088084	.0054044

Sample Name: Q2409-05 Acquired: 10/2/2025 17:53:04 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.004668	.8238688	F 10.12996	6.710501	4.637948	.0117617
Stddev	.000709	.0478503	.19095	.028436	.024445	.0078818
%RSD	15.19595	5.807995	1.884964	.4237537	.5270691	67.01239

#1	-.005291	.8791165	9.90987	6.726691	4.659242	.0162258
#2	-.003896	.7968914	10.25154	6.677667	4.611254	.0026611
#3	-.004819	.7955986	10.22845	6.727145	4.643349	.0163981

Elem	Sr4077
Units	ppm
Avg	.2373037
Stddev	.0026622
%RSD	1.121857

#1	.2361928
#2	.2353768
#3	.2403414

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	8328.049	95808.65	4798.026	6434.250	9028.871
Stddev	18.511	893.07	46.041	55.187	26.894
%RSD	.2222677	.9321431	.9595846	.8577037	.2978669

#1	8336.494	95987.97	4828.882	6480.111	9037.038
#2	8340.831	94839.52	4820.092	6373.003	9050.734
#3	8306.822	96598.45	4745.105	6449.636	8998.840

Sample Name: Q2409-05DUP Acquired: 10/2/2025 17:57:05 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0373446	.0057373	.9564010	.0277357	.0093044	70.08721	.3953858
Stddev	.0007234	.0004240	.0051602	.0033552	.0047142	.41628	.0062645
%RSD	1.937180	7.391030	.5395482	12.09718	50.66639	.5939525	1.584398

#1	.0374000	.0061407	.9543769	.0242415	.0051039	70.55099	.4004010
#2	.0380387	.0057760	.9525596	.0280335	.0084062	69.96477	.3973926
#3	.0365950	.0052952	.9622665	.0309321	.0144031	69.74588	.3883638

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0039444	.0379257	43.87625	.1629663	.0108702	.3304013	54.43230
Stddev	.0000231	.0001310	.25355	.0017696	.0005205	.0018861	.29686
%RSD	.5842996	.3454431	.5778862	1.085867	4.788517	.5708555	.5453835

#1	.0039220	.0377763	44.15820	.1610887	.0104549	.3290209	54.30491
#2	.0039430	.0380212	43.80358	.1632069	.0107017	.3296327	54.22040
#3	.0039681	.0379794	43.66696	.1646032	.0114541	.3325504	54.77161

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2815436	8.131027	.0436612	.0225836	-.232523	.1393278	.5733497
Stddev	.0028346	.084028	.0004964	.0006411	.006429	.0027681	.0020826
%RSD	1.006796	1.033419	1.136954	2.838865	2.764861	1.986717	.3632268

#1	.2847230	8.118019	.0431257	.0224910	-.237311	.1424845	.5710182
#2	.2806272	8.220800	.0437521	.0232660	-.235041	.1373152	.5740052
#3	.2792806	8.054262	.0441059	.0219938	-.225216	.1381837	.5750255

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.585998	-.062443	.0048932	-.008824	.6001918	3.502271	5.520859
Stddev	.028161	.003868	.0005835	.000416	.0124086	.037765	.014562
%RSD	1.775624	6.193750	11.92507	4.711232	2.067443	1.078297	.2637697

#1	1.611951	-.065659	.0049692	-.008614	.5859654	3.483546	5.505823
#2	1.589988	-.063518	.0054350	-.008556	.6058286	3.545739	5.534896
#3	1.556054	-.058152	.0042754	-.009303	.6087814	3.477527	5.521858

Sample Name: Q2409-05DUP Acquired: 10/2/2025 17:57:05 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	3.677537	.0076811	.2280283
Stddev	.003938	.0028826	.0023428
%RSD	.1070900	37.52854	1.027435

#1	3.682077	.0099575	.2303086
#2	3.675042	.0044398	.2281488
#3	3.675492	.0086460	.2256275

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	8244.033	93336.70	4655.360	6342.371	9104.754
Stddev	7.450	624.80	29.750	30.347	10.334
%RSD	.0903724	.6694082	.6390523	.4784865	.1135047

#1	8252.224	93751.73	4632.487	6371.099	9103.944
#2	8242.214	93640.26	4644.599	6345.385	9115.470
#3	8237.660	92618.12	4688.993	6310.629	9094.849

Sample Name: Q2409-05LX5 Acquired: 10/2/2025 18:01:07 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0115213	.0090824	.2495161	.0261535	.0033821	18.95963	.1277694
Stddev	.0008621	.0019291	.0004857	.0037721	.0043485	.05909	.0014705
%RSD	7.482416	21.24003	.1946557	14.42289	128.5721	.3116800	1.150865

#1	.0108293	.0094140	.2490070	.0234468	.0075283	18.93043	.1286552
#2	.0112476	.0108242	.2495671	.0245516	.0037620	18.92081	.1285810
#3	.0124870	.0070090	.2499744	.0304622	-.001144	19.02764	.1260720

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0013351	.0094298	11.63492	.0439846	.0032250	.0906460	14.05439
Stddev	.0000949	.0001020	.02906	.0006150	.0001422	.0003110	.02981
%RSD	7.106688	1.081684	.2497311	1.398210	4.410702	.3430872	.2120798

#1	.0014357	.0094542	11.62434	.0432745	.0032737	.0905486	14.07921
#2	.0012473	.0095174	11.61265	.0443467	.0030648	.0903954	14.06264
#3	.0013222	.0093178	11.66779	.0443326	.0033364	.0909941	14.02133

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0725138	2.960828	.0101887	.0062081	.0683415	.0331272	.1497022
Stddev	.0002907	.062706	.0002277	.0012017	.0537239	.0048705	.0006294
%RSD	.4009202	2.117841	2.234936	19.35652	78.61092	14.70251	.4204155

#1	.0721805	2.999763	.0104314	.0075312	.0183906	.0309318	.1504277
#2	.0726458	2.994227	.0099798	.0059083	.1251751	.0387090	.1493751
#3	.0727150	2.888492	.0101548	.0051847	.0614589	.0297408	.1493037

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3473155	-.020799	.0010188	-.003572	.1497492	1.272635	1.385842
Stddev	.0252500	.000875	.0004920	.000276	.0032401	.062950	.005593
%RSD	7.270036	4.205537	48.29477	7.738175	2.163651	4.946411	.4035906

#1	.3339145	-.021757	.0005964	-.003743	.1526503	1.209687	1.390219
#2	.3315913	-.020596	.0015591	-.003720	.1503444	1.272633	1.387766
#3	.3764408	-.020044	.0009011	-.003253	.1462527	1.335586	1.379541

Sample Name: Q2409-05LX5 Acquired: 10/2/2025 18:01:07 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.9609183	.0105278	.0516935
Stddev	.0035082	.0030076	.0008257
%RSD	.3650929	28.56860	1.597203

#1	.9601774	.0097134	.0520800
#2	.9647378	.0080112	.0507455
#3	.9578397	.0138588	.0522551

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	8062.725	93245.64	4572.661	6218.688	9258.830
Stddev	16.972	612.04	44.342	29.943	31.380
%RSD	.2104996	.6563754	.9697121	.4815014	.3389235

#1	8051.387	93856.72	4612.202	6248.733	9228.699
#2	8054.552	93247.54	4581.060	6218.484	9256.466
#3	8082.238	92632.65	4524.720	6188.848	9291.325

Sample Name: Q2409-05MS Acquired: 10/2/2025 18:05:12 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8541840	1.927336	1.847260	2.106811	.1445758	76.14743
Stddev	.0032517	.044763	.004865	.010216	.0010006	.44121
%RSD	.3806812	2.322523	.2633829	.4848892	.6920675	.5794213

#1	.8578792	1.965928	1.850626	2.112805	.1450587	76.61586
#2	.8529134	1.878262	1.841682	2.095016	.1452433	76.08671
#3	.8517594	1.937817	1.849473	2.112614	.1434254	75.73972

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5592283	.2526009	.2406887	39.70218	.5981341	.2144074
Stddev	.0069304	.0020401	.0008607	.26799	.0014625	.0008731
%RSD	1.239270	.8076402	.3576103	.6750096	.2445065	.4072195

#1	.5657122	.2520629	.2410653	39.92074	.5976251	.2147173
#2	.5600482	.2548561	.2397039	39.78262	.5969941	.2134217
#3	.5519244	.2508837	.2412969	39.40318	.5997830	.2150834

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5767086	56.78543	.4855695	10.38250	.5557283	.0868247
Stddev	.0019955	.35886	.0039571	.11431	.0019155	.0006233
%RSD	.3460105	.6319528	.8149348	1.101034	.3446809	.7179038

#1	.5772681	57.08650	.4889349	10.46628	.5573801	.0866679
#2	.5744931	56.38832	.4865632	10.42896	.5536285	.0862947
#3	.5783646	56.88145	.4812102	10.25227	.5561761	.0875114

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.991577	.4324034	.7026691	9.610464	.2203608	.3702308
Stddev	.033902	.0095364	.0033457	.056879	.0015514	.0014125
%RSD	1.702260	2.205449	.4761359	.5918479	.7040339	.3815055

#1	1.988386	.4421845	.6991381	9.675873	.2221440	.3711838
#2	1.959384	.4318935	.7057920	9.582913	.2193209	.3686081
#3	2.026962	.4231321	.7030771	9.572607	.2196174	.3709006

Sample Name: Q2409-05MS Acquired: 10/2/2025 18:05:12 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3063549	1.019222	6.601070	F 11.69985	3.805886	.1607383
Stddev	.0037744	.019335	.153383	.09711	.038777	.0060350
%RSD	1.232027	1.897047	2.323604	.8299803	1.018870	3.754563

#1	.3063282	1.041535	6.776974	11.76961	3.832455	.1673674
#2	.3025940	1.007395	6.495241	11.58895	3.761389	.1555628
#3	.3101426	1.008737	6.530995	11.74100	3.823814	.1592847

Elem	Sr4077
Units	ppm
Avg	.3799224
Stddev	.0040641
%RSD	1.069728

#1	.3835805
#2	.3806390
#3	.3755476

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	8212.651	95048.87	4600.312	6267.035	8918.857
Stddev	55.118	354.58	31.801	16.536	64.466
%RSD	.6711332	.3730452	.6912889	.2638583	.7228018

#1	8170.695	94854.78	4583.954	6248.198	8869.303
#2	8275.075	95458.12	4580.019	6273.747	8991.739
#3	8192.184	94833.71	4636.963	6279.159	8895.528

Sample Name: Q2409-05MSD Acquired: 10/2/2025 18:09:08 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8563284	2.029048	2.068535	2.105414	.1135112	88.39181
Stddev	.0049176	.051284	.007693	.010051	.0035839	.69307
%RSD	.5742674	2.527500	.3719014	.4773869	3.157345	.7840831

#1	.8619895	2.067611	2.076913	2.116710	.1173493	87.88853
#2	.8531151	2.048686	2.061788	2.102073	.1102519	88.10459
#3	.8538805	1.970847	2.066905	2.097459	.1129323	89.18231

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6041200	.2536489	.2499619	46.03464	.6201778	.2161742
Stddev	.0068341	.0034022	.0009857	.36036	.0011116	.0009657
%RSD	1.131254	1.341317	.3943389	.7827935	.1792362	.4467136

#1	.6003848	.2538570	.2510791	45.78681	.6212514	.2172572
#2	.5999676	.2501474	.2495915	45.86907	.6190318	.2158624
#3	.6120077	.2569423	.2492151	46.44802	.6202501	.2154029

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6429418	59.78048	.4905396	10.90420	.5620853	.0962101
Stddev	.0023654	.43210	.0020489	.08418	.0019057	.0007109
%RSD	.3678954	.7228110	.4176722	.7719725	.3390334	.7388664

#1	.6456282	59.37986	.4885153	10.83291	.5641968	.0969853
#2	.6420255	60.23835	.4904913	10.88262	.5604931	.0960563
#3	.6411716	59.72323	.4926122	10.99706	.5615659	.0955887

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.953734	.4480225	.8311023	9.650032	.2238669	.3684782
Stddev	.029005	.0057681	.0021337	.041626	.0013305	.0017888
%RSD	1.484580	1.287463	.2567362	.4313509	.5943117	.4854617

#1	1.921865	.4434105	.8333129	9.618172	.2248474	.3705041
#2	1.960752	.4461669	.8290548	9.697129	.2223524	.3678140
#3	1.978587	.4544900	.8309391	9.634796	.2244010	.3671165

Sample Name: Q2409-05MSD Acquired: 10/2/2025 18:09:08 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2567795	.9097749	4.571431	F 12.46482	4.074005	.1532354
Stddev	.0016744	.0319667	.089299	.10352	.027762	.0055500
%RSD	.6520625	3.513695	1.953409	.8304939	.6814515	3.621870
#1	.2585117	.9067010	4.478577	12.54345	4.092215	.1530558
#2	.2566571	.8794562	4.656689	12.50346	4.087748	.1477773
#3	.2551697	.9431676	4.579029	12.34753	4.042051	.1588730

Elem	Sr4077
Units	ppm
Avg	.4212762
Stddev	.0044427
%RSD	1.054575
#1	.4197414
#2	.4178044
#3	.4262827

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	8187.023	93912.56	4608.475	6252.859	8861.561
Stddev	31.631	616.06	36.770	42.519	29.855
%RSD	.3863513	.6559882	.7978762	.6799949	.3369046
#1	8150.499	93504.77	4587.058	6210.215	8827.100
#2	8205.250	93611.67	4650.933	6253.109	8878.009
#3	8205.320	94621.23	4587.434	6295.252	8879.576

Sample Name: Q2409-05A Acquired: 10/2/2025 18:13:04 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8927770	1.879640	2.247729	2.195872	.7796038	87.80753
Stddev	.0017193	.051575	.003024	.011206	.0014770	.52844
%RSD	.1925730	2.743898	.1345550	.5103205	.1894609	.6018108

#1	.8911255	1.820602	2.248228	2.182981	.7812809	88.08953
#2	.8945568	1.915936	2.250474	2.201347	.7790340	88.13515
#3	.8926488	1.902383	2.244487	2.203287	.7784965	87.19792

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6465048	.2589410	.2589182	53.90049	.6310718	.2199459
Stddev	.0075305	.0017342	.0005071	.32716	.0036360	.0004188
%RSD	1.164797	.6697308	.1958464	.6069640	.5761562	.1903969

#1	.6492299	.2600877	.2591413	53.99348	.6344204	.2203209
#2	.6522933	.2597893	.2592755	54.17108	.6272042	.2194940
#3	.6379911	.2569459	.2583379	53.53690	.6315909	.2200229

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7169022	67.47951	.5257060	15.09777	.5677377	.1051496
Stddev	.0005933	.26271	.0072632	.12346	.0015609	.0016663
%RSD	.0827520	.3893219	1.381608	.8177691	.2749273	1.584656

#1	.7171180	67.69959	.5284332	15.05511	.5694739	.1058980
#2	.7173574	67.55029	.5312108	15.23691	.5672886	.1063104
#3	.7162313	67.18866	.5174739	15.00130	.5664507	.1032403

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.096772	.4606923	.8975877	10.23235	.2728743	.4112531
Stddev	.044707	.0016872	.0045031	.08814	.0025106	.0007132
%RSD	2.132204	.3662432	.5016935	.8613383	.9200726	.1734114

#1	2.147668	.4612555	.8997413	10.16955	.2755934	.4110707
#2	2.078803	.4620258	.8924122	10.33310	.2723855	.4120397
#3	2.063844	.4587954	.9006097	10.19440	.2706440	.4106488

Sample Name: Q2409-05A Acquired: 10/2/2025 18:13:04 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7755846	.8490733	6.415557	F 13.30535	4.551573	.1535103
Stddev	.0027197	.0453702	.076580	.07522	.034447	.0041989
%RSD	.3506615	5.343492	1.193659	.5653652	.7568264	2.735292

#1	.7760518	.9006726	6.341388	13.22798	4.512245	.1567664
#2	.7780404	.8154258	6.494339	13.37823	4.576394	.1487710
#3	.7726616	.8311216	6.410942	13.30985	4.566080	.1549934

Elem	Sr4077
Units	ppm
Avg	.4141678
Stddev	.0052398
%RSD	1.265139

#1	.4163328
#2	.4179781
#3	.4081924

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	8149.411	92146.41	4584.283	6270.761	8761.723
Stddev	32.494	714.60	22.992	74.328	29.519
%RSD	.3987253	.7755100	.5015390	1.185310	.3369043

#1	8160.155	91582.34	4558.609	6217.554	8758.105
#2	8112.906	92950.01	4591.266	6355.686	8734.180
#3	8175.171	91906.88	4602.974	6239.043	8792.884

Sample Name: CCV06 Acquired: 10/2/2025 18:17:36 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV06 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.206614	4.726730	5.290842	5.013879	4.825247	9.346682
Stddev	.003221	.065754	.011992	.000931	.009941	.030670
%RSD	.0618690	1.391114	.2266487	.0185679	.2060104	.3281344

#1	5.210177	4.747123	5.285846	5.013147	4.821039	9.314660
#2	5.205758	4.653196	5.282156	5.014927	4.818102	9.349596
#3	5.203907	4.779872	5.304524	5.013564	4.836599	9.375791

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.141333	.2515362	2.587963	23.96837	1.038506	2.457932
Stddev	.028559	.0025755	.004736	.04309	.004587	.004384
%RSD	.3124207	1.023902	.1829937	.1797698	.4416720	.1783737

#1	9.113492	.2517989	2.587483	23.92865	1.033856	2.458759
#2	9.139946	.2539702	2.583485	24.01418	1.038634	2.453193
#3	9.170560	.2488394	2.592920	23.96229	1.043026	2.461844

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.266811	5.382978	2.356254	24.39249	2.492329	1.249053
Stddev	.000988	.037232	.007505	.11867	.005621	.002724
%RSD	.0779633	.6916594	.3185271	.4865076	.2255358	.2180694

#1	1.267661	5.390337	2.350585	24.25880	2.490996	1.245959
#2	1.265728	5.342616	2.353410	24.48538	2.487495	1.250116
#3	1.267044	5.415981	2.364765	24.43328	2.498497	1.251086

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	26.04713	2.373202	2.454142	24.67008	4.765401	4.749326
Stddev	.40291	.008008	.004230	.38022	.049591	.003765
%RSD	1.546861	.3374544	.1723502	1.541225	1.040646	.0792720

#1	25.75567	2.378125	2.451392	24.38329	4.768276	4.753640
#2	25.87882	2.377520	2.452020	24.52557	4.813492	4.747634
#3	26.50691	2.363961	2.459012	25.10136	4.714436	4.746703

Sample Name: CCV06 Acquired: 10/2/2025 18:17:36 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV06 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.289461	4.683671	F 3.912331	F 5.655774	5.344759	F 3.703393
Stddev	.001264	.014106	.054055	.008833	.012545	.017140
%RSD	.0239011	.3011646	1.381662	.1561802	.2347180	.4628251

#1	5.289997	4.672137	3.863423	5.661844	5.330340	3.684018
#2	5.290368	4.679478	3.903200	5.659838	5.350766	3.709585
#3	5.288017	4.699397	3.970370	5.645640	5.353172	3.716577

Elem	Sr4077
Units	ppm
Avg	4.610165
Stddev	.012234
%RSD	.2653632

#1	4.597622
#2	4.610810
#3	4.622064

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7634.857	88706.61	4347.821	5871.127	8338.872
Stddev	27.196	780.85	18.905	61.171	20.818
%RSD	.3562104	.8802608	.4348101	1.041888	.2496464

#1	7634.015	89311.32	4357.184	5904.225	8339.187
#2	7608.091	88983.46	4326.062	5908.617	8317.899
#3	7662.464	87825.06	4360.217	5800.539	8359.531

Sample Name: CCB06 Acquired: 10/2/2025 18:21:29 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB06 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005248	.0120242	.0035312	-.002948	.0097818	-.009440	.0375076
Stddev	.0031469	.0012870	.0017265	.001574	.0009466	.011303	.0004455
%RSD	599.6540	10.70374	48.89180	53.37695	9.677487	119.7369	1.187843

#1	-.001706	.0114947	.0018501	-.003532	.0090160	-.015014	.0375211
#2	.004124	.0110864	.0052997	-.001166	.0094893	-.016874	.0370554
#3	-.000843	.0134916	.0034438	-.004146	.0108402	.003568	.0379462

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002260	-.000271	-.000500	.0005637	-.000037	.0007213	-.001543
Stddev	.0001165	.000054	.030816	.0001731	.000203	.0008319	.013242
%RSD	51.52671	20.00971	6158.146	30.71105	555.4421	115.3287	858.2648

#1	.0003245	-.000220	-.020450	.0006387	.000188	.0015031	-.016829
#2	.0000975	-.000328	-.016042	.0006868	-.000090	.0008137	.005808
#3	.0002561	-.000264	.034991	.0003658	-.000208	-.000153	.006393

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000691	.0351651	-.000343	-.000647	-.630841	-.000117	.0036024
Stddev	.000826	.0473944	.000254	.001290	.025570	.004887	.0002564
%RSD	119.5983	134.7770	74.06642	199.3469	4.053308	4189.134	7.117195

#1	.000255	.0538849	-.000051	-.000648	-.657081	-.005719	.0038821
#2	-.001057	-.018730	-.000467	-.001937	-.629443	.003271	.0035467
#3	-.001272	.070341	-.000510	.000643	-.605999	.002098	.0033785

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.822012	.0046176	.0006663	F -.027487	.0034184	-.013332	-.008285
Stddev	.086882	.0012655	.0003708	.000224	.0068296	.013592	.001787
%RSD	10.56942	27.40553	55.65061	.8150413	199.7905	101.9472	21.57099

#1	-.869430	.0060238	.0010284	-.027690	-.002313	.000394	-.010166
#2	-.721739	.0042588	.0006830	-.027247	.010975	-.013604	-.008080
#3	-.874867	.0035703	.0002874	-.027524	.001592	-.026786	-.006609

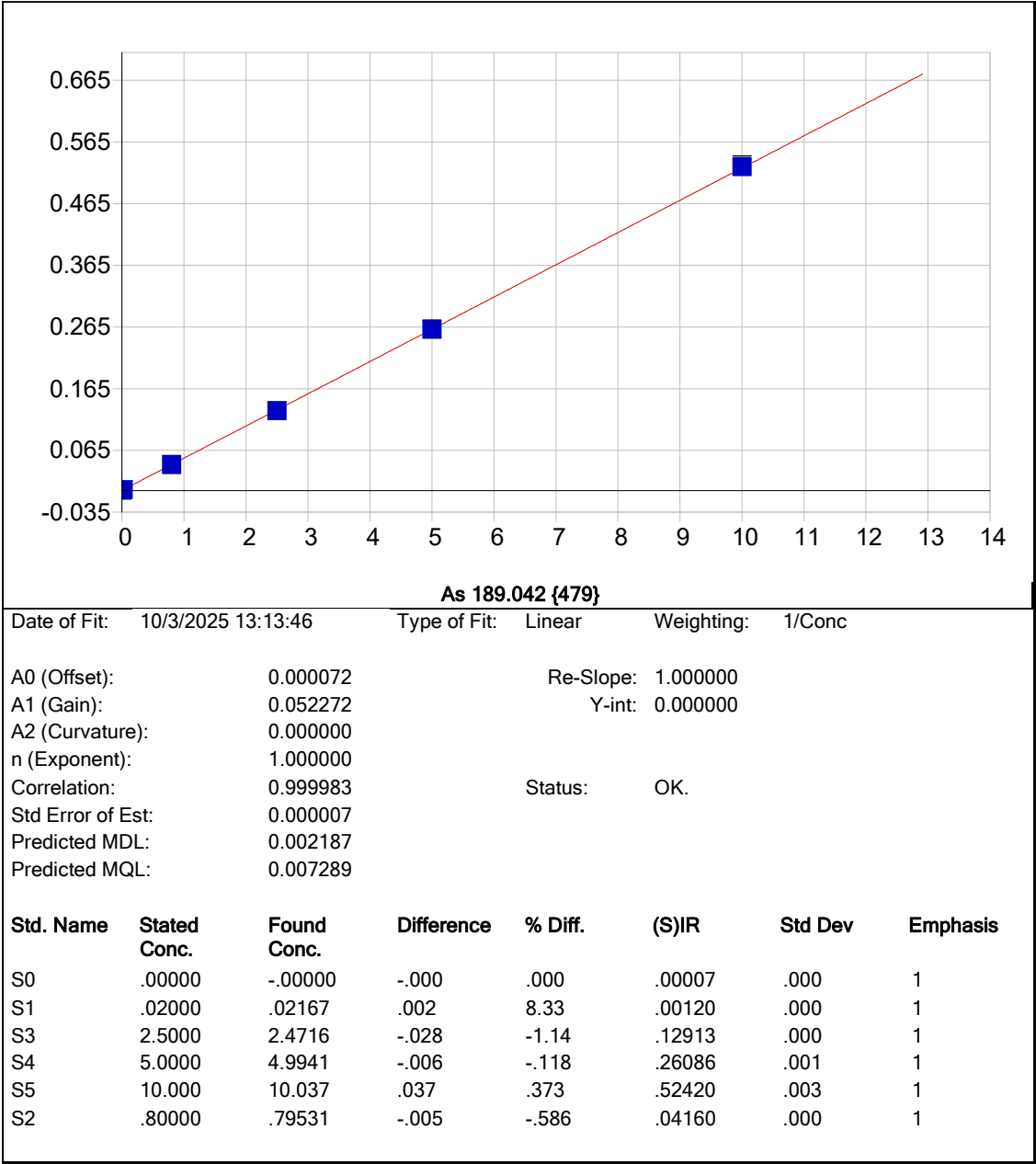
Sample Name: CCB06 Acquired: 10/2/2025 18:21:29 Type: Unk
Method: 6010-200.7 NEW(v241) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB06 Custom ID2: Custom ID3:
Comment:

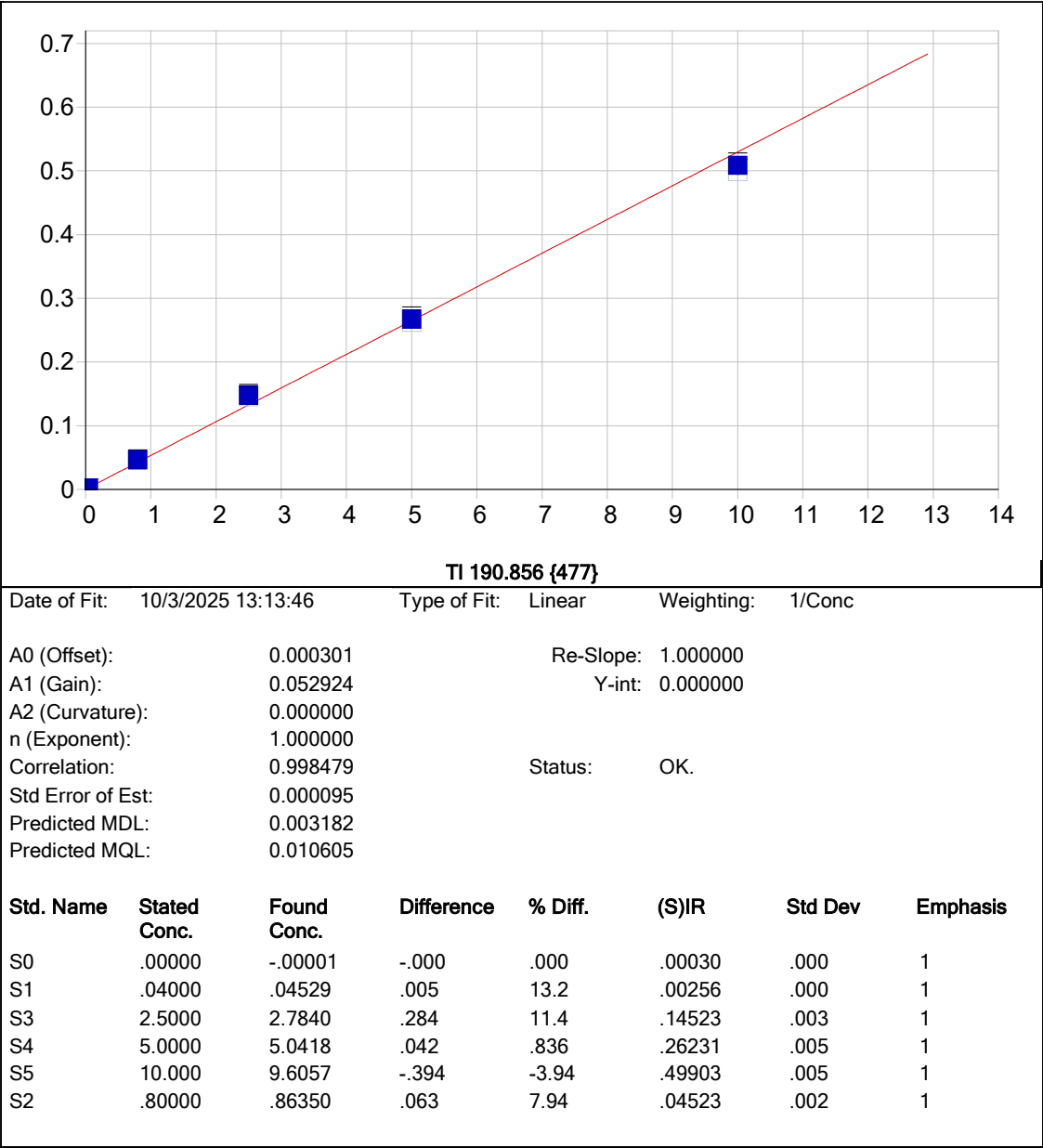
Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0033009	F -.019866	-.000110
Stddev	.0028672	.006282	.000144
%RSD	86.86175	31.62249	131.0565

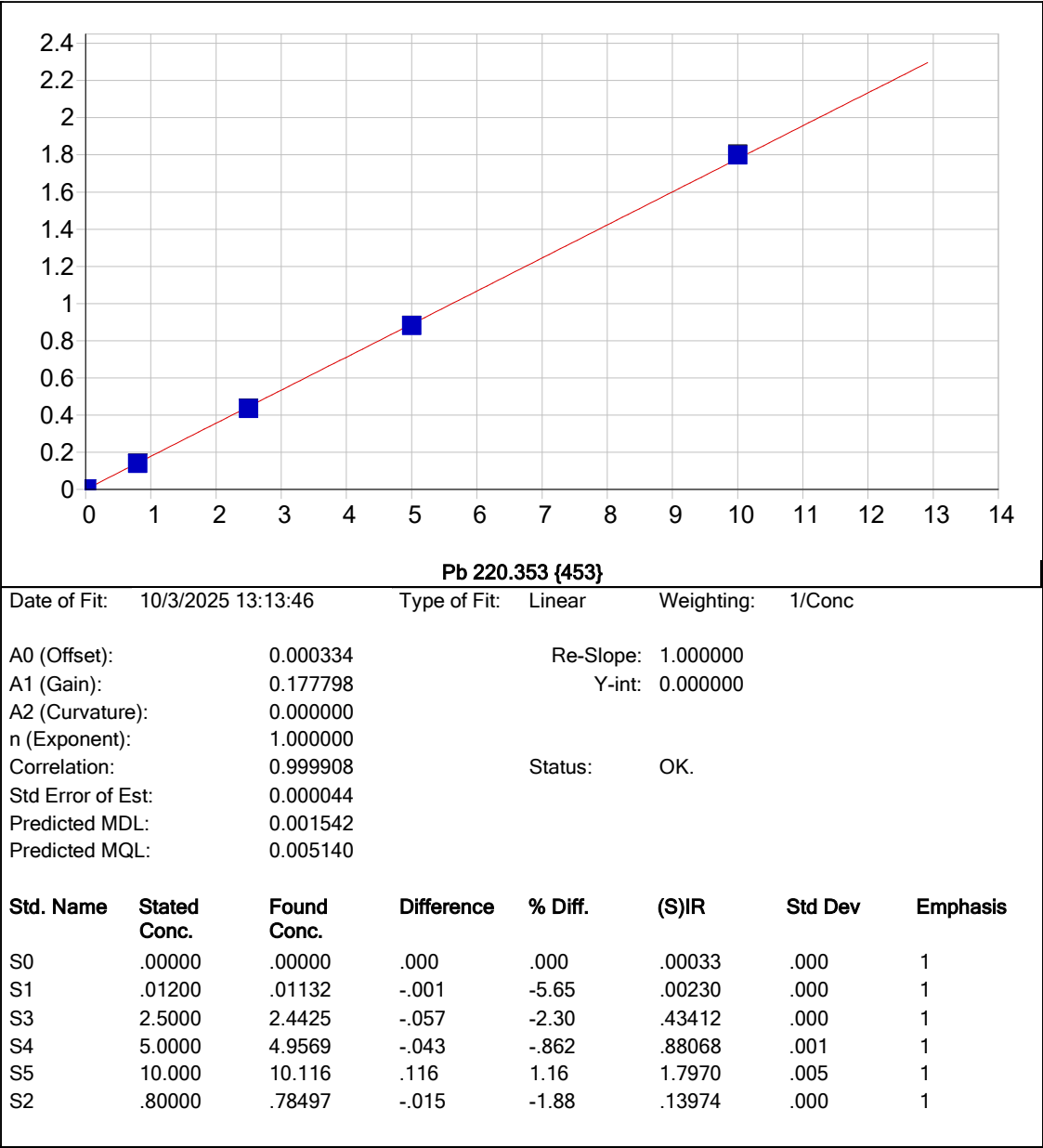
#1	.0042805	-.026536	-.000273
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#3	.0000723	-.014062	-.000004

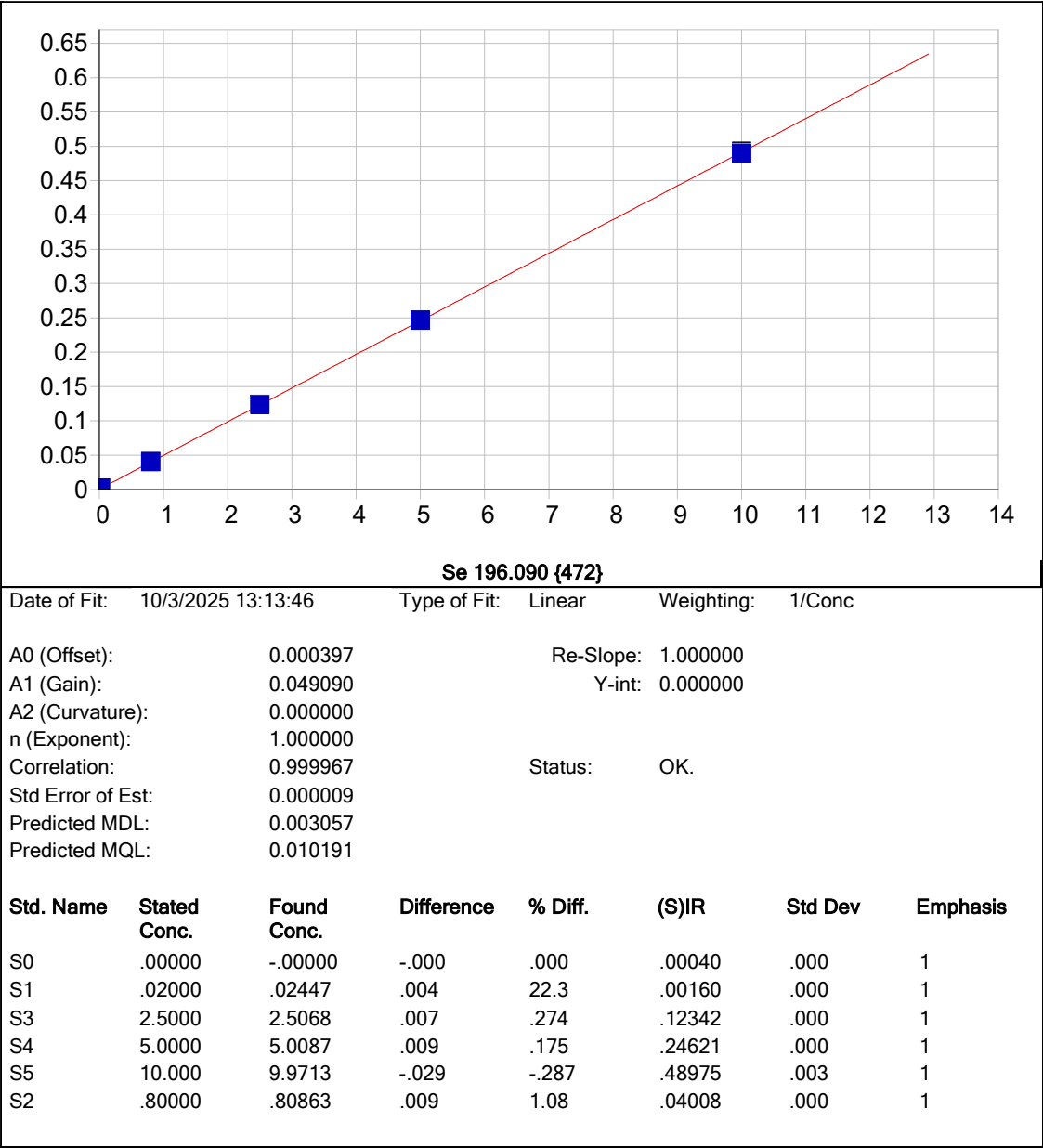
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7881.311	93557.77	4408.938	6149.798	9312.950
Stddev	22.581	299.80	28.797	20.378	22.657
%RSD	.2865128	.3204469	.6531553	.3313634	.2432802

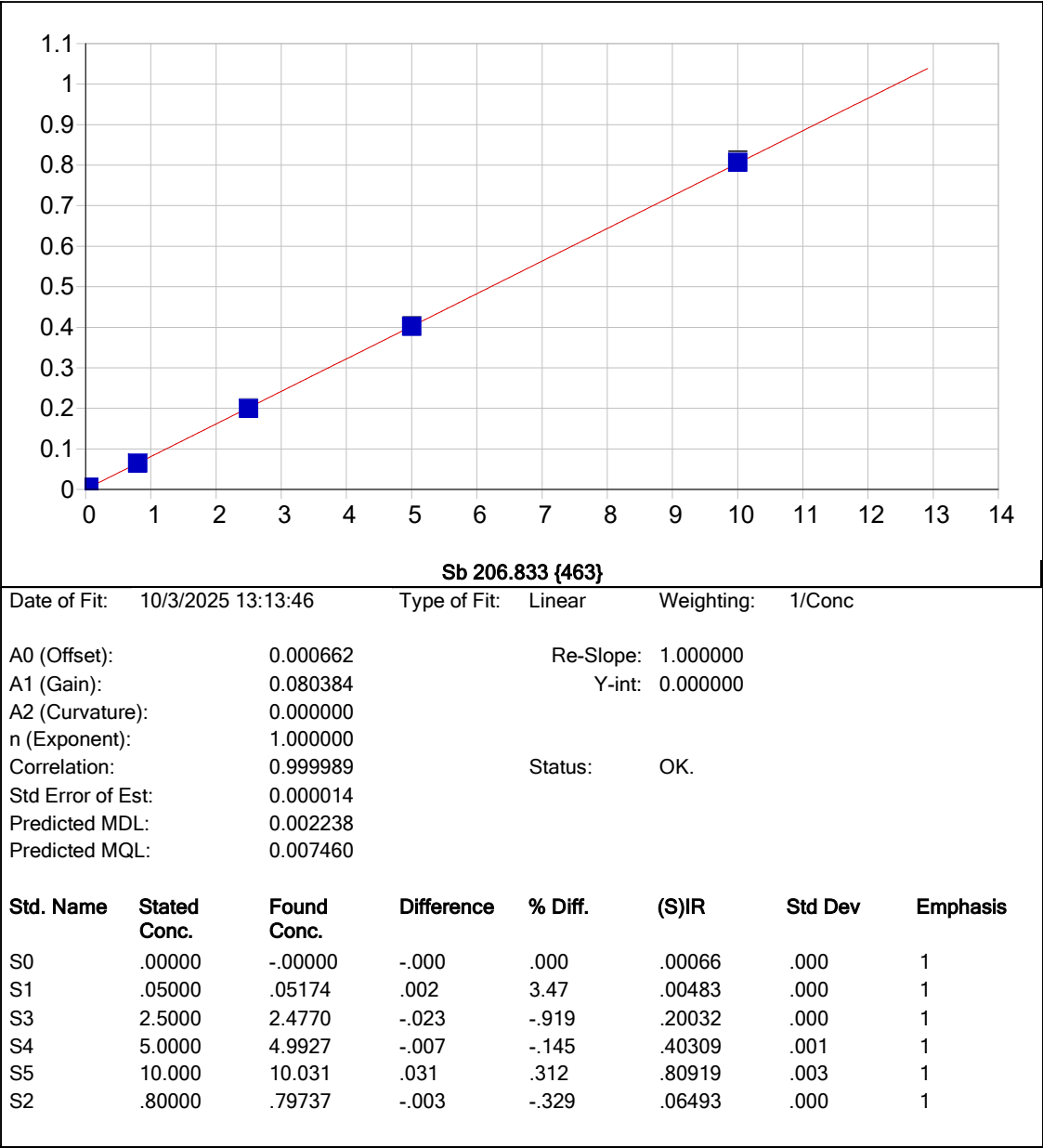
#1	7859.107	93349.35	4388.518	6133.369	9291.581
#2	7904.251	93422.59	4441.875	6143.425	9336.705
#3	7880.573	93901.36	4396.420	6172.601	9310.564

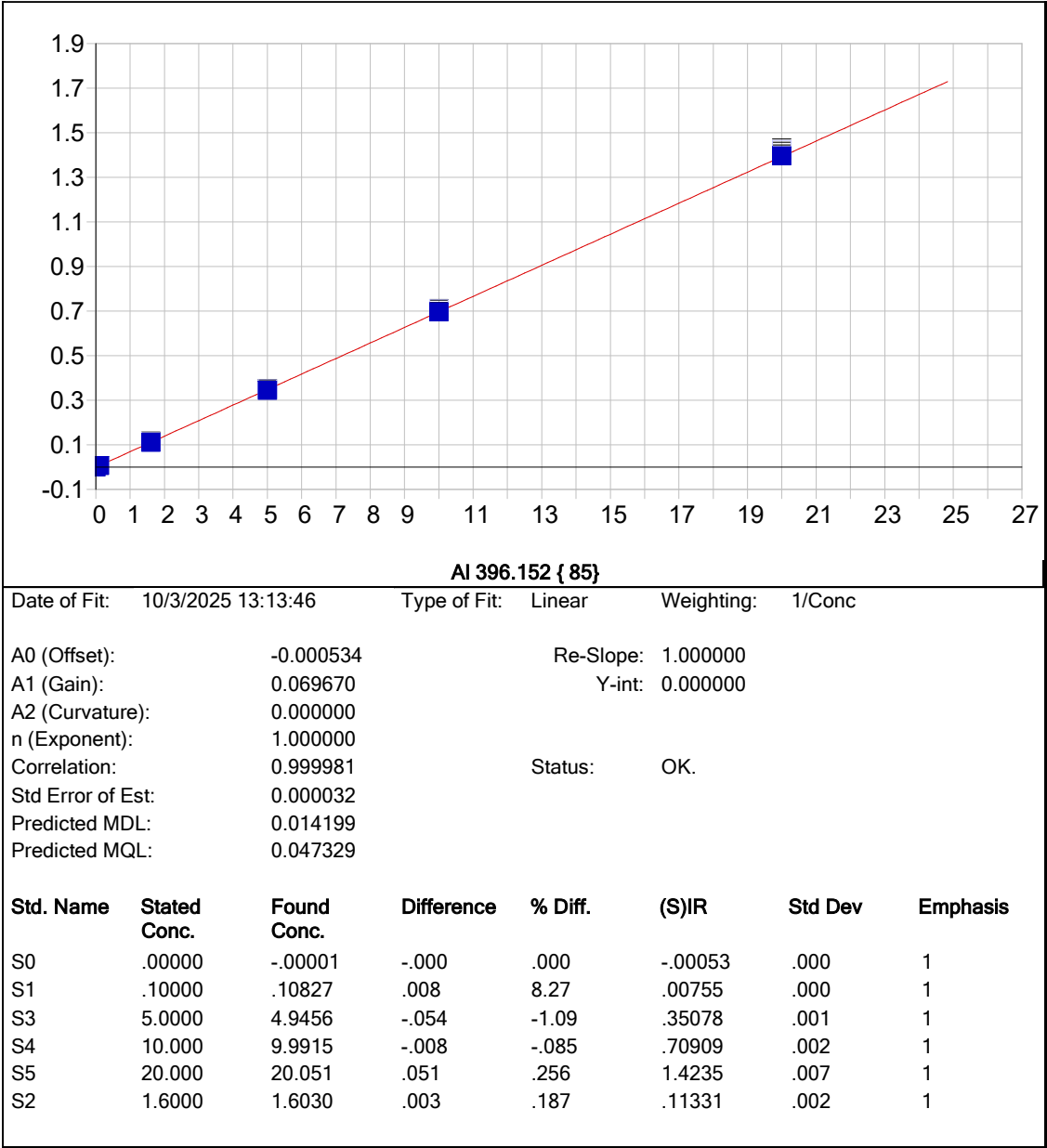


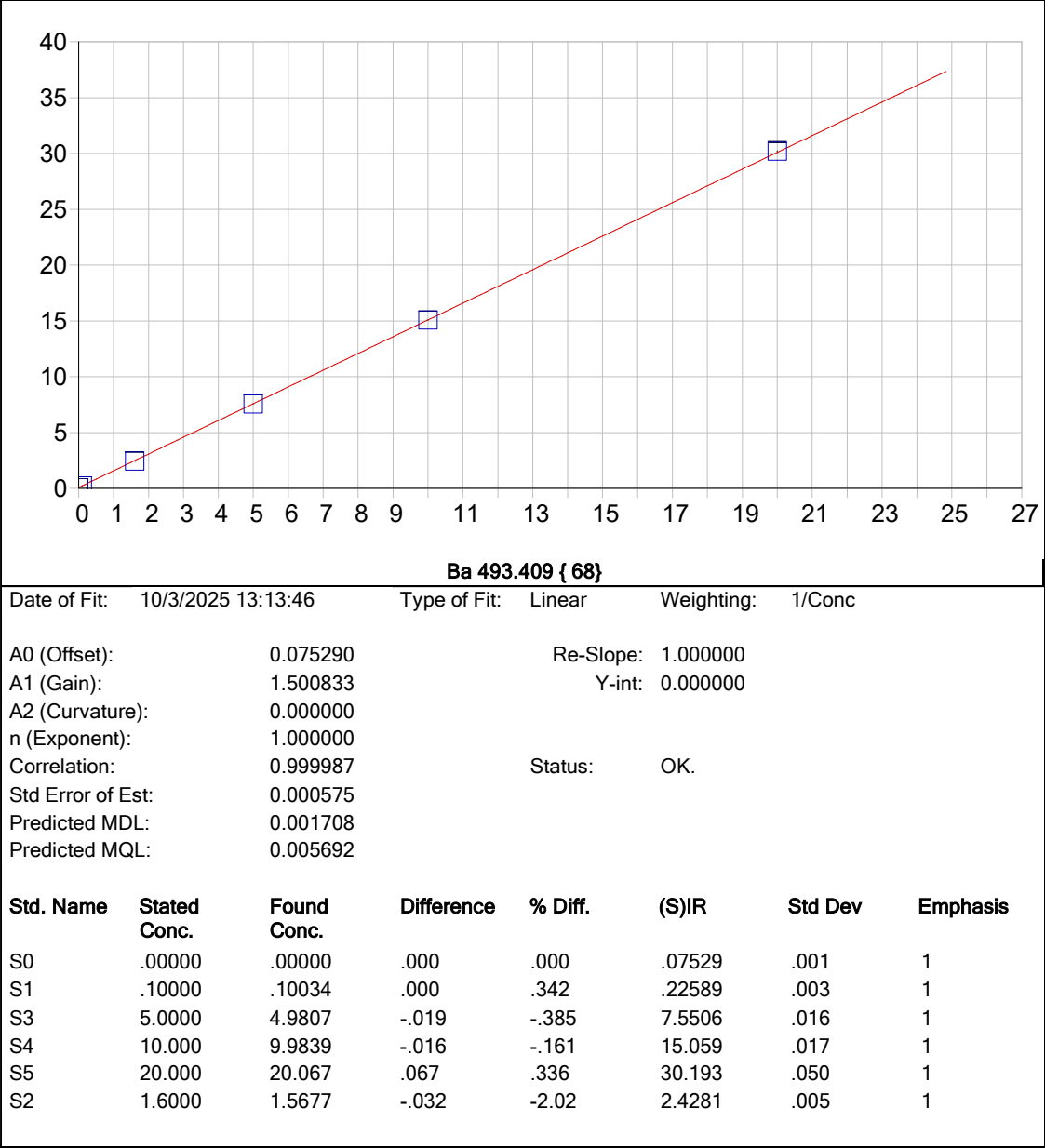


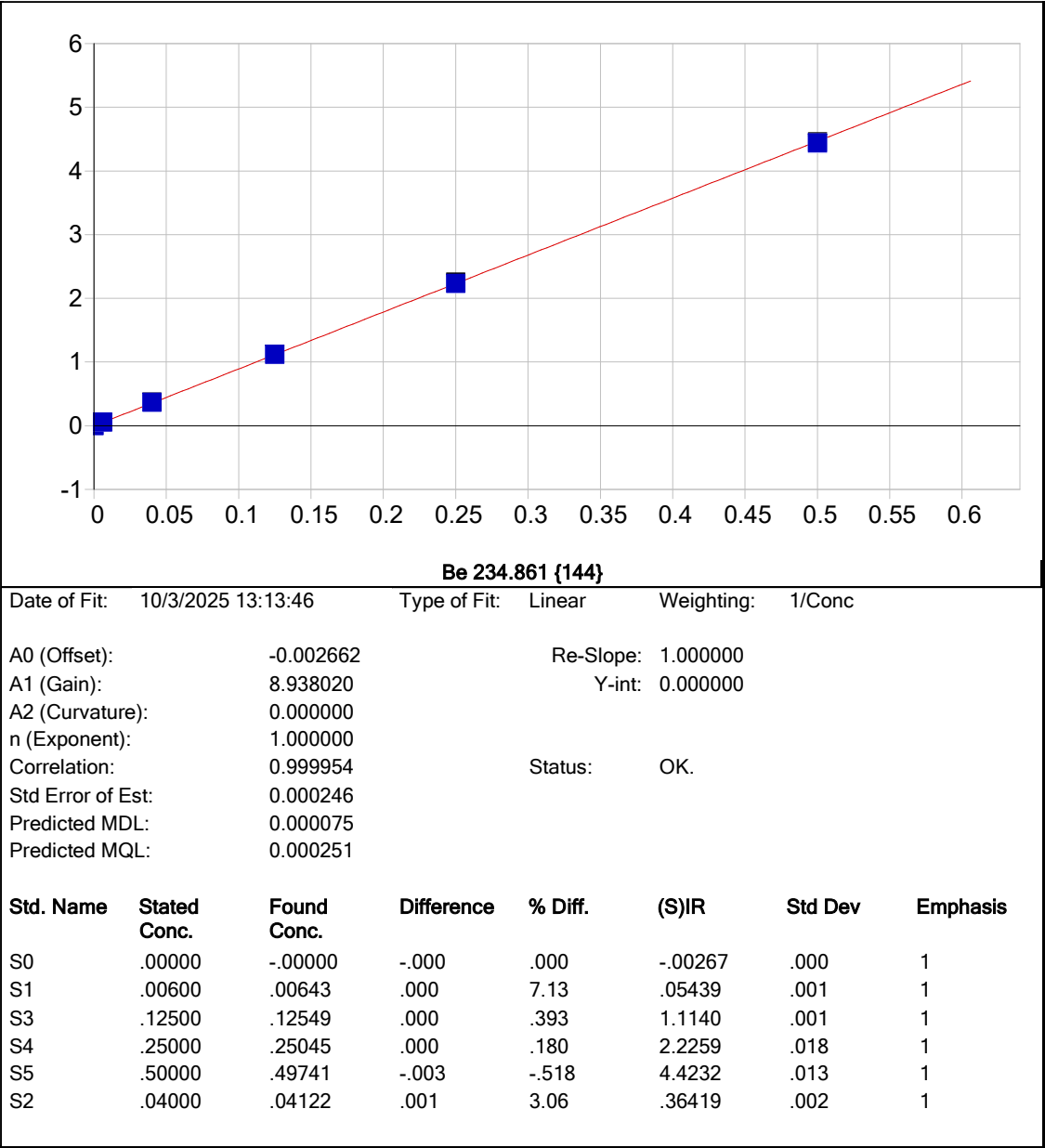


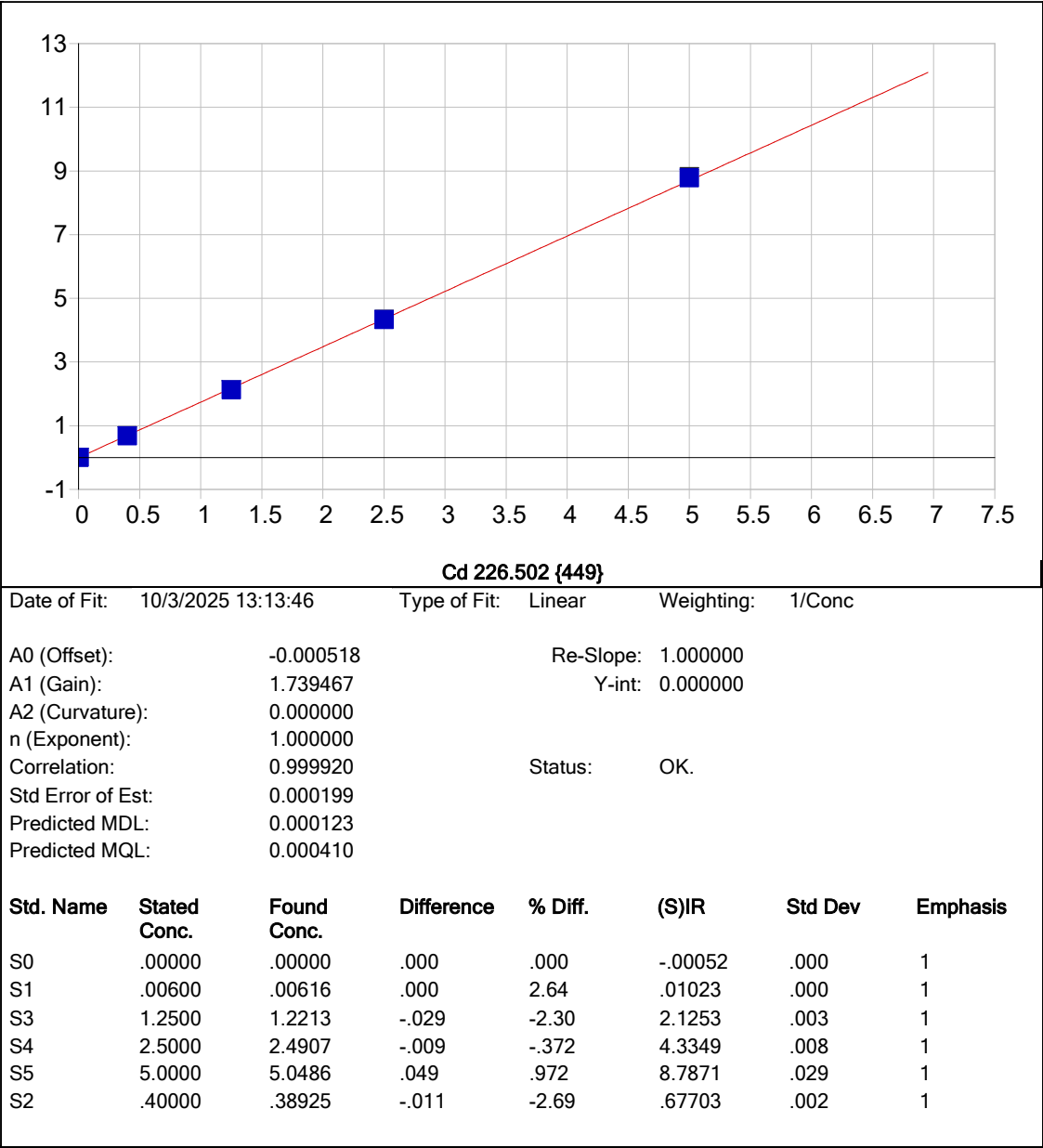


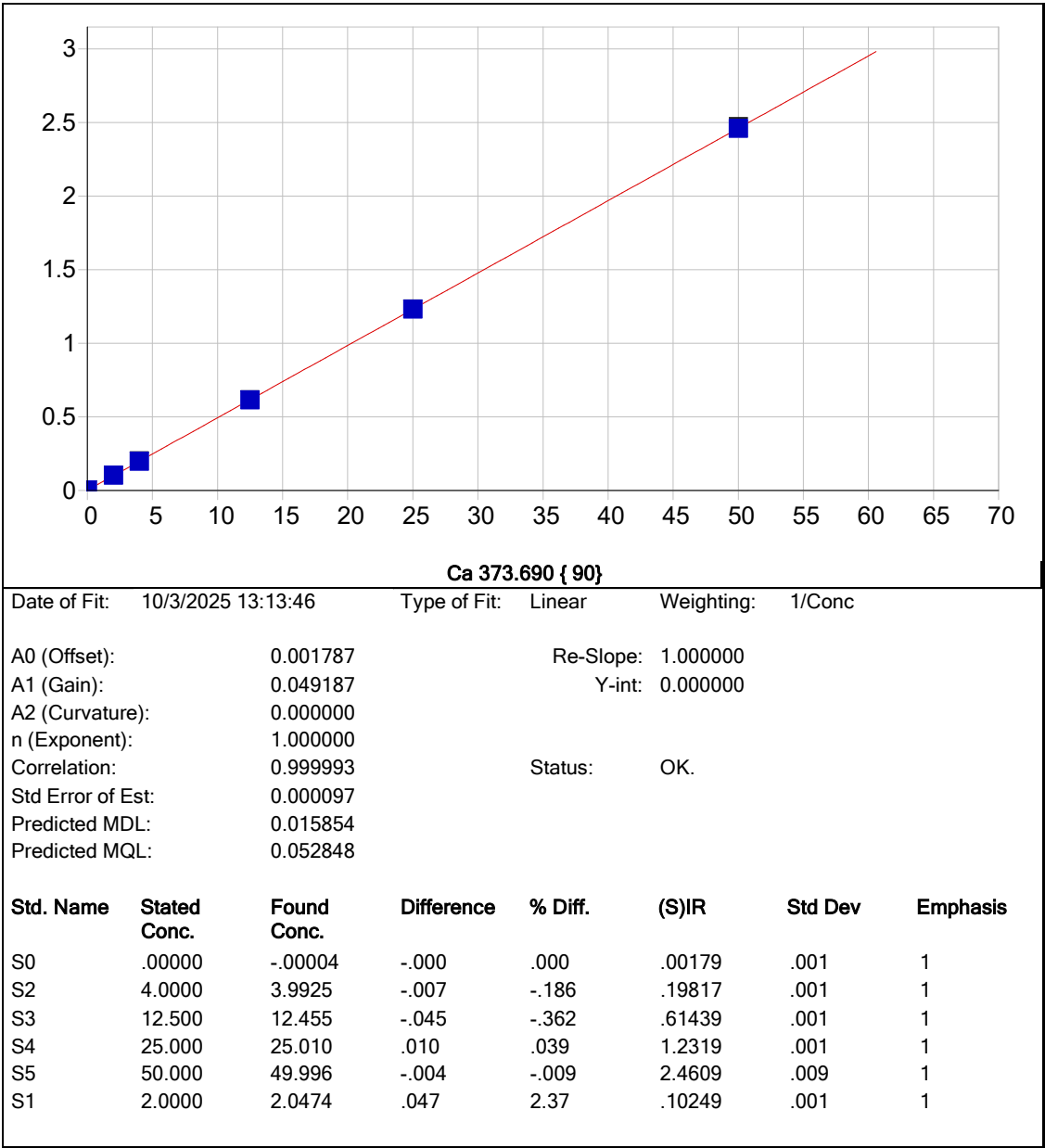


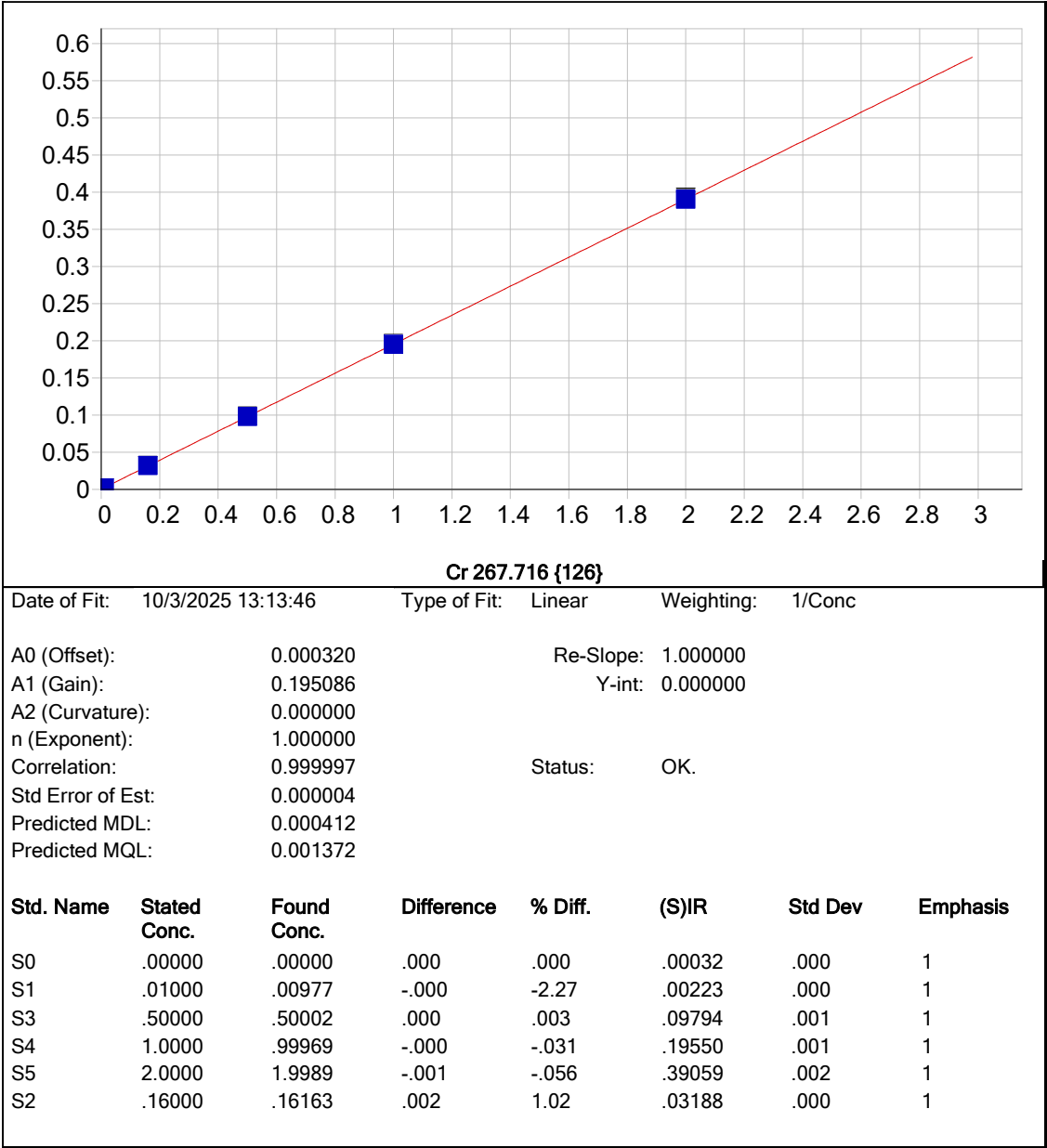


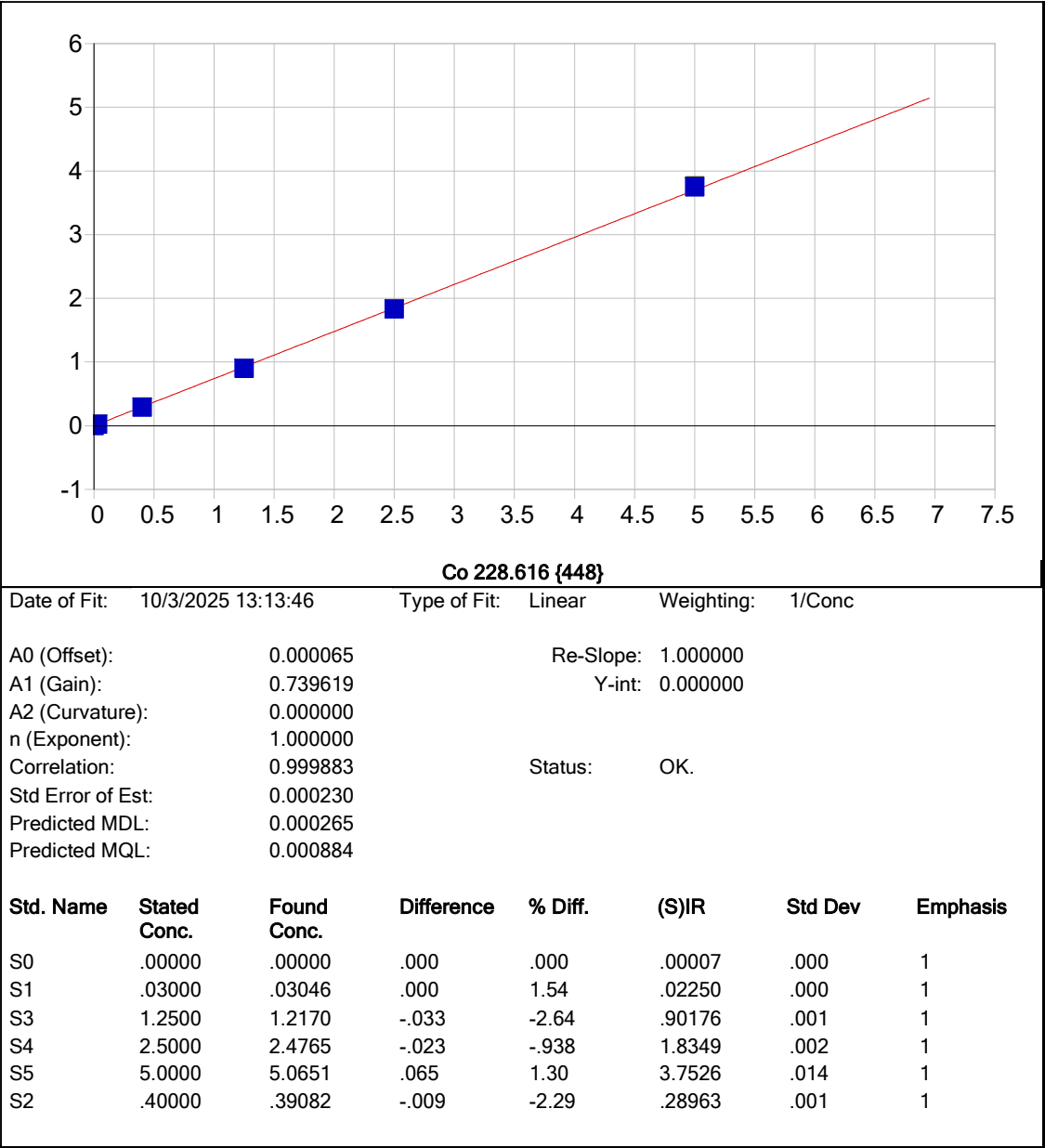


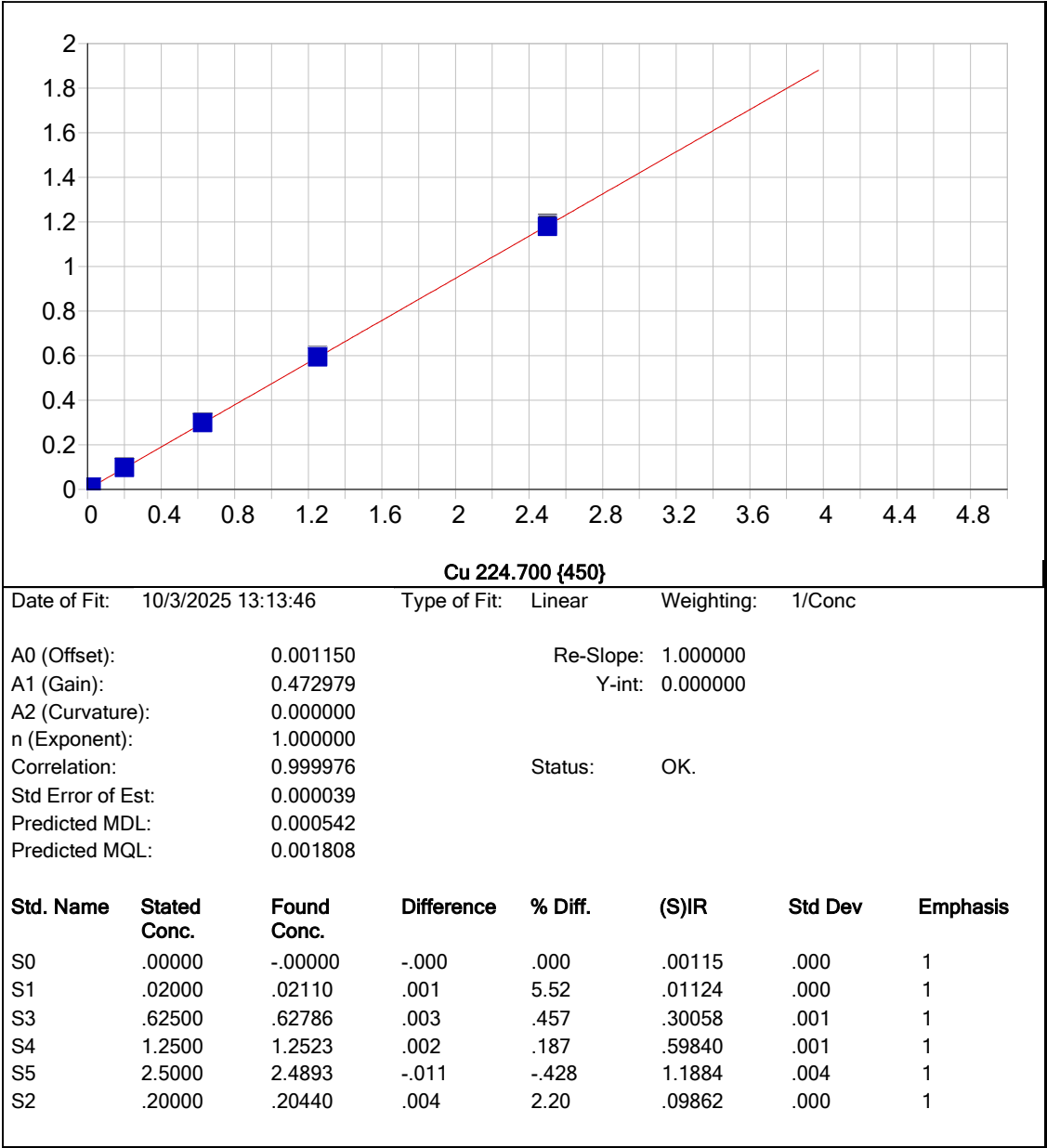


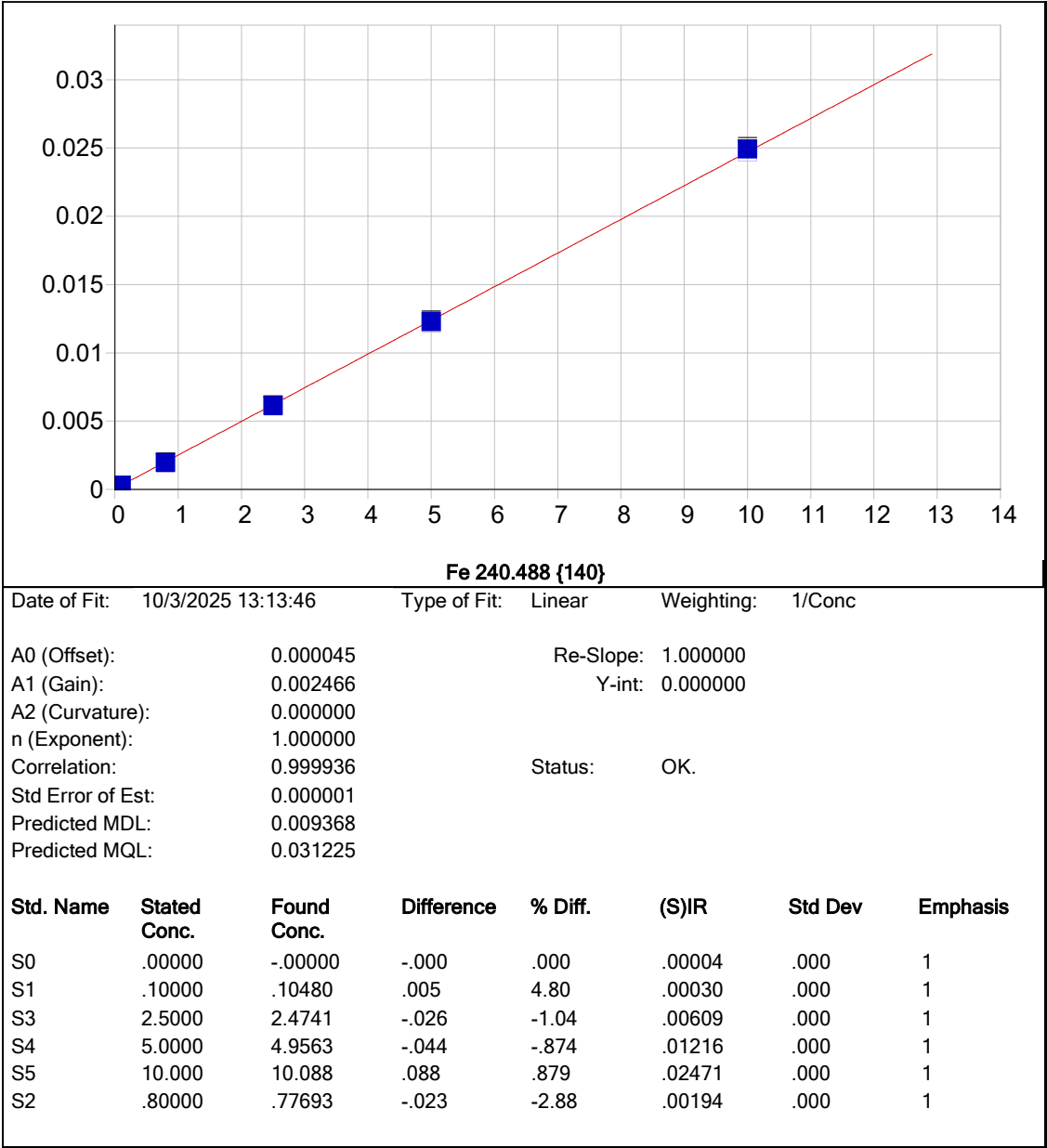


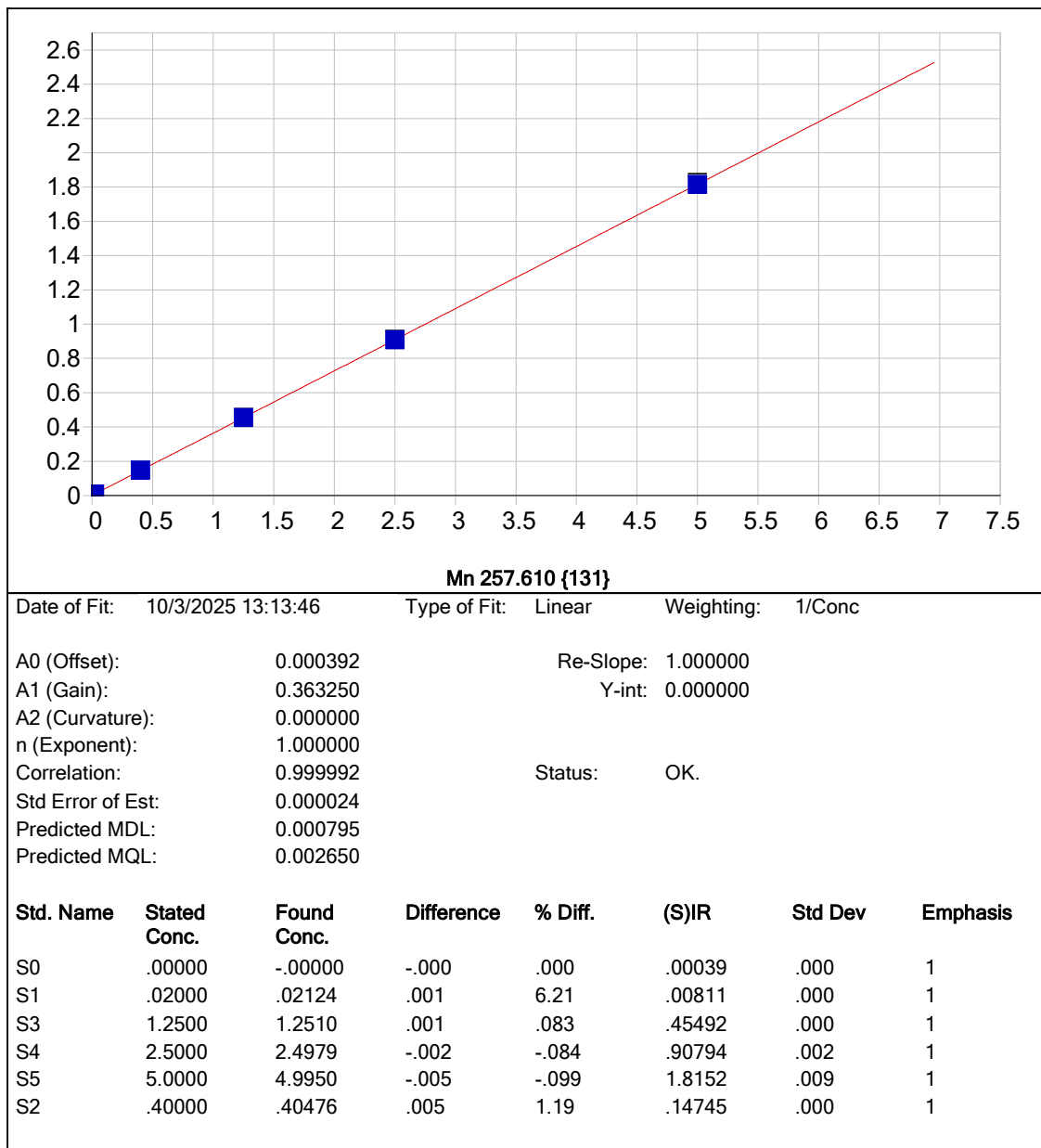


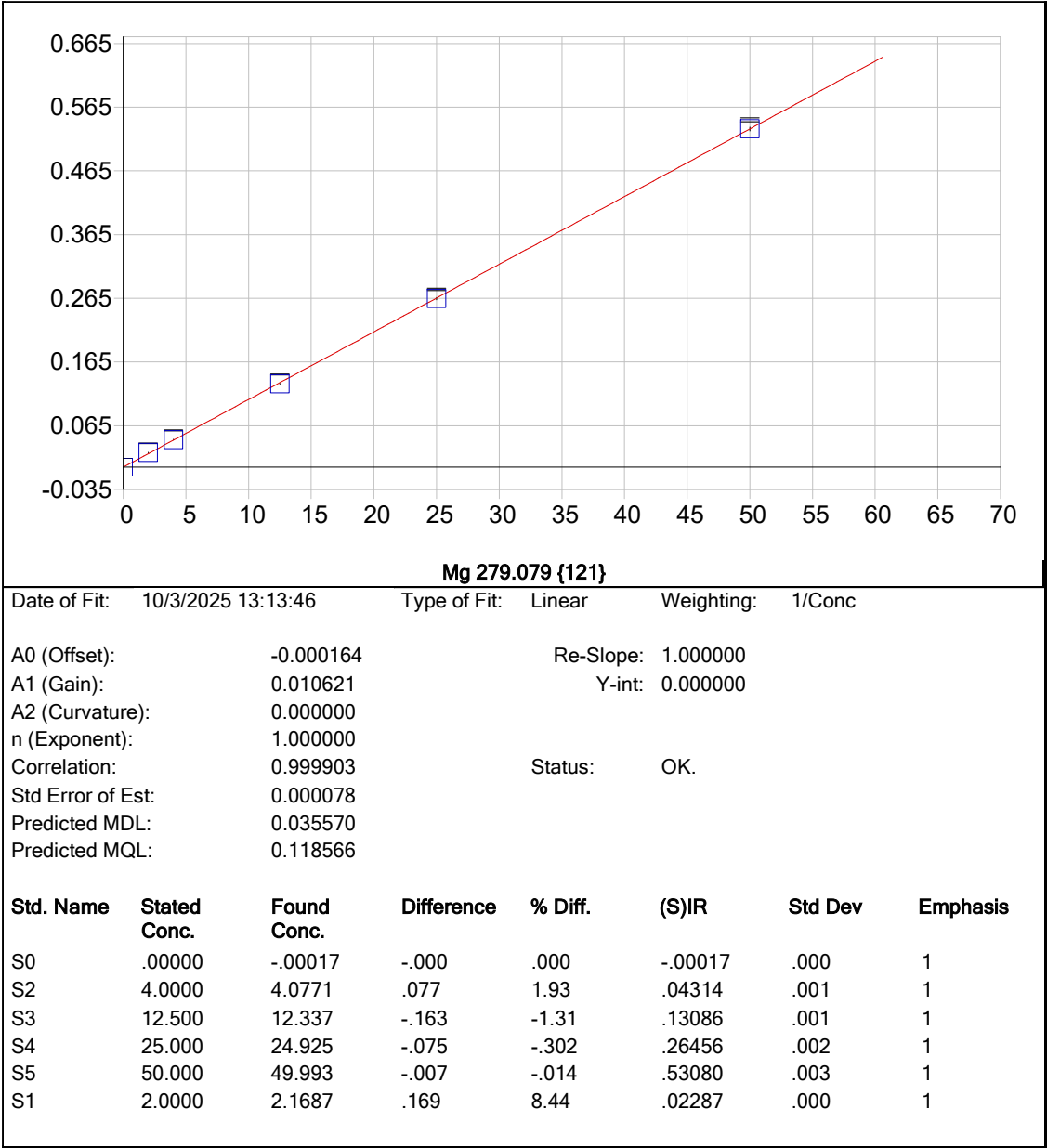


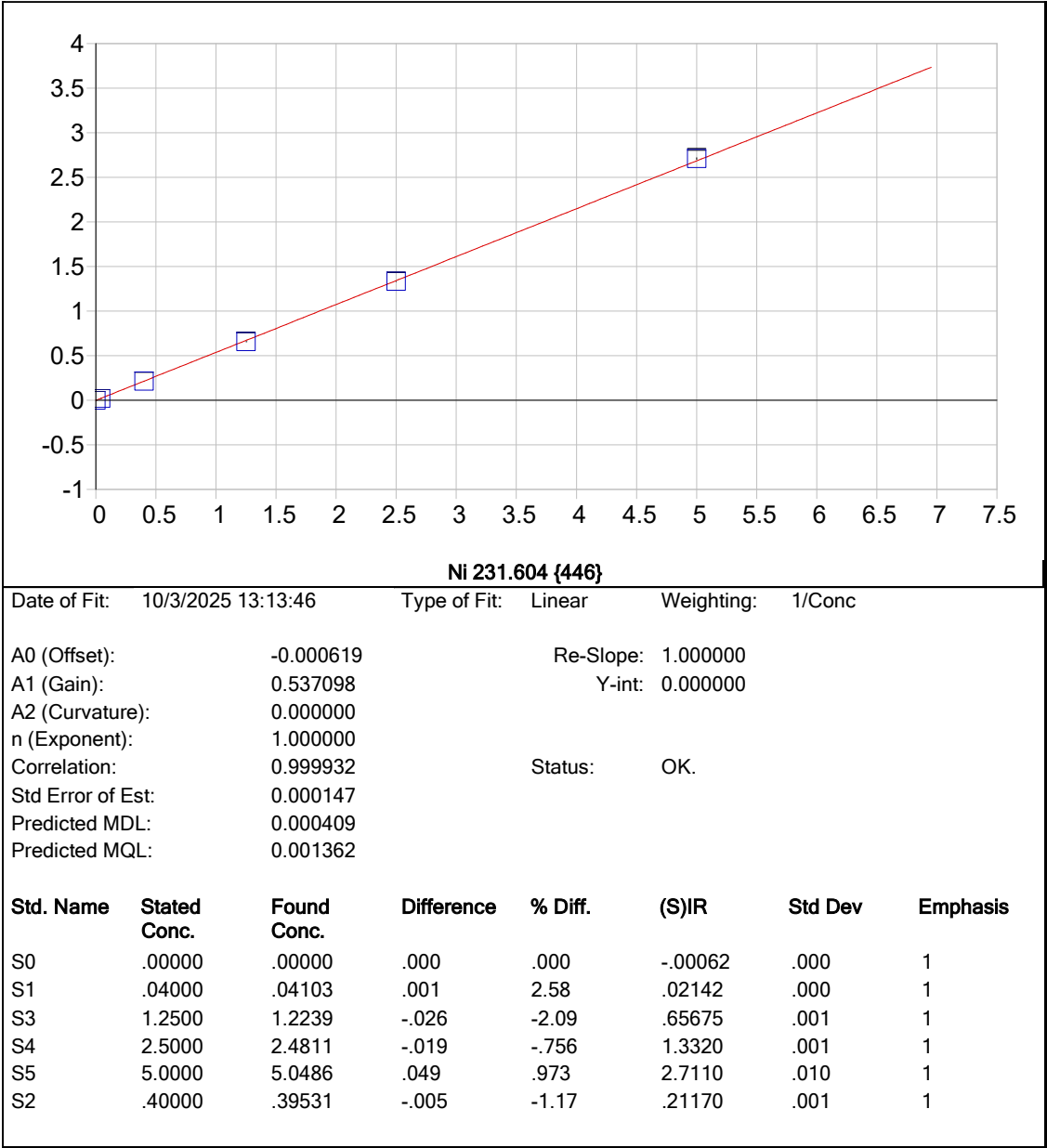


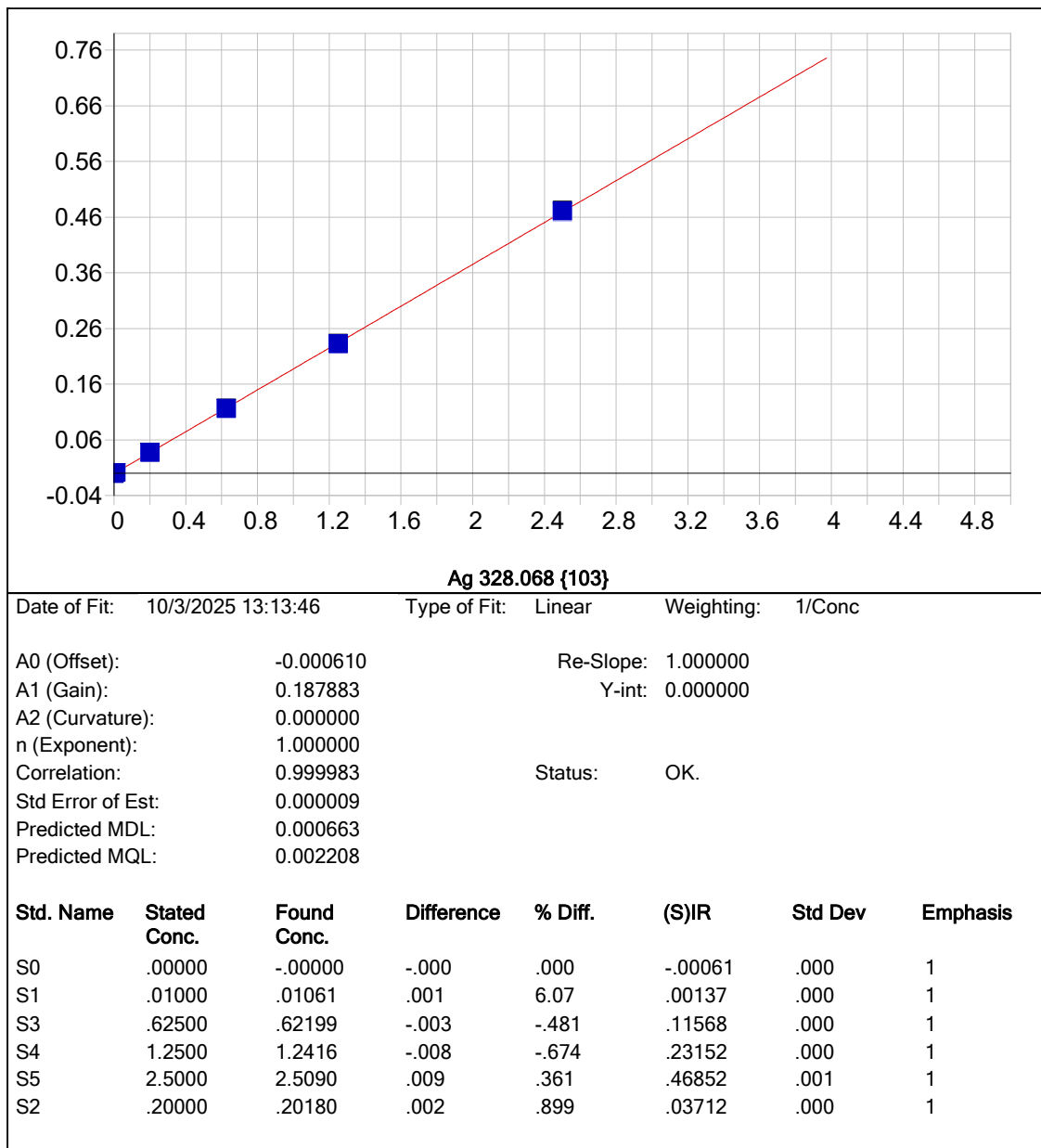


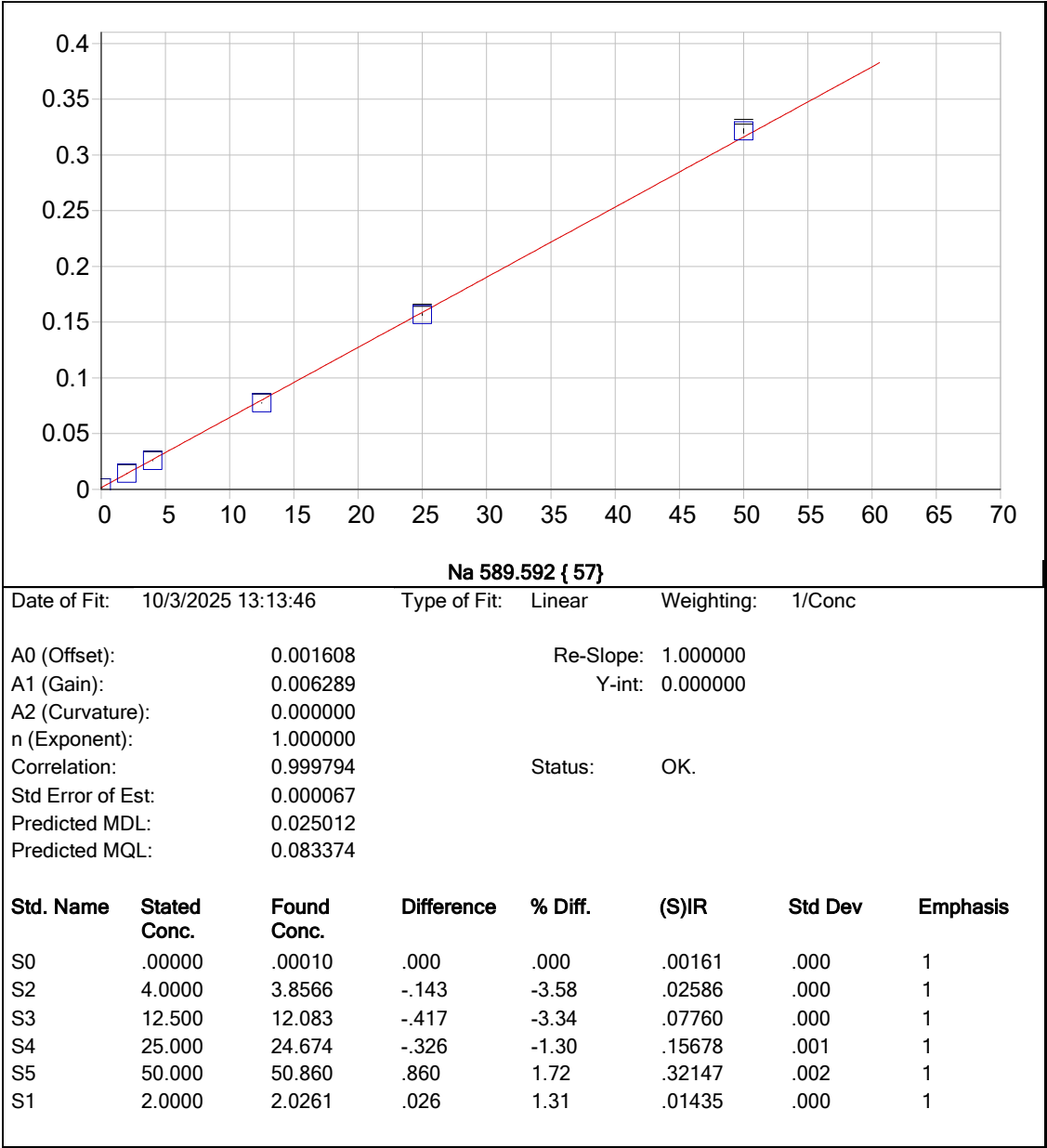


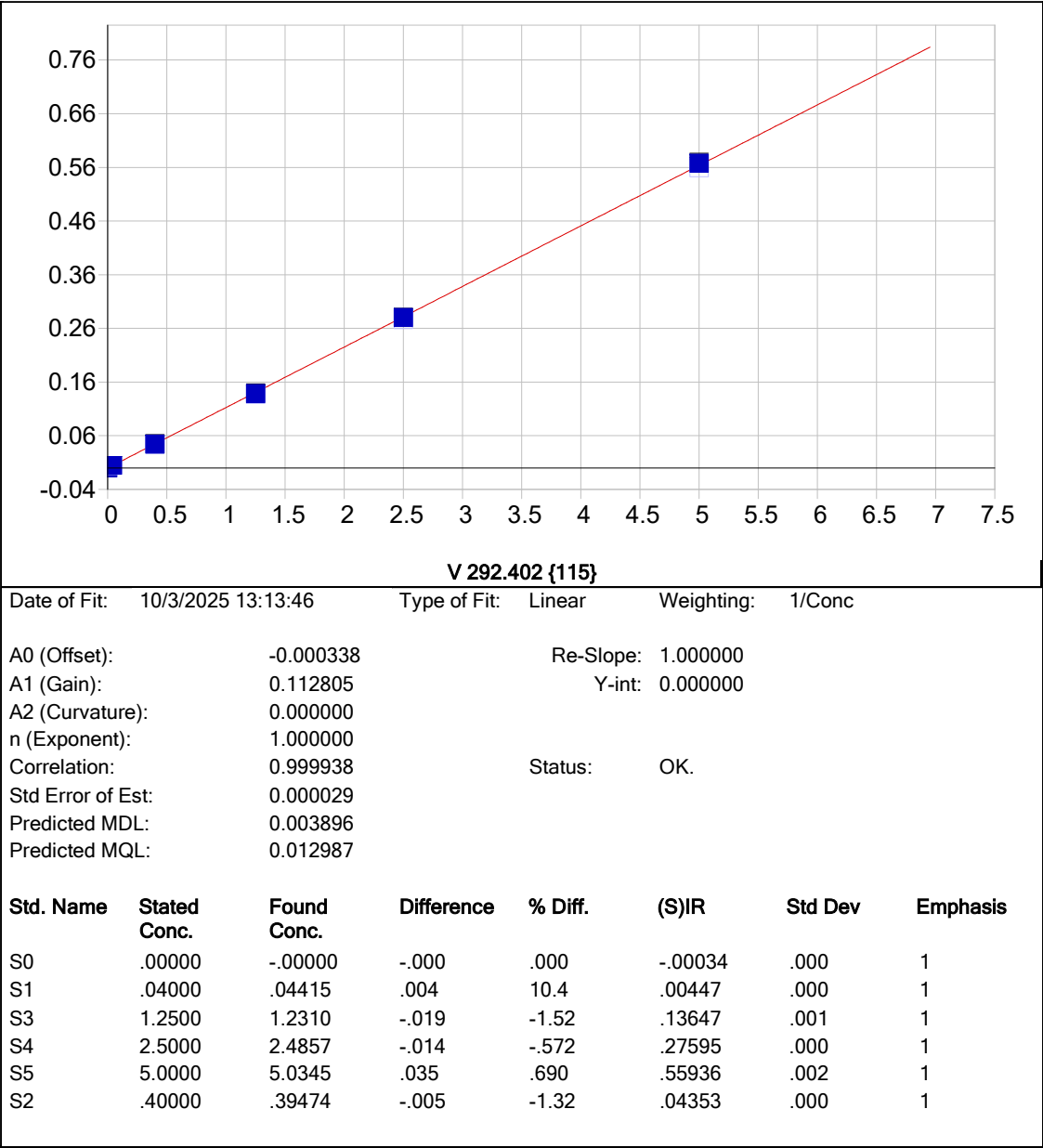


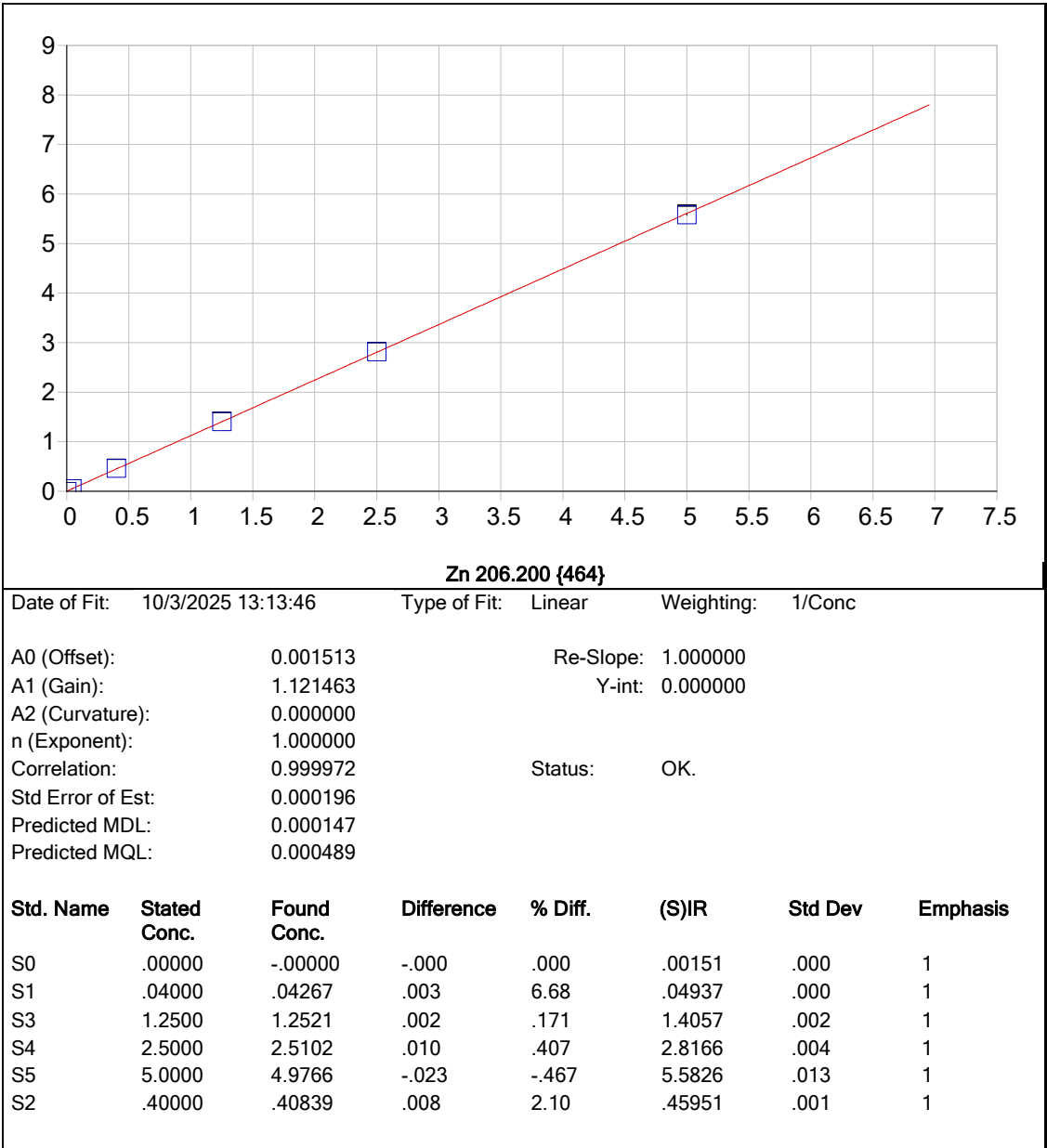


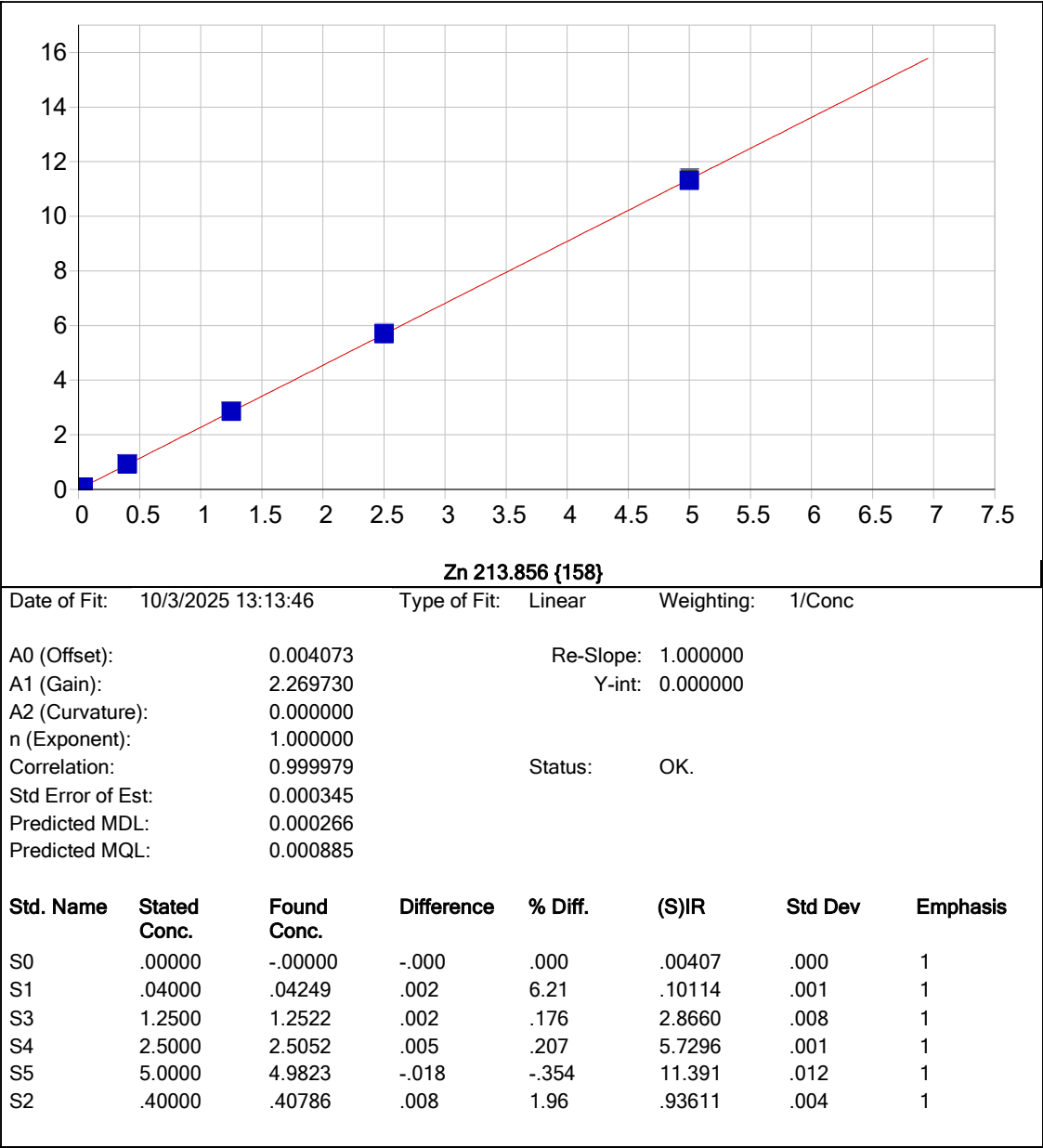


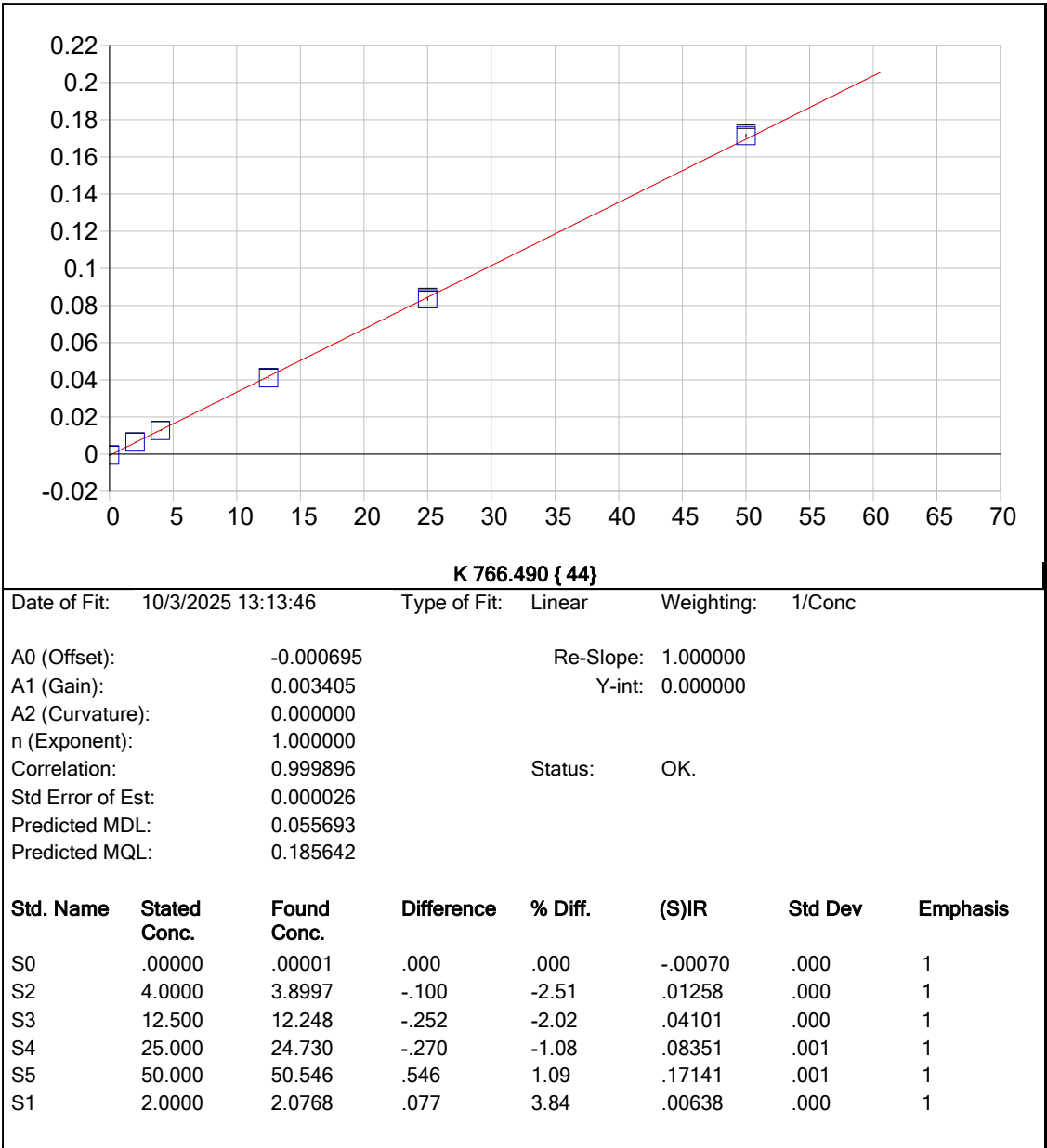


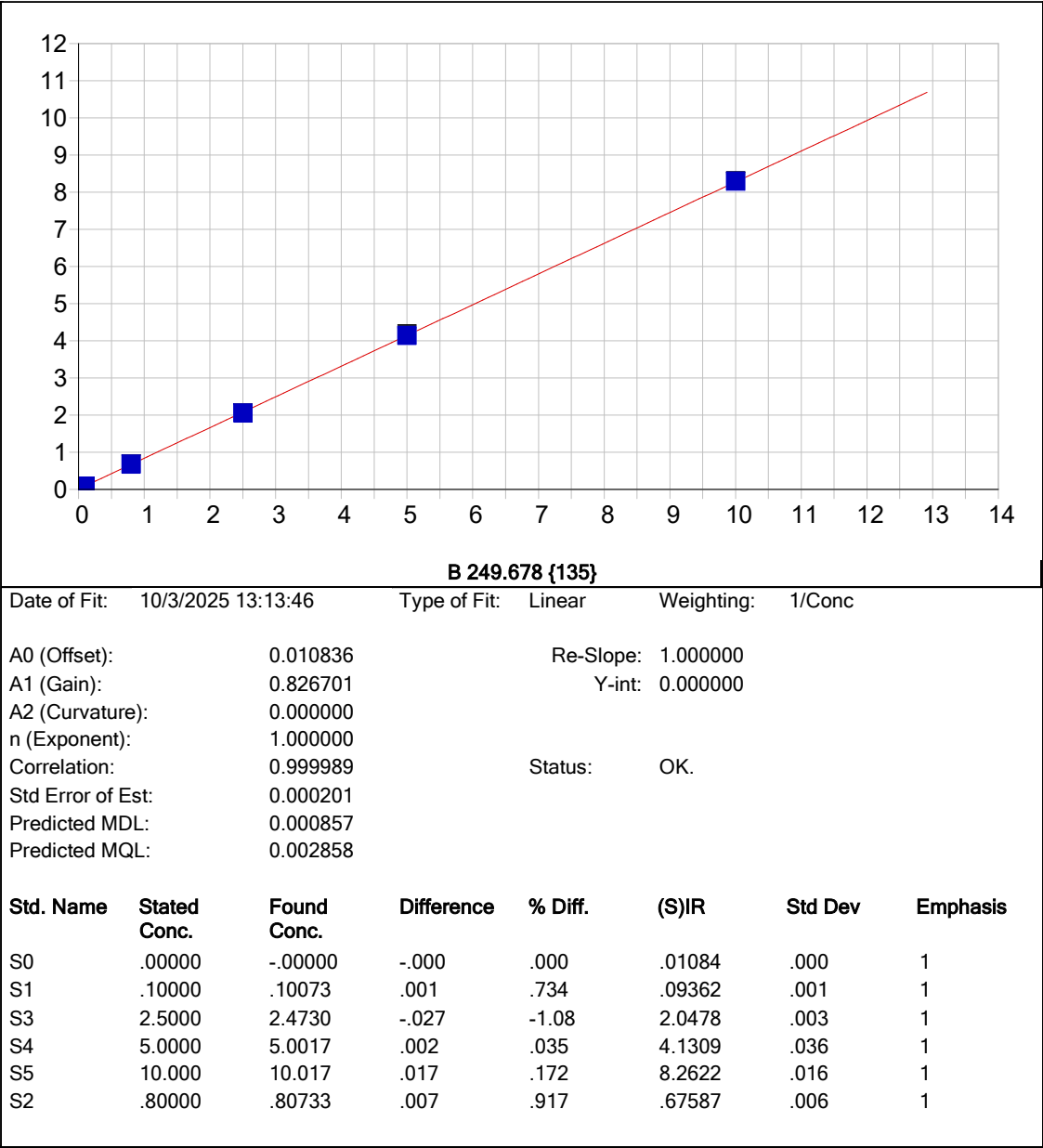


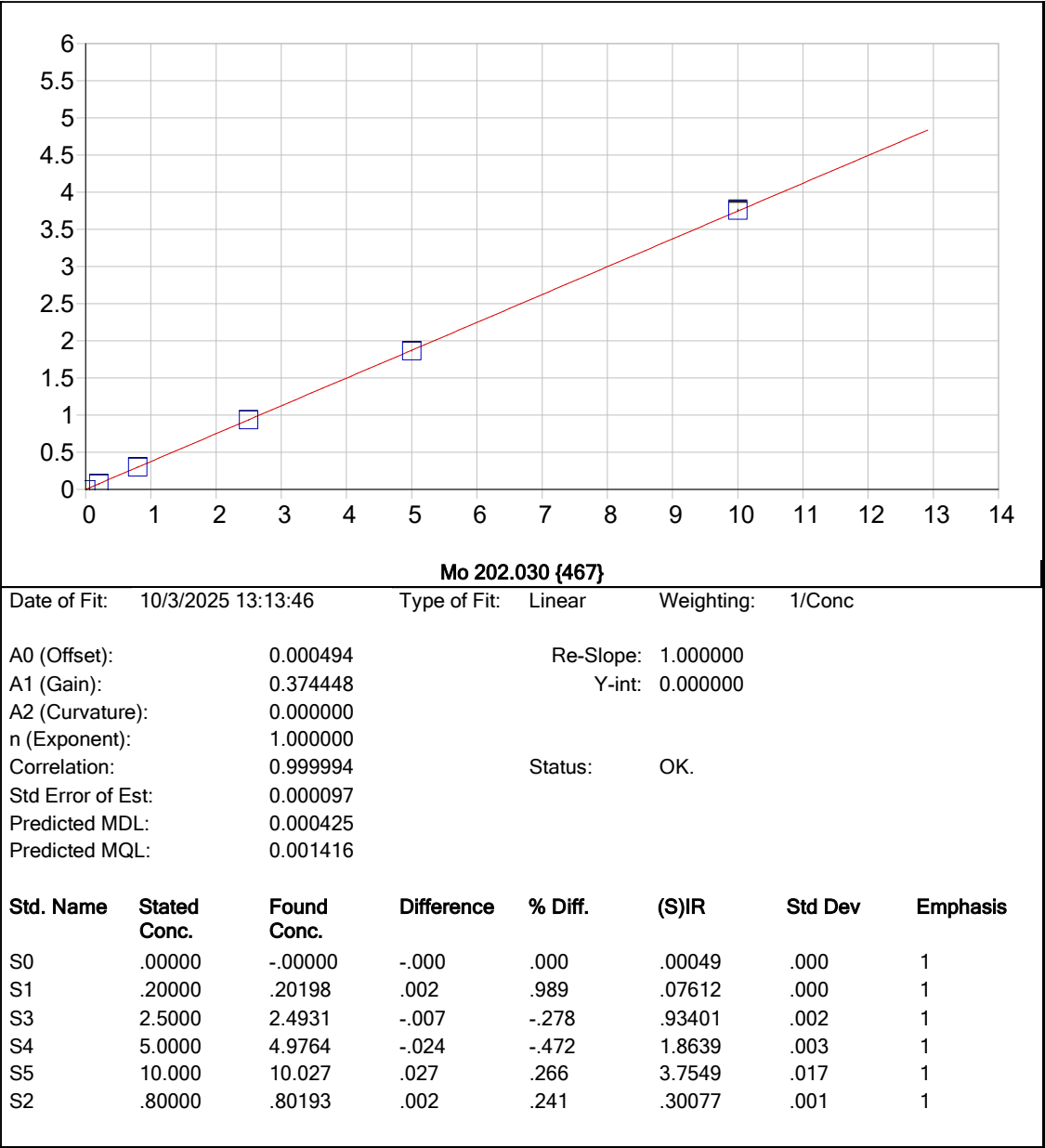


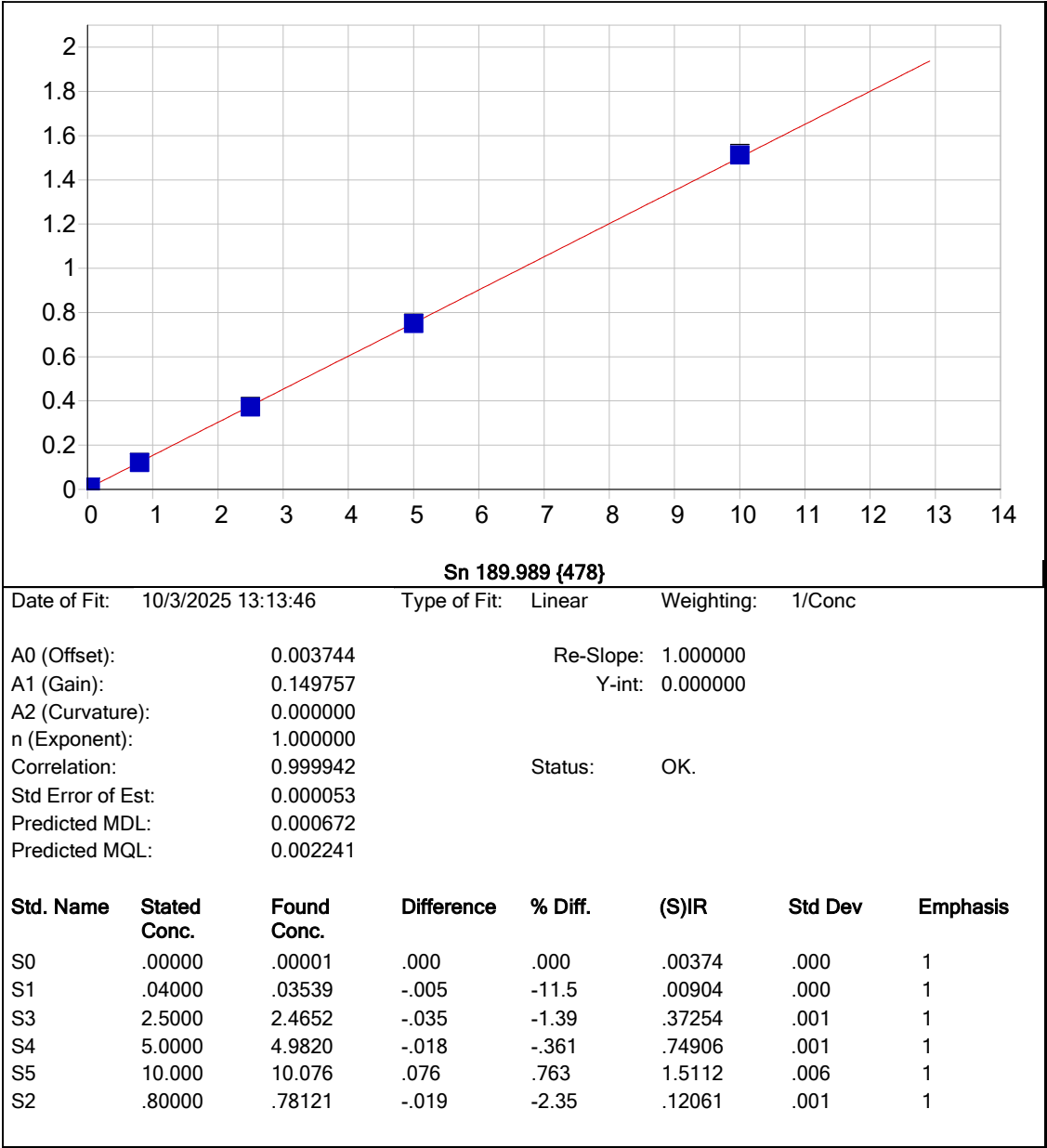


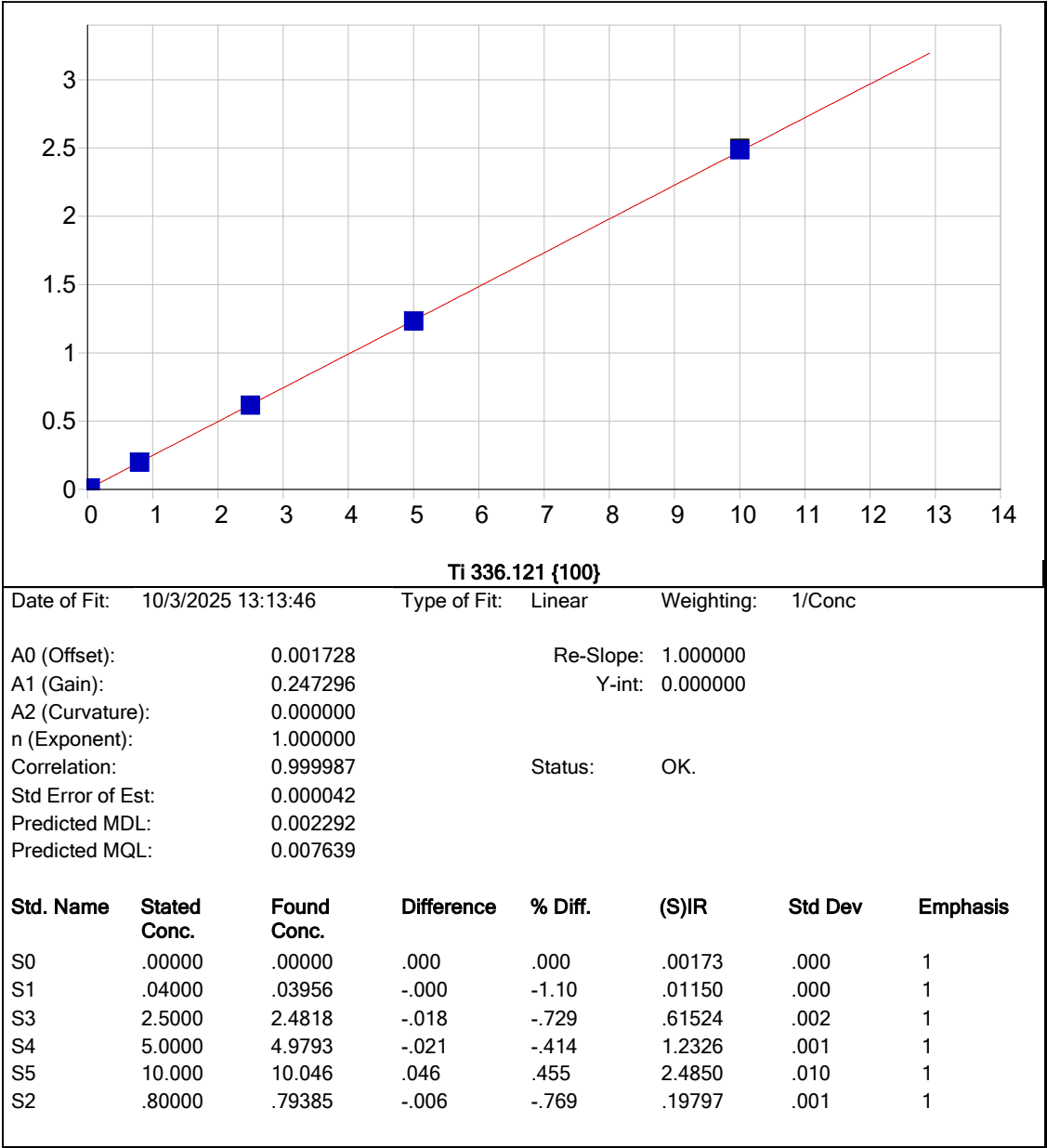


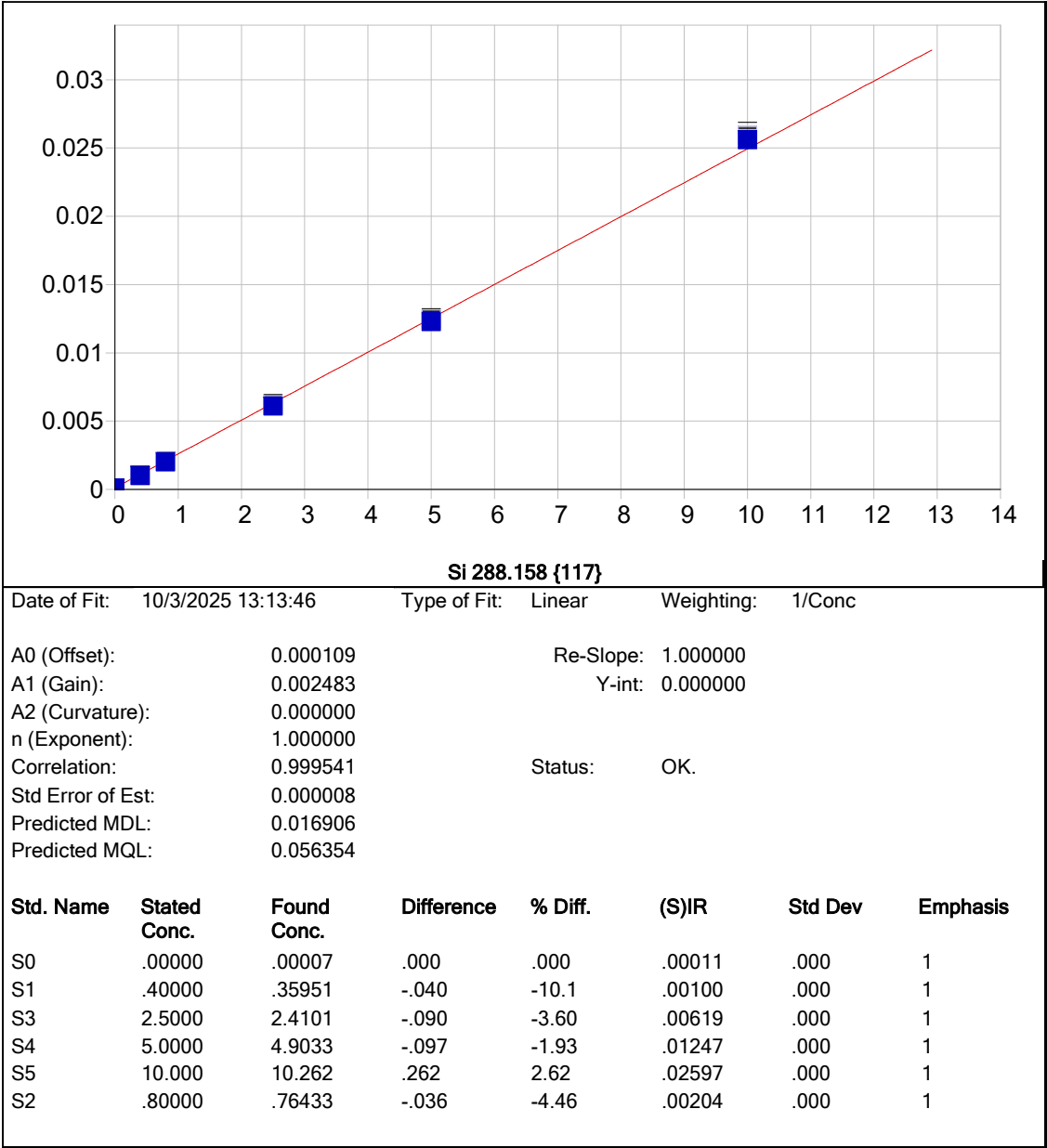


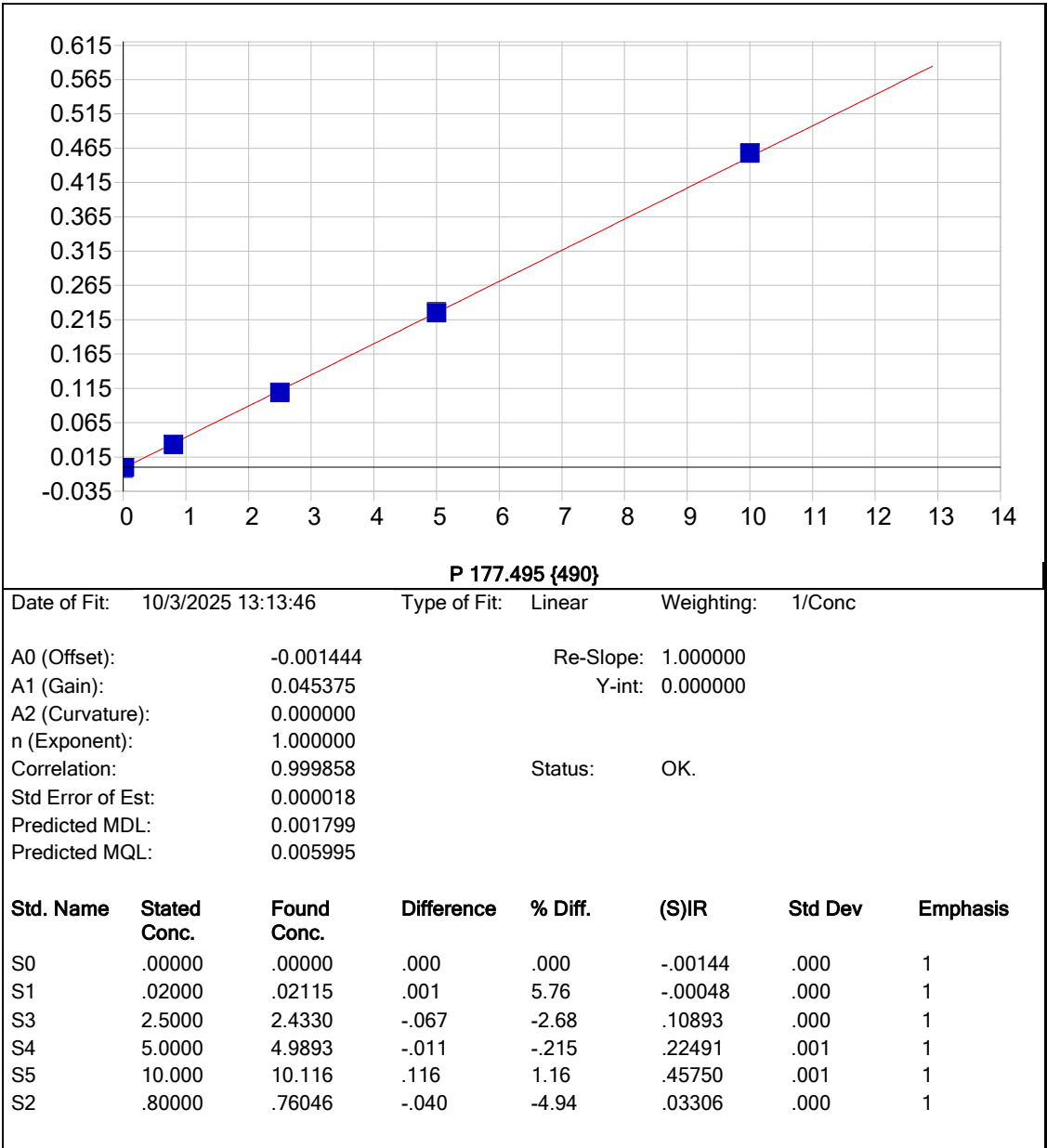


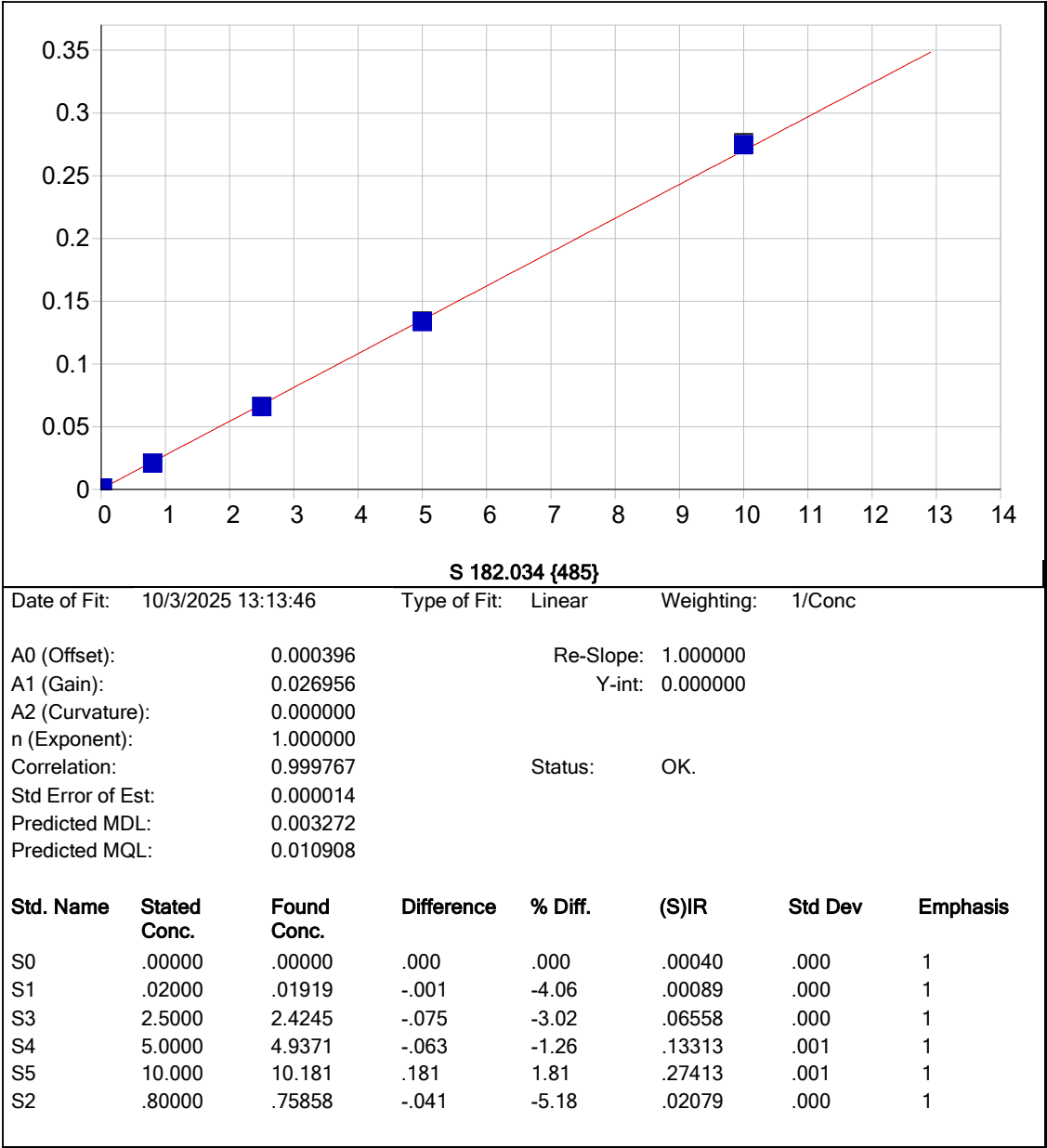


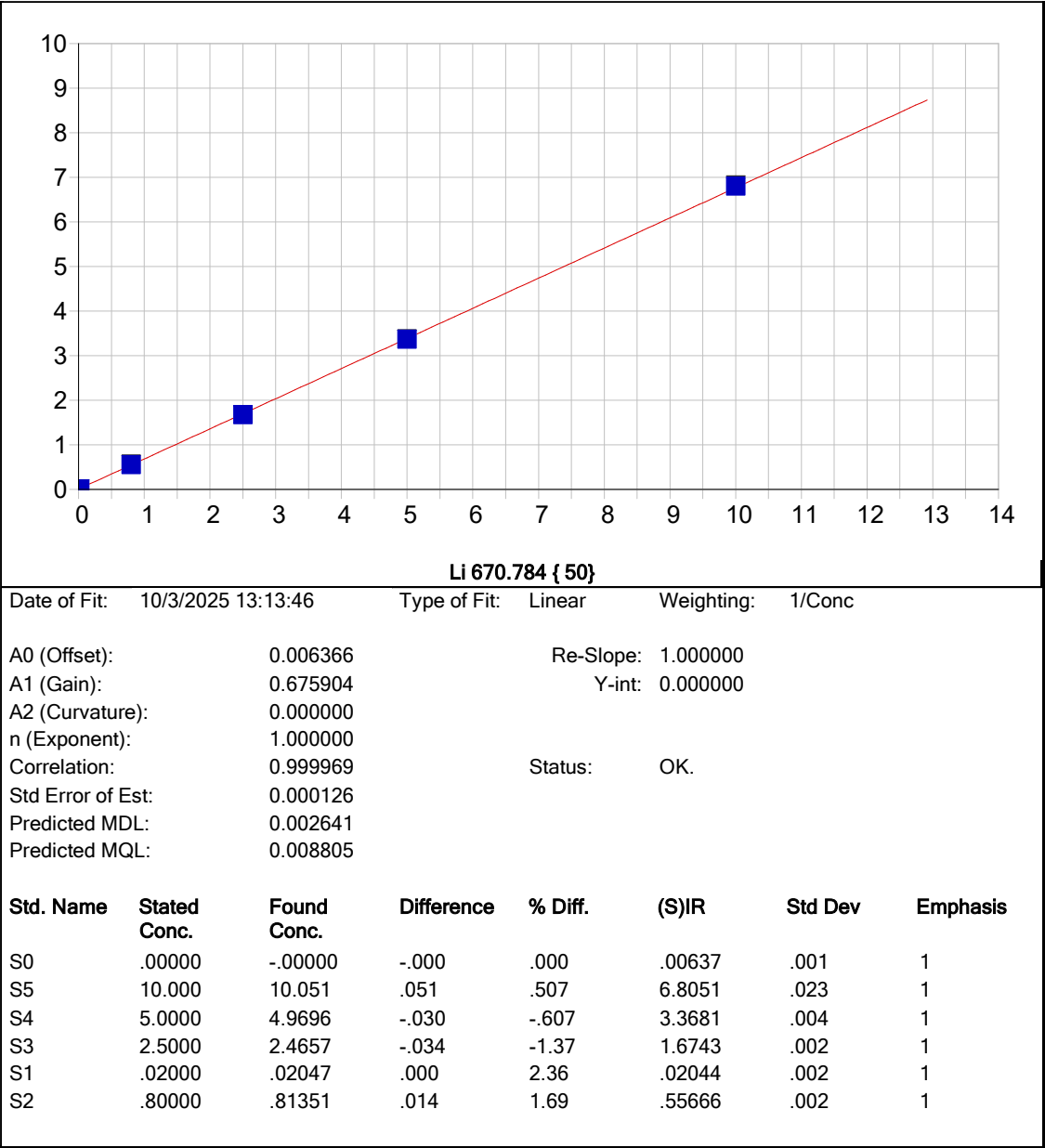


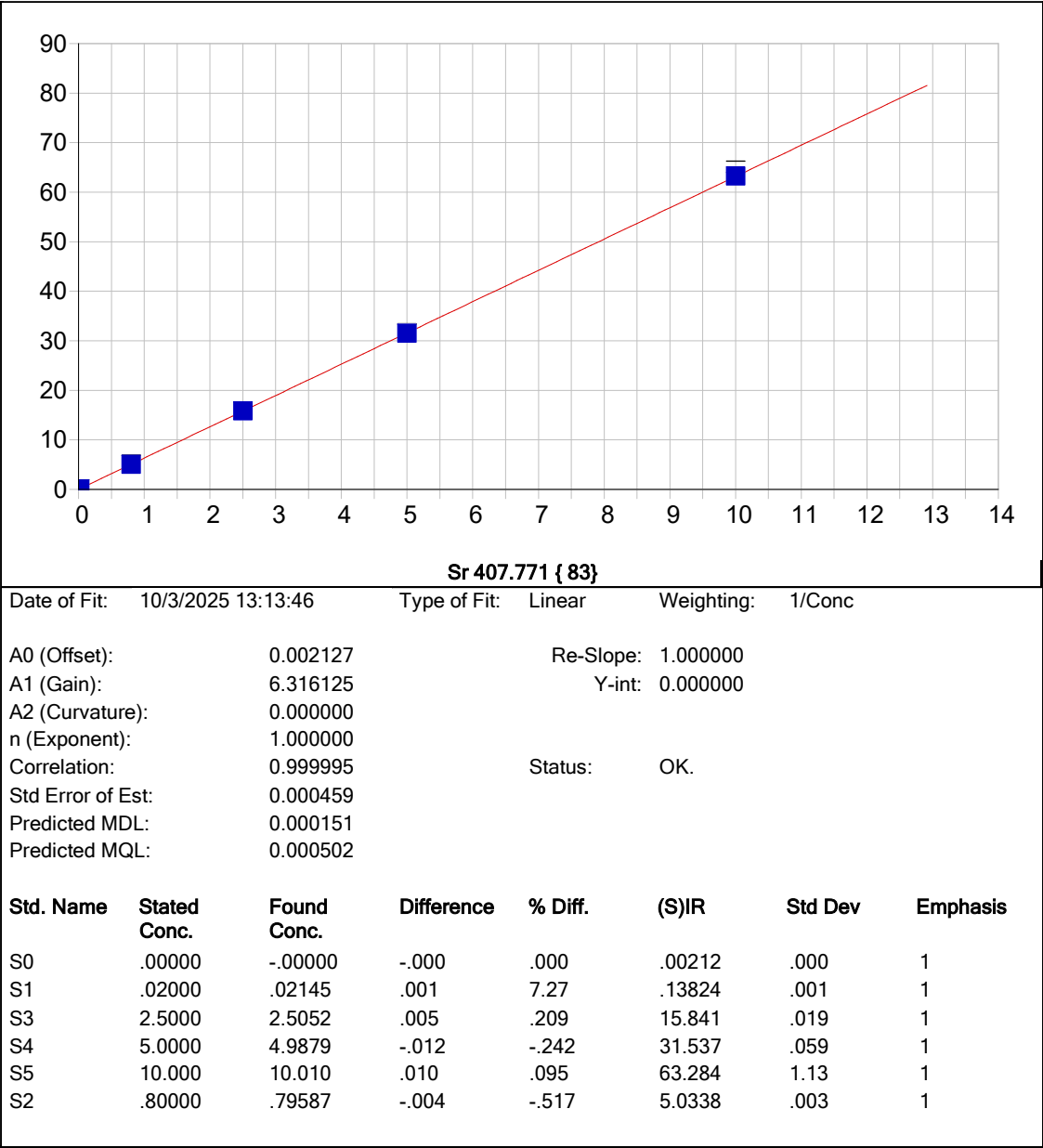


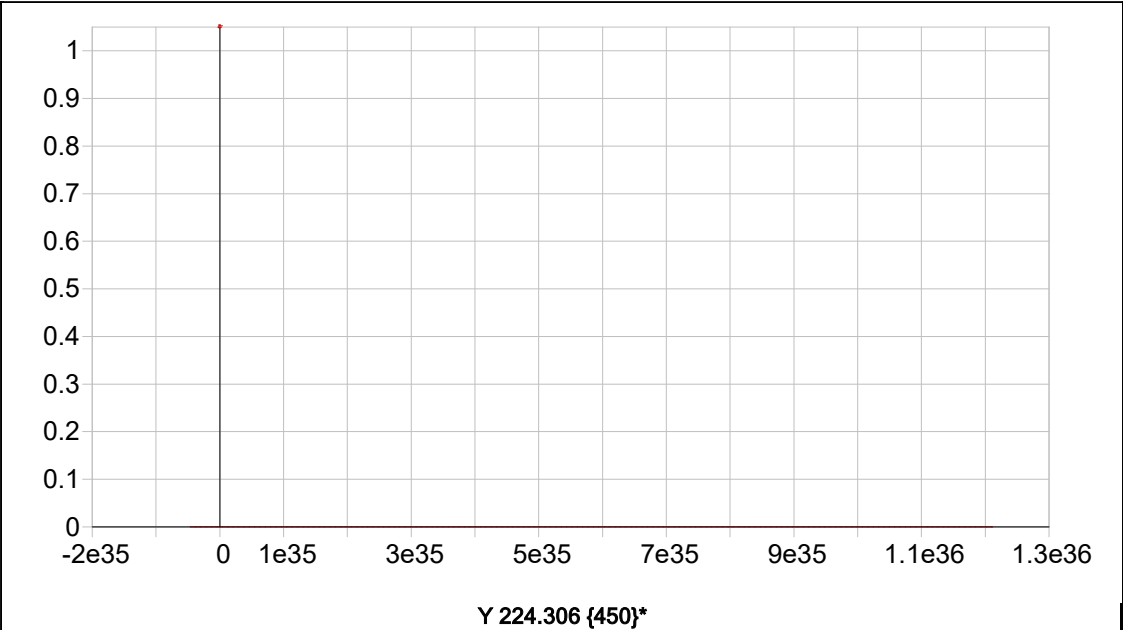






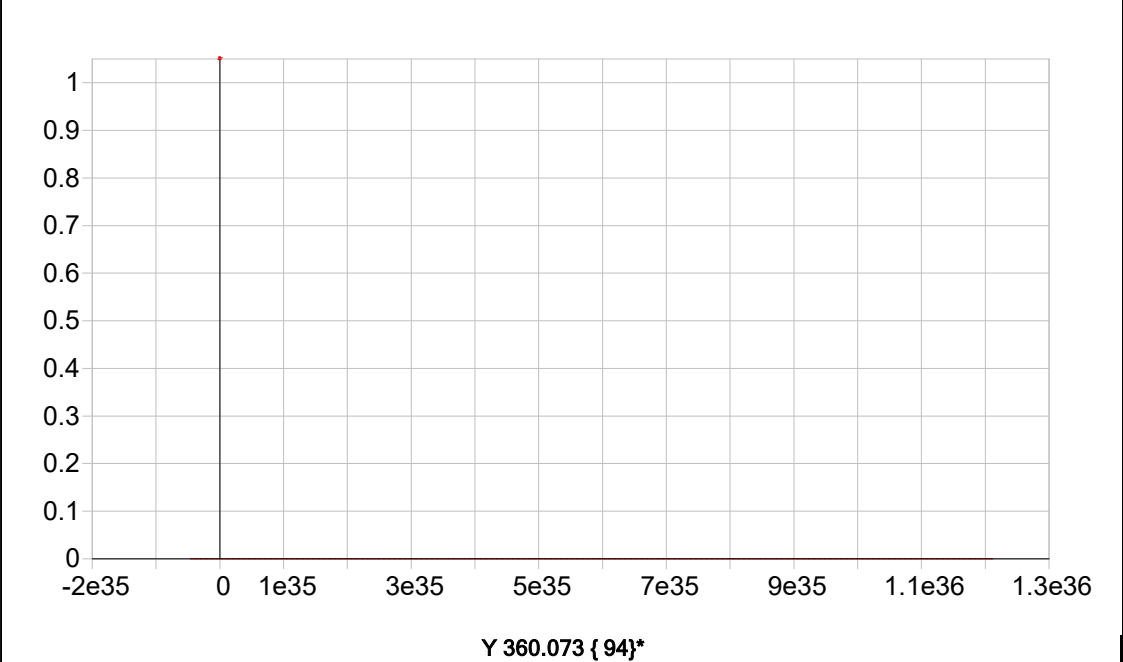




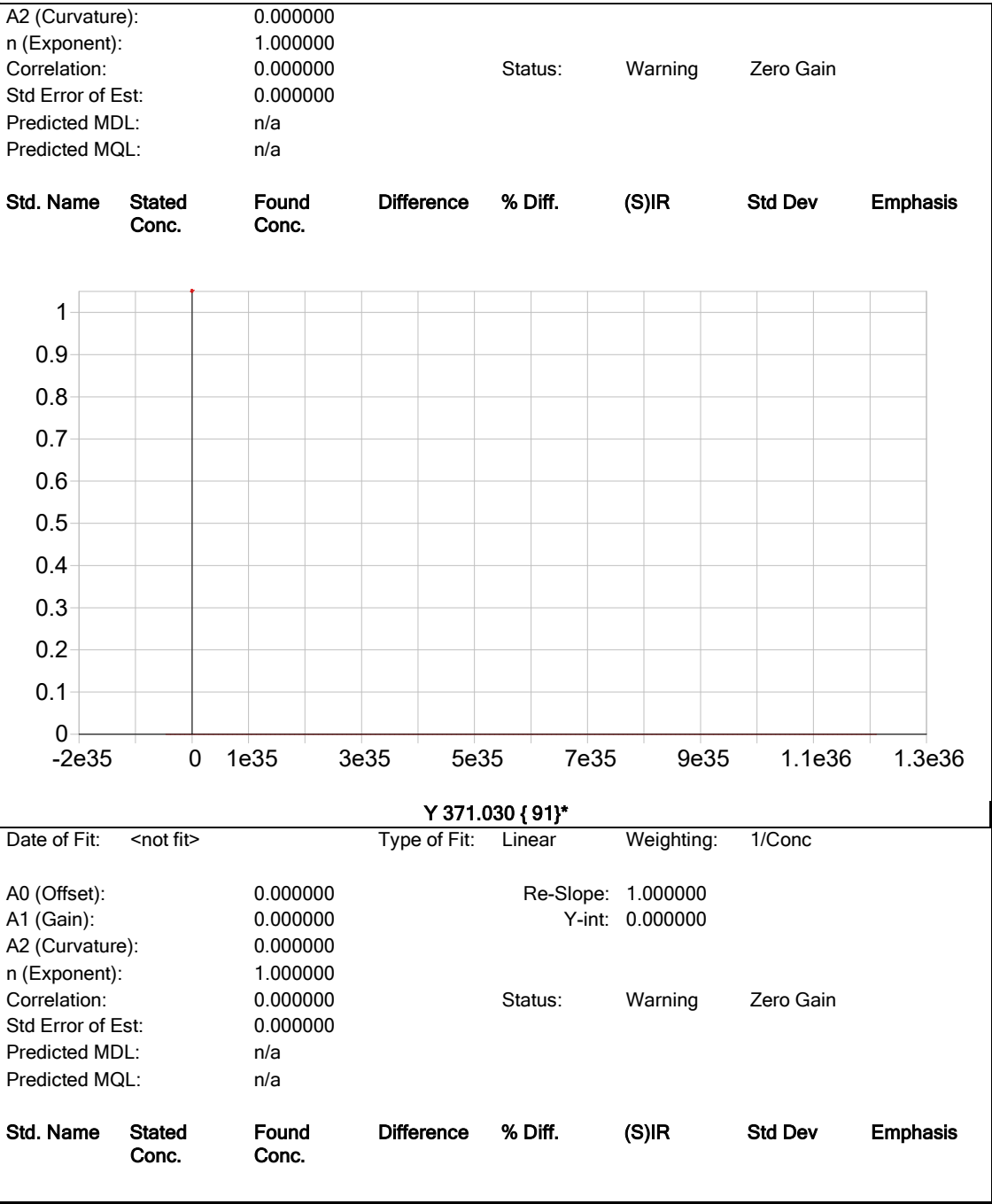


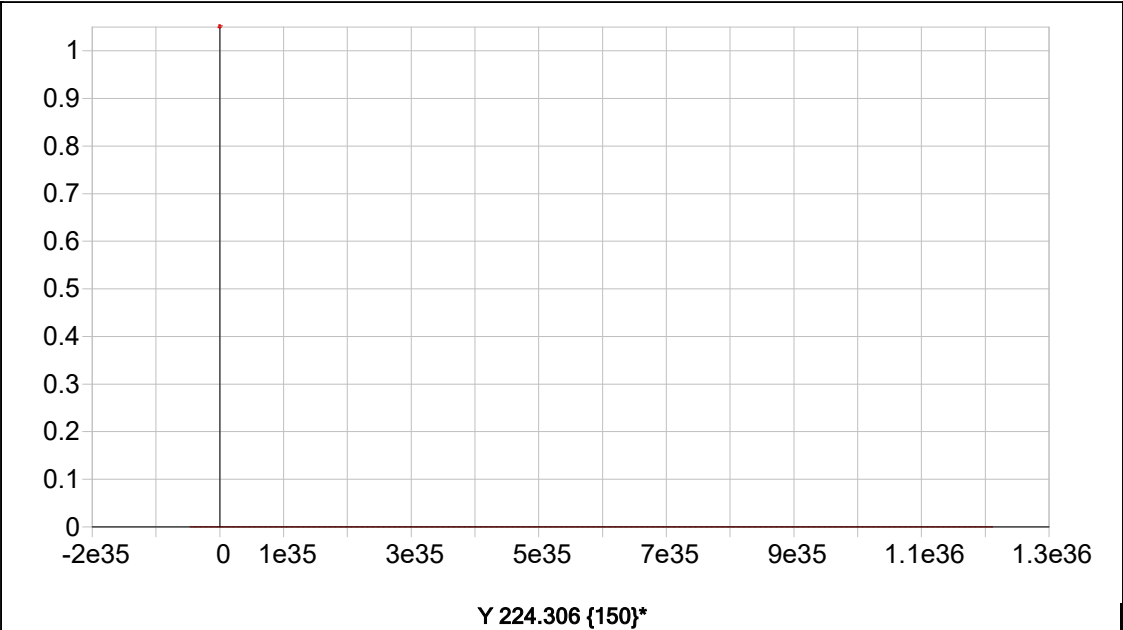
Date of Fit:	10/3/2025 13:13:46	Type of Fit:	Linear	Weighting:	1/Conc
A0 (Offset):	0.000000	Re-Slope:	1.000000		
A1 (Gain):	0.000000	Y-int:	0.000000		
A2 (Curvature):	0.000000				
n (Exponent):	1.000000				
Correlation:	0.000000	Status:	Warning	Zero Gain	
Std Error of Est:	0.000000				
Predicted MDL:	n/a				
Predicted MQL:	n/a				

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
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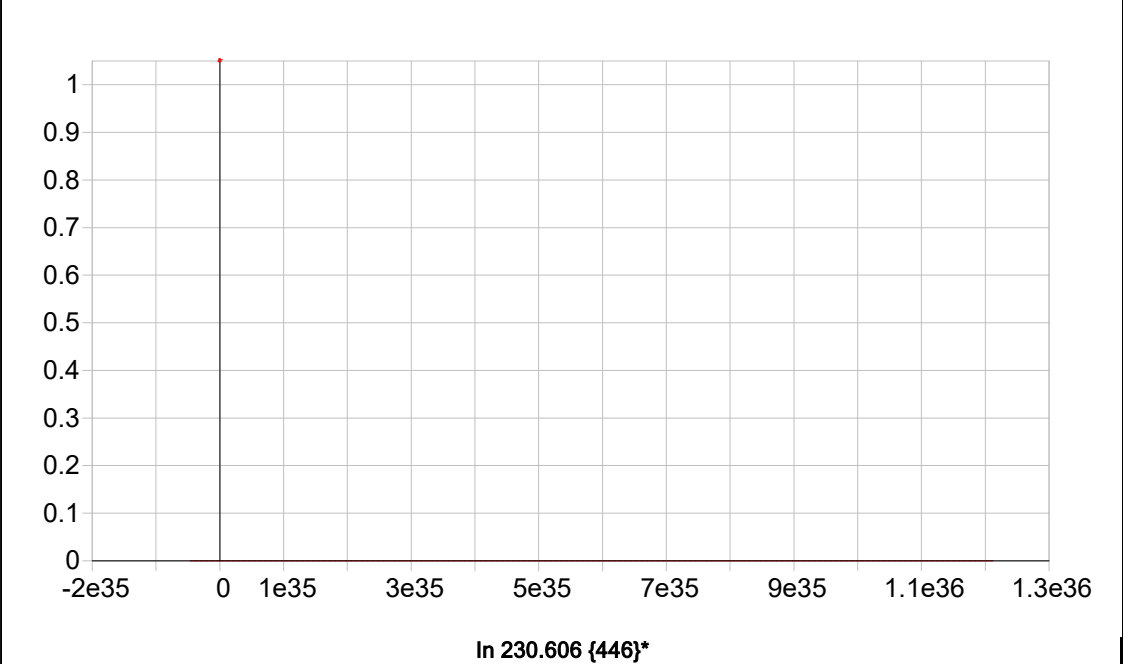
Date of Fit:	<not fit>	Type of Fit:	Linear	Weighting:	1/Conc
A0 (Offset):	0.000000	Re-Slope:	1.000000		
A1 (Gain):	0.000000	Y-int:	0.000000		





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

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
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Date of Fit:	<not fit>		Type of Fit:	Linear	Weighting:	1/Conc
A0 (Offset):	0.000000		Re-Slope:	1.000000		
A1 (Gain):	0.000000		Y-int:	0.000000		

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

LB137397

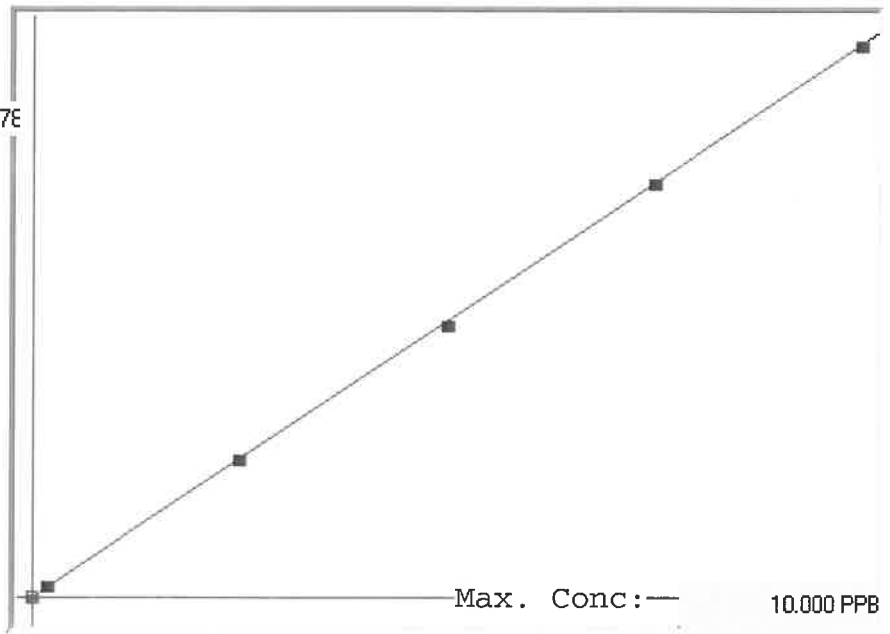
7471B

INSTRUMENT ID: CV1

Linear

μ Abs.:

46178



A= 0.0000e+000

B= 2.1694e-004

C= 1.8165e-003

Rho= 0.9999748

Accept=Accepted

Std ID	Conc.	Calc.	Dev.	Mean	SD or %RSD	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	%D
0.0	0.000	0.002	0.002	-1	0.000	-1					1
0.2	0.200	0.223	0.023	1021	0.0 %	1021					12
2.5	2.500	2.502	0.002	11525	0.0 %	11525					0
5.0	5.000	4.944	-0.056	22783	0.0 %	22783					1
7.5	7.500	7.509	0.009	34607	0.0 %	34607					0
10.0	10.000	10.019	0.019	46178	0.0 %	46178					0

LB137397 INSTRUMENT ID : CV1

Reviewed By: jaswal
On: 10/6/2025 11:36:25 PM
Inst Id : CV1
LB : LB137397

Method: 7471B

Operator: Admin

Date of Analysis: 02 Oct 2025 15:02:06

Type	Sample ID	Extended ID	Conc.	μ Abs.	Units	Type	Std Conc	Method	Date
S	0.0 - 1	IC	-	-1	PPB	Std	0.0000	7471B	03 Oct 2025 08:27:07
S	0.2 - 1	IC	-	1021	PPB	Std	0.2000	7471B	03 Oct 2025 08:29:36
S	2.5 - 1	IC	-	11525	PPB	Std	2.5000	7471B	03 Oct 2025 08:31:53
S	5.0 - 1	IC	-	22783	PPB	Std	5.0000	7471B	03 Oct 2025 08:34:10
S	7.5 - 1	IC	-	34607	PPB	Std	7.5000	7471B	03 Oct 2025 08:36:42
S	10.0 - 1	IC	-	46178	PPB	Std	10.0000	7471B	03 Oct 2025 08:39:24
U	ICV56 - 1	ICV56	3.8453	17717	PPB	SMPL	-7471B		03 Oct 2025 08:42:59
U	ICB56 - 1	ICB56	-0.0841	-396	PPB	SMPL	-7471B		03 Oct 2025 08:45:16
U	CCV75 - 1	CCV75	4.9944	23014	PPB	SMPL	-7471B		03 Oct 2025 08:47:54
U	CCB75 - 1	CCB75	-0.0622	-295	PPB	SMPL	-7471B		03 Oct 2025 08:50:08
U	CRA - 1	CRA	0.2012	919	PPB	SMPL	-7471B		03 Oct 2025 08:52:49
U	HighStd - 1	HighStd	9.7709	45032	PPB	SMPL	-7471B		03 Oct 2025 08:55:04
U	ChkStd - 1	ChkStd	6.6958	30857	PPB	SMPL	-7471B		03 Oct 2025 08:57:19
U	PB169964BL - 1	PBS	-0.0607	-288	PPB	SMPL	-7471B		03 Oct 2025 09:00:07
U	PB169964BS - 1	LCSS	4.3136	19876	PPB	SMPL	-7471B		03 Oct 2025 09:02:52
U	Q2409-05 - 1	COP-SOIL-PILE	4.6512	21432	PPB	SMPL	-7471B		03 Oct 2025 09:05:09
U	Q2409-05DUP - 1	COP-SOIL-PILEDUP	4.3501	20044	PPB	SMPL	-7471B		03 Oct 2025 09:07:48
U	Q2409-05MS - 1	COP-SOIL-PILEMS	8.5187	39260	PPB	SMPL	-7471B		03 Oct 2025 09:10:30
U	Q2409-05MSD - 1	COP-SOIL-PILEMSD	8.5571	39437	PPB	SMPL	-7471B		03 Oct 2025 09:16:19
U	Q3266-01 - 1	ENV-3-6FT	0.3220	1476	PPB	SMPL	-7471B		03 Oct 2025 09:18:53
U	CCV76 - 1	CCV76	5.0224	23143	PPB	SMPL	-7471B		03 Oct 2025 09:21:38
U	CCB76 - 1	CCB76	-0.0611	-290	PPB	SMPL	-7471B		03 Oct 2025 09:23:54
U	Q3266-02 - 1	ENV-3-6FT	1.0108	4651	PPB	SMPL	-7471B		03 Oct 2025 09:26:34
U	Q3269-01 - 1	EG1-TP1	7.7725	35820	PPB	SMPL	-7471B		03 Oct 2025 09:28:49
U	Q3269-04 - 1	EG1-TP2	0.3767	1728	PPB	SMPL	-7471B		03 Oct 2025 09:31:08
U	Q2409-05LX5 - 1		0.7390	3398	PPB	SMPL	-7471B		03 Oct 2025 09:34:04
U	Q2409-05A - 1		8.1087	37370	PPB	SMPL	-7471B		03 Oct 2025 09:36:21
U	CCV77 - 1	CCV77	4.8536	22365	PPB	SMPL	-7471B		03 Oct 2025 09:38:40
U	CCB77 - 1	CCB77	-0.0617	-293	PPB	SMPL	-7471B		03 Oct 2025 09:41:26

SOP ID : M3050B-Digestion-20

SDG No : N/A

Matrix : SOIL

Pipette ID : ICP A

Balance ID : M SC-2

Filter paper ID : N/A

pH Strip ID : N/A

Hood ID : #3

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

Start Digest Date: 10/02/2025 Time : 15:10 Temp : 96 °C

End Digest Date: 10/02/2025 Time : 17:15 Temp : 96 °C

Digestion tube ID: M6054

Block thermometer ID: MET-DIG. #2

 Dig Technician Signature: *SKJ*

 Supervisor Signature: *[Signature]*

Temp : 1. 96°C 2. N/A

Standard Name	MLS USED	STD REF. # FROM LOG
LFS-1	1.00	M6180
LFS-2	1.00	M6181
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
Conc. HNO3	5.00	M6158
1:1 HNO3	10.00	MP85156
30% H2O2	3.00	M6170
Conc. HCL	10.00	M6151
PTFE Boiling Stones	N/A	M5581
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#2 CELL#35 96C

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
10/02/25 18:15	<i>SKJ met d/5</i>	<i>[Signature]</i>
	Preparation Group	Analysis Group

Lab Sample ID	Client Sample ID	pH	Initial Weight (g)	Final Vol (ml)	Color Before	Color After	Texture	Artifact	Comment	Prep Pos
PB169963BL	PBS963	N/A	2.00	100	Colorless	Colorless	Fine	No	N/A	1
PB169963BS	LCS963	N/A	2.00	100	Colorless	Colorless	Fine	No	M6180,M6181	2
Q2409-05MS	COP-SOIL-PILEMS	N/A	2.24	100	Brown	Yellow	Medium	No	M6180,M6181	5
Q2409-05MSD	COP-SOIL-PILEMSD	N/A	2.40	100	Brown	Yellow	Medium	No	M6180,M6181	6
Q2409-05DUP	COP-SOIL-PILEDUP	N/A	2.45	100	Brown	Yellow	Medium	No	N/A	4
Q2409-05	COP-SOIL-PILE	N/A	2.38	100	Brown	Yellow	Medium	No	N/A	3
Q3269-01	EG1-TP1	N/A	2.25	100	Brown	Yellow	Medium	No	N/A	7
Q3269-04	EG1-TP2	N/A	2.34	100	Brown	Yellow	Medium	No	N/A	8

WORKLIST(Hardcopy Internal Chain)

Worklist Name : PB169963

Worklist ID : 192253

Department : Digestion

Date : 10-02-2025 14:29:39

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q2409-05	COP-SOIL-PILE	Solid	Metals ICP-TAL	Cool 4 deg C	COFP02		06/24/2025	6010D
Q3269-01	EG1-TP1	Solid	Metals ICP-TAL	Cool 4 deg C	PSEG03	D31	10/02/2025	6010D
Q3269-04	EG1-TP2	Solid	Metals ICP-TAL	Cool 4 deg C	PSEG03	D31	10/02/2025	6010D

Date/Time 20102125 14:40

Raw Sample Received by: SICS mct-di9

Raw Sample Relinquished by: CPCS m9

Date/Time 10102125 15:46

Raw Sample Received by: CPCS m9

Raw Sample Relinquished by: SICS mct-di9

SOP ID : M7471B-Mercury-19

SDG No : NA

Matrix : SOIL

Pipette ID: HG A

Balance ID : M SC-3

Filter paper ID : NA

pH Strip ID : NA

Hood ID : #1

Block ID: 1. HG HOT BLOCK#3 2. N/A

Start Digest Date: 10/02/2025 Time : 15:10 Temp : 95 °C

End Digest Date: 10/02/2025 Time : 15:40 Temp : 94 °C

Digestion tube ID: M5595

Block thermometer ID: HG-DIG#3

 Dig Technician Signature: *MB*

 Supervisor Signature: *12*

Temp : 1. 95°C 2. N/A

Standard Name	MLS USED	STD REF. # FROM LOG
ICV	30mL	MP87429
CCV	30mL	MP87431
CRA	30mL	MP87433
Blank Spike	0.48mL	MP87421
Matrix Spike	0.48mL	MP87421

Chemical Used	ML/SAMPLE USED	Lot Number
AQUA REGIA	1.5MI	MP87436
KMnO4 (5%)	4.5mL	MP87072
Hydroxylamine HCL (12%)	2.0MI	MP87149
PTFE Boiling Stones	-----	M5582
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

LAB SAMPLE ID	CLIENT SAMPLE ID	Wt(g)/Vol(ml)	Comment
0.0 ppb	S0	30mL	MP87422
0.05 ppb	S0.05	N/A	N/A
0.2 ppb	S0.2	30mL	MP82124
2.5 ppb	S2.5	30mL	MP87425
5.0 ppb	S5.0	30mL	MP87426
7.5 ppb	S7.5	30mL	MP87427
10.0 ppb	S10.0	30mL	MP87428
ICV	ICV	30mL	MP87429
ICB	ICB	30mL	MP87430
CCV	CCV	30mL	MP87431
CCB	CCB	30mL	MP87432
CRI	CRI	30mL	MP87433
CHK STD	CHK STD	30mL	MP87434

Extraction Conformance/Non-Conformance Comments:

N/A		
Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
10/02/25/16:26	<i>MB - JRG. LUS</i>	<i>MB - JRG. LUS</i>
	Preparation Group	Analysis Group

Lab Sample ID	Client Sample ID	Initial Weight (g)	Final Vol (ml)	pH	Comment	Prep Pos
PB169964BL	PBS964	00.54	35	NA	N/A	3-1
PB169964BS	LCS964	0.57	35	NA	MP87421	2
Q2409-05DUP	COP-SOIL-PILEDUP	0.55	35	NA	N/A	4
Q2409-05MS	COP-SOIL-PILEMS	0.59	35	NA	MP87421	5
Q2409-05MSD	COP-SOIL-PILEMSD	0.55	35	NA	MP87421	6
Q2409-05	COP-SOIL-PILE	0.56	35	NA	N/A	3
Q3266-01	ENV-3-6FT	0.50	35	NA	N/A	7
Q3266-02	ENV-3-6FT	0.51	35	NA	N/A	8
Q3269-01	EG1-TP1	0.54	35	NA	N/A	9
Q3269-04	EG1-TP2	0.52	35	NA	N/A	10

WORKLIST(Hardcopy Internal Chain)

WorkList Name : 100225_7471 WorkList ID : 192227 Department : Digestion Date : 10-02-2025 08:07:03

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q3266-01	ENV-3-6FT	Solid	Mercury	Cool 4 deg C	CAMP02	D31	10/01/2025	7471B
Q3266-02	ENV-3-6FT	Solid	Mercury	Cool 4 deg C	CAMP02	D31	10/01/2025	7471B
Q3269-01	EG1-TP1	Solid	Mercury	Cool 4 deg C	PSEG03	D31	10/02/2025	7471B
Q3269-04	EG1-TP2	Solid	Mercury	Cool 4 deg C	PSEG03	D31	10/02/2025	7471B

824.9-05

Mercury

Date/Time 16/02/25 08:14:50
Raw Sample Received by: [Signature]
Raw Sample Relinquished by: [Signature]

Date/Time 10/2/25 15:30
Raw Sample Received by: [Signature]
Raw Sample Relinquished by: [Signature]



PERCENT SOLID

Supervisor: Iwona
Analyst: jignesh
Date: 6/25/2025

OVENTEMP IN Celsius(°C): 108
Time IN: 17:10
In Date: 06/24/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
OvenID: M OVEN#1

OVENTEMP OUT Celsius(°C): 103
Time OUT: 08:15
Out Date: 06/25/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
BalanceID: M SC-4
Thermometer ID: % SOLID- OVEN

QC:LB136243

Lab ID	Client SampleID	Dish #	Dish Wt(g) (A)	Sample Wt(g)	Dish + Sample Wt(g) (B)	Dish+Dry Sample Wt(g) (C)	% Solid	Comments
Q2392-01	S-1	1	1.15	10.05	11.2	10.42	92.2	
Q2392-02	S-1A	2	1.18	10.49	11.67	10.97	93.3	
Q2393-01	PARK AVE -1	3	1.17	10.34	11.51	9.78	83.3	
Q2393-02	PARK AVE -1	4	1.15	10.07	11.22	9.4	81.9	
Q2393-03	PARK AVE -2	5	1.13	10.85	11.98	10.19	83.5	
Q2393-04	PARK AVE -2	6	1.19	10.26	11.45	9.55	81.5	
Q2393-05	PARK AVE -3	7	1.12	10.25	11.37	10.00	86.6	
Q2393-06	PARK AVE -3	8	1.15	10.84	11.99	10.5	86.3	
Q2393-07	PARK AVE -4	9	1.16	10.70	11.86	10.54	87.7	
Q2393-08	PARK AVE -4	10	1.19	9.86	11.05	9.84	87.7	
Q2393-09	PARK AVE -5	11	1.15	10.84	11.99	11.05	91.3	
Q2393-10	PARK AVE -5	12	1.15	9.95	11.1	9.95	88.4	
Q2393-11	PARK AVE -6	13	1.19	10.23	11.42	10.07	86.8	
Q2393-12	PARK AVE -6	14	1.17	10.52	11.69	10.4	87.7	
Q2394-01	MH-K/L	15	1.18	10.49	11.67	10.23	86.3	
Q2394-02	MH-K/L EPH	16	1.19	9.97	11.16	9.58	84.2	
Q2394-03	MH-K/L VOC	17	1.13	10.86	11.99	10.66	87.8	
Q2394-04	MH-K/L	18	1.18	10.49	11.67	10.23	86.3	
Q2396-01	245F53-1-1	19	1.00	1.00	2.00	2.00	100.0	oilc
Q2396-02	245F53-1-2	20	1.00	1.00	2.00	2.00	100.0	oilc
Q2396-03	LAW-25-1A	21	1.00	1.00	2.00	2.00	100.0	oilc
Q2396-04	LAW-25-1B	22	1.00	1.00	2.00	2.00	100.0	oilc
Q2396-05	LAW-25-2A	23	1.00	1.00	2.00	2.00	100.0	oilc
Q2396-06	LAW-25-2B	24	1.00	1.00	2.00	2.00	100.0	oilc
Q2396-07	LAW-25-3A	25	1.00	1.00	2.00	2.00	100.0	oilc
Q2396-08	LAW-25-3B	26	1.00	1.00	2.00	2.00	100.0	oilc
Q2398-01	M00-25-0169	27	1.00	1.00	2.00	2.00	100.0	oil sample
Q2398-03	M00-25-0179	28	1.19	10.07	11.26	7.63	64.0	

PERCENT SOLID

Supervisor: Iwona
Analyst: jignesh
Date: 6/25/2025

OVENTEMP IN Celsius(°C): 108
Time IN: 17:10
In Date: 06/24/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
OvenID: M OVEN#1

OVENTEMP OUT Celsius(°C): 103
Time OUT: 08:15
Out Date: 06/25/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
BalanceID: M SC-4
Thermometer ID: % SOLID- OVEN

QC:LB136243

Lab ID	Client SampleID	Dish #	Dish Wt (g) (A)	Sample Wt (g)	Dish + Sample Wt (g) (B)	Dish+Dry Sample Wt (g) (C)	% Solid	Comments
Q2398-04	M00-25-0179-E2	29	1.19	10.25	11.44	7.68	63.3	
Q2398-06	ARS20-0036	30	1.19	10.53	11.72	10.47	88.1	
Q2398-07	ARS20-0036-E2	31	1.12	10.77	11.89	10.9	90.8	
Q2399-01	TP-13	32	1.13	10.84	11.97	10.27	84.3	
Q2399-02	TP-13-EPH	33	1.19	10.36	11.55	9.96	84.7	
Q2399-03	TP-13-VOC	34	1.15	10.84	11.99	10.36	85.0	
Q2399-04	TP-13	35	1.13	10.84	11.97	10.27	84.3	
Q2399-05	EP-7	36	1.19	10.47	11.66	10.37	87.7	
Q2399-06	EP-7-EPH	37	1.19	10.47	11.66	10.33	87.3	
Q2399-07	EP-7-VOC	38	1.16	10.57	11.73	10.38	87.2	
Q2399-08	EP-13	39	1.19	10.47	11.66	10.37	87.7	
Q2400-01	B-156-SB01	40	1.17	10.58	11.75	10.11	84.5	
Q2400-02	B-134-SB01	41	1.19	10.00	11.19	9.49	83.0	
Q2403-03	LAW-25-0093	42	1.18	10.24	11.42	10.54	91.4	
Q2403-04	LAW-25-0093-E2	43	1.18	10.14	11.32	10.42	91.1	
Q2403-05	Concrete-062325	44	1.15	10.84	11.99	11.71	97.4	
Q2403-07	ARS 20-006	45	1.19	10.44	11.63	11.13	95.2	
Q2403-08	ARS020-0006-E2	46	1.18	10.64	11.82	11.09	93.1	
Q2405-01	MH-M/H	47	1.19	10.11	11.3	10.37	90.8	
Q2405-02	MH-M/N-EPH	48	1.19	10.01	11.2	10.15	89.5	
Q2405-03	MH-M/N-VOC	49	1.11	10.71	11.82	10.9	91.4	
Q2406-01	PUMPING-PLANT	50	1.00	1.00	2.00	2.00	100.0	oil sample
Q2409-02	COP-SOIL-PILE	51	1.18	10.58	11.76	11.38	96.4	
Q2410-01	TRE-25-0021	52	1.00	1.00	2.00	2.00	100.0	debris
Q2411-01	TRE-2002	53	1.00	1.00	2.00	2.00	100.0	wipe sample
Q2412-01	TR-05-062425	54	1.18	10.08	11.26	10.94	96.8	
Q2412-02	TR-05-062425-E2	55	1.16	10.28	11.44	11.23	98.0	

$$\% \text{ Solid} = \frac{(C-A) * 100}{(B-A)}$$

WORKLIST(Hardcopy Internal Chain)

136243

WorkList Name : %1-062425

WorkList ID : 190342

Department : Wet-Chemistry

Date : 06-24-2025 08:17:18

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q2392-01	S-1	Solid	Percent Solids	Cool 4 deg C	EARTH03	A41	06/23/2025	Chemtech -SO
Q2392-02	S-1A	Solid	Percent Solids	Cool 4 deg C	EARTH03	A41	06/23/2025	Chemtech -SO
Q2393-01	PARK AVE -1	Solid	Percent Solids	Cool 4 deg C	UNIO02	A22	06/23/2025	Chemtech -SO
Q2393-02	PARK AVE -1	Solid	Percent Solids	Cool 4 deg C	UNIO02	A22	06/23/2025	Chemtech -SO
Q2393-03	PARK AVE -2	Solid	Percent Solids	Cool 4 deg C	UNIO02	A22	06/23/2025	Chemtech -SO
Q2393-04	PARK AVE -2	Solid	Percent Solids	Cool 4 deg C	UNIO02	A22	06/23/2025	Chemtech -SO
Q2393-05	PARK AVE -3	Solid	Percent Solids	Cool 4 deg C	UNIO02	A22	06/23/2025	Chemtech -SO
Q2393-06	PARK AVE -3	Solid	Percent Solids	Cool 4 deg C	UNIO02	A22	06/23/2025	Chemtech -SO
Q2393-07	PARK AVE -4	Solid	Percent Solids	Cool 4 deg C	UNIO02	A22	06/23/2025	Chemtech -SO
Q2393-08	PARK AVE -4	Solid	Percent Solids	Cool 4 deg C	UNIO02	A22	06/23/2025	Chemtech -SO
Q2393-09	PARK AVE -5	Solid	Percent Solids	Cool 4 deg C	UNIO02	A22	06/23/2025	Chemtech -SO
Q2393-10	PARK AVE -5	Solid	Percent Solids	Cool 4 deg C	UNIO02	A22	06/23/2025	Chemtech -SO
Q2393-11	PARK AVE -6	Solid	Percent Solids	Cool 4 deg C	UNIO02	A22	06/23/2025	Chemtech -SO
Q2393-12	PARK AVE -6	Solid	Percent Solids	Cool 4 deg C	UNIO02	A22	06/23/2025	Chemtech -SO
Q2394-01	MH-K/L	Solid	Percent Solids	Cool 4 deg C	PSEG03	A21	06/23/2025	Chemtech -SO
Q2394-02	MH-K/L EPH	Solid	Percent Solids	Cool 4 deg C	PSEG03	A21	06/23/2025	Chemtech -SO
Q2394-03	MH-K/L VOC	Solid	Percent Solids	Cool 4 deg C	PSEG03	A21	06/23/2025	Chemtech -SO
Q2394-04	MH-K/L	Solid	Percent Solids	Cool 4 deg C	PSEG03	A21	06/23/2025	Chemtech -SO
Q2396-01	245F53-1-1	Solid	Percent Solids	Cool 4 deg C	PSEG03	A11	06/23/2025	Chemtech -SO
Q2396-02	245F53-1-2	Solid	Percent Solids	Cool 4 deg C	PSEG03	A11	06/23/2025	Chemtech -SO
Q2396-03	LAW-25-1A	Solid	Percent Solids	Cool 4 deg C	PSEG03	A11	06/23/2025	Chemtech -SO

Date/Time 06/24/25 15:10

Raw Sample Received by: [Signature]

Raw Sample Relinquished by: [Signature]

Date/Time 06/24/25

Raw Sample Received by: [Signature]

Raw Sample Relinquished by: [Signature]

WORKLIST(Hardcopy Internal Chain)

136243

WorkList Name : %1-062425

WorkList ID : 190342

Department : Wet-Chemistry

Date : 06-24-2025 08:17:18

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q2396-04	LAW-25-1B	Solid	Percent Solids	Cool 4 deg C	PSEG03	A11	06/23/2025	Chemtech -SO
Q2396-05	LAW-25-2A	Solid	Percent Solids	Cool 4 deg C	PSEG03	A11	06/23/2025	Chemtech -SO
Q2396-06	LAW-25-2B	Solid	Percent Solids	Cool 4 deg C	PSEG03	A11	06/23/2025	Chemtech -SO
Q2396-07	LAW-25-3A	Solid	Percent Solids	Cool 4 deg C	PSEG03	A11	06/23/2025	Chemtech -SO
Q2396-08	LAW-25-3B	Solid	Percent Solids	Cool 4 deg C	PSEG03	A11	06/23/2025	Chemtech -SO
Q2398-01	M00-25-0169	Solid	Percent Solids	Cool 4 deg C	PSEG03	A33	06/23/2025	Chemtech -SO
Q2398-03	M00-25-0179	Solid	Percent Solids	Cool 4 deg C	PSEG03	A33	06/23/2025	Chemtech -SO
Q2398-04	M00-25-0179-E2	Solid	Percent Solids	Cool 4 deg C	PSEG03	A33	06/23/2025	Chemtech -SO
Q2398-06	ARS20-0036	Solid	Percent Solids	Cool 4 deg C	PSEG03	A33	06/23/2025	Chemtech -SO
Q2398-07	ARS20-0036-E2	Solid	Percent Solids	Cool 4 deg C	PSEG03	A33	06/23/2025	Chemtech -SO
Q2399-01	TP-13	Solid	Percent Solids	Cool 4 deg C	PSEG03	A41	06/23/2025	Chemtech -SO
Q2399-02	TP-13-EPH	Solid	Percent Solids	Cool 4 deg C	PSEG03	A41	06/23/2025	Chemtech -SO
Q2399-03	TP-13-VOC	Solid	Percent Solids	Cool 4 deg C	PSEG03	A41	06/23/2025	Chemtech -SO
Q2399-04	TP-13	Solid	Percent Solids	Cool 4 deg C	PSEG03	A41	06/23/2025	Chemtech -SO
Q2399-05	EP-7	Solid	Percent Solids	Cool 4 deg C	PSEG03	A41	06/23/2025	Chemtech -SO
Q2399-06	EP-7-EPH	Solid	Percent Solids	Cool 4 deg C	PSEG03	A41	06/23/2025	Chemtech -SO
Q2399-07	EP-7-VOC	Solid	Percent Solids	Cool 4 deg C	PSEG03	A41	06/23/2025	Chemtech -SO
Q2399-08	EP-13	Solid	Percent Solids	Cool 4 deg C	PSEG03	A41	06/23/2025	Chemtech -SO
Q2400-01	B-156-SB01	Solid	Percent Solids	Cool 4 deg C	PORT06	A42	06/23/2025	Chemtech -SO
Q2400-02	B-134-SB01	Solid	Percent Solids	Cool 4 deg C	PORT06	A42	06/23/2025	Chemtech -SO
Q2403-03	LAW-25-0093	Solid	Percent Solids	Cool 4 deg C	PSEG03	A32	06/23/2025	Chemtech -SO

Date/Time

Raw Sample Received by:

Raw Sample Relinquished by:

Date/Time

Raw Sample Received by:

Raw Sample Relinquished by:

WORKLIST(Hardcopy Internal Chain)

136243

WorkList Name : %1-062425

WorkList ID : 190342

Department : Wet-Chemistry

Date : 06-24-2025 08:17:18

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q2403-04	LAW-25-0093-E2	Solid	Percent Solids	Cool 4 deg C	PSEG03	A32	06/23/2025	Chemtech -SO
Q2403-05	Concrete-062325	Solid	Percent Solids	Cool 4 deg C	PSEG03	A32	06/23/2025	Chemtech -SO
Q2403-07	ARS 20-006	Solid	Percent Solids	Cool 4 deg C	PSEG03	A32	06/23/2025	Chemtech -SO
Q2403-08	ARS020-0006-E2	Solid	Percent Solids	Cool 4 deg C	PSEG03	A32	06/23/2025	Chemtech -SO
Q2405-01	MH-M/H	Solid	Percent Solids	Cool 4 deg C	PSEG03	D41	06/24/2025	Chemtech -SO
Q2405-02	MH-M/N-EPH	Solid	Percent Solids	Cool 4 deg C	PSEG03	D41	06/24/2025	Chemtech -SO
Q2405-03	MH-M/N-VOC	Solid	Percent Solids	Cool 4 deg C	PSEG03	D41	06/24/2025	Chemtech -SO
Q2406-01	PUMPING-PLANT	Solid	Percent Solids	Cool 4 deg C	PSEG03	D41	06/23/2025	Chemtech -SO
Q2409-02	COP-SOIL-PILE	Solid	Percent Solids	Cool 4 deg C	COPP02	D51	06/24/2025	Chemtech -SO
Q2410-01	TRE-25-0021	Solid	Percent Solids	Cool 4 deg C	PSEG03	D41	06/24/2025	Chemtech -SO
Q2411-01	TRE-2002	Solid	Percent Solids	Cool 4 deg C	PSEG03	D41	06/24/2025	Chemtech -SO
Q2412-01	TR-05-062425	Solid	Percent Solids	Cool 4 deg C	PSEG05	D41	06/24/2025	Chemtech -SO
Q2412-02	TR-05-062425-E2	Solid	Percent Solids	Cool 4 deg C	PSEG05	D41	06/24/2025	Chemtech -SO

Date/Time 06/24/25 15:10
 Raw Sample Received by: [Signature]
 Raw Sample Relinquished by: [Signature]

Date/Time 06/24/25 17:20
 Raw Sample Received by: [Signature]
 Raw Sample Relinquished by: [Signature]



PERCENT SOLID

Supervisor: Iwona
Analyst: jignesh
Date: 10/3/2025

OVENTEMP IN Celsius(°C): 107
Time IN: 17:30
In Date: 10/02/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
OvenID: M OVEN#1

OVENTEMP OUT Celsius(°C): 104
Time OUT: 08:40
Out Date: 10/03/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
BalanceID: M SC-4
Thermometer ID: % solids-oven

QC:LB137394

Lab ID	Client SampleID	Dish #	Dish Wt(g) (A)	Sample Wt(g)	Dish + Sample Wt(g) (B)	Dish+Dry Sample Wt(g) (C)	% Solid	Comments
Q2409-05	COP-SOIL-PILE	12	1.18	10.58	11.76	11.38	96.4	
Q3249-03	S-3 (4-4.5)	1	1.11	10.45	11.56	9.51	80.4	
Q3249-08	S-8 (4.5-5)	2	1.19	10.75	11.94	10.38	85.5	
Q3249-16	S-14 (4-4.5)	3	1.13	10.32	11.45	9.34	79.6	
Q3249-19	S-18 (4.5-5)	4	1.18	10.64	11.82	10.8	90.4	
Q3249-22	S-20 (4-4.5)	5	1.18	10.47	11.65	10.64	90.4	
Q3249-24	S-22 (4.5-5)	6	1.19	10.11	11.3	10.33	90.4	
Q3249-27	S-24 (4.5-5)	7	1.15	11.05	12.2	9.82	78.5	
Q3269-01	EG1-TP1	8	1.18	10.78	11.96	10.97	90.8	
Q3269-02	EG1-TP1-E2	9	1.13	10.63	11.76	10.8	91.0	
Q3269-04	EG1-TP2	10	1.13	10.85	11.98	10.97	90.7	
Q3269-05	EG1-TP2-E2	11	1.11	10.77	11.88	11.13	93.0	
Q3270-01	SG-1-TEST-PIT	16	1.18	10.73	11.91	10.77	89.4	
Q3270-02	SG-1-TEST-PIT	17	1.19	10.32	11.51	10.79	93.0	
Q3271-01	72-11929	18	1.13	9.61	10.74	9.79	90.1	
Q3271-02	72-11929-E2	19	1.19	10.47	11.66	10.57	89.6	
Q3272-01	VNJ-235	20	1.19	10.68	11.87	10.15	83.9	
Q3272-02	VNJ-235-E2	21	1.13	10.47	11.6	10.15	86.2	
Q3272-03	R7	22	1.12	10.85	11.97	7.78	61.4	
Q3272-04	R7-E2	23	1.18	10.67	11.85	8.98	73.1	
Q3272-06	RT5417-CONCRETE	24	1.00	1.00	2.00	2.00	100.0	Concreate sample
Q3276-01	SB2	13	1.14	10.92	12.06	10.6	86.6	
Q3276-02	SB2A	14	1.15	10.38	11.53	10.6	91.0	
Q3277-01	WC1	15	1.18	10.41	11.59	11.34	97.6	

$$\% \text{ Solid} = \frac{(C-A) * 100}{(B-A)}$$

WORKLIST(Hardcopy Internal Chain)

137394

WorkList Name : %1-100225 WorkList ID : 192236 Department : Wet-Chemistry Date : 10-02-2025 09:10:00

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q2409-05	COP-SOIL-PILE	Solid	Percent Solids	Cool 4 deg C	COPP02	D51	06/24/2025	Chemtech -SO
Q3249-03	S-3(4-4.5)	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/29/2025	Chemtech -SO
Q3249-08	S-8(4.5-5)	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/29/2025	Chemtech -SO
Q3249-16	S-14(4-4.5)	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/29/2025	Chemtech -SO
Q3249-19	S-18(4.5-5)	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/29/2025	Chemtech -SO
Q3249-22	S-20(4-4.5)	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/29/2025	Chemtech -SO
Q3249-24	S-22(4.5-5)	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/29/2025	Chemtech -SO
Q3249-27	S-24(4.5-5)	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/29/2025	Chemtech -SO
Q3269-01	EG1-TP1	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/29/2025	Chemtech -SO
Q3269-02	EG1-TP1-E2	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	10/02/2025	Chemtech -SO
Q3269-04	EG1-TP2	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	10/02/2025	Chemtech -SO
Q3269-05	EG1-TP2-E2	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	10/02/2025	Chemtech -SO
Q3270-01	SG-1-TEST-PIT	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	10/02/2025	Chemtech -SO
Q3270-02	SG-1-TEST-PIT	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	10/02/2025	Chemtech -SO
Q3271-01	72-11929	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	10/02/2025	Chemtech -SO
Q3271-02	72-11929-E2	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	10/02/2025	Chemtech -SO
Q3272-01	VNJ-235	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	10/02/2025	Chemtech -SO
Q3272-02	VNJ-235-E2	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	10/02/2025	Chemtech -SO
Q3272-03	R7	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	10/02/2025	Chemtech -SO
Q3272-04	R7-E2	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	10/02/2025	Chemtech -SO
Q3272-06	RT5417-CONCRETE	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	10/02/2025	Chemtech -SO

Date/Time 10/02/25 16:00
 Raw Sample Received by: JG WCI
 Raw Sample Relinquished by: JG WCI

Date/Time 10/02/25
 Raw Sample Received by: JG WCI
 Raw Sample Relinquished by: JG WCI

WORKLIST(Hardcopy Internal Chain)

8137394

WorkList Name : %1-100225

WorkList ID : 192236

Department : Wet-Chemistry

Date : 10-02-2025 09:10:00

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q3276-01	SB2	Solid	Percent Solids	Cool 4 deg C	GENV01	D31	10/01/2025	Chemtech -SO
Q3276-02	SB2A	Solid	Percent Solids	Cool 4 deg C	GENV01	D31	10/01/2025	Chemtech -SO
Q3277-01	WC1	Solid	Percent Solids	Cool 4 deg C	GENV01	D31	09/30/2025	Chemtech -SO

Date/Time 10/02/25 16:00
 Raw Sample Received by: SP
 Raw Sample Relinquished by: CP

Date/Time 10/02/25 17:40
 Raw Sample Received by: CP
 Raw Sample Relinquished by: SP

Instrument ID: CV1

Daily Analysis Runlog For Sequence/QC Batch ID # LB137397

Review By	mohan	Review On	10/6/2025 10:42:06 AM
Supervise By	jaswal	Supervise On	10/6/2025 11:36:25 PM
STD. NAME	STD REF.#		
ICAL Standard	MP87422,MP87424,MP87425,MP87426,MP87427,MP87428		
ICV Standard	MP87429		
CCV Standard	MP87431		
ICSA Standard			
CRI Standard	MP87433		
LCS Standard			
Chk Standard	MP87430,MP87432,MP87435,MP87439		

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	S0	S0	CAL1	10/03/25 08:27		mohan	OK
2	S0.2	S0.2	CAL2	10/03/25 08:29		mohan	OK
3	S2.5	S2.5	CAL3	10/03/25 08:31		mohan	OK
4	S5	S5	CAL4	10/03/25 08:34		mohan	OK
5	S7.5	S7.5	CAL5	10/03/25 08:36		mohan	OK
6	S10	S10	CAL6	10/03/25 08:39		mohan	OK
7	ICV56	ICV56	ICV	10/03/25 08:42		mohan	OK
8	ICB56	ICB56	ICB	10/03/25 08:45		mohan	OK
9	CCV75	CCV75	CCV	10/03/25 08:47		mohan	OK
10	CCB75	CCB75	CCB	10/03/25 08:50		mohan	OK
11	CRA	CRA	CRDL	10/03/25 08:52		mohan	OK
12	HighStd	HighStd	HIGH STD	10/03/25 08:55		mohan	OK
13	ChkStd	ChkStd	SAM	10/03/25 08:57		mohan	OK
14	PB169964BL	PB169964BL	MB	10/03/25 09:00		mohan	OK
15	PB169964BS	PB169964BS	LCS	10/03/25 09:02		mohan	OK
16	Q2409-05	COP-SOIL-PILE	SAM	10/03/25 09:05		mohan	OK
17	Q2409-05DUP	COP-SOIL-PILEDUP	DUP	10/03/25 09:07		mohan	OK
18	Q2409-05MS	COP-SOIL-PILEMS	MS	10/03/25 09:10		mohan	OK

Instrument ID: CV1

Daily Analysis Runlog For Sequence/QCBatch ID # LB137397

Review By	mohan	Review On	10/6/2025 10:42:06 AM
Supervise By	jaswal	Supervise On	10/6/2025 11:36:25 PM
STD. NAME	STD REF.#		
ICAL Standard	MP87422,MP87424,MP87425,MP87426,MP87427,MP87428		
ICV Standard	MP87429		
CCV Standard	MP87431		
ICSA Standard			
CRI Standard	MP87433		
LCS Standard			
Chk Standard	MP87430,MP87432,MP87435,MP87439		

19	Q2409-05MSD	COP-SOIL-PILEMSD	MSD	10/03/25 09:16		mohan	OK
20	Q3266-01	ENV-3-6FT	SAM	10/03/25 09:18		mohan	OK
21	CCV76	CCV76	CCV	10/03/25 09:21		mohan	OK
22	CCB76	CCB76	CCB	10/03/25 09:23		mohan	OK
23	Q3266-02	ENV-4-6FT	SAM	10/03/25 09:26		mohan	OK
24	Q3269-01	EG1-TP1	SAM	10/03/25 09:28		mohan	OK
25	Q3269-04	EG1-TP2	SAM	10/03/25 09:31		mohan	OK
26	Q2409-05L	COP-SOIL-PILEL	SD	10/03/25 09:34		mohan	OK
27	Q2409-05A	COP-SOIL-PILEA	PS	10/03/25 09:36		mohan	OK
28	CCV77	CCV77	CCV	10/03/25 09:38		mohan	OK
29	CCB77	CCB77	CCB	10/03/25 09:41		mohan	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QC Batch ID # LB137406

Review By	Janvi	Review On	10/3/2025 3:35:00 PM
Supervise By		Supervise On	
STD. NAME	STD REF.#		
ICAL Standard	MP87031,MP87038,MP87035,MP87034,MP87033,MP87032		
ICV Standard	MP87047,MP87038		
CCV Standard	MP87042		
ICSA Standard	MP87040,MP87048		
CRI Standard	MP87038		
LCS Standard			
Chk Standard	MP87043,MP87044,MP87045,MP87046,MP87049		

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	S0	S0	CAL1	10/02/25 10:37		Jaswal	OK
2	S1	S1	CAL2	10/02/25 10:42		Jaswal	OK
3	S2	S2	CAL3	10/02/25 10:46		Jaswal	OK
4	S3	S3	CAL4	10/02/25 10:50		Jaswal	OK
5	S4	S4	CAL5	10/02/25 10:54		Jaswal	OK
6	S5	S5	CAL6	10/02/25 10:58		Jaswal	OK
7	ICV01	ICV01	ICV	10/02/25 11:07		Jaswal	OK
8	LLICV01	LLICV01	LLICV	10/02/25 11:11		Jaswal	OK
9	ICB01	ICB01	ICB	10/02/25 11:27		Jaswal	OK
10	CRI01	CRI01	CRDL	10/02/25 11:36		Jaswal	OK
11	ICSA01	ICSA01	ICSA	10/02/25 11:42		Jaswal	OK
12	ICSAB01	ICSAB01	ICSAB	10/02/25 11:46		Jaswal	OK
13	ICSADL	ICSADL	ICSA	10/02/25 11:50		Jaswal	OK
14	ICSABDL	ICSABDL	ICSAB	10/02/25 11:54		Jaswal	OK
15	CCV01	CCV01	CCV	10/02/25 11:58		Jaswal	OK
16	CCB01	CCB01	CCB	10/02/25 12:02		Jaswal	OK
17	LR-1	LR-1	HIGH STD	10/02/25 12:06		Jaswal	OK
18	LR-2	LR-2	HIGH STD	10/02/25 12:11		Jaswal	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QC Batch ID # LB137406

Review By	Janvi	Review On	10/3/2025 3:35:00 PM
Supervise By		Supervise On	

STD. NAME	STD REF.#
ICAL Standard	MP87031,MP87038,MP87035,MP87034,MP87033,MP87032
ICV Standard	MP87047,MP87038
CCV Standard	MP87042
ICSA Standard	MP87040,MP87048
CRI Standard	MP87038
LCS Standard	
Chk Standard	MP87043,MP87044,MP87045,MP87046,MP87049

19	LR-3	LR-3	HIGH STD	10/02/25 12:42		Jaswal	OK
20	Q3255-01	CONCRETE-1-WC	SAM	10/02/25 12:55		Jaswal	OK
21	Q3256-01	SOIL-PILE-1-WC	SAM	10/02/25 13:00		Jaswal	OK
22	Q3256-01DUP	SOIL-PILE-1-WCDUP	DUP	10/02/25 13:04		Jaswal	OK
23	CCV02	CCV02	CCV	10/02/25 13:48		Jaswal	OK
24	CCB02	CCB02	CCB	10/02/25 13:52		Jaswal	OK
25	Q3256-01L	SOIL-PILE-1-WCL	SD	10/02/25 14:07		Jaswal	OK
26	Q3256-01MS	SOIL-PILE-1-WCMS	MS	10/02/25 14:11		Jaswal	OK
27	Q3256-01MSD	SOIL-PILE-1-WCMSD	MSD	10/02/25 14:15		Jaswal	OK
28	Q3256-01A	SOIL-PILE-1-WCA	PS	10/02/25 14:19	0.1ml of M6007 and M6017 in 10ml sample.	Jaswal	OK
29	Q3256-05	SOIL-PILE-2-WC	SAM	10/02/25 14:22		Jaswal	OK
30	Q3257-01	ENV1-6FT	SAM	10/02/25 14:26	Ag is oversaturate	Jaswal	Dilution
31	Q3257-02	ENV2-6FT	SAM	10/02/25 14:30	Ag is oversaturate	Jaswal	Dilution
32	Q3254-01	MW-1	SAM	10/02/25 14:34		Jaswal	OK
33	Q3254-02	MW-1	SAM	10/02/25 14:38		Jaswal	OK
34	Q3254-03	MW-2	SAM	10/02/25 14:43		Jaswal	OK
35	CCV03	CCV03	CCV	10/02/25 14:47		Jaswal	OK
36	CCB03	CCB03	CCB	10/02/25 14:53		Jaswal	OK
37	Q3254-04	MW-2	SAM	10/02/25 14:57		Jaswal	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QC Batch ID # LB137406

Review By	Janvi	Review On	10/3/2025 3:35:00 PM
Supervise By		Supervise On	
STD. NAME	STD REF.#		
ICAL Standard	MP87031,MP87038,MP87035,MP87034,MP87033,MP87032		
ICV Standard	MP87047,MP87038		
CCV Standard	MP87042		
ICSA Standard	MP87040,MP87048		
CRI Standard	MP87038		
LCS Standard			
Chk Standard	MP87043,MP87044,MP87045,MP87046,MP87049		

38	Q3254-05	MW-3	SAM	10/02/25 15:01		Jaswal	OK
39	Q3254-06	MW-3	SAM	10/02/25 15:05		Jaswal	OK
40	Q3254-07	MW-4	SAM	10/02/25 15:09		Jaswal	OK
41	Q3254-07DUP	MW-4DUP	DUP	10/02/25 15:13		Jaswal	OK
42	Q3254-07L	MW-4L	SD	10/02/25 15:18		Jaswal	OK
43	Q3254-07MS	MW-4MS	MS	10/02/25 15:22		Jaswal	OK
44	Q3254-07MSD	MW-4MSD	MSD	10/02/25 15:26		Jaswal	OK
45	Q3254-07A	MW-4A	PS	10/02/25 15:30	0.1ml of M6007 and M6017 in 10ml sample.	Jaswal	OK
46	Q3254-08	MW-4	SAM	10/02/25 15:34		Jaswal	OK
47	CCV04	CCV04	CCV	10/02/25 15:54		Jaswal	OK
48	CCB04	CCB04	CCB	10/02/25 16:05		Jaswal	OK
49	Q3245-24	12-1	SAM	10/02/25 16:47		Jaswal	OK
50	Q3245-16	12-8	SAM	10/02/25 16:51		Jaswal	OK
51	Q3245-08	13-1	SAM	10/02/25 16:55		Jaswal	OK
52	Q3245-24DUP	12-1DUP	DUP	10/02/25 16:59		Jaswal	OK
53	Q3245-24L	12-1L	SD	10/02/25 17:04		Jaswal	OK
54	Q3245-24MS	12-1MS	MS	10/02/25 17:21		Jaswal	OK
55	CCV05	CCV05	CCV	10/02/25 17:31		Jaswal	OK
56	CCB05	CCB05	CCB	10/02/25 17:35		Jaswal	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QC Batch ID # LB137406

Review By	Janvi	Review On	10/3/2025 3:35:00 PM
Supervise By		Supervise On	

STD. NAME	STD REF.#
ICAL Standard	MP87031,MP87038,MP87035,MP87034,MP87033,MP87032
ICV Standard	MP87047,MP87038
CCV Standard	MP87042
ICSA Standard	MP87040,MP87048
CRI Standard	MP87038
LCS Standard	
Chk Standard	MP87043,MP87044,MP87045,MP87046,MP87049

57	Q3245-24MSD	12-1MSD	MSD	10/02/25 17:45		Jaswal	OK
58	Q3245-24A	12-1A	PS	10/02/25 17:49	0.1ml of M6007 and M6017 in 10ml sample.	Jaswal	OK
59	Q2409-05	COP-SOIL-PILE	SAM	10/02/25 17:53		Jaswal	OK
60	Q2409-05DUP	COP-SOIL-PILEDUP	DUP	10/02/25 17:57		Jaswal	OK
61	Q2409-05L	COP-SOIL-PILEL	SD	10/02/25 18:01		Jaswal	OK
62	Q2409-05MS	COP-SOIL-PILEMS	MS	10/02/25 18:05		Jaswal	OK
63	Q2409-05MSD	COP-SOIL-PILEMSD	MSD	10/02/25 18:09		Jaswal	OK
64	Q2409-05A	COP-SOIL-PILEA	PS	10/02/25 18:13	0.1ml of M6007 and M6017 in 10ml sample.	Jaswal	OK
65	CCV06	CCV06	CCV	10/02/25 18:17		Jaswal	OK
66	CCB06	CCB06	CCB	10/02/25 18:21		Jaswal	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QC Batch ID # LB137426

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	10/03/25 11:53		Jaswal	OK
2	S1	S1	CAL2	10/03/25 11:58		Jaswal	OK
3	S2	S2	CAL3	10/03/25 12:02		Jaswal	OK
4	S3	S3	CAL4	10/03/25 12:06		Jaswal	OK
5	S4	S4	CAL5	10/03/25 12:10		Jaswal	OK
6	S5	S5	CAL6	10/03/25 12:14		Jaswal	OK
7	ICV01	ICV01	ICV	10/03/25 12:18		Jaswal	OK
8	LLICV01	LLICV01	LLICV	10/03/25 13:05		Jaswal	OK
9	ICB01	ICB01	ICB	10/03/25 13:12		Jaswal	OK
10	CRI01	CRI01	CRDL	10/03/25 13:16		Jaswal	OK
11	ICSA01	ICSA01	ICSA	10/03/25 13:20		Jaswal	OK
12	ICSAB01	ICSAB01	ICSAB	10/03/25 13:25		Jaswal	OK
13	ICSADL	ICSADL	ICSA	10/03/25 13:29		Jaswal	OK
14	ICSABDL	ICSABDL	ICSAB	10/03/25 13:33		Jaswal	OK
15	CCV01	CCV01	CCV	10/03/25 13:37		Jaswal	OK
16	CCB01	CCB01	CCB	10/03/25 13:41		Jaswal	OK
17	LR-1	LR-1	HIGH STD	10/03/25 13:45		Jaswal	OK
18	LR-2	LR-2	HIGH STD	10/03/25 13:50		Jaswal	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QC Batch ID # LB137426

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	PB169935BS	PB169935BS	LCS	10/03/25 14:03		Jaswal	OK
20	PB169937BL	PB169937BL	MB	10/03/25 14:07		Jaswal	OK
21	PB169937BS	PB169937BS	LCS	10/03/25 14:12		Jaswal	OK
22	PB169958BL	PB169958BL	MB	10/03/25 14:16		Jaswal	OK
23	PB169958BS	PB169958BS	LCS	10/03/25 14:20		Jaswal	OK
24	PB169963BL	PB169963BL	MB	10/03/25 14:24		Jaswal	OK
25	PB169935BL	PB169935BL	MB	10/03/25 14:33		Jaswal	OK
26	LR-3	LR-3	HIGH STD	10/03/25 14:49		Jaswal	OK
27	CCV02	CCV02	CCV	10/03/25 15:00		Jaswal	OK
28	CCB02	CCB02	CCB	10/03/25 15:04		Jaswal	OK
29	PB169963BS	PB169963BS	LCS	10/03/25 15:08		Jaswal	OK
30	PB169960BL	PB169960BL	MB	10/03/25 15:12		Jaswal	OK
31	PB169960BS	PB169960BS	LCS	10/03/25 15:17		Jaswal	OK
32	PB169959BL	PB169959BL	MB	10/03/25 15:21		Jaswal	OK
33	PB169959BS	PB169959BS	LCS	10/03/25 15:25		Jaswal	OK
34	Q3258-06	COMPOSITE	SAM	10/03/25 15:29		Jaswal	OK
35	Q3263-01	251818	SAM	10/03/25 15:34		Jaswal	OK
36	Q3263-02	266380	SAM	10/03/25 15:38		Jaswal	OK
37	Q3263-02DUP	266380DUP	DUP	10/03/25 15:42		Jaswal	OK
38	Q3263-02L	266380L	SD	10/03/25 15:46		Jaswal	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QC Batch ID # LB137426

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	

39	CCV03	CCV03	CCV	10/03/25 15:51		Jaswal	OK
40	CCB03	CCB03	CCB	10/03/25 16:00		Jaswal	OK
41	Q3263-02MS	266380MS	MS	10/03/25 16:04		Jaswal	OK
42	Q3263-02MSD	266380MSD	MSD	10/03/25 16:08		Jaswal	OK
43	Q3263-02A	266380A	PS	10/03/25 16:12		Jaswal	OK
44	Q3269-01	EG1-TP1	SAM	10/03/25 16:16		Jaswal	OK
45	Q3269-04	EG1-TP2	SAM	10/03/25 16:20		Jaswal	OK
46	Q3262-01	PAD-100125	SAM	10/03/25 16:24		Jaswal	OK
47	Q3266-01	ENV-3-6FT	SAM	10/03/25 16:29		Jaswal	OK
48	Q3266-02	ENV-4-6FT	SAM	10/03/25 16:33	NOT USE	Jaswal	Not Ok
49	Q3266-02DUP	ENV-4-6FTDUP	DUP	10/03/25 16:37	NOT USE	Jaswal	Not Ok
50	Q3266-02L	ENV-4-6FTL	SD	10/03/25 16:41	NOT USE	Jaswal	Not Ok
51	CCV04	CCV04	CCV	10/03/25 16:45		Jaswal	OK
52	CCB04	CCB04	CCB	10/03/25 16:49		Jaswal	OK

Prep Standard - Chemical Standard Summary

Order ID : Q2409

Test : Mercury, Metals ICP-TAL

Prepbatch ID : PB169963, PB169964,

Sequence ID/Qc Batch ID: LB137397, LB137406, LB137426,

Standard ID :

MP85156, MP87031, MP87032, MP87033, MP87034, MP87035, MP87036, MP87038, MP87040, MP87042, MP87043, MP87044, MP87045, MP87046, MP87047, MP87048, MP87049, MP87072, MP87149, MP87421, MP87422, MP87424, MP87425, MP87426, MP87427, MP87428, MP87429, MP87430, MP87431, MP87432, MP87433, MP87435, MP87436, MP87439,

Chemical ID :

M4916, M5062, M5467, M5581, M5582, M5658, M5748, M5751, M5798, M5799, M5800, M5801, M5814, M5820, M5882, M5884, M5962, M5969, M5971, M5979, M5985, M5998, M6021, M6023, M6026, M6027, M6028, M6030, M6032, M6058, M6076, M6077, M6128, M6137, M6138, M6140, M6142, M6144, M6145, M6151, M6158, M6159, M6160, M6161, M6163, M6164, M6165, M6170, M6171, M6174, M6176, M6177, M6178, M6179, M6180, M6181, M6182, M6184, M6187, M6196, M6200, W 3112,

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>
170	1:1HCL	MP85156	04/07/2025	10/08/2025	Kareem Khairalla	None	None	Sarabjit Jaswal
								04/07/2025

FROM 1250.00000ml of M6151 + 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>
902	ICP AES CAL BLK (SO/ICB/CCB)	MP87031	09/02/2025	10/03/2025	Sarabjit Jaswal	None	None	Janvi Patel
								09/04/2025

FROM 125.00000ml of M6151 + 2350.00000ml of W3112 + 25.00000ml of M6187 = 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)	MP87032	09/02/2025	10/03/2025	Sarabjit Jaswal	None	None	Janvi Patel 09/04/2025
<u>FROM</u>	5.00000ml of M5467 + 5.00000ml of M5820 + 5.00000ml of M5969 + 5.00000ml of M5971 + 5.00000ml of M5998 + 5.00000ml of M6077 + 5.00000ml of M6160 + 5.00000ml of M6174 + 5.00000ml of M6176 + 455.00000ml of MP87031 = Final Quantity: 500.000 ml							

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
910	ICP AES STD S4	MP87033	09/02/2025	10/03/2025	Sarabjit Jaswal	None	None	Janvi Patel 09/04/2025
<u>FROM</u> 50.00000ml of MP87031 + 50.00000ml of MP87032 = 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>
909	ICP AES STD S3	MP87034	09/02/2025	10/03/2025	Sarabjit Jaswal	None	METALS_PIPETTE_3 (A)	Janvi Patel 09/04/2025

FROM 25.00000ml of MP87032 + 75.00000ml of MP87031 = 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>
3913	ICP AES STD S2	MP87035	09/02/2025	10/03/2025	Sarabjit Jaswal	None	METALS_PIPETTE_3 (A)	Janvi Patel 09/04/2025

FROM 16.00000ml of MP87032 + 184.00000ml of MP87031 = Final Quantity: 200.000 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>
2950	ICP AES S1/CRI STOCK STD	MP87036	09/02/2025	10/03/2025	Sarabjit Jaswal	None	None	Janvi Patel
								09/04/2025

FROM 0.03000ml of M5798 + 0.03000ml of M6028 + 0.04000ml of M6137 + 0.05000ml of M5658 + 0.05000ml of M6030 + 0.05000ml of M6140 + 0.05000ml of M6159 + 0.06000ml of M6177 + 0.10000ml of M5751 + 0.10000ml of M5801 + 0.10000ml of M5820 + 0.10000ml of M5962 + 0.10000ml of M5971 + 0.10000ml of M6128 + 0.10000ml of M6176 + 0.15000ml of M5800 + 0.20000ml of M5799 + 0.20000ml of M6021 + 0.20000ml of M6023 + 0.20000ml of M6027 + 0.20000ml of M6145 + 0.25000ml of M5467 + 0.25000ml of M6160 + 0.50000ml of M5814 + 0.50000ml of M6032 + 1.00000ml of M5979 + 1.00000ml of M6138 + 1.00000ml of M6142 + 1.00000ml of M6144 + 1.00000ml of M6171 + 1.00000ml of M6178 + 2.00000ml of M5969 + 88.29000ml of MP87031 = 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>
2951	ICP AES S1/CRI WORK STD	MP87038	09/02/2025	10/03/2025	Sarabjit Jaswal	None	METALS_PIPETTE_3 (A)	Janvi Patel
								09/04/2025

FROM 2.00000ml of MP87036 + 98.00000ml of MP87031 = 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	MP87040	09/02/2025	10/03/2025	Sarabjit Jaswal	None	METALS_PIPETTE_3 (A)	Janvi Patel 09/04/2025

FROM 25.00000ml of M6182 + 225.00000ml of MP87031 = 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	MP87042	09/02/2025	10/03/2025	Sarabjit Jaswal	None	None	Janvi Patel 09/04/2025

FROM 50.00000ml of MP87031 + 50.00000ml of MP87032 = 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	MP87043	09/02/2025	10/03/2025	Sarabjit Jaswal	None	None	Janvi Patel
								09/04/2025

FROM 1.00000ml of M6179 + 10.00000ml of M5985 + 1969.00000ml of W3112 + 20.00000ml of M6187 = 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>
903	ICP AES RINSE SOLN	MP87044	09/02/2025	10/03/2025	Sarabjit Jaswal	None	None	Janvi Patel
								09/04/2025

FROM 200.00000ml of M6187 + 9800.00000ml of W3112 = Final Quantity: 10000.000 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>
4225	LR-1	MP87045	09/02/2025	10/03/2025	Sarabjit Jaswal	None	METALS_PIPETTE_3 (A)	Janvi Patel 09/04/2025

FROM 11.50000ml of M6138 + 11.50000ml of M6144 + 11.50000ml of M6171 + 15.50000ml of MP87031 = Final Quantity: 50.000 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>
4226	LR-2	MP87046	09/02/2025	10/03/2025	Sarabjit Jaswal	None	METALS_PIPETTE_3 (A)	Janvi Patel 09/04/2025

FROM 13.50000ml of M6140 + 9.00000ml of M6142 + 9.50000ml of M6159 + 18.00000ml of MP87031 = Final Quantity: 50.000 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>
4163	NEW ICV-060925	MP87047	09/02/2025	10/03/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP)	Sarabjit Jaswal
A) FROM 0.20000ml of M6058 + 0.40000ml of M6163 + 0.40000ml of M6164 + 0.40000ml of M6165 + 48.60000ml of MP87031 = Final Quantity: 50.000 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	MP87048	09/02/2025	10/03/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 09/04/2025
<u>FROM</u>	0.05000ml of M6076 + 5.00000ml of M6182 + 5.00000ml of M6184 + 39.95000ml of MP87031 = 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>
4227	LR-3	MP87049	09/02/2025	10/03/2025	Sarabjit Jaswal	None	None	Janvi Patel 09/04/2025
<u>FROM</u>	1.15000ml of M6026 + 1.25000ml of M5658 + 1.25000ml of M5748 + 1.50000ml of M6145 + 2.50000ml of M5751 + 2.50000ml of M6128 + 39.85000ml of MP87031 = Final Quantity: 50.000 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>
65	POTASSIUM PERMANGANATE SOLUTION 5 %	MP87072	09/04/2025	03/04/2026	Mohan Bera	METALS_SCALE_3 (M SC-3)	None	Sarabjit Jaswal 09/04/2025
<u>FROM</u> 100.00000gram of M4916 + 2000.00000ml of W3112 = 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>
67	SODIUM CHLORIDE - HYDROXYL- CHLORIDE SOLUTION	MP87149	09/09/2025	02/03/2026	Mohan Bera	METALS_SCALE_2 (M SC-2)	None	Sarabjit Jaswal
<u>FROM</u>	2000.00000ml of W3112 + 240.00000gram of M5884 + 240.00000ml of M6196 = 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>
871	MERCURY INTERMEDIATE B 250PPB WORKING STD.	MP87421	10/02/2025	10/03/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 10/02/2025
<u>FROM</u>	1.00000ml of M6187 + 2.50000ml of M5062 + 96.50000ml of W3112 = 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>
1340	Hg 0.00 PPB STD	MP87422	10/02/2025	10/03/2025	Mohan Bera	None	METALS_PIPETTE_5 (HG	Sarabjit Jaswal 10/02/2025

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<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1341	Hg 0.2 PPB STD	MP87424	10/02/2025	10/03/2025	Mohan Bera	None	METALS_PIPETTE_5 (HG	Sarabjit Jaswal 10/02/2025

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<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1342	Hg 2.5 PPB STD	MP87425	10/02/2025	10/03/2025	Mohan Bera	None	METALS_PIPETTE_5 (HG A)	Sarabjit Jaswal 10/02/2025
<u>FROM</u>	2.50000ml of M6187 + 245.00000ml of W3112 + 2.50000ml of MP87421 = 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>
1343	Hg 5.0 PPB STD	MP87426	10/02/2025	10/03/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 10/02/2025
<u>FROM</u>	2.50000ml of M6187 + 242.50000ml of W3112 + 5.00000ml of MP87421 = 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>
1344	Hg 7.5 PPB STD	MP87427	10/02/2025	10/03/2025	Mohan Bera	None	METALS_PIPETTE_5 (HG)	Sarabjit Jaswal 10/02/2025
FROM 2.50000ml of M6187 + 240.00000ml of W3112 + 7.50000ml of MP87421 = 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>
1345	Hg 10.0 PPB STD	MP87428	10/02/2025	10/03/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 10/02/2025
<u>FROM</u> 2.50000ml of M6187 + 237.50000ml of W3112 + 10.00000ml of MP87421 = 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>
1346	Hg ICV SOLUTION	MP87429	10/02/2025	10/03/2025	Mohan Bera	None	METALS_PIPETTE_5 (HG)	Sarabjit Jaswal 10/02/2025
FROM 2.50000ml of M6161 + 2.50000ml of M6187 + 245.00000ml of W3112 = 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>
1351	ICB (Hg 0.00 PPB SOLUTION)	MP87430	10/02/2025	10/03/2025	Mohan Bera	None	METALS_PIPETTE_5 (HG A)	Sarabjit Jaswal 10/02/2025
<u>FROM</u>	2.50000ml of M6187 + 247.50000ml of W3112 = 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>
1358	CCV (Hg 5.0 PPB SOLUTION)	MP87431	10/02/2025	10/03/2025	Mohan Bera	None	METALS_PIPETTE_5 (HG)	Sarabjit Jaswal 10/02/2025
FROM 485.00000ml of W3112 + 5.00000ml of M6187 + 10.00000ml of MP87421 = Final Quantity: 500.000 ml 								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1352	CCB (Hg 0.00 PPB SOLUTION)	MP87432	10/02/2025	10/03/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 10/02/2025
<u>FROM</u> 495.00000ml of W3112 + 5.00000ml of M6187 = Final Quantity: 500.000 ml								

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Metals STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
887	AQUA REGIA FOR HG ON 7471A	MP87436	10/02/2025	10/03/2025	Mohan Bera	None	None	Sarabjit Jaswal
								10/02/2025

FROM 150.00000ml of M6200 + 50.00000ml of M6187 = 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>
68	STANNOUS CHLORIDE SOLUTION	MP87439	10/03/2025	10/04/2025	Mohan Bera	METALS_SCALE_3 (M SC-3)	None	Sarabjit Jaswal
								10/06/2025

FROM 450.00000ml of W3112 + 50.00000gram of M5882 + 50.00000ml of M6200 = Final Quantity: 500.000 ml

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-3227-05 / Potassium Permanganate (2.5kg)	210800	03/31/2026	11/30/2022 / mohan	07/28/2021 / mohan	M4916

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	MSHG-10PPM / MERCURY HCl 125mL 10ug/mL	S2-HG709270	09/22/2026	05/28/2022 / mohan	01/27/2022 / mohan	M5062

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 #
PCI Scientific Supply, Inc.	26397-103 / PTFE BOILING STONES	W126678	03/20/2026	03/20/2025 /	06/12/2023 / jaswal	M5581

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	26397-103 / PTFE BOILING STONES	W126678	12/31/2025	06/17/2023 / Al-Terek	06/12/2023 / jaswal	M5582

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.	/ 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 #
Absolute Standards, Inc.	57004 / Be, 1000 PPM, 125 ml	102523	10/25/2026	02/09/2024 / bin	02/09/2024 / bin	M5798

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

CHEMICAL RECEIPT LOG BOOK

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.	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 #
Seidler Chemical	BA-3980-01 / Stannous Chloride (cs/4x500g)	232820	08/31/2028	04/30/2024 / mohan	04/25/2024 / mohan	M5882

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-3624-05 / Sodium Chloride, Crystal (cs/4x2.5kg)	0000281938	07/06/2026	04/30/2024 / mohan	04/25/2024 / mohan	M5884

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

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	03/31/2026	03/31/2025 / kareem	06/11/2024 / Jaswal	M5969

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	06/06/2025 / Janvi	07/01/2024 / Jaswal	M5971

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	08/05/2026	08/06/2025 / Janvi	02/22/2024 / Jaswal	M5979

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	CLPP-CAL-3 / CLP CAL SOLUTION #3, 125mL	T2-MEB727800	07/30/2026	07/30/2025 / Janvi	02/22/2024 / kareem	M5998

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

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

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57182 / Pb, 10000 PPM, 125 ml	110923	11/09/2026	12/05/2024 / Janvi	08/05/2024 / Jaswal	M6026

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57028 / Ni, 1000 PPM, 125 ml	062024	06/20/2027	06/04/2025 / Janvi	08/05/2024 / Jaswal	M6027

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	CHEM-QC-4 / CHEM-QC-4, Second Source, 1000 ug/ml, B, Mo, Si, Sn, Ti	V2-MEB746173	01/29/2026	01/29/2025 / JANVI	08/22/2024 / Jaswal	M6058

CHEMICAL RECEIPT LOG BOOK

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	01/01/2026	01/01/2025 / kareem	09/19/2024 / kareem	M6076

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 #
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 #
Inorganic Ventures	CGSI1-1 / SILICON 125mL 1000ug/mL	V2-SI744713	07/10/2029	01/14/2025 / Jaswal	10/03/2024 / Jaswal	M6137

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	121824	12/18/2027	04/17/2025 / Janvi	01/13/2025 / Jaswal	M6138

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	011025	01/10/2028	06/25/2025 / Janvi	01/13/2025 / Jaswal	M6140

CHEMICAL RECEIPT LOG BOOK

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	103024	10/30/2027	05/06/2025 / JANVI	01/13/2025 / Jaswal	M6142

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 #
Seidler Chemical	BA-9530-33 / Hydrochloric Acid, Instra-Analyzed (cs/6x2.5L)	22G2862015	02/17/2026	02/18/2025 / Sagar	01/15/2025 / Sagar	M6151

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	10/09/2025	03/10/2025 / Eman	02/02/2025 / Sagar	M6158

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	011325	03/18/2026	03/18/2025 / kareem	02/09/2025 / kareem	M6159

CHEMICAL RECEIPT LOG BOOK

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	03/24/2025 / kareem	10/18/2024 / kareem	M6160

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
EPA	ICV-5 / ICV (HG) STOCK SOLN	ICV 5 0415	12/31/2025	05/01/2025 / mohan	03/30/2024 / mohan	M6161

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	QCP-CICV-1-125ML / EPA CLP ICP Verification Standard1	V2-MEB744107	06/08/2026	06/09/2025 / jaswal	06/06/2025 / jaswal	M6163

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	QCP-CICV-2-125ML / EPA CLP ICP Verification Standard2	U2-MEB733713	06/08/2026	06/09/2025 / jaswal	06/09/2025 / jaswal	M6164

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	QCP-CICV-3-125ML / EPA CLP ICP Verification Standard3	V2-MEB749572	06/08/2026	06/09/2025 / jaswal	06/09/2025 / jaswal	M6165

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-2186-03 / Hydrogen Peroxide (cs/4x4L)	24D1961001	10/16/2025	06/25/2025 /	05/20/2025 / Sagar	M6170

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58112 / Mg, 10000 PPM, 500 ml	011525	01/15/2028	07/15/2025 /	02/13/2025 / Janvi	M6171

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	V2-MEB742428	07/31/2026	07/31/2025 / Janvi	05/05/2025 / Janvi	M6174

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	092724	09/27/2027	08/06/2025 / Janvi	08/06/2025 / Janvi	M6176

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	/ Lead (Pb) 1000PPM	031525	03/15/2028	08/06/2025 / Janvi	08/06/2025 / Janvi	M6177

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	080528	08/05/2028	08/06/2025 / Janvi	08/06/2025 / Janvi	M6178

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	08/05/2026	08/06/2025 / Janvi	06/02/2024 / Janvi	M6179

CHEMICAL RECEIPT LOG BOOK

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	W2-MEB752149	02/05/2026	08/06/2025 / Janvi	07/22/2025 / Janvi	M6180

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	V2-MEB7433480	02/05/2026	08/06/2025 / Janvi	07/22/2025 / Janvi	M6181

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	02/05/2026	08/06/2025 / Janvi	03/06/2024 / Janvi	M6182

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	02/05/2026	08/06/2025 / Janvi	03/06/2024 / Janvi	M6184

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)	24H0162012	01/28/2026	08/29/2025 / Sagar	08/08/2025 / Sagar	M6187

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	H330-500 / HYDROXYLAMINE HYDROCHLORIDE ACS 500G	243373	02/03/2026	09/04/2025 / mohan	08/04/2025 / mohan	M6196

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9530-33 / Hydrochloric Acid, Instra-Analyzed (cs/6x2.5L)	24D1562005	02/10/2026	09/11/2025 / Sagar	08/25/2025 / Sagar	M6200

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 / Iwona	07/03/2024 / Iwona	W3112

M5882
 M3

Certificate of Analysis

1 Reagent Lane
 Fair Lawn, NJ 07410
 201.796.7100 tel
 201.796.1329 fax

Thermo Fisher Scientific's Quality System has been found to conform to Quality Management System
 Standard ISO9001:2015 by SAI Global Certificate Number CERT – 0120633

This is to certify that units of the lot number below were tested and found to comply with the specifications of the grade listed. Certain data have been supplied by third parties. Thermo Fisher Scientific expressly disclaims all warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. Products are for research use or further manufacturing. Not for direct administration to humans or animals. It is the responsibility of the final formulator and end user to determine suitability based upon the intended use of the end product. Products are tested to meet the analytical requirements of the noted grade. The following information is the actual analytical results obtained.

Catalog Number	T142	Quality Test / Release Date	08/17/2023
Lot Number	232820		
Description	STANNOUS CHLORIDE, DIHYDRATE CERTIFIED ACS (Suitable for Mercury Determination)		
Country of Origin	United States	Suggested Retest Date	Aug/2028
Chemical Origin	Inorganic-non animal		
BSE/TSE Comment	No animal products are used as starting raw material ingredients, or used in processing, including lubricants, processing aids, or any other material that might migrate to the finished product.		

N/A			
Result Name	Units	Specifications	Test Value
APPEARANCE		REPORT	Clear crystals
ASSAY	%	Inclusive Between 98 - 103	100.65
CALCIUM	%	<= 0.005	0.0017
IDENTIFICATION	PASS/FAIL	= PASS TEST	PASS TEST
IRON (Fe)	%	<= 0.003	0.0011
LEAD (Pb)	%	<= 0.01	0.0006
MERCURY (Hg)	ppm	<= 0.05	<0.05
POTASSIUM (K)	%	<= 0.005	0.0001
SODIUM (Na)	%	<= 0.01	<0.01
SOLUBILITY IN HCL	PASS/FAIL	= PASS TEST	PASS TEST
SULFATE (SO4)	PASS/FAIL	= P.T. (ABOUT 0.003%)	P.T. (ABOUT 0.003%)



Harout Sahagian - Quality Control Supervisor - Fair Lawn

Note: The data listed is valid for all package sizes of this lot of this product, expressed as an extension of this catalog number listed above.

If there are any questions with this certificate, please call at (800) 227-6701.

*Based on suggested storage condition.



CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

57056
010924
Barium (Ba)

Lot #
Solvent: 24002546 Nitric Acid

Expiration Date:

010927

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): 2000.02 0.058 Flask Uncertainty

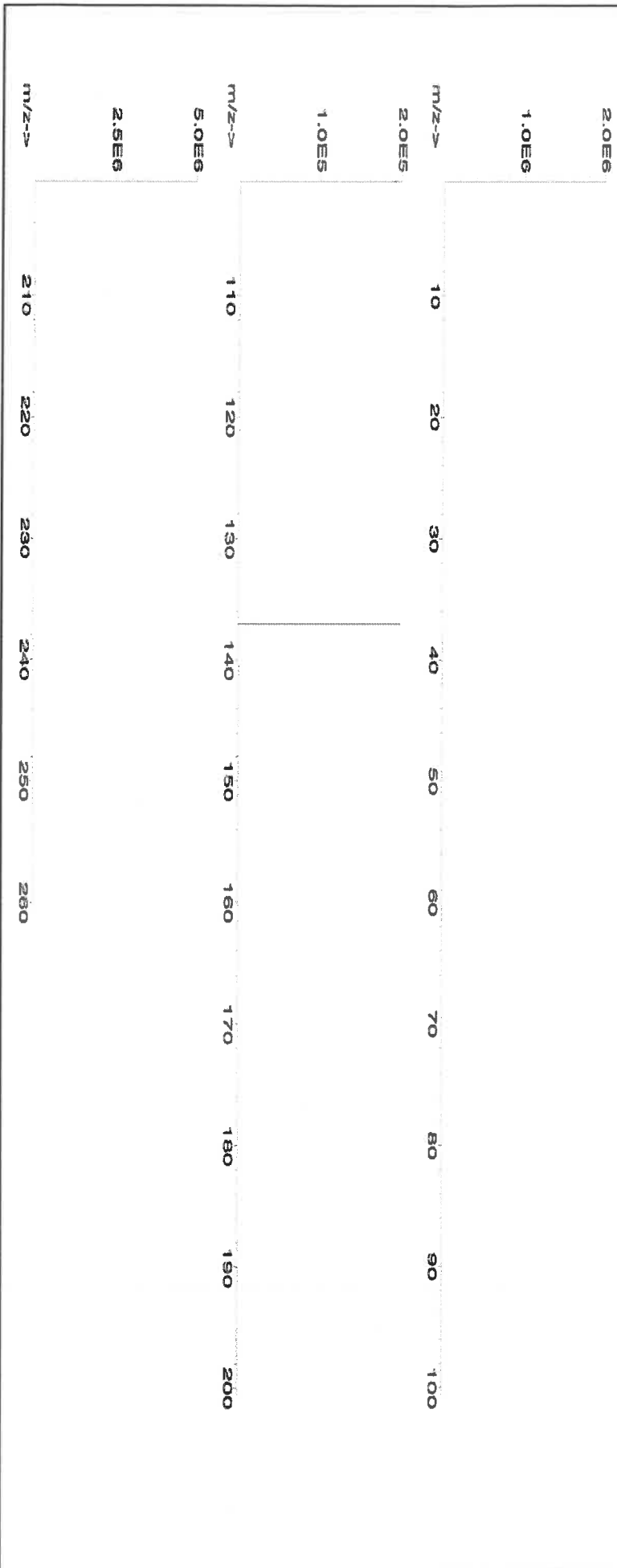
<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
	010924
Reviewed By:	<i>Pedro L. Renteria</i>
	Pedro L. Renteria
	010924

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. 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/m3 or-hat 355 mg/kg 3104a

[1] Spectrum No.1 [12.514 sec]:58156.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	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

Lot #

2% 40.0 Nitric Acid (mL)

Expiration Date: 070127

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): 1000

NIST Test Number: 6UTB

Weight shown below was diluted to (mL): 2000.07 5E-05 Balance Uncertainty 0.100 Flask Uncertainty

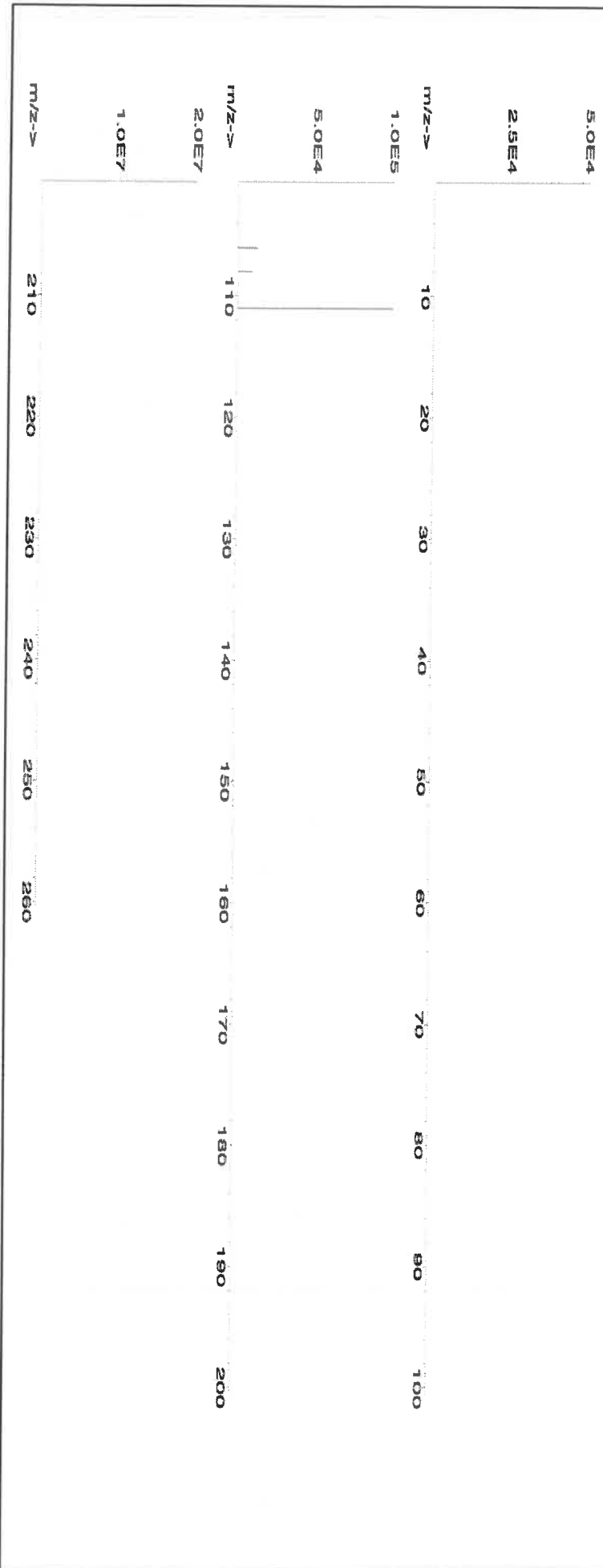
<i>Aleah O'Brady</i>	
Formulated By:	Aleah O'Brady
	070124
<i>Pedro L. Rentas</i>	
Reviewed By:	Pedro L. Rentas
	070124

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).



CERTIFIED WEIGHT REPORT:

Part Number: **57182**
Lot Number: **110923**
Description: **Lead (Pb)**

Solvent: **24002546**
Nitric Acid

Lot #

Expiration Date: **110926**
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** **0.058** **Flask Uncertainty**

Formulated By:	Lawrence Barry
110923	
Reviewed By:	Pedro L. Rentas
110923	

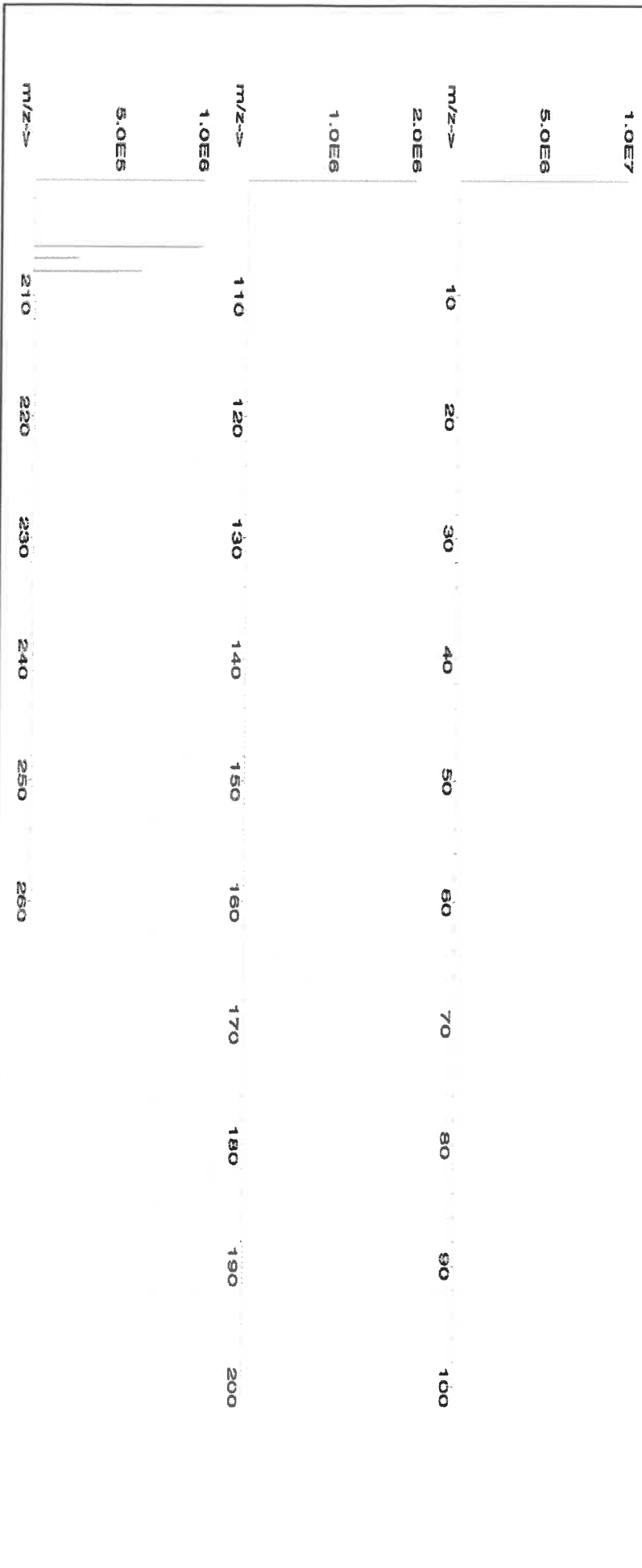
Compound

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

1. **Lead(II) nitrate (Pb)** **IN029** **PED12016A1** **10000** **99.999** **0.10** **62.5** **32.0006** **32.0040** **10001.1** **20.0** **10099-74-8** **0.05 mg/m3** **inhalant rat 83 mg/kg** **3128**

[1] Spectrum No.1 [17.284 sec]:58182.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	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	T	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

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.
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- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

M4913-16

MS

Certificate of Analysis

1 Reagent Lane
 Fair Lawn, NJ 07410
 201.796.7100 tel
 201.796.1329 fax

Thermo Fisher Scientific's Quality System has been found to conform to Quality Management System
 Standard ISO9001:2015 by SAI Global Certificate Number CERT – 0120632

This is to certify that units of the lot number below were tested and found to comply with the specifications of the grade listed. Certain data have been supplied by third parties. Thermo Fisher Scientific expressly disclaims all warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. Products are for research use or further manufacturing. Not for direct administration to humans or animals. It is the responsibility of the final formulator and end user to determine suitability based upon the intended use of the end product. Products are tested to meet the analytical requirements of the noted grade. The following information is the actual analytical results obtained.

Catalog Number	P279	Quality Test / Release Date	01/12/2021
Lot Number	210306		
Description	POTASSIUM PERMANGANATE, A.C.S.		
Country of Origin	United States	Suggested Retest Date	Jan/2026

N/A			
Result Name	Units	Specifications	Test Value
APPEARANCE		REPORT	Dark purple to purple green crystals
ASSAY	%	>= 99	99.3
CHLORIDE & CHLORATE	%	<= 0.005	<0.005
IDENTIFICATION	PASS/FAIL	= PASS TEST	pass test
INSOLUBLE MATTER	%	<= 0.2	<0.2
MERCURY (Hg)	ppm	<= 0.05	<0.004
SULFATE (SO4)	%	<= 0.02	<0.02

Julian Burton

Julian Burton - Quality Control Manager – Fair Lawn

Note: The data listed is valid for all package sizes of this lot of this product, expressed as an extension of this catalog number listed above.
 If there are any questions with this certificate, please call at (800) 227-6701.

*Based on suggested storage condition.

300 Technology Drive
 Christiansburg, VA 24073 USA
 inorganicventures.com

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

MS062
 MS063
 MS

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 Mass Spec Solution
 Catalog Number: MSHG-10PPM
 Lot Number: S2-HG709270
 Matrix: 10% (v/v) HCl
 Value / Analyte(s): 10 µg/mL ea:
 Mercury
 Starting Material: Hg metal
 Starting Material Lot#: 1959
 Starting Material Purity: 99.9994%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10.001 ± 0.053 µg/mL
Density: 1.020 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Hg	ICP Assay	3133	160921
Hg	EDTA	928	928
Hg	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, $X_{CRM/RM}$, 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.

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

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

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

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

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.

O	Ag	0.000011	M	Eu	<	0.000201	O	Na	0.000004	M	Se	<	0.015915	O	Zn	<	0.001510	
O	Al	0.000001	O	Fe		0.000001	M	Nb	<	0.000201	O	Si		0.000005	M	Zr	<	0.000201
M	As	<	0.000402	M	Ga	<	0.000201	M	Nd	<	0.000201	M	Sm	<		0.000201		
M	Au	<	0.003631	M	Gd	<	0.000201	M	Ni	<	0.000402	M	Sn	<		0.001007		
M	B	<	0.001208	M	Ge	<	0.000201	M	Os	<	0.000605	M	Sr	<		0.000201		
M	Ba	<	0.000201	M	Hf	<	0.000201	O	P	<	0.032370	M	Ta	<		0.000201		
M	Be	<	0.000201	s	Hg	<		M	Pb	<	0.000201	M	Tb	<		0.000201		
M	Bi	<	0.000201	M	Ho	<	0.000201	M	Pd	<	0.000403	M	Te	<		0.002216		
O	Ca	0.000007	M	In	<	0.000201	M	Pr	<	0.000201	M	Th	<		0.000201			
M	Cd	<	0.000201	M	Ir	<	0.000201	M	Pt	<	0.000402	M	Ti	<		0.000402		
M	Ce	<	0.000201	O	K		0.000020	M	Rb	<	0.000201	O	Tl	<		0.016508		
M	Co	<	0.000201	M	La	<	0.000201	M	Re	<	0.000201	M	Tm	<		0.000201		
O	Cr	<	0.003021	O	Li	<	0.000107	M	Rh	<	0.000201	M	U	<		0.008058		
M	Cs	<	0.001208	M	Lu	<	0.000201	M	Ru	<	0.000201	M	V	<		0.000201		
M	Cu	<	0.000402	O	Mg		0.000001	O	S	<	0.053950	M	W	<		0.000604		
M	Dy	<	0.000201	M	Mn	<	0.000604	M	Sb	<	0.001208	M	Y	<		0.000201		
M	Er	<	0.000201	M	Mo		0.000009	M	Sc	<	0.000201	M	Yb	<		0.000201		

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

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 200.59 +2 4 Hg(OH)(aq) 1+

Chemical Compatibility - Stable in HNO₃. Avoid basic media forming insoluble carbonate. The sulfide, basic carbonate, oxalate, phosphate, arsenite, arsenate and iodide are insoluble in water.

Stability - 2-100 ppb levels not stable in 1% HNO₃ / LDPE container, stable in 10% HNO₃ packaged in borosilicate glass. 1-100 ppm levels stable in 7% HNO₃ packaged in borosilicate glass. 1000-10,000 ppm solutions are chemically stable for years in 5-10% HNO₃ / LDPE container.

Hg Containing Samples (Preparation and Solution) - Metal (soluble in HNO₃); Oxide (Soluble in HNO₃); Ores and Organic based (The literature has more references to the preparation of Hg containing samples than any other element. Please consult the literature for your specific sample type, since such preparations are prone to error. Or e-mail our technical staff and we will contact you to discuss your particular sample preparation questions in further detail.).

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 202 amu	9 ppt	n/a	186W16O
ICP-OES 184.950 nm	0.03 / 0.005 µg/mL	1	
ICP-OES 194.227 nm	0.03 / 0.005 µg/mL	1	V
ICP-OES 253.652 nm	0.1 / 0.03 µg/mL	1	Ta, Co, Th ,Rh , Fe, U

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

September 22, 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

- **September 22, 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 Prepared By:

Uyen Truong
Supervisor, Product Documentation



Certificate Approved By:

Michael Booth
Director, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director





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	La	<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	<0.01	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	<0.02	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:

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).



MATERIAL CERTIFICATE OF COMPLIANCE

DATE: JUNE 12, 2023

CUSTOMER: PCI SCIENTIFIC SUPPLY, INC

PURCHASE ORDER NO. 6054931

CATALOG NO. BOI5021-450L

PRODUCT DESCRIPTION: BOILING STONES, TFE, 454GMS

QUANTITY: 10 EACH

LOT NO. W126678

SPECIFICATION (S): Made from Virgin PTFE Resin

We certify that we have complied with the terms and conditions of the above Purchase Order and the Part Specifications in the manufacturing of the above product.



Laura Valencia
Quality Assurance Inspector

F:\J:\A\CF\PCISCI\COC-55118-BOI5021-061223



MATERIAL CERTIFICATE OF COMPLIANCE

DATE: JUNE 12, 2023

CUSTOMER: PCI SCIENTIFIC SUPPLY, INC

PURCHASE ORDER NO. 6054931

CATALOG NO. BOI5021-450L

PRODUCT DESCRIPTION: BOILING STONES, TFE, 454GMS

QUANTITY: 10 EACH

LOT NO. W126678

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We certify that we have complied with the terms and conditions of the above Purchase Order and the Part Specifications in the manufacturing of the above product.



Laura Valencia
Quality Assurance Inspector

F:\J:\LCP\PCISCI\COC-55118-BOI5021-061223



CERTIFIED WEIGHT REPORT:

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

Lot # 2110221 **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

2.0%

40.0 (mL)

Nitric Acid

NIST Test Number: 6UTB

SE-05 Balance Uncertainty
0.058 Flask Uncertainty

Reviewed By:

Pedro L. Ruelas

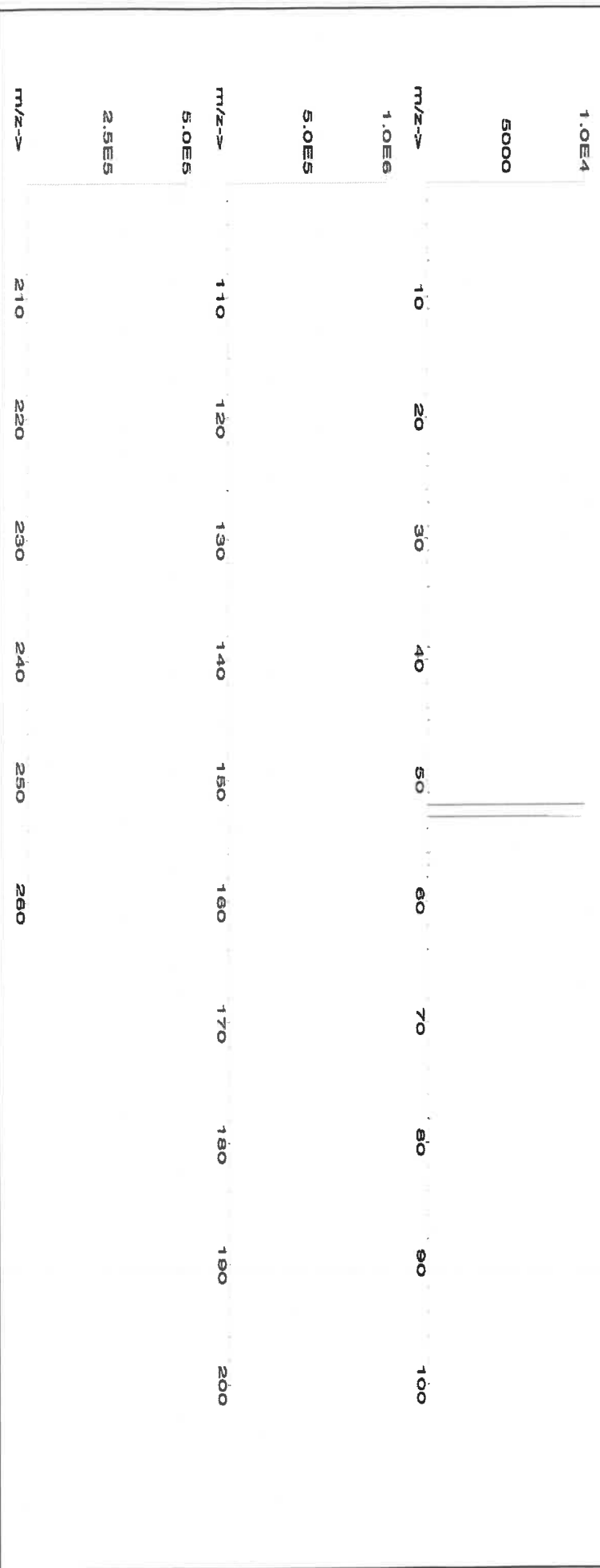
060523

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
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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: **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**

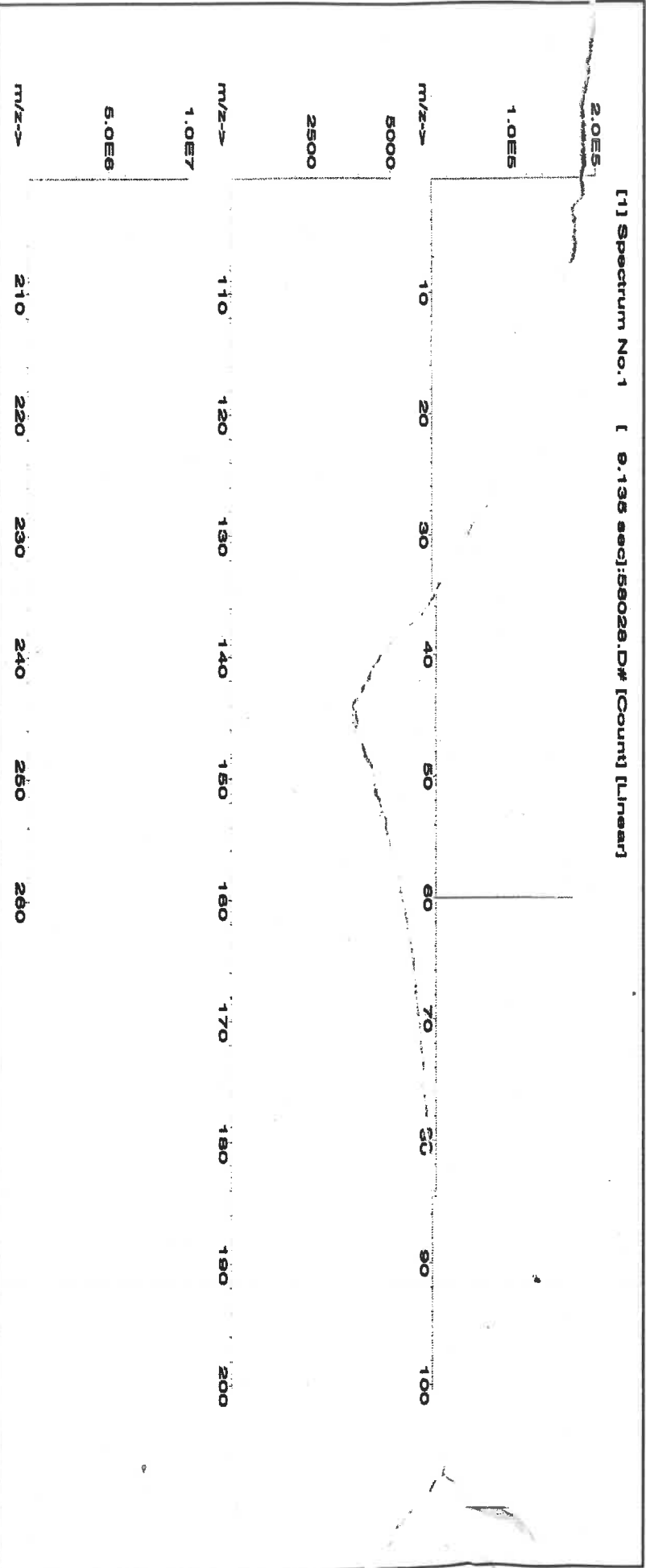
2.0% 40.0 (mL) Nitric Acid

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 Reference Material CRM



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:

Ambient (20 °C)

Nominal Concentration (µg/mL):

1000

NIST Test Number:

6UTB

Volume shown below was diluted to (mL): 2000.02

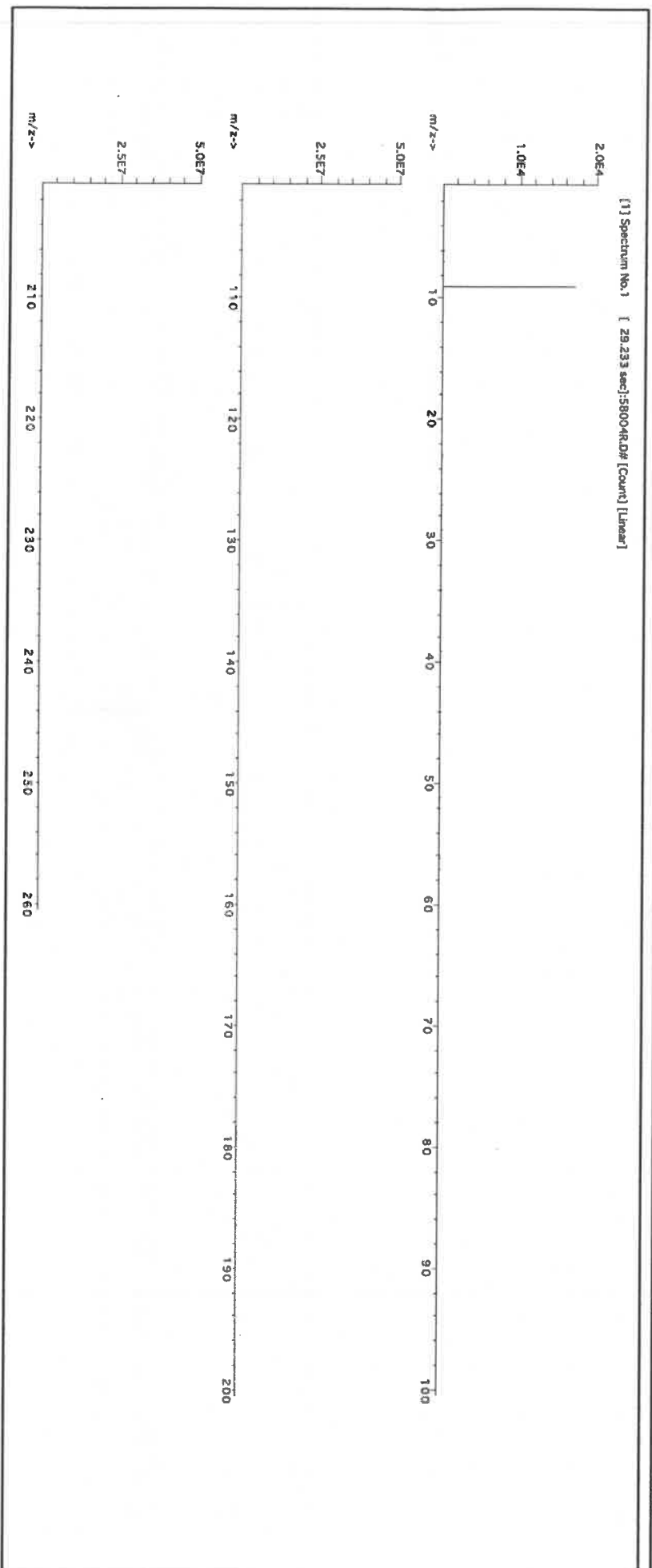
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

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
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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	intrins-rat 3.16mg/kg	NA
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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	Sn	<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:

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- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



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

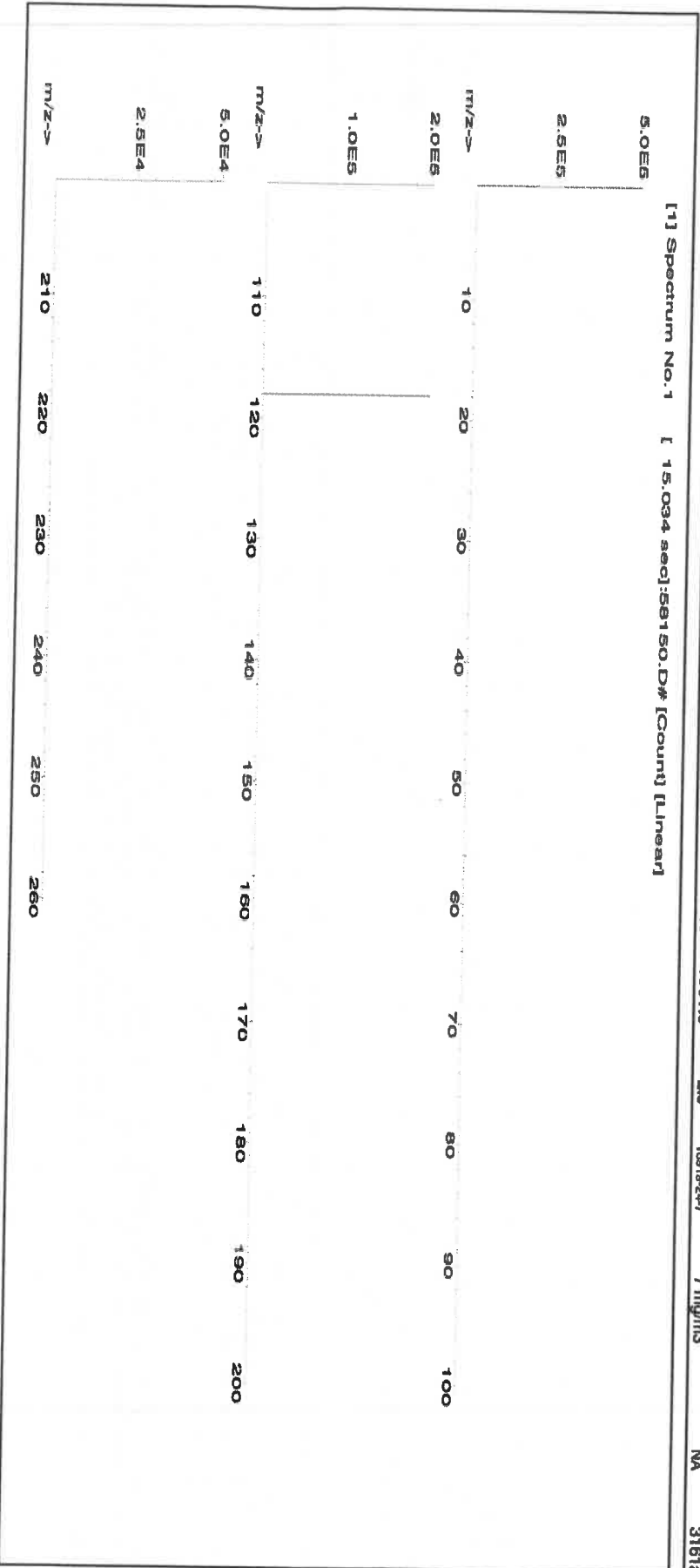
Weight shown below was diluted to (mL): 499.93
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

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

Compound	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty		CAS#	OSHA PEL (TWA)	LD50	NIST SRM
									+/- (µg/mL)	(µg/mL)				

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).
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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).



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)

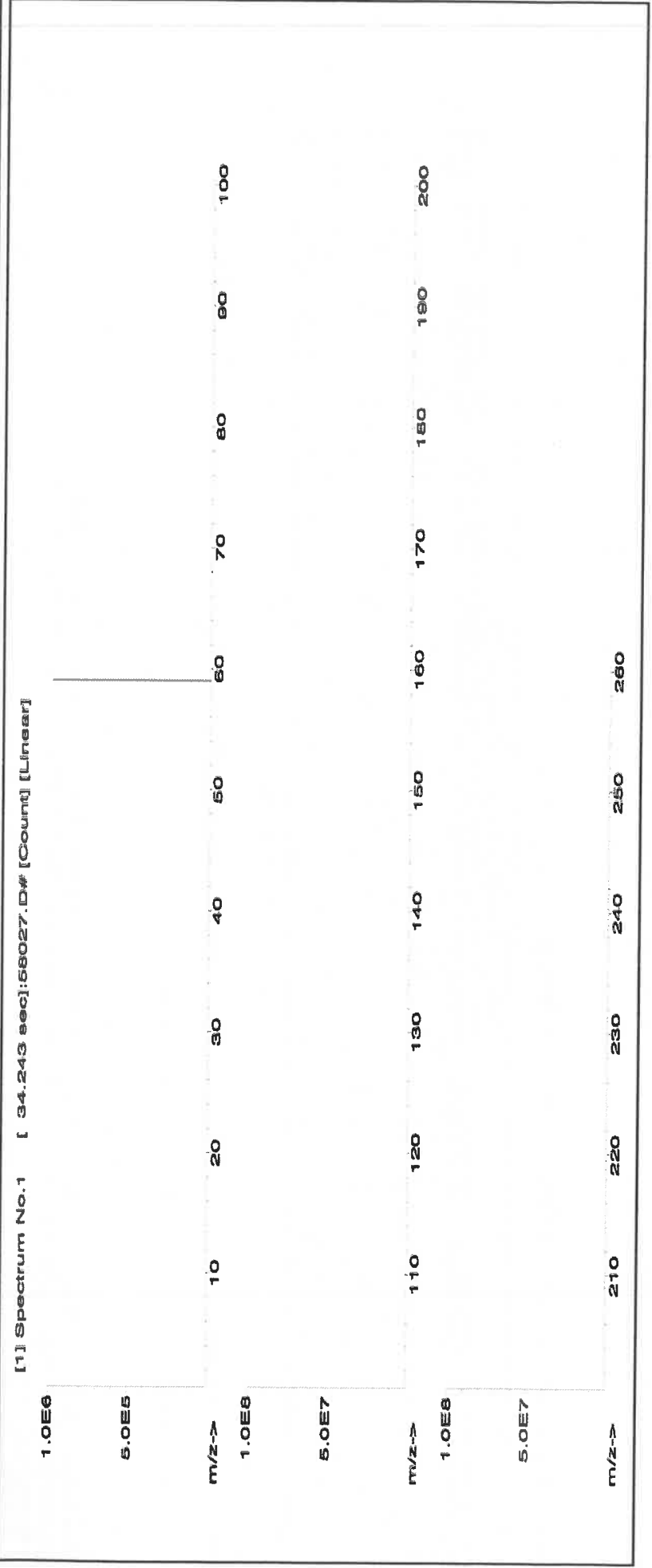
Formulated By:	Lawrence Barry
Reviewed By:	Pedro L. Rentas

SDS Information

Expanded Uncertainty +/- (µg/mL)
Final Conc. (µg/mL)
Initial Conc. (µg/mL)
Nominal Conc. (µg/mL)
Pipette (mL)
Initial Vol. (mL)
Dilution Factor
Part Number
Lot Number

(Solvent Safety Info. On Attached pg.)
CAS#
OSHA PEL (TWA)
LD50
NIST
SRM

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.
- * 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).
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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:
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

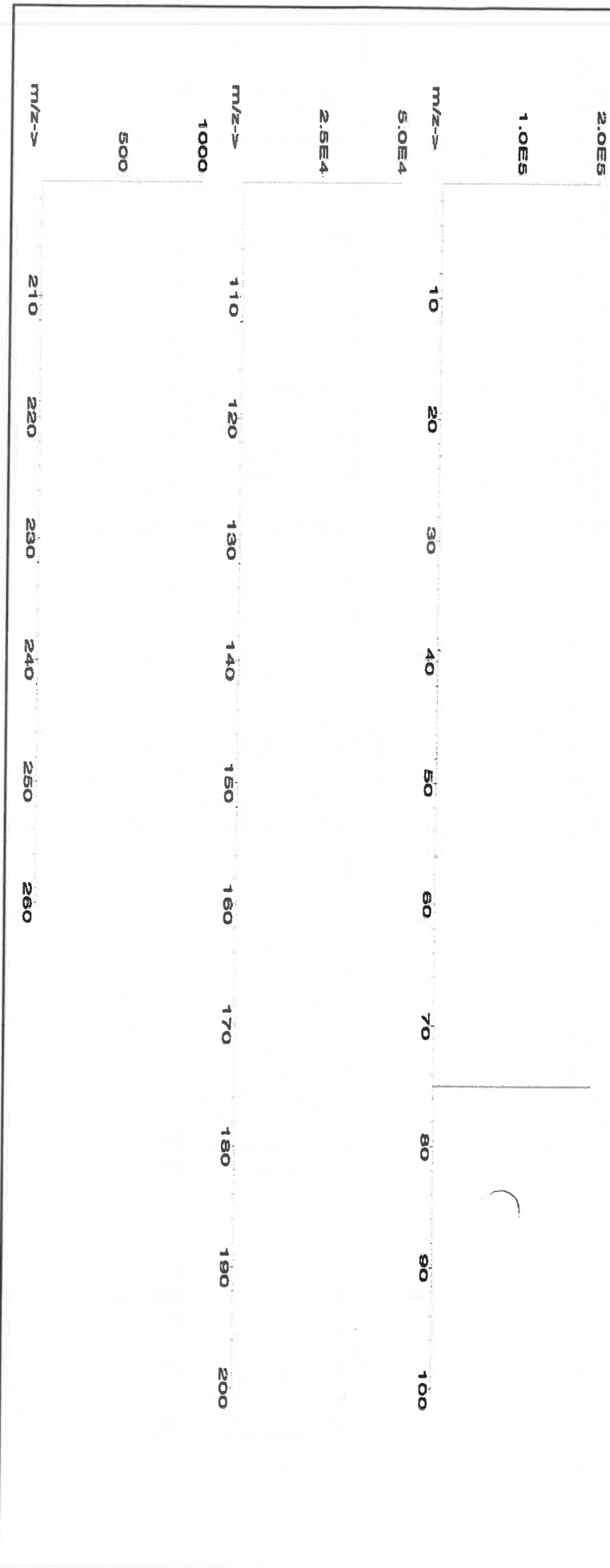
Formulated By:	Lawrence Barry
Reviewed By:	
	Pedro L. Rendas
	111323

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	Pt	<0.02	Sm	<0.02	S	<0.02	Sa	<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 #

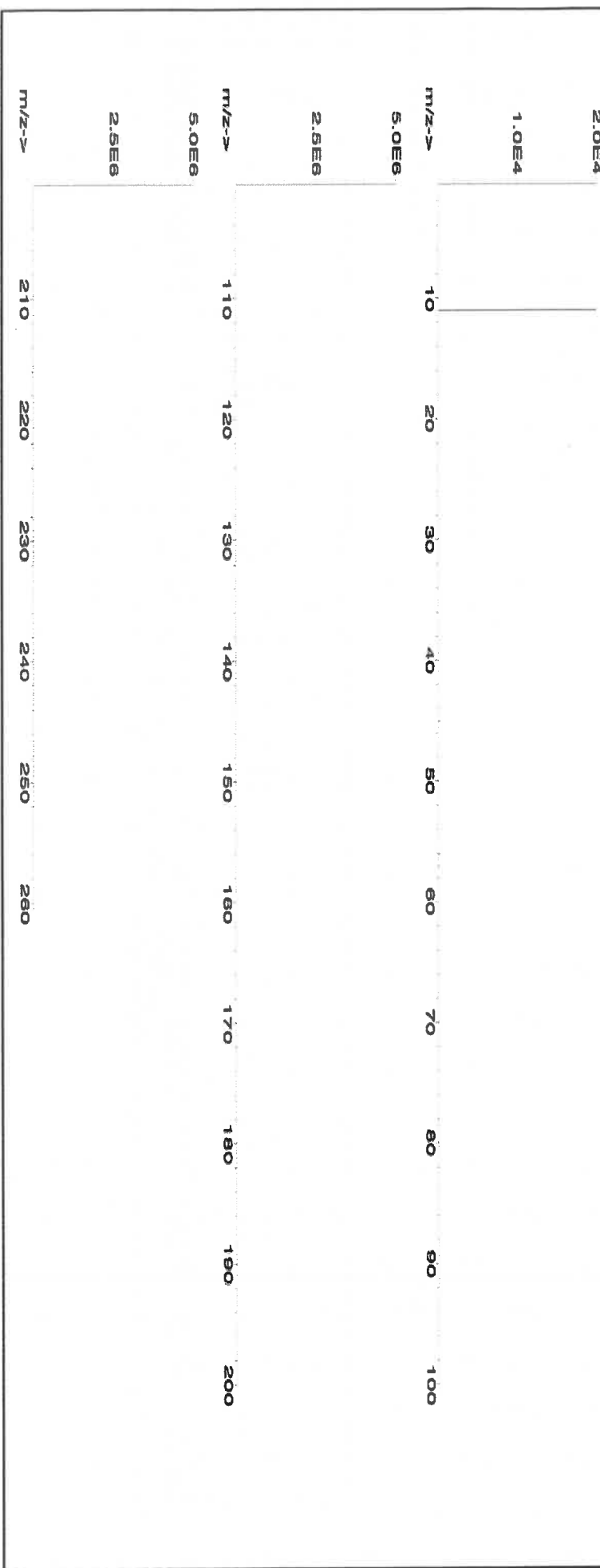
AI: 021009124 M5814

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
Reviewed By:	Pedro L. Rientas
071123	

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)
1. Boric acid (B)	IN018 BV082018A1	1000	99.999	0.10	17.3	11.55772	11.56201	1000.4	2.0
									10043-35-3
									2 mg/m3
									or 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.
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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

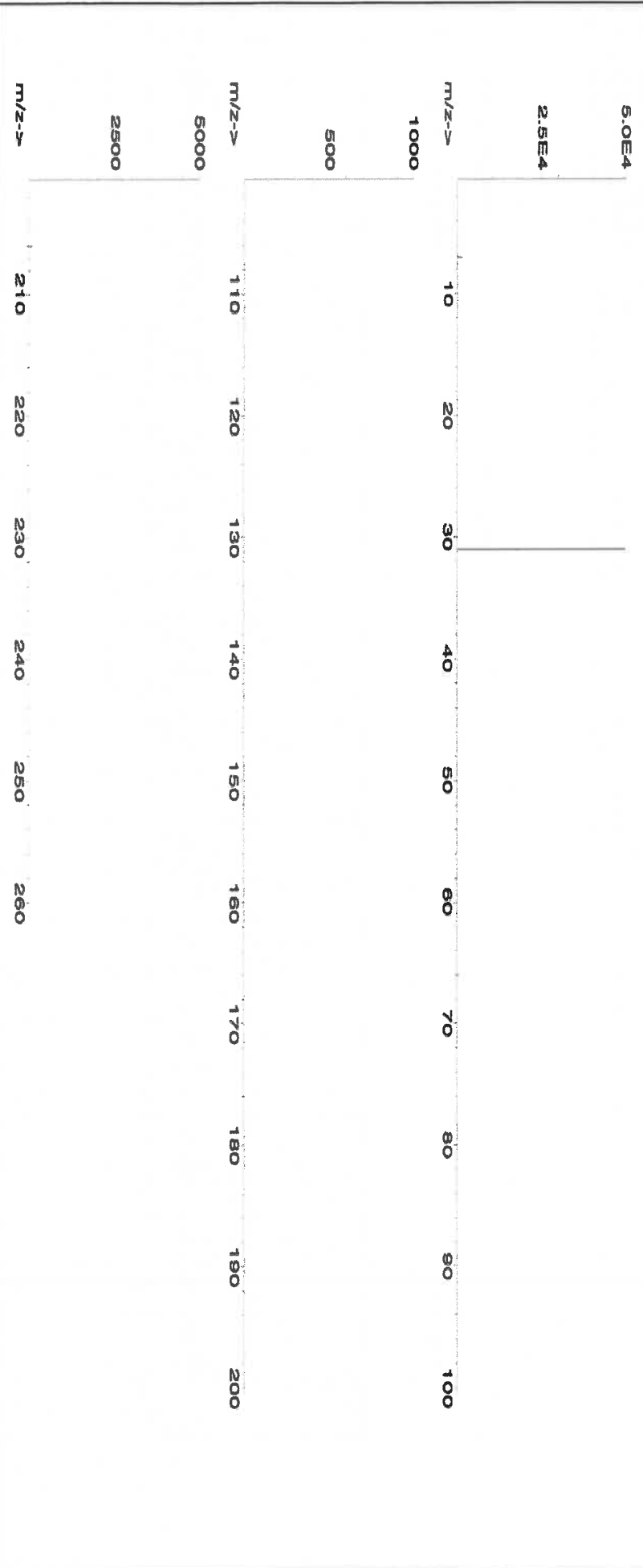
Formulated By:	Lawrence Barry
	091123
Reviewed By:	Pedro L. Rentas
	091123

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**
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

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

1. Ammonium dihydrogen phosphate (P) IN008 PVO62019A1 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 (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Tc	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	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:

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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).

Sodium Chloride, Crystal
BAKER ANALYZED® A.C.S. Reagent



MS824
MB

Material No.: 3624-01

Batch No.: 0000281938

Manufactured Date: 2021-06-07

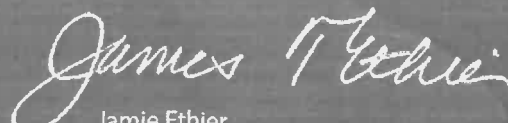
Retest Date: 2026-06-07

Revision No.: 1

Certificate of Analysis

Test	Specification	Result
Assay (NaCl) (by Ag titrn)	$\geq 99.0 \%$	100.0 %
pH of 5% Solution at 25°C	5.0 - 9.0	6.3
Insoluble Matter	$\leq 0.005 \%$	0.003 %
Iodide (I)	$\leq 0.002 \%$	< 0.002 %
Bromide (Br)	$\leq 0.01 \%$	< 0.01 %
Chlorate and Nitrate (as NO ₃)	$\leq 0.003 \%$	< 0.001 %
ACS - Phosphate (PO ₄)	$\leq 5 \text{ ppm}$	< 5 ppm
Sulfate (SO ₄)	$\leq 0.004 \%$	< 0.004 %
Barium (Ba)	Passes Test	Passes Test
ACS - Heavy Metals (as Pb)	$\leq 5 \text{ ppm}$	< 5 ppm
Iron (Fe)	$\leq 2 \text{ ppm}$	< 1 ppm
Calcium (Ca)	$\leq 0.002 \%$	< 0.001 %
Magnesium (Mg)	$\leq 0.001 \%$	< 0.001 %
Potassium (K)	$\leq 0.005 \%$	0.001 %

For Laboratory, Research, or Manufacturing Use
Meets Reagent Specifications for testing USP/NF monographs
Country of Origin: USA
Packaging Site: Paris 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 Mansford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone 610.386.1700



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

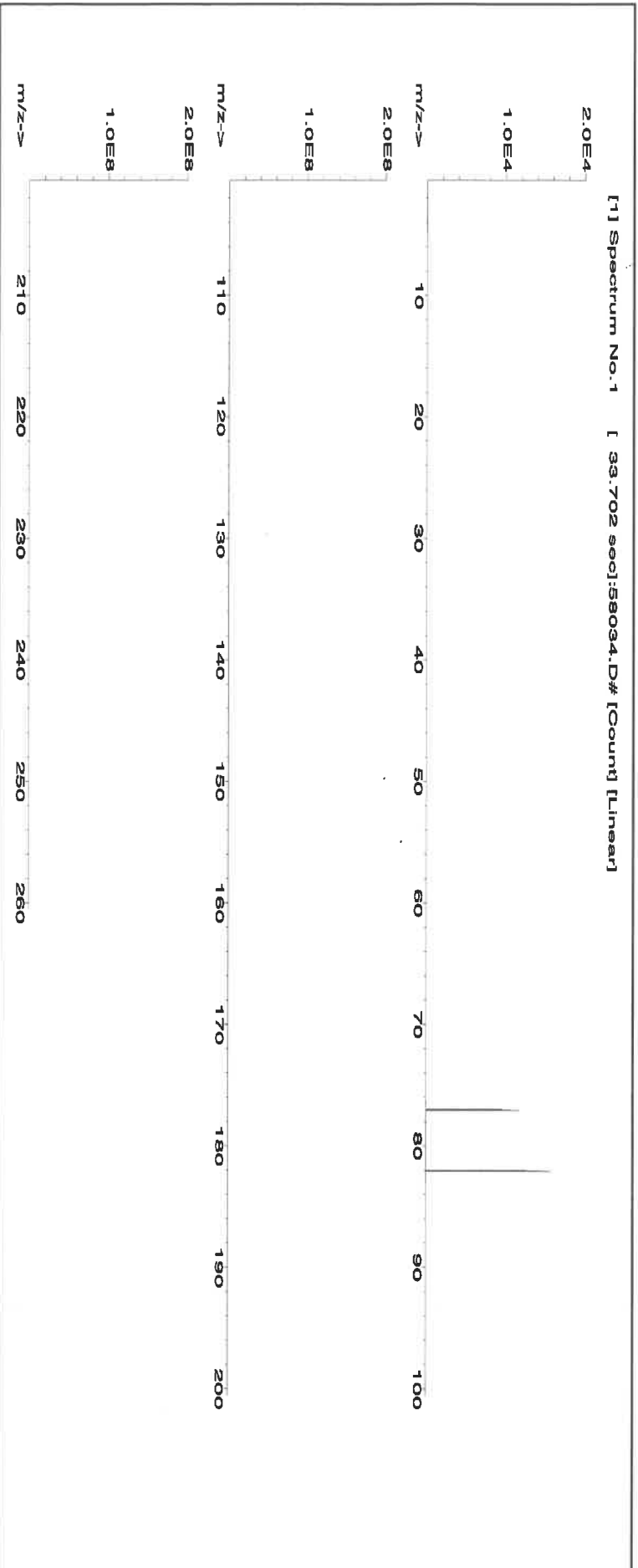
Expiration Date: **060627**
Recommended Storage: **Ambient (20 °C)**
Nominal Concentration (µg/mL): **1000**
NIST Test Number: **6UTB**
Volume shown below was diluted to (mL): **2000.07**
SE-05 Balance Uncertainty **0.100** Flask Uncertainty

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
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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	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	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.
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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: **57016**
Lot Number: **122923**
Description: **Sulfur (S)**

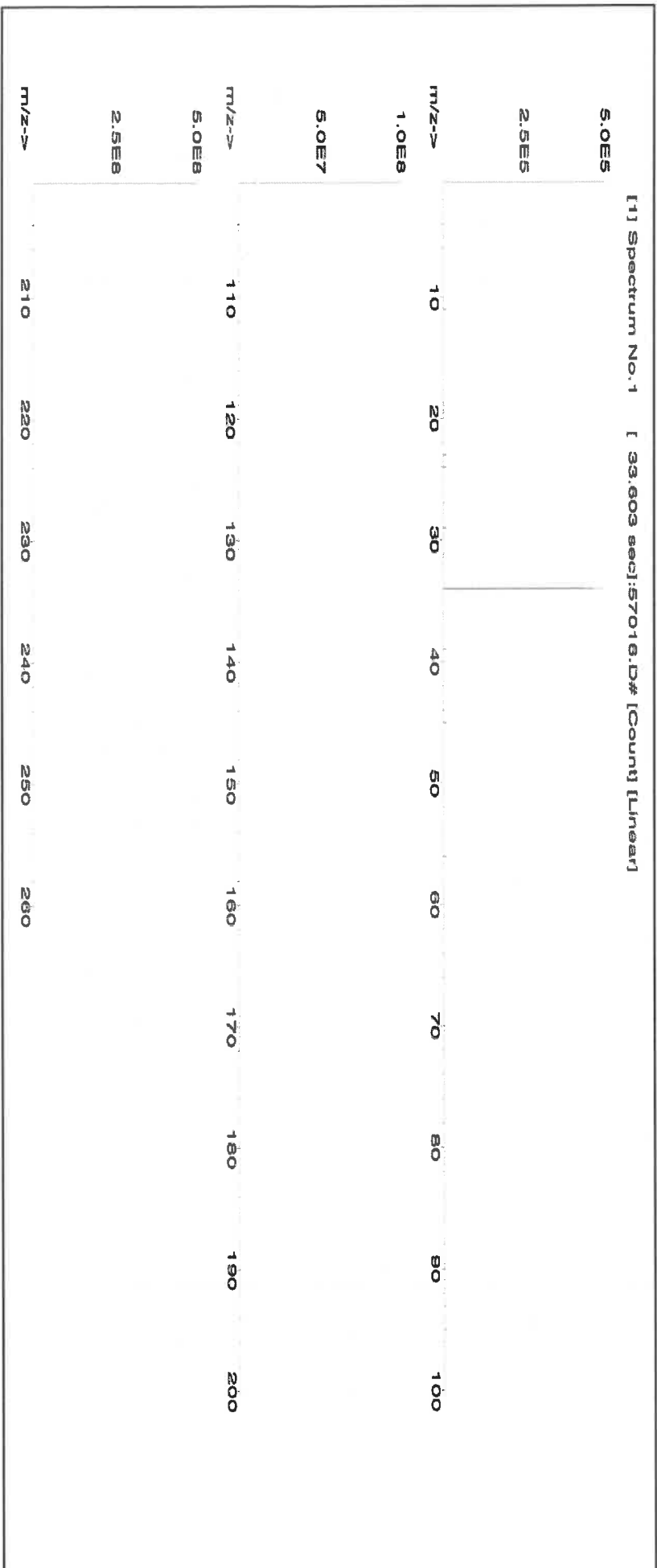
Lot #
Solvent: **122923** ASTM Type 1 Water

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: **6UTB**
Weight shown below was diluted to (mL): **4000.0**
5E-05 Balance Uncertainty
0.06 Flask Uncertainty

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

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 or-rel 4250mg/kg 3181



Absolute Standards, Inc.
800-368-1131
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Certified Reference Material CRM

M5970 M5971

R. J. 10/12/24



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

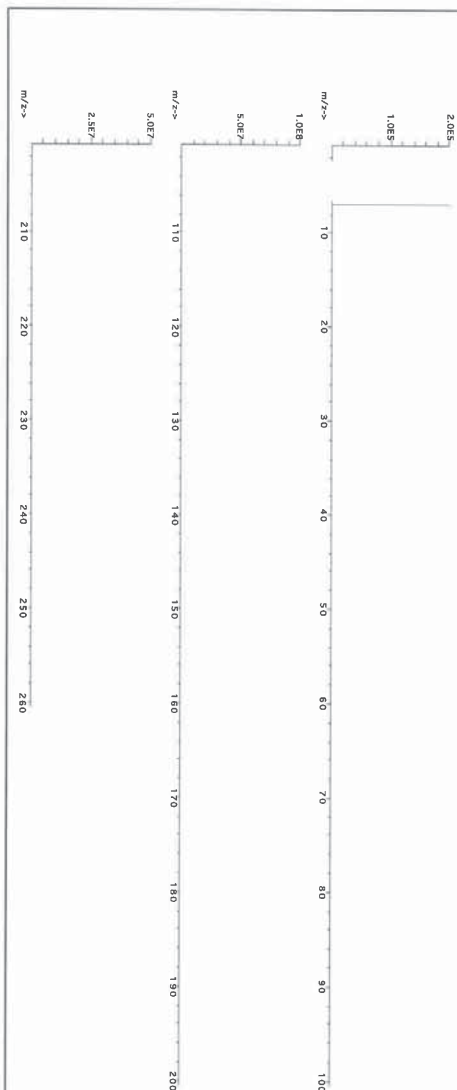
2.0% 5.0 (mL) Nitric Acid

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.

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Christiansburg, VA 24073 USA
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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).

1.0 ACCREDITATION / REGISTRATION

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 Lot#: T1 Metal

Starting Material Purity: 2094

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

X_1 = mean of Assay Method 1 with standard uncertainty $U_{CRM,1}$

$w_1 = (U_{CRM,1})^2 / (U_{CRM,1})^2$

$U_{CRM} = (U_{CRM,1})^2 / (U_{CRM,1})^2$

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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

- 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); K₂SiO₇ - no KF if silica not present); Organic Matrices (Dry ash at 450EC 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.	14 ppt
ICP-MS 48 amu	N/A	
ICP-OES 323.452 nm	0.0054 / 0.00092 µg/mL	1
ICP-OES 334.941 nm	0.0038 / 0.00028 µg/mL	1
ICP-OES 336.121 nm	0.0053 / 0.00034 µg/mL	1

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,
48Ca, [96X=2
14N17N2, 36Ar12C,
14N16O18O,
32S16O, 32S14N,
N/A

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; 540.565.3030; Fax: 540.565.3030; 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 Gaines

Certificate of Analysis

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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



Certificate of Analysis

300 Technology Drive
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inorganicventures.com

R: 2/22/24
MS-997

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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: CLPP-CAL-3
Lot Number: T2-MEB727800
Matrix: 7% (v/v) HNO₃
Value / Analyte(s):
1 000 µg/mL ea:
Arsenic, Lead,
Selenium, Thallium,
500 µg/mL ea:
Cadmium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Arsenic, As	1 000 ± 7 µg/mL	Cadmium, Cd	500.0 ± 2.2 µg/mL
Lead, Pb	1 000 ± 4 µg/mL	Selenium, Se	1 000 ± 6 µg/mL
Thallium, Tl	1 000 ± 7 µg/mL		

Density: 1.042 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
As	ICP Assay	3103a	100818
As	Calculated		See Sec. 4.2
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:

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

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

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

u_{ts} = 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

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

k = coverage factor = 2

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

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)

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

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

December 21, 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

- **December 21, 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



Certificate of Analysis

R: 08/22/24 M6058, M6059

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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: V2-MEB746172
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: 1.032 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).

<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

August 12, 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

- **August 12, 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





Refine your results. Redefine your industry.

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Certificate of Analysis

M6074
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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

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Joseph Burns
Custom VS Manager



Certifying Officer:

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EXP: 9/6/2029

1.0 ACCREDITATION / REGISTRATION

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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

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

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





CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

58025
101124
Manganese (Mn)

R-71113128

Lot #
Solvent: 24002546 Nitric Acid

Expiration Date:

101127

2% 80.0 (mL) Nitric Acid

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

SE-05 Balance Uncertainty

<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
Reviewed By:	<i>Pedro L. Renteria</i>
	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 MMN032020A1 1000 99.999 0.10 20.8 19.2322 19.2344 1000.1 2.0 15710-66-4 5 mg/m3 or-trt >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).

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

M6137
R-71013124

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: CGSI1
Lot Number: V2-SI744713
Matrix: tr. HNO₃
tr. HF
Value / Analyte(s): 1 000 µg/mL ea:
Silicon
Starting Material: Silica
Starting Material Lot#: 1771
Starting Material Purity: 99.9981%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 999 ± 6 µg/mL
Density: 1.003 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1	999 ± 5 µg/mL ICP Assay NIST SRM Traceable to 3150 Lot Number: S2-SI702546
Assay Method #2	1000 ± 7 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	<	0.000310	M	Eu	<	0.000310	O	Na	0.001656	M	Se	<	0.022000	M	Zn	<	0.002500	
M	Al		0.010787	M	Fe	<	0.027000	M	Nb	<	0.001300	s	Si	<		O	Zr	<	0.001900
M	As	<	0.001900	M	Ga	<	0.001300	M	Nd	<	0.000310	M	Sm	<	0.000310				
M	Au	<	0.000910	M	Gd	<	0.000310	M	Ni	<	0.005500	M	Sn		0.000096				
M	B		0.016180	M	Ge	<	0.001900	M	Os	<	0.000610	O	Sr		0.000092				
M	Ba		0.000096	M	Hf		0.000423	i	P	<		M	Ta		0.002542				
O	Be	<	0.000570	M	Hg	<	0.000610	M	Pb	<	0.000310	M	Tb	<	0.000310				
M	Bi	<	0.000310	M	Ho	<	0.000610	M	Pd	<	0.000610	M	Te	<	0.000910				
O	Ca		0.011557	M	In	<	0.000310	M	Pr	<	0.000310	M	Th	<	0.001900				
M	Cd	<	0.000310	M	Ir	<	0.000310	M	Pt	<	0.000310	M	Ti		0.001078				
M	Ce	<	0.000610	O	K		0.000577	M	Rb	<	0.009100	M	Tl	<	0.000310				
M	Co	<	0.001600	M	La	<	0.000310	M	Re	<	0.000310	M	Tm	<	0.000310				
M	Cr	<	0.010000	O	Li	<	0.000460	M	Rh	<	0.000310	M	U	<	0.000310				
M	Cs	<	0.000310	M	Lu	<	0.000310	M	Ru	<	0.000310	O	V	<	0.001300				
M	Cu	<	0.002500	O	Mg		0.001348	O	S	<	0.570000	M	W	<	0.001900				
M	Dy	<	0.000310	M	Mn	<	0.002500	M	Sb	<	0.000310	M	Y	<	0.000310				
M	Er	<	0.000310	M	Mo	<	0.000310	O	Sc	<	0.000590	M	Yb	<	0.000310				

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 - 28.09 +4 6 Si(OH)x(F)y2-

Chemical Compatibility -Soluble in HCl, HF, H3PO4 H2SO4 and HNO3 as the Si(OH)x(F)y2-. Avoid neutral to basic 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 silicic acid (silicic acid is soluble up to ∼100 ppm in water) in all dilute acids except HF.

Stability - 2-100 ppb levels - stability unknown - (alone or mixed with all other metals) as the Si(OH)x(F)y2-. 1-10,000 ppm single element solutions as the Si(OH)x(F)y2- chemically stable for years in 2-5 % HNO3 / trace HF in a LDPE container.

Si Containing Samples (Preparation and Solution) -Metal (Soluble in 1:1:1 H2O / HF / HNO3); Oxide - SiO2, amorphous (dissolve by heating in 1:1:1 H2O / HF / HNO3); Oxide - quartz (fuse in Pt0 with Na2CO3); Geological Samples(fuse in Pt0with Na2CO3 followed by HCl solution of the fuseate); Organic Matrices containing silicates and non volatile silicon compounds (dry ash at 4500C in Pt0 and dissolve by gently warming with 1:1:1 H2O / HF / H2SO4 or fuse / ash with Na2CO3 and dissolve fuseate with HCl / H2O); Silicone Oils - dimethyl silicones depolymerize to form volatile monomer units when heated (Measure directly in alcoholic KOH / xylene mixture where sample is treated first with the KOH at 60-1000C to "unzip" the Si- O-Si polymeric structure or digest with conc. H2SO4 / H2O2 followed by cooling and dissolution of the dehydrated silica with HF.) Note that the direct analysis of silicone oils in an organic solvent will result in false high results due to high vapor pressure of volatile monomer units like hexamethylcyclotrisiloxane. The KOH forms the K2+Si(CH3)2O= salt which is not volatile at room temperature.

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 28 amu	4000 - 8000 ppt	N/A	N2, 12C16O
ICP-OES 212.412 nm	0.02/0.01 µg/mL	1	Hf, Os, Mo, Ta
ICP-OES 251.611 nm	0.012/0.003 µg/mL	1	Ta, U, Zn, Th
ICP-OES 288.158 nm	0.03/0.004 µg/mL	1	Ta, Ce, Cr, Cd, Th

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

July 10, 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

- July 10, 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





M6138

R → 11/13/25



CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

58120
121824
Calcium (Ca)

Solvent: Nitric Acid

Lot #

24012496

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

121827
Ambient (20 °C)
10000
6UTB

2%
80.0 (mL)
Nitric Acid
5E-05 Balance Uncertainty
0.15 Flask Uncertainty

Weight shown below was diluted to (mL):

4000.1

10000

99.999

0.10

39.9

100.2537

100.2677

10001.4

20.0

471-34-1

5 mg/m3

onl-rat >2000mg/kg

3109a

SDS Information

Expanded

Uncertainty

(Solvent Safety Info. On Attached pg.)

NIST

SRM

LD50

CAS#

OSHA PEL (TWA)

Conc. (µg/mL)

Actual

Weight (g)

Target

Weight (g)

Assay

Purity (%)

Purity (%)

Nominal

Conc. (µg/mL)

Lot

Number

RM#

IN014

CAD030202B3

121827

10000

6UTB

5E-05

0.15

Balance Uncertainty

Flask Uncertainty

2%

80.0 (mL)

Nitric Acid

10000

6UTB

5E-05

0.15

Balance Uncertainty

Flask Uncertainty

2%

80.0 (mL)

Nitric Acid

10000

6UTB

5E-05

0.15

Balance Uncertainty

Flask Uncertainty

2%

80.0 (mL)

Nitric Acid

10000

6UTB

5E-05

0.15

Balance Uncertainty

Flask Uncertainty

2%

80.0 (mL)

Nitric Acid

10000

6UTB

5E-05

0.15

Balance Uncertainty

Flask Uncertainty

2%

80.0 (mL)

Nitric Acid

10000

6UTB

5E-05

0.15

Balance Uncertainty

Flask Uncertainty

2%

80.0 (mL)

Nitric Acid

10000

6UTB

5E-05

0.15

Balance Uncertainty

Flask Uncertainty

2%

80.0 (mL)

Nitric Acid

10000

6UTB

5E-05

0.15

Balance Uncertainty

Flask Uncertainty

2%

80.0 (mL)

Nitric Acid

10000

6UTB

5E-05

0.15

Balance Uncertainty

Flask Uncertainty

2%

80.0 (mL)

Nitric Acid

10000

6UTB

5E-05

0.15

Balance Uncertainty

Flask Uncertainty

2%

80.0 (mL)

Nitric Acid

10000

6UTB

5E-05

0.15

Balance Uncertainty

Flask Uncertainty

2%

80.0 (mL)

Nitric Acid

10000

6UTB

5E-05

0.15

Balance Uncertainty

Flask Uncertainty

2%

80.0 (mL)

Nitric Acid

10000

6UTB

5E-05

0.15

Balance Uncertainty

Flask Uncertainty

2%

80.0 (mL)

Nitric Acid

10000

6UTB

5E-05

0.15

Balance Uncertainty

Flask Uncertainty

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6UTB

5E-05

0.15

Balance Uncertainty

Flask Uncertainty

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80.0 (mL)

Nitric Acid

10000

6UTB

5E-05

0.15

Balance Uncertainty

Flask Uncertainty

2%

80.0 (mL)

Nitric Acid

10000

6UTB

5E-05

0.15

Balance Uncertainty

Flask Uncertainty

2%

80.0 (mL)

Nitric Acid

10000

6UTB

5E-05

0.15

Balance Uncertainty

Flask Uncertainty

2%

80.0 (mL)

Nitric Acid

10000

6UTB

5E-05

0.15

Balance Uncertainty

Flask Uncertainty

2%

80.0 (mL)

Nitric Acid

10000

6UTB

5E-05

0.15

Balance Uncertainty

Flask Uncertainty

2%

80.0 (mL)

Nitric Acid

10000

6UTB

5E-05

0.15

Balance Uncertainty

Flask Uncertainty

2%

80.0 (mL)

Nitric Acid

10000



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
Sb	<0.02	Ca	T	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<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
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
Be	<0.01	Cr	<0.02	Ga	30	Fe	<0.02	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<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
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
																W	<0.02
																U	<0.02
																V	<0.02
																Yb	<0.02
																Y	<0.02
																Zn	<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.
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- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number: 58126
Lot Number: 011025
Description: Iron (Fe)
Lot # R-113125
Solvent: 24012496 Nitric Acid

Expiration Date: 011028
Recommended Storage: Ambient (20 °C)
Weight (mL) 40.0
Nitric Acid

Nominal Concentration (µg/mL): 10000

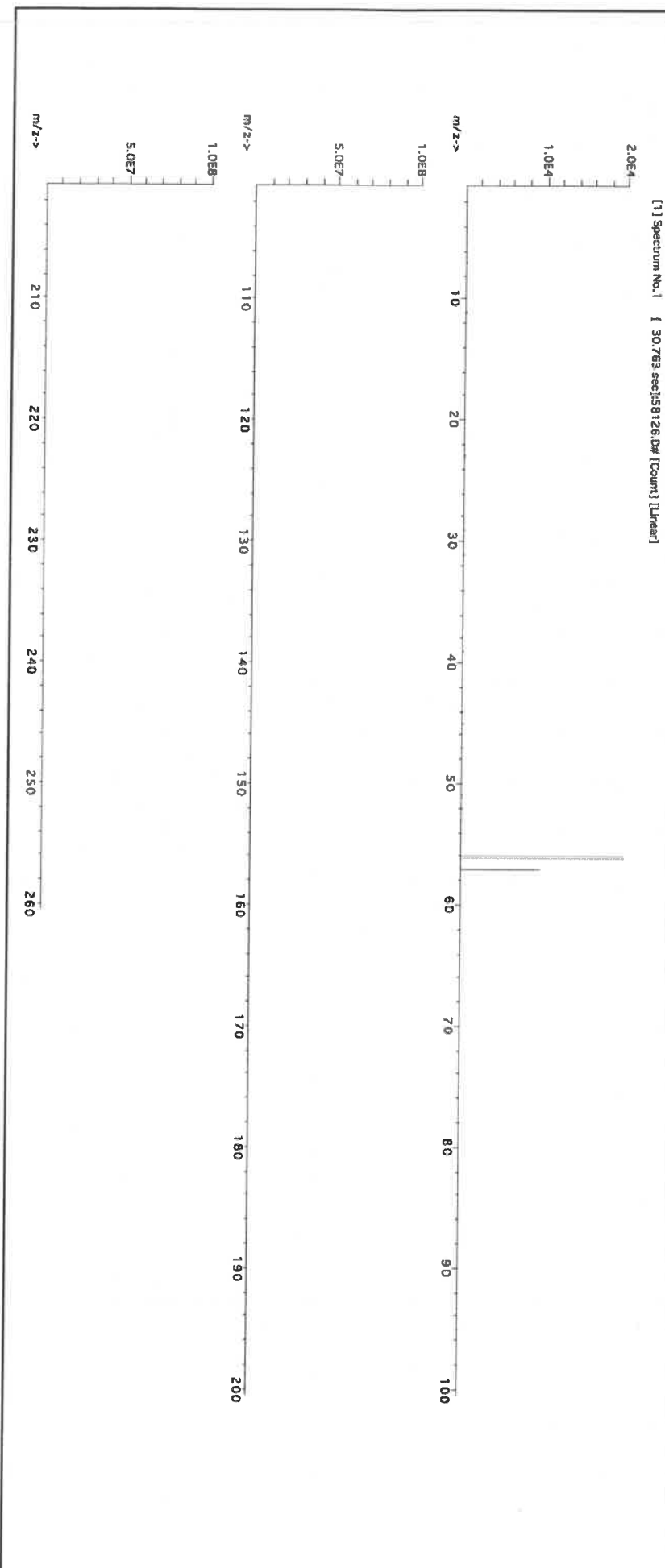
NIST Test Number: 6U7B

Weight shown below was diluted to (mL): 2000.07
5E-05 Balance Uncertainty
0.100 Flask Uncertainty

Formulated By:	Benson Chan	011025
Reviewed By:	Pedro L. Renteria	011025

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

1. Iron(III) nitrate nonahydrate (Fe) IN028 FED082023A1 10000 99.999 0.10 13.0 153.8534 ##### 10000.2 20.0 7782-61-8 1 mg/m³ or-rel 3250mg/kg 3126A





CERTIFIED WEIGHT REPORT:

Part Number: 57119
Lot Number: 103024
Description: Potassium (K)

R-2113125

Solvent: 24002546 Nitric Acid
Lot #

Expiration Date: 103027
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB

M6141
M6142
M6143

2% 80.0 (mL) Nitric Acid

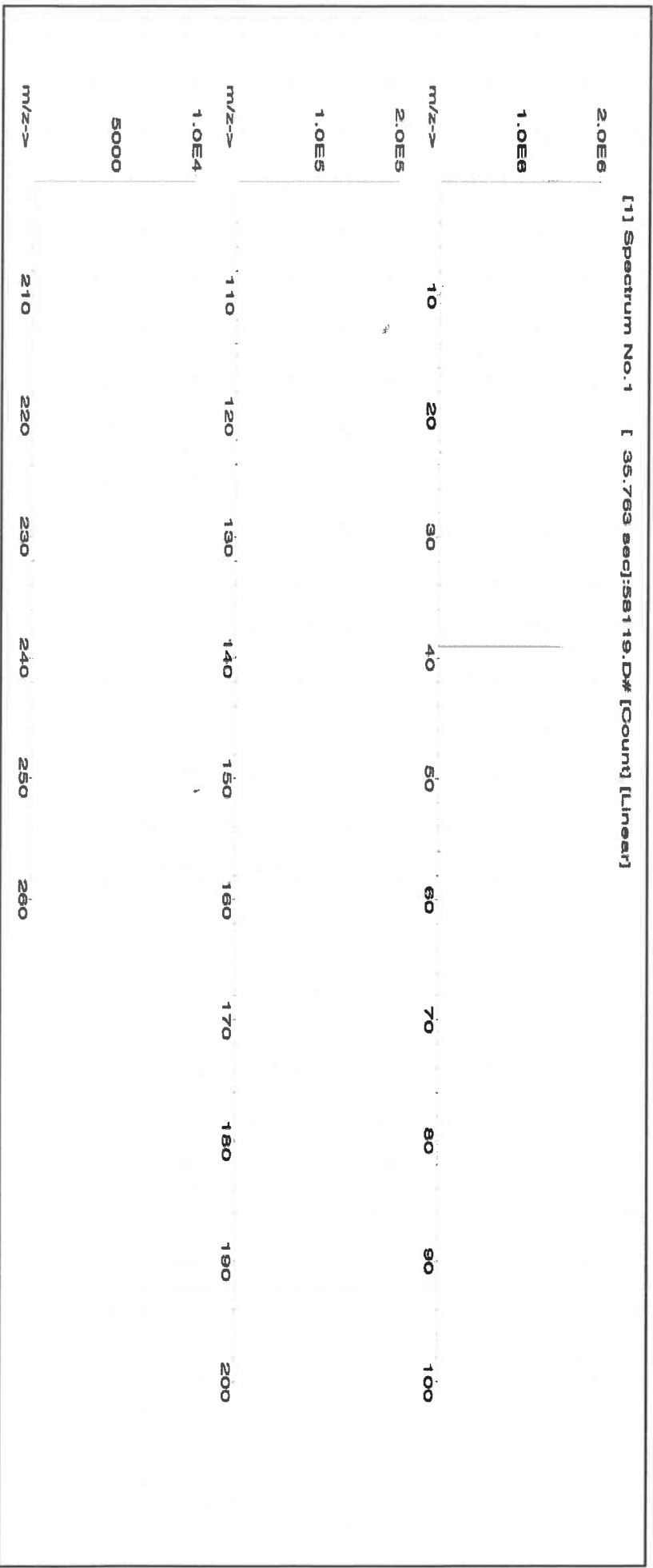
Weight shown below was diluted to (mL): 4000.1 0.15 Flask Uncertainty

<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
Reviewed By:	Pedro L. Renteria
	103024

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty		CAS#	OSHA PEL (TWA)	LD50	NIST SRM
										±	(µg/mL)				

1. Potassium nitrate (K) IN034 KD062022A1 10000 99.999 0.10 37.7 106.1040 ##### 10001.1 20.0 7757-79-1 5 mg/m3 orl-rat 3750 mg/kg 3141a

[1] Spectrum No. 1 [35.763 sec]:58119.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	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:

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: 58111
Lot Number: 072424
Description: Sodium (Na)

Lot # R-1113125
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

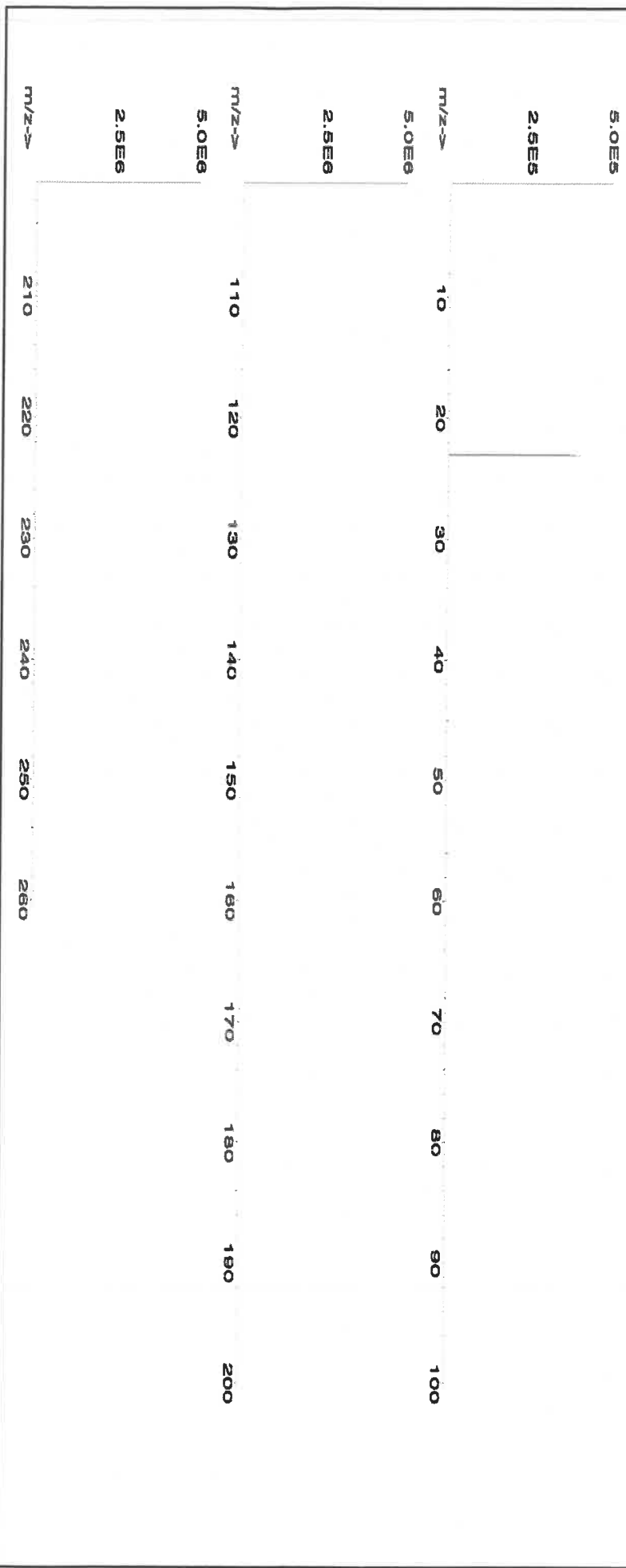
Formulated By:	Benson Chan	072424
Reviewed By:	Pedro L. Renteria	072424

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	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

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- * 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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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:

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

 **avantor™**



M6151

R → 11/15/25

Material No.: 9530-33
Batch No.: 22G2862015
Manufactured Date: 2022-06-15
Retest Date: 2027-06-14
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
ACS – Assay (as HCl) (by acid–base titrn)	36.5 – 38.0 %	37.9 %
ACS – Color (APHA)	≤ 10	5
ACS – Residue after Ignition	≤ 3 ppm	< 1 ppm
ACS – Specific Gravity at 60°/60°F	1.185 – 1.192	1.191
ACS – Bromide (Br)	≤ 0.005 %	< 0.005 %
ACS – Extractable Organic Substances	≤ 5 ppm	< 1 ppm
ACS – Free Chlorine (as Cl ₂)	≤ 0.5 ppm	< 0.5 ppm
Phosphate (PO ₄)	≤ 0.05 ppm	< 0.03 ppm
Sulfate (SO ₄)	≤ 0.5 ppm	< 0.3 ppm
Sulfite (SO ₃)	≤ 0.8 ppm	0.3 ppm
Ammonium (NH ₄)	≤ 3 ppm	< 1 ppm
Trace Impurities – Arsenic (As)	≤ 0.010 ppm	< 0.003 ppm
Trace Impurities – Aluminum (Al)	≤ 10.0 ppb	1.3 ppb
Arsenic and Antimony (as As)	≤ 5.0 ppb	< 3.0 ppb
Trace Impurities – Barium (Ba)	≤ 1.0 ppb	0.2 ppb
Trace Impurities – Beryllium (Be)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Bismuth (Bi)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Boron (B)	≤ 20.0 ppb	< 5.0 ppb
Trace Impurities – Cadmium (Cd)	≤ 1.0 ppb	< 0.3 ppb
Trace Impurities – Calcium (Ca)	≤ 50.0 ppb	163.0 ppb
Trace Impurities – Chromium (Cr)	≤ 1.0 ppb	0.7 ppb
Trace Impurities – Cobalt (Co)	≤ 1.0 ppb	< 0.3 ppb
Trace Impurities – Copper (Cu)	≤ 1.0 ppb	< 0.1 ppb
Trace Impurities – Gallium (Ga)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Germanium (Ge)	≤ 3.0 ppb	< 2.0 ppb
Trace Impurities – Gold (Au)	≤ 4.0 ppb	0.6 ppb
Heavy Metals (as Pb)	≤ 100 ppb	< 50 ppb
Trace Impurities – Iron (Fe)	≤ 15 ppb	6 ppb

>>> Continued on page 2 >>>

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

 **avantorsm**



Material No.: 9530-33
Batch No.: 22G2862015

Test	Specification	Result
Trace Impurities – Lead (Pb)	≤ 1.0 ppb	< 0.5 ppb
Trace Impurities – Lithium (Li)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Magnesium (Mg)	≤ 10.0 ppb	2.9 ppb
Trace Impurities – Manganese (Mn)	≤ 1.0 ppb	< 0.4 ppb
Trace Impurities – Mercury (Hg)	≤ 0.5 ppb	0.1 ppb
Trace Impurities – Molybdenum (Mo)	≤ 10.0 ppb	< 3.0 ppb
Trace Impurities – Nickel (Ni)	≤ 4.0 ppb	< 0.3 ppb
Trace Impurities – Niobium (Nb)	≤ 1.0 ppb	0.8 ppb
Trace Impurities – Potassium (K)	≤ 9.0 ppb	< 2.0 ppb
Trace Impurities – Selenium (Se), For Information Only		< 1.0 ppb
Trace Impurities – Silicon (Si)	≤ 100.0 ppb	< 10.0 ppb
Trace Impurities – Silver (Ag)	≤ 1.0 ppb	0.5 ppb
Trace Impurities – Sodium (Na)	≤ 100.0 ppb	2.3 ppb
Trace Impurities – Strontium (Sr)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Tantalum (Ta)	≤ 1.0 ppb	1.6 ppb
Trace Impurities – Thallium (Tl)	≤ 5.0 ppb	< 2.0 ppb
Trace Impurities – Tin (Sn)	≤ 5.0 ppb	4.0 ppb
Trace Impurities – Titanium (Ti)	≤ 1.0 ppb	1.5 ppb
Trace Impurities – Vanadium (V)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Zinc (Zn)	≤ 5.0 ppb	0.8 ppb
Trace Impurities – Zirconium (Zr)	≤ 1.0 ppb	0.3 ppb

>>> Continued on page 3 >>>

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



Material No.: 9530-33
Batch No.: 22G2862015

Test	Specification	Result
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For Laboratory, Research, or Manufacturing Use
Product Information (not specifications):
Appearance (clear, fuming liquid)
Meets ACS Specifications
Storage Condition: Store below 25 °C.

Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC

A handwritten signature in cursive script that reads 'Jamie Ethier'.
Jamie Ethier
Vice President Global Quality

Nitric Acid 69%
CMOS

avantor™



R- 0210212025

m - 6158

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

 **avantorsTM**



Material No.: 9606-03
Batch No.: 24D1062002

Test	Specification	Result
Trace Impurities – Niobium (Nb)	≤ 50.0 ppb	< 1.0 ppb
Trace Impurities – Potassium (K)	≤ 50 ppb	16 ppb
Trace Impurities – Silicon (Si)	≤ 50 ppb	< 10 ppb
Trace Impurities – Silver (Ag)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities – Sodium (Na)	≤ 150.0 ppb	< 5.0 ppb
Trace Impurities – Strontium (Sr)	≤ 30.0 ppb	< 1.0 ppb
Trace Impurities – Tantalum (Ta)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities – Thallium (Tl)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities – Tin (Sn)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities – Titanium (Ti)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Vanadium (V)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Zinc (Zn)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities – Zirconium (Zr)	≤ 10.0 ppb	< 1.0 ppb
Particle Count – 0.5 µm and greater	≤ 60 par/ml	10 par/ml
Particle Count – 1.0 µm and greater	≤ 10 par/ml	3 par/ml

>>> Continued on page 3 >>>

Nitric Acid 69%
CMOS

 **avantor™**



Material No.: 9606-03
Batch No.: 24D1062002

Test	Specification	Result
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For Microelectronic Use

Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC



Jamie Croak
Director Quality Operations, Bioscience Production

300 Technology Drive
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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:	QCP-CICV-1		
Lot Number:	V2-MEB744107		
Matrix:	7% (v/v) HNO ₃		
Value / Analyte(s):	2 500 µg/mL ea:		
	Calcium,		Potassium,
	Magnesium,		Sodium,
	1 000 µg/mL ea:		
	Aluminum,		Barium,
	500 µg/mL ea:		
	Iron,		
	250 µg/mL ea:		
	Nickel,		Vanadium,
	Zinc,		Cobalt,
	Manganese,		
	125 µg/mL ea:		
	Silver,		Copper,
	100 µg/mL ea:		
	Chromium,		
	25 µg/mL ea:		
	Beryllium		

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
Aluminum, Al	1 000 ± 4 µg/mL	Barium, Ba	1 000 ± 6 µg/mL
Beryllium, Be	24.98 ± 0.12 µg/mL	Calcium, Ca	2 500 ± 8 µg/mL
Chromium, Cr	99.9 ± 0.6 µg/mL	Cobalt, Co	250.2 ± 1.2 µg/mL
Copper, Cu	125.0 ± 0.5 µg/mL	Iron, Fe	500.0 ± 2.2 µg/mL
Magnesium, Mg	2 500 ± 11 µg/mL	Manganese, Mn	249.9 ± 1.1 µg/mL
Nickel, Ni	250.0 ± 1.2 µg/mL	Potassium, K	2 500 ± 11 µg/mL
Silver, Ag	125.0 ± 0.6 µg/mL	Sodium, Na	2 500 ± 11 µg/mL
Vanadium, V	250.0 ± 1.1 µg/mL	Zinc, Zn	249.9 ± 1.1 µg/mL

Density: 1.081 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
Cu	ICP Assay	3114	120618
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	200413
Na	Gravimetric		See Sec. 4.2
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
V	ICP Assay	3165	160906
V	EDTA	928	928
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

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), <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

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

May 22, 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

- **May 22, 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:

Justin Dirico
Stock Processing Supervisor



Certificate Approved By:

Jodie Wall
Stock VSM Coordinator



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



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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: QCP-CICV-2
Lot Number: U2-MEB733713
Matrix: 3% (w/v) Tartaric acid
1% (v/v) HNO₃
Value / Analyte(s): 500 µg/mL ea:
Antimony

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
Antimony, Sb	500.0 ± 2.8 µg/mL		

Density: 1.017 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Sb	ICP Assay	3102a	140911

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:

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

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

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

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

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)

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). <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

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 01, 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

- **June 01, 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



300 Technology Drive
Christiansburg, VA 24073 USA
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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: QCP-CICV-3
Lot Number: V2-MEB749572
Matrix: 7% (v/v) HNO₃
Value / Analyte(s):
500 µg/mL ea:
Arsenic, Lead,
Selenium, Thallium,
250 µg/mL ea:
Cadmium

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
Arsenic, As	500.0 ± 3.1 µg/mL	Cadmium, Cd	250.1 ± 1.1 µg/mL
Lead, Pb	500.0 ± 2.3 µg/mL	Selenium, Se	500.0 ± 3.2 µg/mL
Thallium, Tl	500.0 ± 3.0 µg/mL		

Density: 1.040 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

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), <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

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

January 02, 2025

- 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 02, 2030**

- 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:

Justin Dirico
Stock Processing Supervisor



Certificate Approved By:

Jodie Wall
Stock VSM Coordinator



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



Hydrogen Peroxide, 30%

CMOS

(Stabilized)

M-6170

R.Date . 8-05/20/2025

avantor™



Material No.: 2190-03

Batch No.: 24D1961001

Test	Specification	Result
Trace Impurities – Manganese (Mn)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Molybdenum (Mo)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities – Nickel (Ni)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities – Niobium (Nb)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Potassium (K)	≤ 600.0 ppb	176.7 ppb
Trace Impurities – Silicon (Si)	≤ 100.0 ppb	< 10.0 ppb
Trace Impurities – Silver (Ag)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Sodium (Na)	≤ 100.0 ppb	< 5.0 ppb
Trace Impurities – Strontium (Sr)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Tantalum (Ta)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities – Thallium (Tl)	≤ 50.0 ppb	< 5.0 ppb
Trace Impurities – Tin (Sn)	190.0 – 500.0 ppb	272.3 ppb
Trace Impurities – Titanium (Ti)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Vanadium (V)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Zinc (Zn)	≤ 50 ppb	< 1 ppb
Trace Impurities – Zirconium (Zr)	≤ 10.0 ppb	< 1.0 ppb
Particle Count – 0.2 µm and greater	≤ 1175 par/ml	202 par/ml
Particle Count – 0.5 µm and greater	≤ 100 par/ml	33 par/ml

>>> Continued on page 3 >>>

Hydrogen Peroxide, 30%

CMOS

(Stabilized)

 **avantorsTM**



Material No.: 2190-03
Batch No.: 24D1961001

Test	Specification	Result
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For Microelectronic Use

Country of Origin: USA

Packaging Site: Paris Mfg Ctr & DC



Michelle Bales
Sr. Manager, Quality Assurance

Hydrogen Peroxide, 30%
CMOS
(Stabilized)



Material No.: 2190-03
Batch No.: 24D1961001
Manufactured Date: 2024-04-17
Expiration Date: 2025-10-16
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay (H ₂ O ₂)	30.0 – 32.0 %	31.6 %
Color (APHA)	≤ 10	< 5
Free Acid (μeq/g)	≤ 0.2	0.1
Residue after Evaporation	≤ 10 ppm	2 ppm
Ammonium (NH ₄)	≤ 3 ppm	< 3 ppm
Chloride (Cl)	≤ 0.2 ppm	< 0.2 ppm
Nitrate (NO ₃)	≤ 2 ppm	< 2 ppm
Phosphate (PO ₄)	≤ 1 ppm	1 ppm
Sulfate (SO ₄)	≤ 3 ppm	< 3 ppm
Trace Impurities – Aluminum (Al)	≤ 70.0 ppb	< 5.0 ppb
Arsenic and Antimony (as As)	≤ 10.0 ppb	< 10.0 ppb
Trace Impurities – Barium (Ba)	≤ 20.0 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)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Calcium (Ca)	≤ 50.0 ppb	< 1.0 ppb
Trace Impurities – Chromium (Cr)	≤ 20.0 ppb	1.5 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)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities – Germanium (Ge)	≤ 10.0 ppb	< 10.0 ppb
Trace Impurities – Gold (Au)	≤ 10.0 ppb	< 5.0 ppb
Heavy Metals (as Pb)	≤ 500.0 ppb	< 250.0 ppb
Trace Impurities – Iron (Fe)	≤ 50.0 ppb	4.6 ppb
Trace Impurities – Lead (Pb)	≤ 10.0 ppb	< 10.0 ppb
Trace Impurities – Lithium (Li)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Magnesium (Mg)	≤ 10.0 ppb	< 1.0 ppb

>>> Continued on page 2 >>>



Certified Reference Material CRM



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

CERTIFIED WEIGHT REPORT:

Part Number: 58112
Lot Number: 011525
Description: Magnesium (Mg)
Solvent: 24012496 Nitric Acid

Expiration Date: 011528
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 2000.07
5E-05 Balance Uncertainty
0.100 Flask Uncertainty

Formulated By:	Benson Chan	011525
Reviewed By:	Pedro L. Rentas	011525

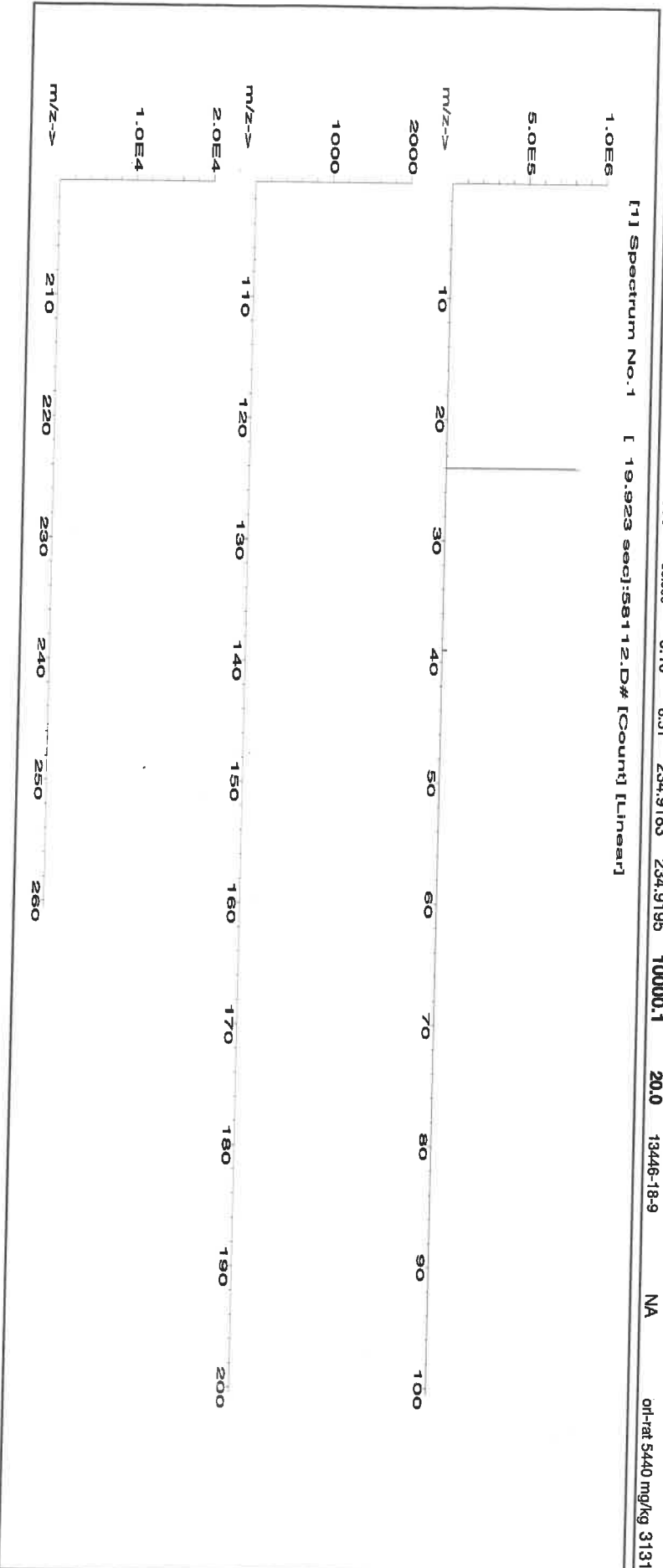
Compound

1. Magnesium nitrate hexahydrate (Mg) IN030 MGD05023A1 10000 99.999 0.10 8.51 234.9183 234.9195 10000.1 20.0 13446-18-9 NA off-ret 5440 mg/kg 3131a

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
Magnesium nitrate hexahydrate (Mg)	011525	10000	99.999	0.10	8.51	234.9183	234.9195	10000.1	20.0	13446-18-9	NA	off-ret 5440 mg/kg	3131a

SDS Information

(Solvent Safety Info. On Attached pg.)





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	T	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ku	<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).

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

M6174
R → S1/S124

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution	
Catalog Number:	CLPP-CAL-1	
Lot Number:	V2-MEB742428	
Matrix:	5% (v/v) HNO ₃	
Value / Analyte(s):	5 000 µg/mL ea:	
	Calcium,	Potassium,
	Magnesium,	Sodium,
	2 000 µg/mL ea:	
	Aluminum,	Barium,
	1 000 µg/mL ea:	
	Iron,	
	500 µg/mL ea:	
	Nickel,	Vanadium,
	Zinc,	Cobalt,
	Manganese,	
	250 µg/mL ea:	
	Silver,	Copper,
	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	50.03 ± 0.30 µg/mL	Calcium, Ca	5 000 ± 16 µg/mL
Chromium, Cr	200.0 ± 1.1 µg/mL	Cobalt, Co	500.0 ± 2.3 µg/mL
Copper, Cu	250.0 ± 1.1 µg/mL	Iron, Fe	1 000 ± 4 µg/mL
Magnesium, Mg	5 000 ± 22 µg/mL	Manganese, Mn	499.9 ± 2.2 µg/mL
Nickel, Ni	500.1 ± 2.3 µg/mL	Potassium, K	5 000 ± 22 µg/mL
Silver, Ag	250.0 ± 1.1 µg/mL	Sodium, Na	5 000 ± 22 µg/mL
Vanadium, V	500.0 ± 2.2 µg/mL	Zinc, Zn	500.0 ± 2.2 µg/mL

Density: 1.117 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
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Co	ICP Assay	3113	190630
Co	EDTA	928	928
Cr	ICP Assay	3112a	170630
Cu	ICP Assay	3114	120618
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	200413
Na	Gravimetric		See Sec. 4.2
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
V	ICP Assay	3165	160906
V	EDTA	928	928
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

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). <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

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; info@inorganicventures.com;

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 22, 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

- **March 22, 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:

Jodie Wall
Stock VSM Coordinator



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director





CERTIFIED WEIGHT REPORT:

Part Number: **57038**
Lot Number: **092724**
Description: **Strontium (Sr)**

57038
092724
Strontium (Sr)

Lot # **24002546** Nitric Acid

Expiration Date: **092727**

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

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

NIST Test Number: **8UTB**

Weight shown below was diluted to (mL): **2000.07**

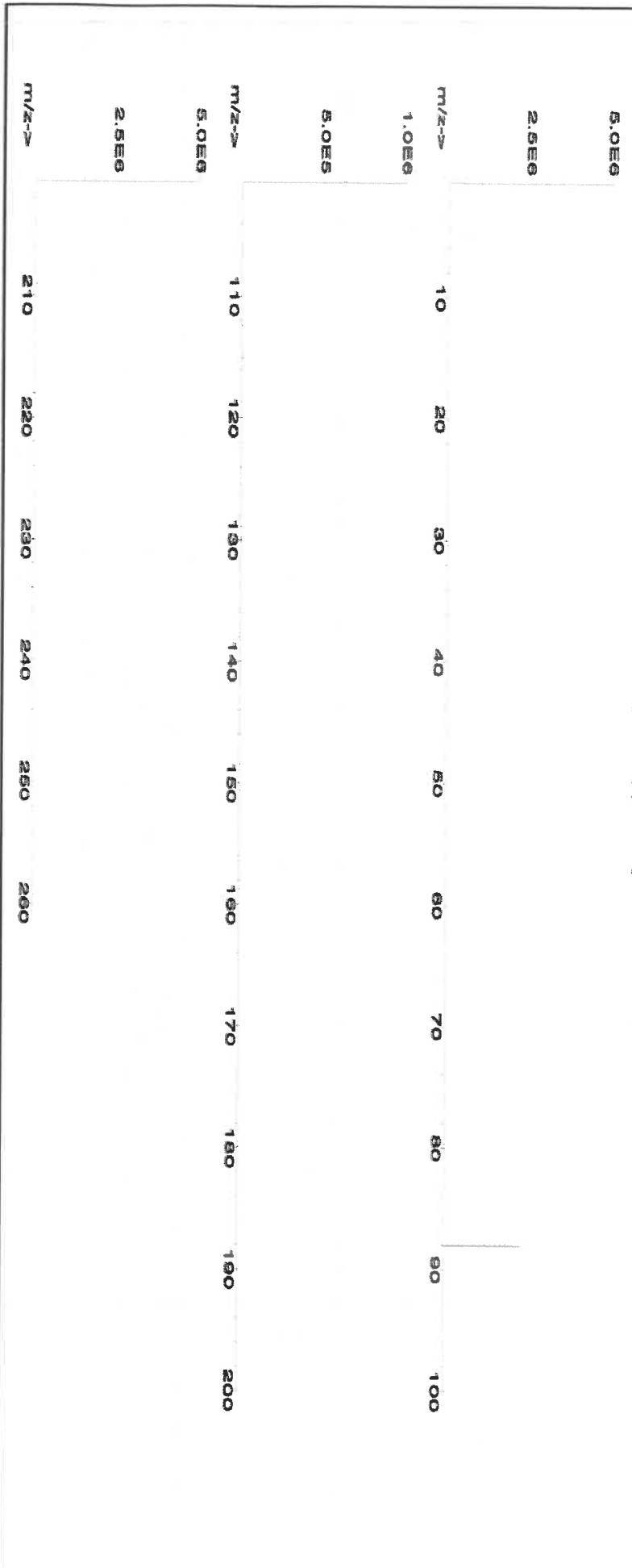
5E-05 Balance Uncertainty
0.100 Flask Uncertainty

2% 40.0 (mL) Nitric Acid

<i>[Signature]</i>	
Formulated By:	Benson Chan
	092724
Reviewed By:	Pedro L. Rentas
	092724

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)
Strontium nitrate (Sr)	IN017 SR2022018A1	1000	99.997	0.10	41.2	4.85470	4.85481	1000.0	2.0
						10042-76-9	NA		or -rel >2000mg/kg 3153a

[1] Spectrum No. 1 [14.465 sec]:68138.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	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	T	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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:
Lot Number:
Description:

57042
080525
Molybdenum (Mo)

57042
080525
Molybdenum (Mo)

57042
080525
Molybdenum (Mo)

Solvent:
Ammonium hydroxide
ASTM Type 1 Water

Expiration Date:

080528

Recommended Storage:

Ambient (15 - 30 °C)

Nominal Concentration (µg/mL):

1000

NIST Test Number:

6UTB

Volume shown below was diluted to (mL):

1999.41

5E-05

Balance Uncertainty
Flesh Uncertainty

0.5%

10.0

Ammonium hydroxide

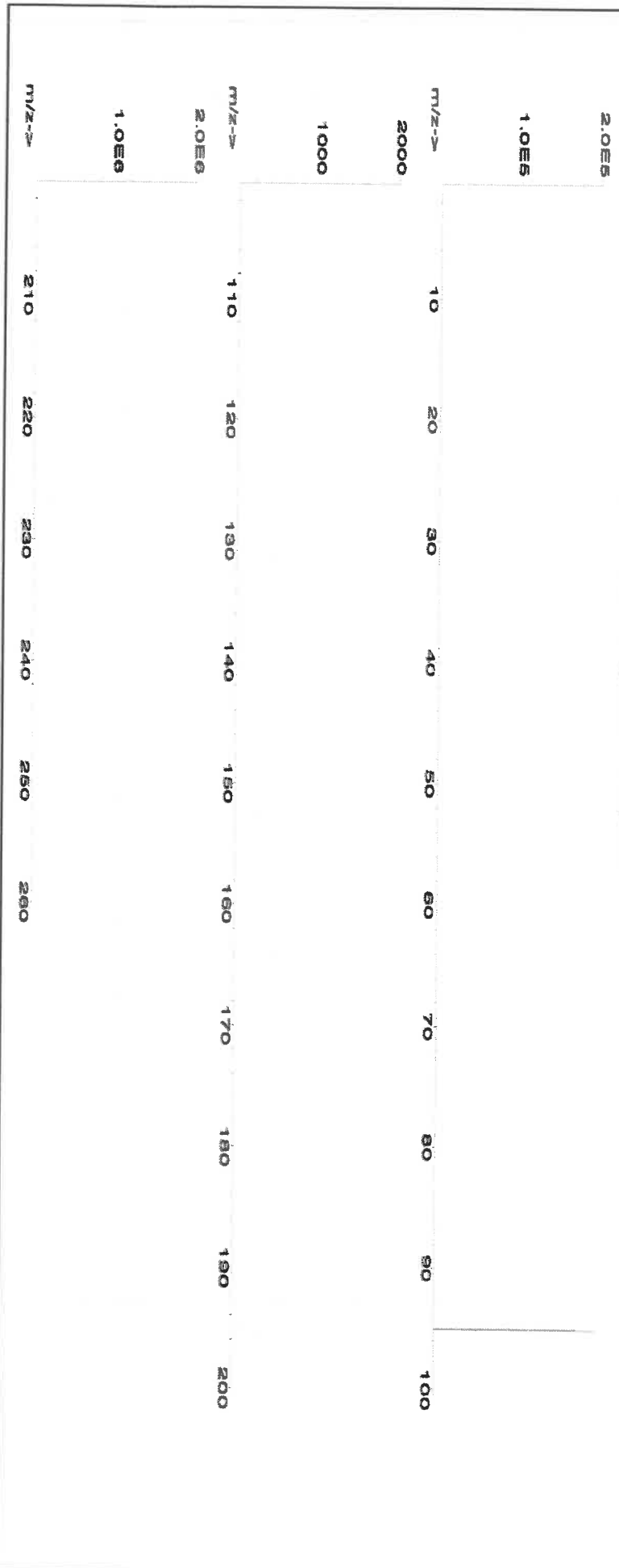
Formulated By:	Benson Chan	080525
Reviewed By:	Pedro L. Rentes	080525

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. Ammonium molybdate (Mo) 58142 112322 0.1000 200.0 0.084 1000 10001.4 1000.5 2.2 13106-76-8 5 mg(Mo)/mL 0.1-0.333 mg/kg 3134

[1] Spectrum No. 1 [8.594 sec]:57042.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
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<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
Ba	<0.02	Ce	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<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
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Te	<0.02
														Tb	<0.02
														Ti	<0.02
														Th	<0.02
														Tm	<0.02
														Sn	<0.02
														Tl	<0.02
														U	<0.02
														V	<0.02
														Yb	<0.02
														Y	<0.02
														Zn	<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 by an ISO17025 certified organization with weights traceable through NIST to the SI kilogram (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).
- Rev 1.0, 2/25/2025



CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

57082
031525
Lead (Pb)

Lot #

24014457 Nitric Acid

Expiration Date:

031528

2%

40.0

Nitric Acid

Recommended Storage:

Ambient (20 °C)

Nominal Concentration (µg/mL):

1000

NIST Test Number:

6UTB

Weight shown below was diluted to (mL):

2000.07

0.10 Flask Uncertainty

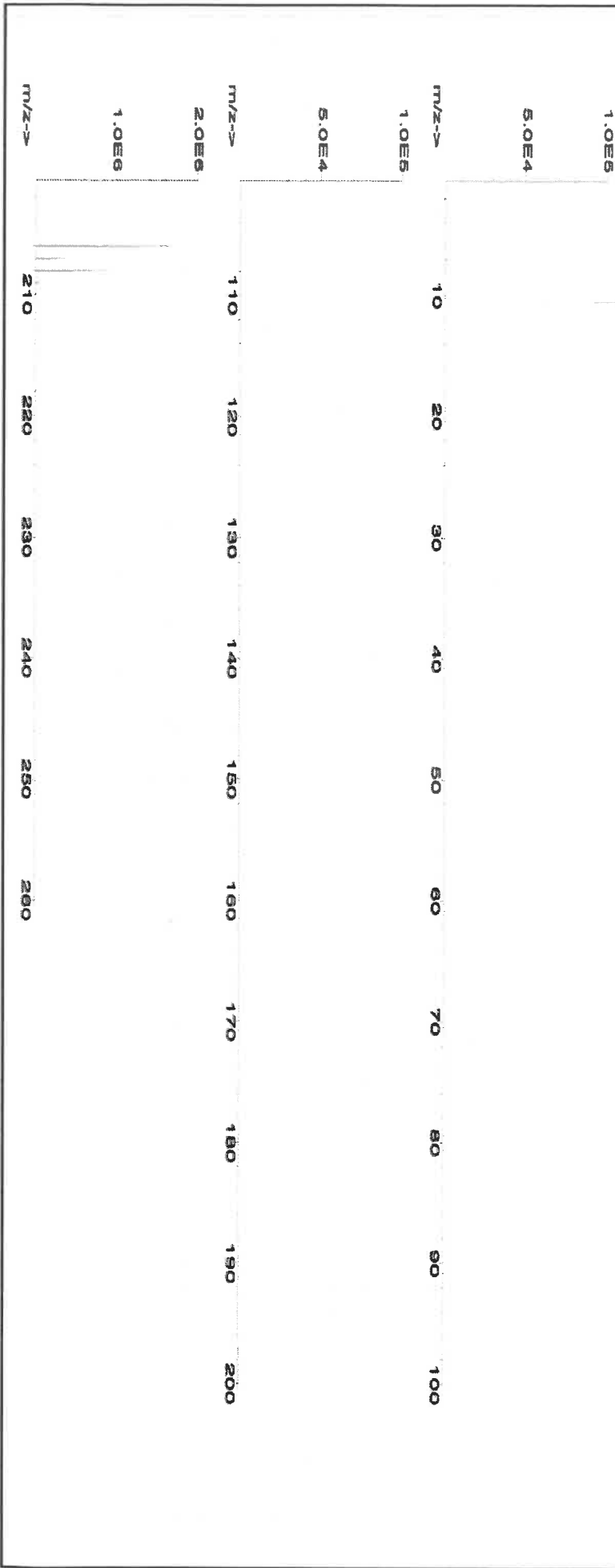
SE-05 Balance Uncertainty

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. Lead(II) nitrate (Pb) IN029 PBD122016A1 1000 99.999 0.10 62.5 3.20015 3.20067 1000.2 2.0 10099-74-8 0.05 mg/m3 Intrins-ral 93 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	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	Tc	<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	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	Se	<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).

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M6179
R → 612/24

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: 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:

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

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

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

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

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). <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	<u>73Ge16O</u> , <u>178Hf+2</u>
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



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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:	W2-MEB752149
Matrix:	5% (v/v) HNO ₃

M6180
R-37/22/23

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	200.2 ± 0.7 µg/mL	Arsenic, As	80.1 ± 0.5 µg/mL
Barium, Ba	20.02 ± 0.12 µg/mL	Beryllium, Be	20.02 ± 0.11 µg/mL
Boron, B	30.02 ± 0.15 µg/mL	Cadmium, Cd	20.04 ± 0.09 µg/mL
Calcium, Ca	100.1 ± 0.3 µg/mL	Cerium, Ce	200.2 ± 1.0 µg/mL
Chromium, Cr	40.02 ± 0.26 µg/mL	Cobalt, Co	20.03 ± 0.09 µg/mL
Copper, Cu	30.03 ± 0.13 µg/mL	Iron, Fe	300.3 ± 1.3 µg/mL
Lead, Pb	100.1 ± 0.5 µg/mL	Lithium, Li	20.03 ± 0.09 µg/mL
Magnesium, Mg	200.2 ± 0.9 µg/mL	Manganese, Mn	19.99 ± 0.09 µg/mL
Mercury, Hg	70.0 ± 0.3 µg/mL	Nickel, Ni	50.05 ± 0.22 µg/mL
Phosphorus, P	600.5 ± 2.9 µg/mL	Potassium, K	1 001 ± 4 µg/mL
Selenium, Se	200.2 ± 1.1 µg/mL	Silver, Ag	7.52 ± 0.03 µg/mL
Sodium, Na	300.3 ± 1.3 µg/mL	Strontium, Sr	20.02 ± 0.10 µg/mL
Thallium, Tl	200.2 ± 1.0 µg/mL	Vanadium, V	30.02 ± 0.13 µg/mL
Zinc, Zn	20.05 ± 0.09 µg/mL		

Density: 1.037 g/mL (measured at 20 ± 5 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	160729
Ag	Volhard	999c	999c
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
As	ICP Assay	3103a	100818
B	ICP Assay	3107	190605
B	Calculated		See Sec. 4.2
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	160830
Ce	EDTA	928	928
Co	ICP Assay	3113	190630
Co	EDTA	928	928
Cr	ICP Assay	3112a	170630
Cu	ICP Assay	3114	120618
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	3152a	200413
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	ICP Assay	3165	160906
V	EDTA	928	928
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of $k = 2$.

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

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° - 25° C to minimize the effects of transpiration. Use at 20° ± 5° 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; Info@inorganicventures.com;

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

April 08, 2025

- 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

- **April 08, 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:

Justin Dirico
Stock Processing Supervisor



Certificate Approved By:

Jodie Wall
Stock VSM Coordinator



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

Certificate of Analysis

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

M6181
R → 7/22/28

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: V2-MEB743480
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 ± 0.5 µg/mL	Molybdenum, Mo	40.05 ± 0.22 µg/mL
Silica, SiO ₂	200.3 ± 1.4 µg/mL	Tin, Sn	70.1 ± 0.4 µg/mL
Titanium, Ti	20.03 ± 0.12 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
Sb	ICP Assay	3102a	140911
SiO ₂	Calculated		See Sec. 4.2
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:

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

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

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; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

May 07, 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

- **May 07, 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:

Justin Dirico
Stock Processing Supervisor



Certificate Approved By:

Thomas Kozikowski
Stock VS Manager



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director





R→03/06/24

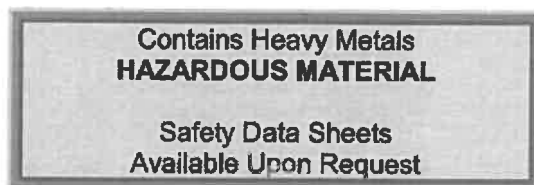
Instructions for QATS Reference Material: ICP-AES ICS

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.



M6182

(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,





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.



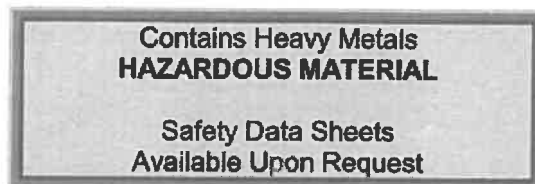
Instructions for QATS Reference Material: ICP-AES ICS

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.



M6184

(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,





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.

Nitric Acid 69%
CMOS



M6187

R.D :- 08/08/25

Material No.: 9606-03
Batch No.: 24H0162012
Manufactured Date: 2024-06-28
Retest Date: 2029-06-27
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay (HNO ₃)	69.0 – 70.0 %	69.7 %
Appearance	Passes Test	Passes Test
Color (APHA)	≤ 10	5
Residue after Ignition	≤ 2 ppm	< 1 ppm
Chloride (Cl)	≤ 0.08 ppm	0.03 ppm
Phosphate (PO ₄)	≤ 0.10 ppm	< 0.03 ppm
Sulfate (SO ₄)	≤ 0.2 ppm	< 0.2 ppm
Trace Impurities – Aluminum (Al)	≤ 40.0 ppb	< 1.0 ppb
Arsenic and Antimony (as As)	≤ 5.0 ppb	< 2.0 ppb
Trace Impurities – Barium (Ba)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Beryllium (Be)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Bismuth (Bi)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities – Boron (B)	≤ 10.0 ppb	0.1 ppb
Trace Impurities – Cadmium (Cd)	≤ 50 ppb	< 1 ppb
Trace Impurities – Calcium (Ca)	≤ 50.0 ppb	0.3 ppb
Trace Impurities – Chromium (Cr)	≤ 30.0 ppb	0.1 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	< 1 ppb
Trace Impurities – Gold (Au)	≤ 20 ppb	< 1 ppb
Heavy Metals (as Pb)	≤ 100 ppb	< 50 ppb
Trace Impurities – Iron (Fe)	≤ 40.0 ppb	< 1.0 ppb
Trace Impurities – Lead (Pb)	≤ 20.0 ppb	< 1.0 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	< 1.0 ppb

>>> Continued on page 2 >>>

Nitric Acid 69%
CMOS



Material No.: 9606-03
Batch No.: 24H0162012

Test	Specification	Result
Trace Impurities – Niobium (Nb)	≤ 50.0 ppb	< 1.0 ppb
Trace Impurities – Potassium (K)	≤ 50 ppb	< 1 ppb
Trace Impurities – Silicon (Si)	≤ 50 ppb	1 ppb
Trace Impurities – Silver (Ag)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities – Sodium (Na)	≤ 150.0 ppb	< 1.0 ppb
Trace Impurities – Strontium (Sr)	≤ 30.0 ppb	< 1.0 ppb
Trace Impurities – Tantalum (Ta)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Thallium (Tl)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Tin (Sn)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities – Titanium (Ti)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Vanadium (V)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Zinc (Zn)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities – Zirconium (Zr)	≤ 10.0 ppb	< 1.0 ppb
Particle Count – 0.5 µm and greater	≤ 60 par/ml	13 par/ml
Particle Count – 1.0 µm and greater	≤ 10 par/ml	5 par/ml

>>> Continued on page 3 >>>

Nitric Acid 69%
CMOS

 **avantorsTM**



Material No.: 9606-03
Batch No.: 24H0162012

Test	Specification	Result
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For Microelectronic Use

Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC



Jamie Croak
Director Quality Operations, Bioscience Production

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



M6200
R.O → 08/25/25

Material No.: 9530–33
Batch No.: 24D1562005
Manufactured Date: 2024–03–18
Retest Date: 2029–03–17
Revision No.: 0

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 ppm
ACS – Specific Gravity at 60°/60°F	1.185 – 1.192	1.192
ACS – Bromide (Br)	≤ 0.005 %	< 0.005 %
ACS – Extractable Organic Substances	≤ 5 ppm	< 1 ppm
ACS – Free Chlorine (as Cl ₂)	≤ 0.5 ppm	< 0.5 ppm
Phosphate (PO ₄)	≤ 0.05 ppm	0.03 ppm
Sulfate (SO ₄)	≤ 0.5 ppm	< 0.3 ppm
Sulfite (SO ₃)	≤ 0.8 ppm	0.3 ppm
Ammonium (NH ₄)	≤ 3 ppm	< 1 ppm
Trace Impurities – Arsenic (As)	≤ 0.010 ppm	< 0.003 ppm
Trace Impurities – Aluminum (Al)	≤ 10.0 ppb	< 5.0 ppb
Arsenic and Antimony (as As)	≤ 5.0 ppb	< 3.0 ppb
Trace Impurities – Barium (Ba)	≤ 1.0 ppb	< 1.0 ppb
Trace Impurities – Beryllium (Be)	≤ 1.0 ppb	< 1.0 ppb
Trace Impurities – Bismuth (Bi)	≤ 10.0 ppb	< 10.0 ppb
Trace Impurities – Boron (B)	≤ 20.0 ppb	2.2 ppb
Trace Impurities – Cadmium (Cd)	≤ 1.0 ppb	< 1.0 ppb
Trace Impurities – Calcium (Ca)	≤ 50.0 ppb	31.0 ppb
Trace Impurities – Chromium (Cr)	≤ 1.0 ppb	0.5 ppb
Trace Impurities – Cobalt (Co)	≤ 1.0 ppb	0.2 ppb
Trace Impurities – Copper (Cu)	≤ 1.0 ppb	< 0.1 ppb
Trace Impurities – Gallium (Ga)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Germanium (Ge)	≤ 3.0 ppb	< 2.0 ppb
Trace Impurities – Gold (Au)	≤ 4.0 ppb	< 0.2 ppb
Heavy Metals (as Pb)	≤ 100 ppb	< 50 ppb
Trace Impurities – Iron (Fe)	≤ 15 ppb	3 ppb

>>> Continued on page 2 >>>

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



Material No.: 9530-33
Batch No.: 24D1562005

Test	Specification	Result
Trace Impurities – Lead (Pb)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Lithium (Li)	≤ 1.0 ppb	< 0.1 ppb
Trace Impurities – Magnesium (Mg)	≤ 10.0 ppb	2.2 ppb
Trace Impurities – Manganese (Mn)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Mercury (Hg)	≤ 0.5 ppb	< 0.1 ppb
Trace Impurities – Molybdenum (Mo)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities – Nickel (Ni)	≤ 4.0 ppb	0.2 ppb
Trace Impurities – Niobium (Nb)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Potassium (K)	≤ 9.0 ppb	< 1.0 ppb
Trace Impurities – Selenium (Se), For Information Only		< 1.0 ppb
Trace Impurities – Silicon (Si)	≤ 100.0 ppb	< 10.0 ppb
Trace Impurities – Silver (Ag)	≤ 1.0 ppb	< 0.3 ppb
Trace Impurities – Sodium (Na)	≤ 100.0 ppb	2.0 ppb
Trace Impurities – Strontium (Sr)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Tantalum (Ta)	≤ 1.0 ppb	< 0.9 ppb
Trace Impurities – Thallium (Tl)	≤ 5.0 ppb	< 2.0 ppb
Trace Impurities – Tin (Sn)	≤ 5.0 ppb	< 0.4 ppb
Trace Impurities – Titanium (Ti)	≤ 1.0 ppb	0.2 ppb
Trace Impurities – Vanadium (V)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Zinc (Zn)	≤ 5.0 ppb	< 0.2 ppb
Trace Impurities – Zirconium (Zr)	≤ 1.0 ppb	< 0.1 ppb

>>> Continued on page 3 >>>

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



Material No.: 9530-33
Batch No.: 24D1562005

Test	Specification	Result
------	---------------	--------

For Laboratory, Research, or Manufacturing Use
Product Information (not specifications):
Appearance (clear, fuming liquid)
Meets ACS Specifications
Storage Condition: Store below 25 °C.

Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC

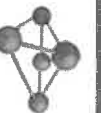
A handwritten signature in dark ink, appearing to read 'JCroak', is positioned above the printed name.

Jamie Croak
Director Quality Operations, Bioscience Production



Certified Reference Material CRM

M6027



CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

57028
062024
Nickel (NI)

Lot #
Solvent:

24002546
Nitric Acid

Formulated By: Benson Chan
Reviewed By: Pedro L. Rentes

062024
062024

Expiration Date:

062027

2.0%

40.0
(mL)

Nitric Acid

Recommended Storage:

Ambient (20 °C)

Nominal Concentration (µg/mL):

1000

NIST Test Number:

6UTB

5E-05 Balance Uncertainty

Volume shown below was diluted to (mL):

2000.07 0.100 Flask Uncertainty

Expanded

SDS Information

Compound

Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty (mL)	Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Uncertainty (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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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	orl-rat 1620 mg/kg	3136
--	-------	--------	--------	-------	-------	------	---------	--------	-----	------------	---------	--------------------	------

[1] Spectrum No.1 [9.136 sec]:58028.D# [Count] [Linear]

2.OE5

1.OE5

m/z--> 10 20 30 40 50 60 70 80 90 100

5000

2500

m/z--> 110 120 130 140 150 160 170 180 190 200

1.OE7

5.OE6

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	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	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



Certified Reference Material CRM

M6030



CERTIFIED WEIGHT REPORT:

Part Number: **57047**
Lot Number: **122823**
Description: **Silver (Ag)**
Solvent: 24002546 Nitric Acid
Lot #

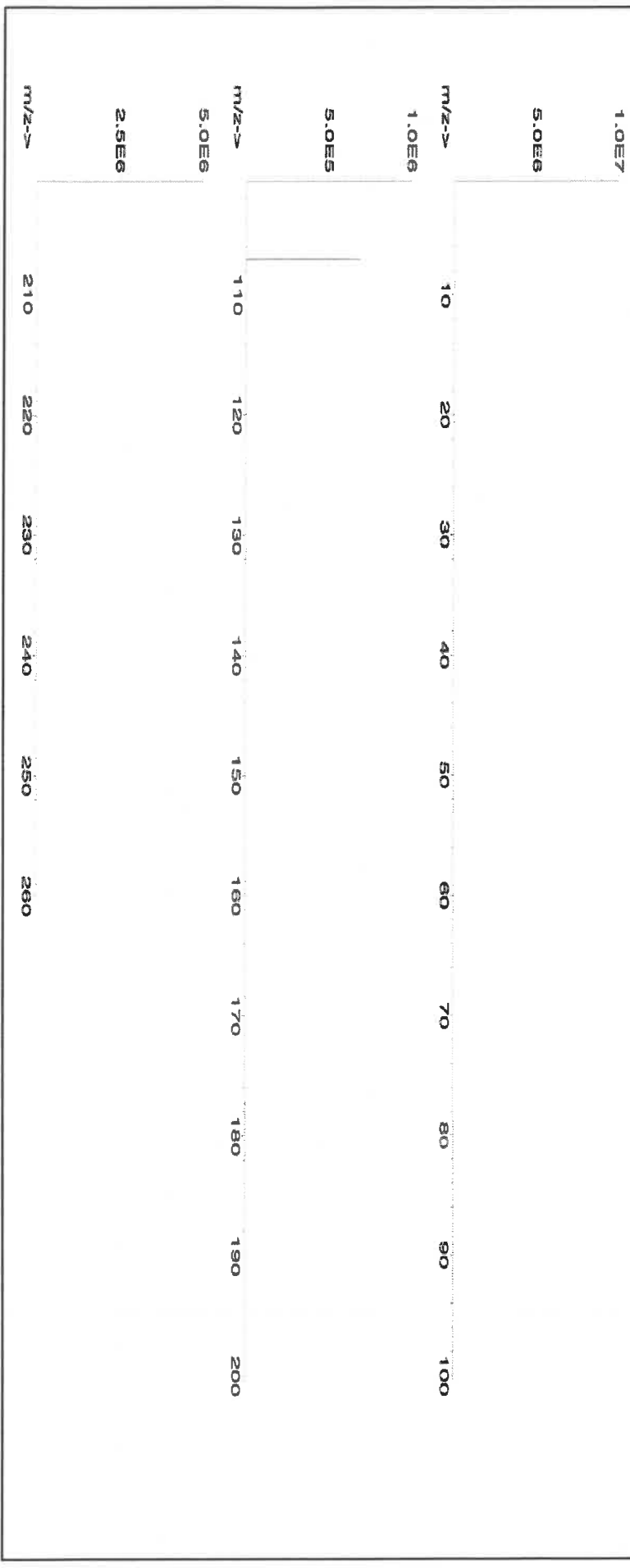
Expiration Date: 122826
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

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	99.999	0.10	63.7	6.27992	6.27998	1000.0
							2.0	7761-88-8	10 µg/mL
									NA
									3151

[1] Spectrum No. 1 [14.044 sec]:58147.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	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 meghm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



Certified Reference Material CRM



CERTIFIED WEIGHT REPORT:

Part Number: **57051**
Lot Number: **071724**
Description: **Antimony (Sb)**

Expiration Date: **071727**
Recommended Storage: **Ambient (20 °C)**
Nominal Concentration (µg/mL): **1000**
NIST Test Number: **6UTB**

Volume shown below was diluted to (mL): **2000.26**

126160

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

2.0% **Nitric Acid**
40.0 (mL)

5E-05 Balance Uncertainty
0.058 Flask Uncertainty

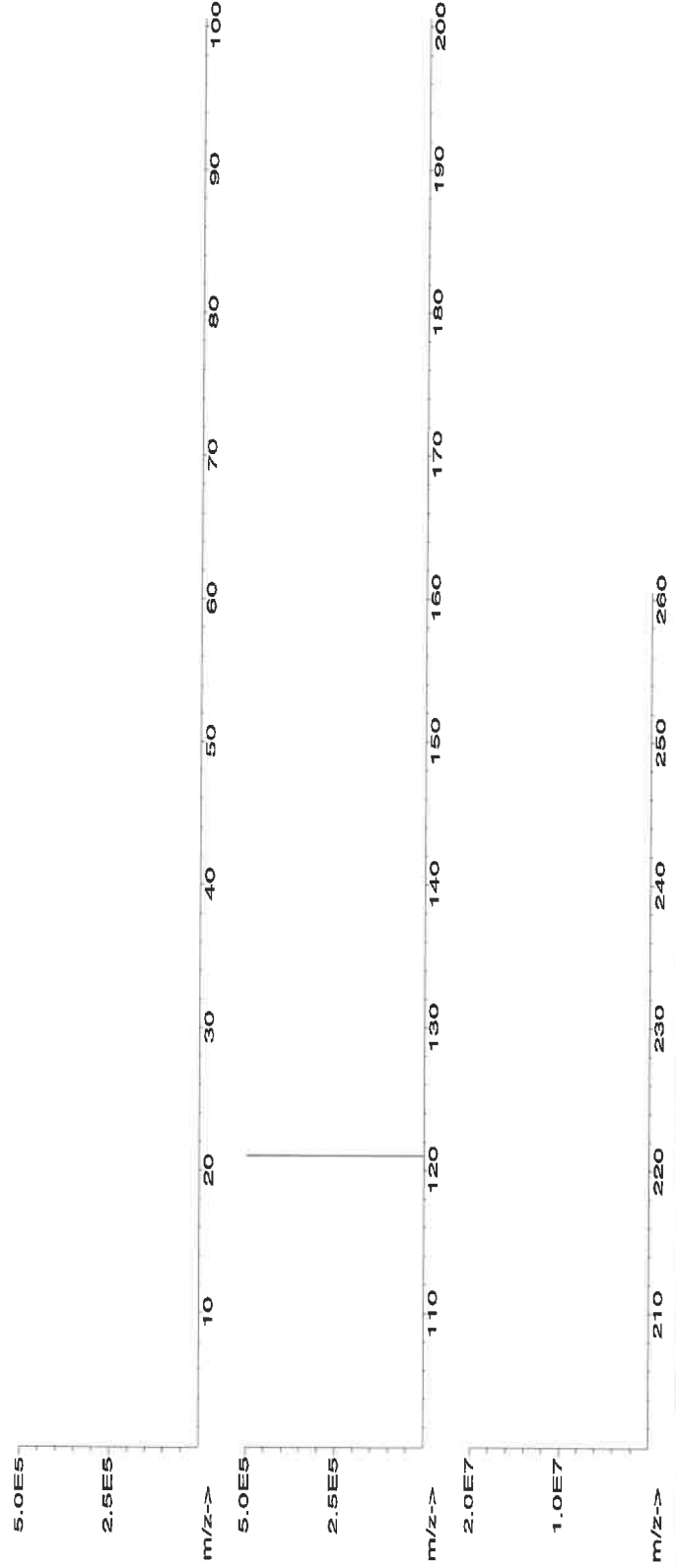
<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
<i>Pedro L. Rentas</i>	
Reviewed By:	Pedro L. Rentas

SDS Information

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

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	or-rat 7000 mg/kg	3102a

[1] Spectrum No.1 [17.964 sec]:58051.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	<0.02	Tb	<0.02	W	<0.02
Sb	T	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	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	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	<0.02	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	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).



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

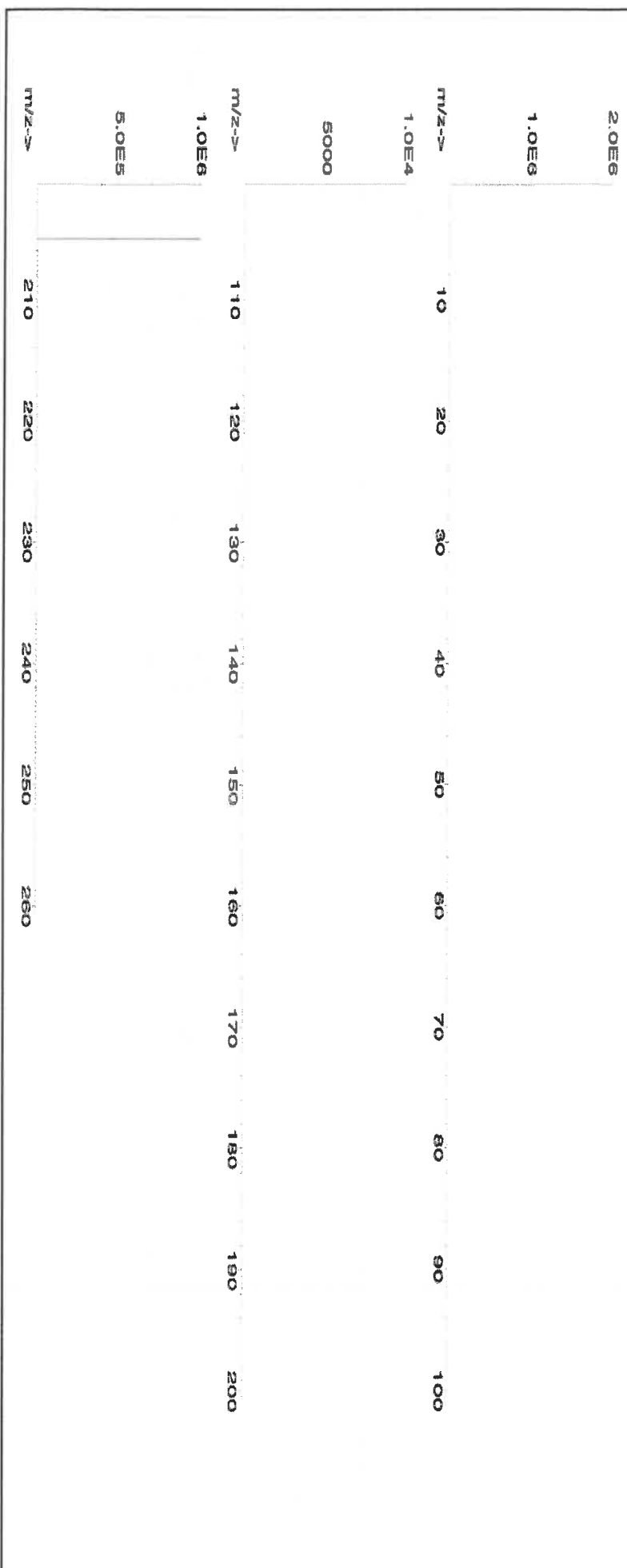
<i>Aleah O'Brady</i>	
Formulated By:	Aleah O'Brady
	062724
Reviewed By:	<i>Pedro L. Rendas</i>
	Pedro L. Rendas
	062724

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
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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**
0.06 Balance Uncertainty
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)	SDS Information (Solvent Safety Info. On Attached pg.)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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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-->	210	220	230	240	250	260				



SHIPPING DOCUMENTS

CLIENT INFORMATION

CLIENT PROJECT INFORMATION

CLIENT BILLING INFORMATION

REPORT TO BE SENT TO:

COMPANY: Coppola Services

ADDRESS: 355 Fowser Rd

CITY: Millville STATE: NJ ZIP:

ATTENTION: Jeffrey Simpkins

PHONE: FAX:

PROJECT NAME: Coppla Services

PROJECT NO.: LOCATION:

PROJECT MANAGER:

e-mail:

PHONE: FAX:

BILL TO: PO#:

ADDRESS:

CITY STATE: ZIP:

ATTENTION: PHONE:

ANALYSIS

DATA TURNAROUND INFORMATION

FAX (RUSH) _____ DAYS*
HARDCOPY (DATA PACKAGE): _____ DAYS*
EDD: _____ DAYS*

*TO BE APPROVED BY CHEMTECH

STANDARD HARDCOPY TURNAROUND TIME IS 10 BUSINESS

DATA DELIVERABLE INFORMATION

☐ 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 _____

1. TCLP VOA
2. Corrosivity
3. Ignitability
4. Reactive CN
5. Reactive Sulfide
6. TCLP Metals + Cadmium
7. TCLP BNA / TVS
8. TCLP Residues (GCL)
9. TPH GC

ALLIANCE SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE		SAMPLE COLLECTION		# OF BOTTLES	PRESERVATIVES									COMMENTS	
			COMP	GRAB	DATE	TIME		1	2	3	4	5	6	7	8	9	← Specify Preservatives A-HCl D-NaOH B-HNO3 E-ICE C-H2SO4 F-OTHER	
1.	Cop-Soil Pile	Soil		X	6-24-25	858	2	X									1.2 ppm	
2.	Cop-Soil Pile		X			904	6		X	X	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. JT	DATE/TIME: 9:25 6-24-25	RECEIVED BY: 1. [Signature]	Conditions of bottles or coolers at receipt: ☒ COMPLIANT ☐ NON COMPLIANT ☐ COOLER TEMP 3.8 °C
RELINQUISHED BY SAMPLER: 2. [Signature]	DATE/TIME:	RECEIVED BY: 2. [Signature]	Comments:
RELINQUISHED BY SAMPLER: 3. JT	DATE/TIME: 1:43 6-24-25	RECEIVED BY: 3. [Signature]	Page ____ of CLIENT: ☐ Hand Delivered ☐ Other Shipment Complete ☐ YES ☐ NO

CHEMTECH

Environmental Laboratory

www.chemtech.net | EMAIL: PM@chemtech.net

Project Name: Coppola Services

Chemtech Order ID: _____

Service Order #: _____

Sampler Name: JT

Work Order #: _____

Client Project Coordinator & Phone:
Jeffrey Simpkins

Labor WBS #: _____

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Facility/Site: Sewage Utility of Millville

Date: 6-24-25

Site Address: 355 Fowler Rd

Arrive Time: 845

Millville NJ

Depart Time: 925

Waste Stream (circle one): drum / roll-off / soil pile / in-situ / linear construction / frac-tank

Sample Matrices (circle all that apply): Water / Soil / NAPL / Concrete / Wipe

Collection Depths: NA

Temp (range): 3.8 °C PID Readings (range): 1, 2 PPM Dimensions/CY: 14 x 11 x 5

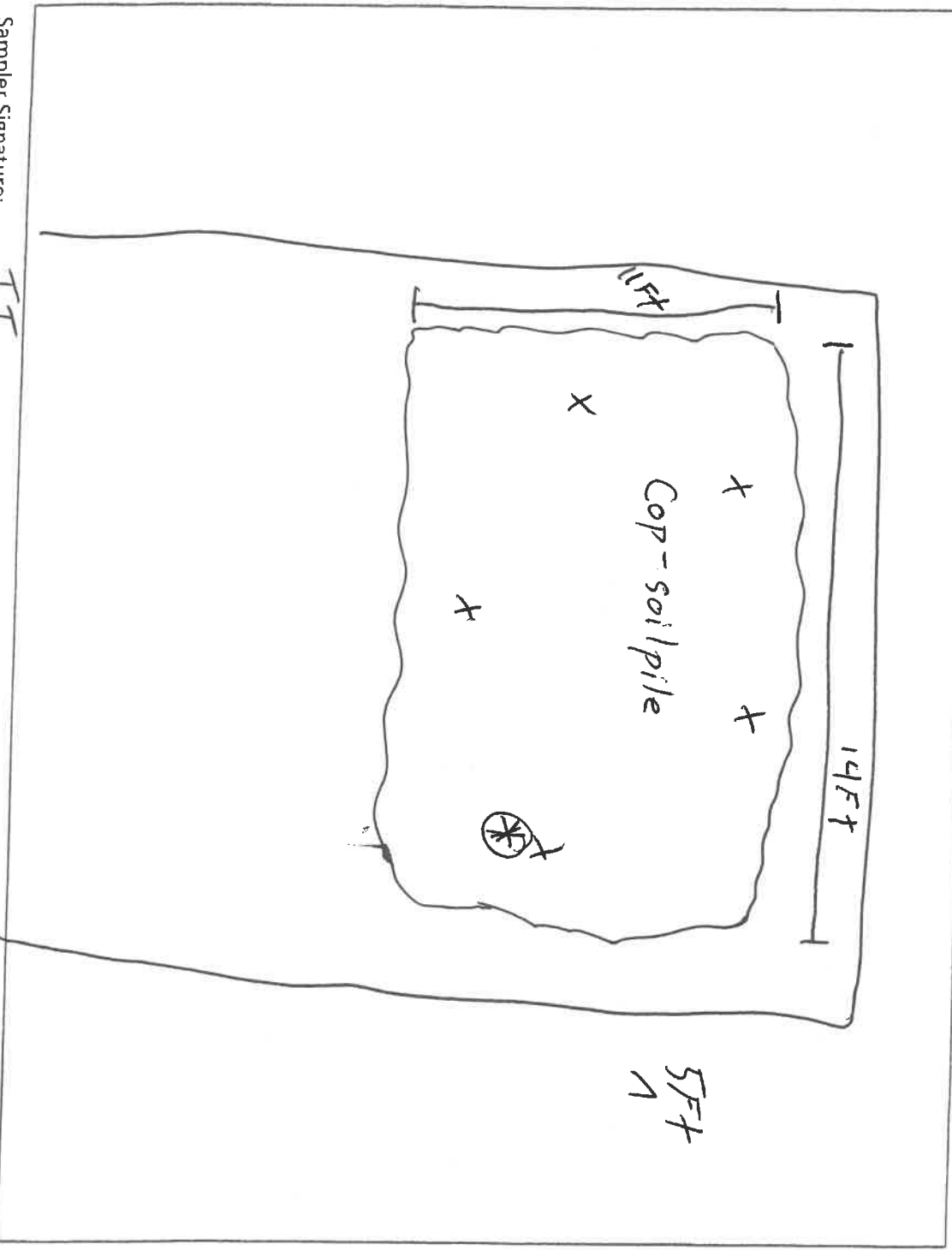
Sample Description: Dry grayish soil - some Rocks

Odor: Y / ☒ Color: Y / ☒

Field Observations: 1 small soil pile

Grid/Area Composite Map:

QA Control # A3041134



Sampler Signature: JT

Supervisor Review/Date: _____

Client Signature: _____

Date/Time Arrived at Lab: _____

Laboratory Certification

Certified By	License No.
Connecticut	PH-0830
DOD ELAP (ANAB)	L2219
Maine	2024021
Maryland	296
New Hampshire	255425
New Jersey	20012
New York	11376
Pennsylvania	68-00548
Soil Permit	525-24-234-08441
Texas	TX-C25-00189
Virginia	460312