

DATA PACKAGE METALS

PROJECT NAME : USACE018-44 DOD

**FIRST ENVIRONMENT, INC.
10 Park Place, Bldg 1A, Suite 504**

**Butler, NJ - 07405
Phone No: 973-334-0003**

**ORDER ID : Q2820
ATTENTION : Al Smith**



Laboratory Certification ID # 20012



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Cover Page

Order ID : Q2820

Project ID : USACE018-44 DOD

Client : First Environment, Inc.

Lab Sample Number

Q2820-01
Q2820-02
Q2820-03
Q2820-04
Q2820-05
Q2820-06
Q2820-07
Q2820-08
Q2820-09
Q2820-10
Q2820-11
Q2820-12
Q2820-13
Q2820-14
Q2820-15
Q2820-16
Q2820-17
Q2820-18
Q2820-19
Q2820-20
Q2820-21
Q2820-22
Q2820-23
Q2820-24

Client Sample Number

82H-S
82H-W
82H-N
SOIL-DUP-1
518R-E
518R-N
518R-S
518R-W
705R-S
SOIL-DUP-2
10PC-W
10PC-S
10P-W
10P-E
10P-S
10P-N
88H-E
88H-N
88H-W
88H-S
22M-N
22M-W
22M-E
22M-S

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 :

APPROVED

By Nimisha Pandya, QA/QC Supervisor at 2:56 pm, Aug 22, 2025

Date: 8/20/2025

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012



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

CASE NARRATIVE

First Environment, Inc.

Project Name: USACE018-44 DOD

Project # N/A

Order ID # Q2820

Test Name: Mercury, Metals ICP-TAL

A. Number of Samples and Date of Receipt:

03 Solid samples were received on 08/08/2025.

B. Parameters:

According to the Chain of Custody document, the following analyses were requested: Mercury, Metals ICP-TAL, METALS-TAL, PCB, Pesticide-TCL, SVOC-TCL BNA -20 and VOC-TCL VOA-10. This data package contains results for Mercury, Metals ICP-TAL.

C. Analytical Techniques:

The analysis of Metals ICP-TAL was based on method 6010D, digestion based on method 3050 (soils). The analysis and digestion of Mercury was based on method 7471B.

D. QA/ QC Samples:

The Holding Times were met for all analysis.

The Blank Spike met requirements for all compounds.

The Duplicate (POWDERMSD) analysis met criteria for all compounds except for Iron and Vanadium due to Chemical Interference during Digestion process.

The Matrix Spike (POWDERMS) analysis met criteria for all compounds except for Antimony, Arsenic, Beryllium, Chromium, Potassium, Selenium, Silver, Thallium and Vanadium due to Chemical Interference during Digestion process.

The Matrix Spike Duplicate (POWDERMSD) analysis met criteria for all compounds except for Antimony, Arsenic, Beryllium, Potassium, Selenium, Silver and Vanadium due to Chemical Interference during Digestion process.

The Blank analysis did not indicate the presence of lab contamination.

The Calibration met the requirements.

The Serial Dilution (POWDERL) met criteria for all compounds except for Aluminum, Calcium, Chromium, Copper, Iron, Manganese and Zinc due to sample matrix interference.

E. Additional Comments:

The Post Digest Spike (POWDERA) analysis met criteria for all compounds except for Antimony, Arsenic, Beryllium, Chromium, Potassium, Selenium, Silver and Vanadium due to unknown chemical interference of matrix with the addition of spike amount after digestion and before analysis; matrix has suppression effect during addition of spike.



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. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

APPROVED

By Nimisha Pandya, QA/QC Supervisor at 2:56 pm, Aug 22, 2025

Signature_____

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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

METALS CONFORMANCE/NON-CONFORMANCE SUMMARY

ORDER ID: Q2820

MATRIX: Solid

METHOD: 6010D,7471B

	NA	NO	YES
1. Calibration Summary met criteria.			✓
2. ICP Interference Check Sample Results Summary Submitted.			✓
3. Serial Dilution Summary (if applicable) Submitted.		✓	
The Serial Dilution (POWDERL) met criteria for all compounds except for Aluminum, Calcium, Chromium, Copper, Iron, Manganese and Zinc due to sample matrix interference.			
4. Laboratory Control Sample Summary (if applicable) Submitted.			✓
5. Blank Contamination - If yes, list compounds and concentrations in each blank:		✓	
6. Matrix Spike/Matrix Spike Duplicate Recoveries Met Criteria		✓	
If not met, list those compounds and their recoveries which fall outside the acceptable range.			
The Matrix Spike (POWDERMS) analysis met criteria for all compounds except for Antimony, Arsenic, Beryllium, Chromium, Potassium, Selenium, Silver, Thallium and Vanadium due to Chemical Interference during Digestion process. The Matrix Spike Duplicate (POWDERMSD) analysis met criteria for all compounds except for Antimony, Arsenic, Beryllium, Potassium, Selenium, Silver and Vanadium due to Chemical Interference during Digestion process.			
7. Sample Duplicate Analysis Met QC Criteria		✓	
If not met, list those compounds and their recoveries which fall outside the acceptable range.			
The Duplicate (POWDERMSD) analysis met criteria for all compounds except for Iron and Vanadium due to Chemical Interference during Digestion process.			
8. Digestion Holding Time Met			✓
If not met, list number of days exceeded for each sample:			

METALS CONFORMANCE/NON-CONFORMANCE SUMMARY (CONTINUED)

	NA	NO	YES
9. Analysis Holding Time Met			✓
If not met, list those compounds and their recoveries which fall outside the acceptable range.			

ADDITIONAL COMMENTS:

The Post Digest Spike (POWDERA) analysis met criteria for all compounds except for Antimony, Arsenic, Beryllium, Chromium, Potassium, Selenium, Silver and Vanadium due to unknown chemical interference of matrix with the addition of spike amount after digestion and before analysis; matrix has suppression effect during addition of spike.

QA REVIEW

REVIEWED

Sohil Jodhani, QA/QC Director , 8/22/2025, 1:05:08 PM

APPENDIX A

QA REVIEW GENERAL DOCUMENTATION

Project #: Q2820

Completed

For thorough review, the report must have the following:

GENERAL:

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

✓

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

✓

Is the chain of custody signed and complete

✓

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

✓

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

✓

COVER PAGE:

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

✓

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

✓

CHAIN OF CUSTODY:

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

✓

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

✓

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

✓

Were the samples received within hold time

✓

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

✓

ANALYTICAL:

Was method requirement followed?

✓

Was client requirement followed?

✓

Does the case narrative summarize all QC failure?

✓

All runlogs and manual integration are reviewed for requirements

✓

All manual calculations and /or hand notations verified

✓

QA Review Signature: SOHIL JODHANI

Date: 08/20/2025

LAB CHRONICLE

OrderID:	Q2820	OrderDate:	8/11/2025 12:29:00 PM
Client:	First Environment, Inc.	Project:	USACE018-44 DOD
Contact:	Al Smith	Location:	D31,VOA Ref. #2 Soil

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
Q2820-09	705R-S	SOIL			08/07/25			08/08/25
			Mercury	7471B		08/11/25	08/12/25	
			Metals ICP-TAL	6010D		08/12/25	08/13/25	
Q2820-10	SOIL-DUP-2	SOIL			08/07/25			08/08/25
			Mercury	7471B		08/11/25	08/12/25	
			Metals ICP-TAL	6010D		08/12/25	08/13/25	
Q2820-24	22M-S	SOIL			08/08/25			08/08/25
			Mercury	7471B		08/11/25	08/12/25	
			Metals ICP-TAL	6010D		08/12/25	08/13/25	

Hit Summary Sheet
SW-846

SDG No.: Q2820 **Order ID:** Q2820
Client: First Environment, Inc. **Project ID:** USACE018-44 DOD

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	LOD	RDL	Units
Client ID : 705R-S									
Q2820-09	705R-S	SOIL	Aluminum	4860		1.34	6.37	7.96	mg/Kg
Q2820-09	705R-S	SOIL	Arsenic	5.01		0.30	1.27	1.59	mg/Kg
Q2820-09	705R-S	SOIL	Barium	8.76		1.16	1.99	7.96	mg/Kg
Q2820-09	705R-S	SOIL	Beryllium	0.35	J	0.040	0.12	0.48	mg/Kg
Q2820-09	705R-S	SOIL	Cadmium	0.56		0.038	0.12	0.48	mg/Kg
Q2820-09	705R-S	SOIL	Calcium	1230		17.7	39.8	159	mg/Kg
Q2820-09	705R-S	SOIL	Chromium	11.5		0.075	0.20	0.80	mg/Kg
Q2820-09	705R-S	SOIL	Cobalt	9.29		0.16	0.60	2.39	mg/Kg
Q2820-09	705R-S	SOIL	Copper	6.51		0.35	1.27	1.59	mg/Kg
Q2820-09	705R-S	SOIL	Iron	10400		6.36	6.37	7.96	mg/Kg
Q2820-09	705R-S	SOIL	Lead	8.38		0.21	0.77	0.96	mg/Kg
Q2820-09	705R-S	SOIL	Magnesium	1500		19.1	39.8	159	mg/Kg
Q2820-09	705R-S	SOIL	Manganese	45.6		0.22	0.40	1.59	mg/Kg
Q2820-09	705R-S	SOIL	Nickel	10.0		0.21	0.80	3.19	mg/Kg
Q2820-09	705R-S	SOIL	Potassium	721		44.1	127	159	mg/Kg
Q2820-09	705R-S	SOIL	Selenium	0.62	J	0.41	1.27	1.59	mg/Kg
Q2820-09	705R-S	SOIL	Silver	0.44	J	0.19	0.40	0.80	mg/Kg
Q2820-09	705R-S	SOIL	Sodium	1540		28.4	127	159	mg/Kg
Q2820-09	705R-S	SOIL	Vanadium	16.7		0.40	1.59	3.19	mg/Kg
Q2820-09	705R-S	SOIL	Zinc	24.9		0.37	0.80	3.19	mg/Kg
Client ID : SOIL-DUP-2									
Q2820-10	SOIL-DUP-2	SOIL	Aluminum	4210		1.60	7.62	9.52	mg/Kg
Q2820-10	SOIL-DUP-2	SOIL	Arsenic	4.37		0.36	1.52	1.90	mg/Kg
Q2820-10	SOIL-DUP-2	SOIL	Barium	9.43	J	1.39	2.38	9.52	mg/Kg
Q2820-10	SOIL-DUP-2	SOIL	Beryllium	0.26	J	0.048	0.14	0.57	mg/Kg
Q2820-10	SOIL-DUP-2	SOIL	Cadmium	0.26	J	0.046	0.14	0.57	mg/Kg
Q2820-10	SOIL-DUP-2	SOIL	Calcium	1620		21.1	47.6	190	mg/Kg
Q2820-10	SOIL-DUP-2	SOIL	Chromium	14.3		0.089	0.24	0.95	mg/Kg
Q2820-10	SOIL-DUP-2	SOIL	Cobalt	1.99	J	0.19	0.71	2.86	mg/Kg
Q2820-10	SOIL-DUP-2	SOIL	Copper	4.06		0.42	1.52	1.90	mg/Kg
Q2820-10	SOIL-DUP-2	SOIL	Iron	7050		7.60	7.62	9.52	mg/Kg
Q2820-10	SOIL-DUP-2	SOIL	Lead	6.97		0.25	0.91	1.14	mg/Kg
Q2820-10	SOIL-DUP-2	SOIL	Magnesium	1660		22.9	47.6	190	mg/Kg
Q2820-10	SOIL-DUP-2	SOIL	Manganese	28.4		0.27	0.48	1.90	mg/Kg
Q2820-10	SOIL-DUP-2	SOIL	Nickel	4.79		0.25	0.95	3.81	mg/Kg
Q2820-10	SOIL-DUP-2	SOIL	Potassium	1060		52.7	152	190	mg/Kg
Q2820-10	SOIL-DUP-2	SOIL	Selenium	0.56	J	0.50	1.52	1.90	mg/Kg

Hit Summary Sheet
SW-846

SDG No.: Q2820 **Order ID:** Q2820
Client: First Environment, Inc. **Project ID:** USACE018-44 DOD

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	LOD	RDL	Units
Q2820-10	SOIL-DUP-2	SOIL	Silver	0.32	J	0.23	0.48	0.95	mg/Kg
Q2820-10	SOIL-DUP-2	SOIL	Sodium	2440		33.9	152	190	mg/Kg
Q2820-10	SOIL-DUP-2	SOIL	Vanadium	22.0		0.48	1.90	3.81	mg/Kg
Q2820-10	SOIL-DUP-2	SOIL	Zinc	11.1		0.44	0.95	3.81	mg/Kg
Client ID : 22M-S									
Q2820-24	22M-S	SOIL	Aluminum	552		0.84	4.01	5.02	mg/Kg
Q2820-24	22M-S	SOIL	Arsenic	0.50	J	0.19	0.80	1.00	mg/Kg
Q2820-24	22M-S	SOIL	Barium	1.70	J	0.73	1.25	5.02	mg/Kg
Q2820-24	22M-S	SOIL	Beryllium	0.071	J	0.025	0.075	0.30	mg/Kg
Q2820-24	22M-S	SOIL	Cadmium	0.075	J	0.024	0.075	0.30	mg/Kg
Q2820-24	22M-S	SOIL	Calcium	57.4	J	11.1	25.1	100	mg/Kg
Q2820-24	22M-S	SOIL	Chromium	2.47		0.047	0.13	0.50	mg/Kg
Q2820-24	22M-S	SOIL	Cobalt	0.36	J	0.10	0.38	1.50	mg/Kg
Q2820-24	22M-S	SOIL	Copper	2.56		0.22	0.80	1.00	mg/Kg
Q2820-24	22M-S	SOIL	Iron	1120		4.00	4.01	5.02	mg/Kg
Q2820-24	22M-S	SOIL	Lead	1.22		0.13	0.48	0.60	mg/Kg
Q2820-24	22M-S	SOIL	Magnesium	148		12.0	25.1	100	mg/Kg
Q2820-24	22M-S	SOIL	Manganese	5.78		0.14	0.25	1.00	mg/Kg
Q2820-24	22M-S	SOIL	Nickel	1.13	J	0.13	0.50	2.01	mg/Kg
Q2820-24	22M-S	SOIL	Potassium	69.4	J	27.8	80.3	100	mg/Kg
Q2820-24	22M-S	SOIL	Sodium	29.3	J	17.9	80.3	100	mg/Kg
Q2820-24	22M-S	SOIL	Vanadium	1.24	J	0.25	1.00	2.01	mg/Kg
Q2820-24	22M-S	SOIL	Zinc	7.43		0.23	0.50	2.01	mg/Kg



SAMPLE DATA

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Report of Analysis

Client:	First Environment, Inc.	Date Collected:	08/07/25
Project:	USACE018-44 DOD	Date Received:	08/08/25
Client Sample ID:	705R-S	SDG No.:	Q2820
Lab Sample ID:	Q2820-09	Matrix:	SOIL
Level (low/med):	low	% Solid:	55.8

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	4860		1	1.34	6.37	7.96	mg/Kg	08/12/25 12:55	08/13/25 16:23	6010D	SW3050
7440-36-0	Antimony	1.00	UN	1	0.35	1.00	3.98	mg/Kg	08/12/25 12:55	08/13/25 16:23	6010D	SW3050
7440-38-2	Arsenic	5.01	N	1	0.30	1.27	1.59	mg/Kg	08/12/25 12:55	08/13/25 16:23	6010D	SW3050
7440-39-3	Barium	8.76		1	1.16	1.99	7.96	mg/Kg	08/12/25 12:55	08/13/25 16:23	6010D	SW3050
7440-41-7	Beryllium	0.35	JN	1	0.040	0.12	0.48	mg/Kg	08/12/25 12:55	08/13/25 16:23	6010D	SW3050
7440-43-9	Cadmium	0.56		1	0.038	0.12	0.48	mg/Kg	08/12/25 12:55	08/13/25 16:23	6010D	SW3050
7440-70-2	Calcium	1230		1	17.7	39.8	159	mg/Kg	08/12/25 12:55	08/13/25 16:23	6010D	SW3050
7440-47-3	Chromium	11.5	N	1	0.075	0.20	0.80	mg/Kg	08/12/25 12:55	08/13/25 16:23	6010D	SW3050
7440-48-4	Cobalt	9.29		1	0.16	0.60	2.39	mg/Kg	08/12/25 12:55	08/13/25 16:23	6010D	SW3050
7440-50-8	Copper	6.51		1	0.35	1.27	1.59	mg/Kg	08/12/25 12:55	08/13/25 16:23	6010D	SW3050
7439-89-6	Iron	10400	*	1	6.36	6.37	7.96	mg/Kg	08/12/25 12:55	08/13/25 16:23	6010D	SW3050
7439-92-1	Lead	8.38		1	0.21	0.77	0.96	mg/Kg	08/12/25 12:55	08/13/25 16:23	6010D	SW3050
7439-95-4	Magnesium	1500		1	19.1	39.8	159	mg/Kg	08/12/25 12:55	08/13/25 16:23	6010D	SW3050
7439-96-5	Manganese	45.6		1	0.22	0.40	1.59	mg/Kg	08/12/25 12:55	08/13/25 16:23	6010D	SW3050
7439-97-6	Mercury	0.019	U	1	0.013	0.019	0.023	mg/Kg	08/11/25 16:30	08/12/25 11:29	7471B	
7440-02-0	Nickel	10.0		1	0.21	0.80	3.19	mg/Kg	08/12/25 12:55	08/13/25 16:23	6010D	SW3050
7440-09-7	Potassium	721	N	1	44.1	127	159	mg/Kg	08/12/25 12:55	08/13/25 16:23	6010D	SW3050
7782-49-2	Selenium	0.62	JN	1	0.41	1.27	1.59	mg/Kg	08/12/25 12:55	08/13/25 16:23	6010D	SW3050
7440-22-4	Silver	0.44	JN	1	0.19	0.40	0.80	mg/Kg	08/12/25 12:55	08/13/25 16:23	6010D	SW3050
7440-23-5	Sodium	1540		1	28.4	127	159	mg/Kg	08/12/25 12:55	08/13/25 16:23	6010D	SW3050
7440-28-0	Thallium	1.59	UN	1	0.37	1.59	3.19	mg/Kg	08/12/25 12:55	08/13/25 16:23	6010D	SW3050
7440-62-2	Vanadium	16.7	N*	1	0.40	1.59	3.19	mg/Kg	08/12/25 12:55	08/13/25 16:23	6010D	SW3050
7440-66-6	Zinc	24.9		1	0.37	0.80	3.19	mg/Kg	08/12/25 12:55	08/13/25 16:23	6010D	SW3050

Color Before:	Brown	Clarity Before:	Texture:	Medium
Color After:	Yellow	Clarity After:	Artifacts:	
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

Report of Analysis

Client:	First Environment, Inc.	Date Collected:	08/07/25
Project:	USACE018-44 DOD	Date Received:	08/08/25
Client Sample ID:	SOIL-DUP-2	SDG No.:	Q2820
Lab Sample ID:	Q2820-10	Matrix:	SOIL
Level (low/med):	low	% Solid:	48.4

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	4210		1	1.60	7.62	9.52	mg/Kg	08/12/25 12:55	08/13/25 16:27	6010D	SW3050
7440-36-0	Antimony	1.19	UN	1	0.42	1.19	4.76	mg/Kg	08/12/25 12:55	08/13/25 16:27	6010D	SW3050
7440-38-2	Arsenic	4.37	N	1	0.36	1.52	1.90	mg/Kg	08/12/25 12:55	08/13/25 16:27	6010D	SW3050
7440-39-3	Barium	9.43	J	1	1.39	2.38	9.52	mg/Kg	08/12/25 12:55	08/13/25 16:27	6010D	SW3050
7440-41-7	Beryllium	0.26	JN	1	0.048	0.14	0.57	mg/Kg	08/12/25 12:55	08/13/25 16:27	6010D	SW3050
7440-43-9	Cadmium	0.26	J	1	0.046	0.14	0.57	mg/Kg	08/12/25 12:55	08/13/25 16:27	6010D	SW3050
7440-70-2	Calcium	1620		1	21.1	47.6	190	mg/Kg	08/12/25 12:55	08/13/25 16:27	6010D	SW3050
7440-47-3	Chromium	14.3	N	1	0.089	0.24	0.95	mg/Kg	08/12/25 12:55	08/13/25 16:27	6010D	SW3050
7440-48-4	Cobalt	1.99	J	1	0.19	0.71	2.86	mg/Kg	08/12/25 12:55	08/13/25 16:27	6010D	SW3050
7440-50-8	Copper	4.06		1	0.42	1.52	1.90	mg/Kg	08/12/25 12:55	08/13/25 16:27	6010D	SW3050
7439-89-6	Iron	7050	*	1	7.60	7.62	9.52	mg/Kg	08/12/25 12:55	08/13/25 16:27	6010D	SW3050
7439-92-1	Lead	6.97		1	0.25	0.91	1.14	mg/Kg	08/12/25 12:55	08/13/25 16:27	6010D	SW3050
7439-95-4	Magnesium	1660		1	22.9	47.6	190	mg/Kg	08/12/25 12:55	08/13/25 16:27	6010D	SW3050
7439-96-5	Manganese	28.4		1	0.27	0.48	1.90	mg/Kg	08/12/25 12:55	08/13/25 16:27	6010D	SW3050
7439-97-6	Mercury	0.023	U	1	0.016	0.023	0.028	mg/Kg	08/11/25 16:30	08/12/25 11:31	7471B	
7440-02-0	Nickel	4.79		1	0.25	0.95	3.81	mg/Kg	08/12/25 12:55	08/13/25 16:27	6010D	SW3050
7440-09-7	Potassium	1060	N	1	52.7	152	190	mg/Kg	08/12/25 12:55	08/13/25 16:27	6010D	SW3050
7782-49-2	Selenium	0.56	JN	1	0.50	1.52	1.90	mg/Kg	08/12/25 12:55	08/13/25 16:27	6010D	SW3050
7440-22-4	Silver	0.32	JN	1	0.23	0.48	0.95	mg/Kg	08/12/25 12:55	08/13/25 16:27	6010D	SW3050
7440-23-5	Sodium	2440		1	33.9	152	190	mg/Kg	08/12/25 12:55	08/13/25 16:27	6010D	SW3050
7440-28-0	Thallium	1.90	UN	1	0.44	1.90	3.81	mg/Kg	08/12/25 12:55	08/13/25 16:27	6010D	SW3050
7440-62-2	Vanadium	22.0	N*	1	0.48	1.90	3.81	mg/Kg	08/12/25 12:55	08/13/25 16:27	6010D	SW3050
7440-66-6	Zinc	11.1		1	0.44	0.95	3.81	mg/Kg	08/12/25 12:55	08/13/25 16:27	6010D	SW3050

Color Before:	Brown	Clarity Before:	Texture:	Medium
Color After:	Yellow	Clarity After:	Artifacts:	
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

Report of Analysis

Client:	First Environment, Inc.	Date Collected:	08/08/25
Project:	USACE018-44 DOD	Date Received:	08/08/25
Client Sample ID:	22M-S	SDG No.:	Q2820
Lab Sample ID:	Q2820-24	Matrix:	SOIL
Level (low/med):	low	% Solid:	89

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	552		1	0.84	4.01	5.02	mg/Kg	08/12/25 12:55	08/13/25 16:31	6010D	SW3050
7440-36-0	Antimony	0.63	UN	1	0.22	0.63	2.51	mg/Kg	08/12/25 12:55	08/13/25 16:31	6010D	SW3050
7440-38-2	Arsenic	0.50	JN	1	0.19	0.80	1.00	mg/Kg	08/12/25 12:55	08/13/25 16:31	6010D	SW3050
7440-39-3	Barium	1.70	J	1	0.73	1.25	5.02	mg/Kg	08/12/25 12:55	08/13/25 16:31	6010D	SW3050
7440-41-7	Beryllium	0.071	JN	1	0.025	0.075	0.30	mg/Kg	08/12/25 12:55	08/13/25 16:31	6010D	SW3050
7440-43-9	Cadmium	0.075	J	1	0.024	0.075	0.30	mg/Kg	08/12/25 12:55	08/13/25 16:31	6010D	SW3050
7440-70-2	Calcium	57.4	J	1	11.1	25.1	100	mg/Kg	08/12/25 12:55	08/13/25 16:31	6010D	SW3050
7440-47-3	Chromium	2.47	N	1	0.047	0.13	0.50	mg/Kg	08/12/25 12:55	08/13/25 16:31	6010D	SW3050
7440-48-4	Cobalt	0.36	J	1	0.10	0.38	1.50	mg/Kg	08/12/25 12:55	08/13/25 16:31	6010D	SW3050
7440-50-8	Copper	2.56		1	0.22	0.80	1.00	mg/Kg	08/12/25 12:55	08/13/25 16:31	6010D	SW3050
7439-89-6	Iron	1120	*	1	4.00	4.01	5.02	mg/Kg	08/12/25 12:55	08/13/25 16:31	6010D	SW3050
7439-92-1	Lead	1.22		1	0.13	0.48	0.60	mg/Kg	08/12/25 12:55	08/13/25 16:31	6010D	SW3050
7439-95-4	Magnesium	148		1	12.0	25.1	100	mg/Kg	08/12/25 12:55	08/13/25 16:31	6010D	SW3050
7439-96-5	Manganese	5.78		1	0.14	0.25	1.00	mg/Kg	08/12/25 12:55	08/13/25 16:31	6010D	SW3050
7439-97-6	Mercury	0.012	U	1	0.0090	0.012	0.015	mg/Kg	08/11/25 16:30	08/12/25 11:34	7471B	
7440-02-0	Nickel	1.13	J	1	0.13	0.50	2.01	mg/Kg	08/12/25 12:55	08/13/25 16:31	6010D	SW3050
7440-09-7	Potassium	69.4	JN	1	27.8	80.3	100	mg/Kg	08/12/25 12:55	08/13/25 16:31	6010D	SW3050
7782-49-2	Selenium	0.80	UN	1	0.26	0.80	1.00	mg/Kg	08/12/25 12:55	08/13/25 16:31	6010D	SW3050
7440-22-4	Silver	0.25	UN	1	0.12	0.25	0.50	mg/Kg	08/12/25 12:55	08/13/25 16:31	6010D	SW3050
7440-23-5	Sodium	29.3	J	1	17.9	80.3	100	mg/Kg	08/12/25 12:55	08/13/25 16:31	6010D	SW3050
7440-28-0	Thallium	1.00	UN	1	0.23	1.00	2.01	mg/Kg	08/12/25 12:55	08/13/25 16:31	6010D	SW3050
7440-62-2	Vanadium	1.24	JN*	1	0.25	1.00	2.01	mg/Kg	08/12/25 12:55	08/13/25 16:31	6010D	SW3050
7440-66-6	Zinc	7.43		1	0.23	0.50	2.01	mg/Kg	08/12/25 12:55	08/13/25 16:31	6010D	SW3050

Color Before:	Brown	Clarity Before:	Texture:	Medium
Color After:	Yellow	Clarity After:	Artifacts:	
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

- 1
- 2
- 3
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Metals

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: First Environment, Inc.

SDG No.: Q2820

Contract: FIRS02

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
ICV08	Mercury	4.39	4.0	110	90 - 110	CV	08/12/2025	09:56	LB136782

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: First Environment, Inc.

SDG No.: Q2820

Contract: FIRS02

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
CCV22	Mercury	5.22	5.0	104	90 - 110	CV	08/12/2025	10:03	LB136782
CCV23	Mercury	5.26	5.0	105	90 - 110	CV	08/12/2025	11:11	LB136782
CCV24	Mercury	5.28	5.0	106	90 - 110	CV	08/12/2025	11:51	LB136782
CCV25	Mercury	5.14	5.0	103	90 - 110	CV	08/12/2025	12:32	LB136782
CCV26	Mercury	4.84	5.0	97	90 - 110	CV	08/12/2025	12:55	LB136782

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: First Environment, Inc.

SDG No.: Q2820

Contract: FIRS02

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	7680	8000	96	90 - 110	P	08/13/2025	12:21	LB136801
	Antimony	4000	4000	100	90 - 110	P	08/13/2025	12:21	LB136801
	Arsenic	3870	4000	97	90 - 110	P	08/13/2025	12:21	LB136801
	Barium	7790	8000	97	90 - 110	P	08/13/2025	12:21	LB136801
	Beryllium	189	200	95	90 - 110	P	08/13/2025	12:21	LB136801
	Cadmium	1920	2000	96	90 - 110	P	08/13/2025	12:21	LB136801
	Calcium	19200	20000	96	90 - 110	P	08/13/2025	12:21	LB136801
	Chromium	788	800	98	90 - 110	P	08/13/2025	12:21	LB136801
	Cobalt	1950	2000	98	90 - 110	P	08/13/2025	12:21	LB136801
	Copper	997	1000	100	90 - 110	P	08/13/2025	12:21	LB136801
	Iron	3950	4000	99	90 - 110	P	08/13/2025	12:21	LB136801
	Lead	3770	4000	94	90 - 110	P	08/13/2025	12:21	LB136801
	Magnesium	19100	20000	96	90 - 110	P	08/13/2025	12:21	LB136801
	Manganese	1920	2000	96	90 - 110	P	08/13/2025	12:21	LB136801
	Nickel	1950	2000	97	90 - 110	P	08/13/2025	12:21	LB136801
	Potassium	19400	20000	97	90 - 110	P	08/13/2025	12:21	LB136801
	Selenium	3880	4000	97	90 - 110	P	08/13/2025	12:21	LB136801
	Silver	1030	1000	103	90 - 110	P	08/13/2025	12:21	LB136801
	Sodium	19100	20000	96	90 - 110	P	08/13/2025	12:21	LB136801
	Thallium	3750	4000	94	90 - 110	P	08/13/2025	12:21	LB136801
	Vanadium	1940	2000	97	90 - 110	P	08/13/2025	12:21	LB136801
	Zinc	1950	2000	98	90 - 110	P	08/13/2025	12:21	LB136801

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: First Environment, Inc.

SDG No.: Q2820

Contract: FIRS02

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	95.1	100	95	80 - 120	P	08/13/2025	12:28	LB136801
	Antimony	50.1	50.0	100	80 - 120	P	08/13/2025	12:28	LB136801
	Arsenic	21.3	20.0	106	80 - 120	P	08/13/2025	12:28	LB136801
	Barium	94.7	100	95	80 - 120	P	08/13/2025	12:28	LB136801
	Beryllium	6.08	6.0	101	80 - 120	P	08/13/2025	12:28	LB136801
	Cadmium	5.59	6.0	93	80 - 120	P	08/13/2025	12:28	LB136801
	Calcium	2040	2000	102	80 - 120	P	08/13/2025	12:28	LB136801
	Chromium	10.5	10.0	105	80 - 120	P	08/13/2025	12:28	LB136801
	Cobalt	29.4	30.0	98	80 - 120	P	08/13/2025	12:28	LB136801
	Copper	21.3	20.0	107	80 - 120	P	08/13/2025	12:28	LB136801
	Iron	107	100	107	80 - 120	P	08/13/2025	12:28	LB136801
	Lead	11.2	12.0	93	80 - 120	P	08/13/2025	12:28	LB136801
	Magnesium	2120	2000	106	80 - 120	P	08/13/2025	12:28	LB136801
	Manganese	21.0	20.0	105	80 - 120	P	08/13/2025	12:28	LB136801
	Nickel	39.6	40.0	99	80 - 120	P	08/13/2025	12:28	LB136801
	Potassium	1990	2000	100	80 - 120	P	08/13/2025	12:28	LB136801
	Selenium	19.2	20.0	96	80 - 120	P	08/13/2025	12:28	LB136801
	Silver	10.1	10.0	101	80 - 120	P	08/13/2025	12:28	LB136801
	Sodium	1850	2000	92	80 - 120	P	08/13/2025	12:28	LB136801
	Thallium	43.0	40.0	107	80 - 120	P	08/13/2025	12:28	LB136801
	Vanadium	38.9	40.0	97	80 - 120	P	08/13/2025	12:28	LB136801
	Zinc	42.4	40.0	106	80 - 120	P	08/13/2025	12:28	LB136801

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: First Environment, Inc.

SDG No.: Q2820

Contract: FIRS02

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	9630	10000	96	90 - 110	P	08/13/2025	12:58	LB136801
	Antimony	4930	5000	99	90 - 110	P	08/13/2025	12:58	LB136801
	Arsenic	4900	5000	98	90 - 110	P	08/13/2025	12:58	LB136801
	Barium	9640	10000	96	90 - 110	P	08/13/2025	12:58	LB136801
	Beryllium	240	250	96	90 - 110	P	08/13/2025	12:58	LB136801
	Cadmium	2430	2500	97	90 - 110	P	08/13/2025	12:58	LB136801
	Calcium	24100	25000	96	90 - 110	P	08/13/2025	12:58	LB136801
	Chromium	1000	1000	100	90 - 110	P	08/13/2025	12:58	LB136801
	Cobalt	2420	2500	97	90 - 110	P	08/13/2025	12:58	LB136801
	Copper	1230	1250	98	90 - 110	P	08/13/2025	12:58	LB136801
	Iron	5030	5000	101	90 - 110	P	08/13/2025	12:58	LB136801
	Lead	4860	5000	97	90 - 110	P	08/13/2025	12:58	LB136801
	Magnesium	24000	25000	96	90 - 110	P	08/13/2025	12:58	LB136801
	Manganese	2390	2500	96	90 - 110	P	08/13/2025	12:58	LB136801
	Nickel	2430	2500	97	90 - 110	P	08/13/2025	12:58	LB136801
	Potassium	25000	25000	100	90 - 110	P	08/13/2025	12:58	LB136801
	Selenium	4930	5000	98	90 - 110	P	08/13/2025	12:58	LB136801
	Silver	1230	1250	99	90 - 110	P	08/13/2025	12:58	LB136801
	Sodium	24600	25000	99	90 - 110	P	08/13/2025	12:58	LB136801
	Thallium	4820	5000	96	90 - 110	P	08/13/2025	12:58	LB136801
	Vanadium	2420	2500	97	90 - 110	P	08/13/2025	12:58	LB136801
	Zinc	2490	2500	99	90 - 110	P	08/13/2025	12:58	LB136801
CCV02	Aluminum	9700	10000	97	90 - 110	P	08/13/2025	13:42	LB136801
	Antimony	4970	5000	99	90 - 110	P	08/13/2025	13:42	LB136801
	Arsenic	4950	5000	99	90 - 110	P	08/13/2025	13:42	LB136801
	Barium	9660	10000	97	90 - 110	P	08/13/2025	13:42	LB136801
	Beryllium	240	250	96	90 - 110	P	08/13/2025	13:42	LB136801
	Cadmium	2430	2500	97	90 - 110	P	08/13/2025	13:42	LB136801
	Calcium	24200	25000	97	90 - 110	P	08/13/2025	13:42	LB136801
	Chromium	987	1000	99	90 - 110	P	08/13/2025	13:42	LB136801
	Cobalt	2430	2500	97	90 - 110	P	08/13/2025	13:42	LB136801
	Copper	1230	1250	99	90 - 110	P	08/13/2025	13:42	LB136801
	Iron	4980	5000	100	90 - 110	P	08/13/2025	13:42	LB136801
	Lead	4850	5000	97	90 - 110	P	08/13/2025	13:42	LB136801

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: <u>First Environment, Inc.</u>	SDG No.: <u>Q2820</u>
Contract: <u>FIRS02</u>	Lab Code: <u>ACE</u>
Initial Calibration Source: <u>EPA</u>	
Continuing Calibration Source: <u>Inorganic Ventures</u>	

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV02	Magnesium	24100	25000	96	90 - 110	P	08/13/2025	13:42	LB136801
	Manganese	2420	2500	97	90 - 110	P	08/13/2025	13:42	LB136801
	Nickel	2430	2500	97	90 - 110	P	08/13/2025	13:42	LB136801
	Potassium	24600	25000	98	90 - 110	P	08/13/2025	13:42	LB136801
	Selenium	4980	5000	100	90 - 110	P	08/13/2025	13:42	LB136801
	Silver	1240	1250	99	90 - 110	P	08/13/2025	13:42	LB136801
	Sodium	24100	25000	96	90 - 110	P	08/13/2025	13:42	LB136801
	Thallium	4960	5000	99	90 - 110	P	08/13/2025	13:42	LB136801
	Vanadium	2450	2500	98	90 - 110	P	08/13/2025	13:42	LB136801
	Zinc	2460	2500	98	90 - 110	P	08/13/2025	13:42	LB136801
CCV03	Aluminum	9650	10000	96	90 - 110	P	08/13/2025	14:33	LB136801
	Antimony	5020	5000	100	90 - 110	P	08/13/2025	14:33	LB136801
	Arsenic	4990	5000	100	90 - 110	P	08/13/2025	14:33	LB136801
	Barium	9670	10000	97	90 - 110	P	08/13/2025	14:33	LB136801
	Beryllium	238	250	95	90 - 110	P	08/13/2025	14:33	LB136801
	Cadmium	2430	2500	97	90 - 110	P	08/13/2025	14:33	LB136801
	Calcium	24100	25000	96	90 - 110	P	08/13/2025	14:33	LB136801
	Chromium	993	1000	99	90 - 110	P	08/13/2025	14:33	LB136801
	Cobalt	2430	2500	97	90 - 110	P	08/13/2025	14:33	LB136801
	Copper	1240	1250	99	90 - 110	P	08/13/2025	14:33	LB136801
	Iron	5010	5000	100	90 - 110	P	08/13/2025	14:33	LB136801
	Lead	4860	5000	97	90 - 110	P	08/13/2025	14:33	LB136801
	Magnesium	23900	25000	96	90 - 110	P	08/13/2025	14:33	LB136801
	Manganese	2390	2500	96	90 - 110	P	08/13/2025	14:33	LB136801
	Nickel	2440	2500	98	90 - 110	P	08/13/2025	14:33	LB136801
	Potassium	24700	25000	99	90 - 110	P	08/13/2025	14:33	LB136801
	Selenium	5020	5000	100	90 - 110	P	08/13/2025	14:33	LB136801
	Silver	1240	1250	99	90 - 110	P	08/13/2025	14:33	LB136801
	Sodium	23300	25000	93	90 - 110	P	08/13/2025	14:33	LB136801
	Thallium	4820	5000	96	90 - 110	P	08/13/2025	14:33	LB136801
	Vanadium	2450	2500	98	90 - 110	P	08/13/2025	14:33	LB136801
	Zinc	2480	2500	99	90 - 110	P	08/13/2025	14:33	LB136801
CCV04	Aluminum	9760	10000	98	90 - 110	P	08/13/2025	15:23	LB136801
	Antimony	5060	5000	101	90 - 110	P	08/13/2025	15:23	LB136801

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: First Environment, Inc.

SDG No.: Q2820

Contract: FIRS02

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	5010	5000	100	90 - 110	P	08/13/2025	15:23	LB136801
	Barium	9660	10000	97	90 - 110	P	08/13/2025	15:23	LB136801
	Beryllium	239	250	96	90 - 110	P	08/13/2025	15:23	LB136801
	Cadmium	2430	2500	97	90 - 110	P	08/13/2025	15:23	LB136801
	Calcium	24300	25000	97	90 - 110	P	08/13/2025	15:23	LB136801
	Chromium	991	1000	99	90 - 110	P	08/13/2025	15:23	LB136801
	Cobalt	2430	2500	97	90 - 110	P	08/13/2025	15:23	LB136801
	Copper	1240	1250	99	90 - 110	P	08/13/2025	15:23	LB136801
	Iron	5000	5000	100	90 - 110	P	08/13/2025	15:23	LB136801
	Lead	4860	5000	97	90 - 110	P	08/13/2025	15:23	LB136801
	Magnesium	24200	25000	97	90 - 110	P	08/13/2025	15:23	LB136801
	Manganese	2390	2500	96	90 - 110	P	08/13/2025	15:23	LB136801
	Nickel	2440	2500	98	90 - 110	P	08/13/2025	15:23	LB136801
	Potassium	24700	25000	99	90 - 110	P	08/13/2025	15:23	LB136801
	Selenium	5070	5000	101	90 - 110	P	08/13/2025	15:23	LB136801
	Silver	1240	1250	99	90 - 110	P	08/13/2025	15:23	LB136801
	Sodium	23700	25000	95	90 - 110	P	08/13/2025	15:23	LB136801
	Thallium	4760	5000	95	90 - 110	P	08/13/2025	15:23	LB136801
	Vanadium	2470	2500	99	90 - 110	P	08/13/2025	15:23	LB136801
	Zinc	2500	2500	100	90 - 110	P	08/13/2025	15:23	LB136801
CCV05	Aluminum	9690	10000	97	90 - 110	P	08/13/2025	16:14	LB136801
	Antimony	5090	5000	102	90 - 110	P	08/13/2025	16:14	LB136801
	Arsenic	5010	5000	100	90 - 110	P	08/13/2025	16:14	LB136801
	Barium	9840	10000	98	90 - 110	P	08/13/2025	16:14	LB136801
	Beryllium	235	250	94	90 - 110	P	08/13/2025	16:14	LB136801
	Cadmium	2400	2500	96	90 - 110	P	08/13/2025	16:14	LB136801
	Calcium	24100	25000	96	90 - 110	P	08/13/2025	16:14	LB136801
	Chromium	991	1000	99	90 - 110	P	08/13/2025	16:14	LB136801
	Cobalt	2420	2500	97	90 - 110	P	08/13/2025	16:14	LB136801
	Copper	1240	1250	100	90 - 110	P	08/13/2025	16:14	LB136801
	Iron	5090	5000	102	90 - 110	P	08/13/2025	16:14	LB136801
	Lead	4810	5000	96	90 - 110	P	08/13/2025	16:14	LB136801
	Magnesium	23800	25000	95	90 - 110	P	08/13/2025	16:14	LB136801
	Manganese	2380	2500	95	90 - 110	P	08/13/2025	16:14	LB136801

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: First Environment, Inc.

SDG No.: Q2820

Contract: FIRS02

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	2430	2500	97	90 - 110	P	08/13/2025	16:14	LB136801
	Potassium	25000	25000	100	90 - 110	P	08/13/2025	16:14	LB136801
	Selenium	5070	5000	101	90 - 110	P	08/13/2025	16:14	LB136801
	Silver	1250	1250	100	90 - 110	P	08/13/2025	16:14	LB136801
	Sodium	23800	25000	95	90 - 110	P	08/13/2025	16:14	LB136801
	Thallium	4540	5000	91	90 - 110	P	08/13/2025	16:14	LB136801
	Vanadium	2460	2500	98	90 - 110	P	08/13/2025	16:14	LB136801
	Zinc	2510	2500	101	90 - 110	P	08/13/2025	16:14	LB136801
CCV06	Aluminum	9690	10000	97	90 - 110	P	08/13/2025	17:05	LB136801
	Antimony	5110	5000	102	90 - 110	P	08/13/2025	17:05	LB136801
	Arsenic	5040	5000	101	90 - 110	P	08/13/2025	17:05	LB136801
	Barium	9810	10000	98	90 - 110	P	08/13/2025	17:05	LB136801
	Beryllium	238	250	95	90 - 110	P	08/13/2025	17:05	LB136801
	Cadmium	2420	2500	97	90 - 110	P	08/13/2025	17:05	LB136801
	Calcium	24100	25000	97	90 - 110	P	08/13/2025	17:05	LB136801
	Chromium	988	1000	99	90 - 110	P	08/13/2025	17:05	LB136801
	Cobalt	2430	2500	97	90 - 110	P	08/13/2025	17:05	LB136801
	Copper	1250	1250	100	90 - 110	P	08/13/2025	17:05	LB136801
	Iron	5070	5000	102	90 - 110	P	08/13/2025	17:05	LB136801
	Lead	4850	5000	97	90 - 110	P	08/13/2025	17:05	LB136801
	Magnesium	24000	25000	96	90 - 110	P	08/13/2025	17:05	LB136801
	Manganese	2400	2500	96	90 - 110	P	08/13/2025	17:05	LB136801
	Nickel	2440	2500	98	90 - 110	P	08/13/2025	17:05	LB136801
	Potassium	24800	25000	99	90 - 110	P	08/13/2025	17:05	LB136801
	Selenium	5150	5000	103	90 - 110	P	08/13/2025	17:05	LB136801
	Silver	1260	1250	100	90 - 110	P	08/13/2025	17:05	LB136801
	Sodium	23300	25000	93	90 - 110	P	08/13/2025	17:05	LB136801
	Thallium	5380	5000	108	90 - 110	P	08/13/2025	17:05	LB136801
	Vanadium	2460	2500	98	90 - 110	P	08/13/2025	17:05	LB136801
	Zinc	2520	2500	101	90 - 110	P	08/13/2025	17:05	LB136801
CCV07	Aluminum	9840	10000	98	90 - 110	P	08/13/2025	17:46	LB136801
	Antimony	5120	5000	102	90 - 110	P	08/13/2025	17:46	LB136801
	Arsenic	5060	5000	101	90 - 110	P	08/13/2025	17:46	LB136801
	Barium	9850	10000	98	90 - 110	P	08/13/2025	17:46	LB136801

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: First Environment, Inc.

SDG No.: Q2820

Contract: FIRS02

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
CCV07	Beryllium	241	250	96	90 - 110	P	08/13/2025	17:46	LB136801
	Cadmium	2440	2500	98	90 - 110	P	08/13/2025	17:46	LB136801
	Calcium	24600	25000	98	90 - 110	P	08/13/2025	17:46	LB136801
	Chromium	1010	1000	101	90 - 110	P	08/13/2025	17:46	LB136801
	Cobalt	2450	2500	98	90 - 110	P	08/13/2025	17:46	LB136801
	Copper	1250	1250	100	90 - 110	P	08/13/2025	17:46	LB136801
	Iron	5140	5000	103	90 - 110	P	08/13/2025	17:46	LB136801
	Lead	4880	5000	98	90 - 110	P	08/13/2025	17:46	LB136801
	Magnesium	24400	25000	98	90 - 110	P	08/13/2025	17:46	LB136801
	Manganese	2430	2500	97	90 - 110	P	08/13/2025	17:46	LB136801
	Nickel	2460	2500	98	90 - 110	P	08/13/2025	17:46	LB136801
	Potassium	24800	25000	99	90 - 110	P	08/13/2025	17:46	LB136801
	Selenium	5160	5000	103	90 - 110	P	08/13/2025	17:46	LB136801
	Silver	1260	1250	100	90 - 110	P	08/13/2025	17:46	LB136801
	Sodium	23600	25000	95	90 - 110	P	08/13/2025	17:46	LB136801
	Thallium	5360	5000	107	90 - 110	P	08/13/2025	17:46	LB136801
	Vanadium	2490	2500	100	90 - 110	P	08/13/2025	17:46	LB136801
	Zinc	2530	2500	101	90 - 110	P	08/13/2025	17:46	LB136801

Metals

- 2b -

CRDL STANDARD FOR AA & ICP

Client: First Environment, Inc.

SDG No.: Q2820

Contract: FIRS02

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
CRA	Mercury	0.23	0.2	113	70 - 130	CV	08/12/2025	10:34	LB136782
CRI01	Aluminum	92.9	100	93	65 - 135	P	08/13/2025	12:37	LB136801
	Antimony	50.2	50.0	100	65 - 135	P	08/13/2025	12:37	LB136801
	Arsenic	20.6	20.0	103	65 - 135	P	08/13/2025	12:37	LB136801
	Barium	93.9	100	94	65 - 135	P	08/13/2025	12:37	LB136801
	Beryllium	6.01	6.0	100	65 - 135	P	08/13/2025	12:37	LB136801
	Cadmium	5.49	6.0	92	65 - 135	P	08/13/2025	12:37	LB136801
	Calcium	2010	2000	100	65 - 135	P	08/13/2025	12:37	LB136801
	Chromium	10.00	10.0	100	65 - 135	P	08/13/2025	12:37	LB136801
	Cobalt	29.0	30.0	97	65 - 135	P	08/13/2025	12:37	LB136801
	Copper	20.9	20.0	104	65 - 135	P	08/13/2025	12:37	LB136801
	Iron	95.9	100	96	65 - 135	P	08/13/2025	12:37	LB136801
	Lead	10.0	12.0	83	65 - 135	P	08/13/2025	12:37	LB136801
	Magnesium	2120	2000	106	65 - 135	P	08/13/2025	12:37	LB136801
	Manganese	20.8	20.0	104	65 - 135	P	08/13/2025	12:37	LB136801
	Nickel	38.7	40.0	97	65 - 135	P	08/13/2025	12:37	LB136801
	Potassium	1930	2000	97	65 - 135	P	08/13/2025	12:37	LB136801
	Selenium	21.1	20.0	106	65 - 135	P	08/13/2025	12:37	LB136801
	Silver	10.3	10.0	103	65 - 135	P	08/13/2025	12:37	LB136801
	Sodium	1810	2000	91	65 - 135	P	08/13/2025	12:37	LB136801
	Thallium	40.7	40.0	102	65 - 135	P	08/13/2025	12:37	LB136801
	Vanadium	42.3	40.0	106	65 - 135	P	08/13/2025	12:37	LB136801
	Zinc	41.0	40.0	102	65 - 135	P	08/13/2025	12:37	LB136801



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

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: First Environment, Inc. **SDG No.:** Q2820
Contract: FIRS02 **Lab Code:** ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB08	Mercury	0.076	+/-0.2	U	0.16	0.20	CV	08/12/2025	10:01	LB136782

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: First Environment, Inc.SDG No.: Q2820Contract: FIRS02Lab Code: ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB22	Mercury	0.076	+/-0.2	U	0.16	0.20	CV	08/12/2025	10:08	LB136782
CCB23	Mercury	0.076	+/-0.2	U	0.16	0.20	CV	08/12/2025	11:21	LB136782
CCB24	Mercury	0.076	+/-0.2	U	0.16	0.20	CV	08/12/2025	11:54	LB136782
CCB25	Mercury	0.076	+/-0.2	U	0.16	0.20	CV	08/12/2025	12:37	LB136782
CCB26	Mercury	0.076	+/-0.2	U	0.16	0.20	CV	08/12/2025	13:00	LB136782

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: First Environment, Inc.

SDG No.: Q2820

Contract: FIRS02

Lab Code: ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB01	Aluminum	11.3	+/-50	U	80.0	100	P	08/13/2025	12:33	LB136801
	Antimony	6.76	+/-25	U	12.5	50.0	P	08/13/2025	12:33	LB136801
	Arsenic	5.12	+/-10	U	15.0	20.0	P	08/13/2025	12:33	LB136801
	Barium	14.6	+/-50	U	25.0	100	P	08/13/2025	12:33	LB136801
	Beryllium	0.56	+/-3	U	1.50	6.00	P	08/13/2025	12:33	LB136801
	Cadmium	0.50	+/-3	U	1.50	6.00	P	08/13/2025	12:33	LB136801
	Calcium	234	+/-1000	U	500	2000	P	08/13/2025	12:33	LB136801
	Chromium	2.12	+/-5	U	5.00	10.0	P	08/13/2025	12:33	LB136801
	Cobalt	2.26	+/-15	U	7.50	30.0	P	08/13/2025	12:33	LB136801
	Copper	4.60	+/-10	U	16.0	20.0	P	08/13/2025	12:33	LB136801
	Iron	23.4	+/-50	U	80.0	100	P	08/13/2025	12:33	LB136801
	Lead	2.30	+/-6	U	9.60	12.0	P	08/13/2025	12:33	LB136801
	Magnesium	244	+/-1000	U	500	2000	P	08/13/2025	12:33	LB136801
	Manganese	5.94	+/-10	U	15.0	20.0	P	08/13/2025	12:33	LB136801
	Nickel	3.06	+/-20	U	10.0	40.0	P	08/13/2025	12:33	LB136801
	Potassium	918	+/-1000	U	1600	2000	P	08/13/2025	12:33	LB136801
	Selenium	9.64	+/-10	U	16.0	20.0	P	08/13/2025	12:33	LB136801
	Silver	1.62	+/-5	U	5.00	10.0	P	08/13/2025	12:33	LB136801
	Sodium	868	+/-1000	U	1000	2000	P	08/13/2025	12:33	LB136801
	Thallium	4.38	+/-20	U	20.0	40.0	P	08/13/2025	12:33	LB136801
	Vanadium	6.26	+/-20	U	20.0	40.0	P	08/13/2025	12:33	LB136801
	Zinc	16.7	+/-20	U	15.0	40.0	P	08/13/2025	12:33	LB136801

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: First Environment, Inc. SDG No.: Q2820
Contract: FIRS02 Lab Code: ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB01	Aluminum	11.3	+/-50	U	80.0	100	P	08/13/2025	13:03	LB136801
	Antimony	6.76	+/-25	U	12.5	50.0	P	08/13/2025	13:03	LB136801
	Arsenic	5.12	+/-10	U	15.0	20.0	P	08/13/2025	13:03	LB136801
	Barium	14.6	+/-50	U	25.0	100	P	08/13/2025	13:03	LB136801
	Beryllium	0.56	+/-3	U	1.50	6.00	P	08/13/2025	13:03	LB136801
	Cadmium	0.50	+/-3	U	1.50	6.00	P	08/13/2025	13:03	LB136801
	Calcium	234	+/-1000	U	500	2000	P	08/13/2025	13:03	LB136801
	Chromium	2.12	+/-5	U	5.00	10.0	P	08/13/2025	13:03	LB136801
	Cobalt	2.26	+/-15	U	7.50	30.0	P	08/13/2025	13:03	LB136801
	Copper	4.60	+/-10	U	16.0	20.0	P	08/13/2025	13:03	LB136801
	Iron	23.4	+/-50	U	80.0	100	P	08/13/2025	13:03	LB136801
	Lead	2.30	+/-6	U	9.60	12.0	P	08/13/2025	13:03	LB136801
	Magnesium	244	+/-1000	U	500	2000	P	08/13/2025	13:03	LB136801
	Manganese	5.94	+/-10	U	15.0	20.0	P	08/13/2025	13:03	LB136801
	Nickel	3.06	+/-20	U	10.0	40.0	P	08/13/2025	13:03	LB136801
	Potassium	918	+/-1000	U	1600	2000	P	08/13/2025	13:03	LB136801
	Selenium	9.64	+/-10	U	16.0	20.0	P	08/13/2025	13:03	LB136801
	Silver	1.62	+/-5	U	5.00	10.0	P	08/13/2025	13:03	LB136801
	Sodium	868	+/-1000	U	1000	2000	P	08/13/2025	13:03	LB136801
	Thallium	4.38	+/-20	U	20.0	40.0	P	08/13/2025	13:03	LB136801
	Vanadium	6.26	+/-20	U	20.0	40.0	P	08/13/2025	13:03	LB136801
	Zinc	16.7	+/-20	U	15.0	40.0	P	08/13/2025	13:03	LB136801
CCB02	Aluminum	11.3	+/-50	U	80.0	100	P	08/13/2025	13:46	LB136801
	Antimony	6.76	+/-25	U	12.5	50.0	P	08/13/2025	13:46	LB136801
	Arsenic	5.12	+/-10	U	15.0	20.0	P	08/13/2025	13:46	LB136801
	Barium	14.6	+/-50	U	25.0	100	P	08/13/2025	13:46	LB136801
	Beryllium	0.56	+/-3	U	1.50	6.00	P	08/13/2025	13:46	LB136801
	Cadmium	0.50	+/-3	U	1.50	6.00	P	08/13/2025	13:46	LB136801
	Calcium	234	+/-1000	U	500	2000	P	08/13/2025	13:46	LB136801
	Chromium	2.12	+/-5	U	5.00	10.0	P	08/13/2025	13:46	LB136801
	Cobalt	2.26	+/-15	U	7.50	30.0	P	08/13/2025	13:46	LB136801
	Copper	4.60	+/-10	U	16.0	20.0	P	08/13/2025	13:46	LB136801
	Iron	23.4	+/-50	U	80.0	100	P	08/13/2025	13:46	LB136801
	Lead	2.30	+/-6	U	9.60	12.0	P	08/13/2025	13:46	LB136801
	Magnesium	244	+/-1000	U	500	2000	P	08/13/2025	13:46	LB136801
	Manganese	5.94	+/-10	U	15.0	20.0	P	08/13/2025	13:46	LB136801
	Nickel	3.06	+/-20	U	10.0	40.0	P	08/13/2025	13:46	LB136801
	Potassium	918	+/-1000	U	1600	2000	P	08/13/2025	13:46	LB136801
	Selenium	9.64	+/-10	U	16.0	20.0	P	08/13/2025	13:46	LB136801

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: First Environment, Inc. SDG No.: Q2820
Contract: FIRS02 Lab Code: ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB02	Silver	1.62	+/-5	U	5.00	10.0	P	08/13/2025	13:46	LB136801
	Sodium	868	+/-1000	U	1000	2000	P	08/13/2025	13:46	LB136801
	Thallium	4.38	+/-20	U	20.0	40.0	P	08/13/2025	13:46	LB136801
	Vanadium	6.26	+/-20	U	20.0	40.0	P	08/13/2025	13:46	LB136801
	Zinc	16.7	+/-20	U	15.0	40.0	P	08/13/2025	13:46	LB136801
CCB03	Aluminum	11.3	+/-50	U	80.0	100	P	08/13/2025	14:37	LB136801
	Antimony	6.76	+/-25	U	12.5	50.0	P	08/13/2025	14:37	LB136801
	Arsenic	5.12	+/-10	U	15.0	20.0	P	08/13/2025	14:37	LB136801
	Barium	14.6	+/-50	U	25.0	100	P	08/13/2025	14:37	LB136801
	Beryllium	0.56	+/-3	U	1.50	6.00	P	08/13/2025	14:37	LB136801
	Cadmium	0.50	+/-3	U	1.50	6.00	P	08/13/2025	14:37	LB136801
	Calcium	234	+/-1000	U	500	2000	P	08/13/2025	14:37	LB136801
	Chromium	2.12	+/-5	U	5.00	10.0	P	08/13/2025	14:37	LB136801
	Cobalt	2.26	+/-15	U	7.50	30.0	P	08/13/2025	14:37	LB136801
	Copper	4.60	+/-10	U	16.0	20.0	P	08/13/2025	14:37	LB136801
	Iron	23.4	+/-50	U	80.0	100	P	08/13/2025	14:37	LB136801
	Lead	2.30	+/-6	U	9.60	12.0	P	08/13/2025	14:37	LB136801
	Magnesium	244	+/-1000	U	500	2000	P	08/13/2025	14:37	LB136801
	Manganese	5.94	+/-10	U	15.0	20.0	P	08/13/2025	14:37	LB136801
	Nickel	3.06	+/-20	U	10.0	40.0	P	08/13/2025	14:37	LB136801
	Potassium	918	+/-1000	U	1600	2000	P	08/13/2025	14:37	LB136801
	Selenium	9.64	+/-10	U	16.0	20.0	P	08/13/2025	14:37	LB136801
	Silver	1.62	+/-5	U	5.00	10.0	P	08/13/2025	14:37	LB136801
	Sodium	868	+/-1000	U	1000	2000	P	08/13/2025	14:37	LB136801
	Thallium	4.38	+/-20	U	20.0	40.0	P	08/13/2025	14:37	LB136801
	Vanadium	6.26	+/-20	U	20.0	40.0	P	08/13/2025	14:37	LB136801
	Zinc	16.7	+/-20	U	15.0	40.0	P	08/13/2025	14:37	LB136801
CCB04	Aluminum	11.3	+/-50	U	80.0	100	P	08/13/2025	15:27	LB136801
	Antimony	6.76	+/-25	U	12.5	50.0	P	08/13/2025	15:27	LB136801
	Arsenic	5.12	+/-10	U	15.0	20.0	P	08/13/2025	15:27	LB136801
	Barium	14.6	+/-50	U	25.0	100	P	08/13/2025	15:27	LB136801
	Beryllium	0.56	+/-3	U	1.50	6.00	P	08/13/2025	15:27	LB136801
	Cadmium	0.50	+/-3	U	1.50	6.00	P	08/13/2025	15:27	LB136801
	Calcium	234	+/-1000	U	500	2000	P	08/13/2025	15:27	LB136801
	Chromium	2.12	+/-5	U	5.00	10.0	P	08/13/2025	15:27	LB136801
	Cobalt	2.26	+/-15	U	7.50	30.0	P	08/13/2025	15:27	LB136801
	Copper	4.60	+/-10	U	16.0	20.0	P	08/13/2025	15:27	LB136801
	Iron	23.4	+/-50	U	80.0	100	P	08/13/2025	15:27	LB136801
	Lead	2.30	+/-6	U	9.60	12.0	P	08/13/2025	15:27	LB136801

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: First Environment, Inc. SDG No.: Q2820
Contract: FIRS02 Lab Code: ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB04	Magnesium	244	+/-1000	U	500	2000	P	08/13/2025	15:27	LB136801
	Manganese	5.94	+/-10	U	15.0	20.0	P	08/13/2025	15:27	LB136801
	Nickel	3.06	+/-20	U	10.0	40.0	P	08/13/2025	15:27	LB136801
	Potassium	918	+/-1000	U	1600	2000	P	08/13/2025	15:27	LB136801
	Selenium	9.64	+/-10	U	16.0	20.0	P	08/13/2025	15:27	LB136801
	Silver	1.62	+/-5	U	5.00	10.0	P	08/13/2025	15:27	LB136801
	Sodium	868	+/-1000	U	1000	2000	P	08/13/2025	15:27	LB136801
	Thallium	4.38	+/-20	U	20.0	40.0	P	08/13/2025	15:27	LB136801
	Vanadium	6.26	+/-20	U	20.0	40.0	P	08/13/2025	15:27	LB136801
	Zinc	16.7	+/-20	U	15.0	40.0	P	08/13/2025	15:27	LB136801
CCB05	Aluminum	11.3	+/-50	U	80.0	100	P	08/13/2025	16:19	LB136801
	Antimony	6.76	+/-25	U	12.5	50.0	P	08/13/2025	16:19	LB136801
	Arsenic	5.12	+/-10	U	15.0	20.0	P	08/13/2025	16:19	LB136801
	Barium	14.6	+/-50	U	25.0	100	P	08/13/2025	16:19	LB136801
	Beryllium	0.56	+/-3	U	1.50	6.00	P	08/13/2025	16:19	LB136801
	Cadmium	0.50	+/-3	U	1.50	6.00	P	08/13/2025	16:19	LB136801
	Calcium	234	+/-1000	U	500	2000	P	08/13/2025	16:19	LB136801
	Chromium	2.12	+/-5	U	5.00	10.0	P	08/13/2025	16:19	LB136801
	Cobalt	2.26	+/-15	U	7.50	30.0	P	08/13/2025	16:19	LB136801
	Copper	4.60	+/-10	U	16.0	20.0	P	08/13/2025	16:19	LB136801
	Iron	23.4	+/-50	U	80.0	100	P	08/13/2025	16:19	LB136801
	Lead	2.30	+/-6	U	9.60	12.0	P	08/13/2025	16:19	LB136801
	Magnesium	244	+/-1000	U	500	2000	P	08/13/2025	16:19	LB136801
	Manganese	5.94	+/-10	U	15.0	20.0	P	08/13/2025	16:19	LB136801
	Nickel	3.06	+/-20	U	10.0	40.0	P	08/13/2025	16:19	LB136801
	Potassium	918	+/-1000	U	1600	2000	P	08/13/2025	16:19	LB136801
	Selenium	9.64	+/-10	U	16.0	20.0	P	08/13/2025	16:19	LB136801
	Silver	1.62	+/-5	U	5.00	10.0	P	08/13/2025	16:19	LB136801
	Sodium	868	+/-1000	U	1000	2000	P	08/13/2025	16:19	LB136801
	Thallium	4.38	+/-20	U	20.0	40.0	P	08/13/2025	16:19	LB136801
CCB06	Vanadium	6.26	+/-20	U	20.0	40.0	P	08/13/2025	16:19	LB136801
	Zinc	16.7	+/-20	U	15.0	40.0	P	08/13/2025	16:19	LB136801
	Aluminum	11.3	+/-50	U	80.0	100	P	08/13/2025	17:09	LB136801
	Antimony	6.76	+/-25	U	12.5	50.0	P	08/13/2025	17:09	LB136801
	Arsenic	5.12	+/-10	U	15.0	20.0	P	08/13/2025	17:09	LB136801
	Barium	14.6	+/-50	U	25.0	100	P	08/13/2025	17:09	LB136801
	Beryllium	0.56	+/-3	U	1.50	6.00	P	08/13/2025	17:09	LB136801
	Cadmium	0.50	+/-3	U	1.50	6.00	P	08/13/2025	17:09	LB136801
	Calcium	234	+/-1000	U	500	2000	P	08/13/2025	17:09	LB136801

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: First Environment, Inc. **SDG No.:** Q2820
Contract: FIRS02 **Lab Code:** ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB06	Chromium	2.12	+/-5	U	5.00	10.0	P	08/13/2025	17:09	LB136801
	Cobalt	2.26	+/-15	U	7.50	30.0	P	08/13/2025	17:09	LB136801
	Copper	4.60	+/-10	U	16.0	20.0	P	08/13/2025	17:09	LB136801
	Iron	23.4	+/-50	U	80.0	100	P	08/13/2025	17:09	LB136801
	Lead	2.30	+/-6	U	9.60	12.0	P	08/13/2025	17:09	LB136801
	Magnesium	244	+/-1000	U	500	2000	P	08/13/2025	17:09	LB136801
	Manganese	5.94	+/-10	U	15.0	20.0	P	08/13/2025	17:09	LB136801
	Nickel	3.06	+/-20	U	10.0	40.0	P	08/13/2025	17:09	LB136801
	Potassium	918	+/-1000	U	1600	2000	P	08/13/2025	17:09	LB136801
	Selenium	9.64	+/-10	U	16.0	20.0	P	08/13/2025	17:09	LB136801
	Silver	1.62	+/-5	U	5.00	10.0	P	08/13/2025	17:09	LB136801
	Sodium	868	+/-1000	U	1000	2000	P	08/13/2025	17:09	LB136801
	Thallium	4.38	+/-20	U	20.0	40.0	P	08/13/2025	17:09	LB136801
	Vanadium	6.26	+/-20	U	20.0	40.0	P	08/13/2025	17:09	LB136801
	Zinc	16.7	+/-20	U	15.0	40.0	P	08/13/2025	17:09	LB136801
CCB07	Aluminum	11.3	+/-50	U	80.0	100	P	08/13/2025	17:50	LB136801
	Antimony	6.76	+/-25	U	12.5	50.0	P	08/13/2025	17:50	LB136801
	Arsenic	5.12	+/-10	U	15.0	20.0	P	08/13/2025	17:50	LB136801
	Barium	14.6	+/-50	U	25.0	100	P	08/13/2025	17:50	LB136801
	Beryllium	0.56	+/-3	U	1.50	6.00	P	08/13/2025	17:50	LB136801
	Cadmium	0.50	+/-3	U	1.50	6.00	P	08/13/2025	17:50	LB136801
	Calcium	234	+/-1000	U	500	2000	P	08/13/2025	17:50	LB136801
	Chromium	2.12	+/-5	U	5.00	10.0	P	08/13/2025	17:50	LB136801
	Cobalt	2.26	+/-15	U	7.50	30.0	P	08/13/2025	17:50	LB136801
	Copper	4.60	+/-10	U	16.0	20.0	P	08/13/2025	17:50	LB136801
	Iron	23.4	+/-50	U	80.0	100	P	08/13/2025	17:50	LB136801
	Lead	2.30	+/-6	U	9.60	12.0	P	08/13/2025	17:50	LB136801
	Magnesium	244	+/-1000	U	500	2000	P	08/13/2025	17:50	LB136801
	Manganese	5.94	+/-10	U	15.0	20.0	P	08/13/2025	17:50	LB136801
	Nickel	3.06	+/-20	U	10.0	40.0	P	08/13/2025	17:50	LB136801
	Potassium	918	+/-1000	U	1600	2000	P	08/13/2025	17:50	LB136801
	Selenium	9.64	+/-10	U	16.0	20.0	P	08/13/2025	17:50	LB136801
	Silver	1.62	+/-5	U	5.00	10.0	P	08/13/2025	17:50	LB136801
	Sodium	868	+/-1000	U	1000	2000	P	08/13/2025	17:50	LB136801
	Thallium	4.38	+/-20	U	20.0	40.0	P	08/13/2025	17:50	LB136801
	Vanadium	6.26	+/-20	U	20.0	40.0	P	08/13/2025	17:50	LB136801
	Zinc	16.7	+/-20	U	15.0	40.0	P	08/13/2025	17:50	LB136801

Metals
- 3b -
PREPARATION BLANK SUMMARY

Client: First Environment, Inc.

SDG No.: Q2820

Instrument: CV1

Sample ID	Analyte	Result (mg/Kg)	Acceptance Limit	Conc Qual	LOD mg/Kg	CRQL mg/Kg	M	Analysis Date	Analysis Time	Run
PB169204BL		SOLID		Batch Number:		PB169204		Prep Date:	08/11/2025	
	Mercury	0.0080	<0.014	U	0.011	0.014	CV	08/12/2025	10:46	LB136782

Metals
- 3b -
PREPARATION BLANK SUMMARY

Client: First Environment, Inc.

SDG No.: Q2820

Instrument: P4

Sample ID	Analyte	Result (mg/Kg)	Acceptance Limit	Conc Qual	LOD mg/Kg	CRQL mg/Kg	M	Analysis Date	Analysis Time	Run
PB169211BL	SOLID			Batch Number:	PB169211			Prep Date:	08/12/2025	
	Aluminum	0.84	<2.5	U	4.00	5.00	P	08/13/2025	15:06	LB136801
	Antimony	0.22	<1.25	U	0.63	2.50	P	08/13/2025	15:06	LB136801
	Arsenic	0.19	<0.5	U	0.80	1.00	P	08/13/2025	15:06	LB136801
	Barium	0.73	<2.5	U	1.25	5.00	P	08/13/2025	15:06	LB136801
	Beryllium	0.025	<0.15	U	0.075	0.30	P	08/13/2025	15:06	LB136801
	Cadmium	0.024	<0.15	U	0.075	0.30	P	08/13/2025	15:06	LB136801
	Calcium	11.1	<50	U	25.0	100	P	08/13/2025	15:06	LB136801
	Chromium	0.047	<0.25	U	0.13	0.50	P	08/13/2025	15:06	LB136801
	Cobalt	0.10	<0.75	U	0.38	1.50	P	08/13/2025	15:06	LB136801
	Copper	0.22	<0.5	U	0.80	1.00	P	08/13/2025	15:06	LB136801
	Iron	3.99	<2.5	U	4.00	5.00	P	08/13/2025	15:06	LB136801
	Lead	0.13	<0.3	U	0.48	0.60	P	08/13/2025	15:06	LB136801
	Magnesium	12.0	<50	U	25.0	100	P	08/13/2025	15:06	LB136801
	Manganese	0.14	<0.5	U	0.25	1.00	P	08/13/2025	15:06	LB136801
	Nickel	0.13	<1	U	0.50	2.00	P	08/13/2025	15:06	LB136801
	Potassium	27.7	<50	U	80.0	100	P	08/13/2025	15:06	LB136801
	Selenium	0.26	<0.5	U	0.80	1.00	P	08/13/2025	15:06	LB136801
	Silver	0.12	<0.25	U	0.25	0.50	P	08/13/2025	15:06	LB136801
	Sodium	17.8	<50	U	80.0	100	P	08/13/2025	15:06	LB136801
	Thallium	0.23	<1	U	1.00	2.00	P	08/13/2025	15:06	LB136801
	Vanadium	0.25	<1	U	1.00	2.00	P	08/13/2025	15:06	LB136801
	Zinc	0.23	<1	U	0.50	2.00	P	08/13/2025	15:06	LB136801

Metals
- 4 -
INTERFERENCE CHECK SAMPLE

Client: <u>First Environment, Inc.</u>	SDG No.: <u>Q2820</u>
Contract: <u>FIRS02</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	240000	255000	94	216000	294000	08/13/2025	12:41	LB136801
	Antimony	-4.82			-50	50	08/13/2025	12:41	LB136801
	Arsenic	13.5			-20	20	08/13/2025	12:41	LB136801
	Barium	-0.47	6.0	8	-94	106	08/13/2025	12:41	LB136801
	Beryllium	1.31			-6	6	08/13/2025	12:41	LB136801
	Cadmium	2.33	1.0	233	-5	7	08/13/2025	12:41	LB136801
	Calcium	229000	245000	94	208000	282000	08/13/2025	12:41	LB136801
	Chromium	58.2	52.0	112	42	62	08/13/2025	12:41	LB136801
	Cobalt	1.85			-30	30	08/13/2025	12:41	LB136801
	Copper	4.82	2.0	241	-18	22	08/13/2025	12:41	LB136801
	Iron	99200	101000	98	85600	116500	08/13/2025	12:41	LB136801
	Lead	-6.38			-12	12	08/13/2025	12:41	LB136801
	Magnesium	243000	255000	95	216000	294000	08/13/2025	12:41	LB136801
	Manganese	8.17	7.0	117	-13	27	08/13/2025	12:41	LB136801
	Nickel	5.22	2.0	261	-38	42	08/13/2025	12:41	LB136801
	Potassium	-4.10			0	0	08/13/2025	12:41	LB136801
	Selenium	2.91			-20	20	08/13/2025	12:41	LB136801
	Silver	2.33			-10	10	08/13/2025	12:41	LB136801
	Sodium	3.06			0	0	08/13/2025	12:41	LB136801
	Thallium	2.91			-40	40	08/13/2025	12:41	LB136801
	Vanadium	3.65			-40	40	08/13/2025	12:41	LB136801
	Zinc	2.20			-40	40	08/13/2025	12:41	LB136801
ICSAB01	Aluminum	247000	247000	100	209000	285000	08/13/2025	12:45	LB136801
	Antimony	588	618	95	525	711	08/13/2025	12:45	LB136801
	Arsenic	111	104	107	88.4	120	08/13/2025	12:45	LB136801
	Barium	492	537	92	437	637	08/13/2025	12:45	LB136801
	Beryllium	487	495	98	420	570	08/13/2025	12:45	LB136801
	Cadmium	994	972	102	826	1120	08/13/2025	12:45	LB136801
	Calcium	236000	235000	100	199000	271000	08/13/2025	12:45	LB136801
	Chromium	558	542	103	460	624	08/13/2025	12:45	LB136801
	Cobalt	498	476	105	404	548	08/13/2025	12:45	LB136801
	Copper	486	511	95	434	588	08/13/2025	12:45	LB136801
	Iron	102000	99300	103	84400	114500	08/13/2025	12:45	LB136801
	Lead	42.2	49.0	86	37	61	08/13/2025	12:45	LB136801
	Magnesium	250000	248000	101	210000	286000	08/13/2025	12:45	LB136801
	Manganese	493	507	97	430	584	08/13/2025	12:45	LB136801
	Nickel	992	954	104	810	1100	08/13/2025	12:45	LB136801
	Potassium	42.9			0	0	08/13/2025	12:45	LB136801
	Selenium	50.5	46.0	110	26	66	08/13/2025	12:45	LB136801
	Silver	216	201	108	170	232	08/13/2025	12:45	LB136801
	Sodium	-3.58			0	0	08/13/2025	12:45	LB136801
	Thallium	113	108	105	68	148	08/13/2025	12:45	LB136801

Metals
- 4 -
INTERFERENCE CHECK SAMPLE

Client: <u>First Environment, Inc.</u>	SDG No.: <u>Q2820</u>
Contract: <u>FIRS02</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	Vanadium	479	491	98	417	565	08/13/2025	12:45	LB136801
	Zinc	1040	952	109	809	1095	08/13/2025	12:45	LB136801



METAL QC DATA

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metals
- 5a -
MATRIX SPIKE SUMMARY

client: <u>First Environment, Inc.</u>	level: <u>low</u>	sdg no.: <u>Q2820</u>
contract: <u>FIRS02</u>		lab code: <u>ACE</u>
matrix: <u>Solid</u>	sample id: <u>Q2828-01</u>	client id: <u>POWDERMS</u>
Percent Solids for Sample: 99.4	Spiked ID: Q2828-01MS	Percent Solids for Spike Sample: 99.4

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Aluminum	mg/Kg	74 - 119	9300		7750		82.1	1892		P
Antimony	mg/Kg	79 - 114	12.2		4.95		32.9	22	N	P
Arsenic	mg/Kg	82 - 111	17.9		5.28		32.9	38	N	P
Barium	mg/Kg	83 - 113	117		123		8.2	-68		P
Beryllium	mg/Kg	83 - 113	3.99		0.95		8.2	37	N	P
Cadmium	mg/Kg	82 - 113	12.5		4.95		8.2	93		P
Calcium	mg/Kg	81 - 116	10400		8670		41.1	4260		P
Chromium	mg/Kg	85 - 113	62.4		60.9		16.4	9	N	P
Cobalt	mg/Kg	85 - 112	47.2		40.3		8.2	84		P
Copper	mg/Kg	81 - 117	80.6		76.1		12.3	37		P
Iron	mg/Kg	81 - 118	10200		12000		120	-1436		P
Lead	mg/Kg	81 - 112	110		71.4		41.1	95		P
Magnesium	mg/Kg	78 - 115	1470		1200		82.1	323		P
Manganese	mg/Kg	84 - 114	219		207		8.2	147		P
Nickel	mg/Kg	83 - 113	157		143		20.5	70		P
Potassium	mg/Kg	81 - 116	551		309		410	59	N	P
Selenium	mg/Kg	78 - 111	30.0		0.51	J	82.1	36	N	P
Silver	mg/Kg	82 - 112	3.22		1.58		3.1	53	N	P
Sodium	mg/Kg	83 - 118	1030		872		120	128		P
Thallium	mg/Kg	83 - 111	67.0		0.43	J	82.1	81	N	P
Vanadium	mg/Kg	82 - 114	56.1		31.8		12.3	197	N	P
Zinc	mg/Kg	82 - 113	244		240		8.2	46		P

metals
- 5a -
MATRIX SPIKE DUPLICATE SUMMARY

client: <u>First Environment, Inc.</u>	level: <u>low</u>	sdg no.: <u>Q2820</u>
contract: <u>FIRS02</u>		lab code: <u>ACE</u>
matrix: <u>Solid</u>	sample id: <u>Q2828-01</u>	client id: <u>POWDERMSD</u>
Percent Solids for Sample: 99.4	Spiked ID: Q2828-01MSD	Percent Solids for Spike Sample: 99.4

Analyte	Units	Acceptance Limit %R	MSD Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Aluminum	mg/Kg	74 - 119	10600		7750		87.5	3219		P
Antimony	mg/Kg	79 - 114	10.5		4.95		35.0	16	N	P
Arsenic	mg/Kg	82 - 111	20.2		5.28		35.0	43	N	P
Barium	mg/Kg	83 - 113	120		123		8.7	-28		P
Beryllium	mg/Kg	83 - 113	4.64		0.95		8.7	43	N	P
Cadmium	mg/Kg	82 - 113	13.8		4.95		8.7	101		P
Calcium	mg/Kg	81 - 116	12400		8670		43.7	8468		P
Chromium	mg/Kg	85 - 113	76.4		60.9		17.5	88		P
Cobalt	mg/Kg	85 - 112	52.6		40.3		8.7	142		P
Copper	mg/Kg	81 - 117	84.2		76.1		13.1	61		P
Iron	mg/Kg	81 - 118	12600		12000		130	492		P
Lead	mg/Kg	81 - 112	116		71.4		43.7	102		P
Magnesium	mg/Kg	78 - 115	1710		1200		87.5	575		P
Manganese	mg/Kg	84 - 114	251		207		8.7	505		P
Nickel	mg/Kg	83 - 113	178		143		21.9	163		P
Potassium	mg/Kg	81 - 116	582		309		440	62	N	P
Selenium	mg/Kg	78 - 111	34.3		0.51	J	87.5	39	N	P
Silver	mg/Kg	82 - 112	3.45		1.58		3.3	57	N	P
Sodium	mg/Kg	83 - 118	1050		872		130	141		P
Thallium	mg/Kg	83 - 111	75.0		0.43	J	87.5	85		P
Vanadium	mg/Kg	82 - 114	41.4		31.8		13.1	73	N	P
Zinc	mg/Kg	82 - 113	250		240		8.7	115		P

metals
- 5a -
MATRIX SPIKE SUMMARY

client: <u>First Environment, Inc.</u>	level: <u>low</u>	sdg no.: <u>Q2820</u>
contract: <u>FIRS02</u>		lab code: <u>ACE</u>
matrix: <u>Solid</u>	sample id: <u>Q2831-01</u>	client id: <u>VNJ-238MS</u>
Percent Solids for Sample: 93.1	Spiked ID: Q2831-01MS	Percent Solids for Spike Sample: 93.1

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Mercury	mg/Kg	80 - 124	0.29		0.037		0.26	97		CV

metals
- 5a -
MATRIX SPIKE DUPLICATE SUMMARY

client: <u>First Environment, Inc.</u>	level: <u>low</u>	sdg no.: <u>Q2820</u>
contract: <u>FIRS02</u>		lab code: <u>ACE</u>
matrix: <u>Solid</u>	sample id: <u>Q2831-01</u>	client id: <u>VNJ-238MSD</u>
Percent Solids for Sample: 93.1	Spiked ID: Q2831-01MSD	Percent Solids for Spike Sample: 93.1

Analyte	Units	Acceptance Limit %R	MSD Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Mercury	mg/Kg	80 - 124	0.30		0.037		0.28	92		CV

Metals
- 5b -
POST DIGEST SPIKE SUMMARY

Client: <u>First Environment, Inc.</u>	SDG No.: <u>Q2820</u>	
Contract: <u>FIRS02</u>	Lab Code: <u>ACE</u>	
Matrix: <u>Solid</u>	Level: <u>LOW</u>	Client ID: <u>POWDERA</u>
Sample ID: <u>Q2828-01</u>	Spiked ID: <u>Q2828-01A</u>	

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Antimony	mg/Kg	79 - 114	23.9		4.95		37.3	51	N	P
Arsenic	mg/Kg	82 - 111	23.2		5.28		37.3	48	N	P
Beryllium	mg/Kg	83 - 113	5.02		0.95		9.30	44	N	P
Chromium	mg/Kg	85 - 113	68.9		60.9		18.6	43	N	P
Potassium	mg/Kg	81 - 116	575		309		470	57	N	P
Selenium	mg/Kg	78 - 111	44.6		0.51	J	93.2	47	N	P
Silver	mg/Kg	82 - 112	3.46		1.58		3.50	54	N	P
Thallium	mg/Kg	83 - 111	80.5		0.43	J	93.2	86		P
Vanadium	mg/Kg	82 - 114	38.6		31.8		14.0	49	N	P

Metals

- 6 -

DUPLICATE SAMPLE SUMMARY

Client: First Environment, Inc. **Level:** LOW **SDG No.:** Q2820
Contract: FIRS02 **Lab Code:** ACE
Matrix: Solid **Sample ID:** Q2828-01 **Client ID:** POWDERDUP
Percent Solids for Sample: 99.4 **Duplicate ID** Q2828-01DUP **Percent Solids for Spike Sample:** 99.4

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Aluminum	mg/Kg	20	7750		7150		8		P
Antimony	mg/Kg	20	4.95		4.87		2		P
Arsenic	mg/Kg	20	5.28		5.00		5		P
Barium	mg/Kg	20	123		112		9		P
Beryllium	mg/Kg	20	0.95		0.88		7		P
Cadmium	mg/Kg	20	4.95		4.56		8		P
Calcium	mg/Kg	20	8670		8040		8		P
Chromium	mg/Kg	20	60.9		55.8		9		P
Cobalt	mg/Kg	20	40.3		36.8		9		P
Copper	mg/Kg	20	76.1		71.4		6		P
Iron	mg/Kg	20	12000		11000		9		P
Lead	mg/Kg	20	71.4		66.2		8		P
Magnesium	mg/Kg	20	1200		1120		7		P
Manganese	mg/Kg	20	207		192		8		P
Nickel	mg/Kg	20	143		131		9		P
Potassium	mg/Kg	20	309		285		8		P
Selenium	mg/Kg	20	0.51	J	0.58	J	14		P
Silver	mg/Kg	20	1.58		1.47		7		P
Sodium	mg/Kg	20	872		806		8		P
Thallium	mg/Kg	20	0.43	J	0.64	J	40		P
Vanadium	mg/Kg	20	31.8		29.6		7		P
Zinc	mg/Kg	20	240		222		8		P

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

Metals

- 6 -

DUPLICATE SAMPLE SUMMARY

Client:	<u>First Environment, Inc.</u>	Level:	<u>LOW</u>	SDG No.:	<u>Q2820</u>
Contract:	<u>FIRS02</u>			Lab Code:	<u>ACE</u>
Matrix:	<u>Solid</u>	Sample ID:	<u>Q2828-01MS</u>	Client ID:	<u>POWDERMSD</u>
Percent Solids for Sample:	99.4	Duplicate ID	Q2828-01MSD	Percent Solids for Spike Sample:	99.4

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Aluminum	mg/Kg	20	9300		10600		13		P
Antimony	mg/Kg	20	12.2		10.5		15		P
Arsenic	mg/Kg	20	17.9		20.2		12		P
Barium	mg/Kg	20	117		120		3		P
Beryllium	mg/Kg	20	3.99		4.64		15		P
Cadmium	mg/Kg	20	12.5		13.8		10		P
Calcium	mg/Kg	20	10400		12400		18		P
Chromium	mg/Kg	20	62.4		76.4		20		P
Cobalt	mg/Kg	20	47.2		52.6		11		P
Copper	mg/Kg	20	80.6		84.2		4		P
Iron	mg/Kg	20	10200		12600		21	*	P
Lead	mg/Kg	20	110		116		5		P
Magnesium	mg/Kg	20	1470		1710		15		P
Manganese	mg/Kg	20	219		251		14		P
Nickel	mg/Kg	20	157		178		13		P
Potassium	mg/Kg	20	551		582		5		P
Selenium	mg/Kg	20	30.0		34.3		13		P
Silver	mg/Kg	20	3.22		3.45		7		P
Sodium	mg/Kg	20	1030		1050		2		P
Thallium	mg/Kg	20	67.0		75.0		11		P
Vanadium	mg/Kg	20	56.1		41.4		30	*	P
Zinc	mg/Kg	20	244		250		2		P

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

Metals

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DUPLICATE SAMPLE SUMMARY

Client:	<u>First Environment, Inc.</u>	Level:	<u>LOW</u>	SDG No.:	<u>Q2820</u>
Contract:	<u>FIRS02</u>			Lab Code:	<u>ACE</u>
Matrix:	<u>Solid</u>	Sample ID:	<u>Q2831-01</u>	Client ID:	<u>VNJ-238DUP</u>
Percent Solids for Sample:	93.1	Duplicate ID	Q2831-01DUP	Percent Solids for Spike Sample:	93.1

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Mercury	mg/Kg	20	0.037		0.040		8		CV

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

Metals

- 6 -

DUPLICATE SAMPLE SUMMARY

Client:	<u>First Environment, Inc.</u>	Level:	<u>LOW</u>	SDG No.:	<u>Q2820</u>
Contract:	<u>FIRS02</u>			Lab Code:	<u>ACE</u>
Matrix:	<u>Solid</u>	Sample ID:	<u>Q2831-01MS</u>	Client ID:	<u>VNJ-238MSD</u>
Percent Solids for Sample:	93.1	Duplicate ID	Q2831-01MSD	Percent Solids for Spike Sample:	93.1

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Mercury	mg/Kg	20	0.29		0.30		2		CV

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

Metals

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LABORATORY CONTROL SAMPLE SUMMARY

Client: First Environment, Inc.

SDG No.: Q2820

Contract: FIRS02

Lab Code: ACE

Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limits	M
PB169204BS Mercury	mg/Kg	0.27	0.23		85	80 - 124	CV

Metals

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LABORATORY CONTROL SAMPLE SUMMARY

Client:	<u>First Environment, Inc.</u>	SDG No.:	<u>Q2820</u>
Contract:	<u>FIRS02</u>	Lab Code:	<u>ACE</u>

Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limits	M
PB169211BS							
Aluminum	mg/Kg	100	98.1		98	74 - 119	P
Antimony	mg/Kg	40.0	40.7		102	79 - 114	P
Arsenic	mg/Kg	40.0	39.2		98	82 - 111	P
Barium	mg/Kg	10.0	9.27		93	83 - 113	P
Beryllium	mg/Kg	10.0	9.71		97	83 - 113	P
Cadmium	mg/Kg	10.0	9.41		94	82 - 113	P
Calcium	mg/Kg	50.0	49.9	J	100	81 - 116	P
Chromium	mg/Kg	20.0	20.3		102	85 - 113	P
Cobalt	mg/Kg	10.0	9.68		97	85 - 112	P
Copper	mg/Kg	15.0	15.4		103	81 - 117	P
Iron	mg/Kg	150	151		101	81 - 118	P
Lead	mg/Kg	50.0	47.4		95	81 - 112	P
Magnesium	mg/Kg	100	97.2	J	97	78 - 115	P
Manganese	mg/Kg	10.0	9.87		99	84 - 114	P
Nickel	mg/Kg	25.0	24.4		98	83 - 113	P
Potassium	mg/Kg	500	486		97	81 - 116	P
Selenium	mg/Kg	100	99.5		100	78 - 111	P
Silver	mg/Kg	3.8	3.78		100	82 - 112	P
Sodium	mg/Kg	150	138		92	83 - 118	P
Thallium	mg/Kg	100	97.7		98	83 - 111	P
Vanadium	mg/Kg	15.0	15.0		100	82 - 114	P
Zinc	mg/Kg	10.0	10.3		103	82 - 113	P

Metals
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ICP SERIAL DILUTIONS

SAMPLE NO.

POWDERL

Lab Name: Alliance

Contract: FIRS02

Lab Code: ACE Lb No.: lb136801 Lab Sample ID : Q2828-01L SDG No.: Q2820

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		7750		13300		71		P
Antimony		4.95		8.21	J	66		P
Arsenic		5.28		8.73		65		P
Barium		123		208		69		P
Beryllium		0.95		1.70		80		P
Cadmium		4.95		3.90		21		P
Calcium		8670		15400		77		P
Chromium		60.9		109		78		P
Cobalt		40.3		39.1		3		P
Copper		76.1		139		82		P
Iron		12000		20300		70		P
Lead		71.4		72.9		2		P
Magnesium		1200		2170		80		P
Manganese		207		372		80		P
Nickel		143		142		0		P
Potassium		309		468		51		P
Selenium		0.51	J	4.66	U	100.0		P
Silver		1.58		2.85		81		P
Sodium		872		1270		46		P
Thallium		0.43	J	1.28	J	199		P
Vanadium		31.8		56.3		77		P
Zinc		240		435		81		P

Metals
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ICP SERIAL DILUTIONS

SAMPLE NO.

VNJ-238L

Lab Name: Alliance **Contract:** FIRS02
Lab Code: ACE **Lb No.:** lb136782 **Lab Sample ID :** Q2831-01L **SDG No.:** Q2820
Matrix (soil/water): Solid **Level (low/med):** LOW
Concentration Units: mg/Kg

Analyte	Initial Sample Result (I) C	Serial Dilution Result (S) C	% Differ- ence	Q	M
Mercury	0.037	0.070 U	100.0		CV



METAL PREPARATION & INSTRUMENT DATA

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Metals

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ICP INTERELEMENT CORRECTION FACTORS

Client: First Environment, Inc.

SDG No.: Q2820

Contract: FIRS02

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: First Environment, Inc.

SDG No.: Q2820

Contract: FIRS02

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: First Environment, Inc.

SDG No.: Q2820

Contract: FIRS02

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: First Environment, Inc.

SDG No.: Q2820

Contract: FIRS02

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: First Environment, Inc.

SDG No.: Q2820

Contract: FIRS02

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

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Metals
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SAMPLE PREPARATION SUMMARY

Client: First Environment, Inc.

SDG No.: Q2820

Contract: FIRS02

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: PB169204							
PB169204BL	PB169204BL	MB	SOLID	08/11/2025	0.51	35.0	100.00
PB169204BS	PB169204BS	LCS	SOLID	08/11/2025	0.51	35.0	100.00
Q2820-09	705R-S	SAM	SOLID	08/11/2025	0.54	35.0	55.80
Q2820-10	SOIL-DUP-2	SAM	SOLID	08/11/2025	0.51	35.0	48.40
Q2820-24	22M-S	SAM	SOLID	08/11/2025	0.51	35.0	89.00
Q2831-01DUP	VNJ-238DUP	DUP	SOLID	08/11/2025	0.50	35.0	93.10
Q2831-01MS	VNJ-238MS	MS	SOLID	08/11/2025	0.57	35.0	93.10
Q2831-01MSD	VNJ-238MSD	MSD	SOLID	08/11/2025	0.54	35.0	93.10

Metals
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SAMPLE PREPARATION SUMMARY

Client: First Environment, Inc.

SDG No.: Q2820

Contract: FIRS02

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: PB169211							
PB169211BL	PB169211BL	MB	SOLID	08/12/2025	2.00	100.0	100.00
PB169211BS	PB169211BS	LCS	SOLID	08/12/2025	2.00	100.0	100.00
Q2820-09	705R-S	SAM	SOLID	08/12/2025	2.25	100.0	55.80
Q2820-10	SOIL-DUP-2	SAM	SOLID	08/12/2025	2.17	100.0	48.40
Q2820-24	22M-S	SAM	SOLID	08/12/2025	2.24	100.0	89.00
Q2828-01DUP	POWDERDUP	DUP	SOLID	08/12/2025	2.33	100.0	99.40
Q2828-01MS	POWDERMS	MS	SOLID	08/12/2025	2.45	100.0	99.40
Q2828-01MSD	POWDERMSD	MSD	SOLID	08/12/2025	2.30	100.0	99.40

metals
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ANALYSIS RUN LOG

Client: First Environment, Inc.

Contract: FIRS02

Lab code: ACE

Sdg no.: Q2820

Instrument id number: _____

Method: _____

Run number: LB136782

Start date: 08/12/2025

End date: 08/12/2025

Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	0919	HG
S0.2	S0.2	1	0924	HG
S2.5	S2.5	1	0926	HG
S5	S5	1	0929	HG
S7.5	S7.5	1	0939	HG
S10	S10	1	0953	HG
ICV08	ICV08	1	0956	HG
ICB08	ICB08	1	1001	HG
CCV22	CCV22	1	1003	HG
CCB22	CCB22	1	1008	HG
CRA	CRA	1	1034	HG
PB169204BL	PB169204BL	1	1046	HG
PB169204BS	PB169204BS	1	1050	HG
CCV23	CCV23	1	1111	HG
CCB23	CCB23	1	1121	HG
Q2820-09	705R-S	1	1129	HG
Q2820-10	SOIL-DUP-2	1	1131	HG
Q2820-24	22M-S	1	1134	HG
CCV24	CCV24	1	1151	HG
CCB24	CCB24	1	1154	HG
Q2831-01DUP	VNJ-238DUP	1	1208	HG
Q2831-01MS	VNJ-238MS	1	1210	HG
Q2831-01MSD	VNJ-238MSD	1	1212	HG
Q2831-01L	VNJ-238L	5	1215	HG
CCV25	CCV25	1	1232	HG
CCB25	CCB25	1	1237	HG
CCV26	CCV26	1	1255	HG
CCB26	CCB26	1	1300	HG

metals
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ANALYSIS RUN LOG

Client: First Environment, Inc.

Contract: FIRS02

Lab code: ACE

Sdg no.: Q2820

Instrument id number: _____

Method: _____

Run number: LB136801

Start date: 08/13/2025

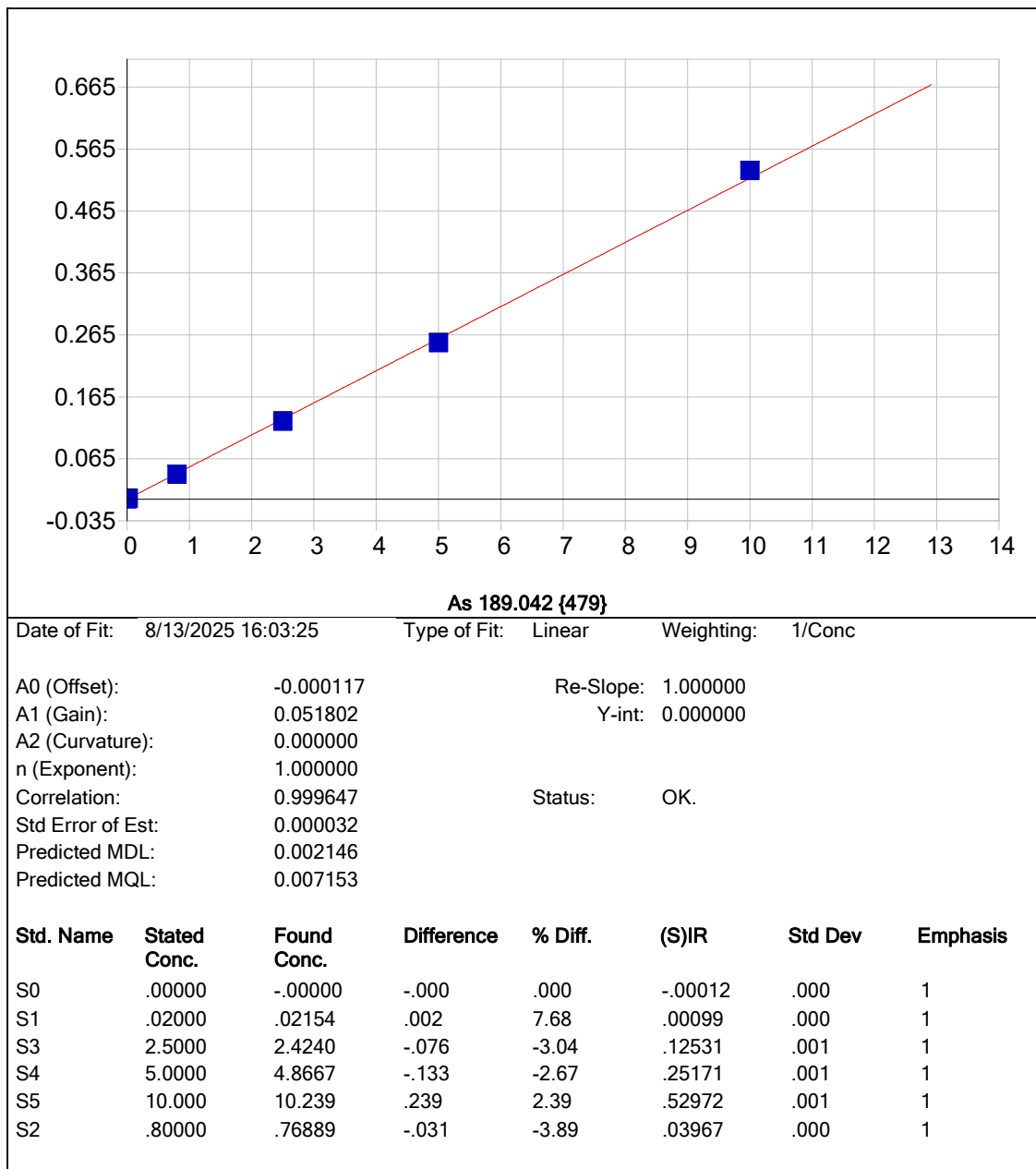
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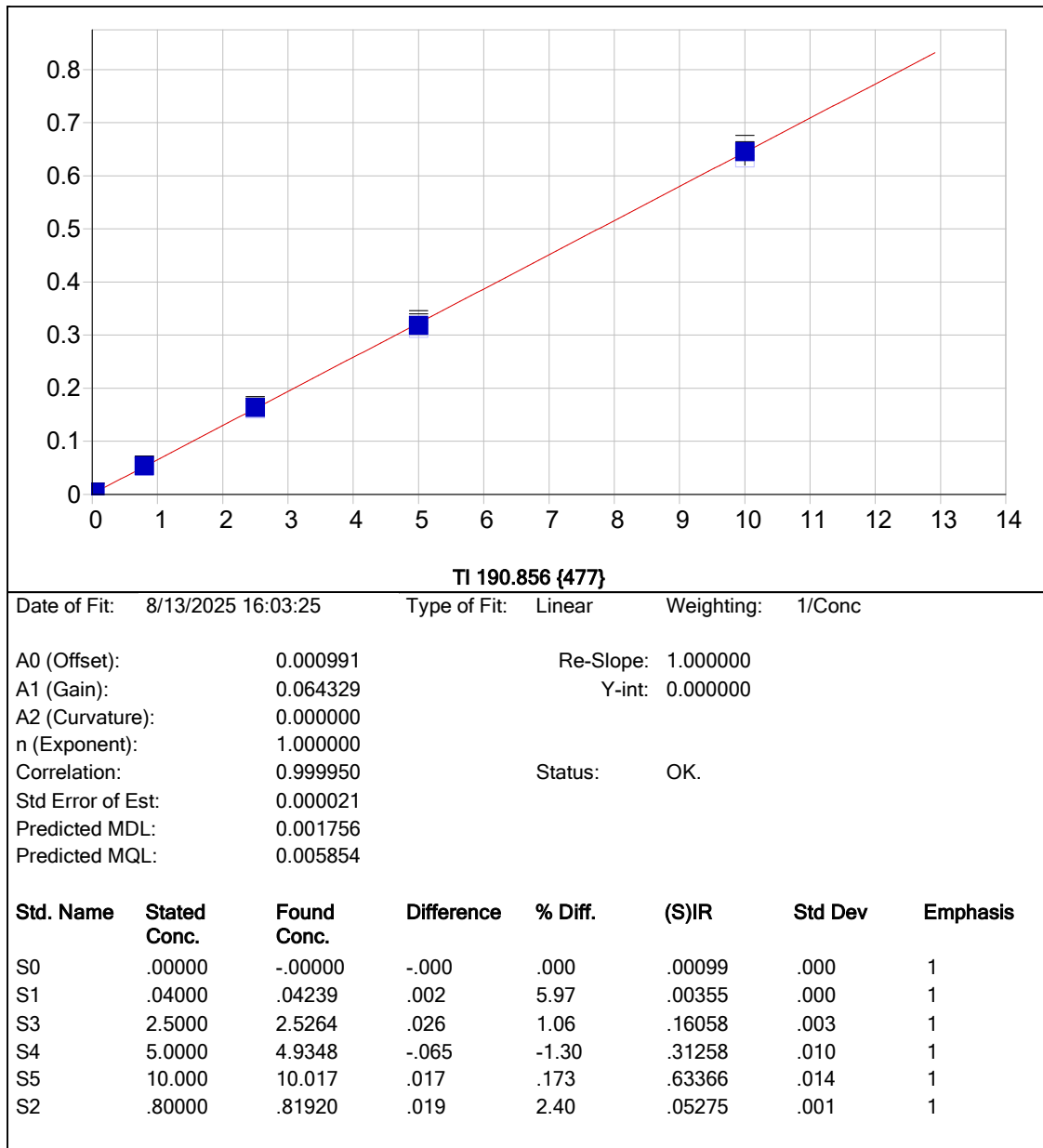
Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	1156	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
S1	S1	1	1200	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
S2	S2	1	1204	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
S3	S3	1	1208	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
S4	S4	1	1212	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	1217	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	1221	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	1228	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	1233	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	1237	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	1241	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	1245	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	1258	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	1303	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q2828-01DUP	POWDERDUP	1	1312	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q2828-01L	POWDERL	5	1316	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q2828-01MS	POWDERMS	1	1320	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q2828-01MSD	POWDERMSD	1	1325	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q2828-01A	POWDERA	1	1330	Ag,As,Be,Cr,K,Sb,Se,Tl,V
CCV02	CCV02	1	1342	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	1346	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	1433	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	1437	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
PB169211BL	PB169211BL	1	1506	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
PB169211BS	PB169211BS	1	1519	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	1523	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	1527	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	1614	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	1619	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q2820-09	705R-S	1	1623	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q2820-10	SOIL-DUP-2	1	1627	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q2820-24	22M-S	1	1631	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCV06	CCV06	1	1705	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	1709	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCV07	CCV07	1	1746	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCB07	CCB07	1	1750	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn

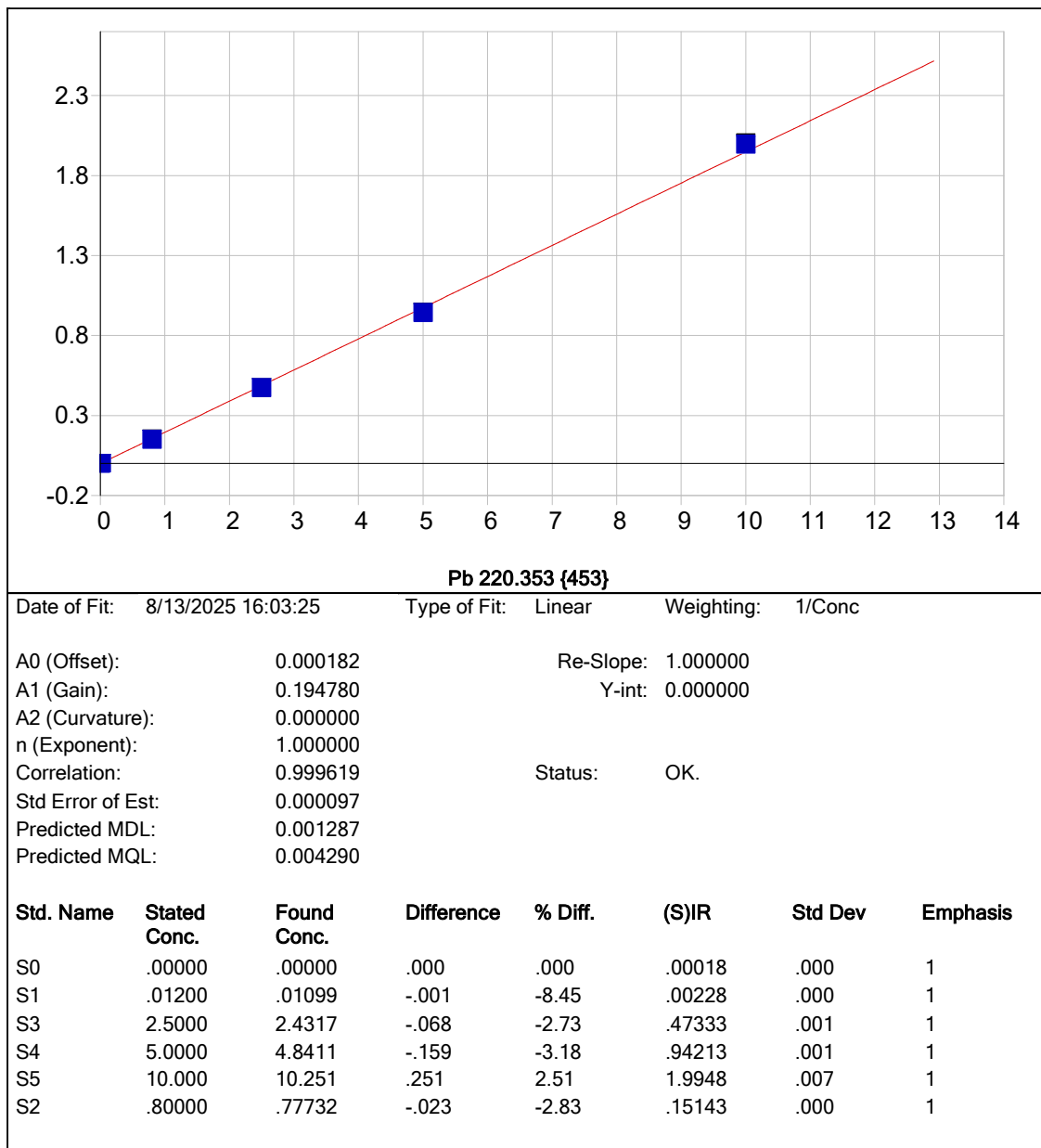


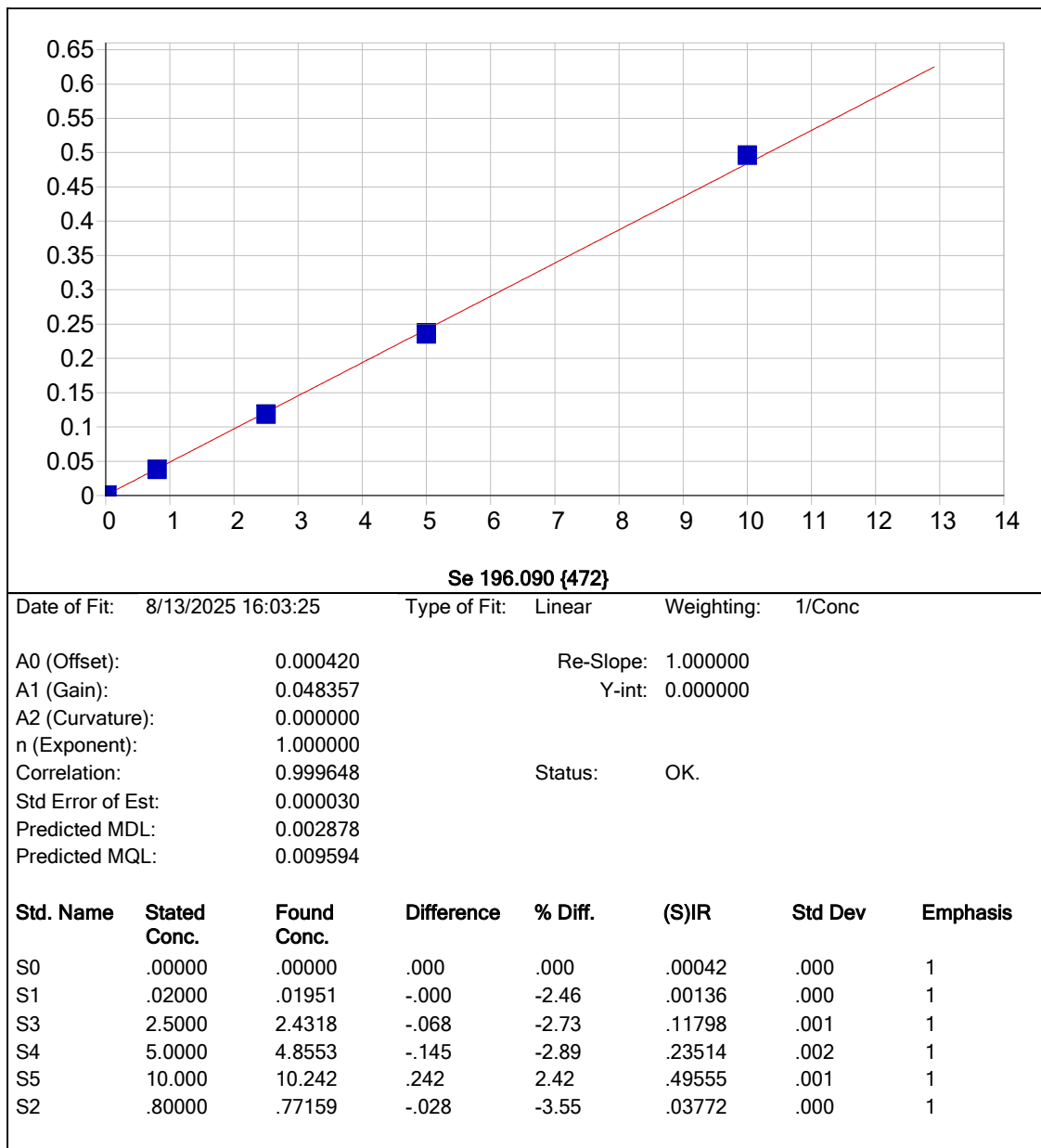
METAL RAW DATA

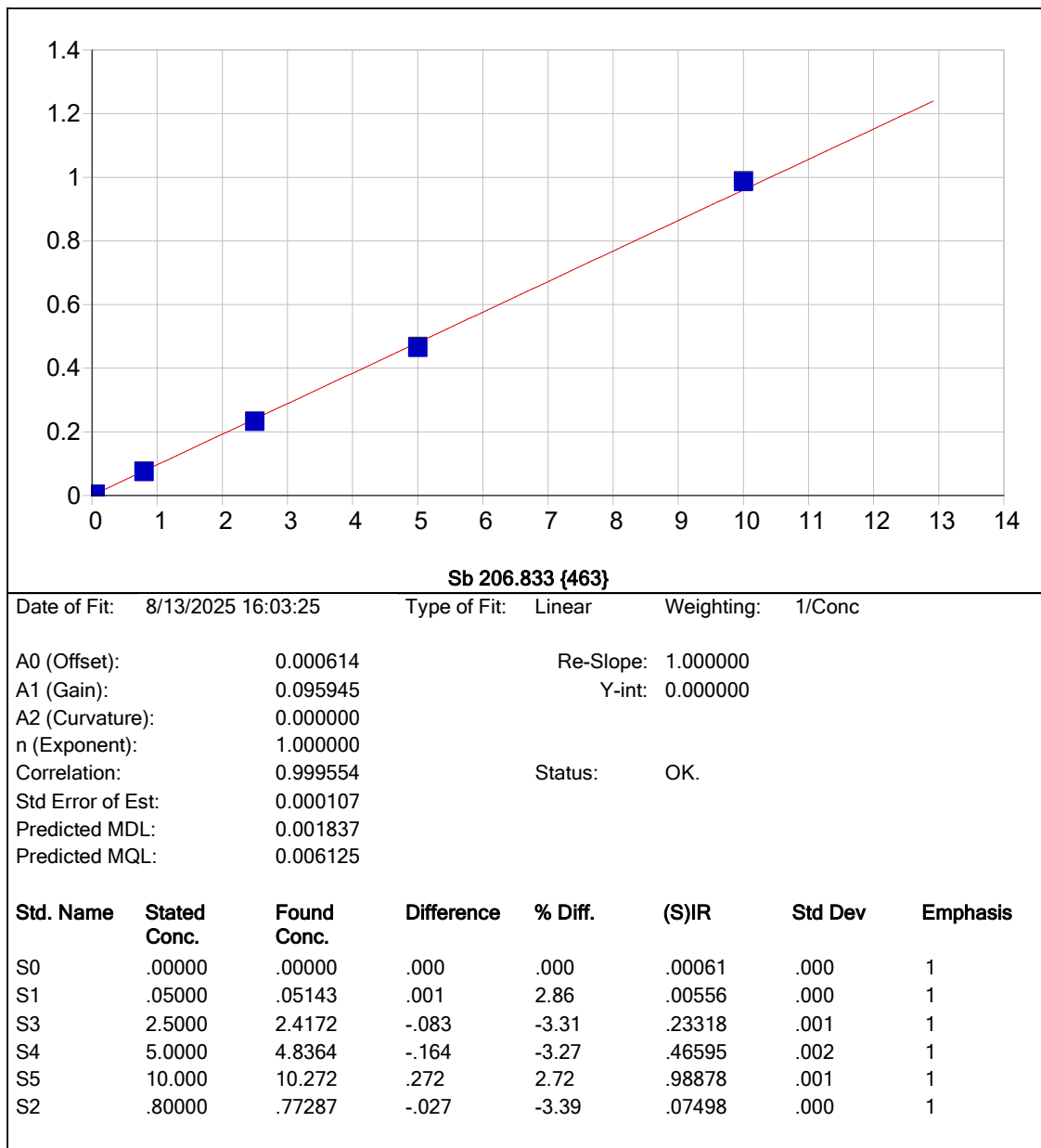
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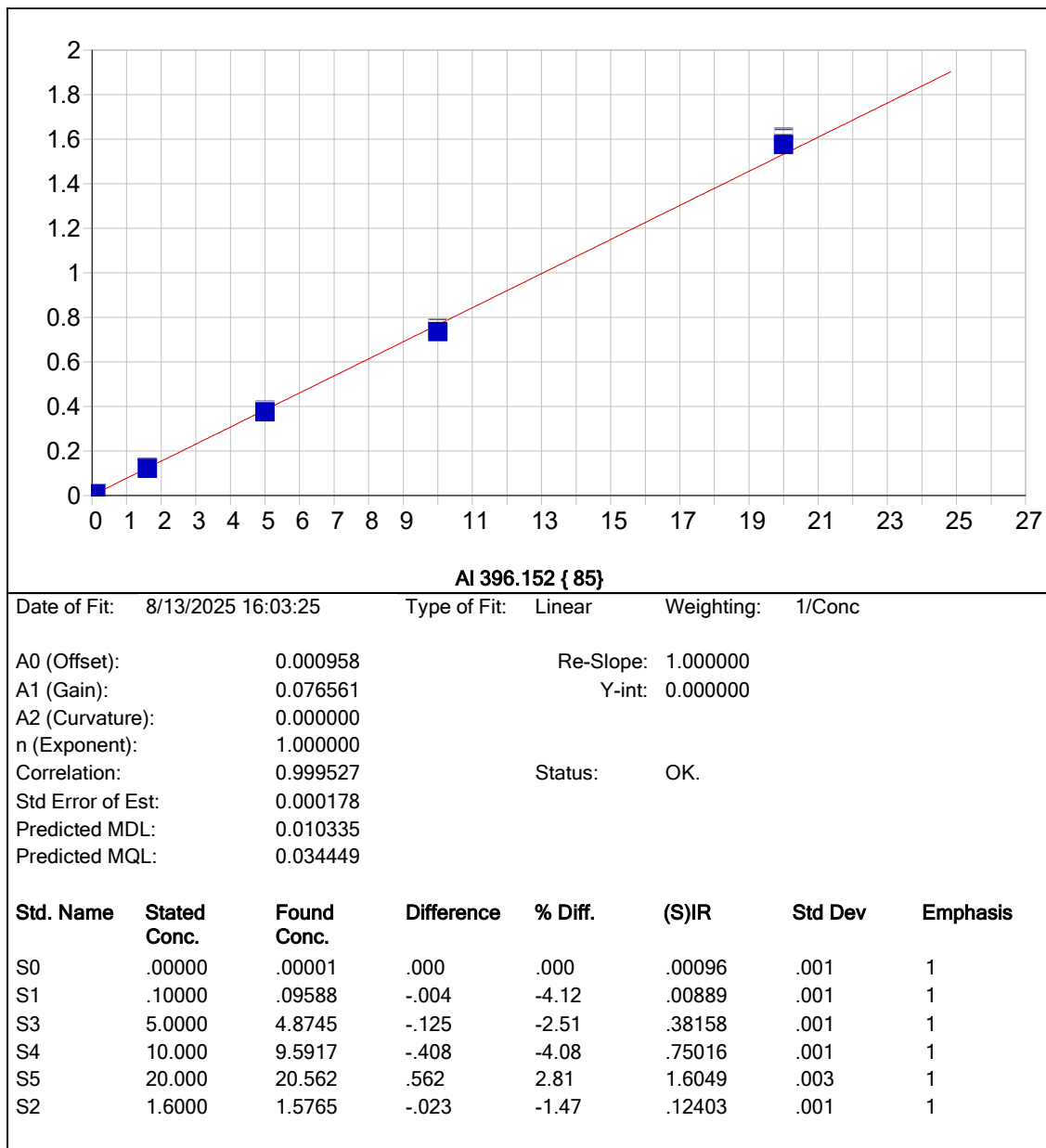


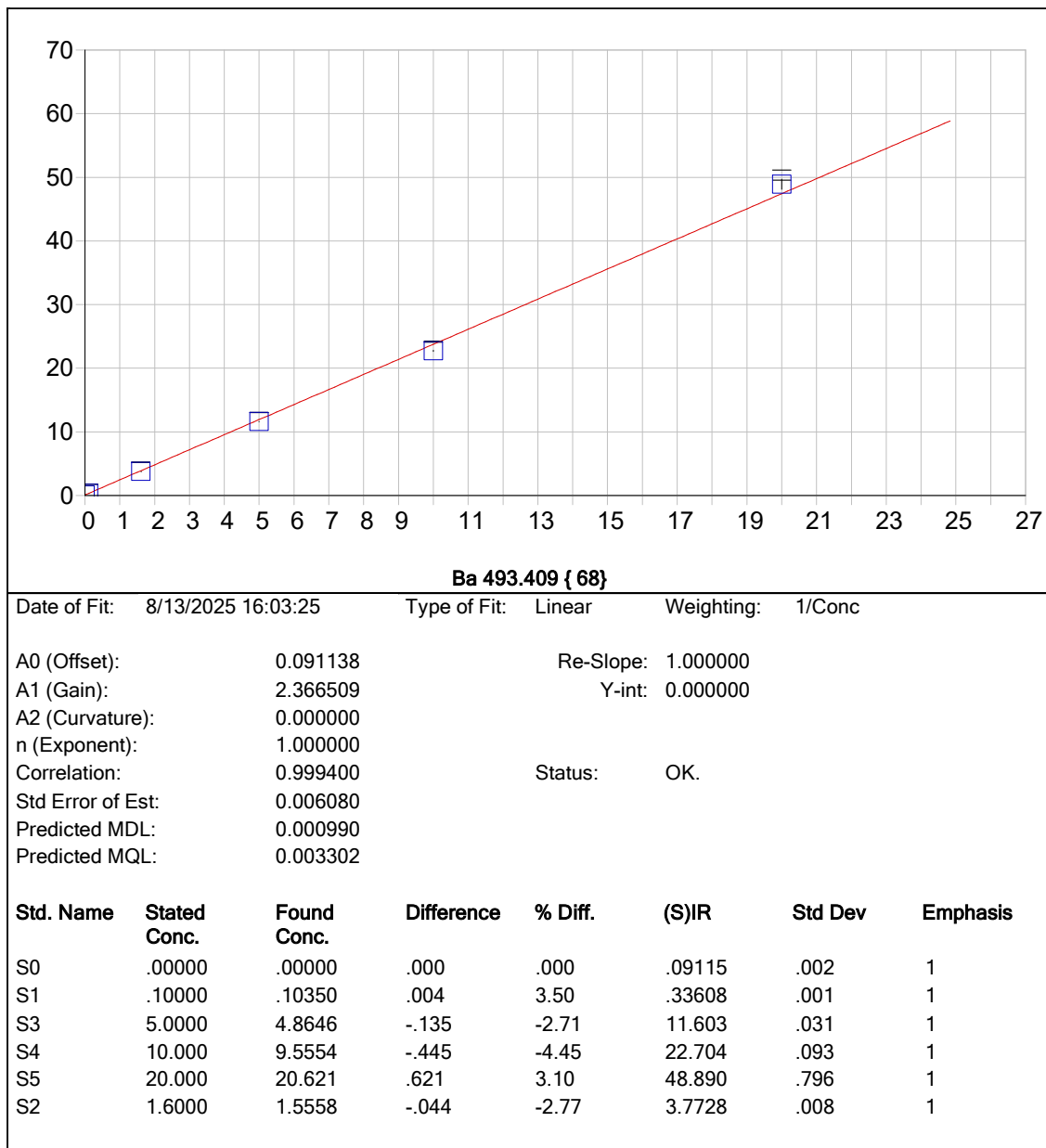


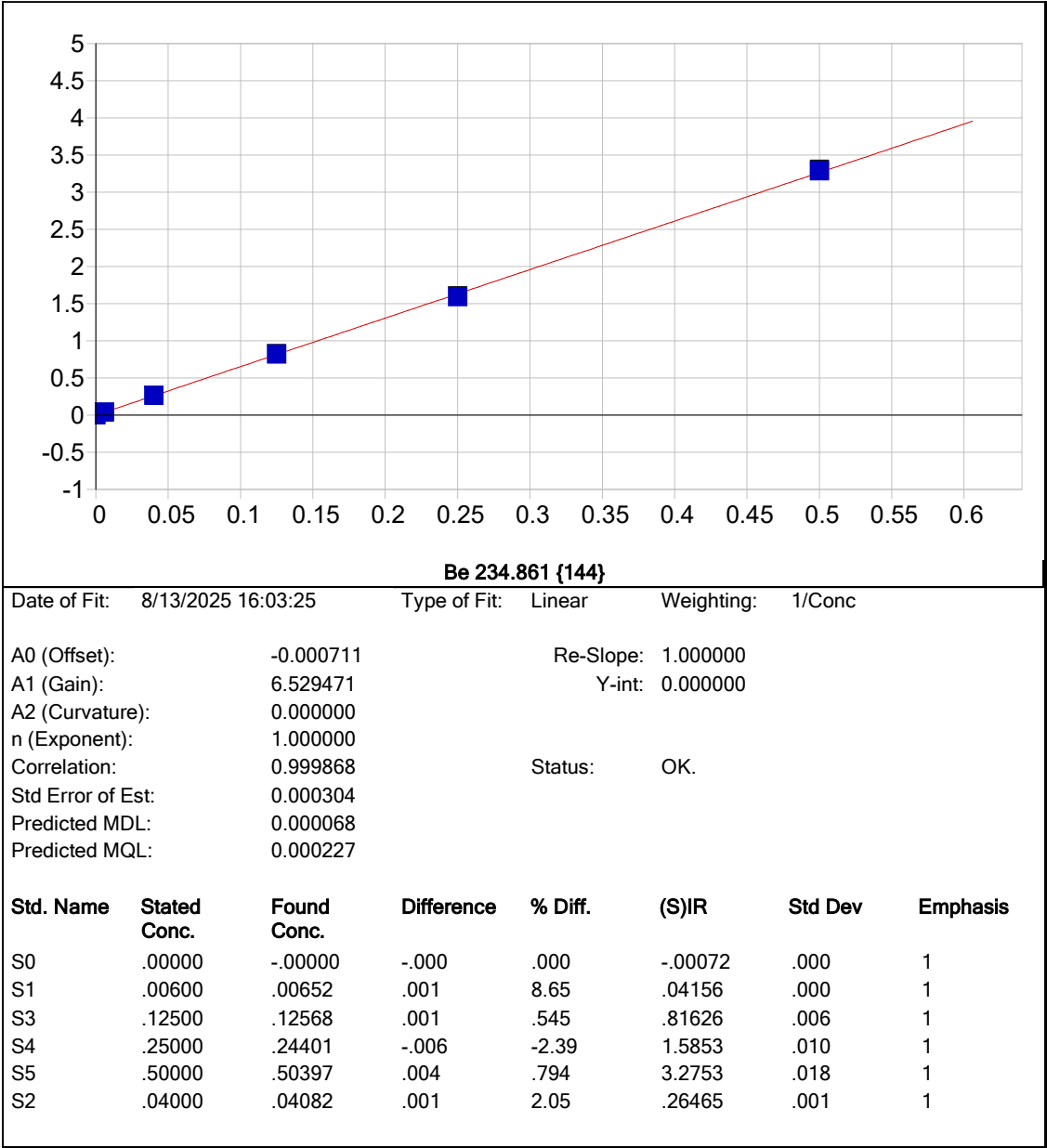


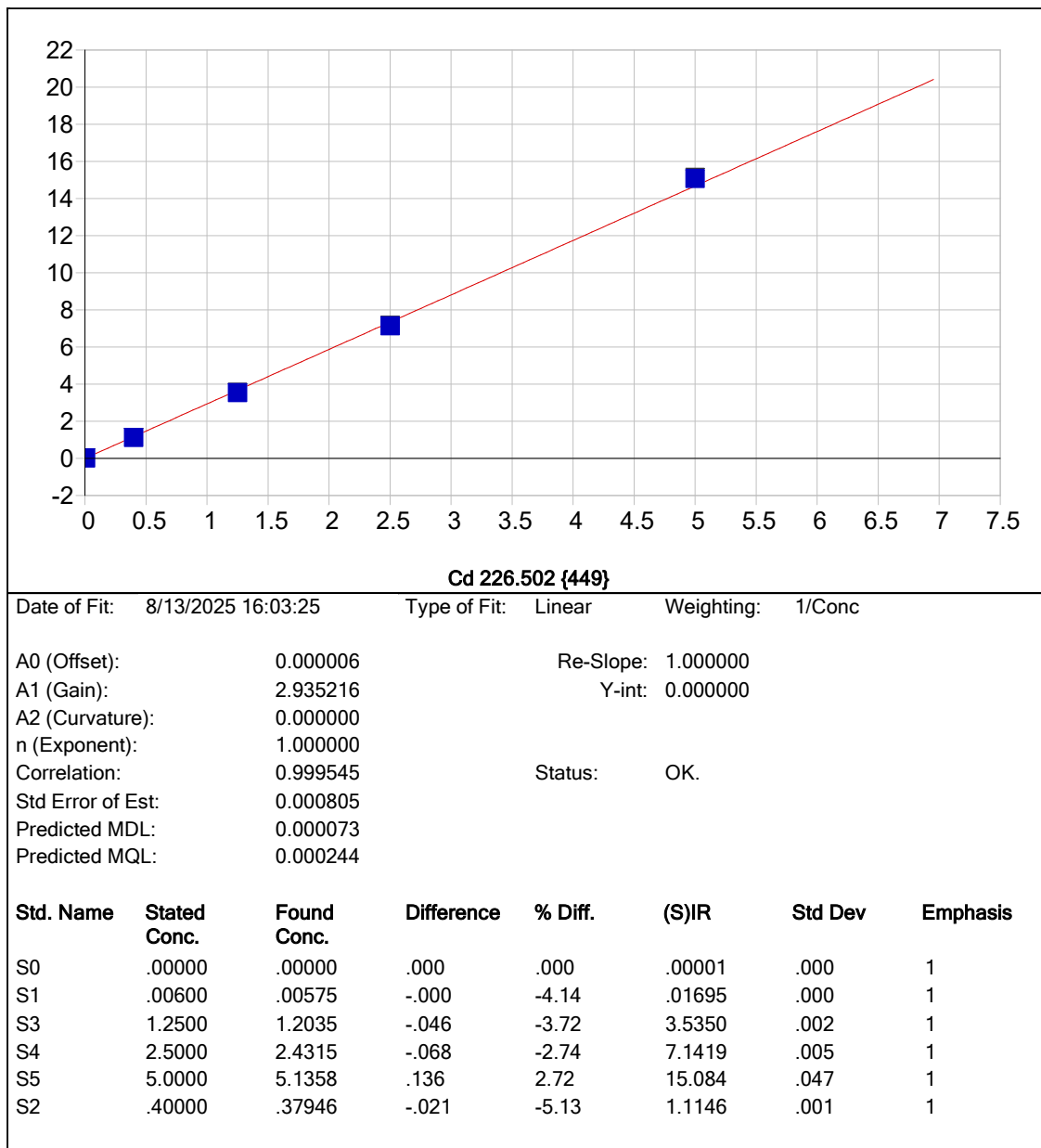


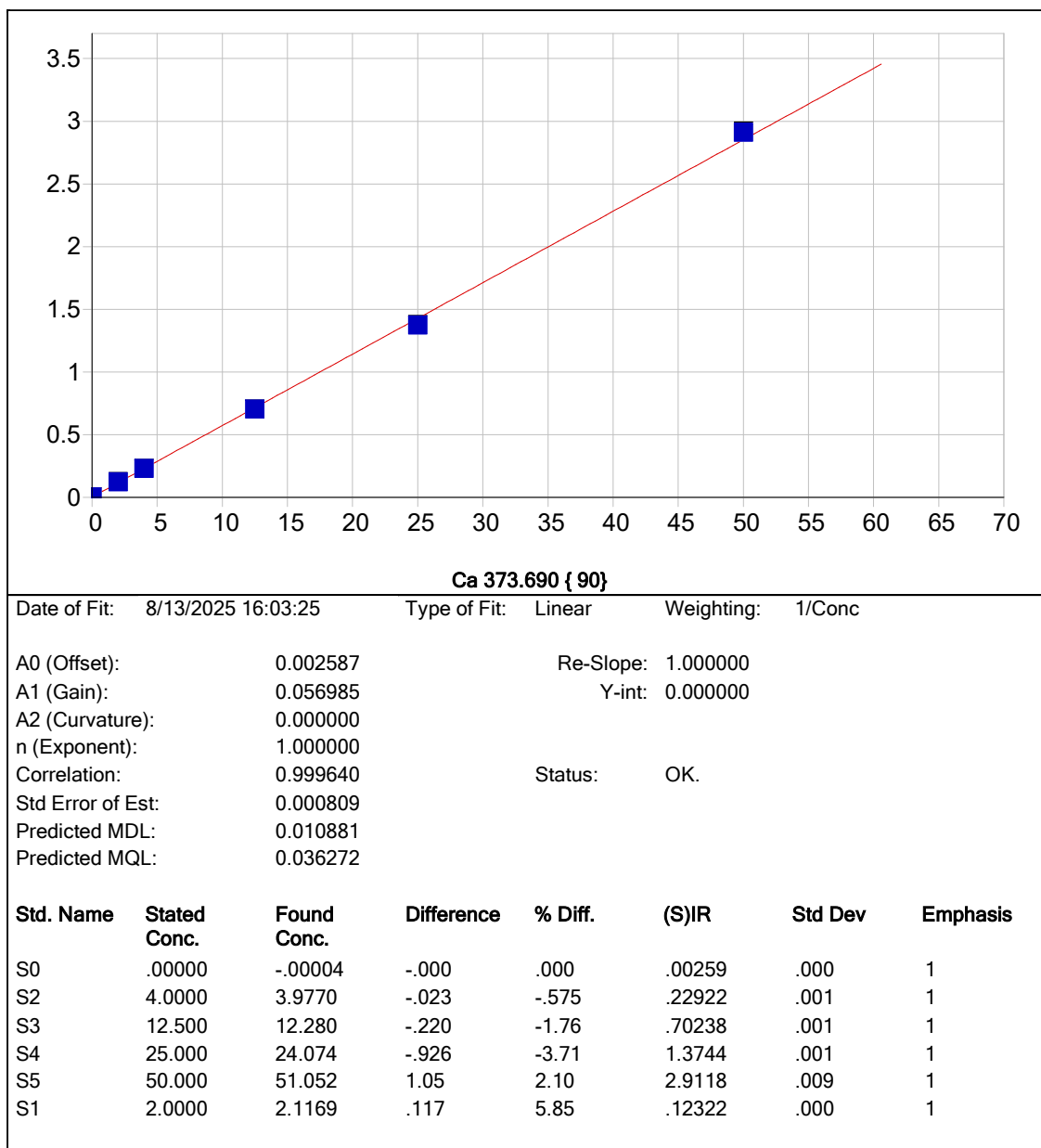


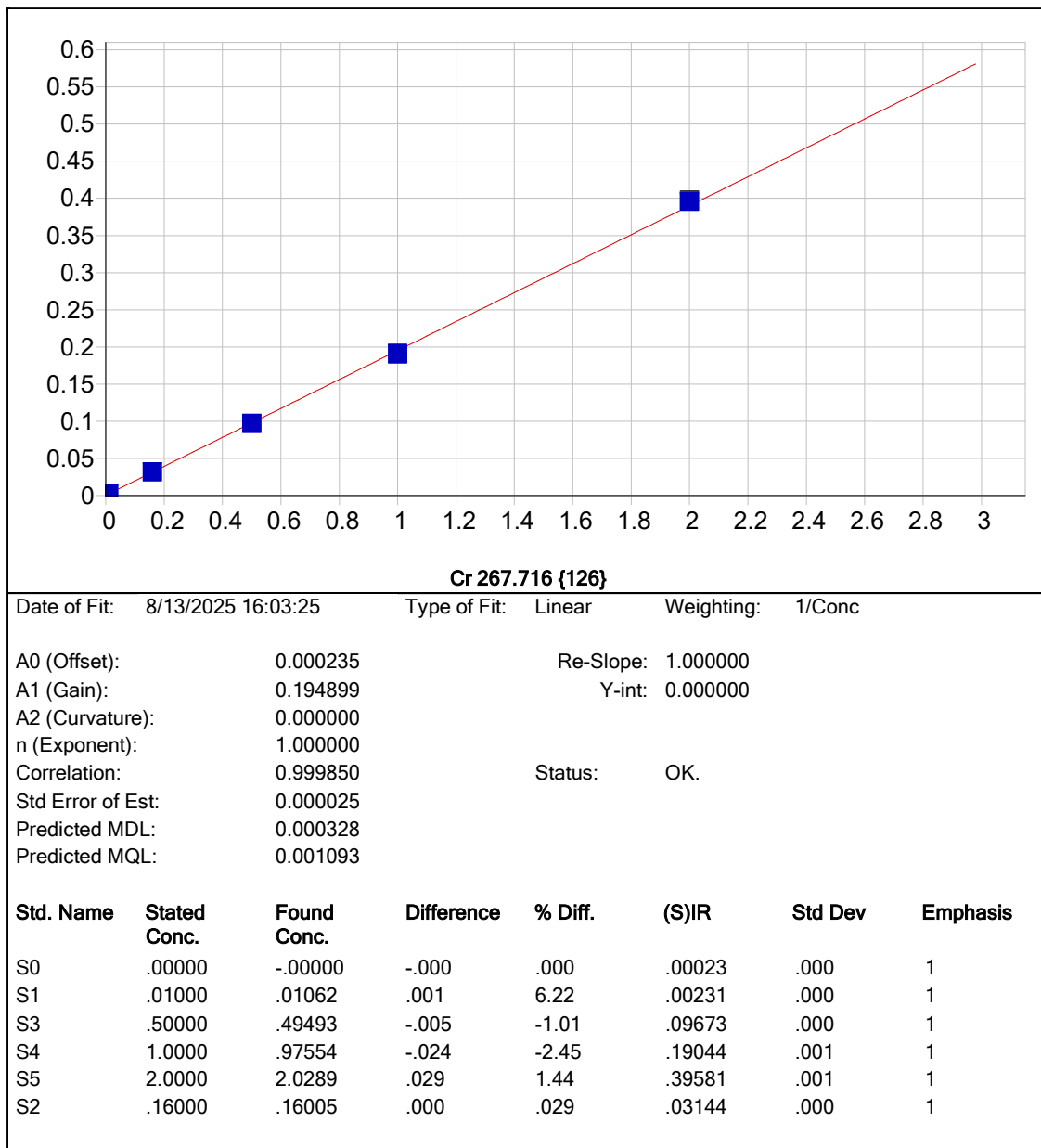


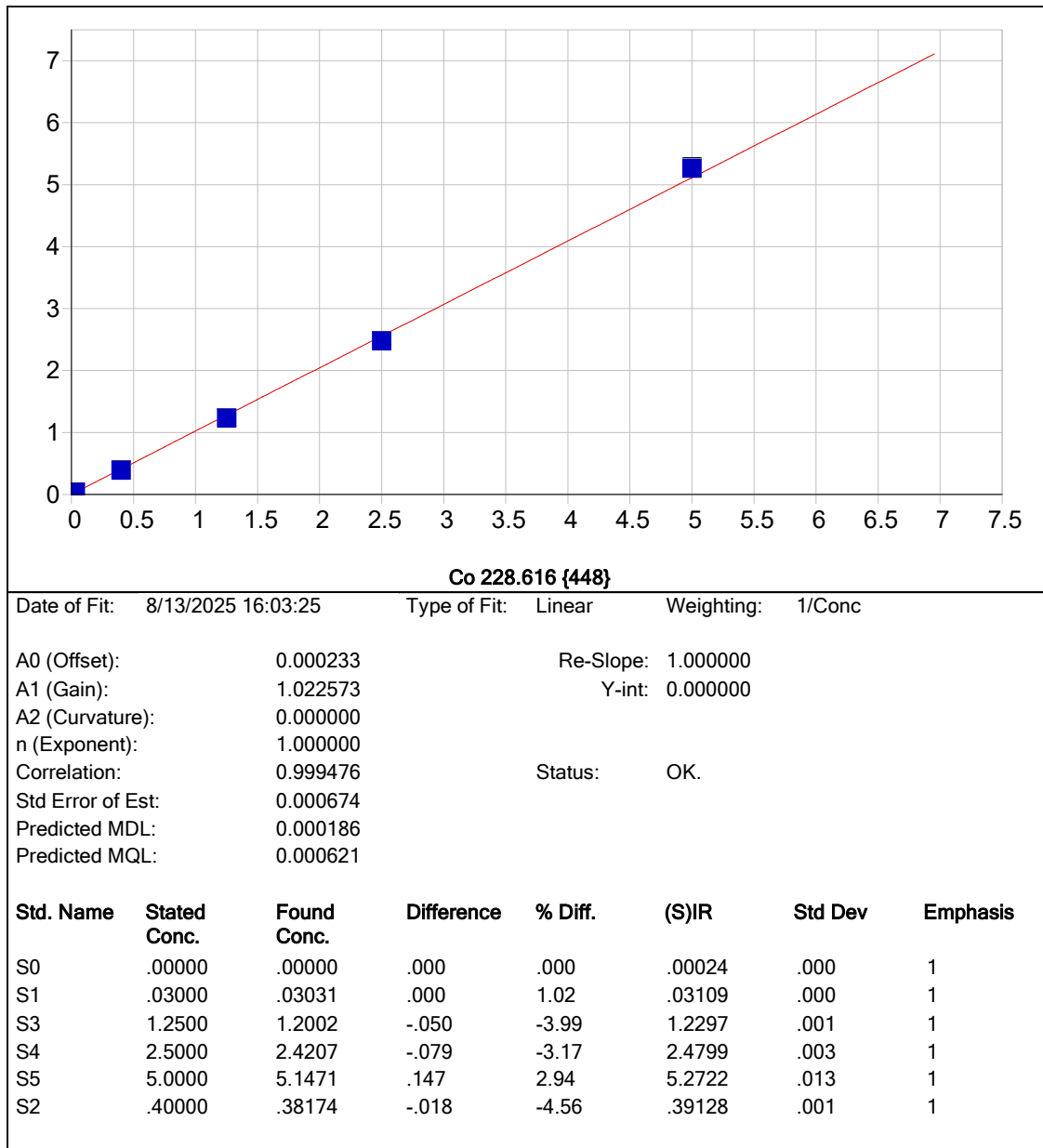


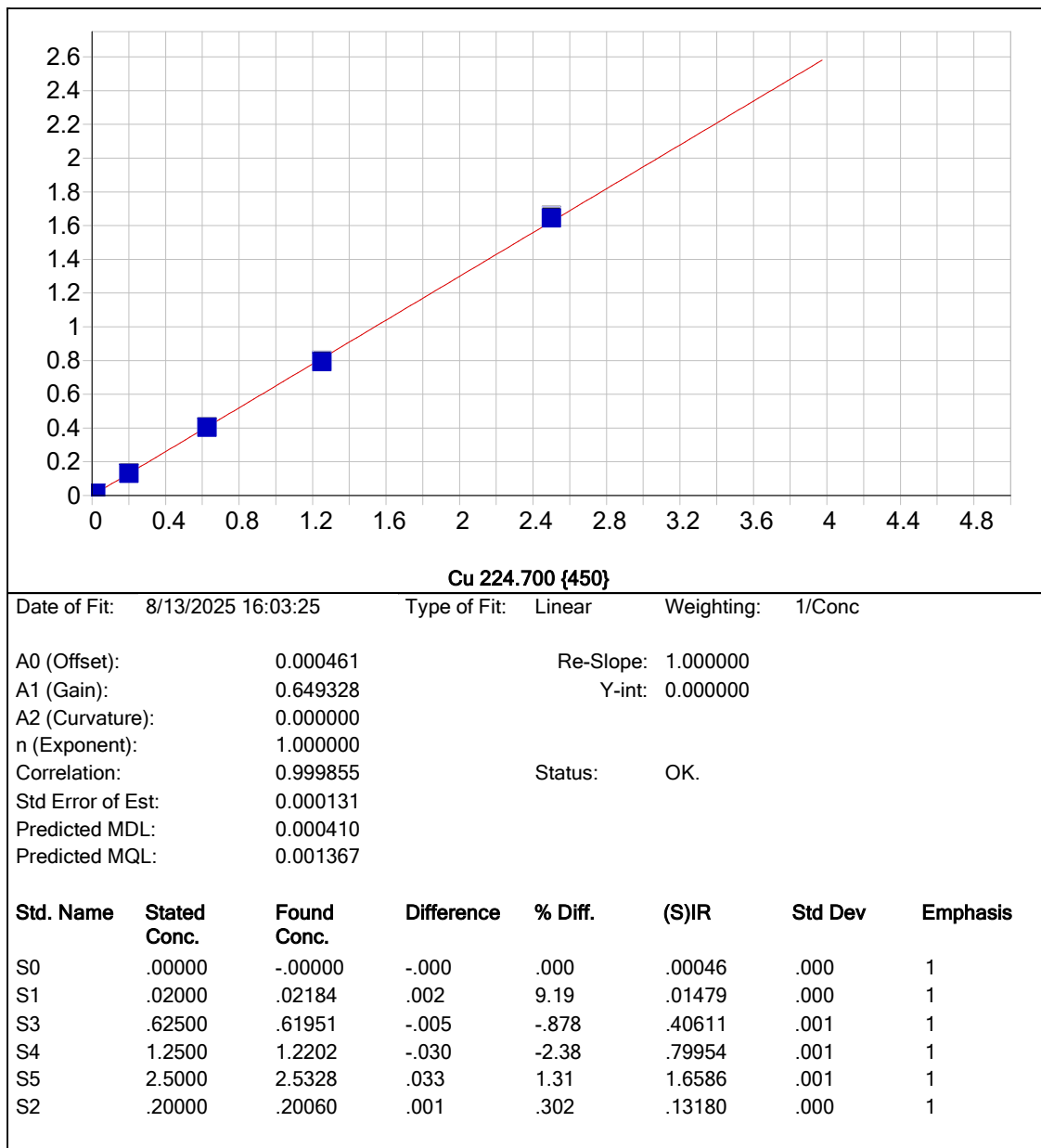


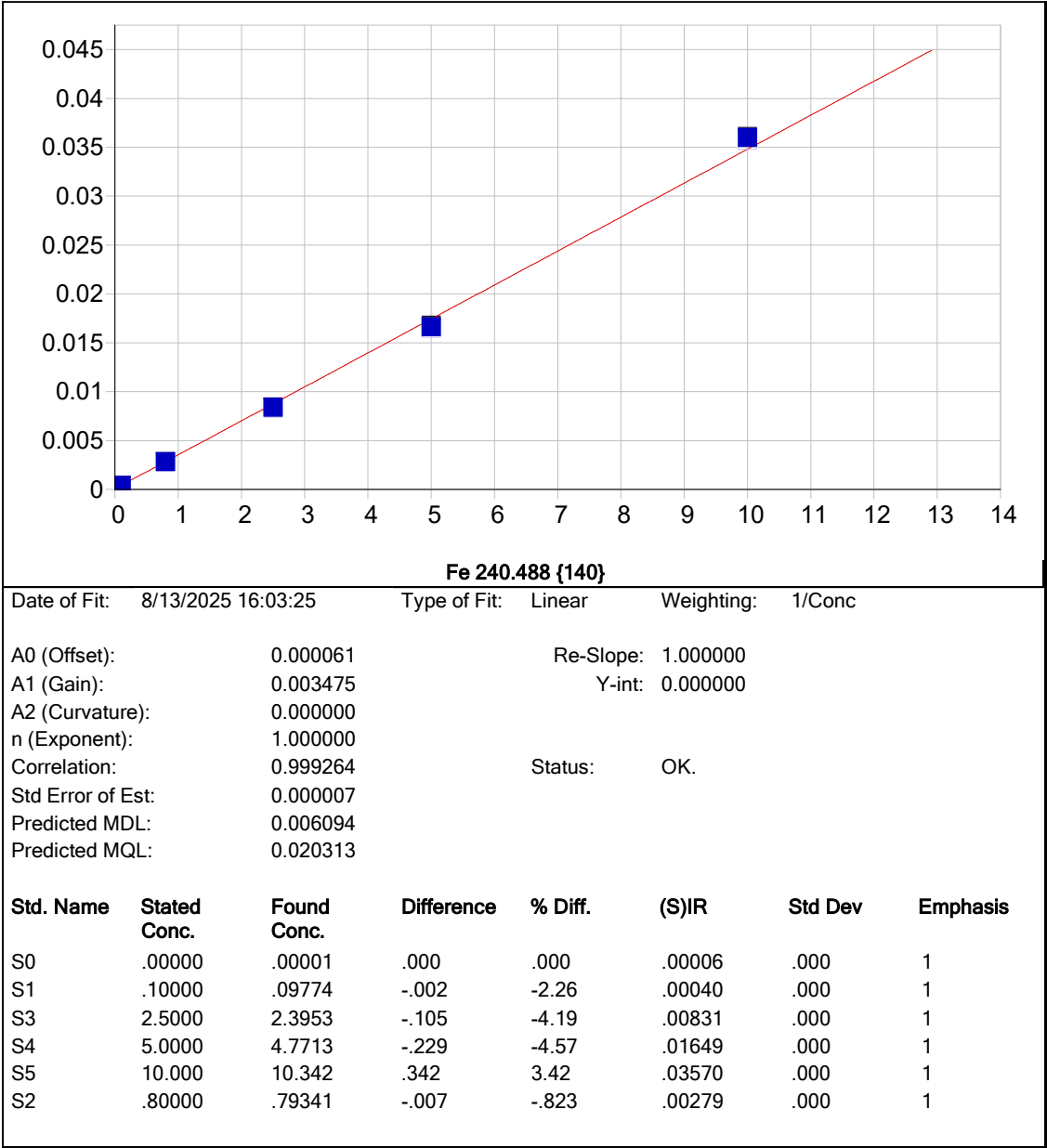


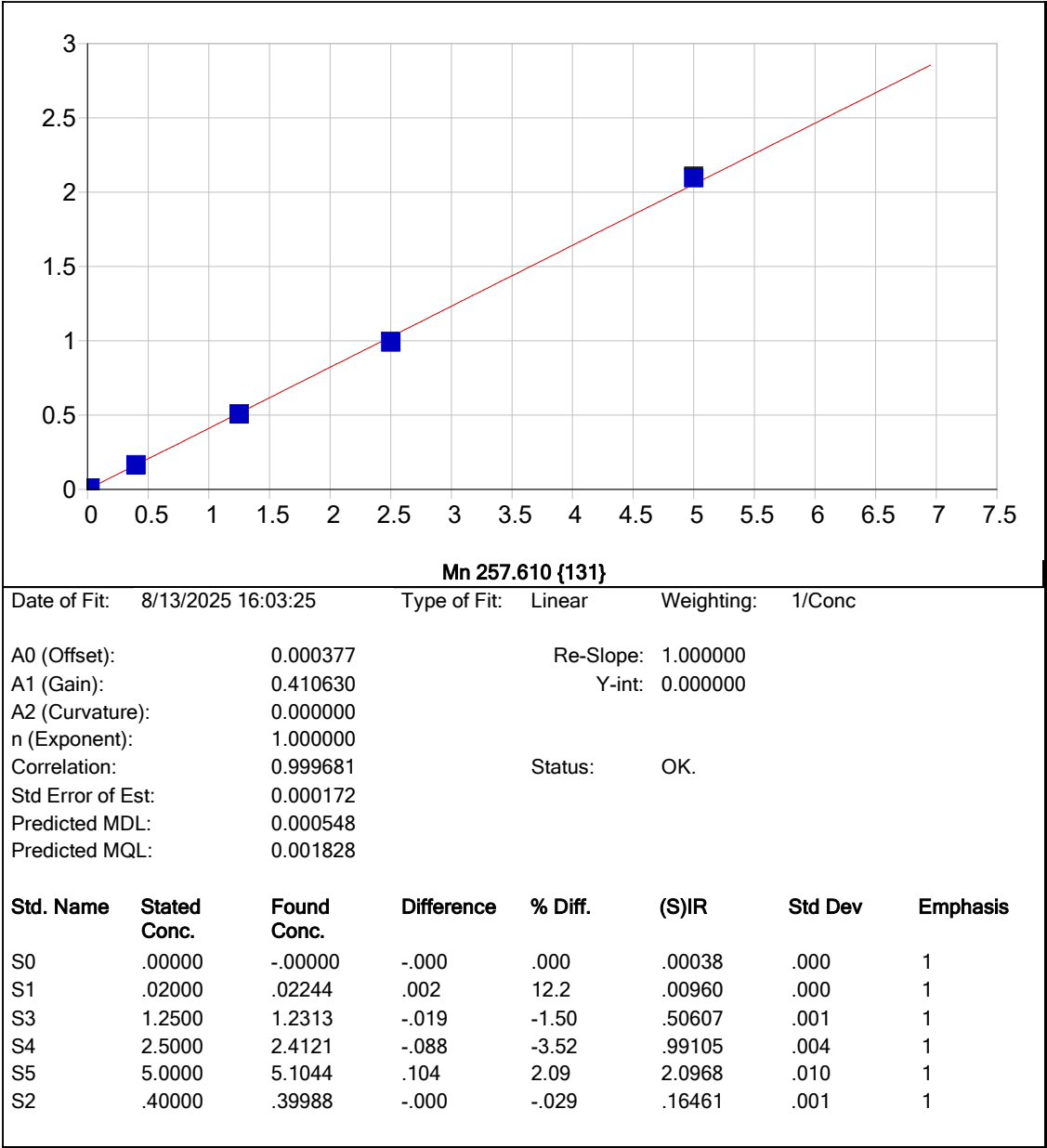


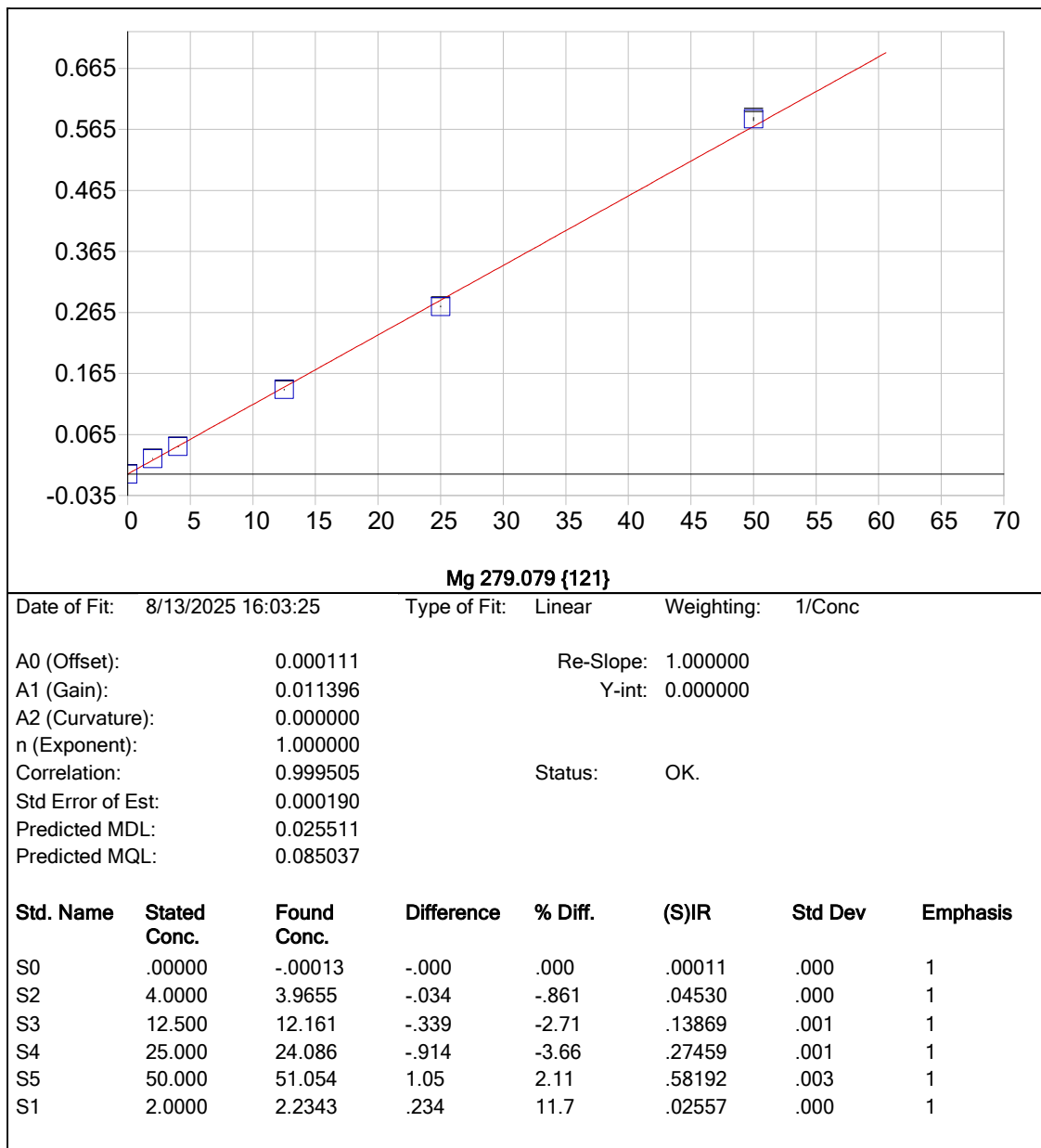


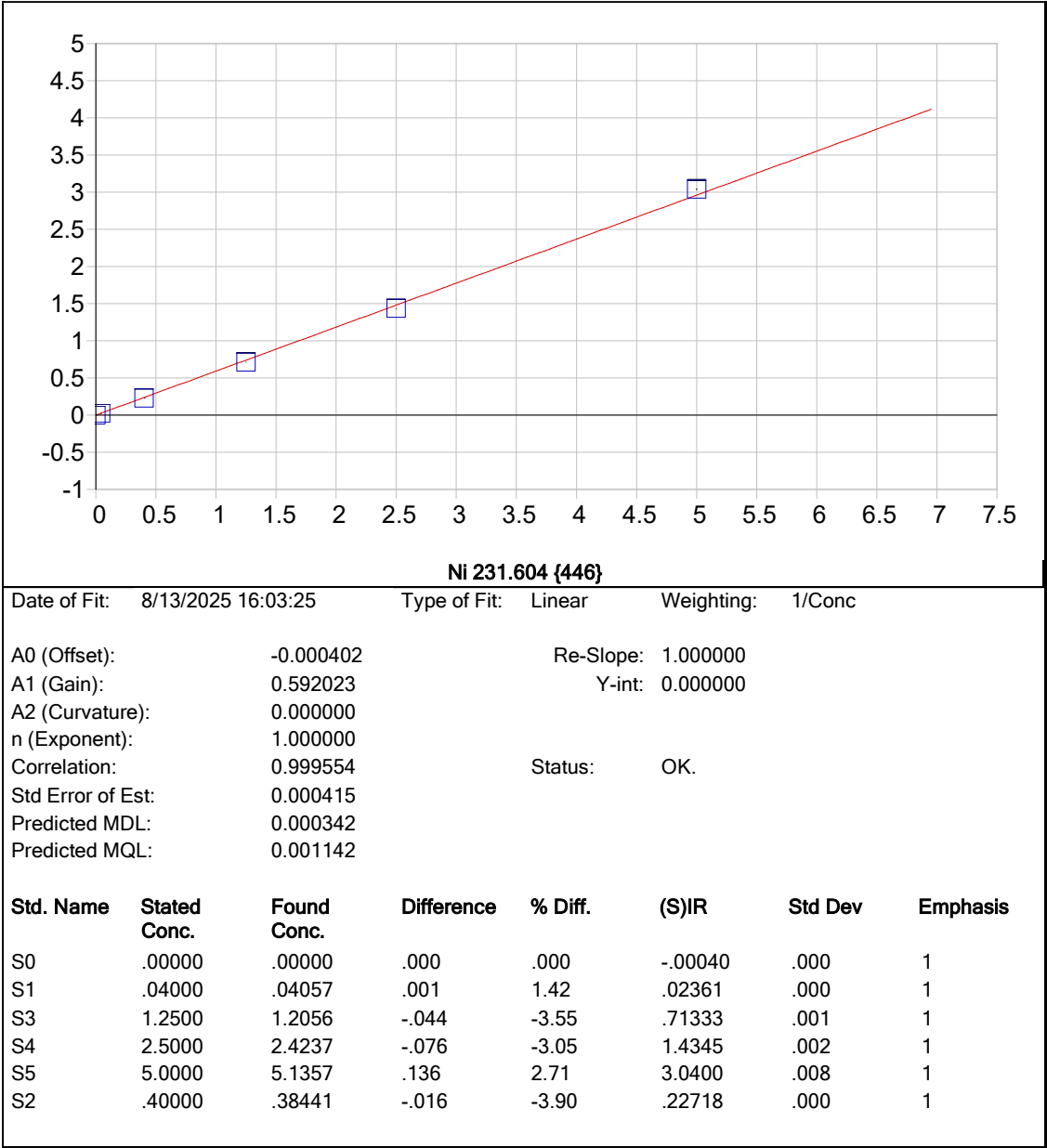


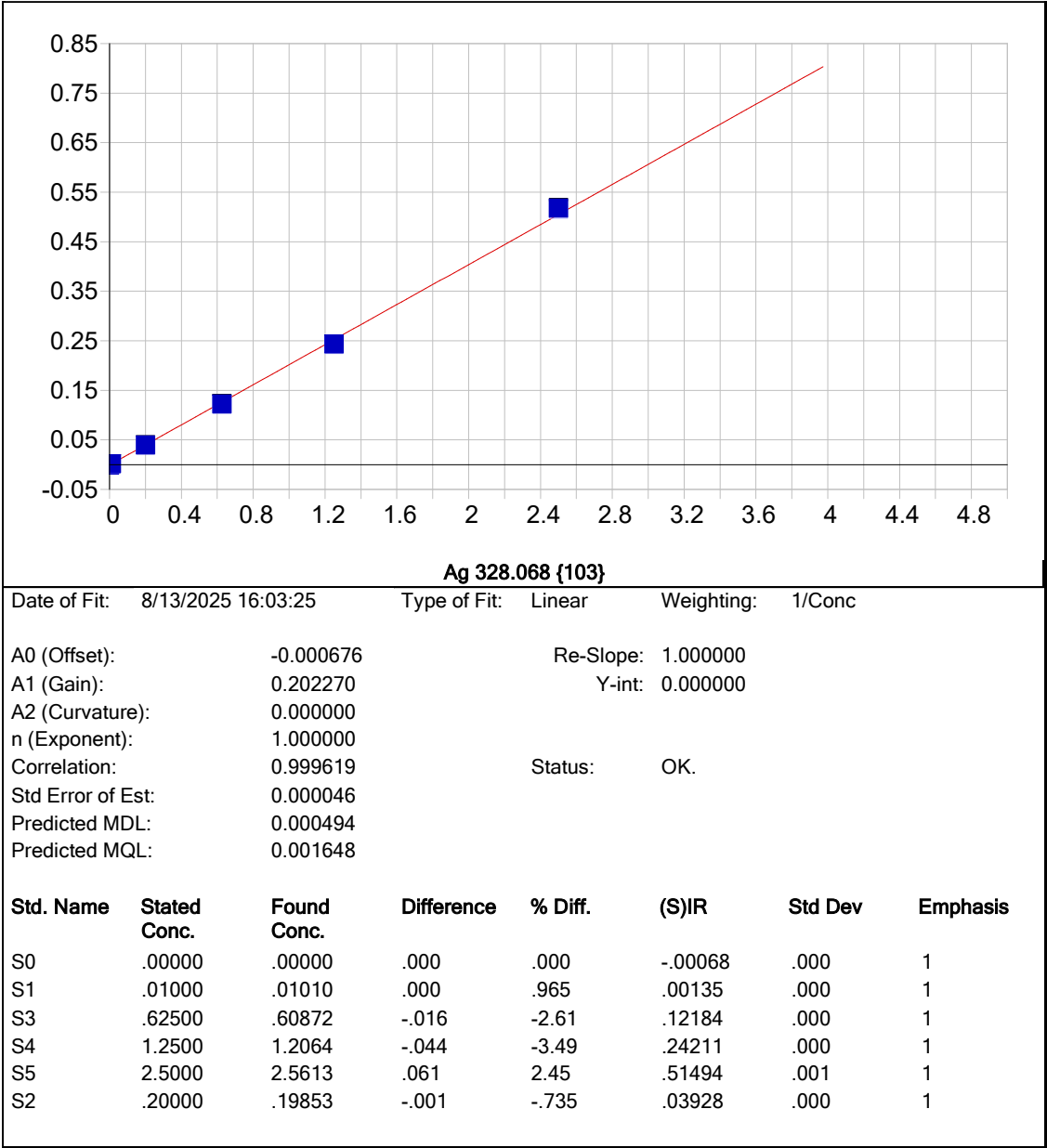


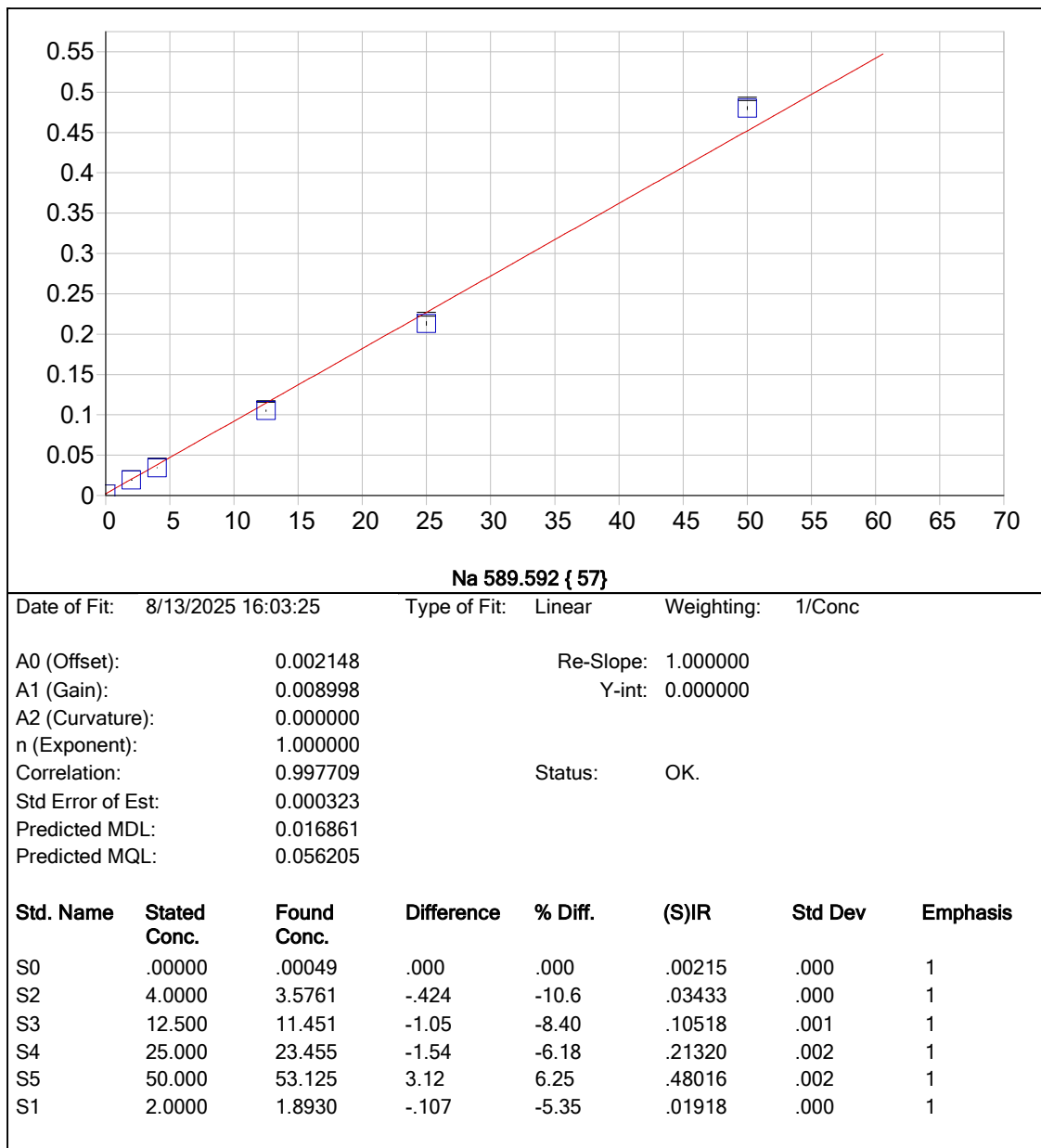


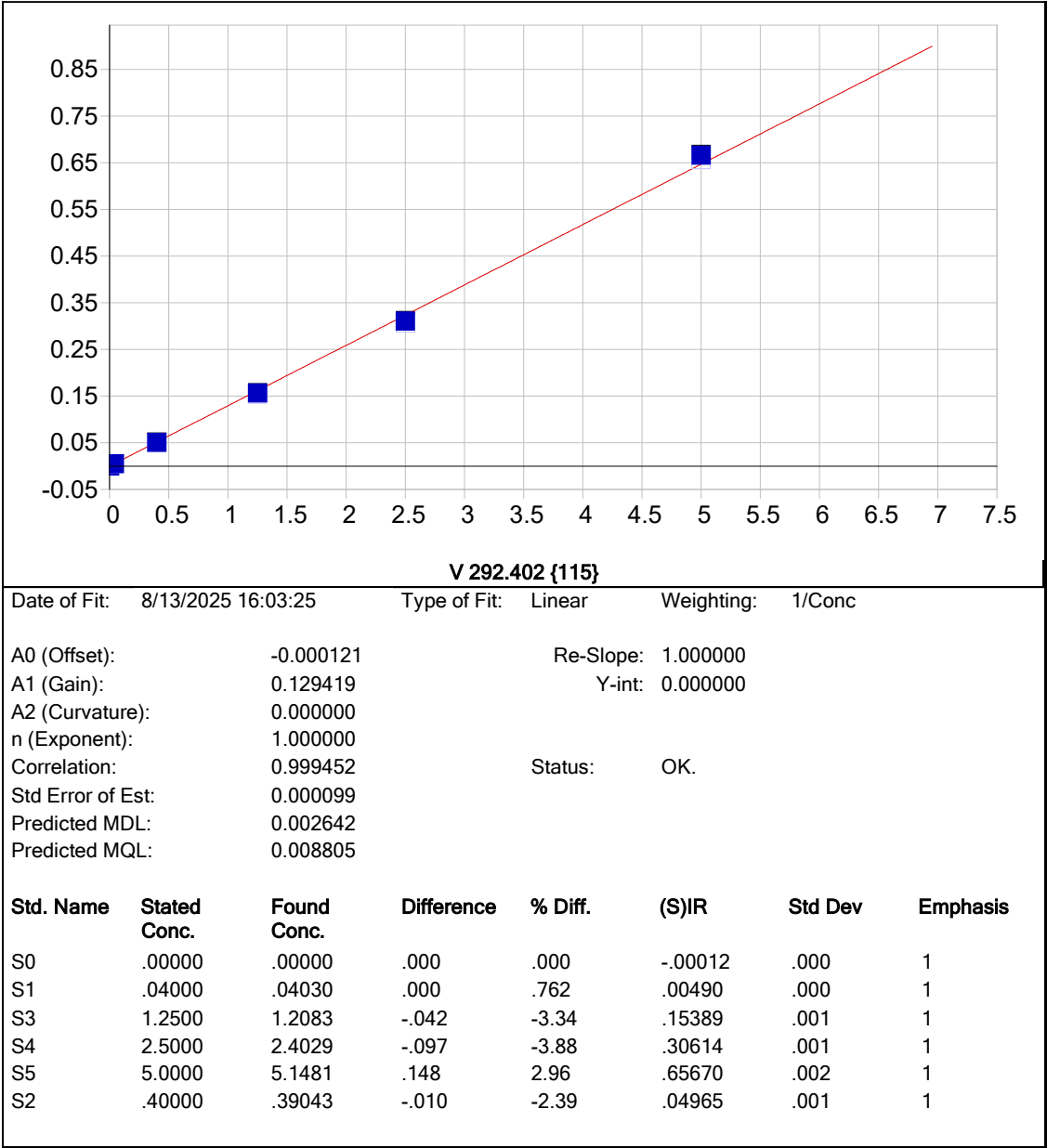


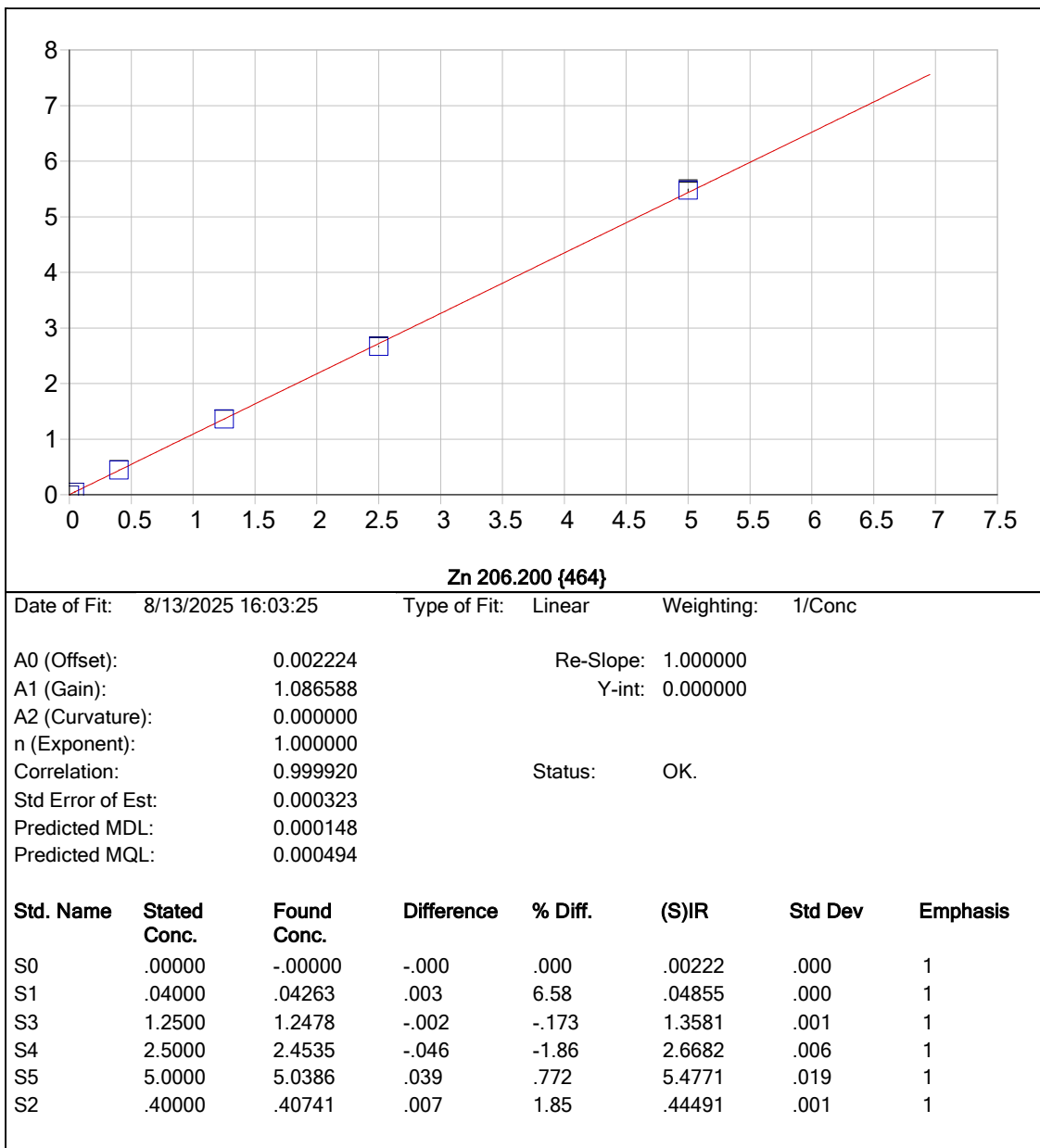


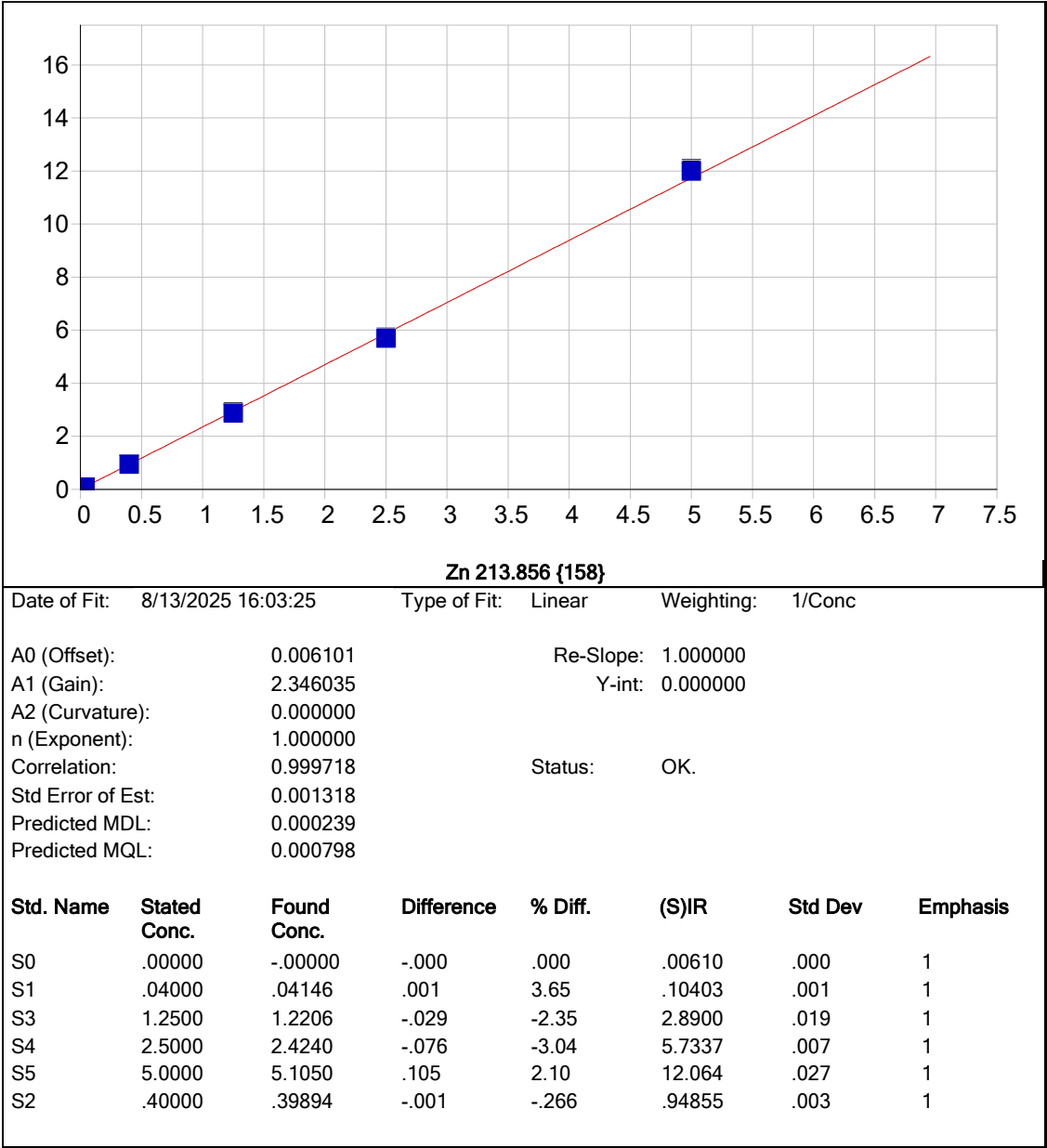


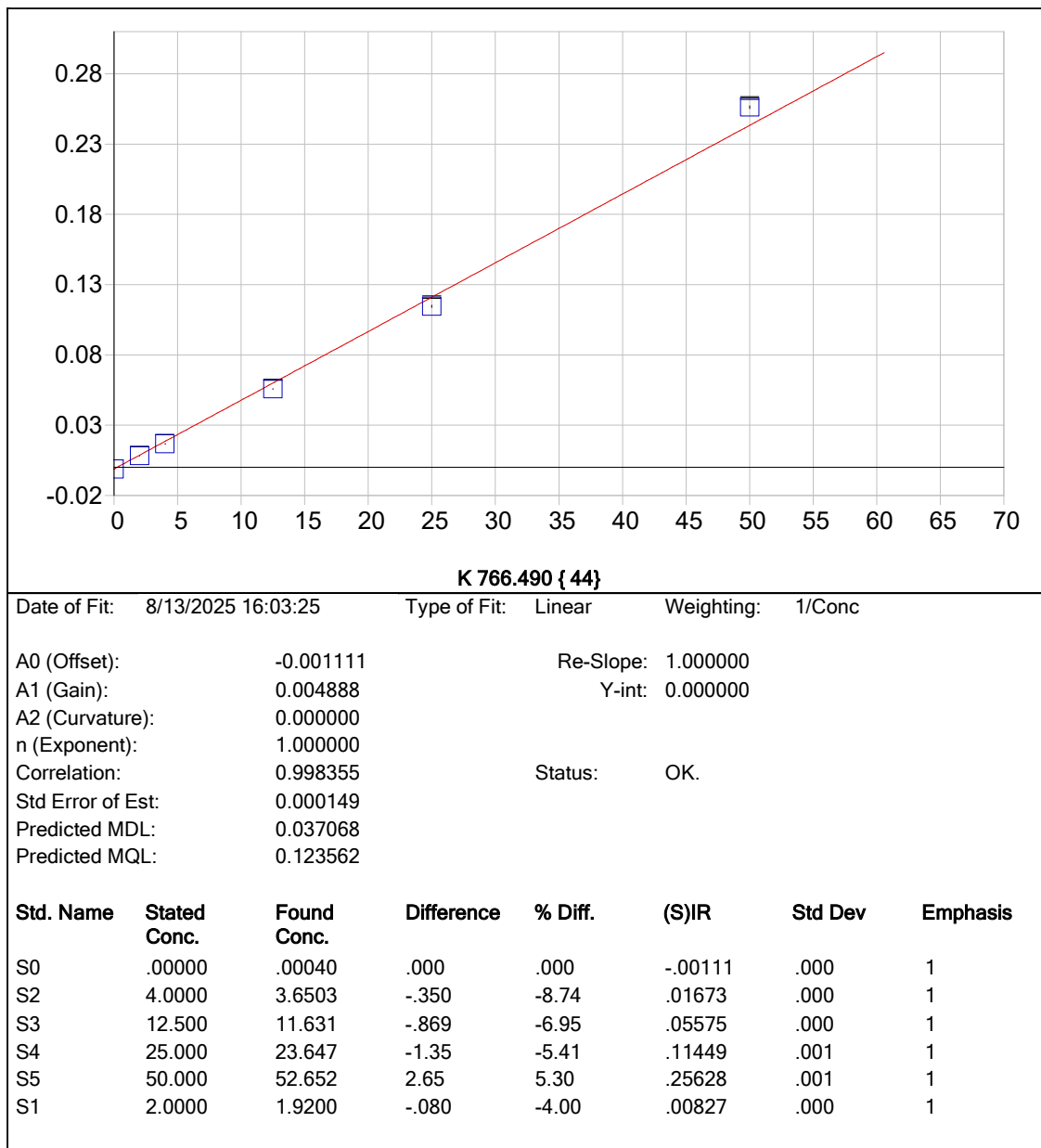


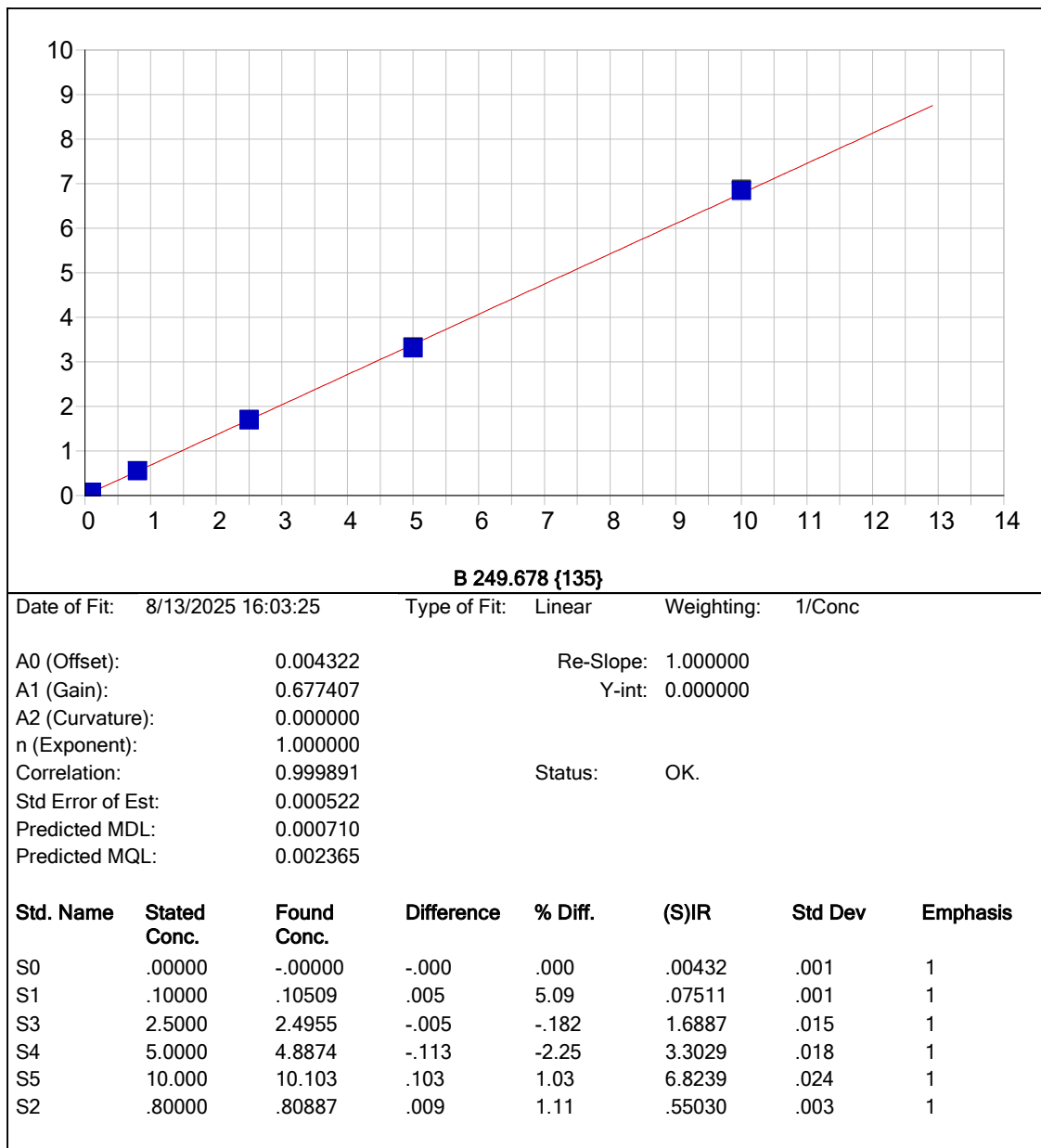


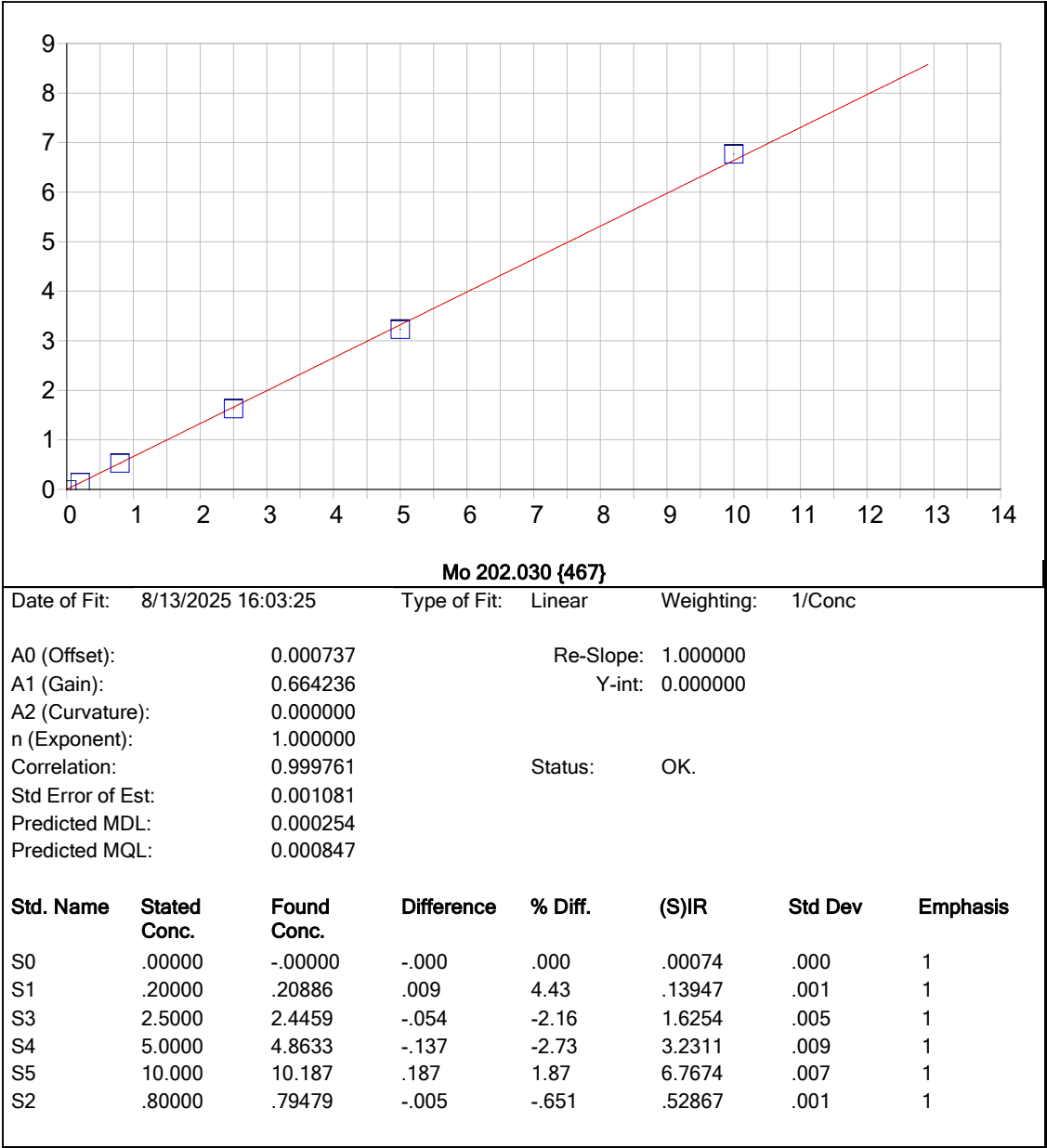


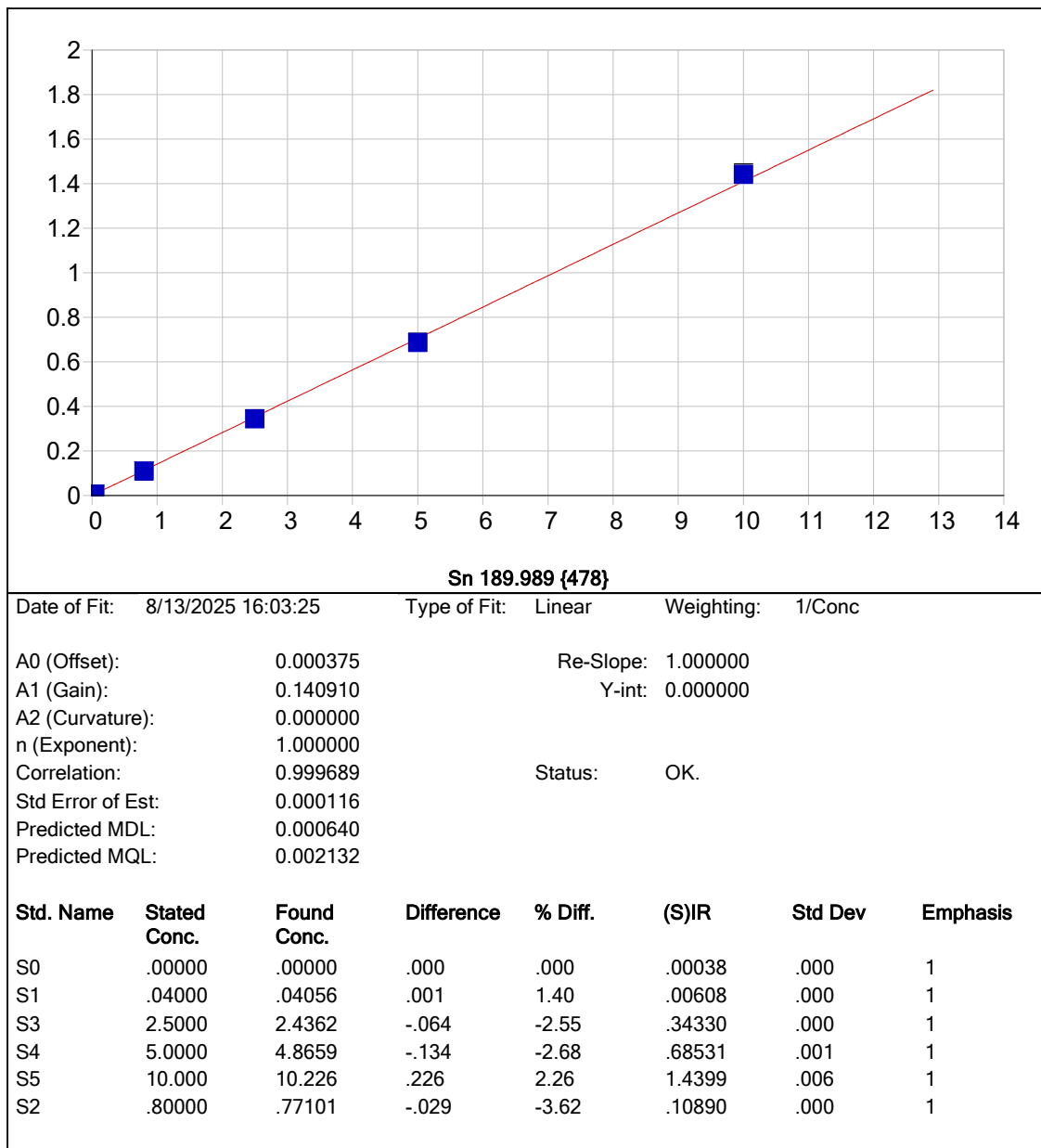


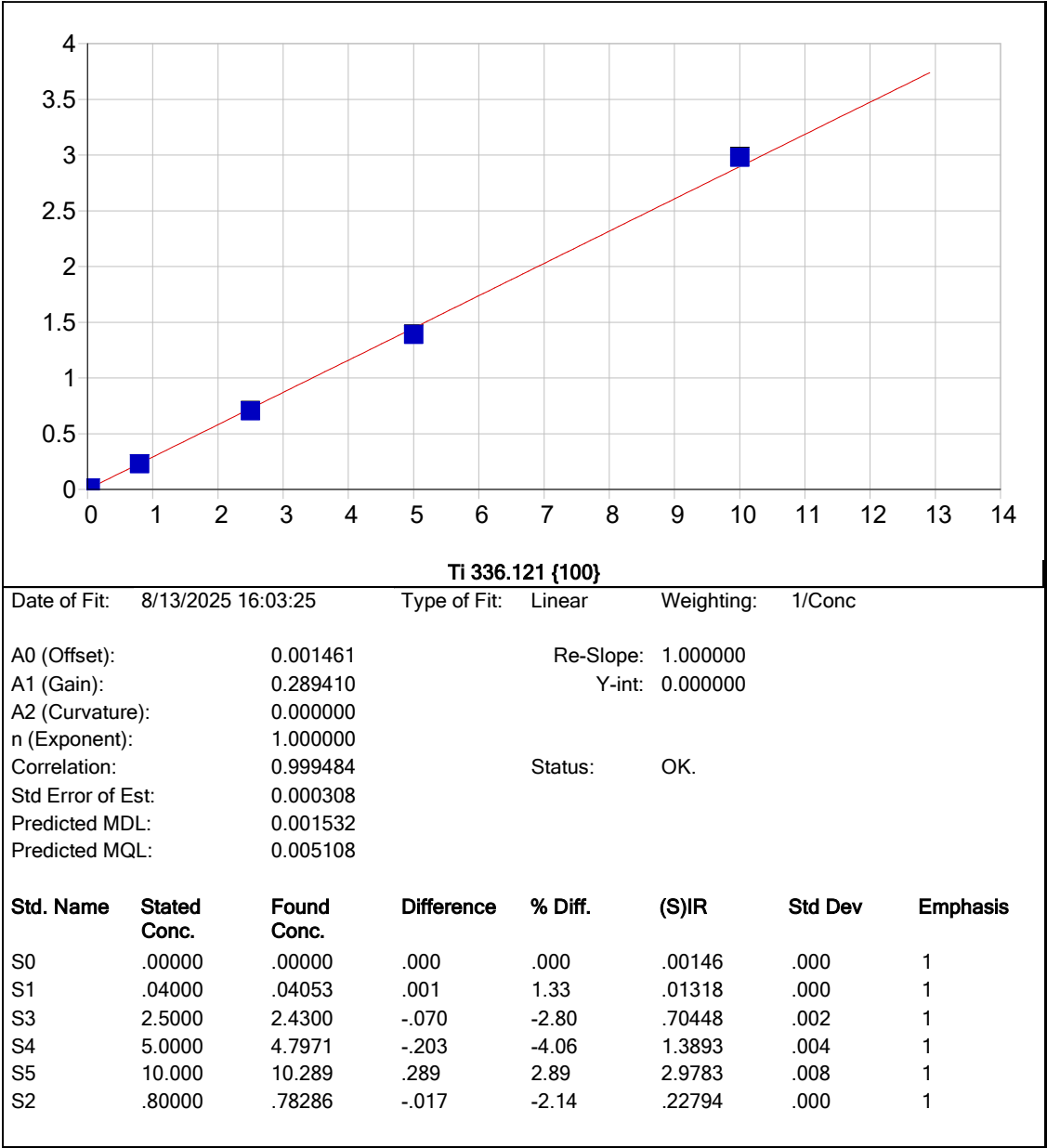


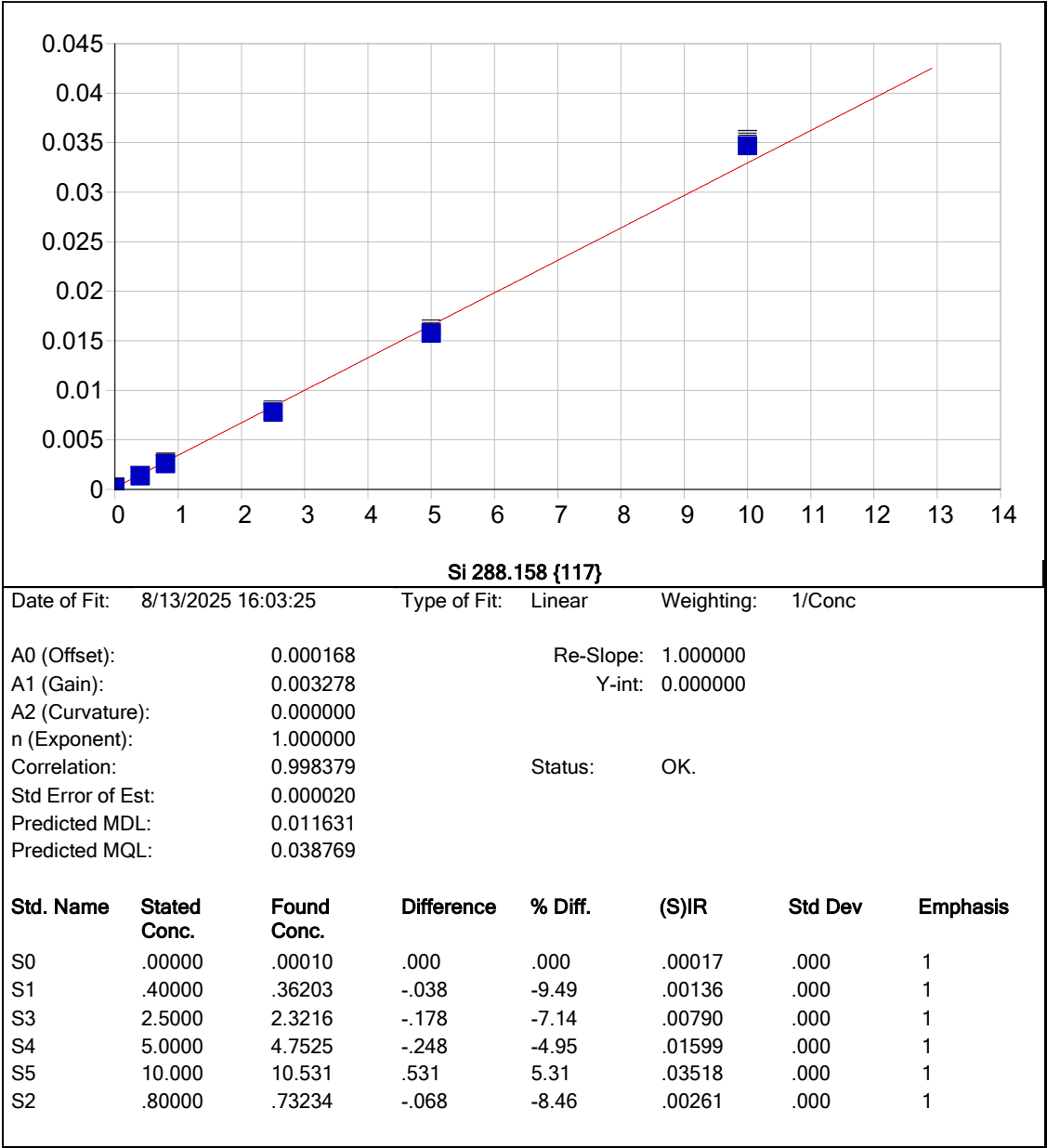


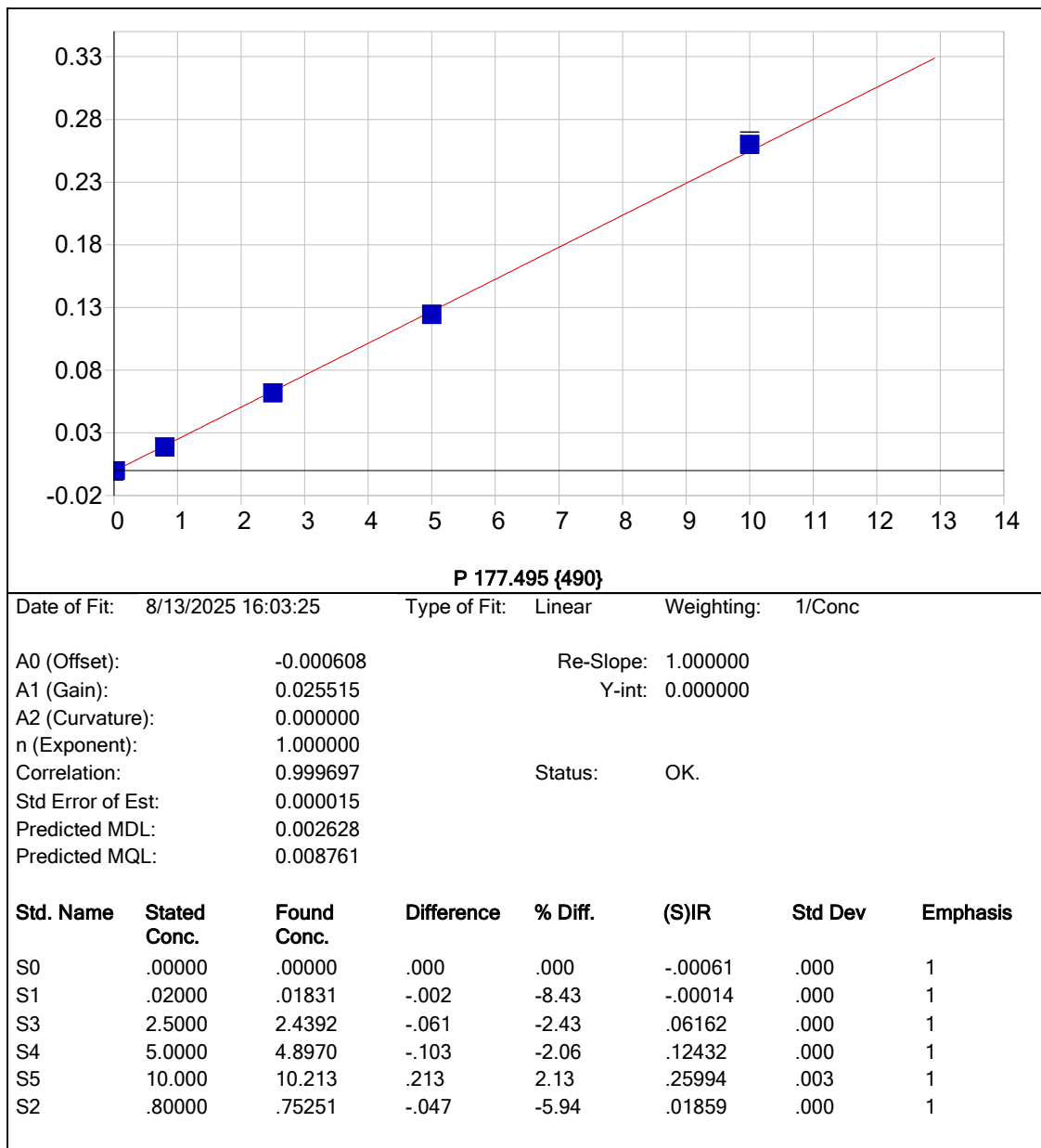


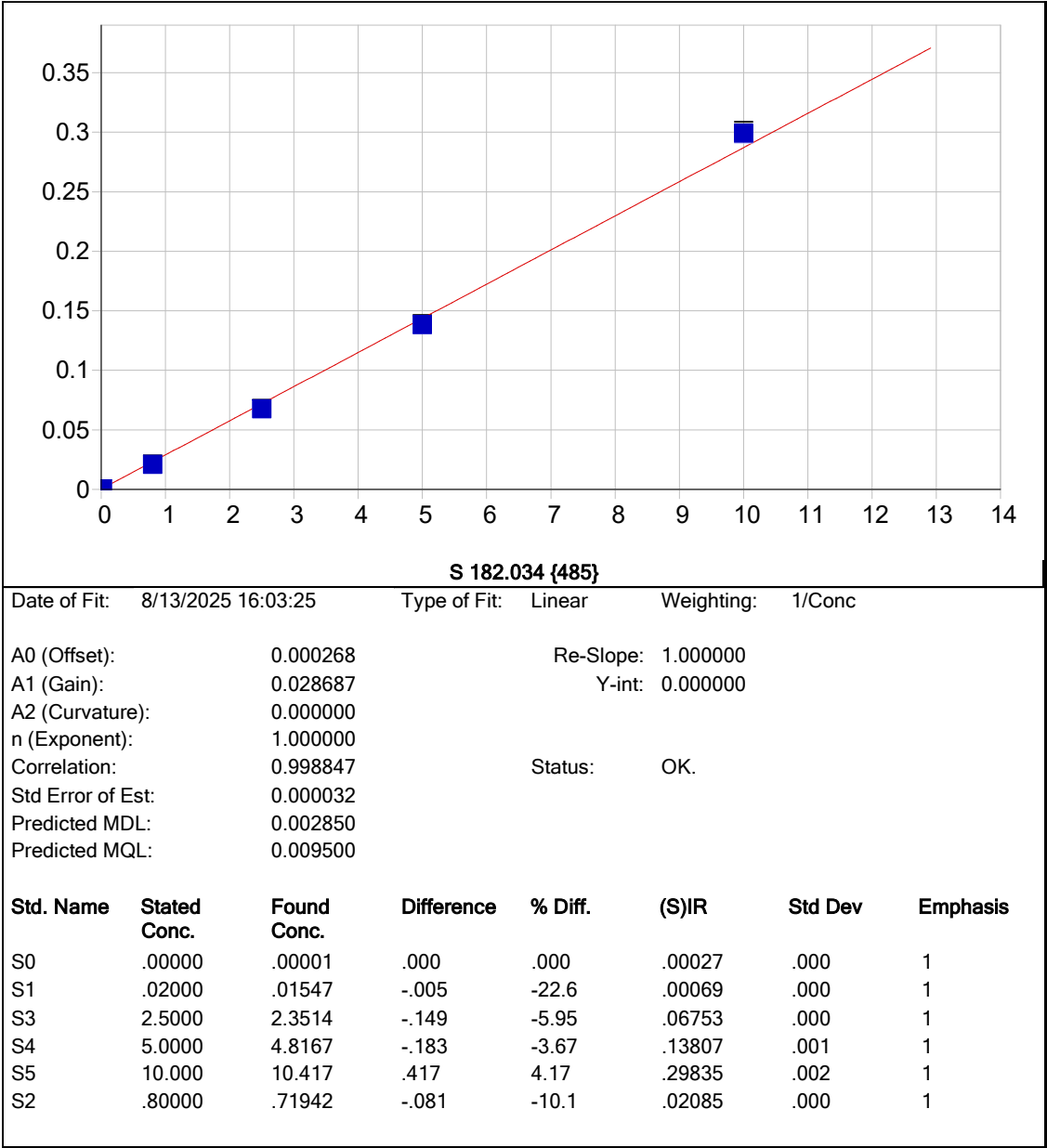


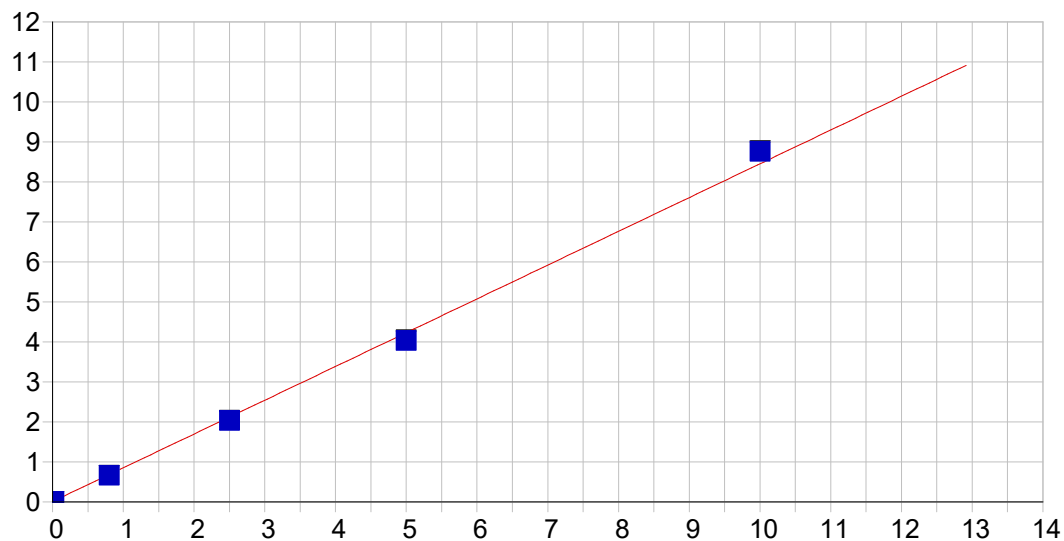










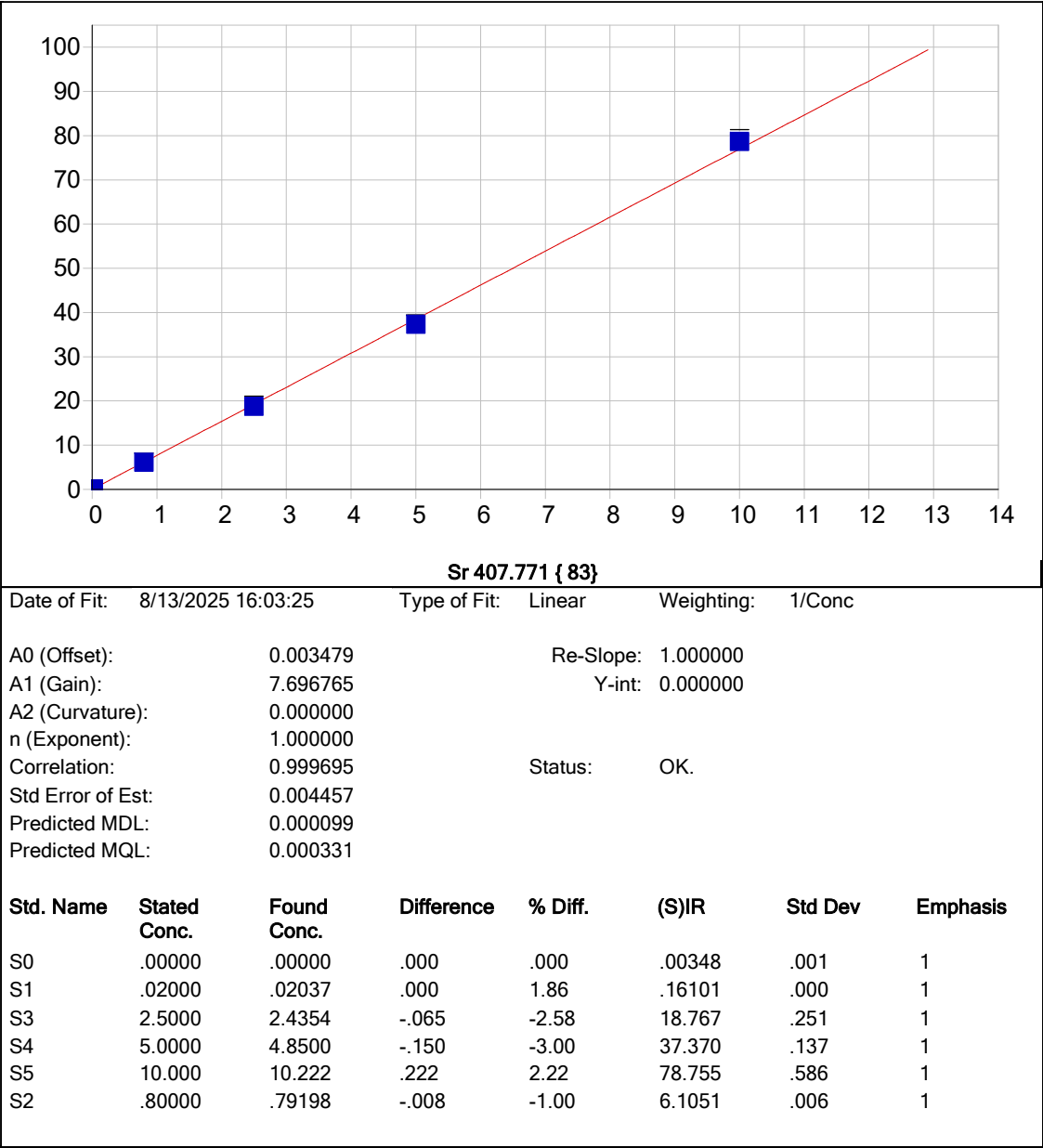


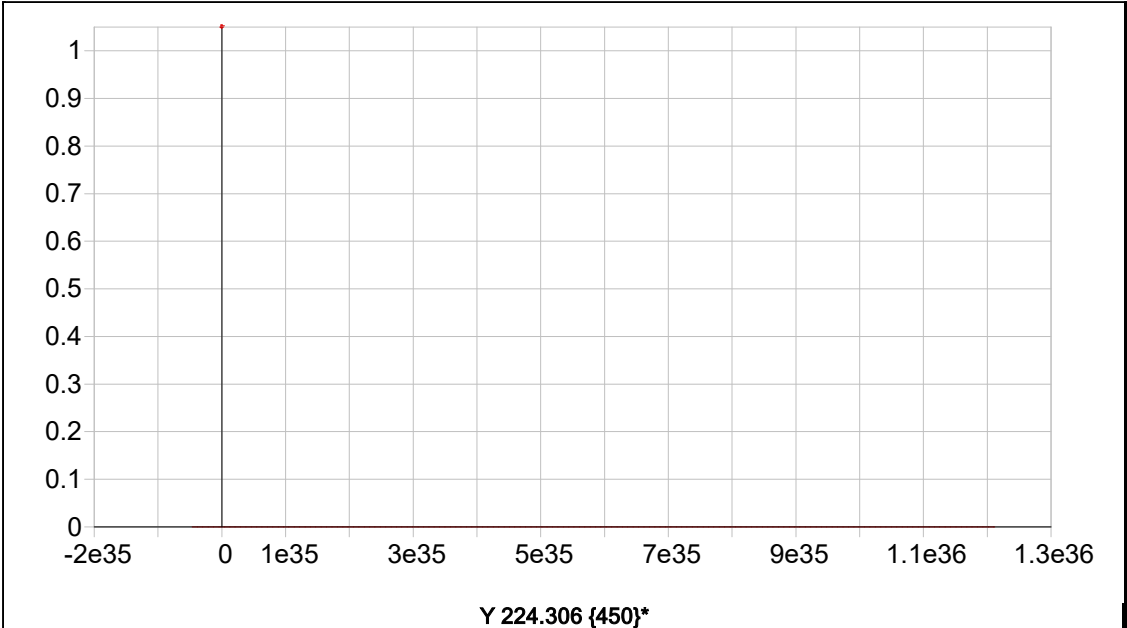
Li 670.784 { 50}

Date of Fit: 8/13/2025 16:03:25 Type of Fit: Linear Weighting: 1/Conc

A0 (Offset): 0.008509 Re-Slope: 1.000000
A1 (Gain): 0.844447 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999199 Status: OK.
Std Error of Est: 0.000793
Predicted MDL: 0.001761
Predicted MQL: 0.005870

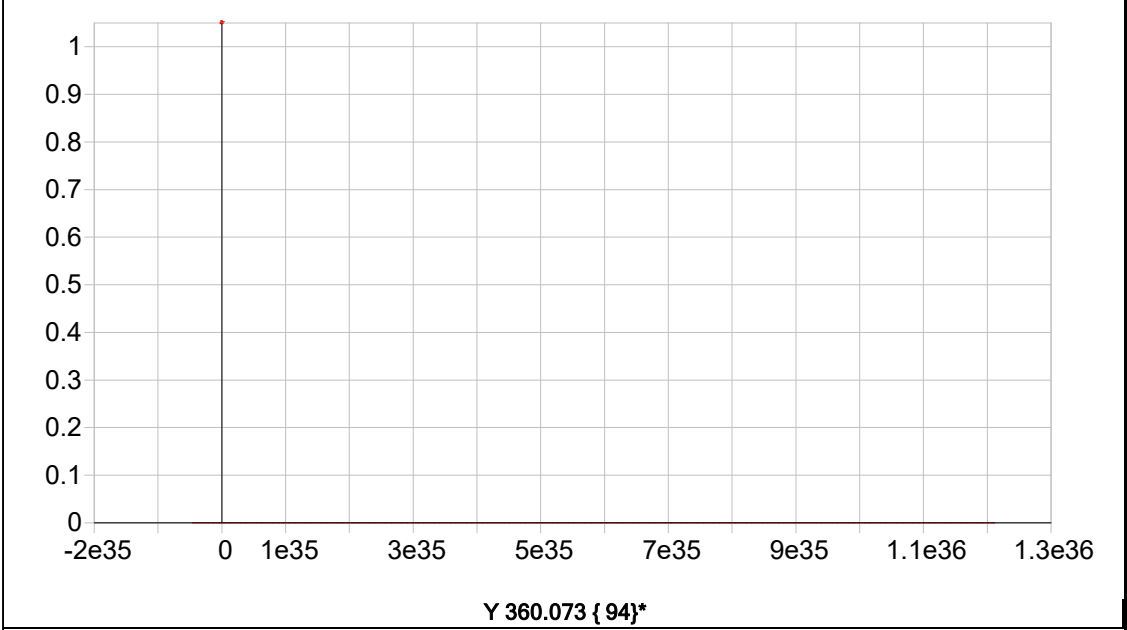
Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00851	.002	1
S5	10.000	10.365	.365	3.65	8.7676	.018	1
S4	5.0000	4.7650	-.235	-4.70	4.0357	.015	1
S3	2.5000	2.3997	-.100	-4.01	2.0366	.003	1
S1	.02000	.01873	-.001	-6.35	.02462	.001	1
S2	.80000	.77199	-.028	-3.50	.66096	.001	1



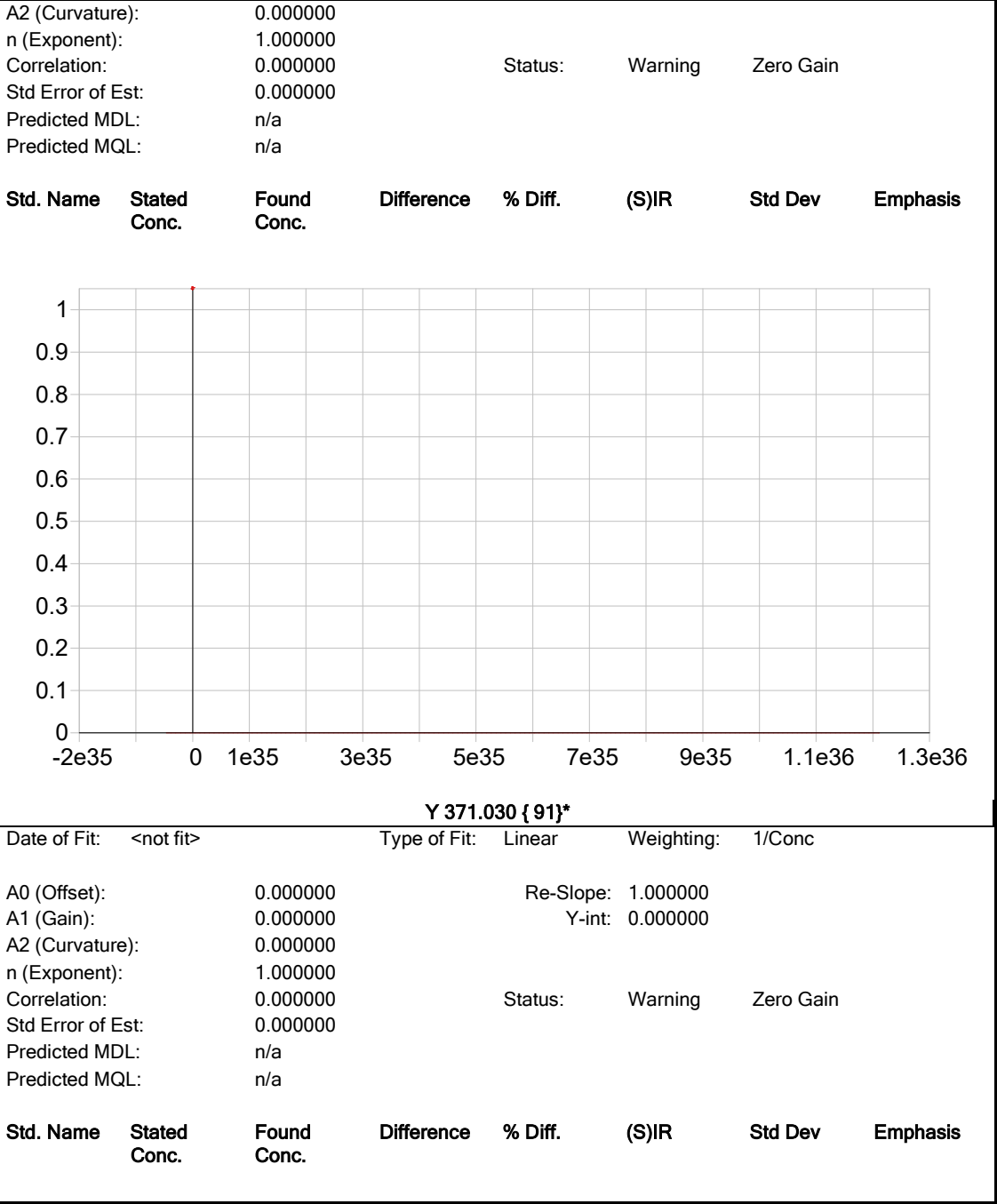


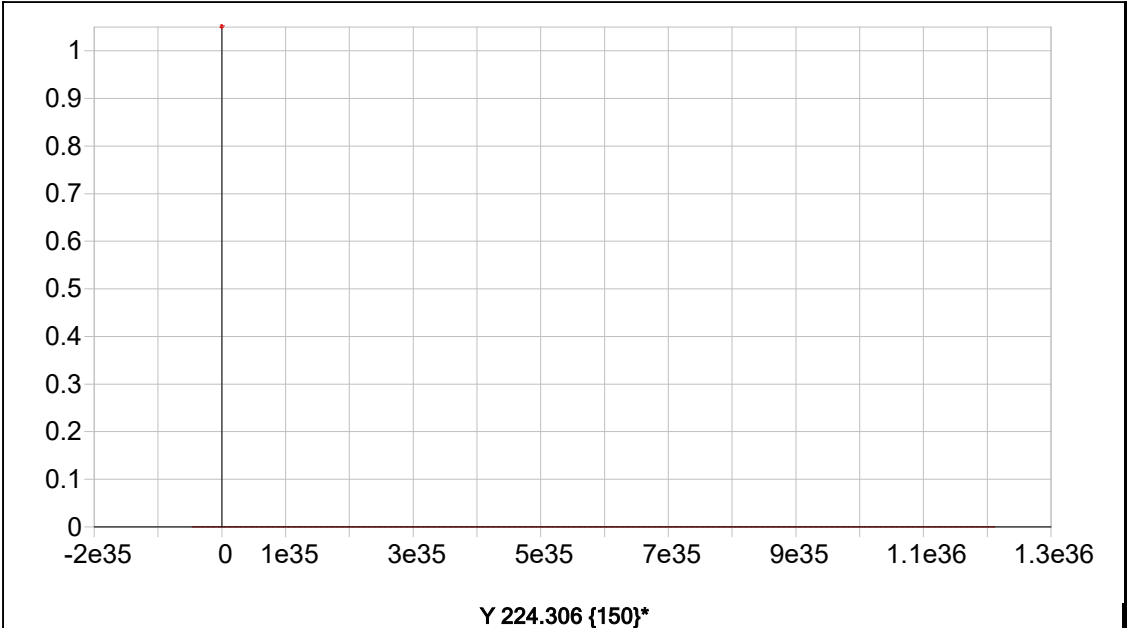
A0 (Offset):	0.000000	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.000000	Status:	Warning Zero Gain
Std Error of Est:	0.000000		
Predicted MDL:	n/a		
Predicted MQL:	n/a		

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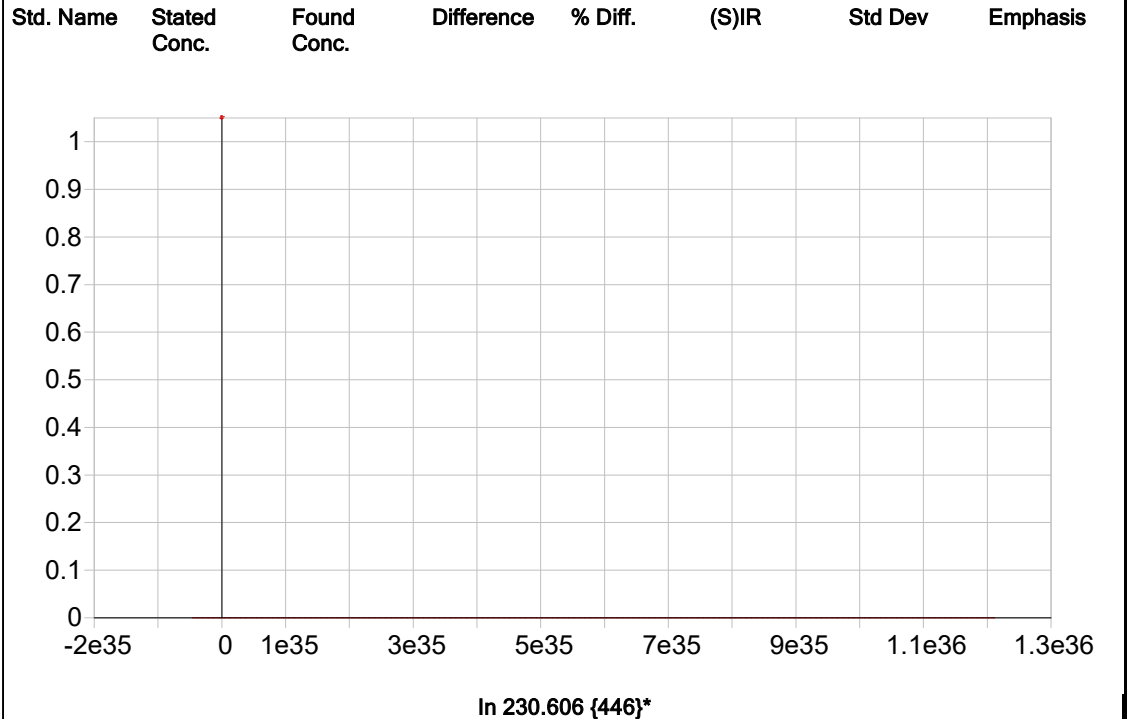


A0 (Offset):	0.000000	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000





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

- 1
- 2
- 3
- 4
- 5
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- 18

Sample Name: S0 Acquired: 8/13/2025 11:56:09 Type: Cal
Method: 6010-200.7 NEW(v96) 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	-.00012	.00099	.00018	.00042	.00061	.00096	.09115	-.00072
Stddev	.00001	.00008	.00023	.00004	.00002	.00054	.00169	.00032
%RSD	11.798	8.2372	126.08	9.5520	3.8011	56.597	1.8506	45.393
#1	-.00011	.00090	.00044	.00041	.00064	.00033	.08965	-.00044
#2	-.00011	.00105	.00010	.00039	.00060	.00128	.09082	-.00107
#3	-.00013	.00103	.00001	.00047	.00060	.00126	.09297	-.00063
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	.00001	.00259	.00023	.00024	.00046	.00006	.00038	.00011
Stddev	.00012	.00023	.00003	.00019	.00014	.00002	.00016	.00026
%RSD	1445.8	8.8787	10.873	79.569	31.413	26.412	41.366	237.07
#1	.00006	.00236	.00021	.00038	.00040	.00005	.00056	-.00017
#2	.00010	.00282	.00025	.00031	.00036	.00005	.00029	.00017
#3	-.00013	.00258	.00024	.00002	.00062	.00008	.00029	.00034
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	-.00040	-.00068	.00215	-.00012	.00610	-.00111	.00432	.00074
Stddev	.00015	.00004	.00007	.00017	.00034	.00011	.00059	.00007
%RSD	36.354	5.4678	3.4595	141.44	5.5783	10.063	13.565	10.186
#1	-.00051	-.00071	.00207	-.00032	.00577	-.00104	.00382	.00068
#2	-.00046	-.00064	.00221	-.00005	.00645	-.00104	.00418	.00082
#3	-.00024	-.00068	.00218	-.00000	.00608	-.00124	.00496	.00071
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	.00038	.00146	.00017	-.00061	.00027	.00851	.00348	
Stddev	.00011	.00026	.00004	.00004	.00002	.00192	.00068	
%RSD	28.119	17.986	24.511	6.9450	8.5623	22.614	19.590	
#1	.00049	.00139	.00018	-.00064	.00029	.01058	.00315	
#2	.00035	.00124	.00020	-.00063	.00025	.00817	.00427	
#3	.00029	.00175	.00012	-.00056	.00027	.00678	.00303	

Sample Name: S0 Acquired: 8/13/2025 11:56:09 Type: Cal
Method: 6010-200.7 NEW(v96) 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	5846.1	103620.	10717.	4580.8	7518.8
Stddev	9.1	117.	61.	12.7	13.9
%RSD	.15484	.11285	.56536	.27636	.18486
#1	5840.1	103630.	10779.	4578.3	7505.2
#2	5856.5	103740.	10713.	4569.6	7533.0
#3	5841.7	103500.	10658.	4594.6	7518.2

Sample Name: S1 Acquired: 8/13/2025 12:00:31 Type: Cal
Method: 6010-200.7 NEW(v96) 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	.00099	.00355	.00228	.00136	.00556	.00889	.33608	.04156
Stddev	.00005	.00006	.00017	.00003	.00005	.00066	.00075	.00037
%RSD	4.8850	1.5813	7.4028	2.2296	.85816	7.4060	.22369	.88732
#1	.00105	.00362	.00245	.00133	.00561	.00814	.33565	.04114
#2	.00097	.00352	.00211	.00139	.00553	.00921	.33695	.04177
#3	.00096	.00352	.00227	.00137	.00554	.00933	.33565	.04178
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	.01695	.12322	.00231	.03109	.01479	.00040	.00960	.02557
Stddev	.00025	.00033	.00008	.00014	.00016	.00001	.00019	.00029
%RSD	1.5039	.27128	3.6790	.46259	1.1040	3.2185	1.9325	1.1517
#1	.01723	.12357	.00240	.03125	.01493	.00039	.00972	.02591
#2	.01674	.12319	.00224	.03107	.01481	.00039	.00938	.02536
#3	.01687	.12290	.00228	.03097	.01461	.00041	.00969	.02545
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	.02361	.00135	.01918	.00490	.10403	.00827	.07511	.13947
Stddev	.00031	.00010	.00010	.00027	.00097	.00012	.00058	.00109
%RSD	1.3018	7.3903	.54544	5.5792	.93125	1.4218	.77058	.78236
#1	.02361	.00124	.01927	.00490	.10503	.00832	.07555	.14042
#2	.02392	.00143	.01906	.00518	.10309	.00837	.07532	.13828
#3	.02331	.00137	.01921	.00463	.10396	.00814	.07445	.13971
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	.00608	.01318	.00136	-.00014	.00069	.02462	.16101	
Stddev	.00005	.00035	.00001	.00005	.00004	.00110	.00037	
%RSD	.85809	2.6841	1.0584	33.670	5.3741	4.4543	.22731	
#1	.00603	.01359	.00137	-.00013	.00065	.02486	.16105	
#2	.00611	.01293	.00136	-.00010	.00069	.02558	.16136	
#3	.00612	.01303	.00134	-.00019	.00072	.02342	.16063	

Sample Name: S1 Acquired: 8/13/2025 12:00:31 Type: Cal
Method: 6010-200.7 NEW(v96) 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	5596.1	98960.	10361.	4343.9	7086.6
Stddev	14.0	81.	27.	17.9	21.9
%RSD	.25060	.08209	.25637	.41295	.30968
#1	5581.6	99054.	10336.	4325.5	7061.3
#2	5609.6	98918.	10358.	4361.3	7099.9
#3	5597.2	98908.	10389.	4344.8	7098.7

Sample Name: S2 Acquired: 8/13/2025 12:04:50 Type: Cal
Method: 6010-200.7 NEW(v96) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Ti1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	Be2348
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.03967	.05275	.15143	.03772	.07498	.12403	3.7728	.26465
Stddev	.00017	.00134	.00039	.00033	.00047	.00079	.0077	.00071
%RSD	.42943	2.5471	.25485	.86907	.62659	.64084	.20458	.26811
#1	.03986	.05430	.15122	.03806	.07525	.12320	3.7719	.26401
#2	.03952	.05205	.15119	.03740	.07443	.12411	3.7810	.26452
#3	.03963	.05190	.15187	.03770	.07524	.12479	3.7656	.26541
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	1.1146	.22922	.03144	.39128	.13180	.00279	.16461	.04530
Stddev	.0010	.00072	.00010	.00061	.00041	.00001	.00103	.00012
%RSD	.08950	.31246	.30475	.15648	.30983	.47946	.62526	.25702
#1	1.1137	.22890	.03148	.39071	.13195	.00280	.16344	.04533
#2	1.1144	.22871	.03151	.39122	.13134	.00281	.16537	.04518
#3	1.1156	.23004	.03133	.39193	.13211	.00278	.16503	.04540
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	.22718	.03928	.03433	.04965	.94855	.01673	.55030	.52867
Stddev	.00038	.00007	.00014	.00057	.00336	.00008	.00269	.00118
%RSD	.16859	.18510	.41651	1.1458	.35431	.46016	.48855	.22400
#1	.22712	.03922	.03446	.04908	.95191	.01673	.54997	.52957
#2	.22683	.03928	.03434	.05022	.94855	.01666	.54780	.52733
#3	.22759	.03936	.03418	.04966	.94519	.01681	.55314	.52911
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	.10890	.22794	.00261	.01859	.02085	.66096	6.1051	
Stddev	.00025	.00027	.00011	.00016	.00006	.00124	.0056	
%RSD	.22625	.11781	4.2783	.84896	.31127	.18771	.09106	
#1	.10884	.22767	.00256	.01871	.02082	.65952	6.1067	
#2	.10869	.22821	.00253	.01841	.02080	.66166	6.1096	
#3	.10917	.22795	.00274	.01864	.02092	.66169	6.0989	

Sample Name: S2 Acquired: 8/13/2025 12:04:50 Type: Cal
Method: 6010-200.7 NEW(v96) 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	5834.2	102520.	10899.	4543.5	7278.7
Stddev	20.7	109.	36.	24.3	11.2
%RSD	.35442	.10614	.33016	.53424	.15406
#1	5819.3	102440.	10928.	4519.2	7269.0
#2	5857.8	102480.	10911.	4543.5	7291.0
#3	5825.5	102650.	10859.	4567.7	7276.1

Sample Name: S3 Acquired: 8/13/2025 12:08:54 Type: Cal
Method: 6010-200.7 NEW(v96) 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	.12531	.16058	.47333	.11798	.23318	.38158	11.603	.81626
Stddev	.00058	.00332	.00073	.00073	.00074	.00072	.031	.00597
%RSD	.46412	2.0683	.15377	.61790	.31580	.18754	.26425	.73117
#1	.12467	.15726	.47319	.11744	.23264	.38084	11.638	.80962
#2	.12544	.16058	.47269	.11770	.23289	.38227	11.588	.82118
#3	.12581	.16390	.47412	.11881	.23402	.38164	11.583	.81798
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	3.5350	.70238	.09673	1.2297	.40611	.00831	.50607	.13869
Stddev	.0024	.00099	.00024	.0012	.00073	.00005	.00116	.00076
%RSD	.06726	.14074	.24898	.09641	.17916	.54279	.22970	.54688
#1	3.5374	.70151	.09697	1.2306	.40542	.00836	.50715	.13790
#2	3.5326	.70346	.09674	1.2283	.40603	.00827	.50484	.13941
#3	3.5349	.70218	.09649	1.2300	.40687	.00830	.50623	.13877
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	.71333	.12184	.10518	.15389	2.8900	.05575	1.6887	1.6254
Stddev	.00078	.00030	.00102	.00062	.0188	.00038	.0146	.0050
%RSD	.10954	.24376	.96671	.40450	.65142	.67359	.86512	.30965
#1	.71412	.12213	.10611	.15461	2.8818	.05614	1.6726	1.6213
#2	.71256	.12184	.10409	.15347	2.9115	.05539	1.7012	1.6238
#3	.71329	.12154	.10534	.15360	2.8767	.05571	1.6921	1.6310
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	.34330	.70448	.00790	.06162	.06753	2.0366	18.767	
Stddev	.00049	.00197	.00009	.00011	.00005	.0029	.251	
%RSD	.14245	.27950	1.1216	.17170	.07487	.14186	1.3398	
#1	.34346	.70603	.00800	.06173	.06758	2.0394	18.554	
#2	.34275	.70515	.00783	.06151	.06748	2.0336	18.702	
#3	.34369	.70226	.00788	.06162	.06754	2.0368	19.044	

Sample Name: S3 Acquired: 8/13/2025 12:08:54 Type: Cal
Method: 6010-200.7 NEW(v96) 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	5699.2	100690.	10886.	4460.2	6930.0
Stddev	3.9	199.	97.	19.9	11.7
%RSD	.06886	.19730	.89149	.44656	.16855
#1	5696.3	100900.	10995.	4459.0	6920.0
#2	5697.6	100660.	10808.	4440.9	6927.2
#3	5703.7	100510.	10855.	4480.6	6942.8

Sample Name: S4 Acquired: 8/13/2025 12:12:59 Type: Cal
Method: 6010-200.7 NEW(v96) 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	.25171	.31258	.94213	.23514	.46595	.75016	22.704	1.5853
Stddev	.00069	.01034	.00065	.00177	.00239	.00078	.093	.0097
%RSD	.27577	3.3092	.06919	.75396	.51292	.10357	.40974	.60926
#1	.25114	.30068	.94248	.23321	.46327	.75065	22.653	1.5887
#2	.25150	.31762	.94254	.23553	.46673	.75057	22.811	1.5927
#3	.25248	.31943	.94138	.23669	.46786	.74927	22.648	1.5743
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	7.1419	1.3744	.19044	2.4799	.79954	.01649	.99105	.27459
Stddev	.0046	.0008	.00058	.0031	.00135	.00014	.00440	.00068
%RSD	.06505	.06197	.30335	.12447	.16861	.84838	.44438	.24795
#1	7.1419	1.3754	.19006	2.4776	.79959	.01644	.99522	.27420
#2	7.1372	1.3737	.19016	2.4786	.79817	.01638	.98644	.27538
#3	7.1465	1.3742	.19111	2.4834	.80087	.01665	.99148	.27419
Elem	Ni2316	Ag3280	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1.4345	.24211	.21320	.30614	5.7337	.11449	3.3029	3.2311
Stddev	.0023	.00003	.00243	.00090	.0074	.00085	.0182	.0094
%RSD	.15854	.01145	1.1377	.29499	.12914	.74073	.55153	.29198
#1	1.4328	.24213	.21323	.30617	5.7299	.11433	3.3136	3.2217
#2	1.4336	.24212	.21075	.30522	5.7422	.11373	3.3132	3.2310
#3	1.4371	.24208	.21561	.30702	5.7290	.11540	3.2818	3.2406
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	.68531	1.3893	.01599	.12432	.13807	4.0357	37.370	
Stddev	.00107	.0039	.00017	.00015	.00056	.0152	.137	
%RSD	.15632	.27905	1.0925	.11901	.40504	.37562	.36677	
#1	.68525	1.3930	.01595	.12431	.13743	4.0455	37.528	
#2	.68427	1.3852	.01585	.12447	.13836	4.0182	37.305	
#3	.68641	1.3896	.01619	.12417	.13843	4.0433	37.278	

Sample Name: S4 Acquired: 8/13/2025 12:12:59 Type: Cal
Method: 6010-200.7 NEW(v96) 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	5645.0	100180.	11009.	4394.4	6724.3
Stddev	9.9	387.	45.	13.7	10.8
%RSD	.17453	.38664	.40904	.31203	.16008
#1	5637.2	100530.	11017.	4410.2	6712.5
#2	5656.1	100250.	10960.	4387.4	6733.6
#3	5641.7	99765.	11049.	4385.6	6726.7

Sample Name: S5 Acquired: 8/13/2025 12:17:10 Type: Cal
Method: 6010-200.7 NEW(v96) 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	.52972	.63366	1.9948	.49555	.98878	1.6049	48.890	3.2753
Stddev	.00057	.01358	.0073	.00077	.00085	.0029	.796	.0185
%RSD	.10790	2.1431	.36699	.15481	.08636	.18246	1.6274	.56399

#1	.52944	.63123	2.0027	.49576	.98862	1.6046	48.872	3.2867
#2	.53037	.64829	1.9937	.49619	.98802	1.6021	48.104	3.2540
#3	.52933	.62146	1.9881	.49470	.98970	1.6079	49.695	3.2852

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	15.084	2.9118	.39581	5.2722	1.6586	.03570	2.0968	.58192
Stddev	.047	.0087	.00140	.0125	.0012	.00010	.0099	.00261
%RSD	.31162	.29870	.35251	.23744	.07043	.27258	.47176	.44855

#1	15.136	2.9107	.39742	5.2866	1.6599	.03562	2.0982	.58223
#2	15.073	2.9037	.39514	5.2641	1.6576	.03581	2.0863	.57917
#3	15.044	2.9210	.39488	5.2659	1.6584	.03567	2.1059	.58436

Elem	Ni2316	Ag3280	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3.0400	.51494	.48016	.65670	12.064	.25628	6.8239	6.7674
Stddev	.0075	.00113	.00190	.00204	.027	.00097	.0245	.0069
%RSD	.24774	.22012	.39602	.31018	.22014	.38010	.35844	.10149

#1	3.0487	.51523	.48100	.65617	12.080	.25638	6.8324	6.7742
#2	3.0363	.51591	.48149	.65498	12.079	.25719	6.7963	6.7676
#3	3.0351	.51370	.47798	.65895	12.034	.25525	6.8429	6.7605

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707	Sr4077	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	1.4399	2.9783	.03518	.25994	.29835	8.7676	78.755	
Stddev	.0062	.0076	.00014	.00260	.00217	.0184	.586	
%RSD	.43098	.25457	.39135	1.0012	.72611	.20932	.74368	

#1	1.4454	2.9785	.03504	.26244	.29893	8.7630	78.239	
#2	1.4412	2.9706	.03531	.26012	.30016	8.7520	78.635	
#3	1.4332	2.9857	.03519	.25724	.29595	8.7879	79.392	

Sample Name: S5 Acquired: 8/13/2025 12:17:10 Type: Cal
Method: 6010-200.7 NEW(v96) 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	5431.8	95688.	10758.	4147.7	6335.1
Stddev	6.9	332.	45.	6.1	13.8
%RSD	.12679	.34662	.42271	.14602	.21731
#1	5424.4	95521.	10733.	4142.1	6319.3
#2	5438.0	95473.	10810.	4146.9	6341.8
#3	5433.1	96070.	10730.	4154.1	6344.2

Sample Name: ICV01 Acquired: 8/13/2025 12:21:22 Type: Unk
Method: 6010-200.7 NEW(v96) 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	3.872529	3.747317	3.774946	3.879669	3.998496	7.680930
Stddev	.003902	.037013	.002479	.002217	.003616	.014768
%RSD	.1007619	.9877262	.0656677	.0571342	.0904217	.1922650

#1	3.869111	3.761842	3.775273	3.880245	3.994378	7.664547
#2	3.876781	3.705245	3.772320	3.877221	3.999959	7.685023
#3	3.871695	3.774865	3.777245	3.881540	4.001150	7.693219

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.787087	.1894277	1.917346	19.17133	.7879995	1.951427
Stddev	.066900	.0012904	.002480	.04239	.0021177	.002684
%RSD	.8591090	.6812079	.1293524	.2210986	.2687385	.1375592

#1	7.825703	.1883907	1.918168	19.13004	.7870095	1.952023
#2	7.825719	.1908728	1.914559	19.16923	.7865583	1.948495
#3	7.709838	.1890195	1.919310	19.21473	.7904309	1.953764

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9971016	3.950722	1.921770	19.09299	1.945451	1.032062
Stddev	.0002298	.013018	.007647	.07624	.001243	.001841
%RSD	.0230492	.3295101	.3979201	.3992970	.0638887	.1783370

#1	.9968415	3.961226	1.913017	19.02672	1.946515	1.029977
#2	.9971860	3.936157	1.925135	19.07593	1.944085	1.033462
#3	.9972774	3.954781	1.927157	19.17631	1.945754	1.032747

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	19.09833	1.937518	1.949359	19.37323	3.744833	3.976290
Stddev	.11337	.000955	.006075	.14820	.031631	.002192
%RSD	.5936094	.0492879	.3116617	.7649614	.8446475	.0551334

#1	19.13358	1.938246	1.942348	19.41682	3.721577	3.978804
#2	18.97152	1.936437	1.952632	19.20813	3.780851	3.974774
#3	19.18989	1.937872	1.953095	19.49475	3.732071	3.975293

Sample Name: ICV01 Acquired: 8/13/2025 12:21:22 Type: Unk
Method: 6010-200.7 NEW(v96) 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	3.853517	3.852559	3.736703	F .0077036	F .0271601	F -.002909
Stddev	.004442	.006257	.022650	.0014054	.0016283	.000859
%RSD	.1152699	.1624205	.6061370	18.24403	5.995220	29.52355
#1	3.852701	3.856439	3.762802	.0088118	.0256722	-.003731
#2	3.849539	3.845341	3.722186	.0061228	.0269086	-.002979
#3	3.858310	3.855899	3.725122	.0081763	.0288995	-.002017
Elem	Sr4077					
Units	ppm					
Avg	F -.003642					
Stddev	.000035					
%RSD	.9554361					
#1	-.003668					
#2	-.003602					
#3	-.003654					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	5737.902	102195.8	11664.72	4400.772	6955.925	
Stddev	8.744	439.9	73.91	18.175	12.061	
%RSD	.1523977	.4304161	.6336377	.4129998	.1733879	
#1	5729.834	102378.4	11747.31	4404.439	6942.067	
#2	5736.678	102514.9	11604.79	4416.834	6964.047	
#3	5747.194	101694.0	11642.06	4381.043	6961.661	

Sample Name: LLICV01 Acquired: 8/13/2025 12:28:47 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.0212869	.0429580	.0111791	.0192117	.0500587	.0951201	.0946827
Stddev	.0006105	.0016753	.0008049	.0015265	.0008149	.0080282	.0009918
%RSD	2.867938	3.899746	7.200015	7.945656	1.627822	8.440043	1.047528

#1	.0218636	.0410657	.0117637	.0203123	.0498314	.0892454	.0958260
#2	.0206474	.0435562	.0115126	.0174690	.0493816	.0918472	.0940538
#3	.0213498	.0442520	.0102611	.0198537	.0509631	.1042677	.0941682

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0060843	.0055941	2.040672	.0104963	.0294114	.0213323	.1068463
Stddev	.0000529	.0000093	.006249	.0000555	.0000699	.0001400	.0039101
%RSD	.8691142	.1670398	.3062115	.5291471	.2377351	.6562415	3.659527

#1	.0060266	.0055895	2.035366	.0104408	.0294738	.0214512	.1066157
#2	.0060959	.0056049	2.039089	.0104963	.0294246	.0213678	.1108666
#3	.0061304	.0055880	2.047559	.0105519	.0293359	.0211780	.1030567

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0210293	2.116955	.0395706	.0101235	1.848759	.0389247	.0424371
Stddev	.0002964	.023230	.0001587	.0003544	.012154	.0002070	.0005068
%RSD	1.409592	1.097332	.4009776	3.500519	.6574014	.5317571	1.194122

#1	.0208042	2.109694	.0397342	.0100837	1.852025	.0391251	.0425327
#2	.0213652	2.098222	.0394174	.0104961	1.835306	.0387117	.0418893
#3	.0209187	2.142948	.0395601	.0097907	1.858946	.0389372	.0428892

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.992274	.1113647	.2068390	.0383012	.0383031	.3725319	.0208482
Stddev	.025784	.0007750	.0005443	.0000473	.0010136	.0088729	.0009790
%RSD	1.294212	.6959354	.2631299	.1234586	2.646283	2.381779	4.695647

#1	2.013299	.1115285	.2071337	.0383426	.0386341	.3822381	.0198549
#2	2.000017	.1120447	.2062110	.0383112	.0391099	.3648378	.0208777
#3	1.963505	.1105208	.2071724	.0382497	.0371654	.3705199	.0218121

Sample Name: LLICV01 Acquired: 8/13/2025 12:28:47 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.0182723	.0169958	.0196862
Stddev	.0009029	.0002173	.0000835
%RSD	4.941298	1.278290	.4239678

#1	.0173798	.0167453	.0197119
#2	.0182516	.0171085	.0195930
#3	.0191853	.0171335	.0197539

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5807.924	104228.6	11501.84	4465.294	7444.260
Stddev	15.704	182.0	26.10	16.352	12.443
%RSD	.2703829	.1746627	.2269126	.3662041	.1671490

#1	5790.519	104032.4	11473.85	4450.376	7441.534
#2	5812.221	104392.1	11525.51	4482.777	7433.405
#3	5821.031	104261.4	11506.15	4462.729	7457.840

Sample Name: ICB01 Acquired: 8/13/2025 12:33:04 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.0020461	.0006381	-.000063	-.000772	.0010903	-.002729	-.004066
Stddev	.0012696	.0009465	.000677	.001823	.0010147	.003038	.000165
%RSD	62.04908	148.3491	1080.785	236.2314	93.05941	111.3193	4.051191
#1	.0031922	.0009866	-.000840	.000282	.0013354	-.002780	-.004239
#2	.0022647	.0013609	.000260	-.002877	.0019600	.000334	-.003912
#3	.0006814	-.000433	.000393	.000280	-.000024	-.005740	-.004046
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000014	.0000246	.0017245	.0003299	.0001895	.0003046	.0079953
Stddev	.000020	.0000281	.0036808	.0000707	.0001241	.0004185	.0035244
%RSD	141.3374	114.2945	213.4394	21.41632	65.47087	137.4151	44.08091
#1	-.000033	-.000007	-.002495	.0004113	.0003019	.0007554	.0052188
#2	-.000017	.000035	.004273	.0002839	.0002102	.0002299	.0119603
#3	.000007	.000046	.003396	.0002946	.0000564	-.000072	.0068069
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001986	.0058094	.0007518	.0000605	-.049108	.0005254	.0024536
Stddev	.0002193	.0140103	.0003315	.0003838	.004769	.0014947	.0002481
%RSD	110.4549	241.1671	44.09304	634.1919	9.710924	284.4610	10.11297
#1	.0004387	-.005213	.0004171	-.000383	-.054107	-.000838	.0021671
#2	.0000090	.021576	.0010800	.000282	-.044609	.002123	.0025914
#3	.0001479	.001065	.0007581	.000282	-.048608	.000291	.0026021
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0223962	.0069915	.0001878	.0007363	.0006101	-.005488	.0031793
Stddev	.0195386	.0003020	.0002695	.0004124	.0014125	.002475	.0022545
%RSD	87.24066	4.319832	143.5270	56.01670	231.5253	45.09840	70.91221
#1	.0139851	.0073368	-.000110	.0002985	.0011362	-.007188	.0057763
#2	.0447318	.0067764	.000257	.0011175	.0016839	-.006628	.0020369
#3	.0084718	.0068614	.000416	.0007929	-.000990	-.002649	.0017246

Sample Name: ICB01 Acquired: 8/13/2025 12:33:04 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.0009618	-.002107	-.000051
Stddev	.0030958	.000913	.000032
%RSD	321.8765	43.32888	63.30726

#1	.0035907	-.001119	-.000018
#2	-.002450	-.002919	-.000082
#3	.001745	-.002284	-.000053

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5920.177	105800.6	11530.31	4505.262	7705.778
Stddev	8.657	219.9	52.01	12.467	10.457
%RSD	.1462266	.2078285	.4510980	.2767269	.1357041

#1	5911.799	105655.1	11495.27	4490.964	7698.761
#2	5919.644	106053.6	11590.08	4513.864	7700.776
#3	5929.088	105693.2	11505.60	4510.958	7717.797

Sample Name: CRI01 Acquired: 8/13/2025 12:37:23 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.0205849	.0406733	.0100082	.0210974	.0501601	.0928898	.0938578
Stddev	.0025719	.0016188	.0006348	.0034708	.0007561	.0136325	.0004453
%RSD	12.49421	3.980102	6.342546	16.45142	1.507352	14.67594	.4744453
#1	.0201310	.0415070	.0106766	.0173189	.0497882	.0820636	.0933436
#2	.0233536	.0417054	.0099343	.0241437	.0510301	.0884066	.0941134
#3	.0182702	.0388075	.0094135	.0218297	.0496620	.1081993	.0941165
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0060104	.0054936	2.009743	.0099982	.0290122	.0208848	.0959440
Stddev	.0000683	.0000424	.002405	.0003607	.0001192	.0002381	.0069841
%RSD	1.135550	.7720568	.1196751	3.607919	.4106902	1.139924	7.279389
#1	.0060431	.0055425	2.007013	.0104143	.0290463	.0207539	.0954112
#2	.0060560	.0054701	2.011551	.0098071	.0291106	.0211595	.0892415
#3	.0059319	.0054681	2.010665	.0097732	.0288798	.0207408	.1031793
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0208250	2.117900	.0386926	.0103327	1.812239	.0422618	.0410103
Stddev	.0000943	.029259	.0001655	.0003137	.002549	.0013977	.0006691
%RSD	.4529240	1.381504	.4276398	3.036040	.1406721	3.307217	1.631641
#1	.0209006	2.088228	.0386578	.0100788	1.809427	.0434929	.0417796
#2	.0208551	2.146728	.0388727	.0102360	1.812888	.0425501	.0406878
#3	.0207193	2.118745	.0385473	.0106834	1.814400	.0407424	.0405634
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.934812	.1007527	.2026697	.0373197	.0381128	.3571710	.0209912
Stddev	.054165	.0010837	.0006563	.0008661	.0007433	.0073746	.0023370
%RSD	2.799475	1.075571	.3238405	2.320852	1.950235	2.064722	11.13306
#1	1.991669	.1000124	.2033662	.0381476	.0385008	.3655936	.0212222
#2	1.883817	.1019965	.2025803	.0373917	.0385818	.3540456	.0185474
#3	1.928950	.1002492	.2020627	.0364199	.0372558	.3518738	.0232041

Sample Name: CRI01 Acquired: 8/13/2025 12:37:23 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.0155669	.0169876	.0194383
Stddev	.0011020	.0005103	.0000266
%RSD	7.079181	3.004134	.1366103

#1	.0166446	.0175666	.0194401
#2	.0156141	.0167930	.0194109
#3	.0144421	.0166033	.0194639

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5878.336	104791.1	11474.11	4497.042	7517.225
Stddev	1.598	168.5	52.55	39.435	13.274
%RSD	.0271765	.1608003	.4579527	.8769002	.1765840

#1	5876.496	104708.3	11520.15	4454.636	7504.717
#2	5879.138	104985.0	11416.86	4532.611	7515.805
#3	5879.373	104679.9	11485.30	4503.879	7531.152

Sample Name: ICSA01 Acquired: 8/13/2025 12:41:39 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSA01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0134755	.0029051	-.006379	.0029114	-.004818	240.2699
Stddev	.0015729	.0020732	.001490	.0036164	.003585	.5040
%RSD	11.67198	71.36207	23.36131	124.2155	74.40217	.2097530
#1	.0138604	.0051580	-.004993	.0061073	-.003015	240.6353
#2	.0117460	.0010778	-.006189	.0036411	-.008947	240.4794
#3	.0148203	.0024795	-.007955	-.001014	-.002493	239.6949
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000470	.0013114	.0023261	229.2883	.0581592	.0018541
Stddev	.000774	.0000873	.0001227	.4618	.0006300	.0001184
%RSD	164.6725	6.658843	5.275484	.2013844	1.083154	6.383889
#1	-.001110	.0013001	.0024222	229.7292	.0588785	.0019160
#2	-.000690	.0012303	.0021878	229.3273	.0578935	.0017176
#3	.000390	.0014038	.0023681	228.8082	.0577057	.0019286
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0048240	99.17169	.0081692	243.0898	.0052171	.0023332
Stddev	.0002039	.45403	.0001293	.4697	.0001901	.0004527
%RSD	4.227024	.4578214	1.583067	.1932077	3.643411	19.40112
#1	.0049235	99.35140	.0082993	243.6319	.0051780	.0019210
#2	.0045895	99.50836	.0080407	242.8316	.0050496	.0022609
#3	.0049592	98.65531	.0081676	242.8058	.0054237	.0028176
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0030553	.0036474	.0021994	-.004103	.0465611	.0004396
Stddev	.0145555	.0010886	.0002810	.002135	.0024231	.0005469
%RSD	476.4051	29.84718	12.77678	52.04560	5.204049	124.4199
#1	.0192408	.0049021	.0024178	-.001849	.0450116	.0010710
#2	-.008960	.0030859	.0018824	-.004363	.0493534	.0001180
#3	-.001115	.0029541	.0022981	-.006096	.0453184	.0001296

Sample Name: ICSA01 Acquired: 8/13/2025 12:41:39 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSA01 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.003408	-.005384	.0191567	.0080433	-.007991	F -.029667
Stddev	.000954	.000165	.0046077	.0006923	.006152	.002334
%RSD	27.99310	3.060358	24.05245	8.607079	76.97972	7.868185
#1	-.004471	-.005566	.0231435	.0087184	-.006961	-.031462
#2	-.003127	-.005341	.0141122	.0080764	-.014593	-.030511
#3	-.002626	-.005244	.0202145	.0073350	-.002420	-.027028
Elem	Sr4077					
Units	ppm					
Avg	-.000415					
Stddev	.000141					
%RSD	33.96231					
#1	-.000341					
#2	-.000577					
#3	-.000326					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	5204.532	91132.91	11089.70	3980.441	5989.069	
Stddev	4.463	395.10	51.37	18.704	3.737	
%RSD	.0857542	.4335453	.4631804	.4698862	.0624027	
#1	5200.730	90746.55	11031.60	3965.808	5986.924	
#2	5203.419	91115.98	11108.42	3974.002	5993.384	
#3	5209.446	91536.21	11129.08	4001.514	5986.898	

Sample Name: ICSAB01 Acquired: 8/13/2025 12:45:51 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.1106466	.1128171	.0422017	.0505495	.5881123	246.7037
Stddev	.0050037	.0025893	.0034502	.0021315	.0030349	.6852
%RSD	4.522257	2.295135	8.175500	4.216752	.5160492	.2777456
#1	.1124155	.1106635	.0387382	.0493812	.5915942	247.4761
#2	.1049987	.1120977	.0456384	.0530098	.5867150	246.1690
#3	.1145255	.1156900	.0422284	.0492575	.5860276	246.4660
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4924139	.4866317	.9942478	235.8991	.5580352	.4980184
Stddev	.0033397	.0019292	.0017136	.8031	.0014520	.0009333
%RSD	.6782315	.3964369	.1723476	.3404239	.2601970	.1873945
#1	.4956595	.4888437	.9932979	236.6501	.5584377	.4975656
#2	.4889874	.4852974	.9932195	235.0525	.5564244	.4973979
#3	.4925949	.4857540	.9962259	235.9946	.5592434	.4990917
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4858476	101.6958	.4933530	249.5102	.9920598	.2159779
Stddev	.0008161	.4135	.0021714	.7409	.0003657	.0004686
%RSD	.1679772	.4066189	.4401321	.2969430	.0368587	.2169859
#1	.4867018	101.6401	.4950965	250.0856	.9922602	.2158847
#2	.4850758	101.3129	.4909208	248.6742	.9916377	.2155629
#3	.4857651	102.1343	.4940419	249.7708	.9922814	.2164862
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.003581	.4786019	1.036676	.0429249	.9922032	1.025640
Stddev	.008404	.0016721	.002684	.0122727	.0026526	.001398
%RSD	234.7125	.3493630	.2588793	28.59119	.2673424	.1363193
#1	-.000562	.4803976	1.039605	.0438434	.9934008	1.027173
#2	-.013077	.4783184	1.036091	.0302187	.9891630	1.024434
#3	.002897	.4770897	1.034334	.0547126	.9940459	1.025315

Sample Name: ICSAB01 Acquired: 8/13/2025 12:45:51 Type: Unk
Method: 6010-200.7 NEW(v96) 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	1.014192	.9962127	1.025751	F .0085425	F -.003250	F -.032460
Stddev	.002322	.0030495	.003653	.0045384	.001359	.000917
%RSD	.2289273	.3061054	.3560896	53.12684	41.81546	2.824814
#1	1.011822	.9987402	1.028019	.0051222	-.002467	-.032318
#2	1.014294	.9928257	1.021537	.0068141	-.002463	-.031622
#3	1.016462	.9970721	1.027696	.0136911	-.004819	-.033439
Elem	Sr4077					
Units	ppm					
Avg	F .0006371					
Stddev	.0005195					
%RSD	81.53226					
#1	.0011466					
#2	.0006567					
#3	.0001082					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	5276.807	92053.53	11147.28	4022.523	6063.212	
Stddev	4.006	308.37	48.84	17.541	2.865	
%RSD	.0759231	.3349901	.4381269	.4360805	.0472593	
#1	5272.726	91974.87	11094.33	4006.839	6063.869	
#2	5276.961	92393.61	11190.56	4041.465	6060.075	
#3	5280.734	91792.10	11156.96	4019.266	6065.691	

Sample Name: ICSADLX20 Acquired: 8/13/2025 12:49:58 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.0016662	.0004461	-.000930	-.000543	-.002258	11.81398	-.003443
Stddev	.0021118	.0015700	.000423	.001440	.000380	.04807	.000460
%RSD	126.7443	351.9226	45.49889	265.3630	16.81115	.4068997	13.36699
#1	.0016100	-.000817	-.000838	.000136	-.002189	11.85082	-.003069
#2	-.000417	-.000048	-.001391	.000433	-.001918	11.83152	-.003957
#3	.003806	.002204	-.000560	-.002196	-.002668	11.75960	-.003303
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001197	.0000111	11.78764	.0027379	-.000011	.0003281	4.713823
Stddev	.0000386	.0000244	.00732	.0001998	.000070	.0002010	.011185
%RSD	32.21384	220.3649	.0620667	7.297680	638.5062	61.27001	.2372759
#1	.0001472	.0000170	11.77984	.0029549	.000069	.0002794	4.703251
#2	.0001362	-.000016	11.78872	.0026973	-.000042	.0001559	4.712684
#3	.0000756	.000032	11.79435	.0025615	-.000060	.0005490	4.725533
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001094	12.22265	.0002019	-.000183	-.067916	.0012792	-.000401
Stddev	.0004360	.04381	.0001770	.000358	.025394	.0010677	.000237
%RSD	398.5806	.3584475	87.67820	195.9442	37.39100	83.46339	59.16842
#1	-.000390	12.24687	.0000780	.000229	-.042532	.0003052	-.000454
#2	.000304	12.17208	.0001230	-.000423	-.093321	.0024207	-.000606
#3	.000414	12.24901	.0004046	-.000355	-.067894	.0011116	-.000141
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.039682	.0002339	-.000140	-.001188	-.000089	.0019297	.0018500
Stddev	.005958	.0006861	.000045	.000313	.001067	.0032203	.0011160
%RSD	15.01318	293.3161	32.09339	26.35886	1197.441	166.8847	60.32268
#1	-.046553	.0008541	-.000191	-.001483	-.001279	.0055024	.0026517
#2	-.036549	-.000503	-.000110	-.000859	.000231	-.000749	.0023227
#3	-.035946	.000351	-.000117	-.001223	.000781	.001036	.0005755

Sample Name: ICSADLX20 Acquired: 8/13/2025 12:49:58 Type: Unk
Method: 6010-200.7 NEW(v96) 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	-.002158	-.006689	-.000026
Stddev	.002637	.001510	.000012
%RSD	122.1855	22.57041	45.33292

#1	.000680	-.005457	-.000033
#2	-.004532	-.008373	-.000031
#3	-.002623	-.006236	-.000012

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5846.827	102377.5	11319.59	4431.459	7393.786
Stddev	14.168	530.5	58.08	28.994	6.043
%RSD	.2423127	.5181323	.5131334	.6542756	.0817341

#1	5832.313	101789.3	11252.53	4413.340	7393.536
#2	5860.621	102819.6	11353.47	4464.899	7399.950
#3	5847.547	102523.7	11352.79	4416.138	7387.871

Sample Name: ICSABDLX20 Acquired: 8/13/2025 12:54:14 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.0051708	.0080030	.0014689	.0049421	.0284657	12.31042	.0200983
Stddev	.0014910	.0012738	.0004836	.0037558	.0005819	.02913	.0013867
%RSD	28.83515	15.91616	32.92407	75.99624	2.044308	.2366435	6.899455
#1	.0039537	.0066374	.0009183	.0081381	.0280884	12.28041	.0185246
#2	.0068339	.0091589	.0018251	.0008054	.0291359	12.31227	.0211409
#3	.0047248	.0082129	.0016633	.0058827	.0281729	12.33859	.0206294
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0253331	.0471222	12.20490	.0284416	.0237561	.0253892	4.821184
Stddev	.0003163	.0000573	.03281	.0003447	.0000645	.0000652	.016281
%RSD	1.248658	.1215111	.2687919	1.211763	.2715122	.2569712	.3376936
#1	.0249733	.0471883	12.17052	.0288051	.0238197	.0254628	4.839821
#2	.0254583	.0470891	12.20832	.0281195	.0237577	.0253384	4.809724
#3	.0255676	.0470890	12.23587	.0284004	.0236907	.0253666	4.814009
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0251611	12.66865	.0478411	.0100466	-.082355	.0245321	.0501608
Stddev	.0005361	.04374	.0001212	.0004238	.003989	.0017694	.0001986
%RSD	2.130691	.3452777	.2534120	4.218723	4.843279	7.212456	.3959678
#1	.0257800	12.62920	.0479292	.0099463	-.082937	.0260297	.0503138
#2	.0248380	12.66106	.0477029	.0096818	-.078108	.0249868	.0499363
#3	.0248654	12.71569	.0478913	.0105115	-.086021	.0225797	.0502324
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.027170	.0494710	.0516894	.0481216	.0498170	.0454517	.0023753
Stddev	.023706	.0003120	.0001934	.0008298	.0014647	.0036934	.0026308
%RSD	87.25090	.6305877	.3742337	1.724347	2.940181	8.125891	110.7588
#1	-.042417	.0491541	.0519127	.0490324	.0515066	.0421454	.0036628
#2	.000142	.0494810	.0515731	.0474087	.0489078	.0494377	.0041143
#3	-.039233	.0497778	.0515823	.0479235	.0490365	.0447721	-.000651

Sample Name: ICSABDLX20 Acquired: 8/13/2025 12:54:14 Type: Unk
Method: 6010-200.7 NEW(v96) 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	-.003774	-.007824	-.000041
Stddev	.000901	.001075	.000051
%RSD	23.88389	13.74498	124.4206

#1	-.002900	-.008639	-.000082
#2	-.004701	-.008228	.000016
#3	-.003722	-.006605	-.000057

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5788.032	102529.6	11275.12	4431.801	7304.387
Stddev	6.942	244.8	64.99	17.825	10.346
%RSD	.1199305	.2387992	.5763729	.4022091	.1416355

#1	5788.647	102437.3	11342.62	4415.268	7297.166
#2	5780.803	102807.2	11269.78	4450.685	7299.757
#3	5794.645	102344.4	11212.97	4429.449	7316.239

Sample Name: CCV01 Acquired: 8/13/2025 12:58:27 Type: Unk
Method: 6010-200.7 NEW(v96) 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	4.904034	4.815737	4.855153	4.926587	4.929568	9.630559	9.639505
Stddev	.003827	.093365	.003356	.000953	.020754	.015530	.074813
%RSD	.0780312	1.938746	.0691173	.0193419	.4210013	.1612545	.7761128

#1	4.903444	4.836858	4.852830	4.925749	4.906877	9.642837	9.631930
#2	4.908121	4.896731	4.853628	4.926387	4.934237	9.613101	9.568767
#3	4.900537	4.713620	4.859000	4.927623	4.947589	9.635739	9.717818

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2396649	2.431220	24.08287	1.004169	2.424524	1.228070	5.033339
Stddev	.0007196	.002959	.09699	.001192	.004031	.002902	.025154
%RSD	.3002633	.1217028	.4027220	.1187049	.1662660	.2363132	.4997529

#1	.2396428	2.429014	24.14632	1.005306	2.421873	1.227030	5.004453
#2	.2389566	2.430064	23.97123	1.004273	2.422536	1.225830	5.045148
#3	.2403954	2.434583	24.13107	1.002928	2.429163	1.231348	5.050415

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.391793	24.03336	2.428809	1.232624	24.64873	2.424834	2.485846
Stddev	.014767	.10979	.004260	.001100	.04149	.010607	.001488
%RSD	.6173828	.4568282	.1753993	.0892242	.1683048	.4374388	.0598746

#1	2.385681	24.03945	2.425560	1.232369	24.60117	2.423347	2.487404
#2	2.381063	23.92066	2.427235	1.233829	24.67747	2.415049	2.484439
#3	2.408634	24.13998	2.433632	1.231674	24.66755	2.436106	2.485694

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	25.03939	4.708310	4.951383	4.865971	4.797024	5.028014	4.746392
Stddev	.11178	.012115	.006688	.003206	.016798	.019018	.004821
%RSD	.4464116	.2573088	.1350742	.0658779	.3501760	.3782440	.1015688

#1	24.92825	4.705204	4.947132	4.863532	4.785107	5.007270	4.750071
#2	25.15180	4.698050	4.947924	4.864781	4.789728	5.032148	4.748170
#3	25.03813	4.721676	4.959092	4.869602	4.816236	5.044626	4.740934

Sample Name: CCV01 Acquired: 8/13/2025 12:58:27 Type: Unk
Method: 6010-200.7 NEW(v96) 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	4.763198	4.755884	4.799049
Stddev	.007889	.015111	.023342
%RSD	.1656218	.3177372	.4863836

#1	4.763274	4.747278	4.817676
#2	4.771049	4.747042	4.772865
#3	4.755272	4.773333	4.806607

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5716.124	98246.45	11482.45	4313.172	6870.297
Stddev	19.794	201.04	26.66	7.498	22.475
%RSD	.3462904	.2046323	.2322168	.1738287	.3271372

#1	5722.865	98226.65	11474.21	4304.542	6876.671
#2	5731.667	98056.03	11512.26	4316.889	6888.896
#3	5693.839	98456.65	11460.87	4318.085	6845.322

Sample Name: CCB01 Acquired: 8/13/2025 13:03:05 Type: Unk
Method: 6010-200.7 NEW(v96) 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	-.000665	.0002982	-.000160	.0019303	-.000085	-.014664	-.003595
Stddev	.000786	.0006068	.000133	.0005636	.001328	.005725	.001019
%RSD	118.1845	203.5272	82.78132	29.19613	1554.203	39.03765	28.33739
#1	-.001490	.0005790	-.000264	.0025654	-.001515	-.020811	-.004488
#2	.000074	-.000398	-.000011	.0014897	.000151	-.013698	-.002485
#3	-.000579	.000714	-.000206	.0017359	.001108	-.009484	-.003813
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000038	-.000159	-.023724	.0014164	-.000206	.0009549	-.007527
Stddev	.000034	.000037	.000970	.0005836	.000143	.0003958	.000646
%RSD	88.68050	22.99370	4.087030	41.20752	69.44955	41.45068	8.585247
#1	-.000047	-.000191	-.022623	.0020379	-.000325	.0014098	-.006947
#2	-.000001	-.000119	-.024447	.0008800	-.000047	.0007663	-.008224
#3	-.000068	-.000168	-.024103	.0013311	-.000245	.0006887	-.007412
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000097	-.022407	-.000059	.0003136	-.097923	-.001545	.0010055
Stddev	.000325	.006411	.000094	.0005164	.006892	.000712	.0001678
%RSD	333.1988	28.61382	159.2137	164.6458	7.038613	46.12859	16.68869
#1	-.000233	-.020516	-.000124	.0001423	-.096068	-.001737	.0010634
#2	-.000332	-.017153	.000049	-.000095	-.105553	-.002141	.0008164
#3	.000273	-.029551	-.000102	.000894	-.092147	-.000755	.0011367
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.014650	.0059156	-.000159	.0000338	-.001152	.0038132	.0010622
Stddev	.016514	.0003154	.000202	.0004324	.000530	.0062807	.0014760
%RSD	112.7205	5.331710	127.4271	1278.706	45.99109	164.7087	138.9568
#1	.002381	.0060799	-.000132	.0002199	-.001375	-.003419	.0027407
#2	-.030592	.0061148	-.000373	-.000460	-.000547	.006957	.0004786
#3	-.015740	.0055519	.000029	.000342	-.001533	.007902	-.000033

Sample Name: CCB01 Acquired: 8/13/2025 13:03:05 Type: Unk
Method: 6010-200.7 NEW(v96) 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	-.001350	-.004000	-.000299
Stddev	.001798	.001573	.000052
%RSD	133.2183	39.32689	17.41513

#1	-.001136	-.003459	-.000260
#2	.000332	-.002769	-.000279
#3	-.003245	-.005772	-.000358

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5851.750	104344.0	11399.46	4448.811	7637.193
Stddev	5.292	478.6	120.53	11.758	4.517
%RSD	.0904386	.4586607	1.057325	.2642944	.0591440

#1	5853.156	104753.0	11439.63	4458.315	7638.654
#2	5856.197	103817.6	11263.97	4452.457	7640.799
#3	5845.897	104461.4	11494.76	4435.662	7632.127

Sample Name: Q2828-01 Acquired: 8/13/2025 13:07:24 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.1134400	.0091516	1.533352	.0108986	.1062454	166.4215	2.636055
Stddev	.0015758	.0040709	.001904	.0014848	.0027283	1.3196	.011931
%RSD	1.389133	44.48259	.1241626	13.62367	2.567924	.7929354	.4526193
#1	.1134908	.0050198	1.532807	.0121019	.1073272	166.8840	2.626658
#2	.1118394	.0092765	1.531779	.0113547	.1082669	164.9329	2.632029
#3	.1149898	.0131587	1.535469	.0092393	.1031421	167.4476	2.649479
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0202952	.1062010	186.2417	1.308005	.8657477	1.634701	256.9624
Stddev	.0001481	.0004095	2.7180	.004477	.0004183	.003580	4.5732
%RSD	.7299014	.3855493	1.459390	.3423139	.0483169	.2189785	1.779725
#1	.0204270	.1057696	187.4768	1.309300	.8659356	1.631343	260.6307
#2	.0203238	.1065842	188.1228	1.303023	.8660392	1.638467	251.8385
#3	.0201349	.1062493	183.1255	1.311693	.8652684	1.634294	258.4179
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.443344	25.86734	3.062504	.0338287	18.71360	.6835053	5.160948
Stddev	.009517	.03745	.001462	.0016321	.22414	.0004427	.011324
%RSD	.2141747	.1447709	.0477248	4.824718	1.197735	.0647699	.2194135
#1	4.437145	25.90887	3.063683	.0353896	18.54055	.6837543	5.173606
#2	4.438587	25.85698	3.060869	.0321336	18.63345	.6829942	5.157459
#3	4.454301	25.83616	3.062961	.0339629	18.96680	.6837675	5.151780
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.638579	.9711255	.1761253	.1868855	14.96628	4.791280	3.820196
Stddev	.038190	.0151179	.0001415	.0008033	.02037	.037473	.012040
%RSD	.5752779	1.556740	.0803617	.4298641	.1361015	.7821169	.3151649
#1	6.607898	.9861273	.1759761	.1872383	14.96144	4.786174	3.810288
#2	6.626488	.9558942	.1761422	.1859661	14.94876	4.756621	3.816704
#3	6.681351	.9713551	.1762576	.1874521	14.98863	4.831044	3.833596

Sample Name: Q2828-01 Acquired: 8/13/2025 13:07:24 Type: Unk
Method: 6010-200.7 NEW(v96) 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	7.773174	.3623238	1.257674
Stddev	.036608	.0018432	.014664
%RSD	.4709588	.5087047	1.165947

#1	7.764086	.3632790	1.273092
#2	7.741966	.3601991	1.256028
#3	7.813471	.3634933	1.243903

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	10847.07	190843.4	24787.89	8059.269	5851.491
Stddev	23.51	876.4	139.91	14.056	6.464
%RSD	.2167710	.4592384	.5644095	.1744020	.1104658

#1	10874.18	191183.3	24628.60	8043.386	5858.912
#2	10832.27	191499.0	24844.22	8064.318	5847.087
#3	10834.77	189847.9	24890.85	8070.102	5848.474

Sample Name: Q2828-01DUP Acquired: 8/13/2025 13:12:06 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.1158155	.0148352	1.532858	.0134744	.1128472	165.6223	2.601885
Stddev	.0015015	.0029402	.002353	.0008166	.0007135	2.9241	.010841
%RSD	1.296437	19.81900	.1535243	6.060074	.6322709	1.765542	.4166676

#1	.1172474	.0115629	1.530339	.0142994	.1134845	162.3270	2.595097
#2	.1142530	.0172546	1.535001	.0134573	.1120763	166.6324	2.596170
#3	.1159463	.0156882	1.533233	.0126666	.1129807	167.9075	2.614388

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0203181	.1055997	186.2800	1.293369	.8525037	1.653211	255.0616
Stddev	.0001062	.0001265	1.5873	.005095	.0013593	.002973	2.7857
%RSD	.5225224	.1198118	.8521250	.3939655	.1594527	.1798595	1.092172

#1	.0202344	.1055010	185.3925	1.288126	.8524774	1.650434	258.2317
#2	.0202824	.1057423	188.1126	1.293677	.8538760	1.656348	253.0042
#3	.0204375	.1055557	185.3349	1.298303	.8511577	1.652852	253.9490

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.454185	25.99138	3.023303	.0339602	18.67039	.6861745	5.142791
Stddev	.020187	.05425	.003063	.0012542	.03486	.0049921	.006382
%RSD	.4532054	.2087361	.1013161	3.693023	.1867154	.7275241	.1240934

#1	4.439820	25.92941	3.019793	.0353625	18.63341	.6808485	5.135883
#2	4.445471	26.01442	3.025437	.0329458	18.70265	.6869278	5.144023
#3	4.477265	26.03032	3.024679	.0335723	18.67511	.6907471	5.148467

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.603250	.9747618	.1783009	.1853271	14.84422	3.869544	3.781350
Stddev	.030996	.0059859	.0001001	.0016453	.05866	.022660	.011464
%RSD	.4694029	.6140847	.0561218	.8877616	.3951431	.5856026	.3031768

#1	6.637791	.9810424	.1784010	.1870788	14.81215	3.844501	3.782269
#2	6.594100	.9691223	.1783006	.1850881	14.80859	3.888632	3.769455
#3	6.577859	.9741207	.1782009	.1838145	14.91192	3.875500	3.792328

Sample Name: Q2828-01DUP Acquired: 8/13/2025 13:12:06 Type: Unk
Method: 6010-200.7 NEW(v96) 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	7.734245	.3603983	1.261066
Stddev	.040429	.0010436	.015900
%RSD	.5227262	.2895702	1.260865

#1	7.738389	.3607265	1.251076
#2	7.691904	.3592301	1.279401
#3	7.772442	.3612384	1.252720

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	10603.16	189222.5	24470.91	8067.296	5787.316
Stddev	22.72	175.1	131.64	26.251	12.262
%RSD	.2143126	.0925284	.5379531	.3254063	.2118816

#1	10617.09	189391.1	24546.45	8045.391	5799.051
#2	10576.94	189041.6	24547.38	8096.394	5774.587
#3	10615.46	189234.8	24318.91	8060.102	5788.311

Sample Name: Q2828-01LX5 Acquired: 8/13/2025 13:16:46 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.0374715	.0054799	.3129119	.0034262	.0352743	56.94094	.8923724
Stddev	.0030387	.0019713	.0007200	.0013189	.0009382	.14880	.0014934
%RSD	8.109254	35.97277	.2301101	38.49380	2.659784	.2613265	.1673533
#1	.0384185	.0032081	.3121144	.0021354	.0354689	56.76937	.8911017
#2	.0399239	.0064933	.3135144	.0047714	.0360999	57.03476	.8940173
#3	.0340721	.0067382	.3131068	.0033718	.0342540	57.01870	.8919981
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0072923	.0167536	65.96660	.4662722	.1679308	.5963318	87.31986
Stddev	.0000975	.0000931	.09158	.0050144	.0005588	.0009259	.27581
%RSD	1.337256	.5558538	.1388234	1.075420	.3327414	.1552667	.3158593
#1	.0072447	.0166691	65.86390	.4715687	.1673239	.5952874	87.59274
#2	.0074045	.0167382	66.03976	.4656498	.1680448	.5966561	87.32562
#3	.0072278	.0168534	65.99613	.4615980	.1684239	.5970519	87.04121
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.597058	9.332307	.6110464	.0122545	5.451154	.2416844	1.868615
Stddev	.003012	.015072	.0011982	.0002839	.017208	.0020022	.007942
%RSD	.1885819	.1615043	.1960946	2.316671	.3156702	.8284214	.4250164
#1	1.593591	9.334797	.6099449	.0121666	5.462255	.2423569	1.860546
#2	1.599027	9.316146	.6108720	.0125719	5.459874	.2432637	1.876424
#3	1.598556	9.345980	.6123222	.0120249	5.431331	.2394325	1.868875
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.008778	.3605193	.0609411	.0368072	5.260559	1.535192	.7285319
Stddev	.030265	.0011303	.0002233	.0000442	.003747	.026223	.0044502
%RSD	1.506614	.3135261	.3664465	.1200149	.0712353	1.708100	.6108499
#1	2.017505	.3592621	.0611443	.0367570	5.260691	1.561722	.7238226
#2	1.975108	.3614515	.0609771	.0368244	5.264239	1.534565	.7291056
#3	2.033720	.3608444	.0607020	.0368402	5.256747	1.509288	.7326675

Sample Name: Q2828-01LX5 Acquired: 8/13/2025 13:16:46 Type: Unk
Method: 6010-200.7 NEW(v96) 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	1.417286	.1153787	.4399982
Stddev	.005971	.0004917	.0016475
%RSD	.4212716	.4261647	.3744271
#1	1.424138	.1157406	.4381381
#2	1.413197	.1155766	.4412736
#3	1.414524	.1148189	.4405829

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6797.836	120467.2	14251.06	5159.481	6763.759
Stddev	4.545	191.4	72.55	18.358	6.699
%RSD	.0668549	.1589031	.5090718	.3558027	.0990436
#1	6800.417	120479.8	14330.11	5172.609	6771.340
#2	6792.589	120269.8	14187.52	5138.503	6761.305
#3	6800.503	120652.0	14235.56	5167.330	6758.634

Sample Name: Q2828-01MS Acquired: 8/13/2025 13:20:51 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.4351764	1.631806	2.687091	.7305922	.2975854	226.5995	2.854597
Stddev	.0027281	.050930	.004847	.0045100	.0030584	2.1090	.021283
%RSD	.6268927	3.121092	.1803775	.6173082	1.027749	.9307268	.7455781

#1	.4355422	1.578458	2.686194	.7279700	.2973353	224.1644	2.830455
#2	.4322839	1.637048	2.682755	.7280067	.2946597	227.7955	2.870649
#3	.4377032	1.679913	2.692323	.7357998	.3007612	227.8387	2.862687

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0971046	.3053206	253.8815	1.519295	1.149584	1.963534	249.5014
Stddev	.0007481	.0006048	2.5695	.010415	.002146	.000298	2.4786
%RSD	.7704324	.1980948	1.012103	.6855172	.1866773	.0151547	.9934152

#1	.0962449	.3052109	250.9508	1.507276	1.148241	1.963518	246.8062
#2	.0976077	.3047781	255.7482	1.525667	1.148453	1.963244	251.6829
#3	.0974611	.3059728	254.9454	1.524943	1.152059	1.963839	250.0152

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.333563	35.79715	3.824304	.0783584	24.96618	1.366538	5.945174
Stddev	.014569	.18385	.005270	.0007498	.00881	.006098	.024668
%RSD	.2731514	.5135933	.1378003	.9568491	.0352953	.4462156	.4149186

#1	5.317401	35.61445	3.825148	.0774946	24.95866	1.359577	5.966449
#2	5.345686	35.98213	3.818663	.0787399	24.97587	1.370936	5.918134
#3	5.337603	35.79488	3.829101	.0788406	24.96401	1.369101	5.950938

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	13.41596	1.260318	.3335284	.8504869	15.32760	5.942173	9.990505
Stddev	.01873	.012414	.0010168	.0028623	.04145	.028959	.025481
%RSD	.1395949	.9849807	.3048548	.3365440	.2703969	.4873392	.2550539

#1	13.39991	1.246265	.3325826	.8484021	15.27986	5.910251	10.00195
#2	13.41145	1.269790	.3333989	.8493084	15.34852	5.949513	9.96131
#3	13.43654	1.264899	.3346037	.8537503	15.35441	5.966756	10.00826

Sample Name: Q2828-01MS Acquired: 8/13/2025 13:20:51 Type: Unk
Method: 6010-200.7 NEW(v96) 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	9.405993	.4839844	1.580557
Stddev	.052539	.0012301	.017248
%RSD	.5585735	.2541656	1.091286

#1	9.353141	.4831675	1.576974
#2	9.406625	.4833866	1.565381
#3	9.458214	.4853992	1.599315

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	11150.53	196965.1	26052.92	8416.630	5545.990
Stddev	18.99	1494.4	236.39	16.122	5.603
%RSD	.1703315	.7587226	.9073641	.1915531	.1010329

#1	11166.06	198514.7	26310.19	8428.839	5552.447
#2	11129.35	195532.8	25845.28	8398.355	5542.405
#3	11156.16	196847.8	26003.31	8422.697	5543.117

Sample Name: Q2828-01MSD Acquired: 8/13/2025 13:25:37 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.4615840	1.715748	2.650532	.7844096	.2400832	241.6083	2.750904
Stddev	.0014728	.030870	.001999	.0023306	.0007801	2.2615	.042241
%RSD	.3190697	1.799219	.0754252	.2971139	.3249339	.9360124	1.535533
#1	.4603177	1.687476	2.648324	.7818328	.2407470	244.0371	2.751524
#2	.4612341	1.711081	2.651052	.7863701	.2402786	239.5632	2.792832
#3	.4632002	1.748685	2.652220	.7850259	.2392239	241.2247	2.708357
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1061506	.3148512	282.9101	1.746571	1.203677	1.923987	288.2252
Stddev	.0002332	.0006359	1.8151	.007134	.001830	.002565	3.2417
%RSD	.2196529	.2019656	.6415928	.4084683	.1520090	.1333316	1.124696
#1	.1063684	.3141310	284.3286	1.748688	1.201599	1.921458	291.5038
#2	.1059046	.3153350	283.5371	1.738618	1.204387	1.926587	285.0218
#3	.1061787	.3150876	280.8646	1.752407	1.205046	1.923916	288.1502
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.736477	39.05291	4.079435	.0788640	24.11455	.9461061	5.724962
Stddev	.029504	.08312	.005347	.0010605	.10649	.0024564	.021914
%RSD	.5143223	.2128394	.1310627	1.344657	.4416175	.2596280	.3827767
#1	5.757364	39.14467	4.073860	.0799670	24.15044	.9489230	5.730063
#2	5.749342	38.98265	4.084519	.0778519	24.19847	.9449851	5.700947
#3	5.702725	39.03143	4.079925	.0787732	23.99475	.9444103	5.743875
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	13.30633	1.279237	.3421945	.8797464	14.67077	1.143119	9.957083
Stddev	.03329	.008530	.0006492	.0033389	.04647	.017539	.045158
%RSD	.2502135	.6668188	.1897172	.3795345	.3167335	1.534312	.4535276
#1	13.32852	1.287682	.3420382	.8771325	14.68701	1.162189	10.00213
#2	13.32244	1.270624	.3416377	.8785990	14.70694	1.139488	9.95730
#3	13.26805	1.279405	.3429076	.8835078	14.61836	1.127679	9.91182

Sample Name: Q2828-01MSD Acquired: 8/13/2025 13:25:37 Type: Unk
Method: 6010-200.7 NEW(v96) 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	9.579984	.4892810	1.560177
Stddev	.022632	.0022723	.017256
%RSD	.2362426	.4644240	1.106057

#1	9.568223	.4909751	1.564974
#2	9.565654	.4901691	1.574528
#3	9.606075	.4866987	1.541030

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	10569.60	185523.5	24488.62	8022.232	5387.879
Stddev	8.81	562.7	26.55	28.638	5.614
%RSD	.0833058	.3033084	.1084259	.3569804	.1042035

#1	10575.21	185376.6	24463.69	8033.160	5388.470
#2	10574.14	186145.1	24516.54	8043.797	5393.175
#3	10559.46	185048.8	24485.63	7989.739	5381.993

Sample Name: Q2828-01A Acquired: 8/13/2025 13:30:23 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.4985563	1.727627	2.394146	.9585126	.5136132	174.0700	2.651098
Stddev	.0127946	.072811	.112491	.0253087	.0159573	.9918	.008567
%RSD	2.566324	4.214509	4.698568	2.640417	3.106871	.5697729	.3231585
#1	.5020827	1.759048	2.438899	.9679940	.5192490	175.2100	2.659650
#2	.5092178	1.779450	2.477372	.9777115	.5259879	173.4052	2.642516
#3	.4843683	1.644381	2.266166	.9298321	.4956028	173.5948	2.651128
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1078394	.2920576	192.9332	1.479441	1.018800	1.764613	257.2287
Stddev	.0002290	.0151426	1.1552	.004351	.051056	.045010	1.6002
%RSD	.2123098	5.184791	.5987651	.2940722	5.011344	2.550723	.6220730
#1	.1076176	.2988290	191.6937	1.475171	1.041834	1.784497	257.5228
#2	.1078256	.3026328	193.9798	1.479284	1.054280	1.796258	255.5018
#3	.1080749	.2747109	193.1260	1.483868	.960285	1.713085	258.6613
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.586002	27.82926	3.425555	.0742261	20.53416	.8293754	5.280278
Stddev	.011470	.06904	.164230	.0007513	.06541	.0017896	.006902
%RSD	.2501002	.2480940	4.794263	1.012168	.3185292	.2157720	.1307175
#1	4.592972	27.89665	3.498943	.0742723	20.58898	.8306126	5.284897
#2	4.572764	27.75868	3.540296	.0734528	20.46176	.8273234	5.283594
#3	4.592270	27.83246	3.237428	.0749533	20.55175	.8301902	5.272344
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.34843	1.100116	.3691177	.8588195	14.91686	3.738774	9.330480
Stddev	.02891	.006739	.0088644	.0359762	.03014	.020807	.451604
%RSD	.2340916	.6125717	2.401496	4.189034	.2020420	.5565135	4.840099
#1	12.34718	1.099619	.3739229	.8760554	14.93945	3.717871	9.532941
#2	12.32017	1.093640	.3745419	.8829352	14.88264	3.738969	9.645426
#3	12.37794	1.107091	.3588883	.8174681	14.92848	3.759484	8.813072

Sample Name: Q2828-01A Acquired: 8/13/2025 13:30:23 Type: Unk
Method: 6010-200.7 NEW(v96) 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	7.567011	.4534073	1.365456
Stddev	.382646	.0018455	.006631
%RSD	5.056764	.4070324	.4855914

#1	7.729611	.4554836	1.370162
#2	7.841503	.4519537	1.357873
#3	7.129917	.4527845	1.368333

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	10592.85	185875.3	24225.45	7907.430	5852.049
Stddev	136.59	303.8	18.83	33.349	226.891
%RSD	1.289441	.1634175	.0777375	.4217425	3.877115

#1	10528.16	186222.7	24242.12	7875.736	5746.291
#2	10500.63	185659.7	24205.02	7904.335	5697.344
#3	10749.77	185743.6	24229.21	7942.219	6112.511

Sample Name: CCV02 Acquired: 8/13/2025 13:42:20 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV02 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.949760	4.959503	4.852074	4.982082	4.970518	9.695432	9.662181
Stddev	.008222	.043373	.003983	.004322	.002979	.013974	.133465
%RSD	.1661075	.8745405	.0820986	.0867538	.0599281	.1441246	1.381311
#1	4.945489	4.927510	4.855461	4.981265	4.973161	9.707947	9.655441
#2	4.959239	4.942129	4.847685	4.978226	4.971104	9.680354	9.532215
#3	4.944553	5.008869	4.853075	4.986754	4.967290	9.697994	9.798889
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2404294	2.432348	24.24217	.9874279	2.426362	1.233085	4.979648
Stddev	.0010260	.003406	.06117	.0023567	.002690	.001601	.035100
%RSD	.4267275	.1400448	.2523355	.2386671	.1108509	.1298123	.7048683
#1	.2401409	2.435142	24.26725	.9899564	2.428882	1.231449	5.014956
#2	.2395785	2.428553	24.17244	.9852925	2.423530	1.233160	4.979228
#3	.2415687	2.433349	24.28681	.9870347	2.426673	1.234647	4.944760
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.415383	24.10653	2.434774	1.235911	24.10775	2.445297	2.459773
Stddev	.009072	.14085	.003600	.000164	.17284	.004068	.006594
%RSD	.3755825	.5842922	.1478514	.0132602	.7169484	.1663490	.2680792
#1	2.421927	24.10849	2.438770	1.235770	24.27911	2.449432	2.452422
#2	2.405027	23.96471	2.431785	1.236091	24.11068	2.441300	2.461730
#3	2.419194	24.24639	2.433767	1.235874	23.93347	2.445160	2.465167
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	24.58278	4.818771	4.982915	4.884147	4.850847	5.108879	4.740257
Stddev	.14503	.020018	.005117	.009146	.017529	.024578	.019218
%RSD	.5899829	.4154131	.1026955	.1872541	.3613697	.4810744	.4054274
#1	24.66268	4.807965	4.979921	4.893465	4.869623	5.131006	4.761259
#2	24.67030	4.806478	4.979999	4.883790	4.834910	5.082425	4.735965
#3	24.41537	4.841870	4.988823	4.875184	4.848008	5.113205	4.723548

Sample Name: CCV02 Acquired: 8/13/2025 13:42:20 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV02 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.789228	4.691877	4.874356
Stddev	.008200	.014598	.024380
%RSD	.1712100	.3111262	.5001740

#1	4.790081	4.708733	4.850932
#2	4.796967	4.683532	4.899591
#3	4.780635	4.683367	4.872544

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5628.741	99513.57	11398.15	4267.446	6777.463
Stddev	7.659	284.50	60.04	14.171	10.063
%RSD	.1360747	.2858916	.5267156	.3320646	.1484718

#1	5629.214	99203.61	11377.40	4278.198	6772.061
#2	5636.153	99762.81	11465.81	4272.752	6789.073
#3	5620.856	99574.29	11351.24	4251.388	6771.255

Sample Name: CCB02 Acquired: 8/13/2025 13:46:31 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.0007395	-.000110	-.000212	.0008023	-.001855	-.017428	-.005219
Stddev	.0009079	.001248	.001121	.0027119	.001276	.002048	.001690
%RSD	122.7650	1135.386	529.6019	338.0241	68.78618	11.75390	32.37903
#1	.0002206	-.000462	.000716	-.001961	-.003304	-.018412	-.003322
#2	.0017879	.001277	.000106	.000907	-.000898	-.015073	-.006563
#3	.0002101	-.001144	-.001457	.003460	-.001364	-.018798	-.005773
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000071	-.000106	-.014381	.0001949	-.000093	-.000229	-.007042
Stddev	.000017	.000042	.008184	.0003369	.000093	.000264	.000950
%RSD	23.97527	39.50109	56.90658	172.9026	99.95443	115.5440	13.49072
#1	-.000055	-.000104	-.022739	.0005834	-.000196	-.000451	-.008084
#2	-.000070	-.000148	-.014022	-.000016	-.000014	.000064	-.006816
#3	-.000089	-.000065	-.006383	.000018	-.000070	-.000299	-.006225
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000148	-.012578	-.000139	-.000051	-.007774	-.000516	-.000457
Stddev	.000238	.004012	.000274	.000282	.008801	.000422	.000184
%RSD	160.4225	31.89640	197.0884	549.7045	113.2215	81.75090	40.21013
#1	-.000381	-.010357	-.000275	.000272	-.005774	-.000908	-.000394
#2	-.000158	-.017209	.000177	-.000245	-.017403	-.000070	-.000664
#3	.000094	-.010168	-.000319	-.000180	-.000144	-.000570	-.000313
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1141832	.0063237	.0000460	.0003722	-.000269	.0103934	.0006505
Stddev	.0261732	.0003078	.0001857	.0001704	.001067	.0175891	.0015128
%RSD	22.92217	4.867042	403.9285	45.78533	396.2427	169.2337	232.5626
#1	.0840241	.0066199	.0000858	.0002075	-.001092	.0031930	.0022614
#2	.1275707	.0063457	.0002085	.0003612	-.000652	-.002453	-.000740
#3	.1309546	.0060055	-.000156	.0005478	.000936	.030440	.000430

Sample Name: CCB02 Acquired: 8/13/2025 13:46:31 Type: Unk
Method: 6010-200.7 NEW(v96) 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	-.000826	-.002222	-.000385
Stddev	.001082	.000297	.000013
%RSD	130.9256	13.36158	3.308400

#1	.000422	-.002151	-.000370
#2	-.001416	-.001967	-.000393
#3	-.001484	-.002548	-.000392

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5806.516	104236.5	11409.06	4447.255	7564.010
Stddev	9.174	248.6	90.83	17.722	3.764
%RSD	.1580008	.2385264	.7961604	.3984855	.0497651

#1	5796.239	103984.8	11416.82	4427.024	7564.422
#2	5809.427	104242.7	11495.76	4454.709	7567.552
#3	5813.882	104482.0	11314.59	4460.032	7560.057

Sample Name: Q2830-01 Acquired: 8/13/2025 13:50:51 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.1453111	-.056883	.3865274	.0131982	-.022559	152.2161	1.736366
Stddev	.0009073	.001454	.0008237	.0036534	.002791	.1455	.004921
%RSD	.6244071	2.556802	.2131029	27.68147	12.37309	.0956025	.2834265

#1	.1454709	-.055205	.3867949	.0146423	-.019433	152.2886	1.740244
#2	.1461279	-.057657	.3871841	.0159088	-.024800	152.0486	1.730830
#3	.1443344	-.057787	.3856032	.0090434	-.023445	152.3112	1.738026

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0173701	.0147549	24.50382	.2734636	.1620453	.1345569	440.7952
Stddev	.0000865	.0008025	.05598	.0015646	.0002981	.0032392	7.2620
%RSD	.4981133	5.438563	.2284726	.5721374	.1839742	2.407349	1.647467

#1	.0173360	.0138483	24.56844	.2752627	.1618765	.1308169	448.8563
#2	.0174684	.0150422	24.46997	.2727076	.1623895	.1363828	438.7644
#3	.0173057	.0153741	24.47305	.2724207	.1618698	.1364711	434.7647

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.053170	43.39191	.2419968	.0125469	1.615406	.5301259	.7093288
Stddev	.008929	.11217	.0005779	.0023185	.023901	.0024664	.0028820
%RSD	.1265909	.2584947	.2387986	18.47885	1.479546	.4652570	.4063013

#1	7.063184	43.45313	.2413544	.0150755	1.641766	.5327165	.7093729
#2	7.046041	43.46015	.2424743	.0120445	1.609304	.5278059	.7121884
#3	7.050282	43.26246	.2421617	.0105208	1.595148	.5298554	.7064249

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.93763	.2061289	.0039361	.0175232	2.264388	6.567941	9.327685
Stddev	.06222	.0197373	.0001829	.0016550	.003505	.048097	.006302
%RSD	.5212011	9.575225	4.645983	9.444708	.1547686	.7323005	.0675626

#1	12.00235	.2284110	.0038572	.0161573	2.266175	6.609928	9.323849
#2	11.87826	.1991339	.0038059	.0193637	2.260350	6.578430	9.324248
#3	11.93228	.1908417	.0041452	.0170487	2.266640	6.515465	9.334958

Sample Name: Q2830-01 Acquired: 8/13/2025 13:50:51 Type: Unk
Method: 6010-200.7 NEW(v96) 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	2.041949	.6125078	-.279202
Stddev	.016170	.0010017	.006923
%RSD	.7919129	.1635426	2.479715

#1	2.026327	.6136305	-.286871
#2	2.040902	.6117053	-.277326
#3	2.058617	.6121878	-.273411

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6119.552	107055.6	13022.57	4596.786	6449.588
Stddev	7.994	543.1	11.22	22.320	6.216
%RSD	.1306277	.5073419	.0861711	.4855565	.0963758

#1	6110.346	106533.9	13031.54	4571.547	6453.282
#2	6124.736	107014.8	13009.99	4604.886	6442.412
#3	6123.575	107617.9	13026.18	4613.925	6453.071

Sample Name: Q2830-03 Acquired: 8/13/2025 13:55:01 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.1069329	-.058267	.3408371	.0184989	-.023934	285.4843	1.256137
Stddev	.0054180	.001836	.0010438	.0029298	.001281	1.7627	.009323
%RSD	5.066772	3.151502	.3062355	15.83794	5.350297	.6174488	.7421650

#1	.1059495	-.060360	.3403176	.0152174	-.025344	287.4928	1.256099
#2	.1020739	-.056925	.3420387	.0194269	-.022843	284.1942	1.265479
#3	.1127753	-.057517	.3401551	.0208524	-.023616	284.7659	1.246834

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0200945	.0183256	13.93393	.4177108	.2867184	.1966260	546.8259
Stddev	.0000651	.0003885	.03499	.0007056	.0009352	.0044343	4.2256
%RSD	.3237473	2.119844	.2511435	.1689157	.3261755	2.255180	.7727529

#1	.0200965	.0184833	13.90667	.4177481	.2865534	.1995388	544.2780
#2	.0201585	.0186104	13.97339	.4183969	.2877250	.1988165	544.4962
#3	.0200284	.0178830	13.92172	.4169873	.2858766	.1915228	551.7036

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.443343	93.59478	.5106256	.0164036	2.137585	.5050311	1.294008
Stddev	.039951	.38588	.0018568	.0021047	.020426	.0025238	.003464
%RSD	.5367407	.4122851	.3636318	12.83043	.9555561	.4997373	.2676837

#1	7.436096	93.47368	.5093758	.0148412	2.142030	.5021470	1.292839
#2	7.486422	94.02668	.5127593	.0155727	2.155422	.5068353	1.297905
#3	7.407512	93.28397	.5097418	.0187968	2.115302	.5061110	1.291280

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	31.98573	^ *****	.0084098	.0201118	4.861828	6.028986	3.927140
Stddev	.02819	-----	.0005355	.0002997	.016239	.030391	.010970
%RSD	.0881428	-----	6.367142	1.490399	.3340137	.5040852	.2793332

#1	31.98346	^ -----	.0090075	.0202926	4.852424	6.037934	3.927290
#2	32.01500	^ -----	.0079740	.0197658	4.880580	5.995126	3.938034
#3	31.95875	^ -----	.0082479	.0202769	4.852481	6.053899	3.916096

Sample Name: Q2830-03 Acquired: 8/13/2025 13:55:01 Type: Unk
Method: 6010-200.7 NEW(v96) 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	1.148863	.9060076	-.400646
Stddev	.010284	.0038149	.004533
%RSD	.8951699	.4210639	1.131329

#1	1.141996	.9036094	-.398279
#2	1.160687	.9104067	-.397786
#3	1.143906	.9040068	-.405872

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5872.360	103376.9	12822.03	4485.751	6090.982
Stddev	16.435	298.3	80.93	24.339	17.017
%RSD	.2798652	.2885852	.6311699	.5425853	.2793761

#1	5856.661	103071.6	12809.47	4492.041	6081.982
#2	5870.977	103391.2	12748.11	4458.884	6080.356
#3	5889.443	103667.8	12908.50	4506.327	6110.609

Sample Name: Q2830-05 Acquired: 8/13/2025 13:59:20 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.0981097	-.049740	.3946600	.0048797	-.022567	210.1859	2.187957
Stddev	.0010152	.003686	.0005067	.0022408	.000572	2.9339	.004397
%RSD	1.034745	7.409790	.1283799	45.92187	2.533900	1.395850	.2009432
#1	.0988646	-.045697	.3949134	.0052919	-.022903	213.3367	2.185531
#2	.0969556	-.050611	.3940766	.0068858	-.021906	207.5326	2.193032
#3	.0985090	-.052913	.3949900	.0024613	-.022891	209.6885	2.185309
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0251375	.0285491	20.79386	.3784151	.3824168	.1868235	469.9531
Stddev	.0002079	.0002725	.02010	.0005088	.0003619	.0012097	1.2231
%RSD	.8268877	.9545306	.0966698	.1344550	.0946473	.6475056	.2602682
#1	.0253632	.0287931	20.80846	.3788631	.3820680	.1859195	468.5525
#2	.0249540	.0282550	20.80218	.3785203	.3823918	.1863532	470.8111
#3	.0250954	.0285993	20.77093	.3778619	.3827906	.1881977	470.4956
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.99003	91.00166	.6855060	.0110437	2.210052	.4841577	1.257853
Stddev	.01316	.10038	.0021833	.0003044	.019969	.0007250	.002923
%RSD	.1013234	.1103038	.3184924	2.756213	.9035583	.1497453	.2323714
#1	13.00512	91.06672	.6833150	.0106936	2.188100	.4844402	1.254484
#2	12.98403	90.88605	.6855213	.0111919	2.227138	.4846989	1.259366
#3	12.98094	91.05220	.6876815	.0112456	2.214919	.4833340	1.259709
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	32.36584	^ *****	.0106158	.0188448	5.040346	6.474977	6.195487
Stddev	.15145	-----	.0000928	.0016341	.002647	.029825	.013510
%RSD	.4679389	-----	.8743992	8.671432	.0525142	.4606186	.2180576
#1	32.19118	^ -----	.0105786	.0169585	5.043362	6.445573	6.182473
#2	32.46086	^ -----	.0105473	.0198295	5.038409	6.505206	6.209443
#3	32.44548	^ -----	.0107215	.0197465	5.039267	6.474154	6.194545

Sample Name: Q2830-05 Acquired: 8/13/2025 13:59:20 Type: Unk
Method: 6010-200.7 NEW(v96) 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	2.052204	.9037890	-.277054
Stddev	.008756	.0020129	.001073
%RSD	.4266834	.2227147	.3874281

#1	2.062032	.9015527	-.275819
#2	2.045234	.9054556	-.277761
#3	2.049345	.9043587	-.277582

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6912.601	123022.2	15099.17	5259.239	6026.339
Stddev	4.661	262.8	57.80	16.562	4.823
%RSD	.0674281	.2135984	.3828035	.3149163	.0800352

#1	6907.804	123213.6	15054.11	5277.778	6026.448
#2	6917.113	123130.5	15164.34	5254.035	6031.106
#3	6912.885	122722.6	15079.06	5245.903	6021.462

Sample Name: Q2830-07 Acquired: 8/13/2025 14:03:39 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.2164020	-.086202	.3725533	.0126132	-.034533	232.5435	2.703325
Stddev	.0020258	.002440	.0048387	.0019213	.003323	2.7196	.011360
%RSD	.9361312	2.830043	1.298802	15.23228	9.623952	1.169486	.4202122
#1	.2150516	-.084667	.3724754	.0146163	-.038242	230.4673	2.707604
#2	.2154232	-.089015	.3677541	.0107858	-.033529	231.5412	2.711924
#3	.2187314	-.084925	.3774306	.0124376	-.031827	235.6220	2.690447
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0318307	.0331737	26.50333	.4026310	.2514180	.1070152	635.3351
Stddev	.0001591	.0004114	.02141	.0005523	.0004308	.0017124	2.7732
%RSD	.4999650	1.240123	.0807693	.1371638	.1713455	1.600164	.4364864
#1	.0318912	.0336477	26.52071	.4020195	.2515941	.1073989	632.2128
#2	.0316502	.0329649	26.47941	.4027800	.2509270	.1051435	637.5117
#3	.0319507	.0329086	26.50986	.4030935	.2517328	.1085033	636.2809
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.406815	69.61454	.4438670	.0160380	2.111442	.7571068	.9436670
Stddev	.027553	.13335	.0004000	.0011218	.009959	.0021030	.0014319
%RSD	.2929047	.1915481	.0901211	6.994476	.4716822	.2777619	.1517369
#1	9.420118	69.54421	.4440964	.0147561	2.122432	.7581159	.9449674
#2	9.425192	69.53109	.4434051	.0168399	2.103015	.7546894	.9439012
#3	9.375135	69.76833	.4440995	.0165181	2.108878	.7585150	.9421325
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	20.91657	^ *****	.0071506	.0224507	3.350843	7.718096	16.67951
Stddev	.05597	-----	.0001171	.0008657	.006427	.022225	.05170
%RSD	.2675800	-----	1.637720	3.856207	.1917944	.2879593	.3099444
#1	20.95895	^ -----	.0071322	.0216211	3.355016	7.694176	16.66228
#2	20.93763	^ -----	.0070437	.0223826	3.354071	7.738108	16.63863
#3	20.85312	^ -----	.0072758	.0233485	3.343442	7.722005	16.73762

Sample Name: Q2830-07 Acquired: 8/13/2025 14:03:39 Type: Unk
Method: 6010-200.7 NEW(v96) 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	1.752929	.8552609	-.447667
Stddev	.024383	.0016938	.002827
%RSD	1.391001	.1980485	.6314977

#1	1.725597	.8565158	-.444412
#2	1.760741	.8559327	-.449082
#3	1.772449	.8533342	-.449507

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6521.479	116295.9	14513.92	4946.778	5954.749
Stddev	13.480	81.2	47.96	18.246	7.674
%RSD	.2066945	.0698483	.3304376	.3688440	.1288658

#1	6505.990	116366.6	14528.89	4965.887	5946.839
#2	6527.894	116207.1	14552.61	4929.539	5962.162
#3	6530.553	116313.8	14460.26	4944.908	5955.247

Sample Name: Q2831-01 Acquired: 8/13/2025 14:07:58 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.0842644	-.028549	.7568970	.0092254	-.001733	129.3234	.9619753
Stddev	.0018064	.003787	.0025219	.0046695	.001596	.2170	.0032684
%RSD	2.143742	13.26499	.3331951	50.61560	92.09078	.1677751	.3397588

#1	.0857302	-.029119	.7546658	.0103259	-.003434	129.3041	.9582198
#2	.0822463	-.024510	.7596333	.0041040	-.001495	129.1166	.9635293
#3	.0848167	-.032019	.7563920	.0132464	-.000269	129.5493	.9641767

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0110824	.0130389	29.22138	.2229414	.1304059	.4015786	287.3479
Stddev	.0000183	.0001943	.03085	.0004774	.0007261	.0005560	.9555
%RSD	.1649328	1.490445	.1055895	.2141515	.5568365	.1384538	.3325383

#1	.0110677	.0128947	29.24894	.2230085	.1298015	.4016671	286.4096
#2	.0110767	.0129622	29.18805	.2224339	.1302048	.4009837	288.3198
#3	.0111029	.0132599	29.22716	.2233817	.1312114	.4020851	287.3142

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.318509	44.53995	.2586293	.0106994	2.636514	.3195009	1.659430
Stddev	.015617	.11522	.0008225	.0000502	.014832	.0014166	.006740
%RSD	.2133840	.2586944	.3180095	.4688305	.5625434	.4433748	.4061625

#1	7.322214	44.64692	.2576882	.0107320	2.620050	.3178988	1.665255
#2	7.301373	44.41795	.2592102	.0106417	2.648828	.3200162	1.652048
#3	7.331940	44.55498	.2589895	.0107246	2.640665	.3205878	1.660988

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.90753	.1555091	.0052800	.0739703	3.042918	11.72958	7.082379
Stddev	.03364	.0093015	.0002461	.0008128	.002422	.04835	.013683
%RSD	.2606456	5.981301	4.661024	1.098832	.0795903	.4122122	.1931991

#1	12.87202	.1485422	.0050530	.0748184	3.044507	11.67378	7.087302
#2	12.93892	.1660717	.0055416	.0731981	3.040131	11.75898	7.066916
#3	12.91166	.1519134	.0052453	.0738942	3.044117	11.75599	7.092920

Sample Name: Q2831-01 Acquired: 8/13/2025 14:07:58 Type: Unk
Method: 6010-200.7 NEW(v96) 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	7.757684	.2486897	-.132920
Stddev	.044599	.0011034	.001025
%RSD	.5748951	.4436814	.7711807
#1	7.706414	.2483096	-.131963
#2	7.787511	.2478265	-.134002
#3	7.779126	.2499329	-.132795

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6320.222	111627.8	13570.13	4762.696	6503.062
Stddev	13.159	29.7	59.74	6.222	11.252
%RSD	.2082032	.0266202	.4402398	.1306349	.1730257
#1	6327.456	111641.2	13526.41	4769.809	6511.421
#2	6328.177	111593.7	13638.20	4760.011	6507.496
#3	6305.033	111648.5	13545.78	4758.267	6490.269

Sample Name: Q2818-01 Acquired: 8/13/2025 14:11:59 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.2462969	-.069644	.3354100	.0130213	-.018397	112.4632
Stddev	.0012952	.003752	.0013166	.0048755	.000980	.2340
%RSD	.5258676	5.387055	.3925382	37.44268	5.327224	.2080750
#1	.2449346	-.067971	.3359474	.0186501	-.017518	112.5226
#2	.2464436	-.067019	.3339097	.0102981	-.018220	112.6618
#3	.2475125	-.073941	.3363729	.0101158	-.019454	112.2053
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8276041	.0201980	.0267863	35.14157	1.105311	.0887568
Stddev	.0039778	.0000887	.0003532	.10878	.004022	.0002024
%RSD	.4806467	.4393552	1.318600	.3095544	.3639050	.2279821
#1	.8265402	.0201625	.0271701	35.13530	1.103455	.0889904
#2	.8320057	.0202990	.0264749	35.25336	1.109926	.0886411
#3	.8242664	.0201326	.0267140	35.03606	1.102551	.0886389
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5169805	540.4245	2.067864	12.72622	.1702107	.0153687
Stddev	.0014479	1.1601	.010081	.07795	.0007809	.0013469
%RSD	.2800703	.2146682	.4875018	.6125339	.4587622	8.763910
#1	.5172343	539.9670	2.066710	12.76450	.1693470	.0158187
#2	.5154225	539.5629	2.078472	12.77763	.1708666	.0138544
#3	.5182848	541.7437	2.058410	12.63653	.1704185	.0164329
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.627463	1.127048	1.580430	23.04248	^ *****	.0151367
Stddev	.013806	.004197	.003761	.14557	-----	.0003061
%RSD	.5254600	.3724033	.2379777	.6317488	-----	2.022111
#1	2.615976	1.129014	1.583086	22.95315	^ -----	.0154716
#2	2.642780	1.129901	1.582077	23.21046	^ -----	.0148713
#3	2.623633	1.122229	1.576126	22.96385	^ -----	.0150672

Sample Name: Q2818-01 Acquired: 8/13/2025 14:11:59 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.0584856	2.938632	3.014497	F 46.56130	16.56324	.0715998
Stddev	.0018447	.010070	.024435	.18311	.10076	.0004075
%RSD	3.154063	.3426813	.8105747	.3932588	.6083331	.5691201

#1	.0566042	2.934504	3.008757	46.46829	16.53407	.0711311
#2	.0585614	2.950111	3.041290	46.44336	16.48029	.0718701
#3	.0602912	2.931282	2.993443	46.77224	16.67537	.0717983

Elem	Sr4077
Units	ppm
Avg	-.203737
Stddev	.002307
%RSD	1.132247

#1	-.203987
#2	-.201316
#3	-.205909

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6505.282	116815.1	14586.43	4966.785	6412.573
Stddev	6.301	286.7	28.92	21.413	2.696
%RSD	.0968644	.2454425	.1982957	.4311184	.0420488

#1	6503.059	116812.9	14567.60	4942.072	6409.605
#2	6512.393	116529.4	14571.96	4979.821	6414.872
#3	6500.393	117102.8	14619.74	4978.461	6413.243

Sample Name: Q2818-02 Acquired: 8/13/2025 14:16:10 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.2545211	-.069890	.3866487	.0127639	-.017780	108.6222
Stddev	.0016831	.003461	.0014114	.0036067	.001657	.2133
%RSD	.6612892	4.952637	.3650320	28.25681	9.320586	.1963731
#1	.2553146	-.073679	.3851463	.0140571	-.019657	108.4475
#2	.2556607	-.066894	.3868531	.0086890	-.016516	108.8599
#3	.2525879	-.069096	.3879468	.0155457	-.017168	108.5592
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7594194	.0201688	.0271667	32.80926	1.098975	.0855620
Stddev	.0033874	.0001196	.0006660	.08813	.001460	.0000602
%RSD	.4460551	.5927880	2.451716	.2686042	.1328341	.0703293
#1	.7557895	.0200884	.0264044	32.71273	1.100395	.0855333
#2	.7624963	.0203062	.0276359	32.88541	1.099053	.0856311
#3	.7599725	.0201118	.0274599	32.82965	1.097478	.0855215
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4744454	534.4423	1.931949	11.77155	.1668473	.0150368
Stddev	.0022762	3.1452	.009811	.02410	.0001242	.0013096
%RSD	.4797657	.5885101	.5078149	.2047647	.0744245	8.708974
#1	.4722957	536.7234	1.921135	11.74549	.1669135	.0153019
#2	.4768300	530.8543	1.940279	11.77610	.1669242	.0136151
#3	.4742105	535.7491	1.934433	11.79305	.1667040	.0161936
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.452424	1.133393	1.477880	21.72002	^ *****	.0141732
Stddev	.004034	.005879	.004034	.03342	----	.0001423
%RSD	.1645005	.5186950	.2729910	.1538895	----	1.004391
#1	2.456539	1.129117	1.481070	21.68251	^ ----	.0140227
#2	2.448476	1.140097	1.479226	21.74666	^ ----	.0141912
#3	2.452256	1.130965	1.473345	21.73087	^ ----	.0143057

Sample Name: Q2818-02 Acquired: 8/13/2025 14:16:10 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.0578646	2.805185	3.128855	F 44.96693	14.47537	.0694440
Stddev	.0006240	.009307	.023205	.06087	.10163	.0007622
%RSD	1.078428	.3317661	.7416472	.1353728	.7020610	1.097547
#1	.0572046	2.797529	3.155627	44.90487	14.36199	.0702671
#2	.0579440	2.815544	3.116429	45.02654	14.50585	.0687626
#3	.0584451	2.802483	3.114510	44.96938	14.55826	.0693022

Elem	Sr4077
Units	ppm
Avg	-.224434
Stddev	.004153
%RSD	1.850307
#1	-.227936
#2	-.219846
#3	-.225521

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6436.522	116239.7	14489.29	4933.282	6323.225
Stddev	9.761	77.4	57.37	12.272	10.112
%RSD	.1516498	.0666187	.3959303	.2487548	.1599176
#1	6443.927	116314.2	14530.81	4919.397	6330.209
#2	6440.177	116245.2	14423.83	4937.773	6327.836
#3	6425.461	116159.7	14513.23	4942.676	6311.629

Sample Name: Q2823-01 Acquired: 8/13/2025 14:20:20 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.0595789	-.019709	.6776581	.0015832	-.010210	79.00177	.7523120
Stddev	.0034710	.001638	.0010042	.0019171	.000188	.08725	.0019272
%RSD	5.825966	8.312127	.1481942	121.0878	1.845286	.1104444	.2561695
#1	.0632265	-.018900	.6786612	.0033229	-.010356	79.07834	.7541088
#2	.0591935	-.018632	.6766527	-.000472	-.009997	78.90677	.7525504
#3	.0563166	-.021594	.6776602	.001899	-.010276	79.02019	.7502766
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0071076	.0087216	39.35586	.2045438	.0829697	.2532587	208.5730
Stddev	.0001596	.0002049	.07032	.0009577	.0005058	.0008350	.6916
%RSD	2.245017	2.348884	.1786734	.4682113	.6095739	.3297056	.3315707
#1	.0072905	.0088676	39.43584	.2040452	.0824443	.2528842	208.2867
#2	.0070354	.0084874	39.32795	.2056479	.0830114	.2526764	209.3618
#3	.0069969	.0088099	39.30377	.2039382	.0834533	.2542154	208.0706
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.078888	31.45919	.1655363	.0060345	4.077726	.2871253	.6014302
Stddev	.007116	.06920	.0005944	.0008514	.040903	.0008044	.0012764
%RSD	.2311380	.2199715	.3590567	14.10940	1.003078	.2801656	.2122278
#1	3.086641	31.53791	.1660194	.0063611	4.057113	.2874946	.6012849
#2	3.077368	31.43171	.1648725	.0066744	4.124834	.2876787	.6002326
#3	3.072654	31.40795	.1657169	.0050682	4.051231	.2862025	.6027730
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.947202	.0832210	.0074125	.0262555	2.867014	1.927358	3.548915
Stddev	.038130	.0017401	.0001892	.0001883	.002132	.006536	.003031
%RSD	.4797947	2.090957	2.552212	.7173225	.0743457	.3391339	.0853944
#1	7.929443	.0827836	.0075810	.0264117	2.868529	1.920358	3.549962
#2	7.990973	.0851380	.0074488	.0263084	2.864577	1.933302	3.545500
#3	7.921191	.0817413	.0072079	.0260463	2.867938	1.928414	3.551283

Sample Name: Q2823-01 Acquired: 8/13/2025 14:20:20 Type: Unk
Method: 6010-200.7 NEW(v96) 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	2.176423	.1429790	-.052955
Stddev	.005012	.0009951	.000635
%RSD	.2302675	.6959702	1.198276

#1	2.182205	.1440108	-.052615
#2	2.173326	.1420252	-.053687
#3	2.173737	.1429009	-.052562

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6096.054	109663.4	13198.58	4675.450	6669.800
Stddev	15.783	115.6	45.71	6.149	15.250
%RSD	.2589088	.1053905	.3463608	.1315232	.2286411

#1	6108.999	109642.7	13155.17	4668.473	6681.476
#2	6100.691	109559.7	13246.29	4677.796	6675.378
#3	6078.471	109788.0	13194.28	4680.081	6652.547

Sample Name: Q2831-03 Acquired: 8/13/2025 14:24:23 Type: Unk
Method: 6010-200.7 NEW(v96) 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	-.001782	.0022204	.0072347	.0057846	-.000345	.2128086	.2527329
Stddev	.001345	.0018925	.0013501	.0020184	.001414	.0027700	.0016029
%RSD	75.48122	85.23361	18.66155	34.89236	410.2523	1.301650	.6342331
#1	-.000765	.0042956	.0075343	.0059234	.001027	.2155533	.2535139
#2	-.003307	.0017760	.0084098	.0077301	-.001796	.2128587	.2508892
#3	-.001274	.0005897	.0057599	.0037004	-.000265	.2100139	.2537956
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000979	.0009984	18.27654	.0001951	.0007236	.0133758	.0766454
Stddev	.0000255	.0000861	.02150	.0002028	.0001225	.0002703	.0055073
%RSD	26.09615	8.620233	.1176456	103.9375	16.92504	2.020487	7.185439
#1	.0000888	.0010729	18.29203	-.000013	.0006898	.0134573	.0800146
#2	.0001267	.0010182	18.25199	.000392	.0006216	.0130742	.0796315
#3	.0000781	.0009042	18.28560	.000206	.0008594	.0135959	.0702899
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4360914	5.240611	.0046601	.0002476	346.6346	.0004213	.4801889
Stddev	.0001023	.028827	.0004023	.0001374	4.4560	.0023461	.0003268
%RSD	.0234688	.5500614	8.633362	55.48468	1.285492	556.8789	.0680459
#1	.4359813	5.214469	.0050681	.0003150	347.2159	-.002265	.4800080
#2	.4361837	5.271526	.0046484	.0000895	350.7714	.001462	.4805661
#3	.4361091	5.235838	.0042637	.0003382	341.9165	.002067	.4799926
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.283750	.0615317	-.000045	.0126468	-.000006	1.012198	.0363648
Stddev	.029012	.0002360	.000100	.0009100	.000794	.011543	.0018684
%RSD	2.259923	.3836309	223.5305	7.195346	12531.79	1.140378	5.137891
#1	1.252012	.0617605	-.000143	.0133302	-.000835	1.000759	.0373706
#2	1.308903	.0612890	.000057	.0116139	.000068	1.023842	.0342090
#3	1.290334	.0615455	-.000048	.0129963	.000748	1.011991	.0375149

Sample Name: Q2831-03 Acquired: 8/13/2025 14:24:23 Type: Unk
Method: 6010-200.7 NEW(v96) 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	2.475763	-.011109	.0848972
Stddev	.020844	.000913	.0001657
%RSD	.8419229	8.215181	.1951584
#1	2.499631	-.010942	.0849354
#2	2.461143	-.010291	.0847158
#3	2.466515	-.012094	.0850406

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5385.989	94690.45	11623.75	4075.253	6446.534
Stddev	4.937	253.82	57.76	10.361	4.117
%RSD	.0916672	.2680559	.4969014	.2542410	.0638679
#1	5390.458	94887.34	11557.40	4081.787	6446.719
#2	5386.819	94403.99	11662.82	4063.306	6450.557
#3	5380.689	94780.03	11651.02	4080.665	6442.328

Sample Name: Q2831-03DUP Acquired: 8/13/2025 14:28:47 Type: Unk
Method: 6010-200.7 NEW(v96) 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	-.003354	.0014374	.0034986	.0042349	.0005220	.1115003	.1365477
Stddev	.000283	.0009253	.0011448	.0008564	.0013241	.0033446	.0010934
%RSD	8.424692	64.37288	32.72062	20.22219	253.6791	2.999625	.8007627
#1	-.003031	.0020996	.0047531	.0032468	.0011585	.1123039	.1361672
#2	-.003473	.0018325	.0032321	.0047640	.0014076	.1078271	.1377805
#3	-.003557	.0003802	.0025106	.0046938	-.001000	.1143698	.1356954
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000020	.0004604	10.20916	-.000284	.0000906	.0075155	.0398376
Stddev	.000058	.0000458	.02268	.000087	.0000781	.0003572	.0037292
%RSD	295.5362	9.953500	.2221622	30.70127	86.22854	4.753048	9.361138
#1	.000045	.0004936	10.20332	-.000298	.0000717	.0071280	.0441430
#2	-.000069	.0004081	10.23418	-.000364	.0000236	.0075867	.0377548
#3	-.000035	.0004796	10.18996	-.000191	.0001764	.0078317	.0376150
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2470744	2.956949	.0029505	.0001497	189.9947	-.000525	.2629899
Stddev	.0009725	.015717	.0001315	.0002272	.5586	.001145	.0009218
%RSD	.3936256	.5315327	4.457111	151.7977	.2939906	218.1441	.3505160
#1	.2460813	2.939145	.0029633	-.000055	190.6256	-.000821	.2620424
#2	.2471167	2.968900	.0028131	.000394	189.5632	-.001494	.2638837
#3	.2480250	2.962801	.0030752	.000110	189.7952	.000739	.2630436
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6666184	.0327151	.0000563	-.000364	-.000543	.5428755	.0242340
Stddev	.0221596	.0001096	.0000735	.000304	.001098	.0123307	.0026964
%RSD	3.324182	.3351035	130.6769	83.40287	202.2671	2.271361	11.12637
#1	.6918465	.0325885	.0000677	-.000625	-.001644	.5383948	.0212463
#2	.6577061	.0327748	-.000022	-.000031	.000551	.5568200	.0264865
#3	.6503024	.0327818	.000123	-.000436	-.000535	.5334116	.0249691

Sample Name: Q2831-03DUP Acquired: 8/13/2025 14:28:47 Type: Unk
Method: 6010-200.7 NEW(v96) 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	1.343508	-.009309	.0470925
Stddev	.003919	.001076	.0001571
%RSD	.2916972	11.55872	.3336625

#1	1.347467	-.009336	.0470512
#2	1.339631	-.010371	.0472661
#3	1.343427	-.008220	.0469601

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5510.051	97698.65	11644.48	4184.562	6724.039
Stddev	3.895	466.06	34.27	16.117	10.535
%RSD	.0706947	.4770432	.2942668	.3851555	.1566725

#1	5512.259	97160.55	11642.56	4177.265	6734.819
#2	5512.340	97960.96	11611.21	4173.384	6723.532
#3	5505.553	97974.46	11679.66	4203.037	6713.768

Sample Name: CCV03 Acquired: 8/13/2025 14:33:12 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV03 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.986424	4.822139	4.858771	5.024045	5.017082	9.649308	9.671877
Stddev	.003959	.085199	.007191	.017583	.010405	.020193	.045147
%RSD	.0793983	1.766839	.1480049	.3499746	.2073991	.2092710	.4667852
#1	4.990412	4.914749	4.851550	5.029091	5.009077	9.640154	9.679255
#2	4.982494	4.747085	4.858832	5.004491	5.013324	9.672457	9.712880
#3	4.986365	4.804581	4.865932	5.038553	5.028844	9.635314	9.623495
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2382256	2.432166	24.13075	.9926120	2.431683	1.239833	5.013994
Stddev	.0018072	.002384	.04250	.0020740	.003451	.001124	.046923
%RSD	.7585863	.0980048	.1761411	.2089462	.1419019	.0906852	.9358501
#1	.2401196	2.431048	24.17977	.9908566	2.428915	1.240269	4.971475
#2	.2380372	2.430546	24.10842	.9920788	2.430586	1.238556	5.006168
#3	.2365201	2.434903	24.10406	.9949005	2.435549	1.240675	5.064338
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.389669	23.92152	2.442080	1.238723	23.27223	2.445371	2.483963
Stddev	.008551	.01033	.003269	.002431	.13607	.007631	.008131
%RSD	.3578296	.0431736	.1338689	.1962353	.5846781	.3120772	.3273534
#1	2.397991	23.92854	2.441360	1.237511	23.13046	2.448595	2.491076
#2	2.390109	23.92636	2.439231	1.237136	23.28446	2.450861	2.485714
#3	2.380906	23.90966	2.445649	1.241521	23.40177	2.436657	2.475099
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	24.67334	4.759229	5.020476	4.883955	4.832826	5.100712	4.779387
Stddev	.16418	.037341	.006420	.010498	.003462	.038615	.011436
%RSD	.6654027	.7846068	.1278746	.2149406	.0716289	.7570491	.2392803
#1	24.48716	4.796477	5.021408	4.892453	4.829107	5.059807	4.778083
#2	24.73554	4.759413	5.013642	4.872220	4.833417	5.105796	4.768659
#3	24.79734	4.721796	5.026380	4.887192	4.835954	5.136533	4.791419

Sample Name: CCV03 Acquired: 8/13/2025 14:33:12 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV03 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.787702	4.582997	4.827607
Stddev	.033485	.005874	.012223
%RSD	.6993966	.1281670	.2531995

#1	4.808043	4.579106	4.829398
#2	4.749054	4.589754	4.838837
#3	4.806008	4.580131	4.814587

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5574.767	98989.92	11516.30	4230.194	6730.322
Stddev	3.921	397.78	60.67	5.893	7.412
%RSD	.0703324	.4018375	.5268301	.1393006	.1101267

#1	5573.760	99432.30	11463.50	4224.832	6729.355
#2	5579.094	98875.74	11502.83	4229.246	6738.170
#3	5571.448	98661.72	11582.57	4236.503	6723.441

Sample Name: CCB03 Acquired: 8/13/2025 14:37:23 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.0013043	-.000444	-.000035	.0014647	-.000561	-.013096	-.007571
Stddev	.0010760	.000922	.000585	.0012494	.000295	.002866	.000470
%RSD	82.49632	207.4499	1672.267	85.29743	52.54865	21.88644	6.204061

#1	.0000706	.000239	.000442	.0020247	-.000875	-.012492	-.007045
#2	.0020486	-.001493	-.000688	.0023362	-.000291	-.010581	-.007949
#3	.0017939	-.000079	.000140	.0000333	-.000517	-.016217	-.007719

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000034	-.000120	-.010327	.0001169	-.000137	.0004249	-.007554
Stddev	.0000183	.000021	.005361	.0002231	.000052	.0002892	.002689
%RSD	541.4829	17.32571	51.91306	190.8846	38.10200	68.06249	35.60151

#1	.0000243	-.000125	-.010753	.0001450	-.000078	.0007587	-.006192
#2	-.000004	-.000138	-.015462	.0003246	-.000175	.0002634	-.005818
#3	-.000010	-.000097	-.004765	-.000119	-.000159	.0002525	-.010651

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000657	-.023313	-.000155	.0007437	.1904242	.0000452	-.000538
Stddev	.000429	.009521	.000080	.0004234	.0047336	.0020678	.000099
%RSD	65.34766	40.83963	51.30466	56.92453	2.485802	4578.159	18.42797

#1	-.000597	-.016827	-.000124	.0002873	.1873210	.0021762	-.000624
#2	-.001113	-.018867	-.000246	.0011237	.1880790	-.001953	-.000430
#3	-.000261	-.034243	-.000096	.0008202	.1958725	-.000088	-.000561

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2739713	.0035535	.0000632	-.000024	-.000684	.0102449	.0004323
Stddev	.0411817	.0004324	.0001732	.000330	.000986	.0066173	.0012958
%RSD	15.03137	12.16744	274.1544	1388.755	144.2009	64.59191	299.7441

#1	.2747650	.0032845	.0001078	-.000324	-.001277	.0150189	.0003350
#2	.3147504	.0033237	-.000128	-.000077	.000455	.0130246	.0017740
#3	.2323986	.0040522	.000210	.000329	-.001230	.0026911	-.000812

Sample Name: CCB03 Acquired: 8/13/2025 14:37:23 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.0001712	.0016517	-.000300
Stddev	.0001214	.0005783	.000041
%RSD	70.91110	35.01581	13.72156

#1	.0000660	.0023193	-.000345
#2	.0003040	.0013039	-.000293
#3	.0001435	.0013318	-.000263

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5808.967	103706.5	11557.20	4391.536	7615.299
Stddev	13.586	22.7	49.75	20.429	14.576
%RSD	.2338870	.0219044	.4304791	.4652011	.1914060

#1	5810.487	103729.6	11515.66	4369.999	7611.062
#2	5821.730	103705.7	11543.61	4410.640	7631.524
#3	5794.685	103684.1	11612.34	4393.970	7603.310

Sample Name: Q2831-03LX5 Acquired: 8/13/2025 14:41:43 Type: Unk
Method: 6010-200.7 NEW(v96) 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	-.000224	.0008080	.0007574	.0013239	-.000649	.0318481	.0454297
Stddev	.000812	.0002989	.0003265	.0019765	.001485	.0010529	.0008129
%RSD	362.5866	36.99664	43.11248	149.2915	228.7796	3.306092	1.789435

#1	-.001148	.0011313	.0009554	-.000886	-.001682	.0322999	.0462405
#2	.000100	.0007510	.0003805	.001933	-.001318	.0325996	.0446146
#3	.000376	.0005416	.0009362	.002924	.001053	.0306446	.0454341

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000047	.0000973	3.744385	.0000387	.0000530	.0024554	.0085002
Stddev	.0000088	.0000408	.011643	.0000553	.0000989	.0001339	.0007300
%RSD	189.2416	41.95617	.3109418	143.1035	186.5810	5.452624	8.588246

#1	-.000004	.0000666	3.757727	.0000986	.0000058	.0023697	.0085723
#2	.000013	.0001436	3.739145	.0000279	-.000013	.0023868	.0077368
#3	.000005	.0000817	3.736283	-.000010	.000167	.0026097	.0091915

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0880318	1.067370	.0005679	.0002273	65.56280	.0001943	.0933207
Stddev	.0002132	.007704	.0000554	.0003818	.53608	.0014219	.0006836
%RSD	.2421539	.7217580	9.747564	167.9915	.8176580	731.7425	.7324795

#1	.0882504	1.066151	.0006241	.0002473	65.17578	.0005096	.0928510
#2	.0878245	1.060348	.0005134	-.000164	66.17469	-.001359	.0941049
#3	.0880206	1.075610	.0005663	.000599	65.33794	.001432	.0930062

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3965807	.0144797	-.000184	.0026916	-.000028	.2001550	.0066870
Stddev	.0160923	.0005667	.000141	.0001849	.001149	.0095789	.0022604
%RSD	4.057775	3.913686	76.91514	6.869458	4079.186	4.785760	33.80202

#1	.3871823	.0143500	-.000126	.0027694	.001112	.2107249	.0040900
#2	.4151621	.0139891	-.000080	.0024805	-.001187	.1920481	.0082107
#3	.3873976	.0151000	-.000345	.0028250	-.000009	.1976919	.0077605

Sample Name: Q2831-03LX5 Acquired: 8/13/2025 14:41:43 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.4870356	.0004293	.0170986
Stddev	.0016418	.0011333	.0000646
%RSD	.3371069	264.0082	.3778988

#1	.4886342	.0017373	.0170310
#2	.4853537	-.000192	.0171597
#3	.4871187	-.000257	.0171052

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5585.186	100202.2	11652.56	4255.730	6912.357
Stddev	1.550	72.2	89.21	18.708	5.359
%RSD	.0277572	.0721033	.7655904	.4395848	.0775208

#1	5585.117	100261.2	11574.69	4275.163	6906.259
#2	5586.770	100121.6	11749.90	4237.844	6916.315
#3	5583.672	100223.8	11633.10	4254.183	6914.497

Sample Name: Q2831-03MS Acquired: 8/13/2025 14:46:01 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.8458270	1.737286	.9652560	2.107903	.8443818	2.148898	.3826328
Stddev	.0032919	.055051	.0019581	.005155	.0007695	.011355	.0004337
%RSD	.3891977	3.168775	.2028598	.2445769	.0911301	.5284083	.1133377

#1	.8420374	1.792371	.9674898	2.110184	.8451014	2.159785	.3821437
#2	.8479788	1.737216	.9638363	2.111525	.8435706	2.137127	.3829703
#3	.8474648	1.682270	.9644419	2.102001	.8444732	2.149782	.3827843

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1909194	.2022705	14.48074	.4198337	.2044384	.3160573	3.317671
Stddev	.0006541	.0005574	.03179	.0017132	.0006591	.0005505	.022368
%RSD	.3425861	.2755808	.2195316	.4080718	.3224065	.1741778	.6742153

#1	.1906266	.2027879	14.50251	.4184322	.2051783	.3160583	3.327126
#2	.1904629	.2016802	14.44426	.4193253	.2039140	.3155063	3.333758
#3	.1916687	.2023436	14.49546	.4217436	.2042230	.3166073	3.292127

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5195057	5.857036	.5152142	.0776577	257.9875	.3094912	.5653778
Stddev	.0007524	.036244	.0015212	.0004349	2.0905	.0026752	.0021538
%RSD	.1448350	.6188112	.2952615	.5600181	.8103231	.8643875	.3809552

#1	.5199643	5.825510	.5162708	.0781599	259.7102	.3074428	.5641219
#2	.5199155	5.896636	.5134706	.0774043	255.6617	.3125178	.5678648
#3	.5186373	5.848962	.5159011	.0774089	258.5907	.3085129	.5641467

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.81714	.3078938	.4365804	.7112207	.2010500	1.682962	5.963440
Stddev	.05405	.0015414	.0007741	.0016633	.0003920	.007348	.047251
%RSD	.4573821	.5006193	.1773155	.2338691	.1949985	.4366399	.7923422

#1	11.75549	.3075952	.4370464	.7127760	.2013333	1.685239	6.017025
#2	11.85636	.3065235	.4356868	.7094671	.2012142	1.674745	5.945545
#3	11.83957	.3095626	.4370079	.7114188	.2006026	1.688903	5.927751

Sample Name: Q2831-03MS Acquired: 8/13/2025 14:46:01 Type: Unk
Method: 6010-200.7 NEW(v96) 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	1.831955	.1880088	.2552432
Stddev	.004998	.0007590	.0000944
%RSD	.2728126	.4037142	.0369676

#1	1.835144	.1885904	.2553116
#2	1.834526	.1871502	.2551356
#3	1.826195	.1882857	.2552825

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5439.391	97001.11	11758.90	4135.885	6517.757
Stddev	8.286	426.72	49.67	13.807	13.219
%RSD	.1523291	.4399137	.4224153	.3338441	.2028180

#1	5429.842	97463.44	11784.21	4151.551	6505.464
#2	5443.642	96917.51	11790.81	4130.611	6531.740
#3	5444.688	96622.38	11701.67	4125.491	6516.068

Sample Name: Q2831-03MSD Acquired: 8/13/2025 14:50:08 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.8248648	1.750507	.9362422	2.071232	.8250552	2.146683	.4082486
Stddev	.0033446	.018036	.0017761	.009606	.0010754	.016818	.0020494
%RSD	.4054669	1.030313	.1897025	.4637894	.1303381	.7834435	.5019883

#1	.8263015	1.768061	.9345192	2.082132	.8241325	2.151418	.4096091
#2	.8210419	1.732026	.9380670	2.064003	.8247969	2.160626	.4058915
#3	.8272509	1.751433	.9361406	2.067560	.8262362	2.128005	.4092451

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1864374	.1978592	16.49128	.4134135	.1997713	.3086908	3.292396
Stddev	.0015550	.0004035	.00567	.0014333	.0001766	.0006836	.027436
%RSD	.8340785	.2039125	.0343917	.3467045	.0884234	.2214542	.8333133

#1	.1881190	.1980268	16.48739	.4137637	.1996369	.3082781	3.262573
#2	.1861416	.1973989	16.48867	.4118375	.1997055	.3094799	3.298051
#3	.1850514	.1981519	16.49779	.4146392	.1999714	.3083144	3.316563

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5638115	6.376995	.5031403	.0762612	299.6543	.3025380	.6117689
Stddev	.0036059	.039751	.0005890	.0003046	4.3223	.0038459	.0018888
%RSD	.6395530	.6233514	.1170613	.3994313	1.442421	1.271200	.3087506

#1	.5651357	6.342419	.5026829	.0759154	294.6635	.3018415	.6129626
#2	.5597308	6.420427	.5029330	.0764897	302.1703	.3066846	.6127529
#3	.5665681	6.368138	.5038049	.0763785	302.1293	.2990880	.6095912

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.87250	.3056645	.4329779	.6947003	.1979171	1.791201	5.774218
Stddev	.13244	.0025377	.0006989	.0005534	.0006869	.020793	.008269
%RSD	1.115480	.8302192	.1614189	.0796592	.3470739	1.160863	.1432019

#1	11.74365	.3085916	.4337263	.6947725	.1977898	1.767312	5.777394
#2	11.86559	.3043194	.4323421	.6941144	.1973027	1.801060	5.764832
#3	12.00825	.3040825	.4328652	.6952141	.1986588	1.805231	5.780427

Sample Name: Q2831-03MSD Acquired: 8/13/2025 14:50:08 Type: Unk
Method: 6010-200.7 NEW(v96) 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	2.043275	.1853131	.2619561
Stddev	.006391	.0008483	.0012361
%RSD	.3127669	.4577749	.4718664

#1	2.047637	.1849999	.2622989
#2	2.035939	.1846659	.2605848
#3	2.046250	.1862735	.2629846

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5412.546	95621.60	11643.53	4093.967	6490.141
Stddev	5.226	213.61	87.78	14.727	6.093
%RSD	.0965558	.2233897	.7539105	.3597244	.0938754

#1	5411.979	95831.57	11557.82	4098.980	6491.923
#2	5407.627	95404.52	11639.54	4077.388	6483.357
#3	5418.032	95628.70	11733.25	4105.532	6495.145

Sample Name: Q2831-03A Acquired: 8/13/2025 14:54:16 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.8161852	1.719967	.9271782	2.051999	.8218899	2.112069	.4152201
Stddev	.0025675	.051805	.0016566	.006699	.0029110	.013334	.0011182
%RSD	.3145669	3.011978	.1786717	.3264794	.3541796	.6313132	.2693077
#1	.8133408	1.661563	.9290787	2.047123	.8245381	2.114963	.4163468
#2	.8183312	1.737965	.9264162	2.049236	.8187730	2.123719	.4141106
#3	.8168838	1.760372	.9260397	2.059638	.8223585	2.097526	.4152031
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1823069	.1958270	17.37746	.4037123	.1970383	.3050489	3.259105
Stddev	.0014486	.0001843	.03862	.0003254	.0002935	.0003343	.021954
%RSD	.7945675	.0941342	.2222462	.0805935	.1489609	.1096017	.6736165
#1	.1823624	.1956581	17.42196	.4036041	.1968462	.3051724	3.261160
#2	.1808314	.1957992	17.35258	.4040780	.1968926	.3046704	3.279959
#3	.1837269	.1960236	17.35786	.4034549	.1973762	.3053040	3.236196
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5818434	6.601214	.4985090	.0749881	315.4277	.2977980	.6383998
Stddev	.0018705	.047845	.0001743	.0004465	2.4947	.0015731	.0014964
%RSD	.3214869	.7247877	.0349711	.5953886	.7908790	.5282555	.2344010
#1	.5838508	6.610990	.4983779	.0748782	313.5838	.2996047	.6395410
#2	.5801493	6.549237	.4987068	.0754792	318.2663	.2970575	.6367055
#3	.5815301	6.643416	.4984423	.0746068	314.4331	.2967318	.6389528
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.90156	.3035321	.4269753	.7003077	.1937429	1.872723	5.769628
Stddev	.08156	.0031720	.0007963	.0021545	.0006656	.012466	.014138
%RSD	.6852792	1.045028	.1865055	.3076533	.3435298	.6656707	.2450370
#1	11.93287	.3038839	.4269369	.6982305	.1936932	1.864609	5.757904
#2	11.96281	.3001988	.4261989	.7025320	.1931036	1.887077	5.785328
#3	11.80898	.3065135	.4277901	.7001606	.1944320	1.866484	5.765653

Sample Name: Q2831-03A Acquired: 8/13/2025 14:54:16 Type: Unk
Method: 6010-200.7 NEW(v96) 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	2.199047	.1836694	.2632172
Stddev	.016043	.0014938	.0005194
%RSD	.7295647	.8133028	.1973294
#1	2.183032	.1846845	.2633951
#2	2.198991	.1843696	.2636242
#3	2.215119	.1819542	.2626322

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5378.167	95313.66	11712.23	4072.355	6425.140
Stddev	7.429	216.53	61.11	22.964	8.912
%RSD	.1381366	.2271780	.5217566	.5639076	.1387091
#1	5375.971	95335.45	11711.70	4076.893	6418.966
#2	5386.447	95087.05	11773.60	4047.461	6435.357
#3	5372.084	95518.47	11651.39	4092.712	6421.097

Sample Name: PB169214BL Acquired: 8/13/2025 14:58:22 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.0010235	-.001369	-.000749	.0004666	-.001921	-.017821
Stddev	.0016576	.000870	.001029	.0018969	.001751	.008505
%RSD	161.9481	63.52798	137.3356	406.5549	91.13790	47.72294
#1	.0009849	-.000381	-.001178	-.001717	-.001667	-.008046
#2	.0027000	-.001705	-.001494	.001709	-.000311	-.021890
#3	-.000614	-.002020	.000425	.001407	-.003785	-.023527
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.006645	-.000032	-.000155	-.010913	.0002165	-.000203
Stddev	.000943	.000014	.000064	.008788	.0001215	.000101
%RSD	14.19433	42.72825	41.49957	80.52361	56.12477	49.86982
#1	-.006678	-.000028	-.000123	-.009754	.0000770	-.000108
#2	-.005685	-.000021	-.000112	-.002763	.0002994	-.000191
#3	-.007571	-.000048	-.000229	-.020223	.0002732	-.000310
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000247	-.003087	-.000551	-.016681	-.000100	.0007818
Stddev	.000437	.005731	.000210	.021290	.000125	.0000986
%RSD	177.3000	185.6381	38.16177	127.6314	125.4901	12.60749
#1	.000257	.000946	-.000792	-.030047	-.000101	.0007171
#2	-.000469	-.009647	-.000402	.007871	.000026	.0008952
#3	-.000528	-.000560	-.000459	-.027867	-.000224	.0007330
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6899983	-.000811	-.000316	.6461554	-.002127	-.000022
Stddev	.0482194	.001431	.000049	.0117819	.000504	.000146
%RSD	6.988336	176.4536	15.60825	1.823382	23.70824	657.4477
#1	.7288618	-.001793	-.000363	.6589839	-.002709	.000128
#2	.7050966	-.001472	-.000265	.6436634	-.001817	-.000032
#3	.6360364	.000831	-.000321	.6358188	-.001854	-.000163

Sample Name: PB169214BL Acquired: 8/13/2025 14:58:22 Type: Unk
Method: 6010-200.7 NEW(v96) 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	-.000303	-.000362	.0126520	.0001514	-.000187	F .0167851
Stddev	.000239	.001056	.0168624	.0017202	.001669	.0009989
%RSD	78.93664	291.4126	133.2787	1136.296	892.6703	5.951275

#1	-.000292	.000187	.0320242	-.000502	.001722	.0178294
#2	-.000548	.000306	.0046624	-.001146	-.001373	.0166874
#3	-.000070	-.001580	.0012693	.002103	-.000909	.0158387

Elem	Sr4077
Units	ppm
Avg	-.000385
Stddev	.000022
%RSD	5.690411

#1	-.000392
#2	-.000403
#3	-.000361

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5755.226	103286.9	11494.17	4335.281	7536.664
Stddev	12.533	91.4	21.48	17.691	19.896
%RSD	.2177708	.0884516	.1868431	.4080599	.2639897

#1	5743.195	103363.4	11470.19	4353.659	7521.600
#2	5768.207	103185.7	11511.64	4333.814	7559.218
#3	5754.276	103311.5	11500.67	4318.370	7529.176

Sample Name: PB169214BS Acquired: 8/13/2025 15:02:41 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.7938186	2.189076	.9560042	2.026724	.8034402	1.975594
Stddev	.0021161	.023292	.0021111	.007024	.0023960	.007247
%RSD	.2665748	1.064003	.2208226	.3465452	.2982235	.3668485
#1	.7938879	2.177530	.9583097	2.022218	.8009094	1.983903
#2	.7958992	2.173812	.9541659	2.023136	.8056737	1.970578
#3	.7916687	2.215885	.9555368	2.034816	.8037376	1.972301
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1889560	.2000878	.1899912	1.011083	.4100973	.1953476
Stddev	.0005085	.0017927	.0002470	.003965	.0009950	.0001890
%RSD	.2691272	.8959469	.1300109	.3921409	.2426386	.0967637
#1	.1887475	.2013838	.1902228	1.007401	.4097026	.1952237
#2	.1885849	.2008377	.1900197	1.015280	.4093602	.1955651
#3	.1895357	.1980420	.1897312	1.010568	.4112291	.1952539
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3102760	3.023575	.2008767	1.981185	.4909465	.0765581
Stddev	.0002951	.051688	.0005262	.019595	.0004238	.0005259
%RSD	.0950965	1.709502	.2619648	.9890339	.0863225	.6869422
#1	.3104296	2.989808	.2002727	1.969465	.4913109	.0761178
#2	.3104626	2.997838	.2011220	1.970283	.4910471	.0764162
#3	.3099358	3.083079	.2012356	2.003805	.4904814	.0771405
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.969037	.3040168	.2082205	9.866256	.2916774	.4093377
Stddev	.021020	.0026288	.0010499	.076192	.0014277	.0004565
%RSD	.7079573	.8647066	.5042331	.7722504	.4894870	.1115208
#1	2.952377	.3013267	.2094113	9.845729	.2913583	.4089553
#2	2.962081	.3065798	.2074280	9.802431	.2932376	.4092147
#3	2.992652	.3041438	.2078222	9.950610	.2904362	.4098431

Sample Name: PB169214BS Acquired: 8/13/2025 15:02:41 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.6666399	.1919342	.8958332	5.371450	F -.001421	.2000307
Stddev	.0007908	.0018770	.0019460	.020209	.001956	.0004630
%RSD	.1186221	.9779166	.2172320	.3762335	137.6998	.2314649
#1	.6674579	.1898465	.8941467	5.389964	-.001980	.2005640
#2	.6665823	.1934822	.8953905	5.374494	.000754	.1997321
#3	.6658795	.1924739	.8979625	5.349891	-.003036	.1997958
Elem	Sr4077					
Units	ppm					
Avg	.1943626					
Stddev	.0001925					
%RSD	.0990383					
#1	.1944057					
#2	.1941522					
#3	.1945299					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	5751.688	102143.9	11497.78	4323.500	7336.115	
Stddev	10.907	158.0	94.96	4.580	21.047	
%RSD	.1896324	.1547224	.8259352	.1059422	.2868955	
#1	5742.439	102201.5	11455.24	4326.232	7317.695	
#2	5748.910	102265.1	11431.51	4318.212	7331.595	
#3	5763.716	101965.1	11606.57	4326.056	7359.054	

Sample Name: PB169211BL Acquired: 8/13/2025 15:06:42 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.0004111	-.000199	-.001120	-.003356	-.000939	-.020048	-.008017
Stddev	.0007195	.000661	.000975	.001254	.000843	.002858	.001327
%RSD	175.0380	332.3926	87.00738	37.36476	89.71201	14.25701	16.55008
#1	-.000324	-.000044	-.002174	-.002179	-.001320	-.018584	-.006525
#2	.000443	-.000924	-.000933	-.004675	.000027	-.018219	-.009064
#3	.001114	.000371	-.000252	-.003215	-.001525	-.023342	-.008461
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000183	-.000076	-.015517	.0000725	-.000194	-.000221	-.007885
Stddev	.0000233	.000047	.008146	.0001255	.000098	.000184	.002626
%RSD	127.5846	60.99397	52.49584	173.1570	50.42397	83.06363	33.30239
#1	-.000001	-.000106	-.006967	.0001875	-.000271	-.000428	-.006194
#2	.000012	-.000023	-.023187	.0000914	-.000226	-.000156	-.006551
#3	.000044	-.000100	-.016396	-.000061	-.000084	-.000078	-.010911
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000367	-.004463	-.000069	.0002437	.1680191	-.000545	-.000495
Stddev	.000595	.015803	.000434	.0004300	.0025115	.002112	.000291
%RSD	161.9412	354.1147	626.6471	176.4375	1.494784	387.6116	58.74022
#1	-.000771	.009089	-.000367	-.000130	.1681156	-.002955	-.000160
#2	.000316	-.000656	-.000269	.000147	.1654607	.000984	-.000649
#3	-.000647	-.021821	.000428	.000714	.1704810	.000336	-.000676
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2929585	-.002242	-.000193	-.000169	.0003801	-.002124	.0002534
Stddev	.0238256	.000233	.000304	.000568	.0008979	.002269	.0022480
%RSD	8.132756	10.39470	157.4197	336.4873	236.2466	106.8311	887.0102
#1	.3100437	-.002024	.000138	.000487	.0013544	-.001325	.0028152
#2	.2657415	-.002214	-.000460	-.000501	.0002000	-.004684	-.000665
#3	.3030903	-.002488	-.000258	-.000492	-.000414	-.000363	-.001390

Sample Name: PB169211BL Acquired: 8/13/2025 15:06:42 Type: Unk
Method: 6010-200.7 NEW(v96) 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	-.002507	-.001726	-.000380
Stddev	.002432	.001021	.000048
%RSD	97.01249	59.15866	12.57555

#1	.000001	-.001593	-.000348
#2	-.002666	-.002807	-.000435
#3	-.004856	-.000778	-.000357

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5798.323	102055.2	11545.26	4324.539	7614.703
Stddev	7.539	466.9	61.26	16.988	8.538
%RSD	.1300236	.4575016	.5305655	.3928282	.1121196

#1	5789.658	101640.4	11504.38	4310.325	7608.147
#2	5801.929	102560.9	11515.70	4343.354	7611.604
#3	5803.383	101964.2	11615.69	4319.939	7624.357

Sample Name: PB169215BL Acquired: 8/13/2025 15:15:01 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.0015062	-.000428	-.000812	-.002134	-.001279	-.023435	-.005510
Stddev	.0001711	.000552	.000620	.000704	.001398	.003566	.000870
%RSD	11.36091	129.1807	76.33808	32.99679	109.2534	15.21467	15.78782

#1	.0013103	-.000504	-.001492	-.001385	-.002614	-.020095	-.005545
#2	.0015813	-.000938	-.000666	-.002235	.000174	-.023020	-.004624
#3	.0016269	.000159	-.000278	-.002783	-.001397	-.027190	-.006363

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000047	-.000135	-.015382	.0000405	-.000207	-.000469	-.013124
Stddev	.000058	.000064	.006357	.0002126	.000163	.000147	.001165
%RSD	124.0776	47.38313	41.32737	524.7280	78.42537	31.31782	8.875237

#1	.000009	-.000102	-.021738	.0000395	-.000136	-.000455	-.013966
#2	-.000041	-.000209	-.009023	-.000172	-.000394	-.000622	-.011794
#3	-.000107	-.000095	-.015386	.000254	-.000093	-.000329	-.013610

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000145	.0010432	.0003212	.0004175	.0690850	-.000806	-.000630
Stddev	.000564	.0173742	.0000882	.0000908	.0156023	.001863	.000149
%RSD	390.2070	1665.397	27.45343	21.75538	22.58418	231.1434	23.67576

#1	.000463	.0005179	.0002315	.0005218	.0543786	-.002948	-.000591
#2	-.000652	-.016062	.0003242	.0003559	.0674258	.000088	-.000794
#3	-.000245	.018674	.0004078	.0003747	.0854505	.000442	-.000504

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1915622	-.002501	-.000308	-.000352	-.000664	.0001007	.0002412
Stddev	.0137264	.000266	.000173	.000475	.001153	.0030708	.0008293
%RSD	7.165503	10.63528	56.21316	134.8013	173.6091	3048.390	343.7718

#1	.1860739	-.002255	-.000109	-.000887	-.000429	-.000044	.0006213
#2	.1814292	-.002784	-.000424	-.000187	-.001916	.003242	-.000710
#3	.2071836	-.002465	-.000391	.000018	.000353	-.002895	.000812

Sample Name: PB169215BL Acquired: 8/13/2025 15:15:01 Type: Unk
Method: 6010-200.7 NEW(v96) 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	-.000445	-.004324	-.000377
Stddev	.000902	.000723	.000033
%RSD	202.4703	16.71955	8.805651

#1	-.000192	-.004431	-.000339
#2	-.001447	-.003553	-.000390
#3	.000303	-.004987	-.000402

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5744.394	102711.1	11389.97	4334.163	7539.356
Stddev	11.519	111.5	203.83	12.352	15.660
%RSD	.2005314	.1085839	1.789570	.2849853	.2077039

#1	5731.097	102613.7	11497.06	4322.124	7522.271
#2	5750.756	102832.8	11154.91	4333.561	7553.027
#3	5751.331	102686.7	11517.93	4346.805	7542.769

Sample Name: PB169211BS Acquired: 8/13/2025 15:19:21 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.7848174	1.954682	.9478664	1.989791	.8133987	1.961216
Stddev	.0024503	.035435	.0011982	.001370	.0026707	.004952
%RSD	.3122066	1.812850	.1264075	.0688278	.3283425	.2525182

#1	.7837395	1.959969	.9491421	1.991090	.8104130	1.959730
#2	.7830909	1.916899	.9467649	1.989923	.8155600	1.966742
#3	.7876218	1.987176	.9476922	1.988361	.8142233	1.957177

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1853821	.1942511	.1881470	.9979744	.4062653	.1935854
Stddev	.0009630	.0012350	.0003905	.0080823	.0008658	.0003802
%RSD	.5194793	.6357772	.2075344	.8098726	.2131039	.1964173

#1	.1858355	.1929472	.1885978	.9887545	.4068685	.1939572
#2	.1842761	.1944030	.1879177	1.001331	.4066540	.1931972
#3	.1860348	.1954031	.1879253	1.003837	.4052733	.1936016

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3085259	3.018975	.1973862	1.944879	.4873920	.0755795
Stddev	.0002140	.028553	.0008450	.020887	.0003084	.0002915
%RSD	.0693534	.9457873	.4280677	1.073929	.0632701	.3857110

#1	.3086825	3.051796	.1982846	1.941037	.4877408	.0757756
#2	.3082821	3.005280	.1966075	1.967421	.4871558	.0757185
#3	.3086132	2.999849	.1972664	1.926181	.4872792	.0752445

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.751885	.2998950	.2065639	9.713072	.2837502	.4137481
Stddev	.013668	.0020729	.0003828	.051070	.0016970	.0007590
%RSD	.4966925	.6911981	.1853020	.5257830	.5980526	.1834400

#1	2.767391	.2975351	.2063815	9.770009	.2828754	.4143840
#2	2.746679	.3014212	.2063065	9.697895	.2826690	.4129078
#3	2.741584	.3007286	.2070038	9.671310	.2857060	.4139524

Sample Name: PB169211BS Acquired: 8/13/2025 15:19:21 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.6712240	.1938734	.9436818	5.420376	F .0001134	.1906200
Stddev	.0022518	.0016192	.0098181	.006628	.0005296	.0005905
%RSD	.3354744	.8351992	1.040398	.1222854	467.1833	.3097584

#1	.6734125	.1922009	.9510521	5.426410	.0004135	.1901507
#2	.6689139	.1954336	.9474568	5.413281	-.000498	.1912830
#3	.6713454	.1939856	.9325366	5.421438	.000425	.1904264

Elem	Sr4077
Units	ppm
Avg	.1907465
Stddev	.0004953
%RSD	.2596457

#1	.1912985
#2	.1906001
#3	.1903409

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5760.607	102514.7	11697.02	4335.838	7356.311
Stddev	7.859	331.6	37.82	32.091	11.319
%RSD	.1364212	.3234640	.3233563	.7401422	.1538715

#1	5753.008	102132.5	11736.44	4300.527	7343.296
#2	5760.110	102686.2	11693.59	4363.225	7363.864
#3	5768.702	102725.5	11661.02	4343.761	7361.772

Sample Name: CCV04 Acquired: 8/13/2025 15:23:20 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV04 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.006582	4.764937	4.861840	5.066387	5.057073	9.759803	9.663803
Stddev	.008391	.079538	.005222	.007827	.008178	.026934	.120905
%RSD	.1676081	1.669233	.1074077	.1544924	.1617067	.2759644	1.251114
#1	4.998108	4.796499	4.865970	5.060269	5.051677	9.764857	9.693351
#2	5.006752	4.823850	4.855970	5.063684	5.053061	9.730700	9.530863
#3	5.014888	4.674462	4.863579	5.075207	5.066482	9.783851	9.767196
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2390305	2.429669	24.30502	.9910053	2.431002	1.242334	4.996794
Stddev	.0013599	.001403	.02608	.0002695	.001309	.001685	.041713
%RSD	.5689187	.0577432	.1073167	.0271950	.0538314	.1356615	.8348001
#1	.2388577	2.430933	24.31981	.9913162	2.431519	1.240533	4.994554
#2	.2377653	2.429915	24.27491	.9908622	2.431973	1.243873	5.039583
#3	.2404685	2.428160	24.32035	.9908375	2.429514	1.242595	4.956246
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.394636	24.17056	2.443000	1.242925	23.74288	2.466601	2.504263
Stddev	.001663	.01215	.001712	.001103	.12195	.004611	.004576
%RSD	.0694360	.0502537	.0700656	.0887644	.5136294	.1869500	.1827204
#1	2.395846	24.18294	2.443771	1.243739	23.69289	2.471856	2.509547
#2	2.395321	24.15866	2.444191	1.241670	23.88188	2.463230	2.501620
#3	2.392740	24.17007	2.441039	1.243367	23.65387	2.464716	2.501623
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	24.65721	4.784846	5.044223	4.871666	4.871899	5.099103	4.769733
Stddev	.12776	.025705	.005817	.006420	.005393	.016541	.000592
%RSD	.5181358	.5372075	.1153114	.1317765	.1107047	.3243961	.0124219
#1	24.56000	4.785157	5.038909	4.875508	4.874707	5.080005	4.769991
#2	24.80191	4.758987	5.043322	4.875234	4.865681	5.108392	4.769055
#3	24.60971	4.810393	5.050437	4.864255	4.875310	5.108911	4.770153

Sample Name: CCV04 Acquired: 8/13/2025 15:23:20 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV04 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.797300	4.605971	4.852389
Stddev	.012976	.011410	.053692
%RSD	.2704760	.2477323	1.106515

#1	4.794412	4.592854	4.899625
#2	4.811476	4.611453	4.793994
#3	4.786011	4.613606	4.863549

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5545.487	99200.59	11507.41	4182.301	6713.448
Stddev	8.693	130.22	68.47	19.057	6.975
%RSD	.1567527	.1312741	.5950074	.4556596	.1038959

#1	5555.224	99051.88	11472.81	4160.894	6716.892
#2	5542.728	99294.28	11586.28	4197.417	6705.420
#3	5538.508	99255.60	11463.14	4188.593	6718.030

Sample Name: CCB04 Acquired: 8/13/2025 15:27:31 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB04 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006266	-.000228	-.000818	-.001163	-.001750	-.015706	-.008146
Stddev	.0011529	.000821	.001139	.000186	.001919	.007660	.001159
%RSD	183.9847	360.0616	139.3426	15.99170	109.6717	48.77059	14.22457
#1	.0019305	-.000954	-.001659	-.001325	-.003960	-.022755	-.008678
#2	-.000258	-.000392	.000479	-.001204	-.000771	-.016810	-.008944
#3	.000208	.000662	-.001273	-.000960	-.000518	-.007554	-.006817
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000045	-.000098	-.012792	.0002817	-.000097	-.000294	-.005749
Stddev	.000032	.000042	.010021	.0000558	.000108	.000057	.002936
%RSD	70.34791	42.49146	78.33554	19.80702	111.6106	19.42404	51.06848
#1	-.000015	-.000140	-.024356	.0003404	-.000175	-.000357	-.008842
#2	-.000042	-.000057	-.006663	.0002755	-.000141	-.000246	-.003000
#3	-.000078	-.000096	-.007358	.0002293	.000026	-.000278	-.005405
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000646	.0021441	.0002269	.0004995	.0345725	-.000698	.0002276
Stddev	.000229	.0139189	.0000453	.0004575	.0111349	.001094	.0000262
%RSD	35.49877	649.1859	19.96302	91.58869	32.20728	156.6740	11.50061
#1	-.000681	-.002513	.0001940	.0008650	.0273777	.000464	.0001993
#2	-.000857	-.008849	.0002786	-.000014	.0473982	-.000850	.0002324
#3	-.000402	.017794	.0002082	.000647	.0289416	-.001708	.0002510
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1786227	.0052852	-.000120	-.000082	.0005844	.0214060	.0023649
Stddev	.0182456	.0003073	.000182	.000304	.0005932	.0071425	.0027215
%RSD	10.21458	5.814260	152.1822	370.0067	101.5089	33.36692	115.0769
#1	.1995735	.0056400	.000091	-.000357	.0012520	.0288243	.0025590
#2	.1662245	.0051011	-.000221	.000245	.0003831	.0145757	-.000448
#3	.1700700	.0051146	-.000228	-.000134	.0001180	.0208179	.004984

Sample Name: CCB04 Acquired: 8/13/2025 15:27:31 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB04 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.000558	-.002100	-.000347
Stddev	.001640	.000751	.000021
%RSD	293.8440	35.75941	6.084275

#1	.001310	-.002774	-.000371
#2	-.001761	-.002235	-.000331
#3	-.001223	-.001291	-.000338

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5812.099	104162.6	11752.27	4374.846	7663.584
Stddev	9.963	483.3	12.47	16.746	9.584
%RSD	.1714149	.4639507	.1061224	.3827870	.1250534

#1	5816.245	103903.7	11765.60	4357.058	7670.426
#2	5819.319	103863.8	11740.88	4377.175	7667.695
#3	5800.732	104720.1	11750.34	4390.307	7652.631

Sample Name: PB169200TB Acquired: 8/13/2025 15:31:51 Type: Unk
Method: 6010-200.7 NEW(v96) 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	-.001733	-.001251	-.000954	.0064789	.0001909	-.012922	-.009606
Stddev	.000746	.001418	.001236	.0009879	.0013411	.001543	.000140
%RSD	43.05275	113.3527	129.6193	15.24854	702.6429	11.94053	1.461455
#1	-.001163	.000386	-.002222	.0064606	.0003743	-.014377	-.009503
#2	-.001458	-.002054	-.000887	.0055003	-.001232	-.013084	-.009549
#3	-.002577	-.002084	.000248	.0074759	.001431	-.011304	-.009766
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000145	-.000210	.0105569	.0000744	-.000443	-.000113	-.005603
Stddev	.000013	.000035	.0048680	.0003986	.000130	.000396	.008326
%RSD	8.948788	16.85594	46.11250	535.6730	29.44306	349.7343	148.6179
#1	-.000136	-.000169	.0156342	.0001001	-.000449	.000042	-.003759
#2	-.000159	-.000230	.0059294	.0004595	-.000570	.000181	-.014696
#3	-.000138	-.000230	.0101069	-.000336	-.000309	-.000564	.001648
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0055757	-.019547	.0009463	.0002576	441.2733	-.000780	.0027015
Stddev	.0000689	.014846	.0002477	.0002575	2.2551	.000664	.0002476
%RSD	1.236446	75.95006	26.17142	99.96742	.5110384	85.09278	9.165545
#1	.0054992	-.008862	.0012137	.0001590	443.4230	-.000017	.0024160
#2	.0056329	-.013281	.0007247	.0005497	438.9259	-.001098	.0028299
#3	.0055950	-.036499	.0009007	.0000639	441.4710	-.001225	.0028585
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1628629	.0004407	.0002781	.0017237	-.001204	.0075056	.0085583
Stddev	.0196115	.0001943	.0000857	.0007288	.001820	.0104390	.0005957
%RSD	12.04171	44.08205	30.80454	42.27880	151.1821	139.0824	6.960305
#1	.1742980	.0002171	.0002634	.0015876	-.000631	.0191918	.0080713
#2	.1402179	.0005368	.0003702	.0010726	-.003240	.0042211	.0083812
#3	.1740728	.0005682	.0002008	.0025110	.000261	-.000896	.0092225

Sample Name: PB169200TB Acquired: 8/13/2025 15:31:51 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.1028890	-.009087	-.000173
Stddev	.0029027	.000353	.000020
%RSD	2.821224	3.887003	11.44720

#1	.1009599	-.009440	-.000151
#2	.1014799	-.008733	-.000179
#3	.1062273	-.009089	-.000189

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5259.474	93740.99	11870.25	3963.272	6334.302
Stddev	10.789	129.24	42.59	19.409	6.300
%RSD	.2051437	.1378663	.3588237	.4897223	.0994563

#1	5267.172	93670.20	11900.24	3984.606	6327.756
#2	5264.108	93662.61	11889.01	3946.660	6340.322
#3	5247.142	93890.15	11821.49	3958.548	6334.827

Sample Name: Q2808-04 Acquired: 8/13/2025 15:36:20 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.0012084	-.007142	-.001966	.0008957	-.001231	.0353977	.7543543
Stddev	.0011546	.001331	.000905	.0020298	.001383	.0169755	.0023880
%RSD	95.54893	18.63047	46.02128	226.6194	112.3448	47.95647	.3165628
#1	.0011245	-.008650	-.001111	.0005554	-.001121	.0507281	.7568897
#2	.0024027	-.006640	-.002913	.0030741	-.002667	.0171542	.7540254
#3	.0000980	-.006135	-.001873	-.000942	.000094	.0383109	.7521478
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003242	.0004314	143.6534	-.000585	.0014674	-.001415	44.79447
Stddev	.0000299	.0000682	.2709	.000306	.0000678	.000107	.07574
%RSD	9.231972	15.79592	.1885467	52.29269	4.623183	7.544293	.1690826
#1	.0002944	.0004456	143.7573	-.000726	.0014798	-.001318	44.78370
#2	.0003543	.0004914	143.8570	-.000795	.0015283	-.001530	44.72469
#3	.0003239	.0003573	143.3460	-.000234	.0013943	-.001399	44.87502
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.313864	7.095835	.0203040	.0025133	336.3410	.0000097	.1752275
Stddev	.005340	.024980	.0002070	.0003095	2.3443	.0007534	.0002137
%RSD	.4064632	.3520442	1.019769	12.31277	.6970086	7762.912	.1219832
#1	1.318051	7.085513	.0204942	.0023224	339.0220	-.000633	.1750853
#2	1.315692	7.124322	.0203345	.0023472	335.3247	-.000177	.1751240
#3	1.307850	7.077669	.0200834	.0028704	334.6763	.000839	.1754733
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.853296	.0928011	.0002084	-.002211	-.005004	.9744557	.0088558
Stddev	.026461	.0007300	.0000739	.000550	.000903	.0149631	.0013873
%RSD	1.427756	.7865870	35.43935	24.88461	18.03725	1.535536	15.66535
#1	1.845325	.0920627	.0001431	-.002834	-.004727	.9592809	.0085364
#2	1.831737	.0928183	.0002886	-.001790	-.004273	.9748884	.0076561
#3	1.882825	.0935223	.0001936	-.002010	-.006013	.9891978	.0103750

Sample Name: Q2808-04 Acquired: 8/13/2025 15:36:20 Type: Unk
Method: 6010-200.7 NEW(v96) 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	2.711850	-.023660	.7856772
Stddev	.008461	.000470	.0019203
%RSD	.3119986	1.984925	.2444132

#1	2.717472	-.023555	.7878258
#2	2.715960	-.024173	.7850774
#3	2.702120	-.023252	.7841284

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5158.161	92861.56	11796.74	3888.707	6164.053
Stddev	4.954	17.34	35.72	6.322	4.149
%RSD	.0960425	.0186783	.3028281	.1625823	.0673081

#1	5160.742	92862.52	11779.42	3882.122	6160.774
#2	5161.292	92843.75	11772.99	3894.728	6162.668
#3	5152.450	92878.40	11837.83	3889.272	6168.718

Sample Name: Q2826-02 Acquired: 8/13/2025 15:40:42 Type: Unk
Method: 6010-200.7 NEW(v96) 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	-.003870	.0013367	.0016224	.0009300	.0031688	.0630191	.1632868
Stddev	.000858	.0014517	.0000766	.0008565	.0014430	.0067992	.0004741
%RSD	22.16069	108.6039	4.720620	92.10016	45.53870	10.78918	.2903508
#1	-.004848	.0001936	.0015644	-.000052	.0019344	.0612981	.1629348
#2	-.003519	.0029701	.0015937	.001318	.0047553	.0705135	.1630997
#3	-.003244	.0008464	.0017093	.001524	.0028168	.0572458	.1638259
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000201	.0074130	215.8080	.0307831	.0034087	.0692483	-.005556
Stddev	.000062	.0000339	.2169	.0002474	.0002559	.0004980	.005497
%RSD	31.11475	.4579942	.1005035	.8035180	7.508624	.7190735	98.94037
#1	-.000248	.0074473	215.5626	.0304976	.0032664	.0688442	-.010281
#2	-.000224	.0074122	215.8875	.0309326	.0032554	.0690961	-.006864
#3	-.000130	.0073794	215.9740	.0309190	.0037041	.0698045	.000477
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8521692	7.864127	.2856859	.0001217	353.6145	.0012170	.2019797
Stddev	.0007872	.071823	.0007400	.0000527	.5166	.0003557	.0006402
%RSD	.0923748	.9133012	.2590378	43.32778	.1461046	29.23057	.3169736
#1	.8521487	7.805185	.2849488	.0001823	354.1647	.0013085	.2021213
#2	.8513925	7.843071	.2856803	.0000960	353.1396	.0015180	.2012806
#3	.8529665	7.944125	.2864288	.0000868	353.5392	.0008244	.2025373
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.455178	.1522442	.0017668	-.002519	-.009678	7.306074	.0321874
Stddev	.046069	.0007788	.0000610	.001176	.000823	.051828	.0025756
%RSD	.7136775	.5115451	3.453233	46.67749	8.501667	.7093882	8.001861
#1	6.469983	.1519378	.0018062	-.003867	-.008792	7.337459	.0341779
#2	6.492024	.1531296	.0016965	-.001982	-.009823	7.334511	.0292785
#3	6.403526	.1516652	.0017977	-.001708	-.010419	7.246252	.0331058

Sample Name: Q2826-02 Acquired: 8/13/2025 15:40:42 Type: Unk
Method: 6010-200.7 NEW(v96) 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	8.226027	-.034296	.7481124
Stddev	.050011	.001144	.0016771
%RSD	.6079566	3.335712	.2241805

#1	8.191122	-.033056	.7495049
#2	8.203639	-.035310	.7485817
#3	8.283321	-.034521	.7462506

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5146.808	92279.32	11784.68	3808.550	6169.524
Stddev	1.627	89.97	46.13	4.458	5.498
%RSD	.0316022	.0974960	.3914651	.1170558	.0891226

#1	5148.622	92262.71	11831.06	3809.639	6173.699
#2	5146.320	92198.82	11784.21	3803.648	6171.580
#3	5145.480	92376.44	11738.79	3812.362	6163.294

Sample Name: Q2827-04 Acquired: 8/13/2025 15:45:01 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.0033375	-.003074	-.001057	.0014729	-.000308	.0380344	.2495645
Stddev	.0016837	.001029	.000641	.0027602	.000919	.0160508	.0014078
%RSD	50.44936	33.47081	60.59839	187.4022	298.6974	42.20084	.5641090

#1	.0052817	-.003587	-.000964	-.000025	.000667	.0565648	.2511639
#2	.0023584	-.001890	-.000468	-.000215	-.000432	.0284558	.2490165
#3	.0023724	-.003746	-.001739	.004658	-.001159	.0290826	.2485131

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000982	.0001396	138.2531	-.000157	.0059795	-.001708	25.64333
Stddev	.0000389	.0000339	.4155	.000235	.0000543	.000679	.70712
%RSD	39.61762	24.23960	.3005079	149.3777	.9088097	39.74215	2.757535

#1	.0001155	.0001688	138.6192	-.000254	.0059409	-.001211	25.16834
#2	.0001254	.0001025	137.8015	-.000329	.0059559	-.002482	26.45599
#3	.0000536	.0001476	138.3385	.000111	.0060417	-.001432	25.30567

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.504102	8.245154	.0126765	.0019749	369.3551	.0004210	.1281643
Stddev	.003141	.015705	.0001787	.0004440	8.0391	.0016323	.0038640
%RSD	.2088171	.1904801	1.409777	22.48106	2.176532	387.7670	3.014896

#1	1.507721	8.255025	.0127857	.0022206	363.2808	.0022615	.1259379
#2	1.502497	8.227043	.0124703	.0022418	378.4713	-.000851	.1326260
#3	1.502087	8.253393	.0127735	.0014624	366.3131	-.000148	.1259288

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.360798	.1614519	.0019197	-.003109	-.005713	.9725995	.2032524
Stddev	.080698	.0013615	.0003764	.000292	.000385	.0164030	.0038331
%RSD	2.401147	.8433026	19.60880	9.388671	6.747460	1.686509	1.885884

#1	3.302088	.1615220	.0016286	-.002775	-.005993	.9561299	.2075059
#2	3.452818	.1627771	.0023448	-.003312	-.005872	.9889350	.2000657
#3	3.327487	.1600567	.0017858	-.003241	-.005273	.9727336	.2021856

Sample Name: Q2827-04 Acquired: 8/13/2025 15:45:01 Type: Unk
Method: 6010-200.7 NEW(v96) 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	2.020646	-.025564	.5703315
Stddev	.005679	.000964	.0015278
%RSD	.2810378	3.770428	.2678728
#1	2.014401	-.024725	.5715272
#2	2.025501	-.026617	.5686103
#3	2.022034	-.025351	.5708568

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5140.094	91969.88	11910.66	3834.611	6150.932
Stddev	14.189	2231.06	79.44	103.400	7.563
%RSD	.2760359	2.425855	.6670009	2.696489	.1229531
#1	5145.943	93440.29	11823.35	3896.357	6155.400
#2	5150.423	89402.73	11978.69	3715.239	6155.196
#3	5123.916	93066.63	11929.93	3892.237	6142.200

Sample Name: Q2827-08 Acquired: 8/13/2025 15:49:23 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.0004648	-.001267	.0023193	.0023266	.0015198	.0487123	.3903590
Stddev	.0009130	.000683	.0011875	.0004222	.0007329	.0045938	.0011785
%RSD	196.4136	53.92181	51.19976	18.14667	48.22536	9.430496	.3019021
#1	-.000413	-.001527	.0016642	.0027112	.0020389	.0472627	.3909608
#2	.000398	-.000492	.0036900	.0018749	.0018390	.0538561	.3890011
#3	.001410	-.001782	.0016037	.0023938	.0006814	.0450182	.3911151
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000030	.0000027	161.0306	-.000177	.0029226	.0004742	11.32621
Stddev	.000045	.0000286	.1109	.000292	.0001423	.0002516	.01758
%RSD	151.4507	1055.262	.0688726	165.3530	4.868289	53.06499	.1552358
#1	-.000075	-.000015	161.0566	.000157	.0029378	.0002823	11.33421
#2	.000014	.000036	160.9090	-.000385	.0030567	.0007591	11.30605
#3	-.000027	-.000013	161.1262	-.000302	.0027733	.0003812	11.33838
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6648473	3.602779	.0131446	.0006610	256.3784	.0010493	.0921859
Stddev	.0026927	.023224	.0002111	.0005121	1.4984	.0022454	.0004844
%RSD	.4050022	.6446002	1.606094	77.47172	.5844562	213.9792	.5254905
#1	.6662891	3.610170	.0129298	.0011115	258.0277	.0026946	.0922620
#2	.6617407	3.621408	.0131522	.0001041	256.0068	-.001509	.0926278
#3	.6665120	3.576760	.0133518	.0007673	255.1008	.001962	.0916680
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.665077	.0347487	.0018025	-.002590	-.006114	1.242884	.0140477
Stddev	.034436	.0005577	.0001830	.000708	.000471	.016625	.0014188
%RSD	1.292139	1.605026	10.15119	27.34576	7.704667	1.337593	10.10002
#1	2.700511	.0350012	.0016436	-.003080	-.006611	1.223719	.0139328
#2	2.631733	.0341094	.0020025	-.001778	-.005674	1.251503	.0155204
#3	2.662988	.0351356	.0017612	-.002912	-.006056	1.253428	.0126898

Sample Name: Q2827-08 Acquired: 8/13/2025 15:49:23 Type: Unk
Method: 6010-200.7 NEW(v96) 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	2.260382	-.027707	.6373880
Stddev	.019203	.001200	.0022095
%RSD	.8495358	4.331528	.3466420

#1	2.242359	-.027369	.6368776
#2	2.258206	-.029040	.6354785
#3	2.280580	-.026712	.6398080

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5038.797	90754.12	11402.74	3777.226	6099.754
Stddev	37.033	188.74	12.15	19.547	35.239
%RSD	.7349610	.2079649	.1065776	.5175070	.5777085

#1	5059.530	90665.48	11412.82	3770.968	6120.440
#2	5060.819	90626.02	11389.25	3761.575	6119.756
#3	4996.041	90970.86	11406.17	3799.137	6059.066

Sample Name: Q2808-01 Acquired: 8/13/2025 15:53:46 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.1800329	.0741751	2.631210	.0111485	-.056125	138.0349
Stddev	.0032144	.0075606	.001568	.0039018	.000925	.1482
%RSD	1.785433	10.19287	.0595839	34.99810	1.647939	.1073441
#1	.1826189	.0705985	2.629903	.0156013	-.056725	137.9216
#2	.1810458	.0690665	2.630779	.0095167	-.056590	137.9805
#3	.1764341	.0828604	2.632948	.0083276	-.055060	138.2026
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.094576	.0145821	.0838653	225.7189	1.039326	.3533821
Stddev	.002682	.0001221	.0006281	.4492	.004628	.0002190
%RSD	.1280380	.8375648	.7489187	.1990023	.4452901	.0619682
#1	2.093157	.0144809	.0832362	225.2066	1.039877	.3532155
#2	2.092901	.0145476	.0844923	225.9045	1.043655	.3533007
#3	2.097669	.0147177	.0838674	226.0455	1.034448	.3536301
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.759315	895.1544	6.072521	86.12084	2.293298	.0454620
Stddev	.003353	6.4741	.010794	.25625	.000710	.0019672
%RSD	.1215271	.7232422	.1777488	.2975493	.0309422	4.327147
#1	2.756124	901.7589	6.062760	85.82496	2.292673	.0472833
#2	2.759012	894.8853	6.084113	86.26598	2.294069	.0457271
#3	2.762810	888.8190	6.070690	86.27157	2.293153	.0433757
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	17.08201	10.35382	5.291721	6.838310	^ *****	.0751818
Stddev	.14609	.01088	.008489	.027116	----	.0004492
%RSD	.8552481	.1050630	.1604148	.3965274	----	.5974492
#1	17.23668	10.34234	5.282000	6.858528	^ ----	.0751910
#2	17.06298	10.35516	5.295499	6.848906	^ ----	.0756264
#3	16.94636	10.36397	5.297665	6.807496	^ ----	.0747282

Sample Name: Q2808-01 Acquired: 8/13/2025 15:53:46 Type: Unk
Method: 6010-200.7 NEW(v96) 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	1.143629	3.997180	8.950507	9.454075	F 62.82702	.1715536
Stddev	.002432	.007489	.143087	.024550	.40623	.0022124
%RSD	.2126665	.1873633	1.598650	.2596788	.6465844	1.289631

#1	1.141105	3.988535	8.940798	9.460310	62.80098	.1720816
#2	1.145958	4.001304	9.098201	9.474906	63.24565	.1734543
#3	1.143825	4.001701	8.812521	9.427008	62.43444	.1691250

Elem	Sr4077
Units	ppm
Avg	.7413666
Stddev	.0226181
%RSD	3.050870

#1	.7157265
#2	.7498832
#3	.7584901

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5696.821	104518.4	13894.88	4253.124	5664.939
Stddev	8.061	192.8	102.65	3.394	3.323
%RSD	.1414970	.1844623	.7387386	.0798042	.0586514

#1	5700.852	104368.8	14011.48	4251.763	5667.372
#2	5702.072	104450.5	13854.96	4250.623	5666.292
#3	5687.540	104736.0	13818.18	4256.988	5661.154

Sample Name: Q2817-01 Acquired: 8/13/2025 15:58:02 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.0159929	.0214913	.0569516	-.011547	.0096765	119.7184	7.361722
Stddev	.0043442	.0021804	.0011669	.003261	.0025923	.2278	.017733
%RSD	27.16340	10.14534	2.049020	28.24337	26.78950	.1902590	.2408823
#1	.0126426	.0189748	.0561640	-.009728	.0120109	119.4951	7.351709
#2	.0144349	.0228155	.0563986	-.009600	.0068867	119.7096	7.351259
#3	.0209013	.0226835	.0582923	-.015312	.0101321	119.9504	7.382197
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0019774	.0082569	2187.873	.0593914	.0249562	.0572867	111.2777
Stddev	.0000469	.0001407	15.838	.0002033	.0004285	.0015108	.3812
%RSD	2.370089	1.704371	.7239144	.3422926	1.717001	2.637314	.3425388
#1	.0020309	.0084009	2206.115	.0595530	.0247352	.0588926	110.9173
#2	.0019574	.0082502	2179.880	.0594580	.0246832	.0570739	111.2391
#3	.0019438	.0081197	2177.624	.0591631	.0254500	.0558935	111.6767
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6303406	294.7570	.1856770	.0184864	52.26184	.0976766	2.813455
Stddev	.0012775	.0737	.0007114	.0004646	.26752	.0008193	.005626
%RSD	.2026767	.0250085	.3831118	2.513492	.5118759	.8388312	.1999734
#1	.6317361	294.7615	.1863830	.0179514	51.99040	.0968175	2.816595
#2	.6292286	294.8284	.1849604	.0187179	52.26986	.0977629	2.816811
#3	.6300571	294.6812	.1856877	.0187898	52.52525	.0984493	2.806960
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	28.83225	.1376957	.0047863	.0777810	9.862906	3.127149	9.469285
Stddev	.22718	.0026629	.0006540	.0017422	.046872	.032871	.002983
%RSD	.7879519	1.933894	13.66310	2.239854	.4752354	1.051153	.0315036
#1	28.60651	.1354698	.0040317	.0794891	9.875588	3.136849	9.470172
#2	28.82938	.1369716	.0051871	.0778472	9.902131	3.154078	9.471724
#3	29.06085	.1406458	.0051401	.0760066	9.810997	3.090519	9.465959

Sample Name: Q2817-01 Acquired: 8/13/2025 15:58:02 Type: Unk
Method: 6010-200.7 NEW(v96) 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	17.77725	-.286456	1.244542
Stddev	.05895	.003348	.002127
%RSD	.3316002	1.168719	.1708942
#1	17.83882	-.289100	1.245300
#2	17.72133	-.287577	1.242140
#3	17.77162	-.282692	1.246185

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4661.789	84226.01	11981.89	3484.731	4867.015
Stddev	6.606	157.36	40.63	7.452	15.862
%RSD	.1417051	.1868335	.3391069	.2138553	.3259127
#1	4669.383	84307.83	11935.51	3489.956	4877.086
#2	4658.606	84325.61	12011.17	3488.041	4875.228
#3	4657.377	84044.59	11999.00	3476.197	4848.730

Sample Name: Q2819-06 Acquired: 8/13/2025 16:02:22 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.0295681	-.002025	.3391143	.0025716	-.002239	40.53668	.1649028
Stddev	.0009381	.000952	.0003256	.0008557	.001405	.10716	.0003091
%RSD	3.172670	47.03529	.0960099	33.27358	62.75319	.2643643	.1874691
#1	.0305262	-.002576	.3387664	.0016127	-.000651	40.65830	.1651227
#2	.0286514	-.000925	.3394116	.0028447	-.003320	40.45612	.1650363
#3	.0295267	-.002573	.3391649	.0032574	-.002747	40.49561	.1645493
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0027959	.0017242	3.648005	.1100694	.0159814	.0459838	59.94381
Stddev	.0000498	.0000771	.018676	.0002597	.0002884	.0003141	.13663
%RSD	1.780254	4.473007	.5119561	.2359039	1.804572	.6830040	.2279226
#1	.0028531	.0017643	3.643727	.1103691	.0158759	.0463248	59.89063
#2	.0027622	.0016352	3.631839	.1099141	.0157606	.0457064	60.09903
#3	.0027724	.0017729	3.668449	.1099248	.0163077	.0459203	59.84177
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7734115	6.536183	.0359841	.0027939	.9287686	.0886997	.1848661
Stddev	.0021155	.010341	.0004410	.0004057	.0127441	.0013520	.0006991
%RSD	.2735216	.1582177	1.225477	14.52069	1.372151	1.524231	.3781866
#1	.7758503	6.547506	.0355489	.0027385	.9178605	.0890158	.1846904
#2	.7720725	6.527237	.0359727	.0032245	.9256685	.0898657	.1842716
#3	.7723117	6.533808	.0364306	.0024188	.9427767	.0872177	.1856363
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.593731	.0122503	.0041230	.0166402	1.202571	2.058589	1.973729
Stddev	.026574	.0017682	.0000417	.0004858	.002886	.007744	.011679
%RSD	1.024540	14.43363	1.010701	2.919133	.2400049	.3762024	.5917076
#1	2.563046	.0109268	.0041248	.0171662	1.205589	2.049676	1.967975
#2	2.609104	.0142584	.0041637	.0165460	1.199838	2.063671	1.966045
#3	2.609043	.0115657	.0040805	.0162085	1.202286	2.062421	1.987169

Sample Name: Q2819-06 Acquired: 8/13/2025 16:02:22 Type: Unk
Method: 6010-200.7 NEW(v96) 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	1.081090	.0601279	-.033818
Stddev	.008608	.0007097	.000099
%RSD	.7962149	1.180226	.2933515

#1	1.087160	.0604386	-.033728
#2	1.071239	.0593159	-.033924
#3	1.084871	.0606292	-.033802

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5828.270	105927.1	12790.54	4428.850	7233.982
Stddev	17.873	74.6	74.31	8.621	22.005
%RSD	.3066564	.0704444	.5809669	.1946463	.3041915

#1	5847.456	106013.0	12727.90	4437.973	7254.738
#2	5825.261	105878.5	12872.65	4427.736	7236.297
#3	5812.092	105889.7	12771.09	4420.840	7210.911

Sample Name: Q2819-11 Acquired: 8/13/2025 16:06:31 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.0704648	-.004367	.4667449	.0017330	-.003384	29.56425	.1721573
Stddev	.0034987	.002492	.0009880	.0015615	.002931	.04793	.0004831
%RSD	4.965171	57.05375	.2116759	90.09899	86.61258	.1621139	.2805978
#1	.0728630	-.001640	.4677795	.0002809	-.001866	29.53883	.1718935
#2	.0720812	-.006524	.4666442	.0033846	-.001524	29.61954	.1727149
#3	.0664501	-.004938	.4658112	.0015335	-.006763	29.53439	.1718637
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0056646	.0029592	110.3061	.0841845	.0187954	.1282340	72.07005
Stddev	.0000424	.0000212	.0224	.0003283	.0000981	.0008094	.18015
%RSD	.7489706	.7158564	.0203489	.3899735	.5218511	.6311963	.2499690
#1	.0056856	.0029378	110.3125	.0844252	.0187189	.1283444	72.10278
#2	.0056923	.0029802	110.3247	.0838106	.0189060	.1289825	71.87578
#3	.0056157	.0029596	110.2812	.0843178	.0187613	.1273751	72.23160
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6079634	53.14769	.0498847	.0030106	1.874281	.0886187	.4421797
Stddev	.0012363	.08071	.0004164	.0001571	.003327	.0023310	.0007953
%RSD	.2033503	.1518658	.8348100	5.217064	.1775170	2.630412	.1798579
#1	.6068666	53.16746	.0499115	.0031041	1.877028	.0885502	.4425090
#2	.6093031	53.21669	.0502871	.0030985	1.870582	.0909833	.4427575
#3	.6077204	53.05893	.0494556	.0028293	1.875234	.0863227	.4412726
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.859434	.0272433	.0034364	.0181882	1.074529	2.073624	2.414830
Stddev	.023004	.0008122	.0003026	.0005704	.002707	.007259	.012654
%RSD	.8044803	2.981392	8.805798	3.135907	.2518943	.3500707	.5240094
#1	2.836883	.0267864	.0033852	.0176564	1.071978	2.065749	2.426694
#2	2.858556	.0267624	.0037614	.0187906	1.074240	2.075073	2.416285
#3	2.882865	.0281810	.0031627	.0181176	1.077368	2.080048	2.401512

Sample Name: Q2819-11 Acquired: 8/13/2025 16:06:31 Type: Unk
Method: 6010-200.7 NEW(v96) 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	8.773774	.0186115	.0773708
Stddev	.034542	.0003194	.0004114
%RSD	.3937015	1.716425	.5316864

#1	8.778689	.0186403	.0772887
#2	8.805596	.0182786	.0778170
#3	8.737037	.0189155	.0770066

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5512.647	100173.0	12390.82	4162.383	6647.578
Stddev	9.278	170.2	36.82	6.630	8.815
%RSD	.1683061	.1698899	.2971413	.1592923	.1326044

#1	5521.993	99977.9	12373.84	4166.015	6657.754
#2	5503.438	100250.9	12365.56	4154.731	6642.672
#3	5512.510	100290.4	12433.07	4166.404	6642.307

Sample Name: Q2819-14 Acquired: 8/13/2025 16:10:37 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.0562086	-.001838	.0944071	.0016999	-.002344	18.90034	.0493644
Stddev	.0009465	.000624	.0009691	.0011157	.001170	.02609	.0016606
%RSD	1.683891	33.92103	1.026491	65.63104	49.91350	.1380288	3.364029
#1	.0552950	-.002320	.0940224	.0008047	-.003276	18.87080	.0481875
#2	.0561459	-.002060	.0936895	.0013452	-.002724	18.91001	.0486417
#3	.0571849	-.001134	.0955095	.0029498	-.001031	18.92021	.0512639
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011686	.0009600	3.458917	.0635441	.0074544	.0551471	31.02448
Stddev	.0000721	.0000533	.010362	.0004881	.0001831	.0002051	.05945
%RSD	6.166037	5.552291	.2995755	.7681515	2.455707	.3719918	.1916310
#1	.0012448	.0009593	3.449301	.0640757	.0076467	.0549441	31.09045
#2	.0011015	.0009071	3.469892	.0634402	.0074342	.0553543	31.00795
#3	.0011594	.0010137	3.457558	.0631162	.0072822	.0551430	30.97505
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3039263	3.218632	.0218651	.0010596	.7424036	.0469757	.2408749
Stddev	.0012553	.011636	.0000523	.0002110	.0117885	.0014296	.0005640
%RSD	.4130390	.3615157	.2393011	19.91474	1.587880	3.043232	.2341325
#1	.3026352	3.208030	.0218537	.0008258	.7423926	.0468424	.2414763
#2	.3051426	3.216786	.0218194	.0011173	.7541976	.0456175	.2403578
#3	.3040009	3.231081	.0219222	.0012358	.7306206	.0484673	.2407906
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.477232	.0041658	.0010734	.0070126	.6799960	1.578442	1.552906
Stddev	.003999	.0001915	.0000535	.0001263	.0010118	.009416	.005233
%RSD	.2706850	4.596142	4.987935	1.800273	.1487913	.5965654	.3369728
#1	1.477640	.0043512	.0011163	.0070693	.6788523	1.571093	1.557173
#2	1.473045	.0041773	.0010134	.0068679	.6807743	1.575177	1.547068
#3	1.481011	.0039688	.0010905	.0071005	.6803613	1.589057	1.554479

Sample Name: Q2819-14 Acquired: 8/13/2025 16:10:37 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.4272766	.0151018	-.011078
Stddev	.0015997	.0010046	.000059
%RSD	.3743919	6.651937	.5339193

#1	.4279249	.0158123	-.011072
#2	.4254545	.0139525	-.011141
#3	.4284504	.0155405	-.011023

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5856.838	105729.6	12562.83	4407.339	7437.104
Stddev	1.171	87.5	42.88	8.296	11.229
%RSD	.0199968	.0827426	.3413558	.1882393	.1509811

#1	5857.671	105705.7	12607.08	4411.773	7439.178
#2	5857.343	105826.5	12559.96	4397.768	7447.151
#3	5855.499	105656.5	12521.46	4412.476	7424.983

Sample Name: CCV05 Acquired: 8/13/2025 16:14:50 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV05 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.008184	4.535581	4.810757	5.071942	5.093948	9.688008	9.835879
Stddev	.012213	.134476	.005069	.016476	.010488	.030487	.175521
%RSD	.2438682	2.964905	.1053730	.3248500	.2058863	.3146899	1.784499
#1	4.994081	4.515866	4.815596	5.055795	5.081950	9.723189	10.03740
#2	5.015170	4.412050	4.805485	5.071302	5.098525	9.671504	9.71639
#3	5.015300	4.678825	4.811188	5.088729	5.101369	9.669331	9.75385
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2345472	2.404781	24.05975	.9910976	2.415756	1.243462	5.093967
Stddev	.0023443	.003151	.06526	.0049268	.002382	.002336	.046423
%RSD	.9994838	.1310496	.2712580	.4971069	.0986044	.1878590	.9113343
#1	.2372284	2.408164	24.13258	.9859178	2.418156	1.241226	5.041633
#2	.2335290	2.401928	24.00656	.9916503	2.413392	1.245887	5.110087
#3	.2328842	2.404252	24.04010	.9957248	2.415722	1.243274	5.130181
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.382668	23.82309	2.431815	1.250084	23.79499	2.460924	2.514845
Stddev	.013619	.09548	.001667	.000295	.17171	.011911	.006230
%RSD	.5715897	.4007756	.0685383	.0236224	.7216063	.4840047	.2477289
#1	2.397178	23.93248	2.433195	1.250300	23.60174	2.474645	2.517563
#2	2.380667	23.75649	2.429963	1.249748	23.85318	2.454879	2.507718
#3	2.370161	23.78031	2.432287	1.250205	23.93003	2.453248	2.519255
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	25.01605	4.703926	5.060931	4.822431	4.862344	5.152760	4.623886
Stddev	.24828	.062604	.008490	.012141	.024646	.067816	.005770
%RSD	.9924974	1.330880	.1677609	.2517579	.5068676	1.316102	.1247822
#1	24.78744	4.775714	5.051870	4.822921	4.890374	5.079557	4.628521
#2	24.98053	4.675387	5.062220	4.810052	4.852593	5.165282	4.625713
#3	25.28018	4.660678	5.068704	4.834319	4.844067	5.213442	4.617424

Sample Name: CCV05 Acquired: 8/13/2025 16:14:50 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV05 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.723238	4.553126	4.856926
Stddev	.036432	.017246	.022126
%RSD	.7713261	.3787828	.4555532

#1	4.705899	4.573014	4.831990
#2	4.698714	4.544085	4.874209
#3	4.765100	4.542281	4.864580

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5506.087	98525.82	11696.80	4119.269	6709.778
Stddev	12.822	418.78	113.77	17.004	7.032
%RSD	.2328637	.4250489	.9726645	.4127957	.1048091

#1	5514.507	98911.53	11566.18	4125.836	6705.549
#2	5491.331	98585.54	11749.90	4132.010	6705.888
#3	5512.424	98080.38	11774.31	4099.961	6717.896

Sample Name: CCB05 Acquired: 8/13/2025 16:19:00 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.0018468	-.000638	-.000707	.0013979	-.001684	-.012440	-.010541
Stddev	.0015917	.000768	.000424	.0001202	.001345	.010019	.001202
%RSD	86.18538	120.3210	60.04589	8.596568	79.89197	80.53817	11.40620

#1	.0028402	-.000613	-.001001	.0013324	-.003185	-.002493	-.010317
#2	.0000110	.000116	-.000900	.0015366	-.000589	-.012298	-.011839
#3	.0026892	-.001419	-.000220	.0013246	-.001276	-.022529	-.009466

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000041	-.000169	-.017867	-.000098	-.000078	-.000062	-.008156
Stddev	.000045	.000049	.001508	.000061	.000142	.000070	.005202
%RSD	109.8832	29.05314	8.440845	62.08776	182.6525	114.0563	63.78417

#1	.000008	-.000148	-.019258	-.000137	-.000054	.000010	-.006437
#2	-.000050	-.000226	-.016264	-.000028	.000051	-.000130	-.014001
#3	-.000081	-.000134	-.018078	-.000130	-.000231	-.000064	-.004031

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000111	-.009397	-.000044	.0007661	.2681295	.0011412	-.000066
Stddev	.000342	.006801	.000158	.0004394	.0134366	.0021803	.000185
%RSD	306.5115	72.37306	360.6661	57.34955	5.011242	191.0505	280.6693

#1	-.000226	-.007377	.000092	.0010490	.2526475	.0035233	-.000274
#2	-.000381	-.016978	-.000006	.0002600	.2767491	-.000756	.000081
#3	.000273	-.003835	-.000218	.0009895	.2749921	.000656	-.000004

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2972330	.0029028	-.000014	-.000220	-.001009	.0044840	.0013016
Stddev	.0116232	.0002418	.000120	.000148	.000543	.0060030	.0018185
%RSD	3.910477	8.329453	838.8570	67.32381	53.83823	133.8770	139.7177

#1	.3022219	.0028757	-.000070	-.000066	-.001614	.0007944	-.000588
#2	.3055290	.0031570	-.000097	-.000232	-.000846	.0012468	.003040
#3	.2839482	.0026757	.000124	-.000361	-.000566	.0114107	.001453

Sample Name: CCB05 Acquired: 8/13/2025 16:19:00 Type: Unk
Method: 6010-200.7 NEW(v96) 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	-.000600	-.001000	-.000350
Stddev	.002094	.001362	.000037
%RSD	348.7752	136.2270	10.47710

#1	-.000861	-.000598	-.000368
#2	-.002551	-.002518	-.000308
#3	.001612	.000116	-.000374

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5705.191	103393.4	11833.18	4257.600	7542.594
Stddev	14.305	88.3	45.83	16.592	11.941
%RSD	.2507329	.0854283	.3873068	.3897100	.1583103

#1	5693.370	103425.1	11854.02	4276.758	7528.867
#2	5721.093	103461.6	11864.89	4248.266	7550.580
#3	5701.109	103293.6	11780.63	4247.778	7548.335

Sample Name: Q2820-09 Acquired: 8/13/2025 16:23:20 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.0628705	-.009917	.1052736	.0077410	-.006199	60.98124
Stddev	.0008748	.002270	.0006586	.0014554	.001212	.03229
%RSD	1.391410	22.89401	.6256464	18.80153	19.55075	.0529510
#1	.0618642	-.007415	.1047135	.0073226	-.006028	60.95144
#2	.0632984	-.010490	.1051081	.0065407	-.007488	60.97674
#3	.0634491	-.011846	.1059992	.0093598	-.005082	61.01555
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1100026	.0043867	.0070576	15.45684	.1446314	.1166744
Stddev	.0006241	.0000752	.0000989	.01080	.0003502	.0001801
%RSD	.5673837	1.714887	1.401612	.0698713	.2421118	.1543278
#1	.1099426	.0044113	.0070394	15.44923	.1443557	.1168752
#2	.1106546	.0044466	.0069690	15.46920	.1445131	.1165273
#3	.1094106	.0043023	.0071643	15.45210	.1450254	.1166207
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0817355	130.2292	.5729521	18.77518	.1260416	.0055557
Stddev	.0004656	.3942	.0015895	.09825	.0003654	.0002949
%RSD	.5696111	.3026802	.2774261	.5233017	.2898635	5.307317
#1	.0822722	129.7986	.5730785	18.88859	.1257706	.0052629
#2	.0814931	130.5723	.5744746	18.72105	.1258972	.0058526
#3	.0814411	130.3167	.5713031	18.71590	.1264571	.0055516
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	19.31055	.2094757	.3121155	9.048743	.1010540	.0430849
Stddev	.07520	.0015439	.0002323	.066356	.0017664	.0002029
%RSD	.3894310	.7370112	.0744417	.7333216	1.748016	.4709123
#1	19.23442	.2111753	.3119546	8.972497	.0996678	.0428907
#2	19.38478	.2081601	.3123819	9.080306	.1004512	.0432955
#3	19.31243	.2090916	.3120101	9.093428	.1030429	.0430685

Sample Name: Q2820-09 Acquired: 8/13/2025 16:23:20 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.0086497	2.066037	3.121620	2.959936	F 121.2632	.1111684
Stddev	.0005792	.005517	.027765	.014832	.7538	.0006940
%RSD	6.696455	.2670513	.8894402	.5011064	.6215947	.6242998

#1	.0092032	2.060306	3.095266	2.968400	120.7538	.1108597
#2	.0086981	2.066493	3.150608	2.942809	120.9068	.1106823
#3	.0080478	2.071312	3.118987	2.968598	122.1291	.1119632

Elem	Sr4077
Units	ppm
Avg	.0633939
Stddev	.0004224
%RSD	.6663265

#1	.0637370
#2	.0635225
#3	.0629221

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6047.697	110321.6	13630.82	4600.120	6873.599
Stddev	3.427	159.2	38.95	5.532	10.172
%RSD	.0566610	.1443344	.2857165	.1202650	.1479880

#1	6045.536	110488.3	13590.50	4593.965	6871.080
#2	6051.648	110171.0	13633.71	4601.718	6884.795
#3	6045.908	110305.4	13668.23	4604.678	6864.924

Sample Name: Q2820-10 Acquired: 8/13/2025 16:27:25 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.0458854	-.001297	.0732546	.0058382	-.003323	44.20861
Stddev	.0004193	.000821	.0011578	.0006372	.000980	.09014
%RSD	.9138928	63.34230	1.580467	10.91365	29.49138	.2038912
#1	.0460564	-.001392	.0720997	.0065457	-.004454	44.28220
#2	.0461923	-.002066	.0744152	.0053094	-.002783	44.10807
#3	.0454076	-.000432	.0732490	.0056596	-.002731	44.23556
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0990888	.0026826	.0027625	16.98924	.1498167	.0208848
Stddev	.0003903	.0000304	.0001032	.03780	.0007894	.0001538
%RSD	.3938335	1.132673	3.735938	.2225148	.5269224	.7365924
#1	.0990539	.0027066	.0028136	17.00282	.1506849	.0209178
#2	.0987172	.0026484	.0026438	16.94652	.1496231	.0207171
#3	.0994954	.0026928	.0028303	17.01837	.1491421	.0210194
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0426454	74.09354	.2983274	17.38385	.0503060	.0033076
Stddev	.0006275	.25583	.0003033	.04322	.0001572	.0003918
%RSD	1.471417	.3452821	.1016784	.2486388	.3124705	11.84599
#1	.0432976	73.79909	.2979971	17.43194	.0504705	.0028800
#2	.0420459	74.22011	.2983918	17.37140	.0502901	.0036495
#3	.0425927	74.26141	.2985934	17.34823	.0501573	.0033932
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	25.64488	.2306219	.1164593	11.15268	.1006994	.0401229
Stddev	.11666	.0006904	.0006704	.05336	.0006070	.0001028
%RSD	.4548895	.2993487	.5756505	.4784834	.6028037	.2560815
#1	25.51109	.2301783	.1166251	11.09197	.1002404	.0401720
#2	25.72532	.2302702	.1157216	11.17389	.1013877	.0400049
#3	25.69824	.2314173	.1170313	11.19218	.1004701	.0401919

Sample Name: Q2820-10 Acquired: 8/13/2025 16:27:25 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.0070478	1.855688	2.851007	1.853259	F 75.00901	.0738318
Stddev	.0008563	.004979	.005048	.002335	.09756	.0002360
%RSD	12.14977	.2683070	.1770541	.1259909	.1300627	.3195877
#1	.0062038	1.852929	2.852895	1.853712	75.11712	.0735634
#2	.0079159	1.852699	2.854839	1.850730	74.98237	.0740064
#3	.0070238	1.861435	2.845288	1.855334	74.92754	.0739256

Elem	Sr4077
Units	ppm
Avg	.1434227
Stddev	.0004725
%RSD	.3294259
#1	.1432447
#2	.1430651
#3	.1439583

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5926.693	108055.4	13441.02	4452.094	6965.546
Stddev	6.802	181.1	63.71	11.458	7.792
%RSD	.1147610	.1675556	.4739774	.2573534	.1118586
#1	5923.217	107848.2	13377.08	4438.903	6956.670
#2	5934.531	108134.4	13504.50	4459.574	6968.708
#3	5922.333	108183.5	13441.48	4457.804	6971.259

Sample Name: Q2820-24 Acquired: 8/13/2025 16:31:32 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.0100422	-.003091	.0242821	.0002366	-.001959	11.00623	.0339094
Stddev	.0006359	.001479	.0006591	.0009710	.001611	.00729	.0002141
%RSD	6.331958	47.84728	2.714395	410.4521	82.23863	.0662197	.6313969
#1	.0094449	-.001455	.0238627	.0001629	-.000918	10.99782	.0337945
#2	.0107106	-.003485	.0250418	.0012423	-.003814	11.01021	.0341564
#3	.0099711	-.004334	.0239418	-.000695	-.001144	11.01066	.0337772
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0014067	.0015051	1.143664	.0491919	.0071257	.0510101	22.25977
Stddev	.0000339	.0000927	.016326	.0001065	.0001757	.0000684	.06609
%RSD	2.412529	6.161059	1.427526	.2165382	2.466422	.1340307	.2968958
#1	.0013740	.0015654	1.148425	.0493053	.0069298	.0509444	22.30463
#2	.0014417	.0013983	1.157080	.0490939	.0071780	.0510809	22.18388
#3	.0014044	.0015517	1.125487	.0491767	.0072694	.0510051	22.29080
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1152239	2.958108	.0225097	.0012271	.5835596	.0246447	.1482109
Stddev	.0004100	.015245	.0000794	.0005636	.0088615	.0009757	.0009343
%RSD	.3557887	.5153688	.3528426	45.93433	1.518521	3.959066	.6304049
#1	.1154795	2.956077	.0224388	.0014293	.5925514	.0253167	.1471604
#2	.1154411	2.943980	.0225955	.0016618	.5832931	.0250917	.1489491
#3	.1147510	2.974267	.0224949	.0005902	.5748344	.0235256	.1485231
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.383879	.0005063	.0016523	.0053822	.4520159	1.285582	.6670487
Stddev	.044094	.0003015	.0001295	.0001942	.0031559	.009770	.0033619
%RSD	3.186293	59.55271	7.837949	3.608977	.6981948	.7599497	.5039916
#1	1.434617	.0006134	.0015275	.0054269	.4483829	1.280766	.6697656
#2	1.362192	.0007397	.0017860	.0055502	.4540801	1.279154	.6632890
#3	1.354829	.0001659	.0016433	.0051695	.4535846	1.296824	.6680916

Sample Name: Q2820-24 Acquired: 8/13/2025 16:31:32 Type: Unk
Method: 6010-200.7 NEW(v96) 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	5.765592	.0176684	-.009014
Stddev	.018823	.0004329	.000072
%RSD	.3264769	2.450278	.7963738
#1	5.786035	.0180353	-.009094
#2	5.748977	.0177789	-.008955
#3	5.761763	.0171909	-.008993

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5815.306	105094.3	12312.37	4383.901	7552.557
Stddev	13.021	81.8	26.21	9.470	12.621
%RSD	.2239121	.0778669	.2128967	.2160136	.1671055
#1	5821.061	105076.5	12318.74	4392.736	7561.195
#2	5824.458	105183.6	12283.56	4373.904	7558.403
#3	5800.399	105022.9	12334.81	4385.063	7538.073

Sample Name: Q2826-01 Acquired: 8/13/2025 16:35:45 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.1395862	-.025763	2.398305	.0125785	.0065415	128.8316	1.566728
Stddev	.0013217	.001038	.001958	.0025831	.0020755	.1042	.006777
%RSD	.9468532	4.030769	.0816551	20.53567	31.72774	.0808437	.4325325
#1	.1388828	-.024771	2.396997	.0122183	.0041538	128.7202	1.560332
#2	.1387650	-.026843	2.397360	.0101944	.0075569	128.8481	1.573830
#3	.1411108	-.025676	2.400556	.0153227	.0079137	128.9265	1.566022
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0092384	.0403645	369.4236	2.532358	.1223023	3.432179	280.8822
Stddev	.0000987	.0000262	.9183	.005853	.0003617	.002533	.4802
%RSD	1.068560	.0648431	.2485788	.2311251	.2957257	.0738115	.1709635
#1	.0091935	.0403940	370.0573	2.531227	.1219632	3.433751	280.3289
#2	.0091702	.0403439	369.8429	2.527153	.1226830	3.429256	281.1271
#3	.0093516	.0403558	368.3705	2.538693	.1222607	3.433529	281.1905
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.039300	96.94582	6.744927	.0125275	6.570137	.3384918	3.255711
Stddev	.026798	.26020	.003762	.0001446	.023254	.0022527	.000994
%RSD	.3806913	.2684012	.0557809	1.154358	.3539342	.6655139	.0305178
#1	7.011408	96.82999	6.741070	.0126914	6.544278	.3370258	3.255552
#2	7.064851	96.76365	6.748587	.0124730	6.589330	.3373638	3.254806
#3	7.041641	97.24383	6.745122	.0124180	6.576801	.3410856	3.256774
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	22.19676	.2881801	.0084255	.3160914	2.769079	7.537017	6.946138
Stddev	.04321	.0030465	.0001559	.0006798	.010314	.054433	.011706
%RSD	.1946549	1.057164	1.850810	.2150654	.3724642	.7222077	.1685291
#1	22.15471	.2861832	.0082486	.3155884	2.757269	7.516157	6.942225
#2	22.24104	.2916867	.0085428	.3158209	2.776314	7.496099	6.959300
#3	22.19453	.2866705	.0084853	.3168648	2.773652	7.598795	6.936890

Sample Name: Q2826-01 Acquired: 8/13/2025 16:35:45 Type: Unk
Method: 6010-200.7 NEW(v96) 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	15.62017	.2315961	.8013124
Stddev	.01530	.0004101	.0043260
%RSD	.0979717	.1770736	.5398634

#1	15.61340	.2311558	.7972390
#2	15.60942	.2319672	.8058531
#3	15.63769	.2316653	.8008452

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5706.696	104008.1	13626.67	4304.267	5804.035
Stddev	8.034	139.7	7.30	10.523	3.066
%RSD	.1407891	.1342996	.0535347	.2444747	.0528283

#1	5699.817	103890.5	13627.18	4292.283	5801.266
#2	5715.526	104162.5	13633.70	4311.997	5807.330
#3	5704.743	103971.3	13619.13	4308.521	5803.508

Sample Name: Q2827-01 Acquired: 8/13/2025 16:39:54 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.1483785	-.074518	70.05285	.0051202	.0227446	73.14248
Stddev	.0024244	.002086	.15429	.0029995	.0012414	.11638
%RSD	1.633961	2.798813	.2202465	58.58230	5.458095	.1591145

#1	.1510508	-.075387	70.11788	.0019906	.0237707	73.22952
#2	.1477646	-.076029	69.87669	.0053999	.0230983	73.18764
#3	.1463200	-.072139	70.16398	.0079701	.0213647	73.01029

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.019622	.0077333	.0335457	206.2075	2.806505	.1333898
Stddev	.087332	.0000428	.0002606	.3819	.004113	.0005159
%RSD	1.244118	.5537602	.7767909	.1851800	.1465360	.3867898

#1	7.063897	.0077015	.0335720	206.2542	2.807204	.1337388
#2	7.075949	.0077820	.0332729	206.5638	2.802088	.1327972
#3	6.919020	.0077164	.0337921	205.8044	2.810223	.1336335

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.695565	485.6378	3.347125	26.43496	.5569049	.0737720
Stddev	.002136	.9572	.013068	.01988	.0011532	.0003967
%RSD	.1259870	.1970914	.3904120	.0751850	.2070772	.5377141

#1	1.693762	486.5389	3.338999	26.43087	.5568312	.0741636
#2	1.697924	485.7416	3.362198	26.45656	.5557903	.0737818
#3	1.695008	484.6330	3.340177	26.41744	.5580932	.0733705

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	22.91282	.5266232	10.17829	7.509590	^ *****	.2211758
Stddev	.11791	.0029539	.05684	.041509	-----	.0001737
%RSD	.5146216	.5609228	.5584790	.5527472	-----	.0785169

#1	22.84096	.5245638	10.11667	7.490038	^ -----	.2209858
#2	23.04890	.5300077	10.18951	7.557264	^ -----	.2212153
#3	22.84859	.5252981	10.22868	7.481468	^ -----	.2213263

Sample Name: Q2827-01 Acquired: 8/13/2025 16:39:54 Type: Unk
Method: 6010-200.7 NEW(v96) 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	1.752780	1.483108	3.499438	11.47636	F 90.96765	.0630121
Stddev	.006148	.004796	.010824	.03346	.44028	.0007146
%RSD	.3507803	.3233535	.3093095	.2915863	.4839953	1.134003
#1	1.756280	1.478163	3.511893	11.50771	91.19106	.0632498
#2	1.745681	1.487739	3.494113	11.44112	90.46045	.0635774
#3	1.756380	1.483422	3.492307	11.48025	91.25143	.0622089
Elem	Sr4077					
Units	ppm					
Avg	.4316986					
Stddev	.0029183					
%RSD	.6759958					
#1	.4297735					
#2	.4350563					
#3	.4302661					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	5336.988	98666.08	12923.86	4046.074	6115.859	
Stddev	11.976	6.33	11.74	13.005	16.515	
%RSD	.2243917	.0064155	.0908273	.3214215	.2700336	
#1	5349.960	98663.96	12910.89	4061.006	6120.348	
#2	5334.652	98673.20	12926.95	4037.222	6129.665	
#3	5326.353	98661.08	12933.75	4039.996	6097.563	

Sample Name: Q2827-05 Acquired: 8/13/2025 16:44:11 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.1044894	-.022758	8.629621	-.005811	.0215296	93.47949
Stddev	.0021559	.001633	.007328	.003909	.0015632	.02872
%RSD	2.063292	7.176200	.0849176	67.26907	7.260596	.0307256
#1	.1021916	-.023672	8.638079	-.008367	.0197732	93.45464
#2	.1048089	-.023730	8.625195	-.001311	.0227682	93.47289
#3	.1064678	-.020872	8.625588	-.007754	.0220474	93.51094
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.833491	.0088923	.0331300	414.0308	.2967711	.1204523
Stddev	.011486	.0001465	.0001906	3.3338	.0044883	.0003603
%RSD	.2996258	1.647250	.5754391	.8052033	1.512380	.2991599
#1	3.822894	.0088246	.0331239	416.7793	.2991695	.1205668
#2	3.831881	.0090604	.0329425	410.3224	.2995506	.1200486
#3	3.845696	.0087920	.0333236	414.9908	.2915931	.1207415
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.168222	295.5230	4.508764	62.94097	.5112842	.0219489
Stddev	.001116	3.4002	.008909	.00810	.0012810	.0002974
%RSD	.0954979	1.150585	.1975916	.0128678	.2505479	1.354777
#1	1.168335	297.3536	4.510427	62.93166	.5114810	.0222285
#2	1.167053	297.6158	4.499141	62.94640	.5099162	.0216365
#3	1.169276	291.5997	4.516724	62.94485	.5124555	.0219818
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	19.65561	.3852155	4.072211	30.64986	.2677562	.0091125
Stddev	.18589	.0012060	.058918	.27890	.0073364	.0001311
%RSD	.9457486	.3130666	1.446835	.9099443	2.739948	1.438322
#1	19.72236	.3841671	4.121845	30.79223	.2699303	.0091275
#2	19.79891	.3849458	4.087688	30.82883	.2737598	.0089746
#3	19.44556	.3865334	4.007099	30.32851	.2595785	.0092355

Sample Name: Q2827-05 Acquired: 8/13/2025 16:44:11 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.2312864	6.011005	4.225126	6.646962	F 78.00988	.1138177
Stddev	.0011711	.015091	.074054	.004547	.21543	.0011660
%RSD	.5063224	.2510607	1.752706	.0684006	.2761556	1.024435

#1	.2299414	5.998876	4.259280	6.651283	78.25803	.1130308
#2	.2320800	6.006235	4.275939	6.647385	77.90083	.1132651
#3	.2318378	6.027906	4.140158	6.642219	77.87077	.1151573

Elem	Sr4077
Units	ppm
Avg	1.741626
Stddev	.029660
%RSD	1.703006

#1	1.732582
#2	1.717540
#3	1.774755

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5582.559	102636.8	13253.48	4268.724	5788.391
Stddev	7.768	1201.0	18.65	45.783	5.664
%RSD	.1391463	1.170112	.1407516	1.072521	.0978507

#1	5590.907	102057.7	13271.64	4230.568	5794.514
#2	5575.543	101835.2	13254.43	4256.112	5787.320
#3	5581.228	104017.6	13234.37	4319.490	5783.339

Sample Name: Q2829-01 Acquired: 8/13/2025 16:48:29 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.0146157	.0127385	.0165349	.0055024	.0057026	55.68469	.0761651
Stddev	.0012553	.0018284	.0007517	.0025820	.0013963	.02899	.0002045
%RSD	8.588339	14.35333	4.546366	46.92525	24.48575	.0520578	.2684381

#1	.0133578	.0148452	.0164574	.0027669	.0059455	55.65340	.0763976
#2	.0158683	.0118054	.0158249	.0078971	.0042008	55.71062	.0760844
#3	.0146210	.0115650	.0173224	.0058430	.0069616	55.69005	.0760133

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0013009	.0010851	81.50139	.1776811	.0272492	.1724574	25.66638
Stddev	.0000699	.0000220	.11623	.0004306	.0000787	.0001102	.10759
%RSD	5.373722	2.026834	.1426071	.2423640	.2889551	.0638851	.4191708

#1	.0012394	.0011012	81.36718	.1773325	.0272602	.1725013	25.56025
#2	.0012863	.0010600	81.56877	.1775482	.0271656	.1725388	25.66353
#3	.0013769	.0010941	81.56822	.1781625	.0273219	.1723320	25.77537

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4952632	16.34188	.1046040	.0026768	4.287983	.1538768	.2256946
Stddev	.0024369	.03958	.0001021	.0001853	.030102	.0032141	.0007184
%RSD	.4920426	.2422069	.0975707	6.923747	.7020036	2.088722	.3182873

#1	.4926014	16.30231	.1045348	.0028507	4.257639	.1563915	.2264066
#2	.4958037	16.38148	.1047212	.0024818	4.288473	.1549831	.2249700
#3	.4973844	16.34185	.1045560	.0026979	4.317837	.1502557	.2257072

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5862546	.1866260	.0247643	.0163739	4.455656	5.020977	.2891648
Stddev	.0298464	.0004926	.0002656	.0002707	.012928	.020250	.0025540
%RSD	5.091032	.2639336	1.072437	1.653148	.2901502	.4032991	.8832270

#1	.5889382	.1861484	.0248499	.0160660	4.440747	5.029726	.2870665
#2	.5551570	.1871323	.0244665	.0165743	4.462461	4.997824	.2884194
#3	.6146686	.1865973	.0249766	.0164813	4.463760	5.035381	.2920086

Sample Name: Q2829-01 Acquired: 8/13/2025 16:48:29 Type: Unk
Method: 6010-200.7 NEW(v96) 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	1.108610	.0162724	.1966764
Stddev	.007751	.0001082	.0006815
%RSD	.6991807	.6645950	.3465180
#1	1.099706	.0161786	.1959911
#2	1.112272	.0163907	.1966841
#3	1.113851	.0162478	.1973541

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5611.318	100878.3	12124.14	4274.155	6695.629
Stddev	7.889	190.4	11.32	2.471	14.487
%RSD	.1405990	.1887140	.0933311	.0578234	.2163607
#1	5602.896	101025.5	12136.11	4271.928	6692.235
#2	5612.521	100946.2	12122.68	4276.814	6683.140
#3	5618.537	100663.3	12113.62	4273.723	6711.511

Sample Name: Q2832-09 Acquired: 8/13/2025 16:52:38 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.5068867	-.123210	11.62454	.0582227	.1547743	70.67201
Stddev	.0018936	.004310	.02015	.0037146	.0010104	.19003
%RSD	.3735730	3.498242	.1733766	6.380026	.6528439	.2688954
#1	.5083855	-.121075	11.63033	.0539487	.1536767	70.46385
#2	.5075160	-.120383	11.60213	.0606730	.1556657	70.83620
#3	.5047586	-.128171	11.64117	.0600465	.1549806	70.71599
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.635758	.0176286	.0365074	93.91628	.8634016	.1572956
Stddev	.006603	.0001553	.0003493	.01233	.0002484	.0008083
%RSD	.1424317	.8811444	.9568729	.0131321	.0287739	.5138664
#1	4.643357	.0174939	.0362677	93.91809	.8636221	.1581316
#2	4.631428	.0177985	.0369082	93.92762	.8631325	.1565182
#3	4.632488	.0175935	.0363463	93.90315	.8634502	.1572371
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.405984	753.9727	3.460085	22.03555	.5543822	.0253858
Stddev	.003754	3.9375	.006010	.02107	.0006017	.0016877
%RSD	.0852065	.5222312	.1736878	.0956221	.1085350	6.648293
#1	4.407393	753.4117	3.466763	22.01132	.5550317	.0250086
#2	4.408831	750.3458	3.455113	22.04956	.5538437	.0239186
#3	4.401730	758.1606	3.458378	22.04576	.5542712	.0272302
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.459966	.6084114	2.516628	10.23195	^ *****	.0391904
Stddev	.010184	.0016812	.003120	.01244	-----	.0003148
%RSD	.2943355	.2763205	.1239663	.1215563	-----	.8032400
#1	3.467697	.6066000	2.514874	10.24186	^ -----	.0389056
#2	3.448427	.6099217	2.514780	10.21800	^ -----	.0395284
#3	3.463773	.6087126	2.520230	10.23600	^ -----	.0391372

Sample Name: Q2832-09 Acquired: 8/13/2025 16:52:38 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.8749492	4.626747	F 23.56135	7.183246	16.32204	.1249249
Stddev	.0016167	.006269	.07363	.013380	.05022	.0011741
%RSD	.1847788	.1354896	.3124889	.1862660	.3077005	.9398070
#1	.8734651	4.630581	23.48792	7.182433	16.29213	.1245564
#2	.8747105	4.619512	23.56095	7.170291	16.29398	.1262390
#3	.8766720	4.630146	23.63517	7.197014	16.38003	.1239793

Elem	Sr4077
Units	ppm
Avg	.0758773
Stddev	.0043948
%RSD	5.791960
#1	.0781212
#2	.0786971
#3	.0708135

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5616.504	102408.8	12765.54	4234.089	6008.079
Stddev	3.720	102.0	34.41	14.181	10.395
%RSD	.0662392	.0996101	.2695882	.3349180	.1730158
#1	5612.211	102291.0	12752.64	4223.042	5999.857
#2	5618.779	102470.6	12739.43	4250.080	6019.763
#3	5618.522	102464.7	12804.54	4229.146	6004.617

Sample Name: Q2832-09DUP Acquired: 8/13/2025 16:56:47 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.5170091	-.128514	11.75216	.0551547	.1570451	69.87703
Stddev	.0036280	.003279	.00789	.0018148	.0007550	.36954
%RSD	.7017233	2.551845	.0671467	3.290404	.4807302	.5288456

#1	.5166836	-.132221	11.74346	.0531075	.1567746	70.30331
#2	.5135548	-.125991	11.75885	.0557905	.1564626	69.64723
#3	.5207888	-.127331	11.75416	.0565660	.1578980	69.68056

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.643892	.0177295	.0387108	93.37976	.8672155	.1568746
Stddev	.021892	.0001613	.0006854	.44004	.0011664	.0004926
%RSD	.4714078	.9099266	1.770540	.4712416	.1345000	.3140031

#1	4.668391	.0178801	.0394854	93.88787	.8673944	.1564528
#2	4.626247	.0175593	.0381828	93.12365	.8659700	.1567549
#3	4.637039	.0177493	.0384644	93.12775	.8682821	.1574159

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.474758	749.9925	3.421493	21.66305	.5564017	.0232006
Stddev	.010289	1.1504	.013257	.14470	.0004962	.0008693
%RSD	.2299280	.1533893	.3874495	.6679395	.0891768	3.746688

#1	4.469558	749.7730	3.436386	21.82569	.5563485	.0223222
#2	4.468107	751.2368	3.410981	21.54859	.5559342	.0240604
#3	4.486609	748.9676	3.417114	21.61487	.5569223	.0232192

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.266850	.6103996	2.497082	10.05460	^ *****	.0407402
Stddev	.011192	.0047355	.001938	.04054	-----	.0002222
%RSD	.3426017	.7757958	.0775925	.4032215	-----	.5453071

#1	3.267642	.6150097	2.498009	10.08697	^ -----	.0408028
#2	3.255282	.6055480	2.494855	10.00913	^ -----	.0409243
#3	3.277625	.6106411	2.498381	10.06771	^ -----	.0404934

Sample Name: Q2832-09DUP Acquired: 8/13/2025 16:56:47 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.8943350	4.565187	F 24.17116	7.043078	16.59765	.1246956
Stddev	.0018740	.024225	.10345	.005152	.02265	.0013964
%RSD	.2095384	.5306367	.4279741	.0731565	.1364949	1.119867

#1	.8923032	4.592525	24.25834	7.039131	16.59435	.1231022
#2	.8947062	4.546389	24.05685	7.041196	16.57683	.1257065
#3	.8959956	4.556648	24.19828	7.048907	16.62178	.1252780

Elem	Sr4077
Units	ppm
Avg	.0765440
Stddev	.0045816
%RSD	5.985578

#1	.0813431
#2	.0722163
#3	.0760725

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5605.268	102739.1	12684.22	4233.567	6008.971
Stddev	10.837	48.5	5.99	5.389	6.048
%RSD	.1933422	.0471929	.0472436	.1272853	.1006416

#1	5599.313	102716.4	12678.80	4228.018	6004.667
#2	5617.777	102706.0	12690.66	4238.779	6015.886
#3	5598.714	102794.7	12683.20	4233.903	6006.362

Sample Name: Q2832-09LX5 Acquired: 8/13/2025 17:00:55 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.1114476	-.027335	2.440055	.0130022	.0319116	15.68400	1.009649
Stddev	.0029274	.000841	.006831	.0009162	.0015833	.05311	.003096
%RSD	2.626740	3.077920	.2799695	7.046108	4.961421	.3386032	.3066798

#1	.1117946	-.027687	2.447355	.0119811	.0327431	15.65265	1.006260
#2	.1141861	-.026375	2.438994	.0132732	.0329059	15.65402	1.010358
#3	.1083622	-.027943	2.433816	.0137521	.0300858	15.74531	1.012330

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0042110	.0057110	21.52531	.1978020	.0310388	1.034941	169.5526
Stddev	.0000838	.0001279	.08996	.0003938	.0001228	.003069	1.4147
%RSD	1.989236	2.240219	.4179242	.1990693	.3954568	.2965717	.8343679

#1	.0042357	.0055658	21.44552	.1977702	.0310677	1.037541	170.4346
#2	.0041176	.0057603	21.50761	.1982106	.0311445	1.035727	170.3022
#3	.0042796	.0058070	21.62281	.1974250	.0309042	1.031555	167.9208

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7964026	5.018822	.1126685	.0063075	.8139610	.1380775	.5571640
Stddev	.0036154	.041165	.0008010	.0005217	.0155468	.0023672	.0048166
%RSD	.4539661	.8202128	.7109300	8.270391	1.910022	1.714368	.8644841

#1	.7939115	4.976818	.1135876	.0057634	.8082590	.1356848	.5608768
#2	.7947469	5.020554	.1121195	.0068034	.8315537	.1381293	.5588939
#3	.8005493	5.059094	.1122983	.0063558	.8020702	.1404183	.5517214

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.306839	.0302560	.0085856	.1817699	1.038072	5.092558	1.396058
Stddev	.049691	.0074943	.0001600	.0009990	.003361	.053783	.001985
%RSD	2.154087	24.76964	1.863019	.5495862	.3238156	1.056115	.1422033

#1	2.270306	.0366018	.0087703	.1808512	1.035580	5.139319	1.393859
#2	2.363423	.0321784	.0084935	.1828334	1.036741	5.104572	1.397720
#3	2.286788	.0219877	.0084930	.1816251	1.041895	5.033784	1.396594

Sample Name: Q2832-09LX5 Acquired: 8/13/2025 17:00:55 Type: Unk
Method: 6010-200.7 NEW(v96) 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	3.269684	.0261822	.0125809
Stddev	.000464	.0002129	.0017660
%RSD	.0141975	.8132413	14.03697

#1	3.269280	.0264212	.0117673
#2	3.270191	.0260128	.0113683
#3	3.269581	.0261126	.0146070

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5684.676	102977.7	11933.45	4309.641	6969.526
Stddev	8.228	781.0	73.80	39.468	12.280
%RSD	.1447329	.7584010	.6184355	.9158176	.1761996

#1	5680.160	102495.0	11989.20	4270.941	6960.451
#2	5679.694	102559.3	11961.40	4308.146	6964.629
#3	5694.172	103878.7	11849.76	4349.836	6983.500

Sample Name: CCV06 Acquired: 8/13/2025 17:05:00 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV06 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.042629	5.384016	4.847802	5.154760	5.108953	9.693028	9.807771
Stddev	.009903	.165242	.005493	.024028	.023208	.018718	.106625
%RSD	.1963763	3.069125	.1133074	.4661249	.4542676	.1931088	1.087153

#1	5.033789	5.211400	4.847917	5.130167	5.095204	9.672500	9.898930
#2	5.040768	5.399913	4.842252	5.155935	5.095906	9.697434	9.690522
#3	5.053330	5.540736	4.853236	5.178179	5.135748	9.709150	9.833861

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2383448	2.423771	24.14399	.9884967	2.431373	1.246068	5.073739
Stddev	.0004951	.002177	.07436	.0013958	.000418	.001468	.012611
%RSD	.2077171	.0898264	.3079790	.1412014	.0171762	.1177902	.2485569

#1	.2377735	2.424343	24.05915	.9890562	2.430893	1.246819	5.078277
#2	.2386125	2.425604	24.19784	.9869079	2.431652	1.244377	5.083452
#3	.2386485	2.421364	24.17499	.9895259	2.431574	1.247009	5.059486

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.399823	23.99836	2.442756	1.255255	23.30557	2.463389	2.518384
Stddev	.012198	.09311	.000861	.001595	.07036	.006836	.003316
%RSD	.5082716	.3879913	.0352654	.1270445	.3018964	.2775143	.1316689

#1	2.392336	23.93731	2.442593	1.256196	23.36529	2.457657	2.515876
#2	2.413898	24.10553	2.443688	1.253414	23.32340	2.470955	2.522144
#3	2.393235	23.95225	2.441988	1.256155	23.22801	2.461554	2.517133

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	24.75928	4.793299	5.103397	4.897045	4.861095	5.150910	4.658086
Stddev	.02302	.019725	.013266	.013081	.016477	.009585	.007983
%RSD	.0929938	.4115131	.2599417	.2671207	.3389532	.1860930	.1713830

#1	24.75838	4.772592	5.091379	4.881940	4.847622	5.158183	4.654073
#2	24.78274	4.795438	5.101181	4.904642	4.879465	5.140048	4.652906
#3	24.73671	4.811868	5.117632	4.904552	4.856197	5.154500	4.667280

Sample Name: CCV06 Acquired: 8/13/2025 17:05:00 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV06 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.860561	4.517107	4.895347
Stddev	.015662	.012428	.025120
%RSD	.3222213	.2751224	.5131321

#1	4.842927	4.503038	4.903653
#2	4.872854	4.526589	4.867126
#3	4.865901	4.521693	4.915260

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5538.876	98999.53	11604.15	4150.276	6719.929
Stddev	9.399	118.63	36.93	10.899	6.276
%RSD	.1697001	.1198249	.3182613	.2626190	.0933876

#1	5539.659	98959.38	11644.58	4144.536	6721.042
#2	5547.860	98906.18	11572.19	4143.445	6725.573
#3	5529.110	99133.02	11595.68	4162.846	6713.171

Sample Name: CCB06 Acquired: 8/13/2025 17:09:12 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.0012380	-.001320	-.000696	-.001443	-.001238	-.020077	-.010116
Stddev	.0007930	.002063	.000280	.001705	.002737	.005241	.001104
%RSD	64.05364	156.3131	40.18541	118.1670	221.0879	26.10447	10.91592
#1	.0021497	-.003419	-.000490	-.000281	-.001795	-.021868	-.009124
#2	.0007091	.000705	-.001014	-.003400	-.003654	-.024188	-.009918
#3	.0008551	-.001244	-.000583	-.000648	.001735	-.014176	-.011306
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000043	-.000133	-.019127	.0001300	-.000183	.0007722	-.005072
Stddev	.0000301	.000018	.002838	.0001797	.000111	.0000879	.003047
%RSD	699.5130	13.53380	14.83772	138.1861	60.33841	11.38265	60.08081
#1	.0000119	-.000153	-.022371	.0000773	-.000196	.0007548	-.005315
#2	-.000029	-.000120	-.017105	.0003302	-.000067	.0006943	-.007991
#3	.000030	-.000125	-.017904	-.000017	-.000287	.0008675	-.001911
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000044	-.000266	.0004091	.0004794	.1379824	-.001081	-.000051
Stddev	.000432	.010715	.0002488	.0002574	.0116954	.001203	.000030
%RSD	975.4545	4030.787	60.81928	53.69104	8.476017	111.2646	58.50475
#1	-.000529	-.012628	.0001461	.0007473	.1369927	.000152	-.000020
#2	.000299	.005476	.0006408	.0004570	.1268133	-.002251	-.000080
#3	.000098	.006355	.0004405	.0002339	.1501412	-.001145	-.000052
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3089144	.0037515	-.000142	-.000066	-.000535	.0077620	.0026199
Stddev	.0070065	.0004349	.000137	.000137	.000499	.0085442	.0030560
%RSD	2.268107	11.59199	96.22786	207.4738	93.19977	110.0776	116.6448
#1	.3127437	.0042331	-.000128	-.000022	-.000821	.0174953	.0010956
#2	.3131718	.0033876	-.000013	-.000220	-.000825	.0042918	.0006258
#3	.3008278	.0036336	-.000286	.000043	.000041	.0014988	.0061382

Sample Name: CCB06 Acquired: 8/13/2025 17:09:12 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.0056333	-.001380	-.000339
Stddev	.0033433	.001669	.000074
%RSD	59.34913	120.8774	21.89610

#1	.0023516	-.000317	-.000254
#2	.0055134	-.000521	-.000389
#3	.0090349	-.003304	-.000375

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5737.472	103539.6	11562.50	4286.944	7564.012
Stddev	6.663	214.1	57.33	17.884	7.887
%RSD	.1161383	.2067639	.4958422	.4171671	.1042707

#1	5741.045	103333.1	11554.88	4272.072	7572.388
#2	5741.587	103525.1	11623.27	4281.971	7562.921
#3	5729.784	103760.5	11509.37	4306.787	7556.727

Sample Name: Q2832-09MS Acquired: 8/13/2025 17:13:32 Type: Unk
Method: 6010-200.7 NEW(v96) 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	1.309558	1.656942	10.79502	1.892510	.8399824	61.98874
Stddev	.009206	.007912	.08300	.012958	.0063985	.08700
%RSD	.7030122	.4775208	.7688886	.6847247	.7617442	.1403428
#1	1.314431	1.655136	10.82684	1.890284	.8422627	61.90232
#2	1.315303	1.665601	10.85740	1.906437	.8449285	62.07630
#3	1.298939	1.650089	10.70081	1.880808	.8327561	61.98761
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.564405	.1844582	.2323631	72.00912	.9885516	.3387792
Stddev	.001956	.0003108	.0028258	.07622	.0032993	.0023966
%RSD	.0428640	.1685178	1.216109	.1058510	.3337553	.7074331
#1	4.562912	.1845214	.2335644	71.93269	.9847432	.3403132
#2	4.566620	.1847326	.2343898	72.08514	.9905453	.3400069
#3	4.563682	.1841206	.2291352	72.00954	.9903662	.3360175
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.960816	811.3024	3.482315	19.78485	.9894247	.1042820
Stddev	.036872	6.9841	.007853	.12924	.0063946	.0040601
%RSD	.7432609	.8608495	.2255197	.6532181	.6462959	3.893347
#1	4.979495	809.1432	3.473320	19.67675	.9940100	.1025386
#2	4.984610	805.6530	3.487807	19.92800	.9921442	.1013848
#3	4.918342	819.1112	3.485819	19.74981	.9821198	.1089226
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.759301	.7841703	2.363669	19.61342	^ *****	.4233106
Stddev	.033462	.0014063	.004636	.10988	-----	.0023500
%RSD	.5810167	.1793389	.1961529	.5602447	-----	.5551574
#1	5.735236	.7828704	2.365478	19.48670	^ -----	.4250544
#2	5.745153	.7856631	2.358401	19.67128	^ -----	.4242393
#3	5.797513	.7839774	2.367128	19.68229	^ -----	.4206382

Sample Name: Q2832-09MS Acquired: 8/13/2025 17:13:32 Type: Unk
Method: 6010-200.7 NEW(v96) 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	1.689791	3.632354	F 25.90019	12.23448	16.93743	.3037707
Stddev	.013491	.008107	.07643	.07837	.12675	.0019426
%RSD	.7983776	.2231756	.2951040	.6405826	.7483320	.6394825
#1	1.698030	3.627734	25.81855	12.26476	17.01400	.3019185
#2	1.697120	3.641715	25.91197	12.29319	17.00715	.3036012
#3	1.674221	3.627614	25.97005	12.14549	16.79112	.3057925

Elem	Sr4077
Units	ppm
Avg	.0558917
Stddev	.0073372
%RSD	13.12753
#1	.0579323
#2	.0619927
#3	.0477503

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5498.562	100468.3	12559.47	4098.853	6001.027
Stddev	28.649	297.2	19.91	4.672	42.164
%RSD	.5210309	.2958354	.1584946	.1139868	.7026181
#1	5478.306	100809.8	12575.88	4102.800	5971.109
#2	5486.039	100326.5	12537.32	4100.064	5982.721
#3	5531.341	100268.4	12565.20	4093.694	6049.250

Sample Name: Q2832-09MSD Acquired: 8/13/2025 17:17:35 Type: Unk
Method: 6010-200.7 NEW(v96) 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	1.294557	1.615152	10.98460	1.887040	.8324383	62.18777
Stddev	.003662	.055660	.01741	.008558	.0031502	.65500
%RSD	.2828688	3.446112	.1584887	.4535308	.3784326	1.053260
#1	1.292277	1.615802	10.98301	1.884110	.8358301	61.43783
#2	1.292612	1.559170	10.96804	1.880332	.8318807	62.47782
#3	1.298781	1.670484	11.00275	1.896679	.8296041	62.64767
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.382495	.1836054	.2323633	73.99576	1.136670	.3527649
Stddev	.049395	.0015159	.0008976	.78465	.002919	.0003648
%RSD	1.127087	.8256081	.3862691	1.060404	.2568189	.1034222
#1	4.326861	.1826156	.2313685	73.14703	1.133320	.3531475
#2	4.399426	.1828501	.2326089	74.14547	1.138024	.3524209
#3	4.421197	.1853505	.2331124	74.69477	1.138667	.3527262
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.873529	744.0530	4.656637	22.28705	1.041241	.0983552
Stddev	.008628	9.4675	.053335	.25818	.000752	.0037941
%RSD	.1770476	1.272417	1.145349	1.158409	.0722151	3.857538
#1	4.867737	754.8364	4.597304	22.02182	1.040757	.1025373
#2	4.869404	737.1051	4.672012	22.30180	1.040859	.0951339
#3	4.883446	740.2176	4.700596	22.53753	1.042107	.0973944
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.546545	.8733662	2.310044	19.62445	^ *****	.4265446
Stddev	.029133	.0062565	.006141	.11273	-----	.0004053
%RSD	.5252375	.7163649	.2658232	.5744617	-----	.0950223
#1	5.513710	.8674169	2.303445	19.49667	^ -----	.4267091
#2	5.569295	.8727913	2.311097	19.70985	^ -----	.4260829
#3	5.556630	.8798902	2.315590	19.66683	^ -----	.4268417

Sample Name: Q2832-09MSD Acquired: 8/13/2025 17:17:35 Type: Unk
Method: 6010-200.7 NEW(v96) 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	1.510096	4.538217	F 22.69122	12.24197	16.15476	.2934906
Stddev	.003566	.050692	.12684	.03448	.05947	.0025572
%RSD	.2361131	1.117004	.5589766	.2816146	.3681109	.8713035
#1	1.511652	4.481235	22.55769	12.28141	16.12926	.2925118
#2	1.506017	4.555112	22.81009	12.22692	16.11229	.2915673
#3	1.512618	4.578304	22.70588	12.21758	16.22272	.2963926
Elem	Sr4077					
Units	ppm					
Avg	.1099942					
Stddev	.0179734					
%RSD	16.34028					
#1	.0892610					
#2	.1195603					
#3	.1211615					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	5494.737	100713.6	12586.10	4111.181	6004.036	
Stddev	2.161	333.3	121.41	24.717	3.159	
%RSD	.0393373	.3309117	.9646662	.6012175	.0526181	
#1	5492.968	101089.8	12699.15	4139.721	6005.216	
#2	5497.147	100455.1	12601.38	4097.088	6000.457	
#3	5494.097	100596.0	12457.77	4096.734	6006.435	

Sample Name: Q2832-09A Acquired: 8/13/2025 17:21:38 Type: Unk
Method: 6010-200.7 NEW(v96) 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	1.238164	1.757962	12.54815	1.843375	.7097440	70.67279
Stddev	.118726	.317580	.13202	.281859	.1250662	1.16967
%RSD	9.588897	18.06523	1.052071	15.29040	17.62131	1.655055

#1	1.118491	1.449250	12.41121	1.557728	.5848143	71.76194
#2	1.240081	1.740913	12.55861	1.851107	.7094713	69.43651
#3	1.355920	2.083722	12.67462	2.121288	.8349462	70.81992

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.632471	.1218876	.2327979	92.82427	1.098159	.3583926
Stddev	.066665	.0096261	.0301571	1.38635	.028184	.0319461
%RSD	1.439077	7.897515	12.95420	1.493522	2.566505	8.913711

#1	4.690819	.1136236	.2020795	94.20972	1.069746	.3255281
#2	4.559813	.1195821	.2339538	91.43701	1.098624	.3603164
#3	4.646781	.1324571	.2623604	92.82609	1.126109	.3893333

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.694833	746.9136	3.432164	22.21839	1.053565	.0661150
Stddev	.035250	7.0967	.046512	.35186	.076993	.0057721
%RSD	.7508231	.9501354	1.355184	1.583652	7.307897	8.730461

#1	4.662460	740.4359	3.471186	22.45421	.974046	.0594640
#2	4.689651	754.4990	3.380695	21.81395	1.058893	.0690655
#3	4.732387	745.8059	3.444612	22.38701	1.127756	.0698155

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.508976	.7152030	2.599404	14.58347	^ *****	.3215056
Stddev	.211732	.0245520	.014703	.75933	-----	.0643404
%RSD	4.695800	3.432875	.5656350	5.206809	-----	20.01223

#1	4.324269	.7103557	2.582565	13.95002	^ -----	.2568049
#2	4.462609	.6934362	2.605954	14.37518	^ -----	.3222323
#3	4.740049	.7418172	2.609695	15.42521	^ -----	.3854796

Sample Name: Q2832-09A Acquired: 8/13/2025 17:21:38 Type: Unk
Method: 6010-200.7 NEW(v96) 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	1.372272	4.601499	F 23.90945	12.51223	16.43532	.1980737
Stddev	.114286	.072106	.27155	.83359	.00747	.0151214
%RSD	8.328216	1.567008	1.135724	6.662195	.0454517	7.634209
#1	1.256868	4.672512	23.81763	11.65716	16.44369	.1887128
#2	1.374543	4.528348	23.69571	12.55698	16.42935	.1899894
#3	1.485406	4.603637	24.21500	13.32254	16.43291	.2155188

Elem	Sr4077
Units	ppm
Avg	.1424456
Stddev	.0235271
%RSD	16.51654
#1	.1497213
#2	.1161401
#3	.1614753

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5620.810	102601.2	12830.37	4220.805	6022.762
Stddev	9.533	496.0	197.68	27.935	11.370
%RSD	.1696006	.4834691	1.540690	.6618498	.1887791
#1	5631.690	103172.4	12630.07	4252.952	6032.775
#2	5613.923	102279.2	13025.31	4202.429	6010.402
#3	5616.817	102351.9	12835.72	4207.033	6025.110

Sample Name: Q2832-03 Acquired: 8/13/2025 17:25:41 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.1626718	-.044950	2.901331	.0113233	.0076799	107.0331
Stddev	.0009131	.002201	.002485	.0011094	.0011278	.1487
%RSD	.5613091	4.896287	.0856650	9.797345	14.68514	.1389337
#1	.1620674	-.043398	2.901952	.0107605	.0068426	106.9096
#2	.1622257	-.047469	2.898594	.0126013	.0089624	107.1982
#3	.1637222	-.043984	2.903447	.0106082	.0072348	106.9915
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.342180	.0100555	.0215490	91.33607	.3554494	.1640387
Stddev	.005733	.0001983	.0002829	.29556	.0009108	.0003430
%RSD	.4271696	1.971818	1.312865	.3235961	.2562466	.2090865
#1	1.336715	.0098752	.0214191	91.16521	.3546814	.1638278
#2	1.348149	.0102679	.0213544	91.67736	.3564557	.1638538
#3	1.341678	.0100234	.0218735	91.16565	.3552112	.1644344
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.415705	374.4046	4.642225	68.82118	.4306590	.0152839
Stddev	.002539	.5206	.025842	.17396	.0004056	.0002141
%RSD	.1793361	.1390431	.5566734	.2527693	.0941801	1.400689
#1	1.413366	374.1854	4.630379	68.71613	.4302017	.0151453
#2	1.415344	374.9990	4.671867	69.02198	.4307998	.0155305
#3	1.418405	374.0296	4.624430	68.72543	.4309754	.0151760
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.105826	.4579401	2.394720	16.90506	.1801404	.0186282
Stddev	.020034	.0040814	.006937	.02943	.0040195	.0002939
%RSD	.6450465	.8912558	.2896717	.1741122	2.231325	1.577554
#1	3.086806	.4605128	2.386730	16.90812	.1840332	.0186956
#2	3.126739	.4600734	2.398224	16.87422	.1760052	.0183065
#3	3.103933	.4532341	2.399207	16.93285	.1803828	.0188825

Sample Name: Q2832-03 Acquired: 8/13/2025 17:25:41 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.2469871	4.236024	F 19.24141	7.884509	6.686284	.2050392
Stddev	.0005437	.015620	.01179	.016669	.019307	.0018937
%RSD	.2201162	.3687427	.0612868	.2114176	.2887548	.9235750
#1	.2469709	4.223382	19.24755	7.867977	6.664633	.2037217
#2	.2464518	4.253486	19.22781	7.884235	6.701712	.2072093
#3	.2475387	4.231205	19.24887	7.901313	6.692506	.2041866
Elem	Sr4077					
Units	ppm					
Avg	.1316666					
Stddev	.0011971					
%RSD	.9091903					
#1	.1307562					
#2	.1330226					
#3	.1312210					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	5826.036	106127.5	13161.55	4380.642	6080.832	
Stddev	1.998	173.7	79.87	6.712	3.922	
%RSD	.0342880	.1636373	.6068242	.1532118	.0645058	
#1	5828.302	106249.0	13196.96	4387.789	6079.315	
#2	5824.531	105928.6	13070.10	4379.665	6077.894	
#3	5825.275	106204.9	13217.59	4374.473	6085.287	

Sample Name: Q2832-05 Acquired: 8/13/2025 17:29:44 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.2126858	-.057857	4.282957	.0139451	.0335319	121.3003
Stddev	.0019287	.001749	.013107	.0017553	.0031425	.3202
%RSD	.9068265	3.023507	.3060271	12.58732	9.371671	.2639832
#1	.2137682	-.058919	4.272536	.0159577	.0318303	120.9475
#2	.2104591	-.058813	4.278661	.0127306	.0316071	121.3807
#3	.2138302	-.055838	4.297672	.0131471	.0371582	121.5726
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.590818	.0130006	.0380501	110.6571	.5647292	.2828633
Stddev	.005156	.0001815	.0002907	.4541	.0018050	.0004283
%RSD	.3241147	1.396267	.7639067	.4103734	.3196276	.1514286
#1	1.587617	.0128747	.0377186	110.1767	.5640809	.2824898
#2	1.588071	.0129184	.0382611	110.7151	.5667689	.2827692
#3	1.596766	.0132087	.0381707	111.0794	.5633379	.2833308
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.691837	460.9497	5.820541	59.12875	.9273159	.0196940
Stddev	.005993	3.9806	.024032	.35432	.0007433	.0020895
%RSD	.2226420	.8635619	.4128816	.5992302	.0801554	10.60966
#1	2.687146	465.3190	5.799810	58.74183	.9264609	.0220597
#2	2.689776	457.5292	5.814931	59.20704	.9278088	.0181007
#3	2.698588	460.0011	5.846881	59.43737	.9276779	.0189216
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.517837	.6174950	4.542601	16.84459	^ *****	.0357038
Stddev	.020786	.0030618	.008406	.12361	-----	.0000305
%RSD	.5908689	.4958465	.1850524	.7338042	-----	.0855315
#1	3.541401	.6158658	4.534028	16.98531	^ -----	.0356687
#2	3.502102	.6155922	4.542945	16.79484	^ -----	.0357189
#3	3.510010	.6210269	4.550830	16.75360	^ -----	.0357239

Sample Name: Q2832-05 Acquired: 8/13/2025 17:29:44 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.3751083	4.722835	F 16.55943	9.668054	7.132989	.1928392
Stddev	.0008599	.010028	.06524	.034766	.026547	.0006657
%RSD	.2292346	.2123258	.3939742	.3595925	.3721711	.3452232

#1	.3746766	4.714886	16.63477	9.628463	7.114119	.1928131
#2	.3745498	4.719517	16.52225	9.693602	7.121502	.1921869
#3	.3760985	4.734101	16.52129	9.682096	7.163345	.1935176

Elem	Sr4077
Units	ppm
Avg	.2481124
Stddev	.0045657
%RSD	1.840181

#1	.2428407
#2	.2508022
#3	.2506943

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5823.194	105927.7	13328.79	4359.507	5932.021
Stddev	11.052	238.7	89.02	8.220	12.536
%RSD	.1897862	.2253476	.6678530	.1885546	.2113249

#1	5834.597	105724.1	13430.54	4367.349	5946.405
#2	5822.456	105868.6	13290.55	4360.216	5926.230
#3	5812.531	106190.4	13265.29	4350.955	5923.427

Sample Name: Q2832-07 Acquired: 8/13/2025 17:33:52 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.2874679	-.074721	5.144197	.0215084	.0524381	124.3803
Stddev	.0020538	.002733	.007669	.0030139	.0031983	1.4720
%RSD	.7144624	3.658272	.1490853	14.01263	6.099166	1.183478
#1	.2895074	-.072481	5.135585	.0243156	.0487922	125.1856
#2	.2854000	-.077767	5.150291	.0218863	.0547708	125.2740
#3	.2874963	-.073915	5.146714	.0183235	.0537512	122.6813
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.813869	.0184552	.0544729	113.3056	2.632413	.6104101
Stddev	.040298	.0003123	.0003477	1.5592	.007636	.0002514
%RSD	1.432127	1.692026	.6382394	1.376103	.2900609	.0411815
#1	2.834766	.0185176	.0541860	113.9965	2.641016	.6101422
#2	2.839427	.0187316	.0543731	114.4000	2.629786	.6104473
#3	2.767415	.0181164	.0548595	111.5203	2.626438	.6106408
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.832450	607.0410	6.708830	75.61339	3.130719	.0245451
Stddev	.010228	2.2118	.102984	.86820	.002805	.0008809
%RSD	.2116464	.3643657	1.535057	1.148210	.0895824	3.588910
#1	4.828448	608.2188	6.756525	75.98023	3.127686	.0244057
#2	4.844074	604.4895	6.779321	76.23796	3.133219	.0237423
#3	4.824829	608.4147	6.590645	74.62198	3.131253	.0254874
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.064338	1.176196	6.873469	19.20966	^ *****	.0838391
Stddev	.043165	.013767	.017816	.11828	----	.0005608
%RSD	.7117840	1.170493	.2591924	.6157240	----	.6688854
#1	6.111612	1.184914	6.893858	19.34523	^ ----	.0842109
#2	6.027023	1.183350	6.860910	19.15620	^ ----	.0841124
#3	6.054380	1.160325	6.865638	19.12755	^ ----	.0831941

Sample Name: Q2832-07 Acquired: 8/13/2025 17:33:52 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.6535547	5.980799	F 35.79728	10.40630	8.317878	.2265325
Stddev	.0022558	.076062	.28656	.03251	.043347	.0016299
%RSD	.3451592	1.271774	.8005136	.3123787	.5211265	.7194833

#1	.6516619	6.018318	36.08968	10.37973	8.271971	.2269559
#2	.6560508	6.030813	35.78524	10.44255	8.323560	.2279090
#3	.6529516	5.893267	35.51693	10.39663	8.358104	.2247328

Elem	Sr4077
Units	ppm
Avg	.1053842
Stddev	.0114699
%RSD	10.88392

#1	.1096276
#2	.1141278
#3	.0923972

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5800.960	105871.8	13566.87	4326.345	5832.947
Stddev	9.265	364.7	163.06	12.800	6.220
%RSD	.1597230	.3444390	1.201909	.2958535	.1066441

#1	5791.743	105456.2	13525.45	4313.945	5826.173
#2	5800.862	106138.4	13428.51	4339.510	5838.402
#3	5810.274	106020.8	13746.64	4325.579	5834.267

Sample Name: PB169215BS Acquired: 8/13/2025 17:42:07 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.8098559	2.163288	.9703870	2.078532	.8419443	2.020039
Stddev	.0021268	.006551	.0020778	.013014	.0025158	.016636
%RSD	.2626112	.3028119	.2141175	.6261072	.2988040	.8235413
#1	.8076511	2.164087	.9689917	2.066937	.8420725	2.037694
#2	.8100216	2.169403	.9693944	2.076053	.8393669	2.017766
#3	.8118949	2.156375	.9727749	2.092608	.8443936	2.004656
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1892723	.2017506	.1923842	1.033484	.4157631	.1985200
Stddev	.0017982	.0016368	.0004945	.021898	.0005109	.0006279
%RSD	.9500428	.8112796	.2570582	2.118841	.1228838	.3162666
#1	.1912906	.2036224	.1918542	1.058335	.4152032	.1978224
#2	.1886852	.2010412	.1924650	1.017015	.4158823	.1986979
#3	.1878411	.2005883	.1928334	1.025102	.4162039	.1990397
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3164279	3.063915	.2036323	2.018439	.5003844	.0773759
Stddev	.0005911	.007467	.0020322	.025195	.0013786	.0002532
%RSD	.1867989	.2436933	.9979807	1.248248	.2755112	.3272504
#1	.3159403	3.059599	.2057227	2.040085	.4989993	.0770885
#2	.3162583	3.072537	.2035106	1.990782	.5003976	.0775663
#3	.3170853	3.059609	.2016637	2.024449	.5017565	.0774728
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.790608	.3086457	.2094068	9.889119	.2942874	.4272990
Stddev	.019448	.0019316	.0003615	.040434	.0023908	.0008186
%RSD	.6969171	.6258194	.1726331	.4088703	.8124165	.1915649
#1	2.807110	.3094516	.2096575	9.894204	.2965155	.4266514
#2	2.769166	.3100438	.2089924	9.846383	.2945849	.4270266
#3	2.795549	.3064417	.2095706	9.926769	.2917617	.4282190

Sample Name: PB169215BS Acquired: 8/13/2025 17:42:07 Type: Unk
Method: 6010-200.7 NEW(v96) 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	.6897690	.1990584	.9339743	5.416043	F .0019589	.1915965
Stddev	.0027190	.0023859	.0106976	.021028	.0011814	.0013790
%RSD	.3941916	1.198589	1.145383	.3882599	60.31055	.7197359

#1	.6867652	.2015360	.9275689	5.392761	.0010165	.1931535
#2	.6904800	.1988631	.9280301	5.421713	.0015759	.1905292
#3	.6920619	.1967762	.9463240	5.433655	.0032843	.1911067

Elem	Sr4077
Units	ppm
Avg	.1958461
Stddev	.0015679
%RSD	.8005777

#1	.1976450
#2	.1951235
#3	.1947698

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5643.099	101499.1	11437.82	4238.110	7221.228
Stddev	14.629	143.0	102.85	18.419	17.611
%RSD	.2592284	.1408958	.8992056	.4345984	.2438769

#1	5659.783	101347.7	11319.08	4217.177	7241.518
#2	5632.472	101631.9	11495.16	4251.832	7212.258
#3	5637.041	101517.8	11499.21	4245.322	7209.909

Sample Name: CCV07 Acquired: 8/13/2025 17:46:06 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV07 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.061751	5.358708	4.884184	5.158125	5.121728	9.835716	9.846023
Stddev	.006174	.049189	.004860	.013048	.013897	.016428	.125289
%RSD	.1219640	.9179269	.0994963	.2529624	.2713388	.1670220	1.272483
#1	5.061243	5.363418	4.885294	5.146779	5.114275	9.854138	9.978686
#2	5.055847	5.307334	4.888392	5.155214	5.113147	9.822589	9.829669
#3	5.068162	5.405373	4.878865	5.172383	5.137762	9.830419	9.729715
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.412303	2.444688	24.56440	1.005668	2.448709	1.252828	5.139318
Stddev	.0014978	.003691	.06028	.002626	.002727	.001636	.032814
%RSD	.6208869	.1509783	.2453991	.2611341	.1113816	.1305542	.6384872
#1	2.429523	2.445921	24.63349	1.004971	2.450829	1.252413	5.108507
#2	2.405088	2.447604	24.53718	1.003461	2.449667	1.251440	5.135624
#3	2.402298	2.440538	24.52253	1.008572	2.445632	1.254631	5.173822
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.426538	24.43010	2.462730	1.255634	23.63989	2.492681	2.532925
Stddev	.008475	.08315	.003602	.001815	.13670	.003999	.004493
%RSD	.3492821	.3403772	.1462586	.1445167	.5782662	.1604231	.1773659
#1	2.436291	24.52612	2.464274	1.256361	23.58539	2.497180	2.538045
#2	2.420961	24.38187	2.465302	1.253569	23.53884	2.491332	2.531089
#3	2.422362	24.38230	2.458613	1.256973	23.79543	2.489532	2.529642
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	24.81823	4.789741	5.140567	4.939621	4.920080	5.230056	4.702327
Stddev	.14336	.026219	.010365	.008277	.007624	.051728	.003153
%RSD	.5776378	.5473900	.2016318	.1675685	.1549586	.9890547	.0670513
#1	24.73653	4.819353	5.137956	4.936586	4.927466	5.179097	4.698751
#2	24.73439	4.780386	5.131757	4.948988	4.912238	5.228550	4.703520
#3	24.98376	4.769482	5.151987	4.933290	4.920535	5.282520	4.704709

Sample Name: CCV07 Acquired: 8/13/2025 17:46:06 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV07 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.856117	4.514361	4.915100
Stddev	.008828	.007981	.010800
%RSD	.1817848	.1767899	.2197312

#1	4.847165	4.520595	4.925030
#2	4.864815	4.505366	4.916670
#3	4.856369	4.517121	4.903602

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5571.628	98750.90	11525.47	4172.309	6754.504
Stddev	9.155	100.03	60.25	10.100	14.252
%RSD	.1643132	.1012949	.5227922	.2420781	.2110032

#1	5565.641	98859.18	11469.48	4166.065	6738.047
#2	5582.167	98731.60	11517.71	4166.900	6762.660
#3	5567.076	98661.93	11589.23	4183.962	6762.805

Sample Name: CCB07 Acquired: 8/13/2025 17:50:17 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB07 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007834	-.000977	-.001403	-.000714	-.000627	-.015122	-.009368
Stddev	.0005179	.001205	.001112	.000675	.000462	.006713	.001339
%RSD	66.10615	123.3274	79.25845	94.55189	73.71355	44.39299	14.28868
#1	.0011536	.000094	-.002684	-.001455	-.000543	-.020681	-.010900
#2	.0001916	-.000744	-.000688	-.000134	-.001126	-.007664	-.008422
#3	.0010050	-.002282	-.000836	-.000554	-.000213	-.017022	-.008784
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000134	-.000105	-.009295	.0000067	-.000172	-.000066	-.002980
Stddev	.0000322	.000086	.004347	.0000791	.000073	.000219	.005712
%RSD	240.2001	82.04779	46.76270	1182.281	42.55719	329.5975	191.6678
#1	-.000023	-.000120	-.005527	.0000899	-.000173	-.000231	-.008596
#2	.000038	-.000182	-.008308	-.000068	-.000244	.000182	.002824
#3	.000025	-.000012	-.014050	-.000002	-.000098	-.000151	-.003169
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000295	-.016698	-.000070	.0005424	.0497158	.0018910	-.000262
Stddev	.000317	.014768	.000167	.0001428	.0062732	.0009997	.000092
%RSD	107.4310	88.44412	239.0154	26.32410	12.61808	52.86805	35.20208
#1	.000034	-.030382	-.000262	.0006393	.0461085	.0008380	-.000366
#2	-.000597	-.001043	.000021	.0006094	.0569594	.0028272	-.000190
#3	-.000321	-.018669	.000032	.0003784	.0460794	.0020079	-.000229
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2415448	.0049203	.0000744	-.000227	-.000145	.0051313	.0012769
Stddev	.0327008	.0004377	.0001539	.000141	.000456	.0032052	.0011478
%RSD	13.53821	8.895402	206.7526	62.10962	314.4662	62.46361	89.88482
#1	.2461504	.0050151	-.000102	-.000351	.000305	.0087122	.0025234
#2	.2067853	.0044429	.000143	-.000074	-.000133	.0025309	.0010438
#3	.2716987	.0053027	.000182	-.000255	-.000607	.0041507	.0002636

Sample Name: CCB07 Acquired: 8/13/2025 17:50:17 Type: Unk
Method: 6010-200.7 NEW(v96) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB07 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0002820	-.004491	-.000254
Stddev	.0019750	.001698	.000037
%RSD	700.4355	37.81408	14.61798

#1	-.001986	-.003235	-.000270
#2	.001212	-.003815	-.000212
#3	.001620	-.006423	-.000281

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5764.274	103250.6	11518.18	4320.515	7589.105
Stddev	3.950	84.7	32.77	5.128	11.655
%RSD	.0685278	.0820157	.2844690	.1186836	.1535706

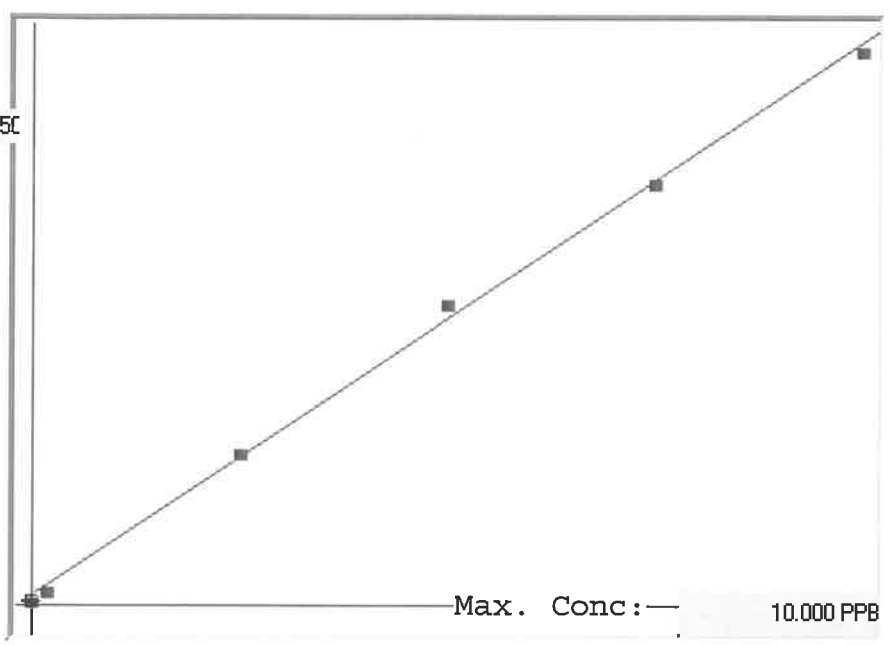
#1	5767.850	103178.1	11496.66	4325.909	7600.862
#2	5760.034	103343.7	11501.99	4319.933	7577.556
#3	5764.937	103230.0	11555.89	4315.703	7588.897

LB136782
INSTRUMENT ID: CV1

7471B

μ Abs.:

49950



Linear

A= 0.0000e+000
B= 2.0052e-004
C= -1.7585e-001
Rho= 0.9991772
Accept=Accepted

Std ID	Conc.	Calc.	Dev.	Mean	SD or %RSD	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0.0	0.000	-0.086	-0.086	446	0.000	446					4.0
0.2	0.200	0.093	-0.107	1341	0.0 %	1341					-47
2.5	2.500	2.590	0.090	13794	0.0 %	13794					4
5.0	5.000	5.285	0.285	27234	0.0 %	27234					6
7.5	7.500	7.478	-0.022	38167	0.0 %	38167					0
10.0	10.000	9.840	-0.160	49950	0.0 %	49950					-2

LB136782 INSTRUMENT ID:CV1

Method: 7471B

Operator: Admin

Date of Analysis: 12 Aug 2025 09:07:38

Type	Sample ID	Extended ID	Conc.	μ Abs	Units	Type	Std Conc	Method	Time
S	0.0 - 1	50.0	-	446	PPB	Std	0.0000	7471B	12 Aug 2025 09:19:35
S	0.2 - 1	50.2	-	1341	PPB	Std	0.2000	7471B	12 Aug 2025 09:24:36
S	2.5 - 1	52.5	-	13794	PPB	Std	2.5000	7471B	12 Aug 2025 09:26:53
S	5.0 - 1	55.0	-	27234	PPB	Std	5.0000	7471B	12 Aug 2025 09:29:10
S	7.5 - 1	57.5	-	38167	PPB	Std	7.5000	7471B	12 Aug 2025 09:39:41
S	10.0 - 1	57.5	-	49950	PPB	Std	10.0000	7471B	12 Aug 2025 09:53:26
U	ICV08 - 1	ICV08 310.0	4.3863	22751	PPB	SMPL	-7471B		12 Aug 2025 09:56:18
U	ICB08 - 1	ICB08	-0.0716	520	PPB	SMPL	-7471B		12 Aug 2025 10:01:20
U	CCV22 - 1	CCV22	5.2239	26928	PPB	SMPL	-7471B		12 Aug 2025 10:03:35
U	CCB22 - 1	CCB22	-0.0724	516	PPB	SMPL	-7471B		12 Aug 2025 10:08:24
U	CRA - 1	CRA	0.2252	2000	PPB	SMPL	-7471B		12 Aug 2025 10:34:36
U	HighStd - 1	HighStd	9.7293	49396	PPB	SMPL	-7471B		12 Aug 2025 10:36:53
U	ChkStd - 1	ChkStd	7.5478	38517	PPB	SMPL	-7471B		12 Aug 2025 10:41:37
U	PB169204BL - 1	PB169204BL	-0.1754	2	PPB	SMPL	-7471B		12 Aug 2025 10:46:30
U	PB169204BS - 1	PB169204BS	3.3496	17581	PPB	SMPL	-7471B		12 Aug 2025 10:50:43
X	Q2808-01 - 1	TP-7	HIGH	120704	PPB		-7471B		12 Aug 2025 10:57:40
U	Q2809-01 - 1	OR-03-08082025	0.2278	2013	PPB	SMPL	-7471B		12 Aug 2025 11:01:20
U	Q2818-01 - 1	B-2-5-1	1.7855	9781	PPB	SMPL	-7471B		12 Aug 2025 11:03:49
U	Q2818-02 - 1	B-3-5-2	1.1159	6442	PPB	SMPL	-7471B		12 Aug 2025 11:06:26
U	Q2819-06 - 1	11M-S	0.0247	1000	PPB	SMPL	-7471B		12 Aug 2025 11:08:54
U	CCV23 - 1	CCV23	5.2650	27133	PPB	SMPL	-7471B		12 Aug 2025 11:11:16
U	CCB23 - 1	CCB23	-0.1123	317	PPB	SMPL	-7471B		12 Aug 2025 11:21:20
U	Q2819-11 - 1	84SB-W	-0.1768	0	PPB	SMPL	-7471B		12 Aug 2025 11:25:11
U	Q2819-14 - 1	17M-W	0.8984	5357	PPB	SMPL	-7471B		12 Aug 2025 11:27:26
U	Q2820-09 - 1	705R-S	-0.1460	149	PPB	SMPL	-7471B		12 Aug 2025 11:29:43
U	Q2820-10 - 1	705R-S	-0.0790	483	PPB	SMPL	-7471B		12 Aug 2025 11:31:59
U	Q2820-10 - 1	SOIL-DUP-2	-0.1309	224	PPB	SMPL	-7471B		12 Aug 2025 11:34:15
U	Q2820-24 - 1	22M-S	-0.0724	516	PPB	SMPL	-7471B		12 Aug 2025 11:36:31
U	Q2823-01 - 1	SU-04-081125	0.3315	2530	PPB	SMPL	-7471B		12 Aug 2025 11:38:48
U	Q2826-01 - 1	WC1	1.7765	9736	PPB	SMPL	-7471B		12 Aug 2025 11:41:06
U	Q2827-01 - 1	TP-8	52.4175	262279	PPB	SMPL	-7471B		12 Aug 2025 11:43:25
U	Q2827-05 - 1	TP-9	3.2700	17184	PPB	SMPL	-7471B		12 Aug 2025 11:46:31
U	Q2828-01 - 1	POWDER	0.0943	1347	PPB	SMPL	-7471B		12 Aug 2025 11:51:42
U	CCV24 - 1	CCV24	5.2804	27210	PPB	SMPL	-7471B		12 Aug 2025 11:54:39
U	CCB24 - 1	CCB24	-0.1592	83	PPB	SMPL	-7471B		12 Aug 2025 11:56:56
U	Q2830-01 - 1	BIN0009-DRIVEWAY-TP-SOUTH-EAST	0.2356	2052	PPB	SMPL	-7471B		12 Aug 2025 11:59:11
U	Q2830-03 - 1	BIN0009-DRIVEWAY-TP-WEST	0.2936	2341	PPB	SMPL	-7471B		12 Aug 2025 12:01:28
U	Q2830-05 - 1	BIN0009-DRIVEWAY-TP-WESTSIDE	0.0347	1050	PPB	SMPL	-7471B		12 Aug 2025 12:03:45
U	Q2830-07 - 1	BIN0009-DRIVEWAY-TP-EASTSIDE	0.1869	1809	PPB	SMPL	-7471B		12 Aug 2025 12:06:00
U	Q2831-01 - 1	VNJ-238	0.5368	3554	PPB	SMPL	-7471B		12 Aug 2025 12:08:18
U	Q2831-01DUP - 1	VNJ-238DUP	0.5364	3552	PPB	SMPL	-7471B		12 Aug 2025 12:10:35
U	Q2831-01MS - 1	VNJ-238MS	4.3947	22793	PPB	SMPL	-7471B		12 Aug 2025 12:12:53
U	Q2831-01MSD - 1	VNJ-238MSD	4.2459	22051	PPB	SMPL	-7471B		12 Aug 2025 12:15:15
U	Q2831-01LX5 - 1		-0.1775	-8	PPB	SMPL	-7471B		12 Aug 2025 12:17:33
U	Q2831-01A - 1		4.5096	23366	PPB	SMPL	-7471B		12 Aug 2025 12:32:09
U	CCV25 - 1	CCV25	5.1445	26532	PPB	SMPL	-7471B		12 Aug 2025 12:37:00
U	CCB25 - 1	CCB25	-0.1161	298	PPB	SMPL	-7471B		12 Aug 2025 12:44:31
U	Q2808-01DLX100 - 1		3.0223	15949	PPB	SMPL	-7471B		12 Aug 2025 12:47:52
U	Q2827-01DLX10 - 1		5.7579	29591	PPB	SMPL	-7471B		12 Aug 2025 12:55:42
U	CCV26 - 1	CCV26	4.8431	25029	PPB	SMPL	-7471B		12 Aug 2025 13:00:29
U	CCB26 - 1	CCB26	-0.1570	94	PPB	SMPL	-7471B		

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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 #5 2. N/A

Start Digest Date: 08/12/2025 Time : 12:55 Temp : 97 °C

End Digest Date: 08/12/2025 Time : 14:55 Temp : 98 °C

Digestion tube ID: M6054

Block thermometer ID: MET-DIG. #5

Dig Technician Signature: *SLC*

Supervisor Signature: *JSP*

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	MP86404
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#5 CELL#35 97C

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
08/12/25 15:55	<i>SLC met dig</i>	<i>JSP / Met Lab</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
PB169211BL	PBS211	N/A	2.00	100	Colorless	Colorless	Fine	N/A	N/A	1
PB169211BS	LCS211	N/A	2.00	100	Colorless	Colorless	Fine	N/A	M6180,M6181	2
Q2808-01	TP-7	N/A	2.42	100	Brown	Yellow	Medium	N/A	N/A	3
Q2809-01	OR-03-08082025	N/A	2.34	100	Brown	Yellow	Medium	N/A	N/A	4
Q2817-01	LEAD-PAINT-CHIPS	N/A	2.27	100	Brown	Yellow	Medium	N/A	N/A	5
Q2818-01	B-2-5-1	N/A	2.34	100	Brown	Yellow	Medium	N/A	N/A	6
Q2818-02	B-3-5-2	N/A	2.33	100	Brown	Yellow	Medium	N/A	N/A	7
Q2819-06	11M-S	N/A	2.32	100	Brown	Yellow	Medium	N/A	N/A	8
Q2819-11	84SB-W	N/A	2.37	100	Brown	Yellow	Medium	N/A	N/A	9
Q2819-14	17M-W	N/A	2.36	100	Brown	Yellow	Medium	N/A	N/A	10
Q2820-09	705R-S	N/A	2.25	100	Brown	Yellow	Medium	N/A	N/A	11
Q2820-10	SOIL-DUP-2	N/A	2.17	100	Brown	Yellow	Medium	N/A	N/A	12
Q2820-24	22M-S	N/A	2.24	100	Brown	Yellow	Medium	N/A	N/A	13
Q2823-01	SU-04-081125	N/A	2.47	100	Brown	Yellow	Medium	N/A	N/A	14
Q2826-01	WC1	N/A	2.19	100	Brown	Yellow	Medium	N/A	N/A	15
Q2827-01	TP-8	N/A	2.26	100	Brown	Yellow	Medium	N/A	N/A	16
Q2827-05	TP-9	N/A	2.32	100	Brown	Yellow	Medium	N/A	N/A	17
Q2828-01	POWDER	N/A	2.16	100	Brown	Yellow	Medium	N/A	N/A	18
Q2828-01MS	POWDERMS	N/A	2.45	100	Brown	Yellow	Medium	N/A	M6180,M6181	20
Q2828-01MSD	POWDERMSD	N/A	2.30	100	Brown	Yellow	Medium	N/A	M6180,M6181	21
Q2828-01DUP	POWDERDUP	N/A	2.33	100	Brown	Yellow	Medium	N/A	N/A	19

WORKLIST(Hardcopy Internal Chain)

WorkList Name : PB169211

WorkList ID : 191219

Department : Digestion

Date : 08-12-2025 11:49:06

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q2808-01	TP-7	Solid	Metals ICP-TAL	Cool 4 deg C	PSEG03	D31	08/08/2025	6010D
Q2809-01	OR-03-08082025	Solid	Metals ICP-TAL	Cool 4 deg C	PSEG05	D31	08/08/2025	6010D
Q2817-01	LEAD-PAINT-CHIPS	Solid	Metals Group3	Cool 4 deg C	HOMIE01	D31	08/11/2025	6010D
Q2818-01	B-2-5-1	Solid	Metals ICP-TAL	Cool 4 deg C	EARTH03		08/11/2025	6010D
Q2818-02	B-3-5-2	Solid	Metals ICP-TAL	Cool 4 deg C	EARTH03		08/11/2025	6010D
Q2819-06	11M-S	Solid	Metals ICP-TAL	Cool 4 deg C	FIRS02	D31	08/05/2025	6010D
Q2819-11	84SB-W	Solid	Metals ICP-TAL	Cool 4 deg C	FIRS02	D31	08/05/2025	6010D
Q2819-14	17M-W	Solid	Metals ICP-TAL	Cool 4 deg C	FIRS02	D31	08/05/2025	6010D
Q2820-09	705R-S	Solid	Metals ICP-TAL	Cool 4 deg C	FIRS02	D31	08/07/2025	6010D
Q2820-10	SOL-DUP-2	Solid	Metals ICP-TAL	Cool 4 deg C	FIRS02	D31	08/07/2025	6010D
Q2820-24	22M-S	Solid	Metals ICP-TAL	Cool 4 deg C	FIRS02	D31	08/08/2025	6010D
Q2823-01	SU-04-081125	Solid	Metals ICP-TAL	Cool 4 deg C	PSEG05	D31	08/11/2025	6010D
Q2826-01	WC1	Solid	Metals ICP-TAL	Cool 4 deg C	GENV01	D31	08/11/2025	6010D
Q2827-01	TP-8	Solid	Metals ICP-TAL	Cool 4 deg C	PSEG03	D31	08/11/2025	6010D
Q2827-05	TP-9	Solid	Metals ICP-TAL	Cool 4 deg C	PSEG03	D31	08/11/2025	6010D
Q2828-01	POWDER	Solid	Metals ICP-Group1	Cool 4 deg C	VIVA01	D21	08/11/2025	6010D

Date/Time 08/12/25 12:05
 Raw Sample Received by: s/m e h19
 Raw Sample Relinquished by: f/c s m1

Date/Time 08/12/25 13:05
 Raw Sample Received by: f.c s m1
 Raw Sample Relinquished by: s/m e h19

SOP ID : M7471B-Mercury-19

SDG No : N/A

Matrix : SOIL

Pipette ID: HG A

Balance ID : M SC-3

Filter paper ID : N/A

pH Strip ID : N/A

Hood ID : #1

Block ID: 1. HG HOT BLOCK#3 2. N/A

Start Digest Date: 08/11/2025 Time : 16:30 Temp : 95 °C

End Digest Date: 08/11/2025 Time : 16:40 Temp : 95 °C

Digestion tube ID: M5595

Block thermometer ID: HG-DIG#3

Dig Technician Signature: *S/S*

Supervisor Signature: *SD*

Temp : 1. 95°C 2. N/A

Standard Name	MLS USED	STD REF. # FROM LOG
ICV	30mL	MP86713
CCV	30mL	MP86715
CRA	30mL	MP86717
Blank Spike	0.48mL	MP86706
Matrix Spike	0.48mL	MP86706

Chemical Used	ML/SAMPLE USED	Lot Number
AQUA REGIA	2.5mL	MP86719
KMnO4 (5%)	4.5mL	MP85893
Hydroxylamine HCL (12%)	2.0mL	MP85895
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
N/A	N/A	N/A

LAB SAMPLE ID	CLIENT SAMPLE ID	Wt(g)/Vol(ml)	Comment
0.0 ppb	S0	30mL	MP86707
0.05 ppb	S0.05	N/A	N/A
0.2 ppb	S0.2	30mL	MP86708
2.5 ppb	S2.5	30mL	MP86709
5.0 ppb	S5.0	30mL	MP86710
7.5 ppb	S7.5	30mL	MP86711
10.0 ppb	S10.0	30mL	MP86712
ICV	ICV	30mL	MP86713
ICB	ICB	30mL	MP86714
CCV	CCV	30mL	MP86715
CCB	CCB	30mL	MP86716
CRI	CRI	30mL	MP86717
CHK STD	CHK STD	30mL	MP86718

Extraction Conformance/Non-Conformance Comments:

N/A		
Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
08/11/25 16:50	<i>S/S met dia</i>	<i>SD (detected lab)</i>
	Preparation Group	Analysis Group

Lab Sample ID	Client Sample ID	Initial Weight (g)	Final Vol (ml)	pH	Comment	Prep Pos
PB169204BL	PBS204	0.51	35	N/A	N/A	1-1
PB169204BS	LCS204	0.51	35	N/A	MP86706	2
Q2808-01	TP-7	0.53	35	N/A	N/A	3
Q2809-01	OR-03-08082025	0.55	35	N/A	N/A	4
Q2818-01	B-2-5-1	0.52	35	N/A	N/A	5
Q2818-02	B-3-5-2	0.53	35	N/A	N/A	6
Q2819-06	11M-S	0.55	35	N/A	N/A	7
Q2819-11	84SB-W	0.56	35	N/A	N/A	8
Q2819-14	17M-W	0.52	35	N/A	N/A	9
Q2820-09	705R-S	0.54	35	N/A	N/A	10
Q2820-10	SOIL-DUP-2	0.51	35	N/A	N/A	11
Q2820-24	22M-S	0.51	35	N/A	N/A	12
Q2823-01	SU-04-081125	0.52	35	N/A	N/A	13
Q2826-01	WC1	0.51	35	N/A	N/A	14
Q2827-01	TP-8	0.59	35	N/A	N/A	15
Q2827-05	TP-9	0.57	35	N/A	N/A	16
Q2828-01	POWDER	0.56	35	N/A	N/A	17
Q2830-01	BIN0009-DRIVEWAY-TP-SOUTH-EAST	0.53	35	N/A	N/A	18
Q2830-03	BIN0009-DRIVEWAY-TP-WEST	0.56	35	N/A	N/A	19
Q2830-05	BIN0009-DRIVEWAY-TP-WESTSIDE	0.55	35	N/A	N/A	20
Q2830-07	BIN0009-DRIVEWAY-TP-EASTSIDE	0.58	35	N/A	N/A	21
Q2831-01	VNJ-238	0.54	35	N/A	N/A	22
Q2831-01MS	VNJ-238MS	0.57	35	N/A	MP86706	24
Q2831-01MSD	VNJ-238MSD	0.54	35	N/A	MP86706	25
Q2831-01DUP	VNJ-238DUP	0.50	35	N/A	N/A	23

WORKLIST(Hardcopy Internal Chain)

Worklist Name : PB169204

Worklist ID : 191207

Department : Digestion

Date : 08-11-2025 15:47:53

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q2808-01	TP-7	Solid	Mercury	Cool 4 deg C	PSEG03	D31	08/08/2025	7471B
Q2809-01	OR-03-08082025	Solid	Mercury	Cool 4 deg C	PSEG05	D31	08/08/2025	7471B
Q2818-01	B-2-5-1	Solid	Mercury	Cool 4 deg C	EARTH03		08/11/2025	7471B
Q2818-02	B-3-5-2	Solid	Mercury	Cool 4 deg C	EARTH03		08/11/2025	7471B
Q2819-06	11M-S	Solid	Mercury	Cool 4 deg C	FIRS02	D31	08/05/2025	7471B
Q2819-11	845SB-W	Solid	Mercury	Cool 4 deg C	FIRS02	D31	08/05/2025	7471B
Q2819-14	17M-W	Solid	Mercury	Cool 4 deg C	FIRS02	D31	08/05/2025	7471B
Q2820-09	705R-S	Solid	Mercury	Cool 4 deg C	FIRS02	D31	08/07/2025	7471B
Q2820-10	SOIL-DUP-2	Solid	Mercury	Cool 4 deg C	FIRS02	D31	08/07/2025	7471B
Q2820-24	22M-S	Solid	Mercury	Cool 4 deg C	FIRS02	D31	08/08/2025	7471B
Q2823-01	SU-04-081125	Solid	Mercury	Cool 4 deg C	PSEG05	D31	08/11/2025	7471B
Q2826-01	WC1	Solid	Mercury	Cool 4 deg C	GENV01	D31	08/11/2025	7471B
Q2827-01	TP-8	Solid	Mercury	Cool 4 deg C	PSEG03	D31	08/11/2025	7471B
Q2827-05	TP-9	Solid	Mercury	Cool 4 deg C	PSEG03	D31	08/11/2025	7471B
Q2828-01	POWDER	Solid	Mercury	Cool 4 deg C	VIVA01	D21	08/11/2025	7471B
Q2830-01	BIN009-DRIVEWAY-TP-SOUTH	Solid	Mercury	Cool 4 deg C	PSEG03	D31	08/11/2025	7471B
Q2830-03	BIN009-DRIVEWAY-TP-WEST	Solid	Mercury	Cool 4 deg C	PSEG03	D31	08/11/2025	7471B
Q2830-05	BIN009-DRIVEWAY-TP-WEST	Solid	Mercury	Cool 4 deg C	PSEG03	D31	08/11/2025	7471B
Q2830-07	BIN009-DRIVEWAY-TP-EASTS	Solid	Mercury	Cool 4 deg C	PSEG03	D31	08/11/2025	7471B
Q2831-01	VNJ-238	Solid	Mercury	Cool 4 deg C	PSEG03	D21	08/11/2025	7471B

Date/Time 08/11/25 16:05

Raw Sample Received by: 815 met us

Raw Sample Relinquished by: CP can

Date/Time 08/11/25 17:05

Raw Sample Received by: CP can

Raw Sample Relinquished by: 815 met us

PERCENT SOLID

Supervisor: rubina
Analyst: jignesh
Date: 8/13/2025

OVENTEMP IN Celsius(°C): 107
Time IN: 17:30
In Date: 08/12/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
OvenID: M OVEN#1

OVENTEMP OUT Celsius(°C): 104
Time OUT: 08:22
Out Date: 08/13/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
BalanceID: M SC-4
Thermometer ID: % solids-oven

QC:LB136783

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
Q2732-02	WC-A7-01-C	74	1.15	10.37	11.52	11.18	96.7	
Q2819-01	22BP-N	1	1.15	10.16	11.31	9.57	82.9	
Q2819-02	22BP-E	2	1.16	10.67	11.83	10.3	85.7	
Q2819-03	22BP-W	3	1.16	10.83	11.99	10.45	85.8	
Q2819-04	22BP-S	4	1.15	9.96	11.11	9.92	88.1	
Q2819-05	11M-W	5	1.14	10.45	11.59	10.7	91.5	
Q2819-06	11M-S	6	1.16	10.83	11.99	10.96	90.5	
Q2819-07	11M-N	7	1.16	10.81	11.97	9.37	75.9	
Q2819-08	11M-E	8	1.17	10.27	11.44	8.54	71.8	
Q2819-09	84SB-E	9	1.13	10.62	11.75	5.12	37.6	
Q2819-10	84SB-S	10	1.18	10.11	11.29	10.51	92.3	
Q2819-11	84SB-W	11	1.14	10.14	11.28	9.94	86.8	
Q2819-12	17M-S	12	1.19	118.66	119.85	11.15	8.4	
Q2819-13	17M-E	13	1.17	10.38	11.55	9.86	83.7	
Q2819-14	17M-W	14	1.15	10.46	11.61	10.1	85.6	
Q2819-15	17M-N	15	1.15	10.57	11.72	9.96	83.3	
Q2819-16	38M-S	16	1.15	10.77	11.92	11.1	92.4	
Q2819-17	38M-N	17	1.16	10.41	11.57	10.27	87.5	
Q2819-18	38M-W	18	1.14	10.66	11.8	10.34	86.3	
Q2819-19	38M-E	19	1.13	10.13	11.26	10.02	87.8	
Q2819-20	82H-E	20	1.17	10.64	11.81	9.38	77.2	
Q2820-01	82H-S	21	1.16	10.76	11.92	10.04	82.5	
Q2820-02	82H-W	22	1.15	11.21	12.36	10.51	83.5	
Q2820-03	82H-N	23	1.16	11.14	12.3	10.9	87.4	
Q2820-04	SOIL-DUP-1	24	1.16	10.83	11.99	10.56	86.8	
Q2820-05	518R-E	25	1.16	10.40	11.56	6.23	48.8	
Q2820-06	518R-N	26	1.18	10.55	11.73	9.35	77.4	
Q2820-07	518R-S	27	1.17	10.52	11.69	9.44	78.6	

PERCENT SOLID

Supervisor: rubina
Analyst: jignesh
Date: 8/13/2025

OVENTEMP IN Celsius(°C): 107
Time IN: 17:30
In Date: 08/12/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
OvenID: M OVEN#1

OVENTEMP OUT Celsius(°C): 104
Time OUT: 08:22
Out Date: 08/13/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
BalanceID: M SC-4
Thermometer ID: % solids-oven

QC:LB136783

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
Q2820-08	518R-W	28	1.13	10.80	11.93	10.74	89.0	
Q2820-09	705R-S	29	1.14	10.59	11.73	7.05	55.8	
Q2820-10	SOIL-DUP-2	30	1.15	10.87	12.02	6.41	48.4	
Q2820-11	10PC-W	31	1.11	10.25	11.36	10.58	92.4	
Q2820-12	10PC-S	32	1.19	10.52	11.71	10.88	92.1	
Q2820-13	10P-W	33	1.14	10.09	11.23	10.34	91.2	
Q2820-14	10P-E	34	1.19	10.37	11.56	9.62	81.3	
Q2820-15	10P-S	35	1.18	10.21	11.39	10.22	88.5	
Q2820-16	10P-N	36	1.11	10.09	11.2	9.81	86.2	
Q2820-17	88H-E	37	1.16	10.42	11.58	9.77	82.6	
Q2820-18	88H-N	38	1.16	10.90	12.06	10.57	86.3	
Q2820-19	88H-W	39	1.18	10.66	11.84	10.62	88.6	
Q2820-20	88H-S	40	1.18	10.12	11.3	9.74	84.6	
Q2820-21	22M-N	41	1.14	11.06	12.2	11.34	92.2	
Q2820-22	22M-W	42	1.17	10.90	12.07	6.94	52.9	
Q2820-23	22M-E	43	1.17	10.27	11.44	4.66	34.0	
Q2820-24	22M-S	44	1.13	10.68	11.81	10.63	89.0	
Q2832-01	TG-S01	45	1.15	10.46	11.61	10.92	93.4	
Q2832-03	TG-S02	46	1.18	10.41	11.59	10.97	94.0	
Q2832-05	TG-S03	47	1.15	10.50	11.65	11.00	93.8	
Q2832-07	TG-S04	48	1.17	10.58	11.75	11.02	93.1	
Q2832-09	TG-S05	49	1.15	10.40	11.55	10.6	90.9	
Q2836-02	WC-A2-15-C	75	1.18	10.38	11.56	9.67	81.8	
Q2836-06	WC-A2-16-C	76	1.19	10.43	11.62	10.66	90.8	
Q2836-10	WC-A2-17-C	77	1.19	10.48	11.67	10.96	93.2	
Q2836-14	WC-A5-02-C	78	1.19	10.17	11.36	8.8	74.8	
Q2838-01	TP-11	50	1.14	10.60	11.74	10.44	87.7	
Q2838-02	TP-11-EPH	51	1.14	10.85	11.99	9.57	77.7	

PERCENT SOLID

Supervisor: rubina
Analyst: jignesh
Date: 8/13/2025

OVENTEMP IN Celsius(°C): 107
Time IN: 17:30
In Date: 08/12/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
OvenID: M OVEN#1

OVENTEMP OUT Celsius(°C): 104
Time OUT: 08:22
Out Date: 08/13/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
BalanceID: M SC-4
Thermometer ID: % solids-oven

QC:LB136783

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
Q2838-03	TP-11-VOC	52	1.19	11.24	12.43	9.97	78.1	
Q2838-05	TP-10	53	1.14	11.08	12.22	10.75	86.7	
Q2838-06	TP-10-EPH	54	1.18	10.42	11.6	7.63	61.9	
Q2838-07	TP-10-VOC	55	1.18	10.50	11.68	8.68	71.4	
Q2839-01	BC274436-1-1	56	1.00	1.00	2.00	2.00	100.0	PILC
Q2839-02	BC274436-1-2	57	1.00	1.00	2.00	2.00	100.0	PILC
Q2839-03	BC151973-1-1	58	1.00	1.00	2.00	2.00	100.0	PILC
Q2839-04	BC151973-1-2	59	1.00	1.00	2.00	2.00	100.0	PILC
Q2839-05	BC271336-1-1	60	1.00	1.00	2.00	2.00	100.0	PILC
Q2839-06	BC271336-1-2	61	1.00	1.00	2.00	2.00	100.0	PILC
Q2839-07	BC271242-1-1	62	1.00	1.00	2.00	2.00	100.0	PILC
Q2839-08	BC271242-1-2	63	1.00	1.00	2.00	2.00	100.0	PILC
Q2839-09	BC271242-2-1	64	1.00	1.00	2.00	2.00	100.0	PILC
Q2839-10	BC271242-2-2	65	1.00	1.00	2.00	2.00	100.0	PILC
Q2839-11	BC226751-1-1	66	1.00	1.00	2.00	2.00	100.0	PILC
Q2839-12	BC226751-1-2	67	1.00	1.00	2.00	2.00	100.0	PILC
Q2839-13	BC226751-2-1	68	1.00	1.00	2.00	2.00	100.0	PILC
Q2839-14	BC226751-2-2	69	1.00	1.00	2.00	2.00	100.0	PILC
Q2839-15	JEC773V-1-1	70	1.00	1.00	2.00	2.00	100.0	PILC
Q2839-16	JEC773V-1-2	71	1.00	1.00	2.00	2.00	100.0	PILC
Q2840-01	0804-SOIL	72	1.12	11.32	12.44	10.42	82.2	
Q2840-02	0804-D	73	1.00	1.00	2.00	2.00	100.0	debris

$$\% \text{ Solid} = \frac{(C-A) * 100}{(B-A)}$$

WORKLIST(Hardcopy Internal Chain)

136783

WorkList Name : %1-081225

WorkList ID : 191210

Department : Wet-Chemistry

Date : 08-12-2025 07:56:53

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q2820-06	518R-N	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/07/2025	Chemtech -SO
Q2820-07	518R-S	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/07/2025	Chemtech -SO
Q2820-08	518R-W	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/07/2025	Chemtech -SO
Q2820-09	705R-S	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/07/2025	Chemtech -SO
Q2820-10	SOIL-DUP-2	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/07/2025	Chemtech -SO
Q2819-19	38M-E	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/06/2025	Chemtech -SO
Q2819-20	82H-E	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/06/2025	Chemtech -SO
Q2820-01	82H-S	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/06/2025	Chemtech -SO
Q2820-02	82H-W	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/06/2025	Chemtech -SO
Q2820-03	82H-N	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/06/2025	Chemtech -SO
Q2820-04	SOIL-DUP-1	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/06/2025	Chemtech -SO
Q2819-13	17M-E	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/06/2025	Chemtech -SO
Q2819-14	17M-W	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/05/2025	Chemtech -SO
Q2819-15	17M-N	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/05/2025	Chemtech -SO
Q2819-16	38M-S	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/05/2025	Chemtech -SO
Q2819-17	38M-N	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/06/2025	Chemtech -SO
Q2819-18	38M-W	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/06/2025	Chemtech -SO
Q2819-07	11M-N	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/06/2025	Chemtech -SO
Q2819-08	11M-E	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/05/2025	Chemtech -SO
Q2819-09	84SB-E	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/05/2025	Chemtech -SO
Q2819-10	84SB-S	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/05/2025	Chemtech -SO

Date/Time 08/12/25 15:00
Raw Sample Received by: SP WCL
Raw Sample Relinquished by: CP

Date/Time

08/12/25

17135

Raw Sample Received by: SP WCL
Raw Sample Relinquished by: CP

Raw Sample Received by:

CP

WORKLIST(Hardcopy Internal Chain)

WB 136783

WorkList Name : %1-081225

WorkList ID : 191210

Department : Wet-Chemistry

Date : 08-12-2025 07:56:53

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q2819-01	22BP-N	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/04/2025	Chemtech -SO
Q2819-02	22BP-E	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/04/2025	Chemtech -SO
Q2819-03	22BP-W	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/04/2025	Chemtech -SO
Q2819-04	22BP-S	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/04/2025	Chemtech -SO
Q2819-05	11M-W	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/04/2025	Chemtech -SO
Q2819-06	11M-S	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/05/2025	Chemtech -SO
Q2820-23	22M-E	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/05/2025	Chemtech -SO
Q2820-24	22M-S	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/08/2025	Chemtech -SO
Q2820-17	88H-E	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/08/2025	Chemtech -SO
Q2820-18	88H-N	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/08/2025	Chemtech -SO
Q2820-19	88H-W	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/08/2025	Chemtech -SO
Q2820-20	88H-S	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/08/2025	Chemtech -SO
Q2820-21	22M-N	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/08/2025	Chemtech -SO
Q2820-22	22M-W	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/08/2025	Chemtech -SO
Q2820-11	10PC-W	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/08/2025	Chemtech -SO
Q2820-12	10PC-S	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/07/2025	Chemtech -SO
Q2820-13	10P-W	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/07/2025	Chemtech -SO
Q2820-14	10P-E	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/07/2025	Chemtech -SO
Q2820-15	10P-S	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/07/2025	Chemtech -SO
Q2820-16	10P-N	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/07/2025	Chemtech -SO
Q2820-05	518R-E	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/07/2025	Chemtech -SO

Date/Time 08/12/25 15:00

Raw Sample Received by: 80 WSC

Raw Sample Relinquished by: [Signature]

Date/Time 08/12/25

Raw Sample Received by: [Signature]

Raw Sample Relinquished by: 80 WSC

WORKLIST(Hardcopy Internal Chain)

136783

WorkList Name : %1-081225

WorkList ID : 191210

Department : Wet-Chemistry

Date : 08-12-2025 07:56:53

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q2839-04	BC151973-1-2	Solid	Percent Solids	Cool 4 deg C	PSEG03	L11	08/12/2025	Chemtech -SO
Q2839-05	BC271336-1-1	Solid	Percent Solids	Cool 4 deg C	PSEG03	L11	08/12/2025	Chemtech -SO
Q2839-06	BC271336-1-2	Solid	Percent Solids	Cool 4 deg C	PSEG03	L11	08/12/2025	Chemtech -SO
Q2839-07	BC271242-1-1	Solid	Percent Solids	Cool 4 deg C	PSEG03	L11	08/12/2025	Chemtech -SO
Q2839-08	BC271242-1-2	Solid	Percent Solids	Cool 4 deg C	PSEG03	L11	08/12/2025	Chemtech -SO
Q2839-09	BC271242-2-1	Solid	Percent Solids	Cool 4 deg C	PSEG03	L11	08/12/2025	Chemtech -SO
Q2839-10	BC271242-2-2	Solid	Percent Solids	Cool 4 deg C	PSEG03	L11	08/12/2025	Chemtech -SO
Q2839-11	BC226751-1-1	Solid	Percent Solids	Cool 4 deg C	PSEG03	L11	08/12/2025	Chemtech -SO
Q2839-12	BC226751-1-2	Solid	Percent Solids	Cool 4 deg C	PSEG03	L11	08/12/2025	Chemtech -SO
Q2839-13	BC226751-2-1	Solid	Percent Solids	Cool 4 deg C	PSEG03	L11	08/12/2025	Chemtech -SO
Q2839-14	BC226751-2-2	Solid	Percent Solids	Cool 4 deg C	PSEG03	L11	08/12/2025	Chemtech -SO
Q2839-15	JEC773V-1-1	Solid	Percent Solids	Cool 4 deg C	PSEG03	L11	08/12/2025	Chemtech -SO
Q2839-16	JEC773V-1-1	Solid	Percent Solids	Cool 4 deg C	PSEG03	L11	08/12/2025	Chemtech -SO
Q2840-01	0804-SOIL	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	08/12/2025	Chemtech -SO
Q2840-02	0804-D	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	08/12/2025	Chemtech -SO

Date/Time 08/12/25 15:00

Raw Sample Received by: [Signature]

Raw Sample Relinquished by: [Signature]

Date/Time 08/12/25

Raw Sample Received by: [Signature]

Raw Sample Relinquished by: [Signature]

WORKLIST(Hardcopy Internal Chain)

W 131783

WorkList Name : %1-081225 WorkList ID : 191210 Department : Wet-Chemistry Date : 08-12-2025 07:56:53

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q2819-11	84SB-W	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/05/2025	Chemtech -SO
Q2819-12	17M-S	Solid	Percent Solids	Cool 4 deg C	FIRS02	D31	08/05/2025	Chemtech -SO
Q2832-01	TG-S01	Solid	Percent Solids	Cool 4 deg C	PORT06	J21	08/11/2025	Chemtech -SO
Q2732-02	WC-A7-01-C	Solid	Percent Solids	Cool 4 deg C	ENTA05	J21	08/12/2025	Chemtech -SO
Q2832-03	TG-S02	Solid	Percent Solids	Cool 4 deg C	PORT06	J21	08/11/2025	Chemtech -SO
Q2832-05	TG-S03	Solid	Percent Solids	Cool 4 deg C	PORT06	J21	08/11/2025	Chemtech -SO
Q2832-07	TG-S04	Solid	Percent Solids	Cool 4 deg C	PORT06	J21	08/11/2025	Chemtech -SO
Q2832-09	TG-S05	Solid	Percent Solids	Cool 4 deg C	PORT06	J21	08/12/2025	Chemtech -SO
Q2836-02	WC-A2-15-C	Solid	Percent Solids	Cool 4 deg C	ENTA05	J23	08/12/2025	Chemtech -SO
Q2836-06	WC-A2-16-C	Solid	Percent Solids	Cool 4 deg C	ENTA05	J23	08/12/2025	Chemtech -SO
Q2836-10	WC-A2-17-C	Solid	Percent Solids	Cool 4 deg C	ENTA05	J23	08/12/2025	Chemtech -SO
Q2836-14	WC-A5-02-C	Solid	Percent Solids	Cool 4 deg C	ENTA05	J23	08/12/2025	Chemtech -SO
Q2838-01	TP-11	Solid	Percent Solids	Cool 4 deg C	PSEG03	D21	08/12/2025	Chemtech -SO
Q2838-02	TP-11-EPH	Solid	Percent Solids	Cool 4 deg C	PSEG03	D21	08/12/2025	Chemtech -SO
Q2838-03	TP-11-VOC	Solid	Percent Solids	Cool 4 deg C	PSEG03	D21	08/12/2025	Chemtech -SO
Q2838-05	TP-10	Solid	Percent Solids	Cool 4 deg C	PSEG03	D21	08/12/2025	Chemtech -SO
Q2838-06	TP-10-EPH	Solid	Percent Solids	Cool 4 deg C	PSEG03	D21	08/12/2025	Chemtech -SO
Q2838-07	TP-10-VOC	Solid	Percent Solids	Cool 4 deg C	PSEG03	D21	08/12/2025	Chemtech -SO
Q2839-01	BC274436-1-1	Solid	Percent Solids	Cool 4 deg C	PSEG03	L11	08/12/2025	Chemtech -SO
Q2839-02	BC274436-1-2	Solid	Percent Solids	Cool 4 deg C	PSEG03	L11	08/12/2025	Chemtech -SO
Q2839-03	BC151973-1-1	Solid	Percent Solids	Cool 4 deg C	PSEG03	L11	08/12/2025	Chemtech -SO

Date/Time 08/12/25 15:00

Raw Sample Received by: SP WCY

Raw Sample Relinquished by: CP SN

Date/Time 08/12/25 17:35

Raw Sample Received by: CP SN

Raw Sample Relinquished by: SP WCY

Instrument ID: CV1

Daily Analysis Runlog For Sequence/QC Batch ID # LB136782

Review By	sagar	Review On	8/12/2025 1:34:59 PM
Supervise By	jaswal	Supervise On	8/12/2025 4:08:53 PM

STD. NAME	STD REF.#
ICAL Standard	MP86706,MP86707,MP86708,MP86709,MP86710,MP86711,MP86712
ICV Standard	MP86713
CCV Standard	MP86715
ICSA Standard	
CRI Standard	MP86717
LCS Standard	
Chk Standard	MP86714,MP86716,MP86718,MP86721

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	S0	S0	CAL1	08/12/25 09:19		sagar	OK
2	S0.2	S0.2	CAL2	08/12/25 09:24		sagar	OK
3	S2.5	S2.5	CAL3	08/12/25 09:26		sagar	OK
4	S5	S5	CAL4	08/12/25 09:29		sagar	OK
5	S7.5	S7.5	CAL5	08/12/25 09:39		sagar	OK
6	S10	S10	CAL6	08/12/25 09:53		sagar	OK
7	ICV08	ICV08	ICV	08/12/25 09:56		sagar	OK
8	ICB08	ICB08	ICB	08/12/25 10:01		sagar	OK
9	CCV22	CCV22	CCV	08/12/25 10:03		sagar	OK
10	CCB22	CCB22	CCB	08/12/25 10:08		sagar	OK
11	CRA	CRA	CRDL	08/12/25 10:34		sagar	OK
12	HighStd	HighStd	HIGH STD	08/12/25 10:36		sagar	OK
13	ChkStd	ChkStd	SAM	08/12/25 10:41		sagar	OK
14	PB169204BL	PB169204BL	MB	08/12/25 10:46		sagar	OK
15	PB169204BS	PB169204BS	LCS	08/12/25 10:50		sagar	OK
16	Q2808-01	TP-7	SAM	08/12/25 10:57	High	sagar	Dilution
17	Q2809-01	OR-03-08082025	SAM	08/12/25 11:01		sagar	OK
18	Q2818-01	B-2-5-1	SAM	08/12/25 11:03		sagar	OK

Instrument ID: CV1

Daily Analysis Runlog For Sequence/QC Batch ID # LB136782

Review By	sagar	Review On	8/12/2025 1:34:59 PM
Supervise By	jaswal	Supervise On	8/12/2025 4:08:53 PM

STD. NAME	STD REF.#
ICAL Standard	MP86706,MP86707,MP86708,MP86709,MP86710,MP86711,MP86712
ICV Standard	MP86713
CCV Standard	MP86715
ICSA Standard	
CRI Standard	MP86717
LCS Standard	
Chk Standard	MP86714,MP86716,MP86718,MP86721

19	Q2818-02	B-3-5-2	SAM	08/12/25 11:06		sagar	OK
20	Q2819-06	11M-S	SAM	08/12/25 11:08		sagar	OK
21	CCV23	CCV23	CCV	08/12/25 11:11		sagar	OK
22	CCB23	CCB23	CCB	08/12/25 11:21		sagar	OK
23	Q2819-11	84SB-W	SAM	08/12/25 11:25		sagar	OK
24	Q2819-14	17M-W	SAM	08/12/25 11:27		sagar	OK
25	Q2820-09	705R-S	SAM	08/12/25 11:29		sagar	OK
26	Q2820-10	SOIL-DUP-2	SAM	08/12/25 11:31		sagar	OK
27	Q2820-24	22M-S	SAM	08/12/25 11:34		sagar	OK
28	Q2823-01	SU-04-081125	SAM	08/12/25 11:36		sagar	OK
29	Q2826-01	WC1	SAM	08/12/25 11:38		sagar	OK
30	Q2827-01	TP-8	SAM	08/12/25 11:41	High	sagar	Dilution
31	Q2827-05	TP-9	SAM	08/12/25 11:43		sagar	OK
32	Q2828-01	POWDER	SAM	08/12/25 11:46		sagar	OK
33	CCV24	CCV24	CCV	08/12/25 11:51		sagar	OK
34	CCB24	CCB24	CCB	08/12/25 11:54		sagar	OK
35	Q2830-01	BIN0009-DRIVEWAY	SAM	08/12/25 11:56		sagar	OK
36	Q2830-03	BIN0009-DRIVEWAY	SAM	08/12/25 11:59		sagar	OK
37	Q2830-05	BIN0009-DRIVEWAY	SAM	08/12/25 12:01		sagar	OK
38	Q2830-07	BIN0009-DRIVEWAY	SAM	08/12/25 12:03		sagar	OK

Instrument ID: CV1

Daily Analysis Runlog For Sequence/QC Batch ID # LB136782

Review By	sagar	Review On	8/12/2025 1:34:59 PM
Supervise By	jaswal	Supervise On	8/12/2025 4:08:53 PM

STD. NAME	STD REF.#
ICAL Standard	MP86706,MP86707,MP86708,MP86709,MP86710,MP86711,MP86712
ICV Standard	MP86713
CCV Standard	MP86715
ICSA Standard	
CRI Standard	MP86717
LCS Standard	
Chk Standard	MP86714,MP86716,MP86718,MP86721

39	Q2831-01	VNJ-238	SAM	08/12/25 12:06		sagar	OK
40	Q2831-01DUP	VNJ-238DUP	DUP	08/12/25 12:08		sagar	OK
41	Q2831-01MS	VNJ-238MS	MS	08/12/25 12:10		sagar	OK
42	Q2831-01MSD	VNJ-238MSD	MSD	08/12/25 12:12		sagar	OK
43	Q2831-01L	VNJ-238L	SD	08/12/25 12:15		sagar	OK
44	Q2831-01A	VNJ-238A	PS	08/12/25 12:17		sagar	OK
45	CCV25	CCV25	CCV	08/12/25 12:32		sagar	OK
46	CCB25	CCB25	CCB	08/12/25 12:37		sagar	OK
47	Q2808-01DL	TP-7DL	SAM	08/12/25 12:44	Report 100X	sagar	Confirms
48	Q2827-01DL	TP-8DL	SAM	08/12/25 12:47	Report 10X	sagar	Confirms
49	CCV26	CCV26	CCV	08/12/25 12:55		sagar	OK
50	CCB26	CCB26	CCB	08/12/25 13:00		sagar	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QC Batch ID # LB136801

Review By	Janvi	Review On	8/15/2025 10:10:36 AM
Supervise By	jaswal	Supervise On	8/19/2025 2:31:42 AM
STD. NAME	STD REF.#		
ICAL Standard	MP86640,MP86656,MP86653,MP86643,MP86642,MP86641		
ICV Standard	MP86752,MP86656		
CCV Standard	MP86646		
ICSA Standard	MP86651,MP86753		
CRI Standard	MP86656		
LCS Standard			
Chk Standard	MP86647,MP86648		

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	S0	S0	CAL1	08/13/25 11:56		Jaswal	OK
2	S1	S1	CAL2	08/13/25 12:00		Jaswal	OK
3	S2	S2	CAL3	08/13/25 12:04		Jaswal	OK
4	S3	S3	CAL4	08/13/25 12:08		Jaswal	OK
5	S4	S4	CAL5	08/13/25 12:12		Jaswal	OK
6	S5	S5	CAL6	08/13/25 12:17		Jaswal	OK
7	ICV01	ICV01	ICV	08/13/25 12:21		Jaswal	OK
8	LLICV01	LLICV01	LLICV	08/13/25 12:28		Jaswal	OK
9	ICB01	ICB01	ICB	08/13/25 12:33		Jaswal	OK
10	CRI01	CRI01	CRDL	08/13/25 12:37		Jaswal	OK
11	ICSA01	ICSA01	ICSA	08/13/25 12:41		Jaswal	OK
12	ICSAB01	ICSAB01	ICSAB	08/13/25 12:45		Jaswal	OK
13	ICSADL	ICSADL	ICSA	08/13/25 12:49		Jaswal	OK
14	ICSABDL	ICSABDL	ICSAB	08/13/25 12:54		Jaswal	OK
15	CCV01	CCV01	CCV	08/13/25 12:58		Jaswal	OK
16	CCB01	CCB01	CCB	08/13/25 13:03		Jaswal	OK
17	Q2828-01	POWDER	SAM	08/13/25 13:07		Jaswal	OK
18	Q2828-01DUP	POWDERDUP	DUP	08/13/25 13:12		Jaswal	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QC Batch ID # LB136801

Review By	Janvi	Review On	8/15/2025 10:10:36 AM
Supervise By	jaswal	Supervise On	8/19/2025 2:31:42 AM
STD. NAME	STD REF.#		
ICAL Standard	MP86640,MP86656,MP86653,MP86643,MP86642,MP86641		
ICV Standard	MP86752,MP86656		
CCV Standard	MP86646		
ICSA Standard	MP86651,MP86753		
CRI Standard	MP86656		
LCS Standard			
Chk Standard	MP86647,MP86648		

19	Q2828-01L	POWDERL	SD	08/13/25 13:16		Jaswal	OK
20	Q2828-01MS	POWDERMS	MS	08/13/25 13:20		Jaswal	OK
21	Q2828-01MSD	POWDERMSD	MSD	08/13/25 13:25		Jaswal	OK
22	Q2828-01A	POWDERA	PS	08/13/25 13:30	0.1 ml of each M6004 and M6017 in 10ml sample	Jaswal	OK
23	CCV02	CCV02	CCV	08/13/25 13:42		Jaswal	OK
24	CCB02	CCB02	CCB	08/13/25 13:46		Jaswal	OK
25	Q2830-01	BIN0009-DRIVEWAY	SAM	08/13/25 13:50		Jaswal	OK
26	Q2830-03	BIN0009-DRIVEWAY	SAM	08/13/25 13:55		Jaswal	OK
27	Q2830-05	BIN0009-DRIVEWAY	SAM	08/13/25 13:59		Jaswal	OK
28	Q2830-07	BIN0009-DRIVEWAY	SAM	08/13/25 14:03		Jaswal	OK
29	Q2831-01	VNJ-238	SAM	08/13/25 14:07		Jaswal	OK
30	Q2818-01	B-2-5-1	SAM	08/13/25 14:11		Jaswal	OK
31	Q2818-02	B-3-5-2	SAM	08/13/25 14:16		Jaswal	OK
32	Q2823-01	SU-04-081125	SAM	08/13/25 14:20		Jaswal	OK
33	Q2831-03	VNJ-238	SAM	08/13/25 14:24		Jaswal	OK
34	Q2831-03DUP	VNJ-238DUP	DUP	08/13/25 14:28		Jaswal	OK
35	CCV03	CCV03	CCV	08/13/25 14:33		Jaswal	OK
36	CCB03	CCB03	CCB	08/13/25 14:37		Jaswal	OK
37	Q2831-03L	VNJ-238L	SD	08/13/25 14:41		Jaswal	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QC Batch ID # LB136801

Review By	Janvi	Review On	8/15/2025 10:10:36 AM
Supervise By	jaswal	Supervise On	8/19/2025 2:31:42 AM
STD. NAME	STD REF.#		
ICAL Standard	MP86640,MP86656,MP86653,MP86643,MP86642,MP86641		
ICV Standard	MP86752,MP86656		
CCV Standard	MP86646		
ICSA Standard	MP86651,MP86753		
CRI Standard	MP86656		
LCS Standard			
Chk Standard	MP86647,MP86648		

38	Q2831-03MS	VNJ-238MS	MS	08/13/25 14:46		Jaswal	OK
39	Q2831-03MSD	VNJ-238MSD	MSD	08/13/25 14:50		Jaswal	OK
40	Q2831-03A	VNJ-238A	PS	08/13/25 14:54	0.1 ml of each M6004 and M6017 in 10ml sample	Jaswal	OK
41	PB169214BL	PB169214BL	MB	08/13/25 14:58		Jaswal	OK
42	PB169214BS	PB169214BS	LCS	08/13/25 15:02		Jaswal	OK
43	PB169211BL	PB169211BL	MB	08/13/25 15:06		Jaswal	OK
44	PB169215BL	PB169215BL	MB	08/13/25 15:15		Jaswal	OK
45	PB169211BS	PB169211BS	LCS	08/13/25 15:19		Jaswal	OK
46	CCV04	CCV04	CCV	08/13/25 15:23		Jaswal	OK
47	CCB04	CCB04	CCB	08/13/25 15:27		Jaswal	OK
48	PB169200TB	PB169200TB	MB	08/13/25 15:31		Jaswal	OK
49	Q2808-04	TP-7	SAM	08/13/25 15:36		Jaswal	OK
50	Q2826-02	WC1	SAM	08/13/25 15:40		Jaswal	OK
51	Q2827-04	TP-8	SAM	08/13/25 15:45		Jaswal	OK
52	Q2827-08	TP-9	SAM	08/13/25 15:49		Jaswal	OK
53	Q2808-01	TP-7	SAM	08/13/25 15:53		Jaswal	OK
54	Q2817-01	LEAD-PAINT-CHIPS	SAM	08/13/25 15:58		Jaswal	OK
55	Q2819-06	11M-S	SAM	08/13/25 16:02		Jaswal	OK
56	Q2819-11	84SB-W	SAM	08/13/25 16:06		Jaswal	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QC Batch ID # LB136801

Review By	Janvi	Review On	8/15/2025 10:10:36 AM
Supervise By	jaswal	Supervise On	8/19/2025 2:31:42 AM

STD. NAME	STD REF.#
ICAL Standard	MP86640,MP86656,MP86653,MP86643,MP86642,MP86641
ICV Standard	MP86752,MP86656
CCV Standard	MP86646
ICSA Standard	MP86651,MP86753
CRI Standard	MP86656
LCS Standard	
Chk Standard	MP86647,MP86648

57	Q2819-14	17M-W	SAM	08/13/25 16:10		Jaswal	OK
58	CCV05	CCV05	CCV	08/13/25 16:14		Jaswal	OK
59	CCB05	CCB05	CCB	08/13/25 16:19		Jaswal	OK
60	Q2820-09	705R-S	SAM	08/13/25 16:23		Jaswal	OK
61	Q2820-10	SOIL-DUP-2	SAM	08/13/25 16:27		Jaswal	OK
62	Q2820-24	22M-S	SAM	08/13/25 16:31		Jaswal	OK
63	Q2826-01	WC1	SAM	08/13/25 16:35		Jaswal	OK
64	Q2827-01	TP-8	SAM	08/13/25 16:39		Jaswal	OK
65	Q2827-05	TP-9	SAM	08/13/25 16:44		Jaswal	OK
66	Q2829-01	SILICA	SAM	08/13/25 16:48		Jaswal	OK
67	Q2832-09	TG-S05	SAM	08/13/25 16:52		Jaswal	OK
68	Q2832-09DUP	TG-S05DUP	DUP	08/13/25 16:56		Jaswal	OK
69	Q2832-09L	TG-S05L	SD	08/13/25 17:00		Jaswal	OK
70	CCV06	CCV06	CCV	08/13/25 17:05		Jaswal	OK
71	CCB06	CCB06	CCB	08/13/25 17:09		Jaswal	OK
72	Q2832-09MS	TG-S05MS	MS	08/13/25 17:13		Jaswal	OK
73	Q2832-09MSD	TG-S05MSD	MSD	08/13/25 17:17		Jaswal	OK
74	Q2832-09A	TG-S05A	PS	08/13/25 17:21	0.1 ml of each M6004 and M6017 in 10ml sample	Jaswal	OK
75	Q2832-03	TG-S02	SAM	08/13/25 17:25		Jaswal	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QCBatch ID # LB136801

Review By	Janvi	Review On	8/15/2025 10:10:36 AM
Supervise By	jaswal	Supervise On	8/19/2025 2:31:42 AM

STD. NAME	STD REF.#
ICAL Standard	MP86640,MP86656,MP86653,MP86643,MP86642,MP86641
ICV Standard	MP86752,MP86656
CCV Standard	MP86646
ICSA Standard	MP86651,MP86753
CRI Standard	MP86656
LCS Standard	
Chk Standard	MP86647,MP86648

76	Q2832-05	TG-S03	SAM	08/13/25 17:29		Jaswal	OK
77	Q2832-07	TG-S04	SAM	08/13/25 17:33		Jaswal	OK
78	PB169215BS	PB169215BS	LCS	08/13/25 17:42		Jaswal	OK
79	CCV07	CCV07	CCV	08/13/25 17:46		Jaswal	OK
80	CCB07	CCB07	CCB	08/13/25 17:50		Jaswal	OK

Prep Standard - Chemical Standard Summary

Order ID : Q2820
Test : Mercury, Metals ICP-TAL
Prepbatch ID : PB169204, PB169211,
Sequence ID/Qc Batch ID: LB136782, LB136801,

Standard ID :
MP85893, MP85895, MP86404, MP86640, MP86641, MP86642, MP86643, MP86646, MP86647, MP86648, MP86651, MP86653, MP86655, MP86656, MP86706, MP86707, MP86708, MP86709, MP86710, MP86711, MP86712, MP86713, MP86714, MP86715, MP86716, MP86717, MP86718, MP86719, MP86721, MP86752, MP86753,

Chemical ID :
M4371, M4916, M5062, M5467, M5581, M5582, M5658, M5697, M5748, M5798, M5799, M5800, M5801, M5805, M5814, M5816, M5820, M5884, M5962, M5969, M5970, M5979, M5985, M5998, M6021, M6023, M6027, M6028, M6030, M6032, M6058, M6076, M6077, M6086, M6128, M6137, M6140, M6142, M6144, M6145, M6146, M6151, M6158, M6159, M6162, M6163, M6164, M6165, M6170, M6171, M6174, M6176, M6177, M6178, M6179, M6180, M6181, M6182, M6184, 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>
65	POTASSIUM PERMANGANATE SOLUTION 5 %	MP85893	06/05/2025	12/05/2025	Mohan Bera	METALS_SCALE_3 (M SC-3)	None	Sarabjit Jaswal
								06/14/2025

FROM 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	MP85895	06/05/2025	08/15/2025	Mohan Bera	METALS_SCALE_3 (M SC-3)	None	Sarabjit Jaswal
								06/14/2025

FROM 2000.00000ml of W3112 + 240.00000gram of M4371 + 240.00000gram of M5884 = Final Quantity: 2000.000 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>
169	1:1HNO3	MP86404	07/17/2025	11/16/2025	Sagar Kanani	METALS_SCALE_2 (M SC-2)	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 07/17/2025

FROM 1250.00000ml of M6162 + 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)	MP86640	08/06/2025	08/27/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 08/07/2025

FROM 125.00000ml of M6151 + 2350.00000ml of W3112 + 25.00000ml of M6162 = Final Quantity: 500.000 ml

Metals STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
907	ICP AES STD S (S5)	MP86641	08/06/2025	08/27/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 08/07/2025
FROM 5.00000ml of M5467 + 5.00000ml of M5820 + 5.00000ml of M5969 + 5.00000ml of M5970 + 5.00000ml of M5998 + 5.00000ml of M6077 + 5.00000ml of M6146 + 5.00000ml of M6174 + 5.00000ml of M6176 + 455.00000ml of MP86640 = 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	MP86642	08/06/2025	08/27/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 08/07/2025
FROM 50.00000ml of MP86640 + 50.00000ml of MP86641 = 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	MP86643	08/06/2025	08/27/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP	Sarabjit Jaswal

A)

FROM 25.00000ml of MP86641 + 75.00000ml of MP86640 = 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>
911	ICP AES CCV SOLN	MP86646	08/06/2025	08/27/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP	Sarabjit Jaswal

A)

FROM 50.00000ml of MP86640 + 50.00000ml of MP86641 = 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	MP86647	08/06/2025	08/27/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP	Sarabjit Jaswal

FROM 1.00000ml of M6179 + 10.00000ml of M5985 + 1969.00000ml of W3112 + 20.00000ml of M6162 = 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	MP86648	08/06/2025	08/27/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP	Sarabjit Jaswal

FROM 200.00000ml of M6162 + 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>
904	ICP AES ICSA SOLN	MP86651	08/06/2025	08/27/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP	Sarabjit Jaswal

A)

FROM 5.00000ml of M6182 + 45.00000ml of MP86640 = 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>
3913	ICP AES STD S2	MP86653	08/06/2025	08/27/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP	Sarabjit Jaswal

A)

FROM 4.00000ml of MP86641 + 46.00000ml of MP86640 = Final Quantity: 50.000 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	MP86655	08/06/2025	08/27/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 08/07/2025

FROM 0.00000ml of M5748 + 0.00000ml of M5805 + 0.03000ml of M5798 + 0.03000ml of M6028 + 0.05000ml of M5658 + 0.05000ml of M6030 + 0.05000ml of M6140 + 0.05000ml of M6159 + 0.06000ml of M6177 + 0.10000ml of M5697 + 0.10000ml of M5801 + 0.10000ml of M5816 + 0.10000ml of M5820 + 0.10000ml of M5962 + 0.10000ml of M5970 + 0.10000ml of M6128 + 0.10000ml of M6176 + 0.15000ml of M5800 + 0.20000ml of M5799 + 0.20000ml of M5979 + 0.20000ml of M6021 + 0.20000ml of M6023 + 0.20000ml of M6027 + 0.20000ml of M6145 + 0.25000ml of M5467 + 0.25000ml of M6146 + 0.50000ml of M5814 + 0.50000ml of M6032 + 1.00000ml of M6086 + 1.00000ml of M6142 + 1.00000ml of M6144 + 1.00000ml of M6171 + 1.00000ml of M6178 + 2.00000ml of M6137 + 89.03000ml of MP86640 = 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	MP86656	08/06/2025	08/27/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 08/07/2025

FROM 1.00000ml of MP86655 + 49.00000ml of MP86640 = Final Quantity: 50.000 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>
871	MERCURY INTERMEDIATE B 250PPB WORKING STD.	MP86706	08/11/2025	08/12/2025	Mohan Bera	None	None	Sarabjit Jaswal
								08/14/2025

FROM 2.50000ml of M5062 + 2.50000ml of M6162 + 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	MP86707	08/11/2025	08/12/2025	Mohan Bera	None	None	Sarabjit Jaswal
								08/14/2025

FROM 2.50000ml of M6162 + 247.50000ml of W3112 = Final Quantity: 250.000 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>
1341	Hg 0.2 PPB STD	MP86708	08/11/2025	08/12/2025	Mohan Bera	None	None	Sarabjit Jaswal
08/14/2025								

FROM 2.50000ml of M6162 + 247.30000ml of W3112 + 0.20000ml of MP86706 = 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>
1342	Hg 2.5 PPB STD	MP86709	08/11/2025	08/12/2025	Mohan Bera	None	None	Sarabjit Jaswal
08/14/2025								

FROM 2.50000ml of M6162 + 245.00000ml of W3112 + 2.50000ml of MP86706 = Final Quantity: 250.000 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>
1343	Hg 5.0 PPB STD	MP86710	08/11/2025	08/12/2025	Mohan Bera	None	None	Sarabjit Jaswal
								08/14/2025

FROM 2.50000ml of M6162 + 242.50000ml of W3112 + 5.00000ml of MP86706 = 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	MP86711	08/11/2025	08/12/2025	Mohan Bera	None	None	Sarabjit Jaswal
								08/14/2025

FROM 2.50000ml of M6162 + 240.00000ml of W3112 + 7.50000ml of MP86706 = Final Quantity: 250.000 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>
1345	Hg 10.0 PPB STD	MP86712	08/11/2025	08/12/2025	Mohan Bera	None	None	Sarabjit Jaswal
08/14/2025								

FROM 2.50000ml of M6162 + 237.50000ml of W3112 + 10.00000ml of MP86706 = 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	MP86713	08/11/2025	08/12/2025	Mohan Bera	None	None	Sarabjit Jaswal
08/14/2025								

FROM 2.50000ml of M6162 + 245.00000ml of W3112 = Final Quantity: 250.000 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>
1351	ICB (Hg 0.00 PPB SOLUTION)	MP86714	08/11/2025	08/12/2025	Mohan Bera	None	None	Sarabjit Jaswal
								08/14/2025

FROM 2.50000ml of M6162 + 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)	MP86715	08/11/2025	08/12/2025	Mohan Bera	None	None	Sarabjit Jaswal
								08/14/2025

FROM 485.00000ml of W3112 + 5.00000ml of M6162 + 10.00000ml of MP86706 = Final Quantity: 500.000 ml

Metals STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1352	CCB (Hg 0.00 PPB SOLUTION)	MP86716	08/11/2025	08/12/2025	Mohan Bera	None	None	Sarabjit Jaswal
								08/14/2025

FROM 495.00000ml of W3112 + 5.00000ml of M6162 = 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>
1349	CRA/CRI (Hg 0.2 PPB SOLUTION)	MP86717	08/11/2025	08/12/2025	Mohan Bera	None	None	Sarabjit Jaswal
								08/14/2025

FROM 2.50000ml of M6162 + 247.30000ml of W3112 + 0.20000ml of MP86706 = Final Quantity: 250.000 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>
1350	CHK STD (Hg 7.0 PPB SOLUTION)	MP86718	08/11/2025	08/12/2025	Mohan Bera	None	None	Sarabjit Jaswal
								08/14/2025

FROM 2.50000ml of M6162 + 240.50000ml of W3112 + 7.00000ml of MP86706 = 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>
887	AQUA REGIA FOR HG ON 7471A	MP86719	08/11/2025	08/12/2025	Mohan Bera	None	None	Sarabjit Jaswal
								08/14/2025

FROM 150.00000ml of M6151 + 50.00000ml of M6162 = 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>
104	5% RINSING HCL	MP86721	08/11/2025	08/17/2025	Mohan Bera	None	None	Sarabjit Jaswal
								08/14/2025

FROM 100.00000ml of M6151 + 1900.00000ml 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>
4163	NEW ICV-060925	MP86752	08/06/2025	08/27/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal
								08/14/2025

FROM 0.20000ml of M6058 + 0.40000ml of M6163 + 0.40000ml of M6164 + 0.40000ml of M6165 + 48.60000ml of MP86640 = Final Quantity: 50.000 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>
3494	ICP AES ICSAB SOLN-1	MP86753	08/06/2025	08/27/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal
FROM 0.05000ml of M6076 + 5.00000ml of M6182 + 5.00000ml of M6184 + 39.95000ml of MP86640 = Final Quantity: 100.000 ml								

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CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-2196-01 / Hydroxylamine Hydrochloride, Crystal (cs/4x500g)	0000215387	06/25/2025	07/01/2019 / RICHARD	06/07/2019 / RICHARD	M4371

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 / jaswal	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

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58024 / Chromium, Cr, 500 ml, 1000 PPM	060523	06/05/2026	08/28/2023 / jaswal	08/25/2023 / jaswal	M5658

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	102523	10/25/2026	04/03/2024 / jaswal	10/27/2023 / jaswal	M5697

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.	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

CHEMICAL RECEIPT LOG BOOK

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58120 / Ca, 10000 PPM, 500 ml	122223	12/22/2026	04/17/2025 / Janvi	01/03/2024 / jaswal	M5805

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.	57016 / S, 1000 PPM, 125 ml	122923	12/29/2026	05/20/2024 / Jaswal	02/09/2024 / jaswal	M5816

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	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-3624-05 / Sodium Chloride, Crystal (cs/4x2.5kg)	0000281938	07/06/2026	04/30/2024 / mohan	04/25/2024 / mohan	M5884

CHEMICAL RECEIPT LOG BOOK

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57003 / Li, 1000 PPM, 125 ml	061224	06/21/2027	07/01/2024 / Jaswal	07/01/2024 / Jaswal	M5970

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGTI1-1 / 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

CHEMICAL RECEIPT LOG BOOK

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

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

CHEMICAL RECEIPT LOG BOOK

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

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.	58120 / Calcium, 500 ml, 10000 PPM	082324	08/23/2027	03/06/2025 / JANVI	10/14/2024 / jaswal	M6086

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

CHEMICAL RECEIPT LOG BOOK

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

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 / Jaswal	01/13/2025 / Jaswal	M6145

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57051 / Sb, 1000 PPM, 125 ml	071724	07/17/2027	01/31/2025 / kareem	10/18/2024 / kareem	M6146

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

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9598-34 / Nitric Acid, Instra-Analyzed (cs/4x2.5L)	24D1062002	09/09/2025	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

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	11/27/2025	05/27/2025 / Sagar	04/27/2025 / Sagar	M6162

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

CHEMICAL RECEIPT LOG BOOK

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 / Sagar	05/20/2025 / Sagar	M6170

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 / Janvi	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

CHEMICAL RECEIPT LOG BOOK

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

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	DIW / DI Water	Daily Lab-Certified	07/03/2029	07/03/2024 / lwona	07/03/2024 / lwona	W3112



M6032



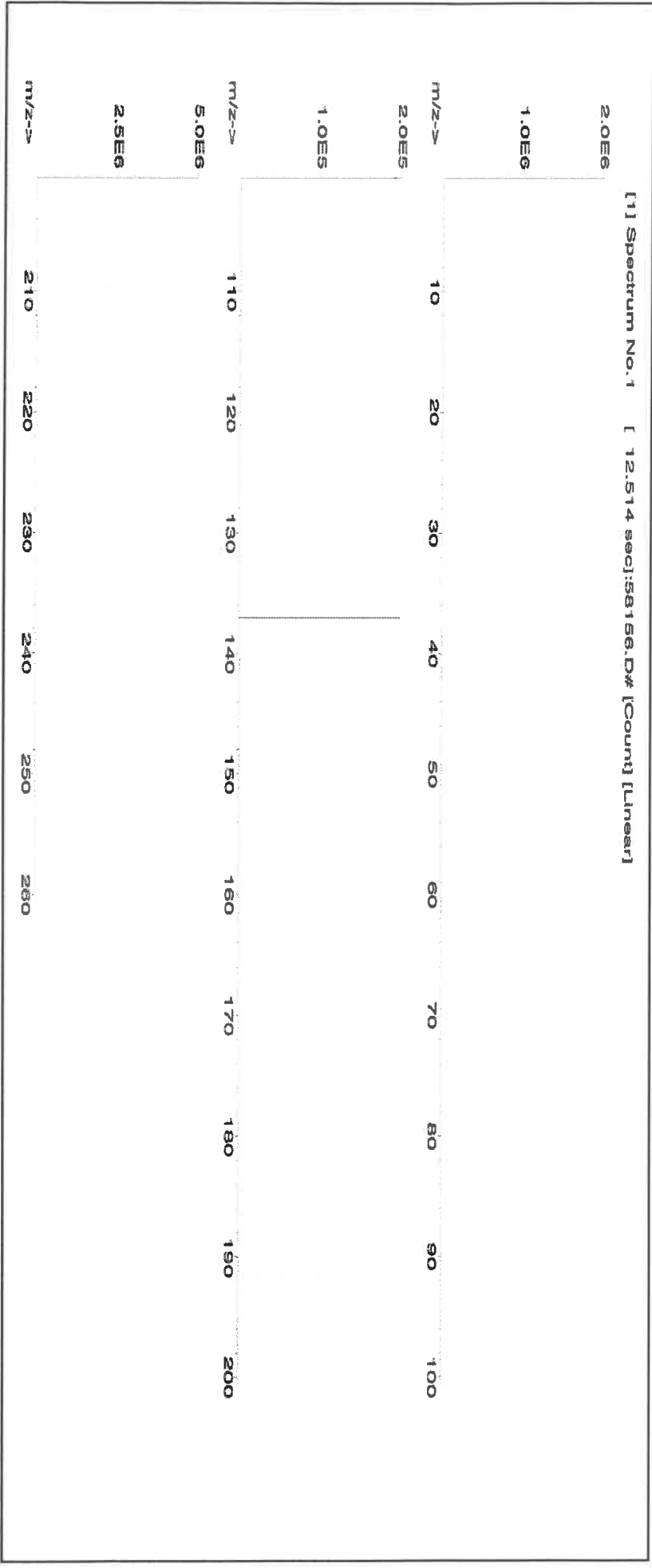
CERTIFIED WEIGHT REPORT:

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

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

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

SDS Information									
Compound	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)
1. Barium nitrate (Ba)	IN023	BA0022019A1	1000	99.999	0.10	52.3	3.82417	3.82441	1000.1





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 Reference Material CRM



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

CERTIFIED WEIGHT REPORT:

Part Number: 58120
Lot Number: 122223
Description: Calcium (Ca)

Solvent: 24002546 Nitric Acid

Lot #

Expiration Date: 122226

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): 10000

NIST Test Number: 6UTB

Weight shown below was diluted to (mL): 4000.0

5E-05 Balance Uncertainty
0.06 Flask Uncertainty

2% 80.0 mL Nitric Acid

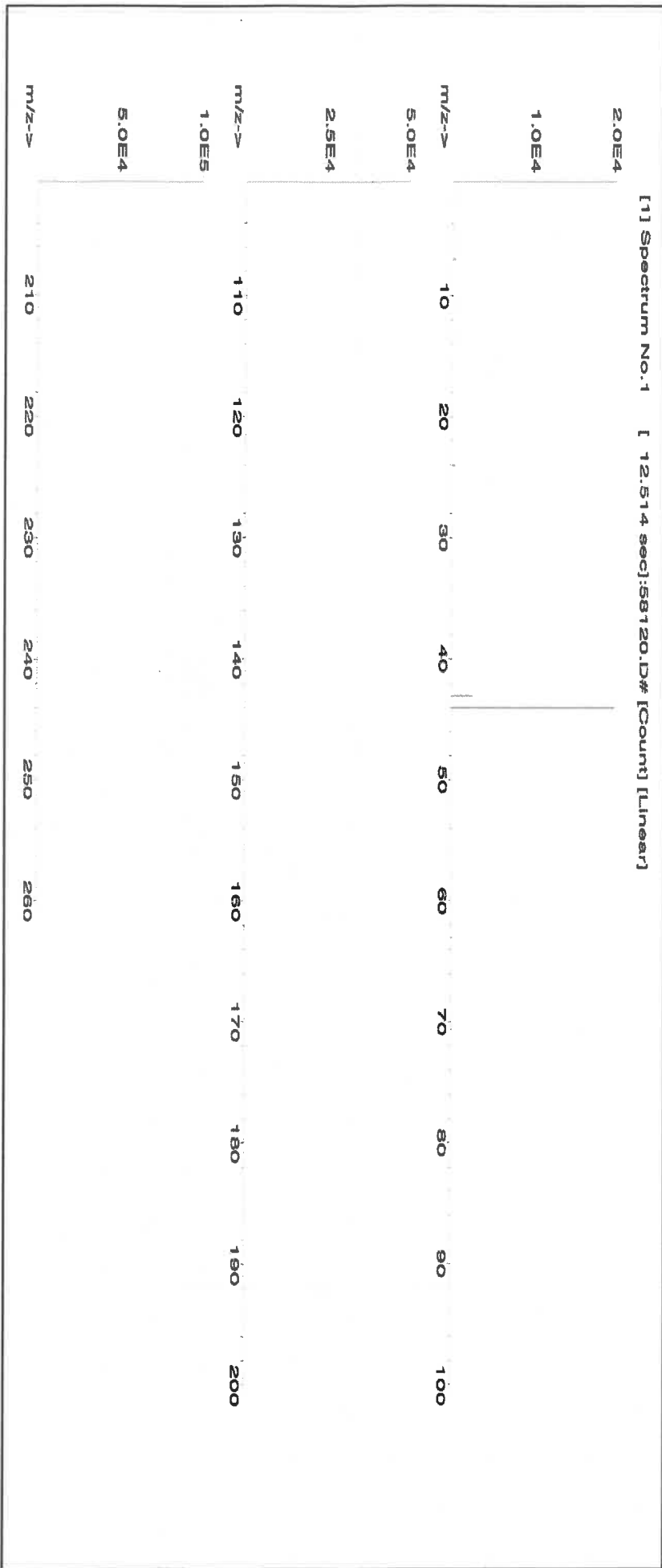
<i>Giovanni Caporaso</i>	
Formulated By:	Giovanni Esposito 122223
Reviewed By:	<i>Pedro L. Renteria</i> 122223

SDS Information

Compound	Lot	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Calcium carbonate (Ca) IN014 CAD0302383 10000 99.999 0.10 39.9 100.2525 100.2670 10001.4 20.0 471.34-1 5 mg/m3 off-ral >2000mg/kg 3109a

[1] Spectrum No.1 [12.514 sec]:58120.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	T	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	Ti	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	30	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	Tl	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



Certified Reference Material CRM



Rev'd 2/10/14/2024 M6085 / M6086 / M6087

CERTIFIED WEIGHT REPORT:

Part Number: 58120
Lot Number: 082324
Description: Calcium (Ca)

Solvent: 24002546 Nitric Acid

Lot #

2% 80.0 (mL) Nitric Acid

Expiration Date: 082327

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): 10000

NIST Test Number: 6UTB

5E-05 Balance Uncertainty

Weight shown below was diluted to (mL): 4000.1 0.15 Flask Uncertainty

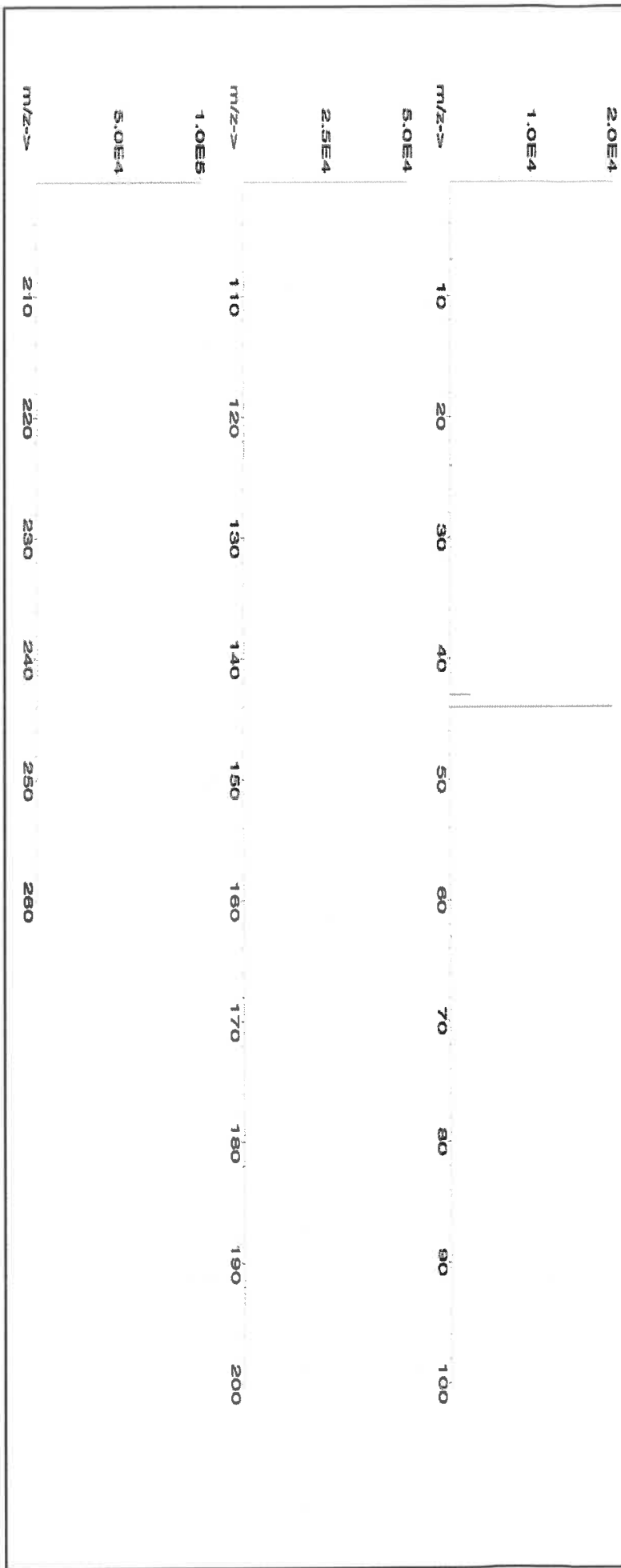
<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
Reviewed By:	Pedro L. Rentas
	082324

SDS Information

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Calcium carbonate (Ca) IN014 CAD03202383 10000 99.999 0.10 39.9 100.2537 100.2656 10001.2 20.0 471-34-1 5 mg/m3 or-rel >2000mg/kg 3109a

[1] Spectrum No. 1 [12.514 sec]: 58120.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	T	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	30	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	Su	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * 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

M6028



CERTIFIED WEIGHT REPORT:

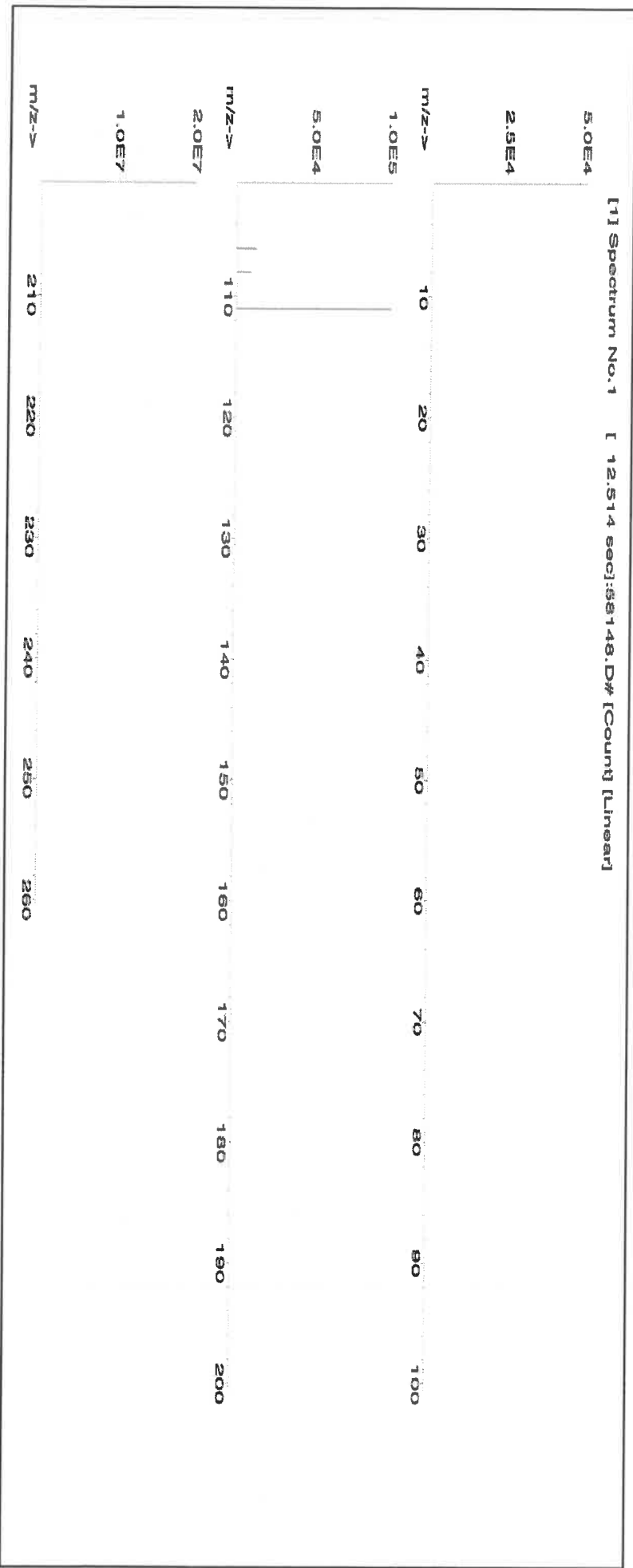
Part Number: 57048 **Lot #**
Lot Number: 070124
Description: Cadmium (Cd) **Solvent:** 24002546 Nitric Acid

Expiration Date: 070127 **2%** 40.0 Nitric Acid
Recommended Storage: Ambient (20 °C) (mL)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB 5E-05 Balance Uncertainty

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

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

SDS Information									
Compound	Lot	Nominal	Purity	Uncertainty	Assay	Target	Actual	Actual	Expanded
	Number	Conc. (µg/mL)	(%)	Purity (%)	(%)	Weight (g)	Weight (g)	Conc. (µg/mL)	+/- (µg/mL)
1. Cadmium nitrate tetrahydrate (Cd)	INO24	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





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).
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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).

M4371

Hydroxylamine Hydrochloride, Crystal
BAKER ANALYZED® A.C.S. Reagent
Suitable for Mercury Determination
(hydroxylammonium chloride)

Rec - 06.07.19



avantortm

Material No.: 2196-01
Batch No.: 0000215387
Manufactured Date: 2018/06/27
Retest Date: 2025/06/25
Revision No: 1

Certificate of Analysis

Meets ACS Reagent Chemical Requirements,

Test	Specification	Result
Assay (NH ₂ OH · HCl) (by KMnO ₄ titrn)	>= 96.0 %	99.1
Clarity of Alcohol Solution	Passes Test	PT
Residue after Ignition	<= 0.050 %	0.017
Titrate Free Acid (meq/g)	<= 0.25	0.19
Ammonium (NH ₄)	Passes Test	PT
Sulfur Compounds (as SO ₄)	<= 0.005 %	< 0.003
Trace Impurities - ACS - Heavy Metals (as Pb)	<= 5 ppm	4
Trace Impurities - Iron (Fe)	<= 5 ppm	< 3
Trace Impurities - Mercury (Hg)	<= 0.050 ppm	< 0.005

For Laboratory, Research or Manufacturing Use

Country of Origin: CN
Packaging Site: Paris Mfg Ctr & DC

ISO

Phillipsburg, NJ 9001:2015, FSSC22000
Paris, KY 9001:2008
Mexico City, Mexico 9001:2008
Gliwice, Poland 9001:2015, 13485:2012
Selangor, Malaysia 9001:2008
Dehradun, India, 9001:2008, 14001:2004, 13485:2003
Mumbai, India, 9001:2015, 17025:2005
Panoli, India 9001:2015

James Ethier

Jamie Ethier
Vice President Global Quality

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700

Avantor Performance Materials, LLC

100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone: 610.386.1700

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.

MS062
MS063
MB

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





Certified Reference Material CRM



N5467 R: 03/01/23 (14)

CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

57058
020623
Cerium (Ce)

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

020626
Ambient (20 °C)
1000
6UTB

Weight shown below was diluted to (mL):

1000.12

5E-05 Balance Uncertainty

0.058 Flask Uncertainty

Lot #

Solvent: 21110221 Nitric Acid

2% 20.0 Nitric Acid (mL)

Formulated By:	Lawrence Barry 020623
Reviewed By:	Pedro L. Rentas 020623

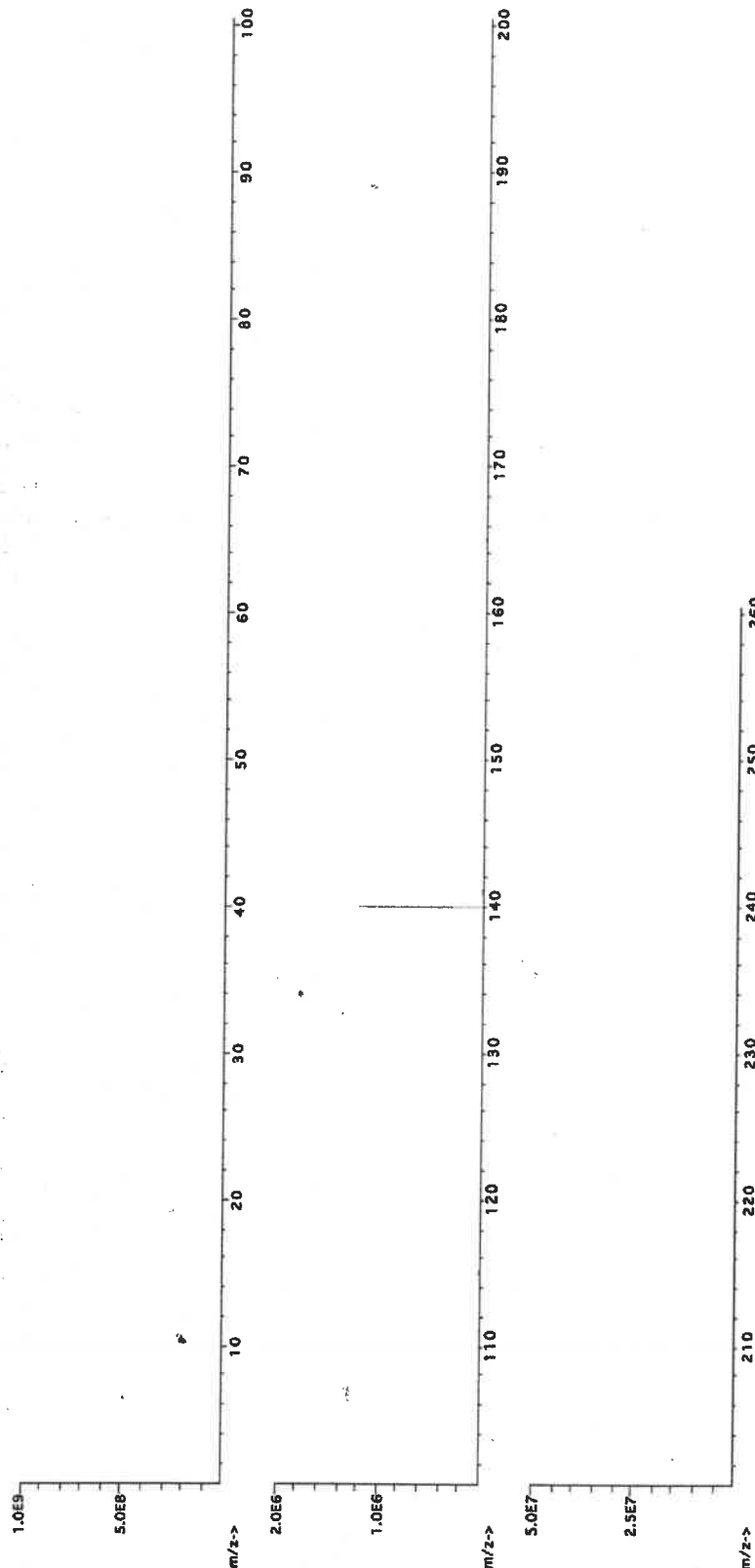
SDS Information

Expanded Uncertainty
Actual Concentration (µg/mL)
Actual Weight (g)
Target Weight (g)
Purity (%)
Nominal Concentration (µg/mL)
Lot Number
RM#

OSHA PEL (TWA)
CAS#
LD50
SRM

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

[1] Spectrum No.1 [43.472 sec]58158.D# [Count] [Linear]





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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	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	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.
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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).



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

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Laura Valencia
Quality Assurance Inspector

F:\J:\A\CF\PCISCI\COC-55118-BOI5021-061223



CERTIFIED WEIGHT REPORT:

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

Lot # 21110221
Solvent: Nitric Acid

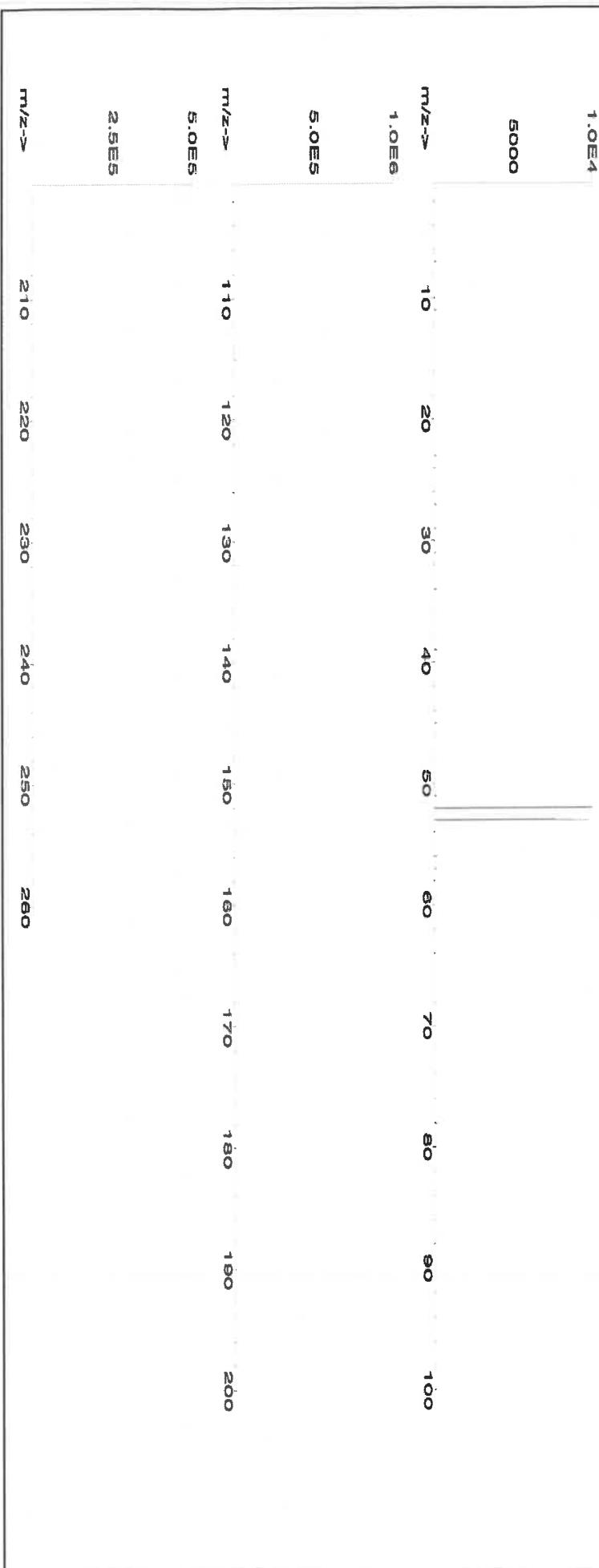
Formulated By:	Lawrence Barry
	060523
Reviewed By:	Pedro L. Ruelas
	060523

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

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
----------	-------------	------------	-----------------	-------------------	------------------	-----------------------	-----------------------	---------------------	----------------------------------	------	----------------	------	----------

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

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





Certified Reference Material CRM



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

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 Reference Material CRM



CERTIFIED WEIGHT REPORT:

Part Number: **58029**
Lot Number: **102523**
Description: **Copper (Cu)**

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

Expiration Date: **102526**

2.0% (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): **2000.02**

0.058 Flask Uncertainty

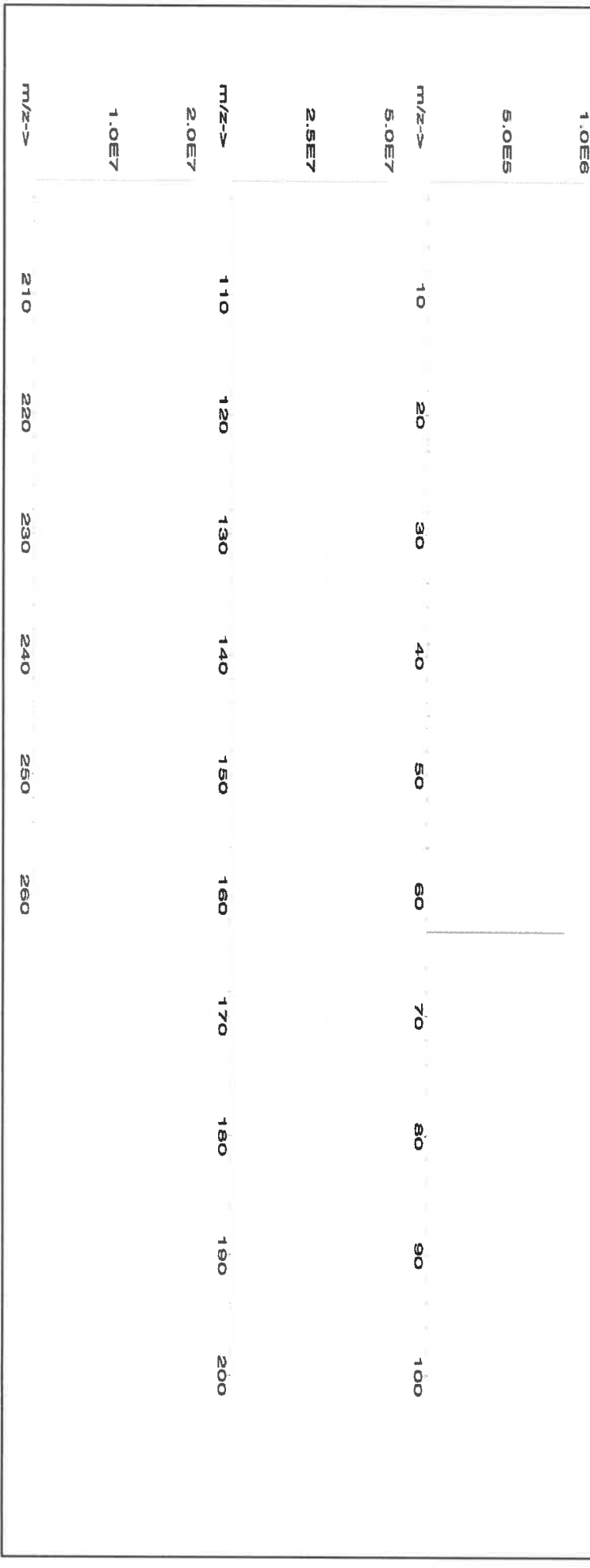
Formulated By:	Benson Chan	102523
Reviewed By:	Pedro L. Rentas	102523

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. Copper(II) nitrate trihydrate (Cu) 58129 100223 0.1000 200.0 0.084 1000 10000.1 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]





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	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	T	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * 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:

57028
091223
Nickel (NI)

Lot #
24002546
Solvent:
Nitric Acid

2.0%

40.0
(mL)

Nitric Acid

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

091228
Ambient (20 °C)
1000

NIST Test Number:

6U7B

Volume shown below was diluted to (mL):

5E-05 Balance Uncertainty
0.056 Flask Uncertainty

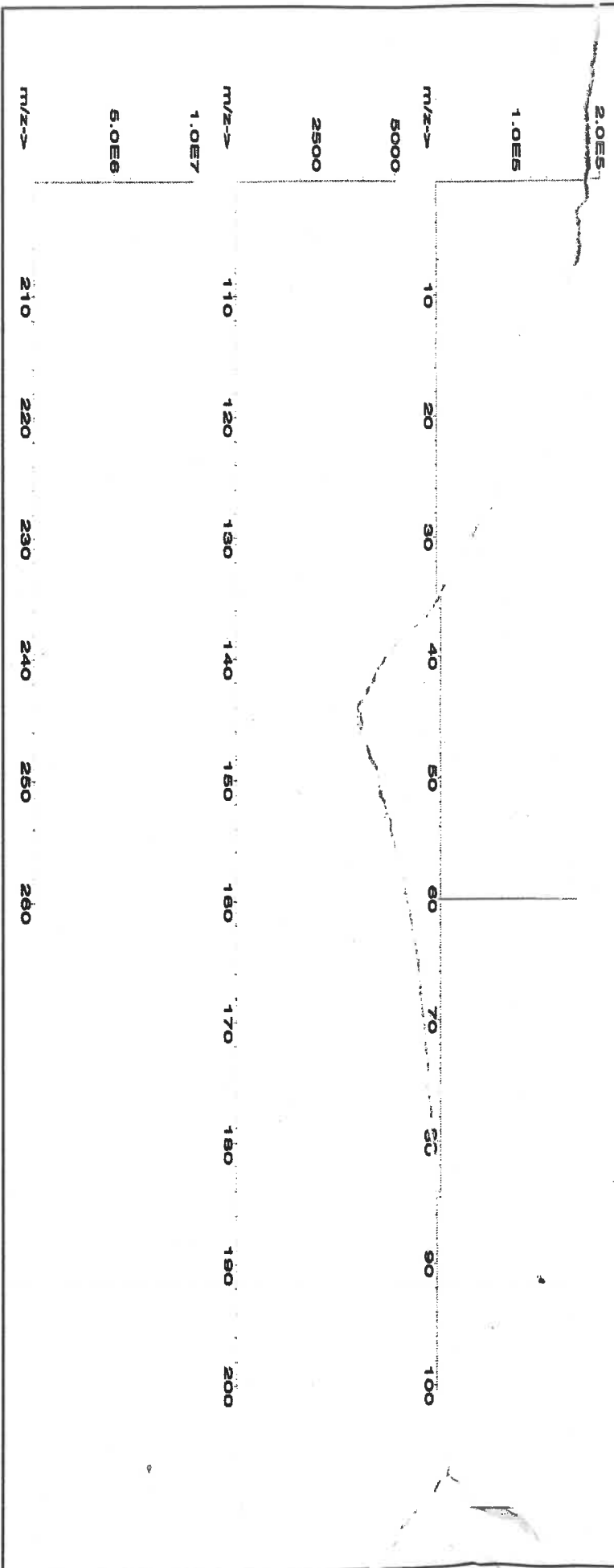
Formulated By:	Lawrence Barry	091223
Reviewed By:	Pedro L. Renteria	091223

SDS Information

Compound	Part Number	Lot Number	Dilution Factor	Initial Vd. (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. 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

[1] Spectrum No.1 [9.135 sec]:56028.D# [Count] [Linear]





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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	T	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Tb	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number: 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

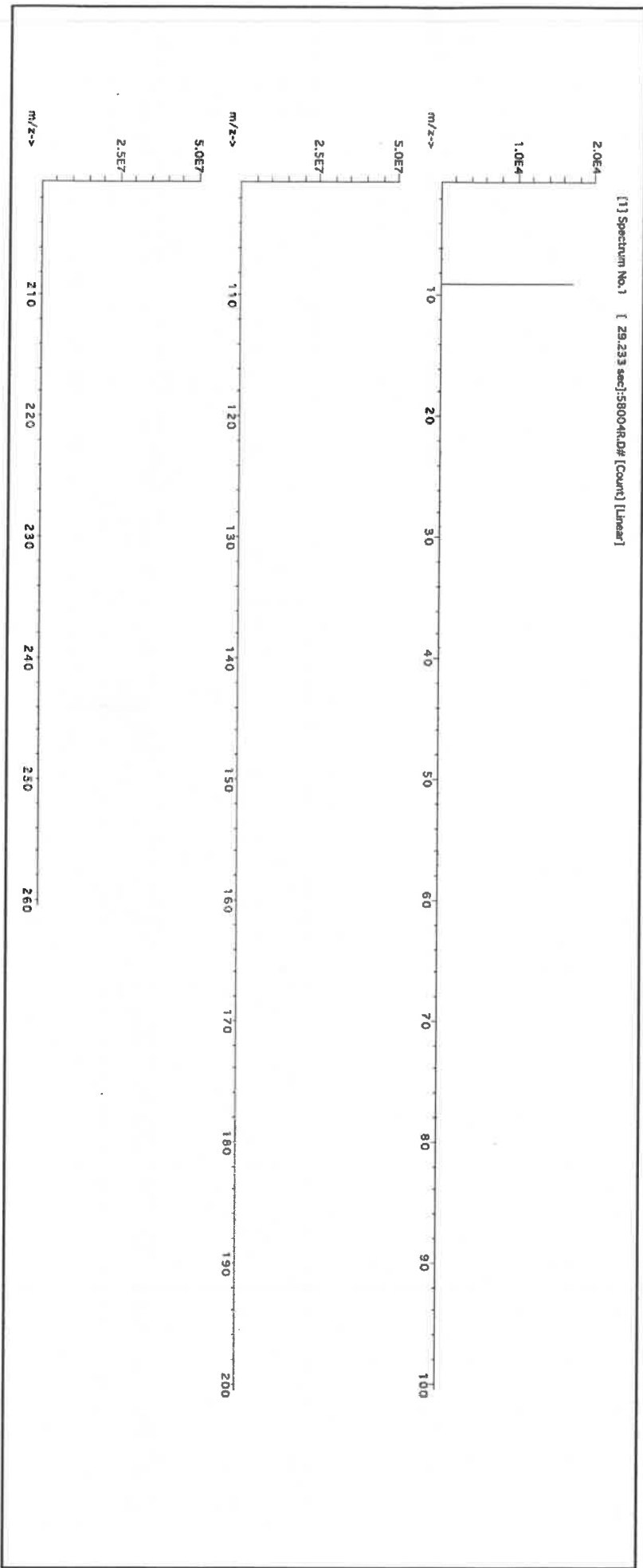
0.058 Flask Uncertainty

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

SDS Information

Compound	Part Number	Lot	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	intrinsc-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 (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	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	<0.02	Th	<0.02	Yb	<0.02
Be	T	Cr	<0.02	Ga	<0.02	Fe	<0.02	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Ta	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.02	Sc	<0.02	Ta	<0.02	Tl	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



Certified Reference Material CRM

CERTIFIED WEIGHT REPORT:

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

Solvents: 21110221 Nitric Acid
22D0562008 Hydrochloric acid

Expiration Date: 071126
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000

2% 10.0 Nitric Acid
6% 30.0 Hydrochloric acid
(mL)

NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 499.93

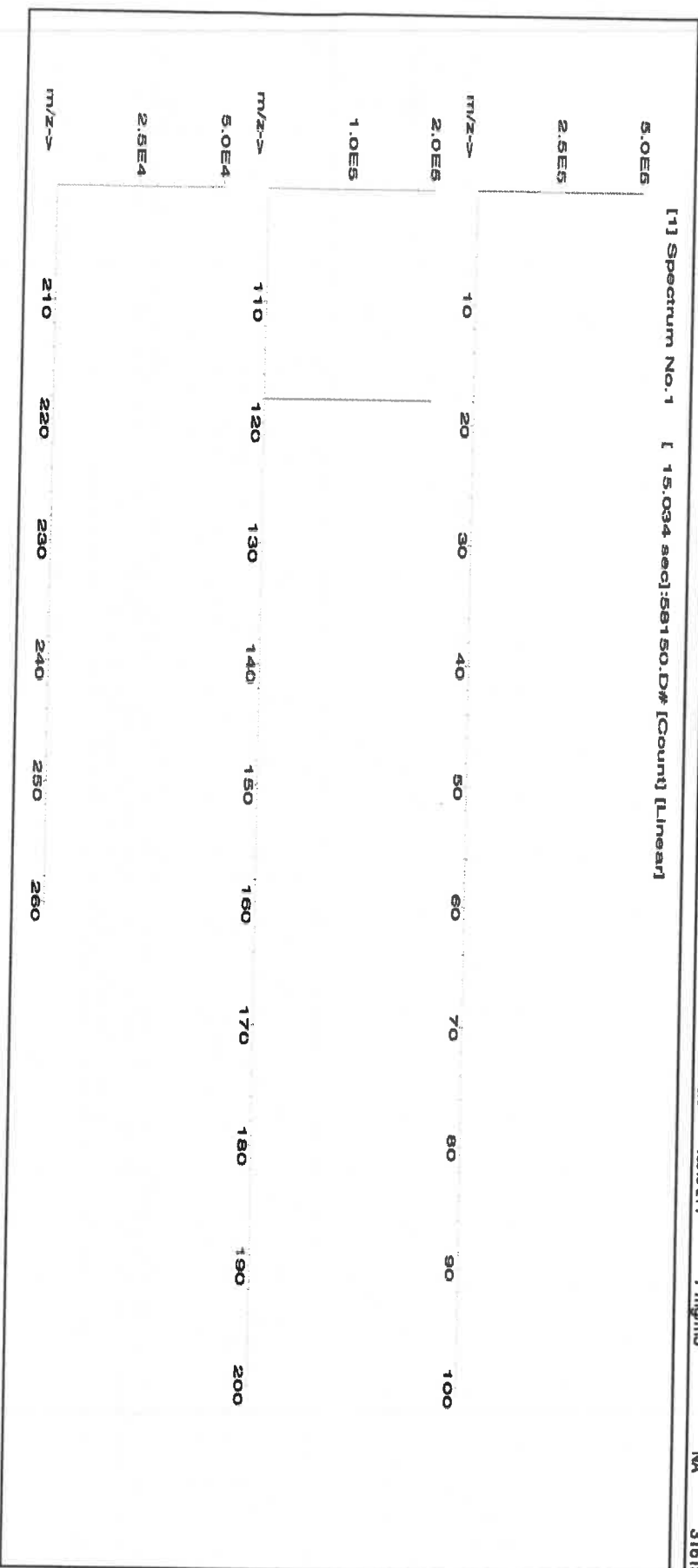
5E-05 Balance Uncertainty
0.0058 Flask Uncertainty

<i>[Signature]</i>	
Formulated By:	Benson Chan
	071123
Reviewed By:	Pedro L. Rientas
	071123

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

1. Ammonium hexafluoroantimonate(V) (Sn) IN010 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	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	<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	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).



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)

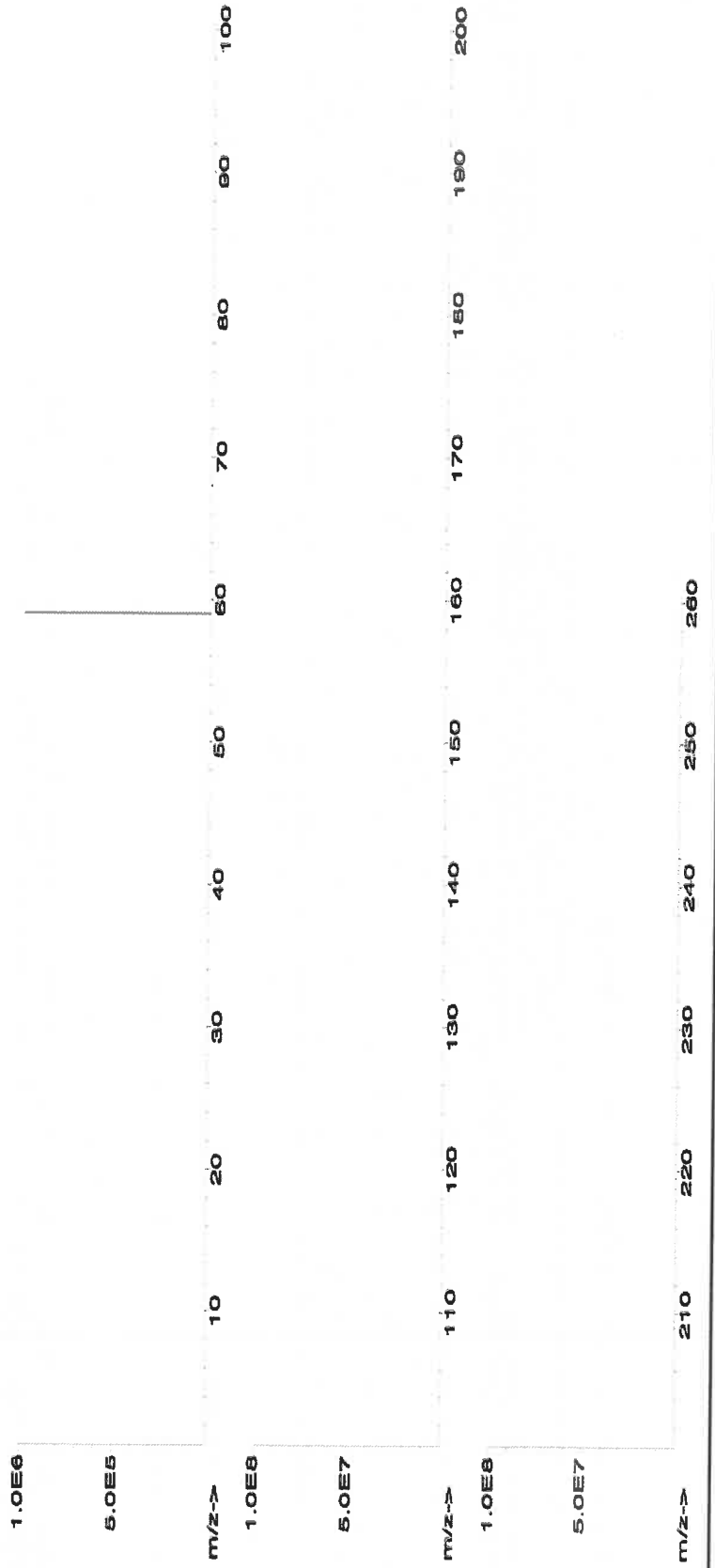
Formulated By:	Lawrence Barry
Reviewed By:	Pedro L. Rentas

SDS Information

Expanded Uncertainty
(Solvent Safety Info. On Attached pg.)
NIST SRM
CAS# OSHA PEL (TWA) LD50

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

[1] Spectrum No.1 [34.243 sec]:58027.D# [Count] [Linear]





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

Trace Metals Verification by ICP-MS ($\mu\text{g/mL}$)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.02	Er	<0.2	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.02	Os	<0.01	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.02	Hg	<0.2	P	<0.2	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Gé	<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:

Ben. F.

- * 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

AR: 02/09/24

M5801

BA



CERTIFIED WEIGHT REPORT:

Part Number: 57033
Lot Number: 111323
Description: Arsenic (As)

Lot # 24002546
Solvent: Nitric Acid

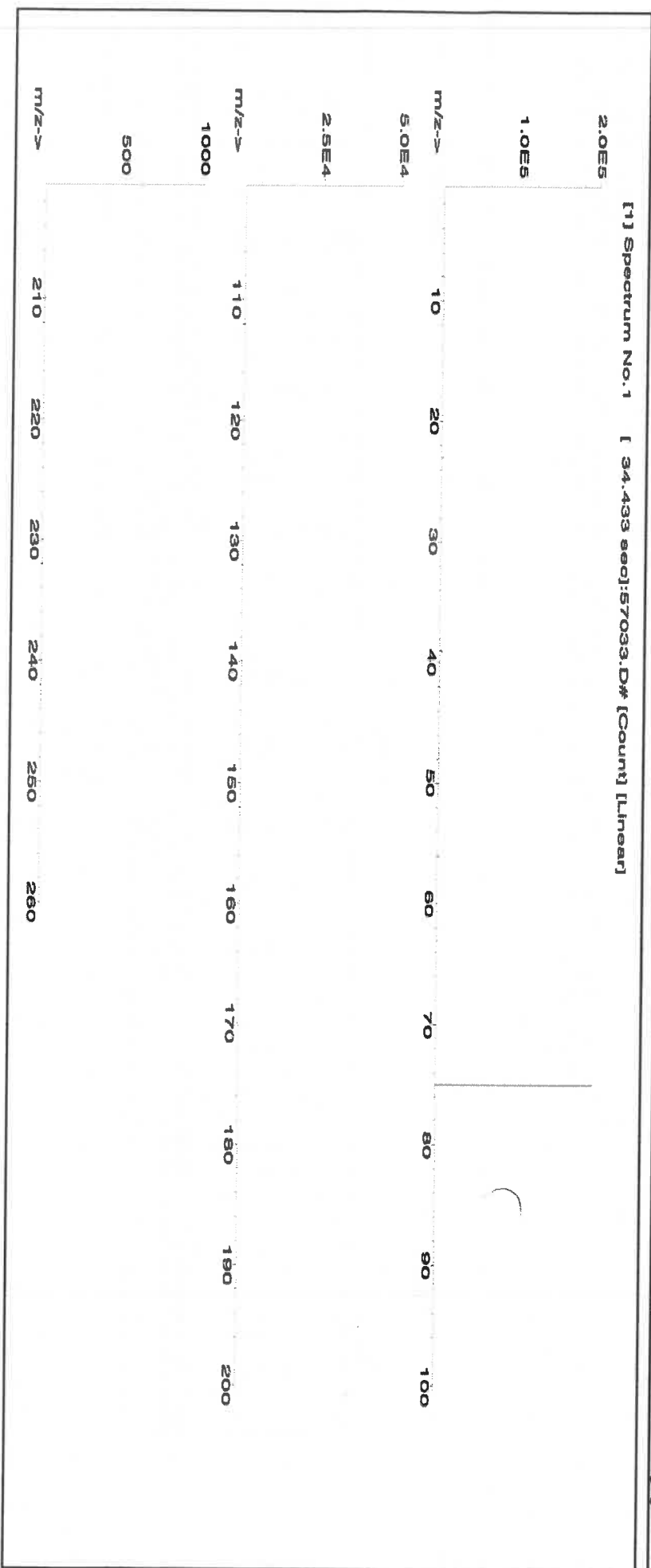
Expiration Date: 111326
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6LUTB
Volume shown below was diluted to (mL): 4000.0

Balance Uncertainty: 5E-05
Flask Uncertainty: 0.06

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

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)
1. Arsenic (As)	57033	020522	0.1000	400.0	0.084	1000	10001.0	1000.0	2.0

7440-38-2 0.5 mg/m3 or rat 500 mg/kg 3103a





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	Tc	<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	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
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	Tl	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

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

Solvent: MKB8697V Ammonium hydroxide

Lot #

AI: 021009124 M5814

Expiration Date: 071126
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

2.0% 40.0 Ammonium hydroxide (mL)

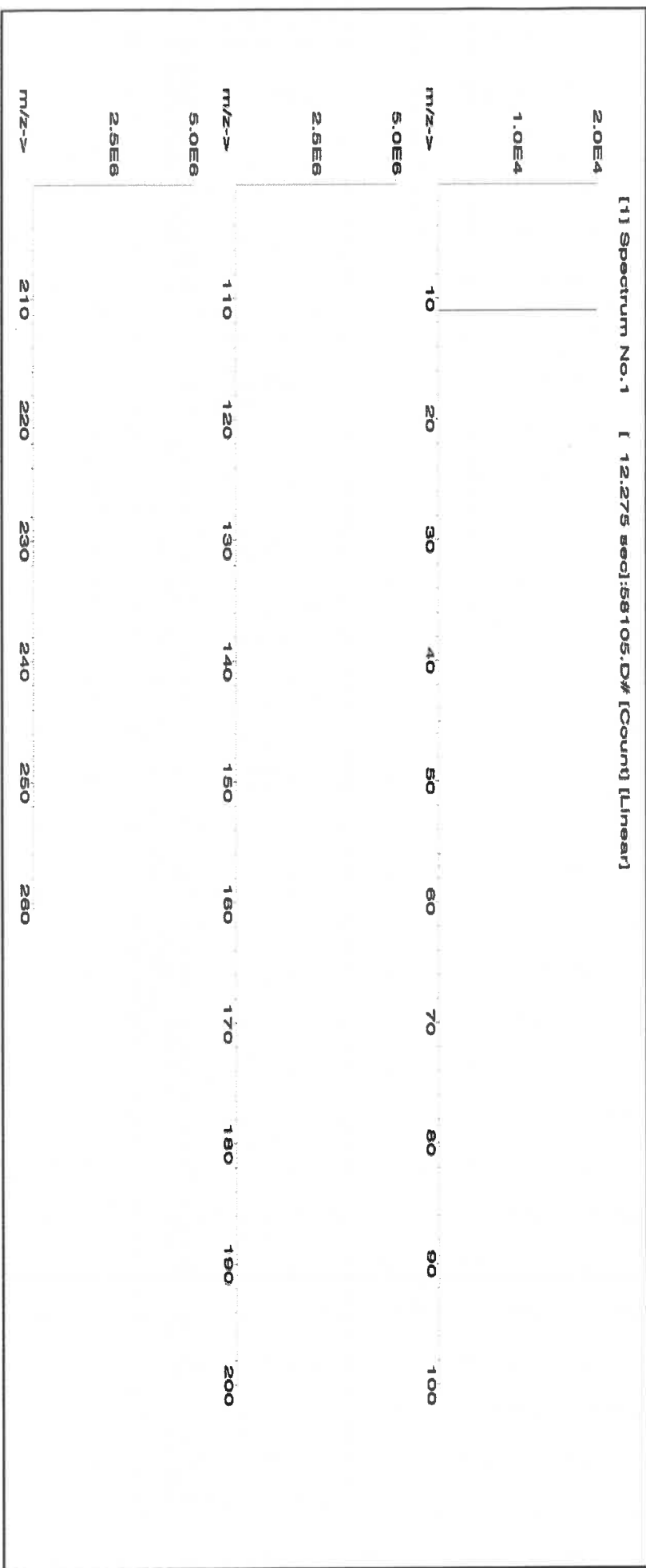
Weight shown below was diluted to (mL): 1999.48 0.058 Balance Uncertainty Flask Uncertainty

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

SDS Information

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

1. Boric acid (B) IN018 BV082018A1 1000 99.9999 0.10 17.3 11.55772 11.56201 1000.4 2.0 10043-35-3 2 mg/m3 or-nat 2660 mg/kg 3107





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
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	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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- * 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)

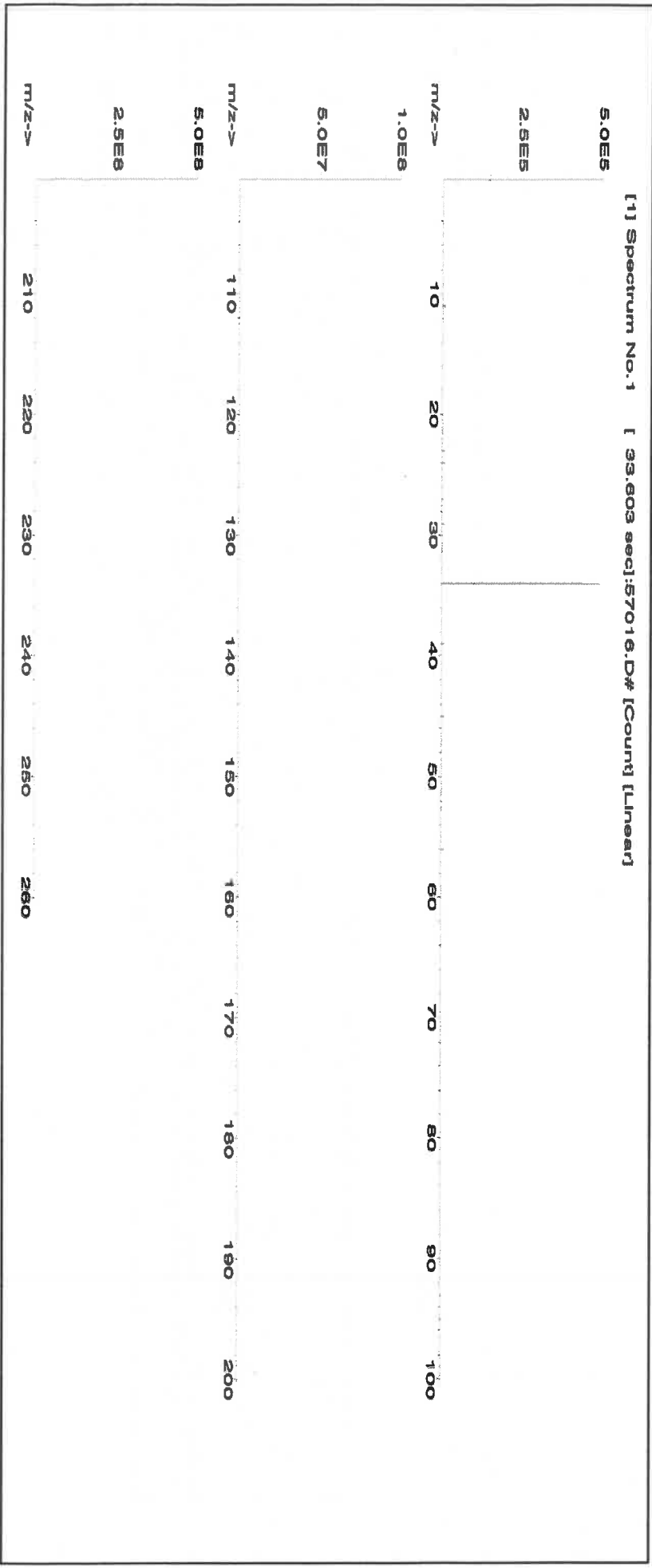
Solvent: 122923
ASTM Type 1 Water

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: 6L7B
Weight shown below was diluted to (mL): 4000.0
SE-05 Balance Uncertainty
0.06 Flask Uncertainty

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

1. Ammonium sulfate (S) IN117 SLBR225V 1000 99.9 0.10 24.3 16.4979 16.4980 1000.0 2.0 7783-20-2 NA or-rel 4250mg/kg 3181





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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	La	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Ba	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Ru	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	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	Ti	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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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 Reference Material CRM



CERTIFIED WEIGHT REPORT:

Part Number: 57015
Lot Number: 091123
Description: Phosphorous (P)

Solvent: 24002546 Nitric Acid

Lot #

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

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

2% 40.0 (mL) Nitric Acid

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

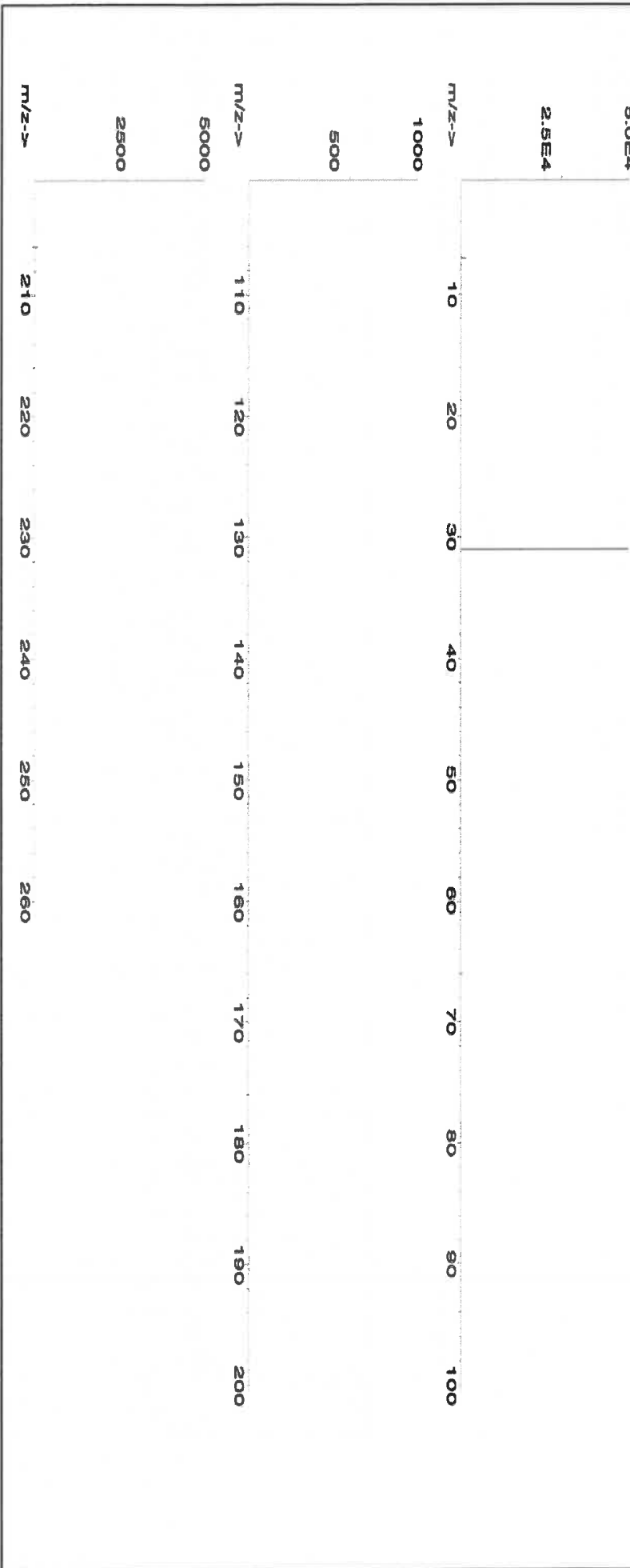
Compound

RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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SDS Information

1. Ammonium dihydrogen phosphate (P) IN008 PY062019A1 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	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).

Sodium Chloride, Crystal
BAKER ANALYZED® A.C.S. Reagent



MS824
MB

Material No.: 3624-01

Batch No.: 0000281938

Manufactured Date: 2021-06-07

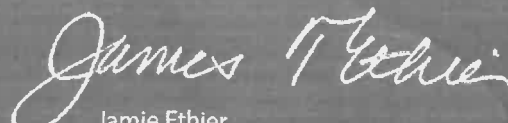
Retest Date: 2026-06-07

Revision No.: 1

Certificate of Analysis

Test	Specification	Result
Assay (NaCl) (by Ag titrn)	≥ 99.0 %	100.0 %
pH of 5% Solution at 25°C	5.0 - 9.0	6.3
Insoluble Matter	≤ 0.005 %	0.003 %
Iodide (I)	≤ 0.002 %	< 0.002 %
Bromide (Br)	≤ 0.01 %	< 0.01 %
Chlorate and Nitrate (as NO ₃)	≤ 0.003 %	< 0.001 %
ACS - Phosphate (PO ₄)	≤ 5 ppm	< 5 ppm
Sulfate (SO ₄)	≤ 0.004 %	< 0.004 %
Barium (Ba)	Passes Test	Passes Test
ACS - Heavy Metals (as Pb)	≤ 5 ppm	< 5 ppm
Iron (Fe)	≤ 2 ppm	< 1 ppm
Calcium (Ca)	≤ 0.002 %	< 0.001 %
Magnesium (Mg)	≤ 0.001 %	< 0.001 %
Potassium (K)	≤ 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

Absolute Standards, Inc.

800-368-1131
www.absolutestandards.com



Certified Reference Material CRM

MS962 R1061424



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

CERTIFIED WEIGHT REPORT:

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

Lot #
24002546
Solvent:
Nitric Acid

2.0%
40.0
Nitric Acid
(mL)

Expiration Date:

060627

Recommended Storage:

Ambient (20 °C)

Nominal Concentration (µg/mL):

1000

NIST Test Number:

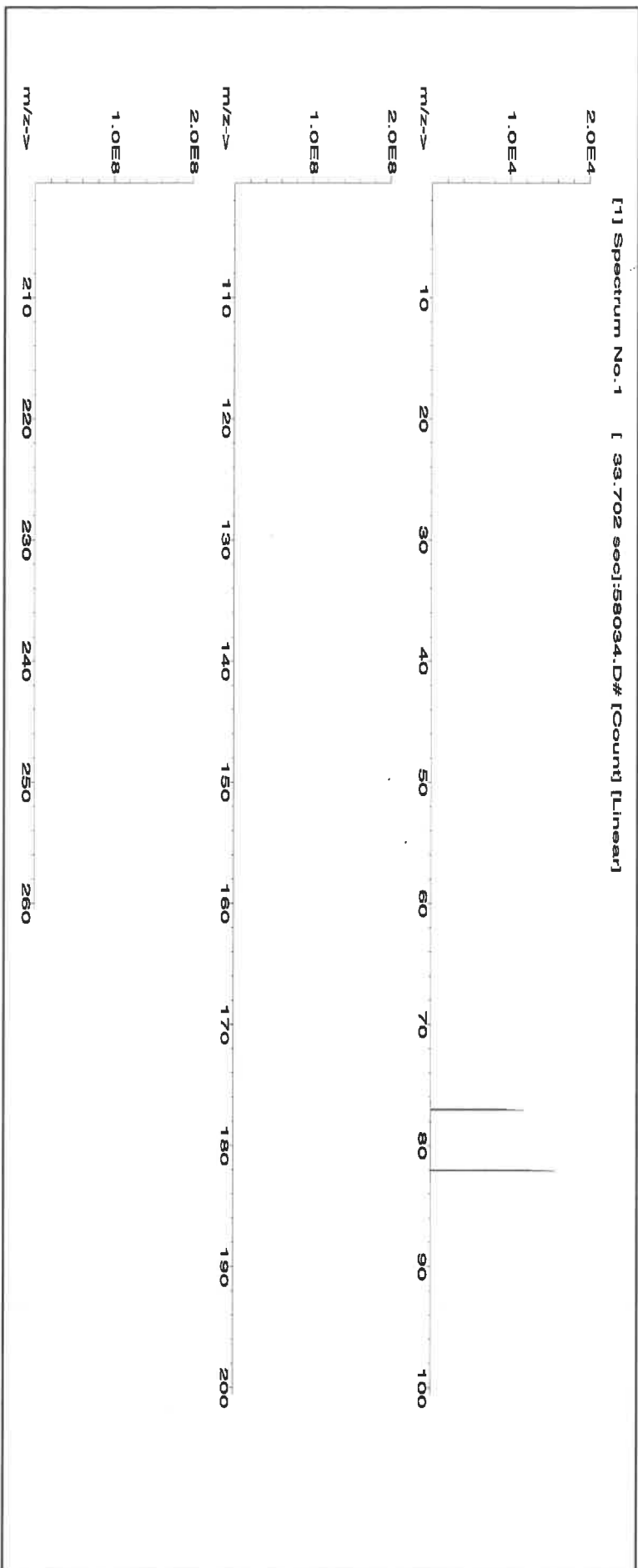
6UTB

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)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)
1. Selenium (Se)	58134	071223	0.1000	200.0	0.084	1000	10002.5	1000.0	2.2
						7782-49-2	0.2 mg/m3	or-tral 6700 mg/kg	3149





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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	T	Tb	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	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	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	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	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	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	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 Reference Material CRM



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AR-1539 Certificate Number
https://AbsoluteStandards.com

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

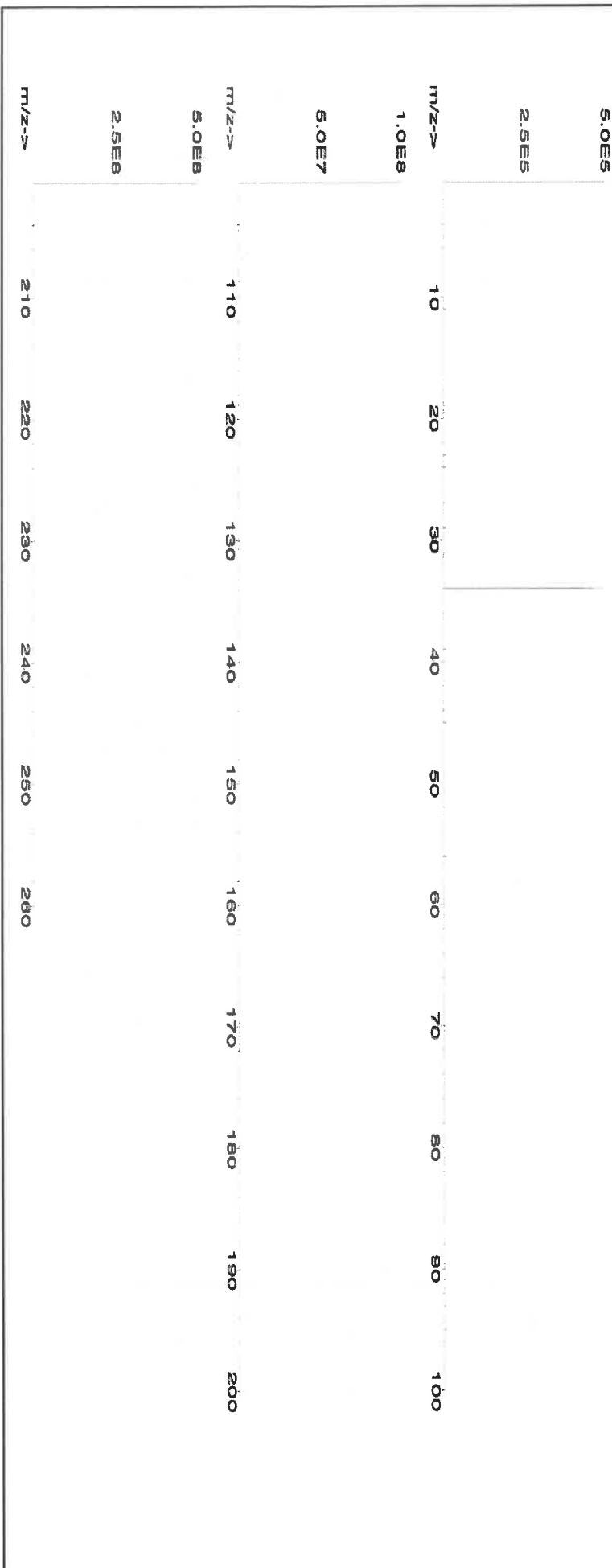
Compound	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty		NIST SRM
									±	(µg/mL)	

SDS Information

(Solvent Safety Info. On Attached pg.)
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**

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



Absolute Standards, Inc.
800-368-1131
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Certified Reference Material CRM
M5970 M5971 R1 710124



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AR-1539 Certificate Number
https://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT:

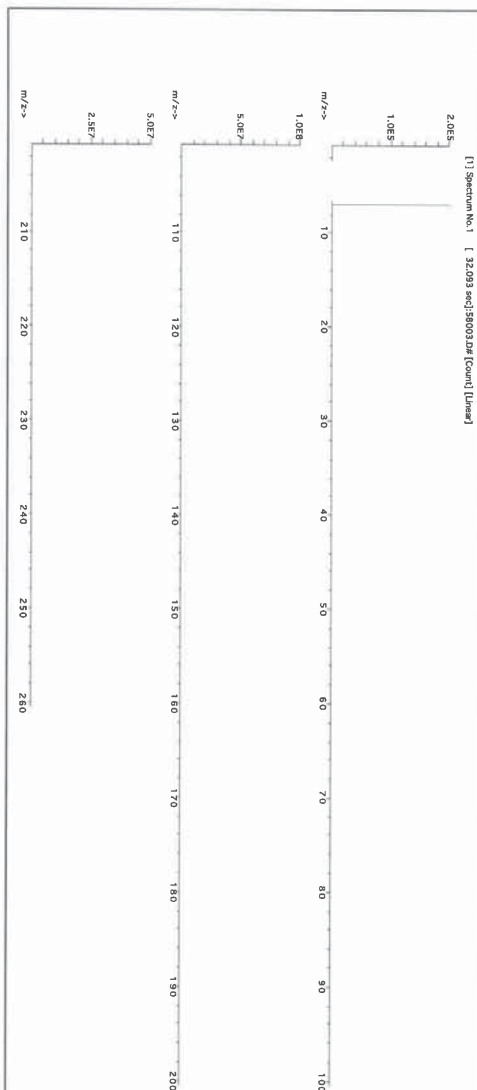
Part Number: 57003
Lot Number: 062124
Description: Lithium (Li)
Expiration Date: 06/21/27
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Volume shown below was diluted to (mL): 250.11

Lot # 24002546
Solvent: Nitric Acid
Conc. (µg/mL) 2.0%
Initial 5.0 (mL)
Final Nitric Acid
SE-05 Balance Uncertainty 0.016
Fisk Uncertainty

Microvite Capable	
Formulated By:	062124
Reviewed By: <i>[Signature]</i>	
Petro L. Parias	

Compound		SDS Information												Expanded (Solvent Safety Info. On Attachment pg.)			CAS# OSHA PEL (TWA) LD50		NEST SM																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
		Part	Lot	Dilution	Initial	Uncertainty	Nominal	Initial	Final	Uncertainty	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)								Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
Number	Factor	Vol. (mL)	Pipette (mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. 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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



Part # 57003 Lot # 062124

1 of 2

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Certificate of Analysis



Redefine your results. Redefine your industry.

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inorganicventures.com

R: 2/22/24

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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: Ti Metal

Starting Material Lot#: 2094

Starting Material Purity: 99.9975%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1002 ± 5 µg/mL

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

Assay Method #1

1002 ± 4 µg/mL

ICP Assay NIST SRM 3162a Lot Number: 130925

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

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

$X_{CRM/RM} = (x_p / u_{p,rel})$

x_p = mean of Assay Method A with

$u_{p,rel}$ = the standard uncertainty of characterization Method A

k = coverage factor = 2

$u_{CRM/RM} = [(2/(n-1)) \sum (u_{p,rel}^2)]^{1/2}$ where $u_{p,rel}$ are the errors from each characterization method

$u_{p,rel}$ = long term stability standard uncertainty (storage)

$u_{p,rel}$ = bottle to bottle homogeneity standard uncertainty

$u_{p,rel}$ = short term stability standard uncertainty

$u_{p,rel}$ = 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 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	Te	<	0.001341				
O	Ca	<	0.000676	M	In	<	0.002683	M	Pr	<	0.000268	M	Th	<	0.053663				
M	Cd	<	0.000268	M	Ir	<	0.000269	M	Pt	<	0.000536	s	Ti	<	<				
M	Ce	<	0.000268	M	K	<	0.001172	M	Rb	<	0.000268	M	Tl	<	0.000268				
M	Co	<	0.004293	M	La	<	0.000268	M	Re	<	0.000268	M	Tm	<	0.000268				
M	Cr	<	0.000752	O	Li	<	0.027225	M	Rh	<	0.000268	M	U	<	0.000268				
M	Cs	<	0.000268	M	Lu	<	0.000268	M	Ru	<	0.000269	M	V	<	0.019855				
O	Cu	<	0.010890	O	Mg	<	0.005445	I	S	<	0.006976	M	W	<	0.000473				
M	Dy	<	0.000268	O	Mn	<	0.003267	M	Sb	<	0.006976	M	Y	<	0.002146				
M	Er	<	0.000268	M	Mo	<	0.000774	O	Sc	<	0.004900	M	Yb	<	0.000536				

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

- 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: Soluble in concentrated HCl, HF, H3PO4 H2SO4 and HNO3. 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 forming the hydrated oxide in all dilute acids except HF. Stable with most inorganic anions with a tendency to hydrolyze forming the hydride fluoride. Stable with most inorganic anions

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); K2S2O7 - 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.	Order	Interferences (underlined indicates severe)
ICP-MS 48 amu	14 ppt	N/A	32S16O, 32S14N,
ICP-OES 323.452 nm	0.0054 / 0.00092 µg/mL	1	14N17N2, 36Ar12C,
ICP-OES 334.941 nm	0.0038 / 0.00028 µg/mL	1	48Ca, 196X=2
ICP-OES 336.121 nm	0.0053 / 0.00034 µg/mL	1	W, Mo, Co
			Nb, Ta, Cr, U
			Ce, Ar, Ni
			Ru]]
			(where X = Zr, Mo,

HAZARDOUS INFORMATION

HF Note: This standard should not be prepared or stored in glass.

HOMOGENEITY

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

- 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"

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY
Inorganic Ventures, 300 Technology Drive, Chesapeake, VA 24073, USA; Telephone: 800.868.6786; 540.565.3030; Fax: 540.565.3012; info@inorganicventures.com
- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

Paul Gaines

Thomas Kozlowski
Manager, Quality Control

TK

Certificate of Analysis

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

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info@inorganicventures.com

M5985
R: 6/14/24

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

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

3.0 CERTIFIED VALUES AND UNCERTAINTIES

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

Assay Information:

Assay Method #1	10021 ± 56 µg/mL ICP Assay NIST SRM 3124a Lot Number: 110516
Assay Method #2	10035 ± 25 µg/mL EDTA NIST SRM 928 Lot Number: 928
Assay Method #3	10001 ± 33 µg/mL Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

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

M - Checked by ICP-MS

O - Checked by ICP-OES

i - Spectral Interference

n - Not Checked For

s - Solution Standard Element

6.0 INTENDED USE

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

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

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form In Solution - 114.82 +3 6 In(H₂O)₆+3

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

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

In Containing Samples (Preparation and Solution) -Metal (Best dissolved in HCl / HNO₃); Oxide (Soluble in mineral acids); Ores (Carbonate fusion in PtO followed by HCl dissolution); Organic Matrices (Sulfuric/peroxide digestion or dry ash and dissolution in dilute HCl).

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

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 115 amu	1 ppt	n/a	115Sn, 99Ru16O
ICP-OES 158.583 nm	0.05 / 0.002 µg/mL	1	
ICP-OES 230.606 nm	0.1 / 0.03 µg/mL	1	Ni, Os
ICP-OES 325.609 nm	0.2 / 0.05 µg/mL	1	Mn, Mo, Th

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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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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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

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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

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-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

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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"

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- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

August 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



300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

Certificate of Analysis

M6074
M6075
M6076
M6077

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

F: 540-585-3012

info@inorganicventures.com

EXP: 9/6/2029

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution
Catalog Number: CHEM-CLP-4
Lot Number: V2-MEB746762
Matrix: 3% (v/v) HNO₃
3% (v/v) HF
Value / Analyte(s): 1 000 µg/mL ea:
Boron, Molybdenum,
Silicon, Tin,
Titanium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Boron, B	1 000 ± 5 µg/mL	Molybdenum, Mo	1 000 ± 5 µg/mL
Silicon, Si	1 000 ± 7 µg/mL	Tin, Sn	1 000 ± 5 µg/mL
Titanium, Ti	1 000 ± 6 µg/mL		

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

Assay Information:

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

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

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

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

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

HF Note: This standard should not be prepared or stored in glass.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 06, 2024

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- September 06, 2029

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

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Certificate Approved By:

Joseph Burns
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Certifying Officer:

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EXP: 9/6/2029

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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

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

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 (PCR™) see the Limited License to Use PCR™ 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 PCR™ certified reference materials. This Limited License agreement is especially pertinent for laboratories accredited under ISO:17034.

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- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

HF Note: This standard should not be prepared or stored in glass.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 06, 2024

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- September 06, 2029

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Joseph Burns
Custom VS Manager



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director





Certified Reference Material CRM



CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

58025
101124
Manganese (Mn)

Lot #
Solvent: Nitric Acid

24002546
2% 80.0 (mL) Nitric Acid

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

101127
Ambient (20 °C)
1000
6UTB

Weight shown below was diluted to (mL):

4000.2 0.10 Flask 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 (%)	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. Manganese(II) nitrate hydrate (Mn) IN031 MNM02020A1 1000 99.999 0.10 20.8 19.2322 19.2344 1000.1 2.0 15710-66-4 5 mg/m3 or-rel >300mg/kg 3132

[1] Spectrum No.1 [34.243 sec]:57025.D# [Count] [Linear]

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



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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	T	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

Certificate of Analysis

300 Technology Drive
 Christiansburg, VA 24073 USA
 inorganicventures.com

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

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

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

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

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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

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

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

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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 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; Inorganicventures.com; 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





CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

58126
011025
Iron (Fe)

R-113125
M6140

Lot #
Solvent: 24012496 Nitric Acid

Expiration Date:

011028

2%

40.0 (mL)
Nitric Acid

Recommended Storage:

Ambient (20 °C)

Nominal Concentration (µg/mL):

10000

NIST Test Number:

6U7B

5E-05 Balance Uncertainty

Weight shown below was diluted to (mL):

2000.07

0.100 Flask Uncertainty

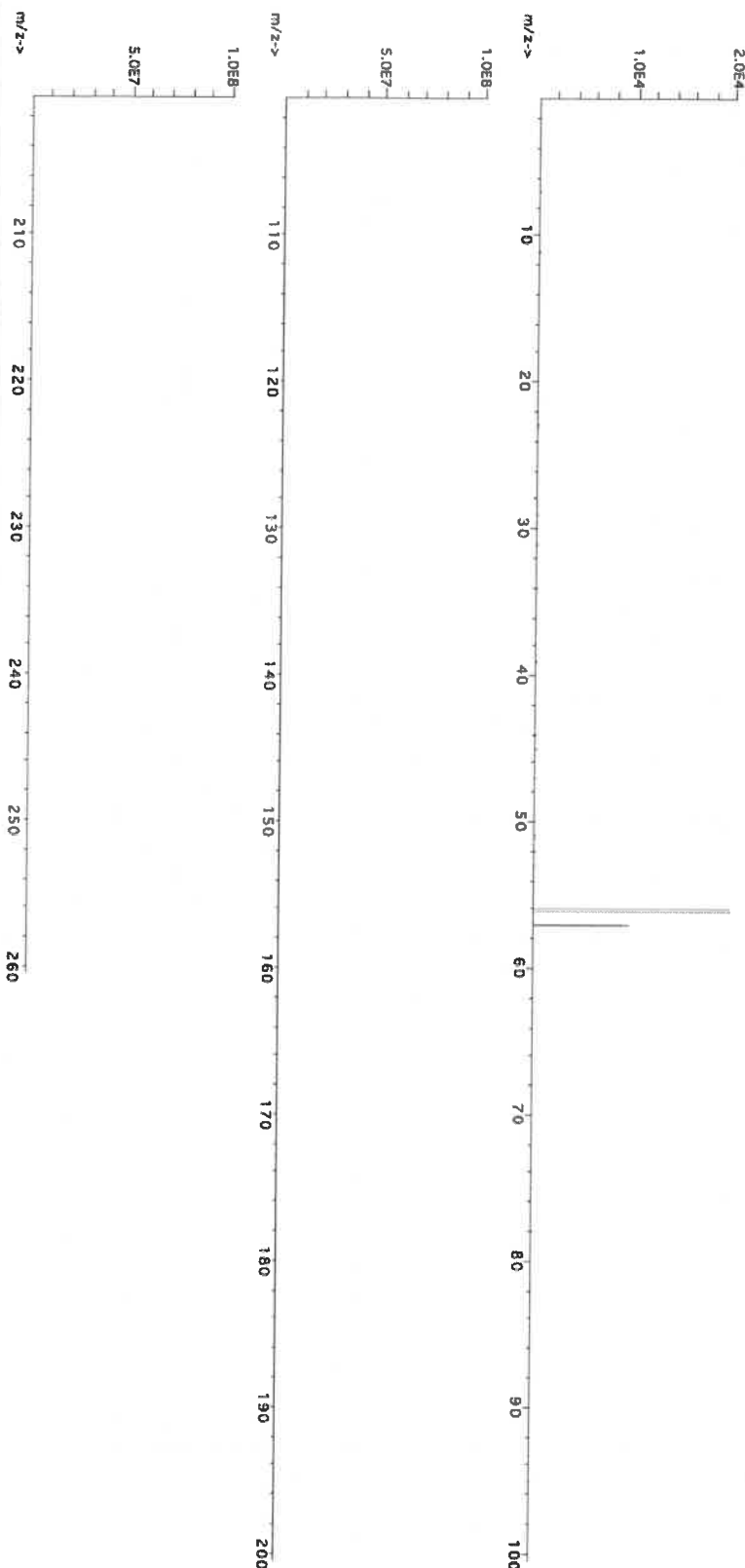
Formulated By:	Benson Chan	011025
Reviewed By:	Pedro L. Renteria	011025

Compound

Lot	Nominal	Purity	Uncertainty	Assay	Target	Actual	Actual	Expanded	SDS Information	NIST
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

[1] Spectrum No.1 [30.763 sec]58126.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	Ti	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	T	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	Tl	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

[Signature]

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:

57119
103024
Potassium (K)

R-21113125

Lot #
Solvent: 24002546
Nitric Acid

<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
Reviewed By:	Pedro L. Renteria
	103024

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

103027
Ambient (20 °C)
10000

M6141
M6142
M6143

2%
80.0 (mL)
Nitric Acid

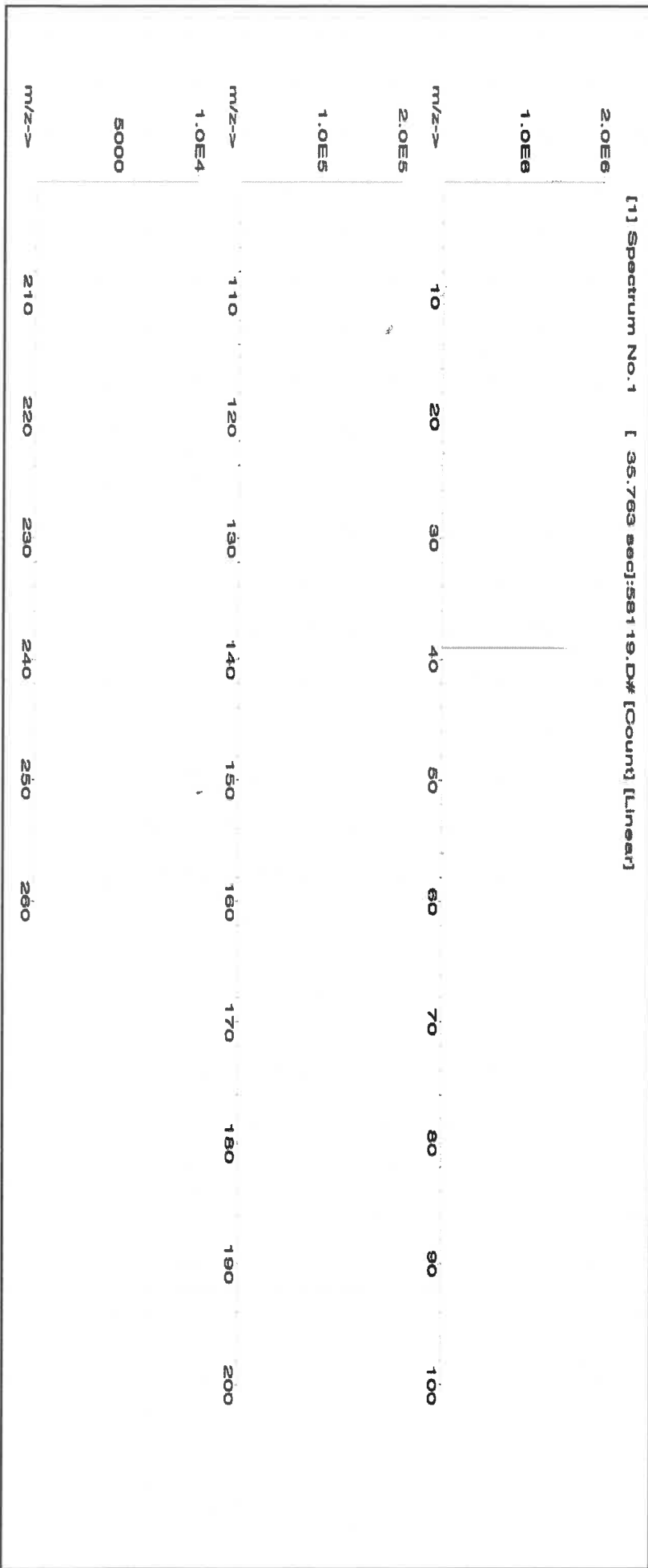
Weight shown below was diluted to (mL):

4000.1 0.15 Flask Uncertainty

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM

1. 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.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number: 58111 **Lot #** R-1113125
Lot Number: 072424 **Solvent:** 24002546 Nitric Acid
Description: Sodium (Na)

Expiration Date: 072427 **2%** 80.0 Nitric Acid (mL)

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): 10000

NIST Test Number: 6UTB **5E-05** Balance Uncertainty

Weight shown below was diluted to (mL): 4000.2 **0.10** Flask Uncertainty

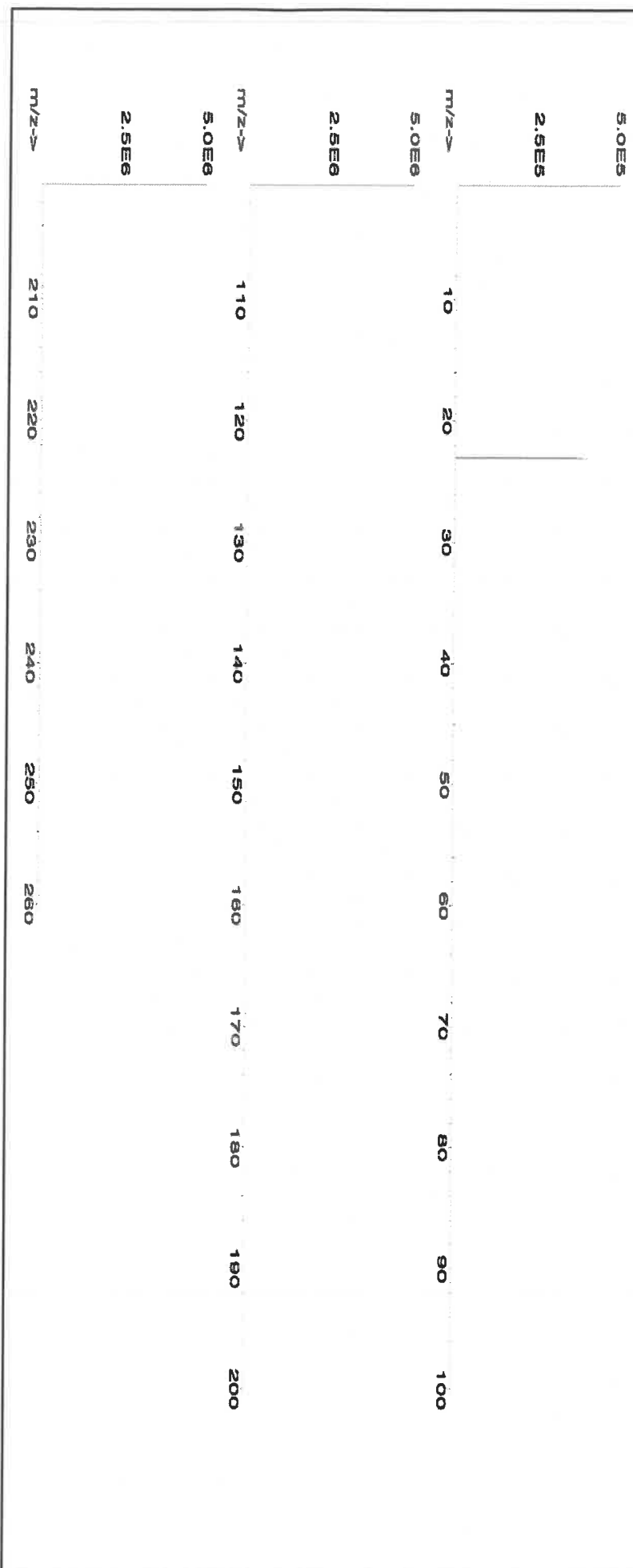
Formulated By:	Benson Chan	072424
Reviewed By:	Pedro L. Renteria	072424

SDS Information

Compound	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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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:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number: **58030** Lot # **24012496**
Lot Number: **121724** Nitric Acid
Description: **Zinc (Zn)**

Expiration Date: **121727** 2%
Recommended Storage: **Ambient (20 °C)** 40.0 (mL)
Nominal Concentration (µg/mL): **1000** Nitric Acid

NIST Test Number: **6UTB**

Weight shown below was diluted to (mL): **2000.1** 0.10 Flask Uncertainty

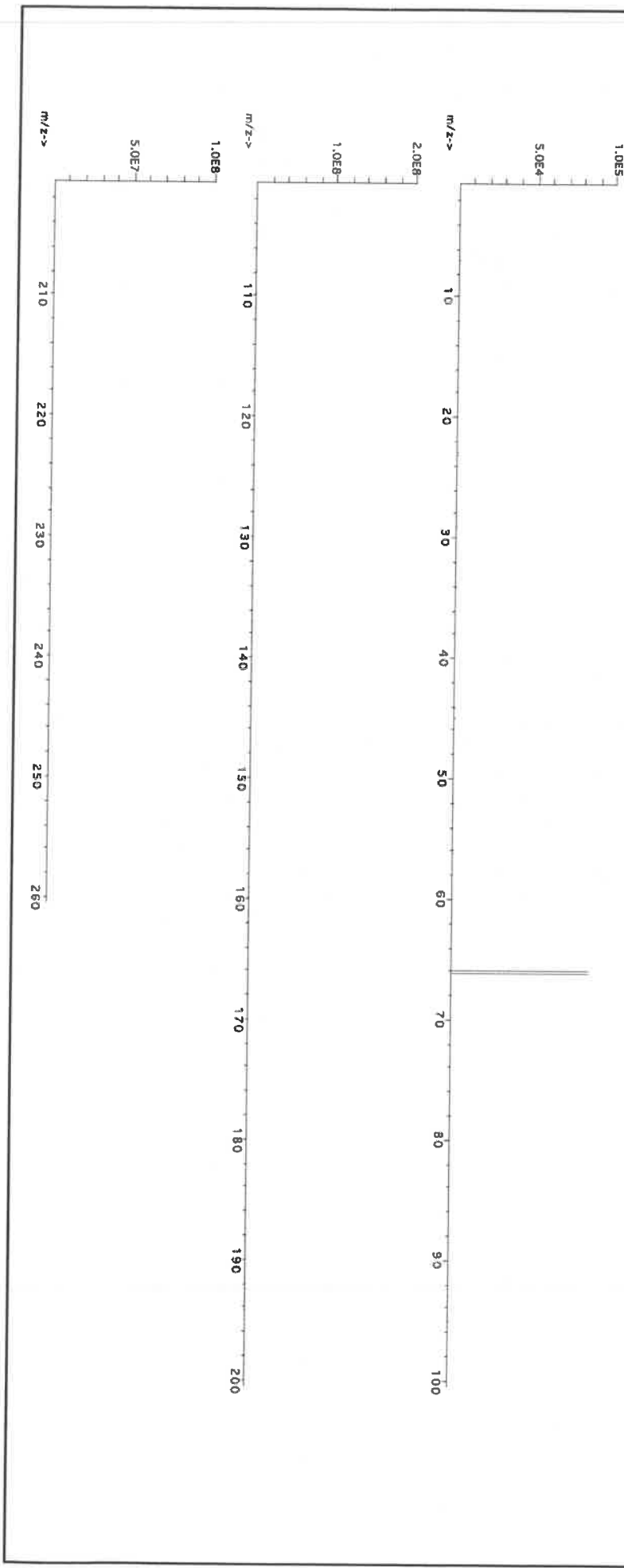
<i>Aleah O Brady</i>	
Formulated By:	Aleah O'Brady
Reviewed By:	<i>Pedro L. Rentias</i>
	Pedro L. Rentias
	121724

Compound

RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Zinc nitrate hexahydrate (Zn) IN016 ZNE032021A1 1000 99.999 0.10 24.3 8.2308 8.2311 1000.0 2.0 10196-18-6 1 mg/m3 or-rat 1190mg/kg 3168

[1] Spectrum No.1 [31.103 sec; 58130.D# [Count] [Lines]





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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Bu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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- * 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).

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 >>>

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

 **avantor**™

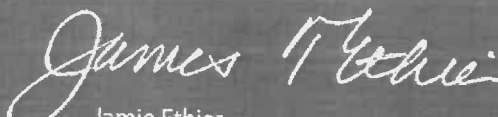


Material No.: 9530-33
Batch No.: 22G2862015

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


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



m-~~6~~162

Material No.: 9606-03
Batch No.: 24H0162012
Manufactured Date: 2024-06-28
Retest Date: 2029-06-27
Revision No.: 0

R. Date :- 04/27/2025

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

avantor™



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 >>>



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 F: 540-585-3012
 info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution		
Catalog Number:	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

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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

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 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
 inorganicventures.com

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

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution
 Catalog Number: 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

avantor™



R.Date . 8-05/20/2025

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)

avantor™



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

Michelle Bales
Sr. Manager, Quality Assurance

Hydrogen Peroxide, 30%
CMOS
(Stabilized)

avantor™



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:

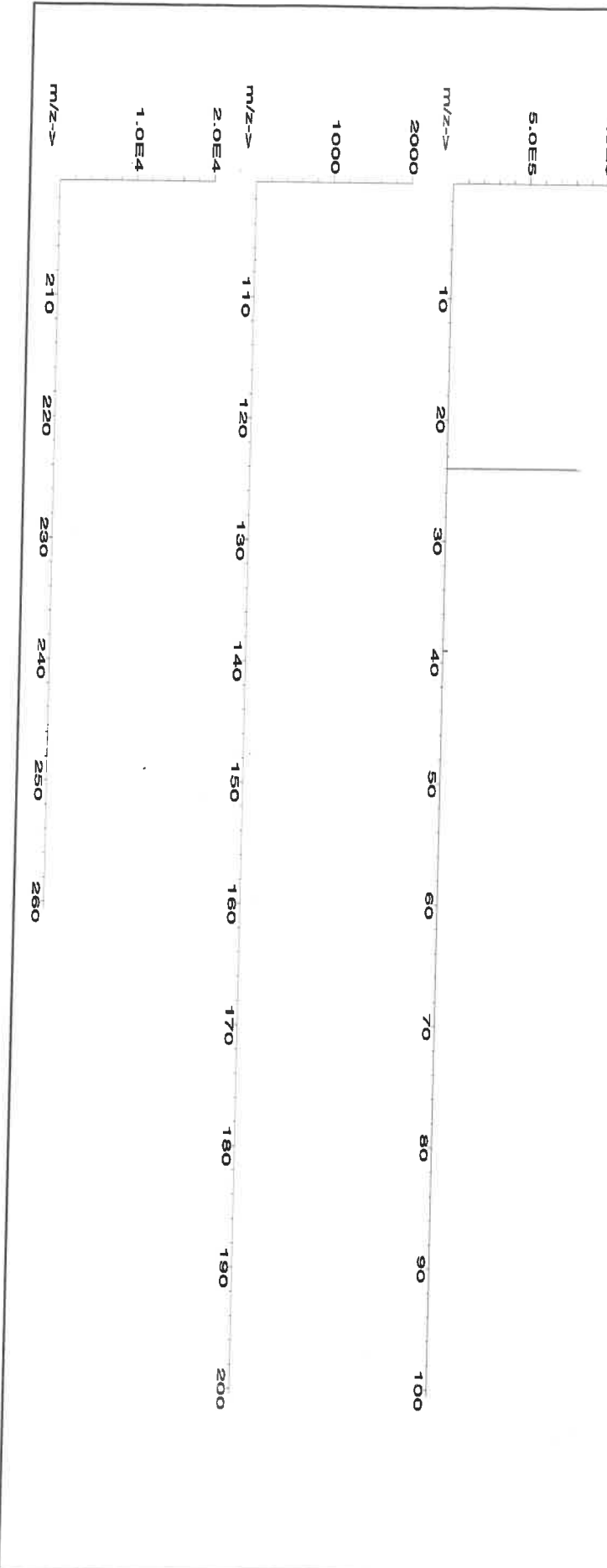
Part Number: 58112 **Lot #** 24012496 **Nitric Acid**
Lot Number: 011525
Description: Magnesium (Mg) **M 6171**
Expiration Date: 011528 **Solvent:** 2% 40.0 Nitric Acid
Recommended Storage: Ambient (20 °C) (mL)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB 5E-05 Balance Uncertainty
Weight shown below was diluted to (mL): 2000.07 0.100 Flask Uncertainty

Formulated By:	Benson Chan	011525
Reviewed By:	Pedro L. Rentas	011525

Compound

Compound	Lot	Nominal	Purity	Uncertainty	Assay	Target	Actual	Actual	Expanded	SDS Information	NIST
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	SRM

[1] Spectrum No. 1 [19.923 sec]: 58112.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	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; inorganicventures.com; 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:

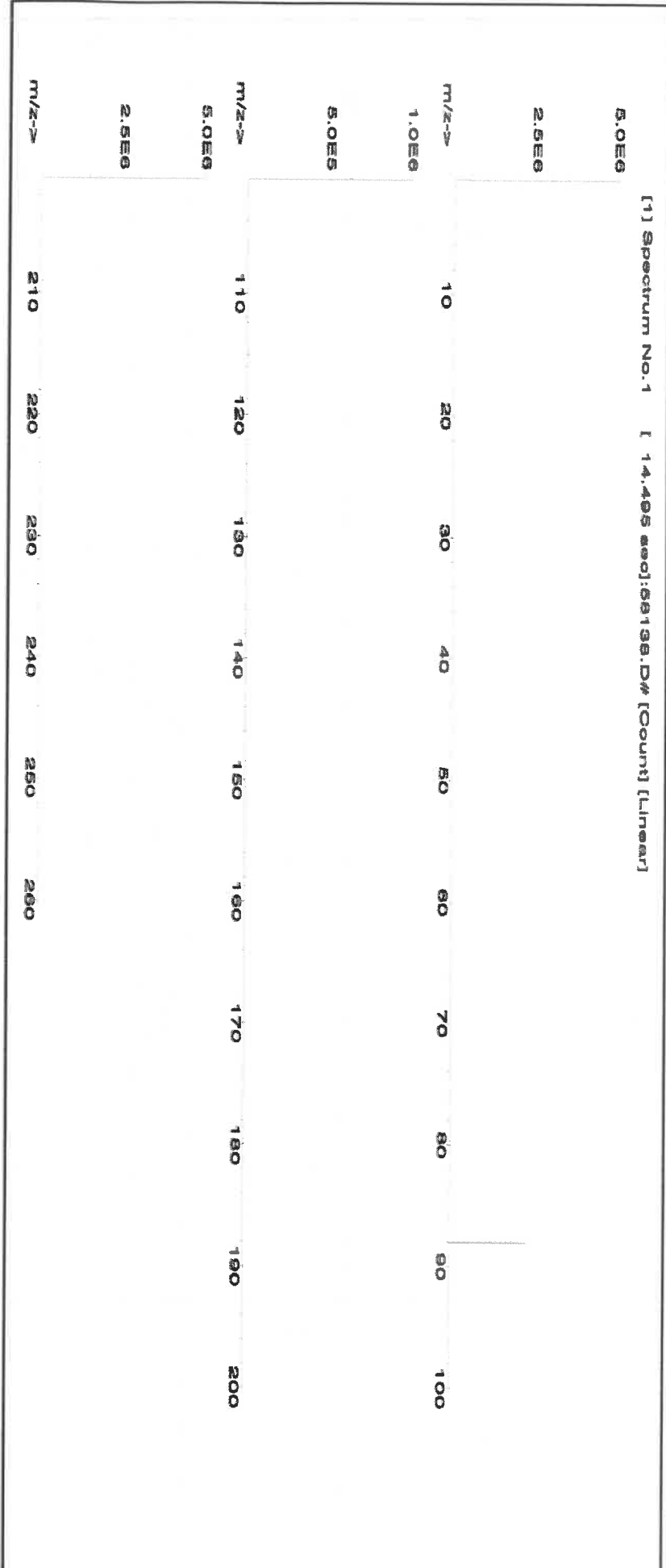
Part Number: 57038 **Lot #** 24002546 **Nitric Acid**
Lot Number: 092724
Description: Strontium (Sr)
Expiration Date: 092727 **2%** **40.0 (mL)** **Nitric Acid**
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 8UTB
Weight shown below was diluted to (mL): 2000.07 **0.100 Flask Uncertainty**
5E-05 Balance Uncertainty

Formulated By: Benson Chan **092724**
Reviewed By: Pedro L. Rentas **092724**

SDS Information

Compound	Lot	Nominal	Purity	Uncertainty	Assay	Target	Actual	Actual	Expanded	Uncertainty	CAS#	OSHA PEL (TWA)	LD50	NIST
	Number	Conc. (µg/mL)	(%)	Purity (%)	(%)	Weight (g)	Weight (g)	Conc. (µg/mL)	+/- (µg/mL)	(µg/mL)				SRM

1. 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





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:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

57042
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):

5E-05

Balance Uncertainty
0.058

10.0

Ammonium hydroxide

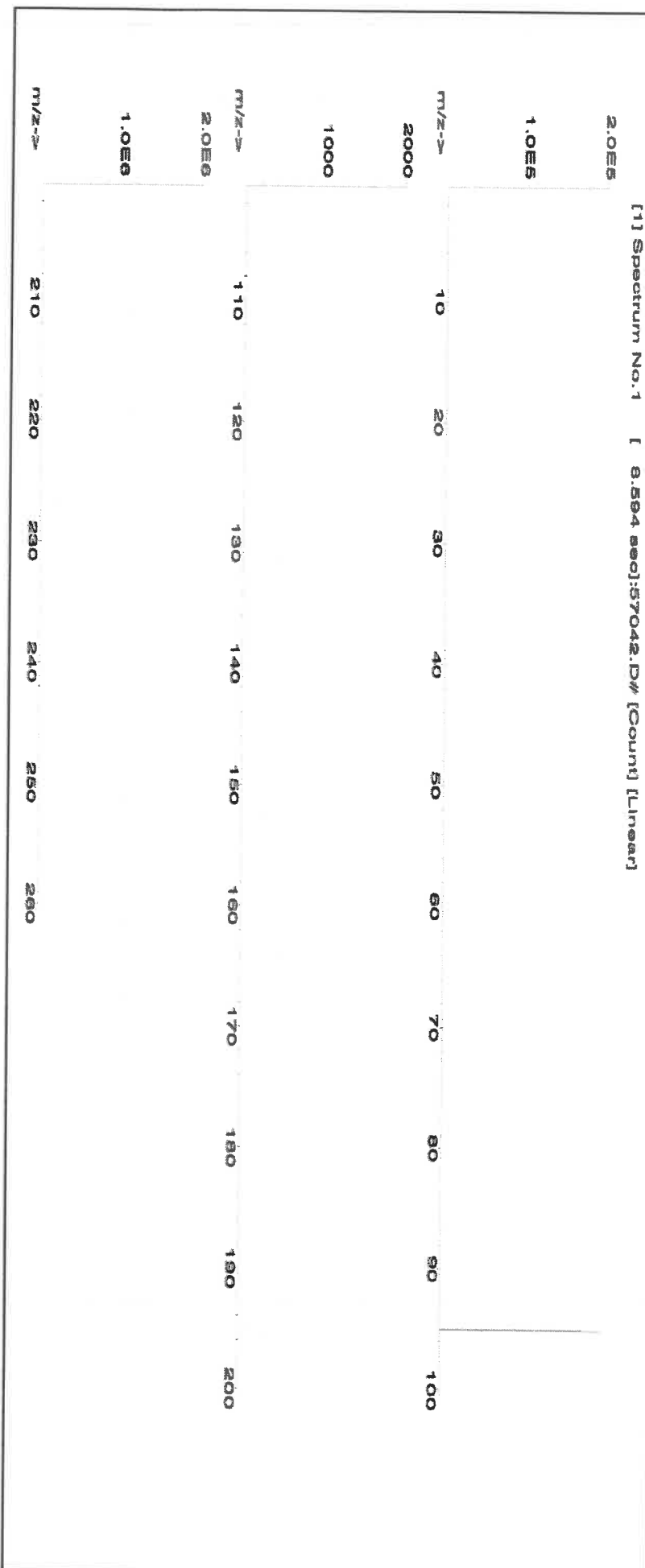
R → 8/6/25
M6177

Formulated By:	Benson Chan	080525
Reviewed By:	Pedro L. Renteria	080525

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. 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 0.1-0.3 333 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.

[Signature]

- * 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

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

2%

40.0 (mL)

Nitric Acid

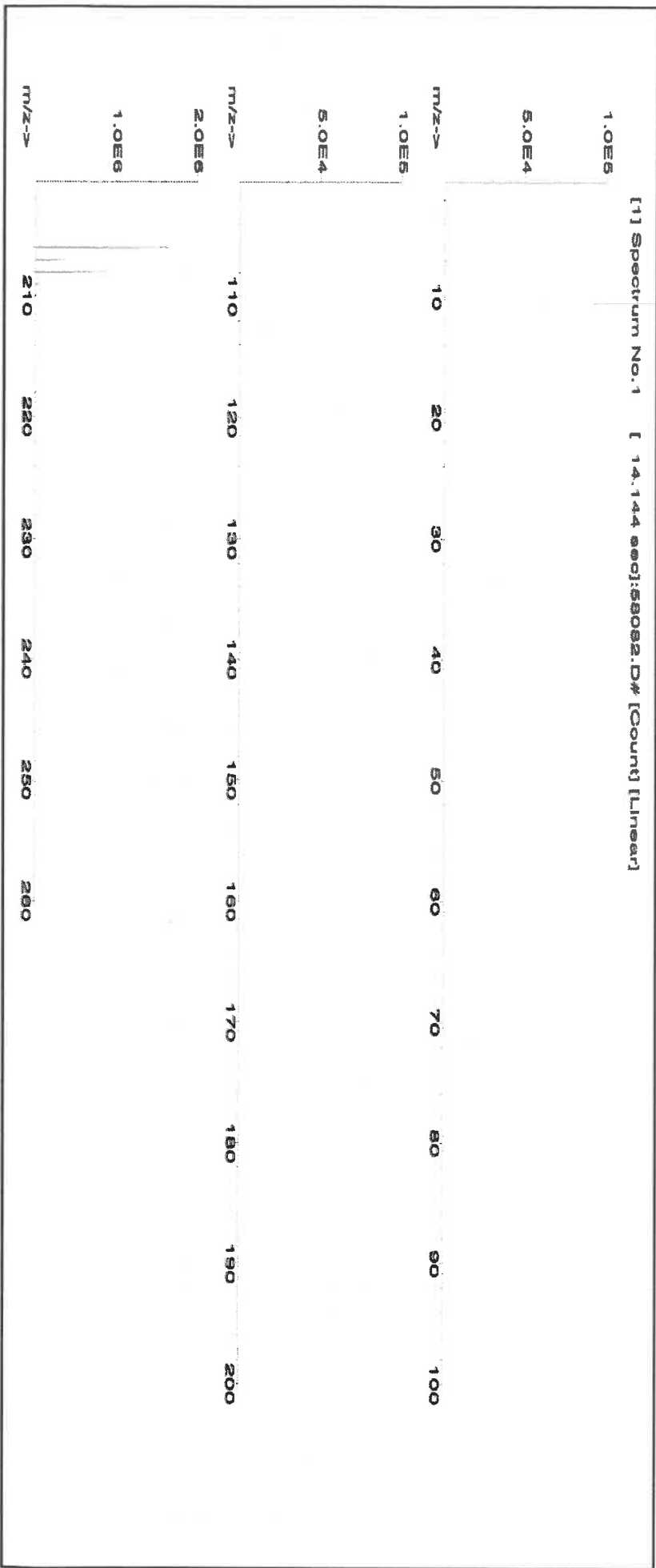
<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
	031525
<i>Pedro L. Renteria</i>	
Reviewed By:	Pedro L. Renteria
	031525

SDS Information

Compound	Lot	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
----------	-----	-----------------------	------------	------------------------	-----------	-------------------	-------------------	----------------------	----------------------------------	------	----------------	------	----------

1. 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 (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	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:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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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



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: WW-LFS-1
Lot Number: W2-MEB752149
Matrix: 5% (v/v) HNO₃

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 ($\mu\text{g/mL}$)

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° - 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
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Certificate of Analysis

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

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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





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.



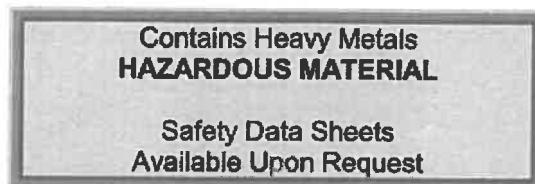
Instructions for QATS Reference Material: ICP-AES ICS

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 ± 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.



Certified Reference Material CRM

M6027



CERTIFIED WEIGHT REPORT:

Part Number: **57028**
Lot Number: **062024**
Description: **Nickel (NI)**

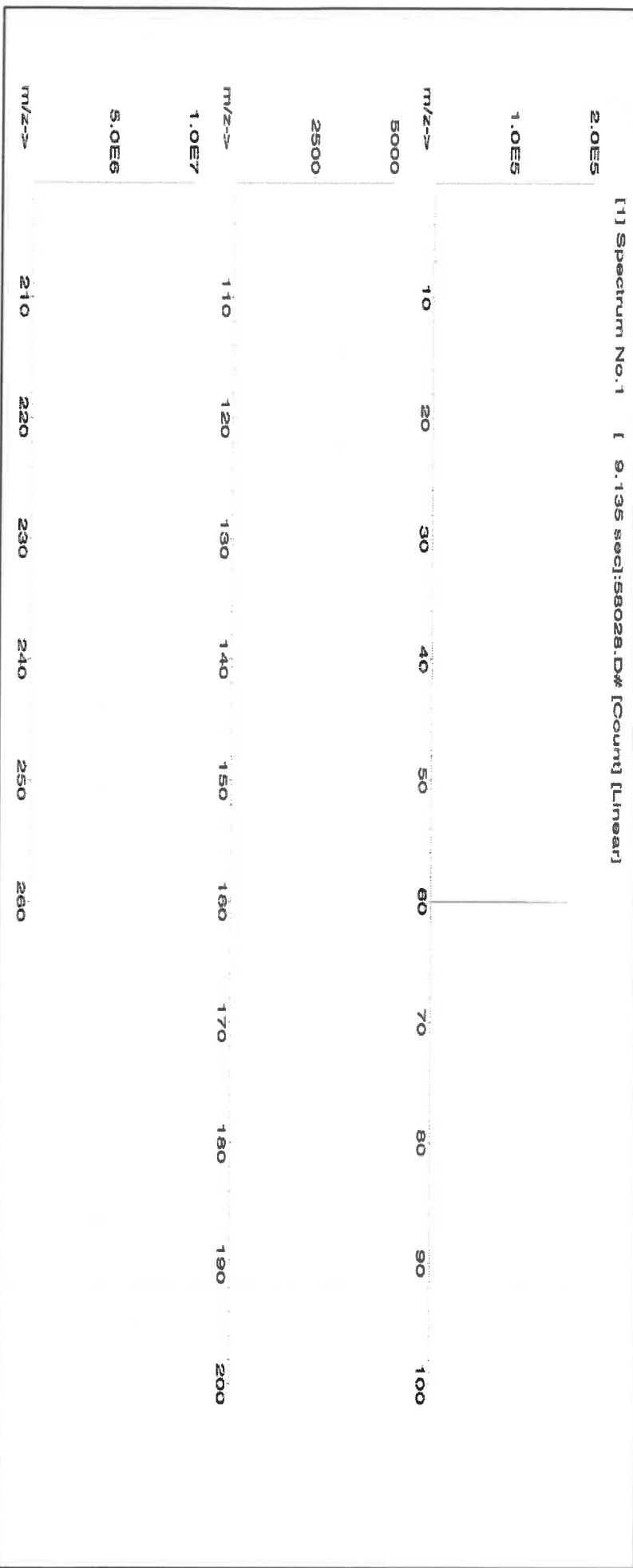
Lot # **24002546**
Solvent: **Nitric Acid**

Formulated By:	Benson Chan
062024	
Reviewed By:	Pedro L. Rentes
062024	

Expiration Date: **062027**
Recommended Storage: **Ambient (20 °C)**
Nominal Concentration (µg/mL): **1000**
NIST Test Number: **6UTB**
Volume shown below was diluted to (mL): **2000.07**
5E-05 Balance Uncertainty
0.100 Flask Uncertainty

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pippet (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 orl-rat 1620 mg/kg 3136





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



ANAB ISO 17034 Accredited
AR-1539 Certificate Number
<https://absolutestandards.com>

CERTIFIED WEIGHT REPORT:

Part Number: **57047**
Lot Number: **122823**
Description: **Silver (Ag)**

Lot #
Solvent: 24002546 Nitric Acid

Expiration Date: 122826
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

2% 80.0 (mL) Nitric Acid

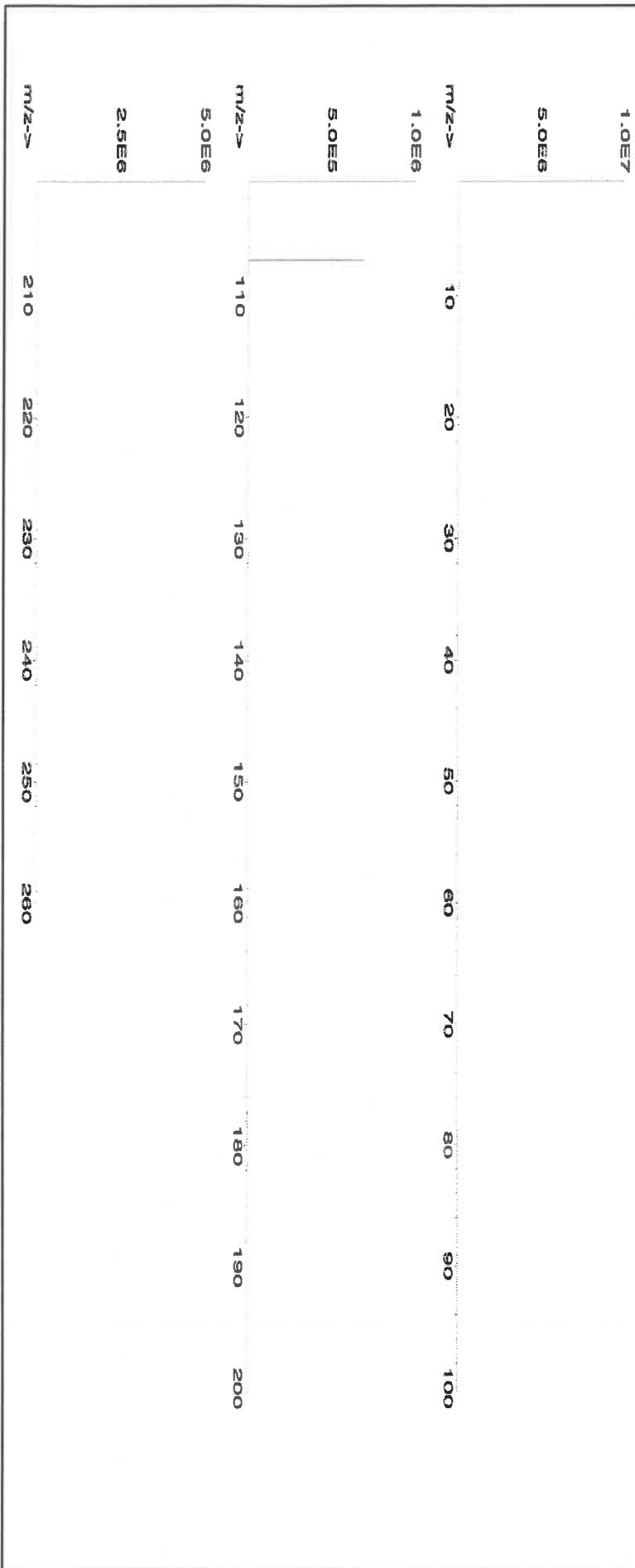
Weight shown below was diluted to (mL): 4000.30 0.058 Balance Uncertainty Flask Uncertainty

Formulated By:	Benson Chan
Reviewed By:	Pedro L. Rentas
	122823

SDS Information									
Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)
1. Silver nitrate (Ag)	IN035	J0612AGA1	1000.0	99.9996	0.10	63.7	6.27992	6.27998	1000.0

							Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
							2.0	7761-88-8	10 µg/m3	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 meghom deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



R: 10/18/24
Certified Reference Material CRM



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

CERTIFIED WEIGHT REPORT:

Part Number:

57051

Lot #

24002546

Solvent:

Nitric Acid

Lot Number:

071724

Description:

Antimony (Sb)

Expiration Date:

071727

Recommended Storage:

Ambient (20 °C)

Nominal Concentration (µg/mL):

1000

NIST Test Number:

6U7B

Volume shown below was diluted to (mL):

2000.26

Balance Uncertainty

0.058

Flask Uncertainty

Formulated By:

Giovanni Esposito

071724

Reviewed By:

Pedro L. Rentas

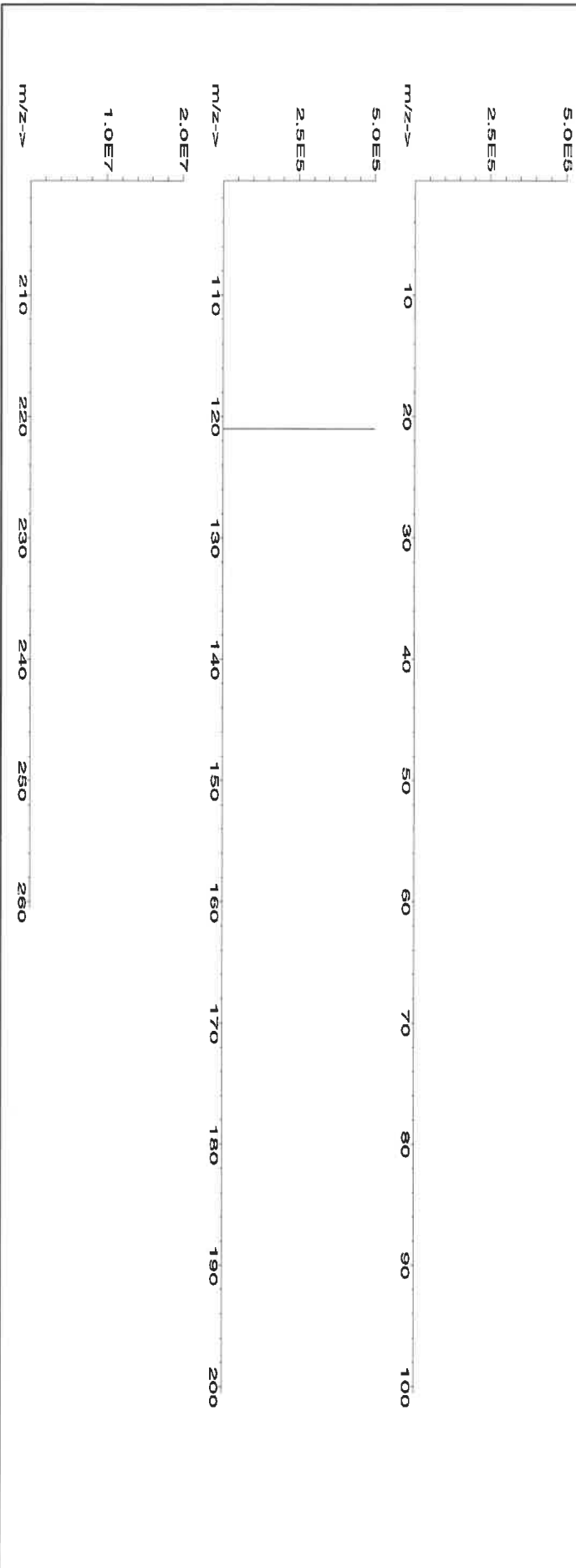
071724

SDS Information

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Antimony (Sb) 58151 060324 0.1000 200.0 0.084 1000 10001.4 1000.0 2.2 7440-36-0 0.5 mg/m3 orl-rat 7000 mg/kg 3102a

[1] Spectrum No.1 [17.964 sec]:58051.D# [Count] [Linear]





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
Sb	T	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02
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
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	<0.02	Fe	<0.2	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.
- * 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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Certified Reference Material CRM

M6023



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

CERTIFIED WEIGHT REPORT:

Part Number: 57081
Lot Number: 062724
Description: Thallium (TI)

Solvent: 24002546 Nitric Acid
Lot #

Expiration Date:

062727

2% 40.0 Nitric Acid (mL)

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL):

1000

NIST Test Number:

6UTB

5E-05 Balance Uncertainty

Weight shown below was diluted to (mL): 2000.1 0.10 Flask Uncertainty

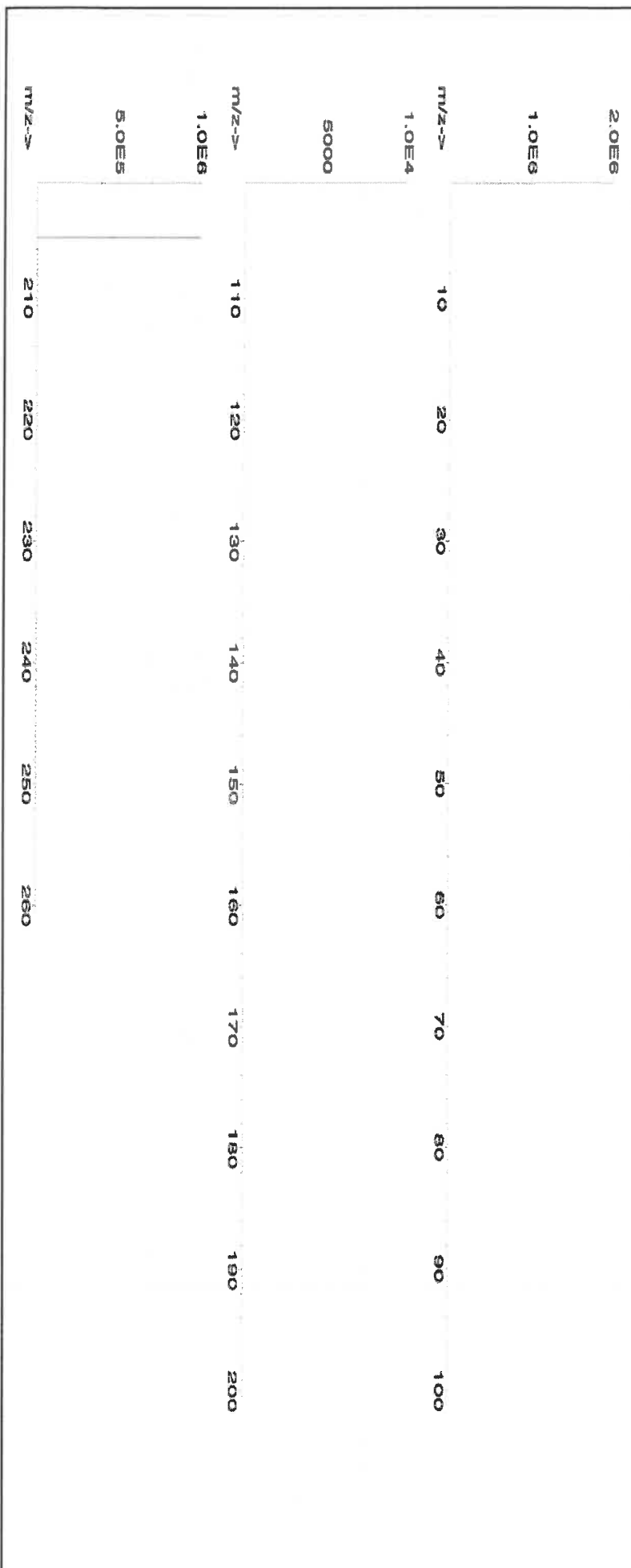
<i>Aleah O'Brady</i>	
Formulated By:	Aleah O'Brady
Reviewed By:	<i>Pedro L. Renteria</i>
	Pedro L. Renteria
	062724

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:

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

M6021



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
Reviewed By:	Pedro L. Rantas
	062424

Expiration Date: 062427
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

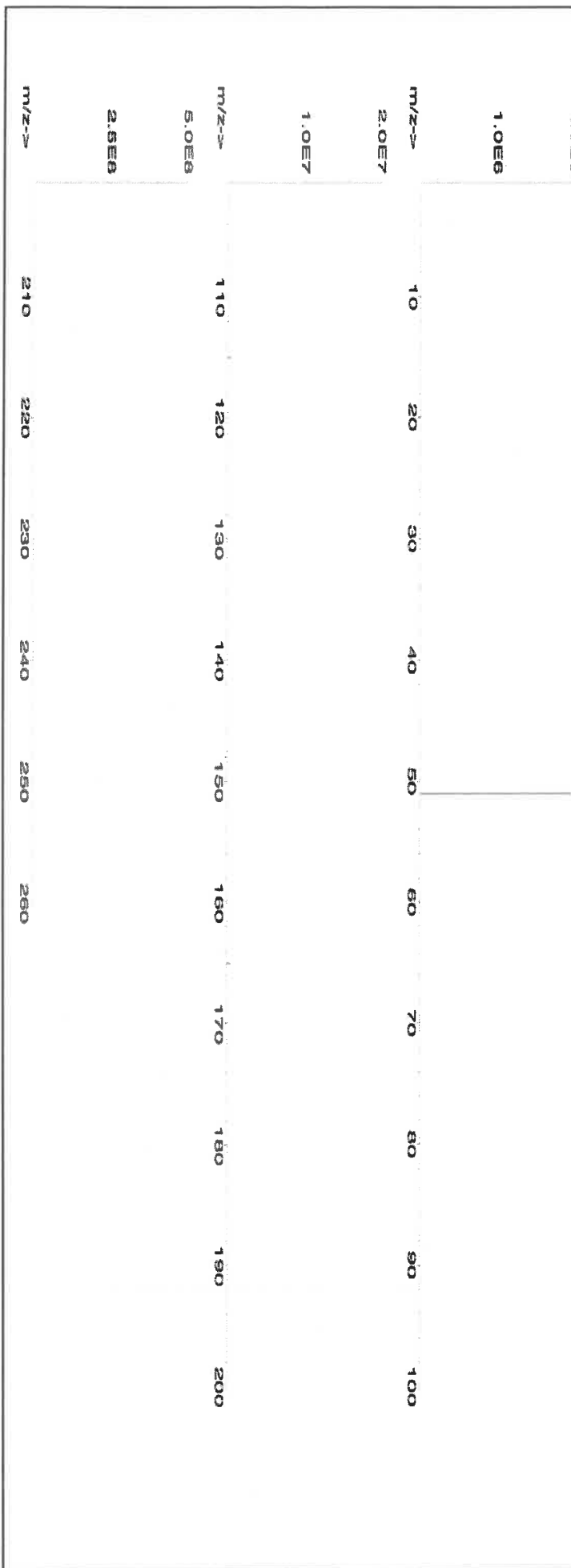
2.0% 40.0 (mL) Nitric Acid

Volume shown below was diluted to (mL): 2000.3 0.06 Flask Uncertainty

Compound		Part		Lot		Dilution		Initial		Uncertainty		Nominal		Initial		Final		Expanded		SDS Information		NIST	
Number	Factor	Number	Factor	Vol. (mL)	Pipette (mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)

1. Ammonium metavanadate (V) 58123 021224 0.1000 200.0 0.084 1000 10000.3 1000.0 2.2 7803-55-6 0.05 mg/m3 3165

[1] Spectrum No.1 [34.243 sec]:58023.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	T
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		<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).



SHIPPING DOCUMENTS

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CLIENT INFORMATION

CLIENT PROJECT INFORMATION

CLIENT BILLING INFORMATION

REPORT TO BE SENT TO:

COMPANY: _____
ADDRESS: see page 1
CITY: _____ STATE: _____ ZIP: _____
ATTENTION: _____
PHONE: _____ FAX: _____

PROJECT NAME: _____
PROJECT NO.: _____ LOCATION: _____
PROJECT MANAGER: _____
e-mail: _____
PHONE: _____ FAX: _____

BILL TO: _____ PO#: _____
ADDRESS: _____
CITY: _____ STATE: _____ ZIP: _____
ATTENTION: _____ PHONE: _____
ANALYSIS

DATA TURNAROUND INFORMATION

DATA DELIVERABLE INFORMATION

FAX (RUSH) _____ DAYS*
HARDCOPY (DATA PACKAGE): 10 DAYS*
EDD: 10 DAYS*
*TO BE APPROVED BY CHEMTECH
STANDARD HARDCOPY TURNAROUND TIME IS 10 BUSINESS

☐ Level 1 (Results Only) ☐ Level 4 (QC + Full Raw Data)
☒ Level 2 (Results + QC) ☐ NJ Reduced ☐ US EPA CLP
☐ Level 3 (Results + QC) ☐ NYS ASP A ☐ NYS ASP B
+ Raw Data ☐ Other _____
☒ EDD FORMAT NYSDEC

1. VOC 2. SVOC 3. Pest 4. PCB 5. Metals 6. 7. 8. 9.

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	
1.	82H-S	S	C		8/6/25	1215	5	X									
2.	82H-W					1230		X									
3.	82H-N					1250		X									
4.	SOIL-0UP-1				8/6/25			X									
5.	S18R-E				8/7/25	0900		X									
6.	S18R-N					0940		X									
7.	S18R-S					0930		X									
8.	S18R-W					0950	54	X	*	*							
9.	705R-S					1100	87	X	X	X							
10.	SOIL-0UP-2						47	X	X	X							

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER: 1. <u>GHC</u>	DATE/TIME: <u>6:01</u>	RECEIVED BY: 1. <u>L. J. Tu 8-8-25</u>	Conditions of bottles or coolers at receipt: ☐ COMPLIANT ☐ NON COMPLIANT ☒ COOLER TEMP <u>3.9°C</u>
RELINQUISHED BY SAMPLER: 2.	DATE/TIME:	RECEIVED BY: 2.	Comments:
RELINQUISHED BY SAMPLER: 3.	DATE/TIME:	RECEIVED BY: 3.	

Page 3 of 5 CLIENT: ☐ Hand Delivered ☐ Other Shipment Complete ☐ YES ☐ NO

CLIENT INFORMATION

REPORT TO BE SENT TO:

COMPANY: _____
ADDRESS: See page 1
CITY: _____ STATE: _____ ZIP: _____
ATTENTION: _____
PHONE: _____ FAX: _____

CLIENT PROJECT INFORMATION

PROJECT NAME: _____
PROJECT NO.: _____ LOCATION: _____
PROJECT MANAGER: _____
e-mail: _____
PHONE: _____ FAX: _____

CLIENT BILLING INFORMATION

BILL TO: _____ PO#: _____
ADDRESS: _____
CITY: _____ STATE: _____ ZIP: _____
ATTENTION: _____ PHONE: _____

ANALYSIS

DATA TURNAROUND INFORMATION

FAX (RUSH) _____ DAYS*
HARDCOPY (DATA PACKAGE): 10 DAYS*
EDD: 10 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 NYSDEC

PRESERVATIVES									COMMENTS	
← Specify Preservatives										
1	2	3	4	5	6	7	8	9	A-HCl	D-NaOH
									B-HNO3	E-ICE
									C-H2SO4	F-OTHER

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		
1.	10PC-W	S	C		8/7/25	1235	5	X										
2.	10PC-S					1240		X										
3.	10P-W					1255		X										
4.	10P-E					1300		X										
5.	10P-S					1320		X										
6.	10P-N					1330		X										
7.	88H-E				8/8/25	0825		X										
8.	88H-N					0840		X										
9.	88H-W					0850		X										
10.	88H-S					0900		X										

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER: 1. <u>GMC</u>	DATE/TIME: <u>6:01</u>	RECEIVED BY: <u>[Signature]</u> <u>8-8-25</u>	Conditions of bottles or coolers at receipt: ☐ COMPLIANT ☐ NON COMPLIANT ☒ COOLER TEMP <u>3.7C</u> °C
RELINQUISHED BY SAMPLER: 2.	DATE/TIME:	RECEIVED BY:	Comments:
RELINQUISHED BY SAMPLER: 3.	DATE/TIME:	RECEIVED BY:	

CLIENT INFORMATION

REPORT TO BE SENT TO:

COMPANY: See page 1
ADDRESS: See page 1
CITY: _____ STATE: _____ ZIP: _____
ATTENTION: _____
PHONE: _____ FAX: _____

CLIENT PROJECT INFORMATION

PROJECT NAME: _____
PROJECT NO.: _____ LOCATION: _____
PROJECT MANAGER: _____
e-mail: _____
PHONE: _____ FAX: _____

CLIENT BILLING INFORMATION

BILL TO: _____ PO#: _____
ADDRESS: _____
CITY: _____ STATE: _____ ZIP: _____
ATTENTION: _____ PHONE: _____

ANALYSIS

DATA TURNAROUND INFORMATION

FAX (RUSH) _____ DAYS*
HARDCOPY (DATA PACKAGE): 10 DAYS*
EDD: 10 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 NYS DEC

1. VOC/SVOC
2. Pest/PCB
3. Metals
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____

PRESERVATIVES

COMMENTS

← Specify Preservatives
A-HCl D-NaOH
B-HNO3 E-ICE
C-H2SO4 F-OTHER

ALLIANCE SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE		SAMPLE COLLECTION		# OF BOTTLES										
			COMP	GRAB	DATE	TIME		1	2	3	4	5	6	7	8	9	
1.	22M-N	S	C		8/8/25	1125	5	X									
2.	22M-W					1050	5	X									
3.	22M-E					1115	5	X									
4.	22M-S					1100	7	X	X	X							
5.																	
6.																	
7.																	
8.																	
9.																	
10.																	

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER: 1. <u>GMC</u>	DATE/TIME: <u>6:01</u>	RECEIVED BY: <u>R. A. L.</u>	DATE/TIME: <u>8-8-25</u>	Conditions of bottles or coolers at receipt: ☒ COMPLIANT ☐ NON COMPLIANT	COOLER TEMP: <u>3.9°C</u>
RELINQUISHED BY SAMPLER: 2.	DATE/TIME:	RECEIVED BY:			
RELINQUISHED BY SAMPLER: 3.	DATE/TIME:	RECEIVED BY:			

Page 5 of 5

CLIENT: ☐ Hand Delivered ☐ Other

Shipment Complete
☐ YES ☐ NO

Laboratory Certification

Certified By	License No.
CAS EPA CLP Contract	68HERH20D0011
Connecticut	PH-0830
DOD ELAP (ANAB)	L2219
Maine	2024021
Maryland	296
New Hampshire	255424 Rev 1
New Jersey	20012
New York	11376
Pennsylvania	68-00548
Soil Permit	525-24-234-08441
Texas	T104704488

LOGIN REPORT/SAMPLE TRANSFER

Order ID : Q2820	FIRS02	Order Date : 8/11/2025 12:29:00 PM	Project Mgr :
Client Name : First Environment, Inc.		Project Name : USACE018-44 DOD	Report Type : Level 4
Client Contact : Al Smith		Receive DateTime : 8/8/2025 6:01:00 PM	EDD Type : EQUIS
Invoice Name : First Environment, Inc.		Purchase Order :	Hard Copy Date :
Invoice Contact : Al Smith			Date Signoff :

LAB ID	CLIENT ID	MATRIX	SAMPLE DATE	SAMPLE TIME	TEST	TEST GROUP	METHOD	FAX DATE	DUE DATES
Q2820-01	82H-S	Solid	08/06/2025	12:15	VOC-TCLVOA-10		8260D	10 Bus. Days	
Q2820-02	82H-W	Solid	08/06/2025	12:30	VOC-TCLVOA-10		8260D	10 Bus. Days	
Q2820-03	82H-N	Solid	08/06/2025	12:50	VOC-TCLVOA-10		8260D	10 Bus. Days	
Q2820-04	SOIL-DUP-1	Solid	08/06/2025	00:00	VOC-TCLVOA-10		8260D	10 Bus. Days	
Q2820-05	518R-E	Solid	08/07/2025	09:00	VOC-TCLVOA-10		8260D	10 Bus. Days	
Q2820-06	518R-N	Solid	08/07/2025	09:40	VOC-TCLVOA-10		8260D	10 Bus. Days	
Q2820-07	518R-S	Solid	08/07/2025	09:30	VOC-TCLVOA-10		8260D	10 Bus. Days	
Q2820-08	518R-W	Solid	08/07/2025	09:50					

LOGIN REPORT/SAMPLE TRANSFER

Order ID : Q2820	FIRS02	Order Date : 8/11/2025 12:29:00 PM	Project Mgr :
Client Name : First Environment, Inc.		Project Name : USACE018-44 DOD	Report Type : Level 4
Client Contact : Al Smith		Receive DateTime : 8/8/2025 6:01:00 PM	EDD Type : EQUIS
Invoice Name : First Environment, Inc.		Purchase Order :	Hard Copy Date :
Invoice Contact : Al Smith			Date Signoff :

LAB ID	CLIENT ID	MATRIX	SAMPLE DATE	SAMPLE TIME	TEST	TEST GROUP	METHOD	FAX DATE	DUE DATES
Q2820-09	705R-S	Solid	08/07/2025	11:00	VOC-TCLVOA-10		8260D		10 Bus. Days
Q2820-10	SOIL-DUP-2	Solid	08/07/2025	00:00	VOC-TCLVOA-10		8260D		10 Bus. Days
Q2820-11	10PC-W	Solid	08/07/2025	12:35	VOC-TCLVOA-10		8260D		10 Bus. Days
Q2820-12	10PC-S	Solid	08/07/2025	12:40	VOC-TCLVOA-10		8260D		10 Bus. Days
Q2820-13	10P-W	Solid	08/07/2025	12:55	VOC-TCLVOA-10		8260D		10 Bus. Days
Q2820-14	10P-E	Solid	08/07/2025	13:00	VOC-TCLVOA-10		8260D		10 Bus. Days
Q2820-15	10P-S	Solid	08/07/2025	13:20	VOC-TCLVOA-10		8260D		10 Bus. Days

LOGIN REPORT/SAMPLE TRANSFER

Order ID : Q2820	FIRS02	Order Date : 8/11/2025 12:29:00 PM	Project Mgr :
Client Name : First Environment, Inc.		Project Name : USACE018-44 DOD	Report Type : Level 4
Client Contact : Al Smith		Receive DateTime : 8/8/2025 6:01:00 PM	EDD Type : EQUIS
Invoice Name : First Environment, Inc.		Purchase Order :	Hard Copy Date :
Invoice Contact : Al Smith			Date Signoff :

LAB ID	CLIENT ID	MATRIX	SAMPLE DATE	SAMPLE TIME	TEST	TEST GROUP	METHOD	FAX DATE	DUE DATES
Q2820-16	10P-N	Solid	08/07/2025	13:30					
					VOC-TCLVOA-10		8260D	10 Bus. Days	
Q2820-17	88H-E	Solid	08/08/2025	08:35					
					VOC-TCLVOA-10		8260D	10 Bus. Days	
Q2820-18	88H-N	Solid	08/08/2025	08:40					
					VOC-TCLVOA-10		8260D	10 Bus. Days	
Q2820-19	88H-W	Solid	08/08/2025	08:50					
					VOC-TCLVOA-10		8260D	10 Bus. Days	
Q2820-20	88H-S	Solid	08/08/2025	09:00					
					VOC-TCLVOA-10		8260D	10 Bus. Days	
Q2820-21	22M-N	Solid	08/08/2025	11:25					
					VOC-TCLVOA-10		8260D	10 Bus. Days	
Q2820-22	22M-W	Solid	08/08/2025	10:56					
					VOC-TCLVOA-10		8260D	10 Bus. Days	
Q2820-23	22M-E	Solid	08/08/2025	11:15					

LOGIN REPORT/SAMPLE TRANSFER

Order ID : Q2820	FIRS02	Order Date : 8/11/2025 12:29:00 PM	Project Mgr :
Client Name : First Environment, Inc.		Project Name : USACE018-44 DOD	Report Type : Level 4
Client Contact : Al Smith		Receive DateTime : 8/8/2025 6:01:00 PM	EDD Type : EQUIS
Invoice Name : First Environment, Inc.		Purchase Order :	Hard Copy Date :
Invoice Contact : Al Smith			Date Signoff :

LAB ID	CLIENT ID	MATRIX	SAMPLE DATE	SAMPLE TIME	TEST	TEST GROUP	METHOD	FAX DATE	DUE DATES
Q2820-24	22M-S	Solid	08/08/2025	11:00	VOC-TCLVOA-10		8260D	10 Bus. Days	
					VOC-TCLVOA-10		8260D	10 Bus. Days	

Relinquished By :

Date / Time :

[Signature]
8-11-25 1450

Received By :

Date / Time :

[Signature]
08/11/25

14:50

[Handwritten notes]
28#6
522

Storage Area : VOA Refridgerator Room