

DATA PACKAGE METALS

PROJECT NAME : FORMER SCHLUMBERGER STC PTC SITE D3868221

JACOBS ENGINEERING GROUP, INC.

412 Mt. Kemble Ave

Downtown Building

Morristown, NJ - 07960

Phone No: 9732670555

ORDER ID : Q1697

ATTENTION : John Ynfante



Laboratory Certification ID # 20012



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Cover Page

Order ID : Q1697

Project ID : Former Schlumberger STC PTC Site D3868221

Client : JACOBS Engineering Group, Inc.

Lab Sample Number

Q1697-01
Q1697-02
Q1697-03
Q1697-04
Q1697-05
Q1697-06
Q1697-13
Q1697-14
Q1697-15
Q1697-16
Q1697-17

Client Sample Number

MW-19B-72-040125
IW-01-55-040125
IW-02-55-040125
IW-02-55-040125-FD
IW-03-55-040125
TB-01-040125
MW-19B-72-040125
IW-01-55-040125
IW-02-55-040125
IW-02-55-040125-FD
IW-03-55-040125

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

Signature : _____

Date: 4/8/2025

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012



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

CASE NARRATIVE

JACOBS Engineering Group, Inc.

Project Name: Former Schlumberger STC PTC Site D3868221

Project # N/A

Chemtech Project # Q1697

Test Name: Metals Group4,Dissolved ICP-Group2

A. Number of Samples and Date of Receipt:

11 Water samples were received on 04/01/2025.

B. Parameters:

According to the Chain of Custody document, the following analyses were requested: Alkalinity, Anions Group1, Dissolved ICP-Group2, Dissolved Metals Group3, Mercury, Metals Group4, Metals ICP-TAL, METALS-TAL, SVOC-SIMGroup1, TDS, VOC-TRACE-SFAM and VOCMS Group3. This data package contains results for Metals Group4,Dissolved ICP-Group2.

C. Analytical Techniques:

The analysis of Dissolved ICP-Group2,Metals Group4 was based on method 6020B and digestion based on method 3010 (waters).

D. QA/ QC Samples:

The Holding Times were met for all analysis.

The Blank Spike met requirements for all samples.

The Duplicate analysis met criteria for all samples.

The Matrix Spike (IW-02-55-040125-FDMS) analysis met criteria for all samples except for Arsenic, Potassium due to matrix interference.

The Matrix Spike Duplicate (IW-02-55-040125-FDMSD) analysis met criteria for all samples except for Arsenic, Potassium due to matrix interference.

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

The Calibration met the requirements.

The Serial Dilution met the acceptable requirements.

E. Additional Comments:

Samples Q1697-01 to Q1697-05 were analyzed as Total metals and Samples Q1697-13 to Q1697-17 were analyzed as Dissolved metals.

Collision cell is being used to remove potential interferences. The analytes Na, Mg, Al, K, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, As are being analyzed with collision cell and analytes Be, B, Ca, Ti, Se, Sr, Zr, Mo, Ag, Cd, Sn, Sb, Ba, Tl, Pb, U are being analyzed with Non-Collision Cell. Helium gas is used for the Collision Cell analysis.



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.

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

CHEMTECH PROJECT NUMBER: Q1697

MATRIX: Water

METHOD: 6020B

	NA	NO	YES
1. Calibration Summary met criteria.			✓
2. ICP Interference Check Sample Results Summary Submitted.			✓
3. Serial Dilution Summary (if applicable) Submitted.			✓
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 (IW-02-55-040125-FDMS) analysis met criteria for all samples except for Arsenic, Potassium due to matrix interference. The Matrix Spike Duplicate (IW-02-55-040125-FDMSD) analysis met criteria for all samples except for Arsenic, Potassium due to matrix interference.			
7. Sample Duplicate Analysis Met QC Criteria			✓
If not met, list those compounds and their recoveries which fall outside the acceptable range.			
8. Digestion Holding Time Met			✓
If not met, list number of days exceeded for each sample:			
9. Analysis Holding Time Met			✓
If not met, list those compounds and their recoveries which fall outside the acceptable range.			

ADDITIONAL COMMENTS: Samples Q1697-01 to Q1697-05 were analyzed as Total metals and Samples Q1697-13 to Q1697-17 were analyzed as Dissolved metals.

Collision cell is being used to remove potential interferences. The analytes Na, Mg, Al, K, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, As are being analyzed with collision cell and analytes Be, B, Ca, Ti, Se, Sr, Zr, Mo, Ag, Cd, Sn, Sb, Ba, Tl, Pb, U are being analyzed with Non-Collision Cell. Helium gas is used for the Collision Cell analysis.

QA REVIEW

Date

APPENDIX A

QA REVIEW GENERAL DOCUMENTATION

Project #: Q1697

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: 04/08/2025

LAB CHRONICLE

OrderID:	Q1697	OrderDate:	4/2/2025 10:31:00 AM
Client:	JACOBS Engineering Group, Inc.	Project:	Former Schlumberger STC PTC Site D3868221
Contact:	John Ynfante	Location:	I31,VOA Ref. #3 Water

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
Q1697-01	MW-19B-72-040125	Water	Metals Group4	6020B	04/01/25	04/03/25	04/03/25	04/01/25
Q1697-02	IW-01-55-040125	Water	Metals Group4	6020B	04/01/25	04/03/25	04/03/25	04/01/25
Q1697-03	IW-02-55-040125	Water	Metals Group4	6020B	04/01/25	04/03/25	04/03/25	04/01/25
Q1697-04	IW-02-55-040125-FD	Water	Metals Group4	6020B	04/01/25	04/03/25	04/03/25	04/01/25
Q1697-05	IW-03-55-040125	Water	Metals Group4	6020B	04/01/25	04/03/25	04/03/25	04/01/25
Q1697-13	MW-19B-72-040125	Water	Dissolved ICP-Group2	6020B	04/01/25	04/03/25	04/03/25	04/01/25
Q1697-14	IW-01-55-040125	Water	Dissolved ICP-Group2	6020B	04/01/25	04/03/25	04/03/25	04/01/25
Q1697-15	IW-02-55-040125	Water	Dissolved ICP-Group2	6020B	04/01/25	04/03/25	04/03/25	04/01/25
Q1697-16	IW-02-55-040125-FD	Water	Dissolved ICP-Group2	6020B	04/01/25	04/03/25	04/03/25	04/01/25
Q1697-17	IW-03-55-040125	Water	Dissolved ICP-Group2	6020B	04/01/25	04/03/25	04/03/25	04/01/25

Hit Summary Sheet SW-846

SDG No.: Q1697 **Order ID:** Q1697
Client: JACOBS Engineering Group, Inc. **Project ID:** Former Schlumberger STC PTC Site D386

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
Client ID : MW-19B-72-040125								
Q1697-01	MW-19B-72-040125	Water	Aluminum	13.7	J	1.94	20.0	ug/L
Q1697-01	MW-19B-72-040125	Water	Arsenic	0.28	J	0.089	1.00	ug/L
Q1697-01	MW-19B-72-040125	Water	Barium	619		0.21	10.0	ug/L
Q1697-01	MW-19B-72-040125	Water	Chromium	0.25	J	0.21	2.00	ug/L
Q1697-01	MW-19B-72-040125	Water	Iron	11500		7.81	50.0	ug/L
Q1697-01	MW-19B-72-040125	Water	Magnesium	13200		19.5	500	ug/L
Q1697-01	MW-19B-72-040125	Water	Manganese	644		0.43	1.00	ug/L
Q1697-01	MW-19B-72-040125	Water	Potassium	6870		36.4	500	ug/L
Q1697-01	MW-19B-72-040125	Water	Sodium	10200		128	500	ug/L
Client ID : IW-01-55-040125								
Q1697-02	IW-01-55-040125	Water	Aluminum	97.2		1.94	20.0	ug/L
Q1697-02	IW-01-55-040125	Water	Arsenic	0.42	J	0.089	1.00	ug/L
Q1697-02	IW-01-55-040125	Water	Barium	316		0.21	10.0	ug/L
Q1697-02	IW-01-55-040125	Water	Chromium	1.64	J	0.21	2.00	ug/L
Q1697-02	IW-01-55-040125	Water	Copper	0.73	J	0.30	2.00	ug/L
Q1697-02	IW-01-55-040125	Water	Iron	5700		7.81	50.0	ug/L
Q1697-02	IW-01-55-040125	Water	Magnesium	8550		19.5	500	ug/L
Q1697-02	IW-01-55-040125	Water	Manganese	596		0.43	1.00	ug/L
Q1697-02	IW-01-55-040125	Water	Potassium	6990		36.4	500	ug/L
Q1697-02	IW-01-55-040125	Water	Sodium	8590		128	500	ug/L
Client ID : IW-02-55-040125								
Q1697-03	IW-02-55-040125	Water	Aluminum	68.5		1.94	20.0	ug/L
Q1697-03	IW-02-55-040125	Water	Arsenic	0.39	J	0.089	1.00	ug/L
Q1697-03	IW-02-55-040125	Water	Barium	293		0.21	10.0	ug/L
Q1697-03	IW-02-55-040125	Water	Chromium	0.47	J	0.21	2.00	ug/L
Q1697-03	IW-02-55-040125	Water	Iron	5390		7.81	50.0	ug/L
Q1697-03	IW-02-55-040125	Water	Magnesium	8440		19.5	500	ug/L
Q1697-03	IW-02-55-040125	Water	Manganese	597		0.43	1.00	ug/L
Q1697-03	IW-02-55-040125	Water	Potassium	6920		36.4	500	ug/L
Q1697-03	IW-02-55-040125	Water	Sodium	6890		128	500	ug/L
Client ID : IW-02-55-040125-FD								
Q1697-04	IW-02-55-040125-FD	Water	Aluminum	70.8		1.94	20.0	ug/L
Q1697-04	IW-02-55-040125-FD	Water	Arsenic	0.39	J	0.089	1.00	ug/L
Q1697-04	IW-02-55-040125-FD	Water	Barium	303		0.21	10.0	ug/L
Q1697-04	IW-02-55-040125-FD	Water	Chromium	0.86	J	0.21	2.00	ug/L

Hit Summary Sheet
SW-846

SDG No.:	Q1697	Order ID:	Q1697
Client:	JACOBS Engineering Group, Inc.	Project ID:	Former Schlumberger STC PTC Site D386

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
Q1697-04	IW-02-55-040125-FD	Water	Iron	5440		7.81	50.0	ug/L
Q1697-04	IW-02-55-040125-FD	Water	Magnesium	8590		19.5	500	ug/L
Q1697-04	IW-02-55-040125-FD	Water	Manganese	602		0.43	1.00	ug/L
Q1697-04	IW-02-55-040125-FD	Water	Potassium	7150		36.4	500	ug/L
Q1697-04	IW-02-55-040125-FD	Water	Sodium	6930		128	500	ug/L
Client ID : IW-03-55-040125								
Q1697-05	IW-03-55-040125	Water	Aluminum	70.4		1.94	20.0	ug/L
Q1697-05	IW-03-55-040125	Water	Arsenic	0.41	J	0.089	1.00	ug/L
Q1697-05	IW-03-55-040125	Water	Barium	295		0.21	10.0	ug/L
Q1697-05	IW-03-55-040125	Water	Chromium	2.42		0.21	2.00	ug/L
Q1697-05	IW-03-55-040125	Water	Iron	5960		7.81	50.0	ug/L
Q1697-05	IW-03-55-040125	Water	Lead	0.32	J	0.21	1.00	ug/L
Q1697-05	IW-03-55-040125	Water	Magnesium	8260		19.5	500	ug/L
Q1697-05	IW-03-55-040125	Water	Manganese	651		0.43	1.00	ug/L
Q1697-05	IW-03-55-040125	Water	Potassium	6810		36.4	500	ug/L
Q1697-05	IW-03-55-040125	Water	Sodium	6490		128	500	ug/L
Client ID : MW-19B-72-040125								
Q1697-13	MW-19B-72-040125	Water	Iron	11600		7.81	50.0	ug/L
Client ID : IW-01-55-040125								
Q1697-14	IW-01-55-040125	Water	Iron	5170		7.81	50.0	ug/L
Client ID : IW-02-55-040125								
Q1697-15	IW-02-55-040125	Water	Iron	5210		7.81	50.0	ug/L
Client ID : IW-02-55-040125-FD								
Q1697-16	IW-02-55-040125-FD	Water	Iron	5210		7.81	50.0	ug/L
Client ID : IW-03-55-040125								
Q1697-17	IW-03-55-040125	Water	Iron	5760		7.81	50.0	ug/L



SAMPLE DATA

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Report of Analysis

Client:	JACOBS Engineering Group, Inc.	Date Collected:	04/01/25
Project:	Former Schlumberger STC PTC Site D3868221	Date Received:	04/01/25
Client Sample ID:	MW-19B-72-040125	SDG No.:	Q1697
Lab Sample ID:	Q1697-01	Matrix:	Water
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	13.7	J	1	1.94	20.0	ug/L	04/03/25 09:15	04/03/25 16:52	SW6020	3010A
7440-36-0	Antimony	0.11	U	1	0.11	2.00	ug/L	04/03/25 09:15	04/03/25 16:52	SW6020	3010A
7440-38-2	Arsenic	0.28	JN	1	0.089	1.00	ug/L	04/03/25 09:15	04/03/25 16:52	SW6020	3010A
7440-39-3	Barium	619		1	0.21	10.0	ug/L	04/03/25 09:15	04/03/25 16:52	SW6020	3010A
7440-41-7	Beryllium	0.32	U	1	0.32	1.00	ug/L	04/03/25 09:15	04/03/25 16:52	SW6020	3010A
7440-43-9	Cadmium	0.34	U	1	0.34	1.00	ug/L	04/03/25 09:15	04/03/25 16:52	SW6020	3010A
7440-47-3	Chromium	0.25	J	1	0.21	2.00	ug/L	04/03/25 09:15	04/03/25 16:52	SW6020	3010A
7440-50-8	Copper	0.30	U	1	0.30	2.00	ug/L	04/03/25 09:15	04/03/25 16:52	SW6020	3010A
7439-89-6	Iron	11500		1	7.81	50.0	ug/L	04/03/25 09:15	04/03/25 16:52	SW6020	3010A
7439-92-1	Lead	0.21	U	1	0.21	1.00	ug/L	04/03/25 09:15	04/03/25 16:52	SW6020	3010A
7439-95-4	Magnesium	13200		1	19.5	500	ug/L	04/03/25 09:15	04/03/25 16:52	SW6020	3010A
7439-96-5	Manganese	644		1	0.43	1.00	ug/L	04/03/25 09:15	04/03/25 16:52	SW6020	3010A
7440-09-7	Potassium	6870	N	1	36.4	500	ug/L	04/03/25 09:15	04/03/25 16:52	SW6020	3010A
7782-49-2	Selenium	2.90	U	1	2.90	5.00	ug/L	04/03/25 09:15	04/03/25 16:52	SW6020	3010A
7440-23-5	Sodium	10200		1	128	500	ug/L	04/03/25 09:15	04/03/25 16:52	SW6020	3010A

Color Before:	Colorless	Clarity Before:	Clear	Texture:
Color After:	Colorless	Clarity After:	Clear	Artifacts:
Comments:	Metals Group4			

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:	JACOBS Engineering Group, Inc.	Date Collected:	04/01/25
Project:	Former Schlumberger STC PTC Site D3868221	Date Received:	04/01/25
Client Sample ID:	IW-01-55-040125	SDG No.:	Q1697
Lab Sample ID:	Q1697-02	Matrix:	Water
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	97.2		1	1.94	20.0	ug/L	04/03/25 09:15	04/03/25 16:56	SW6020	3010A
7440-36-0	Antimony	0.11	U	1	0.11	2.00	ug/L	04/03/25 09:15	04/03/25 16:56	SW6020	3010A
7440-38-2	Arsenic	0.42	JN	1	0.089	1.00	ug/L	04/03/25 09:15	04/03/25 16:56	SW6020	3010A
7440-39-3	Barium	316		1	0.21	10.0	ug/L	04/03/25 09:15	04/03/25 16:56	SW6020	3010A
7440-41-7	Beryllium	0.32	U	1	0.32	1.00	ug/L	04/03/25 09:15	04/03/25 16:56	SW6020	3010A
7440-43-9	Cadmium	0.34	U	1	0.34	1.00	ug/L	04/03/25 09:15	04/03/25 16:56	SW6020	3010A
7440-47-3	Chromium	1.64	J	1	0.21	2.00	ug/L	04/03/25 09:15	04/03/25 16:56	SW6020	3010A
7440-50-8	Copper	0.73	J	1	0.30	2.00	ug/L	04/03/25 09:15	04/03/25 16:56	SW6020	3010A
7439-89-6	Iron	5700		1	7.81	50.0	ug/L	04/03/25 09:15	04/03/25 16:56	SW6020	3010A
7439-92-1	Lead	0.21	U	1	0.21	1.00	ug/L	04/03/25 09:15	04/03/25 16:56	SW6020	3010A
7439-95-4	Magnesium	8550		1	19.5	500	ug/L	04/03/25 09:15	04/03/25 16:56	SW6020	3010A
7439-96-5	Manganese	596		1	0.43	1.00	ug/L	04/03/25 09:15	04/03/25 16:56	SW6020	3010A
7440-09-7	Potassium	6990	N	1	36.4	500	ug/L	04/03/25 09:15	04/03/25 16:56	SW6020	3010A
7782-49-2	Selenium	2.90	U	1	2.90	5.00	ug/L	04/03/25 09:15	04/03/25 16:56	SW6020	3010A
7440-23-5	Sodium	8590		1	128	500	ug/L	04/03/25 09:15	04/03/25 16:56	SW6020	3010A

Color Before:	Colorless	Clarity Before:	Clear	Texture:
Color After:	Colorless	Clarity After:	Clear	Artifacts:
Comments:	Metals Group4			

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:	JACOBS Engineering Group, Inc.	Date Collected:	04/01/25
Project:	Former Schlumberger STC PTC Site D3868221	Date Received:	04/01/25
Client Sample ID:	IW-02-55-040125	SDG No.:	Q1697
Lab Sample ID:	Q1697-03	Matrix:	Water
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	68.5		1	1.94	20.0	ug/L	04/03/25 09:15	04/03/25 16:59	SW6020	3010A
7440-36-0	Antimony	0.11	U	1	0.11	2.00	ug/L	04/03/25 09:15	04/03/25 16:59	SW6020	3010A
7440-38-2	Arsenic	0.39	JN	1	0.089	1.00	ug/L	04/03/25 09:15	04/03/25 16:59	SW6020	3010A
7440-39-3	Barium	293		1	0.21	10.0	ug/L	04/03/25 09:15	04/03/25 16:59	SW6020	3010A
7440-41-7	Beryllium	0.32	U	1	0.32	1.00	ug/L	04/03/25 09:15	04/03/25 16:59	SW6020	3010A
7440-43-9	Cadmium	0.34	U	1	0.34	1.00	ug/L	04/03/25 09:15	04/03/25 16:59	SW6020	3010A
7440-47-3	Chromium	0.47	J	1	0.21	2.00	ug/L	04/03/25 09:15	04/03/25 16:59	SW6020	3010A
7440-50-8	Copper	0.30	U	1	0.30	2.00	ug/L	04/03/25 09:15	04/03/25 16:59	SW6020	3010A
7439-89-6	Iron	5390		1	7.81	50.0	ug/L	04/03/25 09:15	04/03/25 16:59	SW6020	3010A
7439-92-1	Lead	0.21	U	1	0.21	1.00	ug/L	04/03/25 09:15	04/03/25 16:59	SW6020	3010A
7439-95-4	Magnesium	8440		1	19.5	500	ug/L	04/03/25 09:15	04/03/25 16:59	SW6020	3010A
7439-96-5	Manganese	597		1	0.43	1.00	ug/L	04/03/25 09:15	04/03/25 16:59	SW6020	3010A
7440-09-7	Potassium	6920	N	1	36.4	500	ug/L	04/03/25 09:15	04/03/25 16:59	SW6020	3010A
7782-49-2	Selenium	2.90	U	1	2.90	5.00	ug/L	04/03/25 09:15	04/03/25 16:59	SW6020	3010A
7440-23-5	Sodium	6890		1	128	500	ug/L	04/03/25 09:15	04/03/25 16:59	SW6020	3010A

Color Before:	Colorless	Clarity Before:	Clear	Texture:
Color After:	Colorless	Clarity After:	Clear	Artifacts:
Comments:	Metals Group4			

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

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OR = Over Range
N =Spiked sample recovery not within control limits

Report of Analysis

Client:	JACOBS Engineering Group, Inc.	Date Collected:	04/01/25
Project:	Former Schlumberger STC PTC Site D3868221	Date Received:	04/01/25
Client Sample ID:	IW-02-55-040125-FD	SDG No.:	Q1697
Lab Sample ID:	Q1697-04	Matrix:	Water
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	70.8		1	1.94	20.0	ug/L	04/03/25 09:15	04/03/25 17:02	SW6020	3010A
7440-36-0	Antimony	0.11	U	1	0.11	2.00	ug/L	04/03/25 09:15	04/03/25 17:02	SW6020	3010A
7440-38-2	Arsenic	0.39	JN	1	0.089	1.00	ug/L	04/03/25 09:15	04/03/25 17:02	SW6020	3010A
7440-39-3	Barium	303		1	0.21	10.0	ug/L	04/03/25 09:15	04/03/25 17:02	SW6020	3010A
7440-41-7	Beryllium	0.32	U	1	0.32	1.00	ug/L	04/03/25 09:15	04/03/25 17:02	SW6020	3010A
7440-43-9	Cadmium	0.34	U	1	0.34	1.00	ug/L	04/03/25 09:15	04/03/25 17:02	SW6020	3010A
7440-47-3	Chromium	0.86	J	1	0.21	2.00	ug/L	04/03/25 09:15	04/03/25 17:02	SW6020	3010A
7440-50-8	Copper	0.30	U	1	0.30	2.00	ug/L	04/03/25 09:15	04/03/25 17:02	SW6020	3010A
7439-89-6	Iron	5440		1	7.81	50.0	ug/L	04/03/25 09:15	04/03/25 17:02	SW6020	3010A
7439-92-1	Lead	0.21	U	1	0.21	1.00	ug/L	04/03/25 09:15	04/03/25 17:02	SW6020	3010A
7439-95-4	Magnesium	8590		1	19.5	500	ug/L	04/03/25 09:15	04/03/25 17:02	SW6020	3010A
7439-96-5	Manganese	602		1	0.43	1.00	ug/L	04/03/25 09:15	04/03/25 17:02	SW6020	3010A
7440-09-7	Potassium	7150	N	1	36.4	500	ug/L	04/03/25 09:15	04/03/25 17:02	SW6020	3010A
7782-49-2	Selenium	2.90	U	1	2.90	5.00	ug/L	04/03/25 09:15	04/03/25 17:02	SW6020	3010A
7440-23-5	Sodium	6930		1	128	500	ug/L	04/03/25 09:15	04/03/25 17:02	SW6020	3010A

Color Before:	Colorless	Clarity Before:	Clear	Texture:
Color After:	Colorless	Clarity After:	Clear	Artifacts:
Comments:	Metals Group4			

U = Not Detected
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 N =Spiked sample recovery not within control limits

Report of Analysis

Client:	JACOBS Engineering Group, Inc.	Date Collected:	04/01/25
Project:	Former Schlumberger STC PTC Site D3868221	Date Received:	04/01/25
Client Sample ID:	IW-03-55-040125	SDG No.:	Q1697
Lab Sample ID:	Q1697-05	Matrix:	Water
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	70.4		1	1.94	20.0	ug/L	04/03/25 09:15	04/03/25 17:29	SW6020	3010A
7440-36-0	Antimony	0.11	U	1	0.11	2.00	ug/L	04/03/25 09:15	04/03/25 17:29	SW6020	3010A
7440-38-2	Arsenic	0.41	JN	1	0.089	1.00	ug/L	04/03/25 09:15	04/03/25 17:29	SW6020	3010A
7440-39-3	Barium	295		1	0.21	10.0	ug/L	04/03/25 09:15	04/03/25 17:29	SW6020	3010A
7440-41-7	Beryllium	0.32	U	1	0.32	1.00	ug/L	04/03/25 09:15	04/03/25 17:29	SW6020	3010A
7440-43-9	Cadmium	0.34	U	1	0.34	1.00	ug/L	04/03/25 09:15	04/03/25 17:29	SW6020	3010A
7440-47-3	Chromium	2.42		1	0.21	2.00	ug/L	04/03/25 09:15	04/03/25 17:29	SW6020	3010A
7440-50-8	Copper	0.30	U	1	0.30	2.00	ug/L	04/03/25 09:15	04/03/25 17:29	SW6020	3010A
7439-89-6	Iron	5960		1	7.81	50.0	ug/L	04/03/25 09:15	04/03/25 17:29	SW6020	3010A
7439-92-1	Lead	0.32	J	1	0.21	1.00	ug/L	04/03/25 09:15	04/03/25 17:29	SW6020	3010A
7439-95-4	Magnesium	8260		1	19.5	500	ug/L	04/03/25 09:15	04/03/25 17:29	SW6020	3010A
7439-96-5	Manganese	651		1	0.43	1.00	ug/L	04/03/25 09:15	04/03/25 17:29	SW6020	3010A
7440-09-7	Potassium	6810	N	1	36.4	500	ug/L	04/03/25 09:15	04/03/25 17:29	SW6020	3010A
7782-49-2	Selenium	2.90	U	1	2.90	5.00	ug/L	04/03/25 09:15	04/03/25 17:29	SW6020	3010A
7440-23-5	Sodium	6490		1	128	500	ug/L	04/03/25 09:15	04/03/25 17:29	SW6020	3010A

Color Before:	Brown	Clarity Before:	Clear	Texture:
Color After:	Light Brown	Clarity After:	Clear	Artifacts:
Comments:	Metals Group4			

U = Not Detected
 LOQ = Limit of Quantitation
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 LOD = Limit of Detection
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 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:	JACOBS Engineering Group, Inc.	Date Collected:	04/01/25
Project:	Former Schlumberger STC PTC Site D3868221	Date Received:	04/01/25
Client Sample ID:	MW-19B-72-040125	SDG No.:	Q1697
Lab Sample ID:	Q1697-13	Matrix:	Water
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.	Prep Met.
7439-89-6	Iron	11600	1	7.81		50.0	ug/L	04/03/25 09:15	04/03/25 17:32	SW6020	3010A

Color Before:	Colorless	Clarity Before:	Clear	Texture:
Color After:	Colorless	Clarity After:	Clear	Artifacts:
Comments:	Dissolved Metals Group3			

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

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

Report of Analysis

Client:	JACOBS Engineering Group, Inc.	Date Collected:	04/01/25
Project:	Former Schlumberger STC PTC Site D3868221	Date Received:	04/01/25
Client Sample ID:	IW-01-55-040125	SDG No.:	Q1697
Lab Sample ID:	Q1697-14	Matrix:	Water
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.	Prep Met.
7439-89-6	Iron	5170	1	7.81		50.0	ug/L	04/03/25 09:15	04/03/25 17:35	SW6020	3010A

Color Before:	Colorless	Clarity Before:	Clear	Texture:
Color After:	Colorless	Clarity After:	Clear	Artifacts:
Comments:	Dissolved Metals Group3			

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

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

Report of Analysis

Client:	JACOBS Engineering Group, Inc.	Date Collected:	04/01/25
Project:	Former Schlumberger STC PTC Site D3868221	Date Received:	04/01/25
Client Sample ID:	IW-02-55-040125	SDG No.:	Q1697
Lab Sample ID:	Q1697-15	Matrix:	Water
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.	Prep Met.
7439-89-6	Iron	5210	1	7.81		50.0	ug/L	04/03/25 09:15	04/03/25 17:38	SW6020	3010A

Color Before:	Colorless	Clarity Before:	Clear	Texture:
Color After:	Colorless	Clarity After:	Clear	Artifacts:
Comments:	Dissolved Metals Group3			

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

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

Report of Analysis

Client:	JACOBS Engineering Group, Inc.	Date Collected:	04/01/25
Project:	Former Schlumberger STC PTC Site D3868221	Date Received:	04/01/25
Client Sample ID:	IW-02-55-040125-FD	SDG No.:	Q1697
Lab Sample ID:	Q1697-16	Matrix:	Water
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.	Prep Met.
7439-89-6	Iron	5210	1	7.81		50.0	ug/L	04/03/25 09:15	04/03/25 17:42	SW6020	3010A

Color Before:	Colorless	Clarity Before:	Clear	Texture:
Color After:	Colorless	Clarity After:	Clear	Artifacts:
Comments:	Dissolved Metals Group3			

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

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

Report of Analysis

Client:	JACOBS Engineering Group, Inc.	Date Collected:	04/01/25
Project:	Former Schlumberger STC PTC Site D3868221	Date Received:	04/01/25
Client Sample ID:	IW-03-55-040125	SDG No.:	Q1697
Lab Sample ID:	Q1697-17	Matrix:	Water
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.	Prep Met.
7439-89-6	Iron	5760	1	7.81		50.0	ug/L	04/03/25 09:15	04/03/25 17:45	SW6020	3010A

Color Before:	Brown	Clarity Before:	Clear	Texture:
Color After:	Light Brown	Clarity After:	Clear	Artifacts:
Comments:	Dissolved Metals Group3			

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

J = Estimated Value
 B = Analyte Found in Associated Method Blank
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METAL CALIBRATION DATA

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: JACOBS Engineering Group, Inc. SDG No.: Q1697
Contract: JACO05 Lab Code: CHEM Case No.: Q1697 SAS No.: Q1697
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
ICV01	Aluminum	500	500	100	90 - 110	P	04/03/2025	15:26	LB135293
	Antimony	199	200	99	90 - 110	P	04/03/2025	15:26	LB135293
	Arsenic	205	200	102	90 - 110	P	04/03/2025	15:26	LB135293
	Barium	98.1	100	98	90 - 110	P	04/03/2025	15:26	LB135293
	Beryllium	105	100	105	90 - 110	P	04/03/2025	15:26	LB135293
	Cadmium	101	100	101	90 - 110	P	04/03/2025	15:26	LB135293
	Chromium	103	100	103	90 - 110	P	04/03/2025	15:26	LB135293
	Copper	98.1	100	98	90 - 110	P	04/03/2025	15:26	LB135293
	Iron	2070	2000	104	90 - 110	P	04/03/2025	15:26	LB135293
	Lead	194	200	97	90 - 110	P	04/03/2025	15:26	LB135293
	Magnesium	1210	1200	101	90 - 110	P	04/03/2025	15:26	LB135293
	Manganese	103	100	103	90 - 110	P	04/03/2025	15:26	LB135293
	Potassium	1830	2000	92	90 - 110	P	04/03/2025	15:26	LB135293
	Selenium	204	200	102	90 - 110	P	04/03/2025	15:26	LB135293
	Sodium	2100	2000	105	90 - 110	P	04/03/2025	15:26	LB135293

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: JACOBS Engineering Group, Inc. SDG No.: Q1697
Contract: JACO05 Lab Code: CHEM Case No.: Q1697 SAS No.: Q1697
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
LLICV	Aluminum	18.6	20.0	93	80 - 120	P	04/03/2025	15:50	LB135293
	Antimony	2.05	2.0	102	80 - 120	P	04/03/2025	15:50	LB135293
	Arsenic	1.02	1.0	102	80 - 120	P	04/03/2025	15:50	LB135293
	Barium	10.0	10.0	100	80 - 120	P	04/03/2025	15:50	LB135293
	Beryllium	1.12	1.0	112	80 - 120	P	04/03/2025	15:50	LB135293
	Cadmium	1.11	1.0	111	80 - 120	P	04/03/2025	15:50	LB135293
	Chromium	1.87	2.0	94	80 - 120	P	04/03/2025	15:50	LB135293
	Copper	1.82	2.0	91	80 - 120	P	04/03/2025	15:50	LB135293
	Iron	48.6	50.0	97	80 - 120	P	04/03/2025	15:50	LB135293
	Lead	0.96	1.0	96	80 - 120	P	04/03/2025	15:50	LB135293
	Magnesium	521	500	104	80 - 120	P	04/03/2025	15:50	LB135293
	Manganese	0.87	1.0	87	80 - 120	P	04/03/2025	15:50	LB135293
	Potassium	434	500	87	80 - 120	P	04/03/2025	15:50	LB135293
	Selenium	5.45	5.0	109	80 - 120	P	04/03/2025	15:50	LB135293
	Sodium	543	500	108	80 - 120	P	04/03/2025	15:50	LB135293

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: JACOBS Engineering Group, Inc. SDG No.: Q1697
Contract: JACO05 Lab Code: CHEM Case No.: Q1697 SAS No.: Q1697
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
CCV01	Aluminum	51600	50000	103	90 - 110	P	04/03/2025	16:35	LB135293
	Antimony	492	500	98	90 - 110	P	04/03/2025	16:35	LB135293
	Arsenic	485	500	97	90 - 110	P	04/03/2025	16:35	LB135293
	Barium	2470	2500	99	90 - 110	P	04/03/2025	16:35	LB135293
	Beryllium	510	500	102	90 - 110	P	04/03/2025	16:35	LB135293
	Cadmium	490	500	98	90 - 110	P	04/03/2025	16:35	LB135293
	Chromium	498	500	100	90 - 110	P	04/03/2025	16:35	LB135293
	Copper	4560	5000	91	90 - 110	P	04/03/2025	16:35	LB135293
	Iron	123000	125000	99	90 - 110	P	04/03/2025	16:35	LB135293
	Lead	2460	2500	98	90 - 110	P	04/03/2025	16:35	LB135293
	Magnesium	252000	250000	101	90 - 110	P	04/03/2025	16:35	LB135293
	Manganese	5010	5000	100	90 - 110	P	04/03/2025	16:35	LB135293
	Potassium	114000	125000	91	90 - 110	P	04/03/2025	16:35	LB135293
	Selenium	471	500	94	90 - 110	P	04/03/2025	16:35	LB135293
	Sodium	256000	250000	102	90 - 110	P	04/03/2025	16:35	LB135293
CCV02	Aluminum	51100	50000	102	90 - 110	P	04/03/2025	17:16	LB135293
	Antimony	485	500	97	90 - 110	P	04/03/2025	17:16	LB135293
	Arsenic	477	500	96	90 - 110	P	04/03/2025	17:16	LB135293
	Barium	2430	2500	97	90 - 110	P	04/03/2025	17:16	LB135293
	Beryllium	508	500	102	90 - 110	P	04/03/2025	17:16	LB135293
	Cadmium	481	500	96	90 - 110	P	04/03/2025	17:16	LB135293
	Chromium	494	500	99	90 - 110	P	04/03/2025	17:16	LB135293
	Copper	4570	5000	91	90 - 110	P	04/03/2025	17:16	LB135293
	Iron	123000	125000	99	90 - 110	P	04/03/2025	17:16	LB135293
	Lead	2450	2500	98	90 - 110	P	04/03/2025	17:16	LB135293
	Magnesium	253000	250000	101	90 - 110	P	04/03/2025	17:16	LB135293
	Manganese	4980	5000	100	90 - 110	P	04/03/2025	17:16	LB135293
	Potassium	113000	125000	90	90 - 110	P	04/03/2025	17:16	LB135293
	Selenium	472	500	94	90 - 110	P	04/03/2025	17:16	LB135293
	Sodium	254000	250000	102	90 - 110	P	04/03/2025	17:16	LB135293
CCV03	Aluminum	51900	50000	104	90 - 110	P	04/03/2025	17:52	LB135293
	Antimony	499	500	100	90 - 110	P	04/03/2025	17:52	LB135293
	Arsenic	481	500	96	90 - 110	P	04/03/2025	17:52	LB135293
	Barium	2450	2500	98	90 - 110	P	04/03/2025	17:52	LB135293

Metals

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: JACOBS Engineering Group, Inc. SDG No.: Q1697
Contract: JACO05 Lab Code: CHEM Case No.: Q1697 SAS No.: Q1697
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
CCV03	Beryllium	528	500	106	90 - 110	P	04/03/2025	17:52	LB135293
	Cadmium	495	500	99	90 - 110	P	04/03/2025	17:52	LB135293
	Chromium	503	500	100	90 - 110	P	04/03/2025	17:52	LB135293
	Copper	4650	5000	93	90 - 110	P	04/03/2025	17:52	LB135293
	Iron	126000	125000	100	90 - 110	P	04/03/2025	17:52	LB135293
	Lead	2510	2500	100	90 - 110	P	04/03/2025	17:52	LB135293
	Magnesium	253000	250000	101	90 - 110	P	04/03/2025	17:52	LB135293
	Manganese	5060	5000	101	90 - 110	P	04/03/2025	17:52	LB135293
	Potassium	122000	125000	98	90 - 110	P	04/03/2025	17:52	LB135293
	Selenium	477	500	95	90 - 110	P	04/03/2025	17:52	LB135293
	Sodium	254000	250000	102	90 - 110	P	04/03/2025	17:52	LB135293

Metals

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CRDL STANDARD FOR AA & ICP

Client: JACOBS Engineering Group, Inc. **SDG No.:** Q1697
Contract: JACO05 **Lab Code:** CHEM **Case No.:** Q1697 **SAS No.:** Q1697
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
CRI	Aluminum	18.1	20.0	91	70 - 130	P	04/03/2025	16:41	LB135293
	Antimony	2.08	2.0	104	70 - 130	P	04/03/2025	16:41	LB135293
	Arsenic	1.00	1.0	100	70 - 130	P	04/03/2025	16:41	LB135293
	Barium	10.2	10.0	102	70 - 130	P	04/03/2025	16:41	LB135293
	Beryllium	1.07	1.0	107	70 - 130	P	04/03/2025	16:41	LB135293
	Cadmium	1.11	1.0	111	70 - 130	P	04/03/2025	16:41	LB135293
	Chromium	1.89	2.0	94	70 - 130	P	04/03/2025	16:41	LB135293
	Copper	1.86	2.0	93	70 - 130	P	04/03/2025	16:41	LB135293
	Iron	50.5	50.0	101	70 - 130	P	04/03/2025	16:41	LB135293
	Lead	1.00	1.0	100	70 - 130	P	04/03/2025	16:41	LB135293
	Magnesium	523	500	104	70 - 130	P	04/03/2025	16:41	LB135293
	Manganese	0.92	1.0	92	50 - 150	P	04/03/2025	16:41	LB135293
	Potassium	453	500	91	70 - 130	P	04/03/2025	16:41	LB135293
	Selenium	5.00	5.0	100	70 - 130	P	04/03/2025	16:41	LB135293
	Sodium	559	500	112	70 - 130	P	04/03/2025	16:41	LB135293

Metals

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INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: JACOBS Engineering Group, Inc.		SDG No.: Q1697							
Contract: JACO05	Lab Code: CHEM	Case No.: Q1697	SAS No.: Q1697						
Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB01	Aluminum	20.0	+/-20.0	U	20.0	P	04/03/2025	15:55	LB135293
	Antimony	2.00	+/-2.00	U	2.00	P	04/03/2025	15:55	LB135293
	Arsenic	1.00	+/-1.00	U	1.00	P	04/03/2025	15:55	LB135293
	Barium	10.0	+/-10.0	U	10.0	P	04/03/2025	15:55	LB135293
	Beryllium	1.00	+/-1.00	U	1.00	P	04/03/2025	15:55	LB135293
	Cadmium	1.00	+/-1.00	U	1.00	P	04/03/2025	15:55	LB135293
	Chromium	2.00	+/-2.00	U	2.00	P	04/03/2025	15:55	LB135293
	Copper	2.00	+/-2.00	U	2.00	P	04/03/2025	15:55	LB135293
	Iron	50.0	+/-50.0	U	50.0	P	04/03/2025	15:55	LB135293
	Lead	1.00	+/-1.00	U	1.00	P	04/03/2025	15:55	LB135293
	Magnesium	500	+/-500	U	500	P	04/03/2025	15:55	LB135293
	Manganese	1.00	+/-1.00	U	1.00	P	04/03/2025	15:55	LB135293
	Potassium	500	+/-500	U	500	P	04/03/2025	15:55	LB135293
	Selenium	5.00	+/-5.00	U	5.00	P	04/03/2025	15:55	LB135293
	Sodium	500	+/-500	U	500	P	04/03/2025	15:55	LB135293

Metals

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INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: JACOBS Engineering Group, Inc.		SDG No.: Q1697							
Contract: JACO05	Lab Code: CHEM	Case No.: Q1697	SAS No.: Q1697						
Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB01	Aluminum	3.94	+/-20.0	J	20.0	P	04/03/2025	16:38	LB135293
	Antimony	2.00	+/-2.00	U	2.00	P	04/03/2025	16:38	LB135293
	Arsenic	1.00	+/-1.00	U	1.00	P	04/03/2025	16:38	LB135293
	Barium	10.0	+/-10.0	U	10.0	P	04/03/2025	16:38	LB135293
	Beryllium	1.00	+/-1.00	U	1.00	P	04/03/2025	16:38	LB135293
	Cadmium	1.00	+/-1.00	U	1.00	P	04/03/2025	16:38	LB135293
	Chromium	2.00	+/-2.00	U	2.00	P	04/03/2025	16:38	LB135293
	Copper	2.00	+/-2.00	U	2.00	P	04/03/2025	16:38	LB135293
	Iron	50.0	+/-50.0	U	50.0	P	04/03/2025	16:38	LB135293
	Lead	1.00	+/-1.00	U	1.00	P	04/03/2025	16:38	LB135293
	Magnesium	500	+/-500	U	500	P	04/03/2025	16:38	LB135293
	Manganese	1.00	+/-1.00	U	1.00	P	04/03/2025	16:38	LB135293
	Potassium	44.4	+/-500	J	500	P	04/03/2025	16:38	LB135293
	Selenium	5.00	+/-5.00	U	5.00	P	04/03/2025	16:38	LB135293
	Sodium	500	+/-500	U	500	P	04/03/2025	16:38	LB135293
CCB02	Aluminum	3.66	+/-20.0	J	20.0	P	04/03/2025	17:20	LB135293
	Antimony	2.00	+/-2.00	U	2.00	P	04/03/2025	17:20	LB135293
	Arsenic	1.00	+/-1.00	U	1.00	P	04/03/2025	17:20	LB135293
	Barium	10.0	+/-10.0	U	10.0	P	04/03/2025	17:20	LB135293
	Beryllium	1.00	+/-1.00	U	1.00	P	04/03/2025	17:20	LB135293
	Cadmium	1.00	+/-1.00	U	1.00	P	04/03/2025	17:20	LB135293
	Chromium	2.00	+/-2.00	U	2.00	P	04/03/2025	17:20	LB135293
	Copper	2.00	+/-2.00	U	2.00	P	04/03/2025	17:20	LB135293
	Iron	50.0	+/-50.0	U	50.0	P	04/03/2025	17:20	LB135293
	Lead	1.00	+/-1.00	U	1.00	P	04/03/2025	17:20	LB135293
	Magnesium	500	+/-500	U	500	P	04/03/2025	17:20	LB135293
	Manganese	1.00	+/-1.00	U	1.00	P	04/03/2025	17:20	LB135293
	Potassium	500	+/-500	U	500	P	04/03/2025	17:20	LB135293
	Selenium	5.00	+/-5.00	U	5.00	P	04/03/2025	17:20	LB135293
	Sodium	500	+/-500	U	500	P	04/03/2025	17:20	LB135293
CCB03	Aluminum	20.0	+/-20.0	U	20.0	P	04/03/2025	18:41	LB135293
	Antimony	2.00	+/-2.00	U	2.00	P	04/03/2025	18:41	LB135293
	Arsenic	1.00	+/-1.00	U	1.00	P	04/03/2025	18:41	LB135293
	Barium	10.0	+/-10.0	U	10.0	P	04/03/2025	18:41	LB135293
	Beryllium	1.00	+/-1.00	U	1.00	P	04/03/2025	18:41	LB135293
	Cadmium	1.00	+/-1.00	U	1.00	P	04/03/2025	18:41	LB135293
	Chromium	2.00	+/-2.00	U	2.00	P	04/03/2025	18:41	LB135293
	Copper	2.00	+/-2.00	U	2.00	P	04/03/2025	18:41	LB135293
	Iron	50.0	+/-50.0	U	50.0	P	04/03/2025	18:41	LB135293

Metals

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INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: JACOBS Engineering Group, Inc. **SDG No.:** Q1697
Contract: JACO05 **Lab Code:** CHEM **Case No.:** Q1697 **SAS No.:** Q1697

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB03	Lead	1.00	+/-1.00	U	1.00	P	04/03/2025	18:41	LB135293
	Magnesium	500	+/-500	U	500	P	04/03/2025	18:41	LB135293
	Manganese	0.93	+/-1.00	J	1.00	P	04/03/2025	18:41	LB135293
	Potassium	500	+/-500	U	500	P	04/03/2025	18:41	LB135293
	Selenium	5.00	+/-5.00	U	5.00	P	04/03/2025	18:41	LB135293
	Sodium	500	+/-500	U	500	P	04/03/2025	18:41	LB135293

Metals
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PREPARATION BLANK SUMMARY

Client: JACOBS Engineering Group, Inc.

SDG No.: Q1697

Instrument: P8

Sample ID	Analyte	Result (ug/L)	Acceptance Limit	Conc Qual	CRQL ug/L	M	Analysis Date	Analysis Time	Run
PB167437BL	WATER			Batch Number:	PB167437		Prep Date:	04/03/2025	
	Aluminum	20.0	<20.0	U	20.0	P	04/03/2025	16:45	LB135293
	Antimony	2.00	<2.00	U	2.00	P	04/03/2025	16:45	LB135293
	Arsenic	1.00	<1.00	U	1.00	P	04/03/2025	16:45	LB135293
	Barium	10.0	<10.0	U	10.0	P	04/03/2025	16:45	LB135293
	Beryllium	1.00	<1.00	U	1.00	P	04/03/2025	16:45	LB135293
	Cadmium	1.00	<1.00	U	1.00	P	04/03/2025	16:45	LB135293
	Chromium	2.00	<2.00	U	2.00	P	04/03/2025	16:45	LB135293
	Copper	2.00	<2.00	U	2.00	P	04/03/2025	16:45	LB135293
	Iron	50.0	<50.0	U	50.0	P	04/03/2025	16:45	LB135293
	Lead	1.00	<1.00	U	1.00	P	04/03/2025	16:45	LB135293
	Magnesium	500	<500	U	500	P	04/03/2025	16:45	LB135293
	Manganese	1.00	<1.00	U	1.00	P	04/03/2025	16:45	LB135293
	Potassium	500	<500	U	500	P	04/03/2025	16:45	LB135293
	Selenium	5.00	<5.00	U	5.00	P	04/03/2025	16:45	LB135293
	Sodium	500	<500	U	500	P	04/03/2025	16:45	LB135293

Metals
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INTERFERENCE CHECK SAMPLE

Client: JACOBS Engineering Group, Inc. **SDG No.:** Q1697
Contract: JACO05 **Lab Code:** CHEM **Case No.:** Q1697 **SAS No.:** Q1697
ICS Source: EPA **Instrument ID:** P8

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	99800	100000	100	0	0	04/03/2025	16:03	LB135293
	Antimony	1.27	1.5	85	-2.5	5.5	04/03/2025	16:03	LB135293
	Arsenic	0.33	0.1	330	-1.9	2.1	04/03/2025	16:03	LB135293
	Barium	1.47	1.2	122	-18.8	21.2	04/03/2025	16:03	LB135293
	Beryllium	0.30			-2	2	04/03/2025	16:03	LB135293
	Cadmium	0.57	0.7	81	-1.3	2.7	04/03/2025	16:03	LB135293
	Chromium	21.1	21.0	100	17	25	04/03/2025	16:03	LB135293
	Copper	7.43	8.0	93	4	12	04/03/2025	16:03	LB135293
	Iron	109000	100000	109	0	0	04/03/2025	16:03	LB135293
	Lead	4.74	4.0	118	2	6	04/03/2025	16:03	LB135293
	Magnesium	105000	100000	105	0	0	04/03/2025	16:03	LB135293
	Manganese	7.28	7.0	104	5	9	04/03/2025	16:03	LB135293
	Potassium	89400	100000	89	0	0	04/03/2025	16:03	LB135293
ICSAB01	Selenium	0	0.3		-9.7	10	04/03/2025	16:03	LB135293
	Sodium	113000	100000	113	0	0	04/03/2025	16:03	LB135293
	Aluminum	98600	100000	99	0	0	04/03/2025	16:20	LB135293
	Antimony	21.7	22.0	99	18	26	04/03/2025	16:20	LB135293
	Arsenic	21.5	19.0	113	16.2	21.9	04/03/2025	16:20	LB135293
	Barium	21.9	22.0	100	2	42	04/03/2025	16:20	LB135293
	Beryllium	21.6	19.0	114	16.2	21.9	04/03/2025	16:20	LB135293
	Cadmium	20.5	20.0	102	17	23	04/03/2025	16:20	LB135293
	Chromium	41.4	40.0	104	34	46	04/03/2025	16:20	LB135293
	Copper	26.0	25.0	104	21	29	04/03/2025	16:20	LB135293
	Iron	106000	100000	106	0	0	04/03/2025	16:20	LB135293
	Lead	24.7	25.0	99	21.3	28.8	04/03/2025	16:20	LB135293
	Magnesium	105000	100000	105	0	0	04/03/2025	16:20	LB135293
	Manganese	25.9	27.0	96	23	31.1	04/03/2025	16:20	LB135293
	Potassium	88900	100000	89	0	0	04/03/2025	16:20	LB135293
	Selenium	21.0	19.0	110	9	29	04/03/2025	16:20	LB135293
	Sodium	113000	100000	113	0	0	04/03/2025	16:20	LB135293



METAL QC DATA

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metals
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MATRIX SPIKE SUMMARY

client:	<u>JACOBS Engineering Group, Inc.</u>	level:	<u>low</u>	sdg no.:	<u>Q1697</u>
contract:	<u>JACO05</u>	lab code:	<u>CHEM</u>	case no.:	<u>Q1697</u>
matrix:	<u>Water</u>	sample id:	<u>Q1697-04</u>	client id:	<u>IW-02-55-040125-FDMS</u>
Percent Solids for Sample:	<u>NA</u>	Spiked ID:	<u>Q1697-04MS</u>	Percent Solids for Spike Sample:	<u>NA</u>

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Aluminum	ug/L	75 - 125	9340		70.8		10000	93		P
Antimony	ug/L	75 - 125	485		2.00	U	500	97		P
Arsenic	ug/L	75 - 125	0.54	J	0.39	J	500	0	N	P
Barium	ug/L	75 - 125	2410		303		2500	84		P
Beryllium	ug/L	75 - 125	480		1.00	U	500	96		P
Cadmium	ug/L	75 - 125	481		1.00	U	500	96		P
Chromium	ug/L	75 - 125	468		0.86	J	500	93		P
Copper	ug/L	75 - 125	4300		2.00	U	5000	86		P
Iron	ug/L	75 - 125	27300		5440		25000	88		P
Lead	ug/L	75 - 125	2380		1.00	U	2500	95		P
Magnesium	ug/L	75 - 125	58200		8590		50000	99		P
Manganese	ug/L	75 - 125	4900		602		5000	86		P
Potassium	ug/L	75 - 125	24800		7150		25000	71	N	P
Selenium	ug/L	75 - 125	472		5.00	U	500	94		P
Sodium	ug/L	75 - 125	57500		6930		50000	101		P

metals
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MATRIX SPIKE DUPLICATE SUMMARY

client:	<u>JACOBS Engineering Group, Inc.</u>	level:	<u>low</u>	sdg no.:	<u>Q1697</u>
contract:	<u>JACO05</u>	lab code:	<u>CHEM</u>	case no.:	<u>Q1697</u>
matrix:	<u>Water</u>	sample id:	<u>Q1697-04</u>	client id:	<u>IW-02-55-040125-FDMSD</u>
Percent Solids for Sample:	<u>NA</u>	Spiked ID:	<u>Q1697-04MSD</u>	Percent Solids for Spike Sample:	<u>NA</u>

Analyte	Units	Acceptance Limit %R	MSD Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Aluminum	ug/L	75 - 125	9350		70.8		10000	93		P
Antimony	ug/L	75 - 125	490		2.00	U	500	98		P
Arsenic	ug/L	75 - 125	0.56	J	0.39	J	500	0	N	P
Barium	ug/L	75 - 125	2450		303		2500	86		P
Beryllium	ug/L	75 - 125	484		1.00	U	500	97		P
Cadmium	ug/L	75 - 125	487		1.00	U	500	97		P
Chromium	ug/L	75 - 125	472		0.86	J	500	94		P
Copper	ug/L	75 - 125	4360		2.00	U	5000	87		P
Iron	ug/L	75 - 125	27400		5440		25000	88		P
Lead	ug/L	75 - 125	2360		1.00	U	2500	94		P
Magnesium	ug/L	75 - 125	58900		8590		50000	101		P
Manganese	ug/L	75 - 125	4950		602		5000	87		P
Potassium	ug/L	75 - 125	25200		7150		25000	72	N	P
Selenium	ug/L	75 - 125	471		5.00	U	500	94		P
Sodium	ug/L	75 - 125	57800		6930		50000	102		P

Metals
- 5b -
POST DIGEST SPIKE SUMMARY

Client: JACOBS Engineering Group, Inc. **SDG No.:** Q1697

Contract: JACO05 **Lab Code:** CHEM **Case No.:** Q1697 **SAS No.:** Q1697

Matrix: Water **Level:** LOW **Client ID:** IW-02-55-040125-FDA

Sample ID: Q1697-04 **Spiked ID:** Q1697-04A

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Arsenic	ug/L	75 - 125	0.53	J	0.39	J	500	0		P
Potassium	ug/L	75 - 125	25400		7150		25000	73		P

Metals

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DUPLICATE SAMPLE SUMMARY

Client: JACOBS Engineering Group, Inc. **Level:** LOW **SDG No.:** Q1697
Contract: JACO05 **Lab Code:** CHEM **Case No.:** Q1697 **SAS No.:** Q1697
Matrix: Water **Sample ID:** Q1697-04 **Client ID:** IW-02-55-040125-FDDUP
Percent Solids for Sample: NA **Duplicate ID** Q1697-04DUP **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Aluminum	ug/L	20	70.8		58.6		19		P
Antimony	ug/L	20	2.00	U	2.00	U			P
Arsenic	ug/L	20	0.39	J	0.40	J	3		P
Barium	ug/L	20	303		303		0		P
Beryllium	ug/L	20	1.00	U	1.00	U			P
Cadmium	ug/L	20	1.00	U	1.00	U			P
Chromium	ug/L	20	0.86	J	0.59	J	37		P
Copper	ug/L	20	2.00	U	2.00	U			P
Iron	ug/L	20	5440		5400		1		P
Lead	ug/L	20	1.00	U	1.00	U			P
Magnesium	ug/L	20	8590		8620		0		P
Manganese	ug/L	20	602		603		0		P
Potassium	ug/L	20	7150		7030		2		P
Selenium	ug/L	20	5.00	U	5.00	U			P
Sodium	ug/L	20	6930		6980		1		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: JACOBS Engineering Group, Inc. **Level:** LOW **SDG No.:** Q1697
Contract: JACO05 **Lab Code:** CHEM **Case No.:** Q1697 **SAS No.:** Q1697
Matrix: Water **Sample ID:** Q1697-04MS **Client ID:** IW-02-55-040125-FDMSD
Percent Solids for Sample: NA **Duplicate ID** Q1697-04MSD **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Aluminum	ug/L	20	9340		9350		0		P
Antimony	ug/L	20	485		490		1		P
Arsenic	ug/L	20	0.54	J	0.56	J	4		P
Barium	ug/L	20	2410		2450		2		P
Beryllium	ug/L	20	480		484		1		P
Cadmium	ug/L	20	481		487		1		P
Chromium	ug/L	20	468		472		1		P
Copper	ug/L	20	4300		4360		1		P
Iron	ug/L	20	27300		27400		0		P
Lead	ug/L	20	2380		2360		1		P
Magnesium	ug/L	20	58200		58900		1		P
Manganese	ug/L	20	4900		4950		1		P
Potassium	ug/L	20	24800		25200		2		P
Selenium	ug/L	20	472		471		0		P
Sodium	ug/L	20	57500		57800		1		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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LABORATORY CONTROL SAMPLE SUMMARY

Client: JACOBS Engineering Group, Inc. **SDG No.:** Q1697
Contract: JACO05 **Lab Code:** CHEM **Case No.:** Q1697 **SAS No.:** Q1697

Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limits	M
PB167437BS							
Aluminum	ug/L	10000	10800		108	80 - 120	P
Antimony	ug/L	500	527		105	80 - 120	P
Arsenic	ug/L	500	518		104	80 - 120	P
Barium	ug/L	2500	2610		104	80 - 120	P
Beryllium	ug/L	500	519		104	80 - 120	P
Cadmium	ug/L	500	535		107	80 - 120	P
Chromium	ug/L	500	523		105	80 - 120	P
Copper	ug/L	5000	5240		105	80 - 120	P
Iron	ug/L	25000	27500		110	80 - 120	P
Lead	ug/L	2500	2540		102	80 - 120	P
Magnesium	ug/L	50000	55200		110	80 - 120	P
Manganese	ug/L	5000	5270		105	80 - 120	P
Potassium	ug/L	25000	22400		90	80 - 120	P
Selenium	ug/L	500	514		103	80 - 120	P
Sodium	ug/L	50000	56000		112	80 - 120	P

FORM 8A

ICP-MS INTERNAL STANDARD RELATIVE INTENSITY SUMMARY

Client: JACOBS Engineering Group, Inc.

Contract: JACO05

Lab Code: CHEM Case no.: Q1697

Sas No.: Q1697 SDG No.: Q1697

Instrument ID: P8

Start Date : 04/03/2025

Run Number: LB135293

End Date : 04/03/2025

Lab SampleID	Client SampleID	Time	Internal Standard %RI For: Non-Collision Cell									
			Element 6Li	Q	Element 45Sc	Q	Element 89Y	Q	Element 103Rh	Q	Element 159Tb	Q
S0	S0	1415	100		100		100		100		100	
S2	S2	1422	99		99		100		99		98	
S3	S3	1425	99		98		98		98		99	
S4	S4	1428	99		95		98		96		99	
S5	S5	1431	98		96		98		94		99	
S6	S6	1434	94		93		96		91		99	
S7	S7	1437	92		93		95		88		96	
S8	S8	1440	81		82		84		72		85	
ICV01	ICV01	1526	99		97		97		96		96	
LLICV	LLICV	1550	101		98		97		97		97	
ICB01	ICB01	1555	100		98		98		97		95	
ICSA01	ICSA01	1603	92		94		94		86		93	
ICSAB01	ICSAB01	1620	96		97		98		89		95	
CCV01	CCV01	1635	93		97		95		83		92	
CCB01	CCB01	1638	106		106		105		103		100	
CRI	CRI	1641	109		105		105		102		101	
PB167437BL	PB167437BL	1645	108		104		104		103		100	
PB167437BS	PB167437BS	1648	102		101		101		94		98	
Q1697-01	MW-19B-72-01	1652	107		108		105		100		102	
Q1697-02	IW-01-55-04	1656	109		108		105		101		102	
Q1697-03	IW-02-55-04	1659	110		111		105		101		103	
Q1697-04	IW-02-55-04	1702	109		110		105		101		101	
Q1697-04DUP	IW-02-55-04	1705	110		110		104		100		100	
Q1697-04L	IW-02-55-04	1708	108		107		104		103		98	
Q1697-04MS	IW-02-55-04	1712	105		108		101		96		100	
CCV02	CCV02	1716	93		97		96		85		93	
CCB02	CCB02	1720	109		105		106		104		102	
Q1697-04MSD	IW-02-55-04	1723	107		109		104		96		101	
Q1697-04A	IW-02-55-04	1726	106		108		103		96		100	
Q1697-05	IW-03-55-04	1729	111		110		107		103		103	
Q1697-13	MW-19B-72-01	1732	109		112		106		101		103	
Q1697-14	IW-01-55-04	1735	110		112		107		102		103	
Q1697-15	IW-02-55-04	1738	109		112		109		104		103	
Q1697-16	IW-02-55-04	1742	109		109		105		100		101	
Q1697-17	IW-03-55-04	1745	111		113		107		103		102	
CCV03	CCV03	1752	90		94		93		83		91	

Internal Standard %RI Limit: 70 - 130

FORM 8A

ICP-MS INTERNAL STANDARD RELATIVE INTENSITY SUMMARY

Client: JACOBS Engineering Group, Inc.

Contract: JACO05

Lab Code: CHEM Case no.: Q1697

Sas No.: Q1697 SDG No.: Q1697

Instrument ID: P8

Start Date : 04/03/2025

Run Number: LB135293

End Date : 04/03/2025

Lab SampleID	Client SampleID	Time	Internal Standard %RI For: Non-Collision Cell									
			Element 6Li	Q	Element 45Sc	Q	Element 89Y	Q	Element 103Rh	Q	Element 159Tb	Q
CCB03	CCB03	1841	106		105		107		106		106	

FORM 8A

ICP-MS INTERNAL STANDARD RELATIVE INTENSITY SUMMARY

Client: JACOBS Engineering Group, Inc.

Contract: JACO05

Lab Code: CHEM Case no.: Q1697

Sas No.: Q1697 SDG No.: Q1697

Instrument ID: P8

Start Date : 04/03/2025

Run Number: LB135293

End Date : 04/03/2025

Lab SampleID	Client SampleID	Time	Internal Standard %RI For: Collision Cell									
			Element 45Sc	Q	Element 89Y	Q	Element 103Rh	Q	Element 159Tb	Q	Element 165Ho	Q
S0	S0	1415	100		100		100		100		100	
S2	S2	1422	99		100		100		99		100	
S3	S3	1425	96		97		97		96		99	
S4	S4	1428	94		96		96		98		100	
S5	S5	1431	92		94		93		96		99	
S6	S6	1434	92		92		89		95		97	
S7	S7	1437	94		92		88		95		97	
S8	S8	1440	88		92		77		88		91	
ICV01	ICV01	1526	97		98		97		97		98	
LLICV	LLICV	1550	99		99		99		96		98	
ICB01	ICB01	1555	99		99		98		97		99	
ICSA01	ICSA01	1603	93		94		86		92		94	
ICSAB01	ICSAB01	1620	97		96		88		94		96	
CCV01	CCV01	1635	103		100		86		94		97	
CCB01	CCB01	1638	102		105		103		101		103	
CRI	CRI	1641	103		104		102		102		104	
PB167437BL	PB167437BL	1645	101		102		101		100		101	
PB167437BS	PB167437BS	1648	101		99		94		96		100	
Q1697-01	MW-19B-72-01	1652	99		102		99		99		101	
Q1697-02	IW-01-55-04	1656	102		104		100		101		102	
Q1697-03	IW-02-55-04	1659	104		106		103		101		103	
Q1697-04	IW-02-55-04	1702	104		105		102		101		103	
Q1697-04DUP	IW-02-55-04	1705	105		107		102		101		102	
Q1697-04L	IW-02-55-04	1708	105		106		104		100		102	
Q1697-04MS	IW-02-55-04	1712	106		102		96		98		100	
CCV02	CCV02	1716	100		98		87		95		96	
CCB02	CCB02	1720	101		105		105		102		105	
Q1697-04MSD	IW-02-55-04	1723	107		104		96		98		101	
Q1697-04A	IW-02-55-04	1726	107		103		97		99		101	
Q1697-05	IW-03-55-04	1729	104		106		104		103		104	
Q1697-13	MW-19B-72-01	1732	102		104		100		102		103	
Q1697-14	IW-01-55-04	1735	104		106		102		102		103	
Q1697-15	IW-02-55-04	1738	106		107		103		103		103	
Q1697-16	IW-02-55-04	1742	104		104		102		100		102	
Q1697-17	IW-03-55-04	1745	106		106		102		101		103	
CCV03	CCV03	1752	99		100		85		93		96	

Internal Standard %RI Limit: 70 - 130

FORM 8A

ICP-MS INTERNAL STANDARD RELATIVE INTENSITY SUMMARY

Client: JACOBS Engineering Group, Inc.

Contract: JACO05

Lab Code: CHEM Case no.: Q1697

Sas No.: Q1697 SDG No.: Q1697

Instrument ID: P8

Start Date : 04/03/2025

Run Number: LB135293

End Date : 04/03/2025

Lab SampleID	Client SampleID	Time	Internal Standard %RI For: Collision Cell									
			Element 45Sc	Q	Element 89Y	Q	Element 103Rh	Q	Element 159Tb	Q	Element 165Ho	Q
CCB03	CCB03	1841	91		97		100		100		100	

Internal Standard %RI Limit: 70 - 130

FORM 8B

ICP-MS INTERNAL STANDARD RELATIVE INTENSITY SUMMARY

Lab Name: JACOBS Engineering Group, Inc.

Contract: JACO05

Lab Code: CHEM Case no.: Q1697

Sas No.: Q1697 SDG No.: Q1697

Instrument ID: P8

Start Date : 04/03/2025

Run Number: LB135293

End Date : 04/03/2025

Lab SampleID	Client SampleID	Time	Internal Standard %RI For: Non-Collision Cell									
			Element 165Ho	Q	Element 209Bi	Q	Element	Q	Element	Q	Element	Q
S0	S0	1415	100		100							
S2	S2	1422	99		100							
S3	S3	1425	98		99							
S4	S4	1428	99		98							
S5	S5	1431	101		98							
S6	S6	1434	99		95							
S7	S7	1437	98		93							
S8	S8	1440	85		75							
ICV01	ICV01	1526	96		96							
LLICV	LLICV	1550	96		98							
ICB01	ICB01	1555	96		97							
ICSA01	ICSA01	1603	93		86							
ICSAB01	ICSAB01	1620	97		89							
CCV01	CCV01	1635	92		83							
CCB01	CCB01	1638	100		101							
CRI	CRI	1641	102		100							
PB167437BL	PB167437BL	1645	102		101							
PB167437BS	PB167437BS	1648	99		93							
Q1697-01	MW-19B-72-04	1652	102		100							
Q1697-02	IW-01-55-04C	1656	102		100							
Q1697-03	IW-02-55-04C	1659	103		99							
Q1697-04	IW-02-55-04C	1702	102		100							
Q1697-04DUP	IW-02-55-04C	1705	100		99							
Q1697-04L	IW-02-55-04C	1708	100		99							
Q1697-04MS	IW-02-55-04C	1712	99		94							
CCV02	CCV02	1716	94		84							
CCB02	CCB02	1720	104		103							
Q1697-04MSD	IW-02-55-04C	1723	101		96							
Q1697-04A	IW-02-55-04C	1726	100		96							
Q1697-05	IW-03-55-04C	1729	104		103							
Q1697-13	MW-19B-72-04	1732	103		100							
Q1697-14	IW-01-55-04C	1735	103		100							
Q1697-15	IW-02-55-04C	1738	103		100							
Q1697-16	IW-02-55-04C	1742	101		98							

Internal Standard %RI Limit: 70 -130

FORM 8B

ICP-MS INTERNAL STANDARD RELATIVE INTENSITY SUMMARY

Lab Name: JACOBS Engineering Group, Inc.

Contract: JAC005

Lab Code: CHEM Case no.: Q1697

Sas No.: Q1697 SDG No.: Q1697

Instrument ID: P8

Start Date : 04/03/2025

Run Number: LB135293

End Date : 04/03/2025

Lab SampleID	Client SampleID	Time	Internal Standard %RI For: Non-Collision Cell									
			Element 165Ho	Q	Element 209Bi	Q	Element	Q	Element	Q	Element	Q
Q1697-17	IW-03-55-040	1745	102		98							
CCV03	CCV03	1752	90		82							
CCB03	CCB03	1841	108		108							

FORM 8B

ICP-MS INTERNAL STANDARD RELATIVE INTENSITY SUMMARY

Lab Name: JACOBS Engineering Group, Inc.

Contract: JAC005

Lab Code: CHEM Case no.: Q1697

Sas No.: Q1697 SDG No.: Q1697

Instrument ID: P8

Start Date : 04/03/2025

Run Number: LB135293

End Date : 04/03/2025

Lab SampleID	Client SampleID	Time	Internal Standard %RI For: Collision Cell									
			Element 209Bi	Q	Element	Q	Element	Q	Element	Q	Element	Q
S0	S0	1415	100									
S2	S2	1422	100									
S3	S3	1425	98									
S4	S4	1428	96									
S5	S5	1431	94									
S6	S6	1434	91									
S7	S7	1437	90									
S8	S8	1440	77									
ICV01	ICV01	1526	97									
LLICV	LLICV	1550	99									
ICB01	ICB01	1555	98									
ICSA01	ICSA01	1603	86									
ICSAB01	ICSAB01	1620	86									
CCV01	CCV01	1635	84									
CCB01	CCB01	1638	100									
CRI	CRI	1641	101									
PB167437BL	PB167437BL	1645	100									
PB167437BS	PB167437BS	1648	92									
Q1697-01	MW-19B-72-04	1652	97									
Q1697-02	IW-01-55-04C	1656	98									
Q1697-03	IW-02-55-04C	1659	99									
Q1697-04	IW-02-55-04C	1702	99									
Q1697-04DUP	IW-02-55-04C	1705	98									
Q1697-04L	IW-02-55-04C	1708	99									
Q1697-04MS	IW-02-55-04C	1712	92									
CCV02	CCV02	1716	84									
CCB02	CCB02	1720	103									
Q1697-04MSD	IW-02-55-04C	1723	92									
Q1697-04A	IW-02-55-04C	1726	92									
Q1697-05	IW-03-55-04C	1729	101									
Q1697-13	MW-19B-72-04	1732	99									
Q1697-14	IW-01-55-04C	1735	100									
Q1697-15	IW-02-55-04C	1738	99									
Q1697-16	IW-02-55-04C	1742	97									

Internal Standard %RI Limit: 70 -130

FORM 8B

ICP-MS INTERNAL STANDARD RELATIVE INTENSITY SUMMARY

Lab Name: JACOBS Engineering Group, Inc.

Contract: JAC005

Lab Code: CHEM Case no.: Q1697

Sas No.: Q1697 SDG No.: Q1697

Instrument ID: P8

Start Date : 04/03/2025

Run Number: LB135293

End Date : 04/03/2025

Lab SampleID	Client SampleID	Time	Internal Standard %RI For: Collision Cell									
			Element 209Bi	Q	Element	Q	Element	Q	Element	Q	Element	Q
Q1697-17	IW-03-55-040	1745	99									
CCV03	CCV03	1752	85									
CCB03	CCB03	1841	100									

Metals
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ICP SERIAL DILUTIONS

SAMPLE NO.

IW-02-55-040125-FDL

Lab Name: Chemtech Consulting Group **Contract:** JACO05
Lab Code: CHEM **Lb No.:** lb135293 **Lab Sample ID :** Q1697-04L **SDG No.:** Q1697
Matrix (soil/water): Water **Level (low/med):** LOW
Concentration Units: ug/L

Analyte	Initial Sample Result (I)		Serial Dilution Result (S)		% Difference	Q	M
Aluminum	70.8		62.3	J	12		P
Antimony	2.00	U	10.0	U			P
Arsenic	0.39	J	5.00	U	100.0		P
Barium	303		303		0		P
Beryllium	1.00	U	5.00	U			P
Cadmium	1.00	U	5.00	U			P
Chromium	0.86	J	10.0	U	100.0		P
Copper	2.00	U	10.0	U			P
Iron	5440		4760		12		P
Lead	1.00	U	5.00	U			P
Magnesium	8590		7780		9		P
Manganese	602		517		14		P
Potassium	7150		6730		6		P
Selenium	5.00	U	25.0	U			P
Sodium	6930		6710		3		P



METAL PREPARATION & INSTRUMENT DATA

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METAL PREPARATION & ANALYICAL SUMMARY

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Metals
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SAMPLE PREPARATION SUMMARY

Client:	<u>JACOBS Engineering Group, Inc.</u>	SDG No.:	<u>Q1697</u>
Contract:	<u>JACO05</u>	Lab Code:	<u>CHEM</u>
		Method:	<u></u>
		Case No.:	<u>Q1697</u>
		SAS No.:	<u>Q1697</u>

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(mL)	Final Sample Volume (mL)	Percent Solids
Batch Number: PB167437							
PB167437BL	PB167437BL	MB	WATER	04/03/2025	50.0	50.0	
PB167437BS	PB167437BS	LCS	WATER	04/03/2025	50.0	50.0	
Q1697-01	MW-19B-72-040125	SAM	WATER	04/03/2025	50.0	50.0	
Q1697-02	IW-01-55-040125	SAM	WATER	04/03/2025	50.0	50.0	
Q1697-03	IW-02-55-040125	SAM	WATER	04/03/2025	50.0	50.0	
Q1697-04	IW-02-55-040125-FD	SAM	WATER	04/03/2025	50.0	50.0	
Q1697-04DUP	IW-02-55-040125-FDDUP	DUP	WATER	04/03/2025	50.0	50.0	
Q1697-04MS	IW-02-55-040125-FDMS	MS	WATER	04/03/2025	50.0	50.0	
Q1697-04MSD	IW-02-55-040125-FDMSD	MSD	WATER	04/03/2025	50.0	50.0	
Q1697-05	IW-03-55-040125	SAM	WATER	04/03/2025	50.0	50.0	
Q1697-13	MW-19B-72-040125	SAM	WATER	04/03/2025	50.0	50.0	
Q1697-14	IW-01-55-040125	SAM	WATER	04/03/2025	50.0	50.0	
Q1697-15	IW-02-55-040125	SAM	WATER	04/03/2025	50.0	50.0	
Q1697-16	IW-02-55-040125-FD	SAM	WATER	04/03/2025	50.0	50.0	
Q1697-17	IW-03-55-040125	SAM	WATER	04/03/2025	50.0	50.0	

metals
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ANALYSIS RUN LOG

Client: JACOBS Engineering Group, Inc. **Contract:** JACO05

Lab code: CHEM **Case no.:** Q1697 **Sas no.:** Q1697 **Sdg no.:** Q1697

Instrument id number: **Method:** **Run number:** LB135293

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

Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	1415	Fe,Al,As,Ba,Be,Cd,Cr,Cu,K,Mg,Mn,Na,Pb,Sb,Se
S2	S2	1	1422	Fe,Al,As,Ba,Be,Cd,Cr,Cu,K,Mg,Mn,Na,Pb,Sb,Se
S3	S3	1	1425	Fe,Al,As,Ba,Be,Cd,Cr,Cu,K,Mg,Mn,Na,Pb,Sb,Se
S4	S4	1	1428	Fe,Al,As,Ba,Be,Cd,Cr,Cu,K,Mg,Mn,Na,Pb,Sb,Se
S5	S5	1	1431	Fe,Al,As,Ba,Be,Cd,Cr,Cu,K,Mg,Mn,Na,Pb,Sb,Se
S6	S6	1	1434	Fe,Al,As,Ba,Be,Cd,Cr,Cu,K,Mg,Mn,Na,Pb,Sb,Se
S7	S7	1	1437	Fe,Al,As,Ba,Be,Cd,Cr,Cu,K,Mg,Mn,Na,Pb,Sb,Se
S8	S8	1	1440	Fe,Al,K,Mg,Na
ICV01	ICV01	1	1526	Fe,Al,As,Ba,Be,Cd,Cr,Cu,K,Mg,Mn,Na,Pb,Sb,Se
LLICV	LLICV	1	1550	Fe,Al,As,Ba,Be,Cd,Cr,Cu,K,Mg,Mn,Na,Pb,Sb,Se
ICB01	ICB01	1	1555	Fe,Al,As,Ba,Be,Cd,Cr,Cu,K,Mg,Mn,Na,Pb,Sb,Se
ICSA01	ICSA01	1	1603	Fe,Al,As,Ba,Be,Cd,Cr,Cu,K,Mg,Mn,Na,Pb,Sb,Se
ICSAB01	ICSAB01	1	1620	Fe,Al,As,Ba,Be,Cd,Cr,Cu,K,Mg,Mn,Na,Pb,Sb,Se
CCV01	CCV01	1	1635	Fe,Al,As,Ba,Be,Cd,Cr,Cu,K,Mg,Mn,Na,Pb,Sb,Se
CCB01	CCB01	1	1638	Fe,Al,As,Ba,Be,Cd,Cr,Cu,K,Mg,Mn,Na,Pb,Sb,Se
CRI	CRI	1	1641	Fe,Al,As,Ba,Be,Cd,Cr,Cu,K,Mg,Mn,Na,Pb,Sb,Se
PB167437BL	PB167437BL	1	1645	Al,As,Ba,Be,Cd,Cr,Cu,Fe,K,Mg,Mn,Na,Pb,Sb,Se
PB167437BS	PB167437BS	1	1648	Al,As,Ba,Be,Cd,Cr,Cu,Fe,K,Mg,Mn,Na,Pb,Sb,Se
Q1697-01	MW-19B-72-040125	1	1652	Al,As,Ba,Be,Cd,Cr,Cu,Fe,K,Mg,Mn,Na,Pb,Sb,Se
Q1697-02	IW-01-55-040125	1	1656	Al,As,Ba,Be,Cd,Cr,Cu,Fe,K,Mg,Mn,Na,Pb,Sb,Se
Q1697-03	IW-02-55-040125	1	1659	Al,As,Ba,Be,Cd,Cr,Cu,Fe,K,Mg,Mn,Na,Pb,Sb,Se
Q1697-04	IW-02-55-040125-FD	1	1702	Al,As,Ba,Be,Cd,Cr,Cu,Fe,K,Mg,Mn,Na,Pb,Sb,Se
Q1697-04DUP	IW-02-55-040125-FDDUP	1	1705	Al,As,Ba,Be,Cd,Cr,Cu,Fe,K,Mg,Mn,Na,Pb,Sb,Se
Q1697-04L	IW-02-55-040125-FDL	5	1708	Al,As,Ba,Be,Cd,Cr,Cu,Fe,K,Mg,Mn,Na,Pb,Sb,Se
Q1697-04MS	IW-02-55-040125-FDMS	1	1712	Al,As,Ba,Be,Cd,Cr,Cu,Fe,K,Mg,Mn,Na,Pb,Sb,Se
CCV02	CCV02	1	1716	Fe,Al,As,Ba,Be,Cd,Cr,Cu,K,Mg,Mn,Na,Pb,Sb,Se
CCB02	CCB02	1	1720	Fe,Al,As,Ba,Be,Cd,Cr,Cu,K,Mg,Mn,Na,Pb,Sb,Se
Q1697-04MSD	IW-02-55-040125-FDMSD	1	1723	Al,As,Ba,Be,Cd,Cr,Cu,Fe,K,Mg,Mn,Na,Pb,Sb,Se
Q1697-04A	IW-02-55-040125-FDA	1	1726	As,K
Q1697-05	IW-03-55-040125	1	1729	Al,As,Ba,Be,Cd,Cr,Cu,Fe,K,Mg,Mn,Na,Pb,Sb,Se
Q1697-13	MW-19B-72-040125	1	1732	Fe
Q1697-14	IW-01-55-040125	1	1735	Fe
Q1697-15	IW-02-55-040125	1	1738	Fe
Q1697-16	IW-02-55-040125-FD	1	1742	Fe
Q1697-17	IW-03-55-040125	1	1745	Fe
CCV03	CCV03	1	1752	Fe,Al,As,Ba,Be,Cd,Cr,Cu,K,Mg,Mn,Na,Pb,Sb,Se
CCB03	CCB03	1	1841	Fe,Al,As,Ba,Be,Cd,Cr,Cu,K,Mg,Mn,Na,Pb,Sb,Se



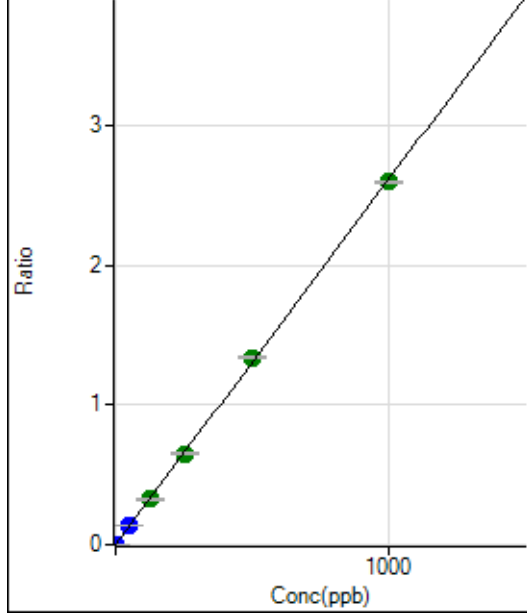
METAL RAW DATA

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Batch Folder: D:\Agilent\ICPMH\1\DATA\P8040325-MS.b\
Analysis File: P8040325-MS.batch.bin
DA Date-Time: 2025-04-03 18:44:37
Calibration Title:
Calibration Method: External Calibration
VIS Interpolation Fit:

Level	Standard Data File	Sample Name	Acq. Date-Time
1	004CALB.d	S00	2025-04-03 14:15:31
2	006CALS.d	S02	2025-04-03 14:22:15
3	007CALB.d	S03	2025-04-03 14:25:36
4	008CALS.d	S04	2025-04-03 14:28:45
5	009CALS.d	S05	2025-04-03 14:31:33
6	010CALS.d	S06	2025-04-03 14:34:39
7	011CALS.d	S07	2025-04-03 14:37:24
8	012CALS.d	S08	2025-04-03 14:40:26

9 Be [No Gas] ISTD:6 Li [No Gas]



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	260.86	0.0001	P	7.3
2	☐	1.000	1.234	11803.81	0.0033	P	1.8
3	☐	50.000	54.792	512408.17	0.1432	P	1.0
4	☐	125.000	125.308	1174858.54	0.3274	A	2.5
5	☐	250.000	249.305	2313716.60	0.6512	A	1.4
6	☐	500.000	512.248	4569140.45	1.3380	A	1.0
7	☐	1000.000	993.771	8672093.62	2.5957	A	0.8
8	☐			664.41	0.0002	P	13.3

$$y = 0.0026 * x + 7.2051E-005$$

$$R = 0.9999$$

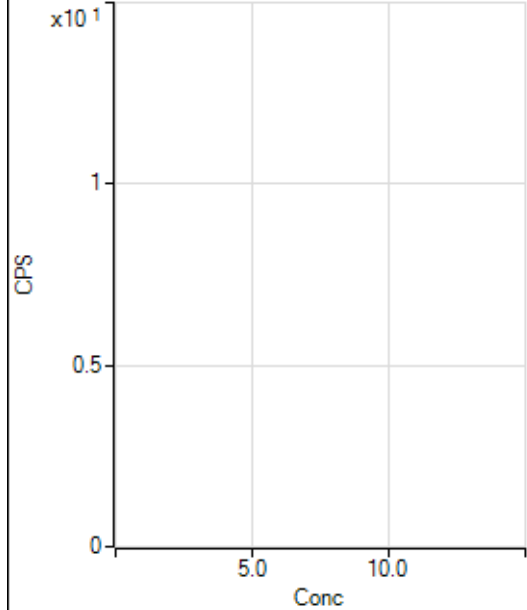
$$DL = 0.006007$$

$$BEC = 0.02759$$

Weight: <None>

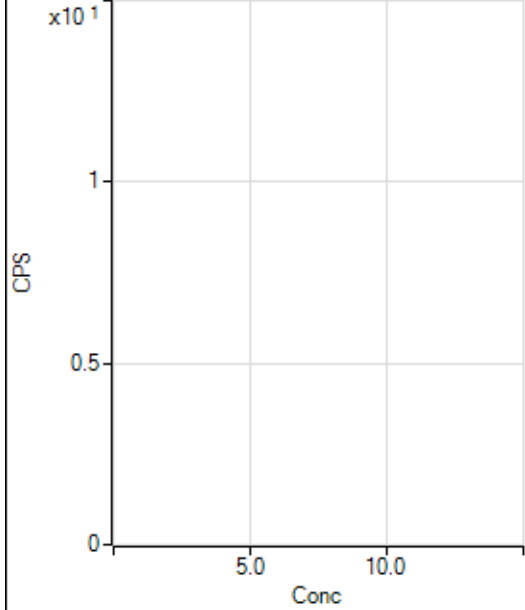
Min Conc: 0

12 C [No Gas] No available calibration points



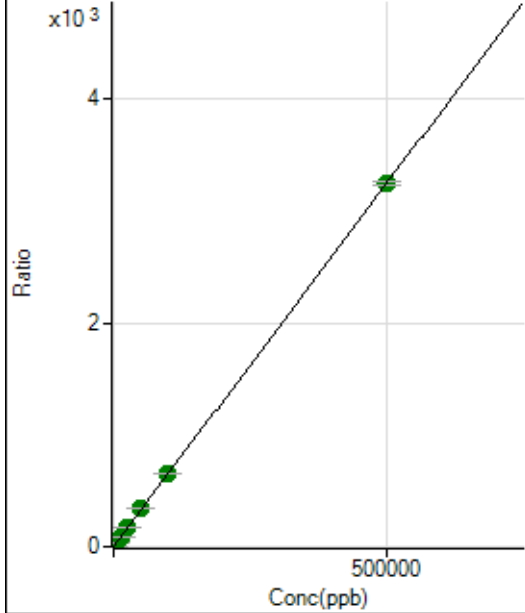
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐			5448269.29		A	1.1
2	☐			5277637.94		A	1.1
3	☐			5426852.56		A	0.7
4	☐			5646189.78		A	1.1
5	☐			5901345.33		A	1.3
6	☐			6356084.28		A	2.2
7	☐			7195827.81		A	3.5
8	☐			5597316.16		A	0.8

12 C [He] No available calibration points



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐			40637.19		P	1.1
2	☐			38559.39		P	0.5
3	☐			39992.12		P	1.0
4	☐			43643.55		P	0.2
5	☐			46208.91		P	0.4
6	☐			51277.99		P	0.3
7	☐			59352.44		P	0.6
8	☐			60691.25		P	0.3

23 Na [He] ISTD:45 Sc [He]



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	71032.81	0.3896	P	1.0
2	☐	500.000	567.891	739207.09	4.0757	P	7.9
3	☐	5000.000	5340.526	6106700.81	35.0542	A	0.5
4	☐	12500.000	13248.174	14824628.25	86.3818	A	0.3
5	☐	25000.000	26251.229	28756829.29	170.7830	A	1.0
6	☐	50000.000	52576.535	57180824.15	341.6572	A	0.3
7	☐	100000.00	99697.219	110534898.35	647.5116	A	0.3
8	☐	500000.00	499718.16	519990396.69	3,243.9973	A	1.1

$$y = 0.0065 * x + 0.3896$$

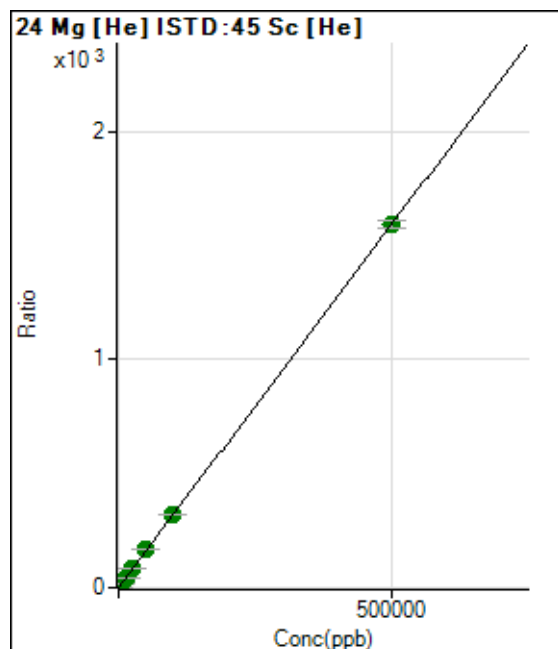
$$R = 1.0000$$

$$DL = 1.819$$

$$BEC = 60.02$$

Weight: <None>

Min Conc: 0



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	572.24	0.0031	P	10.4
2	☐	500.000	548.694	316961.70	1.7477	P	11.8
3	☐	5000.000	5384.660	2982972.87	17.1233	A	0.2
4	☐	12500.000	13297.885	7256531.07	42.2829	A	0.2
5	☐	25000.000	26310.029	14085839.24	83.6542	A	1.0
6	☐	50000.000	52501.490	27937615.97	166.9282	A	0.4
7	☐	100000.00	99705.683	54116184.19	317.0109	A	0.2
8	☐	500000.00	499719.37	254678371.76	1,588.8285	A	2.0

$$y = 0.0032 * x + 0.0031$$

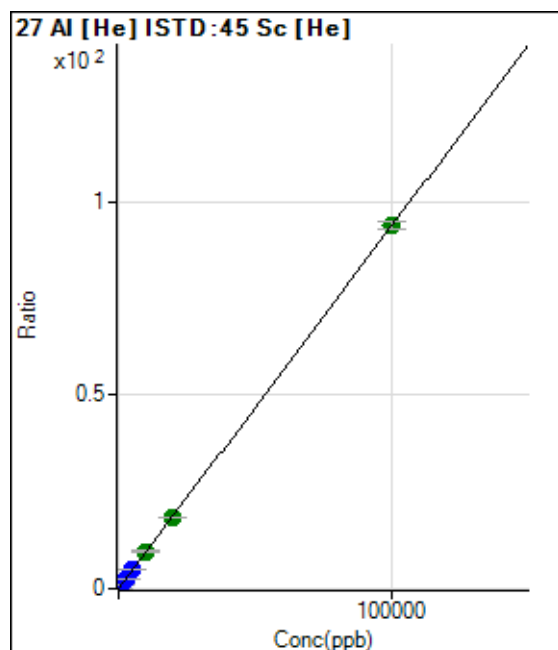
R = 1.0000

DL = 0.308

BEC = 0.9866

Weight: <None>

Min Conc: 0



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	487.79	0.0027	P	8.5
2	☐	20.000	20.716	4000.60	0.0221	P	11.9
3	☐	1000.000	1052.126	171955.32	0.9871	P	1.8
4	☐	2500.000	2584.583	415486.59	2.4210	P	0.4
5	☐	5000.000	5111.056	805690.48	4.7850	P	1.2
6	☐	10000.000	10338.878	1619494.92	9.6765	A	0.9
7	☐	20000.000	19461.652	3108989.12	18.2124	A	0.4
8	☐	100000.00	100065.59	15008725.05	93.6313	A	2.0

$$y = 9.3567E-004 * x + 0.0027$$

R = 1.0000

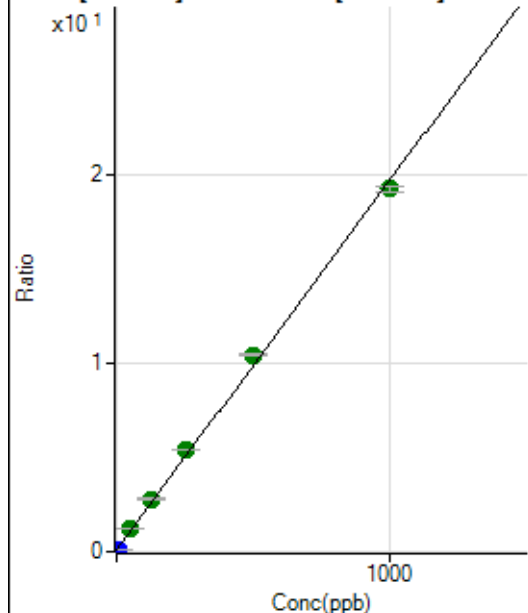
DL = 0.7286

BEC = 2.859

Weight: <None>

Min Conc: 0

28 Si [No Gas] ISTD :45 Sc [No Gas]



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	582792.54	0.0837	P	0.8
2	☐	10.000	1.351	758991.36	0.1102	P	1.8
3	☐	50.000	57.213	8194625.02	1.2042	A	0.7
4	☐	125.000	138.212	18532773.20	2.7905	A	1.2
5	☐	250.000	272.076	36250861.13	5.4122	A	1.3
6	☐	500.000	529.172	67760564.55	10.4473	A	0.5
7	☐	1000.000	977.969	124338948.15	19.2367	A	1.9
8	☐			892437.09	0.1558	P	4.5

$$y = 0.0196 * x + 0.0837$$

R = 0.9989

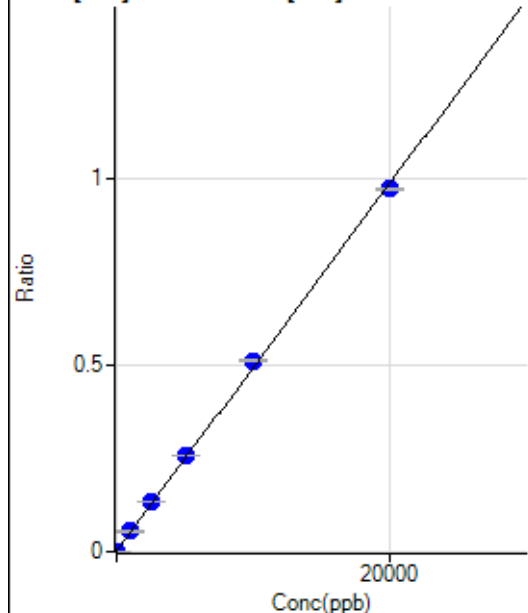
DL = 0.1067

BEC = 4.276

Weight: <None>

Min Conc: 0

31 P [He] ISTD :45 Sc [He]



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	-16.936	146.67	0.0008	P	15.7
2	☐	0.000	16.936	448.90	0.0025	P	5.1
3	☐	1000.000	1066.432	9447.60	0.0542	P	2.2
4	☐	2500.000	2701.098	23144.10	0.1349	P	1.0
5	☐	5000.000	5225.259	43668.91	0.2593	P	0.6
6	☐	10000.000	10381.849	85968.12	0.5137	P	0.2
7	☐	20000.000	19724.302	166341.70	0.9744	P	0.3
8	☐			173.34	0.0011	P	13.6

$$y = 4.9319E-005 * x + 0.0016$$

R = 0.9996

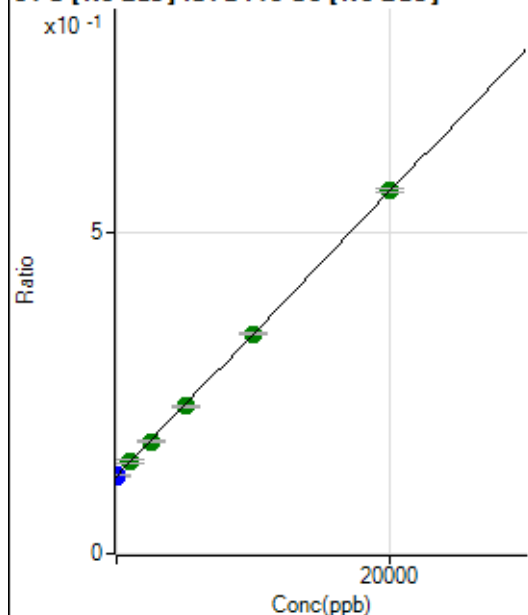
DL = 7.701

BEC = 33.24

Weight: <None>

Min Conc: 0

34 S [No Gas] ISTD:45 Sc [No Gas]



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	-33.653	837281.00	0.1203	P	1.0
2	☐	0.000	33.653	839001.81	0.1218	P	0.6
3	☐	1000.000	1031.930	979652.54	0.1440	A	2.7
4	☐	2500.000	2438.486	1163527.36	0.1752	A	1.6
5	☐	5000.000	4903.739	1539965.57	0.2299	A	1.2
6	☐	10000.000	10005.419	2225716.69	0.3432	A	0.6
7	☐	20000.000	20027.448	3656050.85	0.5656	A	1.0
8	☐			630488.51	0.1101	P	1.3

$$y = 2.2196E-005 * x + 0.1211$$

R = 1.0000

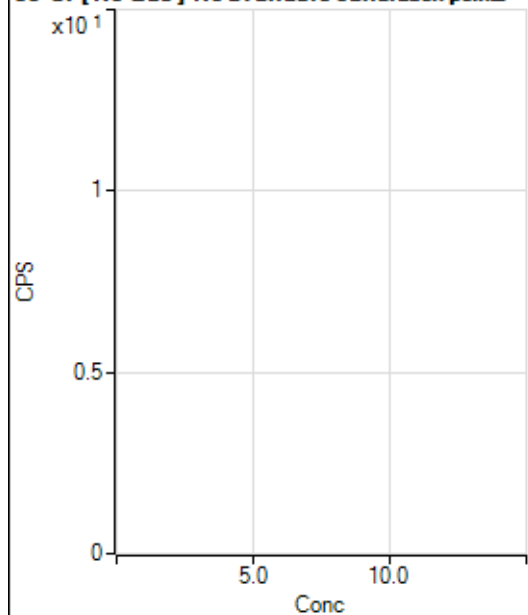
DL = 129.8

BEC = 5455

Weight: <None>

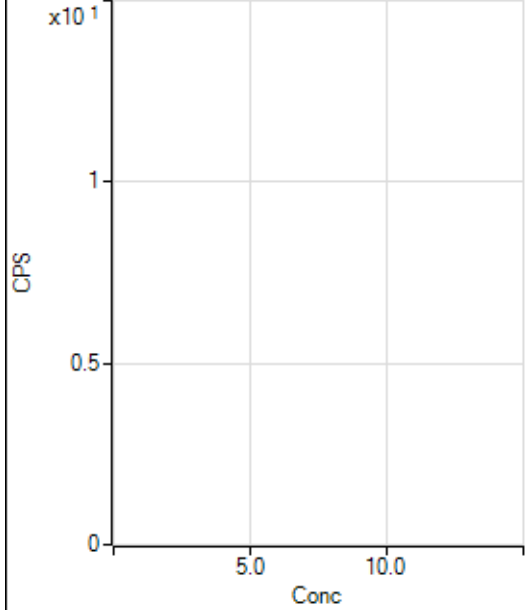
Min Conc: 0

35 Cl [No Gas] No available calibration points



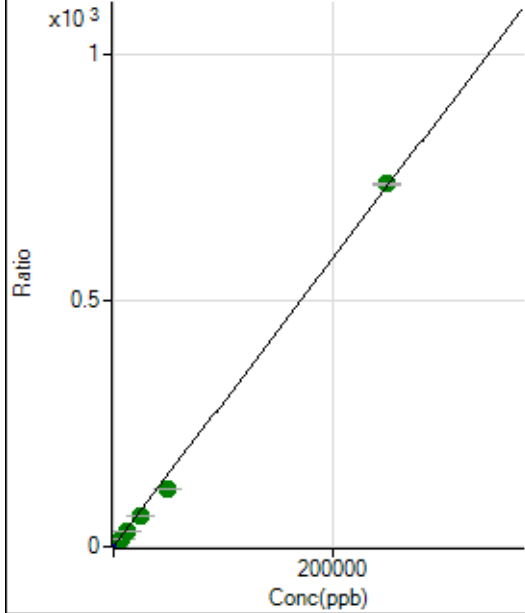
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐			224931.68		P	0.3
2	☐			240706.46		P	0.5
3	☐			279221.72		P	0.7
4	☐			293765.24		P	1.9
5	☐			330434.29		P	1.9
6	☐			461453.20		P	2.8
7	☐			372411.84		P	1.5
8	☐			236540.99		P	0.6

35 Cl [He] No available calibration points



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐			1127.84		P	4.0
2	☐			1327.85		P	4.1
3	☐			1503.43		P	1.2
4	☐			1540.10		P	3.4
5	☐			1721.23		P	4.6
6	☐			2482.46		P	3.0
7	☐			1999.05		P	3.7
8	☐			1446.75		P	8.0

39 K [He] ISTD:45 Sc [He]



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	25150.83	0.1379	P	1.6
2	☐	500.000	454.365	265211.59	1.4622	P	5.6
3	☐	2500.000	2161.309	1121398.37	6.4372	P	0.4
4	☐	6250.000	5385.007	2717343.17	15.8330	A	2.0
5	☐	12500.000	10526.204	5189154.61	30.8174	A	0.8
6	☐	25000.000	21026.024	10279536.44	61.4201	A	1.4
7	☐	50000.000	40691.692	20269310.39	118.7373	A	0.2
8	☐	250000.00	252382.85	117931792.69	735.7292	A	0.6

$$y = 0.0029 * x + 0.1379$$

$$R = 0.9992$$

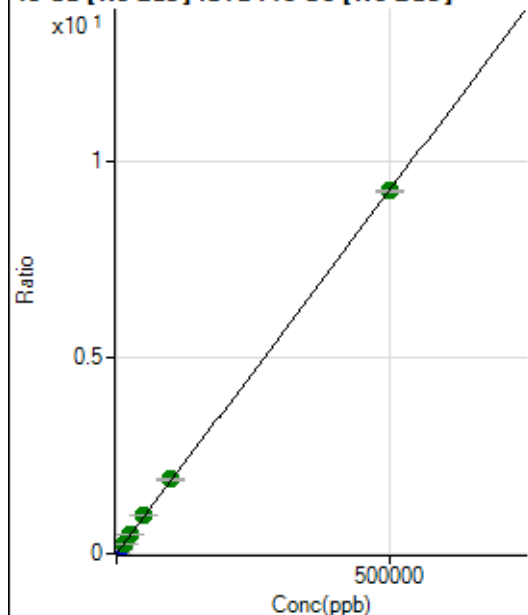
$$DL = 2.323$$

$$BEC = 47.32$$

Weight: <None>

Min Conc: 0

43 Ca [No Gas] ISTD:45 Sc [No Gas]



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	2355.77	0.0003	P	1.4
2	☐	500.000	578.758	76330.02	0.0111	P	0.7
3	☐	5000.000	5238.564	664063.64	0.0976	P	1.1
4	☐	12500.000	12875.310	1589702.46	0.2394	A	1.6
5	☐	25000.000	25582.257	3183254.88	0.4753	A	0.9
6	☐	50000.000	52071.439	6271627.41	0.9670	A	1.7
7	☐	100000.00	102372.10	12287019.40	1.9008	A	1.1
8	☐	500000.00	499277.47	53079835.87	9.2692	A	0.8

$$y = 1.8564E-005 * x + 3.3849E-004$$

R = 1.0000

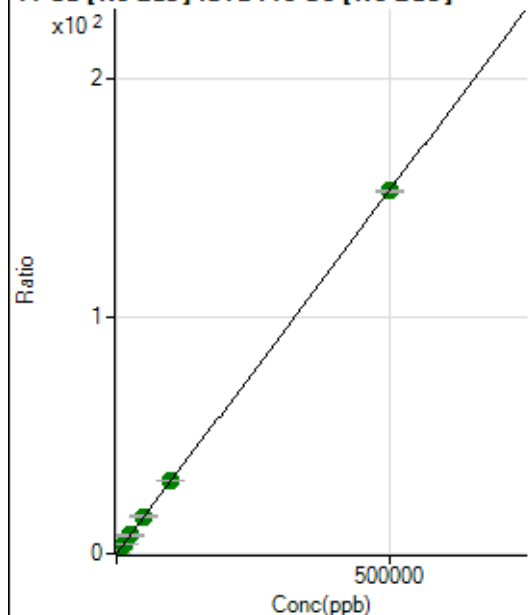
DL = 0.7919

BEC = 18.23

Weight: <None>

Min Conc: 0

44 Ca [No Gas] ISTD:45 Sc [No Gas]



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	66435.46	0.0095	P	0.9
2	☐	500.000	572.834	1272221.16	0.1847	A	1.3
3	☐	5000.000	5105.675	10688791.51	1.5708	A	1.5
4	☐	12500.000	12658.151	25772610.45	3.8803	A	0.3
5	☐	25000.000	25218.217	51713242.56	7.7210	A	1.5
6	☐	50000.000	51384.018	101968509.59	15.7221	A	0.9
7	☐	100000.00	101331.01	200354317.02	30.9953	A	0.8
8	☐	500000.00	499579.40	874884271.41	152.7748	A	0.5

$$y = 3.0579E-004 * x + 0.0095$$

R = 1.0000

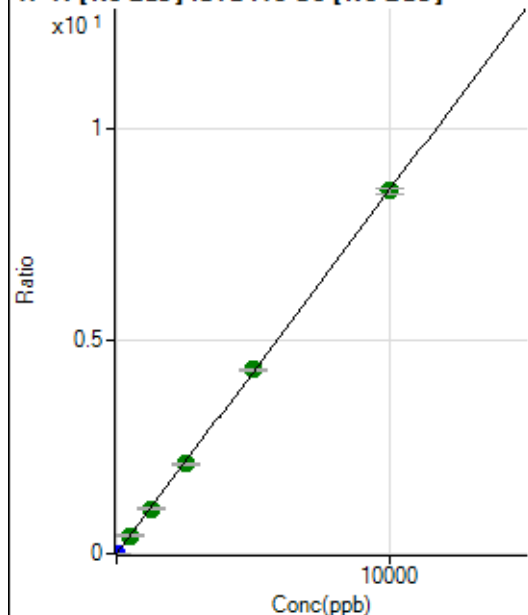
DL = 0.815

BEC = 31.22

Weight: <None>

Min Conc: 0

47 Ti [No Gas] ISTD :45 Sc [No Gas]



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	411.12	0.0001	P	17.4
2	☐	5.000	5.663	33747.46	0.0049	P	2.8
3	☐	500.000	501.876	2919584.43	0.4291	A	2.0
4	☐	1250.000	1237.555	7026190.03	1.0580	A	1.5
5	☐	2500.000	2473.769	14164413.54	2.1147	A	1.5
6	☐	5000.000	5060.543	28057407.36	4.3260	A	0.7
7	☐	10000.000	9977.748	55133192.51	8.5294	A	1.3
8	☐			4634.13	0.0008	P	5.8

$$y = 8.5484\text{E-}004 * x + 5.9033\text{E-}005$$

$$R = 1.0000$$

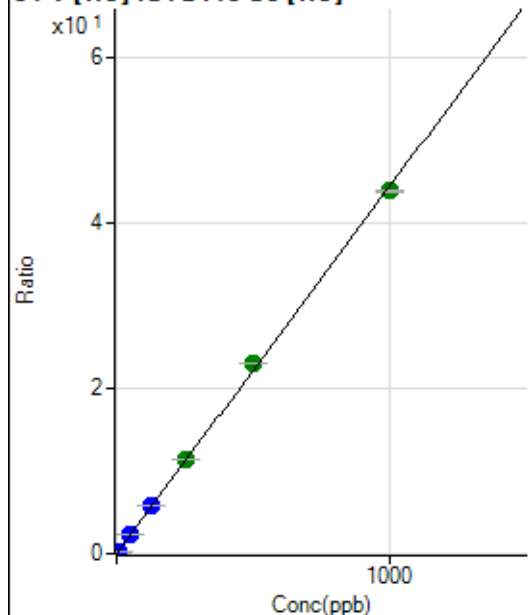
$$DL = 0.03604$$

$$BEC = 0.06906$$

Weight: <None>

Min Conc: 0

51 V [He] ISTD :45 Sc [He]



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	55.55	0.0003	P	35.2
2	☐	5.000	5.127	41268.95	0.2276	P	13.0
3	☐	50.000	51.728	399484.46	2.2932	P	1.4
4	☐	125.000	128.754	979523.20	5.7076	P	0.2
5	☐	250.000	257.333	1920767.61	11.4071	A	0.1
6	☐	500.000	518.120	3843807.34	22.9670	A	0.6
7	☐	1000.000	988.550	7480381.48	43.8197	A	0.5
8	☐			1836.80	0.0115	P	1.7

$$y = 0.0443 * x + 3.0478\text{E-}004$$

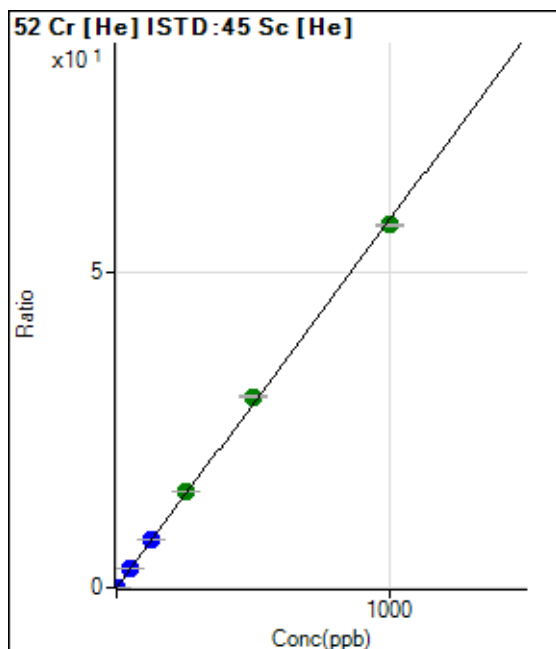
$$R = 0.9997$$

$$DL = 0.007262$$

$$BEC = 0.006876$$

Weight: <None>

Min Conc: 0



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	2368.00	0.0130	P	7.1
2	☐	2.000	2.048	23938.03	0.1320	P	10.9
3	☐	50.000	51.352	522190.18	2.9976	P	0.8
4	☐	125.000	128.687	1285792.33	7.4923	P	0.6
5	☐	250.000	261.707	2563335.33	15.2235	A	1.1
6	☐	500.000	519.206	5052546.94	30.1894	A	0.8
7	☐	1000.000	986.942	9794177.56	57.3744	A	0.5
8	☐			76572.42	0.4777	P	1.9

$$y = 0.0581 * x + 0.0130$$

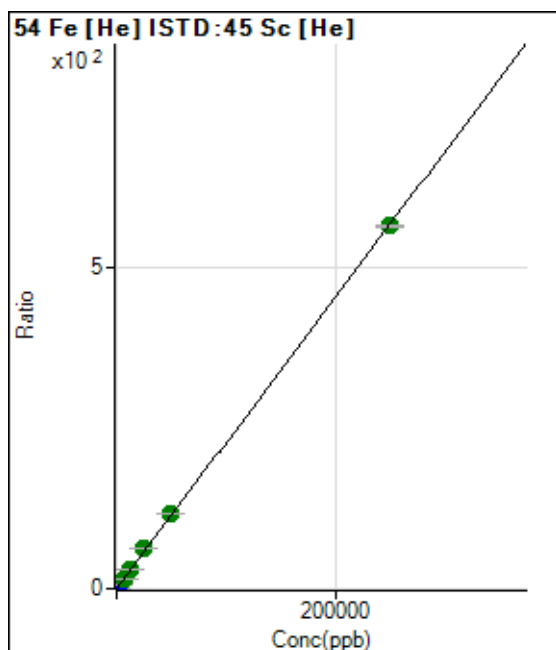
$$R = 0.9996$$

$$DL = 0.04737$$

$$BEC = 0.2234$$

Weight: <None>

Min Conc: 0



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	1455.64	0.0080	P	5.5
2	☐	50.000	55.467	24292.04	0.1339	P	11.9
3	☐	2500.000	2755.292	1091363.24	6.2650	P	1.7
4	☐	6250.000	6965.902	2716131.14	15.8270	A	1.2
5	☐	12500.000	13767.057	5265636.00	31.2718	A	0.9
6	☐	25000.000	27255.678	10360382.69	61.9034	A	0.9
7	☐	50000.000	51551.255	19985914.84	117.0766	A	0.5
8	☐	250000.00	249380.37	90780543.09	566.3303	A	0.7

$$y = 0.0023 * x + 0.0080$$

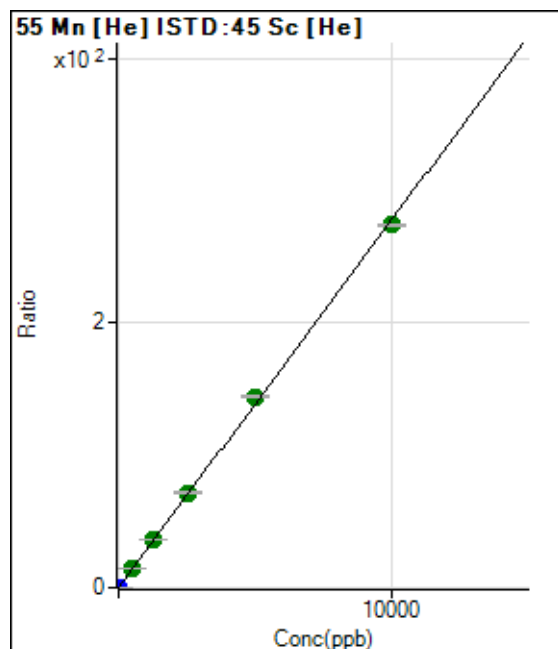
$$R = 0.9999$$

$$DL = 0.5764$$

$$BEC = 3.514$$

Weight: <None>

Min Conc: 0



	R _j ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	2269.10	0.0124	P	12.2
2	☐	1.000	0.939	6985.12	0.0385	P	5.3
3	☐	500.000	528.185	2557555.78	14.6817	A	1.5
4	☐	1250.000	1296.668	6182549.49	36.0248	A	0.9
5	☐	2500.000	2589.208	12110385.93	71.9226	A	1.1
6	☐	5000.000	5196.873	24157966.31	144.3453	A	0.7
7	☐	10000.000	9872.019	46805802.08	274.1882	A	0.4
8	☐			29354.66	0.1831	P	1.3

$$y = 0.0278 * x + 0.0124$$

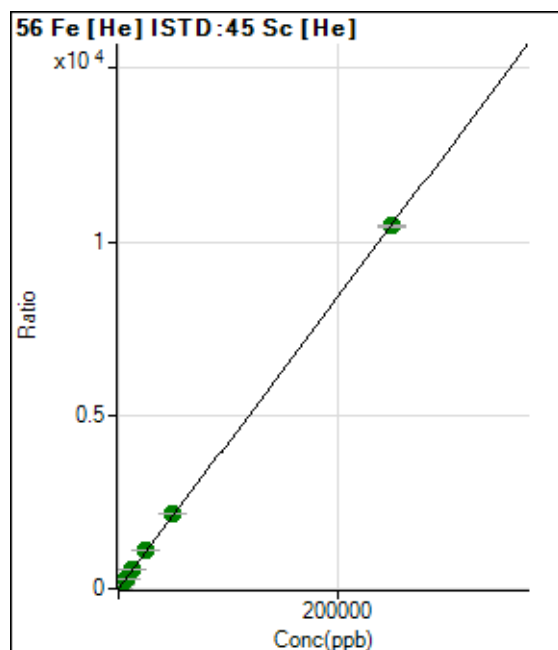
$$R = 0.9997$$

$$DL = 0.164$$

$$BEC = 0.448$$

Weight: <None>

Min Conc: 0



	R _j ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	19620.31	0.1076	P	7.4
2	☐	50.000	53.406	425452.42	2.3460	P	14.1
3	☐	2500.000	2710.284	19807020.40	113.7025	A	1.5
4	☐	6250.000	6747.933	48555056.50	282.9307	A	0.7
5	☐	12500.000	13441.267	94877274.14	563.4654	A	1.3
6	☐	25000.000	26919.417	188846588.30	1,128.3690	A	0.4
7	☐	50000.000	51125.953	365811652.33	2,142.9267	A	0.6
8	☐	250000.00	249521.25	1676370446.1	10,458.179	A	0.8

$$y = 0.0419 * x + 0.1076$$

$$R = 1.0000$$

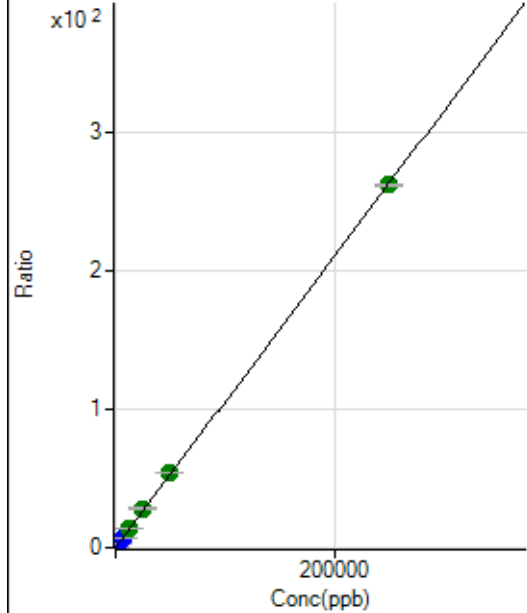
$$DL = 0.5719$$

$$BEC = 2.567$$

Weight: <None>

Min Conc: 0

57 Fe [He] ISTD:45 Sc [He]



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	467.79	0.0026	P	17.7
2	☐	50.000	52.309	10428.38	0.0575	P	12.2
3	☐	2500.000	2693.437	493190.60	2.8311	P	0.8
4	☐	6250.000	6739.454	1215072.07	7.0801	P	0.2
5	☐	12500.000	13746.974	2431302.03	14.4392	A	1.5
6	☐	25000.000	26970.799	4740751.66	28.3265	A	1.5
7	☐	50000.000	51286.372	9194617.16	53.8620	A	0.7
8	☐	250000.00	249469.12	41995005.20	261.9875	A	0.7

$$y = 0.0011 * x + 0.0026$$

$$R = 1.0000$$

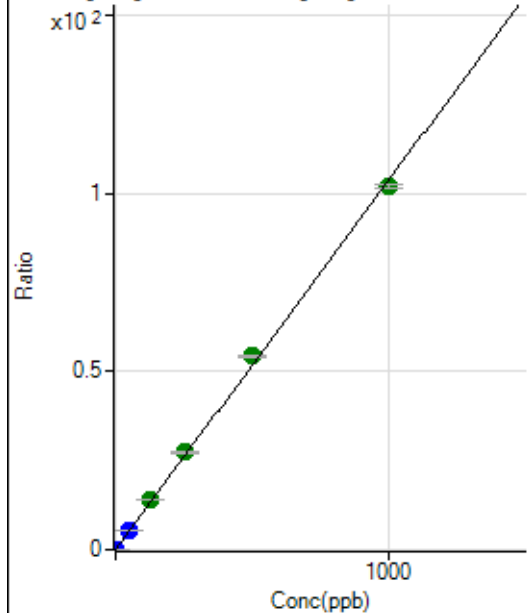
$$DL = 1.3$$

$$BEC = 2.444$$

Weight: <None>

Min Conc: 0

59 Co [He] ISTD:45 Sc [He]



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	297.78	0.0016	P	4.6
2	☐	1.000	1.104	21040.25	0.1160	P	12.5
3	☐	50.000	53.028	956996.81	5.4936	P	1.1
4	☐	125.000	135.405	2407032.41	14.0252	A	1.0
5	☐	250.000	263.267	4591389.31	27.2676	A	2.0
6	☐	500.000	524.603	9093485.70	54.3335	A	0.9
7	☐	1000.000	982.930	17378315.30	101.8014	A	0.9
8	☐			34501.83	0.2152	P	1.3

$$y = 0.1036 * x + 0.0016$$

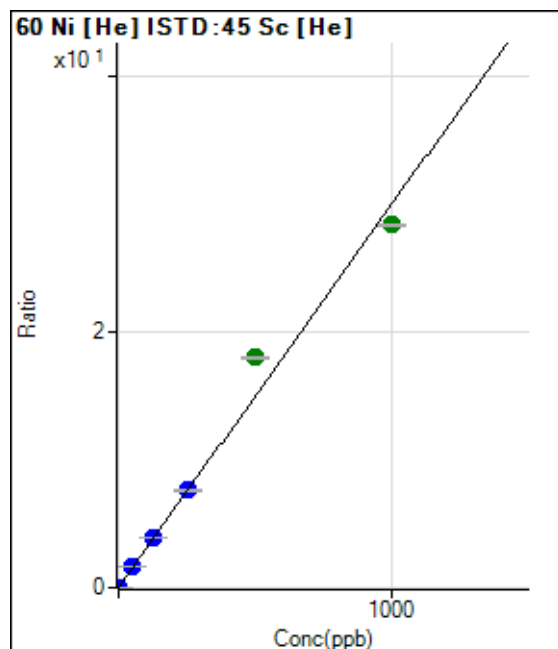
$$R = 0.9994$$

$$DL = 0.002181$$

$$BEC = 0.01577$$

Weight: <None>

Min Conc: 0



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	1430.09	0.0078	P	6.7
2	☐	1.000	1.007	6890.62	0.0380	P	8.3
3	☐	50.000	53.206	278749.29	1.6001	P	0.8
4	☐	125.000	130.496	671581.91	3.9132	P	0.8
5	☐	250.000	254.216	1282358.64	7.6158	P	0.8
6	☐	500.000	601.299	3012999.51	18.0030	A	1.0
7	☐	1000.000	947.449	4841648.54	28.3622	A	0.6
8	☐			15929.02	0.0994	P	1.3

$$y = 0.0299 * x + 0.0078$$

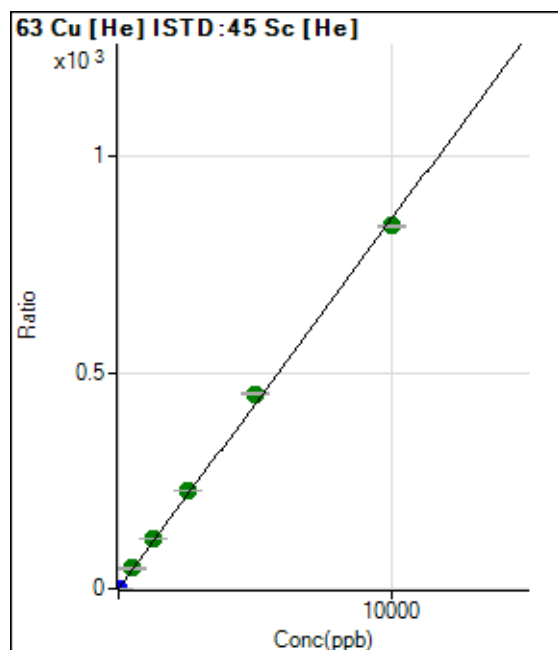
$$R = 0.9922$$

$$DL = 0.05232$$

$$BEC = 0.2621$$

Weight: <None>

Min Conc: 0



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	3982.83	0.0218	P	9.7
2	☐	2.000	2.008	35085.74	0.1935	P	8.9
3	☐	500.000	548.175	8165007.10	46.8713	A	1.3
4	☐	1250.000	1353.646	19857608.46	115.7104	A	0.7
5	☐	2500.000	2651.792	38164203.32	226.6557	A	1.3
6	☐	5000.000	5260.169	75243216.10	449.5791	A	0.9
7	☐	10000.000	9816.603	143223183.42	838.9921	A	0.8
8	☐			30484.97	0.1902	P	1.3

$$y = 0.0855 * x + 0.0218$$

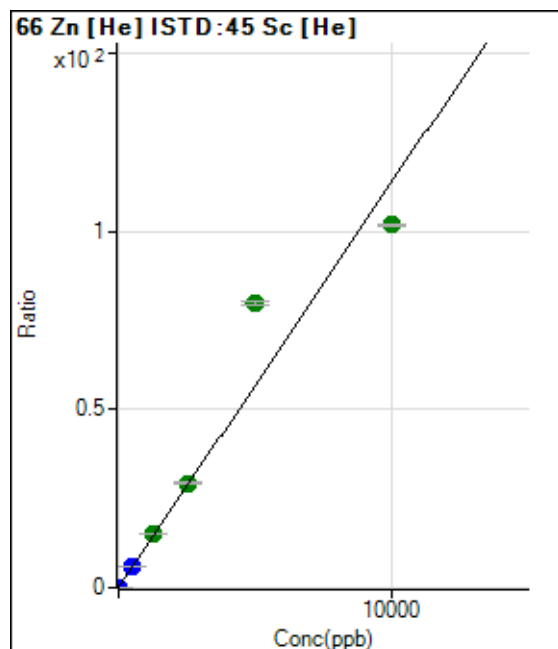
$$R = 0.9993$$

$$DL = 0.07453$$

$$BEC = 0.2555$$

Weight: <None>

Min Conc: 0



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	3114.82	0.0171	P	4.2
2	☐	2.000	4.311	11992.96	0.0661	P	9.9
3	☐	500.000	530.131	1053571.40	6.0480	P	0.7
4	☐	1250.000	1335.921	2611110.38	15.2148	A	1.2
5	☐	2500.000	2580.425	4945736.63	29.3725	A	1.4
6	☐	5000.000	7016.048	13361243.97	79.8330	A	1.3
7	☐	10000.000	8959.623	17402467.52	101.9434	A	0.2
8	☐			33431.66	0.2086	P	0.5

$$y = 0.0114 * x + 0.0171$$

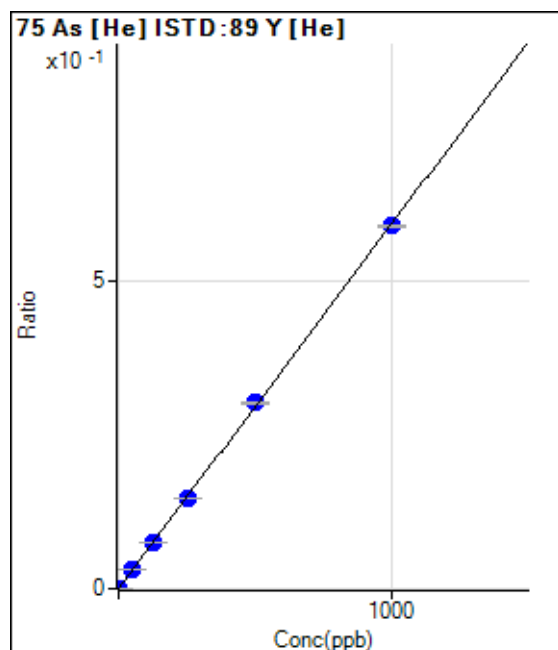
$$R = 0.9688$$

$$DL = 0.1887$$

$$BEC = 1.502$$

Weight: <None>

Min Conc: 0



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	30.00	0.0000	P	12.5
2	☐	1.000	1.034	1113.39	0.0006	P	17.5
3	☐	50.000	50.491	51373.16	0.0300	P	1.3
4	☐	125.000	125.748	127092.20	0.0747	P	1.1
5	☐	250.000	248.551	246751.91	0.1476	P	1.0
6	☐	500.000	509.708	493840.27	0.3027	P	1.2
7	☐	1000.000	995.390	966457.76	0.5912	P	0.8
8	☐			463.35	0.0003	P	4.0

$$y = 5.9392E-004 * x + 1.6959E-005$$

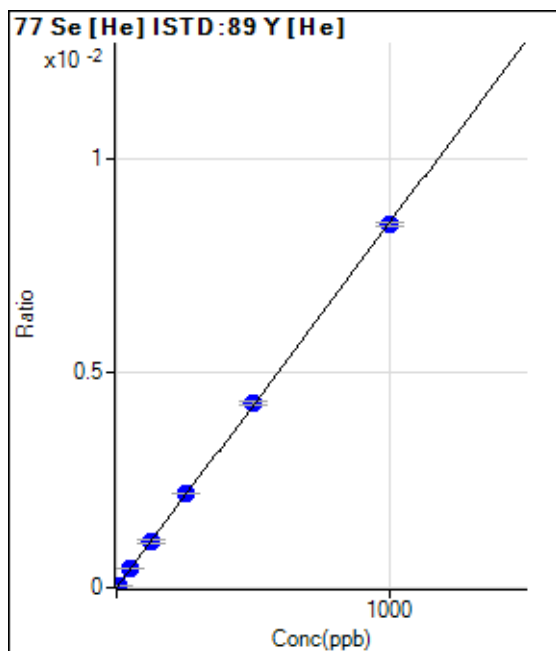
$$R = 0.9999$$

$$DL = 0.01074$$

$$BEC = 0.02855$$

Weight: <None>

Min Conc: 0



	R _j ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	0.00	0.0000	P	
2	☐	5.000	6.063	91.11	0.0001	P	4.3
3	☐	50.000	53.216	774.47	0.0005	P	4.4
4	☐	125.000	127.221	1840.14	0.0011	P	5.8
5	☐	250.000	258.017	3666.07	0.0022	P	1.2
6	☐	500.000	505.953	7016.26	0.0043	P	1.4
7	☐	1000.000	994.575	13823.54	0.0085	P	1.0
8	☐			7.78	0.0000	P	65.8

$$y = 8.5015\text{E-}006 * x + 0.0000\text{E+}000$$

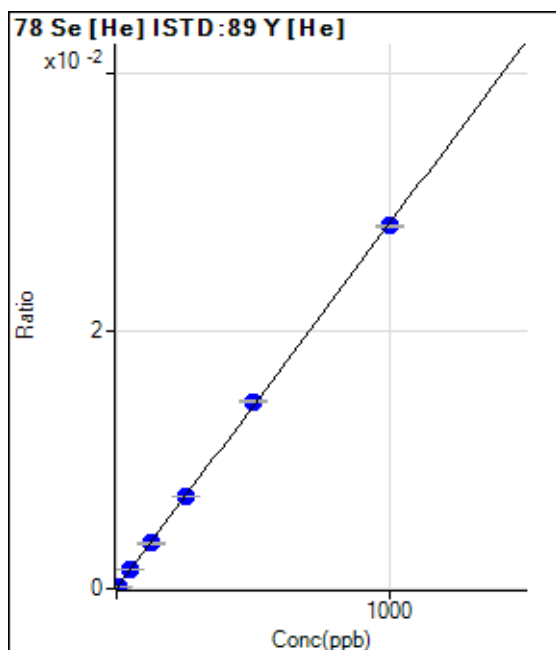
$$R = 0.9999$$

$$DL = 0$$

$$BEC = 0$$

Weight: <None>

Min Conc: 0



	R _j ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	33.34	0.0000	P	46.2
2	☐	5.000	5.219	294.45	0.0002	P	10.6
3	☐	50.000	53.951	2650.28	0.0015	P	1.7
4	☐	125.000	123.252	5975.76	0.0035	P	1.6
5	☐	250.000	251.811	11959.64	0.0072	P	0.4
6	☐	500.000	512.279	23714.48	0.0145	P	1.1
7	☐	1000.000	993.427	46060.73	0.0282	P	0.3
8	☐			50.00	0.0000	P	29.3

$$y = 2.8342\text{E-}005 * x + 1.8828\text{E-}005$$

$$R = 0.9999$$

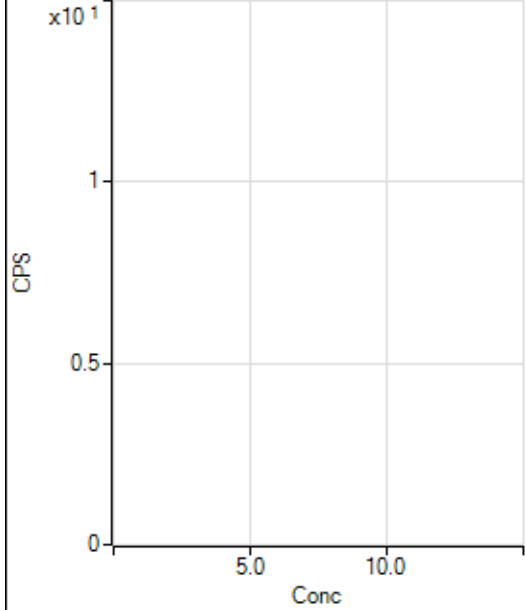
$$DL = 0.9215$$

$$BEC = 0.6643$$

Weight: <None>

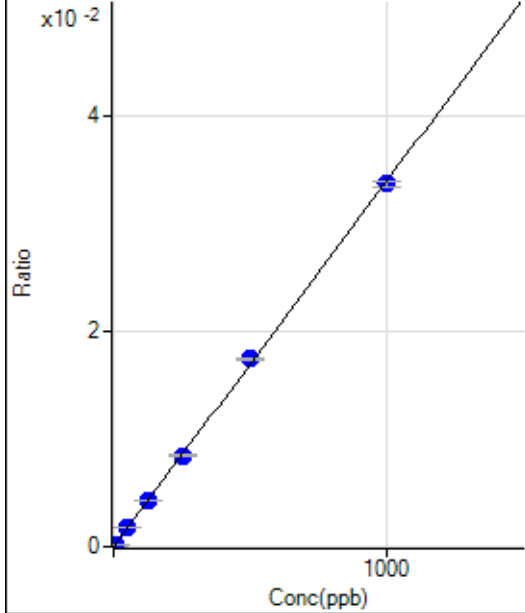
Min Conc: 0

81 Br [No Gas] No available calibration points



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐			27588.38		P	1.9
2	☐			27273.32		P	1.9
3	☐			26949.40		P	2.6
4	☐			26012.00		P	1.4
5	☐			26545.28		P	1.2
6	☐			26163.37		P	0.2
7	☐			25771.58		P	0.7
8	☐			27654.00		P	2.1

82 Se [No Gas] ISTD:89 Y [No Gas]



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	53.34	0.0000	P	63.0
2	☐	5.000	5.731	3663.95	0.0002	P	5.3
3	☐	50.000	51.774	31969.53	0.0018	P	0.4
4	☐	125.000	126.608	77996.73	0.0043	P	1.1
5	☐	250.000	249.673	154348.69	0.0085	P	1.0
6	☐	500.000	513.239	309367.12	0.0174	P	1.3
7	☐	1000.000	993.169	594190.36	0.0336	P	1.5
8	☐			372.24	0.0000	P	13.8

$$y = 3.3852E-005 * x + 2.8725E-006$$

$$R = 0.9999$$

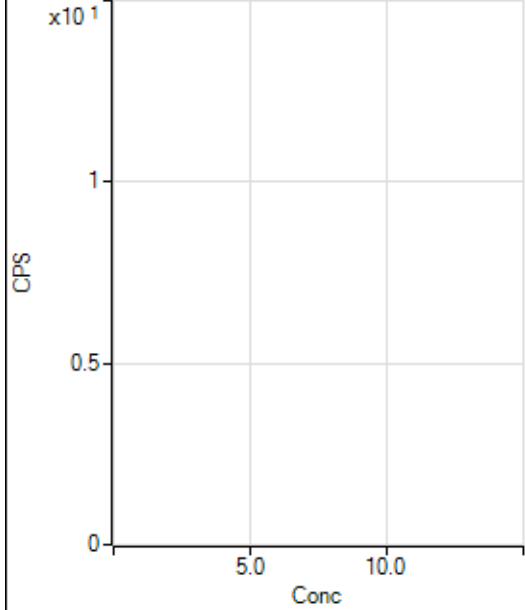
$$DL = 0.1605$$

$$BEC = 0.08486$$

Weight: <None>

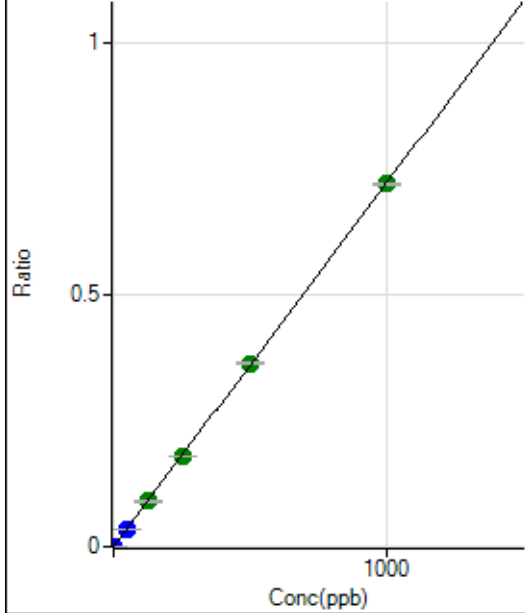
Min Conc: 0

83 Kr [No Gas] No available calibration points



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐			400.01		P	6.3
2	☐			382.23		P	6.6
3	☐			382.23		P	9.0
4	☐			396.68		P	4.7
5	☐			424.46		P	0.5
6	☐			440.01		P	13.8
7	☐			467.79		P	7.1
8	☐			523.35		P	4.5

86 Sr [No Gas] ISTD : 89 Y [No Gas]



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	720.03	0.0000	P	6.8
2	☐	1.000	1.105	15534.29	0.0008	P	2.5
3	☐	50.000	48.959	642798.12	0.0353	P	0.9
4	☐	125.000	125.040	1638325.24	0.0901	A	1.8
5	☐	250.000	248.990	3274259.50	0.1794	A	1.6
6	☐	500.000	504.701	6472416.99	0.3635	A	0.4
7	☐	1000.000	997.949	12702339.12	0.7187	A	0.4
8	☐			36641.31	0.0024	P	0.7

$$y = 7.2018E-004 * x + 3.8835E-005$$

$$R = 1.0000$$

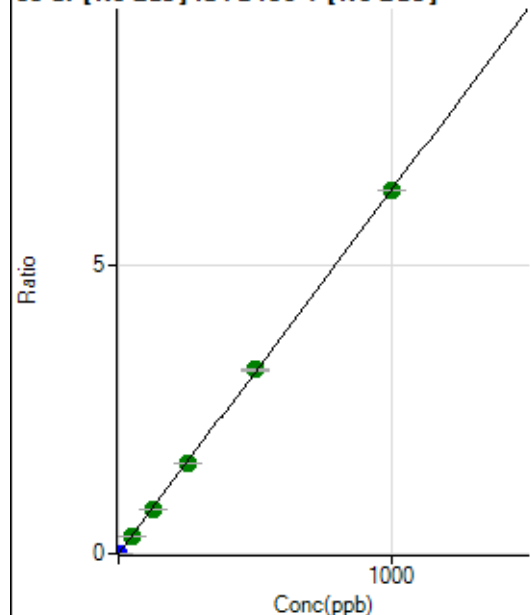
$$DL = 0.01096$$

$$BEC = 0.05392$$

Weight: <None>

Min Conc: 0

88 Sr [No Gas] ISTD:89 Y [No Gas]



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	1054.50	0.0001	P	3.4
2	☐	1.000	1.112	131327.69	0.0071	P	0.5
3	☐	50.000	49.335	5652714.57	0.3104	A	1.0
4	☐	125.000	122.103	13969454.79	0.7682	A	1.7
5	☐	250.000	247.259	28396206.24	1.5555	A	0.9
6	☐	500.000	505.922	56663868.04	3.1826	A	0.8
7	☐	1000.000	998.120	110967617.24	6.2789	A	0.1
8	☐			319226.84	0.0205	P	0.5

$$y = 0.0063 * x + 5.6885E-005$$

$$R = 1.0000$$

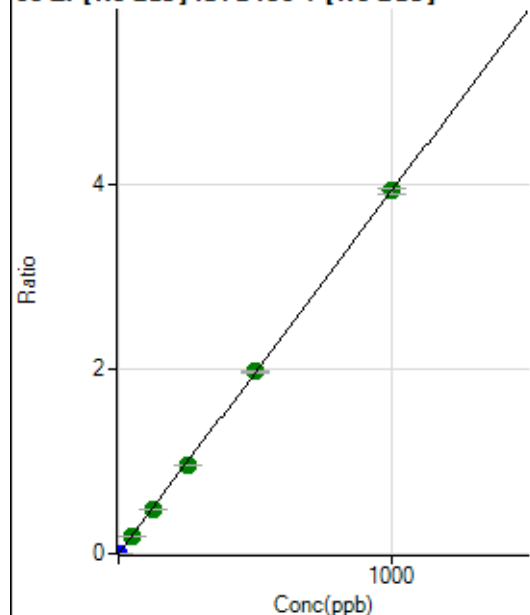
$$DL = 0.0009175$$

$$BEC = 0.009043$$

Weight: <None>

Min Conc: 0

90 Zr [No Gas] ISTD:89 Y [No Gas]



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	1296.77	0.0001	P	3.1
2	☐	1.000	1.064	79037.89	0.0042	P	1.0
3	☐	50.000	49.359	3528476.30	0.1937	A	0.7
4	☐	125.000	121.292	8656704.66	0.4760	A	0.8
5	☐	250.000	244.449	17512134.74	0.9592	A	0.3
6	☐	500.000	502.382	35097668.09	1.9713	A	0.7
7	☐	1000.000	1000.692	69389998.41	3.9266	A	1.6
8	☐			28911.10	0.0019	P	1.7

$$y = 0.0039 * x + 6.9951E-005$$

$$R = 1.0000$$

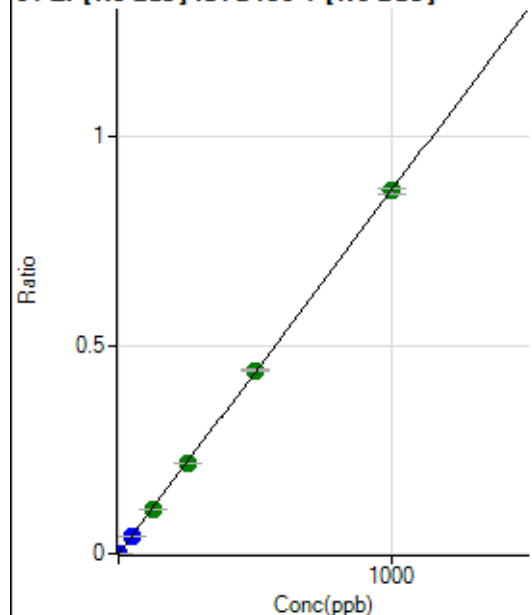
$$DL = 0.001634$$

$$BEC = 0.01783$$

Weight: <None>

Min Conc: 0

91 Zr [No Gas] ISTD:89 Y [No Gas]



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	214.45	0.0000	P	9.7
2	☐	1.000	1.057	17346.44	0.0009	P	0.6
3	☐	50.000	48.134	763650.77	0.0419	P	0.7
4	☐	125.000	121.857	1930395.60	0.1061	A	1.2
5	☐	250.000	247.420	3934351.50	0.2155	A	0.2
6	☐	500.000	504.929	7829602.24	0.4398	A	1.4
7	☐	1000.000	998.666	15371033.66	0.8698	A	1.9
8	☐			6313.71	0.0004	P	2.7

$$y = 8.7096E-004 * x + 1.1570E-005$$

$$R = 1.0000$$

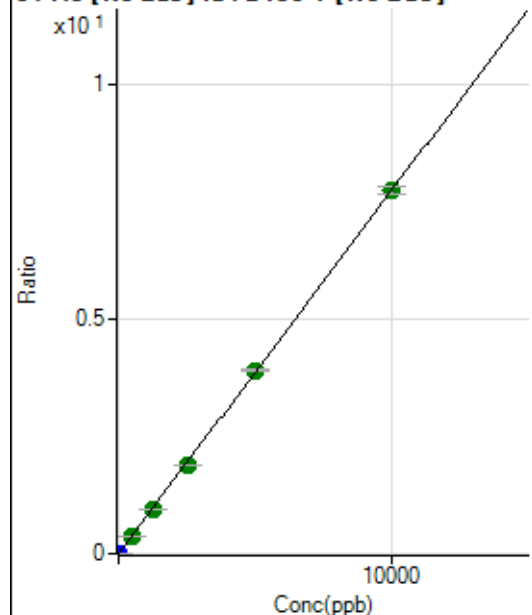
$$DL = 0.003869$$

$$BEC = 0.01328$$

Weight: <None>

Min Conc: 0

94 Mo [No Gas] ISTD:89 Y [No Gas]



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	656.69	0.0000	P	0.5
2	☐	5.000	6.378	92636.86	0.0050	P	1.1
3	☐	500.000	490.957	6926974.90	0.3804	A	1.7
4	☐	1250.000	1214.780	17116392.94	0.9412	A	1.2
5	☐	2500.000	2448.310	34629158.93	1.8969	A	0.3
6	☐	5000.000	5046.151	69605898.41	3.9095	A	0.7
7	☐	10000.000	9994.701	136837799.07	7.7434	A	2.1
8	☐			24228.99	0.0016	P	1.0

$$y = 7.7475E-004 * x + 3.5425E-005$$

$$R = 1.0000$$

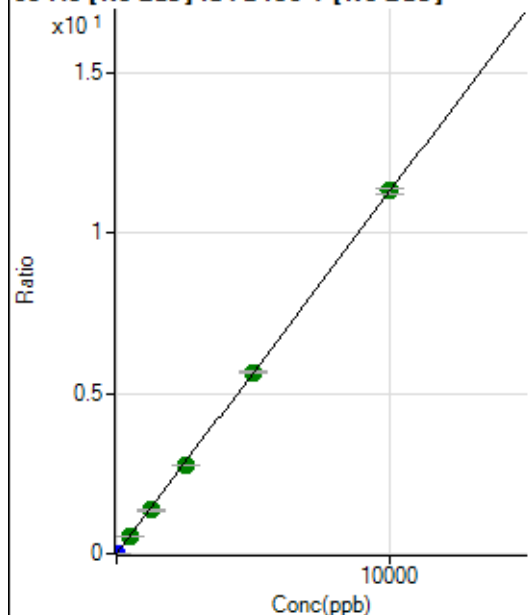
$$DL = 0.0006742$$

$$BEC = 0.04573$$

Weight: <None>

Min Conc: 0

95 Mo [No Gas] ISTD:89 Y [No Gas]



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	480.01	0.0000	P	10.9
2	☐	5.000	5.354	113164.01	0.0061	P	1.6
3	☐	500.000	484.339	9973588.95	0.5477	A	0.5
4	☐	1250.000	1198.245	24638663.80	1.3549	A	1.9
5	☐	2500.000	2418.557	49925989.81	2.7347	A	0.1
6	☐	5000.000	5015.038	100953790.72	5.6705	A	1.4
7	☐	10000.000	10020.094	200214508.13	11.3298	A	1.9
8	☐			28842.20	0.0019	P	5.0

$$y = 0.0011 * x + 2.5897E-005$$

R = 1.0000

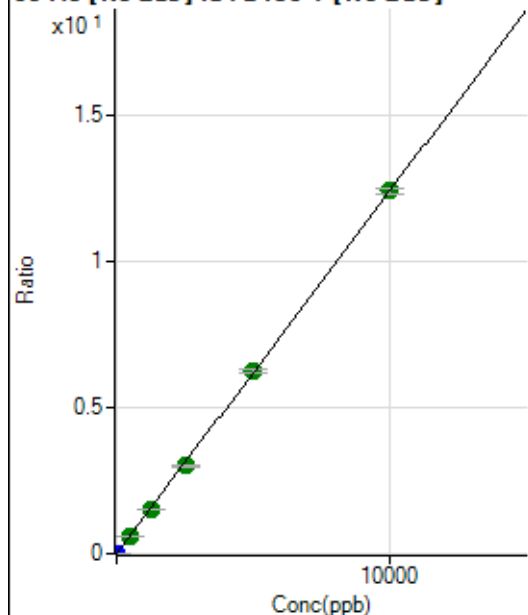
DL = 0.00752

BEC = 0.0229

Weight: <None>

Min Conc: 0

96 Mo [No Gas] ISTD:89 Y [No Gas]



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	574.46	0.0000	P	3.5
2	☐	5.000	5.353	124007.18	0.0067	P	0.7
3	☐	500.000	484.410	10927298.17	0.6000	A	0.8
4	☐	1250.000	1201.664	27069625.15	1.4885	A	1.1
5	☐	2500.000	2415.962	54631683.63	2.9926	A	0.6
6	☐	5000.000	5028.244	110878402.79	6.2283	A	2.0
7	☐	10000.000	10013.709	219197823.40	12.4035	A	1.6
8	☐			37529.62	0.0024	P	2.1

$$y = 0.0012 * x + 3.0988E-005$$

R = 1.0000

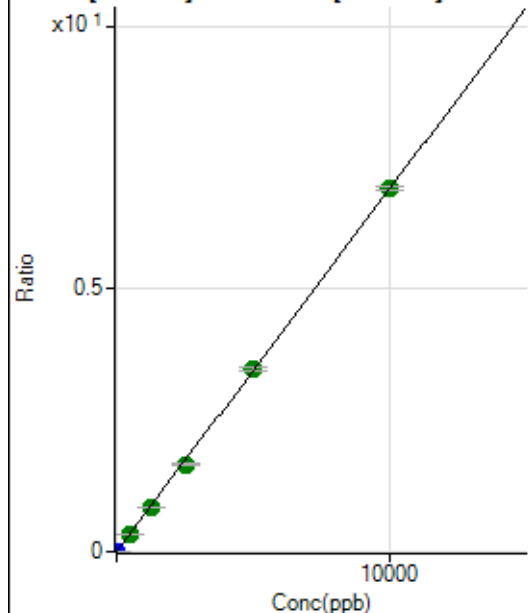
DL = 0.002634

BEC = 0.02502

Weight: <None>

Min Conc: 0

97 Mo [No Gas] ISTD:89 Y [No Gas]



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	271.12	0.0000	P	8.2
2	☐	5.000	5.417	69815.52	0.0038	P	0.7
3	☐	500.000	495.159	6218974.56	0.3415	A	0.8
4	☐	1250.000	1226.104	15378757.27	0.8456	A	0.6
5	☐	2500.000	2409.183	30331089.55	1.6615	A	1.1
6	☐	5000.000	5043.545	61922116.30	3.4783	A	2.0
7	☐	10000.000	10004.160	121928471.52	6.8994	A	1.1
8	☐			14460.94	0.0009	P	2.4

$$y = 6.8965E-004 * x + 1.4623E-005$$

R = 0.9999

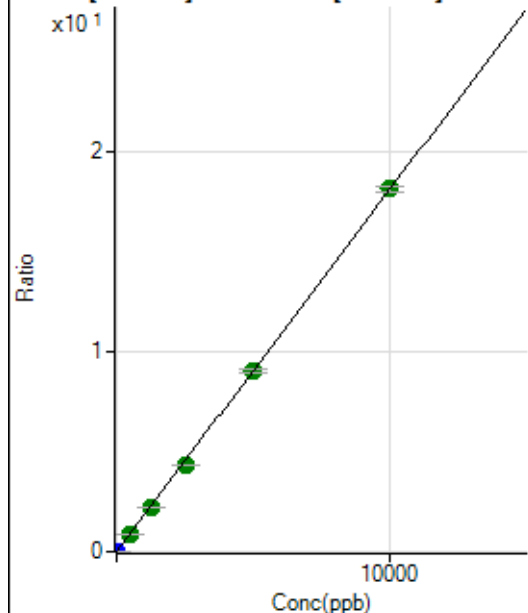
DL = 0.005246

BEC = 0.0212

Weight: <None>

Min Conc: 0

98 Mo [No Gas] ISTD:89 Y [No Gas]



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	718.92	0.0000	P	4.7
2	☐	5.000	5.280	178367.75	0.0096	P	1.3
3	☐	500.000	488.591	16084638.37	0.8832	A	1.4
4	☐	1250.000	1212.438	39859481.91	2.1916	A	0.4
5	☐	2500.000	2410.140	79533376.59	4.3566	A	0.7
6	☐	5000.000	4993.279	160691027.60	9.0259	A	1.5
7	☐	10000.000	10031.091	320434308.56	18.1323	A	1.3
8	☐			34214.40	0.0022	P	2.6

$$y = 0.0018 * x + 3.8778E-005$$

R = 1.0000

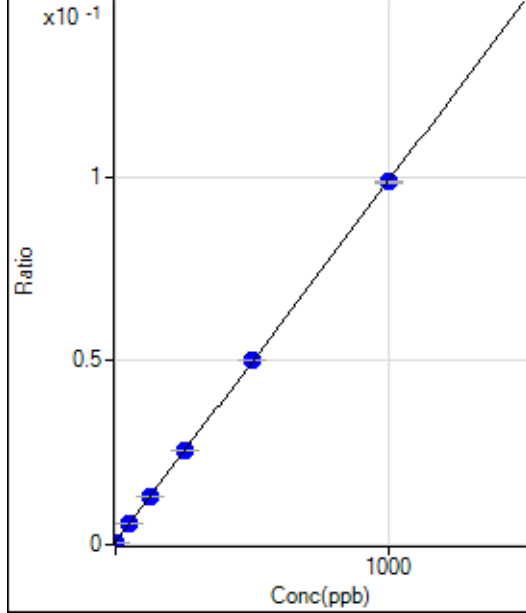
DL = 0.003003

BEC = 0.02145

Weight: <None>

Min Conc: 0

106 Cd [No Gas] ISTD :159 Tb [No Gas]



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	7145.25	0.0006	P	4.3
2	☐	1.000	1.202	8365.96	0.0007	P	3.5
3	☐	50.000	51.843	65281.48	0.0057	P	1.0
4	☐	125.000	127.718	150910.54	0.0132	P	1.6
5	☐	250.000	253.739	293871.26	0.0256	P	1.5
6	☐	500.000	503.726	575557.71	0.0502	P	0.7
7	☐	1000.000	996.770	1099098.05	0.0988	P	0.7
8	☐			6154.77	0.0006	P	1.0

$$y = 9.8476E-005 * x + 6.1784E-004$$

$$R = 1.0000$$

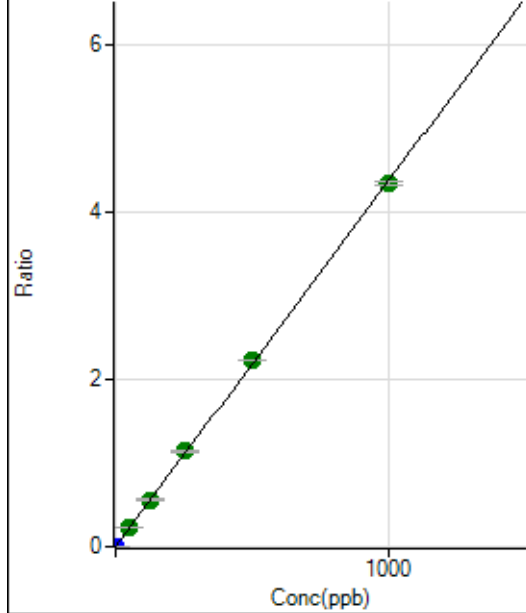
$$DL = 0.8084$$

$$BEC = 6.274$$

Weight: <None>

Min Conc: 0

107 Ag [No Gas] ISTD :159 Tb [No Gas]



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	188.89	0.0000	P	8.0
2	☐	1.000	1.140	56764.05	0.0050	P	2.8
3	☐	50.000	53.597	2671293.48	0.2342	A	1.7
4	☐	125.000	128.742	6434445.32	0.5625	A	1.2
5	☐	250.000	260.257	13050914.81	1.1371	A	1.2
6	☐	500.000	509.723	25523143.51	2.2271	A	0.4
7	☐	1000.000	991.926	48222425.39	4.3339	A	1.1
8	☐			4374.08	0.0004	P	10.2

$$y = 0.0044 * x + 1.6325E-005$$

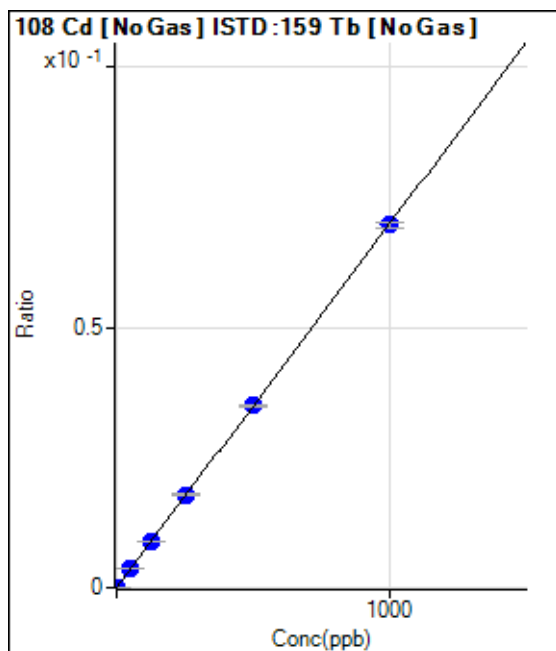
$$R = 0.9999$$

$$DL = 0.0009006$$

$$BEC = 0.003736$$

Weight: <None>

Min Conc: 0



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	24.44	0.0000	P	63.0
2	☐	1.000	1.131	921.15	0.0001	P	7.7
3	☐	50.000	51.646	41140.09	0.0036	P	0.4
4	☐	125.000	127.093	101481.01	0.0089	P	0.8
5	☐	250.000	254.189	203631.63	0.0177	P	2.4
6	☐	500.000	502.026	401552.80	0.0350	P	1.1
7	☐	1000.000	997.596	774706.55	0.0696	P	1.4
8	☐			267.78	0.0000	P	8.8

$$y = 6.9792E-005 * x + 2.1137E-006$$

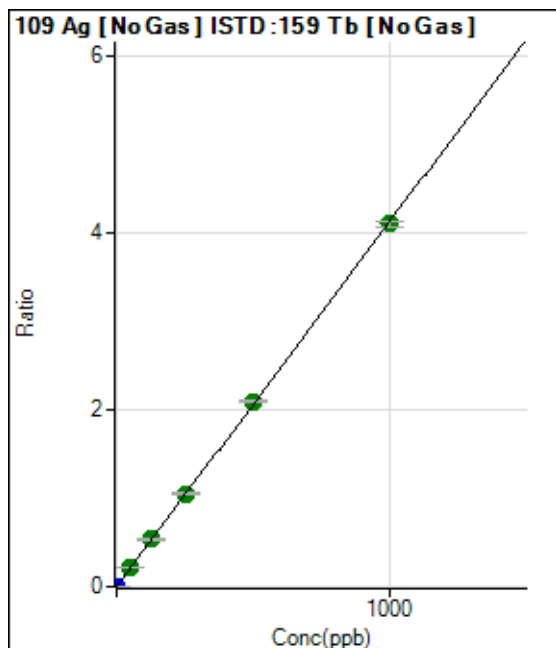
R = 1.0000

DL = 0.05722

BEC = 0.03028

Weight: <None>

Min Conc: 0



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	86.67	0.0000	P	25.6
2	☐	1.000	1.137	53276.99	0.0047	P	1.6
3	☐	50.000	53.563	2515701.30	0.2205	A	1.1
4	☐	125.000	129.446	6096069.29	0.5330	A	1.2
5	☐	250.000	255.592	12077810.93	1.0523	A	1.6
6	☐	500.000	506.833	23914227.14	2.0868	A	1.0
7	☐	1000.000	994.452	45557583.76	4.0944	A	1.3
8	☐			3819.46	0.0004	P	10.9

$$y = 0.0041 * x + 7.4981E-006$$

R = 0.9999

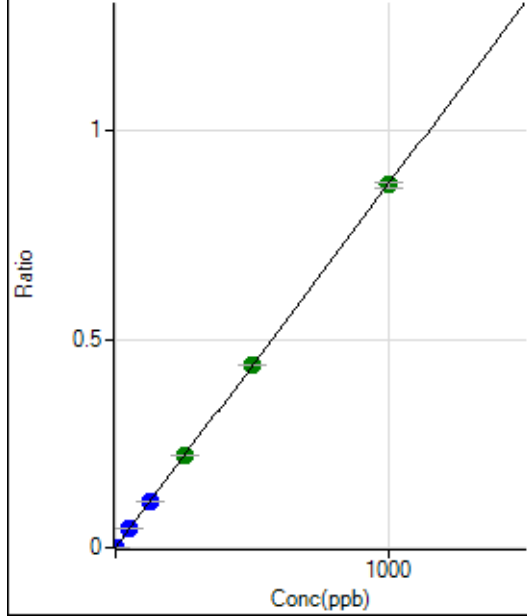
DL = 0.001401

BEC = 0.001821

Weight: <None>

Min Conc: 0

111 Cd [No Gas] ISTD :159 Tb [No Gas]



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	5062.35	0.0004	P	4.6
2	☐	1.000	1.176	16628.42	0.0015	P	2.9
3	☐	50.000	51.103	513303.24	0.0450	P	0.6
4	☐	125.000	125.407	1255890.11	0.1098	P	0.7
5	☐	250.000	254.968	2556888.18	0.2228	A	0.7
6	☐	500.000	502.128	5023138.37	0.4383	A	0.3
7	☐	1000.000	997.588	9684362.10	0.8703	A	1.3
8	☐			5274.29	0.0005	P	0.5

$$y = 8.7201E-004 * x + 4.3774E-004$$

$$R = 1.0000$$

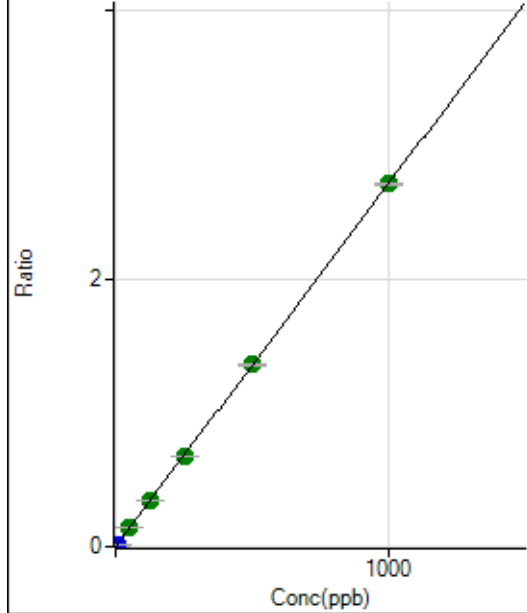
$$DL = 0.06899$$

$$BEC = 0.502$$

Weight: <None>

Min Conc: 0

118 Sn [No Gas] ISTD :159 Tb [No Gas]



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	4970.96	0.0004	P	1.5
2	☐	5.000	5.717	180934.77	0.0159	P	1.4
3	☐	50.000	50.655	1570395.65	0.1377	A	1.6
4	☐	125.000	125.572	3896019.35	0.3407	A	1.8
5	☐	250.000	248.138	7721109.33	0.6727	A	1.6
6	☐	500.000	501.960	15590064.07	1.3604	A	1.5
7	☐	1000.000	999.378	30135248.16	2.7081	A	0.3
8	☐			10875.52	0.0011	P	2.7

$$y = 0.0027 * x + 4.2985E-004$$

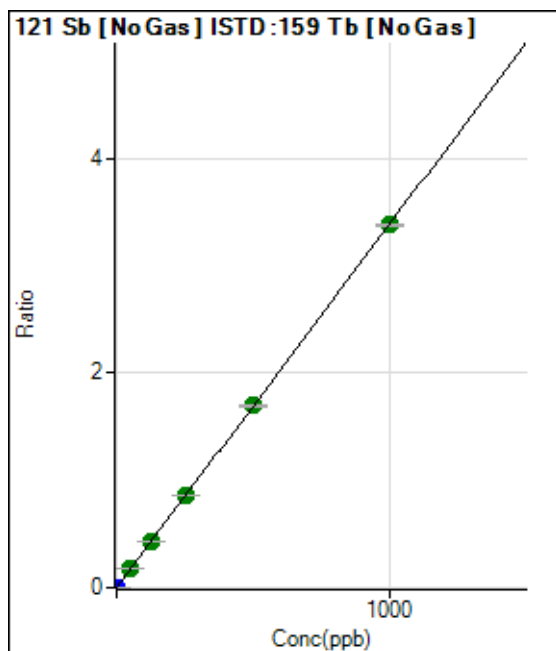
$$R = 1.0000$$

$$DL = 0.00691$$

$$BEC = 0.1586$$

Weight: <None>

Min Conc: 0



	R _j ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	161.11	0.0000	P	8.6
2	☐	2.000	2.229	85899.85	0.0076	P	1.6
3	☐	50.000	52.564	2029304.69	0.1779	A	0.6
4	☐	125.000	127.310	4928327.29	0.4309	A	1.3
5	☐	250.000	253.616	9851323.32	0.8583	A	0.7
6	☐	500.000	501.054	19433059.85	1.6957	A	0.8
7	☐	1000.000	998.152	37589342.49	3.3780	A	0.7
8	☐			15290.89	0.0016	P	3.3

$$y = 0.0034 * x + 1.3937E-005$$

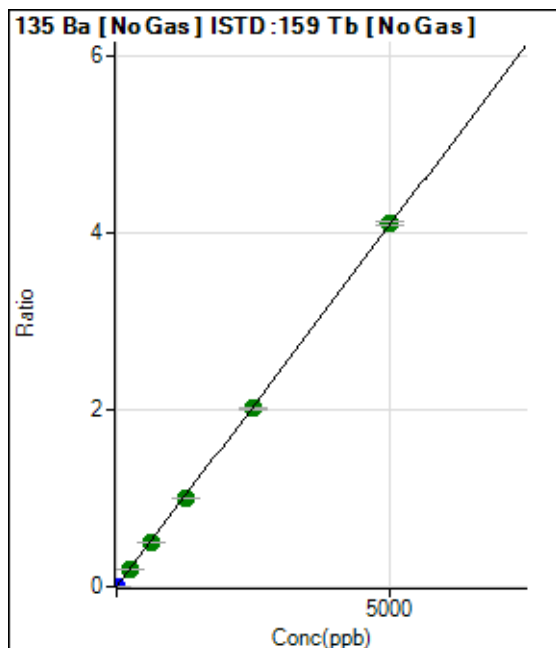
R = 1.0000

DL = 0.001061

BEC = 0.004118

Weight: <None>

Min Conc: 0



	R _j ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	270.01	0.0000	P	8.6
2	☐	10.000	10.744	100067.13	0.0088	P	1.3
3	☐	250.000	249.683	2328039.60	0.2041	A	0.6
4	☐	625.000	614.801	5747640.12	0.5025	A	1.4
5	☐	1250.000	1231.754	11555221.77	1.0068	A	0.4
6	☐	2500.000	2468.861	23125903.27	2.0179	A	0.6
7	☐	5000.000	5021.420	45666315.99	4.1041	A	1.2
8	☐			15643.56	0.0016	P	3.4

$$y = 8.1731E-004 * x + 2.3353E-005$$

R = 1.0000

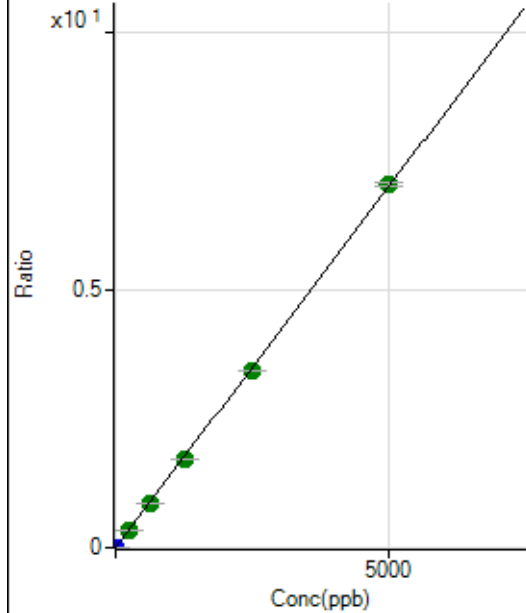
DL = 0.007365

BEC = 0.02857

Weight: <None>

Min Conc: 0

137 Ba [No Gas] ISTD :159 Tb [No Gas]



	R _j ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	461.12	0.0000	P	18.0
2	☐	10.000	10.855	173313.94	0.0153	P	1.5
3	☐	250.000	249.217	3983851.36	0.3493	A	0.4
4	☐	625.000	607.225	9733115.96	0.8509	A	0.2
5	☐	1250.000	1227.090	19736182.90	1.7195	A	0.7
6	☐	2500.000	2454.769	39419847.19	3.4397	A	0.6
7	☐	5000.000	5030.602	78441938.28	7.0491	A	1.0
8	☐			27554.79	0.0028	P	0.4

$$y = 0.0014 * x + 3.9860E-005$$

$$R = 0.9999$$

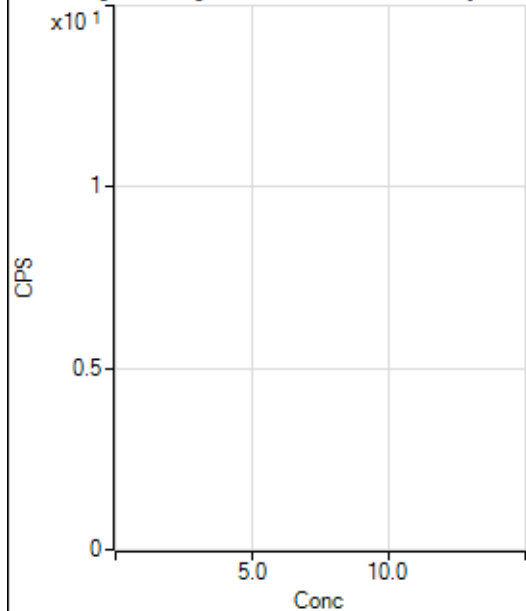
$$DL = 0.01533$$

$$BEC = 0.02845$$

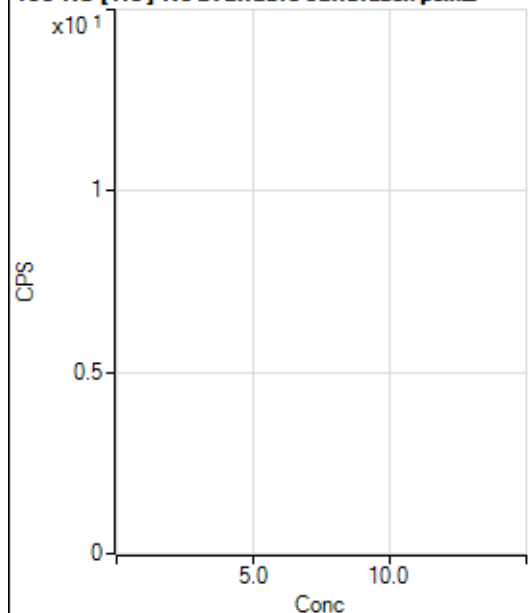
Weight: <None>

Min Conc: 0

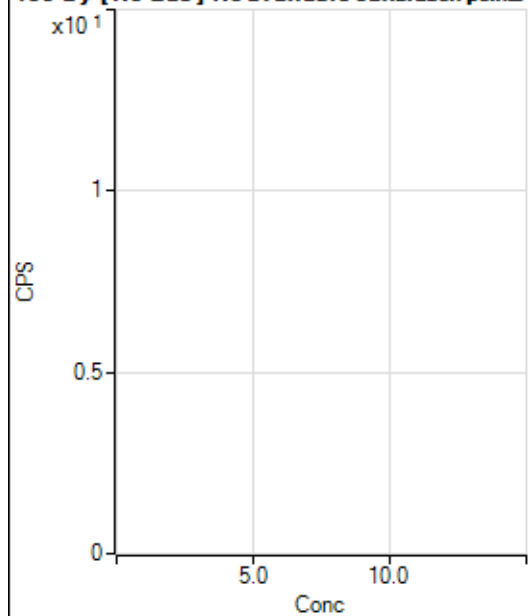
150 Nd [No Gas] No available calibration points



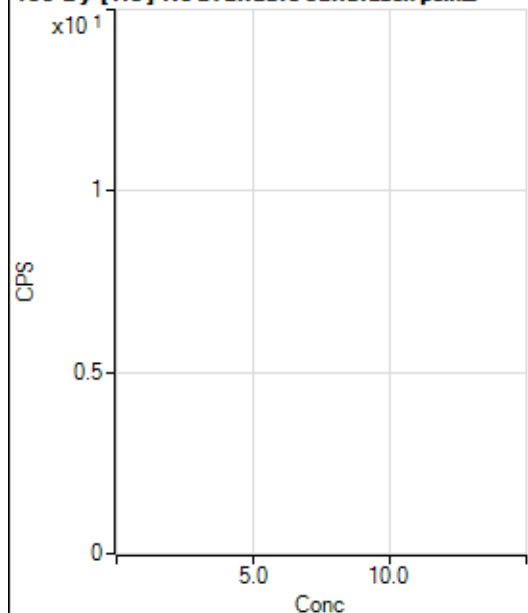
	R _j ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐			18.89		P	62.0
2	☐			20.00		P	28.9
3	☐			165.56		P	26.6
4	☐			377.79		P	10.6
5	☐			788.92		P	8.4
6	☐			1607.89		P	2.0
7	☐			2964.81		P	1.4
8	☐			580.02		P	1.1

150 Nd [He] No available calibration points

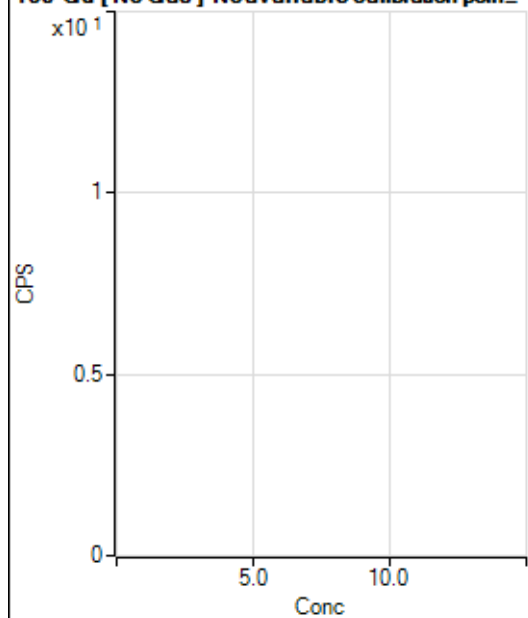
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐			1.11		P	173.
2	☐			4.44		P	114.
3	☐			11.11		P	62.5
4	☐			23.33		P	28.6
5	☐			54.44		P	18.7
6	☐			111.11		P	12.5
7	☐			186.67		P	18.1
8	☐			191.11		P	11.6

156 Dy [No Gas] No available calibration points

	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐			17.78		P	28.6
2	☐			38.89		P	4.9
3	☐			71.11		P	15.1
4	☐			146.67		P	16.4
5	☐			264.45		P	9.5
6	☐			465.57		P	13.1
7	☐			893.37		P	2.1
8	☐			1151.18		P	9.8

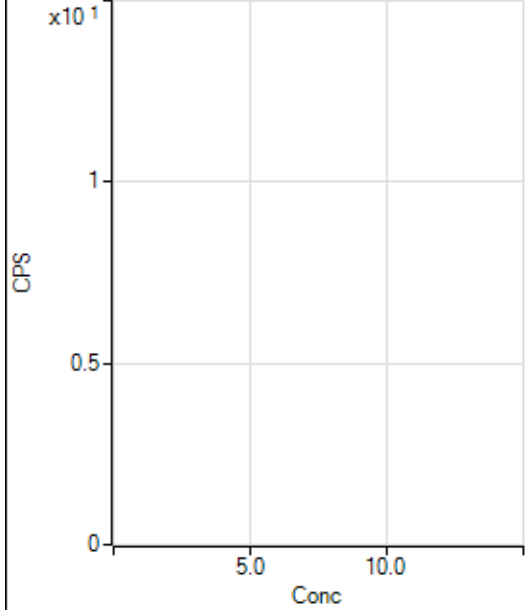
156 Dy [He] No available calibration points

	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐			7.78		P	49.5
2	☐			14.44		P	35.3
3	☐			14.44		P	58.1
4	☐			31.11		P	16.4
5	☐			50.00		P	29.1
6	☐			104.45		P	12.9
7	☐			168.89		P	4.1
8	☐			427.79		P	14.0

160 Gd [No Gas] Noavailable calibration poin_

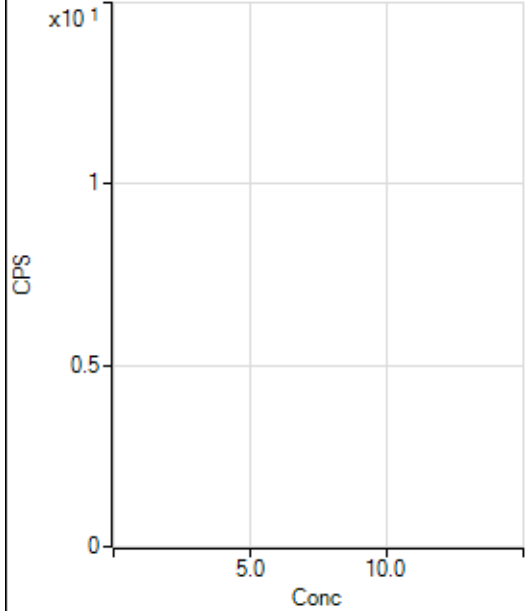
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐			107.78		P	15.6
2	☐			110.00		P	18.9
3	☐			138.89		P	2.8
4	☐			172.22		P	13.6
5	☐			211.12		P	18.4
6	☐			314.45		P	10.6
7	☐			456.68		P	8.4
8	☐			1030.05		P	5.2

160 Gd [He] No available calibration points

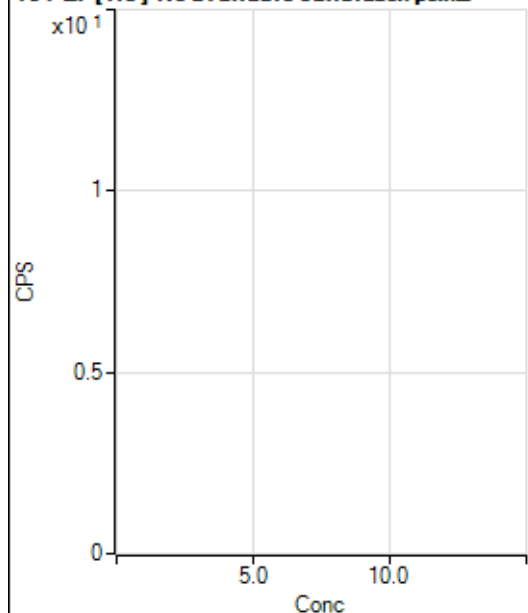


	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐			27.78		P	42.1
2	☐			36.67		P	9.1
3	☐			33.33		P	45.8
4	☐			50.00		P	52.9
5	☐			84.44		P	6.0
6	☐			140.00		P	13.3
7	☐			201.12		P	14.9
8	☐			492.24		P	4.1

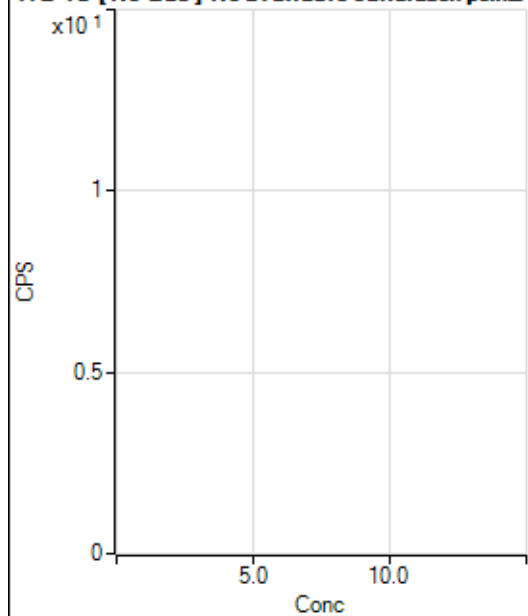
164 Er [No Gas] No available calibration points



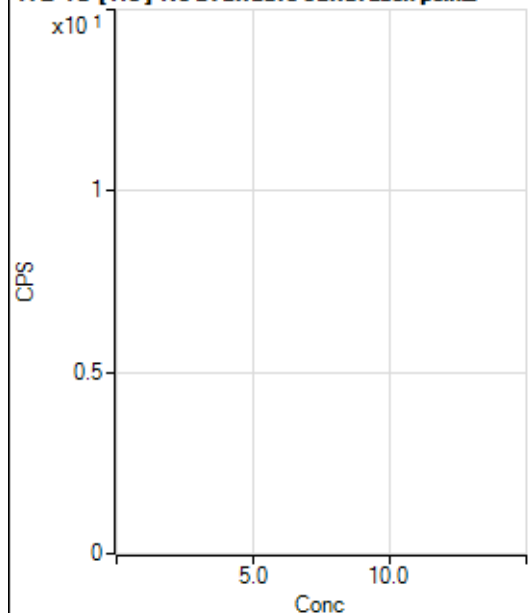
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐			77.78		P	13.1
2	☐			81.11		P	16.6
3	☐			94.44		P	20.4
4	☐			135.56		P	18.8
5	☐			224.45		P	11.2
6	☐			368.90		P	2.8
7	☐			648.91		P	4.3
8	☐			1283.41		P	6.4

164 Er [He] No available calibration points

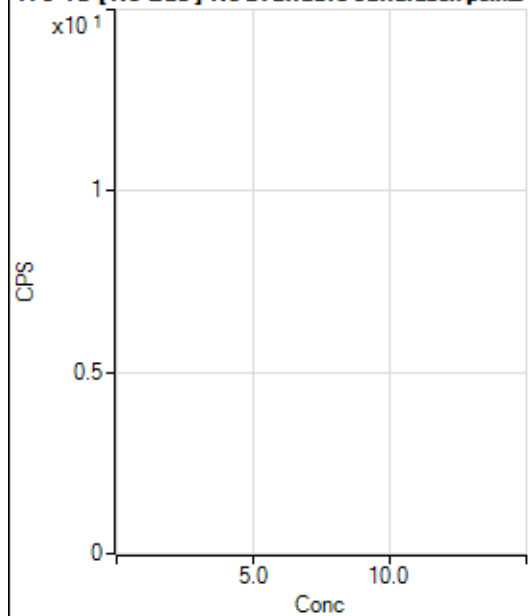
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐			31.11		P	27.0
2	☐			32.22		P	23.9
3	☐			44.44		P	42.7
4	☐			70.00		P	37.8
5	☐			76.67		P	24.2
6	☐			142.22		P	13.7
7	☐			220.00		P	1.5
8	☐			525.57		P	7.7

172 Yb [No Gas] No available calibration points

	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐			68.89		P	29.2
2	☐			66.67		P	18.0
3	☐			105.56		P	19.0
4	☐			155.56		P	6.5
5	☐			250.01		P	4.8
6	☐			347.79		P	6.9
7	☐			691.14		P	6.1
8	☐			2082.41		P	2.7

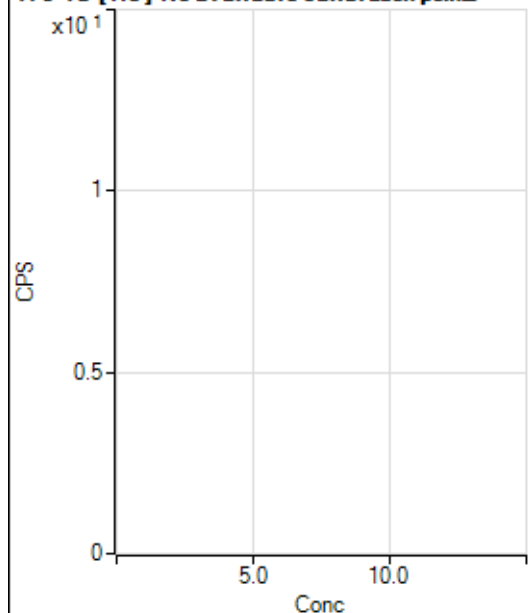
172 Yb [He] No available calibration points

	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐			33.33		P	10.0
2	☐			26.67		P	12.5
3	☐			42.22		P	9.1
4	☐			73.33		P	4.5
5	☐			108.89		P	12.4
6	☐			172.23		P	14.5
7	☐			347.79		P	23.7
8	☐			1001.16		P	6.8

176 Yb [No Gas] No available calibration points

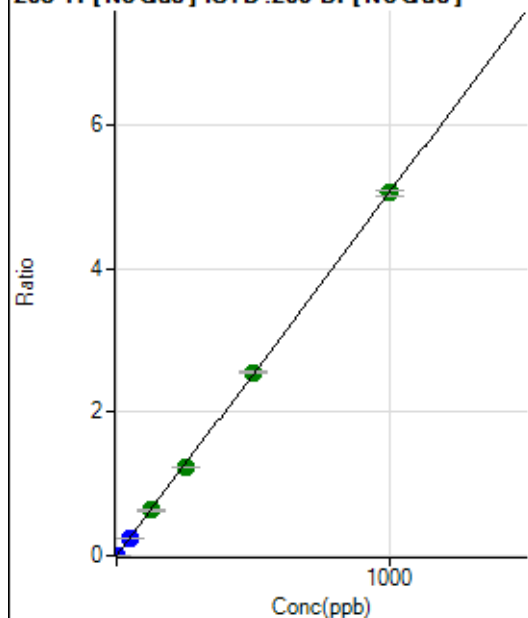
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐			1526.77		P	4.6
2	☐			1684.57		P	8.8
3	☐			8990.91		P	2.1
4	☐			20035.29		P	1.4
5	☐			39306.17		P	0.7
6	☐			77652.15		P	0.3
7	☐			153573.03		P	0.7
8	☐			2615.84		P	3.5

176 Yb [He] No available calibration points



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐			371.12		P	10.3
2	☐			374.45		P	6.9
3	☐			3417.14		P	1.4
4	☐			8148.13		P	1.9
5	☐			15923.02		P	0.8
6	☐			31362.74		P	0.2
7	☐			62499.01		P	0.4
8	☐			941.15		P	7.4

203 Tl [No Gas] ISTD :209 Bi [No Gas]



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	356.68	0.0001	P	1.9
2	☐	1.000	1.027	34096.97	0.0053	P	0.6
3	☐	50.000	47.643	1545854.87	0.2412	P	0.9
4	☐	125.000	124.485	3977297.02	0.6302	A	1.3
5	☐	250.000	243.128	7824261.69	1.2308	A	0.1
6	☐	500.000	505.398	15728505.46	2.5584	A	1.1
7	☐	1000.000	999.201	30570720.66	5.0580	A	1.7
8	☐			1749.03	0.0004	P	15.0

$$y = 0.0051 * x + 5.5171E-005$$

$$R = 1.0000$$

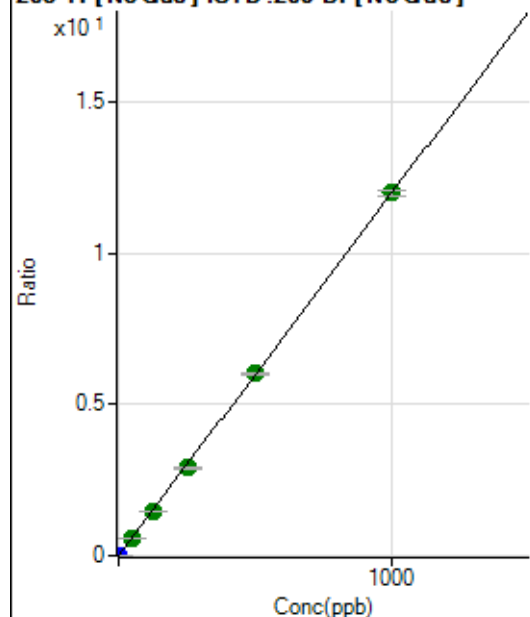
$$DL = 0.0006238$$

$$BEC = 0.0109$$

Weight: <None>

Min Conc: 0

205 Tl [No Gas] ISTD :209 Bi [No Gas]



	R _j ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	876.71	0.0001	P	5.8
2	☐	1.000	1.045	82006.24	0.0126	P	2.3
3	☐	50.000	48.749	3740352.41	0.5837	A	1.8
4	☐	125.000	122.555	9259373.13	1.4671	A	0.9
5	☐	250.000	242.000	18416289.17	2.8969	A	1.3
6	☐	500.000	502.039	36946053.34	6.0096	A	0.5
7	☐	1000.000	1001.349	72455225.59	11.9865	A	1.3
8	☐			4367.46	0.0009	P	13.9

$$y = 0.0120 * x + 1.3561E-004$$

R = 1.0000

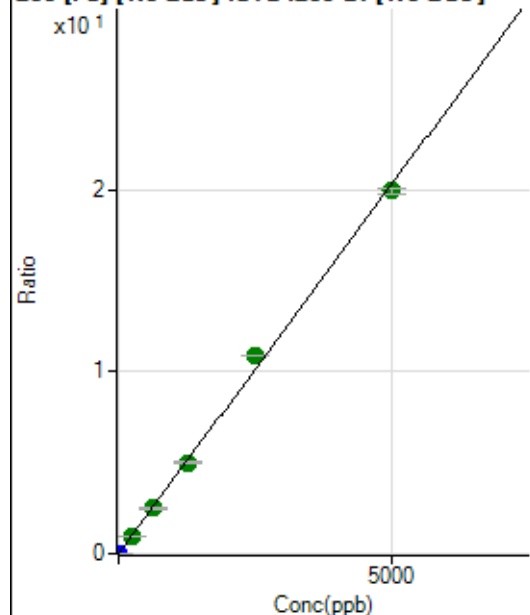
DL = 0.001977

BEC = 0.01133

Weight: <None>

Min Conc: 0

206 [Pb] [No Gas] ISTD :209 Bi [No Gas]



	R _j ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	1855.71	0.0003	P	6.1
2	☐	1.000	1.022	28721.82	0.0044	P	1.8
3	☐	250.000	242.868	6307450.46	0.9843	A	2.0
4	☐	625.000	617.016	15779616.71	2.5002	A	1.8
5	☐	1250.000	1229.768	31676371.47	4.9828	A	1.3
6	☐	2500.000	2683.127	66833847.89	10.8713	A	0.4
7	☐	5000.000	4914.849	120360695.99	19.9133	A	1.2
8	☐			50050.71	0.0103	P	1.6

$$y = 0.0041 * x + 2.8704E-004$$

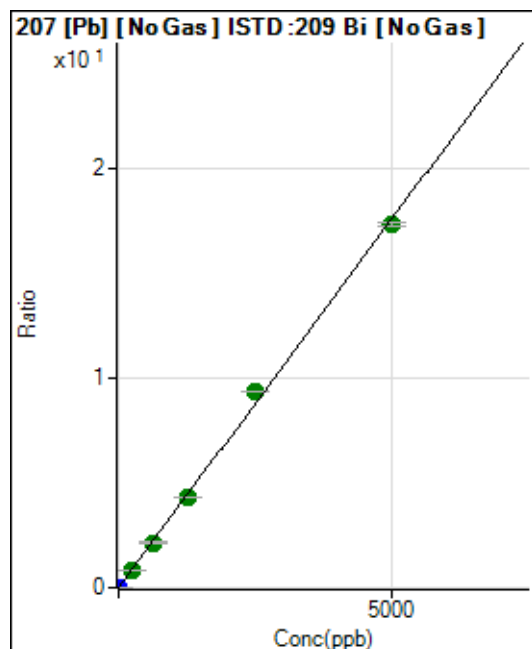
R = 0.9990

DL = 0.01291

BEC = 0.07084

Weight: <None>

Min Conc: 0



	R _j ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	1605.67	0.0002	P	5.0
2	☐	1.000	1.059	25757.90	0.0040	P	1.2
3	☐	250.000	244.195	5500207.14	0.8582	A	0.5
4	☐	625.000	611.792	13567623.82	2.1498	A	1.1
5	☐	1250.000	1231.041	27498429.59	4.3256	A	0.3
6	☐	2500.000	2661.906	57499469.70	9.3530	A	0.7
7	☐	5000.000	4925.728	104606919.55	17.3071	A	1.1
8	☐			43756.99	0.0090	P	2.3

$$y = 0.0035 * x + 2.4837E-004$$

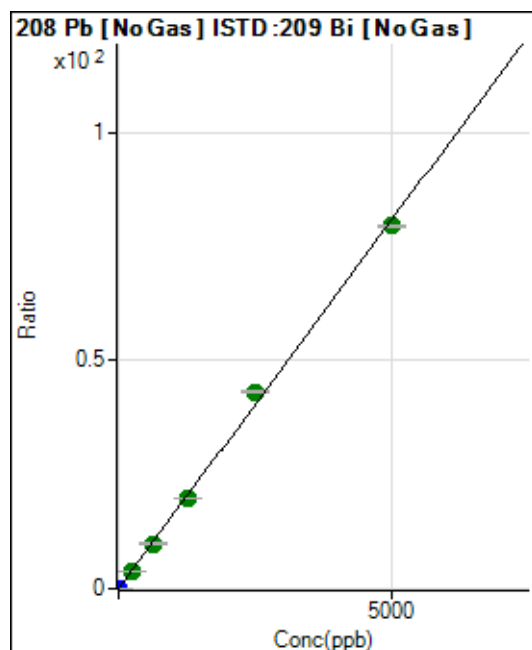
$$R = 0.9992$$

$$DL = 0.01055$$

$$BEC = 0.07069$$

Weight: <None>

Min Conc: 0



	R _j ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	7396.47	0.0011	P	0.7
2	☐	1.000	1.034	115727.12	0.0178	P	0.9
3	☐	250.000	243.108	25150101.43	3.9245	A	0.7
4	☐	625.000	612.277	62368913.09	9.8822	A	1.0
5	☐	1250.000	1228.714	126063612.85	19.8304	A	0.5
6	☐	2500.000	2668.351	264738553.28	43.0635	A	1.1
7	☐	5000.000	4923.081	480227185.07	79.4507	A	0.7
8	☐			199683.97	0.0412	P	1.3

$$y = 0.0161 * x + 0.0011$$

$$R = 0.9991$$

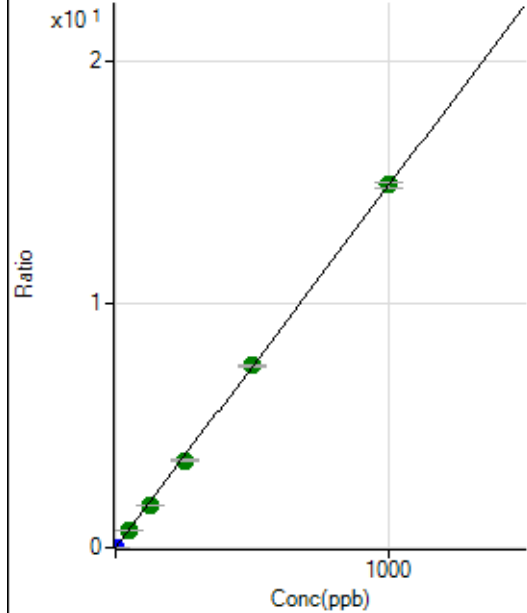
$$DL = 0.001483$$

$$BEC = 0.07089$$

Weight: <None>

Min Conc: 0

238 U [No Gas] ISTD :209 Bi [No Gas]



	R _j ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	0.000	0.000	1012.27	0.0002	P	9.8
2	☐	1.000	1.034	100757.87	0.0155	P	1.7
3	☐	50.000	47.138	4492277.22	0.7010	A	0.6
4	☐	125.000	118.763	11145178.17	1.7658	A	0.5
5	☐	250.000	241.452	22821871.05	3.5899	A	0.2
6	☐	500.000	502.146	45897163.76	7.4657	A	0.5
7	☐	1000.000	1001.987	90042101.99	14.8970	A	1.4
8	☐			3645.01	0.0008	P	11.7

$$y = 0.0149 * x + 1.5658E-004$$

$$R = 0.9999$$

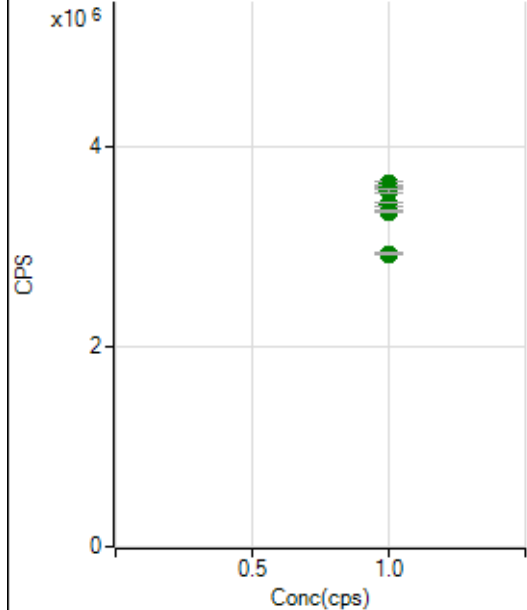
$$DL = 0.003109$$

$$BEC = 0.01053$$

Weight: <None>

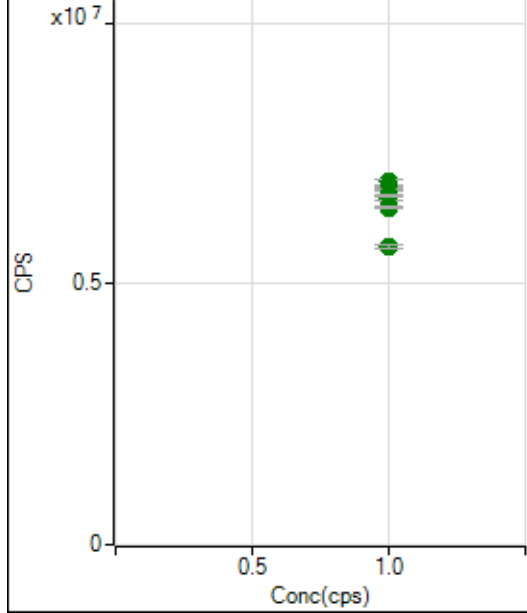
Min Conc: 0

6 Li (ISTD) [No Gas]



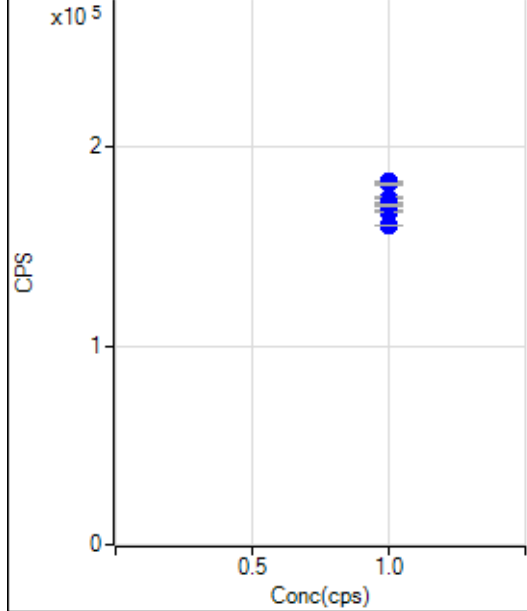
	R _j ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	1.000		3620662.68		A	1.2
2	☐	1.000		3581933.70		A	0.5
3	☐	1.000		3578793.25		A	0.8
4	☐	1.000		3589178.00		A	0.7
5	☐	1.000		3553217.34		A	1.4
6	☐	1.000		3415005.40		A	1.2
7	☐	1.000		3341004.38		A	0.6
8	☐	1.000		2921523.82		A	0.5

45 Sc (ISTD) [No Gas]



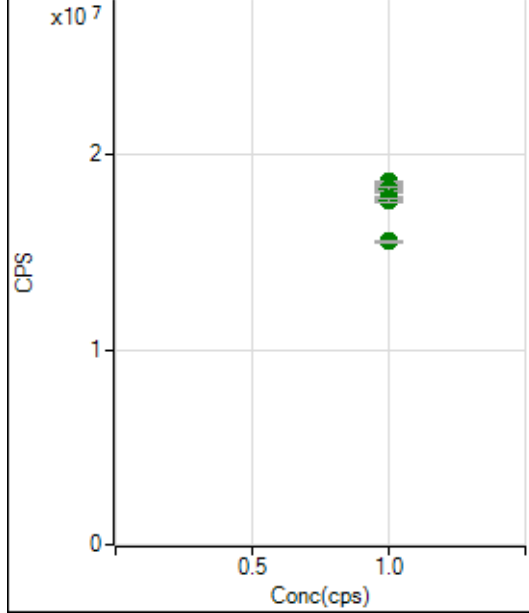
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	1.000		6958821.22		A	1.2
2	☐	1.000		6887211.63		A	0.6
3	☐	1.000		6805164.69		A	1.1
4	☐	1.000		6642174.83		A	1.6
5	☐	1.000		6698294.83		A	1.0
6	☐	1.000		6485874.97		A	0.6
7	☐	1.000		6464308.24		A	0.8
8	☐	1.000		5726756.23		A	1.0

45 Sc (ISTD) [He]



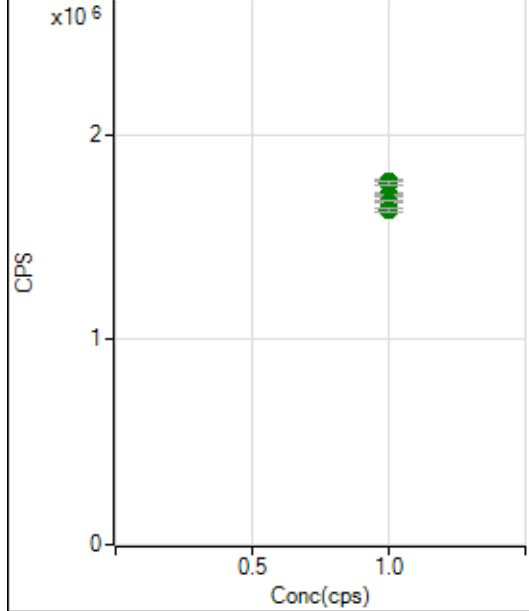
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	1.000		182345.97		P	0.8
2	☐	1.000		181397.41		P	0.3
3	☐	1.000		174205.43		P	0.3
4	☐	1.000		171617.76		P	0.4
5	☐	1.000		168383.41		P	0.3
6	☐	1.000		167362.93		P	0.1
7	☐	1.000		170707.22		P	0.2
8	☐	1.000		160294.24		P	0.4

89 Y (ISTD) [No Gas]

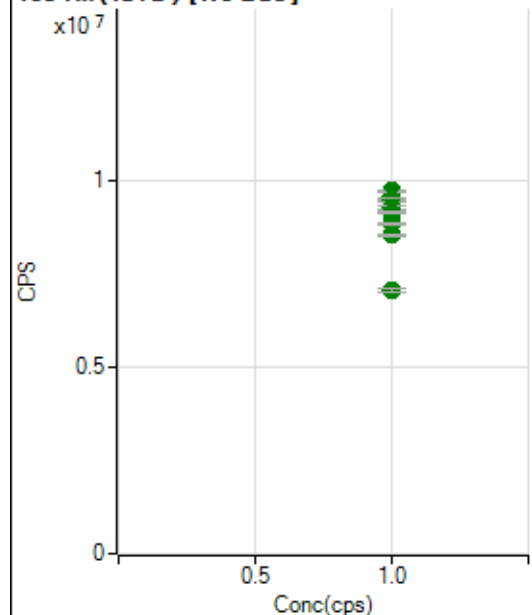


	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	1.000		18537108.47		A	0.4
2	☐	1.000		18614754.72		A	0.9
3	☐	1.000		18211610.98		A	1.0
4	☐	1.000		18187494.03		A	1.0
5	☐	1.000		18256423.62		A	0.9
6	☐	1.000		17805007.79		A	1.1
7	☐	1.000		17673108.21		A	0.7
8	☐	1.000		15558471.43		A	0.8

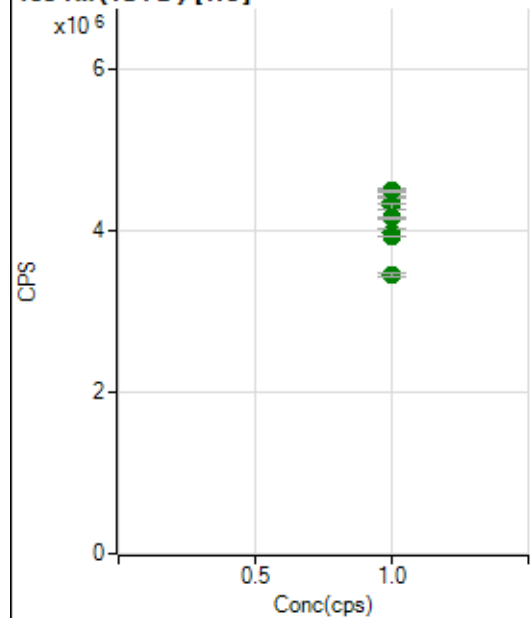
89 Y (ISTD) [He]



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	1.000		1771169.42		A	1.5
2	☐	1.000		1766937.68		A	1.4
3	☐	1.000		1712353.62		A	1.2
4	☐	1.000		1701412.44		A	0.6
5	☐	1.000		1671373.26		A	0.6
6	☐	1.000		1631324.64		A	1.0
7	☐	1.000		1634854.04		A	1.3
8	☐	1.000		1633080.77		A	1.5

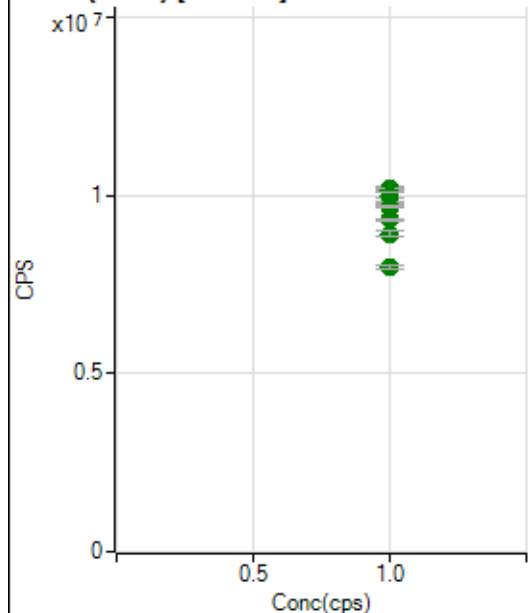
103 Rh (ISTD) [No Gas]

	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	1.000		9738412.84		A	0.4
2	☐	1.000		9599478.95		A	1.7
3	☐	1.000		9516233.19		A	1.1
4	☐	1.000		9302604.03		A	0.9
5	☐	1.000		9142652.99		A	0.6
6	☐	1.000		8864663.27		A	0.5
7	☐	1.000		8554105.43		A	0.6
8	☐	1.000		7050591.07		A	1.6

103 Rh (ISTD) [He]

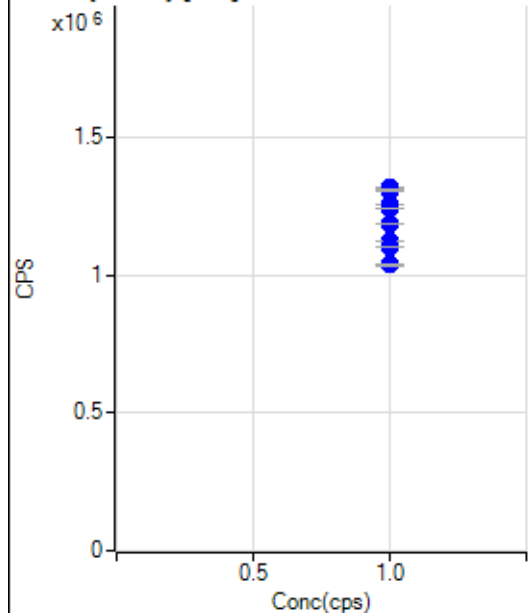
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	1.000		4484877.92		A	2.0
2	☐	1.000		4492590.84		A	0.8
3	☐	1.000		4359114.41		A	1.7
4	☐	1.000		4300602.54		A	1.7
5	☐	1.000		4156461.16		A	0.6
6	☐	1.000		3979134.35		A	2.2
7	☐	1.000		3935814.87		A	0.2
8	☐	1.000		3453577.59		A	0.9

115 In (ISTD) [No Gas]



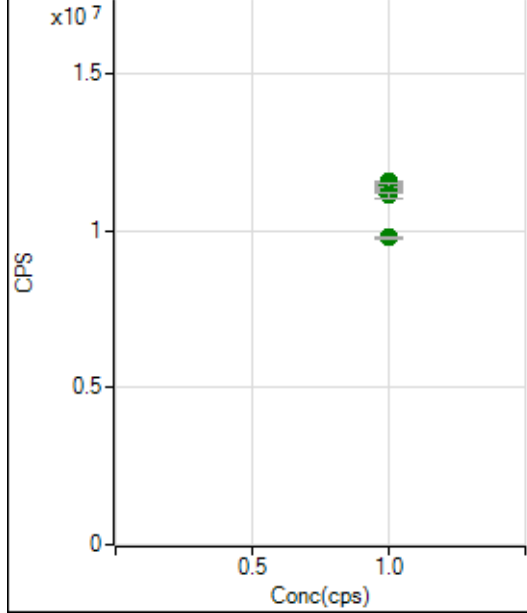
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	1.000		10175061.88		A	1.1
2	☐	1.000		10132852.17		A	0.7
3	☐	1.000		9986119.94		A	1.5
4	☐	1.000		9806837.35		A	0.5
5	☐	1.000		9669600.12		A	0.5
6	☐	1.000		9318206.77		A	0.5
7	☐	1.000		8910607.04		A	1.6
8	☐	1.000		7973292.26		A	1.2

115 In (ISTD) [He]



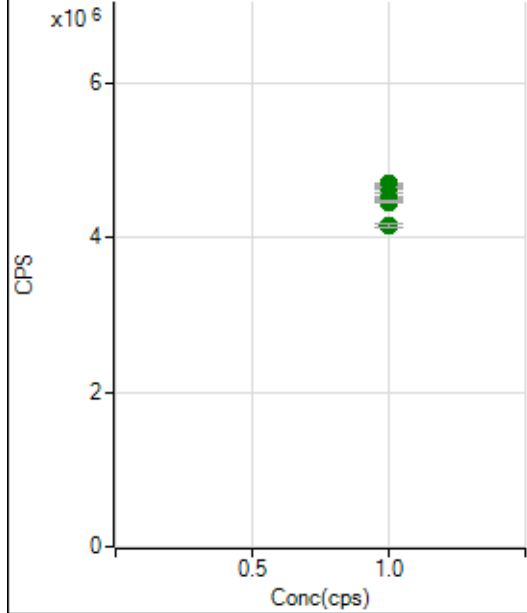
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	1.000		1317575.34		P	0.2
2	☐	1.000		1307303.57		P	0.5
3	☐	1.000		1258944.40		P	0.1
4	☐	1.000		1243190.63		P	0.2
5	☐	1.000		1189343.70		P	0.1
6	☐	1.000		1124238.41		P	0.5
7	☐	1.000		1040284.64		P	0.7
8	☐	1.000		1103389.26		P	0.4

159 Tb (ISTD) [No Gas]



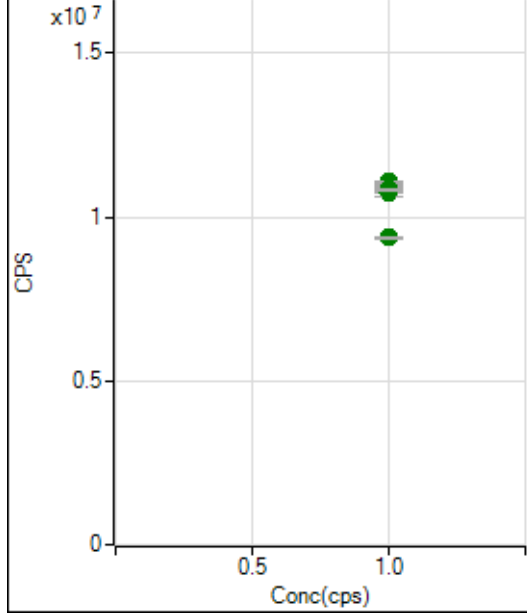
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	1.000		11565467.33		A	0.8
2	☐	1.000		11365944.00		A	1.3
3	☐	1.000		11406790.25		A	0.2
4	☐	1.000		11438812.19		A	1.5
5	☐	1.000		11477712.33		A	0.6
6	☐	1.000		11460528.72		A	0.9
7	☐	1.000		11127804.28		A	1.1
8	☐	1.000		9789440.69		A	0.8

159 Tb (ISTD) [He]



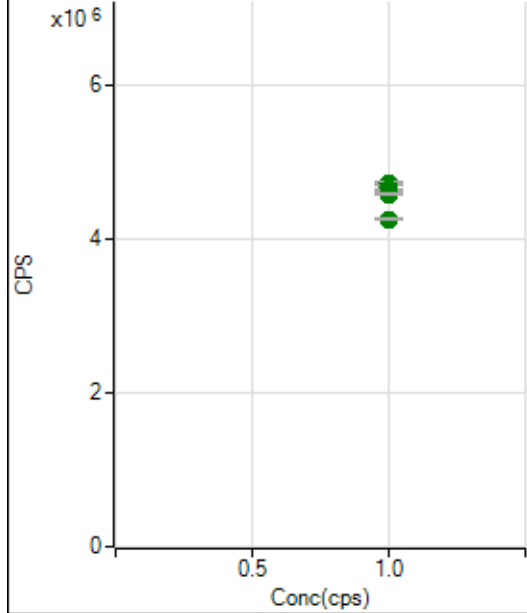
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	1.000		4696097.36		A	0.4
2	☐	1.000		4650031.84		A	0.6
3	☐	1.000		4511385.38		A	0.4
4	☐	1.000		4584245.87		A	0.3
5	☐	1.000		4510333.06		A	0.6
6	☐	1.000		4481366.53		A	0.1
7	☐	1.000		4459748.06		A	0.7
8	☐	1.000		4146852.09		A	1.2

165 Ho (ISTD) [No Gas]

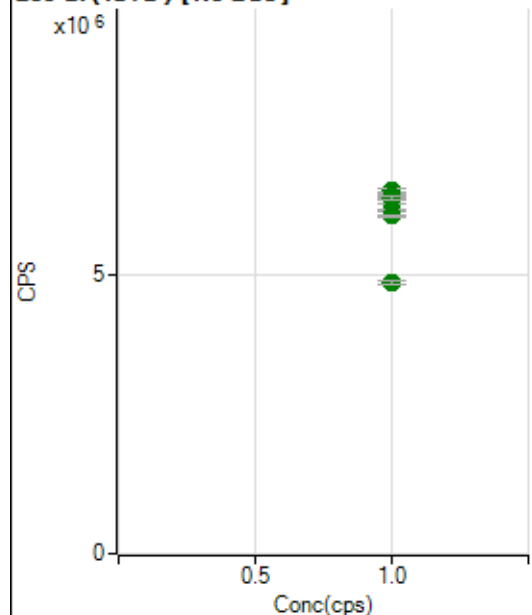


	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	1.000		11012439.42		A	1.0
2	☐	1.000		10879187.34		A	2.2
3	☐	1.000		10766909.28		A	2.1
4	☐	1.000		10956128.86		A	0.2
5	☐	1.000		11073947.34		A	0.7
6	☐	1.000		10857974.42		A	0.7
7	☐	1.000		10819834.28		A	0.2
8	☐	1.000		9379192.29		A	0.7

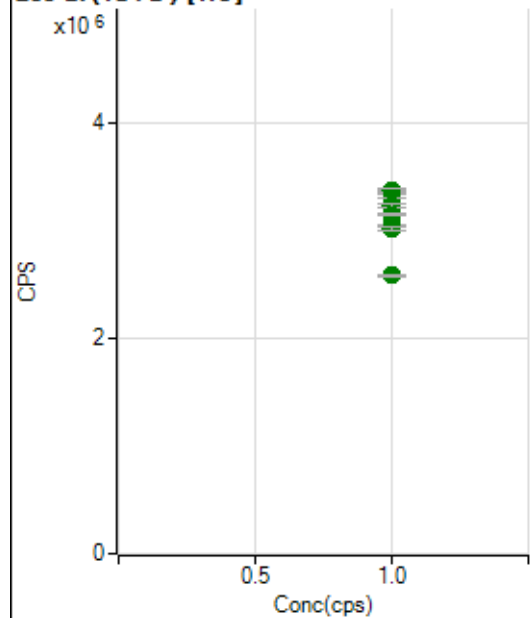
165 Ho (ISTD) [He]



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	1.000		4707372.43		A	0.6
2	☐	1.000		4709638.30		A	0.3
3	☐	1.000		4668729.86		A	1.0
4	☐	1.000		4714711.87		A	0.9
5	☐	1.000		4638122.40		A	0.5
6	☐	1.000		4589178.78		A	0.8
7	☐	1.000		4581907.12		A	0.5
8	☐	1.000		4260636.64		A	0.4

209 Bi (ISTD) [No Gas]

	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	1.000		6464979.21		A	0.0
2	☐	1.000		6488478.52		A	1.3
3	☐	1.000		6408671.30		A	0.7
4	☐	1.000		6311658.38		A	1.3
5	☐	1.000		6357281.99		A	0.9
6	☐	1.000		6147809.22		A	0.4
7	☐	1.000		6044424.91		A	0.7
8	☐	1.000		4848698.64		A	1.5

209 Bi (ISTD) [He]

	Rj ct	Conc.	Calc Conc.	CPS	Ratio	De t	RSD
1	☐	1.000		3366113.60		A	0.6
2	☐	1.000		3375384.57		A	1.3
3	☐	1.000		3308385.58		A	0.4
4	☐	1.000		3240046.23		A	1.0
5	☐	1.000		3156528.98		A	1.0
6	☐	1.000		3052544.88		A	0.6
7	☐	1.000		3016624.23		A	1.1
8	☐	1.000		2585906.87		A	0.4

US EPA Tune Check Report

Reviewed By:kare
On:4/8/2025 1:44:3
PM
Inst Id :P8
LB :LB135293

Operator Name Jaswal
Acq/Data Batch D:\Agilent\ICPMH\1\DATA\P8040325-MS.b
Acq. Date-Time 2025-04-03 13:41:36
Report Comment ---
Instrument Name G8403A SG19224459

[No Gas]

Sensitivity

Mass	Conc. [ug/l]	Count	CPS	Resp (Required) [cps/ug/l]	Resp (Flag)	RSD%	RSD% (Required)
9		93312	933117.48			0.942	5.000
24		425775	4257749.86			0.390	5.000
25		58792	587923.87			0.583	5.000
26		69474	694737.57			1.957	5.000
59		392341	3923409.83			1.790	5.000
113		44945	449454.12			0.535	5.000
115		567122	5671224.23			0.436	5.000
206		112221	1122208.70			1.078	5.000
207		94628	946280.89			1.086	5.000
208		233107	2331073.45			0.941	5.000
220		1	6.50			9.421	

Mass	RSD% (Flag)
9	
24	
25	
26	
59	
113	
115	
206	
207	
208	
220	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
9	93532	93997	91886	94021	93123
24	425921	424897	425054	424422	428580
25	58692	58592	58718	58566	59394
26	70585	67188	69653	69520	70423
59	389631	384388	403185	390131	394370
113	44747	44999	44845	44795	45341
115	566373	569002	565766	564197	570274
206	110278	112818	111836	112899	113274
207	94185	94218	93643	94773	96321
208	231719	233295	232235	231464	236823

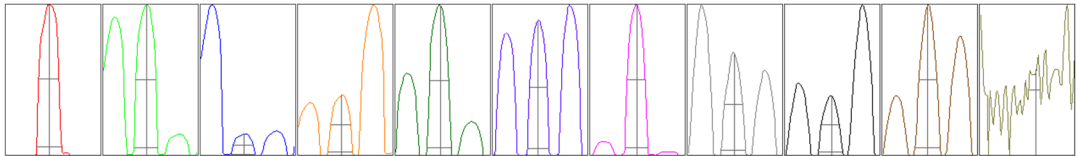
US EPA Tune Check Report

Reviewed By:kare
On:4/8/2025 1:44:
PM
Inst Id :P8
LB :LB135293

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
220	1	1	1	1	1

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
9	151109.30	8.90	8.90 - 9.10	
24	703354.27	23.90	23.90 - 24.10	
25	97244.22	24.90	24.90 - 25.10	
26	110986.55	25.90	25.90 - 26.10	
59	675955.19	58.95	58.90 - 59.10	
113	86687.25	112.95	112.90 - 113.10	
115	1064441.69	115.00	114.90 - 115.10	
206	208051.09	206.00	205.90 - 206.10	
207	173202.13	207.00	206.90 - 207.10	
208	434591.98	207.95	207.90 - 208.10	
220	0.85	220.30	-	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
9	0.65	0.784	0.900	
24	0.65	0.743	0.900	
25	0.64	0.759	0.900	
26	0.65	0.785	0.900	
59	0.61	0.778	0.900	
113	0.55	0.687	0.900	
115	0.56	0.732	0.900	
206	0.57	0.775	0.900	
207	0.57	0.777	0.900	
208	0.56	0.803	0.900	
220	0.35			

Integration Time [sec] 0.1
Acquisition Time [sec] 256.770000000002
Y Axis Linear

Tune Parameters

Plasma Parameters

Plasma Mode --- Nebulizer Gas 0.72 L/min Dilution Gas 0.40 L/min

US EPA Tune Check Report

Reviewed By:kare
On:4/8/2025 1:44:PM
Inst Id :P8
LB :LB135293

RF Power	1600 W	Option Gas	---	Auxiliary Gas	0.90
RF Matching	1.80 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0
Sample Depth	9.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	-6.0 V	Omega Lens	9.2 V	Deflect	13.0 V
Extract 2	-250.0 V	Cell Entrance	-30 V	Plate Bias	-50 V
Omega Bias	-100 V	Cell Exit	-50 V		

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	4.0 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	---	OctP RF	140 V		

QP Parameters

Mass Gain	105	Axis Gain	0.9967	QP Bias	-4.0 V
Mass Offset	126	Axis Offset	-0.02		

Hardware Settings

Torch

Torch H	0.6 mm	Torch V	-0.2 mm
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EM

Discriminator	4.5 mV	Analog HV	2208 V	Pulse HV	928 V
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[He]

Sensitivity

Mass	Conc. [ug/l]	Count	CPS	Resp (Required) [cps/ug/l]	Resp (Flag)	RSD%	RSD% (Required)
59		93973	939729.49			1.142	
89		82957	829570.69			0.682	
205		90028	900283.85			1.136	

Mass	RSD% (Flag)
59	
89	
205	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
59	93177	93420	93347	94147	95775
89	82622	82194	83356	83004	83609
205	89079	89166	91463	90670	89764

Integration Time [sec] 0.1

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas	0.72 L/min	Dilution Gas	0.40 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.80 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	9.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	-6.0 V	Omega Lens	9.2 V	Deflect	2.0 V
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US EPA Tune Check Report

Reviewed By:kare
On:4/8/2025 1:44:3
PM
Inst Id :P8
LB :LB135293

Extract 2	-250.0 V	Cell Entrance	-50 V	Plate Bias	-60 V
Omega Bias	-100 V	Cell Exit	-70 V		
Cell Parameters					
Use Gas	Yes	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	4.5 mL/min	OctP Bias	-18.0 V		
H2 Flow	---	OctP RF	200 V		
QP Parameters					
Mass Gain	105	Axis Gain	0.9967	QP Bias	-13.0 V
Mass Offset	126	Axis Offset	-0.02		
Hardware Settings					
Torch					
Torch H	0.6 mm	Torch V	-0.2 mm		
EM					
Discriminator	4.5 mV	Analog HV	2208 V	Pulse HV	928 V

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LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S0 Instrumnet Name : P8
Client Sample ID : S0 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:15:31 DataFile Name : 004CALB.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	0.28	-0.10	-0.18	0.00	N/A	ppb
Antimony	121-1	0.00	0.00	0.00	0.00	N/A	ppb
Arsenic	75-2	0.00	0.00	0.00	0.00	N/A	ppb
Barium	135-1	0.00	0.00	0.00	0.00	N/A	ppb
Barium	137-1	0.00	0.00	0.01	0.00	N/A	ppb
Beryllium	9-1	0.00	0.00	0.00	0.00	N/A	ppb
Bismuth	209-1				100		%
Bismuth	209-2				100		%
Bromine	81-1						cps
Cadmium	108-1	0.01	0.01	-0.02	0.00	N/A	ppb
Cadmium	106-1	-0.09	-0.21	0.30	0.00	N/A	ppb
Cadmium	111-1	-0.01	-0.02	0.03	0.00	N/A	ppb
Calcium	43-1	0.29	-0.22	-0.07	0.00	N/A	ppb
Calcium	44-1	-0.29	0.25	0.04	0.00	N/A	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	-0.01	0.00	0.02	0.00	N/A	ppb
Cobalt	59-2	0.00	0.00	0.00	0.00	N/A	ppb
Copper	63-2	-0.02	-0.01	0.03	0.00	N/A	ppb
Dysprosium	156-1						cps
Dysprosium	156-2						cps
Erbium	164-1						cps
Erbium	164-2						cps
Gadolinium	160-1						cps
Gadolinium	160-2						cps
Holmium	165-1				100		%
Holmium	165-2				100		%
Indium	115-1				100		%
Indium	115-2				100		%
Iron	54-2	0.00	-0.19	0.19	0.00	N/A	ppb
Iron	56-2	-0.21	0.04	0.17	0.00	N/A	ppb
Iron	57-2	-0.50	0.24	0.26	0.00	N/A	ppb
Krypton	83-1						cps
Lead	206-1	0.00	0.00	0.00	0.00	N/A	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S0 Instrumnet Name : P8
Client Sample ID : S0 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:15:31 DataFile Name : 004CALB.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	0.00	0.00	0.00	0.00	N/A	ppb
Lead	208-1	0.00	0.00	0.00	0.00	N/A	ppb
Lithium	6-1				100		%
Magnesium	24-2	-0.04	-0.08	0.12	0.00	N/A	ppb
Manganese	55-2	-0.06	0.00	0.05	0.00	N/A	ppb
Molybdenum	94-1	0.00	0.00	0.00	0.00	N/A	ppb
Molybdenum	95-1	0.00	0.00	0.00	0.00	N/A	ppb
Molybdenum	96-1	0.00	0.00	0.00	0.00	N/A	ppb
Molybdenum	97-1	0.00	0.00	0.00	0.00	N/A	ppb
Molybdenum	98-1	0.00	0.00	0.00	0.00	N/A	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	-0.02	0.00	0.02	0.00	N/A	ppb
Phosphorus	31-2	-19.57	-16.79	-14.45	-16.94		ppb
Potassium	39-2	0.82	-0.71	-0.11	0.00	N/A	ppb
Rhodium	103-1				100		%
Rhodium	103-2				100		%
Scandium	45-1				100		%
Scandium	45-2				100		%
Selenium	82-1	0.06	-0.05	-0.01	0.00	N/A	ppb
Selenium	77-2	0.00	0.00	0.00	0.00	N/A	ppb
Selenium	78-2	0.28	0.05	-0.33	0.00	N/A	ppb
Silicon	28-1	0.02	0.02	-0.04	0.00	N/A	ppb
Silver	107-1	0.00	0.00	0.00	0.00	N/A	ppb
Silver	109-1	0.00	0.00	0.00	0.00	N/A	ppb
Sodium	23-2	0.64	-0.08	-0.56	0.00	N/A	ppb
Strontium	86-1	0.00	0.00	0.00	0.00	N/A	ppb
Strontium	88-1	0.00	0.00	0.00	0.00	N/A	ppb
Sulfur	34-1	-94.49	-7.44	0.97	-33.65		ppb
Terbium	159-1				100		%
Terbium	159-2				100		%
Thallium	203-1	0.00	0.00	0.00	0.00	N/A	ppb
Thallium	205-1	0.00	0.00	0.00	0.00	N/A	ppb
Tin	118-1	0.00	0.00	0.00	0.00	N/A	ppb
Titanium	47-1	0.01	-0.01	0.00	0.00	N/A	ppb
Uranium	238-1	0.00	0.00	0.00	0.00	N/A	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S0 Instrumnet Name : P8
Client Sample ID : S0 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:15:31 DataFile Name : 004CALB.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	0.00	0.00	0.00	0.00	N/A	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				100		%
Yttrium	89-2				100		%
Zinc	66-2	-0.07	0.02	0.05	0.00	N/A	ppb
Zirconium	90-1	0.00	0.00	0.00	0.00	N/A	ppb
Zirconium	91-1	0.00	0.00	0.00	0.00	N/A	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S2 Instrumnet Name : P8
Client Sample ID : S2 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:22:15 DataFile Name : 006CAL.S.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	23.37	20.99	17.79	20.72	13.52	ppb
Antimony	121-1	2.21	2.27	2.21	2.23	1.62	ppb
Arsenic	75-2	1.19	1.09	0.83	1.03	17.95	ppb
Barium	135-1	10.59	10.84	10.80	10.74	1.28	ppb
Barium	137-1	10.81	11.04	10.72	10.86	1.52	ppb
Beryllium	9-1	1.22	1.22	1.26	1.23	1.86	ppb
Bismuth	209-1				100		%
Bismuth	209-2				100		%
Bromine	81-1						cps
Cadmium	108-1	1.23	1.12	1.05	1.13	7.92	ppb
Cadmium	106-1	0.90	1.39	1.31	1.20	21.86	ppb
Cadmium	111-1	1.12	1.20	1.21	1.18	4.14	ppb
Calcium	43-1	583.26	578.07	574.95	578.76	0.72	ppb
Calcium	44-1	571.69	581.41	565.40	572.83	1.41	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	2.27	2.10	1.78	2.05	12.06	ppb
Cobalt	59-2	1.23	1.12	0.96	1.10	12.65	ppb
Copper	63-2	2.17	2.07	1.78	2.01	9.99	ppb
Dysprosium	156-1						cps
Dysprosium	156-2						cps
Erbium	164-1						cps
Erbium	164-2						cps
Gadolinium	160-1						cps
Gadolinium	160-2						cps
Holmium	165-1				99		%
Holmium	165-2				100		%
Indium	115-1				100		%
Indium	115-2				99		%
Iron	54-2	62.14	56.11	48.16	55.47	12.64	ppb
Iron	56-2	60.74	54.39	45.09	53.41	14.74	ppb
Iron	57-2	58.97	52.32	45.64	52.31	12.74	ppb
Krypton	83-1						cps
Lead	206-1	1.04	1.01	1.01	1.02	1.94	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S2 Instrumnet Name : P8
Client Sample ID : S2 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:22:15 DataFile Name : 006CAL.S.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	1.07	1.06	1.04	1.06	1.30	ppb
Lead	208-1	1.04	1.04	1.02	1.03	0.99	ppb
Lithium	6-1				99		%
Magnesium	24-2	609.92	555.37	480.79	548.69	11.81	ppb
Manganese	55-2	0.99	0.97	0.85	0.94	7.84	ppb
Molybdenum	94-1	6.38	6.45	6.31	6.38	1.06	ppb
Molybdenum	95-1	5.45	5.29	5.32	5.35	1.58	ppb
Molybdenum	96-1	5.39	5.32	5.35	5.35	0.67	ppb
Molybdenum	97-1	5.45	5.42	5.38	5.42	0.68	ppb
Molybdenum	98-1	5.35	5.22	5.27	5.28	1.31	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	1.11	1.01	0.90	1.01	10.47	ppb
Phosphorus	31-2	14.87	19.81	16.13	16.94	15.16	ppb
Potassium	39-2	475.48	465.04	422.57	454.36	6.17	ppb
Rhodium	103-1				99		%
Rhodium	103-2				100		%
Scandium	45-1				99		%
Scandium	45-2				99		%
Selenium	82-1	6.03	5.41	5.75	5.73	5.41	ppb
Selenium	77-2	5.85	5.99	6.35	6.06	4.25	ppb
Selenium	78-2	5.41	5.72	4.52	5.22	11.92	ppb
Silicon	28-1	1.29	1.29	1.47	1.35	7.69	ppb
Silver	107-1	1.10	1.16	1.15	1.14	2.77	ppb
Silver	109-1	1.12	1.15	1.14	1.14	1.56	ppb
Sodium	23-2	609.48	581.16	513.04	567.89	8.73	ppb
Strontium	86-1	1.14	1.08	1.10	1.10	2.65	ppb
Strontium	88-1	1.12	1.11	1.11	1.11	0.47	ppb
Sulfur	34-1	36.12	-1.22	66.06	33.65	100.17	ppb
Terbium	159-1				98		%
Terbium	159-2				99		%
Thallium	203-1	1.03	1.03	1.02	1.03	0.59	ppb
Thallium	205-1	1.02	1.07	1.05	1.04	2.34	ppb
Tin	118-1	5.72	5.80	5.63	5.72	1.48	ppb
Titanium	47-1	5.49	5.71	5.80	5.66	2.81	ppb
Uranium	238-1	1.03	1.05	1.02	1.03	1.72	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S2 Instrumnet Name : P8
Client Sample ID : S2 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:22:15 DataFile Name : 006CALS.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	5.72	5.26	4.40	5.13	13.06	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				100		%
Yttrium	89-2				100		%
Zinc	66-2	4.77	4.49	3.67	4.31	13.30	ppb
Zirconium	90-1	1.05	1.06	1.07	1.06	0.97	ppb
Zirconium	91-1	1.06	1.06	1.05	1.06	0.63	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S3 Instrumnet Name : P8
Client Sample ID : S3 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:25:36 DataFile Name : 007CALB.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	1064.95	1061.01	1030.42	1052.13	1.80	ppb
Antimony	121-1	52.44	52.30	52.95	52.56	0.64	ppb
Arsenic	75-2	51.14	49.81	50.52	50.49	1.32	ppb
Barium	135-1	251.35	249.45	248.25	249.68	0.63	ppb
Barium	137-1	249.64	249.92	248.09	249.22	0.40	ppb
Beryllium	9-1	54.90	55.28	54.19	54.79	1.01	ppb
Bismuth	209-1				99		%
Bismuth	209-2				98		%
Bromine	81-1						cps
Cadmium	108-1	51.74	51.77	51.43	51.65	0.36	ppb
Cadmium	106-1	51.64	51.37	52.52	51.84	1.16	ppb
Cadmium	111-1	50.74	51.18	51.38	51.10	0.64	ppb
Calcium	43-1	5182.38	5235.98	5297.33	5238.56	1.10	ppb
Calcium	44-1	5025.12	5174.43	5117.47	5105.67	1.48	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	51.42	51.73	50.91	51.35	0.81	ppb
Cobalt	59-2	53.62	53.02	52.45	53.03	1.10	ppb
Copper	63-2	553.82	550.69	540.02	548.17	1.32	ppb
Dysprosium	156-1						cps
Dysprosium	156-2						cps
Erbium	164-1						cps
Erbium	164-2						cps
Gadolinium	160-1						cps
Gadolinium	160-2						cps
Holmium	165-1				98		%
Holmium	165-2				99		%
Indium	115-1				98		%
Indium	115-2				96		%
Iron	54-2	2790.82	2771.66	2703.40	2755.29	1.67	ppb
Iron	56-2	2718.78	2745.41	2666.67	2710.28	1.48	ppb
Iron	57-2	2709.25	2701.55	2669.51	2693.44	0.78	ppb
Krypton	83-1						cps
Lead	206-1	237.41	246.49	244.71	242.87	1.98	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S3 Instrumnet Name : P8
Client Sample ID : S3 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:25:36 DataFile Name : 007CALB.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	243.70	243.40	245.49	244.20	0.46	ppb
Lead	208-1	241.36	243.26	244.70	243.11	0.69	ppb
Lithium	6-1				99		%
Magnesium	24-2	5398.20	5372.24	5383.54	5384.66	0.24	ppb
Manganese	55-2	533.98	531.66	518.91	528.18	1.54	ppb
Molybdenum	94-1	492.42	481.79	498.66	490.96	1.74	ppb
Molybdenum	95-1	483.48	482.39	487.15	484.34	0.51	ppb
Molybdenum	96-1	482.34	482.11	488.78	484.41	0.78	ppb
Molybdenum	97-1	496.95	490.49	498.04	495.16	0.82	ppb
Molybdenum	98-1	496.11	483.37	486.29	488.59	1.37	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	53.63	53.27	52.72	53.21	0.85	ppb
Phosphorus	31-2	1082.31	1077.94	1039.05	1066.43	2.23	ppb
Potassium	39-2	2171.08	2155.39	2157.46	2161.31	0.39	ppb
Rhodium	103-1				98		%
Rhodium	103-2				97		%
Scandium	45-1				98		%
Scandium	45-2				96		%
Selenium	82-1	51.75	51.56	52.01	51.77	0.44	ppb
Selenium	77-2	54.97	50.57	54.10	53.22	4.38	ppb
Selenium	78-2	55.00	53.56	53.30	53.95	1.70	ppb
Silicon	28-1	56.88	57.09	57.68	57.21	0.73	ppb
Silver	107-1	52.95	53.19	54.65	53.60	1.72	ppb
Silver	109-1	52.94	54.10	53.65	53.56	1.10	ppb
Sodium	23-2	5332.96	5317.14	5371.48	5340.53	0.52	ppb
Strontium	86-1	48.61	48.80	49.47	48.96	0.92	ppb
Strontium	88-1	49.65	48.76	49.60	49.33	1.02	ppb
Sulfur	34-1	914.04	950.94	1230.80	1031.93	16.79	ppb
Terbium	159-1				99		%
Terbium	159-2				96		%
Thallium	203-1	47.17	47.99	47.77	47.64	0.90	ppb
Thallium	205-1	47.78	49.00	49.46	48.75	1.78	ppb
Tin	118-1	50.27	50.09	51.60	50.65	1.63	ppb
Titanium	47-1	490.52	505.84	509.27	501.88	1.99	ppb
Uranium	238-1	46.86	47.10	47.45	47.14	0.63	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S3 Instrumnet Name : P8
Client Sample ID : S3 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:25:36 DataFile Name : 007CALB.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	52.47	51.65	51.06	51.73	1.36	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				98		%
Yttrium	89-2				97		%
Zinc	66-2	531.26	533.23	525.90	530.13	0.72	ppb
Zirconium	90-1	49.05	49.72	49.30	49.36	0.68	ppb
Zirconium	91-1	48.02	47.87	48.50	48.13	0.68	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S4 Instrumnet Name : P8
Client Sample ID : S4 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:28:45 DataFile Name : 008CAL.S.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	2593.72	2574.74	2585.29	2584.58	0.37	ppb
Antimony	121-1	127.66	125.55	128.72	127.31	1.27	ppb
Arsenic	75-2	124.44	127.21	125.60	125.75	1.11	ppb
Barium	135-1	621.93	616.97	605.50	614.80	1.37	ppb
Barium	137-1	608.92	606.72	606.03	607.23	0.25	ppb
Beryllium	9-1	124.73	122.51	128.68	125.31	2.50	ppb
Bismuth	209-1				98		%
Bismuth	209-2				96		%
Bromine	81-1						cps
Cadmium	108-1	127.92	126.01	127.35	127.09	0.77	ppb
Cadmium	106-1	130.05	126.07	127.03	127.72	1.63	ppb
Cadmium	111-1	125.84	126.02	124.36	125.41	0.73	ppb
Calcium	43-1	13105.43	12828.37	12692.13	12875.31	1.64	ppb
Calcium	44-1	12700.00	12634.49	12639.97	12658.15	0.29	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	128.17	128.33	129.56	128.69	0.59	ppb
Cobalt	59-2	136.70	135.45	134.06	135.40	0.98	ppb
Copper	63-2	1347.97	1348.58	1364.38	1353.65	0.69	ppb
Dysprosium	156-1						cps
Dysprosium	156-2						cps
Erbium	164-1						cps
Erbium	164-2						cps
Gadolinium	160-1						cps
Gadolinium	160-2						cps
Holmium	165-1				99		%
Holmium	165-2				100		%
Indium	115-1				96		%
Indium	115-2				94		%
Iron	54-2	6988.62	6871.51	7037.58	6965.90	1.23	ppb
Iron	56-2	6708.81	6734.79	6800.20	6747.93	0.70	ppb
Iron	57-2	6720.95	6746.86	6750.55	6739.45	0.24	ppb
Krypton	83-1						cps
Lead	206-1	626.39	620.16	604.50	617.02	1.83	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S4 Instrumnet Name : P8
Client Sample ID : S4 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:28:45 DataFile Name : 008CAL.S.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	619.03	606.09	610.26	611.79	1.08	ppb
Lead	208-1	618.89	610.10	607.83	612.28	0.95	ppb
Lithium	6-1				99		%
Magnesium	24-2	13319.88	13302.90	13270.88	13297.89	0.19	ppb
Manganese	55-2	1309.45	1287.39	1293.17	1296.67	0.88	ppb
Molybdenum	94-1	1197.49	1221.00	1225.84	1214.78	1.25	ppb
Molybdenum	95-1	1176.76	1196.05	1221.92	1198.25	1.89	ppb
Molybdenum	96-1	1186.77	1205.30	1212.92	1201.66	1.12	ppb
Molybdenum	97-1	1223.16	1220.63	1234.52	1226.10	0.60	ppb
Molybdenum	98-1	1209.17	1210.31	1217.83	1212.44	0.39	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	131.67	129.96	129.86	130.50	0.78	ppb
Phosphorus	31-2	2710.35	2721.24	2671.70	2701.10	0.96	ppb
Potassium	39-2	5503.26	5368.11	5283.66	5385.01	2.06	ppb
Rhodium	103-1				96		%
Rhodium	103-2				96		%
Scandium	45-1				95		%
Scandium	45-2				94		%
Selenium	82-1	124.97	127.41	127.44	126.61	1.12	ppb
Selenium	77-2	126.06	120.51	135.09	127.22	5.79	ppb
Selenium	78-2	125.08	123.55	121.13	123.25	1.62	ppb
Silicon	28-1	139.94	136.44	138.25	138.21	1.27	ppb
Silver	107-1	128.24	127.56	130.42	128.74	1.16	ppb
Silver	109-1	130.27	127.62	130.45	129.45	1.23	ppb
Sodium	23-2	13282.38	13202.23	13259.91	13248.17	0.31	ppb
Strontium	86-1	123.71	123.74	127.67	125.04	1.82	ppb
Strontium	88-1	120.67	121.08	124.56	122.10	1.75	ppb
Sulfur	34-1	2583.60	2349.41	2382.45	2438.49	5.20	ppb
Terbium	159-1				99		%
Terbium	159-2				98		%
Thallium	203-1	126.23	124.24	122.99	124.48	1.31	ppb
Thallium	205-1	123.51	121.41	122.74	122.55	0.86	ppb
Tin	118-1	128.15	124.72	123.85	125.57	1.81	ppb
Titanium	47-1	1258.96	1224.63	1229.08	1237.56	1.51	ppb
Uranium	238-1	118.70	118.24	119.35	118.76	0.47	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S4 Instrumnet Name : P8
Client Sample ID : S4 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:28:45 DataFile Name : 008CALS.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	129.05	128.56	128.64	128.75	0.20	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				98		%
Yttrium	89-2				96		%
Zinc	66-2	1348.35	1318.56	1340.85	1335.92	1.16	ppb
Zirconium	90-1	120.24	121.56	122.08	121.29	0.78	ppb
Zirconium	91-1	120.31	123.20	122.06	121.86	1.19	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S5 Instrumnet Name : P8
Client Sample ID : S5 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:31:33 DataFile Name : 009CAL.S.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	5179.55	5063.35	5090.27	5111.06	1.19	ppb
Antimony	121-1	255.53	252.81	252.51	253.62	0.66	ppb
Arsenic	75-2	247.33	251.32	247.01	248.55	0.97	ppb
Barium	135-1	1234.53	1226.55	1234.19	1231.75	0.37	ppb
Barium	137-1	1217.70	1230.08	1233.49	1227.09	0.68	ppb
Beryllium	9-1	245.20	251.82	250.90	249.31	1.44	ppb
Bismuth	209-1				98		%
Bismuth	209-2				94		%
Bromine	81-1						cps
Cadmium	108-1	255.56	259.44	247.57	254.19	2.38	ppb
Cadmium	106-1	258.25	252.18	250.78	253.74	1.56	ppb
Cadmium	111-1	254.37	256.99	253.54	254.97	0.71	ppb
Calcium	43-1	25767.14	25666.89	25312.75	25582.26	0.93	ppb
Calcium	44-1	25435.97	25436.17	24782.52	25218.22	1.50	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	264.88	259.41	260.83	261.71	1.09	ppb
Cobalt	59-2	267.66	264.67	257.47	263.27	1.99	ppb
Copper	63-2	2691.49	2623.93	2639.96	2651.79	1.33	ppb
Dysprosium	156-1						cps
Dysprosium	156-2						cps
Erbium	164-1						cps
Erbium	164-2						cps
Gadolinium	160-1						cps
Gadolinium	160-2						cps
Holmium	165-1				101		%
Holmium	165-2				99		%
Indium	115-1				95		%
Indium	115-2				90		%
Iron	54-2	13882.13	13782.96	13636.09	13767.06	0.90	ppb
Iron	56-2	13623.46	13430.21	13270.13	13441.27	1.32	ppb
Iron	57-2	13953.76	13752.42	13534.74	13746.97	1.52	ppb
Krypton	83-1						cps
Lead	206-1	1243.28	1233.26	1212.77	1229.77	1.26	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S5 Instrumnet Name : P8
Client Sample ID : S5 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:31:33 DataFile Name : 009CAL.S.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	1228.64	1235.26	1229.22	1231.04	0.30	ppb
Lead	208-1	1228.62	1234.64	1222.88	1228.71	0.48	ppb
Lithium	6-1				98		%
Magnesium	24-2	26595.05	26256.21	26078.83	26310.03	1.00	ppb
Manganese	55-2	2620.92	2573.77	2572.93	2589.21	1.06	ppb
Molybdenum	94-1	2455.49	2439.78	2449.66	2448.31	0.32	ppb
Molybdenum	95-1	2416.50	2421.83	2417.34	2418.56	0.12	ppb
Molybdenum	96-1	2429.10	2401.33	2417.46	2415.96	0.58	ppb
Molybdenum	97-1	2435.41	2383.25	2408.89	2409.18	1.08	ppb
Molybdenum	98-1	2419.06	2390.35	2421.01	2410.14	0.71	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	256.49	253.17	252.99	254.22	0.78	ppb
Phosphorus	31-2	5259.39	5204.24	5212.14	5225.26	0.57	ppb
Potassium	39-2	10581.79	10574.19	10422.64	10526.20	0.85	ppb
Rhodium	103-1				94		%
Rhodium	103-2				93		%
Scandium	45-1				96		%
Scandium	45-2				92		%
Selenium	82-1	251.79	250.21	247.02	249.67	0.97	ppb
Selenium	77-2	254.55	260.41	259.09	258.02	1.19	ppb
Selenium	78-2	250.79	252.37	252.27	251.81	0.35	ppb
Silicon	28-1	272.65	275.41	268.16	272.08	1.34	ppb
Silver	107-1	261.97	262.07	256.73	260.26	1.17	ppb
Silver	109-1	259.23	256.51	251.04	255.59	1.63	ppb
Sodium	23-2	26507.04	26248.64	25998.00	26251.23	0.97	ppb
Strontium	86-1	248.97	245.12	252.89	248.99	1.56	ppb
Strontium	88-1	249.73	246.36	245.69	247.26	0.87	ppb
Sulfur	34-1	5042.63	4827.44	4841.14	4903.74	2.46	ppb
Terbium	159-1				99		%
Terbium	159-2				96		%
Thallium	203-1	242.84	243.51	243.03	243.13	0.14	ppb
Thallium	205-1	245.26	241.89	238.85	242.00	1.32	ppb
Tin	118-1	249.71	250.95	243.75	248.14	1.55	ppb
Titanium	47-1	2479.54	2507.13	2434.63	2473.77	1.48	ppb
Uranium	238-1	241.94	241.51	240.90	241.45	0.22	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S5 Instrumnet Name : P8
Client Sample ID : S5 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:31:33 DataFile Name : 009CALS.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	257.31	257.67	257.02	257.33	0.13	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				98		%
Yttrium	89-2				94		%
Zinc	66-2	2623.45	2559.73	2558.10	2580.42	1.44	ppb
Zirconium	90-1	245.01	244.54	243.80	244.45	0.25	ppb
Zirconium	91-1	247.35	248.01	246.91	247.42	0.22	ppb

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LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S6 Instrumnet Name : P8
Client Sample ID : S6 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:34:39 DataFile Name : 010CAL.S.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	10443.33	10290.92	10282.38	10338.88	0.88	ppb
Antimony	121-1	496.91	501.97	504.28	501.05	0.75	ppb
Arsenic	75-2	507.22	516.63	505.28	509.71	1.19	ppb
Barium	135-1	2460.17	2487.03	2459.39	2468.86	0.64	ppb
Barium	137-1	2442.58	2449.20	2472.53	2454.77	0.64	ppb
Beryllium	9-1	506.15	515.36	515.23	512.25	1.03	ppb
Bismuth	209-1				95		%
Bismuth	209-2				91		%
Bromine	81-1						cps
Cadmium	108-1	500.68	497.43	507.96	502.03	1.07	ppb
Cadmium	106-1	499.57	505.17	506.44	503.73	0.73	ppb
Cadmium	111-1	501.42	503.74	501.22	502.13	0.28	ppb
Calcium	43-1	51781.76	51346.81	53085.75	52071.44	1.74	ppb
Calcium	44-1	51102.78	51101.54	51947.74	51384.02	0.95	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	515.62	518.40	523.60	519.21	0.78	ppb
Cobalt	59-2	526.10	528.34	519.36	524.60	0.89	ppb
Copper	63-2	5246.54	5314.91	5219.06	5260.17	0.94	ppb
Dysprosium	156-1						cps
Dysprosium	156-2						cps
Erbium	164-1						cps
Erbium	164-2						cps
Gadolinium	160-1						cps
Gadolinium	160-2						cps
Holmium	165-1				99		%
Holmium	165-2				97		%
Indium	115-1				92		%
Indium	115-2				85		%
Iron	54-2	27220.27	27506.40	27040.36	27255.68	0.86	ppb
Iron	56-2	26906.47	26818.54	27033.23	26919.42	0.40	ppb
Iron	57-2	26923.00	26604.27	27385.13	26970.80	1.46	ppb
Krypton	83-1						cps
Lead	206-1	2684.23	2672.21	2692.94	2683.13	0.39	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S6 Instrumnet Name : P8
Client Sample ID : S6 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:34:39 DataFile Name : 010CAL.S.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	2654.12	2648.42	2683.18	2661.91	0.70	ppb
Lead	208-1	2664.72	2641.93	2698.40	2668.35	1.06	ppb
Lithium	6-1				94		%
Magnesium	24-2	52377.04	52729.32	52398.11	52501.49	0.38	ppb
Manganese	55-2	5154.16	5228.74	5207.73	5196.87	0.74	ppb
Molybdenum	94-1	5030.38	5083.99	5024.08	5046.15	0.65	ppb
Molybdenum	95-1	4988.29	5093.07	4963.75	5015.04	1.37	ppb
Molybdenum	96-1	4993.24	5142.01	4949.48	5028.24	2.01	ppb
Molybdenum	97-1	4991.94	5158.19	4980.50	5043.55	1.97	ppb
Molybdenum	98-1	5002.97	5060.77	4916.10	4993.28	1.46	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	596.97	598.74	608.19	601.30	1.00	ppb
Phosphorus	31-2	10371.69	10401.47	10372.39	10381.85	0.16	ppb
Potassium	39-2	21029.47	21313.59	20735.01	21026.02	1.38	ppb
Rhodium	103-1				91		%
Rhodium	103-2				89		%
Scandium	45-1				93		%
Scandium	45-2				92		%
Selenium	82-1	512.52	520.22	506.97	513.24	1.30	ppb
Selenium	77-2	499.56	513.94	504.37	505.95	1.45	ppb
Selenium	78-2	506.00	515.67	515.17	512.28	1.06	ppb
Silicon	28-1	529.50	531.59	526.43	529.17	0.49	ppb
Silver	107-1	508.02	511.90	509.25	509.72	0.39	ppb
Silver	109-1	500.90	508.83	510.77	506.83	1.03	ppb
Sodium	23-2	52767.88	52400.97	52560.76	52576.54	0.35	ppb
Strontium	86-1	503.13	504.14	506.83	504.70	0.38	ppb
Strontium	88-1	502.41	510.68	504.67	505.92	0.85	ppb
Sulfur	34-1	10074.71	10040.02	9901.53	10005.42	0.92	ppb
Terbium	159-1				99		%
Terbium	159-2				95		%
Thallium	203-1	511.31	503.85	501.03	505.40	1.05	ppb
Thallium	205-1	504.90	500.67	500.55	502.04	0.49	ppb
Tin	118-1	494.26	502.61	509.01	501.96	1.47	ppb
Titanium	47-1	5022.57	5074.19	5084.86	5060.54	0.66	ppb
Uranium	238-1	503.10	499.50	503.85	502.15	0.46	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S6 Instrumnet Name : P8
Client Sample ID : S6 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:34:39 DataFile Name : 010CALS.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	514.68	519.71	519.96	518.12	0.58	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				96		%
Yttrium	89-2				92		%
Zinc	66-2	7072.88	7066.01	6909.25	7016.05	1.32	ppb
Zirconium	90-1	500.59	506.22	500.33	502.38	0.66	ppb
Zirconium	91-1	499.50	512.81	502.48	504.93	1.38	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S7 Instrumnet Name : P8
Client Sample ID : S7 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:37:24 DataFile Name : 011CAL.S.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	19381.78	19540.38	19462.79	19461.65	0.41	ppb
Antimony	121-1	994.85	993.51	1006.10	998.15	0.69	ppb
Arsenic	75-2	990.90	990.87	1004.40	995.39	0.78	ppb
Barium	135-1	5030.70	4959.18	5074.38	5021.42	1.16	ppb
Barium	137-1	4982.00	5027.36	5082.44	5030.60	1.00	ppb
Beryllium	9-1	986.52	1001.92	992.87	993.77	0.78	ppb
Bismuth	209-1				93		%
Bismuth	209-2				90		%
Bromine	81-1						cps
Cadmium	108-1	1008.97	981.48	1002.34	997.60	1.44	ppb
Cadmium	106-1	1004.52	989.50	996.30	996.77	0.75	ppb
Cadmium	111-1	995.76	985.29	1011.72	997.59	1.33	ppb
Calcium	43-1	101173.50	102447.73	103495.07	102372.10	1.14	ppb
Calcium	44-1	101178.61	100600.79	102213.63	101331.01	0.81	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	986.41	982.33	992.09	986.94	0.50	ppb
Cobalt	59-2	993.21	976.42	979.16	982.93	0.92	ppb
Copper	63-2	9839.54	9882.91	9727.37	9816.60	0.82	ppb
Dysprosium	156-1						cps
Dysprosium	156-2						cps
Erbium	164-1						cps
Erbium	164-2						cps
Gadolinium	160-1						cps
Gadolinium	160-2						cps
Holmium	165-1				98		%
Holmium	165-2				97		%
Indium	115-1				88		%
Indium	115-2				79		%
Iron	54-2	51828.35	51495.35	51330.07	51551.25	0.49	ppb
Iron	56-2	50760.05	51315.40	51302.41	51125.95	0.62	ppb
Iron	57-2	51585.21	50897.14	51376.77	51286.37	0.69	ppb
Krypton	83-1						cps
Lead	206-1	4858.21	4979.44	4906.90	4914.85	1.24	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S7 Instrumnet Name : P8
Client Sample ID : S7 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:37:24 DataFile Name : 011CAL.S.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	4889.61	4988.17	4899.40	4925.73	1.10	ppb
Lead	208-1	4888.19	4955.75	4925.29	4923.08	0.69	ppb
Lithium	6-1				92		%
Magnesium	24-2	99917.46	99750.04	99449.55	99705.68	0.24	ppb
Manganese	55-2	9825.26	9898.53	9892.27	9872.02	0.41	ppb
Molybdenum	94-1	9832.53	9914.03	10237.54	9994.70	2.14	ppb
Molybdenum	95-1	9995.88	9842.59	10221.81	10020.09	1.90	ppb
Molybdenum	96-1	9857.36	10013.58	10170.18	10013.71	1.56	ppb
Molybdenum	97-1	9893.33	9996.47	10122.68	10004.16	1.15	ppb
Molybdenum	98-1	9995.64	9924.72	10172.91	10031.09	1.27	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	953.79	943.46	945.10	947.45	0.59	ppb
Phosphorus	31-2	19741.72	19777.11	19654.07	19724.30	0.32	ppb
Potassium	39-2	40761.81	40594.24	40719.02	40691.69	0.21	ppb
Rhodium	103-1				88		%
Rhodium	103-2				88		%
Scandium	45-1				93		%
Scandium	45-2				94		%
Selenium	82-1	983.04	986.36	1010.11	993.17	1.49	ppb
Selenium	77-2	1004.73	985.62	993.37	994.58	0.97	ppb
Selenium	78-2	990.42	994.75	995.11	993.43	0.26	ppb
Silicon	28-1	973.93	961.85	998.13	977.97	1.89	ppb
Silver	107-1	1002.36	980.90	992.51	991.93	1.08	ppb
Silver	109-1	1001.30	979.43	1002.62	994.45	1.31	ppb
Sodium	23-2	99967.12	99374.89	99749.65	99697.22	0.30	ppb
Strontium	86-1	993.25	1001.53	999.07	997.95	0.43	ppb
Strontium	88-1	996.49	999.13	998.74	998.12	0.14	ppb
Sulfur	34-1	20020.13	19783.92	20278.30	20027.45	1.23	ppb
Terbium	159-1				96		%
Terbium	159-2				95		%
Thallium	203-1	989.38	1018.26	989.97	999.20	1.65	ppb
Thallium	205-1	994.78	992.62	1016.65	1001.35	1.33	ppb
Tin	118-1	998.79	996.51	1002.83	999.38	0.32	ppb
Titanium	47-1	9889.70	9912.43	10131.12	9977.75	1.34	ppb
Uranium	238-1	986.93	1013.20	1005.83	1001.99	1.35	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S7 Instrumnet Name : P8
Client Sample ID : S7 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:37:24 DataFile Name : 011CALS.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	994.27	987.29	984.10	988.55	0.53	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				95		%
Yttrium	89-2				92		%
Zinc	66-2	8972.10	8937.79	8968.98	8959.62	0.21	ppb
Zirconium	90-1	992.70	990.45	1018.93	1000.69	1.58	ppb
Zirconium	91-1	982.77	993.81	1019.43	998.67	1.88	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S8 Instrumnet Name : P8
Client Sample ID : S8 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:40:26 DataFile Name : 012CALS.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	101550.87	100898.08	97747.83	100065.59	2.03	ppb
Antimony	121-1	0.47	0.46	0.44	0.46	3.30	ppb
Arsenic	75-2	0.46	0.46	0.43	0.45	4.27	ppb
Barium	135-1	1.95	1.98	1.85	1.93	3.42	ppb
Barium	137-1	1.99	1.98	1.97	1.98	0.40	ppb
Beryllium	9-1	0.07	0.06	0.05	0.06	19.52	ppb
Bismuth	209-1				75		%
Bismuth	209-2				77		%
Bromine	81-1						cps
Cadmium	108-1	0.39	0.32	0.37	0.36	9.54	ppb
Cadmium	106-1	0.10	0.05	0.18	0.11	56.44	ppb
Cadmium	111-1	0.11	0.11	0.12	0.12	2.55	ppb
Calcium	43-1	495767.13	503935.52	498129.77	499277.48	0.84	ppb
Calcium	44-1	497929.14	502195.49	498613.58	499579.40	0.46	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	8.13	8.02	7.83	8.00	1.91	ppb
Cobalt	59-2	2.04	2.09	2.06	2.06	1.29	ppb
Copper	63-2	1.98	1.99	1.94	1.97	1.42	ppb
Dysprosium	156-1						cps
Dysprosium	156-2						cps
Erbium	164-1						cps
Erbium	164-2						cps
Gadolinium	160-1						cps
Gadolinium	160-2						cps
Holmium	165-1				85		%
Holmium	165-2				91		%
Indium	115-1				78		%
Indium	115-2				84		%
Iron	54-2	249500.37	250950.93	247689.83	249380.38	0.66	ppb
Iron	56-2	251877.87	248698.10	247987.78	249521.25	0.83	ppb
Iron	57-2	251143.11	249517.26	247747.01	249469.13	0.68	ppb
Krypton	83-1						cps
Lead	206-1	2.52	2.45	2.46	2.48	1.64	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S8 Instrumnet Name : P8
Client Sample ID : S8 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:40:26 DataFile Name : 012CAL.S.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	2.55	2.44	2.51	2.50	2.36	ppb
Lead	208-1	2.52	2.45	2.48	2.48	1.37	ppb
Lithium	6-1				81		%
Magnesium	24-2	509536.38	499665.06	489956.67	499719.37	1.96	ppb
Manganese	55-2	6.23	6.16	6.05	6.15	1.44	ppb
Molybdenum	94-1	1.95	1.99	1.96	1.96	1.00	ppb
Molybdenum	95-1	1.53	1.62	1.70	1.62	5.05	ppb
Molybdenum	96-1	1.97	1.91	1.89	1.92	2.15	ppb
Molybdenum	97-1	1.36	1.30	1.31	1.33	2.41	ppb
Molybdenum	98-1	1.23	1.18	1.18	1.19	2.64	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	3.06	3.10	3.01	3.06	1.40	ppb
Phosphorus	31-2	-9.57	-14.77	-9.59	-11.31		ppb
Potassium	39-2	253925.77	251090.41	252132.37	252382.85	0.57	ppb
Rhodium	103-1				72		%
Rhodium	103-2				77		%
Scandium	45-1				82		%
Scandium	45-2				88		%
Selenium	82-1	0.66	0.51	0.69	0.62	15.72	ppb
Selenium	77-2	0.49	0.96	0.24	0.56	65.75	ppb
Selenium	78-2	0.21	0.78	0.26	0.42	76.08	ppb
Silicon	28-1	4.05	3.64	3.34	3.68	9.72	ppb
Silver	107-1	0.11	0.10	0.09	0.10	10.55	ppb
Silver	109-1	0.10	0.10	0.08	0.09	11.14	ppb
Sodium	23-2	505464.70	498831.59	494858.19	499718.16	1.07	ppb
Strontium	86-1	3.20	3.21	3.24	3.22	0.75	ppb
Strontium	88-1	3.24	3.26	3.26	3.25	0.46	ppb
Sulfur	34-1	-566.77	-477.95	-438.27	-494.33		ppb
Terbium	159-1				85		%
Terbium	159-2				88		%
Thallium	203-1	0.07	0.06	0.05	0.06	17.70	ppb
Thallium	205-1	0.08	0.06	0.06	0.06	16.34	ppb
Tin	118-1	0.24	0.25	0.26	0.25	4.48	ppb
Titanium	47-1	0.92	0.82	0.90	0.88	6.30	ppb
Uranium	238-1	0.05	0.04	0.03	0.04	14.73	ppb

LB Number :LB135293Operator :Jaswal

Lab Sample ID :S8Instrumnet Name :P8

Client Sample ID :S8Dilution Factor :1

Date & Time Acquired :2025-04-03 14:40:26DataFile Name :012CALS.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	0.25	0.25	0.26	0.25	1.79	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				84		%
Yttrium	89-2				92		%
Zinc	66-2	16.79	16.93	16.77	16.83	0.51	ppb
Zirconium	90-1	0.46	0.45	0.45	0.46	1.73	ppb
Zirconium	91-1	0.46	0.46	0.44	0.45	2.76	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : ICV01 Instrumnet Name : P8
Client Sample ID : ICV01 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 15:26:13 DataFile Name : 018ICV.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	497.92	502.30	499.39	499.87	0.45	ppb
Antimony	121-1	195.18	198.64	202.22	198.68	1.77	ppb
Arsenic	75-2	202.62	204.79	206.58	204.66	0.97	ppb
Barium	135-1	93.80	98.86	97.21	96.62	2.68	ppb
Barium	137-1	96.58	98.18	99.55	98.10	1.52	ppb
Beryllium	9-1	105.64	102.32	106.45	104.80	2.09	ppb
Bismuth	209-1				96		%
Bismuth	209-2				97		%
Bromine	81-1						cps
Cadmium	108-1	81.67	83.82	84.41	83.30	1.73	ppb
Cadmium	106-1	79.97	80.77	81.30	80.68	0.83	ppb
Cadmium	111-1	99.66	102.35	101.28	101.10	1.34	ppb
Calcium	43-1	1937.78	1983.61	1986.24	1969.21	1.38	ppb
Calcium	44-1	1972.99	1995.10	1960.46	1976.19	0.89	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	103.35	102.71	102.31	102.79	0.51	ppb
Cobalt	59-2	107.92	109.04	107.37	108.11	0.79	ppb
Copper	63-2	98.75	98.01	97.41	98.06	0.68	ppb
Dysprosium	156-1						cps
Dysprosium	156-2						cps
Erbium	164-1						cps
Erbium	164-2						cps
Gadolinium	160-1						cps
Gadolinium	160-2						cps
Holmium	165-1				96		%
Holmium	165-2				98		%
Indium	115-1				97		%
Indium	115-2				97		%
Iron	54-2	2174.58	2182.61	2159.96	2172.38	0.53	ppb
Iron	56-2	2092.15	2100.68	2049.65	2080.83	1.31	ppb
Iron	57-2	2078.83	2078.69	2055.07	2070.86	0.66	ppb
Krypton	83-1						cps
Lead	206-1	204.14	203.04	198.37	201.85	1.52	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : ICV01 Instrumnet Name : P8
Client Sample ID : ICV01 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 15:26:13 DataFile Name : 018ICV.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	195.95	190.18	186.89	191.01	2.40	ppb
Lead	208-1	197.27	193.33	192.11	194.24	1.39	ppb
Lithium	6-1				99		%
Magnesium	24-2	1217.17	1213.80	1208.74	1213.24	0.35	ppb
Manganese	55-2	103.53	103.16	102.87	103.19	0.32	ppb
Molybdenum	94-1	0.07	0.06	0.06	0.06	2.16	ppb
Molybdenum	95-1	0.02	0.02	0.01	0.02	8.46	ppb
Molybdenum	96-1	0.04	0.03	0.04	0.04	10.32	ppb
Molybdenum	97-1	0.02	0.01	0.01	0.02	21.80	ppb
Molybdenum	98-1	0.02	0.01	0.02	0.02	21.25	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	99.77	100.22	98.98	99.66	0.63	ppb
Phosphorus	31-2	-13.09	-13.45	-13.42	-13.32		ppb
Potassium	39-2	1847.26	1814.02	1833.43	1831.57	0.91	ppb
Rhodium	103-1				96		%
Rhodium	103-2				97		%
Scandium	45-1				97		%
Scandium	45-2				97		%
Selenium	82-1	207.09	200.57	204.01	203.89	1.60	ppb
Selenium	77-2	204.74	209.58	206.31	206.88	1.19	ppb
Selenium	78-2	203.81	205.27	212.05	207.04	2.12	ppb
Silicon	28-1	1.23	1.57	1.17	1.32	16.08	ppb
Silver	107-1	52.03	52.33	52.36	52.24	0.35	ppb
Silver	109-1	51.15	52.77	52.24	52.05	1.58	ppb
Sodium	23-2	2110.36	2106.39	2082.24	2099.66	0.72	ppb
Strontium	86-1	0.24	0.25	0.23	0.24	3.99	ppb
Strontium	88-1	0.24	0.23	0.23	0.23	1.86	ppb
Sulfur	34-1	-86.20	-182.13	-183.08	-150.47		ppb
Terbium	159-1				96		%
Terbium	159-2				97		%
Thallium	203-1	197.23	193.81	191.79	194.27	1.42	ppb
Thallium	205-1	192.65	193.04	192.50	192.73	0.14	ppb
Tin	118-1	0.04	0.06	0.05	0.05	14.85	ppb
Titanium	47-1	0.02	0.01	0.02	0.02	22.48	ppb
Uranium	238-1	-0.01	-0.01	-0.01	-0.01		ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : ICV01 Instrumnet Name : P8
Client Sample ID : ICV01 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 15:26:13 DataFile Name : 018ICV.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	99.61	100.01	100.32	99.98	0.36	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				97		%
Yttrium	89-2				98		%
Zinc	66-2	165.99	166.20	164.93	165.71	0.41	ppb
Zirconium	90-1	0.01	0.02	0.01	0.01	11.43	ppb
Zirconium	91-1	0.10	0.11	0.10	0.10	5.38	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : LLICV Instrumnet Name : P8
Client Sample ID : LLICV Dilution Factor : 1
Date & Time Acquired : 2025-04-03 15:50:51 DataFile Name : 024LLIC.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	22.18	17.94	15.52	18.55	18.17	ppb
Antimony	121-1	2.03	2.11	2.00	2.05	2.94	ppb
Arsenic	75-2	1.08	1.04	0.93	1.02	7.79	ppb
Barium	135-1	9.92	10.06	9.70	9.89	1.82	ppb
Barium	137-1	9.97	10.31	9.73	10.00	2.95	ppb
Beryllium	9-1	1.14	1.12	1.10	1.12	1.71	ppb
Bismuth	209-1				98		%
Bismuth	209-2				99		%
Bromine	81-1						cps
Cadmium	108-1	0.96	1.07	0.90	0.97	9.05	ppb
Cadmium	106-1	0.77	0.85	1.05	0.89	16.34	ppb
Cadmium	111-1	1.10	1.11	1.11	1.11	0.38	ppb
Calcium	43-1	545.40	553.06	522.08	540.18	2.99	ppb
Calcium	44-1	536.89	545.10	517.49	533.16	2.66	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	2.09	1.90	1.63	1.87	12.22	ppb
Cobalt	59-2	1.17	1.07	0.85	1.03	16.17	ppb
Copper	63-2	2.02	1.85	1.60	1.82	11.49	ppb
Dysprosium	156-1						cps
Dysprosium	156-2						cps
Erbium	164-1						cps
Erbium	164-2						cps
Gadolinium	160-1						cps
Gadolinium	160-2						cps
Holmium	165-1				96		%
Holmium	165-2				98		%
Indium	115-1				98		%
Indium	115-2				97		%
Iron	54-2	59.00	52.91	43.72	51.88	14.82	ppb
Iron	56-2	55.40	50.63	42.56	49.53	13.10	ppb
Iron	57-2	54.52	48.37	43.01	48.63	11.85	ppb
Krypton	83-1						cps
Lead	206-1	0.94	0.98	0.93	0.95	2.80	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : LLICV Instrumnet Name : P8
Client Sample ID : LLICV Dilution Factor : 1
Date & Time Acquired : 2025-04-03 15:50:51 DataFile Name : 024LLIC.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	0.98	0.98	0.93	0.96	2.88	ppb
Lead	208-1	0.97	0.98	0.93	0.96	2.93	ppb
Lithium	6-1				101		%
Magnesium	24-2	578.89	531.89	450.78	520.52	12.45	ppb
Manganese	55-2	0.94	0.88	0.80	0.87	8.29	ppb
Molybdenum	94-1	6.04	6.19	5.75	5.99	3.74	ppb
Molybdenum	95-1	5.08	5.10	4.79	4.99	3.43	ppb
Molybdenum	96-1	5.10	5.18	4.81	5.03	3.93	ppb
Molybdenum	97-1	5.18	5.19	4.89	5.09	3.30	ppb
Molybdenum	98-1	5.06	5.01	4.69	4.92	4.07	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	1.03	0.98	0.81	0.94	12.46	ppb
Phosphorus	31-2	21.94	8.37	7.90	12.74	62.61	ppb
Potassium	39-2	447.55	442.27	411.13	433.65	4.54	ppb
Rhodium	103-1				97		%
Rhodium	103-2				99		%
Scandium	45-1				98		%
Scandium	45-2				99		%
Selenium	82-1	5.52	5.54	5.28	5.45	2.63	ppb
Selenium	77-2	4.57	4.10	5.24	4.64	12.38	ppb
Selenium	78-2	4.43	5.83	6.59	5.62	19.49	ppb
Silicon	28-1	1.21	1.49	1.05	1.25	17.98	ppb
Silver	107-1	1.04	1.07	1.01	1.04	2.61	ppb
Silver	109-1	1.03	1.07	1.00	1.03	3.53	ppb
Sodium	23-2	569.42	558.23	500.51	542.72	6.81	ppb
Strontium	86-1	1.07	1.04	0.98	1.03	4.63	ppb
Strontium	88-1	1.05	1.04	0.99	1.03	3.10	ppb
Sulfur	34-1	-24.77	37.44	-243.81	-77.05		ppb
Terbium	159-1				97		%
Terbium	159-2				96		%
Thallium	203-1	1.00	0.97	0.95	0.97	2.67	ppb
Thallium	205-1	0.98	0.98	0.96	0.97	1.51	ppb
Tin	118-1	5.34	5.38	5.16	5.29	2.15	ppb
Titanium	47-1	5.26	5.48	5.19	5.31	2.80	ppb
Uranium	238-1	0.96	0.96	0.93	0.95	1.77	ppb

LB Number :LB135293Operator :Jaswal

Lab Sample ID :LLICVInstrumnet Name :P8

Client Sample ID :LLICVDilution Factor :1

Date & Time Acquired :2025-04-03 15:50:51DataFile Name :024LLIC.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	5.41	5.02	4.06	4.83	14.34	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				97		%
Yttrium	89-2				99		%
Zinc	66-2	4.52	4.07	3.53	4.04	12.23	ppb
Zirconium	90-1	1.00	1.01	0.96	0.99	2.62	ppb
Zirconium	91-1	1.02	1.01	0.97	1.00	2.53	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : ICB01 Instrumnet Name : P8
Client Sample ID : ICB01 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 15:55:08 DataFile Name : 025CCBE.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	-0.38	-0.46	-0.65	-0.50		ppb
Antimony	121-1	0.00	0.00	0.00	0.00	24.37	ppb
Arsenic	75-2	-0.01	-0.02	-0.01	-0.01		ppb
Barium	135-1	-0.01	-0.01	-0.01	-0.01		ppb
Barium	137-1	-0.01	-0.01	-0.01	-0.01		ppb
Beryllium	9-1	-0.02	-0.02	-0.02	-0.02		ppb
Bismuth	209-1				97		%
Bismuth	209-2				98		%
Bromine	81-1						cps
Cadmium	108-1	0.00	-0.01	0.00	-0.01		ppb
Cadmium	106-1	-0.13	0.07	-0.09	-0.05		ppb
Cadmium	111-1	-0.02	0.00	-0.01	-0.01		ppb
Calcium	43-1	2.04	2.38	1.72	2.05	16.08	ppb
Calcium	44-1	4.36	3.48	3.80	3.88	11.46	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	-0.03	-0.02	0.01	-0.01		ppb
Cobalt	59-2	-0.01	-0.01	-0.01	-0.01		ppb
Copper	63-2	-0.07	-0.05	-0.02	-0.04		ppb
Dysprosium	156-1						cps
Dysprosium	156-2						cps
Erbium	164-1						cps
Erbium	164-2						cps
Gadolinium	160-1						cps
Gadolinium	160-2						cps
Holmium	165-1				96		%
Holmium	165-2				99		%
Indium	115-1				97		%
Indium	115-2				97		%
Iron	54-2	-0.11	-0.10	0.57	0.12	330.49	ppb
Iron	56-2	-0.29	-0.16	0.07	-0.13		ppb
Iron	57-2	-0.11	0.10	-0.08	-0.03		ppb
Krypton	83-1						cps
Lead	206-1	-0.01	-0.01	0.00	-0.01		ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : ICB01 Instrumnet Name : P8
Client Sample ID : ICB01 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 15:55:08 DataFile Name : 025CCBE.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	-0.02	-0.01	-0.01	-0.01		ppb
Lead	208-1	-0.01	-0.01	-0.01	-0.01		ppb
Lithium	6-1				100		%
Magnesium	24-2	-0.23	-0.22	-0.04	-0.17		ppb
Manganese	55-2	-0.02	0.03	0.03	0.01	216.05	ppb
Molybdenum	94-1	0.00	0.00	0.01	0.00	778.99	ppb
Molybdenum	95-1	-0.01	-0.01	-0.01	-0.01		ppb
Molybdenum	96-1	0.00	-0.01	0.00	0.00		ppb
Molybdenum	97-1	0.00	-0.01	-0.01	-0.01		ppb
Molybdenum	98-1	-0.01	-0.01	-0.01	-0.01		ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	-0.04	-0.02	0.00	-0.02		ppb
Phosphorus	31-2	-15.95	-17.95	-18.62	-17.51		ppb
Potassium	39-2	8.28	8.01	6.22	7.50	14.90	ppb
Rhodium	103-1				97		%
Rhodium	103-2				98		%
Scandium	45-1				98		%
Scandium	45-2				99		%
Selenium	82-1	0.10	-0.22	-0.08	-0.07		ppb
Selenium	77-2	0.22	0.22	0.00	0.15	86.61	ppb
Selenium	78-2	0.20	0.28	0.46	0.32	42.56	ppb
Silicon	28-1	0.15	0.10	0.04	0.10	56.03	ppb
Silver	107-1	0.01	0.01	0.01	0.01	8.85	ppb
Silver	109-1	0.01	0.01	0.01	0.01	7.62	ppb
Sodium	23-2	7.16	6.57	6.32	6.69	6.47	ppb
Strontium	86-1	0.01	0.00	0.01	0.00	64.46	ppb
Strontium	88-1	0.00	0.00	0.00	0.00	37.59	ppb
Sulfur	34-1	-58.26	-70.52	-125.27	-84.68		ppb
Terbium	159-1				95		%
Terbium	159-2				97		%
Thallium	203-1	0.01	0.01	0.01	0.01	20.02	ppb
Thallium	205-1	0.00	0.01	0.01	0.01	17.50	ppb
Tin	118-1	0.01	0.00	0.00	0.00	206.17	ppb
Titanium	47-1	0.01	0.00	-0.01	0.00	3423.44	ppb
Uranium	238-1	-0.01	-0.01	-0.01	-0.01		ppb

LB Number :LB135293Operator :Jaswal

Lab Sample ID :ICB01Instrumnet Name :P8

Client Sample ID :ICB01Dilution Factor :1

Date & Time Acquired :2025-04-03 15:55:08DataFile Name :025CCBE.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	0.00	0.00	0.00	0.00		ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				98		%
Yttrium	89-2				99		%
Zinc	66-2	0.01	0.00	0.06	0.02	154.68	ppb
Zirconium	90-1	0.00	0.00	0.00	0.00	86.85	ppb
Zirconium	91-1	0.01	0.00	0.00	0.00	114.97	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : ICSA01 Instrumnet Name : P8
Client Sample ID : ICSA01 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:03:42 DataFile Name : 027ICSA.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	101358.14	100194.73	97752.90	99768.59	1.84	ppb
Antimony	121-1	1.25	1.30	1.28	1.27	1.84	ppb
Arsenic	75-2	0.38	0.28	0.33	0.33	15.68	ppb
Barium	135-1	1.47	1.50	1.46	1.48	1.31	ppb
Barium	137-1	1.46	1.47	1.49	1.47	0.87	ppb
Beryllium	9-1	0.28	0.32	0.29	0.30	6.82	ppb
Bismuth	209-1				86		%
Bismuth	209-2				86		%
Bromine	81-1						cps
Cadmium	108-1	16.02	17.14	16.13	16.43	3.75	ppb
Cadmium	106-1	-0.47	-0.48	-0.14	-0.37		ppb
Cadmium	111-1	0.61	0.51	0.59	0.57	9.89	ppb
Calcium	43-1	106442.23	106562.10	104950.67	105985.00	0.85	ppb
Calcium	44-1	105123.61	106849.90	105059.91	105677.81	0.96	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	21.38	21.10	20.72	21.06	1.57	ppb
Cobalt	59-2	1.25	1.26	1.20	1.24	2.50	ppb
Copper	63-2	7.49	7.41	7.39	7.43	0.70	ppb
Dysprosium	156-1						cps
Dysprosium	156-2						cps
Erbium	164-1						cps
Erbium	164-2						cps
Gadolinium	160-1						cps
Gadolinium	160-2						cps
Holmium	165-1				93		%
Holmium	165-2				94		%
Indium	115-1				89		%
Indium	115-2				88		%
Iron	54-2	111315.90	108843.65	107919.39	109359.64	1.61	ppb
Iron	56-2	110817.14	109997.33	107218.21	109344.23	1.73	ppb
Iron	57-2	110394.51	110079.41	107179.31	109217.74	1.62	ppb
Krypton	83-1						cps
Lead	206-1	5.18	5.08	5.03	5.10	1.43	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : ICSA01 Instrumnet Name : P8
Client Sample ID : ICSA01 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:03:42 DataFile Name : 027ICSA.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	4.68	4.57	4.47	4.57	2.35	ppb
Lead	208-1	4.82	4.74	4.66	4.74	1.68	ppb
Lithium	6-1				92		%
Magnesium	24-2	106016.79	105529.03	102964.72	104836.85	1.56	ppb
Manganese	55-2	7.39	7.25	7.20	7.28	1.34	ppb
Molybdenum	94-1	1679.78	1667.72	1649.71	1665.73	0.91	ppb
Molybdenum	95-1	2009.50	2001.24	2001.55	2004.10	0.23	ppb
Molybdenum	96-1	1978.91	1940.39	1977.89	1965.73	1.12	ppb
Molybdenum	97-1	2026.41	1979.89	2030.74	2012.35	1.40	ppb
Molybdenum	98-1	2014.96	2012.82	1986.65	2004.81	0.79	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	5.74	5.88	5.75	5.79	1.33	ppb
Phosphorus	31-2	112977.62	113740.98	110806.04	112508.21	1.35	ppb
Potassium	39-2	89741.34	89610.13	88721.03	89357.50	0.62	ppb
Rhodium	103-1				86		%
Rhodium	103-2				86		%
Scandium	45-1				94		%
Scandium	45-2				93		%
Selenium	82-1	0.04	0.06	-0.13	-0.01		ppb
Selenium	77-2	0.00	0.00	0.00	0.00	N/A	ppb
Selenium	78-2	0.18	0.25	0.26	0.23	19.72	ppb
Silicon	28-1	3.73	3.80	3.76	3.76	0.85	ppb
Silver	107-1	0.03	0.04	0.04	0.03	19.09	ppb
Silver	109-1	0.03	0.03	0.04	0.03	12.52	ppb
Sodium	23-2	113624.21	113406.43	111475.56	112835.40	1.05	ppb
Strontium	86-1	34.90	34.69	34.44	34.68	0.66	ppb
Strontium	88-1	35.15	36.26	36.30	35.90	1.83	ppb
Sulfur	34-1	111777.45	110520.41	109878.84	110725.57	0.87	ppb
Terbium	159-1				93		%
Terbium	159-2				92		%
Thallium	203-1	0.11	0.15	0.18	0.15	21.96	ppb
Thallium	205-1	0.12	0.15	0.18	0.15	22.77	ppb
Tin	118-1	0.17	0.16	0.17	0.16	3.40	ppb
Titanium	47-1	2112.05	2156.12	2149.25	2139.14	1.11	ppb
Uranium	238-1	0.01	0.01	0.02	0.01	6.48	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : ICSA01 Instrumnet Name : P8
Client Sample ID : ICSA01 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:03:42 DataFile Name : 027ICSA.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	0.16	0.15	0.16	0.16	3.05	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				94		%
Yttrium	89-2				94		%
Zinc	66-2	12.18	12.05	12.00	12.08	0.74	ppb
Zirconium	90-1	0.02	0.02	0.02	0.02	12.06	ppb
Zirconium	91-1	0.03	0.02	0.03	0.03	6.45	ppb

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LB Number : LB135293 Operator : Jaswal
Lab Sample ID : ICSAB01 Instrumnet Name : P8
Client Sample ID : ICSAB01 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:20:34 DataFile Name : 031ICSB.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	99000.59	99252.08	97458.23	98570.30	0.99	ppb
Antimony	121-1	21.34	21.72	22.03	21.70	1.59	ppb
Arsenic	75-2	21.86	21.44	21.08	21.46	1.81	ppb
Barium	135-1	21.39	21.83	22.38	21.87	2.27	ppb
Barium	137-1	21.59	21.97	22.20	21.92	1.41	ppb
Beryllium	9-1	21.86	21.35	21.44	21.55	1.28	ppb
Bismuth	209-1				89		%
Bismuth	209-2				86		%
Bromine	81-1						cps
Cadmium	108-1	33.38	33.57	33.56	33.50	0.32	ppb
Cadmium	106-1	15.99	16.09	16.51	16.19	1.71	ppb
Cadmium	111-1	20.17	20.58	20.79	20.51	1.52	ppb
Calcium	43-1	105226.79	106070.31	103267.98	104855.02	1.37	ppb
Calcium	44-1	105218.04	105029.39	102822.91	104356.78	1.28	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	41.02	41.72	41.41	41.38	0.84	ppb
Cobalt	59-2	21.73	22.06	21.90	21.90	0.75	ppb
Copper	63-2	25.68	26.12	26.04	25.95	0.91	ppb
Dysprosium	156-1						cps
Dysprosium	156-2						cps
Erbium	164-1						cps
Erbium	164-2						cps
Gadolinium	160-1						cps
Gadolinium	160-2						cps
Holmium	165-1				97		%
Holmium	165-2				96		%
Indium	115-1				93		%
Indium	115-2				89		%
Iron	54-2	106964.55	107238.17	107091.46	107098.06	0.13	ppb
Iron	56-2	104958.06	105997.86	106268.76	105741.56	0.65	ppb
Iron	57-2	104744.39	105655.80	106919.58	105773.26	1.03	ppb
Krypton	83-1						cps
Lead	206-1	25.31	25.77	25.77	25.62	1.04	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : ICSAB01 Instrumnet Name : P8
Client Sample ID : ICSAB01 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:20:34 DataFile Name : 031ICSB.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	24.45	24.92	24.48	24.62	1.09	ppb
Lead	208-1	24.46	24.99	24.77	24.74	1.08	ppb
Lithium	6-1				96		%
Magnesium	24-2	103918.94	106053.02	104259.18	104743.71	1.09	ppb
Manganese	55-2	25.81	26.02	25.86	25.90	0.43	ppb
Molybdenum	94-1	1607.60	1587.66	1665.87	1620.37	2.51	ppb
Molybdenum	95-1	1952.19	1939.42	2013.52	1968.37	2.01	ppb
Molybdenum	96-1	1910.93	1898.44	1958.39	1922.59	1.65	ppb
Molybdenum	97-1	1950.68	1931.25	1976.03	1952.65	1.15	ppb
Molybdenum	98-1	1956.53	1916.13	1972.19	1948.28	1.48	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	24.65	24.48	24.47	24.53	0.41	ppb
Phosphorus	31-2	109780.41	110508.60	109133.49	109807.50	0.63	ppb
Potassium	39-2	87818.49	89605.94	89364.52	88929.65	1.09	ppb
Rhodium	103-1				89		%
Rhodium	103-2				88		%
Scandium	45-1				97		%
Scandium	45-2				97		%
Selenium	82-1	21.10	20.84	21.19	21.04	0.87	ppb
Selenium	77-2	25.68	27.80	23.25	25.58	8.90	ppb
Selenium	78-2	22.17	21.59	23.05	22.27	3.28	ppb
Silicon	28-1	4.31	3.99	4.32	4.21	4.48	ppb
Silver	107-1	19.12	19.22	19.52	19.29	1.07	ppb
Silver	109-1	19.09	19.51	19.41	19.34	1.13	ppb
Sodium	23-2	112423.59	113863.52	112862.81	113049.97	0.65	ppb
Strontium	86-1	34.03	33.79	34.73	34.18	1.44	ppb
Strontium	88-1	35.51	35.07	35.40	35.33	0.65	ppb
Sulfur	34-1	110977.64	110833.34	109054.93	110288.64	0.97	ppb
Terbium	159-1				95		%
Terbium	159-2				94		%
Thallium	203-1	20.38	21.17	20.72	20.76	1.91	ppb
Thallium	205-1	20.76	21.35	21.00	21.04	1.41	ppb
Tin	118-1	0.20	0.18	0.20	0.19	5.36	ppb
Titanium	47-1	2143.44	2076.50	2139.20	2119.71	1.77	ppb
Uranium	238-1	0.02	0.02	0.01	0.02	8.80	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : ICSAB01 Instrumnet Name : P8
Client Sample ID : ICSAB01 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:20:34 DataFile Name : 031ICSB.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	20.87	21.16	21.04	21.02	0.69	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				98		%
Yttrium	89-2				96		%
Zinc	66-2	27.50	28.19	28.31	28.00	1.57	ppb
Zirconium	90-1	0.02	0.02	0.03	0.02	16.03	ppb
Zirconium	91-1	0.04	0.04	0.05	0.04	10.95	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : CCV01 Instrumnet Name : P8
Client Sample ID : CCV01 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:35:04 DataFile Name : 034CCV.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	51465.81	51765.76	51640.66	51624.08	0.29	ppb
Antimony	121-1	494.22	490.03	492.79	492.34	0.43	ppb
Arsenic	75-2	481.67	486.72	485.30	484.56	0.54	ppb
Barium	135-1	2529.64	2423.47	2475.43	2476.18	2.14	ppb
Barium	137-1	2522.74	2400.41	2491.55	2471.57	2.57	ppb
Beryllium	9-1	516.16	501.74	511.34	509.75	1.44	ppb
Bismuth	209-1				83		%
Bismuth	209-2				84		%
Bromine	81-1						cps
Cadmium	108-1	499.70	481.18	496.01	492.30	1.99	ppb
Cadmium	106-1	495.30	492.26	500.62	496.06	0.85	ppb
Cadmium	111-1	491.67	487.83	489.56	489.68	0.39	ppb
Calcium	43-1	252122.81	248056.99	254314.97	251498.26	1.26	ppb
Calcium	44-1	250298.07	246596.82	249385.09	248759.99	0.78	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	506.19	496.60	491.49	498.09	1.50	ppb
Cobalt	59-2	473.47	469.47	472.25	471.73	0.43	ppb
Copper	63-2	4634.28	4525.28	4535.32	4564.96	1.32	ppb
Dysprosium	156-1						cps
Dysprosium	156-2						cps
Erbium	164-1						cps
Erbium	164-2						cps
Gadolinium	160-1						cps
Gadolinium	160-2						cps
Holmium	165-1				92		%
Holmium	165-2				97		%
Indium	115-1				86		%
Indium	115-2				87		%
Iron	54-2	125069.74	125003.79	123657.46	124577.00	0.64	ppb
Iron	56-2	124905.29	121863.58	121947.60	122905.49	1.41	ppb
Iron	57-2	125249.90	121850.71	122734.51	123278.37	1.43	ppb
Krypton	83-1						cps
Lead	206-1	2453.98	2498.93	2503.76	2485.56	1.10	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : CCV01 Instrumnet Name : P8
Client Sample ID : CCV01 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:35:04 DataFile Name : 034CCV.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	2445.07	2422.70	2458.44	2442.07	0.74	ppb
Lead	208-1	2459.29	2445.44	2471.87	2458.87	0.54	ppb
Lithium	6-1				93		%
Magnesium	24-2	252521.01	250436.14	253060.49	252005.88	0.55	ppb
Manganese	55-2	5078.12	4993.19	4956.98	5009.43	1.24	ppb
Molybdenum	94-1	4903.27	4874.62	4862.95	4880.28	0.43	ppb
Molybdenum	95-1	4791.83	4864.28	4738.47	4798.20	1.32	ppb
Molybdenum	96-1	4745.15	4852.00	4761.11	4786.09	1.20	ppb
Molybdenum	97-1	4804.74	4832.87	4870.99	4836.20	0.69	ppb
Molybdenum	98-1	4795.20	4815.17	4809.90	4806.76	0.22	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	454.67	441.26	454.46	450.13	1.71	ppb
Phosphorus	31-2	10328.10	10336.55	10491.43	10385.36	0.89	ppb
Potassium	39-2	115426.51	113289.77	113863.72	114193.34	0.97	ppb
Rhodium	103-1				83		%
Rhodium	103-2				86		%
Scandium	45-1				97		%
Scandium	45-2				103		%
Selenium	82-1	469.81	475.52	468.78	471.37	0.77	ppb
Selenium	77-2	480.29	487.08	472.56	479.97	1.51	ppb
Selenium	78-2	486.63	481.48	481.40	483.17	0.62	ppb
Silicon	28-1	555.20	551.49	562.58	556.42	1.01	ppb
Silver	107-1	488.64	475.22	482.65	482.17	1.39	ppb
Silver	109-1	487.12	480.11	483.01	483.41	0.73	ppb
Sodium	23-2	256444.71	253925.09	256267.18	255545.66	0.55	ppb
Strontium	86-1	489.19	491.85	495.31	492.12	0.62	ppb
Strontium	88-1	481.53	499.40	488.64	489.86	1.84	ppb
Sulfur	34-1	10624.71	10338.85	10653.97	10539.18	1.65	ppb
Terbium	159-1				92		%
Terbium	159-2				94		%
Thallium	203-1	499.22	504.96	506.51	503.56	0.76	ppb
Thallium	205-1	508.57	516.75	510.22	511.85	0.85	ppb
Tin	118-1	497.79	492.04	503.04	497.62	1.11	ppb
Titanium	47-1	4922.94	4934.15	4993.90	4950.33	0.77	ppb
Uranium	238-1	504.77	498.27	511.46	504.83	1.31	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : CCV01 Instrumnet Name : P8
Client Sample ID : CCV01 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:35:04 DataFile Name : 034CCV.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	499.14	511.01	500.22	503.46	1.30	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				95		%
Yttrium	89-2				100		%
Zinc	66-2	4218.39	4102.14	4122.77	4147.77	1.50	ppb
Zirconium	90-1	492.73	500.09	489.16	494.00	1.13	ppb
Zirconium	91-1	490.96	496.25	490.15	492.45	0.67	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : CCB01 Instrumnet Name : P8
Client Sample ID : CCB01 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:38:00 DataFile Name : 035CCBE.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	4.16	4.03	3.63	3.94	7.03	ppb
Antimony	121-1	0.10	0.08	0.07	0.08	14.08	ppb
Arsenic	75-2	0.00	0.02	-0.01	0.00	462.94	ppb
Barium	135-1	0.04	0.04	0.03	0.04	24.28	ppb
Barium	137-1	0.05	0.05	0.03	0.04	24.01	ppb
Beryllium	9-1	0.02	0.01	0.00	0.01	71.23	ppb
Bismuth	209-1				101		%
Bismuth	209-2				100		%
Bromine	81-1						cps
Cadmium	108-1	0.02	0.03	0.05	0.03	38.52	ppb
Cadmium	106-1	0.47	0.19	0.23	0.30	52.68	ppb
Cadmium	111-1	0.05	0.03	0.03	0.03	41.46	ppb
Calcium	43-1	72.24	66.95	68.13	69.10	4.02	ppb
Calcium	44-1	70.60	67.99	66.33	68.30	3.15	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	-0.01	0.00	0.02	0.00	382.57	ppb
Cobalt	59-2	0.00	-0.01	0.00	0.00		ppb
Copper	63-2	0.03	0.04	0.05	0.04	29.56	ppb
Dysprosium	156-1						cps
Dysprosium	156-2						cps
Erbium	164-1						cps
Erbium	164-2						cps
Gadolinium	160-1						cps
Gadolinium	160-2						cps
Holmium	165-1				100		%
Holmium	165-2				103		%
Indium	115-1				103		%
Indium	115-2				101		%
Iron	54-2	1.54	1.71	1.54	1.59	6.40	ppb
Iron	56-2	1.30	1.24	1.26	1.27	2.22	ppb
Iron	57-2	1.78	0.80	0.95	1.18	44.89	ppb
Krypton	83-1						cps
Lead	206-1	0.12	0.09	0.09	0.10	16.98	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : CCB01 Instrumnet Name : P8
Client Sample ID : CCB01 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:38:00 DataFile Name : 035CCBE.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	0.11	0.10	0.10	0.10	8.95	ppb
Lead	208-1	0.12	0.10	0.09	0.10	15.20	ppb
Lithium	6-1				106		%
Magnesium	24-2	3.32	3.18	3.00	3.17	5.07	ppb
Manganese	55-2	0.02	-0.01	0.07	0.03	150.36	ppb
Molybdenum	94-1	0.24	0.20	0.19	0.21	12.87	ppb
Molybdenum	95-1	0.15	0.12	0.10	0.12	20.15	ppb
Molybdenum	96-1	0.16	0.12	0.10	0.13	23.85	ppb
Molybdenum	97-1	0.14	0.11	0.10	0.12	19.75	ppb
Molybdenum	98-1	0.15	0.11	0.09	0.12	25.23	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	0.04	0.01	0.06	0.03	75.97	ppb
Phosphorus	31-2	-19.67	-15.15	-15.18	-16.67		ppb
Potassium	39-2	45.32	44.01	43.74	44.35	1.90	ppb
Rhodium	103-1				103		%
Rhodium	103-2				103		%
Scandium	45-1				106		%
Scandium	45-2				102		%
Selenium	82-1	0.03	0.09	-0.04	0.03	245.25	ppb
Selenium	77-2	0.00	0.00	0.00	0.00	N/A	ppb
Selenium	78-2	0.14	-0.03	-0.02	0.03	292.73	ppb
Silicon	28-1	0.64	0.52	0.33	0.50	31.22	ppb
Silver	107-1	0.06	0.05	0.04	0.05	16.60	ppb
Silver	109-1	0.05	0.04	0.03	0.04	20.25	ppb
Sodium	23-2	37.84	38.63	37.42	37.96	1.62	ppb
Strontium	86-1	0.02	0.03	0.02	0.03	20.87	ppb
Strontium	88-1	0.03	0.03	0.03	0.03	8.46	ppb
Sulfur	34-1	385.38	211.97	251.79	283.05	32.09	ppb
Terbium	159-1				100		%
Terbium	159-2				101		%
Thallium	203-1	0.05	0.04	0.04	0.04	9.50	ppb
Thallium	205-1	0.05	0.04	0.04	0.04	12.37	ppb
Tin	118-1	0.03	0.03	0.02	0.02	4.39	ppb
Titanium	47-1	0.14	0.10	0.07	0.10	34.57	ppb
Uranium	238-1	0.00	0.00	0.00	0.00		ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : CCB01 Instrumnet Name : P8
Client Sample ID : CCB01 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:38:00 DataFile Name : 035CCBE.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	0.00	0.01	0.00	0.00	136.55	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				105		%
Yttrium	89-2				105		%
Zinc	66-2	1.72	1.90	1.75	1.79	5.43	ppb
Zirconium	90-1	0.05	0.05	0.05	0.05	2.71	ppb
Zirconium	91-1	0.05	0.04	0.05	0.05	10.64	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : CRI Instrumnet Name : P8
Client Sample ID : CRI Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:41:20 DataFile Name : 036LLCC.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	20.21	18.90	15.23	18.11	14.25	ppb
Antimony	121-1	2.05	2.09	2.10	2.08	1.37	ppb
Arsenic	75-2	1.13	0.98	0.88	1.00	12.41	ppb
Barium	135-1	10.04	10.04	9.95	10.01	0.49	ppb
Barium	137-1	10.28	10.14	10.10	10.17	0.92	ppb
Beryllium	9-1	1.08	1.05	1.08	1.07	1.44	ppb
Bismuth	209-1				100		%
Bismuth	209-2				101		%
Bromine	81-1						cps
Cadmium	108-1	0.91	1.09	1.19	1.06	13.50	ppb
Cadmium	106-1	1.39	1.18	1.29	1.29	8.08	ppb
Cadmium	111-1	1.14	1.11	1.09	1.11	2.15	ppb
Calcium	43-1	536.89	531.93	532.68	533.83	0.50	ppb
Calcium	44-1	551.67	543.33	547.73	547.58	0.76	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	2.09	1.92	1.65	1.89	11.68	ppb
Cobalt	59-2	1.13	1.04	0.91	1.03	10.91	ppb
Copper	63-2	2.00	1.93	1.65	1.86	9.89	ppb
Dysprosium	156-1						cps
Dysprosium	156-2						cps
Erbium	164-1						cps
Erbium	164-2						cps
Gadolinium	160-1						cps
Gadolinium	160-2						cps
Holmium	165-1				102		%
Holmium	165-2				104		%
Indium	115-1				104		%
Indium	115-2				101		%
Iron	54-2	59.47	52.17	45.28	52.31	13.57	ppb
Iron	56-2	56.14	51.48	43.78	50.47	12.37	ppb
Iron	57-2	56.11	52.81	42.51	50.48	14.06	ppb
Krypton	83-1						cps
Lead	206-1	1.00	1.00	0.96	0.99	2.05	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : CRI Instrumnet Name : P8
Client Sample ID : CRI Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:41:20 DataFile Name : 036LLCC.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	1.00	1.03	1.01	1.01	1.44	ppb
Lead	208-1	1.01	1.01	0.97	1.00	2.12	ppb
Lithium	6-1				109		%
Magnesium	24-2	573.22	531.96	462.54	522.57	10.70	ppb
Manganese	55-2	0.92	0.94	0.89	0.92	3.06	ppb
Molybdenum	94-1	5.76	5.82	5.98	5.85	1.92	ppb
Molybdenum	95-1	4.84	4.78	4.98	4.87	2.08	ppb
Molybdenum	96-1	4.93	4.97	5.04	4.98	1.06	ppb
Molybdenum	97-1	4.92	4.90	5.01	4.94	1.23	ppb
Molybdenum	98-1	4.79	4.80	4.99	4.86	2.34	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	0.98	0.89	0.82	0.90	9.21	ppb
Phosphorus	31-2	17.46	15.43	5.32	12.74	51.06	ppb
Potassium	39-2	469.32	459.66	431.28	453.42	4.36	ppb
Rhodium	103-1				102		%
Rhodium	103-2				102		%
Scandium	45-1				105		%
Scandium	45-2				103		%
Selenium	82-1	5.05	5.01	4.95	5.00	0.98	ppb
Selenium	77-2	6.63	6.40	6.43	6.48	1.90	ppb
Selenium	78-2	5.68	4.58	4.86	5.04	11.34	ppb
Silicon	28-1	1.37	1.28	1.15	1.27	8.57	ppb
Silver	107-1	1.04	1.03	1.07	1.05	2.16	ppb
Silver	109-1	1.05	1.05	1.06	1.05	0.74	ppb
Sodium	23-2	590.61	569.04	518.63	559.43	6.60	ppb
Strontium	86-1	0.99	0.99	1.07	1.01	4.55	ppb
Strontium	88-1	1.01	1.01	1.03	1.02	1.09	ppb
Sulfur	34-1	619.93	642.14	444.22	568.77	19.06	ppb
Terbium	159-1				101		%
Terbium	159-2				102		%
Thallium	203-1	0.99	1.00	0.97	0.99	1.47	ppb
Thallium	205-1	1.00	1.01	0.99	1.00	0.75	ppb
Tin	118-1	5.37	5.40	5.34	5.37	0.48	ppb
Titanium	47-1	5.26	5.12	5.07	5.15	1.91	ppb
Uranium	238-1	0.96	0.97	0.95	0.96	0.89	ppb

LB Number :LB135293Operator :Jaswal

Lab Sample ID :CRIInstrumnet Name :P8

Client Sample ID :CRIDilution Factor :1

Date & Time Acquired :2025-04-03 16:41:20DataFile Name :036LLCC.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	5.36	4.87	4.28	4.84	11.15	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				105		%
Yttrium	89-2				104		%
Zinc	66-2	4.41	4.14	3.47	4.01	12.05	ppb
Zirconium	90-1	0.99	1.01	1.03	1.01	1.78	ppb
Zirconium	91-1	1.02	1.02	1.02	1.02	0.38	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : PB167437BL Instrumnet Name : P8
Client Sample ID : PB167437BL Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:45:20 DataFile Name : 037CCBE.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	0.33	0.19	-0.16	0.12	208.48	ppb
Antimony	121-1	0.02	0.01	0.01	0.01	13.65	ppb
Arsenic	75-2	-0.01	-0.01	-0.01	-0.01		ppb
Barium	135-1	-0.01	0.00	0.00	0.00		ppb
Barium	137-1	0.00	-0.01	-0.01	0.00		ppb
Beryllium	9-1	-0.01	-0.01	-0.01	-0.01		ppb
Bismuth	209-1				101		%
Bismuth	209-2				100		%
Bromine	81-1						cps
Cadmium	108-1	0.00	0.02	0.01	0.01	98.89	ppb
Cadmium	106-1	0.45	0.09	0.10	0.21	95.66	ppb
Cadmium	111-1	0.03	0.01	0.01	0.02	98.47	ppb
Calcium	43-1	-0.41	-0.80	-1.24	-0.81		ppb
Calcium	44-1	-1.93	-2.18	-2.12	-2.08		ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	-0.01	-0.02	0.02	0.00		ppb
Cobalt	59-2	-0.01	-0.01	-0.01	-0.01		ppb
Copper	63-2	-0.04	-0.01	0.02	-0.01		ppb
Dysprosium	156-1						cps
Dysprosium	156-2						cps
Erbium	164-1						cps
Erbium	164-2						cps
Gadolinium	160-1						cps
Gadolinium	160-2						cps
Holmium	165-1				102		%
Holmium	165-2				101		%
Indium	115-1				104		%
Indium	115-2				99		%
Iron	54-2	-0.19	0.33	0.36	0.16	188.70	ppb
Iron	56-2	-0.05	0.10	0.37	0.14	151.59	ppb
Iron	57-2	-0.10	0.36	0.33	0.20	128.93	ppb
Krypton	83-1						cps
Lead	206-1	0.01	0.00	0.00	0.00	44.11	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : PB167437BL Instrumnet Name : P8
Client Sample ID : PB167437BL Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:45:20 DataFile Name : 037CCBE.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	0.00	0.00	0.01	0.00	26.80	ppb
Lead	208-1	0.01	0.00	0.00	0.01	57.60	ppb
Lithium	6-1				108		%
Magnesium	24-2	0.42	0.48	0.46	0.45	6.59	ppb
Manganese	55-2	-0.05	0.02	0.05	0.01	544.95	ppb
Molybdenum	94-1	0.04	0.04	0.04	0.04	5.24	ppb
Molybdenum	95-1	0.01	0.01	0.01	0.01	26.65	ppb
Molybdenum	96-1	0.01	0.01	0.01	0.01	31.38	ppb
Molybdenum	97-1	0.01	0.01	0.01	0.01	37.31	ppb
Molybdenum	98-1	0.01	0.01	0.01	0.01	16.49	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	-0.07	-0.06	-0.01	-0.05		ppb
Phosphorus	31-2	-18.28	-14.60	-15.05	-15.97		ppb
Potassium	39-2	21.11	21.26	22.18	21.52	2.68	ppb
Rhodium	103-1				103		%
Rhodium	103-2				101		%
Scandium	45-1				104		%
Scandium	45-2				101		%
Selenium	82-1	-0.09	-0.13	-0.13	-0.12		ppb
Selenium	77-2	0.00	0.00	0.00	0.00	N/A	ppb
Selenium	78-2	0.10	-0.07	0.48	0.17	169.16	ppb
Silicon	28-1	-0.02	-0.06	0.01	-0.02		ppb
Silver	107-1	0.01	0.01	0.01	0.01	12.68	ppb
Silver	109-1	0.01	0.01	0.01	0.01	6.10	ppb
Sodium	23-2	17.33	17.11	18.38	17.61	3.84	ppb
Strontium	86-1	0.00	0.00	0.00	0.00		ppb
Strontium	88-1	0.00	0.00	0.00	0.00	64.67	ppb
Sulfur	34-1	448.25	436.53	688.32	524.37	27.10	ppb
Terbium	159-1				100		%
Terbium	159-2				100		%
Thallium	203-1	0.02	0.01	0.02	0.02	18.12	ppb
Thallium	205-1	0.02	0.01	0.02	0.02	4.77	ppb
Tin	118-1	0.01	0.00	0.00	0.00	111.11	ppb
Titanium	47-1	0.02	0.02	0.01	0.02	35.10	ppb
Uranium	238-1	-0.01	-0.01	-0.01	-0.01		ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : PB167437BL Instrumnet Name : P8
Client Sample ID : PB167437BL Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:45:20 DataFile Name : 037CCBE.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	0.00	0.00	0.00	0.00		ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				104		%
Yttrium	89-2				102		%
Zinc	66-2	-0.08	-0.10	0.03	-0.05		ppb
Zirconium	90-1	0.01	0.01	0.01	0.01	17.90	ppb
Zirconium	91-1	0.01	0.01	0.01	0.01	5.51	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : PB167437BS Instrumnet Name : P8
Client Sample ID : PB167437BS Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:48:40 DataFile Name : 038LCSS.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	10891.89	10869.01	10543.87	10768.25	1.81	ppb
Antimony	121-1	525.17	533.87	522.61	527.22	1.12	ppb
Arsenic	75-2	512.18	515.23	526.99	518.14	1.51	ppb
Barium	135-1	2608.11	2623.94	2609.40	2613.82	0.34	ppb
Barium	137-1	2591.10	2631.77	2602.82	2608.56	0.80	ppb
Beryllium	9-1	519.75	519.74	516.47	518.65	0.36	ppb
Bismuth	209-1				93		%
Bismuth	209-2				92		%
Bromine	81-1						cps
Cadmium	108-1	539.39	537.92	538.39	538.57	0.14	ppb
Cadmium	106-1	540.85	539.13	540.89	540.29	0.19	ppb
Cadmium	111-1	537.38	537.77	530.52	535.22	0.76	ppb
Calcium	43-1	54181.12	52488.77	53084.08	53251.32	1.61	ppb
Calcium	44-1	53560.28	52467.16	53351.93	53126.46	1.09	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	518.29	525.64	526.50	523.48	0.86	ppb
Cobalt	59-2	532.66	516.95	527.40	525.67	1.52	ppb
Copper	63-2	5289.70	5130.24	5291.70	5237.22	1.77	ppb
Dysprosium	156-1						cps
Dysprosium	156-2						cps
Erbium	164-1						cps
Erbium	164-2						cps
Gadolinium	160-1						cps
Gadolinium	160-2						cps
Holmium	165-1				99		%
Holmium	165-2				100		%
Indium	115-1				94		%
Indium	115-2				89		%
Iron	54-2	27138.77	27486.41	27881.63	27502.27	1.35	ppb
Iron	56-2	27365.74	27135.06	27471.42	27324.07	0.63	ppb
Iron	57-2	27573.40	27272.38	27584.63	27476.80	0.64	ppb
Krypton	83-1						cps
Lead	206-1	2559.72	2618.24	2524.53	2567.50	1.84	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : PB167437BS Instrumnet Name : P8
Client Sample ID : PB167437BS Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:48:40 DataFile Name : 038LCSS.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	2537.23	2576.08	2490.82	2534.71	1.68	ppb
Lead	208-1	2555.23	2560.03	2514.58	2543.28	0.98	ppb
Lithium	6-1				102		%
Magnesium	24-2	55934.86	54378.58	55191.41	55168.29	1.41	ppb
Manganese	55-2	5248.10	5253.72	5315.54	5272.45	0.71	ppb
Molybdenum	94-1	5072.42	5155.18	5203.14	5143.58	1.29	ppb
Molybdenum	95-1	5070.04	5064.59	5134.66	5089.77	0.77	ppb
Molybdenum	96-1	5039.82	5029.87	5114.37	5061.36	0.91	ppb
Molybdenum	97-1	5085.08	5073.56	5163.28	5107.31	0.96	ppb
Molybdenum	98-1	5025.38	5059.39	5101.55	5062.11	0.75	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	516.30	500.25	514.93	510.49	1.74	ppb
Phosphorus	31-2	10789.77	10689.52	10815.14	10764.81	0.62	ppb
Potassium	39-2	22445.21	21994.57	22618.19	22352.65	1.44	ppb
Rhodium	103-1				94		%
Rhodium	103-2				94		%
Scandium	45-1				101		%
Scandium	45-2				101		%
Selenium	82-1	515.99	514.25	510.70	513.65	0.52	ppb
Selenium	77-2	506.14	514.44	529.95	516.85	2.34	ppb
Selenium	78-2	514.35	520.08	534.45	522.96	1.98	ppb
Silicon	28-1	490.72	494.42	481.94	489.03	1.31	ppb
Silver	107-1	538.58	541.08	539.76	539.81	0.23	ppb
Silver	109-1	542.32	528.53	531.56	534.14	1.36	ppb
Sodium	23-2	56481.72	55365.42	56155.93	56001.03	1.03	ppb
Strontium	86-1	520.34	518.46	517.72	518.84	0.26	ppb
Strontium	88-1	521.84	518.86	510.56	517.09	1.13	ppb
Sulfur	34-1	11403.55	10968.56	11145.24	11172.45	1.96	ppb
Terbium	159-1				98		%
Terbium	159-2				96		%
Thallium	203-1	523.22	527.35	510.30	520.29	1.71	ppb
Thallium	205-1	519.52	522.67	519.66	520.62	0.34	ppb
Tin	118-1	530.19	540.28	523.91	531.46	1.55	ppb
Titanium	47-1	5168.03	5126.74	5186.63	5160.46	0.59	ppb
Uranium	238-1	508.50	501.85	501.04	503.80	0.81	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : PB167437BS Instrumnet Name : P8
Client Sample ID : PB167437BS Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:48:40 DataFile Name : 038LCSS.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	522.80	533.84	526.86	527.83	1.06	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				101		%
Yttrium	89-2				99		%
Zinc	66-2	4741.19	4588.59	4735.15	4688.31	1.84	ppb
Zirconium	90-1	510.68	518.54	509.77	513.00	0.94	ppb
Zirconium	91-1	509.94	520.58	509.29	513.27	1.24	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-01 Instrumnet Name : P8
Client Sample ID : MW-19B-72-040125 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:52:52 DataFile Name : 039AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	14.03	14.57	12.59	13.73	7.43	ppb
Antimony	121-1	0.08	0.07	0.07	0.08	6.62	ppb
Arsenic	75-2	0.24	0.30	0.30	0.28	11.23	ppb
Barium	135-1	613.60	614.54	623.01	617.05	0.84	ppb
Barium	137-1	627.44	606.98	623.68	619.37	1.76	ppb
Beryllium	9-1	0.01	0.00	0.00	0.00	100.62	ppb
Bismuth	209-1				100		%
Bismuth	209-2				97		%
Bromine	81-1						cps
Cadmium	108-1	0.02	0.01	0.01	0.01	50.60	ppb
Cadmium	106-1	0.29	0.28	0.19	0.25	22.66	ppb
Cadmium	111-1	0.03	0.03	0.02	0.03	25.00	ppb
Calcium	43-1	33340.23	33542.23	32408.03	33096.83	1.83	ppb
Calcium	44-1	33531.90	33540.49	32553.92	33208.77	1.71	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	0.25	0.27	0.25	0.25	4.19	ppb
Cobalt	59-2	0.62	0.59	0.56	0.59	4.94	ppb
Copper	63-2	0.05	0.08	0.07	0.07	18.38	ppb
Dysprosium	156-1						cps
Dysprosium	156-2						cps
Erbium	164-1						cps
Erbium	164-2						cps
Gadolinium	160-1						cps
Gadolinium	160-2						cps
Holmium	165-1				102		%
Holmium	165-2				101		%
Indium	115-1				104		%
Indium	115-2				97		%
Iron	54-2	11654.79	11666.97	10948.27	11423.34	3.60	ppb
Iron	56-2	11663.36	11626.98	10789.36	11359.90	4.35	ppb
Iron	57-2	11808.50	11705.21	10989.68	11501.13	3.88	ppb
Krypton	83-1						cps
Lead	206-1	0.21	0.19	0.19	0.20	5.50	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-01 Instrumnet Name : P8
Client Sample ID : MW-19B-72-040125 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:52:52 DataFile Name : 039AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	0.21	0.19	0.18	0.19	7.02	ppb
Lead	208-1	0.20	0.19	0.19	0.19	4.89	ppb
Lithium	6-1				107		%
Magnesium	24-2	13477.60	13257.81	12737.11	13157.51	2.89	ppb
Manganese	55-2	651.57	665.43	615.52	644.18	4.00	ppb
Molybdenum	94-1	0.89	0.84	0.83	0.86	4.05	ppb
Molybdenum	95-1	0.93	0.91	0.93	0.92	0.94	ppb
Molybdenum	96-1	0.94	0.93	0.92	0.93	1.17	ppb
Molybdenum	97-1	0.95	0.92	0.91	0.93	2.44	ppb
Molybdenum	98-1	0.92	0.91	0.91	0.91	0.69	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	0.35	0.34	0.34	0.34	1.76	ppb
Phosphorus	31-2	176.75	181.81	178.14	178.90	1.46	ppb
Potassium	39-2	6963.65	6821.48	6829.72	6871.62	1.16	ppb
Rhodium	103-1				100		%
Rhodium	103-2				99		%
Scandium	45-1				108		%
Scandium	45-2				99		%
Selenium	82-1	0.10	0.02	0.05	0.06	72.09	ppb
Selenium	77-2	0.00	0.00	0.22	0.07	173.21	ppb
Selenium	78-2	0.04	0.12	-0.15	0.01	2455.08	ppb
Silicon	28-1	2940.18	2975.65	2875.29	2930.38	1.74	ppb
Silver	107-1	0.03	0.03	0.02	0.03	9.29	ppb
Silver	109-1	0.03	0.03	0.02	0.03	16.54	ppb
Sodium	23-2	10420.43	10123.09	9983.90	10175.80	2.19	ppb
Strontium	86-1	431.93	433.56	430.83	432.11	0.32	ppb
Strontium	88-1	439.32	436.90	429.52	435.25	1.17	ppb
Sulfur	34-1	1912.57	1645.79	1549.47	1702.61	11.05	ppb
Terbium	159-1				102		%
Terbium	159-2				99		%
Thallium	203-1	0.04	0.03	0.03	0.04	15.10	ppb
Thallium	205-1	0.04	0.03	0.03	0.03	13.63	ppb
Tin	118-1	0.53	0.53	0.51	0.52	2.20	ppb
Titanium	47-1	1.77	1.75	1.72	1.75	1.44	ppb
Uranium	238-1	0.02	0.02	0.02	0.02	10.44	ppb

LB Number :LB135293Operator :Jaswal

Lab Sample ID :Q1697-01Instrumnet Name :P8

Client Sample ID :MW-19B-72-040125Dilution Factor :1

Date & Time Acquired :2025-04-03 16:52:52DataFile Name :039AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	0.06	0.05	0.06	0.06	7.47	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				105		%
Yttrium	89-2				102		%
Zinc	66-2	2.40	2.19	2.09	2.23	7.01	ppb
Zirconium	90-1	0.04	0.04	0.04	0.04	6.50	ppb
Zirconium	91-1	0.04	0.04	0.04	0.04	3.69	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-02 Instrumnet Name : P8
Client Sample ID : IW-01-55-040125 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:56:00 DataFile Name : 040AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	102.55	98.04	91.06	97.21	5.96	ppb
Antimony	121-1	0.03	0.03	0.03	0.03	5.46	ppb
Arsenic	75-2	0.42	0.40	0.44	0.42	4.95	ppb
Barium	135-1	319.31	325.67	312.85	319.28	2.01	ppb
Barium	137-1	315.65	320.12	311.52	315.76	1.36	ppb
Beryllium	9-1	0.07	0.07	0.06	0.06	5.87	ppb
Bismuth	209-1				100		%
Bismuth	209-2				98		%
Bromine	81-1						cps
Cadmium	108-1	-0.01	0.00	0.01	0.00	1066.27	ppb
Cadmium	106-1	-0.09	0.16	-0.05	0.01	1891.92	ppb
Cadmium	111-1	0.00	0.02	0.00	0.00	453.63	ppb
Calcium	43-1	16996.55	16853.29	16776.29	16875.38	0.66	ppb
Calcium	44-1	16795.50	16610.79	16496.91	16634.40	0.91	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	1.54	1.55	1.82	1.64	9.58	ppb
Cobalt	59-2	7.70	7.73	7.01	7.48	5.43	ppb
Copper	63-2	0.75	0.75	0.70	0.73	3.72	ppb
Dysprosium	156-1						cps
Dysprosium	156-2						cps
Erbium	164-1						cps
Erbium	164-2						cps
Gadolinium	160-1						cps
Gadolinium	160-2						cps
Holmium	165-1				102		%
Holmium	165-2				102		%
Indium	115-1				103		%
Indium	115-2				100		%
Iron	54-2	6083.47	6239.54	5436.13	5919.72	7.20	ppb
Iron	56-2	6068.47	6086.95	5392.57	5849.33	6.76	ppb
Iron	57-2	5904.18	5915.02	5288.17	5702.46	6.29	ppb
Krypton	83-1						cps
Lead	206-1	0.11	0.11	0.12	0.11	5.14	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-02 Instrumnet Name : P8
Client Sample ID : IW-01-55-040125 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:56:00 DataFile Name : 040AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	0.10	0.11	0.10	0.10	4.55	ppb
Lead	208-1	0.11	0.11	0.11	0.11	1.92	ppb
Lithium	6-1				109		%
Magnesium	24-2	8772.57	8829.31	8035.03	8545.64	5.19	ppb
Manganese	55-2	614.43	616.39	557.29	596.04	5.63	ppb
Molybdenum	94-1	0.49	0.51	0.50	0.50	2.27	ppb
Molybdenum	95-1	0.46	0.47	0.47	0.47	1.78	ppb
Molybdenum	96-1	0.47	0.46	0.46	0.46	1.29	ppb
Molybdenum	97-1	0.46	0.45	0.46	0.46	1.58	ppb
Molybdenum	98-1	0.46	0.45	0.45	0.45	1.02	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	10.45	10.72	9.71	10.30	5.06	ppb
Phosphorus	31-2	359.86	348.96	322.01	343.61	5.67	ppb
Potassium	39-2	7009.87	7080.06	6869.48	6986.47	1.53	ppb
Rhodium	103-1				101		%
Rhodium	103-2				100		%
Scandium	45-1				108		%
Scandium	45-2				102		%
Selenium	82-1	0.48	0.07	0.03	0.19	128.01	ppb
Selenium	77-2	1.07	0.85	0.00	0.64	88.21	ppb
Selenium	78-2	0.36	0.30	0.56	0.40	33.51	ppb
Silicon	28-1	3485.55	3519.32	3477.74	3494.20	0.63	ppb
Silver	107-1	0.01	0.01	0.01	0.01	9.62	ppb
Silver	109-1	0.01	0.01	0.01	0.01	10.60	ppb
Sodium	23-2	8662.85	8680.41	8437.08	8593.45	1.58	ppb
Strontium	86-1	223.98	222.44	226.36	224.26	0.88	ppb
Strontium	88-1	221.60	226.65	221.09	223.11	1.38	ppb
Sulfur	34-1	3297.28	3232.77	3018.68	3182.91	4.58	ppb
Terbium	159-1				102		%
Terbium	159-2				101		%
Thallium	203-1	0.22	0.21	0.22	0.22	0.98	ppb
Thallium	205-1	0.22	0.22	0.21	0.22	1.81	ppb
Tin	118-1	0.61	0.61	0.59	0.60	1.46	ppb
Titanium	47-1	5.40	5.27	5.24	5.31	1.59	ppb
Uranium	238-1	0.01	0.00	0.01	0.01	8.57	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-02 Instrumnet Name : P8
Client Sample ID : IW-01-55-040125 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:56:00 DataFile Name : 040AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	0.22	0.24	0.22	0.23	4.58	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				105		%
Yttrium	89-2				104		%
Zinc	66-2	9.99	9.68	8.93	9.53	5.75	ppb
Zirconium	90-1	0.06	0.06	0.06	0.06	2.05	ppb
Zirconium	91-1	0.06	0.06	0.06	0.06	2.25	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-03 Instrumnet Name : P8
Client Sample ID : IW-02-55-040125 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:59:12 DataFile Name : 041AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	71.45	68.21	65.97	68.54	4.02	ppb
Antimony	121-1	0.02	0.02	0.02	0.02	4.81	ppb
Arsenic	75-2	0.42	0.41	0.34	0.39	11.30	ppb
Barium	135-1	301.99	296.62	298.20	298.94	0.92	ppb
Barium	137-1	289.39	291.70	298.06	293.05	1.53	ppb
Beryllium	9-1	0.03	0.04	0.03	0.03	9.32	ppb
Bismuth	209-1				99		%
Bismuth	209-2				99		%
Bromine	81-1						cps
Cadmium	108-1	0.00	0.02	0.01	0.01	106.09	ppb
Cadmium	106-1	-0.28	-0.38	-0.33	-0.33		ppb
Cadmium	111-1	-0.02	-0.03	-0.03	-0.03		ppb
Calcium	43-1	15906.23	15820.46	15895.22	15873.97	0.29	ppb
Calcium	44-1	15598.39	15546.46	15457.40	15534.08	0.46	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	0.46	0.48	0.46	0.47	2.68	ppb
Cobalt	59-2	7.02	7.16	6.79	6.99	2.69	ppb
Copper	63-2	0.04	0.03	0.04	0.04	15.07	ppb
Dysprosium	156-1						cps
Dysprosium	156-2						cps
Erbium	164-1						cps
Erbium	164-2						cps
Gadolinium	160-1						cps
Gadolinium	160-2						cps
Holmium	165-1				103		%
Holmium	165-2				103		%
Indium	115-1				104		%
Indium	115-2				101		%
Iron	54-2	5681.95	5634.51	5470.00	5595.49	1.99	ppb
Iron	56-2	5633.14	5731.49	5336.04	5566.89	3.70	ppb
Iron	57-2	5454.92	5524.38	5205.54	5394.95	3.11	ppb
Krypton	83-1						cps
Lead	206-1	0.13	0.13	0.12	0.13	4.86	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-03 Instrumnet Name : P8
Client Sample ID : IW-02-55-040125 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:59:12 DataFile Name : 041AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	0.13	0.13	0.14	0.13	0.79	ppb
Lead	208-1	0.13	0.14	0.13	0.13	1.36	ppb
Lithium	6-1				110		%
Magnesium	24-2	8528.87	8549.43	8227.33	8435.21	2.14	ppb
Manganese	55-2	601.36	604.60	585.95	597.31	1.67	ppb
Molybdenum	94-1	0.72	0.66	0.67	0.68	4.00	ppb
Molybdenum	95-1	0.75	0.77	0.75	0.76	1.51	ppb
Molybdenum	96-1	0.75	0.75	0.76	0.75	0.62	ppb
Molybdenum	97-1	0.76	0.77	0.78	0.77	1.32	ppb
Molybdenum	98-1	0.74	0.76	0.75	0.75	1.57	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	8.00	8.09	7.73	7.94	2.37	ppb
Phosphorus	31-2	285.49	303.38	297.80	295.56	3.10	ppb
Potassium	39-2	6851.06	7003.20	6909.07	6921.11	1.11	ppb
Rhodium	103-1				101		%
Rhodium	103-2				103		%
Scandium	45-1				111		%
Scandium	45-2				104		%
Selenium	82-1	0.02	-0.04	0.01	0.00		ppb
Selenium	77-2	0.42	0.42	0.00	0.28	86.60	ppb
Selenium	78-2	-0.47	0.28	0.58	0.13	425.20	ppb
Silicon	28-1	3480.45	3512.81	3479.05	3490.77	0.55	ppb
Silver	107-1	0.00	0.00	0.00	0.00	8.67	ppb
Silver	109-1	0.00	0.00	0.01	0.01	12.78	ppb
Sodium	23-2	6881.09	6945.07	6845.12	6890.42	0.73	ppb
Strontium	86-1	204.12	202.57	203.31	203.33	0.38	ppb
Strontium	88-1	204.63	202.77	202.52	203.31	0.57	ppb
Sulfur	34-1	845.13	697.29	718.33	753.58	10.61	ppb
Terbium	159-1				103		%
Terbium	159-2				101		%
Thallium	203-1	0.16	0.16	0.15	0.16	1.84	ppb
Thallium	205-1	0.16	0.16	0.16	0.16	1.35	ppb
Tin	118-1	0.51	0.51	0.53	0.52	1.72	ppb
Titanium	47-1	7.24	7.22	7.18	7.21	0.39	ppb
Uranium	238-1	0.00	0.00	0.00	0.00	6.07	ppb

LB Number :

LB135293

Operator :

Jaswal

Lab Sample ID :

Q1697-03

Instrumnet Name :

P8

Client Sample ID :

IW-02-55-040125

Dilution Factor :

1

Date & Time Acquired :

2025-04-03 16:59:12

DataFile Name :

041AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	0.38	0.37	0.35	0.37	4.41	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				105		%
Yttrium	89-2				106		%
Zinc	66-2	6.88	7.02	6.79	6.90	1.71	ppb
Zirconium	90-1	0.03	0.03	0.03	0.03	2.16	ppb
Zirconium	91-1	0.03	0.03	0.03	0.03	11.26	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-04 Instrumnet Name : P8
Client Sample ID : IW-02-55-040125-FD Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:02:22 DataFile Name : 042AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	79.01	69.17	64.10	70.76	10.71	ppb
Antimony	121-1	0.02	0.02	0.02	0.02	7.25	ppb
Arsenic	75-2	0.38	0.40	0.39	0.39	2.16	ppb
Barium	135-1	306.04	306.90	306.85	306.60	0.16	ppb
Barium	137-1	300.13	305.06	303.70	302.96	0.84	ppb
Beryllium	9-1	0.03	0.03	0.03	0.03	10.17	ppb
Bismuth	209-1				100		%
Bismuth	209-2				99		%
Bromine	81-1						cps
Cadmium	108-1	0.01	0.02	0.01	0.01	65.69	ppb
Cadmium	106-1	-0.60	-0.45	-0.12	-0.39		ppb
Cadmium	111-1	-0.05	-0.04	-0.01	-0.03		ppb
Calcium	43-1	16115.24	15962.80	15747.72	15941.92	1.16	ppb
Calcium	44-1	15998.32	15847.27	15534.96	15793.52	1.50	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	0.89	0.86	0.81	0.86	5.06	ppb
Cobalt	59-2	6.64	6.62	6.22	6.49	3.65	ppb
Copper	63-2	0.11	0.11	0.10	0.11	5.03	ppb
Dysprosium	156-1						cps
Dysprosium	156-2						cps
Erbium	164-1						cps
Erbium	164-2						cps
Gadolinium	160-1						cps
Gadolinium	160-2						cps
Holmium	165-1				102		%
Holmium	165-2				103		%
Indium	115-1				103		%
Indium	115-2				100		%
Iron	54-2	5900.92	5772.92	5396.96	5690.26	4.60	ppb
Iron	56-2	5830.77	5670.38	5324.28	5608.48	4.62	ppb
Iron	57-2	5678.17	5485.06	5149.55	5437.59	4.92	ppb
Krypton	83-1						cps
Lead	206-1	0.08	0.09	0.08	0.09	3.84	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-04 Instrumnet Name : P8
Client Sample ID : IW-02-55-040125-FD Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:02:22 DataFile Name : 042AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	0.08	0.08	0.09	0.08	5.15	ppb
Lead	208-1	0.08	0.08	0.09	0.08	1.23	ppb
Lithium	6-1				109		%
Magnesium	24-2	8941.47	8629.19	8184.35	8585.00	4.43	ppb
Manganese	55-2	623.60	609.07	572.43	601.70	4.38	ppb
Molybdenum	94-1	0.66	0.69	0.67	0.67	1.56	ppb
Molybdenum	95-1	0.72	0.71	0.73	0.72	1.37	ppb
Molybdenum	96-1	0.73	0.72	0.73	0.73	0.70	ppb
Molybdenum	97-1	0.74	0.70	0.74	0.73	2.88	ppb
Molybdenum	98-1	0.72	0.71	0.73	0.72	1.12	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	7.85	7.82	7.34	7.67	3.69	ppb
Phosphorus	31-2	294.29	299.68	299.76	297.91	1.05	ppb
Potassium	39-2	7220.83	7207.05	7012.57	7146.82	1.63	ppb
Rhodium	103-1				101		%
Rhodium	103-2				102		%
Scandium	45-1				110		%
Scandium	45-2				104		%
Selenium	82-1	-0.05	0.05	0.11	0.04	215.18	ppb
Selenium	77-2	0.00	0.21	0.21	0.14	86.61	ppb
Selenium	78-2	-0.10	-0.10	-0.03	-0.08		ppb
Silicon	28-1	3639.43	3558.14	3560.49	3586.02	1.29	ppb
Silver	107-1	0.00	0.00	0.00	0.00	18.60	ppb
Silver	109-1	0.00	0.00	0.00	0.00	3.58	ppb
Sodium	23-2	7069.28	6940.27	6790.71	6933.42	2.01	ppb
Strontium	86-1	204.80	205.69	210.10	206.86	1.37	ppb
Strontium	88-1	204.20	204.94	205.43	204.85	0.30	ppb
Sulfur	34-1	881.10	757.39	712.64	783.71	11.13	ppb
Terbium	159-1				101		%
Terbium	159-2				101		%
Thallium	203-1	0.15	0.15	0.17	0.16	5.91	ppb
Thallium	205-1	0.16	0.16	0.16	0.16	1.95	ppb
Tin	118-1	0.54	0.54	0.54	0.54	0.61	ppb
Titanium	47-1	7.49	7.49	7.35	7.44	1.06	ppb
Uranium	238-1	0.00	0.00	0.00	0.00	9.18	ppb

LB Number :LB135293Operator :Jaswal

Lab Sample ID :Q1697-04Instrumnet Name :P8

Client Sample ID :IW-02-55-040125-FDDilution Factor :1

Date & Time Acquired :2025-04-03 17:02:22DataFile Name :042AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	0.35	0.36	0.32	0.34	5.48	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				105		%
Yttrium	89-2				105		%
Zinc	66-2	7.68	7.04	6.95	7.22	5.48	ppb
Zirconium	90-1	0.03	0.03	0.02	0.03	6.20	ppb
Zirconium	91-1	0.03	0.02	0.03	0.03	11.68	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-04DUP Instrumnet Name : P8
Client Sample ID : IW-02-55-040125-FDDUF Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:05:34 DataFile Name : 043AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	60.81	58.87	56.20	58.63	3.95	ppb
Antimony	121-1	0.02	0.02	0.02	0.02	8.76	ppb
Arsenic	75-2	0.40	0.48	0.32	0.40	20.53	ppb
Barium	135-1	305.30	308.71	316.41	310.14	1.83	ppb
Barium	137-1	293.99	305.91	307.73	302.54	2.47	ppb
Beryllium	9-1	0.03	0.03	0.03	0.03	6.73	ppb
Bismuth	209-1				99		%
Bismuth	209-2				98		%
Bromine	81-1						cps
Cadmium	108-1	0.02	0.01	0.02	0.02	13.95	ppb
Cadmium	106-1	-0.69	-0.23	-0.58	-0.50		ppb
Cadmium	111-1	-0.06	-0.02	-0.04	-0.04		ppb
Calcium	43-1	15959.42	16150.78	16176.95	16095.72	0.74	ppb
Calcium	44-1	15754.89	16064.65	15864.41	15894.65	0.99	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	0.60	0.60	0.58	0.59	1.83	ppb
Cobalt	59-2	6.75	6.59	6.16	6.50	4.67	ppb
Copper	63-2	0.28	0.28	0.29	0.28	2.00	ppb
Dysprosium	156-1						cps
Dysprosium	156-2						cps
Erbium	164-1						cps
Erbium	164-2						cps
Gadolinium	160-1						cps
Gadolinium	160-2						cps
Holmium	165-1				100		%
Holmium	165-2				102		%
Indium	115-1				103		%
Indium	115-2				101		%
Iron	54-2	5865.56	5785.52	5342.36	5664.48	4.98	ppb
Iron	56-2	5640.88	5614.73	5343.59	5533.07	2.98	ppb
Iron	57-2	5519.77	5521.50	5167.05	5402.77	3.78	ppb
Krypton	83-1						cps
Lead	206-1	0.09	0.08	0.09	0.09	4.19	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-04DUP Instrumnet Name : P8
Client Sample ID : IW-02-55-040125-FDDUF Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:05:34 DataFile Name : 043AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	0.09	0.09	0.09	0.09	1.57	ppb
Lead	208-1	0.09	0.08	0.09	0.09	2.22	ppb
Lithium	6-1				110		%
Magnesium	24-2	8889.44	8684.82	8299.97	8624.74	3.47	ppb
Manganese	55-2	613.47	611.26	583.91	602.88	2.73	ppb
Molybdenum	94-1	0.66	0.62	0.67	0.65	3.74	ppb
Molybdenum	95-1	0.74	0.73	0.74	0.74	1.08	ppb
Molybdenum	96-1	0.74	0.72	0.72	0.73	1.70	ppb
Molybdenum	97-1	0.76	0.74	0.72	0.74	2.72	ppb
Molybdenum	98-1	0.72	0.70	0.72	0.71	1.54	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	7.72	7.61	7.14	7.49	4.12	ppb
Phosphorus	31-2	295.79	306.43	286.91	296.38	3.30	ppb
Potassium	39-2	7206.19	7020.06	6873.60	7033.28	2.37	ppb
Rhodium	103-1				100		%
Rhodium	103-2				102		%
Scandium	45-1				110		%
Scandium	45-2				105		%
Selenium	82-1	0.08	0.22	-0.15	0.05	360.89	ppb
Selenium	77-2	0.21	0.00	0.21	0.14	86.60	ppb
Selenium	78-2	-0.10	-0.10	0.39	0.06	469.66	ppb
Silicon	28-1	3560.56	3635.17	3570.82	3588.85	1.13	ppb
Silver	107-1	0.00	0.00	0.00	0.00	35.14	ppb
Silver	109-1	0.00	0.00	0.00	0.00	22.13	ppb
Sodium	23-2	7104.22	6991.29	6850.06	6981.86	1.82	ppb
Strontium	86-1	209.51	204.38	210.38	208.09	1.56	ppb
Strontium	88-1	202.54	203.97	205.05	203.85	0.62	ppb
Sulfur	34-1	819.82	816.92	726.59	787.78	6.73	ppb
Terbium	159-1				100		%
Terbium	159-2				101		%
Thallium	203-1	0.15	0.16	0.16	0.16	2.94	ppb
Thallium	205-1	0.16	0.15	0.16	0.16	2.50	ppb
Tin	118-1	0.52	0.53	0.53	0.53	0.82	ppb
Titanium	47-1	8.52	6.43	6.46	7.14	16.78	ppb
Uranium	238-1	0.00	0.00	0.00	0.00	45.95	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-04DUP Instrumnet Name : P8
Client Sample ID : IW-02-55-040125-FDDUF Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:05:34 DataFile Name : 043AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	0.31	0.30	0.29	0.30	4.42	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				104		%
Yttrium	89-2				107		%
Zinc	66-2	7.23	6.85	6.78	6.95	3.50	ppb
Zirconium	90-1	0.02	0.02	0.02	0.02	8.92	ppb
Zirconium	91-1	0.03	0.02	0.03	0.02	22.48	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-04LX5 Instrumnet Name : P8
Client Sample ID : IW-02-55-040125-FDL Dilution Factor : 5
Date & Time Acquired : 2025-04-03 17:08:54 DataFile Name : 044AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	14.59	12.28	10.48	12.45	16.53	ppb
Antimony	121-1	0.00	0.01	0.01	0.01	20.36	ppb
Arsenic	75-2	0.07	0.06	0.04	0.06	27.14	ppb
Barium	135-1	60.19	58.74	61.62	60.18	2.39	ppb
Barium	137-1	61.02	58.92	61.82	60.59	2.47	ppb
Beryllium	9-1	-0.01	-0.01	-0.01	-0.01		ppb
Bismuth	209-1				99		%
Bismuth	209-2				99		%
Bromine	81-1						cps
Cadmium	108-1	-0.01	0.04	0.00	0.01	314.64	ppb
Cadmium	106-1	-0.14	-0.50	-0.16	-0.27		ppb
Cadmium	111-1	-0.01	-0.05	-0.02	-0.03		ppb
Calcium	43-1	3341.47	3292.25	3384.21	3339.31	1.38	ppb
Calcium	44-1	3357.80	3312.47	3325.97	3332.08	0.70	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	0.16	0.16	0.16	0.16	1.35	ppb
Cobalt	59-2	1.35	1.13	0.98	1.15	16.00	ppb
Copper	63-2	0.02	0.04	0.06	0.04	43.94	ppb
Dysprosium	156-1						cps
Dysprosium	156-2						cps
Erbium	164-1						cps
Erbium	164-2						cps
Gadolinium	160-1						cps
Gadolinium	160-2						cps
Holmium	165-1				100		%
Holmium	165-2				102		%
Indium	115-1				102		%
Indium	115-2				101		%
Iron	54-2	1125.32	938.24	801.48	955.01	17.02	ppb
Iron	56-2	1137.15	961.60	811.48	970.08	16.80	ppb
Iron	57-2	1121.60	938.85	797.22	952.56	17.07	ppb
Krypton	83-1						cps
Lead	206-1	0.00	0.01	0.01	0.00	53.88	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-04LX5 Instrumnet Name : P8
Client Sample ID : IW-02-55-040125-FDL Dilution Factor : 5
Date & Time Acquired : 2025-04-03 17:08:54 DataFile Name : 044AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	0.01	0.01	0.01	0.01	34.47	ppb
Lead	208-1	0.01	0.01	0.01	0.01	25.42	ppb
Lithium	6-1				108		%
Magnesium	24-2	1791.73	1538.90	1337.37	1556.00	14.63	ppb
Manganese	55-2	119.86	101.87	88.34	103.36	15.30	ppb
Molybdenum	94-1	0.15	0.16	0.15	0.15	3.44	ppb
Molybdenum	95-1	0.14	0.14	0.14	0.14	1.83	ppb
Molybdenum	96-1	0.15	0.15	0.14	0.15	0.55	ppb
Molybdenum	97-1	0.15	0.14	0.15	0.14	4.04	ppb
Molybdenum	98-1	0.14	0.14	0.15	0.14	1.14	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	1.49	1.30	1.16	1.32	12.78	ppb
Phosphorus	31-2	43.87	42.94	32.31	39.71	16.17	ppb
Potassium	39-2	1444.52	1357.93	1236.31	1346.25	7.77	ppb
Rhodium	103-1				103		%
Rhodium	103-2				104		%
Scandium	45-1				107		%
Scandium	45-2				105		%
Selenium	82-1	-0.05	-0.03	-0.07	-0.05		ppb
Selenium	77-2	0.00	0.00	0.21	0.07	173.21	ppb
Selenium	78-2	-0.16	0.66	0.59	0.36	124.96	ppb
Silicon	28-1	758.66	731.64	762.24	750.85	2.23	ppb
Silver	107-1	0.00	0.00	0.00	0.00	51.35	ppb
Silver	109-1	0.00	0.00	0.00	0.00	32.80	ppb
Sodium	23-2	1473.27	1335.13	1217.34	1341.91	9.55	ppb
Strontium	86-1	39.63	40.22	40.16	40.00	0.81	ppb
Strontium	88-1	41.33	41.59	41.77	41.56	0.53	ppb
Sulfur	34-1	-380.96	-472.97	-363.97	-405.97		ppb
Terbium	159-1				98		%
Terbium	159-2				100		%
Thallium	203-1	0.03	0.04	0.03	0.03	3.35	ppb
Thallium	205-1	0.03	0.03	0.03	0.03	3.97	ppb
Tin	118-1	0.11	0.10	0.11	0.11	4.93	ppb
Titanium	47-1	1.54	1.54	1.58	1.56	1.51	ppb
Uranium	238-1	-0.01	-0.01	-0.01	-0.01		ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-04LX5 Instrumnet Name : P8
Client Sample ID : IW-02-55-040125-FDL Dilution Factor : 5
Date & Time Acquired : 2025-04-03 17:08:54 DataFile Name : 044AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	0.07	0.06	0.05	0.06	19.60	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				104		%
Yttrium	89-2				106		%
Zinc	66-2	1.52	1.31	1.10	1.31	16.23	ppb
Zirconium	90-1	0.01	0.01	0.01	0.01	6.41	ppb
Zirconium	91-1	0.01	0.02	0.02	0.01	27.35	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-04MS Instrumnet Name : P8
Client Sample ID : IW-02-55-040125-FDMS Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:12:24 DataFile Name : 045AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	9343.22	9347.82	9316.66	9335.90	0.18	ppb
Antimony	121-1	481.35	486.95	488.11	485.47	0.74	ppb
Arsenic	75-2	0.53	0.53	0.55	0.54	1.85	ppb
Barium	135-1	2390.69	2426.88	2457.95	2425.17	1.39	ppb
Barium	137-1	2370.87	2474.40	2394.04	2413.10	2.25	ppb
Beryllium	9-1	480.94	473.59	484.41	479.65	1.15	ppb
Bismuth	209-1				94		%
Bismuth	209-2				92		%
Bromine	81-1						cps
Cadmium	108-1	443.26	446.51	451.84	447.20	0.97	ppb
Cadmium	106-1	481.35	485.33	483.70	483.46	0.41	ppb
Cadmium	111-1	476.49	481.52	485.88	481.30	0.98	ppb
Calcium	43-1	62491.49	63678.30	61682.36	62617.38	1.60	ppb
Calcium	44-1	62201.22	62930.69	60953.25	62028.39	1.61	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	464.18	474.06	464.76	467.67	1.19	ppb
Cobalt	59-2	474.63	481.67	482.53	479.61	0.90	ppb
Copper	63-2	4248.60	4351.08	4296.05	4298.58	1.19	ppb
Dysprosium	156-1						cps
Dysprosium	156-2						cps
Erbium	164-1						cps
Erbium	164-2						cps
Gadolinium	160-1						cps
Gadolinium	160-2						cps
Holmium	165-1				99		%
Holmium	165-2				100		%
Indium	115-1				96		%
Indium	115-2				91		%
Iron	54-2	27146.96	27884.50	27409.42	27480.29	1.36	ppb
Iron	56-2	27063.40	27326.23	26739.22	27042.95	1.09	ppb
Iron	57-2	27297.72	27537.34	27163.94	27333.00	0.69	ppb
Krypton	83-1						cps
Lead	206-1	2369.98	2390.92	2447.81	2402.90	1.68	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-04MS Instrumnet Name : P8
Client Sample ID : IW-02-55-040125-FDMS Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:12:24 DataFile Name : 045AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	2343.33	2386.05	2424.36	2384.58	1.70	ppb
Lead	208-1	2341.63	2384.58	2414.24	2380.15	1.53	ppb
Lithium	6-1				105		%
Magnesium	24-2	58204.40	58127.23	58212.90	58181.51	0.08	ppb
Manganese	55-2	4893.96	4993.58	4818.71	4902.08	1.79	ppb
Molybdenum	94-1	2241.78	2224.95	2281.10	2249.27	1.28	ppb
Molybdenum	95-1	1718.66	1672.09	1748.73	1713.16	2.25	ppb
Molybdenum	96-1	1767.69	1787.27	1794.43	1783.13	0.78	ppb
Molybdenum	97-1	1685.62	1737.63	1741.71	1721.65	1.82	ppb
Molybdenum	98-1	1686.19	1690.34	1724.17	1700.23	1.23	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	449.65	461.89	457.83	456.46	1.37	ppb
Phosphorus	31-2	275.84	284.68	278.00	279.51	1.65	ppb
Potassium	39-2	24669.64	24971.98	24878.25	24839.96	0.62	ppb
Rhodium	103-1				96		%
Rhodium	103-2				96		%
Scandium	45-1				108		%
Scandium	45-2				106		%
Selenium	82-1	472.13	468.80	475.83	472.26	0.74	ppb
Selenium	77-2	488.75	489.72	484.09	487.52	0.62	ppb
Selenium	78-2	479.11	477.24	479.22	478.52	0.23	ppb
Silicon	28-1	3382.98	3440.03	3347.98	3390.33	1.37	ppb
Silver	107-1	82.85	81.46	83.41	82.57	1.22	ppb
Silver	109-1	80.33	80.34	82.99	81.22	1.89	ppb
Sodium	23-2	57482.98	57554.55	57536.70	57524.74	0.06	ppb
Strontium	86-1	757.44	763.20	758.52	759.72	0.40	ppb
Strontium	88-1	768.22	763.98	757.46	763.22	0.71	ppb
Sulfur	34-1	1176.97	1514.87	1319.96	1337.27	12.68	ppb
Terbium	159-1				100		%
Terbium	159-2				98		%
Thallium	203-1	452.53	471.00	483.59	469.04	3.33	ppb
Thallium	205-1	455.59	468.05	479.29	467.64	2.53	ppb
Tin	118-1	441.26	453.64	448.46	447.79	1.39	ppb
Titanium	47-1	8.69	8.95	8.62	8.75	2.00	ppb
Uranium	238-1	459.71	471.04	465.75	465.50	1.22	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-04MS Instrumnet Name : P8
Client Sample ID : IW-02-55-040125-FDMS Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:12:24 DataFile Name : 045AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	478.64	488.31	480.74	482.56	1.05	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				101		%
Yttrium	89-2				102		%
Zinc	66-2	3804.62	3873.79	3892.80	3857.07	1.20	ppb
Zirconium	90-1	470.94	464.00	470.40	468.45	0.82	ppb
Zirconium	91-1	474.49	458.01	476.16	469.56	2.14	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : CCV02 Instrumnet Name : P8
Client Sample ID : CCV02 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:16:00 DataFile Name : 046CCV.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	50736.98	50990.09	51655.12	51127.40	0.93	ppb
Antimony	121-1	477.99	486.32	490.23	484.84	1.29	ppb
Arsenic	75-2	473.93	484.14	474.30	477.46	1.21	ppb
Barium	135-1	2433.70	2448.15	2446.82	2442.89	0.33	ppb
Barium	137-1	2451.74	2438.99	2398.99	2429.91	1.13	ppb
Beryllium	9-1	509.55	502.78	510.85	507.73	0.85	ppb
Bismuth	209-1				84		%
Bismuth	209-2				84		%
Bromine	81-1						cps
Cadmium	108-1	483.37	481.90	482.38	482.55	0.15	ppb
Cadmium	106-1	489.41	489.98	485.73	488.37	0.47	ppb
Cadmium	111-1	485.34	482.23	474.14	480.57	1.20	ppb
Calcium	43-1	250827.51	243690.32	245495.31	246671.04	1.50	ppb
Calcium	44-1	251368.99	241683.52	242245.42	245099.31	2.22	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	500.85	489.83	490.58	493.75	1.25	ppb
Cobalt	59-2	480.00	473.80	472.02	475.28	0.88	ppb
Copper	63-2	4552.24	4549.08	4600.84	4567.39	0.64	ppb
Dysprosium	156-1						cps
Dysprosium	156-2						cps
Erbium	164-1						cps
Erbium	164-2						cps
Gadolinium	160-1						cps
Gadolinium	160-2						cps
Holmium	165-1				94		%
Holmium	165-2				96		%
Indium	115-1				88		%
Indium	115-2				86		%
Iron	54-2	125465.65	123851.28	123839.34	124385.42	0.75	ppb
Iron	56-2	122089.89	122302.98	123326.72	122573.20	0.54	ppb
Iron	57-2	123106.48	123334.50	123234.34	123225.11	0.09	ppb
Krypton	83-1						cps
Lead	206-1	2469.94	2406.48	2457.54	2444.66	1.38	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : CCV02 Instrumnet Name : P8
Client Sample ID : CCV02 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:16:00 DataFile Name : 046CCV.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	2474.00	2433.09	2429.72	2445.60	1.01	ppb
Lead	208-1	2477.17	2418.45	2439.80	2445.14	1.22	ppb
Lithium	6-1				93		%
Magnesium	24-2	251434.24	253011.26	253141.30	252528.93	0.38	ppb
Manganese	55-2	4997.88	4931.21	5009.43	4979.51	0.85	ppb
Molybdenum	94-1	4847.16	4853.76	4796.54	4832.48	0.65	ppb
Molybdenum	95-1	4797.69	4803.92	4808.16	4803.26	0.11	ppb
Molybdenum	96-1	4752.22	4824.39	4865.37	4813.99	1.19	ppb
Molybdenum	97-1	4834.13	4831.70	4870.49	4845.44	0.45	ppb
Molybdenum	98-1	4781.20	4812.51	4784.34	4792.68	0.36	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	454.08	460.45	461.57	458.70	0.88	ppb
Phosphorus	31-2	10191.80	10135.51	10365.51	10230.94	1.17	ppb
Potassium	39-2	112602.81	113832.02	112856.39	113097.08	0.57	ppb
Rhodium	103-1				85		%
Rhodium	103-2				87		%
Scandium	45-1				97		%
Scandium	45-2				100		%
Selenium	82-1	469.34	473.20	473.50	472.01	0.49	ppb
Selenium	77-2	464.65	479.75	476.14	473.51	1.67	ppb
Selenium	78-2	470.65	486.54	478.47	478.55	1.66	ppb
Silicon	28-1	562.96	538.05	562.31	554.44	2.56	ppb
Silver	107-1	474.19	477.61	478.52	476.77	0.48	ppb
Silver	109-1	478.47	476.24	473.24	475.99	0.55	ppb
Sodium	23-2	254166.51	253725.47	254601.09	254164.36	0.17	ppb
Strontium	86-1	492.77	479.19	489.26	487.07	1.45	ppb
Strontium	88-1	490.03	478.00	491.47	486.50	1.52	ppb
Sulfur	34-1	10977.66	10235.81	10777.14	10663.54	3.60	ppb
Terbium	159-1				93		%
Terbium	159-2				95		%
Thallium	203-1	499.59	493.10	499.72	497.47	0.76	ppb
Thallium	205-1	508.80	489.67	500.31	499.59	1.92	ppb
Tin	118-1	488.95	495.04	484.07	489.36	1.12	ppb
Titanium	47-1	4923.72	4799.41	4925.61	4882.92	1.48	ppb
Uranium	238-1	511.46	499.70	500.14	503.76	1.32	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : CCV02 Instrumnet Name : P8
Client Sample ID : CCV02 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:16:00 DataFile Name : 046CCV.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	504.80	502.73	501.64	503.06	0.32	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				96		%
Yttrium	89-2				98		%
Zinc	66-2	4197.40	4158.40	4231.26	4195.69	0.87	ppb
Zirconium	90-1	492.42	487.92	483.51	487.95	0.91	ppb
Zirconium	91-1	493.95	492.05	476.85	487.62	1.92	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : CCB02 Instrumnet Name : P8
Client Sample ID : CCB02 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:20:09 DataFile Name : 047CCBE.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	4.02	3.48	3.47	3.66	8.60	ppb
Antimony	121-1	0.05	0.04	0.04	0.04	12.80	ppb
Arsenic	75-2	-0.02	-0.02	-0.02	-0.02		ppb
Barium	135-1	0.03	0.01	0.02	0.02	43.94	ppb
Barium	137-1	0.03	0.02	0.02	0.02	15.12	ppb
Beryllium	9-1	0.00	0.00	0.00	0.00		ppb
Bismuth	209-1				103		%
Bismuth	209-2				103		%
Bromine	81-1						cps
Cadmium	108-1	0.04	0.01	0.02	0.02	50.81	ppb
Cadmium	106-1	0.34	0.10	0.38	0.27	56.09	ppb
Cadmium	111-1	0.03	0.01	0.03	0.02	52.50	ppb
Calcium	43-1	58.81	56.56	62.86	59.41	5.37	ppb
Calcium	44-1	57.49	56.73	58.41	57.55	1.47	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	0.00	0.00	0.01	0.00	204.95	ppb
Cobalt	59-2	-0.01	-0.01	0.00	-0.01		ppb
Copper	63-2	0.01	0.03	0.04	0.03	43.82	ppb
Dysprosium	156-1						cps
Dysprosium	156-2						cps
Erbium	164-1						cps
Erbium	164-2						cps
Gadolinium	160-1						cps
Gadolinium	160-2						cps
Holmium	165-1				104		%
Holmium	165-2				105		%
Indium	115-1				105		%
Indium	115-2				101		%
Iron	54-2	1.01	1.00	0.63	0.88	24.90	ppb
Iron	56-2	0.47	0.58	0.67	0.57	18.26	ppb
Iron	57-2	0.62	0.35	0.70	0.56	32.15	ppb
Krypton	83-1						cps
Lead	206-1	0.06	0.07	0.07	0.07	6.63	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : CCB02 Instrumnet Name : P8
Client Sample ID : CCB02 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:20:09 DataFile Name : 047CCBE.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	0.08	0.07	0.06	0.07	14.94	ppb
Lead	208-1	0.07	0.07	0.06	0.07	6.03	ppb
Lithium	6-1				109		%
Magnesium	24-2	2.02	1.76	1.71	1.83	8.94	ppb
Manganese	55-2	-0.01	0.01	0.06	0.02	170.81	ppb
Molybdenum	94-1	0.14	0.12	0.13	0.13	6.07	ppb
Molybdenum	95-1	0.06	0.04	0.04	0.05	27.87	ppb
Molybdenum	96-1	0.07	0.05	0.05	0.06	24.78	ppb
Molybdenum	97-1	0.06	0.04	0.04	0.05	18.23	ppb
Molybdenum	98-1	0.06	0.04	0.04	0.05	15.66	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	0.03	0.06	0.07	0.05	41.99	ppb
Phosphorus	31-2	-18.94	-17.97	-19.29	-18.73		ppb
Potassium	39-2	28.43	31.14	29.88	29.82	4.55	ppb
Rhodium	103-1				104		%
Rhodium	103-2				105		%
Scandium	45-1				105		%
Scandium	45-2				101		%
Selenium	82-1	-0.02	-0.04	-0.02	-0.03		ppb
Selenium	77-2	0.42	0.00	0.21	0.21	99.76	ppb
Selenium	78-2	-0.29	0.09	-0.28	-0.16		ppb
Silicon	28-1	0.32	0.15	0.24	0.23	36.52	ppb
Silver	107-1	0.02	0.02	0.02	0.02	7.57	ppb
Silver	109-1	0.03	0.02	0.02	0.02	18.86	ppb
Sodium	23-2	27.28	28.61	26.55	27.48	3.81	ppb
Strontium	86-1	0.03	0.02	0.02	0.02	12.66	ppb
Strontium	88-1	0.02	0.02	0.02	0.02	3.57	ppb
Sulfur	34-1	511.63	398.30	300.47	403.47	26.19	ppb
Terbium	159-1				102		%
Terbium	159-2				102		%
Thallium	203-1	0.04	0.04	0.04	0.04	5.63	ppb
Thallium	205-1	0.04	0.04	0.04	0.04	5.87	ppb
Tin	118-1	0.03	0.03	0.06	0.04	42.23	ppb
Titanium	47-1	0.06	0.05	0.02	0.05	48.76	ppb
Uranium	238-1	0.00	0.00	-0.01	0.00		ppb

LB Number :LB135293Operator :Jaswal

Lab Sample ID :CCB02Instrumnet Name :P8

Client Sample ID :CCB02Dilution Factor :1

Date & Time Acquired :2025-04-03 17:20:09DataFile Name :047CCBE.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	0.00	0.00	0.00	0.00	358.57	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				106		%
Yttrium	89-2				105		%
Zinc	66-2	1.57	1.59	1.62	1.59	1.38	ppb
Zirconium	90-1	0.04	0.04	0.04	0.04	10.63	ppb
Zirconium	91-1	0.04	0.04	0.04	0.04	7.26	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-04MSD Instrumnet Name : P8
Client Sample ID : IW-02-55-040125-FDMSI Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:23:33 DataFile Name : 048AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	9492.39	9243.61	9310.84	9348.94	1.38	ppb
Antimony	121-1	486.93	494.03	487.82	489.59	0.79	ppb
Arsenic	75-2	0.53	0.57	0.59	0.56	5.84	ppb
Barium	135-1	2435.74	2520.14	2384.29	2446.73	2.80	ppb
Barium	137-1	2471.44	2528.52	2351.40	2450.45	3.69	ppb
Beryllium	9-1	470.81	486.96	494.92	484.23	2.54	ppb
Bismuth	209-1				96		%
Bismuth	209-2				92		%
Bromine	81-1						cps
Cadmium	108-1	459.25	468.24	452.86	460.12	1.68	ppb
Cadmium	106-1	489.21	494.60	476.96	486.92	1.86	ppb
Cadmium	111-1	481.14	501.57	478.64	487.12	2.58	ppb
Calcium	43-1	60750.82	60388.37	61530.02	60889.74	0.96	ppb
Calcium	44-1	60795.56	59774.97	61544.26	60704.93	1.46	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	477.29	471.90	466.01	471.73	1.20	ppb
Cobalt	59-2	486.30	481.40	490.19	485.97	0.91	ppb
Copper	63-2	4365.37	4311.61	4406.47	4361.15	1.09	ppb
Dysprosium	156-1						cps
Dysprosium	156-2						cps
Erbium	164-1						cps
Erbium	164-2						cps
Gadolinium	160-1						cps
Gadolinium	160-2						cps
Holmium	165-1				101		%
Holmium	165-2				101		%
Indium	115-1				97		%
Indium	115-2				92		%
Iron	54-2	27477.56	27996.93	27601.62	27692.04	0.98	ppb
Iron	56-2	27526.02	27327.95	27155.36	27336.44	0.68	ppb
Iron	57-2	27105.29	27317.79	27680.58	27367.89	1.06	ppb
Krypton	83-1						cps
Lead	206-1	2372.26	2336.67	2383.90	2364.27	1.04	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-04MSD Instrumnet Name : P8
Client Sample ID : IW-02-55-040125-FDMSI Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:23:33 DataFile Name : 048AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	2374.22	2344.47	2361.23	2359.98	0.63	ppb
Lead	208-1	2356.00	2357.04	2378.84	2363.96	0.55	ppb
Lithium	6-1				107		%
Magnesium	24-2	59034.28	58408.03	59176.98	58873.09	0.69	ppb
Manganese	55-2	4952.08	5010.60	4884.21	4948.96	1.28	ppb
Molybdenum	94-1	2213.66	2262.26	2331.78	2269.23	2.62	ppb
Molybdenum	95-1	1646.47	1665.61	1787.24	1699.77	4.49	ppb
Molybdenum	96-1	1693.29	1698.28	1835.96	1742.51	4.65	ppb
Molybdenum	97-1	1658.61	1672.50	1759.00	1696.70	3.21	ppb
Molybdenum	98-1	1643.77	1665.20	1756.14	1688.37	3.53	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	467.16	456.23	459.38	460.92	1.22	ppb
Phosphorus	31-2	283.96	288.42	275.86	282.75	2.25	ppb
Potassium	39-2	25370.91	24982.62	25236.63	25196.72	0.78	ppb
Rhodium	103-1				96		%
Rhodium	103-2				96		%
Scandium	45-1				109		%
Scandium	45-2				107		%
Selenium	82-1	455.63	461.50	496.92	471.35	4.74	ppb
Selenium	77-2	460.21	457.30	478.16	465.22	2.43	ppb
Selenium	78-2	483.89	475.08	475.34	478.10	1.05	ppb
Silicon	28-1	3343.11	3292.56	3354.09	3329.92	0.99	ppb
Silver	107-1	84.72	84.31	84.35	84.46	0.27	ppb
Silver	109-1	81.13	83.86	82.48	82.49	1.65	ppb
Sodium	23-2	57987.91	57729.63	57678.69	57798.74	0.29	ppb
Strontium	86-1	750.10	759.44	762.10	757.21	0.83	ppb
Strontium	88-1	749.70	751.64	778.33	759.89	2.11	ppb
Sulfur	34-1	1558.14	1473.08	1521.58	1517.60	2.81	ppb
Terbium	159-1				101		%
Terbium	159-2				98		%
Thallium	203-1	464.53	465.53	469.48	466.51	0.56	ppb
Thallium	205-1	467.42	467.81	474.82	470.02	0.89	ppb
Tin	118-1	445.02	448.65	438.07	443.91	1.21	ppb
Titanium	47-1	7.60	7.68	7.90	7.73	2.01	ppb
Uranium	238-1	464.66	471.00	464.54	466.73	0.79	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-04MSD Instrumnet Name : P8
Client Sample ID : IW-02-55-040125-FDMSI Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:23:33 DataFile Name : 048AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	489.73	496.08	492.20	492.67	0.65	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				104		%
Yttrium	89-2				104		%
Zinc	66-2	3953.34	3844.28	3939.10	3912.24	1.52	ppb
Zirconium	90-1	460.17	473.04	478.82	470.67	2.03	ppb
Zirconium	91-1	457.35	458.95	492.23	469.51	4.19	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-04A Instrumnet Name : P8
Client Sample ID : IW-02-55-040125-FDA Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:26:21 DataFile Name : 049AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	9293.28	9409.29	9403.03	9368.53	0.70	ppb
Antimony	121-1	494.08	486.80	496.49	492.46	1.02	ppb
Arsenic	75-2	0.57	0.56	0.47	0.53	10.17	ppb
Barium	135-1	2517.13	2421.83	2490.77	2476.58	1.99	ppb
Barium	137-1	2514.17	2378.02	2534.81	2475.67	3.44	ppb
Beryllium	9-1	484.82	472.41	475.21	477.48	1.36	ppb
Bismuth	209-1				96		%
Bismuth	209-2				92		%
Bromine	81-1						cps
Cadmium	108-1	468.66	442.49	459.15	456.77	2.90	ppb
Cadmium	106-1	495.18	483.72	497.52	492.14	1.50	ppb
Cadmium	111-1	494.61	485.18	493.78	491.19	1.06	ppb
Calcium	43-1	60870.70	61579.45	63381.54	61943.90	2.09	ppb
Calcium	44-1	61895.67	60354.75	62843.36	61697.93	2.04	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	476.17	467.92	474.67	472.92	0.93	ppb
Cobalt	59-2	484.83	483.06	482.89	483.59	0.22	ppb
Copper	63-2	4358.90	4353.75	4318.17	4343.61	0.51	ppb
Dysprosium	156-1						cps
Dysprosium	156-2						cps
Erbium	164-1						cps
Erbium	164-2						cps
Gadolinium	160-1						cps
Gadolinium	160-2						cps
Holmium	165-1				100		%
Holmium	165-2				101		%
Indium	115-1				97		%
Indium	115-2				92		%
Iron	54-2	28234.16	27878.69	27901.83	28004.89	0.71	ppb
Iron	56-2	27270.34	26960.81	27024.16	27085.11	0.60	ppb
Iron	57-2	27097.77	27161.24	27530.93	27263.31	0.86	ppb
Krypton	83-1						cps
Lead	206-1	2363.27	2384.57	2407.13	2384.99	0.92	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-04A Instrumnet Name : P8
Client Sample ID : IW-02-55-040125-FDA Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:26:21 DataFile Name : 049AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	2342.81	2365.37	2426.32	2378.17	1.82	ppb
Lead	208-1	2351.65	2359.06	2421.65	2377.45	1.62	ppb
Lithium	6-1				106		%
Magnesium	24-2	58148.14	59329.50	57937.02	58471.55	1.28	ppb
Manganese	55-2	4987.31	4928.42	4936.02	4950.58	0.65	ppb
Molybdenum	94-1	2280.91	2297.61	2224.37	2267.63	1.69	ppb
Molybdenum	95-1	1707.69	1747.44	1657.64	1704.26	2.64	ppb
Molybdenum	96-1	1760.64	1775.88	1744.03	1760.18	0.91	ppb
Molybdenum	97-1	1708.60	1742.34	1700.32	1717.09	1.30	ppb
Molybdenum	98-1	1699.70	1723.28	1685.22	1702.73	1.13	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	464.99	462.68	457.00	461.56	0.89	ppb
Phosphorus	31-2	264.87	249.75	255.27	256.63	2.98	ppb
Potassium	39-2	25602.75	25377.65	25265.76	25415.39	0.68	ppb
Rhodium	103-1				96		%
Rhodium	103-2				97		%
Scandium	45-1				108		%
Scandium	45-2				107		%
Selenium	82-1	469.57	482.82	464.86	472.42	1.97	ppb
Selenium	77-2	480.82	483.63	491.52	485.32	1.14	ppb
Selenium	78-2	494.19	484.67	484.17	487.68	1.16	ppb
Silicon	28-1	3323.31	3286.57	3410.82	3340.24	1.91	ppb
Silver	107-1	85.03	83.07	84.17	84.09	1.17	ppb
Silver	109-1	84.03	82.04	82.80	82.96	1.21	ppb
Sodium	23-2	57355.29	57694.98	58118.67	57722.98	0.66	ppb
Strontium	86-1	756.88	764.28	765.96	762.38	0.63	ppb
Strontium	88-1	760.27	766.37	761.10	762.58	0.43	ppb
Sulfur	34-1	1548.68	1411.04	1716.61	1558.78	9.82	ppb
Terbium	159-1				100		%
Terbium	159-2				99		%
Thallium	203-1	461.13	465.07	471.34	465.85	1.10	ppb
Thallium	205-1	464.30	468.26	468.60	467.05	0.51	ppb
Tin	118-1	454.12	450.24	463.20	455.86	1.46	ppb
Titanium	47-1	8.26	8.23	8.38	8.29	0.94	ppb
Uranium	238-1	463.18	452.04	473.65	462.96	2.33	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-04A Instrumnet Name : P8
Client Sample ID : IW-02-55-040125-FDA Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:26:21 DataFile Name : 049AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	499.33	488.60	489.56	492.50	1.21	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				103		%
Yttrium	89-2				103		%
Zinc	66-2	3913.94	3943.15	3881.36	3912.82	0.79	ppb
Zirconium	90-1	473.76	474.79	465.56	471.37	1.07	ppb
Zirconium	91-1	474.62	476.44	461.32	470.80	1.75	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-05 Instrumnet Name : P8
Client Sample ID : IW-03-55-040125 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:29:07 DataFile Name : 050AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	72.68	71.40	67.24	70.44	4.04	ppb
Antimony	121-1	0.09	0.08	0.08	0.08	8.22	ppb
Arsenic	75-2	0.45	0.35	0.42	0.41	12.01	ppb
Barium	135-1	297.03	305.89	306.32	303.08	1.73	ppb
Barium	137-1	292.65	297.93	294.20	294.93	0.92	ppb
Beryllium	9-1	0.07	0.06	0.06	0.06	7.91	ppb
Bismuth	209-1				103		%
Bismuth	209-2				101		%
Bromine	81-1						cps
Cadmium	108-1	0.09	0.05	0.07	0.07	25.62	ppb
Cadmium	106-1	0.15	0.10	-0.03	0.07	121.95	ppb
Cadmium	111-1	0.03	0.02	0.01	0.02	47.33	ppb
Calcium	43-1	15340.17	15349.50	15166.86	15285.51	0.67	ppb
Calcium	44-1	14971.79	15119.20	14896.05	14995.68	0.76	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	2.44	2.66	2.15	2.42	10.48	ppb
Cobalt	59-2	8.78	8.62	8.09	8.49	4.25	ppb
Copper	63-2	0.20	0.19	0.19	0.19	2.75	ppb
Dysprosium	156-1						cps
Dysprosium	156-2						cps
Erbium	164-1						cps
Erbium	164-2						cps
Gadolinium	160-1						cps
Gadolinium	160-2						cps
Holmium	165-1				104		%
Holmium	165-2				104		%
Indium	115-1				105		%
Indium	115-2				101		%
Iron	54-2	6515.29	6341.62	5886.73	6247.88	5.20	ppb
Iron	56-2	6455.86	6334.80	5749.54	6180.07	6.11	ppb
Iron	57-2	6160.64	6111.79	5616.07	5962.84	5.05	ppb
Krypton	83-1						cps
Lead	206-1	0.37	0.34	0.29	0.33	12.16	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-05 Instrumnet Name : P8
Client Sample ID : IW-03-55-040125 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:29:07 DataFile Name : 050AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	0.35	0.30	0.30	0.32	9.65	ppb
Lead	208-1	0.35	0.32	0.30	0.32	8.22	ppb
Lithium	6-1				111		%
Magnesium	24-2	8448.51	8436.87	7895.16	8260.18	3.83	ppb
Manganese	55-2	662.22	661.89	630.16	651.42	2.83	ppb
Molybdenum	94-1	1.31	1.21	1.18	1.23	5.15	ppb
Molybdenum	95-1	1.03	1.00	1.04	1.02	1.91	ppb
Molybdenum	96-1	1.06	1.06	1.05	1.06	0.54	ppb
Molybdenum	97-1	1.05	1.05	1.00	1.03	2.89	ppb
Molybdenum	98-1	1.03	1.01	1.00	1.01	1.71	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	10.71	10.85	10.07	10.55	3.97	ppb
Phosphorus	31-2	434.04	426.34	375.34	411.91	7.74	ppb
Potassium	39-2	6900.62	6871.40	6646.40	6806.14	2.04	ppb
Rhodium	103-1				103		%
Rhodium	103-2				104		%
Scandium	45-1				110		%
Scandium	45-2				104		%
Selenium	82-1	0.18	0.03	0.26	0.15	74.55	ppb
Selenium	77-2	0.62	0.62	0.63	0.62	0.90	ppb
Selenium	78-2	-0.17	-0.17	0.34	0.00	10248.57	ppb
Silicon	28-1	3259.65	3296.02	3283.98	3279.88	0.56	ppb
Silver	107-1	0.02	0.02	0.02	0.02	16.49	ppb
Silver	109-1	0.03	0.02	0.02	0.02	15.01	ppb
Sodium	23-2	6559.68	6599.92	6302.15	6487.25	2.49	ppb
Strontium	86-1	189.54	190.19	192.66	190.80	0.86	ppb
Strontium	88-1	187.00	187.69	187.67	187.45	0.21	ppb
Sulfur	34-1	565.81	392.23	313.96	424.00	30.40	ppb
Terbium	159-1				103		%
Terbium	159-2				103		%
Thallium	203-1	0.35	0.33	0.30	0.33	8.08	ppb
Thallium	205-1	0.36	0.32	0.31	0.33	8.06	ppb
Tin	118-1	0.98	0.95	0.95	0.96	1.48	ppb
Titanium	47-1	4.89	4.69	4.53	4.70	3.83	ppb
Uranium	238-1	0.02	0.02	0.02	0.02	16.14	ppb

LB Number :

LB135293

Operator :

Jaswal

Lab Sample ID :

Q1697-05

Instrumnet Name :

P8

Client Sample ID :

IW-03-55-040125

Dilution Factor :

1

Date & Time Acquired :

2025-04-03 17:29:07

DataFile Name :

050AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	0.27	0.28	0.23	0.26	10.40	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				107		%
Yttrium	89-2				106		%
Zinc	66-2	11.24	11.03	10.51	10.92	3.42	ppb
Zirconium	90-1	0.23	0.20	0.18	0.21	12.01	ppb
Zirconium	91-1	0.24	0.19	0.18	0.20	14.56	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-13 Instrumnet Name : P8
Client Sample ID : MW-19B-72-040125 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:32:19 DataFile Name : 051AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	4.73	5.02	4.73	4.82	3.47	ppb
Antimony	121-1	0.05	0.05	0.05	0.05	5.67	ppb
Arsenic	75-2	0.22	0.28	0.31	0.27	17.65	ppb
Barium	135-1	641.79	633.58	633.35	636.24	0.76	ppb
Barium	137-1	636.64	625.72	618.79	627.05	1.44	ppb
Beryllium	9-1	0.01	0.01	0.00	0.01	13.57	ppb
Bismuth	209-1				100		%
Bismuth	209-2				99		%
Bromine	81-1						cps
Cadmium	108-1	0.01	0.02	0.03	0.02	68.72	ppb
Cadmium	106-1	-0.03	0.14	-0.21	-0.03		ppb
Cadmium	111-1	0.01	0.02	-0.02	0.00	941.21	ppb
Calcium	43-1	32620.34	33246.93	33347.43	33071.57	1.19	ppb
Calcium	44-1	33094.54	33387.65	32984.84	33155.67	0.63	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	0.06	0.05	0.08	0.06	19.82	ppb
Cobalt	59-2	0.60	0.59	0.57	0.59	2.81	ppb
Copper	63-2	0.04	0.03	0.05	0.04	25.08	ppb
Dysprosium	156-1						cps
Dysprosium	156-2						cps
Erbium	164-1						cps
Erbium	164-2						cps
Gadolinium	160-1						cps
Gadolinium	160-2						cps
Holmium	165-1				103		%
Holmium	165-2				103		%
Indium	115-1				105		%
Indium	115-2				99		%
Iron	54-2	11734.23	11346.42	11149.01	11409.88	2.61	ppb
Iron	56-2	11585.31	11305.98	11230.17	11373.82	1.64	ppb
Iron	57-2	11849.84	11455.09	11369.86	11558.26	2.22	ppb
Krypton	83-1						cps
Lead	206-1	0.11	0.10	0.10	0.10	6.31	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-13 Instrumnet Name : P8
Client Sample ID : MW-19B-72-040125 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:32:19 DataFile Name : 051AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	0.09	0.10	0.10	0.10	5.48	ppb
Lead	208-1	0.10	0.10	0.10	0.10	2.42	ppb
Lithium	6-1				109		%
Magnesium	24-2	13945.87	13389.25	13173.69	13502.93	2.95	ppb
Manganese	55-2	659.69	651.19	645.71	652.20	1.08	ppb
Molybdenum	94-1	0.93	0.97	0.99	0.97	3.07	ppb
Molybdenum	95-1	0.98	0.96	0.97	0.97	0.88	ppb
Molybdenum	96-1	0.99	0.97	1.00	0.98	1.67	ppb
Molybdenum	97-1	0.98	0.97	0.96	0.97	0.80	ppb
Molybdenum	98-1	0.95	0.95	0.97	0.96	1.23	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	0.28	0.28	0.25	0.27	7.03	ppb
Phosphorus	31-2	179.56	170.30	162.42	170.76	5.02	ppb
Potassium	39-2	7143.80	7026.71	6952.59	7041.03	1.37	ppb
Rhodium	103-1				101		%
Rhodium	103-2				100		%
Scandium	45-1				112		%
Scandium	45-2				102		%
Selenium	82-1	0.15	0.25	0.07	0.15	58.29	ppb
Selenium	77-2	0.21	0.00	0.21	0.14	86.60	ppb
Selenium	78-2	0.93	-0.03	0.10	0.33	156.10	ppb
Silicon	28-1	2922.35	2962.12	2942.55	2942.34	0.68	ppb
Silver	107-1	0.01	0.01	0.01	0.01	5.00	ppb
Silver	109-1	0.01	0.01	0.01	0.01	8.38	ppb
Sodium	23-2	11004.97	10853.61	10689.62	10849.40	1.45	ppb
Strontium	86-1	433.38	430.85	440.86	435.03	1.20	ppb
Strontium	88-1	437.95	436.47	441.72	438.71	0.62	ppb
Sulfur	34-1	1615.86	1781.55	1645.45	1680.95	5.26	ppb
Terbium	159-1				103		%
Terbium	159-2				102		%
Thallium	203-1	0.05	0.04	0.04	0.04	10.73	ppb
Thallium	205-1	0.04	0.04	0.04	0.04	5.51	ppb
Tin	118-1	0.56	0.55	0.54	0.55	1.89	ppb
Titanium	47-1	1.28	1.25	1.30	1.28	1.85	ppb
Uranium	238-1	0.01	0.01	0.01	0.01	6.21	ppb

LB Number :LB135293Operator :Jaswal

Lab Sample ID :Q1697-13Instrumnet Name :P8

Client Sample ID :MW-19B-72-040125Dilution Factor :1

Date & Time Acquired :2025-04-03 17:32:19DataFile Name :051AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	0.02	0.02	0.02	0.02	10.01	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				106		%
Yttrium	89-2				104		%
Zinc	66-2	1.24	0.98	1.01	1.08	13.03	ppb
Zirconium	90-1	0.09	0.09	0.10	0.09	2.64	ppb
Zirconium	91-1	0.08	0.10	0.10	0.09	10.45	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-14 Instrumnet Name : P8
Client Sample ID : IW-01-55-040125 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:35:37 DataFile Name : 052AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	4.11	3.27	3.56	3.64	11.74	ppb
Antimony	121-1	0.01	0.01	0.02	0.01	7.71	ppb
Arsenic	75-2	0.40	0.38	0.36	0.38	5.84	ppb
Barium	135-1	317.98	314.43	312.73	315.05	0.85	ppb
Barium	137-1	310.55	313.70	309.46	311.24	0.71	ppb
Beryllium	9-1	0.06	0.06	0.06	0.06	1.80	ppb
Bismuth	209-1				100		%
Bismuth	209-2				100		%
Bromine	81-1						cps
Cadmium	108-1	0.01	0.03	0.01	0.02	68.93	ppb
Cadmium	106-1	0.06	-0.25	-0.54	-0.24		ppb
Cadmium	111-1	0.00	-0.02	-0.04	-0.02		ppb
Calcium	43-1	16071.88	16404.42	16478.99	16318.43	1.33	ppb
Calcium	44-1	16242.95	16351.86	16139.63	16244.81	0.65	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	0.83	0.78	0.80	0.81	3.31	ppb
Cobalt	59-2	7.46	7.34	6.99	7.26	3.37	ppb
Copper	63-2	0.06	0.06	0.07	0.06	11.89	ppb
Dysprosium	156-1						cps
Dysprosium	156-2						cps
Erbium	164-1						cps
Erbium	164-2						cps
Gadolinium	160-1						cps
Gadolinium	160-2						cps
Holmium	165-1				103		%
Holmium	165-2				103		%
Indium	115-1				104		%
Indium	115-2				101		%
Iron	54-2	5628.69	5532.14	5228.45	5463.09	3.82	ppb
Iron	56-2	5500.49	5425.80	5137.44	5354.58	3.58	ppb
Iron	57-2	5327.42	5258.70	4935.16	5173.76	4.05	ppb
Krypton	83-1						cps
Lead	206-1	0.08	0.07	0.08	0.08	7.51	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-14 Instrumnet Name : P8
Client Sample ID : IW-01-55-040125 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:35:37 DataFile Name : 052AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	0.07	0.07	0.06	0.07	8.24	ppb
Lead	208-1	0.08	0.07	0.07	0.07	3.26	ppb
Lithium	6-1				110		%
Magnesium	24-2	8440.81	8486.20	8087.33	8338.11	2.62	ppb
Manganese	55-2	592.12	585.58	560.39	579.37	2.89	ppb
Molybdenum	94-1	0.47	0.45	0.44	0.45	3.02	ppb
Molybdenum	95-1	0.40	0.39	0.38	0.39	2.57	ppb
Molybdenum	96-1	0.43	0.40	0.38	0.40	6.02	ppb
Molybdenum	97-1	0.40	0.39	0.38	0.39	2.20	ppb
Molybdenum	98-1	0.38	0.38	0.38	0.38	1.15	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	10.47	10.18	10.02	10.22	2.25	ppb
Phosphorus	31-2	336.76	336.75	314.59	329.37	3.88	ppb
Potassium	39-2	7109.98	6973.11	6854.96	6979.35	1.83	ppb
Rhodium	103-1				102		%
Rhodium	103-2				102		%
Scandium	45-1				112		%
Scandium	45-2				104		%
Selenium	82-1	0.11	0.23	0.14	0.16	38.57	ppb
Selenium	77-2	0.42	0.63	0.84	0.63	33.29	ppb
Selenium	78-2	0.02	-0.16	0.21	0.03	698.08	ppb
Silicon	28-1	3549.83	3509.94	3448.32	3502.70	1.46	ppb
Silver	107-1	0.00	0.00	0.00	0.00	4.81	ppb
Silver	109-1	0.00	0.00	0.00	0.00	10.11	ppb
Sodium	23-2	8179.47	8113.02	8003.01	8098.50	1.10	ppb
Strontium	86-1	222.69	217.04	218.60	219.45	1.33	ppb
Strontium	88-1	217.14	216.66	215.44	216.41	0.41	ppb
Sulfur	34-1	2543.64	2475.76	2498.85	2506.08	1.38	ppb
Terbium	159-1				103		%
Terbium	159-2				102		%
Thallium	203-1	0.22	0.22	0.22	0.22	0.47	ppb
Thallium	205-1	0.24	0.23	0.23	0.23	2.24	ppb
Tin	118-1	0.59	0.57	0.57	0.58	1.67	ppb
Titanium	47-1	1.49	1.51	1.47	1.49	1.27	ppb
Uranium	238-1	0.00	0.00	0.00	0.00	96.79	ppb

LB Number :LB135293Operator :Jaswal

Lab Sample ID :Q1697-14Instrumnet Name :P8

Client Sample ID :IW-01-55-040125Dilution Factor :1

Date & Time Acquired :2025-04-03 17:35:37DataFile Name :052AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	0.02	0.03	0.02	0.03	10.61	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				107		%
Yttrium	89-2				106		%
Zinc	66-2	8.55	8.45	8.21	8.40	2.09	ppb
Zirconium	90-1	0.07	0.07	0.07	0.07	1.70	ppb
Zirconium	91-1	0.07	0.07	0.07	0.07	2.33	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-15 Instrumnet Name : P8
Client Sample ID : IW-02-55-040125 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:38:49 DataFile Name : 053AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	3.99	3.72	3.69	3.80	4.27	ppb
Antimony	121-1	0.01	0.01	0.01	0.01	3.94	ppb
Arsenic	75-2	0.41	0.41	0.40	0.41	0.79	ppb
Barium	135-1	301.17	298.70	302.72	300.86	0.67	ppb
Barium	137-1	298.81	300.42	297.53	298.92	0.48	ppb
Beryllium	9-1	0.03	0.03	0.03	0.03	6.15	ppb
Bismuth	209-1				100		%
Bismuth	209-2				99		%
Bromine	81-1						cps
Cadmium	108-1	0.03	0.01	0.03	0.02	59.87	ppb
Cadmium	106-1	-0.29	-0.13	-0.57	-0.33		ppb
Cadmium	111-1	-0.03	-0.01	-0.05	-0.03		ppb
Calcium	43-1	15677.09	16010.70	16194.82	15960.87	1.64	ppb
Calcium	44-1	15833.04	15647.59	15853.29	15777.97	0.72	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	0.40	0.42	0.40	0.41	2.31	ppb
Cobalt	59-2	5.98	5.99	5.76	5.91	2.26	ppb
Copper	63-2	0.02	0.04	0.03	0.03	39.68	ppb
Dysprosium	156-1						cps
Dysprosium	156-2						cps
Erbium	164-1						cps
Erbium	164-2						cps
Gadolinium	160-1						cps
Gadolinium	160-2						cps
Holmium	165-1				103		%
Holmium	165-2				103		%
Indium	115-1				104		%
Indium	115-2				102		%
Iron	54-2	5532.50	5800.26	5283.00	5538.59	4.67	ppb
Iron	56-2	5499.19	5567.08	5229.65	5431.97	3.29	ppb
Iron	57-2	5293.92	5344.49	4984.15	5207.52	3.75	ppb
Krypton	83-1						cps
Lead	206-1	0.11	0.12	0.11	0.11	5.58	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-15 Instrumnet Name : P8
Client Sample ID : IW-02-55-040125 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:38:49 DataFile Name : 053AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	0.10	0.12	0.10	0.11	9.62	ppb
Lead	208-1	0.11	0.11	0.11	0.11	3.25	ppb
Lithium	6-1				109		%
Magnesium	24-2	8841.95	8644.52	8360.99	8615.82	2.81	ppb
Manganese	55-2	609.22	613.70	583.39	602.10	2.72	ppb
Molybdenum	94-1	0.74	0.75	0.78	0.76	2.90	ppb
Molybdenum	95-1	0.74	0.77	0.79	0.77	3.00	ppb
Molybdenum	96-1	0.77	0.79	0.79	0.78	1.84	ppb
Molybdenum	97-1	0.77	0.80	0.81	0.80	2.67	ppb
Molybdenum	98-1	0.76	0.80	0.77	0.78	2.54	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	6.47	6.54	6.29	6.43	2.01	ppb
Phosphorus	31-2	282.74	279.20	295.71	285.89	3.04	ppb
Potassium	39-2	7034.27	6978.84	6888.64	6967.25	1.06	ppb
Rhodium	103-1				104		%
Rhodium	103-2				103		%
Scandium	45-1				112		%
Scandium	45-2				106		%
Selenium	82-1	-0.05	-0.08	0.15	0.01	1926.15	ppb
Selenium	77-2	0.00	0.00	0.00	0.00	N/A	ppb
Selenium	78-2	0.39	0.01	0.03	0.14	149.45	ppb
Silicon	28-1	3442.12	3493.90	3566.87	3500.96	1.79	ppb
Silver	107-1	0.00	0.00	0.00	0.00	6.89	ppb
Silver	109-1	0.00	0.00	0.00	0.00	31.44	ppb
Sodium	23-2	6830.08	6813.58	6573.36	6739.01	2.13	ppb
Strontium	86-1	206.46	208.60	204.23	206.43	1.06	ppb
Strontium	88-1	200.55	203.35	202.12	202.01	0.70	ppb
Sulfur	34-1	987.74	970.34	1092.66	1016.91	6.51	ppb
Terbium	159-1				103		%
Terbium	159-2				103		%
Thallium	203-1	0.14	0.15	0.14	0.14	2.20	ppb
Thallium	205-1	0.14	0.15	0.14	0.14	0.75	ppb
Tin	118-1	0.66	0.66	0.65	0.66	1.16	ppb
Titanium	47-1	1.43	1.43	1.40	1.42	1.32	ppb
Uranium	238-1	0.00	0.00	0.00	0.00	20.17	ppb

LB Number :

LB135293

Operator :

Jaswal

Lab Sample ID :

Q1697-15

Instrumnet Name :

P8

Client Sample ID :

IW-02-55-040125

Dilution Factor :

1

Date & Time Acquired :

2025-04-03 17:38:49

DataFile Name :

053AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	0.02	0.02	0.01	0.02	13.61	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				109		%
Yttrium	89-2				107		%
Zinc	66-2	5.48	5.66	5.32	5.49	3.10	ppb
Zirconium	90-1	0.05	0.06	0.06	0.06	4.86	ppb
Zirconium	91-1	0.06	0.07	0.06	0.06	4.47	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-16 Instrumnet Name : P8
Client Sample ID : IW-02-55-040125-FD Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:42:06 DataFile Name : 054AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	5.28	3.97	5.12	4.79	14.95	ppb
Antimony	121-1	0.01	0.01	0.01	0.01	5.05	ppb
Arsenic	75-2	0.37	0.36	0.35	0.36	3.06	ppb
Barium	135-1	311.30	308.02	312.69	310.67	0.77	ppb
Barium	137-1	307.59	294.03	302.35	301.32	2.27	ppb
Beryllium	9-1	0.03	0.03	0.03	0.03	12.15	ppb
Bismuth	209-1				98		%
Bismuth	209-2				97		%
Bromine	81-1						cps
Cadmium	108-1	-0.01	0.00	0.02	0.00	451.54	ppb
Cadmium	106-1	-0.38	-0.85	-0.46	-0.57		ppb
Cadmium	111-1	-0.03	-0.07	-0.04	-0.05		ppb
Calcium	43-1	16051.43	17142.13	16620.86	16604.80	3.29	ppb
Calcium	44-1	15855.83	16487.79	16310.94	16218.19	2.01	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	0.05	0.03	0.05	0.04	25.66	ppb
Cobalt	59-2	6.44	6.25	5.84	6.18	4.97	ppb
Copper	63-2	-0.02	-0.03	-0.01	-0.02		ppb
Dysprosium	156-1						cps
Dysprosium	156-2						cps
Erbium	164-1						cps
Erbium	164-2						cps
Gadolinium	160-1						cps
Gadolinium	160-2						cps
Holmium	165-1				101		%
Holmium	165-2				102		%
Indium	115-1				101		%
Indium	115-2				99		%
Iron	54-2	5682.62	5611.25	5099.36	5464.41	5.82	ppb
Iron	56-2	5685.15	5452.96	5044.79	5394.30	6.01	ppb
Iron	57-2	5441.36	5314.30	4874.05	5209.90	5.71	ppb
Krypton	83-1						cps
Lead	206-1	0.23	0.23	0.23	0.23	1.86	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-16 Instrumnet Name : P8
Client Sample ID : IW-02-55-040125-FD Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:42:06 DataFile Name : 054AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	0.23	0.22	0.23	0.23	1.59	ppb
Lead	208-1	0.23	0.23	0.22	0.23	1.66	ppb
Lithium	6-1				109		%
Magnesium	24-2	8995.32	8845.80	8168.13	8669.75	5.08	ppb
Manganese	55-2	626.79	617.95	579.97	608.24	4.09	ppb
Molybdenum	94-1	0.72	0.79	0.73	0.74	4.97	ppb
Molybdenum	95-1	0.79	0.84	0.77	0.80	4.22	ppb
Molybdenum	96-1	0.78	0.81	0.78	0.79	2.24	ppb
Molybdenum	97-1	0.79	0.79	0.76	0.78	2.06	ppb
Molybdenum	98-1	0.78	0.80	0.78	0.78	1.80	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	7.05	6.74	6.39	6.73	4.95	ppb
Phosphorus	31-2	278.20	278.14	249.11	268.48	6.25	ppb
Potassium	39-2	7205.06	7294.63	7071.06	7190.25	1.56	ppb
Rhodium	103-1				100		%
Rhodium	103-2				102		%
Scandium	45-1				109		%
Scandium	45-2				104		%
Selenium	82-1	-0.15	0.06	0.05	-0.01		ppb
Selenium	77-2	0.00	0.00	0.22	0.07	173.21	ppb
Selenium	78-2	-0.22	-0.03	0.44	0.06	564.74	ppb
Silicon	28-1	3610.30	3614.87	3591.68	3605.62	0.34	ppb
Silver	107-1	0.00	0.00	0.00	0.00	45.82	ppb
Silver	109-1	0.00	0.00	0.00	0.00	23.87	ppb
Sodium	23-2	7544.76	7284.08	7177.46	7335.43	2.58	ppb
Strontium	86-1	211.00	213.73	212.98	212.57	0.66	ppb
Strontium	88-1	204.02	209.25	208.64	207.30	1.38	ppb
Sulfur	34-1	1272.63	1283.67	1175.32	1243.87	4.79	ppb
Terbium	159-1				101		%
Terbium	159-2				100		%
Thallium	203-1	0.14	0.14	0.14	0.14	2.40	ppb
Thallium	205-1	0.15	0.15	0.15	0.15	0.55	ppb
Tin	118-1	0.48	0.48	0.48	0.48	0.32	ppb
Titanium	47-1	1.50	1.51	1.44	1.48	2.34	ppb
Uranium	238-1	0.00	0.00	0.00	0.00	37.28	ppb

LB Number :LB135293Operator :Jaswal

Lab Sample ID :Q1697-16Instrumnet Name :P8

Client Sample ID :IW-02-55-040125-FDDilution Factor :1

Date & Time Acquired :2025-04-03 17:42:06DataFile Name :054AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	0.01	0.01	0.01	0.01	12.46	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				105		%
Yttrium	89-2				104		%
Zinc	66-2	5.79	5.39	5.11	5.43	6.26	ppb
Zirconium	90-1	0.04	0.04	0.04	0.04	5.72	ppb
Zirconium	91-1	0.05	0.05	0.04	0.05	3.13	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-17 Instrumnet Name : P8
Client Sample ID : IW-03-55-040125 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:45:18 DataFile Name : 055AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	6.34	6.88	6.25	6.49	5.24	ppb
Antimony	121-1	0.05	0.05	0.05	0.05	4.18	ppb
Arsenic	75-2	0.44	0.46	0.43	0.44	3.61	ppb
Barium	135-1	309.53	305.05	301.69	305.42	1.29	ppb
Barium	137-1	305.93	303.33	299.38	302.88	1.09	ppb
Beryllium	9-1	0.03	0.02	0.02	0.02	13.20	ppb
Bismuth	209-1				98		%
Bismuth	209-2				99		%
Bromine	81-1						cps
Cadmium	108-1	0.02	0.03	0.03	0.03	21.18	ppb
Cadmium	106-1	-0.36	-0.32	-0.60	-0.43		ppb
Cadmium	111-1	-0.03	-0.03	-0.05	-0.04		ppb
Calcium	43-1	16027.62	15289.35	15667.61	15661.53	2.36	ppb
Calcium	44-1	15482.41	15296.68	15267.77	15348.95	0.76	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	1.63	1.69	1.62	1.64	2.30	ppb
Cobalt	59-2	8.25	8.40	8.39	8.34	0.97	ppb
Copper	63-2	0.10	0.11	0.10	0.10	3.16	ppb
Dysprosium	156-1						cps
Dysprosium	156-2						cps
Erbium	164-1						cps
Erbium	164-2						cps
Gadolinium	160-1						cps
Gadolinium	160-2						cps
Holmium	165-1				102		%
Holmium	165-2				103		%
Indium	115-1				105		%
Indium	115-2				101		%
Iron	54-2	6187.64	6131.60	6024.36	6114.53	1.36	ppb
Iron	56-2	6052.22	6029.92	5887.44	5989.86	1.49	ppb
Iron	57-2	5731.91	5829.42	5727.23	5762.85	1.00	ppb
Krypton	83-1						cps
Lead	206-1	0.13	0.13	0.13	0.13	2.28	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-17 Instrumnet Name : P8
Client Sample ID : IW-03-55-040125 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:45:18 DataFile Name : 055AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	0.11	0.12	0.13	0.12	7.55	ppb
Lead	208-1	0.12	0.12	0.13	0.12	3.59	ppb
Lithium	6-1				111		%
Magnesium	24-2	8623.50	8874.87	8646.77	8715.05	1.59	ppb
Manganese	55-2	673.39	674.80	663.28	670.49	0.94	ppb
Molybdenum	94-1	0.91	0.95	0.95	0.94	2.12	ppb
Molybdenum	95-1	0.98	0.98	1.02	0.99	2.40	ppb
Molybdenum	96-1	0.97	1.00	1.02	1.00	2.66	ppb
Molybdenum	97-1	0.99	1.01	1.05	1.02	3.02	ppb
Molybdenum	98-1	0.98	1.00	1.01	1.00	1.44	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	9.10	9.27	9.08	9.15	1.14	ppb
Phosphorus	31-2	390.42	377.48	379.60	382.50	1.81	ppb
Potassium	39-2	6953.72	7201.29	7167.71	7107.57	1.89	ppb
Rhodium	103-1				103		%
Rhodium	103-2				102		%
Scandium	45-1				113		%
Scandium	45-2				106		%
Selenium	82-1	0.11	-0.02	-0.03	0.02	386.76	ppb
Selenium	77-2	0.00	0.41	0.00	0.14	173.21	ppb
Selenium	78-2	0.03	0.39	-0.04	0.13	179.61	ppb
Silicon	28-1	3375.07	3400.40	3391.13	3388.87	0.38	ppb
Silver	107-1	0.00	0.00	0.00	0.00	32.74	ppb
Silver	109-1	0.00	0.00	0.00	0.00	31.02	ppb
Sodium	23-2	6919.49	7004.81	6916.14	6946.81	0.72	ppb
Strontium	86-1	195.57	195.40	199.91	196.96	1.30	ppb
Strontium	88-1	190.31	194.66	196.31	193.76	1.60	ppb
Sulfur	34-1	189.86	269.06	228.68	229.20	17.28	ppb
Terbium	159-1				102		%
Terbium	159-2				101		%
Thallium	203-1	0.18	0.18	0.19	0.18	5.20	ppb
Thallium	205-1	0.18	0.18	0.19	0.18	1.45	ppb
Tin	118-1	0.87	0.84	0.86	0.85	1.58	ppb
Titanium	47-1	1.45	1.43	1.34	1.41	3.96	ppb
Uranium	238-1	0.00	0.00	0.00	0.00	131.34	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-17 Instrumnet Name : P8
Client Sample ID : IW-03-55-040125 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:45:18 DataFile Name : 055AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	0.03	0.02	0.02	0.02	20.01	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				107		%
Yttrium	89-2				106		%
Zinc	66-2	12.00	11.98	12.20	12.06	0.98	ppb
Zirconium	90-1	0.05	0.05	0.05	0.05	4.35	ppb
Zirconium	91-1	0.04	0.05	0.06	0.05	12.13	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : CCV03 Instrumnet Name : P8
Client Sample ID : CCV03 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:52:40 DataFile Name : 057CCV.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	51714.49	51276.77	52642.53	51877.93	1.34	ppb
Antimony	121-1	498.43	495.45	504.35	499.41	0.91	ppb
Arsenic	75-2	484.23	482.21	476.67	481.04	0.81	ppb
Barium	135-1	2487.91	2468.27	2512.17	2489.45	0.88	ppb
Barium	137-1	2427.41	2449.80	2467.56	2448.26	0.82	ppb
Beryllium	9-1	533.27	527.52	523.91	528.23	0.89	ppb
Bismuth	209-1				82		%
Bismuth	209-2				85		%
Bromine	81-1						cps
Cadmium	108-1	497.91	488.60	489.42	491.98	1.05	ppb
Cadmium	106-1	490.28	493.41	499.39	494.36	0.94	ppb
Cadmium	111-1	489.00	494.84	500.79	494.87	1.19	ppb
Calcium	43-1	254096.09	254801.10	249665.39	252854.19	1.10	ppb
Calcium	44-1	248459.13	253673.44	250484.71	250872.43	1.05	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	501.78	499.10	506.71	502.53	0.77	ppb
Cobalt	59-2	478.25	484.87	488.49	483.87	1.07	ppb
Copper	63-2	4602.51	4660.24	4680.14	4647.63	0.87	ppb
Dysprosium	156-1						cps
Dysprosium	156-2						cps
Erbium	164-1						cps
Erbium	164-2						cps
Gadolinium	160-1						cps
Gadolinium	160-2						cps
Holmium	165-1				90		%
Holmium	165-2				96		%
Indium	115-1				85		%
Indium	115-2				85		%
Iron	54-2	125448.98	126645.68	127287.62	126460.76	0.74	ppb
Iron	56-2	125199.29	123157.77	126765.54	125040.87	1.45	ppb
Iron	57-2	124808.75	126632.33	125610.40	125683.83	0.73	ppb
Krypton	83-1						cps
Lead	206-1	2510.24	2534.06	2520.85	2521.72	0.47	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : CCV03 Instrumnet Name : P8
Client Sample ID : CCV03 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:52:40 DataFile Name : 057CCV.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	2515.38	2494.50	2497.17	2502.35	0.45	ppb
Lead	208-1	2503.56	2514.16	2508.28	2508.67	0.21	ppb
Lithium	6-1				90		%
Magnesium	24-2	252493.04	251302.67	254935.31	252910.34	0.73	ppb
Manganese	55-2	5031.88	5043.43	5119.30	5064.87	0.94	ppb
Molybdenum	94-1	4958.16	5039.58	4943.62	4980.45	1.04	ppb
Molybdenum	95-1	4930.63	4913.27	4860.57	4901.49	0.74	ppb
Molybdenum	96-1	4851.53	4886.01	4854.57	4864.04	0.39	ppb
Molybdenum	97-1	4849.57	4962.52	4825.13	4879.07	1.50	ppb
Molybdenum	98-1	4867.80	4986.15	4836.16	4896.70	1.61	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	457.17	463.72	460.19	460.36	0.71	ppb
Phosphorus	31-2	10373.86	10444.06	10517.39	10445.10	0.69	ppb
Potassium	39-2	121328.77	122356.06	122897.06	122193.96	0.65	ppb
Rhodium	103-1				83		%
Rhodium	103-2				85		%
Scandium	45-1				94		%
Scandium	45-2				99		%
Selenium	82-1	472.90	481.91	476.75	477.19	0.95	ppb
Selenium	77-2	471.06	478.37	474.12	474.52	0.77	ppb
Selenium	78-2	492.08	492.03	477.14	487.08	1.77	ppb
Silicon	28-1	569.26	571.85	571.26	570.79	0.24	ppb
Silver	107-1	489.52	480.68	483.53	484.57	0.93	ppb
Silver	109-1	486.90	477.62	485.46	483.33	1.03	ppb
Sodium	23-2	254342.11	252944.46	255316.57	254201.05	0.47	ppb
Strontium	86-1	495.02	495.83	493.97	494.94	0.19	ppb
Strontium	88-1	493.90	494.74	493.79	494.15	0.11	ppb
Sulfur	34-1	11071.82	10768.35	10701.94	10847.37	1.82	ppb
Terbium	159-1				91		%
Terbium	159-2				93		%
Thallium	203-1	502.71	511.44	510.95	508.37	0.96	ppb
Thallium	205-1	503.62	511.65	512.23	509.17	0.95	ppb
Tin	118-1	495.91	489.70	502.01	495.87	1.24	ppb
Titanium	47-1	4965.15	4965.18	4976.51	4968.95	0.13	ppb
Uranium	238-1	507.45	512.53	508.99	509.65	0.51	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : CCV03 Instrumnet Name : P8
Client Sample ID : CCV03 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:52:40 DataFile Name : 057CCV.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	505.63	513.57	510.73	509.98	0.79	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				93		%
Yttrium	89-2				100		%
Zinc	66-2	4286.59	4304.69	4352.42	4314.56	0.79	ppb
Zirconium	90-1	504.25	504.49	498.25	502.33	0.70	ppb
Zirconium	91-1	504.26	500.55	502.24	502.35	0.37	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : CCB03 Instrumnet Name : P8
Client Sample ID : CCB03 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 18:41:55 DataFile Name : 060CCBE.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	-0.19	-0.41	-0.52	-0.37		ppb
Antimony	121-1	0.00	0.00	0.00	0.00	13.39	ppb
Arsenic	75-2	0.02	0.03	0.11	0.05	87.45	ppb
Barium	135-1	0.12	0.11	0.09	0.10	12.15	ppb
Barium	137-1	0.10	0.09	0.09	0.09	1.33	ppb
Beryllium	9-1	0.24	0.22	0.20	0.22	9.12	ppb
Bismuth	209-1				108		%
Bismuth	209-2				100		%
Bromine	81-1						cps
Cadmium	108-1	0.04	0.04	0.02	0.03	44.43	ppb
Cadmium	106-1	-0.12	-0.36	-0.27	-0.25		ppb
Cadmium	111-1	0.05	0.02	0.02	0.03	59.69	ppb
Calcium	43-1	-1.77	-2.42	-3.72	-2.64		ppb
Calcium	44-1	-5.88	-5.75	-6.24	-5.96		ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	0.05	0.03	0.01	0.03	70.02	ppb
Cobalt	59-2	0.10	0.09	0.09	0.09	10.16	ppb
Copper	63-2	0.15	0.20	0.16	0.17	16.89	ppb
Dysprosium	156-1						cps
Dysprosium	156-2						cps
Erbium	164-1						cps
Erbium	164-2						cps
Gadolinium	160-1						cps
Gadolinium	160-2						cps
Holmium	165-1				108		%
Holmium	165-2				100		%
Indium	115-1				107		%
Indium	115-2				94		%
Iron	54-2	1.32	1.58	1.26	1.39	12.07	ppb
Iron	56-2	1.10	1.10	1.08	1.10	0.90	ppb
Iron	57-2	1.28	0.59	0.83	0.90	39.17	ppb
Krypton	83-1						cps
Lead	206-1	0.10	0.09	0.10	0.09	6.91	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : CCB03 Instrumnet Name : P8
Client Sample ID : CCB03 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 18:41:55 DataFile Name : 060CCBE.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	0.09	0.09	0.08	0.09	3.92	ppb
Lead	208-1	0.09	0.09	0.09	0.09	4.94	ppb
Lithium	6-1				106		%
Magnesium	24-2	0.23	0.29	0.32	0.28	15.55	ppb
Manganese	55-2	0.91	0.94	0.94	0.93	1.39	ppb
Molybdenum	94-1	0.08	0.08	0.09	0.08	11.33	ppb
Molybdenum	95-1	0.06	0.05	0.05	0.05	11.70	ppb
Molybdenum	96-1	0.06	0.06	0.05	0.06	13.05	ppb
Molybdenum	97-1	0.05	0.06	0.06	0.06	5.93	ppb
Molybdenum	98-1	0.05	0.05	0.05	0.05	3.62	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	0.09	0.11	0.09	0.10	8.62	ppb
Phosphorus	31-2	-15.84	-12.26	-19.24	-15.78		ppb
Potassium	39-2	8.94	11.32	10.00	10.09	11.83	ppb
Rhodium	103-1				106		%
Rhodium	103-2				100		%
Scandium	45-1				105		%
Scandium	45-2				91		%
Selenium	82-1	-0.08	0.05	-0.07	-0.03		ppb
Selenium	77-2	0.23	0.23	0.00	0.15	86.61	ppb
Selenium	78-2	0.16	-0.19	0.08	0.02	997.95	ppb
Silicon	28-1	0.84	0.88	0.85	0.86	2.27	ppb
Silver	107-1	0.00	0.00	0.00	0.00	90.55	ppb
Silver	109-1	0.00	0.00	0.00	0.00	19.49	ppb
Sodium	23-2	13.79	15.92	13.11	14.28	10.26	ppb
Strontium	86-1	0.00	0.00	0.00	0.00	478.07	ppb
Strontium	88-1	0.00	0.00	0.00	0.00		ppb
Sulfur	34-1	441.98	504.17	588.59	511.58	14.38	ppb
Terbium	159-1				106		%
Terbium	159-2				100		%
Thallium	203-1	0.05	0.05	0.04	0.05	7.08	ppb
Thallium	205-1	0.05	0.04	0.05	0.05	3.12	ppb
Tin	118-1	0.00	0.00	0.02	0.01	124.71	ppb
Titanium	47-1	0.00	0.01	0.00	0.01	84.14	ppb
Uranium	238-1	0.10	0.10	0.09	0.10	5.39	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : CCB03 Instrumnet Name : P8
Client Sample ID : CCB03 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 18:41:55 DataFile Name : 060CCBE.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	0.05	0.05	0.05	0.05	4.32	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				107		%
Yttrium	89-2				97		%
Zinc	66-2	0.24	0.27	0.28	0.26	8.42	ppb
Zirconium	90-1	0.01	0.01	0.01	0.01	10.05	ppb
Zirconium	91-1	0.02	0.02	0.02	0.02	12.13	ppb

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S0 Instrumnet Name : P8
Client Sample ID : S0 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:15:31 DataFile Name : 004CALB.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	537	467	460	488	8.71	cps
Antimony	121-1	170	147	167	161	7.83	cps
Arsenic	75-2	33	27	30	30	11.10	cps
Barium	135-1	273	247	290	270	8.10	cps
Barium	137-1	390	440	553	461	18.15	cps
Beryllium	9-1	272	239	272	261	7.28	cps
Bismuth	209-1	6465826	6462034	6467077	6464979	0.04	cps
Bismuth	209-2	3370470	3384465	3343406	3366114	0.62	cps
Bromine	81-1	26996	27988	27781	27588	1.90	cps
Cadmium	108-1	33	33	7	24	62.97	cps
Cadmium	106-1	6979	6965	7492	7145	4.20	cps
Cadmium	111-1	4945	4919	5323	5062	4.47	cps
Calcium	43-1	2427	2317	2324	2356	2.62	cps
Calcium	44-1	66748	66681	65878	66435	0.73	cps
Carbon	12-1	5506540	5452663	5385605	5448269	1.11	cps
Carbon	12-2	40920	40115	40877	40637	1.11	cps
Chlorine	35-1	225683	224162	224950	224932	0.34	cps
Chlorine	35-2	1087	1120	1177	1128	4.03	cps
Chromium	52-2	2234	2304	2567	2368	7.42	cps
Cobalt	59-2	313	293	287	298	4.66	cps
Copper	63-2	3674	3837	4437	3983	10.09	cps
Dysprosium	156-1	13	23	17	18	28.64	cps
Dysprosium	156-2	3	10	10	8	49.52	cps
Erbium	164-1	87	67	80	78	13.09	cps
Erbium	164-2	23	40	30	31	26.97	cps
Gadolinium	160-1	110	123	90	108	15.57	cps
Gadolinium	160-2	17	27	40	28	42.13	cps
Holmium	165-1	10993590	10915295	11128434	11012439	0.98	cps
Holmium	165-2	4683532	4703536	4735049	4707372	0.55	cps
Indium	115-1	10215156	10263092	10046937	10175062	1.12	cps
Indium	115-2	1320490	1314600	1317636	1317575	0.22	cps
Iron	54-2	1460	1363	1543	1456	6.19	cps
Iron	56-2	18088	19764	21009	19620	7.47	cps
Iron	57-2	373	510	520	468	17.52	cps
Krypton	83-1	373	423	403	400	6.29	cps
Lead	206-1	1900	1727	1940	1856	6.11	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S0 Instrumnet Name : P8
Client Sample ID : S0 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:15:31 DataFile Name : 004CALB.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	1567	1697	1553	1606	4.93	cps
Lead	208-1	7404	7441	7344	7396	0.66	cps
Lithium	6-1	3667172	3615244	3579572	3620663	1.22	cps
Magnesium	24-2	550	523	643	572	11.01	cps
Manganese	55-2	1987	2274	2547	2269	12.34	cps
Molybdenum	94-1	663	653	653	657	0.88	cps
Molybdenum	95-1	477	533	430	480	10.78	cps
Molybdenum	96-1	583	550	590	574	3.73	cps
Molybdenum	97-1	293	247	273	271	8.64	cps
Molybdenum	98-1	760	690	707	719	5.09	cps
Neodymium	150-1	7	30	20	19	61.96	cps
Neodymium	150-2	3	0	0	1	173.21	cps
Nickel	60-2	1333	1430	1527	1430	6.76	cps
Phosphorus	31-2	123	147	170	147	15.91	cps
Potassium	39-2	25670	24551	25232	25151	2.24	cps
Rhodium	103-1	9778292	9722592	9714354	9738413	0.36	cps
Rhodium	103-2	4429820	4586908	4437906	4484878	1.97	cps
Scandium	45-1	7056695	6928965	6890804	6958821	1.25	cps
Scandium	45-2	182932	180728	183378	182346	0.78	cps
Selenium	82-1	90	23	47	53	63.43	cps
Selenium	77-2	0	0	0	0	0.00	cps
Selenium	78-2	47	37	17	33	45.82	cps
Silicon	28-1	593351	583477	571550	582793	1.87	cps
Silver	107-1	173	207	187	189	8.88	cps
Silver	109-1	107	90	63	87	25.22	cps
Sodium	23-2	72023	70311	70764	71033	1.25	cps
Strontium	86-1	773	670	717	720	7.19	cps
Strontium	88-1	1057	1017	1090	1054	3.48	cps
Sulfur	34-1	839596	837787	834460	837281	0.31	cps
Terbium	159-1	11467117	11663256	11566029	11565467	0.85	cps
Terbium	159-2	4694790	4714461	4679041	4696097	0.38	cps
Thallium	203-1	357	363	350	357	1.87	cps
Thallium	205-1	863	833	933	877	5.85	cps
Tin	118-1	5001	4941	4971	4971	0.60	cps
Titanium	47-1	477	330	427	411	18.14	cps
Uranium	238-1	900	1047	1090	1012	9.84	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S0 Instrumnet Name : P8
Client Sample ID : S0 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:15:31 DataFile Name : 004CALB.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	33	63	70	56	35.16	cps
Ytterbium	172-1	67	50	90	69	29.17	cps
Ytterbium	172-2	33	30	37	33	10.01	cps
Ytterbium	176-1	1577	1447	1557	1527	4.59	cps
Ytterbium	176-2	333	370	410	371	10.33	cps
Yttrium	89-1	18622480	18474160	18514686	18537108	0.41	cps
Yttrium	89-2	1749698	1802077	1761733	1771169	1.55	cps
Zinc	66-2	2977	3134	3234	3115	4.15	cps
Zirconium	90-1	1327	1247	1317	1297	3.36	cps
Zirconium	91-1	210	237	197	214	9.50	cps

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LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S2 Instrumnet Name : P8
Client Sample ID : S2 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:22:15 DataFile Name : 006CAL.S.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	4447	4037	3517	4001	11.65	cps
Antimony	121-1	85528	86233	85938	85900	0.41	cps
Arsenic	75-2	1257	1173	910	1113	16.25	cps
Barium	135-1	99237	99526	101439	100067	1.20	cps
Barium	137-1	173646	173683	172613	173314	0.35	cps
Beryllium	9-1	11651	11747	12013	11804	1.59	cps
Bismuth	209-1	6499541	6399297	6566598	6488479	1.30	cps
Bismuth	209-2	3372697	3420635	3332821	3375385	1.30	cps
Bromine	81-1	27270	27804	26746	27273	1.94	cps
Cadmium	108-1	1003	897	863	921	7.94	cps
Cadmium	106-1	8082	8453	8563	8366	3.01	cps
Cadmium	111-1	16177	16624	17085	16628	2.73	cps
Calcium	43-1	76747	76726	75517	76330	0.92	cps
Calcium	44-1	1267128	1298429	1251106	1272221	1.89	cps
Carbon	12-1	5345010	5250712	5237192	5277638	1.11	cps
Carbon	12-2	38647	38698	38333	38559	0.51	cps
Chlorine	35-1	239253	241072	241794	240706	0.54	cps
Chlorine	35-2	1287	1307	1390	1328	4.13	cps
Chromium	52-2	26234	24378	21202	23938	10.63	cps
Cobalt	59-2	23466	21319	18335	21040	12.25	cps
Copper	63-2	37580	35945	31732	35086	8.60	cps
Dysprosium	156-1	40	40	37	39	4.94	cps
Dysprosium	156-2	13	10	20	14	35.26	cps
Erbium	164-1	67	83	93	81	16.60	cps
Erbium	164-2	37	23	37	32	23.90	cps
Gadolinium	160-1	117	127	87	110	18.92	cps
Gadolinium	160-2	37	40	33	37	9.10	cps
Holmium	165-1	11141198	10662964	10833401	10879187	2.23	cps
Holmium	165-2	4717187	4694726	4717002	4709638	0.27	cps
Indium	115-1	10170046	10052581	10175930	10132852	0.69	cps
Indium	115-2	1315337	1304511	1302062	1307304	0.54	cps
Iron	54-2	27019	24495	21363	24292	11.66	cps
Iron	56-2	480870	431829	363658	425452	13.84	cps
Iron	57-2	11688	10404	9193	10428	11.96	cps
Krypton	83-1	353	393	400	382	6.60	cps
Lead	206-1	29363	28127	28675	28722	2.16	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S2 Instrumnet Name : P8
Client Sample ID : S2 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:22:15 DataFile Name : 006CAL.S.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	26043	25522	25709	25758	1.02	cps
Lead	208-1	116158	115078	115946	115727	0.49	cps
Lithium	6-1	3571434	3603872	3570495	3581934	0.53	cps
Magnesium	24-2	352012	320007	278866	316962	11.57	cps
Manganese	55-2	7239	7132	6585	6985	5.02	cps
Molybdenum	94-1	91720	93887	92303	92637	1.21	cps
Molybdenum	95-1	114073	112128	113290	113164	0.86	cps
Molybdenum	96-1	123674	123574	124773	124007	0.54	cps
Molybdenum	97-1	69607	70025	69814	69816	0.30	cps
Molybdenum	98-1	179098	176718	179288	178368	0.80	cps
Neodymium	150-1	17	17	27	20	28.86	cps
Neodymium	150-2	3	10	0	4	114.60	cps
Nickel	60-2	7442	6902	6328	6891	8.08	cps
Phosphorus	31-2	430	473	443	449	4.95	cps
Potassium	39-2	276150	270152	249333	265212	5.31	cps
Rhodium	103-1	9754917	9619482	9424037	9599479	1.73	cps
Rhodium	103-2	4466908	4534557	4476307	4492591	0.82	cps
Scandium	45-1	6873037	6931014	6857584	6887212	0.56	cps
Scandium	45-2	181230	180907	182055	181397	0.33	cps
Selenium	82-1	3817	3474	3701	3664	4.77	cps
Selenium	77-2	87	90	97	91	5.59	cps
Selenium	78-2	300	320	263	294	9.76	cps
Silicon	28-1	749842	755269	771864	758991	1.51	cps
Silver	107-1	55357	57148	57787	56764	2.22	cps
Silver	109-1	52757	53286	53788	53277	0.97	cps
Sodium	23-2	787555	752895	677172	739207	7.64	cps
Strontium	86-1	15796	15212	15595	15534	1.91	cps
Strontium	88-1	130746	131203	132034	131328	0.50	cps
Sulfur	34-1	837670	838992	840344	839002	0.16	cps
Terbium	159-1	11438033	11199518	11460281	11365944	1.27	cps
Terbium	159-2	4677709	4650007	4622379	4650032	0.59	cps
Thallium	203-1	34198	33804	34289	34097	0.76	cps
Thallium	205-1	80189	82685	83144	82006	1.94	cps
Tin	118-1	182175	180834	179795	180935	0.66	cps
Titanium	47-1	32640	34221	34381	33747	2.85	cps
Uranium	238-1	100907	101095	100271	100758	0.43	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S2 Instrumnet Name : P8
Client Sample ID : S2 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:22:15 DataFile Name : 006CALS.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	46010	42226	35571	41269	12.81	cps
Ytterbium	172-1	57	63	80	67	18.03	cps
Ytterbium	172-2	23	27	30	27	12.51	cps
Ytterbium	176-1	1567	1850	1637	1685	8.76	cps
Ytterbium	176-2	353	403	367	374	6.91	cps
Yttrium	89-1	18435049	18667166	18742049	18614755	0.86	cps
Yttrium	89-2	1742712	1767302	1790800	1766938	1.36	cps
Zinc	66-2	12939	12329	10711	11993	9.60	cps
Zirconium	90-1	77527	79250	80336	79038	1.79	cps
Zirconium	91-1	17237	17461	17341	17346	0.65	cps

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LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S3 Instrumnet Name : P8
Client Sample ID : S3 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:25:36 DataFile Name : 007CALB.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	173728	173101	169037	171955	1.48	cps
Antimony	121-1	2020857	2024925	2042132	2029305	0.56	cps
Arsenic	75-2	51370	51176	51574	51373	0.39	cps
Barium	135-1	2339172	2332397	2312550	2328040	0.59	cps
Barium	137-1	3983117	4006315	3962122	3983851	0.55	cps
Beryllium	9-1	513916	512699	510609	512408	0.33	cps
Bismuth	209-1	6455213	6360422	6410378	6408671	0.74	cps
Bismuth	209-2	3322098	3304811	3298247	3308386	0.37	cps
Bromine	81-1	26903	27684	26261	26949	2.64	cps
Cadmium	108-1	41135	41355	40931	41140	0.52	cps
Cadmium	106-1	64929	64932	65983	65281	0.93	cps
Cadmium	111-1	508761	515534	515614	513303	0.77	cps
Calcium	43-1	664317	662968	664906	664064	0.15	cps
Calcium	44-1	10638844	10819249	10608281	10688792	1.07	cps
Carbon	12-1	5458470	5436582	5385506	5426853	0.69	cps
Carbon	12-2	40121	39550	40305	39992	0.98	cps
Chlorine	35-1	277105	280593	279967	279222	0.67	cps
Chlorine	35-2	1523	1497	1490	1503	1.17	cps
Chromium	52-2	521876	525109	519586	522190	0.53	cps
Cobalt	59-2	965873	955080	950037	956997	0.85	cps
Copper	63-2	8233884	8188082	8073056	8165007	1.01	cps
Dysprosium	156-1	83	67	63	71	15.07	cps
Dysprosium	156-2	23	7	13	14	58.06	cps
Erbium	164-1	83	83	117	94	20.38	cps
Erbium	164-2	60	23	50	44	42.65	cps
Gadolinium	160-1	143	137	137	139	2.77	cps
Gadolinium	160-2	20	50	30	33	45.83	cps
Holmium	165-1	10863778	10506429	10930520	10766909	2.12	cps
Holmium	165-2	4717520	4666113	4622557	4668730	1.02	cps
Indium	115-1	9838085	10127830	9992445	9986120	1.45	cps
Indium	115-2	1260666	1258428	1257739	1258944	0.12	cps
Iron	54-2	1103399	1095920	1074771	1091363	1.36	cps
Iron	56-2	19832634	20028313	19560113	19807020	1.19	cps
Iron	57-2	495169	493801	490601	493191	0.48	cps
Krypton	83-1	353	420	373	382	8.95	cps
Lead	206-1	6210982	6353904	6357465	6307450	1.32	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S3 Instrumnet Name : P8
Client Sample ID : S3 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:25:36 DataFile Name : 007CALB.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	5528918	5440899	5530805	5500207	0.93	cps
Lead	208-1	25151511	24976682	25322111	25150101	0.69	cps
Lithium	6-1	3582160	3548825	3605395	3578793	0.79	cps
Magnesium	24-2	2984910	2970789	2993219	2982973	0.38	cps
Manganese	55-2	2580869	2569874	2521924	2557556	1.23	cps
Molybdenum	94-1	6958069	6861357	6961499	6926975	0.82	cps
Molybdenum	95-1	9970055	10025707	9925004	9973589	0.51	cps
Molybdenum	96-1	10896170	10976592	10909133	10927298	0.40	cps
Molybdenum	97-1	6250482	6217604	6188838	6218975	0.50	cps
Molybdenum	98-1	16355064	16060282	15838570	16084638	1.61	cps
Neodymium	150-1	157	127	213	166	26.58	cps
Neodymium	150-2	3	17	13	11	62.48	cps
Nickel	60-2	280425	278573	277249	278749	0.57	cps
Phosphorus	31-2	9567	9530	9246	9448	1.85	cps
Potassium	39-2	1124269	1116401	1123524	1121398	0.39	cps
Rhodium	103-1	9636462	9438323	9473915	9516233	1.11	cps
Rhodium	103-2	4308193	4443210	4325941	4359114	1.68	cps
Scandium	45-1	6880784	6796758	6737952	6805165	1.05	cps
Scandium	45-2	173881	173895	174840	174205	0.32	cps
Selenium	82-1	31997	32134	31777	31970	0.56	cps
Selenium	77-2	790	743	790	774	3.48	cps
Selenium	78-2	2667	2657	2627	2650	0.79	cps
Silicon	28-1	8240503	8168107	8175265	8194625	0.49	cps
Silver	107-1	2634329	2658292	2721259	2671293	1.68	cps
Silver	109-1	2481614	2548259	2517231	2515701	1.33	cps
Sodium	23-2	6086737	6069355	6164011	6106701	0.83	cps
Strontium	86-1	639095	646720	642579	642798	0.59	cps
Strontium	88-1	5697143	5638419	5622582	5652715	0.69	cps
Sulfur	34-1	972696	966384	999877	979653	1.82	cps
Terbium	159-1	11385358	11438903	11396110	11406790	0.25	cps
Terbium	159-2	4517505	4525479	4491172	4511385	0.40	cps
Thallium	203-1	1541531	1545612	1550422	1545855	0.29	cps
Thallium	205-1	3693164	3731702	3796192	3740352	1.39	cps
Tin	118-1	1555655	1557401	1598131	1570396	1.53	cps
Titanium	47-1	2885638	2939384	2933731	2919584	1.01	cps
Uranium	238-1	4498387	4454775	4523669	4492277	0.78	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S3 Instrumnet Name : P8
Client Sample ID : S3 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:25:36 DataFile Name : 007CALB.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	404437	398206	395811	399484	1.11	cps
Ytterbium	172-1	103	87	127	106	19.03	cps
Ytterbium	172-2	40	40	47	42	9.12	cps
Ytterbium	176-1	9193	8960	8820	8991	2.10	cps
Ytterbium	176-2	3440	3360	3450	3417	1.44	cps
Yttrium	89-1	18236863	18380149	18017821	18211611	1.00	cps
Yttrium	89-2	1690395	1728941	1717725	1712354	1.16	cps
Zinc	66-2	1053866	1057841	1049007	1053571	0.42	cps
Zirconium	90-1	3511511	3587189	3486730	3528476	1.48	cps
Zirconium	91-1	762996	766582	761374	763651	0.35	cps

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LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S4 Instrumnet Name : P8
Client Sample ID : S4 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:28:45 DataFile Name : 008CAL.S.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	418036	414703	413721	415487	0.54	cps
Antimony	121-1	4856956	4918370	5009656	4928327	1.56	cps
Arsenic	75-2	126693	128109	126474	127092	0.70	cps
Barium	135-1	5714284	5837209	5691427	5747640	1.36	cps
Barium	137-1	9591944	9841279	9766125	9733116	1.31	cps
Beryllium	9-1	1172490	1154522	1197564	1174859	1.84	cps
Bismuth	209-1	6227304	6392964	6314707	6311658	1.31	cps
Bismuth	209-2	3250211	3202687	3267241	3240046	1.03	cps
Bromine	81-1	25877	26432	25727	26012	1.43	cps
Cadmium	108-1	100382	101826	102235	101481	0.96	cps
Cadmium	106-1	150914	150858	150959	150911	0.03	cps
Cadmium	111-1	1238487	1277086	1252097	1255890	1.56	cps
Calcium	43-1	1592220	1610024	1566864	1589702	1.36	cps
Calcium	44-1	25442223	26146326	25729282	25772610	1.37	cps
Carbon	12-1	5583360	5654028	5701181	5646190	1.05	cps
Carbon	12-2	43651	43564	43715	43644	0.17	cps
Chlorine	35-1	287749	295163	298384	293765	1.86	cps
Chlorine	35-2	1480	1577	1563	1540	3.40	cps
Chromium	52-2	1283965	1284736	1288676	1285792	0.20	cps
Cobalt	59-2	2436376	2412375	2372346	2407032	1.34	cps
Copper	63-2	19826083	19821774	19924968	19857608	0.29	cps
Dysprosium	156-1	167	153	120	147	16.39	cps
Dysprosium	156-2	27	30	37	31	16.37	cps
Erbium	164-1	163	130	113	136	18.78	cps
Erbium	164-2	90	40	80	70	37.80	cps
Gadolinium	160-1	150	197	170	172	13.60	cps
Gadolinium	160-2	80	40	30	50	52.92	cps
Holmium	165-1	10977667	10945599	10945122	10956129	0.17	cps
Holmium	165-2	4685878	4765232	4693026	4714712	0.93	cps
Indium	115-1	9788492	9858680	9773340	9806837	0.46	cps
Indium	115-2	1246061	1241036	1242475	1243191	0.21	cps
Iron	54-2	2732116	2684558	2731720	2716131	1.01	cps
Iron	56-2	48399844	48554643	48710683	48555057	0.32	cps
Iron	57-2	1214888	1218753	1211574	1215072	0.30	cps
Krypton	83-1	400	413	377	397	4.68	cps
Lead	206-1	15805971	16065062	15467817	15779617	1.90	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S4 Instrumnet Name : P8
Client Sample ID : S4 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:28:45 DataFile Name : 008CAL.S.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	13545838	13615669	13541364	13567624	0.31	cps
Lead	208-1	62204382	62951996	61950361	62368913	0.83	cps
Lithium	6-1	3598113	3607221	3562201	3589178	0.66	cps
Magnesium	24-2	7287364	7273205	7209024	7256531	0.58	cps
Manganese	55-2	6259611	6150094	6137944	6182549	1.08	cps
Molybdenum	94-1	17046213	17215052	17087914	17116393	0.51	cps
Molybdenum	95-1	24446817	24610565	24858609	24638664	0.84	cps
Molybdenum	96-1	27008653	27168837	27031385	27069625	0.32	cps
Molybdenum	97-1	15498773	15319139	15318359	15378757	0.68	cps
Molybdenum	98-1	40158244	39812909	39607293	39859482	0.70	cps
Neodymium	150-1	380	337	417	378	10.60	cps
Neodymium	150-2	17	30	23	23	28.56	cps
Nickel	60-2	679348	670130	665268	671582	1.06	cps
Phosphorus	31-2	23282	23359	22791	23144	1.33	cps
Potassium	39-2	2783576	2713981	2654472	2717343	2.38	cps
Rhodium	103-1	9290705	9388028	9229079	9302604	0.86	cps
Rhodium	103-2	4378519	4230445	4292843	4300603	1.73	cps
Scandium	45-1	6535291	6750892	6640341	6642175	1.62	cps
Scandium	45-2	172063	171948	170842	171618	0.39	cps
Selenium	82-1	77777	78541	77672	77997	0.61	cps
Selenium	77-2	1837	1737	1947	1840	5.71	cps
Selenium	78-2	6108	5968	5851	5976	2.15	cps
Silicon	28-1	18458834	18604501	18534984	18532773	0.39	cps
Silver	107-1	6298750	6451553	6553033	6434445	1.99	cps
Silver	109-1	6029194	6082127	6176886	6096069	1.23	cps
Sodium	23-2	14901331	14801908	14770646	14824628	0.46	cps
Strontium	86-1	1637617	1622335	1655024	1638325	1.00	cps
Strontium	88-1	13948245	13861486	14098634	13969455	0.86	cps
Sulfur	34-1	1166036	1169414	1155132	1163527	0.64	cps
Terbium	159-1	11241204	11575223	11500009	11438812	1.53	cps
Terbium	159-2	4573181	4597160	4582397	4584246	0.26	cps
Thallium	203-1	3979434	4020754	3931703	3977297	1.12	cps
Thallium	205-1	9207347	9292030	9278743	9259373	0.49	cps
Tin	118-1	3907880	3916381	3863797	3896019	0.72	cps
Titanium	47-1	7033719	7067656	6977195	7026190	0.65	cps
Uranium	238-1	10990573	11239234	11205727	11145178	1.21	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S4 Instrumnet Name : P8
Client Sample ID : S4 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:28:45 DataFile Name : 008CALS.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	984350	979961	974259	979523	0.52	cps
Ytterbium	172-1	167	147	153	156	6.55	cps
Ytterbium	172-2	77	73	70	73	4.55	cps
Ytterbium	176-1	20142	20256	19708	20035	1.44	cps
Ytterbium	176-2	8309	8009	8126	8148	1.86	cps
Yttrium	89-1	18372896	18197686	17991901	18187494	1.05	cps
Yttrium	89-2	1713847	1695277	1695113	1701412	0.63	cps
Zinc	66-2	2642233	2582190	2608908	2611110	1.15	cps
Zirconium	90-1	8669618	8681068	8619429	8656705	0.38	cps
Zirconium	91-1	1925427	1952848	1912911	1930396	1.06	cps

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LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S5 Instrumnet Name : P8
Client Sample ID : S5 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:31:33 DataFile Name : 009CAL.S.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	814454	800587	802031	805690	0.95	cps
Antimony	121-1	9871570	9818259	9864142	9851323	0.29	cps
Arsenic	75-2	247138	248849	244268	246752	0.94	cps
Barium	135-1	11517862	11504130	11643673	11555222	0.67	cps
Barium	137-1	19477576	19779861	19951111	19736183	1.21	cps
Beryllium	9-1	2311343	2328591	2301216	2313717	0.60	cps
Bismuth	209-1	6381393	6289143	6401309	6357282	0.94	cps
Bismuth	209-2	3190525	3125339	3153723	3156529	1.04	cps
Bromine	81-1	26889	26275	26472	26545	1.18	cps
Cadmium	108-1	203625	207807	199462	203632	2.05	cps
Cadmium	106-1	297349	292072	292193	293871	1.02	cps
Cadmium	111-1	2537013	2576642	2557009	2556888	0.77	cps
Calcium	43-1	3173929	3197158	3178678	3183255	0.39	cps
Calcium	44-1	51634733	52216049	51288946	51713243	0.91	cps
Carbon	12-1	5835603	5884904	5983529	5901345	1.28	cps
Carbon	12-2	45995	46316	46316	46209	0.40	cps
Chlorine	35-1	323688	331666	335949	330434	1.88	cps
Chlorine	35-2	1780	1753	1630	1721	4.65	cps
Chromium	52-2	2587952	2548494	2553560	2563335	0.84	cps
Cobalt	59-2	4656395	4629750	4488023	4591389	1.97	cps
Copper	63-2	38639396	37877423	37975791	38164203	1.09	cps
Dysprosium	156-1	290	240	263	264	9.46	cps
Dysprosium	156-2	40	43	67	50	29.06	cps
Erbium	164-1	207	253	213	224	11.25	cps
Erbium	164-2	60	97	73	77	24.21	cps
Gadolinium	160-1	253	177	203	211	18.44	cps
Gadolinium	160-2	90	80	83	84	6.03	cps
Holmium	165-1	11068156	11150289	11003397	11073947	0.66	cps
Holmium	165-2	4630444	4665781	4618142	4638122	0.53	cps
Indium	115-1	9723681	9655111	9630008	9669600	0.50	cps
Indium	115-2	1189287	1190003	1188741	1189344	0.05	cps
Iron	54-2	5296375	5287564	5212969	5265636	0.87	cps
Iron	56-2	95923402	95084765	93623655	94877274	1.23	cps
Iron	57-2	2461717	2439590	2392600	2431302	1.45	cps
Krypton	83-1	427	423	423	424	0.45	cps
Lead	206-1	32146728	31426605	31455781	31676371	1.29	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S5 Instrumnet Name : P8
Client Sample ID : S5 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:31:33 DataFile Name : 009CAL.S.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	27549451	27297358	27648480	27498430	0.66	cps
Lead	208-1	126536046	125317557	126337235	126063613	0.52	cps
Lithium	6-1	3608556	3539936	3511160	3553217	1.41	cps
Magnesium	24-2	14202935	14099361	13955221	14085839	0.88	cps
Manganese	55-2	12228208	12074518	12028432	12110386	0.86	cps
Molybdenum	94-1	34384411	34811727	34691339	34629159	0.64	cps
Molybdenum	95-1	49384911	50431479	49961579	49925990	1.05	cps
Molybdenum	96-1	54381958	54778773	54734321	54631684	0.40	cps
Molybdenum	97-1	30356972	30269686	30366610	30331090	0.18	cps
Molybdenum	98-1	79032925	79574714	79992490	79533377	0.60	cps
Neodymium	150-1	717	847	803	789	8.39	cps
Neodymium	150-2	43	63	57	54	18.71	cps
Nickel	60-2	1290609	1280921	1275546	1282359	0.60	cps
Phosphorus	31-2	43843	43625	43539	43669	0.36	cps
Potassium	39-2	5203371	5228342	5135751	5189155	0.92	cps
Rhodium	103-1	9154210	9079359	9194390	9142653	0.64	cps
Rhodium	103-2	4157914	4180055	4131415	4156461	0.59	cps
Scandium	45-1	6630418	6705013	6759453	6698295	0.97	cps
Scandium	45-2	167962	168889	168299	168383	0.28	cps
Selenium	82-1	154105	156040	152901	154349	1.03	cps
Selenium	77-2	3641	3691	3667	3666	0.68	cps
Selenium	78-2	11989	11955	11935	11960	0.23	cps
Silicon	28-1	35960224	36726714	36065646	36250861	1.15	cps
Silver	107-1	13065379	13139642	12947724	13050915	0.74	cps
Silver	109-1	12183192	12119388	11930853	12077811	1.09	cps
Sodium	23-2	28963960	28840515	28466013	28756829	0.90	cps
Strontium	86-1	3241360	3251706	3329713	3274260	1.48	cps
Strontium	88-1	28394298	28542017	28252304	28396206	0.51	cps
Sulfur	34-1	1544902	1530257	1544737	1539966	0.55	cps
Terbium	159-1	11414914	11475458	11542766	11477712	0.56	cps
Terbium	159-2	4531319	4517085	4482595	4510333	0.56	cps
Thallium	203-1	7844817	7752698	7875270	7824262	0.82	cps
Thallium	205-1	18735041	18211187	18302640	18416289	1.52	cps
Tin	118-1	7727948	7807526	7627854	7721109	1.17	cps
Titanium	47-1	14054330	14370593	14068318	14164414	1.26	cps
Uranium	238-1	22955221	22582618	22927774	22821871	0.91	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S5 Instrumnet Name : P8
Client Sample ID : S5 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:31:33 DataFile Name : 009CAL.S.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	1915756	1929078	1917469	1920768	0.38	cps
Ytterbium	172-1	237	260	253	250	4.81	cps
Ytterbium	172-2	117	117	93	109	12.37	cps
Ytterbium	176-1	39038	39288	39593	39306	0.71	cps
Ytterbium	176-2	15773	16030	15966	15923	0.84	cps
Yttrium	89-1	18074037	18416481	18278753	18256424	0.94	cps
Yttrium	89-2	1682225	1667014	1664881	1671373	0.57	cps
Zinc	66-2	5015680	4920916	4900614	4945737	1.24	cps
Zirconium	90-1	17377380	17672163	17486861	17512135	0.85	cps
Zirconium	91-1	3893861	3978202	3930991	3934352	1.07	cps

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LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S6 Instrumnet Name : P8
Client Sample ID : S6 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:34:39 DataFile Name : 010CAL.S.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	1637844	1612607	1608033	1619495	0.99	cps
Antimony	121-1	19420680	19508430	19370070	19433060	0.36	cps
Arsenic	75-2	496441	495486	489594	493840	0.75	cps
Barium	135-1	23220695	23342561	22814454	23125903	1.20	cps
Barium	137-1	39525885	39410675	39322981	39419847	0.26	cps
Beryllium	9-1	4556038	4619281	4532102	4569140	0.99	cps
Bismuth	209-1	6146291	6173556	6123580	6147809	0.41	cps
Bismuth	209-2	3072453	3040718	3044463	3052545	0.57	cps
Bromine	81-1	26218	26134	26138	26163	0.18	cps
Cadmium	108-1	403566	398695	402397	401553	0.63	cps
Cadmium	106-1	575258	578362	573053	575558	0.46	cps
Cadmium	111-1	5054484	5049361	4965570	5023138	0.99	cps
Calcium	43-1	6269537	6189806	6355540	6271627	1.32	cps
Calcium	44-1	101941875	101495238	102468415	101968510	0.48	cps
Carbon	12-1	6223565	6338924	6505764	6356084	2.23	cps
Carbon	12-2	51266	51149	51420	51278	0.27	cps
Chlorine	35-1	447832	463040	473487	461453	2.80	cps
Chlorine	35-2	2430	2567	2450	2482	2.97	cps
Chromium	52-2	5023807	5046698	5087135	5052547	0.63	cps
Cobalt	59-2	9130592	9161828	8988038	9093486	1.02	cps
Copper	63-2	75139756	76055746	74534147	75243216	1.02	cps
Dysprosium	156-1	477	520	400	466	13.05	cps
Dysprosium	156-2	97	120	97	104	12.90	cps
Erbium	164-1	380	367	360	369	2.76	cps
Erbium	164-2	150	120	157	142	13.73	cps
Gadolinium	160-1	277	327	340	314	10.62	cps
Gadolinium	160-2	137	123	160	140	13.25	cps
Holmium	165-1	10820636	10802674	10950613	10857974	0.74	cps
Holmium	165-2	4633621	4572277	4561638	4589179	0.85	cps
Indium	115-1	9272979	9366813	9314828	9318207	0.50	cps
Indium	115-2	1127616	1127001	1118098	1124238	0.47	cps
Iron	54-2	10359538	10459726	10261885	10360383	0.95	cps
Iron	56-2	188987357	188213377	189339031	188846588	0.30	cps
Iron	57-2	4738193	4678216	4805846	4740752	1.35	cps
Krypton	83-1	410	400	510	440	13.83	cps
Lead	206-1	66845464	66841481	66814599	66833848	0.03	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S6 Instrumnet Name : P8
Client Sample ID : S6 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:34:39 DataFile Name : 010CAL.S.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	57318124	57448662	57731622	57499470	0.37	cps
Lead	208-1	264320683	263222788	266672189	264738553	0.67	cps
Lithium	6-1	3446034	3431428	3367554	3415005	1.22	cps
Magnesium	24-2	27905487	28069840	27837520	27937616	0.43	cps
Manganese	55-2	23988820	24315695	24169384	24157966	0.68	cps
Molybdenum	94-1	69708797	69255437	69853461	69605898	0.45	cps
Molybdenum	95-1	100884399	101254455	100722519	100953791	0.27	cps
Molybdenum	96-1	110625875	111987472	110021862	110878403	0.91	cps
Molybdenum	97-1	61577484	62547756	61641109	61922116	0.88	cps
Molybdenum	98-1	161754021	160844204	159474858	160691028	0.71	cps
Neodymium	150-1	1627	1627	1570	1608	2.04	cps
Neodymium	150-2	100	127	107	111	12.49	cps
Nickel	60-2	2994995	3001396	3042608	3013000	0.86	cps
Phosphorus	31-2	85989	86164	85751	85968	0.24	cps
Potassium	39-2	10293705	10423803	10121102	10279536	1.48	cps
Rhodium	103-1	8879517	8900163	8814310	8864663	0.51	cps
Rhodium	103-2	3996888	4056468	3884047	3979134	2.20	cps
Scandium	45-1	6519628	6491222	6446774	6485875	0.57	cps
Scandium	45-2	167568	167429	167092	167363	0.15	cps
Selenium	82-1	310377	309688	308037	309367	0.39	cps
Selenium	77-2	6998	7055	6995	7016	0.48	cps
Selenium	78-2	23663	23630	23850	23714	0.50	cps
Silicon	28-1	68154587	68122431	67004676	67760565	0.97	cps
Silver	107-1	25632793	25683496	25253141	25523144	0.92	cps
Silver	109-1	23816530	24057652	23868499	23914227	0.53	cps
Sodium	23-2	57458852	57012391	57071229	57180824	0.42	cps
Strontium	86-1	6481673	6384435	6551143	6472417	1.29	cps
Strontium	88-1	56531124	56486052	56974427	56663868	0.48	cps
Sulfur	34-1	2247278	2232488	2197385	2225717	1.15	cps
Terbium	159-1	11548259	11483490	11349837	11460529	0.88	cps
Terbium	159-2	4485588	4474383	4484128	4481367	0.14	cps
Thallium	203-1	15908491	15745986	15531039	15728505	1.20	cps
Thallium	205-1	37147245	36999903	36691012	36946053	0.63	cps
Tin	118-1	15469650	15642915	15657628	15590064	0.67	cps
Titanium	47-1	27992430	28156891	28022900	28057407	0.31	cps
Uranium	238-1	45973256	45846654	45871581	45897164	0.15	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S6 Instrumnet Name : P8
Client Sample ID : S6 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:34:39 DataFile Name : 010CAL.S.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	3822980	3857166	3851276	3843807	0.48	cps
Ytterbium	172-1	363	320	360	348	6.93	cps
Ytterbium	172-2	197	147	173	172	14.53	cps
Ytterbium	176-1	77623	77402	77932	77652	0.34	cps
Ytterbium	176-2	31331	31444	31314	31363	0.23	cps
Yttrium	89-1	17886377	17582666	17945981	17805008	1.09	cps
Yttrium	89-2	1647864	1614736	1631374	1631325	1.02	cps
Zinc	66-2	13485762	13461493	13136477	13361244	1.46	cps
Zirconium	90-1	35134164	34925764	35233076	35097668	0.45	cps
Zirconium	91-1	7781534	7853257	7854016	7829602	0.53	cps

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LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S7 Instrumnet Name : P8
Client Sample ID : S7 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:37:24 DataFile Name : 011CAL.S.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	3099659	3123910	3103398	3108989	0.42	cps
Antimony	121-1	37130950	37895074	37742004	37589342	1.08	cps
Arsenic	75-2	969924	968542	960907	966458	0.50	cps
Barium	135-1	45345269	45682081	45971598	45666316	0.69	cps
Barium	137-1	76989102	79395959	78940754	78441938	1.63	cps
Beryllium	9-1	8658369	8688027	8669885	8672094	0.17	cps
Bismuth	209-1	6044054	6002893	6086328	6044425	0.69	cps
Bismuth	209-2	3004469	2990868	3054536	3016624	1.11	cps
Bromine	81-1	25864	25877	25573	25772	0.67	cps
Cadmium	108-1	776627	772050	775443	774707	0.31	cps
Cadmium	106-1	1097749	1105186	1094360	1099098	0.50	cps
Cadmium	111-1	9580844	9688328	9783914	9684362	1.05	cps
Calcium	43-1	12168815	12384304	12307939	12287019	0.89	cps
Calcium	44-1	200476290	200338884	200247777	200354317	0.06	cps
Carbon	12-1	6926251	7227976	7433256	7195828	3.54	cps
Carbon	12-2	59319	59004	59734	59352	0.62	cps
Chlorine	35-1	366126	374054	377056	372412	1.52	cps
Chlorine	35-2	2084	1953	1960	1999	3.66	cps
Chromium	52-2	9799741	9755761	9827030	9794178	0.37	cps
Cobalt	59-2	17579338	17276177	17279431	17378315	1.00	cps
Copper	63-2	143715435	144297635	141656481	143223183	0.97	cps
Dysprosium	156-1	873	897	910	893	2.08	cps
Dysprosium	156-2	167	177	163	169	4.11	cps
Erbium	164-1	680	640	627	649	4.28	cps
Erbium	164-2	217	223	220	220	1.52	cps
Gadolinium	160-1	493	460	417	457	8.42	cps
Gadolinium	160-2	170	203	230	201	14.95	cps
Holmium	165-1	10843374	10796540	10819589	10819834	0.22	cps
Holmium	165-2	4580571	4605859	4559292	4581907	0.51	cps
Indium	115-1	8772583	8901449	9057789	8910607	1.60	cps
Indium	115-2	1046997	1041511	1032346	1040285	0.71	cps
Iron	54-2	20115474	19979153	19863118	19985915	0.63	cps
Iron	56-2	363596888	367444341	366393728	365811652	0.54	cps
Iron	57-2	9258429	9131701	9193721	9194617	0.69	cps
Krypton	83-1	480	430	493	468	7.14	cps
Lead	206-1	118970398	121108528	121003162	120360696	1.00	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S7 Instrumnet Name : P8
Client Sample ID : S7 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:37:24 DataFile Name : 011CAL.S.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	103837842	105209408	104773508	104606920	0.67	cps
Lead	208-1	476801610	480099426	483780519	480227185	0.73	cps
Lithium	6-1	3360115	3319831	3343067	3341004	0.61	cps
Magnesium	24-2	54290984	54180796	53876773	54116184	0.40	cps
Manganese	55-2	46635753	46966853	46814801	46805802	0.35	cps
Molybdenum	94-1	134920275	136508335	139084788	136837799	1.54	cps
Molybdenum	95-1	200179250	197790170	202674104	200214508	1.22	cps
Molybdenum	96-1	216252563	220438210	220902697	219197823	1.17	cps
Molybdenum	97-1	120842832	122524275	122418308	121928472	0.77	cps
Molybdenum	98-1	320010129	318836675	322456122	320434309	0.58	cps
Neodymium	150-1	2944	2937	3014	2965	1.43	cps
Neodymium	150-2	193	150	217	187	18.12	cps
Nickel	60-2	4879412	4824895	4820639	4841649	0.68	cps
Phosphorus	31-2	166672	166911	165442	166342	0.47	cps
Potassium	39-2	20326667	20236021	20245243	20269310	0.25	cps
Rhodium	103-1	8550948	8609794	8501574	8554105	0.63	cps
Rhodium	103-2	3932793	3928470	3946182	3935815	0.23	cps
Scandium	45-1	6477693	6510422	6404810	6464308	0.84	cps
Scandium	45-2	170896	170835	170390	170707	0.16	cps
Selenium	82-1	589439	593472	599661	594190	0.87	cps
Selenium	77-2	14077	13790	13603	13824	1.73	cps
Selenium	78-2	46293	46430	45460	46061	1.14	cps
Silicon	28-1	124096795	123183852	125736198	124338948	1.04	cps
Silver	107-1	48298339	48301996	48066941	48222425	0.28	cps
Silver	109-1	45465751	45449544	45757456	45557584	0.38	cps
Sodium	23-2	110956578	110260532	110387585	110534898	0.34	cps
Strontium	86-1	12669871	12819490	12617656	12702339	0.82	cps
Strontium	88-1	111026108	111704235	110172508	110967617	0.69	cps
Sulfur	34-1	3662763	3647135	3658254	3656051	0.22	cps
Terbium	159-1	11028384	11270543	11084486	11127804	1.14	cps
Terbium	159-2	4425039	4475059	4479146	4459748	0.68	cps
Thallium	203-1	30270254	30941735	30500173	30570721	1.12	cps
Thallium	205-1	71971311	71326237	74068129	72455226	1.98	cps
Tin	118-1	29849040	30434644	30122061	30135248	0.97	cps
Titanium	47-1	54763588	55166773	55469218	55133193	0.64	cps
Uranium	238-1	88684869	90425519	91015919	90042102	1.35	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S7 Instrumnet Name : P8
Client Sample ID : S7 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:37:24 DataFile Name : 011CAL.S.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	7531918	7476410	7432817	7480381	0.66	cps
Ytterbium	172-1	643	723	707	691	6.11	cps
Ytterbium	172-2	423	360	260	348	23.68	cps
Ytterbium	176-1	152985	154793	152941	153573	0.69	cps
Ytterbium	176-2	62631	62192	62674	62499	0.43	cps
Yttrium	89-1	17711265	17772416	17535644	17673108	0.70	cps
Yttrium	89-2	1648042	1645739	1610781	1634854	1.28	cps
Zinc	66-2	17445980	17373122	17388301	17402468	0.22	cps
Zirconium	90-1	68989184	69070629	70110182	69389998	0.90	cps
Zirconium	91-1	15160106	15383335	15569661	15371034	1.33	cps

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LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S8 Instrumnet Name : P8
Client Sample ID : S8 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:40:26 DataFile Name : 012CAL.S.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	15192819	15195051	14638305	15008725	2.14	cps
Antimony	121-1	15899	15239	14735	15291	3.82	cps
Arsenic	75-2	463	477	450	463	2.88	cps
Barium	135-1	15990	15929	15012	15644	3.50	cps
Barium	137-1	27905	27374	27384	27555	1.10	cps
Beryllium	9-1	748	668	577	664	12.86	cps
Bismuth	209-1	4869735	4908551	4767810	4848699	1.50	cps
Bismuth	209-2	2574769	2585208	2597744	2585907	0.44	cps
Bromine	81-1	27029	27741	28192	27654	2.12	cps
Cadmium	108-1	290	240	273	268	9.51	cps
Cadmium	106-1	6201	6058	6205	6155	1.36	cps
Cadmium	111-1	5308	5223	5292	5274	0.86	cps
Calcium	43-1	53301546	53190748	52747214	53079836	0.55	cps
Calcium	44-1	881815960	873136787	869700067	874884271	0.71	cps
Carbon	12-1	5598393	5554758	5638798	5597316	0.75	cps
Carbon	12-2	60845	60715	60514	60691	0.27	cps
Chlorine	35-1	235123	237754	236746	236541	0.56	cps
Chlorine	35-2	1573	1420	1347	1447	8.00	cps
Chromium	52-2	77642	77157	74918	76572	1.90	cps
Cobalt	59-2	34024	35123	34358	34502	1.63	cps
Copper	63-2	30499	30937	30018	30485	1.51	cps
Dysprosium	156-1	1247	1027	1180	1151	9.80	cps
Dysprosium	156-2	367	430	487	428	14.03	cps
Erbium	164-1	1373	1213	1263	1283	6.38	cps
Erbium	164-2	480	540	557	526	7.67	cps
Gadolinium	160-1	980	1023	1087	1030	5.21	cps
Gadolinium	160-2	513	490	473	492	4.08	cps
Holmium	165-1	9442188	9387402	9307987	9379192	0.72	cps
Holmium	165-2	4278209	4251425	4252275	4260637	0.36	cps
Indium	115-1	7973386	8069420	7877071	7973292	1.21	cps
Indium	115-2	1099072	1106788	1104308	1103389	0.36	cps
Iron	54-2	90593522	91723202	90024905	90780543	0.95	cps
Iron	56-2	1687939815	1677660028	1663511495	1676370446	0.73	cps
Iron	57-2	42169978	42174235	41640803	41995005	0.73	cps
Krypton	83-1	523	547	500	523	4.46	cps
Lead	206-1	51187	50103	48862	50051	2.33	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S8 Instrumnet Name : P8
Client Sample ID : S8 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:40:26 DataFile Name : 012CAL.S.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	44874	43218	43178	43757	2.21	cps
Lead	208-1	203254	199489	196309	199684	1.74	cps
Lithium	6-1	2910996	2913772	2939803	2921524	0.54	cps
Magnesium	24-2	259026649	255689410	249319056	254678372	1.94	cps
Manganese	55-2	29644	29527	28893	29355	1.38	cps
Molybdenum	94-1	24235	24475	23977	24229	1.03	cps
Molybdenum	95-1	27611	28900	30016	28842	4.17	cps
Molybdenum	96-1	38737	37260	36591	37530	2.93	cps
Molybdenum	97-1	14975	14197	14211	14461	3.08	cps
Molybdenum	98-1	35529	33704	33410	34214	3.35	cps
Neodymium	150-1	580	587	573	580	1.15	cps
Neodymium	150-2	197	167	210	191	11.61	cps
Nickel	60-2	15896	16196	15695	15929	1.58	cps
Phosphorus	31-2	187	147	187	173	13.32	cps
Potassium	39-2	118353982	117807145	117634252	117931793	0.32	cps
Rhodium	103-1	7154454	7066308	6931012	7050591	1.60	cps
Rhodium	103-2	3437253	3489779	3433700	3453578	0.91	cps
Scandium	45-1	5791129	5685420	5703721	5726756	0.99	cps
Scandium	45-2	159889	160947	160047	160294	0.36	cps
Selenium	82-1	397	313	407	372	13.76	cps
Selenium	77-2	7	13	3	8	65.47	cps
Selenium	78-2	40	67	43	50	29.06	cps
Silicon	28-1	944809	881547	850956	892437	5.36	cps
Silver	107-1	4811	4427	3884	4374	10.65	cps
Silver	109-1	4214	3891	3354	3819	11.38	cps
Sodium	23-2	524643152	521185472	514142566	519990397	1.03	cps
Strontium	86-1	36752	36508	36665	36641	0.34	cps
Strontium	88-1	320228	319653	317800	319227	0.40	cps
Sulfur	34-1	628314	628053	635099	630489	0.63	cps
Terbium	159-1	9875358	9724405	9768558	9789441	0.79	cps
Terbium	159-2	4160399	4186312	4093846	4146852	1.15	cps
Thallium	203-1	2057	1653	1537	1749	15.60	cps
Thallium	205-1	5088	4067	3947	4367	14.35	cps
Tin	118-1	10764	10668	11195	10876	2.58	cps
Titanium	47-1	4901	4297	4704	4634	6.64	cps
Uranium	238-1	4107	3637	3190	3645	12.58	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : S8 Instrumnet Name : P8
Client Sample ID : S8 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 14:40:26 DataFile Name : 012CALS.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	1837	1810	1863	1837	1.45	cps
Ytterbium	172-1	2054	2147	2047	2082	2.69	cps
Ytterbium	172-2	1007	930	1067	1001	6.84	cps
Ytterbium	176-1	2510	2670	2667	2616	3.50	cps
Ytterbium	176-2	873	937	1013	941	7.45	cps
Yttrium	89-1	15689384	15548022	15438008	15558471	0.81	cps
Yttrium	89-2	1611572	1627305	1660365	1633081	1.52	cps
Zinc	66-2	33279	33747	33269	33432	0.82	cps
Zirconium	90-1	29692	28746	28295	28911	2.46	cps
Zirconium	91-1	6485	6385	6071	6314	3.42	cps

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LB Number : LB135293 Operator : Jaswal
Lab Sample ID : ICV01 Instrumnet Name : P8
Client Sample ID : ICV01 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 15:26:13 DataFile Name : 018ICV.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	83267	83944	83333	83515	0.45	cps
Antimony	121-1	7363046	7364805	7598129	7441993	1.82	cps
Arsenic	75-2	209768	210309	212234	210770	0.61	cps
Barium	135-1	854789	885479	882343	874204	1.93	cps
Barium	137-1	1508905	1507561	1549153	1521873	1.55	cps
Beryllium	9-1	971320	982973	979739	978010	0.62	cps
Bismuth	209-1	6133470	6172462	6244621	6183517	0.91	cps
Bismuth	209-2	3295330	3267537	3188849	3250572	1.70	cps
Bromine	81-1	24759	25016	24391	24722	1.27	cps
Cadmium	108-1	63559	64115	65431	64368	1.49	cps
Cadmium	106-1	94668	93903	95745	94772	0.98	cps
Cadmium	111-1	973615	982514	985365	980498	0.63	cps
Calcium	43-1	240878	251838	250685	247800	2.43	cps
Calcium	44-1	4065438	4198933	4102856	4122409	1.67	cps
Carbon	12-1	5546466	5562844	5582716	5564009	0.33	cps
Carbon	12-2	41863	41198	40776	41279	1.33	cps
Chlorine	35-1	228129	229789	233071	230330	1.09	cps
Chlorine	35-2	1210	1273	1367	1283	6.14	cps
Chromium	52-2	1069764	1062497	1056770	1063010	0.61	cps
Cobalt	59-2	1986494	2005849	1972227	1988190	0.85	cps
Copper	63-2	1503670	1491477	1480165	1491771	0.79	cps
Dysprosium	156-1	17	33	27	26	32.81	cps
Dysprosium	156-2	7	3	3	4	43.40	cps
Erbium	164-1	87	97	73	86	13.69	cps
Erbium	164-2	37	40	47	41	12.39	cps
Gadolinium	160-1	97	110	87	98	11.97	cps
Gadolinium	160-2	17	23	47	29	54.53	cps
Holmium	165-1	10473279	10700338	10517008	10563542	1.14	cps
Holmium	165-2	4639791	4679450	4547304	4622181	1.47	cps
Indium	115-1	9881221	9581999	10031734	9831651	2.33	cps
Indium	115-2	1276623	1270260	1273785	1273556	0.25	cps
Iron	54-2	878972	881678	871222	877291	0.62	cps
Iron	56-2	15601495	15655537	15252564	15503199	1.41	cps
Iron	57-2	388406	388143	383158	386569	0.76	cps
Krypton	83-1	407	370	407	394	5.37	cps
Lead	206-1	5074704	5079484	5020722	5058303	0.65	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : ICV01 Instrumnet Name : P8
Client Sample ID : ICV01 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 15:26:13 DataFile Name : 018ICV.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	4224335	4125967	4102081	4150794	1.56	cps
Lead	208-1	19533619	19264797	19367499	19388638	0.70	cps
Lithium	6-1	3519403	3677031	3522960	3573131	2.52	cps
Magnesium	24-2	688259	685934	682044	685412	0.46	cps
Manganese	55-2	513186	511035	508842	511021	0.43	cps
Molybdenum	94-1	1540	1547	1533	1540	0.43	cps
Molybdenum	95-1	777	820	767	788	3.60	cps
Molybdenum	96-1	1320	1333	1490	1381	6.85	cps
Molybdenum	97-1	507	433	450	463	8.30	cps
Molybdenum	98-1	1220	1100	1320	1213	9.08	cps
Neodymium	150-1	70	70	60	67	8.66	cps
Neodymium	150-2	13	7	10	10	33.30	cps
Nickel	60-2	532009	534077	526689	530925	0.72	cps
Phosphorus	31-2	177	173	173	174	1.10	cps
Potassium	39-2	981265	963463	972037	972255	0.92	cps
Rhodium	103-1	9198405	9499636	9334848	9344296	1.61	cps
Rhodium	103-2	4284582	4377294	4399208	4353694	1.40	cps
Scandium	45-1	6633506	6776562	6736675	6715581	1.10	cps
Scandium	45-2	177704	177596	177327	177542	0.11	cps
Selenium	82-1	124282	122664	125019	123988	0.97	cps
Selenium	77-2	3034	3080	3034	3049	0.88	cps
Selenium	78-2	10100	10090	10427	10206	1.88	cps
Silicon	28-1	715184	775235	718775	736398	4.57	cps
Silver	107-1	2534111	2505177	2539814	2526368	0.74	cps
Silver	109-1	2347797	2380411	2387794	2372001	0.90	cps
Sodium	23-2	2503435	2497327	2465751	2488838	0.81	cps
Strontium	86-1	3691	3907	3671	3756	3.50	cps
Strontium	88-1	27738	27524	27380	27547	0.65	cps
Sulfur	34-1	790467	793084	788274	790608	0.30	cps
Terbium	159-1	11146970	10955256	11102256	11068160	0.91	cps
Terbium	159-2	4531027	4550991	4532085	4538034	0.25	cps
Thallium	203-1	6123759	6055837	6062776	6080791	0.61	cps
Thallium	205-1	14145248	14263528	14390016	14266264	0.86	cps
Tin	118-1	6058	6375	6372	6268	2.90	cps
Titanium	47-1	517	483	523	508	4.22	cps
Uranium	238-1	263	303	297	288	7.45	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : ICV01 Instrumnet Name : P8
Client Sample ID : ICV01 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 15:26:13 DataFile Name : 018ICV.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	784694	787346	788598	786879	0.25	cps
Ytterbium	172-1	87	57	87	77	22.59	cps
Ytterbium	172-2	23	23	27	24	7.89	cps
Ytterbium	176-1	1390	1507	1487	1461	4.27	cps
Ytterbium	176-2	323	337	360	340	5.46	cps
Yttrium	89-1	17721248	18059103	18095386	17958579	1.15	cps
Yttrium	89-2	1742862	1728851	1729608	1733773	0.45	cps
Zinc	66-2	338602	338822	335741	337722	0.51	cps
Zirconium	90-1	2110	2374	2324	2269	6.16	cps
Zirconium	91-1	1803	1910	1740	1818	4.73	cps

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LB Number : LB135293 Operator : Jaswal
Lab Sample ID : LLICV Instrumnet Name : P8
Client Sample ID : LLICV Dilution Factor : 1
Date & Time Acquired : 2025-04-03 15:50:51 DataFile Name : 024LLIC.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	4217	3477	3107	3600	15.70	cps
Antimony	121-1	76023	78839	78674	77845	2.03	cps
Arsenic	75-2	1190	1097	980	1089	9.66	cps
Barium	135-1	89775	90687	92379	90947	1.45	cps
Barium	137-1	154689	159374	158770	157611	1.62	cps
Beryllium	9-1	10972	10841	10969	10928	0.69	cps
Bismuth	209-1	6209225	6256562	6495378	6320388	2.43	cps
Bismuth	209-2	3370253	3313484	3274259	3319332	1.45	cps
Bromine	81-1	25517	25884	26088	25829	1.12	cps
Cadmium	108-1	760	843	750	784	6.53	cps
Cadmium	106-1	7659	7716	8376	7917	5.04	cps
Cadmium	111-1	15440	15435	16313	15729	3.21	cps
Calcium	43-1	71078	70726	70395	70733	0.48	cps
Calcium	44-1	1180085	1175234	1177549	1177623	0.21	cps
Carbon	12-1	5087110	4894541	4847330	4942994	2.57	cps
Carbon	12-2	35550	34968	35399	35306	0.85	cps
Chlorine	35-1	199006	202266	200530	200600	0.81	cps
Chlorine	35-2	1113	1047	1087	1082	3.10	cps
Chromium	52-2	24157	22067	19470	21898	10.72	cps
Cobalt	59-2	22111	20131	16123	19455	15.68	cps
Copper	63-2	34980	32110	28679	31923	9.88	cps
Dysprosium	156-1	3	40	23	22	82.63	cps
Dysprosium	156-2	3	3	10	6	69.34	cps
Erbium	164-1	100	90	77	89	13.17	cps
Erbium	164-2	27	33	43	34	24.35	cps
Gadolinium	160-1	100	110	130	113	13.48	cps
Gadolinium	160-2	30	40	37	36	14.32	cps
Holmium	165-1	10446647	10557101	10760744	10588164	1.50	cps
Holmium	165-2	4580700	4568842	4647494	4599012	0.92	cps
Indium	115-1	9784897	9815109	10283317	9961108	2.81	cps
Indium	115-2	1279390	1279287	1286698	1281792	0.33	cps
Iron	54-2	25560	22888	19387	22612	13.69	cps
Iron	56-2	437434	398282	341826	392514	12.25	cps
Iron	57-2	10771	9533	8626	9643	11.16	cps
Krypton	83-1	470	400	393	421	10.09	cps
Lead	206-1	25545	26701	26364	26203	2.27	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : LLICV Instrumnet Name : P8
Client Sample ID : LLICV Dilution Factor : 1
Date & Time Acquired : 2025-04-03 15:50:51 DataFile Name : 024LLIC.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	22994	23064	22904	22987	0.35	cps
Lead	208-1	104037	106361	104712	105037	1.14	cps
Lithium	6-1	3607805	3603820	3727226	3646284	1.92	cps
Magnesium	24-2	331935	302660	259575	298057	12.21	cps
Manganese	55-2	6935	6612	6241	6596	5.26	cps
Molybdenum	94-1	83096	85360	84601	84353	1.37	cps
Molybdenum	95-1	101713	102357	102656	102242	0.47	cps
Molybdenum	96-1	111990	114046	112867	112968	0.91	cps
Molybdenum	97-1	63256	63501	63903	63554	0.51	cps
Molybdenum	98-1	161885	160879	160612	161126	0.42	cps
Neodymium	150-1	33	17	27	26	32.81	cps
Neodymium	150-2	10	10	3	8	49.52	cps
Nickel	60-2	6985	6635	5795	6472	9.45	cps
Phosphorus	31-2	490	367	367	408	17.46	cps
Potassium	39-2	259678	254911	241475	252021	3.75	cps
Rhodium	103-1	9265975	9366096	9619100	9417057	1.93	cps
Rhodium	103-2	4576581	4402201	4337248	4438676	2.79	cps
Scandium	45-1	6792941	6668691	7017987	6826539	2.59	cps
Scandium	45-2	180040	178639	180717	179799	0.59	cps
Selenium	82-1	3347	3367	3427	3381	1.23	cps
Selenium	77-2	70	60	77	69	12.18	cps
Selenium	78-2	260	317	353	310	15.17	cps
Silicon	28-1	729623	753424	731899	738316	1.78	cps
Silver	107-1	50505	51553	51677	51245	1.26	cps
Silver	109-1	46923	48448	47682	47684	1.60	cps
Sodium	23-2	735562	716863	657501	703309	5.80	cps
Strontium	86-1	14314	13904	14027	14082	1.50	cps
Strontium	88-1	117063	116871	118391	117442	0.70	cps
Sulfur	34-1	818727	812960	811732	814473	0.46	cps
Terbium	159-1	11045174	10996597	11612811	11218194	3.05	cps
Terbium	159-2	4598492	4464091	4464529	4509037	1.72	cps
Thallium	203-1	31759	30984	31535	31426	1.27	cps
Thallium	205-1	73339	74590	75197	74375	1.27	cps
Tin	118-1	164671	164900	167489	165686	0.94	cps
Titanium	47-1	30963	31612	31548	31374	1.14	cps
Uranium	238-1	89251	90452	90869	90191	0.93	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : LLICV Instrumnet Name : P8
Client Sample ID : LLICV Dilution Factor : 1
Date & Time Acquired : 2025-04-03 15:50:51 DataFile Name : 024LLIC.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	43248	39779	32614	38547	14.07	cps
Ytterbium	172-1	83	47	50	60	33.79	cps
Ytterbium	172-2	33	20	30	28	24.98	cps
Ytterbium	176-1	1443	1487	1430	1453	2.04	cps
Ytterbium	176-2	297	387	353	346	13.17	cps
Yttrium	89-1	17631119	17681167	18855698	18055995	3.84	cps
Yttrium	89-2	1800905	1720451	1719487	1746948	2.68	cps
Zinc	66-2	12325	11331	10344	11334	8.74	cps
Zirconium	90-1	70152	71247	72289	71229	1.50	cps
Zirconium	91-1	15839	15706	16146	15897	1.42	cps

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LB Number : LB135293 Operator : Jaswal
Lab Sample ID : ICB01 Instrumnet Name : P8
Client Sample ID : ICB01 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 15:55:08 DataFile Name : 025CCBE.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	417	407	373	399	5.69	cps
Antimony	121-1	233	277	247	252	8.80	cps
Arsenic	75-2	17	7	20	14	48.02	cps
Barium	135-1	177	157	130	154	15.16	cps
Barium	137-1	330	313	323	322	2.60	cps
Beryllium	9-1	113	101	113	109	6.57	cps
Bismuth	209-1	6192514	6354696	6306166	6284459	1.32	cps
Bismuth	209-2	3366981	3265664	3306842	3313162	1.54	cps
Bromine	81-1	25731	25243	26759	25911	2.99	cps
Cadmium	108-1	20	13	23	19	26.96	cps
Cadmium	106-1	6702	6835	6748	6762	1.00	cps
Cadmium	111-1	4697	4799	4744	4747	1.07	cps
Calcium	43-1	2540	2600	2537	2559	1.39	cps
Calcium	44-1	73427	72114	73333	72958	1.00	cps
Carbon	12-1	6155276	6738680	7102003	6665320	7.17	cps
Carbon	12-2	55310	56454	55785	55850	1.03	cps
Chlorine	35-1	269718	275339	278076	274378	1.55	cps
Chlorine	35-2	1490	1477	1383	1450	4.01	cps
Chromium	52-2	2070	2170	2464	2235	9.15	cps
Cobalt	59-2	133	127	173	144	17.47	cps
Copper	63-2	2884	3194	3697	3258	12.60	cps
Dysprosium	156-1	27	13	13	18	43.33	cps
Dysprosium	156-2	3	0	3	2	86.60	cps
Erbium	164-1	73	60	90	74	20.19	cps
Erbium	164-2	23	37	37	32	23.90	cps
Gadolinium	160-1	57	90	120	89	35.64	cps
Gadolinium	160-2	23	13	40	26	52.73	cps
Holmium	165-1	10497393	10591226	10690164	10592927	0.91	cps
Holmium	165-2	4648085	4701228	4698013	4682442	0.64	cps
Indium	115-1	9819446	9896405	9855982	9857278	0.39	cps
Indium	115-2	1284739	1276079	1293028	1284615	0.66	cps
Iron	54-2	1390	1403	1670	1488	10.62	cps
Iron	56-2	17120	18312	19897	18443	7.55	cps
Iron	57-2	440	483	447	457	5.11	cps
Krypton	83-1	367	437	370	391	10.10	cps
Lead	206-1	1457	1540	1717	1571	8.45	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : ICB01 Instrumnet Name : P8
Client Sample ID : ICB01 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 15:55:08 DataFile Name : 025CCBE.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	1210	1407	1373	1330	7.91	cps
Lead	208-1	5867	6334	6104	6102	3.82	cps
Lithium	6-1	3671867	3551788	3639721	3621125	1.72	cps
Magnesium	24-2	433	440	540	471	12.68	cps
Manganese	55-2	2134	2420	2390	2315	6.81	cps
Molybdenum	94-1	603	613	740	652	11.68	cps
Molybdenum	95-1	300	343	307	317	7.37	cps
Molybdenum	96-1	480	447	510	479	6.62	cps
Molybdenum	97-1	217	167	187	190	13.25	cps
Molybdenum	98-1	383	463	513	453	14.47	cps
Neodymium	150-1	13	13	3	10	57.75	cps
Neodymium	150-2	13	13	3	10	57.75	cps
Nickel	60-2	1210	1293	1423	1309	8.21	cps
Phosphorus	31-2	153	137	130	140	8.59	cps
Potassium	39-2	29129	29226	28131	28829	2.10	cps
Rhodium	103-1	9380503	9553494	9295676	9409891	1.40	cps
Rhodium	103-2	4466576	4424202	4335812	4408863	1.51	cps
Scandium	45-1	6748507	6795256	6848434	6797399	0.74	cps
Scandium	45-2	179742	181240	180259	180414	0.42	cps
Selenium	82-1	113	-83	3	11	887.22	cps
Selenium	77-2	3	3	0	2	86.60	cps
Selenium	78-2	43	47	57	49	14.20	cps
Silicon	28-1	585068	582782	579014	582288	0.53	cps
Silver	107-1	443	470	430	448	4.55	cps
Silver	109-1	420	387	373	393	6.11	cps
Sodium	23-2	78376	78335	77615	78109	0.55	cps
Strontium	86-1	780	727	793	767	4.60	cps
Strontium	88-1	1153	1227	1287	1222	5.46	cps
Sulfur	34-1	808356	812107	810139	810200	0.23	cps
Terbium	159-1	11071484	10937305	11085973	11031587	0.74	cps
Terbium	159-2	4570736	4551575	4504968	4542426	0.74	cps
Thallium	203-1	593	673	563	610	9.32	cps
Thallium	205-1	1200	1303	1377	1293	6.86	cps
Tin	118-1	5018	4674	4764	4819	3.70	cps
Titanium	47-1	440	400	367	402	9.13	cps
Uranium	238-1	150	190	200	180	14.70	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : ICB01 Instrumnet Name : P8
Client Sample ID : ICB01 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 15:55:08 DataFile Name : 025CCBE.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	43	30	50	41	24.77	cps
Ytterbium	172-1	80	73	40	64	33.25	cps
Ytterbium	172-2	23	30	30	28	13.86	cps
Ytterbium	176-1	1443	1333	1440	1406	4.45	cps
Ytterbium	176-2	323	383	263	323	18.56	cps
Yttrium	89-1	18135828	18259263	17992444	18129179	0.74	cps
Yttrium	89-2	1763432	1743113	1771539	1759361	0.83	cps
Zinc	66-2	3090	3087	3197	3125	2.00	cps
Zirconium	90-1	1273	1300	1307	1293	1.36	cps
Zirconium	91-1	297	213	233	248	17.56	cps

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LB Number : LB135293 Operator : Jaswal
Lab Sample ID : ICSA01 Instrumnet Name : P8
Client Sample ID : ICSA01 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:03:42 DataFile Name : 027ICSA.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	15971231	15838837	15723726	15844598	0.78	cps
Antimony	121-1	45964	46689	46405	46353	0.79	cps
Arsenic	75-2	410	307	353	357	14.51	cps
Barium	135-1	13310	13237	13016	13188	1.16	cps
Barium	137-1	22639	22292	22746	22559	1.05	cps
Beryllium	9-1	2711	2999	2765	2825	5.42	cps
Bismuth	209-1	5476165	5523952	5615968	5538695	1.28	cps
Bismuth	209-2	2871259	2851646	2918074	2880326	1.18	cps
Bromine	81-1	29494	30116	30119	29910	1.20	cps
Cadmium	108-1	12135	12713	12072	12307	2.87	cps
Cadmium	106-1	6188	6051	6462	6234	3.35	cps
Cadmium	111-1	10542	9328	10183	10018	6.23	cps
Calcium	43-1	12933274	12809906	12673142	12805441	1.02	cps
Calcium	44-1	210419710	211595770	208990610	210335364	0.62	cps
Carbon	12-1	79123834	80573459	80578120	80091804	1.05	cps
Carbon	12-2	595433	592245	590276	592652	0.44	cps
Chlorine	35-1	189114837	194715024	195970757	193266873	1.89	cps
Chlorine	35-2	1123042	1131850	1126829	1127241	0.39	cps
Chromium	52-2	211416	209332	209220	209989	0.59	cps
Cobalt	59-2	22111	22274	21667	22017	1.43	cps
Copper	63-2	111426	110680	112279	111462	0.72	cps
Dysprosium	156-1	133	180	200	171	19.99	cps
Dysprosium	156-2	47	50	63	53	16.53	cps
Erbium	164-1	183	187	240	203	15.64	cps
Erbium	164-2	73	77	97	82	15.35	cps
Gadolinium	160-1	230	187	277	231	19.48	cps
Gadolinium	160-2	90	90	73	84	11.40	cps
Holmium	165-1	10178411	10245300	10331272	10251661	0.75	cps
Holmium	165-2	4480344	4417171	4417892	4438469	0.82	cps
Indium	115-1	8938939	9006803	9082875	9009539	0.80	cps
Indium	115-2	1153859	1158358	1158603	1156940	0.23	cps
Iron	54-2	42571187	41759997	42131228	42154137	0.96	cps
Iron	56-2	782176122	778893935	772524282	777864780	0.63	cps
Iron	57-2	19523605	19530669	19349484	19467920	0.53	cps
Krypton	83-1	443	453	493	463	5.71	cps
Lead	206-1	116410	115335	116118	115954	0.48	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : ICSA01 Instrumnet Name : P8
Client Sample ID : ICSA01 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:03:42 DataFile Name : 027ICSA.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	91443	90154	89537	90378	1.08	cps
Lead	208-1	432000	428763	428621	429795	0.44	cps
Lithium	6-1	3375150	3310932	3322596	3336226	1.03	cps
Magnesium	24-2	56763886	56684972	56277096	56575318	0.46	cps
Manganese	55-2	36660	36142	36520	36441	0.74	cps
Molybdenum	94-1	22406668	22537721	22321602	22421997	0.49	cps
Molybdenum	95-1	39119515	39470080	39524509	39371368	0.56	cps
Molybdenum	96-1	42201966	41923629	42786175	42303924	1.04	cps
Molybdenum	97-1	24060920	23817125	24458737	24112261	1.34	cps
Molybdenum	98-1	62708309	63464121	62715561	62962664	0.69	cps
Neodymium	150-1	113	137	160	137	17.07	cps
Neodymium	150-2	43	53	50	49	10.42	cps
Nickel	60-2	30272	31047	30910	30743	1.35	cps
Phosphorus	31-2	938596	947983	939718	942099	0.54	cps
Potassium	39-2	44069864	44147396	44475823	44231028	0.49	cps
Rhodium	103-1	8218469	8349959	8420449	8329626	1.23	cps
Rhodium	103-2	3848237	3836842	3889141	3858073	0.71	cps
Scandium	45-1	6543908	6474198	6503404	6507170	0.54	cps
Scandium	45-2	168401	168944	171905	169750	1.11	cps
Selenium	82-1	70	83	-27	42	142.18	cps
Selenium	77-2	0	0	0	0	0.00	cps
Selenium	78-2	40	43	43	42	4.55	cps
Silicon	28-1	1026659	1023732	1023283	1024558	0.18	cps
Silver	107-1	1417	1827	1967	1737	16.46	cps
Silver	109-1	1443	1593	1810	1616	11.41	cps
Sodium	23-2	124264431	124426415	124453095	124381314	0.08	cps
Strontium	86-1	433393	436406	433893	434564	0.37	cps
Strontium	88-1	3807485	3979684	3989196	3925455	2.61	cps
Sulfur	34-1	17027819	16665789	16648361	16780656	1.28	cps
Terbium	159-1	10831338	10607856	10701891	10713695	1.05	cps
Terbium	159-2	4330749	4345932	4344253	4340311	0.19	cps
Thallium	203-1	3464	4534	5395	4464	21.67	cps
Thallium	205-1	8286	10534	13047	10622	22.42	cps
Tin	118-1	9637	9123	9423	9394	2.75	cps
Titanium	47-1	11815178	11933237	11948901	11899105	0.61	cps
Uranium	238-1	1997	2014	2184	2065	5.00	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : ICSA01 Instrumnet Name : P8
Client Sample ID : ICSA01 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:03:42 DataFile Name : 027ICSA.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	1233	1173	1253	1220	3.41	cps
Ytterbium	172-1	90	113	100	101	11.58	cps
Ytterbium	172-2	53	80	40	58	35.25	cps
Ytterbium	176-1	1347	1277	1383	1336	4.06	cps
Ytterbium	176-2	313	327	353	331	6.15	cps
Yttrium	89-1	17216802	17442768	17464116	17374562	0.79	cps
Yttrium	89-2	1676569	1677496	1650242	1668103	0.93	cps
Zinc	66-2	26204	26054	26408	26222	0.68	cps
Zirconium	90-1	2380	2544	2737	2554	6.99	cps
Zirconium	91-1	580	573	623	592	4.58	cps

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LB Number : LB135293 Operator : Jaswal
Lab Sample ID : ICSAB01 Instrumnet Name : P8
Client Sample ID : ICSAB01 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:20:34 DataFile Name : 031ICSB.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	16569216	16437051	15989779	16332015	1.86	cps
Antimony	121-1	801392	813130	811798	808773	0.79	cps
Arsenic	75-2	22031	21764	21146	21647	2.10	cps
Barium	135-1	194181	197554	199399	197045	1.34	cps
Barium	137-1	336002	340922	339077	338667	0.73	cps
Beryllium	9-1	195733	197592	195824	196383	0.53	cps
Bismuth	209-1	5770683	5709567	5747972	5742741	0.54	cps
Bismuth	209-2	2900097	2883677	2892035	2891936	0.28	cps
Bromine	81-1	32194	33637	33981	33271	2.85	cps
Cadmium	108-1	25871	25928	25527	25775	0.84	cps
Cadmium	106-1	24322	24348	24428	24366	0.23	cps
Cadmium	111-1	200008	203298	202111	201806	0.83	cps
Calcium	43-1	13016037	13455313	13095559	13188970	1.77	cps
Calcium	44-1	214404230	219483737	214803070	216230346	1.31	cps
Carbon	12-1	81934065	84713122	84461710	83702966	1.84	cps
Carbon	12-2	621221	625629	614394	620415	0.91	cps
Chlorine	35-1	195849304	204987910	203408570	201415261	2.43	cps
Chlorine	35-2	1170500	1173434	1160414	1168116	0.58	cps
Chromium	52-2	428761	431419	424325	428168	0.84	cps
Cobalt	59-2	402908	404664	398059	401877	0.85	cps
Copper	63-2	396395	398938	394119	396484	0.61	cps
Dysprosium	156-1	160	153	203	172	15.76	cps
Dysprosium	156-2	70	47	47	54	24.74	cps
Erbium	164-1	207	193	163	188	11.82	cps
Erbium	164-2	90	87	87	88	2.19	cps
Gadolinium	160-1	197	217	267	227	15.91	cps
Gadolinium	160-2	97	97	83	92	8.35	cps
Holmium	165-1	10449127	10720688	10713874	10627897	1.46	cps
Holmium	165-2	4499739	4504764	4494752	4499752	0.11	cps
Indium	115-1	9257246	9484703	9518210	9420053	1.51	cps
Indium	115-2	1173315	1170518	1179816	1174549	0.41	cps
Iron	54-2	43449334	43103520	42643972	43065609	0.94	cps
Iron	56-2	786861135	786320202	780993402	784724913	0.41	cps
Iron	57-2	19675598	19638602	19688553	19667584	0.13	cps
Krypton	83-1	480	603	523	536	11.68	cps
Lead	206-1	593395	597820	601860	597692	0.71	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : ICSAB01 Instrumnet Name : P8
Client Sample ID : ICSAB01 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:20:34 DataFile Name : 031ICSB.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	497092	501411	495748	498084	0.59	cps
Lead	208-1	2284544	2309484	2303890	2299306	0.57	cps
Lithium	6-1	3423258	3539539	3491837	3484878	1.68	cps
Magnesium	24-2	59098494	59679446	58124007	58967316	1.33	cps
Manganese	55-2	130426	130106	128118	129550	0.97	cps
Molybdenum	94-1	22410696	22671621	23112920	22731745	1.56	cps
Molybdenum	95-1	39717224	40418156	40770904	40302095	1.33	cps
Molybdenum	96-1	42589782	43341543	43440798	43124041	1.08	cps
Molybdenum	97-1	24206068	24548415	24404456	24386313	0.70	cps
Molybdenum	98-1	63635409	63838967	63840672	63771683	0.19	cps
Neodymium	150-1	137	177	177	163	14.14	cps
Neodymium	150-2	47	50	60	52	13.28	cps
Nickel	60-2	133335	131057	129768	131387	1.37	cps
Phosphorus	31-2	968721	964915	944044	959227	1.39	cps
Potassium	39-2	45806203	46247743	45693978	45915974	0.64	cps
Rhodium	103-1	8563322	8609047	8692171	8621513	0.76	cps
Rhodium	103-2	3939251	3986211	3952728	3959397	0.61	cps
Scandium	45-1	6661842	6831915	6829655	6774471	1.44	cps
Scandium	45-2	178866	176990	175342	177066	1.00	cps
Selenium	82-1	12903	13053	12896	12951	0.68	cps
Selenium	77-2	370	403	333	369	9.49	cps
Selenium	78-2	1097	1077	1133	1102	2.61	cps
Silicon	28-1	1120055	1105927	1150191	1125391	2.01	cps
Silver	107-1	927084	928529	928661	928092	0.09	cps
Silver	109-1	872235	888365	870303	876967	1.13	cps
Sodium	23-2	130593035	130877308	128520408	129996917	0.99	cps
Strontium	86-1	441685	449188	448649	446507	0.94	cps
Strontium	88-1	4020452	4067161	3989180	4025598	0.97	cps
Sulfur	34-1	17216427	17634071	17358648	17403048	1.22	cps
Terbium	159-1	11094350	11057759	10887622	11013243	1.00	cps
Terbium	159-2	4386991	4407247	4382465	4392234	0.30	cps
Thallium	203-1	595589	612113	603258	603653	1.37	cps
Thallium	205-1	1434860	1459876	1445871	1446869	0.87	cps
Tin	118-1	10831	10214	10534	10526	2.93	cps
Titanium	47-1	12206894	12127574	12489654	12274708	1.55	cps
Uranium	238-1	2384	2190	2147	2240	5.63	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : ICSAB01 Instrumnet Name : P8
Client Sample ID : ICSAB01 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:20:34 DataFile Name : 031ICSB.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	165543	166074	163560	165059	0.80	cps
Ytterbium	172-1	117	87	117	107	16.24	cps
Ytterbium	172-2	30	27	77	44	62.90	cps
Ytterbium	176-1	1447	1287	1597	1443	10.74	cps
Ytterbium	176-2	223	283	320	276	17.71	cps
Yttrium	89-1	17993036	18431168	17907807	18110670	1.55	cps
Yttrium	89-2	1694704	1706730	1686523	1695986	0.60	cps
Zinc	66-2	59009	59792	59464	59422	0.66	cps
Zirconium	90-1	2704	3057	3241	3000	9.10	cps
Zirconium	91-1	823	920	970	904	8.24	cps

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LB Number : LB135293 Operator : Jaswal
Lab Sample ID : CCV01 Instrumnet Name : P8
Client Sample ID : CCV01 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:35:04 DataFile Name : 034CCV.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	8899548	9110292	9094488	9034776	1.30	cps
Antimony	121-1	17526456	17850480	17539926	17638954	1.04	cps
Arsenic	75-2	508576	510008	512897	510494	0.43	cps
Barium	135-1	21665106	21320247	21278460	21421271	0.99	cps
Barium	137-1	37042168	36204444	36718157	36654923	1.15	cps
Beryllium	9-1	4480938	4526570	4491692	4499733	0.53	cps
Bismuth	209-1	5383407	5404632	5353171	5380403	0.48	cps
Bismuth	209-2	2791566	2799273	2843939	2811593	1.01	cps
Bromine	81-1	31873	33717	35167	33586	4.92	cps
Cadmium	108-1	365473	361492	364099	363688	0.56	cps
Cadmium	106-1	517574	528423	524981	523659	1.06	cps
Cadmium	111-1	4497229	4583442	4494305	4524992	1.12	cps
Calcium	43-1	31540783	31611379	31672797	31608320	0.21	cps
Calcium	44-1	515795646	517654006	511617379	515022343	0.60	cps
Carbon	12-1	6595156	6690998	6799824	6695326	1.53	cps
Carbon	12-2	60373	60521	60825	60573	0.38	cps
Chlorine	35-1	1278419	1278818	1256375	1271204	1.01	cps
Chlorine	35-2	7058	7072	7118	7083	0.45	cps
Chromium	52-2	5439240	5430879	5378740	5416286	0.61	cps
Cobalt	59-2	9062090	9145194	9205453	9137579	0.79	cps
Copper	63-2	73196879	72743902	72955112	72965298	0.31	cps
Dysprosium	156-1	977	973	960	970	0.91	cps
Dysprosium	156-2	243	317	237	266	16.71	cps
Erbium	164-1	937	800	720	819	13.38	cps
Erbium	164-2	333	317	373	341	8.54	cps
Gadolinium	160-1	687	730	683	700	3.72	cps
Gadolinium	160-2	293	347	270	303	12.96	cps
Holmium	165-1	10137822	10067149	10054219	10086397	0.45	cps
Holmium	165-2	4513907	4530938	4603550	4549465	1.05	cps
Indium	115-1	8782354	8618766	8816399	8739173	1.21	cps
Indium	115-2	1135955	1141770	1151407	1143044	0.68	cps
Iron	54-2	52488828	53392278	52853339	52911481	0.86	cps
Iron	56-2	967464092	960658066	961977319	963366492	0.37	cps
Iron	57-2	24307838	24067883	24259014	24211578	0.52	cps
Krypton	83-1	513	520	517	517	0.65	cps
Lead	206-1	53526403	54721878	54305618	54184633	1.12	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : CCV01 Instrumnet Name : P8
Client Sample ID : CCV01 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:35:04 DataFile Name : 034CCV.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	46249644	46007184	46241343	46166057	0.30	cps
Lead	208-1	213664905	213299603	213552408	213505639	0.09	cps
Lithium	6-1	3323546	3453860	3362911	3380105	1.98	cps
Magnesium	24-2	148371404	149758114	151430858	149853459	1.02	cps
Manganese	55-2	26065473	26084447	25913030	26020983	0.36	cps
Molybdenum	94-1	67282154	66216897	66671614	66723555	0.80	cps
Molybdenum	95-1	95962435	96434402	94812312	95736383	0.87	cps
Molybdenum	96-1	104100272	105374698	104360668	104611880	0.64	cps
Molybdenum	97-1	58688072	58438487	59446212	58857591	0.89	cps
Molybdenum	98-1	153518751	152608854	153856938	153328181	0.42	cps
Neodymium	150-1	1627	1763	1673	1688	4.12	cps
Neodymium	150-2	193	210	150	184	16.79	cps
Nickel	60-2	2516005	2485191	2561248	2520815	1.52	cps
Phosphorus	31-2	94435	96189	97693	96106	1.70	cps
Potassium	39-2	62195837	62128446	62485742	62270009	0.30	cps
Rhodium	103-1	8022972	8037276	8169964	8076737	1.00	cps
Rhodium	103-2	3882000	3868978	3878027	3876335	0.17	cps
Scandium	45-1	6738233	6863998	6708114	6770115	1.22	cps
Scandium	45-2	184800	188080	188208	187029	1.03	cps
Selenium	82-1	281727	282285	280869	281627	0.25	cps
Selenium	77-2	7259	7305	7149	7237	1.11	cps
Selenium	78-2	24551	24107	24311	24323	0.91	cps
Silicon	28-1	73831462	74710102	74470246	74337270	0.61	cps
Silver	107-1	22371274	22348645	22177984	22299301	0.47	cps
Silver	109-1	21016352	21276921	20915111	21069461	0.89	cps
Sodium	23-2	307680209	310065255	313138335	310294600	0.88	cps
Strontium	86-1	6240479	6211333	6313038	6254950	0.84	cps
Strontium	88-1	53651153	55082719	54396961	54376944	1.32	cps
Sulfur	34-1	2404888	2406222	2398496	2403202	0.17	cps
Terbium	159-1	10478716	10763668	10517085	10586490	1.46	cps
Terbium	159-2	4349928	4465624	4412575	4409376	1.31	cps
Thallium	203-1	13604377	13814966	13725523	13714955	0.77	cps
Thallium	205-1	32773155	33431748	32694566	32966490	1.23	cps
Tin	118-1	14137249	14354013	14338537	14276600	0.85	cps
Titanium	47-1	28357120	28952150	28637282	28648850	1.04	cps
Uranium	238-1	40400746	40037986	40706586	40381773	0.83	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : CCV01 Instrumnet Name : P8
Client Sample ID : CCV01 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:35:04 DataFile Name : 034CCV.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	4088842	4260366	4173269	4174159	2.05	cps
Ytterbium	172-1	1223	1227	1147	1199	3.78	cps
Ytterbium	172-2	633	573	583	597	5.39	cps
Ytterbium	176-1	72025	71512	71901	71813	0.37	cps
Ytterbium	176-2	30285	30465	30963	30571	1.15	cps
Yttrium	89-1	17711282	17533292	17696068	17646881	0.56	cps
Yttrium	89-2	1777693	1764178	1779369	1773747	0.47	cps
Zinc	66-2	8871544	8780264	8830441	8827416	0.52	cps
Zirconium	90-1	34243780	34406217	33966799	34205599	0.65	cps
Zirconium	91-1	7573638	7578243	7554637	7568840	0.17	cps

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LB Number : LB135293 Operator : Jaswal
Lab Sample ID : CCB01 Instrumnet Name : P8
Client Sample ID : CCB01 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:38:00 DataFile Name : 035CCBE.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	1243	1203	1113	1187	5.61	cps
Antimony	121-1	3931	3474	3047	3484	12.68	cps
Arsenic	75-2	30	57	20	36	53.31	cps
Barium	135-1	680	623	527	610	12.71	cps
Barium	137-1	1350	1190	1020	1187	13.91	cps
Beryllium	9-1	449	353	320	374	17.96	cps
Bismuth	209-1	6542637	6523092	6601290	6555673	0.62	cps
Bismuth	209-2	3372993	3399564	3349103	3373886	0.75	cps
Bromine	81-1	31125	31485	31622	31411	0.82	cps
Cadmium	108-1	43	47	63	51	20.96	cps
Cadmium	106-1	7676	7349	7512	7512	2.18	cps
Cadmium	111-1	5566	5311	5411	5429	2.36	cps
Calcium	43-1	12205	11648	11892	11915	2.34	cps
Calcium	44-1	226268	223464	221254	223662	1.12	cps
Carbon	12-1	7206213	7988908	8434620	7876580	7.90	cps
Carbon	12-2	66111	67651	68388	67383	1.72	cps
Chlorine	35-1	1136062	1141342	1152624	1143343	0.74	cps
Chlorine	35-2	5955	5801	5801	5852	1.51	cps
Chromium	52-2	2390	2407	2570	2456	4.05	cps
Cobalt	59-2	223	207	210	213	4.14	cps
Copper	63-2	4651	4657	4864	4724	2.57	cps
Dysprosium	156-1	17	23	10	17	39.99	cps
Dysprosium	156-2	3	10	0	4	114.60	cps
Erbium	164-1	77	83	60	73	16.39	cps
Erbium	164-2	33	33	53	40	28.87	cps
Gadolinium	160-1	113	133	110	119	10.62	cps
Gadolinium	160-2	33	37	33	34	5.60	cps
Holmium	165-1	10862603	11178242	11045437	11028761	1.44	cps
Holmium	165-2	4882397	4797650	4840614	4840220	0.88	cps
Indium	115-1	10413715	10499222	10550813	10487917	0.66	cps
Indium	115-2	1339932	1336444	1317326	1331234	0.91	cps
Iron	54-2	2170	2217	2104	2164	2.63	cps
Iron	56-2	30656	29825	29407	29963	2.12	cps
Iron	57-2	840	637	653	710	15.90	cps
Krypton	83-1	380	373	433	396	8.31	cps
Lead	206-1	5128	4341	4344	4604	9.85	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : CCB01 Instrumnet Name : P8
Client Sample ID : CCB01 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:38:00 DataFile Name : 035CCBE.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	4221	3814	3931	3988	5.25	cps
Lead	208-1	20003	17558	17054	18205	8.66	cps
Lithium	6-1	3823360	3872658	3848463	3848161	0.64	cps
Magnesium	24-2	2590	2474	2324	2462	5.43	cps
Manganese	55-2	2467	2270	2650	2462	7.72	cps
Molybdenum	94-1	4221	3681	3514	3805	9.71	cps
Molybdenum	95-1	3781	3027	2790	3199	16.16	cps
Molybdenum	96-1	4444	3377	3130	3651	19.13	cps
Molybdenum	97-1	2190	1747	1630	1856	15.92	cps
Molybdenum	98-1	5865	4557	3951	4791	20.42	cps
Neodymium	150-1	0	13	23	12	95.78	cps
Neodymium	150-2	0	0	3	1	173.21	cps
Nickel	60-2	1690	1503	1757	1650	7.96	cps
Phosphorus	31-2	127	167	163	152	14.58	cps
Potassium	39-2	51100	49715	48672	49829	2.44	cps
Rhodium	103-1	9961433	10204930	9961797	10042720	1.40	cps
Rhodium	103-2	4680303	4633168	4542258	4618576	1.52	cps
Scandium	45-1	7267033	7366104	7417373	7350170	1.04	cps
Scandium	45-2	189259	186767	183394	186473	1.58	cps
Selenium	82-1	73	117	30	73	59.09	cps
Selenium	77-2	0	0	0	0	0.00	cps
Selenium	78-2	43	33	33	37	15.75	cps
Silicon	28-1	699872	691323	669545	686914	2.28	cps
Silver	107-1	3000	2490	2257	2582	14.72	cps
Silver	109-1	2594	2207	1773	2191	18.72	cps
Sodium	23-2	120207	119585	115986	118593	1.92	cps
Strontium	86-1	1057	1190	1083	1110	6.36	cps
Strontium	88-1	4808	4511	4314	4544	5.47	cps
Sulfur	34-1	942025	926515	939520	936020	0.89	cps
Terbium	159-1	11549638	11552539	11731833	11611337	0.90	cps
Terbium	159-2	4741141	4792930	4672435	4735502	1.28	cps
Thallium	203-1	1960	1780	1703	1815	7.26	cps
Thallium	205-1	4811	4304	3991	4369	9.48	cps
Tin	118-1	5765	5765	5795	5775	0.30	cps
Titanium	47-1	1297	1067	873	1079	19.64	cps
Uranium	238-1	1150	857	797	934	20.23	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : CCB01 Instrumnet Name : P8
Client Sample ID : CCB01 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:38:00 DataFile Name : 035CCBE.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	83	113	47	81	41.16	cps
Ytterbium	172-1	73	60	50	61	19.15	cps
Ytterbium	172-2	17	33	37	29	37.08	cps
Ytterbium	176-1	1470	1397	1473	1447	3.00	cps
Ytterbium	176-2	320	297	260	292	10.35	cps
Yttrium	89-1	19257828	19300573	19641816	19400072	1.08	cps
Yttrium	89-2	1894229	1847543	1816916	1852896	2.10	cps
Zinc	66-2	6932	7225	6778	6978	3.25	cps
Zirconium	90-1	4841	4994	4898	4911	1.58	cps
Zirconium	91-1	1137	967	1047	1050	8.10	cps

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LB Number : LB135293 Operator : Jaswal
Lab Sample ID : CRI Instrumnet Name : P8
Client Sample ID : CRI Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:41:20 DataFile Name : 036LLCC.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	4027	3844	3174	3682	12.20	cps
Antimony	121-1	80482	82711	83174	82122	1.75	cps
Arsenic	75-2	1260	1100	990	1117	12.16	cps
Barium	135-1	95255	95936	95108	95433	0.46	cps
Barium	137-1	167223	166221	165407	166284	0.55	cps
Beryllium	9-1	11127	11438	11470	11345	1.67	cps
Bismuth	209-1	6400625	6434379	6584853	6473286	1.52	cps
Bismuth	209-2	3360318	3469914	3416949	3415727	1.60	cps
Bromine	81-1	31409	31676	31175	31420	0.80	cps
Cadmium	108-1	760	910	997	889	13.47	cps
Cadmium	106-1	8736	8559	8683	8659	1.05	cps
Cadmium	111-1	16584	16386	16218	16396	1.12	cps
Calcium	43-1	74800	74719	75446	74988	0.53	cps
Calcium	44-1	1293703	1285310	1305959	1294991	0.80	cps
Carbon	12-1	6471339	6138220	5993135	6200898	3.95	cps
Carbon	12-2	41181	41692	40004	40959	2.11	cps
Chlorine	35-1	943189	929544	925495	932743	0.99	cps
Chlorine	35-2	4737	4721	4667	4709	0.78	cps
Chromium	52-2	25109	23523	20461	23031	10.26	cps
Cobalt	59-2	22164	20675	17948	20262	10.55	cps
Copper	63-2	35915	35247	30533	33898	8.65	cps
Dysprosium	156-1	10	13	17	13	25.01	cps
Dysprosium	156-2	3	3	3	3	0.00	cps
Erbium	164-1	93	57	90	80	25.34	cps
Erbium	164-2	27	37	30	31	16.37	cps
Gadolinium	160-1	140	120	123	128	8.38	cps
Gadolinium	160-2	23	17	27	22	22.91	cps
Holmium	165-1	11143714	11252588	11143898	11180067	0.56	cps
Holmium	165-2	4925658	4892076	4815733	4877822	1.15	cps
Indium	115-1	10529109	10535511	10613524	10559381	0.45	cps
Indium	115-2	1312246	1335937	1326954	1325046	0.90	cps
Iron	54-2	26692	23880	20779	23783	12.44	cps
Iron	56-2	459183	427783	364299	417088	11.59	cps
Iron	57-2	11475	10958	8853	10428	13.32	cps
Krypton	83-1	427	390	397	404	4.83	cps
Lead	206-1	27776	27817	27593	27729	0.43	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : CRI Instrumnet Name : P8
Client Sample ID : CRI Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:41:20 DataFile Name : 036LLCC.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	24123	24881	24967	24657	1.88	cps
Lead	208-1	111978	112150	111115	111748	0.50	cps
Lithium	6-1	3844394	4048775	3960967	3951379	2.59	cps
Magnesium	24-2	340697	319984	276380	312353	10.51	cps
Manganese	55-2	7112	7289	6952	7117	2.37	cps
Molybdenum	94-1	87986	88976	89448	88803	0.84	cps
Molybdenum	95-1	107690	106292	108449	107477	1.02	cps
Molybdenum	96-1	120215	121109	120232	120519	0.42	cps
Molybdenum	97-1	66646	66371	66539	66519	0.21	cps
Molybdenum	98-1	170326	170584	173832	171581	1.14	cps
Neodymium	150-1	13	37	20	23	51.52	cps
Neodymium	150-2	3	0	0	1	173.21	cps
Nickel	60-2	6952	6538	6058	6516	6.86	cps
Phosphorus	31-2	467	453	357	426	14.11	cps
Potassium	39-2	281005	279040	261599	273881	3.90	cps
Rhodium	103-1	10009937	10164698	9698383	9957673	2.39	cps
Rhodium	103-2	4657899	4564014	4511663	4577859	1.62	cps
Scandium	45-1	7258177	7315733	7376812	7316907	0.81	cps
Scandium	45-2	186615	188840	187536	187664	0.60	cps
Selenium	82-1	3404	3374	3271	3349	2.09	cps
Selenium	77-2	103	100	100	101	1.90	cps
Selenium	78-2	330	273	287	297	9.99	cps
Silicon	28-1	802705	796022	784563	794430	1.15	cps
Silver	107-1	52945	52510	54768	53407	2.24	cps
Silver	109-1	50011	50509	51064	50528	1.04	cps
Sodium	23-2	788101	771058	704370	754510	5.86	cps
Strontium	86-1	14698	14668	15489	14951	3.11	cps
Strontium	88-1	125094	126003	125162	125419	0.40	cps
Sulfur	34-1	978663	990031	965890	978195	1.23	cps
Terbium	159-1	11579611	11661261	11658849	11633240	0.40	cps
Terbium	159-2	4740758	4790777	4786653	4772729	0.58	cps
Thallium	203-1	32374	32878	32695	32649	0.78	cps
Thallium	205-1	77275	78392	79049	78239	1.15	cps
Tin	118-1	173489	175477	173812	174259	0.61	cps
Titanium	47-1	33038	32450	32377	32622	1.11	cps
Uranium	238-1	92218	93390	93911	93173	0.93	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : CRI Instrumnet Name : P8
Client Sample ID : CRI Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:41:20 DataFile Name : 036LLCC.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	44389	40818	35651	40286	10.90	cps
Ytterbium	172-1	47	67	70	61	20.65	cps
Ytterbium	172-2	20	30	40	30	33.33	cps
Ytterbium	176-1	1680	1563	1700	1648	4.48	cps
Ytterbium	176-2	363	320	443	376	16.66	cps
Yttrium	89-1	19576488	19565995	19174622	19439035	1.18	cps
Yttrium	89-2	1834335	1838161	1829631	1834042	0.23	cps
Zinc	66-2	12552	12129	10614	11765	8.66	cps
Zirconium	90-1	77785	79019	78894	78566	0.86	cps
Zirconium	91-1	17538	17641	17177	17452	1.40	cps

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LB Number : LB135293 Operator : Jaswal
Lab Sample ID : PB167437BL Instrumnet Name : P8
Client Sample ID : PB167437BL Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:45:20 DataFile Name : 037CCBE.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	553	527	460	513	9.37	cps
Antimony	121-1	753	610	670	678	10.62	cps
Arsenic	75-2	23	23	20	22	8.65	cps
Barium	135-1	210	237	260	236	10.62	cps
Barium	137-1	470	357	333	387	18.91	cps
Beryllium	9-1	154	155	133	147	8.53	cps
Bismuth	209-1	6503879	6559347	6511463	6524897	0.46	cps
Bismuth	209-2	3378059	3359767	3342046	3359957	0.54	cps
Bromine	81-1	30577	30540	31175	30764	1.16	cps
Cadmium	108-1	23	40	37	33	26.47	cps
Cadmium	106-1	7629	7179	7285	7364	3.19	cps
Cadmium	111-1	5391	5074	5161	5208	3.14	cps
Calcium	43-1	2404	2347	2270	2340	2.86	cps
Calcium	44-1	65067	64377	64036	64493	0.81	cps
Carbon	12-1	5749556	5811221	5708375	5756384	0.90	cps
Carbon	12-2	39817	40178	39302	39766	1.11	cps
Chlorine	35-1	810725	801972	791805	801501	1.18	cps
Chlorine	35-2	4121	4071	3981	4057	1.75	cps
Chromium	52-2	2247	2227	2614	2362	9.22	cps
Cobalt	59-2	167	163	153	161	4.31	cps
Copper	63-2	3410	3811	4307	3843	11.69	cps
Dysprosium	156-1	13	13	23	17	34.65	cps
Dysprosium	156-2	0	13	0	4	173.21	cps
Erbium	164-1	77	87	77	80	7.22	cps
Erbium	164-2	30	23	23	26	15.07	cps
Gadolinium	160-1	103	127	137	122	13.99	cps
Gadolinium	160-2	40	20	30	30	33.33	cps
Holmium	165-1	11078643	11495608	11089957	11221402	2.12	cps
Holmium	165-2	4725592	4747425	4760909	4744642	0.38	cps
Indium	115-1	10577091	10623086	10480505	10560227	0.69	cps
Indium	115-2	1314591	1316944	1300932	1310822	0.66	cps
Iron	54-2	1397	1613	1600	1537	7.90	cps
Iron	56-2	19543	20665	22374	20861	6.83	cps
Iron	57-2	457	543	530	510	9.15	cps
Krypton	83-1	447	400	407	418	6.04	cps
Lead	206-1	2044	1960	1970	1991	2.29	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : PB167437BL Instrumnet Name : P8
Client Sample ID : PB167437BL Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:45:20 DataFile Name : 037CCBE.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	1720	1700	1740	1720	1.16	cps
Lead	208-1	8425	7851	7904	8060	3.93	cps
Lithium	6-1	3973665	3968865	3798779	3913770	2.55	cps
Magnesium	24-2	830	863	837	843	2.09	cps
Manganese	55-2	2054	2424	2537	2338	10.81	cps
Molybdenum	94-1	1280	1297	1303	1293	0.93	cps
Molybdenum	95-1	790	737	660	729	8.97	cps
Molybdenum	96-1	893	797	763	818	8.26	cps
Molybdenum	97-1	470	377	420	422	11.06	cps
Molybdenum	98-1	1080	1013	1033	1042	3.28	cps
Neodymium	150-1	10	20	10	13	43.30	cps
Neodymium	150-2	3	10	10	8	49.52	cps
Nickel	60-2	1050	1123	1370	1181	14.19	cps
Phosphorus	31-2	137	170	163	157	11.26	cps
Potassium	39-2	36940	36947	36867	36918	0.12	cps
Rhodium	103-1	10060806	10142314	10020817	10074646	0.61	cps
Rhodium	103-2	4624591	4499079	4489627	4537766	1.66	cps
Scandium	45-1	7264240	7250051	7194417	7236236	0.51	cps
Scandium	45-2	185203	184849	182010	184021	0.95	cps
Selenium	82-1	-3	-33	-27	-21	-74.63	cps
Selenium	77-2	0	0	0	0	0.00	cps
Selenium	78-2	40	30	57	42	31.91	cps
Silicon	28-1	605792	598848	603689	602776	0.59	cps
Silver	107-1	787	697	660	714	9.12	cps
Silver	109-1	623	573	643	613	5.88	cps
Sodium	23-2	92984	92534	92611	92710	0.26	cps
Strontium	86-1	707	740	707	718	2.68	cps
Strontium	88-1	1153	1137	1123	1138	1.32	cps
Sulfur	34-1	951799	948055	980988	960280	1.88	cps
Terbium	159-1	11524832	11451849	11608187	11528290	0.68	cps
Terbium	159-2	4700903	4705501	4674515	4693640	0.36	cps
Thallium	203-1	1020	823	947	930	10.69	cps
Thallium	205-1	2117	2037	2124	2092	2.31	cps
Tin	118-1	5158	4931	5051	5047	2.25	cps
Titanium	47-1	530	570	493	531	7.22	cps
Uranium	238-1	293	217	287	266	15.99	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : PB167437BL Instrumnet Name : P8
Client Sample ID : PB167437BL Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:45:20 DataFile Name : 037CCBE.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	43	50	73	56	28.35	cps
Ytterbium	172-1	80	60	53	64	21.54	cps
Ytterbium	172-2	47	30	23	33	36.07	cps
Ytterbium	176-1	1500	1353	1407	1420	5.23	cps
Ytterbium	176-2	257	313	327	299	12.44	cps
Yttrium	89-1	19247959	19790086	18960548	19332864	2.18	cps
Yttrium	89-2	1850924	1795246	1754765	1800312	2.68	cps
Zinc	66-2	2987	2944	3177	3036	4.09	cps
Zirconium	90-1	2000	2197	2250	2149	6.13	cps
Zirconium	91-1	393	423	403	407	3.76	cps

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LB Number : LB135293 Operator : Jaswal
Lab Sample ID : PB167437BS Instrumnet Name : P8
Client Sample ID : PB167437BS Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:48:40 DataFile Name : 038LCSS.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	1864788	1893640	1814187	1857538	2.17	cps
Antimony	121-1	20164029	20423919	20038926	20208958	0.97	cps
Arsenic	75-2	540284	541267	542747	541433	0.23	cps
Barium	135-1	24184156	24242741	24163487	24196795	0.17	cps
Barium	137-1	41191754	41686768	41322258	41400260	0.62	cps
Beryllium	9-1	4994181	4978384	4980369	4984312	0.17	cps
Bismuth	209-1	6004319	6010652	6076400	6030457	0.66	cps
Bismuth	209-2	3093347	3147534	3066185	3102356	1.33	cps
Bromine	81-1	30132	30159	29715	30002	0.83	cps
Cadmium	108-1	427115	424410	425748	425758	0.32	cps
Cadmium	106-1	611261	607132	610483	609625	0.36	cps
Cadmium	111-1	5321322	5305903	5246316	5291180	0.75	cps
Calcium	43-1	7031259	6912947	6963736	6969314	0.85	cps
Calcium	44-1	114517535	113848942	115310825	114559101	0.64	cps
Carbon	12-1	6730263	6968127	6886788	6861726	1.76	cps
Carbon	12-2	53581	53908	53912	53800	0.35	cps
Chlorine	35-1	826018	835110	832201	831110	0.56	cps
Chlorine	35-2	4357	4257	4307	4307	1.16	cps
Chromium	52-2	5512825	5689475	5627918	5610073	1.60	cps
Cobalt	59-2	10091878	9966784	10042025	10033562	0.63	cps
Copper	63-2	82703912	81623272	83146115	82491100	0.95	cps
Dysprosium	156-1	497	440	437	458	7.37	cps
Dysprosium	156-2	93	67	107	89	22.91	cps
Erbium	164-1	363	340	263	322	16.24	cps
Erbium	164-2	140	113	130	128	10.54	cps
Gadolinium	160-1	290	363	260	304	17.46	cps
Gadolinium	160-2	140	130	137	136	3.76	cps
Holmium	165-1	10844935	11044078	10904404	10931139	0.94	cps
Holmium	165-2	4795470	4693081	4644446	4710999	1.64	cps
Indium	115-1	9593316	9698529	9493409	9595085	1.07	cps
Indium	115-2	1169594	1168353	1172302	1170083	0.17	cps
Iron	54-2	11275509	11621017	11641651	11512726	1.79	cps
Iron	56-2	209836157	211731304	211692850	211086770	0.51	cps
Iron	57-2	5297568	5332006	5326052	5318542	0.35	cps
Krypton	83-1	423	463	400	429	7.47	cps
Lead	206-1	62272531	63763212	62153767	62729837	1.43	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : PB167437BS Instrumnet Name : P8
Client Sample ID : PB167437BS Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:48:40 DataFile Name : 038LCSS.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	53528274	54405103	53179839	53704405	1.18	cps
Lead	208-1	247605826	248331883	246592261	247509990	0.35	cps
Lithium	6-1	3678638	3667036	3691763	3679146	0.34	cps
Magnesium	24-2	32533332	32185101	32260390	32326275	0.57	cps
Manganese	55-2	26665556	27164148	27142332	26990679	1.04	cps
Molybdenum	94-1	73018834	75107006	75364776	74496872	1.73	cps
Molybdenum	95-1	106516538	107687692	108542592	107582274	0.95	cps
Molybdenum	96-1	115990638	117160358	118435738	117195578	1.04	cps
Molybdenum	97-1	65160341	65798287	66572449	65843692	1.07	cps
Molybdenum	98-1	168783204	171978724	172403247	171055059	1.16	cps
Neodymium	150-1	1717	1837	1773	1776	3.38	cps
Neodymium	150-2	107	110	97	104	6.64	cps
Nickel	60-2	2827967	2788329	2834489	2816928	0.89	cps
Phosphorus	31-2	97645	98444	98360	98150	0.45	cps
Potassium	39-2	11992323	11958995	12144581	12031966	0.82	cps
Rhodium	103-1	9107304	9259823	9122650	9163259	0.92	cps
Rhodium	103-2	4176694	4203579	4210562	4196945	0.43	cps
Scandium	45-1	6988051	7091908	7063923	7047960	0.76	cps
Scandium	45-2	182931	186153	183840	184308	0.90	cps
Selenium	82-1	324597	327417	323262	325092	0.65	cps
Selenium	77-2	7642	7736	7812	7730	1.10	cps
Selenium	78-2	25924	26104	26298	26109	0.72	cps
Silicon	28-1	67742966	69264327	67264964	68090752	1.53	cps
Silver	107-1	26696936	26723567	26719143	26713215	0.05	cps
Silver	109-1	25332491	24598839	24796313	24909214	1.52	cps
Sodium	23-2	67136799	66970184	67081547	67062843	0.13	cps
Strontium	86-1	6963529	7022221	6971335	6985695	0.46	cps
Strontium	88-1	60994951	61380507	60047256	60807571	1.13	cps
Sulfur	34-1	2614853	2585242	2602742	2600946	0.57	cps
Terbium	159-1	11345176	11304052	11329872	11326367	0.18	cps
Terbium	159-2	4458817	4586886	4539403	4528369	1.43	cps
Thallium	203-1	15902979	16045449	15696379	15881602	1.11	cps
Thallium	205-1	37340246	37606164	37798659	37581690	0.61	cps
Tin	118-1	16302096	16551994	16087498	16313863	1.42	cps
Titanium	47-1	30872511	31081032	31320053	31091199	0.72	cps
Uranium	238-1	45393441	44847146	45265016	45168534	0.63	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : PB167437BS Instrumnet Name : P8
Client Sample ID : PB167437BS Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:48:40 DataFile Name : 038LCSS.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	4239356	4405049	4293439	4312615	1.96	cps
Ytterbium	172-1	393	423	310	376	15.64	cps
Ytterbium	172-2	173	190	167	177	6.80	cps
Ytterbium	176-1	77365	77452	78441	77753	0.77	cps
Ytterbium	176-2	32370	32360	31812	32180	0.99	cps
Yttrium	89-1	18580424	18804943	18695570	18693646	0.60	cps
Yttrium	89-2	1776022	1768705	1733968	1759565	1.28	cps
Zinc	66-2	9869826	9720470	9906238	9832178	1.00	cps
Zirconium	90-1	37232977	38262584	37397101	37630887	1.47	cps
Zirconium	91-1	8252374	8526434	8292961	8357257	1.77	cps

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LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-01 Instrumnet Name : P8
Client Sample ID : MW-19B-72-040125 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:52:52 DataFile Name : 039AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	2864	2977	2594	2811	7.01	cps
Antimony	121-1	3390	3167	3057	3205	5.30	cps
Arsenic	75-2	297	347	353	332	9.32	cps
Barium	135-1	5854974	5967017	6048728	5956907	1.63	cps
Barium	137-1	10264385	10104113	10381228	10249909	1.36	cps
Beryllium	9-1	339	320	275	311	10.51	cps
Bismuth	209-1	6340076	6488733	6557764	6462191	1.72	cps
Bismuth	209-2	3252024	3232845	3340745	3275205	1.76	cps
Bromine	81-1	137197	161017	173338	157184	11.69	cps
Cadmium	108-1	40	30	37	36	14.32	cps
Cadmium	106-1	7545	7662	7555	7588	0.85	cps
Cadmium	111-1	5407	5499	5387	5431	1.10	cps
Calcium	43-1	4589634	4663080	4596758	4616491	0.88	cps
Calcium	44-1	76062671	76834367	76087167	76328068	0.57	cps
Carbon	12-1	12392559	13990567	14785404	13722843	8.88	cps
Carbon	12-2	113954	114256	114324	114178	0.17	cps
Chlorine	35-1	11692677	12776378	13307639	12592231	6.54	cps
Chlorine	35-2	75030	75027	73619	74558	1.09	cps
Chromium	52-2	4954	5191	4911	5019	3.00	cps
Cobalt	59-2	11882	11468	10681	11343	5.38	cps
Copper	63-2	4804	5228	4994	5009	4.23	cps
Dysprosium	156-1	387	367	363	372	3.39	cps
Dysprosium	156-2	80	97	87	88	9.56	cps
Erbium	164-1	283	273	337	298	11.43	cps
Erbium	164-2	110	97	163	123	28.60	cps
Gadolinium	160-1	347	330	420	366	13.10	cps
Gadolinium	160-2	163	173	160	166	4.19	cps
Holmium	165-1	11351673	11098589	11153650	11201304	1.19	cps
Holmium	165-2	4750491	4710851	4804558	4755300	0.99	cps
Indium	115-1	10597271	10560760	10532403	10563478	0.31	cps
Indium	115-2	1281559	1284685	1284485	1283577	0.14	cps
Iron	54-2	4797716	4839585	4461416	4699572	4.41	cps
Iron	56-2	88605645	89007132	81138955	86250578	5.14	cps
Iron	57-2	2247719	2245160	2070750	2187876	4.64	cps
Krypton	83-1	393	373	430	399	7.21	cps
Lead	206-1	7239	6959	6949	7049	2.34	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-01 Instrumnet Name : P8
Client Sample ID : MW-19B-72-040125 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:52:52 DataFile Name : 039AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	6218	6015	5805	6013	3.44	cps
Lead	208-1	28222	27685	27191	27700	1.86	cps
Lithium	6-1	3881047	3844592	3875100	3866913	0.51	cps
Magnesium	24-2	7765904	7697900	7265087	7576297	3.59	cps
Manganese	55-2	3281576	3377048	3068798	3242474	4.87	cps
Molybdenum	94-1	14061	13490	13246	13599	3.07	cps
Molybdenum	95-1	20792	20712	20989	20831	0.68	cps
Molybdenum	96-1	23076	23170	22862	23036	0.68	cps
Molybdenum	97-1	12993	12739	12579	12770	1.63	cps
Molybdenum	98-1	32785	32825	32879	32830	0.14	cps
Neodymium	150-1	763	880	807	817	7.22	cps
Neodymium	150-2	140	123	147	137	8.79	cps
Nickel	60-2	3307	3267	3247	3274	0.93	cps
Phosphorus	31-2	1877	1937	1870	1895	1.94	cps
Potassium	39-2	3702991	3655744	3595544	3651426	1.47	cps
Rhodium	103-1	9675304	9846992	9806846	9776380	0.92	cps
Rhodium	103-2	4401273	4395322	4563909	4453501	2.15	cps
Scandium	45-1	7411211	7484487	7636104	7510601	1.53	cps
Scandium	45-2	181217	182607	179385	181070	0.89	cps
Selenium	82-1	120	70	87	92	27.60	cps
Selenium	77-2	0	0	3	1	173.21	cps
Selenium	78-2	37	40	27	34	20.14	cps
Silicon	28-1	427371140	436796167	430635794	431601034	1.11	cps
Silver	107-1	1680	1537	1460	1559	7.16	cps
Silver	109-1	1537	1387	1143	1356	14.64	cps
Sodium	23-2	12327659	12069838	11694790	12030762	2.65	cps
Strontium	86-1	6005829	6111819	6071778	6063142	0.88	cps
Strontium	88-1	53353174	53791848	52869721	53338248	0.86	cps
Sulfur	34-1	1211936	1179600	1187170	1192902	1.42	cps
Terbium	159-1	11674262	11879413	11878397	11810691	1.00	cps
Terbium	159-2	4695848	4661048	4611138	4656011	0.91	cps
Thallium	203-1	1650	1493	1357	1500	9.79	cps
Thallium	205-1	3781	3557	3184	3507	8.60	cps
Tin	118-1	21661	22225	21510	21799	1.73	cps
Titanium	47-1	11631	11668	11668	11656	0.18	cps
Uranium	238-1	2774	2697	2520	2664	4.88	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-01 Instrumnet Name : P8
Client Sample ID : MW-19B-72-040125 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:52:52 DataFile Name : 039AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	550	487	500	512	6.52	cps
Ytterbium	172-1	137	170	150	152	11.02	cps
Ytterbium	172-2	90	90	63	81	18.98	cps
Ytterbium	176-1	1420	1530	1523	1491	4.14	cps
Ytterbium	176-2	300	300	323	308	4.38	cps
Yttrium	89-1	19304981	19571818	19566538	19481112	0.78	cps
Yttrium	89-2	1835363	1795580	1814020	1814988	1.10	cps
Zinc	66-2	8039	7675	7332	7682	4.60	cps
Zirconium	90-1	4341	4818	4674	4611	5.31	cps
Zirconium	91-1	933	973	920	942	2.95	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-02 Instrumnet Name : P8
Client Sample ID : IW-01-55-040125 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:56:00 DataFile Name : 040AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	18435	17447	16319	17401	6.08	cps
Antimony	121-1	1410	1397	1320	1376	3.53	cps
Arsenic	75-2	487	463	507	486	4.47	cps
Barium	135-1	3049507	3109167	3056301	3071658	1.06	cps
Barium	137-1	5168242	5239524	5217551	5208439	0.70	cps
Beryllium	9-1	966	967	913	949	3.29	cps
Bismuth	209-1	6507046	6460686	6498016	6488583	0.38	cps
Bismuth	209-2	3309522	3259238	3320580	3296447	0.99	cps
Bromine	81-1	125745	132967	134320	131011	3.52	cps
Cadmium	108-1	20	23	33	26	27.15	cps
Cadmium	106-1	7115	7402	7325	7281	2.04	cps
Cadmium	111-1	5077	5268	5188	5178	1.86	cps
Calcium	43-1	2343622	2370679	2370707	2361670	0.66	cps
Calcium	44-1	38176645	38517796	38430055	38374832	0.46	cps
Carbon	12-1	12227635	13862637	14802395	13630889	9.56	cps
Carbon	12-2	113984	113971	114004	113986	0.01	cps
Chlorine	35-1	3127840	3282438	3345202	3251827	3.44	cps
Chlorine	35-2	17921	17794	17801	17839	0.40	cps
Chromium	52-2	19190	19039	22029	20086	8.39	cps
Cobalt	59-2	149412	148229	135172	144271	5.48	cps
Copper	63-2	16026	15939	15222	15729	2.81	cps
Dysprosium	156-1	1500	1540	1610	1550	3.59	cps
Dysprosium	156-2	630	673	490	598	16.03	cps
Erbium	164-1	2180	2254	1990	2141	6.35	cps
Erbium	164-2	773	870	687	777	11.81	cps
Gadolinium	160-1	1717	1733	1647	1699	2.71	cps
Gadolinium	160-2	817	820	620	752	15.22	cps
Holmium	165-1	11127735	11312278	11344474	11261496	1.04	cps
Holmium	165-2	4775945	4806054	4795396	4792465	0.32	cps
Indium	115-1	10380879	10544401	10561714	10495665	0.95	cps
Indium	115-2	1310247	1312602	1320055	1314301	0.39	cps
Iron	54-2	2583736	2620217	2294074	2499342	7.15	cps
Iron	56-2	47561061	47169954	41993460	45574825	6.82	cps
Iron	57-2	1159426	1148508	1031814	1113249	6.35	cps
Krypton	83-1	363	423	460	416	11.74	cps
Lead	206-1	4761	4834	5061	4885	3.20	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-02 Instrumnet Name : P8
Client Sample ID : IW-01-55-040125 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:56:00 DataFile Name : 040AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	3854	4031	4004	3963	2.40	cps
Lead	208-1	18592	18692	19002	18762	1.14	cps
Lithium	6-1	3925963	3938754	3989878	3951532	0.86	cps
Magnesium	24-2	5213986	5188765	4744890	5049214	5.23	cps
Manganese	55-2	3191950	3166135	2876670	3078251	5.69	cps
Molybdenum	94-1	7979	8363	8349	8230	2.65	cps
Molybdenum	95-1	10514	10954	10848	10772	2.13	cps
Molybdenum	96-1	11888	11685	11915	11830	1.06	cps
Molybdenum	97-1	6448	6345	6575	6456	1.79	cps
Molybdenum	98-1	16757	16713	16673	16715	0.25	cps
Neodymium	150-1	1780	1640	1647	1689	4.68	cps
Neodymium	150-2	417	393	350	387	8.75	cps
Nickel	60-2	59949	60732	55438	58706	4.87	cps
Phosphorus	31-2	3624	3484	3254	3454	5.41	cps
Potassium	39-2	3844616	3839241	3743840	3809232	1.49	cps
Rhodium	103-1	9721549	9958930	9879282	9853254	1.23	cps
Rhodium	103-2	4549574	4522760	4415310	4495881	1.58	cps
Scandium	45-1	7419562	7568948	7603739	7530750	1.30	cps
Scandium	45-2	186915	184816	185710	185814	0.57	cps
Selenium	82-1	370	103	77	183	88.48	cps
Selenium	77-2	17	13	0	10	88.20	cps
Selenium	78-2	53	50	63	56	12.49	cps
Silicon	28-1	507098819	522314272	518523726	515978939	1.54	cps
Silver	107-1	627	590	690	636	7.96	cps
Silver	109-1	463	413	403	427	7.53	cps
Sodium	23-2	10582949	10485144	10242568	10436887	1.68	cps
Strontium	86-1	3122249	3123196	3201335	3148927	1.44	cps
Strontium	88-1	26978068	27790925	27306314	27358435	1.49	cps
Sulfur	34-1	1441342	1459524	1430100	1443655	1.03	cps
Terbium	159-1	11683891	11679811	11951816	11771839	1.32	cps
Terbium	159-2	4771397	4746178	4719279	4745618	0.55	cps
Thallium	203-1	7442	7332	7512	7429	1.22	cps
Thallium	205-1	18183	17866	17555	17868	1.76	cps
Tin	118-1	24392	24252	24402	24348	0.34	cps
Titanium	47-1	34692	34572	34511	34592	0.27	cps
Uranium	238-1	1527	1463	1557	1516	3.14	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-02 Instrumnet Name : P8
Client Sample ID : IW-01-55-040125 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:56:00 DataFile Name : 040AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	1903	1994	1837	1911	4.11	cps
Ytterbium	172-1	1050	1110	1017	1059	4.47	cps
Ytterbium	172-2	473	493	423	463	7.78	cps
Ytterbium	176-1	2104	2057	1863	2008	6.34	cps
Ytterbium	176-2	577	550	557	561	2.47	cps
Yttrium	89-1	19351921	19491030	19632935	19491962	0.72	cps
Yttrium	89-2	1836407	1838090	1832015	1835504	0.17	cps
Zinc	66-2	24441	23516	22031	23329	5.21	cps
Zirconium	90-1	5928	6065	6208	6067	2.31	cps
Zirconium	91-1	1263	1277	1243	1261	1.33	cps

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LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-03 Instrumnet Name : P8
Client Sample ID : IW-02-55-040125 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:59:12 DataFile Name : 041AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	13152	12486	12269	12635	3.64	cps
Antimony	121-1	960	973	887	940	4.97	cps
Arsenic	75-2	497	483	413	464	9.64	cps
Barium	135-1	2956072	2884113	2853261	2897815	1.82	cps
Barium	137-1	4856632	4862689	4889421	4869581	0.36	cps
Beryllium	9-1	612	678	630	640	5.34	cps
Bismuth	209-1	6420561	6415772	6381257	6405863	0.33	cps
Bismuth	209-2	3315317	3323300	3348275	3328964	0.52	cps
Bromine	81-1	111910	118519	121205	117211	4.08	cps
Cadmium	108-1	27	43	30	33	26.45	cps
Cadmium	106-1	7069	6905	6855	6943	1.61	cps
Cadmium	111-1	4986	4867	4828	4893	1.69	cps
Calcium	43-1	2267258	2254043	2289397	2270233	0.79	cps
Calcium	44-1	36654000	36515952	36703435	36624463	0.27	cps
Carbon	12-1	11733457	12758889	13575110	12689152	7.27	cps
Carbon	12-2	101816	101819	102998	102211	0.67	cps
Chlorine	35-1	2951985	3044862	3100267	3032372	2.47	cps
Chlorine	35-2	17230	17064	17517	17270	1.33	cps
Chromium	52-2	7502	7699	7592	7598	1.30	cps
Cobalt	59-2	137874	139466	134193	137178	1.97	cps
Copper	63-2	4811	4597	4771	4726	2.40	cps
Dysprosium	156-1	947	1083	913	981	9.18	cps
Dysprosium	156-2	360	440	310	370	17.72	cps
Erbium	164-1	940	960	953	951	1.07	cps
Erbium	164-2	373	337	323	344	7.52	cps
Gadolinium	160-1	923	1020	877	940	7.78	cps
Gadolinium	160-2	477	517	490	494	4.12	cps
Holmium	165-1	11438674	11239309	11390022	11356002	0.92	cps
Holmium	165-2	4828128	4835350	4926433	4863304	1.13	cps
Indium	115-1	10542772	10436999	10770857	10583543	1.61	cps
Indium	115-2	1314779	1326954	1333679	1325138	0.72	cps
Iron	54-2	2442423	2403850	2367955	2404743	1.55	cps
Iron	56-2	44683368	45121693	42626341	44143800	3.02	cps
Iron	57-2	1084167	1089717	1041923	1071936	2.44	cps
Krypton	83-1	363	387	353	368	4.65	cps
Lead	206-1	5201	5334	4984	5173	3.42	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-03 Instrumnet Name : P8
Client Sample ID : IW-02-55-040125 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:59:12 DataFile Name : 041AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	4598	4631	4614	4614	0.36	cps
Lead	208-1	21014	21324	20890	21076	1.06	cps
Lithium	6-1	3962981	3987771	3999341	3983364	0.47	cps
Magnesium	24-2	5130332	5104066	4983873	5072757	1.54	cps
Manganese	55-2	3161821	3154949	3102592	3139787	1.03	cps
Molybdenum	94-1	11498	10587	10828	10971	4.30	cps
Molybdenum	95-1	17084	17304	17020	17136	0.87	cps
Molybdenum	96-1	18699	18536	18850	18695	0.84	cps
Molybdenum	97-1	10497	10461	10728	10562	1.37	cps
Molybdenum	98-1	26746	27233	27016	26999	0.91	cps
Neodymium	150-1	1247	1237	1337	1273	4.33	cps
Neodymium	150-2	343	307	277	309	10.81	cps
Nickel	60-2	46773	46941	45566	46427	1.62	cps
Phosphorus	31-2	2974	3117	3110	3067	2.64	cps
Potassium	39-2	3803450	3858131	3862483	3841354	0.86	cps
Rhodium	103-1	9889327	9786877	9926449	9867551	0.73	cps
Rhodium	103-2	4556575	4597357	4642636	4598856	0.94	cps
Scandium	45-1	7669254	7665843	7749504	7694867	0.62	cps
Scandium	45-2	189171	187750	190505	189142	0.73	cps
Selenium	82-1	70	27	63	53	43.76	cps
Selenium	77-2	7	7	0	4	86.60	cps
Selenium	78-2	10	50	67	42	68.98	cps
Silicon	28-1	523398952	528023379	528662299	526694877	0.55	cps
Silver	107-1	457	420	410	429	5.73	cps
Silver	109-1	330	330	380	347	8.33	cps
Sodium	23-2	8522856	8536809	8538499	8532721	0.10	cps
Strontium	86-1	2866823	2810091	2845199	2840704	1.01	cps
Strontium	88-1	25099025	24564452	24749502	24804326	1.09	cps
Sulfur	34-1	1072426	1046794	1061837	1060352	1.21	cps
Terbium	159-1	11975606	11895569	11705668	11858948	1.17	cps
Terbium	159-2	4793222	4723841	4723111	4746725	0.85	cps
Thallium	203-1	5511	5391	5294	5399	2.01	cps
Thallium	205-1	12793	12896	13033	12908	0.93	cps
Tin	118-1	21814	21604	21777	21732	0.52	cps
Titanium	47-1	47907	47779	48044	47910	0.28	cps
Uranium	238-1	1313	1323	1343	1327	1.15	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-03 Instrumnet Name : P8
Client Sample ID : IW-02-55-040125 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 16:59:12 DataFile Name : 041AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	3234	3164	3000	3133	3.82	cps
Ytterbium	172-1	307	400	380	362	13.57	cps
Ytterbium	172-2	150	180	170	167	9.17	cps
Ytterbium	176-1	1690	1640	1617	1649	2.27	cps
Ytterbium	176-2	360	407	430	399	8.94	cps
Yttrium	89-1	19497198	19256775	19426278	19393417	0.64	cps
Yttrium	89-2	1859035	1869540	1893707	1874094	0.95	cps
Zinc	66-2	18028	18208	17971	18069	0.68	cps
Zirconium	90-1	3594	3500	3627	3574	1.84	cps
Zirconium	91-1	787	677	787	750	8.47	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-04 Instrumnet Name : P8
Client Sample ID : IW-02-55-040125-FD Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:02:22 DataFile Name : 042AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	14386	12876	11878	13047	9.68	cps
Antimony	121-1	947	873	833	884	6.50	cps
Arsenic	75-2	453	470	460	461	1.82	cps
Barium	135-1	2934039	2936029	2904460	2924843	0.60	cps
Barium	137-1	4933171	5003422	4928322	4954972	0.85	cps
Beryllium	9-1	571	625	630	609	5.34	cps
Bismuth	209-1	6468621	6625506	6367087	6487071	2.01	cps
Bismuth	209-2	3303589	3391600	3331402	3342197	1.35	cps
Bromine	81-1	111802	118623	122298	117574	4.53	cps
Cadmium	108-1	30	40	30	33	17.32	cps
Cadmium	106-1	6552	6715	7022	6763	3.53	cps
Cadmium	111-1	4632	4719	4974	4775	3.73	cps
Calcium	43-1	2270331	2300460	2263556	2278116	0.86	cps
Calcium	44-1	37155189	37649254	36812081	37205508	1.13	cps
Carbon	12-1	11870738	12952681	13626508	12816642	6.91	cps
Carbon	12-2	102873	104723	104431	104009	0.96	cps
Chlorine	35-1	2835262	3016651	3074857	2975590	4.20	cps
Chlorine	35-2	17104	17401	17751	17418	1.86	cps
Chromium	52-2	12189	12085	11368	11881	3.76	cps
Cobalt	59-2	129456	131369	122461	127762	3.67	cps
Copper	63-2	5805	6038	5825	5889	2.20	cps
Dysprosium	156-1	830	857	813	833	2.62	cps
Dysprosium	156-2	313	260	307	293	9.91	cps
Erbium	164-1	797	723	700	740	6.82	cps
Erbium	164-2	287	337	383	336	14.41	cps
Gadolinium	160-1	827	723	857	802	8.72	cps
Gadolinium	160-2	330	327	367	341	6.51	cps
Holmium	165-1	11149701	11446754	11255031	11283829	1.33	cps
Holmium	165-2	4756605	4824304	4908257	4829722	1.57	cps
Indium	115-1	10498811	10434730	10392998	10442180	0.51	cps
Indium	115-2	1316561	1329268	1319812	1321880	0.50	cps
Iron	54-2	2518158	2506194	2325135	2449829	4.41	cps
Iron	56-2	45916056	45426253	42328164	44556824	4.37	cps
Iron	57-2	1120361	1101002	1025769	1082378	4.62	cps
Krypton	83-1	410	383	360	384	6.51	cps
Lead	206-1	4044	4307	4007	4120	3.97	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-04 Instrumnet Name : P8
Client Sample ID : IW-02-55-040125-FD Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:02:22 DataFile Name : 042AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	3390	3561	3527	3493	2.58	cps
Lead	208-1	16101	16588	16061	16250	1.81	cps
Lithium	6-1	3963899	3982825	3945223	3963982	0.47	cps
Magnesium	24-2	5339621	5242317	4934030	5171989	4.09	cps
Manganese	55-2	3254955	3234164	3016504	3168541	4.17	cps
Molybdenum	94-1	10751	11138	10738	10875	2.09	cps
Molybdenum	95-1	16487	16316	16430	16411	0.53	cps
Molybdenum	96-1	18265	18185	18062	18171	0.56	cps
Molybdenum	97-1	10257	9840	10144	10080	2.14	cps
Molybdenum	98-1	26008	26111	26121	26080	0.24	cps
Neodymium	150-1	1103	1170	1140	1138	2.93	cps
Neodymium	150-2	263	293	293	283	6.11	cps
Nickel	60-2	45566	46228	43159	44984	3.59	cps
Phosphorus	31-2	3034	3137	3114	3095	1.75	cps
Potassium	39-2	3978359	4039524	3901127	3973003	1.75	cps
Rhodium	103-1	9757559	9901092	9822522	9827058	0.73	cps
Rhodium	103-2	4591091	4558886	4566569	4572182	0.37	cps
Scandium	45-1	7580161	7754023	7733715	7689300	1.24	cps
Scandium	45-2	187803	191053	189590	189482	0.86	cps
Selenium	82-1	23	90	130	81	66.44	cps
Selenium	77-2	0	3	3	2	86.60	cps
Selenium	78-2	30	30	33	31	6.18	cps
Silicon	28-1	540919445	540981259	539920139	540606948	0.11	cps
Silver	107-1	390	367	323	360	9.40	cps
Silver	109-1	230	240	233	234	2.17	cps
Sodium	23-2	8690668	8681061	8430530	8600753	1.71	cps
Strontium	86-1	2881786	2912510	2917759	2904018	0.67	cps
Strontium	88-1	25093167	25341763	24914325	25116419	0.85	cps
Sulfur	34-1	1066020	1069178	1058698	1064632	0.51	cps
Terbium	159-1	11729113	11703981	11580028	11671041	0.68	cps
Terbium	159-2	4715976	4730539	4776470	4740995	0.67	cps
Thallium	203-1	5291	5471	5748	5503	4.18	cps
Thallium	205-1	12900	13367	13157	13141	1.78	cps
Tin	118-1	22085	22098	22004	22062	0.23	cps
Titanium	47-1	48970	50091	49060	49374	1.26	cps
Uranium	238-1	1250	1240	1207	1232	1.84	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-04 Instrumnet Name : P8
Client Sample ID : IW-02-55-040125-FD Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:02:22 DataFile Name : 042AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	2977	3074	2757	2936	5.53	cps
Ytterbium	172-1	277	320	310	302	7.51	cps
Ytterbium	172-2	147	150	153	150	2.22	cps
Ytterbium	176-1	1633	1550	1433	1539	6.53	cps
Ytterbium	176-2	357	383	387	376	4.38	cps
Yttrium	89-1	19533726	19656372	19278748	19489615	0.99	cps
Yttrium	89-2	1873619	1867057	1850653	1863777	0.63	cps
Zinc	66-2	19607	18562	18228	18799	3.83	cps
Zirconium	90-1	3420	3420	3157	3333	4.56	cps
Zirconium	91-1	740	647	647	678	7.95	cps

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LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-04DUP Instrumnet Name : P8
Client Sample ID : IW-02-55-040125-FDDUF Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:05:34 DataFile Name : 043AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	11308	11034	10571	10971	3.40	cps
Antimony	121-1	883	807	757	816	7.82	cps
Arsenic	75-2	483	570	387	480	19.11	cps
Barium	135-1	2912886	2928859	2969266	2937003	0.99	cps
Barium	137-1	4809010	4975943	4950969	4911974	1.83	cps
Beryllium	9-1	633	638	599	623	3.38	cps
Bismuth	209-1	6338532	6477260	6346291	6387361	1.22	cps
Bismuth	209-2	3301441	3276880	3341179	3306500	0.98	cps
Bromine	81-1	108657	117454	121488	115866	5.66	cps
Cadmium	108-1	40	37	40	39	4.94	cps
Cadmium	106-1	6422	6905	6442	6589	4.15	cps
Cadmium	111-1	4534	4885	4584	4668	4.06	cps
Calcium	43-1	2293085	2290124	2300181	2294463	0.23	cps
Calcium	44-1	37318077	37551469	37186994	37352180	0.49	cps
Carbon	12-1	11434582	12590266	13165666	12396838	7.11	cps
Carbon	12-2	99980	102457	102125	101521	1.32	cps
Chlorine	35-1	2750682	2976094	3018514	2915096	4.94	cps
Chlorine	35-2	17464	17350	17134	17316	0.97	cps
Chromium	52-2	9090	9093	8930	9037	1.03	cps
Cobalt	59-2	132933	130620	122334	128629	4.33	cps
Copper	63-2	8726	8749	8936	8804	1.31	cps
Dysprosium	156-1	833	937	853	874	6.27	cps
Dysprosium	156-2	273	293	267	278	5.00	cps
Erbium	164-1	793	773	763	777	1.97	cps
Erbium	164-2	343	307	267	306	12.55	cps
Gadolinium	160-1	740	837	790	789	6.13	cps
Gadolinium	160-2	337	423	393	384	11.45	cps
Holmium	165-1	10955204	10992837	11100352	11016131	0.68	cps
Holmium	165-2	4828072	4753613	4829033	4803573	0.90	cps
Indium	115-1	10457599	10506416	10512528	10492181	0.29	cps
Indium	115-2	1331205	1332369	1327359	1330311	0.20	cps
Iron	54-2	2529949	2511471	2322219	2454546	4.68	cps
Iron	56-2	44898258	44977189	42861691	44245713	2.71	cps
Iron	57-2	1100813	1108229	1038462	1082501	3.54	cps
Krypton	83-1	340	310	417	356	15.47	cps
Lead	206-1	4077	4064	4171	4104	1.42	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-04DUP Instrumnet Name : P8
Client Sample ID : IW-02-55-040125-FDDUF Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:05:34 DataFile Name : 043AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	3471	3607	3514	3531	1.98	cps
Lead	208-1	16101	16137	16171	16136	0.22	cps
Lithium	6-1	3966789	3986456	3996493	3983246	0.38	cps
Magnesium	24-2	5365543	5275708	5048487	5229913	3.12	cps
Manganese	55-2	3236518	3245539	3104456	3195504	2.47	cps
Molybdenum	94-1	10401	10150	10731	10427	2.79	cps
Molybdenum	95-1	16343	16623	16810	16592	1.42	cps
Molybdenum	96-1	17992	18122	17868	17994	0.70	cps
Molybdenum	97-1	10220	10344	9930	10165	2.09	cps
Molybdenum	98-1	25377	25497	25867	25580	1.00	cps
Neodymium	150-1	1107	1030	1023	1053	4.40	cps
Neodymium	150-2	240	247	263	250	4.81	cps
Nickel	60-2	45339	45011	42366	44239	3.68	cps
Phosphorus	31-2	3080	3200	3020	3100	2.96	cps
Potassium	39-2	4012969	3935103	3858549	3935540	1.96	cps
Rhodium	103-1	9695150	9684011	9892073	9757078	1.20	cps
Rhodium	103-2	4555420	4602363	4560303	4572695	0.56	cps
Scandium	45-1	7730796	7629437	7650559	7670264	0.70	cps
Scandium	45-2	189820	191038	191286	190715	0.41	cps
Selenium	82-1	107	200	-40	89	136.11	cps
Selenium	77-2	3	0	3	2	86.60	cps
Selenium	78-2	30	30	57	39	39.59	cps
Silicon	28-1	539727392	543798712	535662432	539729512	0.75	cps
Silver	107-1	293	333	257	294	13.02	cps
Silver	109-1	197	250	250	232	13.26	cps
Sodium	23-2	8827014	8743657	8579647	8716773	1.44	cps
Strontium	86-1	2862936	2885506	2943965	2897469	1.44	cps
Strontium	88-1	24169740	25149336	25058323	24792467	2.18	cps
Sulfur	34-1	1076690	1062081	1049682	1062818	1.27	cps
Terbium	159-1	11672612	11607117	11480898	11586876	0.84	cps
Terbium	159-2	4726414	4781580	4781635	4763210	0.67	cps
Thallium	203-1	5301	5581	5608	5497	3.09	cps
Thallium	205-1	13147	12823	12917	12962	1.28	cps
Tin	118-1	21537	21554	21454	21515	0.25	cps
Titanium	47-1	56754	42372	42710	47279	17.36	cps
Uranium	238-1	1307	1173	1140	1207	7.31	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-04DUP Instrumnet Name : P8
Client Sample ID : IW-02-55-040125-FDDUF Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:05:34 DataFile Name : 043AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	2690	2590	2487	2589	3.93	cps
Ytterbium	172-1	303	297	280	293	4.10	cps
Ytterbium	172-2	183	183	147	171	12.37	cps
Ytterbium	176-1	1487	1517	1520	1508	1.22	cps
Ytterbium	176-2	310	397	347	351	12.39	cps
Yttrium	89-1	18969314	19598988	19426032	19331445	1.68	cps
Yttrium	89-2	1890011	1891015	1893174	1891400	0.09	cps
Zinc	66-2	18856	18148	18018	18341	2.46	cps
Zirconium	90-1	3070	2977	2860	2969	3.54	cps
Zirconium	91-1	690	537	673	633	13.28	cps

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LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-04LX5 Instrumnet Name : P8
Client Sample ID : IW-02-55-040125-FDL Dilution Factor : 5
Date & Time Acquired : 2025-04-03 17:08:54 DataFile Name : 044AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	3090	2714	2407	2737	12.51	cps
Antimony	121-1	347	460	393	400	14.24	cps
Arsenic	75-2	110	97	77	94	17.76	cps
Barium	135-1	555724	561995	561789	559836	0.64	cps
Barium	137-1	965981	966480	966294	966252	0.03	cps
Beryllium	9-1	212	194	227	211	7.80	cps
Bismuth	209-1	6497019	6357451	6423766	6426079	1.09	cps
Bismuth	209-2	3292294	3309108	3357855	3319752	1.03	cps
Bromine	81-1	53669	54981	54686	54445	1.26	cps
Cadmium	108-1	17	57	20	31	71.34	cps
Cadmium	106-1	6825	6652	6715	6731	1.30	cps
Cadmium	111-1	4806	4650	4703	4720	1.68	cps
Calcium	43-1	460791	464755	464472	463339	0.48	cps
Calcium	44-1	7656218	7732083	7548857	7645719	1.20	cps
Carbon	12-1	8266136	8338431	8174506	8259691	0.99	cps
Carbon	12-2	58422	57897	57599	57973	0.72	cps
Chlorine	35-1	1186744	1202378	1200896	1196673	0.72	cps
Chlorine	35-2	6712	6415	5961	6363	5.94	cps
Chromium	52-2	4217	4227	4294	4246	0.98	cps
Cobalt	59-2	26769	22718	19937	23141	14.84	cps
Copper	63-2	4517	4831	5191	4846	6.95	cps
Dysprosium	156-1	207	140	217	188	22.20	cps
Dysprosium	156-2	80	57	47	61	27.99	cps
Erbium	164-1	193	203	200	199	2.56	cps
Erbium	164-2	100	83	57	80	27.32	cps
Gadolinium	160-1	230	277	277	261	10.32	cps
Gadolinium	160-2	117	47	80	81	43.17	cps
Holmium	165-1	11013223	11117028	11012874	11047708	0.54	cps
Holmium	165-2	4773027	4797779	4798240	4789682	0.30	cps
Indium	115-1	10240292	10349333	10464776	10351467	1.08	cps
Indium	115-2	1322881	1337265	1329357	1329834	0.54	cps
Iron	54-2	485314	409829	352436	415860	16.03	cps
Iron	56-2	9043374	7743878	6577845	7788366	15.84	cps
Iron	57-2	223477	189430	161903	191603	16.10	cps
Krypton	83-1	357	397	367	373	5.58	cps
Lead	206-1	1914	1960	2017	1964	2.64	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-04LX5 Instrumnet Name : P8
Client Sample ID : IW-02-55-040125-FDL Dilution Factor : 5
Date & Time Acquired : 2025-04-03 17:08:54 DataFile Name : 044AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	1773	1720	1857	1783	3.86	cps
Lead	208-1	7974	8041	8254	8090	1.81	cps
Lithium	6-1	3823819	3931503	3965360	3906894	1.89	cps
Magnesium	24-2	1079073	938218	820369	945887	13.69	cps
Manganese	55-2	632588	544539	475426	550851	14.30	cps
Molybdenum	94-1	2924	3057	2970	2984	2.27	cps
Molybdenum	95-1	3681	3537	3574	3597	2.07	cps
Molybdenum	96-1	4111	4084	4031	4075	1.00	cps
Molybdenum	97-1	2274	2114	2230	2206	3.75	cps
Molybdenum	98-1	5801	5698	5788	5762	0.98	cps
Neodymium	150-1	247	200	217	221	10.70	cps
Neodymium	150-2	60	57	43	53	16.54	cps
Nickel	60-2	9940	8933	8192	9022	9.72	cps
Phosphorus	31-2	720	720	623	688	8.12	cps
Potassium	39-2	823166	784863	721281	776437	6.63	cps
Rhodium	103-1	9993584	9919827	10055106	9989506	0.68	cps
Rhodium	103-2	4743505	4649200	4552130	4648278	2.06	cps
Scandium	45-1	7387872	7562239	7353346	7434486	1.51	cps
Scandium	45-2	189317	191630	192791	191246	0.92	cps
Selenium	82-1	23	37	7	22	67.67	cps
Selenium	77-2	0	0	3	1	173.21	cps
Selenium	78-2	27	70	67	54	44.29	cps
Silicon	28-1	110387455	108991348	110386752	109921852	0.73	cps
Silver	107-1	253	217	263	244	10.05	cps
Silver	109-1	217	157	183	186	16.20	cps
Sodium	23-2	1884145	1735355	1598466	1739322	8.21	cps
Strontium	86-1	556139	559725	556562	557475	0.35	cps
Strontium	88-1	5060493	5049980	5050864	5053779	0.12	cps
Sulfur	34-1	832023	836217	830908	833049	0.34	cps
Terbium	159-1	11291577	11700319	11149273	11380389	2.51	cps
Terbium	159-2	4623328	4739827	4693494	4685550	1.25	cps
Thallium	203-1	1503	1513	1453	1490	2.16	cps
Thallium	205-1	3420	3290	3521	3410	3.38	cps
Tin	118-1	8249	8263	8159	8224	0.68	cps
Titanium	47-1	10180	10404	10380	10322	1.19	cps
Uranium	238-1	363	337	413	371	10.49	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-04LX5 Instrumnet Name : P8
Client Sample ID : IW-02-55-040125-FDL Dilution Factor : 5
Date & Time Acquired : 2025-04-03 17:08:54 DataFile Name : 044AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	623	580	447	550	16.74	cps
Ytterbium	172-1	93	97	130	107	19.01	cps
Ytterbium	172-2	70	33	43	49	38.78	cps
Ytterbium	176-1	1247	1443	1393	1361	7.51	cps
Ytterbium	176-2	307	343	270	307	11.96	cps
Yttrium	89-1	19461195	19299225	19218519	19326313	0.64	cps
Yttrium	89-2	1863071	1870965	1873867	1869301	0.30	cps
Zinc	66-2	6512	6138	5698	6116	6.66	cps
Zirconium	90-1	2070	2140	2057	2089	2.14	cps
Zirconium	91-1	393	497	510	467	13.68	cps

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LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-04MS Instrumnet Name : P8
Client Sample ID : IW-02-55-040125-FDMS Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:12:24 DataFile Name : 045AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	1702103	1683485	1679762	1688450	0.71	cps
Antimony	121-1	18857202	18910140	19031102	18932815	0.47	cps
Arsenic	75-2	597	603	620	607	1.98	cps
Barium	135-1	22618620	22760582	23144272	22841158	1.19	cps
Barium	137-1	38456839	39785722	38647734	38963432	1.84	cps
Beryllium	9-1	4746346	4750707	4730041	4742365	0.23	cps
Bismuth	209-1	6177367	6088420	5966461	6077416	1.74	cps
Bismuth	209-2	3127152	3089977	3058537	3091889	1.11	cps
Bromine	81-1	107851	112501	114711	111688	3.14	cps
Cadmium	108-1	358132	357609	363330	359690	0.88	cps
Cadmium	106-1	555855	555504	555875	555745	0.04	cps
Cadmium	111-1	4814873	4823075	4886272	4841407	0.81	cps
Calcium	43-1	8731122	8761866	8704191	8732393	0.33	cps
Calcium	44-1	143178018	142657891	141708361	142514757	0.52	cps
Carbon	12-1	10439380	11306338	11955561	11233760	6.77	cps
Carbon	12-2	94743	96873	98296	96637	1.85	cps
Chlorine	35-1	148080921	156394048	158952824	154475931	3.68	cps
Chlorine	35-2	905692	910621	904171	906828	0.37	cps
Chromium	52-2	5253607	5304083	5205912	5254534	0.93	cps
Cobalt	59-2	9568047	9599152	9627117	9598105	0.31	cps
Copper	63-2	70678906	71556699	70731102	70988902	0.69	cps
Dysprosium	156-1	1237	1350	1307	1298	4.41	cps
Dysprosium	156-2	393	447	427	422	6.38	cps
Erbium	164-1	903	1017	867	929	8.42	cps
Erbium	164-2	353	323	430	369	14.91	cps
Gadolinium	160-1	980	1010	967	986	2.25	cps
Gadolinium	160-2	473	420	483	459	7.42	cps
Holmium	165-1	10680687	10943230	11229024	10950980	2.50	cps
Holmium	165-2	4671876	4701837	4720881	4698198	0.53	cps
Indium	115-1	9630586	9884899	9862094	9792526	1.44	cps
Indium	115-2	1198668	1196953	1189766	1195129	0.40	cps
Iron	54-2	12000836	12185999	11991882	12059572	0.91	cps
Iron	56-2	220800617	220397490	215906090	219034732	1.24	cps
Iron	57-2	5580297	5564961	5495683	5546980	0.81	cps
Krypton	83-1	457	397	467	440	8.60	cps
Lead	206-1	59318311	58980727	59174446	59157828	0.29	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-04MS Instrumnet Name : P8
Client Sample ID : IW-02-55-040125-FDMS Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:12:24 DataFile Name : 045AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	50862356	51043796	50824479	50910210	0.23	cps
Lead	208-1	233447632	234305962	232469110	233407568	0.39	cps
Lithium	6-1	3778184	3840336	3738192	3785570	1.36	cps
Magnesium	24-2	36020179	35561416	35653891	35745162	0.68	cps
Manganese	55-2	26457929	26688007	25782485	26309473	1.79	cps
Molybdenum	94-1	32303085	32722546	33330853	32785495	1.58	cps
Molybdenum	95-1	36143180	35889918	37291563	36441554	2.05	cps
Molybdenum	96-1	40723474	42024665	41919621	41555920	1.74	cps
Molybdenum	97-1	21621026	22748313	22653872	22341070	2.80	cps
Molybdenum	98-1	56688884	58001546	58778901	57823110	1.83	cps
Neodymium	150-1	2277	2330	2410	2339	2.87	cps
Neodymium	150-2	333	263	290	296	11.95	cps
Nickel	60-2	2620730	2661302	2640887	2640973	0.77	cps
Phosphorus	31-2	2967	3017	2957	2980	1.08	cps
Potassium	39-2	14021825	14031176	13994333	14015778	0.14	cps
Rhodium	103-1	9164186	9442615	9360951	9322584	1.54	cps
Rhodium	103-2	4354453	4283496	4293088	4310346	0.89	cps
Scandium	45-1	7523840	7409654	7598996	7510830	1.27	cps
Scandium	45-2	194640	192416	192633	193230	0.63	cps
Selenium	82-1	297308	301304	303840	300817	1.09	cps
Selenium	77-2	7469	7532	7442	7481	0.62	cps
Selenium	78-2	24441	24505	24595	24514	0.31	cps
Silicon	28-1	499112633	499815513	498889433	499272526	0.10	cps
Silver	107-1	4190588	4084064	4198502	4157718	1.54	cps
Silver	109-1	3828488	3795894	3936685	3853689	1.91	cps
Sodium	23-2	72698986	71957747	72016377	72224370	0.57	cps
Strontium	86-1	10146114	10434308	10303157	10294526	1.40	cps
Strontium	88-1	89881149	91231249	89866355	90326251	0.87	cps
Sulfur	34-1	1107509	1146274	1142689	1132157	1.89	cps
Terbium	159-1	11575749	11474697	11520644	11523696	0.44	cps
Terbium	159-2	4578455	4598620	4604550	4593875	0.30	cps
Thallium	203-1	14150862	14516215	14605755	14424277	1.67	cps
Thallium	205-1	33688948	34111835	34231222	34010668	0.84	cps
Tin	118-1	13844333	14108534	14003330	13985399	0.95	cps
Titanium	47-1	56317	57130	56431	56626	0.78	cps
Uranium	238-1	42221162	42638539	41315601	42058434	1.61	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-04MS Instrumnet Name : P8
Client Sample ID : IW-02-55-040125-FDMS Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:12:24 DataFile Name : 045AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	4129676	4164960	4105001	4133212	0.73	cps
Ytterbium	172-1	893	920	903	906	1.49	cps
Ytterbium	172-2	440	463	450	451	2.60	cps
Ytterbium	176-1	71559	71522	71137	71406	0.33	cps
Ytterbium	176-2	29326	30412	29560	29766	1.92	cps
Yttrium	89-1	18598697	18982702	18859662	18813687	1.04	cps
Yttrium	89-2	1797461	1809141	1808315	1804972	0.36	cps
Zinc	66-2	8427754	8482880	8534074	8481570	0.63	cps
Zirconium	90-1	34369550	34561753	34811462	34580922	0.64	cps
Zirconium	91-1	7686368	7572588	7821588	7693515	1.62	cps

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LB Number : LB135293 Operator : Jaswal
Lab Sample ID : CCV02 Instrumnet Name : P8
Client Sample ID : CCV02 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:16:00 DataFile Name : 046CCV.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	8675394	8671144	8769589	8705376	0.64	cps
Antimony	121-1	17497171	17771740	17914951	17727954	1.20	cps
Arsenic	75-2	494437	494597	494018	494351	0.06	cps
Barium	135-1	21515059	21605769	21594690	21571839	0.23	cps
Barium	137-1	37159774	36903247	36299049	36787357	1.20	cps
Beryllium	9-1	4503298	4444456	4466711	4471488	0.66	cps
Bismuth	209-1	5422555	5510759	5431662	5454992	0.89	cps
Bismuth	209-2	2809287	2829747	2847822	2828952	0.68	cps
Bromine	81-1	36818	38115	38974	37969	2.86	cps
Cadmium	108-1	364917	363189	363556	363887	0.25	cps
Cadmium	106-1	527980	527679	523180	526280	0.51	cps
Cadmium	111-1	4582404	4545272	4469303	4532326	1.27	cps
Calcium	43-1	31126538	30930113	30667343	30907998	0.75	cps
Calcium	44-1	513838699	505301912	498481819	505874144	1.52	cps
Carbon	12-1	7285322	7247989	7461858	7331723	1.56	cps
Carbon	12-2	62914	62733	62084	62577	0.70	cps
Chlorine	35-1	3012770	2797843	2745707	2852107	4.96	cps
Chlorine	35-2	14277	13633	12889	13600	5.11	cps
Chromium	52-2	5321690	5176183	5175484	5224452	1.61	cps
Cobalt	59-2	9084373	8918264	8869948	8957529	1.26	cps
Copper	63-2	71096879	70660311	71345192	71034127	0.49	cps
Dysprosium	156-1	1057	907	947	970	8.01	cps
Dysprosium	156-2	297	333	263	298	11.76	cps
Erbium	164-1	813	807	840	820	2.15	cps
Erbium	164-2	350	367	327	348	5.78	cps
Gadolinium	160-1	650	747	767	721	8.65	cps
Gadolinium	160-2	287	353	293	311	11.80	cps
Holmium	165-1	10349216	10517908	10236797	10367974	1.36	cps
Holmium	165-2	4550998	4541688	4492111	4528266	0.70	cps
Indium	115-1	8991069	9110219	8834489	8978592	1.54	cps
Indium	115-2	1124744	1126889	1130295	1127309	0.25	cps
Iron	54-2	52066031	51115958	51025838	51402609	1.12	cps
Iron	56-2	935080466	931606519	937838573	934841853	0.33	cps
Iron	57-2	23624632	23539374	23481055	23548354	0.31	cps
Krypton	83-1	417	477	460	451	6.87	cps
Lead	206-1	54266448	53732238	54084583	54027756	0.50	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : CCV02 Instrumnet Name : P8
Client Sample ID : CCV02 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:16:00 DataFile Name : 046CCV.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	47137126	47111706	46371124	46873319	0.93	cps
Lead	208-1	216783455	215087892	213871922	215247756	0.68	cps
Lithium	6-1	3383455	3384164	3347397	3371672	0.62	cps
Magnesium	24-2	146080471	146195431	146026768	146100890	0.06	cps
Manganese	55-2	25366708	24891909	25244583	25167733	0.98	cps
Molybdenum	94-1	66745561	66604481	65603577	66317873	0.94	cps
Molybdenum	95-1	96416805	96206849	95976359	96200004	0.23	cps
Molybdenum	96-1	104621138	105841195	106390632	105617655	0.86	cps
Molybdenum	97-1	59254206	59018864	59297721	59190264	0.25	cps
Molybdenum	98-1	153607408	154076481	152672758	153452215	0.47	cps
Neodymium	150-1	1823	1673	1767	1755	4.32	cps
Neodymium	150-2	190	133	217	180	23.64	cps
Nickel	60-2	2484638	2505763	2507631	2499344	0.51	cps
Phosphorus	31-2	92150	91143	93050	92114	1.04	cps
Potassium	39-2	59996306	60320367	59703909	60006861	0.51	cps
Rhodium	103-1	8291774	8226846	8316661	8278427	0.56	cps
Rhodium	103-2	3983743	3793155	3903231	3893376	2.46	cps
Scandium	45-1	6684073	6836406	6728493	6749657	1.16	cps
Scandium	45-2	182733	181737	181434	181968	0.37	cps
Selenium	82-1	282435	283768	283015	283073	0.24	cps
Selenium	77-2	6938	7015	7099	7017	1.14	cps
Selenium	78-2	23463	23750	23814	23676	0.79	cps
Silicon	28-1	74253031	72610612	74661561	73841734	1.47	cps
Silver	107-1	22409273	22532284	22575914	22505824	0.38	cps
Silver	109-1	21308404	21172693	21039824	21173640	0.63	cps
Sodium	23-2	301536656	299372736	299904929	300271440	0.38	cps
Strontium	86-1	6308106	6113048	6221015	6214056	1.57	cps
Strontium	88-1	54789238	53258886	54581051	54209725	1.53	cps
Sulfur	34-1	2437922	2380914	2424177	2414338	1.23	cps
Terbium	159-1	10816379	10797866	10798174	10804140	0.10	cps
Terbium	159-2	4428853	4437193	4466263	4444103	0.44	cps
Thallium	203-1	13713463	13755468	13740241	13736391	0.15	cps
Thallium	205-1	33026465	32301808	32529810	32619361	1.14	cps
Tin	118-1	14333816	14487542	14166887	14329415	1.12	cps
Titanium	47-1	28133645	28048380	28331515	28171180	0.52	cps
Uranium	238-1	41233844	40941250	40388785	40854627	1.05	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : CCV02 Instrumnet Name : P8
Client Sample ID : CCV02 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:16:00 DataFile Name : 046CCV.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	4088887	4049967	4034447	4057767	0.69	cps
Ytterbium	172-1	1337	1250	1213	1267	5.00	cps
Ytterbium	172-2	567	630	617	604	5.52	cps
Ytterbium	176-1	72390	71127	70876	71464	1.14	cps
Ytterbium	176-2	30659	29981	30071	30237	1.22	cps
Yttrium	89-1	17773419	17711709	17653684	17712937	0.34	cps
Yttrium	89-2	1756466	1719987	1753626	1743360	1.16	cps
Zinc	66-2	8728674	8600464	8736522	8688553	0.88	cps
Zirconium	90-1	34342102	33910385	33493888	33915458	1.25	cps
Zirconium	91-1	7646459	7590587	7332070	7523039	2.23	cps

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LB Number : LB135293 Operator : Jaswal
Lab Sample ID : CCB02 Instrumnet Name : P8
Client Sample ID : CCB02 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:20:09 DataFile Name : 047CCBE.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	1187	1077	1090	1118	5.37	cps
Antimony	121-1	2184	1917	1770	1957	10.71	cps
Arsenic	75-2	7	13	13	11	34.61	cps
Barium	135-1	593	410	477	493	18.81	cps
Barium	137-1	883	820	793	832	5.55	cps
Beryllium	9-1	287	280	259	275	5.31	cps
Bismuth	209-1	6685762	6522271	6674719	6627584	1.38	cps
Bismuth	209-2	3510874	3461024	3434788	3468895	1.11	cps
Bromine	81-1	33012	33580	33687	33427	1.09	cps
Cadmium	108-1	57	37	43	46	22.36	cps
Cadmium	106-1	7636	7389	7849	7624	3.02	cps
Cadmium	111-1	5449	5250	5557	5419	2.88	cps
Calcium	43-1	10444	10230	10878	10517	3.14	cps
Calcium	44-1	198103	198160	198054	198106	0.03	cps
Carbon	12-1	7082908	7688406	8121390	7630901	6.84	cps
Carbon	12-2	61940	62268	62592	62267	0.52	cps
Chlorine	35-1	1417121	1379839	1323385	1373448	3.44	cps
Chlorine	35-2	6665	6622	5881	6389	6.89	cps
Chromium	52-2	2360	2377	2540	2426	4.10	cps
Cobalt	59-2	190	173	210	191	9.60	cps
Copper	63-2	4257	4367	4611	4412	4.10	cps
Dysprosium	156-1	10	33	17	20	60.08	cps
Dysprosium	156-2	3	13	3	7	86.65	cps
Erbium	164-1	67	67	93	76	20.38	cps
Erbium	164-2	30	13	33	26	41.94	cps
Gadolinium	160-1	140	140	110	130	13.32	cps
Gadolinium	160-2	33	17	7	19	71.30	cps
Holmium	165-1	11391069	11453660	11554710	11466480	0.72	cps
Holmium	165-2	4961640	4880882	4976048	4939524	1.04	cps
Indium	115-1	10752852	10615734	10823979	10730855	0.99	cps
Indium	115-2	1331776	1327760	1328761	1329432	0.16	cps
Iron	54-2	1893	1860	1730	1828	4.72	cps
Iron	56-2	23433	23910	25005	24116	3.34	cps
Iron	57-2	593	533	607	578	6.76	cps
Krypton	83-1	363	377	370	370	1.80	cps
Lead	206-1	3617	3764	3731	3704	2.08	cps

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LB Number : LB135293 Operator : Jaswal
Lab Sample ID : CCB02 Instrumnet Name : P8
Client Sample ID : CCB02 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:20:09 DataFile Name : 047CCBE.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	3451	3257	2987	3232	7.20	cps
Lead	208-1	15030	14693	14277	14667	2.57	cps
Lithium	6-1	3973268	3995878	3872252	3947133	1.67	cps
Magnesium	24-2	1760	1583	1580	1641	6.27	cps
Manganese	55-2	2267	2290	2607	2388	7.95	cps
Molybdenum	94-1	2810	2584	2724	2706	4.23	cps
Molybdenum	95-1	1857	1393	1367	1539	17.91	cps
Molybdenum	96-1	2327	1743	1803	1958	16.39	cps
Molybdenum	97-1	1040	877	837	918	11.74	cps
Molybdenum	98-1	2714	2257	2327	2432	10.11	cps
Neodymium	150-1	10	20	7	12	56.76	cps
Neodymium	150-2	10	0	3	4	114.60	cps
Nickel	60-2	1603	1763	1840	1736	6.96	cps
Phosphorus	31-2	130	137	127	131	3.88	cps
Potassium	39-2	40697	41503	41406	41202	1.07	cps
Rhodium	103-1	10077803	10179557	10269615	10175658	0.94	cps
Rhodium	103-2	4702374	4732723	4651720	4695606	0.87	cps
Scandium	45-1	7302372	7367971	7225659	7298667	0.98	cps
Scandium	45-2	184330	181476	184029	183278	0.86	cps
Selenium	82-1	40	27	47	38	26.97	cps
Selenium	77-2	7	0	3	3	100.05	cps
Selenium	78-2	20	40	20	27	43.30	cps
Silicon	28-1	656912	638189	638734	644612	1.65	cps
Silver	107-1	1437	1347	1290	1358	5.45	cps
Silver	109-1	1400	1247	1003	1217	16.44	cps
Sodium	23-2	104440	104400	103399	104080	0.57	cps
Strontium	86-1	1127	1073	1067	1089	3.02	cps
Strontium	88-1	4124	3957	4177	4086	2.81	cps
Sulfur	34-1	967068	957222	923043	949111	2.43	cps
Terbium	159-1	11720954	11775986	11979286	11825409	1.15	cps
Terbium	159-2	4848041	4804555	4731725	4794773	1.23	cps
Thallium	203-1	1720	1640	1577	1646	4.37	cps
Thallium	205-1	4081	3731	3741	3851	5.18	cps
Tin	118-1	5961	5991	7007	6320	9.42	cps
Titanium	47-1	823	777	553	718	20.11	cps
Uranium	238-1	637	540	533	570	10.15	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : CCB02 Instrumnet Name : P8
Client Sample ID : CCB02 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:20:09 DataFile Name : 047CCBE.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	63	67	47	59	18.19	cps
Ytterbium	172-1	73	57	57	62	15.46	cps
Ytterbium	172-2	13	30	40	28	48.51	cps
Ytterbium	176-1	1530	1553	1550	1545	0.82	cps
Ytterbium	176-2	297	353	337	329	8.86	cps
Yttrium	89-1	19555387	19668690	19888423	19704167	0.86	cps
Yttrium	89-2	1871366	1864977	1854923	1863755	0.44	cps
Zinc	66-2	6448	6378	6528	6452	1.16	cps
Zirconium	90-1	4127	4334	4834	4432	8.20	cps
Zirconium	91-1	847	923	957	909	6.21	cps

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LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-04MSD Instrumnet Name : P8
Client Sample ID : IW-02-55-040125-FDMSI Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:23:33 DataFile Name : 048AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	1720975	1701700	1686568	1703081	1.01	cps
Antimony	121-1	19223447	19054381	19616757	19298195	1.50	cps
Arsenic	75-2	603	660	667	643	5.41	cps
Barium	135-1	23223168	23474360	23155189	23284239	0.72	cps
Barium	137-1	40398140	40379130	39150561	39975944	1.79	cps
Beryllium	9-1	4872827	4920568	4843228	4878875	0.80	cps
Bismuth	209-1	6246477	6142891	6254744	6214704	1.00	cps
Bismuth	209-2	3095654	3155931	3059759	3103781	1.57	cps
Bromine	81-1	101407	108845	110219	106824	4.44	cps
Cadmium	108-1	373926	372457	375574	373986	0.42	cps
Cadmium	106-1	569190	562129	565431	565583	0.62	cps
Cadmium	111-1	4899419	4989514	4964533	4951155	0.94	cps
Calcium	43-1	8560429	8565653	8617001	8581027	0.36	cps
Calcium	44-1	141138308	139688045	141998991	140941781	0.83	cps
Carbon	12-1	10184948	11012649	11665416	10954338	6.77	cps
Carbon	12-2	91416	94048	94260	93241	1.70	cps
Chlorine	35-1	151206131	155717838	161675828	156199932	3.36	cps
Chlorine	35-2	919214	931386	929206	926602	0.70	cps
Chromium	52-2	5376020	5397187	5244329	5339179	1.55	cps
Cobalt	59-2	9756439	9806804	9825717	9796320	0.37	cps
Copper	63-2	72273042	72482606	72888494	72548047	0.43	cps
Dysprosium	156-1	1427	1430	1443	1433	0.62	cps
Dysprosium	156-2	400	430	463	431	7.35	cps
Erbium	164-1	890	833	937	887	5.84	cps
Erbium	164-2	440	397	340	392	12.79	cps
Gadolinium	160-1	1107	1063	1063	1078	2.32	cps
Gadolinium	160-2	483	560	493	512	8.14	cps
Holmium	165-1	11135431	11176920	11217711	11176687	0.37	cps
Holmium	165-2	4790427	4802729	4699768	4764308	1.18	cps
Indium	115-1	9859027	9901483	9762389	9840966	0.72	cps
Indium	115-2	1212011	1217503	1208370	1212628	0.38	cps
Iron	54-2	12088694	12506895	12132465	12242685	1.88	cps
Iron	56-2	223497290	225307163	220291810	223032088	1.14	cps
Iron	57-2	5514382	5643219	5626402	5594668	1.25	cps
Krypton	83-1	457	457	447	453	1.27	cps
Lead	206-1	60039712	58158131	60414027	59537290	2.03	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-04MSD Instrumnet Name : P8
Client Sample ID : IW-02-55-040125-FDMSI Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:23:33 DataFile Name : 048AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	52109436	50603158	51892919	51535171	1.58	cps
Lead	208-1	237507573	233672220	240128185	237102659	1.37	cps
Lithium	6-1	3962313	3868433	3746414	3859053	2.81	cps
Magnesium	24-2	36358483	36526914	36413944	36433113	0.24	cps
Manganese	55-2	26643707	27373799	26255169	26757558	2.12	cps
Molybdenum	94-1	33862864	34417666	33581313	33953948	1.25	cps
Molybdenum	95-1	36757902	36982599	37564419	37101640	1.12	cps
Molybdenum	96-1	41412474	41307959	42272719	41664384	1.27	cps
Molybdenum	97-1	22585159	22650086	22549584	22594943	0.23	cps
Molybdenum	98-1	58667096	59107779	59007597	58927491	0.39	cps
Neodymium	150-1	2440	2384	2500	2441	2.39	cps
Neodymium	150-2	337	307	290	311	7.60	cps
Nickel	60-2	2709677	2687081	2662185	2686314	0.88	cps
Phosphorus	31-2	3030	3120	2950	3034	2.80	cps
Potassium	39-2	14350477	14348935	14261964	14320459	0.35	cps
Rhodium	103-1	9388914	9295919	9300159	9328331	0.56	cps
Rhodium	103-2	4275988	4348729	4282761	4302493	0.93	cps
Scandium	45-1	7588049	7638237	7541496	7589261	0.64	cps
Scandium	45-2	193707	196690	193534	194644	0.91	cps
Selenium	82-1	304589	306829	312737	308052	1.37	cps
Selenium	77-2	7169	7262	7369	7266	1.38	cps
Selenium	78-2	25163	25186	24455	24934	1.67	cps
Silicon	28-1	497446513	493175393	496015899	495545935	0.44	cps
Silver	107-1	4318296	4198466	4379070	4298611	2.14	cps
Silver	109-1	3896517	3934864	4035232	3955538	1.81	cps
Sodium	23-2	72985092	73779601	72531717	73098803	0.86	cps
Strontium	86-1	10666716	10740720	10202796	10536744	2.77	cps
Strontium	88-1	93117762	92850332	91014075	92327390	1.24	cps
Sulfur	34-1	1181159	1174551	1167793	1174501	0.57	cps
Terbium	159-1	11665305	11396600	11882133	11648013	2.09	cps
Terbium	159-2	4624368	4647945	4578656	4616990	0.76	cps
Thallium	203-1	14688551	14476029	14864641	14676407	1.33	cps
Thallium	205-1	34950416	34399853	35550706	34966992	1.65	cps
Tin	118-1	14070219	13858229	14108215	14012221	0.96	cps
Titanium	47-1	49763	50569	51378	50570	1.60	cps
Uranium	238-1	43152744	43016839	43199246	43122943	0.22	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-04MSD Instrumnet Name : P8
Client Sample ID : IW-02-55-040125-FDMSI Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:23:33 DataFile Name : 048AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	4205081	4325266	4222530	4250959	1.53	cps
Ytterbium	172-1	867	987	927	927	6.47	cps
Ytterbium	172-2	467	433	433	444	4.33	cps
Ytterbium	176-1	73851	73252	72729	73277	0.77	cps
Ytterbium	176-2	30204	30428	30171	30268	0.46	cps
Yttrium	89-1	19744413	19636734	18588336	19323161	3.31	cps
Yttrium	89-2	1832217	1867918	1812676	1837604	1.52	cps
Zinc	66-2	8715047	8605259	8675944	8665417	0.64	cps
Zirconium	90-1	35651928	36449309	34924947	35675395	2.14	cps
Zirconium	91-1	7865019	7849540	7969202	7894587	0.82	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-04A Instrumnet Name : P8
Client Sample ID : IW-02-55-040125-FDA Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:26:21 DataFile Name : 049AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	1703990	1722764	1715473	1714076	0.55	cps
Antimony	121-1	18937613	19511095	19246513	19231740	1.49	cps
Arsenic	75-2	647	630	540	606	9.48	cps
Barium	135-1	23300271	23442325	23318270	23353622	0.33	cps
Barium	137-1	39899824	39463326	40684704	40015951	1.55	cps
Beryllium	9-1	4810418	4741622	4740649	4764230	0.84	cps
Bismuth	209-1	6153933	6325340	6182449	6220574	1.48	cps
Bismuth	209-2	3075587	3125300	3130208	3110365	0.97	cps
Bromine	81-1	104638	108957	114493	109362	4.52	cps
Cadmium	108-1	370472	365765	367079	367772	0.66	cps
Cadmium	106-1	559270	571453	568264	566329	1.12	cps
Cadmium	111-1	4889721	5015776	4937008	4947502	1.29	cps
Calcium	43-1	8497264	8784621	8753290	8678391	1.82	cps
Calcium	44-1	142349878	141850795	142986745	142395806	0.40	cps
Carbon	12-1	10657883	11498254	12244014	11466717	6.92	cps
Carbon	12-2	97581	97151	98997	97910	0.99	cps
Chlorine	35-1	156299751	162969608	164676268	161315209	2.74	cps
Chlorine	35-2	943522	948438	941967	944642	0.36	cps
Chromium	52-2	5424134	5322514	5379983	5375544	0.95	cps
Cobalt	59-2	9837131	9786965	9748725	9790941	0.45	cps
Copper	63-2	72984142	72792527	71940052	72572241	0.77	cps
Dysprosium	156-1	1463	1457	1490	1470	1.20	cps
Dysprosium	156-2	460	427	467	451	4.75	cps
Erbium	164-1	997	810	873	893	10.63	cps
Erbium	164-2	277	417	397	363	20.84	cps
Gadolinium	160-1	1050	1140	980	1057	7.59	cps
Gadolinium	160-2	443	463	507	471	6.87	cps
Holmium	165-1	10923247	11082077	10926132	10977152	0.83	cps
Holmium	165-2	4798056	4688445	4741736	4742746	1.16	cps
Indium	115-1	9674659	9942033	9899163	9838618	1.46	cps
Indium	115-2	1206154	1209677	1204682	1206837	0.21	cps
Iron	54-2	12562345	12386295	12352334	12433658	0.91	cps
Iron	56-2	223931930	221070750	220799403	221934028	0.78	cps
Iron	57-2	5575357	5580345	5636106	5597269	0.60	cps
Krypton	83-1	413	413	400	409	1.88	cps
Lead	206-1	58926017	61113101	60297706	60112275	1.84	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-04A Instrumnet Name : P8
Client Sample ID : IW-02-55-040125-FDA Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:26:21 DataFile Name : 049AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	50658114	52570614	52706954	51978561	2.20	cps
Lead	208-1	233556667	240818513	241623328	238666169	1.86	cps
Lithium	6-1	3798539	3842568	3819124	3820077	0.58	cps
Magnesium	24-2	36218764	36901226	35906563	36342184	1.40	cps
Manganese	55-2	27137433	26778311	26723917	26879887	0.84	cps
Molybdenum	94-1	33958152	33684269	33395864	33679428	0.83	cps
Molybdenum	95-1	37104664	37388501	36321159	36938108	1.50	cps
Molybdenum	96-1	41907511	41624741	41862598	41798283	0.36	cps
Molybdenum	97-1	22643326	22737733	22723772	22701610	0.22	cps
Molybdenum	98-1	59040122	58944756	59031081	59005320	0.09	cps
Neodymium	150-1	2440	2537	2510	2496	2.00	cps
Neodymium	150-2	293	277	307	292	5.14	cps
Nickel	60-2	2727670	2710231	2667410	2701770	1.15	cps
Phosphorus	31-2	2880	2730	2774	2795	2.76	cps
Potassium	39-2	14645556	14496064	14380764	14507461	0.92	cps
Rhodium	103-1	9289819	9406189	9434134	9376714	0.82	cps
Rhodium	103-2	4327638	4371361	4296956	4331985	0.86	cps
Scandium	45-1	7517230	7682025	7437049	7545435	1.66	cps
Scandium	45-2	195903	195620	194922	195481	0.26	cps
Selenium	82-1	305509	309334	304997	306613	0.77	cps
Selenium	77-2	7479	7465	7649	7531	1.36	cps
Selenium	78-2	25660	24976	25152	25263	1.41	cps
Silicon	28-1	489889499	495101673	497409953	494133708	0.78	cps
Silver	107-1	4207678	4298465	4212540	4239561	1.20	cps
Silver	109-1	3918586	4000635	3905002	3941407	1.31	cps
Sodium	23-2	73008151	73334047	73608396	73316864	0.41	cps
Strontium	86-1	10475163	10416122	10690415	10527233	1.37	cps
Strontium	88-1	91904939	91227209	92780875	91971008	0.85	cps
Sulfur	34-1	1168557	1170706	1183813	1174359	0.70	cps
Terbium	159-1	11325594	11843021	11454316	11540977	2.33	cps
Terbium	159-2	4673420	4651504	4650026	4658317	0.28	cps
Thallium	203-1	14365145	14891360	14751137	14669214	1.86	cps
Thallium	205-1	34202549	35455439	34679909	34779299	1.82	cps
Tin	118-1	13939884	14452225	14380136	14257415	1.95	cps
Titanium	47-1	53544	54516	53713	53925	0.96	cps
Uranium	238-1	42378632	42510963	43536961	42808852	1.48	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-04A Instrumnet Name : P8
Client Sample ID : IW-02-55-040125-FDA Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:26:21 DataFile Name : 049AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	4336157	4236848	4229964	4267656	1.39	cps
Ytterbium	172-1	933	883	1010	942	6.77	cps
Ytterbium	172-2	487	470	440	466	5.08	cps
Ytterbium	176-1	74046	73955	73228	73743	0.61	cps
Ytterbium	176-2	30215	29830	29683	29909	0.92	cps
Yttrium	89-1	19216134	18922638	19378335	19172369	1.20	cps
Yttrium	89-2	1829575	1815705	1830446	1825242	0.45	cps
Zinc	66-2	8726052	8778453	8610124	8704876	0.99	cps
Zirconium	90-1	35722729	35253633	35401400	35459254	0.68	cps
Zirconium	91-1	7943705	7852384	7786236	7860775	1.01	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-05 Instrumnet Name : P8
Client Sample ID : IW-03-55-040125 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:29:07 DataFile Name : 050AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	13353	13193	12479	13008	3.58	cps
Antimony	121-1	3811	3534	3244	3529	8.03	cps
Arsenic	75-2	537	427	500	488	11.48	cps
Barium	135-1	2889563	3008311	2964479	2954118	2.03	cps
Barium	137-1	4880949	5023423	4881393	4928588	1.67	cps
Beryllium	9-1	1005	937	889	944	6.14	cps
Bismuth	209-1	6584970	6591733	6707554	6628086	1.04	cps
Bismuth	209-2	3422961	3406049	3373328	3400779	0.74	cps
Bromine	81-1	93060	100550	106350	99987	6.66	cps
Cadmium	108-1	100	70	87	86	17.57	cps
Cadmium	106-1	7532	7549	7285	7455	1.98	cps
Cadmium	111-1	5559	5499	5309	5456	2.39	cps
Calcium	43-1	2148345	2191968	2186562	2175625	1.09	cps
Calcium	44-1	34567944	35594769	35404789	35189168	1.55	cps
Carbon	12-1	17472168	19146972	20312609	18977250	7.52	cps
Carbon	12-2	153675	156103	154698	154825	0.79	cps
Chlorine	35-1	7613138	7367135	7154761	7378345	3.11	cps
Chlorine	35-2	35584	34638	33375	34532	3.21	cps
Chromium	52-2	29240	31819	26291	29117	9.50	cps
Cobalt	59-2	172048	169790	159665	167167	3.95	cps
Copper	63-2	7322	7195	7249	7255	0.88	cps
Dysprosium	156-1	2490	2370	2384	2415	2.72	cps
Dysprosium	156-2	1113	1117	893	1041	12.29	cps
Erbium	164-1	2707	2684	2704	2698	0.47	cps
Erbium	164-2	1123	1050	1020	1065	4.99	cps
Gadolinium	160-1	2524	2447	2550	2507	2.14	cps
Gadolinium	160-2	1360	1137	1127	1208	10.92	cps
Holmium	165-1	11626264	11472962	11301460	11466896	1.42	cps
Holmium	165-2	4893222	4905413	4949043	4915892	0.60	cps
Indium	115-1	10692629	10606254	10687201	10662028	0.45	cps
Indium	115-2	1339452	1322621	1334522	1332199	0.65	cps
Iron	54-2	2796822	2736125	2544941	2692629	4.88	cps
Iron	56-2	51140638	50436714	45868473	49148608	5.82	cps
Iron	57-2	1222794	1219258	1122597	1188216	4.78	cps
Krypton	83-1	373	423	367	388	7.99	cps
Lead	206-1	11762	10895	9797	10818	9.10	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-05 Instrumnet Name : P8
Client Sample ID : IW-03-55-040125 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:29:07 DataFile Name : 050AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	9807	8623	8703	9044	7.32	cps
Lead	208-1	44874	42017	39938	42276	5.86	cps
Lithium	6-1	4042150	3969064	3994302	4001839	0.93	cps
Magnesium	24-2	5075467	5094201	4776483	4982051	3.58	cps
Manganese	55-2	3477086	3492995	3332132	3434071	2.58	cps
Molybdenum	94-1	20839	19327	19030	19732	4.92	cps
Molybdenum	95-1	23724	22956	23931	23537	2.18	cps
Molybdenum	96-1	26869	26699	26679	26749	0.39	cps
Molybdenum	97-1	14691	14678	14047	14472	2.54	cps
Molybdenum	98-1	37848	36923	36735	37169	1.60	cps
Neodymium	150-1	2540	2594	2617	2584	1.52	cps
Neodymium	150-2	700	750	657	702	6.65	cps
Nickel	60-2	62058	63163	58824	61348	3.68	cps
Phosphorus	31-2	4354	4304	3834	4164	6.89	cps
Potassium	39-2	3825855	3829097	3711824	3788925	1.76	cps
Rhodium	103-1	9871409	10142540	10172067	10062005	1.65	cps
Rhodium	103-2	4695740	4671691	4628039	4665157	0.74	cps
Scandium	45-1	7534857	7683190	7756423	7658157	1.47	cps
Scandium	45-2	188928	189886	190258	189691	0.36	cps
Selenium	82-1	177	77	230	161	48.31	cps
Selenium	77-2	10	10	10	10	0.00	cps
Selenium	78-2	27	27	53	36	43.29	cps
Silicon	28-1	481643633	496597566	499502526	492581242	1.95	cps
Silver	107-1	1477	1327	1107	1303	14.28	cps
Silver	109-1	1333	1160	1007	1167	14.01	cps
Sodium	23-2	8117765	8208570	7856903	8061079	2.26	cps
Strontium	86-1	2718433	2718101	2772109	2736214	1.14	cps
Strontium	88-1	23422117	23425120	23580666	23475968	0.39	cps
Sulfur	34-1	1006918	997139	993168	999075	0.71	cps
Terbium	159-1	11901408	12031853	11839757	11924339	0.82	cps
Terbium	159-2	4895323	4786452	4770485	4817420	1.41	cps
Thallium	203-1	11999	11342	10454	11265	6.88	cps
Thallium	205-1	29123	26450	25472	27015	7.00	cps
Tin	118-1	36659	36218	35720	36199	1.30	cps
Titanium	47-1	31936	31267	30489	31231	2.32	cps
Uranium	238-1	3180	2894	2630	2901	9.48	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-05 Instrumnet Name : P8
Client Sample ID : IW-03-55-040125 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:29:07 DataFile Name : 050AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	2314	2400	1980	2231	9.94	cps
Ytterbium	172-1	893	940	927	920	2.61	cps
Ytterbium	172-2	457	387	387	410	9.86	cps
Ytterbium	176-1	2277	2054	1974	2101	7.48	cps
Ytterbium	176-2	530	550	550	543	2.13	cps
Yttrium	89-1	19909656	19838966	19973503	19907375	0.34	cps
Yttrium	89-2	1901406	1885355	1867532	1884764	0.90	cps
Zinc	66-2	27376	27066	26001	26814	2.69	cps
Zirconium	90-1	19534	17328	15716	17526	10.94	cps
Zirconium	91-1	4337	3454	3447	3746	13.67	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-13 Instrumnet Name : P8
Client Sample ID : MW-19B-72-040125 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:32:19 DataFile Name : 051AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	1317	1390	1317	1341	3.16	cps
Antimony	121-1	2274	2114	2377	2255	5.89	cps
Arsenic	75-2	267	343	367	326	16.07	cps
Barium	135-1	6117567	6132967	6262739	6171091	1.29	cps
Barium	137-1	10404142	10384230	10490237	10426203	0.54	cps
Beryllium	9-1	347	341	337	342	1.53	cps
Bismuth	209-1	6523190	6526024	6327744	6458986	1.76	cps
Bismuth	209-2	3319201	3363847	3287465	3323504	1.15	cps
Bromine	81-1	147413	173662	192027	171034	13.11	cps
Cadmium	108-1	30	40	53	41	28.47	cps
Cadmium	106-1	7175	7482	7225	7294	2.26	cps
Cadmium	111-1	5168	5359	5110	5213	2.50	cps
Calcium	43-1	4758316	4784576	4841958	4794950	0.89	cps
Calcium	44-1	79547232	79174015	78919364	79213537	0.40	cps
Carbon	12-1	18483889	20178873	20758635	19807132	5.97	cps
Carbon	12-2	157669	159599	156139	157803	1.10	cps
Chlorine	35-1	14031114	14878918	15023501	14644511	3.66	cps
Chlorine	35-2	83995	84018	82688	83567	0.91	cps
Chromium	52-2	3097	3000	3220	3106	3.55	cps
Cobalt	59-2	11918	11868	11288	11692	3.00	cps
Copper	63-2	4684	4597	4838	4706	2.58	cps
Dysprosium	156-1	240	280	220	247	12.39	cps
Dysprosium	156-2	87	93	70	83	14.42	cps
Erbium	164-1	240	223	247	237	5.08	cps
Erbium	164-2	87	87	87	87	0.00	cps
Gadolinium	160-1	257	280	287	274	5.74	cps
Gadolinium	160-2	110	160	110	127	22.79	cps
Holmium	165-1	11344051	11367927	11454872	11388950	0.51	cps
Holmium	165-2	4838656	4806183	4839691	4828177	0.39	cps
Indium	115-1	10812487	10705610	10474022	10664040	1.62	cps
Indium	115-2	1310302	1307996	1304868	1307722	0.21	cps
Iron	54-2	4944417	4861629	4698241	4834762	2.59	cps
Iron	56-2	90090132	89400122	87335462	88941905	1.61	cps
Iron	57-2	2308822	2269540	2215486	2264616	2.07	cps
Krypton	83-1	387	423	410	407	4.56	cps
Lead	206-1	4738	4407	4381	4509	4.41	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-13 Instrumnet Name : P8
Client Sample ID : MW-19B-72-040125 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:32:19 DataFile Name : 051AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	3724	3961	3787	3824	3.20	cps
Lead	208-1	18065	17825	17038	17643	3.05	cps
Lithium	6-1	3937137	3884605	3982272	3934671	1.24	cps
Magnesium	24-2	8225366	8030186	7770531	8008694	2.85	cps
Manganese	55-2	3400857	3413622	3329083	3381187	1.35	cps
Molybdenum	94-1	15005	15669	15652	15442	2.45	cps
Molybdenum	95-1	22381	22151	21897	22143	1.09	cps
Molybdenum	96-1	24755	24438	24675	24623	0.67	cps
Molybdenum	97-1	13633	13550	13230	13471	1.58	cps
Molybdenum	98-1	34540	35058	34807	34801	0.74	cps
Neodymium	150-1	707	703	750	720	3.62	cps
Neodymium	150-2	83	107	103	98	12.91	cps
Nickel	60-2	3030	3067	2840	2979	4.09	cps
Phosphorus	31-2	1947	1893	1790	1877	4.24	cps
Potassium	39-2	3887785	3888937	3784689	3853804	1.55	cps
Rhodium	103-1	9824659	9801024	9853370	9826351	0.27	cps
Rhodium	103-2	4519399	4473087	4528973	4507153	0.66	cps
Scandium	45-1	7853066	7747666	7816969	7805900	0.69	cps
Scandium	45-2	185494	188620	185507	186540	0.97	cps
Selenium	82-1	157	223	100	160	38.58	cps
Selenium	77-2	3	0	3	2	86.60	cps
Selenium	78-2	83	33	40	52	51.99	cps
Silicon	28-1	450108193	450101953	451131180	450447109	0.13	cps
Silver	107-1	593	613	587	598	2.32	cps
Silver	109-1	520	470	480	490	5.40	cps
Sodium	23-2	13322419	13361635	12943677	13209244	1.75	cps
Strontium	86-1	6171275	6176158	6178018	6175150	0.06	cps
Strontium	88-1	54467619	54645636	54063319	54392191	0.55	cps
Sulfur	34-1	1232472	1244425	1231941	1236279	0.57	cps
Terbium	159-1	11662186	11843003	12098000	11867730	1.84	cps
Terbium	159-2	4749955	4818223	4759517	4775898	0.77	cps
Thallium	203-1	1994	1793	1633	1807	9.98	cps
Thallium	205-1	4367	4211	3884	4154	5.94	cps
Tin	118-1	22759	22709	22933	22800	0.51	cps
Titanium	47-1	9090	8756	9143	8996	2.33	cps
Uranium	238-1	2464	2307	2370	2380	3.31	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-13 Instrumnet Name : P8
Client Sample ID : MW-19B-72-040125 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:32:19 DataFile Name : 051AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	203	240	220	221	8.30	cps
Ytterbium	172-1	157	187	127	157	19.15	cps
Ytterbium	172-2	70	67	50	62	17.22	cps
Ytterbium	176-1	1477	1493	1477	1482	0.65	cps
Ytterbium	176-2	363	317	320	333	7.81	cps
Yttrium	89-1	19770086	19901942	19455915	19709314	1.16	cps
Yttrium	89-2	1843185	1853142	1845654	1847327	0.28	cps
Zinc	66-2	5785	5334	5301	5473	4.93	cps
Zirconium	90-1	8549	8639	8756	8648	1.20	cps
Zirconium	91-1	1650	1887	1947	1828	8.58	cps

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LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-14 Instrumnet Name : P8
Client Sample ID : IW-01-55-040125 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:35:37 DataFile Name : 052AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	1227	1087	1137	1150	6.17	cps
Antimony	121-1	703	773	810	762	7.11	cps
Arsenic	75-2	483	450	433	456	5.59	cps
Barium	135-1	3063633	3092872	3076666	3077723	0.48	cps
Barium	137-1	5129644	5290254	5219505	5213134	1.54	cps
Beryllium	9-1	938	959	951	949	1.12	cps
Bismuth	209-1	6400723	6499443	6498172	6466113	0.88	cps
Bismuth	209-2	3416575	3298267	3355943	3356928	1.76	cps
Bromine	81-1	129283	137547	141769	136200	4.66	cps
Cadmium	108-1	33	50	33	39	24.75	cps
Cadmium	106-1	7352	7139	6802	7097	3.91	cps
Cadmium	111-1	5183	5059	4805	5015	3.85	cps
Calcium	43-1	2290808	2369436	2400432	2353559	2.40	cps
Calcium	44-1	38165028	38934483	38756845	38618785	1.04	cps
Carbon	12-1	15105464	16481261	16869134	16151953	5.74	cps
Carbon	12-2	125591	126778	128210	126860	1.03	cps
Chlorine	35-1	4039958	4166463	4130985	4112469	1.59	cps
Chlorine	35-2	22334	22003	21943	22094	0.95	cps
Chromium	52-2	11548	11051	11305	11301	2.20	cps
Cobalt	59-2	145606	144488	137274	142456	3.17	cps
Copper	63-2	5131	5041	5274	5149	2.29	cps
Dysprosium	156-1	237	183	267	229	18.44	cps
Dysprosium	156-2	73	60	77	70	12.60	cps
Erbium	164-1	200	227	213	213	6.25	cps
Erbium	164-2	107	107	80	98	15.75	cps
Gadolinium	160-1	253	303	300	286	9.79	cps
Gadolinium	160-2	90	103	113	102	11.45	cps
Holmium	165-1	11316355	11476617	11306162	11366378	0.84	cps
Holmium	165-2	4868303	4853914	4853858	4858692	0.17	cps
Indium	115-1	10755269	10641110	10500336	10632238	1.20	cps
Indium	115-2	1320364	1327186	1328150	1325234	0.32	cps
Iron	54-2	2406766	2383946	2248893	2346535	3.64	cps
Iron	56-2	43401231	43145869	40776603	42441234	3.41	cps
Iron	57-2	1053245	1047769	981474	1027496	3.89	cps
Krypton	83-1	370	373	397	380	3.82	cps
Lead	206-1	3941	3704	3887	3844	3.23	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-14 Instrumnet Name : P8
Client Sample ID : IW-01-55-040125 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:35:37 DataFile Name : 052AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	3180	3260	3024	3155	3.82	cps
Lead	208-1	15227	15057	14997	15094	0.79	cps
Lithium	6-1	3933903	3977723	4045791	3985806	1.41	cps
Magnesium	24-2	5050552	5117282	4867555	5011796	2.58	cps
Manganese	55-2	3096841	3086509	2948270	3043873	2.73	cps
Molybdenum	94-1	7742	7572	7582	7632	1.25	cps
Molybdenum	95-1	9247	9180	9073	9166	0.95	cps
Molybdenum	96-1	10871	10344	10017	10411	4.14	cps
Molybdenum	97-1	5598	5571	5531	5567	0.60	cps
Molybdenum	98-1	14257	14344	14374	14325	0.42	cps
Neodymium	150-1	613	570	500	561	10.19	cps
Neodymium	150-2	93	107	113	104	9.75	cps
Nickel	60-2	60444	59253	58229	59308	1.87	cps
Phosphorus	31-2	3434	3460	3247	3380	3.44	cps
Potassium	39-2	3925363	3880306	3807787	3871152	1.53	cps
Rhodium	103-1	9952708	10048189	9849251	9950049	1.00	cps
Rhodium	103-2	4667981	4576703	4524002	4589562	1.59	cps
Scandium	45-1	7669141	7771749	7837825	7759572	1.10	cps
Scandium	45-2	188172	189638	189279	189030	0.40	cps
Selenium	82-1	130	213	153	166	25.97	cps
Selenium	77-2	7	10	13	10	33.30	cps
Selenium	78-2	37	27	47	37	27.27	cps
Silicon	28-1	533812019	534881979	529970819	532888272	0.48	cps
Silver	107-1	397	417	397	403	2.86	cps
Silver	109-1	267	290	253	270	6.87	cps
Sodium	23-2	10063686	10060331	9906133	10010050	0.90	cps
Strontium	86-1	3120040	3106389	3153638	3126689	0.78	cps
Strontium	88-1	26569372	27080398	27142342	26930704	1.17	cps
Sulfur	34-1	1361539	1368044	1383693	1371092	0.83	cps
Terbium	159-1	11787137	12033920	12035860	11952306	1.20	cps
Terbium	159-2	4788332	4795303	4796288	4793307	0.09	cps
Thallium	203-1	7556	7736	7726	7672	1.32	cps
Thallium	205-1	18917	18480	18557	18651	1.25	cps
Tin	118-1	23934	23908	23878	23907	0.12	cps
Titanium	47-1	10244	10467	10307	10339	1.11	cps
Uranium	238-1	1133	1077	1023	1078	5.10	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-14 Instrumnet Name : P8
Client Sample ID : IW-01-55-040125 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:35:37 DataFile Name : 052AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	247	293	267	269	8.71	cps
Ytterbium	172-1	117	120	140	126	10.05	cps
Ytterbium	172-2	63	50	70	61	16.66	cps
Ytterbium	176-1	1460	1493	1620	1525	5.54	cps
Ytterbium	176-2	300	303	290	298	2.33	cps
Yttrium	89-1	19449995	19868391	20026545	19781643	1.51	cps
Yttrium	89-2	1877506	1861328	1874669	1871168	0.46	cps
Zinc	66-2	21516	21476	20909	21301	1.59	cps
Zirconium	90-1	6525	6588	6822	6645	2.35	cps
Zirconium	91-1	1450	1463	1437	1450	0.92	cps

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LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-15 Instrumnet Name : P8
Client Sample ID : IW-02-55-040125 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:38:49 DataFile Name : 053AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	1247	1183	1193	1208	2.82	cps
Antimony	121-1	637	650	617	634	2.64	cps
Arsenic	75-2	493	497	480	490	1.80	cps
Barium	135-1	2938181	2900480	2955803	2931488	0.96	cps
Barium	137-1	4997951	5001415	4980775	4993380	0.22	cps
Beryllium	9-1	617	636	599	617	2.95	cps
Bismuth	209-1	6538786	6424098	6483807	6482231	0.88	cps
Bismuth	209-2	3348728	3360141	3327992	3345620	0.49	cps
Bromine	81-1	110562	117874	120893	116443	4.56	cps
Cadmium	108-1	47	30	47	41	23.41	cps
Cadmium	106-1	7032	7192	6715	6980	3.48	cps
Cadmium	111-1	4956	5080	4745	4927	3.44	cps
Calcium	43-1	2306439	2337588	2317613	2320547	0.68	cps
Calcium	44-1	38399772	37662889	37401331	37821331	1.37	cps
Carbon	12-1	12701239	14141119	14694725	13845694	7.43	cps
Carbon	12-2	113494	113991	113884	113790	0.23	cps
Chlorine	35-1	3475797	3524417	3586295	3528837	1.57	cps
Chlorine	35-2	19583	19760	19700	19681	0.46	cps
Chromium	52-2	7035	7142	7085	7087	0.75	cps
Cobalt	59-2	120888	119557	116435	118960	1.92	cps
Copper	63-2	4571	4881	4691	4714	3.32	cps
Dysprosium	156-1	237	257	300	264	12.24	cps
Dysprosium	156-2	63	97	37	66	45.86	cps
Erbium	164-1	200	187	203	197	4.48	cps
Erbium	164-2	97	107	90	98	8.58	cps
Gadolinium	160-1	250	277	237	254	8.00	cps
Gadolinium	160-2	117	110	87	104	15.08	cps
Holmium	165-1	11350627	11513148	11156993	11340256	1.57	cps
Holmium	165-2	4865865	4892224	4832376	4863488	0.62	cps
Indium	115-1	10668395	10556058	10596434	10606962	0.54	cps
Indium	115-2	1339520	1337077	1342137	1339578	0.19	cps
Iron	54-2	2447304	2531977	2338590	2439290	3.97	cps
Iron	56-2	44888523	44845584	42718224	44150777	2.81	cps
Iron	57-2	1082747	1078730	1020109	1060529	3.31	cps
Krypton	83-1	440	423	413	426	3.17	cps
Lead	206-1	4698	4924	4731	4784	2.56	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-15 Instrumnet Name : P8
Client Sample ID : IW-02-55-040125 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:38:49 DataFile Name : 053AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	3981	4317	3944	4081	5.04	cps
Lead	208-1	18819	19029	18502	18783	1.41	cps
Lithium	6-1	3969919	3945620	3972872	3962803	0.38	cps
Magnesium	24-2	5473132	5280665	5178952	5310916	2.81	cps
Manganese	55-2	3296142	3276742	3158630	3243838	2.29	cps
Molybdenum	94-1	12309	12352	12849	12503	2.40	cps
Molybdenum	95-1	17558	17912	18412	17961	2.39	cps
Molybdenum	96-1	19908	20165	20372	20148	1.15	cps
Molybdenum	97-1	11131	11385	11585	11367	2.00	cps
Molybdenum	98-1	28653	29645	28894	29064	1.78	cps
Neodymium	150-1	447	520	493	487	7.63	cps
Neodymium	150-2	70	97	60	76	25.09	cps
Nickel	60-2	39211	39100	38184	38832	1.45	cps
Phosphorus	31-2	3034	2960	3160	3051	3.32	cps
Potassium	39-2	4017882	3934080	3937913	3963292	1.19	cps
Rhodium	103-1	10008999	10267982	10039916	10105632	1.40	cps
Rhodium	103-2	4573886	4581114	4643284	4599428	0.83	cps
Scandium	45-1	7915689	7855621	7700046	7823785	1.42	cps
Scandium	45-2	194666	192109	194797	193857	0.78	cps
Selenium	82-1	23	3	160	62	137.02	cps
Selenium	77-2	0	0	0	0	0.00	cps
Selenium	78-2	57	37	37	43	26.64	cps
Silicon	28-1	534274765	538186232	538531752	536997583	0.44	cps
Silver	107-1	310	313	327	317	2.78	cps
Silver	109-1	220	160	223	201	17.72	cps
Sodium	23-2	8705986	8571076	8387270	8554777	1.87	cps
Strontium	86-1	3020328	3006693	2956388	2994469	1.12	cps
Strontium	88-1	25621630	25596650	25551710	25589997	0.14	cps
Sulfur	34-1	1131942	1120319	1119037	1123766	0.63	cps
Terbium	159-1	11935515	11879776	11945669	11920320	0.30	cps
Terbium	159-2	4898991	4834336	4774353	4835894	1.29	cps
Thallium	203-1	5071	5151	5011	5078	1.38	cps
Thallium	205-1	12092	12029	12132	12085	0.43	cps
Tin	118-1	26516	26442	26138	26365	0.76	cps
Titanium	47-1	10170	10087	9677	9978	2.65	cps
Uranium	238-1	1130	1153	1123	1136	1.39	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-15 Instrumnet Name : P8
Client Sample ID : IW-02-55-040125 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:38:49 DataFile Name : 053AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	210	213	180	201	9.13	cps
Ytterbium	172-1	150	147	160	152	4.56	cps
Ytterbium	172-2	77	60	77	71	13.53	cps
Ytterbium	176-1	1377	1460	1497	1445	4.26	cps
Ytterbium	176-2	333	297	283	304	8.50	cps
Yttrium	89-1	20308348	20009029	20095277	20137551	0.77	cps
Yttrium	89-2	1901323	1911688	1872532	1895181	1.07	cps
Zinc	66-2	15462	15655	15121	15413	1.75	cps
Zirconium	90-1	5781	5968	6158	5969	3.16	cps
Zirconium	91-1	1363	1407	1313	1361	3.43	cps

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LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-16 Instrumnet Name : P8
Client Sample ID : IW-02-55-040125-FD Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:42:06 DataFile Name : 054AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	1440	1230	1410	1360	8.35	cps
Antimony	121-1	560	557	523	547	3.71	cps
Arsenic	75-2	447	433	410	430	4.32	cps
Barium	135-1	2954889	2971883	2974411	2967061	0.36	cps
Barium	137-1	5005554	4863719	4930720	4933331	1.44	cps
Beryllium	9-1	623	574	551	583	6.35	cps
Bismuth	209-1	6323502	6235044	6374123	6310890	1.12	cps
Bismuth	209-2	3337986	3181891	3233377	3251085	2.45	cps
Bromine	81-1	107506	117205	120842	115184	5.99	cps
Cadmium	108-1	17	23	43	28	49.95	cps
Cadmium	106-1	6735	6302	6665	6567	3.54	cps
Cadmium	111-1	4760	4465	4712	4645	3.41	cps
Calcium	43-1	2280067	2393657	2372397	2348707	2.57	cps
Calcium	44-1	37129691	37953916	38379953	37821187	1.68	cps
Carbon	12-1	13157926	14174256	14924129	14085437	6.29	cps
Carbon	12-2	111898	114186	112796	112960	1.02	cps
Chlorine	35-1	3176577	3380629	3479197	3345467	4.61	cps
Chlorine	35-2	19236	19363	19523	19374	0.74	cps
Chromium	52-2	2954	2814	2957	2908	2.81	cps
Cobalt	59-2	126375	124956	114537	121956	5.30	cps
Copper	63-2	3751	3711	3914	3792	2.84	cps
Dysprosium	156-1	253	217	250	240	8.45	cps
Dysprosium	156-2	47	97	70	71	35.18	cps
Erbium	164-1	247	220	233	233	5.71	cps
Erbium	164-2	83	87	77	82	6.19	cps
Gadolinium	160-1	237	300	290	276	12.36	cps
Gadolinium	160-2	113	87	93	98	14.20	cps
Holmium	165-1	11235581	11086375	10923504	11081820	1.41	cps
Holmium	165-2	4860859	4752505	4764696	4792687	1.24	cps
Indium	115-1	10365764	10315912	10231062	10304246	0.66	cps
Indium	115-2	1303593	1313732	1304260	1307195	0.43	cps
Iron	54-2	2440981	2455133	2188815	2361643	6.34	cps
Iron	56-2	45063741	44027339	39957753	43016278	6.27	cps
Iron	57-2	1080705	1075097	967296	1041032	6.14	cps
Krypton	83-1	470	413	367	417	12.42	cps
Lead	206-1	7679	7719	7676	7691	0.31	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-16 Instrumnet Name : P8
Client Sample ID : IW-02-55-040125-FD Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:42:06 DataFile Name : 054AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	6715	6472	6645	6611	1.90	cps
Lead	208-1	30708	30364	30327	30467	0.69	cps
Lithium	6-1	3949136	3920089	3947049	3938758	0.41	cps
Magnesium	24-2	5407039	5415985	4905890	5242971	5.57	cps
Manganese	55-2	3293093	3306980	3044769	3214947	4.59	cps
Molybdenum	94-1	11538	12289	11929	11919	3.15	cps
Molybdenum	95-1	17918	18576	17905	18133	2.12	cps
Molybdenum	96-1	19520	19747	19784	19684	0.73	cps
Molybdenum	97-1	10908	10721	10751	10793	0.93	cps
Molybdenum	98-1	28159	28319	28610	28362	0.81	cps
Neodymium	150-1	553	473	563	530	9.31	cps
Neodymium	150-2	113	70	87	90	24.29	cps
Nickel	60-2	41393	40350	37596	39780	4.93	cps
Phosphorus	31-2	2904	2957	2630	2830	6.19	cps
Potassium	39-2	3995794	4120315	3918778	4011629	2.54	cps
Rhodium	103-1	9857488	9549305	9917672	9774822	2.02	cps
Rhodium	103-2	4558518	4544848	4596552	4566639	0.59	cps
Scandium	45-1	7642897	7513679	7680243	7612273	1.15	cps
Scandium	45-2	189036	192549	188883	190156	1.09	cps
Selenium	82-1	-40	97	93	50	155.92	cps
Selenium	77-2	0	0	3	1	173.21	cps
Selenium	78-2	23	33	57	38	45.29	cps
Silicon	28-1	541036059	532560659	540878365	538158361	0.90	cps
Silver	107-1	250	350	287	296	17.12	cps
Silver	109-1	197	173	223	198	12.65	cps
Sodium	23-2	9331141	9178754	8873256	9127717	2.55	cps
Strontium	86-1	2970156	2936575	3047880	2984870	1.91	cps
Strontium	88-1	25079750	25107518	26074851	25420706	2.23	cps
Sulfur	34-1	1141263	1123808	1130250	1131774	0.78	cps
Terbium	159-1	11612558	11803746	11637290	11684531	0.89	cps
Terbium	159-2	4770977	4650208	4632288	4684491	1.61	cps
Thallium	203-1	4794	4844	4738	4792	1.11	cps
Thallium	205-1	11882	11795	12099	11926	1.31	cps
Tin	118-1	20031	20265	20041	20113	0.66	cps
Titanium	47-1	10220	10147	9937	10101	1.46	cps
Uranium	238-1	1180	1327	1200	1236	6.44	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-16 Instrumnet Name : P8
Client Sample ID : IW-02-55-040125-FD Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:42:06 DataFile Name : 054AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	153	183	163	167	9.16	cps
Ytterbium	172-1	183	133	103	140	28.87	cps
Ytterbium	172-2	63	80	83	76	14.18	cps
Ytterbium	176-1	1413	1433	1490	1446	2.75	cps
Ytterbium	176-2	310	273	353	312	12.83	cps
Yttrium	89-1	19540782	19073193	19866285	19493420	2.05	cps
Yttrium	89-2	1867303	1864244	1814117	1848555	1.62	cps
Zinc	66-2	15682	15088	14217	14996	4.91	cps
Zirconium	90-1	4304	4534	4647	4495	3.89	cps
Zirconium	91-1	1030	997	1000	1009	1.82	cps

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LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-17 Instrumnet Name : P8
Client Sample ID : IW-03-55-040125 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:45:18 DataFile Name : 055AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	1680	1753	1640	1691	3.40	cps
Antimony	121-1	2140	2147	2300	2196	4.12	cps
Arsenic	75-2	513	553	513	527	4.38	cps
Barium	135-1	2957577	2969714	2925739	2951010	0.77	cps
Barium	137-1	5011700	5062643	4977613	5017319	0.85	cps
Beryllium	9-1	561	495	524	527	6.25	cps
Bismuth	209-1	6463676	6410906	6188117	6354233	2.30	cps
Bismuth	209-2	3326238	3302958	3340272	3323156	0.57	cps
Bromine	81-1	103311	112376	117968	111218	6.65	cps
Cadmium	108-1	43	47	53	48	10.66	cps
Cadmium	106-1	6808	6985	6632	6808	2.60	cps
Cadmium	111-1	4819	4927	4675	4807	2.63	cps
Calcium	43-1	2331861	2237379	2271239	2280160	2.10	cps
Calcium	44-1	37135596	36902249	36488393	36842079	0.89	cps
Carbon	12-1	24810944	27723077	28568875	27034299	7.29	cps
Carbon	12-2	213926	214823	214374	214374	0.21	cps
Chlorine	35-1	3274064	3478272	3495034	3415790	3.60	cps
Chlorine	35-2	19954	19326	20157	19813	2.19	cps
Chromium	52-2	20972	21356	20582	20970	1.85	cps
Cobalt	59-2	167069	167614	167419	167367	0.17	cps
Copper	63-2	5935	5958	5895	5929	0.54	cps
Dysprosium	156-1	240	297	240	259	12.64	cps
Dysprosium	156-2	37	90	70	66	41.10	cps
Erbium	164-1	250	190	217	219	13.74	cps
Erbium	164-2	120	100	77	99	21.93	cps
Gadolinium	160-1	280	293	247	273	8.79	cps
Gadolinium	160-2	90	113	77	93	19.89	cps
Holmium	165-1	11326034	11113079	11139545	11192886	1.04	cps
Holmium	165-2	4835775	4894588	4809674	4846679	0.90	cps
Indium	115-1	10588453	10865380	10585632	10679822	1.50	cps
Indium	115-2	1327232	1332703	1318406	1326114	0.54	cps
Iron	54-2	2743542	2680501	2633592	2685878	2.05	cps
Iron	56-2	49520104	48644323	47494433	48552953	2.09	cps
Iron	57-2	1175121	1178309	1157636	1170355	0.95	cps
Krypton	83-1	367	390	390	382	3.52	cps
Lead	206-1	5191	5211	5118	5173	0.95	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-17 Instrumnet Name : P8
Client Sample ID : IW-03-55-040125 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:45:18 DataFile Name : 055AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	4197	4344	4421	4321	2.63	cps
Lead	208-1	20053	20083	20050	20062	0.09	cps
Lithium	6-1	4008283	3978548	4034189	4007007	0.69	cps
Magnesium	24-2	5350836	5429405	5289765	5356669	1.31	cps
Manganese	55-2	3651899	3608089	3546458	3602149	1.47	cps
Molybdenum	94-1	14928	15282	15028	15079	1.21	cps
Molybdenum	95-1	22682	22538	23036	22752	1.13	cps
Molybdenum	96-1	24792	25136	25400	25109	1.21	cps
Molybdenum	97-1	13964	14171	14411	14182	1.58	cps
Molybdenum	98-1	36505	36598	36528	36544	0.13	cps
Neodymium	150-1	500	473	490	488	2.76	cps
Neodymium	150-2	110	80	77	89	20.65	cps
Nickel	60-2	54681	54872	53761	54438	1.09	cps
Phosphorus	31-2	4077	3897	3917	3964	2.49	cps
Potassium	39-2	3981788	4064653	4045735	4030725	1.08	cps
Rhodium	103-1	9930063	10160301	10086666	10059010	1.17	cps
Rhodium	103-2	4589025	4600087	4571785	4586966	0.31	cps
Scandium	45-1	7828113	7873178	7799594	7833628	0.47	cps
Scandium	45-2	195137	192394	192390	193307	0.82	cps
Selenium	82-1	133	47	33	71	76.35	cps
Selenium	77-2	0	7	0	2	173.21	cps
Selenium	78-2	37	57	33	42	29.89	cps
Silicon	28-1	518083526	524972139	518650752	520568806	0.73	cps
Silver	107-1	240	260	227	242	6.93	cps
Silver	109-1	190	147	160	166	13.41	cps
Sodium	23-2	8840292	8822597	8711683	8791524	0.79	cps
Strontium	86-1	2830252	2792055	2814176	2812161	0.68	cps
Strontium	88-1	24051107	24291509	24133961	24158859	0.51	cps
Sulfur	34-1	980784	1000271	983932	988329	1.06	cps
Terbium	159-1	11689856	11909966	11864399	11821407	0.98	cps
Terbium	159-2	4712819	4746652	4708731	4722734	0.44	cps
Thallium	203-1	6222	6102	6438	6254	2.73	cps
Thallium	205-1	14889	14955	14648	14831	1.09	cps
Tin	118-1	32432	32211	32726	32456	0.80	cps
Titanium	47-1	10140	10070	9407	9872	4.10	cps
Uranium	238-1	987	1083	1143	1071	7.38	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : Q1697-17 Instrumnet Name : P8
Client Sample ID : IW-03-55-040125 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:45:18 DataFile Name : 055AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	300	217	257	258	16.17	cps
Ytterbium	172-1	123	150	157	143	12.30	cps
Ytterbium	172-2	40	67	50	52	25.80	cps
Ytterbium	176-1	1493	1347	1447	1429	5.24	cps
Ytterbium	176-2	343	287	310	313	9.09	cps
Yttrium	89-1	20089175	19835891	19541983	19822349	1.38	cps
Yttrium	89-2	1856724	1901544	1879708	1879326	1.19	cps
Zinc	66-2	29982	29514	29985	29827	0.91	cps
Zirconium	90-1	5161	5428	5241	5277	2.59	cps
Zirconium	91-1	990	1103	1167	1087	8.24	cps

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LB Number : LB135293 Operator : Jaswal
Lab Sample ID : CCV03 Instrumnet Name : P8
Client Sample ID : CCV03 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:52:40 DataFile Name : 057CCV.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	8728027	8671508	8839976	8746503	0.98	cps
Antimony	121-1	17670289	17729660	17936275	17778741	0.79	cps
Arsenic	75-2	504528	503438	503518	503828	0.12	cps
Barium	135-1	21300815	21331182	21576046	21402681	0.71	cps
Barium	137-1	35630908	36297326	36333987	36087407	1.10	cps
Beryllium	9-1	4534663	4480979	4466434	4494026	0.80	cps
Bismuth	209-1	5282459	5315450	5294322	5297410	0.32	cps
Bismuth	209-2	2840490	2864242	2828663	2844465	0.64	cps
Bromine	81-1	32307	33854	35097	33753	4.14	cps
Cadmium	108-1	364045	360593	358960	361199	0.72	cps
Cadmium	106-1	512225	520296	523268	518596	1.10	cps
Cadmium	111-1	4471350	4567211	4593460	4544007	1.41	cps
Calcium	43-1	30824286	30696552	30288270	30603036	0.91	cps
Calcium	44-1	496489993	503411046	500560806	500153948	0.70	cps
Carbon	12-1	6778276	6762426	6755901	6765534	0.17	cps
Carbon	12-2	58616	58600	59349	58855	0.73	cps
Chlorine	35-1	655180	650698	646104	650660	0.70	cps
Chlorine	35-2	3941	3524	3477	3647	7.00	cps
Chromium	52-2	5262449	5244935	5287470	5264951	0.41	cps
Cobalt	59-2	8934105	9075833	9079484	9029807	0.92	cps
Copper	63-2	70951234	71985162	71785141	71573846	0.77	cps
Dysprosium	156-1	903	1027	903	944	7.54	cps
Dysprosium	156-2	233	290	287	270	11.78	cps
Erbium	164-1	797	860	793	817	4.60	cps
Erbium	164-2	343	340	360	348	3.08	cps
Gadolinium	160-1	720	750	637	702	8.36	cps
Gadolinium	160-2	307	397	307	337	15.44	cps
Holmium	165-1	9956622	9897502	9890927	9915017	0.36	cps
Holmium	165-2	4432300	4520335	4573478	4508704	1.58	cps
Indium	115-1	8602517	8756305	8702454	8687092	0.90	cps
Indium	115-2	1120172	1124367	1126945	1123828	0.30	cps
Iron	54-2	51385013	51979189	51875971	51746724	0.61	cps
Iron	56-2	946478279	932911906	953500146	944296777	1.11	cps
Iron	57-2	23641160	24034668	23673375	23783068	0.92	cps
Krypton	83-1	463	437	483	461	5.08	cps
Lead	206-1	53726883	54575368	54075211	54125820	0.79	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : CCV03 Instrumnet Name : P8
Client Sample ID : CCV03 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:52:40 DataFile Name : 057CCV.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	46687343	46588899	46453324	46576522	0.25	cps
Lead	208-1	213432357	215675255	214315647	214474420	0.53	cps
Lithium	6-1	3255478	3252014	3263752	3257081	0.19	cps
Magnesium	24-2	144796101	144402421	145461588	144886703	0.37	cps
Manganese	55-2	25208532	25317070	25517492	25347698	0.62	cps
Molybdenum	94-1	66005197	66834479	66056826	66298834	0.70	cps
Molybdenum	95-1	95795569	95096172	94786265	95226002	0.54	cps
Molybdenum	96-1	103258228	103597442	103707738	103521136	0.23	cps
Molybdenum	97-1	57468091	58583357	57391404	57814284	1.15	cps
Molybdenum	98-1	151192694	154280921	150769394	152081003	1.26	cps
Neodymium	150-1	1717	1613	1730	1687	3.79	cps
Neodymium	150-2	200	193	207	200	3.33	cps
Nickel	60-2	2469153	2509517	2472942	2483871	0.90	cps
Phosphorus	31-2	92576	93388	93381	93115	0.50	cps
Potassium	39-2	63806612	64475664	64306089	64196122	0.54	cps
Rhodium	103-1	8009625	8185623	8131244	8108831	1.11	cps
Rhodium	103-2	3833219	3821685	3806142	3820349	0.36	cps
Scandium	45-1	6534028	6488948	6534337	6519104	0.40	cps
Scandium	45-2	180366	180728	179460	180185	0.36	cps
Selenium	82-1	275117	279297	278392	277602	0.79	cps
Selenium	77-2	7025	7149	7169	7114	1.09	cps
Selenium	78-2	24498	24545	24084	24376	1.04	cps
Silicon	28-1	73392806	73215177	73651882	73419955	0.30	cps
Silver	107-1	22404247	22206316	22199735	22270099	0.52	cps
Silver	109-1	20999855	20793257	21003678	20932263	0.58	cps
Sodium	23-2	297837729	296795342	297475316	297369462	0.18	cps
Strontium	86-1	6126384	6113065	6136183	6125211	0.19	cps
Strontium	88-1	53387173	53275614	53574364	53412384	0.28	cps
Sulfur	34-1	2396852	2336606	2343319	2358926	1.40	cps
Terbium	159-1	10475326	10573730	10508218	10519091	0.48	cps
Terbium	159-2	4424072	4363888	4382283	4390081	0.70	cps
Thallium	203-1	13442655	13761566	13693624	13632615	1.23	cps
Thallium	205-1	31845440	32555582	32462750	32287924	1.20	cps
Tin	118-1	14079305	14033641	14297257	14136735	1.00	cps
Titanium	47-1	27733499	27542348	27798303	27691383	0.48	cps
Uranium	238-1	39853427	40504061	40064314	40140601	0.83	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : CCV03 Instrumnet Name : P8
Client Sample ID : CCV03 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 17:52:40 DataFile Name : 057CCV.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	4042608	4114319	4062861	4073263	0.91	cps
Ytterbium	172-1	1223	1233	1130	1196	4.77	cps
Ytterbium	172-2	613	573	577	588	3.78	cps
Ytterbium	176-1	71167	70443	70902	70838	0.52	cps
Ytterbium	176-2	30405	29901	30258	30188	0.86	cps
Yttrium	89-1	17182790	17117578	17246785	17182384	0.38	cps
Yttrium	89-2	1754203	1757745	1778474	1763474	0.74	cps
Zinc	66-2	8798651	8853519	8888810	8846993	0.51	cps
Zirconium	90-1	33998466	33885945	33719536	33867982	0.41	cps
Zirconium	91-1	7546656	7462719	7544393	7517923	0.64	cps

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LB Number : LB135293 Operator : Jaswal
Lab Sample ID : CCB03 Instrumnet Name : P8
Client Sample ID : CCB03 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 18:41:55 DataFile Name : 060CCBE.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	417	377	370	388	6.51	cps
Antimony	121-1	280	280	257	272	4.95	cps
Arsenic	75-2	50	63	140	84	57.52	cps
Barium	135-1	1437	1357	1197	1330	9.19	cps
Barium	137-1	2120	2134	2097	2117	0.88	cps
Beryllium	9-1	2604	2546	2263	2471	7.38	cps
Bismuth	209-1	6996619	6967947	6965816	6976794	0.25	cps
Bismuth	209-2	3363551	3383598	3388821	3378657	0.39	cps
Bromine	81-1	29895	30279	29608	29928	1.13	cps
Cadmium	108-1	63	57	40	53	22.53	cps
Cadmium	106-1	7369	7225	7245	7280	1.07	cps
Cadmium	111-1	5844	5598	5620	5687	2.39	cps
Calcium	43-1	2227	2124	1970	2107	6.13	cps
Calcium	44-1	56464	56357	55852	56224	0.58	cps
Carbon	12-1	5718006	5711753	5523405	5651055	1.96	cps
Carbon	12-2	38357	36997	37404	37586	1.86	cps
Chlorine	35-1	334959	329260	331704	331975	0.86	cps
Chlorine	35-2	1590	1543	1530	1555	2.03	cps
Chromium	52-2	2614	2390	2274	2426	7.12	cps
Cobalt	59-2	2074	1820	1773	1889	8.55	cps
Copper	63-2	5828	6452	5931	6070	5.51	cps
Dysprosium	156-1	120	127	137	128	6.57	cps
Dysprosium	156-2	10	10	10	10	0.00	cps
Erbium	164-1	120	73	83	92	26.65	cps
Erbium	164-2	33	23	23	27	21.65	cps
Gadolinium	160-1	83	93	93	90	6.42	cps
Gadolinium	160-2	37	17	20	24	43.83	cps
Holmium	165-1	11665623	11919920	11987525	11857689	1.43	cps
Holmium	165-2	4697035	4716356	4697626	4703672	0.23	cps
Indium	115-1	10782066	10951891	10997447	10910468	1.04	cps
Indium	115-2	1234572	1231178	1231389	1232380	0.15	cps
Iron	54-2	1833	1900	1833	1856	2.07	cps
Iron	56-2	25660	25269	25857	25595	1.17	cps
Iron	57-2	653	523	580	586	11.13	cps
Krypton	83-1	467	380	423	423	10.24	cps
Lead	206-1	4768	4417	4711	4632	4.06	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : CCB03 Instrumnet Name : P8
Client Sample ID : CCB03 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 18:41:55 DataFile Name : 060CCBE.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	3901	3877	3737	3838	2.30	cps
Lead	208-1	18539	17658	17568	17922	2.99	cps
Lithium	6-1	3774688	3877061	3852491	3834747	1.39	cps
Magnesium	24-2	647	667	700	671	4.01	cps
Manganese	55-2	6318	6315	6502	6378	1.68	cps
Molybdenum	94-1	1923	1910	2140	1991	6.49	cps
Molybdenum	95-1	1873	1580	1660	1705	8.90	cps
Molybdenum	96-1	2130	2054	1760	1981	9.86	cps
Molybdenum	97-1	1023	1103	1043	1057	3.94	cps
Molybdenum	98-1	2714	2714	2560	2663	3.33	cps
Neodymium	150-1	17	30	13	20	44.10	cps
Neodymium	150-2	3	3	3	3	0.00	cps
Nickel	60-2	1777	1823	1803	1801	1.30	cps
Phosphorus	31-2	143	170	117	143	18.60	cps
Potassium	39-2	27379	28081	28228	27896	1.63	cps
Rhodium	103-1	10252480	10240314	10504007	10332267	1.44	cps
Rhodium	103-2	4487912	4433706	4493740	4471786	0.74	cps
Scandium	45-1	7286709	7234725	7311818	7277751	0.54	cps
Scandium	45-2	166963	164283	168950	166732	1.40	cps
Selenium	82-1	7	90	10	36	132.69	cps
Selenium	77-2	3	3	0	2	86.60	cps
Selenium	78-2	40	23	37	33	26.47	cps
Silicon	28-1	730619	730701	734446	731922	0.30	cps
Silver	107-1	327	233	230	263	20.84	cps
Silver	109-1	217	183	187	196	9.39	cps
Sodium	23-2	79991	80973	80192	80385	0.65	cps
Strontium	86-1	727	817	803	782	6.21	cps
Strontium	88-1	1150	1037	997	1061	7.50	cps
Sulfur	34-1	953730	956912	980809	963817	1.54	cps
Terbium	159-1	12150657	12403459	12256949	12270355	1.03	cps
Terbium	159-2	4618255	4738750	4727874	4694960	1.42	cps
Thallium	203-1	2070	2054	1860	1995	5.85	cps
Thallium	205-1	4931	4688	4724	4781	2.74	cps
Tin	118-1	5354	5341	5848	5515	5.24	cps
Titanium	47-1	447	493	450	463	5.62	cps
Uranium	238-1	11572	11002	10454	11009	5.08	cps

LB Number : LB135293 Operator : Jaswal
Lab Sample ID : CCB03 Instrumnet Name : P8
Client Sample ID : CCB03 Dilution Factor : 1
Date & Time Acquired : 2025-04-03 18:41:55 DataFile Name : 060CCBE.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	420	383	413	406	4.82	cps
Ytterbium	172-1	63	83	87	78	16.23	cps
Ytterbium	172-2	33	30	37	33	10.01	cps
Ytterbium	176-1	1637	1467	1463	1522	6.51	cps
Ytterbium	176-2	310	330	317	319	3.19	cps
Yttrium	89-1	20054406	19846269	19667671	19856115	0.97	cps
Yttrium	89-2	1712573	1728112	1731022	1723902	0.58	cps
Zinc	66-2	3300	3314	3417	3344	1.91	cps
Zirconium	90-1	2364	2537	2490	2464	3.64	cps
Zirconium	91-1	603	553	513	557	8.10	cps

SOP ID : M3010A-Digestion-17

SDG No : N/A

Matrix : WATER

Pipette ID : ICP A

Balance ID : N/A

Filter paper ID : N/A

pH Strip ID : M6069

Hood ID : #3

Block ID: 1. HOT BLOCK #1

2. N/A

Start Digest Date: 04/03/2025 Time : 09:15 Temp : 96 °C

End Digest Date: 04/03/2025 Time : 11:20 Temp : 96 °C

Digestion tube ID: M5595

Block thermometer ID: MET-DIG. #1

Dig Technician Signature: *SKS*

Supervisor Signature: *SO*

Temp : 1. 96°C 2. N/A

Standard Name	MLS USED	STD REF. # FROM LOG
Spike Sol 1	0.50	MP85065
Spike Sol 2	1.00	MP85066
Spike Sol 3	1.00	MP85067
Spike Sol 4	1.00	MP85068
N/A	N/A	N/A

Chemical Used	ML/SAMPLE USED	Lot Number
Conc. HNO3	3.00	M6158
1:1 HCL	5.00	MP84720
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

Extraction Conformance/Non-Conformance Comments:

HOT BLOCK#1 CELL#50 96C

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
04/03/25 12:20	<i>SKS met.dig</i>	<i>SKS (metals lab)</i>
	Preparation Group	Analysis Group

Lab Sample ID	Client Sample ID	pH	Initial Vol (ml)	Final Vol (ml)	Color Before	Color After	Clarity Before	Clarity After	Comment	Prep Pos
PB167437BL	PBW437	<2	50	50	Colorless	Colorless	Clear	Clear	N/A	9
PB167437BS	LCS437	<2	50	50	Colorless	Colorless	Clear	Clear	MP85065,MP85066,MP85067,N	10
Q1697-01	MW-19B-72-040125	<2	50	50	Colorless	Colorless	Clear	Clear	N/A	11
Q1697-02	IW-01-55-040125	<2	50	50	Colorless	Colorless	Clear	Clear	N/A	12
Q1697-03	IW-02-55-040125	<2	50	50	Colorless	Colorless	Clear	Clear	N/A	13
Q1697-04	IW-02-55-040125-FD	<2	50	50	Colorless	Colorless	Clear	Clear	N/A	14
Q1697-04MS	IW-02-55-040125-FDMS	<2	50	50	Colorless	Colorless	Clear	Clear	MP85065,MP85066,MP85067,N	24
Q1697-04MSD	IW-02-55-040125-FDMSD	<2	50	50	Colorless	Colorless	Clear	Clear	MP85065,MP85066,MP85067,N	25
Q1697-04DUP	IW-02-55-040125-FDDUP	<2	50	50	Colorless	Colorless	Clear	Clear	N/A	23
Q1697-05	IW-03-55-040125	<2	50	50	Brown	Light Brown	Clear	Clear	N/A	15
Q1697-13	MW-19B-72-040125	<2	50	50	Colorless	Colorless	Clear	Clear	N/A	16
Q1697-14	IW-01-55-040125	<2	50	50	Colorless	Colorless	Clear	Clear	N/A	17
Q1697-15	IW-02-55-040125	<2	50	50	Colorless	Colorless	Clear	Clear	N/A	18
Q1697-16	IW-02-55-040125-FD	<2	50	50	Colorless	Colorless	Clear	Clear	N/A	19
Q1697-17	IW-03-55-040125	<2	50	50	Brown	Light Brown	Clear	Clear	N/A	20
Q1700-01	32725	<2	50	50	Brown	Light Brown	Clear	Clear	N/A	21
Q1700-02	32525	<2	50	50	Brown	Light Brown	Clear	Clear	N/A	22

WORKLIST(Hardcopy Internal Chain)

Worklist Name : PB167437 Worklist ID : 188701 Department : Digestion Date : 04-03-2025 08:28:25

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q1697-01	MW-19B-72-040125	Water	Metals Group4	1:1 HNO3 to pH < 2	JACO05	I31	04/01/2025	6020B
Q1697-02	IW-01-55-040125	Water	Metals Group4	1:1 HNO3 to pH < 2	JACO05	I31	04/01/2025	6020B
Q1697-03	IW-02-55-040125	Water	Metals Group4	1:1 HNO3 to pH < 2	JACO05	I31	04/01/2025	6020B
Q1697-04	IW-02-55-040125-FD	Water	Metals Group4	1:1 HNO3 to pH < 2	JACO05	I31	04/01/2025	6020B
Q1697-05	IW-03-55-040125	Water	Metals Group4	1:1 HNO3 to pH < 2	JACO05	I31	04/01/2025	6020B
Q1697-13	MW-19B-72-040125	Water	Dissolved ICP-Group2	1:1 HNO3 to pH < 2	JACO05	I31	04/01/2025	6020B
Q1697-14	IW-01-55-040125	Water	Dissolved ICP-Group2	1:1 HNO3 to pH < 2	JACO05	I31	04/01/2025	6020B
Q1697-15	IW-02-55-040125	Water	Dissolved ICP-Group2	1:1 HNO3 to pH < 2	JACO05	I31	04/01/2025	6020B
Q1697-16	IW-02-55-040125-FD	Water	Dissolved ICP-Group2	1:1 HNO3 to pH < 2	JACO05	I31	04/01/2025	6020B
Q1697-17	IW-03-55-040125	Water	Dissolved ICP-Group2	1:1 HNO3 to pH < 2	JACO05	I31	04/01/2025	6020B
Q1700-01	32725	Water	Metals ICP-TAL	1:1 HNO3 to pH < 2	PSEG03	I31	04/02/2025	6020B
Q1700-02	32525	Water	Metals ICP-TAL	1:1 HNO3 to pH < 2	PSEG03	I31	04/02/2025	6020B

Date/Time 04/03/25 08:45

Raw Sample Received by: S123.methd19

Raw Sample Relinquished by: S123.methd19

Date/Time 04/03/25 09:45

Raw Sample Received by: S123.methd19

Raw Sample Relinquished by: S123.methd19

Instrument ID: P8

Daily Analysis Runlog For Sequence/QC Batch ID # LB135293

Review By	jaswal	Review On	4/4/2025 8:31:38 AM
Supervise By	kareem	Supervise On	4/8/2025 1:44:56 PM
STD. NAME	STD REF.#		
ICAL Standard	MP84981,MP84989,MP84988,MP84986,MP84985,MP84984,MP84983,MP84980,MP84982		
ICV Standard	MP84990		
CCV Standard	MP84992		
ICSA Standard	MP84993,MP84996		
CRI Standard	MP84988		
LCS Standard			
Chk Standard	MP84998,MP84999		

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	TUNE	TUNE	TUNE	04/03/25 13:44		Jaswal	OK
2	S0	S0	CAL1	04/03/25 14:15		Jaswal	OK
3	S2	S2	CAL3	04/03/25 14:22		Jaswal	OK
4	S3	S3	CAL4	04/03/25 14:25		Jaswal	OK
5	S4	S4	CAL5	04/03/25 14:28		Jaswal	OK
6	S5	S5	CAL6	04/03/25 14:31		Jaswal	OK
7	S6	S6	CAL7	04/03/25 14:34		Jaswal	OK
8	S7	S7	CAL8	04/03/25 14:37		Jaswal	OK
9	S8	S8	CAL9	04/03/25 14:40		Jaswal	OK
10	ICV01	ICV01	ICV	04/03/25 15:26		Jaswal	OK
11	LLICV	LLICV	LLICV	04/03/25 15:50		Jaswal	OK
12	ICB01	ICB01	ICB	04/03/25 15:55		Jaswal	OK
13	ICSA01	ICSA01	ICSA	04/03/25 16:03		Jaswal	OK
14	ICSAB01	ICSAB01	ICSAB	04/03/25 16:20		Jaswal	OK
15	CCV01	CCV01	CCV	04/03/25 16:35		Jaswal	OK
16	CCB01	CCB01	CCB	04/03/25 16:38		Jaswal	OK
17	CRI	CRI	CRDL	04/03/25 16:41		Jaswal	OK
18	PB167437BL	PB167437BL	MB	04/03/25 16:45		Jaswal	OK

Instrument ID: P8

Daily Analysis Runlog For Sequence/QC Batch ID # LB135293

Review By	jaswal	Review On	4/4/2025 8:31:38 AM
Supervise By	kareem	Supervise On	4/8/2025 1:44:56 PM
STD. NAME	STD REF.#		
ICAL Standard	MP84981,MP84989,MP84988,MP84986,MP84985,MP84984,MP84983,MP84980,MP84982		
ICV Standard	MP84990		
CCV Standard	MP84992		
ICSA Standard	MP84993,MP84996		
CRI Standard	MP84988		
LCS Standard			
Chk Standard	MP84998,MP84999		

19	PB167437BS	PB167437BS	LCS	04/03/25 16:48		Jaswal	OK
20	Q1697-01	MW-19B-72-040125	SAM	04/03/25 16:52		Jaswal	OK
21	Q1697-02	IW-01-55-040125	SAM	04/03/25 16:56		Jaswal	OK
22	Q1697-03	IW-02-55-040125	SAM	04/03/25 16:59		Jaswal	OK
23	Q1697-04	IW-02-55-040125-FD	SAM	04/03/25 17:02		Jaswal	OK
24	Q1697-04DUP	IW-02-55-040125-FDI	DUP	04/03/25 17:05		Jaswal	OK
25	Q1697-04L	IW-02-55-040125-FDI	SD	04/03/25 17:08		Jaswal	OK
26	Q1697-04MS	IW-02-55-040125-FDI	MS	04/03/25 17:12		Jaswal	OK
27	CCV02	CCV02	CCV	04/03/25 17:16		Jaswal	OK
28	CCB02	CCB02	CCB	04/03/25 17:20		Jaswal	OK
29	Q1697-04MSD	IW-02-55-040125-FDI	MSD	04/03/25 17:23		Jaswal	OK
30	Q1697-04A	IW-02-55-040125-FDI	PS	04/03/25 17:26	0.1ml each mp85065,mp85069,0.2ml each mp85066,mp85067,mp850 68-10ml sample)	Jaswal	OK
31	Q1697-05	IW-03-55-040125	SAM	04/03/25 17:29		Jaswal	OK
32	Q1697-13	MW-19B-72-040125	SAM	04/03/25 17:32		Jaswal	OK
33	Q1697-14	IW-01-55-040125	SAM	04/03/25 17:35		Jaswal	OK
34	Q1697-15	IW-02-55-040125	SAM	04/03/25 17:38		Jaswal	OK
35	Q1697-16	IW-02-55-040125-FD	SAM	04/03/25 17:42		Jaswal	OK
36	Q1697-17	IW-03-55-040125	SAM	04/03/25 17:45		Jaswal	OK

Instrument ID: P8

Daily Analysis Runlog For Sequence/QC Batch ID # LB135293

Review By	jaswal	Review On	4/4/2025 8:31:38 AM
Supervise By	kareem	Supervise On	4/8/2025 1:44:56 PM

STD. NAME	STD REF.#
ICAL Standard	MP84981,MP84989,MP84988,MP84986,MP84985,MP84984,MP84983,MP84980,MP84982
ICV Standard	MP84990
CCV Standard	MP84992
ICSA Standard	MP84993,MP84996
CRI Standard	MP84988
LCS Standard	
Chk Standard	MP84998,MP84999

37	CCV03	CCV03	CCV	04/03/25 17:52		Jaswal	OK
38	CCB03	CCB03	CCB	04/03/25 18:41		Jaswal	OK

Prep Standard - Chemical Standard Summary

Order ID : Q1697
Test : Dissolved ICP-Group2, Metals Group4
Prepbatch ID : PB167437,
Sequence ID/Qc Batch ID: LB135293, LB135293

Standard ID :
 MP84720, MP84980, MP84981, MP84982, MP84983, MP84984, MP84985, MP84986, MP84987, MP84988, MP84989, MP84990, MP84992, MP84993, MP84996, MP84997, MP84998, MP84999, MP85065, MP85066, MP85067, MP85068,

Chemical ID :
 M4888, M5305, M5472, M5519, M5520, M5545, M5658, M5739, M5751, M5798, M5799, M5800, M5801, M5811, M5815, M5817, M5873, M5874, M5942, M5961, M5962, M5977, M5981, M5983, M6019, M6020, M6021, M6023, M6025, M6026, M6028, M6030, M6032, M6055, M6058, M6079, M6086, M6127, M6128, M6137, M6144, M6145, M6146, M6150, M6151, M6153, M6156, M6158, M6159, W3112,

Metals STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
170	1:1HCL	MP84720	03/03/2025	04/04/2025	Sagar Kanani	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 03/03/2025

FROM 1000.00000ml of M6151 + 1000.00000ml 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>
3947	S7(SFAM,6020,200.8)	MP84980	03/24/2025	04/14/2025	Janvi Patel	None	METALS_PIPETTE_3 (A)	Sarabjit Jaswal 04/07/2025

FROM 1.00000ml of M5799 + 1.00000ml of M5981 + 1.00000ml of M6079 + 1.00000ml of M6137 + 1.00000ml of M6153 + 1.90000ml of M6159 + 10.00000ml of M5942 + 10.00000ml of M5977 + 10.00000ml of M6158 + 2.00000ml of M5815 + 2.00000ml of M5817 + 4.00000ml of M6025 + 4.00000ml of M6032 + 4.90000ml of M5519 + 4.90000ml of M5811 + 5.00000ml of M6151 + 50.00000ml of M5305 + 829.60000ml of W3112 + 9.00000ml of M5751 + 9.00000ml of M6128 + 9.00000ml of M6145 + 9.90000ml of M6086 + 9.90000ml of M6127 + 9.90000ml of M6144 = Final Quantity: 1000.000 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>
1122	ICPMS CALIB BLANK(S0/ICB/CCB)	MP84981	03/24/2025	04/14/2025	Janvi Patel	None	METALS_PIP ETTE_3 (A)	Sarabjit Jaswal 04/07/2025

FROM 25.00000ml of M6151 + 4925.00000ml of W3112 + 50.00000ml of M6158 = Final Quantity: 5000.000 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>
2902	S8 ICPMS	MP84982	03/24/2025	04/14/2025	Janvi Patel	None	METALS_PIP ETTE_3 (A)	Sarabjit Jaswal 04/07/2025

FROM 1.00000ml of M6159 + 2.50000ml of M5520 + 2.50000ml of M5811 + 5.00000ml of M6086 + 5.00000ml of M6127 + 5.00000ml of M6144 + 79.00000ml of MP84981 = 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>
3948	S6(SFAM,6020,200.8)	MP84983	03/24/2025	04/14/2025	Janvi Patel	None	METALS_PIPETTE_3 (A)	Sarabjit Jaswal 04/07/2025

FROM 0.50000ml of M6151 + 1.00000ml of M6158 + 48.50000ml of W3112 + 50.00000ml of MP84980 = 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>
3949	S5(SFAM,6020,200.8)	MP84984	03/24/2025	04/14/2025	Janvi Patel	None	METALS_PIPETTE_3 (A)	Sarabjit Jaswal 04/07/2025

FROM 0.50000ml of M6151 + 1.00000ml of M6158 + 73.50000ml of W3112 + 25.00000ml of MP84980 = 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>
3954	S4(SFAM,6020,200.8)	MP84985	03/25/2025	04/14/2025	Janvi Patel	None	METALS_PIPETTE_3 (A)	Sarabjit Jaswal 04/07/2025

FROM 0.50000ml of M6151 + 1.00000ml of M6158 + 86.00000ml of W3112 + 12.50000ml of MP84980 = 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>
3951	S3(SFAM, 6020,200.8)	MP84986	03/24/2025	04/14/2025	Janvi Patel	None	METALS_PIPETTE_3 (A)	Sarabjit Jaswal 04/07/2025

FROM 0.50000ml of M6151 + 1.00000ml of M6158 + 88.50000ml of W3112 + 10.00000ml of MP84983 = 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>
3955	S2CONC(SFAM,6020,200.8)	MP84987	03/24/2025	04/14/2025	Janvi Patel	None	METALS_PIPETTE_3 (A)	Sarabjit Jaswal 04/07/2025

FROM 0.00500ml of M6153 + 0.05000ml of M5798 + 0.05000ml of M5800 + 0.05000ml of M5801 + 0.05000ml of M5961 + 0.05000ml of M5981 + 0.05000ml of M6023 + 0.05000ml of M6025 + 0.05000ml of M6028 + 0.05000ml of M6030 + 0.05000ml of M6079 + 0.05000ml of M6128 + 0.10000ml of M5658 + 0.10000ml of M5751 + 0.10000ml of M6146 + 0.10000ml of M6159 + 0.25000ml of M5799 + 0.25000ml of M5811 + 0.25000ml of M5942 + 0.25000ml of M5962 + 0.25000ml of M5977 + 0.25000ml of M6021 + 0.25000ml of M6145 + 0.50000ml of M6032 + 0.50000ml of M6137 + 1.25000ml of M5815 + 1.25000ml of M5817 + 1.25000ml of M6151 + 2.50000ml of M5520 + 2.50000ml of M6086 + 2.50000ml of M6127 + 2.50000ml of M6144 + 2.50000ml of M6158 + 230.04500ml 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>
3956	S2(SFAM,6020,200.8)	MP84988	03/24/2025	04/14/2025	Janvi Patel	None	METALS_PIPETTE_3 (A)	Sarabjit Jaswal 04/07/2025

FROM 0.50000ml of M6151 + 1.00000ml of M6158 + 98.00000ml of W3112 + 0.50000ml of MP84987 = 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>
3957	S1(SFAM,6020,200.8)	MP84989	03/24/2025	04/14/2025	Janvi Patel	None	METALS_PIPETTE_3 (A)	Sarabjit Jaswal 04/07/2025

FROM 0.50000ml of M6151 + 1.00000ml of M6158 + 88.50000ml of W3112 + 10.00000ml of MP84988 = 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>
3959	ICV(6020,200.8)	MP84990	03/24/2025	04/14/2025	Janvi Patel	None	METALS_PIPETTE_3 (A)	Sarabjit Jaswal 04/07/2025

FROM 0.05000ml of M5983 + 0.05000ml of M6019 + 0.05000ml of M6020 + 0.05000ml of M6058 + 0.45000ml of M5545 + 0.45000ml of M6156 + 2.00000ml of M6150 + 96.90000ml of MP84981 = 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>
3961	CCV	MP84992	03/24/2025	04/14/2025	Janvi Patel	None	METALS_PIPETTE_3 (A)	Sarabjit Jaswal 04/07/2025

FROM 0.20000ml of M6026 + 0.50000ml of M5799 + 0.50000ml of M5981 + 0.50000ml of M6079 + 0.50000ml of M6137 + 1.00000ml of M5815 + 1.00000ml of M5817 + 1.25000ml of M6153 + 10.00000ml of M6158 + 12.45000ml of M5520 + 12.45000ml of M5811 + 2.00000ml of M6032 + 24.95000ml of M6086 + 24.95000ml of M6127 + 24.95000ml of M6144 + 25.00000ml of M5305 + 4.50000ml of M5751 + 4.50000ml of M6128 + 4.50000ml of M6145 + 4.95000ml of M6159 + 5.00000ml of M6151 + 5.50000ml of M5942 + 5.50000ml of M5977 + 823.35000ml of W3112 = Final Quantity: 1000.000 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>
1142	ICSA ICPMS	MP84993	03/24/2025	04/14/2025	Janvi Patel	None	METALS_PIPETTE_3 (A)	Sarabjit Jaswal 04/07/2025

FROM 10.00000ml of M5873 + 90.00000ml of MP84981 = 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>
1143	ICSAB ICPMS	MP84996	03/25/2025	04/14/2025	Janvi Patel	None	METALS_PIPETTE_3 (A)	Sarabjit Jaswal 04/07/2025

FROM 0.00500ml of M5983 + 0.00500ml of M6019 + 0.00500ml of M6020 + 0.00500ml of M6058 + 10.00000ml of M5873 + 10.00000ml of M5874 + 79.98000ml of MP84981 = 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>
3962	MG 10PPM FOR TUNE	MP84997	03/24/2025	04/14/2025	Janvi Patel	None	METALS_PIPETTE_3 (A)	Sarabjit Jaswal 04/07/2025

FROM 0.01000ml of M6127 + 9.99000ml of MP84981 = 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>
3894	TUNE 200PPB	MP84998	03/24/2025	04/14/2025	Janvi Patel	None	METALS_PIPETTE_3 (A)	Sarabjit Jaswal 04/07/2025

FROM 2.00000ml of M6055 + 2.00000ml of MP84997 + 96.00000ml of MP84981 = 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>
3903	ISS 3PPM	MP84999	03/24/2025	04/14/2025	Janvi Patel	None	METALS_PIPETTE_3 (A)	Sarabjit Jaswal 04/07/2025

FROM 5.00000ml of M6158 + 75.00000ml of M5739 + 170.00000ml of MP84981 = 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>
3880	M&B SPIKE-1	MP85065	03/24/2025	04/14/2025	Janvi Patel	None	METALS_PIPETTE_3 (A)	Sarabjit Jaswal 04/07/2025

FROM 5.00000ml of M5472 + 5.00000ml of M5658 + 5.00000ml of M5798 + 5.00000ml of M5800 + 5.00000ml of M5961 + 5.00000ml of M5962 + 5.00000ml of M5981 + 5.00000ml of M6021 + 5.00000ml of M6023 + 5.00000ml of M6028 + 5.00000ml of M6030 + 5.00000ml of M6079 + 5.00000ml of M6146 + 35.00000ml of MP84981 = 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>
3881	M&B SPIKE-2	MP85066	03/24/2025	04/14/2025	Janvi Patel	None	METALS_PIPETTE_3 (A)	Sarabjit Jaswal 04/07/2025

FROM 10.00000ml of M4888 + 10.00000ml of M5977 + 12.50000ml of M5520 + 12.50000ml of M5811 + 12.50000ml of M6032 + 2.50000ml of M5799 + 2.50000ml of M6137 + 5.00000ml of M6159 + 32.50000ml of MP84981 = 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>
3882	M&B SPIKE-3	MP85067	03/24/2025	04/14/2025	Janvi Patel	None	METALS_PIPETTE_3 (A)	Sarabjit Jaswal 04/07/2025

FROM 0.62500ml of M6026 + 12.50000ml of M5751 + 12.50000ml of M6128 + 12.50000ml of M6145 + 11.87500ml of MP84981 =
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>
3900	M&B SPIKE-4	MP85068	03/24/2025	04/14/2025	Janvi Patel	None	METALS_PIPETTE_3 (A)	Sarabjit Jaswal 04/07/2025

FROM 6.25000ml of M6086 + 6.25000ml of M6127 + 6.25000ml of M6144 + 6.25000ml of MP84981 = Final Quantity: 25.000 ml

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57022 / Ti, 1000 PPM, 125 ml	070721	09/27/2025	08/06/2021 / jaswal	08/05/2021 / jaswal	M4888

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	6020CAL-1 / Calibration Standard Method 6020	S2-MEB711244	10/20/2026	03/07/2025 / JANVI	04/01/2022 / jaswal	M5305

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57038 / Sr, 1000 PPM, 125 ml	082922	08/29/2025	01/14/2025 / Jaswal	03/16/2023 / jaswal	M5472

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57119 / Potassium (K) 10,000PPM	120822	12/08/2025	01/08/2024 / bin	03/17/2023 / bin	M5519

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57119 / Potassium (K) 10,000PPM	120822	12/08/2025	08/01/2024 / Jaswal	03/17/2023 / bin	M5520

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57022 / Titanium (Ti) 1000PPM	050223	05/02/2026	05/08/2023 / jaswal	05/08/2023 / jaswal	M5545

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 #
Inorganic Ventures	6020ISS / 6020ISS, 10 ug/ml, Bi, Ho, In, 6Li, Rh, Sc, TB, Y	T2-MEB709511	09/03/2026	08/07/2024 / jaswal	04/11/2022 / jaswal	M5739

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58029 / Cu, 1000 PPM, 500 ml	071723	07/17/2026	10/01/2024 / Jaswal	08/25/2023 / jaswal	M5751

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57004 / Be, 1000 PPM, 125 ml	102523	10/25/2026	02/09/2024 / bin	02/09/2024 / bin	M5798

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57050 / Sn, 1000 PPM, 125 ml	071123	07/11/2026	02/09/2024 / bin	02/09/2024 / bin	M5799

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57027 / CO, 1000 PPM, 125 ml	091923	09/19/2026	05/31/2024 / bin	02/09/2024 / bin	M5800

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.	58126 / Fe, 10000 PPM, 500 ml	051523	05/15/2026	02/06/2025 / kareem	01/03/2024 / jaswal	M5811

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57115 / P, 10000 PPM, 125 ml	041723	04/17/2026	05/21/2024 / Jaswal	02/09/2024 / jaswal	M5815

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57116 / S, 10000 PPM, 125 ml	071123	07/11/2026	03/01/2024 / jaswal	02/09/2024 / jaswal	M5817

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
EPA	PART A / ICSA (ICPMS) STOCK SOLN	CP-MS ICSA-0803	04/30/2025	04/17/2024 / jaswal	07/14/2022 / jaswal	M5873

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
EPA	PART B / ICSB (ICPMS) STOCK SOLUTION	CP-MS ICSB-0803	04/30/2025	04/17/2024 / jaswal	07/14/2022 / jaswal	M5874

CHEMICAL RECEIPT LOG BOOK

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	06/17/2027	06/18/2024 / Jaswal	02/22/2024 / Jaswal	M5942

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	041124	04/11/2027	07/02/2024 / Jaswal	06/11/2024 / Jaswal	M5961

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 #
Inorganic Ventures	CGMO1-1 / MOLYBDENUM 125mL 1000ug/mL	T2-MO720876	07/17/2027	01/16/2025 / JANVI	02/22/2024 / Jaswal	M5977

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57092 / U, 1000 PPM, 125 ml	060724	06/07/2027	07/29/2024 / Jaswal	06/11/2024 / Jaswal	M5981

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57040 / Zr, 1000 PPM, 125 ml	071423	07/14/2026	07/29/2024 / Jaswal	06/11/2024 / Jaswal	M5983

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGSR1-1 / Strontium, 125 ml, 1000 PPM	U2-SR730227	03/03/2028	01/14/2025 / Jaswal	08/05/2024 / Jaswal	M6019

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGU1-1 / Uranium 1000 ug/ml	U2-U735194	04/03/2028	01/15/2025 / Jaswal	08/05/2024 / Jaswal	M6020

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.	57082 / Pb, 1000 PPM, 125 ml	061224	11/09/2026	08/05/2024 / Jaswal	08/05/2024 / Jaswal	M6025

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57182 / Pb, 10000 PPM, 125 ml	110923	11/09/2026	12/05/2024 / janvi	08/05/2024 / Jaswal	M6026

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57048 / Cd, 1000 PPM, 125 ml	070124	07/01/2027	08/05/2024 / kareem	08/05/2024 / Jaswal	M6028

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57047 / Ag, 1000 PPM, 125 ml	122823	12/28/2026	08/05/2024 / kareem	08/05/2024 / Jaswal	M6030

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	IV-STOCK-12 / ICP-MS TUNING SOLUTION, 125mL	U2-MEB734294	06/21/2028	08/21/2024 / Jaswal	08/19/2024 / Jaswal	M6055

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 #
Absolute Standards, Inc.	57040 / Zr, 1000 PPM, 125 ml	071423	07/14/2026	01/15/2025 / Jaswal	09/30/2024 / Jaswal	M6079

CHEMICAL RECEIPT LOG BOOK

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.	58112 / Mg, 10000 PPM, 500 ml	112124	11/21/2027	01/13/2025 / kareem	01/13/2025 / kareem	M6127

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGSI1-1 / SILICON 125mL 1000ug/mL	V2-SI744713	07/10/2029	01/14/2025 / Jaswal	10/03/2024 / Jaswal	M6137

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	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

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57051 / Sb, 1000 PPM, 125 ml	071724	07/17/2027	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 #
EPA	ICV-1 / ICV (ICP/ICPMS) STOCK SOLN	ICV1-1014	07/07/2025	02/07/2025 / JANVI	04/20/2021 / JANVI	M6150

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9530-33 / Hydrochloric Acid, Instra-Analyzed (cs/6x2.5L)	22G2862015	08/18/2025	02/18/2025 / Sagar	01/15/2025 / Sagar	M6151

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGSR10 / Strontium (SR), 125mL 10,000ppm	V2-SR754329	02/28/2026	02/28/2025 / JANVI	01/07/2025 / JANVI	M6153

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	032123	03/21/2026	11/06/2024 / JANVI	06/12/2024 / JANVI	M6156

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	03/25/2029	03/10/2025 / Eman	02/02/2025 / Sagar	M6158

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58113 / AI, 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	DIW / DI Water	Daily Lab-Certified	07/03/2029	07/03/2024 / lwona	07/03/2024 / lwona	W3112



M6032



CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

57056
010924
Barium (Ba)

Lot #
Solvent: Nitric Acid

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

0.058 Balance Uncertainty
Flask Uncertainty

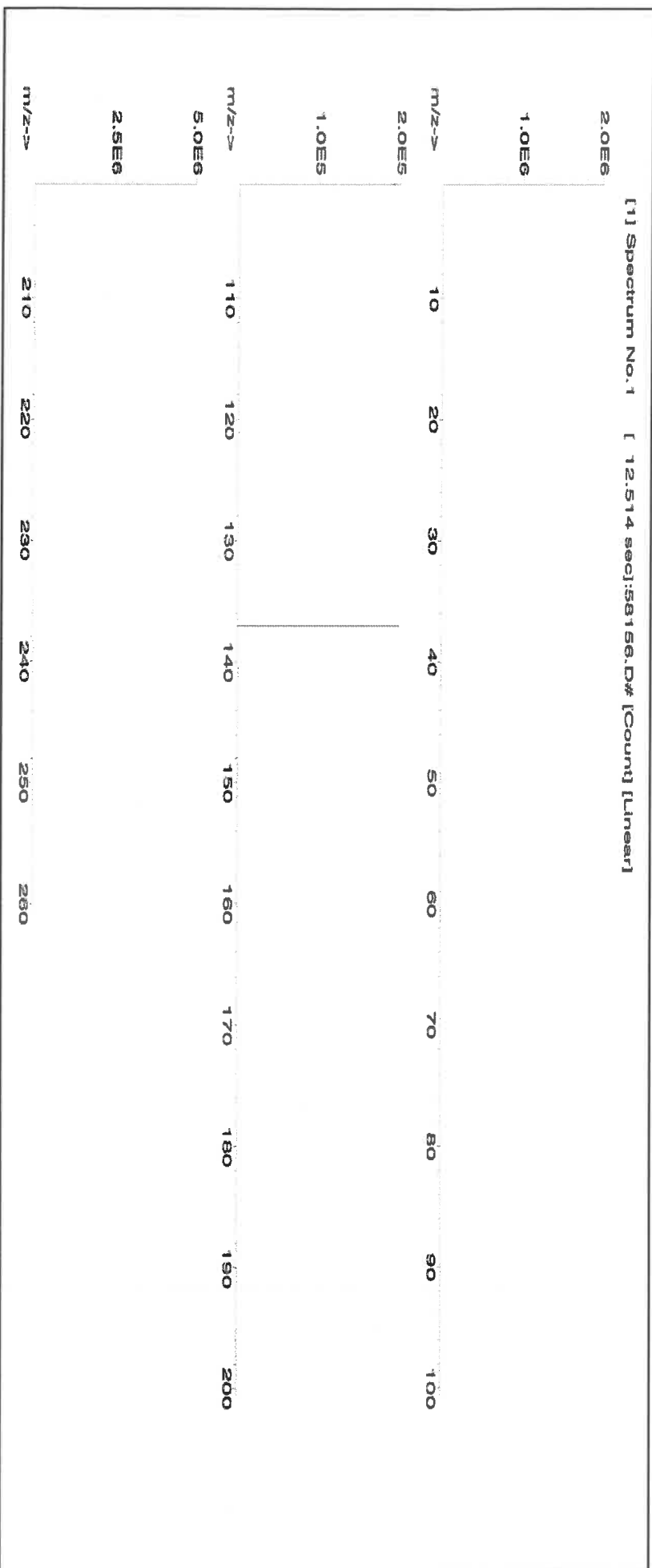
Giovanni Caporale	
Formulated By:	Giovanni Esposito
Reviewed By:	Pedro L. Renteria

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. Barium nitrate (Ba) IN023 BA0022019A1 1000 99.999 0.10 52.3 3.82417 3.82441 1000.1 2.0 10022-31-8 0.5 mg/m3 or-hat 355 mg/kg 3104a

[1] Spectrum No.1 [12.514 sec]:58156.D# [Count] [Linear]





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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	T	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

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



Certified Reference Material CRM



Rev'd 2/10/14/2021 M6085 / M6086 / M6087

CERTIFIED WEIGHT REPORT:

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

Solvent: 24002546 Nitric Acid

Lot #

2% 80.0 Nitric Acid (mL)

Expiration Date: 082327

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): 10000

NIST Test Number: 6UTB

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

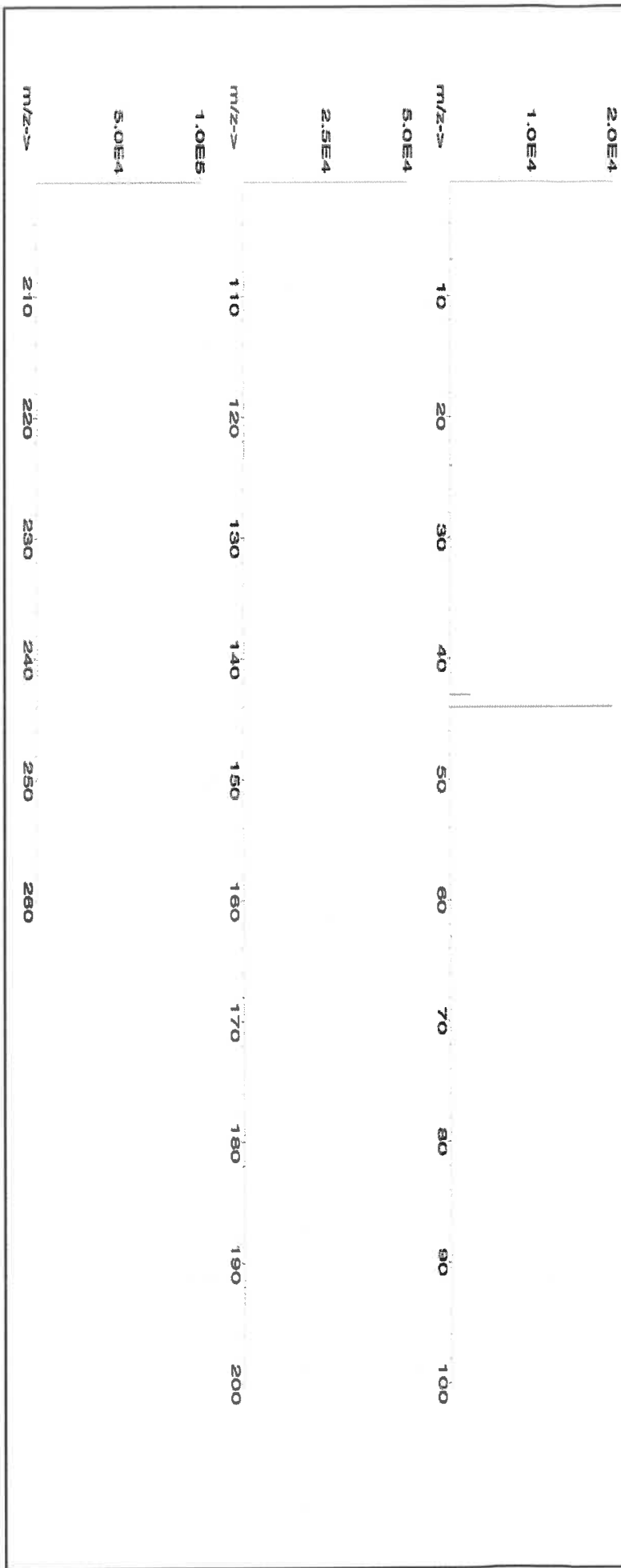
<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
Reviewed By:	Pedro L. Rentas
	082324

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-rat >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).



M6028



CERTIFIED WEIGHT REPORT:

Part Number: 57048
Lot Number: 070124
Description: Cadmium (Cd)

Lot #
Solvent: 24002546 Nitric Acid

Expiration Date: 070127

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): 2000.07

0.100 Flask Uncertainty

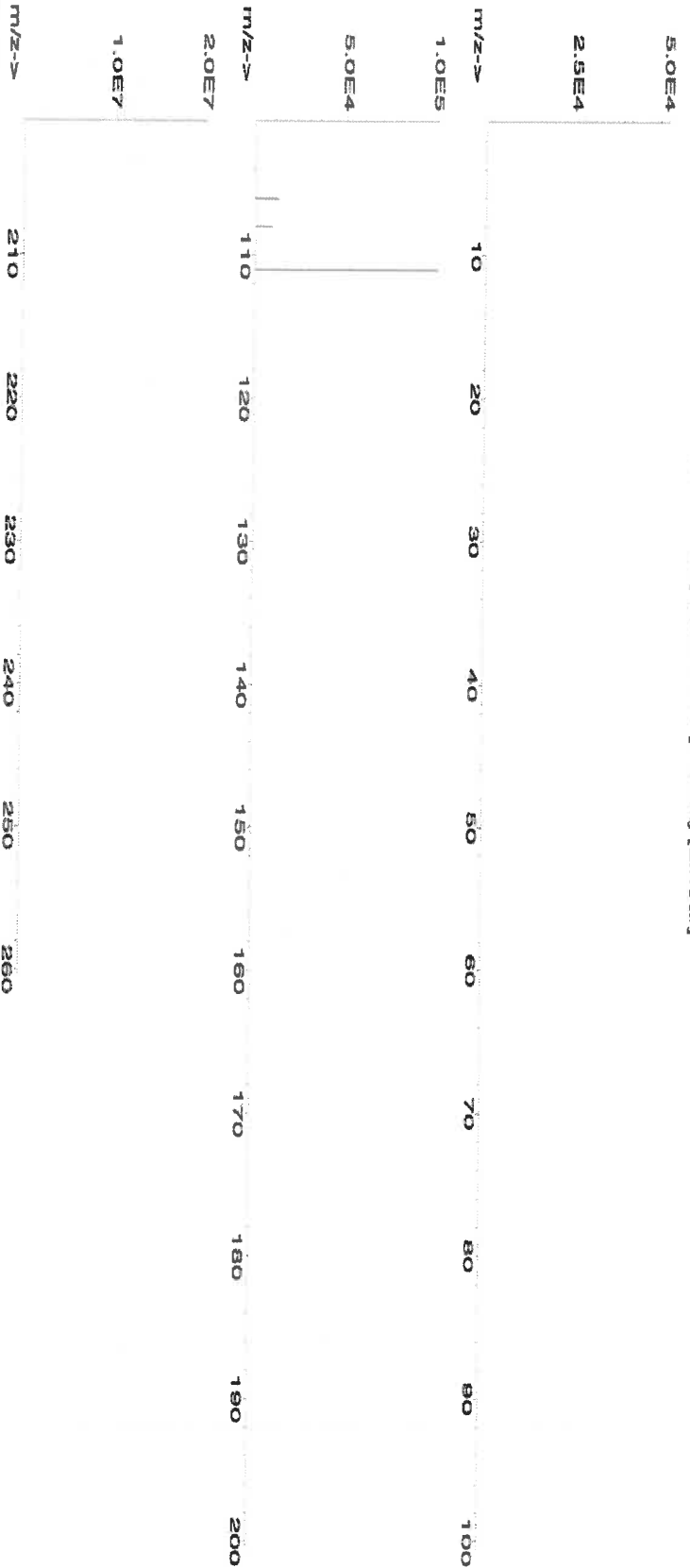
<i>Aleah O'Brady</i>	
Formulated By:	Aleah O'Brady
	070124
<i>Pedro L. Rentas</i>	
Reviewed By:	Pedro L. Rentas
	070124

Compound

Lot	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.)	SRM

1. Cadmium nitrate tetrahydrate (Cd)	IN024	CDM09221A1	1000	99.999	0.10	36.5	5.4797	5.4804	1000.1	2.0	10022-68-1	0.01 mg/m3	ref rat 60.2mg/kg	3108
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[1] Spectrum No.1 [12.514 sec]:\$8148.D# [Count] [Linear]





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

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

Al	<0.02	Cd	<0.2	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Ba	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Cd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pr	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

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



CERTIFIED WEIGHT REPORT:

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

Solvent: 21110221 Nitric Acid

Lot #

Expiration Date: 051526

5.0% 250.0 (mL) Nitric Acid

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): 10000

NIST Test Number: 6UTB

5E-05 Balance Uncertainty

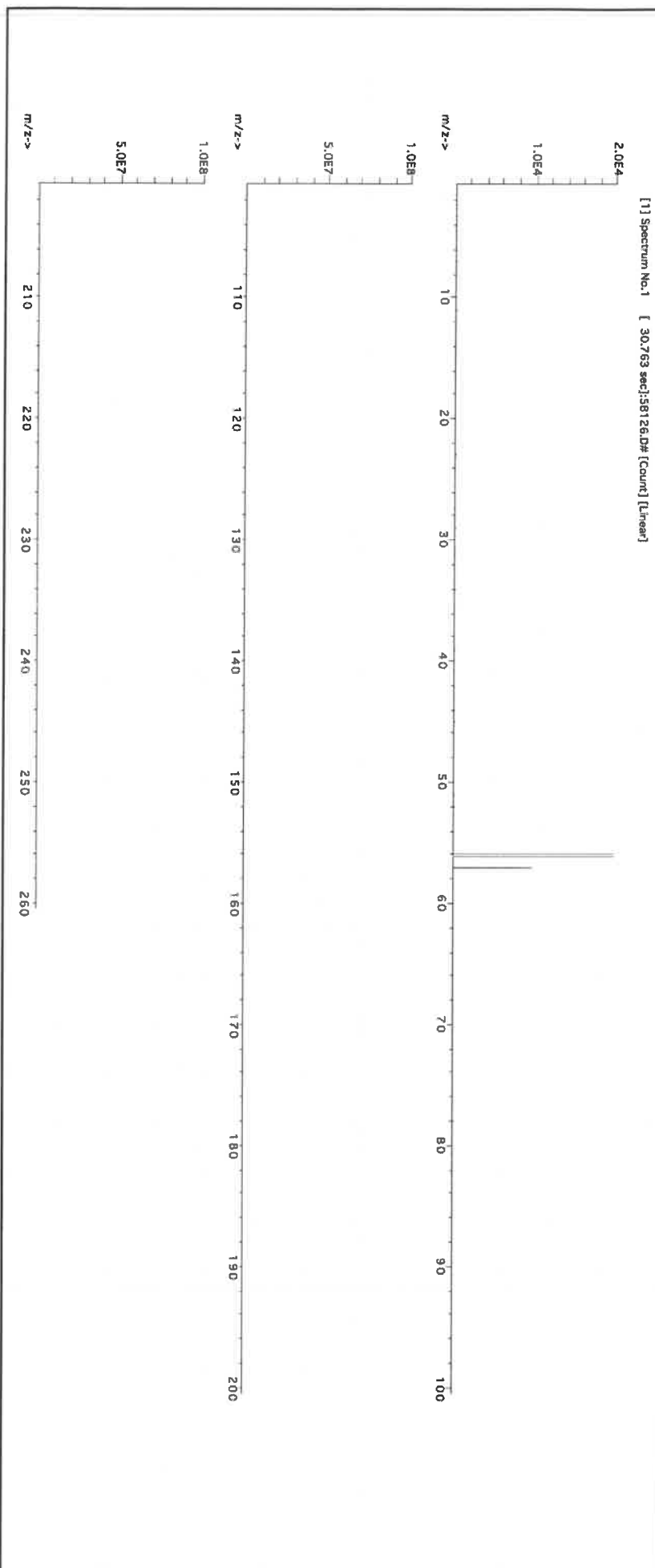
Weight shown below was diluted to (mL): 5000.1 **0.12 Flask Uncertainty**

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

SDS Information

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

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





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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.10	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ce	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rb	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.10	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.05	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.10	Ge	<0.10	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.10
B	<0.02	Cu	<0.10	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Tl	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

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



CERTIFIED WEIGHT REPORT:

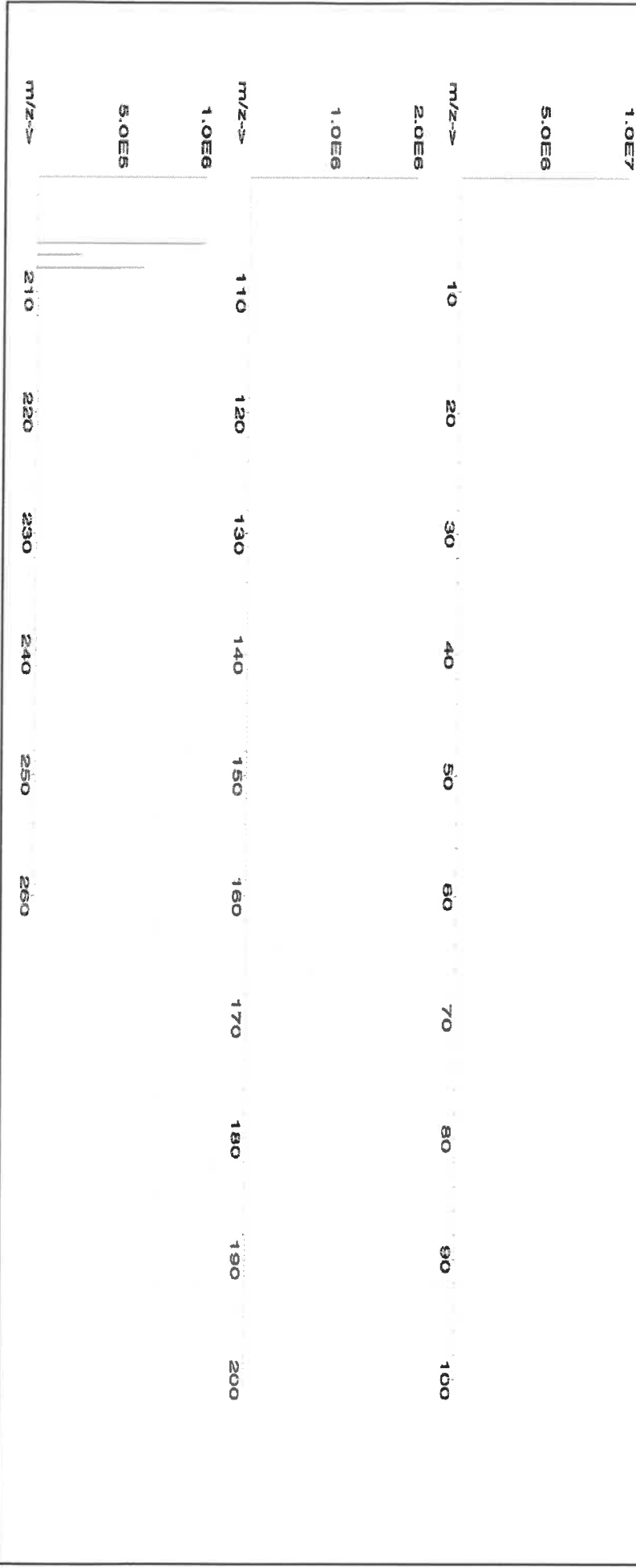
Part Number: **57182**
Lot Number: **110923**
Description: **Lead (Pb)**
Solvent: **24002546 Nitric Acid**
Lot #: **M6025**

Expiration Date: **110926**
Recommended Storage: **Ambient (20 °C)**
Nominal Concentration (µg/mL): **10000**
NIST Test Number: **6UTB**
Weight shown below was diluted to (mL): **2000.02**
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

Formulated By:	Lawrence Barry
Reviewed By:	Pedro L. Rentas
110923	

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. Lead(II) nitrate (Pb)	IN029	PED12016A1	10000	99.999	0.10	62.5	32.0006	32.0040	10001.1
									20.0
									10099-74-8
									0.05 mg/m3
									intrinsic 83 mg/kg
									3128

[1] Spectrum No.1 [17.284 sec]:58182.D# [Count] [Linear]





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

Trace Metals Verification by ICP-MS ($\mu\text{g/mL}$)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

Physical Characterization:

(T)= Target analyte

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

[Handwritten 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.
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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

MC026



CERTIFIED WEIGHT REPORT:

Part Number: **57182**
Lot Number: **110923**
Description: **Lead (Pb)**

Lot #
Solvent: **24002546 Nitric Acid**

Expiration Date: **110926**
Recommended Storage: **Ambient (20 °C)**
Nominal Concentration (µg/mL): **10000**
NIST Test Number: **6UTB**

2%
40.0 (mL)
Nitric Acid

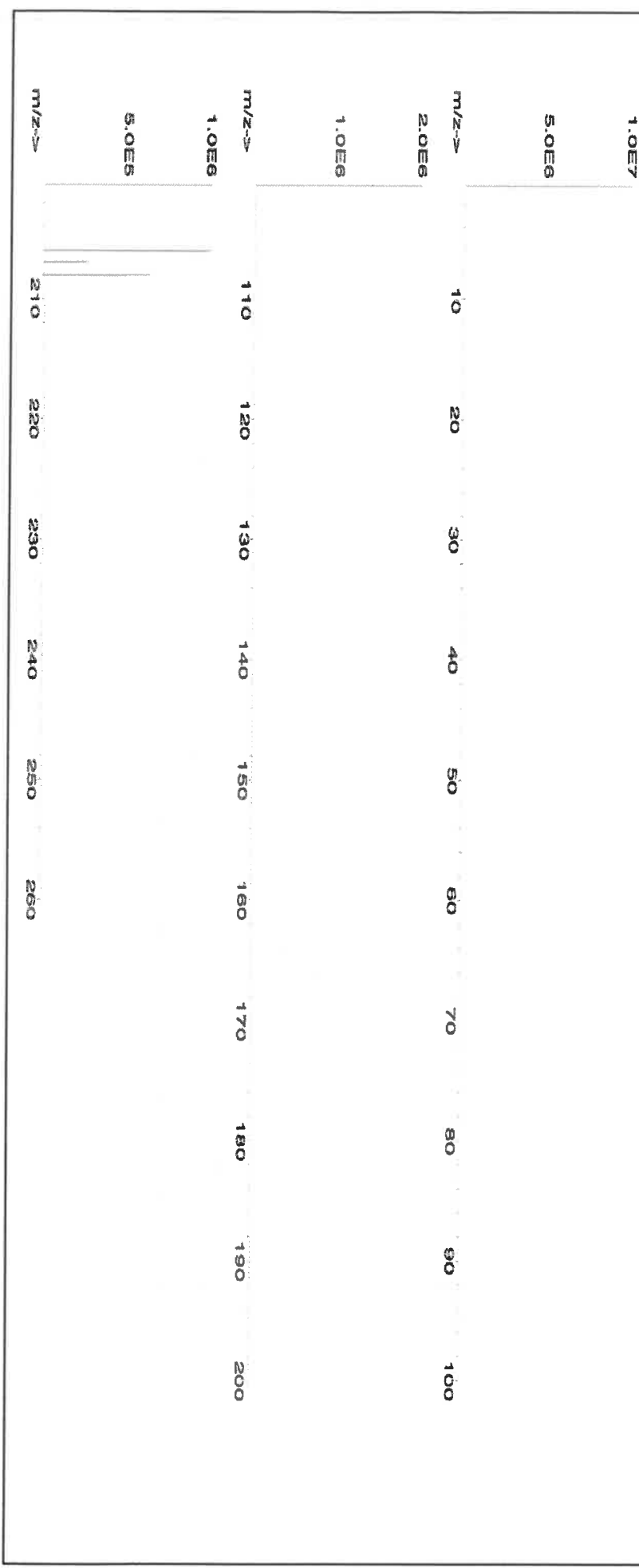
Weight shown below was diluted to (mL): **2000.02** 0.058 Balance Uncertainty
0.058 Flask Uncertainty

Formulated By:	Lawrence Barry
Reviewed By:	Pedro L. Rentas
110923	

Compound	SDS Information									
	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)

1. Lead(II) nitrate (Pb)	IN029	PED12016A1	10000	99.999	0.10	62.5	32.0006	32.0040	10001.1	20.0
--------------------------	-------	------------	-------	--------	------	------	---------	---------	---------	------

[1] Spectrum No.1 [17.284 sec]:58182.D# [Count] [Linear]





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

Trace Metals Verification by ICP-MS ($\mu\text{g/mL}$)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	T	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

Physical Characterization:

(T)= Target analyte

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.
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- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



Certified Reference Material CRM



CERTIFIED WEIGHT REPORT:

Part Number: 57022
Lot Number: 070721
Description: Titanium (Ti)

Expiration Date: 070724
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 # 20370011
Solvent: Nitric Acid

2.0% 40.0 Nitric Acid
(mL)

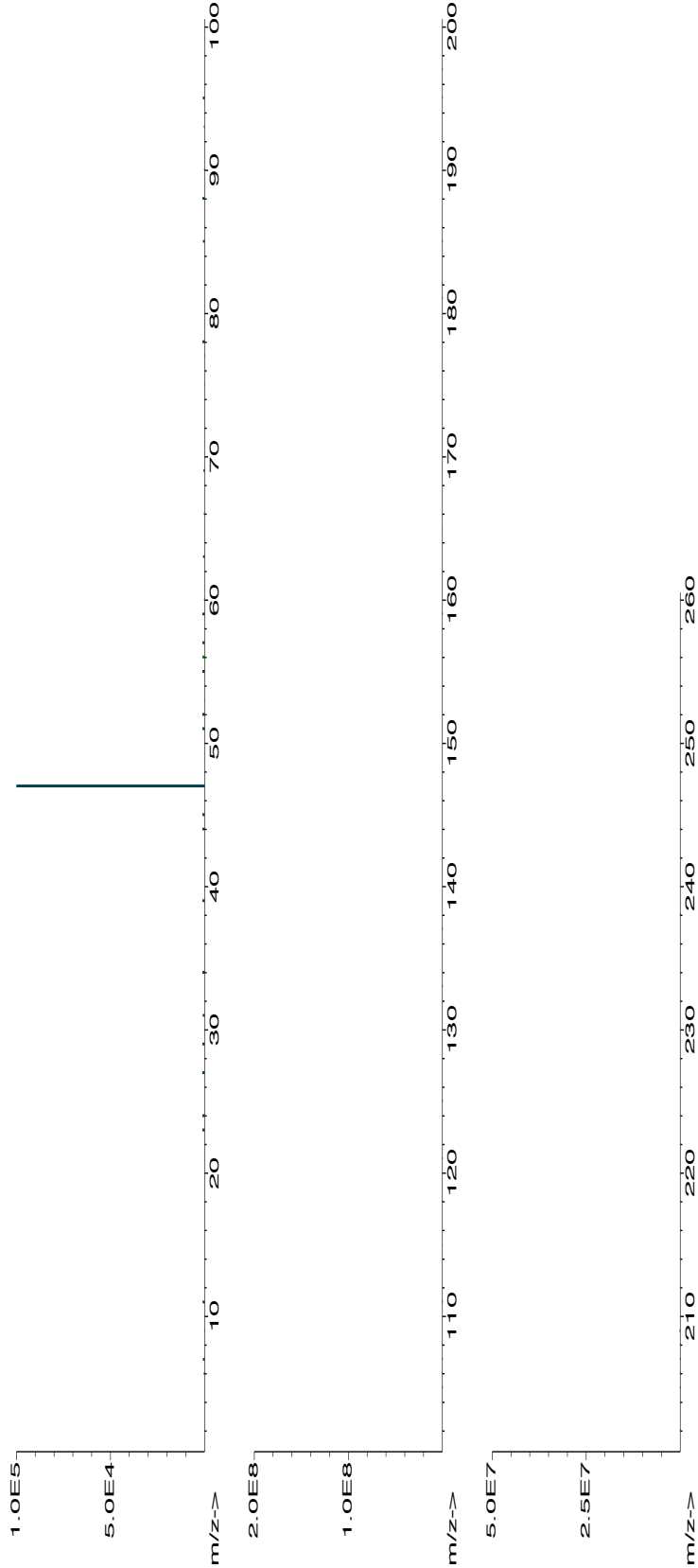
Formulated By:	Lawrence Barry 070721
Reviewed By:	Pedro L. Rentas 070721

SDS Information

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

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	2.2	16962-40-6	2.5 (F) mg/m3	NA	3162a
1. Ammonium hexafluorotitanate (Ti)	58122	070120	0.1000	200.0	0.084	1000	10000.1	1000.0					

[1] Spectrum No.1 [34.693 sec]:57022.D# [Count] [Linear]





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

Trace Metals Verification by ICP-MS (µg/mL)																			
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	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:

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

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



Refine your results. Redefine your industry.

Certificate of Analysis

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: 6020CAL-1
Lot Number: S2-MEB711244
Matrix: 5% (v/v) HNO₃
tr. HF
Value / Analyte(s): 20 µg/mL ea:
Silver, Aluminum,
Arsenic, Barium,
Beryllium, Calcium,
Cadmium, Cobalt,
Chromium, Copper,
Iron, Potassium,
Magnesium, Manganese,
Sodium, Nickel,
Lead, Antimony,
Selenium, Thallium,
Vanadium, Zinc

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	20.01 ± 0.08 µg/mL	Antimony, Sb	20.01 ± 0.12 µg/mL
Arsenic, As	20.01 ± 0.18 µg/mL	Barium, Ba	20.01 ± 0.11 µg/mL
Beryllium, Be	20.01 ± 0.14 µg/mL	Cadmium, Cd	20.01 ± 0.11 µg/mL
Calcium, Ca	20.01 ± 0.10 µg/mL	Chromium, Cr	20.01 ± 0.16 µg/mL
Cobalt, Co	20.01 ± 0.11 µg/mL	Copper, Cu	20.01 ± 0.10 µg/mL
Iron, Fe	20.01 ± 0.09 µg/mL	Lead, Pb	20.01 ± 0.11 µg/mL
Magnesium, Mg	19.99 ± 0.10 µg/mL	Manganese, Mn	20.01 ± 0.10 µg/mL
Nickel, Ni	20.01 ± 0.11 µg/mL	Potassium, K	20.01 ± 0.10 µg/mL
Selenium, Se	20.02 ± 0.14 µg/mL	Silver, Ag	20.02 ± 0.09 µg/mL
Sodium, Na	20.01 ± 0.10 µg/mL	Thallium, Tl	20.01 ± 0.13 µg/mL
Vanadium, V	20.01 ± 0.11 µg/mL	Zinc, Zn	20.01 ± 0.11 µg/mL

Density: 1.026 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	160729
Ag	Volhard	999c	999c
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
As	ICP Assay	3103a	100818
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
Co	ICP Assay	3113	190630
Co	EDTA	928	928
Cr	ICP Assay	3112a	170630
Cu	ICP Assay	3114	121207
Cu	EDTA	928	928
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
Fe	Calculated		See Sec. 4.2
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Se	ICP Assay	3149	100901
Se	Calculated		See Sec. 4.2
Tl	ICP Assay	3158	151215
Tl	Calculated		See Sec. 4.2
V	ICP Assay	3165	160906
V	EDTA	928	928
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of $k = 2$.

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

HF Note: This standard should not be prepared or stored in glass.

Low Silver Note: This solution contains "LOW" levels of Silver. Please store this entire bottle inside a sealed glass jar.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

October 20, 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

- **October 20, 2026**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director





Certified Reference Material CRM

CERTIFIED WEIGHT REPORT:

Part Number: **58119**
Lot Number: **120822**
Description: **Potassium (K)**

Solvent: 20510011 Nitric Acid

Lot #

Expiration Date: 120825

2% 60.0 (mL)

Nitric Acid

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): 10000

NIST Test Number: 6UTB

Weight shown below was diluted to (mL): 3000.4

5E-05 Balance Uncertainty
0.06 Flask Uncertainty

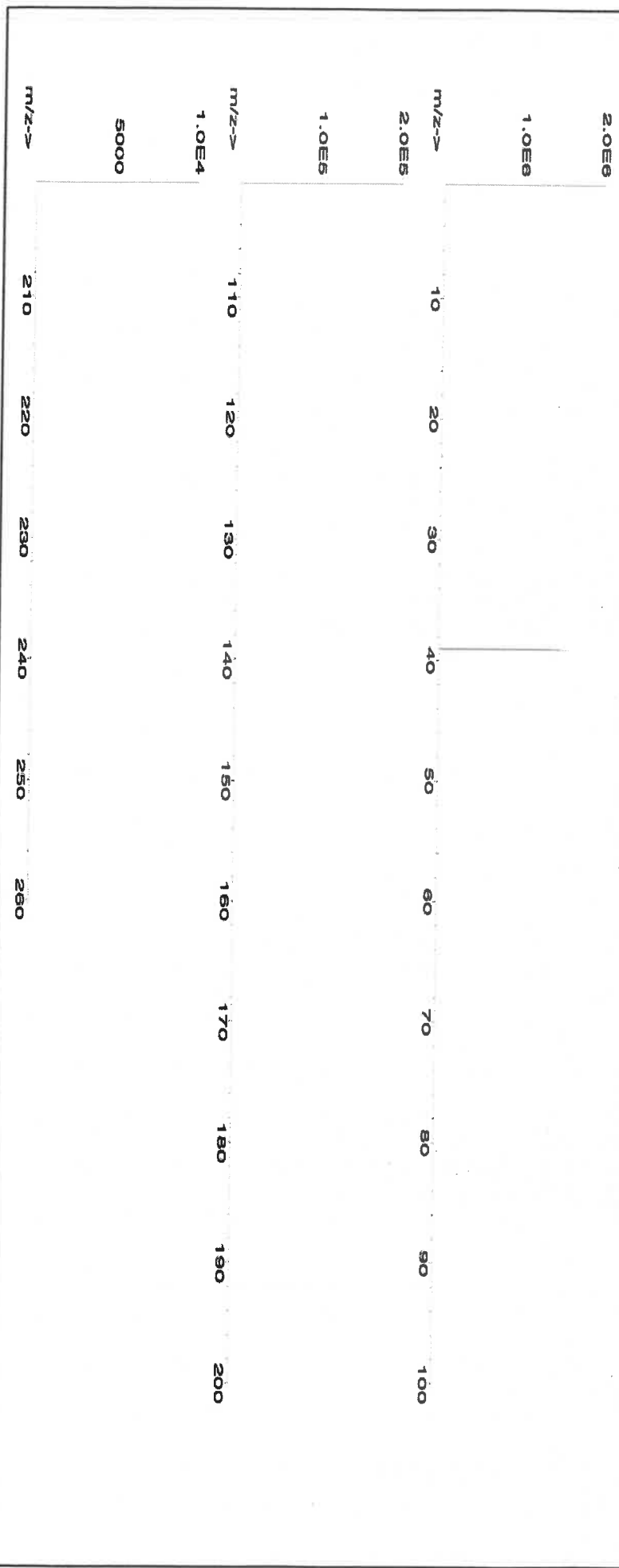
<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
Reviewed By:	Pedro L. Rentas
	120822

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)	Uncertainty +/- (µg/mL)	(Solvent Safety Info. On Attached pg.)	SRM

1. Potassium nitrate (K) IN034 KD022021A1 10000 99.989 0.10 37.6 79.7990 79.8075 10001.1 20.0 7757-79-1 5 mg/m3 crtat 3015 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	<0.02	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: **58119**
Lot Number: **120822**
Description: **Potassium (K)**

Solvent: 20510011 Nitric Acid

Lot #

Expiration Date: 120825

2% 60.0 Nitric Acid (mL)

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): 10000

NIST Test Number: 6UTB

Weight shown below was diluted to (mL): 3000.4 0.06 Flask Uncertainty

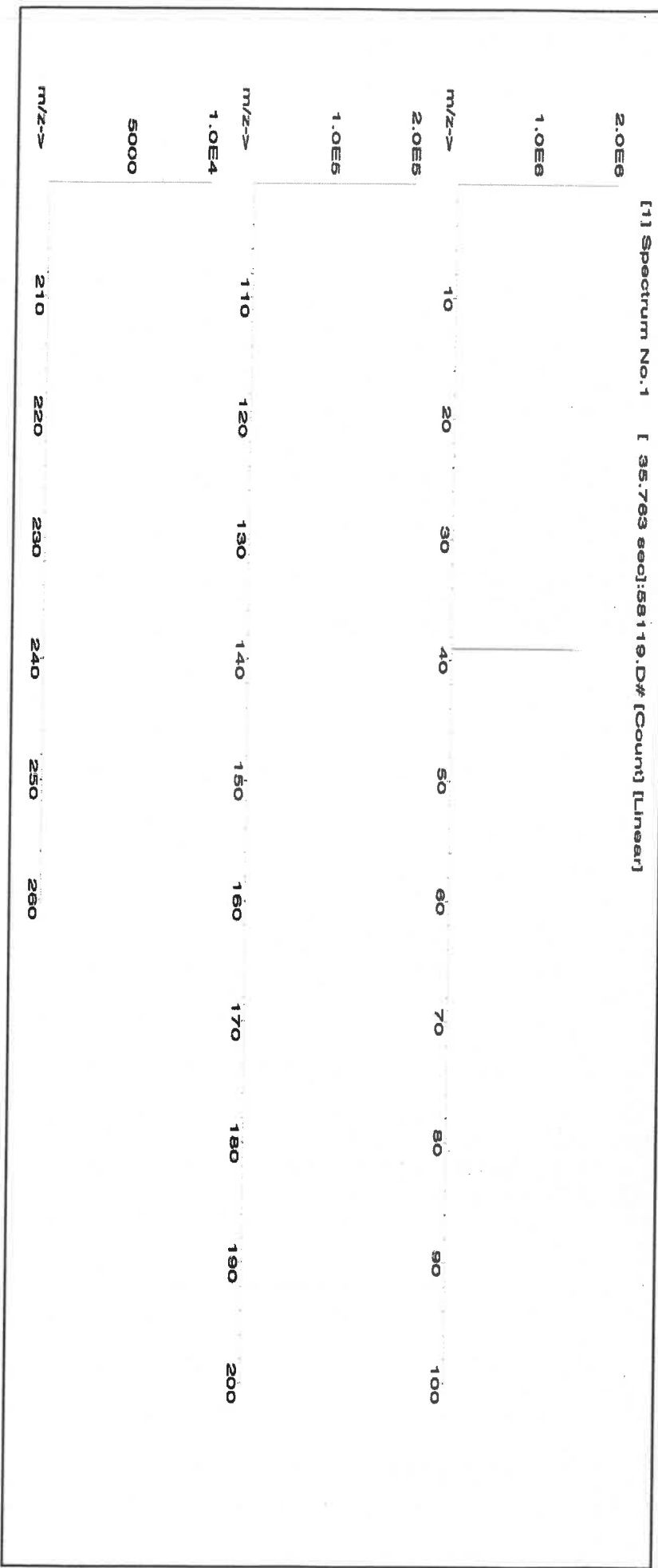
<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
Reviewed By:	Pedro L. Rentas
	120822

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)	Uncertainty +/- (µg/mL)	(Solvent Safety Info. On Attached pg.)	SRM

1. Potassium nitrate (K) IN034 KD022021A1 10000 99.989 0.10 37.6 79.7990 79.8075 10001.1 20.0 7757-79-1 5 mg/m3 crtat 3015 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	<0.02	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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CERTIFIED WEIGHT REPORT:

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

Lot # 21110221 **Solvent:** Nitric Acid

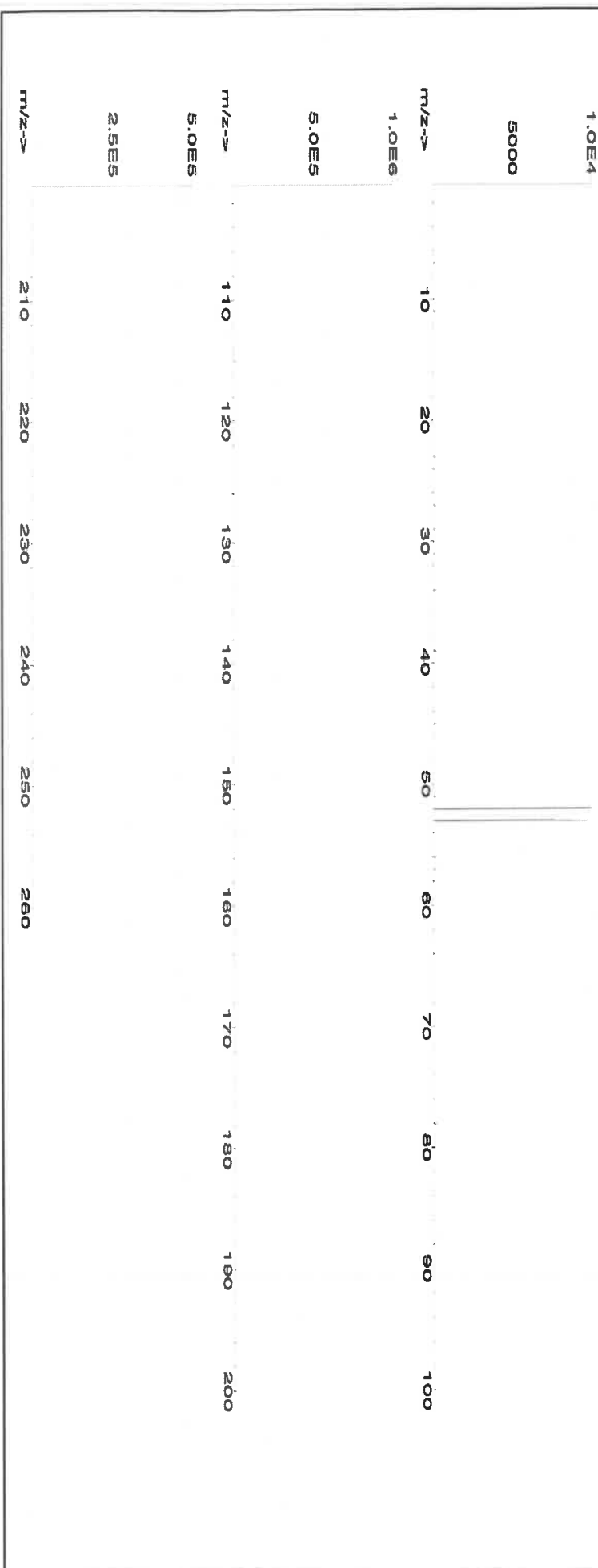
Formulated By:	Lawrence Barry
	060523
Reviewed By:	Pedro L. Ruelas
	060523

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 0.058 Balance Uncertainty
Flask Uncertainty

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Chromium(III) nitrate nonahydrate (Cr) 58124 071122 0.1000 200.0 0.084 1000 10000.1 1000.0 2.2 7789-02-8 0.5 mg(Cr)/m3 or rat 3250 mg/kg 3112a

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





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:

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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

R: 8/25/23 M5751



CERTIFIED WEIGHT REPORT:

Part Number: **58029**
Lot Number: **071723**
Description: **Copper (Cu)**

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

Expiration Date: **071726**
Recommended Storage: **Ambient (20 °C)**
Nominal Concentration (µg/mL): **1000**
NIST Test Number: **6LUTB**

2.0%
40.0 (mL)
Nitric Acid

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

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

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.)	NIST SRM
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1. Copper(II) nitrate trihydrate (Cu) 58129 022723 0.1000 200.0 0.084 1000 10000.5 1000.0 2.2 10031-43-3 1 mg/m3 or rat 794 mg/kg 3114

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

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

Absolute Standards, Inc.

800-368-1131
www.absolutestandards.com



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	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:

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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: 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

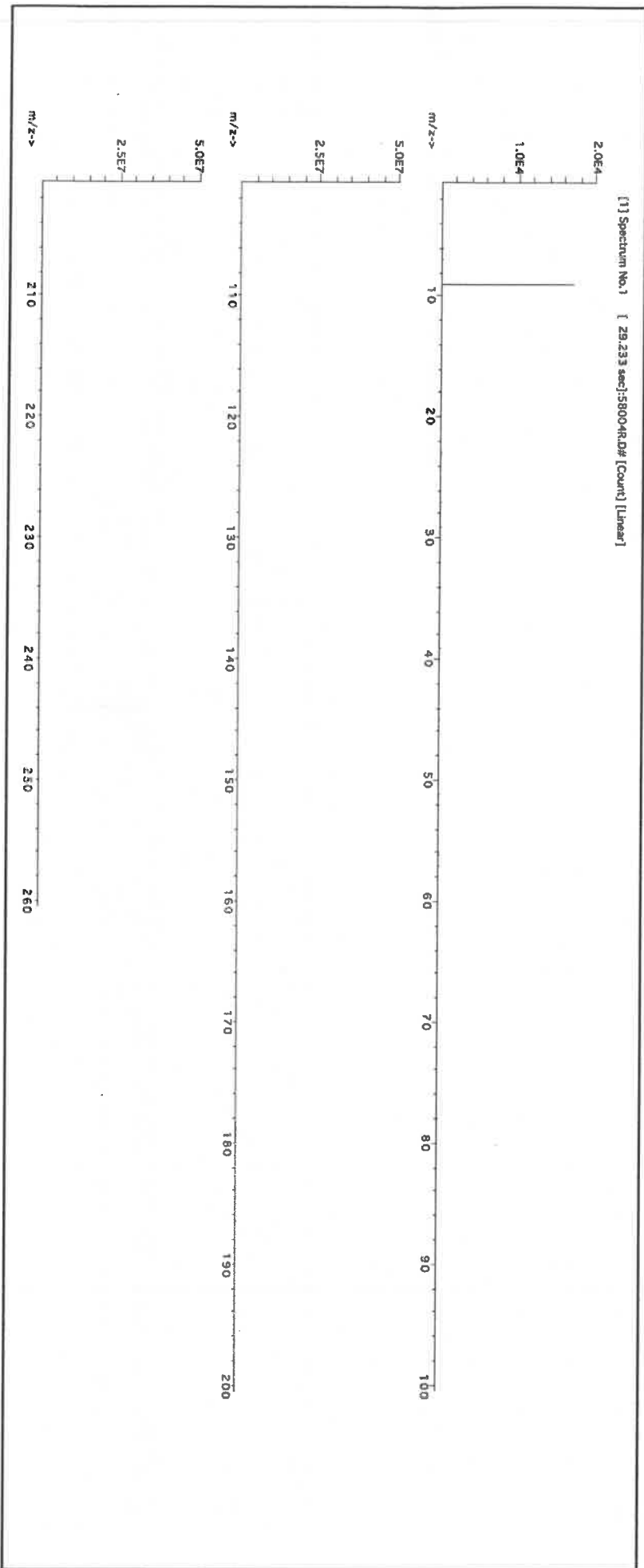
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

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	<0.2	Th	<0.02	Yb	<0.02
Be	T	Cr	<0.02	Ga	<0.02	Fe	<0.02	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	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.

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Certified Reference Material CRM

CERTIFIED WEIGHT REPORT:

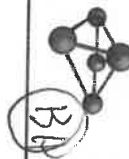
Part Number: 57050
Lot Number: 071123
Description: Tin (Sn)

Solvents: 21110221 Nitric Acid
22D0562008 Hydrochloric acid

Lot #

R-02509124

M599



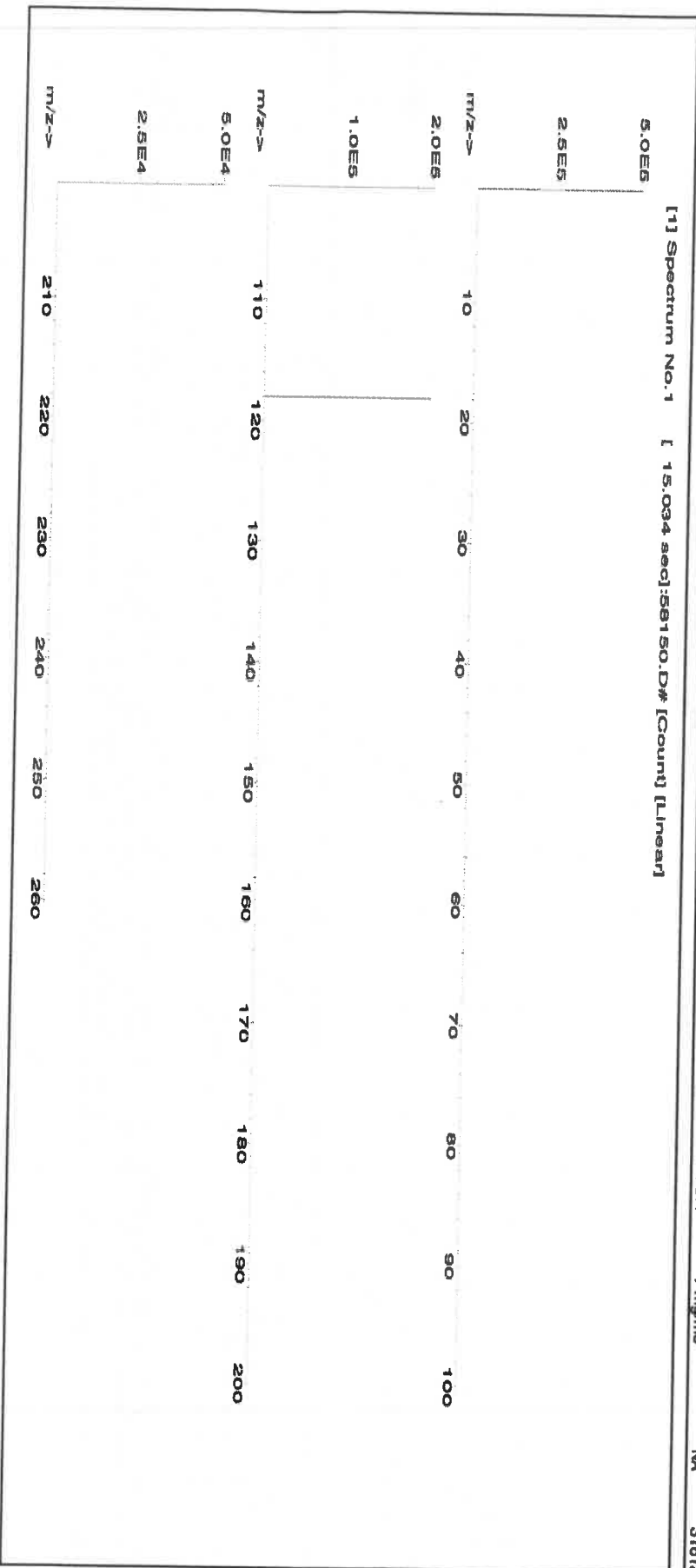
Expiration Date: 071126
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 499.93
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

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

SDS Information												
Compound	Lot	Nominal	Purity	Uncertainty	Assay	Target	Actual	Actual	Expanded	Solvent Safety Info. On Attached pg.)		
										RM#	Number	Conc. (µg/mL)
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:

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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

Lot # 24002546
Solvent: Nitric Acid

2.0% Nitric Acid
40.0 (mL)

Formulated By: Lawrence Barry 091923
Reviewed By: Pedro L. Rentas 091923

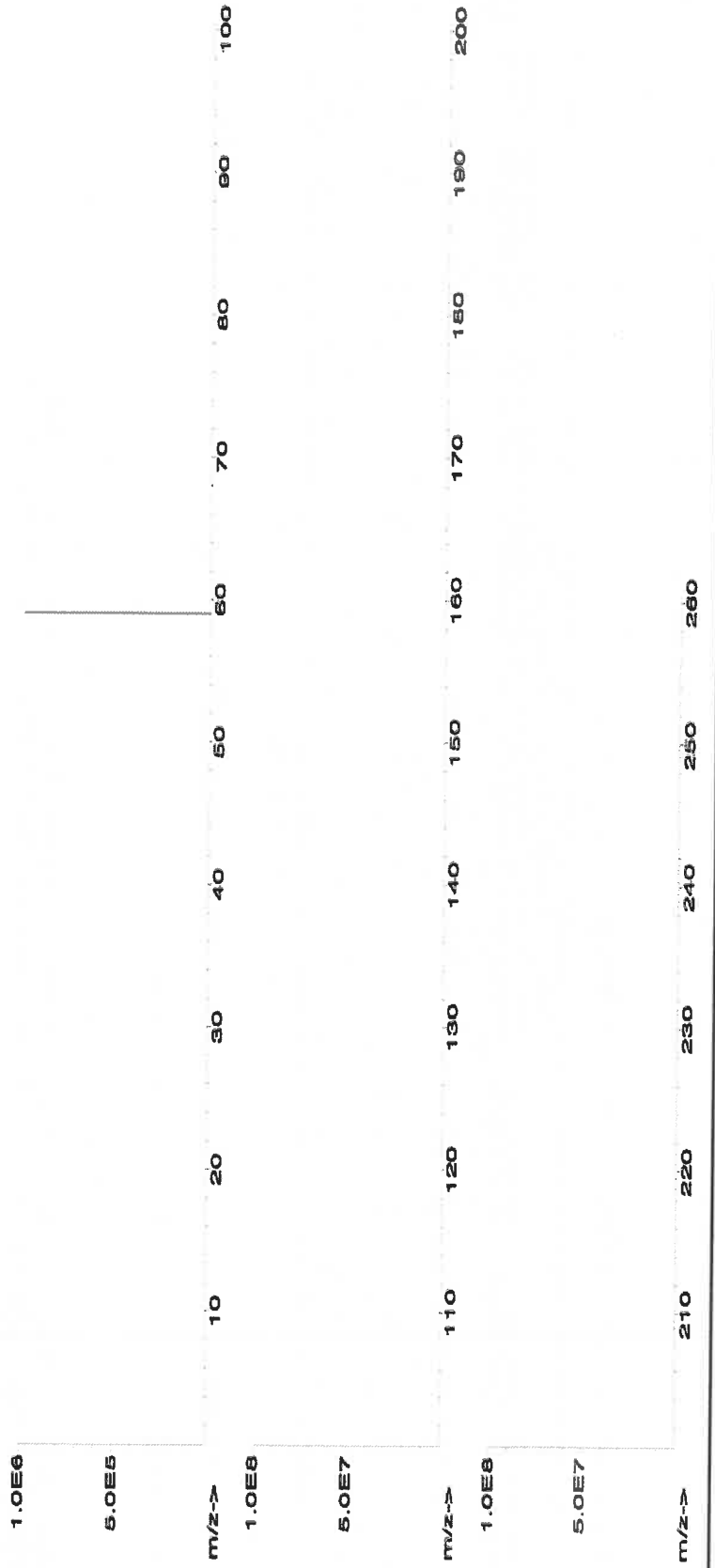
SDS Information

Expanded Uncertainty +/- (µg/mL) 2.2
(Solvent Safety Info. On Attached pg.)
NIST CAS# OSHA PEL (TWA) LD50 SRM

Compound

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 or-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 (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.02	Os	<0.01	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.2	Na	<0.02	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	T	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.2	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:

[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 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

2.0%

80.0 (mL)

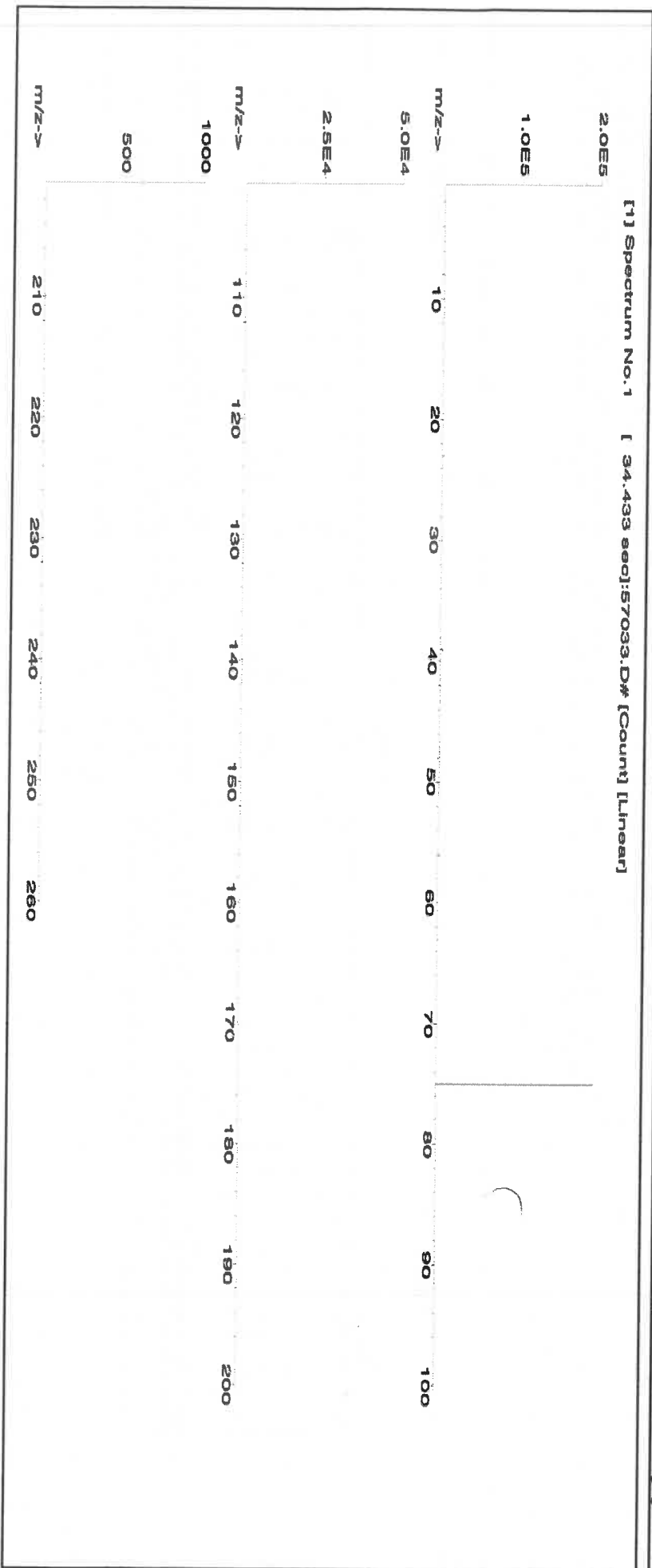
Nitric Acid

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

(Solvent Safety Info. On Attached pg.)
CAS# OSHA PEL (TWA) LD50 SRM

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





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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	T	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Tl _h	<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	Sa	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

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



CERTIFIED WEIGHT REPORT:

Part Number: 57115
Lot Number: 041723
Description: Phosphorous (P)

Solvent: 21110221 Nitric Acid

Lot #

R102109124 M5815

Expiration Date: 041726
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB

2% 40.0 (mL) Nitric Acid

Weight shown below was diluted to (mL): 2000.02 0.056 Balance Uncertainty
Flask Uncertainty

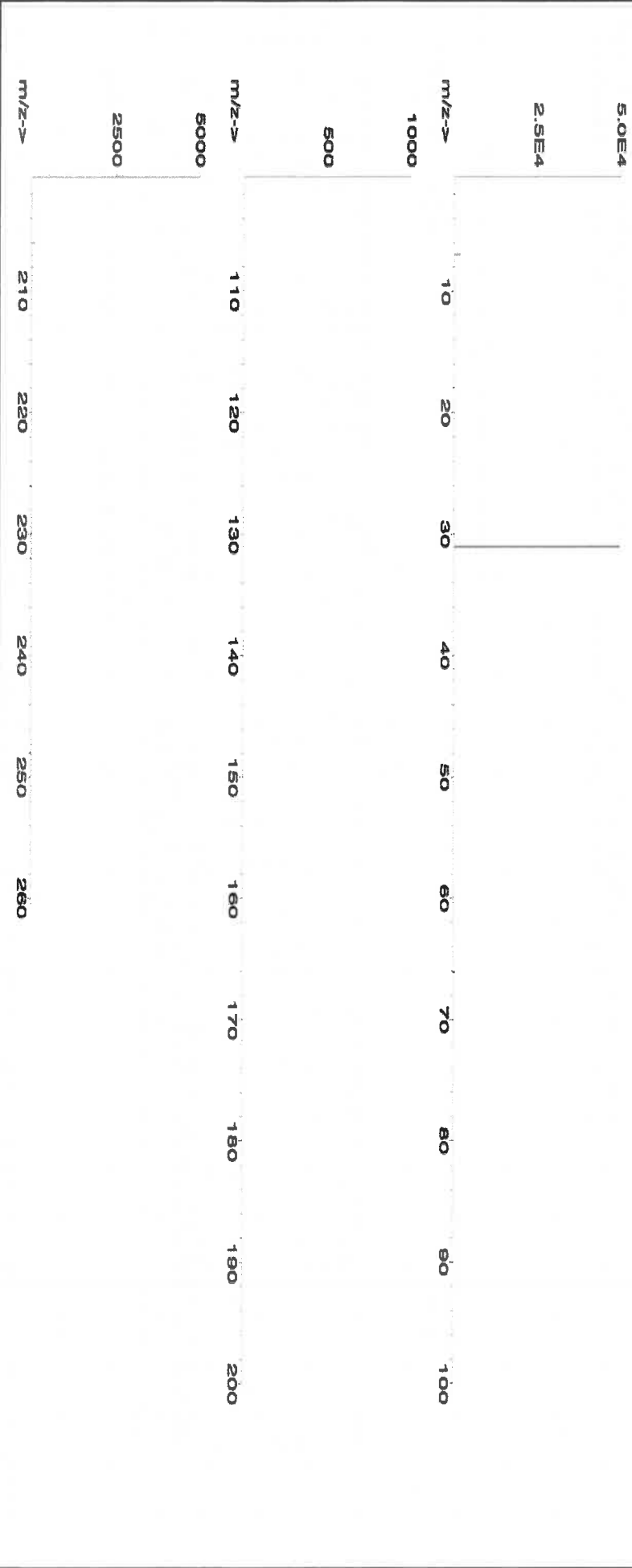
Formulated By:	Lawrence Barry
	041723
Reviewed By:	Pedro L. Rentas
	041723

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

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





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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	T	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

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



CERTIFIED WEIGHT REPORT:

Part Number: 57116
Lot Number: 071123
Description: Sulfur (S)

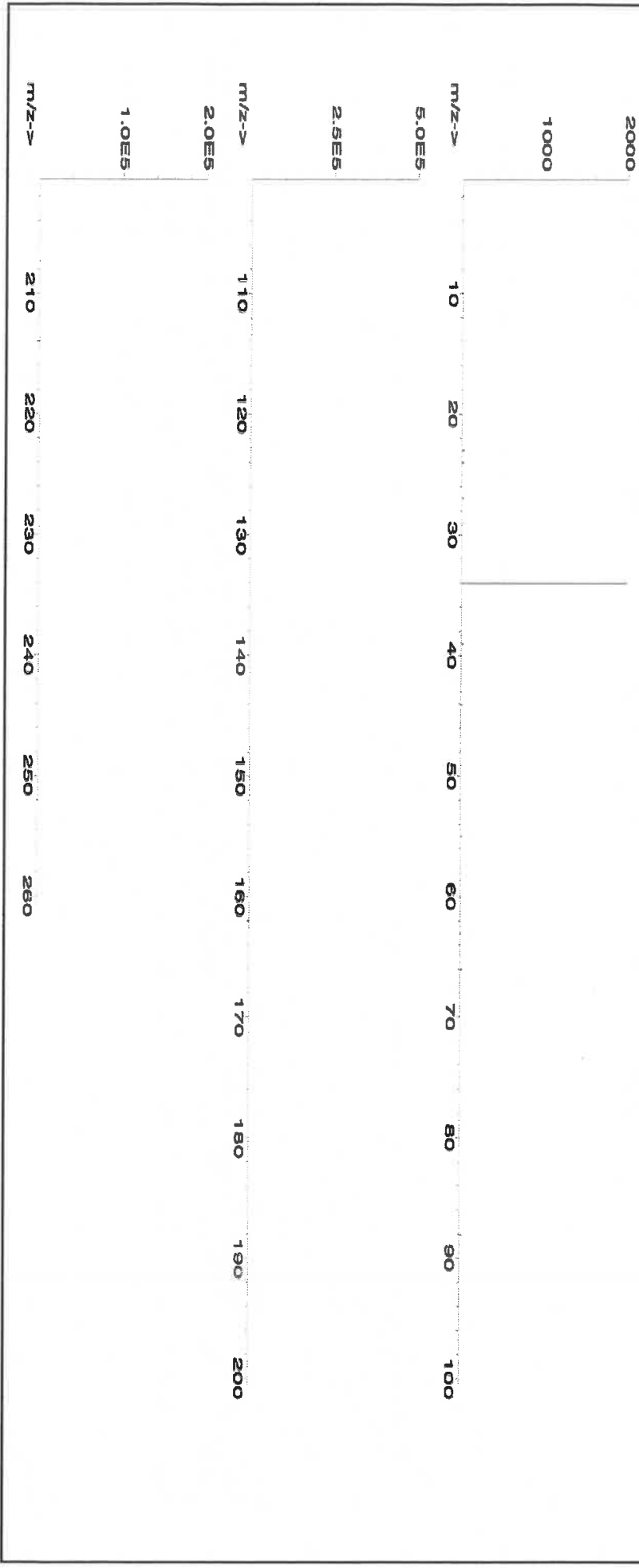
Solvent: 071123
ASTM Type 1 Water

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

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

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

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





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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	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	T	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			Zr	<0.02

Physical Characterization:

(T)= Target analyte

Certified by:

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

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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- * 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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R: 02/22/24 M.5942

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: CGT11
Lot Number: T2-TI719972
Matrix: 2% (v/v) HNO₃
tr. HF
Value / Analyte(s): 1 000 µg/mL ea:
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 Information:

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:

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000536	M	Eu	<	0.000268	O	Na	<	0.032670	M	Se		0.001204	O	Zn	<	0.003267
O	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		0.000096				
O	B	<	0.008929	M	Ge	<	0.002146	M	Os	<	0.000269	O	Sr		0.000096				
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	<		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				

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 - 47.87 +4 6 Ti(F)6-2

Chemical Compatibility - 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 unless they are fluorinated). Stable with most inorganic anions with a tendency to hydrolyze forming the hydrated oxide in all dilute acids except HF.

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

Ti Containing Samples (Preparation and Solution) - Metal (Soluble in H2O / HF caution -powder reacts violently); Oxide - low temperature history anatase or rutile (Dissolved by heating in 1:1:1 H2O / HF / H2SO4); Oxide - high temperature history (~800EC) brookite (fuse in Pt0 with K2S2O7); Ores (fuse in Pt0 with KF + K2S2O7 - no KF if silica not present); Organic Matrices (Dry ash at 450EC in Pt0 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 crystalline 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, 14N16O18O, 14N17N2, 36Ar12C, 48Ca, [96X=2 (where X = Zr, Mo, Ru)]
ICP-OES 323.452 nm	0.0054 / 0.00092 µg/mL	1	Ce, Ar, Ni
ICP-OES 334.941 nm	0.0038 / 0.000028 µg/mL	1	Nb, Ta, Cr, U
ICP-OES 336.121 nm	0.0053 / 0.000034 µg/mL	1	W, Mo, Co

HF Note: This standard should not be prepared or stored in glass.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 17, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- June 17, 2027

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



Absolute Standards, Inc.

800-368-1131
www.absolutestandards.com



Certified Reference Material CRM



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

CERTIFIED WEIGHT REPORT:

Lot #

MS961 R-611124

Part Number:

Solvent: 24002546 Nitric Acid

Lot Number:

041124

Description:

Nickel (NI)

Expiration Date:

041127

Recommended Storage:

Ambient (20 °C)

Nominal Concentration (µg/mL):

1000

NIST Test Number:

6UTB

Weight shown below was diluted to (mL):

249.85

5E-05 Balance Uncertainty
0.002 Flask Uncertainty

2%

5.0 (mL)

Nitric Acid

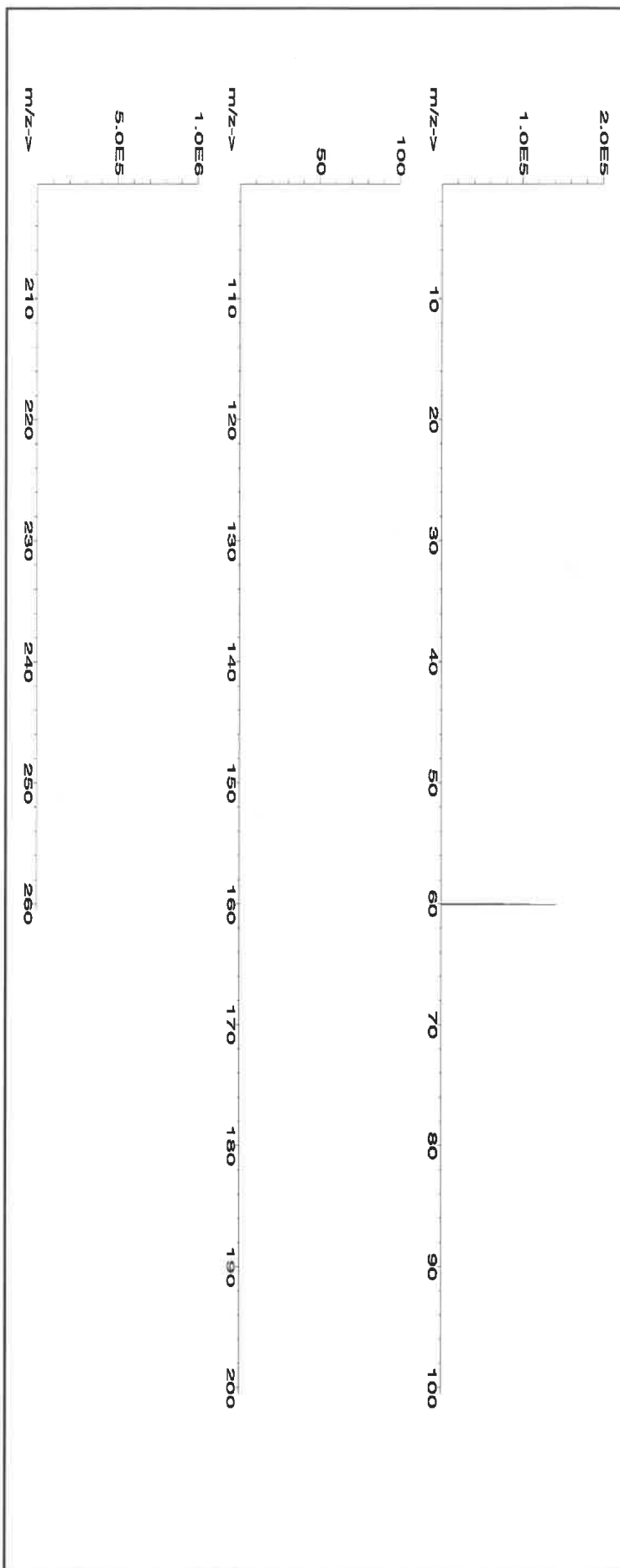
Formulated By:	Brian Geddes	041124
Reviewed By:	Pedro L. Rentas	041124

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
----------	-----	-----------------------	------------	-----------------	-----------	-------------------	-------------------	----------------------	----------------------------------	------	----------------	------	----------

1. Nickel(II) nitrate hexahydrate (NI) IN033 NIM052023A1 1000 99.999 0.10 20.2 1.2369 1.2369 1000.0 2.0 13478-00-7 1 mg/m3 or-rat 1620 mg/kg 3136

[1] Spectrum No. 1 [12.374 sec]:58128.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	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	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	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	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	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	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	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).

Absolute Standards, Inc.

800-368-1131
www.absolutestandards.com



Certified Reference Material CRM

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

CERTIFIED WEIGHT REPORT:

Part Number:

57034

Lot #

24002546

Solvent:

Nitric Acid

Lot Number:

060624

Description:

Selenium (Se)

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

2.0%

40.0

(mL)

Nitric Acid

Formulated By: Benson Chan 060624

Reviewed By:

Pedro L. Rantas

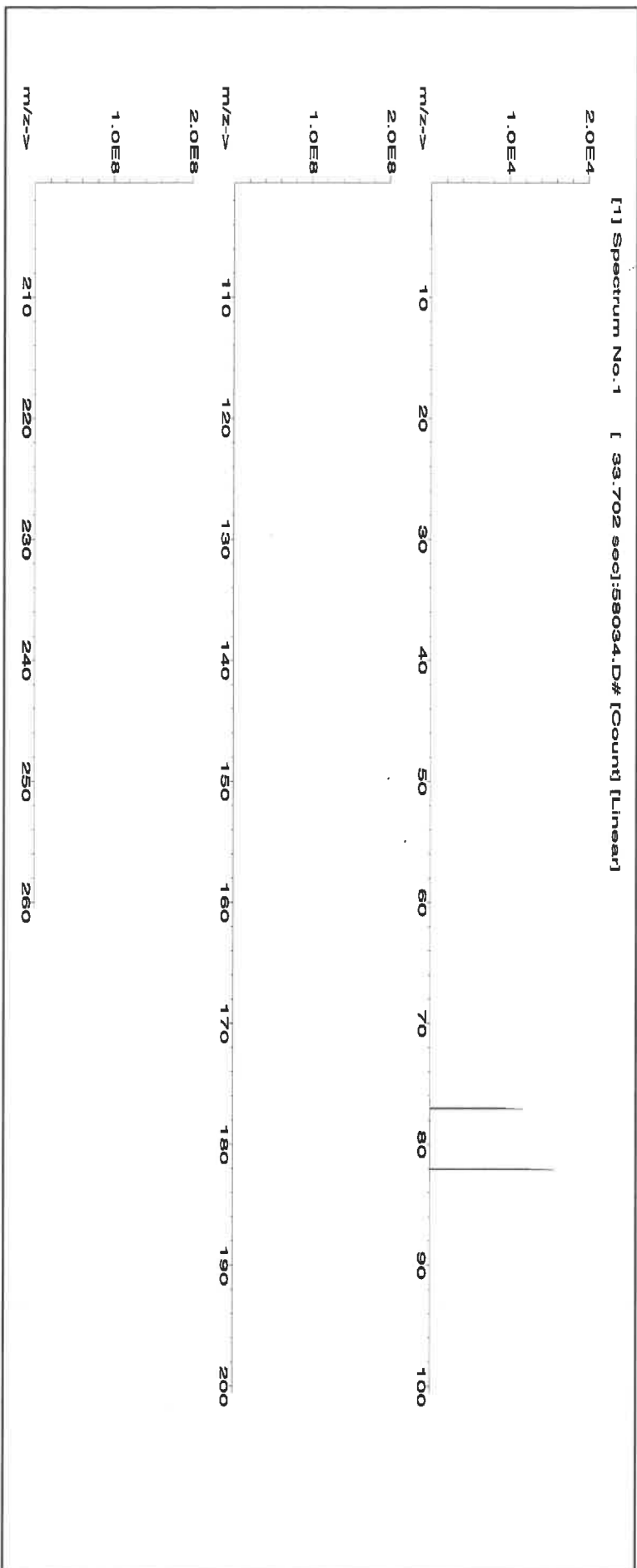
060624

SDS Information

Compound

Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	(Solvent Safety Info. On Attached pg.)	CAS#	OSHA PEL (TWA)	LDSO	NIST SRM
-------------	------------	-----------------	-------------------	--------------	-----------------------	-----------------------	---------------------	----------------------------------	--	------	----------------	------	----------

1. Selenium (Se)	58134	071223	0.1000	200.0	0.084	1000	10002.5	1000.0	2.2	7782-49-2	0.2 mg/m3	or-tral 6700 mg/kg	3149
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Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com



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	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.
- * 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).

M5976, M5977

R: 02/22/24

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: CGMO1
Lot Number: T2-MO720876
Matrix: H2O
tr. NH4OH
Value / Analyte(s): 1 000 µg/mL ea:
Molybdenum
Starting Material: Ammonium Molybdate
Starting Material Lot#: 2361
Starting Material Purity: 99.9893%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 998 ± 7 µg/mL
Density: 1.000 g/mL (measured at 20 ± 4 °C)
Assay Information:

Assay Method #1 **998 ± 4 µg/mL**
ICP Assay NIST SRM 3134 Lot Number: 130418

- 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	<	0.000590	M	Eu	<	0.000300	M	Na		0.000879	M	Se	<	0.008000	M	Zn		0.000598
M	Al		0.000563	M	Fe	<	0.006500	M	Nb	<	0.029000	i	Si	<		M	Zr	<	0.001800
M	As	<	0.002100	M	Ga	<	0.000300	i	Nd	<		M	Sm	<	0.000300				
M	Au	<	0.000300	M	Gd	<	0.000300	M	Ni	<	0.008000	M	Sn	<	0.008900				
M	B	<	0.003300	M	Ge	<	0.000300	M	Os	<	0.000590	M	Sr		0.000175				
M	Ba		0.001689	M	Hf	<	0.001800	i	P	<		M	Ta	<	0.004200				
M	Be	<	0.000890	M	Hg	<	0.003300	M	Pb	<	0.000300	M	Tb	<	0.000300				
M	Bi	<	0.000890	M	Ho	<	0.000300	M	Pd	<	0.001800	M	Te	<	0.021000				
O	Ca		0.006334	M	In	<	0.032000	M	Pr	<	0.013000	M	Th	<	0.000300				
O	Cd	<	0.026000	M	Ir	<	0.000300	M	Pt	<	0.000300	O	Tl	<	0.032000				
M	Ce	<	0.008300	M	K		0.130213	M	Rb		0.004575	M	Tl		0.001266				
M	Co		0.000598	M	La	<	0.000300	M	Re	<	0.000300	M	Tm	<	0.000300				
M	Cr		0.000527	O	Li		0.000059	M	Rh	<	0.000300	M	U	<	0.005300				
M	Cs		0.000527	M	Lu	<	0.000300	M	Ru	<	0.079000	M	V	<	0.000890				
M	Cu		0.002252	M	Mg		0.000563	i	S	<		M	W		0.087982				
M	Dy	<	0.000300	M	Mn	<	0.005900	M	Sb		0.001513	M	Y	<	0.000300				
M	Er	<	0.000300	s	Mo	<		M	Sc	<	0.001200	M	Yb	<	0.000300				

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 - 95.94 +6 6,7,8,9

[MoO4]-2(chemical form as received)

Chemical Compatibility -Mo is received in a NH4OH matrix giving the operator the option of using HCl or HF to stabilize acidic solutions. The [MoO4]-2 is soluble in concentrated HCl [MoOCl5]-2, dilute HF / HNO3 [MoOF5]-2 and basic media [MoO4]-2. Stable at ppm levels with some metals provided it is fluorinated. Do not mix with Alkaline or Rare Earths when HF is present. Stable with most inorganic anions provided it is in the [MoO4]-2 chemical form.

Stability - 2-100 ppb levels stable (alone or mixed with all other metals that are at comparable levels) as the [MoOF5]-2 for months in 1% HNO3 / LDPE container. 1-10,000 ppm single element solutions as the [MoO4]-2 chemically stable for years in 1% NH4OH in a LDPE container.

Mo Containing Samples (Preparation and Solution) -Metal (Soluble in HF / HNO3 or hot dilute HCl); Oxide (soluble in HF or NH4OH) ; Organic Matrices (Dry ash at 450EC in Pt0 and dissolve oxide with HF or 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 95 amu	3 ppt	n/a	40Ar39K16O,79Br16O,190Os2+,190Pt2+
ICP-OES 202.030 nm	0.008 / 0.0002 µg/mL	1	Os, Hf
ICP-OES 203.844 nm	0.012 / 0.002 µg/mL	1	
ICP-OES 204.598 nm	0.012 / 0.001 µg/mL	1	Ir, Ta

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: 800.669.6798; 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 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

- July 17, 2027

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Uyen Truong
Supervisor, Product Documentation



Certificate Approved By:

Michael Booth
Director, Technical



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director





MS981

R: 6/11/24



CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

57092
060724
Uranium (U)

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

060727
Ambient (20 °C)
1000
6UTB

Volume shown below was diluted to (mL): 2000.07

5E-05 Balance Uncertainty
0.100 Flask Uncertainty

Lot # Solvent:
24002546 Nitric Acid

2.0% Nitric Acid
40.0 (mL)

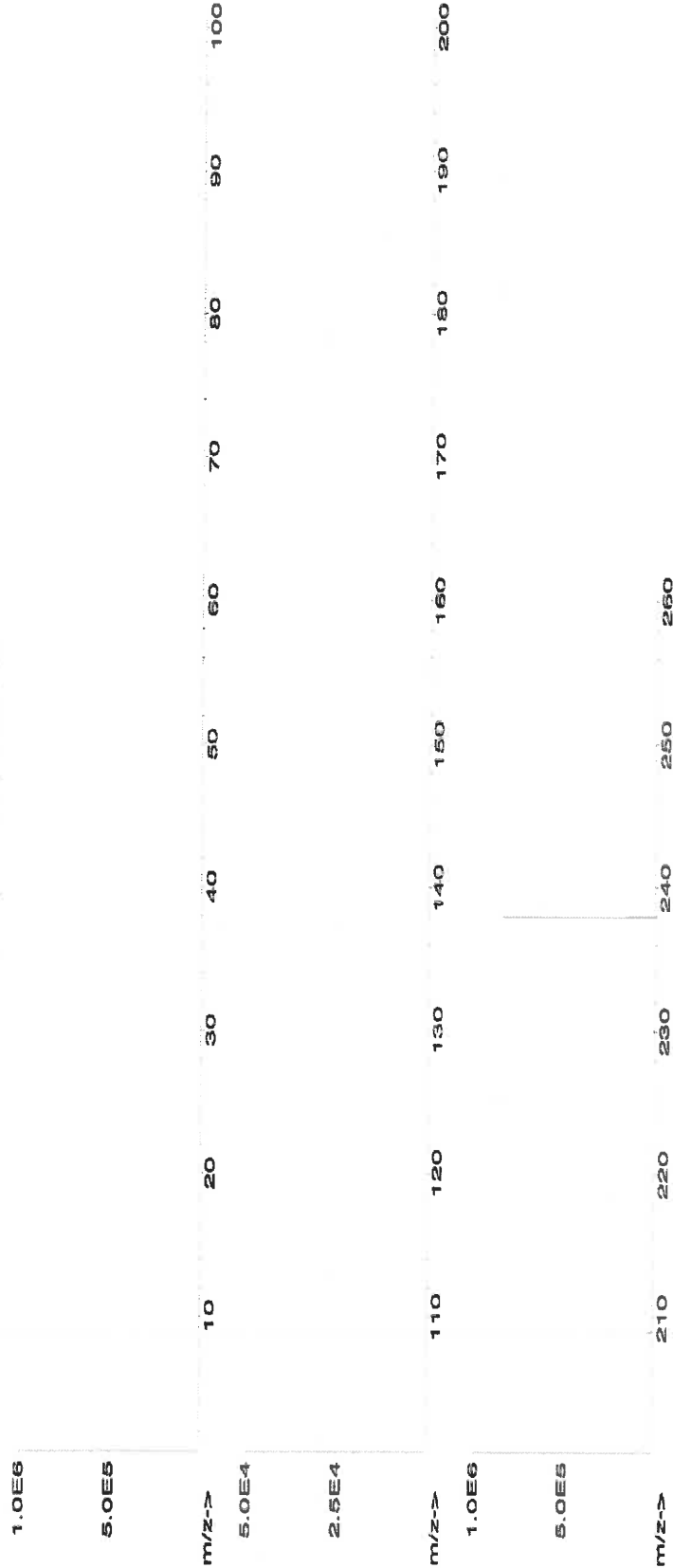
<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
<i>Pedro L. Rentas</i>	
Reviewed By:	Pedro L. Rentas

SDS Information

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	(Solvent Safety Info. On Attached pg.)		
										CAS#	OSHA PEL (TWA)	LD50

1. Uranyl nitrate hexahydrate (U)	58192	041524	0.1000	200.0	0.084	1000	10001.5	1000.0	2.2	13620-83-7	0.05 mg/m3	orl-rat 1040 mg/kg	3164
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[1] Spectrum No.1 [23.254 sec]:57092.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	<0.02	Os	<0.01	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.02	Hg	<0.2	P	<0.2	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

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



Certified Reference Material CRM
45983 R: 6/11/24



CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

57040
071423
Zirconium (Zr)

Lot # Solvent:
21110221 Nitric Acid

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

071426
Ambient (20 °C)
1000
6UTB

2.0% Nitric Acid
40.0 (mL)

Balance Uncertainty
Flask Uncertainty
5E-05 0.058
2000.02

Volume shown below was diluted to (mL):

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

Expanded
Uncertainty
+/- (µg/mL)

Final
Conc. (µg/mL)

Initial
Conc. (µg/mL)

Nominal
Conc. (µg/mL)

Part
Number

Lot
Number

Volume shown below was diluted to (mL):

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. Zirconyl chloride octahydrate (Zr)	58140	070621	0.1000	200.0	0.084	1000	10000.3	1000.0	2.2	13520-92-8	NA	NA	NA

[1] Spectrum No.1 [41.153 sec]:57040.D# [Count] [Linear]

1.OE6

5.OE5

m/z-->

1.OE8

5.OE7

m/z-->

1.OE8

5.OE7

m/z-->



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

Trace Metals Verification by ICP-MS ($\mu\text{g/mL}$)																			
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.02	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	<0.2	Fe	<0.02	Hg	<0.2	P	<0.2	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Ta	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.2	K	<0.02	Sc	<0.2	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:

[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 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).

[Faint text or signature]

R: 8/19/24, M6055

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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: IV-STOCK-12
Lot Number: U2-MEB734294
Matrix: 5% (v/v) HNO₃
Value / Analyte(s): 10 µg/mL ea:
Barium, Beryllium,
Bismuth, Cerium,
Cobalt, Indium,
Lithium, Nickel,
Lead, Uranium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Barium, Ba	10.01 ± 0.04 µg/mL	Beryllium, Be	10.01 ± 0.05 µg/mL
Bismuth, Bi	10.01 ± 0.06 µg/mL	Cerium, Ce	10.01 ± 0.04 µg/mL
Cobalt, Co	10.01 ± 0.05 µg/mL	Indium, In	10.01 ± 0.04 µg/mL
Lead, Pb	10.00 ± 0.04 µg/mL	Lithium, Li	10.01 ± 0.04 µg/mL
Nickel, Ni	10.01 ± 0.04 µg/mL	Uranium, U	10.01 ± 0.05 µg/mL

Density: 1.025 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ba	ICP Assay	3104a	140909
Ba	Calculated		See Sec. 4.2
Ba	Gravimetric		See Sec. 4.2
Be	ICP Assay	3105a	090514
Be	Calculated		See Sec. 4.2
Bi	ICP Assay	3106	180815
Ce	ICP Assay	3110	160830
Ce	EDTA	928	928
Ce	Calculated		See Sec. 4.2
Co	ICP Assay	3113	190630
Co	EDTA	928	928
Co	Calculated		See Sec. 4.2
In	ICP Assay	3124a	110516
In	EDTA	928	928
In	Calculated		See Sec. 4.2
Li	ICP Assay	3129a	100714
Li	Calculated		See Sec. 4.2
Li	Gravimetric		See Sec. 4.2
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
Ni	Calculated		See Sec. 4.2
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Pb	Calculated		See Sec. 4.2
U	ICP Assay	traceable to 3164	R2-U689597
U	Calculated		See Sec. 4.2

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of $k = 2$.

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

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

Certified Abundance:

IV's Certified Abundance

Isotope	Atom %
Uranium 238U	99.8 ± 0.1
Uranium 235U	0.19 ± 0.05

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

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

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

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.
- For more information, visit www.inorganicventures.com/TCT

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 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

- June 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

R: 08/22/24 M6058, M6059

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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: CHEM-CLP-4
Lot Number: V2-MEB746172
Matrix: 3% (v/v) HNO₃
3% (v/v) HF
Value / Analyte(s): 1 000 µg/mL ea:
Boron, Molybdenum,
Silicon, Tin,
Titanium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Boron, B	1 000 ± 5 µg/mL	Molybdenum, Mo	1 000 ± 5 µg/mL
Silicon, Si	1 000 ± 7 µg/mL	Tin, Sn	1 000 ± 5 µg/mL
Titanium, Ti	1 000 ± 6 µg/mL		

Density: 1.032 g/mL (measured at 20 ± 4 °C)

Assay Information:

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

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

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

6.2 For products attaining traceability through Inorganic Ventures' Primary Certified Reference Materials (PCRM™)

see the Limited License to Use PCRM™ in the Inorganic Ventures [Terms and Conditions of Sale](https://www.inorganicventures.com/terms-and-conditions-sale).

<https://www.inorganicventures.com/terms-and-conditions-sale>. The Terms and Conditions contain information on the use of materials traceable to PCRM™ certified reference materials. This Limited License agreement is especially pertinent for laboratories accredited under ISO:17034.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

HF Note: This standard should not be prepared or stored in glass.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

August 12, 2024

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **August 12, 2029**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Joseph Burns
Custom VS Manager



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director





Certified Reference Material CRM



CERTIFIED WEIGHT REPORT:

Part Number: **57040**
Lot Number: **071423**
Description: **Zirconium (Zr)**

Lot # **21110221**
Solvent: **Nitric Acid**

2.0% 40.0 (mL) Nitric Acid

Formulated By: *Benson Chan*
Benson Chan 071423

Expiration Date: 071426
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

Reviewed By: *Pedro L. Renteria*
Pedro L. Renterias 071423

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)	LDSO	NIST SRM
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1. Zirconyl chloride octahydrate (Zr) 58140 070621 0.1000 200.0 0.084 1000 10000.3 1000.0 2.2 13520-82-8 NA NA NA

[1] Spectrum No. 1 [41.163 sec]: 57040.DW [Count] [Linear]

1.OE6	m/z->	10	20	30	40	50	60	70	80	90	100
5.OE6	m/z->	110	120	130	140	150	160	170	180	190	200
1.OE8	m/z->	210	220	230	240	250	260				
5.OE7	m/z->										



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	Ti	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Ru	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Sr	<0.02	S	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	Ta	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02		<0.02	Tl	<0.02	Zr	<0.02
																			T

(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: 58112
Lot # 112124
Description: Magnesium (Mg)
Solvent: Nitric Acid

Expiration Date: 11/21/27
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6LUB

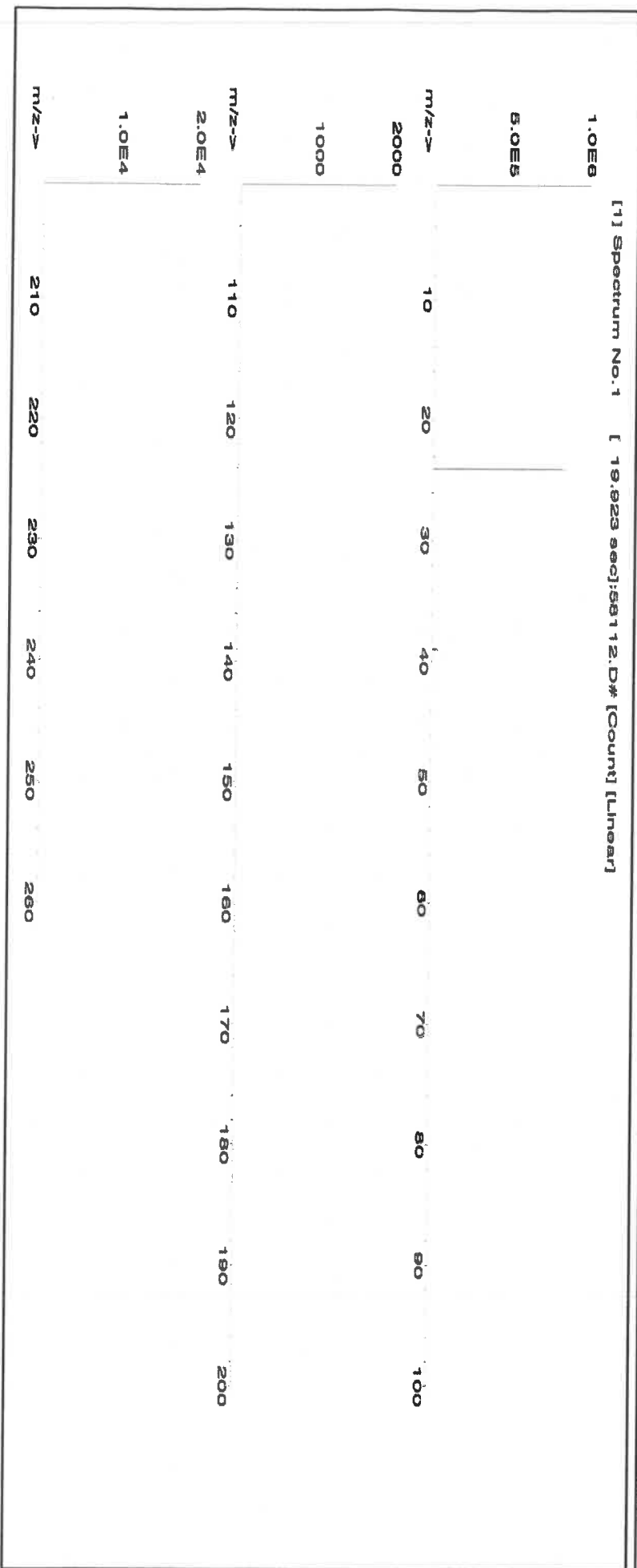
Weight shown below was diluted to (mL): 2000.07
5E-05 Balance Uncertainty
0.100 Flask Uncertainty

<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
Reviewed By:	Pedro L. Rentas
	112124

Compound	Lot	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Magnesium nitrate hexahydrate (Mg) IN030 MG000023A1 10000 99.999 0.10 8.51 234.9183 234.9459 10001.2 20.0 13446-18-9 NA off-rat 5440 mg/kg 3131a

[1] Spectrum No. 1 [19.823 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	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Rc	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	T	Os	<0.02	Rb	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Ru	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Sm	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sc	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2			Ta	<0.02	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:

58025
101124
Manganese (Mn)

Lot #
Solvent: Nitric Acid

24002546
2%
80.0 (mL)
Nitric Acid

<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
	101124
Reviewed By:	<i>Pedro L. Renteria</i>
	Pedro L. Renteria
	101124

Expiration Date: 101127
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 4000.2
5E-05 Balance Uncertainty
0.10 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. Manganese(II) nitrate hydrate (Mn) IN031 MMN02020A1 1000 99.999 0.10 20.8 19.2322 19.2344 1000.1 2.0 15710-66-4 5 mg/m3 or-rel >300mg/kg 3132

[1] Spectrum No.1 [34.243 sec]:57025.D# [Count] [Linear]

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



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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	T	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

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

Certificate of Analysis

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

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

M6137
R-71013124

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution
Catalog Number: CGSI1
Lot Number: V2-SI744713
Matrix: tr. HNO₃
tr. HF
Value / Analyte(s): 1 000 µg/mL ea:
Silicon
Starting Material: Silica
Starting Material Lot#: 1771
Starting Material Purity: 99.9981%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 999 ± 6 µg/mL
Density: 1.003 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1	999 ± 5 µg/mL ICP Assay NIST SRM Traceable to 3150 Lot Number: S2-SI702546
Assay Method #2	1000 ± 7 µg/mL Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

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	<	0.000310	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: 58111 **Lot #** R-1113/25
Lot Number: 072424 **Solvent:** Nitric Acid
Description: Sodium (Na)

Expiration Date: 072427 **2%** **80.0** **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): 4000.2 **0.10** **Flask Uncertainty**

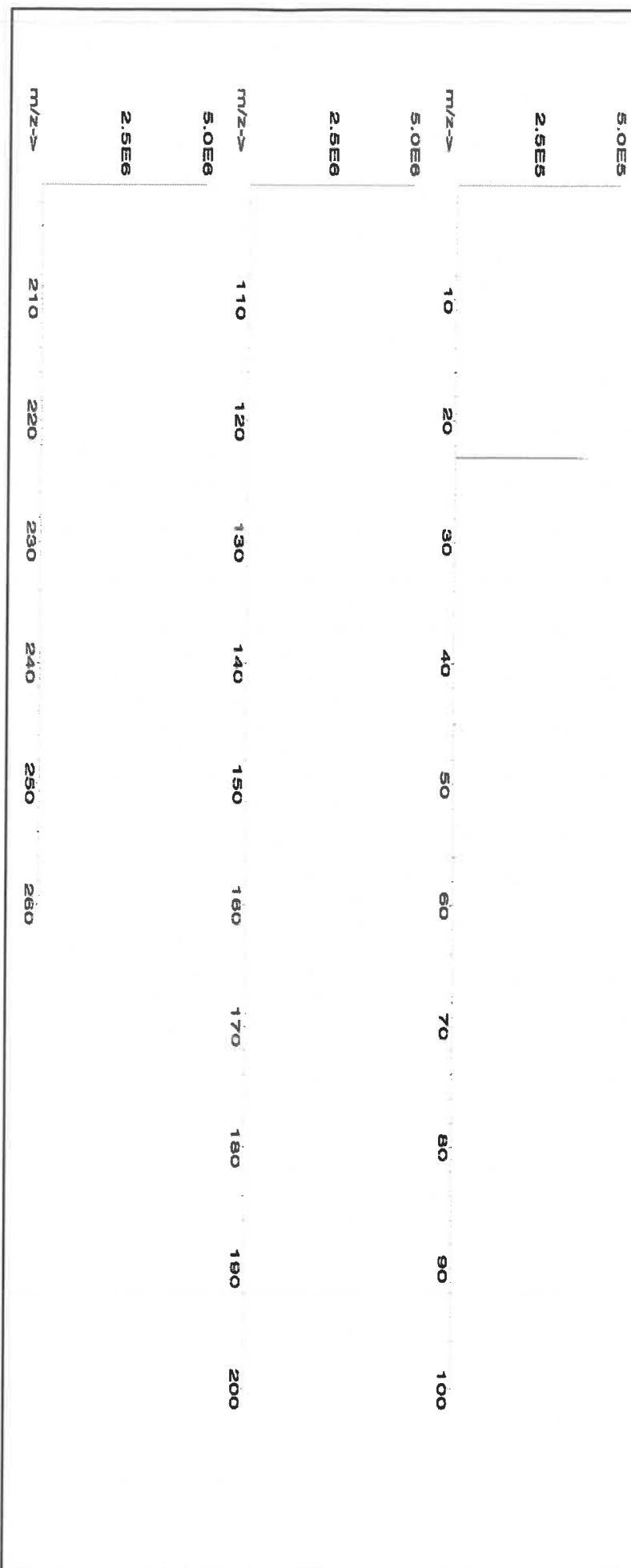
Formulated By:	Benson Chan	072424
Reviewed By:	Pedro L. Renteria	072424

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** Nitric Acid
Lot Number: **121724**
Description: **Zinc (Zn)**

Expiration Date: **121727** 2% 40.0 (mL) Nitric Acid

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

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

NIST Test Number: **6UTB** 5E-05 Balance Uncertainty
Weight shown below was diluted to (mL): **2000.1** 0.10 Flask Uncertainty

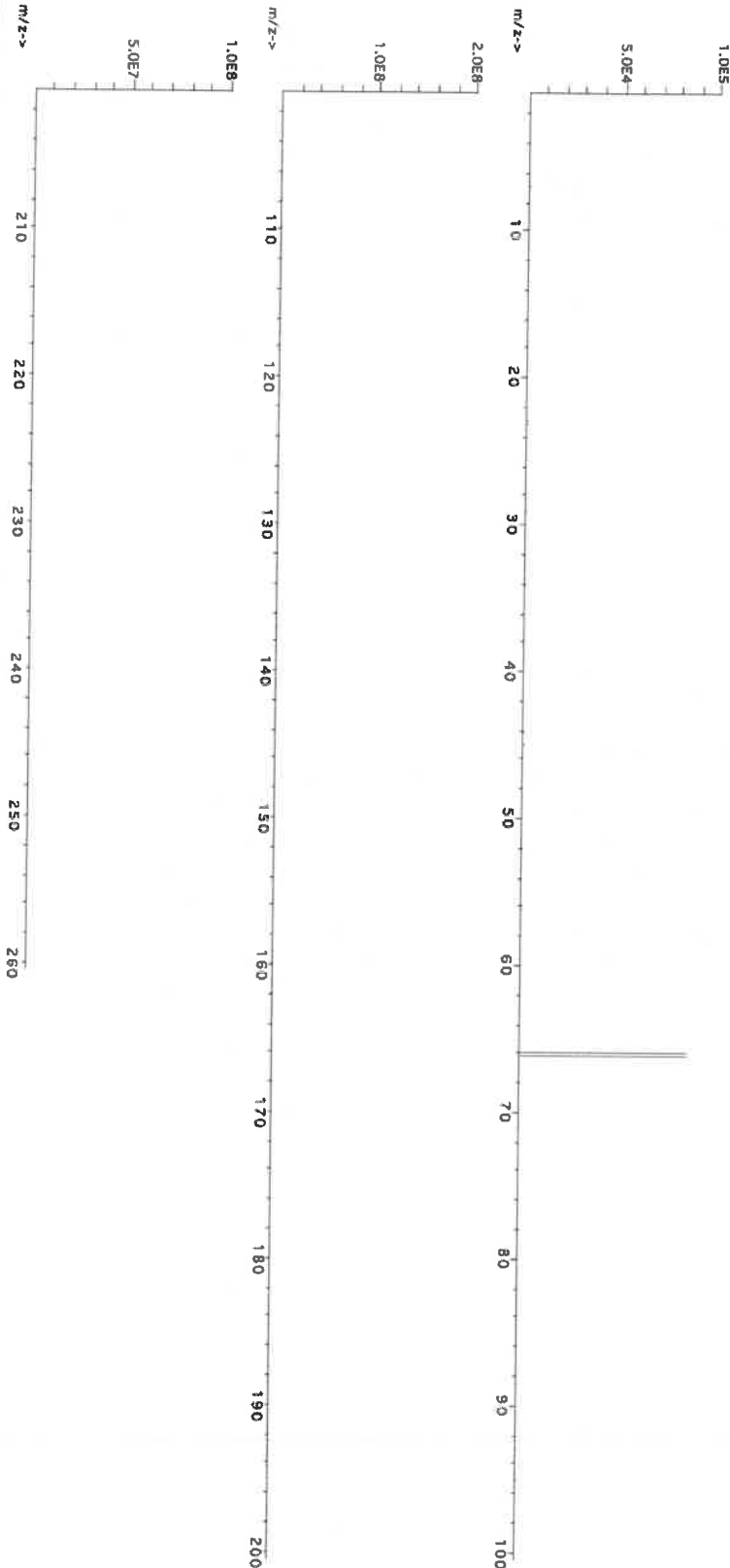
<i>Aleah O'Brady</i>	
Formulated By:	Aleah O'Brady
Reviewed By:	<i>Pedro L. Rentias</i>
	Pedro L. Rentias
	121724

Compound

RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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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] [Linear]





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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Bu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

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



QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
"An ISO 9001:2015 Certified Program"

R: 4/20/21

Instructions for QATS Reference Material: *Inorganic ICV Solutions*

QATS LABORATORY INORGANIC REFERENCE MATERIAL
INITIAL CALIBRATION VERIFICATION SOLUTIONS
(ICV1, ICV5, AND ICV6)

MG150

NOTE: These instructions are for advisory purposes only. If any apparent conflict exists between these instructions and the analytical protocol or your contract, disregard these instructions.

APPLICATION: For use with the CLP SFAM01.0 SOW and revisions.

CAUTION: Read instructions carefully before opening bottle(s) and proceeding with the analyses.

Contains Metals in Dilute Acidic or
Cyanide in Basic Aqueous Solutions
HAZARDOUS MATERIAL

Safety Data Sheets
Available Upon Request

(A) SAMPLE DESCRIPTION

Enclosed is a set of one (1) or more Aqueous Inorganic Reference Materials containing various analyte concentrations. ICV1 and ICV5 are in a matrix of dilute nitric acid. ICV6 is in a matrix of dilute basic solution. For the reference material source in reporting ICVs use "USEPA". For the reference material lot number for the ICV1, ICV5, and ICV6 solutions use "ICV1-1014", "ICV5-0415", and "ICV6-0400", respectively.

(B) BREAKAGE OR MISSING ITEMS

Check the contents of the shipment carefully for any broken, leaking, or missing items. Check that the seal is intact on each bottle. Refer to the enclosed chain of custody record. Report any problems to Mr. Keith Strout, APTIM Federal Services, LLC, at (702) 895-8722. If requested, return the chain-of-custody record with appropriate annotations and signatures to the address provided below.

QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
APTIM Federal Services, LLC
2700 Chandler Avenue - Building C
Las Vegas, NV 89120

(C) ANALYSIS OF SAMPLES

The Initial Calibration Verification Solutions (ICVs) are to be used to evaluate the accuracy of the initial calibrations of ICP, AA, and Cyanide colorimetric instruments, and are to be used with the CLP SOWs and revisions. The values for each element in the ICVs are listed below in µg/L (ppb) for the resulting solution(s) after the dilution of the concentrate(s) according to the following instructions. Use Class 'A' glassware to prepare the solution(s).

ICV1-1014 For ICP-AES analysis, use a 10-fold dilution by pipetting 10 mL of the ICV1 concentrate into a 100 mL volumetric flask and dilute to volume with 2% (v/v) nitric acid.





QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
"An ISO 9001:2015 Certified Program"

Instructions for QATS Reference Material: *Inorganic ICV Solutions*

ICV1-1014 For ICP-MS analysis, use a 50-fold dilution by pipetting 2 mL of the ICV1 concentrate into a 100 mL volumetric flask and dilute to volume with 1% (v/v) nitric acid.

ICV5-0415 For the cold vapor analysis of mercury by AA, use a 100-fold dilution by pipetting 1 mL of the ICV5 concentrate into a 100 mL volumetric flask and dilute to volume with 2% (v/v) nitric acid. The ICV5 concentrate is prepared in 0.05% (w/v) K₂Cr₂O₇ and 5% (v/v) nitric acid.

ICV6-0400 For the analysis of cyanide, use a 100-fold dilution by pipetting 1 mL of the ICV6 concentrate into a 100 mL volumetric flask and dilute to volume with Type II water. Distill this solution along with the samples before analysis. The cyanide concentrate is prepared from K₃Fe(CN)₆, Type II water, and 0.1 % sodium hydroxide, and will decompose rapidly if exposed to light.

NOTE: USE TYPE II WATER AND HIGH-PURITY ACIDS FOR ALL DILUTIONS.

(D) CERTIFIED CONCENTRATIONS OF QATS ICV1, ICV5, AND ICV6 SOLUTIONS

ICV1-1014		
Element	Concentration (µg/L) (after 10-fold dilution)	Concentration (µg/L) (after 50-fold dilution)
Al	2500	500
Sb	1000	200
As	1000	200
Ba	520	100
Be	510	100
Cd	510	100
Ca	10000	2000
Cr	520	100
Co	520	100
Cu	510	100
Fe	10000	2000
Pb	1000	200
Mg	6000	1200
Mn	520	100
Ni	530	110
K	9900	2000
Se	1000	200
Ag	250	50
Na	10000	2000
Tl	1000	210
V	500	100
Zn	1000	200

ICV5-0415		ICV6-0400	
Element	Concentration (µg/L) (after 100-fold dilution)	Analyte	Concentration (µg/L) (after 100-fold dilution)
Hg	4.0	CN ⁻	99

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

avantor™



M6151

R → 11/15/25

Material No.: 9530-33
Batch No.: 22G2862015
Manufactured Date: 2022-06-15
Retest Date: 2027-06-14
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
ACS – Assay (as HCl) (by acid–base titrn)	36.5 – 38.0 %	37.9 %
ACS – Color (APHA)	≤ 10	5
ACS – Residue after Ignition	≤ 3 ppm	< 1 ppm
ACS – Specific Gravity at 60°/60°F	1.185 – 1.192	1.191
ACS – Bromide (Br)	≤ 0.005 %	< 0.005 %
ACS – Extractable Organic Substances	≤ 5 ppm	< 1 ppm
ACS – Free Chlorine (as Cl ₂)	≤ 0.5 ppm	< 0.5 ppm
Phosphate (PO ₄)	≤ 0.05 ppm	< 0.03 ppm
Sulfate (SO ₄)	≤ 0.5 ppm	< 0.3 ppm
Sulfite (SO ₃)	≤ 0.8 ppm	0.3 ppm
Ammonium (NH ₄)	≤ 3 ppm	< 1 ppm
Trace Impurities – Arsenic (As)	≤ 0.010 ppm	< 0.003 ppm
Trace Impurities – Aluminum (Al)	≤ 10.0 ppb	1.3 ppb
Arsenic and Antimony (as As)	≤ 5.0 ppb	< 3.0 ppb
Trace Impurities – Barium (Ba)	≤ 1.0 ppb	0.2 ppb
Trace Impurities – Beryllium (Be)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Bismuth (Bi)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Boron (B)	≤ 20.0 ppb	< 5.0 ppb
Trace Impurities – Cadmium (Cd)	≤ 1.0 ppb	< 0.3 ppb
Trace Impurities – Calcium (Ca)	≤ 50.0 ppb	163.0 ppb
Trace Impurities – Chromium (Cr)	≤ 1.0 ppb	0.7 ppb
Trace Impurities – Cobalt (Co)	≤ 1.0 ppb	< 0.3 ppb
Trace Impurities – Copper (Cu)	≤ 1.0 ppb	< 0.1 ppb
Trace Impurities – Gallium (Ga)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Germanium (Ge)	≤ 3.0 ppb	< 2.0 ppb
Trace Impurities – Gold (Au)	≤ 4.0 ppb	0.6 ppb
Heavy Metals (as Pb)	≤ 100 ppb	< 50 ppb
Trace Impurities – Iron (Fe)	≤ 15 ppb	6 ppb

>>> Continued on page 2 >>>

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

 **avantorsm**



Material No.: 9530-33
Batch No.: 22G2862015

Test	Specification	Result
Trace Impurities – Lead (Pb)	≤ 1.0 ppb	< 0.5 ppb
Trace Impurities – Lithium (Li)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Magnesium (Mg)	≤ 10.0 ppb	2.9 ppb
Trace Impurities – Manganese (Mn)	≤ 1.0 ppb	< 0.4 ppb
Trace Impurities – Mercury (Hg)	≤ 0.5 ppb	0.1 ppb
Trace Impurities – Molybdenum (Mo)	≤ 10.0 ppb	< 3.0 ppb
Trace Impurities – Nickel (Ni)	≤ 4.0 ppb	< 0.3 ppb
Trace Impurities – Niobium (Nb)	≤ 1.0 ppb	0.8 ppb
Trace Impurities – Potassium (K)	≤ 9.0 ppb	< 2.0 ppb
Trace Impurities – Selenium (Se), For Information Only		< 1.0 ppb
Trace Impurities – Silicon (Si)	≤ 100.0 ppb	< 10.0 ppb
Trace Impurities – Silver (Ag)	≤ 1.0 ppb	0.5 ppb
Trace Impurities – Sodium (Na)	≤ 100.0 ppb	2.3 ppb
Trace Impurities – Strontium (Sr)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Tantalum (Ta)	≤ 1.0 ppb	1.6 ppb
Trace Impurities – Thallium (Tl)	≤ 5.0 ppb	< 2.0 ppb
Trace Impurities – Tin (Sn)	≤ 5.0 ppb	4.0 ppb
Trace Impurities – Titanium (Ti)	≤ 1.0 ppb	1.5 ppb
Trace Impurities – Vanadium (V)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Zinc (Zn)	≤ 5.0 ppb	0.8 ppb
Trace Impurities – Zirconium (Zr)	≤ 1.0 ppb	0.3 ppb

>>> Continued on page 3 >>>

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

 **avantor**™

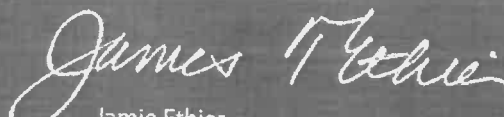


Material No.: 9530-33
Batch No.: 22G2862015

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

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

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

R → 1/7/23
M6153

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution
Catalog Number: CGSR10
Lot Number: V2-SR745329
Matrix: 2% (v/v) HNO₃
Value / Analyte(s): 10 000 µg/mL ea:
Strontium
Starting Material: Strontium Carbonate
Starting Material Lot#: 2647
Starting Material Purity: 99.9960%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10081 ± 39 µg/mL
Density: 1.030 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1 **10059 ± 50 µg/mL**
ICP Assay NIST SRM Traceable to 3153a Lot Number: K2-SR650985

Assay Method #2 **10087 ± 26 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000960	M	Eu	<	0.000480	O	Na		0.002964	M	Se	<	0.042000	M	Zn		0.004560
M	Al		0.003420	O	Fe		0.013225	M	Nb	<	0.000480	O	Si		0.012997	M	Zr		0.001847
M	As	<	0.007200	M	Ga	<	0.002900	M	Nd	<	0.000480	M	Sm	<	0.000480				
M	Au	<	0.003900	M	Gd	<	0.000480	O	Ni		0.001482	M	Sn	<	0.000480				
O	B	<	0.003200	M	Ge	<	0.004800	M	Os	<	0.001500	s	Sr	<					
M	Ba		0.638494	M	Hf	<	0.000480	O	P	<	0.017000	M	Ta	<	0.000480				
O	Be	<	0.000450	M	Hg	<	0.000960	M	Pb		0.010717	M	Tb	<	0.000480				
M	Bi	<	0.002000	M	Ho	<	0.000480	M	Pd	<	0.002000	M	Te	<	0.016000				
O	Ca		0.025083	M	In	<	0.008600	M	Pr		0.000547	M	Th	<	0.000480				
M	Cd	<	0.000960	M	Ir	<	0.000480	M	Pt	<	0.000480	M	Ti		0.004560				
M	Ce		0.000661	O	K		0.025083	M	Rb	<	0.003400	M	Tl	<	0.000480				
M	Co		0.001527	M	La	<	0.000480	M	Re	<	0.000480	M	Tm		0.004332				
O	Cr	<	0.004700	O	Li	<	0.005600	O	Rh	<	0.013000	M	U	<	0.000480				
M	Cs	<	0.000480	M	Lu	<	0.000480	M	Ru	<	0.000960	M	V	<	0.000960				
O	Cu	<	0.003800	O	Mg		0.001048	O	S	<	0.045000	M	W	<	0.002400				
M	Dy	<	0.000960	O	Mn		0.000319	M	Sb	<	0.009600	O	Y	<	0.001200				
M	Er	<	0.000480	M	Mo	<	0.002900	M	Sc	<	0.001500	M	Yb	<	0.000480				

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 - 87.62 +2 6 Sr(H₂O)₆+2

Chemical Compatibility - Soluble in HCl, and HNO₃. Avoid H₂SO₄, HF and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicate, carbonate, hydroxide, oxide, fluoride, sulfate, oxalate, chromate, arsenate and tungstate in neutral aqueous media.

Stability - 2-100 ppb levels stable for months in 1% HNO₃ / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1 - 3.5% HNO₃ / LDPE container.

Sr Containing Samples (Preparation and Solution) -Metal (Best dissolved in diluted HNO₃); Ores (Carbonate fusion in PtO followed by HCl dissolution); Organic Matrices (Dry ash and dissolution in dilute HCl).

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

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 88 amu	1200 ppt	N/A	72Ge16O, 176Yb+2, 176Lu+2 , 176Hf+2
ICP-OES 407.771 nm	0.0004 / 0.00006 µg/mL	1	U, Ce
ICP-OES 421.552 nm	0.0008 / 0.00004 µg/mL	1	Rb
ICP-OES 460.733 nm	0.07 / 0.003 µg/mL	1	Ce

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

August 26, 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 26, 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





M6156

Certified Reference Material CRM



R → 6/12/24

CERTIFIED WEIGHT REPORT:

Part Number:

Lot Number:

Description:

57042

032123

Molybdenum (Mo)

Expiration Date:

032126

Ambient (20 °C)

Recommended Storage:

1000

NIST Test Number:

6UTB

Volume shown below was diluted to (mL):

3000.41

Lot #

MKBQ8597V

Ammonium hydroxide

0.5%

15.0

(mL)

5E-05

Balance Uncertainty

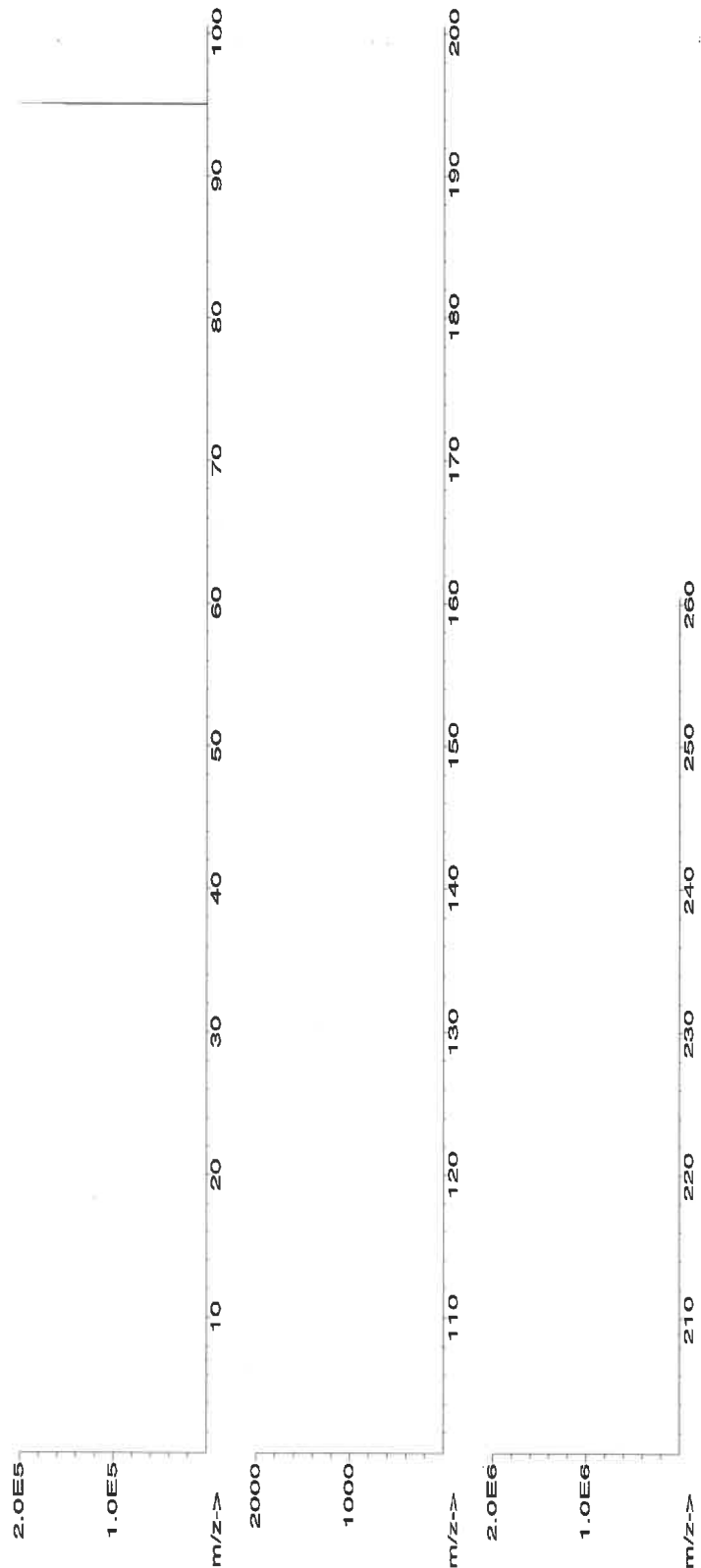
0.058

Flask Uncertainty

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information		
										(Solvent Safety Info. On Attached pg.)	NIST	SRM

1. Ammonium molybdate (Mo) 58142 112322 0.1000 300.0 0.084 1000 10001.4 1000.0 2.1 13106-76-8 5 mg(Mo)/m3 orl-rat 333 mg/kg 3134

[1] Spectrum No.1 [8.594 sec]:57042.D# [Count] [Linear]





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

Trace Metals Verification by ICP-MS (µg/mL)																			
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Tc	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.02	Os	<0.01	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.02	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	T	<0.2	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).

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

avantor™



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 >>>

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: 6020ISS
Lot Number: S2-MEB709511
Matrix: 7% (v/v) HNO₃
Value / Analyte(s): 10 µg/mL ea:
Bismuth, Holmium,
Indium, 6-Lithium,
Rhodium, Scandium,
Terbium, Yttrium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
6-Lithium, Li6	10.00 ± 0.03 µg/mL	Bismuth, Bi	10.00 ± 0.05 µg/mL
Holmium, Ho	10.00 ± 0.05 µg/mL	Indium, In	10.00 ± 0.04 µg/mL
Rhodium, Rh	10.00 ± 0.07 µg/mL	Scandium, Sc	10.00 ± 0.04 µg/mL
Terbium, Tb	10.00 ± 0.04 µg/mL	Yttrium, Y	10.00 ± 0.04 µg/mL

Density: 1.035 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Bi	ICP Assay	3106	180815
Bi	Calculated		See Sec. 4.2
Ho	ICP Assay	3123a	090408
Ho	EDTA	928	928
In	ICP Assay	3124a	110516
In	EDTA	928	928
In	Calculated		See Sec. 4.2
Li6	Gravimetric		See Sec. 4.2
Rh	ICP Assay	3144	070619
Sc	ICP Assay	3148a	100701
Sc	EDTA	928	928
Tb	ICP Assay	3157a	100518
Tb	EDTA	928	928
Tb	Calculated		See Sec. 4.2
Y	ICP Assay	3167a	120314
Y	EDTA	928	928
Y	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

Certified Abundance:

IV's Certified Abundance

Isotope	Atom %
Lithium Li6	95.6 ± 0.3
Lithium Li7	4.4 ± 0.1

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 03, 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 03, 2026**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director





**QATS LABORATORY INORGANIC REFERENCE MATERIAL
 INTERFERENCE CHECK SAMPLE SET FOR ICP-MS (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.

Contains Heavy Metals
HAZARDOUS MATERIAL

Safety Data Sheets
 Available Upon Request

(A) SAMPLE DESCRIPTION

Enclosed is a set of one (1) or more bottles of an 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-0803" and for the ICSAB mixture use "ICSA-0803+ICSB-0803".**

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 the Contracting Officer, Ross Miller at miller.ross@epa.gov. If directed by Ross Miller, 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

This interference check sample set is to be used to verify elemental isobaric correction factors of inductively coupled plasma-mass spectrometers (ICP-MS). This reference material set consists of two (2) concentrated solutions. The ICSA solution contains several interferent elements and species; for a complete listing refer to the CLP SOW. The ICSB solution contains the analytes: Ag, As, Sb, Ba, Be, Cd, Co, Cr, Cu, Mn, Ni, Pb, Tl, Se, V, and Zn. This instruction sheet provides the nominal values for the ICP-MS ICS 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-0803, Interferents: Pipet 10 mL of the ICSA solution into a 100 mL volumetric flask and dilute to volume with 1% v/v HNO₃. Analyze this solution by ICP-MS.

ICSB-0803, Analytes, mixed with ICSA-0803, 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 1% v/v HNO₃. Analyze this ICSAB solution by ICP-MS.

(D) "CERTIFIED VALUE" CONCENTRATIONS OF QATS ICP-MS 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-MS ICSA-0803, AND ICSA-0803 MIXED WITH ICSB-0803							
Element	CRQL	Part A (µg/L)	Lower Limit (µg/L)	Upper Limit (µg/L)	Part A +Part B (µg/L)	Lower Limit (µg/L)	Upper Limit (µg/L)
Al	20.0	[100000]			[100000]		
Sb	2.0	(1.5)	-2.5	5.5	(22.0)	18.0	26.0
As	1.0	(0.1)	-1.9	2.1	19.0	16.2	21.9
Ba	10.0	(1.2)	-18.8	21.2	(22.0)	2.0	42.0
Be	1.0	(0)	-2.0	2.0	19.0	16.2	21.9
Cd	1.0	(0.7)	-1.3	2.7	20.0	17.0	23.0
Ca	500	[100000]			[100000]		
C		[200000]			[200000]		
Cl		[1000000]			[1000000]		
Cr	2.0	(21.0)	17.0	25.0	40.0	34.0	46.0
Co	1.0	(1.0)	-1.0	3.0	20.0	17.0	23.0
Cu	2.0	(8.0)	4.0	12.0	(25.0)	21.0	29.0
Fe	200	[100000]			[100000]		
Pb	1.0	(4.0)	2.0	6.0	25.0	21.3	28.8
Mg	500	[100000]			[100000]		
Mn	1.0	(7.0)	5.0	9.0	27.0	23.0	31.1
Mo		[2000]			[2000]		
Ni	1.0	(6.0)	4.0	8.0	24.0	20.4	27.6
P		[100000]			[100000]		
K	500	[100000]			[100000]		
Se	5.0	(0.3)	-9.7	10.3	(19.0)	9.0	29.0
Ag	1.0	(0)	-2.0	2.0	18.0	15.3	20.7
Na	500	[100000]			[100000]		
S		[100000]			[100000]		
Tl	1.0	(0)	-2.0	2.0	21.0	17.9	24.2
Ti		[2000]			[2000]		
V	5.0	(0.5)	-9.5	10.5	(19.0)	9.0	29.0
Zn	5.0	(11.0)	1.0	21.0	(29.0)	19.0	39.0

[] Indicates analytes that do not require ICP-MS determination in the ICS.

The acceptance ranges for all analytes in parentheses in the above table were determined using the listed certified value ± 2 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.



QATS LABORATORY INORGANIC REFERENCE MATERIAL INTERFERENCE CHECK SAMPLE SET FOR ICP-MS (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.

Contains Heavy Metals
HAZARDOUS MATERIAL

Safety Data Sheets
 Available Upon Request

(A) SAMPLE DESCRIPTION

Enclosed is a set of one (1) or more bottles of an 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-0803" and for the ICSAB mixture use "ICSA-0803+ICSB-0803".**

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 the Contracting Officer, Ross Miller at miller.ross@epa.gov. If directed by Ross Miller, 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

This interference check sample set is to be used to verify elemental isobaric correction factors of inductively coupled plasma-mass spectrometers (ICP-MS). This reference material set consists of two (2) concentrated solutions. The ICSA solution contains several interferent elements and species; for a complete listing refer to the CLP SOW. The ICSB solution contains the analytes: Ag, As, Sb, Ba, Be, Cd, Co, Cr, Cu, Mn, Ni, Pb, Tl, Se, V, and Zn. This instruction sheet provides the nominal values for the ICP-MS ICS 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-0803, Interferents: Pipet 10 mL of the ICSA solution into a 100 mL volumetric flask and dilute to volume with 1% v/v HNO₃. Analyze this solution by ICP-MS.

ICSB-0803, Analytes, mixed with ICSA-0803, 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 1% v/v HNO₃. Analyze this ICSAB solution by ICP-MS.

(D) "CERTIFIED VALUE" CONCENTRATIONS OF QATS ICP-MS 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-MS ICSA-0803, AND ICSA-0803 MIXED WITH ICSB-0803							
Element	CRQL	Part A (µg/L)	Lower Limit (µg/L)	Upper Limit (µg/L)	Part A +Part B (µg/L)	Lower Limit (µg/L)	Upper Limit (µg/L)
Al	20.0	[100000]			[100000]		
Sb	2.0	(1.5)	-2.5	5.5	(22.0)	18.0	26.0
As	1.0	(0.1)	-1.9	2.1	19.0	16.2	21.9
Ba	10.0	(1.2)	-18.8	21.2	(22.0)	2.0	42.0
Be	1.0	(0)	-2.0	2.0	19.0	16.2	21.9
Cd	1.0	(0.7)	-1.3	2.7	20.0	17.0	23.0
Ca	500	[100000]			[100000]		
C		[200000]			[200000]		
Cl		[1000000]			[1000000]		
Cr	2.0	(21.0)	17.0	25.0	40.0	34.0	46.0
Co	1.0	(1.0)	-1.0	3.0	20.0	17.0	23.0
Cu	2.0	(8.0)	4.0	12.0	(25.0)	21.0	29.0
Fe	200	[100000]			[100000]		
Pb	1.0	(4.0)	2.0	6.0	25.0	21.3	28.8
Mg	500	[100000]			[100000]		
Mn	1.0	(7.0)	5.0	9.0	27.0	23.0	31.1
Mo		[2000]			[2000]		
Ni	1.0	(6.0)	4.0	8.0	24.0	20.4	27.6
P		[100000]			[100000]		
K	500	[100000]			[100000]		
Se	5.0	(0.3)	-9.7	10.3	(19.0)	9.0	29.0
Ag	1.0	(0)	-2.0	2.0	18.0	15.3	20.7
Na	500	[100000]			[100000]		
S		[100000]			[100000]		
Tl	1.0	(0)	-2.0	2.0	21.0	17.9	24.2
Ti		[2000]			[2000]		
V	5.0	(0.5)	-9.5	10.5	(19.0)	9.0	29.0
Zn	5.0	(11.0)	1.0	21.0	(29.0)	19.0	39.0

[] Indicates analytes that do not require ICP-MS determination in the ICS.

The acceptance ranges for all analytes in parentheses in the above table were determined using the listed certified value $\pm$ 2 times the associated CLP SOW CRQL. The acceptance ranges for all other analytes were determined using the certified value $\pm$ 15 percent of the listed certified value.



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

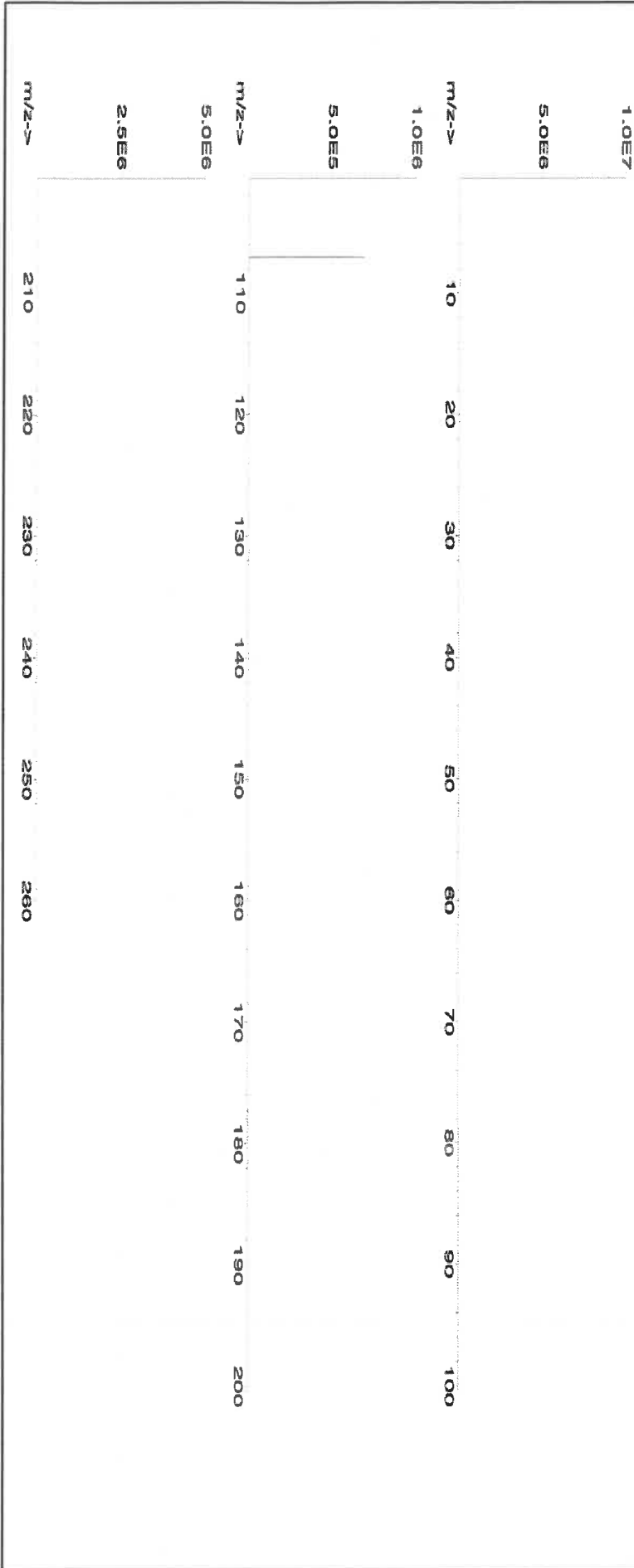
Weight shown below was diluted to (mL): 4000.30 0.058 Balance Uncertainty
Flask Uncertainty

Formulated By:	Benson Chan
122823	
Reviewed By:	Pedro L. Rentas
122823	

SDS Information									
Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)

1. Silver nitrate (Ag) IN035 J0612AGA1 1000.0 99.9996 0.10 63.7 6.27992 6.27998 1000.0 2.0 7761-88-8 10 µg/mL3 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 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: 10/18/24
Certified Reference Material CRM



CERTIFIED WEIGHT REPORT:

Part Number:

57051

Lot #

Solvent:

24002546

Handwritten: 24002546

Nitric Acid

Lot Number:

071724

Description:

Antimony (Sb)

2.0%

40.0 (mL)

Nitric Acid

Expiration Date:

071727

Recommended Storage:

Ambient (20 °C)

Nominal Concentration (µg/mL):

1000

NIST Test Number:

6UJB

Volume shown below was diluted to (mL):

2000.26

5E-05

Balance Uncertainty

0.058

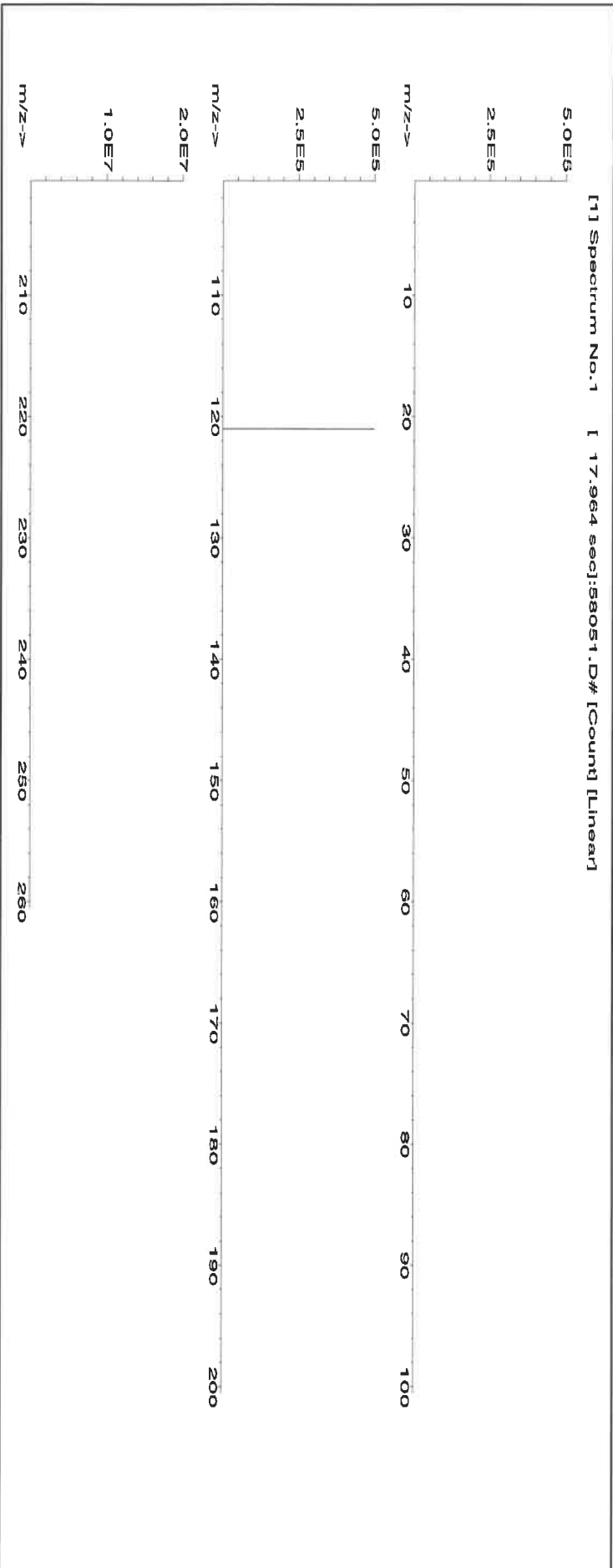
F flask Uncertainty

<i>Handwritten: Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
	071724
<i>Handwritten: Pedro L. Rentas</i>	
Reviewed By:	Pedro L. Rentas
	071724

SDS Information

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
----------	-------------	------------	-----------------	-------------------	--------------------------	-----------------------	-----------------------	---------------------	----------------------------------	------	----------------	------	----------

1. Antimony (Sb) 58151 060324 0.1000 200.0 0.084 1000 10001.4 1000.0 2.2 7440-36-0 0.5 mg/m3 orl-rat 7000 mg/kg 3102a



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R: 8/5/24

M6019

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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: Single Analyte Custom Grade Solution
Catalog Number: CGSR1
Lot Number: U2-SR730227
Matrix: 0.1% (v/v) HNO₃
Value / Analyte(s): 1 000 µg/mL ea:
Strontium
Starting Material: SrCO₃
Starting Material Lot#: M2-2192
Starting Material Purity: 99.9993%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1001 ± 3 µg/mL
Density: 1.000 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1	998 ± 4 µg/mL ICP Assay NIST SRM Traceable to 3153a Lot Number: K2-SR650985
Assay Method #2	1001 ± 3 µg/mL EDTA NIST SRM 928 Lot Number: 928
Assay Method #3	1001 ± 2 µg/mL Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

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	<	0.001980	M	Eu	<	0.000495	O	Na	0.000200	M	Se	<	0.013862	O	Zn	0.000143	
O	Al	0.000370	O	Fe	0.000410	M	Nb	<	0.000495	i	Si	<			M	Zr	<	0.000495
M	As	<	0.000495	M	Ga	<	0.000495	M	Nd	<	0.000495	M	Sm	<	0.000495			
M	Au	<	0.000989	M	Gd	<	0.000495	O	Ni	<	0.007631	M	Sn	<	0.000990			
M	B	<	0.039606	M	Ge	<	0.000495	M	Os	<	0.000494	s	Sr	<				
M	Ba	0.006486	M	Hf	<	0.000495	i	P	<			M	Ta	<	0.000495			
M	Be	<	0.000990	M	Hg	<	0.000989	M	Pb	<	0.002970	M	Tb	<	0.000495			
M	Bi	<	0.000495	M	Ho	<	0.000495	M	Pd	<	0.003957	M	Te	<	0.027724			
O	Ca	0.004255	M	In	<	0.000495	M	Pr	<	0.000495	M	Th	<	0.000990				
M	Cd	0.001339	M	Ir	<	0.000494	M	Pt	<	0.002970	M	Ti	<	0.005940				
M	Ce	<	0.004950	O	K	<	0.008184	M	Rb	<	0.002970	M	Tl	<	0.000495			
M	Co	<	0.000495	M	La	<	0.000495	M	Re	<	0.000495	M	Tm	<	0.000495			
O	Cr	<	0.003207	O	Li	<	0.000884	O	Rh	<	0.012829	M	U	<	0.001485			
M	Cs	<	0.000990	M	Lu	<	0.002970	M	Ru	<	0.000989	M	V	<	0.001980			
M	Cu	0.000099	O	Mg	0.000064	i	S	<				M	W	<	0.003960			
M	Dy	<	0.000495	O	Mn	0.000066	M	Sb	<	0.014852	O	Y	<	0.000995				
M	Er	<	0.000495	M	Mo	<	0.001980	M	Sc	<	0.001980	M	Yb	<	0.000495			

M - Checked by ICP-MS

O - Checked by ICP-OES

i - Spectral Interference

n - Not Checked For

s - Solution Standard Element

6.0 INTENDED USE

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

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

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 87.62 +2 6 Sr(H₂O)₆+2

Chemical Compatibility - Soluble in HCl, and HNO₃. Avoid H₂SO₄, HF and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicate, carbonate, hydroxide, oxide, fluoride, sulfate, oxalate, chromate, arsenate and tungstate in neutral aqueous media.

Stability - 2-100 ppb levels stable for months in 1% HNO₃ / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1 - 3.5% HNO₃ / LDPE container.

Sr Containing Samples (Preparation and Solution) -Metal (Best dissolved in diluted HNO₃); Ores (Carbonate fusion in PtO followed by HCl dissolution); Organic Matrices (Dry ash and dissolution in dilute HCl).

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

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 88 amu	1200 ppt	N/A	72Ge16O, 176Yb+2, 176Lu+2 , 176Hf+2
ICP-OES 407.771 nm	0.0004 / 0.00006 µg/mL	1	U, Ce
ICP-OES 421.552 nm	0.0008 / 0.00004 µg/mL	1	Rb
ICP-OES 460.733 nm	0.07 / 0.003 µg/mL	1	Ce

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 03, 2023

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- March 03, 2028

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



R: 8/5/24

M6019

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.comP: 800-669-6799/540-585-3030
F: 540-585-3012
info@inorganicventures.com**1.0 ACCREDITATION / REGISTRATION**

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

**2.0 PRODUCT DESCRIPTION**

Product Code: Single Analyte Custom Grade Solution
Catalog Number: CGSR1
Lot Number: U2-SR730227
Matrix: 0.1% (v/v) HNO₃
Value / Analyte(s): 1 000 µg/mL ea:
Strontium
Starting Material: SrCO₃
Starting Material Lot#: M2-2192
Starting Material Purity: 99.9993%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1001 ± 3 µg/mL
Density: 1.000 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1	998 ± 4 µg/mL ICP Assay NIST SRM Traceable to 3153a Lot Number: K2-SR650985
Assay Method #2	1001 ± 3 µg/mL EDTA NIST SRM 928 Lot Number: 928
Assay Method #3	1001 ± 2 µg/mL Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001980	M	Eu	<	0.000495	O	Na	0.000200	M	Se	<	0.013862	O	Zn	0.000143	
O	Al	0.000370	O	Fe	0.000410	M	Nb	<	0.000495	i	Si	<			M	Zr	<	0.000495
M	As	<	0.000495	M	Ga	<	0.000495	M	Nd	<	0.000495	M	Sm	<	0.000495			
M	Au	<	0.000989	M	Gd	<	0.000495	O	Ni	<	0.007631	M	Sn	<	0.000990			
M	B	<	0.039606	M	Ge	<	0.000495	M	Os	<	0.000494	s	Sr	<				
M	Ba	0.006486	M	Hf	<	0.000495	i	P	<			M	Ta	<	0.000495			
M	Be	<	0.000990	M	Hg	<	0.000989	M	Pb	<	0.002970	M	Tb	<	0.000495			
M	Bi	<	0.000495	M	Ho	<	0.000495	M	Pd	<	0.003957	M	Te	<	0.027724			
O	Ca	0.004255	M	In	<	0.000495	M	Pr	<	0.000495	M	Th	<	0.000990				
M	Cd	0.001339	M	Ir	<	0.000494	M	Pt	<	0.002970	M	Ti	<	0.005940				
M	Ce	<	0.004950	O	K	<	0.008184	M	Rb	<	0.002970	M	Tl	<	0.000495			
M	Co	<	0.000495	M	La	<	0.000495	M	Re	<	0.000495	M	Tm	<	0.000495			
O	Cr	<	0.003207	O	Li	<	0.000884	O	Rh	<	0.012829	M	U	<	0.001485			
M	Cs	<	0.000990	M	Lu	<	0.002970	M	Ru	<	0.000989	M	V	<	0.001980			
M	Cu	0.000099	O	Mg	0.000064	i	S	<			M	W	<	0.003960				
M	Dy	<	0.000495	O	Mn	0.000066	M	Sb	<	0.014852	O	Y	<	0.000995				
M	Er	<	0.000495	M	Mo	<	0.001980	M	Sc	<	0.001980	M	Yb	<	0.000495			

M - Checked by ICP-MS

O - Checked by ICP-OES

i - Spectral Interference

n - Not Checked For

s - Solution Standard Element

6.0 INTENDED USE

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

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

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 87.62 +2 6 Sr(H₂O)₆+2

Chemical Compatibility - Soluble in HCl, and HNO₃. Avoid H₂SO₄, HF and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicate, carbonate, hydroxide, oxide, fluoride, sulfate, oxalate, chromate, arsenate and tungstate in neutral aqueous media.

Stability - 2-100 ppb levels stable for months in 1% HNO₃ / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1 - 3.5% HNO₃ / LDPE container.

Sr Containing Samples (Preparation and Solution) -Metal (Best dissolved in diluted HNO₃); Ores (Carbonate fusion in PtO followed by HCl dissolution); Organic Matrices (Dry ash and dissolution in dilute HCl).

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

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 88 amu	1200 ppt	N/A	72Ge16O, 176Yb+2, 176Lu+2, 176Hf+2
ICP-OES 407.771 nm	0.0004 / 0.00006 µg/mL	1	U, Ce
ICP-OES 421.552 nm	0.0008 / 0.00004 µg/mL	1	Rb
ICP-OES 460.733 nm	0.07 / 0.003 µg/mL	1	Ce

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 03, 2023

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- March 03, 2028

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director





Certified 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)

Lot #

Solvent: 24002546 Nitric Acid

Aleah O'Brady
Formulated By: Aleah O'Brady 062724

Expiration Date:

062727

2% 40.0 Nitric Acid (mL)

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): 1000

NIST Test Number: 6U7B

5E-05 Balance Uncertainty

Weight shown below was diluted to (mL): 2000.1 0.10 Flask Uncertainty

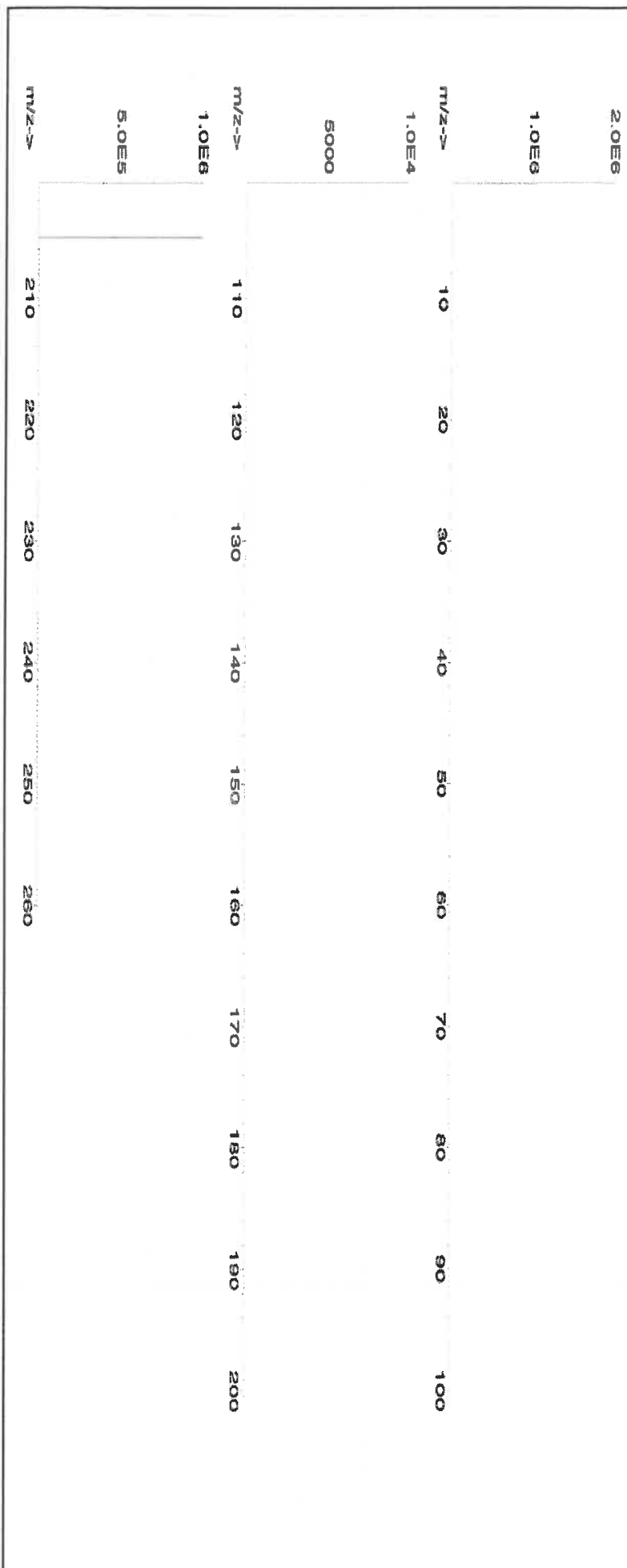
Pedro L. Renteria
Reviewed By: Pedro L. Renterias 062724

SDS Information

Compound	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
----------	------------	-----------------------	------------	-----------------	-----------	-------------------	-------------------	----------------------	----------------------------------	------	----------------	------	----------

1. Thallium nitrate (TI) IN037 BCCF4399 1000 99.999 0.10 77.0 2.5975 2.5977 1000.1 2.0 10102-45-1 0.1 mg/m3 or-mus 15mg/kg 3158

[1] Spectrum No.1 [14.044 sec]:57081.D# [Count] [Linear]





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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Sc	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	T	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Tm	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Sn	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Ti	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Se	<0.02	Ta	<0.02			Zr	<0.02

(T) = Target analyte

Physical Characterization:

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: 57022
Lot Number: 050223
Description: Titanium (Ti)

Lot # 21110221
Solvent: Nitric Acid

Expiration Date: 050226

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

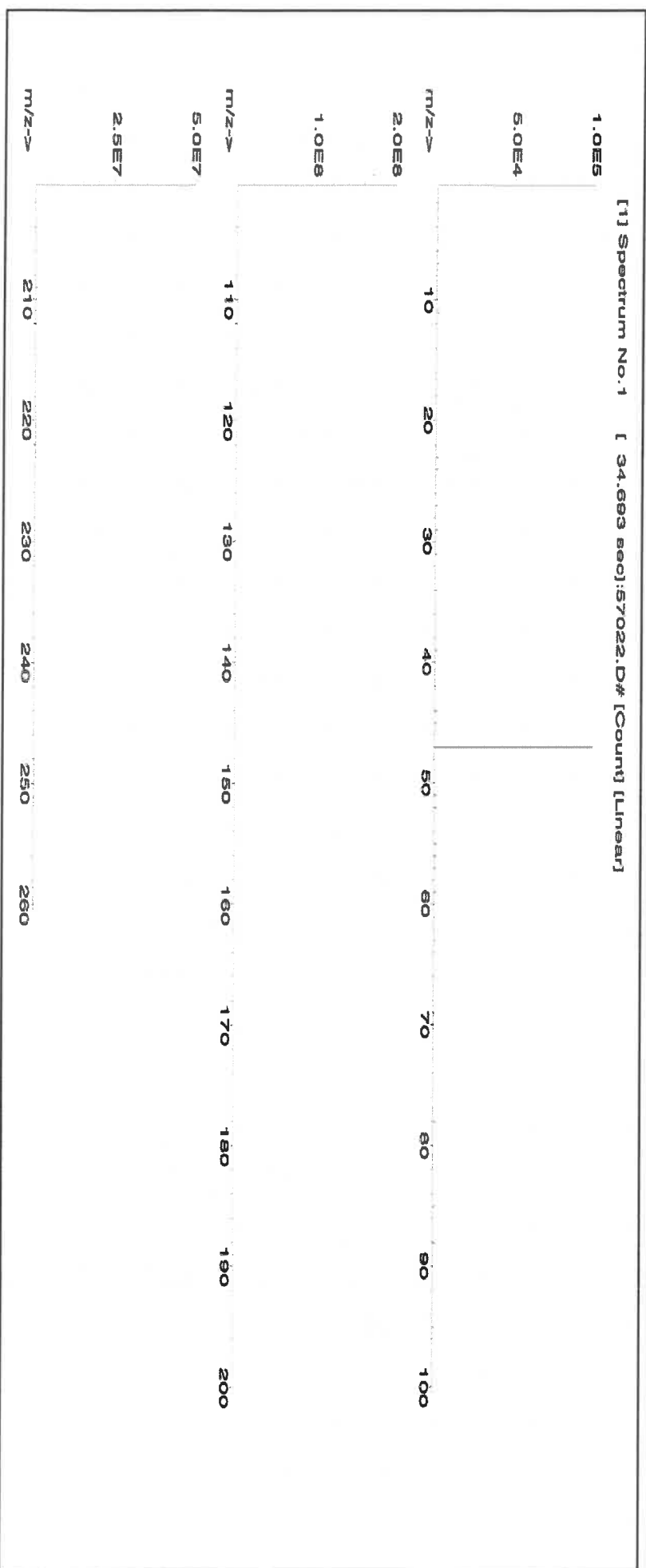
Formulated By:	Lawrence Barry	050223
Reviewed By:	Pedro L. Rentes	050223

SDS Information

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
----------	-------------	------------	-----------------	-------------------	--------------------------	-----------------------	-----------------------	---------------------	----------------------------------	------	----------------	------	----------

1. Ammonium hexafluoroantimonate (Ti)	58122	071122	0.1000	200.0	0.084	1000	10000.1	1000.0	2.2	16962-40-6	2.5 (F) mg/m3	NA	3162a
---------------------------------------	-------	--------	--------	-------	-------	------	---------	--------	-----	------------	---------------	----	-------

[1] Spectrum No. 1 [34.683 sec]: 57022.D# [Count] [Linear]





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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	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	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	Tn	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

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

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution
Catalog Number: CGU1
Lot Number: U2-U735194
Matrix: 2% (v/v) HNO₃
Value / Analyte(s): 1 000 µg/mL ea:
Uranium
Starting Material: Uranyl Nitrate Hexahydrate
Starting Material Lot#: 2504
Starting Material Purity: 99.9993%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1000 ± 5 µg/mL
Density: 1.010 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1	1001 ± 4 µg/mL ICP Assay NIST SRM traceable to 3164 Lot Number: R2-U689597
Assay Method #2	1000 ± 5 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

Certified Abundance:

IV's Certified Abundance

Isotope	Atom %
Uranium 238U	99.8 ± 0.1
Uranium 235U	0.19 ± 0.05

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 <	0.001400	M Eu <	0.000270	M Na	0.001811	M Se <	0.004800	M Zn	0.002126
M Al	0.000322	M Fe	0.007481	M Nb <	0.000790	i Si <		M Zr <	0.000270
M As <	0.007300	M Ga <	0.000270	M Nd <	0.000270	M Sm <	0.000270		
M Au <	0.001400	M Gd <	0.000270	M Ni	0.000905	M Sn <	0.120000		
M B <	0.017000	M Ge <	0.000800	M Os <	0.000270	M Sr <	0.000270		
M Ba <	0.003100	M Hf <	0.000270	i P <		M Ta <	0.000270		
M Be <	0.003200	M Hg <	0.000270	M Pb	0.000511	M Tb <	0.000270		
M Bi <	0.003000	M Ho <	0.000270	M Pd <	0.000270	M Te <	0.001100		
M Ca <	0.048000	M In <	0.001400	M Pr <	0.000270	M Th	0.000200		
M Cd <	0.000270	M Ir <	0.000270	M Pt <	0.000270	M Ti <	0.000530		
M Ce <	0.000270	O K <	0.047000	M Rb <	0.000660	M Tl <	0.000270		
M Co <	0.000270	M La	0.000322	M Re <	0.000270	M Tm <	0.000270		
M Cr	0.001732	M Li <	0.001100	M Rh <	0.000270	s U <			
M Cs <	0.003500	M Lu <	0.000270	M Ru <	0.000270	M V <	0.003500		
M Cu <	0.005600	M Mg	0.000240	i S <		M W <	0.000270		
M Dy <	0.000270	M Mn <	0.006500	M Sb <	0.000270	M Y <	0.000270		
M Er <	0.000270	M Mo	0.000433	M Sc <	0.000800	M Yb <	0.000270		

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 - 238.03 +6 8 UO₂²⁺(uranyl)
Chemical Compatibility - Soluble in HCl and HNO₃. Avoid H₃PO₄. H₂SO₄ and HF matrices should not be a problem depending upon [U]. Although the UO₂²⁺ ion is distinctly basic, any U+4 will precipitate in basic media. UO₂²⁺/salts are generally soluble in water and UO₂²⁺ is stable with most metals and inorganic anions. The uranyl phosphate is insoluble in water. UF₄ and UF₆ are water soluble.
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.
U Containing Samples (Preparation and Solution) -Metal (Dissolves rapidly in HCl and HNO₃); Oxide (Soluble in HNO₃); Ores (Digest for 1-2 hours with 1 gram of ore to 30 mL 1:1 HNO₃. Silica insolubles are removed by filtration after bringing the sample to fumes with conc. H₂SO₄.)

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 238 amu	2 ppt	N/A	206Pb16O2
ICP-OES 263.553 nm	0.3 / 0.01 µg/mL	1	Ce, Ir, Th, Rh, W, Zr, Ta, Ti, V, Hf, Fe, Re, Ru
ICP-OES 367.007 nm	0.3 / 0.02 µg/mL	1	Th, Ce
ICP-OES 385.958 nm	0.3 / 0.01 µg/mL	1	Th, Fe

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

August 03, 2023

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- August 03, 2028

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Uyen Truong
Custom Processing Supervisor



Certificate Approved By:

Jodie Wall
Stock VSM Coordinator



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director





Certified Reference Material CRM

M6021



ANAB ISO 17034 Accredited
AR-1539 Certificate Number
<https://absolutestandards.com>

CERTIFIED WEIGHT REPORT:

Part Number: **57023**
Lot Number: **062424**
Description: **Vanadium (V)**

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

<i>Aleah O'Brady</i>	
Formulated By:	Aleah O'Brady
Reviewed By:	Pedro L. Rantas
	062424

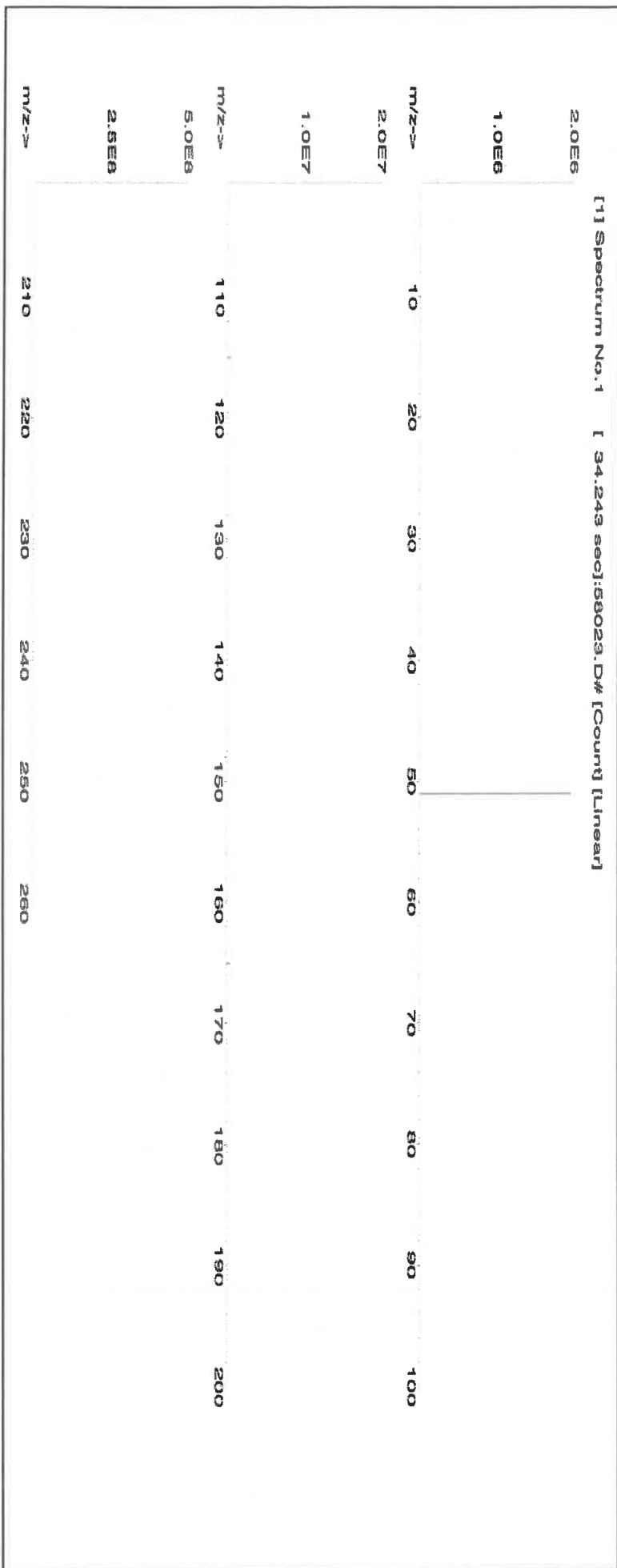
Expiration Date: **062427**
Recommended Storage: **Ambient (20 °C)**
Nominal Concentration (µg/mL): **1000**
NIST Test Number: **6UTB**

2.0%
40.0 (mL)
Nitric Acid

Volume shown below was diluted to (mL): **2000.3**
5E-05 Balance Uncertainty
0.06 Flask Uncertainty

SDS Information									
Formulated By: <i>Aleah O'Brady</i>									
Reviewed By: <i>Pedro L. Rantas</i>									
Expanded Uncertainty (µg/mL) 2.2									
(Solvent Safety Info. On Attached pg.)									
CAS# 0581-25-6 OSHA PEL (TWA) 0.05 mg/m3 LD50 3165									
NIST SRM									

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**





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			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

REPORT TO BE SENT TO:

COMPANY: Jacobs
ADDRESS: 412 Mt Kemble Ave Suite 100
CITY: Morris Plains NJ STATE: NJ ZIP: 07960
ATTENTION: John Yufante John.Yufante@Jacobs.com
PHONE: FAX:

CLIENT PROJECT INFORMATION

PROJECT NAME: STC PTC
PROJECT NO.: D3868221 LOCATION: Princeton Junction
PROJECT MANAGER: Mary Murphy
e-mail: Mary.Murphy@Jacobs.com
PHONE: FAX:

CLIENT BILLING INFORMATION

BILL TO: Mary Murphy PO#: ADDRESS: CITY STATE ZIP: ATTENTION: PHONE:

ANALYSIS

DATA TURNAROUND INFORMATION

FAX (RUSH) Rush TAT (2 day) DAYS*
HARDCOPY (DATA PACKAGE): DAYS*
EDD: DAYS*

*TO BE APPROVED BY CHEMTECH

STANDARD HARDCOPY TURNAROUND TIME IS 10 BUSINESS

DATA DELIVERABLE INFORMATION

☐ Level 1 (Results Only) ☐ Level 4 (QC + Full Raw Data)
☐ Level 2 (Results + QC) ☐ NJ Reduced ☐ US EPA CLP
☒ Level 3 (Results + QC) ☐ NYS ASP A ☐ NYS ASP B
+ Raw Data ☐ Other
☐ EDD FORMAT

1. Site Spec. VOCs (32760-100)
2. 1.4 Discharge (32760-100)
3. Total Dissolved Iron (32760-100)
4. Dissolved Iron (32760-100)
5. Alkalinity (32760-100)
6. TDS (32760-100)
7. Ammonia (32760-100)
8. Nitrite (32760-100)
9. Nitrate (32760-100)

ALLIANCE SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE		SAMPLE COLLECTION		# OF BOTTLES	PRESERVATIVES									COMMENTS		
			COMP	GRAB	DATE	TIME		A/E	E	EB	SE	E	E	E			← Specify Preservatives A-HCl B-HNO3 C-H2SO4 D-NaOH E-ICE F-OTHER		
								1	2	3	4	5	6	7	8	9			
1.	MW-19B-72-040125	GW		✓	4/1/25	1215	9	✓	✓	✓	✓	✓	✓	✓	✓	✓			pH 1.6 / Dis pH 1.0 pH 10+ # RDA0441
2.	IW-01-55-040125	GW		✓	4/1/25	1230	9	✓	✓	✓	✓	✓	✓	✓	✓	✓			
3.	IW-02-55-040125	GW		✓	4/1/25	1505	9	✓	✓	✓	✓	✓	✓	✓	✓	✓			
4.	IW-02-55-040125-FD	GW		✓	4/1/25	1510	9	✓	✓	✓	✓	✓	✓	✓	✓	✓			
5.	IW-03-55-040125	GW		✓	4/1/25	1530	9	✓	✓	✓	✓	✓	✓	✓	✓	✓			
6.	TB-01-040125	DI		✓	4/1/25	1550	2	✓											Dis. Samples preserved
7.																			in Lab @ 12:25 on
8.																			4/2/25 and held for
9.																			18 hrs and will be released
10.																			4/3/25

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE/TIME: 1630	RECEIVED BY:	CONDITIONS OF BOTTLES OR COOLERS AT RECEIPT: ☐ COMPLIANT ☐ NON COMPLIANT ☐ COOLER TEMP: 2.3°C
1. [Signature]	4/1/25	1. [Signature]	Comments: see work order for list of site specific VOCs
RELINQUISHED BY SAMPLER:	DATE/TIME:	RECEIVED BY:	Labels on sample bottles switched accidentally, bottles labeled diss iron are total metals + total metals are diss iron
2. [Signature]		2. [Signature]	PO # 148064311
RELINQUISHED BY SAMPLER:	DATE/TIME: 1817	RECEIVED BY:	Temp 2.3°C Adjusted Factor +1.1 IR Gun #1
3. [Signature]	4-1-25	3. [Signature]	Page 1 of 2
			CLIENT: ☐ Hand Delivered ☐ Other
			Shipment Complete ☐ YES ☐ NO

Q11697

CLIENT INFORMATION

REPORT TO BE SENT TO:

COMPANY: Jacobs
ADDRESS: 412 Mt Kemble Ave Suite 100
CITY: Morrisstown STATE: NJ ZIP: 07960
ATTENTION: John Yufante John.Yufante@Jacobs.com
PHONE: _____ FAX: _____

CLIENT PROJECT INFORMATION

PROJECT NAME: STC PTC
PROJECT NO.: D3808221 LOCATION: Princeton Junction
PROJECT MANAGER: Mary Murphy
e-mail: Mary.Murphy@Jacobs.com
PHONE: _____ FAX: _____

CLIENT BILLING INFORMATION

BILL TO: Mary Murphy PO#: _____
ADDRESS: _____
CITY: _____ STATE: _____ ZIP: _____
ATTENTION: _____ PHONE: _____

ANALYSIS

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*TO BE APPROVED BY CHEMTECH
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DATA DELIVERABLE INFORMATION

☐ Level 1 (Results Only) ☐ Level 4 (QC + Full Raw Data)
☐ Level 2 (Results + QC) ☐ NJ Reduced ☐ US EPA CLP
☒ Level 3 (Results + QC) ☐ NYS ASP A ☐ NYS ASP B
+ Raw Data ☐ Other _____
☐ EDD FORMAT _____

1. Trace VOCs (SFM 10.1-5.1M)
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____

PRESERVATIVES

COMMENTS

ALLIANCE SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE		SAMPLE COLLECTION		# OF BOTTLES	A/E										Specify Preservatives A-HCl B-HNO3 C-H2SO4 D-NaOH E-ICE F-OTHER
			COMP	GRAB	DATE	TIME			1	2	3	4	5	6	7	8	9	
1.	MW-KB-72-040125-SIM	GW		✓	4/1/25	1215	2	✓										
2.																		
3.																		
4.																		
5.																		
6.																		
7.																		
8.																		
9.																		
10.																		

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER: 1. <u>[Signature]</u>	DATE/TIME: <u>4/1/25 1636</u>	RECEIVED BY: 1. <u>[Signature]</u> <u>4-1-25 1636</u>	Conditions of bottles or coolers at receipt: ☐ COMPLIANT ☐ NON COMPLIANT ☐ COOLER TEMP <u>23+1.3, 30</u> °C
RELINQUISHED BY SAMPLER: 2. <u>[Signature]</u>	DATE/TIME: _____	RECEIVED BY: 2. <u>[Signature]</u>	Comments: <u>See work order for list of site specific vocs</u>
RELINQUISHED BY SAMPLER: 3. <u>[Signature]</u>	DATE/TIME: <u>4-1-25 1817</u>	RECEIVED BY: 3. <u>[Signature]</u>	PO# <u>108664311</u> Temp <u>23°C</u> (Adjusted Factor +1) IR Gun # <u>1</u>
Page <u>2</u> of <u>2</u>			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 : Q1697	JACO05	Order Date : 4/2/2025 10:31:00 AM	Project Mgr :
Client Name : JACOBS Engineering Grou		Project Name : Former Schlumberger STC	Report Type : Level 4
Client Contact : John Ynfante		Receive DateTime : 4/1/2025 6:17:00 PM	EDD Type : CH2MHILL
Invoice Name : JACOBS Engineering Grou		Purchase Order :	Hard Copy Date :
Invoice Contact : John Ynfante			Date Signoff :

LAB ID	CLIENT ID	MATRIX	SAMPLE DATE	SAMPLE TIME	TEST	TEST GROUP	METHOD	FAX DATE	DUE DATES
Q1697-01	MW-19B-72-040125	Water	04/01/2025	12:15	VOCMS Group3		8260-Low	2 Bus. Days	
Q1697-02	IW-01-55-040125	Water	04/01/2025	12:30	VOCMS Group3		8260-Low	2 Bus. Days	
Q1697-03	IW-02-55-040125	Water	04/01/2025	15:05	VOCMS Group3		8260-Low	2 Bus. Days	
Q1697-04	IW-02-55-040125-FD	Water	04/01/2025	15:10	VOCMS Group3		8260-Low	2 Bus. Days	
Q1697-05	IW-03-55-040125	Water	04/01/2025	15:30	VOCMS Group3		8260-Low	2 Bus. Days	
Q1697-06	TB-01-040125	Water	04/01/2025	15:50	VOCMS Group3		8260-Low	2 Bus. Days	
Q1697-07	MW-19B-72-040125-SIM	Water	04/01/2025	12:15	VOC-TRACE-SFAM		SFAM_VOCSIM	2 Bus. Days	

YG
04/04/2025

LOGIN REPORT/SAMPLE TRANSFER

Order ID : Q1697	JACO05	Order Date : 4/2/2025 10:31:00 AM	Project Mgr :
Client Name : JACOBS Engineering Grou		Project Name : Former Schlumberger STC	Report Type : Level 4
Client Contact : John Ynfante		Receive DateTime : 4/1/2025 6:17:00 PM	EDD Type : CH2MHILL
Invoice Name : JACOBS Engineering Grou		Purchase Order :	Hard Copy Date :
Invoice Contact : John Ynfante			Date Signoff :

LAB ID	CLIENT ID	MATRIX	SAMPLE DATE	SAMPLE TIME	TEST	TEST GROUP	METHOD	FAX DATE	DUE DATES
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Relinquished By :

[Signature]

Date / Time :

4/2/25 1125

Received By :

[Signature]

Date / Time :

04/02/25 11:25 *ref 4*

Storage Area : VOA Refridgerator Room