

DATA PACKAGE METALS

PROJECT NAME : NJ SOIL PT

ALLIANCE TECHNICAL GROUP, LLC - NEWARK

284 Sheffiled Stree

Suite 1

Mountainside, NJ - 07092

Phone No: 908-789-8900

ORDER ID : Q1872

ATTENTION : Mohammad Ahmed



Laboratory Certification ID # 20012



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Cover Page

Order ID : Q1872

Project ID : NJ Soil PT

Client : Alliance Technical Group, LLC - Newark

Lab Sample Number

Q1872-01
Q1872-02
Q1872-03
Q1872-04
Q1872-05
Q1872-06
Q1872-07
Q1872-08
Q1872-09
Q1872-10
Q1872-11
Q1872-12
Q1872-13
Q1872-14
Q1872-15
Q1872-16
Q1872-17
Q1872-18
Q1872-19
Q1872-20
Q1872-21
Q1872-22
Q1872-23
Q1872-24
Q1872-25

Client Sample Number

HW0425-PT-AN-SOIL
HW0425-PT-CORR-SOIL
HW0425-PT-CN-SOIL
HW0425-PT-CN-SOIL
HW0425-PT-FP-SOIL
HW0425-PT-CR6-SOIL
HW0425-PT-NUT-SOIL
HW0425-PT-NUT-SOIL
HW0425-PT-OGR-SOIL
HW0425-PT-MET-SOIL
HW0425-PT-BNA-SOIL
HW0425-PT-TRIAZINE-SOIL
HW0425-PT-PAH-SOIL
HW0425-PT-DIES-SOIL
HW0425-PT-GAS-SOIL
HW0425-PT-NJEPH-SOIL
HW0425-PT-HERB-SOIL
HW0425-PT-PCB-SOIL
HW0425-PT-PCBO-SOIL
HW0425-PT-PEST-SOIL
HW0425-PT-CHLR-SOIL
HW0425-PT-TXP-SOIL
HW0425-PT-VOA-SOIL
HW0425-PT-SOL-SOIL
HW0425-PT-NO2-SOIL

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

Signature :

APPROVED

By Nimisha Pandya, QA/QC Supervisor at 10:05 am, Jul 23, 2025

Date: 6/23/2025

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012



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

CASE NARRATIVE

Alliance Technical Group, LLC - Newark

Project Name: NJ Soil PT

Project # N/A

Order ID # Q1872

Test Name: Metals Group3

A. Number of Samples and Date of Receipt:

24 Solid samples were received on 04/24/2025.

1 Solid sample was received on 04/28/2025.

B. Parameters:

According to the Chain of Custody document, the following analyses were requested:

Ammonia, Anions Group1, Anions Group2, Corrosivity, Cyanide, Diesel Range Organics, EPH, Flash Point, Gasoline Range Organics, Herbicide Group1, Hexavalent Chromium, Mercury, Metals Group3, Metals ICP-Group1, Oil and Grease, PCB, PESTICIDE Group1, PESTICIDE Group2, PESTICIDE Group3, Phosphorus, Total, SVOCMS Group1, SVOCMS Group2, SVOCMS Group3, SVOCMS Group4, SVOCMS Group5, TKN, TOC, TS and VOCMS Group1. This data package contains results for Metals Group3.

C. Analytical Techniques:

The analysis of Metals Group3 was based on method 6020B and digestion based on method 3050 (soils).

D. QA/ QC Samples:

The Holding Times were met for all analysis.

Sample HW0425-PT-MET-SOIL was diluted due to high concentrations for Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Manganese, Molybdenum, Nickel, Selenium, Strontium, Thallium, Tin and Vanadium.

The Blank Spike met requirements for all parameters.

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

The Calibration met the requirements.

E. Additional Comments:

Internal standard 6Li was out Side qc limit for samples Q1872-10 (HW0425-PT-MET-SOIL) in Original so for theses samples affected parameters are reported from 5X Dilution.

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.

APPROVED

By Nimisha Pandya, QA/QC Supervisor at 10:05 am, Jul 23, 2025

Signature_____

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DATA REPORTING QUALIFIERS- INORGANIC

For reporting results, the following “ Results Qualifiers” are used:

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

METALS CONFORMANCE/NON-CONFORMANCE SUMMARY

ORDER ID: Q1872

MATRIX: Solid

METHOD: 6020B

	NA	NO	YES
1. Calibration Summary met criteria.			✓
2. ICP Interference Check Sample Results Summary Submitted.			✓
3. Laboratory Control Sample Summary (if applicable) Submitted.			✓
4. Blank Contamination - If yes, list compounds and concentrations in each blank:		✓	
5. Digestion Holding Time Met			✓
If not met, list number of days exceeded for each sample:			
6. Analysis Holding Time Met			✓
If not met, list those compounds and their recoveries which fall outside the acceptable range.			

ADDITIONAL COMMENTS:

Internal standard 6Li was out Side qc limit for samples Q1872-10 (HW0425-PT-MET-SOIL) in Original so for theses samples affected parameters are reported from 5X Dilution.

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.

REVIEWED

QA REVIEW

By Sohil Jodhani, QA/QC Director at 8:43 am, Jul 23, 2025

APPENDIX A

QA REVIEW GENERAL DOCUMENTATION

Project #: Q1872

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: 06/23/2025

LAB CHRONICLE

OrderID:	Q1872	OrderDate:	4/24/2025 1:26:50 PM
Client:	Alliance Technical Group, LLC - Newark	Project:	NJ Soil PT
Contact:	Mohammad Ahmed	Location:	QA Office,VOA Lab

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
Q1872-10	HW0425-PT-MET-SOIL	SOIL			04/21/25			04/24/25
	L		Mercury	7471B		05/28/25	05/29/25	
			Metals Group3	6020B		05/22/25	05/23/25	
			Metals ICP-Group1	6010D		04/25/25	05/30/25	

Hit Summary Sheet
SW-846

SDG No.: Q1872 **Order ID:** Q1872
Client: Alliance Technical Group, LLC - Newark **Project ID:** NJ Soil PT

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
Client ID : HW0425-PT-MET-SOIL								
Q1872-10	HW0425-PT-MET-SOIL	SOIL	Aluminum	13500	D	1.57	8.70	mg/Kg
Q1872-10	HW0425-PT-MET-SOIL	SOIL	Antimony	112	D	0.20	0.87	mg/Kg
Q1872-10	HW0425-PT-MET-SOIL	SOIL	Arsenic	172	D	0.052	0.44	mg/Kg
Q1872-10	HW0425-PT-MET-SOIL	SOIL	Barium	737	D	0.14	4.35	mg/Kg
Q1872-10	HW0425-PT-MET-SOIL	SOIL	Beryllium	118	D	0.14	0.44	mg/Kg
Q1872-10	HW0425-PT-MET-SOIL	SOIL	Cadmium	260	D	0.078	0.44	mg/Kg
Q1872-10	HW0425-PT-MET-SOIL	SOIL	Calcium	15200		4.17	43.5	mg/Kg
Q1872-10	HW0425-PT-MET-SOIL	SOIL	Chromium	230	D	0.11	0.87	mg/Kg
Q1872-10	HW0425-PT-MET-SOIL	SOIL	Cobalt	66.1		0.0080	0.087	mg/Kg
Q1872-10	HW0425-PT-MET-SOIL	SOIL	Copper	260		0.057	0.17	mg/Kg
Q1872-10	HW0425-PT-MET-SOIL	SOIL	Iron	10400		0.80	4.35	mg/Kg
Q1872-10	HW0425-PT-MET-SOIL	SOIL	Lead	114		0.028	0.087	mg/Kg
Q1872-10	HW0425-PT-MET-SOIL	SOIL	Magnesium	15000		1.68	43.5	mg/Kg
Q1872-10	HW0425-PT-MET-SOIL	SOIL	Manganese	1240	D	0.15	0.44	mg/Kg
Q1872-10	HW0425-PT-MET-SOIL	SOIL	Nickel	230	D	0.19	0.44	mg/Kg
Q1872-10	HW0425-PT-MET-SOIL	SOIL	Potassium	9070		3.34	43.5	mg/Kg
Q1872-10	HW0425-PT-MET-SOIL	SOIL	Molybdenum	28.6	D	0.34	2.17	mg/Kg
Q1872-10	HW0425-PT-MET-SOIL	SOIL	Tin	109	D	0.14	2.17	mg/Kg
Q1872-10	HW0425-PT-MET-SOIL	SOIL	Selenium	140	D	1.22	2.17	mg/Kg
Q1872-10	HW0425-PT-MET-SOIL	SOIL	Silver	24.9		0.023	0.087	mg/Kg
Q1872-10	HW0425-PT-MET-SOIL	SOIL	Sodium	1860		6.10	43.5	mg/Kg
Q1872-10	HW0425-PT-MET-SOIL	SOIL	Thallium	247	D	0.061	0.44	mg/Kg
Q1872-10	HW0425-PT-MET-SOIL	SOIL	Vanadium	113	D	0.048	2.17	mg/Kg
Q1872-10	HW0425-PT-MET-SOIL	SOIL	Zinc	384		0.078	0.44	mg/Kg
Q1872-10	HW0425-PT-MET-SOIL	SOIL	Strontium	262	D	0.23	0.44	mg/Kg



SAMPLE DATA

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Report of Analysis

Client:	Alliance Technical Group, LLC - Newark	Date Collected:	04/21/25
Project:	NJ Soil PT	Date Received:	04/24/25
Client Sample ID:	HW0425-PT-MET-SOIL	SDG No.:	Q1872
Lab Sample ID:	Q1872-10	Matrix:	SOIL
Level (low/med):	low	% Solid:	100

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	13500	D	5	1.57	8.70	mg/Kg	05/22/25 08:10	05/23/25 15:19	6020B	SW3050
7440-36-0	Antimony	112	D	5	0.20	0.87	mg/Kg	05/22/25 08:10	05/23/25 15:19	6020B	SW3050
7440-38-2	Arsenic	172	D	5	0.052	0.44	mg/Kg	05/22/25 08:10	05/23/25 15:19	6020B	SW3050
7440-39-3	Barium	737	D	5	0.14	4.35	mg/Kg	05/22/25 08:10	05/23/25 15:19	6020B	SW3050
7440-41-7	Beryllium	118	D	5	0.14	0.44	mg/Kg	05/22/25 08:10	05/23/25 15:19	6020B	SW3050
7440-43-9	Cadmium	260	D	5	0.078	0.44	mg/Kg	05/22/25 08:10	05/23/25 15:19	6020B	SW3050
7440-70-2	Calcium	15200		1	4.17	43.5	mg/Kg	05/22/25 08:10	05/23/25 15:13	6020B	SW3050
7440-47-3	Chromium	230	D	5	0.11	0.87	mg/Kg	05/22/25 08:10	05/23/25 15:19	6020B	SW3050
7440-48-4	Cobalt	66.1		1	0.0080	0.087	mg/Kg	05/22/25 08:10	05/23/25 15:13	6020B	SW3050
7440-50-8	Copper	260		1	0.057	0.17	mg/Kg	05/22/25 08:10	05/23/25 15:13	6020B	SW3050
7439-89-6	Iron	10400		1	0.80	4.35	mg/Kg	05/22/25 08:10	05/23/25 15:13	6020B	SW3050
7439-92-1	Lead	114		1	0.028	0.087	mg/Kg	05/22/25 08:10	05/23/25 15:13	6020B	SW3050
7439-95-4	Magnesium	15000		1	1.68	43.5	mg/Kg	05/22/25 08:10	05/23/25 15:13	6020B	SW3050
7439-96-5	Manganese	1240	D	5	0.15	0.44	mg/Kg	05/22/25 08:10	05/23/25 15:19	6020B	SW3050
7439-98-7	Molybdenum	28.6	D	5	0.34	2.17	mg/Kg	05/22/25 08:10	05/23/25 15:19	6020B	SW3050
7440-02-0	Nickel	230	D	5	0.19	0.44	mg/Kg	05/22/25 08:10	05/23/25 15:19	6020B	SW3050
7440-09-7	Potassium	9070		1	3.34	43.5	mg/Kg	05/22/25 08:10	05/23/25 15:13	6020B	SW3050
7782-49-2	Selenium	140	D	5	1.22	2.17	mg/Kg	05/22/25 08:10	05/23/25 15:19	6020B	SW3050
7440-22-4	Silver	24.9		1	0.023	0.087	mg/Kg	05/22/25 08:10	05/23/25 15:13	6020B	SW3050
7440-23-5	Sodium	1860		1	6.10	43.5	mg/Kg	05/22/25 08:10	05/23/25 15:13	6020B	SW3050
7440-24-6	Strontium	262	D	5	0.23	0.44	mg/Kg	05/22/25 08:10	05/23/25 15:19	6020B	SW3050
7440-28-0	Thallium	247	D	5	0.061	0.44	mg/Kg	05/22/25 08:10	05/23/25 15:19	6020B	SW3050
7440-31-5	Tin	109	D	5	0.14	2.17	mg/Kg	05/22/25 08:10	05/23/25 15:19	6020B	SW3050
7440-62-2	Vanadium	113	D	5	0.048	2.17	mg/Kg	05/22/25 08:10	05/23/25 15:19	6020B	SW3050
7440-66-6	Zinc	384		1	0.078	0.44	mg/Kg	05/22/25 08:10	05/23/25 15:13	6020B	SW3050

Color Before:	Lght Grey	Clarity Before:	Texture:	Fine
Color After:	Light Yello	Clarity After:	Artifacts:	No
Comments:	Metals Group3			

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

D = Dilution

Q = indicates LCS control criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

* = indicates the duplicate analysis is not within control limits.

E = Indicates the reported value is estimated because of the presence of interference.

OR = Over Range

N =Spiked sample recovery not within control limits



METAL CALIBRATION DATA

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Metals

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Alliance Technical Group, LLC - Newark SDG No.: Q1872
Contract: ALLI03 Lab Code: CHEM Case No.: Q1872 SAS No.: Q1872
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	492	500	98	90 - 110	P	05/23/2025	14:23	LB135941
	Antimony	193	200	97	90 - 110	P	05/23/2025	14:23	LB135941
	Arsenic	200	200	100	90 - 110	P	05/23/2025	14:23	LB135941
	Barium	92.9	100	93	90 - 110	P	05/23/2025	14:23	LB135941
	Beryllium	99.8	100	100	90 - 110	P	05/23/2025	14:23	LB135941
	Cadmium	101	100	101	90 - 110	P	05/23/2025	14:23	LB135941
	Calcium	2000	2000	100	90 - 110	P	05/23/2025	14:23	LB135941
	Chromium	97.4	100	97	90 - 110	P	05/23/2025	14:23	LB135941
	Cobalt	101	100	101	90 - 110	P	05/23/2025	14:23	LB135941
	Copper	103	100	102	90 - 110	P	05/23/2025	14:23	LB135941
	Iron	1980	2000	99	90 - 110	P	05/23/2025	14:23	LB135941
	Lead	194	200	97	90 - 110	P	05/23/2025	14:23	LB135941
	Magnesium	1180	1200	98	90 - 110	P	05/23/2025	14:23	LB135941
	Manganese	97.9	100	98	90 - 110	P	05/23/2025	14:23	LB135941
	Molybdenum	4960	5000	99	90 - 110	P	05/23/2025	14:23	LB135941
	Nickel	108	110	98	90 - 110	P	05/23/2025	14:23	LB135941
	Potassium	1920	2000	96	90 - 110	P	05/23/2025	14:23	LB135941
	Selenium	193	200	96	90 - 110	P	05/23/2025	14:23	LB135941
	Silver	47.6	50.0	95	90 - 110	P	05/23/2025	14:23	LB135941
	Sodium	2020	2000	101	90 - 110	P	05/23/2025	14:23	LB135941
	Strontium	482	500	96	90 - 110	P	05/23/2025	14:23	LB135941
	Thallium	198	210	94	90 - 110	P	05/23/2025	14:23	LB135941
	Tin	498	500	100	90 - 110	P	05/23/2025	14:23	LB135941
	Vanadium	94.8	100	95	90 - 110	P	05/23/2025	14:23	LB135941
	Zinc	208	200	104	90 - 110	P	05/23/2025	14:23	LB135941

Metals

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Alliance Technical Group, LLC - Newark SDG No.: Q1872
Contract: ALLI03 Lab Code: CHEM Case No.: Q1872 SAS No.: Q1872
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
LLICV01	Aluminum	20.3	20.0	102	80 - 120	P	05/23/2025	14:33	LB135941
	Antimony	1.99	2.0	100	80 - 120	P	05/23/2025	14:33	LB135941
	Arsenic	0.96	1.0	96	80 - 120	P	05/23/2025	14:33	LB135941
	Barium	9.53	10.0	95	80 - 120	P	05/23/2025	14:33	LB135941
	Beryllium	1.11	1.0	111	80 - 120	P	05/23/2025	14:33	LB135941
	Cadmium	0.87	1.0	87	80 - 120	P	05/23/2025	14:33	LB135941
	Calcium	492	500	98	80 - 120	P	05/23/2025	14:33	LB135941
	Chromium	1.99	2.0	100	80 - 120	P	05/23/2025	14:33	LB135941
	Cobalt	1.08	1.0	108	80 - 120	P	05/23/2025	14:33	LB135941
	Copper	2.18	2.0	109	80 - 120	P	05/23/2025	14:33	LB135941
	Iron	52.0	50.0	104	80 - 120	P	05/23/2025	14:33	LB135941
	Lead	0.83	1.0	83	80 - 120	P	05/23/2025	14:33	LB135941
	Magnesium	534	500	107	80 - 120	P	05/23/2025	14:33	LB135941
	Manganese	1.09	1.0	109	80 - 120	P	05/23/2025	14:33	LB135941
	Molybdenum	4.74	5.0	95	80 - 120	P	05/23/2025	14:33	LB135941
	Nickel	0.97	1.0	97	80 - 120	P	05/23/2025	14:33	LB135941
	Potassium	499	500	100	80 - 120	P	05/23/2025	14:33	LB135941
	Selenium	5.14	5.0	103	80 - 120	P	05/23/2025	14:33	LB135941
	Silver	1.08	1.0	108	80 - 120	P	05/23/2025	14:33	LB135941
	Sodium	536	500	107	80 - 120	P	05/23/2025	14:33	LB135941
	Strontium	0.96	1.0	96	80 - 120	P	05/23/2025	14:33	LB135941
	Thallium	0.95	1.0	95	80 - 120	P	05/23/2025	14:33	LB135941
	Tin	4.87	5.0	97	80 - 120	P	05/23/2025	14:33	LB135941
	Vanadium	5.01	5.0	100	80 - 120	P	05/23/2025	14:33	LB135941
	Zinc	5.52	5.0	110	80 - 120	P	05/23/2025	14:33	LB135941

Metals

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Alliance Technical Group, LLC - Newark SDG No.: Q1872
Contract: ALLI03 Lab Code: CHEM Case No.: Q1872 SAS No.: Q1872
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	51800	50000	104	90 - 110	P	05/23/2025	14:52	LB135941
	Antimony	495	500	99	90 - 110	P	05/23/2025	14:52	LB135941
	Arsenic	505	500	101	90 - 110	P	05/23/2025	14:52	LB135941
	Barium	2460	2500	99	90 - 110	P	05/23/2025	14:52	LB135941
	Beryllium	525	500	105	90 - 110	P	05/23/2025	14:52	LB135941
	Cadmium	487	500	97	90 - 110	P	05/23/2025	14:52	LB135941
	Calcium	251000	250000	101	90 - 110	P	05/23/2025	14:52	LB135941
	Chromium	513	500	103	90 - 110	P	05/23/2025	14:52	LB135941
	Cobalt	497	500	99	90 - 110	P	05/23/2025	14:52	LB135941
	Copper	4820	5000	96	90 - 110	P	05/23/2025	14:52	LB135941
	Iron	130000	125000	104	90 - 110	P	05/23/2025	14:52	LB135941
	Lead	2610	2500	104	90 - 110	P	05/23/2025	14:52	LB135941
	Magnesium	260000	250000	104	90 - 110	P	05/23/2025	14:52	LB135941
	Manganese	5030	5000	101	90 - 110	P	05/23/2025	14:52	LB135941
	Molybdenum	5020	5000	100	90 - 110	P	05/23/2025	14:52	LB135941
	Nickel	459	500	92	90 - 110	P	05/23/2025	14:52	LB135941
	Potassium	129000	125000	103	90 - 110	P	05/23/2025	14:52	LB135941
	Selenium	481	500	96	90 - 110	P	05/23/2025	14:52	LB135941
	Silver	482	500	96	90 - 110	P	05/23/2025	14:52	LB135941
	Sodium	261000	250000	104	90 - 110	P	05/23/2025	14:52	LB135941
	Strontium	503	500	101	90 - 110	P	05/23/2025	14:52	LB135941
	Thallium	518	500	104	90 - 110	P	05/23/2025	14:52	LB135941
	Tin	495	500	99	90 - 110	P	05/23/2025	14:52	LB135941
	Vanadium	514	500	103	90 - 110	P	05/23/2025	14:52	LB135941
	Zinc	4970	5000	99	90 - 110	P	05/23/2025	14:52	LB135941
CCV02	Aluminum	51900	50000	104	90 - 110	P	05/23/2025	15:49	LB135941
	Antimony	500	500	100	90 - 110	P	05/23/2025	15:49	LB135941
	Arsenic	510	500	102	90 - 110	P	05/23/2025	15:49	LB135941
	Barium	2520	2500	101	90 - 110	P	05/23/2025	15:49	LB135941
	Beryllium	530	500	106	90 - 110	P	05/23/2025	15:49	LB135941
	Cadmium	495	500	99	90 - 110	P	05/23/2025	15:49	LB135941
	Calcium	254000	250000	102	90 - 110	P	05/23/2025	15:49	LB135941
	Chromium	511	500	102	90 - 110	P	05/23/2025	15:49	LB135941
	Cobalt	498	500	100	90 - 110	P	05/23/2025	15:49	LB135941

Metals

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Alliance Technical Group, LLC - Newark SDG No.: Q1872
Contract: ALLI03 Lab Code: CHEM Case No.: Q1872 SAS No.: Q1872
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
CCV02	Copper	4910	5000	98	90 - 110	P	05/23/2025	15:49	LB135941
	Iron	130000	125000	104	90 - 110	P	05/23/2025	15:49	LB135941
	Lead	2580	2500	103	90 - 110	P	05/23/2025	15:49	LB135941
	Magnesium	263000	250000	105	90 - 110	P	05/23/2025	15:49	LB135941
	Manganese	5030	5000	101	90 - 110	P	05/23/2025	15:49	LB135941
	Molybdenum	5030	5000	101	90 - 110	P	05/23/2025	15:49	LB135941
	Nickel	461	500	92	90 - 110	P	05/23/2025	15:49	LB135941
	Potassium	130000	125000	104	90 - 110	P	05/23/2025	15:49	LB135941
	Selenium	488	500	98	90 - 110	P	05/23/2025	15:49	LB135941
	Silver	478	500	96	90 - 110	P	05/23/2025	15:49	LB135941
	Sodium	261000	250000	104	90 - 110	P	05/23/2025	15:49	LB135941
	Strontium	497	500	99	90 - 110	P	05/23/2025	15:49	LB135941
	Thallium	515	500	103	90 - 110	P	05/23/2025	15:49	LB135941
	Tin	500	500	100	90 - 110	P	05/23/2025	15:49	LB135941
	Vanadium	520	500	104	90 - 110	P	05/23/2025	15:49	LB135941
	Zinc	4980	5000	100	90 - 110	P	05/23/2025	15:49	LB135941

Metals

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CRDL STANDARD FOR AA & ICP

Client: Alliance Technical Group, LLC - Newark **SDG No.:** Q1872
Contract: ALLI03 **Lab Code:** CHEM **Case No.:** Q1872 **SAS No.:** Q1872
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	20.6	20.0	103	70 - 130	P	05/23/2025	15:01	LB135941
	Antimony	1.93	2.0	96	70 - 130	P	05/23/2025	15:01	LB135941
	Arsenic	0.96	1.0	96	70 - 130	P	05/23/2025	15:01	LB135941
	Barium	9.30	10.0	93	70 - 130	P	05/23/2025	15:01	LB135941
	Beryllium	1.10	1.0	110	70 - 130	P	05/23/2025	15:01	LB135941
	Cadmium	0.84	1.0	84	70 - 130	P	05/23/2025	15:01	LB135941
	Calcium	474	500	95	70 - 130	P	05/23/2025	15:01	LB135941
	Chromium	1.95	2.0	98	70 - 130	P	05/23/2025	15:01	LB135941
	Cobalt	1.04	1.0	104	50 - 150	P	05/23/2025	15:01	LB135941
	Copper	2.39	2.0	120	70 - 130	P	05/23/2025	15:01	LB135941
	Iron	52.6	50.0	105	70 - 130	P	05/23/2025	15:01	LB135941
	Lead	0.81	1.0	81	70 - 130	P	05/23/2025	15:01	LB135941
	Magnesium	524	500	105	70 - 130	P	05/23/2025	15:01	LB135941
	Manganese	1.05	1.0	105	50 - 150	P	05/23/2025	15:01	LB135941
	Molybdenum	4.65	5.0	93	70 - 130	P	05/23/2025	15:01	LB135941
	Nickel	1.15	1.0	115	70 - 130	P	05/23/2025	15:01	LB135941
	Potassium	493	500	99	70 - 130	P	05/23/2025	15:01	LB135941
	Selenium	5.09	5.0	102	70 - 130	P	05/23/2025	15:01	LB135941
	Silver	1.00	1.0	100	70 - 130	P	05/23/2025	15:01	LB135941
	Sodium	526	500	105	70 - 130	P	05/23/2025	15:01	LB135941
	Strontium	0.94	1.0	94	70 - 130	P	05/23/2025	15:01	LB135941
	Thallium	0.93	1.0	93	70 - 130	P	05/23/2025	15:01	LB135941
	Tin	4.72	5.0	94	70 - 130	P	05/23/2025	15:01	LB135941
	Vanadium	4.86	5.0	97	70 - 130	P	05/23/2025	15:01	LB135941
	Zinc	5.75	5.0	115	50 - 150	P	05/23/2025	15:01	LB135941

Metals

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INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Alliance Technical Group, LLC - Newark		SDG No.: Q1872							
Contract: ALLI03	Lab Code: CHEM	Case No.: Q1872	SAS No.: Q1872						
Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB01	Aluminum	1.94	+/-10	U	20.0	P	05/23/2025	14:37	LB135941
	Antimony	0.11	+/-1	U	2.00	P	05/23/2025	14:37	LB135941
	Arsenic	0.089	+/-0.5	U	1.00	P	05/23/2025	14:37	LB135941
	Barium	0.21	+/-5	U	10.0	P	05/23/2025	14:37	LB135941
	Beryllium	0.32	+/-0.5	U	1.00	P	05/23/2025	14:37	LB135941
	Cadmium	0.34	+/-0.5	U	1.00	P	05/23/2025	14:37	LB135941
	Calcium	45.7	+/-250	U	500	P	05/23/2025	14:37	LB135941
	Chromium	0.21	+/-1	U	2.00	P	05/23/2025	14:37	LB135941
	Cobalt	0.070	+/-0.5	U	1.00	P	05/23/2025	14:37	LB135941
	Copper	0.30	+/-1	U	2.00	P	05/23/2025	14:37	LB135941
	Iron	7.81	+/-25	U	50.0	P	05/23/2025	14:37	LB135941
	Lead	0.21	+/-0.5	U	1.00	P	05/23/2025	14:37	LB135941
	Magnesium	19.5	+/-250	U	500	P	05/23/2025	14:37	LB135941
	Manganese	0.43	+/-0.5	U	1.00	P	05/23/2025	14:37	LB135941
	Nickel	0.27	+/-0.5	U	1.00	P	05/23/2025	14:37	LB135941
	Potassium	36.4	+/-250	U	500	P	05/23/2025	14:37	LB135941
	Selenium	2.90	+/-2.5	U	5.00	P	05/23/2025	14:37	LB135941
	Tin	0.31	+/-2.5	U	5.00	P	05/23/2025	14:37	LB135941
	Molybdenum	0.27	+/-2.5	U	5.00	P	05/23/2025	14:37	LB135941
	Silver	0.060	+/-0.5	U	1.00	P	05/23/2025	14:37	LB135941
	Sodium	128	+/-250	U	500	P	05/23/2025	14:37	LB135941
	Thallium	0.060	+/-0.5	U	1.00	P	05/23/2025	14:37	LB135941
	Vanadium	0.077	+/-2.5	U	5.00	P	05/23/2025	14:37	LB135941
	Zinc	1.25	+/-2.5	U	5.00	P	05/23/2025	14:37	LB135941
	Strontium	0.084	+/-0.5	U	1.00	P	05/23/2025	14:37	LB135941

Metals

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INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Alliance Technical Group, LLC - Newark		SDG No.: Q1872							
Contract: ALLI03	Lab Code: CHEM	Case No.: Q1872	SAS No.: Q1872						
Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB01	Aluminum	1.94	+/-10	U	20.0	P	05/23/2025	14:58	LB135941
	Antimony	0.11	+/-1	U	2.00	P	05/23/2025	14:58	LB135941
	Arsenic	0.089	+/-0.5	U	1.00	P	05/23/2025	14:58	LB135941
	Barium	0.21	+/-5	U	10.0	P	05/23/2025	14:58	LB135941
	Beryllium	0.32	+/-0.5	U	1.00	P	05/23/2025	14:58	LB135941
	Cadmium	0.34	+/-0.5	U	1.00	P	05/23/2025	14:58	LB135941
	Calcium	45.7	+/-250	U	500	P	05/23/2025	14:58	LB135941
	Chromium	0.21	+/-1	U	2.00	P	05/23/2025	14:58	LB135941
	Cobalt	0.070	+/-0.5	U	1.00	P	05/23/2025	14:58	LB135941
	Copper	0.30	+/-1	U	2.00	P	05/23/2025	14:58	LB135941
	Iron	7.81	+/-25	U	50.0	P	05/23/2025	14:58	LB135941
	Lead	0.21	+/-0.5	U	1.00	P	05/23/2025	14:58	LB135941
	Magnesium	19.5	+/-250	U	500	P	05/23/2025	14:58	LB135941
	Manganese	0.43	+/-0.5	U	1.00	P	05/23/2025	14:58	LB135941
	Nickel	0.27	+/-0.5	U	1.00	P	05/23/2025	14:58	LB135941
	Potassium	36.4	+/-250	U	500	P	05/23/2025	14:58	LB135941
	Selenium	2.90	+/-2.5	U	5.00	P	05/23/2025	14:58	LB135941
	Molybdenum	0.27	+/-2.5	U	5.00	P	05/23/2025	14:58	LB135941
	Tin	0.31	+/-2.5	U	5.00	P	05/23/2025	14:58	LB135941
	Silver	0.060	+/-0.5	U	1.00	P	05/23/2025	14:58	LB135941
	Sodium	128	+/-250	U	500	P	05/23/2025	14:58	LB135941
	Thallium	0.060	+/-0.5	U	1.00	P	05/23/2025	14:58	LB135941
	Vanadium	0.077	+/-2.5	U	5.00	P	05/23/2025	14:58	LB135941
	Zinc	1.25	+/-2.5	U	5.00	P	05/23/2025	14:58	LB135941
	Strontium	0.084	+/-0.5	U	1.00	P	05/23/2025	14:58	LB135941
CCB02	Aluminum	1.94	+/-10	U	20.0	P	05/23/2025	15:55	LB135941
	Antimony	0.11	+/-1	U	2.00	P	05/23/2025	15:55	LB135941
	Arsenic	0.089	+/-0.5	U	1.00	P	05/23/2025	15:55	LB135941
	Barium	0.21	+/-5	U	10.0	P	05/23/2025	15:55	LB135941
	Beryllium	0.32	+/-0.5	U	1.00	P	05/23/2025	15:55	LB135941
	Cadmium	0.34	+/-0.5	U	1.00	P	05/23/2025	15:55	LB135941
	Calcium	45.7	+/-250	U	500	P	05/23/2025	15:55	LB135941
	Chromium	0.21	+/-1	U	2.00	P	05/23/2025	15:55	LB135941
	Cobalt	0.070	+/-0.5	U	1.00	P	05/23/2025	15:55	LB135941
	Copper	0.30	+/-1	U	2.00	P	05/23/2025	15:55	LB135941
	Iron	7.81	+/-25	U	50.0	P	05/23/2025	15:55	LB135941
	Lead	0.21	+/-0.5	U	1.00	P	05/23/2025	15:55	LB135941
	Magnesium	19.5	+/-250	U	500	P	05/23/2025	15:55	LB135941
	Manganese	0.43	+/-0.5	U	1.00	P	05/23/2025	15:55	LB135941

Metals

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INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Alliance Technical Group, LLC - Newark		SDG No.: Q1872							
Contract: ALLI03	Lab Code: CHEM	Case No.: Q1872	SAS No.: Q1872						
Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB02	Nickel	0.27	+/-0.5	U	1.00	P	05/23/2025	15:55	LB135941
	Potassium	36.4	+/-250	U	500	P	05/23/2025	15:55	LB135941
	Selenium	2.90	+/-2.5	U	5.00	P	05/23/2025	15:55	LB135941
	Tin	0.31	+/-2.5	U	5.00	P	05/23/2025	15:55	LB135941
	Molybdenum	0.27	+/-2.5	U	5.00	P	05/23/2025	15:55	LB135941
	Silver	0.060	+/-0.5	U	1.00	P	05/23/2025	15:55	LB135941
	Sodium	128	+/-250	U	500	P	05/23/2025	15:55	LB135941
	Thallium	0.070	+/-0.5	J	1.00	P	05/23/2025	15:55	LB135941
	Vanadium	0.077	+/-2.5	U	5.00	P	05/23/2025	15:55	LB135941
	Zinc	1.25	+/-2.5	U	5.00	P	05/23/2025	15:55	LB135941
	Strontium	0.084	+/-0.5	U	1.00	P	05/23/2025	15:55	LB135941

Metals
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PREPARATION BLANK SUMMARY

Client: Alliance Technical Group, LLC - Newark

SDG No.: Q1872

Instrument: P8

Sample ID	Analyte	Result (mg/Kg)	Acceptance Limit	Conc Qual	CRQL mg/Kg	M	Analysis Date	Analysis Time	Run
PB168134BL	SOLID			Batch Number:	PB168134		Prep Date:	05/22/2025	
	Aluminum	0.36	<1	U	2.00	P	05/23/2025	15:05	LB135941
	Antimony	0.045	<0.1	U	0.20	P	05/23/2025	15:05	LB135941
	Arsenic	0.012	<0.05	U	0.10	P	05/23/2025	15:05	LB135941
	Barium	0.033	<0.5	U	1.00	P	05/23/2025	15:05	LB135941
	Beryllium	0.032	<0.05	U	0.10	P	05/23/2025	15:05	LB135941
	Cadmium	0.018	<0.05	U	0.10	P	05/23/2025	15:05	LB135941
	Calcium	4.79	<25	U	50.0	P	05/23/2025	15:05	LB135941
	Chromium	0.026	<0.1	U	0.20	P	05/23/2025	15:05	LB135941
	Cobalt	0.0090	<0.05	U	0.10	P	05/23/2025	15:05	LB135941
	Copper	0.065	<0.1	U	0.20	P	05/23/2025	15:05	LB135941
	Iron	0.92	<2.5	U	5.00	P	05/23/2025	15:05	LB135941
	Lead	0.032	<0.05	U	0.10	P	05/23/2025	15:05	LB135941
	Magnesium	1.93	<25	U	50.0	P	05/23/2025	15:05	LB135941
	Manganese	0.034	<0.05	U	0.10	P	05/23/2025	15:05	LB135941
	Nickel	0.043	<0.05	U	0.10	P	05/23/2025	15:05	LB135941
	Potassium	3.84	<25	U	50.0	P	05/23/2025	15:05	LB135941
	Tin	0.032	<0.25	U	0.50	P	05/23/2025	15:05	LB135941
	Molybdenum	0.079	<0.25	U	0.50	P	05/23/2025	15:05	LB135941
	Selenium	0.28	<0.25	U	0.50	P	05/23/2025	15:05	LB135941
	Silver	0.026	<0.05	U	0.10	P	05/23/2025	15:05	LB135941
	Sodium	7.02	<25	U	50.0	P	05/23/2025	15:05	LB135941
	Thallium	0.014	<0.05	U	0.10	P	05/23/2025	15:05	LB135941
	Vanadium	0.011	<0.25	U	0.50	P	05/23/2025	15:05	LB135941
	Zinc	0.090	<0.25	U	0.50	P	05/23/2025	15:05	LB135941
	Strontium	0.052	<0.05	U	0.10	P	05/23/2025	15:05	LB135941

Metals
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INTERFERENCE CHECK SAMPLE

Client: Alliance Technical Group, LLC - Newark **SDG No.:** Q1872
Contract: ALLI03 **Lab Code:** CHEM **Case No.:** Q1872 **SAS No.:** Q1872
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	91000	100000	91	0	0	05/23/2025	14:40	LB135941
	Antimony	1.03	1.5	69	-2.5	5.5	05/23/2025	14:40	LB135941
	Arsenic	0.33	0.1	330	-1.9	2.1	05/23/2025	14:40	LB135941
	Barium	1.36	1.2	113	-18.8	21.2	05/23/2025	14:40	LB135941
	Beryllium	0.30			-2	2	05/23/2025	14:40	LB135941
	Cadmium	0.42	0.7	60	-1.3	2.7	05/23/2025	14:40	LB135941
	Calcium	95700	100000	96	0	0	05/23/2025	14:40	LB135941
	Chromium	19.0	21.0	90	17	25	05/23/2025	14:40	LB135941
	Cobalt	1.13	1.0	113	-1	3	05/23/2025	14:40	LB135941
	Copper	7.42	8.0	93	4	12	05/23/2025	14:40	LB135941
	Iron	100000	100000	100	0	0	05/23/2025	14:40	LB135941
	Lead	4.12	4.0	103	2	6	05/23/2025	14:40	LB135941
	Magnesium	96200	100000	96	0	0	05/23/2025	14:40	LB135941
	Manganese	7.22	7.0	103	5	9	05/23/2025	14:40	LB135941
	Nickel	5.13	6.0	86	4	8	05/23/2025	14:40	LB135941
	Potassium	98900	100000	99	0	0	05/23/2025	14:40	LB135941
	Selenium	0.26	0.3	87	-9.7	10	05/23/2025	14:40	LB135941
	Molybdenum	1900	2000	95	1600	2400	05/23/2025	14:40	LB135941
	Tin	0.20			0	0	05/23/2025	14:40	LB135941
	Silver	0.050			-2	2	05/23/2025	14:40	LB135941
	Sodium	101000	100000	101	0	0	05/23/2025	14:40	LB135941
	Thallium	0.14			-2	2	05/23/2025	14:40	LB135941
	Vanadium	0.14	0.5	28	-9.5	10.5	05/23/2025	14:40	LB135941
	Zinc	12.1	11.0	110	1	21	05/23/2025	14:40	LB135941
	Strontium	33.2			0	0	05/23/2025	14:40	LB135941
ICSAB01	Aluminum	91400	100000	91	0	0	05/23/2025	14:43	LB135941
	Antimony	19.7	22.0	90	18	26	05/23/2025	14:43	LB135941
	Arsenic	20.7	19.0	109	16.2	21.9	05/23/2025	14:43	LB135941
	Barium	20.3	22.0	92	2	42	05/23/2025	14:43	LB135941
	Beryllium	21.5	19.0	113	16.2	21.9	05/23/2025	14:43	LB135941
	Cadmium	18.7	20.0	94	17	23	05/23/2025	14:43	LB135941
	Calcium	96300	100000	96	0	0	05/23/2025	14:43	LB135941
	Chromium	38.0	40.0	95	34	46	05/23/2025	14:43	LB135941
	Cobalt	20.5	20.0	102	17	23	05/23/2025	14:43	LB135941
	Copper	26.8	25.0	107	21	29	05/23/2025	14:43	LB135941
	Iron	100000	100000	100	0	0	05/23/2025	14:43	LB135941
	Lead	24.7	25.0	99	21.3	28.8	05/23/2025	14:43	LB135941
	Magnesium	95400	100000	95	0	0	05/23/2025	14:43	LB135941
	Manganese	26.1	27.0	97	23	31.1	05/23/2025	14:43	LB135941
	Nickel	24.0	24.0	100	20.4	27.6	05/23/2025	14:43	LB135941
	Potassium	97600	100000	98	0	0	05/23/2025	14:43	LB135941
	Molybdenum	1890	2000	94	1600	2400	05/23/2025	14:43	LB135941

Metals
- 4 -
INTERFERENCE CHECK SAMPLE

Client: Alliance Technical Group, LLC - Newark **SDG No.:** Q1872
Contract: ALLI03 **Lab Code:** CHEM **Case No.:** Q1872 **SAS No.:** Q1872
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
ICSAB01	Selenium	20.9	19.0	110	9	29	05/23/2025	14:43	LB135941
	Tin	0.21			0	0	05/23/2025	14:43	LB135941
	Silver	17.5	18.0	97	15.3	20.7	05/23/2025	14:43	LB135941
	Sodium	101000	100000	101	0	0	05/23/2025	14:43	LB135941
	Thallium	19.4	21.0	92	17.9	24.2	05/23/2025	14:43	LB135941
	Vanadium	19.4	19.0	102	9	29	05/23/2025	14:43	LB135941
	Zinc	30.1	29.0	104	19	39	05/23/2025	14:43	LB135941
	Strontium	32.6			0	0	05/23/2025	14:43	LB135941



METAL QC DATA

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Metals

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LABORATORY CONTROL SAMPLE SUMMARY

Client: Alliance Technical Group, LLC - Newark **SDG No.:** Q1872
Contract: ALLI03 **Lab Code:** CHEM **Case No.:** Q1872 **SAS No.:** Q1872

Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limits	M
PB168134BS							
Aluminum	mg/Kg	1000	1010		101	80 - 120	P
Antimony	mg/Kg	50.0	49.8		100	80 - 120	P
Arsenic	mg/Kg	50.0	49.5		99	80 - 120	P
Barium	mg/Kg	250	251		100	80 - 120	P
Beryllium	mg/Kg	50.0	49.6		99	80 - 120	P
Cadmium	mg/Kg	50.0	51.7		103	80 - 120	P
Calcium	mg/Kg	5000	4930		99	80 - 120	P
Chromium	mg/Kg	50.0	51.0		102	80 - 120	P
Cobalt	mg/Kg	50.0	50.9		102	80 - 120	P
Copper	mg/Kg	500	508		102	80 - 120	P
Iron	mg/Kg	2500	2640		106	80 - 120	P
Lead	mg/Kg	250	248		99	80 - 120	P
Magnesium	mg/Kg	5000	5180		104	80 - 120	P
Manganese	mg/Kg	500	507		101	80 - 120	P
Nickel	mg/Kg	50.0	47.4		95	80 - 120	P
Potassium	mg/Kg	2500	2560		102	80 - 120	P
Molybdenum	mg/Kg	500	493		99	80 - 120	P
Tin	mg/Kg	50.0	50.1		100	80 - 120	P
Selenium	mg/Kg	50.0	49.5		99	80 - 120	P
Silver	mg/Kg	50.0	50.8		102	80 - 120	P
Sodium	mg/Kg	5000	5150		103	80 - 120	P
Thallium	mg/Kg	50.0	49.2		98	80 - 120	P
Vanadium	mg/Kg	50.0	50.9		102	80 - 120	P
Zinc	mg/Kg	500	507		101	80 - 120	P
Strontium	mg/Kg	50.0	49.1		98	80 - 120	P

FORM 8A

ICP-MS INTERNAL STANDARD RELATIVE INTENSITY SUMMARY

Client: Alliance Technical Group, LLC -

Contract: ALLI03

Lab Code: CHEM Case no.: Q1872

Sas No.: Q1872 SDG No.: Q1872

Instrument ID: P8

Start Date : 05/23/2025

Run Number: LB135941

End Date : 05/23/2025

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	1350	100		100		100		100		100	
S2	S2	1357	102		99		100		98		101	
S3	S3	1400	102		98		99		97		102	
S4	S4	1404	100		97		97		96		102	
S5	S5	1407	98		94		96		93		99	
S6	S6	1409	95		92		94		89		98	
S7	S7	1412	92		89		93		86		96	
S8	S8	1415	84		88		89		78		93	
ICV01	ICV01	1423	101		98		102		101		103	
LLICV01	LLICV01	1433	102		100		102		100		103	
ICB01	ICB01	1437	102		103		102		101		103	
ICSA01	ICSA01	1440	97		97		100		91		101	
ICSAB01	ICSAB01	1443	97		98		100		93		102	
CCV01	CCV01	1452	93		95		98		87		100	
CCB01	CCB01	1458	101		100		100		100		102	
CRI	CRI	1501	101		99		101		99		102	
PB168134BL	PB168134BL	1505	100		99		101		100		101	
PB168134BS	PB168134BS	1508	99		98		99		93		100	
Q1872-10	HW0425-PT-M	1513	218	*	119		129		93		106	
Q1872-10	HW0425-PT-M	1519	128		105		107		97		105	
CCV02	CCV02	1549	90		91		94		84		96	
CCB02	CCB02	1555	101		99		100		98		101	

Internal Standard %RI Limit: 70 - 130

FORM 8A

ICP-MS INTERNAL STANDARD RELATIVE INTENSITY SUMMARY

Client: Alliance Technical Group, LLC -

Contract: ALLI03

Lab Code: CHEM Case no.: Q1872

Sas No.: Q1872 SDG No.: Q1872

Instrument ID: P8

Start Date : 05/23/2025

Run Number: LB135941

End Date : 05/23/2025

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	1350	100		100		100		100		100	
S2	S2	1357	101		99		100		100		100	
S3	S3	1400	99		97		98		98		99	
S4	S4	1404	98		96		96		99		99	
S5	S5	1407	93		91		91		95		96	
S6	S6	1409	94		95		92		97		97	
S7	S7	1412	92		91		88		94		95	
S8	S8	1415	89		91		80		91		93	
ICV01	ICV01	1423	95		94		95		96		97	
LLICV01	LLICV01	1433	100		100		101		100		100	
ICB01	ICB01	1437	101		100		101		100		101	
ICSA01	ICSA01	1440	96		97		91		98		98	
ICSAB01	ICSAB01	1443	96		95		90		98		98	
CCV01	CCV01	1452	96		96		88		96		96	
CCB01	CCB01	1458	98		99		101		100		99	
CRI	CRI	1501	99		99		100		99		100	
PB168134BL	PB168134BL	1505	100		100		101		101		100	
PB168134BS	PB168134BS	1508	98		98		94		99		99	
Q1872-10	HW0425-PT-M	1513	117		124		93		101		101	
Q1872-10	HW0425-PT-M	1519	96		99		90		94		95	
CCV02	CCV02	1549	92		91		85		94		92	
CCB02	CCB02	1555	97		97		98		97		98	

Internal Standard %RI Limit: 70 - 130

FORM 8B

ICP-MS INTERNAL STANDARD RELATIVE INTENSITY SUMMARY

Lab Name: Alliance Technical Group, LLC -

Contract: ALLI03

Lab Code: CHEM Case no.: Q1872

Sas No.: Q1872 SDG No.: Q1872

Instrument ID: P8

Start Date : 05/23/2025

Run Number: LB135941

End Date : 05/23/2025

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	1350	100		100							
S2	S2	1357	100		101							
S3	S3	1400	100		100							
S4	S4	1404	100		99							
S5	S5	1407	99		97							
S6	S6	1409	97		95							
S7	S7	1412	95		92							
S8	S8	1415	93		82							
ICV01	ICV01	1423	104		103							
LLICV01	LLICV01	1433	102		102							
ICB01	ICB01	1437	104		103							
ICSA01	ICSA01	1440	100		93							
ICSAB01	ICSAB01	1443	99		93							
CCV01	CCV01	1452	98		89							
CCB01	CCB01	1458	101		102							
CRI	CRI	1501	101		102							
PB168134BL	PB168134BL	1505	101		102							
PB168134BS	PB168134BS	1508	101		96							
Q1872-10	HW0425-PT-ME	1513	104		95							
Q1872-10	HW0425-PT-ME	1519	103		99							
CCV02	CCV02	1549	94		86							
CCB02	CCB02	1555	99		99							

Internal Standard %RI Limit: 70 -130

FORM 8B

ICP-MS INTERNAL STANDARD RELATIVE INTENSITY SUMMARY

Lab Name: Alliance Technical Group, LLC -

Contract: ALLI03

Lab Code: CHEM Case no.: Q1872

Sas No.: Q1872 SDG No.: Q1872

Instrument ID: P8

Start Date : 05/23/2025

Run Number: LB135941

End Date : 05/23/2025

Lab SampleID	Client SampleID	Time	Internal Standard %RI For: Collision Cell									
			Element 209Bi	Q	Element	Q	Element	Q	Element	Q	Element	Q
S0	S0	1350	100									
S2	S2	1357	100									
S3	S3	1400	98									
S4	S4	1404	97									
S5	S5	1407	94									
S6	S6	1409	93									
S7	S7	1412	89									
S8	S8	1415	81									
ICV01	ICV01	1423	96									
LLICV01	LLICV01	1433	101									
ICB01	ICB01	1437	100									
ICSA01	ICSA01	1440	91									
ICSAB01	ICSAB01	1443	91									
CCV01	CCV01	1452	88									
CCB01	CCB01	1458	100									
CRI	CRI	1501	100									
PB168134BL	PB168134BL	1505	99									
PB168134BS	PB168134BS	1508	94									
Q1872-10	HW0425-PT-ME	1513	92									
Q1872-10	HW0425-PT-ME	1519	92									
CCV02	CCV02	1549	84									
CCB02	CCB02	1555	97									

Internal Standard %RI Limit: 70 -130



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>Alliance Technical Group, LLC - Newark</u>	SDG No.:	<u>Q1872</u>
Contract:	<u>ALLI03</u>	Lab Code:	<u>CHEM</u>
		Method:	<u></u>
		Case No.:	<u>Q1872</u>
		SAS No.:	<u>Q1872</u>

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(g)	Final Sample Volume (mL)	Percent Solids
Batch Number: PB168134							
PB168134BL	PB168134BL	MB	SOLID	05/22/2025	1.00	100.0	100.00
PB168134BS	PB168134BS	LCS	SOLID	05/22/2025	1.00	100.0	100.00
Q1872-10	HW0425-PT-MET-SOIL	SAM	SOLID	05/22/2025	1.15	100.0	100.00

metals
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ANALYSIS RUN LOG

Client: Alliance Technical Group, LLC - Newark

Contract: ALLI03

Lab code: CHEM

Case no.: Q1872

Sas no.: Q1872

Sdg no.: Q1872

Instrument id number:

Method:

Run number: LB135941

Start date: 05/23/2025

End date: 05/23/2025

Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	1350	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Tl,V,Zn
S2	S2	1	1357	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Tl,V,Zn
S3	S3	1	1400	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Tl,V,Zn
S4	S4	1	1404	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Tl,V,Zn
S5	S5	1	1407	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Tl,V,Zn
S6	S6	1	1409	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Tl,V,Zn
S7	S7	1	1412	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Tl,V,Zn
S8	S8	1	1415	Al,Ca,Fe,K,Mg,Na
ICV01	ICV01	1	1423	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Tl,V,Zn
LLICV01	LLICV01	1	1433	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Tl,V,Zn
ICB01	ICB01	1	1437	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Tl,V,Zn
ICSA01	ICSA01	1	1440	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Tl,V,Zn
ICSAB01	ICSAB01	1	1443	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Tl,V,Zn
CCV01	CCV01	1	1452	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Tl,V,Zn
CCB01	CCB01	1	1458	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Tl,V,Zn
CRI	CRI	1	1501	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Tl,V,Zn
PB168134BL	PB168134BL	1	1505	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Tl,V,Zn
PB168134BS	PB168134BS	1	1508	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Tl,V,Zn
Q1872-10	HW0425-PT-MET-SOIL	1	1513	Ag,Ca,Co,Cu,Fe,K,Mg,Na,Pb,Zn
Q1872-10	HW0425-PT-MET-SOIL	5	1519	Al,As,Ba,Be,Cd,Cr,Mn,Mo,Ni,Sb,Se,Sn,Sr,Tl,V
CCV02	CCV02	1	1549	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Tl,V,Zn
CCB02	CCB02	1	1555	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Mo,Na,Ni,Pb,Sb,Se,Sn,Sr,Tl,V,Zn



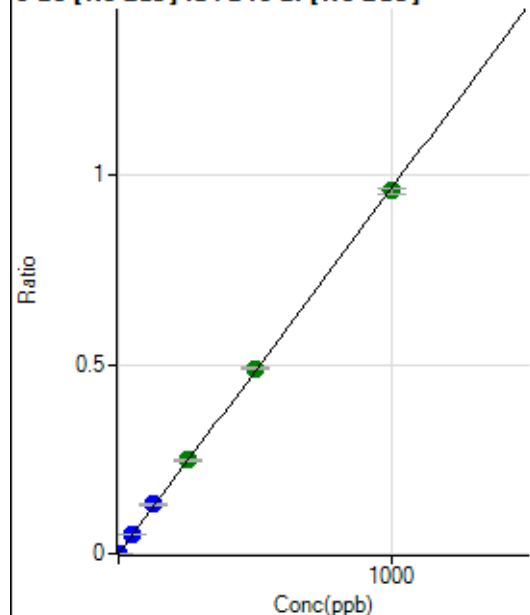
METAL RAW DATA

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Batch Folder: D:\Agilent\ICPMH\1\DATA\P8052325MS.b\
Analysis File: P8052325MS.batch.bin
DA Date-Time: 2025-05-23 15:20:57
Calibration Title:
Calibration Method: External Calibration
VIS Interpolation Fit:

Level	Standard Data File	Sample Name	Acq. Date-Time
1	004CALB.d	S00	2025-05-23 13:50:48
2	006CALS.d	S02	2025-05-23 13:57:33
3	007CALB.d	S03	2025-05-23 14:00:54
4	008CALS.d	S04	2025-05-23 14:04:00
5	009CALS.d	S05	2025-05-23 14:07:01
6	010CALS.d	S06	2025-05-23 14:09:51
7	011CALS.d	S07	2025-05-23 14:12:36
8	012CALS.d	S08	2025-05-23 14:15:23

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



	R _j ct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	82.49	0.0000	P	10.8
2	☐	1.000	1.061	5578.29	0.0010	P	3.7
3	☐	50.000	54.120	278943.65	0.0523	P	1.5
4	☐	125.000	134.727	680021.63	0.1302	P	2.9
5	☐	250.000	256.787	1272102.68	0.2481	A	1.3
6	☐	500.000	507.756	2446301.61	0.4906	A	0.8
7	☐	1000.000	993.003	4650975.72	0.9595	A	1.7
8	☐			794.09	0.0002	P	17.7

$$y = 9.6621E-004 * x + 1.5737E-005$$

R = 0.9999

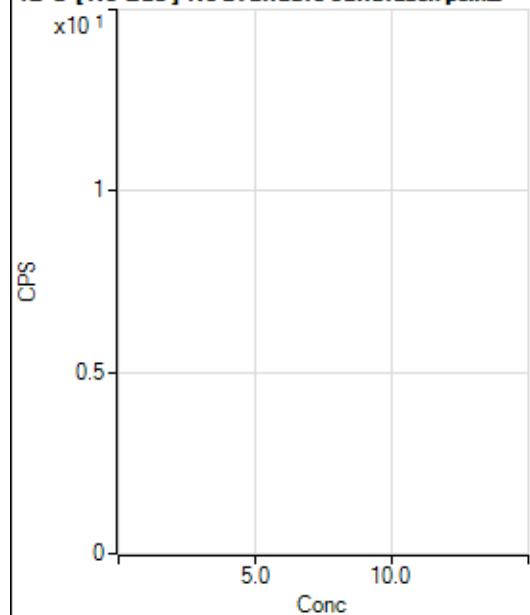
DL = 0.005295

BEC = 0.01629

Weight: <None>

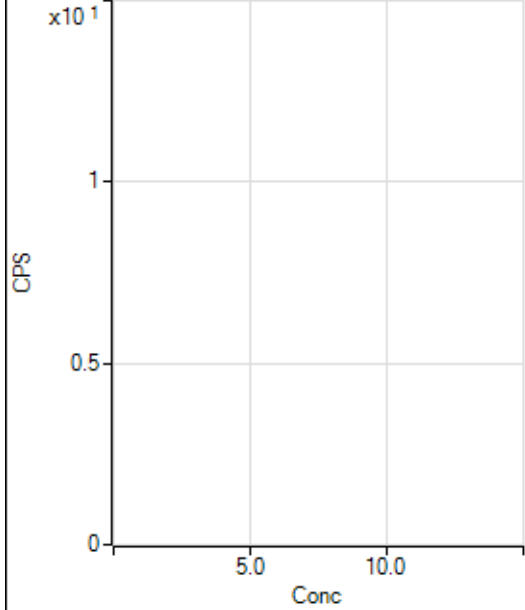
Min Conc: 0

12 C [No Gas] No available calibration points



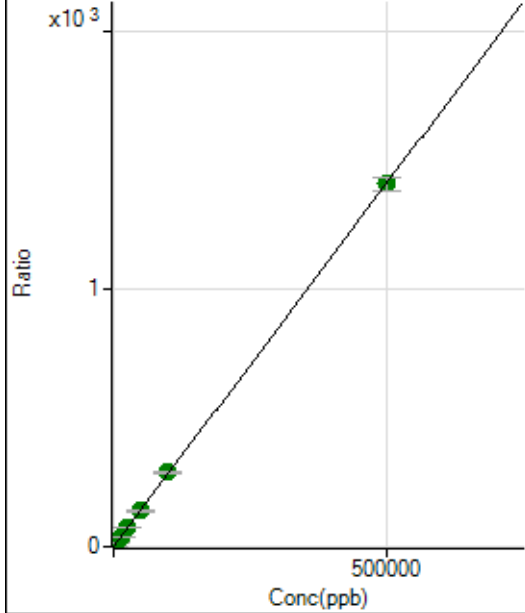
	R _j ct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			3273665.65		A	0.3
2	☐			3308024.78		A	1.0
3	☐			3465413.56		A	1.3
4	☐			3604268.18		A	0.7
5	☐			3690623.17		A	1.2
6	☐			3613237.93		A	1.4
7	☐			3659295.22		A	0.4
8	☐			3503572.10		A	0.8

12 C [He] No available calibration points



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD
1	☐			21567.00		P	1.8
2	☐			21669.37		P	0.8
3	☐			22832.30		P	2.1
4	☐			23945.13		P	0.5
5	☐			24687.52		P	1.4
6	☐			24078.64		P	1.9
7	☐			25758.15		P	0.1
8	☐			29834.76		P	0.8

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



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD
1	☐	0.000	0.000	31439.44	0.1800	P	0.9
2	☐	500.000	485.352	271677.20	1.5475	P	0.2
3	☐	5000.000	5277.290	2589089.56	15.0486	A	1.7
4	☐	12500.000	12958.365	6254968.10	36.6898	A	2.2
5	☐	25000.000	25962.994	11952595.51	73.3301	A	0.9
6	☐	50000.000	50033.078	23221895.77	141.1469	A	5.5
7	☐	100000.00	102061.89	46177048.76	287.7367	A	0.6
8	☐	500000.00	499521.94	218944390.0	1,407.570	A	3.5

$$y = 0.0028 * x + 0.1800$$

$$R = 1.0000$$

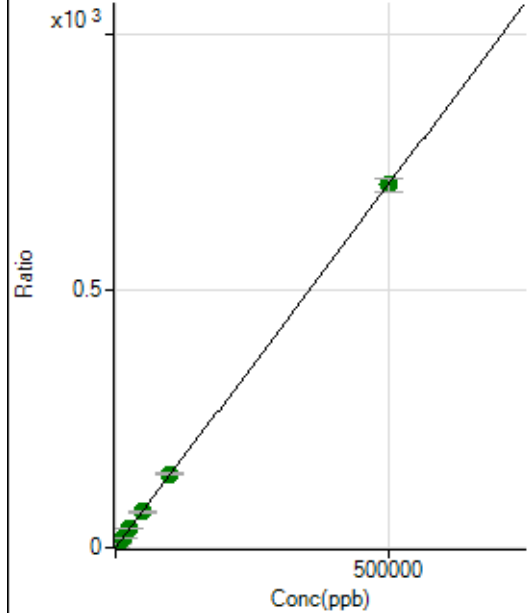
$$DL = 1.743$$

$$BEC = 63.88$$

Weight: <None>

Min Conc: 0

24 Mg [He] ISTD:45 Sc [He]



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1225.62	0.0070	P	1.3
2	☐	500.000	501.882	125746.79	0.7163	P	1.0
3	☐	5000.000	5313.007	1293110.60	7.5154	A	1.0
4	☐	12500.000	13071.986	3150404.81	18.4805	A	2.5
5	☐	25000.000	26385.991	6079286.09	37.2960	A	0.3
6	☐	50000.000	50218.121	11676420.66	70.9759	A	5.6
7	☐	100000.00	101798.40	23088725.77	143.8698	A	0.3
8	☐	500000.00	499531.77	109811879.4	705.9515	A	3.4

$$y = 0.0014 * x + 0.0070$$

$$R = 1.0000$$

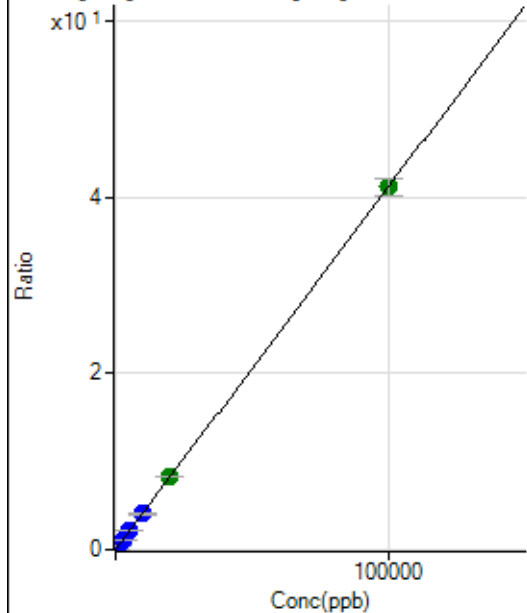
$$DL = 0.199$$

$$BEC = 4.965$$

Weight: <None>

Min Conc: 0

27 Al [He] ISTD:45 Sc [He]



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	140.01	0.0008	P	14.9
2	☐	20.000	19.763	1567.88	0.0089	P	6.2
3	☐	1000.000	1051.652	74587.73	0.4335	P	1.7
4	☐	2500.000	2545.570	178699.22	1.0482	P	2.5
5	☐	5000.000	5140.637	344920.52	2.1161	P	0.3
6	☐	10000.000	9858.139	667598.10	4.0572	P	4.9
7	☐	20000.000	20144.392	1330349.84	8.2898	A	1.0
8	☐	100000.00	99976.620	6396848.59	41.1389	A	5.0

$$y = 4.1148E-004 * x + 8.0153E-004$$

$$R = 1.0000$$

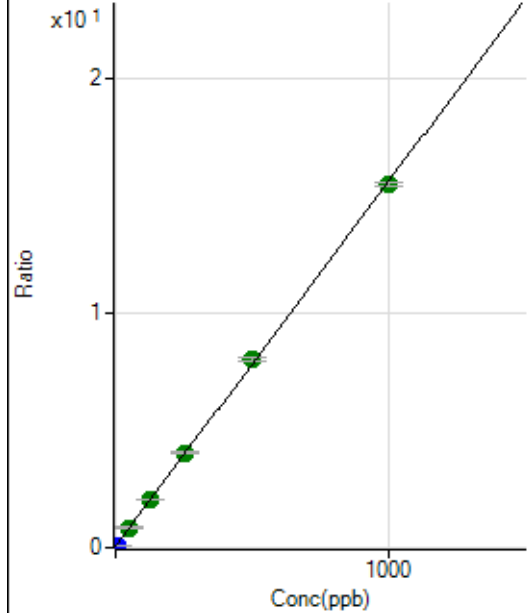
$$DL = 0.869$$

$$BEC = 1.948$$

Weight: <None>

Min Conc: 0

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



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	525367.48	0.0561	P	3.7
2	☐	10.000	0.512	592848.76	0.0640	P	1.9
3	☐	50.000	51.685	7908501.27	0.8592	A	2.2
4	☐	125.000	128.938	18671530.14	2.0596	A	0.6
5	☐	250.000	256.794	35787102.24	4.0463	A	1.0
6	☐	500.000	513.667	68985296.75	8.0378	A	2.5
7	☐	1000.000	990.987	128730155.8	15.4548	A	1.2
8	☐			652902.11	0.0792	P	4.6

$$y = 0.0155 * x + 0.0561$$

$$R = 0.9997$$

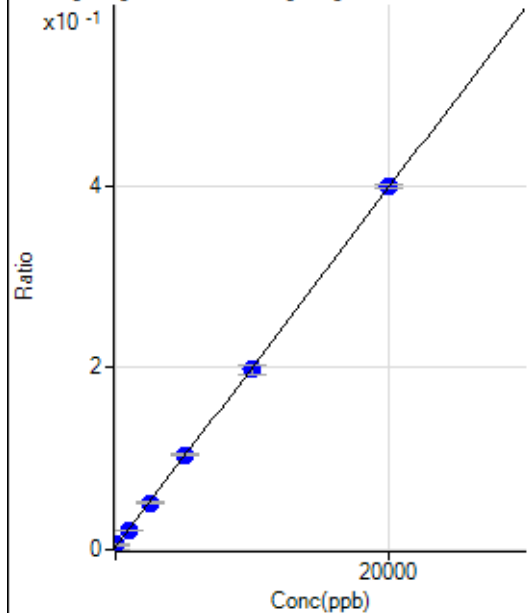
$$DL = 0.4026$$

$$BEC = 3.608$$

Weight: <None>

Min Conc: 0

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



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-125.095	71.11	0.0004	P	48.0
2	☐	0.000	125.095	940.04	0.0054	P	4.6
3	☐	1000.000	909.281	3589.37	0.0209	P	2.2
4	☐	2500.000	2444.800	8730.48	0.0512	P	3.0
5	☐	5000.000	5131.357	17005.61	0.1043	P	2.3
6	☐	10000.000	9863.038	32548.70	0.1979	P	6.2
7	☐	20000.000	20047.078	64070.66	0.3992	P	1.0
8	☐			102.22	0.0007	P	12.4

$$y = 1.9772E-005 * x + 0.0029$$

$$R = 0.9999$$

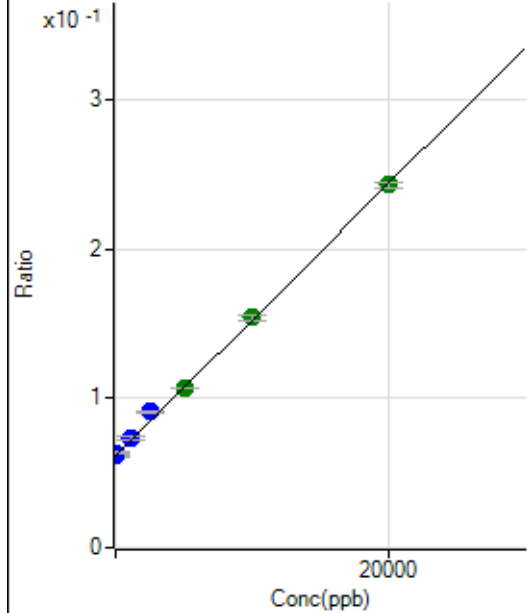
$$DL = 33.66$$

$$BEC = 145.7$$

Weight: <None>

Min Conc: 0

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



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det	RSD
1	☐	0.000	-123.556	576917.41	0.0616	P	1.7
2	☐	0.000	123.556	590858.61	0.0638	P	0.3
3	☐	1000.000	1227.281	679298.96	0.0738	P	2.7
4	☐	2500.000	3136.553	826010.53	0.0911	P	1.8
5	☐	5000.000	4882.868	946053.92	0.1070	A	1.1
6	☐	10000.000	10077.137	1322535.15	0.1541	A	2.1
7	☐	20000.000	19899.781	2025587.72	0.2432	A	1.4
8	☐			457448.01	0.0555	P	1.0

$$y = 9.0720E-006 * x + 0.0627$$

R = 0.9994

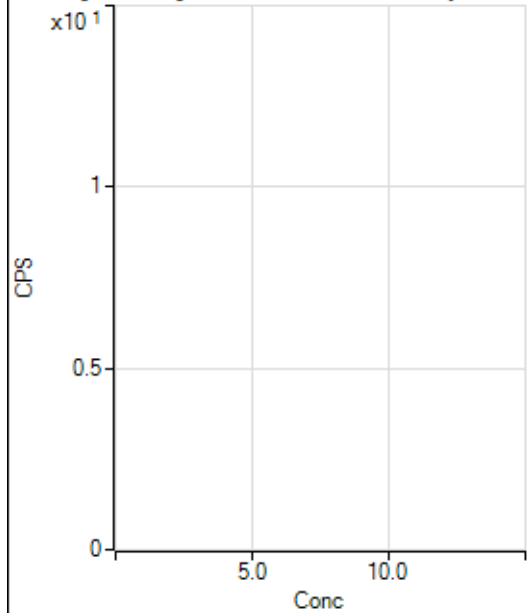
DL = 197.8

BEC = 6908

Weight: <None>

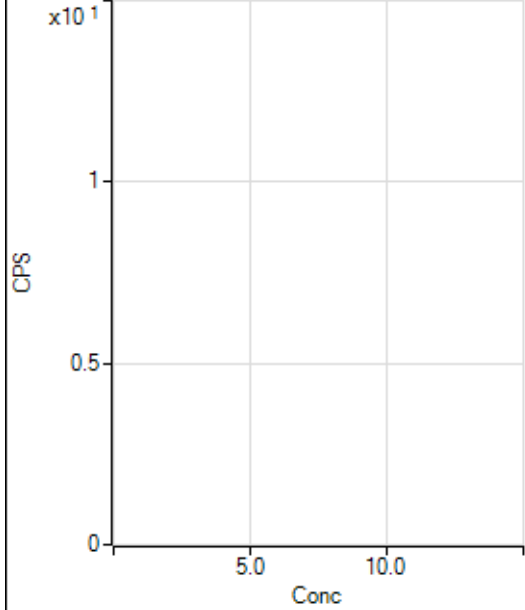
Min Conc: 0

35 Cl [No Gas] No available calibration points



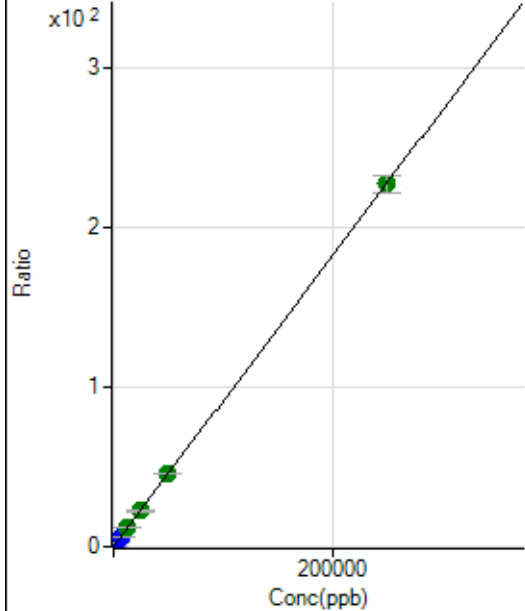
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det	RSD
1	☐			120404.27		P	0.4
2	☐			120397.73		P	0.4
3	☐			126508.86		P	0.9
4	☐			132201.39		P	0.9
5	☐			138317.84		P	0.3
6	☐			154666.25		P	0.5
7	☐			189373.84		P	1.4
8	☐			133726.45		P	0.6

35 Cl [He] No available calibration points



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det	RSD
1	☐			427.79		P	11.3
2	☐			403.34		P	14.5
3	☐			477.79		P	9.5
4	☐			472.23		P	2.9
5	☐			474.46		P	2.1
6	☐			565.57		P	15.5
7	☐			697.80		P	5.7
8	☐			535.57		P	3.4

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



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det	RSD
1	☐	0.000	0.000	13257.29	0.0759	P	2.6
2	☐	500.000	458.406	86621.19	0.4934	P	1.8
3	☐	2500.000	2577.949	417052.79	2.4240	P	1.2
4	☐	6250.000	6265.919	985915.15	5.7832	P	2.1
5	☐	12500.000	13217.948	1974840.14	12.1154	A	1.4
6	☐	25000.000	24925.504	3749238.66	22.7792	A	4.0
7	☐	50000.000	50296.463	7364239.54	45.8882	A	0.6
8	☐	250000.00	249911.16	35406103.92	227.7065	A	4.9

$$y = 9.1085E-004 * x + 0.0759$$

$$R = 1.0000$$

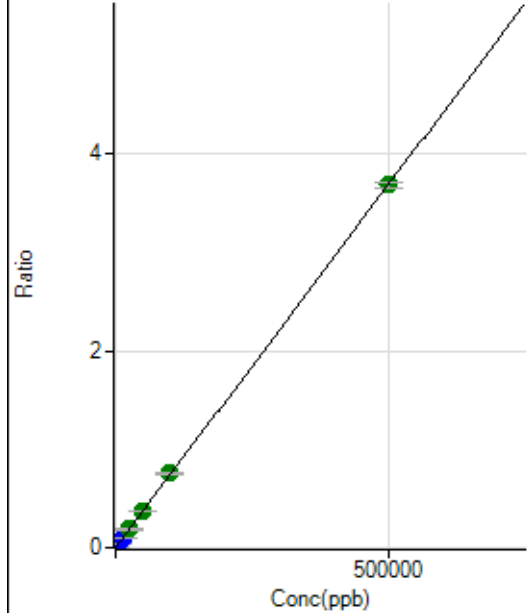
$$DL = 6.514$$

$$BEC = 83.33$$

Weight: <None>

Min Conc: 0

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



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD
1	☐	0.000	0.000	753.36	0.0001	P	3.8
2	☐	500.000	459.061	32154.89	0.0035	P	1.2
3	☐	5000.000	5032.914	342977.40	0.0373	P	2.4
4	☐	12500.000	12508.909	838408.64	0.0925	P	1.4
5	☐	25000.000	25167.842	1645042.53	0.1860	A	1.4
6	☐	50000.000	50685.803	3214711.55	0.3745	A	1.4
7	☐	100000.00	102127.74	6284753.03	0.7546	A	2.0
8	☐	500000.00	499496.96	30426063.16	3.6902	A	1.8

$$y = 7.3877E-006 * x + 8.0340E-005$$

$$R = 1.0000$$

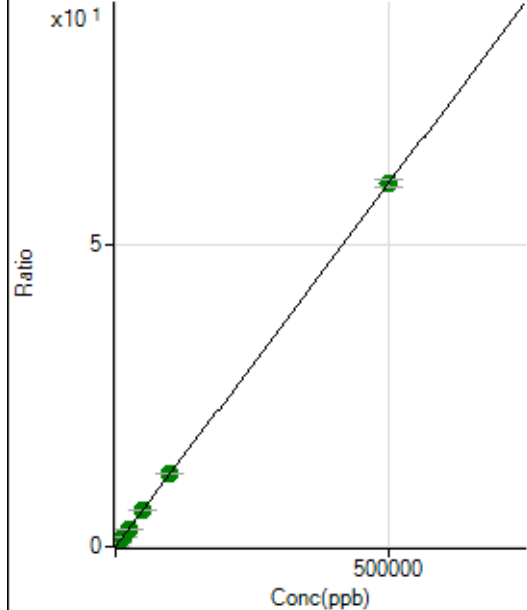
$$DL = 1.25$$

$$BEC = 10.87$$

Weight: <None>

Min Conc: 0

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



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD
1	☐	0.000	0.000	23864.34	0.0025	P	1.2
2	☐	500.000	459.617	536043.85	0.0579	P	1.1
3	☐	5000.000	4997.371	5561168.04	0.6042	A	2.2
4	☐	12500.000	12528.193	13696645.90	1.5108	A	1.2
5	☐	25000.000	24987.829	26627449.88	3.0108	A	1.0
6	☐	50000.000	49732.315	51412102.01	5.9897	A	1.2
7	☐	100000.00	100788.30	101081590.7	12.1361	A	2.0
8	☐	500000.00	499869.07	496199548.1	60.1803	A	2.3

$$y = 1.2039E-004 * x + 0.0025$$

$$R = 1.0000$$

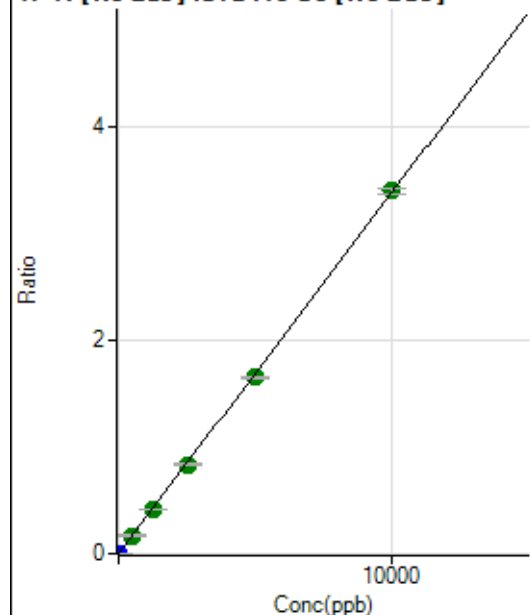
$$DL = 0.7659$$

$$BEC = 21.15$$

Weight: <None>

Min Conc: 0

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



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det	RSD
1	☐	0.000	0.000	241.12	0.0000	P	4.2
2	☐	5.000	4.715	15016.84	0.0016	P	1.0
3	☐	500.000	501.269	1561144.91	0.1696	A	3.3
4	☐	1250.000	1243.260	3813669.60	0.4207	A	1.2
5	☐	2500.000	2469.239	7389540.24	0.8355	A	1.1
6	☐	5000.000	4897.100	14223073.40	1.6570	A	1.0
7	☐	10000.000	10059.919	28352569.30	3.4039	A	1.7
8	☐			3143.71	0.0004	P	3.4

$$y = 3.3836E-004 * x + 2.5731E-005$$

R = 0.9999

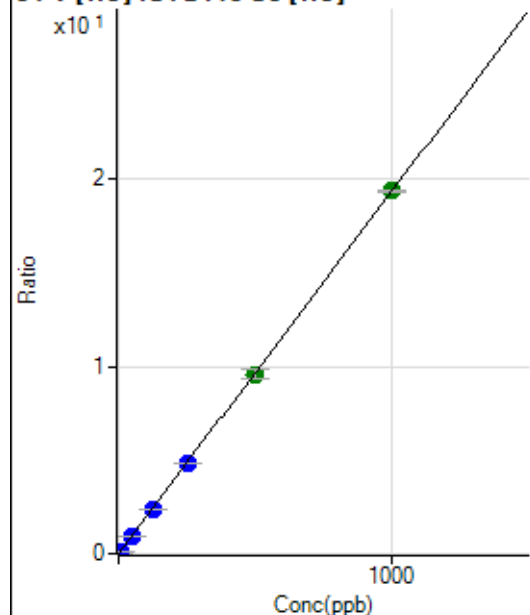
DL = 0.009625

BEC = 0.07605

Weight: <None>

Min Conc: 0

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



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det	RSD
1	☐	0.000	0.000	11.11	0.0001	P	96.3
2	☐	5.000	4.655	15797.69	0.0900	P	3.1
3	☐	50.000	49.715	165267.93	0.9606	P	1.8
4	☐	125.000	122.318	402903.59	2.3634	P	2.1
5	☐	250.000	247.895	780719.65	4.7897	P	0.1
6	☐	500.000	496.690	1579001.87	9.5967	A	5.1
7	☐	1000.000	1002.533	3108559.33	19.3701	A	0.2
8	☐			783.36	0.0050	P	9.5

$$y = 0.0193 * x + 6.3544E-005$$

R = 1.0000

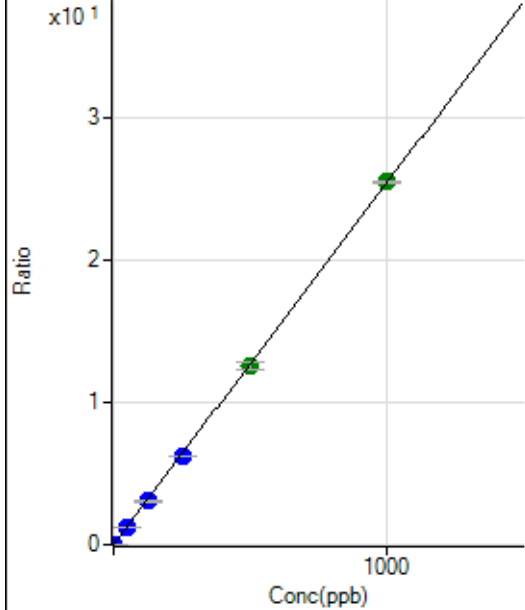
DL = 0.0095

BEC = 0.003289

Weight: <None>

Min Conc: 0

52 Cr [He] ISTD:45 Sc [He]



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	805.59	0.0046	P	12.7
2	☐	2.000	1.806	8855.02	0.0504	P	4.0
3	☐	50.000	49.293	216060.86	1.2558	P	0.9
4	☐	125.000	120.619	522678.56	3.0662	P	2.6
5	☐	250.000	245.754	1017503.66	6.2423	P	0.6
6	☐	500.000	495.950	2072525.66	12.5928	A	4.2
7	☐	1000.000	1003.670	4089058.34	25.4797	A	0.9
8	☐			5751.21	0.0370	P	1.6

$$y = 0.0254 * x + 0.0046$$

$$R = 1.0000$$

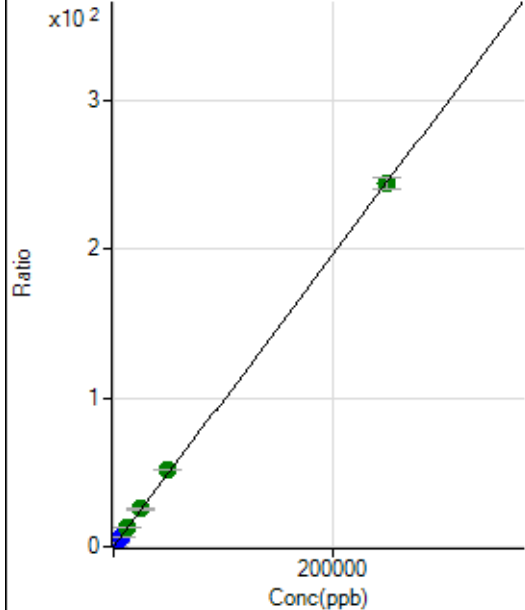
$$DL = 0.06941$$

$$BEC = 0.1817$$

Weight: <None>

Min Conc: 0

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



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	506.68	0.0029	P	3.6
2	☐	50.000	50.269	9147.44	0.0521	P	2.7
3	☐	2500.000	2644.970	445986.08	2.5921	P	0.7
4	☐	6250.000	6506.803	1086264.60	6.3725	P	2.7
5	☐	12500.000	13590.166	2168973.68	13.3064	A	0.3
6	☐	25000.000	25897.029	4172646.88	25.3537	A	4.3
7	☐	50000.000	52554.348	8256753.62	51.4487	A	1.2
8	☐	250000.00	249337.05	37970430.82	244.0805	A	3.2

$$y = 9.7891E-004 * x + 0.0029$$

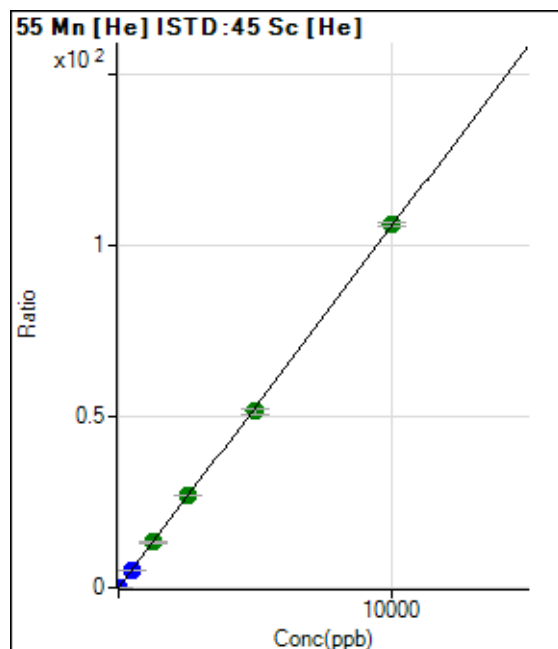
$$R = 0.9999$$

$$DL = 0.3192$$

$$BEC = 2.963$$

Weight: <None>

Min Conc: 0



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1361.19	0.0078	P	7.6
2	☐	1.000	0.957	3140.37	0.0179	P	3.0
3	☐	500.000	496.604	903313.16	5.2502	P	1.1
4	☐	1250.000	1265.091	2277865.07	13.3628	A	2.7
5	☐	2500.000	2576.457	4434674.80	27.2062	A	0.3
6	☐	5000.000	4874.067	8469872.72	51.4610	A	4.2
7	☐	10000.000	10042.136	17013889.05	106.0179	A	1.0
8	☐			7157.42	0.0460	P	5.7

$$y = 0.0106 * x + 0.0078$$

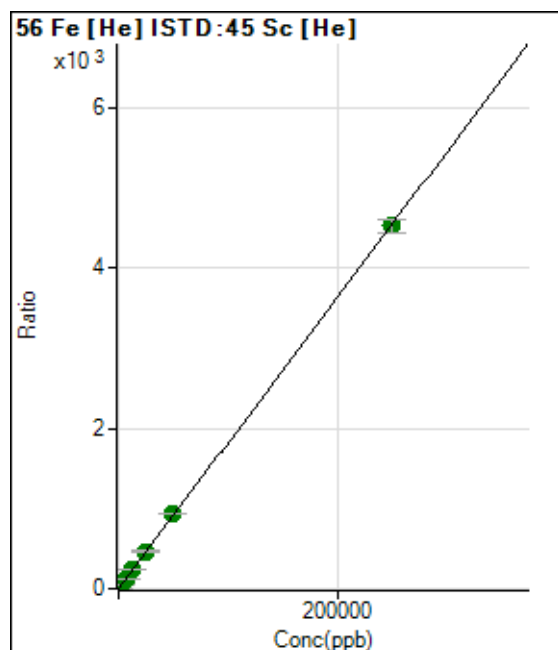
$$R = 0.9999$$

$$DL = 0.1692$$

$$BEC = 0.7381$$

Weight: <None>

Min Conc: 0



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	5571.14	0.0319	P	2.8
2	☐	50.000	49.042	161834.17	0.9218	P	1.0
3	☐	2500.000	2666.127	8330029.60	48.4127	A	0.8
4	☐	6250.000	6531.614	20209914.56	118.5577	A	2.7
5	☐	12500.000	13468.667	39843840.80	244.4407	A	0.5
6	☐	25000.000	25373.792	75778548.31	460.4768	A	4.5
7	☐	50000.000	51884.273	151100256.6	941.5486	A	0.8
8	☐	250000.00	249528.63	704301349.5	4,528.097	A	3.7

$$y = 0.0181 * x + 0.0319$$

$$R = 1.0000$$

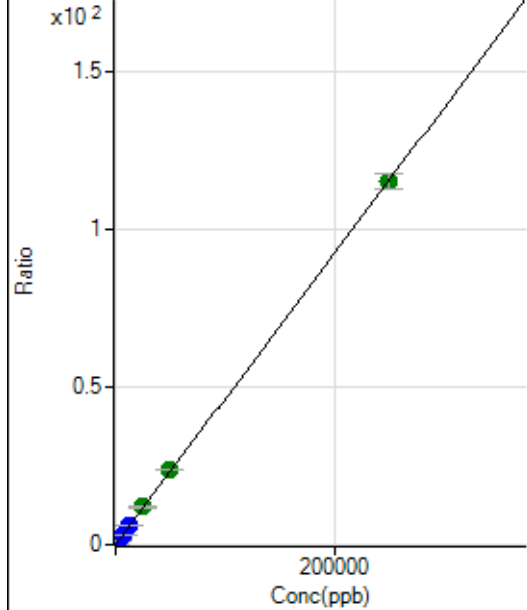
$$DL = 0.1497$$

$$BEC = 1.758$$

Weight: <None>

Min Conc: 0

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



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	133.34	0.0008	P	7.7
2	☐	50.000	48.099	4023.94	0.0229	P	4.0
3	☐	2500.000	2588.139	205300.32	1.1932	P	1.4
4	☐	6250.000	6352.561	499081.45	2.9277	P	2.5
5	☐	12500.000	12858.216	965815.55	5.9252	P	0.2
6	☐	25000.000	25966.648	1968238.76	11.9649	A	5.8
7	☐	50000.000	51838.261	3833156.57	23.8852	A	0.4
8	☐	250000.00	249514.32	17880089.32	114.9644	A	4.1

$$y = 4.6075E-004 * x + 7.6344E-004$$

R = 1.0000

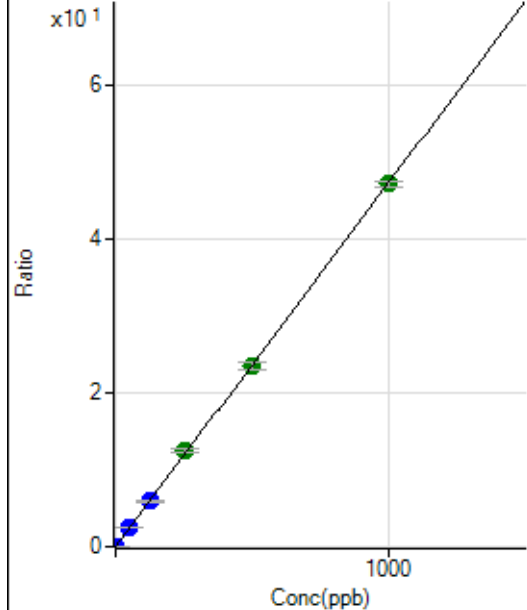
DL = 0.3809

BEC = 1.657

Weight: <None>

Min Conc: 0

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



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	48.89	0.0003	P	17.1
2	☐	1.000	0.984	8217.99	0.0468	P	3.3
3	☐	50.000	50.670	412282.33	2.3961	P	0.2
4	☐	125.000	124.549	1003953.86	5.8894	P	2.5
5	☐	250.000	264.636	2039805.47	12.5131	A	2.3
6	☐	500.000	497.792	3873666.44	23.5375	A	4.3
7	☐	1000.000	997.468	7568846.35	47.1638	A	1.9
8	☐			8163.53	0.0525	P	3.4

$$y = 0.0473 * x + 2.7987E-004$$

R = 0.9999

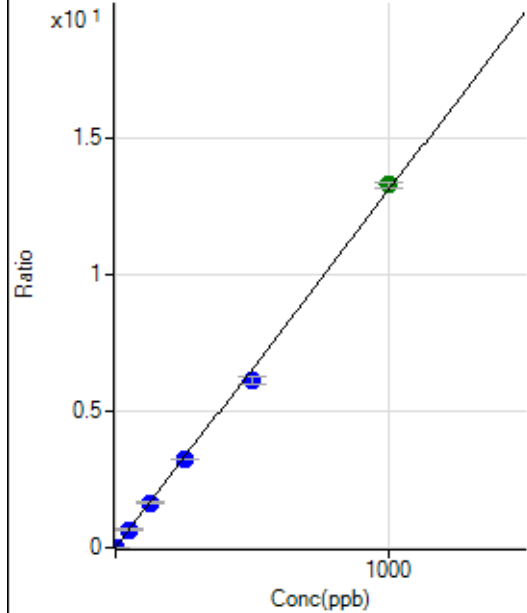
DL = 0.003038

BEC = 0.005919

Weight: <None>

Min Conc: 0

60 Ni [He] ISTD:45 Sc [He]



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det	RSD
1	☐	0.000	0.000	240.01	0.0014	P	8.4
2	☐	1.000	0.852	2195.75	0.0125	P	2.6
3	☐	50.000	50.858	114642.52	0.6663	P	1.0
4	☐	125.000	125.157	279174.24	1.6377	P	2.7
5	☐	250.000	248.577	529982.29	3.2514	P	0.3
6	☐	500.000	469.839	1011049.08	6.1443	P	4.8
7	☐	1000.000	1015.374	2130728.81	13.2768	A	1.2
8	☐			4999.81	0.0321	P	2.9

$$y = 0.0131 * x + 0.0014$$

$$R = 0.9993$$

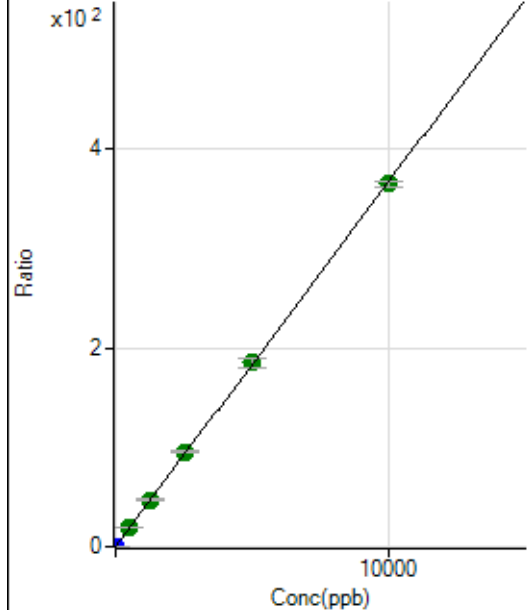
$$DL = 0.0265$$

$$BEC = 0.1051$$

Weight: <None>

Min Conc: 0

63 Cu [He] ISTD:45 Sc [He]



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det	RSD
1	☐	0.000	0.000	1865.70	0.0107	P	3.9
2	☐	2.000	1.928	14279.49	0.0813	P	0.5
3	☐	500.000	535.733	3379948.32	19.6459	A	2.6
4	☐	1250.000	1290.052	8061431.27	47.2926	A	3.1
5	☐	2500.000	2608.914	15587827.96	95.6304	A	0.3
6	☐	5000.000	5037.934	30387900.66	184.6569	A	4.7
7	☐	10000.000	9947.011	58507666.35	364.5803	A	1.8
8	☐			8899.53	0.0572	P	5.5

$$y = 0.0367 * x + 0.0107$$

$$R = 0.9999$$

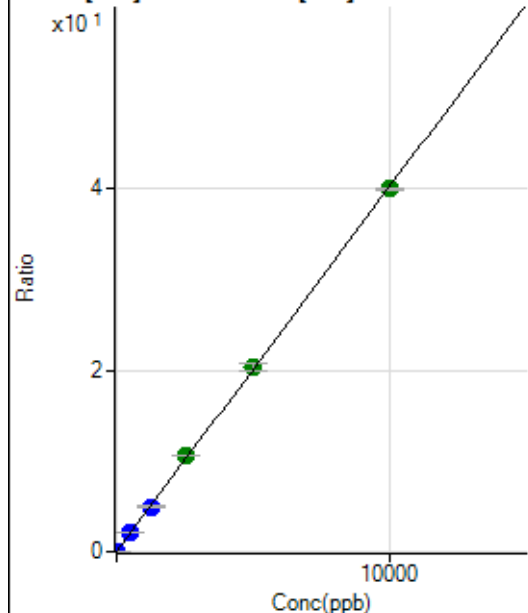
$$DL = 0.03449$$

$$BEC = 0.2914$$

Weight: <None>

Min Conc: 0

⁶⁶Zn [He] ISTD:⁴⁵Sc [He]



	R _j ct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	315.56	0.0018	P	8.5
2	☐	2.000	5.087	3908.35	0.0223	P	3.2
3	☐	500.000	505.046	349690.58	2.0325	P	1.3
4	☐	1250.000	1233.648	845859.16	4.9620	P	2.6
5	☐	2500.000	2633.560	1726264.30	10.5908	A	0.8
6	☐	5000.000	5056.621	3345816.13	20.3334	A	4.8
7	☐	10000.000	9940.090	6414325.95	39.9688	A	0.5
8	☐			26160.85	0.1682	P	3.2

$$y = 0.0040 * x + 0.0018$$

$$R = 0.9999$$

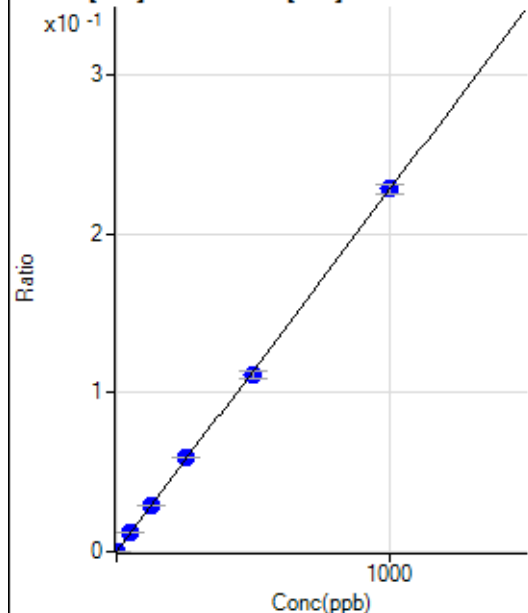
$$DL = 0.1142$$

$$BEC = 0.4493$$

Weight: <None>

Min Conc: 0

⁷⁵As [He] ISTD:⁸⁹Y [He]



	R _j ct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	7.78	0.0000	P	49.7
2	☐	1.000	0.907	403.34	0.0002	P	9.8
3	☐	50.000	51.603	22049.53	0.0118	P	1.9
4	☐	125.000	126.348	53598.04	0.0288	P	0.7
5	☐	250.000	261.073	104716.48	0.0595	P	0.6
6	☐	500.000	489.358	204378.90	0.1116	P	4.5
7	☐	1000.000	1002.304	401722.69	0.2285	P	2.4
8	☐			173.34	0.0001	P	20.4

$$y = 2.2797E-004 * x + 4.0272E-006$$

$$R = 0.9999$$

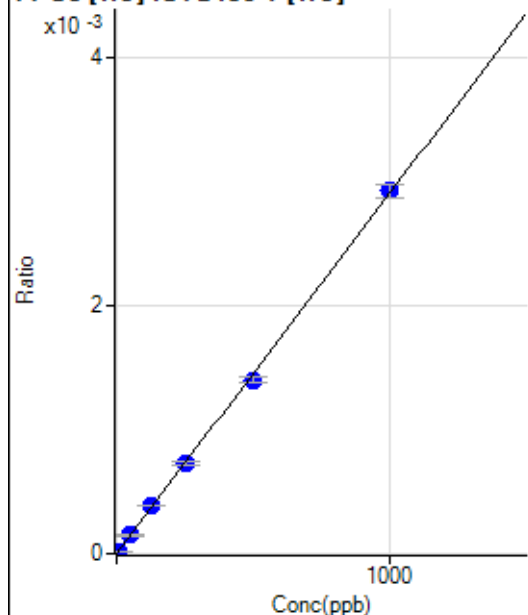
$$DL = 0.02636$$

$$BEC = 0.01767$$

Weight: <None>

Min Conc: 0

77 Se [He] ISTD:89 Y [He]



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	0.00	0.0000	P	
2	☐	5.000	6.008	33.33	0.0000	P	40.4
3	☐	50.000	51.452	280.01	0.0001	P	9.0
4	☐	125.000	133.245	720.03	0.0004	P	2.4
5	☐	250.000	253.157	1293.41	0.0007	P	4.0
6	☐	500.000	481.971	2565.82	0.0014	P	3.2
7	☐	1000.000	1007.117	5142.10	0.0029	P	3.5
8	☐			3.33	0.0000	P	98.5

$$y = 2.9038E-006 * x + 0.0000E+000$$

R = 0.9997

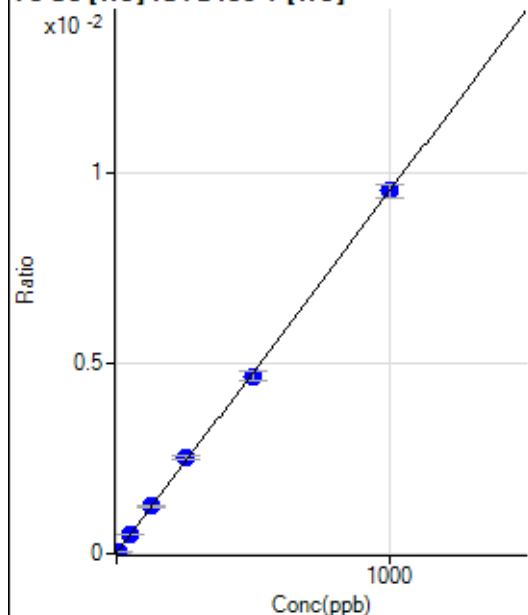
DL = 0

BEC = 0

Weight: <None>

Min Conc: 0

78 Se [He] ISTD:89 Y [He]



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	21.11	0.0000	P	39.4
2	☐	5.000	5.437	120.00	0.0001	P	27.7
3	☐	50.000	52.981	965.60	0.0005	P	1.1
4	☐	125.000	130.625	2334.66	0.0013	P	3.2
5	☐	250.000	263.680	4436.29	0.0025	P	3.6
6	☐	500.000	489.612	8558.21	0.0047	P	5.2
7	☐	1000.000	1000.920	16770.07	0.0095	P	3.7
8	☐			22.22	0.0000	P	19.3

$$y = 9.5214E-006 * x + 1.0908E-005$$

R = 0.9998

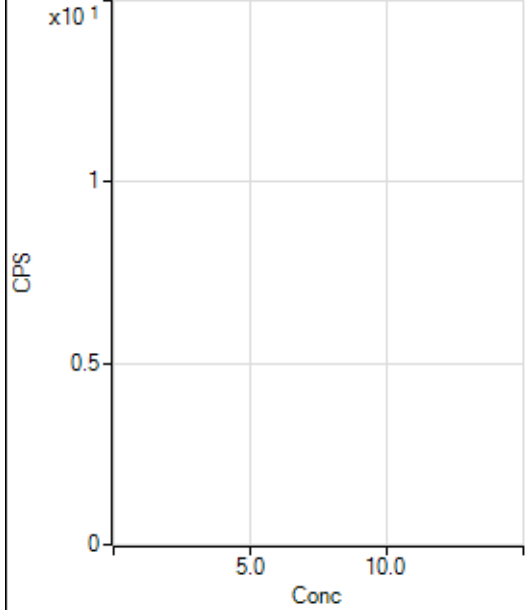
DL = 1.353

BEC = 1.146

Weight: <None>

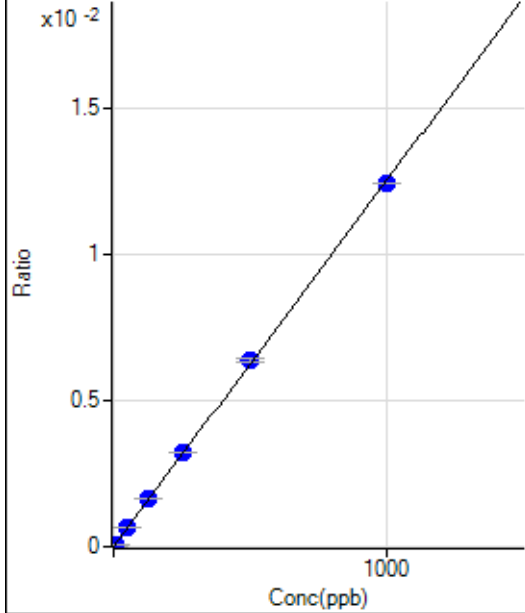
Min Conc: 0

81 Br [No Gas] No available calibration points



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD
1	☐			28113.85		P	1.1
2	☐			26786.79		P	2.3
3	☐			26627.61		P	1.3
4	☐			26246.85		P	1.6
5	☐			26220.20		P	1.8
6	☐			26436.15		P	2.1
7	☐			25881.72		P	1.3
8	☐			24603.84		P	1.6

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



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD
1	☐	0.000	0.000	-38.89	0.0000	P	-34.
2	☐	5.000	4.977	1539.01	0.0001	P	9.0
3	☐	50.000	51.101	16051.77	0.0006	P	0.6
4	☐	125.000	129.315	39928.54	0.0016	P	0.3
5	☐	250.000	256.839	78602.44	0.0032	P	0.7
6	☐	500.000	511.943	153447.92	0.0064	P	2.3
7	☐	1000.000	991.724	292491.25	0.0124	P	0.2
8	☐			231.12	0.0000	P	26.1

$$y = 1.2526E-005 * x - 1.5343E-006$$

$$R = 0.9999$$

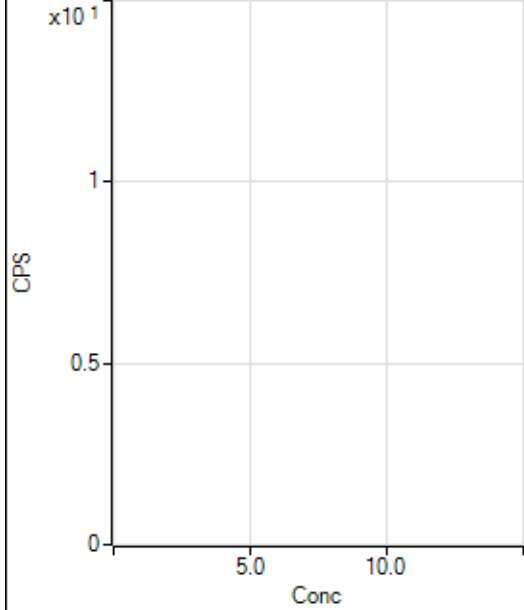
$$DL = 0.1277$$

$$BEC = -0.1225$$

Weight: <None>

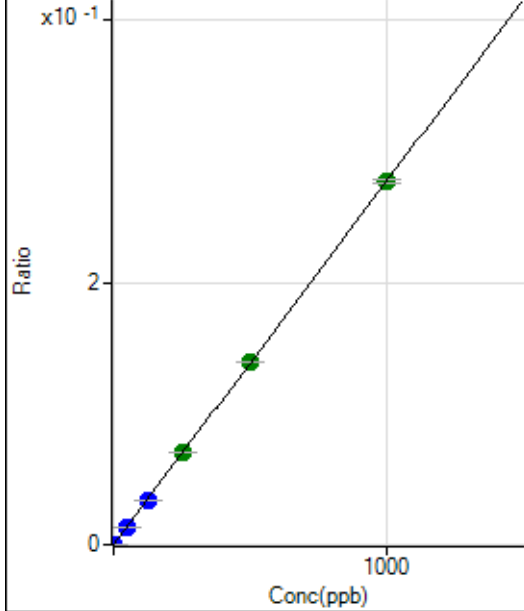
Min Conc: 0

83 Kr [No Gas] No available calibration points



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD
1	☐			252.23		P	9.9
2	☐			252.23		P	9.0
3	☐			257.78		P	1.5
4	☐			244.45		P	18.3
5	☐			271.12		P	6.2
6	☐			260.01		P	6.7
7	☐			280.01		P	4.8
8	☐			328.89		P	3.3

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



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD
1	☐	0.000	0.000	408.90	0.0000	P	3.3
2	☐	1.000	0.922	6870.64	0.0003	P	4.5
3	☐	50.000	48.003	334504.02	0.0133	P	1.3
4	☐	125.000	120.512	823752.11	0.0334	P	0.8
5	☐	250.000	252.428	1709040.91	0.0699	A	0.4
6	☐	500.000	502.802	3333681.93	0.1393	A	0.9
7	☐	1000.000	998.653	6512613.23	0.2766	A	1.1
8	☐			20916.85	0.0009	P	0.6

$$y = 2.7692E-004 * x + 1.6126E-005$$

$$R = 1.0000$$

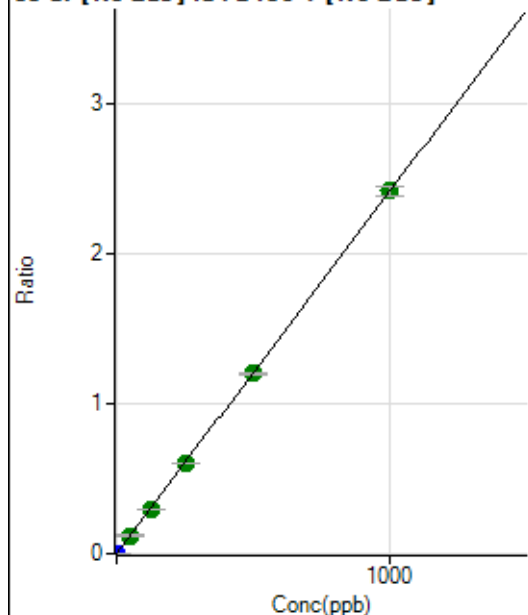
$$DL = 0.0057$$

$$BEC = 0.05823$$

Weight: <None>

Min Conc: 0

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



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	378.90	0.0000	P	12.3
2	☐	1.000	0.908	56002.91	0.0022	P	1.1
3	☐	50.000	50.408	3064534.44	0.1219	A	0.5
4	☐	125.000	124.200	7410935.24	0.3004	A	0.7
5	☐	250.000	247.941	14656557.00	0.5996	A	0.2
6	☐	500.000	497.012	28772647.35	1.2020	A	1.3
7	☐	1000.000	1002.088	57068493.59	2.4235	A	2.4
8	☐			182092.30	0.0080	P	0.5

$$y = 0.0024 * x + 1.4946E-005$$

$$R = 1.0000$$

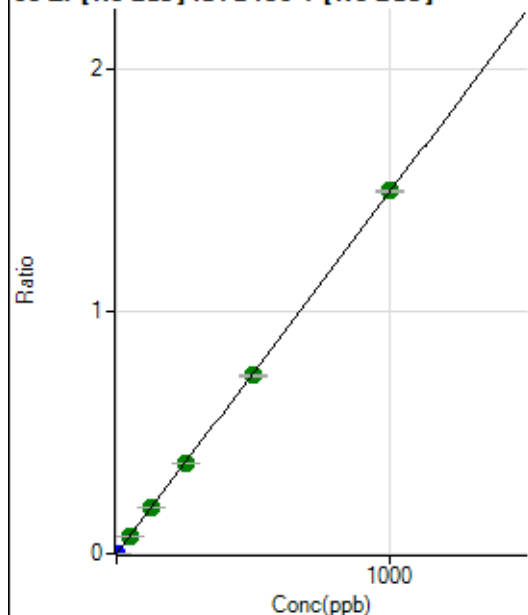
$$DL = 0.002277$$

$$BEC = 0.00618$$

Weight: <None>

Min Conc: 0

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



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1096.72	0.0000	P	6.2
2	☐	1.000	0.956	37181.70	0.0015	P	1.6
3	☐	50.000	50.059	1876753.27	0.0747	A	1.3
4	☐	125.000	125.655	4623028.54	0.1874	A	0.6
5	☐	250.000	250.079	9113891.67	0.3729	A	1.3
6	☐	500.000	492.199	17566612.52	0.7339	A	1.1
7	☐	1000.000	1003.796	35242270.86	1.4966	A	0.7
8	☐			27897.94	0.0012	P	1.2

$$y = 0.0015 * x + 4.3239E-005$$

$$R = 1.0000$$

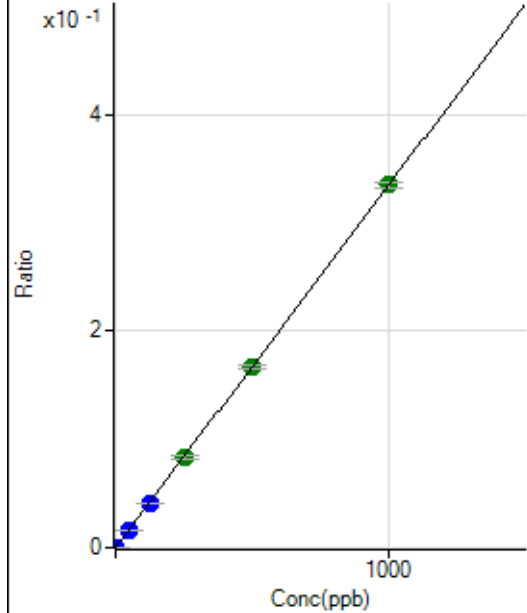
$$DL = 0.005364$$

$$BEC = 0.029$$

Weight: <None>

Min Conc: 0

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



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD
1	☐	0.000	0.000	232.23	0.0000	P	6.1
2	☐	1.000	0.945	8232.49	0.0003	P	1.5
3	☐	50.000	47.625	400518.74	0.0159	P	1.4
4	☐	125.000	120.686	995961.87	0.0404	P	0.8
5	☐	250.000	249.929	2043011.50	0.0836	A	2.6
6	☐	500.000	498.141	3987476.71	0.1666	A	1.8
7	☐	1000.000	1001.605	7887897.80	0.3350	A	1.3
8	☐			6168.09	0.0003	P	2.8

$$y = 3.3442\text{E-}004 * x + 9.1561\text{E-}006$$

$$R = 1.0000$$

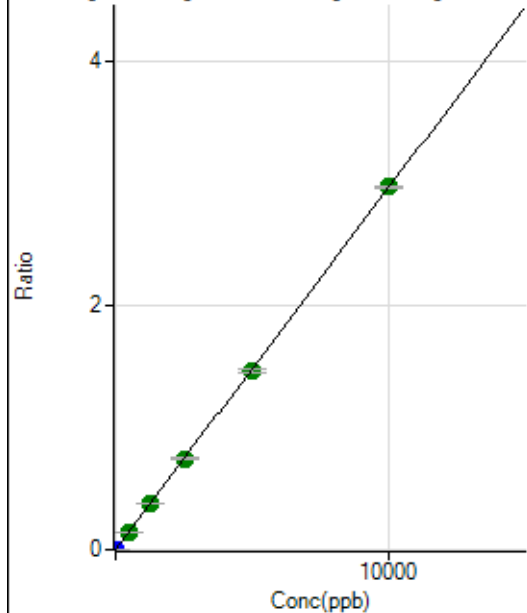
$$DL = 0.005029$$

$$BEC = 0.02738$$

Weight: <None>

Min Conc: 0

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



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD
1	☐	0.000	0.000	470.02	0.0000	P	8.5
2	☐	5.000	5.445	41256.58	0.0016	P	1.3
3	☐	500.000	500.329	3720094.43	0.1480	A	1.6
4	☐	1250.000	1263.345	9220860.56	0.3737	A	0.9
5	☐	2500.000	2507.147	18126375.70	0.7417	A	2.5
6	☐	5000.000	4940.969	34984618.92	1.4617	A	2.0
7	☐	10000.000	10026.044	69842737.85	2.9660	A	0.2
8	☐			16964.89	0.0007	P	3.4

$$y = 2.9583\text{E-}004 * x + 1.8538\text{E-}005$$

$$R = 1.0000$$

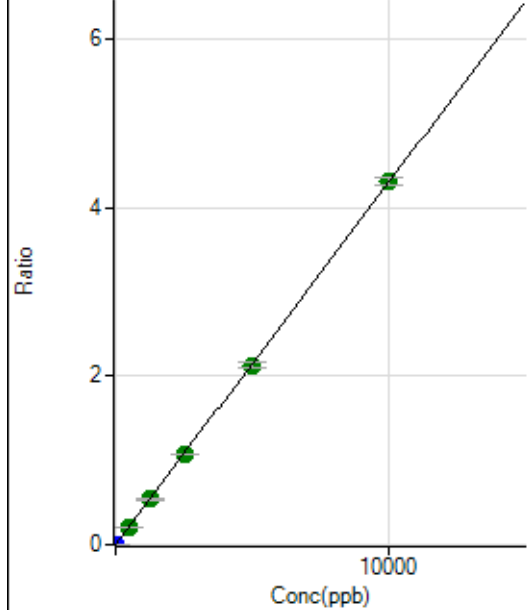
$$DL = 0.01602$$

$$BEC = 0.06266$$

Weight: <None>

Min Conc: 0

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



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD
1	☐	0.000	0.000	124.44	0.0000	P	15.4
2	☐	5.000	4.494	49009.45	0.0019	P	2.0
3	☐	500.000	500.569	5405063.81	0.2150	A	0.7
4	☐	1250.000	1253.232	13282883.28	0.5384	A	1.2
5	☐	2500.000	2492.286	26167640.44	1.0707	A	1.8
6	☐	5000.000	4961.102	51004572.57	2.1312	A	3.4
7	☐	10000.000	10020.946	101374136.2	4.3049	A	2.0
8	☐			11352.52	0.0005	P	6.0

$$y = 4.2959E-004 * x + 4.9081E-006$$

$$R = 1.0000$$

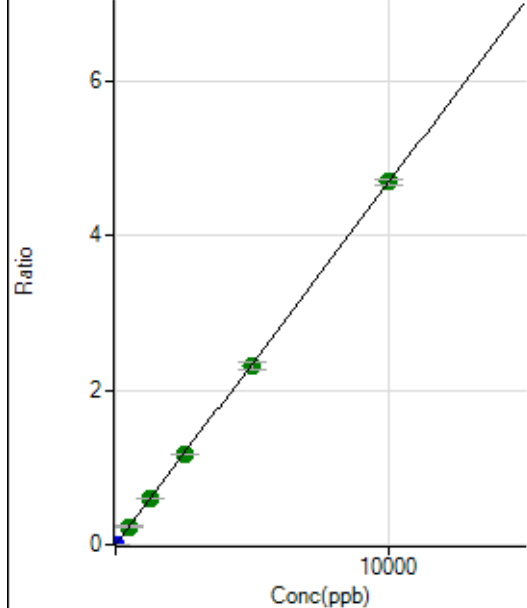
$$DL = 0.005267$$

$$BEC = 0.01143$$

Weight: <None>

Min Conc: 0

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



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD
1	☐	0.000	0.000	222.23	0.0000	P	7.1
2	☐	5.000	4.585	54533.17	0.0022	P	1.4
3	☐	500.000	501.435	5894924.50	0.2346	A	2.4
4	☐	1250.000	1251.941	14450656.73	0.5857	A	0.4
5	☐	2500.000	2489.225	28462007.63	1.1645	A	0.6
6	☐	5000.000	4962.123	55553433.61	2.3213	A	4.3
7	☐	10000.000	10021.318	110396085.0	4.6880	A	1.9
8	☐			23070.32	0.0010	P	1.5

$$y = 4.6780E-004 * x + 8.7645E-006$$

$$R = 1.0000$$

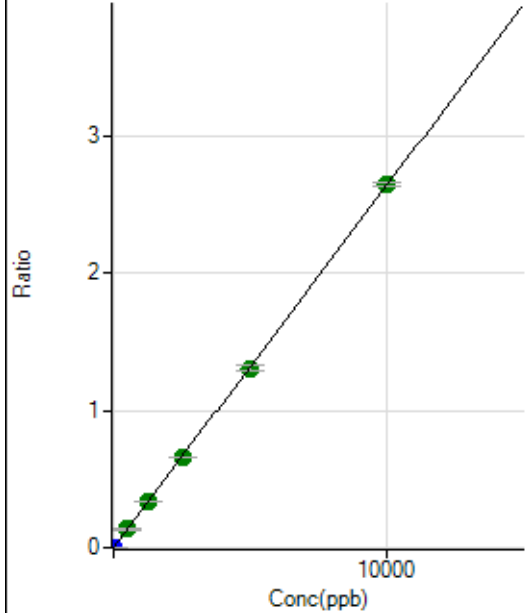
$$DL = 0.003996$$

$$BEC = 0.01874$$

Weight: <None>

Min Conc: 0

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



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	94.44	0.0000	P	8.9
2	☐	5.000	4.480	30049.19	0.0012	P	1.7
3	☐	500.000	506.719	3362612.03	0.1338	A	2.1
4	☐	1250.000	1256.933	8189089.39	0.3319	A	0.8
5	☐	2500.000	2503.056	16155873.23	0.6610	A	0.9
6	☐	5000.000	4951.693	31295807.31	1.3076	A	3.6
7	☐	10000.000	10022.187	62322137.96	2.6466	A	0.9
8	☐			7128.56	0.0003	P	7.0

$$y = 2.6407E-004 * x + 3.7243E-006$$

$$R = 1.0000$$

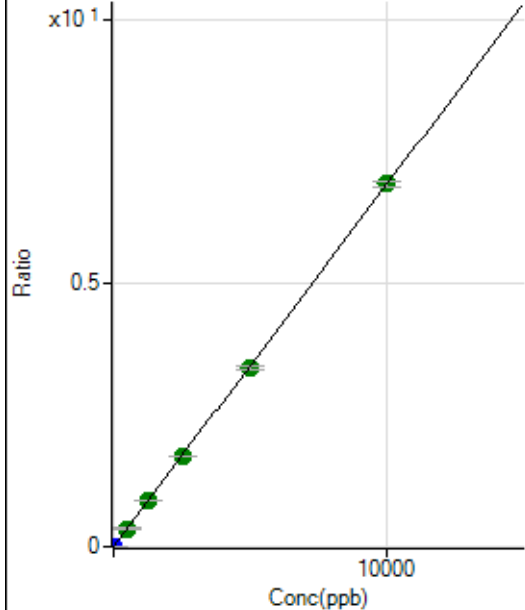
$$DL = 0.003755$$

$$BEC = 0.0141$$

Weight: <None>

Min Conc: 0

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



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	208.89	0.0000	P	10.4
2	☐	5.000	4.523	78773.94	0.0031	P	1.4
3	☐	500.000	500.259	8624684.18	0.3432	A	2.0
4	☐	1250.000	1264.609	21403472.46	0.8675	A	0.6
5	☐	2500.000	2499.061	41901086.32	1.7144	A	1.2
6	☐	5000.000	4946.925	81228635.46	3.3936	A	2.4
7	☐	10000.000	10024.933	161940028.7	6.8771	A	1.3
8	☐			17735.89	0.0008	P	5.3

$$y = 6.8600E-004 * x + 8.2377E-006$$

$$R = 1.0000$$

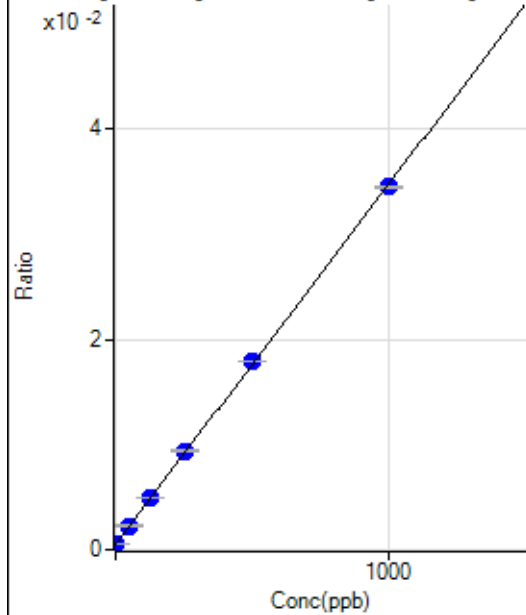
$$DL = 0.003761$$

$$BEC = 0.01201$$

Weight: <None>

Min Conc: 0

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



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD
1	☐	0.000	0.000	8196.94	0.0005	P	2.6
2	☐	1.000	0.484	8554.99	0.0005	P	1.9
3	☐	50.000	52.058	38079.14	0.0023	P	1.1
4	☐	125.000	128.736	81505.44	0.0049	P	2.1
5	☐	250.000	258.273	150605.12	0.0093	P	2.2
6	☐	500.000	508.054	286424.75	0.0179	P	0.3
7	☐	1000.000	993.335	541602.58	0.0345	P	0.4
8	☐			7237.52	0.0005	P	2.5

$$y = 3.4209\text{E-}005 * x + 5.0066\text{E-}004$$

$$R = 0.9999$$

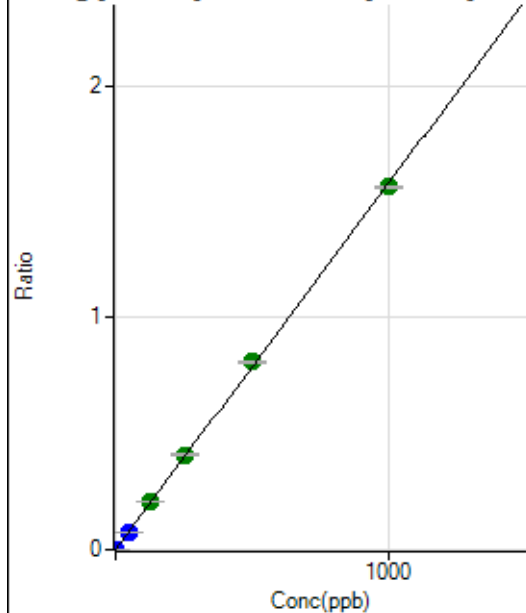
$$DL = 1.152$$

$$BEC = 14.64$$

Weight: <None>

Min Conc: 0

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



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD
1	☐	0.000	0.000	154.45	0.0000	P	19.0
2	☐	1.000	0.981	25793.07	0.0016	P	2.2
3	☐	50.000	49.574	1307567.78	0.0783	P	1.2
4	☐	125.000	130.087	3416156.89	0.2056	A	0.9
5	☐	250.000	258.380	6586505.87	0.4083	A	2.2
6	☐	500.000	513.401	12995867.59	0.8112	A	1.0
7	☐	1000.000	990.590	24585154.91	1.5652	A	0.3
8	☐			2483.59	0.0002	P	9.8

$$y = 0.0016 * x + 9.4402\text{E-}006$$

$$R = 0.9998$$

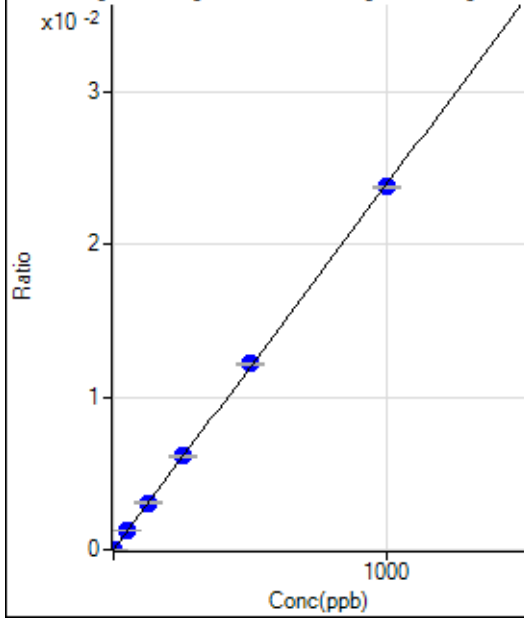
$$DL = 0.003408$$

$$BEC = 0.005975$$

Weight: <None>

Min Conc: 0

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



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det	RSD
1	☐	0.000	0.000	32.22	0.0000	P	48.6
2	☐	1.000	0.921	397.79	0.0000	P	0.2
3	☐	50.000	51.685	20707.84	0.0012	P	1.5
4	☐	125.000	127.887	50964.85	0.0031	P	1.9
5	☐	250.000	256.917	99352.79	0.0062	P	2.4
6	☐	500.000	509.129	195457.64	0.0122	P	0.6
7	☐	1000.000	993.261	373888.67	0.0238	P	0.8
8	☐			192.23	0.0000	P	11.0

$$y = 2.3965E-005 * x + 1.9724E-006$$

$$R = 0.9999$$

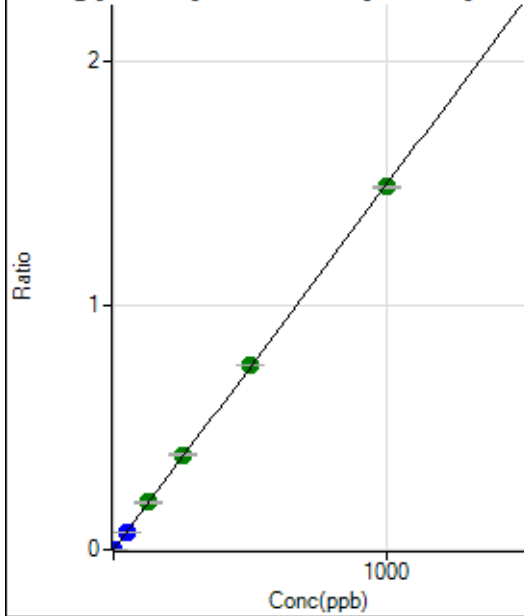
$$DL = 0.12$$

$$BEC = 0.08231$$

Weight: <None>

Min Conc: 0

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



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det	RSD
1	☐	0.000	0.000	40.00	0.0000	P	13.8
2	☐	1.000	0.970	24018.79	0.0015	P	2.7
3	☐	50.000	49.700	1240044.97	0.0743	P	0.9
4	☐	125.000	129.556	3218594.12	0.1937	A	1.2
5	☐	250.000	259.613	6260246.43	0.3881	A	2.0
6	☐	500.000	506.184	12119084.54	0.7566	A	0.5
7	☐	1000.000	993.950	23335385.21	1.4857	A	0.7
8	☐			2086.85	0.0001	P	18.7

$$y = 0.0015 * x + 2.4414E-006$$

$$R = 0.9999$$

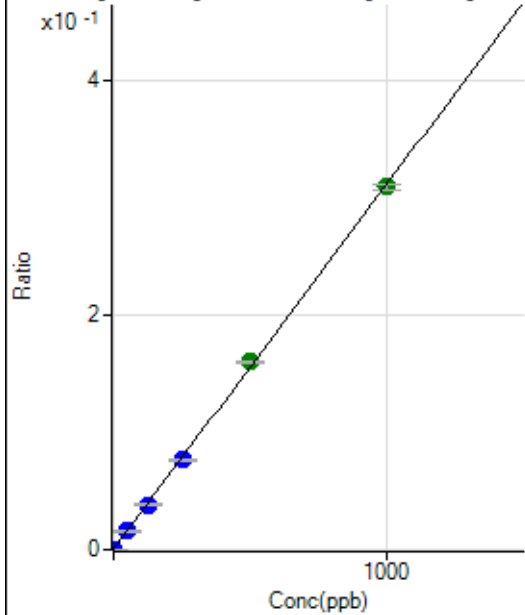
$$DL = 0.0006775$$

$$BEC = 0.001633$$

Weight: <None>

Min Conc: 0

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



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD
1	☐	0.000	0.000	5736.42	0.0004	P	2.5
2	☐	1.000	0.806	9947.40	0.0006	P	2.4
3	☐	50.000	49.252	261763.61	0.0157	P	1.4
4	☐	125.000	122.514	639671.91	0.0385	P	1.6
5	☐	250.000	246.297	1242579.20	0.0770	P	2.3
6	☐	500.000	515.319	2575149.08	0.1608	A	1.0
7	☐	1000.000	993.615	4864130.71	0.3097	A	1.3
8	☐			5637.29	0.0004	P	2.8

$$y = 3.1132E-004 * x + 3.5038E-004$$

R = 0.9998

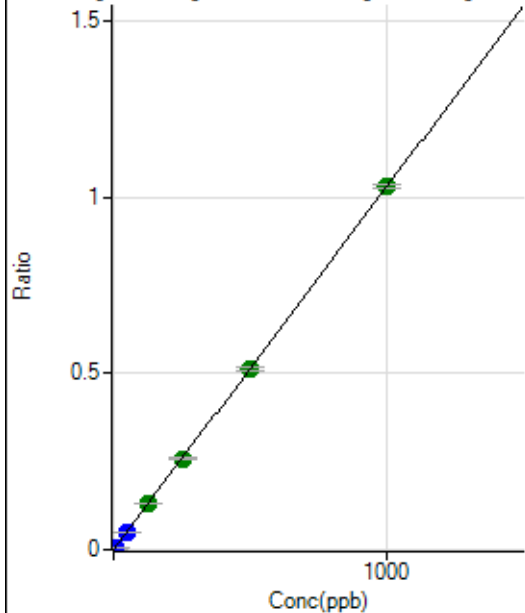
DL = 0.08422

BEC = 1.125

Weight: <None>

Min Conc: 0

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



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD
1	☐	0.000	0.000	2330.22	0.0001	P	4.4
2	☐	5.000	4.555	79922.26	0.0048	P	1.2
3	☐	50.000	49.410	851434.87	0.0510	P	1.2
4	☐	125.000	126.568	2167892.82	0.1305	A	2.0
5	☐	250.000	251.260	4175353.06	0.2588	A	2.4
6	☐	500.000	497.916	8212024.32	0.5128	A	2.6
7	☐	1000.000	1000.563	16182711.15	1.0303	A	1.1
8	☐			4731.97	0.0003	P	4.7

$$y = 0.0010 * x + 1.4235E-004$$

R = 1.0000

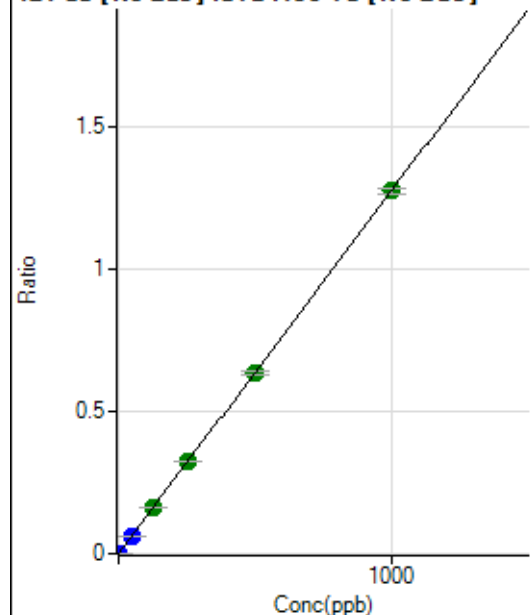
DL = 0.01831

BEC = 0.1383

Weight: <None>

Min Conc: 0

121 Sb [No Gas] ISTD :159 Tb [No Gas]



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD
1	☐	0.000	0.000	51.11	0.0000	P	13.6
2	☐	2.000	1.844	38983.22	0.0024	P	0.9
3	☐	50.000	48.189	1026439.85	0.0615	P	1.0
4	☐	125.000	126.302	2678467.28	0.1612	A	1.4
5	☐	250.000	253.927	5227661.80	0.3240	A	1.3
6	☐	500.000	498.330	10185884.50	0.6359	A	2.1
7	☐	1000.000	999.782	20037593.03	1.2758	A	1.3
8	☐			10432.93	0.0007	P	3.1

$$y = 0.0013 * x + 3.1215E-006$$

$$R = 1.0000$$

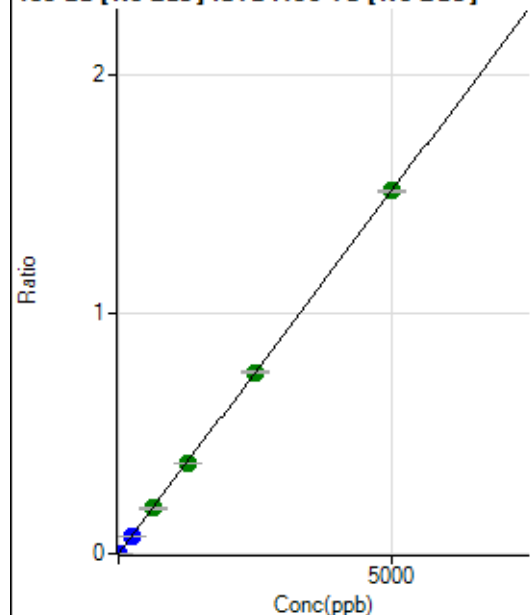
$$DL = 0.0009975$$

$$BEC = 0.002446$$

Weight: <None>

Min Conc: 0

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



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD
1	☐	0.000	0.000	87.78	0.0000	P	16.1
2	☐	10.000	8.939	44882.91	0.0027	P	2.4
3	☐	250.000	237.322	1200129.06	0.0719	P	1.0
4	☐	625.000	627.449	3158753.01	0.1901	A	2.9
5	☐	1250.000	1254.166	6130313.45	0.3800	A	0.6
6	☐	2500.000	2498.027	12121078.01	0.7568	A	1.3
7	☐	5000.000	5000.275	23793511.87	1.5148	A	0.5
8	☐			10257.28	0.0007	P	1.3

$$y = 3.0295E-004 * x + 5.3653E-006$$

$$R = 1.0000$$

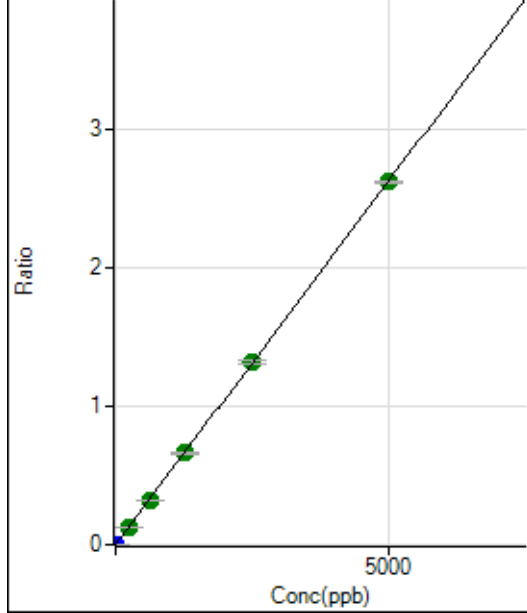
$$DL = 0.008564$$

$$BEC = 0.01771$$

Weight: <None>

Min Conc: 0

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



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det	RSD
1	☐	0.000	0.000	120.01	0.0000	P	4.6
2	☐	10.000	9.007	78218.83	0.0047	P	1.1
3	☐	250.000	248.480	2174017.81	0.1303	A	1.9
4	☐	625.000	616.075	5367195.61	0.3230	A	1.7
5	☐	1250.000	1262.523	10676242.41	0.6618	A	2.5
6	☐	2500.000	2516.092	21123310.65	1.3190	A	1.6
7	☐	5000.000	4990.017	41088003.55	2.6158	A	0.5
8	☐			17636.04	0.0012	P	1.6

$$y = 5.2421E-004 * x + 7.3292E-006$$

$$R = 1.0000$$

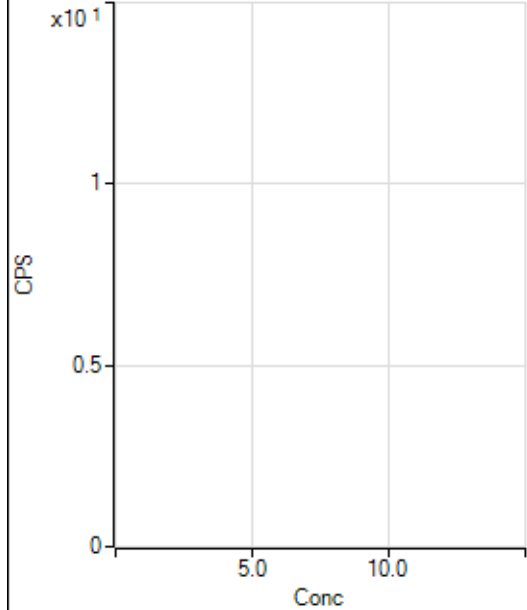
$$DL = 0.001924$$

$$BEC = 0.01398$$

Weight: <None>

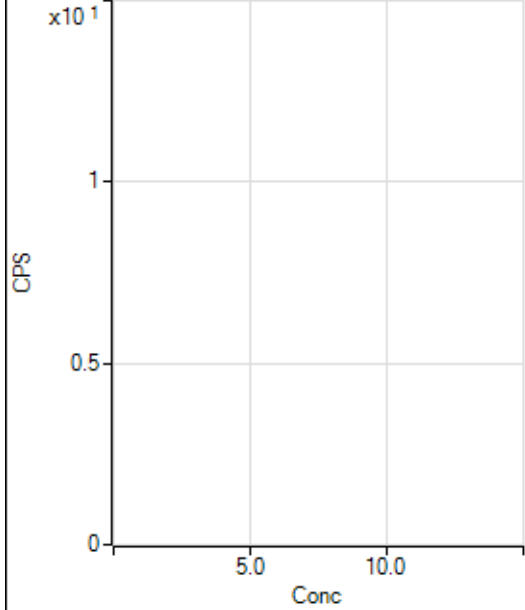
Min Conc: 0

150 Nd [No Gas] No available calibration points



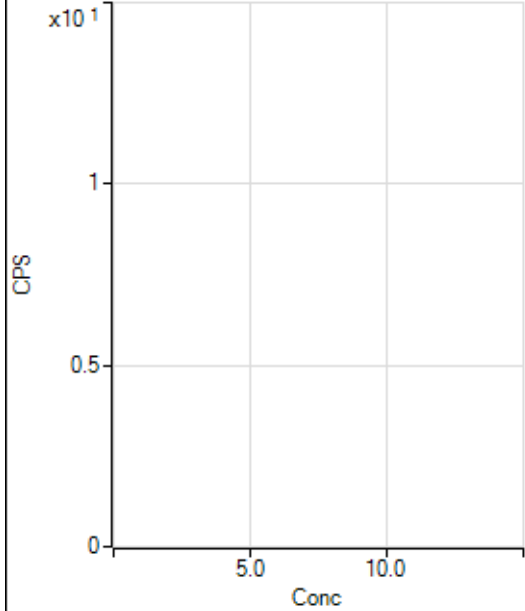
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det	RSD
1	☐			17.78		P	21.7
2	☐			13.33		P	100.
3	☐			108.89		P	4.7
4	☐			267.78		P	16.6
5	☐			486.68		P	4.8
6	☐			954.49		P	11.6
7	☐			1823.48		P	3.0
8	☐			410.01		P	11.3

150 Nd [He] No available calibration points



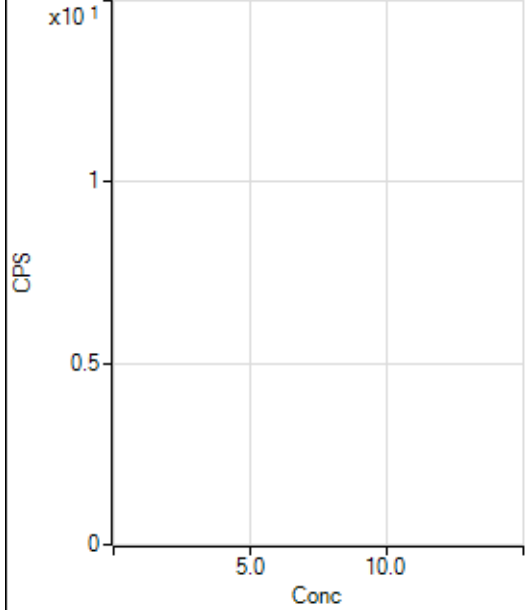
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD
1	☐			1.11		P	173.
2	☐			0.00		P	
3	☐			7.78		P	24.7
4	☐			22.22		P	67.6
5	☐			31.11		P	27.0
6	☐			60.00		P	25.5
7	☐			103.34		P	14.1
8	☐			108.89		P	22.6

156 Dy [No Gas] No available calibration points



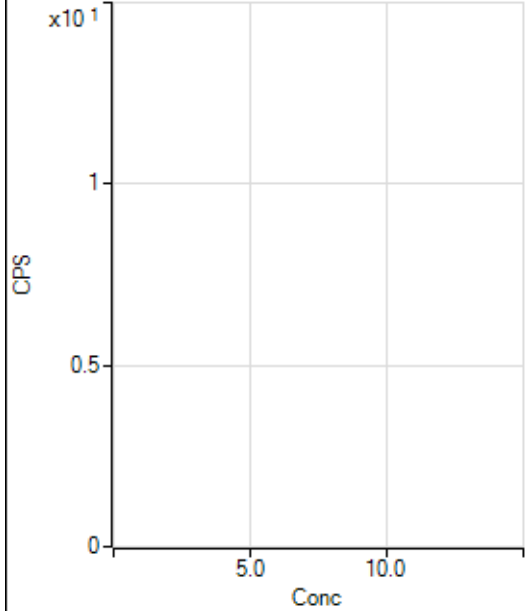
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD
1	☐			20.00		P	16.7
2	☐			20.00		P	33.4
3	☐			44.44		P	17.3
4	☐			120.00		P	20.0
5	☐			171.11		P	10.0
6	☐			331.12		P	11.6
7	☐			546.69		P	4.2
8	☐			1051.17		P	7.3

156 Dy [He] No available calibration points



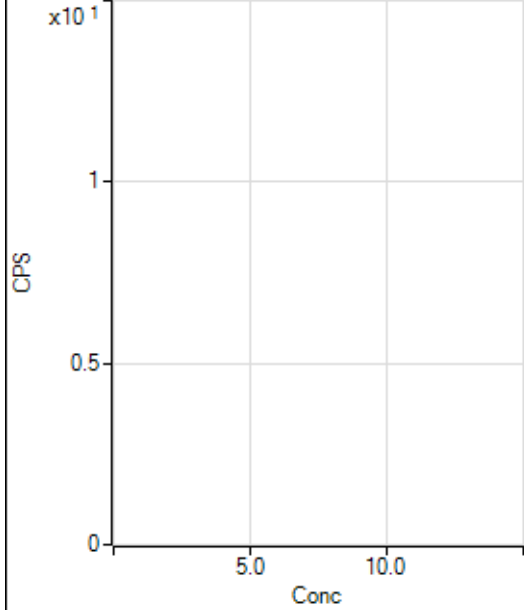
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD
1	☐			3.33		P	100.
2	☐			5.56		P	34.7
3	☐			12.22		P	56.8
4	☐			16.67		P	34.6
5	☐			33.33		P	36.1
6	☐			60.00		P	9.6
7	☐			120.00		P	10.0
8	☐			352.23		P	3.0

160 Gd [No Gas] Noavailable calibration poin_



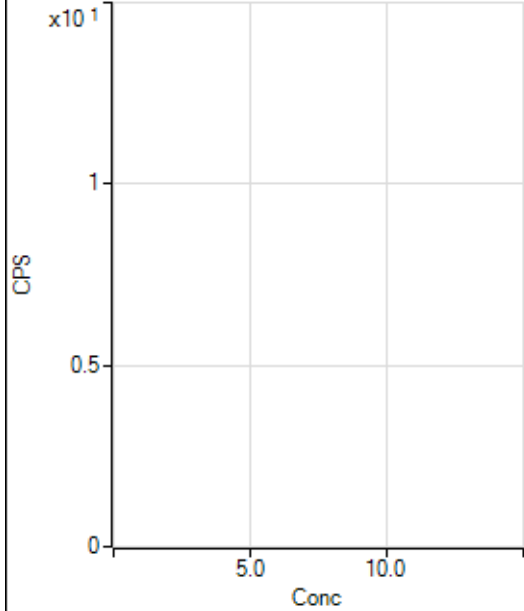
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD
1	☐			116.67		P	29.8
2	☐			105.56		P	3.6
3	☐			116.67		P	12.5
4	☐			158.89		P	7.4
5	☐			171.12		P	11.9
6	☐			236.67		P	11.5
7	☐			347.79		P	7.7
8	☐			1051.17		P	7.3

160 Gd [He] No available calibration points



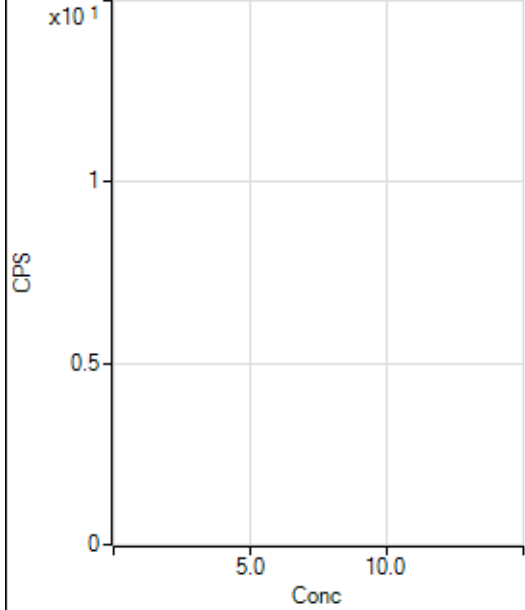
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD
1	☐			18.89		P	20.4
2	☐			20.00		P	16.7
3	☐			20.00		P	33.4
4	☐			36.67		P	27.3
5	☐			58.89		P	23.6
6	☐			95.56		P	17.6
7	☐			136.67		P	13.6
8	☐			431.12		P	1.6

164 Er [No Gas] No available calibration points



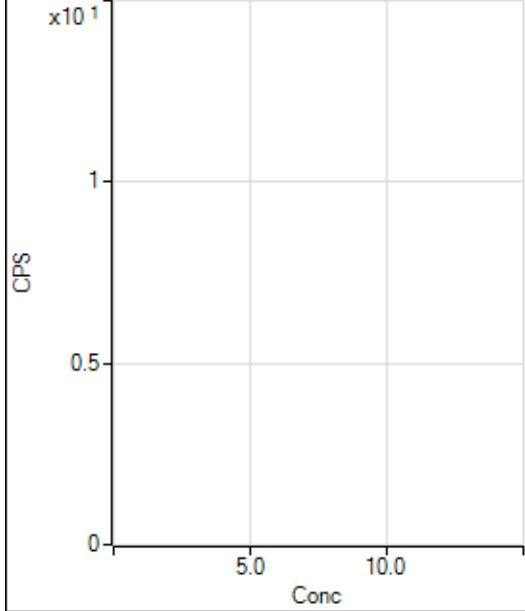
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD
1	☐			140.00		P	21.8
2	☐			123.34		P	2.7
3	☐			143.34		P	14.0
4	☐			136.67		P	19.0
5	☐			202.23		P	18.1
6	☐			283.34		P	17.6
7	☐			501.13		P	3.3
8	☐			1953.50		P	3.6

164 Er [He] No available calibration points



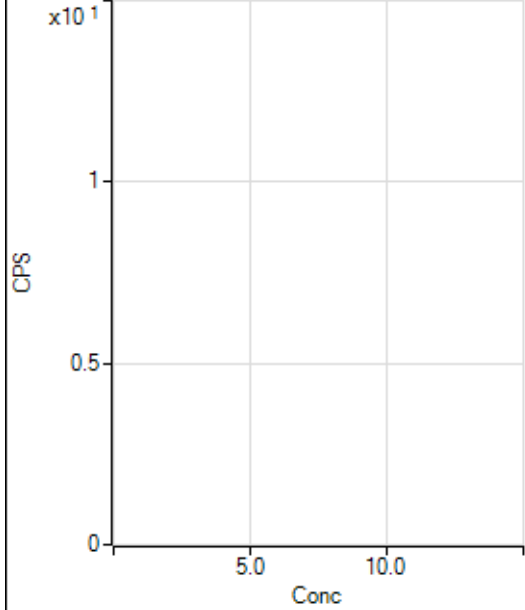
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD
1	☐			38.89		P	30.1
2	☐			53.33		P	37.5
3	☐			48.89		P	33.6
4	☐			57.78		P	43.7
5	☐			66.67		P	18.0
6	☐			134.45		P	17.4
7	☐			190.00		P	15.3
8	☐			698.92		P	8.3

172 Yb [No Gas] No available calibration points



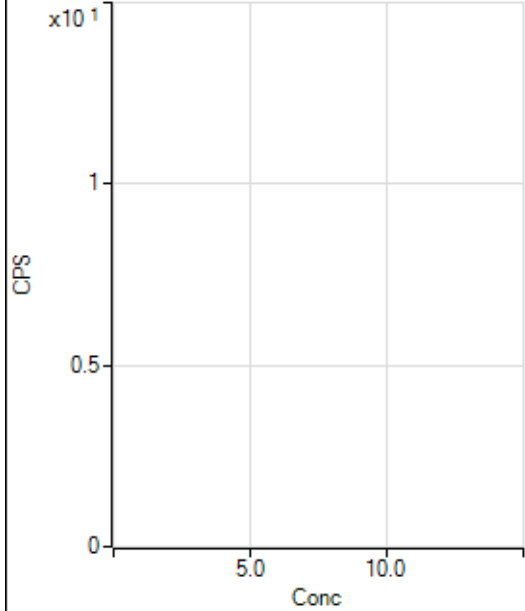
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD
1	☐			105.56		P	6.6
2	☐			102.22		P	3.8
3	☐			141.11		P	18.0
4	☐			150.00		P	4.4
5	☐			215.56		P	12.9
6	☐			312.23		P	9.6
7	☐			480.01		P	9.3
8	☐			1505.66		P	2.1

172 Yb [He] No available calibration points



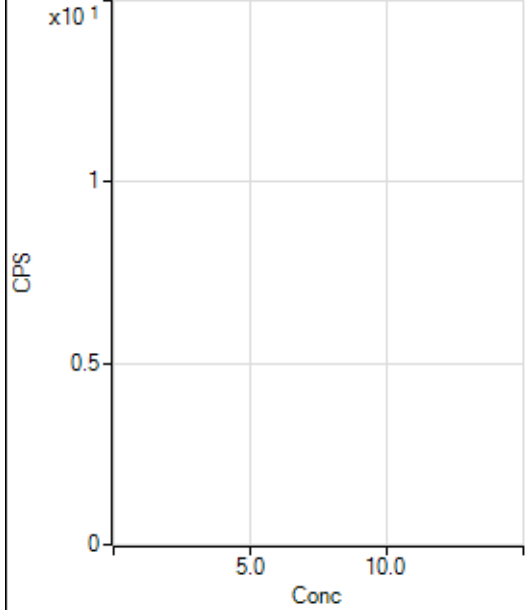
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD
1	☐			35.56		P	5.4
2	☐			43.33		P	20.4
3	☐			45.55		P	8.5
4	☐			61.11		P	19.2
5	☐			82.22		P	18.7
6	☐			133.34		P	11.5
7	☐			198.89		P	9.2
8	☐			596.69		P	7.8

176 Yb [No Gas] No available calibration points



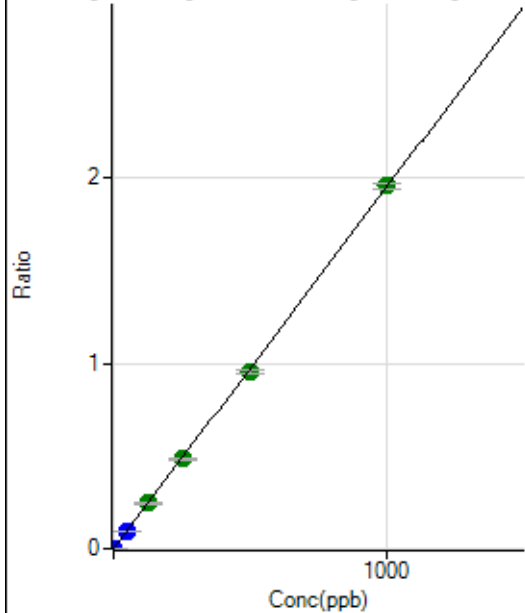
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD
1	☐			2065.74		P	3.2
2	☐			2054.63		P	0.7
3	☐			6223.75		P	1.8
4	☐			12452.65		P	2.5
5	☐			22521.48		P	2.4
6	☐			43017.52		P	0.7
7	☐			82918.18		P	2.4
8	☐			2720.31		P	5.4

176 Yb [He] No available calibration points



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det	RSD
1	☐			765.59		P	6.6
2	☐			712.25		P	7.6
3	☐			2143.53		P	0.4
4	☐			4590.84		P	1.3
5	☐			8373.82		P	2.9
6	☐			15840.70		P	1.7
7	☐			30900.59		P	1.2
8	☐			973.38		P	6.2

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



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det	RSD
1	☐	0.000	0.000	150.00	0.0000	P	2.3
2	☐	1.000	0.890	16980.07	0.0018	P	2.9
3	☐	50.000	46.432	870279.06	0.0906	P	1.3
4	☐	125.000	125.612	2326772.75	0.2451	A	2.5
5	☐	250.000	249.923	4535229.07	0.4876	A	2.3
6	☐	500.000	491.065	8709021.33	0.9581	A	1.8
7	☐	1000.000	1004.589	17320801.69	1.9600	A	1.8
8	☐			1357.87	0.0002	P	4.6

$$y = 0.0020 * x + 1.5620E-005$$

$$R = 0.9999$$

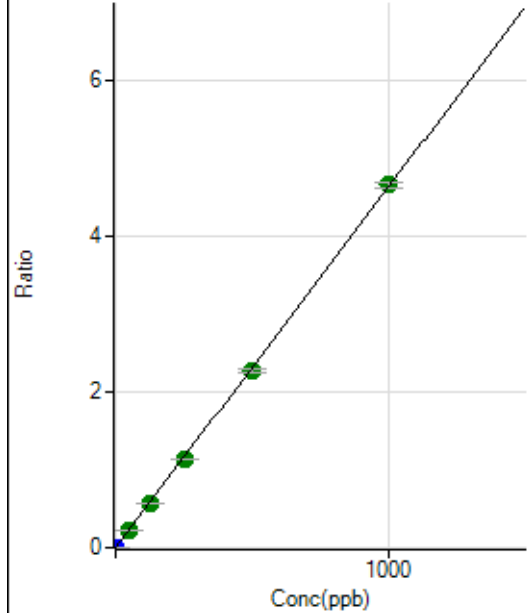
$$DL = 0.0005615$$

$$BEC = 0.008006$$

Weight: <None>

Min Conc: 0

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



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	325.56	0.0000	P	4.7
2	☐	1.000	0.885	40054.98	0.0041	P	0.8
3	☐	50.000	49.218	2190087.52	0.2280	A	1.2
4	☐	125.000	124.363	5469004.85	0.5761	A	1.1
5	☐	250.000	245.730	10587055.12	1.1382	A	1.2
6	☐	500.000	491.441	20690804.83	2.2763	A	1.7
7	☐	1000.000	1005.466	41162098.83	4.6572	A	1.4
8	☐			3144.86	0.0004	P	9.3

$$y = 0.0046 * x + 3.3898E-005$$

$$R = 0.9999$$

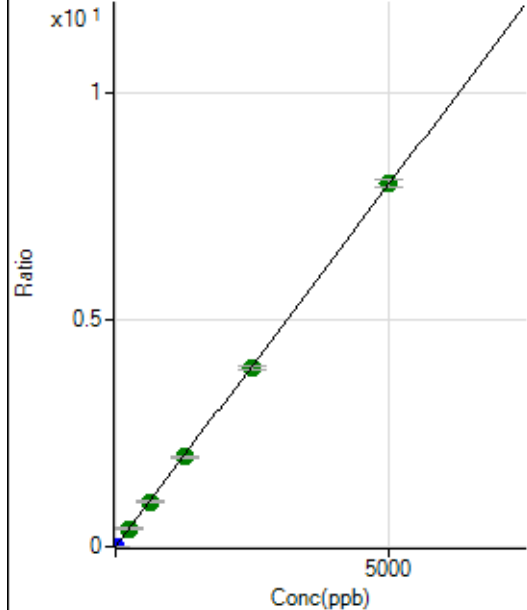
$$DL = 0.001041$$

$$BEC = 0.007318$$

Weight: <None>

Min Conc: 0

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



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	428.90	0.0000	P	6.3
2	☐	1.000	0.741	11892.22	0.0012	P	2.7
3	☐	250.000	250.533	3841255.05	0.3999	A	1.8
4	☐	625.000	624.274	9461975.69	0.9965	A	0.8
5	☐	1250.000	1242.225	18441287.09	1.9828	A	1.3
6	☐	2500.000	2474.622	35902072.24	3.9499	A	1.3
7	☐	5000.000	5014.696	70734266.17	8.0043	A	2.0
8	☐			47544.49	0.0060	P	0.6

$$y = 0.0016 * x + 4.4655E-005$$

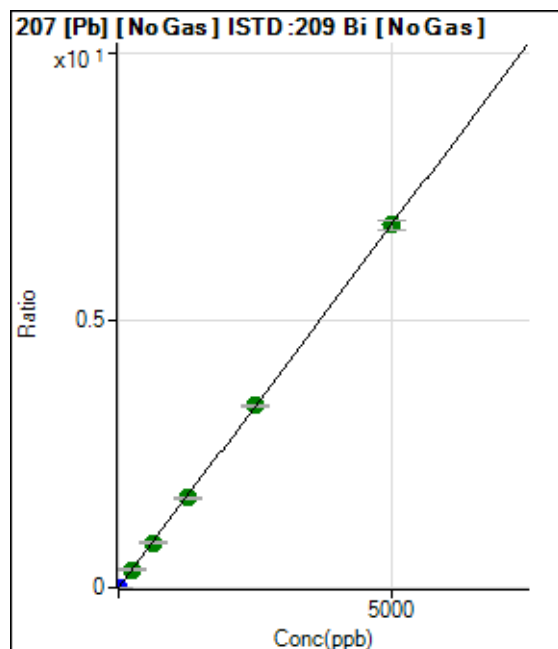
$$R = 1.0000$$

$$DL = 0.005268$$

$$BEC = 0.02798$$

Weight: <None>

Min Conc: 0



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	347.79	0.0000	P	2.2
2	☐	1.000	0.770	10478.78	0.0011	P	1.7
3	☐	250.000	251.228	3273881.45	0.3409	A	1.0
4	☐	625.000	619.237	7974606.27	0.8401	A	2.1
5	☐	1250.000	1241.003	15656037.40	1.6836	A	2.2
6	☐	2500.000	2508.300	30926361.76	3.4029	A	0.6
7	☐	5000.000	4998.758	59919663.55	6.7815	A	2.7
8	☐			41471.70	0.0053	P	0.3

$$y = 0.0014 * x + 3.6216E-005$$

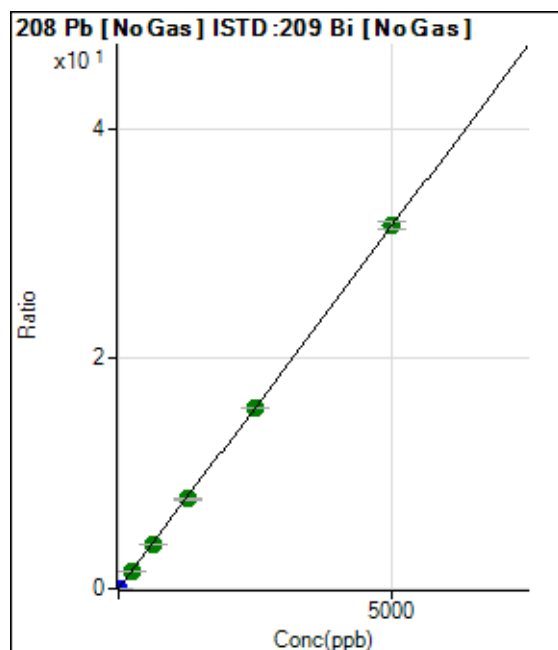
$$R = 1.0000$$

$$DL = 0.001746$$

$$BEC = 0.0267$$

Weight: <None>

Min Conc: 0



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1657.84	0.0002	P	0.9
2	☐	1.000	0.749	47454.20	0.0049	P	0.8
3	☐	250.000	248.345	15033009.43	1.5651	A	0.9
4	☐	625.000	618.259	36988949.45	3.8962	A	1.3
5	☐	1250.000	1240.396	72693428.64	7.8166	A	1.5
6	☐	2500.000	2492.517	142741971.2	15.7069	A	0.2
7	☐	5000.000	5007.068	278823585.2	31.5524	A	2.0
8	☐			189430.50	0.0240	P	0.4

$$y = 0.0063 * x + 1.7263E-004$$

$$R = 1.0000$$

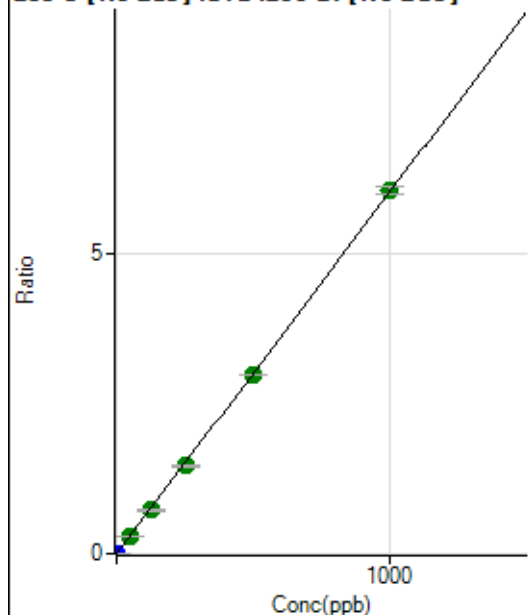
$$DL = 0.0007734$$

$$BEC = 0.02739$$

Weight: <None>

Min Conc: 0

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



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	55.55	0.0000	P	36.5
2	☐	1.000	0.842	49248.26	0.0051	P	0.5
3	☐	50.000	48.784	2825172.36	0.2941	A	1.6
4	☐	125.000	120.714	6908603.58	0.7278	A	3.3
5	☐	250.000	243.082	13630835.91	1.4656	A	1.2
6	☐	500.000	495.035	27123319.04	2.9846	A	0.3
7	☐	1000.000	1004.809	53536995.31	6.0581	A	2.0
8	☐			2053.53	0.0003	P	12.9

$$y = 0.0060 * x + 5.7808E-006$$

$$R = 1.0000$$

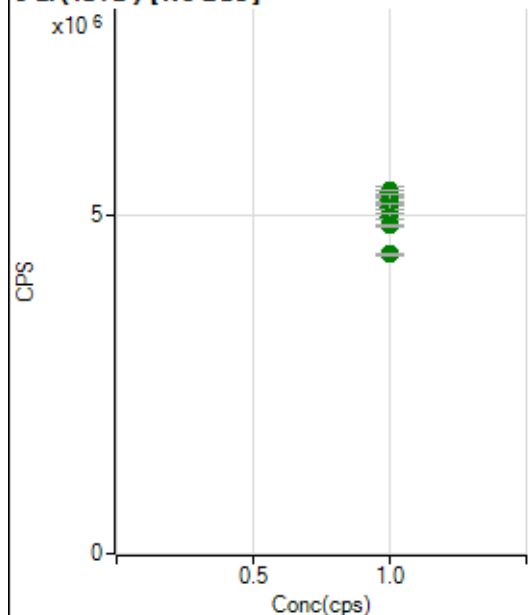
$$DL = 0.001049$$

$$BEC = 0.0009588$$

Weight: <None>

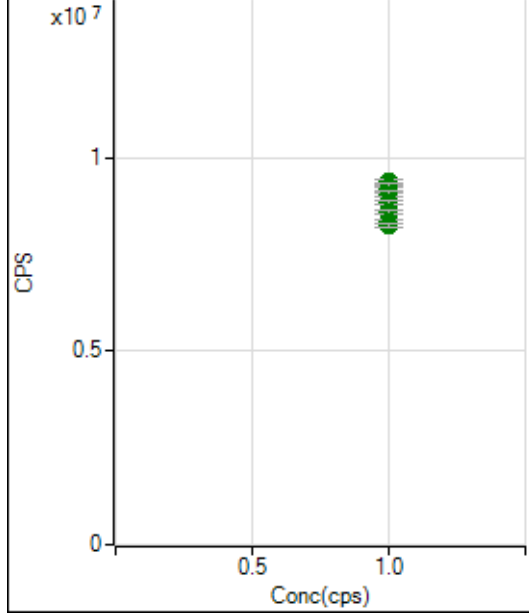
Min Conc: 0

6 Li (ISTD) [No Gas]



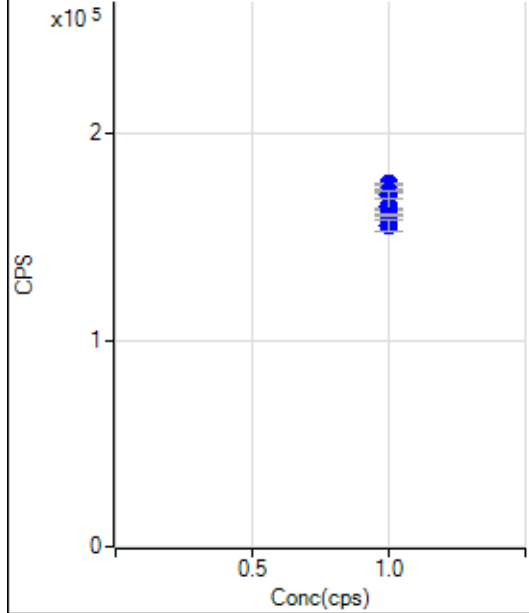
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		5242929.28		A	1.1
2	☐	1.000		5362326.23		A	2.3
3	☐	1.000		5333922.90		A	1.9
4	☐	1.000		5225988.79		A	2.9
5	☐	1.000		5127117.92		A	2.0
6	☐	1.000		4986388.01		A	1.8
7	☐	1.000		4847219.68		A	0.8
8	☐	1.000		4420039.22		A	0.7

45 Sc (ISTD) [No Gas]



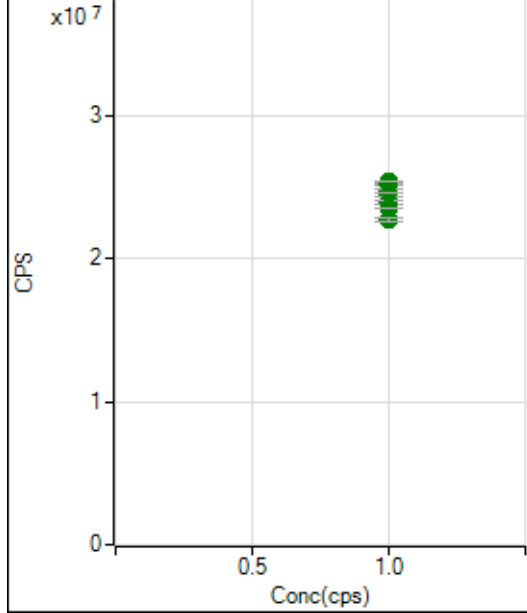
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD
1	☐	1.000		9374442.99		A	1.6
2	☐	1.000		9262025.00		A	0.5
3	☐	1.000		9208632.29		A	3.0
4	☐	1.000		9066063.06		A	1.6
5	☐	1.000		8844482.99		A	0.9
6	☐	1.000		8584176.54		A	1.2
7	☐	1.000		8329568.14		A	1.1
8	☐	1.000		8245846.47		A	0.8

45 Sc (ISTD) [He]



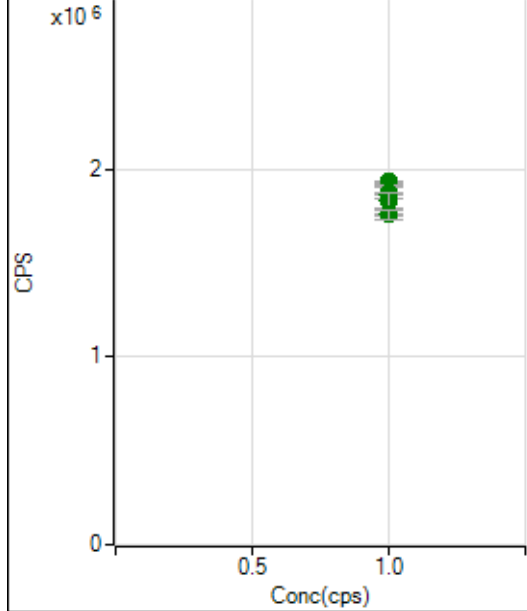
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD
1	☐	1.000		174672.36		P	0.2
2	☐	1.000		175564.76		P	0.9
3	☐	1.000		172064.68		P	1.0
4	☐	1.000		170531.74		P	2.2
5	☐	1.000		163000.76		P	0.5
6	☐	1.000		164791.30		P	4.6
7	☐	1.000		160482.71		P	0.2
8	☐	1.000		155672.07		P	3.6

89 Y (ISTD) [No Gas]

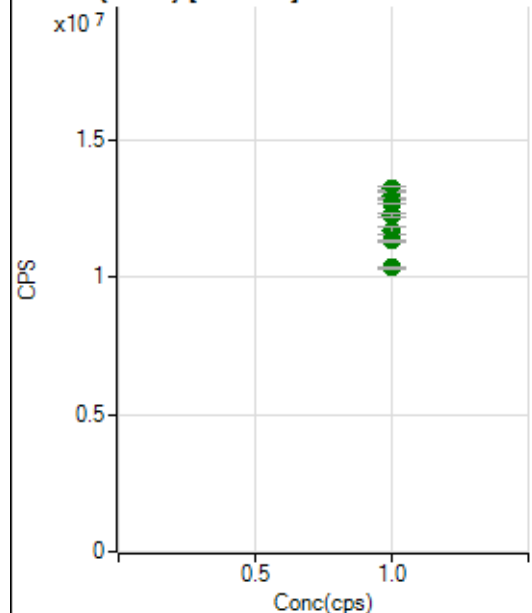


	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD
1	☐	1.000		25359356.84		A	0.4
2	☐	1.000		25322971.29		A	1.1
3	☐	1.000		25135909.07		A	1.9
4	☐	1.000		24672821.30		A	1.1
5	☐	1.000		24442628.80		A	0.9
6	☐	1.000		23938149.92		A	1.2
7	☐	1.000		23547867.15		A	0.3
8	☐	1.000		22674256.89		A	1.0

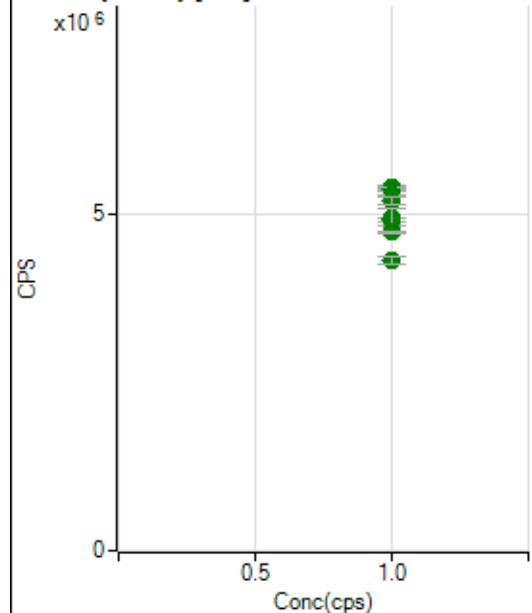
89 Y (ISTD) [He]



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD
1	☐	1.000		1933617.11		A	0.4
2	☐	1.000		1913013.11		A	0.5
3	☐	1.000		1873673.86		A	0.5
4	☐	1.000		1860663.48		A	1.8
5	☐	1.000		1759327.13		A	0.4
6	☐	1.000		1834598.48		A	4.8
7	☐	1.000		1758898.20		A	2.9
8	☐	1.000		1758769.90		A	2.5

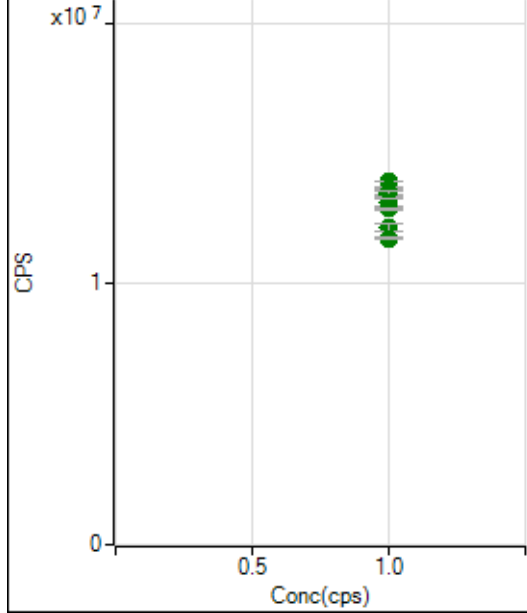
103 Rh (ISTD) [No Gas]

	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD
1	☐	1.000		13218233.41		A	1.0
2	☐	1.000		12979665.09		A	1.8
3	☐	1.000		12846523.98		A	0.7
4	☐	1.000		12682923.56		A	0.4
5	☐	1.000		12258121.35		A	0.9
6	☐	1.000		11713930.93		A	2.6
7	☐	1.000		11321564.00		A	0.4
8	☐	1.000		10339658.80		A	0.7

103 Rh (ISTD) [He]

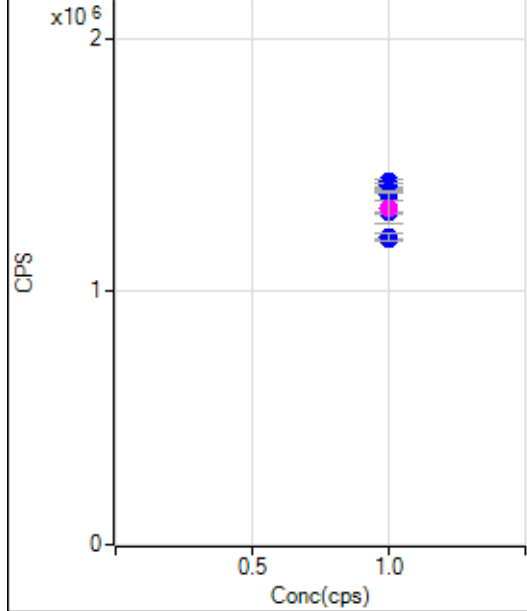
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD
1	☐	1.000		5387135.89		A	1.1
2	☐	1.000		5374294.61		A	1.2
3	☐	1.000		5269697.81		A	0.9
4	☐	1.000		5194249.16		A	2.6
5	☐	1.000		4915359.41		A	1.0
6	☐	1.000		4943159.65		A	5.1
7	☐	1.000		4731253.20		A	0.7
8	☐	1.000		4311716.85		A	3.0

115 In (ISTD) [No Gas]



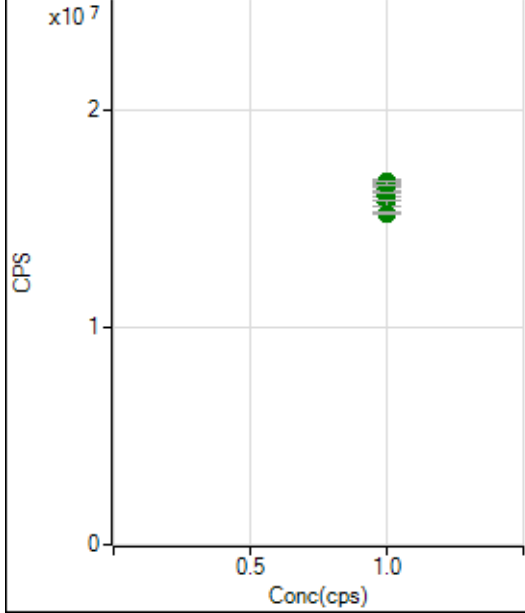
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD
1	☐	1.000		13910718.21		A	0.1
2	☐	1.000		13664462.30		A	0.6
3	☐	1.000		13511992.40		A	1.2
4	☐	1.000		13428074.22		A	1.6
5	☐	1.000		13129814.46		A	2.3
6	☐	1.000		12874354.03		A	0.7
7	☐	1.000		12156114.72		A	2.6
8	☐	1.000		11751409.49		A	0.5

115 In (ISTD) [He]



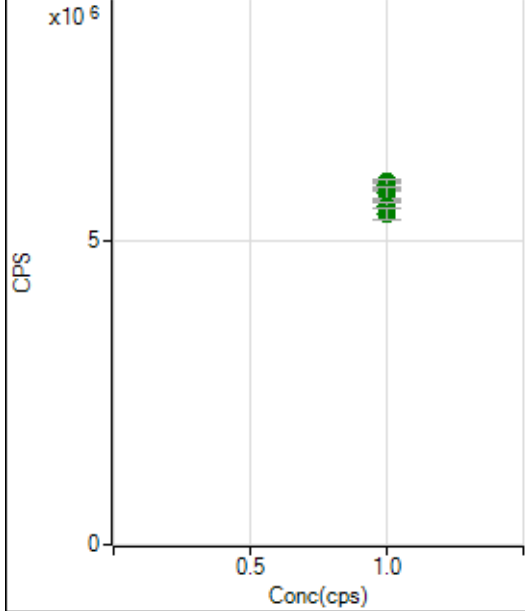
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD
1	☐	1.000		1434093.97		P	0.9
2	☐	1.000		1421302.40		P	0.6
3	☐	1.000		1401794.82		P	0.2
4	☐	1.000		1380987.24		P	2.6
5	☐	1.000		1311572.00		P	0.2
6	☐	1.000		1327801.47		M	9.0
7	☐	1.000		1209168.08		P	0.2
8	☐	1.000		1216041.99		P	2.6

159 Tb (ISTD) [No Gas]



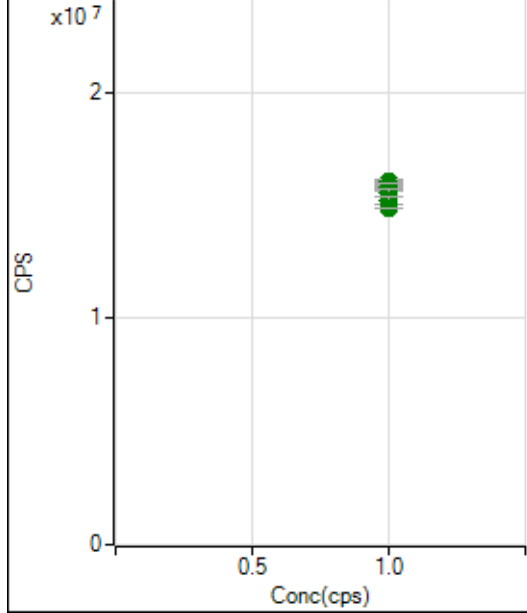
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD
1	☐	1.000		16373139.89		A	1.1
2	☐	1.000		16540828.78		A	0.2
3	☐	1.000		16691261.84		A	1.0
4	☐	1.000		16620079.89		A	1.0
5	☐	1.000		16134970.04		A	1.3
6	☐	1.000		16018263.51		A	1.8
7	☐	1.000		15707642.27		A	1.8
8	☐	1.000		15248122.97		A	0.8

159 Tb (ISTD) [He]



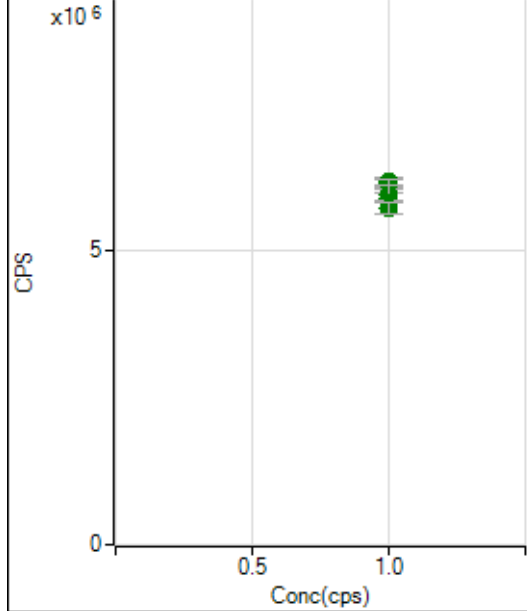
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD
1	☐	1.000		5976501.79		A	1.0
2	☐	1.000		5975637.97		A	0.4
3	☐	1.000		5872077.35		A	0.4
4	☐	1.000		5925691.58		A	3.3
5	☐	1.000		5688198.67		A	0.4
6	☐	1.000		5796613.32		A	3.1
7	☐	1.000		5589267.28		A	1.2
8	☐	1.000		5450164.40		A	3.6

165 Ho (ISTD) [No Gas]



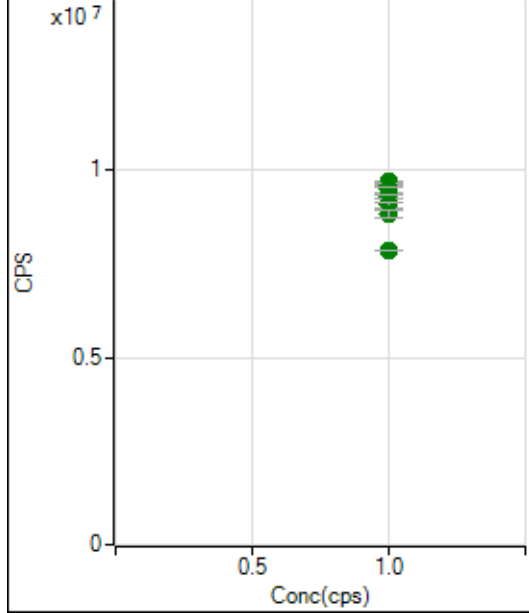
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD
1	☐	1.000		15957599.62		A	2.3
2	☐	1.000		15983967.40		A	0.9
3	☐	1.000		16033702.68		A	1.2
4	☐	1.000		15912957.82		A	0.1
5	☐	1.000		15801530.74		A	2.3
6	☐	1.000		15546560.60		A	1.8
7	☐	1.000		15207448.94		A	2.1
8	☐	1.000		14872549.78		A	0.3

165 Ho (ISTD) [He]



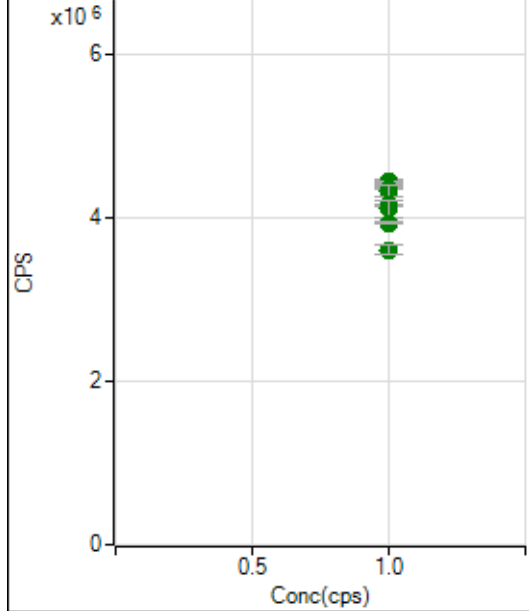
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD
1	☐	1.000		6184768.66		A	2.2
2	☐	1.000		6180009.14		A	1.1
3	☐	1.000		6114040.88		A	0.1
4	☐	1.000		6146600.12		A	2.4
5	☐	1.000		5915181.79		A	2.3
6	☐	1.000		5981901.16		A	5.3
7	☐	1.000		5851485.47		A	0.6
8	☐	1.000		5733747.48		A	3.5

209 Bi (ISTD) [No Gas]



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD
1	☐	1.000		9603361.66		A	0.3
2	☐	1.000		9695625.20		A	0.7
3	☐	1.000		9605289.99		A	0.7
4	☐	1.000		9494862.91		A	1.9
5	☐	1.000		9301364.93		A	1.6
6	☐	1.000		9088028.89		A	1.9
7	☐	1.000		8839310.70		A	2.3
8	☐	1.000		7883429.40		A	0.1

209 Bi (ISTD) [He]



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD
1	☐	1.000		4437099.00		A	1.1
2	☐	1.000		4434398.58		A	0.3
3	☐	1.000		4358358.58		A	0.6
4	☐	1.000		4321518.03		A	3.5
5	☐	1.000		4155456.15		A	0.7
6	☐	1.000		4107531.16		A	5.2
7	☐	1.000		3935332.54		A	1.0
8	☐	1.000		3599200.78		A	3.3

US EPA Tune Check Report

Reviewed By:MOH
On:6/6/2025 7:07:
PM
Inst Id :P8
LB :LB135941

Operator Name Jaswal

Acq/Data Batch D:\Agilent\ICPMH\1\DATA\P8052325MS.b

Acq. Date-Time 2025-05-23 12:16:38

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		53445	534453.43			0.472	5.000
24		526869	5268691.80			0.853	5.000
25		71491	714907.75			1.334	5.000
26		80651	806508.09			1.158	5.000
59		199064	1990641.76			0.874	5.000
113		22925	229247.13			0.709	5.000
115		293330	2933302.28			1.475	5.000
206		60901	609009.58			0.407	5.000
207		52982	529824.51			0.425	5.000
208		136969	1369689.85			0.611	5.000
220		0	4.70			41.612	

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	53671	53456	53716	53167	53217
24	529808	530479	526763	519266	528030
25	72885	72075	70650	70916	70927
26	81349	81930	80197	79854	79925
59	201525	198304	200145	198144	197203
113	23186	22941	22913	22815	22768
115	295598	299348	291984	291811	287910
206	61312	60861	60855	60637	60840
207	53225	52902	53005	52645	53135
208	137691	137368	136294	137631	135861

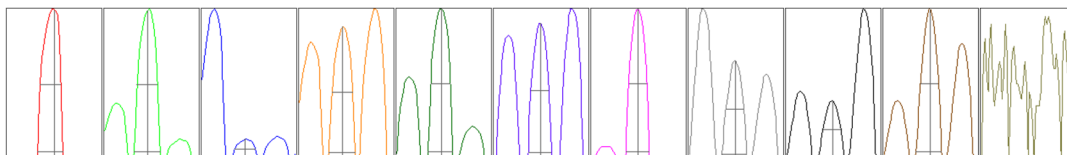
US EPA Tune Check Report

Reviewed By:MOH
On:6/6/2025 7:07:PM
Inst Id :P8
LB :LB135941

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
220	1	0	0	1	0

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
9	85275.71	9.05	8.90 - 9.10	
24	868057.11	23.90	23.90 - 24.10	
25	115356.27	24.90	24.90 - 25.10	
26	130652.34	25.90	25.90 - 26.10	
59	339160.37	58.95	58.90 - 59.10	
113	42980.80	113.00	112.90 - 113.10	
115	546282.98	115.00	114.90 - 115.10	
206	113448.56	206.00	205.90 - 206.10	
207	97753.12	207.00	206.90 - 207.10	
208	251408.68	208.00	207.90 - 208.10	
220			-	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
9	0.66	0.788	0.900	
24	0.65	0.825	0.900	
25	0.65	0.799	0.900	
26	0.65	0.832	0.900	
59	0.62	0.781	0.900	
113	0.57	0.735	0.900	
115	0.57	0.736	0.900	
206	0.57	0.780	0.900	
207	0.57	0.807	0.900	
208	0.57	0.809	0.900	
220				

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:MOH
On:6/6/2025 7:07:PM
Inst Id :P8
LB :LB135941

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	8.7 V	Deflect	14.4 V
Extract 2	-190.0 V	Cell Entrance	-30 V	Plate Bias	-50 V
Omega Bias	-80 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	130 V		

QP Parameters

Mass Gain	105	Axis Gain	0.9967	QP Bias	-4.0 V
Mass Offset	125	Axis Offset	-0.01		

Hardware Settings

Torch

Torch H	0.5 mm	Torch V	-0.6 mm
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EM

Discriminator	4.6 mV	Analog HV	2176 V	Pulse HV	968 V
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[He]

Sensitivity

Mass	Conc. [ug/l]	Count	CPS	Resp (Required) [cps/ug/l]	Resp (Flag)	RSD%	RSD% (Required)
59		37299	372987.53			0.399	
89		54484	544843.58			0.290	
205		42744	427443.57			0.472	

Mass	RSD% (Flag)
59	
89	
205	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
59	37251	37438	37457	37100	37248
89	54562	54472	54613	54558	54217
205	42660	42884	42534	43022	42622

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	8.7 V	Deflect	3.0 V
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US EPA Tune Check Report

Reviewed By:MOH
On:6/6/2025 7:07:PM
Inst Id :P8
LB :LB135941

Extract 2	-190.0 V	Cell Entrance	-50 V	Plate Bias	-60 V
Omega Bias	-80 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	125	Axis Offset	-0.01		
Hardware Settings					
Torch					
Torch H	0.5 mm	Torch V	-0.6 mm		
EM					
Discriminator	4.6 mV	Analog HV	2176 V	Pulse HV	968 V

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17
- 18

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S0 Instrumnet Name : P8
Client Sample ID : S0 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 13:50:48 DataFile Name : 004CALB.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	-0.23	0.33	-0.10	0.00	N/A	ppb
Antimony	121-1	0.00	0.00	0.00	0.00	N/A	ppb
Arsenic	75-2	0.01	-0.01	0.01	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	0.00	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	-0.02	0.05	-0.02	0.00	N/A	ppb
Cadmium	106-1	-0.06	0.41	-0.35	0.00	N/A	ppb
Cadmium	111-1	-0.01	0.03	-0.03	0.00	N/A	ppb
Calcium	43-1	-0.14	0.47	-0.33	0.00	N/A	ppb
Calcium	44-1	-0.26	0.25	0.00	0.00	N/A	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	-0.03	0.01	0.02	0.00	N/A	ppb
Cobalt	59-2	0.00	0.00	0.00	0.00	N/A	ppb
Copper	63-2	-0.01	0.00	0.01	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	0.12	-0.08	-0.04	0.00	N/A	ppb
Iron	56-2	0.04	0.02	-0.06	0.00	N/A	ppb
Iron	57-2	0.13	0.00	-0.13	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 : LB135941 Operator : Jaswal
Lab Sample ID : S0 Instrumnet Name : P8
Client Sample ID : S0 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 13:50:48 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	-0.07	0.01	0.06	0.00	N/A	ppb
Manganese	55-2	-0.04	-0.03	0.06	0.00	N/A	ppb
Molybdenum	94-1	0.01	0.00	-0.01	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	0.00	-0.01	0.01	0.00	N/A	ppb
Phosphorus	31-2	-113.80	-132.17	-129.31	-125.09		ppb
Potassium	39-2	0.87	-2.47	1.60	0.00	N/A	ppb
Rhodium	103-1				100		%
Rhodium	103-2				100		%
Scandium	45-1				100		%
Scandium	45-2				100		%
Selenium	82-1	-0.03	-0.02	0.05	0.00	N/A	ppb
Selenium	77-2	0.00	0.00	0.00	0.00	N/A	ppb
Selenium	78-2	-0.42	0.48	-0.06	0.00	N/A	ppb
Silicon	28-1	-0.02	-0.12	0.14	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	0.60	-0.04	-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	-143.70	-225.73	-1.24	-123.56		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	-0.01	0.00	0.01	0.00	N/A	ppb
Titanium	47-1	0.00	0.00	0.00	0.00	N/A	ppb
Uranium	238-1	0.00	0.00	0.00	0.00	N/A	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S0 Instrumnet Name : P8
Client Sample ID : S0 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 13:50:48 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	-0.04	0.04	0.01	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 : LB135941 Operator : Jaswal
Lab Sample ID : S2 Instrumnet Name : P8
Client Sample ID : S2 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 13:57:33 DataFile Name : 006CAL.S.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	21.13	19.73	18.43	19.76	6.82	ppb
Antimony	121-1	1.83	1.86	1.85	1.84	0.89	ppb
Arsenic	75-2	0.80	0.96	0.95	0.91	9.95	ppb
Barium	135-1	8.70	9.00	9.12	8.94	2.43	ppb
Barium	137-1	8.91	9.10	9.01	9.01	1.08	ppb
Beryllium	9-1	1.02	1.05	1.10	1.06	3.79	ppb
Bismuth	209-1				101		%
Bismuth	209-2				100		%
Bromine	81-1						cps
Cadmium	108-1	0.92	0.92	0.92	0.92	0.26	ppb
Cadmium	106-1	0.18	0.53	0.74	0.48	58.91	ppb
Cadmium	111-1	0.77	0.79	0.86	0.81	5.76	ppb
Calcium	43-1	455.01	456.83	465.34	459.06	1.20	ppb
Calcium	44-1	453.67	462.50	462.68	459.62	1.12	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	1.90	1.78	1.74	1.81	4.46	ppb
Cobalt	59-2	0.99	1.01	0.95	0.98	3.29	ppb
Copper	63-2	1.92	1.92	1.94	1.93	0.56	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				100		%
Indium	115-1				98		%
Indium	115-2				99		%
Iron	54-2	51.89	49.75	49.17	50.27	2.85	ppb
Iron	56-2	49.09	49.50	48.53	49.04	0.99	ppb
Iron	57-2	50.01	48.29	46.00	48.10	4.17	ppb
Krypton	83-1						cps
Lead	206-1	0.72	0.76	0.74	0.74	2.78	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S2 Instrumnet Name : P8
Client Sample ID : S2 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 13:57:33 DataFile Name : 006CAL.S.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	0.78	0.78	0.75	0.77	1.79	ppb
Lead	208-1	0.74	0.76	0.75	0.75	0.85	ppb
Lithium	6-1				102		%
Magnesium	24-2	503.61	506.07	495.97	501.88	1.05	ppb
Manganese	55-2	0.96	1.00	0.90	0.96	5.28	ppb
Molybdenum	94-1	5.36	5.49	5.48	5.45	1.30	ppb
Molybdenum	95-1	4.39	4.53	4.56	4.49	2.01	ppb
Molybdenum	96-1	4.53	4.57	4.66	4.59	1.45	ppb
Molybdenum	97-1	4.39	4.50	4.54	4.48	1.72	ppb
Molybdenum	98-1	4.45	4.56	4.56	4.52	1.36	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	0.88	0.84	0.84	0.85	2.87	ppb
Phosphorus	31-2	111.30	135.84	128.14	125.09	10.03	ppb
Potassium	39-2	461.60	466.15	447.47	458.41	2.12	ppb
Rhodium	103-1				98		%
Rhodium	103-2				100		%
Scandium	45-1				99		%
Scandium	45-2				101		%
Selenium	82-1	4.59	4.89	5.45	4.98	8.79	ppb
Selenium	77-2	3.58	8.44	6.01	6.01	40.39	ppb
Selenium	78-2	7.41	3.82	5.09	5.44	33.53	ppb
Silicon	28-1	0.43	0.58	0.52	0.51	15.60	ppb
Silver	107-1	0.96	0.98	1.00	0.98	2.21	ppb
Silver	109-1	0.94	1.00	0.97	0.97	2.72	ppb
Sodium	23-2	486.80	484.58	484.67	485.35	0.26	ppb
Strontium	86-1	0.88	0.92	0.97	0.92	4.76	ppb
Strontium	88-1	0.90	0.91	0.92	0.91	1.13	ppb
Sulfur	34-1	123.28	141.99	105.40	123.56	14.81	ppb
Terbium	159-1				101		%
Terbium	159-2				100		%
Thallium	203-1	0.88	0.92	0.87	0.89	2.97	ppb
Thallium	205-1	0.88	0.89	0.88	0.88	0.77	ppb
Tin	118-1	4.50	4.55	4.61	4.55	1.21	ppb
Titanium	47-1	4.77	4.67	4.71	4.72	1.04	ppb
Uranium	238-1	0.84	0.84	0.84	0.84	0.48	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S2 Instrumnet Name : P8
Client Sample ID : S2 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 13:57:33 DataFile Name : 006CAL.S.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	4.81	4.63	4.53	4.65	3.10	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				100		%
Yttrium	89-2				99		%
Zinc	66-2	5.20	4.88	5.18	5.09	3.53	ppb
Zirconium	90-1	0.94	0.97	0.96	0.96	1.62	ppb
Zirconium	91-1	0.93	0.96	0.94	0.94	1.50	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S3 Instrumnet Name : P8
Client Sample ID : S3 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:00:54 DataFile Name : 007CALB.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	1031.45	1060.93	1062.57	1051.65	1.67	ppb
Antimony	121-1	47.75	48.67	48.14	48.19	0.96	ppb
Arsenic	75-2	51.32	52.67	50.81	51.60	1.86	ppb
Barium	135-1	235.30	239.94	236.72	237.32	1.00	ppb
Barium	137-1	249.19	252.70	243.55	248.48	1.86	ppb
Beryllium	9-1	54.63	54.57	53.15	54.12	1.55	ppb
Bismuth	209-1				100		%
Bismuth	209-2				98		%
Bromine	81-1						cps
Cadmium	108-1	50.80	52.13	52.13	51.68	1.48	ppb
Cadmium	106-1	51.88	52.90	51.40	52.06	1.47	ppb
Cadmium	111-1	48.94	50.03	48.79	49.25	1.38	ppb
Calcium	43-1	5170.15	4983.47	4945.12	5032.91	2.39	ppb
Calcium	44-1	5121.49	4925.35	4945.28	4997.37	2.16	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	48.91	49.22	49.76	49.29	0.87	ppb
Cobalt	59-2	50.60	50.62	50.80	50.67	0.22	ppb
Copper	63-2	529.54	525.94	551.72	535.73	2.61	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				99		%
Indium	115-1				97		%
Indium	115-2				98		%
Iron	54-2	2624.95	2652.88	2657.08	2644.97	0.66	ppb
Iron	56-2	2671.52	2641.83	2685.03	2666.13	0.83	ppb
Iron	57-2	2567.99	2565.42	2631.01	2588.14	1.44	ppb
Krypton	83-1						cps
Lead	206-1	246.48	255.40	249.72	250.53	1.80	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S3 Instrumnet Name : P8
Client Sample ID : S3 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:00:54 DataFile Name : 007CALB.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	250.93	253.80	248.95	251.23	0.97	ppb
Lead	208-1	249.97	249.37	245.69	248.34	0.93	ppb
Lithium	6-1				102		%
Magnesium	24-2	5270.86	5376.27	5291.89	5313.01	1.05	ppb
Manganese	55-2	491.87	495.64	502.30	496.60	1.06	ppb
Molybdenum	94-1	507.62	491.97	501.40	500.33	1.57	ppb
Molybdenum	95-1	500.86	497.03	503.81	500.57	0.68	ppb
Molybdenum	96-1	515.01	496.63	492.67	501.44	2.38	ppb
Molybdenum	97-1	517.79	496.45	505.92	506.72	2.11	ppb
Molybdenum	98-1	504.41	488.92	507.44	500.26	1.99	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	50.53	50.58	51.46	50.86	1.03	ppb
Phosphorus	31-2	933.37	887.70	906.77	909.28	2.52	ppb
Potassium	39-2	2540.64	2590.27	2602.94	2577.95	1.28	ppb
Rhodium	103-1				97		%
Rhodium	103-2				98		%
Scandium	45-1				98		%
Scandium	45-2				99		%
Selenium	82-1	50.83	51.05	51.42	51.10	0.58	ppb
Selenium	77-2	48.07	49.55	56.74	51.45	9.02	ppb
Selenium	78-2	53.54	52.40	53.00	52.98	1.08	ppb
Silicon	28-1	53.09	50.88	51.09	51.68	2.35	ppb
Silver	107-1	49.13	50.24	49.35	49.57	1.18	ppb
Silver	109-1	49.21	50.09	49.80	49.70	0.90	ppb
Sodium	23-2	5220.03	5229.51	5382.33	5277.29	1.73	ppb
Strontium	86-1	48.23	47.31	48.47	48.00	1.28	ppb
Strontium	88-1	50.45	50.14	50.64	50.41	0.50	ppb
Sulfur	34-1	1480.95	1088.44	1112.45	1227.28	17.93	ppb
Terbium	159-1				102		%
Terbium	159-2				98		%
Thallium	203-1	45.79	46.96	46.55	46.43	1.28	ppb
Thallium	205-1	48.56	49.39	49.70	49.22	1.20	ppb
Tin	118-1	49.23	50.06	48.94	49.41	1.17	ppb
Titanium	47-1	520.33	494.31	489.17	501.27	3.33	ppb
Uranium	238-1	49.66	48.57	48.13	48.78	1.61	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S3 Instrumnet Name : P8
Client Sample ID : S3 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:00:54 DataFile Name : 007CALB.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	49.01	49.39	50.74	49.71	1.82	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				99		%
Yttrium	89-2				97		%
Zinc	66-2	498.83	504.83	511.48	505.05	1.25	ppb
Zirconium	90-1	50.76	49.49	49.93	50.06	1.28	ppb
Zirconium	91-1	47.83	46.87	48.17	47.63	1.41	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S4 Instrumnet Name : P8
Client Sample ID : S4 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:04:00 DataFile Name : 008CAL.S.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	2494.94	2526.25	2615.51	2545.57	2.46	ppb
Antimony	121-1	126.48	128.03	124.40	126.30	1.44	ppb
Arsenic	75-2	125.61	127.29	126.15	126.35	0.68	ppb
Barium	135-1	620.39	648.02	613.94	627.45	2.88	ppb
Barium	137-1	607.62	627.42	613.18	616.07	1.66	ppb
Beryllium	9-1	134.40	131.06	138.72	134.73	2.85	ppb
Bismuth	209-1				99		%
Bismuth	209-2				97		%
Bromine	81-1						cps
Cadmium	108-1	125.87	130.58	127.20	127.89	1.90	ppb
Cadmium	106-1	126.81	132.16	127.23	128.74	2.31	ppb
Cadmium	111-1	121.14	124.82	121.59	122.51	1.64	ppb
Calcium	43-1	12541.17	12671.33	12314.22	12508.91	1.44	ppb
Calcium	44-1	12357.83	12656.16	12570.58	12528.19	1.23	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	117.61	120.33	123.92	120.62	2.63	ppb
Cobalt	59-2	121.09	125.53	127.02	124.55	2.48	ppb
Copper	63-2	1256.37	1279.97	1333.81	1290.05	3.08	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				100		%
Holmium	165-2				99		%
Indium	115-1				97		%
Indium	115-2				96		%
Iron	54-2	6319.31	6531.84	6669.26	6506.80	2.71	ppb
Iron	56-2	6335.13	6595.15	6664.57	6531.61	2.66	ppb
Iron	57-2	6186.62	6371.43	6499.63	6352.56	2.48	ppb
Krypton	83-1						cps
Lead	206-1	624.58	628.81	619.44	624.27	0.75	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S4 Instrumnet Name : P8
Client Sample ID : S4 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:04:00 DataFile Name : 008CAL.S.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	632.56	606.34	618.81	619.24	2.12	ppb
Lead	208-1	620.37	609.07	625.33	618.26	1.35	ppb
Lithium	6-1				100		%
Magnesium	24-2	12694.67	13253.46	13267.84	13071.99	2.50	ppb
Manganese	55-2	1230.16	1267.13	1297.98	1265.09	2.68	ppb
Molybdenum	94-1	1273.34	1250.75	1265.94	1263.34	0.91	ppb
Molybdenum	95-1	1255.03	1237.41	1267.25	1253.23	1.20	ppb
Molybdenum	96-1	1245.94	1255.86	1254.03	1251.94	0.42	ppb
Molybdenum	97-1	1264.92	1246.24	1259.64	1256.93	0.77	ppb
Molybdenum	98-1	1271.55	1257.38	1264.90	1264.61	0.56	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	121.58	125.74	128.15	125.16	2.66	ppb
Phosphorus	31-2	2371.58	2434.79	2528.03	2444.80	3.22	ppb
Potassium	39-2	6137.10	6259.34	6401.32	6265.92	2.11	ppb
Rhodium	103-1				96		%
Rhodium	103-2				96		%
Scandium	45-1				97		%
Scandium	45-2				98		%
Selenium	82-1	129.21	129.72	129.02	129.31	0.28	ppb
Selenium	77-2	134.36	129.62	135.74	133.24	2.41	ppb
Selenium	78-2	130.29	126.62	134.97	130.63	3.20	ppb
Silicon	28-1	128.56	129.88	128.37	128.94	0.64	ppb
Silver	107-1	129.57	131.44	129.25	130.09	0.91	ppb
Silver	109-1	127.73	130.41	130.54	129.56	1.22	ppb
Sodium	23-2	12631.98	13152.26	13090.86	12958.36	2.19	ppb
Strontium	86-1	121.20	119.41	120.93	120.51	0.80	ppb
Strontium	88-1	125.12	124.15	123.34	124.20	0.72	ppb
Sulfur	34-1	3192.65	3277.84	2939.16	3136.55	5.62	ppb
Terbium	159-1				102		%
Terbium	159-2				99		%
Thallium	203-1	128.88	125.40	122.56	125.61	2.52	ppb
Thallium	205-1	125.95	123.37	123.77	124.36	1.12	ppb
Tin	118-1	125.11	129.46	125.13	126.57	1.98	ppb
Titanium	47-1	1238.21	1259.71	1231.86	1243.26	1.17	ppb
Uranium	238-1	121.01	116.61	124.52	120.71	3.28	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S4 Instrumnet Name : P8
Client Sample ID : S4 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:04:00 DataFile Name : 008CALS.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	119.41	123.11	124.43	122.32	2.13	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				97		%
Yttrium	89-2				96		%
Zinc	66-2	1200.88	1235.01	1265.06	1233.65	2.60	ppb
Zirconium	90-1	126.57	125.13	125.26	125.65	0.63	ppb
Zirconium	91-1	121.58	119.70	120.77	120.69	0.78	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S5 Instrumnet Name : P8
Client Sample ID : S5 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:07:01 DataFile Name : 009CAL.S.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	5145.59	5153.02	5123.29	5140.64	0.30	ppb
Antimony	121-1	250.04	255.94	255.80	253.93	1.33	ppb
Arsenic	75-2	259.46	262.62	261.14	261.07	0.60	ppb
Barium	135-1	1246.98	1254.47	1261.05	1254.17	0.56	ppb
Barium	137-1	1225.71	1280.22	1281.64	1262.52	2.53	ppb
Beryllium	9-1	256.10	253.82	260.45	256.79	1.31	ppb
Bismuth	209-1				97		%
Bismuth	209-2				94		%
Bromine	81-1						cps
Cadmium	108-1	249.90	259.69	261.17	256.92	2.38	ppb
Cadmium	106-1	251.38	260.75	262.69	258.27	2.34	ppb
Cadmium	111-1	239.86	248.98	250.05	246.30	2.27	ppb
Calcium	43-1	25067.34	24871.85	25564.33	25167.84	1.42	ppb
Calcium	44-1	25211.88	24701.04	25050.57	24987.83	1.05	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	245.36	247.46	244.43	245.75	0.63	ppb
Cobalt	59-2	271.50	259.81	262.60	264.64	2.31	ppb
Copper	63-2	2606.94	2617.13	2602.67	2608.91	0.28	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				96		%
Indium	115-1				94		%
Indium	115-2				91		%
Iron	54-2	13633.15	13566.15	13571.20	13590.17	0.27	ppb
Iron	56-2	13464.15	13403.35	13538.50	13468.67	0.50	ppb
Iron	57-2	12889.54	12829.89	12855.21	12858.22	0.23	ppb
Krypton	83-1						cps
Lead	206-1	1251.53	1250.99	1224.16	1242.23	1.26	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S5 Instrumnet Name : P8
Client Sample ID : S5 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:07:01 DataFile Name : 009CAL.S.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	1272.29	1230.82	1219.90	1241.00	2.23	ppb
Lead	208-1	1261.01	1232.38	1227.80	1240.40	1.45	ppb
Lithium	6-1				98		%
Magnesium	24-2	26372.78	26482.53	26302.66	26385.99	0.34	ppb
Manganese	55-2	2582.36	2577.91	2569.10	2576.46	0.26	ppb
Molybdenum	94-1	2564.62	2440.79	2516.03	2507.15	2.49	ppb
Molybdenum	95-1	2543.61	2464.37	2468.88	2492.29	1.79	ppb
Molybdenum	96-1	2497.71	2472.96	2497.00	2489.22	0.57	ppb
Molybdenum	97-1	2496.45	2484.53	2528.19	2503.06	0.90	ppb
Molybdenum	98-1	2503.30	2467.83	2526.05	2499.06	1.17	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	249.41	247.83	248.49	248.58	0.32	ppb
Phosphorus	31-2	5003.44	5238.36	5152.27	5131.36	2.32	ppb
Potassium	39-2	13214.27	13407.74	13031.83	13217.95	1.42	ppb
Rhodium	103-1				93		%
Rhodium	103-2				91		%
Scandium	45-1				94		%
Scandium	45-2				93		%
Selenium	82-1	254.90	257.77	257.85	256.84	0.66	ppb
Selenium	77-2	262.58	242.43	254.46	253.16	4.01	ppb
Selenium	78-2	255.22	261.85	273.97	263.68	3.61	ppb
Silicon	28-1	253.84	257.64	258.90	256.79	1.03	ppb
Silver	107-1	253.98	264.88	256.28	258.38	2.22	ppb
Silver	109-1	253.92	263.65	261.27	259.61	1.95	ppb
Sodium	23-2	25749.89	26194.29	25944.81	25962.99	0.86	ppb
Strontium	86-1	251.56	253.55	252.18	252.43	0.40	ppb
Strontium	88-1	248.41	247.51	247.90	247.94	0.18	ppb
Sulfur	34-1	4986.96	4743.77	4917.88	4882.87	2.57	ppb
Terbium	159-1				99		%
Terbium	159-2				95		%
Thallium	203-1	250.64	255.39	243.73	249.92	2.35	ppb
Thallium	205-1	244.77	249.13	243.28	245.73	1.24	ppb
Tin	118-1	244.32	255.00	254.46	251.26	2.40	ppb
Titanium	47-1	2493.86	2441.09	2472.77	2469.24	1.08	ppb
Uranium	238-1	245.36	239.91	243.97	243.08	1.17	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S5 Instrumnet Name : P8
Client Sample ID : S5 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:07:01 DataFile Name : 009CALS.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	247.90	248.08	247.71	247.89	0.08	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				96		%
Yttrium	89-2				91		%
Zinc	66-2	2614.19	2632.41	2654.08	2633.56	0.76	ppb
Zirconium	90-1	249.70	247.15	253.39	250.08	1.25	ppb
Zirconium	91-1	257.29	248.00	244.50	249.93	2.65	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S6 Instrumnet Name : P8
Client Sample ID : S6 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:09:51 DataFile Name : 010CAL.S.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	10173.62	10100.83	9299.96	9858.14	4.92	ppb
Antimony	121-1	499.22	487.51	508.27	498.33	2.09	ppb
Arsenic	75-2	494.99	507.98	465.10	489.36	4.49	ppb
Barium	135-1	2522.17	2460.22	2511.69	2498.03	1.33	ppb
Barium	137-1	2563.58	2490.70	2494.00	2516.09	1.64	ppb
Beryllium	9-1	507.66	503.56	512.05	507.76	0.84	ppb
Bismuth	209-1				95		%
Bismuth	209-2				93		%
Bromine	81-1						cps
Cadmium	108-1	512.64	506.40	508.35	509.13	0.63	ppb
Cadmium	106-1	506.72	507.82	509.61	508.05	0.29	ppb
Cadmium	111-1	519.75	509.83	516.37	515.32	0.98	ppb
Calcium	43-1	51167.09	49894.29	50996.03	50685.80	1.36	ppb
Calcium	44-1	50247.95	49073.44	49875.56	49732.31	1.21	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	509.58	506.53	471.74	495.95	4.24	ppb
Cobalt	59-2	509.24	511.16	472.98	497.79	4.32	ppb
Copper	63-2	5227.18	5116.30	4770.33	5037.93	4.73	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				97		%
Indium	115-1				93		%
Indium	115-2				93		%
Iron	54-2	26559.83	26509.01	24622.25	25897.03	4.26	ppb
Iron	56-2	25961.21	26099.72	24060.45	25373.79	4.49	ppb
Iron	57-2	26693.56	26961.95	24244.44	25966.65	5.77	ppb
Krypton	83-1						cps
Lead	206-1	2437.25	2491.20	2495.41	2474.62	1.31	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S6 Instrumnet Name : P8
Client Sample ID : S6 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:09:51 DataFile Name : 010CAL.S.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	2510.92	2491.64	2522.34	2508.30	0.62	ppb
Lead	208-1	2497.16	2490.96	2489.43	2492.52	0.16	ppb
Lithium	6-1				95		%
Magnesium	24-2	51980.89	51688.00	46985.47	50218.12	5.58	ppb
Manganese	55-2	5024.28	4954.47	4643.45	4874.07	4.16	ppb
Molybdenum	94-1	4875.86	5052.89	4894.16	4940.97	1.97	ppb
Molybdenum	95-1	4815.17	5143.43	4924.71	4961.10	3.37	ppb
Molybdenum	96-1	4723.89	5136.22	5026.25	4962.12	4.30	ppb
Molybdenum	97-1	4744.43	5070.78	5039.87	4951.69	3.64	ppb
Molybdenum	98-1	4812.10	5002.29	5026.39	4946.93	2.37	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	479.85	485.52	444.15	469.84	4.77	ppb
Phosphorus	31-2	10266.41	10179.51	9143.20	9863.04	6.34	ppb
Potassium	39-2	25581.15	25431.12	23764.24	24925.50	4.05	ppb
Rhodium	103-1				89		%
Rhodium	103-2				92		%
Scandium	45-1				92		%
Scandium	45-2				94		%
Selenium	82-1	500.54	523.62	511.67	511.94	2.25	ppb
Selenium	77-2	498.27	480.50	467.14	481.97	3.24	ppb
Selenium	78-2	498.64	509.27	460.92	489.61	5.19	ppb
Silicon	28-1	510.97	502.42	527.61	513.67	2.49	ppb
Silver	107-1	507.52	515.07	517.61	513.40	1.02	ppb
Silver	109-1	508.60	503.87	506.08	506.18	0.47	ppb
Sodium	23-2	52042.75	51151.48	46905.01	50033.08	5.49	ppb
Strontium	86-1	504.82	497.57	506.01	502.80	0.91	ppb
Strontium	88-1	490.01	498.37	502.66	497.01	1.29	ppb
Sulfur	34-1	10308.70	9658.79	10263.92	10077.14	3.60	ppb
Terbium	159-1				98		%
Terbium	159-2				97		%
Thallium	203-1	480.74	495.73	496.72	491.06	1.82	ppb
Thallium	205-1	481.60	496.41	496.32	491.44	1.73	ppb
Tin	118-1	507.99	483.02	502.73	497.92	2.64	ppb
Titanium	47-1	4902.34	4845.33	4943.63	4897.10	1.01	ppb
Uranium	238-1	496.71	494.20	494.19	495.03	0.29	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S6 Instrumnet Name : P8
Client Sample ID : S6 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:09:51 DataFile Name : 010CALS.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	505.93	516.16	467.98	496.69	5.11	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				94		%
Yttrium	89-2				95		%
Zinc	66-2	5192.61	5203.68	4773.58	5056.62	4.85	ppb
Zirconium	90-1	495.00	495.90	485.69	492.20	1.15	ppb
Zirconium	91-1	490.32	508.08	496.03	498.14	1.82	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S7 Instrumnet Name : P8
Client Sample ID : S7 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:12:36 DataFile Name : 011CAL.S.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	20116.10	20368.28	19948.80	20144.39	1.05	ppb
Antimony	121-1	1011.42	985.85	1002.08	999.78	1.29	ppb
Arsenic	75-2	1003.42	1026.13	977.36	1002.30	2.43	ppb
Barium	135-1	5024.12	4977.45	4999.25	5000.28	0.47	ppb
Barium	137-1	4995.78	4962.40	5011.88	4990.02	0.51	ppb
Beryllium	9-1	975.23	1007.91	995.87	993.00	1.66	ppb
Bismuth	209-1				92		%
Bismuth	209-2				89		%
Bromine	81-1						cps
Cadmium	108-1	1002.00	990.33	987.45	993.26	0.78	ppb
Cadmium	106-1	997.28	994.02	988.70	993.34	0.44	ppb
Cadmium	111-1	998.82	978.69	1003.34	993.61	1.32	ppb
Calcium	43-1	100104.56	104237.07	102041.61	102127.75	2.02	ppb
Calcium	44-1	98770.00	102812.91	100782.00	100788.30	2.01	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	996.88	1013.49	1000.64	1003.67	0.87	ppb
Cobalt	59-2	994.53	1018.13	979.74	997.47	1.94	ppb
Copper	63-2	9948.27	10126.80	9765.96	9947.01	1.81	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				95		%
Holmium	165-2				95		%
Indium	115-1				87		%
Indium	115-2				84		%
Iron	54-2	51838.92	52859.92	52964.20	52554.35	1.18	ppb
Iron	56-2	52260.12	51955.79	51436.91	51884.27	0.80	ppb
Iron	57-2	51762.60	52052.59	51699.59	51838.26	0.36	ppb
Krypton	83-1						cps
Lead	206-1	5062.56	4901.99	5079.54	5014.70	1.95	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S7 Instrumnet Name : P8
Client Sample ID : S7 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:12:36 DataFile Name : 011CAL.S.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	5095.19	4844.11	5056.98	4998.76	2.71	ppb
Lead	208-1	5067.70	4892.36	5061.15	5007.07	1.99	ppb
Lithium	6-1				92		%
Magnesium	24-2	101542.51	101720.75	102131.94	101798.40	0.30	ppb
Manganese	55-2	10021.84	10154.00	9950.57	10042.14	1.03	ppb
Molybdenum	94-1	10004.42	10029.92	10043.78	10026.04	0.20	ppb
Molybdenum	95-1	9797.55	10086.69	10178.59	10020.95	1.98	ppb
Molybdenum	96-1	9816.88	10185.97	10061.10	10021.32	1.87	ppb
Molybdenum	97-1	9921.63	10088.75	10056.19	10022.19	0.88	ppb
Molybdenum	98-1	10093.96	9873.27	10107.57	10024.93	1.31	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	1016.94	1001.99	1027.19	1015.37	1.25	ppb
Phosphorus	31-2	20111.88	20207.93	19821.43	20047.08	1.00	ppb
Potassium	39-2	50192.46	50632.04	50064.89	50296.46	0.59	ppb
Rhodium	103-1				86		%
Rhodium	103-2				88		%
Scandium	45-1				89		%
Scandium	45-2				92		%
Selenium	82-1	990.77	990.95	993.45	991.72	0.15	ppb
Selenium	77-2	971.24	1041.69	1008.42	1007.12	3.50	ppb
Selenium	78-2	989.52	1042.59	970.64	1000.92	3.73	ppb
Silicon	28-1	1004.80	985.66	982.51	990.99	1.22	ppb
Silver	107-1	992.77	991.39	987.62	990.59	0.27	ppb
Silver	109-1	1000.02	995.99	985.84	993.95	0.74	ppb
Sodium	23-2	101411.70	102470.67	102303.32	102061.90	0.56	ppb
Strontium	86-1	990.28	994.95	1010.73	998.65	1.07	ppb
Strontium	88-1	984.95	1028.96	992.35	1002.09	2.35	ppb
Sulfur	34-1	19701.66	20338.49	19659.19	19899.78	1.91	ppb
Terbium	159-1				96		%
Terbium	159-2				94		%
Thallium	203-1	1017.38	983.80	1012.59	1004.59	1.81	ppb
Thallium	205-1	1004.20	992.12	1020.07	1005.47	1.39	ppb
Tin	118-1	1005.83	987.83	1008.02	1000.56	1.11	ppb
Titanium	47-1	9865.79	10201.31	10112.65	10059.92	1.73	ppb
Uranium	238-1	1009.29	982.61	1022.53	1004.81	2.02	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S7 Instrumnet Name : P8
Client Sample ID : S7 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:12:36 DataFile Name : 011CALS.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	1004.12	1003.44	1000.05	1002.53	0.22	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				93		%
Yttrium	89-2				91		%
Zinc	66-2	9890.02	9985.48	9944.77	9940.09	0.48	ppb
Zirconium	90-1	998.35	1001.63	1011.40	1003.80	0.68	ppb
Zirconium	91-1	986.28	1011.66	1006.88	1001.61	1.35	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S8 Instrumnet Name : P8
Client Sample ID : S8 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:15:23 DataFile Name : 012CALS.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	94227.84	102883.60	102818.42	99976.62	4.98	ppb
Antimony	121-1	0.55	0.53	0.52	0.53	3.11	ppb
Arsenic	75-2	0.35	0.52	0.38	0.42	21.26	ppb
Barium	135-1	2.19	2.24	2.18	2.20	1.29	ppb
Barium	137-1	2.23	2.17	2.17	2.19	1.63	ppb
Beryllium	9-1	0.21	0.16	0.14	0.17	19.37	ppb
Bismuth	209-1				82		%
Bismuth	209-2				81		%
Bromine	81-1						cps
Cadmium	108-1	0.50	0.44	0.39	0.44	13.08	ppb
Cadmium	106-1	-0.41	-1.10	-0.77	-0.76		ppb
Cadmium	111-1	0.10	0.04	0.05	0.06	53.55	ppb
Calcium	43-1	493383.86	509869.80	495237.24	499496.97	1.81	ppb
Calcium	44-1	506705.68	506014.26	486887.30	499869.08	2.25	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	1.25	1.28	1.29	1.27	1.87	ppb
Cobalt	59-2	1.06	1.13	1.12	1.10	3.43	ppb
Copper	63-2	1.17	1.33	1.31	1.27	6.82	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				93		%
Holmium	165-2				93		%
Indium	115-1				84		%
Indium	115-2				85		%
Iron	54-2	240286.19	255405.06	252319.89	249337.05	3.20	ppb
Iron	56-2	238890.92	254976.02	254718.95	249528.63	3.69	ppb
Iron	57-2	237794.85	255615.75	255132.38	249514.33	4.07	ppb
Krypton	83-1						cps
Lead	206-1	3.75	3.73	3.77	3.75	0.58	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S8 Instrumnet Name : P8
Client Sample ID : S8 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:15:23 DataFile Name : 012CAL.S.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	3.84	3.86	3.85	3.85	0.34	ppb
Lead	208-1	3.80	3.77	3.79	3.79	0.36	ppb
Lithium	6-1				84		%
Magnesium	24-2	480149.27	509192.36	509253.70	499531.78	3.36	ppb
Manganese	55-2	3.34	3.74	3.79	3.62	6.90	ppb
Molybdenum	94-1	2.56	2.44	2.40	2.47	3.45	ppb
Molybdenum	95-1	1.23	1.12	1.11	1.15	6.02	ppb
Molybdenum	96-1	2.19	2.14	2.14	2.16	1.54	ppb
Molybdenum	97-1	1.27	1.12	1.13	1.18	7.10	ppb
Molybdenum	98-1	1.19	1.12	1.07	1.13	5.38	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	2.27	2.41	2.38	2.35	3.04	ppb
Phosphorus	31-2	-112.37	-108.47	-116.69	-112.51		ppb
Potassium	39-2	236557.18	252266.96	260909.36	249911.17	4.94	ppb
Rhodium	103-1				78		%
Rhodium	103-2				80		%
Scandium	45-1				88		%
Scandium	45-2				89		%
Selenium	82-1	0.72	0.95	1.14	0.94	22.73	ppb
Selenium	77-2	1.27	0.67	0.00	0.65	98.47	ppb
Selenium	78-2	0.02	0.48	0.06	0.18	139.09	ppb
Silicon	28-1	1.72	1.49	1.25	1.49	15.83	ppb
Silver	107-1	0.11	0.09	0.09	0.10	10.43	ppb
Silver	109-1	0.11	0.09	0.07	0.09	18.99	ppb
Sodium	23-2	479530.05	509461.97	509573.82	499521.95	3.47	ppb
Strontium	86-1	3.25	3.29	3.28	3.27	0.60	ppb
Strontium	88-1	3.31	3.31	3.33	3.31	0.46	ppb
Sulfur	34-1	-815.82	-721.19	-841.87	-792.96		ppb
Terbium	159-1				93		%
Terbium	159-2				91		%
Thallium	203-1	0.08	0.08	0.08	0.08	5.06	ppb
Thallium	205-1	0.09	0.07	0.07	0.08	10.20	ppb
Tin	118-1	0.18	0.16	0.15	0.16	8.59	ppb
Titanium	47-1	1.01	1.05	1.09	1.05	3.64	ppb
Uranium	238-1	0.05	0.04	0.04	0.04	13.23	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S8 Instrumnet Name : P8
Client Sample ID : S8 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:15:23 DataFile Name : 012CALS.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	0.23	0.27	0.27	0.26	9.64	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				89		%
Yttrium	89-2				91		%
Zinc	66-2	39.95	41.57	42.62	41.38	3.25	ppb
Zirconium	90-1	0.80	0.79	0.80	0.80	1.23	ppb
Zirconium	91-1	0.79	0.80	0.76	0.79	2.90	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : ICV01 Instrumnet Name : P8
Client Sample ID : ICV01 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:23:38 DataFile Name : 014ICV.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	528.67	476.33	470.42	491.81	6.52	ppb
Antimony	121-1	190.81	194.83	194.27	193.30	1.13	ppb
Arsenic	75-2	215.16	190.79	193.91	199.95	6.63	ppb
Barium	135-1	91.32	91.45	94.34	92.37	1.85	ppb
Barium	137-1	91.79	91.96	95.03	92.92	1.96	ppb
Beryllium	9-1	100.68	98.56	100.10	99.78	1.10	ppb
Bismuth	209-1				103		%
Bismuth	209-2				96		%
Bromine	81-1						cps
Cadmium	108-1	174.82	173.94	176.85	175.20	0.85	ppb
Cadmium	106-1	186.92	185.94	190.11	187.66	1.16	ppb
Cadmium	111-1	98.92	100.96	101.79	100.56	1.47	ppb
Calcium	43-1	2038.88	2053.39	2126.17	2072.81	2.26	ppb
Calcium	44-1	1984.34	1990.38	2028.52	2001.08	1.20	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	103.56	95.16	93.45	97.39	5.55	ppb
Cobalt	59-2	107.51	98.80	96.99	101.10	5.57	ppb
Copper	63-2	109.78	99.97	97.87	102.54	6.20	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				97		%
Indium	115-1				99		%
Indium	115-2				93		%
Iron	54-2	2228.17	2049.52	1998.16	2091.95	5.77	ppb
Iron	56-2	2233.28	1991.87	2001.58	2075.57	6.58	ppb
Iron	57-2	2107.43	1941.12	1894.62	1981.06	5.65	ppb
Krypton	83-1						cps
Lead	206-1	195.80	203.67	202.72	200.73	2.14	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : ICV01 Instrumnet Name : P8
Client Sample ID : ICV01 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:23:38 DataFile Name : 014ICV.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	190.63	193.05	197.39	193.69	1.77	ppb
Lead	208-1	191.77	195.32	196.25	194.44	1.22	ppb
Lithium	6-1				101		%
Magnesium	24-2	1257.65	1158.73	1125.52	1180.63	5.82	ppb
Manganese	55-2	104.89	95.16	93.73	97.93	6.20	ppb
Molybdenum	94-1	4794.74	4960.58	4961.23	4905.52	1.96	ppb
Molybdenum	95-1	4837.80	4961.50	4826.24	4875.18	1.54	ppb
Molybdenum	96-1	4793.20	4970.76	4854.27	4872.74	1.85	ppb
Molybdenum	97-1	4823.43	5002.67	5007.70	4944.60	2.12	ppb
Molybdenum	98-1	4856.15	5032.06	5000.73	4962.98	1.89	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	114.14	105.57	103.70	107.80	5.16	ppb
Phosphorus	31-2	-115.48	-127.74	-123.15	-122.12		ppb
Potassium	39-2	2055.99	1868.93	1821.14	1915.36	6.48	ppb
Rhodium	103-1				101		%
Rhodium	103-2				95		%
Scandium	45-1				98		%
Scandium	45-2				95		%
Selenium	82-1	188.53	196.38	193.98	192.97	2.09	ppb
Selenium	77-2	221.34	202.16	201.25	208.25	5.45	ppb
Selenium	78-2	225.27	198.14	206.65	210.02	6.61	ppb
Silicon	28-1	37.82	37.22	38.30	37.78	1.44	ppb
Silver	107-1	47.09	47.39	48.40	47.63	1.44	ppb
Silver	109-1	47.36	47.09	47.69	47.38	0.63	ppb
Sodium	23-2	2166.02	1967.29	1932.32	2021.88	6.23	ppb
Strontium	86-1	481.65	497.09	494.50	491.08	1.68	ppb
Strontium	88-1	482.13	483.49	480.73	482.12	0.29	ppb
Sulfur	34-1	-813.24	-855.34	-710.90	-793.16		ppb
Terbium	159-1				103		%
Terbium	159-2				96		%
Thallium	203-1	196.05	200.81	206.39	201.08	2.57	ppb
Thallium	205-1	195.04	200.40	199.04	198.16	1.41	ppb
Tin	118-1	488.78	496.21	508.29	497.76	1.98	ppb
Titanium	47-1	4671.67	4622.06	4851.26	4714.99	2.56	ppb
Uranium	238-1	492.91	496.59	510.46	499.99	1.85	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : ICV01 Instrumnet Name : P8
Client Sample ID : ICV01 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:23:38 DataFile Name : 014ICV.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	100.84	93.38	90.13	94.78	5.80	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				102		%
Yttrium	89-2				94		%
Zinc	66-2	221.60	202.62	198.68	207.63	5.90	ppb
Zirconium	90-1	474.38	479.11	486.76	480.08	1.30	ppb
Zirconium	91-1	470.89	478.46	476.15	475.17	0.82	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : LLICV01 Instrumnet Name : P8
Client Sample ID : LLICV01 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:33:36 DataFile Name : 016LLIC.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	20.24	22.04	18.68	20.32	8.26	ppb
Antimony	121-1	2.01	1.95	2.02	1.99	1.93	ppb
Arsenic	75-2	1.05	0.94	0.90	0.96	7.88	ppb
Barium	135-1	9.58	9.43	9.68	9.56	1.35	ppb
Barium	137-1	9.65	9.32	9.62	9.53	1.93	ppb
Beryllium	9-1	1.11	1.10	1.13	1.11	1.03	ppb
Bismuth	209-1				102		%
Bismuth	209-2				101		%
Bromine	81-1						cps
Cadmium	108-1	0.93	0.90	0.82	0.89	6.28	ppb
Cadmium	106-1	0.57	0.19	0.25	0.33	61.42	ppb
Cadmium	111-1	0.89	0.82	0.90	0.87	4.77	ppb
Calcium	43-1	489.16	482.96	496.32	489.48	1.37	ppb
Calcium	44-1	487.29	492.96	494.65	491.64	0.78	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	1.97	2.00	1.98	1.99	0.72	ppb
Cobalt	59-2	1.07	1.08	1.08	1.08	0.86	ppb
Copper	63-2	2.13	2.20	2.20	2.18	1.87	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				102		%
Holmium	165-2				100		%
Indium	115-1				101		%
Indium	115-2				99		%
Iron	54-2	52.44	57.07	54.12	54.54	4.30	ppb
Iron	56-2	52.86	53.61	53.38	53.28	0.72	ppb
Iron	57-2	53.34	51.27	51.42	52.01	2.22	ppb
Krypton	83-1						cps
Lead	206-1	0.83	0.83	0.80	0.82	1.90	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : LLICV01 Instrumnet Name : P8
Client Sample ID : LLICV01 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:33:36 DataFile Name : 016LLIC.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	0.83	0.85	0.84	0.84	1.37	ppb
Lead	208-1	0.83	0.85	0.82	0.83	1.62	ppb
Lithium	6-1				102		%
Magnesium	24-2	530.85	537.04	533.42	533.77	0.58	ppb
Manganese	55-2	1.08	1.05	1.13	1.09	3.71	ppb
Molybdenum	94-1	5.80	5.98	6.04	5.94	2.11	ppb
Molybdenum	95-1	4.72	4.78	4.83	4.77	1.16	ppb
Molybdenum	96-1	4.82	4.85	4.91	4.86	1.01	ppb
Molybdenum	97-1	4.72	4.74	4.74	4.73	0.27	ppb
Molybdenum	98-1	4.71	4.70	4.82	4.74	1.47	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	0.97	0.97	0.96	0.97	0.47	ppb
Phosphorus	31-2	124.02	141.90	113.44	126.45	11.37	ppb
Potassium	39-2	496.14	498.65	501.71	498.83	0.56	ppb
Rhodium	103-1				100		%
Rhodium	103-2				101		%
Scandium	45-1				100		%
Scandium	45-2				100		%
Selenium	82-1	5.22	4.90	5.28	5.14	3.95	ppb
Selenium	77-2	4.82	5.30	2.35	4.16	38.12	ppb
Selenium	78-2	4.92	3.34	5.30	4.52	22.94	ppb
Silicon	28-1	0.32	0.44	0.35	0.37	16.65	ppb
Silver	107-1	1.10	1.07	1.07	1.08	1.66	ppb
Silver	109-1	1.05	1.03	1.07	1.05	1.88	ppb
Sodium	23-2	527.49	542.69	538.68	536.29	1.47	ppb
Strontium	86-1	0.92	0.99	0.97	0.96	3.67	ppb
Strontium	88-1	0.94	0.96	0.97	0.96	1.67	ppb
Sulfur	34-1	-281.32	-279.28	-327.16	-295.92		ppb
Terbium	159-1				103		%
Terbium	159-2				100		%
Thallium	203-1	0.95	0.96	0.94	0.95	1.06	ppb
Thallium	205-1	0.95	0.95	0.95	0.95	0.36	ppb
Tin	118-1	4.91	4.77	4.93	4.87	1.78	ppb
Titanium	47-1	5.07	5.12	5.01	5.07	1.08	ppb
Uranium	238-1	0.88	0.90	0.91	0.90	1.99	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : LLICV01 Instrumnet Name : P8
Client Sample ID : LLICV01 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:33:36 DataFile Name : 016LLIC.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	5.01	4.99	5.02	5.01	0.37	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				102		%
Yttrium	89-2				100		%
Zinc	66-2	5.54	5.34	5.68	5.52	3.12	ppb
Zirconium	90-1	1.06	1.06	1.09	1.07	1.63	ppb
Zirconium	91-1	1.04	1.04	1.10	1.06	3.50	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : ICB01 Instrumnet Name : P8
Client Sample ID : ICB01 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:37:13 DataFile Name : 017CCBE.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	-0.10	-0.15	-0.66	-0.30		ppb
Antimony	121-1	0.01	0.01	0.01	0.01	14.34	ppb
Arsenic	75-2	0.00	0.00	-0.01	0.00		ppb
Barium	135-1	0.00	0.00	0.00	0.00	185.27	ppb
Barium	137-1	0.01	0.01	0.00	0.00	57.37	ppb
Beryllium	9-1	0.02	0.02	0.02	0.02	16.07	ppb
Bismuth	209-1				103		%
Bismuth	209-2				100		%
Bromine	81-1						cps
Cadmium	108-1	-0.03	-0.07	-0.01	-0.04		ppb
Cadmium	106-1	-0.34	-0.29	-0.27	-0.30		ppb
Cadmium	111-1	-0.02	-0.02	-0.02	-0.02		ppb
Calcium	43-1	-1.01	-0.23	-1.76	-1.00		ppb
Calcium	44-1	-1.46	-1.53	-1.63	-1.54		ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	-0.01	0.02	0.00	0.00	344.63	ppb
Cobalt	59-2	0.00	0.00	0.01	0.00	75.30	ppb
Copper	63-2	-0.02	-0.01	-0.02	-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				104		%
Holmium	165-2				101		%
Indium	115-1				102		%
Indium	115-2				99		%
Iron	54-2	0.18	-0.24	0.26	0.07	408.50	ppb
Iron	56-2	0.09	0.11	0.04	0.08	44.50	ppb
Iron	57-2	-0.17	-0.13	-0.06	-0.12		ppb
Krypton	83-1						cps
Lead	206-1	0.04	0.04	0.03	0.04	11.09	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : ICB01 Instrumnet Name : P8
Client Sample ID : ICB01 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:37:13 DataFile Name : 017CCBE.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	0.04	0.03	0.03	0.03	8.80	ppb
Lead	208-1	0.04	0.03	0.03	0.03	2.93	ppb
Lithium	6-1				102		%
Magnesium	24-2	-1.78	-1.59	-1.71	-1.69		ppb
Manganese	55-2	-0.04	-0.05	-0.06	-0.05		ppb
Molybdenum	94-1	0.07	0.05	0.05	0.06	16.71	ppb
Molybdenum	95-1	0.02	0.01	0.01	0.01	16.87	ppb
Molybdenum	96-1	0.02	0.01	0.02	0.02	18.39	ppb
Molybdenum	97-1	0.02	0.01	0.01	0.01	44.73	ppb
Molybdenum	98-1	0.01	0.01	0.02	0.01	34.92	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	0.01	0.03	-0.02	0.01	488.78	ppb
Phosphorus	31-2	-124.56	-127.42	-121.78	-124.59		ppb
Potassium	39-2	2.03	2.60	1.20	1.94	36.38	ppb
Rhodium	103-1				101		%
Rhodium	103-2				101		%
Scandium	45-1				103		%
Scandium	45-2				101		%
Selenium	82-1	0.17	0.18	0.17	0.18	2.78	ppb
Selenium	77-2	0.00	0.00	0.00	0.00	N/A	ppb
Selenium	78-2	-0.05	0.69	-0.43	0.07	817.23	ppb
Silicon	28-1	-0.30	-0.10	-0.32	-0.24		ppb
Silver	107-1	0.01	0.01	0.01	0.01	22.88	ppb
Silver	109-1	0.01	0.01	0.01	0.01	18.89	ppb
Sodium	23-2	15.82	13.48	13.20	14.17	10.17	ppb
Strontium	86-1	0.00	0.01	0.00	0.00	13005.94	ppb
Strontium	88-1	0.00	0.00	0.00	0.00		ppb
Sulfur	34-1	-573.56	-521.81	-635.55	-576.97		ppb
Terbium	159-1				103		%
Terbium	159-2				100		%
Thallium	203-1	0.01	0.01	0.01	0.01	15.31	ppb
Thallium	205-1	0.01	0.01	0.01	0.01	6.68	ppb
Tin	118-1	0.01	0.01	0.01	0.01	18.38	ppb
Titanium	47-1	0.02	0.00	0.01	0.01	74.39	ppb
Uranium	238-1	0.00	0.00	0.00	0.00	558.99	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : ICB01 Instrumnet Name : P8
Client Sample ID : ICB01 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:37:13 DataFile Name : 017CCBE.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				102		%
Yttrium	89-2				100		%
Zinc	66-2	0.03	-0.14	0.01	-0.03		ppb
Zirconium	90-1	0.03	0.02	0.03	0.03	8.33	ppb
Zirconium	91-1	0.02	0.02	0.03	0.02	25.09	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : ICSA01 Instrumnet Name : P8
Client Sample ID : ICSA01 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:40:37 DataFile Name : 018ICSA.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	92146.11	89719.62	91226.77	91030.83	1.35	ppb
Antimony	121-1	1.01	1.07	1.01	1.03	3.48	ppb
Arsenic	75-2	0.27	0.41	0.31	0.33	20.59	ppb
Barium	135-1	1.33	1.32	1.32	1.32	0.55	ppb
Barium	137-1	1.34	1.41	1.33	1.36	2.96	ppb
Beryllium	9-1	0.30	0.31	0.29	0.30	4.07	ppb
Bismuth	209-1				93		%
Bismuth	209-2				91		%
Bromine	81-1						cps
Cadmium	108-1	13.66	13.17	13.57	13.47	1.96	ppb
Cadmium	106-1	-0.40	-1.03	-1.33	-0.92		ppb
Cadmium	111-1	0.45	0.48	0.34	0.42	16.83	ppb
Calcium	43-1	94273.10	95245.81	97265.77	95594.89	1.60	ppb
Calcium	44-1	94144.40	95673.31	97280.70	95699.47	1.64	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	18.87	18.91	19.16	18.98	0.83	ppb
Cobalt	59-2	1.14	1.11	1.14	1.13	1.22	ppb
Copper	63-2	7.41	7.41	7.43	7.42	0.14	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				98		%
Indium	115-1				95		%
Indium	115-2				92		%
Iron	54-2	102657.22	98886.74	102293.19	101279.05	2.05	ppb
Iron	56-2	102344.28	99402.86	100814.31	100853.82	1.46	ppb
Iron	57-2	102006.61	98458.16	100547.86	100337.54	1.78	ppb
Krypton	83-1						cps
Lead	206-1	4.28	4.41	4.36	4.35	1.46	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : ICSA01 Instrumnet Name : P8
Client Sample ID : ICSA01 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:40:37 DataFile Name : 018ICSA.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	3.99	4.07	4.05	4.04	1.11	ppb
Lead	208-1	4.08	4.20	4.09	4.12	1.61	ppb
Lithium	6-1				97		%
Magnesium	24-2	95956.25	95964.47	96794.00	96238.24	0.50	ppb
Manganese	55-2	7.15	7.32	7.19	7.22	1.21	ppb
Molybdenum	94-1	1550.27	1516.88	1555.17	1540.78	1.35	ppb
Molybdenum	95-1	1894.84	1872.01	1909.05	1891.97	0.99	ppb
Molybdenum	96-1	1843.64	1832.83	1872.24	1849.57	1.10	ppb
Molybdenum	97-1	1887.65	1880.49	1905.46	1891.20	0.68	ppb
Molybdenum	98-1	1885.60	1872.00	1947.53	1901.71	2.12	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	5.14	5.12	5.14	5.13	0.21	ppb
Phosphorus	31-2	103257.77	103342.31	104007.46	103535.84	0.40	ppb
Potassium	39-2	99163.83	98755.34	98797.57	98905.58	0.23	ppb
Rhodium	103-1				91		%
Rhodium	103-2				91		%
Scandium	45-1				97		%
Scandium	45-2				96		%
Selenium	82-1	0.33	0.22	0.22	0.26	26.03	ppb
Selenium	77-2	0.00	0.60	0.62	0.41	86.62	ppb
Selenium	78-2	-0.77	-0.41	0.75	-0.14		ppb
Silicon	28-1	2.15	2.05	2.20	2.14	3.52	ppb
Silver	107-1	0.06	0.05	0.05	0.05	19.03	ppb
Silver	109-1	0.06	0.05	0.04	0.05	14.51	ppb
Sodium	23-2	100851.49	100741.05	100430.51	100674.35	0.22	ppb
Strontium	86-1	30.67	30.75	31.61	31.01	1.69	ppb
Strontium	88-1	33.09	32.99	33.43	33.17	0.70	ppb
Sulfur	34-1	96797.24	94160.77	96644.48	95867.50	1.54	ppb
Terbium	159-1				101		%
Terbium	159-2				98		%
Thallium	203-1	0.09	0.14	0.18	0.14	35.41	ppb
Thallium	205-1	0.09	0.14	0.18	0.14	35.81	ppb
Tin	118-1	0.22	0.21	0.19	0.20	7.87	ppb
Titanium	47-1	1930.35	1937.27	1976.51	1948.04	1.28	ppb
Uranium	238-1	0.02	0.02	0.01	0.02	4.72	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : ICSA01 Instrumnet Name : P8
Client Sample ID : ICSA01 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:40:37 DataFile Name : 018ICSA.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	0.14	0.12	0.15	0.14	11.26	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				100		%
Yttrium	89-2				97		%
Zinc	66-2	12.01	11.89	12.25	12.05	1.50	ppb
Zirconium	90-1	0.06	0.07	0.07	0.06	9.80	ppb
Zirconium	91-1	0.04	0.06	0.07	0.06	20.35	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : ICSAB01 Instrumnet Name : P8
Client Sample ID : ICSAB01 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:43:44 DataFile Name : 019ICSB.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	89424.96	91790.36	92848.01	91354.45	1.92	ppb
Antimony	121-1	19.37	19.85	19.73	19.65	1.26	ppb
Arsenic	75-2	20.07	20.94	20.94	20.65	2.44	ppb
Barium	135-1	19.54	20.17	20.00	19.90	1.63	ppb
Barium	137-1	20.21	20.46	20.16	20.28	0.78	ppb
Beryllium	9-1	21.26	21.37	21.78	21.47	1.28	ppb
Bismuth	209-1				93		%
Bismuth	209-2				91		%
Bromine	81-1						cps
Cadmium	108-1	28.94	28.93	28.58	28.82	0.70	ppb
Cadmium	106-1	13.48	14.59	14.47	14.18	4.29	ppb
Cadmium	111-1	18.31	18.89	18.90	18.70	1.81	ppb
Calcium	43-1	96937.63	94337.36	95621.32	95632.10	1.36	ppb
Calcium	44-1	96624.65	95505.67	96731.82	96287.38	0.71	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	37.93	37.85	38.26	38.01	0.57	ppb
Cobalt	59-2	20.41	20.49	20.70	20.53	0.74	ppb
Copper	63-2	26.35	26.81	27.19	26.78	1.57	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				98		%
Indium	115-1				96		%
Indium	115-2				92		%
Iron	54-2	99722.08	102540.27	102862.99	101708.44	1.70	ppb
Iron	56-2	101381.27	100709.38	102738.12	101609.59	1.02	ppb
Iron	57-2	98798.64	100939.36	100547.00	100095.00	1.14	ppb
Krypton	83-1						cps
Lead	206-1	25.04	24.88	25.32	25.08	0.89	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : ICSAB01 Instrumnet Name : P8
Client Sample ID : ICSAB01 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:43:44 DataFile Name : 019ICSB.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	24.57	24.76	24.97	24.77	0.80	ppb
Lead	208-1	24.42	24.63	24.97	24.67	1.11	ppb
Lithium	6-1				97		%
Magnesium	24-2	94112.23	95926.98	96015.93	95351.71	1.13	ppb
Manganese	55-2	25.88	26.19	26.33	26.13	0.87	ppb
Molybdenum	94-1	1581.23	1518.17	1517.16	1538.85	2.38	ppb
Molybdenum	95-1	1894.04	1824.92	1870.76	1863.24	1.89	ppb
Molybdenum	96-1	1867.64	1809.25	1860.21	1845.70	1.72	ppb
Molybdenum	97-1	1912.30	1915.84	1898.79	1908.98	0.47	ppb
Molybdenum	98-1	1913.93	1877.57	1881.46	1890.99	1.06	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	23.68	24.08	24.30	24.02	1.30	ppb
Phosphorus	31-2	102430.63	103801.90	104185.06	103472.53	0.89	ppb
Potassium	39-2	97341.76	97814.70	97715.63	97624.03	0.26	ppb
Rhodium	103-1				93		%
Rhodium	103-2				90		%
Scandium	45-1				98		%
Scandium	45-2				96		%
Selenium	82-1	21.59	20.42	20.73	20.92	2.91	ppb
Selenium	77-2	21.57	25.16	18.19	21.64	16.10	ppb
Selenium	78-2	20.47	19.77	22.58	20.94	6.99	ppb
Silicon	28-1	2.17	2.10	2.21	2.16	2.67	ppb
Silver	107-1	17.32	17.66	17.53	17.50	0.98	ppb
Silver	109-1	17.35	17.84	17.57	17.59	1.41	ppb
Sodium	23-2	98861.60	101075.03	102851.45	100929.36	1.98	ppb
Strontium	86-1	31.54	30.84	31.15	31.17	1.12	ppb
Strontium	88-1	33.20	31.90	32.73	32.61	2.01	ppb
Sulfur	34-1	97192.82	92157.30	96018.11	95122.74	2.77	ppb
Terbium	159-1				102		%
Terbium	159-2				98		%
Thallium	203-1	19.33	19.39	19.47	19.40	0.37	ppb
Thallium	205-1	19.03	19.51	19.63	19.39	1.64	ppb
Tin	118-1	0.21	0.21	0.20	0.21	3.69	ppb
Titanium	47-1	1942.03	1958.91	1985.24	1962.06	1.11	ppb
Uranium	238-1	0.03	0.03	0.03	0.03	6.05	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : ICSAB01 Instrumnet Name : P8
Client Sample ID : ICSAB01 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:43:44 DataFile Name : 019ICSB.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	19.30	19.40	19.50	19.40	0.51	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				100		%
Yttrium	89-2				95		%
Zinc	66-2	29.94	29.65	30.62	30.07	1.65	ppb
Zirconium	90-1	0.04	0.04	0.04	0.04	6.87	ppb
Zirconium	91-1	0.05	0.05	0.06	0.05	15.45	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : CCV01 Instrumnet Name : P8
Client Sample ID : CCV01 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:52:31 DataFile Name : 021CCV.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	51446.89	52067.27	51779.29	51764.49	0.60	ppb
Antimony	121-1	499.98	492.79	491.02	494.60	0.96	ppb
Arsenic	75-2	508.95	502.43	502.90	504.76	0.72	ppb
Barium	135-1	2512.00	2434.91	2491.18	2479.36	1.61	ppb
Barium	137-1	2429.48	2467.10	2497.32	2464.63	1.38	ppb
Beryllium	9-1	525.36	521.35	528.40	525.04	0.67	ppb
Bismuth	209-1				89		%
Bismuth	209-2				88		%
Bromine	81-1						cps
Cadmium	108-1	480.41	486.11	488.67	485.06	0.87	ppb
Cadmium	106-1	486.74	486.59	493.23	488.85	0.78	ppb
Cadmium	111-1	479.91	490.06	489.75	486.57	1.19	ppb
Calcium	43-1	250642.50	253239.30	258460.97	254114.26	1.57	ppb
Calcium	44-1	247543.49	254130.99	252753.00	251475.82	1.38	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	515.43	511.77	512.06	513.09	0.40	ppb
Cobalt	59-2	493.11	496.79	499.87	496.59	0.68	ppb
Copper	63-2	4792.43	4826.65	4835.16	4818.08	0.47	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				96		%
Indium	115-1				90		%
Indium	115-2				89		%
Iron	54-2	133265.44	130435.28	131966.34	131889.02	1.07	ppb
Iron	56-2	131168.73	131505.60	130129.73	130934.69	0.55	ppb
Iron	57-2	128831.89	130144.01	132349.47	130441.79	1.36	ppb
Krypton	83-1						cps
Lead	206-1	2613.08	2562.22	2573.49	2582.93	1.03	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : CCV01 Instrumnet Name : P8
Client Sample ID : CCV01 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:52:31 DataFile Name : 021CCV.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	2709.55	2570.45	2588.66	2622.89	2.88	ppb
Lead	208-1	2670.57	2572.89	2593.87	2612.45	1.97	ppb
Lithium	6-1				93		%
Magnesium	24-2	259318.77	260733.76	261373.41	260475.31	0.40	ppb
Manganese	55-2	5032.00	5034.01	5024.37	5030.12	0.10	ppb
Molybdenum	94-1	4888.50	5122.65	5015.95	5009.04	2.34	ppb
Molybdenum	95-1	4896.13	5076.58	5050.84	5007.85	1.95	ppb
Molybdenum	96-1	4954.73	5014.45	4994.08	4987.75	0.61	ppb
Molybdenum	97-1	5001.77	5061.62	5019.80	5027.73	0.61	ppb
Molybdenum	98-1	4879.89	5138.44	5028.18	5015.50	2.59	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	459.01	459.83	457.46	458.76	0.26	ppb
Phosphorus	31-2	10268.48	10421.06	10492.71	10394.08	1.10	ppb
Potassium	39-2	128244.55	129907.07	128965.46	129039.03	0.65	ppb
Rhodium	103-1				87		%
Rhodium	103-2				88		%
Scandium	45-1				95		%
Scandium	45-2				96		%
Selenium	82-1	475.98	483.32	484.53	481.28	0.96	ppb
Selenium	77-2	508.89	480.57	499.35	496.27	2.90	ppb
Selenium	78-2	512.96	492.24	493.94	499.71	2.30	ppb
Silicon	28-1	408.12	414.15	414.90	412.39	0.90	ppb
Silver	107-1	483.78	478.84	482.06	481.56	0.52	ppb
Silver	109-1	482.04	470.63	472.46	475.04	1.29	ppb
Sodium	23-2	256979.69	260179.54	265781.02	260980.09	1.71	ppb
Strontium	86-1	499.76	510.54	512.31	507.54	1.34	ppb
Strontium	88-1	503.58	500.37	504.37	502.77	0.42	ppb
Sulfur	34-1	10050.78	9842.36	9957.05	9950.07	1.05	ppb
Terbium	159-1				100		%
Terbium	159-2				96		%
Thallium	203-1	528.65	516.21	512.13	519.00	1.66	ppb
Thallium	205-1	521.44	518.30	515.62	518.46	0.56	ppb
Tin	118-1	499.73	489.50	496.56	495.26	1.06	ppb
Titanium	47-1	5068.07	4956.26	5125.38	5049.90	1.70	ppb
Uranium	238-1	545.81	526.72	541.68	538.07	1.87	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : CCV01 Instrumnet Name : P8
Client Sample ID : CCV01 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:52:31 DataFile Name : 021CCV.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	512.00	512.16	517.01	513.73	0.55	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	4997.10	4969.99	4930.93	4966.01	0.67	ppb
Zirconium	90-1	487.16	511.42	507.33	501.97	2.59	ppb
Zirconium	91-1	491.93	509.19	513.46	504.86	2.26	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : CCB01 Instrumnet Name : P8
Client Sample ID : CCB01 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:58:09 DataFile Name : 022CCBE.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	0.04	-0.40	-0.44	-0.27		ppb
Antimony	121-1	0.07	0.05	0.05	0.06	18.43	ppb
Arsenic	75-2	-0.01	0.01	-0.01	0.00		ppb
Barium	135-1	0.02	0.01	0.02	0.02	18.44	ppb
Barium	137-1	0.02	0.02	0.02	0.02	19.72	ppb
Beryllium	9-1	0.05	0.04	0.03	0.04	18.24	ppb
Bismuth	209-1				102		%
Bismuth	209-2				100		%
Bromine	81-1						cps
Cadmium	108-1	-0.04	-0.02	-0.01	-0.02		ppb
Cadmium	106-1	-0.93	-0.48	-0.57	-0.66		ppb
Cadmium	111-1	-0.06	-0.03	-0.04	-0.04		ppb
Calcium	43-1	0.71	-0.42	0.06	0.12	491.56	ppb
Calcium	44-1	0.59	-0.04	0.35	0.30	105.51	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	0.01	0.01	0.00	0.01	71.14	ppb
Cobalt	59-2	0.01	0.01	0.01	0.01	40.13	ppb
Copper	63-2	0.04	0.06	0.05	0.05	14.14	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				100		%
Indium	115-2				98		%
Iron	54-2	1.32	0.40	0.81	0.85	54.99	ppb
Iron	56-2	1.20	0.96	1.13	1.10	11.51	ppb
Iron	57-2	1.30	0.86	1.12	1.09	19.94	ppb
Krypton	83-1						cps
Lead	206-1	0.07	0.08	0.07	0.07	10.39	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : CCB01 Instrumnet Name : P8
Client Sample ID : CCB01 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:58:09 DataFile Name : 022CCBE.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	0.08	0.08	0.07	0.08	5.70	ppb
Lead	208-1	0.08	0.08	0.07	0.07	5.97	ppb
Lithium	6-1				101		%
Magnesium	24-2	-0.10	-0.05	0.00	-0.05		ppb
Manganese	55-2	0.01	0.00	0.00	0.00	237.97	ppb
Molybdenum	94-1	0.12	0.12	0.11	0.12	3.93	ppb
Molybdenum	95-1	0.07	0.06	0.06	0.07	10.18	ppb
Molybdenum	96-1	0.07	0.07	0.06	0.07	3.76	ppb
Molybdenum	97-1	0.08	0.05	0.05	0.06	25.88	ppb
Molybdenum	98-1	0.06	0.06	0.06	0.06	5.56	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	0.00	-0.01	0.00	0.00		ppb
Phosphorus	31-2	-118.17	-122.21	-136.88	-125.75		ppb
Potassium	39-2	11.00	12.22	8.77	10.67	16.41	ppb
Rhodium	103-1				100		%
Rhodium	103-2				101		%
Scandium	45-1				100		%
Scandium	45-2				98		%
Selenium	82-1	-0.15	0.25	0.12	0.07	281.40	ppb
Selenium	77-2	0.00	0.00	0.00	0.00	N/A	ppb
Selenium	78-2	-0.96	-0.59	-0.07	-0.54		ppb
Silicon	28-1	-0.35	-0.29	-0.13	-0.26		ppb
Silver	107-1	0.02	0.02	0.01	0.02	9.82	ppb
Silver	109-1	0.02	0.02	0.01	0.02	11.32	ppb
Sodium	23-2	28.74	26.87	26.44	27.35	4.46	ppb
Strontium	86-1	0.00	0.01	0.01	0.01	73.21	ppb
Strontium	88-1	0.00	0.00	0.00	0.00	5.67	ppb
Sulfur	34-1	-330.40	-357.69	-152.86	-280.32		ppb
Terbium	159-1				102		%
Terbium	159-2				100		%
Thallium	203-1	0.03	0.03	0.03	0.03	7.65	ppb
Thallium	205-1	0.03	0.03	0.03	0.03	5.82	ppb
Tin	118-1	0.01	0.00	0.00	0.00	234.47	ppb
Titanium	47-1	0.04	0.06	0.06	0.05	24.34	ppb
Uranium	238-1	0.00	0.00	0.00	0.00	16.84	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : CCB01 Instrumnet Name : P8
Client Sample ID : CCB01 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:58:09 DataFile Name : 022CCBE.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	0.01	0.00	0.00	0.00	145.04	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				100		%
Yttrium	89-2				99		%
Zinc	66-2	0.10	-0.01	0.07	0.05	108.88	ppb
Zirconium	90-1	0.04	0.05	0.04	0.04	11.28	ppb
Zirconium	91-1	0.04	0.04	0.04	0.04	10.91	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : CRI Instrumnet Name : P8
Client Sample ID : CRI Dilution Factor : 1
Date & Time Acquired : 2025-05-23 15:01:44 DataFile Name : 023LLCC.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	20.37	20.27	21.05	20.56	2.07	ppb
Antimony	121-1	1.92	1.90	1.97	1.93	1.85	ppb
Arsenic	75-2	0.86	0.93	1.10	0.96	12.54	ppb
Barium	135-1	8.99	9.17	9.54	9.23	3.03	ppb
Barium	137-1	9.12	9.18	9.60	9.30	2.82	ppb
Beryllium	9-1	1.12	1.11	1.07	1.10	2.35	ppb
Bismuth	209-1				102		%
Bismuth	209-2				100		%
Bromine	81-1						cps
Cadmium	108-1	0.87	0.93	0.72	0.84	12.70	ppb
Cadmium	106-1	0.47	-0.23	0.53	0.26	163.73	ppb
Cadmium	111-1	0.83	0.81	0.88	0.84	4.61	ppb
Calcium	43-1	472.72	483.44	478.92	478.36	1.13	ppb
Calcium	44-1	469.67	479.32	471.89	473.63	1.07	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	1.91	2.00	1.93	1.95	2.54	ppb
Cobalt	59-2	1.02	1.06	1.03	1.04	2.09	ppb
Copper	63-2	2.37	2.42	2.37	2.39	1.08	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				101		%
Holmium	165-2				100		%
Indium	115-1				101		%
Indium	115-2				98		%
Iron	54-2	53.22	54.71	53.90	53.94	1.38	ppb
Iron	56-2	52.09	52.51	52.19	52.26	0.42	ppb
Iron	57-2	50.96	53.05	53.69	52.57	2.72	ppb
Krypton	83-1						cps
Lead	206-1	0.77	0.83	0.77	0.79	4.06	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : CRI Instrumnet Name : P8
Client Sample ID : CRI Dilution Factor : 1
Date & Time Acquired : 2025-05-23 15:01:44 DataFile Name : 023LLCC.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	0.82	0.84	0.83	0.83	0.80	ppb
Lead	208-1	0.79	0.83	0.81	0.81	2.11	ppb
Lithium	6-1				101		%
Magnesium	24-2	522.21	527.60	523.17	524.33	0.55	ppb
Manganese	55-2	1.09	0.96	1.09	1.05	7.38	ppb
Molybdenum	94-1	5.47	5.79	5.75	5.67	3.05	ppb
Molybdenum	95-1	4.59	4.71	4.80	4.70	2.29	ppb
Molybdenum	96-1	4.62	4.79	4.79	4.73	2.11	ppb
Molybdenum	97-1	4.54	4.62	4.77	4.64	2.48	ppb
Molybdenum	98-1	4.56	4.68	4.71	4.65	1.68	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	1.11	1.20	1.16	1.15	3.95	ppb
Phosphorus	31-2	138.79	123.12	128.23	130.05	6.14	ppb
Potassium	39-2	484.94	497.40	497.91	493.42	1.49	ppb
Rhodium	103-1				99		%
Rhodium	103-2				100		%
Scandium	45-1				99		%
Scandium	45-2				99		%
Selenium	82-1	5.15	5.11	5.02	5.09	1.36	ppb
Selenium	77-2	7.68	3.62	2.41	4.57	60.34	ppb
Selenium	78-2	4.80	7.51	5.30	5.87	24.58	ppb
Silicon	28-1	0.26	0.30	0.24	0.27	10.07	ppb
Silver	107-1	0.98	1.01	1.02	1.00	2.20	ppb
Silver	109-1	0.98	1.01	1.04	1.01	3.13	ppb
Sodium	23-2	520.43	528.23	530.50	526.39	1.00	ppb
Strontium	86-1	0.89	0.95	0.95	0.93	3.59	ppb
Strontium	88-1	0.91	0.95	0.94	0.94	2.18	ppb
Sulfur	34-1	16.18	17.20	-27.14	2.08	1216.85	ppb
Terbium	159-1				102		%
Terbium	159-2				99		%
Thallium	203-1	0.94	0.92	0.92	0.93	1.01	ppb
Thallium	205-1	0.92	0.96	0.91	0.93	3.03	ppb
Tin	118-1	4.62	4.69	4.85	4.72	2.50	ppb
Titanium	47-1	4.86	4.93	4.99	4.93	1.25	ppb
Uranium	238-1	0.87	0.88	0.86	0.87	1.51	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : CRI Instrumnet Name : P8
Client Sample ID : CRI Dilution Factor : 1
Date & Time Acquired : 2025-05-23 15:01:44 DataFile Name : 023LLCC.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	4.91	4.75	4.90	4.86	1.83	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	5.63	5.81	5.80	5.75	1.74	ppb
Zirconium	90-1	0.98	1.06	1.06	1.03	4.14	ppb
Zirconium	91-1	1.02	1.01	1.00	1.01	0.59	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : PB168134BL Instrumnet Name : P8
Client Sample ID : PB168134BL Dilution Factor : 1
Date & Time Acquired : 2025-05-23 15:05:08 DataFile Name : 024CCBE.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	-0.17	-0.22	-0.28	-0.22		ppb
Antimony	121-1	0.01	0.01	0.02	0.01	22.19	ppb
Arsenic	75-2	0.00	0.00	0.00	0.00		ppb
Barium	135-1	0.00	0.00	0.01	0.01	120.53	ppb
Barium	137-1	0.01	0.01	0.01	0.01	28.96	ppb
Beryllium	9-1	0.02	0.02	0.02	0.02	20.52	ppb
Bismuth	209-1				102		%
Bismuth	209-2				99		%
Bromine	81-1						cps
Cadmium	108-1	-0.06	0.00	-0.02	-0.02		ppb
Cadmium	106-1	-0.64	-0.47	-0.73	-0.62		ppb
Cadmium	111-1	-0.05	-0.04	-0.05	-0.05		ppb
Calcium	43-1	1.85	1.76	2.35	1.98	16.09	ppb
Calcium	44-1	0.72	-0.08	0.42	0.35	114.42	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	0.00	0.00	0.02	0.01	222.33	ppb
Cobalt	59-2	0.00	0.00	0.00	0.00	83.32	ppb
Copper	63-2	0.00	-0.01	0.01	0.00		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				101		%
Holmium	165-2				100		%
Indium	115-1				100		%
Indium	115-2				99		%
Iron	54-2	0.79	0.41	0.43	0.54	39.17	ppb
Iron	56-2	0.44	0.41	0.40	0.42	5.40	ppb
Iron	57-2	0.64	0.63	0.41	0.56	22.66	ppb
Krypton	83-1						cps
Lead	206-1	0.05	0.04	0.05	0.05	12.64	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : PB168134BL Instrumnet Name : P8
Client Sample ID : PB168134BL Dilution Factor : 1
Date & Time Acquired : 2025-05-23 15:05:08 DataFile Name : 024CCBE.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	0.05	0.05	0.05	0.05	3.68	ppb
Lead	208-1	0.05	0.05	0.05	0.05	5.59	ppb
Lithium	6-1				100		%
Magnesium	24-2	-1.23	-1.46	-1.41	-1.37		ppb
Manganese	55-2	-0.02	-0.05	0.03	-0.01		ppb
Molybdenum	94-1	0.05	0.06	0.05	0.05	14.39	ppb
Molybdenum	95-1	0.02	0.02	0.01	0.02	12.51	ppb
Molybdenum	96-1	0.02	0.01	0.02	0.01	19.07	ppb
Molybdenum	97-1	0.01	0.01	0.01	0.01	38.99	ppb
Molybdenum	98-1	0.01	0.01	0.01	0.01	11.37	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	-0.02	0.01	-0.01	-0.01		ppb
Phosphorus	31-2	-126.26	-117.55	-114.79	-119.53		ppb
Potassium	39-2	5.49	2.79	3.57	3.95	35.17	ppb
Rhodium	103-1				100		%
Rhodium	103-2				101		%
Scandium	45-1				99		%
Scandium	45-2				100		%
Selenium	82-1	-0.01	0.24	0.17	0.13	98.20	ppb
Selenium	77-2	0.00	0.00	0.00	0.00	N/A	ppb
Selenium	78-2	-0.43	-0.79	-0.59	-0.60		ppb
Silicon	28-1	-0.30	-0.27	-0.22	-0.26		ppb
Silver	107-1	0.01	0.01	0.01	0.01	8.10	ppb
Silver	109-1	0.01	0.01	0.01	0.01	18.16	ppb
Sodium	23-2	19.18	18.70	18.30	18.73	2.33	ppb
Strontium	86-1	-0.01	0.00	0.01	0.00	323.84	ppb
Strontium	88-1	0.00	0.00	0.00	0.00	8.36	ppb
Sulfur	34-1	-317.54	-463.39	-348.67	-376.53		ppb
Terbium	159-1				101		%
Terbium	159-2				101		%
Thallium	203-1	0.01	0.01	0.01	0.01	8.76	ppb
Thallium	205-1	0.02	0.01	0.01	0.01	14.20	ppb
Tin	118-1	0.02	0.02	0.03	0.02	23.97	ppb
Titanium	47-1	0.02	0.02	0.02	0.02	21.37	ppb
Uranium	238-1	0.00	0.00	0.00	0.00	167.25	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : PB168134BL Instrumnet Name : P8
Client Sample ID : PB168134BL Dilution Factor : 1
Date & Time Acquired : 2025-05-23 15:05:08 DataFile Name : 024CCBE.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				101		%
Yttrium	89-2				100		%
Zinc	66-2	0.04	0.09	0.00	0.04	108.86	ppb
Zirconium	90-1	0.03	0.02	0.02	0.02	13.07	ppb
Zirconium	91-1	0.02	0.02	0.02	0.02	8.15	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : PB168134BS Instrumnet Name : P8
Client Sample ID : PB168134BS Dilution Factor : 1
Date & Time Acquired : 2025-05-23 15:08:29 DataFile Name : 025LCSS.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	10068.20	10215.21	10057.85	10113.76	0.87	ppb
Antimony	121-1	495.64	510.76	488.94	498.45	2.24	ppb
Arsenic	75-2	490.88	498.27	496.82	495.32	0.79	ppb
Barium	135-1	2437.05	2519.77	2469.23	2475.35	1.68	ppb
Barium	137-1	2487.40	2529.99	2507.70	2508.37	0.85	ppb
Beryllium	9-1	498.15	499.60	488.83	495.53	1.18	ppb
Bismuth	209-1				96		%
Bismuth	209-2				94		%
Bromine	81-1						cps
Cadmium	108-1	497.61	496.30	513.17	502.36	1.87	ppb
Cadmium	106-1	502.08	510.34	508.65	507.02	0.86	ppb
Cadmium	111-1	509.47	515.16	526.05	516.89	1.63	ppb
Calcium	43-1	47844.15	50377.65	49397.85	49206.55	2.60	ppb
Calcium	44-1	48764.36	49465.80	49611.05	49280.40	0.92	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	509.07	513.88	507.18	510.05	0.68	ppb
Cobalt	59-2	504.70	516.67	504.15	508.50	1.39	ppb
Copper	63-2	5042.51	5094.28	5114.68	5083.82	0.73	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				96		%
Indium	115-2				93		%
Iron	54-2	26735.27	26832.36	26493.13	26686.92	0.65	ppb
Iron	56-2	25932.88	26419.18	25599.31	25983.79	1.59	ppb
Iron	57-2	26430.86	26595.50	26214.87	26413.74	0.72	ppb
Krypton	83-1						cps
Lead	206-1	2419.08	2555.63	2515.59	2496.76	2.81	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : PB168134BS Instrumnet Name : P8
Client Sample ID : PB168134BS Dilution Factor : 1
Date & Time Acquired : 2025-05-23 15:08:29 DataFile Name : 025LCSS.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	2411.34	2568.67	2490.94	2490.32	3.16	ppb
Lead	208-1	2415.11	2547.31	2471.74	2478.05	2.68	ppb
Lithium	6-1				99		%
Magnesium	24-2	51657.85	52008.39	51881.92	51849.39	0.34	ppb
Manganese	55-2	5108.84	5091.97	5021.16	5073.99	0.92	ppb
Molybdenum	94-1	4935.66	4910.42	5124.44	4990.17	2.34	ppb
Molybdenum	95-1	4781.29	4977.02	5162.23	4973.51	3.83	ppb
Molybdenum	96-1	4754.22	4972.09	5057.52	4927.94	3.17	ppb
Molybdenum	97-1	4795.55	5030.29	4923.29	4916.38	2.39	ppb
Molybdenum	98-1	4796.74	4969.86	5035.12	4933.91	2.50	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	469.60	475.19	477.13	473.97	0.82	ppb
Phosphorus	31-2	9880.25	10144.17	10062.60	10029.01	1.35	ppb
Potassium	39-2	25840.80	25556.38	25404.25	25600.48	0.87	ppb
Rhodium	103-1				93		%
Rhodium	103-2				94		%
Scandium	45-1				98		%
Scandium	45-2				98		%
Selenium	82-1	483.15	493.01	509.10	495.09	2.64	ppb
Selenium	77-2	502.42	486.32	467.64	485.46	3.58	ppb
Selenium	78-2	491.19	517.44	512.29	506.98	2.74	ppb
Silicon	28-1	498.18	497.11	498.81	498.03	0.17	ppb
Silver	107-1	497.63	506.52	518.72	507.62	2.09	ppb
Silver	109-1	494.39	522.94	507.02	508.12	2.82	ppb
Sodium	23-2	51107.33	51631.33	51714.47	51484.38	0.64	ppb
Strontium	86-1	490.72	495.98	494.23	493.64	0.54	ppb
Strontium	88-1	480.72	497.77	494.26	490.92	1.83	ppb
Sulfur	34-1	9522.37	9589.82	9559.73	9557.31	0.35	ppb
Terbium	159-1				100		%
Terbium	159-2				99		%
Thallium	203-1	478.27	504.08	491.41	491.25	2.63	ppb
Thallium	205-1	483.82	504.69	487.06	491.85	2.28	ppb
Tin	118-1	497.72	515.11	489.25	500.69	2.63	ppb
Titanium	47-1	4849.41	4905.75	4929.62	4894.93	0.84	ppb
Uranium	238-1	478.26	492.94	487.58	486.26	1.53	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : PB168134BS Instrumnet Name : P8
Client Sample ID : PB168134BS Dilution Factor : 1
Date & Time Acquired : 2025-05-23 15:08:29 DataFile Name : 025LCSS.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	516.03	507.89	504.34	509.42	1.18	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				99		%
Yttrium	89-2				98		%
Zinc	66-2	4994.58	5089.48	5113.64	5065.90	1.24	ppb
Zirconium	90-1	495.83	497.35	513.73	502.30	1.98	ppb
Zirconium	91-1	485.29	497.37	523.43	502.03	3.88	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : Q1872-10 Instrumnet Name : P8
Client Sample ID : HW0425-PT-MET-SOIL Dilution Factor : 1
Date & Time Acquired : 2025-05-23 15:13:58 DataFile Name : 027AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	125118.37	126715.83	118079.76	123304.66	3.73	ppb
Antimony	121-1	1248.93	1251.55	1276.10	1258.86	1.19	ppb
Arsenic	75-2	1586.30	1610.71	1528.80	1575.27	2.67	ppb
Barium	135-1	8329.52	8326.46	8327.56	8327.85	0.02	ppb
Barium	137-1	8213.36	8279.78	8289.75	8260.97	0.50	ppb
Beryllium	9-1	730.90	747.08	747.79	741.93	1.29	ppb
Bismuth	209-1				95		%
Bismuth	209-2				92		%
Bromine	81-1						cps
Cadmium	108-1	2300.99	2303.95	2313.97	2306.30	0.30	ppb
Cadmium	106-1	2220.42	2218.49	2237.51	2225.47	0.47	ppb
Cadmium	111-1	2791.04	2794.52	2782.73	2789.43	0.22	ppb
Calcium	43-1	176236.10	176998.67	174728.68	175987.82	0.66	ppb
Calcium	44-1	171535.16	176165.86	175568.24	174423.09	1.44	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	2102.93	2114.58	2007.99	2075.17	2.82	ppb
Cobalt	59-2	775.20	769.97	734.93	760.04	2.88	ppb
Copper	63-2	3026.80	3011.27	2917.81	2985.29	1.97	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				101		%
Indium	115-1				94		%
Indium	115-2				89		%
Iron	54-2	124701.95	125938.04	119558.58	123399.52	2.74	ppb
Iron	56-2	122863.86	121714.80	118170.53	120916.40	2.02	ppb
Iron	57-2	120817.52	121152.66	116251.47	119407.21	2.29	ppb
Krypton	83-1						cps
Lead	206-1	1335.45	1306.27	1337.03	1326.25	1.31	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : Q1872-10 Instrumnet Name : P8
Client Sample ID : HW0425-PT-MET-SOIL Dilution Factor : 1
Date & Time Acquired : 2025-05-23 15:13:58 DataFile Name : 027AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	1323.75	1319.58	1311.00	1318.11	0.49	ppb
Lead	208-1	1310.88	1315.24	1317.04	1314.39	0.24	ppb
Lithium	6-1				218		%
Magnesium	24-2	176252.66	175809.97	165419.03	172493.89	3.55	ppb
Manganese	55-2	11449.38	11308.43	10740.12	11165.98	3.36	ppb
Molybdenum	94-1	368.02	388.69	394.35	383.68	3.61	ppb
Molybdenum	95-1	282.44	286.15	288.45	285.68	1.06	ppb
Molybdenum	96-1	297.34	294.26	303.57	298.39	1.59	ppb
Molybdenum	97-1	282.62	289.47	293.80	288.63	1.95	ppb
Molybdenum	98-1	277.55	289.74	286.33	284.54	2.21	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	2180.77	2185.41	2108.59	2158.26	2.00	ppb
Phosphorus	31-2	6172.46	6319.59	5995.47	6162.51	2.63	ppb
Potassium	39-2	106387.12	105453.67	101129.67	104323.49	2.69	ppb
Rhodium	103-1				93		%
Rhodium	103-2				93		%
Scandium	45-1				119		%
Scandium	45-2				117		%
Selenium	82-1	1279.18	1323.25	1338.80	1313.74	2.35	ppb
Selenium	77-2	1485.47	1494.57	1435.77	1471.93	2.15	ppb
Selenium	78-2	1404.42	1418.77	1325.01	1382.74	3.65	ppb
Silicon	28-1	78.11	79.57	74.79	77.49	3.16	ppb
Silver	107-1	289.84	284.64	285.81	286.76	0.95	ppb
Silver	109-1	285.02	280.09	281.56	282.22	0.90	ppb
Sodium	23-2	21609.26	21685.09	20836.63	21377.00	2.20	ppb
Strontium	86-1	2464.65	2484.28	2548.34	2499.09	1.75	ppb
Strontium	88-1	2428.95	2508.38	2468.84	2468.72	1.61	ppb
Sulfur	34-1	2761.07	2870.72	2665.71	2765.83	3.71	ppb
Terbium	159-1				106		%
Terbium	159-2				101		%
Thallium	203-1	2800.13	2830.52	2834.63	2821.76	0.67	ppb
Thallium	205-1	2736.10	2816.00	2858.87	2803.65	2.22	ppb
Tin	118-1	1186.84	1224.20	1212.40	1207.81	1.58	ppb
Titanium	47-1	3896.68	3905.83	3836.07	3879.53	0.98	ppb
Uranium	238-1	946.34	960.80	947.41	951.51	0.85	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : Q1872-10 Instrumnet Name : P8
Client Sample ID : HW0425-PT-MET-SOIL Dilution Factor : 1
Date & Time Acquired : 2025-05-23 15:13:58 DataFile Name : 027AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	1095.16	1113.76	1058.36	1089.10	2.59	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				129		%
Yttrium	89-2				124		%
Zinc	66-2	4460.60	4494.17	4290.28	4415.02	2.48	ppb
Zirconium	90-1	83.69	84.04	84.95	84.23	0.77	ppb
Zirconium	91-1	77.90	79.68	81.29	79.62	2.13	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : Q1872-10DLX5 Instrumnet Name : P8
Client Sample ID : HW0425-PT-MET-SOILD Dilution Factor : 5
Date & Time Acquired : 2025-05-23 15:19:37 DataFile Name : 029AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	29840.09	33299.35	30111.43	31083.62	6.19	ppb
Antimony	121-1	260.85	262.41	251.17	258.15	2.36	ppb
Arsenic	75-2	383.07	421.82	380.78	395.22	5.84	ppb
Barium	135-1	1744.41	1740.29	1673.19	1719.30	2.33	ppb
Barium	137-1	1714.70	1726.75	1641.02	1694.16	2.74	ppb
Beryllium	9-1	271.05	276.03	267.31	271.46	1.61	ppb
Bismuth	209-1				99		%
Bismuth	209-2				92		%
Bromine	81-1						cps
Cadmium	108-1	489.92	491.29	481.53	487.58	1.08	ppb
Cadmium	106-1	473.99	474.87	462.18	470.35	1.51	ppb
Cadmium	111-1	603.78	603.27	587.54	598.20	1.54	ppb
Calcium	43-1	40931.70	39643.75	40839.83	40471.76	1.78	ppb
Calcium	44-1	40358.60	40729.37	39096.17	40061.38	2.14	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	510.61	555.24	519.79	528.55	4.46	ppb
Cobalt	59-2	183.97	207.01	192.96	194.65	5.97	ppb
Copper	63-2	748.91	825.61	760.73	778.42	5.30	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				95		%
Indium	115-1				98		%
Indium	115-2				89		%
Iron	54-2	29770.50	32953.61	30278.68	31000.93	5.52	ppb
Iron	56-2	29764.87	32718.28	29949.83	30810.99	5.37	ppb
Iron	57-2	29308.06	32462.30	30081.38	30617.25	5.37	ppb
Krypton	83-1						cps
Lead	206-1	273.36	279.10	265.30	272.59	2.54	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : Q1872-10DLX5 Instrumnet Name : P8
Client Sample ID : HW0425-PT-MET-SOILD Dilution Factor : 5
Date & Time Acquired : 2025-05-23 15:19:37 DataFile Name : 029AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	271.31	279.20	261.39	270.64	3.30	ppb
Lead	208-1	271.08	274.98	262.91	269.66	2.29	ppb
Lithium	6-1				128		%
Magnesium	24-2	40825.90	45396.29	41380.59	42534.26	5.86	ppb
Manganese	55-2	2700.14	3054.98	2790.57	2848.57	6.47	ppb
Molybdenum	94-1	89.14	91.23	88.03	89.47	1.82	ppb
Molybdenum	95-1	66.14	67.47	64.15	65.92	2.53	ppb
Molybdenum	96-1	68.18	69.68	67.11	68.32	1.89	ppb
Molybdenum	97-1	66.74	68.46	64.98	66.73	2.60	ppb
Molybdenum	98-1	65.41	67.42	64.60	65.81	2.21	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	505.14	566.08	515.87	529.03	6.15	ppb
Phosphorus	31-2	1383.88	1632.21	1358.27	1458.12	10.38	ppb
Potassium	39-2	24747.86	27493.13	25096.84	25779.28	5.80	ppb
Rhodium	103-1				97		%
Rhodium	103-2				90		%
Scandium	45-1				105		%
Scandium	45-2				96		%
Selenium	82-1	319.97	330.12	316.15	322.08	2.24	ppb
Selenium	77-2	350.28	367.78	349.61	355.89	2.89	ppb
Selenium	78-2	349.25	368.93	338.85	352.35	4.34	ppb
Silicon	28-1	16.65	17.37	15.80	16.61	4.73	ppb
Silver	107-1	62.49	62.54	60.90	61.98	1.50	ppb
Silver	109-1	57.88	57.89	60.96	58.91	3.02	ppb
Sodium	23-2	5116.14	5536.40	5216.12	5289.55	4.15	ppb
Strontium	86-1	605.27	619.74	591.77	605.59	2.31	ppb
Strontium	88-1	613.16	612.96	582.69	602.94	2.91	ppb
Sulfur	34-1	3.46	4.55	-189.15	-60.38		ppb
Terbium	159-1				105		%
Terbium	159-2				94		%
Thallium	203-1	567.29	595.82	554.57	572.56	3.69	ppb
Thallium	205-1	567.30	581.91	553.28	567.49	2.52	ppb
Tin	118-1	257.80	253.26	242.61	251.22	3.10	ppb
Titanium	47-1	877.23	901.07	870.55	882.95	1.82	ppb
Uranium	238-1	191.51	192.62	184.08	189.40	2.45	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : Q1872-10DLX5 Instrumnet Name : P8
Client Sample ID : HW0425-PT-MET-SOILD Dilution Factor : 5
Date & Time Acquired : 2025-05-23 15:19:37 DataFile Name : 029AREF.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	248.71	274.10	254.23	259.01	5.16	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				107		%
Yttrium	89-2				99		%
Zinc	66-2	1041.98	1161.42	1059.22	1087.54	5.94	ppb
Zirconium	90-1	18.99	19.51	18.65	19.05	2.27	ppb
Zirconium	91-1	19.03	19.52	18.75	19.10	2.04	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : CCV02 Instrumnet Name : P8
Client Sample ID : CCV02 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 15:49:15 DataFile Name : 032CCV.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	51351.50	53153.83	51298.07	51934.47	2.03	ppb
Antimony	121-1	494.94	512.19	494.02	500.38	2.05	ppb
Arsenic	75-2	513.27	511.96	504.34	509.86	0.95	ppb
Barium	135-1	2473.09	2614.42	2457.83	2515.11	3.43	ppb
Barium	137-1	2473.73	2614.72	2476.36	2521.60	3.20	ppb
Beryllium	9-1	537.30	521.66	529.67	529.54	1.48	ppb
Bismuth	209-1				86		%
Bismuth	209-2				84		%
Bromine	81-1						cps
Cadmium	108-1	484.10	499.07	482.32	488.50	1.88	ppb
Cadmium	106-1	484.28	504.81	486.82	491.97	2.27	ppb
Cadmium	111-1	485.09	511.90	486.84	494.61	3.03	ppb
Calcium	43-1	257247.43	246835.30	256107.55	253396.76	2.25	ppb
Calcium	44-1	258072.52	250191.89	254625.30	254296.57	1.55	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	511.19	510.85	509.95	510.66	0.12	ppb
Cobalt	59-2	498.57	508.90	487.53	498.33	2.15	ppb
Copper	63-2	4870.35	4998.11	4868.60	4912.35	1.51	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				94		%
Holmium	165-2				92		%
Indium	115-1				88		%
Indium	115-2				84		%
Iron	54-2	130238.28	135698.91	131133.73	132356.97	2.21	ppb
Iron	56-2	129778.37	132365.20	129538.22	130560.59	1.20	ppb
Iron	57-2	129535.15	131950.54	128875.99	130120.56	1.24	ppb
Krypton	83-1						cps
Lead	206-1	2553.15	2610.79	2580.19	2581.37	1.12	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : CCV02 Instrumnet Name : P8
Client Sample ID : CCV02 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 15:49:15 DataFile Name : 032CCV.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	2624.43	2582.54	2553.33	2586.76	1.38	ppb
Lead	208-1	2603.77	2574.80	2565.21	2581.26	0.78	ppb
Lithium	6-1				90		%
Magnesium	24-2	257675.79	269267.71	261309.04	262750.85	2.26	ppb
Manganese	55-2	4962.36	5154.51	4985.48	5034.12	2.08	ppb
Molybdenum	94-1	4911.79	5120.94	5060.82	5031.18	2.14	ppb
Molybdenum	95-1	4858.95	5139.96	5011.25	5003.39	2.81	ppb
Molybdenum	96-1	4890.79	5100.75	4964.92	4985.49	2.14	ppb
Molybdenum	97-1	5061.73	5057.48	5030.99	5050.06	0.33	ppb
Molybdenum	98-1	4944.83	5036.08	5105.21	5028.71	1.60	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	460.33	468.35	454.61	461.10	1.50	ppb
Phosphorus	31-2	10275.68	10657.28	10368.75	10433.90	1.91	ppb
Potassium	39-2	129509.81	131817.51	128006.94	129778.09	1.48	ppb
Rhodium	103-1				84		%
Rhodium	103-2				85		%
Scandium	45-1				91		%
Scandium	45-2				92		%
Selenium	82-1	483.64	490.27	491.43	488.45	0.86	ppb
Selenium	77-2	481.01	491.88	469.26	480.72	2.35	ppb
Selenium	78-2	529.18	503.08	496.03	509.43	3.43	ppb
Silicon	28-1	416.21	403.58	413.74	411.18	1.63	ppb
Silver	107-1	470.17	491.40	472.52	478.03	2.44	ppb
Silver	109-1	470.82	488.94	471.82	477.19	2.13	ppb
Sodium	23-2	258387.57	267537.53	255755.27	260560.13	2.37	ppb
Strontium	86-1	508.70	507.58	508.16	508.15	0.11	ppb
Strontium	88-1	493.58	500.10	495.97	496.55	0.66	ppb
Sulfur	34-1	10881.79	9978.36	10418.52	10426.22	4.33	ppb
Terbium	159-1				96		%
Terbium	159-2				94		%
Thallium	203-1	511.16	518.25	512.08	513.83	0.75	ppb
Thallium	205-1	511.59	514.10	518.47	514.72	0.68	ppb
Tin	118-1	500.85	503.02	495.38	499.75	0.79	ppb
Titanium	47-1	5130.64	4925.27	5016.94	5024.28	2.05	ppb
Uranium	238-1	538.15	526.15	530.50	531.60	1.14	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : CCV02 Instrumnet Name : P8
Client Sample ID : CCV02 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 15:49:15 DataFile Name : 032CCV.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	505.58	535.47	518.35	519.80	2.89	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				94		%
Yttrium	89-2				91		%
Zinc	66-2	4983.16	5045.23	4915.65	4981.35	1.30	ppb
Zirconium	90-1	498.07	520.09	512.83	510.33	2.20	ppb
Zirconium	91-1	488.61	511.07	506.09	501.92	2.35	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : CCB02 Instrumnet Name : P8
Client Sample ID : CCB02 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 15:55:42 DataFile Name : 033CCBE.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Aluminium	27-2	0.31	-0.10	0.05	0.09	235.38	ppb
Antimony	121-1	0.09	0.09	0.08	0.09	1.82	ppb
Arsenic	75-2	0.00	0.01	0.01	0.01	130.06	ppb
Barium	135-1	0.04	0.03	0.04	0.04	12.89	ppb
Barium	137-1	0.03	0.03	0.03	0.03	7.11	ppb
Beryllium	9-1	0.08	0.09	0.09	0.09	10.28	ppb
Bismuth	209-1				99		%
Bismuth	209-2				97		%
Bromine	81-1						cps
Cadmium	108-1	0.01	-0.02	0.01	0.00	723.79	ppb
Cadmium	106-1	-0.62	-1.17	-0.74	-0.84		ppb
Cadmium	111-1	-0.03	-0.07	-0.05	-0.05		ppb
Calcium	43-1	0.86	1.77	1.65	1.43	34.73	ppb
Calcium	44-1	0.72	1.00	0.05	0.59	83.15	ppb
Carbon	12-1						cps
Carbon	12-2						cps
Chlorine	35-1						cps
Chlorine	35-2						cps
Chromium	52-2	0.04	0.00	0.02	0.02	85.38	ppb
Cobalt	59-2	0.01	0.00	0.00	0.00	38.10	ppb
Copper	63-2	0.04	0.05	0.00	0.03	92.79	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				98		%
Indium	115-1				99		%
Indium	115-2				96		%
Iron	54-2	1.28	1.48	0.84	1.20	27.14	ppb
Iron	56-2	1.30	1.20	1.26	1.25	4.11	ppb
Iron	57-2	1.57	1.56	1.41	1.51	5.96	ppb
Krypton	83-1						cps
Lead	206-1	0.08	0.08	0.08	0.08	3.12	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : CCB02 Instrumnet Name : P8
Client Sample ID : CCB02 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 15:55:42 DataFile Name : 033CCBE.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Lead	207-1	0.09	0.08	0.09	0.08	7.58	ppb
Lead	208-1	0.08	0.08	0.08	0.08	3.39	ppb
Lithium	6-1				101		%
Magnesium	24-2	0.92	1.01	0.99	0.97	4.80	ppb
Manganese	55-2	0.08	0.02	0.02	0.04	92.69	ppb
Molybdenum	94-1	0.11	0.10	0.11	0.11	5.54	ppb
Molybdenum	95-1	0.06	0.06	0.05	0.06	8.43	ppb
Molybdenum	96-1	0.08	0.06	0.06	0.07	15.37	ppb
Molybdenum	97-1	0.06	0.06	0.06	0.06	6.52	ppb
Molybdenum	98-1	0.06	0.05	0.05	0.05	1.19	ppb
Neodymium	150-1						cps
Neodymium	150-2						cps
Nickel	60-2	0.01	0.01	-0.01	0.00	451.43	ppb
Phosphorus	31-2	-121.66	-122.03	-115.95	-119.88		ppb
Potassium	39-2	9.31	10.94	8.60	9.62	12.48	ppb
Rhodium	103-1				98		%
Rhodium	103-2				98		%
Scandium	45-1				99		%
Scandium	45-2				97		%
Selenium	82-1	0.08	0.03	0.15	0.09	72.31	ppb
Selenium	77-2	0.00	0.00	0.00	0.00	N/A	ppb
Selenium	78-2	-0.19	0.71	0.33	0.28	157.65	ppb
Silicon	28-1	-0.37	-0.27	-0.39	-0.34		ppb
Silver	107-1	0.01	0.02	0.02	0.02	11.50	ppb
Silver	109-1	0.02	0.01	0.02	0.02	15.30	ppb
Sodium	23-2	24.53	23.38	24.28	24.06	2.51	ppb
Strontium	86-1	0.01	0.00	0.01	0.00	125.08	ppb
Strontium	88-1	0.01	0.00	0.01	0.01	13.56	ppb
Sulfur	34-1	-427.70	-223.18	-333.76	-328.21		ppb
Terbium	159-1				101		%
Terbium	159-2				97		%
Thallium	203-1	0.08	0.07	0.07	0.07	4.88	ppb
Thallium	205-1	0.08	0.07	0.08	0.07	4.65	ppb
Tin	118-1	0.00	0.01	0.01	0.01	88.05	ppb
Titanium	47-1	0.08	0.05	0.05	0.06	32.54	ppb
Uranium	238-1	0.00	0.00	0.00	0.00	20.15	ppb

LB Number :LB135941Operator :Jaswal

Lab Sample ID :CCB02Instrumnet Name :P8

Client Sample ID :CCB02Dilution Factor :1

Date & Time Acquired :2025-05-23 15:55:42DataFile Name :033CCBE.d

Parameter	Mass	ConRep1	ConRep2	ConRep3	Avg. Conc.	ConcRSD	Units
Vanadium	51-2	0.00	0.00	0.01	0.00	130.25	ppb
Ytterbium	172-1						cps
Ytterbium	172-2						cps
Ytterbium	176-1						cps
Ytterbium	176-2						cps
Yttrium	89-1				100		%
Yttrium	89-2				97		%
Zinc	66-2	0.13	0.02	0.03	0.06	95.69	ppb
Zirconium	90-1	0.04	0.04	0.04	0.04	5.79	ppb
Zirconium	91-1	0.04	0.04	0.03	0.04	9.88	ppb

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S0 Instrumnet Name : P8
Client Sample ID : S0 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 13:50:48 DataFile Name : 004CALB.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	123	163	133	140	14.87	cps
Antimony	121-1	53	57	43	51	13.58	cps
Arsenic	75-2	10	3	10	8	49.52	cps
Barium	135-1	80	103	80	88	15.35	cps
Barium	137-1	123	123	113	120	4.81	cps
Beryllium	9-1	79	76	92	82	10.61	cps
Bismuth	209-1	9612587	9630978	9566520	9603362	0.35	cps
Bismuth	209-2	4493861	4418682	4398754	4437099	1.13	cps
Bromine	81-1	28335	28245	27761	28114	1.10	cps
Cadmium	108-1	23	50	23	32	47.79	cps
Cadmium	106-1	8263	8359	7969	8197	2.48	cps
Cadmium	111-1	5781	5843	5585	5736	2.35	cps
Calcium	43-1	750	793	717	753	5.10	cps
Calcium	44-1	23788	24389	23417	23864	2.06	cps
Carbon	12-1	3263595	3284136	3273266	3273666	0.31	cps
Carbon	12-2	21182	21566	21953	21567	1.79	cps
Chlorine	35-1	120795	120570	119847	120404	0.41	cps
Chlorine	35-2	483	403	397	428	11.27	cps
Chromium	52-2	687	853	877	806	12.86	cps
Cobalt	59-2	40	57	50	49	17.16	cps
Copper	63-2	1800	1847	1950	1866	4.11	cps
Dysprosium	156-1	20	17	23	20	16.65	cps
Dysprosium	156-2	7	0	3	3	100.05	cps
Erbium	164-1	167	107	147	140	21.82	cps
Erbium	164-2	40	50	27	39	30.10	cps
Gadolinium	160-1	100	93	157	117	29.83	cps
Gadolinium	160-2	17	23	17	19	20.36	cps
Holmium	165-1	15839977	16365376	15667446	15957600	2.28	cps
Holmium	165-2	6259289	6267657	6027360	6184769	2.21	cps
Indium	115-1	13905284	13920330	13906540	13910718	0.06	cps
Indium	115-2	1419964	1437793	1444525	1434094	0.89	cps
Iron	54-2	527	493	500	507	3.48	cps
Iron	56-2	5691	5618	5404	5571	2.67	cps
Iron	57-2	143	133	123	133	7.50	cps
Krypton	83-1	267	267	223	252	9.92	cps
Lead	206-1	430	457	400	429	6.61	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S0 Instrumnet Name : P8
Client Sample ID : S0 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 13:50:48 DataFile Name : 004CALB.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	340	350	353	348	1.99	cps
Lead	208-1	1647	1680	1647	1658	1.16	cps
Lithium	6-1	5187430	5301604	5239754	5242929	1.09	cps
Magnesium	24-2	1207	1227	1243	1226	1.50	cps
Manganese	55-2	1290	1310	1483	1361	7.81	cps
Molybdenum	94-1	507	473	430	470	8.18	cps
Molybdenum	95-1	130	103	140	124	15.23	cps
Molybdenum	96-1	237	223	207	222	6.76	cps
Molybdenum	97-1	93	87	103	94	8.88	cps
Molybdenum	98-1	210	187	230	209	10.38	cps
Neodymium	150-1	13	20	20	18	21.66	cps
Neodymium	150-2	3	0	0	1	173.21	cps
Nickel	60-2	250	217	253	240	8.45	cps
Phosphorus	31-2	110	47	57	71	47.88	cps
Potassium	39-2	13376	12859	13536	13257	2.67	cps
Rhodium	103-1	13333196	13256224	13065280	13218233	1.04	cps
Rhodium	103-2	5333262	5454294	5373851	5387136	1.14	cps
Scandium	45-1	9459086	9466791	9197451	9374443	1.64	cps
Scandium	45-2	174417	174608	174993	174672	0.17	cps
Selenium	82-1	-47	-47	-23	-39	-34.63	cps
Selenium	77-2	0	0	0	0	0.00	cps
Selenium	78-2	13	30	20	21	39.75	cps
Silicon	28-1	527341	512658	536104	525367	2.26	cps
Silver	107-1	143	187	133	154	18.35	cps
Silver	109-1	43	33	43	40	14.43	cps
Sodium	23-2	31688	31411	31220	31439	0.75	cps
Strontium	86-1	420	397	410	409	2.86	cps
Strontium	88-1	430	347	360	379	11.81	cps
Sulfur	34-1	580498	573926	576328	576917	0.58	cps
Terbium	159-1	16575015	16239546	16304859	16373140	1.09	cps
Terbium	159-2	5904797	6018796	6005912	5976502	1.04	cps
Thallium	203-1	153	147	150	150	2.22	cps
Thallium	205-1	337	333	307	326	5.05	cps
Tin	118-1	2270	2287	2434	2330	3.86	cps
Titanium	47-1	243	233	247	241	2.88	cps
Uranium	238-1	73	60	33	56	36.66	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S0 Instrumnet Name : P8
Client Sample ID : S0 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 13:50:48 DataFile Name : 004CALB.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	7	3	23	11	96.43	cps
Ytterbium	172-1	100	113	103	106	6.58	cps
Ytterbium	172-2	33	37	37	36	5.42	cps
Ytterbium	176-1	1994	2124	2080	2066	3.20	cps
Ytterbium	176-2	813	770	713	766	6.55	cps
Yttrium	89-1	25231662	25437825	25408583	25359357	0.44	cps
Yttrium	89-2	1930741	1942547	1927563	1933617	0.41	cps
Zinc	66-2	287	340	320	316	8.54	cps
Zirconium	90-1	1013	1137	1140	1097	6.58	cps
Zirconium	91-1	217	233	247	232	6.47	cps

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LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S2 Instrumnet Name : P8
Client Sample ID : S2 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 13:57:33 DataFile Name : 006CAL.S.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	1657	1560	1487	1568	5.44	cps
Antimony	121-1	38691	39136	39122	38983	0.65	cps
Arsenic	75-2	360	427	423	403	9.31	cps
Barium	135-1	43794	45125	45730	44883	2.21	cps
Barium	137-1	77604	78925	78127	78219	0.85	cps
Beryllium	9-1	5455	5628	5652	5578	1.92	cps
Bismuth	209-1	9688518	9630783	9767575	9695625	0.71	cps
Bismuth	209-2	4450122	4432027	4421047	4434399	0.33	cps
Bromine	81-1	26231	26679	27450	26787	2.30	cps
Cadmium	108-1	400	397	397	398	0.48	cps
Cadmium	106-1	8406	8566	8693	8555	1.68	cps
Cadmium	111-1	9808	9823	10211	9947	2.30	cps
Calcium	43-1	32066	31849	32550	32155	1.12	cps
Calcium	44-1	532547	536681	538904	536044	0.60	cps
Carbon	12-1	3334469	3316719	3272886	3308025	0.96	cps
Carbon	12-2	21529	21860	21619	21669	0.79	cps
Chlorine	35-1	120799	119838	120557	120398	0.42	cps
Chlorine	35-2	447	337	427	403	14.53	cps
Chromium	52-2	9203	8706	8656	8855	3.42	cps
Cobalt	59-2	8209	8433	8012	8218	2.56	cps
Copper	63-2	14140	14197	14501	14279	1.36	cps
Dysprosium	156-1	13	20	27	20	33.35	cps
Dysprosium	156-2	3	7	7	6	34.70	cps
Erbium	164-1	123	120	127	123	2.70	cps
Erbium	164-2	33	73	53	53	37.50	cps
Gadolinium	160-1	103	110	103	106	3.64	cps
Gadolinium	160-2	23	17	20	20	16.65	cps
Holmium	165-1	15986539	15843687	16121676	15983967	0.87	cps
Holmium	165-2	6198721	6102004	6239303	6180009	1.14	cps
Indium	115-1	13711901	13706970	13574515	13664462	0.57	cps
Indium	115-2	1417039	1430727	1416141	1421302	0.58	cps
Iron	54-2	9370	9023	9050	9147	2.11	cps
Iron	56-2	161021	162656	161826	161834	0.51	cps
Iron	57-2	4154	4024	3894	4024	3.23	cps
Krypton	83-1	270	260	227	252	9.00	cps
Lead	206-1	11572	12136	11969	11892	2.44	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S2 Instrumnet Name : P8
Client Sample ID : S2 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 13:57:33 DataFile Name : 006CAL.S.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	10554	10534	10348	10479	1.09	cps
Lead	208-1	47127	47574	47661	47454	0.60	cps
Lithium	6-1	5426075	5439315	5221589	5362326	2.28	cps
Magnesium	24-2	125420	126291	125529	125747	0.38	cps
Manganese	55-2	3130	3217	3074	3140	2.30	cps
Molybdenum	94-1	41047	41666	41057	41257	0.86	cps
Molybdenum	95-1	48374	49481	49174	49009	1.17	cps
Molybdenum	96-1	54366	54496	54737	54533	0.35	cps
Molybdenum	97-1	29769	30260	30119	30049	0.84	cps
Molybdenum	98-1	78302	79576	78443	78774	0.89	cps
Neodymium	150-1	13	27	0	13	100.01	cps
Neodymium	150-2	0	0	0	0	0.00	cps
Nickel	60-2	2247	2150	2190	2196	2.21	cps
Phosphorus	31-2	887	973	960	940	4.96	cps
Potassium	39-2	86615	87520	85729	86621	1.03	cps
Rhodium	103-1	13034589	12719871	13184535	12979665	1.83	cps
Rhodium	103-2	5425379	5393665	5303840	5374295	1.17	cps
Scandium	45-1	9316466	9217507	9252102	9262025	0.54	cps
Scandium	45-2	174505	174871	177319	175565	0.87	cps
Selenium	82-1	1430	1517	1670	1539	7.90	cps
Selenium	77-2	20	47	33	33	40.01	cps
Selenium	78-2	157	90	113	120	28.19	cps
Silicon	28-1	584021	600458	594067	592849	1.40	cps
Silver	107-1	25260	25838	26282	25793	1.99	cps
Silver	109-1	23440	24632	23984	24019	2.48	cps
Sodium	23-2	270753	270225	274054	271677	0.76	cps
Strontium	86-1	6625	6895	7092	6871	3.41	cps
Strontium	88-1	55858	56276	55875	56003	0.42	cps
Sulfur	34-1	594310	589562	588704	590859	0.51	cps
Terbium	159-1	16587508	16510971	16524008	16540829	0.25	cps
Terbium	159-2	5996806	5946130	5983977	5975638	0.44	cps
Thallium	203-1	16734	17439	16768	16980	2.34	cps
Thallium	205-1	39777	40129	40259	40055	0.62	cps
Tin	118-1	79294	79626	80846	79922	1.02	cps
Titanium	47-1	15268	14801	14981	15017	1.57	cps
Uranium	238-1	48944	49004	49797	49248	0.97	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S2 Instrumnet Name : P8
Client Sample ID : S2 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 13:57:33 DataFile Name : 006CALS.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	16233	15639	15522	15798	2.41	cps
Ytterbium	172-1	100	100	107	102	3.77	cps
Ytterbium	172-2	33	50	47	43	20.36	cps
Ytterbium	176-1	2070	2047	2047	2055	0.66	cps
Ytterbium	176-2	650	737	750	712	7.62	cps
Yttrium	89-1	25571228	25373090	25024595	25322971	1.09	cps
Yttrium	89-2	1923336	1905393	1910311	1913013	0.48	cps
Zinc	66-2	3964	3747	4014	3908	3.63	cps
Zirconium	90-1	36882	37708	36956	37182	1.23	cps
Zirconium	91-1	8212	8383	8102	8232	1.71	cps

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LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S3 Instrumnet Name : P8
Client Sample ID : S3 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:00:54 DataFile Name : 007CALB.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	73953	75143	74667	74588	0.80	cps
Antimony	121-1	1011025	1031397	1036897	1026440	1.33	cps
Arsenic	75-2	21804	22541	21804	22050	1.93	cps
Barium	135-1	1182833	1207111	1210443	1200129	1.26	cps
Barium	137-1	2167441	2199739	2154873	2174018	1.06	cps
Beryllium	9-1	277696	279202	279933	278944	0.41	cps
Bismuth	209-1	9616769	9529209	9669892	9605290	0.74	cps
Bismuth	209-2	4328345	4362721	4384010	4358359	0.64	cps
Bromine	81-1	26702	26926	26255	26628	1.28	cps
Cadmium	108-1	20232	20776	21116	20708	2.15	cps
Cadmium	106-1	37752	38360	38126	38079	0.81	cps
Cadmium	111-1	258594	264454	262243	261764	1.13	cps
Calcium	43-1	340545	346847	341540	342977	0.99	cps
Calcium	44-1	5508268	5597928	5577308	5561168	0.84	cps
Carbon	12-1	3423414	3514028	3458798	3465414	1.32	cps
Carbon	12-2	23289	22314	22895	22832	2.15	cps
Chlorine	35-1	127162	127223	125141	126509	0.94	cps
Chlorine	35-2	513	427	493	478	9.50	cps
Chromium	52-2	216693	215428	216061	216061	0.29	cps
Cobalt	59-2	416129	411245	409472	412282	0.84	cps
Copper	63-2	3377290	3313782	3448773	3379948	2.00	cps
Dysprosium	156-1	40	53	40	44	17.32	cps
Dysprosium	156-2	20	7	10	12	56.76	cps
Erbium	164-1	163	123	143	143	13.95	cps
Erbium	164-2	60	30	57	49	33.63	cps
Gadolinium	160-1	100	127	123	117	12.46	cps
Gadolinium	160-2	27	13	20	20	33.35	cps
Holmium	165-1	16163753	16127278	15810077	16033703	1.21	cps
Holmium	165-2	6119348	6115469	6107305	6114041	0.10	cps
Indium	115-1	13354907	13681745	13499324	13511992	1.21	cps
Indium	115-2	1402045	1403829	1399511	1401795	0.15	cps
Iron	54-2	447401	446684	443873	445986	0.42	cps
Iron	56-2	8436866	8242190	8311033	8330030	1.19	cps
Iron	57-2	205912	203218	206771	205300	0.90	cps
Krypton	83-1	253	260	260	258	1.49	cps
Lead	206-1	3783896	3885132	3854737	3841255	1.35	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S3 Instrumnet Name : P8
Client Sample ID : S3 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:00:54 DataFile Name : 007CALB.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	3274121	3281377	3266146	3273881	0.23	cps
Lead	208-1	15150217	14976027	14972784	15033009	0.68	cps
Lithium	6-1	5259160	5293393	5449216	5333923	1.90	cps
Magnesium	24-2	1296709	1306610	1276013	1293111	1.21	cps
Manganese	55-2	904412	900310	905217	903313	0.29	cps
Molybdenum	94-1	3697540	3724925	3737817	3720094	0.55	cps
Molybdenum	95-1	5297409	5464282	5453501	5405064	1.73	cps
Molybdenum	96-1	5931733	5945699	5807342	5894924	1.29	cps
Molybdenum	97-1	3366469	3355044	3366323	3362612	0.19	cps
Molybdenum	98-1	8519320	8583416	8771316	8624684	1.52	cps
Neodymium	150-1	110	113	103	109	4.68	cps
Neodymium	150-2	7	7	10	8	24.71	cps
Nickel	60-2	115134	113864	114929	114643	0.59	cps
Phosphorus	31-2	3711	3510	3547	3589	2.97	cps
Potassium	39-2	415669	418406	417084	417053	0.33	cps
Rhodium	103-1	12863214	12743368	12932991	12846524	0.75	cps
Rhodium	103-2	5231378	5257615	5320100	5269698	0.86	cps
Scandium	45-1	8897137	9400492	9328269	9208632	2.96	cps
Scandium	45-2	173918	171813	170463	172065	1.01	cps
Selenium	82-1	15639	16327	16190	16052	2.27	cps
Selenium	77-2	260	270	310	280	9.45	cps
Selenium	78-2	970	957	970	966	0.80	cps
Silicon	28-1	7837879	7959291	7928334	7908501	0.80	cps
Silver	107-1	1288238	1318228	1316238	1307568	1.28	cps
Silver	109-1	1220545	1243186	1256404	1240045	1.46	cps
Sodium	23-2	2589170	2562422	2615676	2589090	1.03	cps
Strontium	86-1	329214	335666	338632	334504	1.44	cps
Strontium	88-1	3004025	3103584	3085995	3064534	1.73	cps
Sulfur	34-1	677144	681980	678773	679299	0.36	cps
Terbium	159-1	16591551	16604806	16877428	16691262	0.97	cps
Terbium	159-2	5876421	5894651	5845161	5872077	0.43	cps
Thallium	203-1	859223	873158	878456	870279	1.14	cps
Thallium	205-1	2163329	2180429	2226504	2190088	1.49	cps
Tin	118-1	843354	858120	852831	851435	0.88	cps
Titanium	47-1	1566658	1572530	1544246	1561145	0.96	cps
Uranium	238-1	2879206	2790291	2806019	2825172	1.68	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S3 Instrumnet Name : P8
Client Sample ID : S3 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:00:54 DataFile Name : 007CALB.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	164712	163979	167112	165268	0.99	cps
Ytterbium	172-1	113	163	147	141	18.04	cps
Ytterbium	172-2	50	43	43	46	8.45	cps
Ytterbium	176-1	6215	6338	6118	6224	1.77	cps
Ytterbium	176-2	2134	2147	2150	2144	0.41	cps
Yttrium	89-1	24619966	25591048	25196713	25135909	1.94	cps
Yttrium	89-2	1862890	1876610	1881522	1873674	0.52	cps
Zinc	66-2	349137	349061	350874	349691	0.29	cps
Zirconium	90-1	1864089	1889351	1876820	1876753	0.67	cps
Zirconium	91-1	394047	401393	406116	400519	1.52	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S4 Instrumnet Name : P8
Client Sample ID : S4 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:04:00 DataFile Name : 008CAL.S.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	179443	176699	179955	178699	0.98	cps
Antimony	121-1	2681074	2687613	2666715	2678467	0.40	cps
Arsenic	75-2	54321	53203	53270	53598	1.17	cps
Barium	135-1	3122128	3229582	3124549	3158753	1.94	cps
Barium	137-1	5291177	5410649	5399761	5367196	1.23	cps
Beryllium	9-1	671111	683901	685054	680022	1.14	cps
Bismuth	209-1	9324851	9679292	9480445	9494863	1.87	cps
Bismuth	209-2	4486489	4191725	4286340	4321518	3.48	cps
Bromine	81-1	26038	25974	26729	26247	1.60	cps
Cadmium	108-1	50141	51513	51241	50965	1.43	cps
Cadmium	106-1	80379	82612	81526	81505	1.37	cps
Cadmium	111-1	632259	644987	641770	639672	1.03	cps
Calcium	43-1	837520	837301	840404	838409	0.21	cps
Calcium	44-1	13459712	13639059	13991167	13696646	1.97	cps
Carbon	12-1	3584209	3598035	3630561	3604268	0.66	cps
Carbon	12-2	23826	23923	24087	23945	0.55	cps
Chlorine	35-1	132210	131027	133367	132201	0.89	cps
Chlorine	35-2	460	470	487	472	2.85	cps
Chromium	52-2	522162	519562	526312	522679	0.65	cps
Cobalt	59-2	1000082	1008198	1003582	1003954	0.41	cps
Copper	63-2	8044299	7970140	8169855	8061431	1.25	cps
Dysprosium	156-1	127	140	93	120	20.03	cps
Dysprosium	156-2	20	10	20	17	34.64	cps
Erbium	164-1	167	120	123	137	19.05	cps
Erbium	164-2	87	40	47	58	43.68	cps
Gadolinium	160-1	160	147	170	159	7.37	cps
Gadolinium	160-2	27	47	37	37	27.27	cps
Holmium	165-1	15907730	15896104	15935040	15912958	0.13	cps
Holmium	165-2	6317604	6057136	6065060	6146600	2.41	cps
Indium	115-1	13214810	13428788	13640625	13428074	1.59	cps
Indium	115-2	1422140	1361026	1359797	1380987	2.58	cps
Iron	54-2	1080924	1086554	1091316	1086265	0.48	cps
Iron	56-2	20083949	20333416	20212379	20209915	0.62	cps
Iron	57-2	497984	498761	500499	499081	0.26	cps
Krypton	83-1	277	193	263	244	18.31	cps
Lead	206-1	9296594	9715328	9374006	9461976	2.35	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S4 Instrumnet Name : P8
Client Sample ID : S4 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:04:00 DataFile Name : 008CAL.S.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	8002370	7962319	7959129	7974606	0.30	cps
Lead	208-1	36455224	37151718	37359905	36988949	1.28	cps
Lithium	6-1	5167523	5400012	5110431	5225989	2.94	cps
Magnesium	24-2	3134581	3182563	3134071	3150405	0.88	cps
Manganese	55-2	2269476	2273378	2290741	2277865	0.50	cps
Molybdenum	94-1	9174232	9211306	9277043	9220861	0.56	cps
Molybdenum	95-1	13130428	13233044	13485177	13282883	1.37	cps
Molybdenum	96-1	14194999	14625284	14531687	14450657	1.57	cps
Molybdenum	97-1	8134997	8192578	8239693	8189089	0.64	cps
Molybdenum	98-1	21243607	21472611	21494200	21403472	0.65	cps
Neodymium	150-1	217	290	297	268	16.58	cps
Neodymium	150-2	7	37	23	22	67.63	cps
Nickel	60-2	277869	279467	280187	279174	0.42	cps
Phosphorus	31-2	8693	8666	8833	8730	1.03	cps
Potassium	39-2	989568	981283	986894	985915	0.43	cps
Rhodium	103-1	12661652	12641335	12745784	12682924	0.44	cps
Rhodium	103-2	5351133	5137126	5094489	5194249	2.65	cps
Scandium	45-1	9031743	8936714	9229731	9066063	1.65	cps
Scandium	45-2	174655	169855	167086	170532	2.25	cps
Selenium	82-1	39379	40412	39994	39929	1.30	cps
Selenium	77-2	740	690	730	720	3.67	cps
Selenium	78-2	2374	2230	2400	2335	3.92	cps
Silicon	28-1	18548359	18537386	18928846	18671530	1.19	cps
Silver	107-1	3400998	3416590	3430883	3416157	0.44	cps
Silver	109-1	3171421	3206582	3277779	3218594	1.68	cps
Sodium	23-2	6247452	6324738	6192714	6254968	1.06	cps
Strontium	86-1	817766	823595	829895	823752	0.74	cps
Strontium	88-1	7369478	7474443	7388885	7410935	0.75	cps
Sulfur	34-1	827638	825837	824556	826011	0.19	cps
Terbium	159-1	16611298	16450336	16798606	16620080	1.05	cps
Terbium	159-2	6142612	5880180	5754283	5925692	3.34	cps
Thallium	203-1	2344831	2368356	2267131	2326773	2.28	cps
Thallium	205-1	5440200	5531303	5435512	5469005	0.99	cps
Tin	118-1	2142063	2194969	2166646	2167893	1.22	cps
Titanium	47-1	3784228	3809426	3847355	3813670	0.83	cps
Uranium	238-1	6803454	6805031	7117326	6908604	2.62	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S4 Instrumnet Name : P8
Client Sample ID : S4 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:04:00 DataFile Name : 008CALS.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	402970	404033	401708	402904	0.29	cps
Ytterbium	172-1	143	157	150	150	4.44	cps
Ytterbium	172-2	50	73	60	61	19.15	cps
Ytterbium	176-1	12159	12786	12413	12453	2.53	cps
Ytterbium	176-2	4634	4521	4618	4591	1.33	cps
Yttrium	89-1	24353903	24893841	24770720	24672821	1.15	cps
Yttrium	89-2	1896703	1833230	1852057	1860663	1.75	cps
Zinc	66-2	843631	843759	850187	845859	0.44	cps
Zirconium	90-1	4596554	4645344	4627188	4623029	0.53	cps
Zirconium	91-1	990445	996750	1000690	995962	0.52	cps

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LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S5 Instrumnet Name : P8
Client Sample ID : S5 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:07:01 DataFile Name : 009CAL.S.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	347370	345061	342330	344921	0.73	cps
Antimony	121-1	5228355	5229190	5225441	5227662	0.04	cps
Arsenic	75-2	104225	104903	105021	104716	0.41	cps
Barium	135-1	6190297	6084815	6115828	6130313	0.88	cps
Barium	137-1	10528623	10744865	10755239	10676242	1.20	cps
Beryllium	9-1	1241637	1281957	1292715	1272103	2.12	cps
Bismuth	209-1	9130245	9348050	9425799	9301365	1.65	cps
Bismuth	209-2	4174103	4122814	4169451	4155456	0.68	cps
Bromine	81-1	25851	26756	26054	26220	1.81	cps
Cadmium	108-1	98163	99671	100224	99353	1.07	cps
Cadmium	106-1	149116	150828	151872	150605	0.92	cps
Cadmium	111-1	1229340	1246615	1251783	1242579	0.95	cps
Calcium	43-1	1639349	1640827	1654951	1645043	0.52	cps
Calcium	44-1	26879098	26565751	26437500	26627450	0.85	cps
Carbon	12-1	3648467	3736661	3686741	3690623	1.20	cps
Carbon	12-2	25068	24627	24367	24688	1.44	cps
Chlorine	35-1	137900	138589	138464	138318	0.27	cps
Chlorine	35-2	477	463	483	474	2.15	cps
Chromium	52-2	1022127	1022538	1007845	1017504	0.82	cps
Cobalt	59-2	2105362	1998467	2015587	2039805	2.81	cps
Copper	63-2	15671636	15605800	15486048	15587828	0.60	cps
Dysprosium	156-1	190	167	157	171	10.00	cps
Dysprosium	156-2	20	43	37	33	36.05	cps
Erbium	164-1	190	173	243	202	18.08	cps
Erbium	164-2	77	70	53	67	18.03	cps
Gadolinium	160-1	167	153	193	171	11.90	cps
Gadolinium	160-2	70	43	63	59	23.57	cps
Holmium	165-1	15424738	15816579	16163275	15801531	2.34	cps
Holmium	165-2	6047845	5774447	5923254	5915182	2.31	cps
Indium	115-1	12780490	13306505	13302449	13129814	2.30	cps
Indium	115-2	1310857	1313946	1309913	1311572	0.16	cps
Iron	54-2	2189163	2160812	2156945	2168974	0.81	cps
Iron	56-2	40075093	39571905	39884524	39843841	0.64	cps
Iron	57-2	974103	961764	961580	965816	0.74	cps
Krypton	83-1	273	253	287	271	6.19	cps
Lead	206-1	18239392	18666409	18418060	18441287	1.16	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S5 Instrumnet Name : P8
Client Sample ID : S5 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:07:01 DataFile Name : 009CAL.S.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	15759280	15609269	15599563	15656037	0.57	cps
Lead	208-1	72553218	72597514	72929555	72693429	0.28	cps
Lithium	6-1	5017542	5227046	5136765	5127118	2.05	cps
Magnesium	24-2	6113526	6089376	6034957	6079286	0.66	cps
Manganese	55-2	4472076	4428313	4403635	4434675	0.78	cps
Molybdenum	94-1	18411096	17824898	18143133	18126376	1.62	cps
Molybdenum	95-1	26516277	26134177	25852467	26167640	1.27	cps
Molybdenum	96-1	28354369	28558505	28473150	28462008	0.36	cps
Molybdenum	97-1	15997693	16196373	16273554	16155873	0.88	cps
Molybdenum	98-1	41672246	41791725	42239288	41901086	0.71	cps
Neodymium	150-1	487	510	463	487	4.79	cps
Neodymium	150-2	23	40	30	31	26.97	cps
Nickel	60-2	535007	527339	527601	529982	0.82	cps
Phosphorus	31-2	16696	17317	17003	17006	1.83	cps
Potassium	39-2	1986391	1999013	1939116	1974840	1.60	cps
Rhodium	103-1	12131225	12324550	12318589	12258121	0.90	cps
Rhodium	103-2	4952769	4934233	4859076	4915359	1.01	cps
Scandium	45-1	8848422	8925978	8759049	8844483	0.94	cps
Scandium	45-2	164001	162676	162325	163001	0.54	cps
Selenium	82-1	77444	79669	78694	78602	1.42	cps
Selenium	77-2	1343	1233	1303	1293	4.31	cps
Selenium	78-2	4301	4387	4621	4436	3.73	cps
Silicon	28-1	35397444	36235403	35728460	35787102	1.18	cps
Silver	107-1	6576100	6700938	6482480	6586506	1.66	cps
Silver	109-1	6219313	6309647	6251779	6260246	0.73	cps
Sodium	23-2	11927735	12035076	11894976	11952596	0.61	cps
Strontium	86-1	1690874	1733659	1702591	1709041	1.29	cps
Strontium	88-1	14578721	14776919	14614031	14656557	0.72	cps
Sulfur	34-1	954873	943550	939739	946054	0.83	cps
Terbium	159-1	16386056	16010587	16008266	16134970	1.35	cps
Terbium	159-2	5686380	5713990	5664226	5688199	0.44	cps
Thallium	203-1	4465053	4658205	4482429	4535229	2.36	cps
Thallium	205-1	10351838	10787547	10621780	10587055	2.08	cps
Tin	118-1	4124093	4205730	4196236	4175353	1.07	cps
Titanium	47-1	7466827	7372891	7328903	7389540	0.95	cps
Uranium	238-1	13506350	13521356	13864802	13630836	1.49	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S5 Instrumnet Name : P8
Client Sample ID : S5 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:07:01 DataFile Name : 009CALS.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	785519	779749	776891	780720	0.56	cps
Ytterbium	172-1	193	207	247	216	12.88	cps
Ytterbium	172-2	100	73	73	82	18.73	cps
Ytterbium	176-1	22266	23147	22152	22521	2.42	cps
Ytterbium	176-2	8416	8596	8109	8374	2.94	cps
Yttrium	89-1	24266651	24685951	24375284	24442629	0.89	cps
Yttrium	89-2	1761906	1752096	1763979	1759327	0.36	cps
Zinc	66-2	1724126	1722122	1732545	1726264	0.32	cps
Zirconium	90-1	9034901	9097264	9209510	9113892	0.97	cps
Zirconium	91-1	2088218	2047550	1993266	2043012	2.33	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S6 Instrumnet Name : P8
Client Sample ID : S6 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:09:51 DataFile Name : 010CAL.S.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	673915	664861	664018	667598	0.82	cps
Antimony	121-1	9988338	10079855	10489460	10185885	2.62	cps
Arsenic	75-2	203849	204204	205084	204379	0.31	cps
Barium	135-1	11980484	12076607	12306143	12121078	1.38	cps
Barium	137-1	21070656	21155491	21143785	21123311	0.22	cps
Beryllium	9-1	2397525	2465579	2475801	2446302	1.74	cps
Bismuth	209-1	8933177	9063676	9267233	9088029	1.85	cps
Bismuth	209-2	3984066	3984085	4354443	4107531	5.21	cps
Bromine	81-1	26071	27086	26151	26436	2.14	cps
Cadmium	108-1	192654	196666	197052	195458	1.25	cps
Cadmium	106-1	279642	289592	290040	286425	2.05	cps
Cadmium	111-1	2542500	2577424	2605523	2575149	1.23	cps
Calcium	43-1	3234244	3208584	3201307	3214712	0.54	cps
Calcium	44-1	51767983	51436559	51031764	51412102	0.72	cps
Carbon	12-1	3579897	3588743	3671073	3613238	1.39	cps
Carbon	12-2	24577	23709	23950	24079	1.86	cps
Chlorine	35-1	154141	154383	155475	154666	0.46	cps
Chlorine	35-2	597	467	633	566	15.49	cps
Chromium	52-2	2082555	2056975	2078048	2072526	0.66	cps
Cobalt	59-2	3875555	3865578	3879866	3873666	0.19	cps
Copper	63-2	30837558	29992478	30333666	30387901	1.40	cps
Dysprosium	156-1	293	370	330	331	11.58	cps
Dysprosium	156-2	53	63	63	60	9.62	cps
Erbium	164-1	227	303	320	283	17.57	cps
Erbium	164-2	110	137	157	134	17.42	cps
Gadolinium	160-1	230	267	213	237	11.53	cps
Gadolinium	160-2	80	93	113	96	17.56	cps
Holmium	165-1	15217551	15672479	15749653	15546561	1.85	cps
Holmium	165-2	5837712	5762791	6345201	5981901	5.30	cps
Indium	115-1	12972926	12815929	12834207	12874354	0.67	cps
Indium	115-2	1261829	1255997	1465579	1327801	8.99	cps
Iron	54-2	4185193	4150756	4181992	4172647	0.46	cps
Iron	56-2	75831099	75753287	75751259	75778548	0.06	cps
Iron	57-2	1979698	1986951	1938067	1968239	1.34	cps
Krypton	83-1	250	280	250	260	6.66	cps
Lead	206-1	34752716	36040872	36912629	35902072	3.03	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S6 Instrumnet Name : P8
Client Sample ID : S6 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:09:51 DataFile Name : 010CAL.S.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	30430009	30637499	31711578	30926362	2.22	cps
Lead	208-1	140573789	142273216	145378909	142741971	1.71	cps
Lithium	6-1	4887729	5067404	5004031	4986388	1.83	cps
Magnesium	24-2	11824787	11683770	11520705	11676421	1.30	cps
Manganese	55-2	8538060	8366186	8505373	8469873	1.08	cps
Molybdenum	94-1	34803417	35301022	34849418	34984619	0.79	cps
Molybdenum	95-1	49910509	52180784	50922424	51004573	2.23	cps
Molybdenum	96-1	53320651	56743509	56596141	55553434	3.48	cps
Molybdenum	97-1	30229820	31623050	32034552	31295807	3.02	cps
Molybdenum	98-1	79650229	81039857	82995820	81228635	2.07	cps
Neodymium	150-1	1020	1017	827	954	11.60	cps
Neodymium	150-2	73	43	63	60	25.46	cps
Nickel	60-2	1010016	1015466	1007665	1011049	0.40	cps
Phosphorus	31-2	33134	32650	31862	32549	1.97	cps
Potassium	39-2	3762514	3716852	3768350	3749239	0.75	cps
Rhodium	103-1	11475218	11614980	12051594	11713931	2.57	cps
Rhodium	103-2	4883213	4724812	5221454	4943160	5.13	cps
Scandium	45-1	8554227	8702798	8495505	8584177	1.24	cps
Scandium	45-2	160954	159935	173485	164791	4.58	cps
Selenium	82-1	151245	154861	154237	153448	1.26	cps
Selenium	77-2	2614	2460	2624	2566	3.57	cps
Selenium	78-2	8596	8569	8509	8558	0.52	cps
Silicon	28-1	68398966	68430596	70126329	68985297	1.43	cps
Silver	107-1	12573592	13186854	13227157	12995868	2.82	cps
Silver	109-1	11919728	12203513	12234013	12119085	1.43	cps
Sodium	23-2	23629452	23078325	22957910	23221896	1.54	cps
Strontium	86-1	3373441	3254380	3373225	3333682	2.06	cps
Strontium	88-1	28593785	28463603	29260555	28772647	1.49	cps
Sulfur	34-1	1336111	1308006	1323488	1322535	1.06	cps
Terbium	159-1	15679217	16202973	16172601	16018264	1.84	cps
Terbium	159-2	5764831	5634280	5990729	5796613	3.11	cps
Thallium	203-1	8379067	8766584	8981413	8709021	3.51	cps
Thallium	205-1	19927701	20840263	21304451	20690805	3.39	cps
Tin	118-1	8202648	8060174	8373251	8212024	1.91	cps
Titanium	47-1	14189798	14268350	14211072	14223073	0.29	cps
Uranium	238-1	26752014	27006050	27611893	27123319	1.63	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S6 Instrumnet Name : P8
Client Sample ID : S6 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:09:51 DataFile Name : 010CAL.S.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	1573367	1595004	1568635	1579002	0.89	cps
Ytterbium	172-1	293	297	347	312	9.57	cps
Ytterbium	172-2	147	117	137	133	11.46	cps
Ytterbium	176-1	42655	43234	43164	43018	0.73	cps
Ytterbium	176-2	16043	15943	15536	15841	1.70	cps
Yttrium	89-1	24128430	23616008	24070011	23938150	1.17	cps
Yttrium	89-2	1806384	1763267	1934144	1834598	4.84	cps
Zinc	66-2	3360742	3346598	3330108	3345816	0.46	cps
Zirconium	90-1	17807937	17461243	17430657	17566613	1.19	cps
Zirconium	91-1	3956600	4012844	3992986	3987477	0.72	cps

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LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S7 Instrumnet Name : P8
Client Sample ID : S7 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:12:36 DataFile Name : 011CAL.S.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	1325612	1344401	1321037	1330350	0.93	cps
Antimony	121-1	19853777	19945241	20313761	20037593	1.22	cps
Arsenic	75-2	402658	399395	403115	401723	0.51	cps
Barium	135-1	23413444	23907401	24059690	23793512	1.42	cps
Barium	137-1	40284669	41242769	41736573	41088004	1.80	cps
Beryllium	9-1	4531667	4721717	4699543	4650976	2.23	cps
Bismuth	209-1	8647845	9052379	8817707	8839311	2.30	cps
Bismuth	209-2	3895088	3970406	3940503	3935333	0.96	cps
Bromine	81-1	25881	26215	25550	25882	1.28	cps
Cadmium	108-1	369409	376304	375953	373889	1.04	cps
Cadmium	106-1	532496	547060	545252	541603	1.47	cps
Cadmium	111-1	4788616	4836139	4967637	4864131	1.91	cps
Calcium	43-1	6158642	6344435	6351182	6284753	1.74	cps
Calcium	44-1	99031279	101984185	102229308	101081591	1.76	cps
Carbon	12-1	3645477	3655793	3676615	3659295	0.43	cps
Carbon	12-2	25793	25743	25739	25758	0.12	cps
Chlorine	35-1	186508	190098	191516	189374	1.36	cps
Chlorine	35-2	677	743	673	698	5.66	cps
Chromium	52-2	4052595	4126770	4087810	4089058	0.91	cps
Cobalt	59-2	7530326	7721459	7454754	7568846	1.82	cps
Copper	63-2	58389264	59533284	57600451	58507666	1.66	cps
Dysprosium	156-1	520	560	560	547	4.22	cps
Dysprosium	156-2	133	110	117	120	10.02	cps
Erbium	164-1	503	483	517	501	3.35	cps
Erbium	164-2	210	157	203	190	15.29	cps
Gadolinium	160-1	323	343	377	348	7.75	cps
Gadolinium	160-2	120	157	133	137	13.58	cps
Holmium	165-1	14915263	15151873	15555211	15207449	2.13	cps
Holmium	165-2	5885165	5858012	5811279	5851485	0.64	cps
Indium	115-1	11984535	11969349	12514460	12156115	2.55	cps
Indium	115-2	1206882	1209581	1211041	1209168	0.17	cps
Iron	54-2	8126556	8300023	8343683	8256754	1.39	cps
Iron	56-2	151866484	151226631	150207654	151100257	0.55	cps
Iron	57-2	3819263	3846878	3833328	3833157	0.36	cps
Krypton	83-1	280	267	293	280	4.76	cps
Lead	206-1	69880764	70829641	71492394	70734266	1.15	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S7 Instrumnet Name : P8
Client Sample ID : S7 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:12:36 DataFile Name : 011CAL.S.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	59776342	59489199	60493449	59919664	0.86	cps
Lead	208-1	276164778	279081044	281224934	278823585	0.91	cps
Lithium	6-1	4809207	4848458	4883994	4847220	0.77	cps
Magnesium	24-2	22980594	23058207	23227376	23088726	0.55	cps
Manganese	55-2	16942811	17194011	16904846	17013889	0.92	cps
Molybdenum	94-1	69481014	69921627	70125572	69842738	0.47	cps
Molybdenum	95-1	98810812	102111685	103199912	101374136	2.25	cps
Molybdenum	96-1	107813788	112290518	111083948	110396085	2.10	cps
Molybdenum	97-1	61509269	62781926	62675219	62322138	1.13	cps
Molybdenum	98-1	162562478	159609788	163647821	161940029	1.29	cps
Neodymium	150-1	1863	1760	1847	1823	3.04	cps
Neodymium	150-2	110	87	113	103	14.06	cps
Nickel	60-2	2129362	2101463	2161361	2130729	1.41	cps
Phosphorus	31-2	64138	64546	63528	64071	0.80	cps
Potassium	39-2	7333116	7409210	7350393	7364240	0.54	cps
Rhodium	103-1	11296996	11298369	11369327	11321564	0.37	cps
Rhodium	103-2	4713365	4713488	4766906	4731253	0.65	cps
Scandium	45-1	8326738	8237898	8424069	8329568	1.12	cps
Scandium	45-2	160134	160394	160920	160483	0.25	cps
Selenium	82-1	291326	292481	293667	292491	0.40	cps
Selenium	77-2	4964	5164	5298	5142	3.26	cps
Selenium	78-2	16603	16967	16740	16770	1.10	cps
Silicon	28-1	130474891	126632895	129082681	128730156	1.51	cps
Silver	107-1	24129924	24835435	24790105	24585155	1.61	cps
Silver	109-1	22993654	23603432	23409070	23335385	1.33	cps
Sodium	23-2	45783201	46335889	46412056	46177049	0.74	cps
Strontium	86-1	6438344	6493199	6606297	6512613	1.32	cps
Strontium	88-1	55921939	58641511	56642031	57068494	2.47	cps
Sulfur	34-1	2010122	2036268	2030373	2025588	0.68	cps
Terbium	159-1	15382642	15854431	15885854	15707642	1.79	cps
Terbium	159-2	5555830	5543877	5668095	5589267	1.23	cps
Thallium	203-1	17165920	17375804	17420681	17320802	0.79	cps
Thallium	205-1	40224304	41599384	41662609	41162099	1.97	cps
Tin	118-1	15932069	16126950	16489115	16182711	1.75	cps
Titanium	47-1	27796821	28435492	28825395	28352569	1.83	cps
Uranium	238-1	52622513	53628176	54360298	53536995	1.63	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S7 Instrumnet Name : P8
Client Sample ID : S7 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:12:36 DataFile Name : 011CALS.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	3106719	3109643	3109316	3108559	0.05	cps
Ytterbium	172-1	493	430	517	480	9.34	cps
Ytterbium	172-2	190	187	220	199	9.23	cps
Ytterbium	176-1	80879	83002	84874	82918	2.41	cps
Ytterbium	176-2	30742	30629	31330	30901	1.22	cps
Yttrium	89-1	23476619	23565433	23601550	23547867	0.27	cps
Yttrium	89-2	1760203	1707305	1809187	1758898	2.90	cps
Zinc	66-2	6368146	6440021	6434812	6414326	0.62	cps
Zirconium	90-1	34944755	35192187	35589870	35242271	0.92	cps
Zirconium	91-1	7743565	7972821	7947308	7887898	1.59	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S8 Instrumnet Name : P8
Client Sample ID : S8 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:15:23 DataFile Name : 012CAL.S.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	6276605	6518541	6395400	6396849	1.89	cps
Antimony	121-1	10764	10467	10067	10433	3.35	cps
Arsenic	75-2	153	210	157	173	18.34	cps
Barium	135-1	10177	10501	10094	10257	2.10	cps
Barium	137-1	17939	17648	17321	17636	1.75	cps
Beryllium	9-1	951	759	672	794	17.97	cps
Bismuth	209-1	7878042	7891117	7881130	7883429	0.09	cps
Bismuth	209-2	3731070	3560113	3506419	3599201	3.26	cps
Bromine	81-1	24989	24208	24615	24604	1.59	cps
Cadmium	108-1	213	193	170	192	11.28	cps
Cadmium	106-1	7409	7125	7179	7238	2.08	cps
Cadmium	111-1	5807	5562	5543	5637	2.61	cps
Calcium	43-1	30151561	30774102	30352526	30426063	1.04	cps
Calcium	44-1	504614352	497700579	486283713	496199548	1.87	cps
Carbon	12-1	3472211	3508619	3529887	3503572	0.83	cps
Carbon	12-2	29887	30031	29587	29835	0.76	cps
Chlorine	35-1	133216	133374	134589	133726	0.56	cps
Chlorine	35-2	537	553	517	536	3.43	cps
Chromium	52-2	5875	5715	5665	5751	1.91	cps
Cobalt	59-2	8162	8266	8062	8164	1.25	cps
Copper	63-2	8676	9146	8876	8900	2.65	cps
Dysprosium	156-1	963	1083	1107	1051	7.32	cps
Dysprosium	156-2	360	340	357	352	3.04	cps
Erbium	164-1	1897	2034	1930	1954	3.65	cps
Erbium	164-2	640	757	700	699	8.35	cps
Gadolinium	160-1	1137	1027	990	1051	7.26	cps
Gadolinium	160-2	423	437	433	431	1.61	cps
Holmium	165-1	14871607	14834085	14911957	14872550	0.26	cps
Holmium	165-2	5962746	5587015	5651481	5733747	3.50	cps
Indium	115-1	11808538	11750268	11695422	11751409	0.48	cps
Indium	115-2	1252633	1197603	1197889	1216042	2.61	cps
Iron	54-2	38077294	38496908	37337091	37970431	1.55	cps
Iron	56-2	701755750	712434389	698713910	704301350	1.02	cps
Iron	57-2	17736228	18134501	17769539	17880089	1.24	cps
Krypton	83-1	337	317	333	329	3.26	cps
Lead	206-1	47543	47303	47788	47544	0.51	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S8 Instrumnet Name : P8
Client Sample ID : S8 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:15:23 DataFile Name : 012CAL.S.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	41296	41647	41473	41472	0.42	cps
Lead	208-1	189906	188898	189487	189431	0.27	cps
Lithium	6-1	4426727	4448794	4384597	4420039	0.74	cps
Magnesium	24-2	109844682	110801028	108789928	109811879	0.92	cps
Manganese	55-2	6962	7282	7229	7157	2.40	cps
Molybdenum	94-1	17688	16884	16323	16965	4.04	cps
Molybdenum	95-1	12185	11095	10778	11353	6.51	cps
Molybdenum	96-1	23587	23019	22605	23070	2.14	cps
Molybdenum	97-1	7739	6848	6798	7129	7.42	cps
Molybdenum	98-1	18793	17792	16623	17736	6.12	cps
Neodymium	150-1	440	433	357	410	11.29	cps
Neodymium	150-2	100	137	90	109	22.57	cps
Nickel	60-2	5031	5058	4911	5000	1.56	cps
Phosphorus	31-2	107	113	87	102	13.57	cps
Potassium	39-2	34891926	35391507	35934879	35406104	1.47	cps
Rhodium	103-1	10419249	10306859	10292869	10339659	0.67	cps
Rhodium	103-2	4442807	4305445	4186898	4311717	2.97	cps
Scandium	45-1	8271918	8169732	8295889	8245846	0.81	cps
Scandium	45-2	161879	153975	151162	155672	3.57	cps
Selenium	82-1	170	237	287	231	25.33	cps
Selenium	77-2	7	3	0	3	100.05	cps
Selenium	78-2	20	27	20	22	17.33	cps
Silicon	28-1	685243	646967	626496	652902	4.57	cps
Silver	107-1	2760	2387	2304	2484	9.79	cps
Silver	109-1	2480	2087	1693	2087	18.85	cps
Sodium	23-2	218738103	221042810	217052257	218944390	0.91	cps
Strontium	86-1	20879	21170	20702	20917	1.13	cps
Strontium	88-1	182423	182946	180908	182092	0.58	cps
Sulfur	34-1	457205	458570	456569	457448	0.22	cps
Terbium	159-1	15225651	15383966	15134753	15248123	0.83	cps
Terbium	159-2	5662748	5415754	5271991	5450164	3.63	cps
Thallium	203-1	1423	1350	1300	1358	4.57	cps
Thallium	205-1	3481	3000	2954	3145	9.27	cps
Tin	118-1	4958	4744	4494	4732	4.90	cps
Titanium	47-1	3044	3120	3267	3144	3.61	cps
Uranium	238-1	2327	1800	2034	2054	12.85	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : S8 Instrumnet Name : P8
Client Sample ID : S8 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:15:23 DataFile Name : 012CALS.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	727	817	807	783	6.30	cps
Ytterbium	172-1	1540	1477	1500	1506	2.13	cps
Ytterbium	172-2	643	597	550	597	7.82	cps
Ytterbium	176-1	2847	2560	2754	2720	5.38	cps
Ytterbium	176-2	980	910	1030	973	6.19	cps
Yttrium	89-1	22780565	22834199	22408007	22674257	1.02	cps
Yttrium	89-2	1807264	1722453	1746593	1758770	2.48	cps
Zinc	66-2	26294	26014	26174	26161	0.54	cps
Zirconium	90-1	28179	27714	27801	27898	0.88	cps
Zirconium	91-1	6245	6355	5905	6168	3.80	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : ICV01 Instrumnet Name : P8
Client Sample ID : ICV01 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:23:38 DataFile Name : 014ICV.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	34113	33261	33432	33602	1.34	cps
Antimony	121-1	4128250	4212250	4179126	4173209	1.01	cps
Arsenic	75-2	82684	82007	82463	82385	0.42	cps
Barium	135-1	469154	469479	481872	473501	1.53	cps
Barium	137-1	815926	816818	839863	824202	1.65	cps
Beryllium	9-1	510390	511047	514118	511852	0.39	cps
Bismuth	209-1	9985439	9859787	9855096	9900107	0.75	cps
Bismuth	209-2	4072984	4320677	4329449	4241036	3.43	cps
Bromine	81-1	27233	27223	27267	27241	0.08	cps
Cadmium	108-1	71066	70657	71477	71066	0.58	cps
Cadmium	106-1	116900	116251	118074	117075	0.79	cps
Cadmium	111-1	528072	538471	540079	535541	1.22	cps
Calcium	43-1	141286	141590	142707	141861	0.53	cps
Calcium	44-1	2252629	2248342	2230415	2243795	0.53	cps
Carbon	12-1	3739957	3770517	3770426	3760300	0.47	cps
Carbon	12-2	24624	24604	24935	24721	0.75	cps
Chlorine	35-1	175004	178307	182688	178666	2.16	cps
Chlorine	35-2	630	760	580	657	14.15	cps
Chromium	52-2	411399	409010	408785	409731	0.35	cps
Cobalt	59-2	794305	789568	788861	790911	0.37	cps
Copper	63-2	630299	621083	618798	623394	0.98	cps
Dysprosium	156-1	30	70	53	51	39.31	cps
Dysprosium	156-2	20	10	3	11	75.52	cps
Erbium	164-1	117	90	157	121	27.71	cps
Erbium	164-2	33	40	50	41	20.41	cps
Gadolinium	160-1	117	90	173	127	33.60	cps
Gadolinium	160-2	40	27	67	44	45.82	cps
Holmium	165-1	16431475	16591279	16606339	16543031	0.59	cps
Holmium	165-2	5712770	6141551	6125333	5993218	4.05	cps
Indium	115-1	13732214	13878248	13820499	13810321	0.53	cps
Indium	115-2	1254627	1369956	1369459	1331347	4.99	cps
Iron	54-2	341241	339572	336937	339250	0.64	cps
Iron	56-2	6336822	6114297	6252876	6234665	1.80	cps
Iron	57-2	151829	151286	150280	151132	0.52	cps
Krypton	83-1	283	273	247	268	7.08	cps
Lead	206-1	3121259	3205753	3189267	3172093	1.41	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : ICV01 Instrumnet Name : P8
Client Sample ID : ICV01 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:23:38 DataFile Name : 014ICV.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	2582755	2582576	2639332	2601555	1.26	cps
Lead	208-1	12068426	12137117	12189287	12131610	0.50	cps
Lithium	6-1	5245972	5365550	5314875	5308799	1.13	cps
Magnesium	24-2	278788	277944	274794	277175	0.76	cps
Manganese	55-2	174226	171102	171530	172286	0.98	cps
Molybdenum	94-1	37344349	37634876	37986579	37655268	0.85	cps
Molybdenum	95-1	54716489	54661494	53661161	54346381	1.09	cps
Molybdenum	96-1	59035159	59635599	58774529	59148429	0.75	cps
Molybdenum	97-1	33534951	33879866	34226280	33880366	1.02	cps
Molybdenum	98-1	87707049	88529199	88788345	88341531	0.64	cps
Neodymium	150-1	67	57	83	69	19.55	cps
Neodymium	150-2	0	0	3	1	173.21	cps
Nickel	60-2	233370	233510	233439	233440	0.03	cps
Phosphorus	31-2	93	60	77	77	21.74	cps
Potassium	39-2	304449	300534	298368	301117	1.02	cps
Rhodium	103-1	13252974	13361767	13352956	13322565	0.45	cps
Rhodium	103-2	4820273	5265999	5308723	5131665	5.27	cps
Scandium	45-1	9330177	9284494	9039070	9217914	1.70	cps
Scandium	45-2	156241	169010	172002	165751	5.05	cps
Selenium	82-1	62135	63049	62851	62678	0.77	cps
Selenium	77-2	1083	1107	1090	1093	1.10	cps
Selenium	78-2	3634	3577	3691	3634	1.56	cps
Silicon	28-1	6006701	5890126	5886931	5927919	1.15	cps
Silver	107-1	1261659	1268862	1289302	1273274	1.13	cps
Silver	109-1	1200322	1192648	1201618	1198196	0.40	cps
Sodium	23-2	981614	967202	967383	972066	0.85	cps
Strontium	86-1	3512015	3530666	3544683	3529121	0.46	cps
Strontium	88-1	30698242	29987551	30090948	30258914	1.27	cps
Sulfur	34-1	515915	509843	508210	511323	0.79	cps
Terbium	159-1	16954382	16942469	16857392	16918081	0.31	cps
Terbium	159-2	5415772	5812788	5981587	5736716	5.06	cps
Thallium	203-1	3819724	3863233	3968527	3883828	1.97	cps
Thallium	205-1	9020998	9152390	9086149	9086513	0.72	cps
Tin	118-1	8534448	8658057	8824276	8672260	1.68	cps
Titanium	47-1	14748699	14520649	14837806	14702385	1.11	cps
Uranium	238-1	29674643	29519740	30330117	29841500	1.44	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : ICV01 Instrumnet Name : P8
Client Sample ID : ICV01 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:23:38 DataFile Name : 014ICV.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	304430	304948	299529	302969	0.99	cps
Ytterbium	172-1	260	233	240	244	5.68	cps
Ytterbium	172-2	103	80	127	103	22.58	cps
Ytterbium	176-1	42067	43645	43311	43008	1.93	cps
Ytterbium	176-2	15946	16037	16140	16041	0.60	cps
Yttrium	89-1	26328055	25645832	25882077	25951988	1.33	cps
Yttrium	89-2	1685579	1885255	1865274	1812036	6.07	cps
Zinc	66-2	139492	137994	137715	138400	0.69	cps
Zirconium	90-1	18621723	18320057	18783982	18575254	1.27	cps
Zirconium	91-1	4146287	4103712	4121582	4123860	0.52	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : LLICV01 Instrumnet Name : P8
Client Sample ID : LLICV01 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:33:36 DataFile Name : 016LLIC.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	1603	1707	1480	1597	7.11	cps
Antimony	121-1	42580	42683	43094	42786	0.64	cps
Arsenic	75-2	463	427	410	433	6.30	cps
Barium	135-1	48182	49088	49156	48809	1.11	cps
Barium	137-1	84005	83945	84498	84149	0.36	cps
Beryllium	9-1	5672	5898	5970	5847	2.67	cps
Bismuth	209-1	9725281	9763999	9981511	9823597	1.41	cps
Bismuth	209-2	4473263	4467133	4443873	4461423	0.35	cps
Bromine	81-1	26759	26869	27307	26978	1.07	cps
Cadmium	108-1	403	403	363	390	5.92	cps
Cadmium	106-1	8623	8699	8516	8613	1.07	cps
Cadmium	111-1	10398	10398	10528	10441	0.72	cps
Calcium	43-1	34438	34117	35216	34590	1.63	cps
Calcium	44-1	570618	578786	583615	577673	1.14	cps
Carbon	12-1	3378888	3405211	3386354	3390151	0.40	cps
Carbon	12-2	21903	21496	22043	21814	1.30	cps
Chlorine	35-1	116941	114898	116171	116003	0.89	cps
Chlorine	35-2	387	457	420	421	8.31	cps
Chromium	52-2	9610	9587	9587	9594	0.14	cps
Cobalt	59-2	8900	8903	8953	8918	0.34	cps
Copper	63-2	15582	15809	15892	15761	1.02	cps
Dysprosium	156-1	23	23	10	19	40.75	cps
Dysprosium	156-2	13	3	7	8	65.47	cps
Erbium	164-1	70	117	123	103	28.12	cps
Erbium	164-2	43	27	57	42	35.60	cps
Gadolinium	160-1	140	123	93	119	19.89	cps
Gadolinium	160-2	17	27	27	23	24.74	cps
Holmium	165-1	16388848	16108195	16458179	16318407	1.14	cps
Holmium	165-2	6188044	6191665	6230289	6203333	0.38	cps
Indium	115-1	13901330	14022482	14192918	14038910	1.04	cps
Indium	115-2	1418218	1416554	1432492	1422421	0.62	cps
Iron	54-2	9527	10164	9743	9811	3.30	cps
Iron	56-2	174102	173775	174449	174109	0.19	cps
Iron	57-2	4451	4217	4264	4311	2.87	cps
Krypton	83-1	210	230	240	227	6.74	cps
Lead	206-1	13260	13394	13227	13294	0.66	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : LLICV01 Instrumnet Name : P8
Client Sample ID : LLICV01 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:33:36 DataFile Name : 016LLIC.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	11328	11665	11695	11563	1.76	cps
Lead	208-1	52505	53961	53557	53341	1.41	cps
Lithium	6-1	5209027	5446921	5406376	5354108	2.38	cps
Magnesium	24-2	133011	132469	132667	132716	0.21	cps
Manganese	55-2	3374	3270	3444	3363	2.59	cps
Molybdenum	94-1	45327	46742	46180	46083	1.55	cps
Molybdenum	95-1	53098	53840	53168	53369	0.77	cps
Molybdenum	96-1	59149	59530	59028	59236	0.44	cps
Molybdenum	97-1	32685	32835	32147	32556	1.11	cps
Molybdenum	98-1	84680	84522	84891	84698	0.22	cps
Neodymium	150-1	13	20	7	13	49.99	cps
Neodymium	150-2	3	0	10	4	114.60	cps
Nickel	60-2	2467	2434	2434	2445	0.79	cps
Phosphorus	31-2	937	983	893	938	4.80	cps
Potassium	39-2	92712	91675	92916	92435	0.72	cps
Rhodium	103-1	13237680	13385315	13227983	13283660	0.66	cps
Rhodium	103-2	5362650	5458915	5505280	5442281	1.34	cps
Scandium	45-1	9322459	9351580	9398639	9357559	0.41	cps
Scandium	45-2	175656	172944	174367	174322	0.78	cps
Selenium	82-1	1670	1567	1653	1630	3.40	cps
Selenium	77-2	27	30	13	23	37.81	cps
Selenium	78-2	110	83	120	104	18.15	cps
Silicon	28-1	568727	587993	578737	578486	1.67	cps
Silver	107-1	28930	29141	28332	28801	1.46	cps
Silver	109-1	26001	26455	26776	26411	1.47	cps
Sodium	23-2	292675	295562	296026	294754	0.62	cps
Strontium	86-1	7069	7562	7272	7301	3.40	cps
Strontium	88-1	59851	60926	60540	60439	0.90	cps
Sulfur	34-1	560474	562398	561145	561339	0.17	cps
Terbium	159-1	16579149	17157611	16726657	16821139	1.79	cps
Terbium	159-2	6029307	5942261	6027592	5999720	0.83	cps
Thallium	203-1	18109	18410	18433	18317	0.99	cps
Thallium	205-1	43272	43192	44446	43636	1.61	cps
Tin	118-1	86233	86762	87303	86766	0.62	cps
Titanium	47-1	16219	16439	16176	16278	0.87	cps
Uranium	238-1	51393	53060	54824	53092	3.23	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : LLICV01 Instrumnet Name : P8
Client Sample ID : LLICV01 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:33:36 DataFile Name : 016LLIC.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	17007	16676	16937	16873	1.03	cps
Ytterbium	172-1	100	83	93	92	9.10	cps
Ytterbium	172-2	47	40	43	43	7.70	cps
Ytterbium	176-1	2064	2037	1954	2018	2.84	cps
Ytterbium	176-2	697	673	653	674	3.22	cps
Yttrium	89-1	26145311	26154144	25583943	25961133	1.26	cps
Yttrium	89-2	1905509	1949882	1955623	1937005	1.42	cps
Zinc	66-2	4227	4024	4297	4183	3.40	cps
Zirconium	90-1	42267	42277	42505	42350	0.32	cps
Zirconium	91-1	9297	9367	9677	9447	2.14	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : ICB01 Instrumnet Name : P8
Client Sample ID : ICB01 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:37:13 DataFile Name : 017CCBE.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	133	130	93	119	18.67	cps
Antimony	121-1	300	290	237	276	12.36	cps
Arsenic	75-2	7	7	3	6	34.70	cps
Barium	135-1	100	83	113	99	15.20	cps
Barium	137-1	183	173	137	164	14.94	cps
Beryllium	9-1	201	204	176	194	7.85	cps
Bismuth	209-1	9714668	9944923	9998984	9886192	1.53	cps
Bismuth	209-2	4479945	4409063	4382965	4423991	1.13	cps
Bromine	81-1	28770	27130	27834	27911	2.95	cps
Cadmium	108-1	20	3	30	18	75.79	cps
Cadmium	106-1	8396	8239	8243	8293	1.08	cps
Cadmium	111-1	5893	5785	5772	5817	1.14	cps
Calcium	43-1	700	750	653	701	6.90	cps
Calcium	44-1	22749	22532	22789	22690	0.61	cps
Carbon	12-1	3319354	3323806	3341919	3328359	0.36	cps
Carbon	12-2	21089	21679	20815	21194	2.08	cps
Chlorine	35-1	114952	113628	112466	113682	1.09	cps
Chlorine	35-2	397	377	343	372	7.24	cps
Chromium	52-2	777	900	810	829	7.70	cps
Cobalt	59-2	53	83	93	77	27.15	cps
Copper	63-2	1770	1810	1747	1776	1.80	cps
Dysprosium	156-1	3	10	23	12	83.33	cps
Dysprosium	156-2	0	3	10	4	114.60	cps
Erbium	164-1	147	130	97	124	20.46	cps
Erbium	164-2	33	30	43	36	19.51	cps
Gadolinium	160-1	90	120	123	111	16.52	cps
Gadolinium	160-2	27	27	27	27	0.00	cps
Holmium	165-1	16318359	16586228	16761514	16555367	1.35	cps
Holmium	165-2	6207014	6272090	6297618	6258907	0.75	cps
Indium	115-1	14158749	14221966	14230993	14203903	0.28	cps
Indium	115-2	1417502	1425268	1418371	1420380	0.30	cps
Iron	54-2	540	467	557	521	9.19	cps
Iron	56-2	5878	5955	5758	5863	1.69	cps
Iron	57-2	120	123	130	124	4.09	cps
Krypton	83-1	217	243	243	234	6.57	cps
Lead	206-1	1037	1017	943	999	4.92	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : ICB01 Instrumnet Name : P8
Client Sample ID : ICB01 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:37:13 DataFile Name : 017CCBE.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	837	787	793	806	3.37	cps
Lead	208-1	3824	3864	3810	3832	0.72	cps
Lithium	6-1	5252191	5416810	5450531	5373177	1.98	cps
Magnesium	24-2	790	837	810	812	2.88	cps
Manganese	55-2	1293	1277	1260	1277	1.31	cps
Molybdenum	94-1	997	890	883	923	6.89	cps
Molybdenum	95-1	307	283	257	282	8.86	cps
Molybdenum	96-1	470	407	450	442	7.32	cps
Molybdenum	97-1	203	160	143	169	18.34	cps
Molybdenum	98-1	387	397	520	434	17.09	cps
Neodymium	150-1	10	3	20	11	75.52	cps
Neodymium	150-2	0	3	0	1	173.21	cps
Nickel	60-2	263	313	187	254	25.07	cps
Phosphorus	31-2	73	63	83	73	13.64	cps
Potassium	39-2	13643	13720	13570	13644	0.55	cps
Rhodium	103-1	13290895	13400974	13424974	13372281	0.53	cps
Rhodium	103-2	5481983	5362807	5511301	5452030	1.44	cps
Scandium	45-1	9600668	9539365	9700498	9613510	0.85	cps
Scandium	45-2	175474	175299	176263	175679	0.29	cps
Selenium	82-1	17	20	17	18	10.81	cps
Selenium	77-2	0	0	0	0	0.00	cps
Selenium	78-2	20	33	13	22	45.83	cps
Silicon	28-1	493014	520690	495736	503147	3.03	cps
Silver	107-1	463	393	530	462	14.79	cps
Silver	109-1	417	327	297	347	18.02	cps
Sodium	23-2	39406	38210	38280	38632	1.74	cps
Strontium	86-1	383	493	380	419	15.40	cps
Strontium	88-1	307	363	393	354	12.42	cps
Sulfur	34-1	551747	552703	552029	552160	0.09	cps
Terbium	159-1	17166423	16786149	16771643	16908072	1.32	cps
Terbium	159-2	5958484	5979324	6037920	5991910	0.69	cps
Thallium	203-1	300	320	360	327	9.35	cps
Thallium	205-1	760	780	837	792	5.02	cps
Tin	118-1	2554	2527	2544	2541	0.53	cps
Titanium	47-1	317	260	280	286	10.06	cps
Uranium	238-1	50	87	47	61	36.32	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : ICB01 Instrumnet Name : P8
Client Sample ID : ICB01 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:37:13 DataFile Name : 017CCBE.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	7	13	10	10	33.30	cps
Ytterbium	172-1	83	63	67	71	15.07	cps
Ytterbium	172-2	53	50	60	54	9.35	cps
Ytterbium	176-1	1913	1860	1964	1912	2.70	cps
Ytterbium	176-2	503	613	567	561	9.84	cps
Yttrium	89-1	25594896	26425602	25709615	25910038	1.74	cps
Yttrium	89-2	1924548	1906890	1948575	1926671	1.09	cps
Zinc	66-2	340	217	323	293	22.81	cps
Zirconium	90-1	2180	2120	2230	2177	2.53	cps
Zirconium	91-1	447	400	493	447	10.45	cps

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LB Number : LB135941 Operator : Jaswal
Lab Sample ID : ICSA01 Instrumnet Name : P8
Client Sample ID : ICSA01 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:40:37 DataFile Name : 018ICSA.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	6368594	6265737	6280882	6305071	0.88	cps
Antimony	121-1	21300	22385	21654	21780	2.54	cps
Arsenic	75-2	123	183	140	149	20.80	cps
Barium	135-1	6775	6635	6818	6743	1.42	cps
Barium	137-1	11769	12186	11842	11932	1.87	cps
Beryllium	9-1	1590	1601	1480	1557	4.30	cps
Bismuth	209-1	8978579	8802502	8998964	8926682	1.21	cps
Bismuth	209-2	4027726	3992699	4090901	4037109	1.23	cps
Bromine	81-1	29969	28389	30172	29510	3.31	cps
Cadmium	108-1	5454	5201	5498	5384	2.98	cps
Cadmium	106-1	8062	7626	7646	7778	3.17	cps
Cadmium	111-1	8107	8189	7685	7994	3.38	cps
Calcium	43-1	6275459	6510505	6509415	6431793	2.11	cps
Calcium	44-1	102133938	106580158	106102322	104938806	2.33	cps
Carbon	12-1	43943829	44670414	45327509	44647251	1.55	cps
Carbon	12-2	294898	295198	296038	295378	0.20	cps
Chlorine	35-1	87098559	95827875	98503165	93809866	6.36	cps
Chlorine	35-2	402818	405671	408582	405690	0.71	cps
Chromium	52-2	81239	82238	82147	81875	0.67	cps
Cobalt	59-2	9086	8983	9036	9035	0.57	cps
Copper	63-2	47436	47897	47345	47559	0.62	cps
Dysprosium	156-1	103	70	107	93	21.72	cps
Dysprosium	156-2	20	30	40	30	33.33	cps
Erbium	164-1	207	180	137	174	20.25	cps
Erbium	164-2	67	80	53	67	20.00	cps
Gadolinium	160-1	153	207	140	167	21.17	cps
Gadolinium	160-2	43	40	63	49	25.81	cps
Holmium	165-1	15903597	15739037	16372961	16005198	2.06	cps
Holmium	165-2	6051724	6003254	6045369	6033449	0.44	cps
Indium	115-1	13166860	13017102	13309615	13164526	1.11	cps
Indium	115-2	1309058	1318728	1323475	1317087	0.56	cps
Iron	54-2	16879311	16429399	16754971	16687894	1.39	cps
Iron	56-2	311942782	306145862	306101442	308063362	1.09	cps
Iron	57-2	7894269	7699340	7751544	7781718	1.30	cps
Krypton	83-1	253	270	300	274	8.62	cps
Lead	206-1	61806	62372	63026	62401	0.98	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : ICSA01 Instrumnet Name : P8
Client Sample ID : ICSA01 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:40:37 DataFile Name : 018ICSA.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	48868	48932	49795	49199	1.05	cps
Lead	208-1	232489	234544	233497	233510	0.44	cps
Lithium	6-1	5134470	5078244	5057836	5090184	0.78	cps
Magnesium	24-2	22777958	23018125	22888719	22894934	0.53	cps
Manganese	55-2	13990	14437	14007	14145	1.79	cps
Molybdenum	94-1	11653440	11447656	11605868	11568988	0.93	cps
Molybdenum	95-1	20683259	20515062	20687971	20628764	0.48	cps
Molybdenum	96-1	21914775	21872680	22094123	21960526	0.54	cps
Molybdenum	97-1	12666003	12667936	12693208	12675716	0.12	cps
Molybdenum	98-1	32867480	32759869	33701926	33109758	1.56	cps
Neodymium	150-1	77	117	147	113	30.99	cps
Neodymium	150-2	17	30	23	23	28.56	cps
Nickel	60-2	11528	11601	11465	11531	0.59	cps
Phosphorus	31-2	343390	347265	344554	345069	0.58	cps
Potassium	39-2	15183598	15279229	15069566	15177464	0.69	cps
Rhodium	103-1	12025300	12024726	12210769	12086932	0.89	cps
Rhodium	103-2	4837863	4877227	4923014	4879368	0.87	cps
Scandium	45-1	9009456	9251457	9057834	9106249	1.41	cps
Scandium	45-2	167962	169719	167318	168333	0.74	cps
Selenium	82-1	67	30	30	42	50.14	cps
Selenium	77-2	0	3	3	2	86.60	cps
Selenium	78-2	7	13	33	18	78.05	cps
Silicon	28-1	806448	813875	817603	812642	0.70	cps
Silver	107-1	1847	1457	1353	1552	16.76	cps
Silver	109-1	1487	1290	1137	1305	13.45	cps
Sodium	23-2	47756103	48202689	47374548	47777780	0.87	cps
Strontium	86-1	216183	217629	221221	218344	1.19	cps
Strontium	88-1	2033466	2035929	2040085	2036494	0.16	cps
Sulfur	34-1	8476221	8482623	8509183	8489343	0.21	cps
Terbium	159-1	16557191	16379837	16802559	16579862	1.28	cps
Terbium	159-2	5783627	5874231	5915016	5857624	1.15	cps
Thallium	203-1	1657	2617	3370	2548	33.71	cps
Thallium	205-1	3877	6122	7976	5992	34.25	cps
Tin	118-1	6058	5791	5601	5817	3.95	cps
Titanium	47-1	5884869	6064604	6057945	6002473	1.70	cps
Uranium	238-1	930	867	853	883	4.64	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : ICSA01 Instrumnet Name : P8
Client Sample ID : ICSA01 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:40:37 DataFile Name : 018ICSA.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	463	407	500	457	10.30	cps
Ytterbium	172-1	113	110	107	110	3.03	cps
Ytterbium	172-2	60	60	60	60	0.00	cps
Ytterbium	176-1	1830	1927	1870	1876	2.59	cps
Ytterbium	176-2	567	480	573	540	9.64	cps
Yttrium	89-1	25409290	25510013	25225875	25381726	0.57	cps
Yttrium	89-2	1861269	1896560	1848212	1868680	1.34	cps
Zinc	66-2	8416	8423	8543	8460	0.84	cps
Zirconium	90-1	3264	3587	3704	3518	6.48	cps
Zirconium	91-1	613	743	803	720	13.49	cps

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LB Number : LB135941 Operator : Jaswal
Lab Sample ID : ICSAB01 Instrumnet Name : P8
Client Sample ID : ICSAB01 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:43:44 DataFile Name : 019ICSB.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	6241472	6331779	6362124	6311792	0.99	cps
Antimony	121-1	412208	416891	421269	416789	1.09	cps
Arsenic	75-2	8529	8719	8743	8664	1.35	cps
Barium	135-1	98784	100630	101470	100294	1.37	cps
Barium	137-1	176711	176613	176935	176753	0.09	cps
Beryllium	9-1	104722	105548	106371	105547	0.78	cps
Bismuth	209-1	8956982	8999374	8907222	8954526	0.52	cps
Bismuth	209-2	4002141	4097505	4054002	4051216	1.18	cps
Bromine	81-1	30052	29441	30607	30033	1.94	cps
Cadmium	108-1	11595	11442	11492	11509	0.68	cps
Cadmium	106-1	16036	16453	16657	16382	1.93	cps
Cadmium	111-1	100893	102568	104307	102590	1.66	cps
Calcium	43-1	6507753	6494441	6463697	6488630	0.35	cps
Calcium	44-1	105716632	107152848	106564248	106477910	0.68	cps
Carbon	12-1	44087593	45377448	45871281	45112107	2.04	cps
Carbon	12-2	298924	298157	298279	298453	0.14	cps
Chlorine	35-1	95190375	100563912	103324855	99693047	4.15	cps
Chlorine	35-2	408630	410357	411953	410313	0.40	cps
Chromium	52-2	164059	161820	162461	162780	0.71	cps
Cobalt	59-2	163764	162422	163065	163083	0.41	cps
Copper	63-2	165617	166514	167718	166616	0.63	cps
Dysprosium	156-1	97	107	93	99	7.02	cps
Dysprosium	156-2	23	10	37	23	57.15	cps
Erbium	164-1	187	163	160	170	8.55	cps
Erbium	164-2	57	53	60	57	5.89	cps
Gadolinium	160-1	213	137	213	188	23.57	cps
Gadolinium	160-2	73	67	53	64	15.80	cps
Holmium	165-1	15778598	15879409	15579399	15745802	0.97	cps
Holmium	165-2	6089073	6031036	6010883	6043664	0.67	cps
Indium	115-1	13383448	13456687	13244536	13361557	0.81	cps
Indium	115-2	1338182	1316511	1306319	1320337	1.23	cps
Iron	54-2	16558399	16827584	16768236	16718073	0.85	cps
Iron	56-2	312054609	306368089	310460255	309627651	0.95	cps
Iron	57-2	7721403	7796619	7714644	7744222	0.59	cps
Krypton	83-1	327	243	280	283	14.74	cps
Lead	206-1	358445	357741	360388	358858	0.38	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : ICSAB01 Instrumnet Name : P8
Client Sample ID : ICSAB01 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:43:44 DataFile Name : 019ICSB.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	298929	302586	302031	301182	0.65	cps
Lead	208-1	1379963	1398311	1402827	1393700	0.87	cps
Lithium	6-1	5093393	5107552	5049844	5083597	0.59	cps
Magnesium	24-2	22560537	22727120	22596847	22628168	0.39	cps
Manganese	55-2	47669	47653	47586	47636	0.09	cps
Molybdenum	94-1	11707919	11507165	11432758	11549281	1.23	cps
Molybdenum	95-1	20364498	20085865	20470976	20307113	0.98	cps
Molybdenum	96-1	21867218	21685139	22166550	21906302	1.11	cps
Molybdenum	97-1	12639024	12962195	12772291	12791170	1.27	cps
Molybdenum	98-1	32861146	33000175	32876618	32912646	0.23	cps
Neodymium	150-1	77	123	97	99	23.68	cps
Neodymium	150-2	20	20	20	20	0.00	cps
Nickel	60-2	52757	53015	53139	52970	0.37	cps
Phosphorus	31-2	344002	344532	343501	344012	0.15	cps
Potassium	39-2	15051814	14948329	14833851	14944665	0.73	cps
Rhodium	103-1	12190088	12382301	12130565	12234318	1.08	cps
Rhodium	103-2	4921124	4850150	4833277	4868184	0.96	cps
Scandium	45-1	9086170	9317490	9148877	9184179	1.30	cps
Scandium	45-2	169618	167638	166523	167927	0.93	cps
Selenium	82-1	6732	6515	6575	6607	1.69	cps
Selenium	77-2	117	133	97	116	15.89	cps
Selenium	78-2	383	363	413	387	6.51	cps
Silicon	28-1	816465	826407	827589	823487	0.74	cps
Silver	107-1	456467	459427	463416	459770	0.76	cps
Silver	109-1	432347	438928	439428	436901	0.90	cps
Sodium	23-2	47276044	47769638	48285274	47776985	1.06	cps
Strontium	86-1	218990	219213	220109	219437	0.27	cps
Strontium	88-1	2009627	1976880	2016763	2001090	1.06	cps
Sulfur	34-1	8581002	8373820	8542724	8499182	1.30	cps
Terbium	159-1	16672495	16457879	16728126	16619500	0.86	cps
Terbium	159-2	5945181	5809813	5791346	5848780	1.44	cps
Thallium	203-1	337913	340680	338518	339037	0.43	cps
Thallium	205-1	789897	813547	810350	804598	1.59	cps
Tin	118-1	6045	5905	5811	5920	1.98	cps
Titanium	47-1	5970877	6176116	6145851	6097614	1.82	cps
Uranium	238-1	1607	1440	1550	1532	5.53	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : ICSAB01 Instrumnet Name : P8
Client Sample ID : ICSAB01 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:43:44 DataFile Name : 019ICSB.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	63276	62850	62757	62961	0.44	cps
Ytterbium	172-1	140	90	117	116	21.65	cps
Ytterbium	172-2	53	67	53	58	13.33	cps
Ytterbium	176-1	1760	1870	1924	1851	4.50	cps
Ytterbium	176-2	523	510	530	521	1.96	cps
Yttrium	89-1	25028346	25620865	25472184	25373799	1.21	cps
Yttrium	89-2	1862478	1824882	1829745	1839035	1.11	cps
Zinc	66-2	20725	20291	20802	20606	1.34	cps
Zirconium	90-1	2547	2620	2784	2650	4.57	cps
Zirconium	91-1	627	690	780	699	11.02	cps

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LB Number : LB135941 Operator : Jaswal
Lab Sample ID : CCV01 Instrumnet Name : P8
Client Sample ID : CCV01 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:52:31 DataFile Name : 021CCV.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	3570564	3566945	3566972	3568161	0.06	cps
Antimony	121-1	10288105	10360537	10283787	10310810	0.42	cps
Arsenic	75-2	214907	211792	212721	213140	0.75	cps
Barium	135-1	12271437	12153335	12386581	12270451	0.95	cps
Barium	137-1	20536143	21307326	21485823	21109764	2.39	cps
Beryllium	9-1	2414037	2477948	2508824	2466936	1.96	cps
Bismuth	209-1	8245343	8697997	8663872	8535737	2.95	cps
Bismuth	209-2	3906836	3899425	3850915	3885726	0.78	cps
Bromine	81-1	26819	27160	27734	27238	1.70	cps
Cadmium	108-1	185676	191964	192235	189958	1.95	cps
Cadmium	106-1	276569	282496	285140	281401	1.56	cps
Cadmium	111-1	2414789	2519358	2508115	2480754	2.31	cps
Calcium	43-1	16162923	16801863	16938669	16634485	2.49	cps
Calcium	44-1	260138929	274771596	269941136	268283887	2.78	cps
Carbon	12-1	3605510	3682232	3634872	3640871	1.06	cps
Carbon	12-2	28461	28244	28344	28350	0.38	cps
Chlorine	35-1	1228575	1196768	1187122	1204155	1.80	cps
Chlorine	35-2	4367	4197	4054	4206	3.73	cps
Chromium	52-2	2207330	2163319	2176638	2182429	1.03	cps
Cobalt	59-2	3932510	3910723	3956875	3933369	0.59	cps
Copper	63-2	29626828	29453001	29669222	29583017	0.39	cps
Dysprosium	156-1	750	697	703	717	4.06	cps
Dysprosium	156-2	230	240	177	216	15.79	cps
Erbium	164-1	1037	1130	1137	1101	5.08	cps
Erbium	164-2	413	357	413	394	8.29	cps
Gadolinium	160-1	607	703	613	641	8.42	cps
Gadolinium	160-2	293	257	283	278	6.82	cps
Holmium	165-1	15349474	15840693	15562154	15584107	1.58	cps
Holmium	165-2	5990084	5933192	5977893	5967056	0.50	cps
Indium	115-1	12289319	12684293	12655113	12542908	1.75	cps
Indium	115-2	1270307	1264583	1273904	1269598	0.37	cps
Iron	54-2	22003091	21257669	21626965	21629241	1.72	cps
Iron	56-2	401461487	397293967	395326807	398027421	0.79	cps
Iron	57-2	10011735	9983074	10208788	10067866	1.22	cps
Krypton	83-1	230	333	280	281	18.38	cps
Lead	206-1	34390897	35572754	35589063	35184238	1.95	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : CCV01 Instrumnet Name : P8
Client Sample ID : CCV01 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:52:31 DataFile Name : 021CCV.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	30308882	30331350	30426449	30355560	0.21	cps
Lead	208-1	138760165	141023874	141615995	140466678	1.07	cps
Lithium	6-1	4755589	4919009	4913917	4862838	1.91	cps
Magnesium	24-2	61810911	61345484	61838461	61664952	0.45	cps
Manganese	55-2	8960677	8848474	8880719	8896623	0.65	cps
Molybdenum	94-1	35786994	37567053	36765788	36706612	2.43	cps
Molybdenum	95-1	52048969	54062171	53760713	53290618	2.04	cps
Molybdenum	96-1	57358029	58151406	57885679	57798371	0.70	cps
Molybdenum	97-1	32685444	33134730	32844210	32888128	0.69	cps
Molybdenum	98-1	82840295	87382699	85464099	85229031	2.68	cps
Neodymium	150-1	1150	1063	1107	1107	3.92	cps
Neodymium	150-2	87	127	120	111	19.29	cps
Nickel	60-2	1012413	1001122	1001512	1005016	0.64	cps
Phosphorus	31-2	34728	34782	35213	34908	0.76	cps
Potassium	39-2	19714305	19711784	19677981	19701357	0.10	cps
Rhodium	103-1	11500070	11612513	11556135	11556239	0.49	cps
Rhodium	103-2	4795401	4695390	4687216	4726002	1.27	cps
Scandium	45-1	8728453	8980461	8870681	8859865	1.43	cps
Scandium	45-2	168661	166483	167410	167518	0.65	cps
Selenium	82-1	147506	150043	150342	149297	1.04	cps
Selenium	77-2	2737	2580	2690	2669	3.01	cps
Selenium	78-2	9066	8686	8746	8833	2.31	cps
Silicon	28-1	55842136	58296069	57686536	57274914	2.23	cps
Silver	107-1	12326108	12465423	12501321	12430951	0.74	cps
Silver	109-1	11618553	11590074	11590584	11599737	0.14	cps
Sodium	23-2	122146808	122070108	125392005	123202974	1.54	cps
Strontium	86-1	3425141	3505123	3515520	3481928	1.42	cps
Strontium	88-1	30137925	29998030	30222580	30119512	0.38	cps
Sulfur	34-1	1342901	1364693	1357241	1354945	0.82	cps
Terbium	159-1	16124985	16475395	16412348	16337576	1.14	cps
Terbium	159-2	5770415	5717293	5788463	5758723	0.64	cps
Thallium	203-1	8504629	8760486	8657166	8640760	1.49	cps
Thallium	205-1	19914938	20881718	20692160	20496272	2.50	cps
Tin	118-1	8298695	8305493	8393092	8332427	0.63	cps
Titanium	47-1	14968261	15060676	15384185	15137708	1.44	cps
Uranium	238-1	27133127	27621732	28294665	27683175	2.11	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : CCV01 Instrumnet Name : P8
Client Sample ID : CCV01 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:52:31 DataFile Name : 021CCV.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	1668483	1647456	1672314	1662751	0.80	cps
Ytterbium	172-1	837	890	940	889	5.81	cps
Ytterbium	172-2	413	370	420	401	6.77	cps
Ytterbium	176-1	43475	44930	44364	44256	1.66	cps
Ytterbium	176-2	16247	16807	16801	16618	1.94	cps
Yttrium	89-1	24746164	24789682	24777051	24770966	0.09	cps
Yttrium	89-2	1852158	1849016	1855369	1852181	0.17	cps
Zinc	66-2	3389099	3327176	3319414	3345230	1.14	cps
Zirconium	90-1	17974473	18902532	18742058	18539688	2.68	cps
Zirconium	91-1	4071285	4221499	4254751	4182511	2.34	cps

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LB Number : LB135941 Operator : Jaswal
Lab Sample ID : CCB01 Instrumnet Name : P8
Client Sample ID : CCB01 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:58:09 DataFile Name : 022CCBE.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	140	110	107	119	15.44	cps
Antimony	121-1	1580	1220	1167	1322	17.00	cps
Arsenic	75-2	3	10	3	6	69.34	cps
Barium	135-1	187	157	180	174	9.03	cps
Barium	137-1	253	313	273	280	10.91	cps
Beryllium	9-1	312	275	241	276	12.90	cps
Bismuth	209-1	9819095	9693247	9883104	9798482	0.99	cps
Bismuth	209-2	4469399	4434471	4441370	4448413	0.42	cps
Bromine	81-1	27935	27998	28135	28022	0.37	cps
Cadmium	108-1	17	27	30	24	28.38	cps
Cadmium	106-1	7806	8076	8152	8011	2.27	cps
Cadmium	111-1	5519	5681	5726	5642	1.93	cps
Calcium	43-1	803	727	743	758	5.32	cps
Calcium	44-1	24552	23917	23814	24094	1.66	cps
Carbon	12-1	3327043	3360073	3333874	3340330	0.52	cps
Carbon	12-2	21249	21122	21092	21154	0.39	cps
Chlorine	35-1	604413	591729	574354	590166	2.56	cps
Chlorine	35-2	1993	2094	2013	2033	2.60	cps
Chromium	52-2	840	820	803	821	2.24	cps
Cobalt	59-2	137	97	93	109	22.15	cps
Copper	63-2	2100	2197	2144	2147	2.26	cps
Dysprosium	156-1	20	33	23	26	27.15	cps
Dysprosium	156-2	3	10	3	6	69.34	cps
Erbium	164-1	107	137	117	120	12.73	cps
Erbium	164-2	40	63	50	51	22.90	cps
Gadolinium	160-1	147	100	117	121	19.53	cps
Gadolinium	160-2	30	30	30	30	0.00	cps
Holmium	165-1	16111538	16083272	16118829	16104547	0.12	cps
Holmium	165-2	6115913	6219261	6064137	6133104	1.29	cps
Indium	115-1	13724353	13895043	14029784	13883060	1.10	cps
Indium	115-2	1401986	1400928	1408215	1403710	0.28	cps
Iron	54-2	720	567	637	641	11.97	cps
Iron	56-2	9213	8486	9016	8905	4.22	cps
Iron	57-2	233	200	220	218	7.71	cps
Krypton	83-1	313	230	273	272	15.31	cps
Lead	206-1	1560	1683	1480	1575	6.51	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : CCB01 Instrumnet Name : P8
Client Sample ID : CCB01 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:58:09 DataFile Name : 022CCBE.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	1403	1373	1307	1361	3.64	cps
Lead	208-1	6357	6387	5991	6245	3.54	cps
Lithium	6-1	5273162	5468915	5202538	5314871	2.60	cps
Magnesium	24-2	1180	1197	1207	1195	1.13	cps
Manganese	55-2	1357	1343	1337	1346	0.76	cps
Molybdenum	94-1	1340	1393	1320	1351	2.81	cps
Molybdenum	95-1	917	797	800	838	8.16	cps
Molybdenum	96-1	1033	1030	983	1016	2.75	cps
Molybdenum	97-1	600	443	417	487	20.35	cps
Molybdenum	98-1	1320	1237	1223	1260	4.16	cps
Neodymium	150-1	10	27	17	18	47.19	cps
Neodymium	150-2	3	0	3	2	86.60	cps
Nickel	60-2	247	213	237	232	7.37	cps
Phosphorus	31-2	93	80	30	68	49.26	cps
Potassium	39-2	14738	14995	14441	14724	1.88	cps
Rhodium	103-1	13161560	13372994	13266182	13266912	0.80	cps
Rhodium	103-2	5372573	5407439	5489405	5423139	1.11	cps
Scandium	45-1	9382822	9411775	9204034	9332877	1.21	cps
Scandium	45-2	171527	172292	172145	171988	0.24	cps
Selenium	82-1	-87	40	0	-16	-416.35	cps
Selenium	77-2	0	0	0	0	0.00	cps
Selenium	78-2	3	10	20	11	75.52	cps
Silicon	28-1	475710	484534	497188	485810	2.22	cps
Silver	107-1	607	560	537	568	6.28	cps
Silver	109-1	467	490	407	454	9.46	cps
Sodium	23-2	44762	44057	43809	44209	1.12	cps
Strontium	86-1	420	467	503	463	9.01	cps
Strontium	88-1	570	570	590	577	2.00	cps
Sulfur	34-1	559926	559323	564081	561110	0.46	cps
Terbium	159-1	16643628	16680419	16941272	16755106	0.97	cps
Terbium	159-2	5965200	5949360	6027501	5980687	0.69	cps
Thallium	203-1	730	647	670	682	6.30	cps
Thallium	205-1	1537	1660	1653	1617	4.29	cps
Tin	118-1	2474	2427	2357	2419	2.43	cps
Titanium	47-1	363	423	433	407	9.31	cps
Uranium	238-1	267	217	287	257	14.05	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : CCB01 Instrumnet Name : P8
Client Sample ID : CCB01 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 14:58:09 DataFile Name : 022CCBE.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	50	13	13	26	82.85	cps
Ytterbium	172-1	97	103	117	106	9.65	cps
Ytterbium	172-2	70	27	57	51	43.42	cps
Ytterbium	176-1	1873	1974	2007	1951	3.56	cps
Ytterbium	176-2	593	550	560	568	4.00	cps
Yttrium	89-1	25182405	25434835	25358552	25325264	0.51	cps
Yttrium	89-2	1912687	1905173	1948529	1922130	1.21	cps
Zinc	66-2	380	303	360	348	11.44	cps
Zirconium	90-1	2567	2817	2470	2618	6.83	cps
Zirconium	91-1	527	577	603	569	6.84	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : CRI Instrumnet Name : P8
Client Sample ID : CRI Dilution Factor : 1
Date & Time Acquired : 2025-05-23 15:01:44 DataFile Name : 023LLCC.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	1600	1577	1637	1605	1.89	cps
Antimony	121-1	41486	41158	41386	41343	0.41	cps
Arsenic	75-2	390	410	483	428	11.49	cps
Barium	135-1	46242	47145	47607	46998	1.48	cps
Barium	137-1	81162	81584	82878	81875	1.09	cps
Beryllium	9-1	5765	5762	5713	5747	0.51	cps
Bismuth	209-1	9684999	9711228	9882615	9759614	1.10	cps
Bismuth	209-2	4434293	4391106	4462481	4429293	0.81	cps
Bromine	81-1	27487	28322	27337	27715	1.92	cps
Cadmium	108-1	387	410	317	371	13.09	cps
Cadmium	106-1	8760	8346	8533	8546	2.42	cps
Cadmium	111-1	10342	10196	10292	10277	0.72	cps
Calcium	43-1	33185	33900	33836	33640	1.18	cps
Calcium	44-1	548844	559287	555029	554387	0.95	cps
Carbon	12-1	3406326	3390798	3397149	3398091	0.23	cps
Carbon	12-2	22410	22083	22130	22208	0.80	cps
Chlorine	35-1	457871	446073	435183	446376	2.54	cps
Chlorine	35-2	1410	1417	1600	1476	7.31	cps
Chromium	52-2	9243	9567	9280	9363	1.89	cps
Cobalt	59-2	8429	8693	8493	8538	1.61	cps
Copper	63-2	16990	17114	16894	16999	0.65	cps
Dysprosium	156-1	23	23	17	21	18.21	cps
Dysprosium	156-2	3	13	3	7	86.65	cps
Erbium	164-1	137	103	123	121	13.86	cps
Erbium	164-2	27	43	27	32	29.85	cps
Gadolinium	160-1	110	123	93	109	13.81	cps
Gadolinium	160-2	27	30	10	22	48.22	cps
Holmium	165-1	15888813	16190622	16302656	16127364	1.33	cps
Holmium	165-2	6014947	6218726	6244069	6159247	2.04	cps
Indium	115-1	13930882	14411883	13803808	14048858	2.28	cps
Indium	115-2	1405302	1410515	1414423	1410080	0.32	cps
Iron	54-2	9583	9737	9627	9649	0.82	cps
Iron	56-2	170243	169852	169322	169806	0.27	cps
Iron	57-2	4224	4347	4411	4327	2.19	cps
Krypton	83-1	233	270	267	257	7.90	cps
Lead	206-1	12333	13240	12613	12729	3.65	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : CRI Instrumnet Name : P8
Client Sample ID : CRI Dilution Factor : 1
Date & Time Acquired : 2025-05-23 15:01:44 DataFile Name : 023LLCC.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	11188	11392	11488	11356	1.35	cps
Lead	208-1	50172	52378	51961	51504	2.28	cps
Lithium	6-1	5234767	5273517	5418646	5308976	1.83	cps
Magnesium	24-2	129809	129812	129086	129569	0.32	cps
Manganese	55-2	3370	3087	3334	3264	4.72	cps
Molybdenum	94-1	42535	43528	43852	43305	1.58	cps
Molybdenum	95-1	51321	51050	52726	51699	1.74	cps
Molybdenum	96-1	56320	56571	57324	56739	0.92	cps
Molybdenum	97-1	31252	30784	32211	31416	2.31	cps
Molybdenum	98-1	81548	81021	82604	81724	0.99	cps
Neodymium	150-1	33	10	13	19	66.81	cps
Neodymium	150-2	0	10	3	4	114.60	cps
Nickel	60-2	2760	2937	2860	2853	3.11	cps
Phosphorus	31-2	980	917	937	944	3.43	cps
Potassium	39-2	90186	91233	91564	90994	0.79	cps
Rhodium	103-1	12973014	13134518	13275515	13127682	1.15	cps
Rhodium	103-2	5465653	5374079	5300217	5379983	1.54	cps
Scandium	45-1	9288522	9282895	9351019	9307479	0.41	cps
Scandium	45-2	174237	172478	172953	173223	0.53	cps
Selenium	82-1	1637	1570	1563	1590	2.55	cps
Selenium	77-2	43	20	13	26	61.64	cps
Selenium	78-2	110	157	117	128	19.75	cps
Silicon	28-1	558799	563464	559843	560702	0.44	cps
Silver	107-1	26355	27174	26679	26736	1.54	cps
Silver	109-1	24772	25681	25584	25346	1.97	cps
Sodium	23-2	286843	287738	289641	288074	0.50	cps
Strontium	86-1	6832	7022	7109	6987	2.03	cps
Strontium	88-1	57809	58374	58455	58213	0.60	cps
Sulfur	34-1	583503	583235	583754	583497	0.04	cps
Terbium	159-1	16946694	16935325	16444860	16775626	1.71	cps
Terbium	159-2	5959032	5968594	5884797	5937474	0.77	cps
Thallium	203-1	17836	17572	17892	17767	0.96	cps
Thallium	205-1	41393	43613	42071	42359	2.69	cps
Tin	118-1	83100	84123	84502	83908	0.86	cps
Titanium	47-1	15528	15739	16022	15763	1.57	cps
Uranium	238-1	50761	51805	51166	51244	1.03	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : CRI Instrumnet Name : P8
Client Sample ID : CRI Dilution Factor : 1
Date & Time Acquired : 2025-05-23 15:01:44 DataFile Name : 023LLCC.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	16546	15852	16396	16265	2.25	cps
Ytterbium	172-1	123	73	80	92	29.44	cps
Ytterbium	172-2	33	27	50	37	32.78	cps
Ytterbium	176-1	1850	1940	2084	1958	6.01	cps
Ytterbium	176-2	533	530	543	536	1.30	cps
Yttrium	89-1	25981137	25147949	25504832	25544639	1.64	cps
Yttrium	89-2	1943147	1901233	1902523	1915634	1.24	cps
Zinc	66-2	4261	4341	4347	4316	1.12	cps
Zirconium	90-1	39255	40666	41458	40460	2.76	cps
Zirconium	91-1	9070	8746	8803	8873	1.95	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : PB168134BL Instrumnet Name : P8
Client Sample ID : PB168134BL Dilution Factor : 1
Date & Time Acquired : 2025-05-23 15:05:08 DataFile Name : 024CCBE.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	127	123	120	123	2.70	cps
Antimony	121-1	330	310	440	360	19.44	cps
Arsenic	75-2	7	7	7	7	0.00	cps
Barium	135-1	93	100	150	114	27.06	cps
Barium	137-1	193	170	213	192	11.28	cps
Beryllium	9-1	191	159	165	172	10.05	cps
Bismuth	209-1	9860412	9803186	9622867	9762155	1.27	cps
Bismuth	209-2	4436600	4330198	4410285	4392361	1.26	cps
Bromine	81-1	27420	28322	28539	28094	2.11	cps
Cadmium	108-1	10	33	27	23	51.50	cps
Cadmium	106-1	7986	7962	7922	7957	0.40	cps
Cadmium	111-1	5606	5564	5554	5575	0.50	cps
Calcium	43-1	867	880	910	886	2.51	cps
Calcium	44-1	24275	23917	24191	24128	0.77	cps
Carbon	12-1	3333841	3384372	3416377	3378197	1.23	cps
Carbon	12-2	21529	21699	21419	21549	0.66	cps
Chlorine	35-1	371257	366120	355866	364414	2.15	cps
Chlorine	35-2	1283	1410	1177	1290	9.06	cps
Chromium	52-2	797	790	897	828	7.22	cps
Cobalt	59-2	70	63	50	61	16.66	cps
Copper	63-2	1830	1817	1913	1853	2.83	cps
Dysprosium	156-1	27	17	10	18	47.19	cps
Dysprosium	156-2	0	0	3	1	173.21	cps
Erbium	164-1	133	103	90	109	20.39	cps
Erbium	164-2	47	37	50	44	15.61	cps
Gadolinium	160-1	97	110	93	100	8.82	cps
Gadolinium	160-2	33	23	20	26	27.15	cps
Holmium	165-1	16114495	16028872	16022481	16055283	0.32	cps
Holmium	165-2	6197003	6125001	6184701	6168902	0.62	cps
Indium	115-1	14059273	13743787	13832516	13878526	1.17	cps
Indium	115-2	1414351	1413412	1418700	1415488	0.20	cps
Iron	54-2	637	573	580	597	5.83	cps
Iron	56-2	6925	6848	6828	6867	0.74	cps
Iron	57-2	183	183	167	178	5.41	cps
Krypton	83-1	287	230	257	258	11.00	cps
Lead	206-1	1207	1093	1260	1187	7.17	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : PB168134BL Instrumnet Name : P8
Client Sample ID : PB168134BL Dilution Factor : 1
Date & Time Acquired : 2025-05-23 15:05:08 DataFile Name : 024CCBE.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	1073	1030	1060	1055	2.11	cps
Lead	208-1	4714	4590	4830	4712	2.55	cps
Lithium	6-1	5208005	5196852	5348512	5251123	1.61	cps
Magnesium	24-2	917	860	877	884	3.29	cps
Manganese	55-2	1313	1270	1420	1335	5.78	cps
Molybdenum	94-1	830	943	880	884	6.42	cps
Molybdenum	95-1	290	327	293	303	6.68	cps
Molybdenum	96-1	417	357	417	397	8.73	cps
Molybdenum	97-1	170	177	133	160	14.58	cps
Molybdenum	98-1	387	427	400	404	5.04	cps
Neodymium	150-1	10	27	17	18	47.19	cps
Neodymium	150-2	7	0	0	2	173.21	cps
Nickel	60-2	197	253	210	220	13.47	cps
Phosphorus	31-2	67	97	107	90	23.13	cps
Potassium	39-2	14034	13627	13820	13827	1.47	cps
Rhodium	103-1	13390929	13209996	12926543	13175822	1.78	cps
Rhodium	103-2	5487515	5477800	5412217	5459177	0.75	cps
Scandium	45-1	9221858	9431592	9315946	9323132	1.13	cps
Scandium	45-2	173473	173723	174604	173933	0.34	cps
Selenium	82-1	-43	37	17	3	1247.75	cps
Selenium	77-2	0	0	0	0	0.00	cps
Selenium	78-2	13	7	10	10	33.30	cps
Silicon	28-1	474347	489883	489943	484724	1.85	cps
Silver	107-1	427	467	457	450	4.63	cps
Silver	109-1	350	253	333	312	16.55	cps
Sodium	23-2	40596	40423	40432	40484	0.24	cps
Strontium	86-1	367	437	497	433	15.02	cps
Strontium	88-1	580	617	613	603	3.36	cps
Sulfur	34-1	551396	551457	554391	552415	0.31	cps
Terbium	159-1	16682740	16432258	16656883	16590627	0.83	cps
Terbium	159-2	6038194	6038285	5978284	6018254	0.58	cps
Thallium	203-1	430	387	417	411	5.40	cps
Thallium	205-1	1090	930	903	974	10.36	cps
Tin	118-1	2664	2740	2844	2749	3.29	cps
Titanium	47-1	310	293	293	299	3.22	cps
Uranium	238-1	67	73	50	63	18.98	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : PB168134BL Instrumnet Name : P8
Client Sample ID : PB168134BL Dilution Factor : 1
Date & Time Acquired : 2025-05-23 15:05:08 DataFile Name : 024CCBE.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	7	10	10	9	21.63	cps
Ytterbium	172-1	97	113	87	99	13.62	cps
Ytterbium	172-2	43	30	43	39	19.79	cps
Ytterbium	176-1	1974	1863	1944	1927	2.95	cps
Ytterbium	176-2	513	497	577	529	7.98	cps
Yttrium	89-1	25496839	25510966	26067845	25691884	1.27	cps
Yttrium	89-2	1955210	1944124	1891535	1930290	1.76	cps
Zinc	66-2	343	380	313	346	9.66	cps
Zirconium	90-1	2074	1967	1890	1977	4.66	cps
Zirconium	91-1	427	400	413	413	3.23	cps

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LB Number : LB135941 Operator : Jaswal
Lab Sample ID : PB168134BS Instrumnet Name : P8
Client Sample ID : PB168134BS Dilution Factor : 1
Date & Time Acquired : 2025-05-23 15:08:29 DataFile Name : 025LCSS.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	717412	718953	711275	715880	0.57	cps
Antimony	121-1	10329261	10718874	10316449	10454862	2.19	cps
Arsenic	75-2	213016	215869	214387	214424	0.67	cps
Barium	135-1	12057659	12554198	12368834	12326897	2.04	cps
Barium	137-1	21294821	21811111	21735726	21613886	1.29	cps
Beryllium	9-1	2450158	2461715	2536823	2482899	1.90	cps
Bismuth	209-1	9193726	9053748	9427284	9224919	2.05	cps
Bismuth	209-2	4145995	4169550	4192316	4169287	0.56	cps
Bromine	81-1	27066	27180	27888	27378	1.63	cps
Cadmium	108-1	194784	195631	203372	197929	2.39	cps
Cadmium	106-1	288676	295344	295983	293334	1.38	cps
Cadmium	111-1	2595990	2643279	2713619	2650963	2.23	cps
Calcium	43-1	3266329	3432832	3319088	3339416	2.55	cps
Calcium	44-1	54261733	54939149	54331164	54510682	0.68	cps
Carbon	12-1	3556821	3577940	3535189	3556650	0.60	cps
Carbon	12-2	24477	23779	24280	24179	1.49	cps
Chlorine	35-1	357966	354439	351023	354476	0.98	cps
Chlorine	35-2	1280	1400	1400	1360	5.09	cps
Chromium	52-2	2237930	2231347	2212832	2227370	0.58	cps
Cobalt	59-2	4131755	4177792	4096108	4135218	0.99	cps
Copper	63-2	31999775	31931522	32213181	32048159	0.46	cps
Dysprosium	156-1	300	280	290	290	3.45	cps
Dysprosium	156-2	77	63	53	64	18.17	cps
Erbium	164-1	310	297	280	296	5.09	cps
Erbium	164-2	160	120	103	128	22.79	cps
Gadolinium	160-1	253	207	297	252	17.85	cps
Gadolinium	160-2	70	97	73	80	18.17	cps
Holmium	165-1	16040480	16257052	16115854	16137795	0.68	cps
Holmium	165-2	6116485	6130394	6163902	6136927	0.40	cps
Indium	115-1	13235089	13279021	13377479	13297197	0.55	cps
Indium	115-2	1327350	1324699	1332362	1328137	0.29	cps
Iron	54-2	4531700	4492334	4456820	4493618	0.83	cps
Iron	56-2	81481655	81990717	79827509	81099960	1.39	cps
Iron	57-2	2108583	2095677	2075594	2093285	0.79	cps
Krypton	83-1	283	277	277	279	1.38	cps
Lead	206-1	35499632	36932435	37853694	36761921	3.23	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : PB168134BS Instrumnet Name : P8
Client Sample ID : PB168134BS Dilution Factor : 1
Date & Time Acquired : 2025-05-23 15:08:29 DataFile Name : 025LCSS.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	30075579	31550053	31857662	31161098	3.06	cps
Lead	208-1	139919961	145331955	146839072	144030330	2.53	cps
Lithium	6-1	5090430	5099497	5370955	5186961	3.07	cps
Magnesium	24-2	12640749	12570323	12599903	12603658	0.28	cps
Manganese	55-2	9338852	9193788	9109422	9214021	1.26	cps
Molybdenum	94-1	36883643	36917304	37421996	37074314	0.81	cps
Molybdenum	95-1	51885299	54336441	54742898	53654879	2.88	cps
Molybdenum	96-1	56181394	59111921	58404041	57899119	2.64	cps
Molybdenum	97-1	31989564	33758694	32093499	32613919	3.04	cps
Molybdenum	98-1	83122177	86643835	85265415	85010476	2.09	cps
Neodymium	150-1	983	1027	873	961	8.22	cps
Neodymium	150-2	63	53	70	62	13.48	cps
Nickel	60-2	1063249	1062704	1072149	1066034	0.50	cps
Phosphorus	31-2	34321	34792	34681	34598	0.71	cps
Potassium	39-2	4088241	3993762	3989108	4023704	1.39	cps
Rhodium	103-1	12124534	12627954	12121754	12291414	2.37	cps
Rhodium	103-2	5121478	5043766	5064034	5076426	0.79	cps
Scandium	45-1	9238966	9221717	9092977	9184553	0.87	cps
Scandium	45-2	173136	171011	171831	171993	0.62	cps
Selenium	82-1	152843	156907	157383	155711	1.60	cps
Selenium	77-2	2777	2684	2570	2677	3.87	cps
Selenium	78-2	8923	9383	9253	9186	2.58	cps
Silicon	28-1	72038151	71749542	70989236	71592309	0.76	cps
Silver	107-1	12841327	13162142	13552066	13185179	2.70	cps
Silver	109-1	12068767	12854972	12531054	12484931	3.16	cps
Sodium	23-2	24961635	24907745	25067458	24978946	0.33	cps
Strontium	86-1	3433129	3490940	3378905	3434325	1.63	cps
Strontium	88-1	29367957	30593728	29507398	29823028	2.25	cps
Sulfur	34-1	1377156	1380228	1358477	1371954	0.86	cps
Terbium	159-1	16331332	16445658	16534489	16437160	0.62	cps
Terbium	159-2	5949050	6003321	5867242	5939871	1.15	cps
Thallium	203-1	8579099	8904500	9038761	8840787	2.67	cps
Thallium	205-1	20603275	21164715	21268073	21012021	1.70	cps
Tin	118-1	8371121	8724147	8331031	8475433	2.55	cps
Titanium	47-1	15160183	15307670	15167414	15211756	0.55	cps
Uranium	238-1	26509620	26907221	27712870	27043237	2.27	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : PB168134BS Instrumnet Name : P8
Client Sample ID : PB168134BS Dilution Factor : 1
Date & Time Acquired : 2025-05-23 15:08:29 DataFile Name : 025LCSS.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	1726223	1678144	1674396	1692921	1.71	cps
Ytterbium	172-1	340	353	377	357	5.20	cps
Ytterbium	172-2	120	140	173	144	18.66	cps
Ytterbium	176-1	43381	44294	43314	43663	1.25	cps
Ytterbium	176-2	16220	16724	16420	16455	1.54	cps
Yttrium	89-1	25260808	25413831	24685343	25119994	1.53	cps
Yttrium	89-2	1903442	1900337	1892766	1898848	0.29	cps
Zinc	66-2	3477257	3499835	3533315	3503469	0.81	cps
Zirconium	90-1	18674582	18845621	18908144	18809449	0.64	cps
Zirconium	91-1	4099786	4227283	4321287	4216119	2.64	cps

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LB Number : LB135941 Operator : Jaswal
Lab Sample ID : Q1872-10 Instrumnet Name : P8
Client Sample ID : HW0425-PT-MET-SOIL Dilution Factor : 1
Date & Time Acquired : 2025-05-23 15:13:58 DataFile Name : 027AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	10346737	10505978	10239925	10364213	1.29	cps
Antimony	121-1	27561193	27908585	28080990	27850256	0.95	cps
Arsenic	75-2	853234	855159	865552	857982	0.77	cps
Barium	135-1	43638909	44080181	43505148	43741413	0.69	cps
Barium	137-1	74457156	75846121	74936894	75080057	0.94	cps
Beryllium	9-1	8132909	8242456	8191448	8188937	0.67	cps
Bismuth	209-1	9051324	9167908	9123757	9114329	0.65	cps
Bismuth	209-2	3986983	4010144	4225215	4074114	3.22	cps
Bromine	81-1	60500	61775	62281	61519	1.49	cps
Cadmium	108-1	953635	964872	956300	958269	0.61	cps
Cadmium	106-1	1322234	1334944	1328571	1328583	0.48	cps
Cadmium	111-1	15032324	15208819	14945142	15062095	0.89	cps
Calcium	43-1	14405230	14450306	14478257	14444598	0.26	cps
Calcium	44-1	228494443	234382210	237079343	233318665	1.88	cps
Carbon	12-1	21461774	22745844	23061965	22423194	3.78	cps
Carbon	12-2	149296	151499	149070	149955	0.89	cps
Chlorine	35-1	400466727	419780420	419218567	413155238	2.66	cps
Chlorine	35-2	1737749	1783422	1767957	1763043	1.32	cps
Chromium	52-2	10727968	10815337	10742219	10761841	0.44	cps
Cobalt	59-2	7366430	7335673	7323648	7341917	0.30	cps
Copper	63-2	22296837	22239898	22540147	22358961	0.71	cps
Dysprosium	156-1	605709	615641	614420	611924	0.89	cps
Dysprosium	156-2	179346	180897	182076	180773	0.76	cps
Erbium	164-1	404993	411128	407863	407994	0.75	cps
Erbium	164-2	142106	142793	143962	142954	0.66	cps
Gadolinium	160-1	479157	490315	486155	485209	1.16	cps
Gadolinium	160-2	204706	204568	205948	205074	0.37	cps
Holmium	165-1	17003909	16634145	16232295	16623450	2.32	cps
Holmium	165-2	6250072	6076587	6493454	6273371	3.34	cps
Indium	115-1	13001166	13353403	12897700	13084090	1.83	cps
Indium	115-2	1231427	1230483	1348220	1270043	5.33	cps
Iron	54-2	24533213	24840560	24666128	24679967	0.62	cps
Iron	56-2	448076780	445036007	451935407	448349398	0.77	cps
Iron	57-2	11187437	11247526	11288546	11241169	0.45	cps
Krypton	83-1	957	1053	953	988	5.75	cps
Lead	206-1	19294146	19115676	19471595	19293806	0.92	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : Q1872-10 Instrumnet Name : P8
Client Sample ID : HW0425-PT-MET-SOIL Dilution Factor : 1
Date & Time Acquired : 2025-05-23 15:13:58 DataFile Name : 027AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	16254928	16412428	16227170	16298175	0.61	cps
Lead	208-1	74770414	75985852	75723336	75493201	0.85	cps
Lithium	6-1	11516218	11418488	11337044	11423917	0.79	cps
Magnesium	24-2	50059341	50062943	49269068	49797117	0.92	cps
Manganese	55-2	24291871	24054985	23896176	24081011	0.83	cps
Molybdenum	94-1	3598709	3773581	3757632	3709974	2.61	cps
Molybdenum	95-1	4010162	4033816	3990892	4011623	0.54	cps
Molybdenum	96-1	4597351	4517192	4573828	4562790	0.90	cps
Molybdenum	97-1	2466678	2508413	2498808	2491300	0.88	cps
Molybdenum	98-1	6292827	6522325	6326244	6380465	1.94	cps
Neodymium	150-1	910940	940826	930485	927417	1.64	cps
Neodymium	150-2	234851	236126	239239	236739	0.95	cps
Nickel	60-2	5730381	5757458	5810400	5766080	0.71	cps
Phosphorus	31-2	25105	25756	25589	25484	1.33	cps
Potassium	39-2	19489642	19368810	19428967	19429140	0.31	cps
Rhodium	103-1	12199977	12424532	12110161	12244890	1.32	cps
Rhodium	103-2	4926690	4882950	5169856	4993165	3.10	cps
Scandium	45-1	11063422	11050230	11215432	11109695	0.83	cps
Scandium	45-2	200969	201490	210750	204403	2.69	cps
Selenium	82-1	529521	543839	540047	537802	1.38	cps
Selenium	77-2	10177	10107	10354	10213	1.25	cps
Selenium	78-2	31576	31485	31358	31473	0.35	cps
Silicon	28-1	14048184	14283068	13663556	13998269	2.23	cps
Silver	107-1	7920005	7859286	7787654	7855648	0.84	cps
Silver	109-1	7367674	7315942	7257619	7313745	0.75	cps
Sodium	23-2	12271894	12346730	12410389	12343004	0.56	cps
Strontium	86-1	22557570	22574244	22727782	22619865	0.41	cps
Strontium	88-1	194141364	199054090	192289177	195161544	1.79	cps
Sulfur	34-1	970498	980333	974130	974987	0.51	cps
Terbium	159-1	17293387	17474675	17244429	17337497	0.70	cps
Terbium	159-2	5970309	5969488	6253855	6064551	2.70	cps
Thallium	203-1	49449738	50630266	50459538	50179847	1.27	cps
Thallium	205-1	114709868	119580445	120816078	118368797	2.73	cps
Tin	118-1	21133803	22027636	21527931	21563123	2.08	cps
Titanium	47-1	14587391	14604213	14557797	14583134	0.16	cps
Uranium	238-1	51642449	53106844	52114759	52288018	1.43	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : Q1872-10 Instrumnet Name : P8
Client Sample ID : HW0425-PT-MET-SOIL Dilution Factor : 1
Date & Time Acquired : 2025-05-23 15:13:58 DataFile Name : 027AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	4252473	4335905	4309598	4299325	0.99	cps
Ytterbium	172-1	121206	123392	122578	122392	0.90	cps
Ytterbium	172-2	53069	53019	52845	52978	0.22	cps
Ytterbium	176-1	83556	86303	84055	84638	1.73	cps
Ytterbium	176-2	36433	36921	37012	36789	0.85	cps
Yttrium	89-1	33049851	32813067	32205692	32689537	1.33	cps
Yttrium	89-2	2359372	2328860	2483454	2390562	3.43	cps
Zinc	66-2	3604776	3641308	3635892	3627326	0.54	cps
Zirconium	90-1	4125296	4112527	4080510	4106111	0.56	cps
Zirconium	91-1	861266	874656	875793	870572	0.93	cps

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LB Number : LB135941 Operator : Jaswal
Lab Sample ID : Q1872-10DLX5 Instrumnet Name : P8
Client Sample ID : HW0425-PT-MET-SOILD Dilution Factor : 5
Date & Time Acquired : 2025-05-23 15:19:37 DataFile Name : 029AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	2128016	2160001	2121412	2136476	0.97	cps
Antimony	121-1	5633979	5748597	5615996	5666191	1.27	cps
Arsenic	75-2	172023	174709	171038	172590	1.10	cps
Barium	135-1	8944655	9050926	8881624	8959068	0.96	cps
Barium	137-1	15213720	15539310	15072703	15275244	1.57	cps
Beryllium	9-1	1733188	1786111	1745766	1755022	1.58	cps
Bismuth	209-1	9472784	9316232	9755829	9514948	2.34	cps
Bismuth	209-2	4259039	3777273	4205760	4080691	6.47	cps
Bromine	81-1	33794	33757	34823	34125	1.77	cps
Cadmium	108-1	198752	202150	202225	201042	0.99	cps
Cadmium	106-1	282916	287472	285798	285395	0.81	cps
Cadmium	111-1	3187360	3230145	3211032	3209513	0.67	cps
Calcium	43-1	2943619	2860032	3021017	2941556	2.74	cps
Calcium	44-1	47308628	47893944	47140384	47447652	0.83	cps
Carbon	12-1	6698019	6855807	6894287	6816038	1.53	cps
Carbon	12-2	44862	44601	45079	44847	0.53	cps
Chlorine	35-1	81040830	85639825	86399772	84360143	3.44	cps
Chlorine	35-2	338792	341782	345462	342012	0.98	cps
Chromium	52-2	2246835	2222280	2259547	2242887	0.84	cps
Cobalt	59-2	1507528	1542959	1562098	1537528	1.80	cps
Copper	63-2	4758717	4771575	4775328	4768540	0.18	cps
Dysprosium	156-1	122953	126579	124278	124603	1.47	cps
Dysprosium	156-2	36333	37262	37713	37102	1.90	cps
Erbium	164-1	81954	82487	82644	82362	0.44	cps
Erbium	164-2	28805	29276	29072	29051	0.81	cps
Gadolinium	160-1	97342	98738	97859	97980	0.72	cps
Gadolinium	160-2	41792	42407	41070	41756	1.60	cps
Holmium	165-1	16245225	16247888	16592638	16361917	1.22	cps
Holmium	165-2	6129379	5405421	6069235	5868011	6.85	cps
Indium	115-1	13537751	13460865	13939975	13646197	1.89	cps
Indium	115-2	1323920	1189161	1303953	1272345	5.72	cps
Iron	54-2	5050928	5085460	5075048	5070479	0.35	cps
Iron	56-2	93610075	93595129	93053325	93419510	0.34	cps
Iron	57-2	2340331	2357836	2373047	2357071	0.69	cps
Krypton	83-1	363	463	337	388	17.22	cps
Lead	206-1	4133697	4150734	4131730	4138720	0.25	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : Q1872-10DLX5 Instrumnet Name : P8
Client Sample ID : HW0425-PT-MET-SOILD Dilution Factor : 5
Date & Time Acquired : 2025-05-23 15:19:37 DataFile Name : 029AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	3486981	3529094	3459865	3491980	1.00	cps
Lead	208-1	16183458	16144982	16164294	16164245	0.12	cps
Lithium	6-1	6617627	6696640	6758761	6691009	1.06	cps
Magnesium	24-2	9999926	10113988	10013269	10042394	0.62	cps
Manganese	55-2	4941141	5084894	5044860	5023631	1.48	cps
Molybdenum	94-1	709515	721041	722925	717827	1.01	cps
Molybdenum	95-1	764088	773924	764601	767538	0.72	cps
Molybdenum	96-1	857750	870471	871122	866448	0.87	cps
Molybdenum	97-1	473965	482750	476144	477619	0.96	cps
Molybdenum	98-1	1206560	1235042	1229589	1223730	1.24	cps
Neodymium	150-1	185904	188340	187729	187324	0.68	cps
Neodymium	150-2	47781	49317	48547	48549	1.58	cps
Nickel	60-2	1144796	1166898	1154974	1155556	0.96	cps
Phosphorus	31-2	5241	5541	5091	5291	4.33	cps
Potassium	39-2	3919614	3959411	3926660	3935228	0.54	cps
Rhodium	103-1	12756506	12610453	13199220	12855393	2.38	cps
Rhodium	103-2	5089256	4505012	4915943	4836737	6.20	cps
Scandium	45-1	9731893	9762657	10010243	9834931	1.55	cps
Scandium	45-2	173301	157633	171206	167380	5.08	cps
Selenium	82-1	107719	110360	109815	109298	1.28	cps
Selenium	77-2	2003	1940	2000	1981	1.80	cps
Selenium	78-2	6572	6402	6378	6450	1.64	cps
Silicon	28-1	3063823	3182619	3019371	3088605	2.73	cps
Silver	107-1	1671218	1696599	1686233	1684683	0.76	cps
Silver	109-1	1464246	1485513	1596590	1515450	4.69	cps
Sodium	23-2	2529253	2487237	2546912	2521134	1.22	cps
Strontium	86-1	4506817	4582415	4546410	4545214	0.83	cps
Strontium	88-1	39868853	39577752	39092277	39512961	0.99	cps
Sulfur	34-1	610232	612258	610195	610895	0.19	cps
Terbium	159-1	16925371	17167003	17521420	17204598	1.74	cps
Terbium	159-2	5836037	5154361	5814156	5601518	6.92	cps
Thallium	203-1	10484926	10830087	10555955	10623656	1.72	cps
Thallium	205-1	24891358	25110486	25001740	25001195	0.44	cps
Tin	118-1	4494866	4478770	4379049	4450895	1.41	cps
Titanium	47-1	2888891	2976783	2948919	2938198	1.53	cps
Uranium	238-1	10937748	10818972	10827520	10861414	0.61	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : Q1872-10DLX5 Instrumnet Name : P8
Client Sample ID : HW0425-PT-MET-SOILD Dilution Factor : 5
Date & Time Acquired : 2025-05-23 15:19:37 DataFile Name : 029AREF.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	832781	834825	840973	836193	0.51	cps
Ytterbium	172-1	25481	25237	24964	25227	1.03	cps
Ytterbium	172-2	10548	10968	10898	10804	2.08	cps
Ytterbium	176-1	18657	19284	18814	18918	1.73	cps
Ytterbium	176-2	7859	7749	7886	7831	0.93	cps
Yttrium	89-1	26885937	26698409	27740690	27108345	2.05	cps
Yttrium	89-2	1969746	1816718	1970224	1918896	4.61	cps
Zinc	66-2	726374	736406	729462	730748	0.70	cps
Zirconium	90-1	762427	777672	772538	770879	1.01	cps
Zirconium	91-1	171374	174521	174187	173361	1.00	cps

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LB Number : LB135941 Operator : Jaswal
Lab Sample ID : CCV02 Instrumnet Name : P8
Client Sample ID : CCV02 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 15:49:15 DataFile Name : 032CCV.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	3422379	3440618	3449266	3437421	0.40	cps
Antimony	121-1	9902294	10055137	10076585	10011339	0.95	cps
Arsenic	75-2	202762	203221	205063	203682	0.60	cps
Barium	135-1	11746789	12185065	11901838	11944564	1.86	cps
Barium	137-1	20331161	21086714	20749525	20722467	1.83	cps
Beryllium	9-1	2359153	2395785	2456354	2403764	2.04	cps
Bismuth	209-1	8162631	8324519	8412626	8299925	1.53	cps
Bismuth	209-2	3709112	3737437	3773765	3740104	0.87	cps
Bromine	81-1	26822	27110	27514	27149	1.28	cps
Cadmium	108-1	181920	184028	184786	183578	0.81	cps
Cadmium	106-1	267593	273371	274197	271720	1.32	cps
Cadmium	111-1	2373211	2457091	2428152	2419485	1.76	cps
Calcium	43-1	15887020	15898279	16255323	16013541	1.31	cps
Calcium	44-1	259729216	262605629	263367876	261900907	0.73	cps
Carbon	12-1	3598919	3694885	3681794	3658533	1.42	cps
Carbon	12-2	27876	27686	28147	27903	0.83	cps
Chlorine	35-1	4004571	3789214	3596194	3796660	5.38	cps
Chlorine	35-2	12382	11618	10988	11663	5.99	cps
Chromium	52-2	2102198	2040377	2115796	2086124	1.93	cps
Cobalt	59-2	3818137	3785200	3766831	3790056	0.69	cps
Copper	63-2	28912587	28817664	29159579	28963277	0.61	cps
Dysprosium	156-1	707	653	657	672	4.44	cps
Dysprosium	156-2	183	190	157	177	9.98	cps
Erbium	164-1	973	1053	1083	1037	5.49	cps
Erbium	164-2	343	390	390	374	7.20	cps
Gadolinium	160-1	650	563	580	598	7.69	cps
Gadolinium	160-2	223	243	230	232	4.39	cps
Holmium	165-1	14715275	15416216	15007461	15046317	2.34	cps
Holmium	165-2	5700154	5655748	5685025	5680309	0.40	cps
Indium	115-1	12185346	12227326	12485452	12299375	1.32	cps
Indium	115-2	1209993	1204121	1215390	1209835	0.47	cps
Iron	54-2	20649156	20896187	20976296	20840546	0.82	cps
Iron	56-2	381428554	377843568	384113541	381128554	0.83	cps
Iron	57-2	9666535	9563607	9703000	9644381	0.75	cps
Krypton	83-1	290	233	310	278	14.32	cps
Lead	206-1	33265066	34690652	34646957	34200892	2.37	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : CCV02 Instrumnet Name : P8
Client Sample ID : CCV02 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 15:49:15 DataFile Name : 032CCV.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	29062167	29165514	29140830	29122837	0.19	cps
Lead	208-1	133931746	135068385	135989737	134996622	0.76	cps
Lithium	6-1	4544197	4753065	4799619	4698960	2.89	cps
Magnesium	24-2	58979641	59860436	60343936	59728004	1.16	cps
Manganese	55-2	8485687	8560731	8601145	8549188	0.69	cps
Molybdenum	94-1	34578856	36074739	35690139	35447911	2.19	cps
Molybdenum	95-1	49673463	52580409	51319694	51191189	2.85	cps
Molybdenum	96-1	54447101	56821461	55368748	55545770	2.16	cps
Molybdenum	97-1	31809105	31803076	31671012	31761065	0.25	cps
Molybdenum	98-1	80724372	82267597	83487789	82159919	1.69	cps
Neodymium	150-1	1053	1140	1097	1097	3.95	cps
Neodymium	150-2	127	110	107	114	9.36	cps
Nickel	60-2	975004	963448	971463	969972	0.61	cps
Phosphorus	31-2	33372	33599	33970	33647	0.90	cps
Potassium	39-2	19117879	18898735	19064466	19027027	0.60	cps
Rhodium	103-1	11233806	10922025	11229496	11128442	1.61	cps
Rhodium	103-2	4601137	4532684	4539178	4557666	0.83	cps
Scandium	45-1	8359186	8717956	8591040	8556060	2.13	cps
Scandium	45-2	161962	157304	163404	160890	1.98	cps
Selenium	82-1	144135	146206	146711	145684	0.94	cps
Selenium	77-2	2420	2487	2430	2446	1.47	cps
Selenium	78-2	8749	8359	8443	8517	2.41	cps
Silicon	28-1	54530663	55159909	55713993	55134855	1.07	cps
Silver	107-1	11647630	11945269	11933936	11842279	1.42	cps
Silver	109-1	11033757	11243414	11272694	11183288	1.17	cps
Sodium	23-2	117937418	118601035	117775918	118104790	0.37	cps
Strontium	86-1	3352731	3347533	3354973	3351746	0.11	cps
Strontium	88-1	28406765	28800791	28593851	28600469	0.69	cps
Sulfur	34-1	1349107	1335558	1350421	1345029	0.61	cps
Terbium	159-1	15678455	15384256	15984041	15682251	1.91	cps
Terbium	159-2	5737512	5513530	5524515	5591852	2.26	cps
Thallium	203-1	8140841	8417416	8405297	8321184	1.88	cps
Thallium	205-1	19342625	19822941	20203186	19789584	2.18	cps
Tin	118-1	8087079	7969628	8154536	8070414	1.16	cps
Titanium	47-1	14511979	14529011	14583971	14541654	0.26	cps
Uranium	238-1	26484015	26407066	26907259	26599447	1.01	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : CCV02 Instrumnet Name : P8
Client Sample ID : CCV02 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 15:49:15 DataFile Name : 032CCV.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	1582113	1627468	1636535	1615372	1.81	cps
Ytterbium	172-1	827	877	860	854	2.98	cps
Ytterbium	172-2	400	370	347	372	7.18	cps
Ytterbium	176-1	42074	43197	42418	42563	1.35	cps
Ytterbium	176-2	15519	16233	15760	15837	2.29	cps
Yttrium	89-1	23797418	23812910	23838897	23816409	0.09	cps
Yttrium	89-2	1732761	1741159	1783475	1752465	1.55	cps
Zinc	66-2	3245400	3191326	3229946	3222224	0.86	cps
Zirconium	90-1	17672228	18465784	18227864	18121959	2.25	cps
Zirconium	91-1	3888707	4070105	4034866	3997893	2.41	cps

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LB Number : LB135941 Operator : Jaswal
Lab Sample ID : CCB02 Instrumnet Name : P8
Client Sample ID : CCB02 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 15:55:42 DataFile Name : 033CCBE.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Aluminium	27-2	157	130	140	142	9.47	cps
Antimony	121-1	1877	1877	1800	1851	2.39	cps
Arsenic	75-2	7	10	13	10	33.30	cps
Barium	135-1	267	250	293	270	8.09	cps
Barium	137-1	420	393	377	397	5.51	cps
Beryllium	9-1	479	552	570	534	9.07	cps
Bismuth	209-1	9407896	9710994	9378286	9499059	1.94	cps
Bismuth	209-2	4299941	4349613	4280091	4309882	0.83	cps
Bromine	81-1	27597	27266	27280	27381	0.68	cps
Cadmium	108-1	37	27	37	33	17.32	cps
Cadmium	106-1	7949	7619	7782	7783	2.12	cps
Cadmium	111-1	5665	5435	5502	5534	2.14	cps
Calcium	43-1	807	857	863	842	3.68	cps
Calcium	44-1	24498	24451	23797	24249	1.62	cps
Carbon	12-1	3423687	3392384	3303273	3373115	1.85	cps
Carbon	12-2	21923	21836	20995	21585	2.37	cps
Chlorine	35-1	1186067	1127357	1102933	1138786	3.75	cps
Chlorine	35-2	4204	4141	3894	4080	4.02	cps
Chromium	52-2	933	797	883	871	7.94	cps
Cobalt	59-2	97	70	87	84	15.95	cps
Copper	63-2	2064	2117	1803	1995	8.41	cps
Dysprosium	156-1	3	7	20	10	88.20	cps
Dysprosium	156-2	0	3	3	2	86.60	cps
Erbium	164-1	100	163	123	129	24.85	cps
Erbium	164-2	40	50	33	41	20.41	cps
Gadolinium	160-1	113	97	113	108	8.93	cps
Gadolinium	160-2	37	37	20	31	30.93	cps
Holmium	165-1	15831290	15782565	15767027	15793627	0.21	cps
Holmium	165-2	6094319	6083809	5959976	6046035	1.24	cps
Indium	115-1	13656149	13938324	13560675	13718382	1.43	cps
Indium	115-2	1360385	1377830	1376205	1371473	0.70	cps
Iron	54-2	700	743	633	692	8.01	cps
Iron	56-2	9346	9173	9303	9274	0.97	cps
Iron	57-2	250	253	240	248	2.80	cps
Krypton	83-1	293	270	230	264	12.11	cps
Lead	206-1	1573	1687	1563	1608	4.26	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : CCB02 Instrumnet Name : P8
Client Sample ID : CCB02 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 15:55:42 DataFile Name : 033CCBE.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Lead	207-1	1473	1370	1460	1435	3.92	cps
Lead	208-1	6521	6401	6371	6431	1.23	cps
Lithium	6-1	5294780	5287310	5360198	5314096	0.75	cps
Magnesium	24-2	1400	1443	1430	1425	1.56	cps
Manganese	55-2	1450	1360	1360	1390	3.74	cps
Molybdenum	94-1	1337	1240	1317	1298	3.93	cps
Molybdenum	95-1	783	783	683	750	7.70	cps
Molybdenum	96-1	1177	943	943	1021	13.19	cps
Molybdenum	97-1	533	477	480	497	6.40	cps
Molybdenum	98-1	1183	1143	1157	1161	1.75	cps
Neodymium	150-1	13	17	7	12	41.65	cps
Neodymium	150-2	0	10	7	6	91.64	cps
Nickel	60-2	250	257	210	239	10.57	cps
Phosphorus	31-2	80	80	100	87	13.32	cps
Potassium	39-2	14207	14681	14237	14375	1.85	cps
Rhodium	103-1	13030609	12965733	13062308	13019550	0.38	cps
Rhodium	103-2	5210060	5324073	5270235	5268123	1.08	cps
Scandium	45-1	9306347	9172006	9327413	9268588	0.91	cps
Scandium	45-2	168367	170975	170030	169791	0.78	cps
Selenium	82-1	-13	-30	10	-11	-180.84	cps
Selenium	77-2	0	0	0	0	0.00	cps
Selenium	78-2	17	33	27	26	32.81	cps
Silicon	28-1	468624	475260	466371	470085	0.98	cps
Silver	107-1	547	640	563	583	8.53	cps
Silver	109-1	450	347	437	411	13.67	cps
Sodium	23-2	41940	42037	42238	42072	0.36	cps
Strontium	86-1	457	397	480	444	9.67	cps
Strontium	88-1	717	647	727	697	6.26	cps
Sulfur	34-1	547147	556267	556334	553249	0.96	cps
Terbium	159-1	16577118	16537064	16375920	16496701	0.65	cps
Terbium	159-2	5764648	5846675	5809229	5806851	0.71	cps
Thallium	203-1	1537	1553	1407	1499	5.36	cps
Thallium	205-1	3617	3457	3584	3553	2.38	cps
Tin	118-1	2380	2567	2427	2458	3.95	cps
Titanium	47-1	500	380	403	428	14.87	cps
Uranium	238-1	303	227	263	264	14.50	cps

LB Number : LB135941 Operator : Jaswal
Lab Sample ID : CCB02 Instrumnet Name : P8
Client Sample ID : CCB02 Dilution Factor : 1
Date & Time Acquired : 2025-05-23 15:55:42 DataFile Name : 033CCBE.d

Parameter	Mass	CPS1	CPS2	CPS3	CPSMean	CPSRSD	Units
Vanadium	51-2	23	7	33	21	63.80	cps
Ytterbium	172-1	80	97	93	90	9.80	cps
Ytterbium	172-2	43	40	37	40	8.32	cps
Ytterbium	176-1	1813	1914	1773	1833	3.93	cps
Ytterbium	176-2	583	610	667	620	6.86	cps
Yttrium	89-1	25742178	25311496	25190498	25414724	1.14	cps
Yttrium	89-2	1825663	1888843	1893560	1869355	2.03	cps
Zinc	66-2	390	323	330	348	10.56	cps
Zirconium	90-1	2617	2544	2407	2522	4.23	cps
Zirconium	91-1	563	573	510	549	6.20	cps

SOP ID : M3050B-Digestion-20

SDG No : N/A

Matrix : SOIL

Pipette ID: ICP A

Balance ID : M SC-2

Filter paper ID : N/A

pH Strip ID : N/A

Hood ID : #3

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

Start Digest Date: 05/22/2025 Time : 08:10 Temp : 96 °C

End Digest Date: 05/22/2025 Time : 10:55 Temp : 96 °C

Digestion tube ID: M6054

Block thermometer ID: MET-DIG. #2

Dig Technician Signature: *SLZ*

Supervisor Signature: *[Signature]*

Temp : 1. 96°C 2. N/A

Standard Name	MLS USED	STD REF. # FROM LOG
Spike Sol 1	1.00	MP85581
Spike Sol 2	2.00	MP85582
Spike Sol 3	2.00mL	MP85583
Spike Sol 4	2.00mL	MP85584
Spike Sol 5	2.00	MP85585

Chemical Used	ML/SAMPLE USED	Lot Number
Conc. HNO3	3.00	M6158
1:1 HCL	5.00	MP85156
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#2 CELL#35 96C
X*MP85583,MP85584,MP85585

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
05/22/25 11:55	<i>SLZ met. dig</i>	<i>SLZ met. dig</i>
	Preparation Group	Analysis Group

Lab Sample ID	Client Sample ID	pH	Initial Weight (g)	Final Vol (ml)	Color Before	Color After	Texture	Artifact	Comment	Prep Pos
PB168134BL	PBS134	N/A	1.00	100	Colorless	Colorless	Fine	No	N/A	5-1
PB168134BS	LCS134	N/A	1.00	100	Colorless	Colorless	Fine	No	MP85581,MP85582,X*	2
Q1872-10	HW0425-PT-MET-SOIL	N/A	1.15	100	Lght Grey	Light Yello	Fine	No	N/A	3

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WORKLIST(Hardcopy Internal Chain)

WorkList Name : PB168134 WorkList ID : 189714 Department : Digestion Date : 05-22-2025 08:00:57

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q1872-10	HW0425-PT-MET-SOIL	Solid	Metals Group3	Cool 4 deg C	ALLI03	QA Of	04/21/2025	6020B

Date/Time

05/22/25

08:05

Raw Sample Received by:

5123 mchdlb

Raw Sample Relinquished by:

[Signature]

Date/Time

05/22/25

10:05

Raw Sample Received by:

[Signature]

Raw Sample Relinquished by:

5123 mchdlb

PERCENT SOLID

Supervisor: Iwona
Analyst: jignesh
Date: 4/25/2025

OVENTEMP IN Celsius(°C): 107
Time IN: 17:00
In Date: 04/24/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
OvenID: M OVEN#1

OVENTEMP OUT Celsius(°C): 103
Time OUT: 08:25
Out Date: 04/25/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
BalanceID: M SC-4
Thermometer ID: % SOLID- OVEN

QC:LB135545

Lab ID	Client SampleID	Dish #	Dish Wt (g) (A)	Sample Wt (g)	Dish + Sample Wt (g) (B)	Dish+Dry Sample Wt (g) (C)	% Solid	Comments
Q1869-01	MH-F	1	1.14	10.43	11.57	10.47	89.5	
Q1869-02	MH-F-EPH	2	1.18	9.96	11.14	10.12	89.8	
Q1869-03	MH-F-VOC	3	1.16	10.28	11.44	10.4	89.9	
Q1871-01	MH-A	4	1.14	9.59	10.73	9.86	90.9	
Q1871-02	MH-A-EPH	5	1.18	9.97	11.15	10.25	91.0	
Q1871-03	MH-A-VOC	6	1.15	10.22	11.37	10.47	91.2	
Q1871-05	MH-B	7	1.18	10.31	11.49	10.58	91.2	
Q1871-06	MH-B-EPH	8	1.16	9.63	10.79	10.05	92.3	
Q1871-07	MH-B-VOC	9	1.18	10.35	11.53	10.75	92.5	
Q1872-01	HW0425-PT-AN-SOIL	31	1.00	1.00	2.00	2.00	100.0	
Q1872-02	HW0425-PT-CORR-SOIL	32	1.00	1.00	2.00	2.00	100.0	
Q1872-03	HW0425-PT-CN-SOIL	33	1.00	1.00	2.00	2.00	100.0	
Q1872-04	HW0425-PT-CN-SOIL	34	1.00	1.00	2.00	2.00	100.0	
Q1872-05	HW0425-PT-FP-SOIL	35	1.00	1.00	2.00	2.00	100.0	
Q1872-06	HW0425-PT-CR6-SOIL	36	1.00	1.00	2.00	2.00	100.0	
Q1872-07	HW0425-PT-NUT-SOIL	37	1.00	1.00	2.00	2.00	100.0	
Q1872-08	HW0425-PT-NUT-SOIL	38	1.00	1.00	2.00	2.00	100.0	
Q1872-09	HW0425-PT-OGF-SOIL	39	1.00	1.00	2.00	2.00	100.0	
Q1872-10	HW0425-PT-MET-SOIL	40	1.00	1.00	2.00	2.00	100.0	
Q1872-11	HW0425-PT-BNA-SOIL	41	1.00	1.00	2.00	2.00	100.0	
Q1872-12	HW0425-PT-TRIAZINE-SOIL	42	1.00	1.00	2.00	2.00	100.0	
Q1872-13	HW0425-PT-PAH-SOIL	43	1.00	1.00	2.00	2.00	100.0	
Q1872-14	HW0425-PT-DIES-SOIL	44	1.00	1.00	2.00	2.00	100.0	
Q1872-15	HW0425-PT-GAS-SOIL	45	1.00	1.00	2.00	2.00	100.0	
Q1872-16	HW0425-PT-NJEPH-SOIL	46	1.00	1.00	2.00	2.00	100.0	
Q1872-17	HW0425-PT-HERB-SOIL	47	1.00	1.00	2.00	2.00	100.0	
Q1872-18	HW0425-PT-PCB-SOIL	48	1.00	1.00	2.00	2.00	100.0	
Q1872-19	HW0425-PT-PCBO-SOIL	49	1.00	1.00	2.00	2.00	100.0	

PERCENT SOLID

Supervisor: Iwona
Analyst: jignesh
Date: 4/25/2025

OVENTEMP IN Celsius(°C): 107
Time IN: 17:00
In Date: 04/24/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
OvenID: M OVEN#1

OVENTEMP OUT Celsius(°C): 103
Time OUT: 08:25
Out Date: 04/25/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
BalanceID: M SC-4
Thermometer ID: % SOLID- OVEN

QC:LB135545

Lab ID	Client SampleID	Dish #	Dish Wt (g) (A)	Sample Wt (g)	Dish + Sample Wt (g) (B)	Dish+Dry Sample Wt (g) (C)	% Solid	Comments
Q1872-20	HW0425-PT-PEST-SOIL	50	1.00	1.00	2.00	2.00	100.0	
Q1872-21	HW0425-PT-CHLR-SOIL	51	1.00	1.00	2.00	2.00	100.0	
Q1872-22	HW0425-PT-TXP-SOIL	52	1.00	1.00	2.00	2.00	100.0	
Q1872-23	HW0425-PT-VOA-SOIL	53	1.00	1.00	2.00	2.00	100.0	
Q1872-25	HW0425-PT-NO2-SOIL	54	1.00	1.00	2.00	2.00	100.0	
Q1873-01	CAM-40619	10	1.14	10.70	11.84	4.97	35.8	
Q1873-02	CAM-40620	11	1.15	10.42	11.57	6.19	48.4	
Q1873-03	CAM-40619-20	12	1.18	10.21	11.39	4.77	35.2	
Q1874-01	VNJ-236	13	1.19	10.45	11.64	10.89	92.8	
Q1874-03	RT1491	14	1.19	11.16	12.35	11.43	91.8	
Q1874-05	HT3727	15	1.16	10.63	11.79	11.06	93.1	
Q1875-01	AUD-25-0053	16	1.14	10.75	11.89	11.19	93.5	
Q1875-03	AUD-25-0054	17	1.14	10.02	11.16	10.52	93.6	
Q1875-04	AUD-25-0024	18	1.14	10.03	11.17	10.77	96.0	
Q1876-01	AUD-25-0058	19	1.00	1.00	2.00	2.00	100.0	wipe sample
Q1876-02	AUD-25-0059	20	1.00	1.00	2.00	2.00	100.0	wipe sample
Q1876-03	AUD-25-0060	21	1.00	1.00	2.00	2.00	100.0	wipe sample
Q1876-04	AUD-25-0061	22	1.00	1.00	2.00	2.00	100.0	wipe sample
Q1876-05	AUD-25-0062	23	1.00	1.00	2.00	2.00	100.0	wipe sample
Q1876-06	AUD-25-0063	24	1.00	1.00	2.00	2.00	100.0	wipe sample
Q1876-07	AUD-25-0064	25	1.00	1.00	2.00	2.00	100.0	wipe sample
Q1876-08	AUD-25-0065	26	1.00	1.00	2.00	2.00	100.0	wipe sample
Q1876-09	AUD-25-0066	27	1.00	1.00	2.00	2.00	100.0	wipe sample
Q1877-01	AU-6-042425	55	1.14	10.25	11.39	10.72	93.5	
Q1877-02	AU-6-042425	28	1.14	10.21	11.35	10.54	92.1	
Q1878-01	TR-4-042425	29	1.14	10.17	11.31	11.2	98.9	
Q1878-02	TR-4-042425-E2	30	1.19	10.28	11.47	10.92	94.6	

WORKLIST(Hardcopy Internal Chain)

WorkList Name : %1-042425

WorkList ID : 189122

Department : Wet-Chemistry

Date : 04-24-2025 08:52:24

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q1869-01	MH-F	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	04/24/2025	Chemtech -SO
Q1869-02	MH-F-EPH	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	04/24/2025	Chemtech -SO
Q1869-03	MH-F-VOC	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	04/24/2025	Chemtech -SO
Q1871-01	MH-A	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	04/24/2025	Chemtech -SO
Q1871-02	MH-A-EPH	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	04/24/2025	Chemtech -SO
Q1871-03	MH-A-VOC	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	04/24/2025	Chemtech -SO
Q1871-05	MH-B	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	04/24/2025	Chemtech -SO
Q1871-06	MH-B-EPH	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	04/24/2025	Chemtech -SO
Q1871-07	MH-B-VOC	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	04/24/2025	Chemtech -SO
Q1872-01	HW0425-PT-AN-SOIL	Solid	Percent Solids	Cool 4 deg C	ALLI03	QA Of	04/21/2025	Chemtech -SO
Q1872-02	HW0425-PT-CORR-SOIL	Solid	Percent Solids	Cool 4 deg C	ALLI03	QA Of	04/21/2025	Chemtech -SO
Q1872-03	HW0425-PT-CN-SOIL	Solid	Percent Solids	Cool 4 deg C	ALLI03	QA Of	04/21/2025	Chemtech -SO
Q1872-04	HW0425-PT-CN-SOIL	Solid	Percent Solids	Cool 4 deg C	ALLI03	QA Of	04/21/2025	Chemtech -SO
Q1872-05	HW0425-PT-FP-SOIL	Solid	Percent Solids	Cool 4 deg C	ALLI03	QA Of	04/21/2025	Chemtech -SO
Q1872-06	HW0425-PT-CR6-SOIL	Solid	Percent Solids	Cool 4 deg C	ALLI03	QA Of	04/21/2025	Chemtech -SO
Q1872-07	HW0425-PT-NUT-SOIL	Solid	Percent Solids	Cool 4 deg C	ALLI03	QA Of	04/21/2025	Chemtech -SO
Q1872-08	HW0425-PT-NUT-SOIL	Solid	Percent Solids	Cool 4 deg C	ALLI03	QA Of	04/21/2025	Chemtech -SO
Q1872-09	HW0425-PT-OGR-SOIL	Solid	Percent Solids	Cool 4 deg C	ALLI03	QA Of	04/21/2025	Chemtech -SO
Q1872-10	HW0425-PT-MET-SOIL	Solid	Percent Solids	Cool 4 deg C	ALLI03	QA Of	04/21/2025	Chemtech -SO
Q1872-11	HW0425-PT-BNA-SOIL	Solid	Percent Solids	Cool 4 deg C	ALLI03	QA Of	04/21/2025	Chemtech -SO
Q1872-12	HW0425-PT-TRIAZINE-SOIL	Solid	Percent Solids	Cool 4 deg C	ALLI03	QA Of	04/21/2025	Chemtech -SO

Date/Time

04/24/25

Raw Sample Received by:

yg wyc,

Raw Sample Relinquished by:

DWSH

Date/Time

04/24/25

Raw Sample Received by:

DWSH

Raw Sample Relinquished by:

DWSH

135545

WORKLIST(Hardcopy Internal Chain)

WorkList Name : %1-042425 WorkList ID : 189122 Department : Wet-Chemistry Date : 04-24-2025 08:52:24

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q1872-13	HW0425-PT-PAH-SOIL	Solid	Percent Solids	Cool 4 deg C	ALLI03	QA Of	04/21/2025	Chemtech -SO
Q1872-14	HW0425-PT-DIES-SOIL	Solid	Percent Solids	Cool 4 deg C	ALLI03	QA Of	04/21/2025	Chemtech -SO
Q1872-15	HW0425-PT-GAS-SOIL	Solid	Percent Solids	Cool 4 deg C	ALLI03	QA Of	04/21/2025	Chemtech -SO
Q1872-16	HW0425-PT-NJEPH-SOIL	Solid	Percent Solids	Cool 4 deg C	ALLI03	QA Of	04/21/2025	Chemtech -SO
Q1872-17	HW0425-PT-HERB-SOIL	Solid	Percent Solids	Cool 4 deg C	ALLI03	QA Of	04/21/2025	Chemtech -SO
Q1872-18	HW0425-PT-PCB-SOIL	Solid	Percent Solids	Cool 4 deg C	ALLI03	QA Of	04/21/2025	Chemtech -SO
Q1872-19	HW0425-PT-PCBO-SOIL	Solid	Percent Solids	Cool 4 deg C	ALLI03	QA Of	04/21/2025	Chemtech -SO
Q1872-20	HW0425-PT-PEST-SOIL	Solid	Percent Solids	Cool 4 deg C	ALLI03	QA Of	04/21/2025	Chemtech -SO
Q1872-21	HW0425-PT-CHLR-SOIL	Solid	Percent Solids	Cool 4 deg C	ALLI03	QA Of	04/21/2025	Chemtech -SO
Q1872-22	HW0425-PT-TXP-SOIL	Solid	Percent Solids	Cool 4 deg C	ALLI03	QA Of	04/21/2025	Chemtech -SO
Q1872-23	HW0425-PT-VOA-SOIL	Solid	Percent Solids	Cool 4 deg C	ALLI03	QA Of	04/21/2025	Chemtech -SO
Q1872-25	HW0425-PT-NO2-SOIL	Solid	Percent Solids	Cool 4 deg C	ALLI03	QA Of	04/21/2025	Chemtech -SO
Q1873-01	CAM-40619	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	04/24/2025	Chemtech -SO
Q1873-02	CAM-40620	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	04/24/2025	Chemtech -SO
Q1873-03	CAM-40619-20	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	04/24/2025	Chemtech -SO
Q1874-01	VNJ-236	Solid	Percent Solids	Cool 4 deg C	PSEG03	L51	04/24/2025	Chemtech -SO
Q1874-03	RT1491	Solid	Percent Solids	Cool 4 deg C	PSEG03	L51	04/24/2025	Chemtech -SO
Q1874-05	HT3727	Solid	Percent Solids	Cool 4 deg C	PSEG03	L51	04/24/2025	Chemtech -SO
Q1875-01	AUD-25-0053	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	04/24/2025	Chemtech -SO
Q1875-03	AUD-25-0054	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	04/24/2025	Chemtech -SO
Q1875-04	AUD-25-0024	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	04/24/2025	Chemtech -SO

Date/Time 04/24/25 15:30
Raw Sample Received by: [Signature]
Raw Sample Relinquished by: [Signature]

Date/Time 04/24/25 17:25
Raw Sample Received by: [Signature]
Raw Sample Relinquished by: [Signature]

WORKLIST(Hardcopy Internal Chain)

27 135545

WorkList Name : %1-042425

WorkList ID : 189122

Department : Wet-Chemistry

Date : 04-24-2025 08:52:24

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q1876-01	AUD-25-0058	Solid	Percent Solids	Cool 4 deg C	PSEG03	L31	04/24/2025	Chemtech -SO
Q1876-02	AUD-25-0059	Solid	Percent Solids	Cool 4 deg C	PSEG03	L31	04/24/2025	Chemtech -SO
Q1876-03	AUD-25-0060	Solid	Percent Solids	Cool 4 deg C	PSEG03	L31	04/24/2025	Chemtech -SO
Q1876-04	AUD-25-0061	Solid	Percent Solids	Cool 4 deg C	PSEG03	L31	04/24/2025	Chemtech -SO
Q1876-05	AUD-25-0062	Solid	Percent Solids	Cool 4 deg C	PSEG03	L31	04/24/2025	Chemtech -SO
Q1876-06	AUD-25-0063	Solid	Percent Solids	Cool 4 deg C	PSEG03	L31	04/24/2025	Chemtech -SO
Q1876-07	AUD-25-0064	Solid	Percent Solids	Cool 4 deg C	PSEG03	L31	04/24/2025	Chemtech -SO
Q1876-08	AUD-25-0065	Solid	Percent Solids	Cool 4 deg C	PSEG03	L31	04/24/2025	Chemtech -SO
Q1876-09	AUD-25-0066	Solid	Percent Solids	Cool 4 deg C	PSEG03	L31	04/24/2025	Chemtech -SO
Q1877-01	AU-6-042425	Solid	Percent Solids	Cool 4 deg C	PSEG05	L41	04/24/2025	Chemtech -SO
Q1877-02	AU-6-042425	Solid	Percent Solids	Cool 4 deg C	PSEG05	L41	04/24/2025	Chemtech -SO
Q1878-01	TR-4-042425	Solid	Percent Solids	Cool 4 deg C	PSEG05	L41	04/24/2025	Chemtech -SO
Q1878-02	TR-4-042425-E2	Solid	Percent Solids	Cool 4 deg C	PSEG05	L41	04/24/2025	Chemtech -SO

Date/Time

Raw Sample Received by:

Raw Sample Relinquished by:

Date/Time 04/24/25

Raw Sample Received by:

Raw Sample Relinquished by:

PERCENT SOLID

Supervisor: Iwona
Analyst: jignesh
Date: 4/29/2025

OVENTEMP IN Celsius(°C): 107
Time IN: 17:25
In Date: 04/28/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
OvenID: M OVEN#1

OVENTEMP OUT Celsius(°C): 103
Time OUT: 08:37
Out Date: 04/29/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
BalanceID: M SC-4
Thermometer ID: % SOLID- OVEN

QC:LB135575

Lab ID	Client SampleID	Dish #	Dish Wt (g) (A)	Sample Wt (g)	Dish + Sample Wt (g) (B)	Dish+Dry Sample Wt (g) (C)	% Solid	Comments
Q1872-24	HW0425-PT-SOL-SOIL	8	0.92	10.30	11.22	8.82	76.7	
Q1901-01	B-170-SB00	1	1.14	5.55	6.69	6.28	92.6	
Q1901-02	B-167-SB01	2	1.14	10.22	11.36	9.58	82.6	
Q1901-03	B-170-SB01	3	1.19	10.31	11.5	9.75	83.0	
Q1901-04	B-167-SB02	4	1.15	9.78	10.93	6.35	53.2	
Q1901-05	B-170-SB02	5	1.14	10.16	11.3	8.77	75.1	
Q1902-01	343	6	1.19	10.23	11.42	10.7	93.0	
Q1902-02	343	7	1.13	10.19	11.32	10.33	90.3	
Q1903-01	COMP-4	9	1.18	11.14	12.32	10.46	83.3	
Q1903-02	COMP-5	10	1.16	10.50	11.66	9.44	78.9	
Q1903-03	COMP-6	11	1.17	10.60	11.77	10.06	83.9	
Q1904-01	VNJ-210	12	1.19	10.39	11.58	10.6	90.6	
Q1905-01	MH-G	13	1.15	10.35	11.5	10.38	89.2	
Q1905-02	MH-G-EPH	14	1.16	9.65	10.81	9.71	88.6	
Q1905-03	MH-G-VOC	15	1.16	10.33	11.49	10.36	89.1	
Q1905-05	MH-H	16	1.12	10.03	11.15	10.5	93.5	
Q1905-06	MH-H-EPH	17	1.13	10.30	11.43	10.5	91.0	
Q1905-07	MH-H-VOC	18	1.12	10.03	11.15	10.01	88.6	
Q1906-01	WC-4	19	1.15	9.85	11.00	10.14	91.3	
Q1906-02	WC-4-EPH	20	1.16	9.97	11.13	10.17	90.4	
Q1906-03	WC-4-VOC	21	1.18	9.99	11.17	9.91	87.4	
Q1906-05	WC-5	22	1.16	10.82	11.98	10.19	83.5	
Q1906-06	WC-5-EPH	23	1.13	10.41	11.54	9.94	84.6	
Q1906-07	WC-5-VOC	24	1.18	10.47	11.65	11.63	99.8	
Q1906-09	WC-6	25	1.14	10.04	11.18	10.4	92.2	
Q1906-10	WC-6-EPH	26	1.15	10.77	11.92	10.23	84.3	
Q1906-11	WC-6-VOC	27	1.14	10.47	11.61	10.86	92.8	
Q1906-13	WC-7	28	1.14	10.85	11.99	10.31	84.5	



PERCENT SOLID

Supervisor: Iwona
Analyst: jignesh
Date: 4/29/2025

OVENTEMP IN Celsius(°C): 107
Time IN: 17:25
In Date: 04/28/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
OvenID: M OVEN#1

OVENTEMP OUT Celsius(°C): 103
Time OUT: 08:37
Out Date: 04/29/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
BalanceID: M SC-4
Thermometer ID: % SOLID- OVEN

QC:LB135575

Lab ID	Client SampleID	Dish #	Dish Wt (g) (A)	Sample Wt (g)	Dish + Sample Wt (g) (B)	Dish+Dry Sample Wt (g) (C)	% Solid	Comments
Q1906-14	WC-7-EPH	29	1.12	9.86	10.98	9.7	87.0	
Q1906-15	WC-7-VOC	30	1.13	10.27	11.4	10.23	88.6	
Q1907-01	CO-8R-WC	31	1.13	10.26	11.39	9.81	84.6	

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

WORKLIST(Hardcopy Internal Chain)

V35545

WorkList Name : %1-042825

WorkList ID : 189159

Department : Wet-Chemistry

Date : 04-28-2025 07:59:12

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q1872-24	HW0425-PT-SOL-SOIL	Solid	Percent Solids	Cool 4 deg C	ALLI03	QA Of	04/21/2025	Chemtech -SO
Q1903-01	COMP-4	Solid	Percent Solids	Cool 4 deg C	POWE02	L51	04/25/2025	Chemtech -SO
Q1903-02	COMP-5	Solid	Percent Solids	Cool 4 deg C	POWE02	L51	04/25/2025	Chemtech -SO
Q1903-03	COMP-6	Solid	Percent Solids	Cool 4 deg C	POWE02	L51	04/25/2025	Chemtech -SO
Q1901-01	B-170-SB00	Solid	Percent Solids	Cool 4 deg C	PORT06	L51	04/26/2025	Chemtech -SO
Q1901-02	B-167-SB01	Solid	Percent Solids	Cool 4 deg C	PORT06	L51	04/26/2025	Chemtech -SO
Q1901-03	B-170-SB01	Solid	Percent Solids	Cool 4 deg C	PORT06	L51	04/26/2025	Chemtech -SO
Q1901-04	B-167-SB02	Solid	Percent Solids	Cool 4 deg C	PORT06	L51	04/26/2025	Chemtech -SO
Q1901-05	B-170-SB02	Solid	Percent Solids	Cool 4 deg C	PORT06	L51	04/26/2025	Chemtech -SO
Q1902-01	343	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	04/28/2025	Chemtech -SO
Q1902-02	343	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	04/28/2025	Chemtech -SO
Q1904-01	VNJ-210	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	04/28/2025	Chemtech -SO
Q1905-01	MH-G	Solid	Percent Solids	Cool 4 deg C	PSEG03	L51	04/28/2025	Chemtech -SO
Q1905-02	MH-G-EPH	Solid	Percent Solids	Cool 4 deg C	PSEG03	L51	04/28/2025	Chemtech -SO
Q1905-03	MH-G-VOC	Solid	Percent Solids	Cool 4 deg C	PSEG03	L51	04/28/2025	Chemtech -SO
Q1906-13	WC-7	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	04/28/2025	Chemtech -SO
Q1906-14	WC-7-EPH	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	04/28/2025	Chemtech -SO
Q1906-15	WC-7-VOC	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	04/28/2025	Chemtech -SO
Q1906-05	WC-5	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	04/28/2025	Chemtech -SO
Q1906-06	WC-5-EPH	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	04/28/2025	Chemtech -SO
Q1906-07	WC-5-VOC	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	04/28/2025	Chemtech -SO

Date/Time 04/28/25 16:15

Raw Sample Received by: JH GORDON

Raw Sample Relinquished by: JH GORDON

Date/Time 04/28/25

Raw Sample Received by: JH GORDON

Raw Sample Relinquished by: JH GORDON

17:30

JH GORDON

JH GORDON

WORKLIST(Hardcopy Internal Chain)

1755555

WorkList Name : %1-042825

WorkList ID : 189159

Department : Wet-Chemistry

Date : 04-28-2025 07:59:12

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q1906-09	WC-6	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	04/28/2025	Chemtech -SO
Q1906-10	WC-6-EPH	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	04/28/2025	Chemtech -SO
Q1906-11	WC-6-VOC	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	04/28/2025	Chemtech -SO
Q1905-05	MH-H	Solid	Percent Solids	Cool 4 deg C	PSEG03	L51	04/28/2025	Chemtech -SO
Q1905-06	MH-H-EPH	Solid	Percent Solids	Cool 4 deg C	PSEG03	L51	04/28/2025	Chemtech -SO
Q1905-07	MH-H-VOC	Solid	Percent Solids	Cool 4 deg C	PSEG03	L51	04/28/2025	Chemtech -SO
Q1906-01	WC-4	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	04/28/2025	Chemtech -SO
Q1906-02	WC-4-EPH	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	04/28/2025	Chemtech -SO
Q1906-03	WC-4-VOC	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	04/28/2025	Chemtech -SO
Q1907-01	CO-8R-WC	Solid	Percent Solids	Cool 4 deg C	WALS01	L51	04/28/2025	Chemtech -SO

Date/Time 04/28/25 16:15

Raw Sample Received by: 80 uoc

Raw Sample Relinquished by: 80 uoc

Date/Time 04/28/25 17:30

Raw Sample Received by: CP 80

Raw Sample Relinquished by: 80 uoc

Instrument ID: P8

Daily Analysis Runlog For Sequence/QC Batch ID # LB135941

Review By	jaswal	Review On	6/3/2025 4:22:31 PM
Supervise By	MOHAN	Supervise On	6/6/2025 7:07:58 PM
STD. NAME	STD REF.#		
ICAL Standard	MP85577,MP85606,MP85605,MP85602,MP85595,MP85594,MP85592,MP85580,MP85579		
ICV Standard	MP85607		
CCV Standard	MP85608		
ICSA Standard	MP85641,MP85642		
CRI Standard	MP85605		
LCS Standard			
Chk Standard	MP85644,MP85645		

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	TUNE	TUNE	TUNE	05/23/25 12:19		Jaswal	OK
2	S0	S0	CAL1	05/23/25 13:50		Jaswal	OK
3	S2	S2	CAL3	05/23/25 13:57		Jaswal	OK
4	S3	S3	CAL4	05/23/25 14:00		Jaswal	OK
5	S4	S4	CAL5	05/23/25 14:04		Jaswal	OK
6	S5	S5	CAL6	05/23/25 14:07		Jaswal	OK
7	S6	S6	CAL7	05/23/25 14:09		Jaswal	OK
8	S7	S7	CAL8	05/23/25 14:12		Jaswal	OK
9	S8	S8	CAL9	05/23/25 14:15		Jaswal	OK
10	ICV01	ICV01	ICV	05/23/25 14:23		Jaswal	OK
11	LLICV01	LLICV01	LLICV	05/23/25 14:33		Jaswal	OK
12	ICB01	ICB01	ICB	05/23/25 14:37		Jaswal	OK
13	ICSA01	ICSA01	ICSA	05/23/25 14:40		Jaswal	OK
14	ICSAB01	ICSAB01	ICSAB	05/23/25 14:43		Jaswal	OK
15	CCV01	CCV01	CCV	05/23/25 14:52		Jaswal	OK
16	CCB01	CCB01	CCB	05/23/25 14:58		Jaswal	OK
17	CRI	CRI	CRDL	05/23/25 15:01		Jaswal	OK
18	PB168134BL	PB168134BL	MB	05/23/25 15:05		Jaswal	OK

Instrument ID: P8

Daily Analysis Runlog For Sequence/QC Batch ID # LB135941

Review By	jaswal	Review On	6/3/2025 4:22:31 PM
Supervise By	MOHAN	Supervise On	6/6/2025 7:07:58 PM

STD. NAME	STD REF.#
ICAL Standard	MP85577,MP85606,MP85605,MP85602,MP85595,MP85594,MP85592,MP85580,MP85579
ICV Standard	MP85607
CCV Standard	MP85608
ICSA Standard	MP85641,MP85642
CRI Standard	MP85605
LCS Standard	
Chk Standard	MP85644,MP85645

19	PB168134BS	PB168134BS	LCS	05/23/25 15:08		Jaswal	OK
20	Q1872-10	HW0425-PT-MET-SO	SAM	05/23/25 15:13	INT_STD 6Li Fail, Al,Sb,As,Ba,Cd,Cr,Mn,Mo, Sr,Ni,Se,Tl,Sn,V High	Jaswal	Dilution
21	Q1872-10DL	HW0425-PT-MET-SO	SAM	05/23/25 15:19	5X For INT_STD 6LI,5X For Al,Sb,As,Ba,Cd,Cr,Mn,Mo, Sr,Ni,Se,Tl,Sn,V	Jaswal	Confirms
22	CCV02	CCV02	CCV	05/23/25 15:49		Jaswal	OK
23	CCB02	CCB02	CCB	05/23/25 15:55		Jaswal	OK

Prep Standard - Chemical Standard Summary

Order ID : Q1872
Test : Metals Group3
Prepbatch ID : PB168134,
Sequence ID/Qc Batch ID: LB135941,

Standard ID :
MP85156,MP85577,MP85579,MP85580,MP85581,MP85582,MP85583,MP85584,MP85585,MP85592,MP85594,MP85595,MP85602,MP85604,MP85605,MP85606,MP85607,MP85608,MP85641,MP85642,MP85643,MP85644,MP85645,

Chemical ID :
M5305,M5470,M5520,M5658,M5697,M5739,M5751,M5798,M5799,M5800,M5801,M5811,M5815,M5817,M5873,M5874,M5942,M5961,M5962,M5977,M5981,M6021,M6023,M6025,M6026,M6028,M6030,M6032,M6055,M6079,M6086,M6127,M6128,M6137,M6142,M6144,M6145,M6146,M6150,M6151,M6153,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	MP85156	04/07/2025	08/18/2025	Kareem Khairalla	None	None	Sarabjit Jaswal
								04/07/2025

FROM 1250.00000ml of M6151 + 1250.00000ml of W3112 = Final Quantity: 2500.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1122	ICPMS CALIB BLANK(S0/ICB/CCB)	MP85577	05/05/2025	05/30/2025	Janvi Patel	METALS_SCALE_3 (M SC-3)	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal
								05/07/2025

FROM 25.00000ml of M6151 + 4925.00000ml of W3112 + 50.00000ml of M6158 = Final Quantity: 5000.000 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>
2902	S8 ICPMS	MP85579	05/05/2025	05/30/2025	Janvi Patel	METALS_SCALE_3 (M SC-3)	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 05/07/2025
FROM 1.00000ml of M6159 + 2.50000ml of M5520 + 2.50000ml of M5811 + 2.50000ml of M6142 + 5.00000ml of M6086 + 5.00000ml of M6127 + 5.00000ml of M6144 + 76.50000ml of MP85577 = 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>
3947	S7(SFAM,6020,200.8)	MP85580	05/05/2025	05/30/2025	Janvi Patel	METALS_SCALE_3 (M SC-3)	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 05/07/2025
FROM 0.10000ml of M6153 + 1.00000ml of M5799 + 1.00000ml of M5981 + 1.00000ml of M6079 + 1.00000ml of M6137 + 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 M5520 + 4.90000ml of M5811 + 5.00000ml of M6151 + 50.00000ml of M5305 + 830.50000ml 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>
3880	M&B SPIKE-1	MP85581	05/05/2025	05/30/2025	Janvi Patel	METALS_SCALE_3 (M SC-3)	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 05/09/2025
FROM 5.00000ml of M5470 + 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 + 6.25000ml of MP85577 = Final Quantity: 25.000 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	MP85582	05/05/2025	05/30/2025	Janvi Patel	METALS_SCALE_3 (M SC-3)	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 05/09/2025
FROM 10.00000ml of M5942 + 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 MP85577 = 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	MP85583	05/05/2025	05/30/2025	Janvi Patel	METALS_SCALE_3 (M SC-3)	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 05/09/2025
FROM 0.62500ml of M6026 + 12.50000ml of M5697 + 12.50000ml of M6128 + 12.50000ml of M6145 + 11.87500ml of MP85577 = 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	MP85584	05/05/2025	05/30/2025	Janvi Patel	METALS_SCALE_3 (M SC-3)	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 05/09/2025
FROM 6.25000ml of M6086 + 6.25000ml of M6127 + 6.25000ml of M6144 + 6.25000ml of MP85577 = Final Quantity: 25.000 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>
4025	M&B SPIKE-5	MP85585	05/05/2025	05/26/2025	Janvi Patel	METALS_SCALE_3 (M SC-3)	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 05/09/2025

FROM 15.00000ml of M5942 + 15.00000ml of M5977 + 20.00000ml of MP85577 = 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>
3948	S6(SFAM,6020,200.8)	MP85592	05/05/2025	05/30/2025	Janvi Patel	METALS_SCALE_3 (M SC-3)	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 05/09/2025

FROM 0.50000ml of M6151 + 1.00000ml of M6158 + 48.50000ml of W3112 + 50.00000ml of MP85580 = 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>
3949	S5(SFAM,6020,200.8)	MP85594	05/05/2025	05/30/2025	Janvi Patel	METALS_SCALE_3 (M SC-3)	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 05/09/2025
FROM 0.50000ml of M6151 + 1.00000ml of M6158 + 73.50000ml of W3112 + 25.00000ml of MP85580 = 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>
3954	S4(SFAM,6020,200.8)	MP85595	05/05/2025	05/30/2025	Janvi Patel	METALS_SCALE_3 (M SC-3)	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 05/09/2025
FROM 0.50000ml of M6151 + 1.00000ml of M6158 + 86.00000ml of W3112 + 12.50000ml of MP85580 = 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>
3951	S3(SFAM, 6020,200.8)	MP85602	05/05/2025	05/30/2025	Janvi Patel	METALS_SCALE_3 (M SC-3)	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 05/09/2025
FROM 0.50000ml of M6151 + 1.00000ml of M6158 + 88.50000ml of W3112 + 10.00000ml of MP85592 = 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>
3955	S2CONC(SFAM,6020,200.8)	MP85604	05/05/2025	05/30/2025	Janvi Patel	METALS_SCALE_3 (M SC-3)	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 05/09/2025
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 M5697 + 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								

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>
3956	S2(SFAM,6020,200.8)	MP85605	05/05/2025	05/30/2025	Janvi Patel	METALS_SCALE_3 (M SC-3)	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 05/09/2025

FROM 0.50000ml of M6151 + 1.00000ml of M6158 + 98.00000ml of W3112 + 0.50000ml of MP85604 = 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>
3957	S1(SFAM,6020,200.8)	MP85606	05/05/2025	05/30/2025	Janvi Patel	METALS_SCALE_3 (M SC-3)	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 05/09/2025

FROM 0.50000ml of M6151 + 1.00000ml of M6158 + 88.50000ml of W3112 + 10.00000ml of MP85605 = 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>
3958	ICV(SFAM)	MP85607	05/05/2025	05/30/2025	Janvi Patel	METALS_SCALE_3 (M SC-3)	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 05/09/2025

FROM 2.00000ml of M6150 + 98.00000ml of MP85577 = 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>
3961	CCV	MP85608	05/05/2025	05/30/2025	Janvi Patel	METALS_SCALE_3 (M SC-3)	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 05/09/2025

FROM 0.20000ml of M6026 + 0.50000ml of M5470 + 0.50000ml of M5799 + 0.50000ml of M5981 + 0.50000ml of M6079 + 0.50000ml of M6137 + 1.00000ml of M5815 + 1.00000ml of M5817 + 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 M5697 + 4.50000ml of M6128 + 4.50000ml of M6145 + 4.95000ml of M6159 + 5.00000ml of M6151 + 5.50000ml of M5942 + 5.50000ml of M5977 + 824.10000ml of W3112 = 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>
1142	ICSA ICPMS	MP85641	05/05/2025	05/30/2025	Janvi Patel	None	METALS_PIPETTE_3 (A)	Sarabjit Jaswal 05/13/2025

FROM 10.00000ml of M5873 + 90.00000ml of MP85577 = 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>
1143	ICSAB ICPMS	MP85642	05/05/2025	05/30/2025	Janvi Patel	None	METALS_PIPETTE_3 (A)	Sarabjit Jaswal 05/13/2025

FROM 10.00000ml of M5873 + 10.00000ml of M5874 + 80.00000ml of MP85577 = 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>
3962	MG 10PPM FOR TUNE	MP85643	05/05/2025	05/30/2025	Janvi Patel	None	METALS_PIPETTE_3 (A)	Sarabjit Jaswal 05/13/2025

FROM 0.01000ml of M6127 + 9.99000ml of MP85577 = 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>
3894	TUNE 200PPB	MP85644	05/05/2025	05/30/2025	Janvi Patel	None	METALS_PIPETTE_3 (A)	Sarabjit Jaswal 05/13/2025

FROM 2.00000ml of M6055 + 2.00000ml of MP85643 + 96.00000ml of MP85577 = 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>
3903	ISS 3PPM	MP85645	05/05/2025	05/30/2025	Janvi Patel	None	METALS_PIPETTE_3 (A)	Sarabjit Jaswal 05/13/2025
FROM 5.00000ml of M6158 + 75.00000ml of M5739 + 170.00000ml of MP85577 = Final Quantity: 250.000 ml								

CHEMICAL RECEIPT LOG BOOK

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	04/14/2025 / jaswal	03/16/2023 / jaswal	M5470

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.	58024 / Chromium, Cr, 500 ml, 1000 PPM	060523	06/05/2026	08/28/2023 / jaswal	08/25/2023 / jaswal	M5658

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58029 / Cu, 1000 PPM, 500 ml	102523	10/25/2026	04/03/2024 / jaswal	10/27/2023 / jaswal	M5697

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
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

CHEMICAL RECEIPT LOG BOOK

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

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

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

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

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

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

CHEMICAL RECEIPT LOG BOOK

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	06/30/2025	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	06/30/2025	04/17/2024 / jaswal	07/14/2022 / jaswal	M5874

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGT11-1 / TITANIUM 125mL 1000ug/mL	T2-TI719972	06/17/2027	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

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57034 / Se, 1000 PPM, 125 ml	060624	06/06/2027	07/02/2024 / Jaswal	06/14/2024 / Jaswal	M5962

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
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.	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

CHEMICAL RECEIPT LOG BOOK

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	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 #
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.	58119 / K, 10000 PPM, 500 ml	103024	10/30/2027	05/06/2025 / JANVI	01/13/2025 / Jaswal	M6142

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58111 / Na, 10000 PPM, 500 ml	072424	07/24/2027	01/23/2025 / kareem	01/13/2025 / Jaswal	M6144

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58030 / Zinc, Zn, 500 ml, 1000 PPM	121724	12/17/2027	02/04/2025 / jaswal	01/13/2025 / Jaswal	M6145

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
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 #
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 / Al, 10000 PPM, 500 ml	011325	03/18/2026	03/18/2025 / kareem	02/09/2025 / kareem	M6159

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



M6032

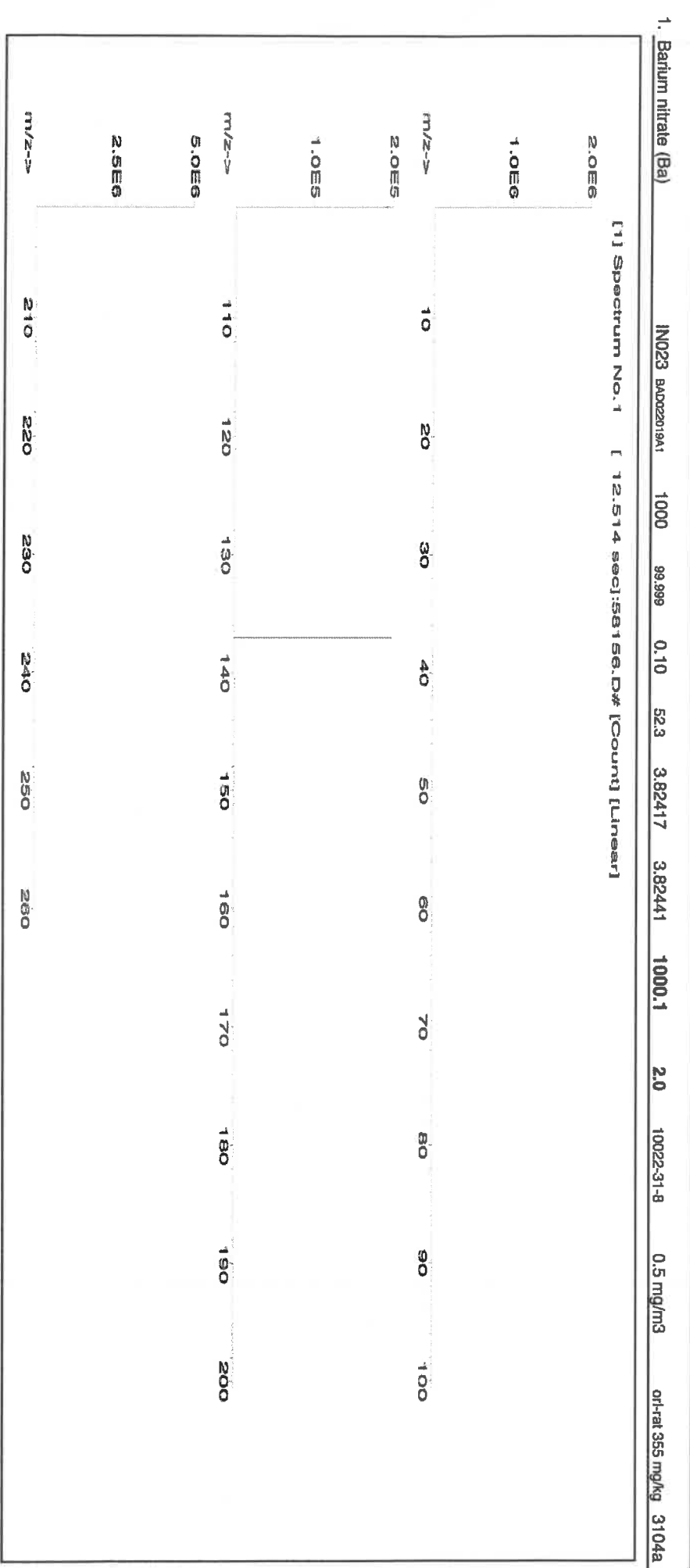


CERTIFIED WEIGHT REPORT:

Part Number: 57056
Lot Number: 010924
Description: Barium (Ba)
Solvent: Nitric Acid
Lot #
Expiration Date: 010927
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 2000.02
Balance Uncertainty: 5E-05
Flask Uncertainty: 0.058

Formulated By: Giovanni Esposito
Reviewed By: Pedro L. Renteria
010924

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





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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	T	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

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



Certified Reference Material CRM



Rev'd 20/11/2021 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

5E-05 Balance Uncertainty

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

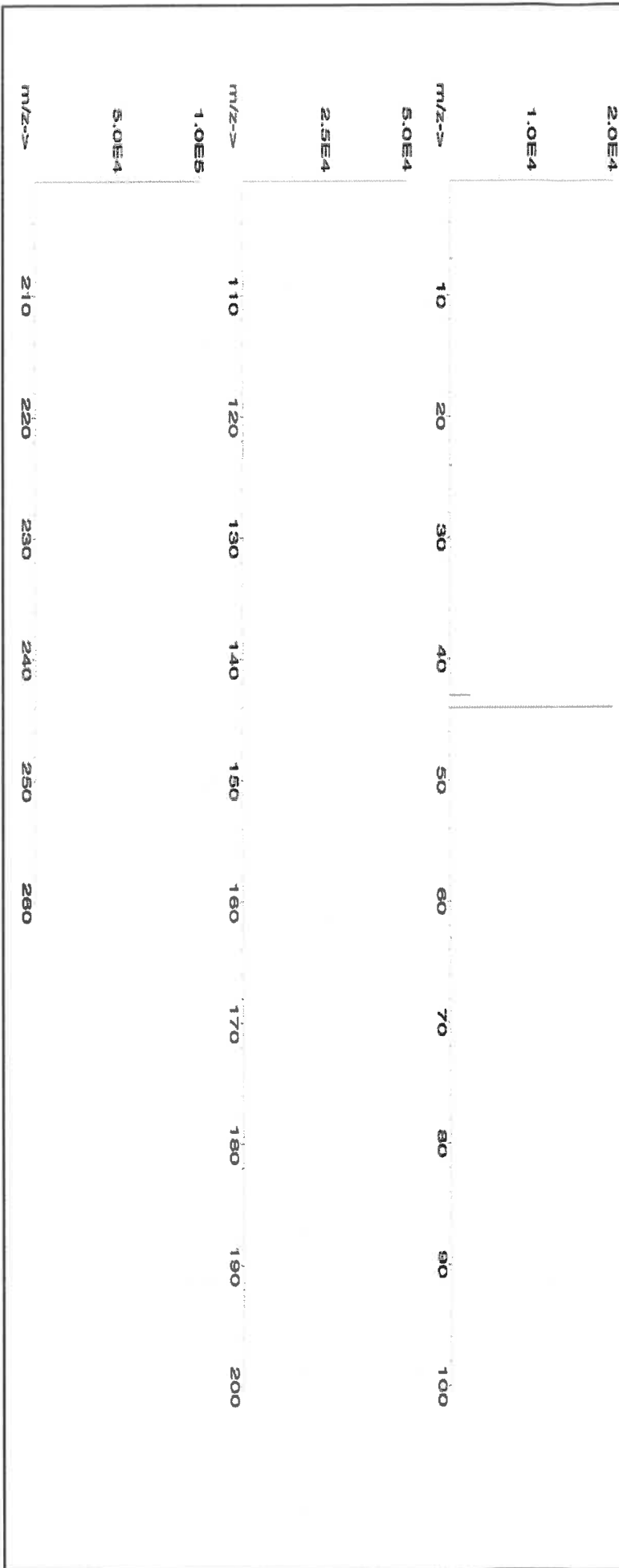
<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
Reviewed By:	Pedro L. Rentas
	082324

SDS Information

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Calcium carbonate (Ca) IN014 CAD03202383 10000 99.999 0.10 39.9 100.2537 100.2656 10001.2 20.0 471-34-1 5 mg/m3 or-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	Ba	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	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)

Solvent: 24002546 Nitric Acid

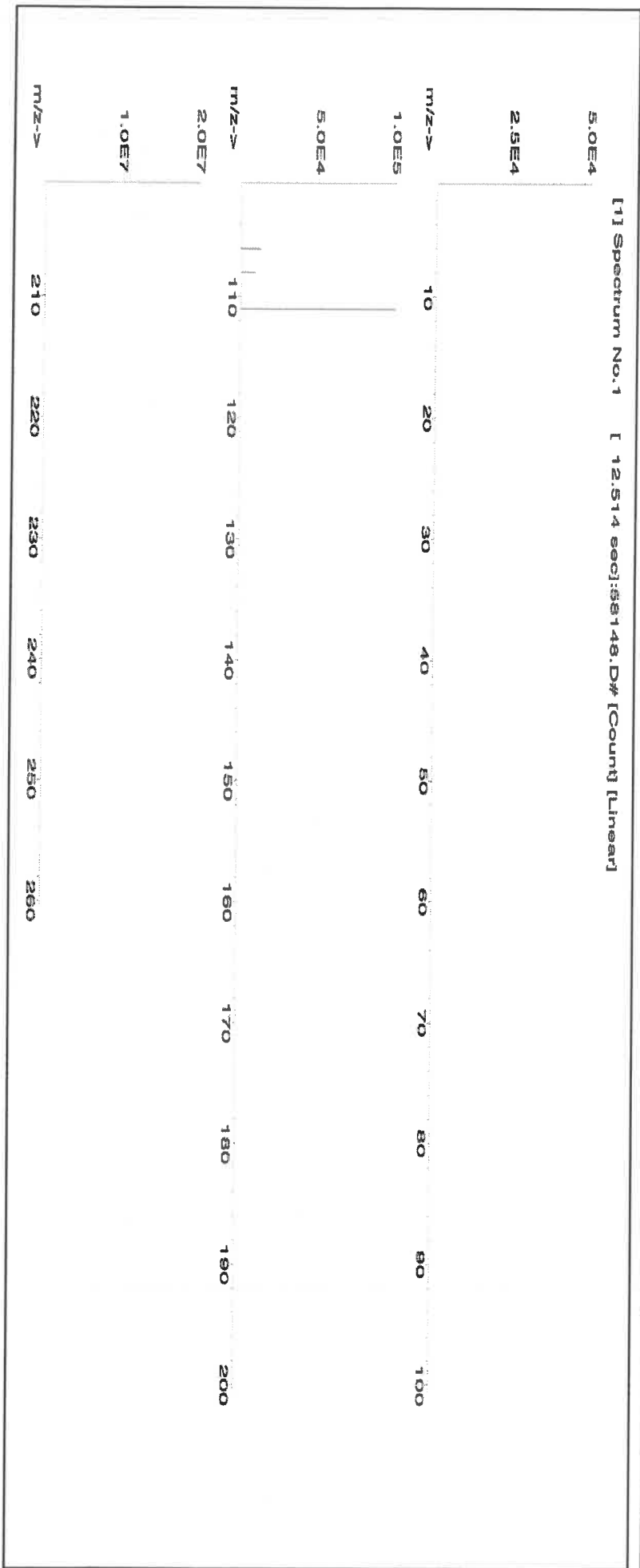
Expiration Date: 070127
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

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

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

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

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





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

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): 10000

NIST Test Number: 6UTB

Weight shown below was diluted to (mL): 5000.1

5E-05 Balance Uncertainty

0.12 Flask Uncertainty

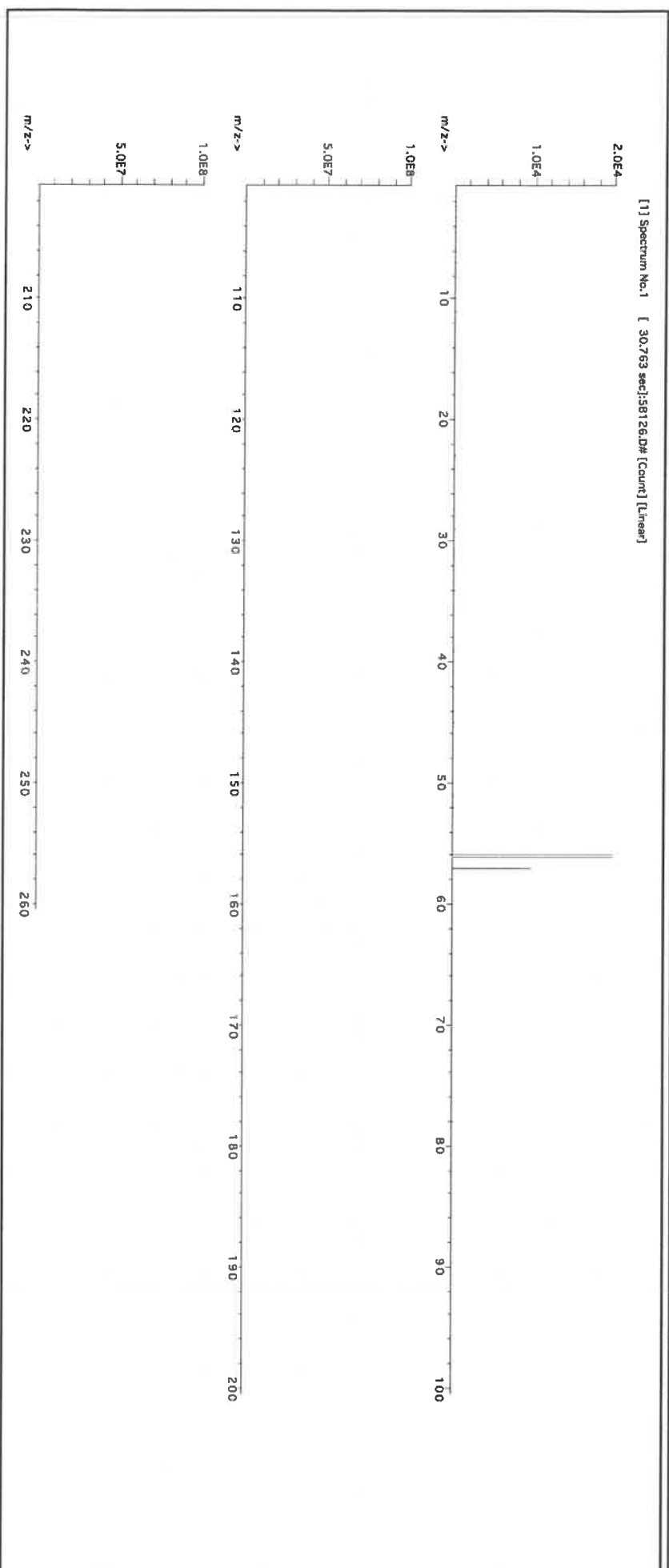
5.0% 250.0 (mL) Nitric Acid

Giovanni Caporale	
Formulated By:	Giovanni Esposito
	051523
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-rel 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 Reference Material CRM



CERTIFIED WEIGHT REPORT:

Part Number: 57182 Lot # M6025
Lot Number: 110923 Solvent: 24002546 Nitric Acid
Description: Lead (Pb)

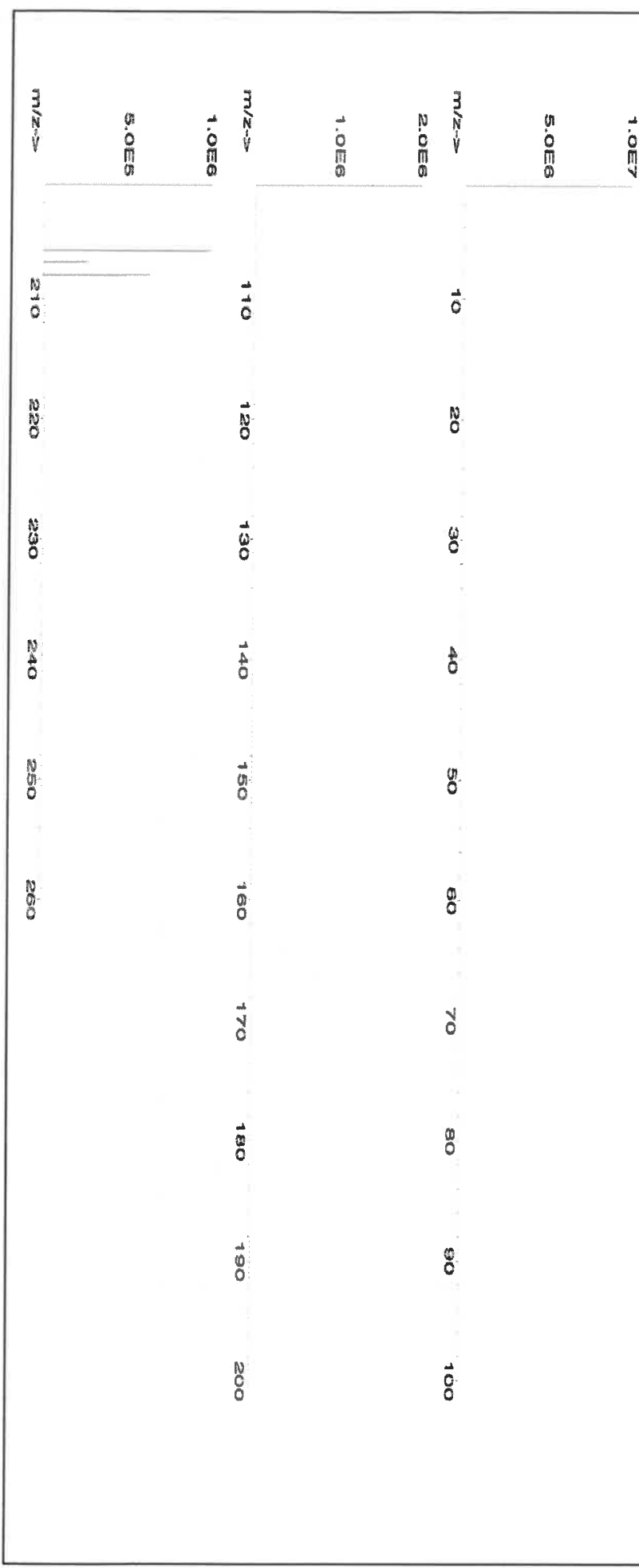
Expiration Date: 110926 2% 40.0 Nitric Acid
Recommended Storage: Ambient (20 °C) (mL)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB 5E-05 Balance Uncertainty
Weight shown below was diluted to (mL): 2000.02 0.058 Flask Uncertainty

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 PED122016A1 10000 99.999 0.10 62.5 32.0006 32.0040 10001.1 20.0 10099-74-8 0.05 mg/m3 Inverse rat 83 mg/kg 3128

[1] Spectrum No.1 [17.284 sec]:58182.D# [Count] [Linear]





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

Trace Metals Verification by ICP-MS ($\mu\text{g/mL}$)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<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.

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).



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**

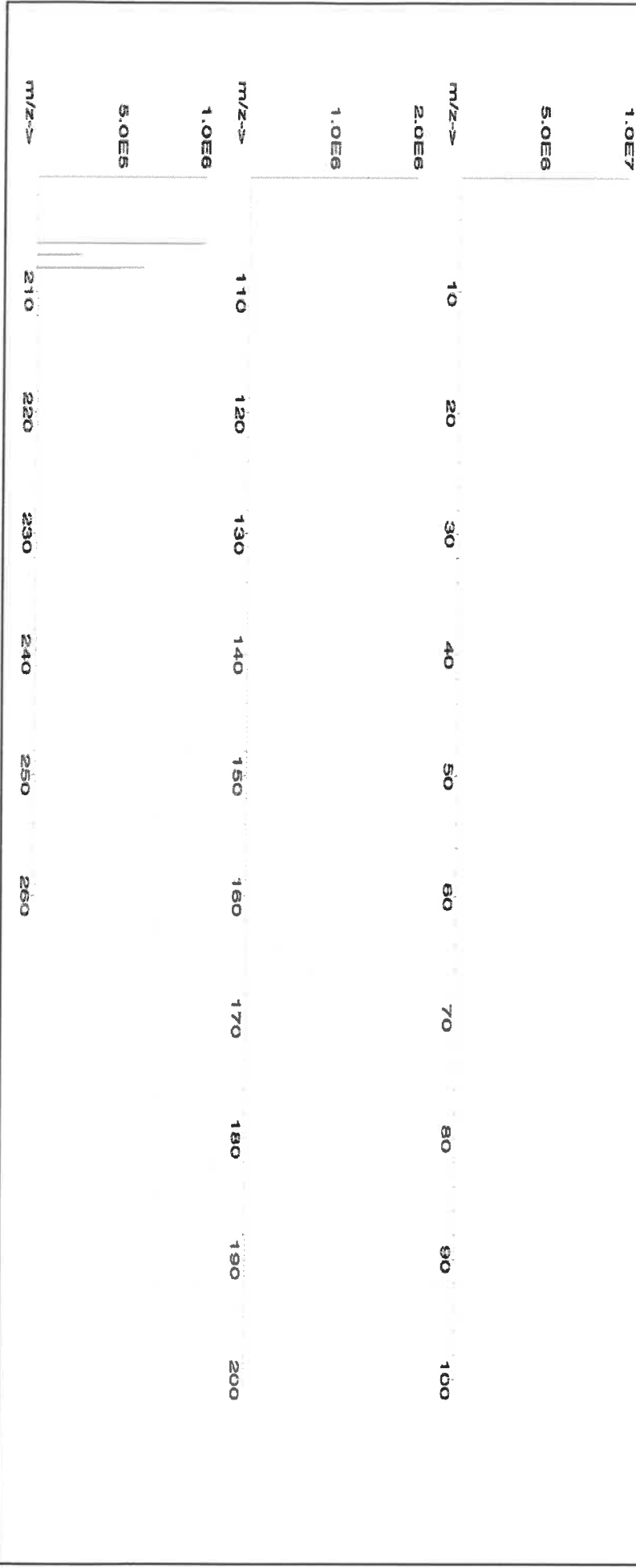
2% **40.0 (mL)** **Nitric Acid**

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

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

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	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

Physical Characterization:

(T)= Target analyte

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

Certified by:

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



Refine your results. Redefine your industry.

Certificate of Analysis

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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 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

5E-05 Balance Uncertainty
0.06 Flask Uncertainty

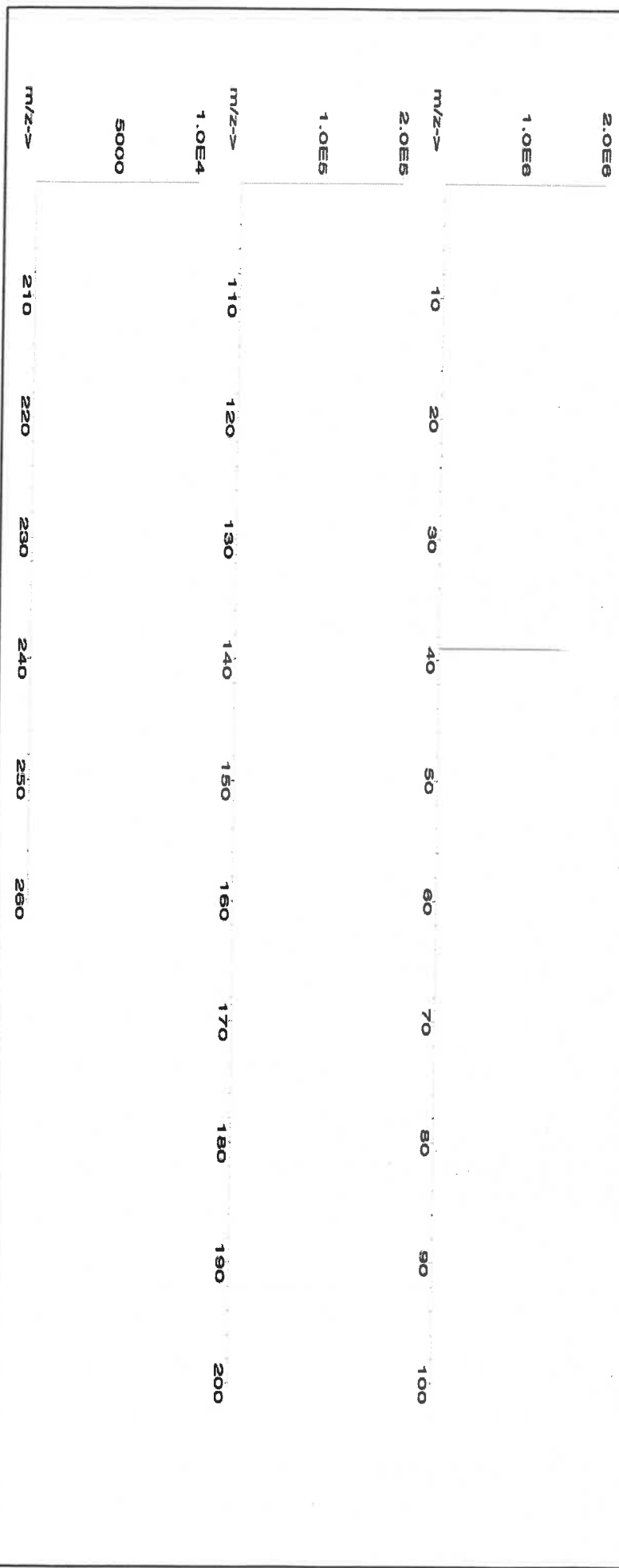
<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
Reviewed By:	Pedro L. Rentas
	120822

Compound

Lot	Nominal	Purity	Uncertainty	Assay	Target	Actual	Actual	Expanded	SDS Information	NIST
RM#	Number	Conc. (µg/mL)	(%)	Purity (%)	Weight (g)	Weight (g)	Conc. (µg/mL)	+/- (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 WEIGHT REPORT:

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

Lot # 21110221
Solvent: Nitric Acid

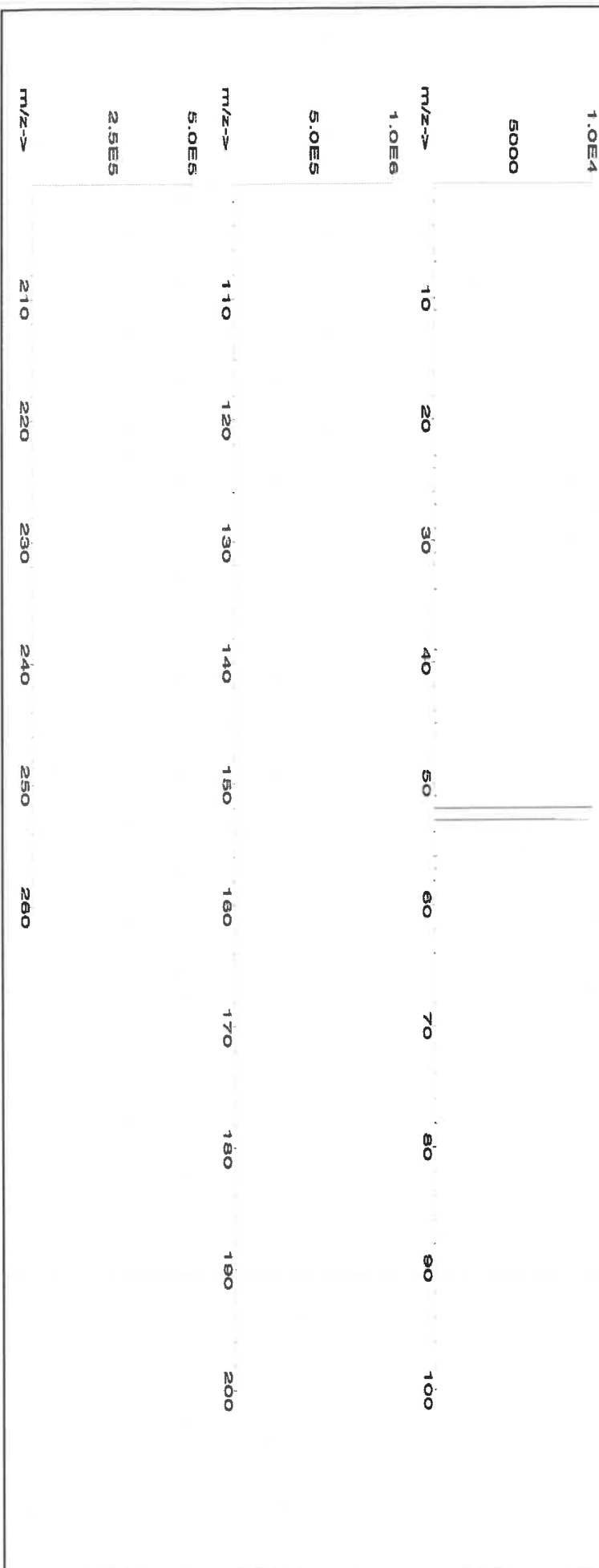
Formulated By:	Lawrence Barry
	060523
Reviewed By:	Pedro L. Ruelas
	060523

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
----------	-------------	------------	-----------------	-------------------	------------------	-----------------------	-----------------------	---------------------	----------------------------------	------	----------------	------	----------

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

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





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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	T	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

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



Certified Reference Material CRM



CERTIFIED WEIGHT REPORT:

Part Number: **58029**
Lot Number: **102523**
Description: **Copper (Cu)**

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

Expiration Date: **102526**

2.0% (mL)

Nitric Acid

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

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

NIST Test Number: **6UTB**

5E-05 Balance Uncertainty

Volume shown below was diluted to (mL): **2000.02**

0.058 Flask Uncertainty

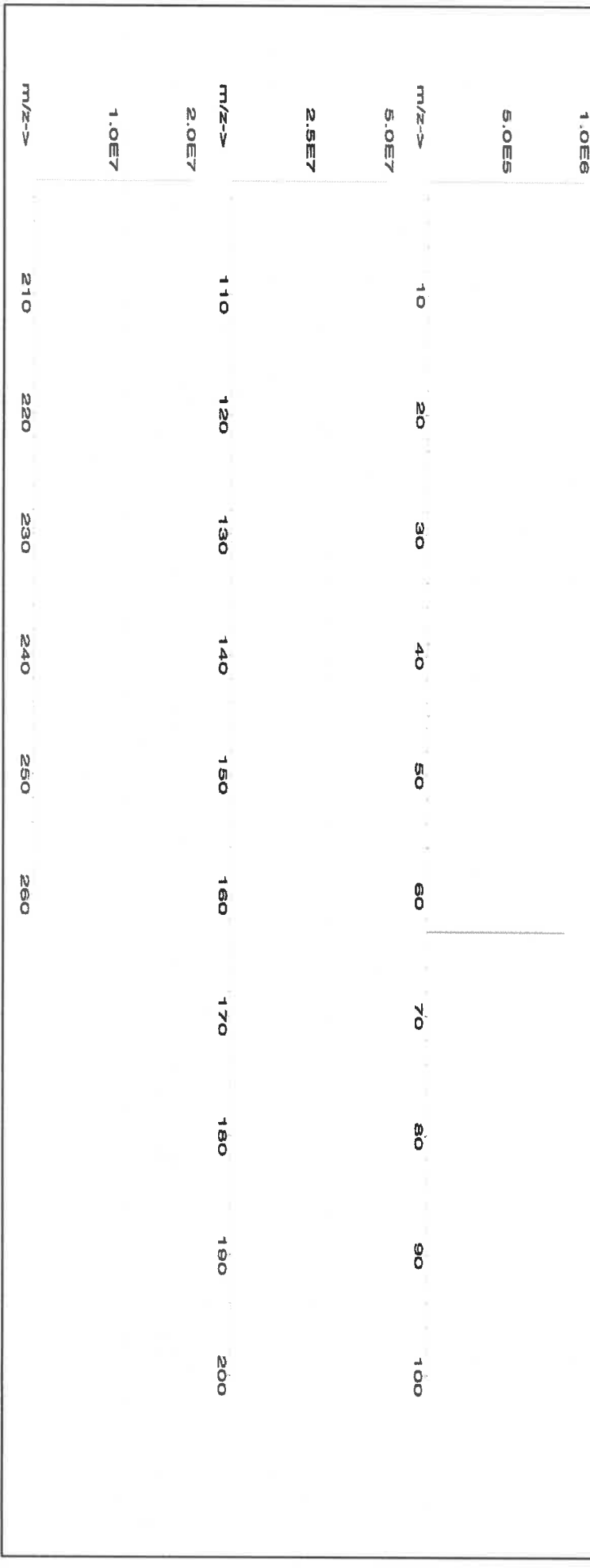
Formulated By:		Benson Chan	102523
Reviewed By:		Pedro L. Rentas	102523

SDS Information

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
----------	-------------	------------	-----------------	-------------------	--------------------------	-----------------------	-----------------------	---------------------	----------------------------------	------	----------------	------	----------

1. Copper(II) nitrate trihydrate (Cu) 58129 100223 0.1000 200.0 0.084 1000 10000.1 1000.0 2.2 10031-43-3 1 mg/m3 or-rat 794 mg/kg 3114

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





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:

Certified by:

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

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



Certified Reference Material CRM

R: 8/25/23

M5751



CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

58029
071723
Copper (Cu)

Lot #
21110221

Solvent:
Nitric Acid

2.0%

40.0
(mL)

Nitric Acid

Expiration Date:

071726

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	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)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
-------------	------------	-----------------	-------------------	------------------	-----------------------	-----------------------	---------------------	----------------------------------	------	----------------	------	----------

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

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

1.0E6	10	20	30	40	50	60	70	80	90	100
5.0E5										
m/z ->	10	20	30	40	50	60	70	80	90	100
5.0E7										
m/z ->	110	120	130	140	150	160	170	180	190	200
2.0E7										
m/z ->	210	220	230	240	250	260				
1.0E7										

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:

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



CERTIFIED WEIGHT REPORT:

Part Number: 57004
Lot Number: 102523
Description: Beryllium (Be)

Lot # 24002546
Solvent: Nitric Acid

Expiration Date:

102526

2.0%

40.0 (mL)

Nitric Acid

Recommended Storage:

Ambient (20 °C)

Nominal Concentration (µg/mL):

1000

NIST Test Number:

6UTB

Volume shown below was diluted to (mL): 2000.02

5E-05 Balance Uncertainty

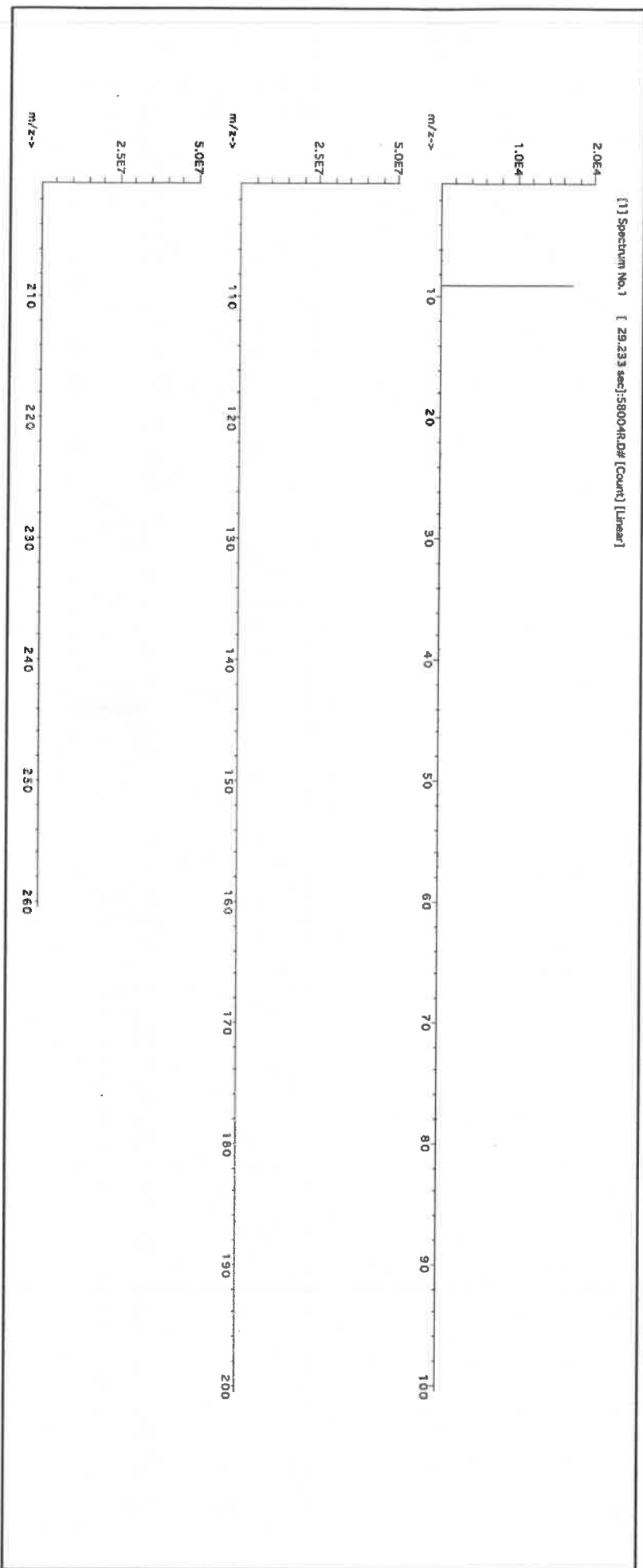
0.058 Flask Uncertainty

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

SDS Information

Compound	Part Number	Lot	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Beryllium nitrate (Be)	58104	091423	0.1000	200.0	0.084	1000	10001.5	1000.0	2.2	13597-99-4	0.2µg/m3	intrinsc-rat 3.16mg/kg	NA
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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Tc	<0.02	U	<0.02
As	<0.02	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Ti	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	T	Cr	<0.02	Ga	<0.02	Fe	<0.02	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Ta	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	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.
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- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



Certified Reference Material CRM



CERTIFIED WEIGHT REPORT:

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

Solvents: 21110221 Nitric Acid
22D0562008 Hydrochloric acid

Lot # R-02509124

M599

36

Expiration Date: 071126
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

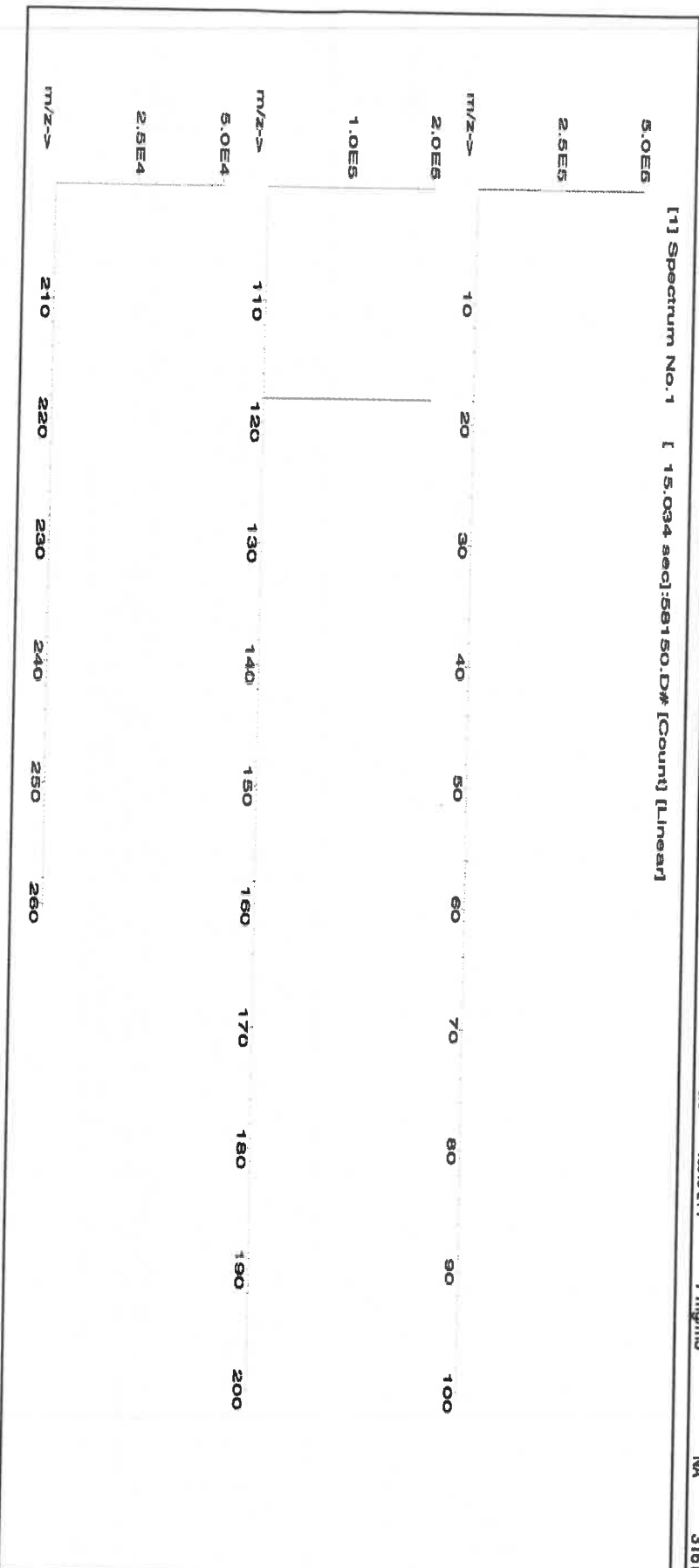
Weight shown below was diluted to (mL): 499.93

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

Compound	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Ammonium hexafluoroantimonate(V) (Sn) INO10 SMD042023A1 1000 99.99 0.10 44.2 1.13107 1.13286 1001.6 2.0 16919-24-7 7 mg/m3 NA 3161a

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





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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Ti	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<500	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Ta	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



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

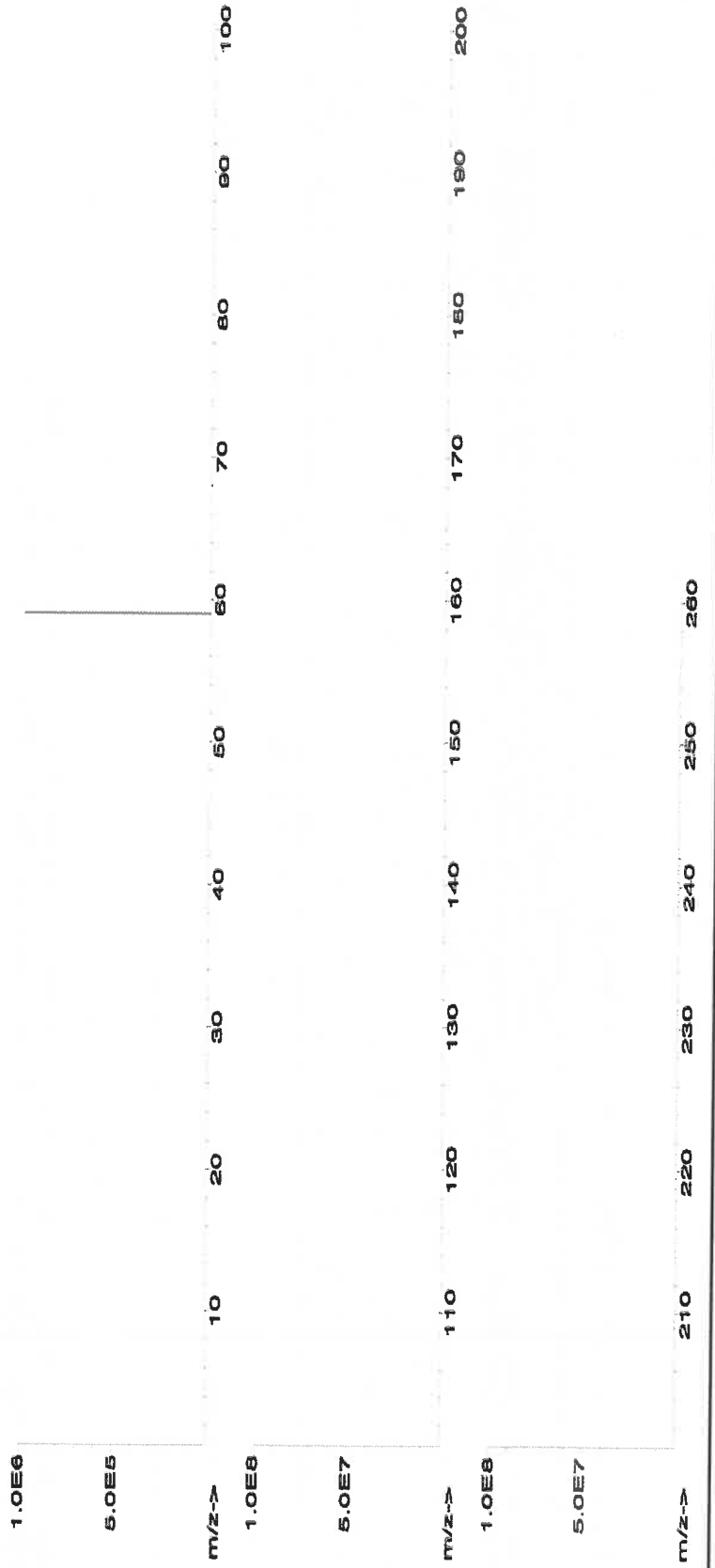
Formulated By: Lawrence Barry 091923
Reviewed By: Pedro L. Rentas 091923

SDS Information

Expanded Uncertainty +/- (µg/mL) CAS# OSHA PEL (TWA) LD50 NIST SRM

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

[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
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
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
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
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02
Bi	<0.02	Co	T	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02
(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.
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- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



Certified Reference Material CRM

AR: 02/09/24

M5801

BA



CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

57033
111323
Arsenic (As)

Lot #
24002546
Solvent:
Nitric Acid

Expiration Date:

111326

2.0%
80.0 (mL)

Nitric Acid

Recommended Storage:

Ambient (20 °C)

Nominal Concentration (µg/mL):

1000

NIST Test Number:

6LUTB

Volume shown below was diluted to (mL):

4000.0

5E-05

Balance Uncertainty
Flask Uncertainty

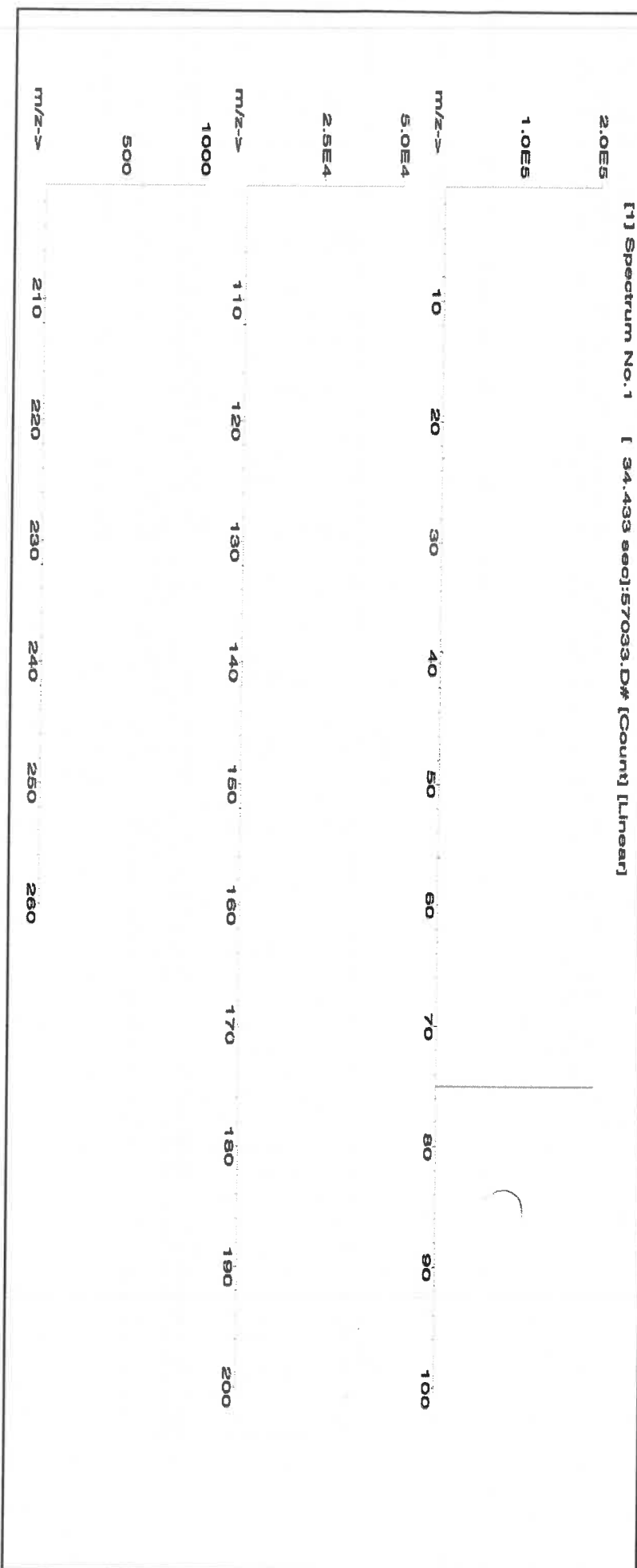
Formulated By:	Lawrence Barry	111323
Reviewed By:	Pedro L. Rendas	111323

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)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Arsenic (As)	58133	020522	0.1000	400.0	0.084	1000	10001.0	1000.0	2.0	7440-38-2	0.5 mg/m3	or-rat 500 mg/kg	3103a
-----------------	-------	--------	--------	-------	-------	------	---------	--------	-----	-----------	-----------	------------------	-------

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





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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Tc	<0.02	U	<0.02
As	T	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Ti	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Bc	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge*	<0.02	La	<0.02	Mo	<0.02	Pr	<0.02	Sm	<0.02	S	<0.02	Sa	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Tl	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

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



CERTIFIED WEIGHT REPORT:

Part Number: 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

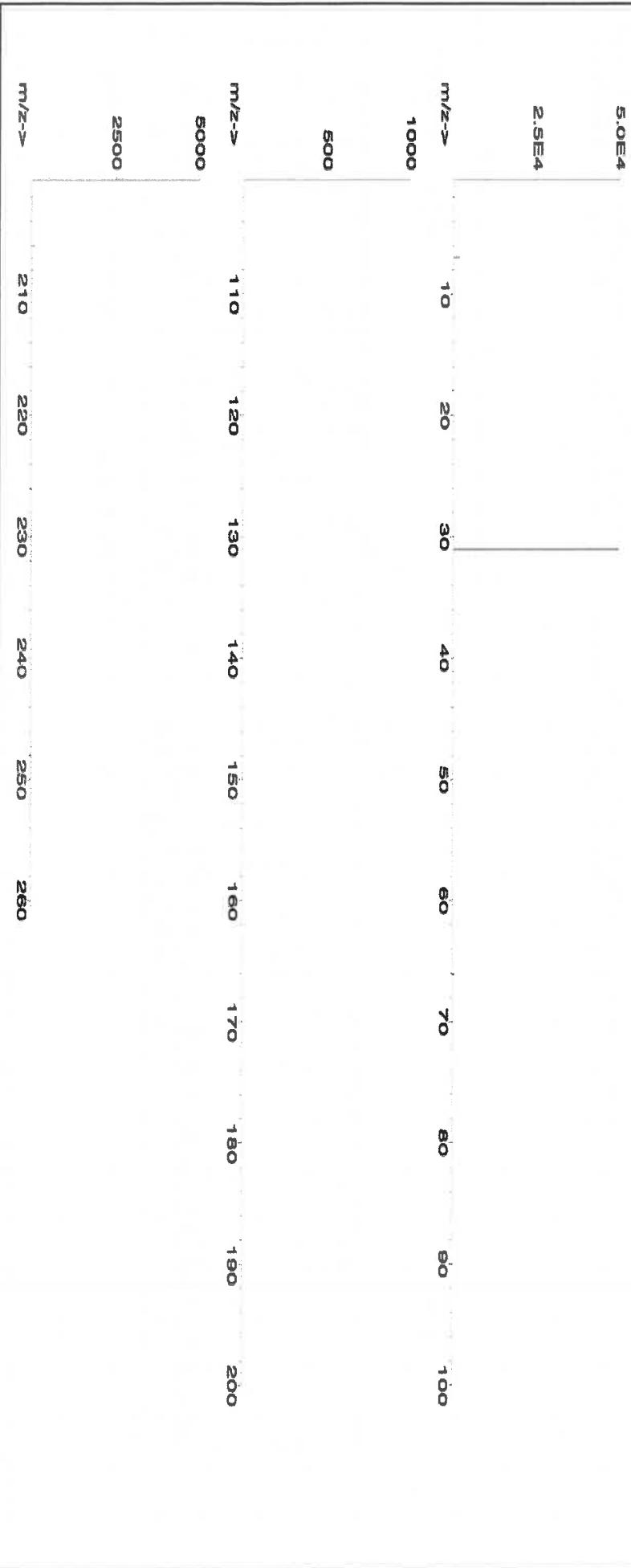
Formulated By:	Lawrence Barry
	041723
Reviewed By:	Pedro L. Rentas
	041723

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]





Certified Reference Material CRM

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

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

Trace Metals Verification by ICP-MS ($\mu\text{g/mL}$)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	T	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

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



CERTIFIED WEIGHT REPORT:

Part Number: **57116**
Lot Number: **071123**
Description: **Sulfur (S)**

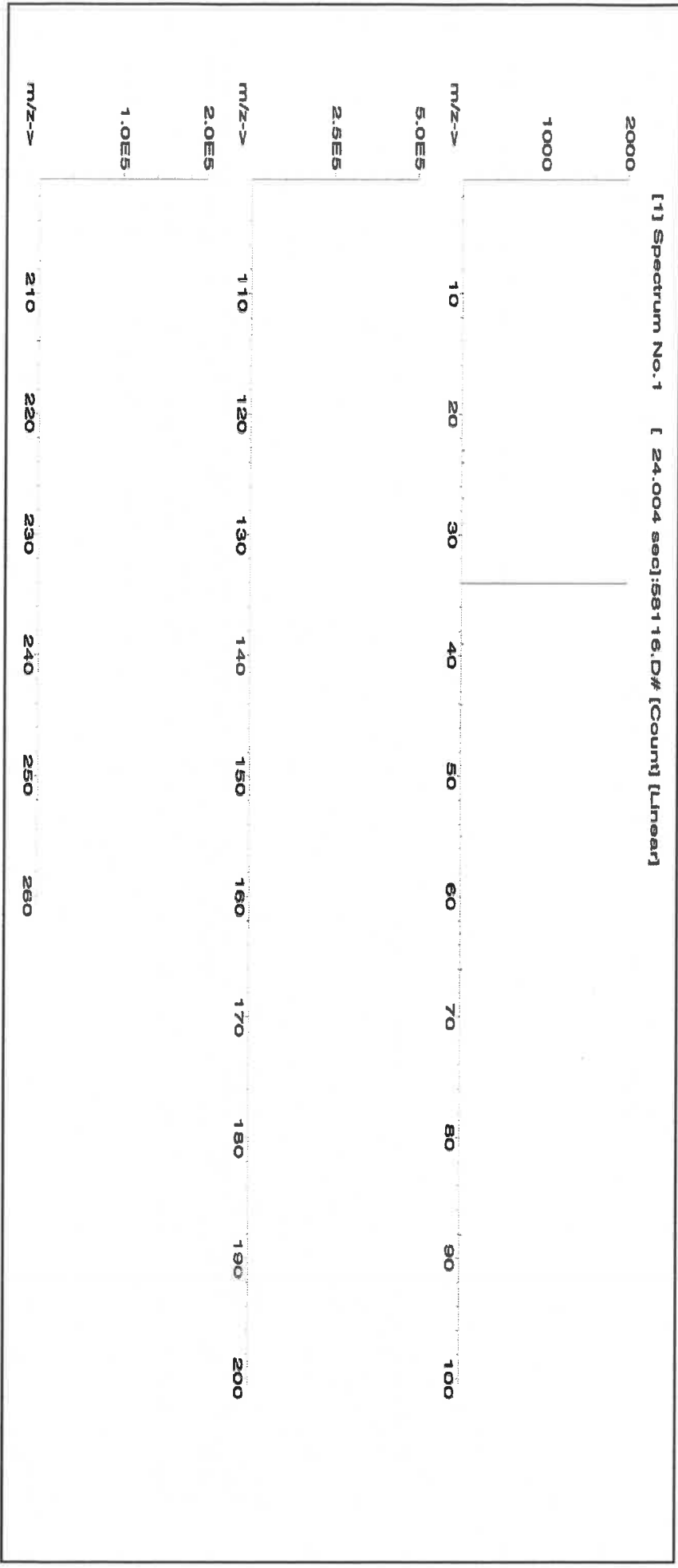
Solvent: **071123** Lot #
ASTM Type 1 Water

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)
									CAS# OSHA PEL (TWA) LD50 SRM

1. Ammonium sulfate (S)	IN117	SLBR725V	10000	99.9	0.10	24.3	82.4675	82.4692	10000.1	20.0	7783-20-2	NA	oral 4250mg/kg	3181
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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Ti	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	T	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

Physical Characterization:

(T)= Target analyte

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

Certified by:

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

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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.absolute-standards.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

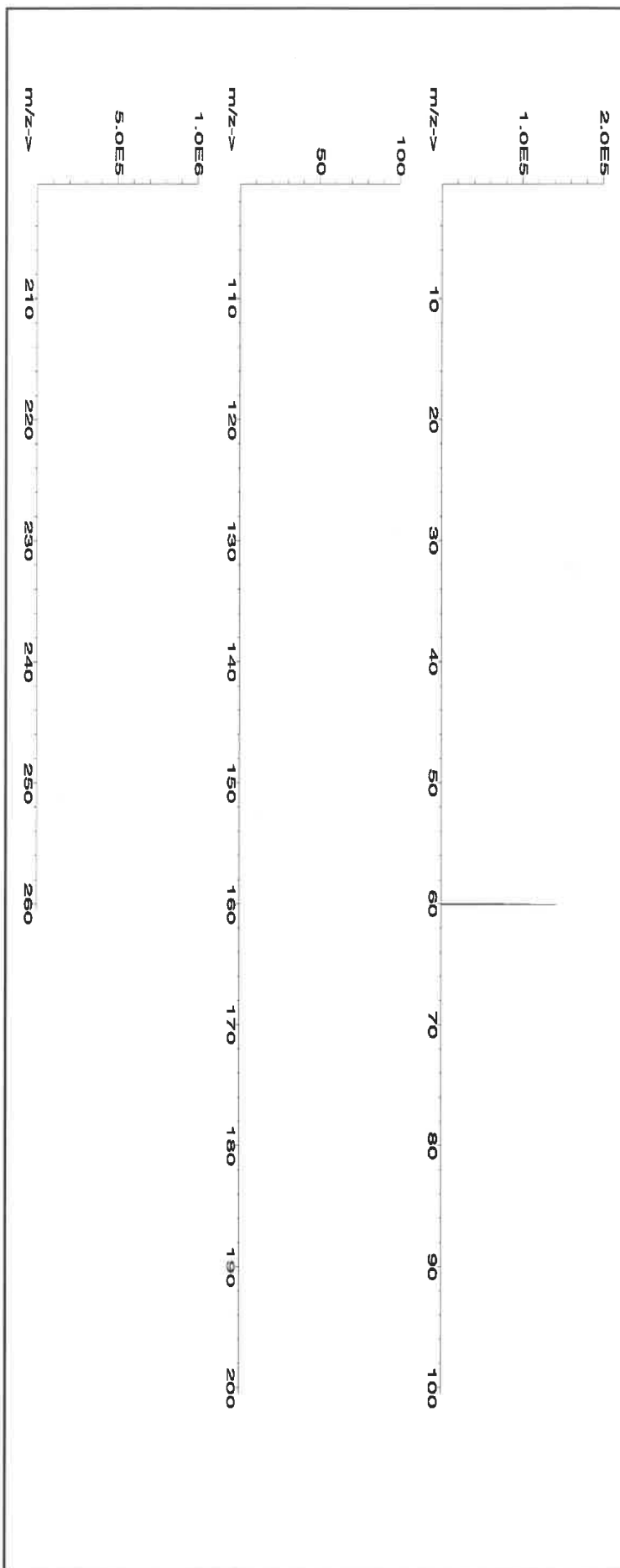
Formulated By:	Brian Geddes	041124
Reviewed By:	Pedro L. Rentas	041124

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
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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]



Part # 57028 Lot # 041124

1 of 2

Printed: 5/21/2024, 11:20:13 PM



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	Gd	<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	Bc	<0.01	Cr	<0.02	Mn	<0.02	Pd	<0.02	Rb	Ru	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Sr	Sm	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	S	Sc	<0.02	Ta	<0.02	Sn	<0.02	Zn	<0.02
						Pb	<0.02	Nd	<0.02	K	<0.2						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 Number:

060624

Description:

Selenium (Se)

Lot #

24002546

Solvent:

Nitric Acid

2.0%

40.0

(mL)

Nitric Acid

(mL)

Formulated By:

Benson Chan

060624

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

Reviewed By:

Pedro L. Rantas

060624

SDS Information

Compound

Part Number

Dilution Factor

Initial Vol. (mL)

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

1. Selenium (Se)

58134 071223

0.1000

200.0

0.084

1000

10002.5

1000.0

2.2

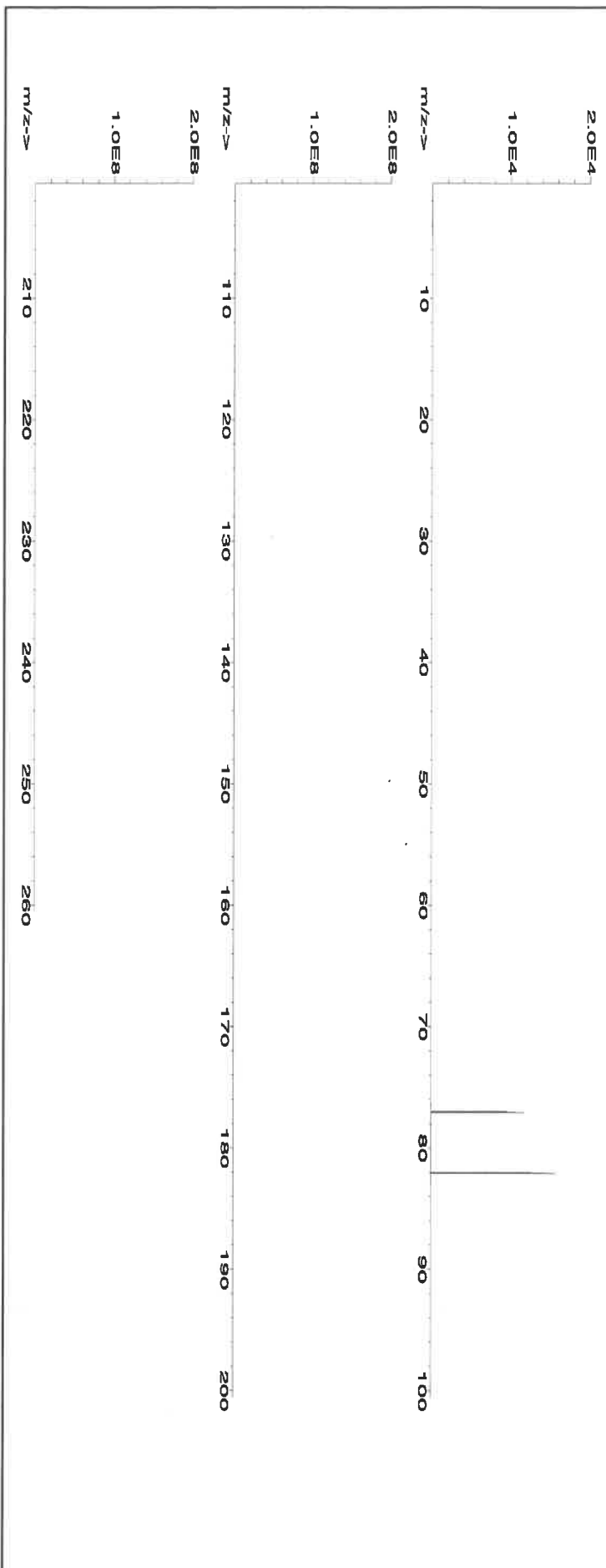
7782-49-2

0.2 mg/m3

or-tral 6700 mg/kg

3149

[1] Spectrum No.1 [33.702 sec]:58034.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	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).

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)

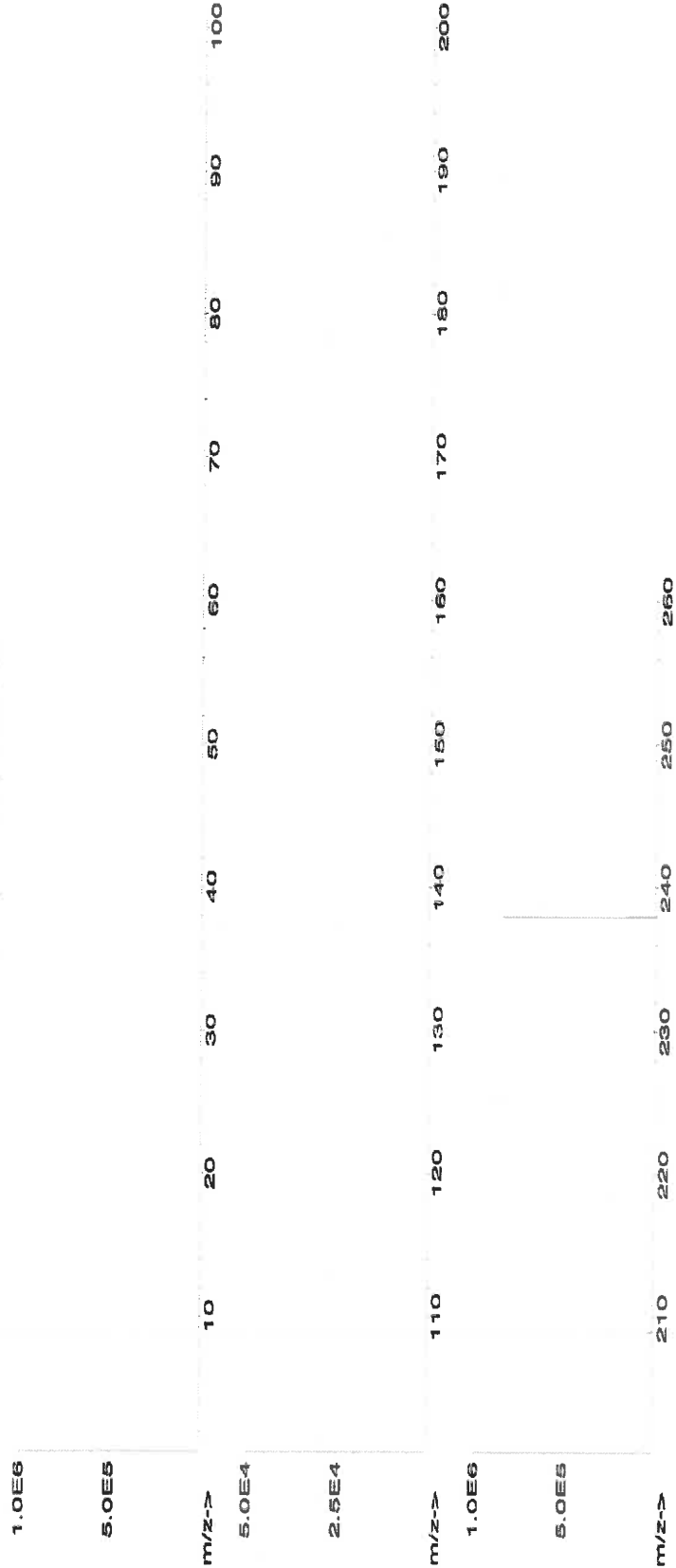
<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
<i>Pedro L. Rentas</i>	
Reviewed By:	Pedro L. Rentas

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
-----------------------------------	-------	--------	--------	-------	-------	------	---------	--------	-----	------------	------------	--------------------	------

[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 (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	<0.02	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	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:

[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).

[Handwritten notes]

8/19/24, M6055

300 Technology Drive
Christiansburg, VA 24073 USA
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P: 800-669-6799/540-585-3030

F: 540-585-3012

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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





Certified Reference Material CRM



CERTIFIED WEIGHT REPORT:

Part Number: **57040**
Lot Number: **071423**
Description: **Zirconium (Zr)**

Lot # **21110221**
Solvent: **Nitric Acid**

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**

2.0%
40.0 (mL)
Nitric Acid

SE-05 Balance Uncertainty
0.058 Flask Uncertainty

Formulated By:		Benson Chan	071423
Reviewed By:		Pedro L. Renteria	071423

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		CAS#	SDS Information		NIST SRM
									+/- (µg/mL)	(µg/mL)		(Solvent Safety Info. On Attached pg.)	LDSO	

1. **Zirconium 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]

m/z	10	20	30	40	50	60	70	80	90	100
1.OE6										
5.OE6										
m/z	10	20	30	40	50	60	70	80	90	100
1.OE8										
5.OE7										
m/z	110	120	130	140	150	160	170	180	190	200
1.OE8										
5.OE7										
m/z	210	220	230	240	250	260				
1.OE7										



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

Trace Metals Verification by ICP-MS ($\mu\text{g/mL}$)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	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)
Nitric Acid 2% (40.0 mL)

Nominal Concentration (µg/mL): 10000

NIST Test Number: 6LUB

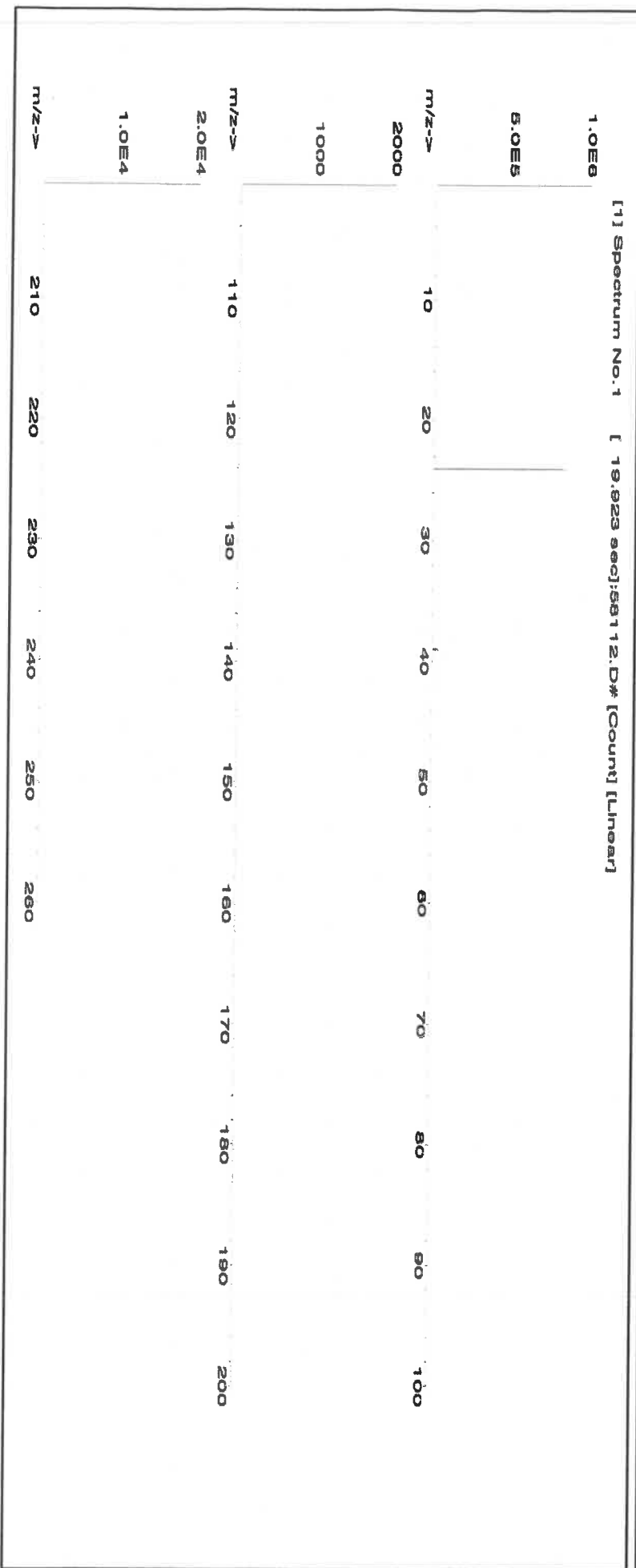
Weight shown below was diluted to (mL): 2000.07 0.100 Flask Uncertainty

<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)

R-71113128

Lot #
Solvent: 24002546 Nitric Acid

Expiration Date:

101127

Recommended Storage:
Ambient (20 °C)

2% 80.0 (mL)

Nitric Acid

Nominal Concentration (µg/mL):

1000

NIST Test Number:

6UTB

SE-05 Balance Uncertainty

Weight shown below was diluted to (mL):

4000.2

0.10 Flask Uncertainty

<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
Reviewed By:	<i>Pedro L. Renteria</i>
	101124

Compound

RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Manganese(II) nitrate hydrate (Mn) IN031 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:

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000310	M	Eu	<	0.000310	O	Na		0.001656	M	Se	<	0.022000	M	Zn	<	0.002500
M	Al		0.010787	M	Fe	<	0.027000	M	Nb	<	0.001300	s	Si	<		O	Zr	<	0.001900
M	As	<	0.001900	M	Ga	<	0.001300	M	Nd	<	0.000310	M	Sm	<	0.000310				
M	Au	<	0.000910	M	Gd	<	0.000310	M	Ni	<	0.005500	M	Sn		0.000096				
M	B		0.016180	M	Ge	<	0.001900	M	Os	<	0.000610	O	Sr		0.000092				
M	Ba		0.000096	M	Hf		0.000423	i	P	<		M	Ta		0.002542				
O	Be	<	0.000570	M	Hg	<	0.000610	M	Pb	<	0.000310	M	Tb	<	0.000310				
M	Bi	<	0.000310	M	Ho	<	0.000610	M	Pd	<	0.000610	M	Te	<	0.000910				
O	Ca		0.011557	M	In	<	0.000310	M	Pr	<	0.000310	M	Th	<	0.001900				
M	Cd	<	0.000310	M	Ir	<	0.000310	M	Pt	<	0.000310	M	Ti		0.001078				
M	Ce	<	0.000610	O	K		0.000577	M	Rb	<	0.009100	M	Tl	<	0.000310				
M	Co	<	0.001600	M	La	<	0.000310	M	Re	<	0.000310	M	Tm	<	0.000310				
M	Cr	<	0.010000	O	Li	<	0.000460	M	Rh	<	0.000310	M	U	<	0.000310				
M	Cs	<	0.000310	M	Lu	<	0.000310	M	Ru	<	0.000310	O	V	<	0.001300				
M	Cu	<	0.002500	O	Mg		0.001348	O	S	<	0.570000	M	W	<	0.001900				
M	Dy	<	0.000310	M	Mn	<	0.002500	M	Sb	<	0.000310	M	Y	<	0.000310				
M	Er	<	0.000310	M	Mo	<	0.000310	O	Sc	<	0.000590	M	Yb	<	0.000310				

M - Checked by ICP-MS

O - Checked by ICP-OES

i - Spectral Interference

n - Not Checked For

s - Solution Standard Element

6.0 INTENDED USE

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

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

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form In Solution - 28.09 +4 6 Si(OH)x(F)y2-

Chemical Compatibility -Soluble in HCl, HF, H3PO4 H2SO4 and HNO3 as the Si(OH)x(F)y2-. Avoid neutral to basic media. Unstable at ppm levels with metals that would pull F- away (i.e. Do not mix with Alkaline or Rare Earths, or high levels of transition elements unless they are fluorinated. Stable with most inorganic anions with a tendency to hydrolyze forming silicic acid (silicic acid is soluble up to ∼100 ppm in water) in all dilute acids except HF.

Stability - 2-100 ppb levels - stability unknown - (alone or mixed with all other metals) as the Si(OH)x(F)y2-. 1-10,000 ppm single element solutions as the Si(OH)x(F)y2- chemically stable for years in 2-5 % HNO3 / trace HF in a LDPE container.

Si Containing Samples (Preparation and Solution) -Metal (Soluble in 1:1:1 H2O / HF / HNO3); Oxide - SiO2, amorphous (dissolve by heating in 1:1:1 H2O / HF / HNO3); Oxide - quartz (fuse in Pt0 with Na2CO3); Geological Samples(fuse in Pt0with Na2CO3 followed by HCl solution of the fuseate); Organic Matrices containing silicates and non volatile silicon compounds (dry ash at 4500C in Pt0 and dissolve by gently warming with 1:1:1 H2O / HF / H2SO4 or fuse / ash with Na2CO3 and dissolve fuseate with HCl / H2O); Silicone Oils - dimethyl silicones depolymerize to form volatile monomer units when heated (Measure directly in alcoholic KOH / xylene mixture where sample is treated first with the KOH at 60-1000C to "unzip" the Si- O-Si polymeric structure or digest with conc. H2SO4 / H2O2 followed by cooling and dissolution of the dehydrated silica with HF.) Note that the direct analysis of silicone oils in an organic solvent will result in false high results due to high vapor pressure of volatile monomer units like hexamethylcyclotrisiloxane. The KOH forms the K2+Si(CH3)2O= salt which is not volatile at room temperature.

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

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 28 amu	4000 - 8000 ppt	N/A	N2, 12C16O
ICP-OES 212.412 nm	0.02/0.01 µg/mL	1	Hf, Os, Mo, Ta
ICP-OES 251.611 nm	0.012/0.003 µg/mL	1	Ta, U, Zn, Th
ICP-OES 288.158 nm	0.03/0.004 µg/mL	1	Ta, Ce, Cr, Cd, Th

HF Note: This standard should not be prepared or stored in glass.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; Inorganicventures.com; Info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

July 10, 2024

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- July 10, 2029

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Uyen Truong
Custom Processing Supervisor



Certificate Approved By:

Muzzammil Khan
Stock Laboratory Supervisor



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director





CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

57119
103024
Potassium (K)

R-21113125

Lot #
Solvent: 24002546 Nitric Acid

Giovanni Caporaso	
Formulated By:	Giovanni Esposito
Reviewed By:	Pedro L. Renteria
	103024

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

103027
Ambient (20 °C)
10000

M6141
M6142
M6143

2%
80.0 (mL)
Nitric Acid

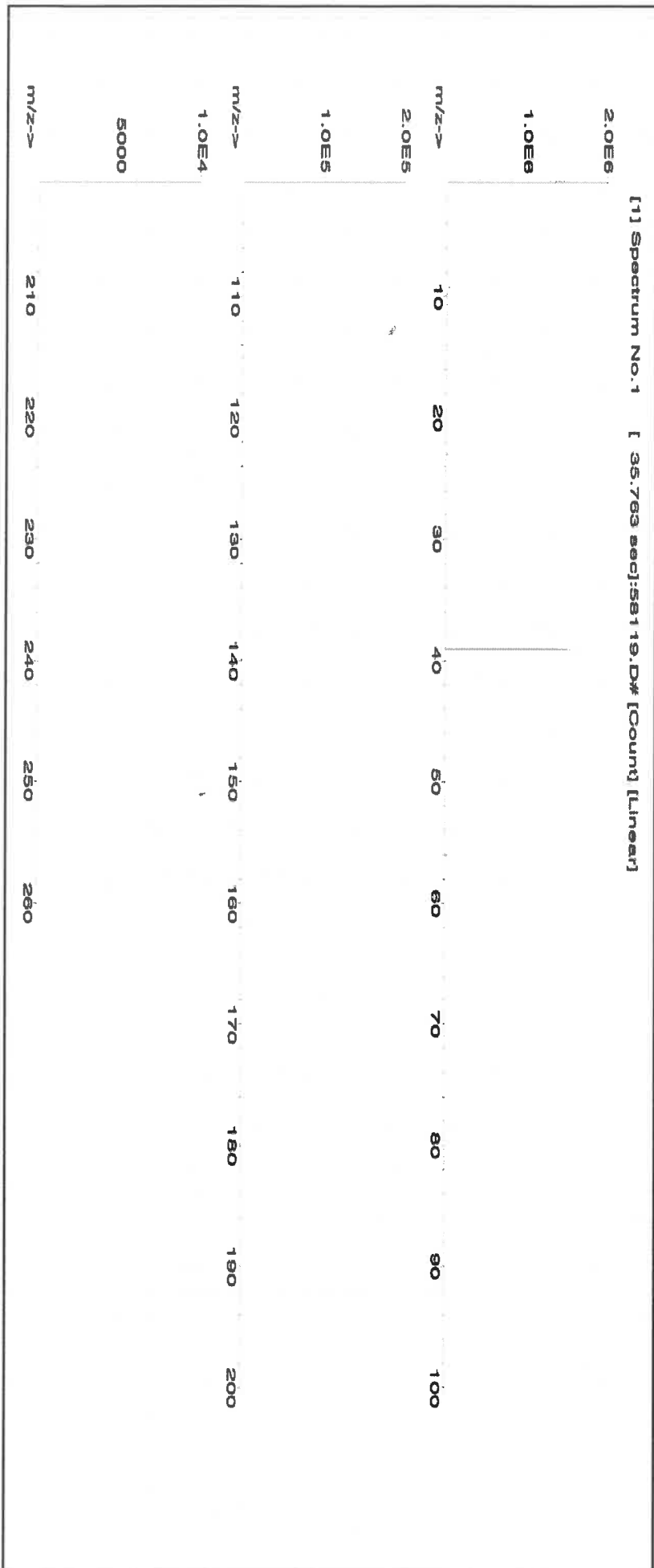
Weight shown below was diluted to (mL):

4000.1 0.15 Flask Uncertainty

Compound	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. Potassium nitrate (K) IN034 KD062022A1 10000 99.999 0.10 37.7 106.1040 ##### 10001.1 20.0 7757-79-1 5 mg/m3 orl-rat 3750 mg/kg 3141a

[1] Spectrum No. 1 [35.763 sec]:58119.D# [Count] [Linear]





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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	T	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

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



CERTIFIED WEIGHT REPORT:

Part Number: 58111 **Lot #** R-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**

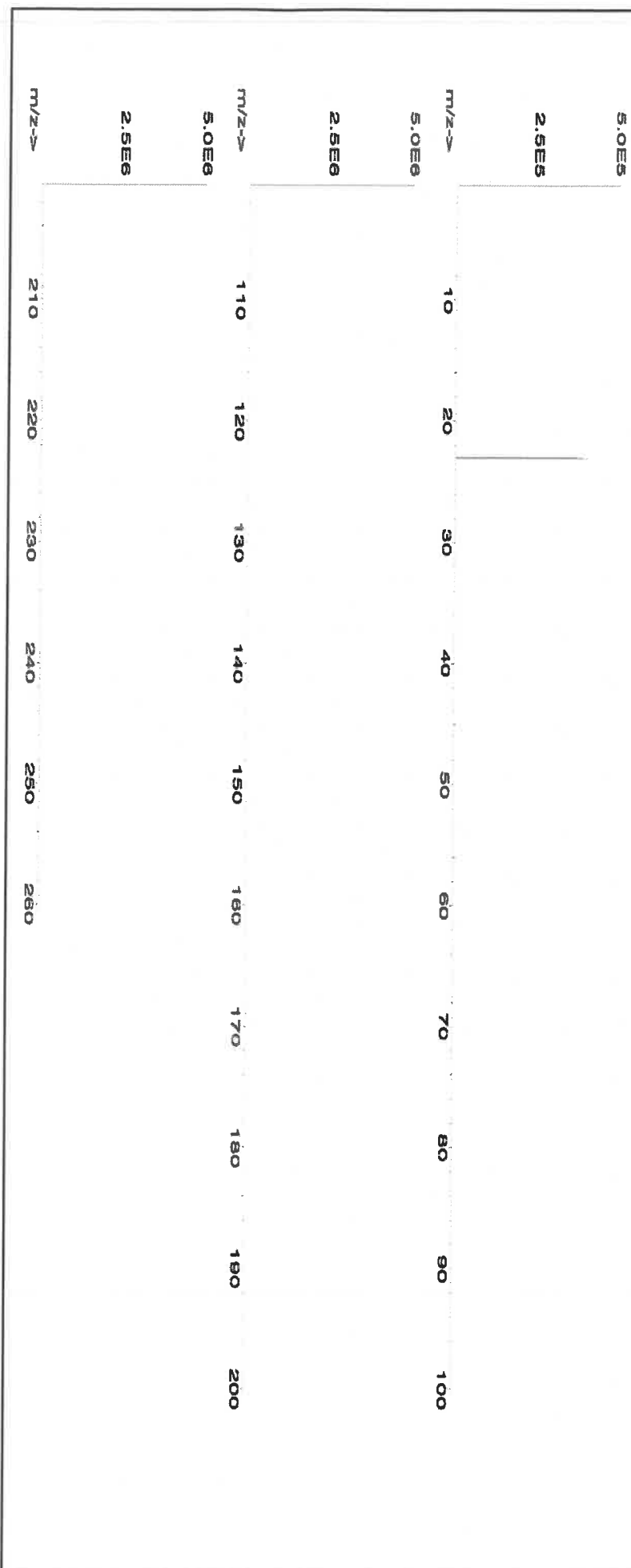
Formulated By:	Benson Chan	072424
Reviewed By:	Pedro L. Renteria	072424

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
----------	------------	-----------------------	------------	------------------------	-----------	-------------------	-------------------	----------------------	----------------------------------	------	----------------	------	----------

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	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	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:

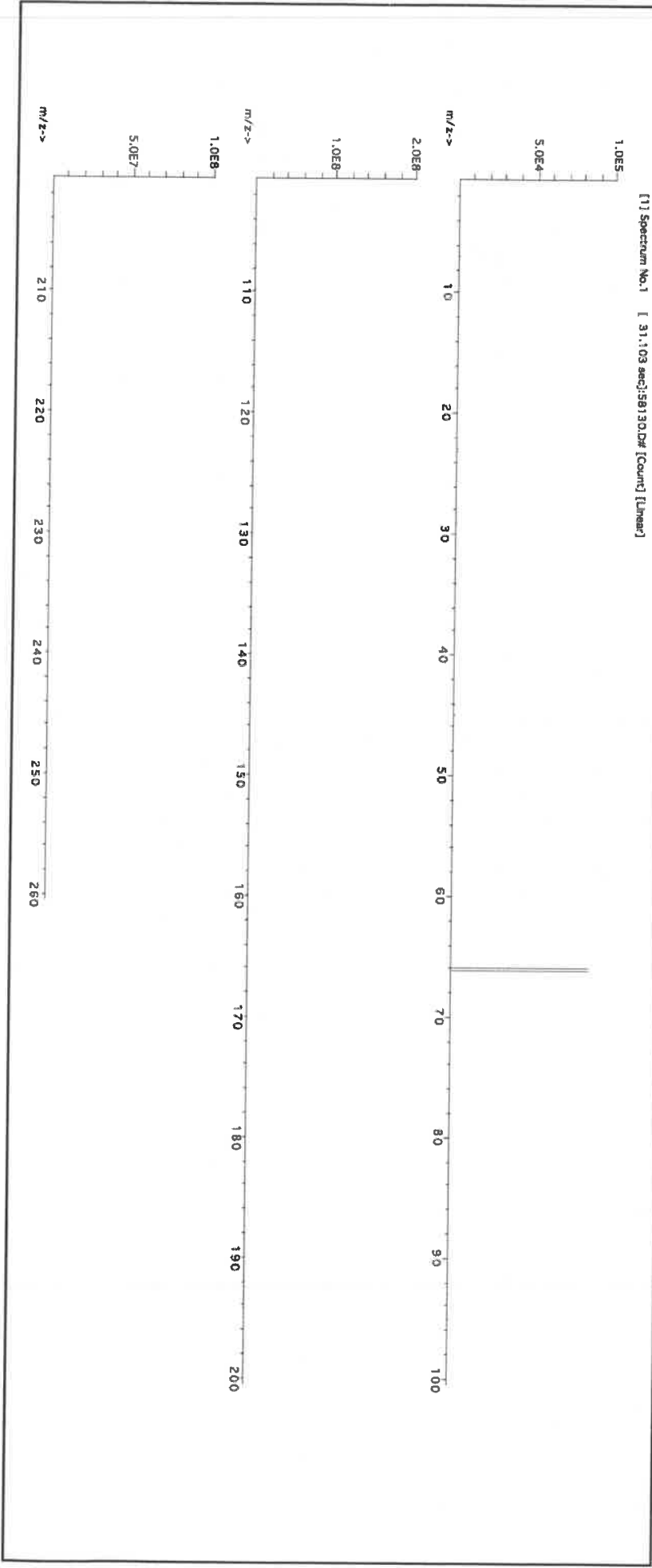
Part Number: 58030
Lot Number: 121724
Description: Zinc (Zn)
Expiration Date: 121727
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 2000.1
Balance Uncertainty: 5E-05
Flask Uncertainty: 0.10

Lot # 24012496
Nitric Acid
2%
40.0 (mL)
Nitric Acid

Aleah O'Brady
Formulated By: Aleah O'Brady
Reviewed By: Pedro L. Rentias
121724

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

1. Zinc nitrate hexahydrate (Zn) IN016 ZNE0302021A1 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





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**™

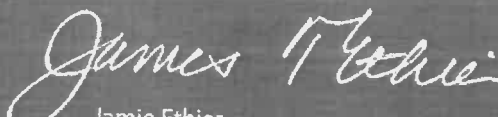


Material No.: 9530-33
Batch No.: 22G2862015

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 Pt0 followed by HCl dissolution); Organic Matrices (Dry ash and dissolution in dilute HCl).

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

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 88 amu	1200 ppt	N/A	72Ge16O, 176Yb+2, 176Lu+2, 176Hf+2
ICP-OES 407.771 nm	0.0004 / 0.00006 µg/mL	1	U, Ce
ICP-OES 421.552 nm	0.0008 / 0.00004 µg/mL	1	Rb
ICP-OES 460.733 nm	0.07 / 0.003 µg/mL	1	Ce

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

August 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



Nitric Acid 69%
CMOS

avantor™



R- 0210212025

m - 6158

Material No.: 9606-03
Batch No.: 24D1062002
Manufactured Date: 2024-03-26
Retest Date: 2029-03-25
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay (HNO ₃)	69.0 – 70.0 %	69.7 %
Appearance	Passes Test	Passes Test
Color (APHA)	≤ 10	5
Residue after Ignition	≤ 2 ppm	1 ppm
Chloride (Cl)	≤ 0.08 ppm	< 0.03 ppm
Phosphate (PO ₄)	≤ 0.10 ppm	< 0.03 ppm
Sulfate (SO ₄)	≤ 0.2 ppm	< 0.2 ppm
Trace Impurities – Aluminum (Al)	≤ 40.0 ppb	< 1.0 ppb
Arsenic and Antimony (as As)	≤ 5.0 ppb	< 2.0 ppb
Trace Impurities – Barium (Ba)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Beryllium (Be)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Bismuth (Bi)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities – Boron (B)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities – Cadmium (Cd)	≤ 50 ppb	< 1 ppb
Trace Impurities – Calcium (Ca)	≤ 50.0 ppb	2.3 ppb
Trace Impurities – Chromium (Cr)	≤ 30.0 ppb	< 1.0 ppb
Trace Impurities – Cobalt (Co)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Copper (Cu)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Gallium (Ga)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Germanium (Ge)	≤ 20 ppb	< 10 ppb
Trace Impurities – Gold (Au)	≤ 20 ppb	< 5 ppb
Heavy Metals (as Pb)	≤ 100 ppb	100 ppb
Trace Impurities – Iron (Fe)	≤ 40.0 ppb	< 1.0 ppb
Trace Impurities – Lead (Pb)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities – Lithium (Li)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Magnesium (Mg)	≤ 20 ppb	< 1 ppb
Trace Impurities – Manganese (Mn)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Nickel (Ni)	≤ 20.0 ppb	< 5.0 ppb

>>> Continued on page 2 >>>

Nitric Acid 69%
CMOS

avantorsTM



Material No.: 9606-03
Batch No.: 24D1062002

Test	Specification	Result
Trace Impurities - Niobium (Nb)	≤ 50.0 ppb	< 1.0 ppb
Trace Impurities - Potassium (K)	≤ 50 ppb	16 ppb
Trace Impurities - Silicon (Si)	≤ 50 ppb	< 10 ppb
Trace Impurities - Silver (Ag)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities - Sodium (Na)	≤ 150.0 ppb	< 5.0 ppb
Trace Impurities - Strontium (Sr)	≤ 30.0 ppb	< 1.0 ppb
Trace Impurities - Tantalum (Ta)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities - Thallium (Tl)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities - Tin (Sn)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities - Titanium (Ti)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Vanadium (V)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Zinc (Zn)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities - Zirconium (Zr)	≤ 10.0 ppb	< 1.0 ppb
Particle Count - 0.5 µm and greater	≤ 60 par/ml	10 par/ml
Particle Count - 1.0 µm and greater	≤ 10 par/ml	3 par/ml

>>> Continued on page 3 >>>

Nitric Acid 69%
CMOS

 **avantorsTM**



Material No.: 9606-03
Batch No.: 24D1062002

Test	Specification	Result
------	---------------	--------

For Microelectronic Use

Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC



Jamie Croak
Director Quality Operations, Bioscience Division

A: 4/11/22

Certificate of Analysis

M5738 M5739 M5740 M5741 M5742

M5743

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: 6020ISS
Lot Number: S2-MEB709511
Matrix: 7% (v/v) HNO₃
Value / Analyte(s): 10 µg/mL ea:
Bismuth, Indium, Rhodium, Terbium, Holmium, 6-Lithium, Scandium, 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 $\pm$ 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

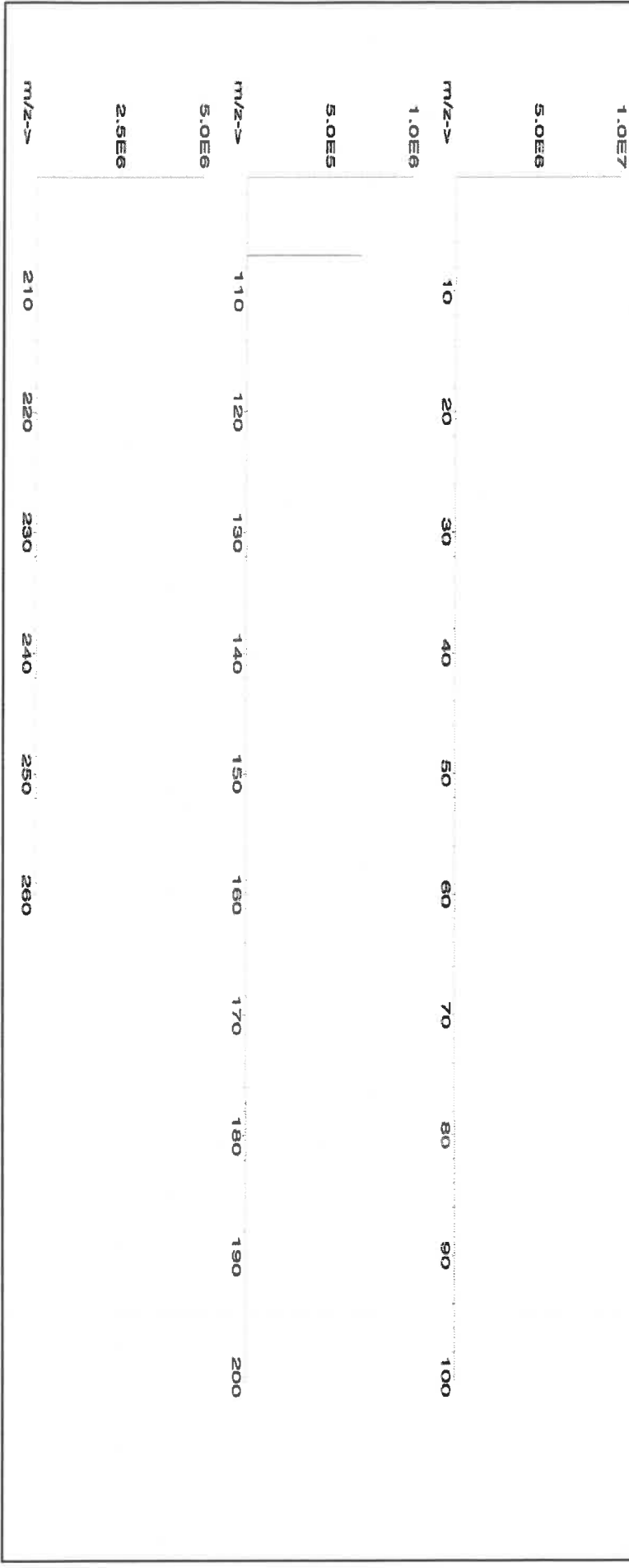
Formulated By:	Benson Chan
Reviewed By:	
Pedro L. Rentas	
122823	

Expiration Date: 122826
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 4000.30
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

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

1. Silver nitrate (Ag) IN035 J0612AGA1 1000.0 99.999 0.10 63.7 6.27992 6.27998 1000.0 2.0 7761-88-8 10 µg/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 meghom deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

R: 10/18/24
Certified Reference Material CRMANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT:

Part Number:

57051

Lot # 24002546

Solvent: Nitric Acid

Lot Number:

071724

Description: Antimony (Sb)

Expiration Date:

071727

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL):

1000

NIST Test Number:

6LJB

Volume shown below was diluted to (mL): 2000.26

5E-05 Balance Uncertainty

0.058 Flask Uncertainty

Formulated By:

Giovanni Esposito

071724

Reviewed By:

Pedro L. Rentas

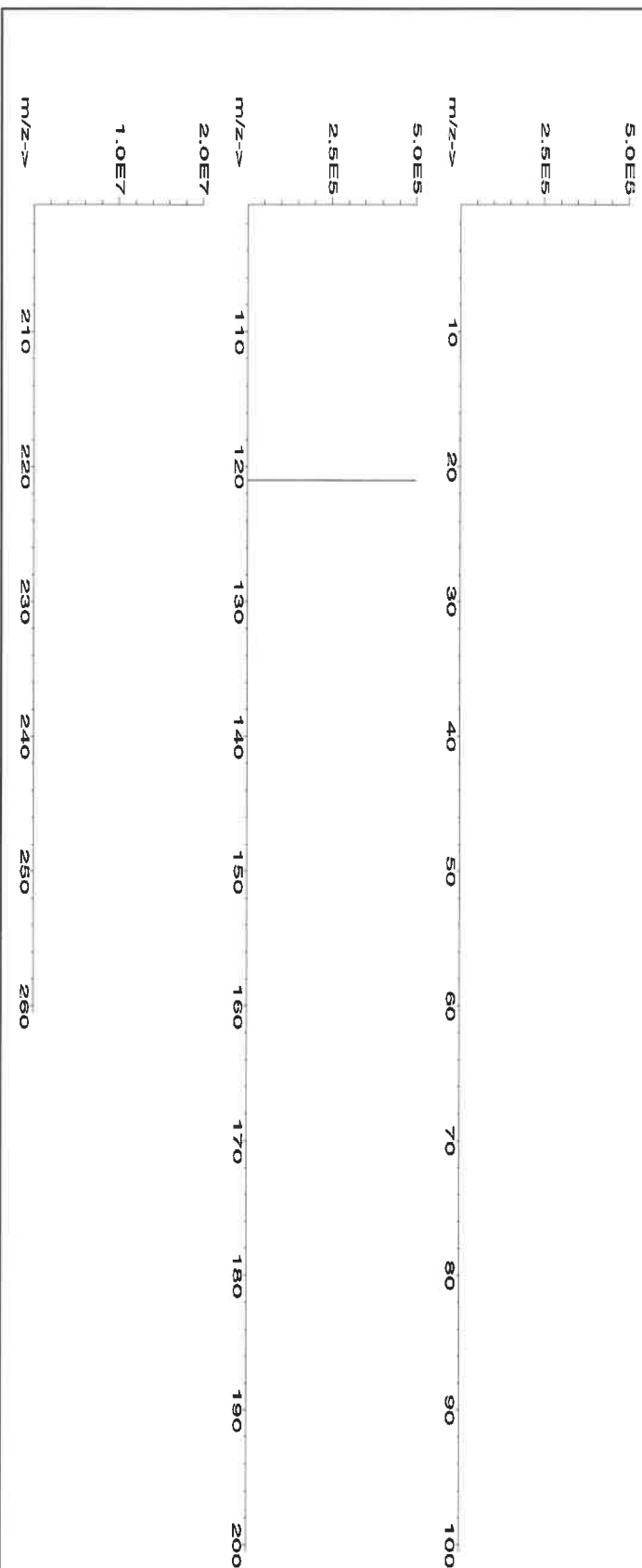
071724

SDS Information

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
----------	-------------	------------	-----------------	-------------------	--------------------------	-----------------------	-----------------------	---------------------	----------------------------------	------	----------------	------	----------

1. Antimony (Sb)	58151	060324	0.1000	200.0	0.084	1000	10001.4	1000.0	2.2	7440-36-0	0.5 mg/m3	or-rat 7000 mg/kg	3102a
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[1] Spectrum No.1 [17.964 sec]:58051.D# [Count] [Linear]





John P. ...

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R: 8/5/24

M6019

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

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

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution
Catalog Number: CGSR1
Lot Number: U2-SR730227
Matrix: 0.1% (v/v) HNO₃
Value / Analyte(s): 1 000 µg/mL ea:
Strontium
Starting Material: SrCO₃
Starting Material Lot#: M2-2192
Starting Material Purity: 99.9993%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1001 ± 3 µg/mL
Density: 1.000 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1	998 ± 4 µg/mL ICP Assay NIST SRM Traceable to 3153a Lot Number: K2-SR650985
Assay Method #2	1001 ± 3 µg/mL EDTA NIST SRM 928 Lot Number: 928
Assay Method #3	1001 ± 2 µg/mL Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

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





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:

2% 40.0 (mL) Nitric Acid

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

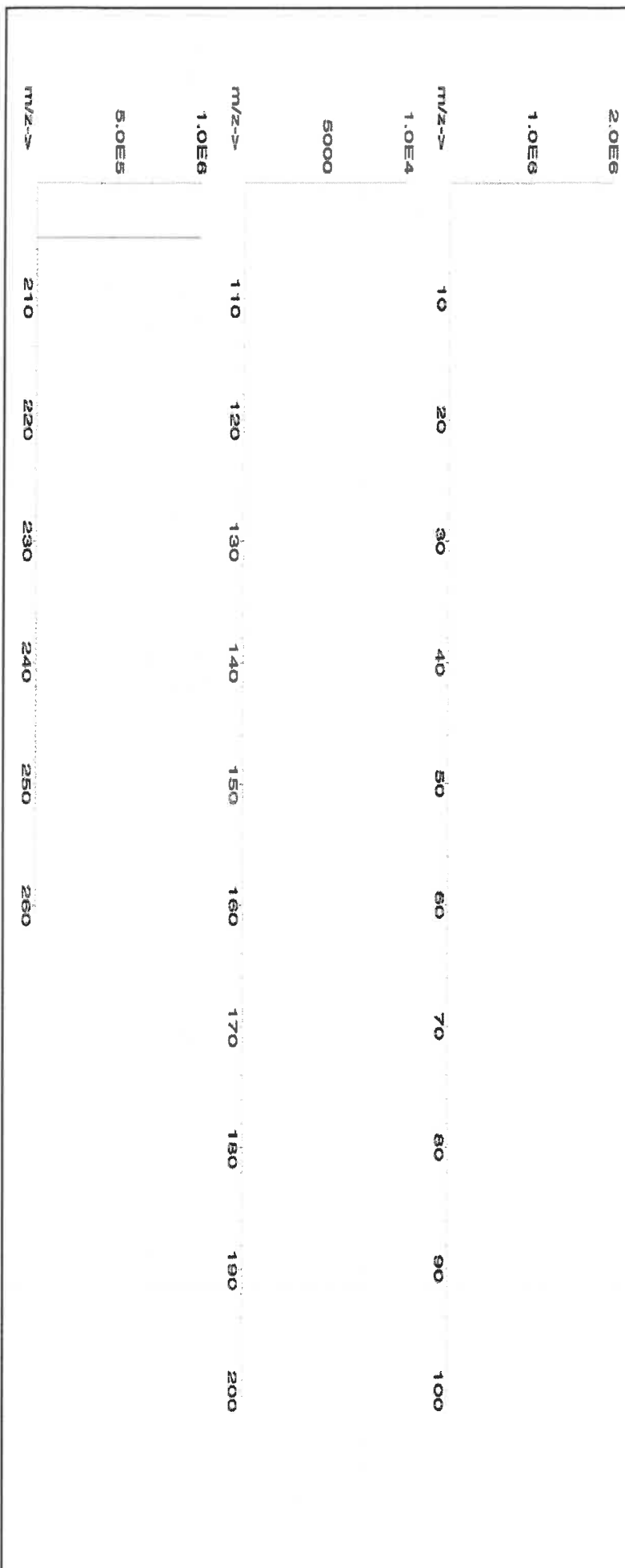
Pedro L. Renias
Reviewed By: Pedro L. Renias 062724

SDS Information

Compound	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
----------	------------	-----------------------	------------	-----------------	-----------	-------------------	-------------------	----------------------	----------------------------------	------	----------------	------	----------

1. Thallium nitrate (TI) IN037 BCCF4399 1000 99.999 0.10 77.0 2.5975 2.5977 1000.1 2.0 10102-45-1 0.1 mg/m3 or-mus 15mg/kg 3158

[1] Spectrum No.1 [14.044 sec]:57081.D# [Count] [Linear]





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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Sc	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	T	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Tm	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Sn	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Ti	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Se	<0.02	Ta	<0.02			Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

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



Certified Reference Material CRM

M6021



ANAB ISO 17034 Accredited
AR-1539 Certificate Number
<https://absolutestandards.com>

CERTIFIED WEIGHT REPORT:

Part Number: **57023**
Lot Number: **062424**
Description: **Vanadium (V)**

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

Aleah O'Brady	
Formulated By:	Aleah O'Brady
	062424
Reviewed By:	Pedro L. Rantas
	062424

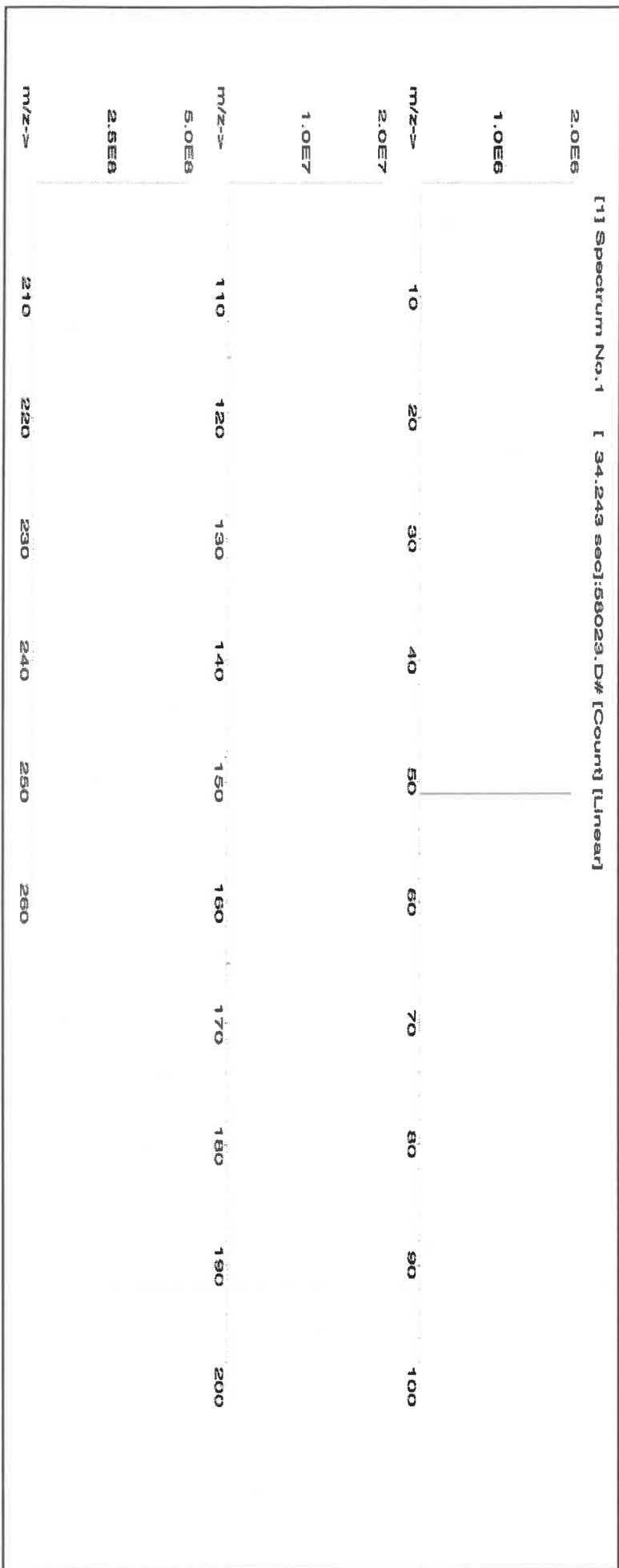
Expiration Date: **062427**
Recommended Storage: **Ambient (20 °C)**
Nominal Concentration (µg/mL): **1000**
NIST Test Number: **6UTB**

Volume shown below was diluted to (mL): **2000.3**
5E-05 Balance Uncertainty
0.06 Flask Uncertainty

2.0%
40.0 (mL)
Nitric Acid

Compound		Part		Lot		Dilution		Initial		Uncertainty		Nominal		Initial		Final		Expanded		SDS Information		NIST	
		Number		Number		Factor		Vol. (mL)		Pipette (mL)		Conc. (µg/mL)		Conc. (µg/mL)		Conc. (µg/mL)		+/- (µg/mL)		(Solvent Safety Info. On Attached pg.)		CAS#	
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	
																						or -rat 58.1mg/kg	
																						3165	

[1] Spectrum No.1 [34.243 sec]:58023.D# [Count] [Linear]





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

Trace Metals Verification by ICP-MS ($\mu\text{g/mL}$)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	T
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Ru	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Sr	<0.02	S	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	Ta	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02			Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

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



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www.phenova.com

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Date	Order #
04/21/2025	333293



Ship To

Alliance Tech Group - Newark
ATTN: Sohil Jodhani
284 Sheffield St., #1
Mountainside, NJ 07092
USA

Customer PO #	Terms	PT Acct #	Customer #	Ship Via	F.O.B.
PO2-1668	Net 30	ZCM-100	1500470	FedEx Collect 2nd Day	Golden, CO

Qty Ordered	Qty Shipped	Qty Backorder	Part Number	Part Description	Study Number	Lot Number
1	1	0	PT-MET-SOIL	SOIL/HW Trace Metals	HW0425	7100-04
1	1	0	PT-CR6-SOIL	SOIL/HW Hexavalent Chromium	HW0425	7100-05B
1	1	0	PT-CN-SOIL	SOIL/HW Cyanide	HW0425	7100-06
1	1	0	PT-CORR-SOIL	SOIL/HW Corrosivity/pH	HW0425	7100-11
1	1	0	PT-FP-SOIL	SOIL/HW Flash Point	HW0425	7100-10
1	1	0	PT-AN-SOIL	SOIL/HW Anions	HW0425	7100-08
1	1	0	PT-NUT-SOIL	SOIL/HW Nutrients	HW0425	7100-09B
1	1	0	PT-SOL-SOIL	SOIL/HW Solids	HW0425	7100-31
1	1	0	PT-NO2-SOIL	SOIL/HW Nitrite as N	HW0425	7100-71
1	1	0	PT-GAS-SOIL	SOIL/HW Gasoline	HW0425	7100-96
1	1	0	PT-OGR-SOIL	SOIL/HW Oil and Grease	HW0425	7100-94
1	1	0	PT-VOA-SOIL	SOIL/HW Volatiles	HW0425	7100-12
1	1	0	PT-BNA-SOIL	SOIL/HW BNAs	HW0425	7100-13
1	1	0	PT-PEST-SOIL	SOIL/HW Pesticides	HW0425	7100-14
1	1	0	PT-CHLR-SOIL	SOIL/HW Chlordane	HW0425	7100-15
1	1	0	PT-TXP-SOIL	SOIL/HW Toxaphene	HW0425	7100-16
1	1	0	PT-PCB-SOIL	SOIL/HW PCBs	HW0425	7100-17
1	1	0	PT-PCBO-SOIL	SOIL/HW PCBs in Oil	HW0425	7100-88
1	1	0	PT-HERB-SOIL	SOIL/HW Herbicides	HW0425	7100-18
1	1	0	PT-PAH-SOIL	SOIL/HW PAHs	HW0425	7100-22
1	1	0	PT-TRIAZINE-SOIL	SOIL/HW Triazine Pesticides	HW0425	7100-106
1	1	0	PT-NJEPH-SOIL	NJ EPH in SOIL	HW0425	7100-105



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Ship To

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ATTN: Sohil Jodhani
284 Sheffield St., #1
Mountainside, NJ 07092
USA

Received by: SJ

4/28/2025 9:40

Customer PO #	Terms	PT Acct #	Customer #	Ship Via	F.O.B.
CPR	Net 30	ZCM-100	1500470	FedEx Next Day	Golden, CO

Qty Ordered	Qty Shipped	Qty Backorder	Part Number	Part Description	Study Number	Lot Number
1	1	0	PT-DIES-SOIL	SOIL/HW Diesel in Soil	HW0425	7100-100

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