284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900,
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DATA PACKAGE

METALS

PROJECT NAME : RAYMARK SUPERFUND SITE

NOBIS GROUP

585 Middlesex Street

Lowell, MA - 01851

Phone No: 978-683-0891

ORDER ID : Q1382

ATTENTION : Adam Roy

Laboratory Certification ID # 20012

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Cover Page

Order ID : Q1382

Project ID : Raymark Superfund Site

Client : Nobis Group

Lab Sample Number	Client Sample Number
Q1382-01	OU4-PCS-TC-01-021725
Q1382-02	OU4-PCS-TC-01-021725
Q1382-03	OU4-PCS-TC-02-021725
Q1382-04	OU4-PCS-TC-02-021725
Q1382-05	OU4-PCS-TC-03-021725
Q1382-06	OU4-PCS-TC-03-021725
Q1382-07	OU4-PCS-TC-04-021725
Q1382-08	OU4-PCS-TC-04-021725
Q1382-09	OU4-PCS-TC-05-021725
Q1382-10	OU4-PCS-TC-05-021725
Q1382-11	OU4-PCS-TC-06-021725
Q1382-12	OU4-PCS-TC-06-021725
Q1382-13	OU4-PCS-TC-07-021725
Q1382-14	OU4-PCS-TC-07-021725
Q1382-15	OU4-PCS-TC-08-021725
Q1382-16	OU4-PCS-TC-08-021725
Q1382-17	OU4-PCS-TC-09-021725
Q1382-18	OU4-PCS-TC-09-021725
Q1382-19	OU4-PCS-TC-10-021725
Q1382-20	OU4-PCS-TC-10-021725

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 9:39 am, Mar 05, 2025* Date: 3/4/2025

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

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CASE NARRATIVE

Nobis Group
Project Name: Raymark Superfund Site
Project # N/A
Chemtech Project # Q1382
Test Name: Metals ICP-TAL,Mercury

A. Number of Samples and Date of Receipt:
20 Solid samples were received on 02/18/2025.

B. Parameters:
According to the Chain of Custody document, the following analyses were requested: Cyanide, Herbicide Group1, Mercury, Metals ICP-TAL, METALS-TAL, PCB, Pesticide-TCL, SPLP Extraction, SPLP Mercury, SPLP MetalGroup3, SVOCMS Group3 and VOCMS Group3. This data package contains results for Metals ICP-TAL,Mercury.

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

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Blank Spike met requirements for all samples.
The Duplicate analysis met criteria for all samples.
The Matrix Spike (OR-03-021823025MS) analysis met criteria for all samples except for Antimony, Barium, Beryllium, Potassium, Selenium, Silver, Vanadium, Zinc due to matrix interference.
The Matrix Spike Duplicate (OR-03-021823025MSD) analysis met criteria for all samples except for Antimony, Barium, Beryllium, Lead, Selenium, Silver, Vanadium, Zinc due to matrix interference.
The Blank analysis did not indicate the presence of lab contamination.
The Calibration met the requirements.
The Serial Dilution met the acceptable requirements.

E. Additional Comments:

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed

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

Signature_____ APPROVED

By Nimisha Pandya, QA/QC Supervisor at 9:39 am, Mar 05, 2025

284 Sheffield Street, Mountainside NJ 07092
Tel. 908-789-8900 Fax: 908-789-8922

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

ALLIANCE 284 Sheffield Street, Mountainside New Jersey 07092

NEW JERSEY LAB ID#: 20012: NEW YORK LAB ID#: 11376

METALS CONFORMANCE/NON-CONFORMANCE SUMMARY

CHEMTECH PROJECT NUMBER: Q1382 MATRIX: Solid

METHOD: 6010D,7471B

		NA	NO	YES
1.	Calibration Summary met criteria.			✓
2.	ICP Interference Check Sample Results Summary Submitted.			✓
3.	Serial Dilution Summary (if applicable) Submitted.			✓
4.	Laboratory Control Sample Summary (if applicable) Submitted.			✓
5.	Blank Contamination - If yes, list compounds and concentrations in each blank:		✓	
6.	Matrix Spike/Matrix Spike Duplicate Recoveries Met Criteria		✓	
	If not met, list those compounds and their recoveries which fall outside the acceptable range.			
	The Matrix Spike (OR-03-021823025MS) analysis met criteria for all samples except for Antimony, Barium, Beryllium, Potassium, Selenium, Silver, Vanadium, Zinc due to matrix interference. The Matrix Spike Duplicate (OR-03-021823025MSD) analysis met criteria for all samples except for Antimony, Barium, Beryllium, Lead, Selenium, Silver, Vanadium, Zinc due to matrix interference.			
7.	Sample Duplicate Analysis Met QC Criteria			✓
	If not met, list those compounds and their recoveries which fall outside the acceptable range.			
8.	Digestion Holding Time Met			✓
	If not met, list number of days exceeded for each sample:			
9.	Analysis Holding Time Met			✓
	If not met, list those compounds and their recoveries which fall outside the acceptable range.			

ADDITIONAL COMMENTS:

QA REVIEW

REVIEWED
By Sohil Jodhani, QA/QC Director at 9:00 am, Mar 05, 2025

Date

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APPENDIX A

QA REVIEW GENERAL DOCUMENTATION

Project #: Q1382

	Completed
For thorough review, the report must have the following:	
GENERAL:	
Are all original paperwork present (chain of custody, record of communication,airbill, sample management lab chronicle, login page)	✓
Check chain-of-custody for proper relinquish/return of samples	✓
Is the chain of custody signed and complete	✓
Check internal chain-of-custody for proper relinquish/return of samples /sample extracts	✓
Collect information for each project id from server. Were all requirements followed	✓
COVER PAGE:	
Do numbers of samples correspond to the number of samples in the Chain of Custody on login page	✓
Do lab numbers and client Ids on cover page agree with the Chain of Custody	✓
CHAIN OF CUSTODY:	
Do requested analyses on Chain of Custody agree with form I results	✓
Do requested analyses on Chain of Custody agree with the log-in page	✓
Were the correct method log-in for analysis according to the Analytical Request and Chain of Castody	✓
Were the samples received within hold time	✓
Were any problems found with the samples at arrival recorded in the Sample Management Laboratory Chronicle	✓
ANALYTICAL:	
Was method requirement followed?	✓
Was client requirement followed?	✓
Does the case narrative summarize all QC failure?	✓
All runlogs and manual integration are reviewed for requirements	✓
All manual calculations and /or hand notations verified	✓

QA Review Signature: SOHIL JODHANI **Date:** 03/04/2025

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LAB CHRONICLE

OrderID:	Q1382	**OrderDate:**	2/18/2025 10:57:00 AM
Client:	Nobis Group	**Project:**	Raymark Superfund Site
Contact:	Adam Roy	**Location:**	H31,VOA Ref. #2 Soil

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
Q1382-01	**OU4-PCS-TC-01-021725**	**SOIL**			**02/17/25**			**02/18/25**
			Mercury	7471B		02/20/25	02/21/25	
			Metals ICP-TAL	6010D		02/18/25	02/19/25	
Q1382-02	**OU4-PCS-TC-01-021725**	**Water**			**02/17/25**			**02/18/25**
			SPLP Mercury	7470A		02/24/25	02/24/25	
			SPLP MetalGroup3	6020B		02/19/25	02/25/25	
Q1382-03	**OU4-PCS-TC-02-021725**	**SOIL**			**02/17/25**			**02/18/25**
			Mercury	7471B		02/20/25	02/21/25	
			Metals ICP-TAL	6010D		02/18/25	02/19/25	
Q1382-04	**OU4-PCS-TC-02-021725**	**Water**			**02/17/25**			**02/18/25**
			SPLP Mercury	7470A		02/24/25	02/24/25	
			SPLP MetalGroup3	6020B		02/19/25	02/25/25	
Q1382-05	**OU4-PCS-TC-03-021725**	**SOIL**			**02/17/25**			**02/18/25**
			Mercury	7471B		02/20/25	02/21/25	
			Metals ICP-TAL	6010D		02/18/25	02/19/25	
Q1382-06	**OU4-PCS-TC-03-021725**	**Water**			**02/17/25**			**02/18/25**
			SPLP Mercury	7470A		02/24/25	02/24/25	
			SPLP MetalGroup3	6020B		02/19/25	02/25/25	
Q1382-07	**OU4-PCS-TC-04-021725**	**SOIL**			**02/17/25**			**02/18/25**
			Mercury	7471B		02/20/25	02/21/25	
			Metals ICP-TAL	6010D		02/18/25	02/19/25	

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LAB CHRONICLE

Q1382-08	**OU4-PCS-TC-04-021725**	**Water**			**02/17/25**			**02/18/25**
			SPLP Mercury	7470A		02/24/25	02/24/25	
			SPLP MetalGroup3	6020B		02/19/25	02/25/25	
Q1382-09	**OU4-PCS-TC-05-021725**	**SOIL**			**02/17/25**			**02/18/25**
			Mercury	7471B		02/20/25	02/21/25	
			Metals ICP-TAL	6010D		02/18/25	02/19/25	
Q1382-10	**OU4-PCS-TC-05-021725**	**Water**			**02/17/25**			**02/18/25**
			SPLP Mercury	7470A		02/24/25	02/24/25	
			SPLP MetalGroup3	6020B		02/19/25	02/25/25	
Q1382-11	**OU4-PCS-TC-06-021725**	**SOIL**			**02/17/25**			**02/18/25**
			Mercury	7471B		02/20/25	02/21/25	
			Metals ICP-TAL	6010D		02/18/25	02/19/25	
Q1382-12	**OU4-PCS-TC-06-021725**	**Water**			**02/17/25**			**02/18/25**
			SPLP Mercury	7470A		02/24/25	02/24/25	
			SPLP MetalGroup3	6020B		02/19/25	02/25/25	
Q1382-13	**OU4-PCS-TC-07-021725**	**SOIL**			**02/17/25**			**02/18/25**
			Mercury	7471B		02/20/25	02/21/25	
			Metals ICP-TAL	6010D		02/18/25	02/19/25	
Q1382-14	**OU4-PCS-TC-07-021725**	**Water**			**02/17/25**			**02/18/25**
			SPLP Mercury	7470A		02/24/25	02/24/25	
			SPLP MetalGroup3	6020B		02/19/25	02/25/25	
Q1382-15	**OU4-PCS-TC-08-021725**	**SOIL**			**02/17/25**			**02/18/25**
			Mercury	7471B		02/20/25	02/21/25	
			Metals ICP-TAL	6010D		02/18/25	02/19/25	
Q1382-16	**OU4-PCS-TC-08-021725**	**Water**			**02/17/25**			**02/18/25**

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LAB CHRONICLE

			SPLP Mercury	7470A		02/24/25	02/24/25
			SPLP MetalGroup3	6020B		02/19/25	02/25/25
Q1382-17	**OU4-PCS-TC-09-0217-25**	**SOIL**			**02/17/25**		**02/18/25**
			Mercury	7471B		02/20/25	02/21/25
			Metals ICP-TAL	6010D		02/18/25	02/19/25
Q1382-18	**OU4-PCS-TC-09-0217-25**	**Water**			**02/17/25**		**02/18/25**
			SPLP Mercury	7470A		02/24/25	02/24/25
			SPLP MetalGroup3	6020B		02/19/25	02/25/25
Q1382-19	**OU4-PCS-TC-10-0217-25**	**SOIL**			**02/17/25**		**02/18/25**
			Mercury	7471B		02/20/25	02/21/25
			Metals ICP-TAL	6010D		02/18/25	02/19/25
Q1382-20	**OU4-PCS-TC-10-0217-25**	**Water**			**02/17/25**		**02/18/25**
			SPLP Mercury	7470A		02/24/25	02/24/25
			SPLP MetalGroup3	6020B		02/19/25	02/25/25

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Hit Summary Sheet
SW-846

SDG No.: Q1382 **Order ID:** Q1382

Client: Nobis Group **Project ID:** Raymark Superfund Site

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
Client ID : OU4-PCS-TC-01-021725								
Q1382-01	OU4-PCS-TC-01-021725	SOIL	Aluminum	7100		2.21	4.59	mg/Kg
Q1382-01	OU4-PCS-TC-01-021725	SOIL	Barium	14.4		0.59	4.59	mg/Kg
Q1382-01	OU4-PCS-TC-01-021725	SOIL	Beryllium	0.42		0.011	0.28	mg/Kg
Q1382-01	OU4-PCS-TC-01-021725	SOIL	Cadmium	0.73		0.015	0.28	mg/Kg
Q1382-01	OU4-PCS-TC-01-021725	SOIL	Calcium	7990		2.57	91.8	mg/Kg
Q1382-01	OU4-PCS-TC-01-021725	SOIL	Chromium	1.31		0.050	0.46	mg/Kg
Q1382-01	OU4-PCS-TC-01-021725	SOIL	Cobalt	16.6		0.053	1.38	mg/Kg
Q1382-01	OU4-PCS-TC-01-021725	SOIL	Copper	36.2		0.43	0.92	mg/Kg
Q1382-01	OU4-PCS-TC-01-021725	SOIL	Iron	26000		2.47	4.59	mg/Kg
Q1382-01	OU4-PCS-TC-01-021725	SOIL	Lead	2.64		0.14	0.55	mg/Kg
Q1382-01	OU4-PCS-TC-01-021725	SOIL	Magnesium	6210		3.15	91.8	mg/Kg
Q1382-01	OU4-PCS-TC-01-021725	SOIL	Manganese	199		0.065	0.92	mg/Kg
Q1382-01	OU4-PCS-TC-01-021725	SOIL	Mercury	0.014	J	0.0060	0.015	mg/Kg
Q1382-01	OU4-PCS-TC-01-021725	SOIL	Nickel	7.72		0.083	1.84	mg/Kg
Q1382-01	OU4-PCS-TC-01-021725	SOIL	Potassium	84.7	J	26.4	91.8	mg/Kg
Q1382-01	OU4-PCS-TC-01-021725	SOIL	Sodium	1090		33.1	91.8	mg/Kg
Q1382-01	OU4-PCS-TC-01-021725	SOIL	Vanadium	51.0		0.25	1.84	mg/Kg
Q1382-01	OU4-PCS-TC-01-021725	SOIL	Zinc	24.8		0.10	1.84	mg/Kg
Client ID : OU4-PCS-TC-02-021725								
Q1382-03	OU4-PCS-TC-02-021725	SOIL	Aluminum	6610		2.46	5.10	mg/Kg
Q1382-03	OU4-PCS-TC-02-021725	SOIL	Barium	13.9		0.65	5.10	mg/Kg
Q1382-03	OU4-PCS-TC-02-021725	SOIL	Beryllium	0.34		0.012	0.31	mg/Kg
Q1382-03	OU4-PCS-TC-02-021725	SOIL	Cadmium	0.29	J	0.016	0.31	mg/Kg
Q1382-03	OU4-PCS-TC-02-021725	SOIL	Calcium	9600		2.85	102	mg/Kg
Q1382-03	OU4-PCS-TC-02-021725	SOIL	Chromium	0.81		0.055	0.51	mg/Kg
Q1382-03	OU4-PCS-TC-02-021725	SOIL	Cobalt	15.7		0.059	1.53	mg/Kg
Q1382-03	OU4-PCS-TC-02-021725	SOIL	Copper	31.0		0.48	1.02	mg/Kg
Q1382-03	OU4-PCS-TC-02-021725	SOIL	Iron	27100		2.74	5.10	mg/Kg
Q1382-03	OU4-PCS-TC-02-021725	SOIL	Lead	2.32		0.15	0.61	mg/Kg
Q1382-03	OU4-PCS-TC-02-021725	SOIL	Magnesium	5780		3.50	102	mg/Kg
Q1382-03	OU4-PCS-TC-02-021725	SOIL	Manganese	240		0.072	1.02	mg/Kg
Q1382-03	OU4-PCS-TC-02-021725	SOIL	Nickel	7.08		0.092	2.04	mg/Kg
Q1382-03	OU4-PCS-TC-02-021725	SOIL	Potassium	154		29.3	102	mg/Kg
Q1382-03	OU4-PCS-TC-02-021725	SOIL	Sodium	1180		36.8	102	mg/Kg
Q1382-03	OU4-PCS-TC-02-021725	SOIL	Vanadium	44.8		0.28	2.04	mg/Kg
Q1382-03	OU4-PCS-TC-02-021725	SOIL	Zinc	25.1		0.11	2.04	mg/Kg

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

Hit Summary Sheet
SW-846

SDG No.: Q1382 **Order ID:** Q1382

Client: Nobis Group **Project ID:** Raymark Superfund Site

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
Client ID : OU4-PCS-TC-03-021725								
Q1382-05	OU4-PCS-TC-03-021725	SOIL	Aluminum	6530		2.33	4.83	mg/Kg
Q1382-05	OU4-PCS-TC-03-021725	SOIL	Barium	12.2		0.62	4.83	mg/Kg
Q1382-05	OU4-PCS-TC-03-021725	SOIL	Beryllium	0.36		0.012	0.29	mg/Kg
Q1382-05	OU4-PCS-TC-03-021725	SOIL	Cadmium	0.46		0.015	0.29	mg/Kg
Q1382-05	OU4-PCS-TC-03-021725	SOIL	Calcium	7040		2.71	96.6	mg/Kg
Q1382-05	OU4-PCS-TC-03-021725	SOIL	Chromium	1.75		0.052	0.48	mg/Kg
Q1382-05	OU4-PCS-TC-03-021725	SOIL	Cobalt	15.1		0.056	1.45	mg/Kg
Q1382-05	OU4-PCS-TC-03-021725	SOIL	Copper	33.3		0.45	0.97	mg/Kg
Q1382-05	OU4-PCS-TC-03-021725	SOIL	Iron	24300		2.60	4.83	mg/Kg
Q1382-05	OU4-PCS-TC-03-021725	SOIL	Lead	1.94		0.14	0.58	mg/Kg
Q1382-05	OU4-PCS-TC-03-021725	SOIL	Magnesium	5740		3.31	96.6	mg/Kg
Q1382-05	OU4-PCS-TC-03-021725	SOIL	Manganese	195		0.069	0.97	mg/Kg
Q1382-05	OU4-PCS-TC-03-021725	SOIL	Nickel	7.56		0.087	1.93	mg/Kg
Q1382-05	OU4-PCS-TC-03-021725	SOIL	Potassium	83.5	J	27.7	96.6	mg/Kg
Q1382-05	OU4-PCS-TC-03-021725	SOIL	Sodium	1080		34.9	96.6	mg/Kg
Q1382-05	OU4-PCS-TC-03-021725	SOIL	Vanadium	48.5		0.26	1.93	mg/Kg
Q1382-05	OU4-PCS-TC-03-021725	SOIL	Zinc	24.1		0.11	1.93	mg/Kg
Client ID : OU4-PCS-TC-04-021725								
Q1382-07	OU4-PCS-TC-04-021725	SOIL	Aluminum	7510		2.29	4.74	mg/Kg
Q1382-07	OU4-PCS-TC-04-021725	SOIL	Barium	16.7		0.61	4.74	mg/Kg
Q1382-07	OU4-PCS-TC-04-021725	SOIL	Beryllium	0.42		0.011	0.28	mg/Kg
Q1382-07	OU4-PCS-TC-04-021725	SOIL	Cadmium	0.70		0.015	0.28	mg/Kg
Q1382-07	OU4-PCS-TC-04-021725	SOIL	Calcium	7530		2.66	94.8	mg/Kg
Q1382-07	OU4-PCS-TC-04-021725	SOIL	Chromium	0.94		0.051	0.47	mg/Kg
Q1382-07	OU4-PCS-TC-04-021725	SOIL	Cobalt	17.9		0.055	1.42	mg/Kg
Q1382-07	OU4-PCS-TC-04-021725	SOIL	Copper	36.8		0.45	0.95	mg/Kg
Q1382-07	OU4-PCS-TC-04-021725	SOIL	Iron	29400		2.55	4.74	mg/Kg
Q1382-07	OU4-PCS-TC-04-021725	SOIL	Lead	2.35		0.14	0.57	mg/Kg
Q1382-07	OU4-PCS-TC-04-021725	SOIL	Magnesium	6770		3.25	94.8	mg/Kg
Q1382-07	OU4-PCS-TC-04-021725	SOIL	Manganese	220		0.067	0.95	mg/Kg
Q1382-07	OU4-PCS-TC-04-021725	SOIL	Nickel	7.88		0.085	1.90	mg/Kg
Q1382-07	OU4-PCS-TC-04-021725	SOIL	Potassium	101		27.2	94.8	mg/Kg
Q1382-07	OU4-PCS-TC-04-021725	SOIL	Sodium	1180		34.2	94.8	mg/Kg
Q1382-07	OU4-PCS-TC-04-021725	SOIL	Vanadium	53.7		0.26	1.90	mg/Kg
Q1382-07	OU4-PCS-TC-04-021725	SOIL	Zinc	27.5		0.10	1.90	mg/Kg
Client ID : OU4-PCS-TC-05-021725								
Q1382-09	OU4-PCS-TC-05-021725	SOIL	Aluminum	8490		2.38	4.94	mg/Kg
Q1382-09	OU4-PCS-TC-05-021725	SOIL	Barium	11.9		0.63	4.94	mg/Kg

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Fax : 908 789 8922

Hit Summary Sheet
SW-846

SDG No.: Q1382 **Order ID:** Q1382

Client: Nobis Group **Project ID:** Raymark Superfund Site

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
Q1382-09	OU4-PCS-TC-05-021725	SOIL	Beryllium	0.41		0.012	0.30	mg/Kg
Q1382-09	OU4-PCS-TC-05-021725	SOIL	Cadmium	0.51		0.016	0.30	mg/Kg
Q1382-09	OU4-PCS-TC-05-021725	SOIL	Calcium	9770		2.77	98.8	mg/Kg
Q1382-09	OU4-PCS-TC-05-021725	SOIL	Chromium	1.08		0.053	0.49	mg/Kg
Q1382-09	OU4-PCS-TC-05-021725	SOIL	Cobalt	17.4		0.057	1.48	mg/Kg
Q1382-09	OU4-PCS-TC-05-021725	SOIL	Copper	34.8		0.46	0.99	mg/Kg
Q1382-09	OU4-PCS-TC-05-021725	SOIL	Iron	28800		2.66	4.94	mg/Kg
Q1382-09	OU4-PCS-TC-05-021725	SOIL	Lead	2.55		0.15	0.59	mg/Kg
Q1382-09	OU4-PCS-TC-05-021725	SOIL	Magnesium	6850		3.39	98.8	mg/Kg
Q1382-09	OU4-PCS-TC-05-021725	SOIL	Manganese	209		0.070	0.99	mg/Kg
Q1382-09	OU4-PCS-TC-05-021725	SOIL	Nickel	8.38		0.089	1.98	mg/Kg
Q1382-09	OU4-PCS-TC-05-021725	SOIL	Potassium	131		28.4	98.8	mg/Kg
Q1382-09	OU4-PCS-TC-05-021725	SOIL	Sodium	1250		35.7	98.8	mg/Kg
Q1382-09	OU4-PCS-TC-05-021725	SOIL	Vanadium	52.2		0.27	1.98	mg/Kg
Q1382-09	OU4-PCS-TC-05-021725	SOIL	Zinc	28.7		0.11	1.98	mg/Kg
Client ID :	**OU4-PCS-TC-06-021725**							
Q1382-11	OU4-PCS-TC-06-021725	SOIL	Aluminum	7210		2.43	5.04	mg/Kg
Q1382-11	OU4-PCS-TC-06-021725	SOIL	Barium	13.8		0.65	5.04	mg/Kg
Q1382-11	OU4-PCS-TC-06-021725	SOIL	Beryllium	0.37		0.012	0.30	mg/Kg
Q1382-11	OU4-PCS-TC-06-021725	SOIL	Cadmium	0.32		0.016	0.30	mg/Kg
Q1382-11	OU4-PCS-TC-06-021725	SOIL	Calcium	8360		2.83	101	mg/Kg
Q1382-11	OU4-PCS-TC-06-021725	SOIL	Chromium	1.16		0.054	0.50	mg/Kg
Q1382-11	OU4-PCS-TC-06-021725	SOIL	Cobalt	16.0		0.059	1.51	mg/Kg
Q1382-11	OU4-PCS-TC-06-021725	SOIL	Copper	32.5		0.47	1.01	mg/Kg
Q1382-11	OU4-PCS-TC-06-021725	SOIL	Iron	28100		2.71	5.04	mg/Kg
Q1382-11	OU4-PCS-TC-06-021725	SOIL	Lead	2.42		0.15	0.61	mg/Kg
Q1382-11	OU4-PCS-TC-06-021725	SOIL	Magnesium	6110		3.46	101	mg/Kg
Q1382-11	OU4-PCS-TC-06-021725	SOIL	Manganese	197		0.072	1.01	mg/Kg
Q1382-11	OU4-PCS-TC-06-021725	SOIL	Nickel	7.45		0.091	2.02	mg/Kg
Q1382-11	OU4-PCS-TC-06-021725	SOIL	Potassium	106		29.0	101	mg/Kg
Q1382-11	OU4-PCS-TC-06-021725	SOIL	Sodium	1260		36.4	101	mg/Kg
Q1382-11	OU4-PCS-TC-06-021725	SOIL	Vanadium	48.9		0.27	2.02	mg/Kg
Q1382-11	OU4-PCS-TC-06-021725	SOIL	Zinc	24.4		0.11	2.02	mg/Kg
Client ID :	**OU4-PCS-TC-07-021725**							
Q1382-13	OU4-PCS-TC-07-021725	SOIL	Aluminum	7850		2.40	4.98	mg/Kg
Q1382-13	OU4-PCS-TC-07-021725	SOIL	Barium	12.3		0.64	4.98	mg/Kg
Q1382-13	OU4-PCS-TC-07-021725	SOIL	Beryllium	0.36		0.012	0.30	mg/Kg
Q1382-13	OU4-PCS-TC-07-021725	SOIL	Cadmium	0.11	J	0.016	0.30	mg/Kg
Q1382-13	OU4-PCS-TC-07-021725	SOIL	Calcium	8070		2.79	99.5	mg/Kg

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Hit Summary Sheet
SW-846

SDG No.: Q1382 **Order ID:** Q1382

Client: Nobis Group **Project ID:** Raymark Superfund Site

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
Q1382-13	OU4-PCS-TC-07-021725	SOIL	Chromium	1.28		0.054	0.50	mg/Kg
Q1382-13	OU4-PCS-TC-07-021725	SOIL	Cobalt	16.3		0.058	1.49	mg/Kg
Q1382-13	OU4-PCS-TC-07-021725	SOIL	Copper	32.0		0.47	1.00	mg/Kg
Q1382-13	OU4-PCS-TC-07-021725	SOIL	Iron	29200		2.68	4.98	mg/Kg
Q1382-13	OU4-PCS-TC-07-021725	SOIL	Lead	2.21		0.15	0.60	mg/Kg
Q1382-13	OU4-PCS-TC-07-021725	SOIL	Magnesium	6880		3.41	99.5	mg/Kg
Q1382-13	OU4-PCS-TC-07-021725	SOIL	Manganese	196		0.071	1.00	mg/Kg
Q1382-13	OU4-PCS-TC-07-021725	SOIL	Nickel	7.77		0.090	1.99	mg/Kg
Q1382-13	OU4-PCS-TC-07-021725	SOIL	Potassium	105		28.6	99.5	mg/Kg
Q1382-13	OU4-PCS-TC-07-021725	SOIL	Sodium	1440		35.9	99.5	mg/Kg
Q1382-13	OU4-PCS-TC-07-021725	SOIL	Vanadium	49.1		0.27	1.99	mg/Kg
Q1382-13	OU4-PCS-TC-07-021725	SOIL	Zinc	23.6		0.11	1.99	mg/Kg
Client ID :	**OU4-PCS-TC-08-021725**							
Q1382-15	OU4-PCS-TC-08-021725	SOIL	Aluminum	7070		2.49	5.17	mg/Kg
Q1382-15	OU4-PCS-TC-08-021725	SOIL	Barium	13.8		0.66	5.17	mg/Kg
Q1382-15	OU4-PCS-TC-08-021725	SOIL	Beryllium	0.38		0.012	0.31	mg/Kg
Q1382-15	OU4-PCS-TC-08-021725	SOIL	Cadmium	0.53		0.017	0.31	mg/Kg
Q1382-15	OU4-PCS-TC-08-021725	SOIL	Calcium	8730		2.89	103	mg/Kg
Q1382-15	OU4-PCS-TC-08-021725	SOIL	Chromium	1.07		0.056	0.52	mg/Kg
Q1382-15	OU4-PCS-TC-08-021725	SOIL	Cobalt	16.2		0.060	1.55	mg/Kg
Q1382-15	OU4-PCS-TC-08-021725	SOIL	Copper	34.3		0.49	1.03	mg/Kg
Q1382-15	OU4-PCS-TC-08-021725	SOIL	Iron	26300		2.78	5.17	mg/Kg
Q1382-15	OU4-PCS-TC-08-021725	SOIL	Lead	2.08		0.16	0.62	mg/Kg
Q1382-15	OU4-PCS-TC-08-021725	SOIL	Magnesium	6400		3.54	103	mg/Kg
Q1382-15	OU4-PCS-TC-08-021725	SOIL	Manganese	214		0.073	1.03	mg/Kg
Q1382-15	OU4-PCS-TC-08-021725	SOIL	Nickel	7.45		0.093	2.07	mg/Kg
Q1382-15	OU4-PCS-TC-08-021725	SOIL	Potassium	95.1	J	29.7	103	mg/Kg
Q1382-15	OU4-PCS-TC-08-021725	SOIL	Sodium	1140		37.3	103	mg/Kg
Q1382-15	OU4-PCS-TC-08-021725	SOIL	Vanadium	46.1		0.28	2.07	mg/Kg
Q1382-15	OU4-PCS-TC-08-021725	SOIL	Zinc	25.6		0.11	2.07	mg/Kg
Client ID :	**OU4-PCS-TC-09-021725**							
Q1382-17	OU4-PCS-TC-09-021725	SOIL	Aluminum	7060		2.47	5.12	mg/Kg
Q1382-17	OU4-PCS-TC-09-021725	SOIL	Barium	12.4		0.66	5.12	mg/Kg
Q1382-17	OU4-PCS-TC-09-021725	SOIL	Beryllium	0.36		0.012	0.31	mg/Kg
Q1382-17	OU4-PCS-TC-09-021725	SOIL	Cadmium	0.17	J	0.016	0.31	mg/Kg
Q1382-17	OU4-PCS-TC-09-021725	SOIL	Calcium	7560		2.87	102	mg/Kg
Q1382-17	OU4-PCS-TC-09-021725	SOIL	Chromium	1.08		0.055	0.51	mg/Kg
Q1382-17	OU4-PCS-TC-09-021725	SOIL	Cobalt	16.2		0.059	1.54	mg/Kg
Q1382-17	OU4-PCS-TC-09-021725	SOIL	Copper	33.1		0.48	1.02	mg/Kg

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Fax : 908 789 8922

Hit Summary Sheet
SW-846

SDG No.: Q1382 **Order ID:** Q1382

Client: Nobis Group **Project ID:** Raymark Superfund Site

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
Q1382-17	OU4-PCS-TC-09-021725	SOIL	Iron	28100		2.75	5.12	mg/Kg
Q1382-17	OU4-PCS-TC-09-021725	SOIL	Lead	2.61		0.15	0.61	mg/Kg
Q1382-17	OU4-PCS-TC-09-021725	SOIL	Magnesium	6150		3.51	102	mg/Kg
Q1382-17	OU4-PCS-TC-09-021725	SOIL	Manganese	200		0.073	1.02	mg/Kg
Q1382-17	OU4-PCS-TC-09-021725	SOIL	Nickel	7.47		0.092	2.05	mg/Kg
Q1382-17	OU4-PCS-TC-09-021725	SOIL	Potassium	96.3	J	29.4	102	mg/Kg
Q1382-17	OU4-PCS-TC-09-021725	SOIL	Sodium	1230		37.0	102	mg/Kg
Q1382-17	OU4-PCS-TC-09-021725	SOIL	Vanadium	51.4		0.28	2.05	mg/Kg
Q1382-17	OU4-PCS-TC-09-021725	SOIL	Zinc	27.1		0.11	2.05	mg/Kg
Client ID :	**OU4-PCS-TC-10-021725**							
Q1382-19	OU4-PCS-TC-10-021725	SOIL	Aluminum	7910		2.46	5.10	mg/Kg
Q1382-19	OU4-PCS-TC-10-021725	SOIL	Barium	13.7		0.65	5.10	mg/Kg
Q1382-19	OU4-PCS-TC-10-021725	SOIL	Beryllium	0.41		0.012	0.31	mg/Kg
Q1382-19	OU4-PCS-TC-10-021725	SOIL	Cadmium	0.40		0.016	0.31	mg/Kg
Q1382-19	OU4-PCS-TC-10-021725	SOIL	Calcium	9010		2.86	102	mg/Kg
Q1382-19	OU4-PCS-TC-10-021725	SOIL	Chromium	1.23		0.055	0.51	mg/Kg
Q1382-19	OU4-PCS-TC-10-021725	SOIL	Cobalt	17.5		0.059	1.53	mg/Kg
Q1382-19	OU4-PCS-TC-10-021725	SOIL	Copper	33.5		0.48	1.02	mg/Kg
Q1382-19	OU4-PCS-TC-10-021725	SOIL	Iron	29500		2.74	5.10	mg/Kg
Q1382-19	OU4-PCS-TC-10-021725	SOIL	Lead	2.92		0.15	0.61	mg/Kg
Q1382-19	OU4-PCS-TC-10-021725	SOIL	Magnesium	6900		3.50	102	mg/Kg
Q1382-19	OU4-PCS-TC-10-021725	SOIL	Manganese	233		0.072	1.02	mg/Kg
Q1382-19	OU4-PCS-TC-10-021725	SOIL	Nickel	8.15		0.092	2.04	mg/Kg
Q1382-19	OU4-PCS-TC-10-021725	SOIL	Potassium	104		29.3	102	mg/Kg
Q1382-19	OU4-PCS-TC-10-021725	SOIL	Sodium	1250		36.8	102	mg/Kg
Q1382-19	OU4-PCS-TC-10-021725	SOIL	Vanadium	51.3		0.28	2.04	mg/Kg
Q1382-19	OU4-PCS-TC-10-021725	SOIL	Zinc	26.9		0.11	2.04	mg/Kg

SAMPLE DATA

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

Report of Analysis

Client:	Nobis Group	Date Collected:	02/17/25
Project:	Raymark Superfund Site	Date Received:	02/18/25
Client Sample ID:	OU4-PCS-TC-01-021725	SDG No.:	Q1382
Lab Sample ID:	Q1382-01	Matrix:	SOIL
Level (low/med):	low	% Solid:	91.9

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	7100		1	2.21	3.67	4.59	mg/Kg	02/18/25 14:05	02/19/25 17:49	SW6010	SW3050
7440-36-0	Antimony	0.57	UN	1	0.14	0.57	2.30	mg/Kg	02/18/25 14:05	02/19/25 17:49	SW6010	SW3050
7440-38-2	Arsenic	0.74	U	1	0.27	0.74	0.92	mg/Kg	02/18/25 14:05	02/19/25 17:49	SW6010	SW3050
7440-39-3	Barium	14.4	N	1	0.59	1.15	4.59	mg/Kg	02/18/25 14:05	02/19/25 17:49	SW6010	SW3050
7440-41-7	Beryllium	0.42	N	1	0.011	0.069	0.28	mg/Kg	02/18/25 14:05	02/19/25 17:49	SW6010	SW3050
7440-43-9	Cadmium	0.73		1	0.015	0.069	0.28	mg/Kg	02/18/25 14:05	02/19/25 17:49	SW6010	SW3050
7440-70-2	Calcium	7990		1	2.57	23.0	91.8	mg/Kg	02/18/25 14:05	02/19/25 17:49	SW6010	SW3050
7440-47-3	Chromium	1.31		1	0.050	0.12	0.46	mg/Kg	02/18/25 14:05	02/19/25 17:49	SW6010	SW3050
7440-48-4	Cobalt	16.6		1	0.053	0.34	1.38	mg/Kg	02/18/25 14:05	02/19/25 17:49	SW6010	SW3050
7440-50-8	Copper	36.2		1	0.43	0.74	0.92	mg/Kg	02/18/25 14:05	02/19/25 17:49	SW6010	SW3050
7439-89-6	Iron	26000		1	2.47	3.67	4.59	mg/Kg	02/18/25 14:05	02/19/25 17:49	SW6010	SW3050
7439-92-1	Lead	2.64	N	1	0.14	0.44	0.55	mg/Kg	02/18/25 14:05	02/19/25 17:49	SW6010	SW3050
7439-95-4	Magnesium	6210		1	3.15	23.0	91.8	mg/Kg	02/18/25 14:05	02/19/25 17:49	SW6010	SW3050
7439-96-5	Manganese	199		1	0.065	0.23	0.92	mg/Kg	02/18/25 14:05	02/19/25 17:49	SW6010	SW3050
7439-97-6	Mercury	0.014	J	1	0.0060	0.012	0.015	mg/Kg	02/20/25 16:00	02/21/25 14:17	SW7471B	
7440-02-0	Nickel	7.72		1	0.083	0.46	1.84	mg/Kg	02/18/25 14:05	02/19/25 17:49	SW6010	SW3050
7440-09-7	Potassium	84.7	JN	1	26.4	73.5	91.8	mg/Kg	02/18/25 14:05	02/19/25 17:49	SW6010	SW3050
7782-49-2	Selenium	0.74	UN	1	0.30	0.74	0.92	mg/Kg	02/18/25 14:05	02/19/25 17:49	SW6010	SW3050
7440-22-4	Silver	0.23	UN	1	0.048	0.23	0.46	mg/Kg	02/18/25 14:05	02/19/25 17:49	SW6010	SW3050
7440-23-5	Sodium	1090		1	33.1	73.5	91.8	mg/Kg	02/18/25 14:05	02/19/25 17:49	SW6010	SW3050
7440-28-0	Thallium	0.92	U	1	0.40	0.92	1.84	mg/Kg	02/18/25 14:05	02/19/25 17:49	SW6010	SW3050
7440-62-2	Vanadium	51.0	N	1	0.25	0.92	1.84	mg/Kg	02/18/25 14:05	02/19/25 17:49	SW6010	SW3050
7440-66-6	Zinc	24.8	N	1	0.10	0.46	1.84	mg/Kg	02/18/25 14:05	02/19/25 17:49	SW6010	SW3050

Color Before:	Black	Clarity Before:		Texture:	Medium
Color After:	Yellow	Clarity After:		Artifacts:	
Comments:	METALS-TAL				

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

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

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

Report of Analysis

Client:	Nobis Group	Date Collected:	02/17/25
Project:	Raymark Superfund Site	Date Received:	02/18/25
Client Sample ID:	OU4-PCS-TC-02-021725	SDG No.:	Q1382
Lab Sample ID:	Q1382-03	Matrix:	SOIL
Level (low/med):	low	% Solid:	91.7

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	6610		1	2.46	4.08	5.10	mg/Kg	02/18/25 14:05	02/19/25 17:53	SW6010	SW3050
7440-36-0	Antimony	0.64	UN	1	0.15	0.64	2.55	mg/Kg	02/18/25 14:05	02/19/25 17:53	SW6010	SW3050
7440-38-2	Arsenic	0.82	U	1	0.30	0.82	1.02	mg/Kg	02/18/25 14:05	02/19/25 17:53	SW6010	SW3050
7440-39-3	Barium	13.9	N	1	0.65	1.27	5.10	mg/Kg	02/18/25 14:05	02/19/25 17:53	SW6010	SW3050
7440-41-7	Beryllium	0.34	N	1	0.012	0.076	0.31	mg/Kg	02/18/25 14:05	02/19/25 17:53	SW6010	SW3050
7440-43-9	Cadmium	0.29	J	1	0.016	0.076	0.31	mg/Kg	02/18/25 14:05	02/19/25 17:53	SW6010	SW3050
7440-70-2	Calcium	9600		1	2.85	25.5	102	mg/Kg	02/18/25 14:05	02/19/25 17:53	SW6010	SW3050
7440-47-3	Chromium	0.81		1	0.055	0.13	0.51	mg/Kg	02/18/25 14:05	02/19/25 17:53	SW6010	SW3050
7440-48-4	Cobalt	15.7		1	0.059	0.38	1.53	mg/Kg	02/18/25 14:05	02/19/25 17:53	SW6010	SW3050
7440-50-8	Copper	31.0		1	0.48	0.82	1.02	mg/Kg	02/18/25 14:05	02/19/25 17:53	SW6010	SW3050
7439-89-6	Iron	27100		1	2.74	4.08	5.10	mg/Kg	02/18/25 14:05	02/19/25 17:53	SW6010	SW3050
7439-92-1	Lead	2.32	N	1	0.15	0.49	0.61	mg/Kg	02/18/25 14:05	02/19/25 17:53	SW6010	SW3050
7439-95-4	Magnesium	5780		1	3.50	25.5	102	mg/Kg	02/18/25 14:05	02/19/25 17:53	SW6010	SW3050
7439-96-5	Manganese	240		1	0.072	0.26	1.02	mg/Kg	02/18/25 14:05	02/19/25 17:53	SW6010	SW3050
7439-97-6	Mercury	0.010	U	1	0.0060	0.010	0.013	mg/Kg	02/20/25 16:00	02/21/25 14:19	SW7471B	
7440-02-0	Nickel	7.08		1	0.092	0.51	2.04	mg/Kg	02/18/25 14:05	02/19/25 17:53	SW6010	SW3050
7440-09-7	Potassium	154	N	1	29.3	81.5	102	mg/Kg	02/18/25 14:05	02/19/25 17:53	SW6010	SW3050
7782-49-2	Selenium	0.82	UN	1	0.34	0.82	1.02	mg/Kg	02/18/25 14:05	02/19/25 17:53	SW6010	SW3050
7440-22-4	Silver	0.26	UN	1	0.053	0.26	0.51	mg/Kg	02/18/25 14:05	02/19/25 17:53	SW6010	SW3050
7440-23-5	Sodium	1180		1	36.8	81.5	102	mg/Kg	02/18/25 14:05	02/19/25 17:53	SW6010	SW3050
7440-28-0	Thallium	1.02	U	1	0.45	1.02	2.04	mg/Kg	02/18/25 14:05	02/19/25 17:53	SW6010	SW3050
7440-62-2	Vanadium	44.8	N	1	0.28	1.02	2.04	mg/Kg	02/18/25 14:05	02/19/25 17:53	SW6010	SW3050
7440-66-6	Zinc	25.1	N	1	0.11	0.51	2.04	mg/Kg	02/18/25 14:05	02/19/25 17:53	SW6010	SW3050

Color Before:	Black	Clarity Before:		Texture:	Medium
Color After:	Yellow	Clarity After:		Artifacts:	
Comments:	METALS-TAL				

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

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

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

Report of Analysis

Client:	Nobis Group	Date Collected:	02/17/25
Project:	Raymark Superfund Site	Date Received:	02/18/25
Client Sample ID:	OU4-PCS-TC-03-021725	SDG No.:	Q1382
Lab Sample ID:	Q1382-05	Matrix:	SOIL
Level (low/med):	low	% Solid:	92.4

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	6530		1	2.33	3.87	4.83	mg/Kg	02/18/25 14:05	02/19/25 17:58	SW6010	SW3050
7440-36-0	Antimony	0.60	UN	1	0.14	0.60	2.42	mg/Kg	02/18/25 14:05	02/19/25 17:58	SW6010	SW3050
7440-38-2	Arsenic	0.77	U	1	0.28	0.77	0.97	mg/Kg	02/18/25 14:05	02/19/25 17:58	SW6010	SW3050
7440-39-3	Barium	12.2	N	1	0.62	1.21	4.83	mg/Kg	02/18/25 14:05	02/19/25 17:58	SW6010	SW3050
7440-41-7	Beryllium	0.36	N	1	0.012	0.072	0.29	mg/Kg	02/18/25 14:05	02/19/25 17:58	SW6010	SW3050
7440-43-9	Cadmium	0.46		1	0.015	0.072	0.29	mg/Kg	02/18/25 14:05	02/19/25 17:58	SW6010	SW3050
7440-70-2	Calcium	7040		1	2.71	24.2	96.6	mg/Kg	02/18/25 14:05	02/19/25 17:58	SW6010	SW3050
7440-47-3	Chromium	1.75		1	0.052	0.12	0.48	mg/Kg	02/18/25 14:05	02/19/25 17:58	SW6010	SW3050
7440-48-4	Cobalt	15.1		1	0.056	0.36	1.45	mg/Kg	02/18/25 14:05	02/19/25 17:58	SW6010	SW3050
7440-50-8	Copper	33.3		1	0.45	0.77	0.97	mg/Kg	02/18/25 14:05	02/19/25 17:58	SW6010	SW3050
7439-89-6	Iron	24300		1	2.60	3.87	4.83	mg/Kg	02/18/25 14:05	02/19/25 17:58	SW6010	SW3050
7439-92-1	Lead	1.94	N	1	0.14	0.46	0.58	mg/Kg	02/18/25 14:05	02/19/25 17:58	SW6010	SW3050
7439-95-4	Magnesium	5740		1	3.31	24.2	96.6	mg/Kg	02/18/25 14:05	02/19/25 17:58	SW6010	SW3050
7439-96-5	Manganese	195		1	0.069	0.24	0.97	mg/Kg	02/18/25 14:05	02/19/25 17:58	SW6010	SW3050
7439-97-6	Mercury	0.012	U	1	0.0070	0.012	0.015	mg/Kg	02/20/25 16:00	02/21/25 14:22	SW7471B	
7440-02-0	Nickel	7.56		1	0.087	0.48	1.93	mg/Kg	02/18/25 14:05	02/19/25 17:58	SW6010	SW3050
7440-09-7	Potassium	83.5	JN	1	27.7	77.3	96.6	mg/Kg	02/18/25 14:05	02/19/25 17:58	SW6010	SW3050
7782-49-2	Selenium	0.77	UN	1	0.32	0.77	0.97	mg/Kg	02/18/25 14:05	02/19/25 17:58	SW6010	SW3050
7440-22-4	Silver	0.24	UN	1	0.050	0.24	0.48	mg/Kg	02/18/25 14:05	02/19/25 17:58	SW6010	SW3050
7440-23-5	Sodium	1080		1	34.9	77.3	96.6	mg/Kg	02/18/25 14:05	02/19/25 17:58	SW6010	SW3050
7440-28-0	Thallium	0.97	U	1	0.43	0.97	1.93	mg/Kg	02/18/25 14:05	02/19/25 17:58	SW6010	SW3050
7440-62-2	Vanadium	48.5	N	1	0.26	0.97	1.93	mg/Kg	02/18/25 14:05	02/19/25 17:58	SW6010	SW3050
7440-66-6	Zinc	24.1	N	1	0.11	0.48	1.93	mg/Kg	02/18/25 14:05	02/19/25 17:58	SW6010	SW3050

Color Before:	Black	Clarity Before:		Texture:	Medium
Color After:	Yellow	Clarity After:		Artifacts:	
Comments:	METALS-TAL				

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

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

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

Report of Analysis

Client:	Nobis Group	Date Collected:	02/17/25
Project:	Raymark Superfund Site	Date Received:	02/18/25
Client Sample ID:	OU4-PCS-TC-04-021725	SDG No.:	Q1382
Lab Sample ID:	Q1382-07	Matrix:	SOIL
Level (low/med):	low	% Solid:	92.5

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	7510		1	2.29	3.79	4.74	mg/Kg	02/18/25 14:05	02/19/25 18:02	SW6010	SW3050
7440-36-0	Antimony	0.59	UN	1	0.14	0.59	2.37	mg/Kg	02/18/25 14:05	02/19/25 18:02	SW6010	SW3050
7440-38-2	Arsenic	0.76	U	1	0.28	0.76	0.95	mg/Kg	02/18/25 14:05	02/19/25 18:02	SW6010	SW3050
7440-39-3	Barium	16.7	N	1	0.61	1.19	4.74	mg/Kg	02/18/25 14:05	02/19/25 18:02	SW6010	SW3050
7440-41-7	Beryllium	0.42	N	1	0.011	0.071	0.28	mg/Kg	02/18/25 14:05	02/19/25 18:02	SW6010	SW3050
7440-43-9	Cadmium	0.70		1	0.015	0.071	0.28	mg/Kg	02/18/25 14:05	02/19/25 18:02	SW6010	SW3050
7440-70-2	Calcium	7530		1	2.66	23.7	94.8	mg/Kg	02/18/25 14:05	02/19/25 18:02	SW6010	SW3050
7440-47-3	Chromium	0.94		1	0.051	0.12	0.47	mg/Kg	02/18/25 14:05	02/19/25 18:02	SW6010	SW3050
7440-48-4	Cobalt	17.9		1	0.055	0.36	1.42	mg/Kg	02/18/25 14:05	02/19/25 18:02	SW6010	SW3050
7440-50-8	Copper	36.8		1	0.45	0.76	0.95	mg/Kg	02/18/25 14:05	02/19/25 18:02	SW6010	SW3050
7439-89-6	Iron	29400		1	2.55	3.79	4.74	mg/Kg	02/18/25 14:05	02/19/25 18:02	SW6010	SW3050
7439-92-1	Lead	2.35	N	1	0.14	0.46	0.57	mg/Kg	02/18/25 14:05	02/19/25 18:02	SW6010	SW3050
7439-95-4	Magnesium	6770		1	3.25	23.7	94.8	mg/Kg	02/18/25 14:05	02/19/25 18:02	SW6010	SW3050
7439-96-5	Manganese	220		1	0.067	0.24	0.95	mg/Kg	02/18/25 14:05	02/19/25 18:02	SW6010	SW3050
7439-97-6	Mercury	0.010	U	1	0.0060	0.010	0.013	mg/Kg	02/20/25 16:00	02/21/25 14:24	SW7471B	
7440-02-0	Nickel	7.88		1	0.085	0.47	1.90	mg/Kg	02/18/25 14:05	02/19/25 18:02	SW6010	SW3050
7440-09-7	Potassium	101	N	1	27.2	75.9	94.8	mg/Kg	02/18/25 14:05	02/19/25 18:02	SW6010	SW3050
7782-49-2	Selenium	0.76	UN	1	0.31	0.76	0.95	mg/Kg	02/18/25 14:05	02/19/25 18:02	SW6010	SW3050
7440-22-4	Silver	0.24	UN	1	0.049	0.24	0.47	mg/Kg	02/18/25 14:05	02/19/25 18:02	SW6010	SW3050
7440-23-5	Sodium	1180		1	34.2	75.9	94.8	mg/Kg	02/18/25 14:05	02/19/25 18:02	SW6010	SW3050
7440-28-0	Thallium	0.95	U	1	0.42	0.95	1.90	mg/Kg	02/18/25 14:05	02/19/25 18:02	SW6010	SW3050
7440-62-2	Vanadium	53.7	N	1	0.26	0.95	1.90	mg/Kg	02/18/25 14:05	02/19/25 18:02	SW6010	SW3050
7440-66-6	Zinc	27.5	N	1	0.10	0.47	1.90	mg/Kg	02/18/25 14:05	02/19/25 18:02	SW6010	SW3050

Color Before:	Black	Clarity Before:		Texture:	Medium
Color After:	Yellow	Clarity After:		Artifacts:	
Comments:	METALS-TAL				

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

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

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

Report of Analysis

Client:	Nobis Group	Date Collected:	02/17/25
Project:	Raymark Superfund Site	Date Received:	02/18/25
Client Sample ID:	OU4-PCS-TC-05-021725	SDG No.:	Q1382
Lab Sample ID:	Q1382-09	Matrix:	SOIL
Level (low/med):	low	% Solid:	92

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	8490		1	2.38	3.95	4.94	mg/Kg	02/18/25 14:05	02/19/25 18:06	SW6010	SW3050
7440-36-0	Antimony	0.62	UN	1	0.15	0.62	2.47	mg/Kg	02/18/25 14:05	02/19/25 18:06	SW6010	SW3050
7440-38-2	Arsenic	0.79	U	1	0.29	0.79	0.99	mg/Kg	02/18/25 14:05	02/19/25 18:06	SW6010	SW3050
7440-39-3	Barium	11.9	N	1	0.63	1.24	4.94	mg/Kg	02/18/25 14:05	02/19/25 18:06	SW6010	SW3050
7440-41-7	Beryllium	0.41	N	1	0.012	0.074	0.30	mg/Kg	02/18/25 14:05	02/19/25 18:06	SW6010	SW3050
7440-43-9	Cadmium	0.51		1	0.016	0.074	0.30	mg/Kg	02/18/25 14:05	02/19/25 18:06	SW6010	SW3050
7440-70-2	Calcium	9770		1	2.77	24.7	98.8	mg/Kg	02/18/25 14:05	02/19/25 18:06	SW6010	SW3050
7440-47-3	Chromium	1.08		1	0.053	0.12	0.49	mg/Kg	02/18/25 14:05	02/19/25 18:06	SW6010	SW3050
7440-48-4	Cobalt	17.4		1	0.057	0.37	1.48	mg/Kg	02/18/25 14:05	02/19/25 18:06	SW6010	SW3050
7440-50-8	Copper	34.8		1	0.46	0.79	0.99	mg/Kg	02/18/25 14:05	02/19/25 18:06	SW6010	SW3050
7439-89-6	Iron	28800		1	2.66	3.95	4.94	mg/Kg	02/18/25 14:05	02/19/25 18:06	SW6010	SW3050
7439-92-1	Lead	2.55	N	1	0.15	0.47	0.59	mg/Kg	02/18/25 14:05	02/19/25 18:06	SW6010	SW3050
7439-95-4	Magnesium	6850		1	3.39	24.7	98.8	mg/Kg	02/18/25 14:05	02/19/25 18:06	SW6010	SW3050
7439-96-5	Manganese	209		1	0.070	0.25	0.99	mg/Kg	02/18/25 14:05	02/19/25 18:06	SW6010	SW3050
7439-97-6	Mercury	0.010	U	1	0.0060	0.010	0.013	mg/Kg	02/20/25 16:00	02/21/25 14:26	SW7471B	
7440-02-0	Nickel	8.38		1	0.089	0.49	1.98	mg/Kg	02/18/25 14:05	02/19/25 18:06	SW6010	SW3050
7440-09-7	Potassium	131	N	1	28.4	79.1	98.8	mg/Kg	02/18/25 14:05	02/19/25 18:06	SW6010	SW3050
7782-49-2	Selenium	0.79	UN	1	0.33	0.79	0.99	mg/Kg	02/18/25 14:05	02/19/25 18:06	SW6010	SW3050
7440-22-4	Silver	0.25	UN	1	0.051	0.25	0.49	mg/Kg	02/18/25 14:05	02/19/25 18:06	SW6010	SW3050
7440-23-5	Sodium	1250		1	35.7	79.1	98.8	mg/Kg	02/18/25 14:05	02/19/25 18:06	SW6010	SW3050
7440-28-0	Thallium	0.99	U	1	0.44	0.99	1.98	mg/Kg	02/18/25 14:05	02/19/25 18:06	SW6010	SW3050
7440-62-2	Vanadium	52.2	N	1	0.27	0.99	1.98	mg/Kg	02/18/25 14:05	02/19/25 18:06	SW6010	SW3050
7440-66-6	Zinc	28.7	N	1	0.11	0.49	1.98	mg/Kg	02/18/25 14:05	02/19/25 18:06	SW6010	SW3050

Color Before:	Black	Clarity Before:		Texture:	Medium
Color After:	Yellow	Clarity After:		Artifacts:	
Comments:	METALS-TAL				

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

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

Alliance TECHNICAL GROUP
284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900,
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Report of Analysis

Client:	Nobis Group	Date Collected:	02/17/25
Project:	Raymark Superfund Site	Date Received:	02/18/25
Client Sample ID:	OU4-PCS-TC-06-021725	SDG No.:	Q1382
Lab Sample ID:	Q1382-11	Matrix:	SOIL
Level (low/med):	low	% Solid:	92.2

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	7210		1	2.43	4.04	5.04	mg/Kg	02/18/25 14:05	02/19/25 18:10	SW6010	SW3050
7440-36-0	Antimony	0.63	UN	1	0.15	0.63	2.52	mg/Kg	02/18/25 14:05	02/19/25 18:10	SW6010	SW3050
7440-38-2	Arsenic	0.81	U	1	0.29	0.81	1.01	mg/Kg	02/18/25 14:05	02/19/25 18:10	SW6010	SW3050
7440-39-3	Barium	13.8	N	1	0.65	1.26	5.04	mg/Kg	02/18/25 14:05	02/19/25 18:10	SW6010	SW3050
7440-41-7	Beryllium	0.37	N	1	0.012	0.076	0.30	mg/Kg	02/18/25 14:05	02/19/25 18:10	SW6010	SW3050
7440-43-9	Cadmium	0.32		1	0.016	0.076	0.30	mg/Kg	02/18/25 14:05	02/19/25 18:10	SW6010	SW3050
7440-70-2	Calcium	8360		1	2.83	25.2	101	mg/Kg	02/18/25 14:05	02/19/25 18:10	SW6010	SW3050
7440-47-3	Chromium	1.16		1	0.054	0.13	0.50	mg/Kg	02/18/25 14:05	02/19/25 18:10	SW6010	SW3050
7440-48-4	Cobalt	16.0		1	0.059	0.38	1.51	mg/Kg	02/18/25 14:05	02/19/25 18:10	SW6010	SW3050
7440-50-8	Copper	32.5		1	0.47	0.81	1.01	mg/Kg	02/18/25 14:05	02/19/25 18:10	SW6010	SW3050
7439-89-6	Iron	28100		1	2.71	4.04	5.04	mg/Kg	02/18/25 14:05	02/19/25 18:10	SW6010	SW3050
7439-92-1	Lead	2.42	N	1	0.15	0.48	0.61	mg/Kg	02/18/25 14:05	02/19/25 18:10	SW6010	SW3050
7439-95-4	Magnesium	6110		1	3.46	25.2	101	mg/Kg	02/18/25 14:05	02/19/25 18:10	SW6010	SW3050
7439-96-5	Manganese	197		1	0.072	0.25	1.01	mg/Kg	02/18/25 14:05	02/19/25 18:10	SW6010	SW3050
7439-97-6	Mercury	0.012	U	1	0.0060	0.012	0.015	mg/Kg	02/20/25 16:00	02/21/25 14:28	SW7471B	
7440-02-0	Nickel	7.45		1	0.091	0.50	2.02	mg/Kg	02/18/25 14:05	02/19/25 18:10	SW6010	SW3050
7440-09-7	Potassium	106	N	1	29.0	80.7	101	mg/Kg	02/18/25 14:05	02/19/25 18:10	SW6010	SW3050
7782-49-2	Selenium	0.81	UN	1	0.33	0.81	1.01	mg/Kg	02/18/25 14:05	02/19/25 18:10	SW6010	SW3050
7440-22-4	Silver	0.25	UN	1	0.052	0.25	0.50	mg/Kg	02/18/25 14:05	02/19/25 18:10	SW6010	SW3050
7440-23-5	Sodium	1260		1	36.4	80.7	101	mg/Kg	02/18/25 14:05	02/19/25 18:10	SW6010	SW3050
7440-28-0	Thallium	1.01	U	1	0.44	1.01	2.02	mg/Kg	02/18/25 14:05	02/19/25 18:10	SW6010	SW3050
7440-62-2	Vanadium	48.9	N	1	0.27	1.01	2.02	mg/Kg	02/18/25 14:05	02/19/25 18:10	SW6010	SW3050
7440-66-6	Zinc	24.4	N	1	0.11	0.50	2.02	mg/Kg	02/18/25 14:05	02/19/25 18:10	SW6010	SW3050

Color Before:	Black	Clarity Before:		Texture:	Medium
Color After:	Yellow	Clarity After:		Artifacts:	
Comments:	METALS-TAL				

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

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

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

Report of Analysis

Client:	Nobis Group	Date Collected:	02/17/25
Project:	Raymark Superfund Site	Date Received:	02/18/25
Client Sample ID:	OU4-PCS-TC-07-021725	SDG No.:	Q1382
Lab Sample ID:	Q1382-13	Matrix:	SOIL
Level (low/med):	low	% Solid:	92.2

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	7850		1	2.40	3.98	4.98	mg/Kg	02/18/25 14:05	02/19/25 18:14	SW6010	SW3050
7440-36-0	Antimony	0.62	UN	1	0.15	0.62	2.49	mg/Kg	02/18/25 14:05	02/19/25 18:14	SW6010	SW3050
7440-38-2	Arsenic	0.80	U	1	0.29	0.80	1.00	mg/Kg	02/18/25 14:05	02/19/25 18:14	SW6010	SW3050
7440-39-3	Barium	12.3	N	1	0.64	1.24	4.98	mg/Kg	02/18/25 14:05	02/19/25 18:14	SW6010	SW3050
7440-41-7	Beryllium	0.36	N	1	0.012	0.075	0.30	mg/Kg	02/18/25 14:05	02/19/25 18:14	SW6010	SW3050
7440-43-9	Cadmium	0.11	J	1	0.016	0.075	0.30	mg/Kg	02/18/25 14:05	02/19/25 18:14	SW6010	SW3050
7440-70-2	Calcium	8070		1	2.79	24.9	99.5	mg/Kg	02/18/25 14:05	02/19/25 18:14	SW6010	SW3050
7440-47-3	Chromium	1.28		1	0.054	0.12	0.50	mg/Kg	02/18/25 14:05	02/19/25 18:14	SW6010	SW3050
7440-48-4	Cobalt	16.3		1	0.058	0.37	1.49	mg/Kg	02/18/25 14:05	02/19/25 18:14	SW6010	SW3050
7440-50-8	Copper	32.0		1	0.47	0.80	1.00	mg/Kg	02/18/25 14:05	02/19/25 18:14	SW6010	SW3050
7439-89-6	Iron	29200		1	2.68	3.98	4.98	mg/Kg	02/18/25 14:05	02/19/25 18:14	SW6010	SW3050
7439-92-1	Lead	2.21	N	1	0.15	0.48	0.60	mg/Kg	02/18/25 14:05	02/19/25 18:14	SW6010	SW3050
7439-95-4	Magnesium	6880		1	3.41	24.9	99.5	mg/Kg	02/18/25 14:05	02/19/25 18:14	SW6010	SW3050
7439-96-5	Manganese	196		1	0.071	0.25	1.00	mg/Kg	02/18/25 14:05	02/19/25 18:14	SW6010	SW3050
7439-97-6	Mercury	0.010	U	1	0.0060	0.010	0.013	mg/Kg	02/20/25 16:00	02/21/25 14:35	SW7471B	
7440-02-0	Nickel	7.77		1	0.090	0.50	1.99	mg/Kg	02/18/25 14:05	02/19/25 18:14	SW6010	SW3050
7440-09-7	Potassium	105	N	1	28.6	79.6	99.5	mg/Kg	02/18/25 14:05	02/19/25 18:14	SW6010	SW3050
7782-49-2	Selenium	0.80	UN	1	0.33	0.80	1.00	mg/Kg	02/18/25 14:05	02/19/25 18:14	SW6010	SW3050
7440-22-4	Silver	0.25	UN	1	0.052	0.25	0.50	mg/Kg	02/18/25 14:05	02/19/25 18:14	SW6010	SW3050
7440-23-5	Sodium	1440		1	35.9	79.6	99.5	mg/Kg	02/18/25 14:05	02/19/25 18:14	SW6010	SW3050
7440-28-0	Thallium	1.00	U	1	0.44	1.00	1.99	mg/Kg	02/18/25 14:05	02/19/25 18:14	SW6010	SW3050
7440-62-2	Vanadium	49.1	N	1	0.27	1.00	1.99	mg/Kg	02/18/25 14:05	02/19/25 18:14	SW6010	SW3050
7440-66-6	Zinc	23.6	N	1	0.11	0.50	1.99	mg/Kg	02/18/25 14:05	02/19/25 18:14	SW6010	SW3050

Color Before:	Black	Clarity Before:		Texture:	Medium
Color After:	Yellow	Clarity After:		Artifacts:	
Comments:	METALS-TAL				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
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J = Estimated Value
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E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

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

Report of Analysis

Client:	Nobis Group	Date Collected:	02/17/25
Project:	Raymark Superfund Site	Date Received:	02/18/25
Client Sample ID:	OU4-PCS-TC-08-021725	SDG No.:	Q1382
Lab Sample ID:	Q1382-15	Matrix:	SOIL
Level (low/med):	low	% Solid:	92.6

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	7070		1	2.49	4.13	5.17	mg/Kg	02/18/25 14:05	02/19/25 18:19	SW6010	SW3050
7440-36-0	Antimony	0.65	UN	1	0.16	0.65	2.58	mg/Kg	02/18/25 14:05	02/19/25 18:19	SW6010	SW3050
7440-38-2	Arsenic	0.83	U	1	0.30	0.83	1.03	mg/Kg	02/18/25 14:05	02/19/25 18:19	SW6010	SW3050
7440-39-3	Barium	13.8	N	1	0.66	1.29	5.17	mg/Kg	02/18/25 14:05	02/19/25 18:19	SW6010	SW3050
7440-41-7	Beryllium	0.38	N	1	0.012	0.078	0.31	mg/Kg	02/18/25 14:05	02/19/25 18:19	SW6010	SW3050
7440-43-9	Cadmium	0.53		1	0.017	0.078	0.31	mg/Kg	02/18/25 14:05	02/19/25 18:19	SW6010	SW3050
7440-70-2	Calcium	8730		1	2.89	25.8	103	mg/Kg	02/18/25 14:05	02/19/25 18:19	SW6010	SW3050
7440-47-3	Chromium	1.07		1	0.056	0.13	0.52	mg/Kg	02/18/25 14:05	02/19/25 18:19	SW6010	SW3050
7440-48-4	Cobalt	16.2		1	0.060	0.39	1.55	mg/Kg	02/18/25 14:05	02/19/25 18:19	SW6010	SW3050
7440-50-8	Copper	34.3		1	0.49	0.83	1.03	mg/Kg	02/18/25 14:05	02/19/25 18:19	SW6010	SW3050
7439-89-6	Iron	26300		1	2.78	4.13	5.17	mg/Kg	02/18/25 14:05	02/19/25 18:19	SW6010	SW3050
7439-92-1	Lead	2.08	N	1	0.16	0.50	0.62	mg/Kg	02/18/25 14:05	02/19/25 18:19	SW6010	SW3050
7439-95-4	Magnesium	6400		1	3.54	25.8	103	mg/Kg	02/18/25 14:05	02/19/25 18:19	SW6010	SW3050
7439-96-5	Manganese	214		1	0.073	0.26	1.03	mg/Kg	02/18/25 14:05	02/19/25 18:19	SW6010	SW3050
7439-97-6	Mercury	0.011	U	1	0.0060	0.011	0.014	mg/Kg	02/20/25 16:00	02/21/25 14:37	SW7471B	
7440-02-0	Nickel	7.45		1	0.093	0.52	2.07	mg/Kg	02/18/25 14:05	02/19/25 18:19	SW6010	SW3050
7440-09-7	Potassium	95.1	JN	1	29.7	82.7	103	mg/Kg	02/18/25 14:05	02/19/25 18:19	SW6010	SW3050
7782-49-2	Selenium	0.83	UN	1	0.34	0.83	1.03	mg/Kg	02/18/25 14:05	02/19/25 18:19	SW6010	SW3050
7440-22-4	Silver	0.26	UN	1	0.054	0.26	0.52	mg/Kg	02/18/25 14:05	02/19/25 18:19	SW6010	SW3050
7440-23-5	Sodium	1140		1	37.3	82.7	103	mg/Kg	02/18/25 14:05	02/19/25 18:19	SW6010	SW3050
7440-28-0	Thallium	1.03	U	1	0.46	1.03	2.07	mg/Kg	02/18/25 14:05	02/19/25 18:19	SW6010	SW3050
7440-62-2	Vanadium	46.1	N	1	0.28	1.03	2.07	mg/Kg	02/18/25 14:05	02/19/25 18:19	SW6010	SW3050
7440-66-6	Zinc	25.6	N	1	0.11	0.52	2.07	mg/Kg	02/18/25 14:05	02/19/25 18:19	SW6010	SW3050

Color Before:	Black	Clarity Before:		Texture:	Medium
Color After:	Yellow	Clarity After:		Artifacts:	
Comments:	METALS-TAL				

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

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

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

Report of Analysis

Client:	Nobis Group	Date Collected:	02/17/25
Project:	Raymark Superfund Site	Date Received:	02/18/25
Client Sample ID:	OU4-PCS-TC-09-021725	SDG No.:	Q1382
Lab Sample ID:	Q1382-17	Matrix:	SOIL
Level (low/med):	low	% Solid:	92.6

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	7060		1	2.47	4.09	5.12	mg/Kg	02/18/25 14:05	02/19/25 18:31	SW6010	SW3050
7440-36-0	Antimony	0.64	UN	1	0.15	0.64	2.56	mg/Kg	02/18/25 14:05	02/19/25 18:31	SW6010	SW3050
7440-38-2	Arsenic	0.82	U	1	0.30	0.82	1.02	mg/Kg	02/18/25 14:05	02/19/25 18:31	SW6010	SW3050
7440-39-3	Barium	12.4	N	1	0.66	1.28	5.12	mg/Kg	02/18/25 14:05	02/19/25 18:31	SW6010	SW3050
7440-41-7	Beryllium	0.36	N	1	0.012	0.077	0.31	mg/Kg	02/18/25 14:05	02/19/25 18:31	SW6010	SW3050
7440-43-9	Cadmium	0.17	J	1	0.016	0.077	0.31	mg/Kg	02/18/25 14:05	02/19/25 18:31	SW6010	SW3050
7440-70-2	Calcium	7560		1	2.87	25.6	102	mg/Kg	02/18/25 14:05	02/19/25 18:31	SW6010	SW3050
7440-47-3	Chromium	1.08		1	0.055	0.13	0.51	mg/Kg	02/18/25 14:05	02/19/25 18:31	SW6010	SW3050
7440-48-4	Cobalt	16.2		1	0.059	0.38	1.54	mg/Kg	02/18/25 14:05	02/19/25 18:31	SW6010	SW3050
7440-50-8	Copper	33.1		1	0.48	0.82	1.02	mg/Kg	02/18/25 14:05	02/19/25 18:31	SW6010	SW3050
7439-89-6	Iron	28100		1	2.75	4.09	5.12	mg/Kg	02/18/25 14:05	02/19/25 18:31	SW6010	SW3050
7439-92-1	Lead	2.61	N	1	0.15	0.49	0.61	mg/Kg	02/18/25 14:05	02/19/25 18:31	SW6010	SW3050
7439-95-4	Magnesium	6150		1	3.51	25.6	102	mg/Kg	02/18/25 14:05	02/19/25 18:31	SW6010	SW3050
7439-96-5	Manganese	200		1	0.073	0.26	1.02	mg/Kg	02/18/25 14:05	02/19/25 18:31	SW6010	SW3050
7439-97-6	Mercury	0.011	U	1	0.0060	0.011	0.014	mg/Kg	02/20/25 16:00	02/21/25 14:40	SW7471B	
7440-02-0	Nickel	7.47		1	0.092	0.51	2.05	mg/Kg	02/18/25 14:05	02/19/25 18:31	SW6010	SW3050
7440-09-7	Potassium	96.3	JN	1	29.4	81.9	102	mg/Kg	02/18/25 14:05	02/19/25 18:31	SW6010	SW3050
7782-49-2	Selenium	0.82	UN	1	0.34	0.82	1.02	mg/Kg	02/18/25 14:05	02/19/25 18:31	SW6010	SW3050
7440-22-4	Silver	0.26	UN	1	0.053	0.26	0.51	mg/Kg	02/18/25 14:05	02/19/25 18:31	SW6010	SW3050
7440-23-5	Sodium	1230		1	37.0	81.9	102	mg/Kg	02/18/25 14:05	02/19/25 18:31	SW6010	SW3050
7440-28-0	Thallium	1.02	U	1	0.45	1.02	2.05	mg/Kg	02/18/25 14:05	02/19/25 18:31	SW6010	SW3050
7440-62-2	Vanadium	51.4	N	1	0.28	1.02	2.05	mg/Kg	02/18/25 14:05	02/19/25 18:31	SW6010	SW3050
7440-66-6	Zinc	27.1	N	1	0.11	0.51	2.05	mg/Kg	02/18/25 14:05	02/19/25 18:31	SW6010	SW3050

Color Before:	Black	Clarity Before:		Texture:	Medium
Color After:	Yellow	Clarity After:		Artifacts:	
Comments:	METALS-TAL				

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

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

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

Report of Analysis

Client:	Nobis Group	Date Collected:	02/17/25
Project:	Raymark Superfund Site	Date Received:	02/18/25
Client Sample ID:	OU4-PCS-TC-10-021725	SDG No.:	Q1382
Lab Sample ID:	Q1382-19	Matrix:	SOIL
Level (low/med):	low	% Solid:	93.4

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	7910		1	2.46	4.08	5.10	mg/Kg	02/18/25 14:05	02/19/25 18:36	SW6010	SW3050
7440-36-0	Antimony	0.64	UN	1	0.15	0.64	2.55	mg/Kg	02/18/25 14:05	02/19/25 18:36	SW6010	SW3050
7440-38-2	Arsenic	0.82	U	1	0.30	0.82	1.02	mg/Kg	02/18/25 14:05	02/19/25 18:36	SW6010	SW3050
7440-39-3	Barium	13.7	N	1	0.65	1.27	5.10	mg/Kg	02/18/25 14:05	02/19/25 18:36	SW6010	SW3050
7440-41-7	Beryllium	0.41	N	1	0.012	0.076	0.31	mg/Kg	02/18/25 14:05	02/19/25 18:36	SW6010	SW3050
7440-43-9	Cadmium	0.40		1	0.016	0.076	0.31	mg/Kg	02/18/25 14:05	02/19/25 18:36	SW6010	SW3050
7440-70-2	Calcium	9010		1	2.86	25.5	102	mg/Kg	02/18/25 14:05	02/19/25 18:36	SW6010	SW3050
7440-47-3	Chromium	1.23		1	0.055	0.13	0.51	mg/Kg	02/18/25 14:05	02/19/25 18:36	SW6010	SW3050
7440-48-4	Cobalt	17.5		1	0.059	0.38	1.53	mg/Kg	02/18/25 14:05	02/19/25 18:36	SW6010	SW3050
7440-50-8	Copper	33.5		1	0.48	0.82	1.02	mg/Kg	02/18/25 14:05	02/19/25 18:36	SW6010	SW3050
7439-89-6	Iron	29500		1	2.74	4.08	5.10	mg/Kg	02/18/25 14:05	02/19/25 18:36	SW6010	SW3050
7439-92-1	Lead	2.92	N	1	0.15	0.49	0.61	mg/Kg	02/18/25 14:05	02/19/25 18:36	SW6010	SW3050
7439-95-4	Magnesium	6900		1	3.50	25.5	102	mg/Kg	02/18/25 14:05	02/19/25 18:36	SW6010	SW3050
7439-96-5	Manganese	233		1	0.072	0.26	1.02	mg/Kg	02/18/25 14:05	02/19/25 18:36	SW6010	SW3050
7439-97-6	Mercury	0.011	U	1	0.0060	0.011	0.014	mg/Kg	02/20/25 16:00	02/21/25 14:42	SW7471B	
7440-02-0	Nickel	8.15		1	0.092	0.51	2.04	mg/Kg	02/18/25 14:05	02/19/25 18:36	SW6010	SW3050
7440-09-7	Potassium	104	N	1	29.3	81.6	102	mg/Kg	02/18/25 14:05	02/19/25 18:36	SW6010	SW3050
7782-49-2	Selenium	0.82	UN	1	0.34	0.82	1.02	mg/Kg	02/18/25 14:05	02/19/25 18:36	SW6010	SW3050
7440-22-4	Silver	0.26	UN	1	0.053	0.26	0.51	mg/Kg	02/18/25 14:05	02/19/25 18:36	SW6010	SW3050
7440-23-5	Sodium	1250		1	36.8	81.6	102	mg/Kg	02/18/25 14:05	02/19/25 18:36	SW6010	SW3050
7440-28-0	Thallium	1.02	U	1	0.45	1.02	2.04	mg/Kg	02/18/25 14:05	02/19/25 18:36	SW6010	SW3050
7440-62-2	Vanadium	51.3	N	1	0.28	1.02	2.04	mg/Kg	02/18/25 14:05	02/19/25 18:36	SW6010	SW3050
7440-66-6	Zinc	26.9	N	1	0.11	0.51	2.04	mg/Kg	02/18/25 14:05	02/19/25 18:36	SW6010	SW3050

Color Before:	Black	Clarity Before:		Texture:	Medium
Color After:	Yellow	Clarity After:		Artifacts:	
Comments:	METALS-TAL				

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

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B = Analyte Found in Associated Method Blank
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N =Spiked sample recovery not within control limits

METAL CALIBRATION DATA

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

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Nobis Group **SDG No.:** Q1382

Contract: NOBI03 **Lab Code:** CHEM **Case No.:** Q1382 **SAS No.:** Q1382

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
ICV13	Mercury	4.00	4.0	100	90 - 110	CV	02/21/2025	12:52	LB134771

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Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Nobis Group **SDG No.:** Q1382

Contract: NOBI03 **Lab Code:** CHEM **Case No.:** Q1382 **SAS No.:** Q1382

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	Mercury	4.73	5.0	95	90 - 110	CV	02/21/2025	12:56	LB134771
CCV02	Mercury	4.67	5.0	93	90 - 110	CV	02/21/2025	13:29	LB134771
CCV03	Mercury	4.93	5.0	98	90 - 110	CV	02/21/2025	13:57	LB134771
CCV04	Mercury	4.95	5.0	99	90 - 110	CV	02/21/2025	14:31	LB134771
CCV05	Mercury	5.42	5.0	108	90 - 110	CV	02/21/2025	15:01	LB134771
CCV06	Mercury	4.87	5.0	97	90 - 110	CV	02/21/2025	15:22	LB134771

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Fax : 908 789 8922

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Nobis Group **SDG No.:** Q1382

Contract: NOBI03 **Lab Code:** CHEM **Case No.:** Q1382 **SAS No.:** Q1382

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
ICV01	Aluminum	2500	2500	100	90 - 110	P	02/19/2025	16:50	LB134756
	Antimony	961	1000	96	90 - 110	P	02/19/2025	16:50	LB134756
	Arsenic	997	1000	100	90 - 110	P	02/19/2025	16:50	LB134756
	Barium	485	520	93	90 - 110	P	02/19/2025	16:50	LB134756
	Beryllium	503	510	98	90 - 110	P	02/19/2025	16:50	LB134756
	Cadmium	484	510	95	90 - 110	P	02/19/2025	16:50	LB134756
	Calcium	9700	10000	97	90 - 110	P	02/19/2025	16:50	LB134756
	Chromium	490	520	94	90 - 110	P	02/19/2025	16:50	LB134756
	Cobalt	525	520	101	90 - 110	P	02/19/2025	16:50	LB134756
	Copper	495	510	97	90 - 110	P	02/19/2025	16:50	LB134756
	Iron	9860	10000	99	90 - 110	P	02/19/2025	16:50	LB134756
	Lead	965	1000	96	90 - 110	P	02/19/2025	16:50	LB134756
	Magnesium	6140	6000	102	90 - 110	P	02/19/2025	16:50	LB134756
	Manganese	489	520	94	90 - 110	P	02/19/2025	16:50	LB134756
	Nickel	521	530	98	90 - 110	P	02/19/2025	16:50	LB134756
	Potassium	10100	9900	102	90 - 110	P	02/19/2025	16:50	LB134756
	Selenium	985	1000	98	90 - 110	P	02/19/2025	16:50	LB134756
	Silver	237	250	95	90 - 110	P	02/19/2025	16:50	LB134756
	Sodium	10100	10000	102	90 - 110	P	02/19/2025	16:50	LB134756
	Thallium	998	1000	100	90 - 110	P	02/19/2025	16:50	LB134756
	Vanadium	489	500	98	90 - 110	P	02/19/2025	16:50	LB134756
	Zinc	941	1000	94	90 - 110	P	02/19/2025	16:50	LB134756

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Metals

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Nobis Group **SDG No.:** Q1382

Contract: NOBI03 **Lab Code:** CHEM **Case No.:** Q1382 **SAS No.:** Q1382

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
LLICV01	Aluminum	94.2	100	94	80 - 120	P	02/19/2025	17:11	LB134756
	Antimony	51.7	50.0	103	80 - 120	P	02/19/2025	17:11	LB134756
	Arsenic	20.7	20.0	104	80 - 120	P	02/19/2025	17:11	LB134756
	Barium	97.4	100	97	80 - 120	P	02/19/2025	17:11	LB134756
	Beryllium	5.43	6.0	90	80 - 120	P	02/19/2025	17:11	LB134756
	Cadmium	5.94	6.0	99	80 - 120	P	02/19/2025	17:11	LB134756
	Calcium	1890	2000	94	80 - 120	P	02/19/2025	17:11	LB134756
	Chromium	9.72	10.0	97	80 - 120	P	02/19/2025	17:11	LB134756
	Cobalt	29.0	30.0	96	80 - 120	P	02/19/2025	17:11	LB134756
	Copper	21.7	20.0	109	80 - 120	P	02/19/2025	17:11	LB134756
	Iron	95.5	100	96	80 - 120	P	02/19/2025	17:11	LB134756
	Lead	11.6	12.0	97	80 - 120	P	02/19/2025	17:11	LB134756
	Magnesium	1970	2000	98	80 - 120	P	02/19/2025	17:11	LB134756
	Manganese	19.3	20.0	97	80 - 120	P	02/19/2025	17:11	LB134756
	Nickel	39.6	40.0	99	80 - 120	P	02/19/2025	17:11	LB134756
	Potassium	2040	2000	102	80 - 120	P	02/19/2025	17:11	LB134756
	Selenium	21.9	20.0	109	80 - 120	P	02/19/2025	17:11	LB134756
	Silver	9.92	10.0	99	80 - 120	P	02/19/2025	17:11	LB134756
	Sodium	2080	2000	104	80 - 120	P	02/19/2025	17:11	LB134756
	Thallium	41.2	40.0	103	80 - 120	P	02/19/2025	17:11	LB134756
	Vanadium	39.2	40.0	98	80 - 120	P	02/19/2025	17:11	LB134756
	Zinc	40.5	40.0	101	80 - 120	P	02/19/2025	17:11	LB134756

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Metals

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Nobis Group **SDG No.:** Q1382

Contract: NOBI03 **Lab Code:** CHEM **Case No.:** Q1382 **SAS No.:** Q1382

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV01	Aluminum	9920	10000	99	90 - 110	P	02/19/2025	17:32	LB134756
	Antimony	5000	5000	100	90 - 110	P	02/19/2025	17:32	LB134756
	Arsenic	4980	5000	100	90 - 110	P	02/19/2025	17:32	LB134756
	Barium	10000	10000	100	90 - 110	P	02/19/2025	17:32	LB134756
	Beryllium	235	250	94	90 - 110	P	02/19/2025	17:32	LB134756
	Cadmium	2500	2500	100	90 - 110	P	02/19/2025	17:32	LB134756
	Calcium	24800	25000	99	90 - 110	P	02/19/2025	17:32	LB134756
	Chromium	1030	1000	102	90 - 110	P	02/19/2025	17:32	LB134756
	Cobalt	2490	2500	100	90 - 110	P	02/19/2025	17:32	LB134756
	Copper	1260	1250	100	90 - 110	P	02/19/2025	17:32	LB134756
	Iron	5230	5000	105	90 - 110	P	02/19/2025	17:32	LB134756
	Lead	5000	5000	100	90 - 110	P	02/19/2025	17:32	LB134756
	Magnesium	24400	25000	98	90 - 110	P	02/19/2025	17:32	LB134756
	Manganese	2450	2500	98	90 - 110	P	02/19/2025	17:32	LB134756
	Nickel	2500	2500	100	90 - 110	P	02/19/2025	17:32	LB134756
	Potassium	26900	25000	108	90 - 110	P	02/19/2025	17:32	LB134756
	Selenium	4980	5000	100	90 - 110	P	02/19/2025	17:32	LB134756
	Silver	1260	1250	101	90 - 110	P	02/19/2025	17:32	LB134756
	Sodium	27000	25000	108	90 - 110	P	02/19/2025	17:32	LB134756
	Thallium	5070	5000	102	90 - 110	P	02/19/2025	17:32	LB134756
	Vanadium	2470	2500	99	90 - 110	P	02/19/2025	17:32	LB134756
	Zinc	2520	2500	101	90 - 110	P	02/19/2025	17:32	LB134756
CCV02	Aluminum	9690	10000	97	90 - 110	P	02/19/2025	18:23	LB134756
	Antimony	4960	5000	99	90 - 110	P	02/19/2025	18:23	LB134756
	Arsenic	4950	5000	99	90 - 110	P	02/19/2025	18:23	LB134756
	Barium	9910	10000	99	90 - 110	P	02/19/2025	18:23	LB134756
	Beryllium	234	250	94	90 - 110	P	02/19/2025	18:23	LB134756
	Cadmium	2480	2500	99	90 - 110	P	02/19/2025	18:23	LB134756
	Calcium	24400	25000	98	90 - 110	P	02/19/2025	18:23	LB134756
	Chromium	1010	1000	101	90 - 110	P	02/19/2025	18:23	LB134756
	Cobalt	2470	2500	99	90 - 110	P	02/19/2025	18:23	LB134756
	Copper	1250	1250	100	90 - 110	P	02/19/2025	18:23	LB134756
	Iron	5190	5000	104	90 - 110	P	02/19/2025	18:23	LB134756
	Lead	4960	5000	99	90 - 110	P	02/19/2025	18:23	LB134756

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Metals

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Nobis Group **SDG No.:** Q1382

Contract: NOBI03 **Lab Code:** CHEM **Case No.:** Q1382 **SAS No.:** Q1382

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV02	Magnesium	24000	25000	96	90 - 110	P	02/19/2025	18:23	LB134756
	Manganese	2420	2500	97	90 - 110	P	02/19/2025	18:23	LB134756
	Nickel	2480	2500	99	90 - 110	P	02/19/2025	18:23	LB134756
	Potassium	26400	25000	106	90 - 110	P	02/19/2025	18:23	LB134756
	Selenium	4970	5000	99	90 - 110	P	02/19/2025	18:23	LB134756
	Silver	1240	1250	100	90 - 110	P	02/19/2025	18:23	LB134756
	Sodium	26400	25000	106	90 - 110	P	02/19/2025	18:23	LB134756
	Thallium	5010	5000	100	90 - 110	P	02/19/2025	18:23	LB134756
	Vanadium	2440	2500	98	90 - 110	P	02/19/2025	18:23	LB134756
	Zinc	2480	2500	99	90 - 110	P	02/19/2025	18:23	LB134756
CCV03	Aluminum	9910	10000	99	90 - 110	P	02/19/2025	19:08	LB134756
	Antimony	5010	5000	100	90 - 110	P	02/19/2025	19:08	LB134756
	Arsenic	5000	5000	100	90 - 110	P	02/19/2025	19:08	LB134756
	Barium	10100	10000	100	90 - 110	P	02/19/2025	19:08	LB134756
	Beryllium	240	250	96	90 - 110	P	02/19/2025	19:08	LB134756
	Cadmium	2510	2500	100	90 - 110	P	02/19/2025	19:08	LB134756
	Calcium	24900	25000	100	90 - 110	P	02/19/2025	19:08	LB134756
	Chromium	1020	1000	102	90 - 110	P	02/19/2025	19:08	LB134756
	Cobalt	2510	2500	100	90 - 110	P	02/19/2025	19:08	LB134756
	Copper	1260	1250	101	90 - 110	P	02/19/2025	19:08	LB134756
	Iron	5170	5000	104	90 - 110	P	02/19/2025	19:08	LB134756
	Lead	5030	5000	101	90 - 110	P	02/19/2025	19:08	LB134756
	Magnesium	24500	25000	98	90 - 110	P	02/19/2025	19:08	LB134756
	Manganese	2480	2500	99	90 - 110	P	02/19/2025	19:08	LB134756
	Nickel	2520	2500	101	90 - 110	P	02/19/2025	19:08	LB134756
	Potassium	26200	25000	105	90 - 110	P	02/19/2025	19:08	LB134756
	Selenium	5010	5000	100	90 - 110	P	02/19/2025	19:08	LB134756
	Silver	1260	1250	100	90 - 110	P	02/19/2025	19:08	LB134756
	Sodium	26100	25000	104	90 - 110	P	02/19/2025	19:08	LB134756
	Thallium	5080	5000	102	90 - 110	P	02/19/2025	19:08	LB134756
	Vanadium	2490	2500	100	90 - 110	P	02/19/2025	19:08	LB134756
	Zinc	2500	2500	100	90 - 110	P	02/19/2025	19:08	LB134756
CCV04	Aluminum	9690	10000	97	90 - 110	P	02/19/2025	19:30	LB134756
	Antimony	5000	5000	100	90 - 110	P	02/19/2025	19:30	LB134756

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Metals

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Nobis Group **SDG No.:** Q1382

Contract: NOBI03 **Lab Code:** CHEM **Case No.:** Q1382 **SAS No.:** Q1382

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV04	Arsenic	4940	5000	99	90 - 110	P	02/19/2025	19:30	LB134756
	Barium	9730	10000	97	90 - 110	P	02/19/2025	19:30	LB134756
	Beryllium	252	250	101	90 - 110	P	02/19/2025	19:30	LB134756
	Cadmium	2450	2500	98	90 - 110	P	02/19/2025	19:30	LB134756
	Calcium	23900	25000	96	90 - 110	P	02/19/2025	19:30	LB134756
	Chromium	992	1000	99	90 - 110	P	02/19/2025	19:30	LB134756
	Cobalt	2460	2500	98	90 - 110	P	02/19/2025	19:30	LB134756
	Copper	1250	1250	100	90 - 110	P	02/19/2025	19:30	LB134756
	Iron	4760	5000	95	90 - 110	P	02/19/2025	19:30	LB134756
	Lead	4910	5000	98	90 - 110	P	02/19/2025	19:30	LB134756
	Magnesium	23600	25000	94	90 - 110	P	02/19/2025	19:30	LB134756
	Manganese	2410	2500	96	90 - 110	P	02/19/2025	19:30	LB134756
	Nickel	2460	2500	98	90 - 110	P	02/19/2025	19:30	LB134756
	Potassium	23300	25000	93	90 - 110	P	02/19/2025	19:30	LB134756
	Selenium	4980	5000	100	90 - 110	P	02/19/2025	19:30	LB134756
	Silver	1240	1250	99	90 - 110	P	02/19/2025	19:30	LB134756
	Sodium	23300	25000	93	90 - 110	P	02/19/2025	19:30	LB134756
	Thallium	5040	5000	101	90 - 110	P	02/19/2025	19:30	LB134756
	Vanadium	2440	2500	98	90 - 110	P	02/19/2025	19:30	LB134756
	Zinc	2470	2500	99	90 - 110	P	02/19/2025	19:30	LB134756

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Metals

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CRDL STANDARD FOR AA & ICP

Client: Nobis Group **SDG No.:** Q1382

Contract: NOBI03 **Lab Code:** CHEM **Case No.:** Q1382 **SAS No.:** Q1382

Initial Calibration Source:

Continuing Calibration Source:

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CRI01	Aluminum	88.6	100	89	40 - 160	P	02/19/2025	17:20	LB134756
	Antimony	52.1	50.0	104	40 - 160	P	02/19/2025	17:20	LB134756
	Arsenic	19.1	20.0	96	40 - 160	P	02/19/2025	17:20	LB134756
	Barium	102	100	102	40 - 160	P	02/19/2025	17:20	LB134756
	Beryllium	5.48	6.0	91	40 - 160	P	02/19/2025	17:20	LB134756
	Cadmium	5.92	6.0	99	40 - 160	P	02/19/2025	17:20	LB134756
	Calcium	1930	2000	96	40 - 160	P	02/19/2025	17:20	LB134756
	Chromium	9.54	10.0	95	40 - 160	P	02/19/2025	17:20	LB134756
	Cobalt	29.4	30.0	98	40 - 160	P	02/19/2025	17:20	LB134756
	Copper	22.1	20.0	111	40 - 160	P	02/19/2025	17:20	LB134756
	Iron	102	100	102	40 - 160	P	02/19/2025	17:20	LB134756
	Lead	11.7	12.0	97	40 - 160	P	02/19/2025	17:20	LB134756
	Magnesium	2000	2000	100	40 - 160	P	02/19/2025	17:20	LB134756
	Manganese	20.4	20.0	102	40 - 160	P	02/19/2025	17:20	LB134756
	Nickel	39.6	40.0	99	40 - 160	P	02/19/2025	17:20	LB134756
	Potassium	2110	2000	106	40 - 160	P	02/19/2025	17:20	LB134756
	Selenium	19.6	20.0	98	40 - 160	P	02/19/2025	17:20	LB134756
	Silver	10.1	10.0	101	40 - 160	P	02/19/2025	17:20	LB134756
	Sodium	2140	2000	107	40 - 160	P	02/19/2025	17:20	LB134756
	Thallium	39.0	40.0	98	40 - 160	P	02/19/2025	17:20	LB134756
	Vanadium	39.3	40.0	98	40 - 160	P	02/19/2025	17:20	LB134756
	Zinc	40.7	40.0	102	40 - 160	P	02/19/2025	17:20	LB134756
CRA	Mercury	0.21	0.2	105	40 - 160	CV	02/21/2025	13:04	LB134771

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Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Nobis Group **SDG No.:** Q1382

Contract: NOBI03 **Lab Code:** CHEM **Case No.:** Q1382 **SAS No.:** Q1382

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB13	Mercury	0.20	+/-0.20	U	0.20	CV	02/21/2025	12:54	LB134771

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INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Nobis Group **SDG No.:** Q1382

Contract: NOBI03 **Lab Code:** CHEM **Case No.:** Q1382 **SAS No.:** Q1382

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB01	Mercury	0.20	+/-0.20	U	0.20	CV	02/21/2025	13:01	LB134771
CCB02	Mercury	0.20	+/-0.20	U	0.20	CV	02/21/2025	13:32	LB134771
CCB03	Mercury	0.20	+/-0.20	U	0.20	CV	02/21/2025	14:02	LB134771
CCB04	Mercury	0.20	+/-0.20	U	0.20	CV	02/21/2025	14:33	LB134771
CCB05	Mercury	0.20	+/-0.20	U	0.20	CV	02/21/2025	15:06	LB134771
CCB06	Mercury	0.20	+/-0.20	U	0.20	CV	02/21/2025	15:24	LB134771

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INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Nobis Group **SDG No.:** Q1382

Contract: NOBI03 **Lab Code:** CHEM **Case No.:** Q1382 **SAS No.:** Q1382

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB01	Aluminum	100	+/-100	U	100	P	02/19/2025	17:15	LB134756
	Antimony	50.0	+/-50.0	U	50.0	P	02/19/2025	17:15	LB134756
	Arsenic	20.0	+/-20.0	U	20.0	P	02/19/2025	17:15	LB134756
	Barium	100	+/-100	U	100	P	02/19/2025	17:15	LB134756
	Beryllium	6.00	+/-6.00	U	6.00	P	02/19/2025	17:15	LB134756
	Cadmium	6.00	+/-6.00	U	6.00	P	02/19/2025	17:15	LB134756
	Calcium	2000	+/-2000	U	2000	P	02/19/2025	17:15	LB134756
	Chromium	10.0	+/-10.0	U	10.0	P	02/19/2025	17:15	LB134756
	Cobalt	30.0	+/-30.0	U	30.0	P	02/19/2025	17:15	LB134756
	Copper	20.0	+/-20.0	U	20.0	P	02/19/2025	17:15	LB134756
	Iron	100	+/-100	U	100	P	02/19/2025	17:15	LB134756
	Lead	12.0	+/-12.0	U	12.0	P	02/19/2025	17:15	LB134756
	Magnesium	2000	+/-2000	U	2000	P	02/19/2025	17:15	LB134756
	Manganese	20.0	+/-20.0	U	20.0	P	02/19/2025	17:15	LB134756
	Nickel	40.0	+/-40.0	U	40.0	P	02/19/2025	17:15	LB134756
	Potassium	2000	+/-2000	U	2000	P	02/19/2025	17:15	LB134756
	Selenium	20.0	+/-20.0	U	20.0	P	02/19/2025	17:15	LB134756
	Silver	10.0	+/-10.0	U	10.0	P	02/19/2025	17:15	LB134756
	Sodium	2000	+/-2000	U	2000	P	02/19/2025	17:15	LB134756
	Thallium	40.0	+/-40.0	U	40.0	P	02/19/2025	17:15	LB134756
	Vanadium	40.0	+/-40.0	U	40.0	P	02/19/2025	17:15	LB134756
	Zinc	40.0	+/-40.0	U	40.0	P	02/19/2025	17:15	LB134756

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Metals

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INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Nobis Group **SDG No.:** Q1382

Contract: NOBI03 **Lab Code:** CHEM **Case No.:** Q1382 **SAS No.:** Q1382

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB01	Aluminum	100	+/-100	U	100	P	02/19/2025	17:36	LB134756
	Antimony	50.0	+/-50.0	U	50.0	P	02/19/2025	17:36	LB134756
	Arsenic	20.0	+/-20.0	U	20.0	P	02/19/2025	17:36	LB134756
	Barium	100	+/-100	U	100	P	02/19/2025	17:36	LB134756
	Beryllium	6.00	+/-6.00	U	6.00	P	02/19/2025	17:36	LB134756
	Cadmium	6.00	+/-6.00	U	6.00	P	02/19/2025	17:36	LB134756
	Calcium	2000	+/-2000	U	2000	P	02/19/2025	17:36	LB134756
	Chromium	10.0	+/-10.0	U	10.0	P	02/19/2025	17:36	LB134756
	Cobalt	30.0	+/-30.0	U	30.0	P	02/19/2025	17:36	LB134756
	Copper	20.0	+/-20.0	U	20.0	P	02/19/2025	17:36	LB134756
	Iron	100	+/-100	U	100	P	02/19/2025	17:36	LB134756
	Lead	12.0	+/-12.0	U	12.0	P	02/19/2025	17:36	LB134756
	Magnesium	2000	+/-2000	U	2000	P	02/19/2025	17:36	LB134756
	Manganese	20.0	+/-20.0	U	20.0	P	02/19/2025	17:36	LB134756
	Nickel	40.0	+/-40.0	U	40.0	P	02/19/2025	17:36	LB134756
	Potassium	2000	+/-2000	U	2000	P	02/19/2025	17:36	LB134756
	Selenium	20.0	+/-20.0	U	20.0	P	02/19/2025	17:36	LB134756
	Silver	10.0	+/-10.0	U	10.0	P	02/19/2025	17:36	LB134756
	Sodium	2000	+/-2000	U	2000	P	02/19/2025	17:36	LB134756
	Thallium	40.0	+/-40.0	U	40.0	P	02/19/2025	17:36	LB134756
	Vanadium	40.0	+/-40.0	U	40.0	P	02/19/2025	17:36	LB134756
	Zinc	40.0	+/-40.0	U	40.0	P	02/19/2025	17:36	LB134756
CCB02	Aluminum	100	+/-100	U	100	P	02/19/2025	18:27	LB134756
	Antimony	50.0	+/-50.0	U	50.0	P	02/19/2025	18:27	LB134756
	Arsenic	20.0	+/-20.0	U	20.0	P	02/19/2025	18:27	LB134756
	Barium	100	+/-100	U	100	P	02/19/2025	18:27	LB134756
	Beryllium	6.00	+/-6.00	U	6.00	P	02/19/2025	18:27	LB134756
	Cadmium	6.00	+/-6.00	U	6.00	P	02/19/2025	18:27	LB134756
	Calcium	2000	+/-2000	U	2000	P	02/19/2025	18:27	LB134756
	Chromium	10.0	+/-10.0	U	10.0	P	02/19/2025	18:27	LB134756
	Cobalt	30.0	+/-30.0	U	30.0	P	02/19/2025	18:27	LB134756
	Copper	20.0	+/-20.0	U	20.0	P	02/19/2025	18:27	LB134756
	Iron	100	+/-100	U	100	P	02/19/2025	18:27	LB134756
	Lead	12.0	+/-12.0	U	12.0	P	02/19/2025	18:27	LB134756
	Magnesium	2000	+/-2000	U	2000	P	02/19/2025	18:27	LB134756
	Manganese	20.0	+/-20.0	U	20.0	P	02/19/2025	18:27	LB134756
	Nickel	40.0	+/-40.0	U	40.0	P	02/19/2025	18:27	LB134756
	Potassium	2000	+/-2000	U	2000	P	02/19/2025	18:27	LB134756
	Selenium	20.0	+/-20.0	U	20.0	P	02/19/2025	18:27	LB134756

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Metals

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INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Nobis Group **SDG No.:** Q1382

Contract: NOBI03 **Lab Code:** CHEM **Case No.:** Q1382 **SAS No.:** Q1382

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB02	Silver	10.0	+/-10.0	U	10.0	P	02/19/2025	18:27	LB134756
	Sodium	2000	+/-2000	U	2000	P	02/19/2025	18:27	LB134756
	Thallium	40.0	+/-40.0	U	40.0	P	02/19/2025	18:27	LB134756
	Vanadium	40.0	+/-40.0	U	40.0	P	02/19/2025	18:27	LB134756
	Zinc	40.0	+/-40.0	U	40.0	P	02/19/2025	18:27	LB134756
CCB03	Aluminum	100	+/-100	U	100	P	02/19/2025	19:13	LB134756
	Antimony	50.0	+/-50.0	U	50.0	P	02/19/2025	19:13	LB134756
	Arsenic	20.0	+/-20.0	U	20.0	P	02/19/2025	19:13	LB134756
	Barium	100	+/-100	U	100	P	02/19/2025	19:13	LB134756
	Beryllium	6.00	+/-6.00	U	6.00	P	02/19/2025	19:13	LB134756
	Cadmium	6.00	+/-6.00	U	6.00	P	02/19/2025	19:13	LB134756
	Calcium	2000	+/-2000	U	2000	P	02/19/2025	19:13	LB134756
	Chromium	10.0	+/-10.0	U	10.0	P	02/19/2025	19:13	LB134756
	Cobalt	30.0	+/-30.0	U	30.0	P	02/19/2025	19:13	LB134756
	Copper	20.0	+/-20.0	U	20.0	P	02/19/2025	19:13	LB134756
	Iron	100	+/-100	U	100	P	02/19/2025	19:13	LB134756
	Lead	12.0	+/-12.0	U	12.0	P	02/19/2025	19:13	LB134756
	Magnesium	2000	+/-2000	U	2000	P	02/19/2025	19:13	LB134756
	Manganese	20.0	+/-20.0	U	20.0	P	02/19/2025	19:13	LB134756
	Nickel	40.0	+/-40.0	U	40.0	P	02/19/2025	19:13	LB134756
	Potassium	2000	+/-2000	U	2000	P	02/19/2025	19:13	LB134756
	Selenium	20.0	+/-20.0	U	20.0	P	02/19/2025	19:13	LB134756
	Silver	10.0	+/-10.0	U	10.0	P	02/19/2025	19:13	LB134756
	Sodium	2000	+/-2000	U	2000	P	02/19/2025	19:13	LB134756
	Thallium	40.0	+/-40.0	U	40.0	P	02/19/2025	19:13	LB134756
	Vanadium	40.0	+/-40.0	U	40.0	P	02/19/2025	19:13	LB134756
	Zinc	40.0	+/-40.0	U	40.0	P	02/19/2025	19:13	LB134756
CCB04	Aluminum	100	+/-100	U	100	P	02/19/2025	19:34	LB134756
	Antimony	50.0	+/-50.0	U	50.0	P	02/19/2025	19:34	LB134756
	Arsenic	20.0	+/-20.0	U	20.0	P	02/19/2025	19:34	LB134756
	Barium	100	+/-100	U	100	P	02/19/2025	19:34	LB134756
	Beryllium	6.00	+/-6.00	U	6.00	P	02/19/2025	19:34	LB134756
	Cadmium	6.00	+/-6.00	U	6.00	P	02/19/2025	19:34	LB134756
	Calcium	2000	+/-2000	U	2000	P	02/19/2025	19:34	LB134756
	Chromium	10.0	+/-10.0	U	10.0	P	02/19/2025	19:34	LB134756
	Cobalt	30.0	+/-30.0	U	30.0	P	02/19/2025	19:34	LB134756
	Copper	20.0	+/-20.0	U	20.0	P	02/19/2025	19:34	LB134756
	Iron	100	+/-100	U	100	P	02/19/2025	19:34	LB134756
	Lead	12.0	+/-12.0	U	12.0	P	02/19/2025	19:34	LB134756

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Metals

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INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Nobis Group **SDG No.:** Q1382

Contract: NOBI03 **Lab Code:** CHEM **Case No.:** Q1382 **SAS No.:** Q1382

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB04	Magnesium	2000	+/-2000	U	2000	P	02/19/2025	19:34	LB134756
	Manganese	20.0	+/-20.0	U	20.0	P	02/19/2025	19:34	LB134756
	Nickel	40.0	+/-40.0	U	40.0	P	02/19/2025	19:34	LB134756
	Potassium	2000	+/-2000	U	2000	P	02/19/2025	19:34	LB134756
	Selenium	20.0	+/-20.0	U	20.0	P	02/19/2025	19:34	LB134756
	Silver	10.0	+/-10.0	U	10.0	P	02/19/2025	19:34	LB134756
	Sodium	2000	+/-2000	U	2000	P	02/19/2025	19:34	LB134756
	Thallium	40.0	+/-40.0	U	40.0	P	02/19/2025	19:34	LB134756
	Vanadium	40.0	+/-40.0	U	40.0	P	02/19/2025	19:34	LB134756
	Zinc	40.0	+/-40.0	U	40.0	P	02/19/2025	19:34	LB134756

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Metals
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PREPARATION BLANK SUMMARY

Client: Nobis Group **SDG No.:** Q1382

Instrument: CV1

Sample ID	Analyte	Result (mg/Kg)	Acceptance Limit	Conc Qual	LOD mg/Kg	CRQL mg/Kg	M	Analysis Date	Analysis Time	Run
PB166830BL		**SOLID**		**Batch Number:**		**PB166830**		**Prep Date:**	**02/20/2025**	
	Mercury	0.013	<0.013	U	0.010	0.013	CV	02/21/2025	14:12	LB134771

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Metals
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PREPARATION BLANK SUMMARY

Client: Nobis Group **SDG No.:** Q1382

Instrument: P4

Sample ID	Analyte	Result (mg/Kg)	Acceptance Limit	Conc Qual	LOD mg/Kg	CRQL mg/Kg	M	Analysis Date	Analysis Time	Run
PB166760BL		**SOLID**		**Batch Number:**		**PB166760**		**Prep Date:**	**02/18/2025**	
	Aluminum	4.78	<4.78	U	3.83	4.78	P	02/19/2025	17:41	LB134756
	Antimony	2.39	<2.39	U	0.60	2.39	P	02/19/2025	17:41	LB134756
	Arsenic	0.96	<0.96	U	0.77	0.96	P	02/19/2025	17:41	LB134756
	Barium	4.78	<4.78	U	1.20	4.78	P	02/19/2025	17:41	LB134756
	Beryllium	0.29	<0.29	U	0.072	0.29	P	02/19/2025	17:41	LB134756
	Cadmium	0.29	<0.29	U	0.072	0.29	P	02/19/2025	17:41	LB134756
	Calcium	95.7	<95.7	U	23.9	95.7	P	02/19/2025	17:41	LB134756
	Chromium	0.48	<0.48	U	0.12	0.48	P	02/19/2025	17:41	LB134756
	Cobalt	1.44	<1.44	U	0.36	1.44	P	02/19/2025	17:41	LB134756
	Copper	0.96	<0.96	U	0.77	0.96	P	02/19/2025	17:41	LB134756
	Iron	4.78	<4.78	U	3.83	4.78	P	02/19/2025	17:41	LB134756
	Lead	0.57	<0.57	U	0.46	0.57	P	02/19/2025	17:41	LB134756
	Magnesium	95.7	<95.7	U	23.9	95.7	P	02/19/2025	17:41	LB134756
	Manganese	0.96	<0.96	U	0.24	0.96	P	02/19/2025	17:41	LB134756
	Nickel	1.91	<1.91	U	0.48	1.91	P	02/19/2025	17:41	LB134756
	Potassium	95.7	<95.7	U	76.6	95.7	P	02/19/2025	17:41	LB134756
	Selenium	0.96	<0.96	U	0.77	0.96	P	02/19/2025	17:41	LB134756
	Silver	0.48	<0.48	U	0.24	0.48	P	02/19/2025	17:41	LB134756
	Sodium	95.7	<95.7	U	76.6	95.7	P	02/19/2025	17:41	LB134756
	Thallium	1.91	<1.91	U	0.96	1.91	P	02/19/2025	17:41	LB134756
	Vanadium	1.91	<1.91	U	0.96	1.91	P	02/19/2025	17:41	LB134756
	Zinc	1.91	<1.91	U	0.48	1.91	P	02/19/2025	17:41	LB134756

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Metals
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INTERFERENCE CHECK SAMPLE

Client: Nobis Group **SDG No.:** Q1382

Contract: NOBI03 **Lab Code:** CHEM **Case No.:** Q1382 **SAS No.:** Q1382

ICS Source: EPA **Instrument ID:** P4

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Low Limit (ug/L)	High Limit (ug/L)	Analysis Date	Analysis Time	Run Number
ICSA01	Aluminum	240000	255000	94	216000	294000	02/19/2025	17:24	LB134756
	Antimony	-0.25			-50	50	02/19/2025	17:24	LB134756
	Arsenic	-2.70			-20	20	02/19/2025	17:24	LB134756
	Barium	6.50	6.0	108	-94	106	02/19/2025	17:24	LB134756
	Beryllium	1.29			-6	6	02/19/2025	17:24	LB134756
	Cadmium	-1.03	1.0	103	-5	7	02/19/2025	17:24	LB134756
	Calcium	228000	245000	93	208000	282000	02/19/2025	17:24	LB134756
	Chromium	56.9	52.0	109	42	62	02/19/2025	17:24	LB134756
	Cobalt	1.33			-30	30	02/19/2025	17:24	LB134756
	Copper	12.3	2.0	615	-18	22	02/19/2025	17:24	LB134756
	Iron	97900	101000	97	85600	116500	02/19/2025	17:24	LB134756
	Lead	5.03			-12	12	02/19/2025	17:24	LB134756
	Magnesium	242000	255000	95	216000	294000	02/19/2025	17:24	LB134756
	Manganese	4.24	7.0	61	-13	27	02/19/2025	17:24	LB134756
	Nickel	2.56	2.0	128	-38	42	02/19/2025	17:24	LB134756
	Potassium	-16.8			0	0	02/19/2025	17:24	LB134756
	Selenium	-15.4			-20	20	02/19/2025	17:24	LB134756
	Silver	-7.36			-10	10	02/19/2025	17:24	LB134756
	Sodium	38.7			0	0	02/19/2025	17:24	LB134756
	Thallium	9.10			-40	40	02/19/2025	17:24	LB134756
	Vanadium	7.33			-40	40	02/19/2025	17:24	LB134756
	Zinc	2.24			-40	40	02/19/2025	17:24	LB134756
ICSAB01	Aluminum	242000	247000	98	209000	285000	02/19/2025	17:28	LB134756
	Antimony	623	618	101	525	711	02/19/2025	17:28	LB134756
	Arsenic	114	104	110	88.4	120	02/19/2025	17:28	LB134756
	Barium	482	537	90	437	637	02/19/2025	17:28	LB134756
	Beryllium	464	495	94	420	570	02/19/2025	17:28	LB134756
	Cadmium	1020	972	105	826	1120	02/19/2025	17:28	LB134756
	Calcium	230000	235000	98	199000	271000	02/19/2025	17:28	LB134756
	Chromium	576	542	106	460	624	02/19/2025	17:28	LB134756
	Cobalt	511	476	107	404	548	02/19/2025	17:28	LB134756
	Copper	499	511	98	434	588	02/19/2025	17:28	LB134756
	Iron	105000	99300	106	84400	114500	02/19/2025	17:28	LB134756
	Lead	55.7	49.0	114	37	61	02/19/2025	17:28	LB134756
	Magnesium	243000	248000	98	210000	286000	02/19/2025	17:28	LB134756
	Manganese	469	507	92	430	584	02/19/2025	17:28	LB134756
	Nickel	1010	954	106	810	1100	02/19/2025	17:28	LB134756
	Potassium	-21.7			0	0	02/19/2025	17:28	LB134756
	Selenium	36.9	46.0	80	26	66	02/19/2025	17:28	LB134756
	Silver	215	201	107	170	232	02/19/2025	17:28	LB134756
	Sodium	70.5			0	0	02/19/2025	17:28	LB134756
	Thallium	99.1	108	92	68	148	02/19/2025	17:28	LB134756

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Metals
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INTERFERENCE CHECK SAMPLE

Client: Nobis Group **SDG No.:** Q1382

Contract: NOBI03 **Lab Code:** CHEM **Case No.:** Q1382 **SAS No.:** Q1382

ICS Source: EPA **Instrument ID:** P4

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Low Limit (ug/L)	High Limit (ug/L)	Analysis Date	Analysis Time	Run Number
ICSAB01	Vanadium	466	491	95	417	565	02/19/2025	17:28	LB134756
	Zinc	1050	952	110	809	1095	02/19/2025	17:28	LB134756

METAL QC DATA

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MATRIX SPIKE SUMMARY

client: Nobis Group **level:** low **sdg no.:** Q1382

contract: NOBI03 **lab code:** CHEM **case no.:** Q1382 **sas no.:** Q1382

matrix: Solid **sample id:** Q1384-01 **client id:** OR-03-021823025MS

Percent Solids for Sample: 88.6 **Spiked ID:** Q1384-01MS **Percent Solids for Spike Sample:** 88.6

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Aluminum	mg/Kg	74 - 119	5210		4950		100	261		P
Antimony	mg/Kg	79 - 114	5.76		2.50	U	40.7	14	N	P
Arsenic	mg/Kg	82 - 111	35.7		0.91	J	40.7	86		P
Barium	mg/Kg	83 - 113	37.5		22.3		10.2	150	N	P
Beryllium	mg/Kg	83 - 113	7.98		0.31		10.2	75	N	P
Cadmium	mg/Kg	82 - 113	9.51		0.30	U	10.2	93		P
Calcium	mg/Kg	81 - 116	3000		3290		50.8	-560		P
Chromium	mg/Kg	85 - 113	25.9		7.64		20.3	90		P
Cobalt	mg/Kg	85 - 112	16.4		5.00		10.2	111		P
Copper	mg/Kg	81 - 117	29.4		15.2		15.3	93		P
Iron	mg/Kg	81 - 118	8430		8480		150	-34		P
Lead	mg/Kg	81 - 112	57.7		16.2		50.8	82		P
Magnesium	mg/Kg	78 - 115	1950		2210		100	-267		P
Manganese	mg/Kg	84 - 114	178		179		10.2	-10		P
Nickel	mg/Kg	83 - 113	33.8		9.50		25.4	96		P
Potassium	mg/Kg	81 - 116	922		515		510	80	N	P
Selenium	mg/Kg	78 - 111	74.7		1.00	U	100	75	N	P
Silver	mg/Kg	82 - 112	2.86		0.50	U	3.8	75	N	P
Sodium	mg/Kg	83 - 118	723		592		150	87		P
Thallium	mg/Kg	83 - 111	92.5		2.00	U	100	92		P
Vanadium	mg/Kg	82 - 114	24.0		14.8		15.3	60	N	P
Zinc	mg/Kg	82 - 113	36.4		21.0		10.2	151	N	P

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metals
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MATRIX SPIKE DUPLICATE SUMMARY

client: Nobis Group **level:** low **sdg no.:** Q1382

contract: NOBI03 **lab code:** CHEM **case no.:** Q1382 **sas no.:** Q1382

matrix: Solid **sample id:** Q1384-01 **client id:** OR-03-021823025MSD

Percent Solids for Sample: 88.6 **Spiked ID:** Q1384-01MSD **Percent Solids for Spike Sample:** 88.6

Analyte	Units	Acceptance Limit %R	MSD Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Aluminum	mg/Kg	74 - 119	5120		4950		99.0	171		P
Antimony	mg/Kg	79 - 114	5.81		2.50	U	39.6	15	N	P
Arsenic	mg/Kg	82 - 111	34.5		0.91	J	39.6	85		P
Barium	mg/Kg	83 - 113	37.8		22.3		9.9	157	N	P
Beryllium	mg/Kg	83 - 113	7.64		0.31		9.9	74	N	P
Cadmium	mg/Kg	82 - 113	9.16		0.30	U	9.9	92		P
Calcium	mg/Kg	81 - 116	2950		3290		49.5	-681		P
Chromium	mg/Kg	85 - 113	25.1		7.64		19.8	88		P
Cobalt	mg/Kg	85 - 112	15.8		5.00		9.9	110		P
Copper	mg/Kg	81 - 117	28.3		15.2		14.9	88		P
Iron	mg/Kg	81 - 118	8390		8480		150	-59		P
Lead	mg/Kg	81 - 112	56.0		16.2		49.5	80	N	P
Magnesium	mg/Kg	78 - 115	1920		2210		99.0	-296		P
Manganese	mg/Kg	84 - 114	175		179		9.9	-39		P
Nickel	mg/Kg	83 - 113	32.6		9.50		24.8	93		P
Potassium	mg/Kg	81 - 116	924		515		500	82		P
Selenium	mg/Kg	78 - 111	71.9		1.00	U	99.0	73	N	P
Silver	mg/Kg	82 - 112	2.77		0.50	U	3.7	75	N	P
Sodium	mg/Kg	83 - 118	716		592		150	83		P
Thallium	mg/Kg	83 - 111	90.2		2.00	U	99.0	91		P
Vanadium	mg/Kg	82 - 114	23.8		14.8		14.9	60	N	P
Zinc	mg/Kg	82 - 113	34.5		21.0		9.9	136	N	P

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metals
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MATRIX SPIKE SUMMARY

client: Nobis Group **level:** low **sdg no.:** Q1382

contract: NOBI03 **lab code:** CHEM **case no.:** Q1382 **sas no.:** Q1382

matrix: Solid **sample id:** Q1388-01 **client id:** 72-12016MS

Percent Solids for Sample: 91.5 **Spiked ID:** Q1388-01MS **Percent Solids for Spike Sample:** 91.5

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Mercury	mg/Kg	80 - 124	0.25		0.015		0.27	88		CV

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metals
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MATRIX SPIKE DUPLICATE SUMMARY

client: Nobis Group **level:** low **sdg no.:** Q1382

contract: NOBI03 **lab code:** CHEM **case no.:** Q1382 **sas no.:** Q1382

matrix: Solid **sample id:** Q1388-01 **client id:** 72-12016MSD

Percent Solids for Sample: 91.5 **Spiked ID:** Q1388-01MSD **Percent Solids for Spike Sample:** 91.5

Analyte	Units	Acceptance Limit %R	MSD Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Mercury	mg/Kg	80 - 124	0.30		0.015		0.29	98		CV

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Metals
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POST DIGEST SPIKE SUMMARY

Client: Nobis Group **SDG No.:** Q1382

Contract: NOBI03 **Lab Code:** CHEM **Case No.:** Q1382 **SAS No.:** Q1382

Matrix: Solid **Level:** LOW **Client ID:** OR-03-021823025A

Sample ID: Q1384-01 **Spiked ID:** Q1384-01A

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Antimony	mg/Kg	79 - 114	5.97		2.50	U	40.0	15		P
Barium	mg/Kg	83 - 113	36.2		22.3		10.0	139		P
Beryllium	mg/Kg	83 - 113	8.69		0.31		10.0	84		P
Lead	mg/Kg	81 - 112	57.4		16.2		49.9	83		P
Potassium	mg/Kg	81 - 116	799		515		500	57		P
Selenium	mg/Kg	78 - 111	74.4		1.00	U	99.9	74		P
Silver	mg/Kg	82 - 112	2.66		0.50	U	3.70	72		P
Vanadium	mg/Kg	82 - 114	23.7		14.8		15.0	59		P
Zinc	mg/Kg	82 - 113	34.8		21.0		10.0	138		P

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Metals

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DUPLICATE SAMPLE SUMMARY

Client: Nobis Group **Level:** LOW **SDG No.:** Q1382

Contract: NOBI03 **Lab Code:** CHEM **Case No.:** Q1382 **SAS No.:** Q1382

Matrix: Solid **Sample ID:** Q1384-01 **Client ID:** OR-03-021823025DUP

Percent Solids for Sample: 88.6 **Duplicate ID** Q1384-01DUP **Percent Solids for Spike Sample:** 88.6

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Aluminum	mg/Kg	20	4950		5180		5		P
Antimony	mg/Kg	20	2.50	U	2.60	U			P
Arsenic	mg/Kg	20	0.91	J	1.05		14		P
Barium	mg/Kg	20	22.3		23.7		6		P
Beryllium	mg/Kg	20	0.31		0.31		1		P
Cadmium	mg/Kg	20	0.30	U	0.31	U			P
Calcium	mg/Kg	20	3290		3430		4		P
Chromium	mg/Kg	20	7.64		7.97		4		P
Cobalt	mg/Kg	20	5.00		5.20		4		P
Copper	mg/Kg	20	15.2		15.6		3		P
Iron	mg/Kg	20	8480		9050		7		P
Lead	mg/Kg	20	16.2		16.9		4		P
Magnesium	mg/Kg	20	2210		2330		5		P
Manganese	mg/Kg	20	179		186		4		P
Nickel	mg/Kg	20	9.50		9.85		4		P
Potassium	mg/Kg	20	515		563		9		P
Selenium	mg/Kg	20	1.00	U	1.04	U			P
Silver	mg/Kg	20	0.50	U	0.52	U			P
Sodium	mg/Kg	20	592		636		7		P
Thallium	mg/Kg	20	2.00	U	2.08	U			P
Vanadium	mg/Kg	20	14.8		15.6		5		P
Zinc	mg/Kg	20	21.0		21.0		0		P

"A control limit of ±20% RPD for each matrix applies for sample values greater than 10 times Detection Limit"

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Metals

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DUPLICATE SAMPLE SUMMARY

Client: Nobis Group **Level:** LOW **SDG No.:** Q1382

Contract: NOBI03 **Lab Code:** CHEM **Case No.:** Q1382 **SAS No.:** Q1382

Matrix: Solid **Sample ID:** Q1384-01MS **Client ID:** OR-03-021823025MSD

Percent Solids for Sample: 88.6 **Duplicate ID** Q1384-01MSD **Percent Solids for Spike Sample:** 88.6

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Aluminum	mg/Kg	20	5210		5120		2		P
Antimony	mg/Kg	20	5.76		5.81		1		P
Arsenic	mg/Kg	20	35.7		34.5		3		P
Barium	mg/Kg	20	37.5		37.8		1		P
Beryllium	mg/Kg	20	7.98		7.64		4		P
Cadmium	mg/Kg	20	9.51		9.16		4		P
Calcium	mg/Kg	20	3000		2950		2		P
Chromium	mg/Kg	20	25.9		25.1		3		P
Cobalt	mg/Kg	20	16.4		15.8		4		P
Copper	mg/Kg	20	29.4		28.3		4		P
Iron	mg/Kg	20	8430		8390		0		P
Lead	mg/Kg	20	57.7		56.0		3		P
Magnesium	mg/Kg	20	1950		1920		2		P
Manganese	mg/Kg	20	178		175		2		P
Nickel	mg/Kg	20	33.8		32.6		4		P
Potassium	mg/Kg	20	922		924		0		P
Selenium	mg/Kg	20	74.7		71.9		4		P
Silver	mg/Kg	20	2.86		2.77		3		P
Sodium	mg/Kg	20	723		716		1		P
Thallium	mg/Kg	20	92.5		90.2		3		P
Vanadium	mg/Kg	20	24.0		23.8		1		P
Zinc	mg/Kg	20	36.4		34.5		5		P

"A control limit of ±20% RPD for each matrix applies for sample values greater than 10 times Detection Limit"

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DUPLICATE SAMPLE SUMMARY

Client: Nobis Group **Level:** LOW **SDG No.:** Q1382

Contract: NOBI03 **Lab Code:** CHEM **Case No.:** Q1382 **SAS No.:** Q1382

Matrix: Solid **Sample ID:** Q1388-01 **Client ID:** 72-12016DUP

Percent Solids for Sample: 91.5 **Duplicate ID** Q1388-01DUP **Percent Solids for Spike Sample:** 91.5

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Mercury	mg/Kg	20	0.015		0.013		14		CV

"A control limit of ±20% RPD for each matrix applies for sample values greater than 10 times Detection Limit"

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DUPLICATE SAMPLE SUMMARY

Client: Nobis Group **Level:** LOW **SDG No.:** Q1382

Contract: NOBI03 **Lab Code:** CHEM **Case No.:** Q1382 **SAS No.:** Q1382

Matrix: Solid **Sample ID:** Q1388-01MS **Client ID:** 72-12016MSD

Percent Solids for Sample: 91.5 **Duplicate ID** Q1388-01MSD **Percent Solids for Spike Sample:** 91.5

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Mercury	mg/Kg	20	0.25		0.30		17		CV

"A control limit of ±20% RPD for each matrix applies for sample values greater than 10 times Detection Limit"

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LABORATORY CONTROL SAMPLE SUMMARY

Client: Nobis Group **SDG No.:** Q1382

Contract: NOBI03 **Lab Code:** CHEM **Case No.:** Q1382 **SAS No.:** Q1382

Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limits	M
PB166760BS							
Aluminum	mg/Kg	88.9	83.4		94	74 - 119	P
Antimony	mg/Kg	35.6	34.9		98	79 - 114	P
Arsenic	mg/Kg	35.6	35.8		101	82 - 111	P
Barium	mg/Kg	8.9	8.65		97	83 - 113	P
Beryllium	mg/Kg	8.9	8.31		93	83 - 113	P
Cadmium	mg/Kg	8.9	8.71		98	82 - 113	P
Calcium	mg/Kg	44.4	42.9	J	97	81 - 116	P
Chromium	mg/Kg	17.8	18.0		101	85 - 113	P
Cobalt	mg/Kg	8.9	8.72		98	85 - 112	P
Copper	mg/Kg	13.3	13.7		103	81 - 117	P
Iron	mg/Kg	130	136		105	81 - 118	P
Lead	mg/Kg	44.4	43.8		99	81 - 112	P
Magnesium	mg/Kg	88.9	82.5	J	93	78 - 115	P
Manganese	mg/Kg	8.9	8.65		97	84 - 114	P
Nickel	mg/Kg	22.2	22.0		99	83 - 113	P
Potassium	mg/Kg	440	444		101	81 - 116	P
Selenium	mg/Kg	88.9	87.4		98	78 - 111	P
Silver	mg/Kg	3.3	3.37		102	82 - 112	P
Sodium	mg/Kg	130	137		105	83 - 118	P
Thallium	mg/Kg	88.9	89.5		101	83 - 111	P
Vanadium	mg/Kg	13.3	12.7		96	82 - 114	P
Zinc	mg/Kg	8.9	8.91		100	82 - 113	P

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LABORATORY CONTROL SAMPLE SUMMARY

Client: Nobis Group **SDG No.:** Q1382

Contract: NOBI03 **Lab Code:** CHEM **Case No.:** Q1382 **SAS No.:** Q1382

Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limits	M
PB166830BS							
Mercury	mg/Kg	0.25	0.24		95	80 - 124	CV

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ICP SERIAL DILUTIONS

SAMPLE NO.

OR-03-021823025L

Lab Name: Chemtech Consulting Group **Contract:** NOBI03

Lab Code: CHEM **Lb No.:** lb134756 **Lab Sample ID :** Q1384-01L **SDG No.:** Q1382

Matrix (soil/water): Solid **Level (low/med):** LOW

Concentration Units: mg/Kg

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	4950		5630		14		P
Antimony	2.50	U	12.5	U			P
Arsenic	0.91	J	4.99	U	100.0		P
Barium	22.3		25.0		12		P
Beryllium	0.31		0.41	J	32		P
Cadmium	0.30	U	1.50	U			P
Calcium	3290		3830		17		P
Chromium	7.64		8.81		15		P
Cobalt	5.00		5.05	J	1		P
Copper	15.2		19.0		25		P
Iron	8480		9190		8		P
Lead	16.2		17.1		5		P
Magnesium	2210		2600		18		P
Manganese	179		210		17		P
Nickel	9.50		9.81	J	3		P
Potassium	515		541		5		P
Selenium	1.00	U	4.99	U			P
Silver	0.50	U	2.50	U			P
Sodium	592		607		2		P
Thallium	2.00	U	9.99	U			P
Vanadium	14.8		17.5		18		P
Zinc	21.0		23.3		11		P

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ICP SERIAL DILUTIONS

SAMPLE NO.

72-12016L

Lab Name: Chemtech Consulting Group **Contract:** NOBI03

Lab Code: CHEM **Lb No.:** lb134771 **Lab Sample ID :** Q1388-01L **SDG No.:** Q1382

Matrix (soil/water): Solid **Level (low/med):** LOW

Concentration Units: mg/Kg

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Mercury	0.015		0.071	U	100.0		CV

METAL PREPARATION & INSTRUMENT DATA

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ICP INTERELEMENT CORRECTION FACTORS

Client: Nobis Group **SDG No.:** Q1382

Contract: NOBI03 **Lab Code:** CHEM **Case No.:** Q1382 **SAS No.:** Q1382

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

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

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ICP INTERELEMENT CORRECTION FACTORS

Client: Nobis Group **SDG No.:** Q1382

Contract: NOBI03 **Lab Code:** CHEM **Case No.:** Q1382 **SAS No.:** Q1382

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

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

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ICP INTERELEMENT CORRECTION FACTORS

Client: Nobis Group **SDG No.:** Q1382

Contract: NOBI03 **Lab Code:** CHEM **Case No.:** Q1382 **SAS No.:** Q1382

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

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

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ICP INTERELEMENT CORRECTION FACTORS

Client: Nobis Group **SDG No.:** Q1382

Contract: NOBI03 **Lab Code:** CHEM **Case No.:** Q1382 **SAS No.:** Q1382

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

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

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ICP INTERELEMENT CORRECTION FACTORS

Client: Nobis Group **SDG No.:** Q1382

Contract: NOBI03 **Lab Code:** CHEM **Case No.:** Q1382 **SAS No.:** Q1382

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

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

METAL PREPARATION & ANALYICAL SUMMARY

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Fax : 908 789 8922

Metals
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SAMPLE PREPARATION SUMMARY

Client: Nobis Group **SDG No.:** Q1382

Contract: NOBI03 **Lab Code:** CHEM **Method:**

Case No.: Q1382 **SAS No.:** Q1382

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(g)	Final Sample Volume (mL)	Percent Solids
Batch Number:	**PB166760**						
PB166760BL	PB166760BL	MB	SOLID	02/18/2025	2.09	100.0	100.00
PB166760BS	PB166760BS	LCS	SOLID	02/18/2025	2.25	100.0	100.00
Q1382-01	OU4-PCS-TC-01-021725	SAM	SOLID	02/18/2025	2.37	100.0	91.90
Q1382-03	OU4-PCS-TC-02-021725	SAM	SOLID	02/18/2025	2.14	100.0	91.70
Q1382-05	OU4-PCS-TC-03-021725	SAM	SOLID	02/18/2025	2.24	100.0	92.40
Q1382-07	OU4-PCS-TC-04-021725	SAM	SOLID	02/18/2025	2.28	100.0	92.50
Q1382-09	OU4-PCS-TC-05-021725	SAM	SOLID	02/18/2025	2.20	100.0	92.00
Q1382-11	OU4-PCS-TC-06-021725	SAM	SOLID	02/18/2025	2.15	100.0	92.20
Q1382-13	OU4-PCS-TC-07-021725	SAM	SOLID	02/18/2025	2.18	100.0	92.20
Q1382-15	OU4-PCS-TC-08-021725	SAM	SOLID	02/18/2025	2.09	100.0	92.60
Q1382-17	OU4-PCS-TC-09-021725	SAM	SOLID	02/18/2025	2.11	100.0	92.60
Q1382-19	OU4-PCS-TC-10-021725	SAM	SOLID	02/18/2025	2.10	100.0	93.40
Q1384-01DUP	OR-03-021823025DUP	DUP	SOLID	02/18/2025	2.17	100.0	88.60
Q1384-01MS	OR-03-021823025MS	MS	SOLID	02/18/2025	2.22	100.0	88.60
Q1384-01MSD	OR-03-021823025MSD	MSD	SOLID	02/18/2025	2.28	100.0	88.60

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Metals
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SAMPLE PREPARATION SUMMARY

Client: Nobis Group **SDG No.:** Q1382

Contract: NOBI03 **Lab Code:** CHEM **Method:**

Case No.: Q1382 **SAS No.:** Q1382

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(g)	Final Sample Volume (mL)	Percent Solids
Batch Number:	**PB166830**						
PB166830BL	PB166830BL	MB	SOLID	02/20/2025	0.54	35.0	100.00
PB166830BS	PB166830BS	LCS	SOLID	02/20/2025	0.56	35.0	100.00
Q1382-01	OU4-PCS-TC-01-021725	SAM	SOLID	02/20/2025	0.52	35.0	91.90
Q1382-03	OU4-PCS-TC-02-021725	SAM	SOLID	02/20/2025	0.59	35.0	91.70
Q1382-05	OU4-PCS-TC-03-021725	SAM	SOLID	02/20/2025	0.50	35.0	92.40
Q1382-07	OU4-PCS-TC-04-021725	SAM	SOLID	02/20/2025	0.58	35.0	92.50
Q1382-09	OU4-PCS-TC-05-021725	SAM	SOLID	02/20/2025	0.60	35.0	92.00
Q1382-11	OU4-PCS-TC-06-021725	SAM	SOLID	02/20/2025	0.52	35.0	92.20
Q1382-13	OU4-PCS-TC-07-021725	SAM	SOLID	02/20/2025	0.58	35.0	92.20
Q1382-15	OU4-PCS-TC-08-021725	SAM	SOLID	02/20/2025	0.55	35.0	92.60
Q1382-17	OU4-PCS-TC-09-021725	SAM	SOLID	02/20/2025	0.55	35.0	92.60
Q1382-19	OU4-PCS-TC-10-021725	SAM	SOLID	02/20/2025	0.53	35.0	93.40
Q1388-01DUP	72-12016DUP	DUP	SOLID	02/20/2025	0.59	35.0	91.50
Q1388-01MS	72-12016MS	MS	SOLID	02/20/2025	0.56	35.0	91.50
Q1388-01MSD	72-12016MSD	MSD	SOLID	02/20/2025	0.53	35.0	91.50

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metals
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ANALYSIS RUN LOG

Client: Nobis Group **Contract:** NOBI03

Lab code: CHEM **Case no.:** Q1382 **Sas no.:** Q1382 **Sdg no.:** Q1382

Instrument id number: **Method:** **Run number:** LB134756

Start date: 02/19/2025 **End date:** 02/19/2025

Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	1259	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
S1	S1	1	1303	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
S2	S2	1	1308	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
S3	S3	1	1312	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
S4	S4	1	1316	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
S5	S5	1	1320	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
ICV01	ICV01	1	1650	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
LLICV01	LLICV01	1	1711	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
ICB01	ICB01	1	1715	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CRI01	CRI01	1	1720	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
ICSA01	ICSA01	1	1724	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
ICSAB01	ICSAB01	1	1728	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCV01	CCV01	1	1732	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCB01	CCB01	1	1736	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
PB166760BL	PB166760BL	1	1741	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
PB166760BS	PB166760BS	1	1745	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q1382-01	OU4-PCS-TC-01-021725	1	1749	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q1382-03	OU4-PCS-TC-02-021725	1	1753	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q1382-05	OU4-PCS-TC-03-021725	1	1758	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q1382-07	OU4-PCS-TC-04-021725	1	1802	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q1382-09	OU4-PCS-TC-05-021725	1	1806	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q1382-11	OU4-PCS-TC-06-021725	1	1810	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q1382-13	OU4-PCS-TC-07-021725	1	1814	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q1382-15	OU4-PCS-TC-08-021725	1	1819	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCV02	CCV02	1	1823	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCB02	CCB02	1	1827	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q1382-17	OU4-PCS-TC-09-021725	1	1831	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q1382-19	OU4-PCS-TC-10-021725	1	1836	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q1384-01DUP	OR-03-021823025DUP	1	1844	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q1384-01L	OR-03-021823025L	5	1848	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q1384-01MS	OR-03-021823025MS	1	1852	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q1384-01MSD	OR-03-021823025MSD	1	1856	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
Q1384-01A	OR-03-021823025A	1	1900	Ag,Ba,Be,K,Pb,Sb,Se,V,Zn
CCV03	CCV03	1	1908	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCB03	CCB03	1	1913	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCV04	CCV04	1	1930	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCB04	CCB04	1	1934	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn

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metals
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ANALYSIS RUN LOG

Client: Nobis Group **Contract:** NOBI03

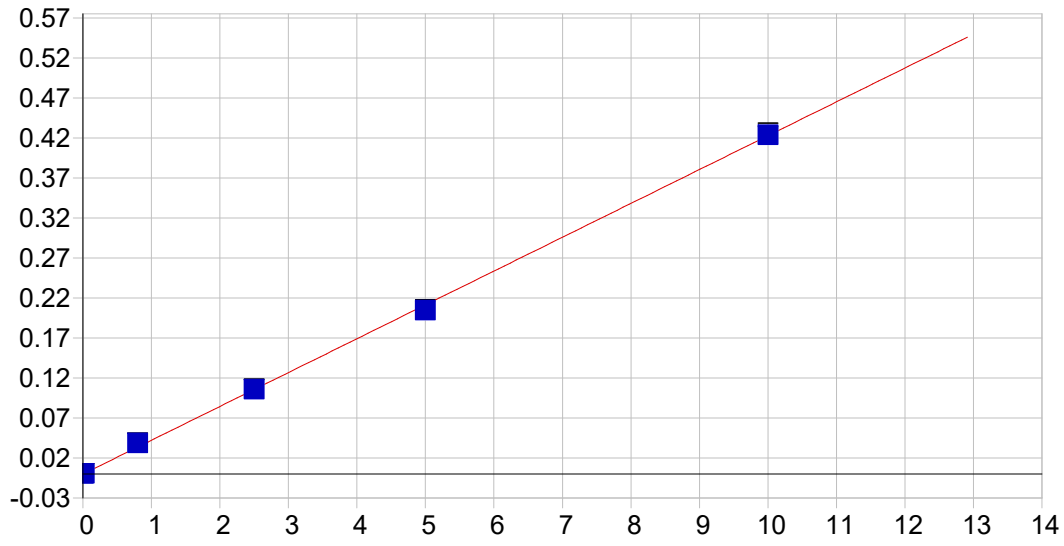
Lab code: CHEM **Case no.:** Q1382 **Sas no.:** Q1382 **Sdg no.:** Q1382

Instrument id number: **Method:** **Run number:** LB134771

Start date: 02/21/2025 **End date:** 02/21/2025

Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	1229	HG
S0.2	S0.2	1	1232	HG
S2.5	S2.5	1	1234	HG
S5	S5	1	1236	HG
S7.5	S7.5	1	1239	HG
S10	S10	1	1241	HG
ICV13	ICV13	1	1252	HG
ICB13	ICB13	1	1254	HG
CCV01	CCV01	1	1256	HG
CCB01	CCB01	1	1301	HG
CRA	CRA	1	1304	HG
CCV02	CCV02	1	1329	HG
CCB02	CCB02	1	1332	HG
CCV03	CCV03	1	1357	HG
CCB03	CCB03	1	1402	HG
PB166830BL	PB166830BL	1	1412	HG
PB166830BS	PB166830BS	1	1415	HG
Q1382-01	OU4-PCS-TC-01-021725	1	1417	HG
Q1382-03	OU4-PCS-TC-02-021725	1	1419	HG
Q1382-05	OU4-PCS-TC-03-021725	1	1422	HG
Q1382-07	OU4-PCS-TC-04-021725	1	1424	HG
Q1382-09	OU4-PCS-TC-05-021725	1	1426	HG
Q1382-11	OU4-PCS-TC-06-021725	1	1428	HG
CCV04	CCV04	1	1431	HG
CCB04	CCB04	1	1433	HG
Q1382-13	OU4-PCS-TC-07-021725	1	1435	HG
Q1382-15	OU4-PCS-TC-08-021725	1	1437	HG
Q1382-17	OU4-PCS-TC-09-021725	1	1440	HG
Q1382-19	OU4-PCS-TC-10-021725	1	1442	HG
Q1388-01DUP	72-12016DUP	1	1454	HG
Q1388-01MS	72-12016MS	1	1456	HG
Q1388-01MSD	72-12016MSD	1	1458	HG
CCV05	CCV05	1	1501	HG
CCB05	CCB05	1	1506	HG
Q1388-01L	72-12016L	5	1517	HG
CCV06	CCV06	1	1522	HG
CCB06	CCB06	1	1524	HG

METAL
RAW DATA

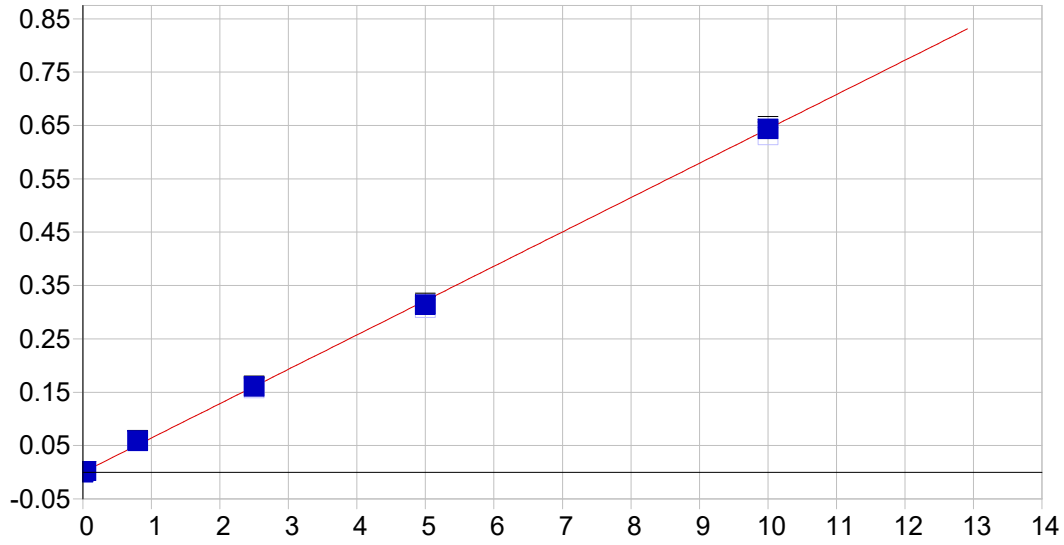


As 189.042 {479}

Date of Fit:	2/19/2025 17:18:18	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000180	Re-Slope:	1.000000
A1 (Gain):	0.042288	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999392	Status:	OK.
Std Error of Est:	0.000035		
Predicted MDL:	0.003430		
Predicted MQL:	0.011433		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00018	.000	1
S1	.02000	.02155	.002	7.75	.00073	.000	1
S3	2.5000	2.5069	.007	.278	.10572	.000	1
S4	5.0000	4.8438	-.156	-3.12	.20443	.001	1
S5	10.000	10.031	.031	.307	.42354	.002	1
S2	.80000	.91706	.117	14.6	.03856	.000	1

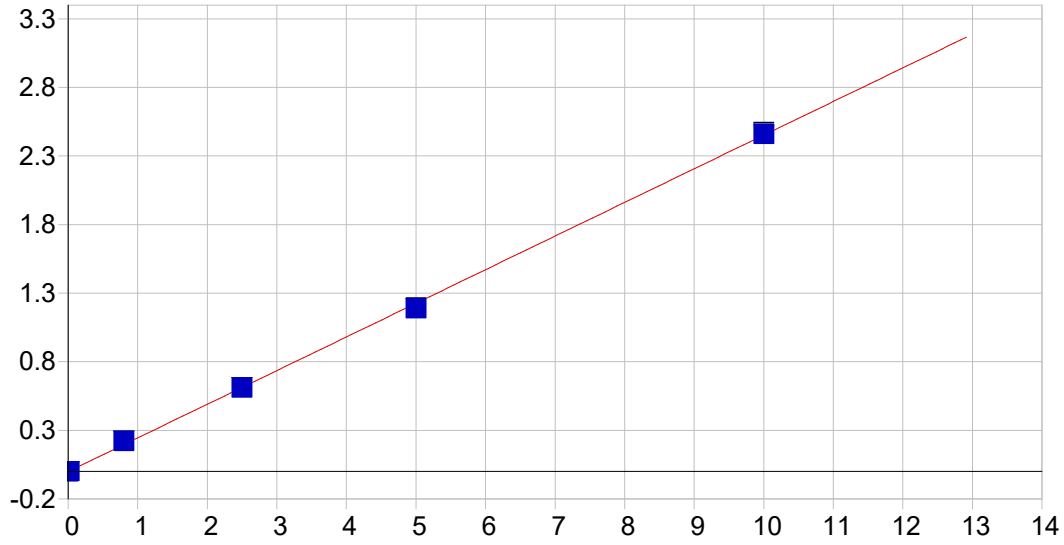


Tl 190.856 {477}

Date of Fit:	2/19/2025 17:18:18	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000143	Re-Slope:	1.000000
A1 (Gain):	0.064372	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999410	Status:	OK.
Std Error of Est:	0.000072		
Predicted MDL:	0.002106		
Predicted MQL:	0.007021		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00014	.000	1
S1	.04000	.03830	-.002	-4.24	.00216	.000	1
S3	2.5000	2.4991	-.001	-.038	.15776	.001	1
S4	5.0000	4.8808	-.119	-2.38	.30812	.003	1
S5	10.000	10.002	.002	.019	.63184	.005	1
S2	.80000	.91982	.120	15.0	.05812	.001	1

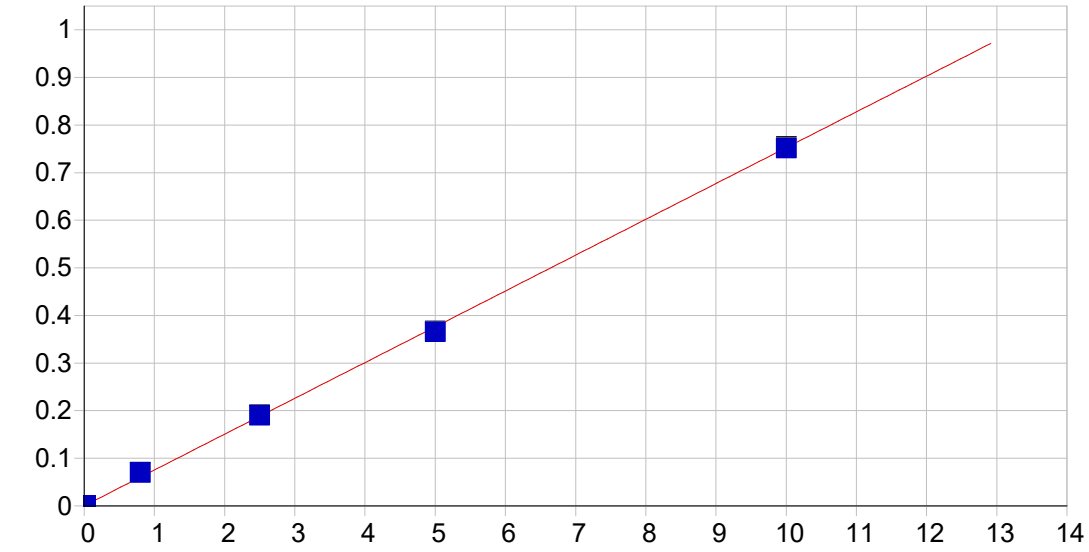


Pb 220.353 {453}

Date of Fit:	2/19/2025 17:18:18	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000156	Re-Slope:	1.000000
A1 (Gain):	0.245225	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999456	Status:	OK.
Std Error of Est:	0.000147		
Predicted MDL:	0.001211		
Predicted MQL:	0.004035		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00016	.000	1
S1	.01200	.01144	-.001	-4.69	.00259	.000	1
S3	2.5000	2.4974	-.003	-.103	.61160	.001	1
S4	5.0000	4.8508	-.149	-2.98	1.1880	.003	1
S5	10.000	10.042	.042	.418	2.4597	.011	1
S2	.80000	.91046	.110	13.8	.22290	.000	1

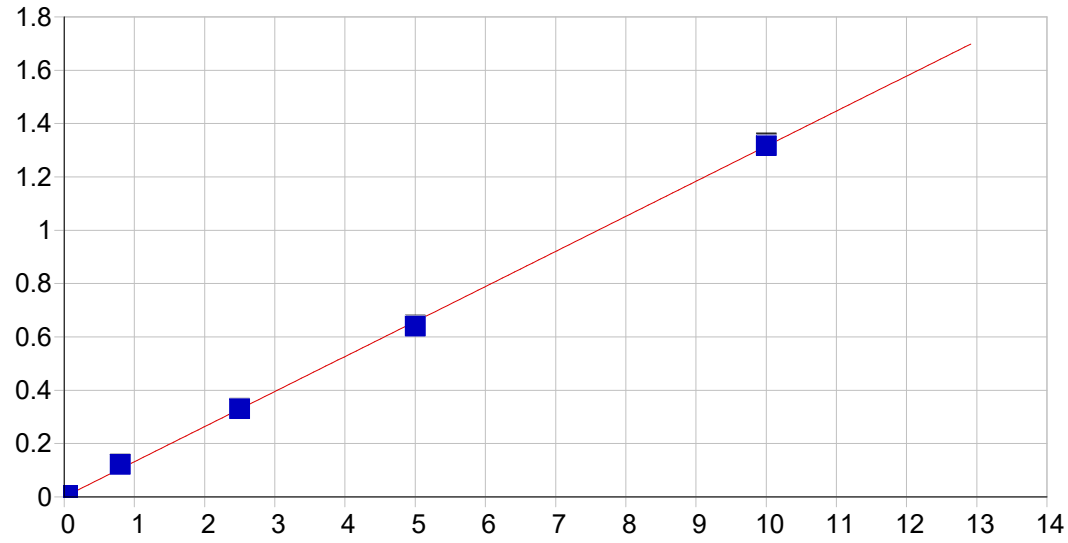


Se 196.090 {472}

Date of Fit:	2/19/2025 17:18:18	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000222	Re-Slope:	1.000000
A1 (Gain):	0.075217	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999300	Status:	OK.
Std Error of Est:	0.000066		
Predicted MDL:	0.002715		
Predicted MQL:	0.009051		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00022	.000	1
S1	.02000	.01945	-.001	-2.75	.00169	.000	1
S3	2.5000	2.5257	.026	1.03	.19015	.001	1
S4	5.0000	4.8568	-.143	-2.86	.36543	.001	1
S5	10.000	9.9877	-.012	-.123	.75126	.003	1
S2	.80000	.93042	.130	16.3	.07019	.000	1

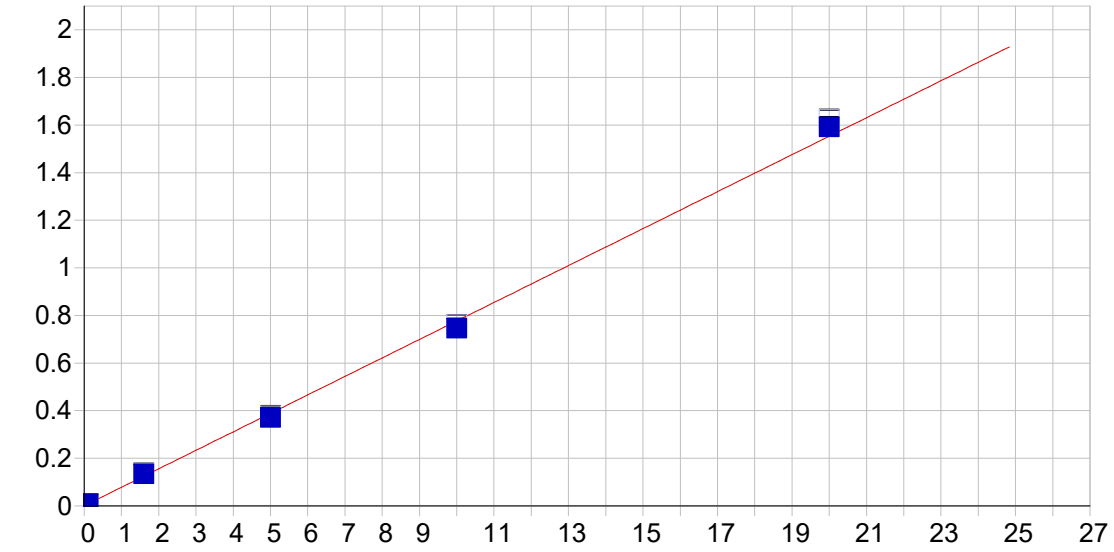


Sb 206.833 {463}

Date of Fit:	2/19/2025 17:18:18	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000393	Re-Slope:	1.000000
A1 (Gain):	0.131464	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999395	Status:	OK.
Std Error of Est:	0.000170		
Predicted MDL:	0.001816		
Predicted MQL:	0.006054		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00001	-.000	.000	.00039	.000	1
S1	.05000	.05160	.002	3.20	.00719	.000	1
S3	2.5000	2.5051	.005	.203	.33061	.002	1
S4	5.0000	4.8625	-.138	-2.75	.64142	.003	1
S5	10.000	10.009	.009	.092	1.3198	.008	1
S2	.80000	.92165	.122	15.2	.12184	.001	1

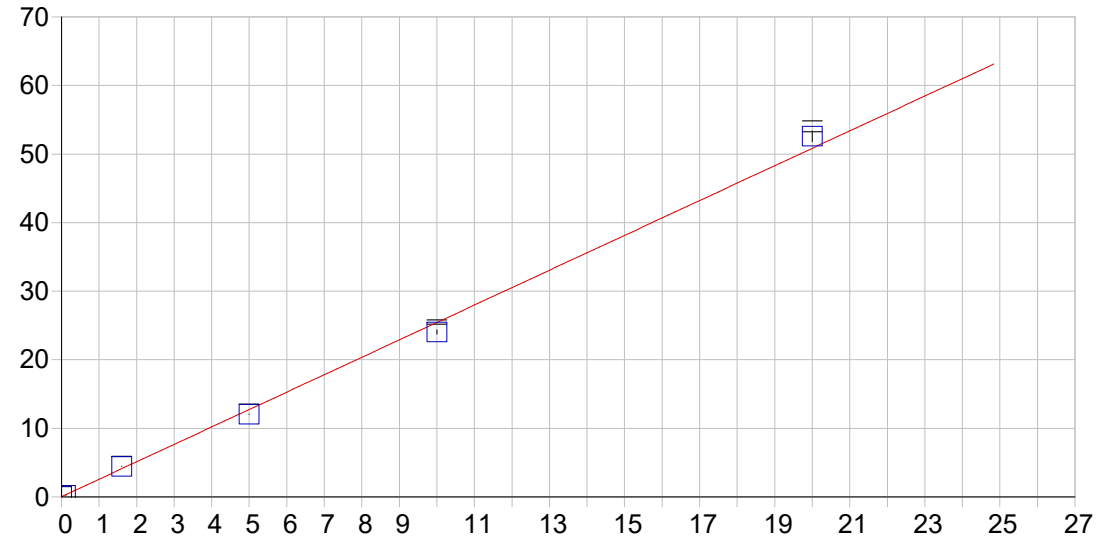


Al 396.152 { 85}

Date of Fit:	2/19/2025 17:18:18	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000578	Re-Slope:	1.000000
A1 (Gain):	0.077634	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999337	Status:	OK.
Std Error of Est:	0.000214		
Predicted MDL:	0.008681		
Predicted MQL:	0.028935		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00001	.000	.000	.00058	.000	1
S1	.10000	.08943	-.011	-10.6	.00812	.001	1
S3	5.0000	4.7692	-.231	-4.62	.37836	.002	1
S4	10.000	9.6073	-.393	-3.93	.76149	.001	1
S5	20.000	20.503	.503	2.52	1.6224	.003	1
S2	1.6000	1.7315	.132	8.22	.13741	.001	1

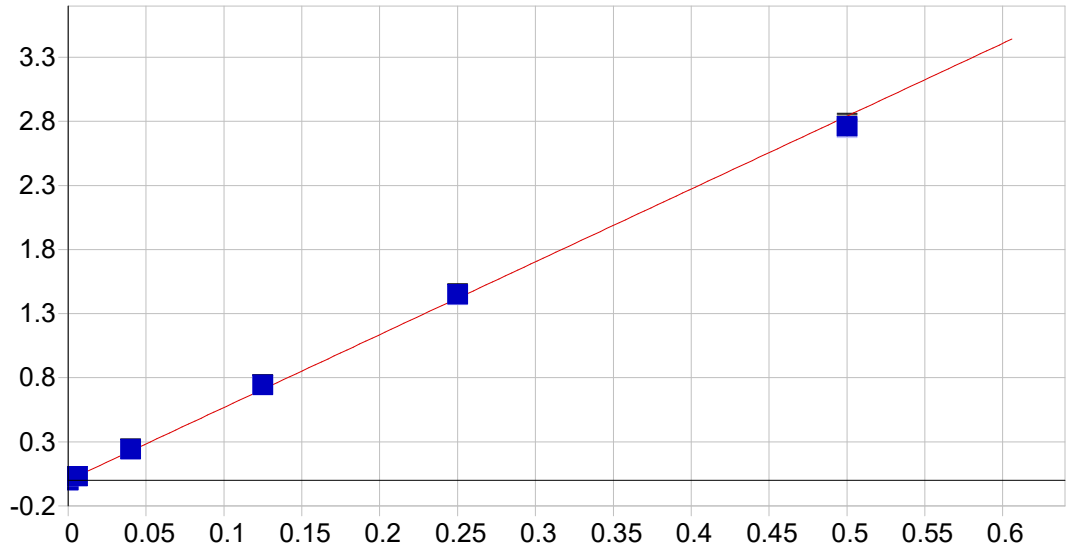


Ba 493.409 { 68}

Date of Fit:	2/19/2025 17:18:18	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.042064	Re-Slope:	1.000000
A1 (Gain):	2.539968	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.998912	Status:	OK.
Std Error of Est:	0.008795		
Predicted MDL:	0.000941		
Predicted MQL:	0.003136		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00001	.000	.000	.04209	.001	1
S1	.10000	.08985	-.010	-10.1	.27028	.001	1
S3	5.0000	4.7311	-.269	-5.38	12.059	.035	1
S4	10.000	9.4543	-.546	-5.46	24.056	.306	1
S5	20.000	20.694	.694	3.47	52.605	.804	1
S2	1.6000	1.7305	.130	8.16	4.4374	.026	1

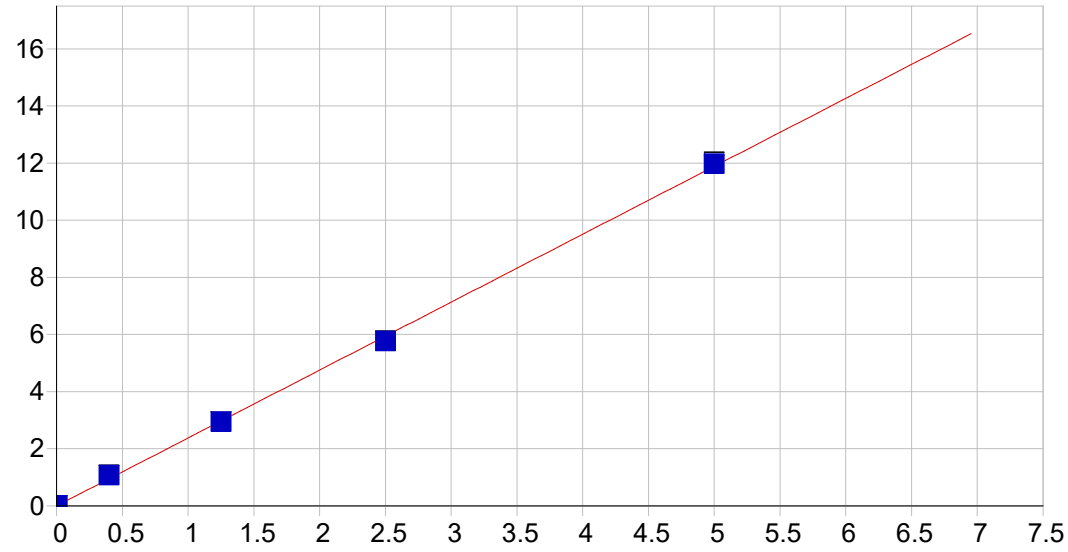


Be 234.861 {144}

Date of Fit:	2/19/2025 17:18:18	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000056	Re-Slope:	1.000000
A1 (Gain):	5.681296	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999466	Status:	OK.
Std Error of Est:	0.000532		
Predicted MDL:	0.000059		
Predicted MQL:	0.000195		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00006	.000	1
S1	.00600	.00576	-.000	-3.98	.03242	.000	1
S3	.12500	.13100	.006	4.80	.74099	.002	1
S4	.25000	.25532	.005	2.13	1.4441	.005	1
S5	.50000	.48620	-.014	-2.76	2.7495	.023	1
S2	.04000	.04271	.003	6.78	.24160	.001	1

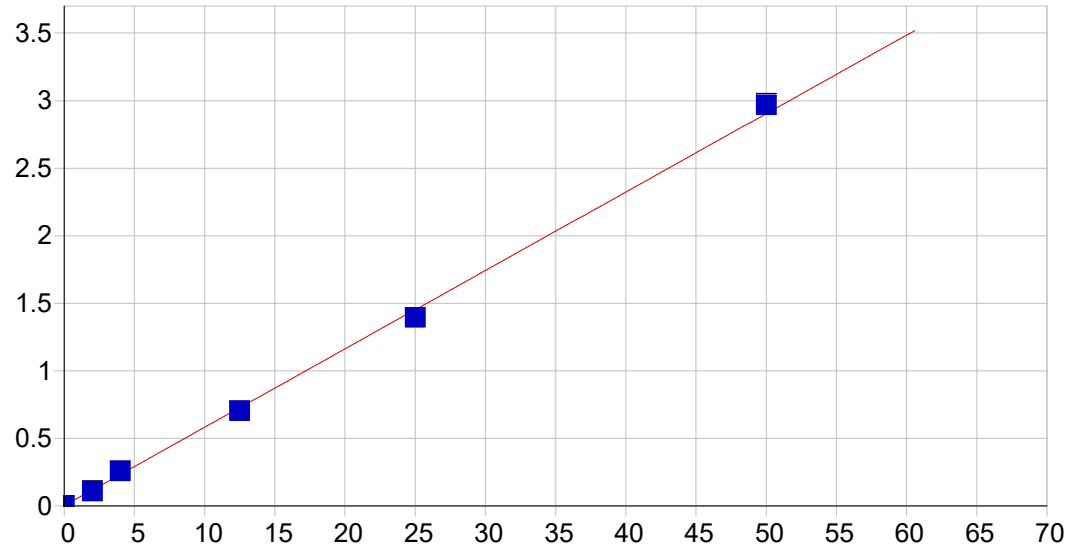


Cd 226.502 {449}

Date of Fit:	2/19/2025 17:18:18	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000124	Re-Slope:	1.000000
A1 (Gain):	2.377846	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999500	Status:	OK.
Std Error of Est:	0.000683		
Predicted MDL:	0.000095		
Predicted MQL:	0.000316		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00012	.000	1
S1	.00600	.00584	-.000	-2.66	.01408	.000	1
S3	1.2500	1.2380	-.012	-.964	2.9462	.002	1
S4	2.5000	2.4257	-.074	-2.97	5.7728	.010	1
S5	5.0000	5.0352	.035	.704	11.983	.056	1
S2	.40000	.45136	.051	12.8	1.0742	.002	1

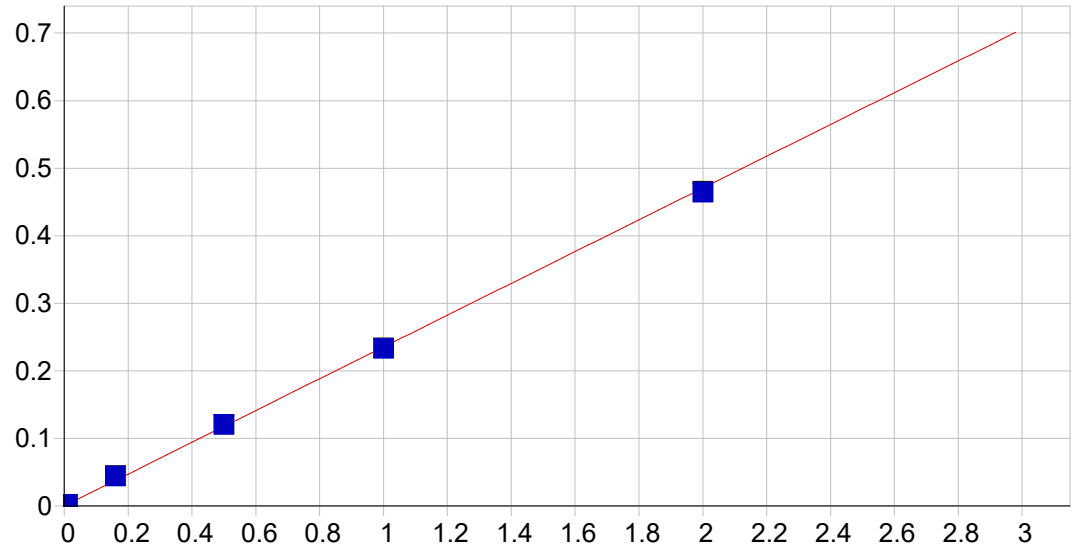


Ca 373.690 { 90}

Date of Fit:	2/19/2025 17:18:18	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.001576	Re-Slope:	1.000000
A1 (Gain):	0.058045	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999306	Status:	OK.
Std Error of Est:	0.001145		
Predicted MDL:	0.010843		
Predicted MQL:	0.036143		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00003	.000	.000	.00158	.001	1
S2	4.0000	4.4168	.417	10.4	.25795	.001	1
S3	12.500	12.109	-.391	-3.12	.70446	.000	1
S4	25.000	24.002	-.998	-3.99	1.3947	.002	1
S5	50.000	51.111	1.11	2.22	2.9683	.011	1
S1	2.0000	1.8612	-.139	-6.94	.10961	.001	1

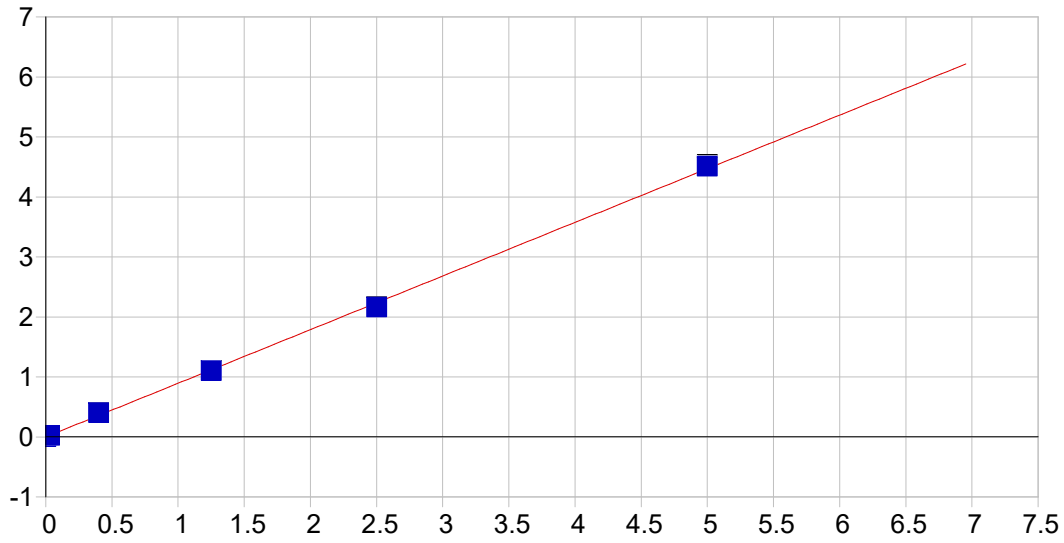


Cr 267.716 {126}

Date of Fit:	2/19/2025 17:18:18	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000087	Re-Slope:	1.000000
A1 (Gain):	0.235252	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999267	Status:	OK.
Std Error of Est:	0.000067		
Predicted MDL:	0.000404		
Predicted MQL:	0.001347		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00009	.000	1
S1	.01000	.00950	-.001	-5.01	.00232	.000	1
S3	.50000	.51054	.011	2.11	.12023	.000	1
S4	1.0000	.98963	-.010	-1.04	.23297	.000	1
S5	2.0000	1.9730	-.027	-1.35	.46438	.001	1
S2	.16000	.18733	.027	17.1	.04417	.000	1

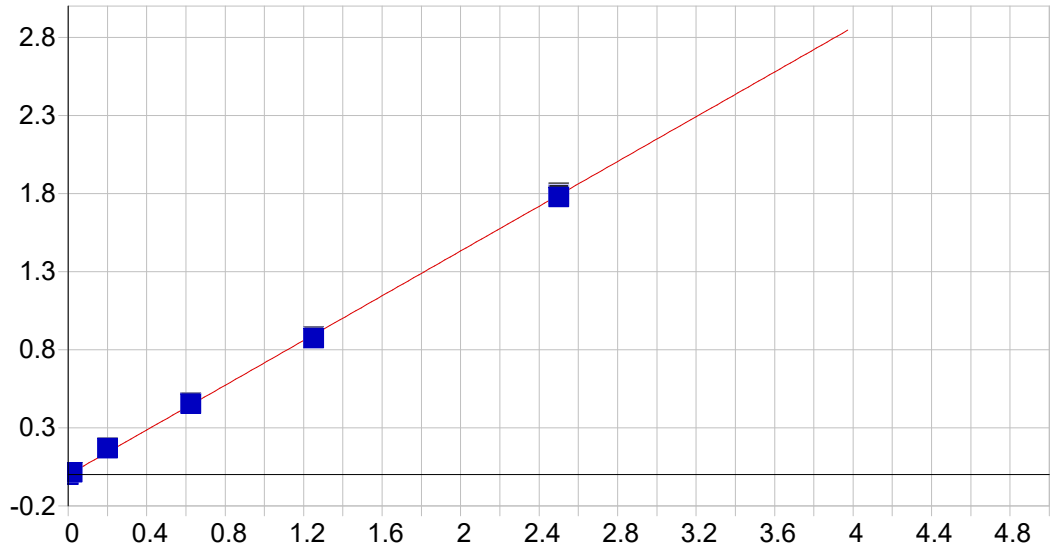


Co 228.616 {448}

Date of Fit:	2/19/2025 17:18:18	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000060	Re-Slope:	1.000000
A1 (Gain):	0.893864	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999455	Status:	OK.
Std Error of Est:	0.000601		
Predicted MDL:	0.000224		
Predicted MQL:	0.000746		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00006	.000	1
S1	.03000	.02911	-.001	-2.96	.02597	.000	1
S3	1.2500	1.2350	-.015	-1.20	1.1059	.002	1
S4	2.5000	2.4168	-.083	-3.33	2.1641	.005	1
S5	5.0000	5.0477	.048	.953	4.5196	.021	1
S2	.40000	.45144	.051	12.9	.40420	.001	1

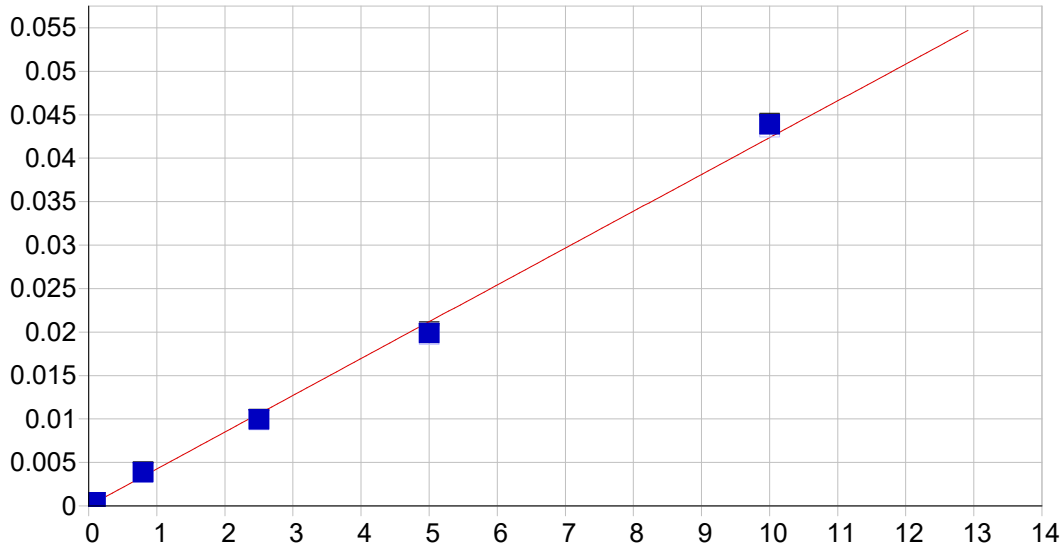


Cu 224.700 {450}

Date of Fit:	2/19/2025 17:18:18	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000609	Re-Slope:	1.000000
A1 (Gain):	0.716306	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999175	Status:	OK.
Std Error of Est:	0.000345		
Predicted MDL:	0.000462		
Predicted MQL:	0.001541		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00001	-.000	.000	-.00061	.000	1
S1	.02000	.02193	.002	9.65	.01528	.000	1
S3	.62500	.63530	.010	1.65	.45873	.001	1
S4	1.2500	1.2203	-.030	-2.38	.88202	.003	1
S5	2.5000	2.4813	-.019	-.747	1.7938	.010	1
S2	.20000	.23615	.036	18.1	.16991	.000	1

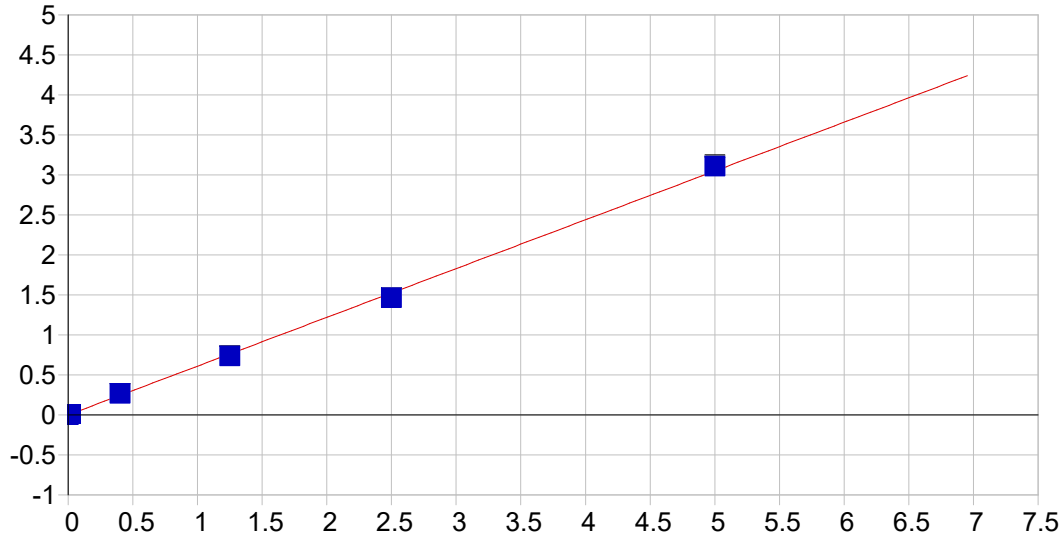


Fe 240.488 {140}

Date of Fit:	2/19/2025 17:18:18	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000014	Re-Slope:	1.000000
A1 (Gain):	0.004235	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.998390	Status:	OK.
Std Error of Est:	0.000013		
Predicted MDL:	0.006380		
Predicted MQL:	0.021267		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00001	.000	.000	.00001	.000	1
S1	.10000	.08904	-.011	-11.0	.00039	.000	1
S3	2.5000	2.3438	-.156	-6.25	.00985	.000	1
S4	5.0000	4.6938	-.306	-6.12	.01971	.000	1
S5	10.000	10.362	.362	3.62	.04353	.000	1
S2	.80000	.91170	.112	14.0	.00385	.000	1

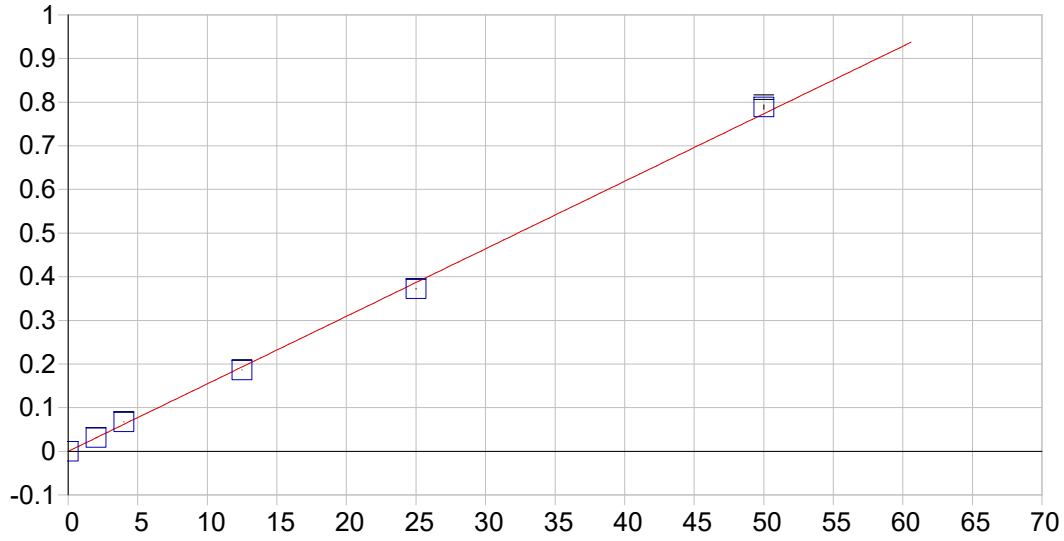


Mn 257.610 {131}

Date of Fit:	2/19/2025 17:18:18	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000280	Re-Slope:	1.000000
A1 (Gain):	0.609797	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999408	Status:	OK.
Std Error of Est:	0.000348		
Predicted MDL:	0.000415		
Predicted MQL:	0.001384		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00028	.000	1
S1	.02000	.01950	-.001	-2.52	.01161	.000	1
S3	1.2500	1.2081	-.042	-3.36	.73654	.003	1
S4	2.5000	2.4037	-.096	-3.85	1.4658	.002	1
S5	5.0000	5.1000	.100	2.00	3.1103	.014	1
S2	.40000	.43868	.039	9.67	.26728	.002	1

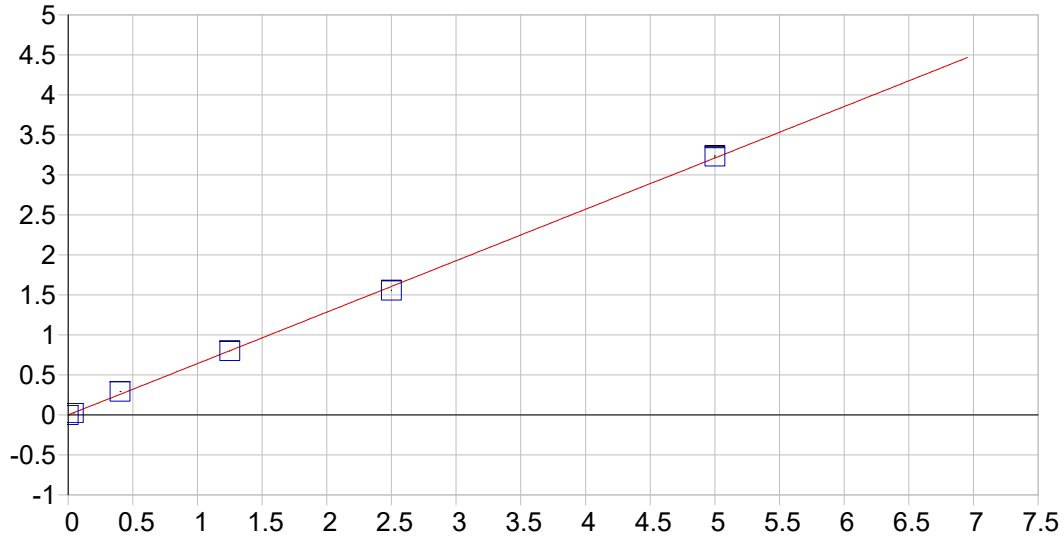


Mg 279.079 {121}

Date of Fit:	2/19/2025 17:18:18	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000177	Re-Slope:	1.000000
A1 (Gain):	0.015472	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999431	Status:	OK.
Std Error of Est:	0.000276		
Predicted MDL:	0.018551		
Predicted MQL:	0.061838		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00010	-.000	.000	-.00018	.000	1
S2	4.0000	4.3669	.367	9.17	.06739	.000	1
S3	12.500	12.041	-.459	-3.67	.18613	.000	1
S4	25.000	24.060	-.940	-3.76	.37209	.001	1
S5	50.000	51.003	1.00	2.01	.78896	.005	1
S1	2.0000	2.0290	.029	1.45	.03122	.000	1

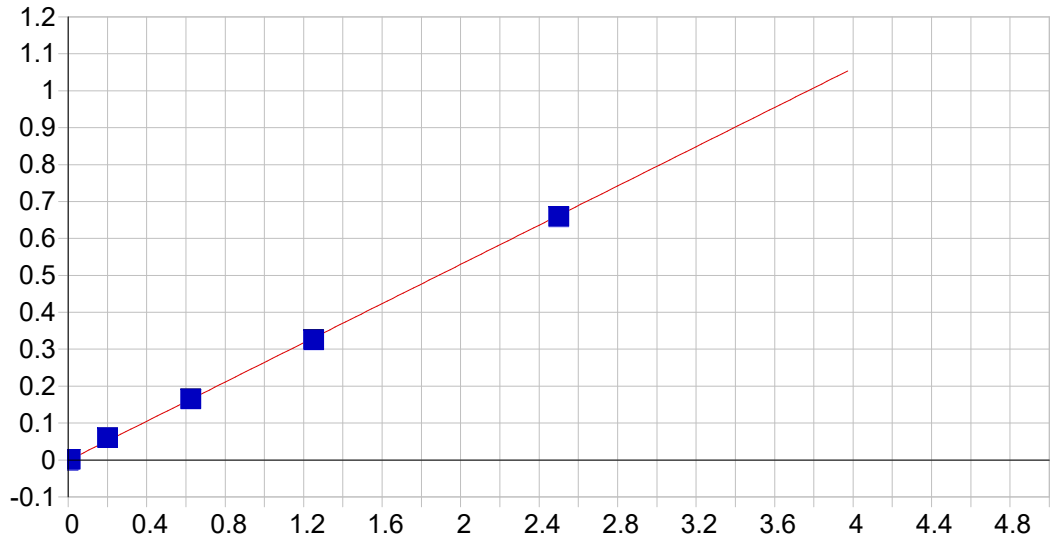


Ni 231.604 {446}

Date of Fit:	2/19/2025 17:18:18	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000077	Re-Slope:	1.000000
A1 (Gain):	0.642402	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999423	Status:	OK.
Std Error of Est:	0.000513		
Predicted MDL:	0.000348		
Predicted MQL:	0.001160		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00007	.000	1
S1	.04000	.03928	-.001	-1.80	.02531	.000	1
S3	1.2500	1.2435	-.006	-.519	.79891	.002	1
S4	2.5000	2.4224	-.078	-3.10	1.5562	.003	1
S5	5.0000	5.0282	.028	.564	3.2302	.014	1
S2	.40000	.45659	.057	14.1	.29339	.000	1

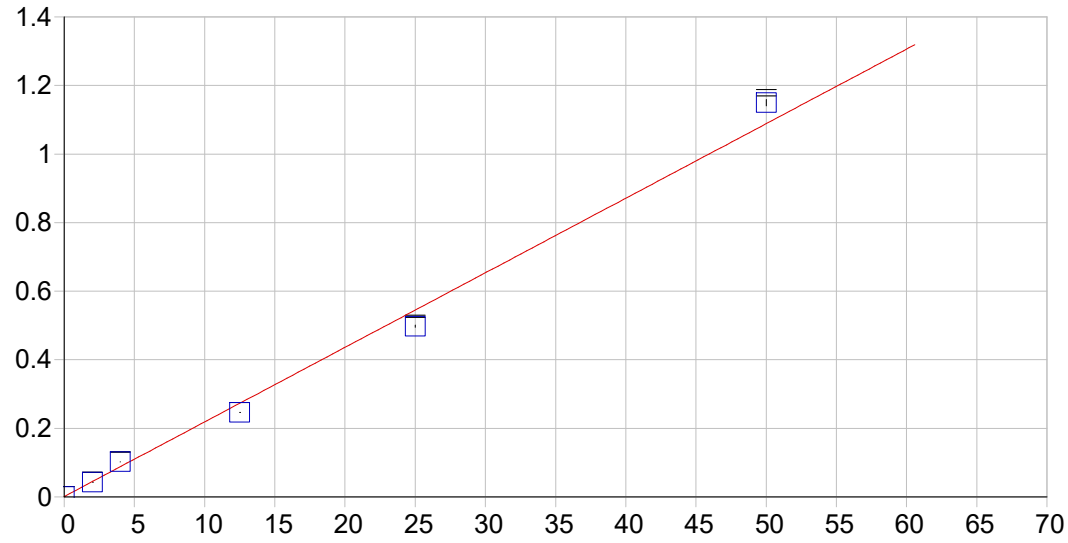


Ag 328.068 {103}

Date of Fit:	2/19/2025 17:18:18	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.001296	Re-Slope:	1.000000
A1 (Gain):	0.265537	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999416	Status:	OK.
Std Error of Est:	0.000075		
Predicted MDL:	0.000457		
Predicted MQL:	0.001523		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00130	.000	1
S1	.01000	.01020	.000	2.00	.00139	.000	1
S3	.62500	.62578	.001	.124	.16421	.000	1
S4	1.2500	1.2302	-.020	-1.58	.32406	.000	1
S5	2.5000	2.4874	-.013	-.506	.65655	.000	1
S2	.20000	.23142	.031	15.7	.05994	.000	1

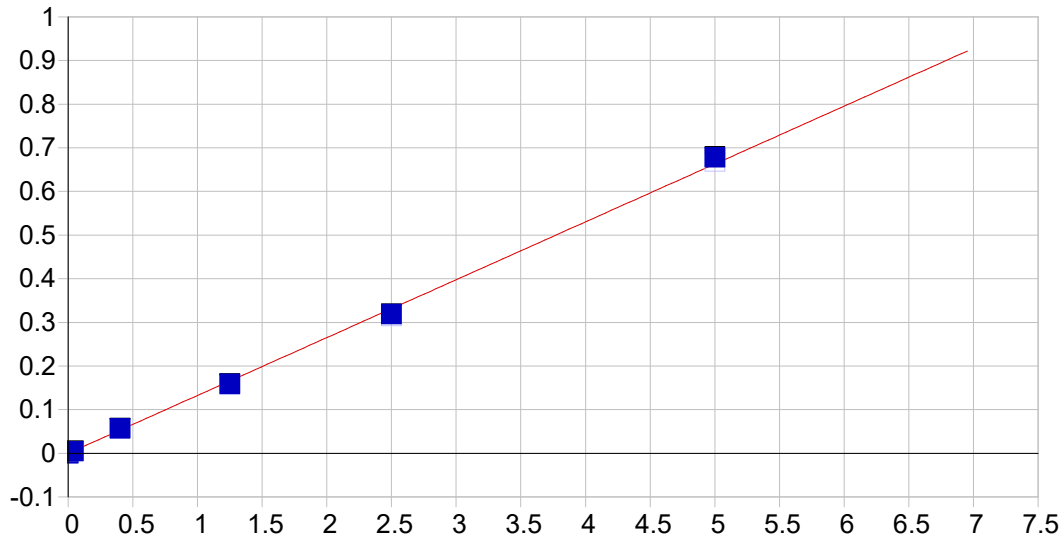


Na 589.592 { 57}

Date of Fit:	2/19/2025 17:18:18	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.001242	Re-Slope:	1.000000
A1 (Gain):	0.021747	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.996916	Status:	OK.
Std Error of Est:	0.000906		
Predicted MDL:	0.008906		
Predicted MQL:	0.029687		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00001	.000	.000	.00124	.000	1
S2	4.0000	4.6531	.653	16.3	.10243	.000	1
S3	12.500	11.271	-1.23	-9.83	.24636	.000	1
S4	25.000	22.827	-2.17	-8.69	.49767	.003	1
S5	50.000	52.827	2.83	5.65	1.1501	.009	1
S1	2.0000	1.9212	-.079	-3.94	.04302	.000	1

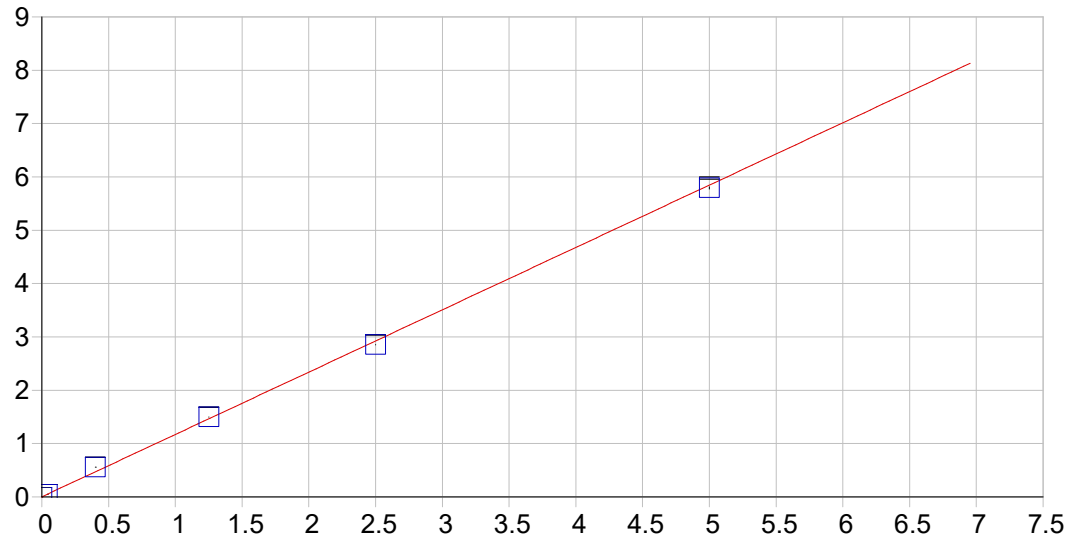


V 292.402 {115}

Date of Fit:	2/19/2025 17:18:18	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000100	Re-Slope:	1.000000
A1 (Gain):	0.132594	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999408	Status:	OK.
Std Error of Est:	0.000106		
Predicted MDL:	0.002183		
Predicted MQL:	0.007277		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00010	.000	1
S1	.04000	.03912	-.001	-2.21	.00489	.000	1
S3	1.2500	1.1989	-.051	-4.08	.15646	.001	1
S4	2.5000	2.4071	-.093	-3.72	.31424	.001	1
S5	5.0000	5.1136	.114	2.27	.66826	.003	1
S2	.40000	.43124	.031	7.81	.05631	.001	1

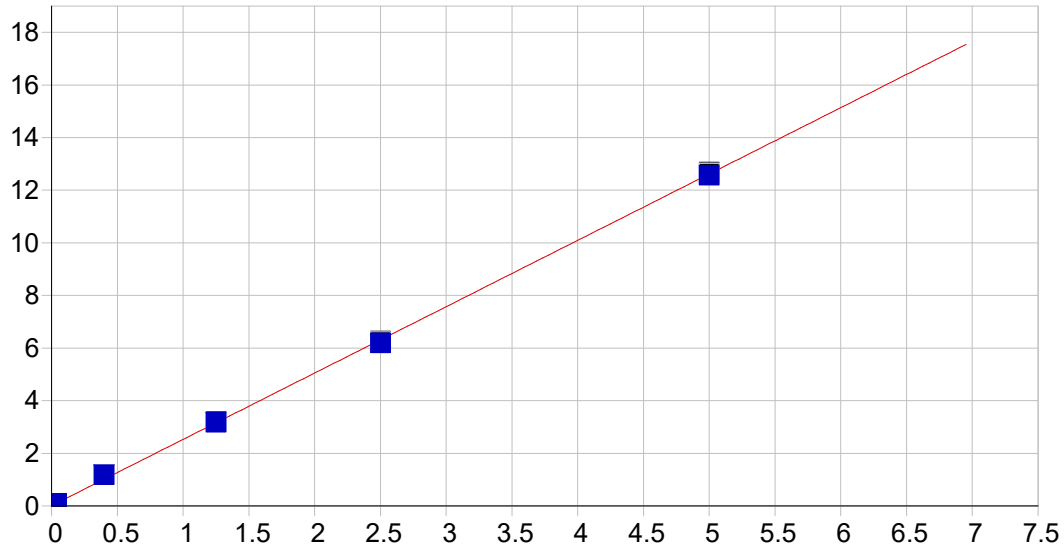


Zn 206.200 {464}

Date of Fit:	2/19/2025 17:18:18	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.002147	Re-Slope:	1.000000
A1 (Gain):	1.168877	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999084	Status:	OK.
Std Error of Est:	0.001175		
Predicted MDL:	0.000187		
Predicted MQL:	0.000622		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00001	-.000	.000	.00214	.000	1
S1	.04000	.04022	.000	.557	.04916	.000	1
S3	1.2500	1.2797	.030	2.37	1.4979	.002	1
S4	2.5000	2.4393	-.061	-2.43	2.8534	.005	1
S5	5.0000	4.9552	-.045	-.896	5.7942	.022	1
S2	.40000	.47555	.076	18.9	.55801	.002	1

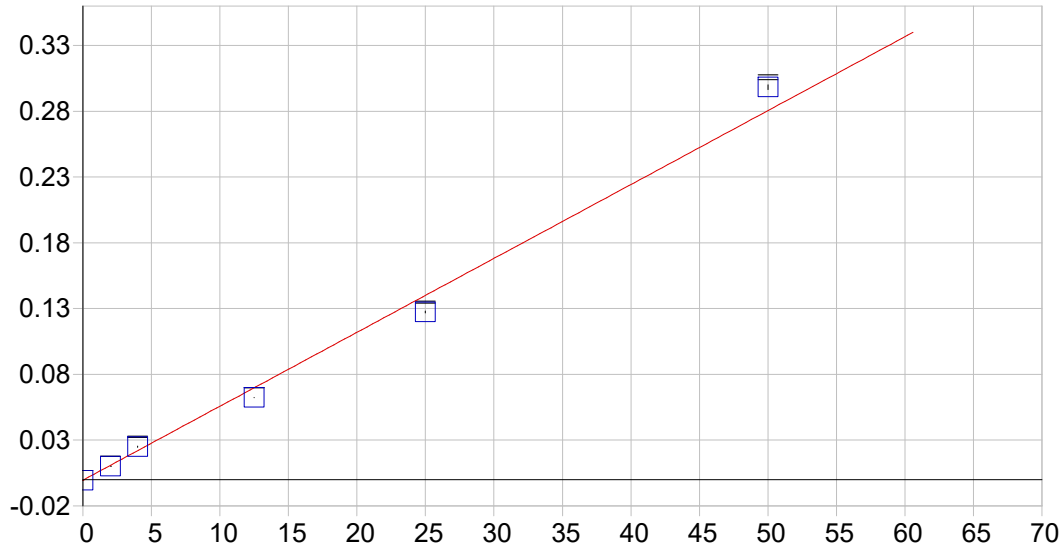


Zn 213.856 {158}

Date of Fit:	2/19/2025 17:18:18	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.005900	Re-Slope:	1.000000
A1 (Gain):	2.522263	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999373	Status:	OK.
Std Error of Est:	0.002112		
Predicted MDL:	0.000350		
Predicted MQL:	0.001165		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00001	-.000	.000	.00589	.001	1
S1	.04000	.04002	.000	.043	.10754	.001	1
S3	1.2500	1.2544	.004	.352	3.1917	.017	1
S4	2.5000	2.4526	-.047	-1.90	6.2358	.029	1
S5	5.0000	4.9776	-.022	-.447	12.649	.040	1
S2	.40000	.46538	.065	16.3	1.1867	.010	1

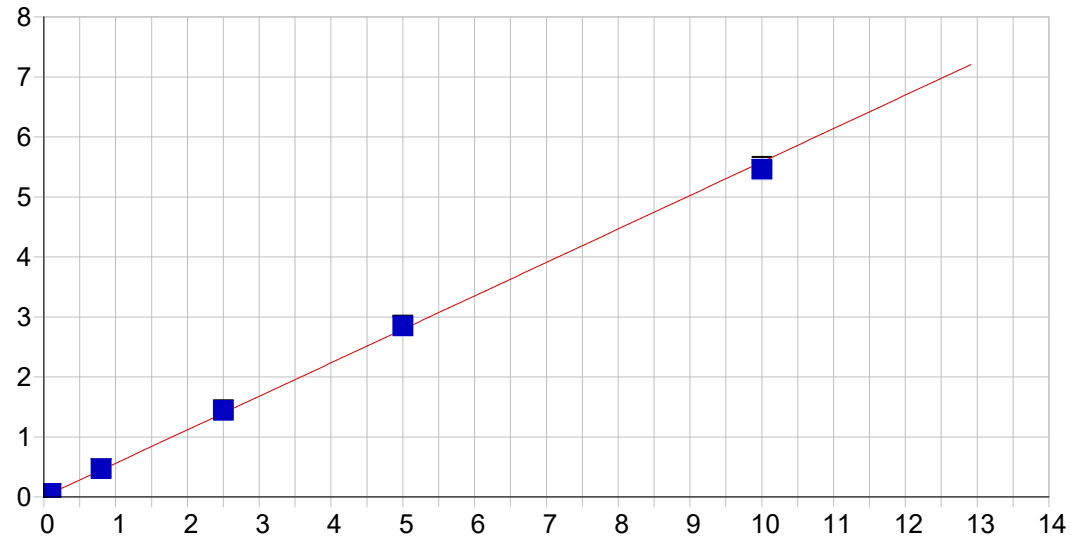


K 766.490 { 44}

Date of Fit:	2/19/2025 17:18:18	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000419	Re-Slope:	1.000000
A1 (Gain):	0.005619	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.996692	Status:	OK.
Std Error of Est:	0.000242		
Predicted MDL:	0.041361		
Predicted MQL:	0.137871		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00013	.000	.000	-.00042	.000	1
S2	4.0000	4.5276	.528	13.2	.02502	.000	1
S3	12.500	11.172	-1.33	-10.6	.06236	.000	1
S4	25.000	22.756	-2.24	-8.97	.12744	.001	1
S5	50.000	53.172	3.17	6.34	.29834	.002	1
S1	2.0000	1.8719	-.128	-6.40	.01010	.000	1

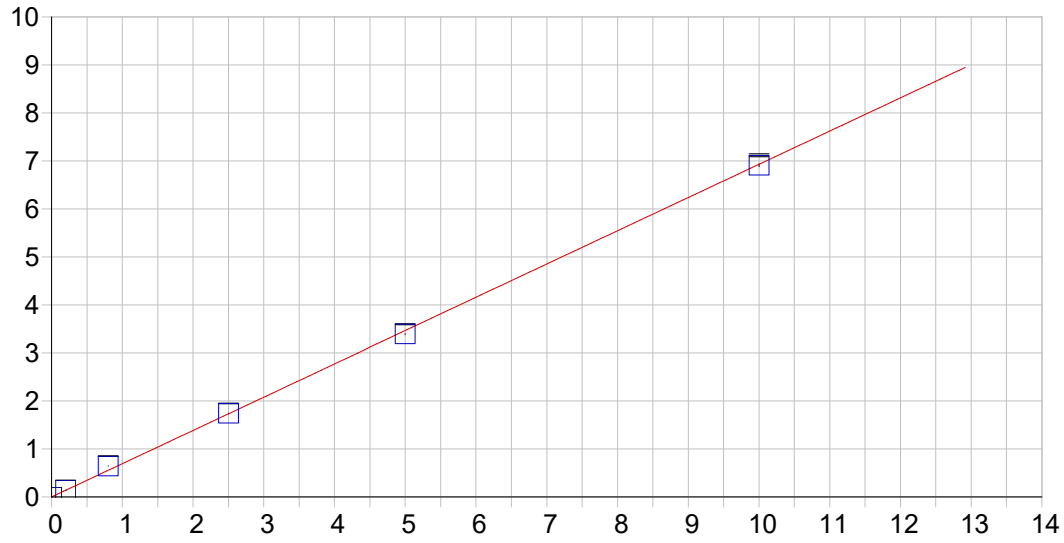


B 249.678 {135}

Date of Fit:	2/19/2025 17:18:18	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.002796	Re-Slope:	1.000000
A1 (Gain):	0.557859	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999681	Status:	OK.
Std Error of Est:	0.000739		
Predicted MDL:	0.000736		
Predicted MQL:	0.002455		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00279	.000	1
S1	.10000	.09656	-.003	-3.44	.05642	.000	1
S3	2.5000	2.5809	.081	3.24	1.4398	.005	1
S4	5.0000	5.1018	.102	2.04	2.8434	.014	1
S5	10.000	9.7801	-.220	-2.20	5.4478	.048	1
S2	.80000	.84067	.041	5.08	.47090	.001	1

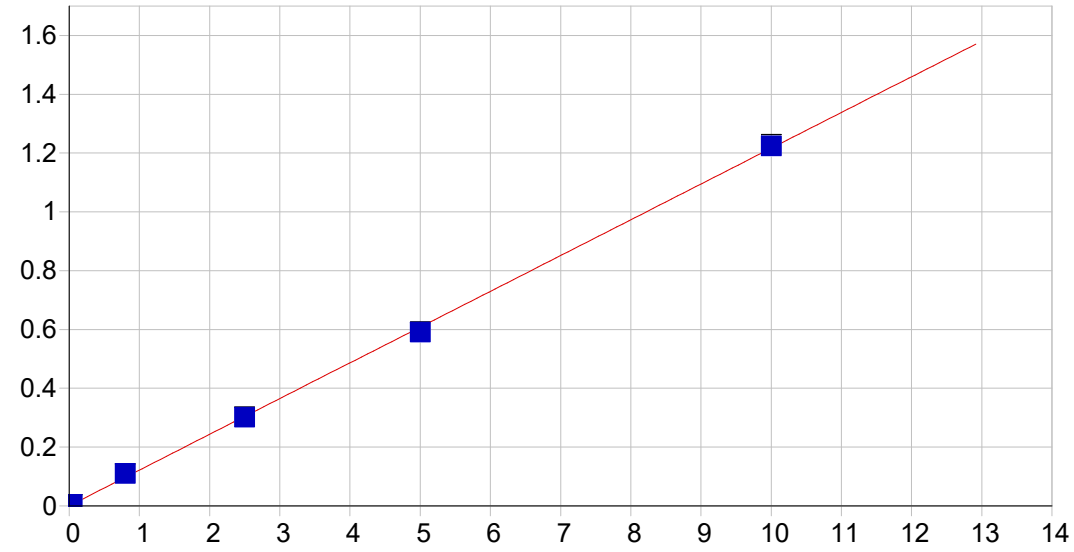


Mo 202.030 {467}

Date of Fit:	2/19/2025 17:18:18	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000207	Re-Slope:	1.000000
A1 (Gain):	0.693007	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999402	Status:	OK.
Std Error of Est:	0.001785		
Predicted MDL:	0.000308		
Predicted MQL:	0.001025		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00003	-.000	.000	.00019	.000	1
S1	.20000	.19947	-.001	-.264	.13844	.000	1
S3	2.5000	2.5105	.011	.421	1.7400	.006	1
S4	5.0000	4.8939	-.106	-2.12	3.3917	.011	1
S5	10.000	9.9704	-.030	-.296	6.9098	.032	1
S2	.80000	.92568	.126	15.7	.64171	.003	1

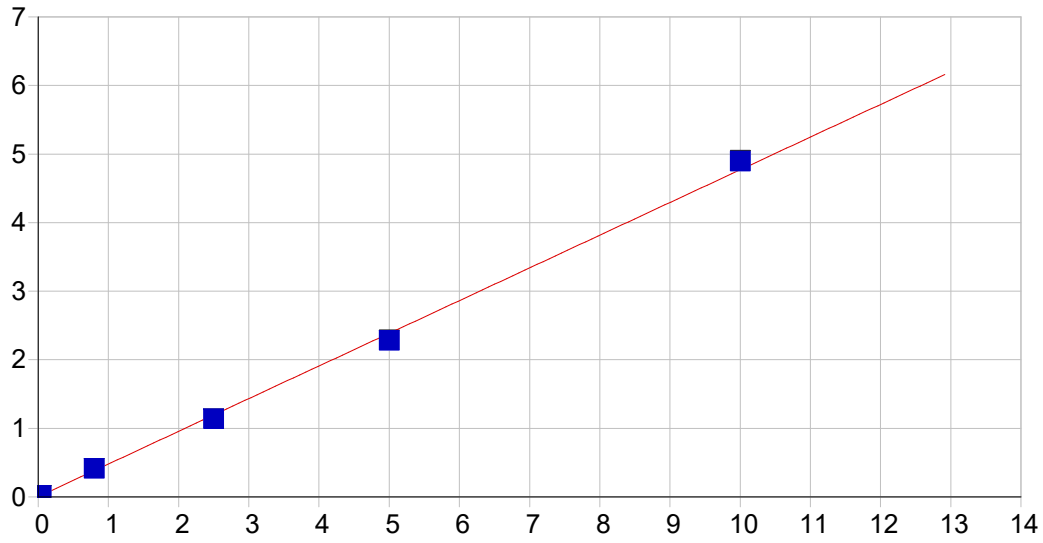


Sn 189.989 {478}

Date of Fit:	2/19/2025 17:18:18	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000134	Re-Slope:	1.000000
A1 (Gain):	0.121621	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999521	Status:	OK.
Std Error of Est:	0.000125		
Predicted MDL:	0.000848		
Predicted MQL:	0.002828		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00013	.000	1
S1	.04000	.03884	-.001	-2.91	.00485	.000	1
S3	2.5000	2.4819	-.018	-.724	.30167	.001	1
S4	5.0000	4.8552	-.145	-2.90	.59000	.001	1
S5	10.000	10.063	.063	.629	1.2228	.006	1
S2	.80000	.90116	.101	12.6	.10963	.000	1

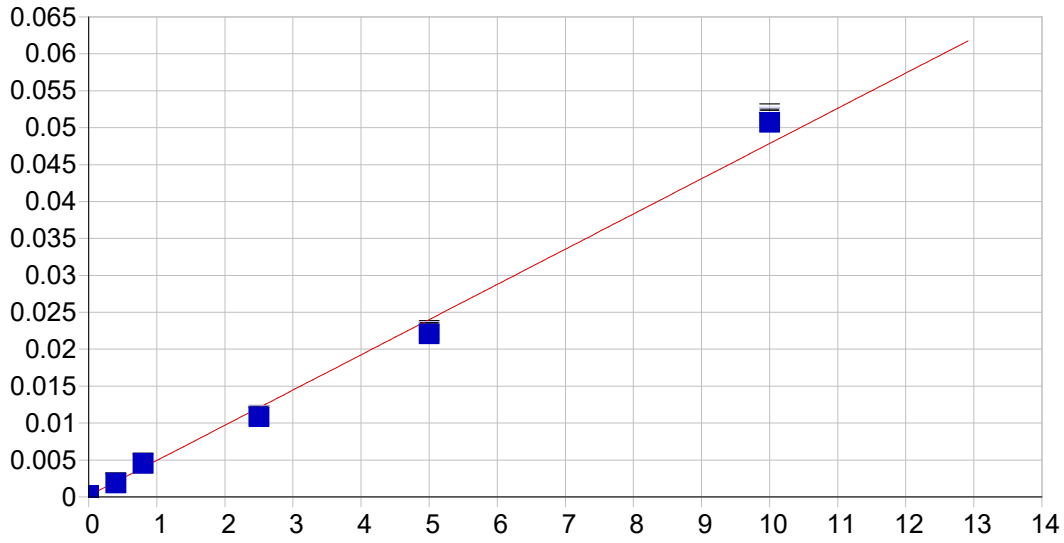


Ti 336.121 {100}

Date of Fit:	2/19/2025 17:18:18	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.002481	Re-Slope:	1.000000
A1 (Gain):	0.476759	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999253	Status:	OK.
Std Error of Est:	0.000611		
Predicted MDL:	0.000868		
Predicted MQL:	0.002892		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00248	.000	1
S1	.04000	.03708	-.003	-7.30	.02015	.000	1
S3	2.5000	2.3842	-.116	-4.63	1.1387	.004	1
S4	5.0000	4.7856	-.214	-4.29	2.2832	.002	1
S5	10.000	10.266	.266	2.66	4.8954	.011	1
S2	.80000	.86662	.067	8.33	.41551	.001	1

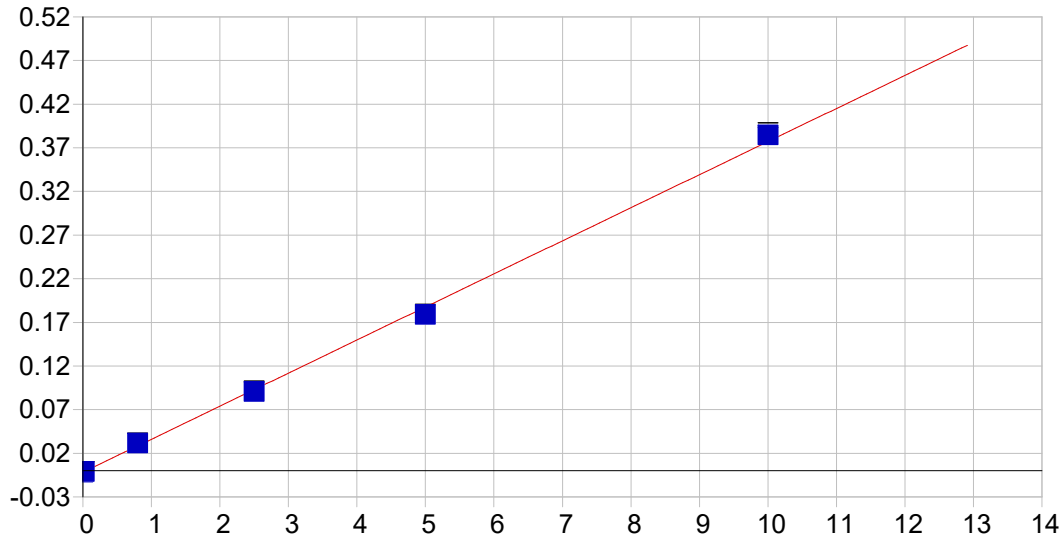


Si 288.158 {117}

Date of Fit:	2/19/2025 17:18:18	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000159	Re-Slope:	1.000000
A1 (Gain):	0.004769	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.996990	Status:	OK.
Std Error of Est:	0.000040		
Predicted MDL:	0.010156		
Predicted MQL:	0.033854		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00004	.000	.000	.00016	.000	1
S1	.40000	.35885	-.041	-10.3	.00187	.000	1
S3	2.5000	2.2381	-.262	-10.5	.01101	.000	1
S4	5.0000	4.5918	-.408	-8.16	.02242	.000	1
S5	10.000	10.600	.600	6.00	.05143	.000	1
S2	.80000	.91110	.111	13.9	.00456	.000	1

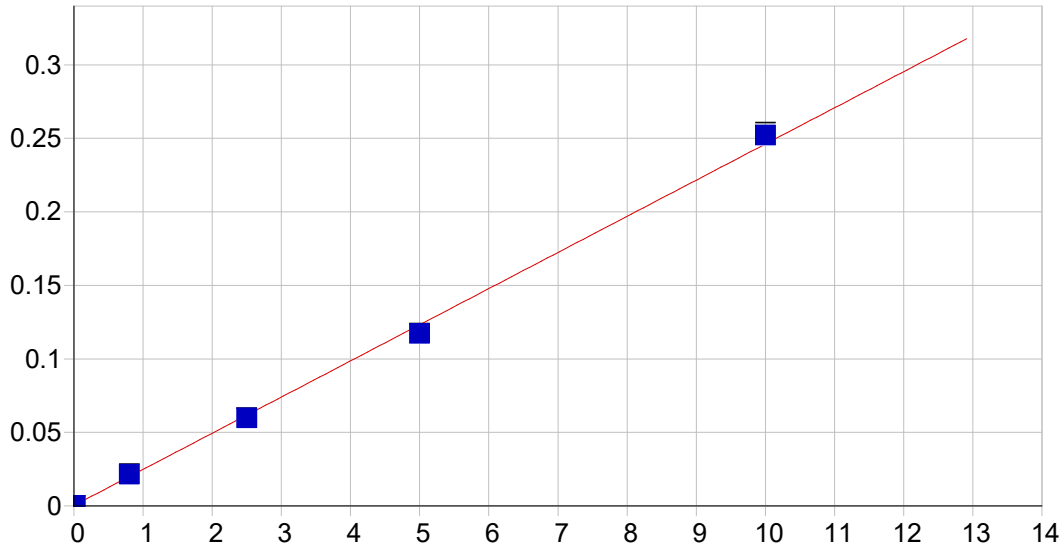


P 177.495 {490}

Date of Fit:	2/19/2025 17:18:18	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.001832	Re-Slope:	1.000000
A1 (Gain):	0.037897	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999339	Status:	OK.
Std Error of Est:	0.000032		
Predicted MDL:	0.002635		
Predicted MQL:	0.008782		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00183	.000	1
S1	.02000	.01796	-.002	-10.2	-.00115	.000	1
S3	2.5000	2.4443	-.056	-2.23	.09079	.000	1
S4	5.0000	4.7759	-.224	-4.48	.17913	.000	1
S5	10.000	10.198	.198	1.98	.38457	.003	1
S2	.80000	.88412	.084	10.5	.03167	.000	1

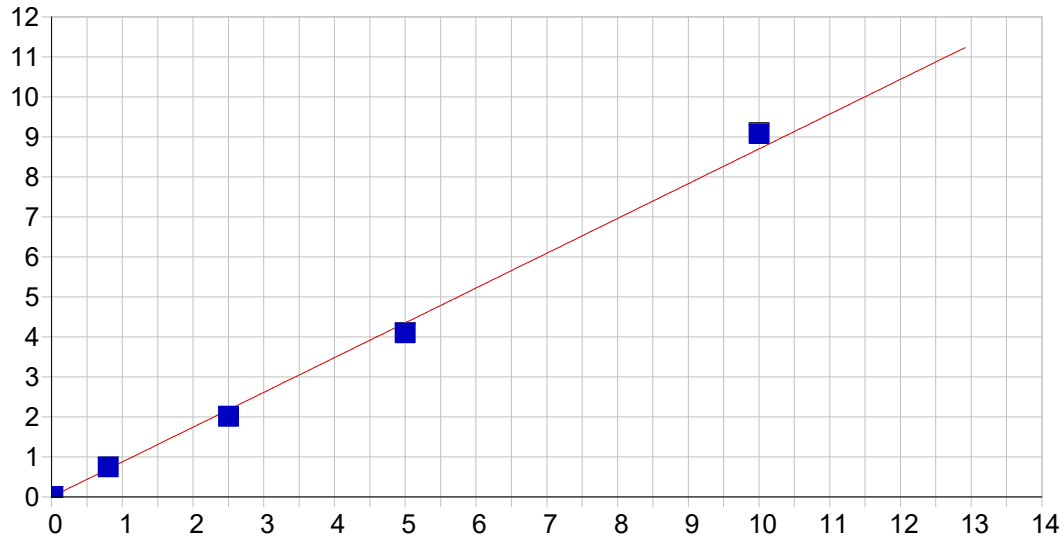


S 182.034 {485}

Date of Fit:	2/19/2025 17:18:18	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000261	Re-Slope:	1.000000
A1 (Gain):	0.024591	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999264	Status:	OK.
Std Error of Est:	0.000022		
Predicted MDL:	0.003832		
Predicted MQL:	0.012772		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00026	.000	1
S1	.02000	.01511	-.005	-24.4	.00061	.000	1
S3	2.5000	2.4245	-.076	-3.02	.05972	.000	1
S4	5.0000	4.7629	-.237	-4.74	.11707	.000	1
S5	10.000	10.248	.248	2.48	.25164	.002	1
S2	.80000	.86920	.069	8.65	.02158	.000	1

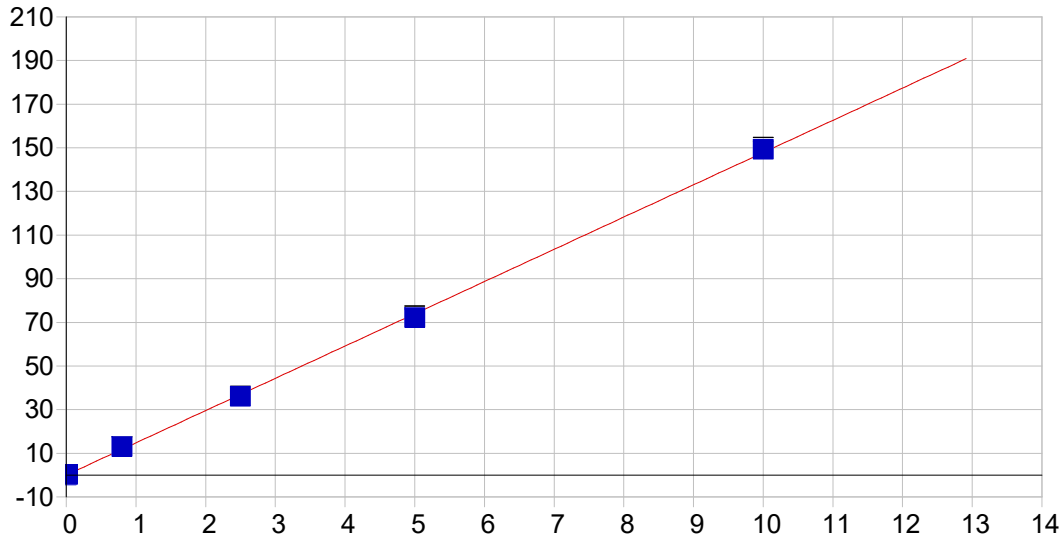


Li 670.784 { 50}

Date of Fit:	2/19/2025 17:18:18	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.004311	Re-Slope:	1.000000
A1 (Gain):	0.869590	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.998479	Status:	OK.
Std Error of Est:	0.001126		
Predicted MDL:	0.001448		
Predicted MQL:	0.004828		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00431	.000	1
S5	10.000	10.438	.438	4.38	9.0892	.013	1
S4	5.0000	4.7017	-.298	-5.97	4.0968	.017	1
S3	2.5000	2.3079	-.192	-7.68	2.0132	.006	1
S1	.02000	.01707	-.003	-14.7	.01946	.000	1
S2	.80000	.85496	.055	6.87	.74840	.003	1

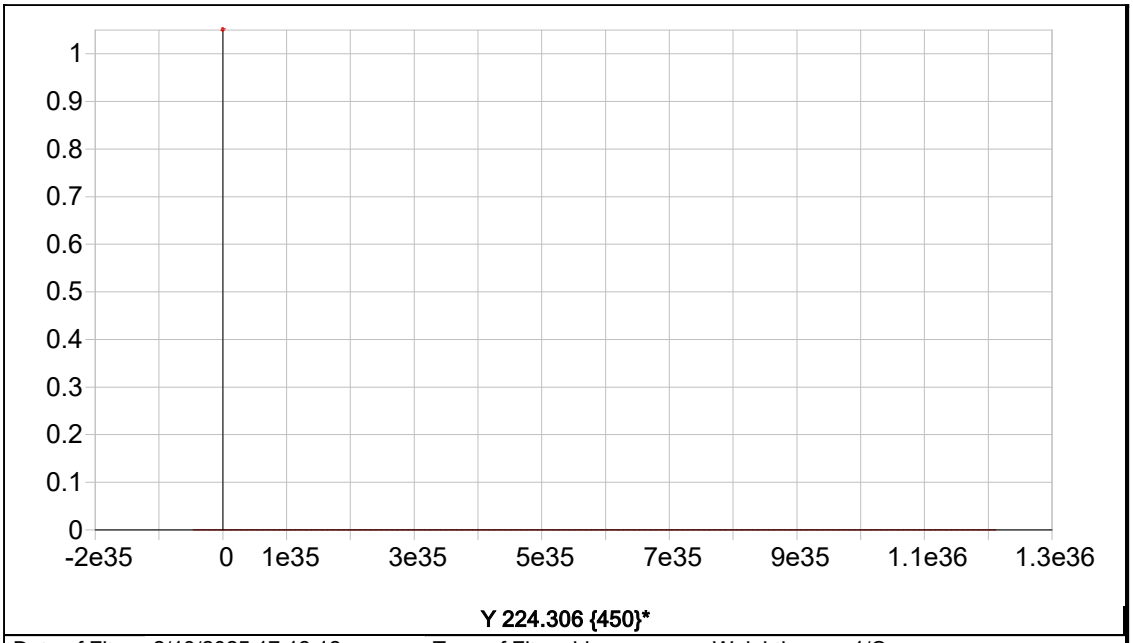


Sr 407.771 { 83}

Date of Fit:	2/19/2025 17:18:18	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000330	Re-Slope:	1.000000
A1 (Gain):	14.781804	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999638	Status:	OK.
Std Error of Est:	0.009325		
Predicted MDL:	0.000051		
Predicted MQL:	0.000171		

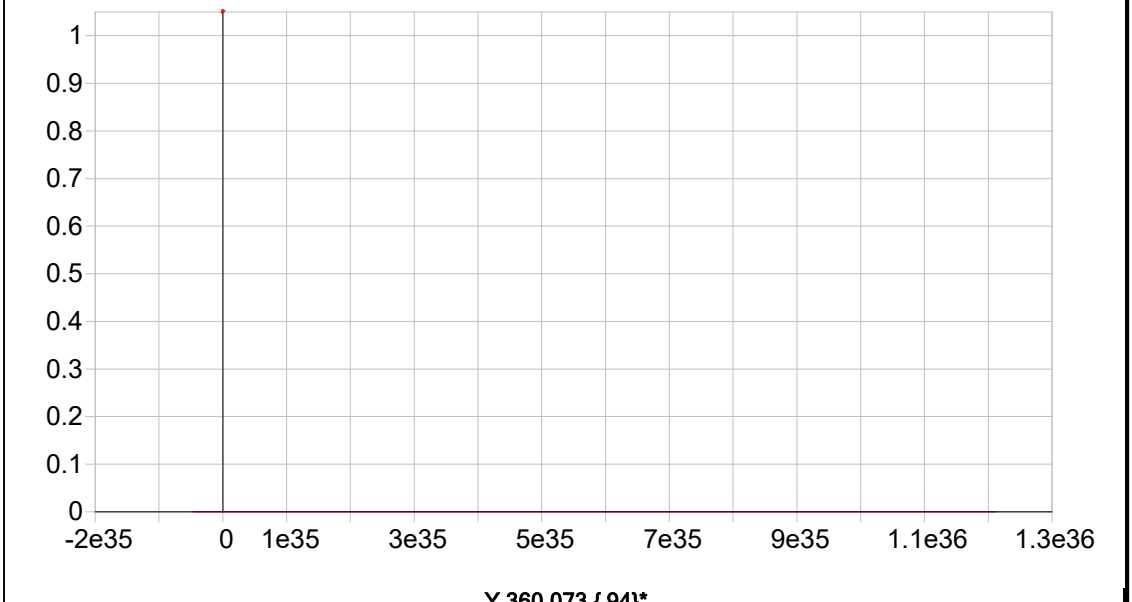
Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00033	.000	1
S1	.02000	.01895	-.001	-5.24	.28129	.001	1
S3	2.5000	2.4436	-.056	-2.26	36.157	.107	1
S4	5.0000	4.8765	-.123	-2.47	72.157	.819	1
S5	10.000	10.102	.102	1.02	149.47	.855	1
S2	.80000	.87934	.079	9.92	13.010	.046	1



Y 224.306 {450}*

Date of Fit:	2/19/2025 17:18:18	Type of Fit:	Linear	Weighting:	1/Conc
A0 (Offset):	0.000000		Re-Slope:	1.000000	
A1 (Gain):	0.000000		Y-int:	0.000000	
A2 (Curvature):	0.000000				
n (Exponent):	1.000000				
Correlation:	0.000000		Status:	Warning	Zero Gain
Std Error of Est:	0.000000				
Predicted MDL:	n/a				
Predicted MQL:	n/a				

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



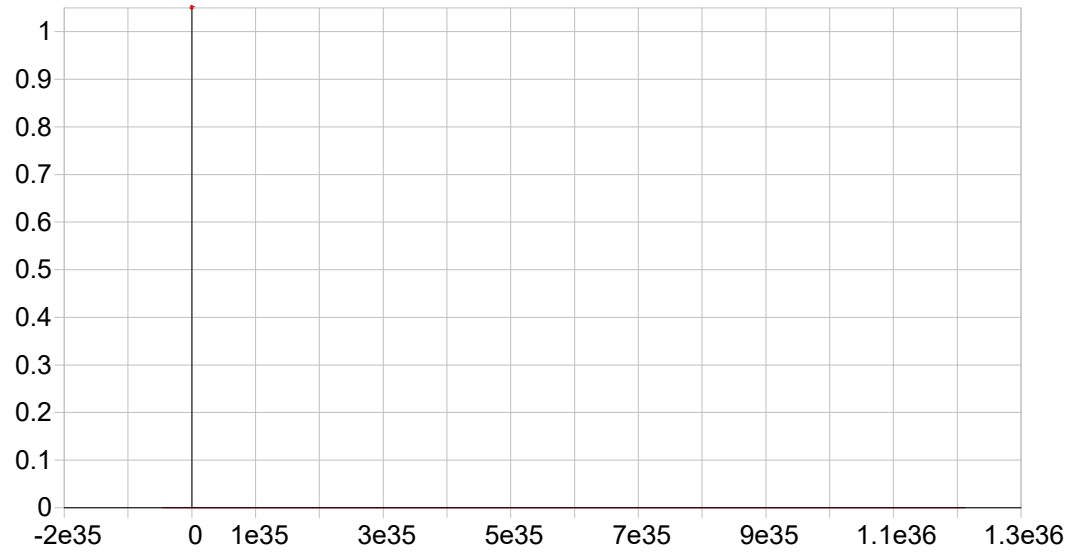
Y 360.073 { 94}*

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

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

A2 (Curvature):	0.000000					
n (Exponent):	1.000000					
Correlation:	0.000000		Status:	Warning	Zero Gain	
Std Error of Est:	0.000000					
Predicted MDL:	n/a					
Predicted MQL:	n/a					

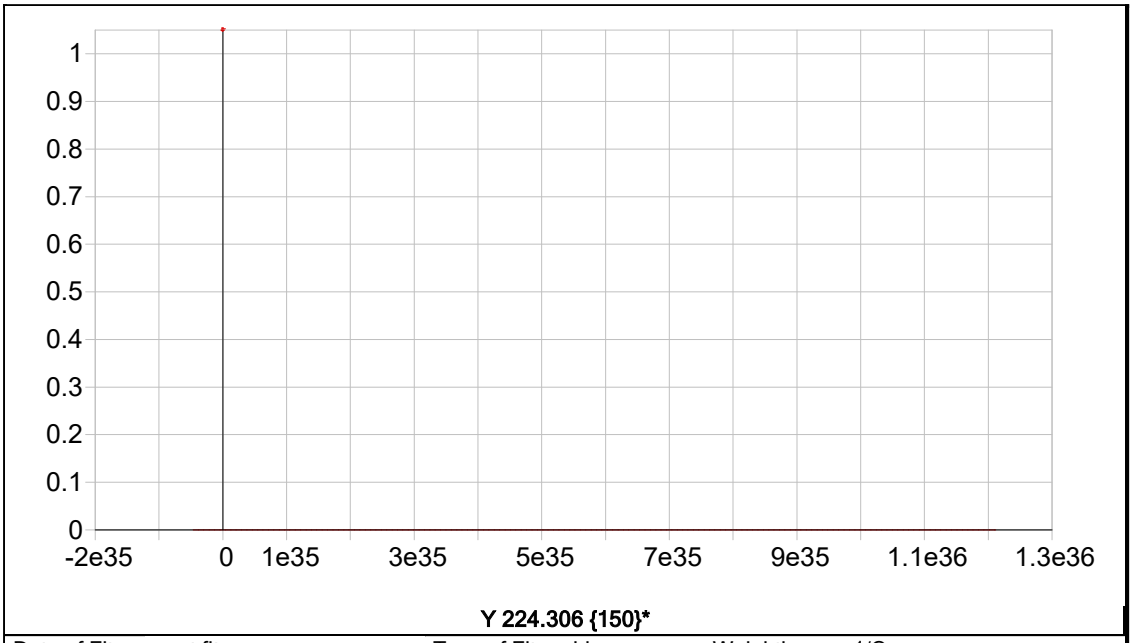
Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis



Y 371.030 { 91}*

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

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

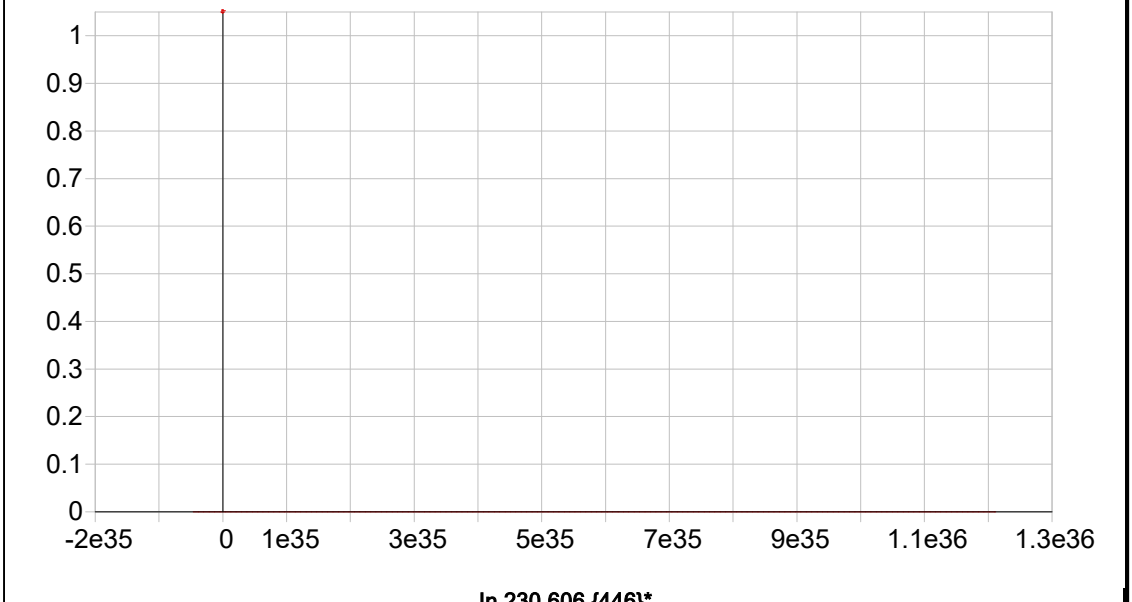


Y 224.306 {150}*

Date of Fit:	<not fit>	Type of Fit:	Linear	Weighting:	1/Conc

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

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



In 230.606 {446}*

Date of Fit:	<not fit>	Type of Fit:	Linear	Weighting:	1/Conc

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

A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.000000		Status:	Warning	Zero Gain	
Std Error of Est:		0.000000					
Predicted MDL:		n/a					
Predicted MQL:		n/a					
Std. Name	**Stated Conc.**	**Found Conc.**	**Difference**	**% Diff.**	**(S)IR**	**Std Dev**	**Emphasis**

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: S0 Acquired: 2/19/2025 12:59:28 Type: Cal
Method: NON EPA-6010-200.7(v2709) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	Be2348
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00018	-.00014	-.00016	.00022	.00039	.00058	.04209	-.00006
Stddev	.00002	.00003	.00017	.00015	.00008	.00042	.00129	.00012
%RSD	9.7651	22.668	106.76	67.633	19.683	72.576	3.0646	204.73
#1	-.00019	-.00016	-.00007	.00020	.00030	.00058	.04062	-.00010
#2	-.00016	-.00011	-.00035	.00008	.00044	.00100	.04305	.00008
#3	-.00019	-.00017	-.00005	.00038	.00043	.00016	.04259	-.00015

Elem	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00012	.00158	.00009	.00006	-.00061	.00001	-.00028	-.00018
Stddev	.00009	.00080	.00005	.00013	.00040	.00001	.00026	.00006
%RSD	76.336	50.606	61.879	225.84	65.334	93.824	91.971	30.911
#1	.00022	.00163	.00014	.00021	-.00023	.00002	-.00033	-.00017
#2	.00004	.00235	.00008	-.00001	-.00058	-.00000	-.00000	-.00013
#3	.00011	.00076	.00004	-.00003	-.00103	.00003	-.00051	-.00024

Elem	Ni2316	Ag3280	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00007	-.00130	.00124	-.00010	.00589	-.00042	.00279	.00019
Stddev	.00019	.00009	.00008	.00019	.00058	.00016	.00025	.00018
%RSD	250.42	7.0354	6.6631	186.69	9.8599	38.875	8.8774	94.189
#1	.00018	-.00120	.00115	.00009	.00648	-.00038	.00278	.00034
#2	.00018	-.00138	.00125	-.00010	.00585	-.00060	.00305	-.00001
#3	-.00014	-.00131	.00132	-.00029	.00532	-.00028	.00255	.00024

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00013	.00248	.00016	-.00183	.00026	.00431	-.00033
Stddev	.00004	.00038	.00004	.00006	.00003	.00027	.00042
%RSD	29.277	15.110	28.021	3.4730	13.321	6.3672	126.71
#1	.00017	.00272	.00019	-.00182	.00030	.00454	-.00058
#2	.00013	.00205	.00011	-.00177	.00024	.00401	.00015
#3	.00010	.00268	.00018	-.00190	.00025	.00439	-.00057

Sample Name: S0 Acquired: 2/19/2025 12:59:28 Type: Cal
Method: NON EPA-6010-200.7(v2709) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2727.5	54284.	8448.4	1759.2	4207.5
Stddev	13.0	111.	42.0	6.7	22.8
%RSD	.47607	.20433	.49736	.37877	.54147
#1	2713.2	54359.	8467.7	1765.7	4181.6
#2	2738.6	54338.	8477.3	1759.5	4224.5
#3	2730.5	54157.	8400.2	1752.4	4216.3

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: S1 Acquired: 2/19/2025 13:03:52 Type: Cal
Method: NON EPA-6010-200.7(v2709) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	Be2348
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00073	.00216	.00259	.00169	.00719	.00812	.27028	.03242
Stddev	.00006	.00001	.00036	.00004	.00022	.00084	.00068	.00040
%RSD	8.1700	.33303	13.956	2.0955	3.0227	10.279	.24988	1.2382
#1	.00066	.00215	.00272	.00172	.00739	.00718	.26969	.03285
#2	.00074	.00215	.00287	.00168	.00722	.00843	.27102	.03237
#3	.00078	.00217	.00218	.00165	.00696	.00876	.27013	.03205

Elem	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.01408	.10961	.00232	.02597	.01528	.00039	.01161	.03122
Stddev	.00010	.00069	.00002	.00009	.00023	.00004	.00009	.00024
%RSD	.70947	.62746	1.0434	.35678	1.5369	11.024	.79415	.77378
#1	.01419	.11012	.00229	.02586	.01552	.00042	.01151	.03124
#2	.01399	.10987	.00233	.02603	.01528	.00040	.01165	.03144
#3	.01405	.10883	.00234	.02601	.01505	.00034	.01168	.03096

Elem	Ni2316	Ag3280	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02531	.00139	.04302	.00489	.10754	.01010	.05642	.13844
Stddev	.00020	.00001	.00021	.00016	.00095	.00002	.00013	.00034
%RSD	.78021	1.0467	.49764	3.2540	.88451	.17496	.22309	.24267
#1	.02553	.00141	.04283	.00489	.10863	.01011	.05631	.13807
#2	.02524	.00139	.04325	.00473	.10713	.01010	.05640	.13856
#3	.02515	.00138	.04298	.00505	.10686	.01008	.05656	.13871

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00485	.02015	.00187	-.00115	.00061	.01946	.28129
Stddev	.00002	.00009	.00004	.00004	.00006	.00033	.00062
%RSD	.44981	.44083	2.1820	3.5966	10.615	1.6719	.22175
#1	.00485	.02011	.00183	-.00117	.00067	.01960	.28067
#2	.00487	.02025	.00191	-.00118	.00054	.01970	.28129
#3	.00483	.02008	.00189	-.00110	.00062	.01909	.28191

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: S1 Acquired: 2/19/2025 13:03:52 Type: Cal
Method: NON EPA-6010-200.7(v2709) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2700.1	54342.	8969.0	1757.0	4108.0
Stddev	2.4	136.	28.1	6.4	2.5
%RSD	.09070	.25064	.31346	.36342	.05992
#1	2702.8	54224.	8974.5	1753.3	4110.4
#2	2699.4	54491.	8994.0	1764.4	4108.1
#3	2698.1	54312.	8938.6	1753.4	4105.5

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: S2 Acquired: 2/19/2025 13:08:13 Type: Cal
Method: NON EPA-6010-200.7(v2709) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	Be2348
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.03856	.05812	.22290	.07019	.12184	.13741	4.4374	.24160
Stddev	.00016	.00083	.00035	.00026	.00057	.00135	.0259	.00084
%RSD	.42191	1.4200	.15876	.37515	.46375	.98389	.58417	.34834
#1	.03839	.05782	.22249	.07031	.12121	.13722	4.4626	.24129
#2	.03860	.05749	.22312	.06989	.12201	.13885	4.4389	.24095
#3	.03871	.05905	.22309	.07037	.12230	.13617	4.4108	.24255

Elem	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1.0742	.25795	.04417	.40420	.16991	.00385	.26728	.06739
Stddev	.0020	.00137	.00015	.00123	.00025	.00004	.00222	.00036
%RSD	.18374	.52964	.33706	.30505	.14679	1.0144	.83143	.53245
#1	1.0725	.25915	.04434	.40303	.16963	.00389	.26984	.06739
#2	1.0736	.25824	.04411	.40408	.17011	.00381	.26588	.06703
#3	1.0764	.25646	.04405	.40548	.17000	.00384	.26611	.06775

Elem	Ni2316	Ag3280	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.29339	.05994	.10243	.05631	1.1867	.02502	.47090	.64171
Stddev	.00039	.00010	.00030	.00056	.0096	.00045	.00081	.00258
%RSD	.13186	.16165	.29708	.99231	.81249	1.8082	.17254	.40204
#1	.29299	.05986	.10264	.05689	1.1784	.02554	.47023	.64020
#2	.29343	.06005	.10208	.05624	1.1845	.02481	.47067	.64024
#3	.29376	.05993	.10257	.05578	1.1973	.02471	.47180	.64469

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.10963	.41551	.00456	.03167	.02158	.74840	13.010
Stddev	.00040	.00073	.00003	.00003	.00008	.00287	.046
%RSD	.36534	.17622	.75456	.09441	.39208	.38339	.35303
#1	.10942	.41632	.00458	.03167	.02155	.75171	13.004
#2	.10938	.41533	.00458	.03170	.02152	.74674	13.058
#3	.11010	.41488	.00452	.03164	.02168	.74675	12.967

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: S2 Acquired: 2/19/2025 13:08:13 Type: Cal
Method: NON EPA-6010-200.7(v2709) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2663.7	54023.	9175.7	1730.5	3990.5
Stddev	5.2	212.	17.4	8.7	4.6
%RSD	.19400	.39158	.18948	.50069	.11440
#1	2669.2	53834.	9158.2	1729.7	3993.4
#2	2658.9	54252.	9193.0	1739.5	3985.3
#3	2663.1	53984.	9176.0	1722.3	3992.9

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: S3 Acquired: 2/19/2025 13:12:18 Type: Cal
Method: NON EPA-6010-200.7(v2709) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	Be2348
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.10572	.15776	.61160	.19015	.33061	.37836	12.059	.74099
Stddev	.00040	.00075	.00070	.00093	.00153	.00162	.035	.00208
%RSD	.38076	.47445	.11466	.48753	.46403	.42720	.28683	.28054
#1	.10584	.15792	.61111	.19043	.33084	.38015	12.096	.74260
#2	.10527	.15695	.61129	.18911	.32898	.37790	12.054	.74173
#3	.10605	.15842	.61241	.19090	.33202	.37702	12.027	.73864

Elem	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2.9462	.70446	.12023	1.1059	.45873	.00985	.73654	.18613
Stddev	.0018	.00038	.00027	.0015	.00103	.00003	.00288	.00045
%RSD	.06098	.05326	.22278	.13601	.22484	.30592	.39062	.23968
#1	2.9454	.70403	.12005	1.1055	.45927	.00983	.73876	.18663
#2	2.9450	.70466	.12054	1.1046	.45754	.00988	.73758	.18598
#3	2.9483	.70470	.12009	1.1075	.45938	.00984	.73329	.18578

Elem	Ni2316	Ag3280	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.79891	.16421	.24636	.15646	3.1917	.06236	1.4398	1.7400
Stddev	.00167	.00040	.00020	.00063	.0175	.00017	.0055	.0059
%RSD	.20848	.24628	.07971	.40562	.54685	.27059	.37859	.33622
#1	.79729	.16459	.24624	.15691	3.2041	.06243	1.4446	1.7387
#2	.79882	.16427	.24659	.15673	3.1993	.06248	1.4411	1.7349
#3	.80062	.16378	.24626	.15573	3.1718	.06216	1.4339	1.7464

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.30167	1.1387	.01101	.09079	.05972	2.0132	36.157
Stddev	.00080	.0036	.00003	.00042	.00002	.0063	.107
%RSD	.26590	.31961	.30553	.46266	.03028	.31255	.29536
#1	.30187	1.1426	.01098	.09049	.05971	2.0189	36.196
#2	.30079	1.1383	.01102	.09060	.05974	2.0143	36.036
#3	.30236	1.1353	.01104	.09127	.05971	2.0065	36.238

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: S3 Acquired: 2/19/2025 13:12:18 Type: Cal
Method: NON EPA-6010-200.7(v2709) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2687.5	54205.	8306.8	1741.8	3964.3
Stddev	6.6	18.	26.8	6.3	7.6
%RSD	.24599	.03265	.32222	.36075	.19129
#1	2689.4	54189.	8278.4	1735.9	3969.6
#2	2692.9	54203.	8310.6	1741.2	3967.5
#3	2680.1	54224.	8331.5	1748.4	3955.6

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: S4 Acquired: 2/19/2025 13:16:25 Type: Cal
Method: NON EPA-6010-200.7(v2709) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	Be2348
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.20443	.30812	1.1880	.36543	.64142	.76149	24.056	1.4441
Stddev	.00104	.00330	.0029	.00136	.00269	.00147	.306	.0053
%RSD	.50674	1.0724	.24339	.37089	.41873	.19322	1.2708	.36628
#1	.20402	.30654	1.1886	.36467	.64063	.76308	23.890	1.4390
#2	.20366	.30589	1.1849	.36463	.63922	.76120	23.868	1.4439
#3	.20560	.31191	1.1906	.36700	.64441	.76018	24.408	1.4495

Elem	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5.7728	1.3947	.23297	2.1641	.88202	.01971	1.4658	.37209
Stddev	.0097	.0016	.00044	.0047	.00264	.00013	.0018	.00061
%RSD	.16708	.11374	.18811	.21751	.29974	.67037	.12136	.16340
#1	5.7795	1.3929	.23345	2.1659	.88156	.01982	1.4671	.37166
#2	5.7618	1.3960	.23284	2.1588	.87963	.01975	1.4665	.37279
#3	5.7772	1.3953	.23261	2.1676	.88486	.01956	1.4638	.37183

Elem	Ni2316	Ag3280	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1.5562	.32406	.49767	.31424	6.2358	.12744	2.8434	3.3917
Stddev	.0028	.00047	.00345	.00074	.0290	.00064	.0141	.0113
%RSD	.18122	.14606	.69297	.23391	.46433	.50306	.49619	.33308
#1	1.5571	.32387	.50080	.31358	6.2065	.12812	2.8286	3.3868
#2	1.5531	.32460	.49824	.31503	6.2366	.12736	2.8449	3.3838
#3	1.5585	.32372	.49397	.31410	6.2644	.12684	2.8567	3.4047

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.59000	2.2832	.02242	.17913	.11707	4.0968	72.157
Stddev	.00129	.0024	.00013	.00038	.00012	.0165	.819
%RSD	.21837	.10725	.57770	.20988	.09964	.40299	1.1352
#1	.59079	2.2860	.02256	.17916	.11702	4.1139	71.247
#2	.58852	2.2819	.02240	.17874	.11699	4.0956	72.391
#3	.59070	2.2817	.02230	.17949	.11720	4.0809	72.834

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: S4 Acquired: 2/19/2025 13:16:25 Type: Cal
Method: NON EPA-6010-200.7(v2709) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2701.8	53485.	8253.5	1714.0	3929.6
Stddev	7.6	66.	26.3	4.5	12.9
%RSD	.27997	.12362	.31921	.26402	.32863
#1	2698.3	53432.	8278.4	1716.8	3918.1
#2	2710.5	53464.	8256.2	1716.3	3943.6
#3	2696.6	53559.	8225.9	1708.7	3927.3

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: S5 Acquired: 2/19/2025 13:20:39 Type: Cal
Method: NON EPA-6010-200.7(v2709) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	Be2348
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.42354	.63184	2.4597	.75126	1.3198	1.6224	52.605	2.7495
Stddev	.00229	.00473	.0110	.00289	.0076	.0027	.804	.0231
%RSD	.54086	.74896	.44562	.38457	.57525	.16425	1.5291	.83857
#1	.42148	.63329	2.4513	.74897	1.3118	1.6247	53.303	2.7761
#2	.42313	.62656	2.4556	.75031	1.3206	1.6230	52.787	2.7372
#3	.42601	.63569	2.4721	.75451	1.3270	1.6195	51.725	2.7351

Elem	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	11.983	2.9683	.46438	4.5196	1.7938	.04353	3.1103	.78896
Stddev	.056	.0114	.00130	.0211	.0100	.00015	.0141	.00496
%RSD	.46629	.38428	.27951	.46662	.55592	.34952	.45351	.62921
#1	11.949	2.9814	.46327	4.5050	1.7840	.04337	3.1266	.79384
#2	11.952	2.9623	.46406	4.5100	1.7937	.04354	3.1030	.78913
#3	12.047	2.9611	.46581	4.5438	1.8039	.04368	3.1014	.78391

Elem	Ni2316	Ag3280	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3.2302	.65655	1.1501	.66826	12.649	.29834	5.4478	6.9098
Stddev	.0140	.00018	.0093	.00253	.040	.00190	.0482	.0321
%RSD	.43469	.02675	.80831	.37853	.31852	.63533	.88446	.46484
#1	3.2204	.65657	1.1394	.67024	12.635	.29640	5.5030	6.8817
#2	3.2239	.65672	1.1543	.66913	12.694	.29842	5.4266	6.9029
#3	3.2463	.65637	1.1565	.66541	12.616	.30019	5.4139	6.9448

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1.2228	4.8954	.05143	.38457	.25164	9.0892	149.47
Stddev	.0057	.0109	.00044	.00258	.00206	.0133	.85
%RSD	.46783	.22231	.86241	.67049	.81940	.14605	.57193
#1	1.2193	4.9076	.05093	.38381	.25001	9.1040	150.33
#2	1.2196	4.8916	.05157	.38246	.25095	9.0853	148.62
#3	1.2294	4.8869	.05179	.38745	.25395	9.0783	149.46

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: S5 Acquired: 2/19/2025 13:20:39 Type: Cal
Method: NON EPA-6010-200.7(v2709) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2535.1	51279.	8366.5	1629.0	3591.6
Stddev	8.5	118.	60.0	6.6	10.5
%RSD	.33452	.23081	.71677	.40744	.29313
#1	2544.4	51416.	8298.5	1634.3	3600.2
#2	2532.9	51211.	8389.4	1621.6	3594.8
#3	2527.9	51211.	8411.7	1631.1	3579.9

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: ICV01 Acquired: 2/19/2025 16:50:01 Type: Unk
Method: NON EPA-6010-200.7(v2709) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICV01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9969923	.9977077	.9653453	.9852552	.9613099	2.495850
Stddev	.0040460	.0015826	.0022324	.0036187	.0017649	.005750
%RSD	.4058241	.1586284	.2312496	.3672839	.1835982	.2303932
#1	.9989124	.9967473	.9679220	.9893852	.9599601	2.500776
#2	.9923437	.9995344	.9641200	.9826405	.9606626	2.489531
#3	.9997207	.9968413	.9639939	.9837398	.9633072	2.497244

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4851541	.5025166	.4841793	9.699572	.4896172	.5250866
Stddev	.0008732	.0007601	.0011236	.015890	.0157098	.0007328
%RSD	.1799829	.1512603	.2320685	.1638197	3.208594	.1395596
#1	.4851443	.5016404	.4847290	9.717087	.4799828	.5252957
#2	.4860322	.5029104	.4828867	9.686082	.4811233	.5242720
#3	.4842859	.5029991	.4849223	9.695547	.5077453	.5256921

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4948740	9.857985	.4889129	6.136861	.5205145	.2366574
Stddev	.0009353	.291295	.0015857	.015235	.0018577	.0064540
%RSD	.1889927	2.954910	.3243349	.2482547	.3568909	2.727133
#1	.4954802	9.647508	.4903349	6.119952	.5213257	.2326736
#2	.4937968	9.736008	.4872029	6.149520	.5183892	.2331950
#3	.4953448	10.19044	.4892008	6.141110	.5218286	.2441038

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.14555	.4885836	.9413592	10.06189	2.363267	2.532800
Stddev	.28120	.0019926	.0267790	.27270	.006172	.004481
%RSD	2.771610	.4078420	2.844714	2.710245	.2611700	.1769059
#1	9.97839	.4907468	.9258912	9.86257	2.356223	2.532257
#2	9.98807	.4881812	.9259054	9.95044	2.367730	2.528615
#3	10.47020	.4868229	.9722808	10.37267	2.365847	2.537527

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: ICV01 Acquired: 2/19/2025 16:50:01 Type: Unk
Method: NON EPA-6010-200.7(v2709) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICV01 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.491508	2.388705	F 2.806708	2.489753	2.251414	2.369460
Stddev	.002980	.002638	.075225	.006833	.003935	.005745
%RSD	.1196243	.1104281	2.680195	.2744636	.1748002	.2424731
#1	2.493200	2.390932	2.757875	2.495413	2.254795	2.375069
#2	2.488067	2.385792	2.768913	2.482162	2.247094	2.369723
#3	2.493258	2.389392	2.893337	2.491684	2.252354	2.363588

Elem	Sr4077
Units	ppm
Avg	2.305210
Stddev	.019841
%RSD	.8606983
#1	2.328115
#2	2.293334
#3	2.294180

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2658.138	54642.61	9484.163	1743.816	3953.429
Stddev	3.614	1466.69	23.491	43.748	5.697
%RSD	.1359531	2.684147	.2476818	2.508760	.1440962
#1	2660.908	55594.45	9478.930	1772.137	3953.992
#2	2659.456	55379.81	9463.730	1765.882	3958.823
#3	2654.050	52953.56	9509.828	1693.430	3947.471

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: LLICV01 Acquired: 2/19/2025 17:11:40 Type: Unk
Method: NON EPA-6010-200.7(v2710) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: LLICV01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0207345	.0411618	.0116442	.0218646	.0517189	.0942305
Stddev	.0037467	.0021506	.0011121	.0032337	.0014474	.0038204
%RSD	18.06982	5.224816	9.550565	14.78965	2.798631	4.054267
#1	.0181438	.0434635	.0109867	.0197591	.0524701	.0903521
#2	.0190292	.0408183	.0129282	.0202468	.0526363	.0979900
#3	.0250305	.0392036	.0110177	.0255879	.0500503	.0943496

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0974329	.0054254	.0059403	1.888465	.0097245	.0289630
Stddev	.0011155	.0000285	.0000972	.006247	.0001134	.0001306
%RSD	1.144905	.5254095	1.636301	.3307926	1.166569	.4507887
#1	.0968620	.0054156	.0059277	1.887788	.0096005	.0288616
#2	.0987183	.0054575	.0060432	1.895023	.0097496	.0289170
#3	.0967185	.0054030	.0058500	1.882584	.0098232	.0291103

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0217145	.0954810	.0193271	1.966138	.0395916	.0099192
Stddev	.0003011	.0019047	.0001711	.009833	.0002530	.0000337
%RSD	1.386519	1.994873	.8851705	.5001040	.6391150	.3397317
#1	.0213673	.0975535	.0194178	1.954846	.0392996	.0099455
#2	.0219031	.0938070	.0194336	1.972809	.0397286	.0099310
#3	.0218731	.0950827	.0191297	1.970758	.0397467	.0098812

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.081855	.0392040	.0405379	2.035563	.0899951	.2021414
Stddev	.012217	.0012888	.0008507	.020556	.0005285	.0002653
%RSD	.5868085	3.287525	2.098494	1.009858	.5872641	.1312313
#1	2.083690	.0400994	.0395751	2.011992	.0903026	.2023230
#2	2.068825	.0397858	.0408506	2.044931	.0902979	.2018370
#3	2.093050	.0377268	.0411880	2.049767	.0893849	.2022643

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: LLICV01 Acquired: 2/19/2025 17:11:40 Type: Unk
Method: NON EPA-6010-200.7(v2710) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: LLICV01 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0384553	.0382499	.4031990	.0223447	.0180895	F .0156576
Stddev	.0003878	.0008149	.0100039	.0022499	.0032033	.0002404
%RSD	1.008447	2.130503	2.481141	10.06901	17.70785	1.535163
#1	.0380135	.0391236	.4107090	.0227381	.0176104	.0158497
#2	.0387392	.0381159	.3918427	.0243720	.0215053	.0153880
#3	.0386134	.0375103	.4070452	.0199241	.0151528	.0157350

Elem	Sr4077
Units	ppm
Avg	.0188025
Stddev	.0000701
%RSD	.3726745
#1	.0187924
#2	.0187380
#3	.0188770

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2711.070	53714.32	9520.888	1735.647	4144.410
Stddev	1.405	161.68	66.504	4.507	4.139
%RSD	.0518302	.3010038	.6985091	.2596677	.0998671
#1	2710.754	53887.76	9526.902	1740.849	4148.278
#2	2712.606	53567.77	9451.582	1733.174	4144.908
#3	2709.850	53687.43	9584.182	1732.919	4140.045

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: ICB01 Acquired: 2/19/2025 17:15:46 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICB01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006586	-.001500	-.000556	.0020613	-.001192	-.005821	.0065790
Stddev	.0031635	.001183	.000363	.0024293	.000077	.008481	.0005404
%RSD	480.3587	78.83421	65.35953	117.8548	6.482714	145.7073	8.214265
#1	-.001065	-.002836	-.000719	.0027845	-.001113	-.006251	.0059764
#2	.004310	-.000584	-.000140	-.000648	-.001267	-.014078	.0070207
#3	-.001269	-.001081	-.000810	.004047	-.001195	.002867	.0067397

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000016	-.000056	-.013333	.0000632	-.000012	-.000110	-.005750
Stddev	.0000192	.000026	.008414	.0001090	.000068	.000371	.002390
%RSD	1183.525	46.18464	63.10581	172.6503	584.8361	336.3827	41.56630
#1	.0000103	-.000030	-.008735	.0001413	.000032	.000277	-.007488
#2	.0000148	-.000056	-.023044	-.000061	.000023	-.000462	-.003024
#3	-.000020	-.000082	-.008219	.000110	-.000089	-.000146	-.006739

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005511	.0001546	.0000720	-.000757	.0103886	.0015433	-.001110
Stddev	.0002526	.0164953	.0002062	.000303	.0041347	.0006426	.000380
%RSD	45.83286	10666.49	286.2002	39.96691	39.79976	41.63741	34.21960
#1	.0002637	.0079204	-.000038	-.000408	.0056184	.0015556	-.000715
#2	.0007377	-.018790	.000310	-.000920	.0129446	.0021797	-.001142
#3	.0006518	.011334	-.000056	-.000944	.0126029	.0008946	-.001473

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.027771	-.002358	-.000122	-.000354	-.000071	-.006739	.0023627
Stddev	.034381	.000625	.000387	.000658	.000680	.008315	.0013730
%RSD	123.7981	26.49434	317.9407	185.9299	962.4708	123.3757	58.11257
#1	.007796	-.001685	.000116	-.001060	-.000808	-.016086	.0038642
#2	-.060827	-.002471	-.000568	.000243	.000063	-.003968	.0011713
#3	-.030284	-.002919	.000087	-.000245	.000533	-.000164	.0020524

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: ICB01 Acquired: 2/19/2025 17:15:46 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICB01 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.003307	-.003181	-.000005
Stddev	.000552	.000541	.000021
%RSD	16.69681	17.01297	447.5623
#1	-.003831	-.003094	.000015
#2	-.002731	-.002689	-.000002
#3	-.003359	-.003761	-.000027

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2682.525	53960.70	9447.438	1737.641	4114.799
Stddev	1.364	162.57	24.346	3.945	5.534
%RSD	.0508621	.3012660	.2576994	.2270323	.1344937
#1	2683.908	54088.98	9419.670	1737.557	4114.119
#2	2682.485	54015.24	9465.119	1741.627	4120.642
#3	2681.180	53777.88	9457.526	1733.738	4109.637

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: CRI01 Acquired: 2/19/2025 17:20:07 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CRI01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0191338	.0389992	.0116696	.0195681	.0521331	.0886498	.1018883
Stddev	.0013491	.0022991	.0002085	.0011900	.0015031	.0040294	.0011644
%RSD	7.050824	5.895258	1.786927	6.081260	2.883251	4.545249	1.142798
#1	.0177399	.0413532	.0119058	.0208432	.0503975	.0840393	.1012913
#2	.0204331	.0367592	.0115109	.0184871	.0529894	.0914967	.1032301
#3	.0192283	.0388853	.0115921	.0193740	.0530124	.0904133	.1011436

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0054813	.0059209	1.929333	.0095449	.0294060	.0221178	.1022753
Stddev	.0000441	.0000503	.008181	.0000634	.0001753	.0002929	.0060227
%RSD	.8048873	.8503224	.4240298	.6647793	.5962706	1.324434	5.888686
#1	.0054326	.0059023	1.927036	.0096099	.0294007	.0219609	.0961639
#2	.0055186	.0059779	1.938417	.0095418	.0292333	.0219367	.1082052
#3	.0054928	.0058825	1.922546	.0094831	.0295839	.0224558	.1024568

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0203725	2.001164	.0395729	.0101287	2.138292	.0392636	.0407113
Stddev	.0003656	.007213	.0004945	.0000703	.014745	.0016463	.0002231
%RSD	1.794792	.3604479	1.249712	.6940416	.6895472	4.192934	.5479082
#1	.0199637	1.993638	.0393201	.0101139	2.134107	.0374683	.0406444
#2	.0204854	2.008017	.0392559	.0102053	2.126092	.0407025	.0409601
#3	.0206683	2.001836	.0401428	.0100670	2.154676	.0396200	.0405293

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.111046	.0906734	.2024682	.0395666	.0380332	.4060435	.0218257
Stddev	.018386	.0002733	.0002545	.0007648	.0003116	.0063752	.0006136
%RSD	.8709636	.3014009	.1256795	1.932825	.8193552	1.570089	2.811343
#1	2.127930	.0904825	.2022706	.0397617	.0383435	.3987403	.0211338
#2	2.091456	.0905512	.2023787	.0402149	.0377203	.4104961	.0223037
#3	2.113751	.0909864	.2027553	.0387232	.0380359	.4088940	.0220397

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: CRI01 Acquired: 2/19/2025 17:20:07 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CRI01 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0156921	.0166149	.0187843
Stddev	.0031043	.0013007	.0000488
%RSD	19.78273	7.828368	.2596881
#1	.0136075	.0151362	.0188260
#2	.0192598	.0171264	.0187307
#3	.0142091	.0175821	.0187962

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2691.547	53199.91	9371.930	1741.709	4088.210
Stddev	3.225	25.94	38.039	3.560	4.419
%RSD	.1198069	.0487627	.4058817	.2044208	.1080937
#1	2689.902	53229.86	9370.193	1737.617	4084.623
#2	2689.477	53184.35	9334.789	1743.410	4086.859
#3	2695.263	53185.53	9410.807	1744.100	4093.146

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: ICSA01 Acquired: 2/19/2025 17:24:25 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSA01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.002701	.0090984	.0050291	-.015366	-.000250	239.7934
Stddev	.006058	.0009249	.0011217	.002554	.001316	.3159
%RSD	224.2747	10.16503	22.30458	16.62136	525.5900	.1317411
#1	-.000914	.0100035	.0059110	-.018095	-.001209	239.5849
#2	.002262	.0091368	.0037666	-.013034	-.000792	239.6384
#3	-.009452	.0081550	.0054097	-.014969	.001250	240.1568

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0065013	.0012942	-.001026	227.7438	.0568898	.0013306
Stddev	.0007669	.0001218	.000145	.6164	.0004111	.0001962
%RSD	11.79683	9.408058	14.09720	.2706356	.7226399	14.74822
#1	.0062078	.0011624	-.001148	227.5611	.0568661	.0014550
#2	.0059245	.0014024	-.001065	227.2394	.0573123	.0014325
#3	.0073716	.0013178	-.000866	228.4308	.0564911	.0011044

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0123264	97.87407	.0042381	241.6775	.0025615	-.007358
Stddev	.0006069	.73023	.0002655	.6507	.0002910	.000057
%RSD	4.923222	.7460869	6.264408	.2692237	11.35885	.7716919
#1	.0117245	98.38654	.0041697	241.1681	.0025271	-.007299
#2	.0123167	98.19772	.0040135	241.4539	.0022893	-.007412
#3	.0129381	97.03795	.0045311	242.4105	.0028681	-.007363

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0387411	.0073307	.0022436	-.016767	.0367618	-.000027
Stddev	.0050437	.0011217	.0003169	.005670	.0022170	.000188
%RSD	13.01903	15.30101	14.12634	33.81659	6.030750	707.2733
#1	.0349440	.0073768	.0020027	-.022257	.0375651	-.000108
#2	.0444640	.0084286	.0021254	-.017114	.0384653	.000188
#3	.0368153	.0061867	.0026026	-.010932	.0342552	-.000160

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: ICSA01 Acquired: 2/19/2025 17:24:25 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSA01 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.003990	-.001808	.0117597	.0035248	-.018464	F -.036196
Stddev	.000754	.001104	.0105087	.0026624	.006876	.000395
%RSD	18.90913	61.07959	89.36213	75.53390	37.24087	1.091208
#1	-.004092	-.002209	-.000102	.0005549	-.016097	-.036537
#2	-.003189	-.000559	.019907	.0056976	-.013084	-.035763
#3	-.004688	-.002656	.015473	.0043219	-.026212	-.036286

Elem	Sr4077
Units	ppm
Avg	-.002690
Stddev	.000623
%RSD	23.15063
#1	-.003221
#2	-.002844
#3	-.002004

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2416.044	48147.96	8341.712	1584.857	3358.973
Stddev	2.099	185.17	64.721	5.404	3.696
%RSD	.0868650	.3845808	.7758684	.3409977	.1100198
#1	2418.145	47997.33	8360.773	1585.924	3358.859
#2	2416.039	48091.87	8394.762	1578.999	3355.336
#3	2413.947	48354.69	8269.602	1589.648	3362.724

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: ICSAB01 Acquired: 2/19/2025 17:28:39 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSAB01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1141227	.0991319	.0557079	.0368931	.6226516	242.2901
Stddev	.0025618	.0010616	.0020481	.0004548	.0024135	.2640
%RSD	2.244783	1.070900	3.676518	1.232727	.3876082	.1089496
#1	.1170519	.0982425	.0558180	.0369500	.6213843	242.3004
#2	.1130154	.1003072	.0536070	.0373168	.6254347	242.0212
#3	.1123007	.0988461	.0576988	.0364126	.6211358	242.5488

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4824176	.4644665	1.017843	229.9306	.5760777	.5107613
Stddev	.0016231	.0014327	.001474	.2582	.0015433	.0002028
%RSD	.3364513	.3084635	.1448127	.1122862	.2679012	.0397071
#1	.4841078	.4629523	1.016141	230.2111	.5749357	.5107971
#2	.4808712	.4646466	1.018676	229.7030	.5754639	.5109439
#3	.4822738	.4658006	1.018713	229.8776	.5778335	.5105430

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4986145	105.4328	.4688322	243.3785	1.012752	.2149140
Stddev	.0013751	.6059	.0018315	.4849	.000285	.0001996
%RSD	.2757732	.5746895	.3906489	.1992495	.0281048	.0928864
#1	.4973056	106.1143	.4709441	243.1002	1.012642	.2151380
#2	.5000473	105.2292	.4676800	243.0968	1.013075	.2147549
#3	.4984906	104.9549	.4678725	243.9384	1.012539	.2148491

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0705067	.4663318	1.049699	-.021733	1.000803	1.107774
Stddev	.0027348	.0014237	.002401	.028307	.002745	.000748
%RSD	3.878795	.3052919	.2287659	130.2514	.2742333	.0675425
#1	.0729806	.4674781	1.047139	-.014854	.998497	1.107044
#2	.0709694	.4667792	1.050056	.002501	1.000074	1.107739
#3	.0675700	.4647382	1.051902	-.052846	1.003839	1.108539

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: ICSAB01 Acquired: 2/19/2025 17:28:39 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSAB01 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.116309	1.023298	1.067432	F .0103805	F -.028453	F -.037553
Stddev	.003174	.002730	.016398	.0033602	.003933	.001593
%RSD	.2843141	.2668088	1.536255	32.37048	13.82346	4.240663
#1	1.112944	1.024397	1.076737	.0089014	-.032811	-.035722
#2	1.116736	1.025308	1.048498	.0142265	-.025167	-.038615
#3	1.119248	1.020190	1.077061	.0080136	-.027382	-.038322

Elem	Sr4077
Units	ppm
Avg	F -.010377
Stddev	.000721
%RSD	6.949629
#1	-.011169
#2	-.010205
#3	-.009757

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2405.988	47709.85	9046.204	1554.530	3358.429
Stddev	2.667	112.55	22.969	1.529	3.070
%RSD	.1108308	.2359148	.2539114	.0983499	.0914059
#1	2403.574	47595.91	9051.526	1553.029	3360.599
#2	2405.541	47820.97	9066.046	1556.085	3359.773
#3	2408.850	47712.65	9021.041	1554.476	3354.917

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: CCV01 Acquired: 2/19/2025 17:32:42 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.980899	5.072727	5.000626	4.984059	4.997216	9.922720	10.01623
Stddev	.019549	.060236	.006587	.020111	.016730	.012518	.09935
%RSD	.3924724	1.187447	.1317208	.4035158	.3347787	.1261598	.9918740
#1	4.965263	5.003521	4.999950	4.961661	4.977911	9.930769	10.09920
#2	4.974617	5.113353	4.994403	4.989944	5.006244	9.929094	10.04335
#3	5.002816	5.101307	5.007525	5.000571	5.007491	9.908298	9.90614

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2349276	2.498485	24.75342	1.025213	2.493769	1.256813	5.233609
Stddev	.0003353	.005313	.08120	.004931	.004082	.003202	.009842
%RSD	.1427215	.2126406	.3280466	.4809853	.1637043	.2547961	.1880619
#1	.2345456	2.500309	24.71848	1.030904	2.495657	1.255645	5.225216
#2	.2350640	2.492500	24.84625	1.022203	2.489084	1.254358	5.231168
#3	.2351732	2.502645	24.69554	1.022533	2.496566	1.260435	5.244442

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.448813	24.39904	2.501296	1.258329	26.96452	2.468300	2.522791
Stddev	.009823	.03950	.004235	.002023	.11813	.005833	.004938
%RSD	.4011505	.1618942	.1693101	.1607841	.4380961	.2363163	.1957459
#1	2.441696	24.38410	2.500879	1.259695	27.09956	2.464357	2.527743
#2	2.460021	24.44383	2.497285	1.256005	26.91367	2.475000	2.517867
#3	2.444723	24.36918	2.505724	1.259287	26.88034	2.465542	2.522763

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	26.88368	4.645192	5.050192	5.016250	4.939044	5.293268	4.996692
Stddev	.09632	.020880	.013720	.006821	.019401	.020580	.010072
%RSD	.3582940	.4495017	.2716706	.1359804	.3928153	.3888029	.2015635
#1	26.97102	4.621334	5.034952	5.016016	4.932512	5.304794	4.985063
#2	26.89964	4.654112	5.054068	5.009549	4.960868	5.269508	5.002466
#3	26.78037	4.660131	5.061558	5.023185	4.923751	5.305503	5.002548

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: CCV01 Acquired: 2/19/2025 17:32:42 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV01 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.893566	4.974141	4.898557
Stddev	.021735	.012567	.033929
%RSD	.4441629	.2526438	.6926257
#1	4.869287	4.966031	4.877084
#2	4.900199	4.988617	4.937672
#3	4.911212	4.967774	4.880915

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2604.229	51249.40	8858.682	1632.947	3779.389
Stddev	1.697	252.52	7.139	8.730	5.019
%RSD	.0651795	.4927241	.0805918	.5346108	.1327912
#1	2605.972	50973.23	8864.110	1626.067	3774.220
#2	2602.581	51468.50	8861.341	1642.767	3784.243
#3	2604.136	51306.49	8850.594	1630.007	3779.704

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: CCB01 Acquired: 2/19/2025 17:36:53 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0015321	-.000606	-.000076	.0028850	.0006744	-.006918	.0035674
Stddev	.0033386	.001141	.000331	.0029667	.0005510	.006874	.0016212
%RSD	217.9047	188.3372	435.8078	102.8328	81.70915	99.37557	45.44528
#1	.0049830	-.001481	-.000165	.0000842	.0002647	-.013275	.0037279
#2	.0012950	-.001021	-.000353	.0025771	.0004576	.000377	.0018719
#3	-.001682	.000685	.000290	.0059936	.0013009	-.007855	.0051024

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000345	-.000009	-.019439	-.000044	-.000030	.0002791	-.011406
Stddev	.0000684	.000041	.010033	.000195	.000091	.0003793	.002932
%RSD	198.1508	449.1595	51.61528	446.2063	297.8311	135.9148	25.70762
#1	-.000044	-.000033	-.016657	.000128	-.000122	-.000108	-.013471
#2	.000066	-.000032	-.011090	-.000004	.000059	.000650	-.008050
#3	.000082	.000038	-.030570	-.000255	-.000029	.000295	-.012698

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003778	-.002361	.0002825	-.000165	.0234693	.0014067	-.001553
Stddev	.0002704	.014333	.0002059	.000576	.0044937	.0014600	.000179
%RSD	71.58786	607.0336	72.90754	349.1175	19.14720	103.7897	11.50028
#1	.0002315	-.007738	.0001070	.000037	.0219752	.0006355	-.001542
#2	.0002120	.013883	.0002313	.000283	.0199129	.0004940	-.001737
#3	.0006898	-.013229	.0005092	-.000815	.0285197	.0030906	-.001381

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.024042	.0084392	.0001473	.0003544	.0005568	.0022296	.0052451
Stddev	.029279	.0005081	.0001150	.0000497	.0003876	.0061602	.0019623
%RSD	121.7853	6.020392	78.11051	14.01087	69.60560	276.2901	37.41262
#1	-.048974	.0085784	.0002037	.0003850	.0006767	-.000404	.0029933
#2	.008200	.0088632	.0000149	.0002971	.0001234	.009269	.0061525
#3	-.031351	.0078760	.0002232	.0003811	.0008702	-.002176	.0065896

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: CCB01 Acquired: 2/19/2025 17:36:53 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB01 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.001999	-.002064	.0000622
Stddev	.001520	.001075	.0000372
%RSD	76.03255	52.10525	59.91258
#1	-.003272	-.003304	.0000802
#2	-.002408	-.001398	.0000869
#3	-.000316	-.001489	.0000193

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2754.471	53711.33	9363.016	1730.142	4279.442
Stddev	2.799	227.18	25.328	2.736	4.827
%RSD	.1015986	.4229733	.2705102	.1581513	.1127870
#1	2754.859	53932.10	9367.763	1730.733	4284.773
#2	2757.055	53478.24	9385.635	1727.159	4278.185
#3	2751.499	53723.65	9335.651	1732.535	4275.368

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: PB166760BL Acquired: 2/19/2025 17:41:14 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0019710	-.001917	-.001247	.0011882	.0003282	-.007701	.0075108
Stddev	.0042750	.003073	.000119	.0037259	.0023685	.007823	.0010940
%RSD	216.8869	160.2834	9.510460	313.5886	721.7303	101.5890	14.56531
#1	-.002423	-.004829	-.001122	-.001600	-.002102	-.016577	.0075697
#2	.002221	.001294	-.001358	.005420	.000457	-.004716	.0085742
#3	.006116	-.002216	-.001262	-.000255	.002630	-.001809	.0063886

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000008	-.000071	-.017948	-.000105	-.000058	-.000340	-.004385
Stddev	.000058	.000037	.009484	.000221	.000111	.000350	.003433
%RSD	701.8665	52.82879	52.84001	210.8810	191.6921	102.9720	78.28699
#1	-.000069	-.000033	-.027677	-.000180	.000061	.000052	-.002801
#2	.000046	-.000107	-.017436	.000144	-.000159	-.000621	-.002030
#3	-.000002	-.000072	-.008730	-.000278	-.000077	-.000451	-.008323

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002387	-.003646	.0001280	-.000468	.0353736	.0017808	-.001063
Stddev	.0000730	.001133	.0008211	.000129	.0029494	.0014358	.000271
%RSD	30.56192	31.07032	641.3101	27.57557	8.337872	80.62659	25.50806
#1	.0002533	-.004954	.0001748	-.000359	.0385363	.0011893	-.000757
#2	.0001596	-.002951	.0009247	-.000434	.0348863	.0034178	-.001274
#3	.0003033	-.003035	-.000715	-.000610	.0326982	.0007352	-.001156

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.041685	.0021465	.0000626	-.000019	.0005917	.0109972	.0011383
Stddev	.023662	.0003541	.0001456	.000435	.0001569	.0087812	.0026094
%RSD	56.76257	16.49435	232.4983	2314.081	26.51289	79.84919	229.2448
#1	-.027280	.0025489	-.000097	.000314	.0004264	.0182765	.0003842
#2	-.028782	.0018829	.000097	-.000512	.0007385	.0012446	.0040416
#3	-.068993	.0020076	.000188	.000142	.0006102	.0134704	-.001011

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: PB166760BL Acquired: 2/19/2025 17:41:14 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.005306	-.002169	.0000869
Stddev	.002503	.000458	.0000303
%RSD	47.16934	21.10573	34.80950
#1	-.002431	-.002698	.0000940
#2	-.006490	-.001922	.0001130
#3	-.006998	-.001888	.0000537

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2681.629	53764.69	9412.455	1758.697	4087.873
Stddev	12.137	220.24	85.185	5.932	16.118
%RSD	.4526031	.4096377	.9050243	.3373151	.3942987
#1	2668.219	53542.77	9477.286	1755.733	4073.531
#2	2691.860	53983.21	9315.976	1765.528	4105.317
#3	2684.806	53768.07	9444.103	1754.832	4084.771

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: PB166760BS Acquired: 2/19/2025 17:45:35 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8060856	2.013043	.9860936	1.965474	.7855937	1.877618
Stddev	.0015751	.007326	.0025206	.003472	.0028231	.017192
%RSD	.1953978	.3639128	.2556115	.1766658	.3593554	.9156344
#1	.8064335	2.010310	.9831833	1.962046	.7826139	1.870170
#2	.8043657	2.021343	.9875744	1.968989	.7882283	1.865406
#3	.8074576	2.007477	.9875232	1.965387	.7859388	1.897278

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1945458	.1870461	.1960001	.9656712	.4041852	.1962715
Stddev	.0004410	.0009780	.0004542	.0128200	.0013288	.0003091
%RSD	.2266600	.5228457	.2317113	1.327570	.3287543	.1575006
#1	.1945063	.1865956	.1955026	.9526789	.4052717	.1959632
#2	.1941259	.1863746	.1961049	.9783116	.4045802	.1962697
#3	.1950052	.1881681	.1963926	.9660229	.4027037	.1965815

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3074340	3.061813	.1945677	1.855187	.4958294	.0757566
Stddev	.0005497	.023260	.0004024	.004263	.0006311	.0004800
%RSD	.1787966	.7596915	.2068175	.2297792	.1272897	.6336539
#1	.3068035	3.064429	.1946100	1.857176	.4952446	.0752212
#2	.3078124	3.083655	.1941458	1.850293	.4957452	.0761485
#3	.3076860	3.037355	.1949473	1.858092	.4964984	.0759000

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.084358	.2862517	.2003896	9.992386	.2745420	.3953036
Stddev	.022448	.0020445	.0014402	.066720	.0024783	.0006443
%RSD	.7277998	.7142349	.7186793	.6677056	.9026954	.1629815
#1	3.099487	.2885438	.1988759	9.998355	.2731991	.3951007
#2	3.095020	.2855955	.2017428	10.05592	.2730250	.3960249
#3	3.058565	.2846159	.2005502	9.92288	.2774019	.3947853

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: PB166760BS Acquired: 2/19/2025 17:45:35 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6780746	.1883160	.8317913	5.815592	F -.009897	.1946481
Stddev	.0023586	.0012071	.0107785	.008193	.002390	.0014667
%RSD	.3478334	.6410051	1.295814	.1408775	24.14922	.7535112
#1	.6756317	.1871225	.8442231	5.824354	-.012359	.1944621
#2	.6782536	.1895363	.8250619	5.814302	-.007585	.1961989
#3	.6803387	.1882891	.8260890	5.808121	-.009748	.1932832

Elem	Sr4077
Units	ppm
Avg	.1845571
Stddev	.0003768
%RSD	.2041393
#1	.1848494
#2	.1841319
#3	.1846901

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2660.539	53413.28	9083.236	1747.553	4000.389
Stddev	3.855	240.95	26.679	3.551	6.033
%RSD	.1449095	.4511007	.2937198	.2031794	.1508215
#1	2664.614	53136.79	9080.034	1746.008	4007.354
#2	2656.949	53524.69	9111.371	1745.037	3996.794
#3	2660.054	53578.36	9058.302	1751.614	3997.018

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: Q1382-01 Acquired: 2/19/2025 17:49:36 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000300	-.017508	.0574436	-.119863	-.001125	154.7426
Stddev	.006048	.001279	.0002852	.003249	.004183	.1168
%RSD	2019.535	7.303732	.4963964	2.710709	371.7720	.0754584
#1	.004787	-.016944	.0573840	-.119771	-.004587	154.8215
#2	.001303	-.018972	.0577538	-.116660	.003524	154.7978
#3	-.006988	-.016608	.0571929	-.123156	-.002313	154.6085

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3140106	.0090510	.0158740	173.9480	.0286117	.3619154
Stddev	.0005727	.0000753	.0007338	.2414	.0004261	.0005640
%RSD	.1823685	.8317585	4.622385	.1388050	1.489369	.1558493
#1	.3146701	.0089649	.0153689	174.1896	.0284024	.3616214
#2	.3137225	.0091045	.0155373	173.9476	.0291021	.3615591
#3	.3136391	.0090835	.0167156	173.7067	.0283307	.3625657

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7893320	565.7708	4.333192	135.2943	.1681142	-.044481
Stddev	.0032365	.8773	.006485	.1907	.0002480	.000534
%RSD	.4100350	.1550631	.1496615	.1409269	.1474968	1.201301
#1	.7866284	565.9148	4.337450	135.4745	.1681241	-.044611
#2	.7884493	566.5672	4.336397	135.0946	.1678614	-.043894
#3	.7929183	564.8304	4.325728	135.3137	.1683571	-.044939

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	23.68001	1.109739	.5400504	1.845140	3.181283	-.000155
Stddev	.02210	.006024	.0027658	.010795	.011820	.000427
%RSD	.0933471	.5428046	.5121343	.5850488	.3715537	275.5414
#1	23.65503	1.103561	.5390821	1.848231	3.193405	.000311
#2	23.68794	1.115596	.5378988	1.854052	3.180655	-.000249
#3	23.69705	1.110060	.5431701	1.833136	3.169789	-.000528

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: Q1382-01 Acquired: 2/19/2025 17:49:36 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0023575	4.165978	3.739524	9.759140	F 19.23641	.0852171
Stddev	.0005007	.007373	.029701	.015439	.03859	.0013245
%RSD	21.23753	.1769799	.7942508	.1581986	.2006088	1.554313
#1	.0024703	4.169252	3.741066	9.742578	19.19882	.0862247
#2	.0027922	4.171146	3.709082	9.761710	19.23448	.0837168
#3	.0018101	4.157534	3.768425	9.773133	19.27593	.0857097

Elem	Sr4077
Units	ppm
Avg	-.138166
Stddev	.000901
%RSD	.6522251
#1	-.137884
#2	-.139174
#3	-.137439

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2984.574	60015.23	10209.88	1905.176	3425.817
Stddev	.824	66.24	32.64	4.527	2.481
%RSD	.0276002	.1103742	.3196477	.2376022	.0724184
#1	2985.495	60067.61	10184.19	1906.011	3427.998
#2	2984.316	59940.77	10198.85	1909.227	3426.336
#3	2983.909	60037.32	10246.60	1900.289	3423.118

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: Q1382-03 Acquired: 2/19/2025 17:53:50 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.009772	-.006459	.0455030	-.093792	-.001930	129.6348	.2734888
Stddev	.003672	.000727	.0029879	.003095	.002440	.2159	.0011184
%RSD	37.57762	11.25889	6.566459	3.300231	126.4404	.1665688	.4089323
#1	-.013982	-.005644	.0476010	-.095896	-.001367	129.4082	.2725461
#2	-.007229	-.006693	.0468260	-.090238	-.004603	129.8382	.2731956
#3	-.008106	-.007041	.0420819	-.095242	.000180	129.6579	.2747245

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0066964	.0056313	188.3727	.0159205	.3078425	.6091079	531.9128
Stddev	.0001103	.0006571	.3274	.0003631	.0006547	.0016180	2.2894
%RSD	1.647557	11.66834	.1738184	2.280371	.2126589	.2656373	.4304085
#1	.0066790	.0059182	188.0280	.0155375	.3077718	.6109056	530.1673
#2	.0065958	.0048795	188.4106	.0159646	.3072260	.6086498	534.5049
#3	.0068144	.0060961	188.6796	.0162596	.3085296	.6077684	531.0661

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.718278	113.5146	.1388867	-.028211	23.07495	.8785070	.4932453
Stddev	.013869	.3609	.0008533	.000354	.15895	.0042984	.0017874
%RSD	.2939383	.3179058	.6143909	1.253953	.6888312	.4892888	.3623822
#1	4.702650	113.2922	.1384156	-.028313	23.06050	.8751607	.4911820
#2	4.723062	113.3207	.1383727	-.027817	23.24064	.8833548	.4942336
#3	4.729121	113.9310	.1398716	-.028502	22.92373	.8770056	.4943205

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.016477	2.169165	-.000750	.0017319	3.277255	4.036709	9.788524
Stddev	.022630	.006185	.000085	.0008748	.006057	.017210	.026339
%RSD	.7502043	.2851383	11.28714	50.51265	.1848084	.4263441	.2690761
#1	3.017983	2.166799	-.000824	.0010257	3.272595	4.017156	9.778740
#2	3.038317	2.164512	-.000658	.0014594	3.284101	4.043408	9.768478
#3	2.993132	2.176184	-.000768	.0027106	3.275068	4.049562	9.818354

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: Q1382-03 Acquired: 2/19/2025 17:53:50 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	8.815506	.0629477	-.128794
Stddev	.023933	.0000992	.001386
%RSD	.2714909	.1575521	1.076318
#1	8.825357	.0630037	-.127600
#2	8.788219	.0630061	-.130314
#3	8.832940	.0628332	-.128467

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2956.986	59743.25	11311.93	1886.079	3342.847
Stddev	8.306	114.78	71.73	3.776	9.129
%RSD	.2809076	.1921219	.6340689	.2001963	.2730882
#1	2947.438	59800.05	11322.56	1889.790	3337.683
#2	2962.552	59818.55	11377.74	1886.204	3353.387
#3	2960.968	59611.14	11235.48	1882.242	3337.470

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: Q1382-05 Acquired: 2/19/2025 17:58:02 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.015240	-.015841	.0401511	-.098412	-.001651	135.0641	.2532865
Stddev	.003535	.003007	.0012364	.001003	.001485	.1822	.0002876
%RSD	23.19263	18.98049	3.079263	1.019316	89.94631	.1348619	.1135637
#1	-.013903	-.016652	.0389593	-.097532	-.000662	134.8775	.2535300
#2	-.019248	-.018359	.0414276	-.099505	-.003358	135.2415	.2529691
#3	-.012570	-.012512	.0400664	-.098200	-.000932	135.0733	.2533603

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0073599	.0094976	145.7144	.0362052	.3124502	.6889855	502.2830
Stddev	.0000772	.0006114	.2086	.0002281	.0011215	.0045208	2.9517
%RSD	1.048695	6.437468	.1431754	.6301631	.3589407	.6561474	.5876666
#1	.0073085	.0098095	145.4744	.0363562	.3136527	.6896302	500.6523
#2	.0073225	.0087931	145.8161	.0359427	.3122652	.6841770	505.6904
#3	.0074487	.0098902	145.8527	.0363166	.3114326	.6931493	500.5064

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.025970	118.7609	.1564051	-.035711	22.26519	1.002847	.4982147
Stddev	.006840	.4419	.0002431	.000765	.08514	.000907	.0013460
%RSD	.1699036	.3720618	.1554032	2.142447	.3824062	.0904182	.2701662
#1	4.018738	118.2532	.1566669	-.036531	22.35416	1.001912	.4997683
#2	4.026837	118.9714	.1563618	-.035016	22.18447	1.002908	.4974005
#3	4.032336	119.0582	.1561866	-.035587	22.25694	1.003722	.4974753

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.728525	1.961408	.0004023	-.000015	4.096643	4.002505	8.955621
Stddev	.036195	.007356	.0005296	.002046	.004751	.034316	.028907
%RSD	2.093990	.3750578	131.6363	13639.99	.1159614	.8573536	.3227771
#1	1.770222	1.955051	.0009348	.002223	4.095051	3.996606	8.986380
#2	1.705210	1.969466	-.000124	-.001788	4.092892	3.971521	8.929017
#3	1.710143	1.959709	.000397	-.000480	4.101985	4.039387	8.951465

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: Q1382-05 Acquired: 2/19/2025 17:58:02 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	5.733778	.0747296	-.121010
Stddev	.011743	.0003438	.002632
%RSD	.2048079	.4600684	2.174681
#1	5.728584	.0747737	-.119570
#2	5.725527	.0750492	-.124047
#3	5.747222	.0743658	-.119411

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2966.748	60160.91	10529.04	1901.908	3455.261
Stddev	3.043	111.91	38.95	6.564	8.368
%RSD	.1025653	.1860242	.3699500	.3451345	.2421855
#1	2964.724	60045.56	10565.59	1906.013	3445.736
#2	2970.247	60168.13	10488.06	1894.338	3458.621
#3	2965.273	60269.04	10533.46	1905.374	3461.428

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: Q1382-07 Acquired: 2/19/2025 18:02:15 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.014230	-.010953	.0495691	-.125598	-.001250	158.3069
Stddev	.002637	.003781	.0008235	.002354	.001287	.0444
%RSD	18.53152	34.52037	1.661270	1.873915	103.0132	.0280299
#1	-.016830	-.015314	.0499710	-.128308	-.002456	158.3476
#2	-.014303	-.008583	.0501143	-.124073	-.001399	158.3133
#3	-.011557	-.008962	.0486218	-.124411	.000106	158.2596

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3522878	.0089022	.0148505	158.8063	.0198520	.3768790
Stddev	.0018249	.0000771	.0008554	.2059	.0002743	.0010476
%RSD	.5180084	.8665607	5.760134	.1296565	1.381982	.2779659
#1	.3542313	.0089907	.0145254	158.8431	.0198185	.3756915
#2	.3506108	.0088496	.0142053	158.5845	.0201416	.3776724
#3	.3520212	.0088662	.0158208	158.9914	.0195960	.3772730

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7765290	621.0435	4.633962	142.7154	.1662107	-.044559
Stddev	.0069889	5.4194	.010975	.1533	.0006324	.001131
%RSD	.9000192	.8726339	.2368490	.1073876	.3804906	2.538418
#1	.7757517	621.3827	4.637451	142.5620	.1663871	-.044779
#2	.7699612	626.2853	4.621667	142.7155	.1667362	-.043334
#3	.7838740	615.4624	4.642770	142.8686	.1655089	-.045563

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	24.80069	1.132238	.5794771	2.123336	2.773714	-.001231
Stddev	.17955	.004426	.0016831	.022236	.007359	.000770
%RSD	.7239807	.3909318	.2904448	1.047217	.2653039	62.53795
#1	24.87531	1.137349	.5794869	2.111782	2.767330	-.000372
#2	24.93089	1.129627	.5777892	2.148971	2.772049	-.001464
#3	24.59586	1.129738	.5811553	2.109256	2.781763	-.001857

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: Q1382-07 Acquired: 2/19/2025 18:02:15 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001407	4.121988	4.032540	F 10.45483	F 10.49291	.0976287
Stddev	.0009260	.004483	.072750	.00940	.02065	.0007298
%RSD	658.2385	.1087634	1.804079	.0899034	.1967604	.7475042
#1	-.000316	4.126559	4.069790	10.45417	10.49457	.0980456
#2	-.000468	4.117598	4.079122	10.44577	10.47148	.0980544
#3	.001206	4.121805	3.948708	10.46454	10.51268	.0967860

Elem	Sr4077
Units	ppm
Avg	-.219877
Stddev	.004479
%RSD	2.037247
#1	-.219976
#2	-.224305
#3	-.215348

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2983.731	60181.49	10649.45	1926.162	3372.650
Stddev	1.490	168.09	49.59	6.134	4.708
%RSD	.0499475	.2792983	.4656198	.3184508	.1395824
#1	2985.175	60202.84	10672.95	1921.001	3377.905
#2	2982.198	60003.74	10682.91	1924.541	3371.226
#3	2983.821	60337.87	10592.48	1932.943	3368.818

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: Q1382-09 Acquired: 2/19/2025 18:06:28 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.012774	-.012664	.0516726	-.115742	-.001657	171.7580	.2410425
Stddev	.000460	.002751	.0023233	.002288	.001829	.3519	.0003770
%RSD	3.599018	21.72499	4.496160	1.976379	110.4383	.2048558	.1564142
#1	-.012804	-.014284	.0538898	-.117582	-.003617	172.0310	.2406235
#2	-.013218	-.009487	.0492560	-.113181	.000005	171.8820	.2411495
#3	-.012300	-.014220	.0518720	-.116464	-.001358	171.3609	.2413545

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0082846	.0103619	197.8110	.0219251	.3524052	.7035671	583.7892
Stddev	.0001007	.0007636	.0220	.0004061	.0007150	.0044270	3.2820
%RSD	1.215884	7.369159	.0111312	1.852289	.2028856	.6292241	.5621843
#1	.0083994	.0095133	197.7945	.0217459	.3519945	.6995415	587.4008
#2	.0082436	.0105791	197.8025	.0216394	.3519903	.7028515	580.9891
#3	.0082109	.0109934	197.8360	.0223900	.3532307	.7083083	582.9777

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.222681	138.7141	.1695187	-.040717	25.23940	1.056072	.5803316
Stddev	.003756	.2710	.0010301	.000394	.11763	.001460	.0019571
%RSD	.0889364	.1953898	.6076674	.9682594	.4660703	.1382617	.3372332
#1	4.223819	138.7525	.1703866	-.040338	25.37440	1.056615	.5817326
#2	4.218488	138.4260	.1683803	-.041125	25.18487	1.057184	.5811667
#3	4.225736	138.9640	.1697891	-.040687	25.15893	1.054419	.5780955

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.641943	2.170914	.0001457	-.000427	4.396400	7.825803	9.687782
Stddev	.010463	.001893	.0004400	.000935	.007907	.056437	.031722
%RSD	.3960225	.0871776	301.9852	218.7371	.1798596	.7211705	.3274385
#1	2.630350	2.172681	.0000880	.000531	4.405349	7.890871	9.683942
#2	2.650682	2.168917	-.000263	-.001336	4.393497	7.796386	9.658155
#3	2.644798	2.171144	.000612	-.000477	4.390355	7.790150	9.721249

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: Q1382-09 Acquired: 2/19/2025 18:06:28 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	9.964520	.1043955	-.215281
Stddev	.002738	.0005629	.002992
%RSD	.0274810	.5392314	1.389836
#1	9.962486	.1044404	-.217683
#2	9.963440	.1038114	-.211930
#3	9.967633	.1049346	-.216231

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2904.090	59477.05	10531.89	1921.792	3335.052
Stddev	3.157	117.56	13.06	7.203	5.924
%RSD	.1087175	.1976562	.1239920	.3748187	.1776200
#1	2903.558	59344.35	10540.92	1913.795	3330.909
#2	2907.479	59518.66	10516.92	1923.812	3341.837
#3	2901.232	59568.15	10537.83	1927.770	3332.410

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: Q1382-11 Acquired: 2/19/2025 18:10:40 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.008158	-.006291	.0479203	-.102065	-.000673	143.0156
Stddev	.002345	.001659	.0013284	.001446	.002101	.1583
%RSD	28.74405	26.37528	2.772169	1.417108	312.2656	.1106726
#1	-.010674	-.007889	.0477979	-.100629	-.002905	143.1899
#2	-.007766	-.006407	.0493056	-.102045	-.000378	142.9763
#3	-.006033	-.004577	.0466572	-.103521	.001265	142.8807

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2735667	.0073935	.0063922	165.7846	.0229710	.3172070
Stddev	.0009699	.0001161	.0008069	.3452	.0000835	.0008673
%RSD	.3545446	1.569889	12.62291	.2082042	.3634453	.2734228
#1	.2746042	.0073656	.0057133	166.1715	.0230388	.3164745
#2	.2734130	.0075210	.0061789	165.6741	.0229964	.3169818
#3	.2726827	.0072939	.0072843	165.5082	.0228777	.3181647

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6445995	556.2637	3.906617	121.2052	.1477130	-.034207
Stddev	.0029555	3.2677	.019129	.2691	.0002157	.000323
%RSD	.4585100	.5874443	.4896533	.2220211	.1460434	.9438676
#1	.6430000	559.3076	3.928490	121.5155	.1475028	-.033944
#2	.6427885	556.6728	3.898350	121.0637	.1479339	-.034110
#3	.6480101	552.8106	3.893013	121.0364	.1477023	-.034568

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	24.99807	.9684550	.4835432	2.108226	2.207467	.0001660
Stddev	.13874	.0022633	.0007252	.022522	.006955	.0000489
%RSD	.5550012	.2337041	.1499666	1.068292	.3150769	29.45880
#1	25.15516	.9710671	.4830248	2.082874	2.200663	.0001537
#2	24.94674	.9670759	.4832329	2.125922	2.214564	.0002198
#3	24.89230	.9672219	.4843719	2.115882	2.207174	.0001244

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: Q1382-11 Acquired: 2/19/2025 18:10:40 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000563	4.141398	4.131018	9.420783	F 16.53282	.0791484
Stddev	.000976	.013821	.007275	.029351	.03871	.0020525
%RSD	173.3624	.3337224	.1761141	.3115579	.2341109	2.593237
#1	.000310	4.156896	4.138814	9.452450	16.54096	.0800812
#2	-.001616	4.136950	4.129829	9.394491	16.49069	.0805688
#3	-.000383	4.130350	4.124410	9.415408	16.56681	.0767951

Elem	Sr4077
Units	ppm
Avg	-.147409
Stddev	.003630
%RSD	2.462438
#1	-.150885
#2	-.147699
#3	-.143643

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2908.274	59323.35	10842.53	1888.728	3368.438
Stddev	.873	192.12	14.46	8.421	2.716
%RSD	.0300335	.3238457	.1333787	.4458585	.0806449
#1	2908.633	59119.56	10848.71	1879.127	3371.276
#2	2908.911	59501.15	10852.88	1894.861	3368.177
#3	2907.278	59349.33	10826.01	1892.196	3365.861

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: Q1382-13 Acquired: 2/19/2025 18:14:52 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.013794	-.008618	.0444453	-.102146	-.003082	157.7994	.2462229
Stddev	.002053	.002469	.0016624	.002549	.000550	.3946	.0015901
%RSD	14.88070	28.64621	3.740321	2.495420	17.84446	.2500768	.6458007
#1	-.015306	-.010979	.0455301	-.102541	-.003694	157.3825	.2443975
#2	-.014620	-.008819	.0425314	-.099422	-.002927	157.8488	.2473075
#3	-.011457	-.006054	.0452744	-.104474	-.002627	158.1671	.2469635

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0072886	.0021505	162.1709	.0257039	.3279625	.6435333	587.3958
Stddev	.0001128	.0001358	.8859	.0001980	.0007916	.0029868	.7532
%RSD	1.547807	6.313252	.5462812	.7701491	.2413774	.4641298	.1282208
#1	.0071808	.0019937	161.1822	.0257745	.3271225	.6401606	588.2154
#2	.0072793	.0022300	162.4377	.0258568	.3286946	.6445955	587.2379
#3	.0074058	.0022277	162.8927	.0254803	.3280705	.6458439	586.7342

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.947893	138.2950	.1562101	-.030064	28.99861	.9874495	.4741315
Stddev	.020498	.9704	.0001712	.001034	.06369	.0042186	.0016717
%RSD	.5192259	.7017227	.1096165	3.439608	.2196456	.4272185	.3525880
#1	3.926416	137.1878	.1563402	-.030486	29.06920	.9839346	.4739741
#2	3.950013	138.6986	.1562741	-.028886	28.94545	.9921277	.4725440
#3	3.967249	138.9984	.1560161	-.030821	28.98118	.9862863	.4758763

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.101172	3.127984	-.000272	.0003493	3.775153	4.301503	8.604486
Stddev	.011283	.016063	.000049	.0015711	.010384	.017366	.024469
%RSD	.5369967	.5135186	18.05749	449.8117	.2750660	.4037144	.2843779
#1	2.109095	3.115570	-.000309	-.001442	3.763399	4.321522	8.632672
#2	2.088253	3.122257	-.000216	.000994	3.778978	4.290487	8.588679
#3	2.106168	3.146126	-.000291	.001496	3.783082	4.292500	8.592108

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: Q1382-13 Acquired: 2/19/2025 18:14:52 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	8.858292	.0909879	-.170877
Stddev	.014954	.0004277	.001057
%RSD	.1688118	.4700404	.6185144
#1	8.872887	.0913851	-.172035
#2	8.843004	.0905352	-.170632
#3	8.858984	.0910435	-.169964

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2901.250	58562.59	11067.14	1845.135	3414.533
Stddev	.414	118.68	57.23	5.404	2.150
%RSD	.0142679	.2026570	.5170962	.2928751	.0629677
#1	2901.019	58550.05	11127.74	1838.945	3416.041
#2	2901.728	58687.04	11059.66	1848.914	3412.071
#3	2901.003	58450.67	11014.02	1847.545	3415.488

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: Q1382-15 Acquired: 2/19/2025 18:19:05 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.017098	-.010981	.0402465	-.106430	.0012682	136.7559	.2678582
Stddev	.001145	.001306	.0009223	.001845	.0007148	.4182	.0028149
%RSD	6.698932	11.88992	2.291660	1.733417	56.36239	.3058303	1.050908
#1	-.015908	-.011635	.0397435	-.104315	.0020883	137.1541	.2704764
#2	-.017195	-.011831	.0396851	-.107707	.0007772	136.7936	.2682172
#3	-.018193	-.009478	.0413110	-.107268	.0009392	136.3202	.2648810

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0074392	.0103065	169.0135	.0207944	.3141879	.6638609	509.6850
Stddev	.0000546	.0011396	.7017	.0003014	.0007779	.0061216	5.5822
%RSD	.7334586	11.05718	.4151891	1.449576	.2475772	.9221199	1.095227
#1	.0074938	.0090826	169.7865	.0208372	.3137305	.6575447	515.1978
#2	.0073846	.0104997	168.8374	.0204739	.3150860	.6642707	509.8214
#3	.0074394	.0113372	168.4166	.0210722	.3137471	.6697673	504.0359

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.137042	123.9175	.1442084	-.037628	22.00199	.8930049	.4952362
Stddev	.020918	.5170	.0010458	.001289	.09542	.0019053	.0019586
%RSD	.5056269	.4172210	.7252128	3.425611	.4336800	.2133577	.3954911
#1	4.158755	124.5133	.1430164	-.036469	22.04889	.8950511	.4958222
#2	4.135349	123.6526	.1446367	-.037398	22.06488	.8912819	.4968350
#3	4.117021	123.5866	.1449720	-.039017	21.89220	.8926816	.4930515

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.839591	1.491886	-.000586	.0002135	3.837580	4.405358	9.726704
Stddev	.011459	.007483	.000323	.0018862	.020078	.015003	.008931
%RSD	.6229030	.5015905	55.11200	883.5484	.5231968	.3405577	.0918186
#1	1.851238	1.499831	-.000906	.0023309	3.859049	4.393478	9.734368
#2	1.828330	1.490854	-.000260	-.001287	3.834426	4.422217	9.728846
#3	1.839207	1.484972	-.000592	-.000404	3.819266	4.400378	9.716896

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: Q1382-15 Acquired: 2/19/2025 18:19:05 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	6.945655	.0796635	-.140447
Stddev	.000699	.0012380	.004955
%RSD	.0100673	1.554040	3.528374
#1	6.944852	.0805993	-.145156
#2	6.945979	.0801316	-.140908
#3	6.946133	.0782598	-.135277

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2956.674	59912.71	10421.92	1906.682	3442.743
Stddev	1.306	130.80	44.84	15.318	4.302
%RSD	.0441592	.2183119	.4302122	.8033807	.1249720
#1	2957.369	59761.68	10377.87	1889.049	3441.262
#2	2955.168	59987.82	10467.50	1914.301	3439.377
#3	2957.486	59988.62	10420.41	1916.697	3447.591

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: CCV02 Acquired: 2/19/2025 18:23:18 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV02 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.951849	5.007774	4.956560	4.966918	4.955918	9.691605	9.906031
Stddev	.011321	.011354	.001581	.004644	.002430	.026537	.009128
%RSD	.2286202	.2267354	.0319048	.0934936	.0490397	.2738195	.0921504
#1	4.951925	4.995283	4.954745	4.970927	4.954658	9.720956	9.895798
#2	4.940490	5.010569	4.957295	4.961830	4.954376	9.669305	9.908960
#3	4.963131	5.017470	4.957640	4.967997	4.958719	9.684556	9.913336

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2341073	2.478031	24.40621	1.009225	2.472178	1.248399	5.194245
Stddev	.0005189	.002448	.02095	.002159	.001449	.001206	.027592
%RSD	.2216488	.0987769	.0858365	.2139148	.0586169	.0966102	.5312044
#1	.2339075	2.475211	24.42800	1.011490	2.470651	1.247211	5.224880
#2	.2346964	2.479265	24.40440	1.008996	2.473534	1.249623	5.186507
#3	.2337180	2.479616	24.38622	1.007191	2.472349	1.248362	5.171348

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.421718	24.01388	2.480873	1.244186	26.37141	2.436629	2.478116
Stddev	.007800	.08203	.001657	.001496	.11226	.002495	.001598
%RSD	.3220862	.3415886	.0667905	.1202728	.4256713	.1023906	.0644741
#1	2.428213	23.97935	2.479099	1.245914	26.49716	2.439492	2.478342
#2	2.423874	24.10753	2.482380	1.243349	26.28130	2.434919	2.476417
#3	2.413067	23.95477	2.481139	1.243296	26.33577	2.435476	2.479588

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	26.43938	4.635013	4.974511	4.971269	4.867048	5.236410	4.999854
Stddev	.11903	.006575	.007110	.010966	.007515	.015022	.008197
%RSD	.4501906	.1418530	.1429211	.2205888	.1544105	.2868769	.1639527
#1	26.57630	4.628912	4.966536	4.958819	4.874410	5.236851	4.998400
#2	26.36053	4.634150	4.976809	4.979494	4.867345	5.221172	5.008681
#3	26.38131	4.641977	4.980186	4.975495	4.859388	5.251206	4.992480

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: CCV02 Acquired: 2/19/2025 18:23:18 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV02 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.914799	4.897801	4.766392
Stddev	.005480	.009355	.037667
%RSD	.1115086	.1910130	.7902645
#1	4.912819	4.908238	4.746856
#2	4.910585	4.894993	4.809813
#3	4.920995	4.890170	4.742505

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2612.051	51893.72	8925.302	1669.031	3778.713
Stddev	4.438	176.61	30.311	1.058	5.311
%RSD	.1699136	.3403260	.3396062	.0634127	.1405632
#1	2617.026	51737.34	8921.597	1668.392	3783.617
#2	2608.498	51858.56	8897.013	1668.449	3773.071
#3	2610.629	52085.26	8957.295	1670.253	3779.450

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: CCB02 Acquired: 2/19/2025 18:27:29 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB02 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011292	-.001880	-.001049	.0027451	-.000415	-.005841	.0024437
Stddev	.0038612	.000803	.000388	.0010023	.002434	.004148	.0007722
%RSD	341.9376	42.73225	37.01584	36.51147	586.8636	71.02917	31.59919
#1	.0035679	-.002611	-.000948	.0016435	.002076	-.003092	.0031663
#2	-.003323	-.002009	-.000720	.0036032	-.002787	-.003817	.0016300
#3	.003142	-.001020	-.001477	.0029887	-.000533	-.010612	.0025347

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000029	-.000049	-.017921	.0000216	-.000080	-.000015	.0056852
Stddev	.0000401	.000061	.006807	.0002100	.000148	.000421	.0032641
%RSD	1370.467	123.5012	37.98437	973.0497	184.7781	2726.171	57.41441
#1	.0000411	-.000003	-.021639	.0002570	.000058	.000359	.0062993
#2	.0000065	-.000027	-.022061	-.000046	-.000236	.000066	.0085986
#3	-.000039	-.000118	-.010065	-.000146	-.000062	-.000471	.0021576

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005815	-.009650	.0002140	-.000031	.0397600	.0005062	-.001341
Stddev	.0002551	.003106	.0002367	.000382	.0134467	.0020852	.000368
%RSD	43.86073	32.18566	110.5993	1225.313	33.81978	411.9516	27.42014
#1	.0008694	-.007704	.0004707	.000404	.0361810	.0027397	-.001330
#2	.0004916	-.013232	.0001670	-.000313	.0284648	.0001683	-.001714
#3	.0003836	-.008014	.0000043	-.000185	.0546341	-.001389	-.000979

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0290717	.0125770	-.000084	.0002558	.0005135	.0043558	.0019757
Stddev	.0257470	.0005922	.000266	.0003615	.0009207	.0036899	.0017498
%RSD	88.56354	4.708945	316.0852	141.2970	179.2801	84.71329	88.56451
#1	.0315483	.0132387	-.000350	.0006719	-.000359	.0056646	.0037342
#2	.0021760	.0120965	-.000084	.0000192	.000424	.0072130	.0002348
#3	.0534909	.0123958	.000181	.0000763	.001476	.0001899	.0019582

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: CCB02 Acquired: 2/19/2025 18:27:29 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB02 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.003016	-.002036	.0004880
Stddev	.002049	.000733	.0000131
%RSD	67.95399	35.99559	2.682818
#1	-.001504	-.001375	.0004747
#2	-.005348	-.002825	.0005008
#3	-.002195	-.001909	.0004884

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2740.714	54539.90	9287.504	1781.995	4193.344
Stddev	4.009	298.78	21.979	11.404	3.984
%RSD	.1462603	.5478176	.2366481	.6399541	.0949982
#1	2736.597	54194.91	9264.819	1769.486	4191.357
#2	2744.604	54710.26	9308.700	1791.812	4190.744
#3	2740.941	54714.53	9288.992	1784.687	4197.930

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: Q1382-17 Acquired: 2/19/2025 18:31:49 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.003635	-.010792	.0509970	-.101954	-.003014	137.9120	.2416599
Stddev	.001712	.004421	.0026018	.000883	.000709	.8009	.0012159
%RSD	47.11061	40.96760	5.101788	.8665058	23.52431	.5807672	.5031461
#1	-.001691	-.006019	.0511463	-.102870	-.003799	137.4197	.2402575
#2	-.004922	-.014748	.0483237	-.101108	-.002421	137.4800	.2424176
#3	-.004291	-.011610	.0535208	-.101883	-.002821	138.8362	.2423047

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0071079	.0033467	147.6622	.0211773	.3163263	.6458555	549.5454
Stddev	.0000726	.0008649	.5616	.0000622	.0009348	.0044097	3.6299
%RSD	1.021168	25.84261	.3803323	.2934516	.2955211	.6827645	.6605338
#1	.0071822	.0037753	147.1429	.0211551	.3165890	.6476532	546.6530
#2	.0070371	.0023513	147.5856	.0211293	.3152882	.6408309	553.6187
#3	.0071043	.0039137	148.2582	.0212475	.3171017	.6490822	548.3644

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.912803	120.1318	.1459306	-.029730	24.08154	1.005093	.5289260
Stddev	.013205	.5355	.0006176	.000487	.11047	.006883	.0015668
%RSD	.3374720	.4458015	.4231968	1.639236	.4587257	.6847947	.2962149
#1	3.900014	119.6850	.1458058	-.030055	24.06242	.998977	.5284871
#2	3.912007	119.9850	.1453850	-.029170	23.98189	1.003756	.5306654
#3	3.926387	120.7255	.1466011	-.029965	24.20033	1.012546	.5276254

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.881716	2.244955	.0001712	.0035289	3.930907	4.588918	9.460712
Stddev	.029475	.012663	.0004497	.0013333	.016717	.010746	.040666
%RSD	1.566414	.5640589	262.6614	37.78102	.4252653	.2341662	.4298409
#1	1.856427	2.232798	-.000055	.0021772	3.918357	4.593883	9.454014
#2	1.874634	2.258069	.000689	.0035668	3.924481	4.576588	9.423811
#3	1.914087	2.243998	-.000121	.0048429	3.949883	4.596284	9.504312

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: Q1382-17 Acquired: 2/19/2025 18:31:49 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	9.516612	.0911176	-.205662
Stddev	.031772	.0004057	.005229
%RSD	.3338621	.4452280	2.542381
#1	9.503986	.0906659	-.203908
#2	9.493094	.0914509	-.211543
#3	9.552757	.0912360	-.201537

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3018.586	60902.28	11216.78	1954.656	3485.839
Stddev	6.602	154.66	57.19	3.542	5.050
%RSD	.2187272	.2539473	.5098676	.1812197	.1448670
#1	3012.146	61058.71	11280.43	1958.678	3480.139
#2	3025.340	60749.45	11169.71	1952.000	3489.755
#3	3018.271	60898.67	11200.20	1953.289	3487.622

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: Q1382-19 Acquired: 2/19/2025 18:36:02 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000861	-.008016	.0572400	-.108923	-.000708	155.1652
Stddev	.008535	.001163	.0027865	.006911	.002152	.1301
%RSD	991.3539	14.50361	4.868151	6.345250	303.7973	.0838198
#1	-.001632	-.009262	.0572081	-.115083	-.003180	155.1149
#2	.008033	-.007827	.0544695	-.110238	.000302	155.0678
#3	-.008984	-.006960	.0600423	-.101449	.000752	155.3129

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2684946	.0080028	.0077996	176.6479	.0240766	.3434201
Stddev	.0012742	.0001047	.0014146	.2521	.0005357	.0004044
%RSD	.4745791	1.308844	18.13661	.1426975	2.225092	.1177510
#1	.2674880	.0079254	.0092462	176.6767	.0238113	.3434887
#2	.2680685	.0079611	.0077332	176.3827	.0237253	.3429858
#3	.2699272	.0081220	.0064194	176.8843	.0246932	.3437858

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6562868	578.2459	4.562743	135.3632	.1597640	-.037531
Stddev	.0079870	6.8124	.014640	.3647	.0003668	.001548
%RSD	1.217005	1.178108	.3208696	.2694414	.2295582	4.124071
#1	.6650331	571.4258	4.563176	135.7828	.1599583	-.039213
#2	.6544475	578.2613	4.547891	135.1225	.1599928	-.037213
#3	.6493799	585.0505	4.577162	135.1843	.1593410	-.036166

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	24.53467	1.006912	.5284865	2.035637	2.302852	-.000644
Stddev	.16820	.002337	.0042270	.036968	.011260	.000446
%RSD	.6855511	.2320755	.7998361	1.816037	.4889506	69.28928
#1	24.37618	1.005521	.5327884	2.057982	2.304924	-.000918
#2	24.71113	1.005605	.5283327	2.055964	2.290700	-.000129
#3	24.51669	1.009610	.5243385	1.992966	2.312932	-.000885

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: Q1382-19 Acquired: 2/19/2025 18:36:02 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.002231	4.315264	4.657932	9.086079	F 16.56310	.1095843
Stddev	.000432	.003452	.029594	.008782	.03201	.0006743
%RSD	19.35651	.0800061	.6353431	.0966544	.1932420	.6153408
#1	-.002457	4.312507	4.626836	9.089116	16.53481	.1088134
#2	-.002502	4.314148	4.685751	9.076182	16.59784	.1098746
#3	-.001733	4.319136	4.661210	9.092940	16.55664	.1100648

Elem	Sr4077
Units	ppm
Avg	-.166869
Stddev	.006786
%RSD	4.066581
#1	-.159889
#2	-.167275
#3	-.173442

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2903.190	59074.09	10578.22	1903.345	3355.266
Stddev	8.809	125.57	60.40	2.507	5.727
%RSD	.3034405	.2125564	.5710154	.1317407	.1706815
#1	2895.801	59219.07	10546.09	1900.478	3350.487
#2	2912.939	59000.65	10647.90	1904.427	3361.614
#3	2900.829	59002.54	10540.68	1905.129	3353.699

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: Q1384-01 Acquired: 2/19/2025 18:40:14 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0183011	-.008644	.3249874	-.025486	-.001827	99.07090	.4457465
Stddev	.0006204	.003086	.0017173	.002418	.000696	.25686	.0005957
%RSD	3.390153	35.70097	.5284206	9.487526	38.11491	.2592661	.1336354
#1	.0178383	-.005767	.3233668	-.027575	-.002561	98.87508	.4462109
#2	.0190061	-.008263	.3267874	-.022837	-.001745	98.97588	.4450749
#3	.0180590	-.011903	.3248080	-.026047	-.001175	99.36173	.4459538

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0062172	-.000257	65.79038	.1528827	.1000983	.3052309	169.8408
Stddev	.0000164	.000238	.16166	.0006178	.0001252	.0007343	.3960
%RSD	.2629049	92.70331	.2457211	.4040875	.1250906	.2405640	.2331399
#1	.0062112	-.000506	65.60371	.1524632	.0999943	.3047225	170.0336
#2	.0062356	-.000233	65.88339	.1525928	.1002373	.3048974	170.1034
#3	.0062046	-.000032	65.88403	.1535921	.1000632	.3060727	169.3854

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.577201	44.28807	.1903006	-.009219	11.85896	.2968627	.4206819
Stddev	.001882	.37158	.0000453	.000070	.01529	.0005899	.0021343
%RSD	.0526110	.8390005	.0238302	.7562901	.1288999	.1987129	.5073373
#1	3.577895	43.99224	.1903051	-.009242	11.84322	.2963868	.4219506
#2	3.575071	44.16685	.1903436	-.009140	11.87374	.2966785	.4182178
#3	3.578638	44.70512	.1902532	-.009274	11.85993	.2975227	.4218773

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.31336	.1570325	.0043284	.0073143	3.120710	4.082453	5.770996
Stddev	.04431	.0025819	.0002484	.0001438	.002352	.039872	.013683
%RSD	.4295977	1.644209	5.740039	1.965513	.0753777	.9766761	.2370925
#1	10.26255	.1581604	.0046016	.0073229	3.118840	4.048125	5.760711
#2	10.33364	.1588585	.0041159	.0071664	3.119938	4.126188	5.786525
#3	10.34390	.1540785	.0042678	.0074536	3.123351	4.073047	5.765752

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: Q1384-01 Acquired: 2/19/2025 18:40:14 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	5.868395	.0965416	-.024814
Stddev	.008920	.0015163	.000898
%RSD	.1520018	1.570648	3.619475
#1	5.860291	.0970089	-.025428
#2	5.877953	.0948466	-.025231
#3	5.866941	.0977692	-.023784

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2952.549	58405.74	10274.42	1890.106	3655.705
Stddev	6.087	214.37	29.50	8.432	9.833
%RSD	.2061549	.3670435	.2871412	.4461238	.2689723
#1	2946.450	58600.88	10308.17	1896.655	3652.985
#2	2952.574	58176.28	10261.58	1880.592	3647.519
#3	2958.624	58440.07	10253.52	1893.072	3666.612

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: Q1384-01DUP Acquired: 2/19/2025 18:44:18 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0201027	-.011532	.3250291	-.026845	-.003565	99.59055	.4559505
Stddev	.0023752	.002863	.0014095	.001720	.000649	.12304	.0008607
%RSD	11.81515	24.82382	.4336492	6.408201	18.21393	.1235495	.1887594
#1	.0226527	-.011026	.3234077	-.026866	-.002843	99.45117	.4551985
#2	.0197024	-.008956	.3257171	-.028554	-.004102	99.63634	.4568892
#3	.0179532	-.014614	.3259624	-.025114	-.003750	99.68413	.4557637

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0060113	-.001102	65.95121	.1532910	.1000246	.3005701	173.9387
Stddev	.0000500	.000164	.17155	.0009925	.0002184	.0008186	.2555
%RSD	.8326381	14.87493	.2601230	.6474886	.2183647	.2723594	.1468889
#1	.0059784	-.001220	65.79245	.1521848	.1000182	.2997321	173.7101
#2	.0059867	-.001172	65.92797	.1535845	.1002461	.3013679	174.2145
#3	.0060689	-.000915	66.13319	.1541038	.0998094	.3006102	173.8914

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.568824	44.71189	.1894180	-.008728	12.22021	.3000606	.4031789
Stddev	.006267	.16069	.0002590	.000310	.03627	.0024169	.0002145
%RSD	.1756095	.3593819	.1367529	3.546250	.2968332	.8054655	.0532069
#1	3.563322	44.53572	.1892890	-.008777	12.20055	.2989560	.4033188
#2	3.567504	44.74955	.1897162	-.009010	12.26207	.3028324	.4032860
#3	3.575646	44.85041	.1892487	-.008397	12.19801	.2983933	.4029319

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.81619	.1606905	.0043254	.0065052	3.187835	4.604939	5.730003
Stddev	.03110	.0005089	.0001221	.0008520	.004457	.010162	.011290
%RSD	.2874874	.3167107	2.822586	13.09779	.1398197	.2206811	.1970319
#1	10.79908	.1605881	.0044579	.0062613	3.182844	4.600625	5.716975
#2	10.85208	.1612428	.0043009	.0074526	3.191420	4.616547	5.736935
#3	10.79740	.1602405	.0042174	.0058018	3.189242	4.597646	5.736098

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: Q1384-01DUP Acquired: 2/19/2025 18:44:18 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	5.804574	.0981491	-.030473
Stddev	.012131	.0009566	.000245
%RSD	.2089962	.9745841	.8049633
#1	5.792093	.0978917	-.030230
#2	5.816323	.0992079	-.030721
#3	5.805307	.0973475	-.030468

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2980.776	59131.51	10675.32	1899.185	3700.215
Stddev	4.048	176.09	42.82	3.844	4.636
%RSD	.1358070	.2977931	.4010919	.2023797	.1252949
#1	2979.076	59330.43	10721.41	1894.753	3695.822
#2	2977.856	58995.55	10667.78	1901.604	3699.762
#3	2985.397	59068.56	10636.77	1901.197	3705.061

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: Q1384-01LX5 Acquired: 2/19/2025 18:48:22 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0041848	-.004030	.0684233	-.004163	-.001052	22.55264	.1000321
Stddev	.0031415	.000464	.0011652	.002199	.000673	.02184	.0001360
%RSD	75.07120	11.52340	1.702858	52.83158	64.00003	.0968380	.1359644
#1	.0013601	-.004546	.0684860	-.001971	-.000791	22.54730	.1001407
#2	.0075682	-.003646	.0672281	-.004147	-.001817	22.57666	.1000760
#3	.0036259	-.003899	.0695558	-.006369	-.000548	22.53397	.0998796

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0016358	-.000715	15.32979	.0352637	.0202322	.0762509	36.81349
Stddev	.0000768	.000119	.04004	.0003387	.0000069	.0004523	.36658
%RSD	4.693628	16.67450	.2611930	.9605094	.0342578	.5931346	.9957660
#1	.0017088	-.000822	15.37538	.0355753	.0202297	.0757599	37.10349
#2	.0016428	-.000586	15.31369	.0349032	.0202268	.0766504	36.40146
#3	.0015557	-.000737	15.30031	.0353127	.0202400	.0763425	36.93552

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8404979	10.41967	.0392921	-.003171	2.429272	.0701244	.0934278
Stddev	.0029333	.02148	.0005481	.000251	.011359	.0007390	.0003515
%RSD	.3490002	.2061639	1.395053	7.920823	.4675966	1.053807	.3761711
#1	.8423650	10.39711	.0393575	-.002906	2.440214	.0692712	.0937031
#2	.8371169	10.43988	.0398047	-.003405	2.417537	.0705647	.0930320
#3	.8420118	10.42202	.0387142	-.003203	2.430065	.0705372	.0935484

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.166527	.0334507	.0008764	-.000152	.7316886	.9270004	1.169604
Stddev	.017018	.0009226	.0001639	.001119	.0015682	.0120199	.011863
%RSD	.7855126	2.758008	18.70362	735.0137	.2143226	1.296648	1.014311
#1	2.169768	.0336439	.0007755	-.000879	.7302563	.9249927	1.156114
#2	2.148122	.0324468	.0007882	-.000715	.7314454	.9161108	1.174283
#3	2.181693	.0342613	.0010655	.001137	.7333642	.9398978	1.178414

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: Q1384-01LX5 Acquired: 2/19/2025 18:48:22 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.180036	.0212081	-.002958
Stddev	.000916	.0012912	.000352
%RSD	.0776051	6.088282	11.91595
#1	1.179294	.0197172	-.003213
#2	1.179754	.0219615	-.002556
#3	1.181059	.0219456	-.003105

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2786.478	55112.76	8827.506	1806.829	3991.229
Stddev	4.179	119.33	31.469	14.694	13.764
%RSD	.1499790	.2165162	.3564890	.8132528	.3448627
#1	2790.572	54990.61	8842.513	1790.460	4006.691
#2	2786.643	55229.05	8791.342	1818.880	3986.684
#3	2782.219	55118.61	8848.662	1811.147	3980.312

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: Q1384-01MS Acquired: 2/19/2025 18:52:38 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7029890	1.819228	1.134817	1.469163	.1133811	102.4454
Stddev	.0026719	.020313	.000524	.001076	.0004649	.1265
%RSD	.3800833	1.116596	.0461992	.0732617	.4100420	.1234638
#1	.6999913	1.820161	1.134623	1.469866	.1138143	102.5275
#2	.7051200	1.798465	1.134417	1.469699	.1128899	102.2997
#3	.7038557	1.839059	1.135410	1.467924	.1134389	102.5088

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7381777	.1569720	.1870488	59.02778	.5089903	.3217415
Stddev	.0004673	.0006786	.0004583	.13976	.0001391	.0006084
%RSD	.0633025	.4323294	.2449875	.2367618	.0273369	.1890974
#1	.7387133	.1561894	.1865726	58.86659	.5088589	.3211339
#2	.7378533	.1573978	.1870870	59.11500	.5091360	.3223507
#3	.7379665	.1573287	.1874867	59.10176	.5089760	.3217400

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5791933	165.8259	3.494439	38.25989	.6646905	.0561925
Stddev	.0016105	1.0976	.002960	.11745	.0007569	.0002751
%RSD	.2780649	.6618959	.0846993	.3069708	.1138681	.4895269
#1	.5774893	167.0564	3.496547	38.12473	.6639565	.0562686
#2	.5794002	165.4733	3.495714	38.33710	.6646466	.0564215
#3	.5806903	164.9479	3.491055	38.31785	.6654684	.0558874

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	14.23044	.4729626	.7152868	18.12759	.3023001	.3156483
Stddev	.11774	.0005851	.0014255	.15156	.0014282	.0004632
%RSD	.8273882	.1237117	.1992906	.8360726	.4724470	.1467496
#1	14.36628	.4722943	.7167951	18.30260	.3038683	.3156329
#2	14.16744	.4733826	.7139618	18.04010	.3019581	.3151930
#3	14.15760	.4732110	.7151034	18.04009	.3010740	.3161191

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: Q1384-01MS Acquired: 2/19/2025 18:52:38 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6275781	2.702167	5.284504	F 11.68163	6.161448	.2590562
Stddev	.0005689	.004561	.025861	.03074	.022469	.0008385
%RSD	.0906488	.1687747	.4893763	.2631329	.3646692	.3236718
#1	.6273699	2.705269	5.259879	11.68276	6.158088	.2593896
#2	.6282218	2.704301	5.282187	11.65034	6.140849	.2596768
#3	.6271426	2.696931	5.311445	11.71178	6.185408	.2581023

Elem	Sr4077
Units	ppm
Avg	.1483089
Stddev	.0010672
%RSD	.7195699
#1	.1474312
#2	.1479987
#3	.1494968

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2979.456	59051.23	10561.72	1918.070	3726.496
Stddev	2.640	202.30	42.49	4.699	.820
%RSD	.0886135	.3425870	.4022897	.2450033	.0219986
#1	2976.448	58818.61	10610.78	1912.662	3725.595
#2	2981.389	59149.09	10537.21	1921.161	3727.199
#3	2980.532	59186.00	10537.16	1920.387	3726.693

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: Q1384-01MSD Acquired: 2/19/2025 18:56:36 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6962177	1.822998	1.130419	1.453225	.1173126	103.3621
Stddev	.0056274	.027966	.005800	.010706	.0004213	.2965
%RSD	.8082835	1.534076	.5131245	.7366783	.3591590	.2868239
#1	.7026790	1.838865	1.133619	1.461736	.1171504	103.6958
#2	.6935843	1.839422	1.133913	1.456733	.1169965	103.2614
#3	.6923898	1.790707	1.123723	1.441205	.1177910	103.1291

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7628529	.1544221	.1850591	59.56070	.5066035	.3200613
Stddev	.0025186	.0006434	.0012656	.23125	.0002801	.0021239
%RSD	.3301485	.4166206	.6838685	.3882668	.0552973	.6635832
#1	.7656586	.1551442	.1857442	59.81493	.5063501	.3210515
#2	.7621125	.1542120	.1858344	59.50434	.5069043	.3215092
#3	.7607875	.1539100	.1835987	59.36284	.5065560	.3176232

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5726073	169.5589	3.531730	38.76712	.6593442	.0560298
Stddev	.0024928	.0961	.018443	.14098	.0025885	.0001441
%RSD	.4353465	.0566504	.5222106	.3636713	.3925819	.2571711
#1	.5743141	169.6690	3.551619	38.86750	.6609496	.0558679
#2	.5737612	169.5154	3.528379	38.82792	.6607249	.0560775
#3	.5697466	169.4923	3.515192	38.60593	.6563581	.0561439

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	14.47214	.4806080	.6971335	18.66794	.3068279	.3185368
Stddev	.02565	.0025062	.0021861	.03036	.0001680	.0014657
%RSD	.1772641	.5214626	.3135809	.1626483	.0547426	.4601331
#1	14.44818	.4832022	.6976996	18.64973	.3069105	.3190125
#2	14.46905	.4804217	.6989808	18.70300	.3069386	.3197056
#3	14.49920	.4782002	.6947200	18.65111	.3066346	.3168924

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: Q1384-01MSD Acquired: 2/19/2025 18:56:36 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6243180	2.804889	6.180704	F 11.56491	6.053331	.2636318
Stddev	.0027632	.010367	.005287	.07308	.044804	.0005893
%RSD	.4425983	.3696213	.0855452	.6318700	.7401577	.2235362
#1	.6260262	2.814879	6.183821	11.60980	6.094732	.2631270
#2	.6257978	2.805607	6.174599	11.60433	6.059498	.2642794
#3	.6211301	2.794181	6.183691	11.48059	6.005763	.2634891

Elem	Sr4077
Units	ppm
Avg	.1407819
Stddev	.0004515
%RSD	.3206963
#1	.1413021
#2	.1404919
#3	.1405516

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3015.459	59537.98	10733.04	1928.506	3776.868
Stddev	12.194	63.63	54.09	8.246	20.127
%RSD	.4043951	.1068756	.5039563	.4275836	.5328969
#1	3007.030	59472.55	10671.06	1919.275	3764.473
#2	3009.905	59599.64	10757.37	1931.098	3766.040
#3	3029.441	59541.76	10770.70	1935.144	3800.091

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: Q1384-01A Acquired: 2/19/2025 19:00:35 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7099749	1.868249	1.149437	1.489331	.1194776	102.3643
Stddev	.0058588	.006227	.001648	.003462	.0009640	.1612
%RSD	.8252101	.3333173	.1433626	.2324647	.8068171	.1574746
#1	.7061946	1.875416	1.149949	1.492886	.1191406	102.5132
#2	.7167238	1.864168	1.147595	1.489136	.1205648	102.3865
#3	.7070064	1.865162	1.150769	1.485970	.1187273	102.1931

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7248060	.1739193	.1908106	58.77091	.5073291	.3245681
Stddev	.0038224	.0006363	.0002480	.17988	.0004972	.0005209
%RSD	.5273683	.3658516	.1299898	.3060671	.0980043	.1604823
#1	.7254905	.1745634	.1910842	58.86660	.5077947	.3250224
#2	.7282399	.1739035	.1906005	58.88272	.5068054	.3239996
#3	.7206876	.1732911	.1907471	58.56341	.5073871	.3246823

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6004354	153.6358	3.502774	38.99345	.6691909	.0532284
Stddev	.0009761	.4184	.008452	.18318	.0022423	.0003721
%RSD	.1625585	.2723115	.2412860	.4697650	.3350802	.6990602
#1	.6008768	153.4392	3.508064	39.08360	.6717766	.0534596
#2	.5993166	154.1163	3.507232	39.11408	.6677818	.0527992
#3	.6011129	153.3520	3.493027	38.78267	.6680142	.0534266

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.41311	.4753751	.6969773	16.00418	.2981989	.3203636
Stddev	.01837	.0013470	.0010316	.05757	.0024142	.0001119
%RSD	.1479940	.2833494	.1480107	.3597012	.8095935	.0349283
#1	12.40396	.4744074	.6960410	16.02874	.2963459	.3204507
#2	12.40112	.4769135	.6968077	16.04540	.3009290	.3202374
#3	12.43426	.4748045	.6980832	15.93841	.2973217	.3204027

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: Q1384-01A Acquired: 2/19/2025 19:00:35 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6364629	2.790538	5.745952	F 11.95528	6.280717	.2515764
Stddev	.0004441	.009867	.016716	.02665	.007826	.0013935
%RSD	.0697780	.3535878	.2909235	.2228878	.1246021	.5538894
#1	.6366406	2.793379	5.727714	11.98423	6.288732	.2511201
#2	.6367907	2.798673	5.760545	11.94982	6.280324	.2531408
#3	.6359575	2.779562	5.749595	11.93178	6.273095	.2504682

Elem	Sr4077
Units	ppm
Avg	.1637833
Stddev	.0007595
%RSD	.4637260
#1	.1645599
#2	.1630421
#3	.1637480

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2967.406	59492.19	9567.924	1937.056	3699.106
Stddev	3.285	118.65	42.791	9.198	8.803
%RSD	.1107170	.1994459	.4472305	.4748530	.2379863
#1	2963.715	59356.30	9522.345	1926.945	3688.941
#2	2968.489	59544.99	9574.192	1944.928	3704.251
#3	2970.013	59575.28	9607.236	1939.294	3704.126

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: Q1385-01 Acquired: 2/19/2025 19:04:34 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0051435	-.025425	.0568254	-.035135	.0026556	135.8903
Stddev	.0008737	.003507	.0029660	.002472	.0016047	.2852
%RSD	16.98727	13.79316	5.219450	7.035763	60.42814	.2098394
#1	.0060940	-.029281	.0590973	-.033793	.0017725	135.5708
#2	.0049613	-.022427	.0579088	-.037988	.0045079	136.1192
#3	.0043753	-.024566	.0534700	-.033624	.0016864	135.9808

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7725531	.0092465	.0025136	715.5801	.3249860	.1235215
Stddev	.0016704	.0000346	.0000792	3.2883	.0006339	.0004820
%RSD	.2162172	.3743217	3.151854	.4595361	.1950379	.3902436
#1	.7706271	.0092187	.0024809	718.1192	.3246835	.1230273
#2	.7736055	.0092853	.0024559	716.7555	.3245601	.1239904
#3	.7734268	.0092355	.0026039	711.8655	.3257144	.1235467

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8008265	160.9954	3.520233	120.0787	.4402421	-.004980
Stddev	.0005446	.4025	.004125	.2386	.0010982	.000229
%RSD	.0679999	.2500285	.1171843	.1986767	.2494466	4.593581
#1	.8001991	160.5319	3.517850	119.8357	.4390888	-.004716
#2	.8011769	161.1964	3.517852	120.0876	.4403623	-.005119
#3	.8011035	161.2578	3.524996	120.3126	.4412752	-.005105

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	13.56854	.2562935	6.242490	11.88385	.2110937	.0093541
Stddev	.03417	.0023515	.021732	.05084	.0013194	.0001802
%RSD	.2518164	.9175100	.3481253	.4278408	.6250325	1.926195
#1	13.52981	.2537183	6.224708	11.84767	.2097320	.0095453
#2	13.59441	.2568356	6.266714	11.86188	.2111827	.0093295
#3	13.58140	.2583267	6.236047	11.94198	.2123663	.0091875

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: Q1385-01 Acquired: 2/19/2025 19:04:34 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000051	6.451247	7.124875	5.892545	F 31.29279	-.002018
Stddev	.001443	.010757	.028392	.015532	.07166	.000581
%RSD	2808.860	.1667441	.3984915	.2635875	.2290130	28.78379
#1	-.000292	6.439224	7.092205	5.885482	31.21106	-.002541
#2	.001496	6.459963	7.143576	5.881799	31.32241	-.001393
#3	-.001359	6.454553	7.138844	5.910353	31.34489	-.002120

Elem	Sr4077
Units	ppm
Avg	3.190447
Stddev	.017180
%RSD	.5384944
#1	3.177072
#2	3.184446
#3	3.209823

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2692.224	54546.87	9994.556	1760.537	3150.334
Stddev	.067	37.89	6.918	6.131	4.474
%RSD	.0024938	.0694564	.0692167	.3482180	.1420112
#1	2692.300	54583.57	9993.282	1767.052	3155.489
#2	2692.196	54549.14	10002.02	1754.881	3147.459
#3	2692.175	54507.89	9988.36	1759.679	3148.055

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: CCV03 Acquired: 2/19/2025 19:08:57 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV03 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.999963	5.081416	5.027796	5.007224	5.012847	9.905042	10.05063
Stddev	.033526	.007310	.009966	.031346	.026392	.013580	.05682
%RSD	.6705233	.1438642	.1982231	.6260155	.5264841	.1371048	.5652892
#1	5.011736	5.089242	5.036386	5.013414	5.019183	9.918069	10.09188
#2	4.962138	5.080246	5.016869	4.973245	4.983865	9.890969	10.07418
#3	5.026014	5.074762	5.030133	5.035013	5.035495	9.906088	9.98582

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2400560	2.512510	24.89599	1.017544	2.511564	1.262020	5.174616
Stddev	.0006515	.007870	.06171	.000542	.009941	.006166	.003236
%RSD	.2714100	.3132245	.2478629	.0532572	.3958081	.4886083	.0625413
#1	.2403946	2.516254	24.91961	1.017907	2.515825	1.264604	5.175606
#2	.2393048	2.503468	24.82596	1.016921	2.500203	1.254983	5.177241
#3	.2404685	2.517809	24.94240	1.017804	2.518665	1.266475	5.171000

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.484156	24.45523	2.517668	1.255398	26.07439	2.487906	2.504302
Stddev	.004690	.05850	.010756	.001410	.03258	.009633	.006569
%RSD	.1888081	.2392227	.4272013	.1122861	.1249347	.3871926	.2623154
#1	2.487801	24.44929	2.523917	1.256149	26.11045	2.489620	2.511651
#2	2.478865	24.39993	2.505248	1.256274	26.04708	2.477531	2.502257
#3	2.485804	24.51648	2.523837	1.253772	26.06564	2.496567	2.498999

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	26.17494	4.776087	5.058584	5.044810	4.974002	5.194938	5.055093
Stddev	.04190	.013882	.021471	.018929	.012605	.020638	.016037
%RSD	.1600875	.2906473	.4244440	.3752153	.2534163	.3972662	.3172458
#1	26.21171	4.784692	5.064050	5.060512	4.977609	5.208176	5.060771
#2	26.12931	4.760073	5.034909	5.023791	4.959987	5.171159	5.036990
#3	26.18379	4.783497	5.076794	5.050127	4.984411	5.205480	5.067519

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: CCV03 Acquired: 2/19/2025 19:08:57 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV03 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.960071	4.979149	4.927743
Stddev	.022101	.013341	.006321
%RSD	.4455684	.2679445	.1282765
#1	4.984302	4.990001	4.931357
#2	4.941022	4.964254	4.920444
#3	4.954888	4.983192	4.931428

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2627.882	52823.41	8828.886	1688.973	3800.317
Stddev	10.875	45.39	12.939	2.300	12.401
%RSD	.4138154	.0859248	.1465549	.1361771	.3263042
#1	2624.584	52780.78	8822.517	1690.209	3794.598
#2	2640.023	52818.33	8843.775	1686.319	3814.545
#3	2619.038	52871.13	8820.366	1690.390	3791.807

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: CCB03 Acquired: 2/19/2025 19:13:08 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB03 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0015511	-.001933	.0003150	.0010451	.0000539	.0012143	-.000434
Stddev	.0012316	.001301	.0007341	.0008587	.0011319	.0071366	.000212
%RSD	79.40312	67.31252	233.0636	82.15893	2098.554	587.7206	48.85658
#1	.0002321	-.001024	.0000977	.0019930	.0000111	.0004224	-.000553
#2	.0017501	-.001352	-.000286	.0003192	.0012067	-.005493	-.000560
#3	.0026712	-.003424	.001133	.0008232	-.001056	.008714	-.000189

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000244	-.000053	-.005664	-.000073	-.000110	.0002806	-.005623
Stddev	.0000461	.000035	.005254	.000282	.000176	.0003770	.004716
%RSD	188.7459	65.47405	92.75648	384.1169	159.5231	134.3760	83.87042
#1	.0000370	-.000025	-.008276	-.000304	.000043	-.000132	-.006698
#2	-.000027	-.000043	-.009100	-.000156	-.000072	.000366	-.000462
#3	.000063	-.000092	.000384	.000240	-.000303	.000607	-.009707

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003722	-.000916	.0003011	-.000553	.0209963	.0005734	-.001092
Stddev	.0002520	.011493	.0003292	.000304	.0028535	.0020928	.000306
%RSD	67.69664	1254.518	109.3220	55.08805	13.59029	365.0238	28.00631
#1	.0001266	.006162	.0004835	-.000203	.0183368	-.001114	-.001324
#2	.0003598	-.014178	-.000079	-.000700	.0206416	-.000081	-.001206
#3	.0006301	.005267	.000499	-.000756	.0240106	.002915	-.000746

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0468394	.0074294	.0002936	-.000651	-.000205	.0086390	.0012888
Stddev	.0203878	.0003469	.0000634	.000189	.000921	.0075550	.0013390
%RSD	43.52702	4.669468	21.58507	29.03262	449.6391	87.45180	103.8932
#1	.0255946	.0078055	.0002303	-.000437	.000128	.0115143	.0000525
#2	.0486780	.0071219	.0003570	-.000795	-.001246	.0143342	.0027111
#3	.0662456	.0073607	.0002935	-.000722	.000503	.0000686	.0011030

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: CCB03 Acquired: 2/19/2025 19:13:08 Type: Unk
Method: NON EPA-6010-200.7(v2711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB03 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.001670	-.002096	.0001294
Stddev	.002915	.001348	.0000219
%RSD	174.6187	64.34287	16.91729
#1	.000032	-.001100	.0001190
#2	-.005036	-.001557	.0001145
#3	-.000005	-.003630	.0001545

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2788.813	55594.29	8735.101	1817.930	4298.954
Stddev	3.133	244.32	23.506	16.812	5.435
%RSD	.1123437	.4394645	.2690928	.9247702	.1264344
#1	2789.106	55870.90	8755.415	1836.610	4303.487
#2	2785.543	55503.99	8740.532	1804.016	4300.447
#3	2791.788	55407.97	8709.355	1813.164	4292.928

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: LR1 Acquired: 2/19/2025 19:17:01 Type: Unk
Method: NON EPA-6010-200.7(v2712) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0028195	.0981596	.0291174	-.153831	-.007250	1999.832	.0311525
Stddev	.0096076	.0154200	.0016569	.000902	.008865	10.606	.0012565
%RSD	340.7534	15.70916	5.690537	.5860456	122.2752	.5303291	4.033208
#1	.0124030	.0974250	.0279261	-.152790	-.010593	2003.793	.0298876
#2	.0028677	.0831200	.0310096	-.154346	.002800	1987.816	.0324003
#3	-.006812	.1139338	.0284165	-.154357	-.013956	2007.888	.0311697

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0091852	-.024725	1875.905	.0051759	.0245886	-.140494	1092.811
Stddev	.0000211	.001071	15.758	.0003738	.0005040	.008777	6.882
%RSD	.2293147	4.332785	.8400061	7.221362	2.049691	6.247435	.6297073
#1	.0092093	-.024521	1876.586	.0053400	.0240279	-.141989	1093.669
#2	.0091760	-.025883	1859.817	.0047481	.0250040	-.148428	1099.223
#3	.0091703	-.023769	1891.311	.0054395	.0247340	-.131066	1085.541

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.088929	1701.858	.0218691	-.037353	1948.638	.0502307	.1297269
Stddev	.000818	3.142	.0010127	.001993	11.438	.0019365	.0012755
%RSD	.9203679	.1846133	4.630904	5.336195	.5869580	3.855283	.9832486
#1	-.087985	1704.965	.0230380	-.039311	1960.765	.0495841	.1295461
#2	-.089386	1698.683	.0212529	-.035326	1947.105	.0487003	.1285514
#3	-.089418	1701.925	.0213165	-.037422	1938.044	.0524079	.1310832

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1288.402	.6573062	.0047290	.0064237	-.040196	.1603866	.0751197
Stddev	5.937	.0123544	.0006180	.0014682	.000780	.0087119	.0102433
%RSD	.4608153	1.879556	13.06761	22.85618	1.940679	5.431810	13.63599
#1	1285.492	.6651063	.0049133	.0081084	-.041031	.1611898	.0709056
#2	1295.232	.6637503	.0052337	.0057465	-.040069	.1686691	.0676557
#3	1284.481	.6430620	.0040398	.0054164	-.039487	.1513009	.0867979

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: LR1 Acquired: 2/19/2025 19:17:01 Type: Unk
Method: NON EPA-6010-200.7(v2712) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.253373	-.293853	-1.08122
Stddev	.009016	.002833	.00686
%RSD	3.558501	.9639298	.6344798
#1	-.262561	-.291697	-1.08208
#2	-.253019	-.292801	-1.08761
#3	-.244539	-.297061	-1.07397

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1877.677	37763.72	7524.395	1218.099	2376.193
Stddev	3.336	97.72	34.001	6.663	5.359
%RSD	.1776899	.2587621	.4518781	.5470299	.2255257
#1	1877.633	37657.14	7557.061	1210.560	2379.037
#2	1881.036	37849.09	7526.925	1223.201	2379.531
#3	1874.363	37784.92	7489.200	1220.536	2370.012

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: LR2 Acquired: 2/19/2025 19:22:00 Type: Unk
Method: NON EPA-6010-200.7(v2712) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0092350	-.022217	245.6709	.0103485	-.001416	.1630853	109.4232
Stddev	.0049956	.001142	.3268	.0021583	.001334	.0072205	.8181
%RSD	54.09418	5.142098	.1330136	20.85646	94.23887	4.427462	.7476390
#1	.0144539	-.023367	245.4909	.0118266	-.000061	.1661536	110.0759
#2	.0087537	-.021083	246.0481	.0113473	-.002729	.1682650	108.5055
#3	.0044975	-.022202	245.4737	.0078717	-.001457	.1548373	109.6884

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.002717	-.004518	.1883805	.0112711	-.016444	239.7956	.0999944
Stddev	.000039	.000057	.0027786	.0002671	.000578	.9487	.0056104
%RSD	1.420981	1.264419	1.475009	2.369676	3.516449	.3956249	5.610661
#1	-.002761	-.004493	.1855785	.0113820	-.015873	240.0352	.1030926
#2	-.002690	-.004477	.1884279	.0114648	-.016431	238.7501	.1033725
#3	-.002700	-.004583	.1911351	.0109664	-.017029	240.6015	.0935182

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	44.42328	-.050703	54.83118	-.000172	.2518028	-.012293	31.97483
Stddev	.20325	.002780	.04125	.000074	.0108744	.000683	.30564
%RSD	.4575386	5.483353	.0752330	43.05949	4.318606	5.556872	.9558620
#1	44.22177	-.047504	54.78536	-.000223	.2499935	-.012374	32.32708
#2	44.41983	-.052528	54.84280	-.000087	.2634684	-.011572	31.77999
#3	44.62823	-.052079	54.86537	-.000206	.2419466	-.012931	31.81742

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2498258	-.000885	-.008322	-.004649	-.037659	-.018201	2.524793
Stddev	.0166183	.000283	.000318	.000822	.001111	.006349	.028044
%RSD	6.651954	31.94793	3.821908	17.68781	2.950782	34.88322	1.110736
#1	.2425422	-.000558	-.008400	-.004553	-.036472	-.022413	2.508239
#2	.2688422	-.001048	-.008594	-.005515	-.037830	-.010898	2.557172
#3	.2380929	-.001048	-.007973	-.003878	-.038675	-.021291	2.508967

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: LR2 Acquired: 2/19/2025 19:22:00 Type: Unk
Method: NON EPA-6010-200.7(v2712) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.022557	-.002424	.0014007
Stddev	.000710	.000272	.0001265
%RSD	3.146568	11.23813	9.029276
#1	-.021822	-.002110	.0015465
#2	-.023239	-.002583	.0013349
#3	-.022611	-.002580	.0013207

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2531.992	57527.31	9839.475	1782.203	4217.796
Stddev	5.853	117.37	40.457	2.521	.877
%RSD	.2311426	.2040282	.4111698	.1414732	.0207895
#1	2537.113	57658.51	9794.323	1780.728	4218.620
#2	2533.249	57491.15	9872.430	1780.768	4216.875
#3	2525.613	57432.28	9851.672	1785.115	4217.895

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: CCV04 Acquired: 2/19/2025 19:30:47 Type: Unk
Method: NON EPA-6010-200.7(v2521) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV04 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.943764	5.042847	4.909773	4.978430	5.001940	9.686513	9.732991
Stddev	.013199	.048315	.007526	.009269	.015855	.017780	.074440
%RSD	.2669818	.9580863	.1532804	.1861903	.3169812	.1835526	.7648223
#1	4.942121	5.030498	4.906286	4.978344	4.993154	9.670479	9.659553
#2	4.931463	5.001906	4.904623	4.969204	4.992422	9.705634	9.808395
#3	4.957707	5.096139	4.918410	4.987742	5.020243	9.683427	9.731024

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2521483	2.446067	23.88092	.9916485	2.456796	1.248858	4.759213
Stddev	.0011029	.004143	.07971	.0018354	.003983	.003815	.013441
%RSD	.4373933	.1693637	.3337625	.1850885	.1621023	.3054454	.2824246
#1	.2513388	2.444529	23.82739	.9898266	2.455179	1.247466	4.765309
#2	.2517017	2.442912	23.97253	.9916218	2.453876	1.245935	4.768526
#3	.2534045	2.450758	23.84285	.9934972	2.461333	1.253173	4.743804

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.412450	23.55610	2.458880	1.238794	23.33737	2.438078	2.465893
Stddev	.008856	.16171	.003091	.002518	.07303	.009355	.002791
%RSD	.3670905	.6864871	.1257181	.2032441	.3129472	.3836980	.1131655
#1	2.411328	23.36979	2.458146	1.235888	23.29866	2.433246	2.463820
#2	2.421814	23.63839	2.456222	1.240164	23.42161	2.448860	2.469066
#3	2.404210	23.66011	2.462273	1.240329	23.29184	2.432127	2.464794

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	23.29528	5.066527	5.019573	4.908437	4.861378	4.709658	4.958875
Stddev	.10986	.015980	.018907	.010698	.015028	.023418	.021359
%RSD	.4716185	.3154068	.3766634	.2179428	.3091362	.4972322	.4307220
#1	23.32161	5.053925	5.011364	4.910602	4.858674	4.684248	4.947989
#2	23.38958	5.061156	5.006159	4.896822	4.877574	4.730372	4.945152
#3	23.17464	5.084501	5.041198	4.917886	4.847885	4.714352	4.983484

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: CCV04 Acquired: 2/19/2025 19:30:47 Type: Unk
Method: NON EPA-6010-200.7(v2521) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV04 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.876102	4.768659	4.957377
Stddev	.018858	.016635	.031378
%RSD	.3867396	.3488464	.6329620
#1	4.859810	4.778179	4.987841
#2	4.871736	4.778347	4.925158
#3	4.896760	4.749450	4.959132

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2695.602	54477.60	8501.252	1707.543	3930.064
Stddev	5.129	111.30	17.474	2.509	2.725
%RSD	.1902673	.2043032	.2055412	.1469499	.0693344
#1	2696.228	54604.76	8520.713	1704.651	3930.550
#2	2700.390	54397.89	8496.135	1709.140	3932.513
#3	2690.189	54430.15	8486.908	1708.838	3927.128

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: CCB04 Acquired: 2/19/2025 19:34:58 Type: Unk
Method: NON EPA-6010-200.7(v2521) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB04 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0012214	.0004191	-.000669	.0009500	-.000961	-.004974	-.001900
Stddev	.0018138	.0004862	.000478	.0011652	.001208	.003953	.001201
%RSD	148.5065	116.0087	71.43057	122.6512	125.6740	79.47291	63.20893
#1	.0007591	.0008473	-.000902	.0004636	-.002326	-.009107	-.001604
#2	-.000317	.0005197	-.000119	.0022796	-.000527	-.004588	-.003221
#3	.003222	-.000110	-.000985	.0001068	-.000030	-.001229	-.000875

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000123	-.000014	-.015312	.0001779	.0000411	.0001765	-.001973
Stddev	.0000248	.000026	.005994	.0002321	.0002747	.0003783	.004666
%RSD	202.6072	186.1147	39.14503	130.4583	668.0109	214.3066	236.4708
#1	.0000382	.000002	-.020931	-.000087	-.000274	.0002204	-.004172
#2	.0000099	-.000043	-.009003	.000278	.000232	.0005309	.003386
#3	-.000011	.000000	-.016002	.000343	.000165	-.000222	-.005135

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004557	-.005714	.0001673	-.000354	.0918541	-.000119	-.001228
Stddev	.0002769	.009741	.0002925	.000400	.0051642	.002221	.000397
%RSD	60.76589	170.4801	174.8560	112.7674	5.622206	1868.945	32.33016
#1	.0003318	-.011149	.0003994	-.000799	.0903003	-.000356	-.000833
#2	.0002624	.005532	.0002637	-.000239	.0876453	-.002212	-.001224
#3	.0007730	-.011525	-.000161	-.000025	.0976169	.002212	-.001627

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0347635	.0049274	.0001953	-.000911	.0001309	.0042843	.0049326
Stddev	.0348273	.0007737	.0001118	.000578	.0008099	.0029135	.0023438
%RSD	100.1834	15.70160	57.26052	63.44508	618.8694	68.00422	47.51659
#1	.0180504	.0057663	.0000725	-.000925	-.000246	.0015213	.0038840
#2	.0747973	.0042419	.0002914	-.001482	-.000422	.0073281	.0076177
#3	.0114429	.0047741	.0002221	-.000326	.001061	.0040036	.0032962

Reviewed By:Janvi
On:2/21/2025 4:50:51 PM
Inst Id :P4
LB :LB134756

Sample Name: CCB04 Acquired: 2/19/2025 19:34:58 Type: Unk
Method: NON EPA-6010-200.7(v2521) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB04 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.000781	-.000519	.0001958
Stddev	.002574	.000807	.0000464
%RSD	329.7628	155.5709	23.71101
#1	.000698	.000206	.0001833
#2	.000713	-.001389	.0001570
#3	-.003753	-.000375	.0002473

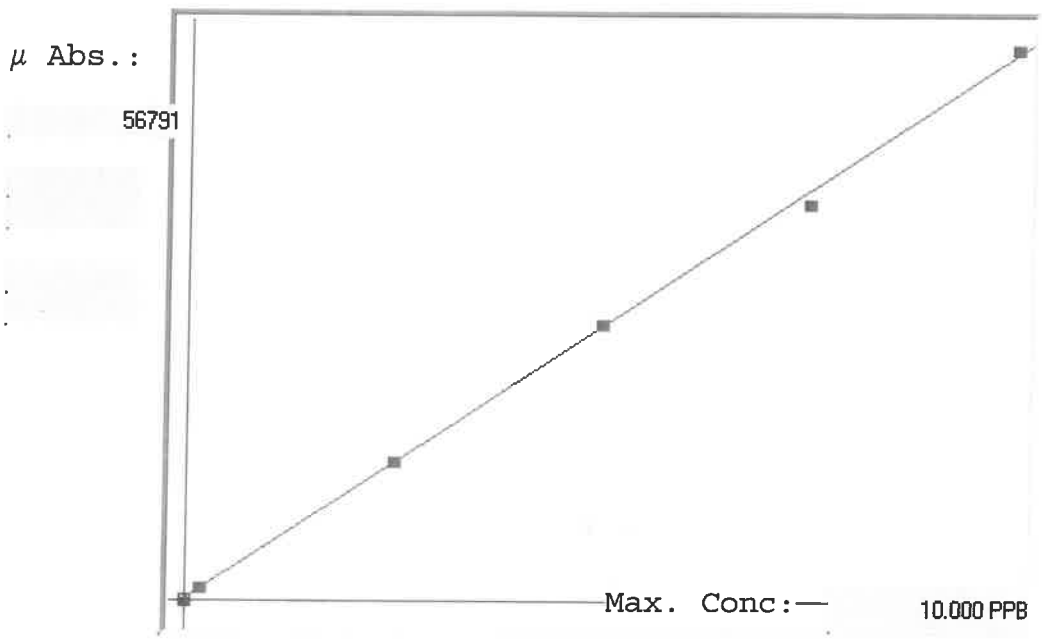
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2816.654	57239.24	9303.946	1830.627	4374.168
Stddev	2.525	109.36	10.160	15.788	8.426
%RSD	.0896616	.1910538	.1092032	.8624166	.1926256
#1	2819.335	57299.40	9296.050	1831.550	4381.804
#2	2816.306	57113.01	9300.379	1814.399	4375.571
#3	2814.320	57305.31	9315.408	1845.933	4365.128

Reviewed By:jaswal
On:3/3/2025 10:58:57 PM
Inst Id :CV1
LB :LB134771

LB134771

7471B / INSTRUMENT ID: CV1

Linear



A= 0.0000e+000

B= 1.7846e-004

C= -2.8325e-002

Rho= 0.9996331

Accept=Accepted

Std ID	Conc.	Calc.	Dev.	Mean	SD or %RSD	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0.0	0.000	-0.028	-0.028	0	0.000	0				
0.2	0.200	0.224	0.024	1415	0.0 %	1415				
2.5	2.500	2.543	0.043	14409	0.0 %	14409				
5.0	5.000	5.059	0.059	28505	0.0 %	28505				
7.5	7.500	7.295	-0.205	41038	0.0 %	41038				
10.0	10.000	10.107	0.107	56791	0.0 %	56791				

Reviewed By:jaswal
On:3/3/2025 10:58:57 PM
Inst Id :CV1
LB :LB134771

LB134771 INSTRUMENT ID : CV1

Method: 7471B Operator: Admin Date of Analysis: 21 Feb 2025 12:17:22

Sample ID	Extended ID	µ Abs.	Conc.	Stnd Conc	Method	Units	Date	Type	Type
0.0 - 1		0	-	0.00000	7471B	PPB	21 Feb 2025 12:29:59	S	Std
0.2 - 1		1415	-	0.20000	7471B	PPB	21 Feb 2025 12:32:16	S	Std
2.5 - 1		14409	-	2.50000	7471B	PPB	21 Feb 2025 12:34:33	S	Std
5.0 - 1		28505	-	5.00000	7471B	PPB	21 Feb 2025 12:36:50	S	Std
7.5 - 1		41038	-	7.50000	7471B	PPB	21 Feb 2025 12:39:09	S	Std
10.0 - 1		56791	-	10.00000	7471B	PPB	21 Feb 2025 12:41:28	S	Std
ICV13 - 1	ICV13	22577	4.0008	-7471B		PPB	21 Feb 2025 12:52:03	U	SMPL
ICB13 - 1	ICB13	-319	-0.0853	-7471B		PPB	21 Feb 2025 12:54:19	U	SMPL
CCV01 - 1	CCV01	26683	4.7336	-7471B		PPB	21 Feb 2025 12:56:37	U	SMPL
CCB01 - 1	CCB01	1	-0.0281	-7471B		PPB	21 Feb 2025 13:01:50	U	SMPL
CRA - 1	CRA	1331	0.2092	-7471B		PPB	21 Feb 2025 13:04:04	U	SMPL
HighStd - 1	HighStd	56305	10.0200	-7471B		PPB	21 Feb 2025 13:06:19	U	SMPL
ChkStd - 1	ChkStd	37085	6.5900	-7471B		PPB	21 Feb 2025 13:08:34	U	SMPL
PB166828BL - 1	PB166828BL	-2	-0.0287	-7471B		PPB	21 Feb 2025 13:13:49	U	SMPL
PB166828BS - 1	PB166828BS	21230	3.7604	-7471B		PPB	21 Feb 2025 13:16:05	U	SMPL
Q1383-01 - 1	OU4-PCS-TC-11-021725	1448	0.2301	-7471B		PPB	21 Feb 2025 13:18:21	U	SMPL
Q1383-03 - 1	OU4-PCS-TC-12-021725	954	0.1419	-7471B		PPB	21 Feb 2025 13:20:40	U	SMPL
Q1383-05 - 1	OU4-PCS-TC-13-021725	327	0.0300	-7471B		PPB	21 Feb 2025 13:23:00	U	SMPL
Q1383-07 - 1	OU4-PCS-TC-14-021725	258	0.0177	-7471B		PPB	21 Feb 2025 13:25:18	U	SMPL
Q1383-09 - 1	OU4-PCS-TC-15-021725	178	0.0034	-7471B		PPB	21 Feb 2025 13:27:34	U	SMPL
CCV02 - 1	CCV02	26314	4.6678	-7471B		PPB	21 Feb 2025 13:29:49	U	SMPL
CCB02 - 1	CCB02	-351	-0.0910	-7471B		PPB	21 Feb 2025 13:32:05	U	SMPL
Q1383-11 - 1	OU4-PCS-TC-16-021725	791	0.1128	-7471B		PPB	21 Feb 2025 13:34:24	U	SMPL
Q1383-13 - 1	OU4-PCS-TC-17-021725	230	0.0127	-7471B		PPB	21 Feb 2025 13:36:39	U	SMPL
Q1383-15 - 1	OU4-PCS-TC-18-021725	188	0.0052	-7471B		PPB	21 Feb 2025 13:38:55	U	SMPL
Q1383-17 - 1	OU4-PCS-TC-19-021725	223	0.0115	-7471B		PPB	21 Feb 2025 13:41:11	U	SMPL
Q1383-19 - 1	OU4-PCS-TC-20-021725	192	0.0059	-7471B		PPB	21 Feb 2025 13:43:27	U	SMPL
Q1383-21 - 1	OU4-CF-15-021725	216	0.0102	-7471B		PPB	21 Feb 2025 13:45:43	U	SMPL
Q1397-01 - 1	STOCK-PILE	4561	0.7856	-7471B		PPB	21 Feb 2025 13:47:59	U	SMPL
Q1397-03 - 1	TP7	4983	0.8610	-7471B		PPB	21 Feb 2025 13:50:16	U	SMPL
Q1397-05 - 1	TP8	6093	1.0591	-7471B		PPB	21 Feb 2025 13:52:34	U	SMPL
Q1397-05DUP - 1	TP8DUP	7472	1.3052	-7471B		PPB	21 Feb 2025 13:54:51	U	SMPL
CCV03 - 1	CCV03	27762	4.9262	-7471B		PPB	21 Feb 2025 13:57:08	U	SMPL
CCB03 - 1	CCB03	6	-0.0273	-7471B		PPB	21 Feb 2025 14:02:17	U	SMPL
Q1397-05MSD - 1	TP8MSD	25766	4.5700	-7471B		PPB	21 Feb 2025 14:07:16	U	SMPL
Q1397-05MS - 1	TP8MS	26569	4.7133	-7471B		PPB	21 Feb 2025 14:10:08	U	SMPL
PB166830BL - 1	PB166830BL	-84	-0.0433	-7471B		PPB	21 Feb 2025 14:12:51	U	SMPL
PB166830BS - 1	PB166830BS	21443	3.7985	-7471B		PPB	21 Feb 2025 14:15:08	U	SMPL
Q1382-01 - 1	OU4-PCS-TC-01-021725	1203	0.1864	-7471B		PPB	21 Feb 2025 14:17:25	U	SMPL
Q1382-03 - 1	OU4-PCS-TC-02-021725	323	0.0293	-7471B		PPB	21 Feb 2025 14:19:44	U	SMPL
Q1382-05 - 1	OU4-PCS-TC-03-021725	87	-0.0128	-7471B		PPB	21 Feb 2025 14:22:01	U	SMPL
Q1382-07 - 1	OU4-PCS-TC-04-021725	164	0.0009	-7471B		PPB	21 Feb 2025 14:24:18	U	SMPL
Q1382-09 - 1	OU4-PCS-TC-05-021725	272	0.0202	-7471B		PPB	21 Feb 2025 14:26:36	U	SMPL
Q1382-11 - 1	OU4-PCS-TC-06-021725	256	0.0174	-7471B		PPB	21 Feb 2025 14:28:51	U	SMPL
CCV04 - 1	CCV04	27876	4.9465	-7471B		PPB	21 Feb 2025 14:31:06	U	SMPL
CCB04 - 1	CCB04	-346	-0.0901	-7471B		PPB	21 Feb 2025 14:33:22	U	SMPL
Q1382-13 - 1	OU4-PCS-TC-07-021725	310	0.0270	-7471B		PPB	21 Feb 2025 14:35:41	U	SMPL
Q1382-15 - 1	OU4-PCS-TC-08-021725	183	0.0043	-7471B		PPB	21 Feb 2025 14:37:57	U	SMPL
Q1382-17 - 1	OU4-PCS-TC-09-021725	159	0.0001	-7471B		PPB	21 Feb 2025 14:40:13	U	SMPL
Q1382-19 - 1	OU4-PCS-TC-10-021725	188	0.0052	-7471B		PPB	21 Feb 2025 14:42:29	U	SMPL
Q1384-01 - 1	OR-03-021823025	1986	0.3261	-7471B		PPB	21 Feb 2025 14:44:45	U	SMPL
Q1385-01 - 1	ST-1	235	0.0136	-7471B		PPB	21 Feb 2025 14:47:01	U	SMPL
Q1388-01 - 1	72-12016	1339	0.2106	-7471B		PPB	21 Feb 2025 14:49:18	U	SMPL
Q1388-01DUP - 1	72-12016DUP	1277	0.1996	-7471B		PPB	21 Feb 2025 14:54:24	U	SMPL
Q1388-01MS - 1	72-12016MS	20796	3.6830	-7471B		PPB	21 Feb 2025 14:56:40	U	SMPL
Q1388-01MSD - 1	72-12016MSD	23287	4.1275	-7471B		PPB	21 Feb 2025 14:58:56	U	SMPL
CCV05 - 1	CCV05	30505	5.4157	-7471B		PPB	21 Feb 2025 15:01:14	U	SMPL
CCB05 - 1	CCB05	3	-0.0278	-7471B		PPB	21 Feb 2025 15:06:22	U	SMPL
Q1393-01 - 1	SOIL-COMP	401	0.0432	-7471B		PPB	21 Feb 2025 15:08:37	U	SMPL
Q1393-03 - 1	OD-281	620	0.0823	-7471B		PPB	21 Feb 2025 15:10:53	U	SMPL
Q1397-05LX5 - 1		1500	0.2394	-7471B		PPB	21 Feb 2025 15:13:08	U	SMPL
Q1397-05A - 1		26387	4.6808	-7471B		PPB	21 Feb 2025 15:15:24	U	SMPL
Q1388-01LX5 - 1		-290	-0.0801	-7471B		PPB	21 Feb 2025 15:17:40	U	SMPL
Q1388-01A - 1		23245	4.1200	-7471B		PPB	21 Feb 2025 15:20:01	U	SMPL
CCV06 - 1	CCV06	27456	4.8716	-7471B		PPB	21 Feb 2025 15:22:20	U	SMPL
CCB06 - 1	CCB06	-401	-0.0999	-7471B		PPB	21 Feb 2025 15:24:39	U	SMPL
Q1388-01DUP - 1	72-12016DUP	2143	0.3541	-7471B		PPB	21 Feb 2025 14:51:35	U	SMPL

Alliance TECHNICAL GROUP

Soil/Sludge Metals Preparation Sheet

PB166760

SOP ID : M3050B-Digestion-20

SDG No : N/A

Matrix : SOIL

Pippete 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 #3 2. N/A

Start Digest Date: 02/18/2025 **Time :** 14:05 **Temp :** 96 °C

End Digest Date: 02/18/2025 **Time :** 16:10 **Temp :** 96 °C

Digestion tube ID: M6054

Block thermometer ID: MET-DIG. #3

Dig Technician Signature: SLD.

Supervisor Signature: MB

Temp : 1. 96°C 2. N/A

Standared Name	MLS USED	STD REF. # FROM LOG
LFS-1	1.00	M6002
LCS-2	1.00	M6011
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

Chemical Used	ML/SAMPLE USED	Lot Number
1:1 HNO3	10.00	MP84041
Conc. HNO3	5.00	M6126
30% H2O2	3.00	M6125
Conc. HCL	10.00	M6121
PTFE Boiling Stones	N/A	M5585
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 # 3 CELL 35 Temp :96 C

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
02/18/25 17:10	SLD. met. dig.	MB - metal Lab
	Preparation Group	Analysis Group

Alliance TECHNICAL GROUP

Soil/Sludge Metals Preparation Sheet

PB166760

Lab Sample ID	Client Sample ID	pH	Initial Weight (g)	Final Vol (ml)	Color Before	Color After	Texture	Artifact	Comment	Prep Pos
PB166760BL	PBS760	N/A	2.09	100	Colorless	Colorless	Fine	N/A	N/A	1
PB166760BS	LCS760	N/A	2.25	100	Colorless	Colorless	Fine	N/A	M6002,M6011	2
Q1382-01	OU4-PCS-TC-01-021725	N/A	2.37	100	Black	Yellow	Medium	N/A	N/A	3
Q1382-03	OU4-PCS-TC-02-021725	N/A	2.14	100	Black	Yellow	Medium	N/A	N/A	4
Q1382-05	OU4-PCS-TC-03-021725	N/A	2.24	100	Black	Yellow	Medium	N/A	N/A	5
Q1382-07	OU4-PCS-TC-04-021725	N/A	2.28	100	Black	Yellow	Medium	N/A	N/A	6
Q1382-09	OU4-PCS-TC-05-021725	N/A	2.20	100	Black	Yellow	Medium	N/A	N/A	7
Q1382-11	OU4-PCS-TC-06-021725	N/A	2.15	100	Black	Yellow	Medium	N/A	N/A	8
Q1382-13	OU4-PCS-TC-07-021725	N/A	2.18	100	Black	Yellow	Medium	N/A	N/A	9
Q1382-15	OU4-PCS-TC-08-021725	N/A	2.09	100	Black	Yellow	Medium	N/A	N/A	10
Q1382-17	OU4-PCS-TC-09-021725	N/A	2.11	100	Black	Yellow	Medium	N/A	N/A	11
Q1382-19	OU4-PCS-TC-10-021725	N/A	2.10	100	Black	Yellow	Medium	N/A	N/A	12
Q1384-01	OR-03-021823025	N/A	2.26	100	Brown	Yellow	Medium	N/A	N/A	13
Q1384-01MS	OR-03-021823025MS	N/A	2.22	100	Brown	Yellow	Medium	N/A	M6002,M6011	15
Q1384-01MSD	OR-03-021823025MSD	N/A	2.28	100	Brown	Yellow	Medium	N/A	M6002,M6011	16
Q1384-01DUP	OR-03-021823025DUP	N/A	2.17	100	Brown	Yellow	Medium	N/A	N/A	14
Q1385-01	ST-1	N/A	2.123	100	Black	Yellow	Medium	N/A	N/A	17

WORKLIST(Hardcopy Internal Chain)

WorkList Name : PB166760 **WorkList ID :** 187747 **Department :** Digestion **Date :** 02-18-2025 13:11:19

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q1382-01	OU4-PCS-TC-01-021725	Solid	Metals ICP-TAL	Cool 4 deg C	NOBI03	H31	02/17/2025	6010D
Q1382-03	OU4-PCS-TC-02-021725	Solid	Metals ICP-TAL	Cool 4 deg C	NOBI03	H31	02/17/2025	6010D
Q1382-05	OU4-PCS-TC-03-021725	Solid	Metals ICP-TAL	Cool 4 deg C	NOBI03	H31	02/17/2025	6010D
Q1382-07	OU4-PCS-TC-04-021725	Solid	Metals ICP-TAL	Cool 4 deg C	NOBI03	H31	02/17/2025	6010D
Q1382-09	OU4-PCS-TC-05-021725	Solid	Metals ICP-TAL	Cool 4 deg C	NOBI03	H31	02/17/2025	6010D
Q1382-11	OU4-PCS-TC-06-021725	Solid	Metals ICP-TAL	Cool 4 deg C	NOBI03	H31	02/17/2025	6010D
Q1382-13	OU4-PCS-TC-07-021725	Solid	Metals ICP-TAL	Cool 4 deg C	NOBI03	H31	02/17/2025	6010D
Q1382-15	OU4-PCS-TC-08-021725	Solid	Metals ICP-TAL	Cool 4 deg C	NOBI03	H31	02/17/2025	6010D
Q1382-17	OU4-PCS-TC-09-021725	Solid	Metals ICP-TAL	Cool 4 deg C	NOBI03	H31	02/17/2025	6010D
Q1382-19	OU4-PCS-TC-10-021725	Solid	Metals ICP-TAL	Cool 4 deg C	NOBI03	H31	02/17/2025	6010D
Q1384-01	OR-03-021823025	Solid	Metals ICP-TAL	Cool 4 deg C	PSEG05	N41	02/18/2025	6010D
Q1385-01	ST-1	Solid	Metals ICP-TAL	Cool 4 deg C	PSEG03	H21	02/18/2025	6010D

Date/Time 02/28/25 13:35
Raw Sample Received by: SKD. met.dig
Raw Sample Relinquished by: TM

Date/Time 02/28/25 14:35
Raw Sample Received by: SM
Raw Sample Relinquished by: SKD. met.dig

Alliance TECHNICAL GROUP

Soil/Sludge Mercury Preparation Sheet

PB166830

SOP ID : M7471B-Mercury-18

SDG No : NA

Matrix : SOIL

Pippete ID: HG A

Balance ID : M SC-3

Filter paper ID : NA

pH Strip ID : NA

Hood ID : #1

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

Start Digest Date: 02/20/2025 **Time :** 16:00 **Temp :** 95 °C

End Digest Date: 02/20/2025 **Time :** 16:30 **Temp :** 94 °C

Digestion tube ID: M5595

Block thermometer ID: HG-DIG#3

Dig Technician Signature: MB

Supervisor Signature: 12

Temp : 1. 95°C 2. N/A

Standared Name	MLS USED	STD REF. # FROM LOG
ICV	30mL	MP84591
CCV	30mL	MP84593
CRA	30mL	MP84595
Blank Spike	0.48mL	MP84584
Matrix Spike	0.48mL	MP84584

Chemical Used	ML/SAMPLE USED	Lot Number
AQUA REGIA	1.5mL	MP84597
KMnO4 (5%)	4.5mL	MP84564
Hydroxylamine HCL (12%)	2.0mL	MP84566
PTFE Boiling Stones	----------	M4583
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

LAB SAMPLE ID	CLIENT SAMPLE ID	Wt(g)/Vol(ml)	Comment
0.0 ppb	S0	30mL	MP84585
0.05 ppb	S0.05	N/A	N/A
0.2 ppb	S0.2	30mL	MP84586
2.5 ppb	S2.5	30mL	MP84587
5.0 ppb	S5.0	30mL	MP84588
7.5 ppb	S7.5	30mL	MP84589
10.0 ppb	S10.0	30mL	MP84590
ICV	ICV	30mL	MP84591
ICB	ICB	30mL	MP84592
CCV	CCV	30mL	MP84593
CCB	CCB	30mL	MP84594
CRI	CRI	30mL	MP84595
CHK STD	CHK STD	30mL	MP84596

Extraction Conformance/Non-Conformance Comments:

N/A

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
2/20/25@ 17:16	MB – Dig. Lab	MB – Metal Lab
	Preparation Group	Analysis Group

Alliance TECHNICAL GROUP

Soil/Sludge Mercury Preparation Sheet

PB166830

Lab Sample ID	Client Sample ID	Initial Weight (g)	Final Vol (ml)	pH	Comment	Prep Pos
PB166830BL	PBS830	0.54	35	NA	N/A	1
PB166830BS	LCS830	0.56	35	NA	MP84584	2
Q1382-01	OU4-PCS-TC-01-021725	0.52	35	NA	N/A	3
Q1382-03	OU4-PCS-TC-02-021725	0.59	35	NA	N/A	4
Q1382-05	OU4-PCS-TC-03-021725	0.50	35	NA	N/A	5
Q1382-07	OU4-PCS-TC-04-021725	0.58	35	NA	N/A	6
Q1382-09	OU4-PCS-TC-05-021725	0.60	35	NA	N/A	7
Q1382-11	OU4-PCS-TC-06-021725	0.52	35	NA	N/A	8
Q1382-13	OU4-PCS-TC-07-021725	0.58	35	NA	N/A	9
Q1382-15	OU4-PCS-TC-08-021725	0.55	35	NA	N/A	10
Q1382-17	OU4-PCS-TC-09-021725	0.55	35	NA	N/A	11
Q1382-19	OU4-PCS-TC-10-021725	0.53	35	NA	N/A	12
Q1384-01	OR-03-021823025	0.55	35	NA	N/A	13
Q1385-01	ST-1	0.53	35	NA	N/A	14
Q1388-01	72-12016	0.54	35	NA	N/A	15
Q1388-01DUP	72-12016DUP	0.59	35	NA	N/A	16
Q1388-01MS	72-12016MS	0.56	35	NA	MP84584	17
Q1388-01MSD	72-12016MSD	0.53	35	NA	MP84584	18
Q1393-01	SOIL-COMP	0.57	35	NA	N/A	19
Q1393-03	OD-281	0.58	35	NA	N/A	20

WORKLIST(Hardcopy Internal Chain)

WorkList Name : 022025_7471 **WorkList ID :** 187804 **Department :** Digestion **Date :** 02-20-2025 15:42:58

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q1382-01	OU4-PCS-TC-01-021725	Solid	Mercury	Cool 4 deg C	NOBI03	H31	02/17/2025	7471B
Q1382-03	OU4-PCS-TC-02-021725	Solid	Mercury	Cool 4 deg C	NOBI03	H31	02/17/2025	7471B
Q1382-05	OU4-PCS-TC-03-021725	Solid	Mercury	Cool 4 deg C	NOBI03	H31	02/17/2025	7471B
Q1382-07	OU4-PCS-TC-04-021725	Solid	Mercury	Cool 4 deg C	NOBI03	H31	02/17/2025	7471B
Q1382-09	OU4-PCS-TC-05-021725	Solid	Mercury	Cool 4 deg C	NOBI03	H31	02/17/2025	7471B
Q1382-11	OU4-PCS-TC-06-021725	Solid	Mercury	Cool 4 deg C	NOBI03	H31	02/17/2025	7471B
Q1382-13	OU4-PCS-TC-07-021725	Solid	Mercury	Cool 4 deg C	NOBI03	H31	02/17/2025	7471B
Q1382-15	OU4-PCS-TC-08-021725	Solid	Mercury	Cool 4 deg C	NOBI03	H31	02/17/2025	7471B
Q1382-17	OU4-PCS-TC-09-021725	Solid	Mercury	Cool 4 deg C	NOBI03	H31	02/17/2025	7471B
Q1382-19	OU4-PCS-TC-10-021725	Solid	Mercury	Cool 4 deg C	NOBI03	H31	02/17/2025	7471B
Q1385-01	ST-1	Solid	Mercury	Cool 4 deg C	NOBI03	H31	02/17/2025	7471B
Q1388-01	72-12016	Solid	Mercury	Cool 4 deg C	PSEG03	H21	02/18/2025	7471B
Q1393-01	SOIL-COMP	Solid	Mercury	Cool 4 deg C	PSEG03	H31	02/19/2025	7471B
Q1393-03	OD-281	Solid	Mercury	Cool 4 deg C	PSEG03	H21	02/19/2025	7471B
~~Q1372-01~~	~~AU-05-021425~~	~~Solid~~	~~Mercury~~	~~Cool 4 deg C~~	PSEG05	H21	02/14/2025	7471B
~~Q1374-01~~	~~TR-05-02142025~~	~~Solid~~	~~Mercury~~	~~Cool 4 deg C~~	PSEG05	H21	02/14/2025	7471B
Q1384-01	OR-03-021823025	Solid	Mercury	Cool 4 deg C	PSEG05	N41	02/18/2025	7471B

Date/Time 2/20/25 @ 15:35 ~~15:30~~

Raw Sample Received by: MB - MRL Lab

Raw Sample Relinquished by: MB - MRL Lab

Date/Time 2/20/25 @ 16:20

Raw Sample Received by: MB - MRL Lab

Raw Sample Relinquished by:

Alliance TECHNICAL GROUP

PERCENT SOLID

Supervisor: Iwona
Analyst: jignesh
Date: 2/19/2025

OVENTEMP IN Celsius(°C): 107
Time IN: 16:40
In Date: 02/18/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
OvenID: M OVEN#1

OVENTEMP OUT Celsius(°C): 103
Time OUT: 08:11
Out Date: 02/19/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
BalanceID: M SC-4
Thermometer ID: % SOLID- OVEN

QC: LB134739

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
Q1380-06	BP-VPB-192-GW-725-727	1	1.15	8.48	9.63	1.78	7.4	SLUDGE SAMPLE
Q1380-07	Q1380-06MS	2	1.15	8.48	9.63	1.78	7.4	SLUDGE SAMPLE
Q1380-08	Q1380-06MSD	3	1.15	8.48	9.63	1.78	7.4	SLUDGE SAMPLE
Q1382-01	OU4-PCS-TC-01-021725	4	1.15	8.56	9.71	9.02	91.9	
Q1382-03	OU4-PCS-TC-02-021725	5	1.15	8.59	9.74	9.03	91.7	
Q1382-05	OU4-PCS-TC-03-021725	6	1.15	8.56	9.71	9.06	92.4	
Q1382-07	OU4-PCS-TC-04-021725	7	1.16	8.80	9.96	9.3	92.5	
Q1382-09	OU4-PCS-TC-05-021725	8	1.16	8.65	9.81	9.12	92.0	
Q1382-11	OU4-PCS-TC-06-021725	9	1.12	8.76	9.88	9.2	92.2	
Q1382-13	OU4-PCS-TC-07-021725	10	1.11	8.67	9.78	9.1	92.2	
Q1382-15	OU4-PCS-TC-08-021725	11	1.19	8.61	9.8	9.16	92.6	
Q1382-17	OU4-PCS-TC-09-021725	12	1.14	8.66	9.8	9.16	92.6	
Q1382-19	OU4-PCS-TC-10-021725	13	1.14	8.84	9.98	9.4	93.4	
Q1383-01	OU4-PCS-TC-11-021725	14	1.17	8.74	9.91	9.26	92.6	
Q1383-03	OU4-PCS-TC-12-021725	15	1.15	8.73	9.88	9.2	92.2	
Q1383-05	OU4-PCS-TC-13-021725	16	1.12	8.76	9.88	9.22	92.5	
Q1383-07	OU4-PCS-TC-14-021725	17	1.18	8.58	9.76	9.08	92.1	
Q1383-09	OU4-PCS-TC-15-021725	18	1.13	8.77	9.9	9.24	92.5	
Q1383-11	OU4-PCS-TC-16-021725	19	1.16	8.61	9.77	9.09	92.1	
Q1383-13	OU4-PCS-TC-17-021725	20	1.19	8.58	9.77	9.03	91.4	
Q1383-15	OU4-PCS-TC-18-021725	21	1.15	8.60	9.75	9.05	91.9	
Q1383-17	OU4-PCS-TC-19-021725	22	1.15	8.84	9.99	9.29	92.1	
Q1383-19	OU4-PCS-TC-20-021725	23	1.13	8.67	9.8	9.12	92.2	
Q1383-21	OU4-CF-15-021725	24	1.16	8.50	9.66	9.02	92.5	
Q1384-01	OR-03-021823025	25	1.15	8.81	9.96	8.96	88.6	
Q1384-02	OR-03-021823025-E2	26	1.17	8.82	9.99	9.04	89.2	
Q1385-01	ST-1	27	1.00	1.00	2.00	2.00	100.0	CONCRETE sample
Q1385-02	ST-1-E2	28	1.00	1.00	2.00	2.00	100.0	CONCRETE sample

Alliance TECHNICAL GROUP

PERCENT SOLID

Supervisor: Iwona
Analyst: jignesh
Date: 2/19/2025

OVENTEMP IN Celsius(°C): 107
Time IN: 16:40
In Date: 02/18/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
OvenID: M OVEN#1

OVENTEMP OUT Celsius(°C): 103
Time OUT: 08:11
Out Date: 02/19/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
BalanceID: M SC-4
Thermometer ID: % SOLID- OVEN

QC: LB134739

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

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

WORKLIST(Hardcopy Internal Chain)

VB 134739

WorkList Name : %1-021825 **WorkList ID :** 187742 **Department :** Wet-Chemistry **Date :** 02-18-2025 08:35:18

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q1380-06	BP-VPB-192-GW-725-727	Solid	Percent Solids	Cool 4 deg C	TETR06	H31	02/10/2025	Chemtech -SO
Q1380-07	Q1380-06MS	Solid	Percent Solids	Cool 4 deg C	TETR06	H31	02/10/2025	Chemtech -SO
Q1380-08	Q1380-06MSD	Solid	Percent Solids	Cool 4 deg C	TETR06	H31	02/10/2025	Chemtech -SO
Q1382-01	OU4-PCS-TC-01-021725	Solid	Percent Solids	Cool 4 deg C	NOBI03	H31	02/17/2025	Chemtech -SO
Q1382-03	OU4-PCS-TC-02-021725	Solid	Percent Solids	Cool 4 deg C	NOBI03	H31	02/17/2025	Chemtech -SO
Q1382-05	OU4-PCS-TC-03-021725	Solid	Percent Solids	Cool 4 deg C	NOBI03	H31	02/17/2025	Chemtech -SO
Q1382-07	OU4-PCS-TC-04-021725	Solid	Percent Solids	Cool 4 deg C	NOBI03	H31	02/17/2025	Chemtech -SO
Q1382-09	OU4-PCS-TC-05-021725	Solid	Percent Solids	Cool 4 deg C	NOBI03	H31	02/17/2025	Chemtech -SO
Q1382-11	OU4-PCS-TC-06-021725	Solid	Percent Solids	Cool 4 deg C	NOBI03	H31	02/17/2025	Chemtech -SO
Q1382-13	OU4-PCS-TC-07-021725	Solid	Percent Solids	Cool 4 deg C	NOBI03	H31	02/17/2025	Chemtech -SO
Q1382-15	OU4-PCS-TC-08-021725	Solid	Percent Solids	Cool 4 deg C	NOBI03	H31	02/17/2025	Chemtech -SO
Q1382-17	OU4-PCS-TC-09-021725	Solid	Percent Solids	Cool 4 deg C	NOBI03	H31	02/17/2025	Chemtech -SO
Q1382-19	OU4-PCS-TC-10-021725	Solid	Percent Solids	Cool 4 deg C	NOBI03	H31	02/17/2025	Chemtech -SO
Q1383-01	OU4-PCS-TC-11-021725	Solid	Percent Solids	Cool 4 deg C	NOBI03	H31	02/17/2025	Chemtech -SO
Q1383-03	OU4-PCS-TC-12-021725	Solid	Percent Solids	Cool 4 deg C	NOBI03	H31	02/17/2025	Chemtech -SO
Q1383-05	OU4-PCS-TC-13-021725	Solid	Percent Solids	Cool 4 deg C	NOBI03	H31	02/17/2025	Chemtech -SO
Q1383-07	OU4-PCS-TC-14-021725	Solid	Percent Solids	Cool 4 deg C	NOBI03	H31	02/17/2025	Chemtech -SO
Q1383-09	OU4-PCS-TC-15-021725	Solid	Percent Solids	Cool 4 deg C	NOBI03	H31	02/17/2025	Chemtech -SO
Q1383-11	OU4-PCS-TC-16-021725	Solid	Percent Solids	Cool 4 deg C	NOBI03	H31	02/17/2025	Chemtech -SO
Q1383-13	OU4-PCS-TC-17-021725	Solid	Percent Solids	Cool 4 deg C	NOBI03	H31	02/17/2025	Chemtech -SO
Q1383-15	OU4-PCS-TC-18-021725	Solid	Percent Solids	Cool 4 deg C	NOBI03	H31	02/17/2025	Chemtech -SO

Date/Time 02/18/25 15:00

Raw Sample Received by: TB [illegible]

Raw Sample Relinquished by: [illegible]

Date/Time 02/18/25 17:00

Raw Sample Received by: [illegible]

Raw Sample Relinquished by: [illegible]

VB1347 39

WORKLIST(Hardcopy Internal Chain)

WorkList Name : %1-021825 **WorkList ID :** 187742 **Department :** Wet-Chemistry **Date :** 02-18-2025 08:35:18

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q1383-17	OU4-PCS-TC-19-021725	Solid	Percent Solids	Cool 4 deg C	NOBI03	H31	02/17/2025	Chemtech -SO
Q1383-19	OU4-PCS-TC-20-021725	Solid	Percent Solids	Cool 4 deg C	NOBI03	H31	02/17/2025	Chemtech -SO
Q1383-21	OU4-CF-15-021725	Solid	Percent Solids	Cool 4 deg C	NOBI03	H31	02/17/2025	Chemtech -SO
Q1384-01	OR-03-021823025	Solid	Percent Solids	Cool 4 deg C	PSEG05	N41	02/18/2025	Chemtech -SO
Q1384-02	OR-03-021823025-E2	Solid	Percent Solids	Cool 4 deg C	PSEG05	N41	02/18/2025	Chemtech -SO
Q1385-01	ST-1	Solid	Percent Solids	Cool 4 deg C	PSEG03	H21	02/18/2025	Chemtech -SO
Q1385-02	ST-1-E2	Solid	Percent Solids	Cool 4 deg C	PSEG03	H21	02/18/2025	Chemtech -SO

Date/Time 02/18/25 15:00

Raw Sample Received by: [illegible]

Raw Sample Relinquished by: [illegible]

Date/Time 02/18/25 17:00

Raw Sample Received by: [illegible]

Raw Sample Relinquished by: [illegible]

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

Instrument ID: P4

Daily Analysis Runlog For Sequence/QCBatch ID # LB134756

Review By	kareem	Review On	2/20/2025 5:42:28 PM
Supervise By	Janvi	Supervise On	2/21/2025 4:50:51 PM

STD. NAME	STD REF.#
ICAL Standard	MP84204,MP84223,MP84224,MP84225,MP84226,MP84228
ICV Standard	MP84446
CCV Standard	MP84232
ICSA Standard	MP84230,MP84231
CRI Standard	MP84228
LCS Standard	
Chk Standard	MP84218,MP84219

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	S0	S0	CAL1	02/19/25 12:59		Kareem	OK
2	S1	S1	CAL2	02/19/25 13:03		Kareem	OK
3	S2	S2	CAL3	02/19/25 13:08		Kareem	OK
4	S3	S3	CAL4	02/19/25 13:12		Kareem	OK
5	S4	S4	CAL5	02/19/25 13:16		Kareem	OK
6	S5	S5	CAL6	02/19/25 13:20		Kareem	OK
7	ICV01	ICV01	ICV	02/19/25 16:50		Kareem	OK
8	LLICV01	LLICV01	LLICV	02/19/25 17:11		Kareem	OK
9	ICB01	ICB01	ICB	02/19/25 17:15		Kareem	OK
10	CRI01	CRI01	CRDL	02/19/25 17:20		Kareem	OK
11	ICSA01	ICSA01	ICSA	02/19/25 17:24		Kareem	OK
12	ICSAB01	ICSAB01	ICSAB	02/19/25 17:28		Kareem	OK
13	CCV01	CCV01	CCV	02/19/25 17:32		Kareem	OK
14	CCB01	CCB01	CCB	02/19/25 17:36		Kareem	OK
15	PB166760BL	PB166760BL	MB	02/19/25 17:41		Kareem	OK
16	PB166760BS	PB166760BS	LCS	02/19/25 17:45	0.1 ML M6101 AND M6001 WERE ADDED TO 10 ML OF SAMPLE	Kareem	OK
17	Q1382-01	OU4-PCS-TC-01-021	SAM	02/19/25 17:49		Kareem	OK
18	Q1382-03	OU4-PCS-TC-02-021	SAM	02/19/25 17:53		Kareem	OK

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Daily Analysis Runlog For Sequence/QCBatch ID # LB134756

Review By	kareem	Review On	2/20/2025 5:42:28 PM
Supervise By	Janvi	Supervise On	2/21/2025 4:50:51 PM

STD. NAME	STD REF.#
ICAL Standard	MP84204,MP84223,MP84224,MP84225,MP84226,MP84228
ICV Standard	MP84446
CCV Standard	MP84232
ICSA Standard	MP84230,MP84231
CRI Standard	MP84228
LCS Standard	
Chk Standard	MP84218,MP84219

19	Q1382-05	OU4-PCS-TC-03-021	SAM	02/19/25 17:58		Kareem	OK
20	Q1382-07	OU4-PCS-TC-04-021	SAM	02/19/25 18:02		Kareem	OK
21	Q1382-09	OU4-PCS-TC-05-021	SAM	02/19/25 18:06		Kareem	OK
22	Q1382-11	OU4-PCS-TC-06-021	SAM	02/19/25 18:10		Kareem	OK
23	Q1382-13	OU4-PCS-TC-07-021	SAM	02/19/25 18:14		Kareem	OK
24	Q1382-15	OU4-PCS-TC-08-021	SAM	02/19/25 18:19		Kareem	OK
25	CCV02	CCV02	CCV	02/19/25 18:23		Kareem	OK
26	CCB02	CCB02	CCB	02/19/25 18:27		Kareem	OK
27	Q1382-17	OU4-PCS-TC-09-021	SAM	02/19/25 18:31		Kareem	OK
28	Q1382-19	OU4-PCS-TC-10-021	SAM	02/19/25 18:36		Kareem	OK
29	Q1384-01	OR-03-021823025	SAM	02/19/25 18:40		Kareem	OK
30	Q1384-01DUP	OR-03-021823025DU	DUP	02/19/25 18:44		Kareem	OK
31	Q1384-01L	OR-03-021823025L	SD	02/19/25 18:48		Kareem	OK
32	Q1384-01MS	OR-03-021823025MS	MS	02/19/25 18:52	0.1 ML M6101 AND M6001 WERE ADDED TO 10 ML OF SAMPLE	Kareem	OK
33	Q1384-01MSD	OR-03-021823025MS	MSD	02/19/25 18:56	0.1 ML M6101 AND M6001 WERE ADDED TO 10 ML OF SAMPLE	Kareem	OK
34	Q1384-01A	OR-03-021823025A	PS	02/19/25 19:00	0.1 ML M6101 AND M6001 WERE ADDED TO 10 ML OF SAMPLE	Kareem	OK
35	Q1385-01	ST-1	SAM	02/19/25 19:04		Kareem	OK

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Instrument ID: P4

Daily Analysis Runlog For Sequence/QCBatch ID # LB134756

Review By	kareem	Review On	2/20/2025 5:42:28 PM
Supervise By	Janvi	Supervise On	2/21/2025 4:50:51 PM

STD. NAME	STD REF.#
ICAL Standard	MP84204,MP84223,MP84224,MP84225,MP84226,MP84228
ICV Standard	MP84446
CCV Standard	MP84232
ICSA Standard	MP84230,MP84231
CRI Standard	MP84228
LCS Standard	
Chk Standard	MP84218,MP84219

36	CCV03	CCV03	CCV	02/19/25 19:08		Kareem	OK
37	CCB03	CCB03	CCB	02/19/25 19:13		Kareem	OK
38	LR1	LR1	HIGH STD	02/19/25 19:17		Kareem	OK
39	LR2	LR2	HIGH STD	02/19/25 19:22		Kareem	OK
40	CCV04	CCV04	CCV	02/19/25 19:30		Kareem	OK
41	CCB04	CCB04	CCB	02/19/25 19:34		Kareem	OK

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Instrument ID: CV1

Daily Analysis Runlog For Sequence/QCBatch ID # LB134771

Review By	Mohan	Review On	2/26/2025 2:07:31 PM
Supervise By	jaswal	Supervise On	3/3/2025 10:58:57 PM

STD. NAME	STD REF.#
ICAL Standard	MP84585,MP84586,MP84587,MP84588,MP84589,MP84590
ICV Standard	MP84591
CCV Standard	MP84593
ICSA Standard	
CRI Standard	MP84595
LCS Standard	
Chk Standard	MP84592,MP84594,MP84596,MP84601

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	S0	S0	CAL1	02/21/25 12:29		Mohan	OK
2	S0.2	S0.2	CAL2	02/21/25 12:32		Mohan	OK
3	S2.5	S2.5	CAL3	02/21/25 12:34		Mohan	OK
4	S5	S5	CAL4	02/21/25 12:36		Mohan	OK
5	S7.5	S7.5	CAL5	02/21/25 12:39		Mohan	OK
6	S10	S10	CAL6	02/21/25 12:41		Mohan	OK
7	ICV13	ICV13	ICV	02/21/25 12:52		Mohan	OK
8	ICB13	ICB13	ICB	02/21/25 12:54		Mohan	OK
9	CCV01	CCV01	CCV	02/21/25 12:56		Mohan	OK
10	CCB01	CCB01	CCB	02/21/25 13:01		Mohan	OK
11	CRA	CRA	CRDL	02/21/25 13:04		Mohan	OK
12	HighStd	HighStd	HIGH STD	02/21/25 13:06		Mohan	OK
13	ChkStd	ChkStd	SAM	02/21/25 13:08		Mohan	OK
14	PB166828BL	PB166828BL	MB	02/21/25 13:13		Mohan	OK
15	PB166828BS	PB166828BS	LCS	02/21/25 13:16		Mohan	OK
16	Q1383-01	OU4-PCS-TC-11-0217	SAM	02/21/25 13:18		Mohan	OK
17	Q1383-03	OU4-PCS-TC-12-0217	SAM	02/21/25 13:20		Mohan	OK
18	Q1383-05	OU4-PCS-TC-13-0217	SAM	02/21/25 13:23		Mohan	OK

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Supervise By	jaswal	Supervise On	3/3/2025 10:58:57 PM

STD. NAME	STD REF.#
ICAL Standard	MP84585,MP84586,MP84587,MP84588,MP84589,MP84590
ICV Standard	MP84591
CCV Standard	MP84593
ICSA Standard	
CRI Standard	MP84595
LCS Standard	
Chk Standard	MP84592,MP84594,MP84596,MP84601

19	Q1383-07	OU4-PCS-TC-14-021	SAM	02/21/25 13:25		Mohan	OK
20	Q1383-09	OU4-PCS-TC-15-021	SAM	02/21/25 13:27		Mohan	OK
21	CCV02	CCV02	CCV	02/21/25 13:29		Mohan	OK
22	CCB02	CCB02	CCB	02/21/25 13:32		Mohan	OK
23	Q1383-11	OU4-PCS-TC-16-021	SAM	02/21/25 13:34		Mohan	OK
24	Q1383-13	OU4-PCS-TC-17-021	SAM	02/21/25 13:36		Mohan	OK
25	Q1383-15	OU4-PCS-TC-18-021	SAM	02/21/25 13:38		Mohan	OK
26	Q1383-17	OU4-PCS-TC-19-021	SAM	02/21/25 13:41		Mohan	OK
27	Q1383-19	OU4-PCS-TC-20-021	SAM	02/21/25 13:43		Mohan	OK
28	Q1383-21	OU4-CF-15-021725	SAM	02/21/25 13:45		Mohan	OK
29	Q1397-01	STOCK-PILE	SAM	02/21/25 13:47		Mohan	OK
30	Q1397-03	TP7	SAM	02/21/25 13:50		Mohan	OK
31	Q1397-05	TP8	SAM	02/21/25 13:52		Mohan	OK
32	Q1397-05DUP	TP8DUP	DUP	02/21/25 13:54		Mohan	OK
33	CCV03	CCV03	CCV	02/21/25 13:57		Mohan	OK
34	CCB03	CCB03	CCB	02/21/25 14:02		Mohan	OK
35	Q1397-05MSD	TP8MSD	MSD	02/21/25 14:07		Mohan	OK
36	Q1397-05MS	TP8MS	MS	02/21/25 14:10		Mohan	OK
37	PB166830BL	PB166830BL	MB	02/21/25 14:12		Mohan	OK
38	PB166830BS	PB166830BS	LCS	02/21/25 14:15		Mohan	OK

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STD. NAME	STD REF.#
ICAL Standard	MP84585,MP84586,MP84587,MP84588,MP84589,MP84590
ICV Standard	MP84591
CCV Standard	MP84593
ICSA Standard	
CRI Standard	MP84595
LCS Standard	
Chk Standard	MP84592,MP84594,MP84596,MP84601

39	Q1382-01	OU4-PCS-TC-01-021	SAM	02/21/25 14:17		Mohan	OK
40	Q1382-03	OU4-PCS-TC-02-021	SAM	02/21/25 14:19		Mohan	OK
41	Q1382-05	OU4-PCS-TC-03-021	SAM	02/21/25 14:22		Mohan	OK
42	Q1382-07	OU4-PCS-TC-04-021	SAM	02/21/25 14:24		Mohan	OK
43	Q1382-09	OU4-PCS-TC-05-021	SAM	02/21/25 14:26		Mohan	OK
44	Q1382-11	OU4-PCS-TC-06-021	SAM	02/21/25 14:28		Mohan	OK
45	CCV04	CCV04	CCV	02/21/25 14:31		Mohan	OK
46	CCB04	CCB04	CCB	02/21/25 14:33		Mohan	OK
47	Q1382-13	OU4-PCS-TC-07-021	SAM	02/21/25 14:35		Mohan	OK
48	Q1382-15	OU4-PCS-TC-08-021	SAM	02/21/25 14:37		Mohan	OK
49	Q1382-17	OU4-PCS-TC-09-021	SAM	02/21/25 14:40		Mohan	OK
50	Q1382-19	OU4-PCS-TC-10-021	SAM	02/21/25 14:42		Mohan	OK
51	Q1384-01	OR-03-021823025	SAM	02/21/25 14:44		Mohan	OK
52	Q1385-01	ST-1	SAM	02/21/25 14:47		Mohan	OK
53	Q1388-01	72-12016	SAM	02/21/25 14:49		Mohan	OK
54	Q1388-01DUP	72-12016DUP	DUP	02/21/25 14:54		Mohan	OK
55	Q1388-01MS	72-12016MS	MS	02/21/25 14:56		Mohan	OK
56	Q1388-01MSD	72-12016MSD	MSD	02/21/25 14:58		Mohan	OK
57	CCV05	CCV05	CCV	02/21/25 15:01		Mohan	OK
58	CCB05	CCB05	CCB	02/21/25 15:06		Mohan	OK

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Supervise By	jaswal	Supervise On	3/3/2025 10:58:57 PM

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ICAL Standard	MP84585,MP84586,MP84587,MP84588,MP84589,MP84590
ICV Standard	MP84591
CCV Standard	MP84593
ICSA Standard	
CRI Standard	MP84595
LCS Standard	
Chk Standard	MP84592,MP84594,MP84596,MP84601

59	Q1393-01	SOIL-COMP	SAM	02/21/25 15:08		Mohan	OK
60	Q1393-03	OD-281	SAM	02/21/25 15:10		Mohan	OK
61	Q1397-05L	TP8L	SD	02/21/25 15:13		Mohan	OK
62	Q1397-05A	TP8A	PS	02/21/25 15:15		Mohan	OK
63	Q1388-01L	72-12016L	SD	02/21/25 15:17		Mohan	OK
64	Q1388-01A	72-12016A	PS	02/21/25 15:20		Mohan	OK
65	CCV06	CCV06	CCV	02/21/25 15:22		Mohan	OK
66	CCB06	CCB06	CCB	02/21/25 15:24		Mohan	OK

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Prep Standard - Chemical Standard Summary

Order ID : Q1382

Test : Mercury,Metals ICP-TAL

Prepbatch ID : PB166760,PB166830,

Sequence ID/Qc Batch ID: LB134756,LB134771,

Standard ID :
MP84041,MP84204,MP84218,MP84219,MP84223,MP84224,MP84225,MP84226,MP84227,MP84228,MP84230,MP84231,MP84232,MP84446,MP84584,MP84585,MP84586,MP84587,MP84588,MP84589,MP84590,MP84591,MP84592,MP84593,MP84594,MP84595,MP84596,MP84601,

Chemical ID :
M4884,M5062,M5130,M5192,M5218,M5223,M5288,M5298,M5393,M5429,M5467,M5472,M5496,M5497,M5532,M5585,M5658,M5697,M5747,M5748,M5798,M5799,M5800,M5801,M5802,M5814,M5815,M5816,M5817,M5819,M5820,M5875,M5882,M5959,M5962,M5970,M5978,M5985,M6002,M6011,M6021,M6023,M6028,M6030,M6032,M6077,M6121,M6125,M6126,M6127,M6128,M6144,M6150,M6151,W3112,

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
169	1:1HNO3	MP84041	01/14/2025	07/14/2025	Eman Mughal	None	None	Sarabjit Jaswal 01/16/2025

FROM 1250.00000ml of M6126 + 1250.00000ml of W3112 = Final Quantity: 2500.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
902	ICP AES CAL BLK (SO/ICB/CCB)	MP84204	01/24/2025	02/24/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 01/27/2025

FROM 125.00000ml of M6121 + 2350.00000ml of W3112 + 25.00000ml of M6126 = Final Quantity: 2500.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
919	ICP AES INTERNAL STD	MP84218	01/24/2025	02/24/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 01/27/2025

FROM 1.00000ml of M5959 + 10.00000ml of M5985 + 1969.00000ml of W3112 + 20.00000ml of M6126 = Final Quantity: 2000.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
903	ICP AES RINSE SOLN	MP84219	01/24/2025	02/24/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 01/27/2025

FROM 200.00000ml of M6126 + 9800.00000ml of W3112 = Final Quantity: 10000.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
907	ICP AES STD S (S5)	MP84223	01/24/2025	02/24/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 01/28/2025

FROM 5.00000ml of M5393 + 5.00000ml of M5467 + 5.00000ml of M5472 + 5.00000ml of M5802 + 5.00000ml of M5816 + 5.00000ml of M5820 + 5.00000ml of M5875 + 5.00000ml of M5970 + 5.00000ml of M6077 + 455.00000ml of MP84204 = Final Quantity: 500.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
910	ICP AES STD S4	MP84224	01/24/2025	02/24/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 01/28/2025

FROM 50.00000ml of MP84204 + 50.00000ml of MP84223 = Final Quantity: 100.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
909	ICP AES STD S3	MP84225	01/24/2025	02/24/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 01/28/2025

FROM 25.00000ml of MP84223 + 75.00000ml of MP84204 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3913	ICP AES STD S2	MP84226	01/24/2025	02/24/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 01/28/2025

FROM 16.00000ml of MP84223 + 184.00000ml of MP84204 = Final Quantity: 200.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
2950	ICP AES S1/CRI STOCK STD	MP84227	01/24/2025	02/24/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 01/28/2025

FROM 0.00200ml of M5816 + 0.00400ml of M5978 + 0.03000ml of M5798 + 0.03000ml of M6028 + 0.05000ml of M5298 + 0.05000ml of M5496 + 0.05000ml of M5658 + 0.05000ml of M6030 + 0.06000ml of M5747 + 0.10000ml of M5472 + 0.10000ml of M5697 + 0.10000ml of M5801 + 0.10000ml of M5962 + 0.10000ml of M5970 + 0.10000ml of M6128 + 0.15000ml of M5800 + 0.20000ml of M5748 + 0.20000ml of M5799 + 0.20000ml of M5819 + 0.20000ml of M6021 + 0.20000ml of M6023 + 0.25000ml of M5467 + 0.25000ml of M5802 + 0.50000ml of M5814 + 0.50000ml of M6032 + 1.00000ml of M5192 + 1.00000ml of M5288 + 1.00000ml of M5497 + 1.00000ml of M6127 + 1.00000ml of M6144 + 2.00000ml of M4884 + 77.68000ml of MP84204 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
2951	ICP AES S1/CRI WORK STD	MP84228	01/24/2025	02/24/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 01/28/2025

FROM 2.00000ml of MP84227 + 98.00000ml of MP84204 = Final Quantity: 100.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
904	ICP AES ICSA SOLN	MP84230	01/24/2025	02/24/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 01/28/2025

FROM 25.00000ml of M5130 + 225.00000ml of MP84204 = Final Quantity: 250.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3494	ICP AES ICSAB SOLN-1	MP84231	01/24/2025	02/24/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 01/28/2025

FROM 0.01000ml of M5815 + 0.01000ml of M5817 + 0.10000ml of M5472 + 0.10000ml of M5970 + 0.10000ml of M6077 + 10.00000ml of M5130 + 10.00000ml of M5223 + 79.50000ml of MP84204 = Final Quantity: 100.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
911	ICP AES CCV SOLN	MP84232	01/24/2025	02/24/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 01/28/2025

FROM 50.00000ml of MP84204 + 50.00000ml of MP84223 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
912	ICP AES ICV SOLN	MP84446	01/27/2025	02/24/2025	Kareem Khairalla	None	None	Janvi Patel 02/12/2025

FROM 0.02500ml of M5429 + 0.02500ml of M5815 + 0.02500ml of M5817 + 0.10000ml of M5467 + 0.25000ml of M5218 + 0.25000ml of M5472 + 10.00000ml of M6150 + 87.77500ml of MP84204 = Final Quantity: 100.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
871	MERCURY INTERMEDIATE B 250PPB WORKING STD.	MP84584	02/20/2025	02/21/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Janvi Patel 02/20/2025

FROM 1.00000ml of M6126 + 2.50000ml of M5062 + 96.50000ml of W3112 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1340	Hg 0.00 PPB STD	MP84585	02/20/2025	02/21/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Janvi Patel 02/20/2025

FROM 2.50000ml of M6126 + 247.50000ml of W3112 = Final Quantity: 250.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1341	Hg 0.2 PPB STD	MP84586	02/20/2025	02/21/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Janvi Patel 02/20/2025

FROM 2.50000ml of M6126 + 247.30000ml of W3112 + 0.20000ml of MP84584 = Final Quantity: 250.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1342	Hg 2.5 PPB STD	MP84587	02/20/2025	02/21/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Janvi Patel 02/20/2025

FROM 2.50000ml of M6126 + 245.00000ml of W3112 + 2.50000ml of MP84584 = Final Quantity: 250.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1343	Hg 5.0 PPB STD	MP84588	02/20/2025	02/21/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Janvi Patel 02/20/2025

FROM 2.50000ml of M6126 + 242.50000ml of W3112 + 5.00000ml of MP84584 = Final Quantity: 250.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1344	Hg 7.5 PPB STD	MP84589	02/20/2025	02/21/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Janvi Patel 02/20/2025

FROM 2.50000ml of M6126 + 240.00000ml of W3112 + 7.50000ml of MP84584 = Final Quantity: 250.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1345	Hg 10.0 PPB STD	MP84590	02/20/2025	02/21/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Janvi Patel 02/20/2025

FROM 2.50000ml of M6126 + 237.50000ml of W3112 + 10.00000ml of MP84584 = Final Quantity: 250.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1346	Hg ICV SOLUTION	MP84591	02/20/2025	02/21/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Janvi Patel 02/20/2025

FROM 2.50000ml of M5532 + 2.50000ml of M6126 + 245.00000ml of W3112 = Final Quantity: 250.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1351	ICB (Hg 0.00 PPB SOLUTION)	MP84592	02/20/2025	02/21/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Janvi Patel 02/20/2025

FROM 2.50000ml of M6126 + 247.50000ml of W3112 = Final Quantity: 250.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1358	CCV (Hg 5.0 PPB SOLUTION)	MP84593	02/20/2025	02/21/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Janvi Patel 02/20/2025

FROM 485.00000ml of W3112 + 5.00000ml of M6126 + 10.00000ml of MP84584 = Final Quantity: 500.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1352	CCB (Hg 0.00 PPB SOLUTION)	MP84594	02/20/2025	02/21/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Janvi Patel 02/20/2025

FROM 495.00000ml of W3112 + 5.00000ml of M6126 = Final Quantity: 500.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1349	CRA/CRI (Hg 0.2 PPB SOLUTION)	MP84595	02/20/2025	02/21/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Janvi Patel 02/20/2025

FROM 2.50000ml of M6126 + 247.30000ml of W3112 + 0.20000ml of MP84584 = Final Quantity: 250.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1350	CHK STD (Hg 7.0 PPB SOLUTION)	MP84596	02/20/2025	02/21/2025	Mohan Bera	None	METALS_PIPETTE_5 (HG A)	Janvi Patel 02/20/2025

FROM 2.50000ml of M6126 + 240.50000ml of W3112 + 7.00000ml of MP84584 = Final Quantity: 250.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
68	STANNOUS CHLORIDE SOLUTION	MP84601	02/21/2025	02/22/2025	Mohan Bera	METALS_SCALE_3 (M SC-3)	None	Sarabjit Jaswal 02/28/2025

FROM 450.00000ml of W3112 + 50.00000gram of M5882 + 50.00000ml of M6151 = Final Quantity: 500.000 ml

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Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57014 / Si, 1000 PPM, 125 ml	030921	03/09/2025	08/06/2021 / jaswal	08/05/2021 / jaswal	M4884

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	MSHG-10PPM / MERCURY HCl 125mL 10ug/mL	S2-HG709270	09/22/2026	05/28/2022 / mohan	01/27/2022 / mohan	M5062

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
EPA	PART A / ICSA (ICP) STOCK SOLN	ICSA-1211	01/31/2025	05/20/2024 / Jaswal	04/20/2021 / bin	M5130

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57042 / Mo, 1000 PPM, 125 ml	051722	05/17/2025	07/01/2022 / bin	06/17/2022 / jaswal	M5192

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CHEM-QC-4 / CHEM-QC-4, Second Source, 1000 ug/ml, B, Mo, Si, Sn, Ti	S2-MEB711674	11/02/2026	07/01/2022 / bin	09/10/2021 / bin	M5218

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
EPA	PART B / ICSAB (ICP) STOCK SOLN	ICSB-0710	01/31/2025	05/20/2024 / Jaswal	04/20/2021 / bin	M5223

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58126 / Fe, 10000 PPM, 500 ml	020422	02/04/2025	05/02/2023 / jaswal	06/15/2022 / jaswal	M5298

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CLPP-CAL-3 / CLP CAL SOLUTION #3, 125mL	T2-MEB714159	01/13/2027	10/12/2022 / bin	09/19/2022 / bin	M5393

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57103 / Li, 10000 PPM, 125 ml	070622	07/06/2025	01/30/2023 / bin	01/26/2023 / bin	M5429

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

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

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58120 / Ca, 10000 PPM, 500 ml	031523	03/15/2026	03/18/2023 / bin	03/17/2023 / bin	M5497

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
EPA	ICV-5 / ICV (HG) STOCK SOLN	ICV5-0415	02/28/2025	01/02/2025 / Jaswal	03/30/2023 / mohan	M5532

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	26397-103 / PTFE BOILING STONES	W126678	02/28/2025	01/20/2024 / Jaswal	06/12/2023 / jaswal	M5585

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

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

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	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

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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	120523	12/05/2026	08/07/2024 / jaswal	01/03/2024 / jaswal	M5802

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57005 / B, 1000 PPM, 125 ml	071123	07/11/2026	03/26/2024 / Sohil	01/03/2024 / jaswal	M5814

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57016 / S, 1000 PPM, 125 ml	122923	12/29/2026	05/20/2024 / Jaswal	02/09/2024 / jaswal	M5816

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58030 / Zinc, Zn, 500 ml, 1000 PPM	111623	11/16/2026	03/20/2024 / jaswal	02/09/2024 / jaswal	M5819

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Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57015 / P, 1000 PPM, 125 ml	091123	09/11/2026	05/01/2024 / jaswal	02/09/2024 / jaswal	M5820

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CLPP-CAL-1 / CLP CAL SOLUTION #1, 125mL	T2-MEB714417	01/27/2027	04/19/2024 / jaswal	02/22/2024 / jaswal	M5875

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-3980-01 / Stannous Chloride (cs/4x500g)	232820	08/31/2028	04/30/2024 / mohan	04/25/2024 / mohan	M5882

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

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

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

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Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGTI1-1 / TITANIUM 125mL 1000ug/mL	T2-TI719972	06/17/2027	08/07/2024 / jaswal	02/22/2024 / Jaswal	M5978

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGIN10-5 / INDIUM 1 x 500 ml	U2-IN729349	02/21/2028	10/08/2024 / Jaswal	06/14/2024 / Jaswal	M5985

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	WW-LFS-1 / Laboratory Fortified Stock Solution 1, 125 ml	T2-MEB723367	07/14/2025	01/14/2025 / Eman	05/14/2024 / Jaswal	M6002

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	WW-LFS-2 / Laboratory Fortified Stock Solution 2, 125 ml	U2-MEB731108	07/14/2025	01/14/2025 / Eman	05/14/2024 / Jaswal	M6011

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57081 / Tl, 1000 PPM, 125 ml	0624724	06/27/2027	08/05/2024 / kareem	08/05/2024 / Jaswal	M6023

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

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

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

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9530-33 / Hydrochloric Acid, Instra-Analyzed (cs/6x2.5L)	0000275677	05/13/2025	11/13/2024 / Eman	10/13/2024 / Eman	M6121

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	1403 / Hydrogen Peroxide, 30% 1 gal	820803	05/25/2025	11/26/2024 / Eman	11/22/2024 / Eman	M6125

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Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9598-34 / Nitric Acid, Instra-Analyzed (cs/4x2.5L)	24D1062002	06/03/2025	12/03/2024 / Janvi	11/12/2024 / Janvi	M6126

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58112 / Mg, 10000 PPM, 500 ml	112124	11/21/2027	01/13/2025 / kareem	01/13/2025 / kareem	M6127

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

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

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

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

CHEMICAL RECEIPT LOG BOOK

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

ThermoFisher SCIENTIFIC

M5882 M3

Certificate of Analysis

1 Reagent Lane
Fair Lawn, NJ 07410
201.796.7100 tel
201.796.1329 fax

Thermo Fisher Scientific's Quality System has been found to conform to Quality Management System Standard ISO9001:2015 by SAI Global Certificate Number CERT – 0120633

This is to certify that units of the lot number below were tested and found to comply with the specifications of the grade listed. Certain data have been supplied by third parties. Thermo Fisher Scientific expressly disclaims all warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. Products are for research use or further manufacturing. Not for direct administration to humans or animals. It is the responsibility of the final formulator and end user to determine suitability based upon the intended use of the end product. Products are tested to meet the analytical requirements of the noted grade. The following information is the actual analytical results obtained.

Catalog Number	T142	Quality Test / Release Date	08/17/2023
Lot Number	232820		
Description	STANNOUS CHLORIDE, DIHYDRATE CERTIFIED ACS (Suitable for Mercury Determination)		
Country of Origin	United States	Suggested Retest Date	Aug/2028
Chemical Origin	Inorganic-non animal		
BSE/TSE Comment	No animal products are used as starting raw material ingredients, or used in processing, including lubricants, processing aids, or any other material that might migrate to the finished product.		

N/A			
Result Name	Units	Specifications	Test Value
APPEARANCE		REPORT	Clear crystals
ASSAY	%	Inclusive Between 98 - 103	100.65
CALCIUM	%	<= 0.005	0.0017
IDENTIFICATION	PASS/FAIL	= PASS TEST	PASS TEST
IRON (Fe)	%	<= 0.003	0.0011
LEAD (Pb)	%	<= 0.01	0.0006
MERCURY (Hg)	ppm	<= 0.05	<0.05
POTASSIUM (K)	%	<= 0.005	0.0001
SODIUM (Na)	%	<= 0.01	<0.01
SOLUBILITY IN HCL	PASS/FAIL	= PASS TEST	PASS TEST
SULFATE (SO4)	PASS/FAIL	= P.T. (ABOUT 0.003%)	P.T. (ABOUT 0.003%)

Harout Sahagian - Quality Control Supervisor - Fair Lawn

Note: The data listed is valid for all package sizes of this lot of this product, expressed as an extension of this catalog number listed above.
If there are any questions with this certificate, please call at (800) 227-6701.
*Based on suggested storage condition.

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

Certified Reference Material CRM

M6032

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

R 8/5/24

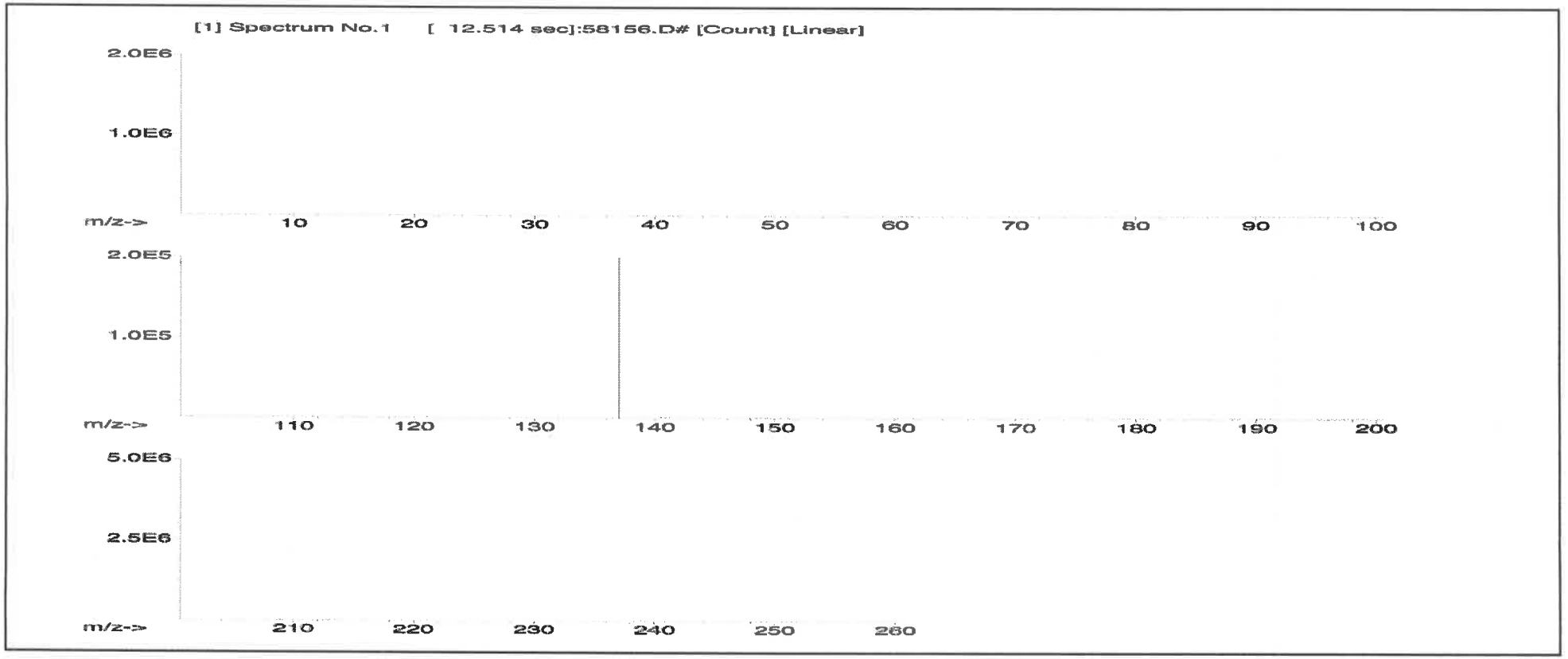
CERTIFIED WEIGHT REPORT:

Part Number:	**57056**		**Solvent:**	**Lot #** 24002546	Nitric Acid
Lot Number:	**010924**				
Description:	**Barium (Ba)**		2%	40.0 (mL)	Nitric Acid
Expiration Date:	010927				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**1000**				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Weight shown below was diluted to (mL):	2000.02	0.058	Flask Uncertainty		

Giovanni Esposito

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

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Barium nitrate (Ba)	IN023	BAD022019A1	1000	99.999	0.10	52.3	3.82417	3.82441	**1000.1**	**2.0**	10022-31-8	0.5 mg/m3	orl-rat 355 mg/kg	3104a



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Q1382-METALS

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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	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 certifed (+/-) 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.
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Certified Reference Material CRM

M6028

R: 8/5/24

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

CERTIFIED WEIGHT REPORT:

Part Number:	**57048**		**Lot #**		
Lot Number:	**070124**	**Solvent:**	24002546	Nitric Acid	
Description:	**Cadmium (Cd)**				
		2%	40.0 (mL)	Nitric Acid	
Expiration Date:	070127				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**1000**				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Weight shown below was diluted to (mL):	2000.07	0.100	Flask Uncertainty		

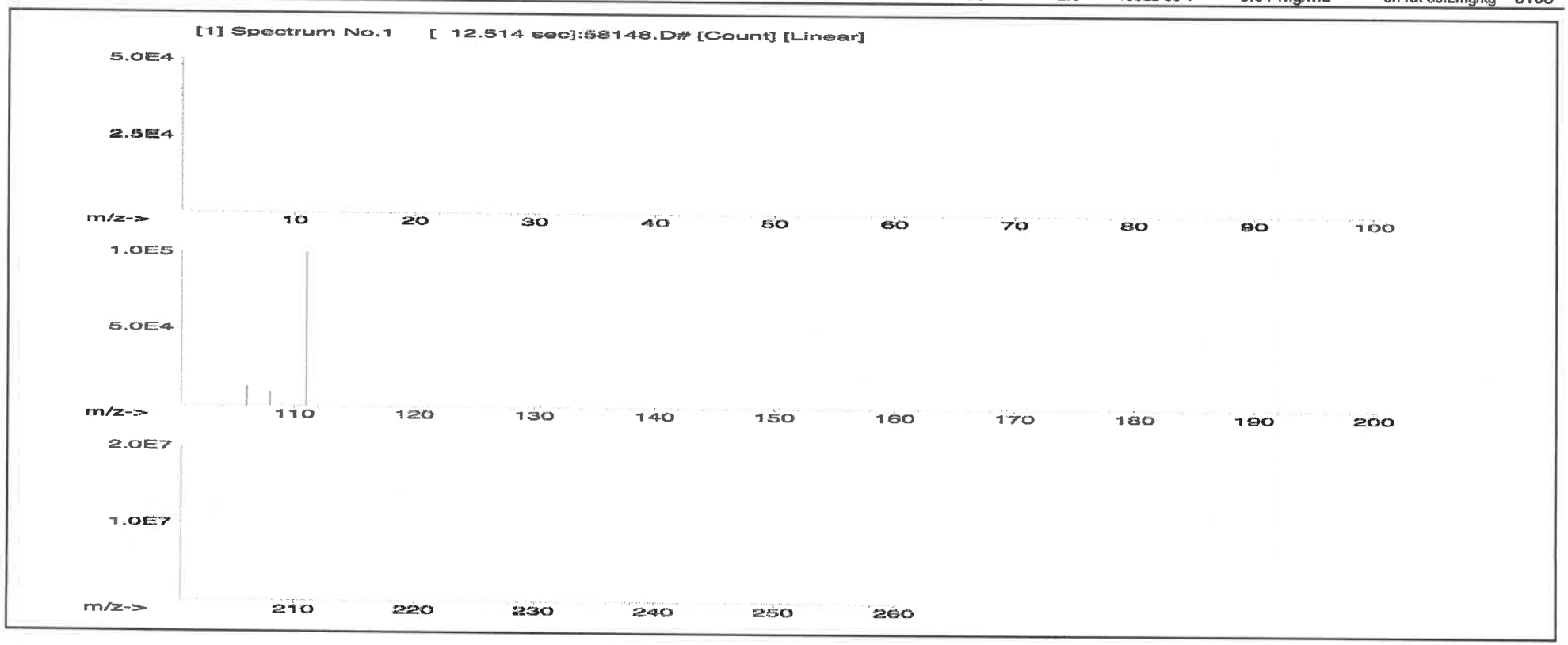
Aleah O'Brady

Formulated By:	Aleah O'Brady	070124

Pedro Rentas

Reviewed By:	Pedro L. Rentas	070124

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Cadmium nitrate tetrahydrate (Cd)	IN024	CDM092021A1	1000	99.999	0.10	36.5	5.4797	5.4804	**1000.1**	**2.0**	10022-68-1	0.01 mg/m3	orl-rat 60.2mg/kg	3108



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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	T	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	<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 certifed (+/-) 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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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).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	CLPP-CAL-1
Lot Number:	T2-MEB714417
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	5 000 µg/mL ea: Calcium, Potassium, Magnesium, Sodium, 2 000 µg/mL ea: Aluminum, Barium, 1 000 µg/mL ea: Iron, 500 µg/mL ea: Nickel, Vanadium, Zinc, Cobalt, Manganese, 250 µg/mL ea: Silver, Copper, 200 µg/mL ea: Chromium, 50 µg/mL ea: Beryllium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	2 000 ± 7 µg/mL	Barium, Ba	2 000 ± 9 µg/mL
Beryllium, Be	50.00 ± 0.26 µg/mL	Calcium, Ca	5 000 ± 22 µg/mL
Chromium, Cr	200.0 ± 1.0 µg/mL	Cobalt, Co	500.0 ± 2.4 µg/mL
Copper, Cu	250.0 ± 1.0 µg/mL	Iron, Fe	1 000 ± 4 µg/mL
Magnesium, Mg	5 000 ± 20 µg/mL	Manganese, Mn	500.0 ± 2.0 µg/mL
Nickel, Ni	500.0 ± 2.2 µg/mL	Potassium, K	5 000 ± 19 µg/mL
Silver, Ag	250.0 ± 1.1 µg/mL	Sodium, Na	5 000 ± 18 µg/mL
Vanadium, V	499.7 ± 2.2 µg/mL	Zinc, Zn	500.0 ± 2.2 µg/mL

Density: 1.118 g/mL (measured at 20 ± 4 ºC)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	160729
Ag	Volhard	999c	999c
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
Ba	ICP Assay	3104a	140909
Ba	Gravimetric		See Sec. 4.2
Be	ICP Assay	3105a	090514
Be	Calculated		See Sec. 4.2
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Co	ICP Assay	3113	190630
Co	EDTA	928	928
Cr	ICP Assay	3112a	170630
Cr	Calculated		See Sec. 4.2
Cu	ICP Assay	3114	121207
Cu	EDTA	928	928
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
V	IC Assay	3165	160906
V	EDTA	928	928
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

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

Characterization of CRM/RM by Two or More Methods

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

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

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:

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

$CRM/RM\ Expanded\ Uncertainty\ (\pm) = U_{CRM/RM} = k\ (u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ 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

$CRM/RM\ Expanded\ Uncertainty\ (\pm) = U_{CRM/RM} = k\ (u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

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

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

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

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 27, 2022

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

11.2 Lot Expiration Date

- **January 27, 2027**

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

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

11.3 Period of Validity

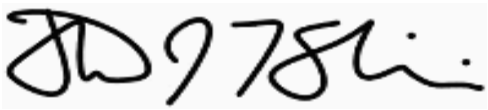
- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	CLPP-CAL-3
Lot Number:	T2-MEB714159
Matrix:	7% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Arsenic, Lead, Selenium, Thallium, 500 µg/mL ea: Cadmium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Arsenic, As	**1 000 ± 8 µg/mL**	**Cadmium, Cd**	**500.0 ± 2.1 µg/mL**
Lead, Pb	**1 000 ± 5 µg/mL**	**Selenium, Se**	**1 000 ± 8 µg/mL**
Thallium, Tl	**1 000 ± 7 µg/mL**		

Density: 1.043 g/mL (measured at 20 ± 4 ºC)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
As	ICP Assay	3103a	100818
Cd	ICP Assay	3108	130116
Cd	EDTA	928	928
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Se	ICP Assay	3149	100901
Tl	ICP Assay	3158	151215

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

Characterization of CRM/RM by Two or More Methods

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

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

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:

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

$CRM/RM\ Expanded\ Uncertainty\ (\pm) = U_{CRM/RM} = k\ (u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ 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

$CRM/RM\ Expanded\ Uncertainty\ (\pm) = U_{CRM/RM} = k\ (u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

- 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

January 13, 2022

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

11.2 Lot Expiration Date

- **January 13, 2027**

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

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

11.3 Period of Validity

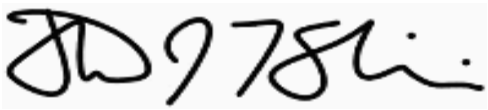
- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

INORGANIC VENTURES

Refine your results. Redefine your industry.

Certificate of Analysis

RD:05/14/2024

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).

ACCREDITED Testing Laboratory Certificate 883.01 ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	WW-LFS-1
Lot Number:	T2-MEB723367
Matrix:	5% (v/v) HNO3

Value / Analyte(s):	1 000 µg/mL ea: Potassium,	
	600 µg/mL ea: Phosphorus,	
	300 µg/mL ea: Sodium,	Iron,
	200 µg/mL ea: Magnesium, Cerium, Thallium,	Aluminum, Selenium,
	100 µg/mL ea: Lead,	Calcium,
	80 µg/mL ea: Arsenic,	
	70 µg/mL ea: Mercury,	
	50 µg/mL ea: Nickel,	
	40 µg/mL ea: Chromium,	
	30 µg/mL ea: Copper, Vanadium,	Boron,
	20 µg/mL ea: Zinc, Barium, Cadmium, Manganese,	Strontium, Beryllium, Cobalt, Lithium,
	7.5 µg/mL ea: Silver	

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	200.0 ± 0.7 µg/mL	Arsenic, As	80.0 ± 0.7 µg/mL
Barium, Ba	20.00 ± 0.09 µg/mL	Beryllium, Be	20.00 ± 0.13 µg/mL
Boron, B	30.00 ± 0.18 µg/mL	Cadmium, Cd	20.00 ± 0.09 µg/mL
Calcium, Ca	100.0 ± 0.4 µg/mL	Cerium, Ce	200.0 ± 0.8 µg/mL
Chromium, Cr	40.00 ± 0.30 µg/mL	Cobalt, Co	20.00 ± 0.10 µg/mL
Copper, Cu	30.00 ± 0.13 µg/mL	Iron, Fe	300.0 ± 1.3 µg/mL
Lead, Pb	100.0 ± 0.4 µg/mL	Lithium, Li	20.00 ± 0.08 µg/mL
Magnesium, Mg	200.0 ± 0.8 µg/mL	Manganese, Mn	20.00 ± 0.08 µg/mL
Mercury, Hg	70.0 ± 0.3 µg/mL	Nickel, Ni	50.00 ± 0.22 µg/mL
Phosphorus, P	600.0 ± 2.7 µg/mL	Potassium, K	1 000 ± 4 µg/mL
Selenium, Se	200.0 ± 1.3 µg/mL	Silver, Ag	7.50 ± 0.03 µg/mL
Sodium, Na	300.0 ± 1.4 µg/mL	Strontium, Sr	20.01 ± 0.08 µg/mL
Thallium, Tl	200.0 ± 1.4 µg/mL	Vanadium, V	30.00 ± 0.13 µg/mL
Zinc, Zn	20.00 ± 0.09 µg/mL		

Density: 1.034 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	160729
Ag	Volhard	999c	999c
Ag	Calculated		See Sec. 4.2
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
As	ICP Assay	3103a	100818
B	ICP Assay	3107	190605
Ba	ICP Assay	3104a	140909
Ba	Gravimetric		See Sec. 4.2
Be	ICP Assay	3105a	090514
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Cd	ICP Assay	3108	130116
Cd	EDTA	928	928
Ce	ICP Assay	3110	090504
Ce	EDTA	928	928
Co	ICP Assay	3113	190630
Co	EDTA	928	928
Cr	ICP Assay	3112a	170630
Cu	ICP Assay	3114	121207
Cu	EDTA	928	928
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
Hg	ICP Assay	3133	160921
Hg	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Li	ICP Assay	3129a	100714
Li	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Na	ICP Assay	Traceable to 3152A	S2-NA700842
Na	Gravimetric		See Sec. 4.2
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Se	ICP Assay	3149	100901
Sr	EDTA	928	928
Sr	ICP Assay	Traceable to 3153a	K2-SR650985
Tl	ICP Assay	3158	151215
V	IC Assay	3165	160906
V	EDTA	928	928
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

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

Characterization of CRM/RM by Two or More Methods

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

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

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:

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ 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 Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

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

Low Silver Note: This solution contains "LOW" levels of Silver. Please store this entire bottle inside a sealed glass jar.

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

August 30, 2022

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

11.2 Lot Expiration Date

- **August 30, 2026**

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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Certificate of Analysis

RD:05/14/2024

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).

ACCREDITED Testing Laboratory Certificate 863.01 ACCREDITED Reference Material Producer Certificate 863.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	WW-LFS-2
Lot Number:	U2-MEB731108
Matrix:	5% (v/v) HNO3 tr. HF
Value / Analyte(s):	200 µg/mL ea: Silica, 80 µg/mL ea: Antimony, 70 µg/mL ea: Tin, 40 µg/mL ea: Molybdenum, 20 µg/mL ea: Titanium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Antimony, Sb	80.1 ± 0.6 µg/mL	Molybdenum, Mo	40.03 ± 0.18 µg/mL
Silica, SiO2	200.2 ± 1.3 µg/mL	Tin, Sn	70.0 ± 0.4 µg/mL
Titanium, Ti	20.01 ± 0.13 µg/mL		

Density: 1.025 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Mo	ICP Assay	3134	130418
Mo	Calculated		See Sec. 4.2
Sb	ICP Assay	3102a	140911
SiO2	ICP Assay	3150	130912
Sn	ICP Assay	3161a	140917
Ti	ICP Assay	3162a	130925
Ti	Calculated		See Sec. 4.2

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

Characterization of CRM/RM by Two or More Methods

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

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

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:

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\ (u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ 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 Expanded Uncertainty (±) = $U_{CRM/RM} = k\ (u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

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

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

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

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

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

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 17, 2023

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

11.2 Lot Expiration Date

- March 17, 2028

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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

Certified Reference Material CRM

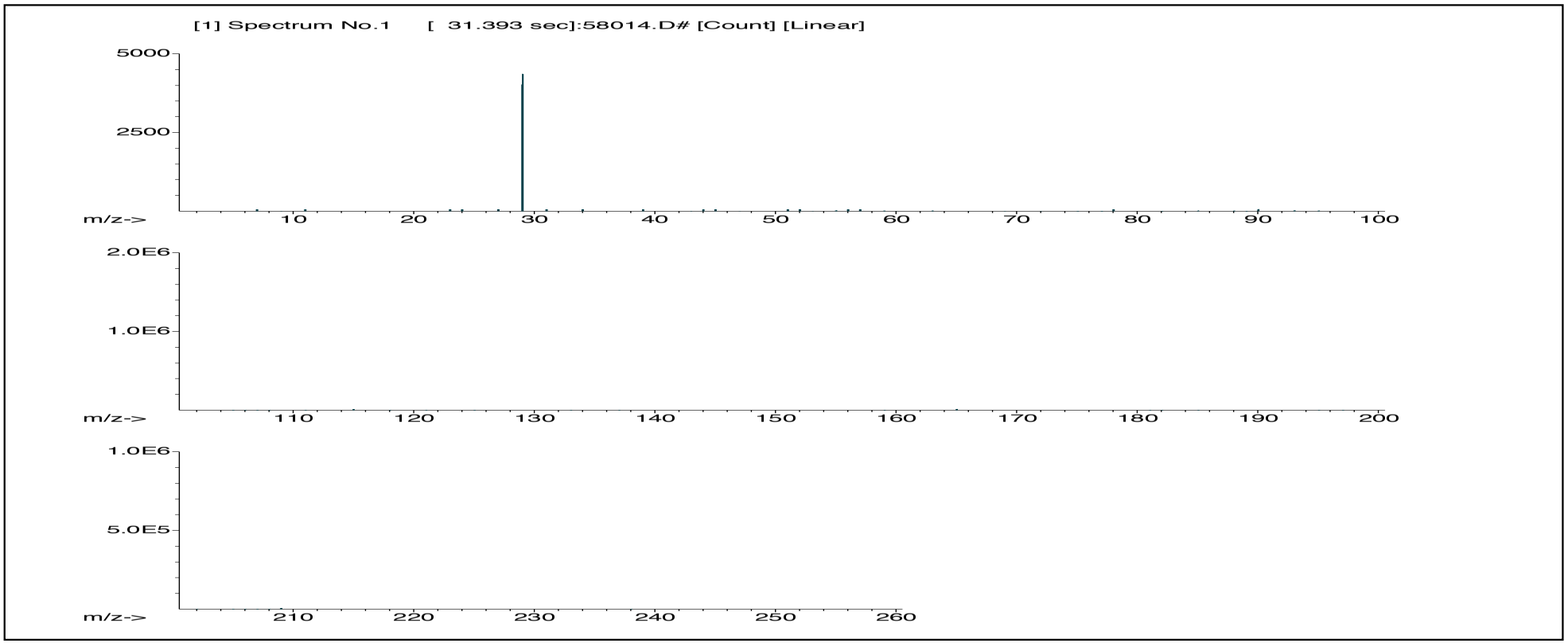
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:	
Part Number:	**57014**	19410105	Nitric Acid	
Lot Number:	**030921**			
Description:	**Silicon (Si)**			
		2.0%	60.0	Nitric Acid
Expiration Date:	030924		(mL)	
Recommended Storage:	Ambient (20 ºC)			
Nominal Concentration (µg/mL):	**1000**			
NIST Test Number:	6UTB	5E-05	Balance Uncertainty	
Volume shown below was diluted to (mL):	3000.41	0.058	Flask Uncertainty	

Formulated By:	Lawrence Barry 030921
Reviewed By:	Pedro L. Rentas 030921

	Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	**Final Conc. (µg/mL)**	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1.	Ammonium hexafluorosilicate (Si)	58114	070120	0.1000	300.0	0.084	1000	10000.0	**1000.0**	**2.1**	16919-19-0	2.50 mg/m3	orl-rat 70 mg/kg	NA



QI3382-METALS

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

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

(T)= Target analyte

Physical Characterization:

Certified by:

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

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 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).

INORGANIC VENTURES
Refine your results. Redefine your industry.

Certificate of Analysis

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

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

M5062
M5063
M3

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).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Mass Spec Solution
Catalog Number:	MSHG-10PPM
Lot Number:	S2-HG709270
Matrix:	10% (v/v) HCl
Value / Analyte(s):	10 µg/mL ea: Mercury
Starting Material:	Hg metal
Starting Material Lot#:	1959
Starting Material Purity:	99.9994%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10.001 ± 0.053 µg/mL

Density: 1.020 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Hg	ICP Assay	3133	160921
Hg	EDTA	928	928
Hg	Calculated		See Sec. 4.2

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

Characterization of CRM/RM by Two or More Methods

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

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

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.

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

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

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2 (u_{char\ i})^2)]^{1/2}$ 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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

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

O	Ag		0.000011	M	Eu	<	0.000201	O	Na		0.000004	M	Se	<	0.015915	O	Zn	<	0.001510
O	Al		0.000001	O	Fe		0.000001	M	Nb	<	0.000201	O	Si		0.000005	M	Zr	<	0.000201
M	As	<	0.000402	M	Ga	<	0.000201	M	Nd	<	0.000201	M	Sm	<	0.000201				
M	Au	<	0.003631	M	Gd	<	0.000201	M	Ni	<	0.000402	M	Sn	<	0.001007				
M	B	<	0.001208	M	Ge	<	0.000201	M	Os	<	0.000605	M	Sr	<	0.000201				
M	Ba	<	0.000201	M	Hf	<	0.000201	O	P	<	0.032370	M	Ta	<	0.000201				
M	Be	<	0.000201	s	Hg	<		M	Pb	<	0.000201	M	Tb	<	0.000201				
M	Bi	<	0.000201	M	Ho	<	0.000201	M	Pd	<	0.000403	M	Te	<	0.002216				
O	Ca		0.000007	M	In	<	0.000201	M	Pr	<	0.000201	M	Th	<	0.000201				
M	Cd	<	0.000201	M	Ir	<	0.000201	M	Pt	<	0.000402	M	Ti	<	0.000402				
M	Ce	<	0.000201	O	K		0.000020	M	Rb	<	0.000201	O	Tl	<	0.016508				
M	Co	<	0.000201	M	La	<	0.000201	M	Re	<	0.000201	M	Tm	<	0.000201				
O	Cr	<	0.003021	O	Li	<	0.000107	M	Rh	<	0.000201	M	U	<	0.008058				
M	Cs	<	0.001208	M	Lu	<	0.000201	M	Ru	<	0.000201	M	V	<	0.000201				
M	Cu	<	0.000402	O	Mg		0.000001	O	S	<	0.053950	M	W	<	0.000604				
M	Dy	<	0.000201	M	Mn	<	0.000604	M	Sb	<	0.001208	M	Y	<	0.000201				
M	Er	<	0.000201	M	Mo		0.000009	M	Sc	<	0.000201	M	Yb	<	0.000201				

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

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

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

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 200.59 +2 4 Hg(OH)(aq) 1+

Chemical Compatibility - Stable in HNO_3. Avoid basic media forming insoluble carbonate. The sulfide, basic carbonate, oxalate, phosphate, arsenite, arsenate and iodide are insoluble in water.

Stability - 2-100 ppb levels not stable in 1% HNO_3 / LDPE container, stable in 10% HNO_3 packaged in borosilicate glass. 1-100 ppm levels stable in 7% HNO_3 packaged in borosilicate glass. 1000-10,000 ppm solutions are chemically stable for years in 5-10% HNO_3 / LDPE container.

Hg Containing Samples (Preparation and Solution) - Metal (soluble in HNO_3); Oxide (Soluble in HNO_3); Ores and Organic based (The literature has more references to the preparation of Hg containing samples than any other element. Please consult the literature for your specific sample type, since such preparations are prone to error. Or e-mail our technical staff and we will contact you to discuss your particular sample preparation questions in further detail.).

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

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 202 amu	9 ppt	n/a	186W16O
ICP-OES 184.950 nm	0.03 / 0.005 µg/mL	1	
ICP-OES 194.227 nm	0.03 / 0.005 µg/mL	1	V
ICP-OES 253.652 nm	0.1 / 0.03 µg/mL	1	Ta, Co, Th ,Rh , Fe, U

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 22, 2021

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

11.2 Lot Expiration Date

- September 22, 2026

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Uyen Truong
Supervisor, Product Documentation

Certificate Approved By:

Michael Booth
Director, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

QATS LABORATORY INORGANIC REFERENCE MATERIAL INTERFERENCE CHECK SAMPLE SET FOR ICP-AES (ICSA WITH ICSB)

NOTE: These instructions are for advisory purposes only. If any apparent conflict exists between these instructions and the analytical protocol or your contract, disregard these instructions.

APPLICATION: For use with the CLP SFAM01.0 SOW and revisions.

CAUTION: Read instructions carefully before opening bottle(s) and proceeding with the analyses.

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 Aqueous Reference Material, each composed of metals at various concentrations and prepared with nitrate salts and oxy-acids of the respective elements in a 5% nitric acid matrix. **For the reference material source in reporting ICSA and ICSAB mixture use "USEPA". For the reference material lot number for the ICSA use "ICSA-1211" and for the ICSAB mixture use "ICSA-1211+ICSB-0710".**

CAUTION: The bottle(s) should be protected from light during storage to ensure the stability of silver which is contained in the ICSB solution. The bottle(s) should be stored at room temperature. **Do not allow the solution(s) to freeze.**

(B) *BREAKAGE OR MISSING ITEMS*

Check the contents of the shipment carefully for any broken, leaking, or missing items. Check that the seal is intact on each bottle. Refer to the enclosed chain of custody record. Report any problems to Mr. Keith Strout, APTIM Federal Services, LLC, at (702) 895-8722. If requested, return the chain-of-custody record with appropriate annotations and signatures to the address provided below.

QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
APTIM Federal Services, LLC
2700 Chandler Avenue - Building C
Las Vegas, NV 89120

(C) *ANALYSIS OF SAMPLES*

The interference check sample set is to be used to verify inter-element and background correction factors of inductively-coupled plasma (ICP) spectrometers. This reference material set consists of two (2) concentrated solutions. The ICSA solution contains the four (4) interferent elements: Al, Ca, Fe, and Mg. The ICSB solution contains the analytes: Ag, As, Sb, Ba, Be,

Cd, Co, Cr, Cu, Mn, Ni, Pb, Tl, Se, V, and Zn. This instruction sheet provides the nominal values for ICP-AES Part A and Part B target analytes when diluted as directed.

Using Class "A" glassware, preparation and analysis must be performed according to the following instructions:

ICSA-1211, Interferents: Pipet 10 mL of the ICSA solution into a 100 mL volumetric flask and dilute to volume with 2% v/v HNO_3. Analyze this ICSA solution by ICP-AES.

ICSB-0710, Analytes, mixed with ICSA-1211, Interferents: Pipet 10 mL of the ICSA solution and 10 mL of the ICSB solution into a 100 mL volumetric flask and dilute to volume with 2% v/v HNO_3. Analyze this ICSAB solution by ICP-AES.

(D) *"CERTIFIED VALUE" CONCENTRATIONS OF QATS ICP-AES ICS SOLUTION(S)*

The "Certified Value" concentrations of the elements, listed in Table 1 below, were derived from statistically pooled analysis results from the following sources, if available: QATS Laboratory, CLP laboratories, Quarterly Blind (QB)/Proficiency Testing (PT) events, CLP pre-award events, and external referee laboratories.

Table 1. "CERTIFIED VALUES" FOR INTERFERENCE CHECK SAMPLE ICP-AES ICSA-1211, AND ICSA-1211 MIXED WITH ICSB-0710

Element	CRQL	Part A (µg/L)	Low Limit (µg/L)	High Limit (µg/L)	Part A +Part B (µg/L)	Low Limit (µg/L)	High Limit (µg/L)
Al	200	255000	216000	294000	247000	209000	285000
Sb	60	(0.0)	-60.0	60.0	618	525	711
As	10	(0.0)	-10.0	10.0	104	88.4	120
Ba	200	(6.0)	-194	206	(537)	337	737
Be	5.0	(0.0)	-5.0	5.0	495	420	570
Cd	5.0	(1.0)	-4.0	6.0	972	826	1120
Ca	5000	245000	208000	282000	235000	199000	271000
Cr	10	(52.0)	42.0	62.0	542	460	624
Co	50	(0.0)	-50.0	50.0	476	404	548
Cu	25	(2.0)	-23.0	27.0	511	434	588
Fe	100	101000	85600	116500	99300	84400	114500
Pb	10	(0.0)	-10.0	10.0	(49.0)	39.0	59.0
Mg	5000	255000	216000	294000	248000	210000	286000
Mn	15	(7.0)	-8.0	22.0	507	430	584
Ni	40	(2.0)	-38.0	42.0	954	810	1100
Se	35	(0.0)	-35.0	35.0	(46.0)	11.0	81.0
Ag	10	(0.0)	-10.0	10.0	201	170	232
Tl	25	(0.0)	-25.0	25.0	(108)	83.0	133
V	50	(0.0)	-50.0	50.0	491	417	565
Zn	60	(0.0)	-60.0	60.0	952	809	1095

ICSA M5126 M5127 M5128 M5129 M5130

ICSB M5219 M5220 M5221 M5222 M5223

The acceptance ranges for all analytes in parentheses in the above table were determined using the listed certified value ± 1 times the associated CLP SOW CRQL. The acceptance ranges for all other analytes were determined using the certified value ± 15 percent of the listed certified value.

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

Certified Reference Material CRM

M5192 R: 06/17/22

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

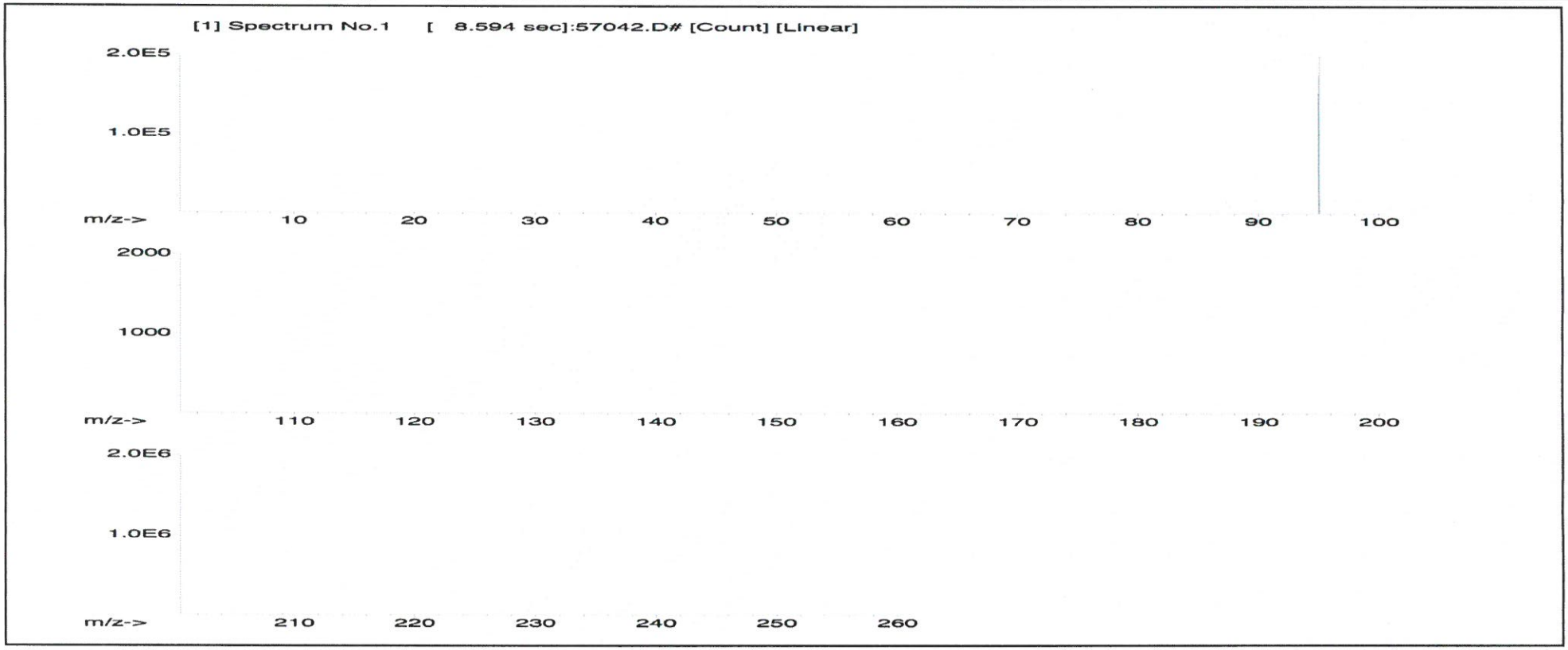
CERTIFIED WEIGHT REPORT:

Part Number: 57042
Lot Number: 051722
Description: Molybdenum (Mo)
Expiration Date: 051725
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Volume shown below was diluted to (mL): 3000.41

Lot #	Solvent:		
MKBQ8597V	Ammonium hydroxide		
0.5%	15.0 (mL)	Ammonium hydroxide	
5E-05	Balance Uncertainty		
0.058	Flask Uncertainty		

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

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Ammonium molybdate (Mo)	58142	022222	0.1000	300.0	0.084	1000	10001.0	**1000.0**	**2.1**	13106-76-8	5 mg(Mo)/m3	orl-rat 333 mg/kg	3134



Absolute Standards, Inc.
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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 Spectroscopy (ICP-MS):

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

(T)= Target analyte

Physical Characterization:

Certified by:

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

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 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).

INORGANIC VENTURES™
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Certificate of Analysis

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

P: 800-669-6799/540-585-3030
F: 540-585-3012
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).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	CHEM-QC-4
Lot Number:	S2-MEB711674
Matrix:	3% (v/v) HNO3 3% (v/v) HF
Value / Analyte(s):	1 000 µg/mL ea: Boron, Molybdenum, Silicon, Tin, Titanium

Second Source: Whenever possible, this solution was manufactured from a second set of concentrates in our manufacturing facility.

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Boron, B	**1 000 ± 7 µg/mL**	**Molybdenum, Mo**	**1 000 ± 5 µg/mL**
Silicon, Si	**1 000 ± 7 µg/mL**	**Tin, Sn**	**1 000 ± 5 µg/mL**
Titanium, Ti	**1 001 ± 6 µg/mL**		

Density: 1.032 g/mL (measured at 20 ± 4 ºC)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
B	ICP Assay	3107	110830
Mo	ICP Assay	3134	130418
Si	ICP Assay	3150	130912
Sn	ICP Assay	3161a	140917
Ti	ICP Assay	3162a	130925

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

Characterization of CRM/RM by Two or More Methods

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

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

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:

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

$CRM/RM\ Expanded\ Uncertainty\ (\pm) = U_{CRM/RM} = k\ (u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ 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

$CRM/RM\ Expanded\ Uncertainty\ (\pm) = U_{CRM/RM} = k\ (u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

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

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

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

November 02, 2021

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

11.2 Lot Expiration Date

- **November 02, 2026**

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

QATS LABORATORY INORGANIC REFERENCE MATERIAL
INTERFERENCE CHECK SAMPLE SET FOR ICP-AES (ICSA WITH ICSB)

NOTE: These instructions are for advisory purposes only. If any apparent conflict exists between these instructions and the analytical protocol or your contract, disregard these instructions.

APPLICATION: For use with the CLP SFAM01.0 SOW and revisions.

CAUTION: Read instructions carefully before opening bottle(s) and proceeding with the analyses.

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 Aqueous Reference Material, each composed of metals at various concentrations and prepared with nitrate salts and oxy-acids of the respective elements in a 5% nitric acid matrix. **For the reference material source in reporting ICSA and ICSAB mixture use "USEPA". For the reference material lot number for the ICSA use "ICSA-1211" and for the ICSAB mixture use "ICSA-1211+ICSB-0710".**

CAUTION: The bottle(s) should be protected from light during storage to ensure the stability of silver which is contained in the ICSB solution. The bottle(s) should be stored at room temperature. **Do not allow the solution(s) to freeze.**

(B) *BREAKAGE OR MISSING ITEMS*

Check the contents of the shipment carefully for any broken, leaking, or missing items. Check that the seal is intact on each bottle. Refer to the enclosed chain of custody record. Report any problems to Mr. Keith Strout, APTIM Federal Services, LLC, at (702) 895-8722. If requested, return the chain-of-custody record with appropriate annotations and signatures to the address provided below.

QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
APTIM Federal Services, LLC
2700 Chandler Avenue - Building C
Las Vegas, NV 89120

(C) *ANALYSIS OF SAMPLES*

The interference check sample set is to be used to verify inter-element and background correction factors of inductively-coupled plasma (ICP) spectrometers. This reference material set consists of two (2) concentrated solutions. The ICSA solution contains the four (4) interferent elements: Al, Ca, Fe, and Mg. The ICSB solution contains the analytes: Ag, As, Sb, Ba, Be,

Cd, Co, Cr, Cu, Mn, Ni, Pb, Tl, Se, V, and Zn. This instruction sheet provides the nominal values for ICP-AES Part A and Part B target analytes when diluted as directed.

Using Class "A" glassware, preparation and analysis must be performed according to the following instructions:

ICSA-1211, Interferents: Pipet 10 mL of the ICSA solution into a 100 mL volumetric flask and dilute to volume with 2% v/v HNO_3. Analyze this ICSA solution by ICP-AES.

ICSB-0710, Analytes, mixed with ICSA-1211, Interferents: Pipet 10 mL of the ICSA solution and 10 mL of the ICSB solution into a 100 mL volumetric flask and dilute to volume with 2% v/v HNO_3. Analyze this ICSAB solution by ICP-AES.

(D) *"CERTIFIED VALUE" CONCENTRATIONS OF QATS ICP-AES ICS SOLUTION(S)*

The "Certified Value" concentrations of the elements, listed in Table 1 below, were derived from statistically pooled analysis results from the following sources, if available: QATS Laboratory, CLP laboratories, Quarterly Blind (QB)/Proficiency Testing (PT) events, CLP pre-award events, and external referee laboratories.

Table 1. "CERTIFIED VALUES" FOR INTERFERENCE CHECK SAMPLE ICP-AES ICSA-1211, AND ICSA-1211 MIXED WITH ICSB-0710

Element	CRQL	Part A (µg/L)	Low Limit (µg/L)	High Limit (µg/L)	Part A +Part B (µg/L)	Low Limit (µg/L)	High Limit (µg/L)
Al	200	255000	216000	294000	247000	209000	285000
Sb	60	(0.0)	-60.0	60.0	618	525	711
As	10	(0.0)	-10.0	10.0	104	88.4	120
Ba	200	(6.0)	-194	206	(537)	337	737
Be	5.0	(0.0)	-5.0	5.0	495	420	570
Cd	5.0	(1.0)	-4.0	6.0	972	826	1120
Ca	5000	245000	208000	282000	235000	199000	271000
Cr	10	(52.0)	42.0	62.0	542	460	624
Co	50	(0.0)	-50.0	50.0	476	404	548
Cu	25	(2.0)	-23.0	27.0	511	434	588
Fe	100	101000	85600	116500	99300	84400	114500
Pb	10	(0.0)	-10.0	10.0	(49.0)	39.0	59.0
Mg	5000	255000	216000	294000	248000	210000	286000
Mn	15	(7.0)	-8.0	22.0	507	430	584
Ni	40	(2.0)	-38.0	42.0	954	810	1100
Se	35	(0.0)	-35.0	35.0	(46.0)	11.0	81.0
Ag	10	(0.0)	-10.0	10.0	201	170	232
Tl	25	(0.0)	-25.0	25.0	(108)	83.0	133
V	50	(0.0)	-50.0	50.0	491	417	565
Zn	60	(0.0)	-60.0	60.0	952	809	1095

ICSA M5126 M5127 M5128 M5129 M5130

ICSB M5219 M5220 M5221 M5222 M5223

The acceptance ranges for all analytes in parentheses in the above table were determined using the listed certified value ± 1 times the associated CLP SOW CRQL. The acceptance ranges for all other analytes were determined using the certified value ± 15 percent of the listed certified value.

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Certified Reference Material CRM

M5288 R: 07/21/2022

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AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

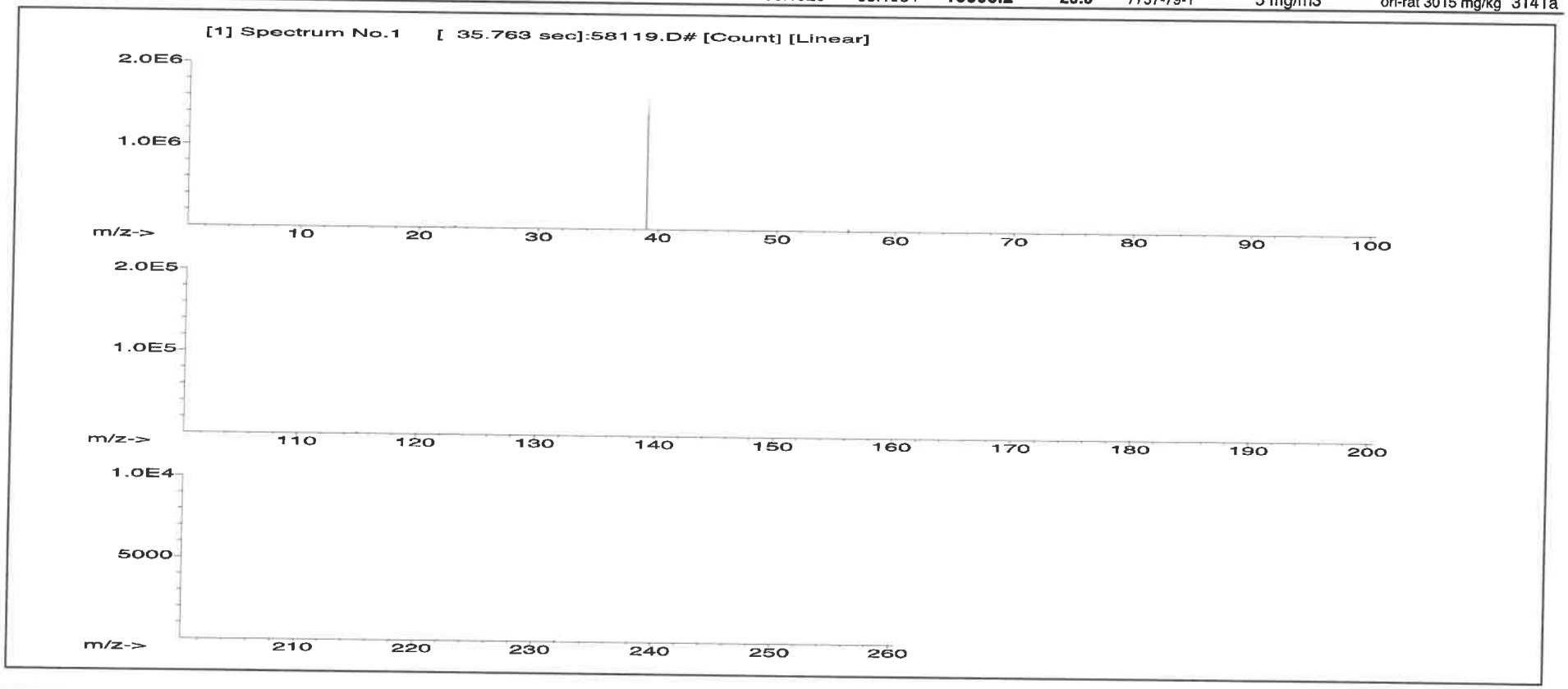
Part Number: 58119
Lot Number: 071122
Description: Potassium (K)

Expiration Date: 071125
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 2000.02

	Lot #		
Solvent:	20510011	Nitric Acid	
2%	40.0 (mL)	Nitric Acid	
	5E-05	Balance Uncertainty	
	0.058	Flask Uncertainty	

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

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	**Actual Conc. (µg/mL)**	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Potassium nitrate (K)	IN034	KD022021A1	10000	99.999	0.10	37.6	53.1925	53.1934	**10000.2**	**20.0**	7757-79-1	5 mg/m3	orl-rat 3015 mg/kg	3141a



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AR-1539 Certificate Number
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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	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	T	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

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 certifed (+/-) 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).

Part # **58119** Lot # **071122**

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SJ 6/15/22

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Certified Reference Material CRM

ANAB ISO 17034 Accredited
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CERTIFIED WEIGHT REPORT:

Part Number: 58126
Lot Number: 020422
Description: Iron (Fe)

M5298

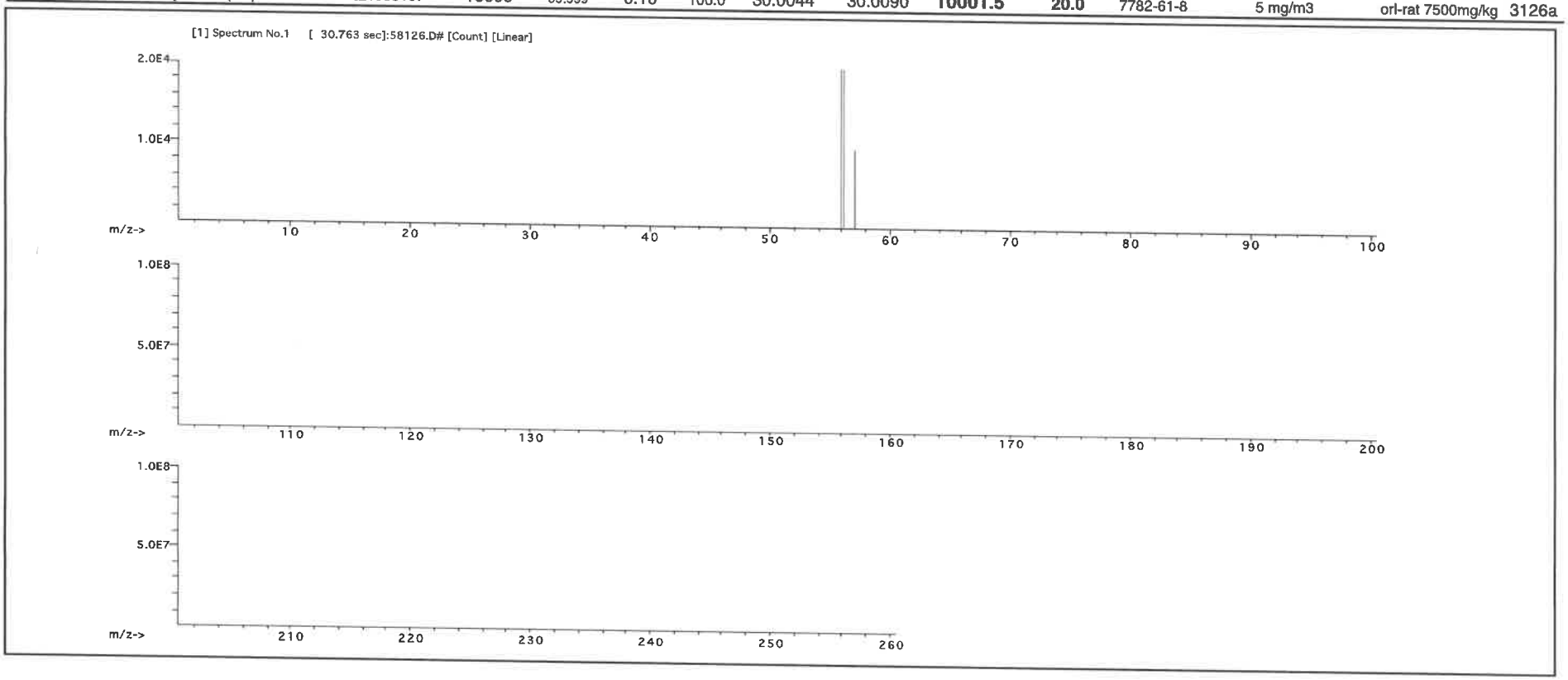
Expiration Date: 020425
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 3000.41

	Lot #		
Solvent:	20370011	Nitric Acid	
5.0%	150.0 (mL)	Nitric Acid	
5E-05	Balance Uncertainty		
0.058	Flask Uncertainty		

Giovanni Esposito

Formulated By:	Giovanni Esposito	020422
Reviewed By:	Pedro L. Rentas	020422

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Iron(III) nitrate nonahydrate (Fe)	IN346	221035107	10000	99.999	0.10	100.0	30.0044	30.0090	**10001.5**	**20.0**	7782-61-8	5 mg/m3	orl-rat 7500mg/kg	3126a



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Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
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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	<0.10	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	<0.10	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.5	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	<0.02
B	<0.02	Cu	<0.10	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 certifed (+/-) 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).

Part # **58126** Lot # **020422**

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Certified Reference Material CRM

M5429 R1 01/26/23 BH

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

CERTIFIED WEIGHT REPORT:

Part Number: 57103
Lot Number: 070622
Description: Lithium (Li)

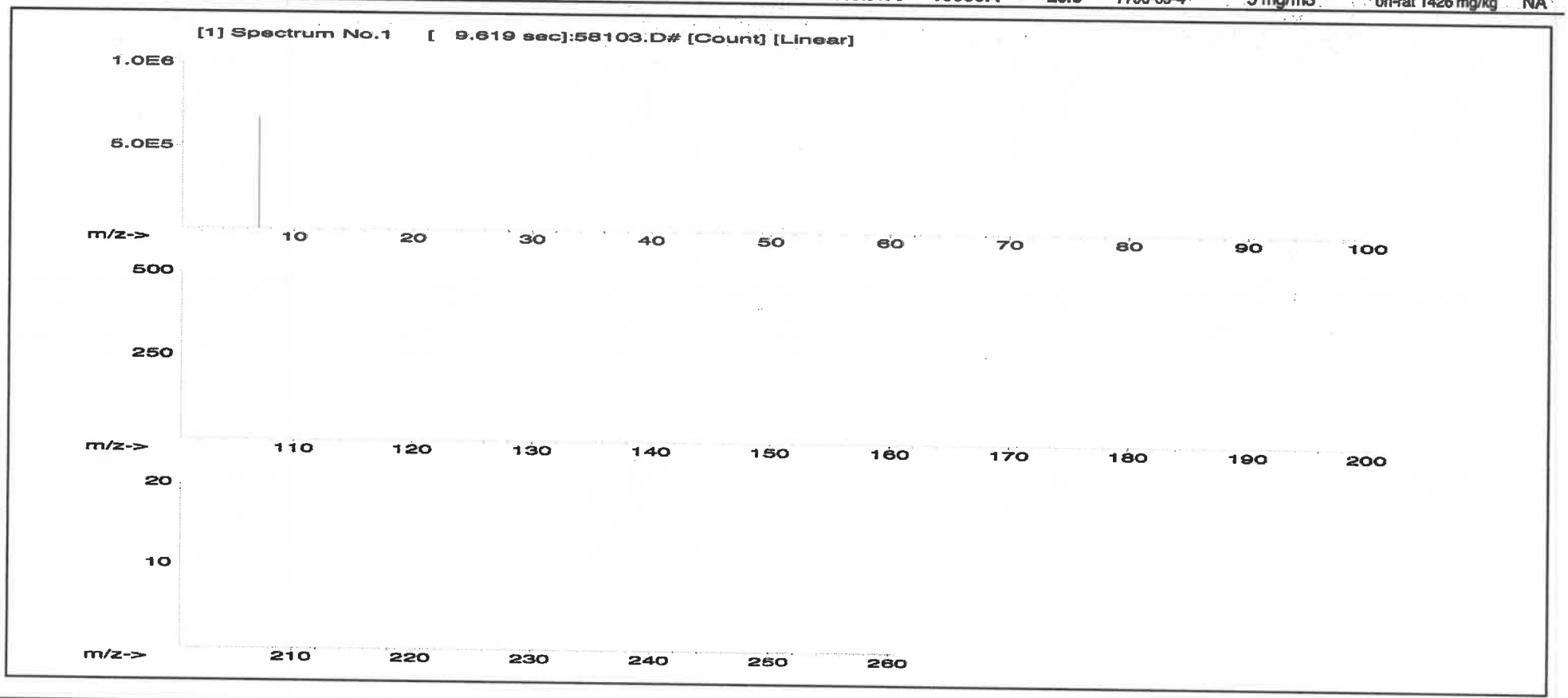
Expiration Date: 070625
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 1000.12

	Lot #			
Solvent:	20510011	Nitric Acid		
2%	20.0 (mL)	Nitric Acid		

5E-05 Balance Uncertainty
0.058 Flask Uncertainty

Formulated By:	Lawrence Barry	070622
Reviewed By:	Pedro L. Rentas	070622

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Lithium nitrate (Li)	IN019	LIZ042018A1	10000	99.999	0.10	10.0	100.0134	100.0173	**10000.4**	**20.0**	7790-69-4	5 mg/m3	orl-rat 1426 mg/kg	NA



QUALITY-METALS

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	T	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	<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.
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* All Standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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Certified Reference Material CRM

M5467 R: 03/01/23 (LA)

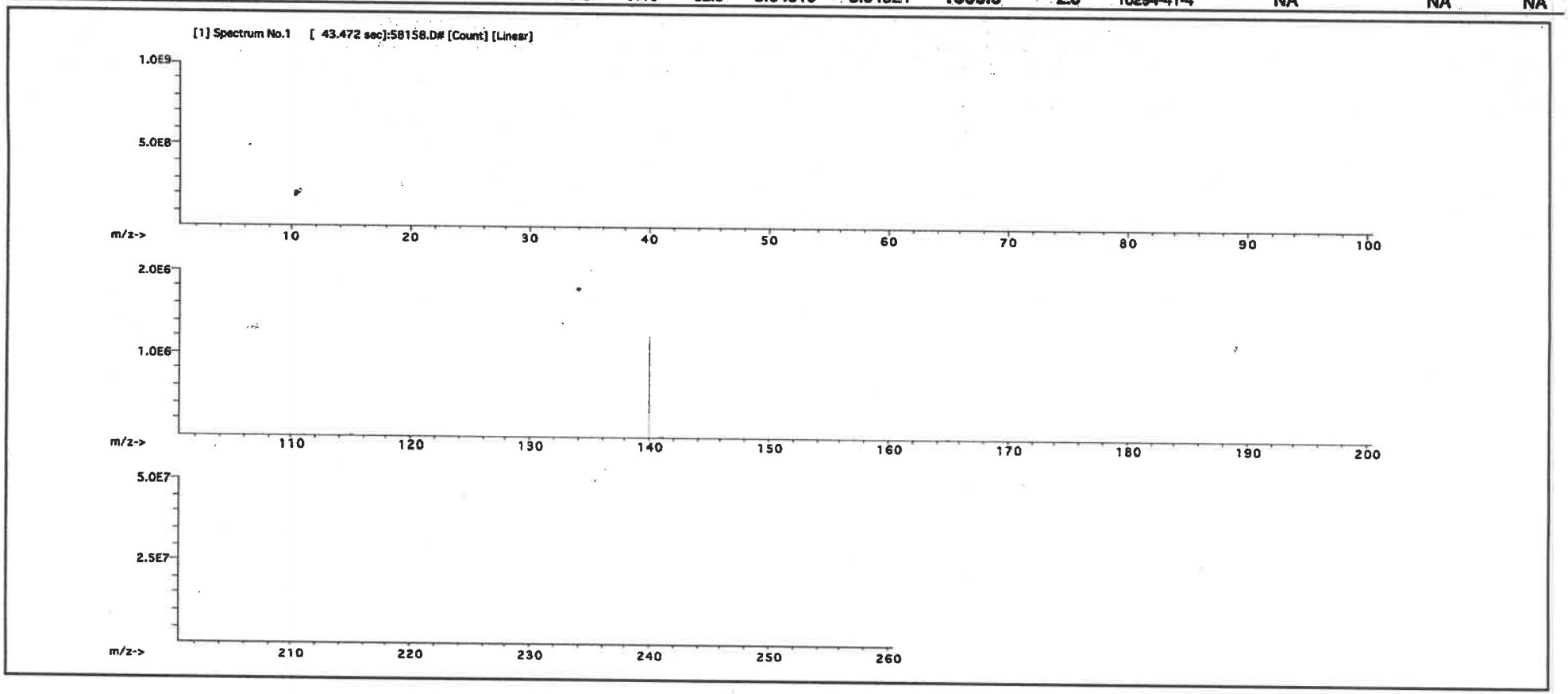
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

Part Number:	57058		**Lot #**	
Lot Number:	020623	**Solvent:**	21110221	Nitric Acid
Description:	Cerium (Ce)	2%	20.0 (mL)	Nitric Acid
Expiration Date:	020626			
Recommended Storage:	Ambient (20 °C)			
Nominal Concentration (µg/mL):	1000			
NIST Test Number:	6UTB	5E-05	Balance Uncertainty	
Weight shown below was diluted to (mL):	1000.12	0.058	Flask Uncertainty	

Formulated By:	Lawrence Barry	020623
Reviewed By:	Pedro L. Rentas	020623

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Cerium nitrate hexahydrate (Ce)	IN146	Z512CEB1	1000	99.999	0.10	32.8	3.04919	3.04921	**1000.0**	**2.0**	10294-41-4	NA	NA	NA



21382-METALS

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

Trace Metals Verification by ICP-MS (µg/mL)																	
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	T	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	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:

Certified by:

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

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 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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M5496 R 7/20/23

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CERTIFIED WEIGHT REPORT:

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

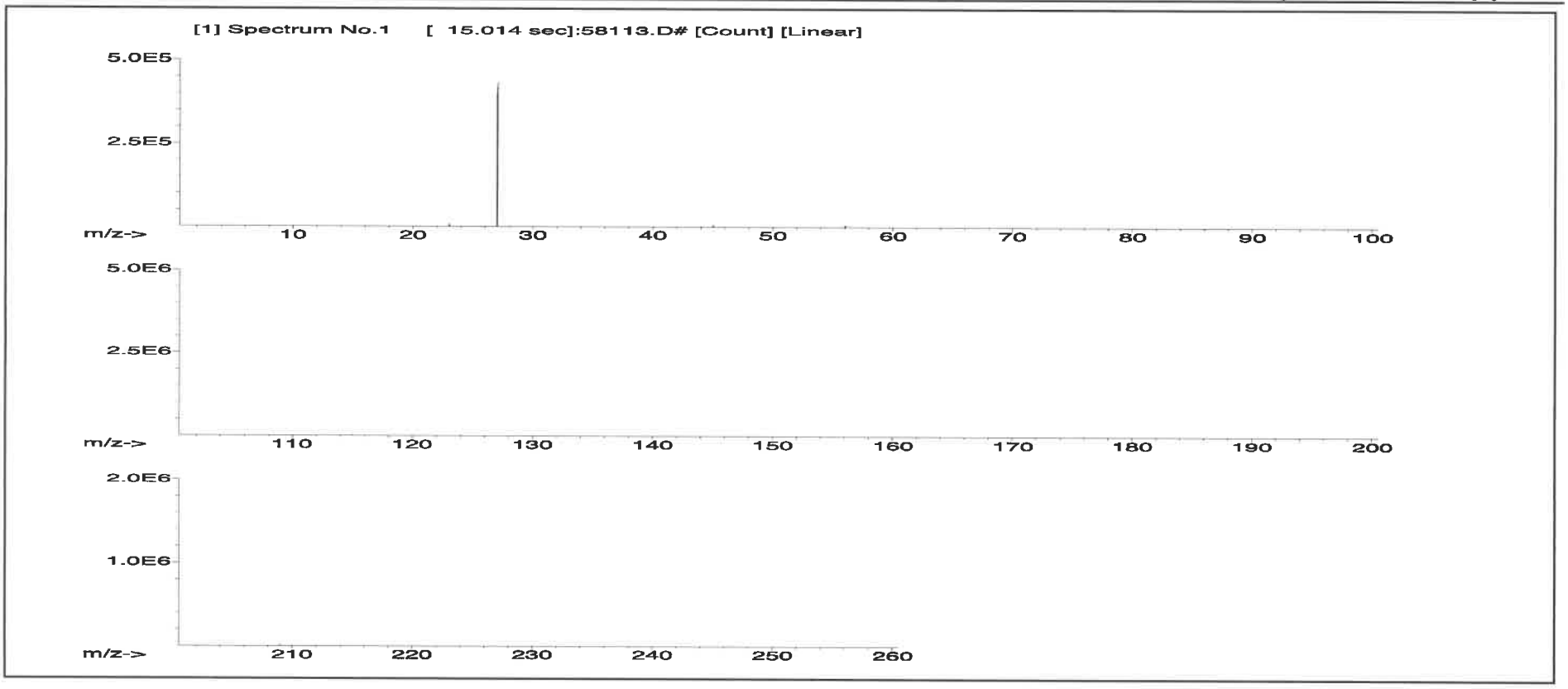
Expiration Date: 011626
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 2000.02

	Lot #		
Solvent:	20510011	Nitric Acid	
2%	40.0 (mL)	Nitric Acid	
5E-05	Balance Uncertainty		
0.058	Flask Uncertainty		

Giovanni Esposito

Formulated By:	Giovanni Esposito	011623
Reviewed By:	Pedro L. Rentas	011623

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Aluminum nitrate nonahydrate (Al)	IN022	ALM112021A1	10000	99.999	0.10	7.30	273.9779	274.0078	**10001.1**	**20.0**	7784-27-2	2 mg/m3	orl-rat 3671 mg/kg	3101a



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M5497 - M5498 R: 03/17/23 BH

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CERTIFIED WEIGHT REPORT:

Part Number: 58120
Lot Number: 031523
Description: Calcium (Ca)

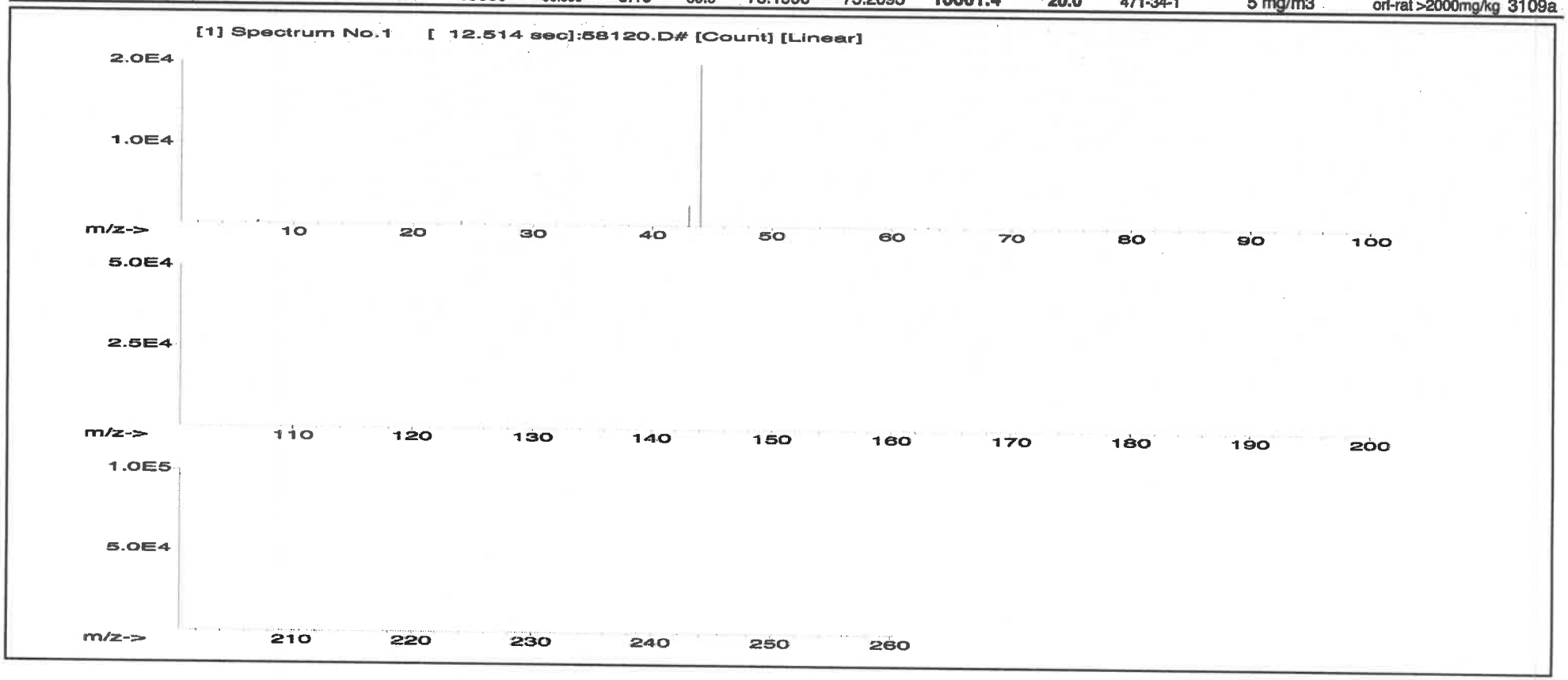
Expiration Date: 031526
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 3000.41

	Lot #		
Solvent:	21110221	Nitric Acid	
2%	60.0 (mL)	Nitric Acid	
	5E-05	Balance Uncertainty	
	0.058	Flask Uncertainty	

Giovanni Esposito
Formulated By: Giovanni Esposito 031523

Pedro Rentas
Reviewed By: Pedro L. Rentas 031523

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Calcium carbonate (Ca)	IN014	CAD072022A1	10000	99.999	0.10	39.9	75.1990	75.2093	**10001.4**	**20.0**	471-34-1	5 mg/m3	orl-rat >2000mg/kg	3109a



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	T	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<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:

Certified by:

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

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 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).

QATS LABORATORY INORGANIC REFERENCE MATERIAL INITIAL CALIBRATION VERIFICATION SOLUTIONS (ICV1, ICV5, AND ICV6)

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.

MSS28-37
MB

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.

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) $K_2Cr_2O_7$ 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 $K_3Fe(CN)_6$, 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

JENSEN INERT PRODUCTS

MATERIAL CERTIFICATE OF COMPLIANCE

DATE: JUNE 12, 2023

CUSTOMER:	PCI SCIENTIFIC SUPPLY, INC
PURCHASE ORDER NO.	6054931
CATALOG NO.	BOI5021-450L
PRODUCT DESCRIPTION:	BOILING STONES, TFE, 454GMS
QUANTITY:	10 EACH
LOT NO.	W126678
SPECIFICATION (S):	Made from Virgin PTFE Resin

We certify that we have complied with the terms and conditions of the above Purchase Order and the Part Specifications in the manufacturing of the above product.

Laura Valencia

Laura Valencia
Quality Assurance Inspector

F:U:J:CF:PCISCI:COC-68118-BOI5021-061223

3773 NW 126th Avenue • Coral Springs, Florida 33065 • Fax (954) 344-2008 • 1-800 446-3781
Email: jensen@jenseninert.com Visit our Web Site at www.jenseninert.com

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M5658 R ! 8/25/23

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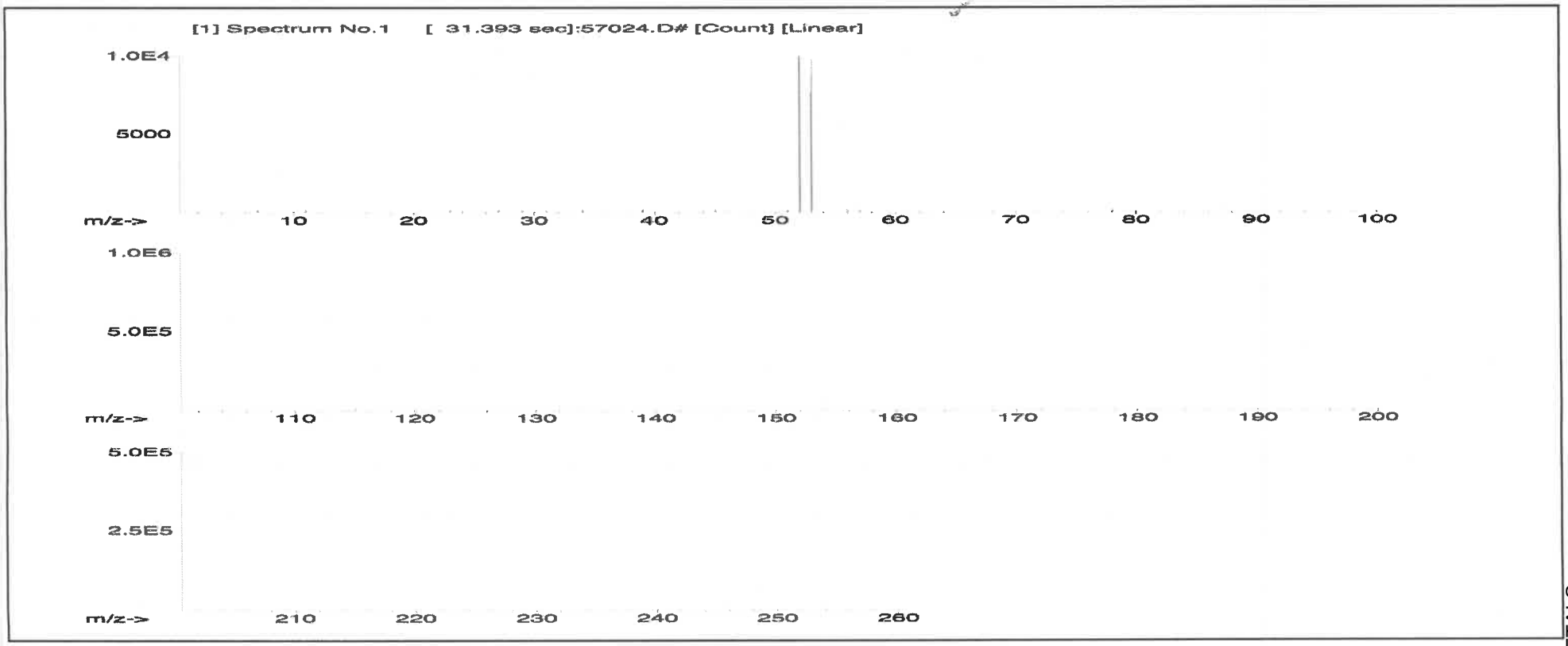
CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:	
Part Number:	**58024**	21110221	Nitric Acid	
Lot Number:	**060523**			
Description:	**Chromium (Cr)**			
		2.0%	40.0 (mL)	Nitric Acid
Expiration Date:	060526			
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:	Lawrence Barry	060523
Reviewed By:	Pedro L. Rentas	060523

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) 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	orl-rat 3250 mg/kg	3112a



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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	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:

Certified by:

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

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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M5697 R: 10/27/23

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AR-1539 Certificate Number
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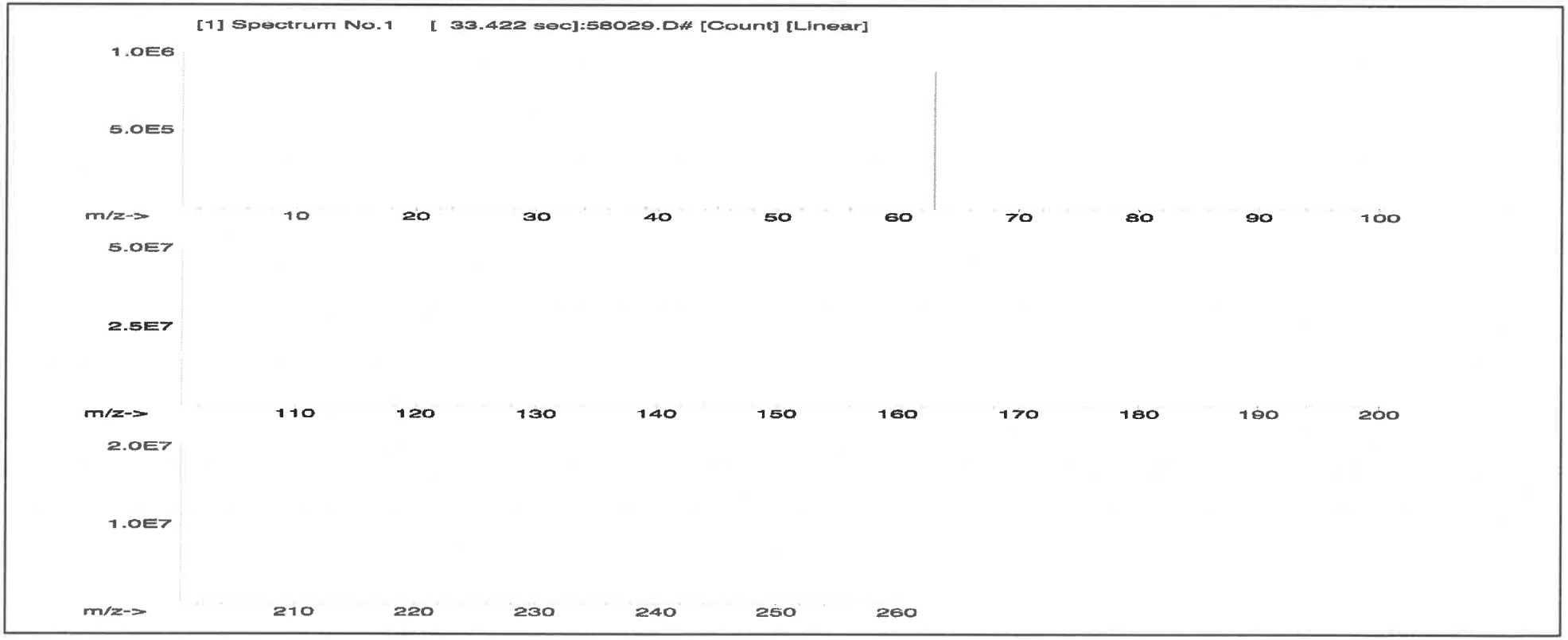
CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:		
Part Number:	**58029**	24002546	Nitric Acid		
Lot Number:	**102523**				
Description:	**Copper (Cu)**				
		2.0%	40.0 (mL)	Nitric Acid	
Expiration Date:	102526				
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

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) 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	orl-rat 794 mg/kg	3114



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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	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	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.
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Certified Reference Material CRM

R: 12/20/23 M5747

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CERTIFIED WEIGHT REPORT:

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

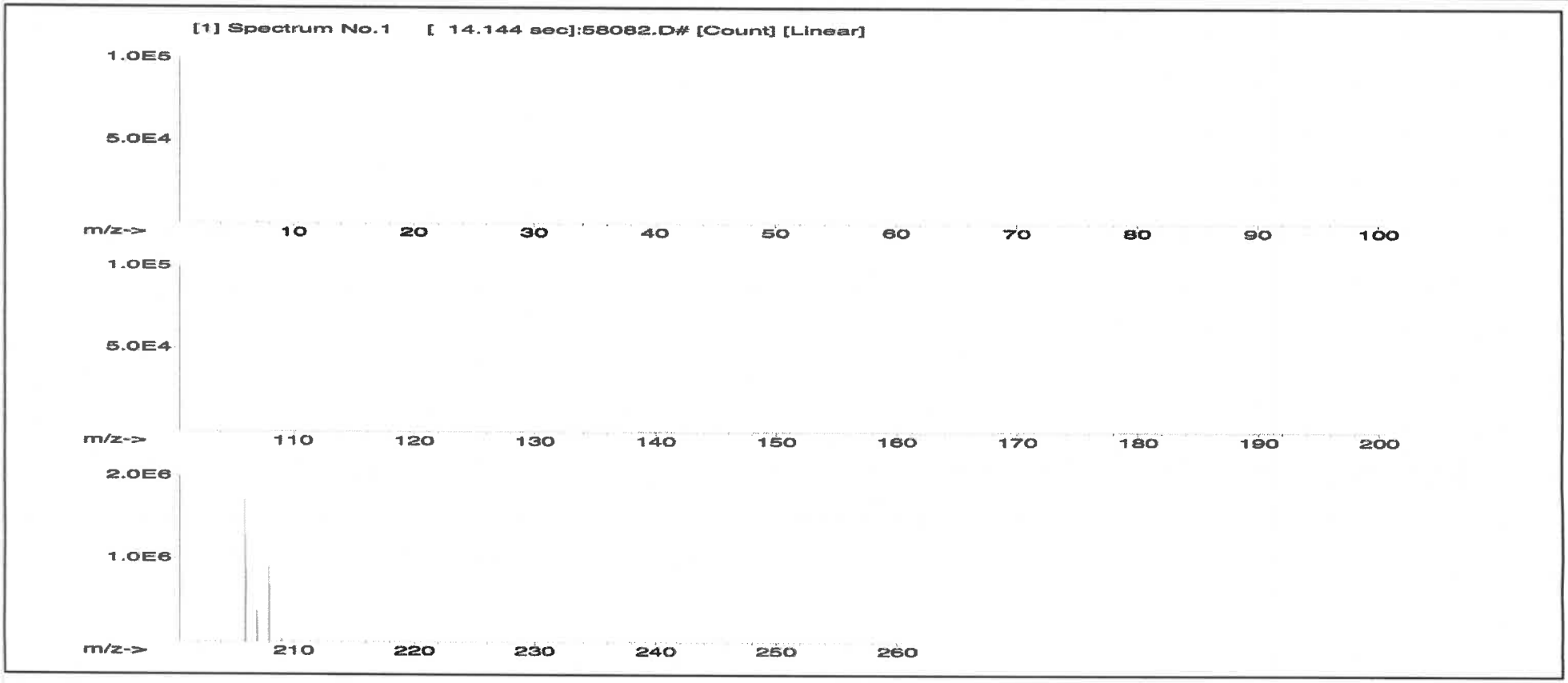
Expiration Date: 100926
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 3000.41 0.06 Flask Uncertainty

	Lot #		
Solvent:	24002546	Nitric Acid	
2%	60.0 (mL)	Nitric Acid	

5E-05 Balance Uncertainty

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

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Lead(II) nitrate (Pb)	IN029	PBD122016A1	1000	99.999	0.10	62.5	4.80071	4.80077	**1000.0**	**2.0**	10099-74-8	0.05 mg/m3	intrvns-rat 93 mg/kg	3128



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AR-1539 Certificate Number
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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	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	T	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.

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* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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R: 12/20/23 M5748

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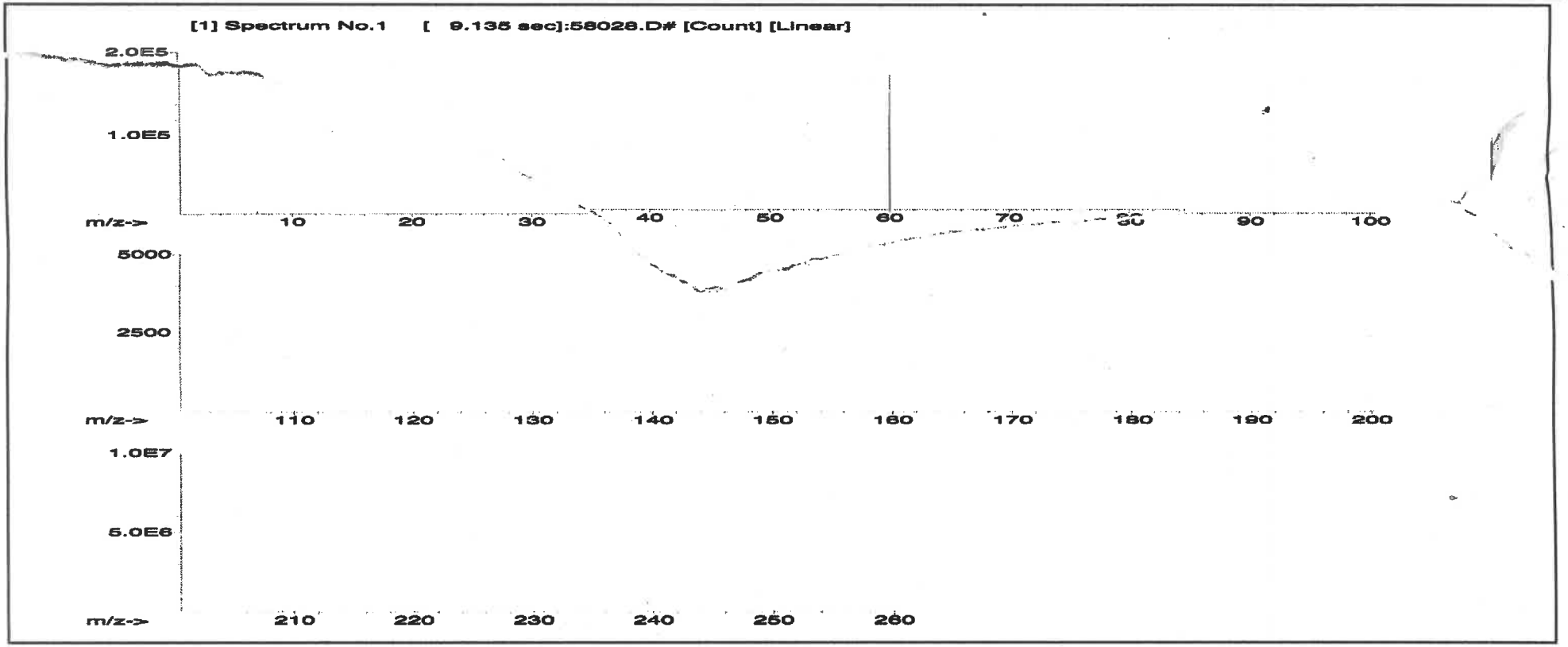
CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:	
Part Number:	**57028**	24002546	Nitric Acid	
Lot Number:	**091223**			
Description:	**Nickel (Ni)**			
		2.0%	40.0 (mL)	Nitric Acid
Expiration Date:	091226			
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:	Lawrence Barry	091223
Reviewed By:	Pedro L. Rentas	091223

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Nickel(II) nitrate hexahydrate (Ni)	58128	062023	0.1000	200.0	0.084	1000	10000.4	**1000.0**	2.2	13478-00-7	1 mg/m3	orl-rat 1620 mg/kg	3136



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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	T	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	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:

Certified by:

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

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R: 02/09/24 M5798

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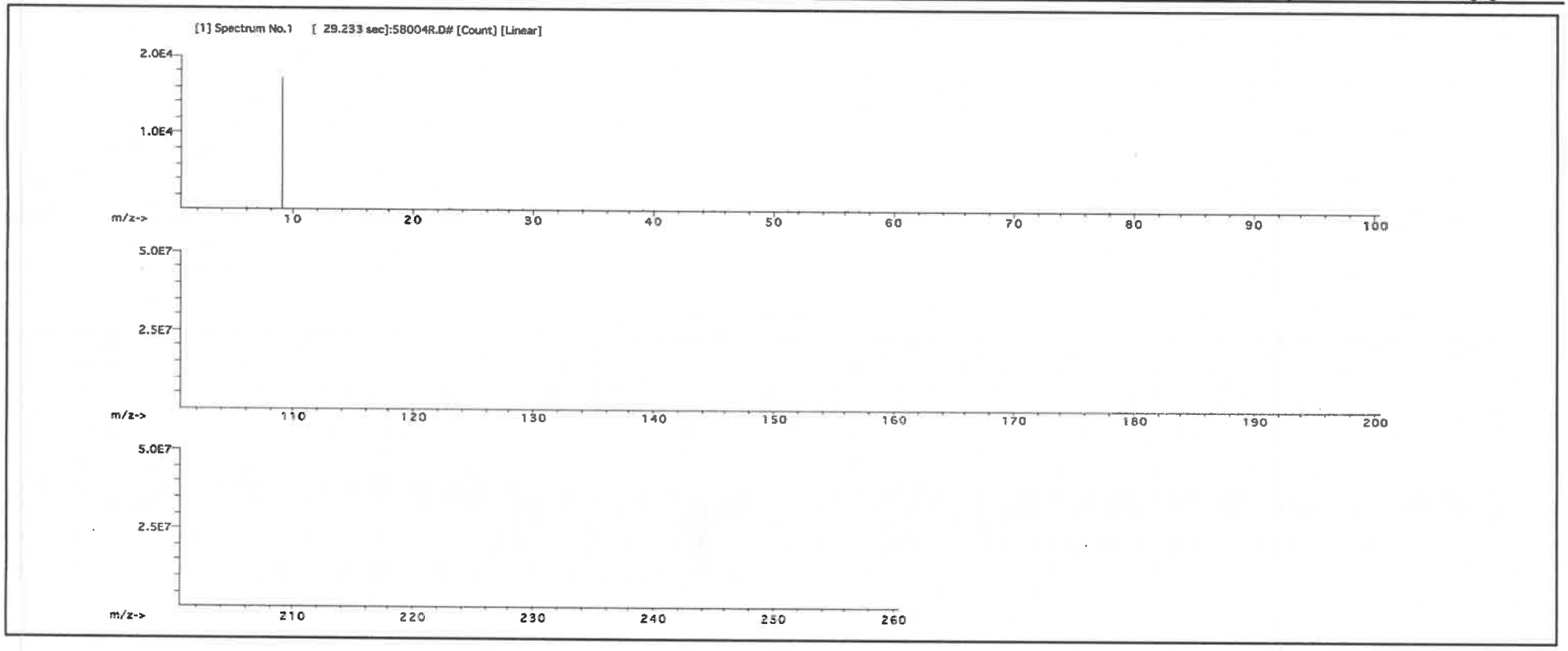
CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:		
Part Number:	**57004**	24002546	Nitric Acid		
Lot Number:	**102523**				
Description:	**Beryllium (Be)**	2.0%	40.0 (mL)	Nitric Acid	
Expiration Date:	102526				
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

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Beryllium nitrate (Be)	58104	091423	0.1000	200.0	0.084	1000	10001.5	**1000.0**	**2.2**	13597-99-4	0.2ug/m3	intrvns-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	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	T	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:

Certified by:

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

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R? 02/09/24 IV15799

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CERTIFIED WEIGHT REPORT:

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

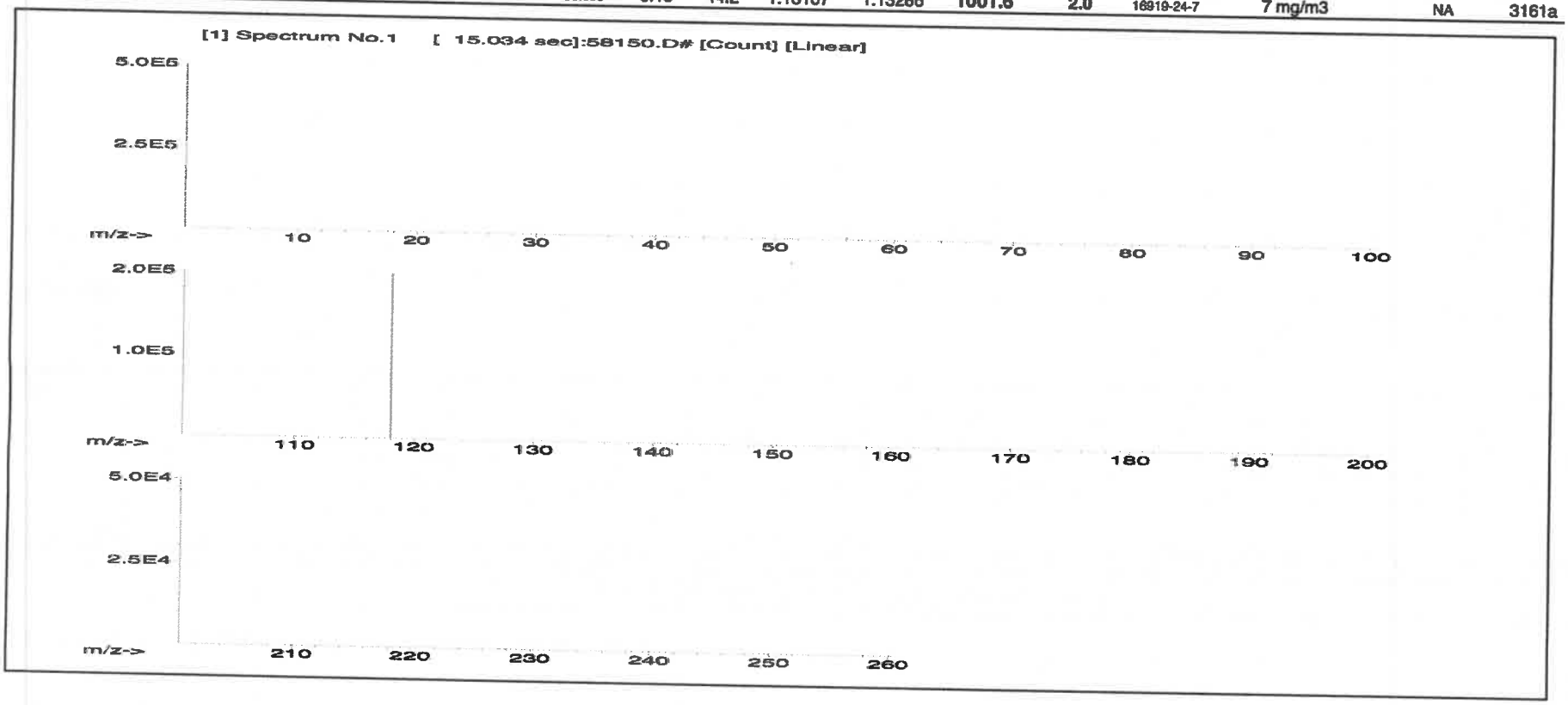
Expiration Date: 071126
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 499.93

	Lot #	
Solvents:	21110221	Nitric Acid
	22D0562008	Hydrochloric acid
2%	10.0	Nitric Acid
6%	30.0	Hydrochloric acid
	(mL)	

5E-05 Balance Uncertainty
0.058 Flask Uncertainty

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

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Ammonium hexafluorostannate(IV) (Sn)	IN010	SND042023A1	1000	99.999	0.10	44.2	1.13107	1.13286	**1001.6**	**2.0**	16919-24-7	7 mg/m3	NA	3161a



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

(T) = Target analyte

Physical Characterization:

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

Certified by:

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Certified Reference Material CRM

R: 02/09/24 IM5800 BH

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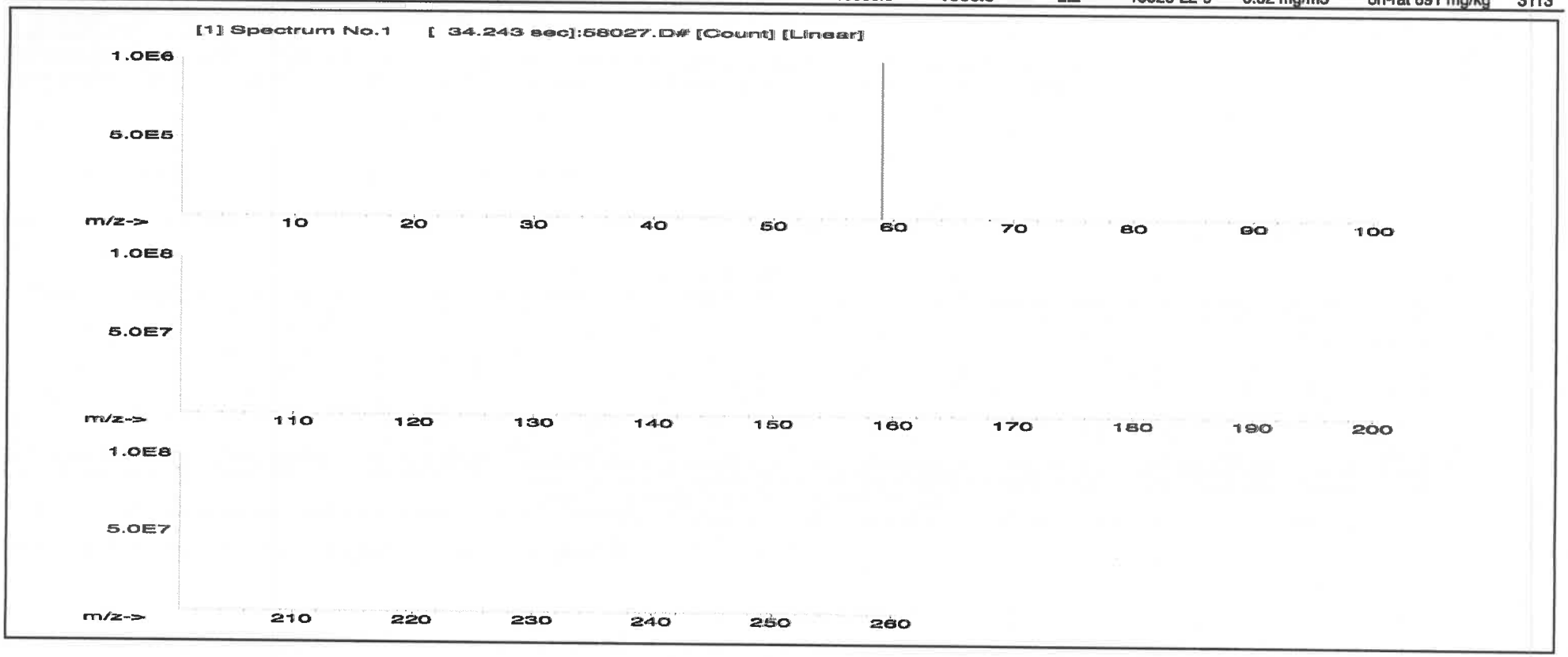
CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:		
Part Number:	**57027**	24002546	Nitric Acid		
Lot Number:	**091923**				
Description:	**Cobalt (Co)**	2.0%	40.0 (mL)	Nitric Acid	
Expiration Date:	091926				
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: Lawrence Barry 091923

Reviewed By: Pedro L. Rentas 091923

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) 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



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

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

(T)= Target analyte

Physical Characterization:

Certified by:

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R: 02/09/24 M5801 BH

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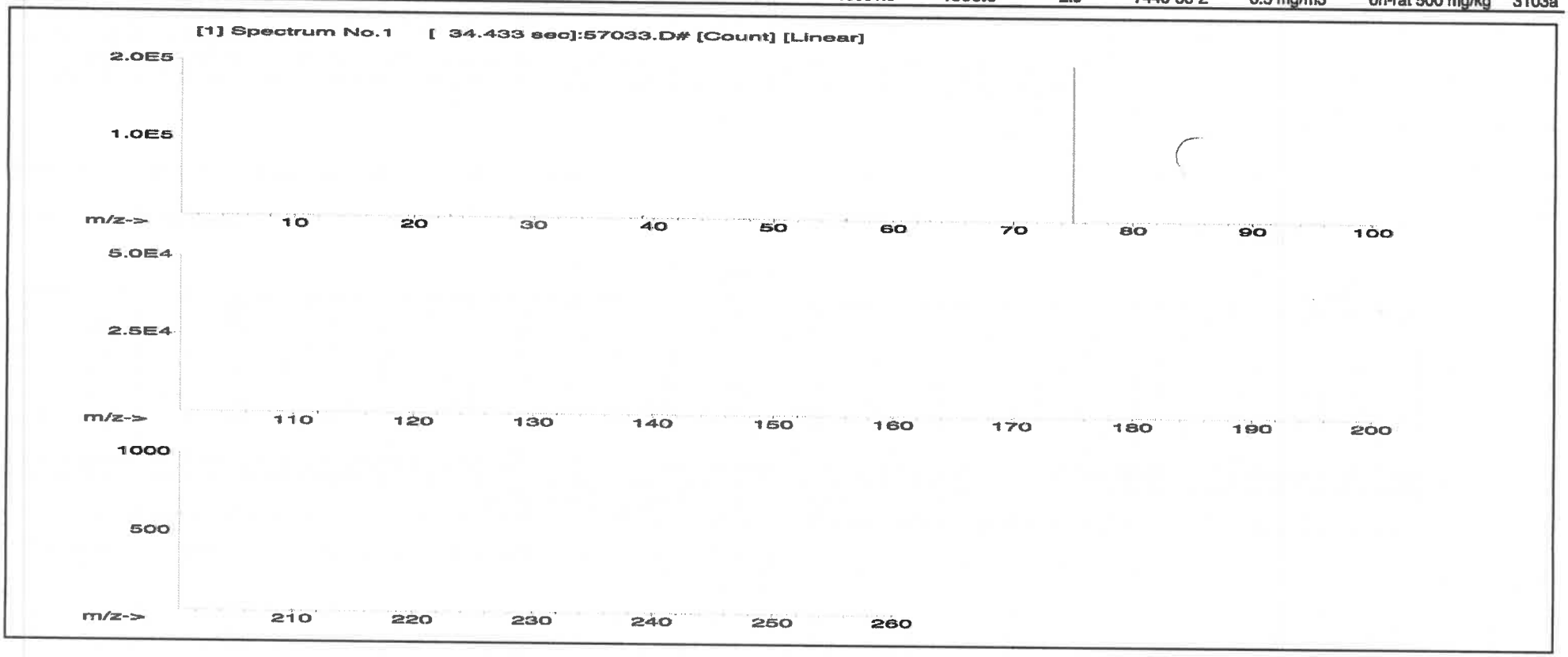
CERTIFIED **WEIGHT** REPORT:

		Lot #	Solvent:		
Part Number:	**57033**				
Lot Number:	**111323**	24002546	Nitric Acid		
Description:	**Arsenic (As)**				
		2.0%	80.0 (mL)	Nitric Acid	
Expiration Date:	111326				
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):	4000.0	0.06	Flask Uncertainty		

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

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Arsenic (As)	58133	020522	0.1000	400.0	0.084	1000	10001.0	**1000.0**	**2.0**	7440-38-2	0.5 mg/m3	orl-rat 500 mg/kg	3103a



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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	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	T	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	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:

Certified by:

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

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A: 02/09/24 M.5814

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CERTIFIED WEIGHT REPORT:

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

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

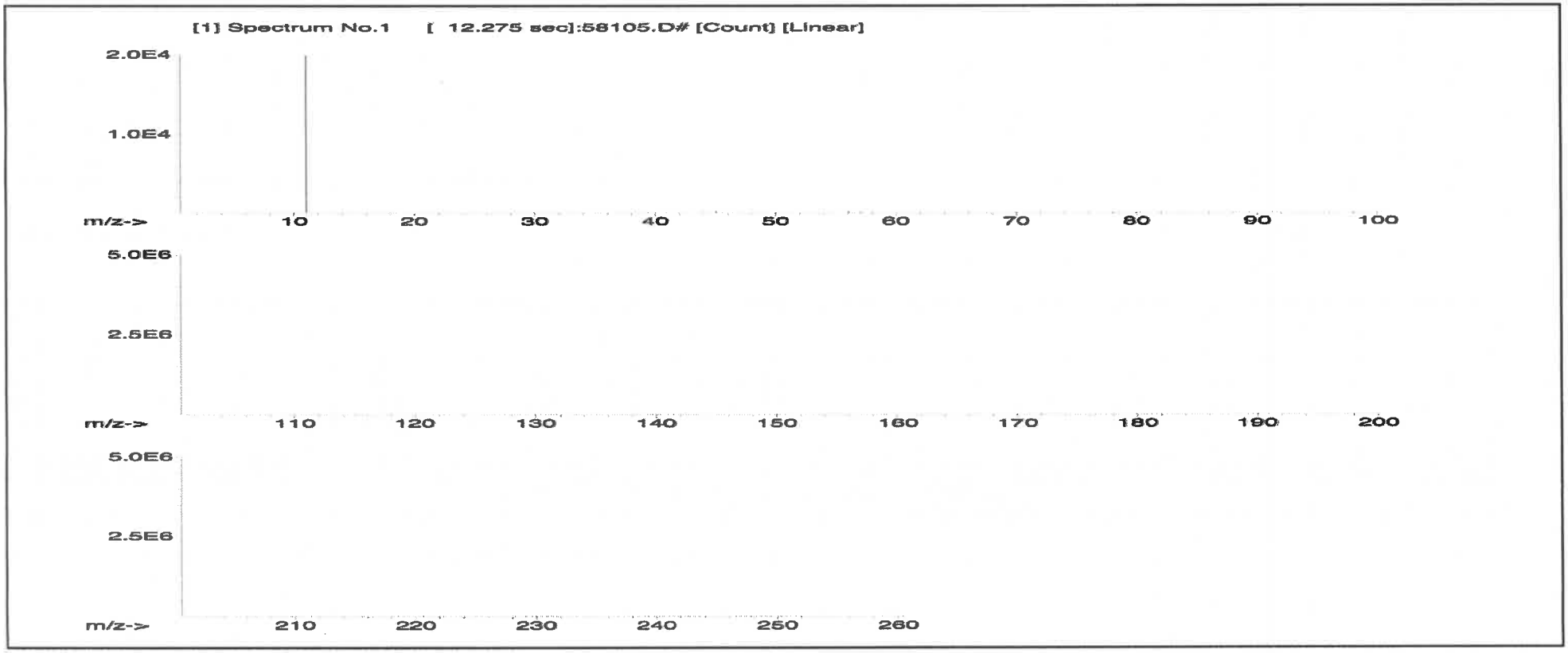
Weight shown below was diluted to (mL): 1999.48 0.058 Flask Uncertainty

	Lot #			
Solvent:	MKBQ8597V	Ammonium hydroxide		
	2.0%	40.0 (mL)	Ammonium hydroxide	

5E-05 Balance Uncertainty

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

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Boric acid (B)	IN018	BV092016A1	1000	99.9999	0.10	17.3	11.55772	11.56201	**1000.4**	**2.0**	10043-35-3	2 mg/m3	orl-rat 2660 mg/kg	3107



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

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

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

(T) = Target analyte

Physical Characterization:

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

Certified by:

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

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R1 02/09/24. M58165

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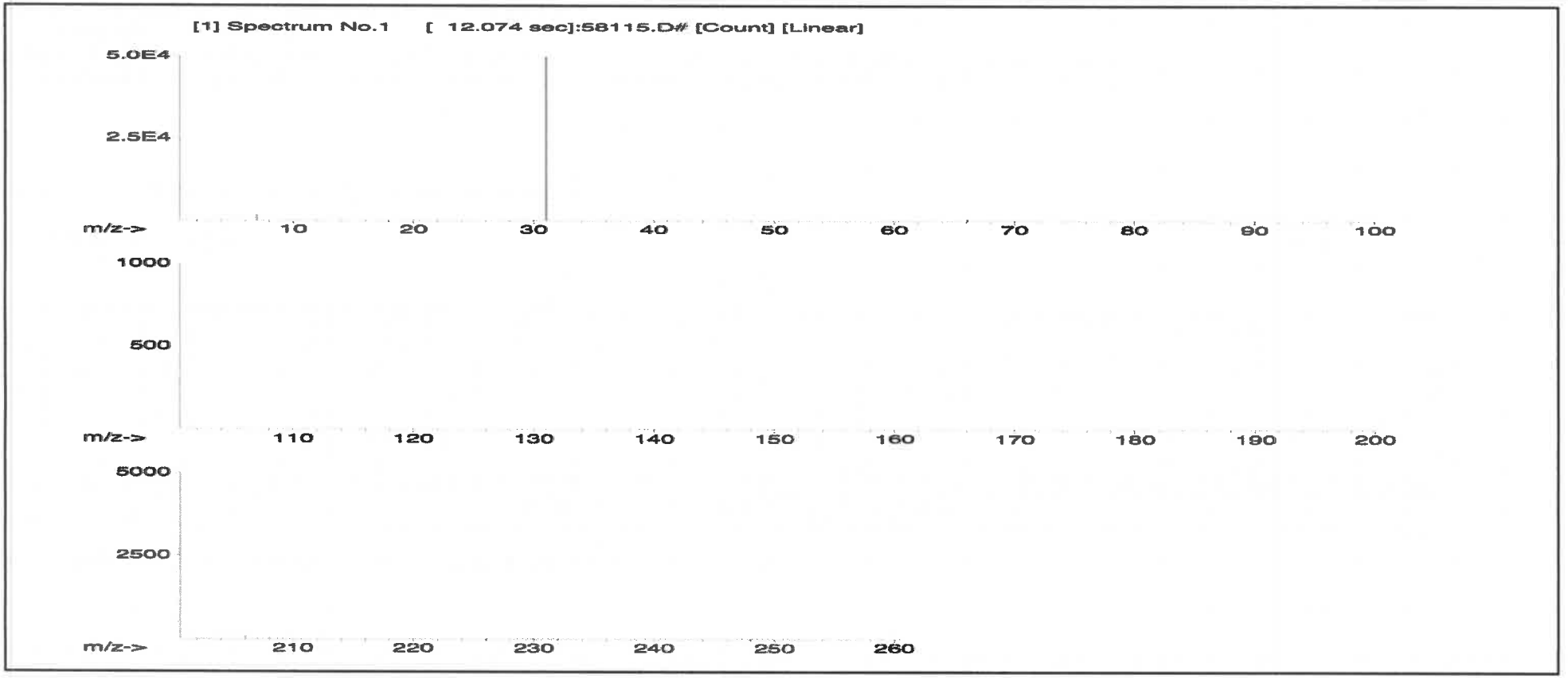
CERTIFIED WEIGHT REPORT:

Part Number:	**57115**		**Solvent:**	21110221	Nitric Acid
Lot Number:	**041723**				
Description:	**Phosphorous (P)**		2%	40.0 (mL)	Nitric Acid
Expiration Date:	041726				
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):	2000.02	0.058	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)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Ammonium dihydrogen phosphate (P)	IN008	PV082019A1	10000	99.999	0.10	27.5	72.7287	72.7289	**10000.0**	**20.0**	7722-76-1	5 mg/m3	orl-rat >2000mg/kg	3186



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

Trace Metals Verification by ICP-MS (µg/mL)																	
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	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:

Certified by:

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

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* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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R: 02/09/24 M5816

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CERTIFIED WEIGHT REPORT:

Part Number: 57016
Lot Number: 122923
Description: Sulfur (S)

Expiration Date: 122926
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

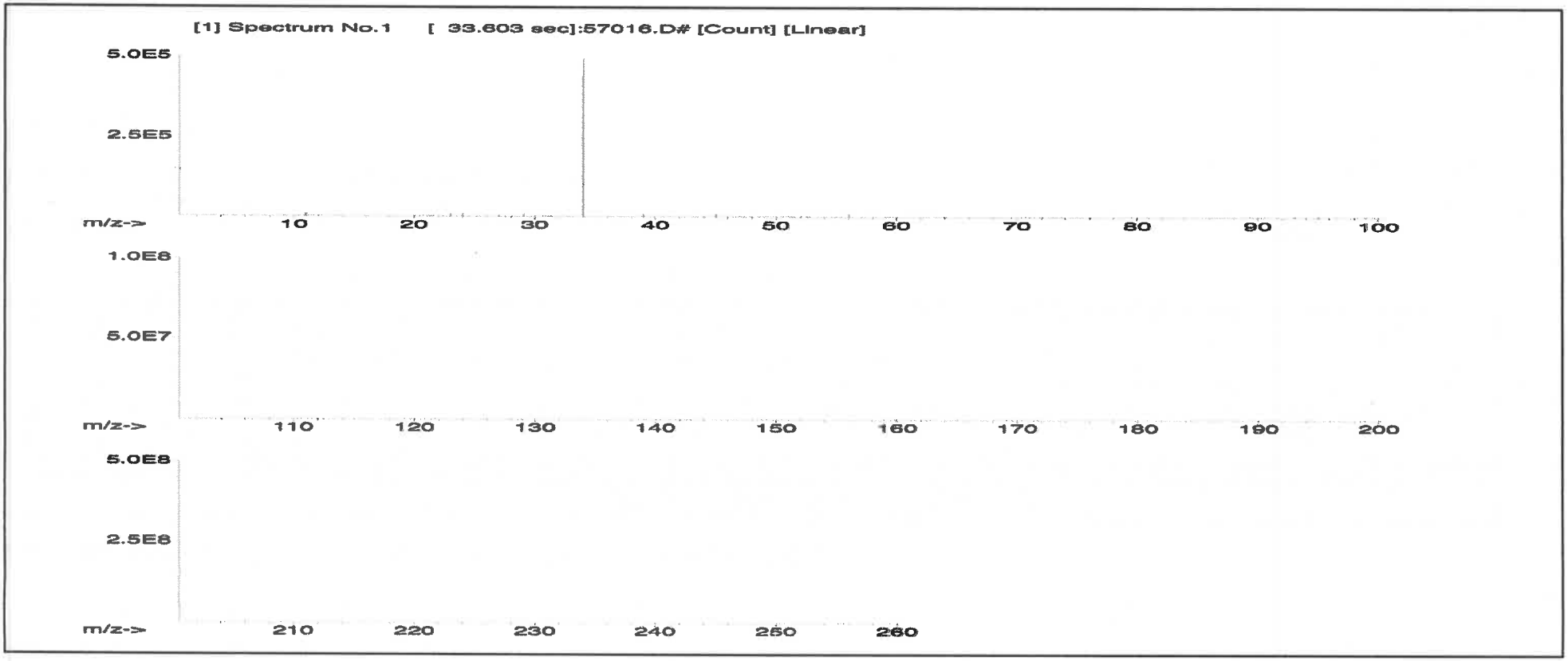
Weight shown below was diluted to (mL): 4000.0 0.06 Flask Uncertainty

	Lot #	
Solvent:	122923	ASTM Type 1 Water

5E-05 Balance Uncertainty

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

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Ammonium sulfate (S)	IN117	SLBR7225V	1000	99.9	0.10	24.3	16.4979	16.4980	**1000.0**	**2.0**	7783-20-2	NA	orl-rat 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	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	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

(T) = Target analyte

Physical Characterization:

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

Certified by:

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R: 02/09/24 M5817

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CERTIFIED WEIGHT REPORT:

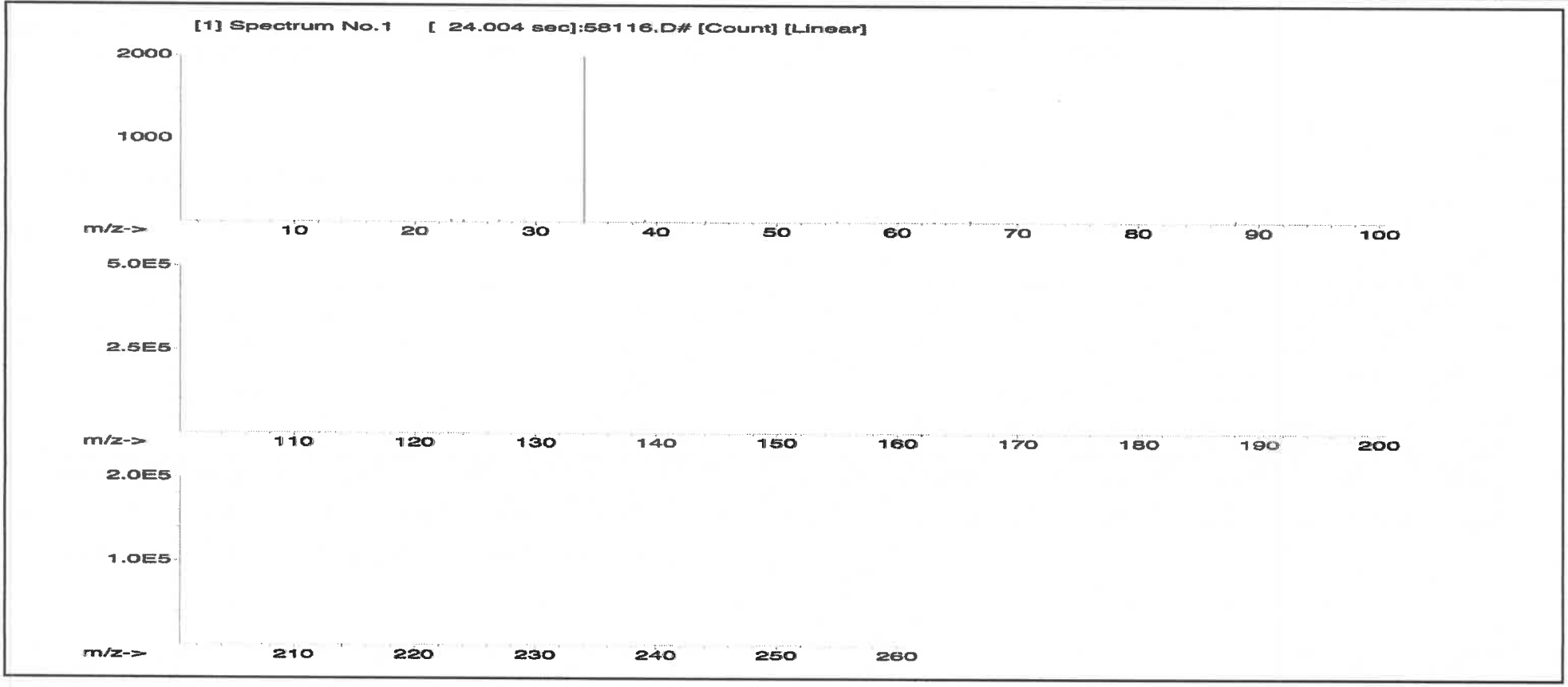
Part Number: 57116
Lot Number: 071123
Description: Sulfur (S)

Lot #
Solvent: 071123 ASTM Type 1 Water

Expiration Date: 071126
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): 1999.48 0.058 Flask Uncertainty

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

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Ammonium sulfate (S)	IN117	SLBR7225V	10000	99.9	0.10	24.3	82.4675	82.4682	**10000.1**	**20.0**	7783-20-2	NA	ori-rat 4250mg/kg	3181



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AR-1539 Certificate Number
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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	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	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

(T)= Target analyte

Physical Characterization:

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

Certified by:

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R: 02/09/24 M5819

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CERTIFIED WEIGHT REPORT:

Part Number: 58030
Lot Number: 111623
Description: Zinc (Zn)

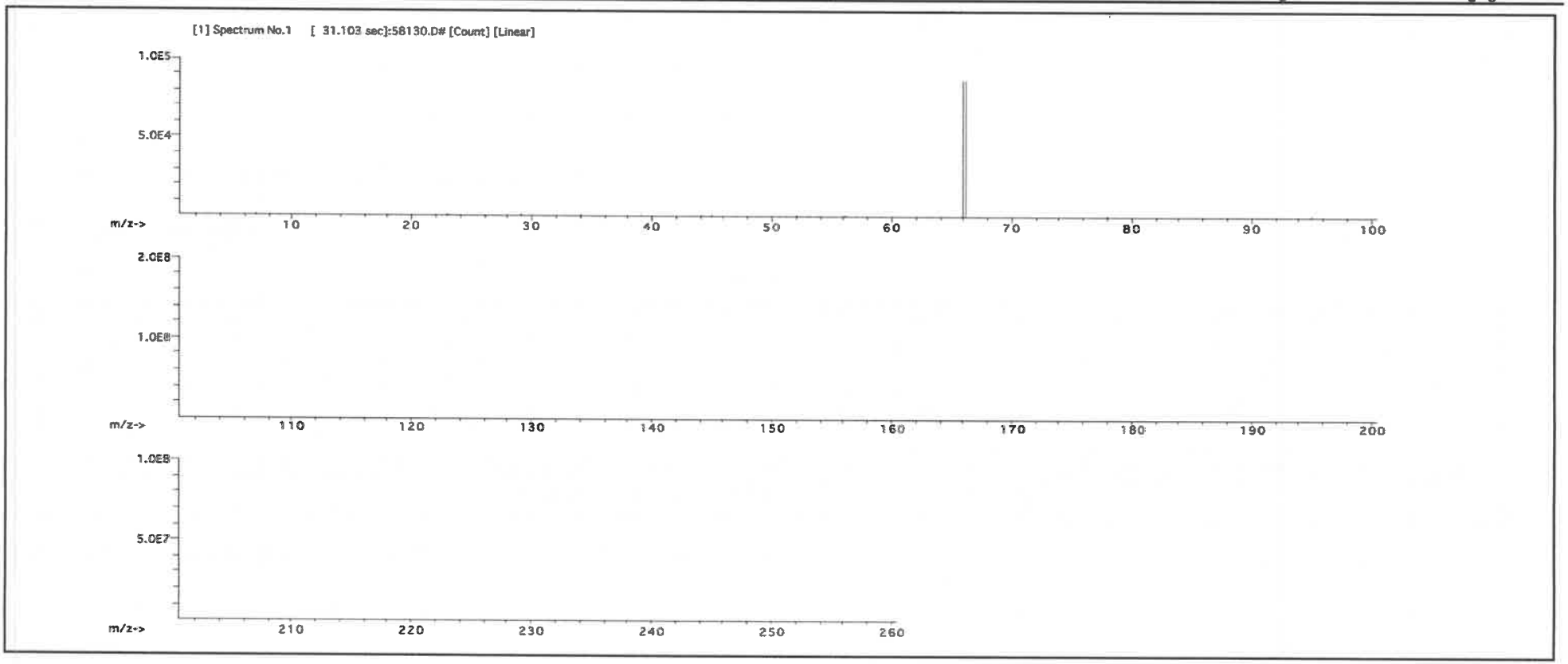
Expiration Date: 111626
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

Weight shown below was diluted to (mL): 3000.4 ± 0.06 Flask Uncertainty

	Lot #		
Solvent:	24002546	Nitric Acid	
2%	60.0 (mL)	Nitric Acid	
	5E-05	Balance Uncertainty	

Formulated By:	Benson Chan	111623
Reviewed By:	Pedro L. Rentas	111623

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Zinc nitrate hexahydrate (Zn)	IN016	ZNE032021A1	1000	99.999	0.10	24.3	12.3475	12.3502	**1000.2**	**2.0**	10196-18-6	1 mg/m3	orl-rat 1190mg/kg	3168



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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	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	T
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

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R: 02/09/24 M5820

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CERTIFIED WEIGHT REPORT:

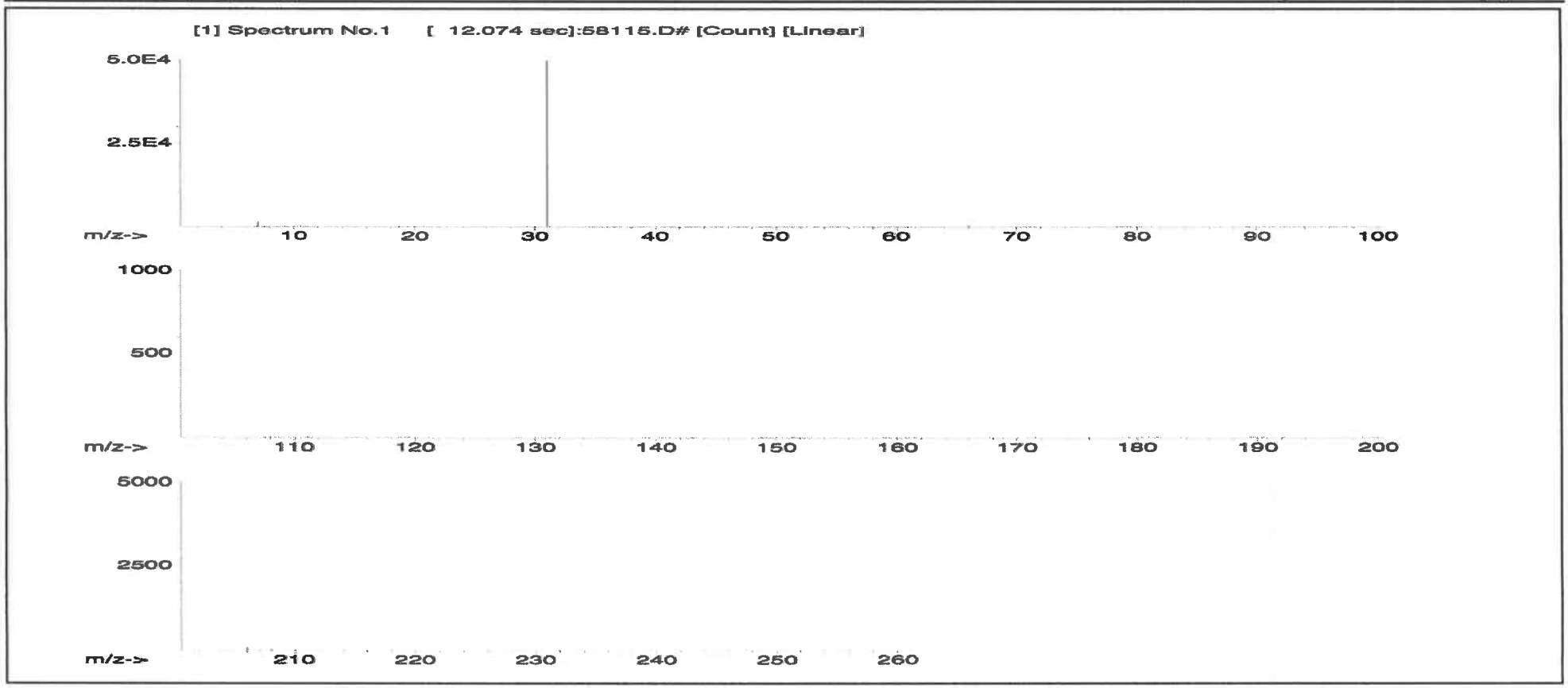
Part Number: 57015
Lot Number: 091123
Description: Phosphorous (P)

Expiration Date: 091126
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 2000.02

	Lot #		
Solvent:	24002546	Nitric Acid	
2%	40.0 (mL)	Nitric Acid	
	5E-05	Balance Uncertainty	
	0.058	Flask Uncertainty	

Formulated By:	Lawrence Barry	091123
Reviewed By:	Pedro L. Rentas	091123

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Ammonium dihydrogen phosphate (P)	IN008	PV082019A1	1000	99.999	0.10	27.5	7.2729	7.2730	**1000.0**	**2.0**	7722-76-1	5 mg/m3	orl-rat >2000mg/k	3186



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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	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	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:

Certified by:

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

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

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Certificate of Analysis

M5959 R: 6/14/24.

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

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F: 540-585-3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

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

ACCREDITED Testing Laboratory Certificate 863.01
ACCREDITED Reference Material Producer Certificate 863.02

2.0 PRODUCT DESCRIPTION

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

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10000 ± 30 µg/mL

Density: 1.032 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1	**10011 ± 25 µg/mL** EDTA NIST SRM 928 Lot Number: 928
Assay Method #2	**9997 ± 50 µg/mL** ICP Assay NIST SRM 3167a Lot Number: 190730
Assay Method #3	**9984 ± 31 µg/mL** Calculated NIST SRM Lot Number: See Sec. 4.2

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

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

Characterization of CRM/RM by Two or More Methods

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

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

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:

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ 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 Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

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

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

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

6.0 INTENDED USE

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

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

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

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

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 88.91 +3 6 Y(OH)(H2O)x+2

Chemical Compatibility -Soluble in HCl, H2SO4 and HNO3. Avoid HF, H3PO4 and neutral to basic media. Stable with most metals and inorganic anions forming an insoluble carbonate, oxide, oxalate, and fluoride. Avoid mixing with elements / solutions containing moderate amounts of fluoride.

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

Y Containing Samples (Preparation and Solution) - Metal (Soluble in acids); Oxide (Dissolve by heating in H2O/ HNO3); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Dry ash and dissolve in 1:1 H2O / HCl or HNO3).

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

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 89 amu	0.8 ppt	N/A	73Ge16O, 178Hf+2
ICP-OES 360.073 nm	0.005 / 0.000036 µg/mL	1	Ce, Th
ICP-OES 371.030 nm	0.004 / 0.00007 µg/mL	1	Ce
ICP-OES 377.433 nm	0.005 / 0.0009 µg/mL	1	Ta, Th

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

February 20, 2024

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

11.2 Lot Expiration Date

- February 20, 2029

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Uyen Truong
Custom Processing Supervisor

Certificate Approved By:

Muzzammil Khan
Stock Laboratory Supervisor

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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

Certified Reference Material CRM

M5962 R! 06/14/24.

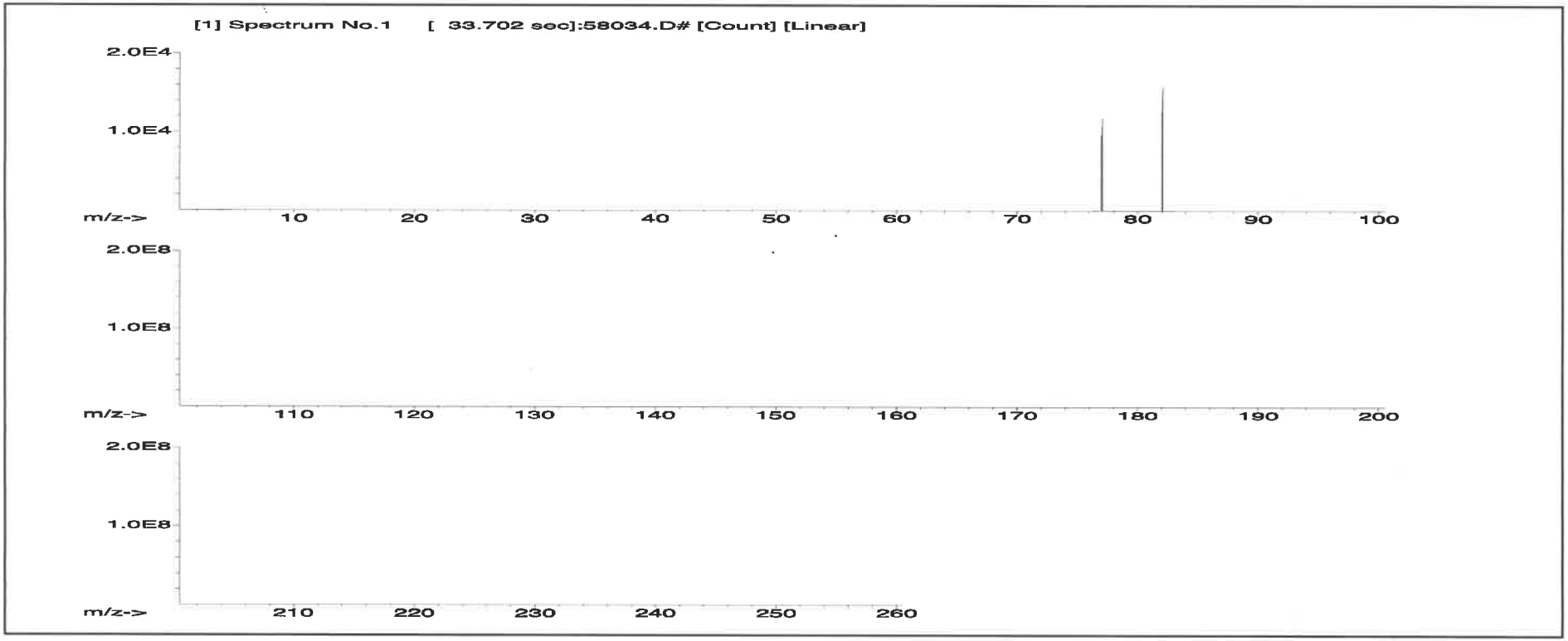
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:	
Part Number:	**57034**	24002546	Nitric Acid	
Lot Number:	**060624**			
Description:	**Selenium (Se)**			
		2.0%	40.0 (mL)	Nitric Acid
Expiration Date:	060627			
Recommended Storage:	Ambient (20 °C)			
Nominal Concentration (µg/mL):	**1000**			
NIST Test Number:	6UTB	5E-05	Balance Uncertainty	
Volume shown below was diluted to (mL):	2000.07	0.100	Flask Uncertainty	

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

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	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	orl-rat 6700 mg/kg	3149



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

(T) = Target analyte

Physical Characterization:

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

Certified by:

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

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Certified Reference Material CRM

M5970, M5971 R: 7/01/24

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

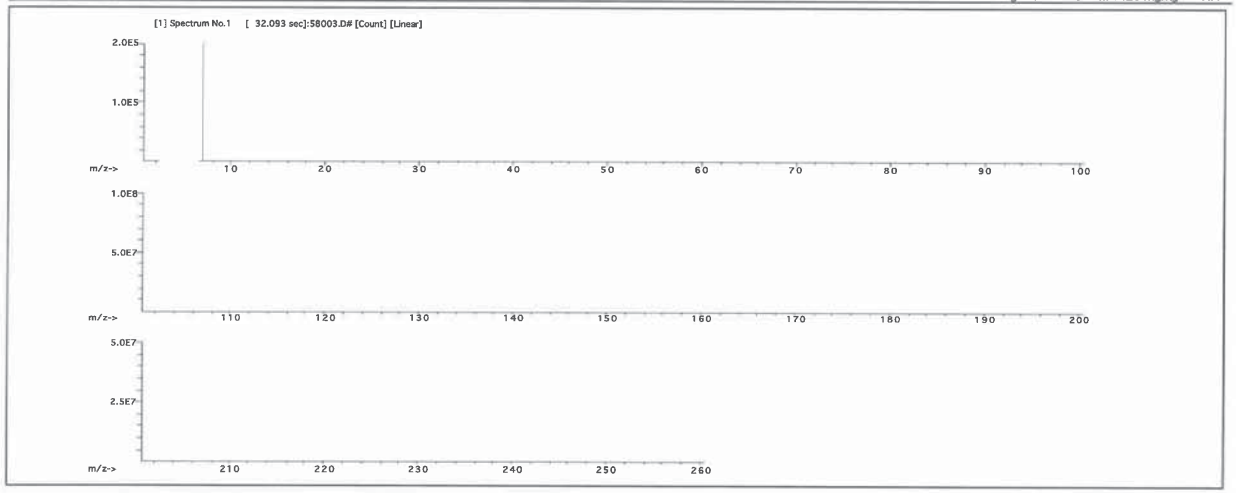
CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:		
Part Number:	**57003**	24002546	Nitric Acid		
Lot Number:	**062124**				
Description:	**Lithium (Li)**	2.0%	5.0 (mL)	Nitric Acid	
Expiration Date:	062127				
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):	250.11	0.016	Flask Uncertainty		

Giovanni Esposito
Formulated By: Giovanni Esposito 062124

Pedro Rentas
Reviewed By: Pedro L. Rentas 062124

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Lithium nitrate (Li)	58103	070622	0.1000	25.0	0.004	1000	10000.4	**1000.0**	**2.0**	7790-69-4	5 mg/m3	orl-rat 1426 mg/kg	NA



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Certified Reference Material CRM

ANAB ISO 17034 Accredited
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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	T	Ni	<0.02	Pr	<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	<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 certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All Standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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Certificate of Analysis

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inorganicventures.com

P: 800-669-6799/540-585-3030
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R: 2/22/24

1.0 ACCREDITATION / REGISTRATION

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ACCREDITED Testing Laboratory Certificate 865.01

ACCREDITED Reference Material Producer Certificate 865.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGTI1
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:

$$X_{CRM/RM} = \Sigma(w_i)\,(x_i)$$

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

$$w_i = (1/u_{Char\ i})^2 \,/\, (\Sigma(1/u_{Char\ i})^2)$$

CRM/RM Expanded Uncertainty ($\pm$) = $U_{CRM/RM} = k\,(u^2_{Char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{Char} = [\Sigma((w_i)^2\,(u_{Char\ i})^2)]^{½}$ 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:

$$X_{CRM/RM} = (\Sigma x_a)\,(v_{Char\ a})$$

X_a = mean of Assay Method A with

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

CRM/RM Expanded Uncertainty ($\pm$) = $U_{CRM/RM} = k\,(u^2_{Char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

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 for months in 1% 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

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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 property 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 Kozlkowski
Manager, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

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

MS985
R: 6/14/24

1.0 ACCREDITATION / REGISTRATION

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

ACCREDITED Testing Laboratory Certificate 863.01
ACCREDITED Reference Material Producer Certificate 863.02

2.0 PRODUCT DESCRIPTION

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

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10022 ± 30 µg/mL

Density: 1.044 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1	**10021 ± 56 µg/mL** ICP Assay NIST SRM 3124a Lot Number: 110516
Assay Method #2	**10035 ± 25 µg/mL** EDTA NIST SRM 928 Lot Number: 928
Assay Method #3	**10001 ± 33 µg/mL** Calculated NIST SRM Lot Number: See Sec. 4.2

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

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

Characterization of CRM/RM by Two or More Methods

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

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

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:

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\ (u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ 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 Expanded Uncertainty (±) = $U_{CRM/RM} = k\ (u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

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

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

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

6.0 INTENDED USE

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

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

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

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

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 114.82 +3 6 In(H2O)6+3

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

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

In Containing Samples (Preparation and Solution) -Metal (Best dissolved in HCl / HNO3); Oxide (Soluble in mineral acids); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Sulfuric/peroxide digestion or dry ash and dissolution in dilute HCl).

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

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 115 amu	1 ppt	n/a	115Sn, 99Ru16O
ICP-OES 158.583 nm	0.05 / 0.002 µg/mL	1	
ICP-OES 230.606 nm	0.1 / 0.03 µg/mL	1	Ni, Os
ICP-OES 325.609 nm	0.2 / 0.05 µg/mL	1	Mn, Mo, Th

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

February 21, 2023

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

11.2 Lot Expiration Date

- February 21, 2028

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

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

EXP.: 9/6/2029

1.0 ACCREDITATION / REGISTRATION

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

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	CHEM-CLP-4
Lot Number:	V2-MEB746762
Matrix:	3% (v/v) HNO3 3% (v/v) HF
Value / Analyte(s):	1 000 µg/mL ea: Boron, Molybdenum, Silicon, Tin, Titanium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Boron, B	1 000 ± 5 µg/mL	Molybdenum, Mo	1 000 ± 5 µg/mL
Silicon, Si	1 000 ± 7 µg/mL	Tin, Sn	1 000 ± 5 µg/mL
Titanium, Ti	1 000 ± 6 µg/mL		

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

Assay Information:

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

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

Characterization of CRM/RM by Two or More Methods

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

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

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:

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ 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 Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

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

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

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

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

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

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 06, 2024

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

11.2 Lot Expiration Date

- September 06, 2029

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Joseph Burns
Custom VS Manager

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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

avantor™ | J.T.Baker®

R → 16|13|24
Met dig

M 6121

Material No.: 9530-33
Batch No.: 0000275677
Manufactured Date: 2020/12/16
Retest Date: 2025/12/15
Revision No: 1

Certificate of Analysis

Test	Specification	Result
ACS – Assay (as HCl) (by acid-base titrn)	36.5 – 38.0 %	37.6
ACS – Color (APHA)	<= 10	5
ACS – Residue after Ignition	<= 3 ppm	1
ACS – Specific Gravity at 60°/60°F	1.185 – 1.192	1.190
ACS – Bromide (Br)	<= 0.005 %	< 0.005
ACS – Extractable Organic Substances	<= 5 ppm	1
ACS – Free Chlorine (as Cl_2)	<= 0.5 ppm	< 0.5
Phosphate (PO_4)	<= 0.05 ppm	< 0.03
Sulfate (SO_4)	<= 0.5 ppm	< 0.3
Sulfite (SO_3)	<= 0.8 ppm	0.3
Ammonium (NH_4)	<= 3 ppm	< 1
Trace Impurities – Arsenic (As)	<= 0.010 ppm	< 0.003
Trace Impurities – Aluminum (Al)	<= 10.0 ppb	< 0.2
Arsenic and Antimony (as As)	<= 5 ppb	< 3
Trace Impurities – Barium (Ba)	<= 1.0 ppb	< 0.2
Trace Impurities – Beryllium (Be)	<= 1.0 ppb	< 0.2
Trace Impurities – Bismuth (Bi)	<= 10.0 ppb	< 1.0
Trace Impurities – Boron (B)	<= 20.0 ppb	< 5.0
Trace Impurities – Cadmium (Cd)	<= 1.0 ppb	< 0.3
Trace Impurities – Calcium (Ca)	<= 50.0 ppb	29.7
Trace Impurities – Chromium (Cr)	<= 1.0 ppb	< 0.4
Trace Impurities – Cobalt (Co)	<= 1.0 ppb	< 0.3
Trace Impurities – Copper (Cu)	<= 1.0 ppb	< 0.1
Trace Impurities – Gallium (Ga)	<= 1.0 ppb	< 0.2

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700
Avantor Performance Materials, LLC
100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone: 610.386.1700

Test	Specification	Result
Trace Impurities - Germanium (Ge)	<= 3.0 ppb	< 2.0
Trace Impurities - Gold (Au)	<= 4.0 ppb	< 0.2
Heavy Metals (as Pb)	<= 100 ppb	< 50
Trace Impurities - Iron (Fe)	<= 15.0 ppb	<1
Trace Impurities - Lead (Pb)	<= 1.0 ppb	< 0.5
Trace Impurities - Lithium (Li)	<= 1.0 ppb	0.2
Trace Impurities - Magnesium (Mg)	<= 10.0 ppb	0.4
Trace Impurities - Manganese (Mn)	<= 1.0 ppb	< 0.4
Trace Impurities - Mercury (Hg)	<= 0.5 ppb	0.1
Trace Impurities - Molybdenum (Mo)	<= 10.0 ppb	< 5.0
Trace Impurities - Nickel (Ni)	<= 4.0 ppb	< 0.3
Trace Impurities - Niobium (Nb)	<= 1.0 ppb	< 0.2
Trace Impurities - Potassium (K)	<= 9.0 ppb	< 2.0
Trace Impurities - Selenium (Se), For Information Only	ppb	1.0
Trace Impurities - Silicon (Si)	<= 100.0 ppb	< 10.0
Trace Impurities - Silver (Ag)	<= 1.0 ppb	< 0.3
Trace Impurities - Sodium (Na)	<= 100.0 ppb	< 5.0
Trace Impurities - Strontium (Sr)	<= 1.0 ppb	< 0.2
Trace Impurities - Tantalum (Ta)	<= 1.0 ppb	< 0.9
Trace Impurities - Thallium (Tl)	<= 5.0 ppb	< 2.0
Trace Impurities - Tin (Sn)	<= 5.0 ppb	< 0.8
Trace Impurities - Titanium (Ti)	<= 1.0 ppb	0.2
Trace Impurities - Vanadium (V)	<= 1.0 ppb	< 0.2
Trace Impurities - Zinc (Zn)	<= 5.0 ppb	0.3
Trace Impurities - Zirconium (Zr)	<= 1.0 ppb	< 0.1

For Laboratory, Research or Manufacturing Use
Product Information (not specifications):
Appearance (clear, fuming liquid)
Meets ACS Specifications

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

James Ethier
Jamie Ethier
Vice President Global Quality

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700
Avantor Performance Materials, LLC
100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone: 610.386.1700

M6125 Receive -> 11/22/24

CORCO CHEMICAL CORPORATION

Manufacturers of ACS Reagents and Semiconductor Grade Chemicals

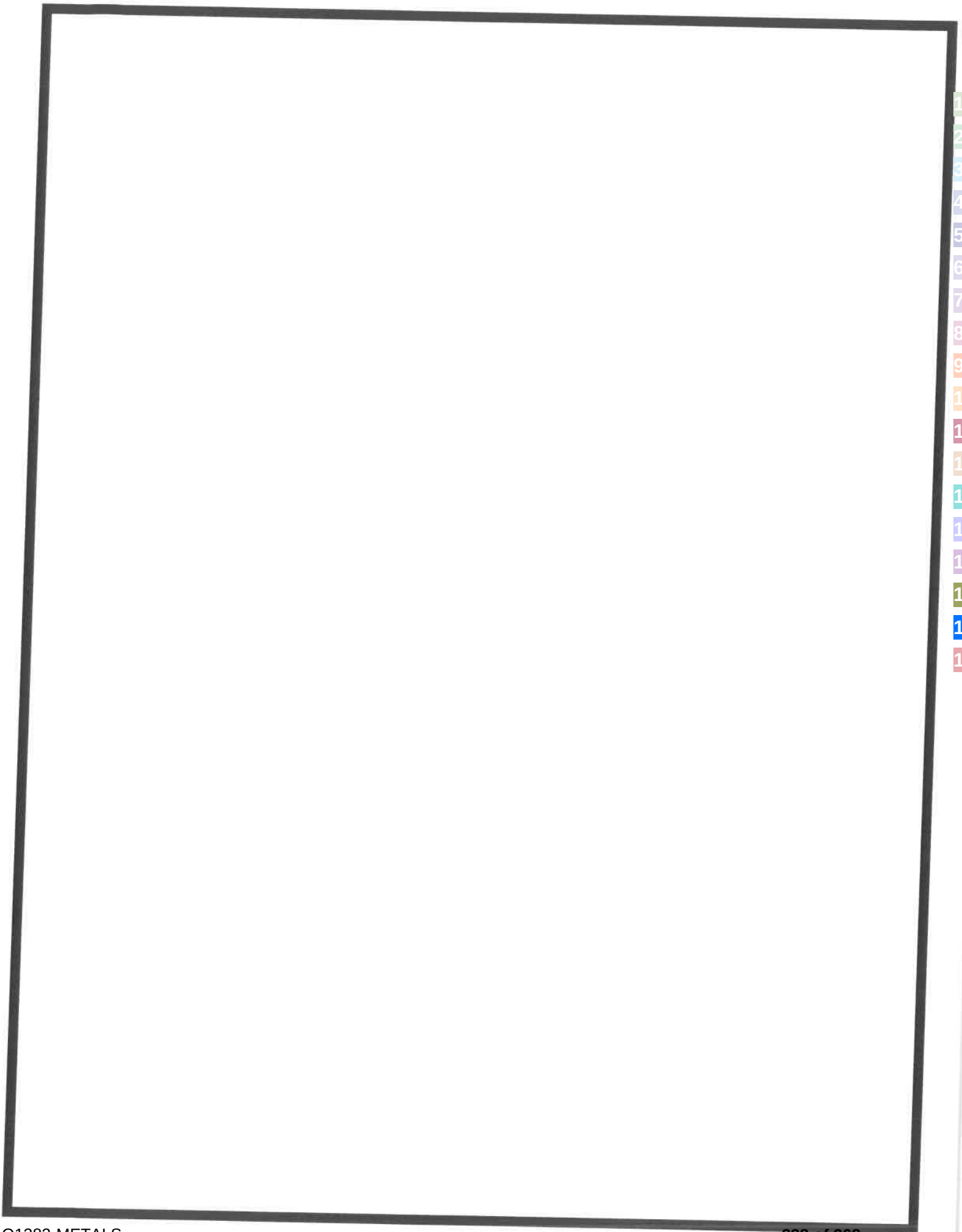
Office and Plant
299 Cedar Lane
Fairless Hills, PA 19030

Phone: 215-295-5006
Fax: 215-295-0781

Hydrogen Peroxide 30%, ACS

Reagent Grade

SPECIFICATION	MAXIMUM LIMITS
Appearance	Colorless and free from suspended matter or sediment
Assay	29-32%
Color (APHA)	10
Residue after Evaporation	0.002%
Titratable Acid	0.0006 meq/g
Chloride (Cl)	3 ppm
Nitrate (NO_3)	2 ppm
Phosphate	2 ppm
Sulfate (SO_4)	5 ppm
Ammonium (NH_4)	5 ppm
Heavy Metals (as Pb)	1 ppm
Iron (Fe)	0.5 ppm



Nitric Acid 69%
CMOS

avantor™ | J.T.Baker®

R -> 11/12/24

M6126

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

Certificate of Analysis

Test	Specification	Result
Assay (HNO_3)	69.0 - 70.0 %	69.7 %
Appearance	Passes Test	Passes Test
Color (APHA)	≤ 10	5
Residue after Ignition	≤ 2 ppm	1 ppm
Chloride (Cl)	≤ 0.08 ppm	< 0.03 ppm
Phosphate (PO_4)	≤ 0.10 ppm	< 0.03 ppm
Sulfate (SO_4)	≤ 0.2 ppm	< 0.2 ppm
Trace Impurities - Aluminum (Al)	≤ 40.0 ppb	< 1.0 ppb
Arsenic and Antimony (as As)	≤ 5.0 ppb	< 2.0 ppb
Trace Impurities - Barium (Ba)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Beryllium (Be)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Bismuth (Bi)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities - Boron (B)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities - Cadmium (Cd)	≤ 50 ppb	< 1 ppb
Trace Impurities - Calcium (Ca)	≤ 50.0 ppb	2.3 ppb
Trace Impurities - Chromium (Cr)	≤ 30.0 ppb	< 1.0 ppb
Trace Impurities - Cobalt (Co)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Copper (Cu)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Gallium (Ga)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Germanium (Ge)	≤ 20 ppb	< 10 ppb
Trace Impurities - Gold (Au)	≤ 20 ppb	< 5 ppb
Heavy Metals (as Pb)	≤ 100 ppb	100 ppb
Trace Impurities - Iron (Fe)	≤ 40.0 ppb	< 1.0 ppb
Trace Impurities - Lead (Pb)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities - Lithium (Li)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Magnesium (Mg)	≤ 20 ppb	< 1 ppb
Trace Impurities - Manganese (Mn)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Nickel (Ni)	≤ 20.0 ppb	< 5.0 ppb

>>> Continued on page 2 >>>

Nitric Acid 69%
CMOS

avantor™ | J.T.Baker®

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

Test	Specification	Result

For Microelectronic Use

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

Jamie Croak
Director Quality Operations, Bioscience Production

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:

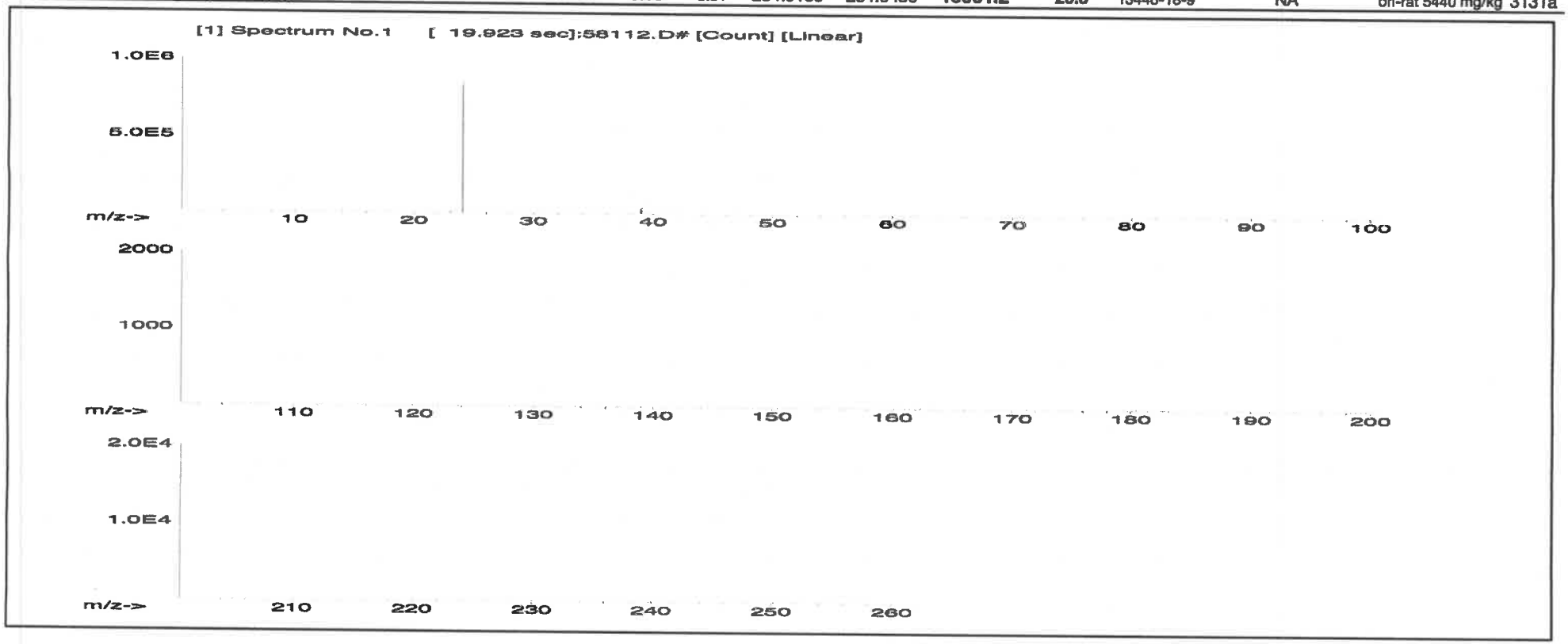
R -> 1/13/25
M 6127

Part Number:	**58112**		**Solvent:**	**Lot #** 24012496	Nitric Acid
Lot Number:	**112124**				
Description:	**Magnesium (Mg)**		2%	40.0 (mL)	Nitric Acid
Expiration Date:	112127				
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):	2000.07	0.100	Flask Uncertainty		

Giovanni Esposito

Formulated By:	Giovanni Esposito	112124
Reviewed By:	Pedro L. Rentas	112124

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Magnesium nitrate hexahydrate (Mg)	IN030	MGD052023A1	10000	99.999	0.10	8.51	234.9183	234.9459	**10001.2**	**20.0**	13446-18-9	NA	orl-rat 5440 mg/kg	3131a



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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	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	T	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	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 certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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CERTIFIED WEIGHT REPORT:

R->1/13/25
M6128

Part Number: 58025
Lot Number: 101124
Description: Manganese (Mn)
Expiration Date: 101127
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 4000.2 0.10 Flask Uncertainty

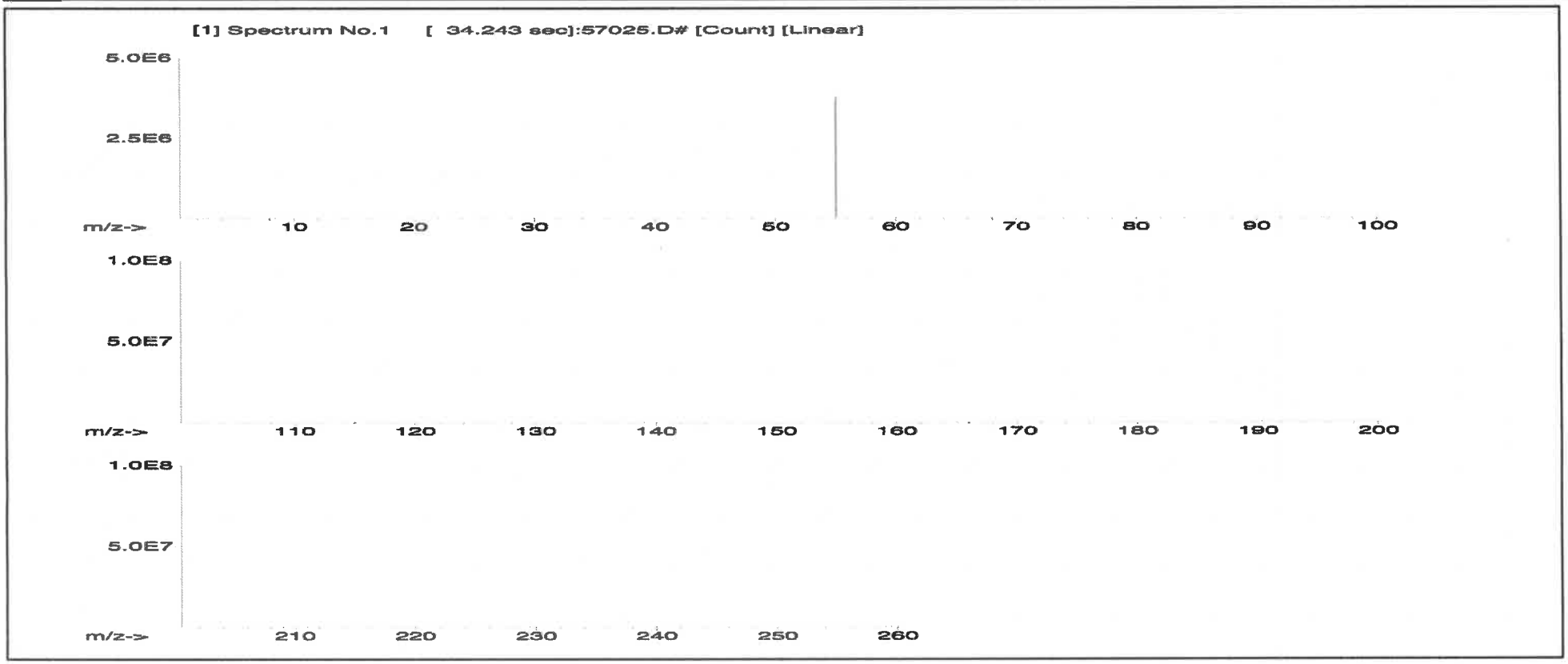
		Lot #	
Solvent:	24002546	Nitric Acid	
	2%	80.0 (mL)	Nitric Acid

5E-05 Balance Uncertainty

Giovanni Esposito
Formulated By: Giovanni Esposito 101124

Pedro Rentas
Reviewed By: Pedro L. Rentas 101124

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Manganese(II) nitrate hydrate (Mn)	IN031	MNM092020A1	1000	99.999	0.10	20.8	19.2322	19.2344	**1000.1**	**2.0**	15710-66-4	5 mg/m3	orl-rat >300mg/kg	3132



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Certified Reference Material CRM

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

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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	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 certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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Certified Reference Material CRM

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AR-1539 Certificate Number
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CERTIFIED WEIGHT REPORT:

R->1/13/25

Part Number: 58111
Lot Number: 072424
Description: Sodium (Na)

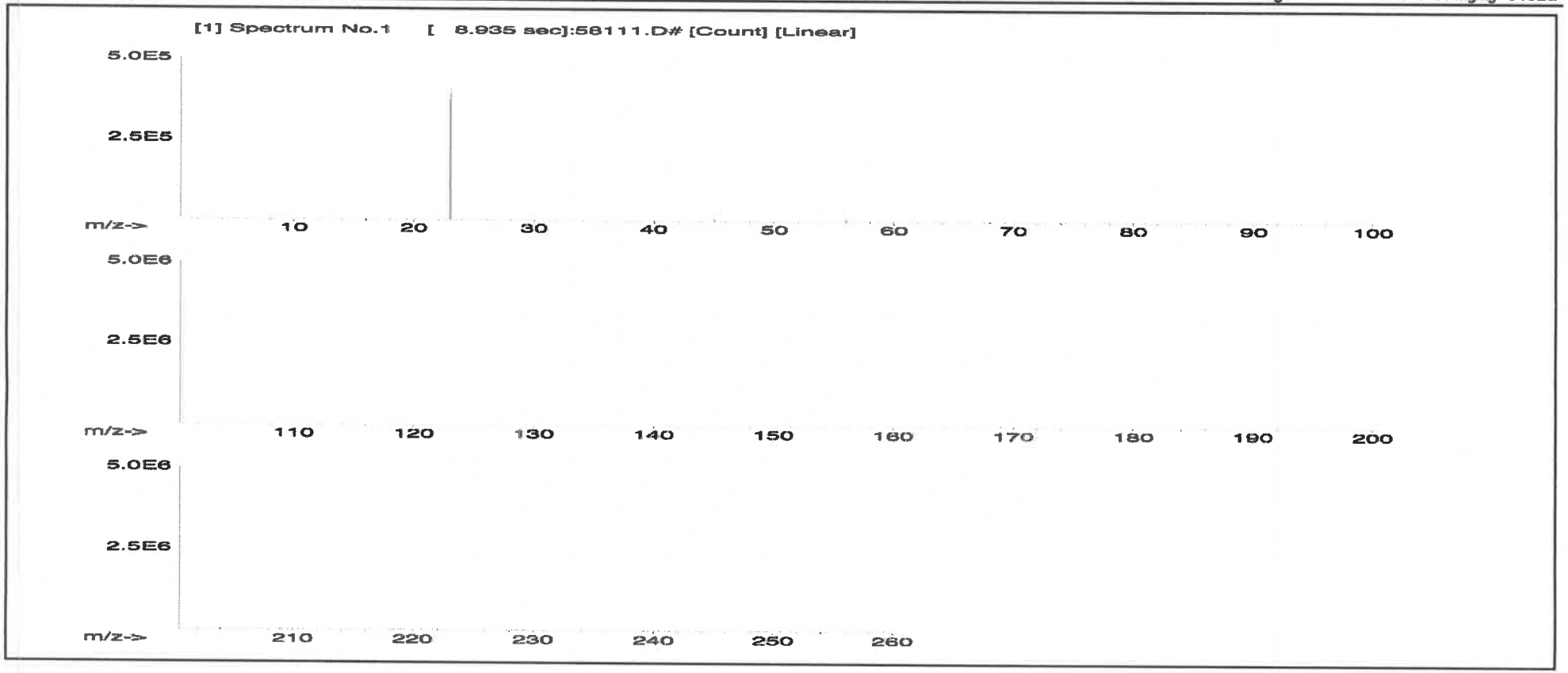
MG144

Expiration Date: 072427
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 4000.2

	Lot #		
Solvent:	24002546	Nitric Acid	
	2%	80.0 (mL)	Nitric Acid
5E-05	Balance Uncertainty		
0.10	Flask Uncertainty		

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

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Sodium nitrate (Na)	IN036	NAV012015I1	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



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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	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	<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:

Certified by:

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

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* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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* Standards are certifed (+/-) 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 : 4/20/21

QATS LABORATORY INORGANIC REFERENCE MATERIAL INITIAL CALIBRATION VERIFICATION SOLUTIONS (ICV1, ICV5, AND ICV6)

M6150

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.

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) $K_2Cr_2O_7$ 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 $K_3Fe(CN)_6$, 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™ | J.T.Baker®

M6151

R→ 1/15/25

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

avantor™ | J.T.Baker®

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™ | J.T.Baker®

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

Test	Specification	Result

For Laboratory,Research,or Manufacturing Use
Product Information (not specifications):
Appearance (clear, fuming liquid)
Meets ACS Specifications
Storage Condition: Store below 25 °C.

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

James T Ethier

Jamie Ethier
Vice President Global Quality

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

Certified Reference Material CRM

R: 01/03/24 M5802, M5803

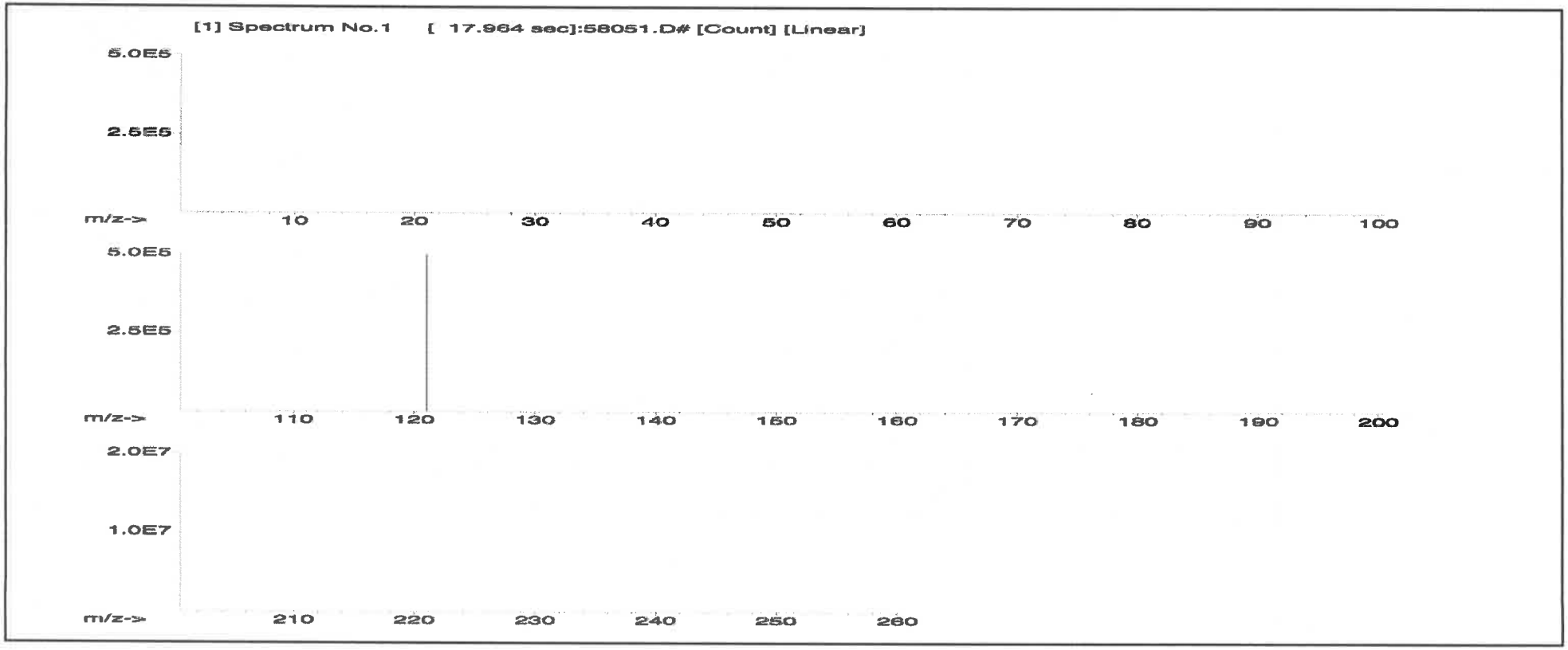
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:		
Part Number:	**57051**	24002546	Nitric Acid		
Lot Number:	**120523**				
Description:	**Antimony (Sb)**	2.0%	60.0 (mL)	Nitric Acid	
Expiration Date:	120526				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**1000**				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Volume shown below was diluted to (mL):	3000.41	0.058	Flask Uncertainty		

Formulated By:	Lawrence Barry	120523
Reviewed By:	Pedro L. Rentas	120523

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Antimony (Sb)	58151	100923	0.1000	300.0	0.084	1000	10001.4	**1000.0**	2.1	7440-36-0	0.5 mg/m3	orl-rat 7000 mg/kg	3102a



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

(T) = Target analyte

Physical Characterization:

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

Certified by:

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

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Certified Reference Material CRM

M6030

R: 8/5/24

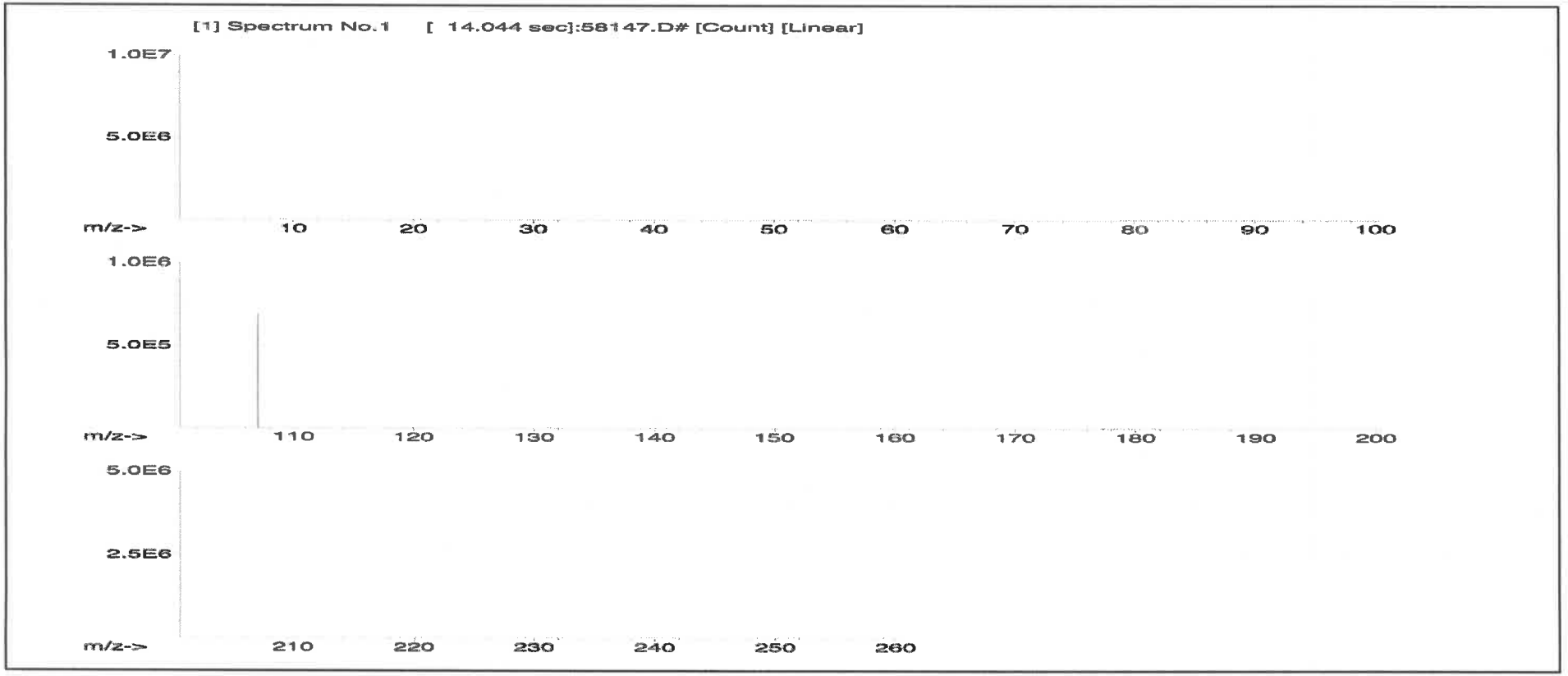
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

Part Number:	**57047**			**Lot #**	
Lot Number:	**122823**		**Solvent:**	24002546	Nitric Acid
Description:	**Silver (Ag)**		2%	80.0 (mL)	Nitric Acid
Expiration Date:	122826				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**1000**				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Weight shown below was diluted to (mL):	4000.30	0.058	Flask Uncertainty		

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

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Silver nitrate (Ag)	IN035	J0612AGA1	1000.0	99.9999	0.10	63.7	6.27992	6.27998	**1000.0**	**2.0**	7761-88-8	10 ug/m3	NA	3151



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ANAB ISO 17034 Accredited
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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	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	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:

Certified by:

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

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are certifed (+/-) 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).

INORGANIC VENTURES™
Refine your results. Redefine your industry.

Certificate of Analysis

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).

ACCREDITED Testing Laboratory Certificate 888.01
ACCREDITED Reference Material Producer Certificate 888.02

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:

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

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:

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ 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 Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

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 $Sr(H_2O)_{6}^{+2}$

Chemical Compatibility - Soluble in HCl, and HNO_3. Avoid H_2SO_4, 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% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1 - 3.5% HNO_3 / LDPE container.

Sr Containing Samples (Preparation and Solution) -Metal (Best dissolved in diluted HNO_3); 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

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

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

Certified Reference Material CRM

M6023

R ! 8/5/24

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

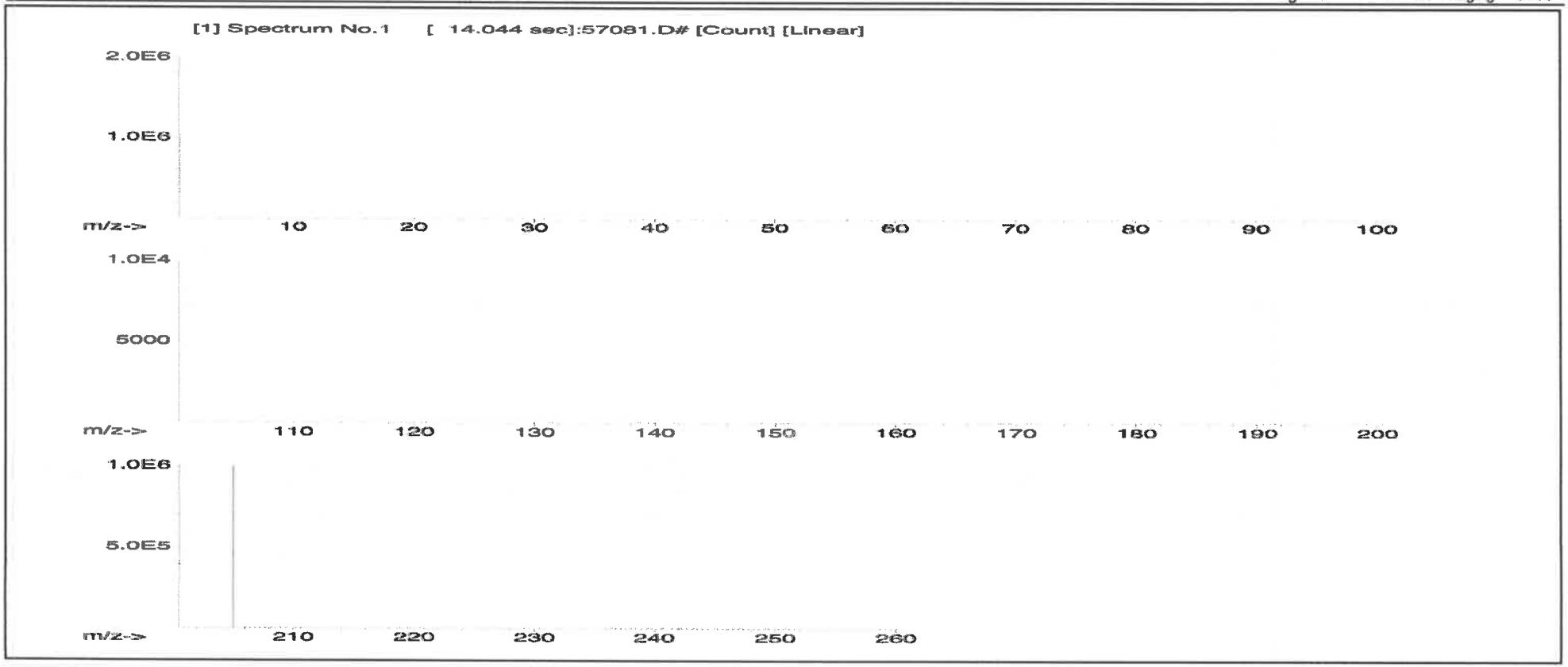
CERTIFIED WEIGHT REPORT:

Part Number:	**57081**			**Lot #**	
Lot Number:	**062724**		**Solvent:**	24002546	Nitric Acid
Description:	**Thallium (Tl)**				
			2%	40.0 (mL)	Nitric Acid
Expiration Date:	062727				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**1000**				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Weight shown below was diluted to (mL):	2000.1	0.10	Flask Uncertainty		

Aleah O'Brady

Formulated By:	Aleah O'Brady	062724
Reviewed By:	Pedro L. Rentas	062724

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Thallium nitrate (Tl)	IN037	BCCF4399	1000	99.999	0.10	77.0	2.5975	2.5977	**1000.1**	**2.0**	10102-45-1	0.1 mg/m3	orl-mus 15mg/kg	3158



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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	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	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 certifed (+/-) 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

M6021

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

Rc. 8/5/24

CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:	
Part Number:	**57023**			
Lot Number:	**062424**	24002546	Nitric Acid	
Description:	**Vanadium (V)**			
		2.0%	40.0 (mL)	Nitric Acid
Expiration Date:	062427			
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):	2000.3	0.06	Flask Uncertainty	

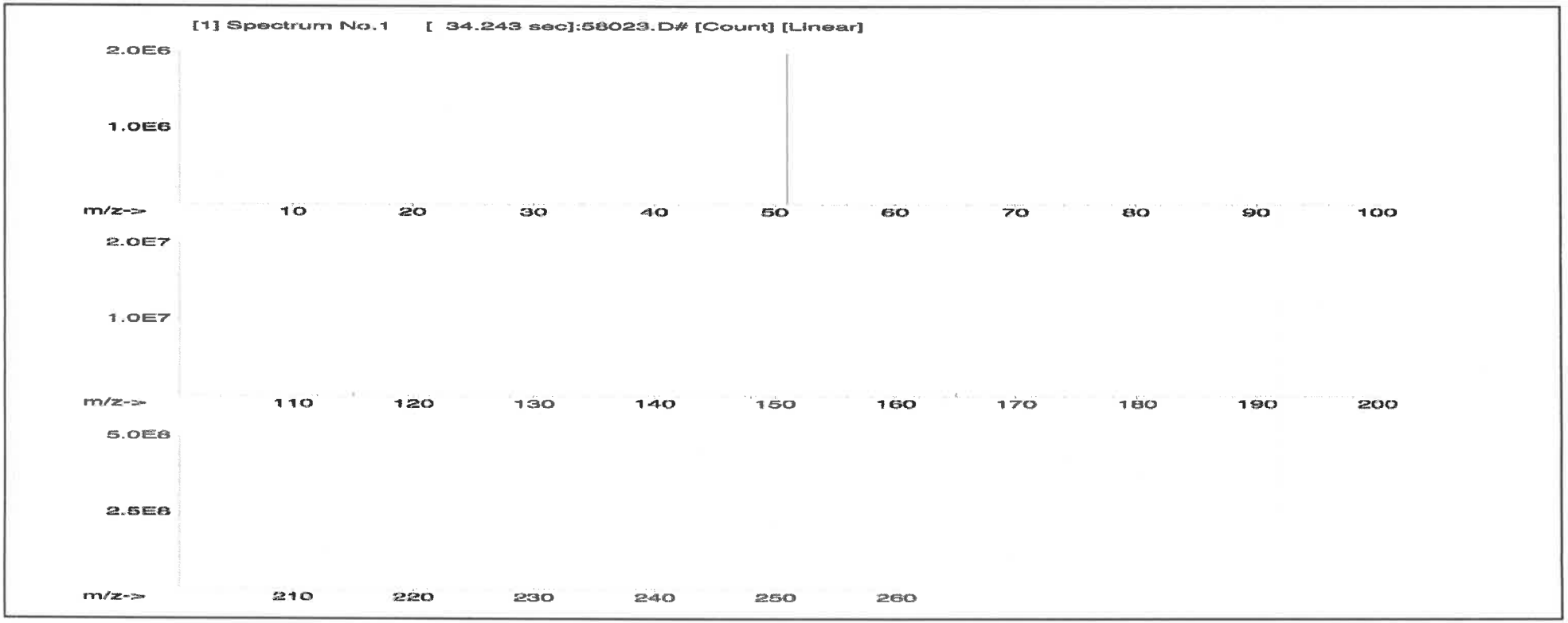
Aleah O'Brady

Formulated By:	Aleah O'Brady	062424

Pedro Rentas

Reviewed By:	Pedro L. Rentas	062424

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Ammonium metavanadate (V)	58123	021224	0.1000	200.0	0.084	1000	10000.3	**1000.0**	**2.2**	7803-55-6	0.05 mg/m3	orl-rat 58.1mg/kg	3165



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	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	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 certifed (+/-) 0.5% of the stated value, unless otherwise stated.
* All Standards should be stored with caps tight and under appropriate laboratory conditions.
* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

SHIPPING DOCUMENTS

Q1382

Chemtech

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

http://www.contestlabs.com

CHAIN OF CUSTODY RECORD

39 Spruce Street
East Longmeadow, MA 01028

Doc # 381 Rev 4_01/08/2020

Company Name:	Nobis Group
Address:	55 Technology Dr Suite 101, Lowell, MA 01851
Phone:	978-703-6014
Project Name:	Raymark
Project Location:	Stratford, CT
Project Number:	95700
Project Manager:	Adam Roy
Con-Test Quote Name/Number:	
Invoice Recipient:	
Sampled By:	A. Brittingham

Requested Turnaround Time
5-Day ☐ 10-Day ☑
PFAS 10-Day (std) ☐ Due Date:

Rush-Approval Required
1-Day ☐ 3-Day ☐
2-Day ☐ 4-Day ☐

Data Delivery
Format: PDF ☑ EXCEL ☑
Other:
CLP Like Data Pkg Required: ☐ No
Email To: aroy@nobis-group.com
Fax To #:

Dissolved Metals Samples
○ Field Filtered
○ Lab to Filter

Orthophosphate Samples
○ Field Filtered
○ Lab to Filter

PCB ONLY
SOXHLET ☑
NON SOXHLET ☐

ANALYSIS REQUESTED

Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	[1] Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE	M/O	RCP VOCs	% Solids	PAHs	Herbicides	Pesticides	PCBs	Metals ICP + Hg - 6010	Cyanide	SPLP RCP Metals - 6020	
	OU4-PCS-TC-01-021725	2/17/25	8:30	G	SO		3	2	1				I	I	I	I	I	I	I	I	I	
	OU4-PCS-TC-02-021725	2/17/25	8:35	G	SO		3	2	1				X	X	X	X	X	X	X	X	X	
	OU4-PCS-TC-03-021725	2/17/25	8:40	G	SO		3	2	1				X	X	X	X	X	X	X	X	X	
	OU4-PCS-TC-04-021725	2/17/25	8:45	G	SO		3	2	1				X	X	X	X	X	X	X	X	X	
	OU4-PCS-TC-05-021725	2/17/25	8:50	G	SO		3	2	1				X	X	X	X	X	X	X	X	X	
	OU4-PCS-TC-06-021725	2/17/25	8:55	G	SO		3	2	1				X	X	X	X	X	X	X	X	X	
	OU4-PCS-TC-07-021725	2/17/25	9:00	G	SO		3	2	1				X	X	X	X	X	X	X	X	X	
	OU4-PCS-TC-08-021725	2/17/25	9:05	G	SO		3	2	1				X	X	X	X	X	X	X	X	X	
	OU4-PCS-TC-09-021725	2/17/25	9:10	G	SO		3	2	1				X	X	X	X	X	X	X	X	X	
	OU4-PCS-TC-10-021725	2/17/25	9:15	G	SO		3	2	1				X	X	X	X	X	X	X	X	X	

[2] Preservation Code

Courier Use Only
Total Number Of:
VIALS_____
GLASS_____
PLASTIC_____
BACTERIA_____
ENCORE_____

Glassware in the fridge? Y / N
Glassware in freezer? Y / N
Prepackaged Cooler? Y / N
*Contest is not responsible for missing samples from prepacked coolers

[1] **Matrix Codes:**
GW = Ground Water
WW = Waste Water
DW = Drinking Water
A = Air
S = Soil
SL = Sludge
SOL = Solid
O = Other (please define)

[2] **Preservation Codes:**
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium Bisulfate
X = Sodium Hydroxide
T = Sodium Thiosulfate
O = Other (please define)

Relinquished by: (signature)	Date/Time: 2/17/25 1200
Received by: (signature)	Date/Time: 2-18-25 1025
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

Client Comments:

Detection Limit Requirements
MA
CT
Other:

Special Requirements
☐ MA MCP Required
MCP Certification Form Required
☑ CT RCP Required
RCP Certification Form Required
☐ MA State DW Required
PWSID #

Please use the following codes to indicate possible sample concentration within the Conc Code column above:
H - High; **M** - Medium; **L** - Low; **C** - Clean; **U** - Unknown

NELAC and AIHA-LAP, LLC Accredited

Project Entity
Government ☐ Municipality ☐ MWRA ☐ WRTA ☐
Federal ☐ 21 J ☐ School ☐
City ☐ Brownfield ☐ MBTA ☐

Other
☐ Chromatogram
☐ *AIHA-LAP,LLC*

Lab Comments:
If Cont 1
3.1°C

Disclaimer: Con-Test Labs is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Con-Test values your partnership on each project and will try to assist with missing information, but will not be held accountable.

Q1382-METALS

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

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

LOGIN REPORT/SAMPLE TRANSFER

Order ID : Q1382 NOBI03
Client Name : Nobis Group
Client Contact : Adam Roy
Invoice Name : Nobis Group
Invoice Contact : Adam Roy

Order Date : 2/18/2025 10:57:00 AM
Project Name : Raymark Superfund Site
Receive DateTime : 2/18/2025 10:25:00 AM
Purchase Order :

Project Mgr :
Report Type : Level 4
EDD Type : EQUIS
Hard Copy Date :
Date Signoff :

LAB ID	CLIENT ID	MATRIX	SAMPLE DATE	SAMPLE TIME	TEST	TEST GROUP	METHOD	FAX DATE	DUE DATES
Q1382-01	OU4-PCS-TC-01-021725	Solid	02/17/2025	08:30					
					VOCMS Group3		8260D		10 Bus. Days
Q1382-03	OU4-PCS-TC-02-021725	Solid	02/17/2025	08:35					
					VOCMS Group3		8260D		10 Bus. Days
Q1382-05	OU4-PCS-TC-03-021725	Solid	02/17/2025	08:40					
					VOCMS Group3		8260D		10 Bus. Days
Q1382-07	OU4-PCS-TC-04-021725	Solid	02/17/2025	08:45					
					VOCMS Group3		8260D		10 Bus. Days
Q1382-09	OU4-PCS-TC-05-021725	Solid	02/17/2025	08:50					
					VOCMS Group3		8260D		10 Bus. Days
Q1382-11	OU4-PCS-TC-06-021725	Solid	02/17/2025	08:55					
					VOCMS Group3		8260D		10 Bus. Days
Q1382-13	OU4-PCS-TC-07-021725	Solid	02/17/2025	09:00					
					VOCMS Group3		8260D		10 Bus. Days
Q1382-15	OU4-PCS-TC-08-021725	Solid	02/17/2025	09:05					

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

LOGIN REPORT/SAMPLE TRANSFER

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Report Type : Level 4
EDD Type : EQUIS
Hard Copy Date :
Date Signoff :

LAB ID	CLIENT ID	MATRIX	SAMPLE DATE	SAMPLE TIME	TEST	TEST GROUP	METHOD	FAX DATE	DUE DATES
					VOCMS Group3		8260D		10 Bus. Days
Q1382-17	OU4-PCS-TC-09-021725	Solid	02/17/2025	09:10					
					VOCMS Group3		8260D		10 Bus. Days
Q1382-19	OU4-PCS-TC-10-021725	Solid	02/17/2025	09:15					
					VOCMS Group3		8260D		10 Bus. Days

Relinguished By :
Date / Time : 2-18-25 1245

Received By :
Date / Time : 02/18/25

Storage Area : VOA Refridgerator Room