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Cover Page

Order ID : P5217

Project ID : 45-40 Vernon Blvd LIC

Client : EarthEfficient LLC

Lab Sample Number	Client Sample Number
P5217-01	MIXED-DEMO

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

Signature : _____

Date: 12/13/2024

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

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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 TECHNICAL GROUP
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APPENDIX A

QA REVIEW GENERAL DOCUMENTATION

Project #: **P5217**

	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: **PATEL VAISHALI** **Date:** **12/13/2024**

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LAB CHRONICLE

OrderID:	P5217	**OrderDate:**	12/9/2024 12:39:00 PM
Client:	EarthEfficient LLC	**Project:**	45-40 Vernon Blvd LIC
Contact:	Environmental Team	**Location:**	M11

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
P5217-01	**MIXED-DEMO**	**SOIL**			**12/09/24**			**12/09/24**
			Metals Group3	6010D		12/10/24	12/11/24	

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Hit Summary Sheet
SW-846

SDG No.:	P5217	**Order ID:**	P5217
Client:	EarthEfficient LLC	**Project ID:**	45-40 Vernon Blvd LIC

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
Client ID : MIXED-DEMO								
P5217-01	MIXED-DEMO	SOIL	Lead	4.75		0.14	0.54	mg/Kg

SAMPLE DATA

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Report of Analysis

Client:	EarthEfficient LLC	Date Collected:	12/09/24
Project:	45-40 Vernon Blvd LIC	Date Received:	12/09/24
Client Sample ID:	MIXED-DEMO	SDG No.:	P5217
Lab Sample ID:	P5217-01	Matrix:	SOIL
Level (low/med):	low	% Solid:	99.6

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7439-92-1	Lead	4.75		1	0.14	0.54	mg/Kg	12/10/24 11:05	12/11/24 15:16	SW6010	SW3050

Color Before:	Brown	Clarity Before:		Texture:	Medium
Color After:	Yellow	Clarity After:		Artifacts:	
Comments:	Metals Group3				

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

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

METAL CALIBRATION DATA

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Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: EarthEfficient LLC **SDG No.:** P5217

Contract: EART12 **Lab Code:** CHEM **Case No.:** P5217 **SAS No.:** P5217

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	Lead	1000	1000	100	90 - 110	P	12/11/2024	11:52	LB133897

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Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: EarthEfficient LLC **SDG No.:** P5217

Contract: EART12 **Lab Code:** CHEM **Case No.:** P5217 **SAS No.:** P5217

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	Lead	10.3	12.0	86	80 - 120	P	12/11/2024	12:00	LB133897

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Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: EarthEfficient LLC **SDG No.:** P5217

Contract: EART12 **Lab Code:** CHEM **Case No.:** P5217 **SAS No.:** P5217

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	Lead	4980	5000	100	90 - 110	P	12/11/2024	12:57	LB133897
CCV02	Lead	5220	5000	104	90 - 110	P	12/11/2024	13:54	LB133897
CCV03	Lead	5070	5000	101	90 - 110	P	12/11/2024	14:12	LB133897
CCV04	Lead	4930	5000	98	90 - 110	P	12/11/2024	15:07	LB133897
CCV05	Lead	4960	5000	99	90 - 110	P	12/11/2024	15:59	LB133897
CCV06	Lead	5130	5000	103	90 - 110	P	12/11/2024	16:22	LB133897
CCV07	Lead	4940	5000	99	90 - 110	P	12/11/2024	16:39	LB133897

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Metals

- 2b -
CRDL STANDARD FOR AA & ICP

Client: EarthEfficient LLC **SDG No.:** P5217

Contract: EART12 **Lab Code:** CHEM **Case No.:** P5217 **SAS No.:** P5217

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	Lead	10.9	12.0	91	40 - 160	P	12/11/2024	12:44	LB133897

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Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: EarthEfficient LLC **SDG No.:** P5217

Contract: EART12 **Lab Code:** CHEM **Case No.:** P5217 **SAS No.:** P5217

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB01	Lead	12.0	+/-12.0	U	12.0	P	12/11/2024	12:39	LB133897

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Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: EarthEfficient LLC **SDG No.:** P5217

Contract: EART12 **Lab Code:** CHEM **Case No.:** P5217 **SAS No.:** P5217

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB01	Lead	12.0	+/-12.0	U	12.0	P	12/11/2024	13:06	LB133897
CCB02	Lead	12.0	+/-12.0	U	12.0	P	12/11/2024	13:59	LB133897
CCB03	Lead	12.0	+/-12.0	U	12.0	P	12/11/2024	14:17	LB133897
CCB04	Lead	12.0	+/-12.0	U	12.0	P	12/11/2024	15:12	LB133897
CCB05	Lead	12.0	+/-12.0	U	12.0	P	12/11/2024	16:05	LB133897
CCB06	Lead	12.0	+/-12.0	U	12.0	P	12/11/2024	16:26	LB133897
CCB07	Lead	12.0	+/-12.0	U	12.0	P	12/11/2024	16:43	LB133897

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Metals
- 3b -
PREPARATION BLANK SUMMARY

Client: EarthEfficient LLC **SDG No.:** P5217

Instrument: P4

Sample ID	Analyte	Result (mg/Kg)	Acceptance Limit	Conc Qual	CRQL mg/Kg	M	Analysis Date	Analysis Time	Run
PB165528BL		**SOLID**		**Batch Number:**	**PB165528**		**Prep Date:**	**12/10/2024**	
	Lead	0.51	<0.51	U	0.51	P	12/11/2024	14:43	LB133897

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Metals
- 4 -
INTERFERENCE CHECK SAMPLE

Client: EarthEfficient LLC **SDG No.:** P5217

Contract: EART12 **Lab Code:** CHEM **Case No.:** P5217 **SAS No.:** P5217

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	Lead	6.35			-12	12	12/11/2024	12:48	LB133897
ICSAB01	Lead	56.2	49.0	115	37	61	12/11/2024	12:52	LB133897

METAL
QC
DATA

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metals
- 5a -
MATRIX SPIKE SUMMARY

client: EarthEfficient LLC **level:** low **sdg no.:** P5217

contract: EART12 **lab code:** CHEM **case no.:** P5217 **sas no.:** P5217

matrix: Solid **sample id:** P5217-01 **client id:** MIXED-DEMOMS

Percent Solids for Sample: 99.6 **Spiked ID:** P5217-01MS **Percent Solids for Spike Sample:** 99.6

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Lead	mg/Kg	75 - 125	46.1		4.75		45.4	91		P

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metals
- 5a -
MATRIX SPIKE DUPLICATE SUMMARY

client: EarthEfficient LLC **level:** low **sdg no.:** P5217

contract: EART12 **lab code:** CHEM **case no.:** P5217 **sas no.:** P5217

matrix: Solid **sample id:** P5217-01 **client id:** MIXED-DEMOMSD

Percent Solids for Sample: 99.6 **Spiked ID:** P5217-01MSD **Percent Solids for Spike Sample:** 99.6

Analyte	Units	Acceptance Limit %R	MSD Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Lead	mg/Kg	75 - 125	46.8		4.75		46.5	90		P

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Metals
- 5b -

Client: EarthEfficient LLC **SDG No.:** P5217

Contract: EART12 **Lab Code:** CHEM **Case No.:** P5217 **SAS No.:** P5217

Matrix: **Level:** LOW **Client ID:**

Sample ID: **Spiked ID:**

Analyte	Units	Acceptance Limit %R	C	Sample Result	C	Spike Added	% Recovery	Qual	M

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Metals

- 6 -

DUPLICATE SAMPLE SUMMARY

Client: EarthEfficient LLC **Level:** LOW **SDG No.:** P5217

Contract: EART12 **Lab Code:** CHEM **Case No.:** P5217 **SAS No.:** P5217

Matrix: Solid **Sample ID:** P5217-01 **Client ID:** MIXED-DEMODUP

Percent Solids for Sample: 99.6 **Duplicate ID** P5217-01DUP **Percent Solids for Spike Sample:** 99.6

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Lead	mg/Kg	20	4.75		5.13		8		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

- 6 -

DUPLICATE SAMPLE SUMMARY

Client: EarthEfficient LLC **Level:** LOW **SDG No.:** P5217

Contract: EART12 **Lab Code:** CHEM **Case No.:** P5217 **SAS No.:** P5217

Matrix: Solid **Sample ID:** P5217-01MS **Client ID:** MIXED-DEMOMSD

Percent Solids for Sample: 99.6 **Duplicate ID** P5217-01MSD **Percent Solids for Spike Sample:** 99.6

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Lead	mg/Kg	20	46.1		46.8		2		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

LABORATORY CONTROL SAMPLE SUMMARY

Client: EarthEfficient LLC **SDG No.:** P5217

Contract: EART12 **Lab Code:** CHEM **Case No.:** P5217 **SAS No.:** P5217

Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limits	M
PB165528BS							
Lead	mg/Kg	42.6	41.7		98	80 - 120	P

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Metals

-9 -

ICP SERIAL DILUTIONS

SAMPLE NO.

MIXED-DEMOL

Lab Name: Chemtech Consulting Group **Contract:** EART12

Lab Code: CHEM **Lb No.:** lb133897 **Lab Sample ID :** P5217-01L **SDG No.:** P5217

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
Lead	4.75		5.00		5		P

METAL PREPARATION & INSTRUMENT DATA

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Metals
- 11 -
ICP INTERELEMENT CORRECTION FACTORS

Client: EarthEfficient LLC **SDG No.:** P5217

Contract: EART12 **Lab Code:** CHEM **Case No.:** P5217 **SAS No.:** P5217

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
Lead	220.353	-0.0000920	0.0000000	0.0000380	0.0000000	0.0000000

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Metals
- 11 -
ICP INTERELEMENT CORRECTION FACTORS

Client: EarthEfficient LLC **SDG No.:** P5217

Contract: EART12 **Lab Code:** CHEM **Case No.:** P5217 **SAS No.:** P5217

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
Lead	220.353	0.0000000	0.0003170	0.0000000	0.0000000	0.0000000

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Metals
- 11 -
ICP INTERELEMENT CORRECTION FACTORS

Client: EarthEfficient LLC **SDG No.:** P5217

Contract: EART12 **Lab Code:** CHEM **Case No.:** P5217 **SAS No.:** P5217

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
Lead	220.353	0.0000000	0.0000000	0.0000000	0.0001400	-0.0008600

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Metals
- 11 -
ICP INTERELEMENT CORRECTION FACTORS

Client: EarthEfficient LLC **SDG No.:** P5217

Contract: EART12 **Lab Code:** CHEM **Case No.:** P5217 **SAS No.:** P5217

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
Lead	220.353	0.0000000	0.0006580	0.0000000	0.0000000	0.0001290

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Metals
- 11 -
ICP INTERELEMENT CORRECTION FACTORS

Client: EarthEfficient LLC **SDG No.:** P5217

Contract: EART12 **Lab Code:** CHEM **Case No.:** P5217 **SAS No.:** P5217

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
Lead	220.353	0.0000000	-0.0003610	0.0000000	0.0000000	0.0000000

METAL PREPARATION & ANALYICAL SUMMARY

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Metals
- 13 -
SAMPLE PREPARATION SUMMARY

Client: EarthEfficient LLC **SDG No.:** P5217

Contract: EART12 **Lab Code:** CHEM **Method:**

Case No.: P5217 **SAS No.:** P5217

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(g)	Final Sample Volume (mL)	Percent Solids
Batch Number:	**PB165528**						
P5217-01	MIXED-DEMO	SAM	SOLID	12/10/2024	2.22	100.0	99.60
P5217-01DUP	MIXED-DEMODUP	DUP	SOLID	12/10/2024	2.09	100.0	99.60
P5217-01MS	MIXED-DEMOMS	MS	SOLID	12/10/2024	2.21	100.0	99.60
P5217-01MSD	MIXED-DEMOMSD	MSD	SOLID	12/10/2024	2.16	100.0	99.60
PB165528BL	PB165528BL	MB	SOLID	12/10/2024	2.35	100.0	100.00
PB165528BS	PB165528BS	LCS	SOLID	12/10/2024	2.35	100.0	100.00

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metals
- 14 -
ANALYSIS RUN LOG

Client: EarthEfficient LLC **Contract:** EART12

Lab code: CHEM **Case no.:** P5217 **Sas no.:** P5217 **Sdg no.:** P5217

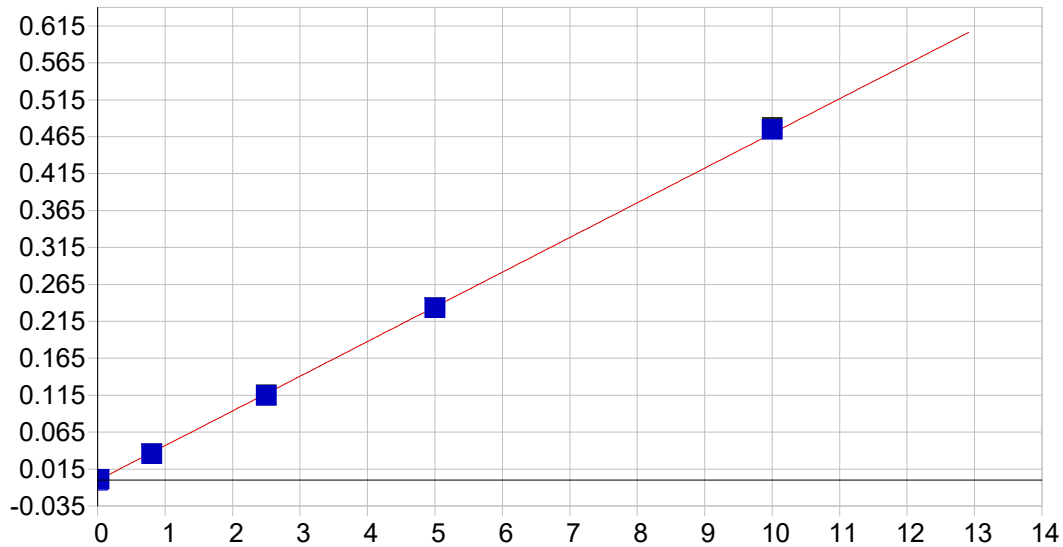
Instrument id number: **Method:** **Run number:** LB133897

Start date: 12/11/2024 **End date:** 12/11/2024

Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	1127	Pb
S1	S1	1	1131	Pb
S2	S2	1	1135	Pb
S3	S3	1	1139	Pb
S4	S4	1	1144	Pb
S5	S5	1	1148	Pb
ICV01	ICV01	1	1152	Pb
LLICV01	LLICV01	1	1200	Pb
ICB01	ICB01	1	1239	Pb
CRI01	CRI01	1	1244	Pb
ICSA01	ICSA01	1	1248	Pb
ICSAB01	ICSAB01	1	1252	Pb
CCV01	CCV01	1	1257	Pb
CCB01	CCB01	1	1306	Pb
CCV02	CCV02	1	1354	Pb
CCB02	CCB02	1	1359	Pb
CCV03	CCV03	1	1412	Pb
CCB03	CCB03	1	1417	Pb
PB165528BL	PB165528BL	1	1443	Pb
PB165528BS	PB165528BS	1	1447	Pb
CCV04	CCV04	1	1507	Pb
CCB04	CCB04	1	1512	Pb
P5217-01	MIXED-DEMO	1	1516	Pb
P5217-01DUP	MIXED-DEMODUP	1	1520	Pb
P5217-01L	MIXED-DEMOL	5	1525	Pb
P5217-01MS	MIXED-DEMOMS	1	1529	Pb
P5217-01MSD	MIXED-DEMOMSD	1	1534	Pb
CCV05	CCV05	1	1559	Pb
CCB05	CCB05	1	1605	Pb
CCV06	CCV06	1	1622	Pb
CCB06	CCB06	1	1626	Pb
CCV07	CCV07	1	1639	Pb
CCB07	CCB07	1	1643	Pb

METAL
RAW DATA

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897



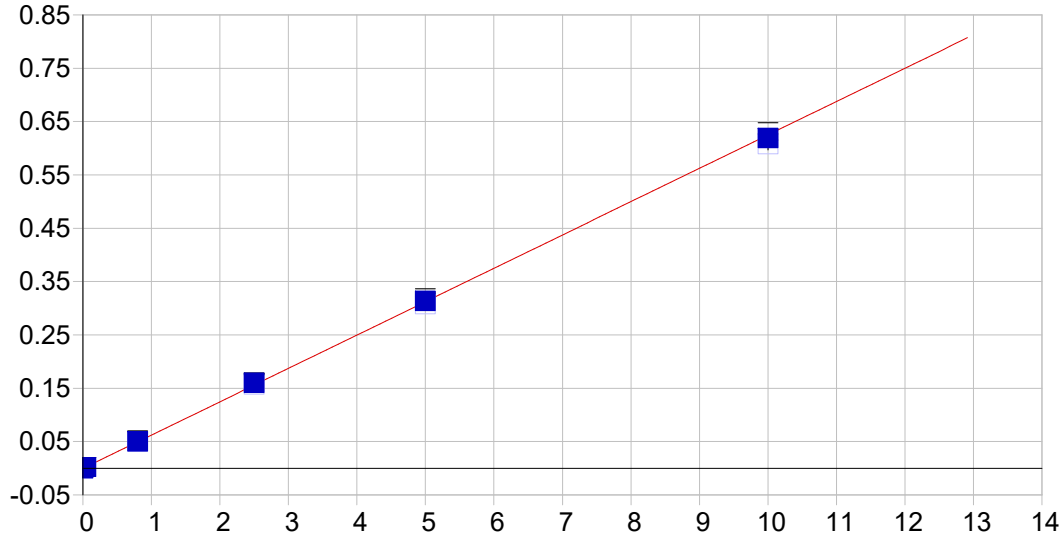
As 189.042 {479}

Date of Fit:	12/11/2024 11:52:35	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000263	Re-Slope:	1.000000
A1 (Gain):	0.046966	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999870	Status:	OK.
Std Error of Est:	0.000018		
Predicted MDL:	0.002956		
Predicted MQL:	0.009855		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00026	.000	1
S1	.02000	.02303	.003	15.1	.00081	.000	1
S3	2.5000	2.4470	-.053	-2.12	.11453	.001	1
S4	5.0000	4.9731	-.027	-.539	.23305	.000	1
S5	10.000	10.114	.114	1.14	.47424	.002	1
S2	.80000	.76287	-.037	-4.64	.03552	.000	1

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897



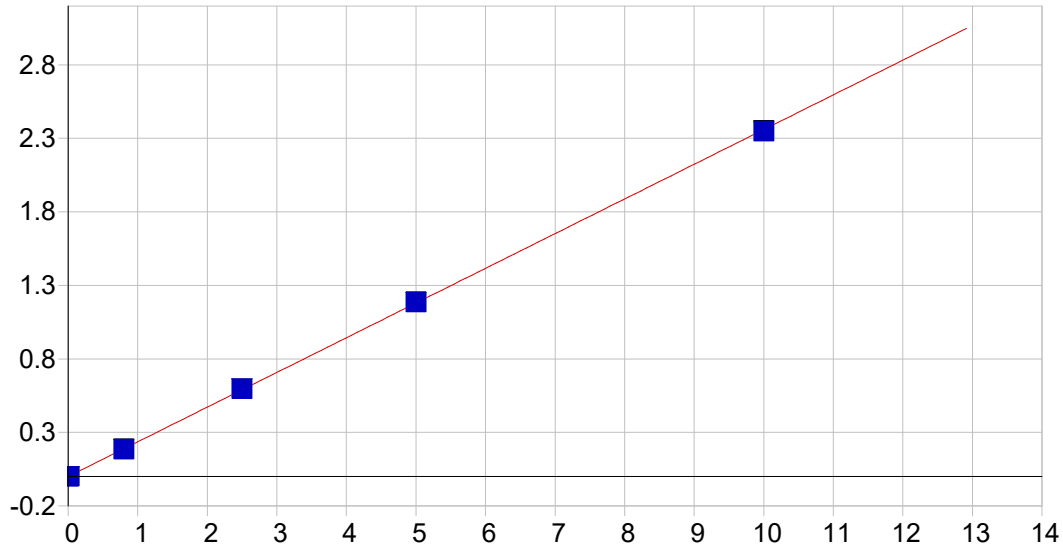
Tl 190.856 {477}

Date of Fit:	12/11/2024 11:52:35	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000435	Re-Slope:	1.000000
A1 (Gain):	0.062541	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999919	Status:	OK.
Std Error of Est:	0.000026		
Predicted MDL:	0.001941		
Predicted MQL:	0.006471		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00044	.000	1
S1	.04000	.04108	.001	2.71	.00197	.000	1
S3	2.5000	2.5635	.064	2.54	.15701	.000	1
S4	5.0000	5.0200	.020	.401	.30776	.004	1
S5	10.000	9.9029	-.097	-.971	.60738	.011	1
S2	.80000	.81251	.013	1.56	.04946	.001	1

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897



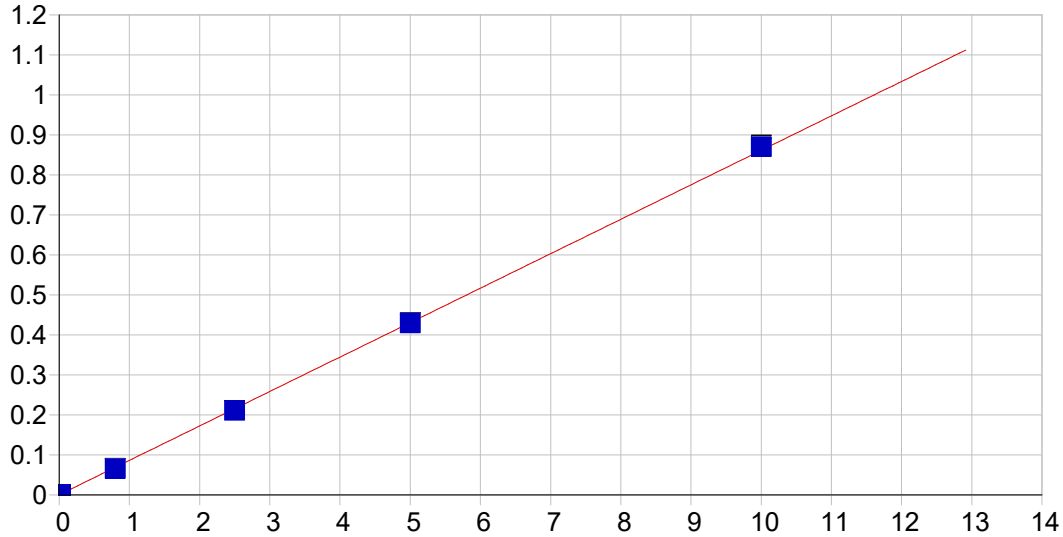
Pb 220.353 {453}

Date of Fit:	12/11/2024 11:52:35	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000151	Re-Slope:	1.000000
A1 (Gain):	0.236005	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999971	Status:	OK.
Std Error of Est:	0.000032		
Predicted MDL:	0.001068		
Predicted MQL:	0.003559		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00015	.000	1
S1	.01200	.01030	-.002	-14.2	.00222	.000	1
S3	2.5000	2.5305	.031	1.22	.59642	.001	1
S4	5.0000	5.0241	.024	.483	1.1843	.002	1
S5	10.000	9.9574	-.043	-.426	2.3473	.004	1
S2	.80000	.78959	-.010	-1.30	.18599	.000	1

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897



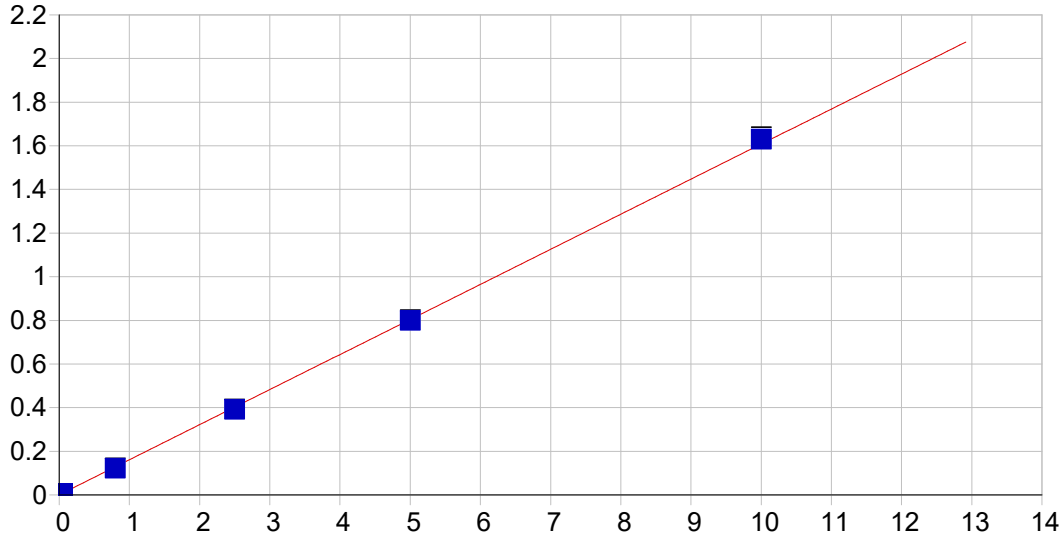
Se 196.090 {472}

Date of Fit:	12/11/2024 11:52:35	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000186	Re-Slope:	1.000000
A1 (Gain):	0.086110	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999886	Status:	OK.
Std Error of Est:	0.000030		
Predicted MDL:	0.002260		
Predicted MQL:	0.007534		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00019	.000	1
S1	.02000	.02070	.001	3.51	.00197	.000	1
S3	2.5000	2.4463	-.054	-2.15	.21078	.000	1
S4	5.0000	4.9845	-.016	-.311	.42928	.002	1
S5	10.000	10.107	.107	1.07	.87024	.004	1
S2	.80000	.76193	-.038	-4.76	.06578	.000	1

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897



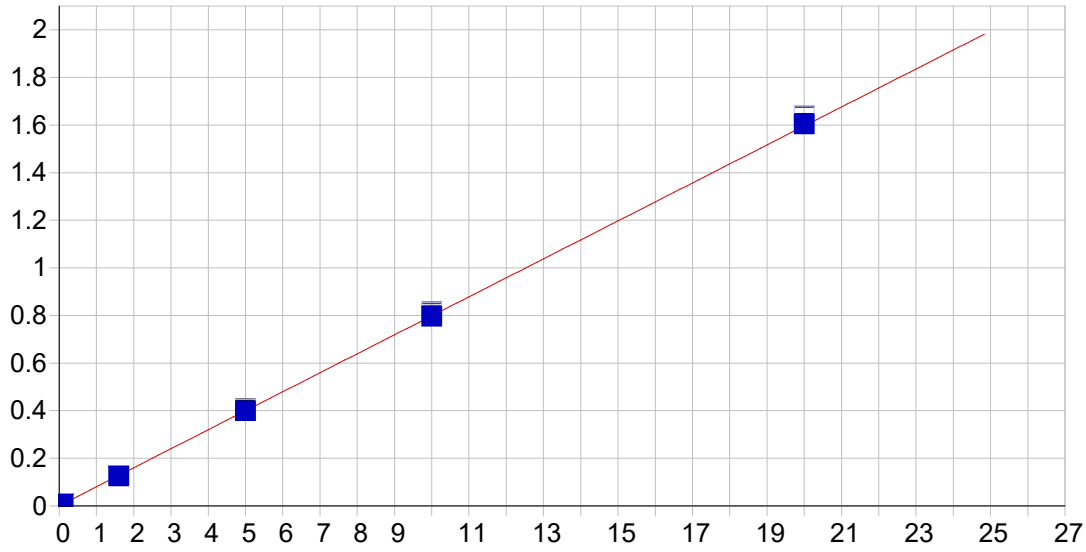
Sb 206.833 {463}

Date of Fit:	12/11/2024 11:52:35	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000312	Re-Slope:	1.000000
A1 (Gain):	0.160739	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999836	Status:	OK.
Std Error of Est:	0.000108		
Predicted MDL:	0.001346		
Predicted MQL:	0.004486		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00001	.000	.000	.00031	.000	1
S1	.05000	.04625	-.004	-7.49	.00776	.000	1
S3	2.5000	2.4368	-.063	-2.53	.39309	.000	1
S4	5.0000	4.9684	-.032	-.633	.80111	.002	1
S5	10.000	10.139	.139	1.39	1.6344	.008	1
S2	.80000	.75962	-.040	-5.05	.12276	.000	1

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897



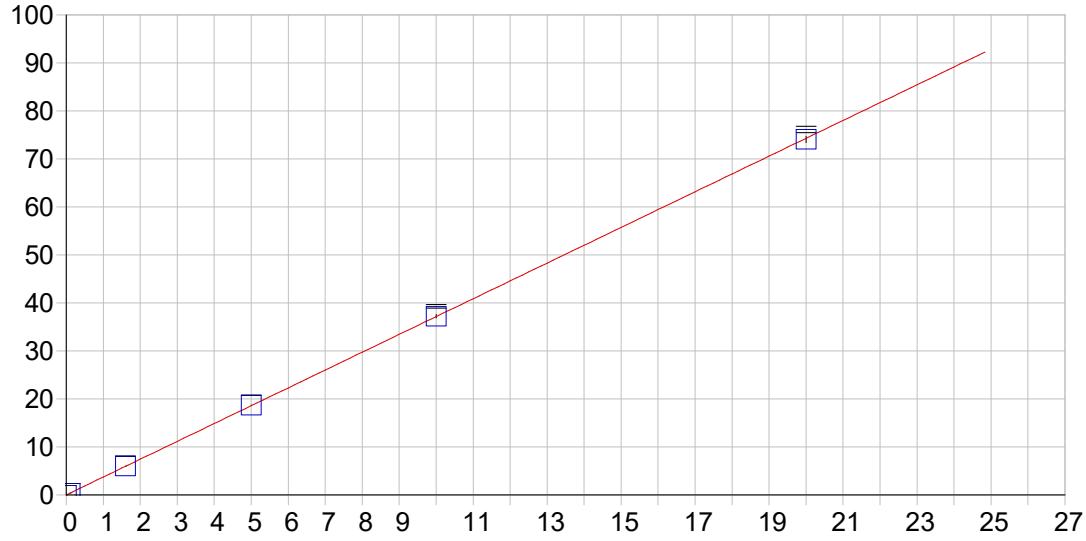
Al 396.152 { 85}

Date of Fit:	12/11/2024 11:52:35	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000838	Re-Slope:	1.000000
A1 (Gain):	0.079772	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999967	Status:	OK.
Std Error of Est:	0.000049		
Predicted MDL:	0.005225		
Predicted MQL:	0.017416		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00001	.000	.000	.00084	.000	1
S1	.10000	.09345	-.007	-6.55	.00891	.000	1
S3	5.0000	4.9903	-.010	-.193	.40667	.001	1
S4	10.000	9.9680	-.032	-.320	.81148	.003	1
S5	20.000	20.097	.097	.485	1.6350	.002	1
S2	1.6000	1.5516	-.048	-3.02	.12709	.000	1

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897



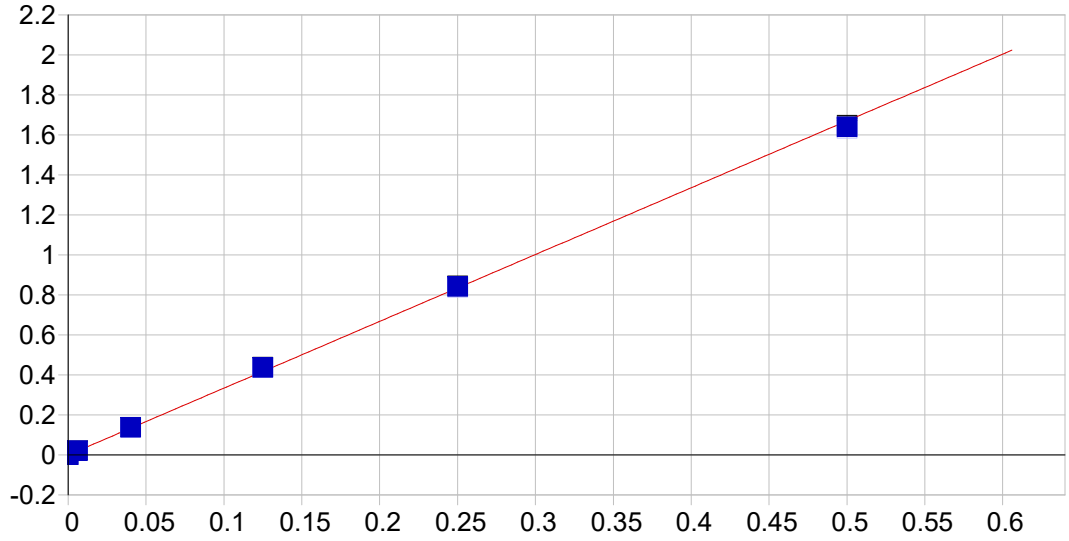
Ba 493.409 { 68}

Date of Fit:	12/11/2024 11:52:35	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.013629	Re-Slope:	1.000000
A1 (Gain):	3.714094	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999993	Status:	OK.
Std Error of Est:	0.000999		
Predicted MDL:	0.000403		
Predicted MQL:	0.001344		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.01363	.009	1
S1	.10000	.09773	-.002	-2.27	.37662	.002	1
S3	5.0000	5.0290	.029	.580	18.692	.049	1
S4	10.000	10.017	.017	.168	37.217	.371	1
S5	20.000	19.945	-.055	-.275	74.091	.665	1
S2	1.6000	1.6115	.012	.720	5.9990	.030	1

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897



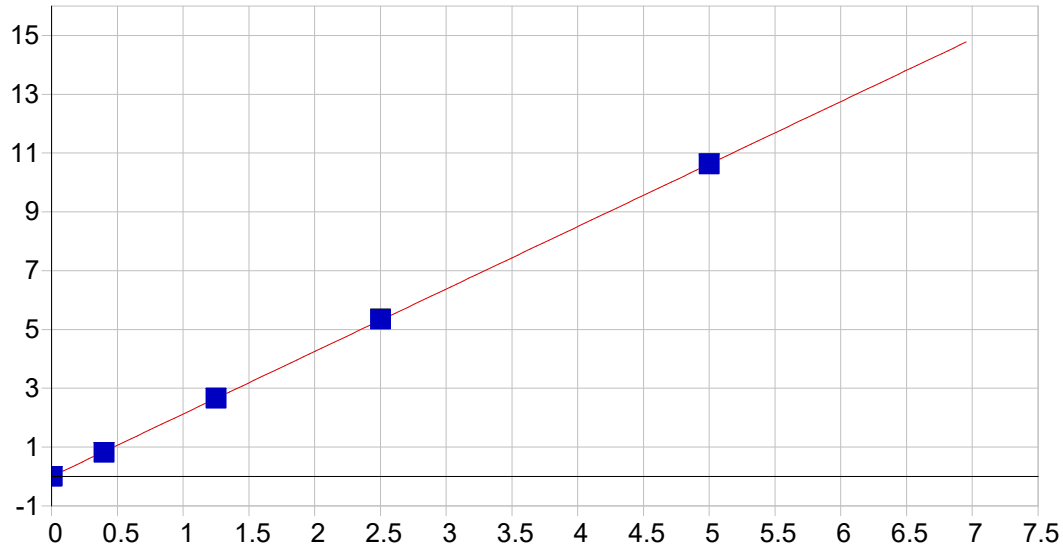
Be 234.861 {144}

Date of Fit:	12/11/2024 11:52:35	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000375	Re-Slope:	1.000000
A1 (Gain):	3.340438	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999726	Status:	OK.
Std Error of Est:	0.000224		
Predicted MDL:	0.000060		
Predicted MQL:	0.000201		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00038	.000	1
S1	.00600	.00632	.000	5.30	.02058	.000	1
S3	.12500	.13084	.006	4.67	.43481	.001	1
S4	.25000	.25188	.002	.752	.83727	.004	1
S5	.50000	.49087	-.009	-1.83	1.6319	.008	1
S2	.04000	.04109	.001	2.73	.13629	.001	1

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897



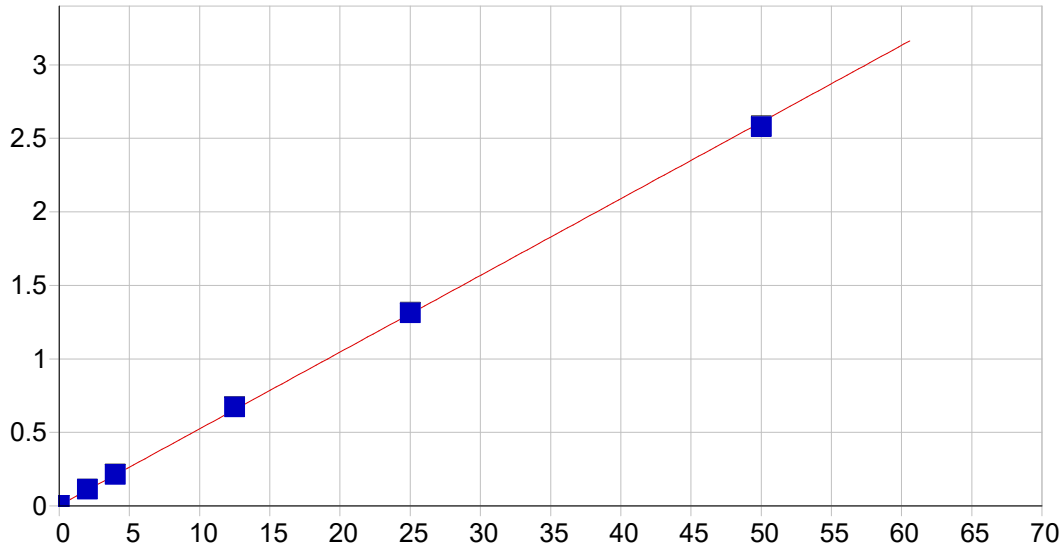
Cd 226.502 {449}

Date of Fit:	12/11/2024 11:52:35	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000025	Re-Slope:	1.000000
A1 (Gain):	2.125252	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999969	Status:	OK.
Std Error of Est:	0.000151		
Predicted MDL:	0.000091		
Predicted MQL:	0.000302		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00003	.000	1
S1	.00600	.00581	-.000	-3.10	.01244	.000	1
S3	1.2500	1.2512	.001	.093	2.6612	.001	1
S4	2.5000	2.5155	.016	.620	5.3505	.004	1
S5	5.0000	4.9970	-.003	-.060	10.629	.018	1
S2	.40000	.38650	-.013	-3.37	.82214	.001	1

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897



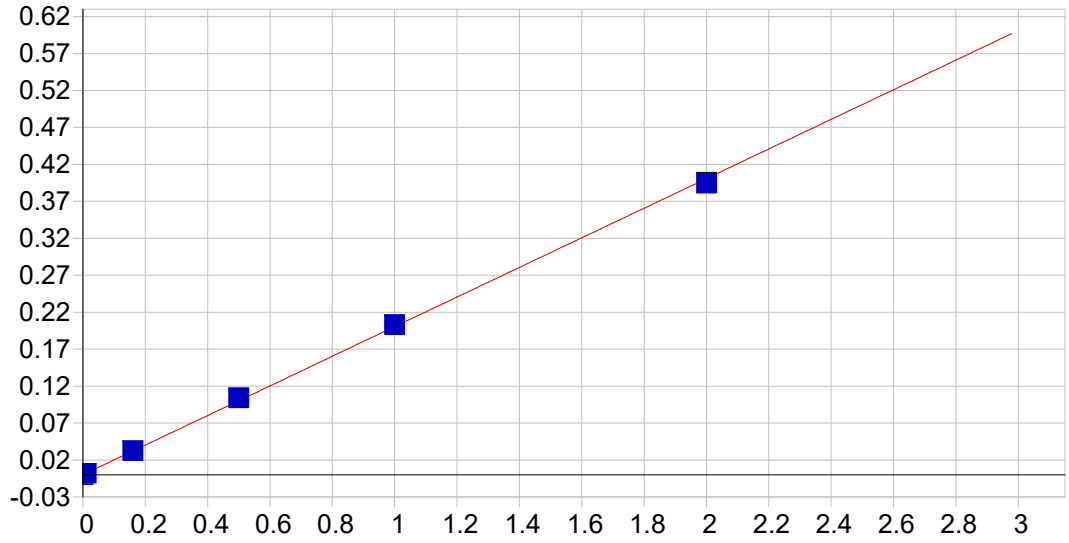
Ca 373.690 { 90}

Date of Fit:	12/11/2024 11:52:35	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.002869	Re-Slope:	1.000000
A1 (Gain):	0.052158	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999884	Status:	OK.
Std Error of Est:	0.000420		
Predicted MDL:	0.007642		
Predicted MQL:	0.025472		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00016	-.000	.000	.00286	.000	1
S2	4.0000	4.0479	.048	1.20	.21400	.001	1
S3	12.500	12.839	.339	2.71	.67253	.001	1
S4	25.000	25.100	.100	.398	1.3120	.004	1
S5	50.000	49.417	-.583	-1.17	2.5804	.003	1
S1	2.0000	2.0965	.097	4.83	.11222	.001	1

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897



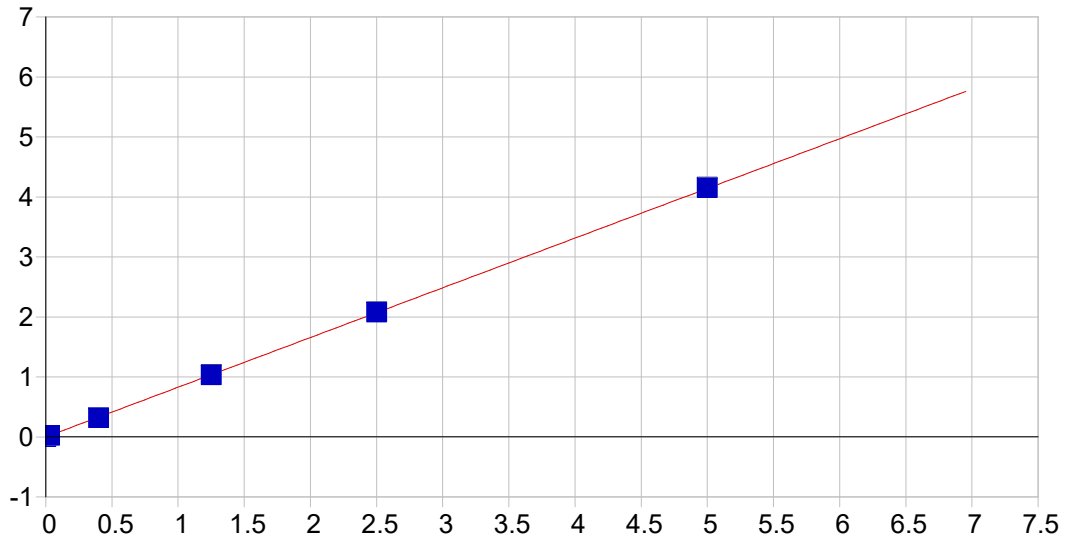
Cr 267.716 {126}

Date of Fit:	12/11/2024 11:52:35	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000037	Re-Slope:	1.000000
A1 (Gain):	0.200379	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999829	Status:	OK.
Std Error of Est:	0.000027		
Predicted MDL:	0.000360		
Predicted MQL:	0.001199		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00004	.000	1
S1	.01000	.01021	.000	2.07	.00208	.000	1
S3	.50000	.51694	.017	3.39	.10365	.000	1
S4	1.0000	1.0124	.012	1.24	.20296	.000	1
S5	2.0000	1.9685	-.032	-1.58	.39460	.001	1
S2	.16000	.16197	.002	1.23	.03250	.000	1

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897



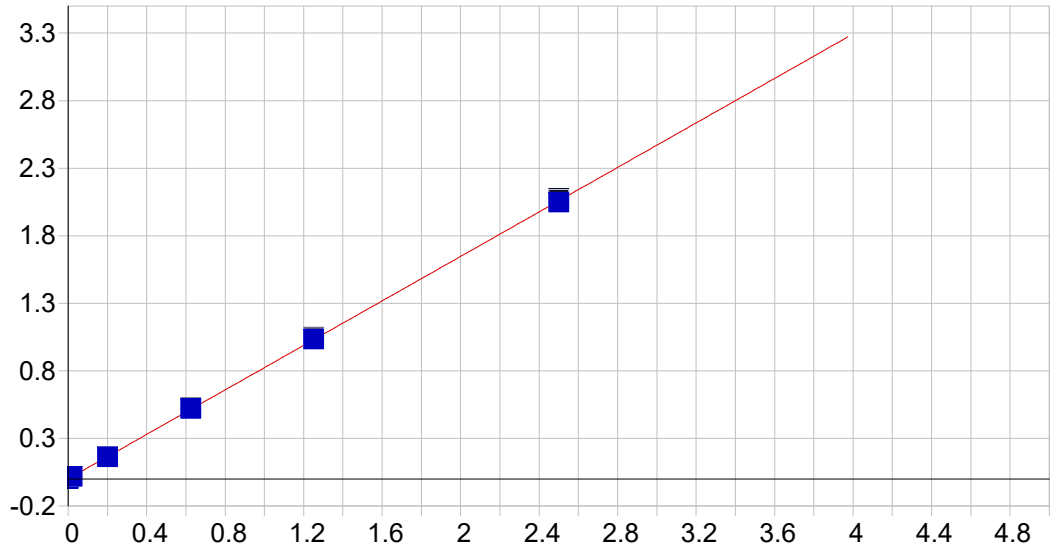
Co 228.616 {448}

Date of Fit:	12/11/2024 11:52:35	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000025	Re-Slope:	1.000000
A1 (Gain):	0.828286	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999969	Status:	OK.
Std Error of Est:	0.000134		
Predicted MDL:	0.000208		
Predicted MQL:	0.000692		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00003	.000	1
S1	.03000	.02925	-.001	-2.48	.02415	.000	1
S3	1.2500	1.2460	-.004	-.322	1.0338	.000	1
S4	2.5000	2.5080	.008	.319	2.0809	.002	1
S5	5.0000	5.0109	.011	.218	4.1575	.008	1
S2	.40000	.38588	-.014	-3.53	.32020	.000	1

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897



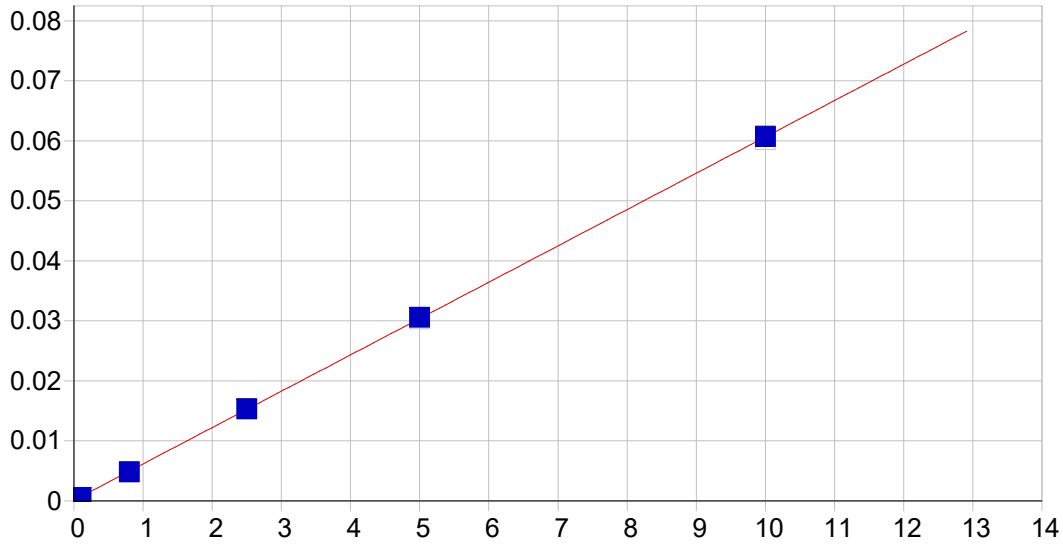
Cu 224.700 {450}

Date of Fit:	12/11/2024 11:52:35	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000165	Re-Slope:	1.000000
A1 (Gain):	0.823368	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999978	Status:	OK.
Std Error of Est:	0.000065		
Predicted MDL:	0.000366		
Predicted MQL:	0.001220		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00016	.000	1
S1	.02000	.02088	.001	4.42	.01757	.000	1
S3	.62500	.63122	.006	.996	.52480	.000	1
S4	1.2500	1.2566	.007	.530	1.0446	.004	1
S5	2.5000	2.4880	-.012	-.480	2.0683	.007	1
S2	.20000	.19827	-.002	-.867	.16498	.001	1

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897



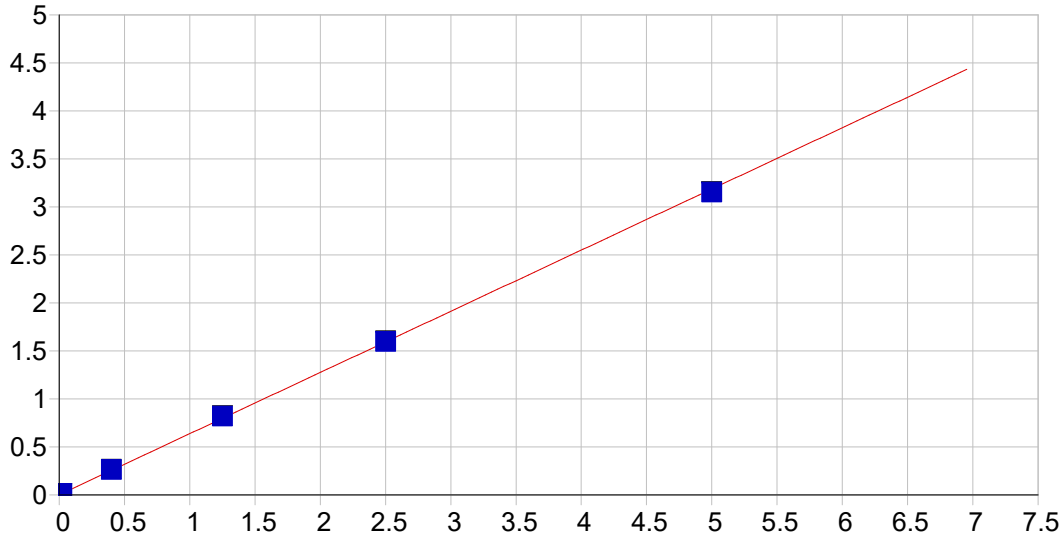
Fe 240.488 {140}

Date of Fit:	12/11/2024 11:52:35	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000113	Re-Slope:	1.000000
A1 (Gain):	0.006055	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999909	Status:	OK.
Std Error of Est:	0.000004		
Predicted MDL:	0.003818		
Predicted MQL:	0.012727		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00002	.000	.000	.00011	.000	1
S1	.10000	.08493	-.015	-15.1	.00062	.000	1
S3	2.5000	2.5092	.009	.369	.01518	.000	1
S4	5.0000	5.0302	.030	.604	.03031	.000	1
S5	10.000	10.001	.001	.010	.06015	.000	1
S2	.80000	.77455	-.025	-3.18	.00476	.000	1

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897



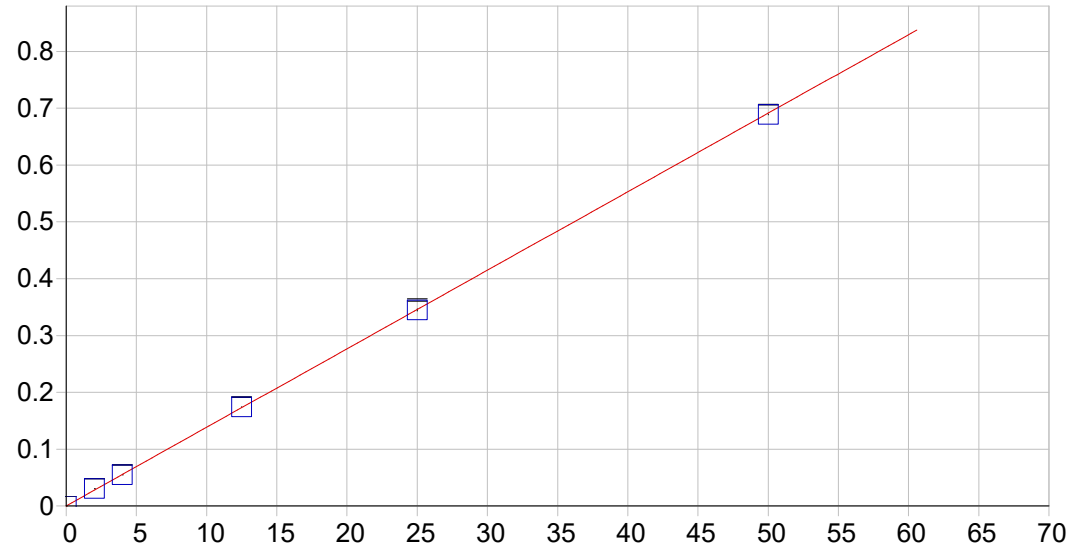
Mn 257.610 {131}

Date of Fit:	12/11/2024 11:52:35	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000938	Re-Slope:	1.000000
A1 (Gain):	0.637243	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999884	Status:	OK.
Std Error of Est:	0.000161		
Predicted MDL:	0.000263		
Predicted MQL:	0.000878		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00094	.000	1
S1	.02000	.02051	.001	2.56	.01401	.000	1
S3	1.2500	1.2876	.038	3.01	.82163	.003	1
S4	2.5000	2.5057	.006	.229	1.5980	.006	1
S5	5.0000	4.9443	-.056	-1.11	3.1523	.009	1
S2	.40000	.41180	.012	2.95	.26340	.002	1

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897



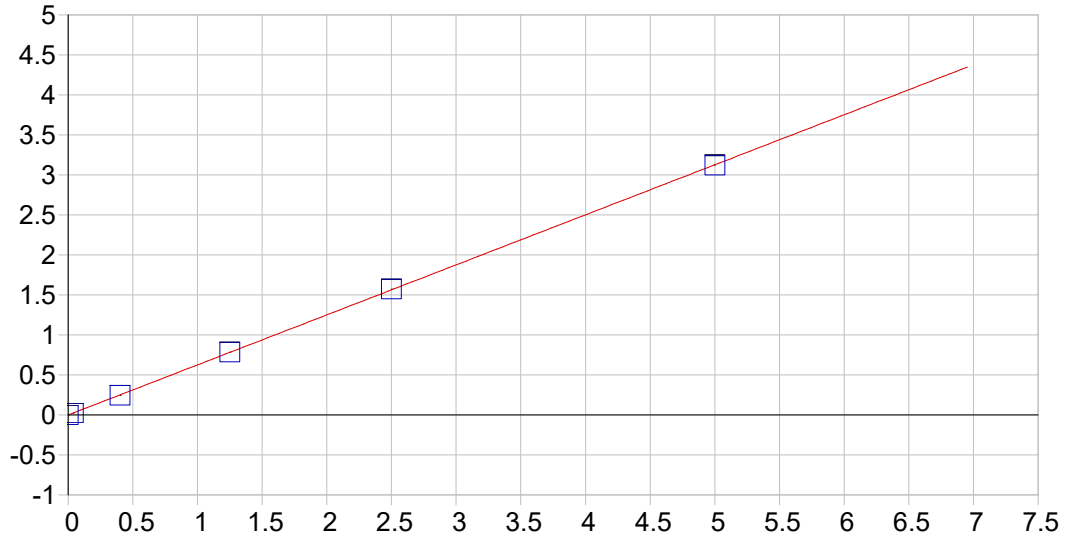
Mg 279.079 {121}

Date of Fit:	12/11/2024 11:52:35	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000104	Re-Slope:	1.000000
A1 (Gain):	0.013826	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999875	Status:	OK.
Std Error of Est:	0.000115		
Predicted MDL:	0.012793		
Predicted MQL:	0.042643		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00017	-.000	.000	.00010	.000	1
S2	4.0000	3.9354	-.065	-1.62	.05451	.000	1
S3	12.500	12.594	.094	.753	.17423	.001	1
S4	25.000	24.942	-.058	-.232	.34495	.002	1
S5	50.000	49.825	-.175	-.351	.68898	.001	1
S1	2.0000	2.2039	.204	10.2	.03058	.000	1

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897



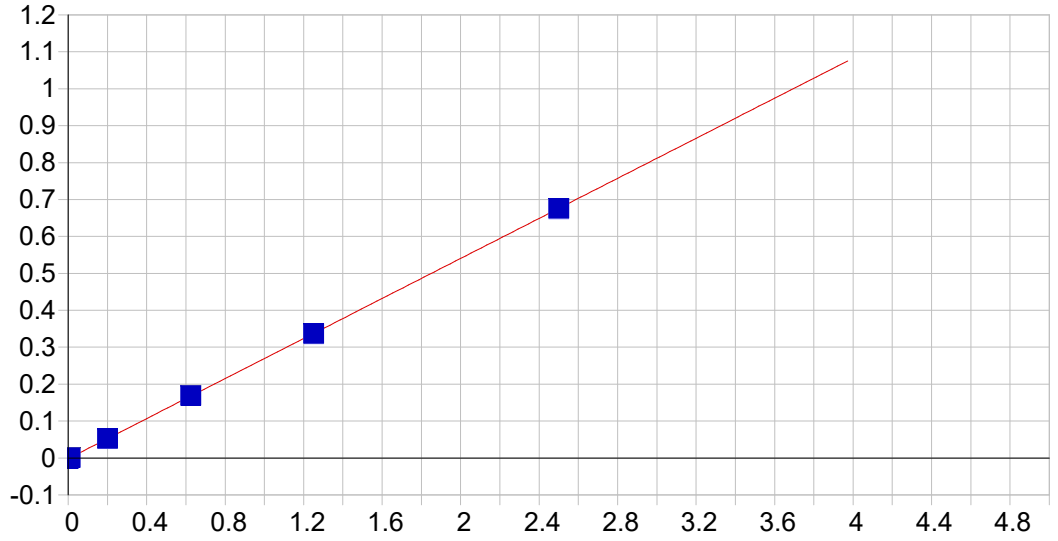
Ni 231.604 {446}

Date of Fit:	12/11/2024 11:52:35	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000198	Re-Slope:	1.000000
A1 (Gain):	0.625340	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999980	Status:	OK.
Std Error of Est:	0.000092		
Predicted MDL:	0.000309		
Predicted MQL:	0.001032		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00020	.000	1
S1	.04000	.03920	-.001	-2.00	.02432	.000	1
S3	1.2500	1.2561	.006	.487	.78528	.000	1
S4	2.5000	2.5139	.014	.556	1.5719	.002	1
S5	5.0000	4.9902	-.010	-.195	3.1204	.006	1
S2	.40000	.39056	-.009	-2.36	.24404	.000	1

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897



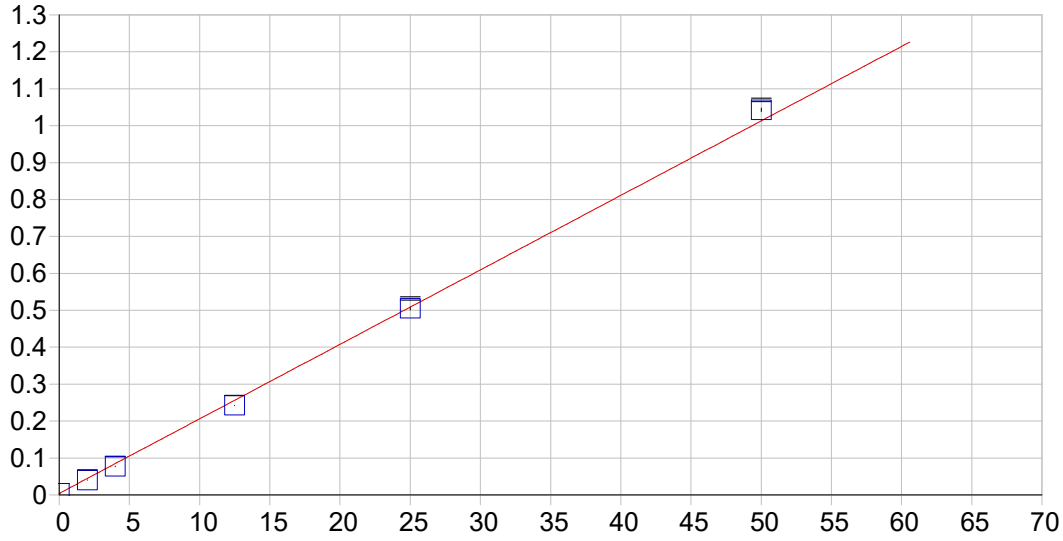
Ag 328.068 {103}

Date of Fit:	12/11/2024 11:52:35	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.001755	Re-Slope:	1.000000
A1 (Gain):	0.271121	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999995	Status:	OK.
Std Error of Est:	0.000007		
Predicted MDL:	0.000351		
Predicted MQL:	0.001169		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00175	.000	1
S1	.01000	.01002	.000	.245	.00094	.000	1
S3	.62500	.62984	.005	.774	.16834	.000	1
S4	1.2500	1.2477	-.002	-.186	.33517	.001	1
S5	2.5000	2.4985	-.002	-.061	.67295	.000	1
S2	.20000	.19898	-.001	-.509	.05198	.000	1

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897



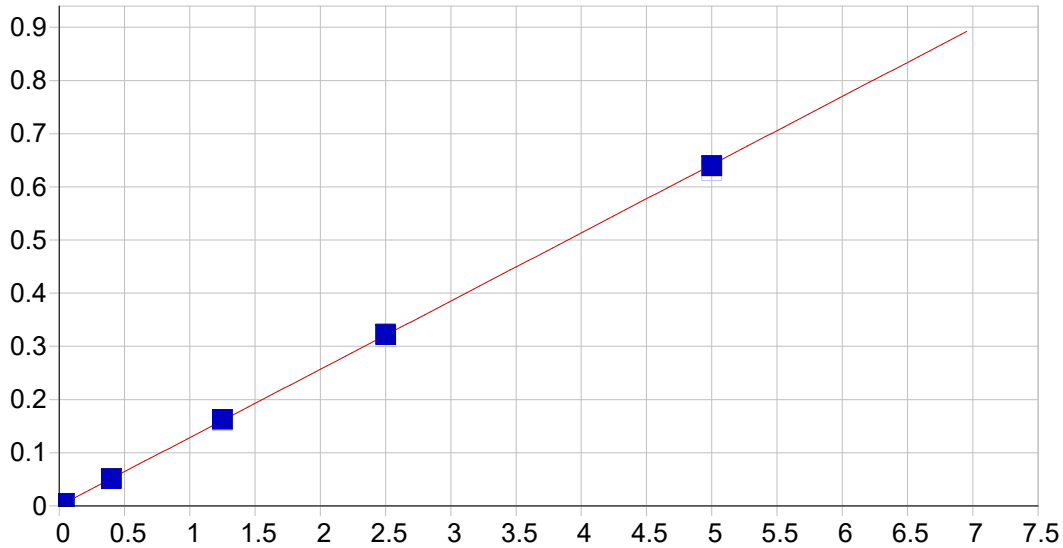
Na 589.592 { 57}

Date of Fit:	12/11/2024 11:52:35	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.004342	Re-Slope:	1.000000
A1 (Gain):	0.020171	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999205	Status:	OK.
Std Error of Est:	0.000426		
Predicted MDL:	0.007622		
Predicted MQL:	0.025408		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00049	.000	.000	.00435	.000	1
S2	4.0000	3.6102	-.390	-9.75	.07716	.001	1
S3	12.500	11.794	-.706	-5.65	.24225	.000	1
S4	25.000	24.829	-.171	-.683	.50518	.004	1
S5	50.000	51.491	1.49	2.98	1.0430	.005	1
S1	2.0000	1.7759	-.224	-11.2	.04016	.000	1

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897



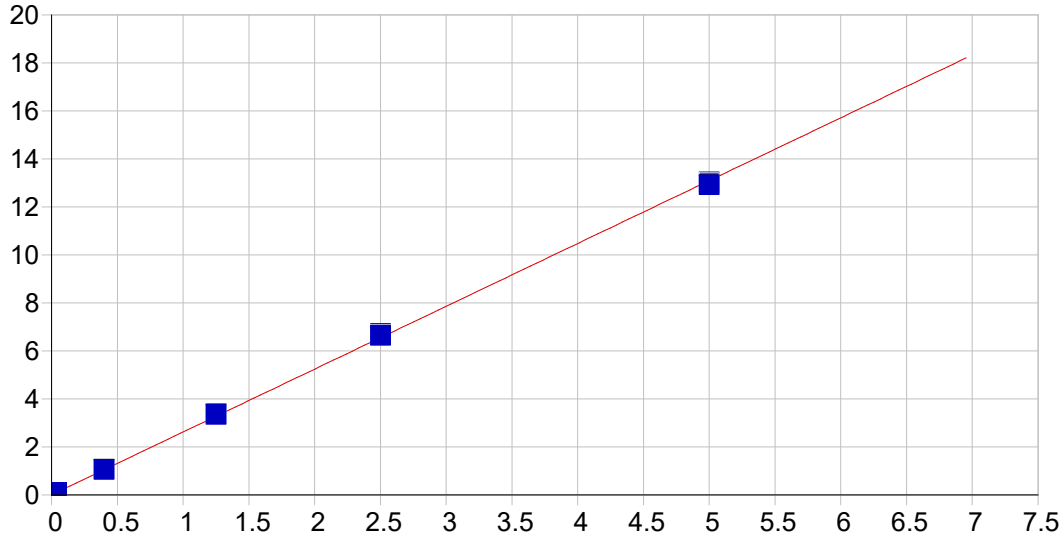
V 292.402 {115}

Date of Fit:	12/11/2024 11:52:35	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000234	Re-Slope:	1.000000
A1 (Gain):	0.128306	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999982	Status:	OK.
Std Error of Est:	0.000018		
Predicted MDL:	0.001417		
Predicted MQL:	0.004723		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00023	.000	1
S1	.04000	.03896	-.001	-2.61	.00504	.000	1
S3	1.2500	1.2644	.014	1.15	.16013	.000	1
S4	2.5000	2.5088	.009	.353	.31745	.001	1
S5	5.0000	4.9808	-.019	-.384	.62995	.000	1
S2	.40000	.39698	-.003	-.754	.05042	.000	1

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897



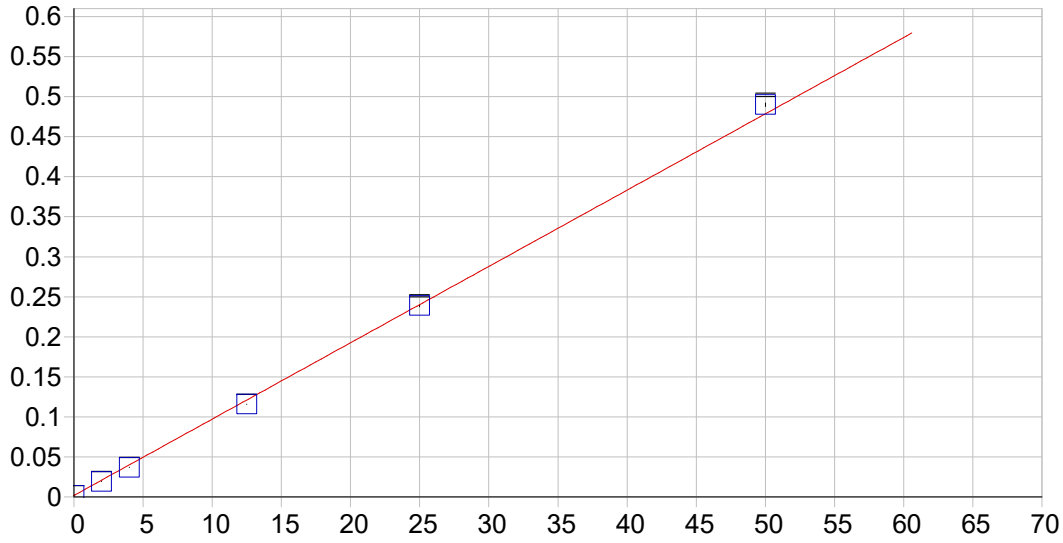
Zn 213.856 {158}

Date of Fit:	12/11/2024 11:52:35	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.004275	Re-Slope:	1.000000
A1 (Gain):	2.618262	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999889	Status:	OK.
Std Error of Est:	0.000922		
Predicted MDL:	0.000292		
Predicted MQL:	0.000972		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00426	.001	1
S1	.04000	.04280	.003	7.01	.11708	.002	1
S3	1.2500	1.2772	.027	2.18	3.3711	.014	1
S4	2.5000	2.5329	.033	1.31	6.6815	.042	1
S5	5.0000	4.9352	-.065	-1.30	13.017	.023	1
S2	.40000	.40197	.002	.492	1.0640	.003	1

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897



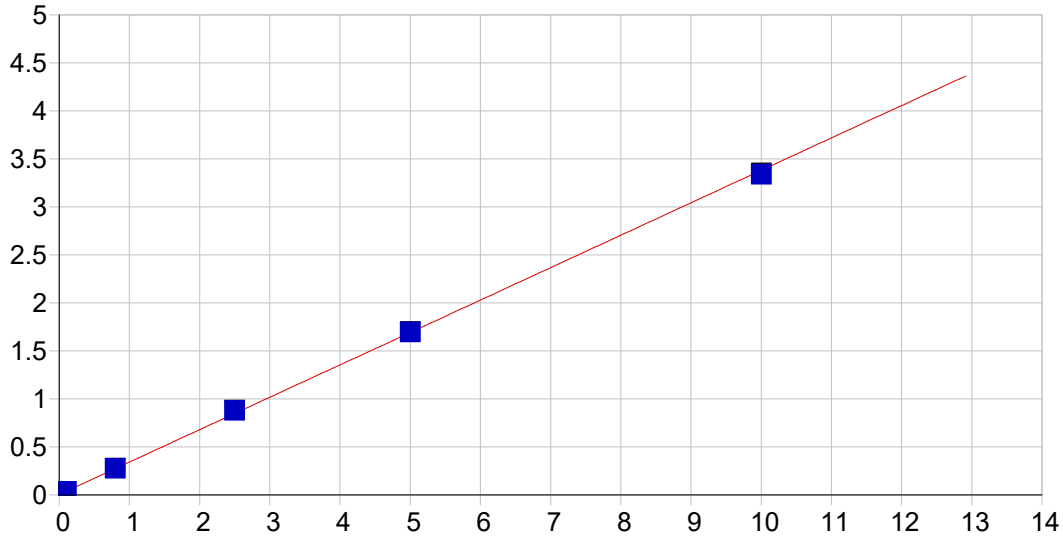
K 766.490 { 44}

Date of Fit:	12/11/2024 11:52:35	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.001873	Re-Slope:	1.000000
A1 (Gain):	0.009534	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999485	Status:	OK.
Std Error of Est:	0.000162		
Predicted MDL:	0.018935		
Predicted MQL:	0.063115		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00039	.000	.000	.00188	.000	1
S2	4.0000	3.6641	-.336	-8.40	.03680	.000	1
S3	12.500	11.946	-.554	-4.44	.11576	.000	1
S4	25.000	24.864	-.136	-.543	.23892	.001	1
S5	50.000	51.194	1.19	2.39	.48993	.002	1
S1	2.0000	1.8320	-.168	-8.40	.01934	.000	1

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897



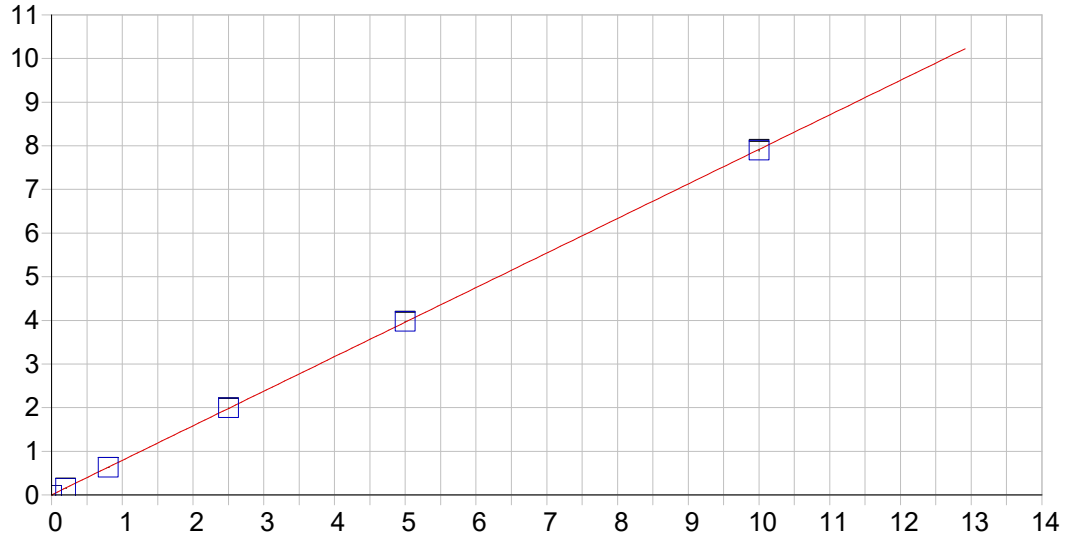
B 249.678 {135}

Date of Fit:	12/11/2024 11:52:35	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.004085	Re-Slope:	1.000000
A1 (Gain):	0.337624	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999862	Status:	OK.
Std Error of Est:	0.000294		
Predicted MDL:	0.000739		
Predicted MQL:	0.002464		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00001	-.000	.000	.00408	.000	1
S1	.10000	.10255	.003	2.55	.03857	.000	1
S3	2.5000	2.5950	.095	3.80	.87856	.002	1
S4	5.0000	5.0113	.011	.227	1.6927	.005	1
S5	10.000	9.8853	-.115	-1.15	3.3350	.010	1
S2	.80000	.80585	.006	.731	.27563	.000	1

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897



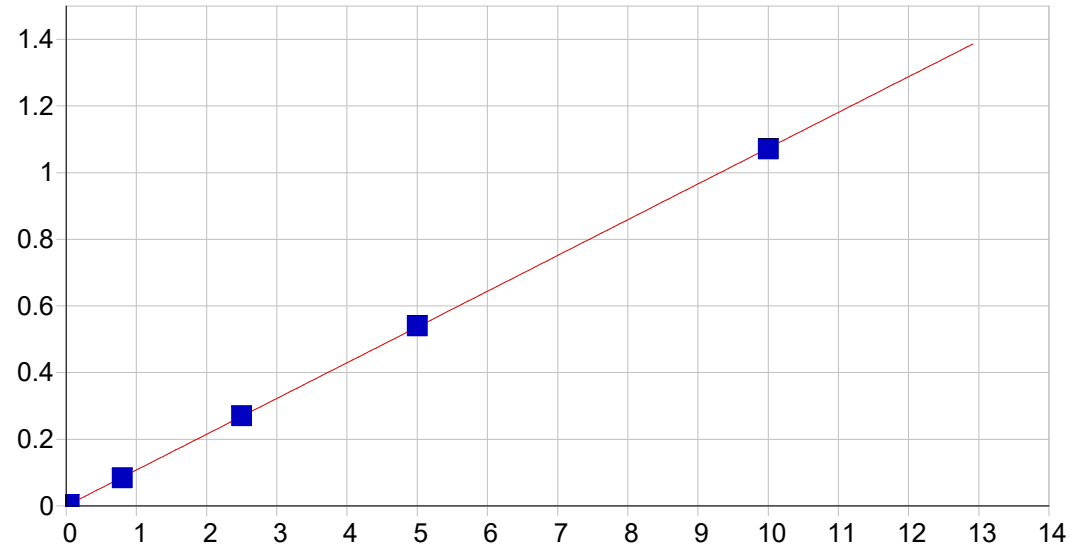
Mo 202.030 {467}

Date of Fit:	12/11/2024 11:52:35	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000833	Re-Slope:	1.000000
A1 (Gain):	0.791699	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999993	Status:	OK.
Std Error of Est:	0.000221		
Predicted MDL:	0.000251		
Predicted MQL:	0.000838		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00084	.000	1
S1	.20000	.19711	-.003	-1.45	.15688	.000	1
S3	2.5000	2.5139	.014	.554	1.9911	.002	1
S4	5.0000	5.0173	.017	.346	3.9730	.010	1
S5	10.000	9.9762	-.024	-.238	7.8990	.025	1
S2	.80000	.79551	-.004	-.561	.63064	.001	1

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897



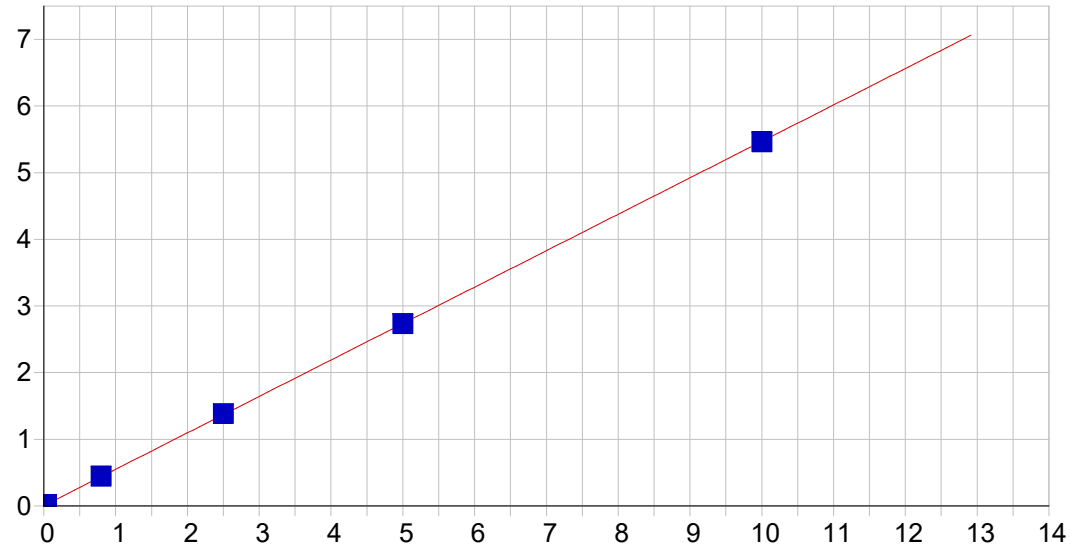
Sn 189.989 {478}

Date of Fit:	12/11/2024 11:52:35	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000326	Re-Slope:	1.000000
A1 (Gain):	0.107318	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999912	Status:	OK.
Std Error of Est:	0.000047		
Predicted MDL:	0.000845		
Predicted MQL:	0.002817		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00001	-.000	.000	.00033	.000	1
S1	.04000	.04962	.010	24.1	.00565	.000	1
S3	2.5000	2.5149	.015	.596	.26995	.000	1
S4	5.0000	5.0248	.025	.497	.53903	.002	1
S5	10.000	9.9726	-.027	-.274	1.0695	.002	1
S2	.80000	.77807	-.022	-2.74	.08374	.000	1

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897



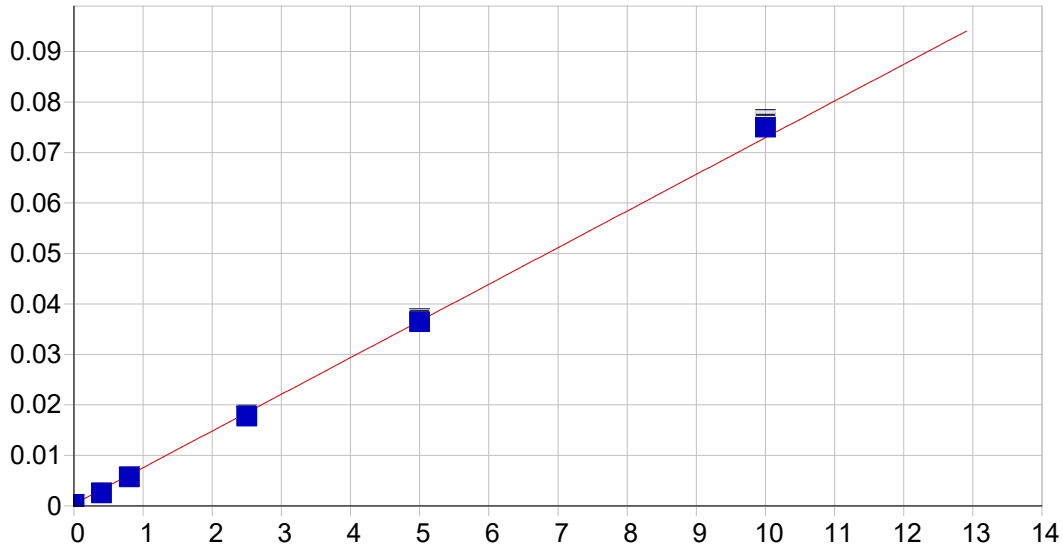
Ti 336.121 {100}

Date of Fit:	12/11/2024 11:52:35	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.002740	Re-Slope:	1.000000
A1 (Gain):	0.546679	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999990	Status:	OK.
Std Error of Est:	0.000080		
Predicted MDL:	0.000498		
Predicted MQL:	0.001660		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00274	.001	1
S1	.04000	.03980	-.000	-.505	.02448	.001	1
S3	2.5000	2.5253	.025	1.01	1.3828	.002	1
S4	5.0000	4.9900	-.010	-.200	2.7297	.008	1
S5	10.000	9.9794	-.021	-.206	5.4563	.008	1
S2	.80000	.80547	.005	.684	.44292	.002	1

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897



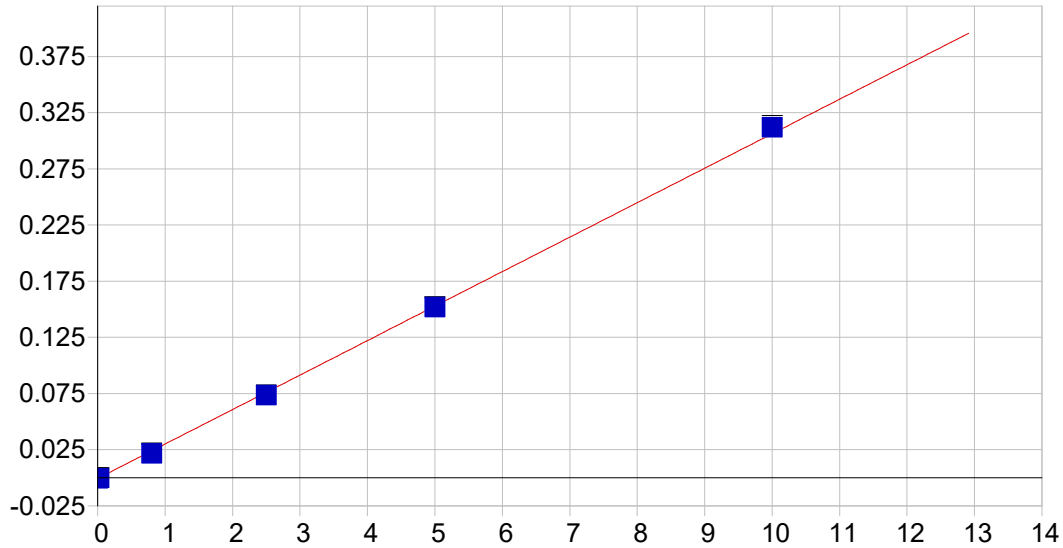
Si 288.158 {117}

Date of Fit:	12/11/2024 11:52:35	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000319	Re-Slope:	1.000000
A1 (Gain):	0.007261	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.998941	Status:	OK.
Std Error of Est:	0.000036		
Predicted MDL:	0.005420		
Predicted MQL:	0.018065		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00014	.000	.000	.00032	.000	1
S1	.40000	.30127	-.099	-24.7	.00251	.000	1
S3	2.5000	2.4031	-.097	-3.88	.01804	.000	1
S4	5.0000	4.9749	-.025	-.501	.03699	.000	1
S5	10.000	10.280	.280	2.80	.07606	.000	1
S2	.80000	.73893	-.061	-7.63	.00577	.000	1

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897



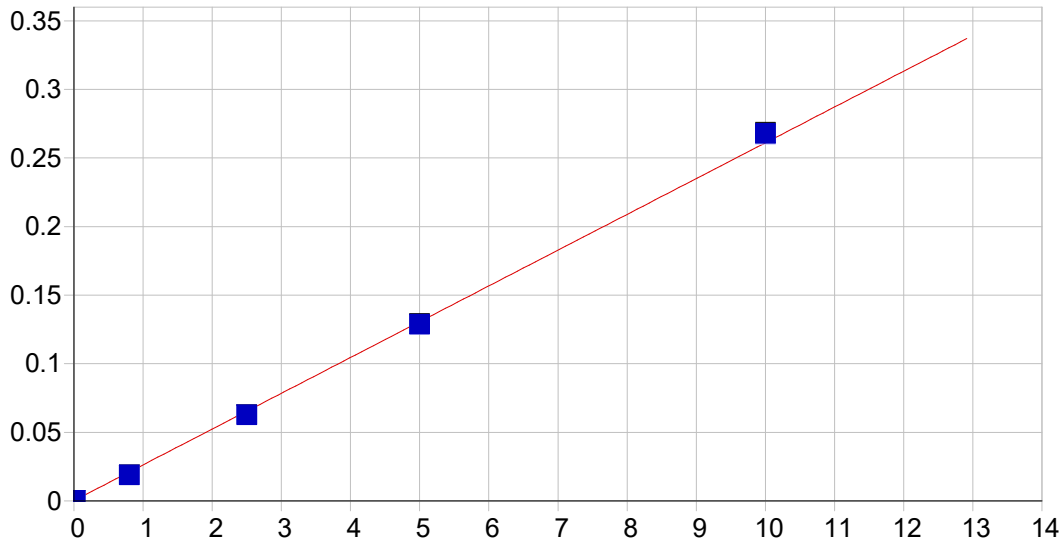
P 177.495 {490}

Date of Fit:	12/11/2024 11:52:35	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000613	Re-Slope:	1.000000
A1 (Gain):	0.030696	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999642	Status:	OK.
Std Error of Est:	0.000019		
Predicted MDL:	0.002692		
Predicted MQL:	0.008972		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00061	.000	1
S1	.02000	.01736	-.003	-13.2	-.00008	.000	1
S3	2.5000	2.4170	-.083	-3.32	.07357	.000	1
S4	5.0000	4.9701	-.030	-.598	.15193	.001	1
S5	10.000	10.187	.187	1.87	.31203	.002	1
S2	.80000	.72881	-.071	-8.90	.02175	.000	1

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897



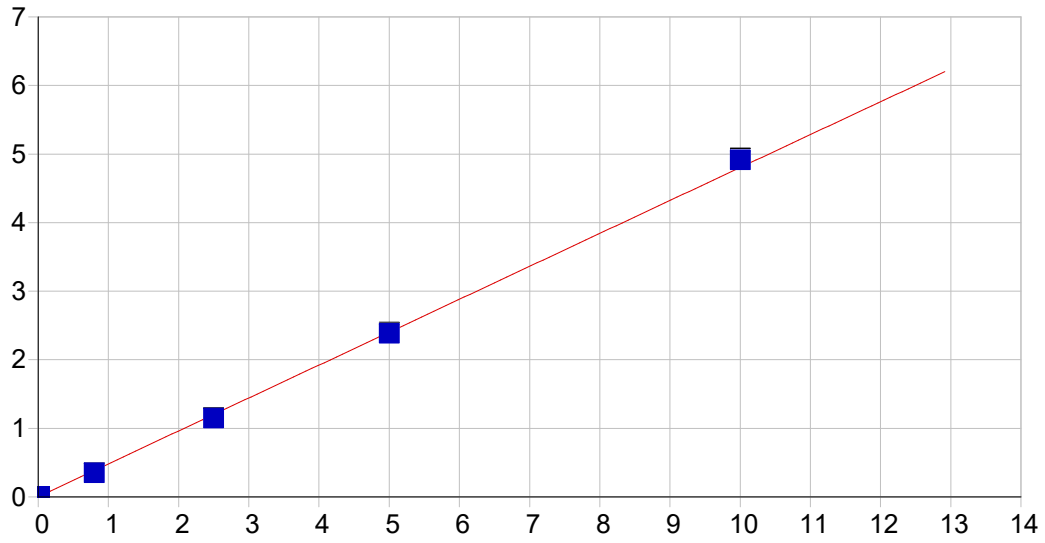
S 182.034 {485}

Date of Fit:	12/11/2024 11:52:35	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000198	Re-Slope:	1.000000
A1 (Gain):	0.026089	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999433	Status:	OK.
Std Error of Est:	0.000021		
Predicted MDL:	0.003292		
Predicted MQL:	0.010972		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00020	.000	1
S1	.02000	.01994	-.000	-.304	.00070	.000	1
S3	2.5000	2.3936	-.106	-4.25	.06248	.000	1
S4	5.0000	4.9323	-.068	-1.35	.12853	.000	1
S5	10.000	10.257	.257	2.57	.26712	.001	1
S2	.80000	.71688	-.083	-10.4	.01885	.000	1

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897



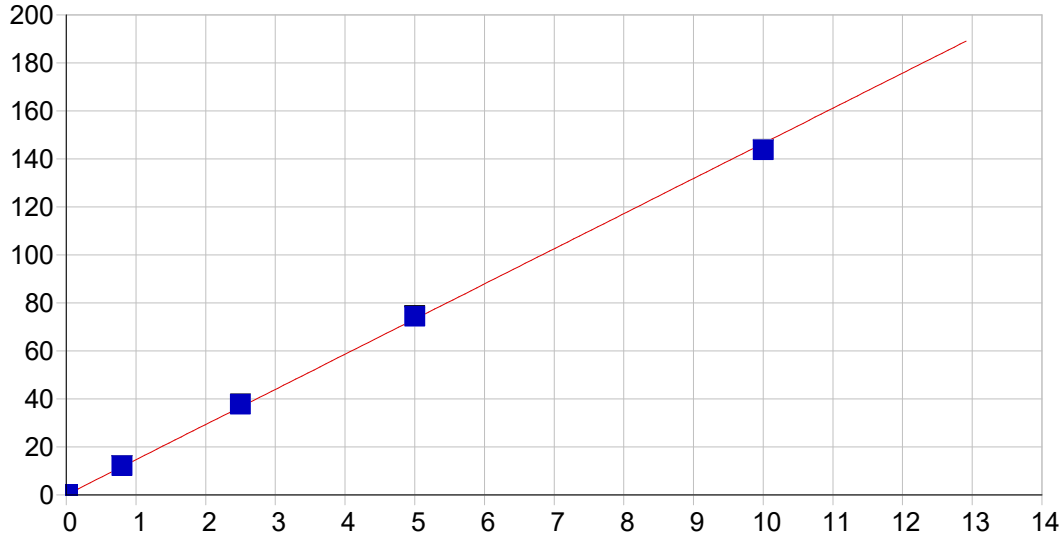
Li 670.784 { 50}

Date of Fit:	12/11/2024 11:52:35	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.001651	Re-Slope:	1.000000
A1 (Gain):	0.480119	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999487	Status:	OK.
Std Error of Est:	0.000361		
Predicted MDL:	0.001713		
Predicted MQL:	0.005711		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00001	.000	.000	.00165	.000	1
S5	10.000	10.229	.229	2.29	4.9172	.024	1
S4	5.0000	4.9645	-.036	-.710	2.3874	.014	1
S3	2.5000	2.3882	-.112	-4.47	1.1493	.005	1
S1	.02000	.01614	-.004	-19.3	.00958	.000	1
S2	.80000	.72202	-.078	-9.75	.34865	.003	1

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897



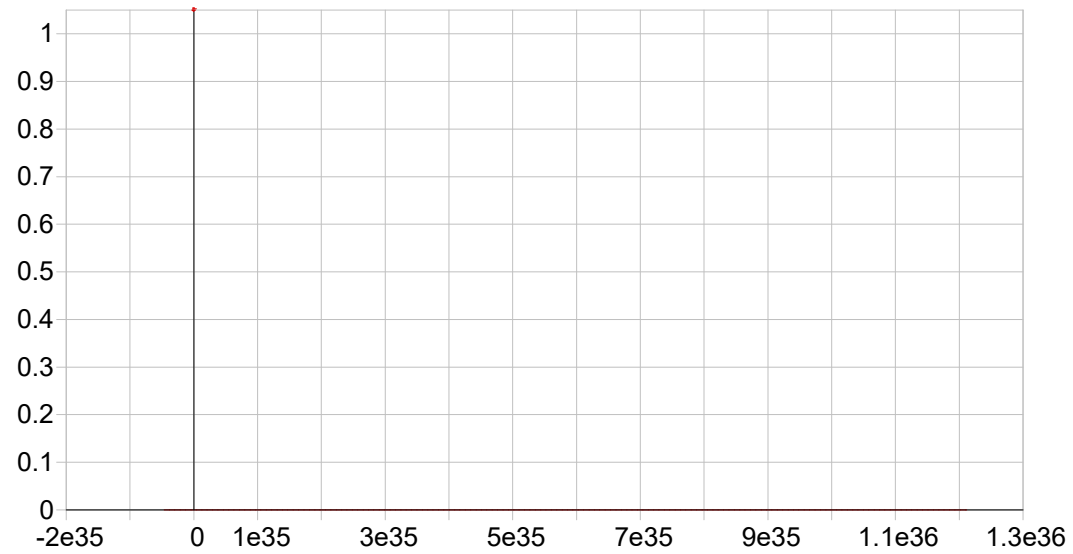
Sr 407.771 { 83}

Date of Fit:	12/11/2024 11:52:35	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.028726	Re-Slope:	1.000000
A1 (Gain):	14.644036	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999777	Status:	OK.
Std Error of Est:	0.007249		
Predicted MDL:	0.000032		
Predicted MQL:	0.000106		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.02872	.017	1
S1	.02000	.01913	-.001	-4.34	.31035	.002	1
S3	2.5000	2.5790	.079	3.16	37.832	.018	1
S4	5.0000	5.0752	.075	1.50	74.424	.263	1
S5	10.000	9.8164	-.184	-1.84	143.93	.088	1
S2	.80000	.83021	.030	3.78	12.198	.045	1

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

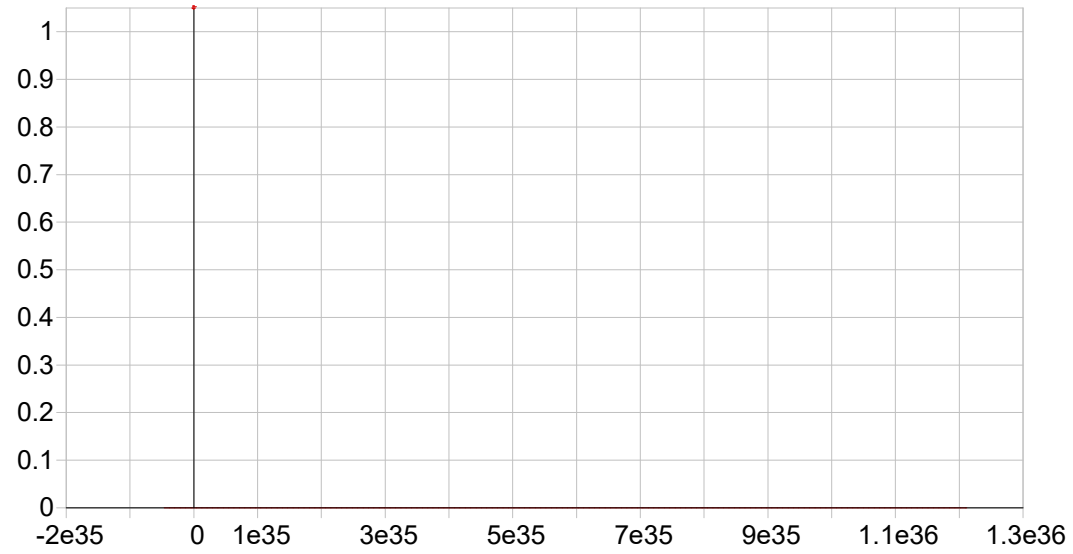


Y 224.306 {450}*

Date of Fit:	12/11/2024 10:08:28	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



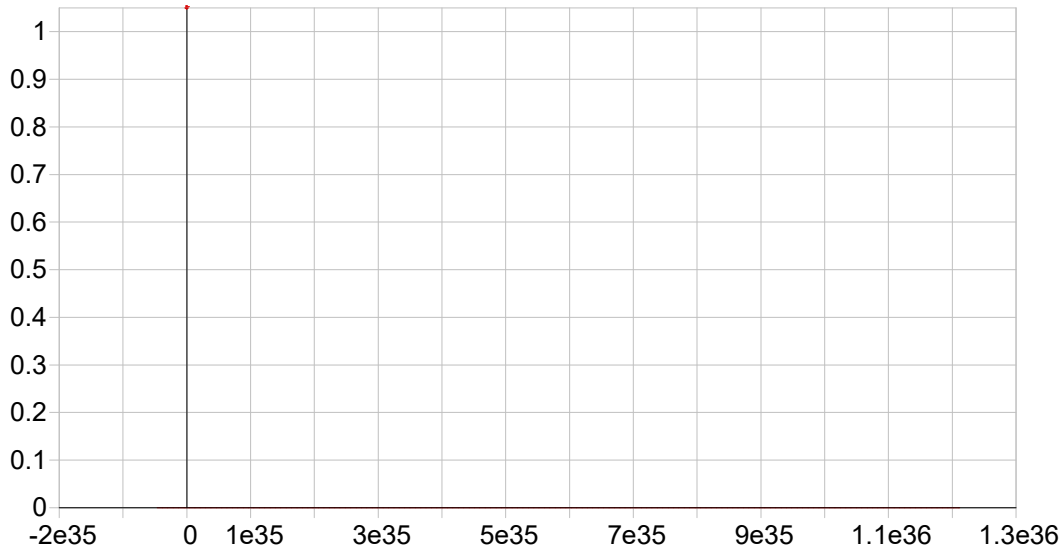
Y 360.073 { 94}*

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:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

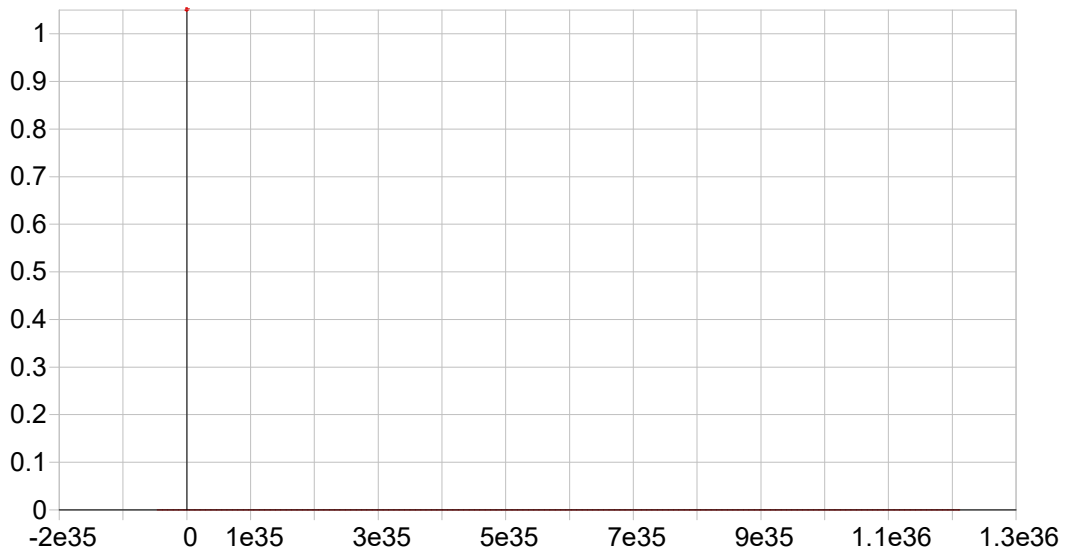
A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.000000		Status:	Warning	Zero Gain	
Std Error of Est:		0.000000					
Predicted MDL:		n/a					
Predicted MQL:		n/a					
Std. Name	**Stated Conc.**	**Found Conc.**	**Difference**	**% Diff.**	**(S)IR**	**Std Dev**	**Emphasis**



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**

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

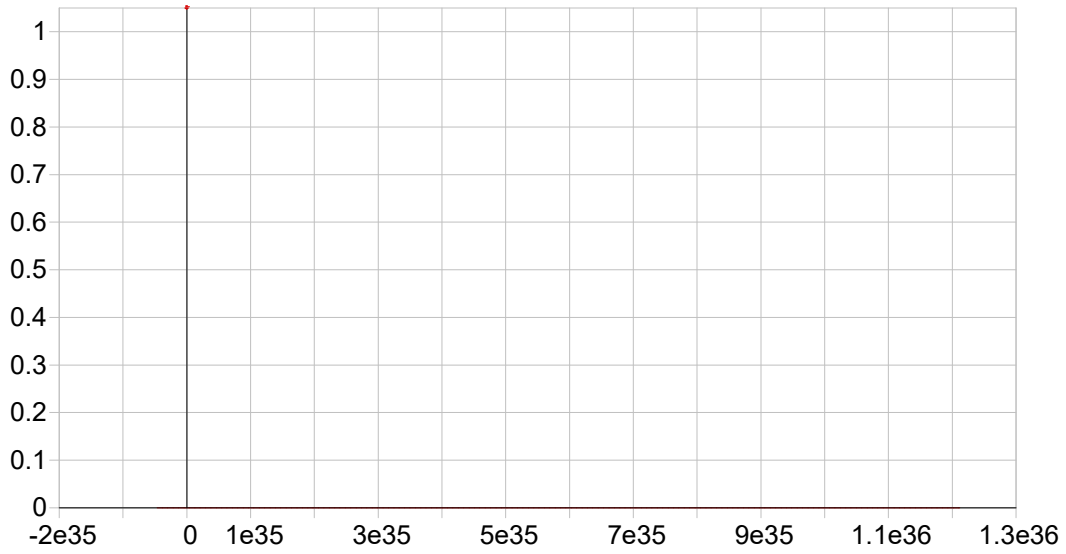


Y 224.306 {150}*

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

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

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:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: S0 Acquired: 12/11/2024 11:27:02 Type: Cal
Method: NON EPA-6010-200.7(v2516) 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	-.00026	-.00044	-.00015	.00019	.00031	.00084	.01363	-.00038
Stddev	.00015	.00018	.00003	.00013	.00011	.00028	.00907	.00014
%RSD	58.810	41.732	22.295	72.006	34.539	33.544	66.504	37.207
#1	-.00043	-.00064	-.00017	.00032	.00035	.00105	.02351	-.00053
#2	-.00012	-.00038	-.00017	.00019	.00040	.00095	.01170	-.00026
#3	-.00025	-.00029	-.00011	.00005	.00019	.00052	.00569	-.00034

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	.00003	.00286	.00004	.00003	.00016	.00011	.00094	.00010
Stddev	.00028	.00046	.00004	.00014	.00017	.00002	.00043	.00003
%RSD	1105.5	16.143	116.96	518.99	104.89	13.897	45.524	32.341
#1	-.00000	.00338	.00007	.00007	.00029	.00013	.00142	.00013
#2	.00032	.00272	.00006	.00014	.00024	.00011	.00076	.00010
#3	-.00024	.00249	-.00001	-.00013	-.00003	.00010	.00063	.00007

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	-.00020	-.00175	.00435	.00023	.00426	.00188	.00408	.00084
Stddev	.00009	.00011	.00018	.00011	.00083	.00012	.00023	.00021
%RSD	44.816	5.9985	4.2454	45.576	19.417	6.3468	5.6405	25.405
#1	-.00022	-.00185	.00420	.00035	.00489	.00189	.00399	.00103
#2	-.00027	-.00177	.00429	.00014	.00458	.00175	.00435	.00087
#3	-.00010	-.00164	.00456	.00022	.00332	.00199	.00391	.00061

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	.00033	.00274	.00032	-.00061	.00020	.00165	.02872
Stddev	.00005	.00072	.00005	.00002	.00013	.00047	.01732
%RSD	14.030	26.215	14.444	3.7831	65.896	28.234	60.293
#1	.00036	.00356	.00036	-.00061	.00035	.00145	.04774
#2	.00035	.00240	.00033	-.00063	.00015	.00219	.02455
#3	.00027	.00225	.00027	-.00059	.00010	.00133	.01387

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: S0 Acquired: 12/11/2024 11:27:02 Type: Cal
Method: NON EPA-6010-200.7(v2516) 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	2577.5	62640.	13104.	1920.4	4252.5
Stddev	10.5	105.	31.	5.0	3.5
%RSD	.40545	.16763	.23735	.26093	.08126
#1	2589.5	62751.	13135.	1916.9	4254.9
#2	2573.0	62627.	13105.	1918.2	4254.1
#3	2570.1	62542.	13073.	1926.2	4248.6

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: S1 Acquired: 12/11/2024 11:31:28 Type: Cal
Method: NON EPA-6010-200.7(v2516) 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	.00081	.00197	.00222	.00197	.00776	.00891	.37662	.02058
Stddev	.00007	.00012	.00016	.00012	.00016	.00013	.00187	.00022
%RSD	8.9205	6.0547	7.3107	6.2777	2.0929	1.4975	.49703	1.0656
#1	.00084	.00209	.00214	.00190	.00761	.00876	.37867	.02034
#2	.00087	.00197	.00212	.00189	.00774	.00901	.37619	.02078
#3	.00073	.00185	.00241	.00211	.00794	.00896	.37500	.02062

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	.01244	.11222	.00208	.02415	.01757	.00062	.01401	.03058
Stddev	.00023	.00091	.00003	.00005	.00023	.00002	.00016	.00011
%RSD	1.8408	.81421	1.4335	.22040	1.2841	2.8554	1.1152	.35381
#1	.01245	.11172	.00205	.02411	.01732	.00060	.01394	.03068
#2	.01266	.11328	.00208	.02421	.01763	.00063	.01419	.03059
#3	.01221	.11167	.00211	.02414	.01776	.00062	.01391	.03046

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	.02432	.00094	.04016	.00504	.11708	.01934	.03857	.15688
Stddev	.00009	.00004	.00020	.00010	.00159	.00006	.00012	.00042
%RSD	.37267	4.0812	.50564	1.8887	1.3608	.32938	.32219	.26470
#1	.02423	.00091	.04004	.00513	.11718	.01927	.03866	.15687
#2	.02430	.00094	.04040	.00494	.11862	.01939	.03861	.15648
#3	.02441	.00098	.04006	.00504	.11544	.01936	.03843	.15731

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	.00565	.02448	.00251	-.00008	.00070	.00958	.31035
Stddev	.00005	.00126	.00001	.00010	.00003	.00030	.00177
%RSD	.89648	5.1346	.57468	123.93	4.4568	3.1694	.57124
#1	.00559	.02373	.00252	.00002	.00069	.00930	.31122
#2	.00565	.02593	.00250	-.00017	.00067	.00990	.31153
#3	.00569	.02378	.00252	-.00009	.00073	.00953	.30831

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: S1 Acquired: 12/11/2024 11:31:28 Type: Cal
Method: NON EPA-6010-200.7(v2516) 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	2554.2	62232.	13291.	1883.8	4204.7
Stddev	11.9	69.	61.	2.9	11.1
%RSD	.46569	.11078	.45559	.15162	.26441
#1	2559.9	62283.	13265.	1880.8	4210.3
#2	2562.1	62154.	13248.	1886.6	4211.8
#3	2540.5	62260.	13360.	1883.9	4191.8

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: S2 Acquired: 12/11/2024 11:35:50 Type: Cal
Method: NON EPA-6010-200.7(v2516) 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	.03552	.04946	.18599	.06578	.12276	.12709	5.9990	.13629
Stddev	.00015	.00076	.00018	.00034	.00033	.00010	.0296	.00050
%RSD	.41522	1.5344	.09445	.51902	.26682	.07684	.49379	.36987
#1	.03562	.05033	.18619	.06617	.12314	.12720	5.9761	.13665
#2	.03560	.04901	.18594	.06562	.12260	.12702	6.0325	.13650
#3	.03535	.04903	.18585	.06554	.12255	.12706	5.9884	.13571

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	.82214	.21400	.03250	.32020	.16498	.00476	.26340	.05451
Stddev	.00062	.00137	.00005	.00041	.00063	.00002	.00183	.00013
%RSD	.07531	.64117	.16306	.12732	.38151	.38779	.69456	.23885
#1	.82150	.21340	.03244	.31984	.16545	.00476	.26295	.05466
#2	.82218	.21557	.03255	.32065	.16522	.00478	.26542	.05447
#3	.82274	.21303	.03252	.32012	.16426	.00474	.26184	.05441

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	.24404	.05198	.07716	.05042	1.0640	.03680	.27563	.63064
Stddev	.00034	.00016	.00054	.00016	.0025	.00023	.00027	.00147
%RSD	.13741	.31454	.69785	.31499	.23868	.61857	.09761	.23315
#1	.24382	.05180	.07662	.05046	1.0614	.03654	.27541	.63231
#2	.24386	.05212	.07769	.05025	1.0665	.03693	.27593	.62956
#3	.24442	.05202	.07719	.05055	1.0641	.03694	.27555	.63004

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	.08374	.44292	.00577	.02175	.01885	.34865	12.198
Stddev	.00019	.00194	.00003	.00012	.00009	.00287	.045
%RSD	.22650	.43828	.52965	.55177	.48144	.82405	.36963
#1	.08395	.44360	.00575	.02189	.01894	.34742	12.164
#2	.08367	.44443	.00576	.02173	.01884	.35194	12.249
#3	.08360	.44073	.00581	.02165	.01876	.34660	12.181

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: S2 Acquired: 12/11/2024 11:35:50 Type: Cal
Method: NON EPA-6010-200.7(v2516) 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	2472.7	60526.	13449.	1806.4	4042.9
Stddev	1.3	90.	27.	3.6	.6
%RSD	.05077	.14899	.20094	.19808	.01484
#1	2471.9	60630.	13436.	1803.6	4043.2
#2	2472.1	60483.	13431.	1810.5	4042.3
#3	2474.1	60466.	13480.	1805.1	4043.4

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: S3 Acquired: 12/11/2024 11:39:57 Type: Cal
Method: NON EPA-6010-200.7(v2516) 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	.11453	.15701	.59642	.21078	.39309	.40667	18.692	.43481
Stddev	.00055	.00039	.00079	.00032	.00028	.00113	.049	.00129
%RSD	.47813	.24871	.13244	.14998	.07087	.27898	.26365	.29782
#1	.11477	.15687	.59620	.21048	.39334	.40536	18.724	.43423
#2	.11493	.15745	.59729	.21111	.39313	.40731	18.716	.43629
#3	.11391	.15671	.59576	.21076	.39279	.40734	18.635	.43390

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	2.6612	.67253	.10365	1.0338	.52480	.01518	.82163	.17423
Stddev	.0014	.00073	.00010	.0004	.00031	.00003	.00272	.00054
%RSD	.05142	.10843	.09676	.03823	.05848	.18685	.33054	.30926
#1	2.6611	.67188	.10360	1.0343	.52487	.01516	.81998	.17485
#2	2.6626	.67332	.10377	1.0336	.52446	.01521	.82476	.17390
#3	2.6599	.67238	.10359	1.0335	.52506	.01517	.82013	.17394

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	.78528	.16834	.24225	.16013	3.3711	.11576	.87856	1.9911
Stddev	.00029	.00032	.00046	.00030	.0137	.00017	.00184	.0019
%RSD	.03756	.18982	.19078	.18539	.40575	.14956	.20958	.09371
#1	.78494	.16814	.24259	.15979	3.3680	.11561	.87708	1.9920
#2	.78542	.16870	.24243	.16027	3.3592	.11571	.88062	1.9922
#3	.78549	.16816	.24172	.16032	3.3860	.11595	.87799	1.9889

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	.26995	1.3828	.01804	.07357	.06248	1.1493	37.832
Stddev	.00039	.0024	.00003	.00011	.00012	.0053	.018
%RSD	.14374	.17396	.17695	.14612	.19276	.46015	.04686
#1	.26952	1.3812	.01808	.07367	.06243	1.1504	37.813
#2	.27029	1.3856	.01802	.07358	.06239	1.1540	37.848
#3	.27003	1.3816	.01802	.07345	.06261	1.1436	37.836

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: S3 Acquired: 12/11/2024 11:39:57 Type: Cal
Method: NON EPA-6010-200.7(v2516) 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	2410.7	59009.	13392.	1759.1	3846.9
Stddev	3.4	28.	26.	7.6	3.7
%RSD	.14069	.04713	.19457	.43135	.09720
#1	2407.9	59021.	13389.	1758.3	3847.5
#2	2409.8	59029.	13368.	1767.1	3843.0
#3	2414.5	58977.	13420.	1752.0	3850.4

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: S4 Acquired: 12/11/2024 11:44:13 Type: Cal
Method: NON EPA-6010-200.7(v2516) 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	.23305	.30776	1.1843	.42928	.80111	.81148	37.217	.83727
Stddev	.00025	.00401	.0021	.00187	.00217	.00317	.371	.00366
%RSD	.10803	1.3020	.17419	.43512	.27088	.39054	.99698	.43719
#1	.23285	.30624	1.1820	.42713	.79877	.80783	36.850	.83351
#2	.23333	.30474	1.1847	.43030	.80148	.81347	37.592	.84082
#3	.23295	.31231	1.1861	.43042	.80307	.81316	37.208	.83749

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	5.3505	1.3120	.20296	2.0809	1.0446	.03031	1.5980	.34495
Stddev	.0043	.0040	.00012	.0020	.0037	.00006	.0058	.00184
%RSD	.08041	.30121	.05740	.09514	.35029	.20608	.36344	.53236
#1	5.3467	1.3077	.20296	2.0790	1.0405	.03036	1.5928	.34293
#2	5.3495	1.3130	.20308	2.0806	1.0459	.03024	1.6043	.34540
#3	5.3552	1.3154	.20285	2.0829	1.0475	.03034	1.5970	.34652

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	1.5719	.33517	.50518	.31745	6.6815	.23892	1.6927	3.9730
Stddev	.0017	.00061	.00415	.00110	.0416	.00129	.0055	.0098
%RSD	.10737	.18234	.82193	.34566	.62230	.53902	.32241	.24746
#1	1.5699	.33587	.50896	.31621	6.7285	.24001	1.6864	3.9622
#2	1.5725	.33476	.50585	.31788	6.6661	.23924	1.6958	3.9755
#3	1.5731	.33488	.50073	.31827	6.6497	.23750	1.6960	3.9814

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	.53903	2.7297	.03699	.15193	.12853	2.3874	74.424
Stddev	.00184	.0075	.00017	.00067	.00035	.0141	.263
%RSD	.34080	.27592	.45819	.44204	.26876	.58902	.35398
#1	.53763	2.7247	.03679	.15186	.12834	2.3921	74.124
#2	.53836	2.7383	.03706	.15129	.12833	2.3984	74.618
#3	.54111	2.7260	.03710	.15263	.12893	2.3715	74.529

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: S4 Acquired: 12/11/2024 11:44:13 Type: Cal
Method: NON EPA-6010-200.7(v2516) 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	2313.3	57699.	13473.	1676.7	3649.6
Stddev	7.7	140.	26.	18.1	9.1
%RSD	.33330	.24334	.19599	1.0798	.24971
#1	2322.1	57541.	13497.	1657.7	3659.1
#2	2309.9	57745.	13445.	1678.6	3648.8
#3	2307.9	57810.	13476.	1693.8	3640.9

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: S5 Acquired: 12/11/2024 11:48:24 Type: Cal
Method: NON EPA-6010-200.7(v2516) 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	.47424	.60738	2.3473	.87024	1.6344	1.6350	74.091	1.6319
Stddev	.00232	.01055	.0037	.00411	.0075	.0023	.665	.0080
%RSD	.48901	1.7368	.15739	.47207	.45950	.14014	.89714	.49093
#1	.47197	.60512	2.3430	.86638	1.6271	1.6324	73.775	1.6411
#2	.47415	.59815	2.3500	.86977	1.6340	1.6358	73.643	1.6283
#3	.47661	.61888	2.3488	.87456	1.6421	1.6368	74.855	1.6263

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	10.629	2.5804	.39460	4.1575	2.0683	.06015	3.1523	.68898
Stddev	.018	.0028	.00106	.0076	.0073	.00011	.0086	.00069
%RSD	.16961	.10731	.26904	.18311	.35126	.18626	.27295	.09986
#1	10.615	2.5828	.39582	4.1501	2.0619	.06022	3.1600	.68945
#2	10.649	2.5774	.39401	4.1653	2.0668	.06002	3.1430	.68931
#3	10.622	2.5810	.39395	4.1572	2.0762	.06022	3.1539	.68819

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	3.1204	.67295	1.0430	.62995	13.017	.48993	3.3350	7.8990
Stddev	.0057	.00025	.0046	.00042	.023	.00218	.0101	.0245
%RSD	.18332	.03675	.44486	.06652	.17844	.44496	.30363	.31061
#1	3.1150	.67323	1.0403	.62988	13.038	.48759	3.3441	7.8779
#2	3.1264	.67277	1.0402	.63040	13.021	.49031	3.3368	7.8932
#3	3.1198	.67284	1.0483	.62957	12.992	.49190	3.3241	7.9259

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	1.0695	5.4563	.07606	.31203	.26712	4.9172	143.93
Stddev	.0018	.0078	.00047	.00157	.00104	.0240	.09
%RSD	.16725	.14342	.61370	.50276	.39107	.48785	.06102
#1	1.0690	5.4551	.07552	.31261	.26669	4.9121	143.87
#2	1.0680	5.4491	.07628	.31025	.26635	4.8962	143.88
#3	1.0714	5.4647	.07637	.31323	.26831	4.9434	144.03

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: S5 Acquired: 12/11/2024 11:48:24 Type: Cal
Method: NON EPA-6010-200.7(v2516) 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	2174.9	55680.	13153.	1584.0	3390.9
Stddev	8.2	102.	29.	4.3	10.4
%RSD	.37852	.18386	.21970	.27114	.30610
#1	2184.1	55787.	13119.	1589.0	3402.9
#2	2172.2	55668.	13170.	1581.8	3385.3
#3	2168.3	55584.	13169.	1581.3	3384.5

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: ICV01 Acquired: 12/11/2024 11:52:38 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.9956555	1.058630	1.003427	1.030472	1.016125	2.577040
Stddev	.0018874	.011427	.002438	.004289	.004159	.009785
%RSD	.1895671	1.079373	.2429640	.4161783	.4093101	.3796898
#1	.9943382	1.071780	1.001779	1.031070	1.017070	2.585867
#2	.9948104	1.052990	1.006227	1.025916	1.011575	2.566519
#3	.9978178	1.051120	1.002274	1.034430	1.019731	2.578734

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5286476	.5238522	.5042994	10.15236	.5325838	.5119763
Stddev	.0032967	.0018190	.0012701	.02343	.0018415	.0002927
%RSD	.6236036	.3472420	.2518613	.2307386	.3457693	.0571730
#1	.5324421	.5233868	.5029885	10.15242	.5322481	.5117843
#2	.5264876	.5223110	.5043853	10.12890	.5309333	.5118314
#3	.5270130	.5258587	.5055244	10.17575	.5345701	.5123132

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5240510	10.00769	.5288952	5.943126	.5149278	.2548303
Stddev	.0010497	.01650	.0013535	.016516	.0007076	.0003441
%RSD	.2003099	.1648682	.2559029	.2778957	.1374229	.1350391
#1	.5230892	9.99150	.5285848	5.936851	.5146790	.2547062
#2	.5238931	10.00709	.5277238	5.930668	.5157263	.2545655
#3	.5251708	10.02449	.5303768	5.961860	.5143782	.2552193

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.646189	.5197283	1.037998	9.838470	F .0016521	F .0012801
Stddev	.025354	.0018026	.001669	.055109	.0010278	.0009777
%RSD	.2628410	.3468341	.1607761	.5601350	62.20958	76.37744
#1	9.635384	.5215984	1.036084	9.789154	.0027662	.0024004
#2	9.628028	.5180018	1.038762	9.828301	.0007409	.0008411
#3	9.675156	.5195847	1.039149	9.897955	.0014493	.0005988

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: ICV01 Acquired: 12/11/2024 11:52:38 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	F .0085026	F .0033255	F .0128301	F .0020786	F -.000589	F .0027230
Stddev	.0004475	.0028261	.0098937	.0014597	.003879	.0030505
%RSD	5.263645	84.98326	77.11319	70.22281	658.5723	112.0256
#1	.0081313	.0063781	.0240092	.0037546	-.000120	.0062194
#2	.0083769	.0027981	.0092792	.0013957	.003034	.0013450
#3	.0089995	.0008002	.0052019	.0010857	-.004681	.0006047

Elem	Sr4077
Units	ppm
Avg	F -.005882
Stddev	.002862
%RSD	48.66380
#1	-.002759
#2	-.006504
#3	-.008382

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2370.473	59087.59	13581.95	1717.128	3896.441
Stddev	5.324	101.16	32.22	4.543	5.450
%RSD	.2245776	.1712086	.2372377	.2645627	.1398655
#1	2370.660	59027.25	13567.32	1721.833	3893.481
#2	2375.701	59204.38	13618.89	1716.783	3902.731
#3	2365.059	59031.13	13559.63	1712.767	3893.112

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: LLICV01 Acquired: 12/11/2024 12:00:54 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.0219762	.0420931	.0102720	.0203254	.0485131	.0940965
Stddev	.0019627	.0019174	.0005441	.0017236	.0007501	.0032385
%RSD	8.930890	4.555085	5.297175	8.480224	1.546075	3.441646
#1	.0211128	.0410329	.0107937	.0192008	.0486372	.0977579
#2	.0205932	.0443065	.0097079	.0194656	.0477088	.0929238
#3	.0242225	.0409400	.0103144	.0223098	.0491934	.0916077

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0918387	.0059324	.0056785	1.999655	.0102801	.0287863
Stddev	.0000639	.0000689	.0000272	.013714	.0003262	.0001211
%RSD	.0695566	1.162108	.4790819	.6858144	3.173031	.4208316
#1	.0918135	.0058594	.0056564	1.989147	.0104956	.0287102
#2	.0917914	.0059964	.0056704	2.015169	.0099048	.0287229
#3	.0919114	.0059415	.0057089	1.994649	.0104398	.0289260

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0211852	.0855195	.0194807	2.065959	.0383466	.0102675
Stddev	.0005276	.0044927	.0003112	.009123	.0002160	.0001625
%RSD	2.490381	5.253379	1.597414	.4415837	.5632502	1.582639
#1	.0206889	.0904716	.0194607	2.055426	.0381227	.0101131
#2	.0217393	.0843820	.0198015	2.071076	.0385537	.0102523
#3	.0211275	.0817049	.0191801	2.071374	.0383631	.0104370

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.786522	.0372831	.0435314	1.869248	.1003077	.2023237
Stddev	.006376	.0012266	.0003562	.010730	.0008941	.0004396
%RSD	.3569102	3.290039	.8181358	.5740252	.8913912	.2172867
#1	1.782078	.0363630	.0438206	1.863636	.0996980	.2019396
#2	1.783661	.0368105	.0431336	1.862489	.1013341	.2022284
#3	1.793828	.0386757	.0436401	1.881621	.0998909	.2028032

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: LLICV01 Acquired: 12/11/2024 12:00:54 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	F .0482544	.0382738	F .3163010	.0176091	.0175301	F .0139186
Stddev	.0007735	.0008329	.0024031	.0027144	.0020567	.0004985
%RSD	1.602881	2.176021	.7597486	15.41489	11.73220	3.581277
#1	.0491388	.0374770	.3140661	.0206206	.0198694	.0134920
#2	.0477047	.0382060	.3159942	.0168556	.0167149	.0137974
#3	.0479196	.0391386	.3188428	.0153510	.0160059	.0144665

Elem	Sr4077
Units	ppm
Avg	.0188285
Stddev	.0000223
%RSD	.1184472
#1	.0188482
#2	.0188043
#3	.0188330

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2406.330	60016.49	13684.36	1722.468	4061.075
Stddev	2.979	50.65	38.19	5.074	4.722
%RSD	.1238048	.0843905	.2790709	.2946032	.1162629
#1	2405.457	59963.28	13713.30	1717.737	4056.208
#2	2409.649	60022.06	13641.07	1727.827	4061.380
#3	2403.885	60064.12	13698.69	1721.839	4065.636

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: ICB01 Acquired: 12/11/2024 12:39:48 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	-.000874	-.000173	-.001844	.0004509	-.001832	-.008045	-.007774
Stddev	.002792	.000421	.001532	.0011334	.000818	.003975	.000556
%RSD	319.4376	244.1525	83.11063	251.3949	44.66462	49.40346	7.151345
#1	-.000689	.000210	-.000757	.0009426	-.001746	-.004712	-.007133
#2	.001821	-.000624	-.001178	-.000845	-.001060	-.006981	-.008068
#3	-.003755	-.000104	-.003596	.001255	-.002689	-.012444	-.008122

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000039	-.000136	-.033131	.0006482	-.000186	-.000284	-.013802
Stddev	.000058	.000107	.003056	.0002876	.000226	.000058	.000753
%RSD	151.4015	78.31002	9.224104	44.36780	121.4858	20.38190	5.452678
#1	-.000069	-.000066	-.029962	.0007852	.000074	-.000244	-.014580
#2	.000029	-.000083	-.036060	.0008417	-.000338	-.000350	-.013749
#3	-.000076	-.000259	-.033369	.0003177	-.000293	-.000257	-.013078

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001393	-.021600	-.000160	.0002502	-.094882	-.002649	.0000993
Stddev	.000044	.012808	.000058	.0000434	.019695	.000419	.0001220
%RSD	3.175511	59.29620	36.20974	17.34563	20.75706	15.82846	122.7903
#1	-.001428	-.035053	-.000100	.0002032	-.117178	-.002793	.0002290
#2	-.001407	-.020193	-.000215	.0002587	-.087614	-.002977	.0000819
#3	-.001343	-.009554	-.000164	.0002887	-.079855	-.002177	-.000013

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.065625	-.009235	-.000698	.0098376	-.001560	-.012245	-.003697
Stddev	.015931	.000939	.000047	.0005048	.000188	.007164	.002530
%RSD	24.27609	10.16594	6.742335	5.131674	12.05850	58.50287	68.44911
#1	-.083135	-.008504	-.000671	.0093952	-.001709	-.017416	-.002582
#2	-.051987	-.008907	-.000671	.0097300	-.001349	-.004068	-.001916
#3	-.061752	-.010294	-.000752	.0103875	-.001622	-.015251	-.006593

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: ICB01 Acquired: 12/11/2024 12:39:48 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	-.001690	-.004541	-.001949
Stddev	.003562	.001494	.000028
%RSD	210.8510	32.90543	1.449105
#1	.000706	-.004087	-.001956
#2	-.005783	-.006210	-.001919
#3	.000009	-.003327	-.001974

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2351.268	59419.36	13805.48	1695.545	4037.656
Stddev	11.162	198.18	183.95	4.199	3.090
%RSD	.4747177	.3335292	1.332461	.2476618	.0765361
#1	2358.332	59626.47	13994.51	1700.219	4037.232
#2	2357.072	59400.11	13794.84	1694.325	4040.937
#3	2338.400	59231.51	13627.07	1692.091	4034.800

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: CRI01 Acquired: 12/11/2024 12:44:09 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.0204420	.0400566	.0108822	.0199518	.0478676	.0924136	.0925359
Stddev	.0024627	.0012156	.0001387	.0013346	.0014513	.0037402	.0001013
%RSD	12.04723	3.034681	1.274747	6.688948	3.031975	4.047242	.1094826
#1	.0232770	.0388143	.0110421	.0185435	.0473804	.0967092	.0926058
#2	.0192172	.0412437	.0107933	.0201140	.0467225	.0898790	.0924197
#3	.0188319	.0401117	.0108113	.0211978	.0494998	.0906525	.0925823

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0060217	.0056640	2.025262	.0103419	.0290251	.0214906	.0811590
Stddev	.0000095	.0000614	.015281	.0003378	.0002061	.0004028	.0003882
%RSD	.1583521	1.084213	.7545323	3.266570	.7102036	1.874199	.4783777
#1	.0060135	.0057345	2.013911	.0099760	.0289895	.0219544	.0815037
#2	.0060193	.0056218	2.019238	.0104079	.0288391	.0212887	.0812348
#3	.0060322	.0056358	2.042637	.0106419	.0292467	.0212287	.0807384

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0195732	2.103166	.0389669	.0108354	1.809624	.0386841	.0443282
Stddev	.0003547	.018306	.0002043	.0001101	.010529	.0002050	.0003650
%RSD	1.812136	.8704225	.5243129	1.016557	.5818103	.5298839	.8234414
#1	.0199584	2.099776	.0387363	.0109403	1.817194	.0388165	.0446537
#2	.0192601	2.086792	.0390390	.0108453	1.814079	.0387879	.0443974
#3	.0195011	2.122931	.0391254	.0107207	1.797601	.0384480	.0439336

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.891013	.0927861	.2050984	.0485552	.0381635	.3117045	.0179624
Stddev	.009266	.0009258	.0007221	.0006936	.0005216	.0021877	.0014649
%RSD	.4900116	.9978277	.3520587	1.428506	1.366691	.7018579	8.155236
#1	1.880373	.0925923	.2056659	.0485566	.0384151	.3099309	.0173883
#2	1.895351	.0919726	.2053436	.0478609	.0375638	.3141491	.0168715
#3	1.897314	.0937936	.2042857	.0492481	.0385115	.3110334	.0196274

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: CRI01 Acquired: 12/11/2024 12:44:09 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.0197405	.0143095	.0191909
Stddev	.0022586	.0011993	.0000092
%RSD	11.44150	8.381331	.0482239
#1	.0172761	.0156938	.0191812
#2	.0202333	.0136522	.0191920
#3	.0217120	.0135825	.0191996

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2370.777	59014.83	13372.88	1687.919	4020.286
Stddev	8.539	95.65	40.31	4.635	5.297
%RSD	.3601882	.1620854	.3014149	.2745809	.1317509
#1	2361.593	58951.15	13380.98	1685.550	4016.282
#2	2372.260	58968.51	13408.52	1684.947	4026.292
#3	2378.477	59124.83	13329.14	1693.259	4018.286

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: ICSA01 Acquired: 12/11/2024 12:48:27 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.0047828	-.003940	.0063480	-.002209	-.002961	270.0744
Stddev	.0026547	.002055	.0003977	.004806	.003825	1.1568
%RSD	55.50534	52.16435	6.265028	217.5332	129.2028	.4283446
#1	.0017184	-.003610	.0058896	-.007739	-.005622	269.6641
#2	.0062479	-.006141	.0065543	.000951	-.004683	269.1786
#3	.0063823	-.002070	.0066002	.000161	.001423	271.3805

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.002428	.0014523	.0061792	250.5680	.0581960	.0027009
Stddev	.000301	.0001058	.0001057	.7795	.0005617	.0002067
%RSD	12.39451	7.282805	1.709813	.3111088	.9651084	7.652122
#1	-.002083	.0013478	.0061687	249.8279	.0579172	.0025285
#2	-.002558	.0014498	.0060792	250.4944	.0588425	.0029300
#3	-.002641	.0015593	.0062897	251.3818	.0578283	.0026442

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0188074	100.8983	.0005299	270.2487	.0025936	-.005731
Stddev	.0001755	.1765	.0002383	.7643	.0006427	.000172
%RSD	.9331805	.1748793	44.96336	.2827987	24.77799	3.002961
#1	.0189194	100.6958	.0003365	269.4986	.0029892	-.005910
#2	.0186051	100.9797	.0004571	270.2210	.0029396	-.005716
#3	.0188976	101.0193	.0007960	271.0264	.0018521	-.005567

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000443	.0016633	.0067440	.0270296	F -.217034	-.001462
Stddev	.013217	.0010831	.0002912	.0158574	.000193	.000157
%RSD	2985.301	65.11696	4.317794	58.66665	.0890128	10.76380
#1	-.007817	.0006806	.0064110	.0100295	-.217232	-.001635
#2	-.008327	.0014847	.0068696	.0296389	-.216846	-.001424
#3	.014817	.0028245	.0069512	.0414206	-.217023	-.001327

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: ICSA01 Acquired: 12/11/2024 12:48:27 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.0060052	-.001698	.0037714	.0005267	-.005666	F .0436796
Stddev	.0010420	.000231	.0012985	.0023349	.006137	.0010554
%RSD	17.35244	13.60665	34.43076	443.3017	108.3035	2.416191
#1	.0069897	-.001431	.0052540	-.000556	-.009103	.0425326
#2	.0061120	-.001820	.0028367	-.001070	-.009314	.0438966
#3	.0049138	-.001841	.0032234	.003206	.001419	.0446096

Elem	Sr4077
Units	ppm
Avg	.0062436
Stddev	.0002232
%RSD	3.574641
#1	.0062628
#2	.0060115
#3	.0064566

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2032.802	50668.99	12488.60	1439.890	3082.959
Stddev	3.978	87.93	9.94	4.802	5.378
%RSD	.1957036	.1735283	.0796016	.3335131	.1744373
#1	2030.029	50719.06	12487.06	1444.116	3077.614
#2	2031.016	50567.47	12499.23	1440.887	3082.894
#3	2037.360	50720.46	12479.52	1434.668	3088.369

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: ICSAB01 Acquired: 12/11/2024 12:52:51 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.1039210	.0833848	.0562339	.0437058	.6116013	264.9099
Stddev	.0030313	.0020592	.0022247	.0029771	.0013447	.1656
%RSD	2.916929	2.469530	3.956118	6.811728	.2198567	.0625247
#1	.1019180	.0842580	.0542361	.0442747	.6100592	264.8893
#2	.1074084	.0810328	.0558342	.0463573	.6125287	264.7556
#3	.1024366	.0848635	.0586313	.0404852	.6122160	265.0849

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5107396	.5283361	1.018485	250.3958	.5745592	.5121864
Stddev	.0026658	.0010799	.001423	.7487	.0008147	.0014472
%RSD	.5219573	.2043892	.1397643	.2990251	.1417938	.2825607
#1	.5114302	.5276528	1.017790	250.1112	.5744861	.5118332
#2	.5077964	.5277744	1.017543	249.8311	.5737835	.5109485
#3	.5129922	.5295810	1.020123	251.2451	.5754079	.5137776

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4975757	99.55310	.5054665	271.4226	1.012239	.1945706
Stddev	.0015781	.30127	.0023258	.6659	.001596	.0004435
%RSD	.3171635	.3026177	.4601316	.2453367	.1576812	.2279472
#1	.4958588	99.40869	.5057075	271.0066	1.010619	.1948514
#2	.4989630	99.35122	.5030295	271.0707	1.012287	.1940593
#3	.4979053	99.89938	.5076624	272.1907	1.013810	.1948011

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.009226	.5070772	1.093547	.0065756	F -.215169	F -.001561
Stddev	.012984	.0021191	.001845	.0208024	.001814	.000347
%RSD	140.7238	.4179021	.1687508	316.3584	.8432720	22.22409
#1	-.023524	.5094401	1.095386	-.013460	-.214349	-.001273
#2	-.005986	.5053452	1.091695	.005118	-.213909	-.001946
#3	.001830	.5064462	1.093559	.028068	-.217248	-.001465

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: ICSAB01 Acquired: 12/11/2024 12:52:51 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	F .0048858	F -.002726	F -.008465	F .0069942	F -.010102	F .0416353
Stddev	.0014709	.000145	.002822	.0020456	.004802	.0007673
%RSD	30.10510	5.301905	33.33538	29.24640	47.52948	1.842954
#1	.0059821	-.002603	-.007665	.0051169	-.004932	.0409297
#2	.0054609	-.002885	-.011600	.0091743	-.014421	.0415239
#3	.0032142	-.002690	-.006129	.0066915	-.010954	.0424522

Elem	Sr4077
Units	ppm
Avg	F .0053302
Stddev	.0003678
%RSD	6.901111
#1	.0056072
#2	.0049128
#3	.0054706

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2064.316	51042.84	12414.39	1464.384	3115.550
Stddev	3.293	23.48	40.02	5.893	1.331
%RSD	.1595418	.0460052	.3223693	.4024457	.0427272
#1	2067.980	51030.05	12405.88	1461.400	3117.086
#2	2061.601	51069.94	12457.98	1471.173	3114.837
#3	2063.368	51028.53	12379.31	1460.580	3114.728

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: CCV01 Acquired: 12/11/2024 12:57:07 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	4.971780	5.068423	4.975219	5.002514	5.015761	10.06573	9.695282
Stddev	.007523	.043642	.003683	.011657	.011311	.06672	.108083
%RSD	.1513151	.8610528	.0740186	.2330240	.2255131	.6628040	1.114796
#1	4.972798	5.118412	4.977387	5.002908	5.017687	10.13127	9.571798
#2	4.963800	5.037914	4.977304	4.990665	5.003610	10.06802	9.741350
#3	4.978742	5.048942	4.970967	5.013969	5.025985	9.99790	9.772698

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2521271	2.454946	25.17673	1.015479	2.452975	1.262350	4.980083
Stddev	.0015292	.001945	.08456	.008483	.004396	.002258	.013285
%RSD	.6065295	.0792195	.3358642	.8353214	.1792015	.1788952	.2667589
#1	.2537431	2.454556	25.08747	1.024992	2.449665	1.260407	4.995169
#2	.2507027	2.457056	25.18710	1.008702	2.457963	1.261817	4.970131
#3	.2519354	2.453226	25.25563	1.012743	2.451297	1.264828	4.974950

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.483392	25.04576	2.471562	1.248899	24.12341	2.495699	2.540764
Stddev	.014471	.05500	.000455	.001598	.06626	.012001	.002330
%RSD	.5827154	.2196086	.0183965	.1279233	.2746867	.4808830	.0916892
#1	2.471264	24.98626	2.472081	1.250477	24.17812	2.481846	2.538096
#2	2.479502	25.05626	2.471369	1.247283	24.14238	2.502295	2.541803
#3	2.499411	25.09475	2.471236	1.248937	24.04973	2.502956	2.542394

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	24.22935	4.942724	5.082125	4.945184	4.953841	4.971661	5.081258
Stddev	.04765	.012677	.003642	.006798	.011407	.022248	.036652
%RSD	.1966730	.2564774	.0716619	.1374705	.2302592	.4475030	.7213079
#1	24.18745	4.946970	5.081447	4.950213	4.941345	4.947632	5.122526
#2	24.28119	4.928468	5.078869	4.947890	4.956482	4.975806	5.068749
#3	24.21942	4.952732	5.086057	4.937450	4.963695	4.991546	5.052498

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: CCV01 Acquired: 12/11/2024 12:57:07 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	4.899893	4.715184	5.011486
Stddev	.012213	.008683	.043623
%RSD	.2492450	.1841521	.8704515
#1	4.913946	4.716863	4.985019
#2	4.893885	4.705784	4.987605
#3	4.891849	4.722905	5.061835

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2200.114	55349.55	12902.04	1570.638	3526.270
Stddev	4.285	82.07	32.80	12.789	4.048
%RSD	.1947530	.1482734	.2542136	.8142790	.1147854
#1	2201.707	55440.95	12933.80	1585.199	3526.353
#2	2203.374	55282.19	12904.04	1561.226	3530.275
#3	2195.261	55325.50	12868.29	1565.489	3522.181

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: CCB01 Acquired: 12/11/2024 13:06:32 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.0003169	-.000268	-.001137	.0040701	.0005724	-.002395	-.002122
Stddev	.0048991	.000211	.000705	.0012738	.0012264	.001326	.003393
%RSD	1546.153	78.56220	61.96509	31.29623	214.2722	55.37218	159.8823
#1	.0012036	-.000026	-.001859	.0053357	.0015093	-.001447	.001498
#2	.0047120	-.000406	-.000451	.0040863	.0010235	-.001828	-.002635
#3	-.004965	-.000373	-.001103	.0027883	-.000816	-.003911	-.005230

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000035	.0000136	-.014310	.0006292	-.000046	-.000548	-.011058
Stddev	.000069	.0001092	.006544	.0001088	.000159	.000297	.001244
%RSD	195.9674	804.6845	45.73094	17.28909	348.8588	54.17020	11.25188
#1	.000027	.0001395	-.007584	.0006644	-.000218	-.000277	-.009669
#2	-.000109	-.000044	-.014691	.0005072	-.000014	-.000866	-.012072
#3	-.000024	-.000055	-.020655	.0007160	.000096	-.000502	-.011432

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004437	-.003915	-.000194	.0002902	-.085322	-.000122	-.000010
Stddev	.0011124	.010933	.000122	.0000912	.003624	.001183	.000497
%RSD	250.7305	279.2108	63.00542	31.42103	4.247148	968.1381	5227.181
#1	.0016671	.005525	-.000226	.0002486	-.089267	.000784	.000515
#2	.0001708	-.001378	-.000296	.0002272	-.084556	.000311	-.000070
#3	-.000507	-.015894	-.000059	.0003947	-.082142	-.001461	-.000473

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.077944	-.004364	.0001085	.0109226	.0023816	-.002349	-.001285
Stddev	.004650	.000890	.0001363	.0005665	.0017503	.009435	.001905
%RSD	5.965657	20.39569	125.6144	5.186598	73.49343	401.6728	148.2414
#1	-.075404	-.003911	.0002281	.0110717	.0041744	.004695	.000826
#2	-.083311	-.003790	-.000040	.0102965	.0022933	.001327	-.002875
#3	-.075118	-.005389	.000137	.0113997	.0006771	-.013069	-.001807

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: CCB01 Acquired: 12/11/2024 13:06:32 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.0022679	-.002047	.0014285
Stddev	.0018025	.001506	.0021011
%RSD	79.47989	73.59129	147.0766
#1	.0017145	-.000905	.0037073
#2	.0042822	-.001482	.0010102
#3	.0008069	-.003754	-.000432

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2367.111	59178.28	13564.49	1678.806	4084.543
Stddev	4.065	11.98	31.36	1.620	4.038
%RSD	.1717313	.0202363	.2311936	.0965103	.0988715
#1	2371.108	59168.82	13597.21	1680.199	4086.915
#2	2367.244	59174.29	13534.69	1679.192	4086.835
#3	2362.981	59191.75	13561.58	1677.028	4079.880

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: PB165470TB Acquired: 12/11/2024 13:10:52 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	-.003057	-.003563	-.001243	.0022794	-.001735	.0025615
Stddev	.001369	.004185	.000453	.0002316	.001486	.0016155
%RSD	44.77675	117.4661	36.48042	10.16286	85.60218	63.06852
#1	-.001550	.001167	-.001687	.0020123	-.002328	.0012612
#2	-.003398	-.006784	-.001261	.0024003	-.000045	.0043700
#3	-.004224	-.005071	-.000780	.0024256	-.002833	.0020534

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.009156	-.000108	-.000239	-.032821	.0000465	-.000039
Stddev	.000517	.000053	.000068	.003194	.0001721	.000214
%RSD	5.648117	49.12160	28.40016	9.731488	370.0589	545.4734
#1	-.008943	-.000075	-.000317	-.032513	-.000074	-.000285
#2	-.009746	-.000170	-.000211	-.036158	.000244	.000067
#3	-.008779	-.000080	-.000190	-.029792	-.000030	.000101

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000174	.0152732	-.000016	-.010284	.0012164	.0006435
Stddev	.000305	.0022248	.000031	.008952	.0000354	.0001030
%RSD	175.4759	14.56677	190.4505	87.04728	2.909894	16.00534
#1	-.000487	.0178309	.000020	-.020234	.0012486	.0007260
#2	-.000155	.0137864	-.000037	-.002882	.0011785	.0006764
#3	.000121	.0142023	-.000032	-.007736	.0012222	.0005281

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 175.2205	-.002385	.0007546	-.118776	-.008555	-.000488
Stddev	.8325	.000759	.0003167	.009956	.000668	.000272
%RSD	.4751311	31.81218	41.96770	8.382281	7.810258	55.65462
#1	174.3832	-.001587	.0008863	-.128883	-.008961	-.000585
#2	176.0482	-.002471	.0003933	-.108978	-.007784	-.000698
#3	175.2301	-.003097	.0009841	-.118468	-.008920	-.000181

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: PB165470TB Acquired: 12/11/2024 13:10:52 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	-.002204	-.001136	-.006429	.0035998	F .0189897	-.003457
Stddev	.000619	.000595	.003153	.0016199	.0018405	.001398
%RSD	28.07102	52.41659	49.04717	44.99958	9.692329	40.44741
#1	-.001873	-.000528	-.003207	.0054598	.0208896	-.004761
#2	-.002918	-.001161	-.009508	.0024989	.0188646	-.003629
#3	-.001821	-.001718	-.006571	.0028406	.0172149	-.001980

Elem	Sr4077
Units	ppm
Avg	-.001963
Stddev	.000016
%RSD	.8238048
#1	-.001954
#2	-.001982
#3	-.001954

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2161.561	55094.39	13504.68	1545.245	3524.396
Stddev	13.636	67.55	2.31	4.460	14.382
%RSD	.6308425	.1226043	.0171266	.2886277	.4080838
#1	2175.561	55116.73	13504.49	1549.610	3537.660
#2	2160.802	55018.50	13502.47	1540.696	3526.418
#3	2148.320	55147.93	13507.08	1545.429	3509.109

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: PB165527BL Acquired: 12/11/2024 13:15:22 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	-.000124	-.000713	-.000879	.0021466	-.001491	-.010381	-.008742
Stddev	.001295	.001376	.000467	.0027384	.000343	.003114	.000481
%RSD	1047.176	193.0530	53.09877	127.5695	22.98768	29.99806	5.507396
#1	-.001574	-.000797	-.001346	-.000429	-.001096	-.010680	-.008320
#2	.000919	.000704	-.000877	.005023	-.001712	-.013335	-.008641
#3	.000283	-.002046	-.000413	.001846	-.001665	-.007128	-.009266

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000080	-.000108	-.033961	.0005849	-.000050	-.000247	-.018445
Stddev	.000038	.000090	.005882	.0002761	.000227	.000094	.000974
%RSD	46.97900	83.07759	17.32068	47.20684	453.2316	38.20582	5.282514
#1	-.000110	-.000157	-.027616	.0002726	-.000039	-.000138	-.017814
#2	-.000038	-.000164	-.035035	.0006853	.000172	-.000304	-.017954
#3	-.000092	-.000004	-.039233	.0007968	-.000283	-.000298	-.019567

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001531	-.023776	-.000178	.0005650	-.023997	-.002886	-.000612
Stddev	.000035	.006655	.000147	.0002419	.034576	.000254	.000171
%RSD	2.309492	27.99154	82.19631	42.80988	144.0858	8.787830	27.95530
#1	-.001510	-.030349	-.000168	.0008193	.013945	-.002872	-.000463
#2	-.001572	-.017042	-.000329	.0003379	-.032208	-.003146	-.000575
#3	-.001511	-.023938	-.000037	.0005377	-.053728	-.002639	-.000799

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.097440	-.008452	-.000522	-.000301	-.001578	-.017426	.0009116
Stddev	.015148	.000292	.000234	.000249	.000226	.003115	.0008921
%RSD	15.54617	3.457259	44.77668	82.66028	14.30446	17.87628	97.86274
#1	-.114387	-.008614	-.000781	-.000018	-.001479	-.015990	-.000117
#2	-.085216	-.008627	-.000458	-.000401	-.001836	-.021000	.001477
#3	-.092717	-.008114	-.000327	-.000486	-.001418	-.015288	.001374

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: PB165527BL Acquired: 12/11/2024 13:15:22 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	-.001450	-.002410	-.001964
Stddev	.000901	.000814	.000009
%RSD	62.11321	33.77963	.4467550
#1	-.000746	-.003314	-.001973
#2	-.001138	-.001735	-.001962
#3	-.002465	-.002181	-.001956

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2327.407	58582.21	13376.83	1649.426	4041.378
Stddev	3.426	141.79	23.49	8.963	4.781
%RSD	.1471984	.2420346	.1755957	.5433927	.1182890
#1	2323.452	58707.63	13349.84	1656.715	4035.959
#2	2329.417	58428.36	13392.69	1639.419	4044.998
#3	2329.354	58610.64	13387.95	1652.144	4043.176

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: PB165527BS Acquired: 12/11/2024 13:19:43 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.7856855	2.074064	.9900629	1.985871	.8007302	2.087617
Stddev	.0022651	.023656	.0008288	.007469	.0034628	.007220
%RSD	.2883001	1.140582	.0837090	.3761072	.4324526	.3458341
#1	.7837181	2.100521	.9891111	1.989454	.7985353	2.088000
#2	.7851764	2.066723	.9904526	1.990874	.7989332	2.080213
#3	.7881618	2.054949	.9906249	1.977286	.8047220	2.094637

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1976543	.2101221	.1958756	1.030604	.4175289	.2002860
Stddev	.0002213	.0004688	.0005219	.004374	.0022449	.0004905
%RSD	.1119534	.2231085	.2664172	.4244384	.5376714	.2448823
#1	.1977342	.2102456	.1964133	1.026320	.4201208	.2000641
#2	.1978245	.2105167	.1958425	1.030428	.4162644	.2008482
#3	.1974042	.2096039	.1953711	1.035063	.4162013	.1999457

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3196990	2.978370	.2072685	1.990243	.5039681	.0769964
Stddev	.0009938	.003026	.0004902	.017600	.0005560	.0004357
%RSD	.3108487	.1016014	.2365112	.8842921	.1103166	.5658182
#1	.3188290	2.980210	.2077961	1.970832	.5046054	.0774459
#2	.3194862	2.974877	.2068271	1.994740	.5037163	.0765761
#3	.3207820	2.980023	.2071823	2.005158	.5035825	.0769671

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.818669	.3103676	.2136291	9.735767	.2852745	.4184593
Stddev	.006896	.0013537	.0011179	.011450	.0011170	.0003180
%RSD	.2446640	.4361586	.5232978	.1176120	.3915565	.0759841
#1	2.826498	.3091268	.2141563	9.734929	.2839849	.4181326
#2	2.813495	.3101648	.2143858	9.724758	.2859428	.4184775
#3	2.816015	.3118112	.2123450	9.747613	.2858956	.4187677

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: PB165527BS Acquired: 12/11/2024 13:19:43 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.6885058	.2024754	F .7037373	5.861207	F -.009890	.1883929
Stddev	.0037474	.0003524	.0063584	.052786	.001238	.0010485
%RSD	.5442812	.1740608	.9035195	.9006036	12.51956	.5565428
#1	.6919963	.2026903	.7110203	5.918234	-.009747	.1874864
#2	.6889754	.2020686	.7009007	5.851330	-.011194	.1881511
#3	.6845458	.2026672	.6992909	5.814057	-.008731	.1895411

Elem	Sr4077
Units	ppm
Avg	.2140209
Stddev	.0003439
%RSD	.1606812
#1	.2142760
#2	.2136298
#3	.2141568

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2254.573	56841.06	12862.84	1611.907	3788.588
Stddev	4.740	217.44	33.86	11.944	2.307
%RSD	.2102263	.3825415	.2632088	.7409768	.0608991
#1	2260.030	56591.57	12824.18	1598.542	3789.570
#2	2252.211	56941.40	12877.17	1615.642	3785.952
#3	2251.479	56990.21	12887.18	1621.537	3790.241

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5174-02 Acquired: 12/11/2024 13:23:44 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	-.002066	-.004533	.0339901	.0060644	-.001276	.0287480	.1026875
Stddev	.001329	.001682	.0004957	.0013116	.002103	.0020745	.0001937
%RSD	64.32943	37.11633	1.458269	21.62854	164.8054	7.216220	.1886702
#1	-.001530	-.006310	.0339922	.0045805	-.003359	.0294386	.1024648
#2	-.003579	-.004324	.0344847	.0070691	-.001313	.0264162	.1028172
#3	-.001088	-.002965	.0334933	.0065435	.000845	.0303891	.1027805

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000120	.0008295	7.999025	.0000382	.0019982	.0082498	.0162617
Stddev	.000062	.0000423	.016739	.0003029	.0000948	.0002175	.0048610
%RSD	51.75981	5.097411	.2092635	792.9083	4.741989	2.636664	29.89239
#1	-.000052	.0008649	8.010465	.0002441	.0020858	.0081388	.0217828
#2	-.000133	.0008410	8.006797	.0001801	.0020113	.0085005	.0143775
#3	-.000174	.0007827	7.979812	-.000310	.0018976	.0081103	.0126249

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4636086	.7816961	.0034684	.0004093	156.3845	-.002240	.1881340
Stddev	.0016998	.0176078	.0004376	.0001891	1.8924	.000832	.0015234
%RSD	.3666404	2.252511	12.61610	46.20732	1.210099	37.13069	.8097561
#1	.4622670	.8019547	.0035856	.0001937	155.1385	-.002612	.1866340
#2	.4655201	.7700751	.0038355	.0004869	158.5621	-.002822	.1880882
#3	.4630387	.7730585	.0029842	.0005473	155.4529	-.001288	.1896798

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3520382	-.003796	-.000511	-.001868	-.000466	.2506250	.0196168
Stddev	.0133137	.000305	.000238	.000490	.000022	.0021569	.0002937
%RSD	3.781891	8.039966	46.55402	26.25237	4.685023	.8605980	1.497405
#1	.3673800	-.003800	-.000747	-.001810	-.000442	.2482944	.0199395
#2	.3435157	-.003489	-.000272	-.002384	-.000473	.2525509	.0195457
#3	.3452189	-.004099	-.000514	-.001409	-.000484	.2510296	.0193651

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5174-02 Acquired: 12/11/2024 13:23:44 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.2968198	-.001507	.0522653
Stddev	.0026095	.001349	.0001681
%RSD	.8791405	89.51221	.3216369
#1	.2998321	-.002242	.0521998
#2	.2953766	-.002328	.0524563
#3	.2952508	.000050	.0521399

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2068.584	53738.22	13318.72	1485.560	3407.169
Stddev	23.510	82.94	30.70	12.517	20.409
%RSD	1.136514	.1543377	.2304853	.8426067	.5990054
#1	2091.700	53833.76	13354.02	1497.258	3427.594
#2	2069.350	53696.13	13298.22	1487.064	3407.135
#3	2044.700	53684.77	13303.93	1472.359	3386.776

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5196-04 Acquired: 12/11/2024 13:28:10 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	-.002188	-.003967	-.000295	.0045277	-.002644	.0312089	.1300324
Stddev	.004208	.001134	.000408	.0032393	.000439	.0006614	.0005862
%RSD	192.3268	28.57403	138.0152	71.54404	16.61137	2.119410	.4508145
#1	-.001175	-.003070	-.000677	.0082035	-.003149	.0318505	.1293790
#2	.001421	-.005241	.000134	.0020905	-.002436	.0305293	.1302062
#3	-.006810	-.003591	-.000343	.0032890	-.002348	.0312470	.1305121

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000170	-.000041	7.300891	-.000227	.0016748	.0038363	.0073766
Stddev	.0000065	.000035	.061415	.000085	.0002603	.0003824	.0012972
%RSD	38.52649	85.20579	.8412051	37.32394	15.54037	9.968730	17.58455
#1	.0000245	-.000010	7.371252	-.000218	.0014248	.0034519	.0088608
#2	.0000140	-.000034	7.273378	-.000148	.0016554	.0042167	.0064598
#3	.0000124	-.000078	7.258042	-.000316	.0019443	.0038402	.0068093

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3749375	1.883670	.0025438	.0003692	165.7743	-.002621	.0254330
Stddev	.0013253	.016036	.0000274	.0000757	1.6956	.000706	.0002794
%RSD	.3534582	.8513108	1.075145	20.49903	1.022866	26.94437	1.098553
#1	.3763124	1.896319	.0025692	.0002819	163.8355	-.003407	.0257556
#2	.3736683	1.889057	.0025474	.0004162	166.5066	-.002414	.0252741
#3	.3748319	1.865635	.0025148	.0004094	166.9806	-.002041	.0252694

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1307848	-.004928	-.000602	-.002872	-.001208	.1595694	.0077237
Stddev	.0015199	.000500	.000384	.000514	.000168	.0049961	.0024972
%RSD	1.162147	10.15213	63.73605	17.88170	13.91668	3.131004	32.33185
#1	.1299779	-.004356	-.000162	-.002284	-.001334	.1538275	.0095554
#2	.1325380	-.005285	-.000867	-.003097	-.001272	.1619559	.0087364
#3	.1298386	-.005144	-.000777	-.003235	-.001017	.1629247	.0048792

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5196-04 Acquired: 12/11/2024 13:28:10 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.1147401	-.001049	.0312016
Stddev	.0033309	.000557	.0001686
%RSD	2.902949	53.06980	.5404399
#1	.1159389	-.001349	.0310363
#2	.1109758	-.001391	.0311951
#3	.1173056	-.000407	.0313734

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2021.578	53243.48	13464.81	1431.087	3359.610
Stddev	9.024	170.44	40.91	1.708	4.608
%RSD	.4463634	.3201127	.3038537	.1193729	.1371479
#1	2025.993	53428.74	13417.75	1431.874	3361.568
#2	2011.197	53093.33	13484.78	1429.127	3354.347
#3	2027.544	53208.38	13491.91	1432.259	3362.915

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5216-04 Acquired: 12/11/2024 13:32:38 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	-.003089	-.004003	.0001172	.0042385	-.001707	.0142008	.1360531
Stddev	.001370	.000987	.0006101	.0021277	.001934	.0049909	.0003152
%RSD	44.35330	24.66551	520.4204	50.19863	113.2901	35.14495	.2316756
#1	-.001524	-.005117	-.000582	.0019091	-.003860	.0198982	.1364087
#2	-.003675	-.003236	.000396	.0060795	-.000117	.0121031	.1358083
#3	-.004069	-.003656	.000538	.0047268	-.001145	.0106013	.1359422

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000077	-.000158	4.565281	.0000498	-.000030	.0036621	.0034108
Stddev	.000052	.000021	.024649	.0002282	.000116	.0001705	.0042208
%RSD	67.76943	13.42176	.5399319	458.0535	389.1375	4.654738	123.7495
#1	-.000090	-.000180	4.592065	-.000019	.000007	.0038393	.0044839
#2	-.000020	-.000155	4.543550	-.000136	.000064	.0034993	.0069914
#3	-.000122	-.000138	4.560226	.000305	-.000160	.0036477	-.001243

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0590711	.3775477	.0002316	.0004840	154.9170	-.003341	.0509540
Stddev	.0001476	.0099652	.0003152	.0000757	1.5817	.001039	.0001763
%RSD	.2499345	2.639451	136.0960	15.64985	1.021019	31.10052	.3460848
#1	.0592296	.3865549	.0002985	.0004635	153.1549	-.004100	.0510832
#2	.0589375	.3668426	-.000112	.0005679	156.2140	-.003766	.0507531
#3	.0590460	.3792455	.000508	.0004207	155.3821	-.002157	.0510256

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3386628	.0078136	-.000618	-.002353	-.001043	.3149217	.0181794
Stddev	.0124719	.0003176	.000320	.000872	.000267	.0035711	.0011075
%RSD	3.682684	4.065142	51.74795	37.06987	25.54746	1.133947	6.092227
#1	.3460662	.0079203	-.000731	-.002929	-.001113	.3137947	.0194499
#2	.3242634	.0074563	-.000257	-.002780	-.001268	.3189203	.0174180
#3	.3456587	.0080640	-.000867	-.001349	-.000749	.3120501	.0176703

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5216-04 Acquired: 12/11/2024 13:32:38 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.1668354	-.002701	.0337553
Stddev	.0053208	.000842	.0000146
%RSD	3.189230	31.15437	.0433253
#1	.1655362	-.003648	.0337494
#2	.1726855	-.002418	.0337720
#3	.1622846	-.002038	.0337446

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1984.456	52666.48	13175.82	1429.449	3317.800
Stddev	15.426	168.04	34.18	5.150	12.833
%RSD	.7773583	.3190734	.2594433	.3602808	.3867941
#1	1998.210	52843.40	13136.52	1435.264	3327.789
#2	1987.381	52508.99	13198.63	1425.465	3322.284
#3	1967.776	52647.06	13192.31	1427.618	3303.326

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5216-08 Acquired: 12/11/2024 13:37:06 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	-.004134	-.005553	.0034539	.0054284	-.001883	.0142064	.2076667
Stddev	.000717	.000449	.0009312	.0032138	.001035	.0036506	.0013699
%RSD	17.35002	8.092647	26.96169	59.20323	54.94725	25.69689	.6596575
#1	-.003314	-.005861	.0026414	.0087673	-.003043	.0180619	.2071550
#2	-.004645	-.005037	.0032500	.0023563	-.001055	.0108027	.2066264
#3	-.004442	-.005760	.0044701	.0051616	-.001551	.0137545	.2092188

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000057	.0003545	26.15737	-.000336	.0032479	.0113803	-.001493
Stddev	.000049	.0000801	.15054	.000465	.0001335	.0001535	.002883
%RSD	86.33767	22.60509	.5755038	138.3581	4.110080	1.349091	193.1307
#1	-.000002	.0004463	26.32405	.000200	.0032684	.0112808	-.004291
#2	-.000098	.0003184	26.03130	-.000628	.0031053	.0115572	.001469
#3	-.000070	.0002988	26.11678	-.000579	.0033699	.0113031	-.001657

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9116076	.7392260	.0041721	.0007531	178.6500	-.002440	.0480409
Stddev	.0061479	.0107038	.0000388	.0000791	2.4470	.000379	.0003072
%RSD	.6744044	1.447971	.9288205	10.50823	1.369743	15.54586	.6393588
#1	.9164700	.7287939	.0041963	.0008344	177.5735	-.002868	.0483928
#2	.9046971	.7387020	.0041925	.0007487	176.9257	-.002144	.0478270
#3	.9136559	.7501822	.0041274	.0006763	181.4507	-.002309	.0479028

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8733723	.0034132	-.000397	-.003263	-.001810	.3786242	.0081876
Stddev	.0126811	.0007436	.000208	.001181	.000404	.0049669	.0020161
%RSD	1.451969	21.78651	52.48985	36.18928	22.29765	1.311815	24.62382
#1	.8674058	.0041711	-.000161	-.004262	-.002253	.3809781	.0080330
#2	.8647749	.0033836	-.000555	-.001960	-.001462	.3819765	.0062532
#3	.8879362	.0026848	-.000475	-.003565	-.001716	.3729180	.0102765

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5216-08 Acquired: 12/11/2024 13:37:06 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.2912202	.0030906	.0842826
Stddev	.0006977	.0011348	.0006789
%RSD	.2395722	36.71700	.8055395
#1	.2906583	.0018864	.0837145
#2	.2920011	.0041400	.0840987
#3	.2910011	.0032455	.0850345

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1922.352	51670.23	13202.58	1392.898	3205.730
Stddev	4.421	112.62	26.95	5.577	6.074
%RSD	.2299618	.2179612	.2041516	.4003609	.1894743
#1	1919.883	51769.34	13192.97	1396.735	3205.191
#2	1927.456	51693.58	13233.03	1395.458	3212.055
#3	1919.718	51547.76	13181.76	1386.501	3199.943

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5216-12 Acquired: 12/11/2024 13:41:33 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	-.004538	-.004646	-.000740	.0060942	-.002547	.0296795	.1652126
Stddev	.001669	.001152	.000505	.0015939	.002331	.0005420	.0006422
%RSD	36.78745	24.78763	68.26082	26.15480	91.50602	1.826206	.3887246
#1	-.004058	-.003668	-.000271	.0047534	-.004026	.0296475	.1646307
#2	-.003161	-.004355	-.000675	.0056727	-.003755	.0302369	.1659017
#3	-.006395	-.005916	-.001275	.0078566	.000140	.0291543	.1651056

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000035	-.000176	1.868629	.0002042	.0022440	.0065723	.0682927
Stddev	.000023	.000020	.007057	.0001566	.0000635	.0002642	.0019707
%RSD	65.53811	11.52249	.3776690	76.70095	2.830655	4.019888	2.885735
#1	-.000054	-.000199	1.875318	.0000701	.0022749	.0063930	.0684583
#2	-.000010	-.000161	1.869317	.0003763	.0022862	.0064482	.0662444
#3	-.000042	-.000168	1.861254	.0001662	.0021710	.0068757	.0701755

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1991145	.3076886	.0004650	.0005968	165.7333	-.001538	.0552465
Stddev	.0016489	.0033204	.0001022	.0003563	1.2766	.000793	.0005077
%RSD	.8280995	1.079130	21.98685	59.69238	.7702522	51.54548	.9189775
#1	.2005027	.3104040	.0003471	.0004396	165.6153	-.000623	.0556765
#2	.1995490	.3086750	.0005291	.0003463	164.5199	-.002031	.0553765
#3	.1972919	.3039868	.0005188	.0010047	167.0648	-.001959	.0546864

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3684743	.0130332	-.000526	-.001797	-.000596	.1437030	.0074017
Stddev	.0217356	.0002821	.000104	.000282	.000374	.0048597	.0017963
%RSD	5.898804	2.164072	19.75067	15.67799	62.75911	3.381782	24.26874
#1	.3453458	.0133057	-.000425	-.001474	-.001025	.1425404	.0094515
#2	.3715981	.0127425	-.000633	-.001991	-.000419	.1395300	.0066512
#3	.3884789	.0130515	-.000521	-.001926	-.000343	.1490386	.0061023

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5216-12 Acquired: 12/11/2024 13:41:33 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.3858497	-.001987	.0139201
Stddev	.0034694	.000961	.0000643
%RSD	.8991668	48.35834	.4620811
#1	.3898306	-.001822	.0139269
#2	.3842487	-.003019	.0139807
#3	.3834699	-.001119	.0138526

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1923.196	51804.51	13089.94	1386.540	3249.540
Stddev	18.939	198.88	22.25	11.106	17.529
%RSD	.9847805	.3838978	.1699561	.8010166	.5394338
#1	1943.176	52003.94	13078.13	1399.362	3267.013
#2	1920.907	51803.41	13076.09	1379.921	3249.652
#3	1905.505	51606.19	13115.60	1380.336	3231.955

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5216-16 Acquired: 12/11/2024 13:46:01 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	-.000464	-.003897	.0080499	.0050121	-.002684	.0176627	.1502024
Stddev	.003696	.000397	.0007938	.0016129	.001238	.0026283	.0011904
%RSD	795.8649	10.17444	9.861379	32.17922	46.14195	14.88056	.7925522
#1	.001837	-.003713	.0076674	.0038072	-.004082	.0192181	.1502260
#2	-.004727	-.003627	.0089625	.0043847	-.002245	.0191419	.1490003
#3	.001498	-.004353	.0075197	.0068444	-.001725	.0146281	.1513808

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000121	-.000016	6.117164	-.000256	.0011843	.0056028	.0082379
Stddev	.000013	.000036	.052158	.000299	.0001566	.0001906	.0029710
%RSD	11.15006	225.4663	.8526477	117.0434	13.22598	3.401714	36.06541
#1	-.000108	.000010	6.177005	.000018	.0012154	.0055072	.0067458
#2	-.000135	-.000058	6.093135	-.000210	.0013231	.0054788	.0063087
#3	-.000119	-.000001	6.081351	-.000576	.0010145	.0058222	.0116592

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7424125	.6156425	.0005131	.0007058	157.9039	-.001787	.0583196
Stddev	.0026391	.0138203	.0000514	.0001270	2.1312	.000394	.0002161
%RSD	.3554691	2.244851	10.00825	17.98693	1.349690	22.05504	.3704714
#1	.7451862	.6314284	.0004624	.0008374	158.9209	-.001764	.0583551
#2	.7399327	.6097755	.0005118	.0006960	155.4546	-.002192	.0585157
#3	.7421187	.6057236	.0005651	.0005840	159.3360	-.001405	.0580880

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9049939	.0092117	-.000640	-.001639	-.000953	.4499509	.0067827
Stddev	.0063250	.0003903	.000123	.000571	.000072	.0050904	.0023133
%RSD	.6989014	4.236943	19.18303	34.85563	7.563935	1.131317	34.10629
#1	.8997071	.0092174	-.000624	-.001055	-.001029	.4461811	.0093515
#2	.9120012	.0088186	-.000771	-.001666	-.000944	.4557413	.0061328
#3	.9032735	.0095992	-.000527	-.002197	-.000886	.4479302	.0048639

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5216-16 Acquired: 12/11/2024 13:46:01 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.2070234	-.001665	.0389292
Stddev	.0025820	.000553	.0002382
%RSD	1.247226	33.21781	.6119714
#1	.2092062	-.002289	.0390186
#2	.2041732	-.001470	.0386593
#3	.2076910	-.001235	.0391099

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1955.975	52325.21	13285.07	1401.340	3293.050
Stddev	14.861	76.04	42.24	4.792	21.987
%RSD	.7597544	.1453252	.3179646	.3419573	.6676914
#1	1971.966	52382.67	13240.46	1403.676	3315.340
#2	1953.369	52353.99	13324.46	1404.516	3292.432
#3	1942.589	52238.98	13290.28	1395.828	3271.378

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5216-16DUP Acquired: 12/11/2024 13:50:28 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	-.001050	-.005234	.0088219	.0043327	-.002033	.0164953	.1512866
Stddev	.001933	.002408	.0006804	.0024231	.000363	.0036784	.0003888
%RSD	184.0864	46.01835	7.713065	55.92617	17.86500	22.29984	.2570174
#1	-.001983	-.004583	.0089381	.0062009	-.001725	.0187785	.1511244
#2	-.002340	-.007900	.0080908	.0015948	-.001941	.0184554	.1517303
#3	.001173	-.003217	.0094367	.0052025	-.002433	.0122519	.1510052

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000112	-.000077	6.154250	-.000333	.0009897	.0056960	.0090363
Stddev	.000044	.000065	.040605	.000064	.0002676	.0001651	.0059710
%RSD	39.41595	85.24763	.6597813	19.19375	27.04163	2.897678	66.07789
#1	-.000084	-.000152	6.195342	-.000279	.0012923	.0057822	.0146685
#2	-.000089	-.000048	6.153258	-.000404	.0008928	.0055056	.0027761
#3	-.000162	-.000030	6.114151	-.000316	.0007841	.0058000	.0096643

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7437948	.6187357	.0004370	.0009411	158.9613	-.002218	.0585143
Stddev	.0053560	.0038245	.0002414	.0000991	3.0555	.000449	.0005827
%RSD	.7200913	.6181123	55.24036	10.52517	1.922142	20.23715	.9958152
#1	.7482305	.6160729	.0001943	.0008299	155.4332	-.002573	.0579377
#2	.7453093	.6231181	.0006771	.0010199	160.7334	-.002366	.0591029
#3	.7378447	.6170160	.0004396	.0009736	160.7175	-.001713	.0585022

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8957454	.0084842	-.000500	-.002358	-.001281	.4504552	.0068680
Stddev	.0170333	.0005274	.000314	.000584	.000095	.0011965	.0025750
%RSD	1.901576	6.216135	62.76438	24.76557	7.383860	.2656297	37.49303
#1	.8761142	.0082442	-.000854	-.003032	-.001330	.4508872	.0060425
#2	.9045143	.0090890	-.000258	-.002013	-.001341	.4491026	.0048069
#3	.9066077	.0081196	-.000387	-.002028	-.001172	.4513757	.0097545

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5216-16DUP Acquired: 12/11/2024 13:50:28 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.1961042	-.000656	.0391542
Stddev	.0022450	.001563	.0000851
%RSD	1.144807	238.3149	.2173392
#1	.1986889	-.001369	.0390706
#2	.1949840	.001137	.0392407
#3	.1946398	-.001735	.0391512

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1951.478	52101.25	13224.22	1397.331	3281.911
Stddev	6.803	194.47	55.18	9.894	5.736
%RSD	.3486216	.3732488	.4172810	.7080907	.1747665
#1	1950.766	52253.71	13181.72	1408.300	3279.285
#2	1958.609	52167.78	13204.36	1394.615	3288.490
#3	1945.059	51882.24	13286.58	1389.079	3277.959

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: CCV02 Acquired: 12/11/2024 13:54:55 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	5.262048	5.368932	5.221066	5.298000	5.326975	10.56061	10.49155
Stddev	.004970	.021735	.006414	.021703	.017682	.03037	.04536
%RSD	.0944483	.4048370	.1228537	.4096359	.3319343	.2875933	.4323399
#1	5.257212	5.345542	5.220720	5.274624	5.306601	10.52565	10.48285
#2	5.267142	5.388509	5.214831	5.301868	5.336011	10.58052	10.45117
#3	5.261792	5.372744	5.227646	5.317509	5.338313	10.57565	10.54063

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2556004	2.568715	25.37354	1.059554	2.579793	1.336787	5.183257
Stddev	.0011015	.002495	.13473	.001367	.002478	.003003	.034240
%RSD	.4309408	.0971468	.5310002	.1290447	.0960688	.2246057	.6605923
#1	.2545054	2.569795	25.22029	1.058069	2.578189	1.333327	5.151188
#2	.2555875	2.565861	25.42692	1.059831	2.578543	1.338711	5.179266
#3	.2567082	2.570488	25.47340	1.060761	2.582647	1.338322	5.219319

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.537014	25.18018	2.600426	1.312566	27.18963	2.595848	2.682633
Stddev	.014914	.15508	.003031	.002117	.17173	.011786	.014159
%RSD	.5878373	.6159005	.1165469	.1612883	.6315988	.4540228	.5277878
#1	2.520144	25.00555	2.598189	1.311117	27.34444	2.585102	2.669157
#2	2.542457	25.23319	2.599215	1.314996	27.21954	2.593989	2.697387
#3	2.548442	25.30182	2.603875	1.311586	27.00491	2.608452	2.681355

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	26.85304	5.025605	5.378335	5.175570	5.183010	5.266457	5.345432
Stddev	.02509	.011056	.007014	.008122	.025107	.031467	.014937
%RSD	.0934386	.2199984	.1304029	.1569254	.4844031	.5975009	.2794359
#1	26.86195	5.012847	5.370617	5.171632	5.154580	5.231074	5.336672
#2	26.87247	5.032391	5.380067	5.170167	5.192314	5.291306	5.362679
#3	26.82471	5.031576	5.384320	5.184910	5.202137	5.276991	5.336946

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: CCV02 Acquired: 12/11/2024 13:54:55 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	5.149773	5.170475	5.333625
Stddev	.007283	.018958	.011563
%RSD	.1414288	.3666593	.2167999
#1	5.157969	5.150066	5.341742
#2	5.147304	5.173821	5.338748
#3	5.144044	5.187537	5.320386

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2076.407	52650.31	12682.76	1475.514	3340.917
Stddev	3.247	174.14	6.45	5.225	4.677
%RSD	.1563812	.3307515	.0508957	.3540837	.1399852
#1	2080.148	52476.40	12685.37	1472.577	3346.116
#2	2074.752	52649.86	12687.51	1472.419	3339.581
#3	2074.322	52824.68	12675.42	1481.546	3337.054

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: CCB02 Acquired: 12/11/2024 13:59:06 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	-.000078	.0001740	-.000615	.0017265	.0011534	.0017177	.0005576
Stddev	.002236	.0024924	.000168	.0017629	.0011085	.0050599	.0063612
%RSD	2854.536	1432.423	27.25230	102.1121	96.10823	294.5808	1140.903
#1	.000389	.0028282	-.000562	.0011378	.0006011	.0073507	.0072984
#2	.001887	-.002117	-.000481	.0003331	.0024295	.0002445	-.000286
#3	-.002511	-.000190	-.000803	.0037084	.0004295	-.002442	-.005340

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000061	-.000043	-.008959	.0007496	-.000118	-.000317	-.010813
Stddev	.000028	.000047	.013060	.0002495	.000213	.000131	.002006
%RSD	46.72799	108.8795	145.7659	33.27899	180.3985	41.52058	18.55532
#1	-.000087	-.000029	.006115	.0009741	-.000332	-.000350	-.010487
#2	-.000064	-.000095	-.016136	.0004811	-.000116	-.000172	-.008989
#3	-.000031	-.000005	-.016857	.0007935	.000094	-.000428	-.012962

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0010836	.0037098	-.000252	.0004462	.0355796	.0013485	.0000642
Stddev	.0015289	.0142242	.000298	.0002659	.0094507	.0006098	.0002325
%RSD	141.0997	383.4230	118.4637	59.59099	26.56219	45.22165	362.4762
#1	.0027508	.0165729	-.000342	.0005388	.0418211	.0017173	.0002878
#2	.0007530	.0061232	-.000494	.0006534	.0247065	.0006446	.0000810
#3	-.000253	-.011567	.000081	.0001464	.0402111	.0016836	-.000176

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0113449	-.000827	.0006015	.0001204	.0041051	-.001063	-.001602
Stddev	.0039840	.001321	.0005996	.0001317	.0028783	.010259	.002681
%RSD	35.11691	159.8109	99.69194	109.4430	70.11562	964.7612	167.4196
#1	.0156363	-.000242	.0010483	.0000001	.0072692	.010314	.001086
#2	.0106344	.000101	.0008362	.0000997	.0034041	-.009612	-.001614
#3	.0077639	-.002340	-.000080	.0002611	.0016420	-.003893	-.004277

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: CCB02 Acquired: 12/11/2024 13:59:06 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	-.003725	.0022270	.0034220
Stddev	.001153	.0024776	.0032055
%RSD	30.94419	111.2502	93.67077
#1	-.004960	.0047148	.0068629
#2	-.003539	-.000240	.0028830
#3	-.002677	.002206	.0005203

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2229.972	56160.10	12937.90	1576.360	3878.098
Stddev	6.306	96.50	22.49	8.021	3.169
%RSD	.2827879	.1718279	.1738214	.5088372	.0817119
#1	2234.237	56113.66	12941.48	1567.104	3877.927
#2	2232.950	56271.04	12958.38	1580.709	3881.350
#3	2222.728	56095.61	12913.83	1581.268	3875.019

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5245-01 Acquired: 12/11/2024 14:08:27 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.0625814	-.045202	.1236976	-.013557	.0002961	95.93003
Stddev	.0028778	.002397	.0010236	.003758	.0014371	.81964
%RSD	4.598413	5.304001	.8274596	27.72281	485.4113	.8544102
#1	.0599880	-.045737	.1244904	-.014112	.0019531	95.33144
#2	.0620790	-.047287	.1225421	-.017007	-.000455	95.59444
#3	.0656773	-.042582	.1240603	-.009552	-.000610	96.86420

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5428232	.0042995	.0102328	1139.568	.5244058	.0459719
Stddev	.0062347	.0000966	.0001624	8.857	.0011216	.0004937
%RSD	1.148565	2.245762	1.587323	.7772674	.2138883	1.073853
#1	.5399217	.0043261	.0101440	1131.610	.5256517	.0463861
#2	.5385680	.0041924	.0101341	1137.983	.5234766	.0461041
#3	.5499798	.0043800	.0104202	1149.111	.5240890	.0454256

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1087638	112.8462	2.137633	67.32934	.2893023	-.004753
Stddev	.0003058	.2826	.021043	.49532	.0008462	.000571
%RSD	.2812061	.2504294	.9843946	.7356741	.2924817	12.01790
#1	.1084136	112.7122	2.122539	66.88402	.2897449	-.004832
#2	.1089784	112.6556	2.128690	67.24118	.2883267	-.005280
#3	.1088995	113.1709	2.161670	67.86283	.2898354	-.004146

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.88023	.3582835	.8291478	21.90377	-.128059	.0077970
Stddev	.05160	.0020774	.0037776	.03491	.002953	.0001260
%RSD	.4742615	.5798104	.4556033	.1593872	2.306163	1.616548
#1	10.88858	.3564819	.8330223	21.88482	-.124809	.0077355
#2	10.82496	.3578127	.8254751	21.88242	-.128788	.0077134
#3	10.92714	.3605558	.8289461	21.94406	-.130579	.0079419

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5245-01 Acquired: 12/11/2024 14:08:27 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.0016176	5.939631	6.178219	2.698118	F 35.01544	.4047830
Stddev	.0012889	.053143	.007044	.010160	.14501	.0038676
%RSD	79.68158	.8947268	.1140175	.3765612	.4141319	.9554662
#1	.0001298	5.905461	6.170431	2.709823	35.04668	.4025084
#2	.0023943	5.912572	6.184145	2.692949	34.85735	.4025919
#3	.0023288	6.000858	6.180082	2.691581	35.14228	.4092486

Elem	Sr4077
Units	ppm
Avg	2.407904
Stddev	.018454
%RSD	.7663837
#1	2.395540
#2	2.399056
#3	2.429116

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1890.022	48184.43	12519.32	1329.933	2666.098
Stddev	7.045	57.11	74.64	2.189	9.399
%RSD	.3727243	.1185255	.5962158	.1646205	.3525452
#1	1888.299	48136.00	12564.62	1327.735	2660.598
#2	1897.768	48169.86	12560.16	1329.950	2676.951
#3	1883.999	48247.41	12433.17	1332.114	2660.746

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: CCV03 Acquired: 12/11/2024 14:12:54 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	5.062067	5.143507	5.072473	5.097679	5.125074	10.36154	10.03881
Stddev	.003803	.022736	.007475	.011972	.014137	.06797	.02507
%RSD	.0751341	.4420374	.1473626	.2348454	.2758339	.6559856	.2497379
#1	5.058592	5.152668	5.078041	5.083876	5.109298	10.43690	10.02275
#2	5.066130	5.160234	5.063978	5.105234	5.136592	10.34285	10.02598
#3	5.061479	5.117620	5.075402	5.103928	5.129333	10.30487	10.06770

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2491064	2.494784	25.74796	1.029290	2.501513	1.292146	5.108734
Stddev	.0006825	.004069	.85910	.001893	.004568	.002035	.065609
%RSD	.2739914	.1630964	3.336567	.1838996	.1825911	.1575207	1.284242
#1	.2487861	2.497522	26.70770	1.028656	2.505550	1.289796	5.180237
#2	.2486430	2.490108	25.48538	1.027795	2.496555	1.293287	5.094660
#3	.2498902	2.496721	25.05079	1.031418	2.502436	1.293356	5.051304

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.458217	24.72352	2.519653	1.268924	25.42188	2.520107	2.608244
Stddev	.013661	.09012	.004029	.000520	.03441	.006388	.006808
%RSD	.5557398	.3645050	.1599219	.0410029	.1353587	.2534981	.2610053
#1	2.442864	24.63343	2.521952	1.268323	25.42655	2.520556	2.600932
#2	2.462757	24.81367	2.515000	1.269214	25.38538	2.513507	2.609403
#3	2.469031	24.72345	2.522007	1.269235	25.45372	2.526260	2.614398

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	25.62317	4.897106	5.206087	5.017281	5.017349	5.130136	5.213803
Stddev	.07668	.001973	.007160	.007427	.010301	.042090	.028361
%RSD	.2992619	.0402957	.1375395	.1480342	.2053130	.8204454	.5439547
#1	25.54455	4.898134	5.198336	5.017047	5.009759	5.081538	5.244971
#2	25.62721	4.898352	5.212455	5.009973	5.013211	5.153952	5.189515
#3	25.69775	4.894830	5.207470	5.024822	5.029075	5.154918	5.206924

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: CCV03 Acquired: 12/11/2024 14:12:54 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	4.969599	4.904285	5.130834
Stddev	.013919	.022123	.029642
%RSD	.2800776	.4510962	.5777147
#1	4.981580	4.892591	5.137448
#2	4.954331	4.890462	5.098443
#3	4.972887	4.929800	5.156609

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2113.225	53285.05	12739.89	1487.204	3395.716
Stddev	5.894	58.25	4.41	3.831	2.421
%RSD	.2789156	.1093161	.0346325	.2576064	.0712912
#1	2119.785	53348.13	12736.01	1491.149	3398.147
#2	2108.374	53233.29	12738.97	1483.498	3395.695
#3	2111.516	53273.74	12744.69	1486.966	3393.306

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: CCB03 Acquired: 12/11/2024 14:17:04 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.0027417	.0013765	-.000883	.0015597	.0000973	.0014903	.0003970
Stddev	.0018557	.0021957	.001085	.0009145	.0008710	.0124871	.0076964
%RSD	67.68636	159.5059	122.8577	58.63285	895.5501	837.9137	1938.896
#1	.0023787	.0029897	-.001650	.0026062	.0007917	.0154522	.0089575
#2	.0010942	.0022639	-.001357	.0011587	.0003802	-.002372	-.001816
#3	.0047520	-.001124	.000358	.0009142	-.000880	-.008609	-.005950

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000029	-.000043	-.007252	.0008138	-.000079	-.000485	-.011359
Stddev	.000033	.000107	.020366	.0002855	.000108	.000106	.004009
%RSD	116.5804	252.3330	280.8396	35.08422	137.2738	21.83198	35.29285
#1	.000007	-.000082	.015508	.0011407	-.000177	-.000403	-.006895
#2	-.000033	.000079	-.013505	.0006128	.000037	-.000447	-.012530
#3	-.000060	-.000125	-.023758	.0006881	-.000096	-.000605	-.014653

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011597	.0020854	-.000148	.0002996	-.000238	.0000864	-.000246
Stddev	.0019377	.0147311	.000300	.0001821	.008388	.0026859	.000140
%RSD	167.0864	706.4034	202.8577	60.77777	3517.036	3108.394	56.72664
#1	.0033261	.0138100	-.000143	.0001493	.007246	.0015870	-.000230
#2	.0005611	.0068956	-.000451	.0005020	-.009304	.0016866	-.000115
#3	-.000408	-.014450	.000150	.0002474	.001343	-.003014	-.000393

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0079619	.0000263	.0005851	-.000753	.0044208	.0024072	-.001383
Stddev	.0171927	.0006188	.0003825	.000720	.0042211	.0097444	.000958
%RSD	215.9377	2354.990	65.36198	95.60964	95.48334	404.7946	69.25998
#1	.0217616	.0007396	.0009796	-.000637	.0091948	.0133553	-.000340
#2	-.011298	-.000294	.0005598	-.000098	.0028846	-.000818	-.001586
#3	.013422	-.000367	.0002160	-.001524	.0011829	-.005316	-.002224

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: CCB03 Acquired: 12/11/2024 14:17:04 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	-.004302	-.000952	.0031192
Stddev	.001516	.002545	.0039581
%RSD	35.23864	267.4123	126.8958
#1	-.004194	.001968	.0075369
#2	-.002843	-.002127	.0019247
#3	-.005868	-.002697	-.000104

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2229.359	56502.33	13028.91	1573.507	3870.688
Stddev	6.427	46.44	20.78	6.374	6.505
%RSD	.2882945	.0821993	.1594711	.4050749	.1680690
#1	2222.836	56457.78	13051.52	1576.899	3863.224
#2	2235.686	56498.75	13024.58	1577.468	3875.151
#3	2229.556	56550.46	13010.65	1566.155	3873.690

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5216-16DLX5 Acquired: 12/11/2024 14:25:47 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.0014738	-.000468	.0012206	.0033898	-.001373	-.006346	.0239574
Stddev	.0012239	.000927	.0005922	.0034934	.000171	.004578	.0003302
%RSD	83.04102	197.8635	48.52173	103.0559	12.44966	72.14013	1.378390
#1	.0026358	-.000398	.0012835	.0065816	-.001466	-.001252	.0235919
#2	.0015894	.000421	.0017788	.0039301	-.001477	-.010116	.0242342
#3	.0001963	-.001429	.0005994	-.000342	-.001176	-.007670	.0240460

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000035	-.000074	1.273646	.0002060	.0002211	.0007268	-.008041
Stddev	.000032	.000055	.008638	.0002320	.0000657	.0000921	.001431
%RSD	90.73397	73.86892	.6781988	112.6029	29.70355	12.66749	17.79829
#1	-.000072	-.000128	1.279075	.0004737	.0002389	.0008217	-.007389
#2	-.000022	-.000076	1.278178	.0000825	.0002760	.0006379	-.009683
#3	-.000012	-.000019	1.263685	.0000619	.0001483	.0007208	-.007053

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1552992	.1181872	.0000828	.0004660	28.98840	-.002575	.0109072
Stddev	.0005932	.0058957	.0001310	.0001516	.12223	.000900	.0003791
%RSD	.3819534	4.988418	158.3290	32.51958	.4216559	34.93856	3.475285
#1	.1554453	.1219134	.0002119	.0006183	28.88425	-.001536	.0106263
#2	.1558056	.1113900	-.000050	.0003152	28.95798	-.003071	.0107570
#3	.1546466	.1212583	.000086	.0004647	29.12297	-.003117	.0113384

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0854975	-.003362	-.000606	-.000704	-.001257	.0783115	-.000315
Stddev	.0076520	.000406	.000095	.000271	.000405	.0046319	.003399
%RSD	8.949905	12.07460	15.73591	38.45408	32.23250	5.914707	1079.252
#1	.0796726	-.003015	-.000640	-.000508	-.001033	.0731059	-.004020
#2	.0826563	-.003808	-.000499	-.000591	-.001013	.0819777	.000416
#3	.0941637	-.003262	-.000681	-.001013	-.001725	.0798509	.002660

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5216-16DLX5 Acquired: 12/11/2024 14:25:47 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.0366983	-.002012	.0064050
Stddev	.0026558	.000450	.0000360
%RSD	7.236980	22.36477	.5619758
#1	.0395250	-.002286	.0063939
#2	.0363147	-.001493	.0063758
#3	.0342550	-.002258	.0064452

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2162.592	54635.37	12943.84	1521.811	3635.039
Stddev	6.787	70.85	12.29	1.599	6.124
%RSD	.3138422	.1296780	.0949613	.1050755	.1684788
#1	2161.789	54641.98	12937.24	1520.275	3628.715
#2	2156.243	54561.45	12936.25	1521.693	3635.460
#3	2169.746	54702.69	12958.02	1523.466	3640.942

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5216-16MS Acquired: 12/11/2024 14:30:05 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.3928742	.9451727	.4740828	.9732375	.3990392	1.016697	.2714574
Stddev	.0006656	.0079188	.0012232	.0059075	.0018416	.015098	.0023566
%RSD	.1694261	.8378176	.2580136	.6069915	.4614984	1.485001	.8681353
#1	.3935862	.9368116	.4738619	.9665780	.3975865	1.033141	.2741710
#2	.3922675	.9525589	.4729852	.9752878	.3984207	1.003461	.2699250
#3	.3927689	.9461477	.4754015	.9778466	.4011104	1.013488	.2702762

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0950228	.0953465	7.763956	.1975062	.0976277	.1547515	1.501639
Stddev	.0010465	.0001683	.064861	.0015757	.0005554	.0002507	.003392
%RSD	1.101329	.1764829	.8354149	.7978131	.5689413	.1619978	.2258777
#1	.0959064	.0954078	7.838839	.1977362	.0970449	.1545019	1.497725
#2	.0938671	.0951561	7.725370	.1958282	.0981509	.1547494	1.503478
#3	.0952948	.0954755	7.727658	.1989543	.0976872	.1550033	1.503714

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9576717	1.638486	.2426828	.0378529	171.8636	.1485853	.1710734
Stddev	.0090173	.014308	.0001479	.0003135	1.3313	.0019771	.0010969
%RSD	.9415858	.8732616	.0609413	.8281527	.7746315	1.330626	.6412050
#1	.9680233	1.646181	.2426344	.0376433	170.9576	.1506681	.1698146
#2	.9534681	1.647301	.2425652	.0377021	173.3921	.1467343	.1715812
#3	.9515238	1.621977	.2428489	.0382133	171.2411	.1483536	.1718244

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.308062	.1389900	.2090400	.3348207	.0973736	.8814117	3.000378
Stddev	.053704	.0001098	.0004715	.0018286	.0013593	.0118560	.009401
%RSD	.8513477	.0789665	.2255487	.5461481	1.395917	1.345110	.3133344
#1	6.360712	.1388735	.2085263	.3335284	.0989270	.8950611	2.992911
#2	6.310110	.1390915	.2091404	.3369130	.0964026	.8755010	3.010935
#3	6.253364	.1390051	.2094531	.3340206	.0967911	.8736730	2.997286

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5216-16MS Acquired: 12/11/2024 14:30:05 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.2128232	.0927205	.1456744
Stddev	.0027893	.0017741	.0013909
%RSD	1.310609	1.913432	.9547798
#1	.2132249	.0945782	.1472460
#2	.2098549	.0910438	.1446022
#3	.2153899	.0925395	.1451750

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2109.863	53585.85	13153.80	1486.201	3424.008
Stddev	6.635	168.65	67.48	11.719	8.689
%RSD	.3144526	.3147208	.5130373	.7885376	.2537690
#1	2116.332	53561.85	13078.85	1490.346	3432.075
#2	2110.183	53430.49	13209.75	1472.973	3425.140
#3	2103.074	53765.21	13172.79	1495.285	3414.808

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5216-16MSD Acquired: 12/11/2024 14:34:23 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.3968043	.9352324	.4725156	.9874486	.4048251	1.015286	.2719730
Stddev	.0006537	.0092949	.0019823	.0016161	.0003656	.004755	.0015459
%RSD	.1647304	.9938609	.4195271	.1636588	.0903109	.4683113	.5683903
#1	.3964056	.9253830	.4735702	.9888631	.4045792	1.015693	.2712395
#2	.3975587	.9438499	.4702289	.9856873	.4046508	1.010341	.2709305
#3	.3964487	.9364644	.4737477	.9877953	.4052452	1.019824	.2737491

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0951529	.0952048	7.713155	.1988151	.0980535	.1553757	1.498097
Stddev	.0003346	.0001622	.028736	.0008318	.0003259	.0004117	.003713
%RSD	.3516754	.1703411	.3725570	.4183750	.3323959	.2649422	.2478814
#1	.0951004	.0952406	7.727588	.1992423	.0983384	.1553790	1.493959
#2	.0955107	.0953460	7.731813	.1993465	.0981241	.1549624	1.501140
#3	.0948477	.0950277	7.680063	.1978565	.0976981	.1557856	1.499192

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9545896	1.625417	.2427169	.0379717	173.4804	.1470738	.1721306
Stddev	.0026108	.006481	.0001979	.0002839	.9981	.0010800	.0016271
%RSD	.2734996	.3987522	.0815183	.7476731	.5753341	.7343570	.9452711
#1	.9573350	1.617934	.2429452	.0382882	174.6305	.1468985	.1706820
#2	.9542955	1.629044	.2426109	.0378872	172.9698	.1460922	.1738911
#3	.9521383	1.629274	.2425947	.0377396	172.8409	.1482308	.1718186

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.316799	.1381010	.2095052	.3331430	.0974180	.8729729	2.969740
Stddev	.019038	.0006587	.0003802	.0009382	.0006163	.0011377	.012878
%RSD	.3013901	.4769890	.1814692	.2816186	.6325884	.1303299	.4336321
#1	6.320511	.1375026	.2092692	.3334804	.0967842	.8716694	2.967377
#2	6.296179	.1388069	.2093026	.3338658	.0974549	.8737665	2.983635
#3	6.333709	.1379935	.2099438	.3320828	.0980150	.8734828	2.958207

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5216-16MSD Acquired: 12/11/2024 14:34:23 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.2004722	.0937841	.1460121
Stddev	.0023567	.0007513	.0005507
%RSD	1.175571	.8011374	.3771806
#1	.1990577	.0930216	.1456583
#2	.2031928	.0938071	.1457314
#3	.1991662	.0945237	.1466466

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2075.475	53384.79	13106.51	1477.918	3376.758
Stddev	7.960	54.84	20.06	7.099	7.256
%RSD	.3835355	.1027242	.1530340	.4803077	.2148808
#1	2083.940	53394.54	13129.48	1485.442	3384.904
#2	2074.344	53325.74	13092.46	1471.339	3370.988
#3	2068.140	53434.11	13097.60	1476.975	3374.382

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5216-16A Acquired: 12/11/2024 14:38:41 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.3971074	.9514390	.4747533	.9953769	.4061518	1.022052	.2713046
Stddev	.0036221	.0064039	.0019959	.0019436	.0007513	.003436	.0022460
%RSD	.9121226	.6730699	.4204110	.1952664	.1849851	.3361650	.8278572
#1	.4011455	.9582061	.4763604	.9971292	.4054798	1.018919	.2691641
#2	.3941450	.9506370	.4725191	.9957152	.4060127	1.021512	.2711068
#3	.3960316	.9454739	.4753803	.9932863	.4069630	1.025726	.2736430

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0943484	.0954389	7.701994	.1981809	.0981873	.1559131	1.506648
Stddev	.0007508	.0000483	.020021	.0002512	.0001682	.0003216	.009231
%RSD	.7958186	.0506239	.2599453	.1267353	.1713242	.2062806	.6126691
#1	.0935220	.0954353	7.688318	.1979289	.0983776	.1561910	1.516571
#2	.0945343	.0953925	7.724974	.1981826	.0981261	.1559875	1.505059
#3	.0949887	.0954889	7.692689	.1984313	.0980583	.1555608	1.498316

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9535497	1.641296	.2432937	.0383435	174.0985	.1475849	.1717697
Stddev	.0052690	.016670	.0007299	.0005087	1.6004	.0011371	.0003450
%RSD	.5525641	1.015686	.3000074	1.326577	.9192414	.7704767	.2008573
#1	.9488661	1.634263	.2440004	.0378307	174.2579	.1478597	.1716416
#2	.9592546	1.660331	.2433380	.0383518	172.4243	.1463357	.1715071
#3	.9525286	1.629295	.2425426	.0388479	175.6131	.1485595	.1721605

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.340536	.1371726	.2109772	.3343941	.0972506	.8829427	3.009331
Stddev	.046347	.0016532	.0004621	.0008680	.0006505	.0106864	.005600
%RSD	.7309674	1.205166	.2190114	.2595716	.6689291	1.210322	.1860749
#1	6.315181	.1353116	.2114100	.3346306	.0965000	.8879558	3.010328
#2	6.312398	.1377354	.2104906	.3351193	.0976519	.8902009	3.003300
#3	6.394029	.1384709	.2110309	.3334324	.0975999	.8706713	3.014365

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5216-16A Acquired: 12/11/2024 14:38:41 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.2004154	.0942707	.1452967
Stddev	.0025834	.0008506	.0009577
%RSD	1.289023	.9022779	.6591426
#1	.1995744	.0932925	.1442222
#2	.1983573	.0948357	.1456074
#3	.2033145	.0946840	.1460605

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2069.719	53215.82	13176.34	1463.030	3370.235
Stddev	2.792	43.78	59.16	4.712	2.610
%RSD	.1349023	.0822715	.4489572	.3220776	.0774435
#1	2071.363	53167.09	13244.29	1457.740	3371.488
#2	2071.300	53228.51	13148.46	1464.572	3371.982
#3	2066.496	53251.85	13136.28	1466.778	3367.235

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: PB165528BL Acquired: 12/11/2024 14:43:01 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	-.000966	-.001466	-.000719	.0039985	-.000590	-.007449	-.009201
Stddev	.001969	.001127	.001520	.0004583	.001069	.001547	.000411
%RSD	203.8663	76.86486	211.4799	11.46296	181.1957	20.77133	4.463552
#1	.001162	-.000757	.000269	.0038369	-.000538	-.009052	-.008845
#2	-.002723	-.000876	-.002468	.0036428	-.001684	-.007329	-.009109
#3	-.001337	-.002766	.000043	.0045157	.000452	-.005965	-.009650

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000031	-.000111	-.039759	.0005036	-.000009	-.000423	-.012917
Stddev	.000029	.000027	.007855	.0002547	.000194	.000241	.002796
%RSD	93.76003	24.27044	19.75773	50.58018	2169.502	57.01773	21.64824
#1	-.000035	-.000135	-.038025	.0006292	.000193	-.000491	-.015841
#2	-.000000	-.000116	-.048336	.0002104	-.000025	-.000623	-.010270
#3	-.000059	-.000082	-.032915	.0006710	-.000195	-.000155	-.012639

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001599	-.014365	-.000316	.0006482	.0330140	-.001939	-.000504
Stddev	.000081	.010193	.000203	.0003381	.0162481	.001040	.000389
%RSD	5.033913	70.95641	64.30723	52.16580	49.21566	53.65438	77.15313
#1	-.001537	-.014516	-.000415	.0005624	.0167645	-.002169	-.000952
#2	-.001570	-.004098	-.000450	.0010210	.0330168	-.000803	-.000311
#3	-.001690	-.024482	-.000082	.0003612	.0492606	-.002845	-.000250

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.046186	-.009158	-.000692	-.001126	-.001511	-.016056	-.000451
Stddev	.028189	.000057	.000248	.000289	.000451	.002345	.002175
%RSD	61.03474	.6185133	35.85414	25.70022	29.83704	14.60566	482.4205
#1	-.074391	-.009143	-.000761	-.001457	-.001349	-.017922	-.002126
#2	-.046154	-.009221	-.000898	-.000999	-.002020	-.013423	-.001234
#3	-.018012	-.009111	-.000416	-.000922	-.001163	-.016823	.002007

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: PB165528BL Acquired: 12/11/2024 14:43:01 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	-.000760	.0020180	-.001989
Stddev	.004484	.0007449	.000015
%RSD	589.8195	36.91120	.7686655
#1	.001580	.0025177	-.002000
#2	.002069	.0023745	-.001994
#3	-.005930	.0011619	-.001971

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2217.038	56007.43	13076.55	1553.285	3868.497
Stddev	6.879	91.66	35.18	7.476	7.789
%RSD	.3102847	.1636501	.2689975	.4813046	.2013449
#1	2210.776	55933.47	13037.12	1548.816	3861.219
#2	2224.402	55978.84	13087.82	1561.916	3876.712
#3	2215.937	56109.97	13104.71	1549.122	3867.561

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: PB165528BS Acquired: 12/11/2024 14:47:22 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.7826072	2.070338	.9791065	1.987183	.7989013	2.072811
Stddev	.0030155	.035619	.0028546	.002832	.0028981	.007259
%RSD	.3853090	1.720461	.2915485	.1424944	.3627558	.3502210
#1	.7821872	2.110562	.9812789	1.990306	.8013644	2.064560
#2	.7858107	2.042793	.9758734	1.984783	.7996315	2.075652
#3	.7798238	2.057659	.9801671	1.986459	.7957080	2.078220

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1960699	.2046509	.1933387	1.009828	.4125320	.1978206
Stddev	.0003221	.0003482	.0004876	.004533	.0011747	.0007664
%RSD	.1642698	.1701373	.2522071	.4488841	.2847471	.3874115
#1	.1957254	.2044339	.1933652	1.008753	.4124146	.1974250
#2	.1963635	.2044661	.1928384	1.005929	.4137610	.1973328
#3	.1961208	.2050525	.1938125	1.014802	.4114204	.1987039

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3191205	2.947514	.2031893	1.954281	.4983918	.0761027
Stddev	.0005521	.019962	.0005996	.009654	.0011872	.0001229
%RSD	.1730173	.6772344	.2951017	.4939905	.2382024	.1614723
#1	.3196446	2.937797	.2031462	1.964543	.4993226	.0760210
#2	.3191729	2.970473	.2038093	1.945380	.4970548	.0762440
#3	.3185441	2.934271	.2026124	1.952920	.4987979	.0760431

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.861685	.3078828	.2131804	9.778323	.2760287	.4176781
Stddev	.013688	.0018815	.0008947	.044864	.0006109	.0006717
%RSD	.4783273	.6111072	.4196769	.4588070	.2213110	.1608146
#1	2.846414	.3074939	.2130041	9.728946	.2766316	.4181546
#2	2.865789	.3099283	.2123871	9.816584	.2760442	.4169099
#3	2.872852	.3062261	.2141502	9.789438	.2754102	.4179698

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: PB165528BS Acquired: 12/11/2024 14:47:22 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.6780712	.1998125	F .7017948	5.698873	F -.014090	.1894418
Stddev	.0019437	.0009157	.0024986	.049352	.002563	.0020222
%RSD	.2866509	.4582815	.3560307	.8659988	18.18635	1.067438
#1	.6802300	.1995299	.7012561	5.753756	-.012250	.1872144
#2	.6775236	.2008362	.6996095	5.658145	-.013004	.1911623
#3	.6764601	.1990714	.7045189	5.684717	-.017017	.1899487

Elem	Sr4077
Units	ppm
Avg	.2120674
Stddev	.0002338
%RSD	.1102718
#1	.2118230
#2	.2120902
#3	.2122891

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2246.121	56760.57	13003.48	1582.418	3808.344
Stddev	1.459	92.36	6.59	2.695	4.548
%RSD	.0649636	.1627224	.0507092	.1702812	.1194165
#1	2244.807	56807.09	13000.37	1584.260	3809.229
#2	2247.692	56654.20	12999.00	1579.325	3812.384
#3	2245.865	56820.43	13011.05	1583.668	3803.419

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5216-01 Acquired: 12/11/2024 14:51:24 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.0702135	-.022337	.4098023	-.010312	-.005028	135.7689	.7786861
Stddev	.0012128	.001467	.0010642	.002535	.001532	.1847	.0041244
%RSD	1.727329	6.565416	.2596969	24.58278	30.46289	.1360245	.5296574
#1	.0715168	-.021344	.4097201	-.010288	-.006384	135.5556	.7776290
#2	.0691180	-.021646	.4087815	-.007789	-.005332	135.8735	.7832362
#3	.0700058	-.024021	.4109052	-.012858	-.003367	135.8775	.7751932

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0106795	.0225742	21.86343	.2467352	.1510326	.6956599	275.3621
Stddev	.0000343	.0000932	.03696	.0007351	.0001638	.0008797	.6699
%RSD	.3211980	.4127313	.1690683	.2979133	.1084578	.1264561	.2432938
#1	.0107185	.0225007	21.82514	.2474814	.1511994	.6950550	275.8139
#2	.0106538	.0225429	21.89890	.2467125	.1508719	.6952557	275.6801
#3	.0106663	.0226790	21.86625	.2460118	.1510265	.6966691	274.5924

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.992731	44.57181	.2267607	-.014201	2.153213	.3736002	.8230175
Stddev	.019988	.09398	.0003449	.000054	.026410	.0028769	.0038266
%RSD	.2858459	.2108431	.1520817	.3813758	1.226538	.7700579	.4649479
#1	6.989420	44.46974	.2266034	-.014224	2.136668	.3705900	.8218651
#2	7.014168	44.59093	.2265224	-.014139	2.183671	.3738883	.8272878
#3	6.974604	44.65476	.2271561	-.014240	2.139301	.3763222	.8198995

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	14.72358	-.540147	.0033677	.0115868	4.653624	5.112819	5.117666
Stddev	.05705	.002036	.0004120	.0007321	.015165	.000378	.019581
%RSD	.3874792	.3769075	12.23280	6.318059	.3258708	.0073980	.3826200
#1	14.68574	-.537798	.0034742	.0111206	4.648498	5.112390	5.121691
#2	14.78920	-.541396	.0037159	.0112092	4.670688	5.112962	5.134922
#3	14.69579	-.541248	.0029129	.0124306	4.641687	5.113105	5.096385

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5216-01 Acquired: 12/11/2024 14:51:24 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.2168921	.1799486	-.095046
Stddev	.0031292	.0029822	.000722
%RSD	1.442760	1.657271	.7600162
#1	.2141569	.1782151	-.095820
#2	.2162148	.1833922	-.094390
#3	.2203045	.1782386	-.094929

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2459.049	63130.32	15519.00	1732.564	3342.432
Stddev	1.404	126.12	20.57	7.890	4.089
%RSD	.0571037	.1997740	.1325175	.4554009	.1223213
#1	2457.843	63045.32	15520.33	1734.787	3337.830
#2	2458.713	63070.42	15497.81	1723.801	3345.645
#3	2460.590	63275.23	15538.88	1739.104	3343.823

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5216-05 Acquired: 12/11/2024 14:55:30 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.1352683	-.039096	.5228175	-.010795	-.002561	84.19542	.9383466
Stddev	.0015323	.001028	.0024340	.002011	.000655	.04777	.0008017
%RSD	1.132770	2.629303	.4655474	18.62546	25.56619	.0567341	.0854372
#1	.1369661	-.040241	.5219549	-.012479	-.001974	84.15599	.9392438
#2	.1348507	-.038797	.5255653	-.011337	-.003267	84.24854	.9380957
#3	.1339882	-.038252	.5209324	-.008569	-.002442	84.18173	.9377004

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0105515	.0263824	147.0130	.2157442	.1256145	.3022265	204.2257
Stddev	.0000537	.0001552	.3545	.0011840	.0005200	.0005275	.4200
%RSD	.5092824	.5883154	.2411040	.5487957	.4140013	.1745331	.2056728
#1	.0106109	.0262393	146.6916	.2163171	.1257637	.3028355	204.0007
#2	.0105376	.0265474	146.9543	.2165327	.1250362	.3019324	203.9660
#3	.0105061	.0263606	147.3931	.2143827	.1260437	.3019116	204.7103

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.530751	62.52232	.2429700	-.009251	10.06576	.3611355	1.579648
Stddev	.019930	.24039	.0003860	.000330	.03423	.0016161	.005141
%RSD	.2091125	.3844808	.1588767	3.571241	.3400983	.4474925	.3254816
#1	9.515650	62.31179	.2425894	-.009426	10.09766	.3592908	1.584409
#2	9.523263	62.47093	.2433612	-.009457	10.07004	.3623014	1.574196
#3	9.553341	62.78425	.2429593	-.008870	10.02959	.3618144	1.580339

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	28.42832	-.365546	.0003022	-.002512	6.708604	7.279504	8.687239
Stddev	.06396	.003064	.0001796	.001491	.006729	.011075	.023304
%RSD	.2249895	.8381462	59.44159	59.37029	.1003108	.1521435	.2682555
#1	28.49288	-.368772	.0002593	-.002557	6.704158	7.267757	8.661671
#2	28.42712	-.365193	.0004994	-.003980	6.705308	7.289756	8.707288
#3	28.36497	-.362675	.0001479	-.000998	6.716346	7.280999	8.692757

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5216-05 Acquired: 12/11/2024 14:55:30 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.5122979	.2284590	.0923796
Stddev	.0075634	.0012918	.0007326
%RSD	1.476364	.5654522	.7930211
#1	.5035698	.2299355	.0929827
#2	.5169263	.2275369	.0925919
#3	.5163977	.2279046	.0915644

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2532.142	65305.51	16300.49	1770.585	3163.286
Stddev	1.527	91.60	9.79	8.207	4.922
%RSD	.0603030	.1402630	.0600900	.4635014	.1555835
#1	2530.698	65223.72	16291.62	1769.364	3160.656
#2	2531.987	65288.33	16298.85	1779.334	3160.238
#3	2533.740	65404.48	16311.00	1763.057	3168.964

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5216-09 Acquired: 12/11/2024 14:59:36 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.0212796	-.001442	.0691710	-.004618	-.001755	55.01423	.7834710
Stddev	.0034255	.001714	.0005951	.000506	.000884	.09375	.0035703
%RSD	16.09749	118.8176	.8603216	10.95824	50.36777	.1704066	.4557092
#1	.0176498	-.002621	.0685521	-.004567	-.001798	54.92349	.7872404
#2	.0244555	.000524	.0697390	-.004139	-.000850	55.00848	.7801402
#3	.0217334	-.002230	.0692221	-.005147	-.002616	55.11072	.7830325

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0053147	.0069286	8.522991	.0959711	.0761834	.1312884	137.2808
Stddev	.0000572	.0002478	.026624	.0001633	.0002098	.0004209	.2652
%RSD	1.076350	3.576569	.3123787	.1701744	.2753452	.3205962	.1932038
#1	.0053387	.0066564	8.532824	.0961278	.0764245	.1308264	137.5736
#2	.0052494	.0069883	8.492849	.0959837	.0760830	.1313884	137.0566
#3	.0053560	.0071411	8.543299	.0958019	.0760427	.1316502	137.2121

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.699930	16.89058	.1116834	-.006518	1.959019	.1299340	.3172046
Stddev	.010462	.03208	.0001187	.000278	.005413	.0012732	.0014100
%RSD	.6154389	.1899206	.1063052	4.260243	.2763022	.9798731	.4445142
#1	1.710351	16.88771	.1117583	-.006202	1.965253	.1308904	.3185028
#2	1.689428	16.86003	.1117453	-.006725	1.956292	.1284888	.3157045
#3	1.700011	16.92400	.1115465	-.006627	1.955512	.1304227	.3174067

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.716097	-.265236	.0023028	.0071919	.9032748	5.777932	2.524417
Stddev	.008872	.001391	.0003320	.0006512	.0039479	.013974	.012919
%RSD	.1321002	.5244737	14.41567	9.054104	.4370627	.2418565	.5117703
#1	6.713123	-.266571	.0019455	.0064667	.9058892	5.761879	2.510573
#2	6.709095	-.263795	.0023612	.0077264	.8987335	5.784539	2.526527
#3	6.726074	-.265341	.0026016	.0073826	.9052016	5.787378	2.536152

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5216-09 Acquired: 12/11/2024 14:59:36 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.7682511	.1046331	-.074447
Stddev	.0036732	.0012192	.000054
%RSD	.4781277	1.165245	.0723930
#1	.7643163	.1044503	-.074385
#2	.7688472	.1035155	-.074474
#3	.7715898	.1059334	-.074482

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2414.667	61719.25	15036.82	1706.632	3614.802
Stddev	2.547	47.94	40.16	7.223	5.898
%RSD	.1054631	.0776804	.2670883	.4232106	.1631500
#1	2417.459	61718.21	14996.95	1702.450	3620.565
#2	2414.070	61671.84	15077.27	1714.972	3615.064
#3	2412.472	61767.71	15036.24	1702.475	3608.778

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5216-13 Acquired: 12/11/2024 15:03:45 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.0587923	-.010808	1.006727	-.007215	-.004456	148.2309	.8762454
Stddev	.0010421	.001789	.002174	.002286	.003007	.4511	.0015388
%RSD	1.772576	16.55290	.2159365	31.67816	67.47117	.3043012	.1756124
#1	.0587653	-.011447	1.005807	-.007323	-.007878	147.7815	.8744763
#2	.0598477	-.008787	1.005164	-.004877	-.003257	148.2276	.8769863
#3	.0577640	-.012190	1.009210	-.009445	-.002235	148.6836	.8772735

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0110985	.0219545	24.15326	.2103500	.1359818	.4915409	271.7897
Stddev	.0000525	.0001680	.08994	.0005058	.0004979	.0004960	.8984
%RSD	.4730721	.7650909	.3723704	.2404606	.3661471	.1009033	.3305661
#1	.0111017	.0220416	24.05047	.2099475	.1355977	.4920197	270.9107
#2	.0110444	.0220610	24.19181	.2101847	.1358033	.4915737	271.7520
#3	.0111493	.0217609	24.21749	.2109177	.1365443	.4910294	272.7064

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.924494	32.26578	.1906530	-.014136	4.814899	.3673156	.9242102
Stddev	.021554	.05535	.0003328	.000241	.010505	.0004705	.0010244
%RSD	.3638171	.1715467	.1745864	1.702783	.2181793	.1280943	.1108359
#1	5.900911	32.20892	.1907129	-.014413	4.806712	.3678499	.9253091
#2	5.929393	32.31949	.1902943	-.014017	4.811241	.3669632	.9232817
#3	5.943177	32.26894	.1909519	-.013979	4.826745	.3671337	.9240399

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.40859	-.540855	.0046785	.0194711	2.987019	6.664406	4.935084
Stddev	.03209	.001942	.0004625	.0015910	.006403	.031970	.007604
%RSD	.2813093	.3591365	9.885711	8.171011	.2143695	.4797126	.1540840
#1	11.37258	-.541118	.0049719	.0176990	2.981211	6.659702	4.935565
#2	11.43418	-.538794	.0049182	.0207768	2.985961	6.635048	4.927251
#3	11.41900	-.542652	.0041454	.0199373	2.993886	6.698467	4.942436

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5216-13 Acquired: 12/11/2024 15:03:45 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.7329218	.1666448	-.090707
Stddev	.0020887	.0013070	.000640
%RSD	.2849798	.7843309	.7055511
#1	.7311854	.1673011	-.090316
#2	.7323404	.1674936	-.090360
#3	.7352396	.1651396	-.091446

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2443.555	62594.08	15412.97	1713.707	3359.130
Stddev	3.286	102.68	7.08	6.028	3.708
%RSD	.1344671	.1640435	.0459234	.3517541	.1103869
#1	2440.561	62544.18	15417.19	1708.462	3358.928
#2	2447.070	62712.17	15416.93	1720.292	3362.936
#3	2443.034	62525.88	15404.80	1712.368	3355.528

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: CCV04 Acquired: 12/11/2024 15:07:59 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	5.040343	5.122496	4.925825	5.088395	5.118070	10.05022	9.952431
Stddev	.005900	.028076	.003776	.018069	.009162	.00664	.048986
%RSD	.1170637	.5480977	.0766591	.3551096	.1790035	.0661161	.4922047
#1	5.044451	5.093270	4.921629	5.067584	5.107714	10.04255	10.00540
#2	5.033582	5.149261	4.928949	5.097495	5.125118	10.05424	9.90877
#3	5.042996	5.124958	4.926896	5.100105	5.121378	10.05387	9.94313

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2369850	2.416863	23.77464	.9975774	2.423996	1.283293	4.917746
Stddev	.0004342	.001256	.05259	.0015874	.001858	.003487	.003861
%RSD	.1832066	.0519815	.2212095	.1591211	.0766531	.2717325	.0785207
#1	.2372036	2.415710	23.78999	.9981223	2.422023	1.279689	4.921103
#2	.2372665	2.418202	23.71609	.9988206	2.425713	1.283539	4.913526
#3	.2364850	2.416677	23.81785	.9957894	2.424253	1.286650	4.918609

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.375369	23.58642	2.446723	1.241112	25.61457	2.455135	2.554739
Stddev	.001209	.06998	.002577	.001060	.12953	.002566	.011799
%RSD	.0509003	.2967027	.1053064	.0854262	.5056747	.1045306	.4618477
#1	2.376566	23.58478	2.445878	1.239919	25.76337	2.454283	2.543149
#2	2.374149	23.51727	2.444675	1.241947	25.52707	2.453104	2.554331
#3	2.375393	23.65721	2.449616	1.241471	25.55328	2.458019	2.566736

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	25.74203	4.661190	5.154842	4.888906	4.902936	5.081370	4.971020
Stddev	.02064	.005175	.013042	.003041	.007048	.023532	.013704
%RSD	.0801651	.1110149	.2530028	.0622009	.1437473	.4630945	.2756696
#1	25.73846	4.660620	5.139929	4.888194	4.902396	5.058919	4.970751
#2	25.72341	4.666626	5.164112	4.886284	4.896173	5.079338	4.957452
#3	25.76421	4.656324	5.160485	4.892240	4.910238	5.105851	4.984856

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: CCV04 Acquired: 12/11/2024 15:07:59 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	4.857967	4.960872	5.076048
Stddev	.014043	.001499	.001635
%RSD	.2890742	.0302168	.0322182
#1	4.845992	4.959758	5.076566
#2	4.854484	4.962576	5.074217
#3	4.873423	4.960281	5.077363

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2113.672	53951.13	13202.04	1484.998	3440.484
Stddev	4.062	110.02	33.65	6.391	3.232
%RSD	.1921743	.2039321	.2549078	.4303550	.0939420
#1	2118.184	53824.45	13163.89	1487.987	3442.282
#2	2112.525	54006.09	13214.70	1489.347	3442.417
#3	2110.307	54022.84	13227.52	1477.661	3436.753

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: CCB04 Acquired: 12/11/2024 15:12:10 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.0007856	-.000406	-.001038	.0015796	-.000848	-.005956	-.009941
Stddev	.0036378	.000724	.000251	.0007610	.000487	.003338	.000124
%RSD	463.0391	178.2820	24.23321	48.17403	57.38640	56.04134	1.243991
#1	.0001577	.000416	-.001147	.0007789	-.001087	-.003846	-.010070
#2	-.002497	-.000947	-.000750	.0022934	-.000288	-.004218	-.009823
#3	.004697	-.000687	-.001216	.0016666	-.001170	-.009805	-.009930

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000051	-.000065	-.035673	.0005229	.0000643	-.000441	-.010201
Stddev	.000022	.000070	.004371	.0002245	.0002602	.000236	.000861
%RSD	42.42999	107.5376	12.25401	42.93147	404.7771	53.43058	8.439491
#1	-.000026	-.000141	-.031356	.0007307	-.000233	-.000433	-.010319
#2	-.000067	-.000052	-.040097	.0005532	.000249	-.000681	-.009287
#3	-.000061	-.000003	-.035568	.0002848	.000177	-.000210	-.010997

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001318	-.022571	.0000060	.0006744	-.010090	-.002859	-.000723
Stddev	.000206	.007308	.0003055	.0001647	.009546	.001256	.000351
%RSD	15.62468	32.37874	5121.485	24.42586	94.61151	43.93727	48.60159
#1	-.001138	-.017346	.0001235	.0005828	-.020320	-.002909	-.000323
#2	-.001543	-.019445	.0002353	.0005759	-.008529	-.004089	-.000861
#3	-.001274	-.030923	-.000341	.0008646	-.001420	-.001578	-.000983

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0294401	-.005327	-.000119	-.000834	-.001323	-.012829	-.000352
Stddev	.0116474	.000312	.000264	.000658	.000232	.002636	.002785
%RSD	39.56305	5.848336	221.4688	78.88816	17.57042	20.54624	791.0805
#1	.0180834	-.004973	.000147	-.001550	-.001120	-.014026	-.000313
#2	.0413580	-.005561	-.000125	-.000695	-.001576	-.009807	-.003156
#3	.0288790	-.005446	-.000380	-.000256	-.001272	-.014653	.002413

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: CCB04 Acquired: 12/11/2024 15:12:10 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	-.002836	-.003127	-.001896
Stddev	.002171	.001624	.000017
%RSD	76.55777	51.93274	.9190991
#1	-.000509	-.001784	-.001885
#2	-.003191	-.002666	-.001916
#3	-.004809	-.004932	-.001887

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2254.297	57009.11	13310.35	1592.841	3954.991
Stddev	3.663	42.44	26.68	2.768	1.020
%RSD	.1624897	.0744483	.2004488	.1737616	.0257955
#1	2258.465	56983.72	13280.18	1591.849	3955.213
#2	2252.835	57058.10	13330.84	1595.968	3953.878
#3	2251.591	56985.49	13320.03	1590.706	3955.882

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5217-01 Acquired: 12/11/2024 15:16:31 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.0226087	-.030114	.1050718	-.015443	.0060108	100.3544
Stddev	.0014563	.003104	.0023792	.001137	.0028036	.2209
%RSD	6.441192	10.30824	2.264372	7.361883	46.64230	.2201652
#1	.0216387	-.032022	.1023785	-.016755	.0047277	100.1342
#2	.0242832	-.026532	.1059491	-.014826	.0040784	100.5761
#3	.0219040	-.031788	.1068877	-.014748	.0092263	100.3530

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4529492	.0041803	.0084875	1707.157	.4376728	.0302853
Stddev	.0013897	.0000505	.0001480	2.006	.0005366	.0004391
%RSD	.3068168	1.207386	1.744281	.1174860	.1226150	1.449989
#1	.4541573	.0042296	.0083204	1708.408	.4381681	.0304147
#2	.4532599	.0041287	.0085396	1708.220	.4377477	.0297960
#3	.4514305	.0041824	.0086024	1704.844	.4371027	.0306451

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1449314	78.59041	3.317020	296.3435	.0982580	-.001239
Stddev	.0003726	.34409	.015651	.3665	.0002891	.000184
%RSD	.2570908	.4378264	.4718504	.1236899	.2942612	14.87989
#1	.1449797	78.87775	3.334248	296.7107	.0979349	-.001134
#2	.1445370	78.20910	3.313137	295.9776	.0983470	-.001132
#3	.1452774	78.68439	3.303676	296.3422	.0984923	-.001452

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.874582	.1324640	1.272375	35.98340	.0156694	.0149957
Stddev	.022876	.0014472	.007380	.05360	.0019065	.0003609
%RSD	.2577671	1.092552	.5799893	.1489597	12.16708	2.406630
#1	8.885394	.1317381	1.280089	35.96034	.0143039	.0145790
#2	8.848304	.1315234	1.265383	35.94520	.0148566	.0152100
#3	8.890047	.1341305	1.271652	36.04468	.0178476	.0151981

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5217-01 Acquired: 12/11/2024 15:16:31 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	-.000217	4.089983	6.564329	5.342278	F 80.09743	.6386741
Stddev	.001916	.006668	.014936	.024648	.08759	.0074008
%RSD	882.3489	.1630267	.2275310	.4613712	.1093521	1.158778
#1	-.000794	4.096742	6.554080	5.363326	80.02641	.6315788
#2	-.001778	4.089796	6.557441	5.315163	80.07059	.6380968
#3	.001921	4.083411	6.581466	5.348344	80.19530	.6463466

Elem	Sr4077
Units	ppm
Avg	8.101326
Stddev	.026555
%RSD	.3277901
#1	8.121219
#2	8.111587
#3	8.071171

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1812.876	46879.49	12509.51	1278.355	2494.361
Stddev	5.880	92.16	31.98	8.198	4.317
%RSD	.3243189	.1965837	.2556345	.6413033	.1730796
#1	1806.158	46867.81	12480.04	1273.882	2489.447
#2	1817.085	46976.93	12504.97	1287.816	2497.544
#3	1815.385	46793.73	12543.51	1273.366	2496.092

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5217-01DUP Acquired: 12/11/2024 15:20:58 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.0231978	-.038844	.1067318	-.014269	.0030099	100.5137
Stddev	.0091185	.005270	.0015880	.002931	.0016464	.0891
%RSD	39.30760	13.56816	1.487829	20.54390	54.69820	.0886594
#1	.0254267	-.036136	.1085650	-.013143	.0030932	100.5877
#2	.0309953	-.035478	.1057815	-.012067	.0046130	100.4148
#3	.0131715	-.044918	.1058488	-.017596	.0013235	100.5385

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4521144	.0042113	.0086714	1695.112	.4358546	.0296808
Stddev	.0026493	.0000667	.0001505	5.050	.0010655	.0003643
%RSD	.5859821	1.583399	1.734957	.2979107	.2444625	1.227540
#1	.4547715	.0041958	.0086308	1698.124	.4347676	.0294081
#2	.4520989	.0042843	.0085454	1697.930	.4358990	.0300946
#3	.4494729	.0041537	.0088380	1689.282	.4368972	.0295396

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1461847	78.65975	3.297620	295.7221	.0990056	-.001423
Stddev	.0001942	.06358	.018008	.7407	.0002121	.000050
%RSD	.1328282	.0808266	.5461003	.2504782	.2142611	3.498441
#1	.1462565	78.67953	3.310478	294.8768	.0988768	-.001380
#2	.1463328	78.58863	3.305344	296.2574	.0988896	-.001478
#3	.1459649	78.71109	3.277039	296.0322	.0992505	-.001411

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.992706	.1314306	1.278610	36.17340	.0168744	.0151068
Stddev	.045976	.0014810	.004616	.09390	.0016278	.0000795
%RSD	.5112593	1.126821	.3610115	.2595703	9.646666	.5260359
#1	9.042330	.1298749	1.280572	36.22491	.0176543	.0151585
#2	8.984233	.1328234	1.273337	36.06502	.0179655	.0151466
#3	8.951556	.1315935	1.281920	36.23027	.0150033	.0150153

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5217-01DUP Acquired: 12/11/2024 15:20:58 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.0019142	4.086061	6.663086	5.330439	F 80.61441	.6508449
Stddev	.0015762	.010993	.016726	.021174	.30425	.0058186
%RSD	82.33920	.2690304	.2510204	.3972328	.3774190	.8940091
#1	.0037327	4.093904	6.647833	5.322325	80.35331	.6458841
#2	.0010700	4.090783	6.660453	5.354470	80.54139	.6494011
#3	.0009401	4.073497	6.680972	5.314521	80.94853	.6572495

Elem	Sr4077
Units	ppm
Avg	8.061874
Stddev	.064535
%RSD	.8005010
#1	8.104944
#2	8.093004
#3	7.987675

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1814.214	46804.81	12547.28	1273.913	2487.615
Stddev	4.412	79.88	31.80	3.550	2.495
%RSD	.2432163	.1706558	.2534547	.2786988	.1002896
#1	1809.837	46779.46	12525.95	1276.997	2485.215
#2	1814.145	46894.28	12532.05	1274.711	2487.434
#3	1818.661	46740.69	12583.83	1270.032	2490.195

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5217-01DLX5 Acquired: 12/11/2024 15:25:23 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.0046289	-.008370	.0221310	-.002507	.0000084	20.13816
Stddev	.0043015	.001160	.0008218	.001983	.0001621	.00757
%RSD	92.92833	13.85949	3.713130	79.12337	1922.440	.0375831
#1	.0060601	-.007976	.0225090	-.000990	-.000142	20.13413
#2	-.000206	-.009675	.0211883	-.004751	.000180	20.14689
#3	.008032	-.007458	.0226957	-.001778	-.000012	20.13346

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0863118	.0008531	.0008651	380.5475	.0977615	.0059736
Stddev	.0003024	.0000529	.0000804	.6551	.0010443	.0001400
%RSD	.3503478	6.199625	9.294381	.1721445	1.068244	2.343560
#1	.0866269	.0008692	.0009088	380.3413	.0973764	.0058226
#2	.0862844	.0007941	.0009141	381.2809	.0989437	.0059992
#3	.0860240	.0008961	.0007723	380.0204	.0969645	.0060991

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0339058	16.49257	.7323467	61.68523	.0201911	.0000873
Stddev	.0002268	.05986	.0020488	.33920	.0001953	.0002400
%RSD	.6689934	.3629505	.2797597	.5498948	.9672782	274.8286
#1	.0338436	16.42389	.7304884	61.29459	.0204023	.0002347
#2	.0341572	16.53364	.7345438	61.90520	.0200171	-.000190
#3	.0337165	16.52019	.7320078	61.85591	.0201537	.000217

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.693494	.0265455	.3619262	6.670573	-.000211	.0031281
Stddev	.013464	.0008089	.0012788	.028680	.001324	.0001312
%RSD	.7950152	3.047249	.3533371	.4299466	628.3932	4.194427
#1	1.688220	.0256294	.3619797	6.660869	-.000031	.0032538
#2	1.683465	.0271614	.3606214	6.648004	-.001616	.0029920
#3	1.708796	.0268457	.3631774	6.702846	.001015	.0031383

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5217-01DLX5 Acquired: 12/11/2024 15:25:23 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	-.005074	.8810699	1.298329	.9782281	F 14.96542	.0957980
Stddev	.000343	.0012000	.006739	.0014282	.02364	.0005441
%RSD	6.763642	.1362008	.5190809	.1459965	.1579867	.5679928
#1	-.005293	.8803958	1.290660	.9783666	14.94122	.0956078
#2	-.004678	.8824554	1.303308	.9767358	14.96657	.0953746
#3	-.005250	.8803585	1.301020	.9795821	14.98847	.0964118

Elem	Sr4077
Units	ppm
Avg	1.779054
Stddev	.003656
%RSD	.2054842
#1	1.775225
#2	1.782508
#3	1.779428

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2026.598	51167.46	12868.63	1407.015	3125.497
Stddev	2.312	68.05	14.89	5.029	3.651
%RSD	.1140656	.1329919	.1156723	.3573982	.1168144
#1	2029.259	51116.08	12865.69	1404.994	3128.970
#2	2025.437	51141.67	12855.43	1412.739	3125.829
#3	2025.096	51244.63	12884.76	1403.310	3121.691

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5217-01MS Acquired: 12/11/2024 15:29:52 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.8303967	1.799422	1.015351	1.959818	.3419483	101.1101
Stddev	.0014033	.002870	.001527	.006831	.0028483	.1264
%RSD	.1689914	.1594853	.1503942	.3485429	.8329595	.1249990
#1	.8287783	1.802697	1.014752	1.951993	.3432376	101.2337
#2	.8311369	1.798228	1.017087	1.962867	.3439239	100.9811
#3	.8312749	1.797343	1.014214	1.964592	.3386833	101.1155

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6322572	.1922935	.1997365	1658.616	.7377883	.2209760
Stddev	.0025353	.0003060	.0003634	8.825	.0017894	.0007347
%RSD	.4009899	.1591324	.1819593	.5320964	.2425323	.3324797
#1	.6340500	.1926427	.2000629	1656.133	.7394358	.2201656
#2	.6333650	.1920725	.1998017	1651.298	.7380446	.2215985
#3	.6293565	.1921652	.1993449	1668.417	.7358847	.2211639

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3999557	77.45795	3.385031	291.8491	.5602958	.0800359
Stddev	.0015077	.07972	.006515	.6811	.0019531	.0005452
%RSD	.3769763	.1029266	.1924778	.2333631	.3485760	.6811337
#1	.3982215	77.39826	3.392155	292.1441	.5593539	.0799949
#2	.4009562	77.42711	3.379375	291.0703	.5625413	.0806003
#3	.4006894	77.54849	3.383564	292.3329	.5589922	.0795123

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.94173	.4027232	1.428784	46.60633	.2565036	.3887598
Stddev	.04524	.0018753	.004829	.04165	.0009648	.0011276
%RSD	.3788263	.4656613	.3379956	.0893617	.3761191	.2900407
#1	11.96162	.4014329	1.427324	46.64483	.2574945	.3891167
#2	11.97361	.4018623	1.424852	46.61203	.2564490	.3896657
#3	11.88995	.4048744	1.434174	46.56212	.2555673	.3874970

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5217-01MS Acquired: 12/11/2024 15:29:52 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.6524455	4.231004	7.731725	F 11.94573	F 76.97996	.8166216
Stddev	.0023830	.003850	.021266	.00829	.08784	.0031262
%RSD	.3652406	.0909987	.2750429	.0693812	.1141063	.3828174
#1	.6514737	4.235200	7.755902	11.95070	77.07478	.8199542
#2	.6507019	4.230179	7.715917	11.93616	76.96373	.8161567
#3	.6551608	4.227633	7.723357	11.95032	76.90137	.8137539

Elem	Sr4077
Units	ppm
Avg	8.154955
Stddev	.014595
%RSD	.1789717
#1	8.170705
#2	8.152272
#3	8.141887

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1822.024	46886.38	12282.67	1268.322	2515.724
Stddev	3.750	77.99	34.06	6.318	4.077
%RSD	.2057917	.1663282	.2772752	.4981545	.1620520
#1	1826.018	46805.33	12244.62	1270.920	2519.613
#2	1818.580	46960.88	12310.29	1272.927	2511.483
#3	1821.473	46892.93	12293.11	1261.119	2516.077

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5217-01MSD Acquired: 12/11/2024 15:34:09 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.8202066	1.775635	1.006741	1.954542	.3437100	100.5360
Stddev	.0023189	.011248	.002318	.005554	.0008471	.0490
%RSD	.2827187	.6334370	.2302684	.2841431	.2464605	.0487507
#1	.8200007	1.774048	1.007641	1.955291	.3445111	100.5693
#2	.8226215	1.765265	1.004107	1.959683	.3437955	100.4797
#3	.8179975	1.787591	1.008474	1.948652	.3428234	100.5590

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6265935	.1906594	.1981489	1648.112	.7352324	.2201415
Stddev	.0001549	.0005914	.0007024	6.893	.0024795	.0003744
%RSD	.0247156	.3102107	.3544827	.4182658	.3372396	.1700821
#1	.6267317	.1902619	.1987355	1643.036	.7323959	.2205731
#2	.6266225	.1913391	.1973705	1655.960	.7369876	.2199042
#3	.6264261	.1903770	.1983407	1645.340	.7363137	.2199471

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3979739	76.79452	3.343207	290.1833	.5547850	.0791631
Stddev	.0012291	.06136	.012490	.9021	.0013749	.0003394
%RSD	.3088381	.0798976	.3735914	.3108715	.2478205	.4287963
#1	.3992330	76.82591	3.349143	290.7485	.5546253	.0793366
#2	.3979116	76.83384	3.351622	290.6584	.5534969	.0787719
#3	.3967772	76.72382	3.328856	289.1429	.5562327	.0793806

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.84641	.3998526	1.417297	46.41282	.2597637	.3859873
Stddev	.03782	.0007992	.002602	.11357	.0011141	.0002636
%RSD	.3192652	.1998794	.1835582	.2446947	.4289080	.0682913
#1	11.86761	.3992057	1.416852	46.43048	.2584982	.3862817
#2	11.80275	.4007461	1.414946	46.29146	.2605970	.3859071
#3	11.86888	.3996060	1.420092	46.51653	.2601958	.3857731

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5217-01MSD Acquired: 12/11/2024 15:34:09 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.6459011	4.196308	7.704824	F 11.81539	F 76.28788	.8177009
Stddev	.0008540	.006282	.016139	.02865	.11234	.0040104
%RSD	.1322213	.1497034	.2094666	.2424969	.1472520	.4904519
#1	.6449207	4.202788	7.715098	11.81262	76.36685	.8184499
#2	.6462990	4.195892	7.686222	11.78822	76.15927	.8133687
#3	.6464835	4.190245	7.713152	11.84533	76.33750	.8212840

Elem	Sr4077
Units	ppm
Avg	8.057948
Stddev	.039304
%RSD	.4877695
#1	8.072306
#2	8.088054
#3	8.013483

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1823.069	47158.26	12368.81	1276.415	2519.603
Stddev	2.698	146.06	43.92	4.231	3.245
%RSD	.1480131	.3097315	.3551090	.3314731	.1288080
#1	1821.108	46992.44	12331.18	1274.441	2516.138
#2	1821.954	47267.85	12358.19	1281.273	2522.571
#3	1826.147	47214.48	12417.07	1273.532	2520.099

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5217-01A Acquired: 12/11/2024 15:38:27 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.8154973	1.755898	1.010888	1.951327	.3446401	100.5956
Stddev	.0081389	.012484	.000224	.010729	.0033964	.1686
%RSD	.9980264	.7109881	.0221243	.5498558	.9854815	.1675582
#1	.8122829	1.747766	1.011146	1.939280	.3467877	100.4149
#2	.8094565	1.770272	1.010752	1.959857	.3464083	100.7486
#3	.8247525	1.749656	1.010766	1.954843	.3407245	100.6232

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6286562	.1907500	.1986863	1646.390	.7345546	.2209975
Stddev	.0036636	.0004079	.0006958	9.804	.0016357	.0008898
%RSD	.5827642	.2138211	.3501954	.5954864	.2226834	.4026136
#1	.6265727	.1905621	.1980572	1635.730	.7331825	.2200303
#2	.6328864	.1912179	.1985679	1655.021	.7341166	.2211809
#3	.6265095	.1904699	.1994336	1648.419	.7363648	.2217813

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3989034	76.84178	3.352756	289.7577	.5579612	.0791833
Stddev	.0002791	.34130	.022377	.8523	.0012313	.0001996
%RSD	.0699640	.4441556	.6674118	.2941497	.2206784	.2521256
#1	.3991856	76.76222	3.348605	290.2847	.5577816	.0789829
#2	.3986275	77.21583	3.376917	290.2140	.5568296	.0793822
#3	.3988970	76.54730	3.332745	288.7744	.5592725	.0791849

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.91043	.3994464	1.422135	46.61730	.2587783	.3856384
Stddev	.04427	.0027514	.005170	.18918	.0018179	.0001488
%RSD	.3717260	.6887922	.3635309	.4058223	.7024808	.0385770
#1	11.88150	.4016527	1.428089	46.40057	.2572920	.3856343
#2	11.96140	.4003230	1.419535	46.70193	.2608052	.3854917
#3	11.88839	.3963636	1.418782	46.74939	.2582377	.3857892

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5217-01A Acquired: 12/11/2024 15:38:27 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.6463638	4.201803	7.691900	F 11.84079	F 76.60481	.8207208
Stddev	.0029311	.016164	.036118	.02547	.03461	.0055678
%RSD	.4534752	.3846915	.4695552	.2150844	.0451814	.6784003
#1	.6431743	4.199712	7.651522	11.81162	76.56499	.8250872
#2	.6489391	4.218911	7.721127	11.85859	76.62176	.8144509
#3	.6469782	4.186787	7.703052	11.85217	76.62768	.8226243

Elem	Sr4077
Units	ppm
Avg	8.031889
Stddev	.048826
%RSD	.6078957
#1	7.993034
#2	8.086695
#3	8.015937

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1821.432	47193.22	12371.53	1279.947	2511.875
Stddev	4.899	34.95	49.58	3.890	2.577
%RSD	.2689864	.0740653	.4007679	.3038918	.1025989
#1	1815.835	47198.01	12361.00	1281.385	2509.454
#2	1823.517	47156.12	12328.05	1282.913	2514.584
#3	1824.944	47225.53	12425.53	1275.543	2511.587

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5219-01 Acquired: 12/11/2024 15:42:44 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.0115012	-.030812	.0252961	-.003334	-.004062	256.0512	.1764354
Stddev	.0022344	.001435	.0003769	.002082	.001917	.7492	.0004078
%RSD	19.42768	4.658359	1.489855	62.43303	47.19410	.2925872	.2311509
#1	.0109679	-.031649	.0248993	-.005737	-.005744	256.8701	.1768164
#2	.0095816	-.031633	.0253396	-.002194	-.004468	255.8835	.1764845
#3	.0139540	-.029155	.0256492	-.002072	-.001975	255.4002	.1760052

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0036674	.0128796	139.5329	.3593841	.1773768	1.528570	196.4458
Stddev	.0001234	.0003394	.0459	.0015569	.0024417	.020417	.3479
%RSD	3.366295	2.635302	.0328792	.4332158	1.376580	1.335719	.1770974
#1	.0036277	.0131885	139.5392	.3611801	.1796516	1.547967	196.3670
#2	.0035686	.0129341	139.5754	.3584172	.1776821	1.530477	196.8263
#3	.0038058	.0125163	139.4843	.3585550	.1747968	1.507266	196.1440

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.797620	137.2800	.4022801	-.010335	31.48575	.3706227	.4420066
Stddev	.003663	.2331	.0054297	.000375	.10907	.0019021	.0013949
%RSD	.2037574	.1698049	1.349730	3.632330	.3464151	.5132166	.3155785
#1	1.797830	137.2841	.4061814	-.010465	31.59511	.3727997	.4403993
#2	1.801173	137.5111	.4045800	-.009911	31.48516	.3692823	.4427202
#3	1.793856	137.0449	.3960790	-.010627	31.37697	.3697861	.4429003

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	14.41090	-.342488	-.001249	.0000422	5.027322	7.617615	7.258463
Stddev	.02893	.000847	.000049	.0018633	.010345	.077929	.078613
%RSD	.2007648	.2473737	3.909521	4421.015	.2057781	1.023007	1.083060
#1	14.44257	-.341538	-.001304	-.002002	5.037507	7.638504	7.314901
#2	14.38585	-.343166	-.001231	.001646	5.027635	7.682969	7.291815
#3	14.40428	-.342759	-.001211	.000482	5.016824	7.531370	7.168671

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5219-01 Acquired: 12/11/2024 15:42:44 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	1.867241	.1320082	.2962903
Stddev	.018337	.0004659	.0007927
%RSD	.9820580	.3529510	.2675354
#1	1.874538	.1320827	.2971812
#2	1.880806	.1324324	.2956628
#3	1.846378	.1315095	.2960270

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2053.271	51868.21	13184.60	1428.521	3063.929
Stddev	23.433	83.38	30.78	3.470	36.270
%RSD	1.141261	.1607454	.2334792	.2429140	1.183772
#1	2030.401	51778.56	13150.38	1432.205	3033.383
#2	2052.181	51882.66	13193.39	1428.043	3054.387
#3	2077.229	51943.42	13210.03	1425.314	3104.016

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5219-02 Acquired: 12/11/2024 15:47:00 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.0097876	-.028714	.0172617	-.004570	-.003896	193.4484	.2117714
Stddev	.0040615	.003362	.0004738	.004126	.001790	1.4032	.0002962
%RSD	41.49661	11.70698	2.745007	90.28263	45.94391	.7253534	.1398660
#1	.0083864	-.028015	.0172747	-.002941	-.005792	192.2382	.2114692
#2	.0143643	-.032370	.0177289	-.009261	-.002236	193.1204	.2120612
#3	.0066122	-.025757	.0167815	-.001507	-.003660	194.9865	.2117837

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0025344	.0071121	109.4636	.1556246	.0955227	1.108956	116.2661
Stddev	.0000227	.0001697	.2312	.0008833	.0002314	.000840	.0506
%RSD	.8968558	2.386546	.2111733	.5675962	.2422729	.0757599	.0435079
#1	.0025360	.0071791	109.7296	.1546176	.0953824	1.108663	116.2968
#2	.0025110	.0069191	109.3119	.1559879	.0953960	1.108302	116.2938
#3	.0025563	.0072381	109.3492	.1562683	.0957898	1.109903	116.2077

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.087416	62.24433	.2111559	-.005580	27.90154	.3106027	.1716495
Stddev	.003355	.19599	.0005523	.000505	.08892	.0018691	.0002742
%RSD	.3085506	.3148735	.2615776	9.049195	.3186945	.6017603	.1597412
#1	1.090170	62.38620	.2115071	-.006026	27.88889	.3126971	.1713557
#2	1.088399	62.02069	.2105192	-.005032	27.99610	.3100063	.1718986
#3	1.083679	62.32609	.2114413	-.005681	27.81962	.3091045	.1716944

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	16.98191	-.203440	.0009015	.0016092	4.001102	3.729595	7.036140
Stddev	.08085	.003021	.0002610	.0020313	.004728	.013167	.006937
%RSD	.4760712	1.485169	28.95254	126.2327	.1181593	.3530500	.0985966
#1	16.89823	-.206318	.0006972	-.000121	4.005062	3.720713	7.032541
#2	17.05959	-.203709	.0008117	.001102	4.002377	3.744723	7.031742
#3	16.98791	-.200293	.0011955	.003846	3.995868	3.723348	7.044137

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5219-02 Acquired: 12/11/2024 15:47:00 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	1.296084	.0696576	.2995990
Stddev	.004737	.0010466	.0009371
%RSD	.3655053	1.502464	.3127834
#1	1.298827	.0692144	.3000412
#2	1.298811	.0689055	.3002333
#3	1.290614	.0708528	.2985227

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2140.382	54145.10	13610.87	1481.132	3243.571
Stddev	3.043	13.61	40.76	5.000	4.914
%RSD	.1421508	.0251282	.2994994	.3375668	.1514944
#1	2140.421	54149.97	13564.44	1478.467	3242.732
#2	2143.405	54155.59	13627.34	1478.029	3248.851
#3	2137.320	54129.72	13640.81	1486.900	3239.131

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5219-03DLX5 Acquired: 12/11/2024 15:51:16 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.0055392	.0122110	.0316382	-.002652	-.002684	2.662817	.0869754
Stddev	.0004268	.0010859	.0009738	.000757	.001233	.016916	.0006009
%RSD	7.705633	8.893054	3.078074	28.56133	45.92806	.6352686	.6909050
#1	.0051935	.0131540	.0306633	-.001830	-.004104	2.678450	.0876097
#2	.0060163	.0124553	.0326110	-.003321	-.001888	2.665141	.0869020
#3	.0054078	.0110237	.0316403	-.002805	-.002060	2.644859	.0864146

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0024064	.0040765	7.834420	.0471955	.0095504	.1291140	148.7527
Stddev	.0000738	.0003689	.044158	.0001557	.0002529	.0020219	.3562
%RSD	3.065434	9.050495	.5636365	.3298783	2.647712	1.566003	.2394473
#1	.0024915	.0044538	7.884242	.0471410	.0097060	.1313230	149.1103
#2	.0023608	.0040590	7.818900	.0470744	.0096865	.1286638	148.7500
#3	.0023669	.0037166	7.800117	.0473711	.0092586	.1273551	148.3979

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6928948	1.044377	.0226300	-.009628	.7908169	.0739899	.2325982
Stddev	.0055385	.019211	.0003192	.000545	.0152040	.0016206	.0009321
%RSD	.7993231	1.839479	1.410598	5.661813	1.922567	2.190281	.4007565
#1	.6989700	1.066182	.0227775	-.010251	.7734172	.0750604	.2316757
#2	.6915871	1.037003	.0228488	-.009393	.8015417	.0747838	.2325792
#3	.6881271	1.029944	.0222637	-.009240	.7974916	.0721254	.2335397

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.581726	-.312330	.0125298	.0054390	.0890249	1.165016	.1171830
Stddev	.022653	.003070	.0000735	.0009267	.0008121	.006869	.0020574
%RSD	1.432189	.9827815	.5870086	17.03829	.9122700	.5895649	1.755735
#1	1.557341	-.314778	.0126068	.0044959	.0898138	1.170360	.1193716
#2	1.585720	-.313326	.0124603	.0063484	.0890695	1.167421	.1152883
#3	1.602117	-.308886	.0125222	.0054728	.0881913	1.157269	.1168890

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5219-03DLX5 Acquired: 12/11/2024 15:51:16 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	1.998799	-.000739	-.131653
Stddev	.029801	.001323	.000223
%RSD	1.490957	179.0987	.1692423
#1	2.030406	-.000139	-.131839
#2	1.994780	-.002255	-.131714
#3	1.971211	.000178	-.131406

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2215.618	56365.88	13376.23	1547.273	3736.248
Stddev	5.773	62.10	82.15	1.029	8.272
%RSD	.2605432	.1101731	.6141768	.0664904	.2213866
#1	2215.464	56296.86	13286.20	1546.198	3733.155
#2	2221.466	56383.53	13395.36	1547.371	3745.621
#3	2209.923	56417.24	13447.14	1548.249	3729.970

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5219-04 Acquired: 12/11/2024 15:55:30 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.0242552	-.178574	-.008343	.0125107	-.028321	F 3424.890
Stddev	.0030566	.002794	.005704	.0067389	.006993	17.352
%RSD	12.60201	1.564813	68.36461	53.86489	24.69301	.5066321
#1	.0253500	-.175487	-.007795	.0165193	-.023879	3409.497
#2	.0208019	-.180930	-.014301	.0047305	-.036382	3421.479
#3	.0266137	-.179305	-.002933	.0162824	-.024701	3443.694

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000682	.0542451	.0097190	4.040015	.0019569	-.000589
Stddev	.0006590	.0002950	.0001056	.000661	.0001433	.000481
%RSD	966.6510	.5439072	1.086075	.0163726	7.321470	81.76416
#1	.0008139	.0539773	.0097006	4.039851	.0019379	-.000976
#2	-.000173	.0541967	.0096238	4.040743	.0018240	-.000050
#3	-.000436	.0545614	.0098325	4.039450	.0021087	-.000740

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000620	.6158155	.0596018	.2574540	-.004150	-.001315
Stddev	.000324	.0067018	.0005452	.0158595	.000644	.000261
%RSD	52.31806	1.088288	.9147140	6.160140	15.51276	19.86503
#1	-.000264	.6168630	.0589739	.2391530	-.004892	-.001016
#2	-.000698	.6219320	.0598761	.2671774	-.003748	-.001502
#3	-.000899	.6086516	.0599553	.2660317	-.003810	-.001425

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	68.70743	.0110719	1.017335	.3491545	-.005571	-.001217
Stddev	.26012	.0008318	.002004	.0209879	.000413	.000417
%RSD	.3785872	7.512443	.1969409	6.011054	7.418629	34.29552
#1	68.54655	.0110045	1.015082	.3351832	-.005910	-.001508
#2	69.00752	.0102759	1.018919	.3389909	-.005111	-.001403
#3	68.56821	.0119353	1.018003	.3732892	-.005693	-.000739

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5219-04 Acquired: 12/11/2024 15:55:30 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.0043036	.0158301	.0758025	.0030781	.1165552	.1290840
Stddev	.0021913	.0004985	.0020278	.0066122	.0145980	.0017961
%RSD	50.91824	3.149312	2.675078	214.8119	12.52450	1.391390
#1	.0040762	.0162189	.0776065	.0077331	.1043513	.1291465
#2	.0065997	.0160033	.0736078	-.004490	.1327268	.1308479
#3	.0022348	.0152680	.0761931	.005992	.1125875	.1272574

Elem	Sr4077
Units	ppm
Avg	.0342038
Stddev	.0001424
%RSD	.4162485
#1	.0340462
#2	.0342420
#3	.0343231

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1901.440	43760.65	11200.68	1311.013	2738.524
Stddev	3.361	75.63	22.90	7.293	1.328
%RSD	.1767510	.1728355	.2044918	.5563144	.0484819
#1	1903.069	43847.98	11222.16	1317.463	2738.329
#2	1897.575	43718.02	11203.29	1303.098	2737.304
#3	1903.676	43715.96	11176.58	1312.478	2739.938

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: CCV05 Acquired: 12/11/2024 15:59:48 Type: Unk
Method: NON EPA-6010-200.7(v2516) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV05 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.994605	5.001941	4.959055	5.060991	5.078266	10.17046	9.917710
Stddev	.002320	.020532	.004904	.005017	.002732	.01084	.108287
%RSD	.0464553	.4104818	.0988918	.0991291	.0537965	.1065639	1.091853
#1	4.997030	5.024227	4.958803	5.057046	5.079094	10.17081	10.04183
#2	4.994377	4.997801	4.954282	5.059290	5.080489	10.15944	9.86872
#3	4.992407	4.983794	4.964080	5.066637	5.075216	10.18111	9.84257

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2417104	2.446164	23.95963	1.012478	2.453663	1.276874	4.885664
Stddev	.0005485	.003902	.06072	.002354	.003345	.000326	.017420
%RSD	.2269037	.1594965	.2534135	.2324563	.1363160	.0255141	.3565434
#1	.2420964	2.445921	24.00465	1.012130	2.452496	1.277088	4.884767
#2	.2419522	2.442389	23.89057	1.014987	2.451059	1.276500	4.868710
#3	.2410826	2.450181	23.98366	1.010318	2.457435	1.277036	4.903514

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.365269	23.87923	2.465755	1.248962	25.20007	2.458455	2.562468
Stddev	.011164	.09024	.001762	.000531	.14818	.008068	.005440
%RSD	.4720159	.3778829	.0714645	.0424764	.5880254	.3281856	.2122878
#1	2.370384	23.84785	2.464916	1.248647	25.28809	2.461278	2.556238
#2	2.352463	23.80887	2.464569	1.249575	25.02899	2.449355	2.566276
#3	2.372958	23.98097	2.467780	1.248664	25.28314	2.464733	2.564890

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	25.61763	4.761302	5.132410	4.898955	4.894405	5.040507	4.940300
Stddev	.16088	.015033	.004420	.003272	.019201	.011385	.012169
%RSD	.6279955	.3157414	.0861265	.0667996	.3923123	.2258713	.2463205
#1	25.60955	4.775470	5.136892	4.899128	4.906316	5.034812	4.953190
#2	25.46095	4.762906	5.128054	4.895599	4.872254	5.033094	4.938699
#3	25.78240	4.745532	5.132284	4.902137	4.904645	5.053616	4.929011

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: CCV05 Acquired: 12/11/2024 15:59:48 Type: Unk
Method: NON EPA-6010-200.7(v2516) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV05 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.838013	4.861822	5.018219
Stddev	.010008	.038252	.038339
%RSD	.2068665	.7867901	.7639865
#1	4.845541	4.879656	5.043512
#2	4.841841	4.817909	4.974108
#3	4.826655	4.887901	5.037037

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2137.088	53889.13	13092.75	1502.632	3449.556
Stddev	1.913	90.47	47.66	7.043	1.880
%RSD	.0895094	.1678774	.3640306	.4686782	.0544922
#1	2134.887	53828.55	13038.82	1503.122	3449.892
#2	2138.032	53993.13	13129.22	1509.416	3451.245
#3	2138.346	53845.73	13110.21	1495.357	3447.531

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: CCB05 Acquired: 12/11/2024 16:05:37 Type: Unk
Method: NON EPA-6010-200.7(v2516) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB05 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002576	-.000589	-.001328	.0020700	-.001558	-.002562	-.009499
Stddev	.0012321	.000765	.000139	.0004906	.001384	.003956	.000296
%RSD	478.3619	129.7971	10.46116	23.70203	88.83249	154.3796	3.118439
#1	-.000191	-.001473	-.001481	.0022287	-.000130	.001263	-.009729
#2	.001651	-.000146	-.001296	.0015197	-.001650	-.006636	-.009604
#3	-.000687	-.000150	-.001208	.0024616	-.002894	-.002313	-.009165

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000026	-.000071	-.027573	.0005542	-.000031	-.000800	-.014691
Stddev	.000015	.000024	.009255	.0004126	.000140	.000209	.001708
%RSD	58.97209	34.12285	33.56472	74.45613	454.6568	26.10563	11.62422
#1	-.000030	-.000071	-.036564	.0009641	.000115	-.000562	-.016415
#2	-.000038	-.000047	-.018076	.0001389	-.000044	-.000883	-.014656
#3	-.000009	-.000096	-.028079	.0005595	-.000164	-.000955	-.013001

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001619	-.014448	-.000099	.0002369	-.026538	-.002225	-.000885
Stddev	.000091	.012227	.000188	.0002814	.016647	.000644	.000173
%RSD	5.611680	84.62666	189.0544	118.7979	62.72875	28.94587	19.50057
#1	-.001549	-.006183	.000057	.0000653	-.045275	-.002657	-.000693
#2	-.001587	-.008667	-.000048	.0000838	-.020885	-.001485	-.000936
#3	-.001721	-.028493	-.000307	.0005617	-.013454	-.002535	-.001027

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.123626	-.007081	-.000233	-.001327	-.001238	-.013543	.0010404
Stddev	.039446	.000662	.000352	.000803	.000201	.001424	.0015941
%RSD	31.90739	9.349030	150.8544	60.47219	16.25950	10.51421	153.2215
#1	-.167744	-.007824	.000153	-.002225	-.001157	-.014752	.0007439
#2	-.111372	-.006865	-.000317	-.001075	-.001467	-.011973	.0027619
#3	-.091761	-.006553	-.000536	-.000681	-.001089	-.013904	-.000385

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: CCB05 Acquired: 12/11/2024 16:05:37 Type: Unk
Method: NON EPA-6010-200.7(v2516) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB05 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.001157	-.003903	-.001889
Stddev	.001866	.000632	.000034
%RSD	161.2298	16.20415	1.808717
#1	.000987	-.004279	-.001893
#2	-.002050	-.004256	-.001853
#3	-.002408	-.003172	-.001921

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2295.955	57332.22	13245.66	1608.500	3995.480
Stddev	3.246	126.20	21.83	6.622	3.411
%RSD	.1413684	.2201281	.1648284	.4117094	.0853596
#1	2292.309	57199.85	13224.97	1600.874	3993.901
#2	2297.028	57345.62	13243.54	1611.821	3993.145
#3	2298.528	57451.19	13268.48	1612.805	3999.394

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5219-04DLX5 Acquired: 12/11/2024 16:09:57 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.0117762	-.030596	.0019708	.0019089	-.009044	706.7651	-.008349
Stddev	.0073734	.000786	.0012506	.0022245	.002374	2.5086	.000277
%RSD	62.61328	2.569059	63.45763	116.5338	26.24830	.3549409	3.323368
#1	.0165552	-.031386	.0007651	.0014926	-.008141	703.9831	-.008647
#2	.0154890	-.029814	.0018853	-.000078	-.011737	708.8550	-.008301
#3	.0032843	-.030590	.0032619	.004312	-.007254	707.4571	-.008098

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0094091	.0020169	.7717941	.0006273	-.000069	-.000582	.1067591
Stddev	.0000140	.0001836	.0007986	.0002605	.000237	.000446	.0068743
%RSD	.1492571	9.104943	.1034737	41.51849	343.8265	76.71981	6.439047
#1	.0094045	.0020020	.7727145	.0009220	-.000264	-.000232	.1107213
#2	.0094248	.0022075	.7713832	.0004277	.000195	-.001084	.0988214
#3	.0093979	.0018411	.7712847	.0005323	-.000137	-.000429	.1107346

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0101511	.0326393	-.001267	-.000315	11.69844	.0001674	.1889852
Stddev	.0001458	.0140576	.000303	.000390	.03480	.0009332	.0010283
%RSD	1.436176	43.06963	23.89088	123.7538	.2974868	557.3476	.5441041
#1	.0102452	.0460836	-.001072	-.000028	11.67605	.0011982	.1885660
#2	.0102250	.0337948	-.001616	-.000758	11.68073	-.000076	.1882328
#3	.0099831	.0180396	-.001114	-.000158	11.73853	-.000620	.1901569

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0583046	-.006657	-.000246	.0022635	.0020593	.0017346	.0005506
Stddev	.0167277	.000926	.000476	.0010046	.0003007	.0021563	.0010963
%RSD	28.69027	13.90307	193.5893	44.38333	14.60028	124.3096	199.0997
#1	.0413357	-.007668	-.000765	.0034235	.0017122	.0038819	.0007277
#2	.0587978	-.006452	-.000141	.0016964	.0022260	.0017526	.0015475
#3	.0747802	-.005851	.000169	.0016707	.0022398	-.000431	-.000623

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5219-04DLX5 Acquired: 12/11/2024 16:09:57 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.0209599	.0186276	.0051669
Stddev	.0057115	.0008676	.0000183
%RSD	27.24962	4.657710	.3548061
#1	.0194509	.0192948	.0051466
#2	.0161545	.0176468	.0051721
#3	.0272744	.0189412	.0051822

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2148.237	51075.76	12597.81	1504.282	3295.198
Stddev	2.544	80.46	19.77	8.621	5.021
%RSD	.1184393	.1575291	.1569641	.5730923	.1523860
#1	2150.624	51164.14	12575.23	1513.619	3300.277
#2	2148.528	51006.77	12606.18	1496.625	3290.236
#3	2145.560	51056.38	12612.02	1502.601	3295.079

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5223-01 Acquired: 12/11/2024 16:14:24 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	.0624888	-.017677	.1877221	-.009942	-.002832	192.3284	.5262972
Stddev	.0018707	.001474	.0016492	.000903	.003384	.2009	.0015005
%RSD	2.993632	8.339688	.8785517	9.078772	119.4886	.1044623	.2851054
#1	.0632101	-.016013	.1858408	-.010428	-.004336	192.4438	.5278138
#2	.0638915	-.018820	.1884068	-.010498	.001043	192.0964	.5248133
#3	.0603649	-.018198	.1889187	-.008901	-.005205	192.4451	.5262644

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0080825	.0148079	119.9620	.2118573	.0886820	.2673398	236.9805
Stddev	.0000957	.0002971	.1482	.0003305	.0004547	.0013022	.5324
%RSD	1.184279	2.006720	.1235171	.1560187	.5127136	.4870963	.2246692
#1	.0080427	.0151262	120.1281	.2115154	.0886547	.2686786	236.5437
#2	.0081917	.0147596	119.8435	.2118811	.0891497	.2660776	237.5736
#3	.0080130	.0145378	119.9143	.2121752	.0882415	.2672631	236.8241

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.592426	32.05084	.1629981	-.013633	4.291129	.3885847	.6704811
Stddev	.003431	.01930	.0005828	.000284	.001843	.0017324	.0023048
%RSD	.2154500	.0602184	.3575601	2.084718	.0429597	.4458229	.3437527
#1	1.594633	32.02950	.1634997	-.013310	4.289250	.3881744	.6680351
#2	1.588474	32.06708	.1631357	-.013749	4.291202	.3904855	.6707960
#3	1.594172	32.05595	.1623587	-.013842	4.292935	.3870943	.6726123

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.567069	-.428352	.0018140	.0093522	3.209787	9.818094	3.747584
Stddev	.029776	.003489	.0002856	.0011574	.002402	.020693	.015519
%RSD	.3475688	.8144580	15.74401	12.37607	.0748479	.2107655	.4140957
#1	8.546586	-.431938	.0020897	.0080364	3.207195	9.841946	3.764030
#2	8.553394	-.424970	.0018328	.0102127	3.210229	9.804938	3.745524
#3	8.601226	-.428149	.0015194	.0098076	3.211938	9.807398	3.733199

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: P5223-01 Acquired: 12/11/2024 16:14:24 Type: Unk
Method: NON EPA-6010-200.7(v2516) 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	6.782065	.0919720	.2326078
Stddev	.036169	.0010433	.0011398
%RSD	.5333018	1.134351	.4899912
#1	6.819384	.0928570	.2336878
#2	6.747168	.0922373	.2314164
#3	6.779643	.0908217	.2327191

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2255.859	56472.96	13887.27	1575.978	3304.595
Stddev	4.700	33.99	27.93	4.223	8.659
%RSD	.2083394	.0601964	.2011554	.2679770	.2620193
#1	2250.432	56485.72	13861.34	1580.297	3296.453
#2	2258.610	56434.43	13916.85	1575.778	3303.641
#3	2258.535	56498.73	13883.62	1571.858	3313.691

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: CCV06 Acquired: 12/11/2024 16:22:12 Type: Unk
Method: NON EPA-6010-200.7(v2516) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV06 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.063739	5.433940	5.134616	5.137645	5.120336	10.35762	10.03465
Stddev	.010811	.037502	.015654	.006950	.004080	.00614	.06816
%RSD	.2134912	.6901449	.3048695	.1352851	.0796803	.0592686	.6792931
#1	5.059159	5.472471	5.125686	5.138250	5.117976	10.36441	9.99358
#2	5.055973	5.431790	5.125471	5.130412	5.117985	10.35247	9.99704
#3	5.076086	5.397559	5.152691	5.144273	5.125047	10.35598	10.11333

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2573791	2.550087	25.15817	1.054320	2.545050	1.291050	4.996272
Stddev	.0002846	.004991	.07186	.003164	.005540	.003380	.011285
%RSD	.1105894	.1957086	.2856273	.3000586	.2176667	.2617967	.2258710
#1	.2573927	2.548478	25.11751	1.053093	2.541194	1.288676	4.986234
#2	.2570879	2.546099	25.11586	1.057914	2.542559	1.289554	5.008487
#3	.2576567	2.555683	25.24114	1.051955	2.551398	1.294920	4.994094

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.469925	25.08492	2.553377	1.281534	24.95705	2.551964	2.619652
Stddev	.003968	.02886	.005222	.002051	.07197	.003482	.001518
%RSD	.1606683	.1150649	.2044990	.1600074	.2883833	.1364372	.0579498
#1	2.467277	25.11328	2.551048	1.283830	24.97731	2.549846	2.621160
#2	2.468010	25.08591	2.549726	1.280888	25.01671	2.550064	2.618124
#3	2.474488	25.05558	2.559358	1.279884	24.87711	2.555983	2.619673

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	25.53496	5.004428	5.266861	5.113577	5.062612	5.127009	5.039558
Stddev	.03994	.011134	.007118	.013400	.011089	.010921	.011764
%RSD	.1564269	.2224791	.1351387	.2620449	.2190459	.2130181	.2334377
#1	25.49011	5.016665	5.268222	5.102851	5.058167	5.120448	5.048603
#2	25.56669	4.994895	5.259161	5.109283	5.054435	5.120963	5.026259
#3	25.54810	5.001726	5.273199	5.128598	5.075235	5.139617	5.043813

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: CCV06 Acquired: 12/11/2024 16:22:12 Type: Unk
Method: NON EPA-6010-200.7(v2516) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV06 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	5.010633	4.848841	5.150482
Stddev	.019894	.018958	.031672
%RSD	.3970396	.3909884	.6149422
#1	5.001113	4.829397	5.120653
#2	4.997287	4.849850	5.147072
#3	5.033498	4.867274	5.183722

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2202.241	54257.68	12831.31	1534.104	3507.469
Stddev	2.080	88.35	16.08	2.252	3.479
%RSD	.0944509	.1628401	.1253335	.1467956	.0991923
#1	2204.632	54167.62	12813.88	1532.228	3511.369
#2	2201.237	54261.18	12845.58	1533.481	3506.354
#3	2200.853	54344.22	12834.46	1536.601	3504.684

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: CCB06 Acquired: 12/11/2024 16:26:24 Type: Unk
Method: NON EPA-6010-200.7(v2516) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB06 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000895	-.000940	-.001144	.0018508	-.000976	-.000344	-.009573
Stddev	.002075	.002114	.000276	.0023049	.000302	.002448	.000739
%RSD	231.8471	224.9460	24.09741	124.5376	30.89622	710.8261	7.714240
#1	-.000785	-.001442	-.000994	.0043388	-.000952	-.000198	-.008746
#2	-.003023	-.002757	-.000976	.0014252	-.000688	-.002862	-.010165
#3	.001123	.001380	-.001463	-.000212	-.001290	.002028	-.009809

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000046	-.000062	-.023995	.0005157	.0001296	-.000417	-.014235
Stddev	.000017	.000097	.003908	.0001952	.0000648	.000196	.005800
%RSD	36.41731	156.2414	16.28704	37.85400	49.97962	46.95168	40.74550
#1	-.000063	.000034	-.020487	.0002916	.0001645	-.000212	-.008908
#2	-.000030	-.000160	-.023291	.0006065	.0000548	-.000602	-.020414
#3	-.000044	-.000059	-.028207	.0006490	.0001693	-.000437	-.013382

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001414	-.009810	-.000308	.0002721	-.021302	-.002499	-.000543
Stddev	.000109	.009492	.000253	.0002337	.013920	.000699	.000124
%RSD	7.707243	96.74963	82.03091	85.86279	65.34315	27.97491	22.84873
#1	-.001289	-.012723	-.000304	.0000084	-.035441	-.003236	-.000687
#2	-.001464	.000796	-.000057	.0003546	-.020853	-.002416	-.000473
#3	-.001490	-.017504	-.000562	.0004534	-.007613	-.001845	-.000470

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.061685	-.003846	.0000800	-.000712	-.001141	-.012014	-.001138
Stddev	.027169	.000378	.0004685	.000924	.000192	.004375	.001151
%RSD	44.04418	9.821767	585.6382	129.8083	16.84838	36.41754	101.1599
#1	-.089820	-.003415	.0006058	.000201	-.001258	-.016421	-.000601
#2	-.059637	-.004119	-.000073	-.001647	-.000919	-.011952	-.002460
#3	-.035598	-.004005	-.000293	-.000690	-.001245	-.007671	-.000353

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: CCB06 Acquired: 12/11/2024 16:26:24 Type: Unk
Method: NON EPA-6010-200.7(v2516) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB06 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.002438	-.005752	-.001765
Stddev	.001079	.000728	.000013
%RSD	44.26772	12.66433	.7372011
#1	-.001323	-.005704	-.001771
#2	-.002513	-.006503	-.001750
#3	-.003478	-.005049	-.001774

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2327.821	57757.26	13085.41	1633.367	4015.012
Stddev	1.819	117.80	24.13	4.831	6.266
%RSD	.0781488	.2039599	.1843811	.2957578	.1560526
#1	2329.738	57628.67	13070.13	1634.141	4022.033
#2	2327.607	57859.97	13113.22	1637.764	4009.990
#3	2326.119	57783.16	13072.87	1628.196	4013.013

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: LR1 Acquired: 12/11/2024 16:30:18 Type: Unk
Method: NON EPA-6010-200.7(v2519) 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	.0519972	-.070550	-.032687	-.105357	-.022827	1924.712	.0064734
Stddev	.0124534	.012845	.010469	.012694	.001560	2.433	.0009923
%RSD	23.95011	18.20730	32.02703	12.04838	6.832058	.1263971	15.32829
#1	.0518465	-.074117	-.022915	-.103903	-.023101	1925.390	.0076187
#2	.0645253	-.056299	-.043735	-.093452	-.021149	1926.734	.0058743
#3	.0396199	-.081236	-.031412	-.118715	-.024232	1922.012	.0059270

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0114069	.1686024	1649.121	.0015526	.0562390	.1023895	1013.995
Stddev	.0001570	.0022284	9.154	.0005935	.0006678	.0074784	9.625
%RSD	1.376209	1.321685	.5550951	38.22298	1.187395	7.303840	.9491910
#1	.0112549	.1676227	1658.188	.0010412	.0560117	.0991404	1021.096
#2	.0113973	.1670317	1649.293	.0014133	.0569908	.0970852	1017.847
#3	.0115684	.1711528	1639.882	.0022033	.0557146	.1109428	1003.040

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.153217	1708.754	.0123795	-.109851	2012.793	.0213084	.3694690
Stddev	.000769	7.817	.0003955	.002111	22.374	.0003256	.0065290
%RSD	.5021489	.4574407	3.194738	1.921672	1.111589	1.527965	1.767136
#1	-.153357	1717.514	.0128359	-.108220	2023.377	.0216468	.3647657
#2	-.152387	1702.492	.0121368	-.109098	1987.090	.0209974	.3667180
#3	-.153907	1706.256	.0121660	-.112235	2027.910	.0212809	.3769233

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1403.852	^ *****	-.018814	.0066896	-.034134	.1256720	.0923810
Stddev	13.879	-----	.001122	.0040823	.000479	.0047186	.0109625
%RSD	.9886297	-----	5.963242	61.02382	1.403830	3.754718	11.86660
#1	1419.798	^ -----	-.020086	.0112538	-.034024	.1228248	.1010559
#2	1394.489	^ -----	-.017964	.0054278	-.034659	.1230725	.0960270
#3	1397.270	^ -----	-.018392	.0033873	-.033720	.1311187	.0800601

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: LR1 Acquired: 12/11/2024 16:30:18 Type: Unk
Method: NON EPA-6010-200.7(v2519) 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	-.220122	.6748911	-1.00400
Stddev	.006808	.0039483	.00965
%RSD	3.093028	.5850228	.9612427
#1	-.214088	.6770081	-1.01111
#2	-.227503	.6703358	-1.00787
#3	-.218774	.6773293	-.99301

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1282.453	33862.35	9647.095	889.0558	1779.613
Stddev	5.388	116.12	20.311	12.1791	6.248
%RSD	.4201301	.3429085	.2105428	1.369895	.3510924
#1	1281.556	33899.00	9666.733	893.8200	1779.442
#2	1288.234	33955.71	9648.381	898.1326	1785.944
#3	1277.570	33732.33	9626.172	875.2147	1773.452

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: LR2 Acquired: 12/11/2024 16:35:17 Type: Unk
Method: NON EPA-6010-200.7(v2519) 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	.0057878	-.036368	232.4473	.0021287	.0026912	.0553838	^F *****
Stddev	.0003367	.002659	1.1894	.0013256	.0020896	.0106197	-----
%RSD	5.817382	7.310301	.5116926	62.27090	77.64699	19.17465	-----
#1	.0054505	-.038170	233.5486	.0020803	.0024342	.0676172	^ -----
#2	.0061239	-.037619	232.6074	.0034777	.0048975	.0485357	^ -----
#3	.0057891	-.033314	231.1860	.0008280	.0007419	.0499986	^ -----

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.003648	-.005604	.3326162	.0095366	-.011817	229.3768	-.033096
Stddev	.000065	.000217	.0059897	.0002296	.000461	2.1516	.005837
%RSD	1.772960	3.866111	1.800786	2.408008	3.902076	.9380265	17.63828
#1	-.003698	-.005854	.3391552	.0096966	-.012143	227.1042	-.027466
#2	-.003575	-.005472	.3312983	.0096398	-.012019	229.6437	-.032699
#3	-.003670	-.005485	.3273953	.0092735	-.011290	231.3825	-.039121

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	42.54558	-.114495	46.06985	.0074359	.4421447	-.018919	36.07404
Stddev	.17579	.007422	.25990	.0000761	.0080033	.001101	.48786
%RSD	.4131729	6.482571	.5641401	1.023845	1.810103	5.819302	1.352391
#1	42.64434	-.106090	46.30661	.0074789	.4366273	-.017860	36.49444
#2	42.34262	-.120149	46.11118	.0074808	.4513238	-.020057	36.18859
#3	42.64977	-.117246	45.79176	.0073480	.4384830	-.018841	35.53910

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3658535	-.005598	-.003958	-.005314	-.041329	-.015031	.3997079
Stddev	.0192198	.000806	.000512	.001750	.000334	.004309	.0154266
%RSD	5.253406	14.40169	12.94100	32.94135	.8090679	28.66656	3.859472
#1	.3640245	-.005746	-.004523	-.007172	-.041642	-.010455	.4171784
#2	.3859224	-.004729	-.003829	-.005074	-.041368	-.019011	.3939835
#3	.3476137	-.006321	-.003523	-.003696	-.040977	-.015626	.3879617

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: LR2 Acquired: 12/11/2024 16:35:17 Type: Unk
Method: NON EPA-6010-200.7(v2519) 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	.0021655	-.005630	.0004641
Stddev	.0041814	.001925	.0000141
%RSD	193.0912	34.18608	3.034345
#1	.0060895	-.005367	.0004513
#2	-.002233	-.007672	.0004619
#3	.002640	-.003850	.0004792

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1911.467	54145.58	12973.18	1410.140	3479.134
Stddev	37.548	131.19	26.46	6.935	36.350
%RSD	1.964364	.2422847	.2039633	.4917713	1.044814
#1	1941.670	54204.02	12945.34	1415.594	3507.645
#2	1923.305	54237.40	12976.20	1412.490	3491.556
#3	1869.427	53995.33	12998.01	1402.335	3438.201

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: CCV07 Acquired: 12/11/2024 16:39:28 Type: Unk
Method: NON EPA-6010-200.7(v2516) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV07 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.005068	5.243075	4.941095	5.149891	5.101376	10.05826	9.849746
Stddev	.012335	.024572	.008233	.004287	.005267	.01553	.069336
%RSD	.2464455	.4686605	.1666264	.0832540	.1032463	.1543875	.7039324
#1	5.015136	5.270348	4.942729	5.147499	5.105614	10.04212	9.906977
#2	5.008759	5.222661	4.948389	5.147333	5.095479	10.05958	9.772645
#3	4.991309	5.236215	4.932168	5.154840	5.103036	10.07309	9.869616

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2427132	2.449347	23.69560	1.009831	2.458590	1.286097	4.864577
Stddev	.0011609	.001929	.05852	.000933	.003584	.001625	.028737
%RSD	.4782974	.0787433	.2469560	.0924083	.1457827	.1263323	.5907370
#1	.2435859	2.448320	23.69760	1.010493	2.454635	1.284241	4.841709
#2	.2413957	2.451572	23.63610	1.010236	2.461624	1.286787	4.855189
#3	.2431582	2.448150	23.75308	1.008764	2.459510	1.287263	4.896834

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.366264	23.87036	2.460585	1.242969	24.05772	2.454504	2.464222
Stddev	.010967	.04328	.003984	.002222	.04548	.010791	.002044
%RSD	.4634877	.1813173	.1618949	.1788029	.1890278	.4396579	.0829657
#1	2.366121	23.85822	2.457663	1.245530	24.07033	2.444494	2.462008
#2	2.355369	23.83445	2.465123	1.241541	24.00727	2.453081	2.464621
#3	2.377302	23.91842	2.458971	1.241837	24.09556	2.465936	2.466038

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	25.45042	4.811472	5.174060	4.892089	4.888247	5.026374	4.848303
Stddev	.05803	.015345	.001779	.001922	.013070	.014791	.012729
%RSD	.2280182	.3189310	.0343787	.0392872	.2673769	.2942598	.2625356
#1	25.39827	4.828621	5.175219	4.893314	4.884332	5.013516	4.862807
#2	25.44006	4.799037	5.174948	4.893080	4.877581	5.023067	4.838993
#3	25.51294	4.806758	5.172012	4.889874	4.902827	5.042537	4.843108

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: CCV07 Acquired: 12/11/2024 16:39:28 Type: Unk
Method: NON EPA-6010-200.7(v2516) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV07 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.833375	4.781916	5.028789
Stddev	.008821	.032072	.004803
%RSD	.1825117	.6706989	.0955116
#1	4.835572	4.776488	5.028544
#2	4.840890	4.752904	5.024113
#3	4.823662	4.816356	5.033710

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2135.242	53757.10	12947.34	1489.200	3454.428
Stddev	3.032	55.63	32.75	5.010	7.461
%RSD	.1419951	.1034867	.2529693	.3363995	.2159719
#1	2138.741	53693.62	12912.57	1494.791	3462.827
#2	2133.599	53780.33	12977.60	1485.119	3448.567
#3	2133.386	53797.36	12951.86	1487.689	3451.892

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: CCB07 Acquired: 12/11/2024 16:43:39 Type: Unk
Method: NON EPA-6010-200.7(v2516) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB07 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000180	-.001485	.0001494	.0022575	-.000821	-.007504	-.010864
Stddev	.004004	.001340	.0009107	.0001684	.000973	.002213	.000136
%RSD	2230.423	90.19615	609.5440	7.457746	118.4733	29.49709	1.251605
#1	.004439	.000012	.0006118	.0022605	-.000686	-.007150	-.011001
#2	-.002663	-.002571	.0007362	.0024244	.000077	-.005489	-.010860
#3	-.002314	-.001897	-.000900	.0020877	-.001855	-.009873	-.010729

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000016	-.000071	-.033339	.0007050	.0000517	.0013157	-.012202
Stddev	.000007	.000120	.008735	.0002497	.0001282	.0004629	.002609
%RSD	43.70869	169.6862	26.20075	35.42178	248.0609	35.18330	21.38163
#1	-.000024	-.000197	-.028273	.0007575	.0001650	.0013076	-.012942
#2	-.000011	-.000060	-.043425	.0009244	.0000775	.0008569	-.014361
#3	-.000014	.000043	-.028317	.0004332	-.000087	.0017826	-.009303

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001185	-.025527	.0001339	.0003579	.2233127	-.002781	-.000289
Stddev	.000224	.003541	.0004326	.0001331	.0224426	.000455	.000273
%RSD	18.88903	13.87257	323.1214	37.17897	10.04987	16.37473	94.30192
#1	-.000935	-.022260	.0005324	.0003620	.1974607	-.003243	-.000147
#2	-.001368	-.025031	.0001953	.0002228	.2346807	-.002766	-.000604
#3	-.001252	-.029291	-.000326	.0004888	.2377967	-.002333	-.000117

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2769363	-.004895	-.000126	-.000707	-.001298	-.015269	-.000286
Stddev	.0309624	.000207	.000058	.000287	.000213	.001008	.000475
%RSD	11.18034	4.224212	46.15075	40.55151	16.39719	6.602202	166.1406
#1	.2414802	-.004971	-.000064	-.000436	-.001053	-.015749	-.000042
#2	.2906870	-.005053	-.000135	-.001007	-.001408	-.015947	.000018
#3	.2986417	-.004661	-.000180	-.000678	-.001434	-.014111	-.000833

Reviewed By:mohan
On:12/16/2024
11:22:00 PM
Inst Id :P4
LB :LB133897

Sample Name: CCB07 Acquired: 12/11/2024 16:43:39 Type: Unk
Method: NON EPA-6010-200.7(v2516) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB07 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.004538	-.005528	-.001911
Stddev	.001306	.001051	.000013
%RSD	28.77655	19.01618	.6957989
#1	-.003289	-.005500	-.001902
#2	-.004430	-.004492	-.001904
#3	-.005894	-.006594	-.001926

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2299.720	57633.63	13149.00	1605.787	4010.920
Stddev	1.624	184.30	46.45	5.004	4.878
%RSD	.0706072	.3197751	.3532590	.3116263	.1216286
#1	2298.166	57659.79	13097.85	1603.302	4013.565
#2	2301.406	57437.65	13188.56	1602.513	4013.906
#3	2299.586	57803.45	13160.58	1611.548	4005.291

Alliance TECHNICAL GROUP

Soil/Sludge Metals Preparation Sheet

PB165528

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 #5 2. N/A

Start Digest Date: 12/10/2024 **Time :** 11:05 **Temp :** 96 °C

End Digest Date: 12/10/2024 **Time :** 13:15 **Temp :** 96 °C

Digestion tube ID: M6054

Block thermometer ID: MET-DIG. # 5

Dig Technician Signature: SKG.

Supervisor Signature:

Temp : 1. 96°C 2. N/A

Standared Name	MLS USED	STD REF. # FROM LOG
LFS-1	1.00	M6000
LFS-2	1.00	M6009
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	MP83498
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#5 CELL #33 Temp: 96 C

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
12/10/24 12:05	SKG met. Digestition	[illegible] lab
	Preparation Group	Analysis Group

Alliance TECHNICAL GROUP

Soil/Sludge Metals Preparation Sheet

PB165528

Lab Sample ID	Client Sample ID	pH	Initial Weight (g)	Final Vol (ml)	Color Before	Color After	Texture	Artifact	Comment	Prep Pos
P5216-01	BP-G-6	N/A	2.10	100	Brown	Yellow	Medium	N/A	N/A	N/A
P5216-05	MH-743	N/A	2.13	100	Brown	Yellow	Medium	N/A	N/A	N/A
P5216-09	MH-744	N/A	2.22	100	Brown	Yellow	Medium	N/A	N/A	N/A
P5216-13	TP-12	N/A	2.46	100	Brown	Yellow	Medium	N/A	N/A	N/A
P5217-01	MIXED-DEMO	N/A	2.22	100	Brown	Yellow	Medium	N/A	N/A	N/A
P5217-01MS	MIXED-DEMOMS	N/A	2.21	100	Brown	Yellow	Medium	N/A	M6000,M6009	N/A
P5217-01MSD	MIXED-DEMOMSD	N/A	2.16	100	Brown	Yellow	Medium	N/A	M6000,M6009	N/A
P5217-01DUP	MIXED-DEMODUP	N/A	2.09	100	Brown	Yellow	Medium	N/A	N/A	N/A
P5219-01	MR-CAM-09-MR-CAM-010	N/A	2.15	100	Gray	Yellow	Medium	N/A	N/A	N/A
P5219-02	MR-CAM-011	N/A	2.27	100	Gray	Yellow	Medium	N/A	N/A	N/A
P5219-03	MR-CAM-012	N/A	2.15	100	Brown	Yellow	Medium	N/A	N/A	N/A
P5219-04	MR-CAM-013	N/A	2.03	100	White	Yellow	Medium	N/A	N/A	N/A
P5223-01	TR-05-120924	N/A	2.13	100	Brown	Yellow	Medium	N/A	N/A	N/A
PB165528BL	PBS528	N/A	2.35	100	Colorless	Colorless	Fine	N/A	N/A	N/A
PB165528BS	LCS528	N/A	2.35	100	Colorless	Colorless	Fine	N/A	M6000,M6009	N/A

WORKLIST(Hardcopy Internal Chain)

WorkList Name : PB165528 **WorkList ID :** 186174 **Department :** Digestion **Date :** 12-10-2024 09:56:03

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
P5216-01	BP-G-6	Solid	Metals ICP-TAL	Cool 4 deg C	PSEG03	L41	12/07/2024	6010D
P5216-05	MH-743	Solid	Metals ICP-TAL	Cool 4 deg C	PSEG03	L41	12/07/2024	6010D
P5216-09	MH-744	Solid	Metals ICP-TAL	Cool 4 deg C	PSEG03	L41	12/07/2024	6010D
P5216-13	TP-12	Solid	Metals ICP-TAL	Cool 4 deg C	PSEG03	L41	12/07/2024	6010D
P5217-01	MIXED-DEMO	Solid	Metals Group3	Cool 4 deg C	EART12	M11	12/09/2024	6010D
P5219-01	MR-CAM-09-MR-CAM-010	Solid	Metals ICP-TAL	Cool 4 deg C	PSEG03	L51	12/09/2024	6010D
P5219-02	MR-CAM-011	Solid	Metals ICP-TAL	Cool 4 deg C	PSEG03	L51	12/09/2024	6010D
P5219-03	MR-CAM-012	Solid	Metals ICP-TAL	Cool 4 deg C	PSEG03	L51	12/09/2024	6010D
P5219-04	MR-CAM-013	Solid	Metals ICP-TAL	Cool 4 deg C	PSEG03	L51	12/09/2024	6010D
P5223-01	TR-05-120924	Solid	Metals ICP-TAL	Cool 4 deg C	PSEG05	L51	12/09/2024	6010D

Date/Time 12/10/24 10:25

Raw Sample Received by: SKJ. met. Digestion

Raw Sample Relinquished by: [illegible]

Date/Time 12/10/24 11:30

Raw Sample Received by: [illegible]

Raw Sample Relinquished by: SKJ. met. Digestion

PERCENT SOLID

Supervisor: Iwona
Analyst: jignesh
Date: 12/10/2024

OVENTEMP IN Celsius(°C): 107
Time IN: 17:45
In Date: 12/09/2024
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
OvenID: M OVEN#1

OVENTEMP OUT Celsius(°C): 103
Time OUT: 08:25
Out Date: 12/10/2024
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
BalanceID: M SC-4
Thermometer ID: % SOLID- OVEN

QC: LB133836

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
P5171-01	JNLH1	1	1.14	8.69	9.83	7.65	74.9	
P5171-02	JNLH2	2	1.15	8.65	9.8	8.96	90.3	
P5213-01	TAPIAL3-SB03I-15-120624-00-T1	3	1.15	8.83	9.98	9.06	89.6	
P5216-01	BP-G-6	4	1.15	8.82	9.97	9.07	89.8	
P5216-02	BP-G-6-EPH	5	1.14	8.54	9.68	8.43	85.4	
P5216-03	BP-G-6-VOC	6	1.12	8.41	9.53	8.34	85.9	
P5216-05	MH-743	7	1.18	8.44	9.62	8.79	90.2	
P5216-06	MH-743-EPH	8	1.15	8.55	9.7	8.84	89.9	
P5216-07	MH-743-VOC	9	1.12	8.75	9.87	9.00	90.1	
P5216-09	MH-744	10	1.15	8.63	9.78	8.22	81.9	
P5216-10	MH-744-EPH	11	1.18	8.44	9.62	8.33	84.7	
P5216-11	MH-744-VOC	12	1.17	8.53	9.7	8.43	85.1	
P5216-13	TP-12	13	1.17	8.40	9.57	8.2	83.7	
P5216-14	TP-12-EPH	14	1.15	8.40	9.55	8.13	83.1	
P5216-15	TP-12-VOC	15	1.19	8.43	9.62	8.46	86.2	
P5217-01	MIXED-DEMO	16	1.16	8.44	9.6	9.57	99.6	
P5219-01	MR-CAM-09-MR-CAM-010	17	1.00	1.00	2.00	2.00	100.0	stone sample, 100 % solids
P5219-02	MR-CAM-011	18	1.00	1.00	2.00	2.00	100.0	stone sample, 100 % solids
P5219-03	MR-CAM-012	19	1.16	8.48	9.64	6.74	65.8	
P5219-04	MR-CAM-013	20	1.15	8.44	9.59	9.51	99.1	
P5220-01	GAS-AUD-1562	21	1.18	8.77	9.95	6.42	59.7	
P5221-02	GAS-BUR-1326	22	1.00	1.00	2.00	2.00	100.0	WIPE SAMPLE
P5222-01	TRE-1113	23	1.00	1.00	2.00	2.00	100.0	WIPE SAMPLE
P5223-01	TR-05-120924	24	1.15	8.84	9.99	9.39	93.2	
P5223-02	TR-05-120924-E2	25	1.12	8.55	9.67	8.83	90.2	

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

WORKLIST(Hardcopy Internal Chain)

WB 183836

WorkList Name : %1-120924 **WorkList ID :** 186111 **Department :** Wet-Chemistry **Date :** 12-09-2024 08:19:41

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
P5171-01	JNLH1	Solid	Percent Solids	Cool 4 deg C	USEP04	Q32	12/03/2024	Chemtech -SO
P5171-02	JNLH2	Solid	Percent Solids	Cool 4 deg C	USEP04	Q32	12/04/2024	Chemtech -SO
P5213-01	TAPIAL3-SB03I-15-120624-00-	Solid	Percent Solids	Cool 4 deg C	WEST04	L51	12/06/2024	Chemtech -SO
P5216-01	BP-G-6	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	12/07/2024	Chemtech -SO
P5216-02	BP-G-6-EPH	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	12/07/2024	Chemtech -SO
P5216-03	BP-G-6-VOC	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	12/07/2024	Chemtech -SO
P5216-05	MH-743	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	12/07/2024	Chemtech -SO
P5216-06	MH-743-EPH	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	12/07/2024	Chemtech -SO
P5216-07	MH-743-VOC	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	12/07/2024	Chemtech -SO
P5216-09	MH-744	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	12/07/2024	Chemtech -SO
P5216-10	MH-744-EPH	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	12/07/2024	Chemtech -SO
P5216-11	MH-744-VOC	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	12/07/2024	Chemtech -SO
P5216-13	TP-12	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	12/07/2024	Chemtech -SO
P5216-14	TP-12-EPH	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	12/07/2024	Chemtech -SO
P5216-15	TP-12-VOC	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	12/07/2024	Chemtech -SO
P5217-01	MIXED-DEMO	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	12/07/2024	Chemtech -SO
P5219-01	MR-CAM-09-MR-CAM-010	Solid	Percent Solids	Cool 4 deg C	EART12	M11	12/09/2024	Chemtech -SO
P5219-02	MR-CAM-011	Solid	Percent Solids	Cool 4 deg C	PSEG03	L51	12/09/2024	Chemtech -SO
P5219-03	MR-CAM-012	Solid	Percent Solids	Cool 4 deg C	PSEG03	L51	12/09/2024	Chemtech -SO
P5219-04	MR-CAM-013	Solid	Percent Solids	Cool 4 deg C	PSEG03	L51	12/09/2024	Chemtech -SO
P5220-01	GAS-AUD-1562	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	12/09/2024	Chemtech -SO

Date/Time 12/09/24 16:45

Raw Sample Received by: TP (WC)

Raw Sample Relinquished by: [illegible] (SM)

Date/Time 12/09/24 18:00

Raw Sample Received by: [illegible] (SM)

Raw Sample Relinquished by: TP (WC)

WORKLIST(Hardcopy Internal Chain)

WR 183836

WorkList Name : %1-120924 **WorkList ID :** 186111 **Department :** Wet-Chemistry **Date :** 12-09-2024 08:19:41

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
P5221-02	GAS-BUR-1326	Solid	Percent Solids	Cool 4 deg C	PSEG03	L51	12/09/2024	Chemtech -SO
P5222-01	TRE-1113	Solid	Percent Solids	Cool 4 deg C	PSEG03	L51	12/09/2024	Chemtech -SO
P5223-01	TR-05-120924	Solid	Percent Solids	Cool 4 deg C	PSEG05	L51	12/09/2024	Chemtech -SO
P5223-02	TR-05-120924-E2	Solid	Percent Solids	Cool 4 deg C	PSEG05	L51	12/09/2024	Chemtech -SO

Date/Time 12/09/24 16:45
Raw Sample Received by: [illegible]
Raw Sample Relinquished by: [illegible] (SM)

Date/Time 12/09/24 18:00
Raw Sample Received by: [illegible] (SM)
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 # LB133897

Review By	kareem	Review On	12/13/2024 7:07:43 PM
Supervise By	mohan	Supervise On	12/16/2024 11:22:00 PM

STD. NAME	STD REF.#
ICAL Standard	MP83552,MP83553,MP83554,MP83555,MP83556,MP83558
ICV Standard	MP83559
CCV Standard	MP83562
ICSA Standard	MP83560,MP83561
CRI Standard	MP83558
LCS Standard	
Chk Standard	MP83565,MP83566

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	S0	S0	CAL1	12/11/24 11:27		Kareem	OK
2	S1	S1	CAL2	12/11/24 11:31		Kareem	OK
3	S2	S2	CAL3	12/11/24 11:35		Kareem	OK
4	S3	S3	CAL4	12/11/24 11:39		Kareem	OK
5	S4	S4	CAL5	12/11/24 11:44		Kareem	OK
6	S5	S5	CAL6	12/11/24 11:48		Kareem	OK
7	ICV01	ICV01	ICV	12/11/24 11:52		Kareem	OK
8	LLICV01	LLICV01	LLICV	12/11/24 12:00		Kareem	OK
9	ICB01	ICB01	ICB	12/11/24 12:39		Kareem	OK
10	CRI01	CRI01	CRDL	12/11/24 12:44		Kareem	OK
11	ICSA01	ICSA01	ICSA	12/11/24 12:48		Kareem	OK
12	ICSAB01	ICSAB01	ICSAB	12/11/24 12:52		Kareem	OK
13	CCV01	CCV01	CCV	12/11/24 12:57		Kareem	OK
14	CCB01	CCB01	CCB	12/11/24 13:06		Kareem	OK
15	PB165470TB	PB165470TB	MB	12/11/24 13:10		Kareem	OK
16	PB165527BL	PB165527BL	MB	12/11/24 13:15		Kareem	OK
17	PB165527BS	PB165527BS	LCS	12/11/24 13:19	0.1 ml of m6010 and m6001 were added to 10ml of sample	Kareem	OK
18	P5174-02	ROLL-OFF-COMP	SAM	12/11/24 13:23		Kareem	OK

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 # LB133897

Review By	kareem	Review On	12/13/2024 7:07:43 PM
Supervise By	mohan	Supervise On	12/16/2024 11:22:00 PM

STD. NAME	STD REF.#
ICAL Standard	MP83552,MP83553,MP83554,MP83555,MP83556,MP83558
ICV Standard	MP83559
CCV Standard	MP83562
ICSA Standard	MP83560,MP83561
CRI Standard	MP83558
LCS Standard	
Chk Standard	MP83565,MP83566

19	P5196-04	MH-761	SAM	12/11/24 13:28		Kareem	OK
20	P5216-04	BP-G-6	SAM	12/11/24 13:32		Kareem	OK
21	P5216-08	MH-743	SAM	12/11/24 13:37		Kareem	OK
22	P5216-12	MH-744	SAM	12/11/24 13:41		Kareem	OK
23	P5216-16	TP-12	SAM	12/11/24 13:46	MS/MSD fail for more than 50% parameters	Kareem	Not Ok
24	P5216-16DUP	TP-12DUP	DUP	12/11/24 13:50	MS/MSD fail for more than 50% parameters	Kareem	Not Ok
25	CCV02	CCV02	CCV	12/11/24 13:54		Kareem	OK
26	CCB02	CCB02	CCB	12/11/24 13:59		Kareem	OK
27	P5245-01	72-12016	SAM	12/11/24 14:08		Kareem	OK
28	CCV03	CCV03	CCV	12/11/24 14:12		Kareem	OK
29	CCB03	CCB03	CCB	12/11/24 14:17		Kareem	OK
30	P5216-16L	TP-12L	SD	12/11/24 14:25	MS/MSD fail for more than 50% parameters	Kareem	Not Ok
31	P5216-16MS	TP-12MS	MS	12/11/24 14:30	MS/MSD fail for more than 50% parameters	Kareem	Not Ok
32	P5216-16MSD	TP-12MSD	MSD	12/11/24 14:34	MS/MSD fail for more than 50% parameters	Kareem	Not Ok
33	P5216-16A	TP-12A	PS	12/11/24 14:38	MS/MSD fail for more than 50% parameters	Kareem	Not Ok
34	PB165528BL	PB165528BL	MB	12/11/24 14:43		Kareem	OK
35	PB165528BS	PB165528BS	LCS	12/11/24 14:47	0.1 ml of m6010 and m6001 were added to 10ml of sample	Kareem	OK

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 # LB133897

Review By	kareem	Review On	12/13/2024 7:07:43 PM
Supervise By	mohan	Supervise On	12/16/2024 11:22:00 PM

STD. NAME	STD REF.#
ICAL Standard	MP83552,MP83553,MP83554,MP83555,MP83556,MP83558
ICV Standard	MP83559
CCV Standard	MP83562
ICSA Standard	MP83560,MP83561
CRI Standard	MP83558
LCS Standard	
Chk Standard	MP83565,MP83566

36	P5216-01	BP-G-6	SAM	12/11/24 14:51		Kareem	OK
37	P5216-05	MH-743	SAM	12/11/24 14:55		Kareem	OK
38	P5216-09	MH-744	SAM	12/11/24 14:59		Kareem	OK
39	P5216-13	TP-12	SAM	12/11/24 15:03		Kareem	OK
40	CCV04	CCV04	CCV	12/11/24 15:07		Kareem	OK
41	CCB04	CCB04	CCB	12/11/24 15:12		Kareem	OK
42	P5217-01	MIXED-DEMO	SAM	12/11/24 15:16		Kareem	OK
43	P5217-01DUP	MIXED-DEMODUP	DUP	12/11/24 15:20		Kareem	OK
44	P5217-01L	MIXED-DEMOL	SD	12/11/24 15:25		Kareem	OK
45	P5217-01MS	MIXED-DEMOMS	MS	12/11/24 15:29	0.1 ml of m6010 and m6001 were added to 10ml of sample	Kareem	OK
46	P5217-01MSD	MIXED-DEMOMSD	MSD	12/11/24 15:34	0.1 ml of m6010 and m6001 were added to 10ml of sample	Kareem	OK
47	P5217-01A	MIXED-DEMOA	PS	12/11/24 15:38	0.1 ml of m6010 and m6001 were added to 10ml of sample	Kareem	OK
48	P5219-01	MR-CAM-09-MR-CAM	SAM	12/11/24 15:42		Kareem	OK
49	P5219-02	MR-CAM-011	SAM	12/11/24 15:47		Kareem	OK
50	P5219-03DL	MR-CAM-012DL	SAM	12/11/24 15:51	Straight 5x Dilution for all elements	Kareem	OK
51	P5219-04	MR-CAM-013	SAM	12/11/24 15:55	Al high	Kareem	Dilution
52	CCV05	CCV05	CCV	12/11/24 15:59		Kareem	OK

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Instrument ID: P4

Daily Analysis Runlog For Sequence/QCBatch ID # LB133897

Review By	kareem	Review On	12/13/2024 7:07:43 PM
Supervise By	mohan	Supervise On	12/16/2024 11:22:00 PM

STD. NAME	STD REF.#
ICAL Standard	MP83552,MP83553,MP83554,MP83555,MP83556,MP83558
ICV Standard	MP83559
CCV Standard	MP83562
ICSA Standard	MP83560,MP83561
CRI Standard	MP83558
LCS Standard	
Chk Standard	MP83565,MP83566

53	CCB05	CCB05	CCB	12/11/24 16:05		Kareem	OK
54	P5219-04DL	MR-CAM-013DL	SAM	12/11/24 16:09	5x for Al	Kareem	Confirms
55	P5223-01	TR-05-120924	SAM	12/11/24 16:14		Kareem	OK
56	CCV06	CCV06	CCV	12/11/24 16:22		Kareem	OK
57	CCB06	CCB06	CCB	12/11/24 16:26		Kareem	OK
58	LR1	LR1	HIGH STD	12/11/24 16:30		Kareem	OK
59	LR2	LR2	HIGH STD	12/11/24 16:35		Kareem	OK
60	CCV07	CCV07	CCV	12/11/24 16:39		Kareem	OK
61	CCB07	CCB07	CCB	12/11/24 16:43		Kareem	OK

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Prep Standard - Chemical Standard Summary

Order ID : P5217

Test : Metals Group3

Prepbatch ID : PB165528,

Sequence ID/Qc Batch ID: LB133897,LB133897,

Standard ID :
MP83498,MP83500,MP83552,MP83553,MP83554,MP83555,MP83556,MP83557,MP83558,MP83559,MP83560,MP83561,MP83562,MP83565,MP83566,

Chemical ID :
M5130,M5192,M5218,M5223,M5288,M5295,M5296,M5390,M5393,M5429,M5466,M5467,M5497,M5515,M5585,M5658,M5697,M5698,M5747,M5748,M5768,M5798,M5799,M5800,M5801,M5802,M5806,M5814,M5815,M5816,M5817,M5818,M5819,M5820,M5875,M5959,M5962,M5970,M5978,M5982,M5985,M6000,M6009,M6021,M6023,M6028,M6030,M6033,M6121,M6125,M6126,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	MP83498	12/09/2024	12/28/2024	Janvi Patel	None	None	Sarabjit Jaswal 12/09/2024

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)	MP83500	12/06/2024	01/06/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 12/09/2024

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
514	CAL BLK (S0/ICB/CCB)	MP83552	12/06/2024	01/06/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 12/11/2024

FROM 125.00000ml of M6121 + 2350.00000ml of W3112 + 25.00000ml of M6126 = Final Quantity: 2500.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
907	ICP AES STD S (S5)	MP83553	12/06/2024	01/06/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 12/11/2024

FROM 5.00000ml of M5296 + 5.00000ml of M5393 + 5.00000ml of M5467 + 5.00000ml of M5802 + 5.00000ml of M5816 + 5.00000ml of M5820 + 5.00000ml of M5875 + 5.00000ml of M5970 + 5.00000ml of M5982 + 455.00000ml of MP83500 = 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
910	ICP AES STD S4	MP83554	12/06/2024	01/06/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 12/11/2024

FROM 50.00000ml of MP83500 + 50.00000ml of MP83553 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
909	ICP AES STD S3	MP83555	12/06/2024	01/06/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 12/11/2024

FROM 25.00000ml of MP83553 + 75.00000ml of MP83500 = 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
3913	ICP AES STD S2	MP83556	12/06/2024	01/06/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 12/11/2024

FROM 16.00000ml of MP83553 + 184.00000ml of MP83500 = Final Quantity: 200.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
2950	ICP AES S1/CRI STOCK STD	MP83557	12/06/2024	01/06/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 12/11/2024

FROM 0.00600ml of M5816 + 0.03000ml of M5798 + 0.03000ml of M6028 + 0.05000ml of M5515 + 0.05000ml of M5658 + 0.05000ml of M6030 + 0.05000ml of M6033 + 0.06000ml of M5747 + 0.10000ml of M5697 + 0.10000ml of M5698 + 0.10000ml of M5801 + 0.10000ml of M5820 + 0.10000ml of M5962 + 0.10000ml of M5970 + 0.10000ml of M5982 + 0.15000ml of M5800 + 0.20000ml of M5748 + 0.20000ml of M5799 + 0.20000ml of M5819 + 0.20000ml of M5978 + 0.20000ml of M6021 + 0.20000ml of M6023 + 0.25000ml of M5467 + 0.25000ml of M5802 + 0.50000ml of M5390 + 0.50000ml of M5814 + 1.00000ml of M5192 + 1.00000ml of M5288 + 1.00000ml of M5497 + 1.00000ml of M5768 + 1.00000ml of M5806 + 2.00000ml of M5818 + 77.68000ml of MP83500 = 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
2951	ICP AES S1/CRI WORK STD	MP83558	12/06/2024	01/06/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 12/11/2024

FROM 2.00000ml of MP83557 + 98.00000ml of MP83500 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
912	ICP AES ICV SOLN	MP83559	12/06/2024	01/06/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 12/11/2024

FROM 0.02500ml of M5429 + 0.02500ml of M5815 + 0.02500ml of M5817 + 0.10000ml of M5466 + 0.25000ml of M5218 + 0.25000ml of M5982 + 10.00000ml of M5295 + 89.77500ml of MP83500 = 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	MP83560	12/06/2024	12/28/2024	Kareem Khairalla	None	None	Sarabjit Jaswal 12/11/2024

FROM 25.00000ml of M5130 + 225.00000ml of MP83500 = 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	MP83561	12/06/2024	12/28/2024	Kareem Khairalla	None	None	Sarabjit Jaswal 12/11/2024

FROM 0.01000ml of M5815 + 0.01000ml of M5817 + 0.10000ml of M5296 + 0.10000ml of M5970 + 0.10000ml of M5982 + 10.00000ml of M5130 + 10.00000ml of M5223 + 79.50000ml of MP83500 = 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	MP83562	12/06/2024	01/06/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 12/11/2024

FROM 50.00000ml of MP83500 + 50.00000ml of MP83553 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
919	ICP AES INTERNAL STD	MP83565	12/06/2024	01/06/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 12/11/2024

FROM 1.00000ml of M5959 + 10.00000ml of M5985 + 1969.00000ml of W3112 + 20.00000ml of M6126 = Final Quantity: 2000.000 ml

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Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
903	ICP AES RINSE SOLN	MP83566	12/06/2024	01/06/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 12/11/2024

FROM 200.00000ml of M6126 + 9800.00000ml of W3112 = Final Quantity: 10000.000 ml

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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	12/28/2024	05/20/2024 /	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	12/28/2024	05/20/2024 /	04/20/2021 / bin	M5223

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 #
EPA	ICV-1 / ICV (ICP/ICPMS) STOCK SOLN	ICV-1014	02/05/2025	08/07/2024 / jaswal	02/20/2020 / bin	M5295

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Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	Z9651Q / CHEM-CLP-4/.25L	S2-MEB711673	11/02/2026	09/19/2022 / jaswal	08/20/2022 / jaswal	M5296

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	072122	07/21/2025	08/07/2024 / jaswal	09/18/2022 / bin	M5390

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	061322	06/13/2025	03/06/2023 / bin	03/01/2023 / bin	M5466

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

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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 #
Absolute Standards, Inc.	58126 / Fe, 10000 PPM, 500 ml	092122	09/21/2025	08/01/2024 / Jaswal	03/17/2023 / bin	M5515

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 /	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

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	102623	10/26/2026	04/18/2024 / jaswal	10/27/2023 / jaswal	M5698

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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.	58112 / Mg, 10000 PPM, 500 ml	091823	09/18/2026	01/08/2024 / bin	01/03/2024 / bin	M5768

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

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	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.	58111 / Na, 10000 PPM, 500 ml	122223	12/22/2026	08/01/2024 / Jaswal	01/03/2024 / jaswal	M5806

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

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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.	57014 / Si, 1000 PPM, 125 ml	122023	12/20/2026	03/06/2024 / jaswal	02/09/2024 / jaswal	M5818

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

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 #
Inorganic Ventures	CGY10-1 / YTTRIUM 125mL 10,000ug/mL	V2-Y740548	02/20/2029	07/01/2024 / Jaswal	06/14/2024 / Jaswal	M5959

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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

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 #
Absolute Standards, Inc.	57038 / Sr, 1000 PPM, 125 ml	031524	03/15/2027	07/01/2024 / Jaswal	06/11/2024 / Jaswal	M5982

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	08/30/2026	08/13/2024 / Jaswal	05/14/2024 / Jaswal	M6000

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CHEMICAL RECEIPT LOG BOOK

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	03/17/2028	08/13/2024 / Jaswal	05/14/2024 / Jaswal	M6009

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

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	01/25/2019 / 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.	58113 / Al, 10000 PPM, 500 ml	011623	01/16/2026	08/07/2024 / Jaswal	01/03/2024 / Jaswal	M6033

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	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

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 #
Seidler Chemical	DIW / DI Water	Daily Lab-Certified	07/03/2029	07/03/2024 / Iwona	07/03/2024 / Iwona	W3112

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

R: 8/5/24

M6028

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

CERTIFIED WEIGHT REPORT:

Part Number: 57048
Lot Number: 070124
Description: Cadmium (Cd)

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

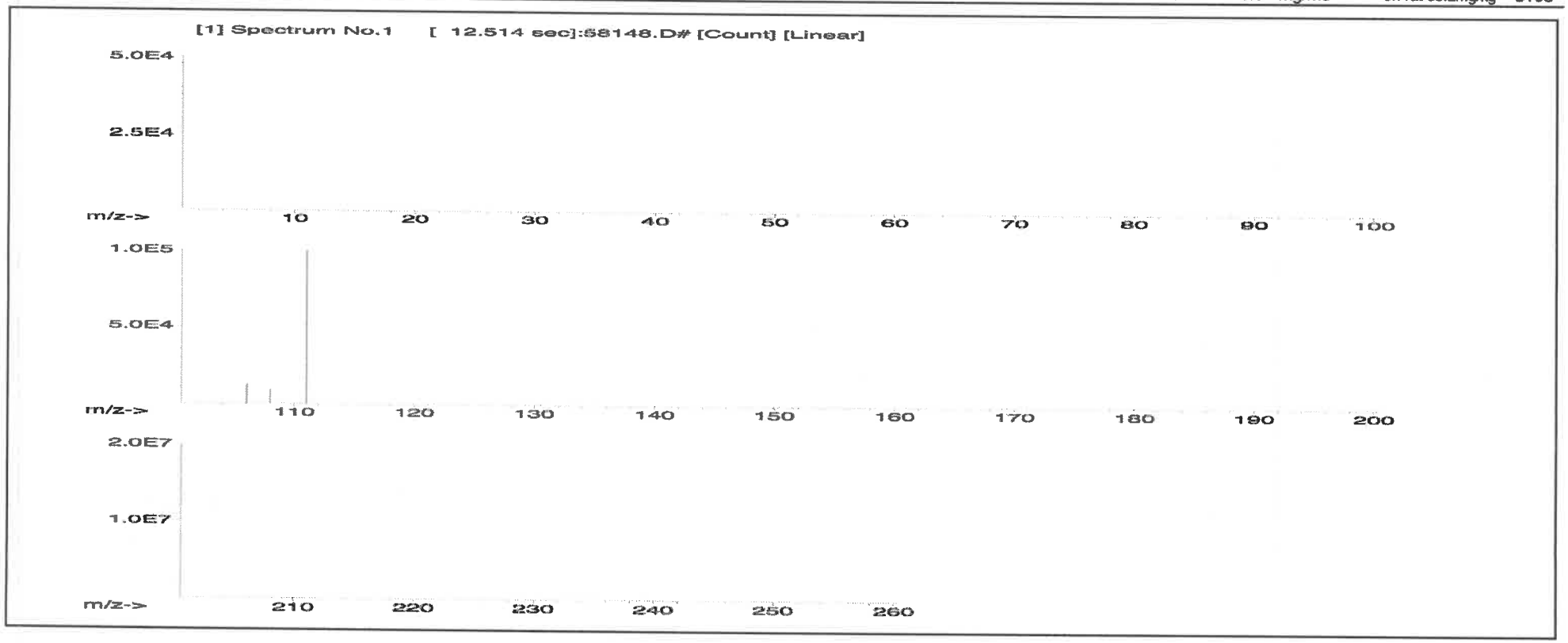
Weight shown below was diluted to (mL): 2000.07

	Lot #		
Solvent:	24002546	Nitric Acid	
2%	40.0 (mL)	Nitric Acid	
5E-05	Balance Uncertainty		
0.100	Flask Uncertainty		

Aleah O'Brady

Formulated By:	Aleah O'Brady	070124
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



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).

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

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:	S2-MEB711673
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 ± 6 µg/mL**	**Molybdenum, Mo**	**1 000 ± 6 µg/mL**
Silicon, Si	**1 000 ± 7 µg/mL**	**Tin, Sn**	**1 000 ± 6 µg/mL**
Titanium, Ti	**1 000 ± 7 µg/mL**		

Density: 1.030 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 (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

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)

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

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Certificate of Analysis

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1.0 ACCREDITATION / REGISTRATION

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

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 (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

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)

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 (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

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)

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

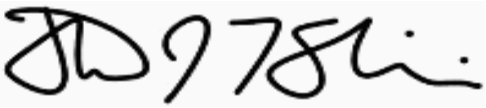
- Sealed TCT Bag Open Date: _____

- 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 (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

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)

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

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

August 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

M6009,M6010,M6011,M6012,M6013,M6014,M6015,M6015,M6017

INORGANIC VENTURES

Refine your results. Redefine your industry.

Certificate of Analysis

RD:05/14/2024

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Christiansburg, VA 24073 USA
inorganicventures.com

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

1.0 ACCREDITATION / REGISTRATION

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

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 (±) = $U_{CRM/RM} = k\ (u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\ (u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

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)

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

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

ICSA M5126 M5127 M5128 M5129 M5130

ICSB M5219 M5220 M5221 M5222 M5223

Element	CRQL	Part A (µg/L)	Low Limit (µg/L)	High Limit (µg/L)	Part A +Part B (µg/L)	Low Limit (µg/L)	High Limit (µg/L)
Al	200	255000	216000	294000	247000	209000	285000
Sb	60	(0.0)	-60.0	60.0	618	525	711
As	10	(0.0)	-10.0	10.0	104	88.4	120
Ba	200	(6.0)	-194	206	(537)	337	737
Be	5.0	(0.0)	-5.0	5.0	495	420	570
Cd	5.0	(1.0)	-4.0	6.0	972	826	1120
Ca	5000	245000	208000	282000	235000	199000	271000
Cr	10	(52.0)	42.0	62.0	542	460	624
Co	50	(0.0)	-50.0	50.0	476	404	548
Cu	25	(2.0)	-23.0	27.0	511	434	588
Fe	100	101000	85600	116500	99300	84400	114500
Pb	10	(0.0)	-10.0	10.0	(49.0)	39.0	59.0
Mg	5000	255000	216000	294000	248000	210000	286000
Mn	15	(7.0)	-8.0	22.0	507	430	584
Ni	40	(2.0)	-38.0	42.0	954	810	1100
Se	35	(0.0)	-35.0	35.0	(46.0)	11.0	81.0
Ag	10	(0.0)	-10.0	10.0	201	170	232
Tl	25	(0.0)	-25.0	25.0	(108)	83.0	133
V	50	(0.0)	-50.0	50.0	491	417	565
Zn	60	(0.0)	-60.0	60.0	952	809	1095

The acceptance ranges for all analytes in parentheses in the above table were determined using the listed certified value ± 1 times the associated CLP SOW CRQL. The acceptance ranges for all other analytes were determined using the certified value ± 15 percent of the listed certified value.

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:

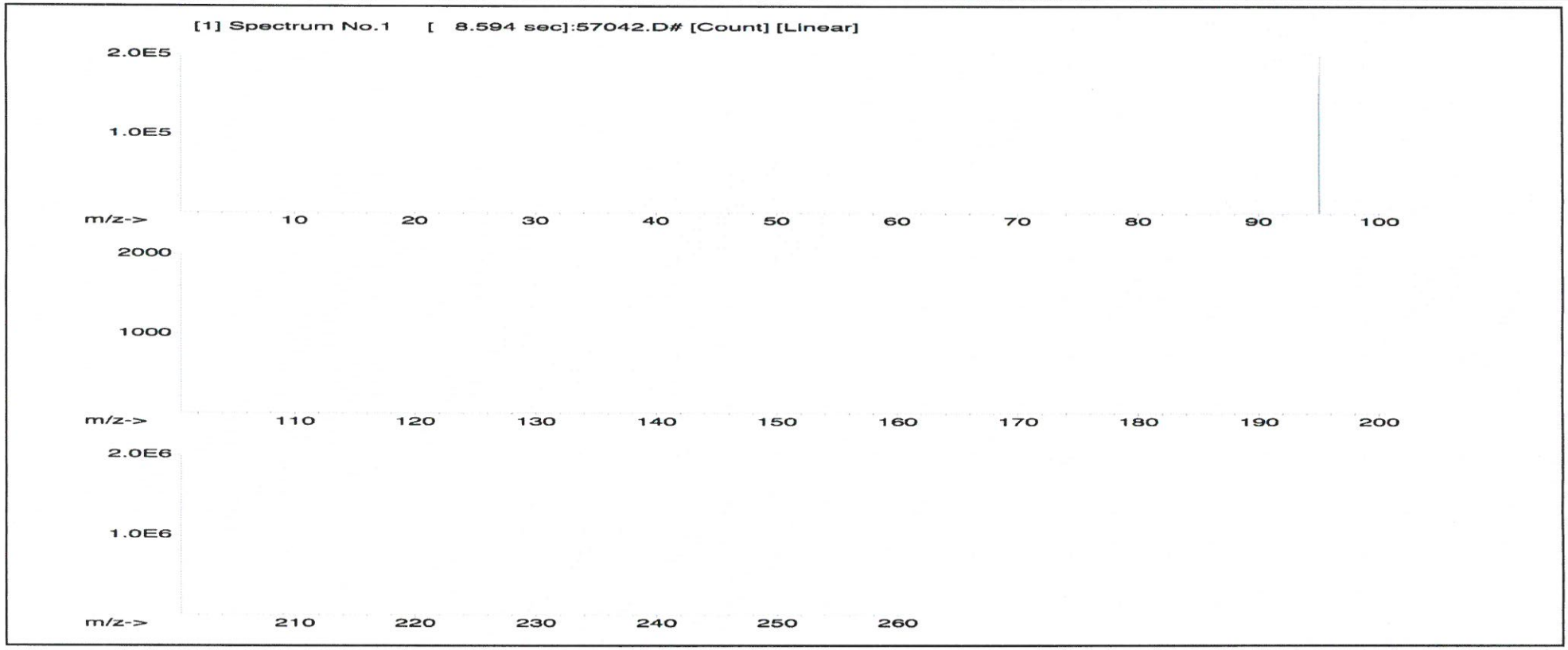
Part Number: **57042**
Lot Number: **051722**
Description: **Molybdenum (Mo)**

Expiration Date: 051725
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): **1000**
NIST Test Number: 6UTB 5E-05 Balance Uncertainty
Volume shown below was diluted to (mL): 3000.41 0.058 Flask Uncertainty

Lot #	Solvent:		
MKBQ8597V	Ammonium hydroxide		
0.5%	15.0 (mL)	Ammonium hydroxide	

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



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:

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).

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

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 (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

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)

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

ICSA M5126 M5127 M5128 M5129 M5130

ICSB M5219 M5220 M5221 M5222 M5223

Element	CRQL	Part A (µg/L)	Low Limit (µg/L)	High Limit (µg/L)	Part A +Part B (µg/L)	Low Limit (µg/L)	High Limit (µg/L)
Al	200	255000	216000	294000	247000	209000	285000
Sb	60	(0.0)	-60.0	60.0	618	525	711
As	10	(0.0)	-10.0	10.0	104	88.4	120
Ba	200	(6.0)	-194	206	(537)	337	737
Be	5.0	(0.0)	-5.0	5.0	495	420	570
Cd	5.0	(1.0)	-4.0	6.0	972	826	1120
Ca	5000	245000	208000	282000	235000	199000	271000
Cr	10	(52.0)	42.0	62.0	542	460	624
Co	50	(0.0)	-50.0	50.0	476	404	548
Cu	25	(2.0)	-23.0	27.0	511	434	588
Fe	100	101000	85600	116500	99300	84400	114500
Pb	10	(0.0)	-10.0	10.0	(49.0)	39.0	59.0
Mg	5000	255000	216000	294000	248000	210000	286000
Mn	15	(7.0)	-8.0	22.0	507	430	584
Ni	40	(2.0)	-38.0	42.0	954	810	1100
Se	35	(0.0)	-35.0	35.0	(46.0)	11.0	81.0
Ag	10	(0.0)	-10.0	10.0	201	170	232
Tl	25	(0.0)	-25.0	25.0	(108)	83.0	133
V	50	(0.0)	-50.0	50.0	491	417	565
Zn	60	(0.0)	-60.0	60.0	952	809	1095

The acceptance ranges for all analytes in parentheses in the above table were determined using the listed certified value ± 1 times the associated CLP SOW CRQL. The acceptance ranges for all other analytes were determined using the certified value ± 15 percent of the listed certified value.

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

M5288 R: 07/21/2022

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

CERTIFIED WEIGHT REPORT:

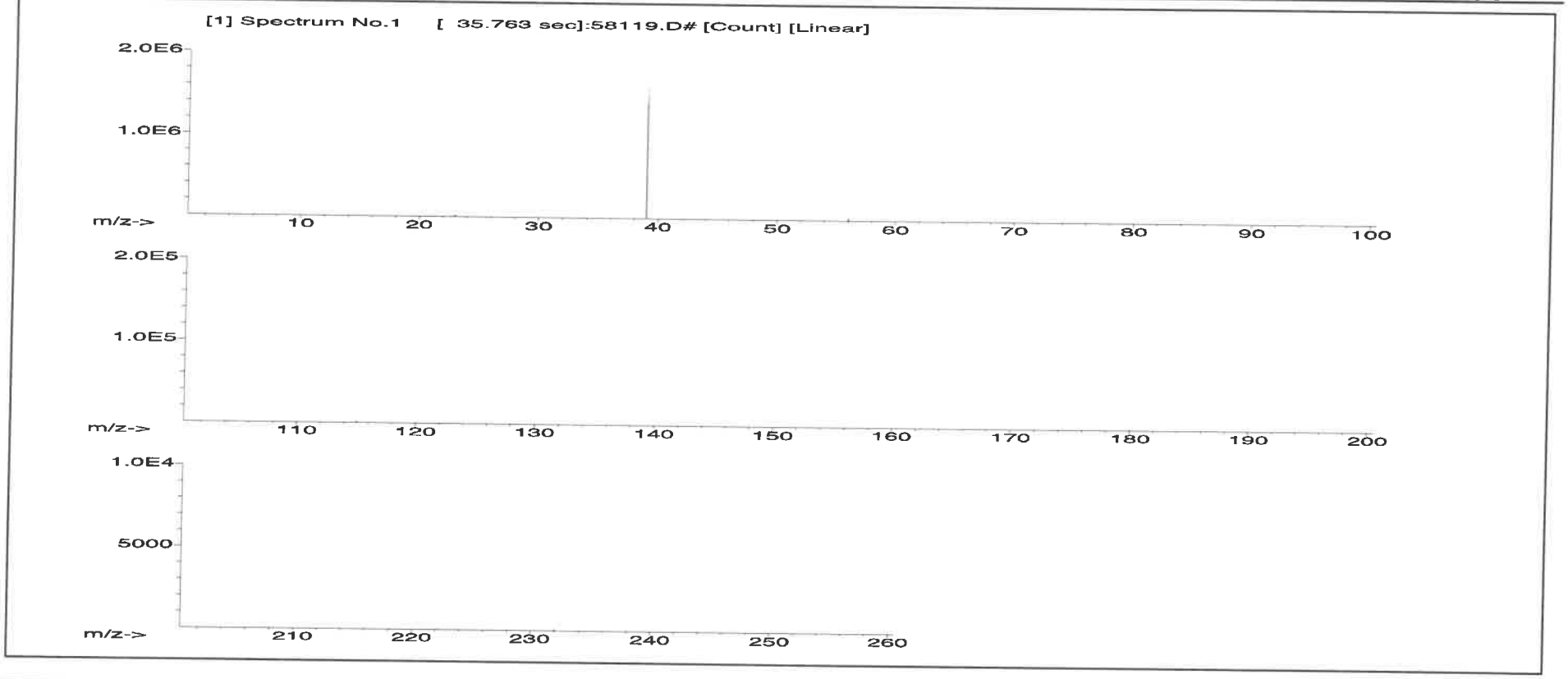
Part Number: 58119
Lot Number: 071122
Description: Potassium (K)

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



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).

R : 4/20/21

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.

Contains Metals in Dilute Acidic or
Cyanide in Basic Aqueous Solutions
HAZARDOUS MATERIAL

Safety Data Sheets
Available Upon Request

M5291
M5292
M5293
M5294
M5295

(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

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R: 09/08/22 (BH)

Certified Reference Material CRM

M5387 . M5389 . M5390 . M5391 . M5392

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AR-1539 Certificate Number
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CERTIFIED WEIGHT REPORT:

Part Number: 57056
Lot Number: 072122
Description: Barium (Ba)

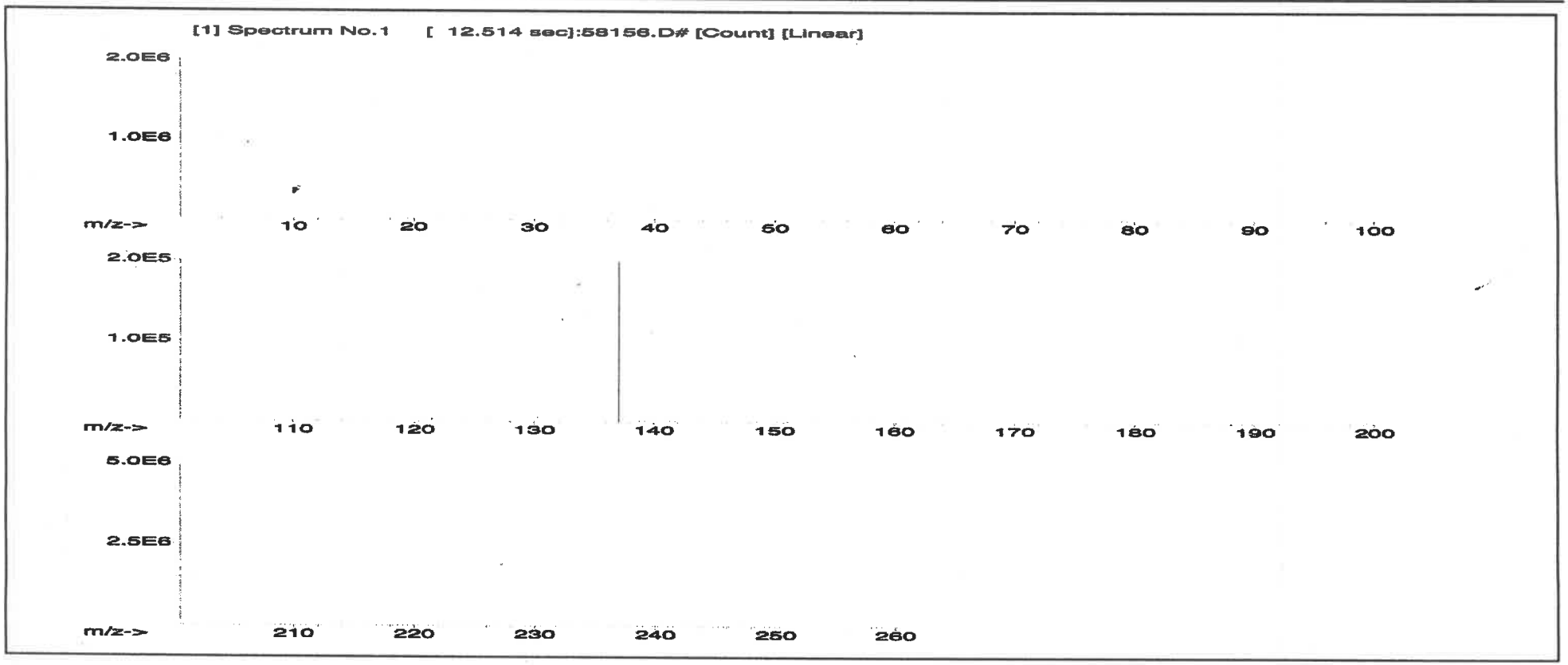
Expiration Date: 072125
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB 5E-05 Balance Uncertainty
Weight shown below was diluted to (mL): 2000.02 0.058 Flask Uncertainty

		Lot #	
Solvent:		20510011	Nitric Acid
	2%	40.0 (mL)	Nitric Acid

Giovanni Esposito
Formulated By: Giovanni Esposito 072122

Pedro Rentas
Reviewed By: Pedro L. Rentas 072122

	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	3.82426	**1000.0**	2.0	10022-31-8	0.5 mg/m3	orl-rat 355 mg/kg	3104a



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).

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Certified Reference Material CRM

M 5429 Ri 01/26/23 BH

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CERTIFIED WEIGHT REPORT:

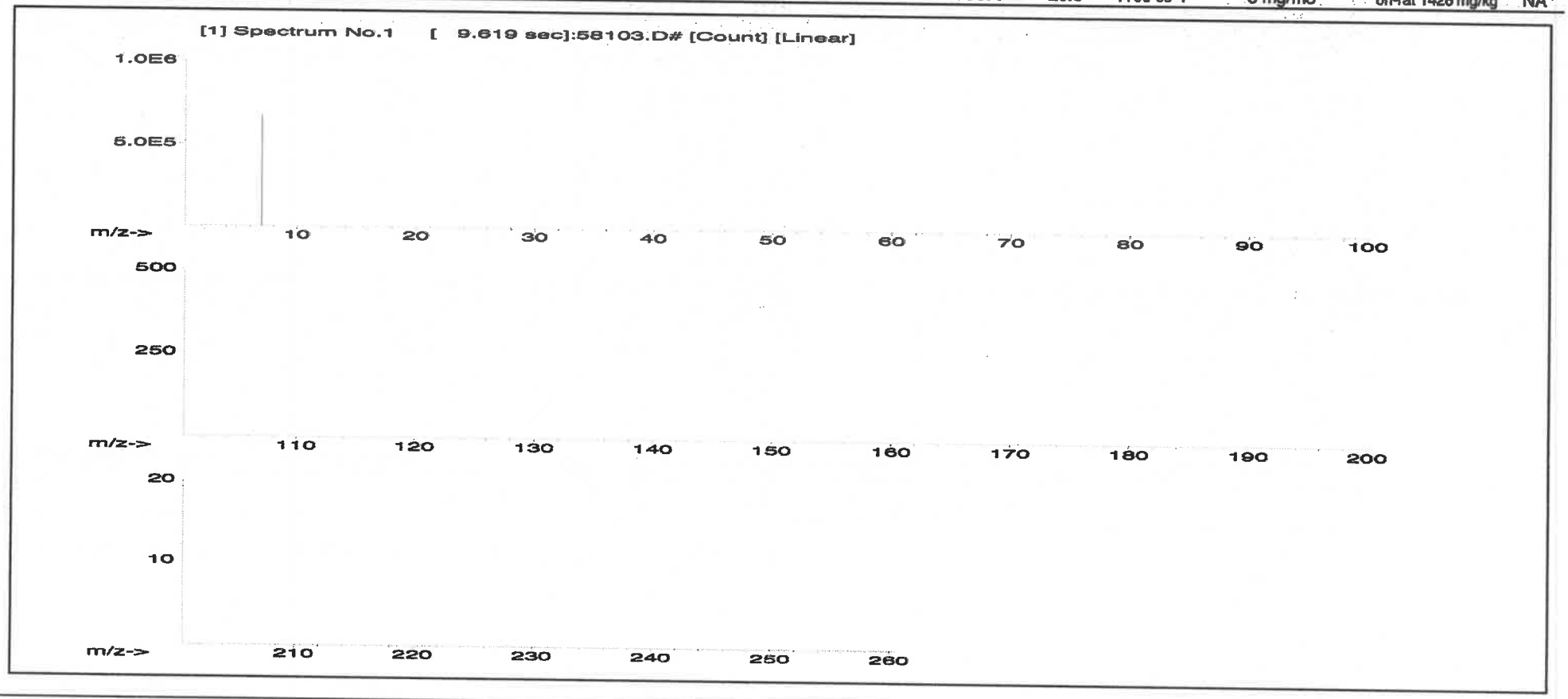
Part Number: 57103
Lot Number: 070622
Description: Lithium (Li)

Expiration Date: 070625
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB 5E-05 Balance Uncertainty
Weight shown below was diluted to (mL): 1000.12 0.058 Flask Uncertainty

		Lot #	
Solvent:		20510011	Nitric Acid
	2%	20.0 (mL)	Nitric Acid

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



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:

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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M 5466

Certified Reference Material CRM

R: 03/01/23 BH

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CERTIFIED WEIGHT REPORT:

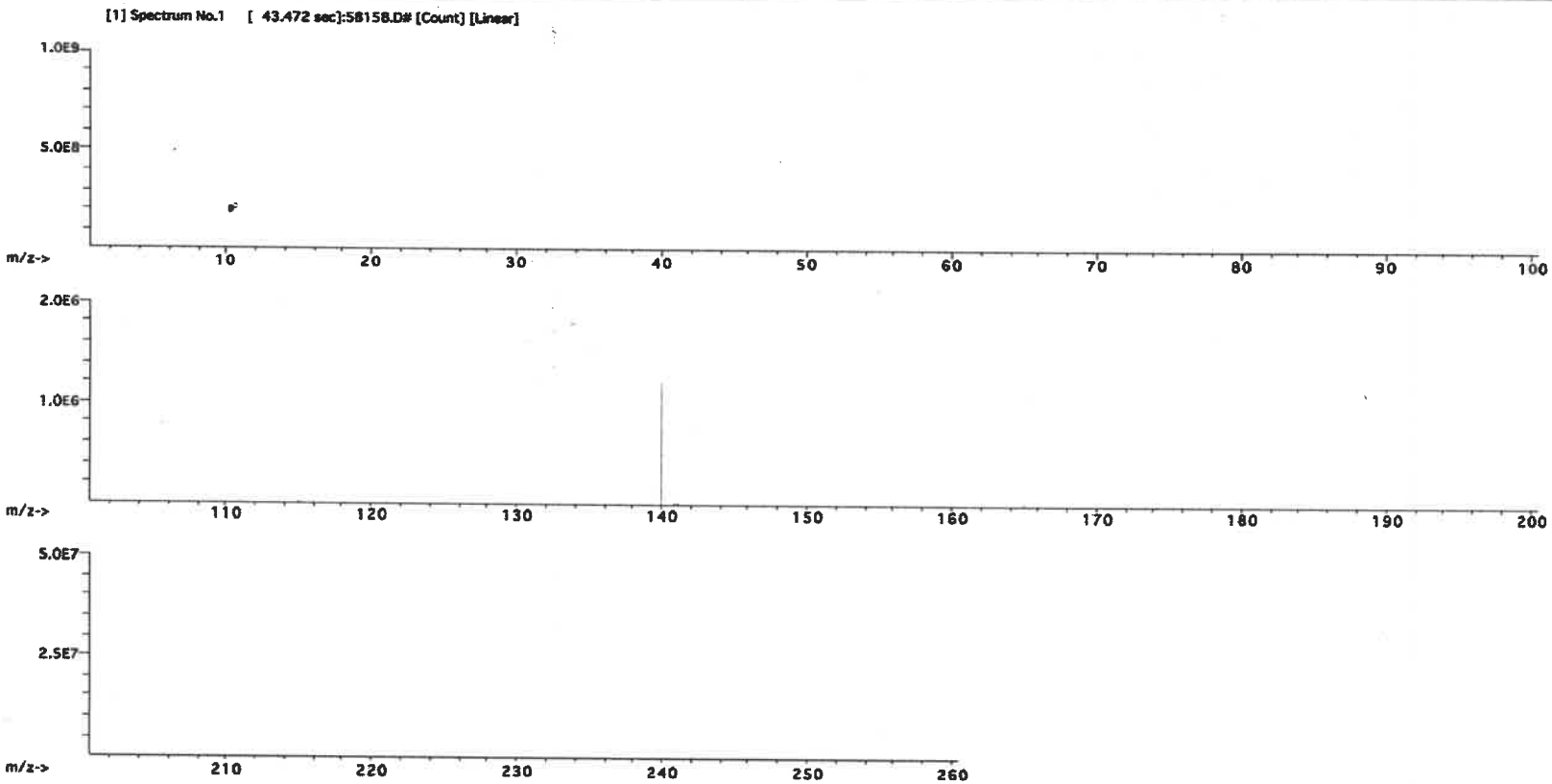
Part Number: 57058
Lot Number: 061322
Description: Cerium (Ce)

Expiration Date: 061325
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

	Lot #	
Solvent:	20510011	Nitric Acid
2%	20.0 (mL)	Nitric Acid

Formulated By:	Lawrence Barry	061322
Reviewed By:	Pedro L. Rentas	061322

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	3.04923	1000.0	2.0	10294-41-4	NA	NA	NA



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:

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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Certified Reference Material CRM

M5467 R: 03/01/23

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CERTIFIED WEIGHT REPORT:

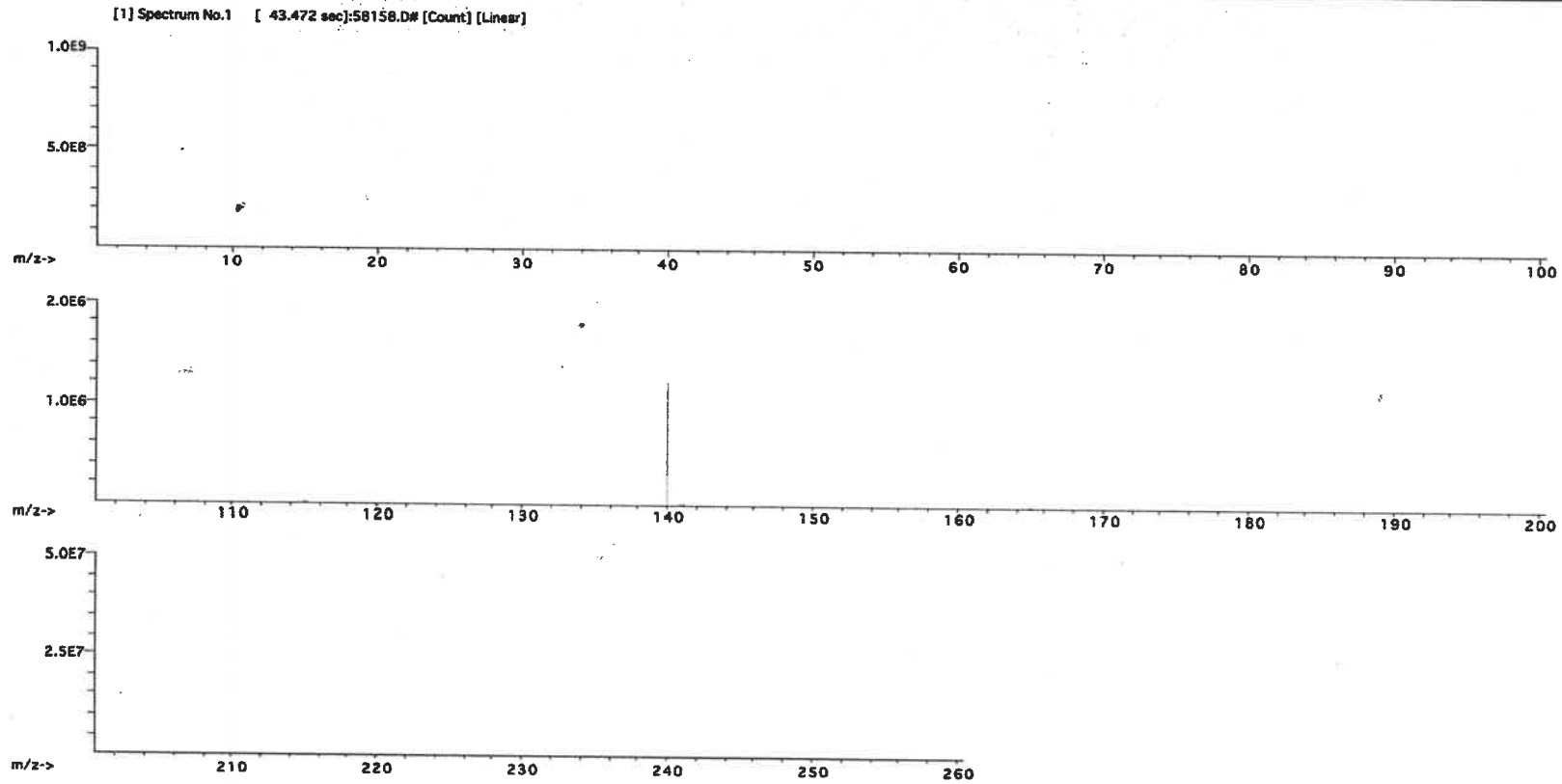
Part Number: 57058
Lot Number: 020623
Description: Cerium (Ce)

Expiration Date: 020626
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 1000.12

		Lot #	
Solvent:		21110221	Nitric Acid
	2%	20.0 (mL)	Nitric Acid
	5E-05	Balance Uncertainty	
	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



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.
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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

M5497 - M5498 R: 03/17/23

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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

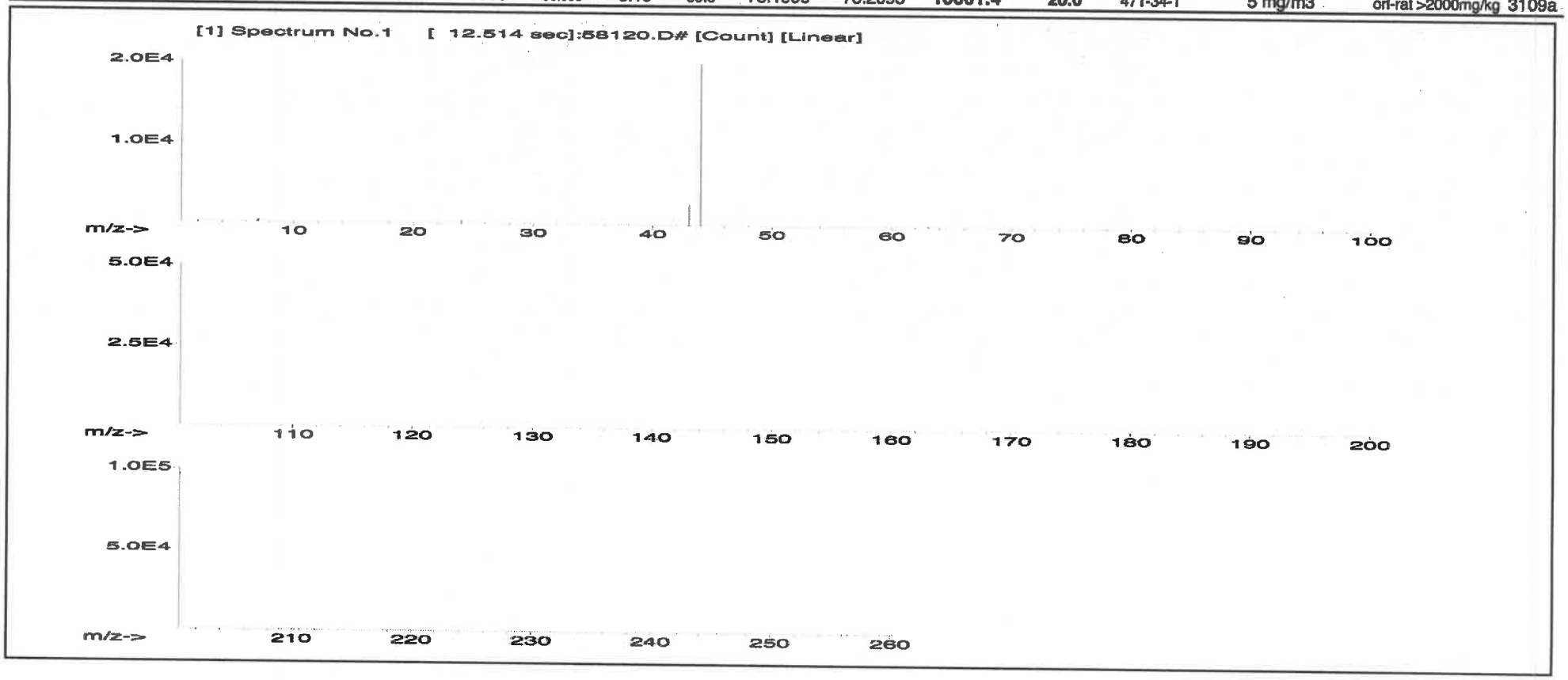
	Lot #		
Solvent:	21110221	Nitric Acid	
2%	60.0 (mL)	Nitric Acid	

5E-05 Balance Uncertainty
0.058 Flask Uncertainty

Giovanni Esposito

Formulated By:	Giovanni Esposito	031523
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).
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Certified Reference Material CRM

M5514 - M5515 R: 03/17/22

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CERTIFIED WEIGHT REPORT:

Part Number: 58126
Lot Number: 092122
Description: Iron (Fe)

Expiration Date: 092125
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB

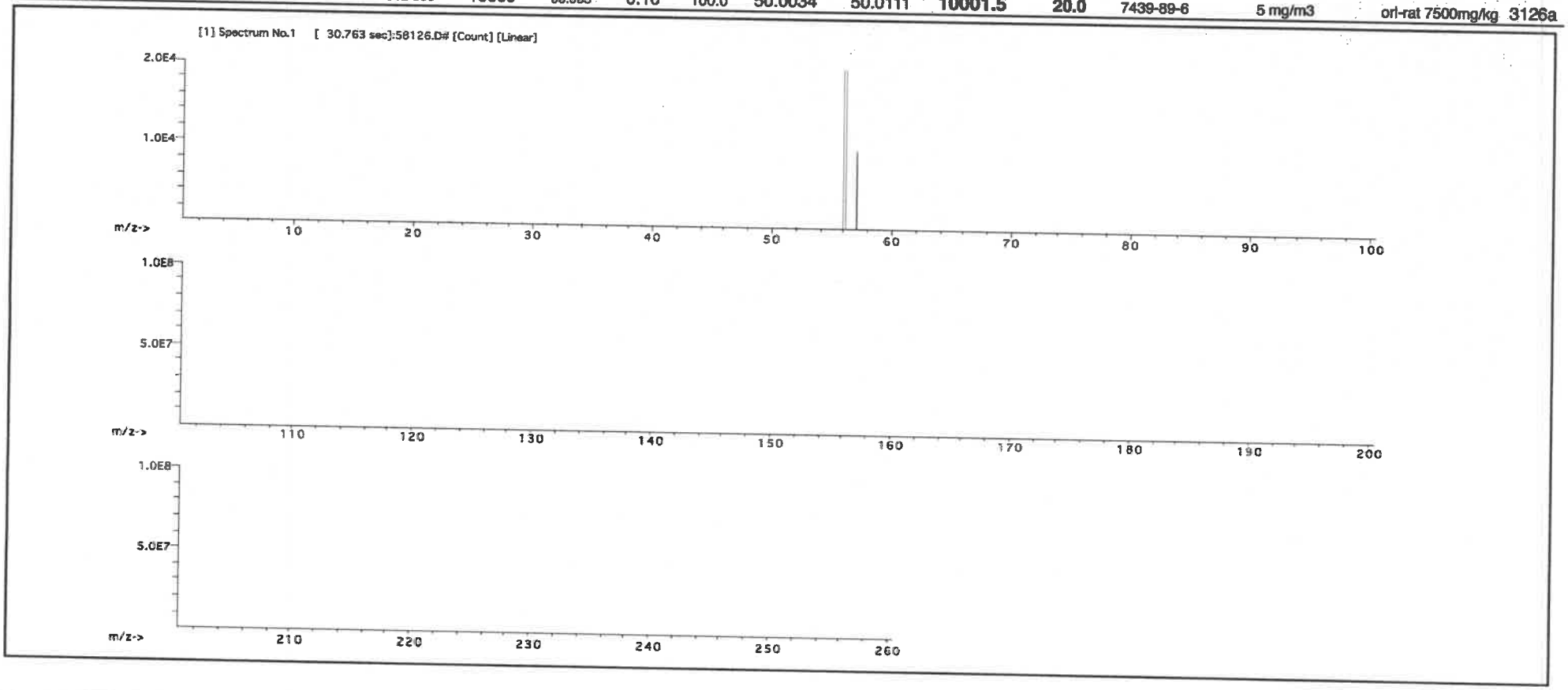
Weight shown below was diluted to (mL): 5000.1

	Lot #		
Solvent:	20510011	Nitric Acid	
7.0%	350.0 (mL)	Nitric Acid	
5E-05	Balance Uncertainty		
0.12	Flask Uncertainty		

Giovanni Esposito

Formulated By:	Giovanni Esposito	092122
Reviewed By:	Pedro L. Rentas	092122

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 (Fe)	IN346	2224912-500	10000	99.995	0.10	100.0	50.0034	50.0111	**10001.5**	**20.0**	7439-89-6	5 mg/m3	orl-rat 7500mg/kg	3126a



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

Trace Metals Verification by ICP-MS (µg/mL)																			
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.10	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	<0.05	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.10	Ge	<0.10	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.05
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:

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).

RD: 06/12/2023, M5581, M5582, M5583, M5584, M5585

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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AR-1539 Certificate Number
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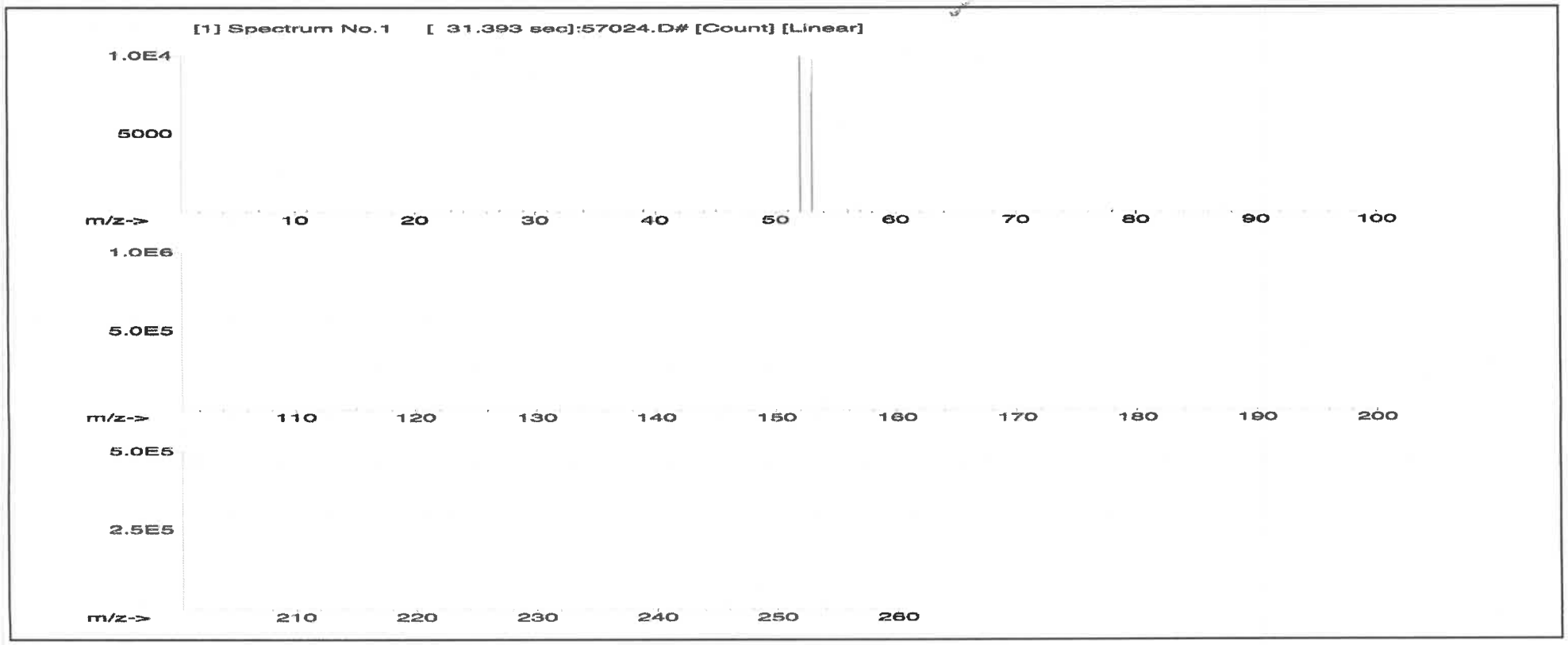
CERTIFIED WEIGHT REPORT:

		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



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.
* All standard containers are meticulously cleaned prior to use.
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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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M5697 R: 10/27/23

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CERTIFIED WEIGHT REPORT:

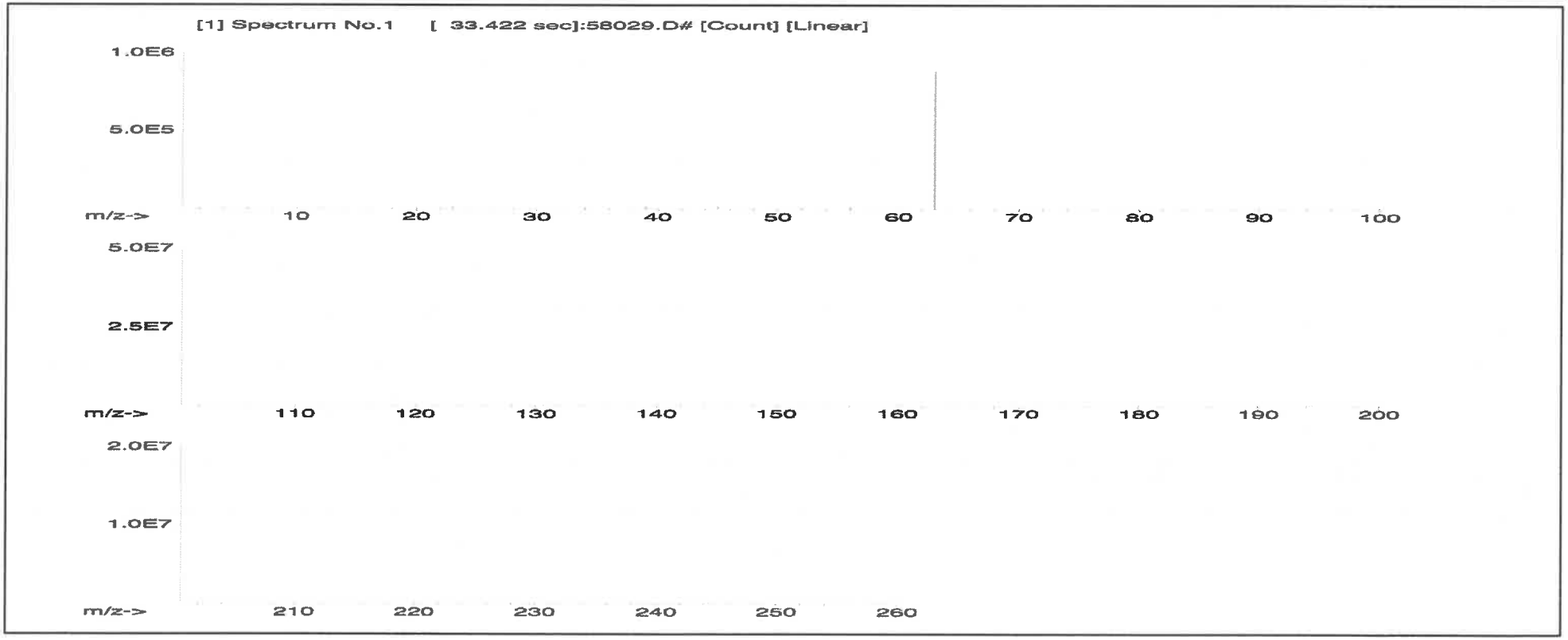
		Lot #	Solvent:
Part Number:	**58029**	24002546	Nitric Acid
Lot Number:	**102523**		
Description:	**Copper (Cu)**		

2.0%	40.0 (mL)	Nitric Acid	

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

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

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



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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* 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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M5648 R: 10/27/23

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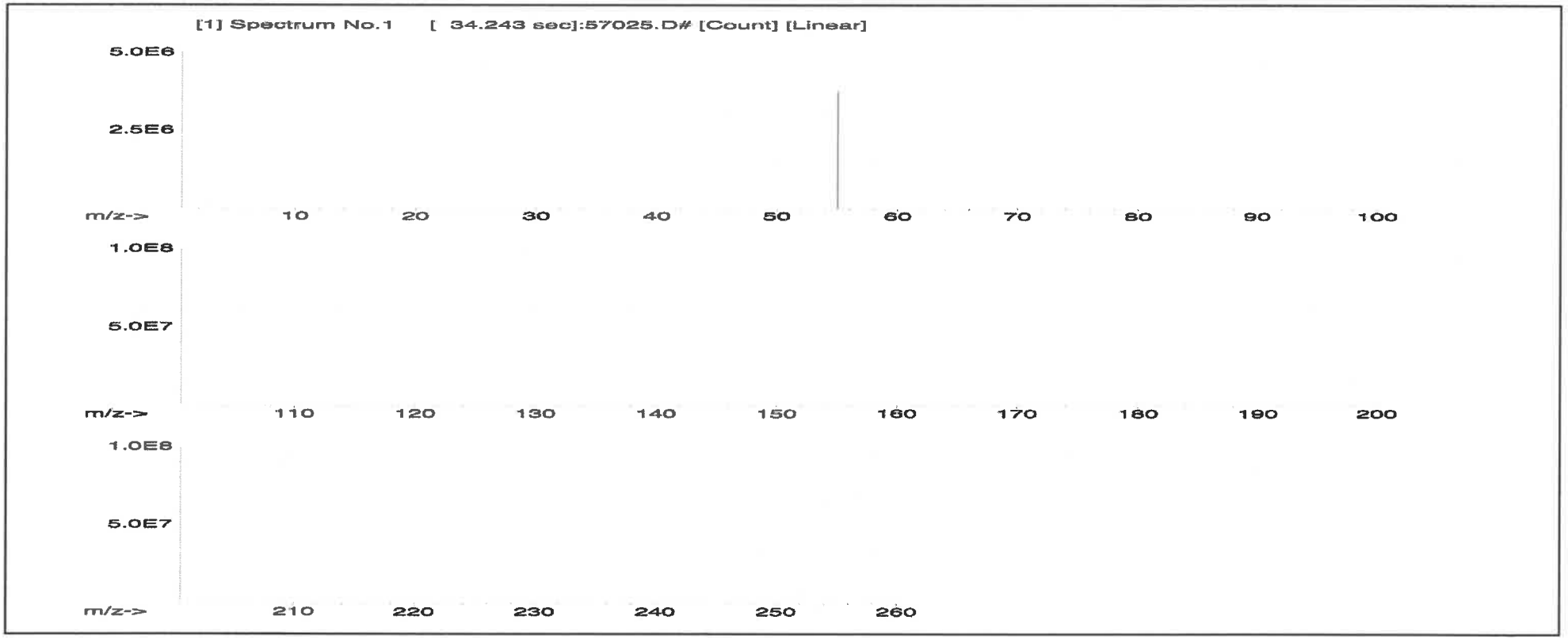
CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:
Part Number:	**58025**	24002546	Nitric Acid
Lot Number:	**102623**		
Description:	**Manganese (Mn)**		
		2.0%	60.0 (mL) Nitric Acid
Expiration Date:	102626		
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:	Benson Chan	102623
Reviewed By:	Pedro L. Rentas	102623

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. Manganese(II) nitrate tetrahydrate (Mn)	58125	071123	0.1000	300.0	0.084	1000	10000.1	**1000.0**	**2.1**	20694-39-7	5 mg/m3	orl-rat >300mg/kg	3132



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:

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R: 12/20/23 M5747

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CERTIFIED WEIGHT REPORT:

Part Number: 57082
Lot Number: 100923
Description: Lead (Pb)

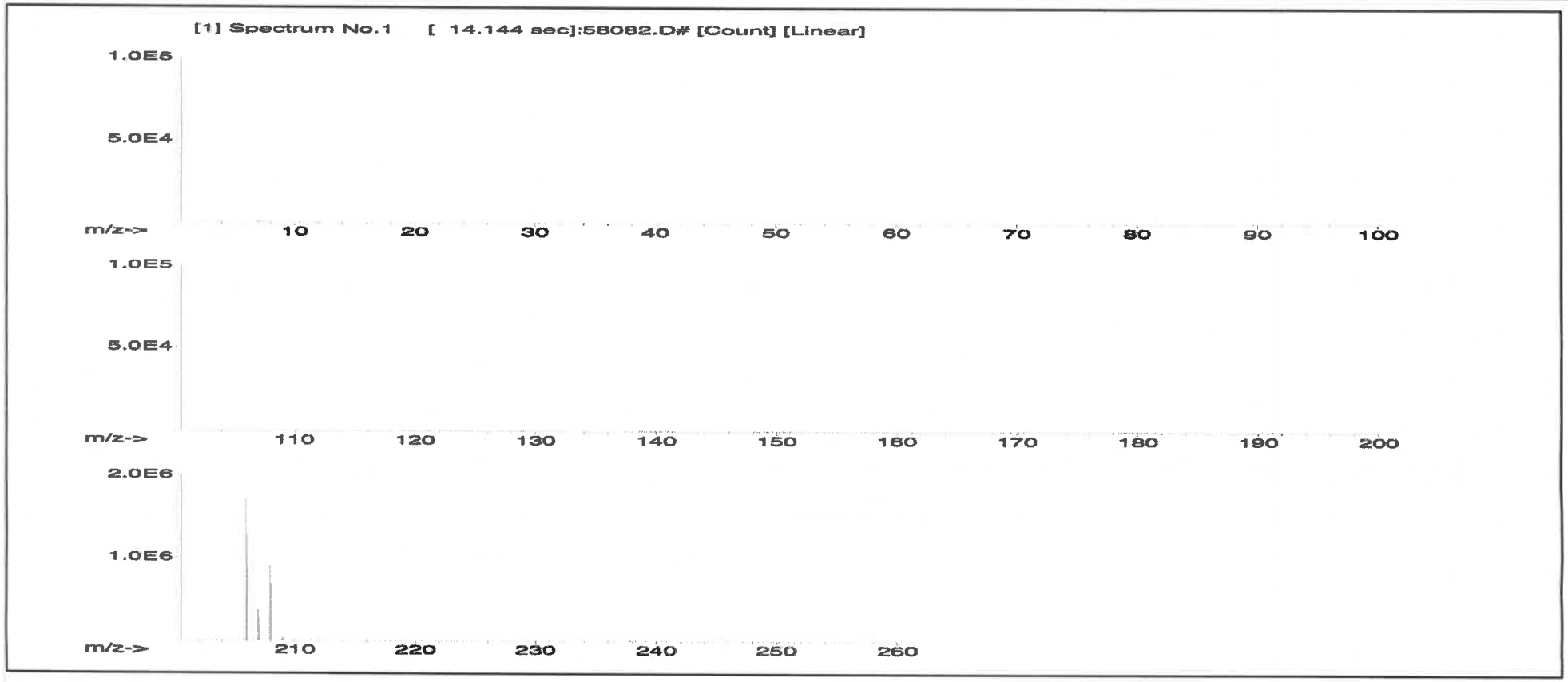
Expiration Date: 100926
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 3000.41

		5E-05	Balance Uncertainty
		0.06	Flask Uncertainty

	Lot #	
Solvent:	24002546	Nitric Acid
2%	60.0 (mL)	Nitric Acid

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



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:

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

Certified by:

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R: 12/20/23 M5748

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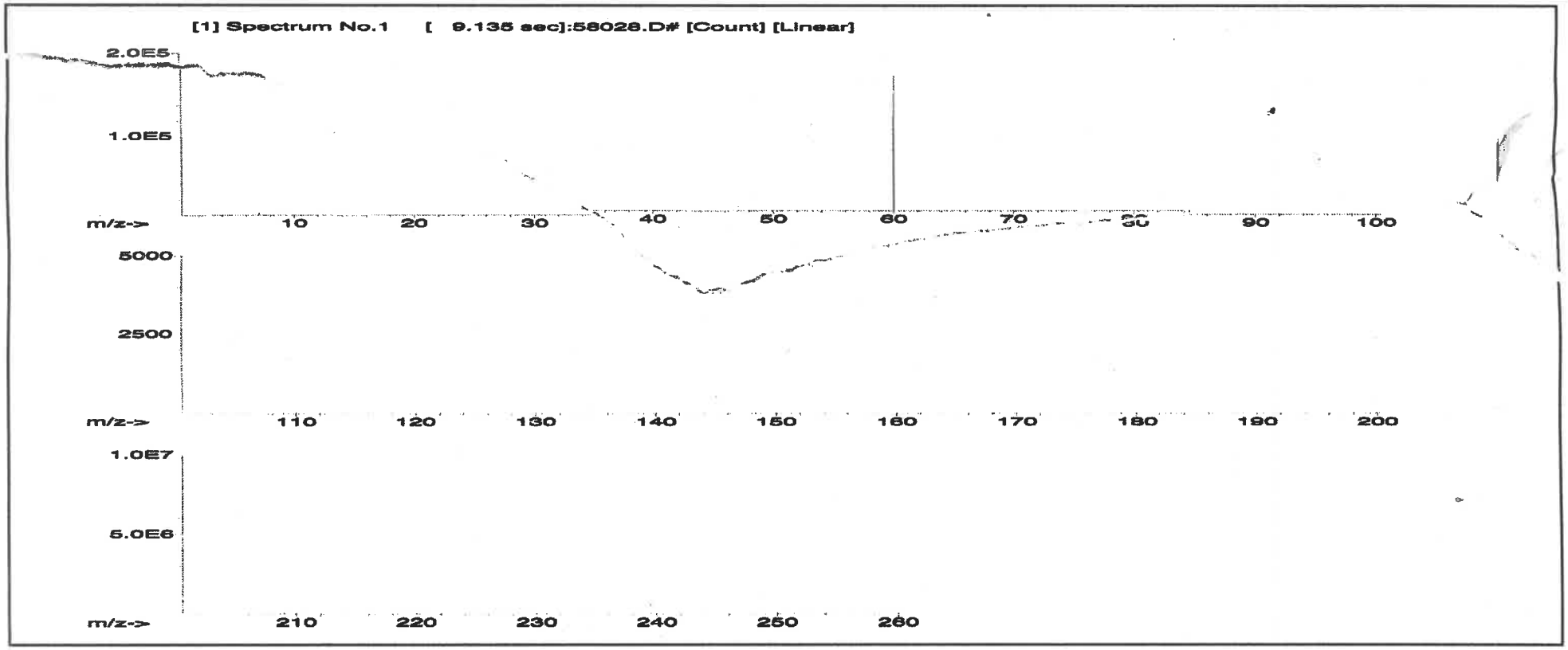
CERTIFIED WEIGHT REPORT:

		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



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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* 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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M5768 M5769 BP R:1/3/24

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CERTIFIED WEIGHT REPORT:

Part Number: 58112
Lot Number: 091823
Description: Magnesium (Mg)

Expiration Date: 091826
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 2000.02

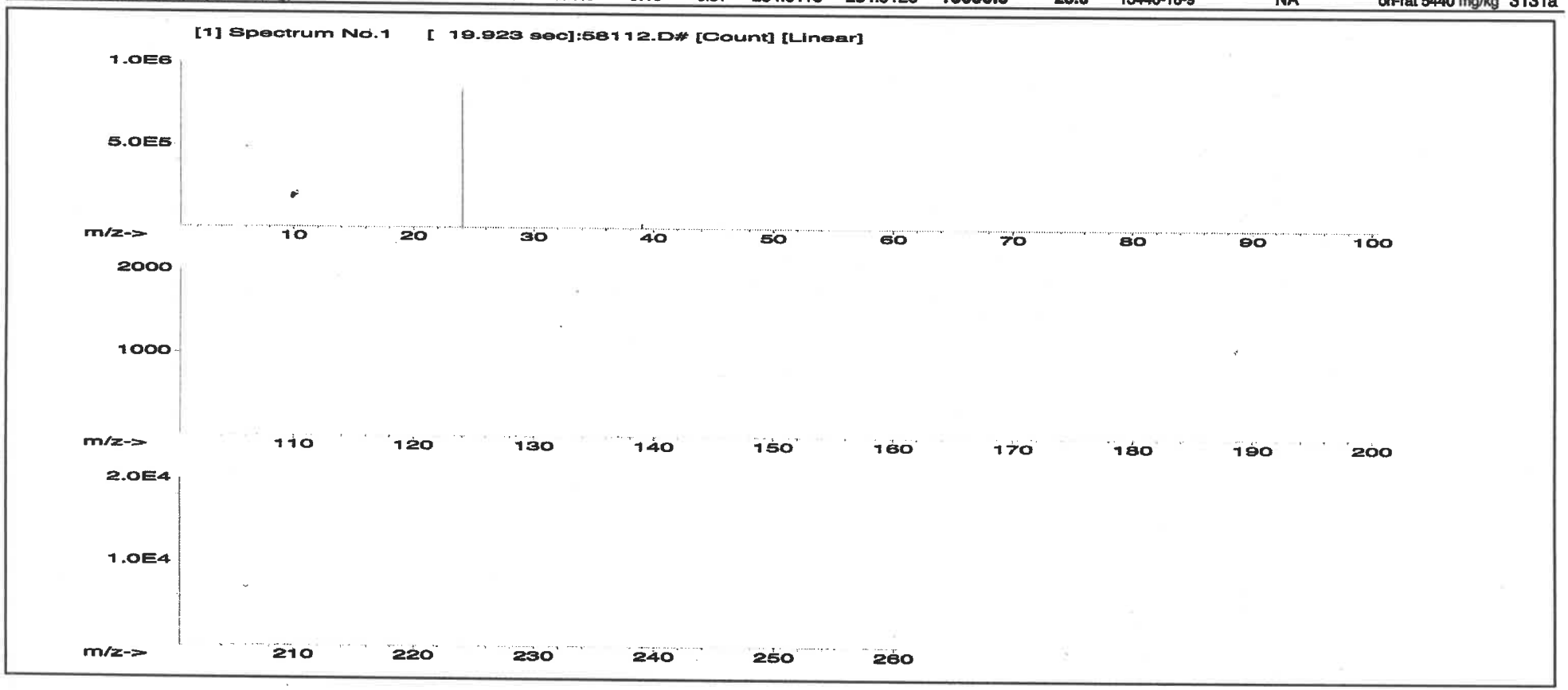
		Lot #	
Solvent:		24002546	Nitric Acid
	2%	40.0 (mL)	Nitric Acid

M5768, M5769 BP R: 1/3/24

5E-05 Balance Uncertainty
0.058 Flask Uncertainty

Formulated By:	Lawrence Barry	091823
Reviewed By:	Pedro L. Rentas	091823

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	234.9118	234.9126	**10000.0**	**20.0**	13446-18-9	NA	orl-rat 5440 mg/kg	3131a



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:

Certified by:

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

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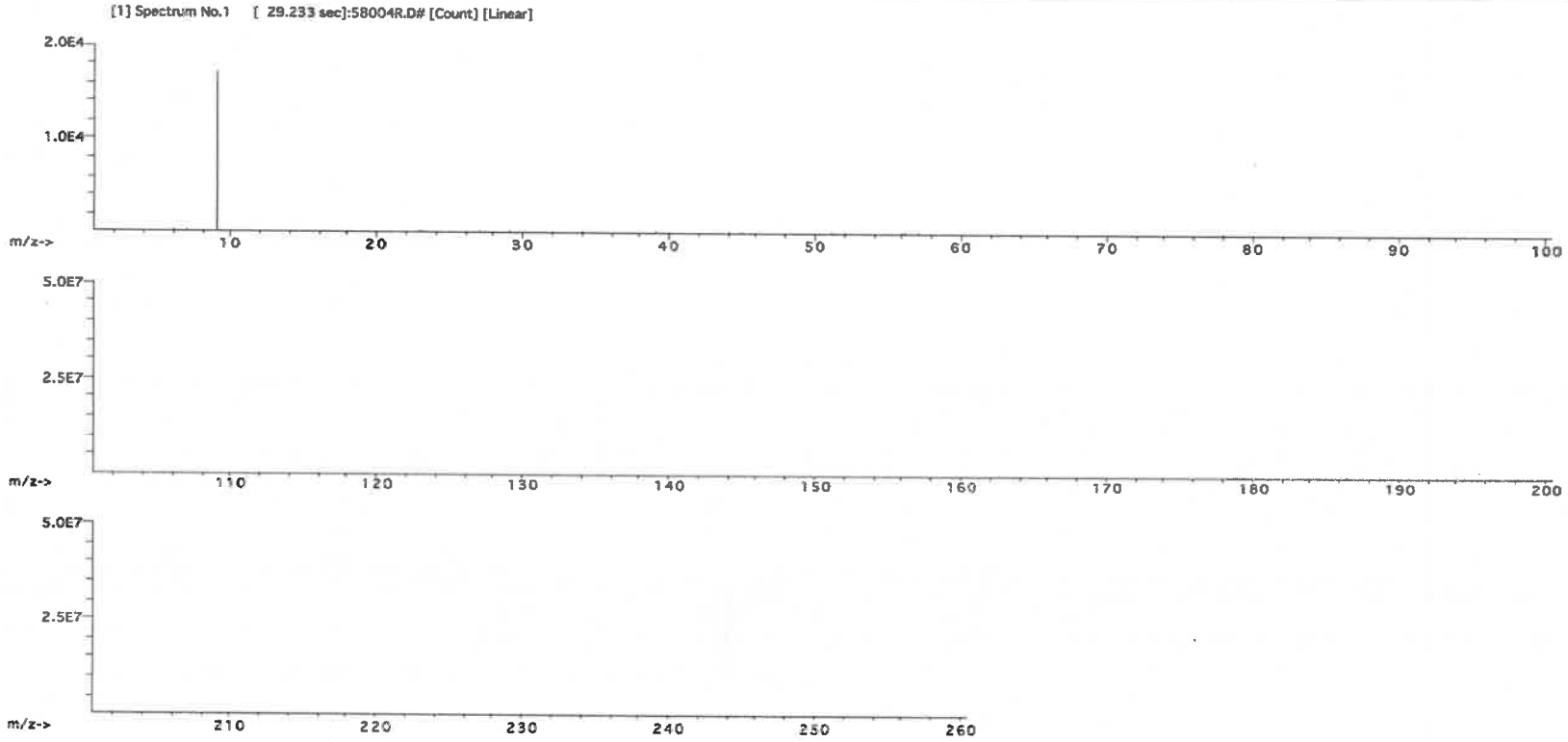
CERTIFIED WEIGHT REPORT:

		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



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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CERTIFIED WEIGHT REPORT:

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

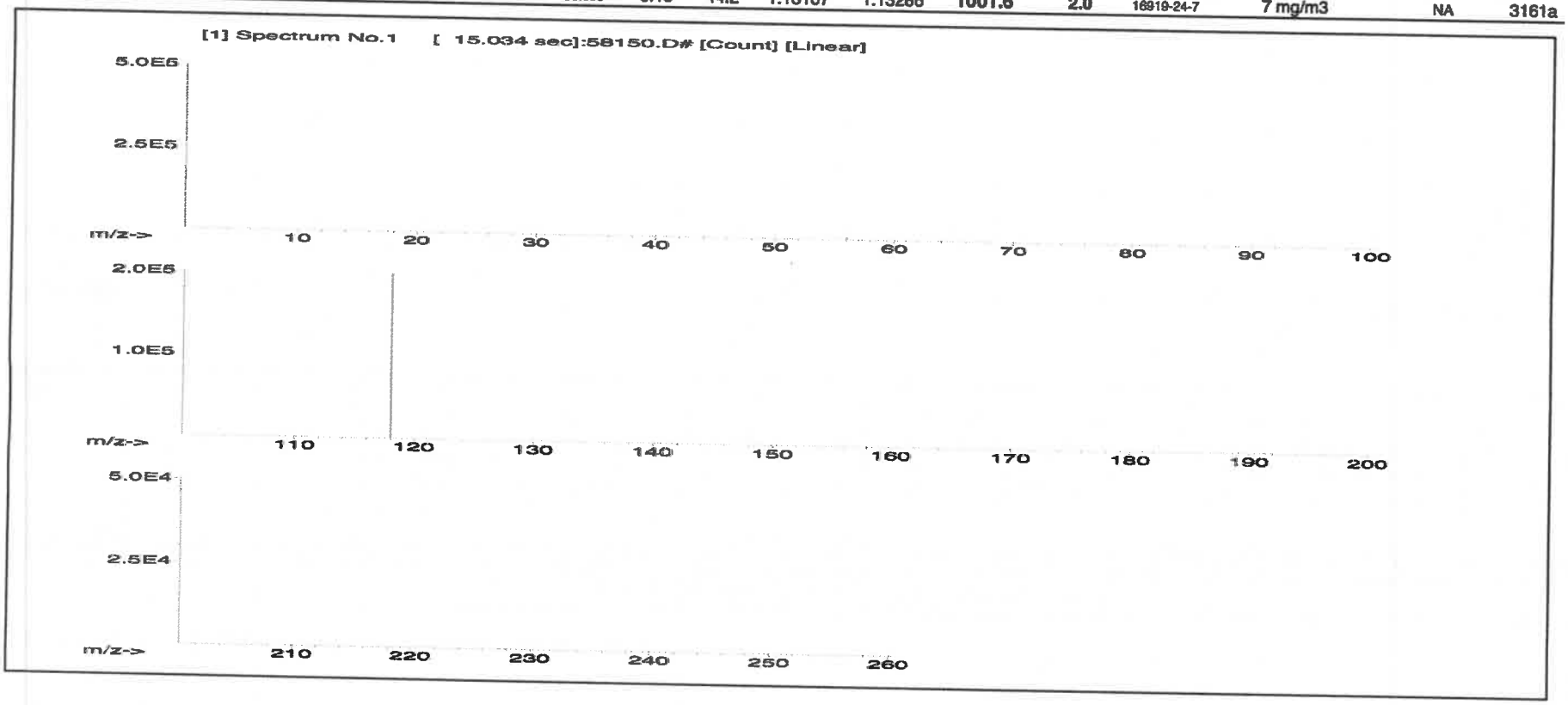
Expiration Date: 071126
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 499.93

	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



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 WEIGHT REPORT:

		Lot #	Solvent:
Part Number:	57027	24002546	Nitric Acid
Lot Number:	091923		
Description:	Cobalt (Co)		

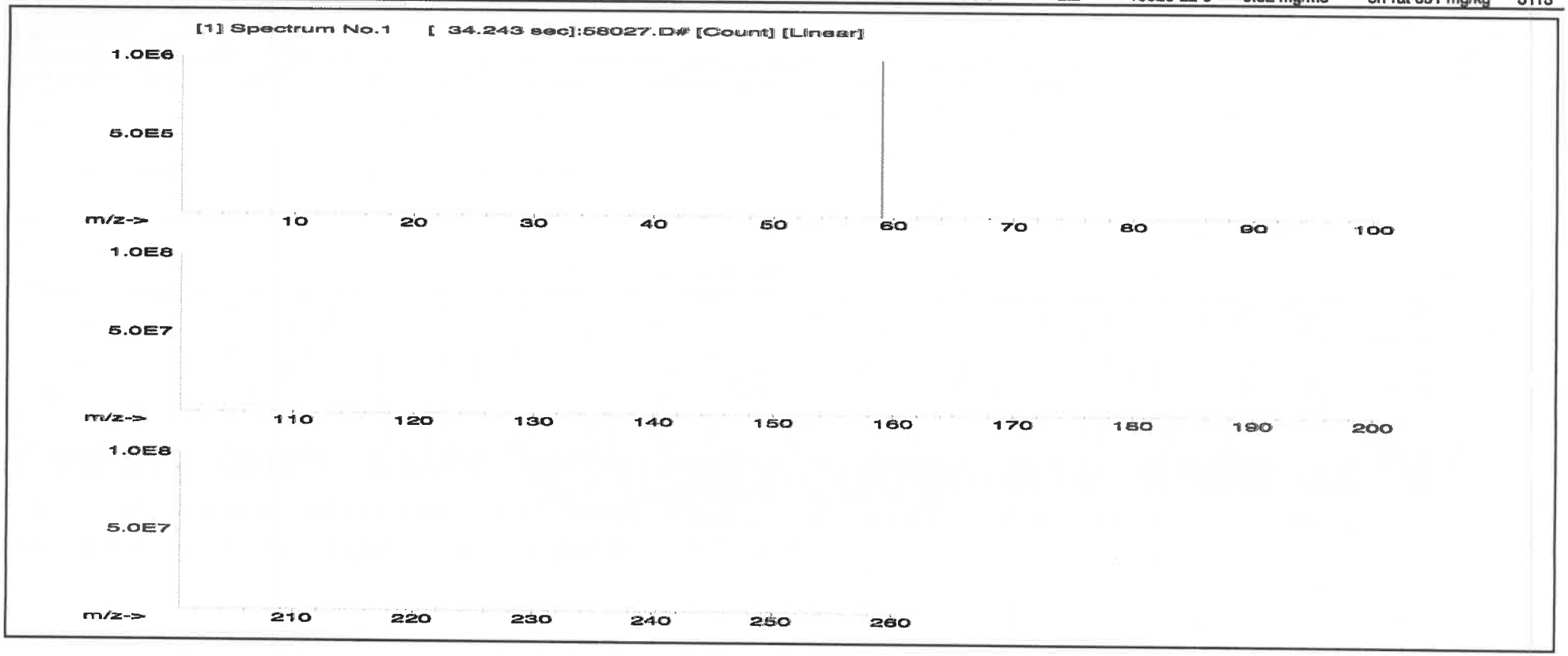
		2.0%	40.0 (mL)	Nitric Acid

Expiration Date:	091926
Recommended Storage:	Ambient (20 °C)
Nominal Concentration (µg/mL):	1000
NIST Test Number:	6UTB

Volume shown below was diluted to (mL): 2000.02 — 5E-05 Balance Uncertainty; 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



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:

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

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CERTIFIED WEIGHT REPORT:

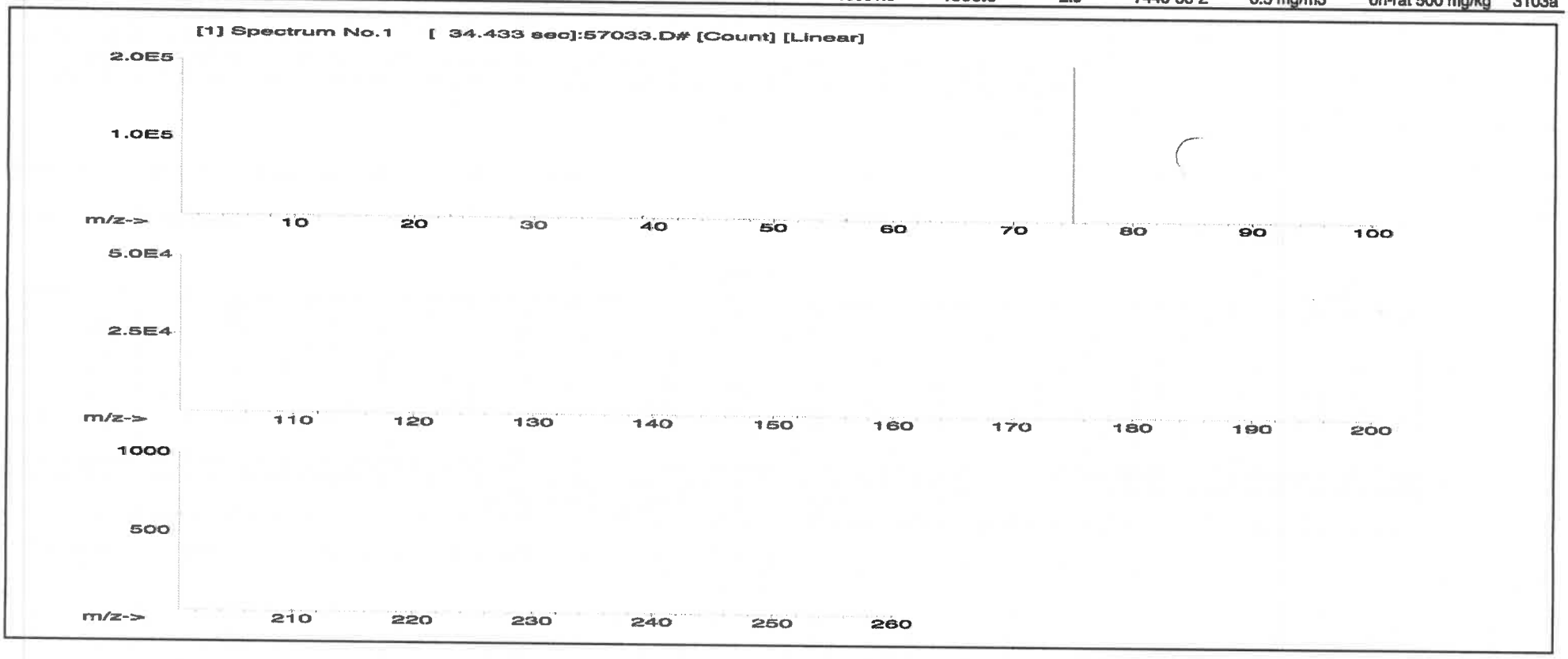
		Lot #	Solvent:
Part Number:	**57033**	24002546	Nitric Acid
Lot Number:	**111323**		
Description:	**Arsenic (As)**		

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



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)

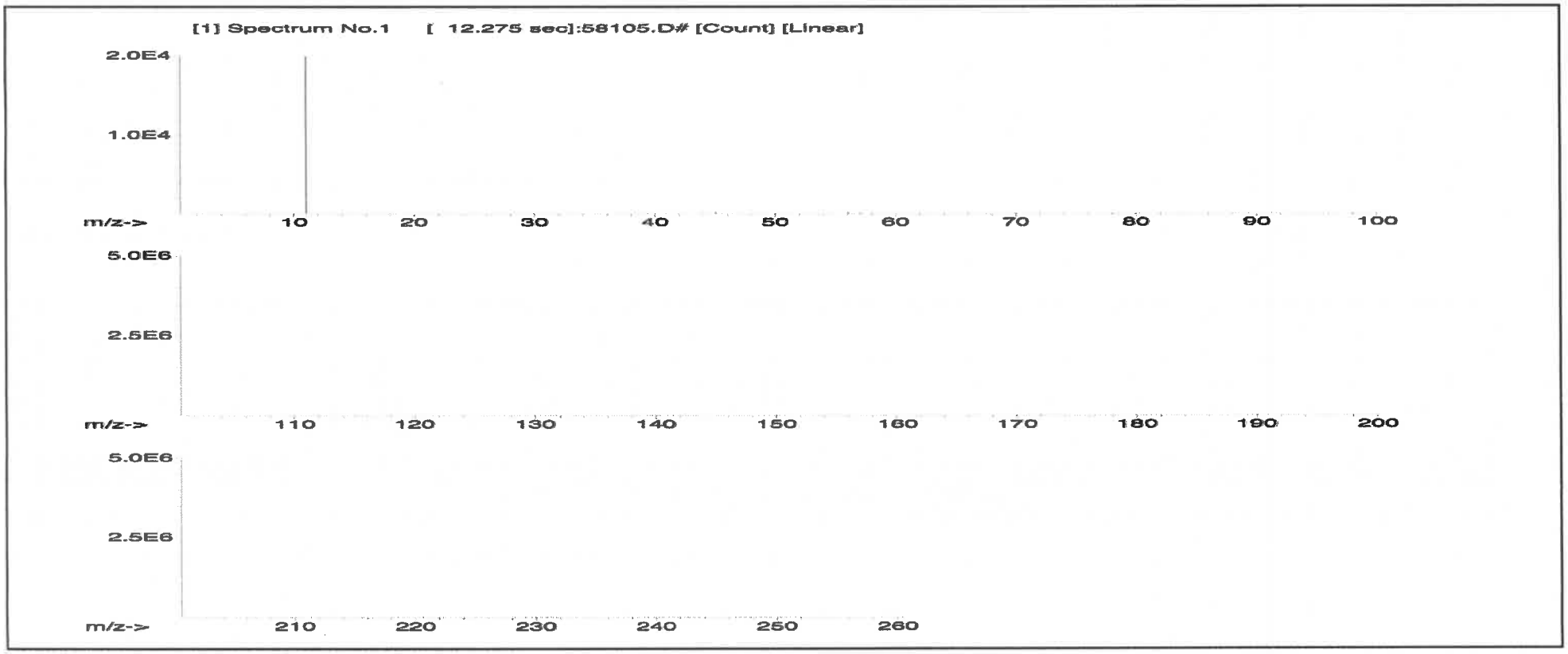
Expiration Date: 071126
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

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



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.
* 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 WEIGHT REPORT:

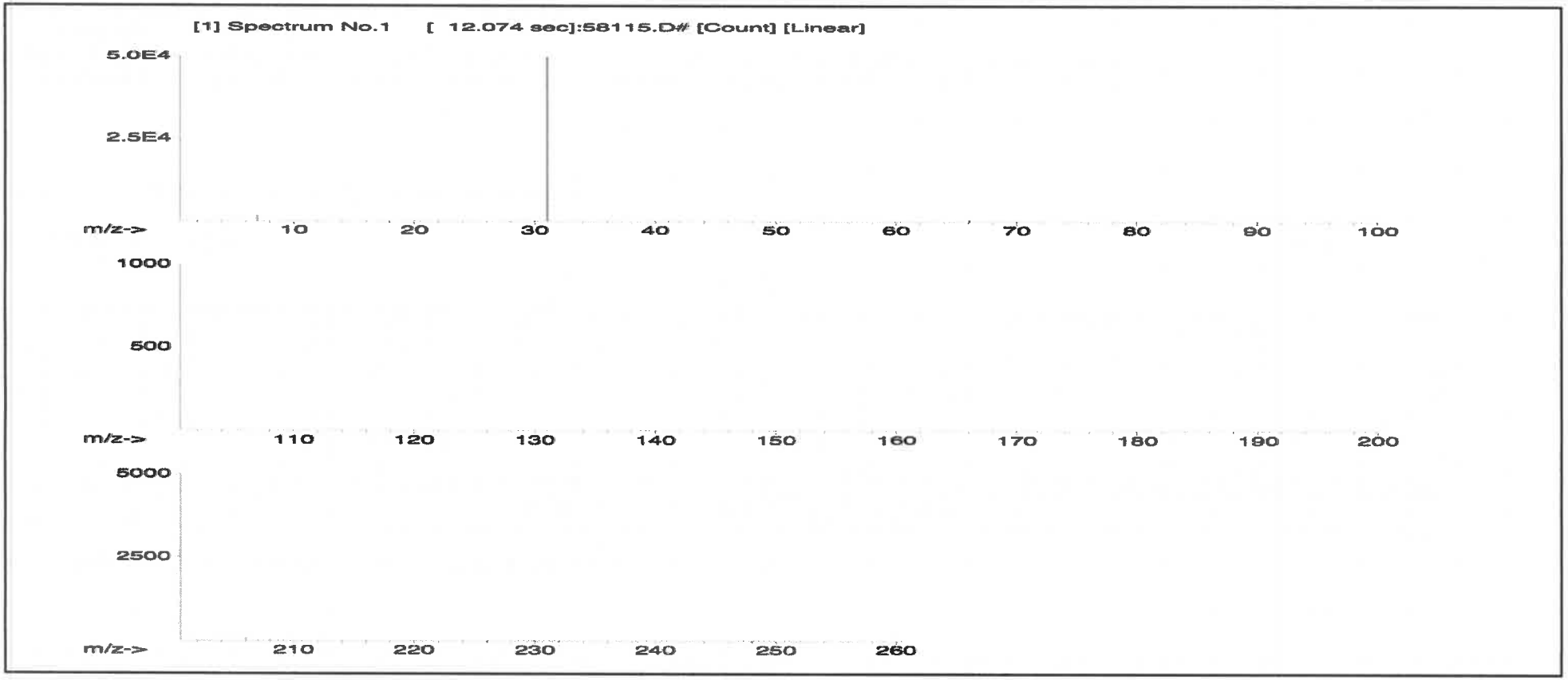
Part Number: 57115
Lot Number: 041723
Description: Phosphorous (P)

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

	Lot #	
Solvent:	21110221	Nitric Acid
2%	40.0 (mL)	Nitric Acid

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



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.

* 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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* 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:

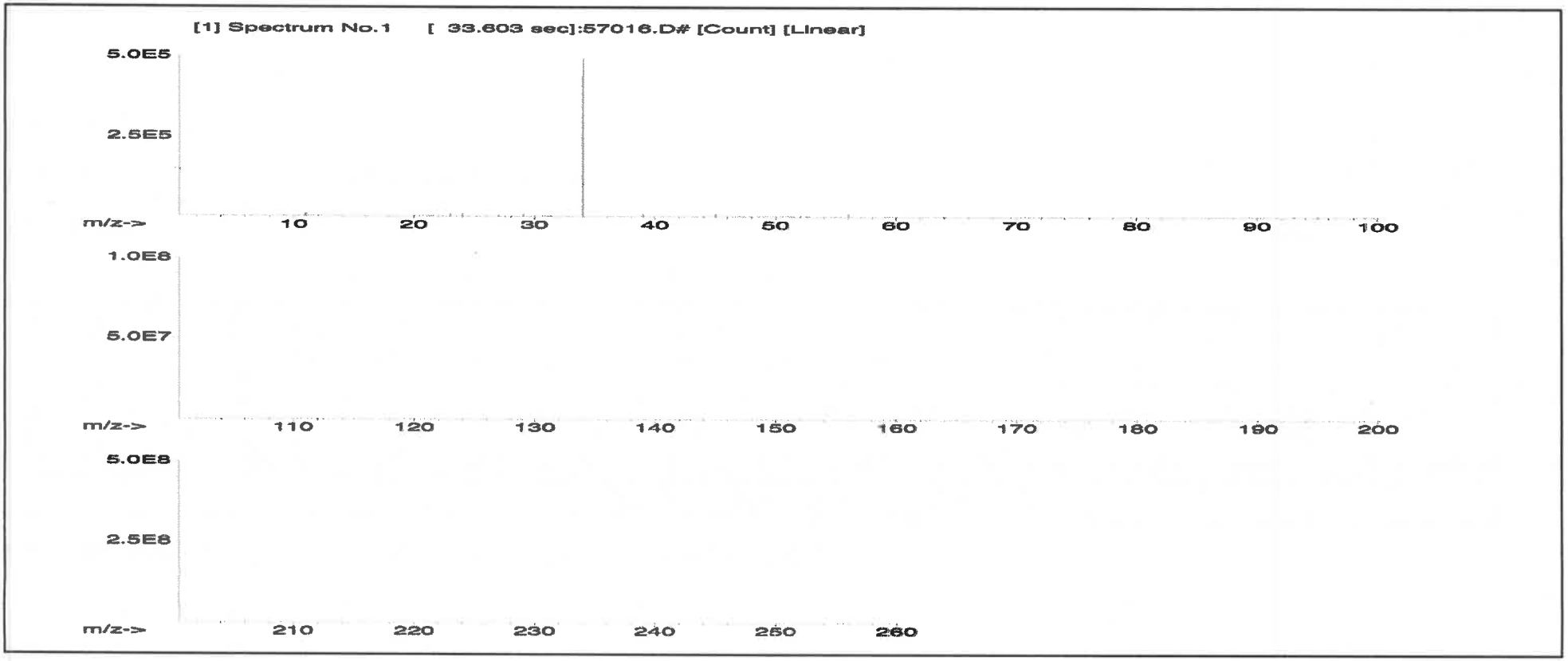
Part Number: 57016
Lot Number: 122923
Description: Sulfur (S)

Expiration Date: 122926
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB 5E-05 Balance Uncertainty
Weight shown below was diluted to (mL): 4000.0 0.06 Flask Uncertainty

Solvent: Lot # 122923 ASTM Type 1 Water

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)	CAS#	SDS Information (Solvent Safety Info. On Attached pg.) 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



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:

* 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:

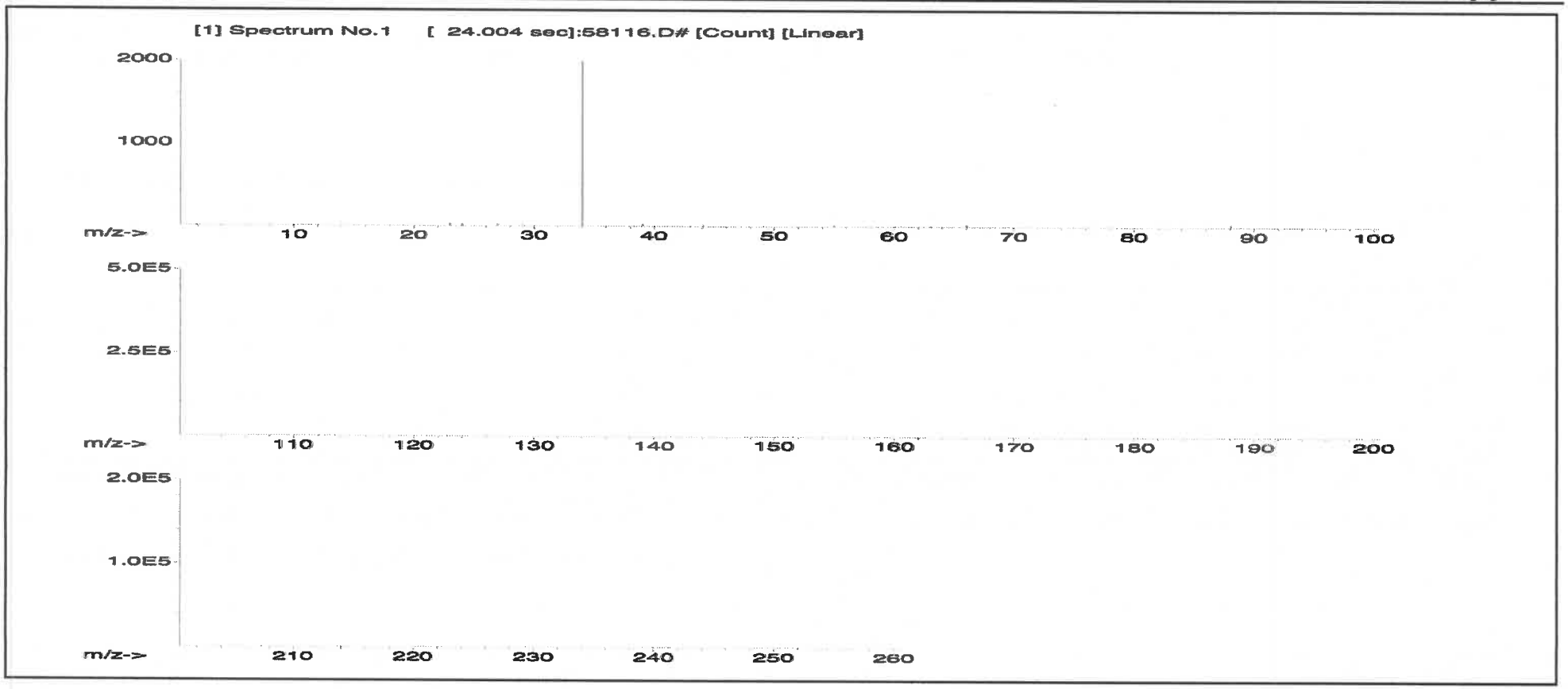
Part Number: 57116
Lot Number: 071123
Description: Sulfur (S)

Solvent: Lot # 071123 ASTM Type 1 Water

Formulated By:	Lawrence Barry	071123
Reviewed By:	Pedro L. Rentas	071123

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

	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



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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* 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:

Part Number: 57014
Lot Number: 122023
Description: Silicon (Si)

Expiration Date: 122026
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 1999.48

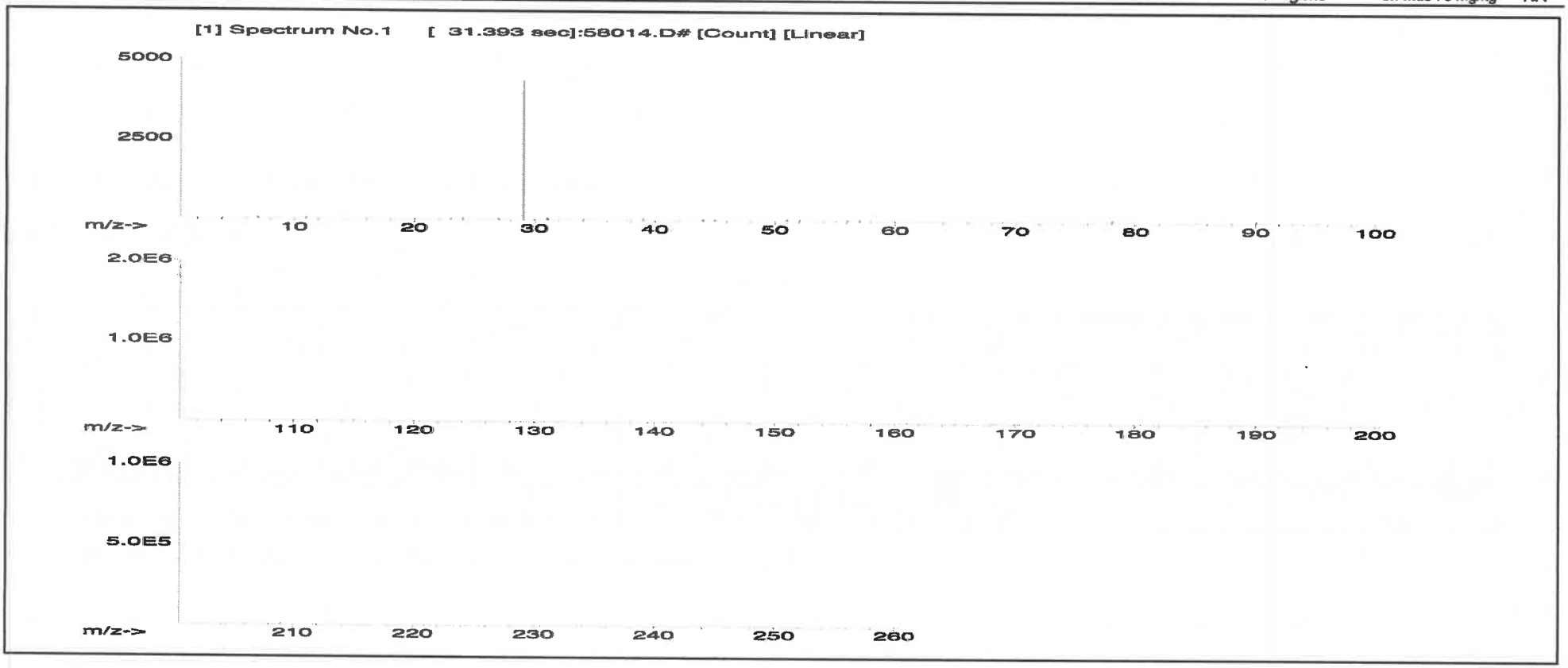
	Lot #	
Solvent:	24002546	Nitric Acid
2%	40.0 (mL)	Nitric Acid

5E-05 Balance Uncertainty
0.058 Flask Uncertainty

Aleah O'Brady

Formulated By:	Aleah O'Brady	122023
Reviewed By:	Pedro L. Rentas	122023

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 hexafluorosilicate (Si)	IN009	SID082022A1	1000	99.999	0.10	14.4	13.8854	13.8855	**1000.0**	**2.0**	16919-19-0	2.5 mg/m3	orl-mus 70 mg/kg	NA



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	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:

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

Certified by:

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* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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CERTIFIED WEIGHT REPORT:

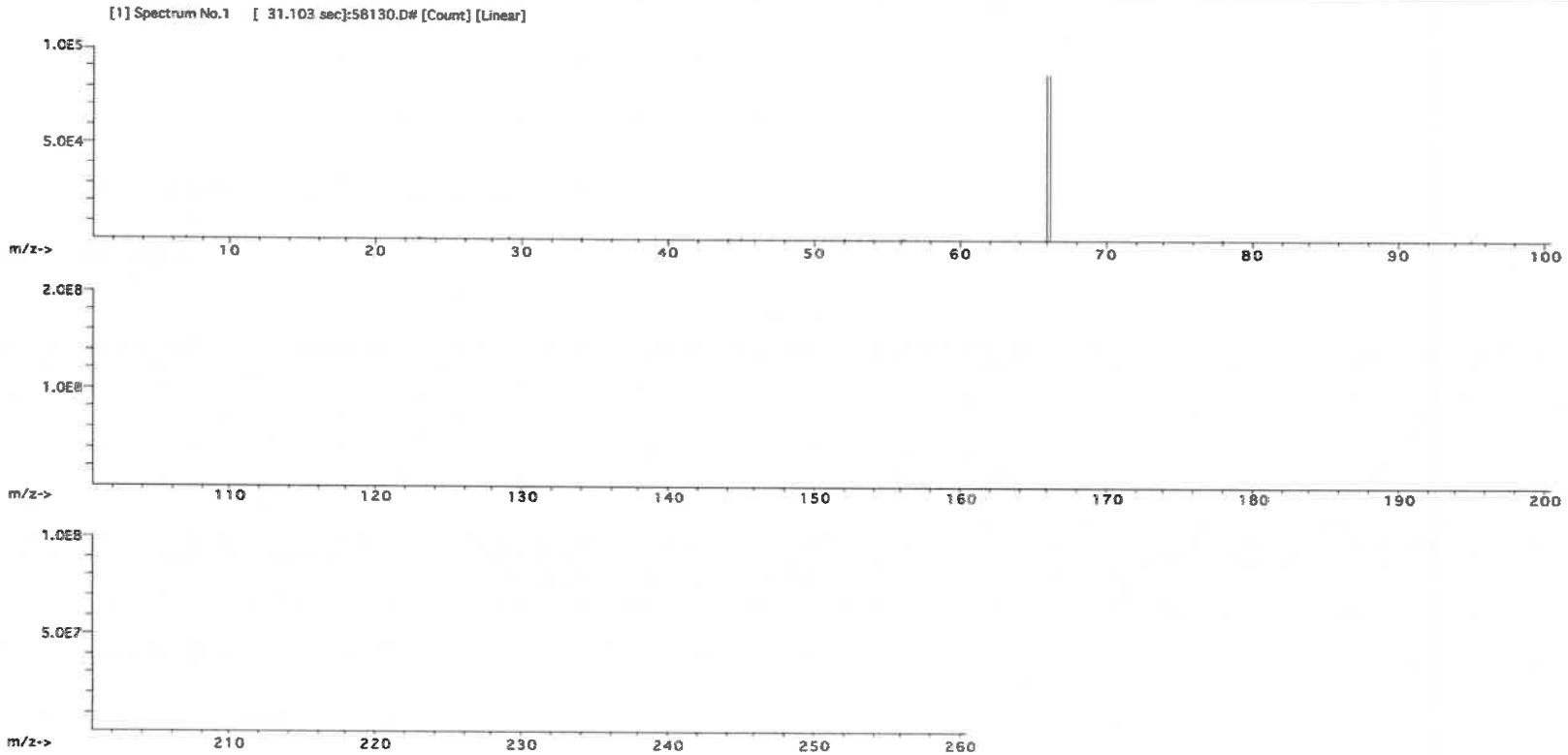
Part Number: 58030
Lot Number: 111623
Description: Zinc (Zn)

Expiration Date: 111626
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB 5E-05 Balance Uncertainty
Weight shown below was diluted to (mL): 3000.4 0.06 Flask Uncertainty

	Lot #	
Solvent:	24002546	Nitric Acid
2%	60.0 (mL)	Nitric Acid

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



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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* 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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R: 02/09/24 M5820

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CERTIFIED WEIGHT REPORT:

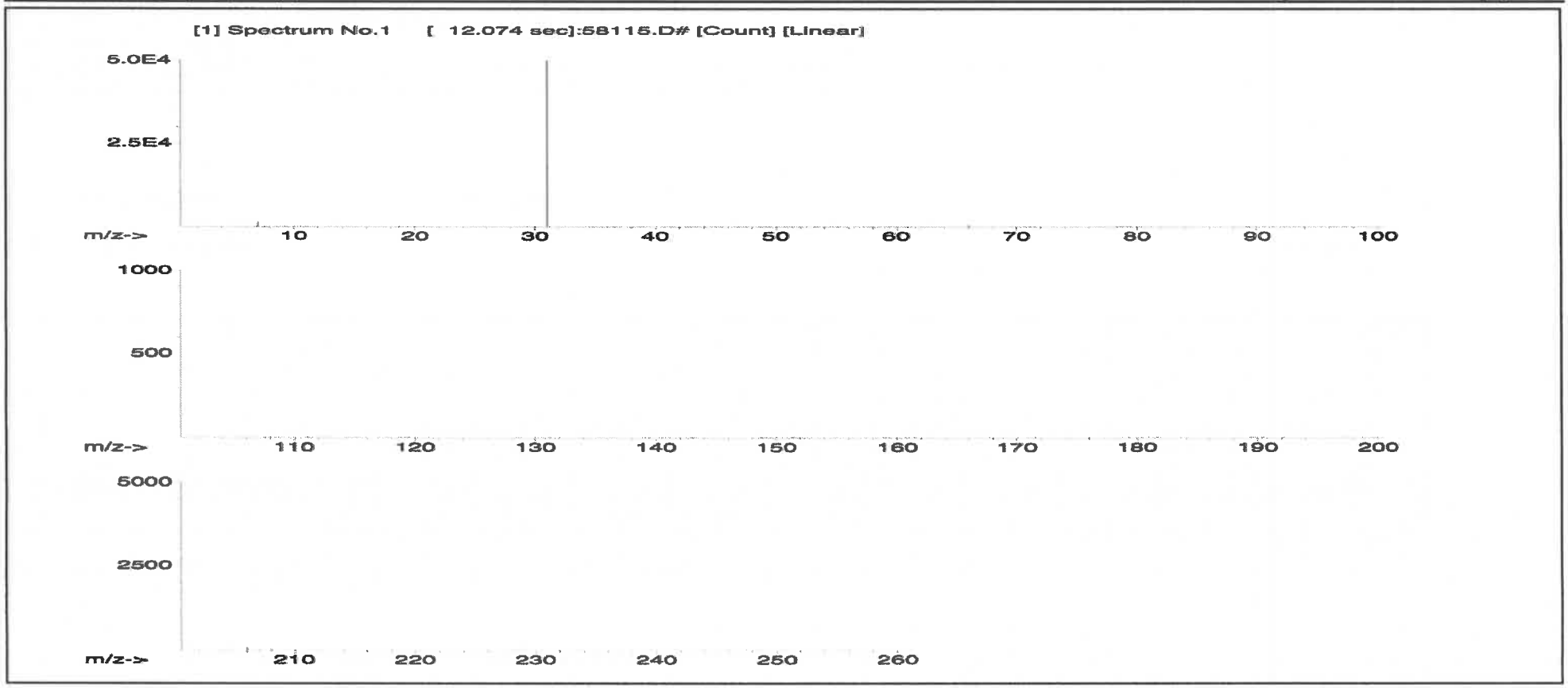
Part Number: 57015
Lot Number: 091123
Description: Phosphorous (P)
Expiration Date: 091126
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 2000.02

		5E-05	Balance Uncertainty
		0.058	Flask Uncertainty

	Lot #	
Solvent:	24002546	Nitric Acid
2%	40.0 (mL)	Nitric Acid

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



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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M5959 R: 6/14/24.

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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 (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

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.

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

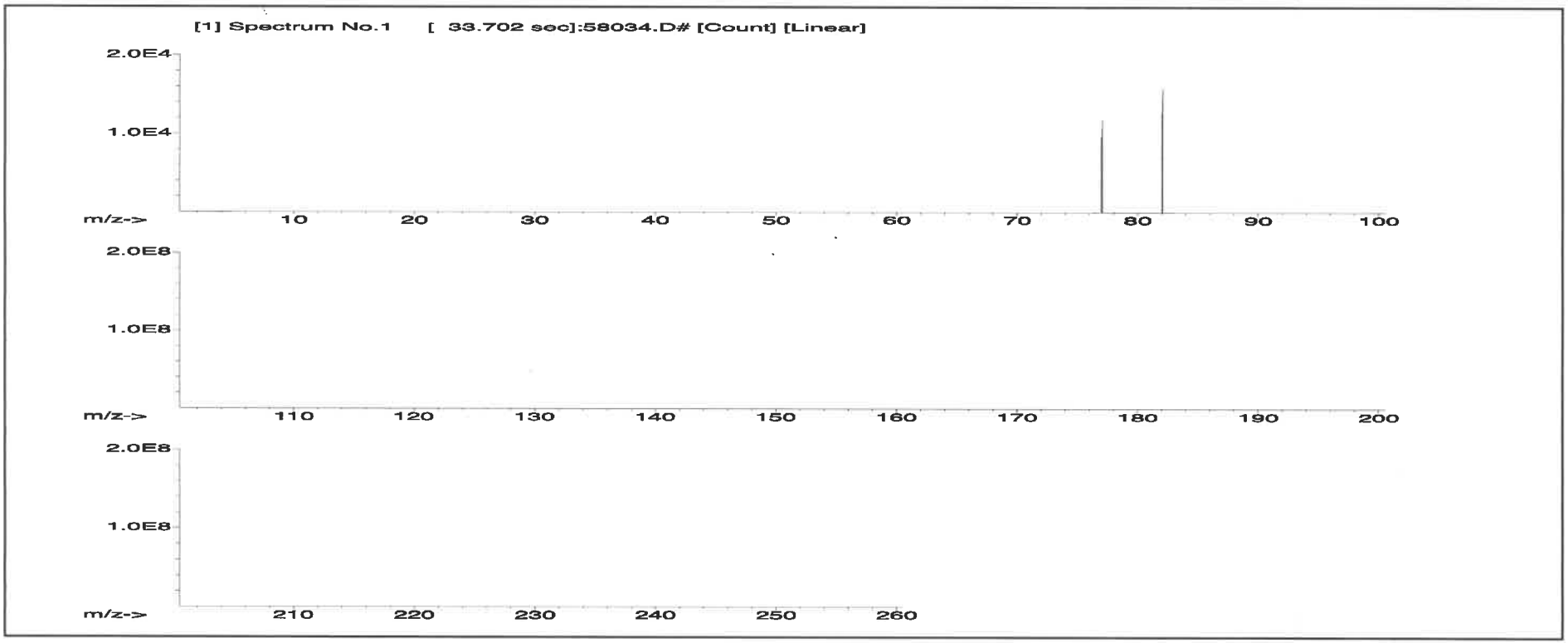
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

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



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.
* 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

M5970, M5971 R: 7/01/24

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

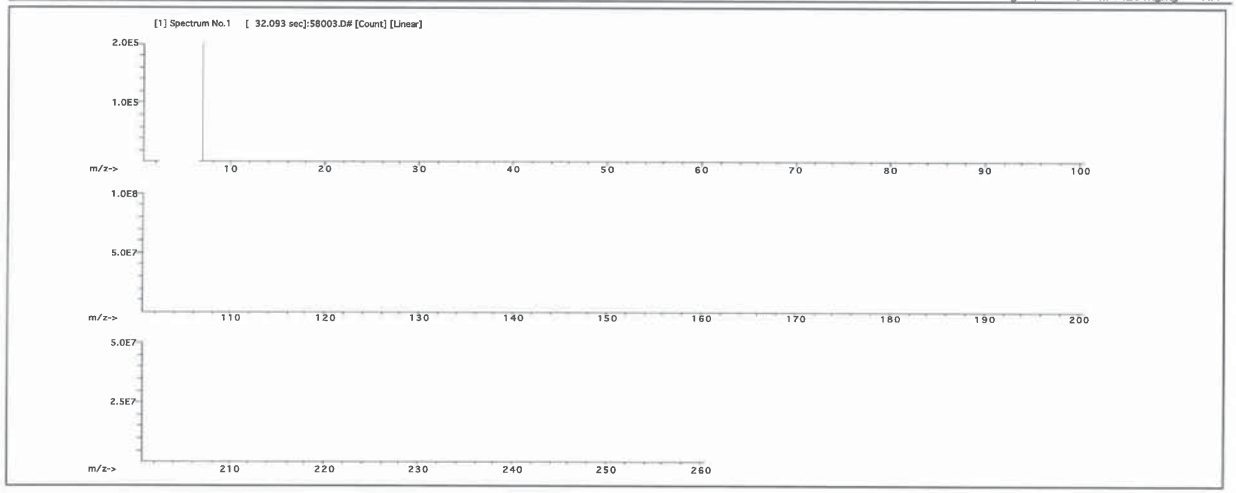
CERTIFIED WEIGHT REPORT:

		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



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).

M5978, M5979

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1.0 ACCREDITATION / REGISTRATION

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ACCREDITED Testing Laboratory Certificate 883.01 — ACCREDITED Reference Material Producer Certificate 883.02

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 (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

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.

M	Ag	<	0.000536	M	Eu	<	0.000268	O	Na	<	0.032670	M	Se		0.001204	O	Zn	<	0.003267
O	Al		0.000872	O	Fe		0.003225	O	Nb	<	0.043560	O	Si		0.004735	O	Zr	<	0.043560
M	As	<	0.008586	M	Ga	<	0.000268	M	Nd	<	0.000268	M	Sm	<	0.000268				
M	Au	<	0.004577	M	Gd	<	0.000268	O	Ni	<	0.010890	M	Sn		0.000096				
O	B	<	0.008929	M	Ge	<	0.002146	M	Os	<	0.000269	O	Sr		0.000096				
M	Ba	<	0.002683	M	Hf		0.002161	O	P	<	0.054450	M	Ta		0.010560				
M	Be	<	0.005366	M	Hg	<	0.003231	M	Pb	<	0.001073	M	Tb	<	0.000268				
M	Bi	<	0.001609	M	Ho	<	0.000268	M	Pd	<	0.000268	M	Te	<	0.001341				
O	Ca		0.000676	M	In	<	0.002683	M	Pr	<	0.000268	M	Th	<	0.053663				
M	Cd	<	0.000268	M	Ir	<	0.000269	M	Pt	<	0.000536	s	Ti	<					
M	Ce	<	0.000268	M	K		0.001172	M	Rb	<	0.000268	M	Tl	<	0.000268				
M	Co	<	0.004293	M	La	<	0.000268	M	Re	<	0.000268	M	Tm	<	0.000268				
M	Cr		0.000752	O	Li	<	0.027225	M	Rh	<	0.000268	M	U	<	0.000268				
M	Cs	<	0.000268	M	Lu	<	0.000268	M	Ru	<	0.000269	M	V	<	0.019855				
O	Cu	<	0.010890	O	Mg	<	0.005445	i	S	<		M	W		0.000473				
M	Dy	<	0.000268	O	Mn	<	0.003267	M	Sb	<	0.006976	M	Y	<	0.002146				
M	Er	<	0.000268	M	Mo		0.000774	O	Sc	<	0.004900	M	Yb	<	0.000536				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

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

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 47.87 +4 6 Ti(F)6-2

Chemical Compatibility - Soluble in concentrated HCl, HF, H3PO4 H2SO4 and HNO3. Avoid neutral to basic media. Unstable at ppm levels with metals that would pull F- away (i.e. Do not mix with Alkaline or Rare Earths or high levels of transition elements unless they are fluorinated). Stable with most inorganic anions with a tendency to hydrolyze forming the hydrated oxide in all dilute acids except HF.

Stability - 2-100 ppb levels stable (Alone or mixed with all other metals) as the Ti(F)6-2 for months in 1% HNO3 / LDPE container. 1-10,000 ppm single element solutions as the Ti(F)6-2 chemically stable for years in 2-5% HNO3 / trace HF in an LDPE container.

Ti Containing Samples (Preparation and Solution) - Metal (Soluble in H2O / HF caution -powder reacts violently); Oxide - low temperature history anatase or rutile (Dissolved by heating in 1:1:1 H2O / HF / H2SO4); Oxide - high temperature history (~800EC) brookite (fuse in Pt0 with K2S2O7); Ores (fuse in Pt0 with KF + K2S2O7 - no KF if silica not present); Organic Matrices (Dry ash at 450EC in Pt0 and dissolve by heating with 1:1:1 H2O / HF / H2SO4 or fuse ash with pyrosulfate if oxide is as plastic pigment and likely in brookite crystalline form).

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

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 48 amu	14 ppt	N/A	32S16O, 32S14N, 14N16O18O, 14N17N2, 36Ar12C, 48Ca, [96X=2 (where X = Zr, Mo, Ru)]
ICP-OES 323.452 nm	0.0054 / 0.00092 µg/mL	1	Ce, Ar, Ni
ICP-OES 334.941 nm	0.0038 / 0.000028 µg/mL	1	Nb, Ta, Cr, U
ICP-OES 336.121 nm	0.0053 / 0.000034 µg/mL	1	W, Mo, Co

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

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.869.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 17, 2022

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

11.2 Lot Expiration Date

- June 17, 2027

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

U5982 R: 6/11/24

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

CERTIFIED WEIGHT REPORT:

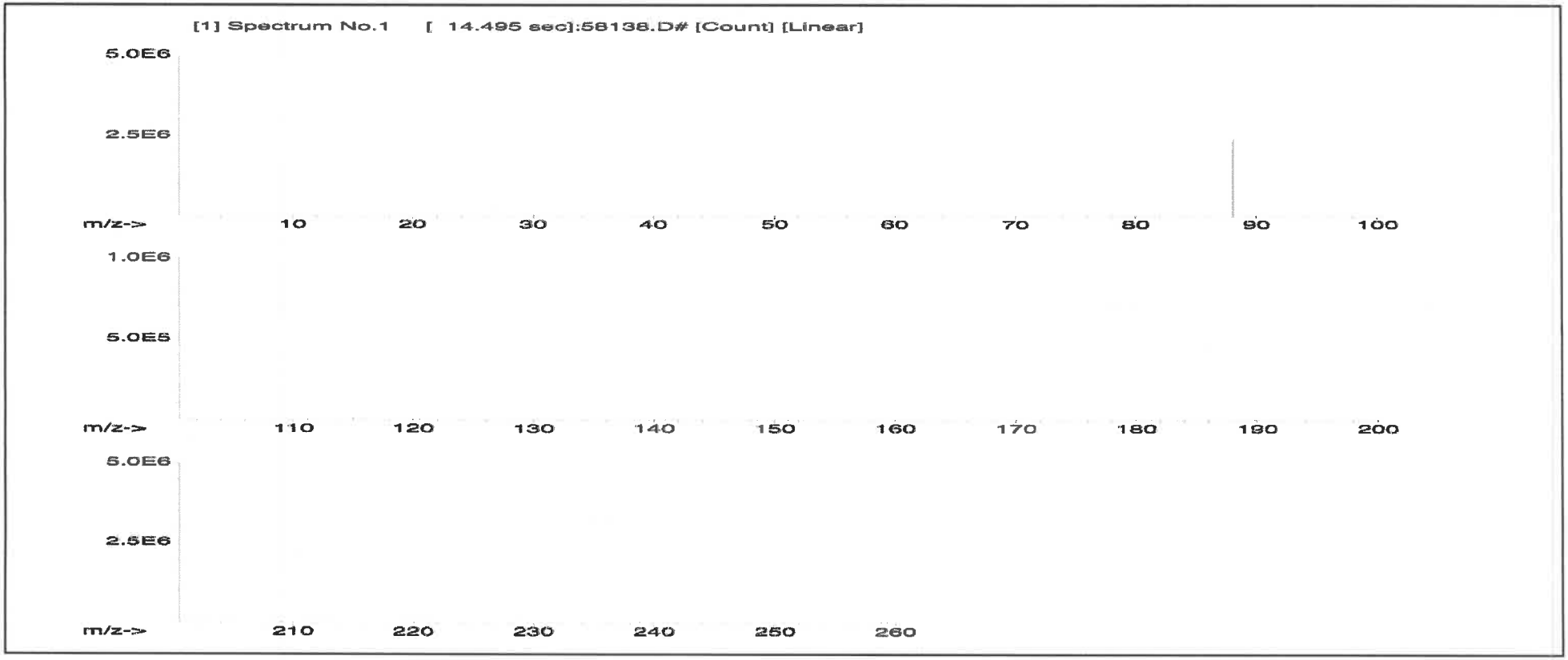
Part Number: 57038
Lot Number: 031524
Description: Strontium (Sr)

Expiration Date: 031527
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 2000.07

		Lot #	
Solvent:		24002546	Nitric Acid
	2%	40.0 (mL)	Nitric Acid
	5E-05	Balance Uncertainty	
	0.100	Flask Uncertainty	

Formulated By:	Benson Chan	031524
Reviewed By:	Pedro L. Rentas	031524

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	SDS Information (Solvent Safety Info. On Attached pg.) OSHA PEL (TWA)	LD50	NIST SRM
1. Strontium nitrate (Sr)	IN017	SRZ022018A1	1000	99.997	0.10	41.2	4.85470	4.85502	**1000.1**	**2.0**	10042-76-9	NA	orl-rat >2000mg/kg	3153a



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

Trace Metals Verification by ICP-MS (µg/mL)																			
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	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	T	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are 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

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Christiansburg, VA 24073 USA
inorganicventures.com

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F: 540-585-3012
info@inorganicventures.com

M5985
R: 6/14/24

1.0 ACCREDITATION / REGISTRATION

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

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 (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

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.

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

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

February 21, 2023

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

11.2 Lot Expiration Date

- February 21, 2028

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

R: 01/03/24 M6033

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

CERTIFIED WEIGHT REPORT:

			Lot #	
Part Number:	**58113**	**Solvent:**	20510011	Nitric Acid
Lot Number:	**011623**			
Description:	**Aluminum (Al)**			
		2%	40.0 (mL)	Nitric Acid
Expiration Date:	011626			
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	

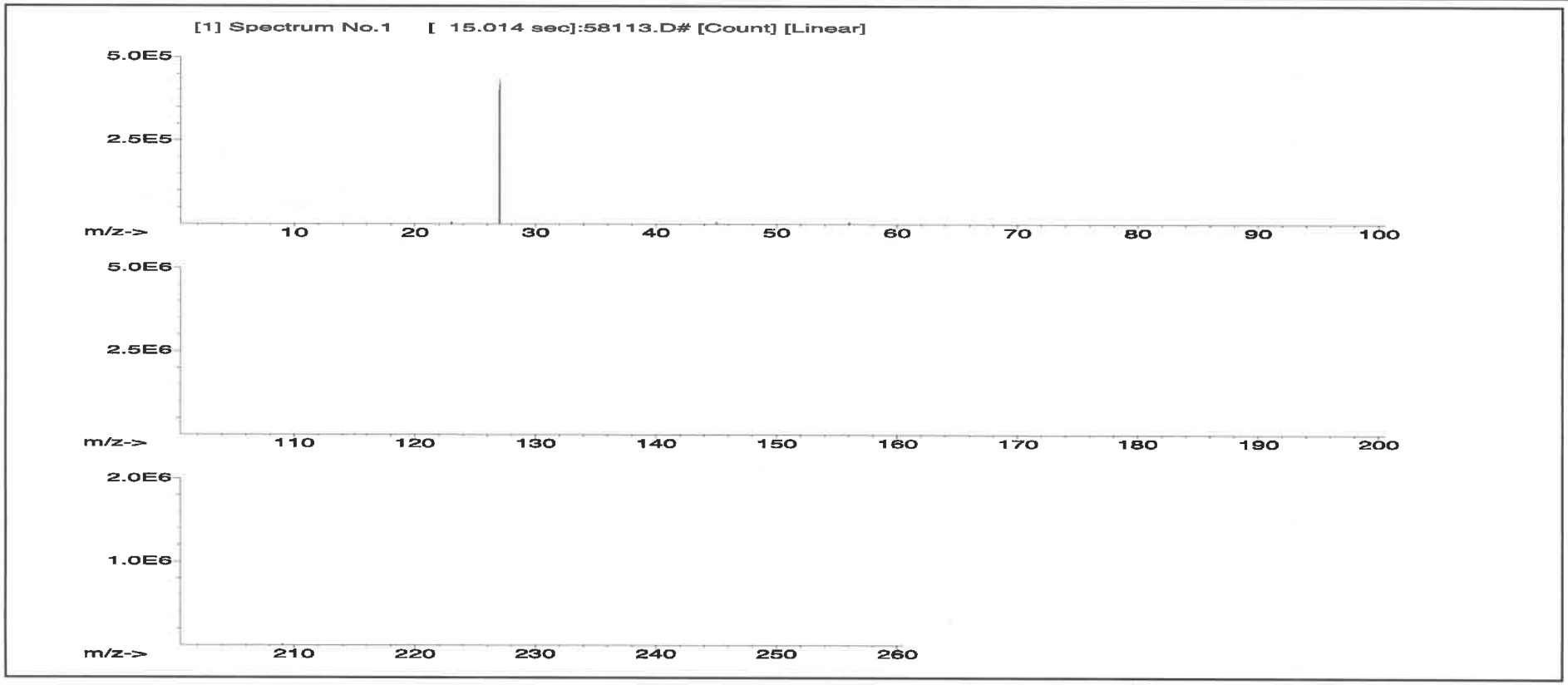
Giovanni Esposito

Formulated By:	Giovanni Esposito	011623

Pedro Rentas

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



Hydrochloric Acid, 36.5-38.0%
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis

avantor™ | J.T.Baker®

R → 10/13/24
Met dig

M 6/21

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

Material No.: 9530-33
Batch No.: 0000275677

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

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

M612S 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

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

M6126

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

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R: 01/03/24 M5806, M5807

CERTIFIED WEIGHT REPORT:

Part Number: 58111
Lot Number: 122223
Description: Sodium (Na)

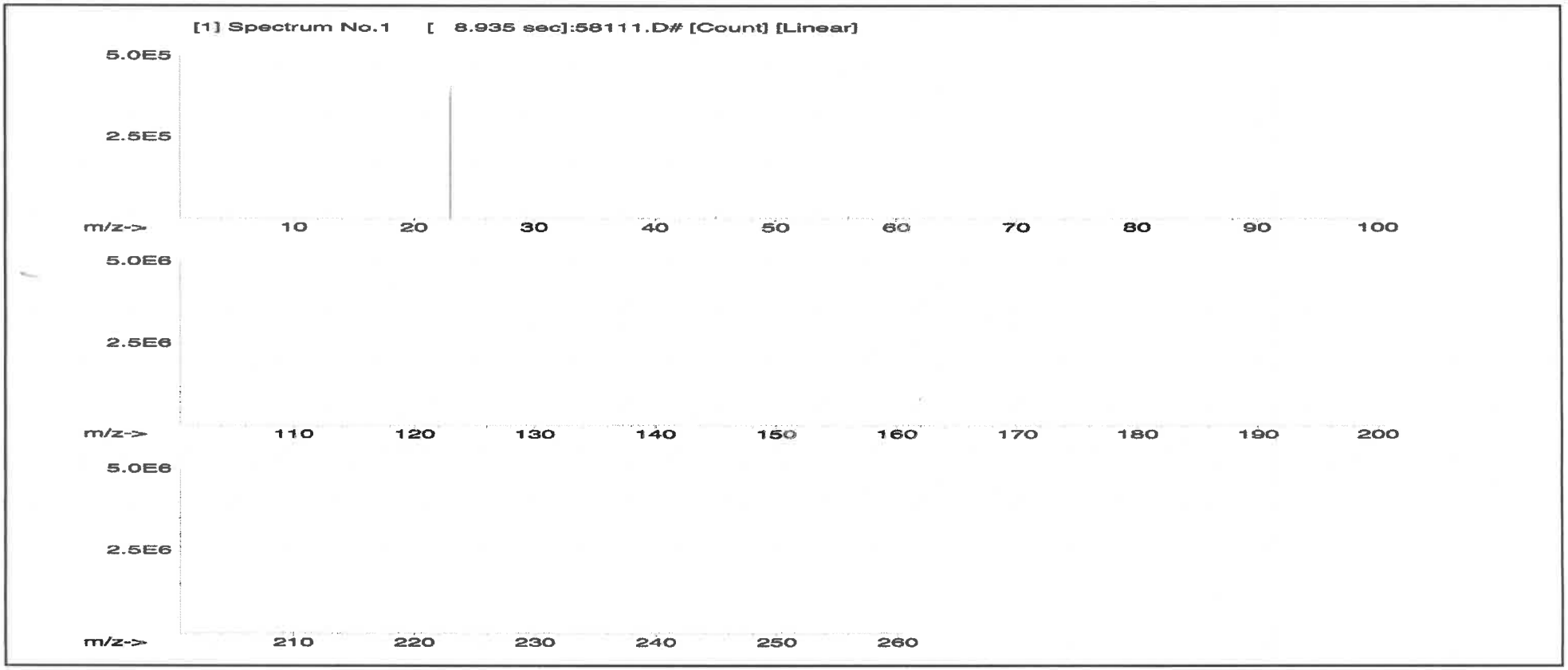
Expiration Date: 122226
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB 5E-05 Balance Uncertainty
Weight shown below was diluted to (mL): 3000.4 0.06 Flask Uncertainty

	Lot #	
Solvent:	24002546	Nitric Acid
2%	60.0 (mL)	Nitric Acid

Aleah O'Brady

Formulated By:	Aleah O'Brady	122223
Reviewed By:	Pedro L. Rentas	122223

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	111.5406	111.5479	**10000.7**	**20.0**	7631-99-4	5 mg/m3	orl-rat 3430 mg/kg	3152a



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	T	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
* All standard containers are meticulously cleaned prior to use.
* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
* Standards are 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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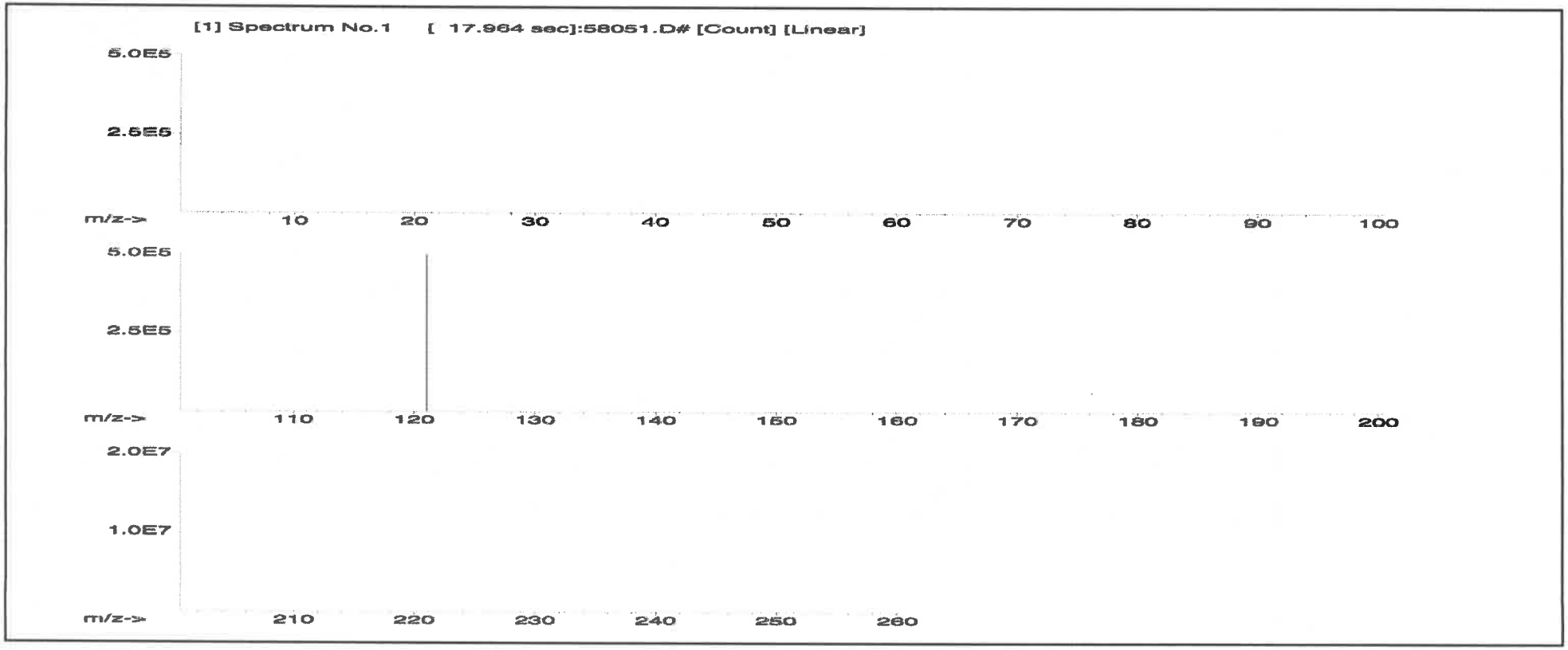
R: 01/03/24 M5802, M5803

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



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:

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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M6030

R: 8/5/24

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CERTIFIED WEIGHT REPORT:

Part Number: 57047
Lot Number: 122823
Description: Silver (Ag)

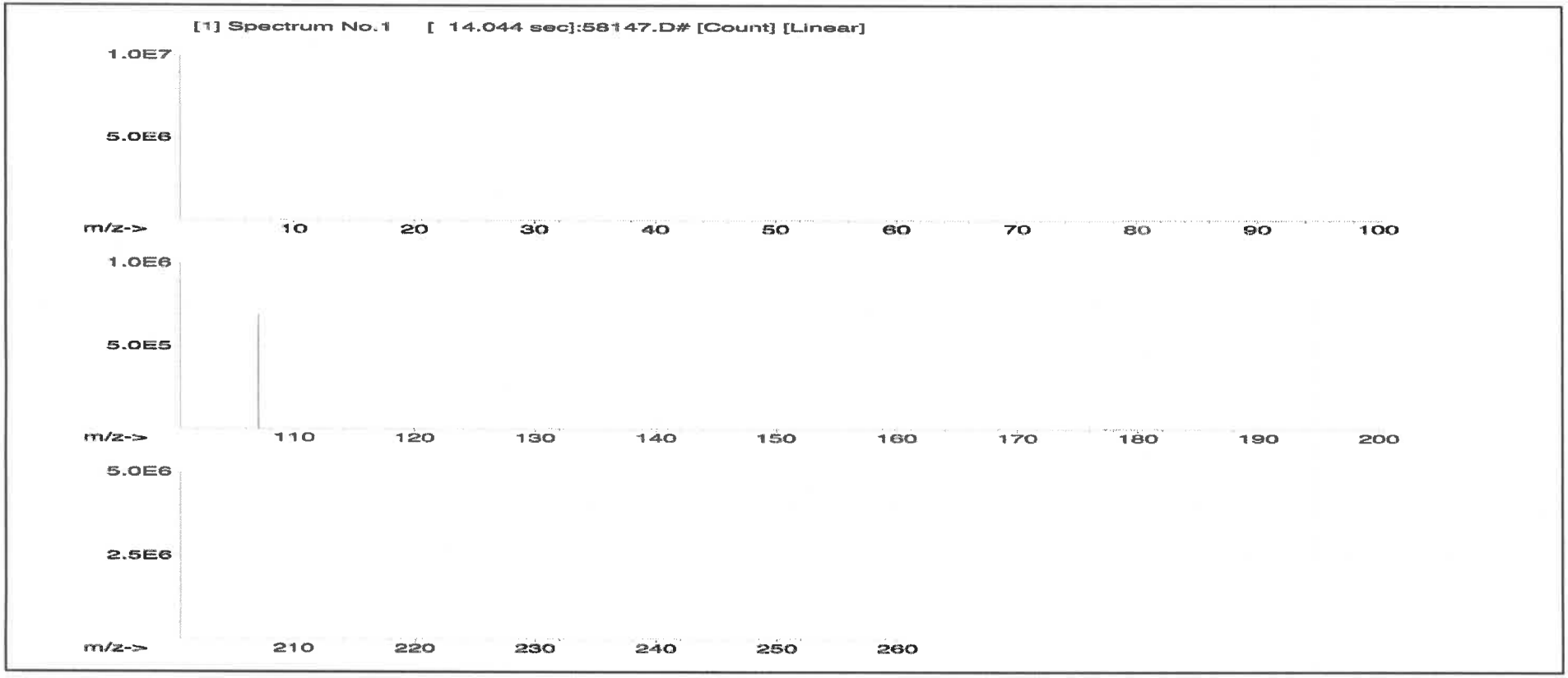
Expiration Date: 122826
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

Weight shown below was diluted to (mL): 4000.30 0.058 Flask Uncertainty

		Lot #	
Solvent:		24002546	Nitric Acid
	2%	80.0 (mL)	Nitric Acid
		5E-05	Balance 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



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:

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

Certified by:

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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* Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
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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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Certified Reference Material CRM

R: 8/5/24

M6023

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CERTIFIED WEIGHT REPORT:

Part Number: 57081
Lot Number: 062724
Description: Thallium (Tl)

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

	Lot #	
Solvent:	24002546	Nitric Acid
2%	40.0 (mL)	Nitric Acid

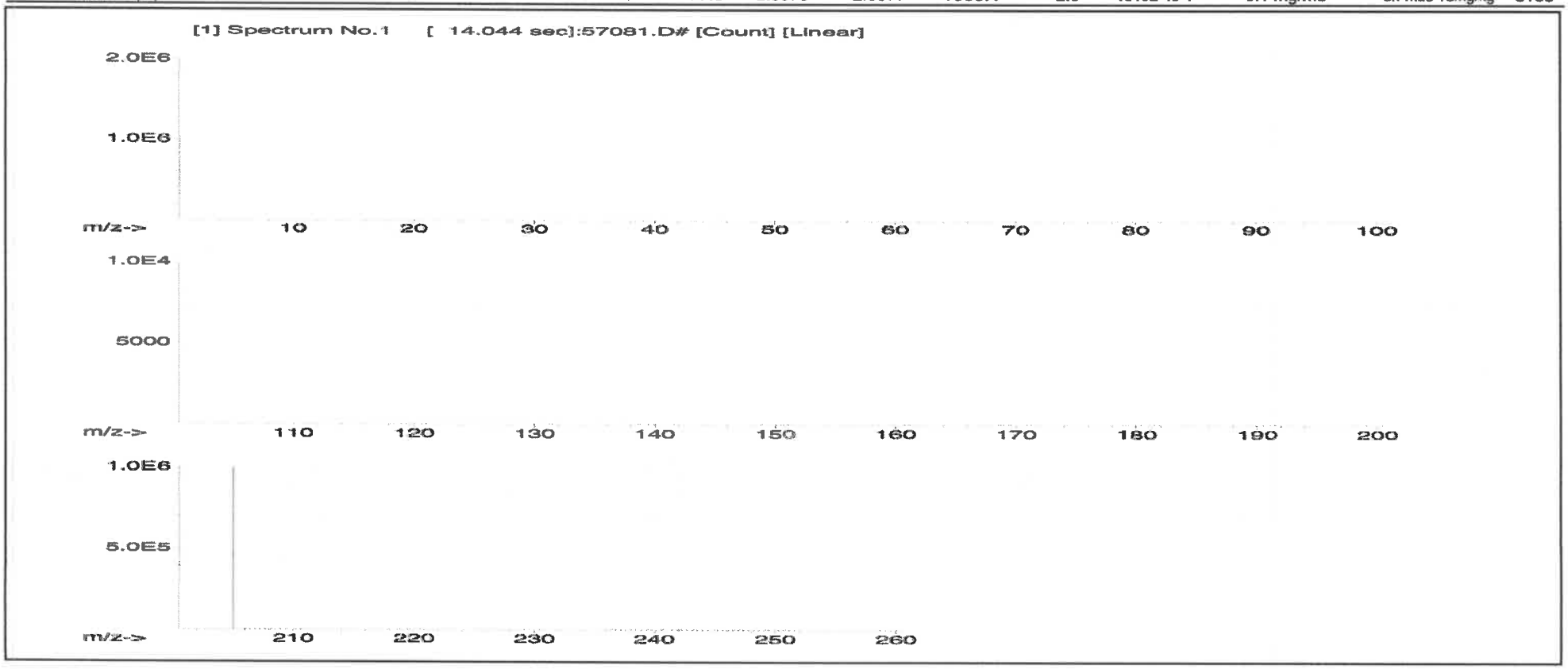
Aleah O'Brady

Formulated By:	Aleah O'Brady	062724

Pedro Rentas

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



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

Bc. 8/5/24

M6021

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

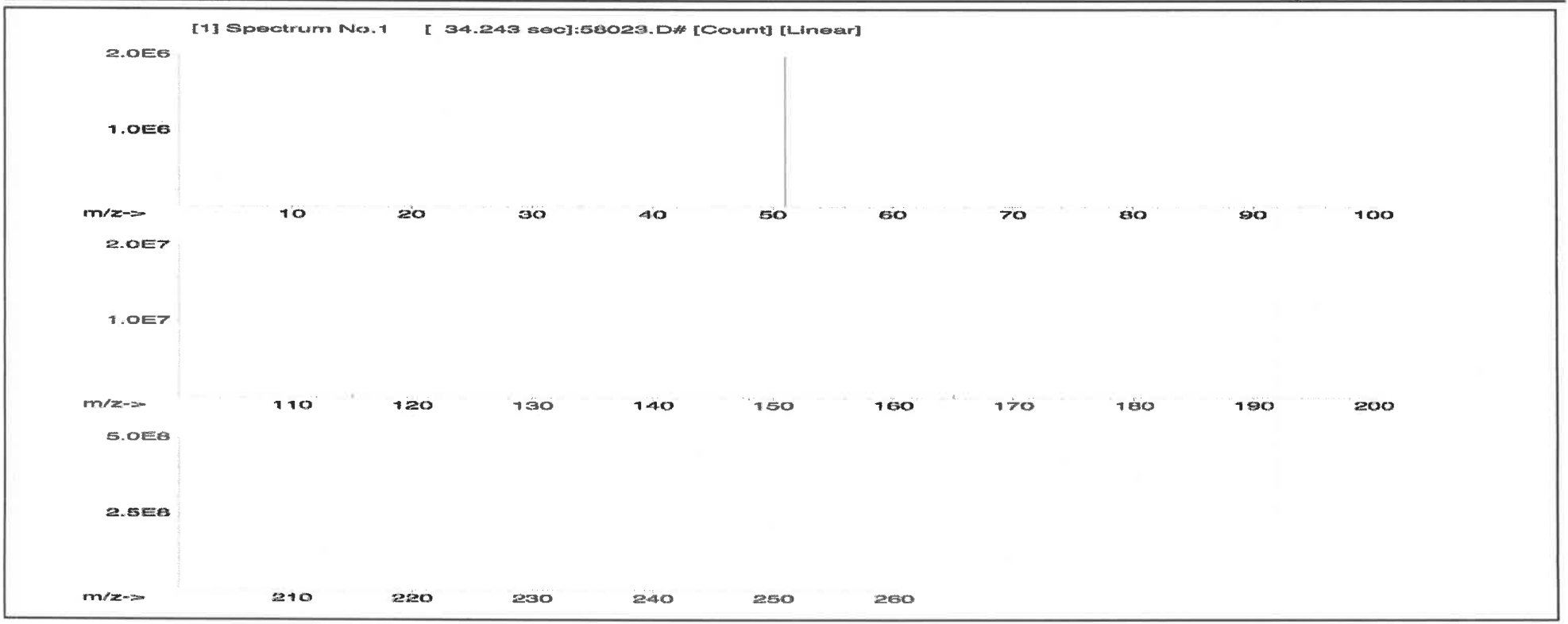
CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:	
Part Number:	57023	24002546	Nitric Acid	
Lot Number:	062424			
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
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



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:

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SHIPPING DOCUMENTS

CHEMTECH
CHAIN OF CUSTODY RECORD

284 Sheffield Street, Mountainside, NJ 07092
(908) 789-8900 Fax (908) 789-8922
www.chemtech.net

Chemtech Project Number: P5217
COC Number:

CLIENT INFORMATION

Report to be sent to:
COMPANY: EarthEfficient
ADDRESS: 30 W Main St
CITY: Riverhead STATE: NY ZIP: 11901
ATTENTION: Env Team - envteam@earthefficient.com
PHONE: (631) 209-4245 FAX:

PROJECT INFORMATION

PROJECT NAME: 45-40 Vernon Blvd LIC
PROJECT #: LOCATION: 45-40 Vernon Blvd
PROJECT MANAGER: Ryan Casserly Long Island City, NY
E-MAIL: envteam@earthefficient.com
PHONE: (631) 209-4245 FAX:

BILLING INFORMATION

BILL TO: EarthEfficient PO#
ADDRESS: 30 W Main St
CITY: Riverhead STATE: NY ZIP: 11901
ATTENTION: Pia Tague - pia@earthefficient.com
PHONE: (631) 209-4245

DATA TURNAROUND INFORMATION

FAX (RUSH) 5 DAYS*
HARDCOPY (DATA PACKAGE): 5 DAYS*
EDD: 5 DAYS*
*TO BE APPROVED BY CHEMTECH
STANDARD HARDCOPY TURNAROUND TIME IS 10 BUSINESS DAYS

DATA DELIVERABLE INFORMATION

- ☐ Level 1 (Results Only)
- ☐ Level 2 (Results + QC)
- ☐ Level 3 (Results + QC + Raw Data)
- ☐ EDD FORMAT
- ☐ Level 4 (QC + Full Raw Data)
- ☑ NJ Reduced ☐ US EPA CLP
- ☐ NYS ASP A ☐ NYS ASP B
- ☐ Other

ANALYSIS

1 total lead (6010)
2 PCBs (8082)
3 4 5 6 7 8 9

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE COMP	SAMPLE TYPE GRAB	SAMPLE COLLECTION DATE	SAMPLE COLLECTION TIME	# of Bottles	1	2	3	4	5	6	7	8	9	COMMENTS
1.	Mixed Demo	S	✔		12/9/21	11:20am	1	✔	✔								
2.																	
3.																	
4.																	
5.																	
6.																	
7.																	
8.																	
9.																	
10.																	

PRESERVATIVES

COMMENTS
<—Specify Preservatives
A-HCl D-NaOH
B-HNO3 E-ICE
C-H2SO4 F-OTHER

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE PROSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER	DATE/TIME	RECEIVED BY
1.	12/9/21	1. 1230
RELINQUISHED BY 2.	DATE/TIME	RECEIVED BY 2.
RELINQUISHED BY 3.	DATE/TIME	RECEIVED FOR LAB BY 3.

Conditions of bottles or coilers at receipt: ☐ COMPLIANT ☐ NON COMPLIANT ☐ COOLER TEMP 4.4°C
Comments:

Page 1 of 1

CLIENT: ☐ Hand Delivered ☐ Other:
CHEMTECH: ☐ Picked Up

Shipment Complete ☐ YES ☐ NO

10/2021

WHITE - CHEMTECH COPY FOR RETURN TO CLIENT **YELLOW** - CHEMTECH COPY **PINK** - SAMPLER COPY

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

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