Alliance TECHNICAL GROUP

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

DATA REPORTING QUALIFIERS- INORGANIC

For reporting results, the following " Results Qualifiers" are used:

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

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

LAB CHRONICLE

OrderID:	Q3041	**OrderDate:**	9/8/2025 11:43:00 AM
Client:	Tully Environmental, Inc	**Project:**	Transfer Station-SPDES
Contact:	Dean Devoe	**Location:**	J11,VOA Lab

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
Q3041-01	**001 Willets Pt Blvd (Sep)**	**Water**			**09/04/25**			**09/08/25**
			Metals Group 10	200.7		09/09/25	09/09/25	
Q3041-04	**002 35th Ave(sep)**	**Water**			**09/04/25**			**09/08/25**
			Metals Group 10	200.7		09/09/25	09/09/25	

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

Hit Summary Sheet
SW-846

SDG No.: Q3041 **Order ID:** Q3041

Client: Tully Environmental, Inc **Project ID:** Transfer Station-SPDES

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
Client ID : 001 Willets Pt Blvd (Sep)								
Q3041-01	001 Willets Pt Blvd (Sep)	Water	Copper	577		1.89	10.0	ug/L
Q3041-01	001 Willets Pt Blvd (Sep)	Water	Iron	53300		18.0	50.0	ug/L
Q3041-01	001 Willets Pt Blvd (Sep)	Water	Lead	301		1.21	6.00	ug/L
Client ID : 002 35th Ave(sep)								
Q3041-04	002 35th Ave(sep)	Water	Copper	179		1.89	10.0	ug/L
Q3041-04	002 35th Ave(sep)	Water	Iron	16700		18.0	50.0	ug/L
Q3041-04	002 35th Ave(sep)	Water	Lead	80.7		1.21	6.00	ug/L



SAMPLE DATA

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

Report of Analysis

Client:	Tully Environmental, Inc	Date Collected:	09/04/25
Project:	Transfer Station-SPDES	Date Received:	09/08/25
Client Sample ID:	001 Willets Pt Blvd (Sep)	SDG No.:	Q3041
Lab Sample ID:	Q3041-01	Matrix:	Water
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.	Prep Met.
7440-50-8	Copper	577		1	1.89	10.0	ug/L	09/09/25 10:40	09/09/25 16:44	EPA 200.7	
7439-89-6	Iron	53300		1	18.0	50.0	ug/L	09/09/25 10:40	09/09/25 16:44	EPA 200.7	
7439-92-1	Lead	301		1	1.21	6.00	ug/L	09/09/25 10:40	09/09/25 16:44	EPA 200.7	

Color Before:	Brown	Clarity Before:	Cloudy	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	Metals Group 10				

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

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

Report of Analysis

Client:	Tully Environmental, Inc	Date Collected:	09/04/25
Project:	Transfer Station-SPDES	Date Received:	09/08/25
Client Sample ID:	002 35th Ave(sep)	SDG No.:	Q3041
Lab Sample ID:	Q3041-04	Matrix:	Water
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.	Prep Met.
7440-50-8	Copper	179		1	1.89	10.0	ug/L	09/09/25 10:40	09/09/25 16:48	EPA 200.7	
7439-89-6	Iron	16700		1	18.0	50.0	ug/L	09/09/25 10:40	09/09/25 16:48	EPA 200.7	
7439-92-1	Lead	80.7		1	1.21	6.00	ug/L	09/09/25 10:40	09/09/25 16:48	EPA 200.7	

Color Before:	Brown	Clarity Before:	Cloudy	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	Metals Group 10				

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

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

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Tully Environmental, Inc

SDG No.: Q3041

Contract: TULL01

Lab Code: ACE

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
ICV01	Copper	1030	1000	103	95 - 105	P	09/09/2025	12:14	LB137122
	Iron	4010	4000	100	95 - 105	P	09/09/2025	12:14	LB137122
	Lead	3910	4000	98	95 - 105	P	09/09/2025	12:14	LB137122

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

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Tully Environmental, Inc

SDG No.: Q3041

Contract: TULL01

Lab Code: ACE

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
LLICV01	Copper	20.8	20.0	104	80 - 120	P	09/09/2025	12:26	LB137122
	Iron	103	100	104	80 - 120	P	09/09/2025	12:26	LB137122
	Lead	11.1	12.0	92	80 - 120	P	09/09/2025	12:26	LB137122

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

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Tully Environmental, Inc **SDG No.:** Q3041

Contract: TULL01 **Lab Code:** ACE

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV01	Copper	1230	1250	98	90 - 110	P	09/09/2025	12:59	LB137122
	Iron	4960	5000	99	90 - 110	P	09/09/2025	12:59	LB137122
	Lead	4900	5000	98	90 - 110	P	09/09/2025	12:59	LB137122
CCV02	Copper	1190	1250	95	90 - 110	P	09/09/2025	14:14	LB137122
	Iron	4890	5000	98	90 - 110	P	09/09/2025	14:14	LB137122
	Lead	4650	5000	93	90 - 110	P	09/09/2025	14:14	LB137122
CCV03	Copper	1190	1250	95	90 - 110	P	09/09/2025	15:11	LB137122
	Iron	4750	5000	95	90 - 110	P	09/09/2025	15:11	LB137122
	Lead	4630	5000	93	90 - 110	P	09/09/2025	15:11	LB137122
CCV04	Copper	1190	1250	95	90 - 110	P	09/09/2025	16:24	LB137122
	Iron	4750	5000	95	90 - 110	P	09/09/2025	16:24	LB137122
	Lead	4670	5000	93	90 - 110	P	09/09/2025	16:24	LB137122
CCV05	Copper	1220	1250	98	90 - 110	P	09/09/2025	17:13	LB137122
	Iron	4880	5000	98	90 - 110	P	09/09/2025	17:13	LB137122
	Lead	4780	5000	96	90 - 110	P	09/09/2025	17:13	LB137122
CCV06	Copper	1220	1250	97	90 - 110	P	09/09/2025	17:46	LB137122
	Iron	4880	5000	98	90 - 110	P	09/09/2025	17:46	LB137122
	Lead	4800	5000	96	90 - 110	P	09/09/2025	17:46	LB137122

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

Metals

- 2b -
CRDL STANDARD FOR AA & ICP

Client: Tully Environmental, Inc **SDG No.:** Q3041

Contract: TULL01 **Lab Code:** ACE

Initial Calibration Source:

Continuing Calibration Source:

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CRI01	Copper	20.7	20.0	103	65 - 135	P	09/09/2025	12:36	LB137122
	Iron	98.3	100	98	65 - 135	P	09/09/2025	12:36	LB137122
	Lead	9.44	12.0	79	65 - 135	P	09/09/2025	12:36	LB137122

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

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Tully Environmental, Inc **SDG No.:** Q3041

Contract: TULL01 **Lab Code:** ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB01	Copper	4.60	+/-10	U	20.0	P	09/09/2025	12:31	LB137122
	Iron	23.4	+/-50	U	100	P	09/09/2025	12:31	LB137122
	Lead	2.30	+/-6	U	12.0	P	09/09/2025	12:31	LB137122

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

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Tully Environmental, Inc **SDG No.:** Q3041

Contract: TULL01 **Lab Code:** ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB01	Copper	4.60	+/-10	U	20.0	P	09/09/2025	13:26	LB137122
	Iron	23.4	+/-50	U	100	P	09/09/2025	13:26	LB137122
	Lead	2.30	+/-6	U	12.0	P	09/09/2025	13:26	LB137122
CCB02	Copper	4.60	+/-10	U	20.0	P	09/09/2025	14:19	LB137122
	Iron	23.4	+/-50	U	100	P	09/09/2025	14:19	LB137122
	Lead	2.30	+/-6	U	12.0	P	09/09/2025	14:19	LB137122
CCB03	Copper	4.60	+/-10	U	20.0	P	09/09/2025	15:25	LB137122
	Iron	23.4	+/-50	U	100	P	09/09/2025	15:25	LB137122
	Lead	2.30	+/-6	U	12.0	P	09/09/2025	15:25	LB137122
CCB04	Copper	4.60	+/-10	U	20.0	P	09/09/2025	16:28	LB137122
	Iron	23.4	+/-50	U	100	P	09/09/2025	16:28	LB137122
	Lead	2.30	+/-6	U	12.0	P	09/09/2025	16:28	LB137122
CCB05	Copper	4.60	+/-10	U	20.0	P	09/09/2025	17:17	LB137122
	Iron	23.4	+/-50	U	100	P	09/09/2025	17:17	LB137122
	Lead	2.30	+/-6	U	12.0	P	09/09/2025	17:17	LB137122
CCB06	Copper	4.60	+/-10	U	20.0	P	09/09/2025	17:50	LB137122
	Iron	23.4	+/-50	U	100	P	09/09/2025	17:50	LB137122
	Lead	2.30	+/-6	U	12.0	P	09/09/2025	17:50	LB137122

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

Metals
- 3b -
PREPARATION BLANK SUMMARY

Client: Tully Environmental, Inc **SDG No.:** Q3041

Instrument: P4

Sample ID	Analyte	Result (ug/L)	Acceptance Limit	Conc Qual	CRQL ug/L	M	Analysis Date	Analysis Time	Run
PB169618BL		**WATER**		**Batch Number:**	**PB169618**		**Prep Date:**	**09/09/2025**	
	Copper	1.89	<5	U	10.0	P	09/09/2025	16:11	LB137122
	Iron	18.0	<25	U	50.0	P	09/09/2025	16:11	LB137122
	Lead	1.21	<3	U	6.00	P	09/09/2025	16:11	LB137122

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

Metals
- 4 -
INTERFERENCE CHECK SAMPLE

Client: Tully Environmental, Inc **SDG No.:** Q3041

Contract: TULL01 **Lab Code:** ACE

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	Copper	-9.26	2.0	463	-18	22	09/09/2025	12:42	LB137122
	Iron	95100	101000	94	85600	116500	09/09/2025	12:42	LB137122
	Lead	-3.71			-12	12	09/09/2025	12:42	LB137122
ICSAB01	Copper	490	511	96	434	588	09/09/2025	12:46	LB137122
	Iron	104000	99300	105	84400	114500	09/09/2025	12:46	LB137122
	Lead	44.4	49.0	91	37	61	09/09/2025	12:46	LB137122
ICSA	Copper	-33.5	2.0	1675	-18	22	09/09/2025	12:50	LB137122
	Iron	93500	101000	93	85600	116500	09/09/2025	12:50	LB137122
	Lead	-143			-12	12	09/09/2025	12:50	LB137122
ICSAB	Copper	511	511	100	434	588	09/09/2025	12:55	LB137122
	Iron	99900	99300	101	84400	114500	09/09/2025	12:55	LB137122
	Lead	-94.9	49.0	194	37	61	09/09/2025	12:55	LB137122

METAL
QC
DATA

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

metals
- 5a -
MATRIX SPIKE SUMMARY

client: Tully Environmental, Inc **level:** low **sdg no.:** Q3041

contract: TULL01 **lab code:** ACE

matrix: Water **sample id:** Q3041-04 **client id:** 002 35th Ave(sep)MS

Percent Solids for Sample: NA **Spiked ID:** Q3041-04MS **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Copper	ug/L	75 - 125	300		179		150	81		P
Iron	ug/L	75 - 125	17400		16700		1500	44		P
Lead	ug/L	75 - 125	521		80.7		500	88		P

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

metals
- 5a -
MATRIX SPIKE DUPLICATE SUMMARY

client: Tully Environmental, Inc **level:** low **sdg no.:** Q3041

contract: TULL01 **lab code:** ACE

matrix: Water **sample id:** Q3041-04 **client id:** 002 35th Ave(sep)MSD

Percent Solids for Sample: NA **Spiked ID:** Q3041-04MSD **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit %R	MSD Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Copper	ug/L	75 - 125	311		179		150	89		P
Iron	ug/L	75 - 125	18000		16700		1500	85		P
Lead	ug/L	75 - 125	534		80.7		500	91		P

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

Metals
- 5b -

Client: Tully Environmental, Inc **SDG No.:** Q3041

Contract: TULL01 **Lab Code:** ACE

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

Sample ID: **Spiked ID:**

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

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

Metals

- 6 -

DUPLICATE SAMPLE SUMMARY

Client: Tully Environmental, Inc **Level:** LOW **SDG No.:** Q3041

Contract: TULL01 **Lab Code:** ACE

Matrix: Water **Sample ID:** Q3041-04 **Client ID:** 002 35th Ave(sep)DUP

Percent Solids for Sample: NA **Duplicate ID** Q3041-04DUP **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Copper	ug/L	20	179		171		5		P
Iron	ug/L	20	16700		16500		1		P
Lead	ug/L	20	80.7		79.4		2		P

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

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

Metals

- 6 -

DUPLICATE SAMPLE SUMMARY

Client: Tully Environmental, Inc **Level:** LOW **SDG No.:** Q3041

Contract: TULL01 **Lab Code:** ACE

Matrix: Water **Sample ID:** Q3041-04MS **Client ID:** 002 35th Ave(sep)MSD

Percent Solids for Sample: NA **Duplicate ID** Q3041-04MSD **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Copper	ug/L	20	300		311		4		P
Iron	ug/L	20	17400		18000		3		P
Lead	ug/L	20	521		534		2		P

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

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

LABORATORY CONTROL SAMPLE SUMMARY

Client: Tully Environmental, Inc **SDG No.:** Q3041

Contract: TULL01 **Lab Code:** ACE

Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limits	M
PB169618BS							
Copper	ug/L	150	150		100	85 - 115	P
Iron	ug/L	1500	1450		97	85 - 115	P
Lead	ug/L	500	470		94	85 - 115	P

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

Metals

-9 -

ICP SERIAL DILUTIONS

SAMPLE NO.

002 35th Ave(sep)L

Lab Name: Alliance **Contract:** TULL01

Lab Code: ACE **Lb No.:** lb137122 **Lab Sample ID :** Q3041-04L **SDG No.:** Q3041

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

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Copper	179		182		2		P
Iron	16700		16600		1		P
Lead	80.7		63.7		21		P

METAL PREPARATION & INSTRUMENT DATA

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

Metals
- 11 -
ICP INTERELEMENT CORRECTION FACTORS

Client: Tully Environmental, Inc **SDG No.:** Q3041

Contract: TULL01 **Lab Code:** ACE

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave-Length (nm)	ICP Interelement Correction Factors For: Al	Ca	Fe	Mg	Ag
Copper	224.700	0.0000000	0.0000000	0.0007850	0.0000000	0.0000000
Iron	240.488	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.353	-0.0000920	0.0000000	0.0000380	0.0000000	0.0000000

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

Metals
- 11 -
ICP INTERELEMENT CORRECTION FACTORS

Client: Tully Environmental, Inc **SDG No.:** Q3041

Contract: TULL01 **Lab Code:** ACE

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave-Length (nm)	ICP Interelement Correction Factors For: As	Ba	Be	Cd	Co
Copper	224.700	0.0000000	0.0000000	0.0000000	0.0000000	0.0009530
Iron	240.488	0.0000000	0.0000000	0.0000000	0.0000000	-0.0039600
Lead	220.353	0.0000000	0.0003170	0.0000000	0.0000000	0.0000000

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

Metals
- 11 -
ICP INTERELEMENT CORRECTION FACTORS

Client: Tully Environmental, Inc **SDG No.:** Q3041

Contract: TULL01 **Lab Code:** ACE

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave-Length (nm)	ICP Interelement Correction Factors For: Cr	Cu	K	Mn	Mo
Copper	224.700	0.0000000	0.0000000	0.0000000	0.0006510	0.0020500
Iron	240.488	0.0000000	0.0000000	0.0000730	0.0000000	-0.0015250
Lead	220.353	0.0000000	0.0000000	0.0000000	0.0001400	-0.0008600

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

Metals
- 11 -
ICP INTERELEMENT CORRECTION FACTORS

Client: Tully Environmental, Inc **SDG No.:** Q3041

Contract: TULL01 **Lab Code:** ACE

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave-Length (nm)	ICP Interelement Correction Factors For: Na	Ni	Pb	Sb	Se
Copper	224.700	0.0000000	-0.0047000	0.0036100	0.0000000	0.0000000
Iron	240.488	0.0000000	-0.0017000	0.0000000	0.0000000	0.0000000
Lead	220.353	0.0000000	0.0006580	0.0000000	0.0000000	0.0001290

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

Metals
- 11 -
ICP INTERELEMENT CORRECTION FACTORS

Client: Tully Environmental, Inc **SDG No.:** Q3041

Contract: TULL01 **Lab Code:** ACE

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave-Length (nm)	ICP Interelement Correction Factors For: Sn	Ti	Tl	V	Zn
Copper	224.700	0.0000000	0.0003840	0.0000000	0.0000000	0.0000000
Iron	240.488	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.353	0.0000000	-0.0003610	0.0000000	0.0000000	0.0000000

METAL PREPARATION & ANALYICAL SUMMARY

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

Metals
- 13 -
SAMPLE PREPARATION SUMMARY

Client: Tully Environmental, Inc **SDG No.:** Q3041

Contract: TULL01 **Lab Code:** ACE **Method:**

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(mL)	Final Sample Volume (mL)	Percent Solids
Batch Number:	**PB169618**						
PB169618BL	PB169618BL	MB	WATER	09/09/2025	50.0	25.0	
PB169618BS	PB169618BS	LCS	WATER	09/09/2025	50.0	25.0	
Q3041-01	001 Willets Pt Blvd (Sep)	SAM	WATER	09/09/2025	50.0	25.0	
Q3041-04	002 35th Ave(sep)	SAM	WATER	09/09/2025	50.0	25.0	
Q3041-04DUP	002 35th Ave(sep)DUP	DUP	WATER	09/09/2025	50.0	25.0	
Q3041-04MS	002 35th Ave(sep)MS	MS	WATER	09/09/2025	50.0	25.0	
Q3041-04MSD	002 35th Ave(sep)MSD	MSD	WATER	09/09/2025	50.0	25.0	

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

metals
- 14 -
ANALYSIS RUN LOG

Client: Tully Environmental, Inc **Contract:** TULL01

Lab code: ACE **Sdg no.:** Q3041

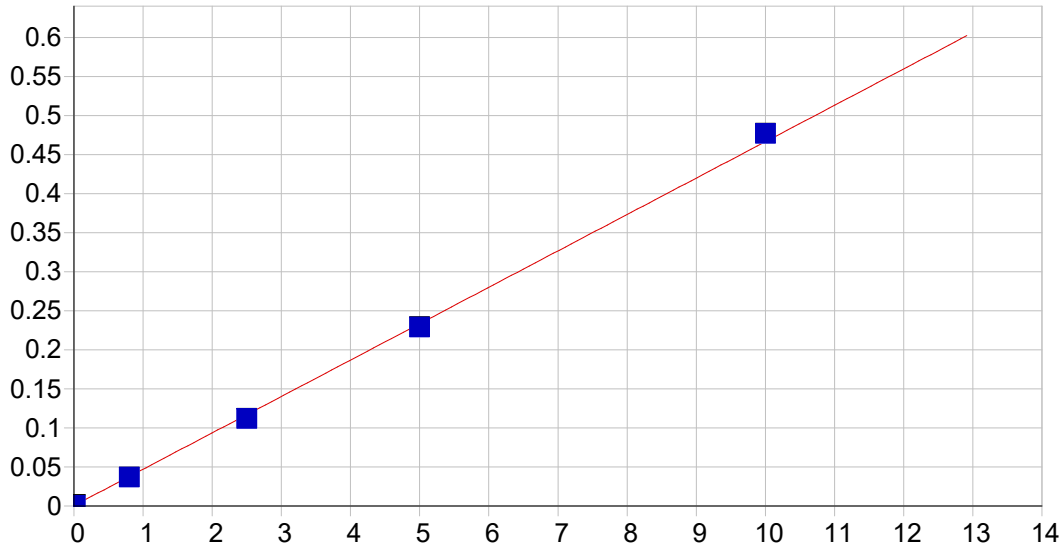
Instrument id number: **Method:** **Run number:** LB137122

Start date: 09/09/2025 **End date:** 09/09/2025

Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	1148	Cu,Fe,Pb
S1	S1	1	1153	Cu,Fe,Pb
S2	S2	1	1157	Cu,Fe,Pb
S3	S3	1	1201	Cu,Fe,Pb
S4	S4	1	1205	Cu,Fe,Pb
S5	S5	1	1209	Cu,Fe,Pb
ICV01	ICV01	1	1214	Cu,Fe,Pb
LLICV01	LLICV01	1	1226	Cu,Fe,Pb
ICB01	ICB01	1	1231	Cu,Fe,Pb
CRI01	CRI01	1	1236	Cu,Fe,Pb
ICSA01	ICSA01	1	1242	Cu,Fe,Pb
ICSAB01	ICSAB01	1	1246	Cu,Fe,Pb
ICSA	ICSA	20	1250	Cu,Fe,Pb
ICSAB	ICSAB	20	1255	Cu,Fe,Pb
CCV01	CCV01	1	1259	Cu,Fe,Pb
CCB01	CCB01	1	1326	Cu,Fe,Pb
CCV02	CCV02	1	1414	Cu,Fe,Pb
CCB02	CCB02	1	1419	Cu,Fe,Pb
CCV03	CCV03	1	1511	Cu,Fe,Pb
CCB03	CCB03	1	1525	Cu,Fe,Pb
PB169618BL	PB169618BL	1	1611	Cu,Fe,Pb
CCV04	CCV04	1	1624	Cu,Fe,Pb
CCB04	CCB04	1	1628	Cu,Fe,Pb
Q3041-01	001 Willets Pt Blvd (Sep)	1	1644	Cu,Fe,Pb
Q3041-04	002 35th Ave(sep)	1	1648	Cu,Fe,Pb
Q3041-04DUP	002 35th Ave(sep)DUP	1	1652	Cu,Fe,Pb
Q3041-04L	002 35th Ave(sep)L	5	1656	Cu,Fe,Pb
Q3041-04MS	002 35th Ave(sep)MS	1	1700	Cu,Fe,Pb
Q3041-04MSD	002 35th Ave(sep)MSD	1	1705	Cu,Fe,Pb
CCV05	CCV05	1	1713	Cu,Fe,Pb
CCB05	CCB05	1	1717	Cu,Fe,Pb
PB169618BS	PB169618BS	1	1725	Cu,Fe,Pb
CCV06	CCV06	1	1746	Cu,Fe,Pb
CCB06	CCB06	1	1750	Cu,Fe,Pb

METAL
RAW DATA

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122



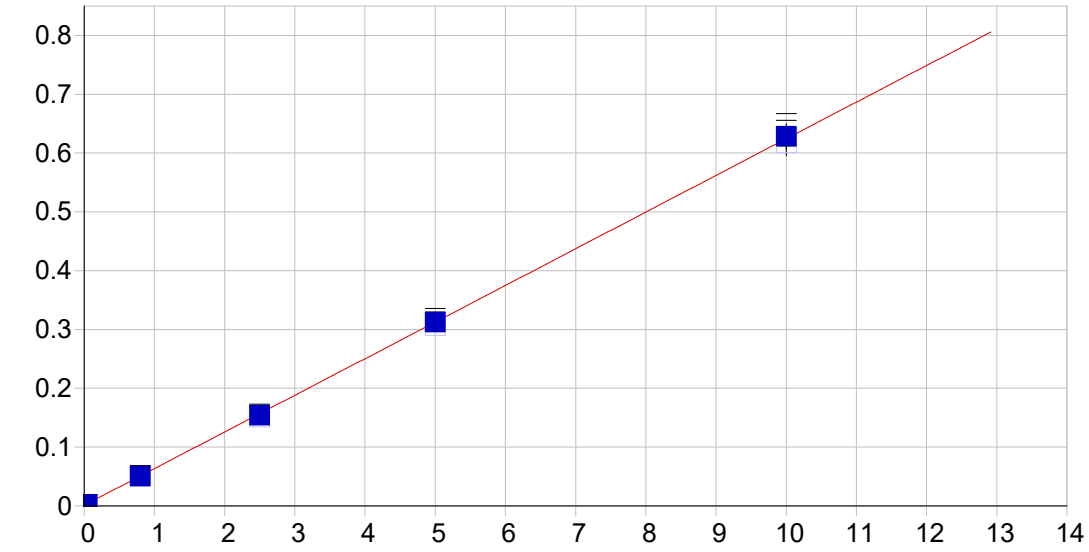
As 189.042 {479}

Date of Fit:	9/9/2025 12:14:00	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000450	Re-Slope:	1.000000
A1 (Gain):	0.046596	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999660	Status:	OK.
Std Error of Est:	0.000028		
Predicted MDL:	0.002337		
Predicted MQL:	0.007791		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00045	.000	1
S1	.02000	.02012	.000	.604	.00138	.000	1
S3	2.5000	2.3889	-.111	-4.44	.11164	.000	1
S4	5.0000	4.9057	-.094	-1.89	.22879	.000	1
S5	10.000	10.227	.227	2.27	.47650	.001	1
S2	.80000	.77840	-.022	-2.70	.03668	.000	1

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122



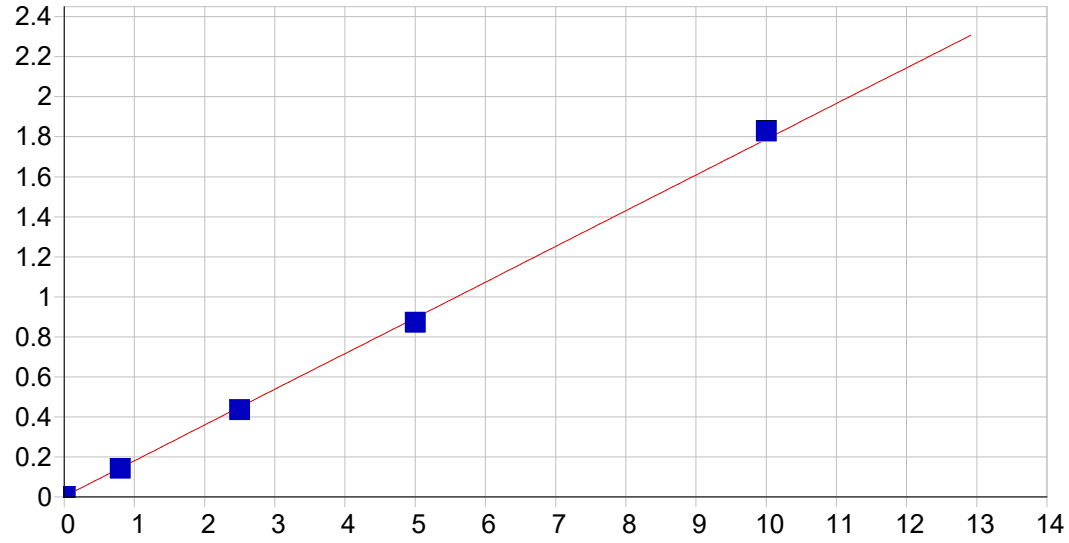
Tl 190.856 {477}

Date of Fit:	9/9/2025 12:14:00	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.001020	Re-Slope:	1.000000
A1 (Gain):	0.062325	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999954	Status:	OK.
Std Error of Est:	0.000019		
Predicted MDL:	0.002235		
Predicted MQL:	0.007449		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00102	.000	1
S1	.04000	.03694	-.003	-7.65	.00316	.000	1
S3	2.5000	2.4518	-.048	-1.93	.15099	.003	1
S4	5.0000	4.9918	-.008	-.163	.30645	.007	1
S5	10.000	10.065	.065	.647	.61693	.022	1
S2	.80000	.79454	-.005	-.682	.04963	.001	1

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122



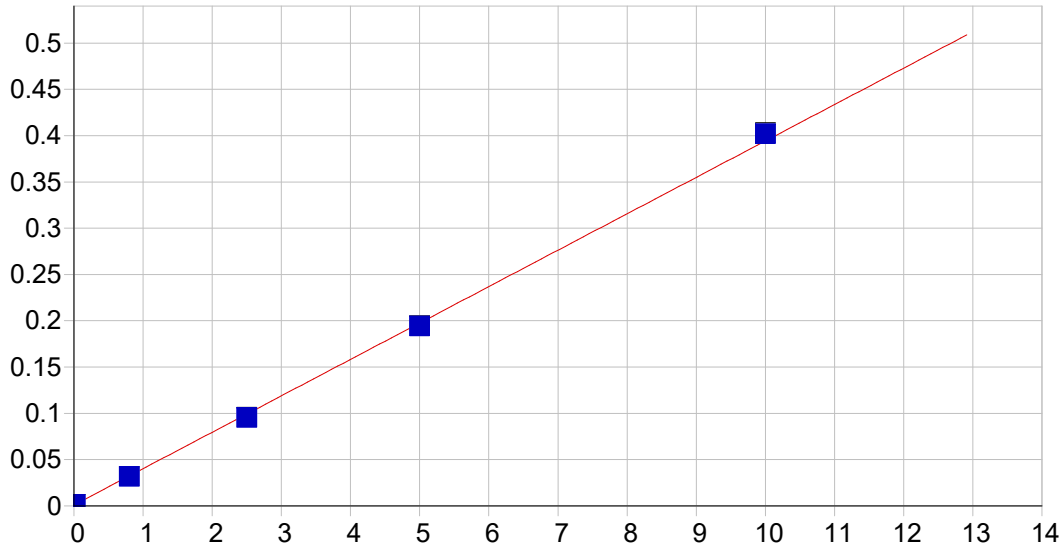
Pb 220.353 {453}

Date of Fit:	9/9/2025 12:14:00	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.002194	Re-Slope:	1.000000
A1 (Gain):	0.178495	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999692	Status:	OK.
Std Error of Est:	0.000080		
Predicted MDL:	0.001494		
Predicted MQL:	0.004980		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00219	.000	1
S1	.01200	.01086	-.001	-9.53	.00409	.000	1
S3	2.5000	2.4204	-.080	-3.18	.43373	.000	1
S4	5.0000	4.8747	-.125	-2.51	.87132	.001	1
S5	10.000	10.225	.225	2.25	1.8253	.003	1
S2	.80000	.78135	-.019	-2.33	.14150	.000	1

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122



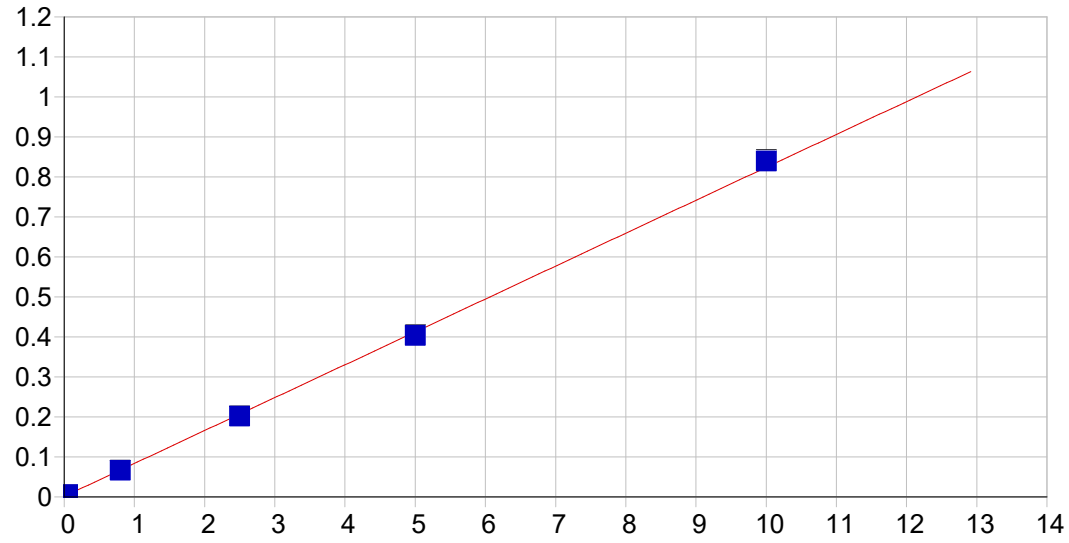
Se 196.090 {472}

Date of Fit:	9/9/2025 12:14:00	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000918	Re-Slope:	1.000000
A1 (Gain):	0.039335	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999724	Status:	OK.
Std Error of Est:	0.000022		
Predicted MDL:	0.003393		
Predicted MQL:	0.011310		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00092	.000	1
S1	.02000	.02163	.002	8.13	.00177	.000	1
S3	2.5000	2.3988	-.101	-4.05	.09525	.000	1
S4	5.0000	4.9151	-.085	-1.70	.19420	.000	1
S5	10.000	10.202	.202	2.02	.40210	.001	1
S2	.80000	.78249	-.018	-2.19	.03169	.000	1

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122



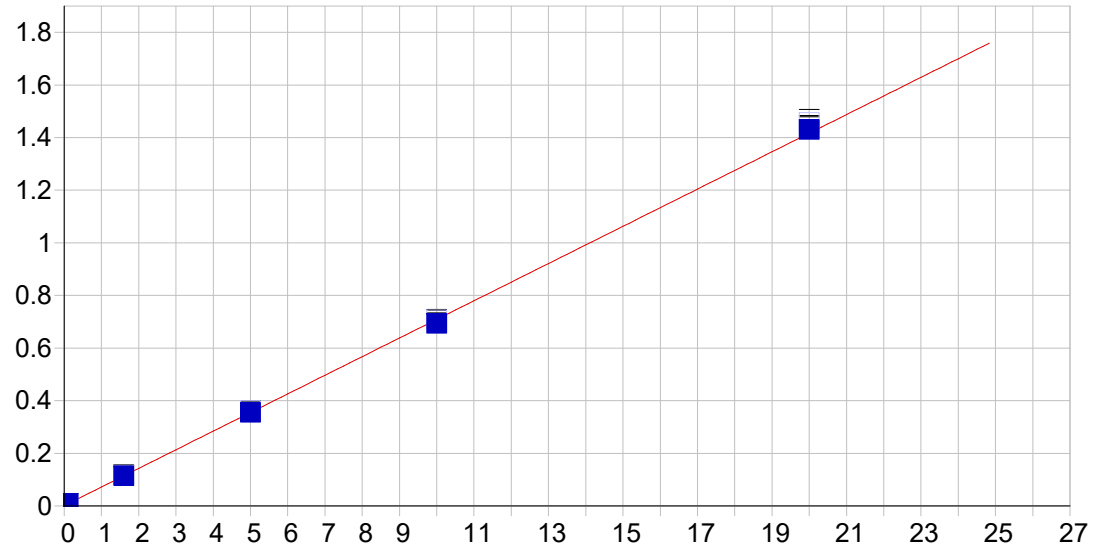
Sb 206.833 {463}

Date of Fit:	9/9/2025 12:14:00	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.001422	Re-Slope:	1.000000
A1 (Gain):	0.082234	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999781	Status:	OK.
Std Error of Est:	0.000064		
Predicted MDL:	0.002116		
Predicted MQL:	0.007054		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00142	.000	1
S1	.05000	.04732	-.003	-5.37	.00532	.000	1
S3	2.5000	2.4345	-.066	-2.62	.20218	.000	1
S4	5.0000	4.8904	-.110	-2.19	.40469	.001	1
S5	10.000	10.190	.190	1.90	.84166	.002	1
S2	.80000	.78733	-.013	-1.58	.06635	.000	1

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122



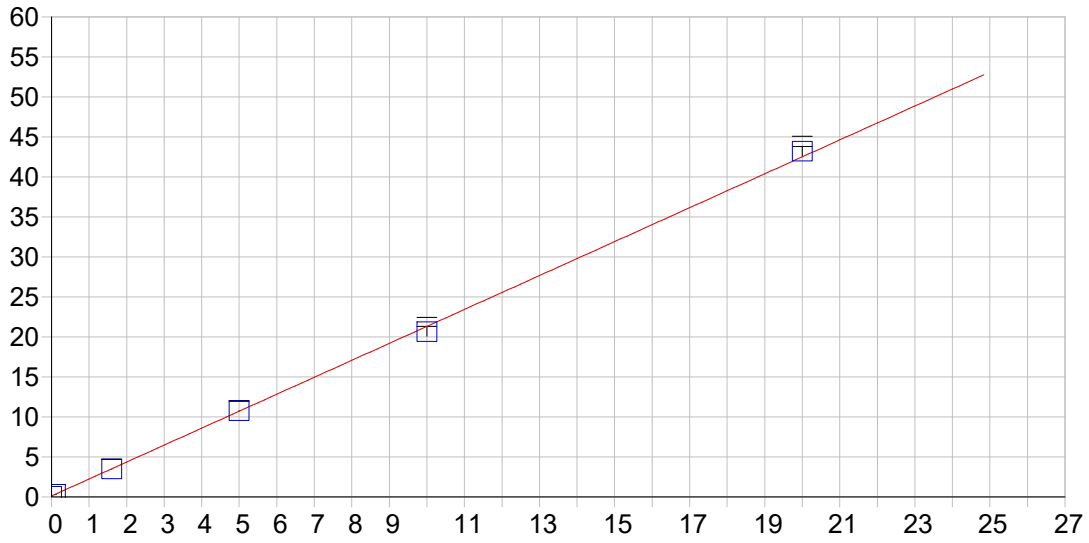
Al 396.152 { 85}

Date of Fit:	9/9/2025 12:14:00	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.001109	Re-Slope:	1.000000
A1 (Gain):	0.070781	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999873	Status:	OK.
Std Error of Est:	0.000085		
Predicted MDL:	0.011122		
Predicted MQL:	0.037073		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00002	-.000	.000	.00111	.000	1
S1	.10000	.11744	.017	17.4	.00997	.000	1
S3	5.0000	5.0036	.004	.072	.36213	.001	1
S4	10.000	9.7808	-.219	-2.19	.70714	.002	1
S5	20.000	20.191	.191	.953	1.4577	.012	1
S2	1.6000	1.6065	.006	.406	.11702	.000	1

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122



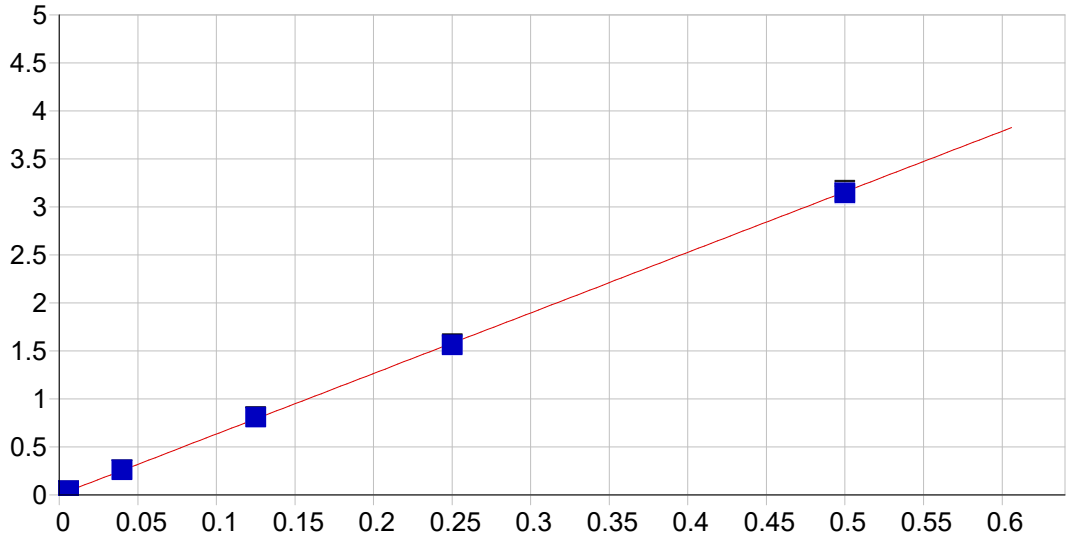
Ba 493.409 { 68}

Date of Fit:	9/9/2025 12:14:00	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.120722	Re-Slope:	1.000000
A1 (Gain):	2.119354	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999782	Status:	OK.
Std Error of Est:	0.003280		
Predicted MDL:	0.001053		
Predicted MQL:	0.003509		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.12072	.001	1
S1	.10000	.10167	.002	1.67	.33619	.004	1
S3	5.0000	5.0204	.020	.408	10.761	.046	1
S4	10.000	9.6786	-.321	-3.21	20.633	.556	1
S5	20.000	20.323	.323	1.61	43.192	.633	1
S2	1.6000	1.5766	-.023	-1.46	3.4621	.014	1

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122



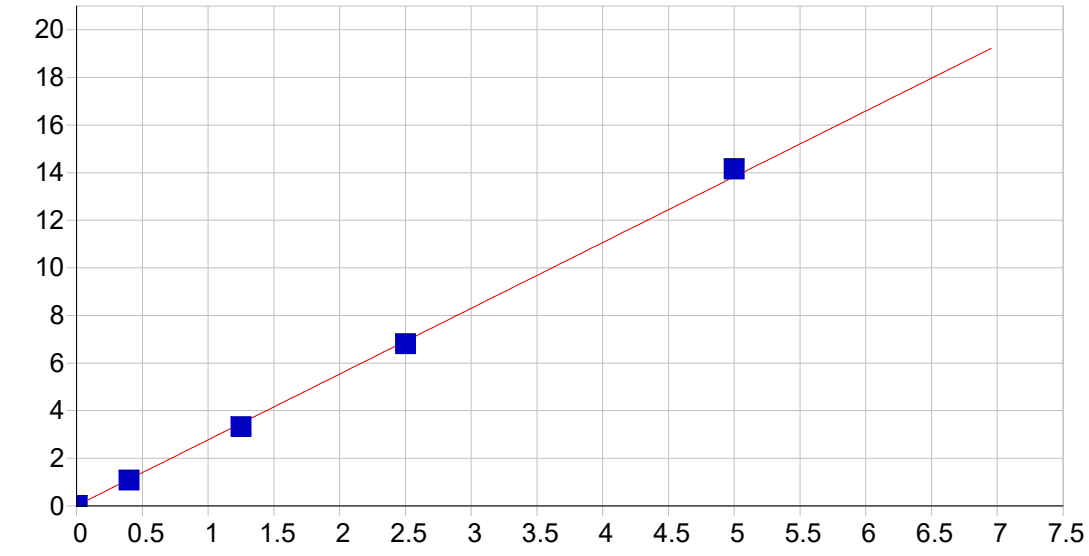
Be 234.861 {144}

Date of Fit:	9/9/2025 12:14:00	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.002832	Re-Slope:	1.000000
A1 (Gain):	6.309693	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999922	Status:	OK.
Std Error of Est:	0.000226		
Predicted MDL:	0.000072		
Predicted MQL:	0.000240		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00283	.000	1
S1	.00600	.00647	.000	7.79	.04336	.001	1
S3	.12500	.12777	.003	2.22	.80551	.006	1
S4	.25000	.24752	-.002	-.993	1.5575	.008	1
S5	.50000	.49847	-.002	-.306	3.1339	.025	1
S2	.04000	.04077	.001	1.93	.25896	.001	1

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122



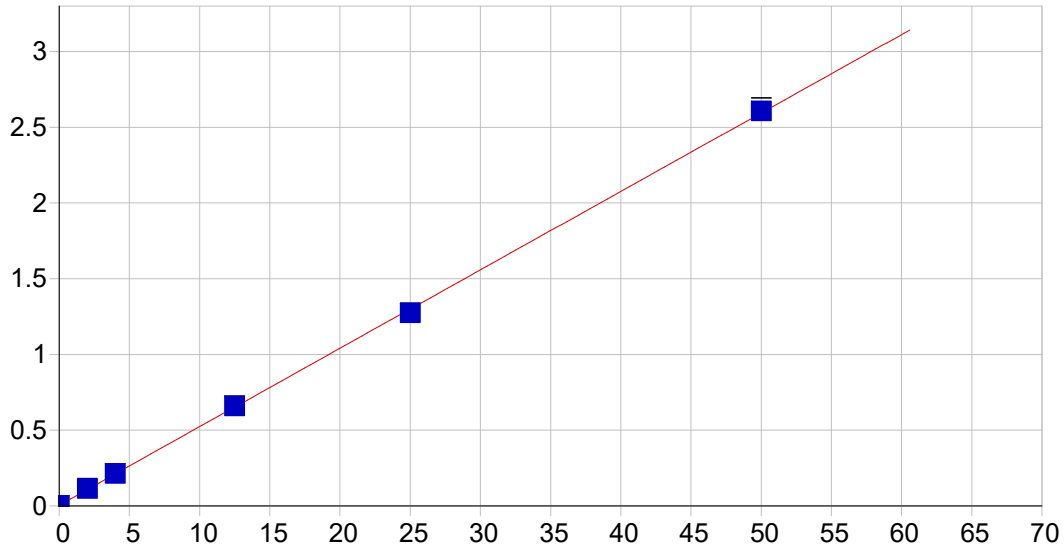
Cd 226.502 {449}

Date of Fit:	9/9/2025 12:14:00	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.013867	Re-Slope:	1.000000
A1 (Gain):	2.762812	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999667	Status:	OK.
Std Error of Est:	0.000647		
Predicted MDL:	0.000083		
Predicted MQL:	0.000276		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.01387	.000	1
S1	.00600	.00585	-.000	-2.50	.03008	.000	1
S3	1.2500	1.1965	-.053	-4.28	3.3220	.008	1
S4	2.5000	2.4564	-.044	-1.75	6.8049	.004	1
S5	5.0000	5.1120	.112	2.24	14.146	.020	1
S2	.40000	.38527	-.015	-3.68	1.0790	.000	1

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122



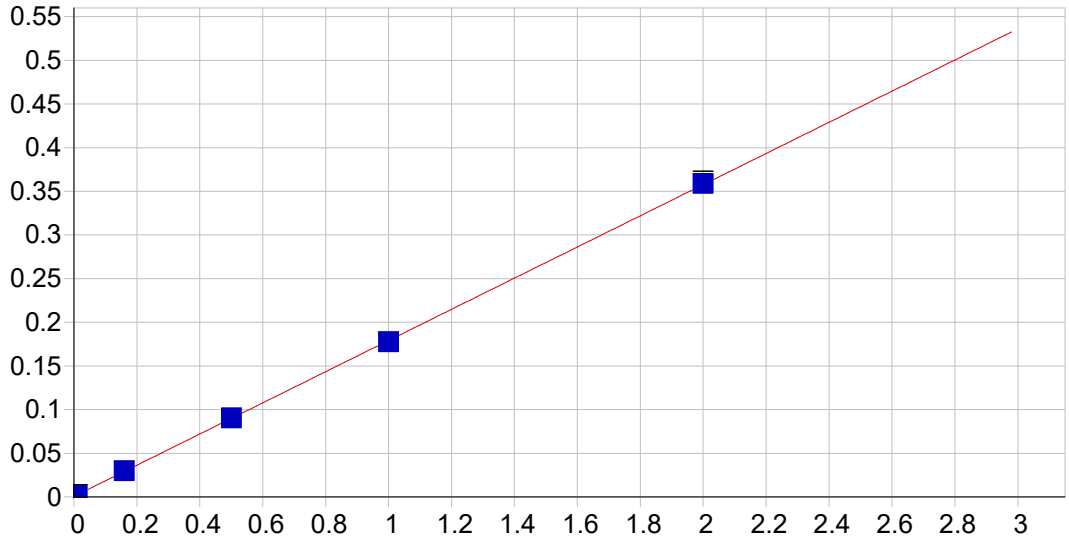
Ca 373.690 { 90}

Date of Fit:	9/9/2025 12:14:00	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.005428	Re-Slope:	1.000000
A1 (Gain):	0.051769	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999905	Status:	OK.
Std Error of Est:	0.000378		
Predicted MDL:	0.011888		
Predicted MQL:	0.039626		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00010	-.000	.000	.00542	.001	1
S2	4.0000	4.0172	.017	.430	.21340	.000	1
S3	12.500	12.624	.124	.990	.65895	.002	1
S4	25.000	24.497	-.503	-2.01	1.2736	.001	1
S5	50.000	50.262	.262	.525	2.6075	.021	1
S1	2.0000	2.0998	.100	4.99	.11413	.002	1

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122



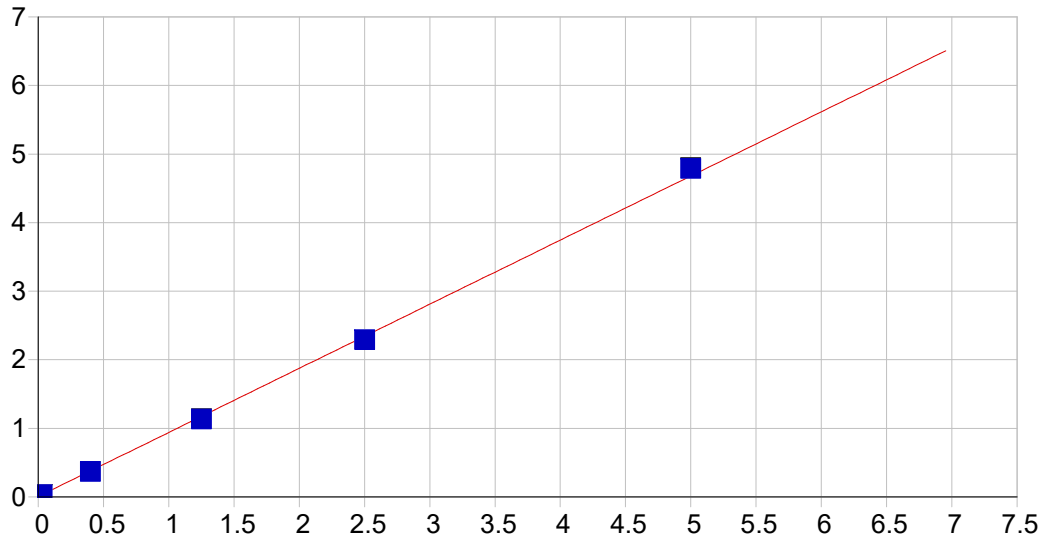
Cr 267.716 {126}

Date of Fit:	9/9/2025 12:14:00	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000643	Re-Slope:	1.000000
A1 (Gain):	0.178487	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999978	Status:	OK.
Std Error of Est:	0.000009		
Predicted MDL:	0.000355		
Predicted MQL:	0.001183		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00064	.000	1
S1	.01000	.00970	-.000	-2.98	.00238	.000	1
S3	.50000	.50227	.002	.453	.09036	.000	1
S4	1.0000	.99012	-.010	-.988	.17751	.001	1
S5	2.0000	2.0060	.006	.298	.35897	.003	1
S2	.16000	.16195	.002	1.22	.02957	.000	1

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122



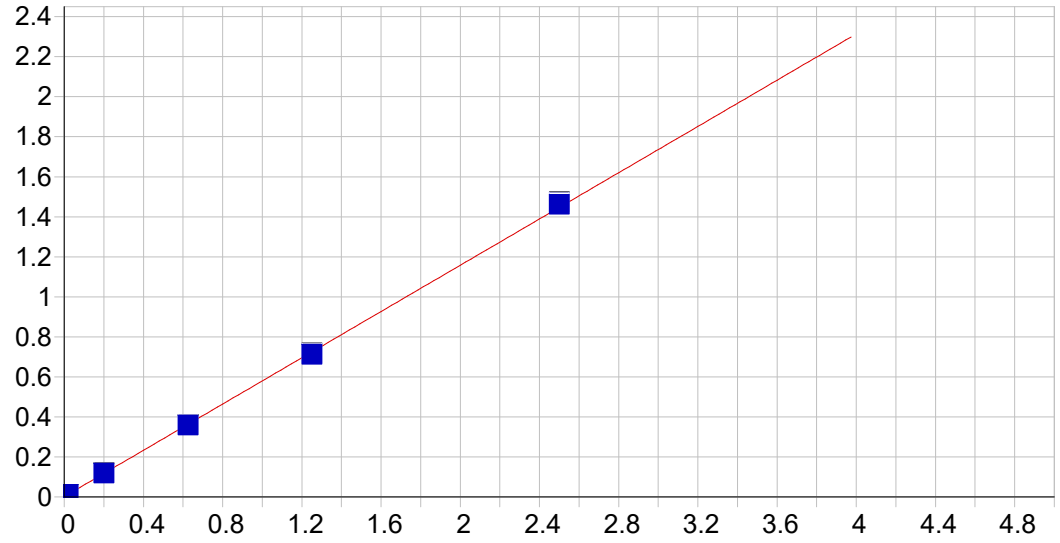
Co 228.616 {448}

Date of Fit:	9/9/2025 12:14:00	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.005192	Re-Slope:	1.000000
A1 (Gain):	0.935018	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999685	Status:	OK.
Std Error of Est:	0.000478		
Predicted MDL:	0.000215		
Predicted MQL:	0.000718		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00519	.000	1
S1	.03000	.02950	-.001	-1.67	.03266	.000	1
S3	1.2500	1.2055	-.045	-3.56	1.1343	.002	1
S4	2.5000	2.4437	-.056	-2.25	2.2940	.001	1
S5	5.0000	5.1135	.113	2.27	4.7943	.008	1
S2	.40000	.38790	-.012	-3.03	.36852	.000	1

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122



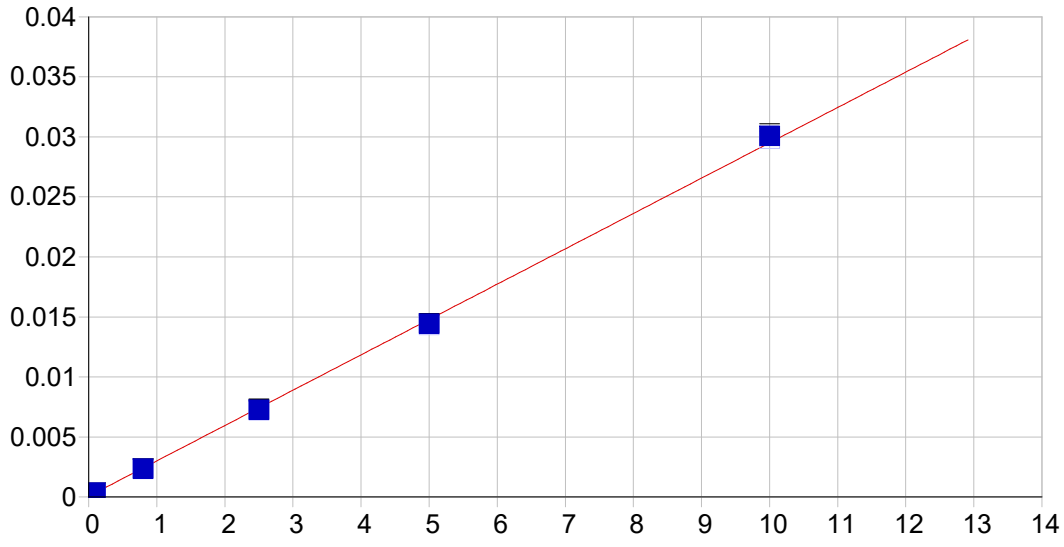
Cu 224.700 {450}

Date of Fit:	9/9/2025 12:14:00	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.001828	Re-Slope:	1.000000
A1 (Gain):	0.578014	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999903	Status:	OK.
Std Error of Est:	0.000095		
Predicted MDL:	0.000455		
Predicted MQL:	0.001518		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00183	.000	1
S1	.02000	.02172	.002	8.62	.01451	.000	1
S3	.62500	.61602	-.009	-1.44	.36091	.000	1
S4	1.2500	1.2293	-.021	-1.65	.71842	.001	1
S5	2.5000	2.5251	.025	1.00	1.4734	.000	1
S2	.20000	.20282	.003	1.41	.12003	.000	1

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122



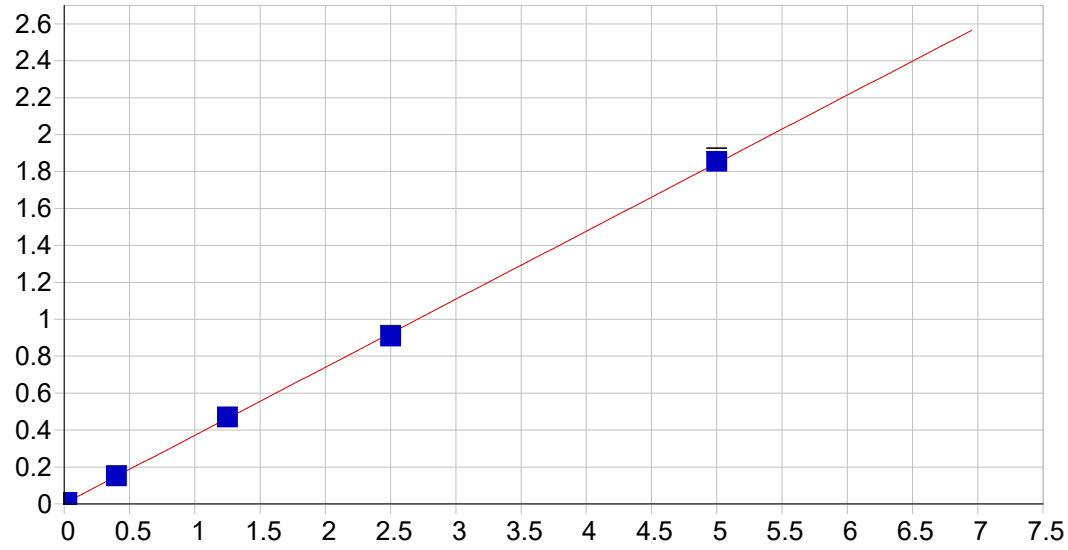
Fe 240.488 {140}

Date of Fit:	9/9/2025 12:14:00	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000058	Re-Slope:	1.000000
A1 (Gain):	0.002945	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999762	Status:	OK.
Std Error of Est:	0.000003		
Predicted MDL:	0.006894		
Predicted MQL:	0.022981		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00001	.000	.000	.00006	.000	1
S1	.10000	.09895	-.001	-1.05	.00035	.000	1
S3	2.5000	2.4469	-.053	-2.12	.00720	.000	1
S4	5.0000	4.8838	-.116	-2.32	.01431	.000	1
S5	10.000	10.197	.197	1.97	.02984	.000	1
S2	.80000	.77336	-.027	-3.33	.00232	.000	1

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122



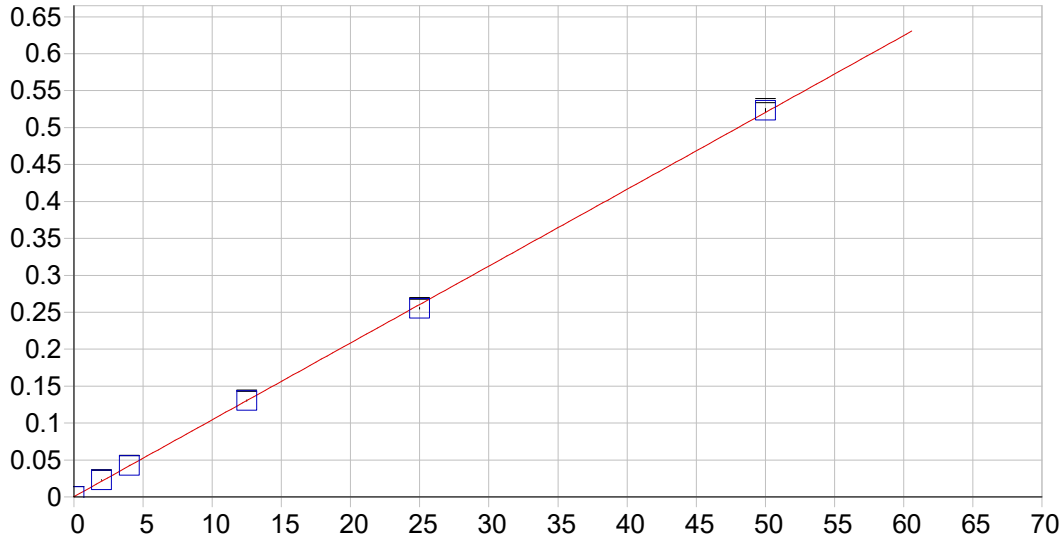
Mn 257.610 {131}

Date of Fit:	9/9/2025 12:14:00	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.002613	Re-Slope:	1.000000
A1 (Gain):	0.368554	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999929	Status:	OK.
Std Error of Est:	0.000073		
Predicted MDL:	0.000602		
Predicted MQL:	0.002008		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00261	.000	1
S1	.02000	.02159	.002	7.93	.01057	.000	1
S3	1.2500	1.2656	.016	1.24	.46913	.001	1
S4	2.5000	2.4546	-.045	-1.82	.90744	.005	1
S5	5.0000	5.0251	.025	.503	1.8550	.019	1
S2	.40000	.40315	.003	.788	.15123	.001	1

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122



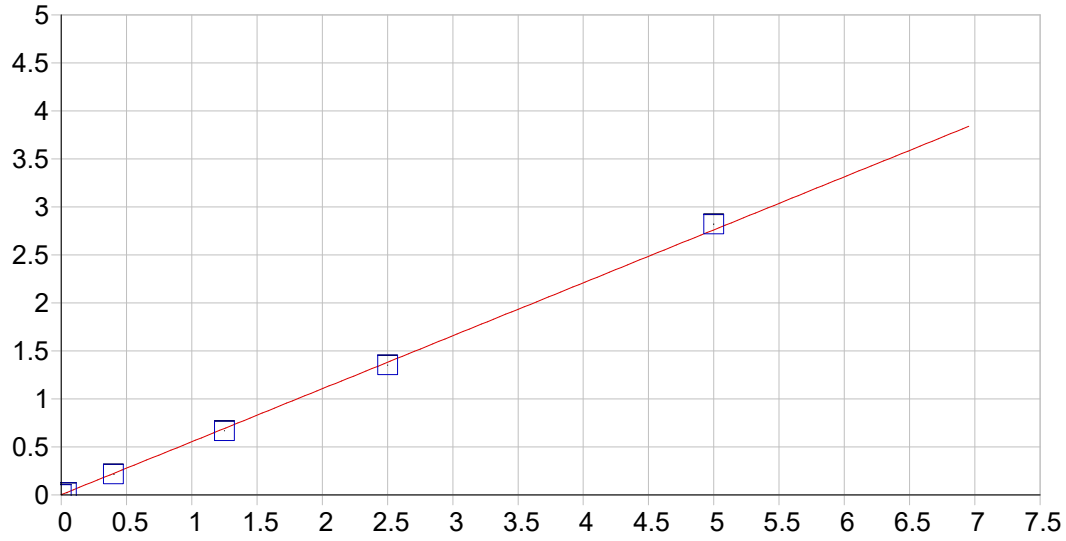
Mg 279.079 {121}

Date of Fit:	9/9/2025 12:14:00	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000394	Re-Slope:	1.000000
A1 (Gain):	0.010401	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999855	Status:	OK.
Std Error of Est:	0.000094		
Predicted MDL:	0.028063		
Predicted MQL:	0.093543		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00017	-.000	.000	.00039	.000	1
S2	4.0000	4.0585	.058	1.46	.04261	.000	1
S3	12.500	12.489	-.011	-.087	.13030	.001	1
S4	25.000	24.514	-.486	-1.94	.25538	.001	1
S5	50.000	50.263	.263	.526	.52320	.003	1
S1	2.0000	2.1753	.175	8.76	.02302	.001	1

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122



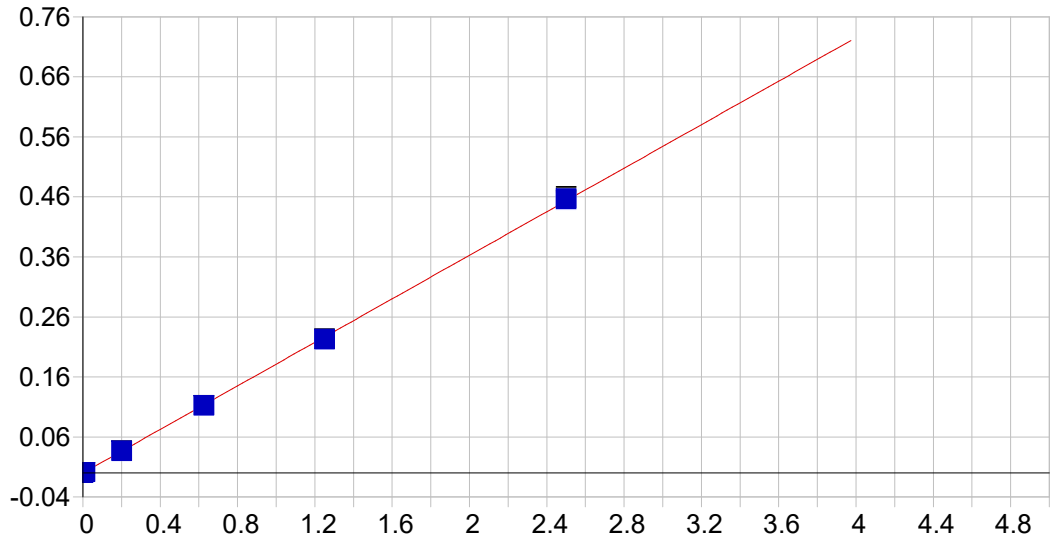
Ni 231.604 {446}

Date of Fit:	9/9/2025 12:14:00	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.002277	Re-Slope:	1.000000
A1 (Gain):	0.551774	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999711	Status:	OK.
Std Error of Est:	0.000312		
Predicted MDL:	0.000390		
Predicted MQL:	0.001300		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00228	.000	1
S1	.04000	.04004	.000	.097	.02437	.000	1
S3	1.2500	1.2056	-.044	-3.55	.66751	.001	1
S4	2.5000	2.4458	-.054	-2.17	1.3518	.002	1
S5	5.0000	5.1081	.108	2.16	2.8208	.004	1
S2	.40000	.39034	-.010	-2.42	.21765	.000	1

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122



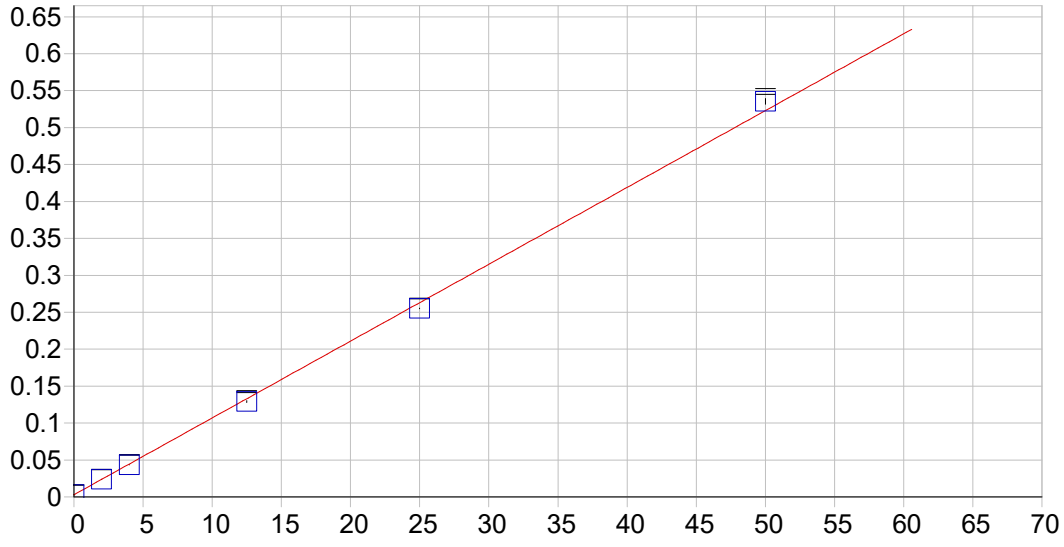
Ag 328.068 {103}

Date of Fit:	9/9/2025 12:14:00	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000182	Re-Slope:	1.000000
A1 (Gain):	0.181428	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999937	Status:	OK.
Std Error of Est:	0.000017		
Predicted MDL:	0.000553		
Predicted MQL:	0.001843		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00018	.000	1
S1	.01000	.01053	.001	5.34	.00171	.000	1
S3	.62500	.62039	-.005	-.737	.11182	.000	1
S4	1.2500	1.2305	-.019	-1.56	.22197	.001	1
S5	2.5000	2.5212	.021	.846	.45503	.003	1
S2	.20000	.20239	.002	1.20	.03636	.000	1

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122



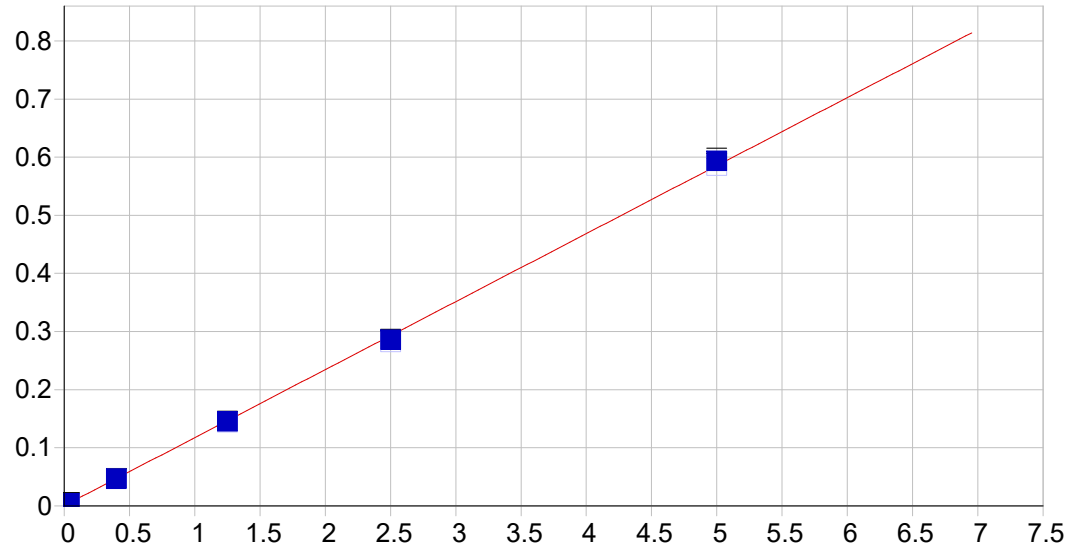
Na 589.592 { 57}

Date of Fit:	9/9/2025 12:14:00	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.002929	Re-Slope:	1.000000
A1 (Gain):	0.010401	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999659	Status:	OK.
Std Error of Est:	0.000144		
Predicted MDL:	0.013365		
Predicted MQL:	0.044551		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00013	.000	.000	.00293	.000	1
S2	4.0000	3.9020	-.098	-2.45	.04351	.000	1
S3	12.500	12.131	-.369	-2.95	.12910	.001	1
S4	25.000	24.270	-.730	-2.92	.25535	.000	1
S5	50.000	51.207	1.21	2.41	.53552	.004	1
S1	2.0000	1.9898	-.010	-.509	.02362	.000	1

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122



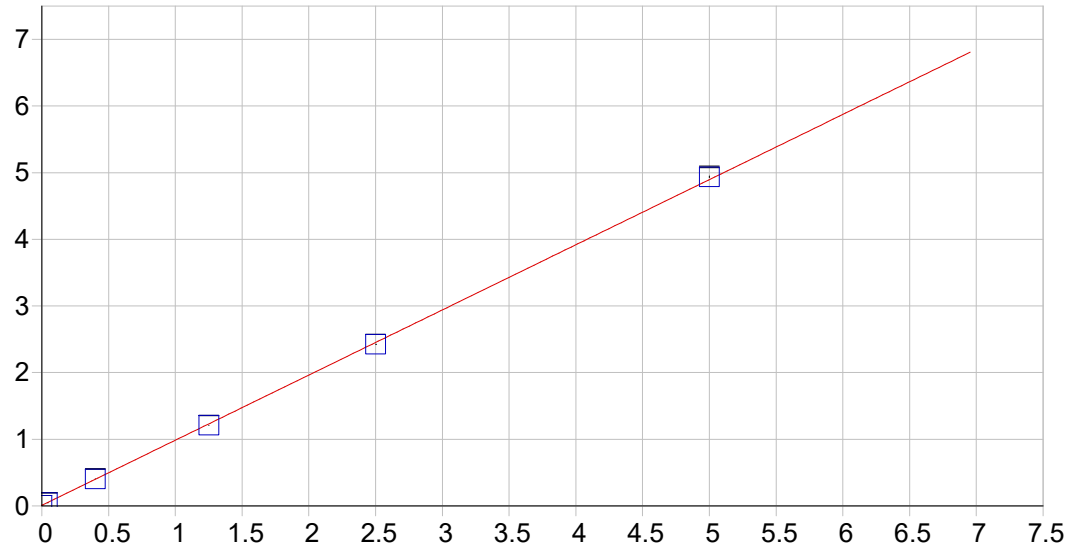
V 292.402 {115}

Date of Fit:	9/9/2025 12:14:00	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000425	Re-Slope:	1.000000
A1 (Gain):	0.117008	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999859	Status:	OK.
Std Error of Est:	0.000045		
Predicted MDL:	0.002938		
Predicted MQL:	0.009795		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00043	.000	1
S1	.04000	.04079	.001	1.98	.00502	.000	1
S3	1.2500	1.2405	-.009	-.756	.14345	.000	1
S4	2.5000	2.4406	-.059	-2.37	.28173	.001	1
S5	5.0000	5.0707	.071	1.41	.58520	.005	1
S2	.40000	.39734	-.003	-.665	.04623	.000	1

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122



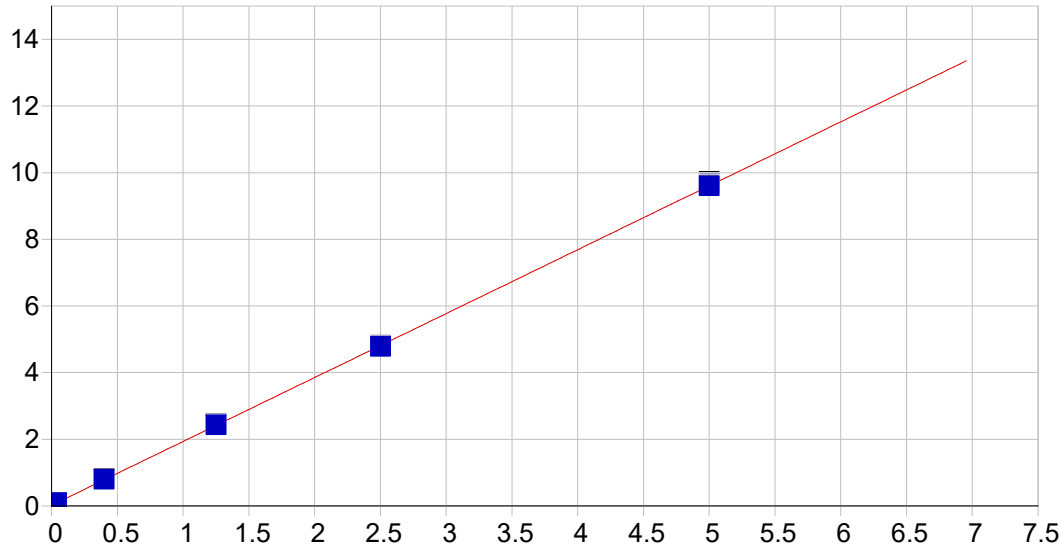
Zn 206.200 {464}

Date of Fit:	9/9/2025 12:14:00	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.007449	Re-Slope:	1.000000
A1 (Gain):	0.977821	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999934	Status:	OK.
Std Error of Est:	0.000264		
Predicted MDL:	0.000157		
Predicted MQL:	0.000525		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00745	.000	1
S1	.04000	.04157	.002	3.92	.04809	.000	1
S3	1.2500	1.2282	-.022	-1.74	1.2085	.001	1
S4	2.5000	2.4718	-.028	-1.13	2.4244	.002	1
S5	5.0000	5.0417	.042	.834	4.9373	.012	1
S2	.40000	.40672	.007	1.68	.40515	.001	1

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122



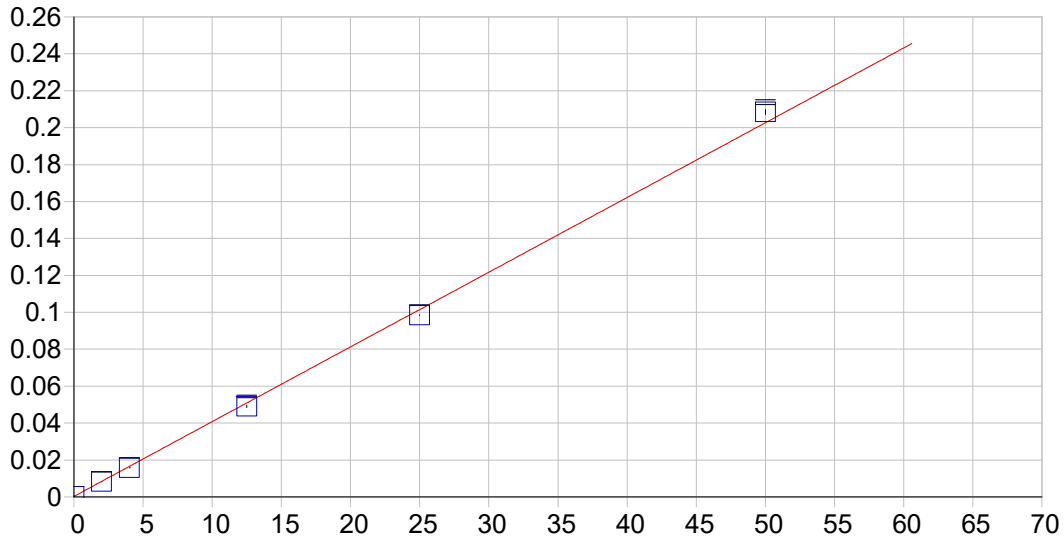
Zn 213.856 {158}

Date of Fit:	9/9/2025 12:14:00	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.016143	Re-Slope:	1.000000
A1 (Gain):	1.918241	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999976	Status:	OK.
Std Error of Est:	0.000314		
Predicted MDL:	0.000246		
Predicted MQL:	0.000821		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.01614	.000	1
S1	.04000	.04181	.002	4.54	.09689	.001	1
S3	1.2500	1.2583	.008	.664	2.4465	.010	1
S4	2.5000	2.4835	-.017	-.660	4.8134	.012	1
S5	5.0000	4.9975	-.003	-.050	9.6692	.070	1
S2	.40000	.40890	.009	2.23	.80586	.001	1

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122



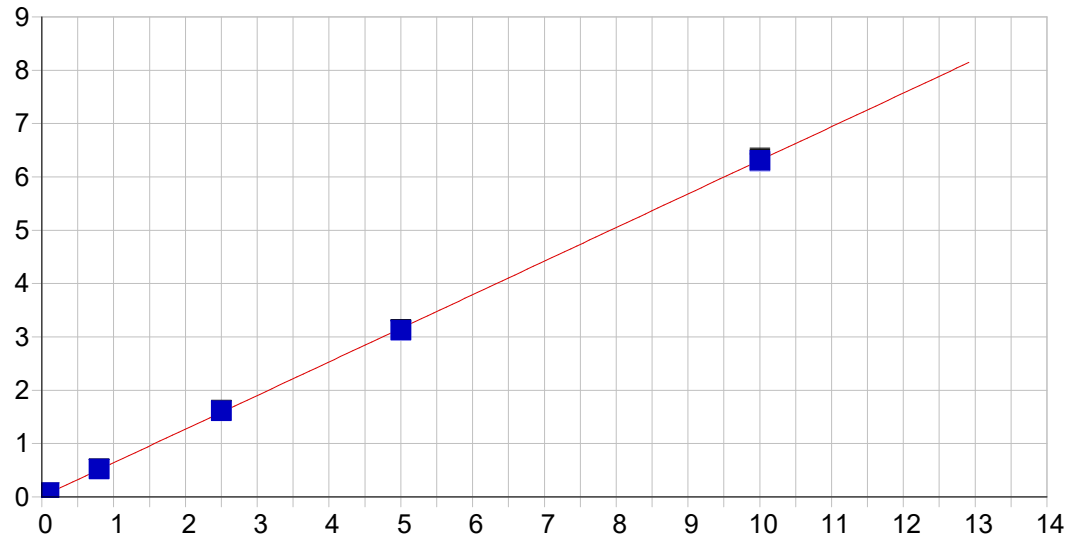
K 766.490 { 44}

Date of Fit:	9/9/2025 12:14:00	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000316	Re-Slope:	1.000000
A1 (Gain):	0.004047	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999522	Status:	OK.
Std Error of Est:	0.000066		
Predicted MDL:	0.042134		
Predicted MQL:	0.140448		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00021	.000	.000	.00032	.000	1
S2	4.0000	3.8168	-.183	-4.58	.01576	.000	1
S3	12.500	12.040	-.460	-3.68	.04904	.001	1
S4	25.000	24.251	-.749	-3.00	.09846	.000	1
S5	50.000	51.430	1.43	2.86	.20845	.001	1
S1	2.0000	1.9624	-.038	-1.88	.00826	.000	1

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122



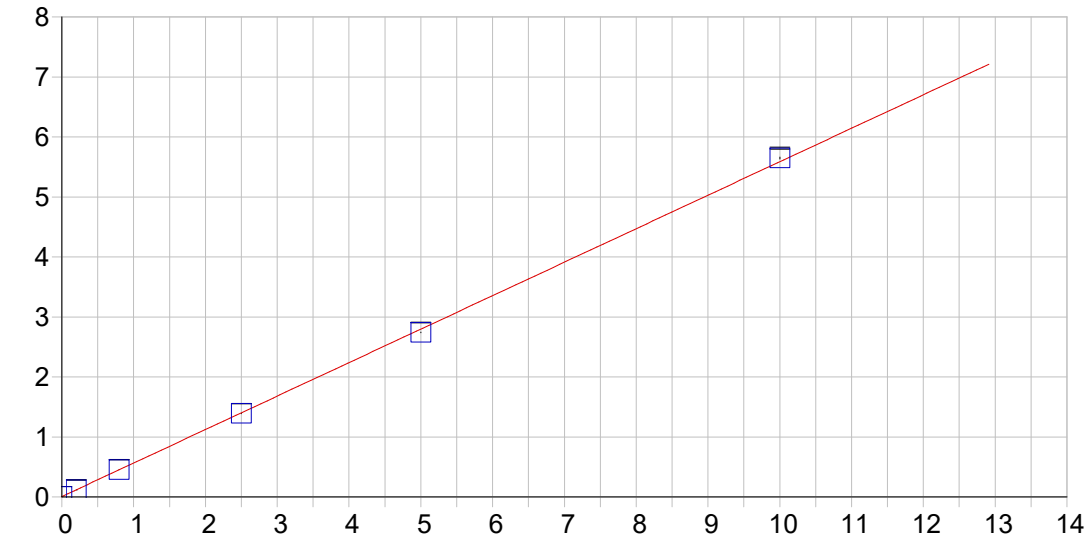
B 249.678 {135}

Date of Fit:	9/9/2025 12:14:00	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.010247	Re-Slope:	1.000000
A1 (Gain):	0.630062	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999947	Status:	OK.
Std Error of Est:	0.000338		
Predicted MDL:	0.000782		
Predicted MQL:	0.002608		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00001	-.000	.000	.01024	.000	1
S1	.10000	.10642	.006	6.42	.07693	.002	1
S3	2.5000	2.5456	.046	1.82	1.6085	.014	1
S4	5.0000	4.9456	-.054	-1.09	3.1149	.012	1
S5	10.000	9.9945	-.006	-.055	6.2847	.047	1
S2	.80000	.80797	.008	.997	.51750	.002	1

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122



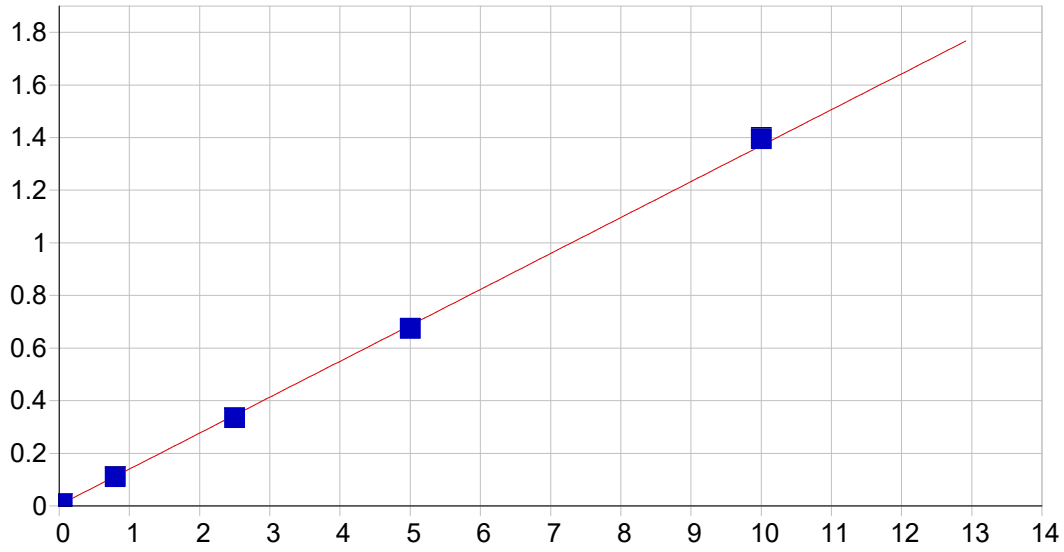
Mo 202.030 {467}

Date of Fit:	9/9/2025 12:14:00	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.006424	Re-Slope:	1.000000
A1 (Gain):	0.557965	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999911	Status:	OK.
Std Error of Est:	0.000553		
Predicted MDL:	0.000291		
Predicted MQL:	0.000971		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00643	.000	1
S1	.20000	.19707	-.003	-1.47	.11638	.000	1
S3	2.5000	2.4818	-.018	-.729	1.3912	.003	1
S4	5.0000	4.9045	-.096	-1.91	2.7430	.005	1
S5	10.000	10.112	.112	1.12	5.6484	.017	1
S2	.80000	.80505	.005	.631	.45561	.000	1

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122



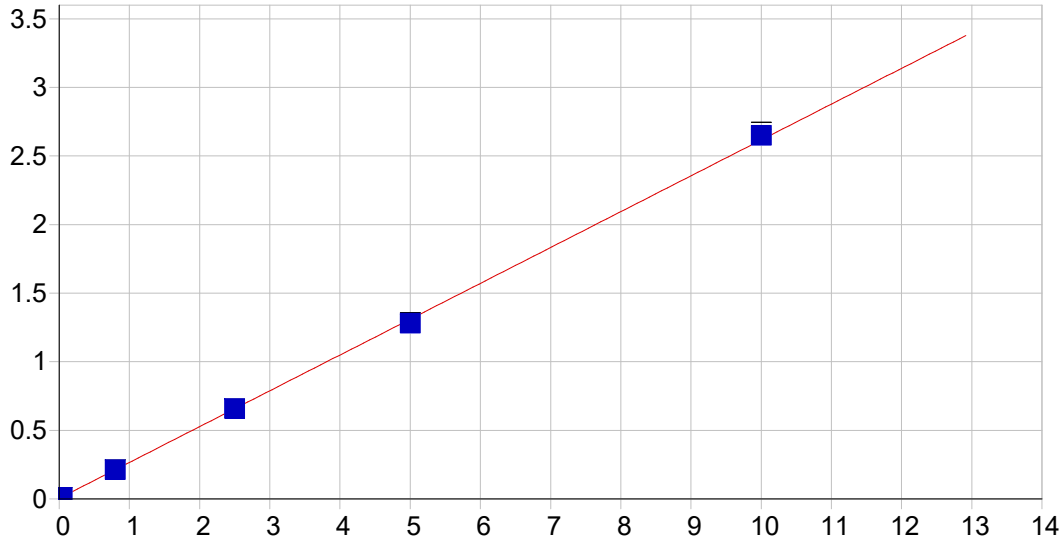
Sn 189.989 {478}

Date of Fit:	9/9/2025 12:14:00	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.003344	Re-Slope:	1.000000
A1 (Gain):	0.136591	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999783	Status:	OK.
Std Error of Est:	0.000094		
Predicted MDL:	0.000711		
Predicted MQL:	0.002371		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00334	.000	1
S1	.04000	.03864	-.001	-3.39	.00862	.000	1
S3	2.5000	2.4242	-.076	-3.03	.33412	.001	1
S4	5.0000	4.9087	-.091	-1.83	.67313	.001	1
S5	10.000	10.187	.187	1.87	1.3934	.005	1
S2	.80000	.78150	-.018	-2.31	.10998	.000	1

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122



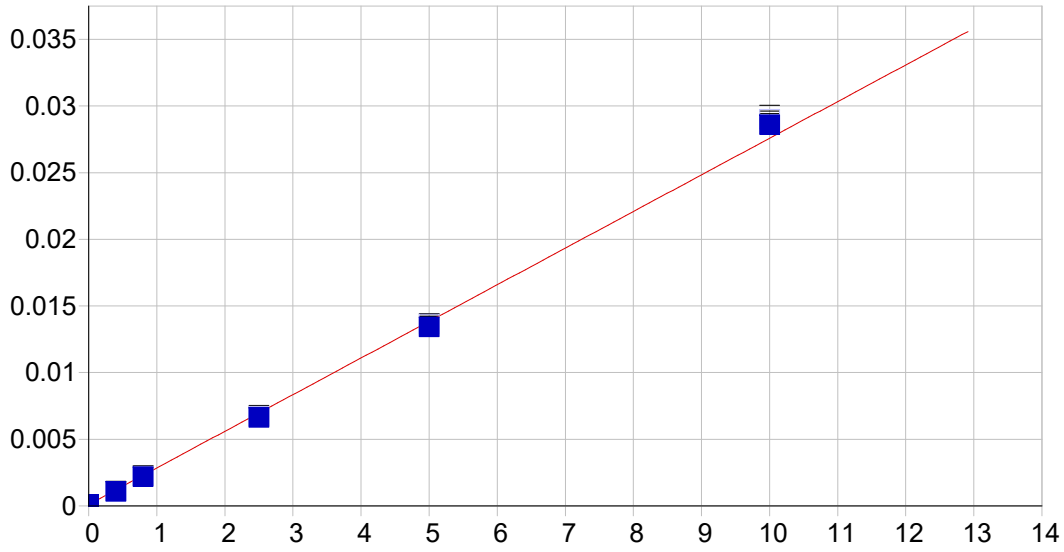
Ti 336.121 {100}

Date of Fit:	9/9/2025 12:14:00	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.004317	Re-Slope:	1.000000
A1 (Gain):	0.261239	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999878	Status:	OK.
Std Error of Est:	0.000135		
Predicted MDL:	0.001705		
Predicted MQL:	0.005684		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00432	.000	1
S1	.04000	.03790	-.002	-5.25	.01421	.000	1
S3	2.5000	2.4999	-.000	-.003	.65716	.002	1
S4	5.0000	4.8822	-.118	-2.36	1.2793	.007	1
S5	10.000	10.125	.125	1.25	2.6484	.025	1
S2	.80000	.79527	-.005	-.591	.21200	.001	1

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122



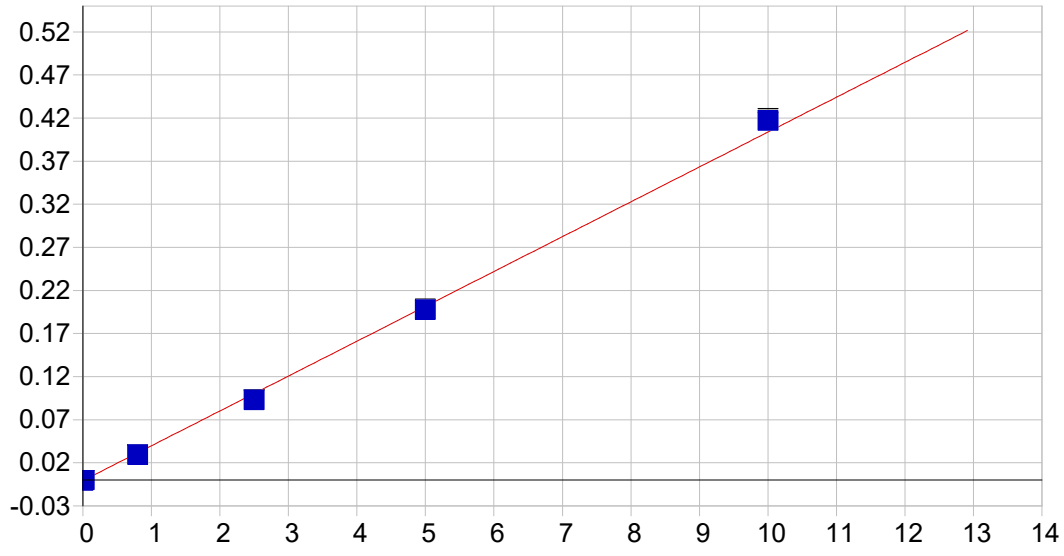
Si 288.158 {117}

Date of Fit:	9/9/2025 12:14:00	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000101	Re-Slope:	1.000000
A1 (Gain):	0.002748	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999177	Status:	OK.
Std Error of Est:	0.000012		
Predicted MDL:	0.013436		
Predicted MQL:	0.044786		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00008	.000	.000	.00010	.000	1
S1	.40000	.35317	-.047	-11.7	.00107	.000	1
S3	2.5000	2.3720	-.128	-5.12	.00672	.000	1
S4	5.0000	4.8506	-.149	-2.99	.01364	.000	1
S5	10.000	10.363	.363	3.63	.02900	.000	1
S2	.80000	.76018	-.040	-4.98	.00222	.000	1

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122



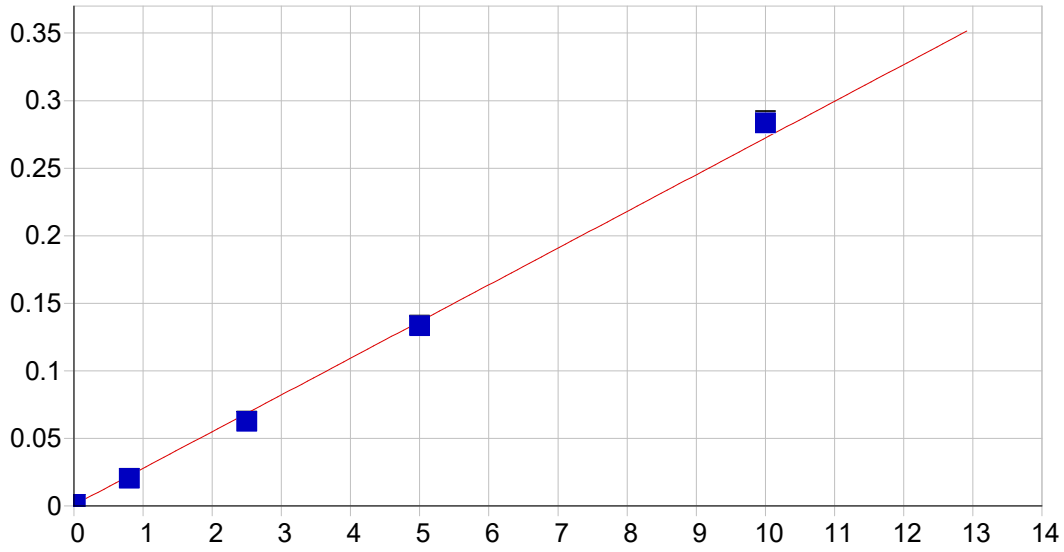
P 177.495 {490}

Date of Fit:	9/9/2025 12:14:00	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000699	Re-Slope:	1.000000
A1 (Gain):	0.040448	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999192	Status:	OK.
Std Error of Est:	0.000038		
Predicted MDL:	0.001970		
Predicted MQL:	0.006566		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00070	.000	1
S1	.02000	.01937	-.001	-3.15	.00009	.000	1
S3	2.5000	2.3177	-.182	-7.29	.09303	.000	1
S4	5.0000	4.9068	-.093	-1.86	.19774	.000	1
S5	10.000	10.330	.330	3.30	.41707	.002	1
S2	.80000	.74585	-.054	-6.77	.02946	.000	1

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122



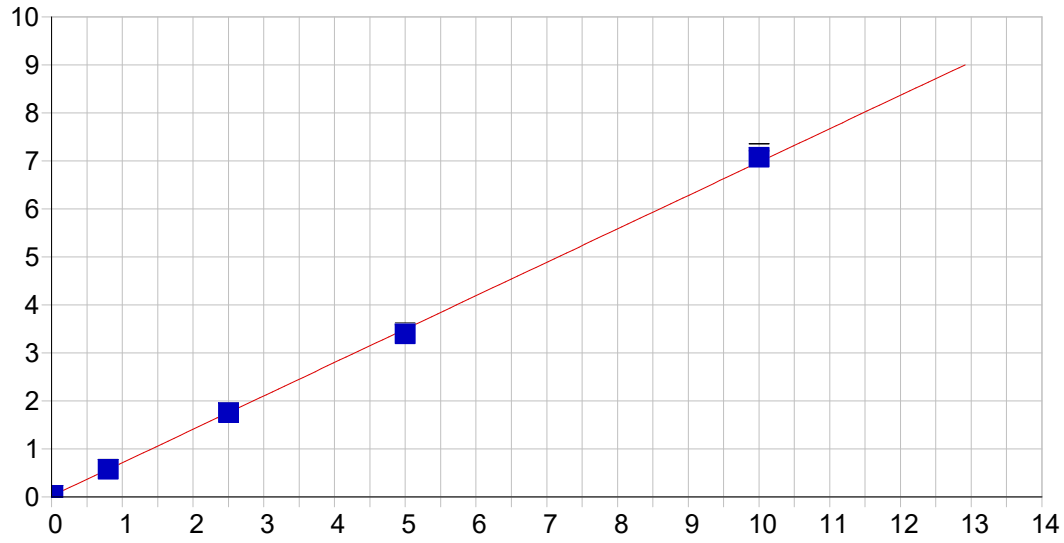
S 182.034 {485}

Date of Fit:	9/9/2025 12:14:00	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000647	Re-Slope:	1.000000
A1 (Gain):	0.027166	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.998734	Status:	OK.
Std Error of Est:	0.000032		
Predicted MDL:	0.003233		
Predicted MQL:	0.010777		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00065	.000	1
S1	.02000	.01850	-.001	-7.49	.00113	.000	1
S3	2.5000	2.2779	-.222	-8.88	.06235	.000	1
S4	5.0000	4.8886	-.111	-2.23	.13310	.000	1
S5	10.000	10.410	.410	4.10	.28275	.002	1
S2	.80000	.72469	-.075	-9.41	.02028	.000	1

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122



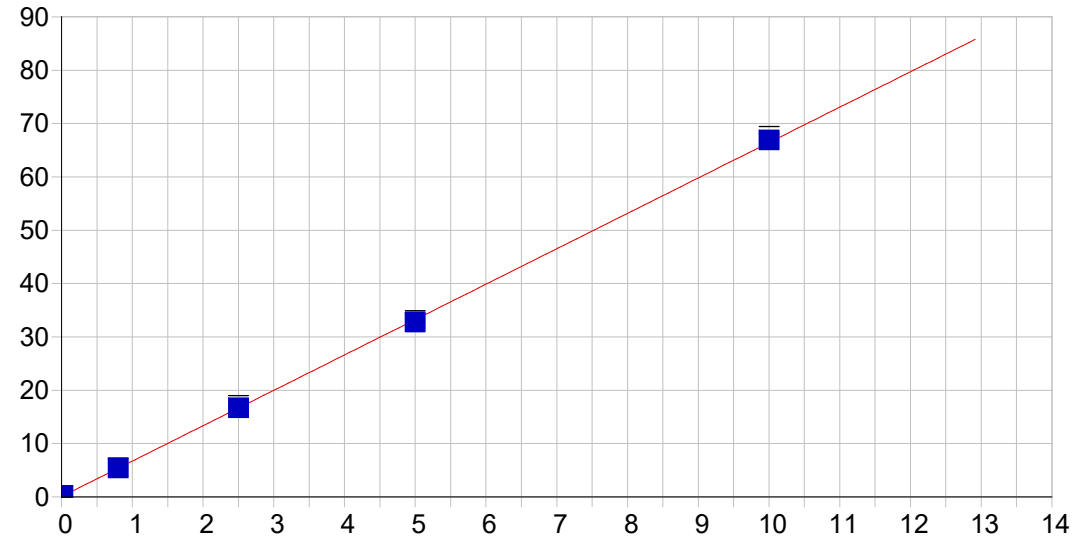
Li 670.784 { 50}

Date of Fit:	9/9/2025 12:14:00	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.016593	Re-Slope:	1.000000
A1 (Gain):	0.695865	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999816	Status:	OK.
Std Error of Est:	0.000313		
Predicted MDL:	0.002054		
Predicted MQL:	0.006847		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.01659	.001	1
S5	10.000	10.145	.145	1.45	7.0816	.074	1
S4	5.0000	4.8539	-.146	-2.92	3.3970	.018	1
S3	2.5000	2.4972	-.003	-.111	1.7557	.006	1
S1	.02000	.02271	.003	13.6	.03264	.001	1
S2	.80000	.80126	.001	.157	.57461	.001	1

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122



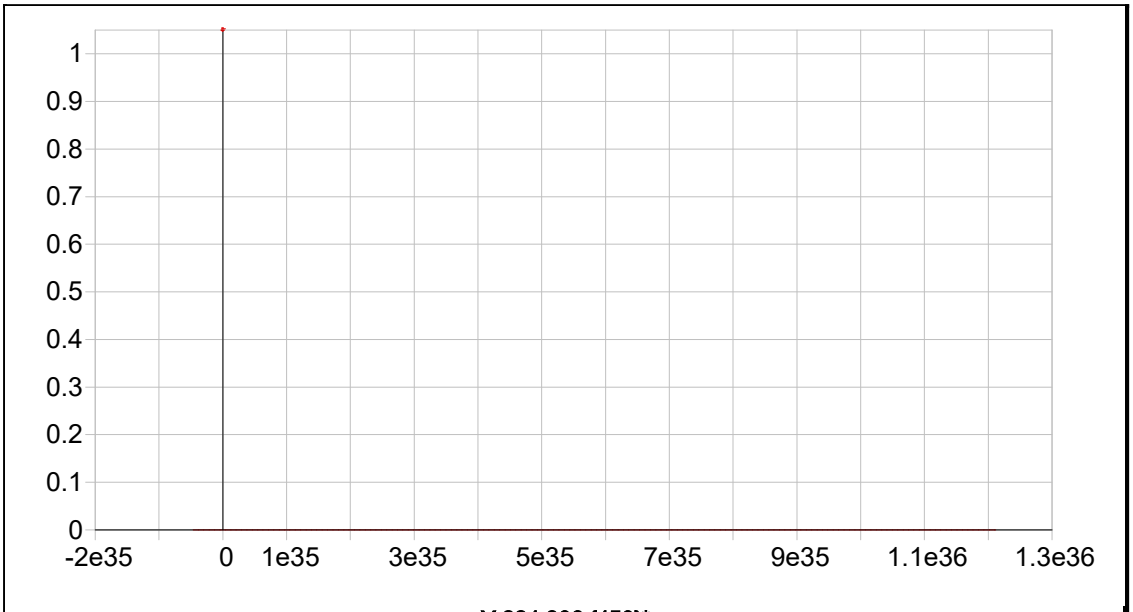
Sr 407.771 { 83}

Date of Fit:	9/9/2025 12:14:00	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.072051	Re-Slope:	1.000000
A1 (Gain):	6.636155	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999955	Status:	OK.
Std Error of Est:	0.001474		
Predicted MDL:	0.000115		
Predicted MQL:	0.000384		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.07205	.001	1
S1	.02000	.02086	.001	4.30	.21111	.003	1
S3	2.5000	2.5054	.005	.215	16.714	.423	1
S4	5.0000	4.9242	-.076	-1.52	32.782	.265	1
S5	10.000	10.066	.066	.659	66.934	.668	1
S2	.80000	.80365	.004	.457	5.4103	.009	1

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

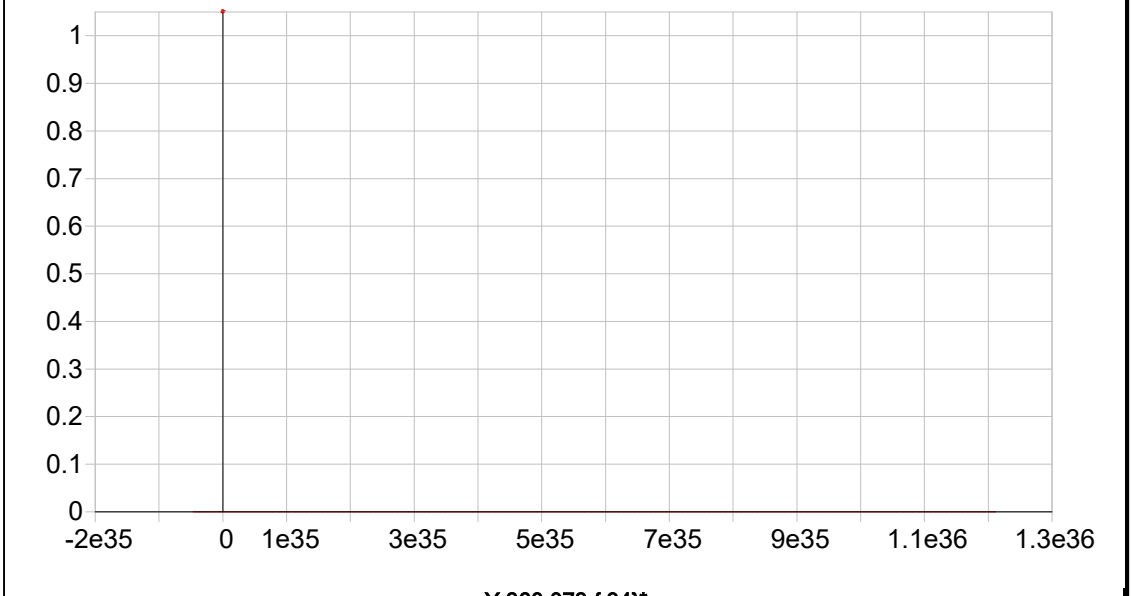


Y 224.306 {450}*

Date of Fit:	9/9/2025 11:29:00	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}*

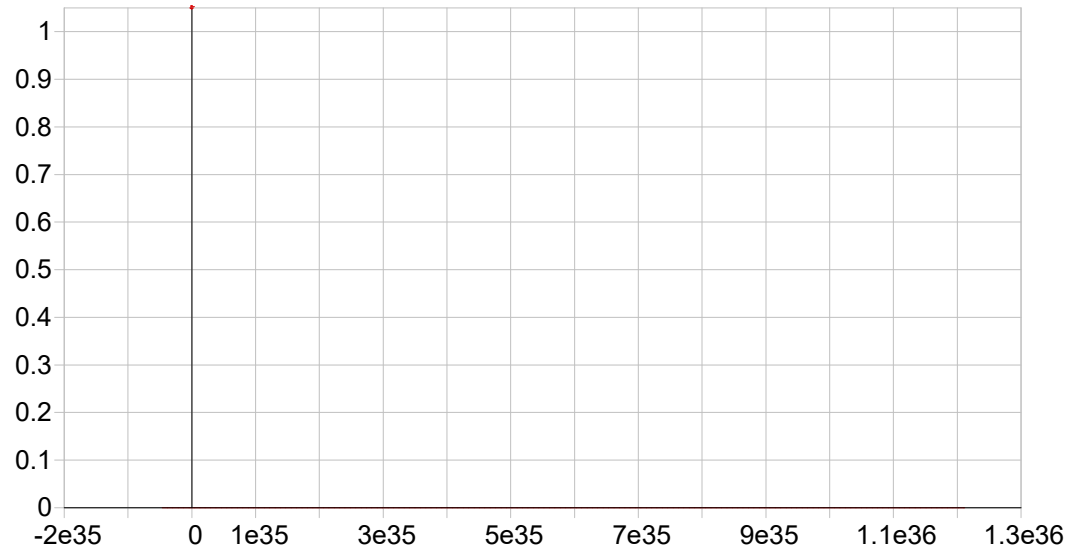
Date of Fit:	<not fit>	Type of Fit:	Linear	Weighting:	1/Conc

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

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

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



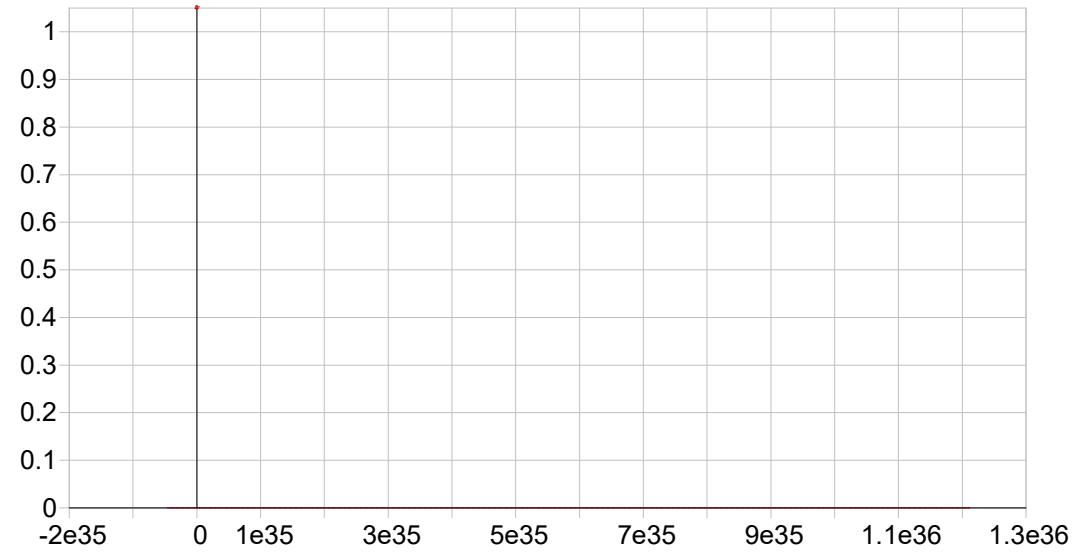
Y 371.030 { 91}*

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:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

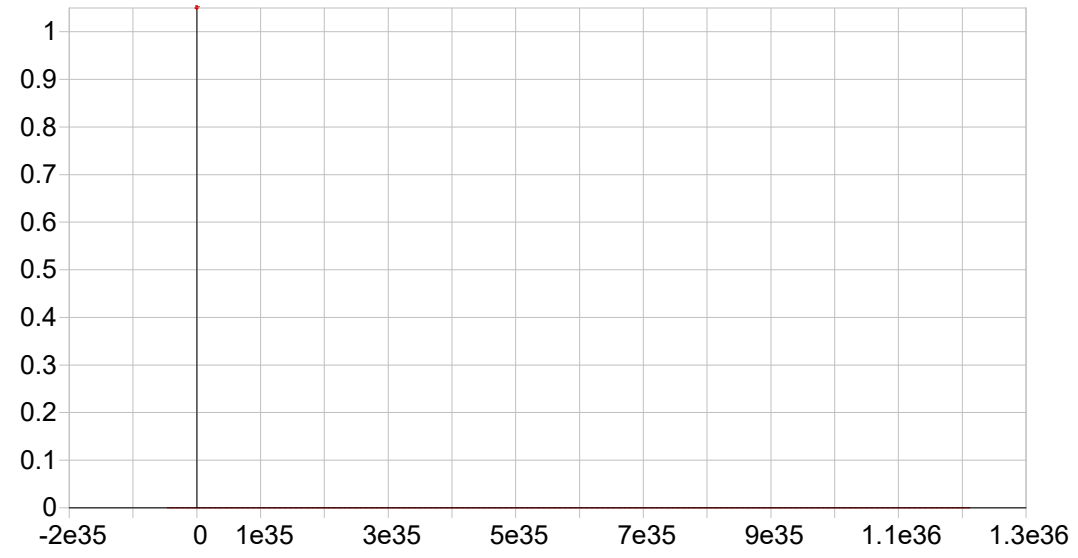


Y 224.306 {150}*

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:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

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:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: S0 Acquired: 9/9/2025 11:48:46 Type: Cal
Method: 6010-200.7 NEW(v151) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	Be2348
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00045**	**.00102**	**.00219**	**.00092**	**.00142**	**.00111**	**.12072**	**.00283**
Stddev	.00006	.00011	.00031	.00012	.00011	.00019	.00118	.00020
%RSD	13.163	11.261	14.161	12.696	7.5746	17.021	.97431	7.1357
#1	.00040	.00089	.00193	.00096	.00133	.00128	.12088	.00304
#2	.00043	.00110	.00254	.00079	.00154	.00114	.11948	.00264
#3	.00052	.00107	.00212	.00100	.00139	.00090	.12182	.00280

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	**.01387**	**.00542**	**.00064**	**.00519**	**.00183**	**.00006**	**.00261**	**.00039**
Stddev	.00019	.00079	.00003	.00009	.00021	.00002	.00016	.00008
%RSD	1.3991	14.497	4.6609	1.6584	11.691	27.011	6.2620	21.099
#1	.01400	.00611	.00061	.00514	.00166	.00006	.00252	.00030
#2	.01365	.00457	.00066	.00529	.00175	.00004	.00251	.00046
#3	.01396	.00559	.00066	.00515	.00207	.00007	.00280	.00042

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	**.00228**	**-.00018**	**.00293**	**.00043**	**.01614**	**.00032**	**.01024**	**.00643**
Stddev	.00022	.00007	.00017	.00010	.00017	.00016	.00034	.00007
%RSD	9.4387	36.349	5.9396	22.597	1.0753	51.354	3.3010	1.0655
#1	.00251	-.00011	.00276	.00035	.01599	.00016	.01063	.00638
#2	.00209	-.00024	.00292	.00039	.01633	.00030	.01002	.00639
#3	.00222	-.00020	.00311	.00053	.01609	.00049	.01007	.00651

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	**.00334**	**.00432**	**.00010**	**-.00070**	**.00065**	**.01659**	**.07205**
Stddev	.00006	.00039	.00003	.00006	.00002	.00053	.00084
%RSD	1.7945	8.9270	29.571	8.4371	3.4175	3.2075	1.1609
#1	.00328	.00447	.00007	-.00064	.00066	.01613	.07285
#2	.00334	.00460	.00011	-.00076	.00066	.01647	.07211
#3	.00340	.00388	.00012	-.00070	.00062	.01717	.07118

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: S0 Acquired: 9/9/2025 11:48:46 Type: Cal
Method: 6010-200.7 NEW(v151) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6166.3	107560.	10739.	5609.0	7207.8
Stddev	9.4	529.	16.	45.6	24.3
%RSD	.15167	.49204	.14799	.81345	.33757
#1	6157.8	107810.	10738.	5661.6	7190.7
#2	6164.9	107910.	10723.	5584.7	7197.0
#3	6176.3	106950.	10755.	5580.7	7235.6

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: S1 Acquired: 9/9/2025 11:53:07 Type: Cal
Method: 6010-200.7 NEW(v151) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	Be2348	Cd2265
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00138**	**.00316**	**.00409**	**.00177**	**.00532**	**.00997**	**.33619**	**.04336**	**.03008**
Stddev	.00007	.00005	.00015	.00007	.00009	.00019	.00371	.00068	.00018
%RSD	5.3516	1.7158	3.7399	3.9757	1.7755	1.8889	1.1034	1.5622	.60684
#1	.00144	.00311	.00391	.00174	.00528	.00989	.33614	.04356	.03004
#2	.00130	.00316	.00418	.00172	.00525	.01019	.33992	.04391	.03028
#3	.00140	.00322	.00417	.00185	.00543	.00984	.33250	.04260	.02993

Elem	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.11413**	**.00238**	**.03266**	**.01451**	**.00035**	**.01057**	**.02302**	**.02437**	**.00171**
Stddev	.00193	.00005	.00024	.00013	.00001	.00030	.00057	.00016	.00006
%RSD	1.6928	2.0163	.73663	.89433	4.0294	2.8290	2.4974	.66340	3.4743
#1	.11360	.00236	.03243	.01453	.00033	.01041	.02237	.02431	.00177
#2	.11628	.00234	.03263	.01438	.00034	.01092	.02344	.02425	.00165
#3	.11253	.00243	.03291	.01464	.00036	.01039	.02325	.02455	.00172

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.02362**	**.00502**	**.09689**	**.00826**	**.07693**	**.11638**	**.00862**	**.01421**	**.00107**
Stddev	.00025	.00038	.00087	.00012	.00175	.00049	.00005	.00014	.00002
%RSD	1.0471	7.5735	.89512	1.4915	2.2751	.42362	.57203	1.0176	1.8109
#1	.02338	.00483	.09608	.00813	.07702	.11581	.00861	.01406	.00110
#2	.02361	.00478	.09780	.00827	.07863	.11669	.00857	.01422	.00106
#3	.02388	.00546	.09679	.00837	.07513	.11663	.00867	.01435	.00106

Elem	P_1774	S_1820	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00009**	**.00113**	**.03264**	**.21111**
Stddev	.00004	.00003	.00135	.00305
%RSD	48.659	2.4998	4.1407	1.4453
#1	.00011	.00115	.03416	.21040
#2	.00004	.00110	.03221	.21446
#3	.00011	.00113	.03156	.20849

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: S1 Acquired: 9/9/2025 11:53:07 Type: Cal
Method: 6010-200.7 NEW(v151) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6237.7	105780.	10468.	5535.6	7302.8
Stddev	24.6	706.	140.	13.6	39.4
%RSD	.39391	.66716	1.3385	.24525	.53978
#1	6266.1	105970.	10517.	5546.0	7348.3
#2	6223.2	106370.	10310.	5520.3	7280.8
#3	6223.8	105000.	10577.	5540.7	7279.3

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: S2 Acquired: 9/9/2025 11:57:25 Type: Cal
Method: 6010-200.7 NEW(v151) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	Be2348	Cd2265
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.03668	.04963	.14150	.03169	.06635	.11702	3.4621	.25896	1.0790
Stddev	.00017	.00104	.00026	.00013	.00021	.00040	.0136	.00135	.0003
%RSD	.46492	2.0875	.18630	.39549	.31393	.34490	.39371	.52182	.02787
#1	.03685	.05048	.14156	.03183	.06655	.11738	3.4778	.25945	1.0793
#2	.03669	.04848	.14121	.03163	.06614	.11658	3.4550	.25743	1.0790
#3	.03651	.04994	.14173	.03160	.06635	.11708	3.4535	.26000	1.0787

Elem	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.21340	.02957	.36852	.12003	.00232	.15123	.04261	.21765	.03636
Stddev	.00028	.00003	.00034	.00018	.00003	.00076	.00021	.00015	.00007
%RSD	.12899	.11335	.09272	.14790	1.3565	.50476	.49967	.06950	.18979
#1	.21371	.02954	.36817	.11982	.00235	.15210	.04260	.21754	.03628
#2	.21323	.02961	.36886	.12011	.00229	.15071	.04240	.21783	.03638
#3	.21325	.02956	.36852	.12014	.00230	.15087	.04283	.21759	.03642

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.04351	.04623	.80586	.01576	.51750	.45561	.10998	.21200	.00222
Stddev	.00012	.00030	.00148	.00006	.00197	.00040	.00034	.00060	.00005
%RSD	.26685	.65945	.18347	.36775	.38133	.08680	.30987	.28503	2.2865
#1	.04347	.04646	.80492	.01583	.51681	.45602	.11001	.21240	.00223
#2	.04364	.04589	.80508	.01573	.51597	.45560	.10962	.21130	.00217
#3	.04342	.04635	.80756	.01573	.51973	.45523	.11030	.21229	.00227

Elem	P_1774	S_1820	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02946	.02028	.57461	5.4103
Stddev	.00007	.00010	.00133	.0086
%RSD	.24092	.48581	.23068	.15851
#1	.02955	.02028	.57612	5.4124
#2	.02942	.02018	.57406	5.4009
#3	.02943	.02037	.57364	5.4176

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: S2 Acquired: 9/9/2025 11:57:25 Type: Cal
Method: 6010-200.7 NEW(v151) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6224.7	104360.	10638.	5515.5	7212.5
Stddev	12.8	107.	30.	20.0	13.5
%RSD	.20617	.10233	.28669	.36328	.18674
#1	6231.9	104390.	10648.	5533.0	7226.0
#2	6209.9	104240.	10663.	5493.6	7199.1
#3	6232.2	104450.	10604.	5519.9	7212.3

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: S3 Acquired: 9/9/2025 12:01:29 Type: Cal
Method: 6010-200.7 NEW(v151) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	Be2348	Cd2265
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.11164**	**.15099**	**.43373**	**.09525**	**.20218**	**.36213**	**10.761**	**.80551**	**3.3220**
Stddev	.00031	.00260	.00039	.00033	.00032	.00092	.046	.00560	.0080
%RSD	.28167	1.7207	.08910	.34923	.15859	.25395	.42798	.69494	.24119
#1	.11191	.15290	.43332	.09562	.20254	.36148	10.710	.80735	3.3129
#2	.11130	.14803	.43379	.09499	.20191	.36173	10.800	.79922	3.3252
#3	.11172	.15204	.43408	.09514	.20209	.36319	10.772	.80996	3.3278

Elem	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.65895**	**.09036**	**1.1343**	**.36091**	**.00720**	**.46913**	**.13030**	**.66751**	**.11182**
Stddev	.00223	.00033	.0023	.00021	.00007	.00106	.00081	.00107	.00015
%RSD	.33906	.35995	.20274	.05888	1.0214	.22554	.61834	.16022	.13369
#1	.65784	.09002	1.1317	.36071	.00713	.46794	.13020	.66652	.11195
#2	.65749	.09039	1.1353	.36088	.00728	.46948	.12955	.66865	.11166
#3	.66152	.09067	1.1360	.36113	.00719	.46997	.13115	.66736	.11186

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.12910**	**.14345**	**2.4465**	**.04904**	**1.6085**	**1.3912**	**.33412**	**.65716**	**.00672**
Stddev	.00118	.00029	.0097	.00066	.0135	.0027	.00070	.00154	.00006
%RSD	.91423	.20014	.39656	1.3436	.84066	.19080	.20924	.23375	.91505
#1	.12830	.14312	2.4376	.04834	1.6120	1.3930	.33386	.65584	.00669
#2	.13046	.14367	2.4451	.04965	1.5935	1.3881	.33359	.65680	.00679
#3	.12855	.14354	2.4569	.04913	1.6199	1.3923	.33492	.65884	.00668

Elem	P_1774	S_1820	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.09303**	**.06235**	**1.7557**	**16.714**
Stddev	.00022	.00027	.0056	.423
%RSD	.23323	.42565	.31774	2.5293
#1	.09314	.06262	1.7493	16.548
#2	.09278	.06209	1.7593	16.400
#3	.09318	.06236	1.7586	17.195

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: S3 Acquired: 9/9/2025 12:01:29 Type: Cal
Method: 6010-200.7 NEW(v151) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6368.0	104790.	10666.	5526.7	7273.1
Stddev	5.8	42.	91.	14.4	6.0
%RSD	.09162	.03960	.85724	.26037	.08299
#1	6361.8	104780.	10601.	5514.0	7279.8
#2	6373.4	104760.	10770.	5542.3	7268.1
#3	6368.8	104840.	10625.	5523.9	7271.5

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: S4 Acquired: 9/9/2025 12:05:36 Type: Cal
Method: 6010-200.7 NEW(v151) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	Be2348	Cd2265
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.22879	.30645	.87132	.19420	.40469	.70714	20.633	1.5575	6.8049
Stddev	.00041	.00671	.00096	.00047	.00086	.00224	.556	.0077	.0043
%RSD	.17805	2.1911	.11066	.24191	.21267	.31616	2.6943	.49388	.06250
#1	.22887	.30447	.87183	.19381	.40385	.70573	19.992	1.5486	6.8076
#2	.22916	.31394	.87192	.19472	.40557	.70972	20.978	1.5619	6.8072
#3	.22835	.30095	.87021	.19406	.40467	.70596	20.930	1.5621	6.8000

Elem	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1.2736	.17751	2.2940	.71842	.01431	.90744	.25538	1.3518	.22197
Stddev	.0011	.00071	.0015	.00132	.00002	.00510	.00128	.0023	.00063
%RSD	.08824	.39906	.06360	.18393	.14293	.56201	.50148	.16876	.28520
#1	1.2724	.17684	2.2953	.71734	.01434	.90193	.25390	1.3544	.22126
#2	1.2740	.17825	2.2944	.71990	.01429	.90839	.25621	1.3509	.22217
#3	1.2745	.17744	2.2924	.71804	.01431	.91200	.25601	1.3502	.22248

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.25535	.28173	4.8134	.09846	3.1149	2.7430	.67313	1.2793	.01364
Stddev	.00046	.00090	.0116	.00019	.0116	.0047	.00149	.0068	.00004
%RSD	.18178	.32085	.24187	.19755	.37330	.17092	.22201	.53220	.31484
#1	.25562	.28069	4.8019	.09823	3.1017	2.7405	.67406	1.2726	.01359
#2	.25482	.28229	4.8131	.09860	3.1191	2.7484	.67392	1.2789	.01365
#3	.25562	.28222	4.8252	.09854	3.1238	2.7401	.67140	1.2862	.01368

Elem	P_1774	S_1820	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.19774	.13310	3.3970	32.782
Stddev	.00047	.00033	.0177	.265
%RSD	.23661	.24422	.52150	.80729
#1	.19762	.13294	3.3828	32.499
#2	.19826	.13347	3.3913	33.024
#3	.19734	.13288	3.4169	32.823

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: S4 Acquired: 9/9/2025 12:05:36 Type: Cal
Method: 6010-200.7 NEW(v151) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6128.2	103390.	10817.	5442.1	6806.3
Stddev	10.9	252.	30.	13.1	12.3
%RSD	.17704	.24353	.27309	.24091	.18059
#1	6127.6	103420.	10843.	5431.1	6796.8
#2	6117.7	103130.	10785.	5456.6	6802.0
#3	6139.4	103630.	10822.	5438.6	6820.2

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: S5 Acquired: 9/9/2025 12:09:49 Type: Cal
Method: 6010-200.7 NEW(v151) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	Be2348	Cd2265
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.47650**	**.61693**	**1.8253**	**.40210**	**.84166**	**1.4577**	**43.192**	**3.1339**	**14.146**
Stddev	.00055	.02175	.0035	.00074	.00162	.0117	.633	.0245	.020
%RSD	.11559	3.5257	.19139	.18457	.19206	.80301	1.4654	.78225	.13878
#1	.47704	.63277	1.8269	.40217	.84273	1.4654	43.909	3.1618	14.149
#2	.47652	.62590	1.8276	.40281	.84245	1.4635	42.710	3.1241	14.164
#3	.47594	.59213	1.8212	.40133	.83980	1.4442	42.957	3.1158	14.125

Elem	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2.6075**	**.35897**	**4.7943**	**1.4734**	**.02984**	**1.8550**	**.52320**	**2.8208**	**.45503**
Stddev	.0205	.00291	.0077	.0004	.00019	.0190	.00289	.0041	.00339
%RSD	.78725	.81035	.16125	.03055	.64020	1.0265	.55146	.14603	.74476
#1	2.6222	.35700	4.7987	1.4737	.02964	1.8739	.52596	2.8210	.45281
#2	2.6162	.35759	4.7988	1.4736	.02985	1.8554	.52344	2.8248	.45335
#3	2.5840	.36231	4.7854	1.4729	.03002	1.8358	.52021	2.8166	.45893

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.53552**	**.58520**	**9.6692**	**.20845**	**6.2847**	**5.6484**	**1.3934**	**2.6484**	**.02900**
Stddev	.00405	.00458	.0698	.00126	.0466	.0169	.0053	.0251	.00031
%RSD	.75594	.78338	.72233	.60668	.74177	.29849	.37868	.94958	1.0556
#1	.53100	.58824	9.6189	.20701	6.3364	5.6609	1.3971	2.6680	.02868
#2	.53676	.58744	9.6399	.20895	6.2715	5.6549	1.3957	2.6570	.02903
#3	.53880	.57993	9.7490	.20938	6.2460	5.6292	1.3873	2.6200	.02929

Elem	P_1774	S_1820	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.41707**	**.28275**	**7.0816**	**66.934**
Stddev	.00240	.00173	.0735	.668
%RSD	.57623	.61012	1.0383	.99827
#1	.41917	.28426	7.1410	66.989
#2	.41759	.28312	7.1045	67.573
#3	.41445	.28087	6.9994	66.240

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: S5 Acquired: 9/9/2025 12:09:49 Type: Cal
Method: 6010-200.7 NEW(v151) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5817.0	99787.	10622.	5252.7	6344.0
Stddev	25.7	641.	81.	37.9	29.3
%RSD	.44196	.64266	.76123	.72065	.46218
#1	5794.3	100430.	10547.	5295.3	6319.2
#2	5811.8	99783.	10612.	5240.1	6336.5
#3	5845.0	99148.	10707.	5222.8	6376.4

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: ICV01 Acquired: 9/9/2025 12:14:01 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICV01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.031910**	**3.814803**	**3.909143**	**4.064250**	**4.131554**	**7.921361**
Stddev	.008357	.058597	.008268	.010570	.009751	.022761
%RSD	.2072595	1.536047	.2115134	.2600839	.2360242	.2873312
#1	4.023137	3.847216	3.899616	4.055863	4.120486	7.895939
#2	4.032816	3.850033	3.914446	4.076123	4.135294	7.928297
#3	4.039776	3.747160	3.913368	4.060764	4.138882	7.939846

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.780044**	**.1989496**	**1.990885**	**19.68706**	**.8131926**	**2.003754**
Stddev	.093073	.0009272	.004918	.03984	.0027481	.005381
%RSD	1.196306	.4660450	.2470340	.2023567	.3379362	.2685534
#1	7.818111	.1998600	1.985463	19.67000	.8160802	1.997553
#2	7.673972	.1980065	1.992133	19.65859	.8106094	2.007203
#3	7.848049	.1989823	1.995059	19.73259	.8128883	2.006505

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.027852**	**4.013961**	**1.964690**	**19.75568**	**2.008154**	**1.017825**
Stddev	.002770	.021562	.014973	.06309	.006098	.000669
%RSD	.2694608	.5371726	.7621214	.3193716	.3036794	.0657719
#1	1.025009	3.989663	1.952675	19.76886	2.001133	1.017266
#2	1.028006	4.021408	1.959930	19.68704	2.011189	1.018567
#3	1.030542	4.030812	1.981465	19.81115	2.012140	1.017642

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**19.98338**	**1.975023**	**2.023440**	**19.72830**	**3.897732**	**4.039575**
Stddev	.15372	.010653	.000773	.18815	.012860	.010111
%RSD	.7692219	.5393753	.0382097	.9536853	.3299365	.2503086
#1	19.80604	1.964798	2.023227	19.53201	3.911269	4.027905
#2	20.06565	1.974213	2.022797	19.74579	3.885678	4.045737
#3	20.07845	1.986057	2.024298	19.90708	3.896249	4.045082

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: ICV01 Acquired: 9/9/2025 12:14:01 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICV01 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.983408	3.946045	3.751654	F .0023396	F .0178145	F -.005247
Stddev	.002128	.023680	.018437	.0019555	.0030570	.001838
%RSD	.0534270	.6001002	.4914439	83.58576	17.15992	35.02290
#1	3.980970	3.924828	3.730431	.0032194	.0143476	-.003867
#2	3.984361	3.941717	3.760809	.0037006	.0201227	-.007333
#3	3.984894	3.971591	3.763721	.0000987	.0189733	-.004542

Elem	Sr4077
Units	ppm
Avg	F -.006315
Stddev	.000049
%RSD	.7781794
#1	-.006347
#2	-.006338
#3	-.006258

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5963.317	101296.3	10846.61	5366.406	6712.227
Stddev	16.493	292.7	71.82	13.645	11.885
%RSD	.2765784	.2889089	.6621808	.2542588	.1770683
#1	5975.134	101274.2	10792.14	5376.069	6715.982
#2	5970.342	101599.4	10928.01	5372.352	6721.782
#3	5944.474	101015.3	10819.67	5350.798	6698.918

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: LLICV01 Acquired: 9/9/2025 12:26:32 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: LLICV01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0177687**	**.0343672**	**.0121329**	**.0196824**	**.0448908**	**.1017879**
Stddev	.0019807	.0006513	.0003032	.0001986	.0010774	.0067904
%RSD	11.14733	1.895023	2.499342	1.008834	2.400143	6.671095
#1	.0169415	.0343827	.0119082	.0198633	.0457313	.1037976
#2	.0200289	.0350106	.0120127	.0194700	.0436761	.0942195
#3	.0163356	.0337084	.0124778	.0197140	.0452649	.1073466

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0901198**	**.0060072**	**.0056843**	**2.026822**	**.0092394**	**.0278780**
Stddev	.0005779	.0001008	.0000354	.007347	.0001963	.0002096
%RSD	.6413036	1.678597	.6227401	.3624982	2.124117	.7520013
#1	.0896540	.0060127	.0056931	2.023236	.0090595	.0279457
#2	.0899389	.0061052	.0057144	2.035273	.0092101	.0276429
#3	.0907666	.0059037	.0056453	2.021956	.0094487	.0280455

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0207617**	**.1034940**	**.0186803**	**2.098658**	**.0388975**	**.0099138**
Stddev	.0003646	.0048154	.0005170	.030188	.0003079	.0002302
%RSD	1.756279	4.652792	2.767516	1.438456	.7916127	2.321573
#1	.0203407	.1013384	.0186835	2.095572	.0391293	.0096517
#2	.0209748	.1090106	.0191957	2.070131	.0390151	.0100828
#3	.0209697	.1001330	.0181618	2.130271	.0385481	.0100070

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.031523**	**.0365922**	**.0407590**	**1.967438**	**.0993881**	**.1928808**
Stddev	.011118	.0029702	.0002325	.024393	.0008082	.0009187
%RSD	.5472702	8.116896	.5703600	1.239832	.8131463	.4763326
#1	2.021922	.0386375	.0405071	1.948379	.1003173	.1919076
#2	2.043704	.0379537	.0408048	1.994928	.0989982	.1930017
#3	2.028943	.0331853	.0409652	1.959008	.0988487	.1937331

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: LLICV01 Acquired: 9/9/2025 12:26:32 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal 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	.0353503	.0338871	.3748354	F .0157707	.0174494	.0164431
Stddev	.0001623	.0019063	.0033853	.0004806	.0018218	.0013260
%RSD	.4590311	5.625546	.9031501	3.047320	10.44018	8.063994
#1	.0351929	.0352186	.3775553	.0161876	.0159652	.0152299
#2	.0355171	.0317033	.3710440	.0152451	.0194825	.0162407
#3	.0353410	.0347392	.3759068	.0158795	.0169006	.0178586

Elem	Sr4077
Units	ppm
Avg	.0170654
Stddev	.0002320
%RSD	1.359370
#1	.0173273
#2	.0169832
#3	.0168857

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6272.265	105032.3	11127.89	5593.874	7262.107
Stddev	1.043	398.6	72.99	5.995	1.974
%RSD	.0166320	.3794619	.6559114	.1071775	.0271832
#1	6272.378	105069.2	11053.36	5598.329	7264.247
#2	6271.170	104616.6	11131.10	5587.058	7261.717
#3	6273.247	105411.1	11199.23	5596.236	7260.357

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: ICB01 Acquired: 9/9/2025 12:31:33 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICB01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.003354**	**-.001683**	**-.004020**	**-.002329**	**-.001853**	**-.014059**	**-.010333**
Stddev	.001454	.000247	.001305	.001706	.001299	.002808	.001536
%RSD	43.35191	14.68429	32.46196	73.23095	70.10248	19.97115	14.86446
#1	-.004488	-.001857	-.003913	-.000375	-.001712	-.014647	-.011053
#2	-.003860	-.001400	-.005376	-.003519	-.003218	-.011004	-.008570
#3	-.001715	-.001791	-.002772	-.003095	-.000631	-.016526	-.011377

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000293**	**-.001264**	**-.017704**	**-.000999**	**-.001926**	**-.000491**	**-.000475**
Stddev	.000023	.000503	.004794	.000064	.000409	.000239	.004436
%RSD	7.956261	39.79912	27.07802	6.425919	21.24417	48.71464	933.3656
#1	-.000291	-.001658	-.012190	-.000947	-.002220	-.000561	.004138
#2	-.000317	-.001437	-.020883	-.001071	-.002099	-.000687	-.004709
#3	-.000270	-.000697	-.020038	-.000979	-.001459	-.000225	-.000855

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.002519**	**-.011211**	**-.001898**	**-.000704**	**-.063755**	**-.000844**	**-.001790**
Stddev	.000122	.020322	.000335	.000454	.016635	.003527	.000173
%RSD	4.860119	181.2564	17.63358	64.54329	26.09243	417.6679	9.668199
#1	-.002531	-.034218	-.002284	-.001113	-.076275	.000580	-.001864
#2	-.002391	.004292	-.001732	-.000783	-.070112	-.004860	-.001915
#3	-.002635	-.003708	-.001679	-.000215	-.044879	.001747	-.001593

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.117132**	**-.002426**	**-.003618**	**-.002919**	**-.004573**	**.0067042**	**-.003082**
Stddev	.046020	.001056	.000770	.000551	.001081	.0075887	.000768
%RSD	39.28866	43.50648	21.28773	18.87631	23.63818	113.1934	24.90340
#1	-.170003	-.002759	-.004062	-.003447	-.003397	.0002265	-.003703
#2	-.095315	-.001244	-.004065	-.002963	-.004798	.0048324	-.003319
#3	-.086079	-.003275	-.002729	-.002348	-.005523	.0150537	-.002224

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: ICB01 Acquired: 9/9/2025 12:31:33 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICB01 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.007572	-.008232	-.004317
Stddev	.002142	.001149	.000067
%RSD	28.29429	13.96255	1.560939
#1	-.009110	-.007133	-.004258
#2	-.008482	-.009426	-.004390
#3	-.005125	-.008137	-.004302

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6295.185	104048.0	11034.12	5546.920	7339.457
Stddev	45.722	650.6	60.08	7.623	64.532
%RSD	.7263018	.6252908	.5444963	.1374270	.8792528
#1	6247.564	104600.9	11060.57	5538.135	7270.589
#2	6299.256	104212.0	10965.35	5551.779	7349.248
#3	6338.736	103331.1	11076.43	5550.848	7398.535

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: CRI01 Acquired: 9/9/2025 12:36:53 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CRI01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0164024**	**.0315257**	**.0115939**	**.0199498**	**.0462831**	**.1069230**	**.0922164**
Stddev	.0007323	.0031318	.0009962	.0024352	.0012356	.0100652	.0013870
%RSD	4.464328	9.933978	8.592272	12.20657	2.669691	9.413517	1.504022
#1	.0157036	.0350842	.0106085	.0202641	.0461318	.1038769	.0924866
#2	.0163395	.0291887	.0126005	.0173727	.0475873	.0987327	.0907142
#3	.0171640	.0303044	.0115727	.0222126	.0451300	.1181594	.0934483

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0060544**	**.0055335**	**2.064924**	**.0094951**	**.0276680**	**.0206760**	**.0982989**
Stddev	.0000430	.0000728	.006230	.0000799	.0001895	.0003708	.0077073
%RSD	.7097404	1.315633	.3016892	.8418196	.6847408	1.793401	7.840708
#1	.0060877	.0055842	2.064771	.0094667	.0278737	.0208908	.0903805
#2	.0060059	.0055663	2.058772	.0094332	.0276297	.0208893	.0987399
#3	.0060697	.0054501	2.071229	.0095853	.0275006	.0202478	.1057762

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0188711**	**2.089250**	**.0381187**	**.0096409**	**1.957822**	**.0381420**	**.0406450**
Stddev	.0004830	.022600	.0002748	.0002495	.014980	.0034455	.0003531
%RSD	2.559478	1.081722	.7208330	2.588192	.7651355	9.033451	.8687779
#1	.0191113	2.098856	.0383699	.0094709	1.945637	.0384893	.0409149
#2	.0191870	2.063434	.0378253	.0099273	1.974547	.0345360	.0407748
#3	.0183151	2.105460	.0381609	.0095244	1.953283	.0414008	.0402454

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.922762**	**.1000972**	**.1925590**	**.0348765**	**.0354647**	**.3698090**	**.0143085**
Stddev	.029131	.0012540	.0009057	.0005831	.0012846	.0018614	.0001072
%RSD	1.515058	1.252809	.4703704	1.671740	3.622154	.5033390	.7491938
#1	1.929487	.1010392	.1935361	.0349424	.0341099	.3713308	.0144237
#2	1.890857	.0986738	.1923935	.0354239	.0356191	.3703625	.0142116
#3	1.947943	.1005786	.1917475	.0342634	.0366652	.3677336	.0142902

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: CRI01 Acquired: 9/9/2025 12:36:53 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CRI01 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0141807	.0149101	.0176329
Stddev	.0006279	.0002276	.0001032
%RSD	4.428083	1.526662	.5850033
#1	.0143206	.0149919	.0175260
#2	.0147270	.0146529	.0177319
#3	.0134947	.0150856	.0176408

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6317.946	106905.8	11013.47	5600.150	7375.799
Stddev	6.107	70.1	57.94	16.072	6.943
%RSD	.0966680	.0655773	.5260394	.2869960	.0941279
#1	6314.575	106830.9	10963.35	5583.831	7378.923
#2	6314.268	106916.5	11076.90	5615.964	7367.843
#3	6324.996	106969.9	11000.17	5600.655	7380.631

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: ICSA01 Acquired: 9/9/2025 12:42:39 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSA01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000298**	**-.007161**	**-.003710**	**.0041036**	**-.004633**	**239.7795**	**-.008713**
Stddev	.003092	.003040	.000660	.0025453	.006305	.9250	.000716
%RSD	1039.135	42.44734	17.78199	62.02683	136.0872	.3857587	8.214087
#1	-.000727	-.004139	-.004152	.0063733	-.010536	240.4034	-.008722
#2	-.003153	-.010218	-.004026	.0045858	.002008	240.2182	-.007992
#3	.002987	-.007128	-.002951	.0013517	-.005370	238.7168	-.009424

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0012082**	**-.001233**	**227.2214**	**.0506395**	**-.000970**	**-.009264**	**95.11722**
Stddev	.0000640	.000073	1.2772	.0007116	.000253	.000163	.54893
%RSD	5.294123	5.936375	.5620887	1.405184	26.11448	1.758467	.5771040
#1	.0011944	-.001148	228.5018	.0511531	-.000682	-.009449	95.11466
#2	.0011523	-.001279	227.2149	.0509382	-.001157	-.009196	94.56958
#3	.0012780	-.001271	225.9474	.0498273	-.001071	-.009146	95.66743

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.003244**	**240.8164**	**.0043733**	**.0007958**	**.0947661**	**.0025551**	**.0019982**
Stddev	.000451	.7260	.0004227	.0006679	.0203668	.0025209	.0003661
%RSD	13.89801	.3014677	9.666236	83.93063	21.49168	98.66095	18.32255
#1	-.002737	241.4429	.0038878	.0003224	.0799288	.0006085	.0018621
#2	-.003395	240.9856	.0045727	.0005052	.0863829	.0016542	.0024128
#3	-.003600	240.0208	.0046595	.0015597	.1179866	.0054027	.0017196

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0958032**	**-.059657**	**-.003103**	**-.007456**	**-.008651**	**.0288880**	**.0020946**
Stddev	.0357447	.000837	.000592	.000320	.000332	.0125030	.0023252
%RSD	37.31060	1.403466	19.08406	4.289425	3.835584	43.28098	111.0106
#1	.0564507	-.060551	-.003217	-.007764	-.009032	.0166519	.0040624
#2	.1262600	-.058891	-.002462	-.007126	-.008501	.0416418	-.000471
#3	.1046988	-.059528	-.003629	-.007477	-.008421	.0283702	.002692

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: ICSA01 Acquired: 9/9/2025 12:42:39 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSA01 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.009554	F -.034391	-.001902
Stddev	.002386	.001359	.000902
%RSD	24.96919	3.952944	47.41116
#1	-.008136	-.035742	-.002255
#2	-.008219	-.034409	-.000877
#3	-.012309	-.033023	-.002573

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6022.642	98595.22	10923.10	5274.809	6531.255
Stddev	6.499	189.35	88.90	19.270	5.662
%RSD	.1079109	.1920463	.8138730	.3653251	.0866967
#1	6030.128	98483.39	10840.93	5292.979	6537.285
#2	6018.435	98813.84	10910.90	5276.849	6530.429
#3	6019.364	98488.42	11017.47	5254.601	6526.051

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: ICSAB01 Acquired: 9/9/2025 12:46:50 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSAB01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1068113**	**.0928633**	**.0443512**	**.0561392**	**.6140589**	**257.4417**
Stddev	.0032008	.0029511	.0030743	.0063866	.0046742	.5452
%RSD	2.996692	3.177878	6.931738	11.37635	.7611895	.2117789
#1	.1051887	.0899410	.0478461	.0635133	.6192529	256.8121
#2	.1047468	.0928066	.0420648	.0525265	.6127325	257.7617
#3	.1104985	.0958424	.0431427	.0523778	.6101913	257.7511

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4956276**	**.5148713**	**1.005352**	**244.5328**	**.6055670**	**.5054941**
Stddev	.0012816	.0020216	.004417	.6447	.0011181	.0021851
%RSD	.2585884	.3926502	.4393403	.2636485	.1846335	.4322725
#1	.4945642	.5128684	1.009986	243.8067	.6047178	.5078592
#2	.4952679	.5169112	1.004880	245.0382	.6051495	.5050727
#3	.4970506	.5148345	1.001190	244.7534	.6068338	.5035503

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4898685**	**103.7474**	**.4977595**	**259.1312**	**1.012792**	**.2213218**
Stddev	.0023781	.5214	.0008538	.9228	.005067	.0005008
%RSD	.4854551	.5025740	.1715372	.3561073	.5003323	.2262648
#1	.4925918	103.6122	.4975300	258.1535	1.018373	.2210407
#2	.4888115	103.3069	.4970438	259.9870	1.011523	.2210248
#3	.4882020	104.3231	.4987046	259.2529	1.008479	.2219000

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2124163**	**.4907659**	**1.093108**	**-.130809**	**.8782455**	**.9799371**
Stddev	.0069340	.0028678	.002122	.037456	.0037222	.0055437
%RSD	3.264338	.5843494	.1941278	28.63405	.4238238	.5657209
#1	.2110249	.4880517	1.094800	-.093272	.8752442	.9863349
#2	.2062835	.4904803	1.090727	-.168183	.8824106	.9769211
#3	.2199404	.4937659	1.093795	-.130972	.8770817	.9765552

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: ICSAB01 Acquired: 9/9/2025 12:46:50 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSAB01 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9711329	.9577918	1.007309	F .0049309	F .0055211	F -.038336
Stddev	.0040361	.0042305	.006501	.0015986	.0009800	.002441
%RSD	.4156091	.4416984	.6453684	32.41946	17.75007	6.367827
#1	.9756812	.9530164	.999827	.0053822	.0049717	-.040518
#2	.9697388	.9592882	1.010518	.0062554	.0049390	-.035699
#3	.9679786	.9610708	1.011581	.0031552	.0066525	-.038792

Elem	Sr4077
Units	ppm
Avg	F -.003329
Stddev	.000475
%RSD	14.27168
#1	-.003256
#2	-.002894
#3	-.003836

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5625.492	92638.03	10490.37	4925.405	6100.755
Stddev	31.539	283.42	32.80	22.827	26.969
%RSD	.5606511	.3059405	.3127065	.4634472	.4420672
#1	5590.907	92730.98	10527.61	4915.360	6074.893
#2	5632.900	92863.31	10465.73	4951.532	6098.663
#3	5652.667	92319.81	10477.77	4909.324	6128.710

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: ICSADLX20 Acquired: 9/9/2025 12:50:51 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSA01DLX20 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.004232**	**-.008370**	**-.007170**	**-.001084**	**-.005730**	**12.04302**	**-.012165**
Stddev	.001762	.002307	.001097	.001785	.001537	.01929	.000450
%RSD	41.62665	27.56646	15.29514	164.7472	26.82146	.1601968	3.695636
#1	-.002594	-.006855	-.005929	-.000816	-.005496	12.02080	-.012597
#2	-.004007	-.007231	-.008009	.000552	-.007370	12.05282	-.011700
#3	-.006096	-.011026	-.007572	-.002987	-.004323	12.05545	-.012198

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000230**	**-.002638**	**11.88045**	**.0020084**	**-.003005**	**-.001674**	**4.675278**
Stddev	.000032	.000029	.02890	.0002666	.000133	.000115	.025661
%RSD	13.69238	1.115538	.2432271	13.27563	4.423764	6.877933	.5488558
#1	-.000267	-.002671	11.85924	.0018940	-.003048	-.001711	4.646114
#2	-.000216	-.002624	11.91336	.0023132	-.002856	-.001767	4.685325
#3	-.000208	-.002617	11.86875	.0018181	-.003111	-.001545	4.694395

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.003202**	**12.44421**	**-.002379**	**-.000939**	**-.153409**	**-.002247**	**-.002563**
Stddev	.000422	.05847	.000149	.000434	.009678	.002118	.000204
%RSD	13.18603	.4698296	6.278071	46.26562	6.308497	94.23406	7.949903
#1	-.003577	12.38018	-.002451	-.000794	-.156519	-.001661	-.002738
#2	-.002745	12.45769	-.002480	-.001427	-.161150	-.004596	-.002339
#3	-.003284	12.49476	-.002208	-.000595	-.142559	-.000484	-.002612

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.281837**	**-.007774**	**-.005379**	**-.005884**	**-.005612**	**-.003493**	**-.006627**
Stddev	.029738	.000087	.000162	.000367	.000628	.004636	.000281
%RSD	10.55145	1.120186	3.003700	6.228746	11.19653	132.7308	4.239611
#1	-.310164	-.007676	-.005309	-.006153	-.006193	-.004785	-.006332
#2	-.284483	-.007807	-.005265	-.006033	-.005698	-.007346	-.006655
#3	-.250865	-.007841	-.005564	-.005467	-.004946	.001652	-.006892

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: ICSADLX20 Acquired: 9/9/2025 12:50:51 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSA01DLX20 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.007125	-.011749	-.005462
Stddev	.001161	.001989	.000018
%RSD	16.30123	16.92960	.3225332
#1	-.006570	-.013612	-.005447
#2	-.008460	-.009654	-.005458
#3	-.006345	-.011980	-.005481

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6324.764	106009.2	10932.38	5620.313	7334.613
Stddev	16.497	329.0	25.31	29.661	15.289
%RSD	.2608257	.3103925	.2315157	.5277503	.2084543
#1	6317.500	106343.2	10931.37	5586.673	7331.593
#2	6313.146	105685.3	10907.58	5642.704	7321.060
#3	6343.646	105999.0	10958.17	5631.563	7351.188

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: ICSABDLX20 Acquired: 9/9/2025 12:55:05 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSAB01DLX20 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001203	-.005831	-.004747	-.000025	.0262580	12.78524	.0160737
Stddev	.002055	.001583	.000805	.003179	.0015865	.05125	.0012452
%RSD	170.7758	27.14997	16.95263	12638.28	6.041864	.4008285	7.746636
#1	-.002774	-.005251	-.005661	-.002980	.0272177	12.84087	.0155725
#2	-.001959	-.004620	-.004435	-.000435	.0244268	12.73995	.0151572
#3	.001123	-.007622	-.004145	.003339	.0271294	12.77490	.0174914

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0278972	.0495135	12.69588	.0327077	.0232636	.0255645	4.996471
Stddev	.0000786	.0000784	.07275	.0002168	.0000307	.0002368	.036716
%RSD	.2818267	.1583930	.5730431	.6627865	.1318724	.9261384	.7348485
#1	.0279865	.0495658	12.77594	.0329520	.0232990	.0257070	5.031590
#2	.0278384	.0494233	12.63381	.0326329	.0232469	.0252912	4.958342
#3	.0278666	.0495514	12.67789	.0325383	.0232449	.0256954	4.999480

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0244792	13.31119	.0501448	.0105688	-.056386	.0232493	.0541563
Stddev	.0005190	.14283	.0005663	.0004431	.011971	.0036944	.0002648
%RSD	2.120014	1.073023	1.129360	4.192511	21.23104	15.89049	.4889694
#1	.0243594	13.46238	.0499201	.0100607	-.070105	.0268115	.0544239
#2	.0240307	13.17852	.0497252	.0107708	-.048062	.0235009	.0541506
#3	.0250477	13.29268	.0507889	.0108750	-.050990	.0194355	.0538944

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.278677	-.008461	-.005661	-.006080	-.005684	.0070057	-.005321
Stddev	.010220	.000739	.000149	.000197	.002281	.0061012	.000440
%RSD	3.667170	8.735686	2.635577	3.240481	40.12804	87.08838	8.277921
#1	-.267495	-.008698	-.005604	-.006087	-.008262	.0133013	-.005178
#2	-.281005	-.009053	-.005830	-.005880	-.003928	.0011196	-.004969
#3	-.287532	-.007633	-.005549	-.006273	-.004863	.0065963	-.005815

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: ICSABDLX20 Acquired: 9/9/2025 12:55:05 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSAB01DLX20 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.001926	-.012205	-.005394
Stddev	.004163	.001225	.000060
%RSD	216.1302	10.03323	1.108934
#1	.002853	-.012584	-.005446
#2	-.003866	-.010836	-.005407
#3	-.004766	-.013195	-.005329

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6385.949	104841.5	10968.12	5607.572	7434.332
Stddev	7.095	464.6	65.05	13.447	4.131
%RSD	.1111067	.4431522	.5930408	.2397966	.0555662
#1	6386.461	104395.9	10897.75	5610.346	7438.164
#2	6378.612	105323.0	11026.05	5619.414	7429.956
#3	6392.775	104805.5	10980.55	5592.954	7434.877

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: CCV01 Acquired: 9/9/2025 12:59:16 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.883923**	**5.055956**	**4.897342**	**4.891319**	**4.931073**	**9.936727**	**9.858942**
Stddev	.010640	.061635	.009973	.010366	.010064	.030502	.073620
%RSD	.2178496	1.219065	.2036439	.2119284	.2040909	.3069606	.7467368
#1	4.895639	5.069817	4.906934	4.894851	4.941899	9.968644	9.943133
#2	4.881266	5.109482	4.898064	4.899457	4.922002	9.933664	9.806655
#3	4.874864	4.988571	4.887027	4.879648	4.929318	9.907872	9.827037

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2538063**	**2.444175**	**24.93822**	**1.003795**	**2.437905**	**1.228258**	**4.959681**
Stddev	.0007405	.003930	.12976	.003422	.002057	.002096	.038831
%RSD	.2917625	.1608030	.5203221	.3408903	.0843744	.1706376	.7829236
#1	.2543825	2.448593	25.08455	1.002577	2.440224	1.230512	4.976225
#2	.2540653	2.442865	24.83716	1.001148	2.436303	1.227896	4.915318
#3	.2529710	2.441068	24.89294	1.007659	2.437187	1.226368	4.987499

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.487201**	**24.87025**	**2.444883**	**1.248385**	**24.84533**	**2.489934**	**2.503712**
Stddev	.018649	.13701	.002854	.000691	.12358	.011956	.009181
%RSD	.7498151	.5509030	.1167523	.0553775	.4973790	.4801831	.3666906
#1	2.504378	25.02841	2.448157	1.248264	24.84482	2.503650	2.496305
#2	2.467365	24.79431	2.443570	1.247763	24.72202	2.481713	2.500849
#3	2.489859	24.78802	2.442920	1.249129	24.96917	2.484438	2.513984

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**24.52906**	**5.053195**	**4.894971**	**4.884296**	**4.939375**	**4.916415**	**4.902555**
Stddev	.11659	.021491	.008202	.011005	.017730	.026177	.007898
%RSD	.4753174	.4252927	.1675634	.2253101	.3589471	.5324441	.1610906
#1	24.54109	5.064074	4.902498	4.895057	4.957978	4.896418	4.903488
#2	24.40692	5.067072	4.896187	4.884769	4.922671	4.906783	4.909945
#3	24.63916	5.028440	4.886229	4.873063	4.937475	4.946044	4.894233

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: CCV01 Acquired: 9/9/2025 12:59:16 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV01 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**4.712694**	**4.916549**	**4.954474**
Stddev	.004365	.023498	.053882
%RSD	.0926327	.4779293	1.087541
#1	4.717648	4.940741	5.010948
#2	4.711023	4.893814	4.903625
#3	4.709411	4.915091	4.948850

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6205.981**	**102701.2**	**10780.02**	**5498.300**	**6926.060**
Stddev	26.807	389.4	69.35	22.875	29.167
%RSD	.4319612	.3791513	.6432920	.4160322	.4211129
#1	6178.916	102331.1	10704.74	5496.480	6895.105
#2	6206.502	103107.4	10794.04	5522.031	6930.047
#3	6232.524	102664.9	10841.29	5476.390	6953.028

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: CCB01 Acquired: 9/9/2025 13:26:10 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.005139**	**-.010109**	**-.000194**	**-.003919**	**-.006958**	**-.004309**	**-.015021**
Stddev	.000525	.001561	.000519	.000731	.001254	.007239	.000849
%RSD	10.21209	15.44168	267.2441	18.65888	18.02576	168.0008	5.651299
#1	-.005333	-.010772	-.000336	-.003736	-.005610	-.009924	-.015539
#2	-.005539	-.008326	-.000627	-.004725	-.008090	.003862	-.014041
#3	-.004545	-.011229	.000381	-.003297	-.007174	-.006866	-.015483

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000360**	**-.002819**	**-.057945**	**-.001247**	**-.002944**	**-.001445**	**-.010189**
Stddev	.000042	.000036	.005351	.000233	.000051	.000037	.001605
%RSD	11.67293	1.268025	9.234332	18.71996	1.718388	2.585759	15.75137
#1	-.000337	-.002779	-.053124	-.001320	-.002927	-.001467	-.011439
#2	-.000334	-.002848	-.057008	-.000986	-.003001	-.001465	-.008379
#3	-.000408	-.002831	-.063702	-.001435	-.002904	-.001402	-.010749

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.003317**	**-.032530**	**-.002657**	**-.001127**	**-.181575**	**-.001955**	**-.003760**
Stddev	.000259	.025755	.000391	.000384	.008202	.002131	.000097
%RSD	7.800255	79.17489	14.70892	34.02245	4.517174	109.0323	2.584321
#1	-.003267	-.059323	-.002415	-.001506	-.184249	.000398	-.003697
#2	-.003597	-.030311	-.002447	-.000739	-.188107	-.003756	-.003711
#3	-.003087	-.007956	-.003107	-.001137	-.172370	-.002506	-.003872

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.263938**	**-.007309**	**-.005720**	**-.000451**	**-.007147**	**.0050734**	**-.006573**
Stddev	.006656	.000623	.000508	.000707	.000833	.0033927	.001714
%RSD	2.521920	8.523001	8.882770	156.8402	11.65411	66.87210	26.07279
#1	-.271368	-.007373	-.005946	.000359	-.007445	.0089186	-.006537
#2	-.258520	-.007898	-.006075	-.000763	-.007789	.0038000	-.004878
#3	-.261925	-.006657	-.005138	-.000948	-.006206	.0025017	-.008305

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: CCB01 Acquired: 9/9/2025 13:26:10 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB01 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	F -.011504	F -.011290	-.005978
Stddev	.001403	.000208	.000063
%RSD	12.19754	1.845523	1.056041
#1	-.010406	-.011103	-.005917
#2	-.011022	-.011515	-.006043
#3	-.013085	-.011251	-.005973

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6772.832	114782.9	11681.95	5998.197	8024.390
Stddev	5.761	729.2	115.68	24.808	6.181
%RSD	.0850673	.6353111	.9902129	.4135927	.0770247
#1	6766.735	113948.6	11559.88	5975.919	8025.566
#2	6773.574	115101.5	11696.04	6024.931	8017.706
#3	6778.186	115298.7	11789.94	5993.742	8029.898

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: LR-1 Acquired: 9/9/2025 13:30:27 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.003354**	**.0016958**	**.0082608**	**-.002577**	**.0050561**	**.2337947**	**-.022272**
Stddev	.002335	.0035165	.0014596	.005772	.0012500	.0257409	.000206
%RSD	69.63910	207.3716	17.66878	223.9556	24.72336	11.01006	.9257933
#1	-.001003	-.002074	.0092642	.002144	.0054545	.2096544	-.022036
#2	-.003385	.002275	.0089316	-.000864	.0060585	.2608825	-.022368
#3	-.005673	.004887	.0065864	-.009012	.0036555	.2308471	-.022413

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000182**	**-.002252**	**2416.793**	**.0242271**	**-.002636**	**.0013166**	**.4895028**
Stddev	.000040	.000060	30.610	.0002156	.000336	.0004622	.0063426
%RSD	21.93583	2.683300	1.266549	.8899909	12.75691	35.10533	1.295726
#1	-.000139	-.002192	2424.357	.0240493	-.003005	.0009468	.4821866
#2	-.000218	-.002252	2383.111	.0241651	-.002346	.0011683	.4934510
#3	-.000189	-.002313	2442.912	.0244669	-.002558	.0018348	.4928707

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0120526**	**2198.275**	**.0149561**	**-.002867**	**2460.282**	**.0032265**	**.2285720**
Stddev	.0003399	15.924	.0009205	.000739	22.799	.0041312	.0064434
%RSD	2.820163	.7243744	6.154883	25.77318	.9266640	128.0374	2.818970
#1	.0121038	2182.635	.0158311	-.002669	2452.391	-.000685	.2215786
#2	.0116900	2197.723	.0150413	-.002247	2442.477	.007547	.2298694
#3	.0123640	2214.468	.0139960	-.003684	2485.977	.002817	.2342679

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.461589**	**.0022568**	**-.001378**	**-.017625**	**-.119179**	**-.035950**	**.0118851**
Stddev	.791122	.0011724	.000274	.001626	.000342	.021386	.0036292
%RSD	17.73185	51.94782	19.86232	9.226572	.2871979	59.48687	30.53555
#1	3.633591	.0011562	-.001298	-.017000	-.118810	-.018642	.0143667
#2	4.541390	.0034897	-.001154	-.019471	-.119240	-.059858	.0077199
#3	5.209787	.0021244	-.001683	-.016404	-.119487	-.029352	.0135686

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: LR-1 Acquired: 9/9/2025 13:30:27 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.2116440	-.380697	.0553923
Stddev	.0081136	.004719	.0007402
%RSD	3.833587	1.239664	1.336255
#1	.2024512	-.383773	.0545402
#2	.2146755	-.375264	.0557598
#3	.2178054	-.383055	.0558768

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4252.809	74545.56	9883.185	3740.985	4355.675
Stddev	13.267	15.00	38.969	24.177	7.544
%RSD	.3119636	.0201277	.3942912	.6462623	.1731999
#1	4240.088	74551.90	9840.417	3715.906	4352.513
#2	4266.563	74528.43	9892.456	3742.903	4364.285
#3	4251.776	74556.35	9916.682	3764.145	4350.226

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: LR-2 Acquired: 9/9/2025 13:35:02 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0855545**	**-.172133**	**.0872010**	**-.264405**	**-.077944**	**1745.876**	**.0074204**
Stddev	.0033807	.002479	.0064836	.024653	.005889	17.216	.0015503
%RSD	3.951495	1.440123	7.435243	9.324041	7.555173	.9861232	20.89253
#1	.0892833	-.169713	.0804355	-.258202	-.078502	1738.986	.0056667
#2	.0846906	-.172019	.0933601	-.243446	-.083533	1765.471	.0086083
#3	.0826896	-.174667	.0878075	-.291568	-.071796	1733.172	.0079862

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0368226**	**.0184724**	**^ *******	**-.240273**	**.0516533**	**-.203430**	**2504.249**
Stddev	.0003832	.0029636	-----	.003210	.0003255	.016829	24.380
%RSD	1.040553	16.04321	-----	1.335907	.6301120	8.272753	.9735538
#1	.0364622	.0197744	^ -----	-.238098	.0512781	-.193516	2487.717
#2	.0372251	.0150807	^ -----	-.243960	.0518216	-.222861	2532.249
#3	.0367804	.0205621	^ -----	-.238762	.0518601	-.193912	2492.781

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.426061**	**1.229189**	**.0455008**	**^ *****	**3.810013**	**.0321388**	**.0727919**
Stddev	.002808	.029772	.0008182	-----	.028148	.0009754	.0031110
%RSD	.6589540	2.422116	1.798299	-----	.7387889	3.035078	4.273848
#1	-.424869	1.199091	.0457640	^ -----	3.785662	.0313614	.0738514
#2	-.424046	1.258624	.0445834	^ -----	3.803546	.0332333	.0692895
#3	-.429267	1.229853	.0461551	^ -----	3.840832	.0318217	.0752348

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1732.051**	**5.620948**	**-.019379**	**.0089496**	**-.003060**	**.4547240**	**.0685439**
Stddev	13.225	.062516	.001482	.0019444	.001140	.0054411	.0054431
%RSD	.7635729	1.112200	7.647158	21.72599	37.27210	1.196583	7.941089
#1	1722.718	5.586318	-.021034	.0069926	-.002316	.4597621	.0668441
#2	1726.248	5.693116	-.018174	.0108811	-.002490	.4554559	.0641535
#3	1747.186	5.583409	-.018930	.0089751	-.004373	.4489539	.0746341

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: LR-2 Acquired: 9/9/2025 13:35:02 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.453446	k .2395045	-2.40657
Stddev	.013693	.0030805	.02338
%RSD	3.019756	1.286197	.9716858
#1	-.437771	k .2360683	-2.39073
#2	-.463079	k .2420187	-2.43343
#3	-.459488	k .2404265	-2.39556

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5390.904	86285.29	11039.07	4708.271	5582.814
Stddev	5.387	93.86	40.79	19.110	7.404
%RSD	.0999358	.1087838	.3695028	.4058760	.1326258
#1	5389.803	86177.73	11073.87	4693.772	5575.012
#2	5396.757	86350.59	10994.18	4729.926	5589.744
#3	5386.152	86327.57	11049.15	4701.115	5583.684

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: LR-3 Acquired: 9/9/2025 13:39:30 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0945413	-.000429	226.3925	.0132478	.1788992	.2186216
Stddev	.0007392	.005242	.5595	.0029465	.0049522	.0035086
%RSD	.7818622	1220.752	.2471367	22.24117	2.768170	1.604873
#1	.0953882	-.005008	225.8908	.0111399	.1755512	.2191838
#2	.0942101	-.001569	226.2908	.0166145	.1845879	.2148658
#3	.0940257	.005289	226.9959	.0119888	.1765585	.2218151

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.014346	-.004451	-.004731	.1499023	22.69263	.0036345
Stddev	.000527	.000095	.000096	.0013877	.34301	.0001318
%RSD	3.673361	2.134133	2.025685	.9257479	1.511562	3.626281
#1	-.014904	-.004476	-.004637	.1483395	22.84484	.0037703
#2	-.014278	-.004347	-.004728	.1503771	22.29985	.0035070
#3	-.013856	-.004532	-.004828	.1509903	22.93320	.0036263

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 56.78428	.2920979	48.42630	-.186233	23.63897	.0021198
Stddev	.23859	.0266603	.46436	.014860	.09505	.0000865
%RSD	.4201684	9.127171	.9588957	7.979115	.4021001	4.079143
#1	56.57368	.2766467	48.15757	-.169177	23.56147	.0021778
#2	56.73576	.2767646	48.96250	-.196384	23.61041	.0021611
#3	57.04340	.3228825	48.15884	-.193137	23.74503	.0020204

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1530390	-.046076	31.52777	.4147305	-.017097	-.024670
Stddev	.0239783	.001864	.72258	.0027400	.000195	.000527
%RSD	15.66812	4.046468	2.291870	.6606656	1.141545	2.135564
#1	.1416132	-.047771	32.06669	.4120659	-.016877	-.024509
#2	.1369104	-.044079	30.70669	.4145855	-.017250	-.025258
#3	.1805933	-.046378	31.80994	.4175401	-.017163	-.024242

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: LR-3 Acquired: 9/9/2025 13:39:30 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.011718**	**-.050517**	**-.095040**	**.0979370**	**.0488598**	**-.008993**
Stddev	.000394	.000877	.007665	.0025897	.0028576	.001233
%RSD	3.363189	1.735308	8.065501	2.644249	5.848577	13.71377
#1	-.011487	-.051501	-.086956	.0953866	.0477580	-.010214
#2	-.012173	-.049819	-.095962	.0978601	.0467171	-.009016
#3	-.011495	-.050231	-.102204	.1005642	.0521042	-.007748

Elem	Sr4077
Units	ppm
Avg	**-.005922**
Stddev	.000184
%RSD	3.113476
#1	-.006050
#2	-.005711
#3	-.006006

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5507.085**	**110787.6**	**11485.01**	**5646.035**	**7349.538**
Stddev	28.998	2056.1	35.74	115.776	34.977
%RSD	.5265533	1.855892	.3111926	2.050575	.4759066
#1	5498.205	110000.1	11526.28	5594.416	7339.740
#2	5539.484	113121.1	11464.28	5778.642	7388.369
#3	5483.566	109241.7	11464.46	5565.047	7320.504

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3027-01 Acquired: 9/9/2025 13:44:23 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0302419	-.055084	.2039975	-.038575	-.016316	199.3154
Stddev	.0014007	.000222	.0020694	.002939	.000863	1.0173
%RSD	4.631544	.4038086	1.014401	7.619761	5.288639	.5103877
#1	.0287042	-.055194	.2063706	-.041029	-.015325	198.7736
#2	.0305767	-.054828	.2025687	-.035317	-.016720	198.6836
#3	.0314448	-.055230	.2030533	-.039379	-.016903	200.4888

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8227291	.0173258	.0249939	27.56062	.1752936	.2125282
Stddev	.0050146	.0000646	.0006648	.07585	.0002757	.0007022
%RSD	.6095130	.3730289	2.659977	.2752161	.1572825	.3303883
#1	.8172287	.0172585	.0256345	27.47951	.1751342	.2129986
#2	.8239121	.0173874	.0243072	27.57252	.1756120	.2117210
#3	.8270465	.0173315	.0250400	27.62981	.1751346	.2128649

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1168467	269.9297	3.639778	28.18947	.2008416	.0023642
Stddev	.0019965	3.6906	.017699	.06444	.0005419	.0011656
%RSD	1.708670	1.367259	.4862659	.2285826	.2698048	49.30293
#1	.1188959	266.6033	3.626270	28.17770	.2008533	.0012709
#2	.1149074	273.8999	3.633249	28.13173	.2013776	.0035907
#3	.1167366	269.2860	3.659813	28.25898	.2002940	.0022311

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.446030	.3380627	.4582600	9.985225	.6748878	-.003050
Stddev	.058042	.0015849	.0021052	.100291	.0108653	.000163
%RSD	.6144628	.4688260	.4593945	1.004393	1.609947	5.340945
#1	9.379050	.3366254	.4597681	9.869483	.6647339	-.003166
#2	9.481578	.3378002	.4558548	10.04641	.6863467	-.003121
#3	9.477461	.3397625	.4591570	10.03978	.6735829	-.002864

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3027-01 Acquired: 9/9/2025 13:44:23 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0095411	6.904910	6.238131	F 10.16523	3.723457	.0633156
Stddev	.0010119	.028795	.038252	.04171	.033151	.0009180
%RSD	10.60550	.4170264	.6131969	.4103547	.8903326	1.449908
#1	.0094080	6.877489	6.193963	10.20074	3.728420	.0622673
#2	.0106130	6.902334	6.260587	10.11929	3.688104	.0639757
#3	.0086024	6.934906	6.259843	10.17567	3.753847	.0637039

Elem	Sr4077
Units	ppm
Avg	-.167217
Stddev	.003480
%RSD	2.080853
#1	-.164181
#2	-.171014
#3	-.166456

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	12445.23	208324.0	24322.75	10958.19	6609.316
Stddev	6.60	588.8	42.98	59.95	2.339
%RSD	.0530689	.2826221	.1767199	.5471036	.0353883
#1	12438.17	208964.8	24305.57	10924.29	6611.968
#2	12446.27	207807.0	24371.66	11027.41	6608.431
#3	12451.26	208200.0	24291.01	10922.87	6607.549

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3027-01DUP Acquired: 9/9/2025 13:48:47 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0340510	-.061760	.2113301	-.040482	-.017421	202.3776
Stddev	.0009573	.002012	.0018522	.001731	.000578	1.3719
%RSD	2.811337	3.257383	.8764485	4.275745	3.318873	.6778907
#1	.0344047	-.062427	.2131120	-.039523	-.017045	201.0909
#2	.0347811	-.063354	.2114634	-.042481	-.018087	202.2206
#3	.0329672	-.059499	.2094148	-.039444	-.017131	203.8212

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8089838	.0183958	.0296740	32.40886	.1867453	.2327598
Stddev	.0012238	.0000565	.0003701	.02082	.0001033	.0003682
%RSD	.1512806	.3069377	1.247036	.0642514	.0553071	.1581756
#1	.8075733	.0184542	.0300773	32.38665	.1867452	.2323541
#2	.8096132	.0183917	.0293502	32.42794	.1868486	.2328526
#3	.8097648	.0183415	.0295944	32.41199	.1866421	.2330726

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1207226	283.6497	3.784606	31.63395	.2317519	.0029599
Stddev	.0006973	1.8776	.001889	.03185	.0002313	.0009782
%RSD	.5776423	.6619429	.0499056	.1006978	.0997857	33.04865
#1	.1201848	283.7942	3.784229	31.61742	.2317400	.0030602
#2	.1204726	285.4509	3.786655	31.67067	.2319888	.0038841
#3	.1215105	281.7041	3.782934	31.61375	.2315268	.0019354

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.773159	.3586763	.4497814	8.630552	.7042637	-.002129
Stddev	.044225	.0014433	.0004015	.039389	.0049472	.000232
%RSD	.4525118	.4023954	.0892638	.4563845	.7024643	10.88322
#1	9.766703	.3596463	.4501726	8.635456	.7046990	-.002240
#2	9.732516	.3570177	.4493703	8.588941	.7089788	-.002284
#3	9.820256	.3593650	.4498013	8.667259	.6991132	-.001862

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3027-01DUP Acquired: 9/9/2025 13:48:47 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0089843	6.765359	2.757550	F 11.43055	4.366827	.0618344
Stddev	.0010830	.008770	.020166	.08699	.030483	.0002925
%RSD	12.05441	.1296247	.7313169	.7610657	.6980641	.4730874
#1	.0091453	6.756898	2.769611	11.51742	4.394981	.0615987
#2	.0099778	6.764772	2.734268	11.43080	4.371046	.0617428
#3	.0078298	6.774408	2.768769	11.34343	4.334454	.0621618

Elem	Sr4077
Units	ppm
Avg	-.173121
Stddev	.002123
%RSD	1.226502
#1	-.173312
#2	-.175142
#3	-.170909

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	13370.55	226221.2	26731.29	11801.16	6637.229
Stddev	16.57	639.1	31.48	57.44	7.160
%RSD	.1238952	.2825164	.1177597	.4867222	.1078817
#1	13353.82	225779.7	26695.49	11759.51	6628.961
#2	13370.87	226954.0	26743.75	11866.69	6641.406
#3	13386.95	225929.7	26754.63	11777.28	6641.320

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3027-01LX5 Acquired: 9/9/2025 13:53:11 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0055445**	**-.021878**	**.0398596**	**-.014519**	**-.009808**	**67.42595**	**.2650290**
Stddev	.0025257	.001541	.0008088	.003013	.002222	.24254	.0012300
%RSD	45.55417	7.042956	2.029050	20.75272	22.65605	.3597152	.4640999
#1	.0057543	-.020536	.0394875	-.017229	-.011997	67.22196	.2644381
#2	.0029204	-.021537	.0407875	-.011274	-.007554	67.36176	.2642059
#3	.0079588	-.023561	.0393039	-.015054	-.009873	67.69413	.2664429

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0058724**	**-.001187**	**9.606470**	**.0600260**	**.0382631**	**.0445234**	**91.12290**
Stddev	.0000821	.000070	.064477	.0005698	.0003183	.0004069	.23819
%RSD	1.397519	5.875772	.6711812	.9492902	.8318014	.9139068	.2613965
#1	.0057896	-.001236	9.553284	.0606462	.0381137	.0440607	90.86003
#2	.0058739	-.001107	9.587945	.0595257	.0380470	.0448251	91.32439
#3	.0059537	-.001219	9.678182	.0599059	.0386285	.0446846	91.18429

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.272452**	**9.861703**	**.0390281**	**-.000018**	**3.012260**	**.1131088**	**.1539118**
Stddev	.006319	.019843	.0001540	.000130	.022162	.0036917	.0004801
%RSD	.4965806	.2012154	.3944658	714.8750	.7357339	3.263886	.3119484
#1	1.271227	9.858297	.0388587	.000109	2.986828	.1093934	.1533895
#2	1.266835	9.883029	.0390661	-.000013	3.027440	.1131567	.1540119
#3	1.279293	9.843784	.0391595	-.000151	3.022512	.1167764	.1543339

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.117564**	**.2215864**	**-.005431**	**.0023993**	**2.358029**	**2.021367**	**2.072737**
Stddev	.050451	.0004000	.000041	.0007552	.010763	.005888	.027198
%RSD	1.618267	.1805217	.7514332	31.47783	.4564602	.2912840	1.312190
#1	3.061466	.2211979	-.005396	.0023781	2.351444	2.015689	2.041738
#2	3.159217	.2219970	-.005423	.0016549	2.352192	2.020967	2.083870
#3	3.132008	.2215641	-.005476	.0031649	2.370450	2.027445	2.092602

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3027-01LX5 Acquired: 9/9/2025 13:53:11 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.7203808	.0136181	-.060390
Stddev	.0137581	.0005383	.000154
%RSD	1.909832	3.952766	.2554695
#1	.7046684	.0135766	-.060397
#2	.7262057	.0131018	-.060541
#3	.7302682	.0141759	-.060232

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7641.230	129909.0	14381.31	6885.069	7144.560
Stddev	24.911	246.6	87.02	25.045	28.184
%RSD	.3260119	.1898399	.6051087	.3637592	.3944809
#1	7669.941	129645.8	14365.21	6912.917	7176.394
#2	7628.403	130134.8	14475.26	6864.392	7134.499
#3	7625.346	129946.4	14303.46	6877.896	7122.787

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3027-01MS Acquired: 9/9/2025 13:57:16 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3663712	1.667922	1.056682	.7834921	.0982911	195.6872
Stddev	.0027165	.028771	.001403	.0032759	.0014542	3.1668
%RSD	.7414695	1.724975	.1327831	.4181171	1.479443	1.618310
#1	.3647677	1.697007	1.055064	.7837658	.0993006	195.1903
#2	.3695077	1.667283	1.057418	.7866227	.0966243	192.7982
#3	.3648382	1.639475	1.057564	.7800880	.0989484	199.0731

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9744940	.0961178	.1983735	41.61632	.3621839	.4916688
Stddev	.0054928	.0006709	.0006245	.08341	.0018134	.0005574
%RSD	.5636606	.6980191	.3148152	.2004332	.5006970	.1133625
#1	.9807624	.0965696	.1977514	41.70768	.3640030	.4917906
#2	.9705223	.0953469	.1983686	41.54424	.3621724	.4910606
#3	.9721972	.0964369	.1990004	41.59704	.3603762	.4921552

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2503730	265.8528	5.172489	38.94344	.6750102	.0345247
Stddev	.0017122	2.6871	.023485	.10387	.0009529	.0009049
%RSD	.6838418	1.010729	.4540320	.2667301	.1411616	2.620900
#1	.2486414	268.8028	5.198674	39.03795	.6742208	.0355574
#2	.2520650	263.5450	5.153290	38.83223	.6747411	.0338709
#3	.2504128	265.2106	5.165504	38.96013	.6760687	.0341458

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.32738	.4862048	.5938845	13.66709	.7689149	.1613103
Stddev	.07423	.0012150	.0009380	.06861	.0081733	.0000369
%RSD	.6552871	.2498989	.1579489	.5020161	1.062971	.0228467
#1	11.36158	.4873524	.5928711	13.69585	.7776659	.1613285
#2	11.37834	.4863299	.5947223	13.71665	.7614787	.1612679
#3	11.24221	.4849321	.5940601	13.58878	.7676000	.1613346

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3027-01MS Acquired: 9/9/2025 13:57:16 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5874283	6.756942	4.795902	F 15.63839	4.415438	.1502714
Stddev	.0012329	.016861	.029287	.03524	.024290	.0008911
%RSD	.2098787	.2495418	.6106687	.2253260	.5501207	.5929726
#1	.5888409	6.776085	4.800984	15.66909	4.439860	.1511513
#2	.5865687	6.744291	4.822315	15.64616	4.415172	.1502932
#3	.5868754	6.750451	4.764406	15.59991	4.391282	.1493696

Elem	Sr4077
Units	ppm
Avg	-.062554
Stddev	.002579
%RSD	4.122576
#1	-.065361
#2	-.060289
#3	-.062012

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	12752.04	214451.9	25488.21	11347.20	6691.959
Stddev	15.24	1105.9	158.75	34.09	4.199
%RSD	.1195347	.5157066	.6228528	.3004009	.0627443
#1	12742.66	213361.2	25340.84	11374.85	6695.502
#2	12743.84	214422.0	25656.32	11309.12	6693.052
#3	12769.63	215572.5	25467.48	11357.64	6687.321

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3027-01MSD Acquired: 9/9/2025 14:01:37 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3541661	1.686123	1.088419	.7451654	.0944746	203.4662
Stddev	.0028309	.018351	.003973	.0033695	.0019543	1.6233
%RSD	.7993158	1.088332	.3650302	.4521812	2.068618	.7978472
#1	.3540921	1.696080	1.088297	.7428562	.0965668	204.8784
#2	.3513729	1.664946	1.084508	.7490319	.0941609	201.6927
#3	.3570332	1.697344	1.092451	.7436082	.0926961	203.8276

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8897285	.0975954	.2154611	32.39341	.4255490	.4332046
Stddev	.0042191	.0000818	.0002345	.07401	.0001056	.0004284
%RSD	.4741960	.0838674	.1088162	.2284736	.0248052	.0989029
#1	.8912797	.0976695	.2156149	32.36120	.4254554	.4330488
#2	.8849534	.0975075	.2155772	32.34096	.4256634	.4336891
#3	.8929524	.0976092	.2151913	32.47807	.4255283	.4328758

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2552659	306.5952	3.743937	31.15438	.7106049	.0337639
Stddev	.0015428	2.7766	.014637	.02331	.0006217	.0009336
%RSD	.6044108	.9056141	.3909604	.0748063	.0874893	2.764921
#1	.2554566	306.3472	3.745962	31.14617	.7105531	.0337706
#2	.2567045	303.9509	3.728392	31.13630	.7112509	.0328271
#3	.2536366	309.4874	3.757456	31.18068	.7100107	.0346941

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.14422	.5442701	.5816676	12.49800	.8517868	.1542228
Stddev	.03938	.0016264	.0003412	.06521	.0082121	.0001498
%RSD	.3533453	.2988189	.0586631	.5217826	.9641005	.0971369
#1	11.14111	.5454102	.5814541	12.49219	.8508569	.1540500
#2	11.10649	.5424077	.5814877	12.43589	.8440793	.1543165
#3	11.18506	.5449923	.5820612	12.56593	.8604243	.1543018

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3027-01MSD Acquired: 9/9/2025 14:01:37 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6108720	8.650454	4.838260	F 17.55930	4.260057	.1529925
Stddev	.0020742	.025472	.021142	.05749	.022173	.0006007
%RSD	.3395440	.2944631	.4369789	.3273990	.5204819	.3926055
#1	.6129205	8.661371	4.847628	17.61289	4.283212	.1533100
#2	.6109225	8.621343	4.814052	17.49858	4.239018	.1522997
#3	.6087731	8.668648	4.853099	17.56642	4.257940	.1533678

Elem	Sr4077
Units	ppm
Avg	-.077981
Stddev	.002837
%RSD	3.638586
#1	-.077632
#2	-.075335
#3	-.080977

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	13390.57	228582.0	26403.13	11831.11	6502.629
Stddev	26.84	805.9	51.17	34.45	13.242
%RSD	.2004603	.3525822	.1938151	.2912123	.2036449
#1	13397.41	228813.7	26421.17	11822.47	6502.394
#2	13360.97	229246.6	26442.85	11869.06	6489.505
#3	13413.33	227685.5	26345.38	11801.80	6515.987

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3027-01A Acquired: 9/9/2025 14:05:58 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3941281	1.698854	1.044701	.8599352	.3551712	198.8427
Stddev	.0013461	.034265	.005070	.0044094	.0011526	.8611
%RSD	.3415440	2.016944	.4852945	.5127594	.3245204	.4330585
#1	.3929980	1.705246	1.039311	.8549142	.3538514	199.7855
#2	.3956174	1.661843	1.045419	.8617142	.3559795	198.0976
#3	.3937688	1.729473	1.049374	.8631773	.3556829	198.6451

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9396549	.1022716	.1996566	27.33082	.3457184	.3845612
Stddev	.0027549	.0003547	.0014578	.08286	.0020015	.0023793
%RSD	.2931792	.3468134	.7301699	.3031647	.5789356	.6187037
#1	.9427776	.1023423	.1982059	27.40668	.3438701	.3819375
#2	.9386183	.1018869	.1996424	27.34337	.3454410	.3851672
#3	.9375686	.1025856	.2011214	27.24240	.3478442	.3865789

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2447702	270.1283	3.714974	28.57390	.6395011	.0396667
Stddev	.0007791	.8505	.012066	.01164	.0031362	.0005528
%RSD	.3182954	.3148473	.3247937	.0407373	.4904131	1.393555
#1	.2446081	269.3768	3.728783	28.57795	.6362240	.0398597
#2	.2440850	271.0516	3.709672	28.56078	.6398052	.0400971
#3	.2456177	269.9564	3.706466	28.58297	.6424742	.0390433

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.80815	.4642549	.5475336	15.31418	.7951091	.1818116
Stddev	.04143	.0005889	.0010473	.02861	.0018957	.0007306
%RSD	.3833239	.1268404	.1912667	.1868068	.2384133	.4018382
#1	10.76178	.4642216	.5482186	15.28446	.7938317	.1814974
#2	10.84152	.4648597	.5463281	15.31654	.7972871	.1812908
#3	10.82115	.4636834	.5480541	15.34153	.7942083	.1826468

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3027-01A Acquired: 9/9/2025 14:05:58 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6310641	7.261480	8.678945	F 14.83224	3.640182	.1622607
Stddev	.0022832	.020105	.034059	.05003	.015094	.0008008
%RSD	.3617995	.2768732	.3924353	.3372884	.4146490	.4934945
#1	.6287933	7.284260	8.647626	14.81550	3.632260	.1631510
#2	.6310394	7.253964	8.715205	14.79273	3.630699	.1620316
#3	.6333595	7.246216	8.674005	14.88849	3.657588	.1615995

Elem	Sr4077
Units	ppm
Avg	-.080398
Stddev	.000834
%RSD	1.037729
#1	-.079559
#2	-.081227
#3	-.080408

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	12110.26	205692.4	23874.66	10734.28	6626.215
Stddev	29.04	619.7	87.58	23.90	34.125
%RSD	.2398050	.3012805	.3668456	.2226327	.5150053
#1	12134.20	206287.8	23807.03	10722.00	6661.802
#2	12118.62	205738.6	23973.60	10761.82	6623.076
#3	12077.95	205051.0	23843.36	10719.01	6593.768

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q2982-10 Acquired: 9/9/2025 14:10:11 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.008321**	**-.011541**	**.0209457**	**.0003075**	**-.005781**	**.2719732**	**.1952221**
Stddev	.001128	.002989	.0020072	.0011388	.000590	.0060972	.0009213
%RSD	13.55631	25.90108	9.582664	370.3527	10.21417	2.241825	.4719452
#1	-.007312	-.008645	.0198940	.0015829	-.005134	.2744057	.1962128
#2	-.009539	-.011363	.0232601	-.000053	-.006291	.2650353	.1950626
#3	-.008112	-.014615	.0196829	-.000607	-.005917	.2764787	.1943909

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000530**	**-.003181**	**190.9295**	**.0007035**	**-.003159**	**.0209927**	**.0194111**
Stddev	.000058	.000038	.1207	.0001381	.000218	.0003786	.0036694
%RSD	10.97896	1.201980	.0632101	19.62340	6.906202	1.803348	18.90383
#1	-.000481	-.003221	191.0561	.0008435	-.003236	.0206406	.0151816
#2	-.000594	-.003145	190.9166	.0006997	-.003328	.0213931	.0213070
#3	-.000514	-.003178	190.8157	.0005675	-.002912	.0209443	.0217448

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.002110**	**-.014729**	**-.002614**	**-.002132**	**346.8087**	**-.001570**	**.0090275**
Stddev	.000407	.032867	.000095	.000411	.7678	.002799	.0001715
%RSD	19.30123	223.1396	3.644080	19.25940	.2213967	178.2879	1.900144
#1	-.002262	.021343	-.002505	-.002069	346.0191	-.002939	.0088958
#2	-.002420	-.042980	-.002681	-.001756	347.5527	.001650	.0092215
#3	-.001649	-.022551	-.002655	-.002570	346.8544	-.003422	.0089653

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**16.66274**	**-.005111**	**-.004557**	**-.011884**	**-.014296**	**.2696237**	**.0019104**
Stddev	.05159	.000633	.000084	.000668	.000591	.0070241	.0009342
%RSD	.3096172	12.37697	1.837349	5.622720	4.136413	2.605136	48.89845
#1	16.60435	-.005822	-.004651	-.011112	-.014405	.2646801	.0029465
#2	16.68172	-.004610	-.004532	-.012277	-.014825	.2665270	.0016521
#3	16.70216	-.004900	-.004490	-.012262	-.013657	.2776640	.0011325

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q2982-10 Acquired: 9/9/2025 14:10:11 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.9946515	-.001427	3.293241
Stddev	.0100544	.000879	.038437
%RSD	1.010848	61.59649	1.167143
#1	.9831510	-.001720	3.305079
#2	1.001778	-.000439	3.324368
#3	.999025	-.002123	3.250278

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6047.416	103123.3	11371.98	5384.879	6630.360
Stddev	7.269	221.4	22.69	12.334	4.893
%RSD	.1201920	.2147037	.1995060	.2290488	.0737980
#1	6054.069	103335.2	11346.22	5371.471	6633.018
#2	6048.520	102893.5	11380.71	5395.742	6633.349
#3	6039.658	103141.3	11389.00	5387.424	6624.714

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: CCV02 Acquired: 9/9/2025 14:14:45 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV02 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.695984**	**4.825431**	**4.653394**	**4.697913**	**4.782010**	**9.535185**
Stddev	.013883	.055383	.014782	.024564	.023921	.058763
%RSD	.2956304	1.147730	.3176682	.5228702	.5002201	.6162802
#1	4.702740	4.808980	4.659857	4.713541	4.805389	9.518838
#2	4.680017	4.780137	4.636480	4.669600	4.757583	9.486326
#3	4.705196	4.887175	4.663844	4.710597	4.783058	9.600391

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.676031**	**.2346016**	**2.333781**	**23.97192**	**.9543553**	**2.356130**
Stddev	.091111	.0011952	.008584	.13801	.0012272	.009143
%RSD	.9416134	.5094401	.3678020	.5757161	.1285922	.3880607
#1	9.651610	.2356668	2.336930	23.96237	.9545159	2.361913
#2	9.599619	.2333091	2.324068	23.83894	.9554943	2.345589
#3	9.776864	.2348289	2.340346	24.11446	.9530557	2.360888

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.185882**	**4.885034**	**2.405835**	**23.66603**	**2.345063**	**1.193674**
Stddev	.005070	.039539	.015180	.11776	.007859	.001576
%RSD	.4275457	.8093915	.6309596	.4975709	.3351162	.1320378
#1	1.188651	4.840882	2.402606	23.73250	2.348603	1.192756
#2	1.180030	4.897047	2.392529	23.53007	2.336057	1.195494
#3	1.188965	4.917173	2.422370	23.73552	2.350529	1.192771

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**24.23795**	**2.402965**	**2.401527**	**24.15036**	**4.698988**	**4.805302**
Stddev	.11984	.012170	.000941	.20478	.027087	.017003
%RSD	.4944215	.5064688	.0391814	.8479289	.5764384	.3538339
#1	24.12126	2.399168	2.402014	23.96782	4.718972	4.818036
#2	24.23189	2.393147	2.400442	24.11147	4.668159	4.785994
#3	24.36070	2.416582	2.402123	24.37180	4.709832	4.811877

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: CCV02 Acquired: 9/9/2025 14:14:45 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV02 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.654750**	**4.781392**	**4.808513**	**4.625231**	F **4.464961**	**4.677438**
Stddev	.015469	.032361	.041131	.016798	.014527	.038672
%RSD	.3323201	.6768168	.8553880	.3631710	.3253564	.8267747
#1	4.660294	4.776116	4.765572	4.633616	4.462948	4.665480
#2	4.637273	4.751993	4.812410	4.605891	4.451545	4.646157
#3	4.666682	4.816067	4.847557	4.636184	4.480389	4.720676

Elem	Sr4077
Units	ppm
Avg	**4.774811**
Stddev	.013192
%RSD	.2762883
#1	4.763821
#2	4.789441
#3	4.771171

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6563.271**	**109619.2**	**11689.00**	**5694.827**	**7403.714**
Stddev	20.392	118.7	71.00	22.757	21.148
%RSD	.3106952	.1082391	.6074426	.3996116	.2856411
#1	6541.657	109624.1	11635.94	5683.539	7384.782
#2	6582.167	109735.3	11769.66	5721.022	7426.538
#3	6565.990	109498.1	11661.39	5679.921	7399.822

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: CCB02 Acquired: 9/9/2025 14:19:32 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB02 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.007860**	**-.005150**	**-.003296**	**-.005241**	**-.006154**	**-.012105**	**-.016227**
Stddev	.001195	.000906	.000741	.001111	.001872	.004701	.000637
%RSD	15.20787	17.58860	22.47396	21.19484	30.42305	38.83277	3.922619
#1	-.009004	-.006160	-.003342	-.006118	-.004585	-.007114	-.015609
#2	-.006619	-.004408	-.002534	-.005614	-.005651	-.012752	-.016881
#3	-.007957	-.004883	-.004013	-.003992	-.008226	-.016449	-.016191

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000408**	**-.002879**	**-.062292**	**-.001556**	**-.003594**	**-.001762**	**-.008806**
Stddev	.000084	.000059	.003000	.000283	.000078	.000138	.003453
%RSD	20.51197	2.050734	4.816516	18.17127	2.155954	7.835181	39.21940
#1	-.000312	-.002813	-.065749	-.001650	-.003655	-.001736	-.005573
#2	-.000444	-.002925	-.060362	-.001781	-.003507	-.001639	-.008399
#3	-.000467	-.002900	-.060765	-.001239	-.003622	-.001911	-.012444

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.004003**	**-.030584**	**-.003313**	**-.001342**	**-.007932**	**-.002573**	**-.004142**
Stddev	.000433	.029479	.000168	.000133	.026931	.001519	.000125
%RSD	10.82175	96.38936	5.059678	9.916173	339.5244	59.05716	3.020883
#1	-.003684	-.018194	-.003197	-.001495	-.038755	-.001128	-.004244
#2	-.003828	-.064236	-.003505	-.001280	.003906	-.002433	-.004002
#3	-.004496	-.009321	-.003237	-.001251	.011053	-.004157	-.004179

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.061999**	**-.005215**	**-.006581**	**-.000405**	**-.006252**	**.0006804**	**-.004475**
Stddev	.029460	.000459	.000347	.000640	.000161	.0097758	.000242
%RSD	47.51620	8.793563	5.274712	157.8929	2.572289	1436.867	5.410884
#1	-.089192	-.005071	-.006190	-.001052	-.006434	.0004362	-.004676
#2	-.066102	-.004846	-.006855	-.000391	-.006192	.0105760	-.004206
#3	-.030703	-.005728	-.006697	.000227	-.006130	-.008971	-.004542

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: CCB02 Acquired: 9/9/2025 14:19:32 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB02 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	F -.010590	-.009427	-.006619
Stddev	.001524	.000649	.000048
%RSD	14.39071	6.881896	.7180231
#1	-.012333	-.009748	-.006624
#2	-.009514	-.008680	-.006569
#3	-.009921	-.009852	-.006664

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6558.420	112272.6	11481.86	5847.046	7748.495
Stddev	5.017	555.2	42.57	37.999	7.078
%RSD	.0764983	.4944751	.3707185	.6498846	.0913519
#1	6556.749	112429.0	11433.32	5827.248	7753.169
#2	6564.059	112732.7	11499.42	5823.034	7751.964
#3	6554.452	111656.0	11512.83	5890.856	7740.351

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3030-01 Acquired: 9/9/2025 14:27:59 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.007905**	**-.011714**	**.0708642**	**-.003442**	**-.005880**	**.1189055**	**.2205884**
Stddev	.000613	.001108	.0005663	.001416	.002829	.0027115	.0004353
%RSD	7.758545	9.454580	.7990772	41.13813	48.10912	2.280364	.1973372
#1	-.008529	-.011356	.0712814	-.004822	-.008718	.1183054	.2205696
#2	-.007303	-.012957	.0710916	-.003513	-.005863	.1218667	.2201629
#3	-.007885	-.010831	.0702196	-.001992	-.003060	.1165443	.2210329

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000587**	**-.003332**	**.5866690**	**-.001030**	**-.003813**	**-.000850**	**.0305884**
Stddev	.000066	.000045	.0029509	.000242	.000033	.000226	.0021620
%RSD	11.21051	1.352830	.5029936	23.54138	.8767256	26.54218	7.067958
#1	-.000605	-.003282	.5870557	-.001068	-.003848	-.000802	.0308934
#2	-.000514	-.003369	.5835438	-.000770	-.003812	-.001096	.0282901
#3	-.000642	-.003344	.5894075	-.001250	-.003781	-.000653	.0325816

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.002348**	**-.019698**	**-.002253**	**-.001630**	**369.3203**	**.0001886**	**.1322692**
Stddev	.000215	.019425	.000396	.000146	5.5882	.0026134	.0003545
%RSD	9.134952	98.61158	17.56310	8.959824	1.513111	1385.828	.2679909
#1	-.002374	-.012894	-.001856	-.001618	365.0472	-.002543	.1320765
#2	-.002549	-.004591	-.002257	-.001782	367.2693	.000444	.1326783
#3	-.002122	-.041609	-.002647	-.001490	375.6442	.002665	.1320528

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1828416**	**.0191310**	**-.006371**	**-.018290**	**-.006581**	**.2673972**	**.0824788**
Stddev	.0244705	.0007486	.000206	.000169	.000633	.0064508	.0013478
%RSD	13.38345	3.912832	3.239927	.9252578	9.617292	2.412425	1.634092
#1	.1588113	.0197193	-.006552	-.018094	-.005930	.2711042	.0814487
#2	.2077298	.0182884	-.006146	-.018381	-.006618	.2599485	.0840041
#3	.1819839	.0193852	-.006415	-.018393	-.007194	.2711389	.0819835

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3030-01 Acquired: 9/9/2025 14:27:59 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.1923629	-.014696	.0250112
Stddev	.0042662	.002185	.0000801
%RSD	2.217766	14.87028	.3204741
#1	.1941761	-.015303	.0249775
#2	.1954230	-.012271	.0249535
#3	.1874897	-.016514	.0251027

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6202.711	102171.6	11661.87	5391.224	6909.630
Stddev	17.550	198.2	77.75	28.790	18.811
%RSD	.2829363	.1939550	.6666831	.5340111	.2722375
#1	6220.024	102152.8	11585.85	5394.396	6922.782
#2	6203.175	102378.5	11741.24	5360.980	6918.025
#3	6184.934	101983.5	11658.53	5418.297	6888.084

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3032-02 Acquired: 9/9/2025 14:32:24 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.007514**	**-.012399**	**-.005137**	**-.000769**	**-.004433**	**.1038083**	**.1093276**
Stddev	.000771	.001040	.000909	.003593	.000954	.0045968	.0007306
%RSD	10.26025	8.387294	17.70454	466.9972	21.51400	4.428153	.6682402
#1	-.007475	-.011269	-.004479	.000829	-.004139	.1090987	.1089834
#2	-.008304	-.012614	-.004757	.001747	-.003661	.1015362	.1101667
#3	-.006764	-.013315	-.006174	-.004885	-.005499	.1007900	.1088327

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000511**	**-.002896**	**39.12297**	**-.001573**	**.0047780**	**.0031503**	**.0340019**
Stddev	.000042	.000029	.07802	.000115	.0000860	.0000913	.0029975
%RSD	8.195489	.9915719	.1994251	7.320837	1.799246	2.898986	8.815670
#1	-.000557	-.002921	39.20113	-.001702	.0046938	.0030614	.0373318
#2	-.000502	-.002865	39.04509	-.001482	.0047746	.0032439	.0331548
#3	-.000475	-.002904	39.12267	-.001533	.0048656	.0031455	.0315191

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9480159**	**7.277023**	**.0017346**	**-.001578**	**369.0036**	**-.002995**	**.0305543**
Stddev	.0038537	.034998	.0002994	.000208	2.5483	.002041	.0002246
%RSD	.4065057	.4809368	17.25910	13.16919	.6905894	68.14085	.7352005
#1	.9486215	7.257172	.0020789	-.001734	368.7131	-.001528	.0306454
#2	.9438952	7.256463	.0015354	-.001342	366.6130	-.002131	.0307192
#3	.9515310	7.317433	.0015896	-.001657	371.6847	-.005326	.0302985

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.043135**	**-.001121**	**-.006335**	**-.020578**	**-.008688**	**2.382291**	**.0050437**
Stddev	.013011	.000491	.000108	.001019	.001126	.037250	.0018185
%RSD	1.247285	43.82707	1.704748	4.953116	12.95663	1.563617	36.05444
#1	1.029153	-.001003	-.006454	-.021748	-.007586	2.367759	.0031304
#2	1.054885	-.001660	-.006242	-.019879	-.009836	2.424616	.0067496
#3	1.045368	-.000699	-.006310	-.020108	-.008641	2.354497	.0052510

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3032-02 Acquired: 9/9/2025 14:32:24 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.5090678	-.021510	.1249814
Stddev	.0052619	.001227	.0003319
%RSD	1.033630	5.705027	.2655531
#1	.5051897	-.020486	.1246575
#2	.5150575	-.021174	.1253207
#3	.5069563	-.022870	.1249659

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6309.534	106235.6	11906.84	5555.007	6989.706
Stddev	11.087	488.0	135.67	25.350	9.802
%RSD	.1757135	.4593391	1.139415	.4563389	.1402370
#1	6318.056	105724.6	11795.02	5526.191	6991.087
#2	6313.546	106285.5	12057.76	5564.962	6998.745
#3	6297.000	106696.7	11867.74	5573.868	6979.287

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3032-05 Acquired: 9/9/2025 14:36:49 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.008569	-.013803	.0012962	-.002164	-.006233	.0750939	.1636887
Stddev	.002618	.001095	.0012271	.000585	.001173	.0060023	.0000370
%RSD	30.55812	7.932085	94.66805	27.05381	18.82079	7.993081	.0226291
#1	-.010859	-.014716	.0024915	-.001661	-.007180	.0817121	.1637076
#2	-.005714	-.014105	.0000396	-.002806	-.006599	.0700023	.1637126
#3	-.009133	-.012590	.0013576	-.002024	-.004921	.0735673	.1636461

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000543	-.002784	19.85754	-.000485	.0047013	.0080942	.0287920
Stddev	.000035	.000047	.04008	.001124	.0001055	.0001062	.0048838
%RSD	6.508916	1.686897	.2018265	231.5631	2.243145	1.312595	16.96232
#1	-.000584	-.002759	19.81772	-.001035	.0046297	.0080136	.0330209
#2	-.000522	-.002838	19.85703	.000808	.0048224	.0082146	.0234467
#3	-.000523	-.002755	19.89787	-.001228	.0046518	.0080544	.0299085

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6695383	2.579330	.0006519	-.001981	402.3893	-.005292	.0818571
Stddev	.0045202	.019970	.0003035	.000127	2.7063	.002139	.0004682
%RSD	.6751232	.7742238	46.55720	6.407755	.6725580	40.42605	.5719791
#1	.6716719	2.557589	.0008945	-.002126	402.3383	-.003283	.0813232
#2	.6643463	2.596856	.0003116	-.001931	405.1207	-.007541	.0820506
#3	.6725969	2.583546	.0007496	-.001887	399.7088	-.005052	.0821976

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.218304	.0074623	-.006389	-.019559	-.007311	1.461230	.0125632
Stddev	.044289	.0007045	.000147	.000510	.001190	.002363	.0004905
%RSD	3.635297	9.440549	2.308200	2.605684	16.28070	.1616856	3.903905
#1	1.176213	.0066589	-.006506	-.019856	-.006703	1.459636	.0129367
#2	1.214193	.0077535	-.006223	-.019851	-.006547	1.460109	.0120077
#3	1.264504	.0079744	-.006437	-.018971	-.008682	1.463944	.0127450

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3032-05 Acquired: 9/9/2025 14:36:49 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.4097871	-.018791	.0758679
Stddev	.0064454	.000792	.0004015
%RSD	1.572867	4.215396	.5292056
#1	.4166805	-.018895	.0754166
#2	.4039105	-.019526	.0760018
#3	.4087704	-.017952	.0761854

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6212.462	105791.7	12096.50	5527.872	6878.891
Stddev	4.286	271.0	28.24	17.386	5.771
%RSD	.0689909	.2561464	.2334588	.3145097	.0838875
#1	6207.514	105478.8	12078.31	5532.583	6872.238
#2	6215.042	105943.6	12129.04	5542.417	6882.533
#3	6214.830	105952.6	12082.17	5508.617	6881.903

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3045-05 Acquired: 9/9/2025 14:41:13 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001696	-.013628	-.007109	-.002354	-.003317	-.008457	.0232308
Stddev	.001862	.002367	.000779	.002566	.000737	.005687	.0009209
%RSD	109.7261	17.37181	10.95641	108.9947	22.21155	67.24193	3.964022
#1	-.003729	-.010895	-.006284	-.005156	-.003079	-.002484	.0225791
#2	-.000075	-.015007	-.007212	-.001789	-.004144	-.009082	.0242843
#3	-.001286	-.014983	-.007831	-.000118	-.002729	-.013806	.0228290

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000557	-.003379	.2881206	.6606064	-.003283	.0004017	.0235921
Stddev	.000010	.000051	.0097272	.0050093	.000072	.0003133	.0033435
%RSD	1.845141	1.523175	3.376092	.7582930	2.206749	77.99795	14.17217
#1	-.000568	-.003337	.2865370	.6594250	-.003254	.0003969	.0197381
#2	-.000555	-.003363	.2792824	.6562934	-.003366	.0007173	.0253216
#3	-.000548	-.003437	.2985425	.6661009	-.003230	.0000908	.0257166

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0057346	3.155327	-.000753	-.001642	376.3239	-.003599	.0339667
Stddev	.0002527	.035183	.000082	.000254	3.2523	.001693	.0002122
%RSD	4.405864	1.115050	10.84059	15.45836	.8642302	47.02927	.6246015
#1	.0060081	3.122066	-.000763	-.001897	374.7232	-.004353	.0338919
#2	.0055100	3.151755	-.000830	-.001389	374.1822	-.004784	.0342061
#3	.0056856	3.192161	-.000667	-.001640	380.0663	-.001660	.0338021

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.080507	.0324595	-.006119	-.018668	-.007025	.1367274	.0002890
Stddev	.026540	.0002785	.000099	.000263	.000313	.0087354	.0011523
%RSD	1.275659	.8579647	1.625758	1.409432	4.454772	6.388908	398.7288
#1	2.104012	.0324754	-.006118	-.018958	-.007151	.1284490	-.000714
#2	2.051724	.0321734	-.006219	-.018601	-.006669	.1358756	.001548
#3	2.085785	.0327297	-.006020	-.018445	-.007255	.1458574	.000034

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3045-05 Acquired: 9/9/2025 14:41:13 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**5.221572**	**-.016363**	**-.004845**
Stddev	.030877	.000440	.000091
%RSD	.5913375	2.690696	1.873682
#1	5.257122	-.015965	-.004760
#2	5.201443	-.016836	-.004834
#3	5.206151	-.016289	-.004940

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6402.682**	**107064.0**	**12038.44**	**5634.486**	**7194.324**
Stddev	13.308	389.1	41.02	9.201	21.035
%RSD	.2078546	.3634273	.3407739	.1633022	.2923788
#1	6391.317	106996.6	11991.92	5634.155	7173.363
#2	6417.322	107482.4	12053.95	5625.455	7215.432
#3	6399.406	106713.1	12069.45	5643.849	7194.178

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3046-02 Acquired: 9/9/2025 14:45:38 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.008731**	**-.012212**	**-.008684**	**-.000505**	**-.003972**	**.4980960**	**.1439017**
Stddev	.000526	.003342	.000526	.003621	.000932	.0192689	.0010239
%RSD	6.026044	27.36440	6.062309	717.1154	23.47853	3.868503	.7114999
#1	-.008142	-.008440	-.008084	.003575	-.004408	.4807003	.1438074
#2	-.009155	-.013393	-.009071	-.001752	-.004606	.4947799	.1449695
#3	-.008897	-.014803	-.008896	-.003338	-.002901	.5188076	.1429283

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000634**	**-.003390**	**294.7441**	**.0036332**	**-.003835**	**-.000415**	**.0057636**
Stddev	.000018	.000070	1.1709	.0002053	.000097	.000313	.0198450
%RSD	2.850461	2.061660	.3972508	5.650475	2.532710	75.38024	344.3185
#1	-.000631	-.003338	293.4640	.0037759	-.003940	-.000397	-.004670
#2	-.000617	-.003469	295.7609	.0037258	-.003816	-.000111	-.006689
#3	-.000653	-.003362	295.0075	.0033979	-.003748	-.000736	.028649

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.001966**	**-.000093**	**-.003313**	**-.002051**	**537.0353**	**-.001818**	**.0031129**
Stddev	.000723	.023870	.000209	.000227	3.7139	.001006	.0003713
%RSD	36.75064	25608.95	6.302191	11.07142	.6915472	55.31719	11.92632
#1	-.002642	-.024819	-.003465	-.001856	541.1531	-.001718	.0034847
#2	-.002051	.022817	-.003075	-.001997	536.0134	-.000866	.0031117
#3	-.001205	.001722	-.003399	-.002300	533.9393	-.002870	.0027422

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.543786**	**.0194250**	**-.004232**	**-.013850**	**-.019897**	**2.847420**	**.0086390**
Stddev	.046108	.0006483	.000149	.000310	.001369	.030506	.0003967
%RSD	1.301099	3.337452	3.514671	2.237690	6.879257	1.071354	4.592357
#1	3.578930	.0193858	-.004083	-.014037	-.020468	2.882435	.0089138
#2	3.560849	.0200920	-.004380	-.014022	-.018336	2.833244	.0081842
#3	3.491578	.0187972	-.004235	-.013493	-.020888	2.826582	.0088191

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3046-02 Acquired: 9/9/2025 14:45:38 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**7.047786**	**-.054283**	**2.653898**
Stddev	.054696	.000283	.025963
%RSD	.7760686	.5221760	.9783142
#1	7.110902	-.054596	2.640420
#2	7.014251	-.054044	2.637446
#3	7.018206	-.054209	2.683829

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5863.864**	**100194.9**	**11641.34**	**5194.529**	**6427.021**
Stddev	19.081	768.3	78.17	2.576	21.553
%RSD	.3253928	.7668178	.6715016	.0495947	.3353550
#1	5844.805	99617.9	11706.85	5192.986	6402.140
#2	5863.819	99899.8	11554.81	5193.097	6438.963
#3	5882.966	101067.1	11662.36	5197.503	6439.961

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3050-01 Acquired: 9/9/2025 14:50:11 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0180674	-.011290	-.010059	.0014201	.0310747	.2011046
Stddev	.0046369	.001249	.000609	.0007599	.0011562	.0114322
%RSD	25.66468	11.06686	6.049734	53.51073	3.720858	5.684684
#1	.0179103	-.012731	-.010065	.0022864	.0324069	.2017425
#2	.0227810	-.010516	-.009448	.0008664	.0303325	.1893669
#3	.0135110	-.010622	-.010665	.0011075	.0304845	.2122045

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1605824	-.000878	-.003292	233.9992	.0003001	.0065727
Stddev	.0067655	.000045	.000070	6.2236	.0003169	.0001835
%RSD	4.213121	5.128701	2.114231	2.659665	105.6043	2.791491
#1	.1529203	-.000886	-.003291	226.8869	.0003759	.0065228
#2	.1630939	-.000919	-.003223	236.6639	.0005722	.0067759
#3	.1657331	-.000830	-.003363	238.4467	-.000048	.0064193

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0085186	.2623076	4.564846	27.41705	.0157657	-.001221
Stddev	.0004920	.0061911	.120137	.68358	.0003348	.000166
%RSD	5.775995	2.360238	2.631792	2.493280	2.123888	13.62848
#1	.0089852	.2666213	4.428436	26.63269	.0159297	-.001029
#2	.0080046	.2650877	4.611209	27.73260	.0159869	-.001314
#3	.0085661	.2552138	4.654894	27.88587	.0153805	-.001321

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	496.6261	-.001707	.3269052	116.6749	.0889618	.0012383
Stddev	4.1716	.002151	.0025367	1.0223	.0034960	.0002223
%RSD	.8399946	126.0482	.7759894	.8762123	3.929765	17.94939
#1	499.7778	-.000119	.3242353	116.1516	.0853574	.0010425
#2	491.8955	-.004155	.3292836	117.8529	.0891898	.0011924
#3	498.2050	-.000846	.3271969	116.0201	.0923382	.0014799

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3050-01 Acquired: 9/9/2025 14:50:11 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.018148	-.009923	4.376892	2.194891	F 42.77337	-.050616
Stddev	.000253	.001747	.037990	.012384	.28754	.000875
%RSD	1.393037	17.60978	.8679690	.5642261	.6722496	1.729465
#1	-.018373	-.009887	4.376840	2.197273	42.68004	-.049683
#2	-.018196	-.008194	4.414909	2.205912	43.09599	-.051419
#3	-.017874	-.011688	4.338928	2.181489	42.54409	-.050747

Elem	Sr4077
Units	ppm
Avg	.6562954
Stddev	.0181037
%RSD	2.758464
#1	.6354358
#2	.6655419
#3	.6679086

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6046.310	101594.3	11944.84	5255.612	6602.848
Stddev	35.065	733.7	276.71	32.153	33.935
%RSD	.5799448	.7221919	2.316554	.6117846	.5139501
#1	6043.095	101741.3	12261.14	5282.116	6605.746
#2	6012.963	100798.3	11825.88	5219.844	6567.557
#3	6082.872	102243.4	11747.50	5264.875	6635.242

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3045-06 Acquired: 9/9/2025 14:54:29 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0406662	-.012946	-.004949	-.001157	.0121827	-.004275
Stddev	.0009391	.000577	.002228	.002733	.0095318	.007123
%RSD	2.309293	4.460198	45.02052	236.2134	78.24028	166.6250
#1	.0410830	-.012282	-.006311	-.003838	.0118121	.000022
#2	.0413247	-.013331	-.006159	.001625	.0028416	-.012497
#3	.0395908	-.013224	-.002378	-.001257	.0218943	-.000350

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0208317	-.000617	-.002954	2.559990	5.216001	.0006927
Stddev	.0004583	.000030	.000027	.027040	.556011	.0000646
%RSD	2.199748	4.785477	.9193526	1.056260	10.65972	9.326885
#1	.0203090	-.000583	-.002982	2.530012	5.350566	.0007630
#2	.0211642	-.000639	-.002951	2.567419	5.692380	.0006359
#3	.0210220	-.000627	-.002928	2.582539	4.605057	.0006792

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0089684	.0155395	.0814014	26.25042	.0109738	-.002067
Stddev	.0003371	.0057651	.0010114	.16058	.0001561	.000247
%RSD	3.758906	37.09998	1.242538	.6117221	1.422610	11.93117
#1	.0092710	.0221297	.0802516	26.06828	.0109345	-.001783
#2	.0090293	.0130585	.0821538	26.31142	.0111458	-.002190
#3	.0086050	.0114301	.0817989	26.37157	.0108411	-.002228

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	801.0539	-.009682	.0269063	20.02240	.2299140	-.002204
Stddev	73.0081	.001588	.0035631	1.80737	.0033158	.000156
%RSD	9.114009	16.39689	13.24247	9.026760	1.442180	7.096970
#1	811.7985	-.008787	.0276895	20.11938	.2312920	-.002071
#2	868.0944	-.008743	.0300126	21.77934	.2323186	-.002164
#3	723.2690	-.011515	.0230168	18.16849	.2261315	-.002376

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3045-06 Acquired: 9/9/2025 14:54:29 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.012354	-.008404	1.077968	-.001525	F 43.48201	-.010625
Stddev	.000348	.001730	.102252	.001074	.15113	.000293
%RSD	2.820537	20.58061	9.485659	70.42938	.3475637	2.756446
#1	-.012547	-.007083	1.076102	-.002745	43.65295	-.010423
#2	-.011952	-.007767	1.181141	-.001111	43.42697	-.010490
#3	-.012563	-.010362	.976662	-.000720	43.36612	-.010961

Elem	Sr4077
Units	ppm
Avg	.0037012
Stddev	.0000844
%RSD	2.279046
#1	.0036561
#2	.0037985
#3	.0036489

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6045.792	100782.5	11615.73	5294.442	6721.480
Stddev	41.001	9438.5	29.07	501.814	43.768
%RSD	.6781822	9.365179	.2502753	9.478128	.6511697
#1	5998.633	98335.4	11644.32	5170.742	6672.478
#2	6065.749	92808.6	11616.67	4866.046	6735.267
#3	6072.994	111203.5	11586.20	5846.537	6756.694

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3051-02 Acquired: 9/9/2025 14:58:52 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.008701**	**-.011218**	**-.003422**	**-.003712**	**-.007149**	**.1723940**
Stddev	.001348	.004358	.000203	.002633	.001944	.0294535
%RSD	15.49097	38.84489	5.925752	70.93245	27.19852	17.08501
#1	-.009726	-.007505	-.003228	-.001491	-.008103	.1554952
#2	-.007174	-.016016	-.003405	-.003025	-.008432	.1552829
#3	-.009203	-.010135	-.003633	-.006620	-.004912	.2064038

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0408563**	**-.000505**	**-.002832**	**23.41629**	**-.000799**	**.0029892**
Stddev	.0013749	.000043	.000068	.04696	.000086	.0002210
%RSD	3.365272	8.545364	2.386122	.2005231	10.82011	7.391942
#1	.0403711	-.000513	-.002858	23.43833	-.000748	.0032439
#2	.0397897	-.000459	-.002884	23.44817	-.000751	.0028495
#3	.0424080	-.000544	-.002756	23.36237	-.000899	.0028741

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000830**	**.1427341**	**1.042976**	**9.811056**	**.0076455**	**-.001443**
Stddev	.000394	.0554803	.000389	.052289	.0001191	.000323
%RSD	47.44208	38.86974	.0373401	.5329635	1.557865	22.38130
#1	-.000434	.1115057	1.042527	9.761657	.0075538	-.001764
#2	-.000835	.1099059	1.043181	9.865822	.0077801	-.001448
#3	-.001221	.2067906	1.043220	9.805691	.0076025	-.001118

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**276.0768**	**-.003363**	**.1743090**	**8.145569**	**.0349603**	**-.006853**
Stddev	3.3642	.000342	.0003635	.023177	.0002194	.000070
%RSD	1.218559	10.16095	.2085146	.2845290	.6276554	1.027916
#1	273.5971	-.003543	.1744810	8.171304	.0352020	-.006914
#2	274.7271	-.003578	.1745546	8.126343	.0349053	-.006776
#3	279.9062	-.002969	.1738915	8.139059	.0347737	-.006871

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3051-02 Acquired: 9/9/2025 14:58:52 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.019667	-.003887	2.222610	.0562945	F 15.44629	-.004567
Stddev	.000224	.000729	.061945	.0009455	.17699	.001114
%RSD	1.139252	18.76325	2.787016	1.679571	1.145821	24.40445
#1	-.019746	-.004710	2.204619	.0573288	15.63612	-.005533
#2	-.019840	-.003323	2.171654	.0554747	15.28582	-.003347
#3	-.019414	-.003626	2.291559	.0560798	15.41693	-.004820

Elem	Sr4077
Units	ppm
Avg	.2918512
Stddev	.0002677
%RSD	.0917292
#1	.2921099
#2	.2915753
#3	.2918684

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6518.896	108600.4	12406.34	5667.395	7278.633
Stddev	67.318	98.1	49.64	7.233	81.306
%RSD	1.032654	.0903163	.4001436	.1276248	1.117052
#1	6441.329	108681.9	12459.88	5663.639	7185.456
#2	6562.054	108627.7	12361.83	5662.813	7335.182
#3	6553.306	108491.6	12397.31	5675.733	7315.261

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3051-02DUP Acquired: 9/9/2025 15:03:13 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.008397**	**-.014869**	**-.004495**	**-.004511**	**-.005517**	**.1516714**
Stddev	.001507	.002429	.001548	.000540	.001634	.0042133
%RSD	17.94925	16.33297	34.44318	11.96823	29.62309	2.777886
#1	-.009391	-.012074	-.006200	-.004770	-.004995	.1487058
#2	-.006663	-.016066	-.003177	-.004874	-.004207	.1564942
#3	-.009137	-.016466	-.004108	-.003891	-.007348	.1498143

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0349156**	**-.000489**	**-.002831**	**21.83160**	**-.000679**	**.0027250**
Stddev	.0003010	.000062	.000027	.05846	.000182	.0001946
%RSD	.8619499	12.61271	.9400824	.2677685	26.81381	7.141677
#1	.0346656	-.000424	-.002848	21.81484	-.000490	.0026962
#2	.0352497	-.000497	-.002845	21.78335	-.000853	.0025464
#3	.0348315	-.000547	-.002800	21.89660	-.000695	.0029324

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.001006**	**.1043624**	**.9667130**	**9.157025**	**.0072010**	**-.001758**
Stddev	.000066	.0025261	.0023648	.026099	.0001905	.000569
%RSD	6.585646	2.420527	.2446253	.2850214	2.645294	32.35511
#1	-.001031	.1033893	.9693547	9.170856	.0073273	-.001793
#2	-.000931	.1072303	.9647934	9.126921	.0069819	-.002308
#3	-.001057	.1024675	.9659909	9.173299	.0072938	-.001172

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**253.5307**	**-.003061**	**.1612724**	**7.328194**	**.0327910**	**-.006722**
Stddev	1.9779	.001676	.0009584	.051713	.0010619	.000108
%RSD	.7801431	54.74944	.5942842	.7056705	3.238498	1.600716
#1	255.8132	-.003730	.1612543	7.352573	.0318894	-.006785
#2	252.3216	-.004298	.1603232	7.268797	.0325221	-.006784
#3	252.4572	-.001154	.1622397	7.363211	.0339615	-.006598

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3051-02DUP Acquired: 9/9/2025 15:03:13 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.020162	-.004066	2.020653	.0530909	F 14.05853	-.004072
Stddev	.000755	.000955	.012577	.0009685	.05029	.000186
%RSD	3.742939	23.48040	.6224165	1.824325	.3577139	4.557759
#1	-.019658	-.002965	2.013613	.0525182	14.01688	-.003979
#2	-.019798	-.004573	2.013172	.0542092	14.04432	-.004286
#3	-.021029	-.004661	2.035173	.0525454	14.11440	-.003951

Elem	Sr4077
Units	ppm
Avg	.2740257
Stddev	.0011086
%RSD	.4045516
#1	.2740974
#2	.2728830
#3	.2750967

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6423.172	109096.5	12233.37	5687.871	7213.557
Stddev	18.892	309.8	18.28	11.186	15.637
%RSD	.2941234	.2839359	.1493934	.1966675	.2167699
#1	6444.776	108739.0	12254.38	5687.568	7230.610
#2	6414.988	109266.2	12221.14	5699.205	7210.172
#3	6409.752	109284.3	12224.60	5676.839	7199.891

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3051-02LX5 Acquired: 9/9/2025 15:07:34 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.007370**	**-.011654**	**-.007496**	**-.005413**	**-.008372**	**.0312522**	**-.006499**
Stddev	.001978	.000807	.001196	.001565	.000395	.0049701	.000809
%RSD	26.84068	6.927587	15.95009	28.90889	4.718187	15.90333	12.44257
#1	-.007201	-.012444	-.006268	-.003624	-.008395	.0302274	-.006188
#2	-.009427	-.010831	-.007565	-.006087	-.007965	.0366549	-.007417
#3	-.005481	-.011687	-.008656	-.006528	-.008754	.0268744	-.005892

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000430**	**-.003372**	**5.165344**	**-.001480**	**-.002340**	**-.001650**	**.0140070**
Stddev	.000043	.000038	.013109	.000239	.000027	.000407	.0062639
%RSD	10.01779	1.117259	.2537957	16.15776	1.141752	24.67730	44.71973
#1	-.000473	-.003337	5.172510	-.001308	-.002315	-.001834	.0146471
#2	-.000429	-.003412	5.150214	-.001379	-.002337	-.001183	.0199263
#3	-.000387	-.003368	5.173310	-.001753	-.002368	-.001933	.0074477

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2262110**	**2.172725**	**-.001029**	**-.001607**	**57.68946**	**-.004783**	**.0334964**
Stddev	.0013141	.012278	.000075	.000445	.39938	.002643	.0004687
%RSD	.5809073	.5651197	7.332903	27.70640	.6922986	55.25000	1.399236
#1	.2277278	2.158936	-.001116	-.001230	57.84152	-.004727	.0340144
#2	.2254890	2.182474	-.000986	-.002098	57.99048	-.002169	.0333733
#3	.2254162	2.176766	-.000986	-.001493	57.23638	-.007453	.0331015

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.989541**	**.0008457**	**-.007297**	**-.005024**	**-.009170**	**.4414720**	**.0086848**
Stddev	.060149	.0002617	.000022	.000456	.000928	.0101286	.0009224
%RSD	3.023249	30.94102	.2992758	9.077745	10.12356	2.294282	10.62069
#1	1.920619	.0010995	-.007313	-.004986	-.008715	.4308238	.0093367
#2	2.016576	.0005768	-.007305	-.004588	-.008557	.4426068	.0076294
#3	2.031429	.0008607	-.007272	-.005498	-.010238	.4509854	.0090883

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3051-02LX5 Acquired: 9/9/2025 15:07:34 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**3.259339**	**-.004173**	**.0592133**
Stddev	.020332	.002546	.0000878
%RSD	.6238177	61.00396	.1482893
#1	3.272974	-.006917	.0592577
#2	3.235969	-.003713	.0592701
#3	3.269072	-.001889	.0591122

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6718.296**	**112996.0**	**12020.18**	**5874.971**	**7759.200**
Stddev	13.394	439.8	66.90	9.735	13.886
%RSD	.1993666	.3892390	.5565936	.1657096	.1789681
#1	6720.812	112577.1	11971.90	5865.218	7759.102
#2	6730.253	112956.6	12096.55	5875.007	7773.136
#3	6703.822	113454.2	11992.08	5884.689	7745.363

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: CCV03 Acquired: 9/9/2025 15:11:50 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV03 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.750736**	**5.239182**	**4.628899**	**4.778930**	**4.807182**	**9.466232**	**9.519102**
Stddev	.008962	.053355	.003787	.009773	.009038	.019507	.191713
%RSD	.1886465	1.018386	.0818072	.2045112	.1880009	.2060647	2.013982
#1	4.755881	5.188146	4.628276	4.782296	4.809114	9.487869	9.594589
#2	4.755941	5.294587	4.625463	4.786576	4.815097	9.460837	9.661582
#3	4.740388	5.234813	4.632959	4.767919	4.797335	9.449991	9.301136

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2342372**	**2.326108**	**23.58472**	**.9403489**	**2.343821**	**1.188709**	**4.752425**
Stddev	.0012932	.002669	.04874	.0016311	.002741	.001663	.042419
%RSD	.5520732	.1147246	.2066801	.1734593	.1169352	.1399060	.8925688
#1	.2340072	2.328836	23.64092	.9415266	2.346128	1.189508	4.800800
#2	.2356299	2.323503	23.55383	.9410329	2.340791	1.189822	4.734886
#3	.2330745	2.325985	23.55942	.9384871	2.344543	1.186798	4.721588

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.354154**	**23.39778**	**2.332485**	**1.189162**	**24.10952**	**2.375690**	**2.397281**
Stddev	.011814	.02411	.001012	.003317	.12170	.009231	.010722
%RSD	.5018180	.1030507	.0433839	.2789708	.5047717	.3885465	.4472675
#1	2.366909	23.39380	2.333290	1.192978	24.17942	2.385350	2.409093
#2	2.351965	23.42364	2.331349	1.187543	23.96899	2.374761	2.388163
#3	2.343588	23.37591	2.332816	1.186964	24.18015	2.366959	2.394586

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**24.10071**	**4.702537**	**4.777185**	**4.656908**	**4.737494**	**4.691090**	**4.643147**
Stddev	.17578	.025572	.002923	.007513	.012679	.022116	.016279
%RSD	.7293657	.5438004	.0611956	.1613273	.2676376	.4714446	.3506094
#1	24.18596	4.691803	4.779662	4.663525	4.750790	4.707124	4.660260
#2	23.89856	4.731727	4.777932	4.648741	4.736155	4.665859	4.641329
#3	24.21761	4.684081	4.773960	4.658457	4.725538	4.700285	4.627854

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: CCV03 Acquired: 9/9/2025 15:11:50 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV03 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**4.626000**	**4.695759**	**4.833168**
Stddev	.008277	.012047	.016158
%RSD	.1789298	.2565585	.3343111
#1	4.632006	4.708797	4.845502
#2	4.629437	4.693442	4.839125
#3	4.616558	4.685039	4.814877

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6576.539**	**112322.5**	**11906.25**	**5823.661**	**7404.745**
Stddev	12.635	389.2	83.87	30.064	10.334
%RSD	.1921287	.3465013	.7044382	.5162360	.1395547
#1	6587.836	111939.3	11886.70	5789.506	7410.740
#2	6562.894	112310.9	11833.88	5835.362	7392.813
#3	6578.886	112717.4	11998.17	5846.115	7410.683

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: CCB03 Acquired: 9/9/2025 15:25:32 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB03 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.005709**	**-.012044**	**.0004706**	**-.007344**	**-.006367**	**-.014380**	**-.019735**
Stddev	.000759	.001750	.0005287	.001008	.000859	.001862	.000361
%RSD	13.29173	14.53403	112.3593	13.72385	13.49046	12.95148	1.831606
#1	-.005143	-.010044	.0003938	-.006278	-.005919	-.012683	-.019600
#2	-.005412	-.012789	-.000016	-.007472	-.007357	-.016372	-.019461
#3	-.006571	-.013298	.001034	-.008282	-.005824	-.014084	-.020145

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000422**	**-.000428**	**-.077738**	**-.001699**	**-.003859**	**-.002113**	**-.005664**
Stddev	.000038	.000052	.003658	.000179	.000118	.000101	.001272
%RSD	9.039814	12.26151	4.705674	10.51807	3.052127	4.796694	22.45580
#1	-.000429	-.000450	-.078645	-.001500	-.003935	-.002201	-.006946
#2	-.000380	-.000466	-.080858	-.001752	-.003723	-.002002	-.005642
#3	-.000455	-.000368	-.073712	-.001845	-.003918	-.002136	-.004402

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.004896**	**-.020875**	**-.003455**	**-.001667**	**.1951302**	**-.004361**	**.0060438**
Stddev	.000185	.007034	.000043	.000514	.0369575	.000913	.0002719
%RSD	3.782715	33.69621	1.247503	30.87043	18.93990	20.92404	4.498275
#1	-.004697	-.013390	-.003416	-.001085	.1545042	-.003695	.0058203
#2	-.005064	-.021888	-.003501	-.002062	.2041295	-.005401	.0063465
#3	-.004925	-.027348	-.003447	-.001853	.2267569	-.003988	.0059646

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2179490**	**-.009507**	**-.007537**	**-.001492**	**-.007766**	**-.002256**	**-.003717**
Stddev	.0333121	.000339	.000261	.000126	.000523	.008002	.000201
%RSD	15.28435	3.564902	3.459584	8.472016	6.740335	354.6602	5.401099
#1	.2022069	-.009890	-.007737	-.001434	-.007165	.006341	-.003555
#2	.1954254	-.009381	-.007633	-.001637	-.008014	-.003623	-.003654
#3	.2562147	-.009248	-.007242	-.001406	-.008120	-.009486	-.003941

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: CCB03 Acquired: 9/9/2025 15:25:32 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB03 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.009755	-.006595	-.007449
Stddev	.000628	.001609	.000057
%RSD	6.441176	24.40352	.7630503
#1	-.009060	-.008279	-.007388
#2	-.010282	-.006435	-.007500
#3	-.009923	-.005072	-.007459

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6812.685	115344.0	12068.57	5975.325	8171.311
Stddev	92.759	1425.9	47.38	48.223	110.908
%RSD	1.361569	1.236238	.3925944	.8070379	1.357290
#1	6741.962	116895.7	12029.55	6024.909	8077.534
#2	6917.710	114091.2	12121.29	5928.589	8293.732
#3	6778.384	115045.1	12054.86	5972.478	8142.668

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3051-02MS Acquired: 9/9/2025 15:29:49 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.7509827**	**2.012226**	**.8550480**	**1.896928**	**.7419220**	**2.019136**
Stddev	.0015327	.031141	.0023136	.008244	.0009270	.003375
%RSD	.2040919	1.547570	.2705797	.4346100	.1249455	.1671629
#1	.7515379	2.045651	.8524295	1.900508	.7409141	2.017533
#2	.7492498	2.006995	.8568159	1.887499	.7421139	2.023014
#3	.7521604	1.984032	.8558986	1.902777	.7427380	2.016862

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2319498**	**.1710693**	**.1773214**	**29.07678**	**.3692663**	**.1875566**
Stddev	.0005994	.0015177	.0002997	.06916	.0014195	.0003018
%RSD	.2584250	.8871624	.1690273	.2378697	.3844210	.1609164
#1	.2322279	.1728105	.1771138	29.13287	.3708525	.1872129
#2	.2312618	.1703703	.1776650	28.99950	.3681154	.1877786
#3	.2323597	.1700271	.1771854	29.09798	.3688311	.1876782

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2699094**	**3.069472**	**1.428341**	**13.57894**	**.4642794**	**.0653244**
Stddev	.0001443	.019210	.003746	.04452	.0002199	.0000808
%RSD	.0534624	.6258288	.2622398	.3278893	.0473570	.1236795
#1	.2698608	3.051653	1.432596	13.63034	.4642786	.0654149
#2	.2697957	3.089821	1.425543	13.55388	.4644996	.0652596
#3	.2700718	3.066941	1.426884	13.55258	.4640599	.0652987

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**331.6306**	**.2720055**	**.4140469**	**19.37979**	**.2903360**	**.3850445**
Stddev	6.5474	.0009595	.0016449	.17400	.0024890	.0006234
%RSD	1.974302	.3527452	.3972722	.8978458	.8572967	.1619045
#1	332.6038	.2724260	.4157053	19.19196	.2931583	.3843641
#2	324.6511	.2709076	.4140195	19.41194	.2893952	.3855882
#3	337.6369	.2726829	.4124158	19.53548	.2884545	.3851813

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3051-02MS Acquired: 9/9/2025 15:29:49 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6220119	.1802309	3.519730	5.459920	F 18.99022	.1846284
Stddev	.0016598	.0015649	.012513	.017565	.05865	.0011464
%RSD	.2668443	.8682978	.3555216	.3217040	.3088455	.6209330
#1	.6222475	.1816564	3.518517	5.477937	19.05119	.1851853
#2	.6235413	.1785564	3.532806	5.442846	18.93420	.1853900
#3	.6202469	.1804798	3.507867	5.458976	18.98526	.1833099

Elem	Sr4077
Units	ppm
Avg	.5402025
Stddev	.0002788
%RSD	.0516017
#1	.5398846
#2	.5403180
#3	.5404050

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6248.003	106969.3	12038.46	5608.721	6942.674
Stddev	9.482	271.1	104.42	2.250	11.864
%RSD	.1517550	.2533973	.8673601	.0401249	.1708859
#1	6241.929	106671.1	11918.27	5608.135	6938.397
#2	6243.151	107200.7	12090.30	5606.821	6933.542
#3	6258.929	107036.1	12106.82	5611.206	6956.084

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3051-02MSD Acquired: 9/9/2025 15:33:55 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7825298	1.979074	.8782410	1.991636	.7720219	2.249706
Stddev	.0019659	.071833	.0033693	.005970	.0029425	.010077
%RSD	.2512212	3.629642	.3836443	.2997595	.3811454	.4479202
#1	.7802678	1.901002	.8752619	1.986921	.7725297	2.245528
#2	.7838259	1.993848	.8775636	1.989638	.7688586	2.261200
#3	.7834956	2.042372	.8818976	1.998349	.7746775	2.242391

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2863020	.1763355	.1833544	47.26905	.3813396	.1989994
Stddev	.0041139	.0006990	.0005516	.19586	.0020726	.0004979
%RSD	1.436925	.3963763	.3008609	.4143514	.5434942	.2501946
#1	.2872931	.1769528	.1829742	47.26815	.3793938	.1986858
#2	.2898298	.1764771	.1831019	47.46536	.3811059	.1987389
#3	.2817830	.1755766	.1839871	47.07365	.3835191	.1995735

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2754594	3.364101	2.240320	21.26832	.4864155	.0671785
Stddev	.0006747	.013010	.018378	.06835	.0009382	.0003681
%RSD	.2449346	.3867408	.8203390	.3213516	.1928834	.5479894
#1	.2757077	3.357121	2.250257	21.26605	.4853885	.0668681
#2	.2746957	3.379112	2.251590	21.33778	.4866305	.0670821
#3	.2759747	3.356070	2.219113	21.20114	.4872276	.0675852

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	558.1957	.2833117	.5729516	27.57574	.3321394	.3979726
Stddev	6.3043	.0020946	.0010666	.14961	.0016341	.0011679
%RSD	1.129399	.7393198	.1861639	.5425526	.4919855	.2934702
#1	552.5329	.2826893	.5720145	27.48186	.3338859	.3967610
#2	557.0657	.2815989	.5727279	27.74827	.3318847	.3980653
#3	564.9886	.2856470	.5741123	27.49707	.3306477	.3990914

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3051-02MSD Acquired: 9/9/2025 15:33:55 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6370273	.1890433	5.479791	5.722630	F 31.21483	.2051465
Stddev	.0030468	.0025043	.058649	.025235	.17376	.0022678
%RSD	.4782848	1.324741	1.070283	.4409701	.5566452	1.105437
#1	.6338000	.1913797	5.429856	5.706118	31.06702	.2059188
#2	.6374281	.1893507	5.465140	5.710093	31.17123	.2069273
#3	.6398539	.1863994	5.544377	5.751678	31.40623	.2025935

Elem	Sr4077
Units	ppm
Avg	.7888198
Stddev	.0013426
%RSD	.1702091
#1	.7872726
#2	.7896794
#3	.7895072

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6216.020	104687.2	12167.19	5439.307	6832.231
Stddev	12.581	352.8	51.51	3.059	18.840
%RSD	.2023910	.3370091	.4233314	.0562346	.2757568
#1	6226.666	104993.7	12111.99	5435.842	6849.782
#2	6219.256	104766.4	12175.62	5441.633	6834.587
#3	6202.137	104301.5	12213.96	5440.446	6812.323

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3051-02A Acquired: 9/9/2025 15:38:01 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.7500581**	**1.992152**	**.8747678**	**1.902203**	**.7522271**	**1.986483**
Stddev	.0038692	.054059	.0014357	.006863	.0013565	.008609
%RSD	.5158514	2.713613	.1641265	.3607721	.1803347	.4333768
#1	.7512020	2.041983	.8749807	1.909845	.7522615	1.990435
#2	.7532263	1.999797	.8760852	1.896567	.7535661	1.976607
#3	.7457459	1.934678	.8732375	1.900197	.7508537	1.992406

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2209853**	**.1763325**	**.1801859**	**23.37213**	**.3793416**	**.1891242**
Stddev	.0015744	.0008637	.0005494	.03347	.0007970	.0004604
%RSD	.7124538	.4897902	.3049199	.1431940	.2100920	.2434418
#1	.2192091	.1773221	.1807892	23.34837	.3799781	.1896483
#2	.2222090	.1759448	.1800541	23.41040	.3784478	.1887851
#3	.2215378	.1757306	.1797143	23.35760	.3795990	.1889390

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2739969**	**3.120157**	**1.179443**	**11.27058**	**.4692903**	**.0689906**
Stddev	.0009997	.022899	.001120	.04355	.0011172	.0005783
%RSD	.3648540	.7338920	.0949949	.3863753	.2380629	.8381715
#1	.2751351	3.099809	1.178758	11.30686	.4705103	.0689295
#2	.2735946	3.115708	1.180736	11.28259	.4690433	.0695970
#3	.2732611	3.144953	1.178835	11.22229	.4683172	.0684453

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**269.4090**	**.2791217**	**.3781213**	**17.53265**	**.2873932**	**.3914666**
Stddev	2.4673	.0014698	.0018308	.03990	.0011423	.0014101
%RSD	.9158295	.5265913	.4841873	.2275817	.3974797	.3602164
#1	267.1442	.2786571	.3775834	17.50989	.2877161	.3930948
#2	269.0445	.2807677	.3801608	17.50934	.2883393	.3906425
#3	272.0383	.2779403	.3766196	17.57873	.2861242	.3906624

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3051-02A Acquired: 9/9/2025 15:38:01 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6358834	.1795283	3.008274	5.461484	F 14.58692	.1851101
Stddev	.0014771	.0023521	.033203	.031839	.13856	.0020286
%RSD	.2322886	1.310147	1.103707	.5829820	.9498783	1.095876
#1	.6371928	.1815924	2.970526	5.496642	14.72619	.1865925
#2	.6361753	.1800249	3.021342	5.453214	14.58548	.1859395
#3	.6342822	.1769676	3.032955	5.434595	14.44909	.1827982

Elem	Sr4077
Units	ppm
Avg	.4692583
Stddev	.0004644
%RSD	.0989613
#1	.4687500
#2	.4693644
#3	.4696604

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6385.610	105854.3	12021.34	5580.857	7125.469
Stddev	13.955	283.9	34.67	5.495	18.805
%RSD	.2185312	.2682260	.2883892	.0984567	.2639085
#1	6375.836	106085.8	11989.29	5582.817	7113.546
#2	6379.403	105939.5	12058.14	5585.104	7115.715
#3	6401.591	105537.5	12016.58	5574.651	7147.147

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: PB169589TBRE Acquired: 9/9/2025 15:49:50 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.011450**	**-.013665**	**.0007167**	**-.005552**	**-.005532**	**-.005406**	**-.020109**
Stddev	.000761	.002425	.0014038	.002592	.000468	.006644	.000887
%RSD	6.649832	17.74758	195.8604	46.68294	8.466650	122.8985	4.409548
#1	-.012170	-.015716	.0001957	-.003230	-.005995	.000193	-.019094
#2	-.011527	-.010988	-.000352	-.005078	-.005059	-.003663	-.020734
#3	-.010653	-.014291	.002307	-.008349	-.005543	-.012748	-.020499

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000568**	**.0001876**	**-.030624**	**-.001276**	**-.003953**	**-.001775**	**.0222846**
Stddev	.000011	.0000296	.003965	.000251	.000078	.000354	.0078315
%RSD	1.890612	15.75476	12.94576	19.71196	1.968761	19.93259	35.14290
#1	-.000556	.0002040	-.027918	-.001565	-.004029	-.001527	.0201004
#2	-.000574	.0002053	-.028780	-.001107	-.003957	-.002180	.0309763
#3	-.000575	.0001535	-.035175	-.001155	-.003873	-.001618	.0157772

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.001770**	**-.034215**	**-.002472**	**-.001620**	**340.9964**	**-.003988**	**.0096224**
Stddev	.000225	.009754	.000306	.000212	1.8837	.001541	.0000530
%RSD	12.72825	28.50657	12.39521	13.09763	.5524183	38.63016	.5505409
#1	-.001612	-.040352	-.002351	-.001518	342.9202	-.002774	.0096730
#2	-.001671	-.022968	-.002821	-.001479	339.1555	-.003468	.0096268
#3	-.002028	-.039325	-.002245	-.001864	340.9135	-.005721	.0095673

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.298010**	**-.010486**	**-.007338**	**-.019117**	**-.007887**	**.0094053**	**-.000803**
Stddev	.024679	.000431	.000153	.000835	.002194	.0077684	.001627
%RSD	8.281419	4.109445	2.089576	4.365339	27.81910	82.59508	202.6225
#1	-.311082	-.010373	-.007481	-.018582	-.007864	.0045490	.000924
#2	-.269544	-.010122	-.007176	-.020079	-.010093	.0053021	-.001026
#3	-.313404	-.010962	-.007358	-.018691	-.005705	.0183649	-.002306

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: PB169589TBRE Acquired: 9/9/2025 15:49:50 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0406659	-.015641	-.007626
Stddev	.0041663	.001059	.000048
%RSD	10.24526	6.772447	.6279359
#1	.0368470	-.014726	-.007635
#2	.0451092	-.016801	-.007574
#3	.0400414	-.015397	-.007669

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6369.679	107465.6	11840.95	5643.858	7090.293
Stddev	5.248	396.0	41.39	7.057	10.511
%RSD	.0823909	.3685071	.3495572	.1250387	.1482454
#1	6374.733	107306.8	11794.31	5639.803	7100.083
#2	6370.047	107916.4	11855.23	5652.007	7091.611
#3	6364.256	107173.7	11873.31	5639.765	7079.185

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: PB169621TB Acquired: 9/9/2025 15:54:17 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.008299**	**-.014340**	**.0016683**	**-.005534**	**-.006293**	**-.010218**	**-.020928**
Stddev	.000803	.001290	.0003740	.000424	.002693	.008939	.000122
%RSD	9.677987	8.994600	22.41957	7.659248	42.79641	87.48211	.5850339
#1	-.008309	-.012967	.0016582	-.005177	-.005601	-.004983	-.020824
#2	-.009098	-.015527	.0012994	-.005423	-.004013	-.020539	-.020899
#3	-.007491	-.014527	.0020473	-.006003	-.009264	-.005131	-.021063

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000535**	**.0001551**	**-.031656**	**-.001120**	**-.004067**	**-.001846**	**.0188314**
Stddev	.000063	.0000618	.011796	.000089	.000091	.000318	.0043863
%RSD	11.75489	39.84177	37.26186	7.939160	2.237404	17.24412	23.29222
#1	-.000468	.0001465	-.039639	-.001216	-.004093	-.001966	.0222278
#2	-.000544	.0002208	-.018107	-.001105	-.003966	-.001485	.0138794
#3	-.000593	.0000981	-.037223	-.001040	-.004143	-.002087	.0203871

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.002029**	**-.026152**	**-.002779**	**-.001704**	**333.4149**	**-.004566**	**.0094864**
Stddev	.000154	.029474	.000159	.000469	3.3582	.001780	.0002597
%RSD	7.583401	112.6998	5.736913	27.49856	1.007208	38.99199	2.737123
#1	-.002042	.007728	-.002640	-.002245	331.6770	-.006621	.0091918
#2	-.001870	-.040300	-.002952	-.001415	337.2859	-.003519	.0095852
#3	-.002177	-.045885	-.002743	-.001453	331.2818	-.003557	.0096821

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.249150**	**-.010399**	**-.007252**	**-.019328**	**-.007366**	**.0025106**	**-.000518**
Stddev	.020835	.000173	.000063	.000304	.000593	.0060523	.000459
%RSD	8.362471	1.664333	.8685826	1.575146	8.049823	241.0705	88.55700
#1	-.265591	-.010475	-.007184	-.019679	-.007262	.0070300	-.000364
#2	-.256141	-.010201	-.007308	-.019137	-.008005	-.004366	-.001034
#3	-.225718	-.010520	-.007265	-.019168	-.006833	.004867	-.000156

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: PB169621TB Acquired: 9/9/2025 15:54:17 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0357356	-.014463	-.007672
Stddev	.0031584	.001236	.000065
%RSD	8.838230	8.545139	.8536853
#1	.0386410	-.015885	-.007627
#2	.0361919	-.013859	-.007641
#3	.0323738	-.013646	-.007747

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6635.827	109680.7	12049.60	5795.435	7438.447
Stddev	30.086	319.4	15.60	11.906	30.576
%RSD	.4533865	.2912503	.1294412	.2054291	.4110488
#1	6603.633	109994.3	12064.39	5782.765	7405.562
#2	6640.615	109692.1	12051.11	5806.390	7443.762
#3	6663.231	109355.7	12033.31	5797.151	7466.016

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: PB169589TB Acquired: 9/9/2025 15:58:53 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.008616**	**-.011187**	**.0015675**	**-.003018**	**-.006065**	**-.007044**	**-.019826**
Stddev	.001162	.001219	.0010695	.000914	.001157	.008812	.000239
%RSD	13.48407	10.89939	68.22874	30.29377	19.08586	125.0998	1.204871
#1	-.009725	-.011416	.0027305	-.003380	-.006735	-.003343	-.019993
#2	-.007408	-.012276	.0013456	-.001978	-.006731	-.000686	-.019932
#3	-.008715	-.009870	.0006264	-.003696	-.004728	-.017102	-.019552

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000534**	**.0003258**	**-.025719**	**-.000753**	**-.003941**	**-.001604**	**.0198667**
Stddev	.000028	.0000222	.001461	.000119	.000307	.000189	.0064821
%RSD	5.190788	6.808024	5.680641	15.79837	7.791479	11.80829	32.62803
#1	-.000520	.0003004	-.024599	-.000881	-.004078	-.001748	.0268972
#2	-.000515	.0003412	-.027372	-.000731	-.003589	-.001676	.0141272
#3	-.000565	.0003358	-.025187	-.000646	-.004155	-.001390	.0185757

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.001679**	**-.039182**	**-.002756**	**-.001958**	**345.8515**	**-.003785**	**.0102206**
Stddev	.000305	.008549	.000271	.000289	3.8753	.002199	.0001642
%RSD	18.17583	21.81915	9.831204	14.74424	1.120516	58.09859	1.606656
#1	-.001667	-.035267	-.002636	-.002238	345.7681	-.006294	.0103707
#2	-.001990	-.033291	-.002566	-.001974	349.7679	-.002867	.0100452
#3	-.001380	-.048987	-.003066	-.001661	342.0186	-.002193	.0102459

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.283242**	**-.010286**	**-.007242**	**-.019379**	**-.008683**	**-.002296**	**-.001633**
Stddev	.011557	.000484	.000126	.000973	.000807	.006028	.001267
%RSD	4.080411	4.702575	1.735782	5.021580	9.295678	262.5651	77.59524
#1	-.280953	-.009734	-.007170	-.019772	-.009615	.004587	-.001957
#2	-.273000	-.010491	-.007387	-.018271	-.008209	-.006637	-.002707
#3	-.295773	-.010634	-.007168	-.020094	-.008225	-.004838	-.000235

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: PB169589TB Acquired: 9/9/2025 15:58:53 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0383921	-.015079	-.007655
Stddev	.0001697	.000421	.000098
%RSD	.4419763	2.790935	1.277913
#1	.0385217	-.014986	-.007723
#2	.0382000	-.015539	-.007543
#3	.0384545	-.014713	-.007699

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6240.118	105628.2	11722.00	5580.302	6900.243
Stddev	13.316	450.0	239.26	19.393	22.619
%RSD	.2133883	.4260214	2.041150	.3475301	.3277984
#1	6248.172	106083.3	11793.53	5587.550	6908.204
#2	6247.434	105183.4	11917.34	5558.328	6917.805
#3	6224.748	105618.0	11455.13	5595.026	6874.720

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: PB169617BL Acquired: 9/9/2025 16:03:21 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.006368**	**-.012140**	**-.000254**	**-.008806**	**-.008795**	**-.009899**	**-.016361**
Stddev	.002221	.001593	.001044	.001355	.000757	.007770	.000955
%RSD	34.87456	13.11865	410.7387	15.39182	8.609509	78.48898	5.837053
#1	-.008265	-.013926	.000905	-.010077	-.009344	-.018004	-.017426
#2	-.006914	-.011627	-.001123	-.007380	-.009111	-.002515	-.016074
#3	-.003925	-.010867	-.000545	-.008961	-.007931	-.009178	-.015582

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000440**	**.0000147**	**-.067283**	**-.001787**	**-.003885**	**-.001717**	**-.010057**
Stddev	.000076	.0000416	.006514	.000161	.000182	.000484	.006176
%RSD	17.26501	282.8649	9.680819	9.019546	4.688190	28.19961	61.41389
#1	-.000443	-.000019	-.059763	-.001896	-.004090	-.001567	-.010347
#2	-.000362	.000001	-.070903	-.001864	-.003824	-.001326	-.003741
#3	-.000514	.000061	-.071181	-.001602	-.003741	-.002259	-.016084

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.004560**	**-.036427**	**-.003610**	**-.001626**	**.9541502**	**-.002094**	**.0072650**
Stddev	.000194	.017774	.000197	.000535	.0638295	.000156	.0000864
%RSD	4.254317	48.79443	5.449837	32.90988	6.689668	7.456869	1.189478
#1	-.004631	-.020149	-.003632	-.001195	.8828568	-.001998	.0071858
#2	-.004341	-.033740	-.003403	-.001458	.9736059	-.002275	.0073572
#3	-.004709	-.055391	-.003795	-.002225	1.005988	-.002011	.0072518

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4802683**	**-.010011**	**-.007740**	**-.001291**	**-.008285**	**-.004706**	**-.006811**
Stddev	.0685575	.000798	.000119	.000421	.001480	.005324	.001046
%RSD	14.27483	7.972278	1.542768	32.62996	17.86114	113.1151	15.36502
#1	.4011291	-.009091	-.007840	-.001029	-.006646	-.010737	-.006080
#2	.5215322	-.010426	-.007608	-.001777	-.008687	-.000658	-.008010
#3	.5181435	-.010516	-.007773	-.001067	-.009522	-.002725	-.006343

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: PB169617BL Acquired: 9/9/2025 16:03:21 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0013247	-.003092	-.007589
Stddev	.0010613	.001036	.000086
%RSD	80.11487	33.49567	1.136330
#1	.0006562	-.004286	-.007585
#2	.0007694	-.002432	-.007504
#3	.0025484	-.002558	-.007677

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6497.669	107885.0	10992.79	5717.662	7662.235
Stddev	18.290	297.9	114.31	13.274	23.342
%RSD	.2814911	.2760954	1.039852	.2321618	.3046370
#1	6479.343	108108.4	10936.33	5711.725	7636.530
#2	6497.739	107546.8	10917.69	5708.392	7668.067
#3	6515.924	107999.8	11124.34	5732.868	7682.108

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: PB169618BL Acquired: 9/9/2025 16:11:58 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.008539**	**-.010280**	**.0002785**	**-.007863**	**-.007591**	**-.013000**	**-.018176**
Stddev	.001922	.003233	.0004940	.001892	.001710	.008073	.001052
%RSD	22.51233	31.44671	177.3935	24.05742	22.53126	62.10305	5.787464
#1	-.008035	-.006548	.0008160	-.005853	-.009193	-.021640	-.017101
#2	-.006919	-.012103	-.000156	-.008128	-.005790	-.005649	-.018223
#3	-.010663	-.012190	.000175	-.009608	-.007791	-.011711	-.019203

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000401**	**-.000040**	**-.043536**	**-.001569**	**-.003878**	**-.001916**	**-.006096**
Stddev	.000060	.000042	.002396	.000248	.000067	.000253	.003895
%RSD	15.04403	106.1158	5.504220	15.80280	1.718479	13.22007	63.89456
#1	-.000461	-.000035	-.046301	-.001295	-.003807	-.002045	-.009809
#2	-.000340	-.000085	-.042063	-.001636	-.003939	-.002078	-.006437
#3	-.000402	-.000000	-.042244	-.001777	-.003888	-.001624	-.002042

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.004509**	**-.024987**	**-.003697**	**-.001611**	**.3416220**	**-.002058**	**.0077246**
Stddev	.000433	.009601	.000098	.000497	.0223866	.001803	.0002354
%RSD	9.603143	38.42280	2.644843	30.83524	6.553034	87.58898	3.047268
#1	-.004988	-.013955	-.003654	-.002172	.3219894	-.003326	.0075000
#2	-.004145	-.029557	-.003628	-.001226	.3368753	-.002854	.0077043
#3	-.004395	-.031449	-.003809	-.001435	.3660013	.000006	.0079695

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.3908651**	**-.010358**	**-.007642**	**-.001593**	**-.007142**	**-.001103**	**-.007739**
Stddev	.0469622	.000169	.000247	.000358	.001853	.006673	.000625
%RSD	12.01493	1.630601	3.236623	22.47748	25.94073	604.8178	8.078192
#1	.3409232	-.010436	-.007367	-.001598	-.005871	.005182	-.008236
#2	.3975385	-.010164	-.007844	-.001948	-.006288	-.008105	-.007945
#3	.4341336	-.010474	-.007716	-.001232	-.009268	-.000387	-.007037

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: PB169618BL Acquired: 9/9/2025 16:11:58 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**-.007516**	**-.006505**	**-.007768**
Stddev	.001164	.002365	.000097
%RSD	15.48885	36.35839	1.250589
#1	-.007421	-.007526	-.007704
#2	-.008725	-.003801	-.007720
#3	-.006402	-.008188	-.007880

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6638.394**	**111995.5**	**11384.25**	**5919.698**	**7910.630**
Stddev	17.934	336.9	149.71	32.624	26.348
%RSD	.2701609	.3008567	1.315050	.5511154	.3330725
#1	6623.615	112186.1	11435.24	5935.508	7883.190
#2	6633.219	112193.8	11215.71	5941.404	7912.970
#3	6658.346	111606.4	11501.81	5882.181	7935.730

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3040-01 Acquired: 9/9/2025 16:20:17 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0217972**	**-.017025**	**.2793083**	**-.009912**	**.0874603**	**23.14348**
Stddev	.0016190	.001582	.0009194	.000894	.0015317	.08399
%RSD	7.427369	9.292807	.3291815	9.023038	1.751284	.3629130
#1	.0212170	-.017821	.2782498	-.010177	.0875747	23.22666
#2	.0205483	-.015203	.2799088	-.008916	.0889317	23.05870
#3	.0236263	-.018051	.2797663	-.010645	.0858747	23.14509

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.6012116**	**.0006559**	**-.000468**	**86.08494**	**.1387386**	**.0132991**
Stddev	.0049262	.0000058	.000057	.22497	.0004942	.0001328
%RSD	.8193819	.8760022	12.10244	.2613401	.3562215	.9981470
#1	.6068152	.0006612	-.000469	86.32675	.1388466	.0133679
#2	.5975628	.0006567	-.000523	85.88181	.1391699	.0133834
#3	.5992567	.0006498	-.000410	86.04628	.1381994	.0131461

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.5445602**	**48.29952**	**.4995223**	**10.50212**	**.0566325**	**.0004048**
Stddev	.0029092	.13789	.0030465	.02698	.0001171	.0004504
%RSD	.5342303	.2854795	.6098803	.2569434	.2067154	111.2819
#1	.5412416	48.26766	.5030400	10.52016	.0565390	.0009028
#2	.5457683	48.18035	.4977665	10.51511	.0565947	.0002855
#3	.5466707	48.45055	.4977603	10.47110	.0567638	.0000260

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**8.273394**	**.0491581**	**28.93637**	**6.905847**	**.2368631**	**-.005657**
Stddev	.036633	.0038487	.16713	.036712	.0005612	.000144
%RSD	.4427760	7.829306	.5775652	.5316118	.2369184	2.547789
#1	8.243359	.0505817	28.74370	6.868970	.2372855	-.005754
#2	8.262616	.0520923	29.02321	6.942392	.2370775	-.005726
#3	8.314206	.0448004	29.04220	6.906178	.2362263	-.005492

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3040-01 Acquired: 9/9/2025 16:20:17 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001375	.8851569	F 29.60788	7.036407	8.952397	-.001488
Stddev	.000492	.0118276	.10856	.011364	.023535	.000301
%RSD	35.78739	1.336213	.3666684	.1615096	.2628956	20.25535
#1	-.000857	.8929320	29.52063	7.044472	8.977188	-.001673
#2	-.001433	.8715455	29.57354	7.023410	8.930359	-.001652
#3	-.001836	.8909930	29.72945	7.041339	8.949644	-.001140

Elem	Sr4077
Units	ppm
Avg	.4888126
Stddev	.0020524
%RSD	.4198776
#1	.4909301
#2	.4868322
#3	.4886755

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6537.561	112637.3	12186.36	5802.472	7476.677
Stddev	22.048	317.4	50.95	11.416	10.089
%RSD	.3372513	.2817540	.4180537	.1967507	.1349330
#1	6562.208	112931.2	12132.54	5789.516	7488.308
#2	6530.761	112300.8	12192.72	5806.844	7471.414
#3	6519.714	112679.8	12233.83	5811.057	7470.307

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: CCV04 Acquired: 9/9/2025 16:24:37 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV04 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.750914**	**5.005681**	**4.669858**	**4.772388**	**4.777278**	**9.365886**	**9.410118**
Stddev	.008210	.059112	.006963	.010873	.010144	.023154	.047155
%RSD	.1728027	1.180900	.1491009	.2278368	.2123411	.2472163	.5011146
#1	4.757896	4.959674	4.665938	4.772791	4.766352	9.368250	9.357012
#2	4.741869	4.985019	4.665739	4.761318	4.779084	9.387768	9.426257
#3	4.752976	5.072351	4.677897	4.783054	4.786398	9.341641	9.447085

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2353598**	**2.347667**	**23.45919**	**.9412704**	**2.348122**	**1.189733**	**4.748503**
Stddev	.0017540	.003271	.07453	.0023397	.002813	.001340	.019290
%RSD	.7452241	.1393507	.3176936	.2485680	.1197882	.1126173	.4062409
#1	.2364740	2.345777	23.41440	.9399290	2.345603	1.189055	4.745706
#2	.2362672	2.345780	23.54522	.9399102	2.347606	1.188868	4.730764
#3	.2333380	2.351445	23.41795	.9439721	2.351157	1.191277	4.769040

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.349349**	**23.31459**	**2.346259**	**1.181252**	**23.40653**	**2.350669**	**2.353738**
Stddev	.013810	.00335	.003640	.002572	.20818	.011062	.003838
%RSD	.5878026	.0143819	.1551384	.2177768	.8894021	.4705962	.1630428
#1	2.350227	23.31397	2.343725	1.182861	23.32551	2.348101	2.349426
#2	2.362698	23.31821	2.344621	1.178285	23.25105	2.362789	2.355008
#3	2.335121	23.31159	2.350430	1.182610	23.64304	2.341116	2.356779

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**23.51339**	**4.699908**	**4.738602**	**4.683072**	**4.686106**	**4.719696**	**4.815553**
Stddev	.16858	.034739	.006265	.008592	.017836	.028858	.019746
%RSD	.7169349	.7391481	.1322042	.1834799	.3806240	.6114333	.4100374
#1	23.42051	4.716348	4.734897	4.680212	4.683958	4.705084	4.796766
#2	23.41167	4.723375	4.735074	4.676275	4.704920	4.701067	4.813759
#3	23.70798	4.660000	4.745835	4.692730	4.669441	4.752937	4.836135

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: CCV04 Acquired: 9/9/2025 16:24:37 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV04 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**4.635532**	**4.596249**	**4.756810**
Stddev	.017507	.019732	.013747
%RSD	.3776662	.4292979	.2889866
#1	4.632632	4.584911	4.764483
#2	4.619656	4.619033	4.765007
#3	4.654307	4.584802	4.740940

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6387.850**	**109353.2**	**11578.58**	**5738.578**	**7150.214**
Stddev	15.961	625.6	47.30	26.973	18.083
%RSD	.2498587	.5721141	.4084818	.4700321	.2529024
#1	6397.789	109791.5	11583.33	5754.218	7164.809
#2	6396.322	109631.5	11529.08	5754.083	7155.848
#3	6369.440	108636.7	11623.32	5707.432	7129.984

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: CCB04 Acquired: 9/9/2025 16:28:48 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB04 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.005855**	**-.010716**	**.0007309**	**-.008111**	**-.007644**	**-.016966**	**-.017496**
Stddev	.000520	.000944	.0005994	.002563	.001599	.008195	.000065
%RSD	8.874629	8.807800	82.00400	31.59674	20.92128	48.30296	.3709975
#1	-.006325	-.010456	.0013785	-.005495	-.007235	-.025367	-.017455
#2	-.005942	-.009929	.0006184	-.010618	-.006289	-.016537	-.017570
#3	-.005297	-.011763	.0001957	-.008220	-.009408	-.008994	-.017462

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000454**	**-.000140**	**-.064902**	**-.001733**	**-.003945**	**-.001930**	**-.011684**
Stddev	.000015	.000044	.008303	.000294	.000137	.000283	.005206
%RSD	3.241215	31.54023	12.79276	16.94911	3.472990	14.67419	44.55850
#1	-.000468	-.000090	-.074400	-.002067	-.003873	-.002166	-.007127
#2	-.000456	-.000175	-.061281	-.001620	-.004103	-.002007	-.017359
#3	-.000439	-.000155	-.059024	-.001513	-.003859	-.001616	-.010568

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.004821**	**-.029225**	**-.003646**	**-.000877**	**.1522370**	**-.004710**	**.0065537**
Stddev	.000398	.012057	.000273	.000323	.0268431	.004816	.0001435
%RSD	8.251217	41.25395	7.481859	36.83142	17.63245	102.2670	2.189990
#1	-.004811	-.017140	-.003347	-.000512	.1223438	-.007325	.0064472
#2	-.004428	-.041253	-.003711	-.001124	.1600880	.000849	.0067169
#3	-.005223	-.029282	-.003881	-.000996	.1742793	-.007653	.0064970

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2438608**	**-.004894**	**-.007515**	**-.001308**	**-.006846**	**.0118256**	**-.005869**
Stddev	.0673448	.000044	.000154	.000558	.002755	.0049517	.001613
%RSD	27.61608	.9023545	2.052561	42.64091	40.23883	41.87266	27.48731
#1	.1819887	-.004850	-.007664	-.001279	-.007296	.0174247	-.005977
#2	.2340022	-.004894	-.007523	-.000765	-.003894	.0100296	-.004205
#3	.3155915	-.004939	-.007356	-.001880	-.009348	.0080225	-.007426

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: CCB04 Acquired: 9/9/2025 16:28:48 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB04 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.009052	-.008191	-.007719
Stddev	.000960	.000568	.000048
%RSD	10.60193	6.939465	.6237852
#1	-.007999	-.007786	-.007671
#2	-.009877	-.008841	-.007718
#3	-.009280	-.007947	-.007767

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6688.337	113708.2	11402.94	5941.028	7956.752
Stddev	3.107	244.2	70.94	17.511	1.477
%RSD	.0464572	.2147506	.6220805	.2947526	.0185645
#1	6691.639	113884.8	11337.97	5944.269	7956.904
#2	6685.471	113429.5	11478.62	5922.122	7958.148
#3	6687.900	113810.2	11392.24	5956.692	7955.205

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3040-02 Acquired: 9/9/2025 16:39:40 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0281547	-.019657	.3515120	-.007786	.0978953	28.65764
Stddev	.0026425	.000865	.0009489	.002500	.0020983	.05012
%RSD	9.385618	4.402750	.2699363	32.10724	2.143447	.1748762
#1	.0265032	-.020636	.3511454	-.004987	.0987912	28.62082
#2	.0267586	-.018992	.3508011	-.009797	.0954977	28.71472
#3	.0312025	-.019343	.3525895	-.008573	.0993970	28.63740

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7051626	.0008808	.0001889	96.97206	.1704362	.0169223
Stddev	.0040339	.0000376	.0000797	.24644	.0008902	.0001346
%RSD	.5720518	4.270215	42.18561	.2541387	.5222846	.7953163
#1	.7032390	.0008374	.0001166	96.93799	.1707376	.0168158
#2	.7097983	.0009007	.0001757	97.23377	.1694344	.0170736
#3	.7024506	.0009044	.0002743	96.74442	.1711365	.0168775

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6330987	59.51774	.6076931	12.40661	.0688937	.0009570
Stddev	.0005147	.06953	.0043299	.03523	.0005064	.0004097
%RSD	.0812962	.1168300	.7125176	.2839396	.7350324	42.80545
#1	.6334171	59.58583	.6091207	12.36786	.0689723	.0008328
#2	.6325049	59.44684	.6111289	12.43669	.0683526	.0014145
#3	.6333740	59.52055	.6028296	12.41528	.0693562	.0006239

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.121733	.0603871	F 32.40695	7.742170	.2864370	-.006521
Stddev	.030648	.0036332	.43955	.016278	.0004028	.000200
%RSD	.3359933	6.016524	1.356341	.2102458	.1406071	3.066280
#1	9.089409	.0583360	32.21259	7.726331	.2865350	-.006714
#2	9.125417	.0645820	32.09810	7.758853	.2867817	-.006534
#3	9.150373	.0582433	32.91018	7.741324	.2859943	-.006315

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3040-02 Acquired: 9/9/2025 16:39:40 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0064359	1.051760	F 34.36872	8.175646	F 10.61857	-.001613
Stddev	.0011048	.013991	.08352	.015443	.01789	.000893
%RSD	17.16608	1.330233	.2430010	.1888858	.1684325	55.37336
#1	.0068426	1.036732	34.30174	8.165850	10.59868	-.001896
#2	.0051854	1.064408	34.34212	8.167640	10.63333	-.002330
#3	.0072797	1.054140	34.46230	8.193447	10.62371	-.000612

Elem	Sr4077
Units	ppm
Avg	.5355130
Stddev	.0017309
%RSD	.3232210
#1	.5335157
#2	.5365762
#3	.5364471

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6284.078	108942.2	11898.87	5654.454	7132.138
Stddev	7.542	264.4	20.83	11.169	6.560
%RSD	.1200223	.2426587	.1750340	.1975327	.0919799
#1	6275.386	108933.8	11885.55	5656.751	7124.700
#2	6288.898	109210.6	11888.20	5642.315	7137.098
#3	6287.949	108682.1	11922.87	5664.296	7134.615

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3041-01 Acquired: 9/9/2025 16:44:00 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0516234**	**-.024156**	**.6028661**	**-.012885**	**.1210619**	**51.30825**
Stddev	.0017133	.002815	.0041347	.002547	.0005227	.16728
%RSD	3.318767	11.65425	.6858328	19.76654	.4317608	.3260265
#1	.0522452	-.027407	.6000813	-.010117	.1207090	51.39662
#2	.0529389	-.022524	.6076169	-.013409	.1216624	51.11532
#3	.0496860	-.022537	.6009001	-.015129	.1208142	51.41282

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.7755318**	**.0021045**	**.0039492**	**123.0690**	**.3063286**	**.0362529**
Stddev	.0033404	.0000472	.0001141	.2250	.0010844	.0002093
%RSD	.4307279	2.243472	2.888981	.1827871	.3540110	.5773856
#1	.7769558	.0020504	.0038454	123.3065	.3070331	.0361758
#2	.7779243	.0021254	.0039307	122.8592	.3068729	.0360930
#3	.7717154	.0021376	.0040714	123.0414	.3050799	.0364898

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.153996**	**106.6046**	**.9622018**	**21.58612**	**.1205629**	**.0033108**
Stddev	.002256	.9402	.0027408	.05981	.0003287	.0004965
%RSD	.1954744	.8819522	.2848450	.2770928	.2726263	14.99559
#1	1.151431	106.7850	.9645148	21.56913	.1209024	.0035435
#2	1.155670	107.4415	.9629159	21.53663	.1205399	.0036482
#3	1.154887	105.5872	.9591746	21.65259	.1202462	.0027407

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**36.70663**	**.1119224**	F **36.74565**	**16.23505**	**.4161104**	**-.005352**
Stddev	.26534	.0011845	.30166	.17308	.0019701	.000302
%RSD	.7228629	1.058334	.8209392	1.066093	.4734599	5.644487
#1	36.82009	.1132647	36.74870	16.24199	.4172592	-.005356
#2	36.89638	.1114788	36.44248	16.40456	.4172363	-.005653
#3	36.40343	.1110237	37.04577	16.05861	.4138355	-.005048

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3041-01 Acquired: 9/9/2025 16:44:00 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0178242	1.743771	F 53.08553	F 12.00380	F 18.08252	.0110347
Stddev	.0009097	.008140	.31085	.03446	.07262	.0025325
%RSD	5.103964	.4667772	.5855640	.2870738	.4015842	22.95004
#1	.0167881	1.752720	53.38958	11.97250	18.03562	.0123443
#2	.0181924	1.736808	53.09870	11.99817	18.04578	.0081156
#3	.0184921	1.741785	52.76830	12.04072	18.16617	.0126443

Elem	Sr4077
Units	ppm
Avg	.4031951
Stddev	.0026359
%RSD	.6537561
#1	.4039614
#2	.4002610
#3	.4053630

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6408.487	110323.6	12219.46	5708.842	7072.415
Stddev	17.885	193.8	80.91	7.833	12.576
%RSD	.2790759	.1756375	.6621104	.1372019	.1778119
#1	6408.970	110136.8	12214.16	5717.034	7079.184
#2	6390.365	110310.4	12302.88	5708.067	7057.905
#3	6426.125	110523.6	12141.33	5701.426	7080.156

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3041-04 Acquired: 9/9/2025 16:48:17 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0107546**	**-.018471**	**.1614204**	**-.005713**	**.0446589**	**15.44277**
Stddev	.0017158	.002376	.0013512	.001111	.0016932	.02493
%RSD	15.95395	12.86118	.8370779	19.44268	3.791399	.1614113
#1	.0121259	-.019164	.1612069	-.004485	.0444428	15.43336
#2	.0088306	-.020424	.1628657	-.006005	.0464497	15.47104
#3	.0113072	-.015826	.1601886	-.006648	.0430841	15.42393

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2834239**	**.0003216**	**-.001606**	**89.21403**	**.0885594**	**.0064591**
Stddev	.0006272	.0000891	.000023	.20237	.0011308	.0000575
%RSD	.2212977	27.70965	1.446935	.2268352	1.276928	.8894539
#1	.2827258	.0003646	-.001613	89.32265	.0875284	.0065151
#2	.2839400	.0003810	-.001580	89.33890	.0883809	.0064003
#3	.2836059	.0002191	-.001625	88.98055	.0897688	.0064618

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.3571589**	**33.43894**	**.4801254**	**10.02960**	**.0358328**	**-.000469**
Stddev	.0006896	.19256	.0016400	.05565	.0001179	.000575
%RSD	.1930678	.5758640	.3415811	.5548330	.3289155	122.6637
#1	.3573827	33.49069	.4819466	9.96566	.0359666	-.000064
#2	.3577089	33.22580	.4796642	10.05606	.0357444	-.000215
#3	.3563853	33.60035	.4787653	10.06709	.0357873	-.001127

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**36.80690**	**.0324021**	**21.84309**	**12.93773**	**.1637610**	**-.007844**
Stddev	.18610	.0022114	.08231	.03467	.0007351	.000370
%RSD	.5056238	6.824942	.3768393	.2680118	.4489003	4.720331
#1	36.87838	.0302193	21.93608	12.93605	.1638715	-.008183
#2	36.59565	.0346411	21.81361	12.90393	.1629768	-.007900
#3	36.94667	.0323459	21.77958	12.97322	.1644346	-.007449

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3041-04 Acquired: 9/9/2025 16:48:17 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.004007	.6930319	F 24.31457	5.386443	6.969851	-.009796
Stddev	.000613	.0150783	.17928	.003335	.018219	.001174
%RSD	15.30845	2.175696	.7373395	.0619185	.2613924	11.98375
#1	-.003604	.6924403	24.42410	5.382592	6.951941	-.008565
#2	-.003704	.7083972	24.10768	5.388409	6.969251	-.010903
#3	-.004713	.6782581	24.41194	5.388328	6.988363	-.009919

Elem	Sr4077
Units	ppm
Avg	.3179557
Stddev	.0002168
%RSD	.0681686
#1	.3179467
#2	.3181768
#3	.3177435

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6330.972	110053.0	11940.22	5683.248	7158.423
Stddev	2.295	381.0	30.99	27.316	4.092
%RSD	.0362473	.3462366	.2595151	.4806471	.0571631
#1	6330.985	109822.9	11933.27	5654.044	7159.062
#2	6333.260	110492.8	11913.30	5687.531	7162.157
#3	6328.671	109843.3	11974.09	5708.171	7154.049

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3041-04DUP Acquired: 9/9/2025 16:52:30 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0073150**	**-.015226**	**.1587193**	**-.005961**	**.0429696**	**14.50936**
Stddev	.0001836	.003307	.0010023	.002171	.0019576	.01723
%RSD	2.509706	21.71908	.6314689	36.41280	4.555671	.1187352
#1	.0073814	-.011512	.1592991	-.007939	.0414453	14.49547
#2	.0074560	-.016315	.1575620	-.006307	.0422862	14.50397
#3	.0071074	-.017851	.1592967	-.003639	.0451772	14.52864

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2758935**	**.0002192**	**-.001779**	**87.23029**	**.0831815**	**.0065755**
Stddev	.0021738	.0000271	.000050	.05825	.0002247	.0001331
%RSD	.7879036	12.35682	2.791451	.0667787	.2700977	2.023394
#1	.2779665	.0001994	-.001837	87.28993	.0833867	.0067245
#2	.2760827	.0002501	-.001749	87.22740	.0829414	.0064684
#3	.2736313	.0002081	-.001752	87.17353	.0832162	.0065337

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.3412420**	**33.06028**	**.4657114**	**9.784752**	**.0334816**	**.0001017**
Stddev	.0008005	.10034	.0014574	.023599	.0003827	.0000574
%RSD	.2345894	.3034984	.3129421	.2411772	1.143115	56.47336
#1	.3421483	33.17166	.4673348	9.803971	.0338750	.0001631
#2	.3406312	33.03222	.4652838	9.791872	.0334593	.0000493
#3	.3409466	32.97695	.4645157	9.758413	.0331105	.0000927

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**37.10012**	**.0305177**	**22.08417**	**12.87536**	**.1610670**	**-.008252**
Stddev	.02583	.0014117	.20066	.02473	.0003572	.000267
%RSD	.0696290	4.625881	.9086348	.1920538	.2217859	3.229977
#1	37.12845	.0314788	22.10143	12.89700	.1614556	-.008546
#2	37.07788	.0288969	22.27565	12.88067	.1609925	-.008184
#3	37.09403	.0311773	21.87543	12.84841	.1607530	-.008026

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3041-04DUP Acquired: 9/9/2025 16:52:30 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.008878	.4796252	F 23.30154	5.095768	6.639031	-.008898
Stddev	.000587	.0156121	.01659	.014324	.018069	.000924
%RSD	6.614853	3.255053	.0711829	.2810898	.2721663	10.38830
#1	-.008467	.4734166	23.29785	5.111717	6.656937	-.008293
#2	-.008616	.4973864	23.31966	5.083999	6.620803	-.008439
#3	-.009551	.4680724	23.28710	5.091588	6.639354	-.009962

Elem	Sr4077
Units	ppm
Avg	.3087251
Stddev	.0012438
%RSD	.4028947
#1	.3075624
#2	.3085762
#3	.3100367

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6383.783	106823.8	11901.80	5576.700	7244.770
Stddev	29.048	73.0	7.21	22.154	41.382
%RSD	.4550213	.0683272	.0605796	.3972612	.5711983
#1	6351.154	106747.6	11894.46	5581.144	7197.162
#2	6393.371	106830.9	11902.07	5552.661	7265.030
#3	6406.825	106893.0	11908.87	5596.295	7272.119

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3041-04LX5 Acquired: 9/9/2025 16:56:44 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.007322**	**-.013881**	**.0254750**	**-.007329**	**.0054916**	**3.148915**	**.0416727**
Stddev	.001924	.001712	.0010852	.003164	.0014573	.006358	.0004306
%RSD	26.27284	12.33247	4.259984	43.17740	26.53592	.2019000	1.033388
#1	-.006139	-.015337	.0242656	-.005130	.0061309	3.145967	.0418608
#2	-.006285	-.014311	.0257957	-.010955	.0038240	3.156211	.0419773
#3	-.009541	-.011995	.0263638	-.005901	.0065200	3.144566	.0411800

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000313**	**-.003256**	**18.39871**	**.0161683**	**-.001844**	**.0728407**	**6.620990**
Stddev	.000043	.000009	.02608	.0003591	.000242	.0007641	.029361
%RSD	13.78681	.2758078	.1417452	2.221242	13.14799	1.049002	.4434512
#1	-.000265	-.003247	18.39229	.0162340	-.001907	.0720824	6.653674
#2	-.000349	-.003255	18.37644	.0164900	-.002049	.0728293	6.596844
#3	-.000326	-.003265	18.42740	.0157808	-.001577	.0736105	6.612453

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0947533**	**2.062551**	**.0042415**	**-.001589**	**7.300552**	**.0045045**	**5.613712**
Stddev	.0007223	.016866	.0001501	.000440	.032989	.0014841	.020233
%RSD	.7623016	.8177220	3.540116	27.68234	.4518767	32.94758	.3604168
#1	.0951632	2.075034	.0042332	-.001598	7.300409	.0061454	5.621138
#2	.0939193	2.069256	.0040957	-.002025	7.267635	.0041123	5.590816
#3	.0951775	2.043364	.0043956	-.001145	7.333613	.0032559	5.629182

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.504486**	**.0266950**	**-.008052**	**-.002468**	**.1447355**	**4.694986**	**1.071727**
Stddev	.026383	.0002295	.000094	.000165	.0106096	.023337	.011130
%RSD	1.053416	.8596544	1.172568	6.669357	7.330333	.4970694	1.038534
#1	2.499861	.0265957	-.008079	-.002382	.1567670	4.721568	1.059320
#2	2.480722	.0269574	-.007948	-.002658	.1407185	4.685529	1.075028
#3	2.532875	.0265319	-.008131	-.002365	.1367209	4.677861	1.080833

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3041-04LX5 Acquired: 9/9/2025 16:56:44 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**1.384149**	**-.009042**	**.0586499**
Stddev	.018554	.001545	.0005444
%RSD	1.340457	17.08947	.9281712
#1	1.362725	-.010696	.0580292
#2	1.394779	-.007636	.0588746
#3	1.394943	-.008795	.0590460

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6502.782**	**111312.4**	**11643.08**	**5822.879**	**7561.754**
Stddev	19.442	360.6	71.09	14.576	27.479
%RSD	.2989841	.3239521	.6105726	.2503253	.3634001
#1	6519.590	111238.0	11687.19	5820.199	7588.197
#2	6507.267	110994.8	11561.07	5809.829	7563.722
#3	6481.489	111704.3	11680.98	5838.609	7533.344

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3041-04MS Acquired: 9/9/2025 17:00:56 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7723669	1.936478	1.042601	1.860312	.7719067	16.74622
Stddev	.0018294	.032821	.000468	.002667	.0026678	.02563
%RSD	.2368534	1.694881	.0449211	.1433497	.3456149	.1530625
#1	.7733010	1.967659	1.042252	1.860753	.7715997	16.77518
#2	.7735406	1.902232	1.043133	1.857452	.7694057	16.72643
#3	.7702590	1.939541	1.042418	1.862731	.7747148	16.73707

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4650381	.1868678	.1816676	87.97224	.4709290	.1956298
Stddev	.0017499	.0003829	.0002327	.30936	.0019084	.0006480
%RSD	.3762983	.2049203	.1280713	.3516548	.4052316	.3312584
#1	.4668804	.1872923	.1819285	88.32784	.4716427	.1959698
#2	.4633981	.1865485	.1814815	87.76503	.4723777	.1948825
#3	.4648357	.1867625	.1815930	87.82385	.4687667	.1960371

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6009269	34.76935	.6566067	11.55151	.5027447	.0694211
Stddev	.0011837	.07357	.0038589	.02950	.0006977	.0003967
%RSD	.1969832	.2116038	.5876986	.2553513	.1387811	.5714133
#1	.5997750	34.85146	.6594433	11.57852	.5034079	.0690640
#2	.6008657	34.74721	.6522125	11.52003	.5020170	.0698480
#3	.6021401	34.70940	.6581643	11.55597	.5028093	.0693512

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	39.33001	.3183690	21.71789	22.62386	.4220889	.3876769
Stddev	.16274	.0013227	.24153	.11044	.0007826	.0001196
%RSD	.4137752	.4154607	1.112138	.4881546	.1854197	.0308597
#1	39.45861	.3187069	21.58259	22.70997	.4229731	.3877652
#2	39.38437	.3194900	21.57433	22.66226	.4214851	.3877247
#3	39.14705	.3169102	21.99674	22.49935	.4218086	.3875407

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3041-04MS Acquired: 9/9/2025 17:00:56 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3454705	.7772251	F 24.64958	9.887409	6.068036	.1925394
Stddev	.0006174	.0052942	.12415	.022884	.018129	.0019026
%RSD	.1787132	.6811626	.5036639	.2314470	.2987623	.9881848
#1	.3461386	.7831324	24.78932	9.903492	6.088160	.1909480
#2	.3453517	.7756336	24.60739	9.861210	6.052980	.1920233
#3	.3449211	.7729092	24.55201	9.897525	6.062969	.1946468

Elem	Sr4077
Units	ppm
Avg	.4965143
Stddev	.0018134
%RSD	.3652175
#1	.4977384
#2	.4973734
#3	.4944310

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6461.328	108920.6	11886.63	5662.355	7340.795
Stddev	4.096	16.3	30.64	13.941	10.642
%RSD	.0633964	.0149539	.2578060	.2462047	.1449710
#1	6458.392	108911.8	11873.30	5660.102	7329.072
#2	6459.585	108910.5	11921.68	5677.285	7343.466
#3	6466.008	108939.4	11864.91	5649.678	7349.847

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3041-04MSD Acquired: 9/9/2025 17:05:02 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7893784	2.040819	1.067595	1.903223	.7872857	17.17563
Stddev	.0023176	.029067	.004055	.006382	.0016531	.02648
%RSD	.2935993	1.424265	.3798317	.3353080	.2099718	.1541952
#1	.7867649	2.014794	1.064833	1.909811	.7884707	17.14513
#2	.7901866	2.035478	1.065701	1.897070	.7853973	17.18895
#3	.7911837	2.072186	1.072251	1.902789	.7879893	17.19282

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4710566	.1858459	.1849467	88.94395	.4798169	.1992881
Stddev	.0023806	.0011160	.0006240	.20032	.0011233	.0005742
%RSD	.5053754	.6005130	.3374060	.2252165	.2341158	.2881019
#1	.4683405	.1846265	.1845569	88.71268	.4810639	.1988283
#2	.4720482	.1860944	.1846168	89.05616	.4795023	.1991043
#3	.4727812	.1868167	.1856664	89.06302	.4788844	.1999316

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6229418	35.99189	.6632355	11.80578	.5127392	.0712482
Stddev	.0011997	.07391	.0023578	.07097	.0019857	.0004059
%RSD	.1925787	.2053656	.3555000	.6011452	.3872692	.5697094
#1	.6225619	36.07591	.6605998	11.72460	.5123933	.0707863
#2	.6219780	35.96287	.6639625	11.85606	.5109493	.0714100
#3	.6242853	35.93689	.6651442	11.83668	.5148752	.0715482

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	40.03106	.3237767	21.90594	22.97070	.4258165	.3998454
Stddev	.11911	.0028366	.17519	.06523	.0028046	.0006556
%RSD	.2975455	.8760910	.7997363	.2839688	.6586468	.1639656
#1	40.16584	.3205723	21.79828	23.01028	.4229279	.3990884
#2	39.98742	.3259662	21.81145	23.00641	.4259926	.4002267
#3	39.93993	.3247916	22.10809	22.89541	.4285289	.4002211

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3041-04MSD Acquired: 9/9/2025 17:05:02 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3464320	.6607307	F 25.05453	F 10.25628	6.451212	.1921021
Stddev	.0019584	.0018865	.10518	.04274	.014822	.0017246
%RSD	.5653137	.2855151	.4198112	.4166873	.2297494	.8977557
#1	.3464503	.6617856	25.17469	10.22592	6.443299	.1901313
#2	.3444645	.6618537	25.00973	10.23777	6.442027	.1928402
#3	.3483812	.6585527	24.97916	10.30515	6.468311	.1933348

Elem	Sr4077
Units	ppm
Avg	.5045548
Stddev	.0011821
%RSD	.2342837
#1	.5031925
#2	.5053098
#3	.5051622

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6382.163	108110.8	11949.99	5649.288	7241.799
Stddev	9.703	79.8	63.54	19.136	15.238
%RSD	.1520340	.0738189	.5316998	.3387309	.2104131
#1	6390.324	108019.1	12022.06	5670.981	7251.179
#2	6384.729	108164.9	11925.89	5642.078	7250.001
#3	6371.434	108148.3	11902.03	5634.804	7224.217

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3041-04A Acquired: 9/9/2025 17:09:06 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7797571	1.959952	1.057745	1.908443	.8372758	16.41856
Stddev	.0021496	.036961	.001623	.007953	.0015388	.01661
%RSD	.2756826	1.885793	.1534322	.4167361	.1837918	.1011636
#1	.7820493	1.929691	1.056567	1.907456	.8376834	16.43350
#2	.7777861	2.001145	1.057072	1.901029	.8355741	16.40067
#3	.7794359	1.949019	1.059596	1.916844	.8385698	16.42149

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4627852	.1829329	.1826190	87.47804	.4697977	.1957888
Stddev	.0023997	.0000109	.0000824	.06781	.0010717	.0002378
%RSD	.5185426	.0059440	.0451138	.0775118	.2281119	.1214333
#1	.4607527	.1829450	.1825981	87.46089	.4706799	.1956548
#2	.4621702	.1829238	.1827098	87.42046	.4701081	.1960633
#3	.4654325	.1829300	.1825490	87.55278	.4686051	.1956482

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6281337	35.90039	.6547974	11.57686	.5053625	.0707831
Stddev	.0007046	.17123	.0013280	.02794	.0004707	.0011140
%RSD	.1121757	.4769634	.2028081	.2413101	.0931499	1.573787
#1	.6288771	35.90578	.6533370	11.55624	.5049303	.0720062
#2	.6280481	35.72653	.6551224	11.60866	.5058640	.0705161
#3	.6274757	36.06886	.6559326	11.56570	.5052931	.0698268

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	39.60663	.3202879	21.99996	22.63864	.4216711	.4076210
Stddev	.06332	.0005164	.05066	.03159	.0009564	.0002902
%RSD	.1598810	.1612195	.2302697	.1395322	.2268094	.0712044
#1	39.60917	.3198966	22.04044	22.61292	.4222688	.4073235
#2	39.54207	.3208732	21.94315	22.62910	.4205681	.4076361
#3	39.66864	.3200940	22.01629	22.67390	.4221765	.4079035

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: Q3041-04A Acquired: 9/9/2025 17:09:06 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.6672920**	**.7328648**	F **24.33973**	F **10.44547**	**6.626036**	**.1893023**
Stddev	.0005102	.0074583	.06357	.03186	.022981	.0018393
%RSD	.0764615	1.017692	.2611923	.3050314	.3468245	.9716423
#1	.6667617	.7255857	24.27433	10.41064	6.603886	.1893413
#2	.6677795	.7404902	24.40131	10.47315	6.649766	.1874437
#3	.6673348	.7325185	24.34354	10.45262	6.624457	.1911218

Elem	Sr4077
Units	ppm
Avg	**.4932913**
Stddev	.0001459
%RSD	.0295696
#1	.4931542
#2	.4934446
#3	.4932752

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6287.917**	**107032.6**	**11867.68**	**5594.242**	**7115.742**
Stddev	20.558	196.9	16.60	17.187	23.300
%RSD	.3269505	.1839315	.1398457	.3072178	.3274438
#1	6271.680	106814.3	11850.74	5603.802	7098.639
#2	6281.037	107196.7	11868.40	5604.522	7106.306
#3	6311.033	107086.7	11883.91	5574.401	7142.280

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: CCV05 Acquired: 9/9/2025 17:13:10 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV05 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.885626**	**5.229960**	**4.784519**	**4.912286**	**4.908576**	**9.631782**	**9.664792**
Stddev	.004601	.096308	.003560	.009629	.007182	.050951	.160803
%RSD	.0941781	1.841465	.0744112	.1960169	.1463058	.5289866	1.663805
#1	4.885808	5.257280	4.781921	4.903144	4.905815	9.687213	9.547394
#2	4.880936	5.122943	4.783059	4.911378	4.903184	9.621139	9.598909
#3	4.890133	5.309656	4.788577	4.922337	4.916728	9.586993	9.848074

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2434225**	**2.404485**	**24.18758**	**.9675545**	**2.405532**	**1.219139**	**4.882900**
Stddev	.0010075	.003984	.07311	.0019866	.003398	.001673	.001442
%RSD	.4138911	.1657093	.3022529	.2053252	.1412733	.1372226	.0295222
#1	.2442645	2.401574	24.27118	.9693359	2.402709	1.217719	4.881373
#2	.2436966	2.402856	24.15593	.9654121	2.404583	1.218716	4.884237
#3	.2423063	2.409026	24.13563	.9679155	2.409304	1.220983	4.883091

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.426760**	**23.98241**	**2.408951**	**1.213045**	**24.05538**	**2.422300**	**2.273984**
Stddev	.017346	.10042	.002147	.000420	.03691	.013534	.008304
%RSD	.7147859	.4187415	.0891358	.0346372	.1534335	.5587268	.3651832
#1	2.444438	24.09818	2.406979	1.212884	24.06789	2.436970	2.264755
#2	2.426074	23.91889	2.408635	1.212730	24.01384	2.419631	2.276345
#3	2.409766	23.93014	2.411239	1.213522	24.08440	2.410299	2.280852

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**24.10531**	**4.861176**	**4.871977**	**4.802433**	**4.838369**	**4.825442**	**4.943905**
Stddev	.13027	.012862	.006622	.010903	.017453	.017504	.016763
%RSD	.5404172	.2645800	.1359155	.2270283	.3607284	.3627494	.3390570
#1	23.98593	4.866453	4.871267	4.794899	4.858469	4.811682	4.932742
#2	24.08574	4.870561	4.865739	4.797464	4.829587	4.819500	4.935794
#3	24.24426	4.846515	4.878926	4.814935	4.827051	4.845143	4.963181

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: CCV05 Acquired: 9/9/2025 17:13:10 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV05 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**4.781910**	**4.766458**	**4.857246**
Stddev	.023230	.014253	.039043
%RSD	.4857838	.2990180	.8038114
#1	4.770003	4.782914	4.898699
#2	4.767048	4.758027	4.851870
#3	4.808679	4.758434	4.821170

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6255.255**	**107211.7**	**11264.09**	**5633.920**	**7008.557**
Stddev	7.201	100.4	48.54	17.568	3.967
%RSD	.1151214	.0936411	.4309247	.3118205	.0565952
#1	6247.291	107243.5	11235.08	5643.312	7005.384
#2	6261.307	107099.3	11237.06	5613.653	7013.004
#3	6257.167	107292.5	11320.13	5644.796	7007.284

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: CCB05 Acquired: 9/9/2025 17:17:21 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB05 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.006406**	**-.009267**	**.0000995**	**-.003708**	**-.007503**	**-.017155**	**-.019157**
Stddev	.001535	.001621	.0012793	.002315	.001119	.006175	.001712
%RSD	23.97003	17.49572	1285.753	62.41509	14.90811	35.99306	8.935632
#1	-.005277	-.010202	-.000545	-.002584	-.007715	-.011772	-.017272
#2	-.005786	-.007395	-.000729	-.006370	-.008501	-.015797	-.020614
#3	-.008154	-.010204	.001573	-.002171	-.006294	-.023895	-.019586

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000434**	**-.000044**	**-.069635**	**-.001816**	**-.004007**	**-.001750**	**-.008170**
Stddev	.000026	.000018	.011859	.000083	.000186	.000363	.005917
%RSD	5.927986	41.75502	17.02998	4.558993	4.643676	20.71927	72.41818
#1	-.000409	-.000032	-.075120	-.001786	-.004027	-.002152	-.001786
#2	-.000461	-.000035	-.077758	-.001909	-.004183	-.001651	-.009255
#3	-.000431	-.000065	-.056027	-.001751	-.003812	-.001448	-.013469

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.004612**	**-.050565**	**-.003931**	**-.001552**	**.1538278**	**-.002170**	**.0069228**
Stddev	.000430	.011633	.000441	.000704	.0308349	.003275	.0000364
%RSD	9.321845	23.00604	11.20780	45.39125	20.04508	150.9393	.5257347
#1	-.005083	-.049699	-.004167	-.002004	.1184222	.001396	.0069178
#2	-.004241	-.062607	-.004203	-.001910	.1682713	-.002862	.0069615
#3	-.004511	-.039389	-.003423	-.000740	.1747900	-.005044	.0068892

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2552548**	**-.005006**	**-.007751**	**-.000316**	**-.008228**	**.0113330**	**-.006624**
Stddev	.0499327	.000106	.000050	.000484	.001362	.0095980	.001169
%RSD	19.56190	2.119093	.6487109	153.1747	16.55172	84.69098	17.64332
#1	.2011332	-.005062	-.007732	-.000394	-.006668	.0007363	-.007260
#2	.2650989	-.004883	-.007713	.000202	-.009180	.0138198	-.007337
#3	.2995323	-.005072	-.007808	-.000757	-.008836	.0194429	-.005275

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: CCB05 Acquired: 9/9/2025 17:17:21 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB05 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.004743	-.006716	-.007871
Stddev	.002463	.002684	.000074
%RSD	51.93555	39.96525	.9423794
#1	-.004489	-.007669	-.007905
#2	-.002417	-.003685	-.007921
#3	-.007323	-.008793	-.007785

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6454.398	110739.9	11392.21	5819.409	7569.556
Stddev	11.112	203.9	20.64	28.569	8.915
%RSD	.1721665	.1841533	.1811695	.4909227	.1177754
#1	6456.948	110883.0	11415.92	5852.363	7569.822
#2	6464.015	110506.4	11382.49	5804.242	7578.335
#3	6442.233	110830.3	11378.23	5801.622	7560.511

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: PB169617BS Acquired: 9/9/2025 17:21:40 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.7628374**	**2.097313**	**.9379974**	**1.944194**	**.7758109**	**1.940392**	**.1774305**
Stddev	.0020901	.076759	.0041858	.008676	.0029609	.004809	.0007966
%RSD	.2739855	3.659885	.4462523	.4462644	.3816566	.2478501	.4489810
#1	.7611665	2.014724	.9336200	1.934269	.7738616	1.942350	.1783476
#2	.7651810	2.110744	.9384113	1.950338	.7743530	1.943913	.1769096
#3	.7621647	2.166470	.9419609	1.947976	.7792181	1.934912	.1770344

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2018341**	**.1863928**	**.9185447**	**.3896873**	**.1892663**	**.3007673**	**2.894545**
Stddev	.0016672	.0007108	.0039445	.0009860	.0005693	.0011394	.030137
%RSD	.8260120	.3813633	.4294287	.2530126	.3007732	.3788327	1.041169
#1	.2037238	.1856491	.9225634	.3899778	.1886110	.2996200	2.869434
#2	.2012073	.1864639	.9146788	.3885887	.1895488	.3007832	2.886235
#3	.2005712	.1870654	.9183920	.3904954	.1896390	.3018986	2.927965

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1981451**	**1.950010**	**.4806744**	**.0721901**	**2.959379**	**.2895896**	**.1999572**
Stddev	.0006158	.030293	.0014452	.0003653	.052150	.0018259	.0005432
%RSD	.3107844	1.553484	.3006656	.5059771	1.762202	.6305067	.2716760
#1	.1986535	1.918425	.4790057	.0724538	2.899820	.2914825	.1993846
#2	.1974604	1.952782	.4814928	.0723434	2.981463	.2878390	.2000218
#3	.1983215	1.978821	.4815248	.0717732	2.996853	.2894473	.2004653

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.581633**	**.2999041**	**.3906871**	**.6631870**	**.1847167**	**.8457220**	**5.465505**
Stddev	.083302	.0031026	.0015505	.0026914	.0016344	.0154279	.044508
%RSD	.8693933	1.034530	.3968700	.4058298	.8848175	1.824228	.8143453
#1	9.491498	.3034358	.3889129	.6601195	.1834059	.8379504	5.418763
#2	9.597616	.2976171	.3913661	.6642889	.1841963	.8634902	5.470374
#3	9.655786	.2986595	.3917823	.6651527	.1865479	.8357254	5.507378

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: PB169617BS Acquired: 9/9/2025 17:21:40 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	F -.008723	.1955545	.1851512
Stddev	.001418	.0017262	.0002328
%RSD	16.25391	.8827242	.1257430
#1	-.007478	.1937740	.1852200
#2	-.010266	.1956686	.1853419
#3	-.008424	.1972208	.1848918

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6562.607	112176.7	11389.62	5862.982	7680.459
Stddev	23.041	208.5	74.32	26.327	26.366
%RSD	.3510918	.1858399	.6525041	.4490368	.3432923
#1	6573.574	112413.6	11305.39	5881.745	7691.408
#2	6578.116	112095.2	11417.57	5832.887	7699.587
#3	6536.132	112021.2	11445.92	5874.315	7650.382

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: PB169618BS Acquired: 9/9/2025 17:25:40 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.7643979**	**2.044306**	**.9390673**	**1.945305**	**.7816715**	**1.936220**	**.1752966**
Stddev	.0015093	.013660	.0024603	.005800	.0019230	.002668	.0005247
%RSD	.1974497	.6681884	.2619933	.2981592	.2460157	.1378031	.2993234
#1	.7635811	2.038832	.9386837	1.943426	.7827588	1.935971	.1755405
#2	.7661396	2.059854	.9368214	1.940678	.7828046	1.939004	.1756549
#3	.7634731	2.034232	.9416969	1.951812	.7794511	1.933685	.1746943

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2027958**	**.1876230**	**.9023313**	**.3926492**	**.1894199**	**.3007202**	**2.891510**
Stddev	.0002592	.0004254	.0165834	.0011058	.0002514	.0011376	.018056
%RSD	.1277919	.2267522	1.837834	.2816121	.1326929	.3782970	.6244442
#1	.2025187	.1876055	.9135993	.3936101	.1896429	.3005054	2.878885
#2	.2028363	.1872067	.9101055	.3914406	.1891475	.2997053	2.912191
#3	.2030323	.1880570	.8832890	.3928970	.1894693	.3019499	2.883452

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1947318**	**1.948483**	**.4812793**	**.0725155**	**2.953858**	**.2900384**	**.2021740**
Stddev	.0011680	.034053	.0008614	.0004923	.019965	.0015125	.0007000
%RSD	.5997745	1.747643	.1789867	.6788442	.6759072	.5214715	.3462541
#1	.1941877	1.913755	.4814875	.0721804	2.937650	.2895120	.2019139
#2	.1960725	1.949876	.4803329	.0722854	2.947765	.2917437	.2016414
#3	.1939351	1.981818	.4820176	.0730807	2.976160	.2888594	.2029669

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.554377**	**.2992885**	**.3900159**	**.6711965**	**.1849826**	**.8543599**	**5.555487**
Stddev	.035733	.0009031	.0004534	.0000885	.0021346	.0077196	.006714
%RSD	.3739979	.3017625	.1162490	.0131885	1.153928	.9035529	.1208570
#1	9.587815	.2984692	.3901347	.6711922	.1828378	.8455124	5.551161
#2	9.558594	.2991394	.3895150	.6711102	.1871068	.8578438	5.552079
#3	9.516723	.3002570	.3903981	.6712871	.1850033	.8597235	5.563222

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: PB169618BS Acquired: 9/9/2025 17:25:40 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	F -.010680	.1964957	.1829856
Stddev	.000775	.0013614	.0004876
%RSD	7.254525	.6928561	.2664518
#1	-.010726	.1950459	.1825085
#2	-.011430	.1977469	.1829651
#3	-.009883	.1966944	.1834830

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6427.564	109593.0	11214.90	5804.098	7449.924
Stddev	7.712	179.7	37.17	19.067	4.351
%RSD	.1199888	.1639555	.3314059	.3285070	.0583987
#1	6429.282	109735.8	11245.37	5824.870	7450.968
#2	6434.273	109651.9	11225.84	5787.393	7453.658
#3	6419.137	109391.2	11173.49	5800.030	7445.146

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: CCV06 Acquired: 9/9/2025 17:46:17 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB06 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.845749**	**5.078773**	**4.800945**	**4.861581**	**4.886171**	**9.715217**	**9.717738**
Stddev	.002764	.035570	.008047	.005546	.002338	.051269	.264335
%RSD	.0570303	.7003682	.1676078	.1140750	.0478439	.5277140	2.720127
#1	4.847843	5.099938	4.810006	4.867766	4.883953	9.772559	9.911256
#2	4.846788	5.098674	4.798198	4.859927	4.888612	9.699285	9.416563
#3	4.842617	5.037707	4.794632	4.857051	4.885948	9.673805	9.825396

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2455305**	**2.408703**	**24.27372**	**.9768922**	**2.410483**	**1.217931**	**4.875387**
Stddev	.0033816	.003426	.17564	.0033582	.001263	.002685	.045223
%RSD	1.377263	.1422157	.7235606	.3437678	.0523803	.2204669	.9275718
#1	.2493458	2.412602	24.47363	.9730745	2.411674	1.219807	4.824120
#2	.2429030	2.407328	24.14419	.9793902	2.410615	1.219131	4.909617
#3	.2443429	2.406178	24.20333	.9782118	2.409159	1.214855	4.892422

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.422471**	**24.28522**	**2.409339**	**1.222056**	**24.16860**	**2.431988**	**2.393792**
Stddev	.017623	.25657	.001207	.002828	.32573	.008725	.003442
%RSD	.7274753	1.056486	.0501152	.2313834	1.347750	.3587422	.1437880
#1	2.442032	24.55600	2.410676	1.218924	23.79656	2.441996	2.392621
#2	2.407833	24.25394	2.409015	1.224421	24.40250	2.425985	2.397667
#3	2.417548	24.04573	2.408327	1.222823	24.30673	2.427982	2.391088

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**24.11820**	**4.906139**	**4.865476**	**4.806663**	**4.846039**	**4.860206**	**5.005925**
Stddev	.31625	.066505	.001485	.011354	.023229	.065673	.022056
%RSD	1.311264	1.355544	.0305196	.2362187	.4793332	1.351238	.4405899
#1	23.76693	4.982299	4.865313	4.819743	4.872861	4.787203	5.028149
#2	24.38030	4.859534	4.867037	4.800899	4.832474	4.878938	5.005584
#3	24.20736	4.876584	4.864080	4.799347	4.832783	4.914479	4.984042

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: CCV06 Acquired: 9/9/2025 17:46:17 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB06 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**4.723918**	**4.735892**	**4.892214**
Stddev	.010593	.016112	.093571
%RSD	.2242432	.3402063	1.912648
#1	4.735696	4.754494	4.999754
#2	4.720887	4.726852	4.829393
#3	4.715171	4.726330	4.847496

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6263.204**	**105529.3**	**11113.09**	**5586.679**	**7005.793**
Stddev	6.111	246.3	181.46	14.822	4.296
%RSD	.0975622	.2333790	1.632843	.2653012	.0613256
#1	6264.209	105635.1	10910.16	5572.219	7000.840
#2	6256.653	105704.9	11259.75	5601.838	7008.521
#3	6268.750	105247.7	11169.36	5585.981	7008.017

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: CCB06 Acquired: 9/9/2025 17:50:30 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB06 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.006325**	**-.009942**	**-.000344**	**-.008930**	**-.006223**	**-.012553**	**-.018048**
Stddev	.001659	.001667	.000419	.001560	.001787	.006321	.001288
%RSD	26.22883	16.77100	121.7417	17.47375	28.71930	50.35681	7.137208
#1	-.007742	-.008110	-.000118	-.007174	-.007307	-.010241	-.016752
#2	-.004500	-.010345	-.000087	-.009455	-.004160	-.007713	-.018064
#3	-.006734	-.011371	-.000828	-.010160	-.007202	-.019705	-.019328

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000497**	**-.000332**	**-.069460**	**-.001837**	**-.004108**	**-.001894**	**-.007270**
Stddev	.000052	.000025	.012630	.000316	.000140	.000366	.005634
%RSD	10.37241	7.379764	18.18282	17.19703	3.407562	19.33404	77.50046
#1	-.000458	-.000327	-.055017	-.001943	-.004255	-.002264	-.005598
#2	-.000477	-.000359	-.078430	-.001482	-.004090	-.001885	-.013551
#3	-.000556	-.000311	-.074933	-.002086	-.003977	-.001532	-.002661

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.004511**	**-.023665**	**-.003692**	**-.001352**	**-.005190**	**-.006132**	**-.004415**
Stddev	.000256	.008745	.000268	.000442	.016874	.002699	.000087
%RSD	5.684891	36.95579	7.269584	32.68025	325.1295	44.00828	1.980685
#1	-.004371	-.014960	-.003934	-.000913	-.024664	-.003208	-.004507
#2	-.004354	-.023583	-.003738	-.001797	.004004	-.008528	-.004333
#3	-.004807	-.032451	-.003403	-.001347	.005090	-.006660	-.004406

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0314191**	**-.001894**	**-.007804**	**-.001510**	**-.008316**	**.0087045**	**-.008600**
Stddev	.0352316	.000473	.000058	.000785	.001134	.0050232	.001034
%RSD	112.1341	24.98447	.7452329	51.96416	13.63681	57.70783	12.01856
#1	.0216169	-.001350	-.007750	-.000630	-.007651	.0081833	-.008787
#2	.0021266	-.002122	-.007797	-.002137	-.009625	.0039623	-.009528
#3	.0705138	-.002209	-.007866	-.001762	-.007671	.0139680	-.007486

Reviewed By:jaswal
On:9/10/2025 11:43:17 PM
Inst Id :P4
LB :LB137122

Sample Name: CCB06 Acquired: 9/9/2025 17:50:30 Type: Unk
Method: 6010-200.7 NEW(v151) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB06 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	F -.010558	-.009028	-.007826
Stddev	.003635	.000755	.000113
%RSD	34.42518	8.363561	1.439670
#1	-.012546	-.008435	-.007712
#2	-.012765	-.009878	-.007829
#3	-.006363	-.008771	-.007937

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6605.631	112791.6	10914.85	5879.638	7856.493
Stddev	13.164	340.9	56.90	14.707	13.946
%RSD	.1992852	.3022094	.5213275	.2501335	.1775142
#1	6590.948	112526.7	10867.48	5863.022	7840.397
#2	6616.378	113176.1	10899.10	5890.983	7864.099
#3	6609.568	112671.9	10977.97	5884.910	7864.983

Alliance TECHNICAL GROUP

Water Metals Preparation Sheet

PB169618

SOP ID : M200.7-Trace Elements-22

SDG No : N/A

Matrix : WATER

Pippete ID: ICP A

Balance ID : N/A

Filter paper ID : N/A

pH Strip ID : M6069

Hood ID : #3

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

Start Digest Date: 09/09/2025 **Time :** 10:40 **Temp :** 96 °C

End Digest Date: 09/09/2025 **Time :** 13:45 **Temp :** 96 °C

Digestion tube ID: M5595

Block thermometer ID: MET-DIG. #1

Dig Technician Signature: SPG.

Supervisor Signature:

Temp : 1. 96°C 2. N/A

Standared Name	MLS USED	STD REF. # FROM LOG
LFS-1	0.25	M6180
LFS-2	0.25	M6181
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

Chemical Used	ML/SAMPLE USED	Lot Number
Conc. HNO3	3.00	M6158
1:1 HCL	5.00	MP87148
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

Extraction Conformance/Non-Conformance Comments:

HOT BLOCK#1 CELL#50 96C

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
09/09/25 14:45	SPG. metdig.	SG (Metals Lab)
	Preparation Group	Analysis Group

Alliance TECHNICAL GROUP

Water Metals Preparation Sheet

PB169618

Lab Sample ID	Client Sample ID	pH	Initial Vol (ml)	Final Vol (ml)	Color Before	Color After	Clarity Before	Clarity After	Comment	Prep Pos
PB169618BL	PBW618	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	18
PB169618BS	LCS618	<2	50	25	Colorless	Colorless	Clear	Clear	M6180,M6181	19
Q3040-01	011 WILLETS PT BLVD(JULY)	<2	50	25	Brown	Colorless	Cloudy	Clear	N/A	20
Q3040-02	002 35TH AVE (JULY)	<2	50	25	Brown	Colorless	Cloudy	Clear	N/A	21
Q3041-01	001 WILLETS PT BLVD (SEP))	<2	50	25	Brown	Colorless	Cloudy	Clear	N/A	22
Q3041-04	002 35TH AVE(SEP)	<2	50	25	Brown	Colorless	Cloudy	Clear	N/A	23
Q3041-04MS	002 35TH AVE(SEP)MS	<2	50	25	Brown	Colorless	Cloudy	Clear	M6180,M6181	25
Q3041-04MSD	002 35TH AVE(SEP)MSD	<2	50	25	Brown	Colorless	Cloudy	Clear	M6180,M6181	26
Q3041-04DUP	002 35TH AVE(SEP)DUP	<2	50	25	Brown	Colorless	Cloudy	Clear	N/A	24

WORKLIST(Hardcopy Internal Chain)

WorkList Name : PB169618 **WorkList ID :** 191758 **Department :** Digestion **Date :** 09-09-2025 09:56:56

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q3040-01	011 willets Pt Blvd(july)	Water	Metals Group 10	1:1 HNO3 to pH < 2	TULL01	J62	09/04/2025	200.7
Q3040-02	002 35th Ave (JULY)	Water	Metals Group 10	1:1 HNO3 to pH < 2	TULL01	J62	09/04/2025	200.7
Q3041-01	001 Willets Pt Blvd (Sep))	Water	Metals Group 10	1:1 HNO3 to pH < 2	TULL01	J11	09/04/2025	200.7
Q3041-04	002 35th Ave(sep)	Water	Metals Group 10	1:1 HNO3 to pH < 2	TULL01	J11	09/04/2025	200.7

Date/Time 09/09/2025 10:15
Raw Sample Received by: SKG mCt dio
Raw Sample Relinquished by: C&C (SM)

Date/Time 09109/25 11:15
Raw Sample Received by: C&C (SM)
Raw Sample Relinquished by: SKG mCt dio

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 # LB137122

Review By	Janvi	Review On	9/10/2025 11:55:53 AM
Supervise By	jaswal	Supervise On	9/10/2025 11:43:17 PM

STD. NAME	STD REF.#
ICAL Standard	MP87031,MP87038,MP87035,MP87034,MP87033,MP87032
ICV Standard	MP87047,MP87038
CCV Standard	MP87042
ICSA Standard	MP87040,MP87048
CRI Standard	MP87038
LCS Standard	
Chk Standard	MP87043,MP87044,MP87045,MP87046,MP87049

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	S0	S0	CAL1	09/09/25 11:48		Jaswal	OK
2	S1	S1	CAL2	09/09/25 11:53		Jaswal	OK
3	S2	S2	CAL3	09/09/25 11:57		Jaswal	OK
4	S3	S3	CAL4	09/09/25 12:01		Jaswal	OK
5	S4	S4	CAL5	09/09/25 12:05		Jaswal	OK
6	S5	S5	CAL6	09/09/25 12:09		Jaswal	OK
7	ICV01	ICV01	ICV	09/09/25 12:14		Jaswal	OK
8	LLICV01	LLICV01	LLICV	09/09/25 12:26		Jaswal	OK
9	ICB01	ICB01	ICB	09/09/25 12:31		Jaswal	OK
10	CRI01	CRI01	CRDL	09/09/25 12:36		Jaswal	OK
11	ICSA01	ICSA01	ICSA	09/09/25 12:42		Jaswal	OK
12	ICSAB01	ICSAB01	ICSAB	09/09/25 12:46		Jaswal	OK
13	ICSADL	ICSADL	ICSA	09/09/25 12:50		Jaswal	OK
14	ICSABDL	ICSABDL	ICSAB	09/09/25 12:55		Jaswal	OK
15	CCV01	CCV01	CCV	09/09/25 12:59		Jaswal	OK
16	CCB01	CCB01	CCB	09/09/25 13:26		Jaswal	OK
17	LR-1	LR-1	HIGH STD	09/09/25 13:30		Jaswal	OK
18	LR-2	LR-2	HIGH STD	09/09/25 13:35		Jaswal	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 # LB137122

Review By	Janvi	Review On	9/10/2025 11:55:53 AM
Supervise By	jaswal	Supervise On	9/10/2025 11:43:17 PM

STD. NAME	STD REF.#
ICAL Standard	MP87031,MP87038,MP87035,MP87034,MP87033,MP87032
ICV Standard	MP87047,MP87038
CCV Standard	MP87042
ICSA Standard	MP87040,MP87048
CRI Standard	MP87038
LCS Standard	
Chk Standard	MP87043,MP87044,MP87045,MP87046,MP87049

19	LR-3	LR-3	HIGH STD	09/09/25 13:39		Jaswal	OK
20	Q3027-01	HD-01-09042025	SAM	09/09/25 13:44		Jaswal	OK
21	Q3027-01DUP	HD-01-09042025DUP	DUP	09/09/25 13:48		Jaswal	OK
22	Q3027-01L	HD-01-09042025L	SD	09/09/25 13:53		Jaswal	OK
23	Q3027-01MS	HD-01-09042025MS	MS	09/09/25 13:57		Jaswal	OK
24	Q3027-01MSD	HD-01-09042025MSD	MSD	09/09/25 14:01		Jaswal	OK
25	Q3027-01A	HD-01-09042025A	PS	09/09/25 14:05	0.1 ML OF EACH M6008 AND M6017 IN 10ML SAMPLE.	Jaswal	OK
26	Q2982-10	MOO-25-0236	SAM	09/09/25 14:10		Jaswal	OK
27	CCV02	CCV02	CCV	09/09/25 14:14		Jaswal	OK
28	CCB02	CCB02	CCB	09/09/25 14:19		Jaswal	OK
29	Q3030-01	BLEECKER-082825H	SAM	09/09/25 14:27		Jaswal	OK
30	Q3032-02	SOIL-PILE-1	SAM	09/09/25 14:32		Jaswal	OK
31	Q3032-05	SOIL-PILE-2	SAM	09/09/25 14:36		Jaswal	OK
32	Q3045-05	DNAPL-OIL	SAM	09/09/25 14:41		Jaswal	OK
33	Q3046-02	IRV-CONCRETE	SAM	09/09/25 14:45		Jaswal	OK
34	Q3050-01	72-11939	SAM	09/09/25 14:50		Jaswal	OK
35	Q3045-06	DNAPL	SAM	09/09/25 14:54		Jaswal	OK
36	Q3051-02	VNJ-223	SAM	09/09/25 14:58		Jaswal	OK
37	Q3051-02DUP	VNJ-223DUP	DUP	09/09/25 15:03		Jaswal	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 # LB137122

Review By	Janvi	Review On	9/10/2025 11:55:53 AM
Supervise By	jaswal	Supervise On	9/10/2025 11:43:17 PM

STD. NAME	STD REF.#
ICAL Standard	MP87031,MP87038,MP87035,MP87034,MP87033,MP87032
ICV Standard	MP87047,MP87038
CCV Standard	MP87042
ICSA Standard	MP87040,MP87048
CRI Standard	MP87038
LCS Standard	
Chk Standard	MP87043,MP87044,MP87045,MP87046,MP87049

38	Q3051-02L	VNJ-223L	SD	09/09/25 15:07		Jaswal	OK
39	CCV03	CCV03	CCV	09/09/25 15:11		Jaswal	OK
40	CCB03	CCB03	CCB	09/09/25 15:25		Jaswal	OK
41	Q3051-02MS	VNJ-223MS	MS	09/09/25 15:29		Jaswal	OK
42	Q3051-02MSD	VNJ-223MSD	MSD	09/09/25 15:33		Jaswal	OK
43	Q3051-02A	VNJ-223A	PS	09/09/25 15:38	0.1 ML OF EACH M6008 AND M6017 IN 10ML SAMPLE.	Jaswal	OK
44	PB169589TBRE	PB169589TBRE	MB	09/09/25 15:49		Jaswal	OK
45	PB169621TB	PB169621TB	MB	09/09/25 15:54		Jaswal	OK
46	PB169589TB	PB169589TB	MB	09/09/25 15:58		Jaswal	OK
47	PB169617BL	PB169617BL	MB	09/09/25 16:03		Jaswal	OK
48	PB169618BL	PB169618BL	MB	09/09/25 16:11		Jaswal	OK
49	Q3040-01	001 willets Pt Blvd(july	SAM	09/09/25 16:20		Jaswal	OK
50	CCV04	CCV04	CCV	09/09/25 16:24		Jaswal	OK
51	CCB04	CCB04	CCB	09/09/25 16:28		Jaswal	OK
52	Q3040-02	002 35th Ave (JULY)	SAM	09/09/25 16:39		Jaswal	OK
53	Q3041-01	001 Willets Pt Blvd (S	SAM	09/09/25 16:44		Jaswal	OK
54	Q3041-04	002 35th Ave(sep)	SAM	09/09/25 16:48		Jaswal	OK
55	Q3041-04DUP	002 35th Ave(sep)DUI	DUP	09/09/25 16:52		Jaswal	OK
56	Q3041-04L	002 35th Ave(sep)L	SD	09/09/25 16:56		Jaswal	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 # LB137122

Review By	Janvi	Review On	9/10/2025 11:55:53 AM
Supervise By	jaswal	Supervise On	9/10/2025 11:43:17 PM

STD. NAME	STD REF.#
ICAL Standard	MP87031,MP87038,MP87035,MP87034,MP87033,MP87032
ICV Standard	MP87047,MP87038
CCV Standard	MP87042
ICSA Standard	MP87040,MP87048
CRI Standard	MP87038
LCS Standard	
Chk Standard	MP87043,MP87044,MP87045,MP87046,MP87049

57	Q3041-04MS	002 35th Ave(sep)MS	MS	09/09/25 17:00		Jaswal	OK
58	Q3041-04MSD	002 35th Ave(sep)MSI	MSD	09/09/25 17:05		Jaswal	OK
59	Q3041-04A	002 35th Ave(sep)A	PS	09/09/25 17:09	0.1 ML OF EACH M6008 AND M6017 IN 10ML SAMPLE.	Jaswal	OK
60	CCV05	CCV05	CCV	09/09/25 17:13		Jaswal	OK
61	CCB05	CCB05	CCB	09/09/25 17:17		Jaswal	OK
62	PB169617BS	PB169617BS	LCS	09/09/25 17:21		Jaswal	OK
63	PB169618BS	PB169618BS	LCS	09/09/25 17:25		Jaswal	OK
64	CCV06	CCV06	CCV	09/09/25 17:46		Jaswal	OK
65	CCB06	CCB06	CCB	09/09/25 17:50		Jaswal	OK

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

Prep Standard - Chemical Standard Summary

Order ID : Q3041

Test : Metals Group 10

Prepbatch ID : PB169618,

Sequence ID/Qc Batch ID: LB137122,

Standard ID :
MP87031,MP87032,MP87033,MP87034,MP87035,MP87036,MP87038,MP87040,MP87042,MP87043,MP87044,MP87045,MP87046,MP87047,MP87048,MP87049,MP87148,

Chemical ID :
M5467,M5658,M5748,M5751,M5798,M5799,M5800,M5801,M5814,M5820,M5962,M5969,M5971,M5979,M5985,M5998,M6021,M6023,M6026,M6027,M6028,M6030,M6032,M6058,M6076,M6077,M6128,M6137,M6138,M6140,M6142,M6144,M6145,M6151,M6158,M6159,M6160,M6163,M6164,M6165,M6171,M6174,M6176,M6177,M6178,M6179,M6180,M6181,M6182,M6184,M6187,W3112,

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

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
902	ICP AES CAL BLK (SO/ICB/CCB)	MP87031	09/02/2025	10/03/2025	Sarabjit Jaswal	None	None	Janvi Patel 09/04/2025

FROM 125.00000ml of M6151 + 2350.00000ml of W3112 + 25.00000ml of M6187 = 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)	MP87032	09/02/2025	10/03/2025	Sarabjit Jaswal	None	None	Janvi Patel 09/04/2025

FROM 5.00000ml of M5467 + 5.00000ml of M5820 + 5.00000ml of M5969 + 5.00000ml of M5971 + 5.00000ml of M5998 + 5.00000ml of M6077 + 5.00000ml of M6160 + 5.00000ml of M6174 + 5.00000ml of M6176 + 455.00000ml of MP87031 = Final Quantity: 500.000 ml

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

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
910	ICP AES STD S4	MP87033	09/02/2025	10/03/2025	Sarabjit Jaswal	None	None	Janvi Patel 09/04/2025

FROM 50.00000ml of MP87031 + 50.00000ml of MP87032 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
909	ICP AES STD S3	MP87034	09/02/2025	10/03/2025	Sarabjit Jaswal	None	METALS_PIPETTE_3 (A)	Janvi Patel 09/04/2025

FROM 25.00000ml of MP87032 + 75.00000ml of MP87031 = Final Quantity: 100.000 ml

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

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3913	ICP AES STD S2	MP87035	09/02/2025	10/03/2025	Sarabjit Jaswal	None	METALS_PIPETTE_3 (A)	Janvi Patel 09/04/2025

FROM 16.00000ml of MP87032 + 184.00000ml of MP87031 = 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	MP87036	09/02/2025	10/03/2025	Sarabjit Jaswal	None	None	Janvi Patel 09/04/2025

FROM 0.03000ml of M5798 + 0.03000ml of M6028 + 0.04000ml of M6137 + 0.05000ml of M5658 + 0.05000ml of M6030 + 0.05000ml of M6140 + 0.05000ml of M6159 + 0.06000ml of M6177 + 0.10000ml of M5751 + 0.10000ml of M5801 + 0.10000ml of M5820 + 0.10000ml of M5962 + 0.10000ml of M5971 + 0.10000ml of M6128 + 0.10000ml of M6176 + 0.15000ml of M5800 + 0.20000ml of M5799 + 0.20000ml of M6021 + 0.20000ml of M6023 + 0.20000ml of M6027 + 0.20000ml of M6145 + 0.25000ml of M5467 + 0.25000ml of M6160 + 0.50000ml of M5814 + 0.50000ml of M6032 + 1.00000ml of M5979 + 1.00000ml of M6138 + 1.00000ml of M6142 + 1.00000ml of M6144 + 1.00000ml of M6171 + 1.00000ml of M6178 + 2.00000ml of M5969 + 88.29000ml of MP87031 = Final Quantity: 100.000 ml

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

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	MP87038	09/02/2025	10/03/2025	Sarabjit Jaswal	None	METALS_PIPETTE_3 (A)	Janvi Patel 09/04/2025

FROM 2.00000ml of MP87036 + 98.00000ml of MP87031 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
904	ICP AES ICSA SOLN	MP87040	09/02/2025	10/03/2025	Sarabjit Jaswal	None	METALS_PIPETTE_3 (A)	Janvi Patel 09/04/2025

FROM 25.00000ml of M6182 + 225.00000ml of MP87031 = Final Quantity: 250.000 ml

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

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
911	ICP AES CCV SOLN	MP87042	09/02/2025	10/03/2025	Sarabjit Jaswal	None	None	Janvi Patel 09/04/2025

FROM 50.00000ml of MP87031 + 50.00000ml of MP87032 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
919	ICP AES INTERNAL STD	MP87043	09/02/2025	10/03/2025	Sarabjit Jaswal	None	None	Janvi Patel 09/04/2025

FROM 1.00000ml of M6179 + 10.00000ml of M5985 + 1969.00000ml of W3112 + 20.00000ml of M6187 = Final Quantity: 2000.000 ml

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

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
903	ICP AES RINSE SOLN	MP87044	09/02/2025	10/03/2025	Sarabjit Jaswal	None	None	Janvi Patel 09/04/2025

FROM 200.00000ml of M6187 + 9800.00000ml of W3112 = Final Quantity: 10000.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
4225	LR-1	MP87045	09/02/2025	10/03/2025	Sarabjit Jaswal	None	METALS_PIPETTE_3 (A)	Janvi Patel 09/04/2025

FROM 11.50000ml of M6138 + 11.50000ml of M6144 + 11.50000ml of M6171 + 15.50000ml of MP87031 = Final Quantity: 50.000 ml

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

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
4226	LR-2	MP87046	09/02/2025	10/03/2025	Sarabjit Jaswal	None	METALS_PIPETTE_3 (A)	Janvi Patel 09/04/2025

FROM 13.50000ml of M6140 + 9.00000ml of M6142 + 9.50000ml of M6159 + 18.00000ml of MP87031 = Final Quantity: 50.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
4163	NEW ICV-060925	MP87047	09/02/2025	10/03/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 09/04/2025

FROM 0.20000ml of M6058 + 0.40000ml of M6163 + 0.40000ml of M6164 + 0.40000ml of M6165 + 48.60000ml of MP87031 = Final Quantity: 50.000 ml

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

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3494	ICP AES ICSAB SOLN-1	MP87048	09/02/2025	10/03/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 09/04/2025

FROM 0.05000ml of M6076 + 5.00000ml of M6182 + 5.00000ml of M6184 + 39.95000ml of MP87031 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
4227	LR-3	MP87049	09/02/2025	10/03/2025	Sarabjit Jaswal	None	None	Janvi Patel 09/04/2025

FROM 1.15000ml of M6026 + 1.25000ml of M5658 + 1.25000ml of M5748 + 1.50000ml of M6145 + 2.50000ml of M5751 + 2.50000ml of M6128 + 39.85000ml of MP87031 = Final Quantity: 50.000 ml

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

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
170	1:1HCL	MP87148	09/09/2025	02/17/2026	Sagar Kanani	None	None	Sarabjit Jaswal 09/10/2025

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

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 #
Absolute Standards, Inc.	57058 / Cerium, 1000PPM, 100ML	020623	02/06/2026	03/06/2023 / bin	03/01/2023 / bin	M5467

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

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

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

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 #
Absolute Standards, Inc.	57027 / CO, 1000 PPM, 125 ml	091923	09/19/2026	05/31/2024 / bin	02/09/2024 / bin	M5800

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

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57016 / S, 1000 PPM, 125 ml	122923	03/31/2026	03/31/2025 / kareem	06/11/2024 / Jaswal	M5969

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 #
Absolute Standards, Inc.	57003 / Li, 1000 PPM, 125 ml	061224	06/21/2027	06/06/2025 / Janvi	07/01/2024 / Jaswal	M5971

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGTI1-1 / TITANIUM 125mL 1000ug/mL	T2-TI719972	08/05/2026	08/06/2025 / Janvi	02/22/2024 / Jaswal	M5979

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGIN10-5 / INDIUM 1 x 500 ml	U2-IN729349	02/21/2028	10/08/2024 / Jaswal	06/14/2024 / Jaswal	M5985

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CLPP-CAL-3 / CLP CAL SOLUTION #3, 125mL	T2-MEB727800	07/30/2026	07/30/2025 / Janvi	02/22/2024 / kareem	M5998

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

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 #
Absolute Standards, Inc.	57182 / Pb, 10000 PPM, 125 ml	110923	11/09/2026	12/05/2024 / janvi	08/05/2024 / Jaswal	M6026

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57028 / Ni, 1000 PPM, 125 ml	062024	06/20/2027	06/04/2025 / Janvi	08/05/2024 / Jaswal	M6027

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

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

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CHEM-QC-4 / CHEM-QC-4, Second Source, 1000 ug/ml, B, Mo, Si, Sn, Ti	V2-MEB746173	01/29/2026	01/29/2025 / JANVI	08/22/2024 / Jaswal	M6058

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 #
Inorganic Ventures	Z9651Q / CHEM-CLP-4/.25L	V2-MEB746762	01/01/2026	01/01/2025 / kareem	09/19/2024 / kareem	M6076

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	Z9651Q / CHEM-CLP-4/.25L	V2-MEB746762	09/06/2029	01/23/2025 / kareem	09/19/2024 / kareem	M6077

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGSI1-1 / SILICON 125mL 1000ug/mL	V2-SI744713	07/10/2029	01/14/2025 / Jaswal	10/03/2024 / Jaswal	M6137

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58120 / Ca, 10000 PPM, 500 ml	121824	12/18/2027	04/17/2025 / Janvi	01/13/2025 / Jaswal	M6138

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58126 / Fe, 10000 PPM, 500 ml	011025	01/10/2028	06/25/2025 / Janvi	01/13/2025 / Jaswal	M6140

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 #
Absolute Standards, Inc.	58119 / K, 10000 PPM, 500 ml	103024	10/30/2027	05/06/2025 / JANVI	01/13/2025 / Jaswal	M6142

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

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9530-33 / Hydrochloric Acid, Instra-Analyzed (cs/6x2.5L)	22G2862015	02/17/2026	02/18/2025 / Sagar	01/15/2025 / Sagar	M6151

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	10/09/2025	03/10/2025 / Eman	02/02/2025 / Sagar	M6158

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58113 / Al, 10000 PPM, 500 ml	011325	03/18/2026	03/18/2025 / kareem	02/09/2025 / kareem	M6159

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 #
Absolute Standards, Inc.	57051 / Sb, 1000 PPM, 125 ml	071724	07/17/2027	03/24/2025 / kareem	10/18/2024 / kareem	M6160

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	QCP-CICV-1-125ML / EPA CLP ICP Verification Standard1	V2-MEB744107	06/08/2026	06/09/2025 / jaswal	06/06/2025 / jaswal	M6163

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	QCP-CICV-2-125ML / EPA CLP ICP Verification Standard2	U2-MEB733713	06/08/2026	06/09/2025 / jaswal	06/09/2025 / jaswal	M6164

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	QCP-CICV-3-125ML / EPA CLP ICP Verification Standard3	V2-MEB749572	06/08/2026	06/09/2025 / jaswal	06/09/2025 / jaswal	M6165

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58112 / Mg, 10000 PPM, 500 ml	011525	01/15/2028	07/15/2025 /	02/13/2025 / Janvi	M6171

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CLPP-CAL-1 / CLP CAL SOLUTION #1, 125mL	V2-MEB742428	07/31/2026	07/31/2025 / Janvi	05/05/2025 / Janvi	M6174

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 #
Absolute Standards, Inc.	57038 / Sr, 1000 PPM, 125 ml	092724	09/27/2027	08/06/2025 / Janvi	08/06/2025 / Janvi	M6176

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	/ Lead (Pb) 1000PPM	031525	03/15/2028	08/06/2025 / Janvi	08/06/2025 / Janvi	M6177

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57042 / Mo, 1000 PPM, 125 ml	080528	08/05/2028	08/06/2025 / Janvi	08/06/2025 / Janvi	M6178

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGY10-1 / YTTRIUM 125mL 10,000ug/mL	V2-Y740548	08/05/2026	08/06/2025 / Janvi	06/02/2024 / Janvi	M6179

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	WW-LFS-1 / Laboratory Fortified Stock Solution 1, 125 ml	W2-MEB752149	02/05/2026	08/06/2025 / Janvi	07/22/2025 / Janvi	M6180

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	WW-LFS-2 / Laboratory Fortified Stock Solution 2, 125 ml	V2-MEB7433480	02/05/2026	08/06/2025 / Janvi	07/22/2025 / Janvi	M6181

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 #
EPA	PART A / ICSA (ICP) STOCK SOLN	ICSA-1211	02/05/2026	08/06/2025 / Janvi	03/06/2024 / Janvi	M6182

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
EPA	PART B / ICSAB (ICP) STOCK SOLN	ICSB-0710	02/05/2026	08/06/2025 / Janvi	03/06/2024 / Janvi	M6184

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9598-34 / Nitric Acid, Instra-Analyzed (cs/4x2.5L)	24H0162012	01/28/2026	08/29/2025 / Sagar	08/08/2025 / Sagar	M6187

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

M6032

R: 8/5/24

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

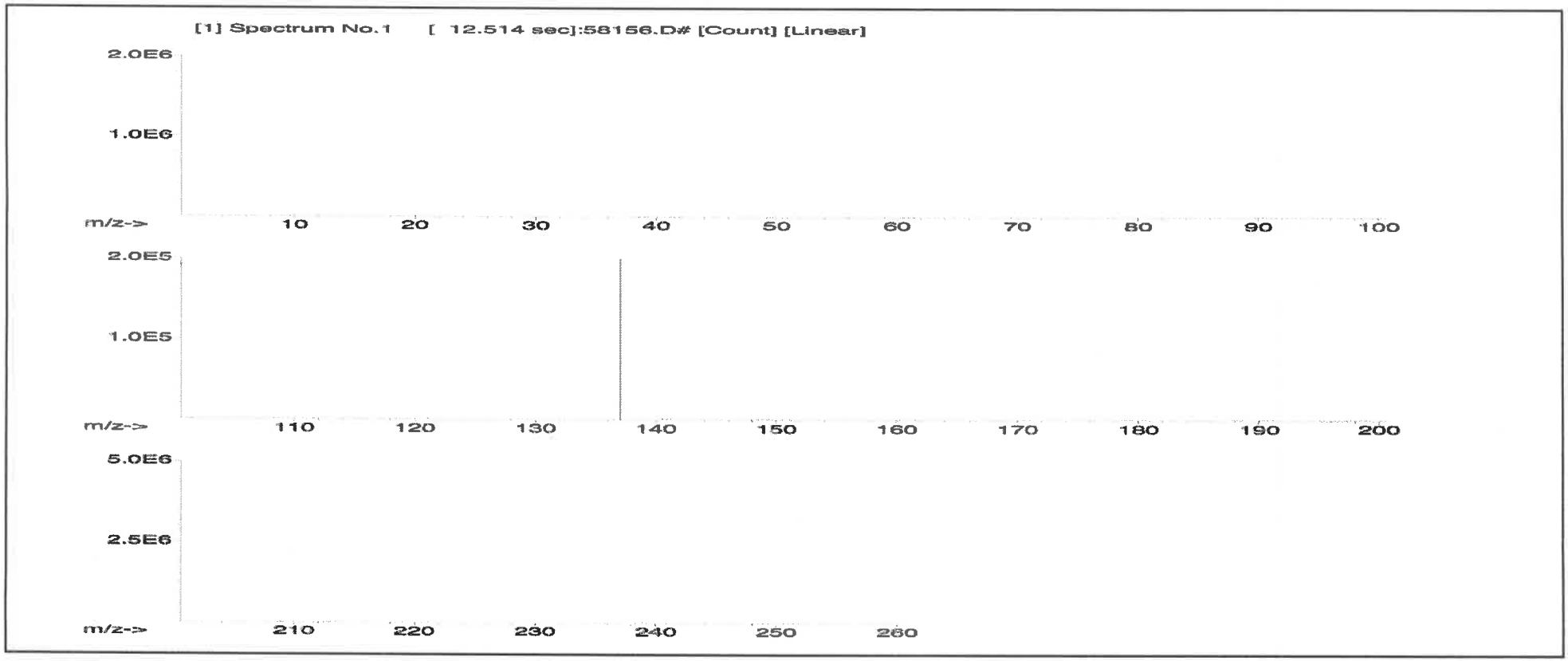
CERTIFIED WEIGHT REPORT:

Part Number:	**57056**		**Lot #**		
Lot Number:	**010924**	**Solvent:**	24002546	Nitric Acid	
Description:	**Barium (Ba)**				
		2%	40.0 (mL)	Nitric Acid	
Expiration Date:	010927				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**1000**				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Weight shown below was diluted to (mL):	2000.02	0.058	Flask Uncertainty		

Giovanni Esposito

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

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Barium nitrate (Ba)	IN023	BAD022019A1	1000	99.999	0.10	52.3	3.82417	3.82441	**1000.1**	**2.0**	10022-31-8	0.5 mg/m3	orl-rat 355 mg/kg	3104a



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

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

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

(T) = Target analyte

Physical Characterization:

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

Certified by:



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

Absolute Standards, Inc.
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

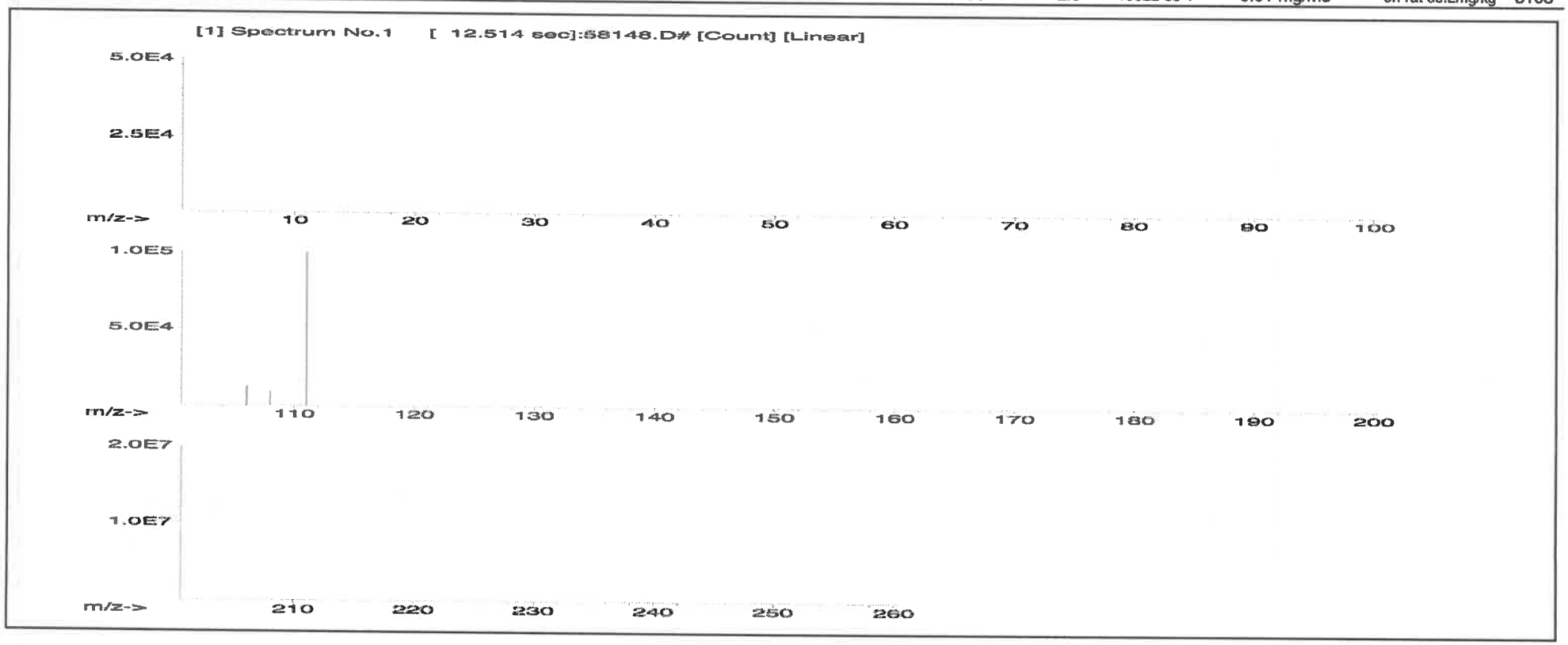
CERTIFIED WEIGHT REPORT:

Part Number:	**57048**		**Lot #**		
Lot Number:	**070124**	**Solvent:**	24002546	Nitric Acid	
Description:	**Cadmium (Cd)**	2%	40.0 (mL)	Nitric Acid	
Expiration Date:	070127				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**1000**				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Weight shown below was diluted to (mL):	2000.07	0.100	Flask Uncertainty		

Aleah O'Brady

Formulated By:	Aleah O'Brady	070124
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:

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).

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

Certified Reference Material CRM

R: 8/5/24

M6026

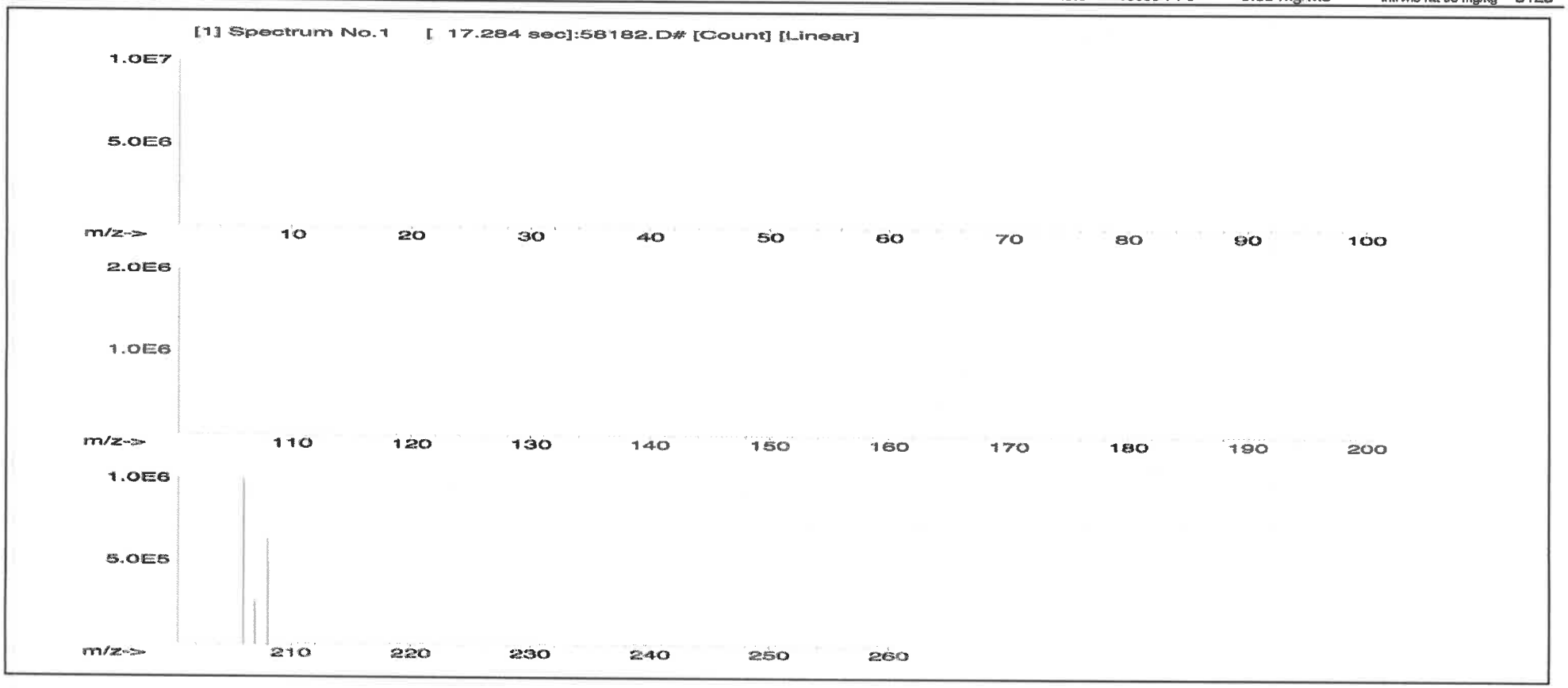
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

Part Number:	**57182**			**Lot #**	
Lot Number:	**110923**	**Solvent:**	24002546	Nitric Acid	
Description:	**Lead (Pb)**				
		2%	40.0 (mL)	Nitric Acid	
Expiration Date:	110926				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**10000**				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Weight shown below was diluted to (mL):	2000.02	0.058	Flask Uncertainty		

Formulated By:	Lawence Barry	110923
Reviewed By:	Pedro L. Rentas	110923

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	10000	99.999	0.10	62.5	32.0006	32.0040	**10001.1**	**20.0**	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:

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).

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

Certified Reference Material CRM

M5467 R: 03/01/23 (LA)

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

CERTIFIED WEIGHT REPORT:

Part Number: 57058
Lot Number: 020623
Description: Cerium (Ce)

Expiration Date: 020626
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

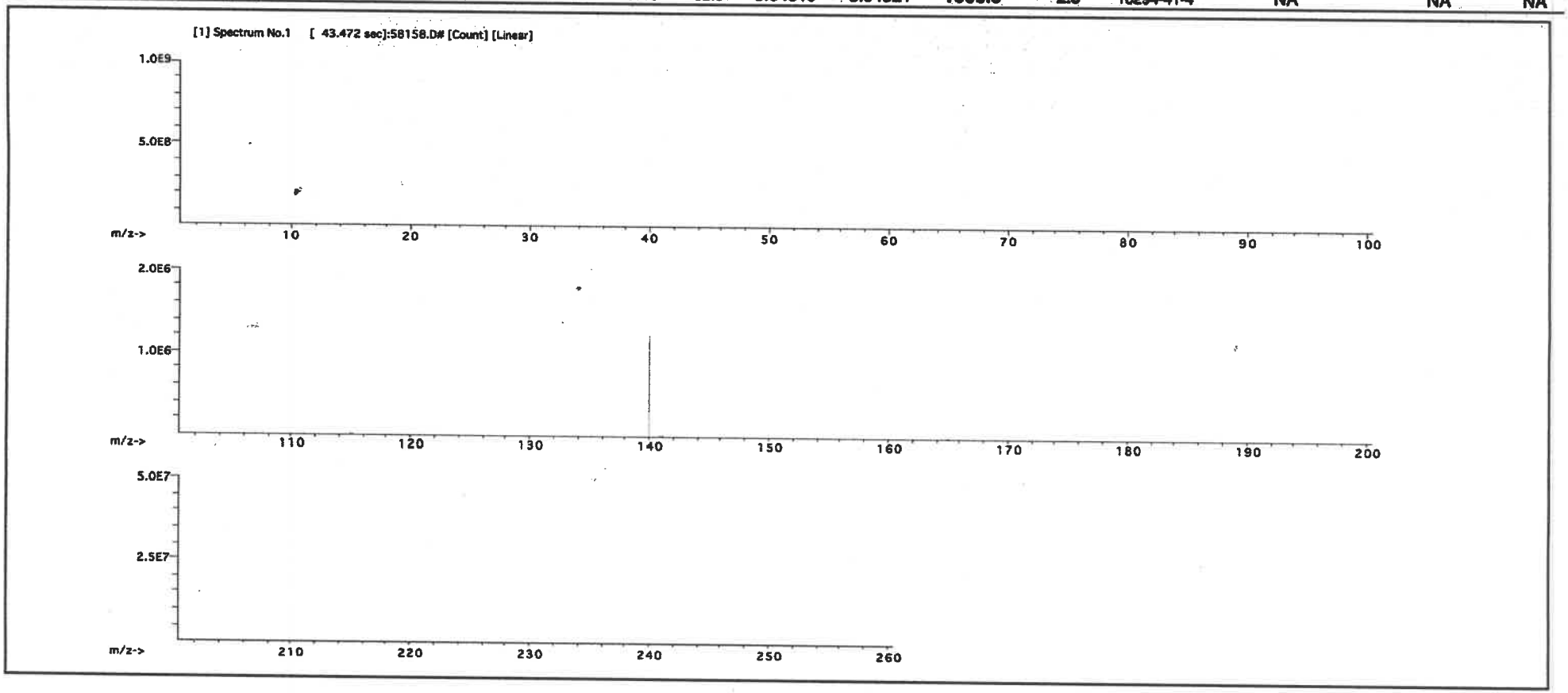
Weight shown below was diluted to (mL): 1000.12 0.058 Flask Uncertainty

		Lot #	
Solvent:	21110221	Nitric Acid	
2%	20.0 (mL)	Nitric Acid	

5E-05 Balance 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.
* 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

M5658 R ! 8/25/23

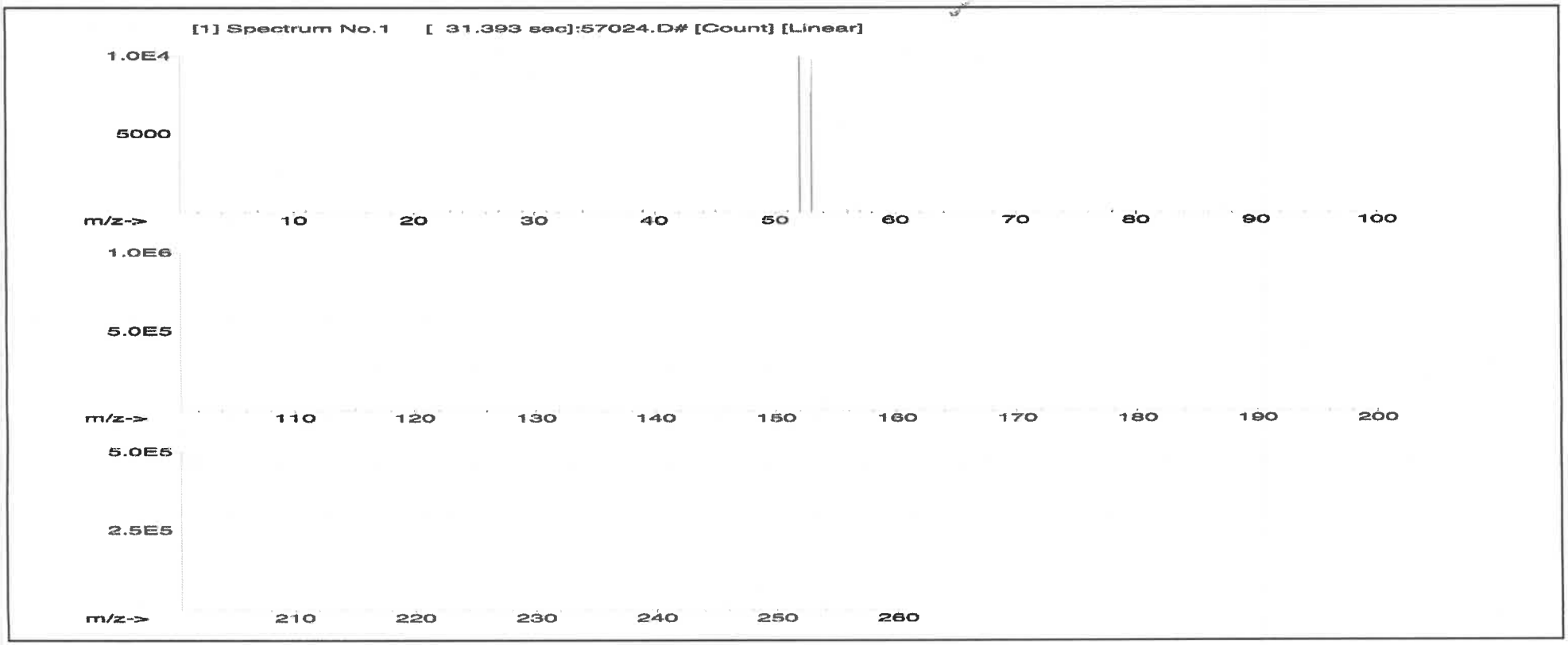
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

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.
* 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

R: 12/20/23 M5748

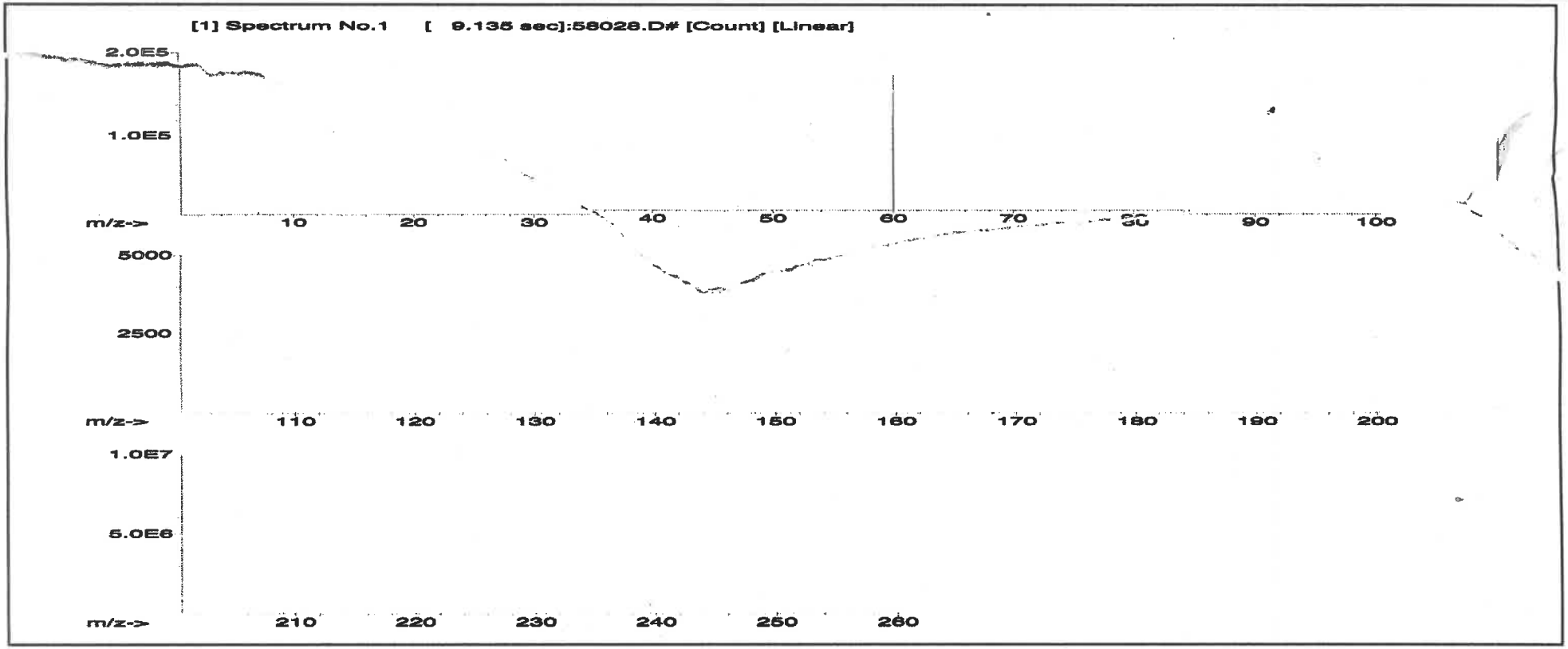
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

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.

* 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

R: 8/25/23 M5751

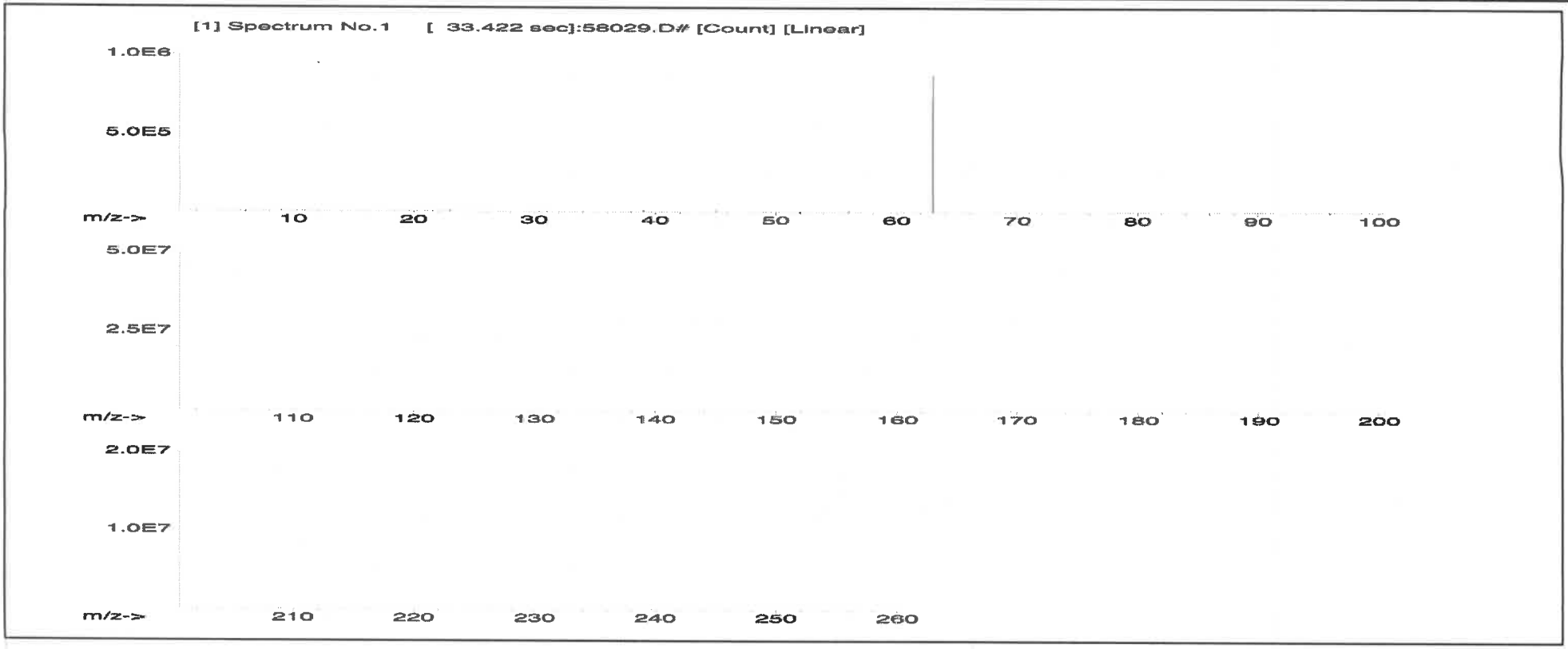
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:	
Part Number:	**58029**	21110221	Nitric Acid	
Lot Number:	**071723**			
Description:	**Copper (Cu)**			
		2.0%	40.0 (mL)	Nitric Acid
Expiration Date:	071726			
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	071723
Reviewed By:	Pedro L. Rentas	071723

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	022723	0.1000	200.0	0.084	1000	10000.5	**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:

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).

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

Certified Reference Material CRM

R: 02/09/24 M5798

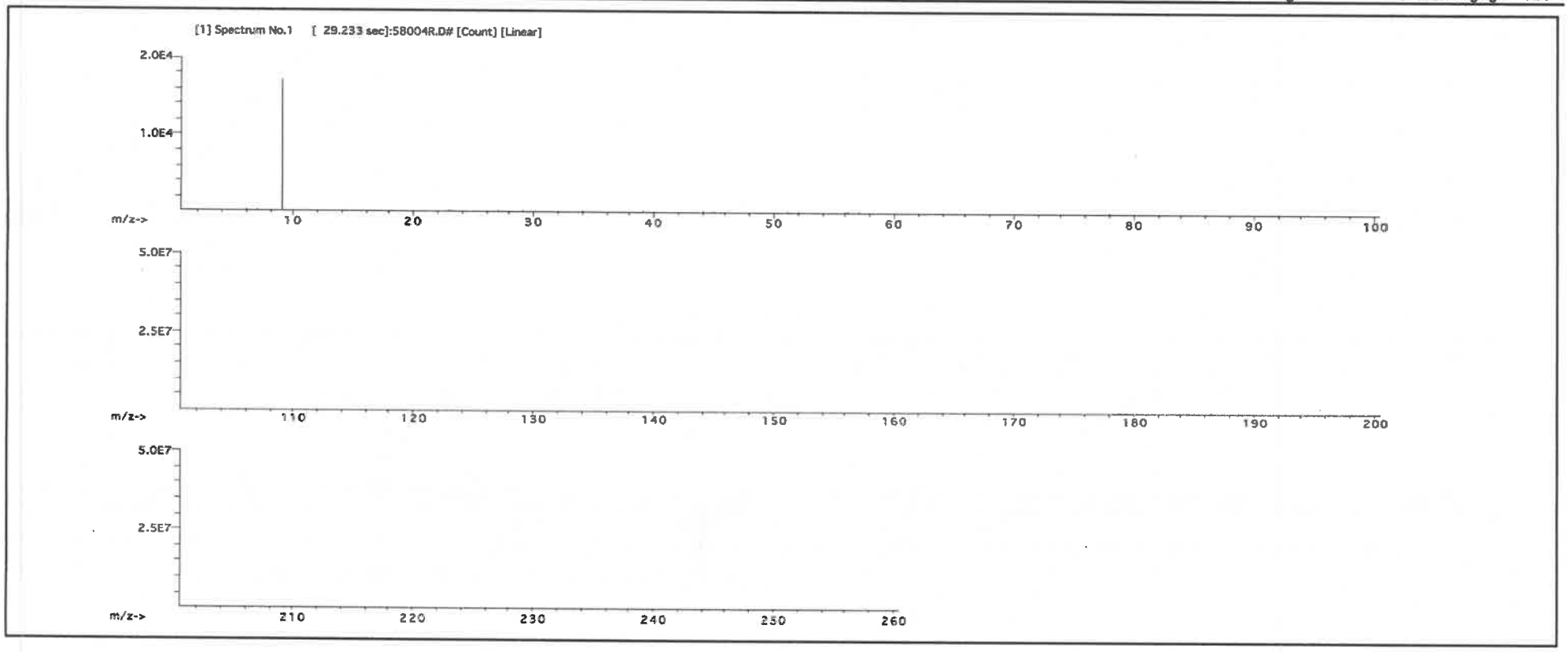
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

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.

* 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

R? 02/09/24 IV15799

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

CERTIFIED WEIGHT REPORT:

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

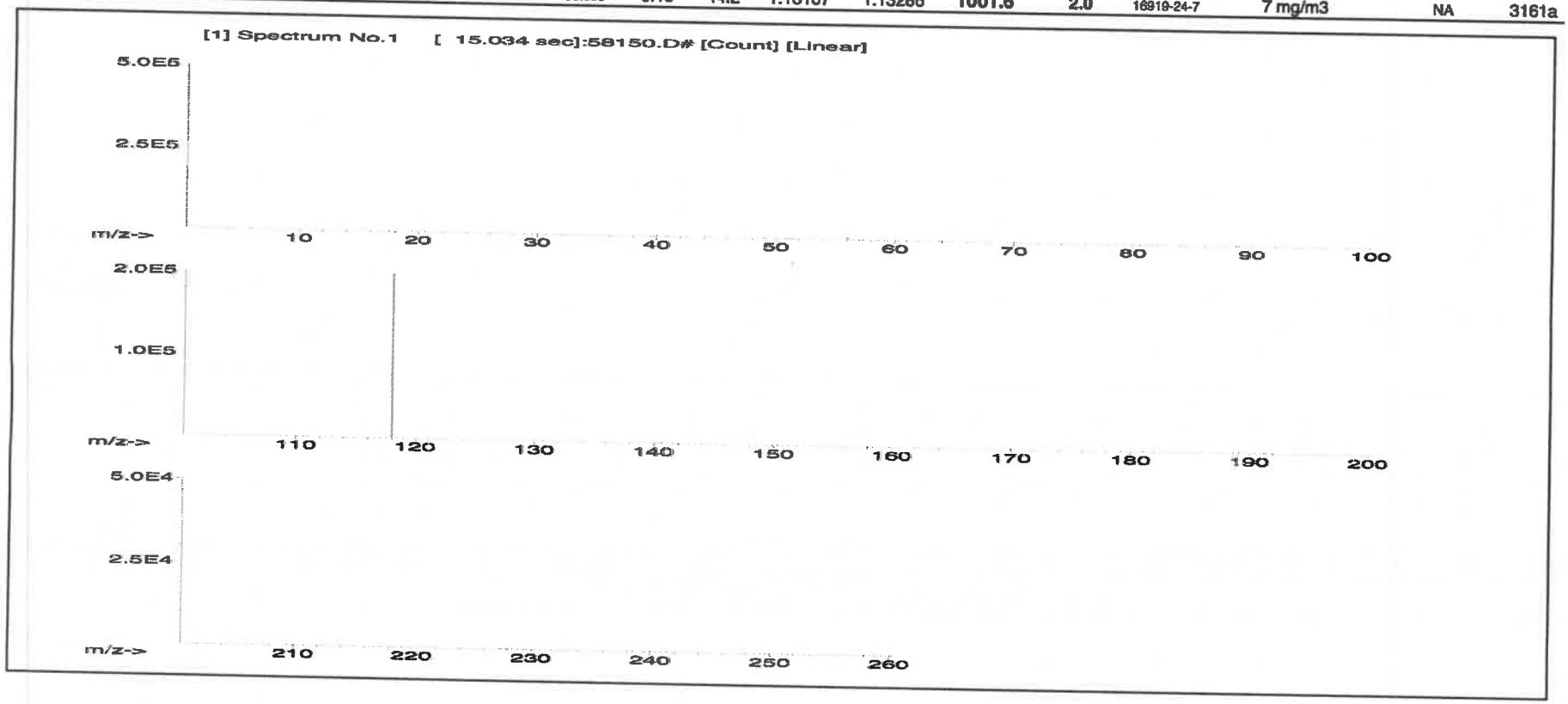
Expiration Date: 071126
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 499.93

	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:

* 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

R: 02/09/24 IM5800 BH

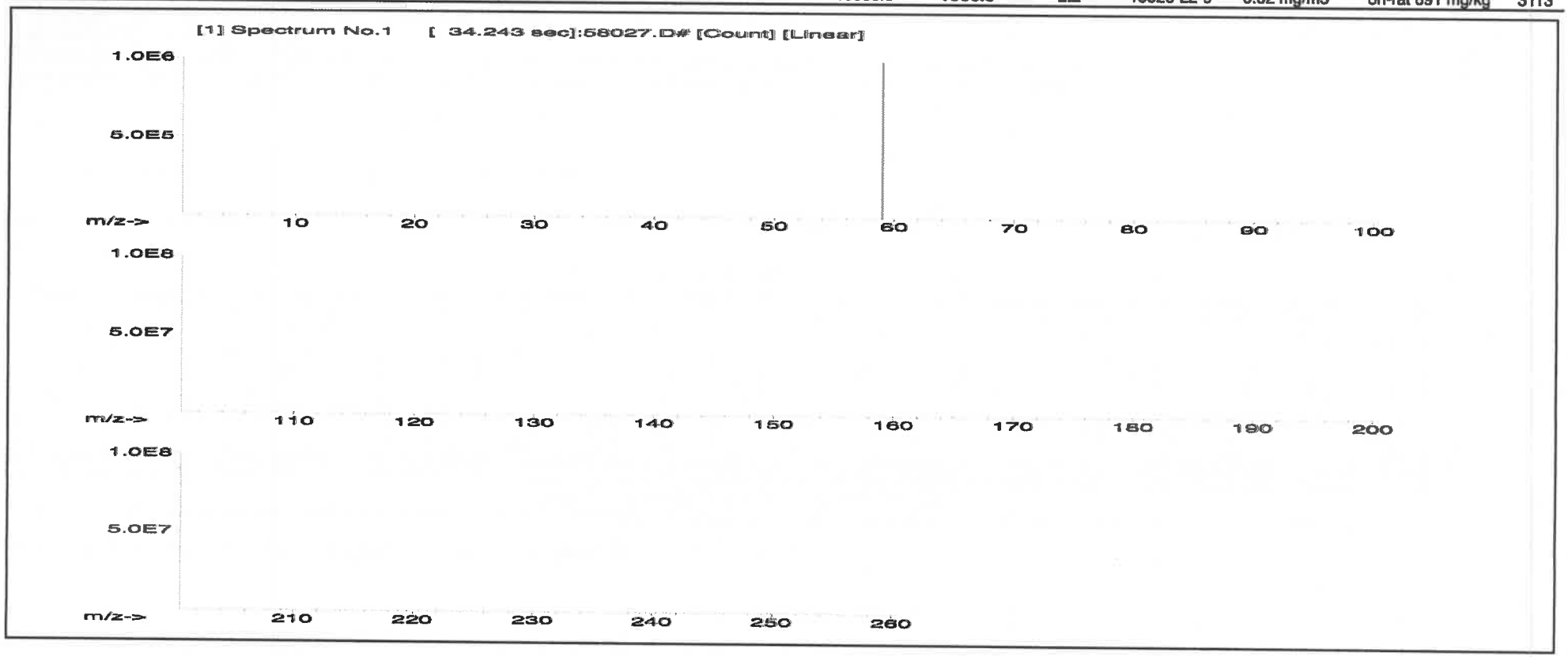
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:		
Part Number:	**57027**	24002546	Nitric Acid		
Lot Number:	**091923**				
Description:	**Cobalt (Co)**	2.0%	40.0 (mL)	Nitric Acid	
Expiration Date:	091926				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**1000**				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Volume shown below was diluted to (mL):	2000.02	0.058	Flask Uncertainty		

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

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Cobalt(II) nitrate hexahydrate (Co)	58127	050923	0.1000	200.0	0.084	1000	10000.0	**1000.0**	**2.2**	10026-22-9	0.02 mg/m3	orl-rat 691 mg/kg	3113



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.

* 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

R: 02/09/24 IM5801 BH

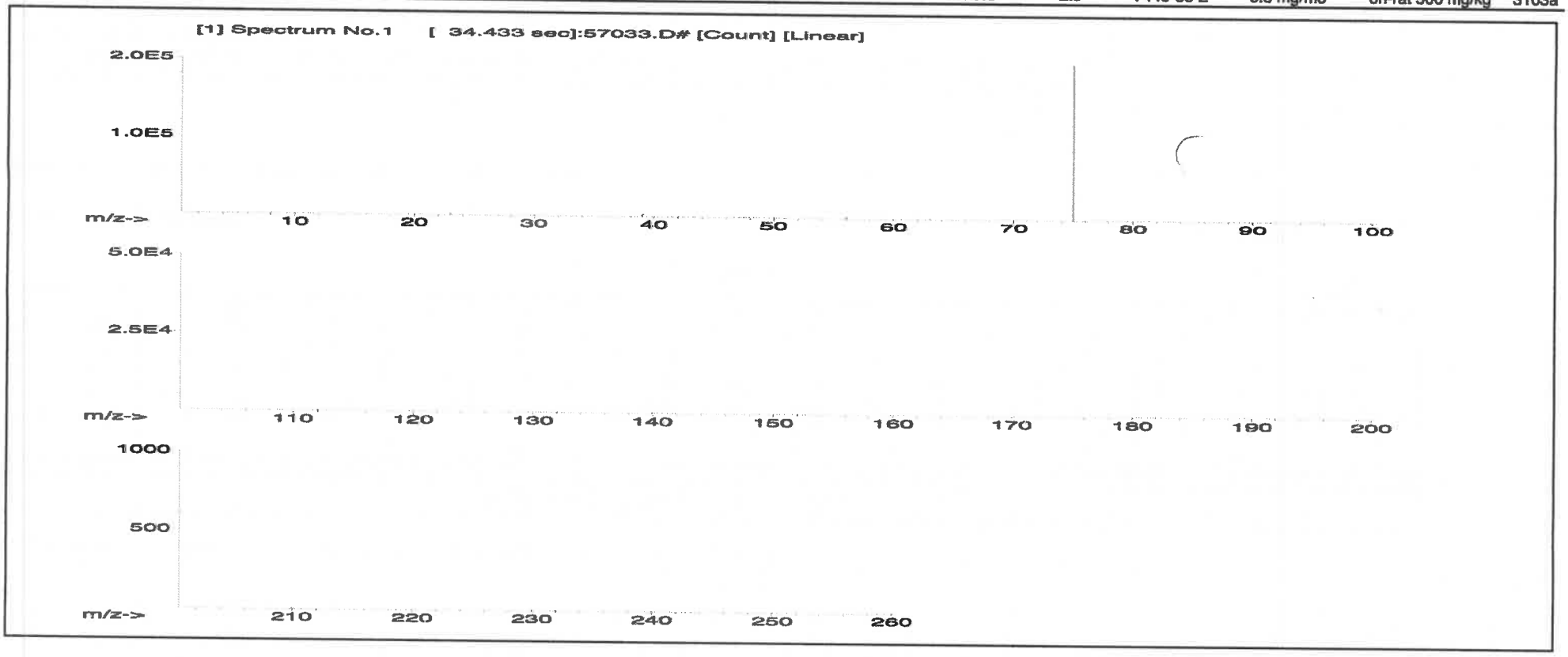
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

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.

* 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

A: 02/09/24 M.5814

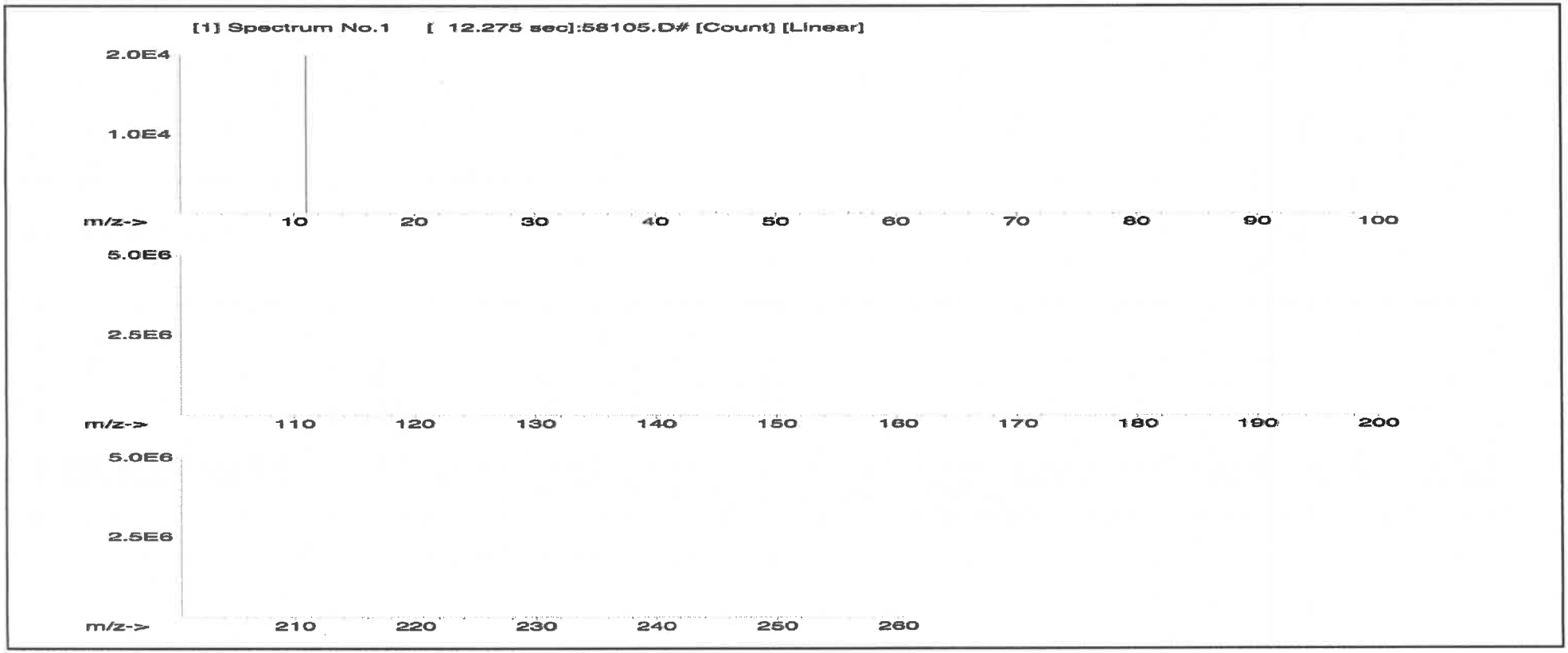
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

Part Number:	**57005**		**Solvent:**	MKBQ8597V	Ammonium hydroxide
Lot Number:	**071123**				
Description:	**Boron (B)**		2.0%	40.0 (mL)	Ammonium hydroxide
Expiration Date:	071126				
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):	1999.48	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. 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.
* 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

R: 02/09/24 M5820

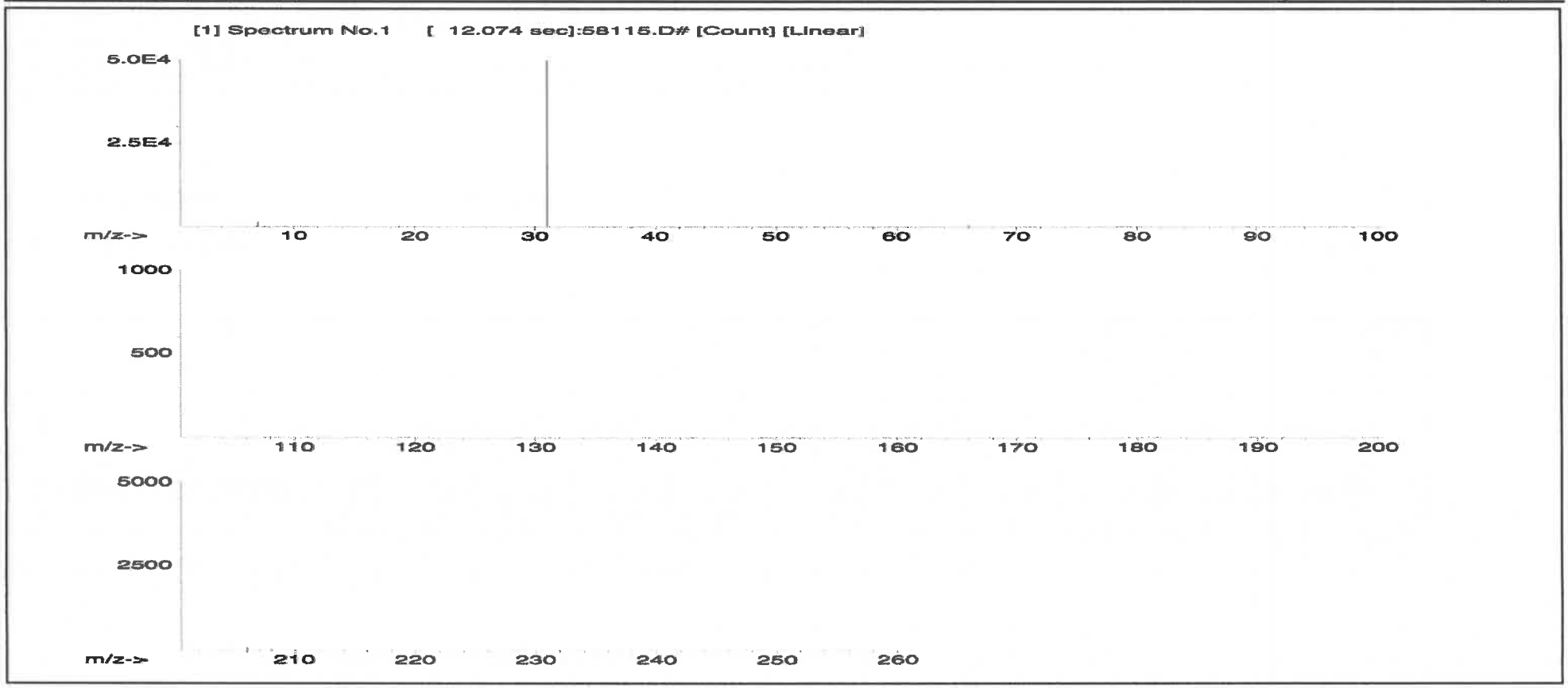
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

Part Number:	**57015**		**Lot #**		
Lot Number:	**091123**	**Solvent:**	24002546	Nitric Acid	
Description:	**Phosphorous (P)**				
		2%	40.0 (mL)	Nitric Acid	
Expiration Date:	091126				
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		

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).

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

Certified Reference Material CRM

M5962 R! 06/14/24.

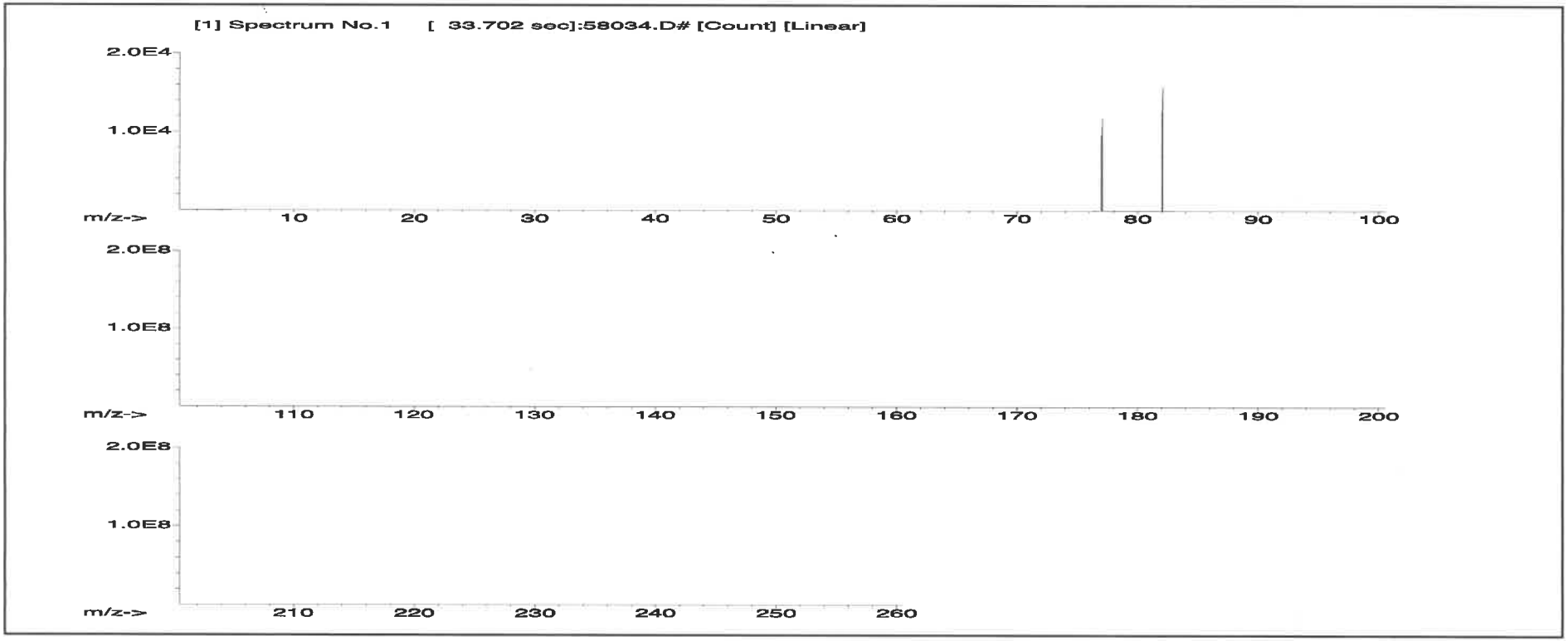
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

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

M5969 R: 06/11/24

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

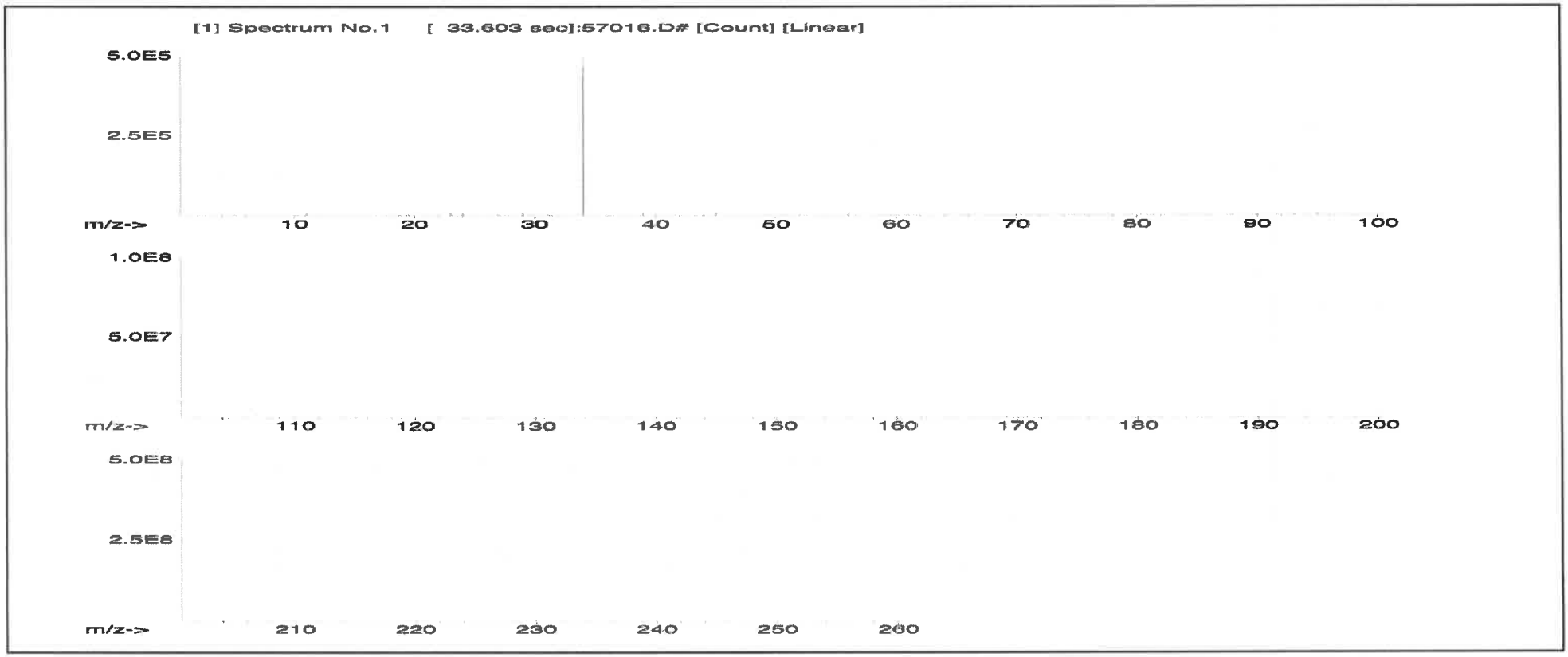
CERTIFIED WEIGHT REPORT:

Part Number:	**57016**	**Solvent:**	122923	ASTM Type 1 Water
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	

Lot #

Formulated By:	Benson Chan	122923
Reviewed By:	Pedro L. Rentas	122923

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Ammonium sulfate (S)	IN117	SLBR7225V	1000	99.9	0.10	24.3	16.4979	16.4980	**1000.0**	**2.0**	7783-20-2	NA	orl-rat 4250mg/kg	3181



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

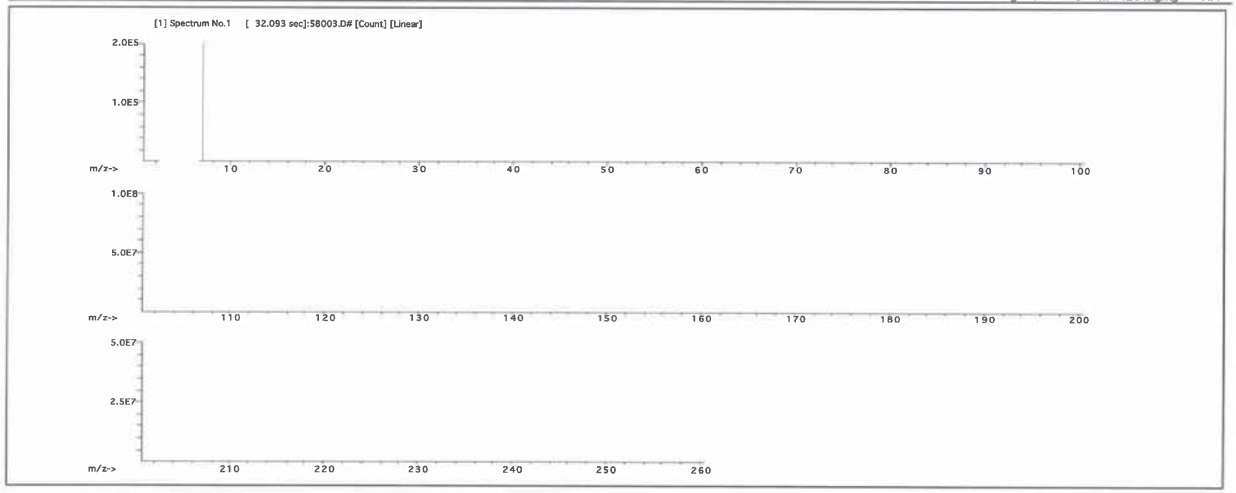
CERTIFIED WEIGHT REPORT:

		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

INORGANIC VENTURES
Refine your results. Redefine your industry.

Certificate of Analysis

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

R: 2/22/24

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:	Single Analyte Custom Grade Solution
Catalog Number:	CGTI1
Lot Number:	T2-TI719972
Matrix:	2% (v/v) HNO_3 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 (±) = $U_{CRM/RM} = k\ (u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma(w_i)^2\ (u_{char\ i})^2]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\ (u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

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

M	Ag	<	0.000536	M	Eu	<	0.000268	O	Na	<	0.032670	M	Se		0.001204	O	Zn	<	0.003267
O	Al		0.000872	O	Fe		0.003225	O	Nb	<	0.043560	O	Si		0.004735	O	Zr	<	0.043560
M	As	<	0.008586	M	Ga	<	0.000268	M	Nd	<	0.000268	M	Sm	<	0.000268				
M	Au	<	0.004577	M	Gd	<	0.000268	O	Ni	<	0.010890	M	Sn		0.000096				
O	B	<	0.008929	M	Ge	<	0.002146	M	Os	<	0.000269	O	Sr		0.000096				
M	Ba	<	0.002683	M	Hf		0.002161	O	P	<	0.054450	M	Ta		0.010560				
M	Be	<	0.005366	M	Hg	<	0.003231	M	Pb	<	0.001073	M	Tb	<	0.000268				
M	Bi	<	0.001609	M	Ho	<	0.000268	M	Pd	<	0.000268	M	Te	<	0.001341				
O	Ca		0.000676	M	In	<	0.002683	M	Pr	<	0.000268	M	Th	<	0.053663				
M	Cd	<	0.000268	M	Ir	<	0.000269	M	Pt	<	0.000536	s	Ti	<					
M	Ce	<	0.000268	M	K		0.001172	M	Rb	<	0.000268	M	Tl	<	0.000268				
M	Co	<	0.004293	M	La	<	0.000268	M	Re	<	0.000268	M	Tm	<	0.000268				
M	Cr		0.000752	O	Li	<	0.027225	M	Rh	<	0.000268	M	U	<	0.000268				
M	Cs	<	0.000268	M	Lu	<	0.000268	M	Ru	<	0.000269	M	V	<	0.019855				
O	Cu	<	0.010890	O	Mg	<	0.005445	i	S	<		M	W		0.000473				
M	Dy	<	0.000268	O	Mn	<	0.003267	M	Sb	<	0.006976	M	Y	<	0.002146				
M	Er	<	0.000268	M	Mo		0.000774	O	Sc	<	0.004900	M	Yb	<	0.000536				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

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

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 47.87 +4 6 Ti(F)6-2

Chemical Compatibility - Soluble in concentrated HCl, HF, H3PO4 H2SO4 and HNO3. Avoid neutral to basic media. Unstable at ppm levels with metals that would pull F- away (i.e. Do not mix with Alkaline or Rare Earths or high levels of transition elements unless they are fluorinated). Stable with most inorganic anions with a tendency to hydrolyze forming the hydrated oxide in all dilute acids except HF.

Stability - 2-100 ppb levels stable (Alone or mixed with all other metals) as the Ti(F)6-2 for months in 1% HNO3 / LDPE container. 1-10,000 ppm single element solutions as the Ti(F)6-2 chemically stable for years in 2-5% HNO3 / trace HF in an LDPE container.

Ti Containing Samples (Preparation and Solution) - Metal (Soluble in H2O / HF caution -powder reacts violently); Oxide - low temperature history anatase or rutile (Dissolved by heating in 1:1:1 H2O / HF / H2SO4); Oxide - high temperature history (~800EC) brookite (fuse in Pt0 with K2S2O7); Ores (fuse in Pt0 with KF + K2S2O7 - no KF if silica not present); Organic Matrices (Dry ash at 450EC in Pt0 and dissolve by heating with 1:1:1 H2O / HF / H2SO4 or fuse ash with pyrosulfate if oxide is as plastic pigment and likely in brookite crystalline form).

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

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 48 amu	14 ppt	N/A	32S16O, 32S14N, 14N16O18O, 14N17N2, 36Ar12C, 48Ca, [96X=2 (where X = Zr, Mo, Ru)]
ICP-OES 323.452 nm	0.0054 / 0.00092 µg/mL	1	Ce, Ar, Ni
ICP-OES 334.941 nm	0.0038 / 0.000028 µg/mL	1	Nb, Ta, Cr, U
ICP-OES 336.121 nm	0.0053 / 0.000034 µg/mL	1	W, Mo, Co

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

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 17, 2022

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

11.2 Lot Expiration Date

- June 17, 2027

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



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

MS985
R: 6/14/24

1.0 ACCREDITATION / REGISTRATION

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

ACCREDITED Testing Laboratory Certificate 863.01
ACCREDITED Reference Material Producer Certificate 863.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGIN10
Lot Number:	U2-IN729349
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Indium
Starting Material:	Indium Metal
Starting Material Lot#:	2511
Starting Material Purity:	99.9995%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10022 ± 30 µg/mL

Density: 1.044 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1	**10021 ± 56 µg/mL** ICP Assay NIST SRM 3124a Lot Number: 110516
Assay Method #2	**10035 ± 25 µg/mL** EDTA NIST SRM 928 Lot Number: 928
Assay Method #3	**10001 ± 33 µg/mL** Calculated NIST SRM Lot Number: See Sec. 4.2

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

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\ (u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\ (u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

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

M	Ag	<	0.000760	M	Eu	<	0.000760	O	Na		0.012771	M	Se	<	0.023000	M	Zn	<	0.006100
M	Al		0.003385	O	Fe		0.004462	M	Nb	<	0.000760	O	Si		0.024619	M	Zr	<	0.000760
M	As	<	0.004600	M	Ga	<	0.000760	M	Nd	<	0.000760	M	Sm	<	0.000760				
M	Au	<	0.002300	M	Gd	<	0.000760	O	Ni	<	0.005100	M	Sn	<	0.000760				
O	B		0.003692	M	Ge	<	0.001600	M	Os	<	0.000760	O	Sr	<	0.000610				
M	Ba	<	0.001600	M	Hf	<	0.000760	n	P	<		M	Ta	<	0.000760				
O	Be	<	0.000130	M	Hg	<	0.003100	M	Pb		0.001400	M	Tb	<	0.000760				
M	Bi	<	0.000760	M	Ho	<	0.000760	M	Pd	<	0.001600	M	Te	<	0.000760				
O	Ca		0.004616	s	In	<		M	Pr	<	0.000760	M	Th	<	0.000760				
M	Cd	<	0.000760	M	Ir	<	0.000760	M	Pt	<	0.000760	O	Ti	<	0.001100				
M	Ce	<	0.000760	O	K		0.007078	M	Rb	<	0.000760	M	Tl	<	0.000760				
M	Co	<	0.000760	M	La	<	0.000760	M	Re	<	0.000760	M	Tm	<	0.000760				
O	Cr	<	0.001300	O	Li	<	0.000130	M	Rh	<	0.000760	M	U	<	0.000760				
M	Cs	<	0.000760	M	Lu	<	0.000760	M	Ru	<	0.000760	M	V	<	0.001600				
M	Cu	<	0.003800	O	Mg		0.000707	n	S	<		M	W	<	0.001600				
M	Dy	<	0.000760	O	Mn		0.000149	M	Sb	<	0.000760	M	Y	<	0.000760				
M	Er	<	0.000760	M	Mo	<	0.002300	M	Sc	<	0.000760	M	Yb	<	0.000760				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

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

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

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

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

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 114.82 +3 6 In(H2O)6+3

Chemical Compatibility -Soluble in HCl, HNO3, and H2SO4. Avoid neutral and basic media. Stable with most metals and inorganic anions. The oxalate, sulfide, carbonate, hydroxide and phosphate are insoluble in water.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO3 / LDPE container.

In Containing Samples (Preparation and Solution) -Metal (Best dissolved in HCl / HNO3); Oxide (Soluble in mineral acids); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Sulfuric/peroxide digestion or dry ash and dissolution in dilute HCl).

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

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 115 amu	1 ppt	n/a	115Sn, 99Ru16O
ICP-OES 158.583 nm	0.05 / 0.002 µg/mL	1	
ICP-OES 230.606 nm	0.1 / 0.03 µg/mL	1	Ni, Os
ICP-OES 325.609 nm	0.2 / 0.05 µg/mL	1	Mn, Mo, Th

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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



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

R: 2/22/24
MS-997

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-3
Lot Number:	T2-MEB727800
Matrix:	7% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Arsenic, Lead, Selenium, Thallium, 500 µg/mL ea: Cadmium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Arsenic, As	**1 000 ± 7 µg/mL**	**Cadmium, Cd**	**500.0 ± 2.2 µg/mL**
Lead, Pb	**1 000 ± 4 µg/mL**	**Selenium, Se**	**1 000 ± 6 µg/mL**
Thallium, Tl	**1 000 ± 7 µg/mL**		

Density: 1.042 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
As	ICP Assay	3103a	100818
As	Calculated		See Sec. 4.2
Cd	ICP Assay	3108	130116
Cd	EDTA	928	928
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Se	ICP Assay	3149	100901
Tl	ICP Assay	3158	151215

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

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, 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**

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

December 21, 2022

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

11.2 Lot Expiration Date

- December 21, 2027

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



INORGANIC VENTURES
Refine your results. Redefine your industry.

Certificate of Analysis

R! 08/22/24 M6058, M6059

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:	V2-MEB746172
Matrix:	3% (v/v) HNO_3 3% (v/v) HF
Value / Analyte(s):	1 000 µg/mL ea: Boron, Molybdenum, Silicon, Tin, Titanium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Boron, B	1 000 ± 5 µg/mL	Molybdenum, Mo	1 000 ± 5 µg/mL
Silicon, Si	1 000 ± 7 µg/mL	Tin, Sn	1 000 ± 5 µg/mL
Titanium, Ti	1 000 ± 6 µg/mL		

Density: 1.032 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
B	ICP Assay	3107	190605
B	Calculated		See Sec. 4.2
Mo	ICP Assay	traceable to 3134	U2-MO739068
Si	ICP Assay	Traceable to 3150	S2-SI702546
Sn	ICP Assay	3161a	140917
Ti	ICP Assay	traceable to 3162a	T2-TI725816

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

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, 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

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

August 12, 2024

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

11.2 Lot Expiration Date

- August 12, 2029

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Joseph Burns
Custom VS Manager



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



INORGANIC VENTURES™
Refine your results. Redefine your industry.

Certificate of Analysis

M6074
M6075
M6076
M6077

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

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

EXP.: 9/6/2029

1.0 ACCREDITATION / REGISTRATION

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

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	CHEM-CLP-4
Lot Number:	V2-MEB746762
Matrix:	3% (v/v) HNO3 3% (v/v) HF
Value / Analyte(s):	1 000 µg/mL ea: Boron, Molybdenum, Silicon, Tin, Titanium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Boron, B	**1 000 ± 5 µg/mL**	**Molybdenum, Mo**	**1 000 ± 5 µg/mL**
Silicon, Si	**1 000 ± 7 µg/mL**	**Tin, Sn**	**1 000 ± 5 µg/mL**
Titanium, Ti	**1 000 ± 6 µg/mL**		

Density: 1.033 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
B	ICP Assay	3107	190605
B	Calculated		See Sec. 4.2
Mo	ICP Assay	traceable to 3134	U2-MO739068
Si	ICP Assay	Traceable to 3150	S2-SI702546
Sn	ICP Assay	3161a	140917
Ti	ICP Assay	traceable to 3162a	T2-TI725816

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

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

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

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

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

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

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 06, 2024

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

11.2 Lot Expiration Date

- September 06, 2029

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Joseph Burns
Custom VS Manager



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



INORGANIC VENTURES™
Refine your results. Redefine your industry.

Certificate of Analysis

M6074
M6075
M6076
M6077

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

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

EXP.: 9/6/2029

1.0 ACCREDITATION / REGISTRATION

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

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	CHEM-CLP-4
Lot Number:	V2-MEB746762
Matrix:	3% (v/v) HNO3 3% (v/v) HF
Value / Analyte(s):	1 000 µg/mL ea: Boron, Molybdenum, Silicon, Tin, Titanium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Boron, B	**1 000 ± 5 µg/mL**	**Molybdenum, Mo**	**1 000 ± 5 µg/mL**
Silicon, Si	**1 000 ± 7 µg/mL**	**Tin, Sn**	**1 000 ± 5 µg/mL**
Titanium, Ti	**1 000 ± 6 µg/mL**		

Density: 1.033 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
B	ICP Assay	3107	190605
B	Calculated		See Sec. 4.2
Mo	ICP Assay	traceable to 3134	U2-MO739068
Si	ICP Assay	Traceable to 3150	S2-SI702546
Sn	ICP Assay	3161a	140917
Ti	ICP Assay	traceable to 3162a	T2-TI725816

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

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

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

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

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

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

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 06, 2024

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

11.2 Lot Expiration Date

- September 06, 2029

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Joseph Burns
Custom VS Manager



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



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

Certified Reference Material CRM

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

CERTIFIED WEIGHT REPORT:

R->1/13/28

M6128

Part Number:	**58025**	**Solvent:**	**Lot #** 24002546	Nitric Acid
Lot Number:	**101124**			
Description:	**Manganese (Mn)**	2%	80.0 (mL)	Nitric Acid
Expiration Date:	101127			
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):	4000.2	0.10	Flask Uncertainty	

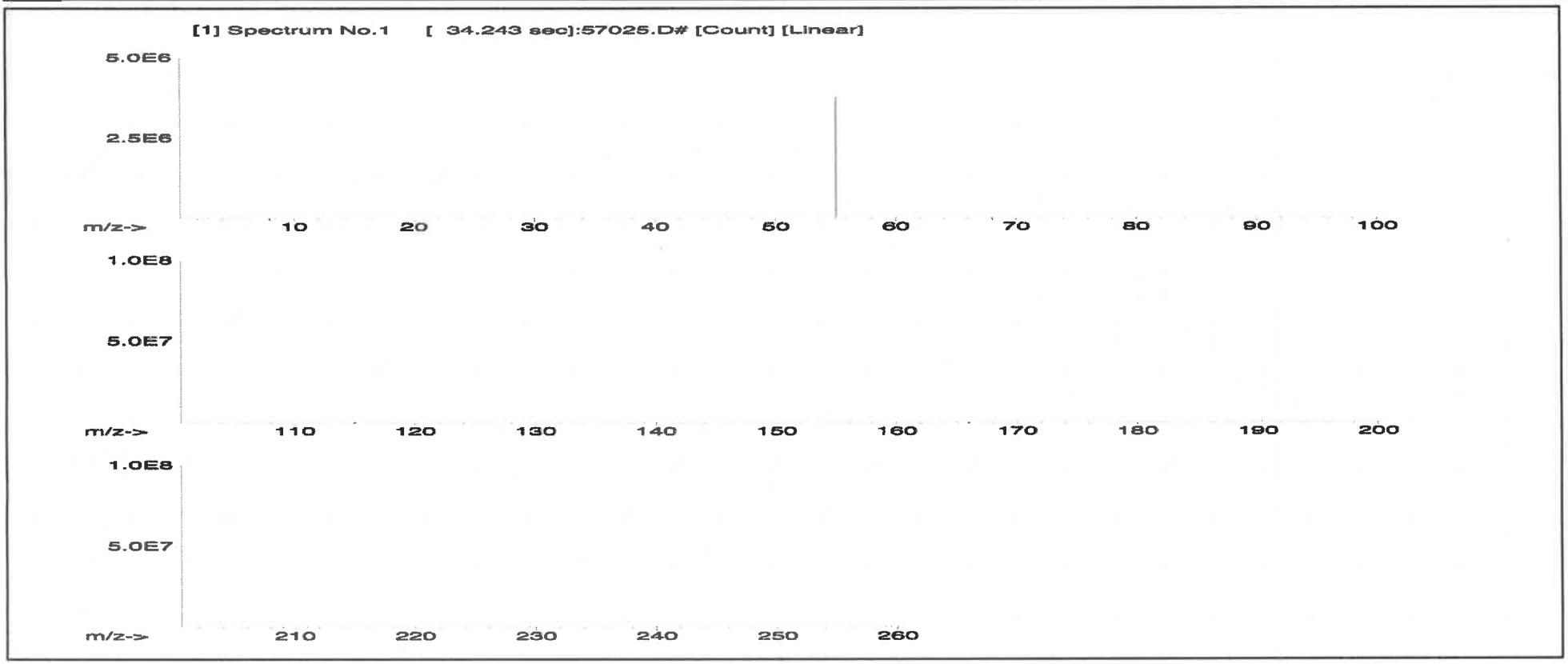
Giovanni Esposito

Formulated By:	Giovanni Esposito	101124

Pedro Rentas

Reviewed By:	Pedro L. Rentas	101124

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	**Actual Conc. (µg/mL)**	Expanded Uncertainty +/- (µg/mL)	**SDS Information** (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Manganese(II) nitrate hydrate (Mn)	IN031	MNM092020A1	1000	99.999	0.10	20.8	19.2322	19.2344	**1000.1**	**2.0**	15710-66-4	5 mg/m3	orl-rat >300mg/kg	3132



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

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

(T) = Target analyte

Physical Characterization:

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

Certified by:



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

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

M6137 R→10/3/24

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 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGSI1
Lot Number:	V2-SI744713
Matrix:	tr. HNO3 tr. HF
Value / Analyte(s):	1 000 µg/mL ea: Silicon
Starting Material:	Silica
Starting Material Lot#:	1771
Starting Material Purity:	99.9981%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 999 ± 6 µg/mL

Density: 1.003 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1	**999 ± 5 µg/mL** ICP Assay NIST SRM Traceable to 3150 Lot Number: S2-SI702546
Assay Method #2	**1000 ± 7 µg/mL** Calculated NIST SRM Lot Number: See Sec. 4.2

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

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

Characterization of CRM/RM by Two or More Methods

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

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

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

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

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

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

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

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

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

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

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

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

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

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

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

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

July 10, 2024

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

11.2 Lot Expiration Date

- **July 10, 2029**

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Uyen Truong
Custom Processing Supervisor



Certificate Approved By:

Muzzammil Khan
Stock Laboratory Supervisor



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



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

Certified Reference Material CRM

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

M6138
R->1/13/25

CERTIFIED WEIGHT REPORT:

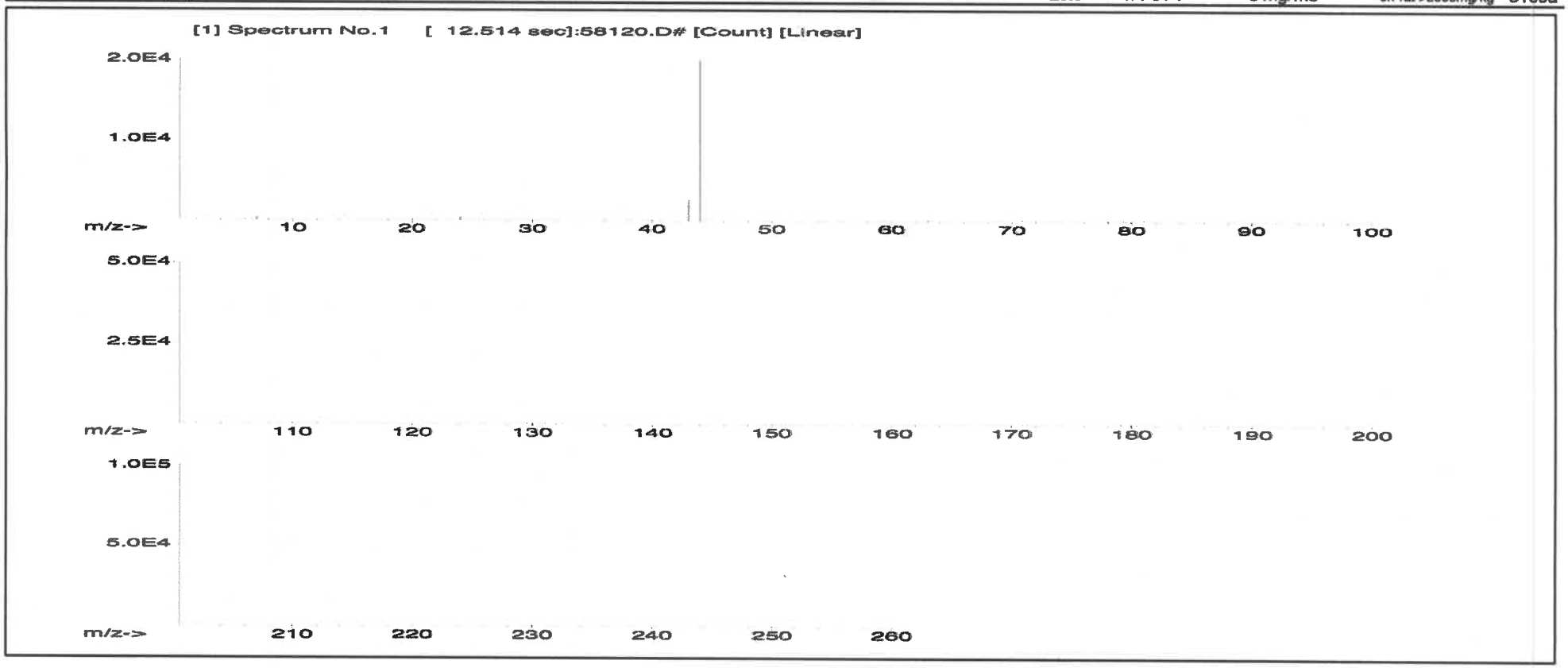
Part Number: 58120
Lot Number: 121824
Description: Calcium (Ca)
Expiration Date: 121827
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 4000.1

	Lot #		
Solvent:	24012496	Nitric Acid	
2%	80.0 (mL)	Nitric Acid	
	5E-05	Balance Uncertainty	
	0.15	Flask Uncertainty	

Giovanni Esposito

Formulated By:	Giovanni Esposito	121824
Reviewed By:	Pedro L. Rentas	121824

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	CAD03203B3	10000	99.999	0.10	39.9	100.2537	100.2677	**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	30	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	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).

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

Certified Reference Material CRM

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

CERTIFIED WEIGHT REPORT:

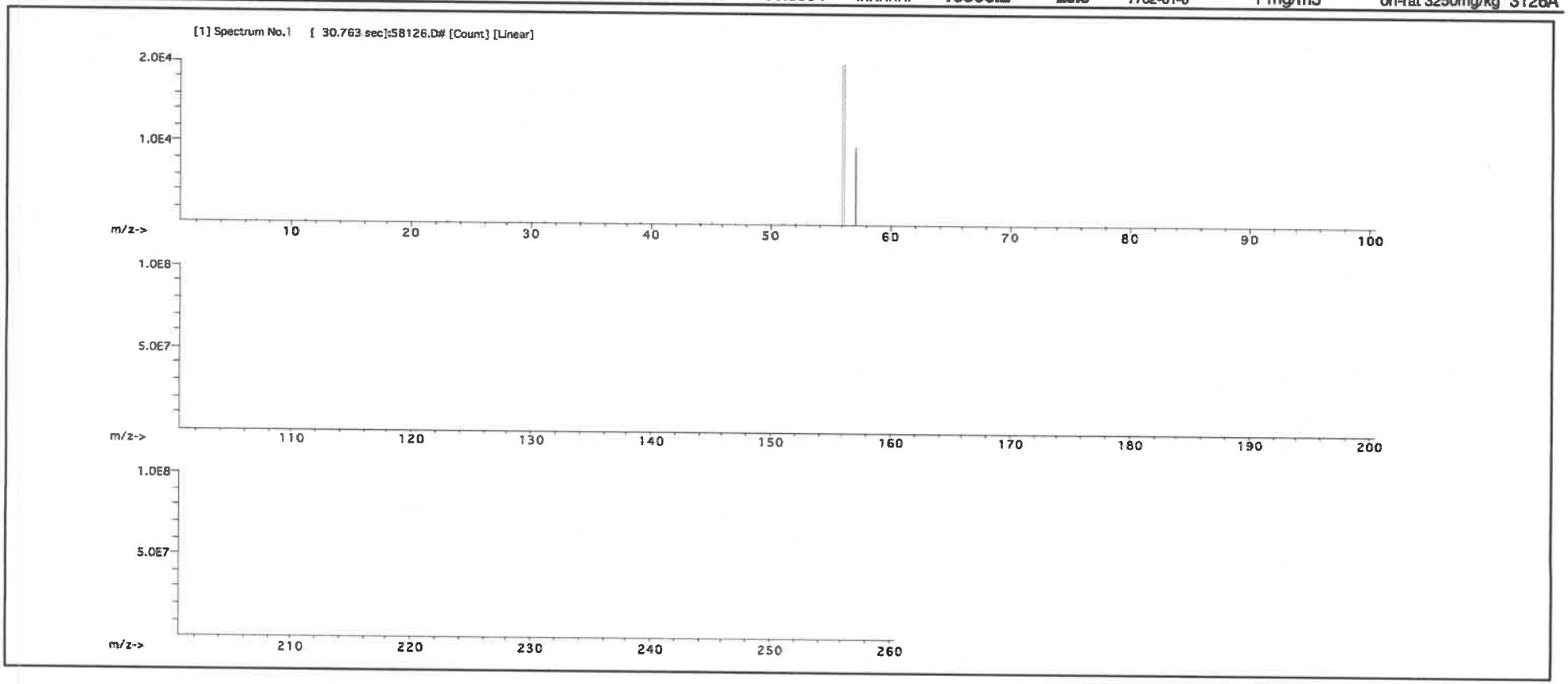
Part Number: 58126 R->1|B|2S
Lot Number: 011025
Description: Iron (Fe) M6140
Expiration Date: 011028
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 2000.07 ± 0.100 Flask Uncertainty

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

5E-05 Balance Uncertainty

Formulated By:	Benson Chan	011025
Reviewed By:	Pedro L. Rentas	011025

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Iron(III) nitrate nonahydrate (Fe)	IN028	FED082023A1	10000	99.999	0.10	13.0	153.8534	######	**10000.2**	**20.0**	7782-61-8	1 mg/m3	orl-rat 3250mg/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	<0.02	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	T	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	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).

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

Certified Reference Material CRM

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

CERTIFIED WEIGHT REPORT:

R-> 1/13/25

Part Number: 57119
Lot Number: 103024
Description: Potassium (K)

M6141
M6142
M6143

Expiration Date: 103027
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB

		Lot #	
Solvent:	24002546	Nitric Acid	
2%	80.0 (mL)	Nitric Acid	

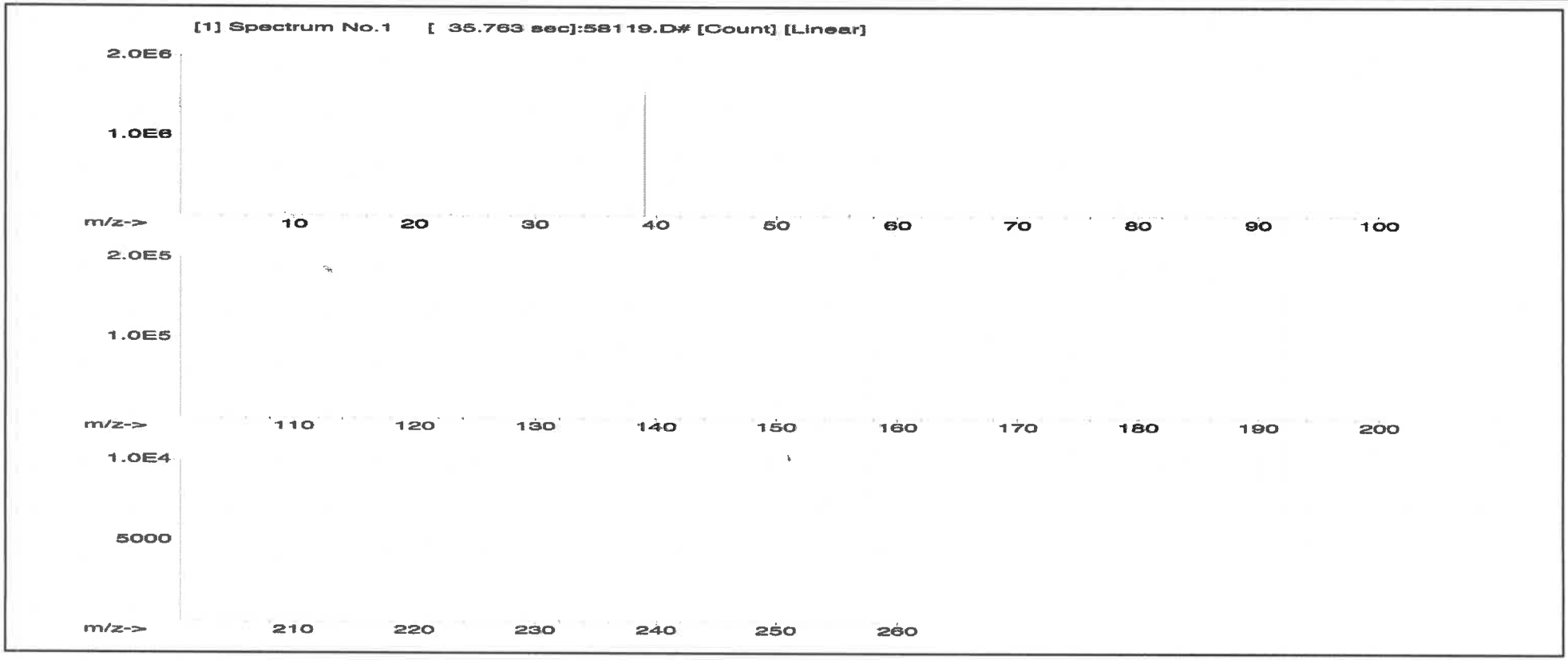
5E-05 Balance Uncertainty

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

Giovanni Esposito

Formulated By:	Giovanni Esposito	103024
Reviewed By:	Pedro L. Rentas	103024

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	KD062022A1	10000	99.999	0.10	37.7	106.1040	######	**10001.1**	**20.0**	7757-79-1	5 mg/m3	orl-rat 3750 mg/kg	3141a



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:

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).

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

Certified Reference Material CRM

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

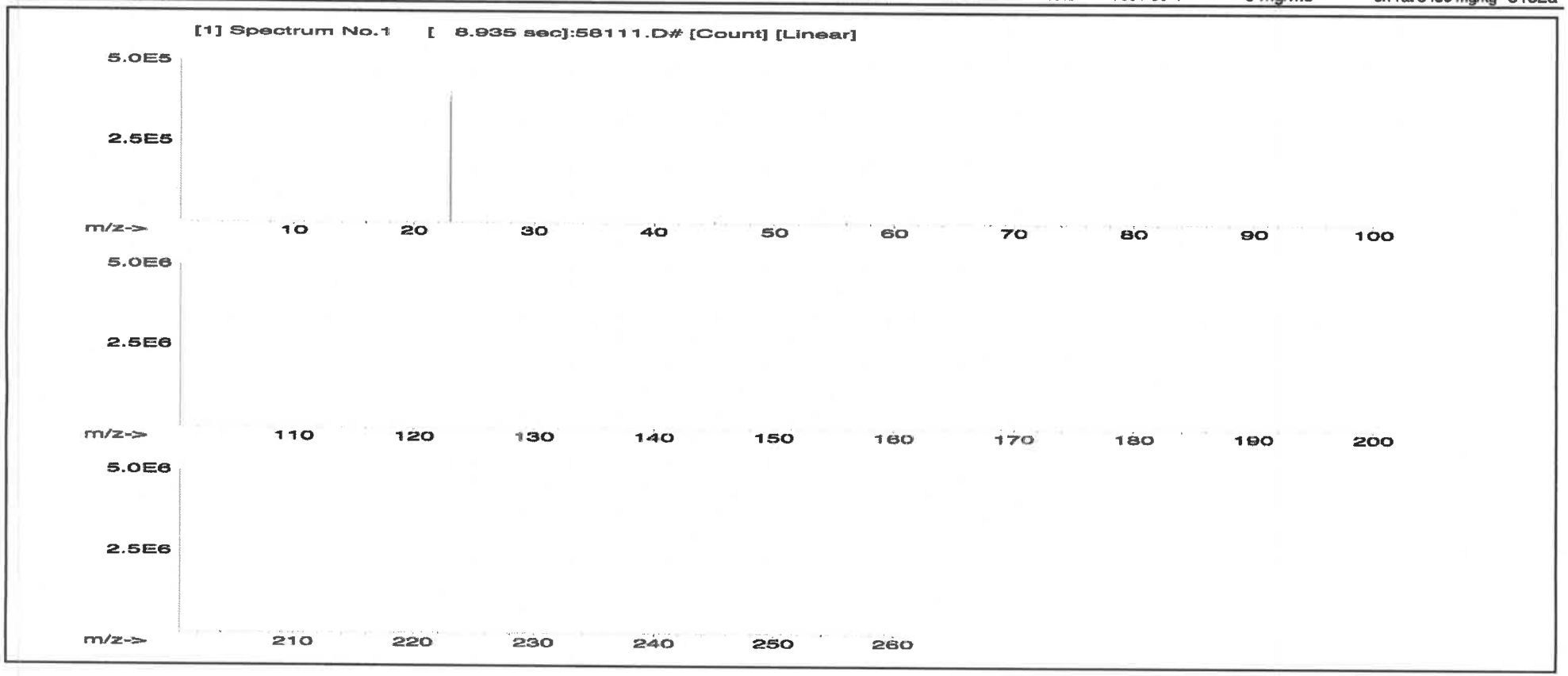
CERTIFIED WEIGHT REPORT:

R->1/13/25

Part Number:	**58111**		**Lot #**		
Lot Number:	**072424**	**Solvent:**	24002546	Nitric Acid	
Description:	**Sodium (Na)**				
		MG144 2%	80.0 (mL)	Nitric Acid	
Expiration Date:	072427				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**10000**				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Weight shown below was diluted to (mL):	4000.2	0.10	Flask Uncertainty		

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

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Sodium nitrate (Na)	IN036	NAV012015I1	10000	99.999	0.10	26.9	148.7096	######	**10000.0**	**20.0**	7631-99-4	5 mg/m3	orl-rat 3430 mg/kg	3152a



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

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

(T) = Target analyte

Physical Characterization:

Certified by:

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

* 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

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

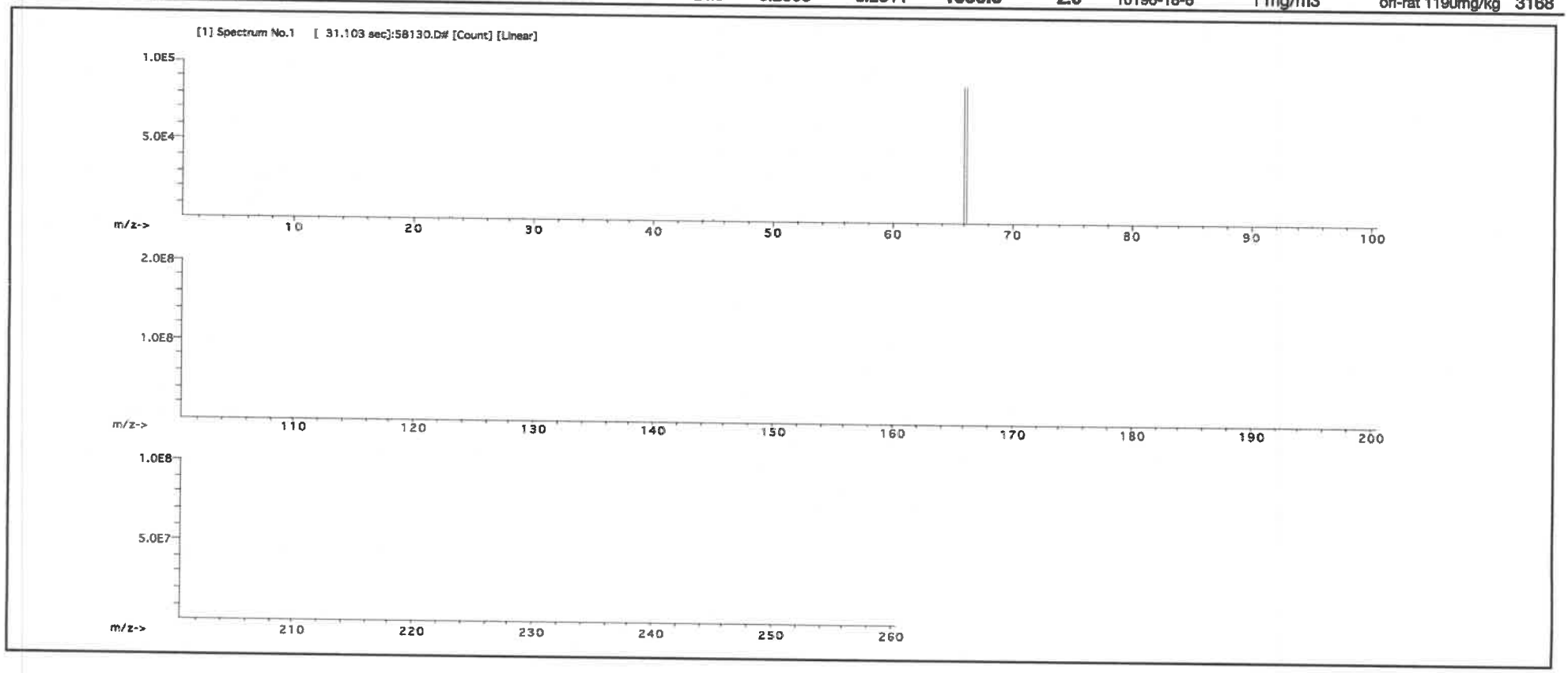
CERTIFIED WEIGHT REPORT:

Part Number:	**58030**	R → 1/13/25	**Solvent:**	**Lot #** 24012496	Nitric Acid
Lot Number:	**121724**				
Description:	**Zinc (Zn)**	M6145	2%	40.0 (mL)	Nitric Acid
Expiration Date:	121727				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**1000**				
NIST Test Number:	6UTB	5E-05 Balance Uncertainty			
Weight shown below was diluted to (mL):	2000.1	0.10 Flask Uncertainty			

Aleah O'Brady

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

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	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	8.2308	8.2311	**1000.0**	**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:

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).

Hydrochloric Acid, 36.5–38.0%
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis

avantor™ | J.T.Baker®

M6151

R-> 1/15/25

Material No.: 9530-33
Batch No.: 22G2862015
Manufactured Date: 2022-06-15
Retest Date: 2027-06-14
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
ACS – Assay (as HCl) (by acid-base titrn)	36.5 – 38.0 %	37.9 %
ACS – Color (APHA)	≤ 10	5
ACS – Residue after Ignition	≤ 3 ppm	< 1 ppm
ACS – Specific Gravity at 60°/60°F	1.185 – 1.192	1.191
ACS – Bromide (Br)	≤ 0.005 %	< 0.005 %
ACS – Extractable Organic Substances	≤ 5 ppm	< 1 ppm
ACS – Free Chlorine (as Cl_2)	≤ 0.5 ppm	< 0.5 ppm
Phosphate (PO_4)	≤ 0.05 ppm	< 0.03 ppm
Sulfate (SO_4)	≤ 0.5 ppm	< 0.3 ppm
Sulfite (SO_3)	≤ 0.8 ppm	0.3 ppm
Ammonium (NH_4)	≤ 3 ppm	< 1 ppm
Trace Impurities – Arsenic (As)	≤ 0.010 ppm	< 0.003 ppm
Trace Impurities – Aluminum (Al)	≤ 10.0 ppb	1.3 ppb
Arsenic and Antimony (as As)	≤ 5.0 ppb	< 3.0 ppb
Trace Impurities – Barium (Ba)	≤ 1.0 ppb	0.2 ppb
Trace Impurities – Beryllium (Be)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Bismuth (Bi)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Boron (B)	≤ 20.0 ppb	< 5.0 ppb
Trace Impurities – Cadmium (Cd)	≤ 1.0 ppb	< 0.3 ppb
Trace Impurities – Calcium (Ca)	≤ 50.0 ppb	163.0 ppb
Trace Impurities – Chromium (Cr)	≤ 1.0 ppb	0.7 ppb
Trace Impurities – Cobalt (Co)	≤ 1.0 ppb	< 0.3 ppb
Trace Impurities – Copper (Cu)	≤ 1.0 ppb	< 0.1 ppb
Trace Impurities – Gallium (Ga)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Germanium (Ge)	≤ 3.0 ppb	< 2.0 ppb
Trace Impurities – Gold (Au)	≤ 4.0 ppb	0.6 ppb
Heavy Metals (as Pb)	≤ 100 ppb	< 50 ppb
Trace Impurities – Iron (Fe)	≤ 15 ppb	6 ppb

>>> Continued on page 2 >>>

Hydrochloric Acid, 36.5-38.0%
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis

avantor™ | J.T.Baker®

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

Test	Specification	Result
Trace Impurities - Lead (Pb)	≤ 1.0 ppb	< 0.5 ppb
Trace Impurities - Lithium (Li)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities - Magnesium (Mg)	≤ 10.0 ppb	2.9 ppb
Trace Impurities - Manganese (Mn)	≤ 1.0 ppb	< 0.4 ppb
Trace Impurities - Mercury (Hg)	≤ 0.5 ppb	0.1 ppb
Trace Impurities - Molybdenum (Mo)	≤ 10.0 ppb	< 3.0 ppb
Trace Impurities - Nickel (Ni)	≤ 4.0 ppb	< 0.3 ppb
Trace Impurities - Niobium (Nb)	≤ 1.0 ppb	0.8 ppb
Trace Impurities - Potassium (K)	≤ 9.0 ppb	< 2.0 ppb
Trace Impurities - Selenium (Se), For Information Only		< 1.0 ppb
Trace Impurities - Silicon (Si)	≤ 100.0 ppb	< 10.0 ppb
Trace Impurities - Silver (Ag)	≤ 1.0 ppb	0.5 ppb
Trace Impurities - Sodium (Na)	≤ 100.0 ppb	2.3 ppb
Trace Impurities - Strontium (Sr)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities - Tantalum (Ta)	≤ 1.0 ppb	1.6 ppb
Trace Impurities - Thallium (Tl)	≤ 5.0 ppb	< 2.0 ppb
Trace Impurities - Tin (Sn)	≤ 5.0 ppb	4.0 ppb
Trace Impurities - Titanium (Ti)	≤ 1.0 ppb	1.5 ppb
Trace Impurities - Vanadium (V)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities - Zinc (Zn)	≤ 5.0 ppb	0.8 ppb
Trace Impurities - Zirconium (Zr)	≤ 1.0 ppb	0.3 ppb

>>> Continued on page 3 >>>

Hydrochloric Acid, 36.5–38.0%
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis

avantor™ | J.T.Baker®

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

Test	Specification	Result

For Laboratory,Research,or Manufacturing Use
Product Information (not specifications):
Appearance (clear, fuming liquid)
Meets ACS Specifications
Storage Condition: Store below 25 °C.

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

James T Ethier

Jamie Ethier
Vice President Global Quality

Nitric Acid 69%
CMOS

avantor™ | J.T.Baker®

R-02102/2025

M-6158

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

Certificate of Analysis

Test	Specification	Result
Assay (HNO_3)	69.0 - 70.0 %	69.7 %
Appearance	Passes Test	Passes Test
Color (APHA)	≤ 10	5
Residue after Ignition	≤ 2 ppm	1 ppm
Chloride (Cl)	≤ 0.08 ppm	< 0.03 ppm
Phosphate (PO_4)	≤ 0.10 ppm	< 0.03 ppm
Sulfate (SO_4)	≤ 0.2 ppm	< 0.2 ppm
Trace Impurities - Aluminum (Al)	≤ 40.0 ppb	< 1.0 ppb
Arsenic and Antimony (as As)	≤ 5.0 ppb	< 2.0 ppb
Trace Impurities - Barium (Ba)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Beryllium (Be)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Bismuth (Bi)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities - Boron (B)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities - Cadmium (Cd)	≤ 50 ppb	< 1 ppb
Trace Impurities - Calcium (Ca)	≤ 50.0 ppb	2.3 ppb
Trace Impurities - Chromium (Cr)	≤ 30.0 ppb	< 1.0 ppb
Trace Impurities - Cobalt (Co)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Copper (Cu)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Gallium (Ga)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Germanium (Ge)	≤ 20 ppb	< 10 ppb
Trace Impurities - Gold (Au)	≤ 20 ppb	< 5 ppb
Heavy Metals (as Pb)	≤ 100 ppb	100 ppb
Trace Impurities - Iron (Fe)	≤ 40.0 ppb	< 1.0 ppb
Trace Impurities - Lead (Pb)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities - Lithium (Li)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Magnesium (Mg)	≤ 20 ppb	< 1 ppb
Trace Impurities - Manganese (Mn)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Nickel (Ni)	≤ 20.0 ppb	< 5.0 ppb

>>> Continued on page 2 >>>

Nitric Acid 69%
CMOS

avantor™ | J.T.Baker®

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

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

>>> Continued on page 3 >>>

Nitric Acid 69%
CMOS

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

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:	QCP-CICV-1
Lot Number:	V2-MEB744107
Matrix:	7% (v/v) HNO3
Value / Analyte(s):	2 500 µg/mL ea: Calcium, Potassium, Magnesium, Sodium, 1 000 µg/mL ea: Aluminum, Barium, 500 µg/mL ea: Iron, 250 µg/mL ea: Nickel, Vanadium, Zinc, Cobalt, Manganese, 125 µg/mL ea: Silver, Copper, 100 µg/mL ea: Chromium, 25 µg/mL ea: Beryllium

Second Source: Whenever possible, this solution was manufactured from a second set of concentrates in our manufacturing facility.

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	**1 000 ± 4 µg/mL**	**Barium, Ba**	**1 000 ± 6 µg/mL**
Beryllium, Be	**24.98 ± 0.12 µg/mL**	**Calcium, Ca**	**2 500 ± 8 µg/mL**
Chromium, Cr	**99.9 ± 0.6 µg/mL**	**Cobalt, Co**	**250.2 ± 1.2 µg/mL**
Copper, Cu	**125.0 ± 0.5 µg/mL**	**Iron, Fe**	**500.0 ± 2.2 µg/mL**
Magnesium, Mg	**2 500 ± 11 µg/mL**	**Manganese, Mn**	**249.9 ± 1.1 µg/mL**
Nickel, Ni	**250.0 ± 1.2 µg/mL**	**Potassium, K**	**2 500 ± 11 µg/mL**
Silver, Ag	**125.0 ± 0.6 µg/mL**	**Sodium, Na**	**2 500 ± 11 µg/mL**
Vanadium, V	**250.0 ± 1.1 µg/mL**	**Zinc, Zn**	**249.9 ± 1.1 µg/mL**

Density: 1.081 g/mL (measured at 20 ± 4 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
Cu	ICP Assay	3114	120618
Cu	EDTA	928	928
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Na	ICP Assay	3152a	200413
Na	Gravimetric		See Sec. 4.2
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
V	ICP Assay	3165	160906
V	EDTA	928	928
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

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

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

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

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

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

May 22, 2024

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

11.2 Lot Expiration Date

- **May 22, 2029**

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

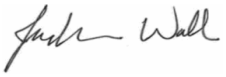
Certificate Prepared By:

Justin Dirico
Stock Processing Supervisor



Certificate Approved By:

Jodie Wall
Stock VSM Coordinator



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



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:	QCP-CICV-2
Lot Number:	U2-MEB733713
Matrix:	3% (w/v) Tartaric acid 1% (v/v) HNO3
Value / Analyte(s):	500 µg/mL ea: Antimony

Second Source: Whenever possible, this solution was manufactured from a second set of concentrates in our manufacturing facility.

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Antimony, Sb	**500.0 ± 2.8 µg/mL**		

Density: 1.017 g/mL (measured at 20 ± 4 ºC)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Sb	ICP Assay	3102a	140911

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

Characterization of CRM/RM by Two or More Methods

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

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

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$
w_i = the weighting factors for each method calculated using the inverse square of the variance:
$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2
$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method
u_{bb} = bottle to bottle homogeneity standard uncertainty
u_{lts} = long term stability standard uncertainty (storage)
u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with
$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2
$u_{char\ a}$ = the errors from characterization
u_{bb} = bottle to bottle homogeneity standard uncertainty
u_{lts} = long term stability standard uncertainty (storage)
u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

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

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

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

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

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 01, 2023

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

11.2 Lot Expiration Date

- **June 01, 2028**

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

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

11.3 Period of Validity

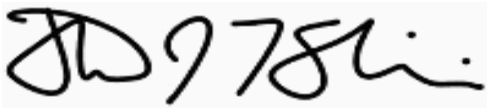
- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



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:	QCP-CICV-3
Lot Number:	V2-MEB749572
Matrix:	7% (v/v) HNO3
Value / Analyte(s):	500 µg/mL ea: Arsenic, Lead, Selenium, Thallium, 250 µg/mL ea: Cadmium

Second Source: Whenever possible, this solution was manufactured from a second set of concentrates in our manufacturing facility.

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Arsenic, As	**500.0 ± 3.1 µg/mL**	**Cadmium, Cd**	**250.1 ± 1.1 µg/mL**
Lead, Pb	**500.0 ± 2.3 µg/mL**	**Selenium, Se**	**500.0 ± 3.2 µg/mL**
Thallium, Tl	**500.0 ± 3.0 µg/mL**		

Density: 1.040 g/mL (measured at 20 ± 4 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 (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

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

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

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

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

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 02, 2025

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

11.2 Lot Expiration Date

- **January 02, 2030**

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

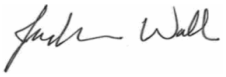
Certificate Prepared By:

Justin Dirico
Stock Processing Supervisor



Certificate Approved By:

Jodie Wall
Stock VSM Coordinator



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



R -> 2/13/25

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

Certified Reference Material CRM

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

CERTIFIED WEIGHT REPORT:

Part Number: 58112
Lot Number: 011525
Description: Magnesium (Mg)

M 6171

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

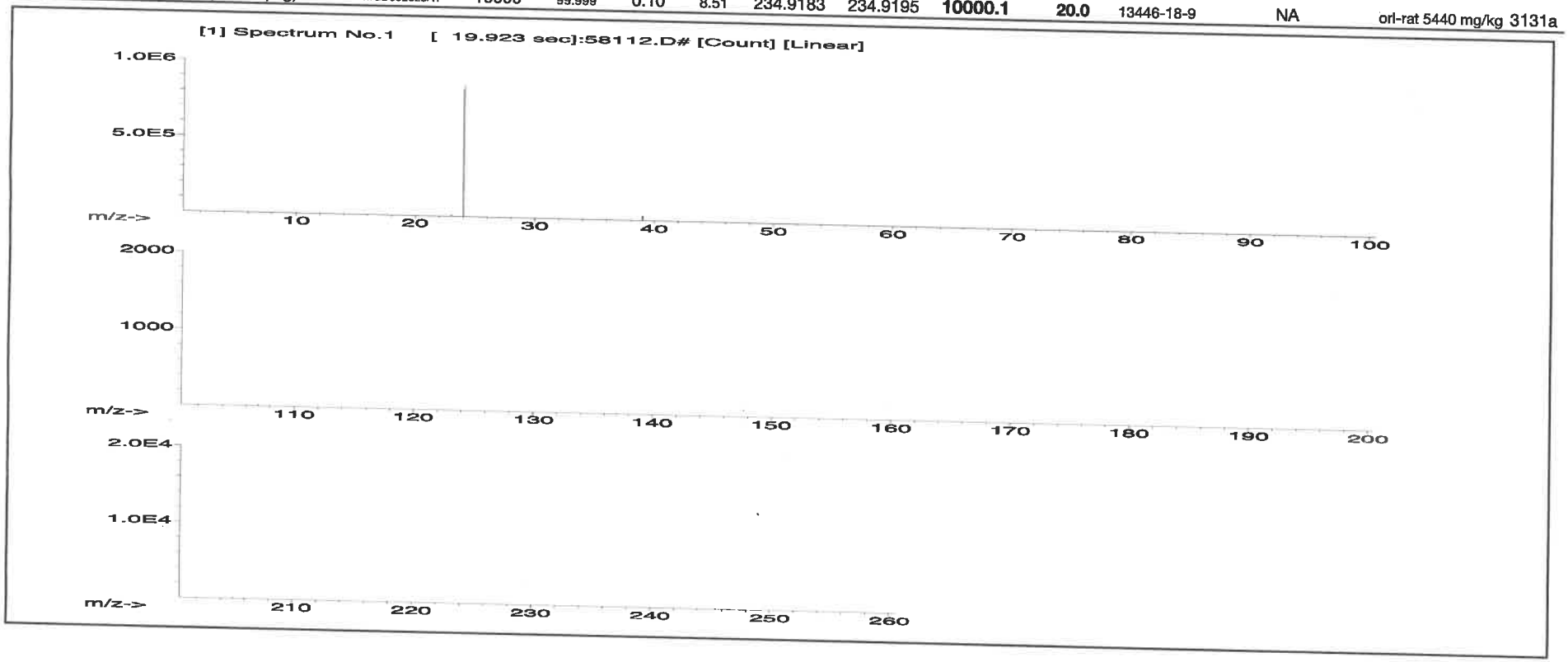
Expiration Date: 011528
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB

5E-05	Balance Uncertainty	
0.100	Flask Uncertainty	

Weight shown below was diluted to (mL): 2000.07

Formulated By:	Benson Chan	011525
Reviewed By:	Pedro L. Rentas	011525

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Magnesium nitrate hexahydrate (Mg)	IN030	MGD052023A1	10000	99.999	0.10	8.51	234.9183	234.9195	**10000.1**	**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:

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

M6174
R-> 5/5/24

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 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:	V2-MEB742428
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	50.03 ± 0.30 µg/mL	Calcium, Ca	5 000 ± 16 µg/mL
Chromium, Cr	200.0 ± 1.1 µg/mL	Cobalt, Co	500.0 ± 2.3 µg/mL
Copper, Cu	250.0 ± 1.1 µg/mL	Iron, Fe	1 000 ± 4 µg/mL
Magnesium, Mg	5 000 ± 22 µg/mL	Manganese, Mn	499.9 ± 2.2 µg/mL
Nickel, Ni	500.1 ± 2.3 µg/mL	Potassium, K	5 000 ± 22 µg/mL
Silver, Ag	250.0 ± 1.1 µg/mL	Sodium, Na	5 000 ± 22 µg/mL
Vanadium, V	500.0 ± 2.2 µg/mL	Zinc, Zn	500.0 ± 2.2 µg/mL

Density: 1.117 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	160729
Ag	Volhard	999c	999c
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
Ba	ICP Assay	3104a	140909
Ba	Gravimetric		See Sec. 4.2
Be	ICP Assay	3105a	090514
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Co	ICP Assay	3113	190630
Co	EDTA	928	928
Cr	ICP Assay	3112a	170630
Cu	ICP Assay	3114	120618
Cu	EDTA	928	928
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Na	ICP Assay	3152a	200413
Na	Gravimetric		See Sec. 4.2
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
V	ICP Assay	3165	160906
V	EDTA	928	928
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\ (u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\ (u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

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

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

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

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

Note: This solution contains Silver (Ag), please refer to our Sample Preparation Guide for more information (https://www.inorganicventures.com/sample-preparation-guide/samples-containing-silver)

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 22, 2024

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

11.2 Lot Expiration Date

- March 22, 2029

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Uyen Truong
Custom Processing Supervisor



Certificate Approved By:

Jodie Wall
Stock VSM Coordinator



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



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

Certified Reference Material CRM

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

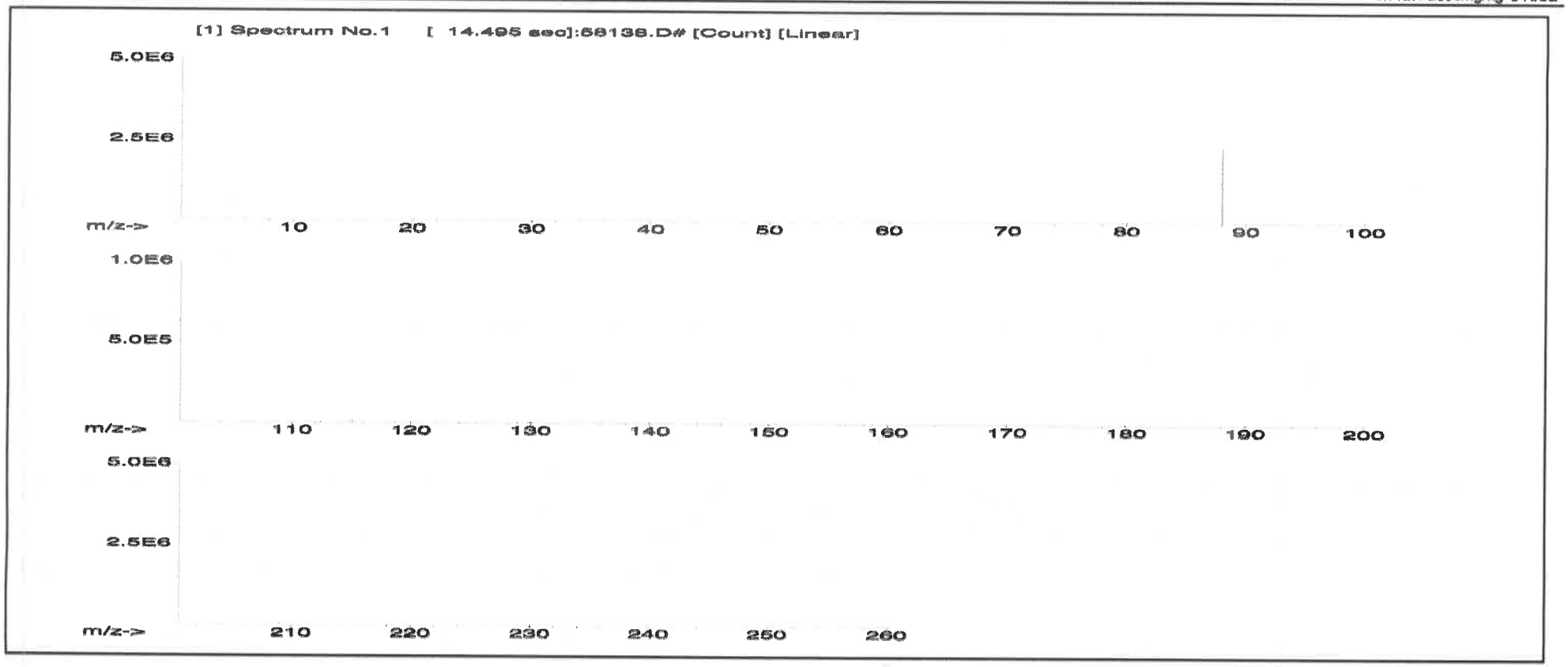
CERTIFIED WEIGHT REPORT:

R->8/6/29

Part Number:	57038		**Lot #**		
Lot Number:	092724	**Solvent:**	24002546	Nitric Acid	
Description:	Strontium (Sr)				
		M6176 2%	40.0 (mL)	Nitric Acid	
Expiration Date:	092727				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	1000				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Weight shown below was diluted to (mL):	2000.07	0.100	Flask Uncertainty		

Formulated By:	Benson Chan	092724
Reviewed By:	Pedro L. Rentas	092724

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. Strontium nitrate (Sr)	IN017	SRZ022018A1	1000	99.997	0.10	41.2	4.85470	4.85481	**1000.0**	**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:

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).

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

Certified Reference Material CRM

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

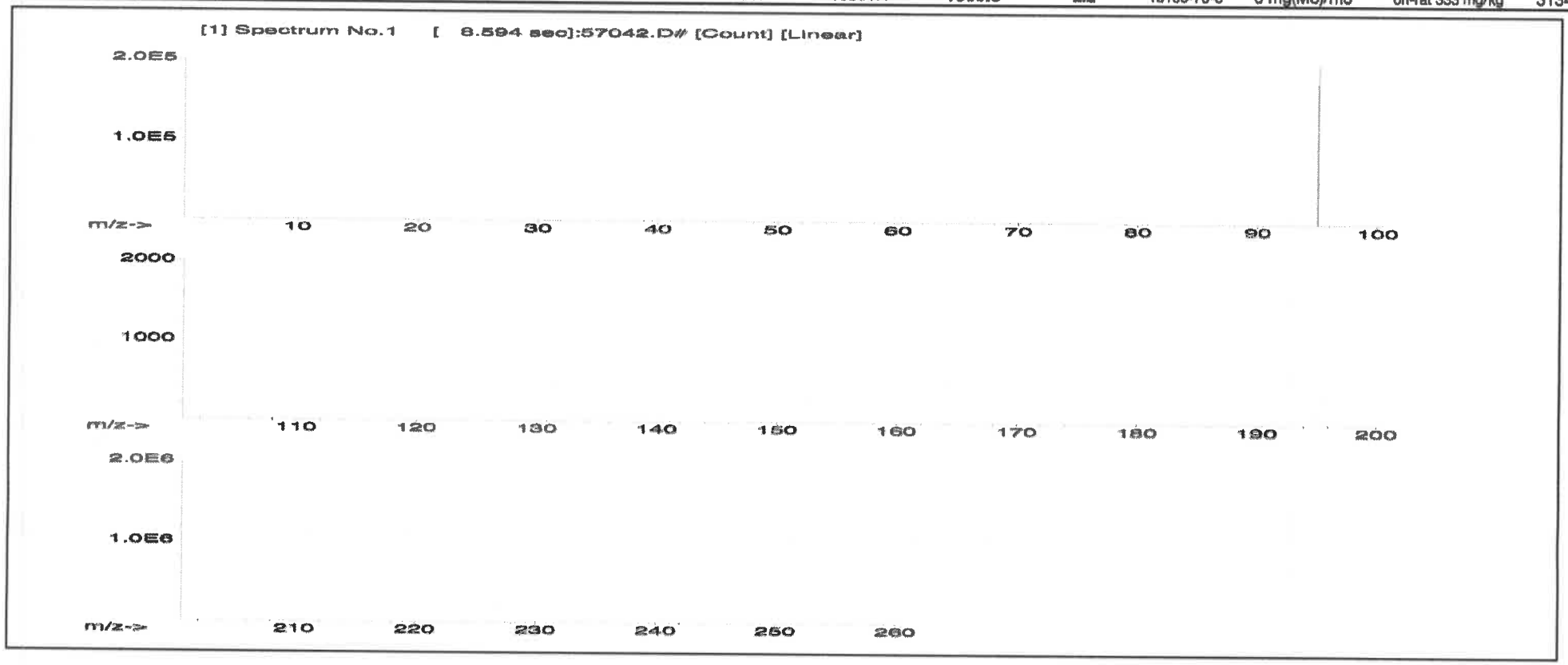
CERTIFIED WEIGHT REPORT:

R→ 8/6/25
M6177

		Lot #	Solvent:		
Part Number:	57042	MKBQ8597V	Ammonium hydroxide		
Lot Number:	080525	080525	ASTM Type 1 Water		
Description:	Molybdenum (Mo)	0.5%	10.0 (mL)	Ammonium hydroxide	
Expiration Date:	080528				
Recommended Storage:	Ambient (15 - 30 °C)				
Nominal Concentration (µg/mL):	1000				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Volume shown below was diluted to (mL):	1999.41	0.058	Flask Uncertainty		

Formulated By:	Benson Chan	080525
Reviewed By:	Pedro L. Rentas	080525

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Ammonium molybdate (Mo)	58142	112322	0.1000	200.0	0.084	1000	10001.4	**1000.5**	**2.2**	13106-76-8	5 mg(Mo)/m3	orl-rat 333 mg/kg	3134



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	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 by an ISO17025 certified organization with weights traceable through NIST to the SI kilogram (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).
Rev 1.0, 2/25/2025

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

Certified Reference Material CRM

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

CERTIFIED WEIGHT REPORT:

R>8/6/28
M6178

Part Number:	**57082**		**Lot #**		
Lot Number:	**031525**	**Solvent:**	24014457	Nitric Acid	
Description:	**Lead (Pb)**		2%	40.0 (mL)	Nitric Acid
Expiration Date:	031528				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**1000**				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Weight shown below was diluted to (mL):	2000.07	0.10	Flask Uncertainty		

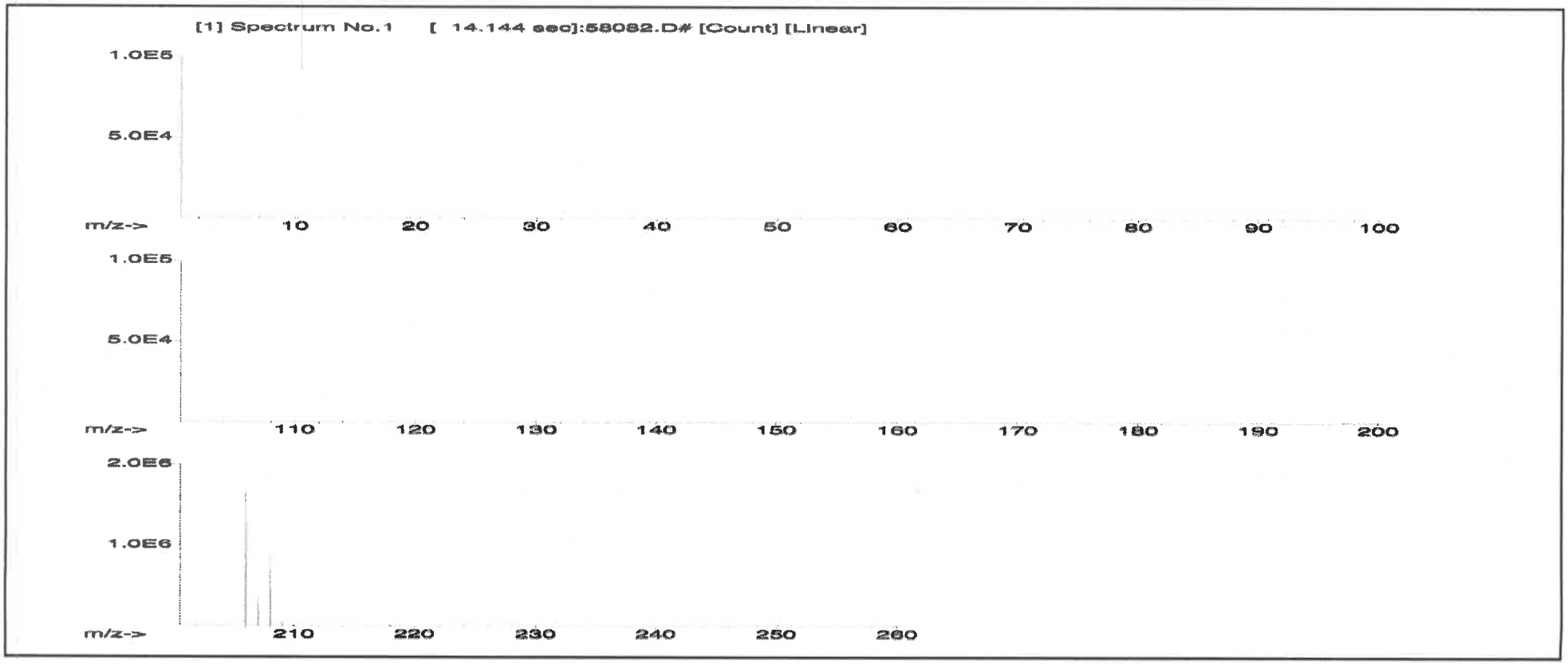
Giovanni Esposito

Formulated By:	Giovanni Esposito	031525

Pedro Rentas

Reviewed By:	Pedro L. Rentas	031525

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	3.20015	3.20067	**1000.2**	**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	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	T	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Certified by:

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



* 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

M6179
R -> 6/2/24

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 883.01
ACCREDITED Reference Material Producer Certificate 883.02

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



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:	WW-LFS-1
Lot Number:	W2-MEB752149
Matrix:	5% (v/v) HNO3

M6180
R-7/22/23

Value / Analyte(s):	1 000 µg/mL ea: Potassium,	
	600 µg/mL ea: Phosphorus,	
	300 µg/mL ea: Sodium,	Iron,
	200 µg/mL ea: Magnesium, 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	200.2 ± 0.7 µg/mL	Arsenic, As	80.1 ± 0.5 µg/mL
Barium, Ba	20.02 ± 0.12 µg/mL	Beryllium, Be	20.02 ± 0.11 µg/mL
Boron, B	30.02 ± 0.15 µg/mL	Cadmium, Cd	20.04 ± 0.09 µg/mL
Calcium, Ca	100.1 ± 0.3 µg/mL	Cerium, Ce	200.2 ± 1.0 µg/mL
Chromium, Cr	40.02 ± 0.26 µg/mL	Cobalt, Co	20.03 ± 0.09 µg/mL
Copper, Cu	30.03 ± 0.13 µg/mL	Iron, Fe	300.3 ± 1.3 µg/mL
Lead, Pb	100.1 ± 0.5 µg/mL	Lithium, Li	20.03 ± 0.09 µg/mL
Magnesium, Mg	200.2 ± 0.9 µg/mL	Manganese, Mn	19.99 ± 0.09 µg/mL
Mercury, Hg	70.0 ± 0.3 µg/mL	Nickel, Ni	50.05 ± 0.22 µg/mL
Phosphorus, P	600.5 ± 2.9 µg/mL	Potassium, K	1 001 ± 4 µg/mL
Selenium, Se	200.2 ± 1.1 µg/mL	Silver, Ag	7.52 ± 0.03 µg/mL
Sodium, Na	300.3 ± 1.3 µg/mL	Strontium, Sr	20.02 ± 0.10 µg/mL
Thallium, Tl	200.2 ± 1.0 µg/mL	Vanadium, V	30.02 ± 0.13 µg/mL
Zinc, Zn	20.05 ± 0.09 µg/mL		

Density: 1.037 g/mL (measured at 20 ± 5 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	160729
Ag	Volhard	999c	999c
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
As	ICP Assay	3103a	100818
B	ICP Assay	3107	190605
B	Calculated		See Sec. 4.2
Ba	ICP Assay	3104a	140909
Ba	Gravimetric		See Sec. 4.2
Be	ICP Assay	3105a	090514
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Cd	ICP Assay	3108	130116
Cd	EDTA	928	928
Ce	ICP Assay	3110	160830
Ce	EDTA	928	928
Co	ICP Assay	3113	190630
Co	EDTA	928	928
Cr	ICP Assay	3112a	170630
Cu	ICP Assay	3114	120618
Cu	EDTA	928	928
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
Hg	ICP Assay	3133	160921
Hg	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Li	ICP Assay	3129a	100714
Li	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Na	ICP Assay	3152a	200413
Na	Gravimetric		See Sec. 4.2
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Se	ICP Assay	3149	100901
Sr	EDTA	928	928
Sr	ICP Assay	Traceable to 3153a	K2-SR650985
Tl	ICP Assay	3158	151215
V	ICP Assay	3165	160906
V	EDTA	928	928
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

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

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

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 25° C to minimize the effects of transpiration. Use at 20° ± 5° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

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

Note: This solution contains Silver (Ag), please refer to our Sample Preparation Guide for more information (https://www.inorganicventures.com/sample-preparation-guide/samples-containing-silver)

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

April 08, 2025

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

11.2 Lot Expiration Date

- April 08, 2029

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Justin Dirico
Stock Processing Supervisor



Certificate Approved By:

Jodie Wall
Stock VSM Coordinator



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



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

M6181
R -> 7/22/28

1.0 ACCREDITATION / REGISTRATION

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

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-2
Lot Number:	V2-MEB743480
Matrix:	5% (v/v) HNO3 tr. HF
Value / Analyte(s):	200 µg/mL ea: Silica, 80 µg/mL ea: Antimony, 70 µg/mL ea: Tin, 40 µg/mL ea: Molybdenum, 20 µg/mL ea: Titanium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Antimony, Sb	80.1 ± 0.5 µg/mL	Molybdenum, Mo	40.05 ± 0.22 µg/mL
Silica, SiO2	200.3 ± 1.4 µg/mL	Tin, Sn	70.1 ± 0.4 µg/mL
Titanium, Ti	20.03 ± 0.12 µg/mL		

Density: 1.025 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Mo	ICP Assay	3134	130418
Sb	ICP Assay	3102a	140911
SiO2	Calculated		See Sec. 4.2
Sn	ICP Assay	3161a	140917
Ti	ICP Assay	traceable to 3162a	T2-TI725816

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

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

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

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

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

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

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

May 07, 2024

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

11.2 Lot Expiration Date

- May 07, 2029

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Justin Dirico
Stock Processing Supervisor



Certificate Approved By:

Thomas Kozikowski
Stock VS Manager



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



R→03/06/24

QATS LABORATORY INORGANIC REFERENCE MATERIAL INTERFERENCE CHECK SAMPLE SET FOR ICP-AES (ICSA WITH ICSB)

NOTE: These instructions are for advisory purposes only. If any apparent conflict exists between these instructions and the analytical protocol or your contract, disregard these instructions.

APPLICATION: For use with the CLP SFAM01.0 SOW and revisions.

CAUTION: Read instructions carefully before opening bottle(s) and proceeding with the analyses.

M6182

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,

The Quality Assurance Technical Support (QATS) contract is operated by APTIM Federal Services, LLC.

Cd, Co, Cr, Cu, Mn, Ni, Pb, Tl, Se, V, and Zn. This instruction sheet provides the nominal values for ICP-AES Part A and Part B target analytes when diluted as directed.

Using Class "A" glassware, preparation and analysis must be performed according to the following instructions:

ICSA-1211, Interferents: Pipet 10 mL of the ICSA solution into a 100 mL volumetric flask and dilute to volume with 2% v/v HNO_3. Analyze this ICSA solution by ICP-AES.

ICSB-0710, Analytes, mixed with ICSA-1211, Interferents: Pipet 10 mL of the ICSA solution and 10 mL of the ICSB solution into a 100 mL volumetric flask and dilute to volume with 2% v/v HNO_3. Analyze this ICSAB solution by ICP-AES.

(D) *"CERTIFIED VALUE" CONCENTRATIONS OF QATS ICP-AES ICS SOLUTION(S)*

The "Certified Value" concentrations of the elements, listed in Table 1 below, were derived from statistically pooled analysis results from the following sources, if available: QATS Laboratory, CLP laboratories, Quarterly Blind (QB)/Proficiency Testing (PT) events, CLP pre-award events, and external referee laboratories.

Table 1. "CERTIFIED VALUES" FOR INTERFERENCE CHECK SAMPLE ICP-AES ICSA-1211, AND ICSA-1211 MIXED WITH ICSB-0710

Element	CRQL	Part A (µg/L)	Low Limit (µg/L)	High Limit (µg/L)	Part A +Part B (µg/L)	Low Limit (µg/L)	High Limit (µg/L)
Al	200	255000	216000	294000	247000	209000	285000
Sb	60	(0.0)	-60.0	60.0	618	525	711
As	10	(0.0)	-10.0	10.0	104	88.4	120
Ba	200	(6.0)	-194	206	(537)	337	737
Be	5.0	(0.0)	-5.0	5.0	495	420	570
Cd	5.0	(1.0)	-4.0	6.0	972	826	1120
Ca	5000	245000	208000	282000	235000	199000	271000
Cr	10	(52.0)	42.0	62.0	542	460	624
Co	50	(0.0)	-50.0	50.0	476	404	548
Cu	25	(2.0)	-23.0	27.0	511	434	588
Fe	100	101000	85600	116500	99300	84400	114500
Pb	10	(0.0)	-10.0	10.0	(49.0)	39.0	59.0
Mg	5000	255000	216000	294000	248000	210000	286000
Mn	15	(7.0)	-8.0	22.0	507	430	584
Ni	40	(2.0)	-38.0	42.0	954	810	1100
Se	35	(0.0)	-35.0	35.0	(46.0)	11.0	81.0
Ag	10	(0.0)	-10.0	10.0	201	170	232
Tl	25	(0.0)	-25.0	25.0	(108)	83.0	133
V	50	(0.0)	-50.0	50.0	491	417	565
Zn	60	(0.0)	-60.0	60.0	952	809	1095

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.

R→03/06/24

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

M6184

(A) *SAMPLE DESCRIPTION*

Enclosed is a set of one (1) or more bottles of Aqueous Reference Material, each composed of metals at various concentrations and prepared with nitrate salts and oxy-acids of the respective elements in a 5% nitric acid matrix. **For the reference material source in reporting ICSA and ICSAB mixture use "USEPA". For the reference material lot number for the ICSA use "ICSA-1211" and for the ICSAB mixture use "ICSA-1211+ICSB-0710".**

CAUTION: The bottle(s) should be protected from light during storage to ensure the stability of silver which is contained in the ICSB solution. The bottle(s) should be stored at room temperature. **Do not allow the solution(s) to freeze.**

(B) *BREAKAGE OR MISSING ITEMS*

Check the contents of the shipment carefully for any broken, leaking, or missing items. Check that the seal is intact on each bottle. Refer to the enclosed chain of custody record. Report any problems to Mr. Keith Strout, APTIM Federal Services, LLC, at (702) 895-8722. If requested, return the chain-of-custody record with appropriate annotations and signatures to the address provided below.

QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
APTIM Federal Services, LLC
2700 Chandler Avenue - Building C
Las Vegas, NV 89120

(C) *ANALYSIS OF SAMPLES*

The interference check sample set is to be used to verify inter-element and background correction factors of inductively-coupled plasma (ICP) spectrometers. This reference material set consists of two (2) concentrated solutions. The ICSA solution contains the four (4) interferent elements: Al, Ca, Fe, and Mg. The ICSB solution contains the analytes: Ag, As, Sb, Ba, Be,

The Quality Assurance Technical Support (QATS) contract is operated by APTIM Federal Services, LLC.

Cd, Co, Cr, Cu, Mn, Ni, Pb, Tl, Se, V, and Zn. This instruction sheet provides the nominal values for ICP-AES Part A and Part B target analytes when diluted as directed.

Using Class "A" glassware, preparation and analysis must be performed according to the following instructions:

ICSA-1211, Interferents: Pipet 10 mL of the ICSA solution into a 100 mL volumetric flask and dilute to volume with 2% v/v HNO_3. Analyze this ICSA solution by ICP-AES.

ICSB-0710, Analytes, mixed with ICSA-1211, Interferents: Pipet 10 mL of the ICSA solution and 10 mL of the ICSB solution into a 100 mL volumetric flask and dilute to volume with 2% v/v HNO_3. Analyze this ICSAB solution by ICP-AES.

(D) *"CERTIFIED VALUE" CONCENTRATIONS OF QATS ICP-AES ICS SOLUTION(S)*

The "Certified Value" concentrations of the elements, listed in Table 1 below, were derived from statistically pooled analysis results from the following sources, if available: QATS Laboratory, CLP laboratories, Quarterly Blind (QB)/Proficiency Testing (PT) events, CLP pre-award events, and external referee laboratories.

Table 1. "CERTIFIED VALUES" FOR INTERFERENCE CHECK SAMPLE ICP-AES ICSA-1211, AND ICSA-1211 MIXED WITH ICSB-0710

Element	CRQL	Part A (µg/L)	Low Limit (µg/L)	High Limit (µg/L)	Part A +Part B (µg/L)	Low Limit (µg/L)	High Limit (µg/L)
Al	200	255000	216000	294000	247000	209000	285000
Sb	60	(0.0)	-60.0	60.0	618	525	711
As	10	(0.0)	-10.0	10.0	104	88.4	120
Ba	200	(6.0)	-194	206	(537)	337	737
Be	5.0	(0.0)	-5.0	5.0	495	420	570
Cd	5.0	(1.0)	-4.0	6.0	972	826	1120
Ca	5000	245000	208000	282000	235000	199000	271000
Cr	10	(52.0)	42.0	62.0	542	460	624
Co	50	(0.0)	-50.0	50.0	476	404	548
Cu	25	(2.0)	-23.0	27.0	511	434	588
Fe	100	101000	85600	116500	99300	84400	114500
Pb	10	(0.0)	-10.0	10.0	(49.0)	39.0	59.0
Mg	5000	255000	216000	294000	248000	210000	286000
Mn	15	(7.0)	-8.0	22.0	507	430	584
Ni	40	(2.0)	-38.0	42.0	954	810	1100
Se	35	(0.0)	-35.0	35.0	(46.0)	11.0	81.0
Ag	10	(0.0)	-10.0	10.0	201	170	232
Tl	25	(0.0)	-25.0	25.0	(108)	83.0	133
V	50	(0.0)	-50.0	50.0	491	417	565
Zn	60	(0.0)	-60.0	60.0	952	809	1095

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.

Nitric Acid 69%
CMOS

M6187
R.D :- 08/08/25

avantor™ | J.T.Baker®

Material No.: 9606-03
Batch No.: 24H0162012
Manufactured Date: 2024-06-28
Retest Date: 2029-06-27
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay (HNO_3)	69.0 - 70.0 %	69.7 %
Appearance	Passes Test	Passes Test
Color (APHA)	≤ 10	5
Residue after Ignition	≤ 2 ppm	< 1 ppm
Chloride (Cl)	≤ 0.08 ppm	0.03 ppm
Phosphate (PO_4)	≤ 0.10 ppm	< 0.03 ppm
Sulfate (SO_4)	≤ 0.2 ppm	< 0.2 ppm
Trace Impurities - Aluminum (Al)	≤ 40.0 ppb	< 1.0 ppb
Arsenic and Antimony (as As)	≤ 5.0 ppb	< 2.0 ppb
Trace Impurities - Barium (Ba)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Beryllium (Be)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Bismuth (Bi)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities - Boron (B)	≤ 10.0 ppb	0.1 ppb
Trace Impurities - Cadmium (Cd)	≤ 50 ppb	< 1 ppb
Trace Impurities - Calcium (Ca)	≤ 50.0 ppb	0.3 ppb
Trace Impurities - Chromium (Cr)	≤ 30.0 ppb	0.1 ppb
Trace Impurities - Cobalt (Co)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Copper (Cu)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Gallium (Ga)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Germanium (Ge)	≤ 20 ppb	< 1 ppb
Trace Impurities - Gold (Au)	≤ 20 ppb	< 1 ppb
Heavy Metals (as Pb)	≤ 100 ppb	< 50 ppb
Trace Impurities - Iron (Fe)	≤ 40.0 ppb	< 1.0 ppb
Trace Impurities - Lead (Pb)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities - Lithium (Li)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Magnesium (Mg)	≤ 20 ppb	< 1 ppb
Trace Impurities - Manganese (Mn)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Nickel (Ni)	≤ 20.0 ppb	< 1.0 ppb

>>> Continued on page 2 >>>

Nitric Acid 69%
CMOS

avantor™ | J.T.Baker®

Material No.: 9606-03
Batch No.: 24H0162012

Test	Specification	Result
Trace Impurities – Niobium (Nb)	≤ 50.0 ppb	< 1.0 ppb
Trace Impurities – Potassium (K)	≤ 50 ppb	< 1 ppb
Trace Impurities – Silicon (Si)	≤ 50 ppb	1 ppb
Trace Impurities – Silver (Ag)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities – Sodium (Na)	≤ 150.0 ppb	< 1.0 ppb
Trace Impurities – Strontium (Sr)	≤ 30.0 ppb	< 1.0 ppb
Trace Impurities – Tantalum (Ta)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Thallium (Tl)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Tin (Sn)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities – Titanium (Ti)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Vanadium (V)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Zinc (Zn)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities – Zirconium (Zr)	≤ 10.0 ppb	< 1.0 ppb
Particle Count – 0.5 µm and greater	≤ 60 par/ml	13 par/ml
Particle Count – 1.0 µm and greater	≤ 10 par/ml	5 par/ml

>>> Continued on page 3 >>>

Nitric Acid 69%
CMOS

avantor™ | J.T.Baker®

Material No.: 9606-03
Batch No.: 24H0162012

Test	Specification	Result

For Microelectronic Use

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

Jamie Croak
Director Quality Operations, Bioscience Production

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

Certified Reference Material CRM

R 8/05/24

M6027

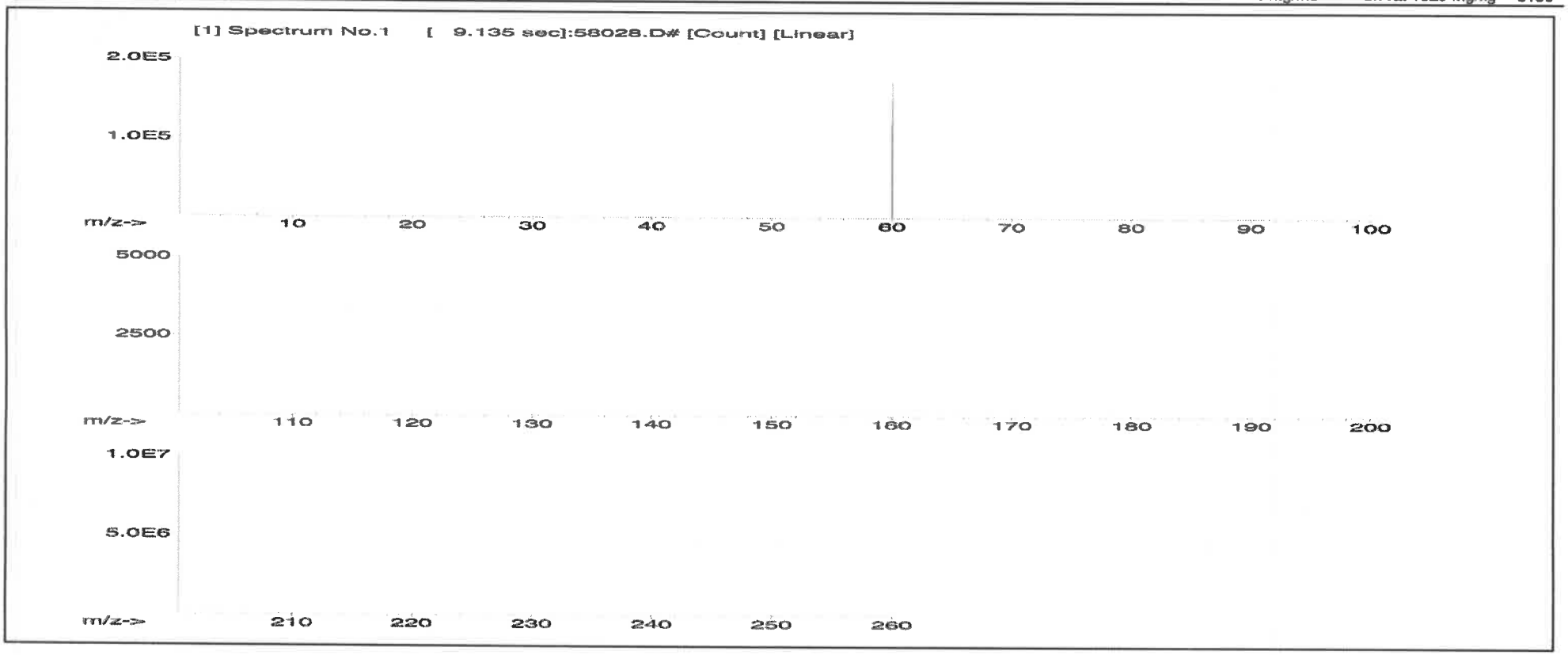
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:	
Part Number:	**57028**			
Lot Number:	**062024**	24002546	Nitric Acid	
Description:	**Nickel (Ni)**			
		2.0%	40.0 (mL)	Nitric Acid
Expiration Date:	062027			
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	062024
Reviewed By:	Pedro L. Rentas	062024

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 Spectrometry (ICP-MS):

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

(T) = Target analyte

Physical Characterization:

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).

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

Certified Reference Material CRM

M6030

R: 8/5/24

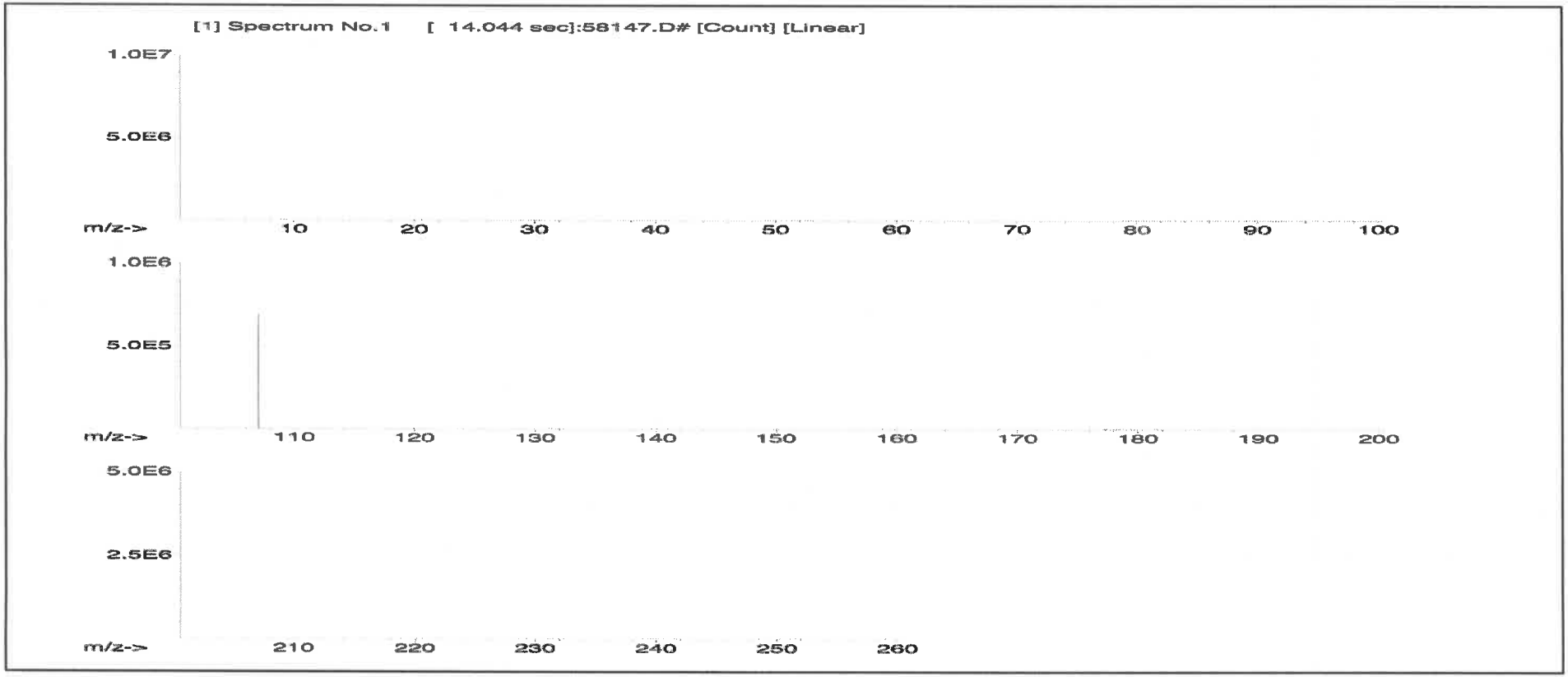
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

Part Number:	**57047**		**Lot #**		
Lot Number:	**122823**	**Solvent:**	24002546	Nitric Acid	
Description:	**Silver (Ag)**	2%	80.0 (mL)	Nitric Acid	
Expiration Date:	122826				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**1000**				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Weight shown below was diluted to (mL):	4000.30	0.058	Flask Uncertainty		

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

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Silver nitrate (Ag)	IN035	J0612AGA1	1000.0	99.9999	0.10	63.7	6.27992	6.27998	**1000.0**	**2.0**	7761-88-8	10 ug/m3	NA	3151



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.
* 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).

opened : 3/24/25

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

Certified Reference Material CRM

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

CERTIFIED WEIGHT REPORT:

M6160

Part Number: 57051
Lot Number: 071724
Description: Antimony (Sb)
Expiration Date: 071727
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Volume shown below was diluted to (mL): 2000.26

Lot #	Solvent:		
24002546	Nitric Acid		
2.0%	40.0 (mL)	Nitric Acid	

5E-05 Balance Uncertainty
0.058 Flask Uncertainty

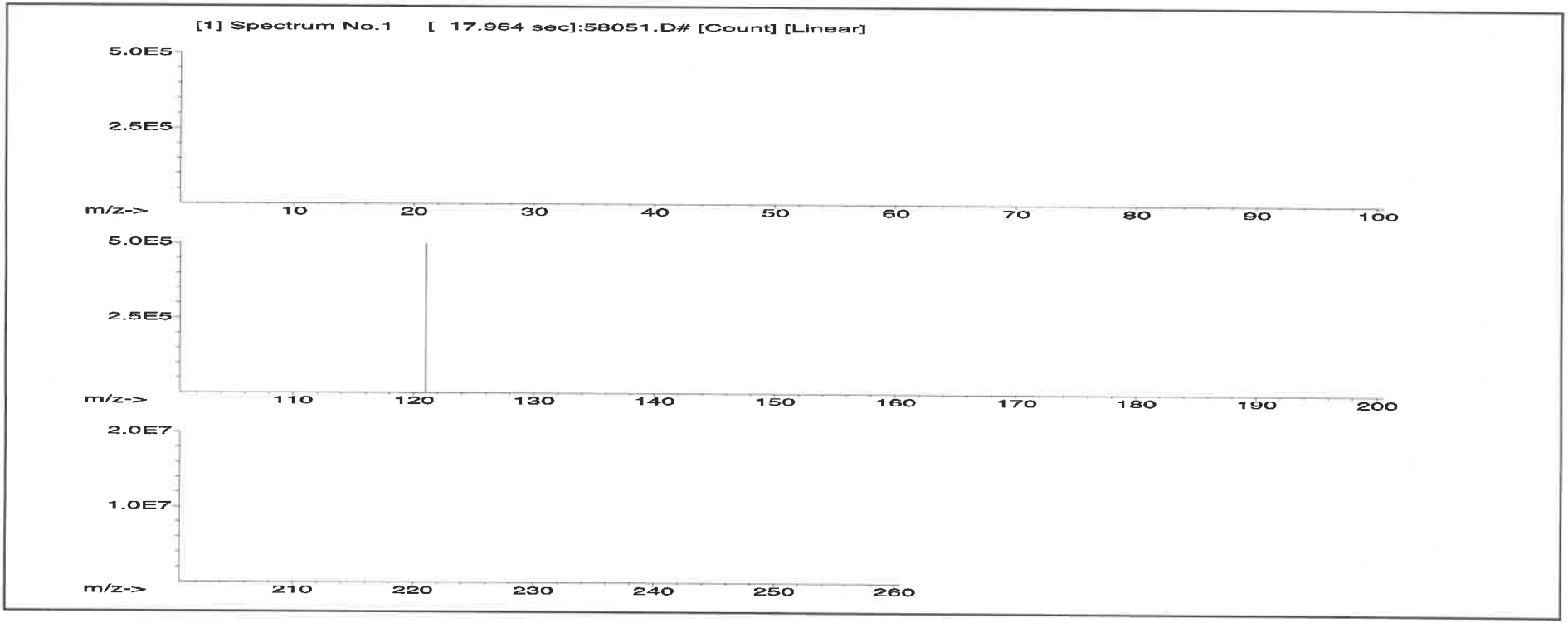
Giovanni Esposito

Formulated By:	Giovanni Esposito	071724

Pedro Rentas

Reviewed By:	Pedro L. Rentas	071724

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	060324	0.1000	200.0	0.084	1000	10001.4	**1000.0**	**2.2**	7440-36-0	0.5 mg/m3	orl-rat 7000 mg/kg	3102a



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

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

(T) = Target analyte

Physical Characterization:

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

Certified by:

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

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

Certified Reference Material CRM

R ! 8/5/24

M6023

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

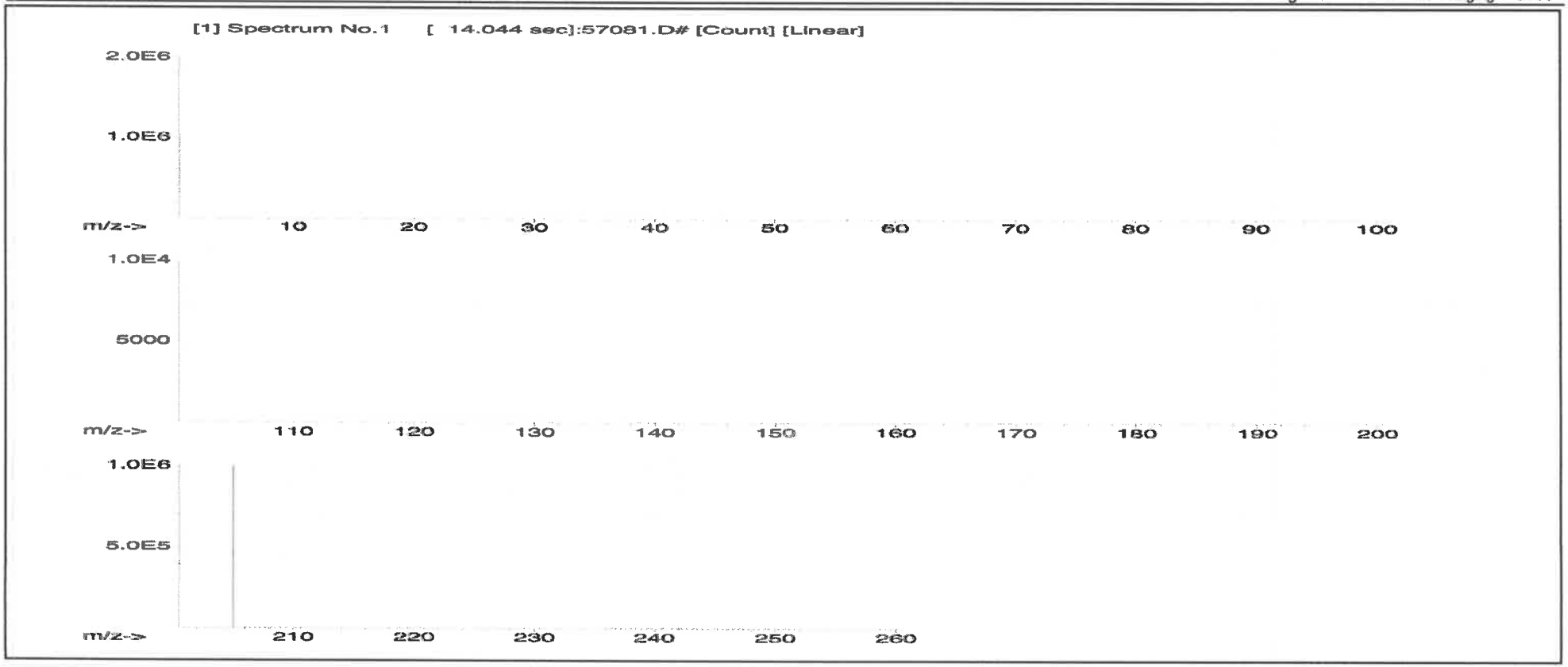
CERTIFIED WEIGHT REPORT:

Part Number:	**57081**		**Lot #**		
Lot Number:	**062724**	**Solvent:**	24002546	Nitric Acid	
Description:	**Thallium (Tl)**				
		2%	40.0 (mL)	Nitric Acid	
Expiration Date:	062727				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**1000**				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Weight shown below was diluted to (mL):	2000.1	0.10	Flask Uncertainty		

Aleah O'Brady

Formulated By:	Aleah O'Brady	062724
Reviewed By:	Pedro L. Rentas	062724

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Thallium nitrate (Tl)	IN037	BCCF4399	1000	99.999	0.10	77.0	2.5975	2.5977	**1000.1**	**2.0**	10102-45-1	0.1 mg/m3	orl-mus 15mg/kg	3158



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

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

(T) = Target analyte

Physical Characterization:

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

Certified by:

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

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

Certified Reference Material CRM

M6021

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

Bc. 8/5/24

CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:	
Part Number:	**57023**			
Lot Number:	**062424**	24002546	Nitric Acid	
Description:	**Vanadium (V)**			
		2.0%	40.0 (mL)	Nitric Acid
Expiration Date:	062427			
Recommended Storage:	Ambient (20 °C)			
Nominal Concentration (µg/mL):	**1000**			
NIST Test Number:	6UTB	5E-05	Balance Uncertainty	
Volume shown below was diluted to (mL):	2000.3	0.06	Flask Uncertainty	

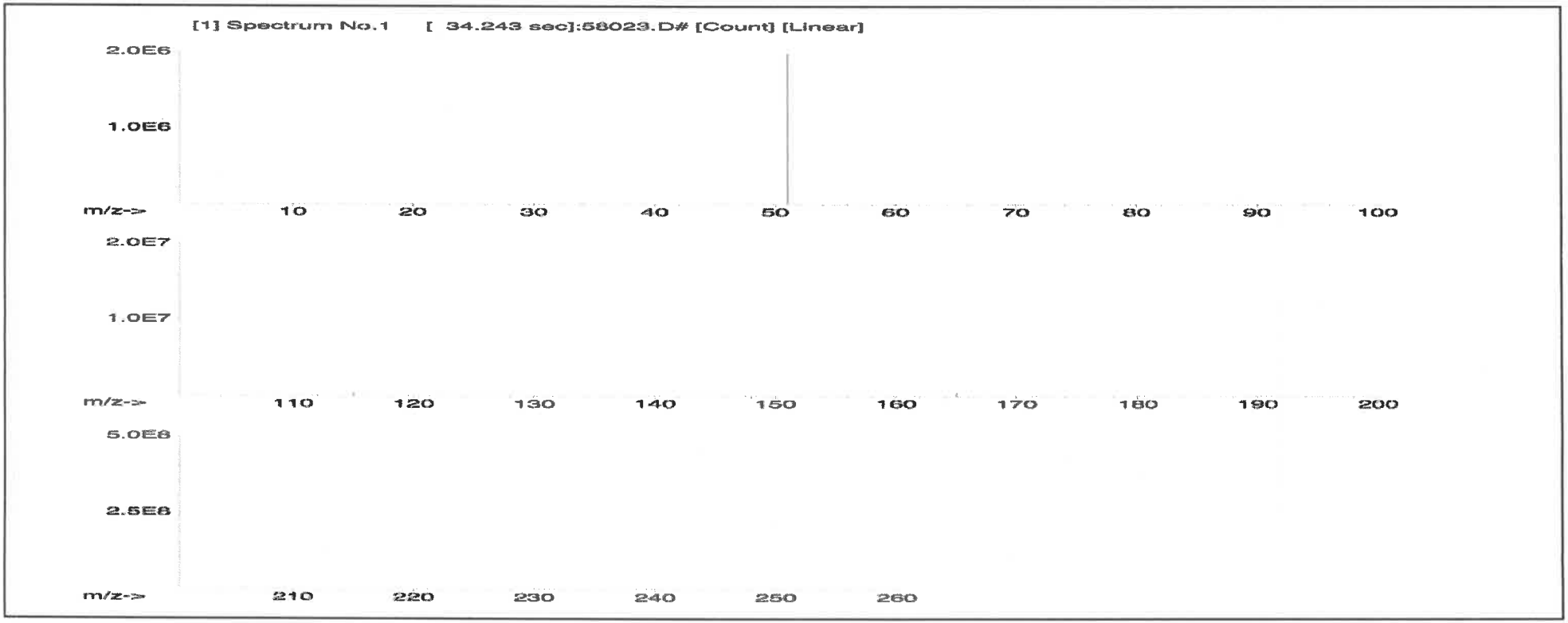
Aleah O'Brady

Formulated By:	Aleah O'Brady	062424

Pedro Rentas

Reviewed By:	Pedro L. Rentas	062424

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Ammonium metavanadate (V)	58123	021224	0.1000	200.0	0.084	1000	10000.3	**1000.0**	**2.2**	7803-55-6	0.05 mg/m3	orl-rat 58.1mg/kg	3165



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:

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).



SHIPPING DOCUMENTS

Alliance TECHNICAL GROUP

284 Sheffield Street, Mountainside, NJ 07092
(908) 789-8900 Fax: (908) 788-9222
www.chemtech.net

CHAIN OF CUSTODY RECORD

Alliance Project Number: Q3041

COC Number: Q3042

CLIENT INFORMATION

COMPANY: Tully Environmental Inc.
ADDRESS: 57 Seaview Blvd
CITY: Pt Washington STATE: NY ZIP: 11050
ATTENTION: Dean Devoe
PHONE: 718 446 7000 FAX:

PROJECT INFORMATION

PROJECT NAME: Transfer Station SPDES
PROJECT #: 252113 LOCATION:
PROJECT MANAGER:
E-MAIL:
PHONE: FAX:

BILLING INFORMATION

BILL TO: Same PO#
ADDRESS:
CITY: STATE: ZIP:
ATTENTION: PHONE:

DATA TURNAROUND INFORMATION

FAX:_____ DAYS*
HARD COPY:_____DAYS*
EDD_____DAYS*
* TO BE APPROVED BY ALLIANCE
STANDARD TURNAROUND TIME IS 10 BUSINESS DAYS

DATA DELIVERABLE INFORMATION

* RESULTS ONLY
☐ RESULTS + QC
☐ New Jersey REDUCED
☐ New Jersey CLP
☐ EDD Format_____
☐ USEPA CLP
☐ New York State ASP "B"
☐ New York State ASP "A"
☐ Other_____

ANALYSIS

1	2	3	4	5	6	7	8	9
Ammonia	TSS/ O&G	Cu, Fe, PB	BTEX	Hg 1631LL	BOD5			

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE COMP	SAMPLE TYPE GRAB	SAMPLE COLLECTION DATE	SAMPLE COLLECTION TIME	# of Bottles	PRESERVATIVES 1	2	3	4	5	6	7	8	9	COMMENTS
1.	001 Willets Pt Blvd (Sep)	W		X	9/4/25	11:30		X	X	X	X	X	X				
2.	002 35th Ave (Sep)	W		X	9/4/25	11:30		X	X	X	X	X	X				
3.																	
4.																	
5.																	
6.																	
7.																	
8.																	
9.																	
10.																	

<-- Specify Preservatives
A-HCl B-HNO3
C-H2SO4 D-NaOH
E-ICE F-Other

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE PROSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER	DATE/TIME	RECEIVED BY
1. D Devoe	Sep 4, 2025	1.
RELINQUISHED BY 2.	DATE/TIME 9/8/25 11:25	RECEIVED BY 2.
RELINQUISHED BY 3.	DATE/TIME	RECEIVED FOR LAB BY 3.

Conditions of bottles or coolers at receipt: ☐ Compliant ☐ Non Compliant ☐ Cooler Temp 20.1 C
☐ Ice in Cooler?: No
MeOH extraction requires an additional 4oz. Jar for percent solid
Comments:

Page_____of_____

SHIPPED VIA: CLIENT: ☐ Hand Delivered ☐ Overnight
ALLIANCE: ☐ Picked Up ☐ Overnight

Shipment Complete
☐ YES ☐ NO

WHITE - ALLIANCE COPYFOR RETURN TO CLIENT **YELLOW** - ALLIANCE COPY **PINK** - SAMPLER COPY

From: Dean Devoe <DDevoe@tullyconstruction.com>
Sent: Monday, September 08, 2025 2:39 PM
Subject: RE: Samples with two different color water

EXTERNAL EMAIL - This email was sent by a person from outside your organization. Exercise caution when clicking links, opening attachments or taking further action, before validating its authenticity.

Secured by Check Point

Wednesday results are sufficient for July. If you are asking whether to proceed with Sep analysis, please do.

From: Deepak Parmar <Deepak.Parmar@alliancetg.com>
Sent: Monday, September 8, 2025 2:11 PM
To: Dean Devoe <DDevoe@tullyconstruction.com>
Subject: Re: Samples with two different color water

EXTERNAL EMAIL - This email was sent by a person from outside your organization. Exercise caution when clicking links, opening attachments or taking further action, before validating its authenticity.

Secured by Check Point

hello,

results for July samples by tomorrow is not possible,

one more issu with sample for (Sep) recvied with preservation for BOD and TSS analysis ,let us how to proceed with analysis ?

Thanks & Regards,

Deepak Parmar
Sr. Project Manager
An Alliance Technical Group Company
Main: 908-789-8900
Direct: 908-728-3154
Address: 284 Sheffield St, Ste 1, Mountainside, NJ 07092
www.alliancetg.com

From: Dean Devoe <DDevoe@tullyconstruction.com>
Sent: Monday, September 8, 2025 12:38 PM
To: Deepak Parmar <Deepak.Parmar@alliancetg.com>
Subject: RE: Samples with two different color water

EXTERNAL EMAIL - This email was sent by a person from outside your organization. Exercise caution when clicking links, opening attachments or taking further action, before validating its authenticity.

Secured by Check Point

Hi Deepak – Please see below. Can we get results for July samples by tomorrow? Thank you Dean

From: Deepak Parmar <Deepak.Parmar@alliancetg.com>
Sent: Monday, September 8, 2025 12:30 PM
To: Dean Devoe <DDevoe@tullyconstruction.com>
Subject: Samples with two different color water

EXTERNAL EMAIL - This email was sent by a person from outside your organization. Exercise caution when clicking links, opening attachments or taking further action, before validating its authenticity.

Secured by Check Point

hello,

Issue 1# as you see in the pictures lab received same sample with two different bottles for BOD and TSS analysis ,lab like to know which sample will use for both analysis ? Please use the darker color sample and hold the other.

Issue 2# all sample received with melted ice is with tempter 20.1 degree, let us know to procced with analysis ? Proceed.

Thanks & Regards,

Deepak Parmar
Sr. Project Manager
An Alliance Technical Group Company
Main: 908-789-8900

Direct: 908-728-3154

Address: 284 Sheffield St, Ste 1, Mountainside, NJ 07092

www.alliancetg.com

284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Laboratory Certification

Certified By	License No.
Connecticut	PH-0830
DOD ELAP (ANAB)	L2219
Maine	2024021
Maryland	296
New Hampshire	255425
New Jersey	20012
New York	11376
Pennsylvania	68-00548
Soil Permit	525-24-234-08441
Texas	TX-C25-00189
Virginia	460312

QA Control Code: A2070148

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

LOGIN REPORT/SAMPLE TRANSFER

Order ID : Q3041 TULL01
Client Name : Tully Environmental, Inc
Client Contact : Dean Devoe
Invoice Name : Tully Environmental, Inc
Invoice Contact : Dean Devoe

Order Date : 9/8/2025 11:43:00 AM
Project Name : Transfer Station-SPDES
Receive DateTime : 9/8/2025 11:25:00 AM
Purchase Order :

Project Mgr :
Report Type : Results Only
EDD Type : EXCEL NOCLEANUP
Hard Copy Date :
Date Signoff :

LAB ID	CLIENT ID	MATRIX	SAMPLE DATE	SAMPLE TIME	TEST	TEST GROUP	METHOD	FAX DATE	DUE DATES
Q3041-01	001 Willets Pt Blvd (Sep))	Water	09/04/2025	11:30					
					VOC-BTEX		624.1		2 Bus. Days
Q3041-04	002 35th Ave(sep)	Water	09/04/2025	11:30					
					VOC-BTEX		624.1		2 Bus. Days

Relinguished By : _____
Date / Time : 9/8/25 1240

Received By : _____
Date / Time : 09/08/25 12:40 Nyt 5

Storage Area : **VOA Refridgerator Room**