

SDG COVER PAGE

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011
 Lab Code: ACE Case No.: 51863 MA No.: _____ SDG No.: MC0D96
 SOW No. : SFAM01.1

EPA Sample No.	Lab Sample Id	ICP-AES	Analysis Method		
			ICP-MS	Mercury	Cyanide
MC0D96	P4754-01	X			
MC0D97	P4754-02	X			
MC0D98	P4754-03	X			
MC0D99	P4754-04	X			
MC0D99D	P4754-05	X			
MC0D99S	P4754-06	X			
MC0D68	P4754-07	X			
MC0D69	P4754-08	X			
MC0D70	P4754-09	X			
MC0D71	P4754-10	X			
MC0D72	P4754-11	X			
MC0D74	P4754-12	X			
MC0D75	P4754-13	X			
MC0D76	P4754-14	X			
MC0D77	P4754-15	X			
MC0D78	P4754-16	X			
MC0D81	P4754-17	X			
MC0D82	P4754-18	X			
MC0D83	P4754-19	X			
MC0D84	P4754-20	X			
MC0D86	P4754-21	X			
MC0D87	P4754-22	X			

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the SDG Narrative. All edits and manual integrations have been peer-reviewed. Release of the data contained in this hardcopy Complete SDG File and in the electronic data submitted has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: _____
 Date: _____ Title: _____

Page 1 of 1

USEPA CLP COC (LAB COPY)

Date Shipped: 11/6/2024

Carrier Name: FedEx

Airbill No: 779772897863

CHAIN OF CUSTODY RECORD

Case #: 51863

Cooler #: 4

No: 3-110624-075354-0175

Lab: Alliance Technical Group LLC

Lab Contact: Mohammad Amed

Lab Phone: 908-789-8900

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
SHI-SS-17-a	MC0D89	Soil/ START	Composite	Pb(7)	3446 (4 C) (1)	Pile 17	11/05/2024 16:39	
SHI-SS-17-b	MC0D90	Soil/ START	Composite	Pb(7)	3447 (4 C) (1)	Pile 17	11/05/2024 16:45	
SHI-SS-17-c	MC0D91	Soil/ START	Composite	Pb(7)	3448 (4 C) (1)	Pile 17	11/05/2024 16:52	
SHI-SS-17-d	MC0D92	Soil/ START	Composite	Pb(7)	3449 (4 C) (1)	Pile 17	11/05/2024 16:55	
SHI-SS-17-e	MC0D93	Soil/ START	Composite	Pb(7)	3450 (4 C) (1)	Pile 17	11/05/2024 17:02	
SHI-SS-17	MC0D94	Soil/ START	Composite	TCLP Metals - Cd+Pb(14)	3470 (4 C) (1)	Pile 17	11/05/2024 17:03	
SHI-SS-8-a	MC0D95	Soil/ START	Composite	Pb(7)	3452 (4 C) (1)	Pile 8	11/05/2024 16:28	
SHI-SS-8-b	MC0D96	Soil/ START	Composite	Pb(7)	3453 (4 C) (1)	Pile 8	11/05/2024 16:33	1
SHI-SS-8-c	MC0D97	Soil/ START	Composite	Pb(7)	3454 (4 C) (1)	Pile 8	11/05/2024 16:45	2
SHI-SS-8-d	MC0D98	Soil/ START	Composite	Pb(7)	3455 (4 C) (1)	Pile 8	11/05/2024 16:49	3
SHI-SS-8-e	MC0D99	Soil/ START	Composite	Pb(7)	3456 (4 C) (1)	Pile 8	11/05/2024 16:53	4 - all
SHI-SS-8	MC0DA0	Soil/ START	Composite	TCLP Metals - Cd+Pb(14)	3478 (4 C) (1)	Pile 8	11/05/2024 16:58	
SHI-SS-10-a	MC0DA1	Soil/ START	Composite	Pb(7)	3458 (4 C) (1)	Pile 10	11/05/2024 16:30	
SHI-SS-10-b	MC0DA2	Soil/ START	Composite	Pb(7)	3459 (4 C) (1)	Pile 10	11/05/2024 16:35	
SHI-SS-10-c	MC0DA3	Soil/ START	Composite	Pb(7)	3460 (4 C) (1)	Pile 10	11/05/2024 16:40	
SHI-SS-10-d	MC0DA4	Soil/ START	Composite	Pb(7)	3461 (4 C) (1)	Pile 10	11/05/2024 16:45	
SHI-SS-10-e	MC0DA5	Soil/ START	Composite	Pb(7)	3462 (4 C) (1)	Pile 10	11/05/2024 16:50	
SHI-SS-10	MC0DA6	Soil/ START	Composite	TCLP Metals - Cd+Pb(14)	3467 (4 C) (1)	Pile 10	11/05/2024 16:55	

Sample(s) to be used for Lab QC: SHI-SS-8-e Tag 3456, SHI-SS-10-d Tag 3461

Shipment for Case Complete? Y

Samples Transferred From Chain of Custody #

Analysis Key: Pb=Pb by ICP-AES, TCLP Metals - Cd+Pb=TCLP Metals - Cd and Pb

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	 Tyronne T. Smith	11/6/24 16:50		9:15 11-7-24	It Cont 1 2.4 Custody Seal Intact Temp Blank present

Page 1 of 2

USEPA CLP COC (LAB COPY)

Date Shipped: 11/6/2024

Carrier Name: FedEx

Airbill No: 779763141341

CHAIN OF CUSTODY RECORD

Case #: 51863

Cooler #: 3

No: 3-110524-191402-0172

Lab: Alliance Technical Group LLC

Lab Contact: Mohammad Amed

Lab Phone: 908-789-8900

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coil. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
SHI-SS-4,5-a	MC0D68	Soil/ START	Composite	Pb(7)	3425 (4 C) (1)	Pile 4,5	11/05/2024 16:02	✓
SHI-SS-4,5-b	MC0D69	Soil/ START	Composite	Pb(7)	3426 (4 C) (1)	Pile 4,5	11/05/2024 16:04	✓
SHI-SS-4,5-c	MC0D70	Soil/ START	Composite	Pb(7)	3427 (4 C) (1)	Pile 4,5	11/05/2024 16:07	✓
SHI-SS-4,5-d	MC0D71	Soil/ START	Composite	Pb(7)	3428 (4 C) (1)	Pile 4,5	11/05/2024 16:11	✓
SHI-SS-4,5-e	MC0D72	Soil/ START	Composite	Pb(7)	3429 (4 C) (1)	Pile 4,5	11/05/2024 16:13	✓
SHI-SS-4,5	MC0D73	Soil/ START	Composite	TCLP Metals - Cd+Pb(14)	3475 (4 C) (1)	Pile 4,5	11/05/2024 16:16	✓
SHI-SS-6,12,13-a	MC0D74	Soil/ START	Composite	Pb(7)	3431 (4 C) (1)	Pile 6,12,13	11/05/2024 16:14	✓
SHI-SS-6,12,13-b	MC0D75	Soil/ START	Composite	Pb(7)	3432 (4 C) (1)	Pile 6,12,13	11/05/2024 16:20	✓
SHI-SS-6,12,13-c	MC0D76	Soil/ START	Composite	Pb(7)	3433 (4 C) (1)	Pile 6,12,13	11/05/2024 16:25	✓
SHI-SS-6,12,13-d	MC0D77	Soil/ START	Composite	Pb(7)	3434 (4 C) (1)	Pile 6,12,13	11/05/2024 16:29	✓
SHI-SS-6,12,13-e	MC0D78	Soil/ START	Composite	Pb(7)	3435 (4 C) (1)	Pile 6,12,13	11/05/2024 16:37	✓
SHI-SS-6,12,13	MC0D79	Soil/ START	Composite	TCLP Metals - Cd+Pb(14)	3476 (4 C) (1)	Pile 6,12,13	11/05/2024 16:32	✓
SHI-SS-1,2-b	MC0D81	Soil/ START	Composite	Pb(7)	3438 (4 C) (1)	Pile 1,2	11/05/2024 16:10	✓
SHI-SS-1,2-c	MC0D82	Soil/ START	Composite	Pb(7)	3439 (4 C) (1)	Pile 1,2	11/05/2024 16:00	✓
SHI-SS-1,2-d	MC0D83	Soil/ START	Composite	Pb(7)	3440 (4 C) (1)	Pile 1,2	11/05/2024 16:15	✓
SHI-SS-1,2-e	MC0D84	Soil/ START	Composite	Pb(7)	3441 (4 C) (1)	Pile 1,2	11/05/2024 16:20	✓
SHI-SS-1,2-c-D	MC0D86	Soil/ START	Composite	Pb(7)	3443 (4 C) (1)	Pile 1,2	11/05/2024 16:02	✓
SHI-SS-22-a	MC0D87	Soil/ START	Composite	Pb(7)	3444 (4 C) (1)	Pile 22	11/05/2024 17:14	✓

Special Instructions:

Shipment for Case Complete? N

Samples Transferred From Chain of Custody #

Analysis Key: Pb=Pb by ICP-AES, TCLP Metals - Cd+Pb=TCLP Metals - Cd and Pb

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	<i>[Signature]</i> / START	11/06/2024 17:00	<i>[Signature]</i>	11-8-24 0930	1.9-c ILSW #1
					custody seals intact
					Temp OK - present

FORM DC-1
SAMPLE LOG-IN SHEET

Lab Name : Alliance Technical Group, LLC		Page <u>1</u> of <u>2</u>
Received By (Print Name) <u>Eggen</u>		Log-in Date 11/7/2024
Received By (Signature) <u>[Signature]</u>		
Case Number 51863	SDG No. MC0D96	MA No. N/A

Remarks:	
1. Custody Seal (s)	Present, Intact
2. Custody Seal Nos.	<u>n/a</u>
3. Traffic Reports/Chain Of Custody Records	Present
4. Airbill	Present
5. Airbill No. and Shipping Container ID No.	<u>779772897863</u> <u>1</u>
6. Shipping Container Temperature Indicator Bottle	Present
7. Shipping Container Temperature	<u>2.4</u> Degree C
8. Sample Condition	Intact
9. Sample Tags Sample Tag Numbers	Absent Listed on Traffic Report
10. Does information on Traffic Reports/Chain of Custody Records and Sample Tags agree ?	Yes
11. Date Received at Lab	<u>11/07/2024</u>
12. Time Received	<u>09:15</u>

	EPA Sample #	Aqueous/ Water Sample pH	Corresponding		Remarks: Condition of Sample Shipment, etc.
			Sample Tag #	Assigned Lab #	
1	MC0D96	N/A	3453	P4754-01	Intact
2	MC0D97	N/A	3454	P4754-02	Intact
3	MC0D98	N/A	3455	P4754-03	Intact
4	MC0D99	N/A	3456	P4754-04	Intact
5	MC0D99D	N/A	3456	P4754-05	Intact
6	MC0D99S	N/A	3456	P4754-06	Intact
7	N/A	N/A	N/A	N/A	N/A
8	N/A	N/A	N/A	N/A	N/A
9	N/A	N/A	N/A	N/A	N/A
10	N/A	N/A	N/A	N/A	N/A
11	N/A	N/A	N/A	N/A	N/A
12	N/A	N/A	N/A	N/A	N/A
13	N/A	N/A	N/A	N/A	N/A
14	N/A	N/A	N/A	N/A	N/A
15	N/A	N/A	N/A	N/A	N/A
16	N/A	N/A	N/A	N/A	N/A
17	N/A	N/A	N/A	N/A	N/A
18	N/A	N/A	N/A	N/A	N/A
19	N/A	N/A	N/A	N/A	N/A
20	N/A	N/A	N/A	N/A	N/A
21	N/A	N/A	N/A	N/A	N/A
22	N/A	N/A	N/A	N/A	N/A
23	N/A	N/A	N/A	N/A	N/A

* Contact SMO and attach record of resolution

Reviewed By <u>[Signature]</u>	Logbook No. N/A
Date <u>11/8/24</u>	Logbook Page No. N/A

FORM DC-1
SAMPLE LOG-IN SHEET

Lab Name : Alliance Technical Group, LLC		Page <u>2</u> of <u>✓</u>
Received By (Print Name) <u>George Meson</u>		Log-in Date 11/8/2024
Received By (Signature) <u>[Signature]</u>		
Case Number 51863	SDG No. MC0D96	MA No. N/A

Remarks:	
1. Custody Seal (s)	Present, Intact
2. Custody Seal Nos.	<u>n/a</u>
3. Traffic Reports/Chain Of Custody Records	Present
4. Airbill	Present
5. Airbill No. and Shipping Container ID No.	<u>779763141341</u> <u>2</u>
6. Shipping Container Temperature Indicator Bottle	Present
7. Shipping Container Temperature	<u>1.9</u> Degree C
8. Sample Condition	Intact
9. Sample Tags Sample Tag Numbers	Absent Listed on Traffic Report
10. Does information on Traffic Reports/Chain of Custody Records and Sample Tags agree ?	Yes
11. Date Received at Lab	<u>11/08/2024</u>
12. Time Received	<u>09:50</u>

	EPA Sample #	Aqueous/ Water Sample pH	Corresponding		Remarks: Condition of Sample Shipment, etc.
			Sample Tag #	Assigned Lab #	
1	MC0D68	N/A	3425	P4754-07	Intact
2	MC0D69	N/A	3426	P4754-08	Intact
3	MC0D70	N/A	3427	P4754-09	Intact
4	MC0D71	N/A	3428	P4754-10	Intact
5	MC0D72	N/A	3429	P4754-11	Intact
6	MC0D74	N/A	3431	P4754-12	Intact
7	MC0D75	N/A	3432	P4754-13	Intact
8	MC0D76	N/A	3433	P4754-14	Intact
9	MC0D77	N/A	3434	P4754-15	Intact
10	MC0D78	N/A	3435	P4754-16	Intact
11	MC0D81	N/A	3438	P4754-17	Intact
12	MC0D82	N/A	3439	P4754-18	Intact
13	MC0D83	N/A	3440	P4754-19	Intact
14	MC0D84	N/A	3441	P4754-20	Intact
15	MC0D86	N/A	3443	P4754-21	Intact
16	MC0D87	N/A	3444	P4754-22	Intact
17	N/A	N/A	N/A	N/A	N/A
18	N/A	N/A	N/A	N/A	N/A
19	N/A	N/A	N/A	N/A	N/A
20	N/A	N/A	N/A	N/A	N/A
21	N/A	N/A	N/A	N/A	N/A
22	N/A	N/A	N/A	N/A	N/A
23	N/A	N/A	N/A	N/A	N/A

* Contact SMO and attach record of resolution

Reviewed By <u>[Signature]</u>	Logbook No. N/A
Date <u>11/8/24</u>	Logbook Page No. N/A

FORM DC-2
COMPLETE SDG FILE (CSF) INVENTORY SHEET

LAB NAME	Alliance Technical Group, LLC		
LAB CODE	ACE		
CONTRACT NO.	68HERH20D0011		
CASE NO.	51863	SDG NO.	MC0D96
MA NO.		SOW NO.	SFAM01.1

All documents delivered in the Complete SDG File must be original documents where possible.
(Reference - Exhibit B Section 2.4)

	PAGE NOS:		CHECK	
	FROM	TO	LAB	REGION
1. SDG Cover Page	1	1	✓	
2. Traffic Report/Chain of Custody Record(s)	2	3	✓	
3. Sample Log-In Sheet (DC-1)	4	5	✓	
4. CSF Inventory Sheet (DC-2)	6	8	✓	
5. SDG Narrative	9	10	✓	
6. Communication Logs	NA	NA	✓	
7. Percent Solids Log	11	13	✓	

Analysis Forms and Data (ICP-AES)

8. Sample Analysis Data Forms (1A-OR, 1B-OR, and 1-IN) for each sample or sample analysis, laboratory QC as applicable	14	33	✓	
9. Instrument raw data by instrument in analysis order	34	214	✓	

Other Data

10. Standard and Reagent Preparation Logs	215	353	✓	
11. Original Preparation and Cleanup forms or copies of Preparation and Cleanup Logbooks	354	355	✓	
12. Original Analysis or Instrument Run forms or copies of Analysis or Instrument Logbooks	356	362	✓	
13. Performance Evaluation (PE)/Proficiency Testing (PT) Sample Instructions	NA	NA	✓	
14. Extraction Logs for TCLP and SPLP	NA	NA	✓	
15. Raw GPC Data	NA	NA	✓	
16. Raw Florisil Data	NA	NA	✓	

Analysis Forms and Data (ICP-MS)

17. Sample Analysis Data Forms (1A-OR, 1B-OR, and 1-IN) for each sample or sample analysis, laboratory QC as applicable	NA	NA	✓	
18. Instrument raw data by instrument in analysis order	NA	NA	✓	

Other Data

19. Standard and Reagent Preparation Logs	NA	NA	✓	
20. Original Preparation and Cleanup forms or copies of Preparation and Cleanup Logbooks	NA	NA	✓	
21. Original Analysis or Instrument Run forms or copies of Analysis or Instrument Logbooks	NA	NA	✓	
22. Performance Evaluation (PE)/Proficiency Testing (PT) Sample Instructions	NA	NA	✓	

- 23 . Extraction Logs for TCLP and SPLP
- 24 . Raw GPC Data
- 25 . Raw Florisil Data

PAGE NOS:		CHECK	
FROM	TO	LAB	REGION
NA	NA	✓	
NA	NA	✓	
NA	NA	✓	

Analysis Forms and Data (Mercury)

- 26 . Sample Analysis Data Forms (1A-OR, 1B-OR, and 1-IN) for each sample or sample analysis, laboratory QC as applicable
- 27 . Instrument raw data by instrument in analysis order

NA	NA	✓	
NA	NA	✓	

Other Data

- 28 . Standard and Reagent Preparation Logs
- 29 . Original Preparation and Cleanup forms or copies of Preparation and Cleanup Logbooks
- 30 . Original Analysis or Instrument Run forms or copies of Analysis or Instrument Logbooks
- 31 . Performance Evaluation (PE)/Proficiency Testing (PT) Sample Instructions
- 32 . Extraction Logs for TCLP and SPLP
- 33 . Raw GPC Data
- 34 . Raw Florisil Data

NA	NA	✓	
NA	NA	✓	
NA	NA	✓	
NA	NA	✓	
NA	NA	✓	
NA	NA	✓	
NA	NA	✓	

Analysis Forms and Data (Cyanide)

- 35 . Sample Analysis Data Forms (1A-OR, 1B-OR, and 1-IN) for each sample or sample analysis, laboratory QC as applicable
- 36 . Instrument raw data by instrument in analysis order

NA	NA	✓	
NA	NA	✓	

Other Data

- 37 . Standard and Reagent Preparation Logs
- 38 . Original Preparation and Cleanup forms or copies of Preparation and Cleanup Logbooks
- 39 . Original Analysis or Instrument Run forms or copies of Analysis or Instrument Logbooks
- 40 . Performance Evaluation (PE)/Proficiency Testing (PT) Sample Instructions
- 41 . Extraction Logs for TCLP and SPLP
- 42 . Raw GPC Data
- 43 . Raw Florisil Data

NA	NA	✓	
NA	NA	✓	
NA	NA	✓	
NA	NA	✓	
NA	NA	✓	
NA	NA	✓	
NA	NA	✓	

Additional

44. EPA Shipping/Receiving Documents

Airbill (No. of Shipments 2)

Sample Tags

Sample Log-In Sheet (Lab)

45. Misc. Shipping/Receiving Records (list all individual records)

46. Internal Lab Sample Transfer Records and Tracking Sheets
(describe or list)47. Other Records and related Communication Logs
(describe or list)

48. Comments:

Completed by:
(CLP Lab)Audited by:
(EPA)

Nimisha Pandya, Document Control Officer

(Signature)

(Print Name & Title)

(Date)

(Signature)

(Print Name & Title)

(Date)

PAGE NOs:		CHECK	
FROM	TO	LAB	REGION
363	364	✓	
NA	NA	✓	
365	366	✓	
NA	NA	✓	
367	368	✓	
NA	NA	✓	



**284 Sheffield Street
Mountainside, NJ 07092**

SDG NARRATIVE

USEPA

SDG # MC0D96

CASE # 51863

CONTRACT # 68HERH20D0011

SOW# SFAM01.1

LAB NAME: Alliance Technical Group, LLC

LAB CODE: ACE

LAB ORDER ID # P4754

A. Number of Samples and Date of Receipt

20 Soil samples were delivered to the laboratory intact on 11/07/2024, 11/08/2024.

B. Parameters

Test requested for Metals CLP4= Lead

C. Cooler Temp

Indicator Bottle: **Presence**/Absence

Cooler: 2.4°C, 1.9°C

D. Detail Documentation (related to Sample Handling Shipping, Analytical Problem, Temp of Cooler etc):

Issue: A "P" or "M" prefix was listed at the beginning of a CLP sample ID.

E. Corrective Action taken for above:

Resolution: To maintain COC integrity, ASB requests no changes to the Sample IDs. The laboratory will note the issue in the SDG Narrative and proceed with the analysis of the samples.

F. Analytical Techniques:

All analyses were based on CLP Methodology by method SFAM01.1.

Inter Element correction factors (IECs) are determined annually and correction factor are applied during ICP-AES analysis.

G. Calculation:

Calculation for ICP-AES Soil Sample:



**284 Sheffield Street
Mountainside, NJ 07092**

Conversion of Results from mg/L or ppm to mg/kg (Dry Weight Basis):

$$\text{Concentration (mg/kg)} = C \times \frac{V_f}{W \times S} \times DF$$

Where,

C = Instrument value in ppm (The average of all replicate exposures)

V_f = Final digestion volume (mL)

W = Initial aliquot amount (g) (Sample amount taken in prep)

S = % Solids / 100 (Fraction of Percent Solids)

DF = Dilution Factor

Example Calculation For Sample MC0D96 For Lead:

If C = 1.727936 ppm

V_f = 100 ml

W = 1.19 g

S = 0.942(94.2/100)

DF = 1

$$\text{Concentration (mg/kg)} = 1.727936 \times \frac{100}{1.19 \times 0.942} \times 1$$

$$= 154.145 \text{ mg/kg}$$

$$= 150 \text{ mg/kg (Reported Result with Signification)}$$

H. QA/ QC

Calibrations met requirements. Interference check met requirements. Blank analyses did not indicate any presence of contamination. Laboratory Control sample was within control limits. Spike sample did meet requirements. Duplicate sample did meet requirements. Serial Dilution did meet requirements.

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

Signature_____

Name: Nimisha Pandya

Date _____

Title: Document Control Officer

PERCENT SOLID

Supervisor: Iwona
Analyst: jignesh
Date: 11/11/2024

OVENTEMP IN Celsius(°C): 107
Time IN: 14:50
In Date: 11/08/2024
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
OvenID: M OVEN#1

OVENTEMP OUT Celsius(°C): 103
Time OUT: 08:00
Out Date: 11/09/2024
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
BalanceID: M SC-4
Thermometer ID: % SOLID- OVEN

QC:LB133359

Lab ID	Client SampleID	Dish #	Dish Wt(g) (A)	Sample Wt(g)	Dish + Sample Wt(g) (B)	Dish+Dry Sample Wt(g) (C)	% Solid	Comments
P4754-01	MC0D96	1	1.18	8.66	9.84	9.34	94.2	
P4754-02	MC0D97	2	1.15	8.40	9.55	9.31	97.1	
P4754-03	MC0D98	3	1.18	8.42	9.6	9.21	95.4	
P4754-04	MC0D99	4	1.14	8.55	9.69	9.33	95.8	
P4754-05	MC0D99D	5	1.14	8.55	9.69	9.33	95.8	
P4754-06	MC0D99S	6	1.14	8.55	9.69	9.33	95.8	
P4754-07	MC0D68	7	1.18	8.51	9.69	9.29	95.3	
P4754-08	MC0D69	8	1.18	8.63	9.81	9.56	97.1	
P4754-09	MC0D70	9	1.13	8.45	9.58	9.2	95.5	
P4754-10	MC0D71	10	1.15	8.35	9.5	9.22	96.6	
P4754-11	MC0D72	11	1.16	8.40	9.56	9.16	95.2	
P4754-12	MC0D74	12	1.18	8.43	9.61	9.43	97.9	
P4754-13	MC0D75	13	1.13	8.68	9.81	9.54	96.9	
P4754-14	MC0D76	14	1.19	8.62	9.81	9.26	93.6	
P4754-15	MC0D77	15	1.15	8.42	9.57	9.29	96.7	
P4754-16	MC0D78	16	1.15	8.40	9.55	9.4	98.2	
P4754-17	MC0D81	17	1.18	8.67	9.85	8.79	87.8	
P4754-18	MC0D82	18	1.16	8.80	9.96	8.75	86.3	
P4754-19	MC0D83	19	1.18	8.43	9.61	8.7	89.2	
P4754-20	MC0D84	20	1.14	8.48	9.62	8.77	90.0	
P4754-21	MC0D86	21	1.12	8.75	9.87	8.54	84.8	
P4754-22	MC0D87	22	1.12	8.45	9.57	9.03	93.6	

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

WORKLIST(Hardcopy Internal Chain)

W 133359

WorkList Name : %1-p4754

WorkList ID : 185264

Department : Wet-Chemistry

Date : 11-08-2024 14:14:38

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
P4754-01	MC0D96	Solid	Percent Solids	Cool 4 deg C	USEP01	Q12	11/05/2024	Chemtech -SO
P4754-02	MC0D97	Solid	Percent Solids	Cool 4 deg C	USEP01	Q12	11/05/2024	Chemtech -SO
P4754-03	MC0D98	Solid	Percent Solids	Cool 4 deg C	USEP01	Q12	11/05/2024	Chemtech -SO
P4754-04	MC0D99	Solid	Percent Solids	Cool 4 deg C	USEP01	Q12	11/05/2024	Chemtech -SO
P4754-05	MC0D99D	Solid	Percent Solids	Cool 4 deg C	USEP01	Q12	11/05/2024	Chemtech -SO
P4754-06	MC0D99S	Solid	Percent Solids	Cool 4 deg C	USEP01	Q12	11/05/2024	Chemtech -SO
P4754-07	MC0D68	Solid	Percent Solids	Cool 4 deg C	USEP01	Q12	11/05/2024	Chemtech -SO
P4754-08	MC0D69	Solid	Percent Solids	Cool 4 deg C	USEP01	Q12	11/05/2024	Chemtech -SO
P4754-09	MC0D70	Solid	Percent Solids	Cool 4 deg C	USEP01	Q12	11/05/2024	Chemtech -SO
P4754-10	MC0D71	Solid	Percent Solids	Cool 4 deg C	USEP01	Q12	11/05/2024	Chemtech -SO
P4754-11	MC0D72	Solid	Percent Solids	Cool 4 deg C	USEP01	Q12	11/05/2024	Chemtech -SO
P4754-12	MC0D74	Solid	Percent Solids	Cool 4 deg C	USEP01	Q12	11/05/2024	Chemtech -SO
P4754-13	MC0D75	Solid	Percent Solids	Cool 4 deg C	USEP01	Q12	11/05/2024	Chemtech -SO
P4754-14	MC0D76	Solid	Percent Solids	Cool 4 deg C	USEP01	Q12	11/05/2024	Chemtech -SO
P4754-15	MC0D77	Solid	Percent Solids	Cool 4 deg C	USEP01	Q12	11/05/2024	Chemtech -SO
P4754-16	MC0D78	Solid	Percent Solids	Cool 4 deg C	USEP01	Q12	11/05/2024	Chemtech -SO
P4754-17	MC0D81	Solid	Percent Solids	Cool 4 deg C	USEP01	Q12	11/05/2024	Chemtech -SO
P4754-18	MC0D82	Solid	Percent Solids	Cool 4 deg C	USEP01	Q12	11/05/2024	Chemtech -SO
P4754-19	MC0D83	Solid	Percent Solids	Cool 4 deg C	USEP01	Q12	11/05/2024	Chemtech -SO
P4754-20	MC0D84	Solid	Percent Solids	Cool 4 deg C	USEP01	Q12	11/05/2024	Chemtech -SO
P4754-21	MC0D86	Solid	Percent Solids	Cool 4 deg C	USEP01	Q12	11/05/2024	Chemtech -SO

12

Date/Time 11/08/24 14:14:38

Raw Sample Received by: WJ WJC

Raw Sample Relinquished by: JTC (94)

Date/Time 11/08/24

Raw Sample Received by: JTC (94)

Raw Sample Relinquished by: JTC (94)

JB 133359

WORKLIST(Hardcopy Internal Chain)

WorkList Name : %1-p4754 WorkList ID : 185264 Department : Wet-Chemistry Date : 11-08-2024 14:14:38

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
P4754-22	MC0D87	Solid	Percent Solids	Cool 4 deg C	USEP01	Q12	11/05/2024	Chemtech -SO

13

Date/Time 11/08/24 14:20
Raw Sample Received by: 80 WOC
Raw Sample Relinquished by: 55(SM)

Date/Time 11/08/24 15:00
Raw Sample Received by: 57(SM)
Raw Sample Relinquished by: 80 WOC

FORM 1 - IN
INORGANIC ANALYSIS DATA SHEET

MC0D68

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011
Lab Code: ACE Case No.: 51863 MA No. : SDG No.: MC0D96
Matrix: SOIL Lab Sample ID: P4754-07
% Solids: 95.3 Date Received: 11/08/2024
Analytical Method: ICP_AES
Concentration Units ($\mu\text{g/L}$, mg/L , mg/kg dry weight, μg , or $\mu\text{g/cm}^2$): mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7439-92-1	Lead	50		11/14/2024	0557

NOTE: Hardness (total) is reported in mg/L

Comments:

FORM 1 - IN
INORGANIC ANALYSIS DATA SHEET

MC0D69

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011
Lab Code: ACE Case No.: 51863 MA No. : SDG No.: MC0D96
Matrix: SOIL Lab Sample ID: P4754-08
% Solids: 97.1 Date Received: 11/08/2024
Analytical Method: ICP_AES
Concentration Units ($\mu\text{g/L}$, mg/L , mg/kg dry weight, μg , or $\mu\text{g/cm}^2$): mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7439-92-1	Lead	78		11/14/2024	0602

NOTE: Hardness (total) is reported in mg/L Comments:

FORM 1 - IN
INORGANIC ANALYSIS DATA SHEET

MC0D70

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011
Lab Code: ACE Case No.: 51863 MA No. : SDG No.: MC0D96
Matrix: SOIL Lab Sample ID: P4754-09
% Solids: 95.5 Date Received: 11/08/2024
Analytical Method: ICP_AES
Concentration Units ($\mu\text{g/L}$, mg/L , mg/kg dry weight, μg , or $\mu\text{g/cm}^2$): mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7439-92-1	Lead	80		11/14/2024	0606

NOTE: Hardness (total) is reported in mg/L

Comments:

FORM 1 - IN
INORGANIC ANALYSIS DATA SHEET

MC0D71

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011
Lab Code: ACE Case No.: 51863 MA No. : SDG No.: MC0D96
Matrix: SOIL Lab Sample ID: P4754-10
% Solids: 96.6 Date Received: 11/08/2024
Analytical Method: ICP_AES
Concentration Units ($\mu\text{g/L}$, mg/L , mg/kg dry weight, μg , or $\mu\text{g/cm}^2$): mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7439-92-1	Lead	71		11/14/2024	0611

NOTE: Hardness (total) is reported in mg/L

Comments:

FORM 1 - IN
INORGANIC ANALYSIS DATA SHEET

MC0D72

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011
Lab Code: ACE Case No.: 51863 MA No. : SDG No.: MC0D96
Matrix: SOIL Lab Sample ID: P4754-11
% Solids: 95.2 Date Received: 11/08/2024
Analytical Method: ICP_AES
Concentration Units ($\mu\text{g/L}$, mg/L , mg/kg dry weight, μg , or $\mu\text{g/cm}^2$): mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7439-92-1	Lead	48		11/14/2024	0615

NOTE: Hardness (total) is reported in mg/L

Comments:

FORM 1 - IN
INORGANIC ANALYSIS DATA SHEET

MC0D74

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011
Lab Code: ACE Case No.: 51863 MA No. : SDG No.: MC0D96
Matrix: SOIL Lab Sample ID: P4754-12
% Solids: 97.9 Date Received: 11/08/2024
Analytical Method: ICP_AES
Concentration Units ($\mu\text{g/L}$, mg/L , mg/kg dry weight, μg , or $\mu\text{g/cm}^2$): mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7439-92-1	Lead	150		11/14/2024	0620

NOTE: Hardness (total) is reported in mg/L

Comments:

FORM 1 - IN
INORGANIC ANALYSIS DATA SHEET

MC0D75

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011
Lab Code: ACE Case No.: 51863 MA No. : SDG No.: MC0D96
Matrix: SOIL Lab Sample ID: P4754-13
% Solids: 96.9 Date Received: 11/08/2024
Analytical Method: ICP_AES
Concentration Units ($\mu\text{g/L}$, mg/L , mg/kg dry weight, μg , or $\mu\text{g/cm}^2$): mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7439-92-1	Lead	85		11/14/2024	0624

NOTE: Hardness (total) is reported in mg/L

Comments:

FORM 1 - IN
INORGANIC ANALYSIS DATA SHEET

MC0D76

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011
Lab Code: ACE Case No.: 51863 MA No. : SDG No.: MC0D96
Matrix: SOIL Lab Sample ID: P4754-14
% Solids: 93.6 Date Received: 11/08/2024
Analytical Method: ICP_AES
Concentration Units ($\mu\text{g/L}$, mg/L , mg/kg dry weight, μg , or $\mu\text{g/cm}^2$): mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7439-92-1	Lead	76		11/14/2024	0637

NOTE: Hardness (total) is reported in mg/L

Comments:

FORM 1 - IN
INORGANIC ANALYSIS DATA SHEET

MC0D77

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011
Lab Code: ACE Case No.: 51863 MA No. : SDG No.: MC0D96
Matrix: SOIL Lab Sample ID: P4754-15
% Solids: 96.7 Date Received: 11/08/2024
Analytical Method: ICP_AES
Concentration Units ($\mu\text{g/L}$, mg/L , mg/kg dry weight, μg , or $\mu\text{g/cm}^2$): mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7439-92-1	Lead	38		11/14/2024	0642

NOTE: Hardness (total) is reported in mg/L

Comments:

FORM 1 - IN
INORGANIC ANALYSIS DATA SHEET

MC0D78

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011
Lab Code: ACE Case No.: 51863 MA No. : SDG No.: MC0D96
Matrix: SOIL Lab Sample ID: P4754-16
% Solids: 98.2 Date Received: 11/08/2024
Analytical Method: ICP_AES
Concentration Units ($\mu\text{g/L}$, mg/L , mg/kg dry weight, μg , or $\mu\text{g/cm}^2$): mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7439-92-1	Lead	35		11/14/2024	0646

NOTE: Hardness (total) is reported in mg/L

Comments:

FORM 1 - IN
INORGANIC ANALYSIS DATA SHEET

MC0D81

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011
Lab Code: ACE Case No.: 51863 MA No. : SDG No.: MC0D96
Matrix: SOIL Lab Sample ID: P4754-17
% Solids: 87.8 Date Received: 11/08/2024
Analytical Method: ICP_AES
Concentration Units ($\mu\text{g/L}$, mg/L , mg/kg dry weight, μg , or $\mu\text{g/cm}^2$): mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7439-92-1	Lead	190		11/14/2024	0651

NOTE: Hardness (total) is reported in mg/L

Comments:

FORM 1 - IN
INORGANIC ANALYSIS DATA SHEET

MC0D82

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011
Lab Code: ACE Case No.: 51863 MA No. : SDG No.: MC0D96
Matrix: SOIL Lab Sample ID: P4754-18
% Solids: 86.3 Date Received: 11/08/2024
Analytical Method: ICP_AES
Concentration Units ($\mu\text{g/L}$, mg/L , mg/kg dry weight, μg , or $\mu\text{g/cm}^2$): mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7439-92-1	Lead	150		11/14/2024	0655

NOTE: Hardness (total) is reported in mg/L

Comments:

FORM 1 - IN
INORGANIC ANALYSIS DATA SHEET

MC0D83

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011
Lab Code: ACE Case No.: 51863 MA No. : SDG No.: MC0D96
Matrix: SOIL Lab Sample ID: P4754-19
% Solids: 89.2 Date Received: 11/08/2024
Analytical Method: ICP_AES
Concentration Units ($\mu\text{g/L}$, mg/L , mg/kg dry weight, μg , or $\mu\text{g/cm}^2$): mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7439-92-1	Lead	110		11/14/2024	0700

NOTE: Hardness (total) is reported in mg/L

Comments:

FORM 1 - IN
INORGANIC ANALYSIS DATA SHEET

MC0D84

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011
Lab Code: ACE Case No.: 51863 MA No. : SDG No.: MC0D96
Matrix: SOIL Lab Sample ID: P4754-20
% Solids: 90 Date Received: 11/08/2024
Analytical Method: ICP_AES
Concentration Units ($\mu\text{g/L}$, mg/L , mg/kg dry weight, μg , or $\mu\text{g/cm}^2$): mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7439-92-1	Lead	63		11/14/2024	0704

NOTE: Hardness (total) is reported in mg/L

Comments:

FORM 1 - IN
INORGANIC ANALYSIS DATA SHEET

MC0D86

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011
Lab Code: ACE Case No.: 51863 MA No. : SDG No.: MC0D96
Matrix: SOIL Lab Sample ID: P4754-21
% Solids: 84.8 Date Received: 11/08/2024
Analytical Method: ICP_AES
Concentration Units ($\mu\text{g/L}$, mg/L , mg/kg dry weight, μg , or $\mu\text{g/cm}^2$): mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7439-92-1	Lead	140		11/14/2024	0709

NOTE: Hardness (total) is reported in mg/L

Comments:

FORM 1 - IN
INORGANIC ANALYSIS DATA SHEET

MC0D87

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011
Lab Code: ACE Case No.: 51863 MA No. : SDG No.: MC0D96
Matrix: SOIL Lab Sample ID: P4754-22
% Solids: 93.6 Date Received: 11/08/2024
Analytical Method: ICP_AES
Concentration Units ($\mu\text{g/L}$, mg/L , mg/kg dry weight, μg , or $\mu\text{g/cm}^2$): mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7439-92-1	Lead	180		11/14/2024	0713

NOTE: Hardness (total) is reported in mg/L

Comments:

FORM 1 - IN
INORGANIC ANALYSIS DATA SHEET

MC0D96

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011
Lab Code: ACE Case No.: 51863 MA No. : SDG No.: MC0D96
Matrix: SOIL Lab Sample ID: P4754-01
% Solids: 94.2 Date Received: 11/07/2024
Analytical Method: ICP_AES
Concentration Units ($\mu\text{g/L}$, mg/L , mg/kg dry weight, μg , or $\mu\text{g/cm}^2$): mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7439-92-1	Lead	150		11/14/2024	0526

NOTE: Hardness (total) is reported in mg/L

Comments:

FORM 1 - IN
INORGANIC ANALYSIS DATA SHEET

MC0D97

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011
Lab Code: ACE Case No.: 51863 MA No. : SDG No.: MC0D96
Matrix: SOIL Lab Sample ID: P4754-02
% Solids: 97.1 Date Received: 11/07/2024
Analytical Method: ICP_AES
Concentration Units ($\mu\text{g/L}$, mg/L , mg/kg dry weight, μg , or $\mu\text{g/cm}^2$): mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7439-92-1	Lead	37		11/14/2024	0531

NOTE: Hardness (total) is reported in mg/L Comments:

FORM 1 - IN
INORGANIC ANALYSIS DATA SHEET

MC0D98

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011
Lab Code: ACE Case No.: 51863 MA No. : SDG No.: MC0D96
Matrix: SOIL Lab Sample ID: P4754-03
% Solids: 95.4 Date Received: 11/07/2024
Analytical Method: ICP_AES
Concentration Units ($\mu\text{g/L}$, mg/L , mg/kg dry weight, μg , or $\mu\text{g/cm}^2$): mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7439-92-1	Lead	73		11/14/2024	0535

NOTE: Hardness (total) is reported in mg/L

Comments:

FORM 1 - IN
INORGANIC ANALYSIS DATA SHEET

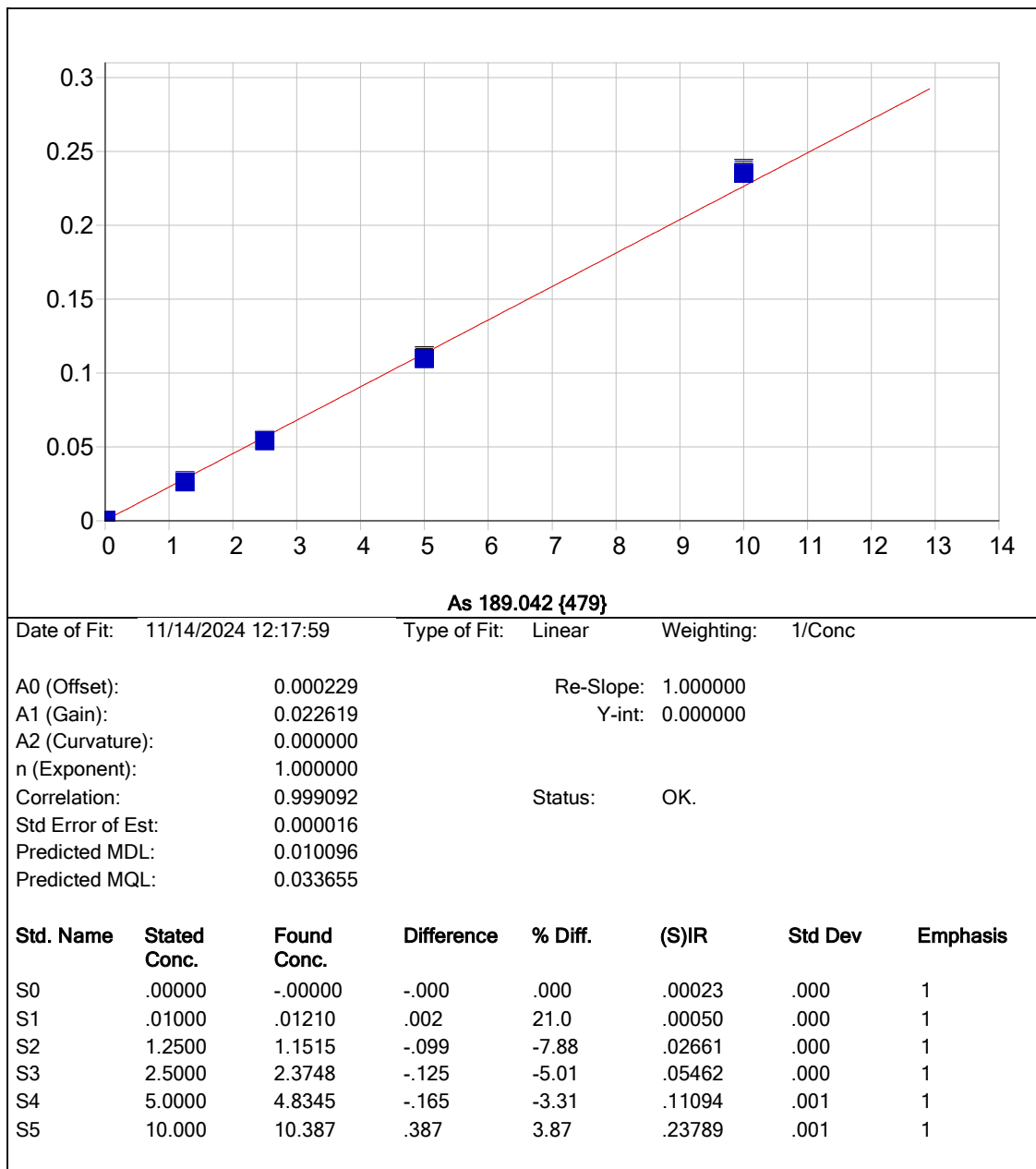
MC0D99

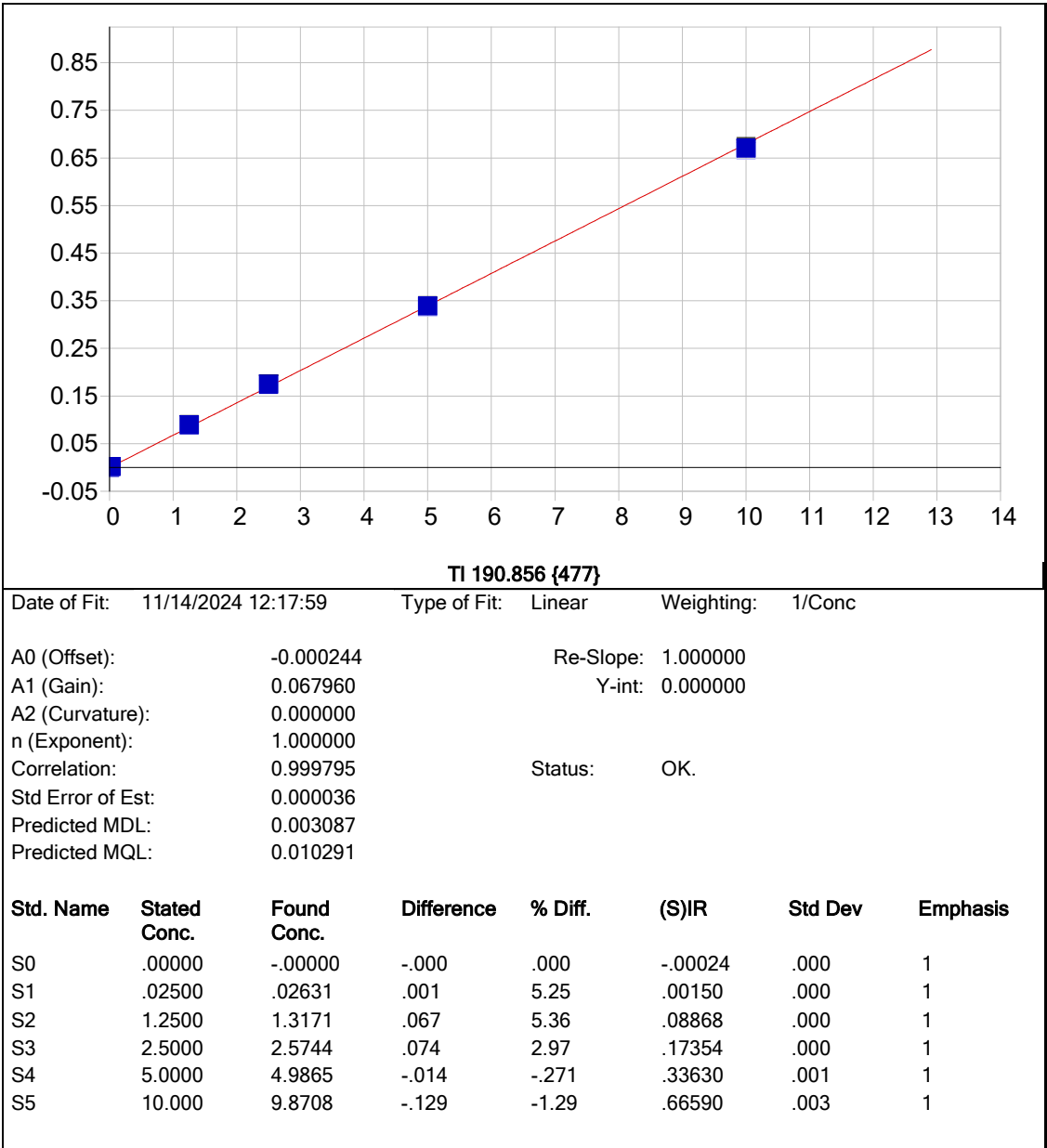
Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011
Lab Code: ACE Case No.: 51863 MA No. : SDG No.: MC0D96
Matrix: SOIL Lab Sample ID: P4754-04
% Solids: 95.8 Date Received: 11/07/2024
Analytical Method: ICP_AES
Concentration Units ($\mu\text{g/L}$, mg/L , mg/kg dry weight, μg , or $\mu\text{g/cm}^2$): mg/kg

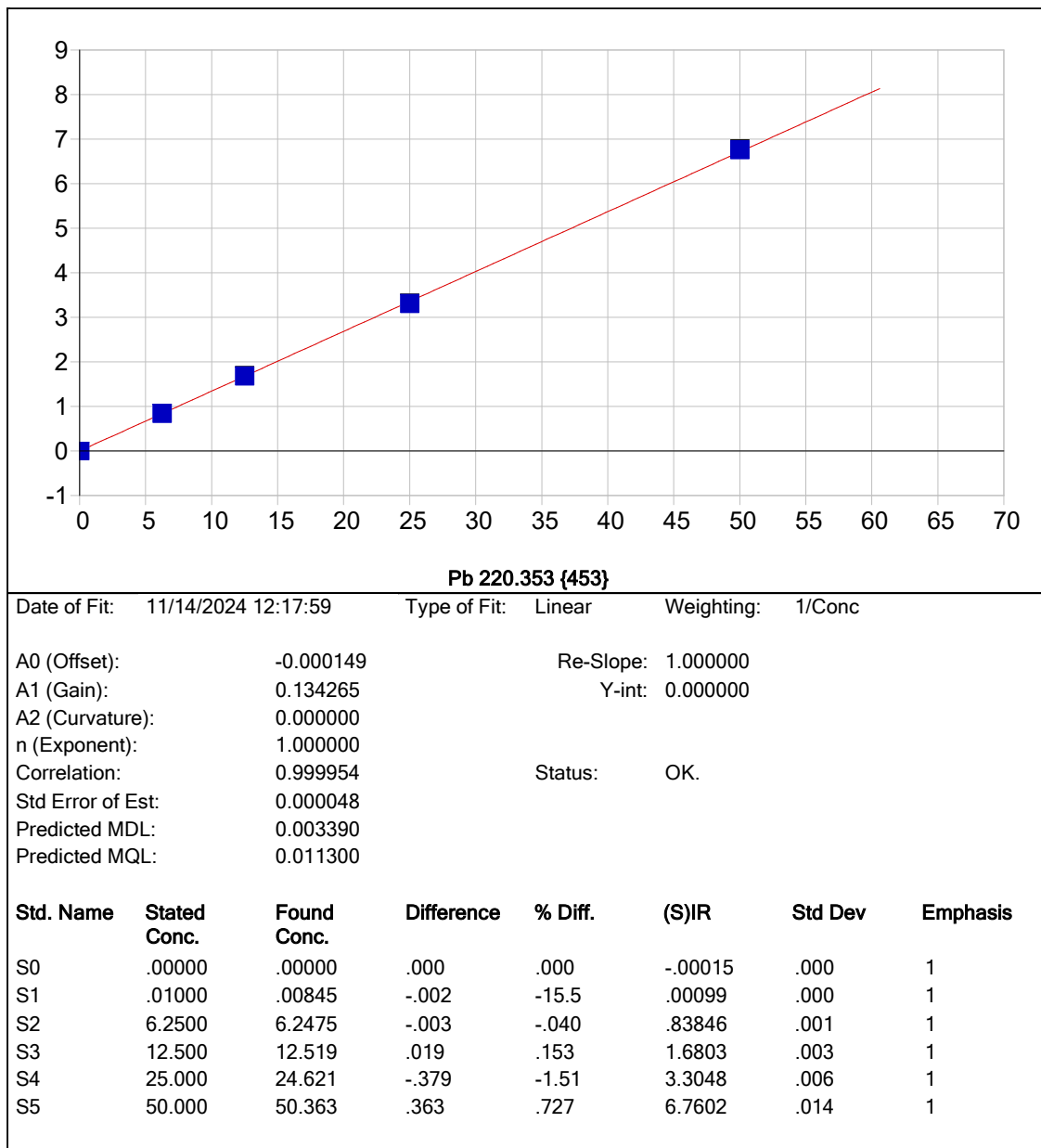
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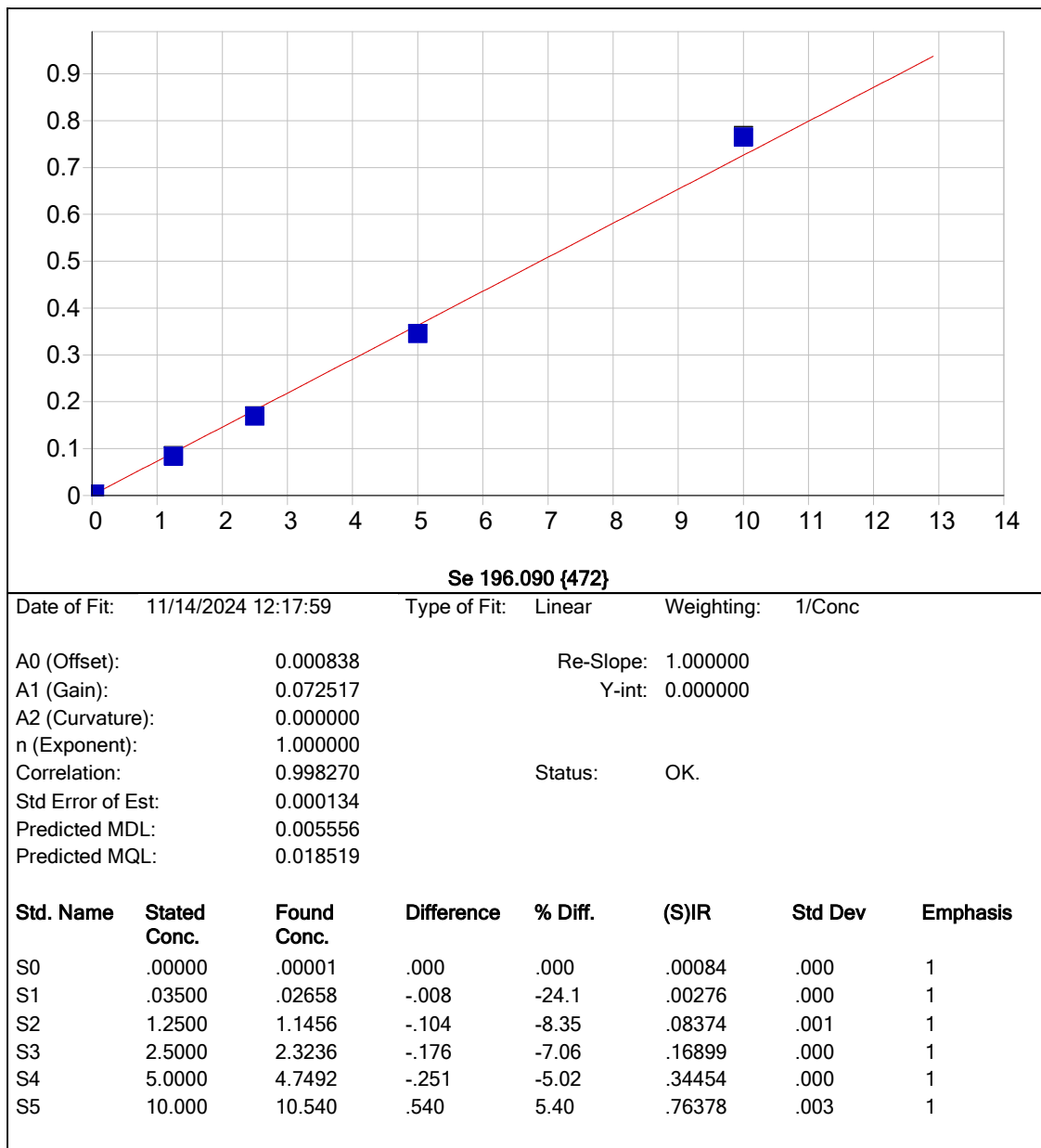
NOTE: Hardness (total) is reported in mg/L

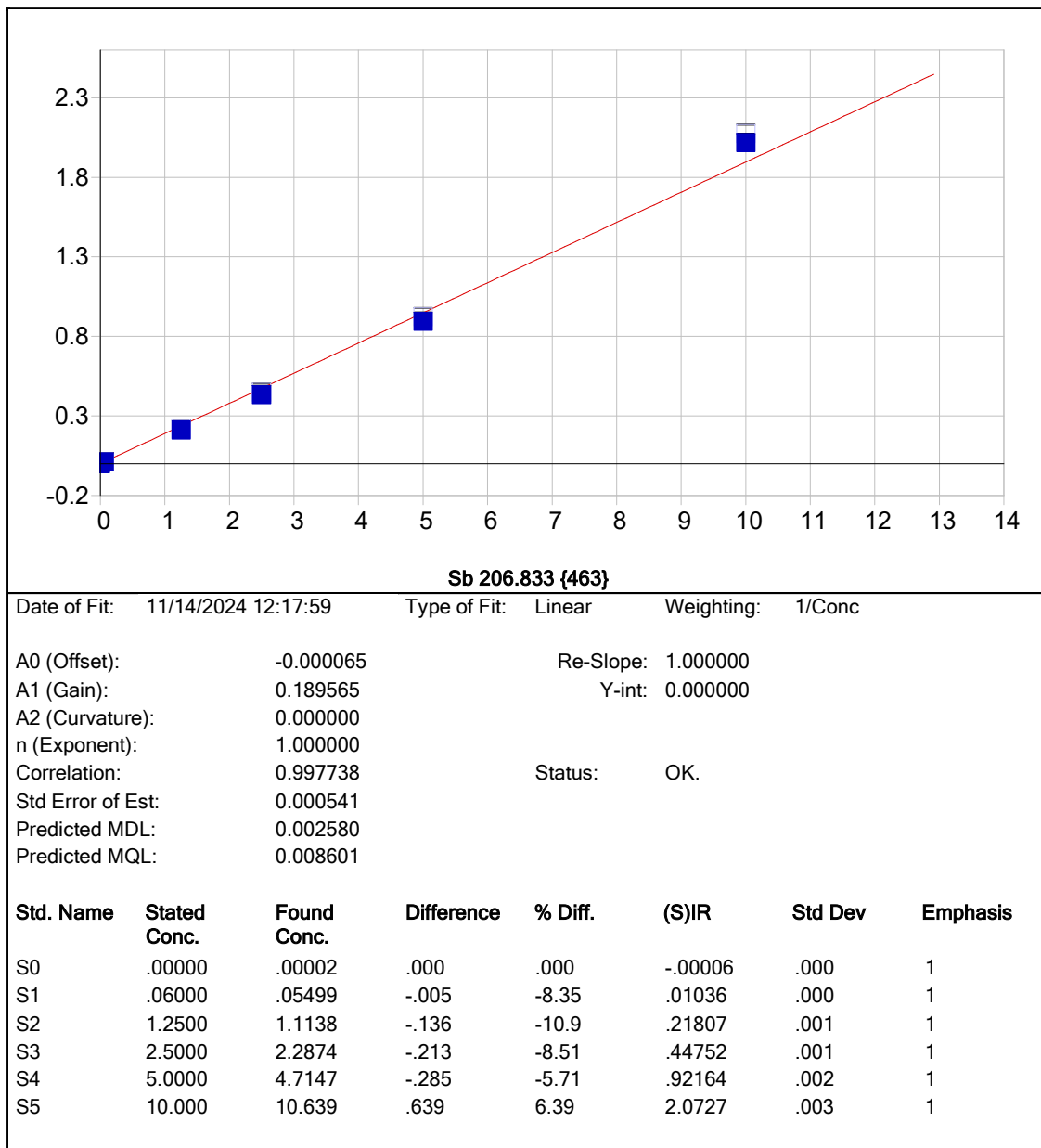
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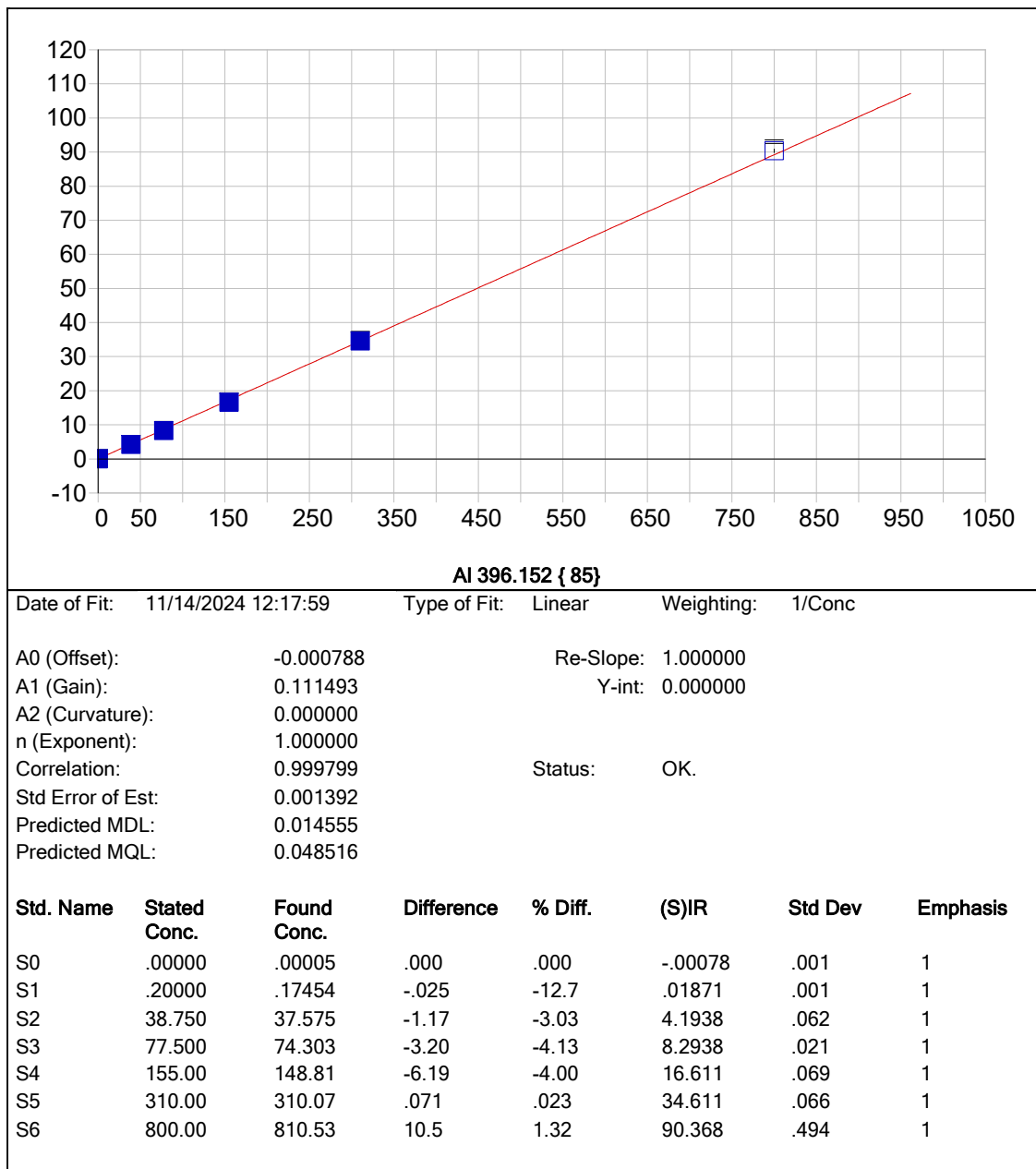


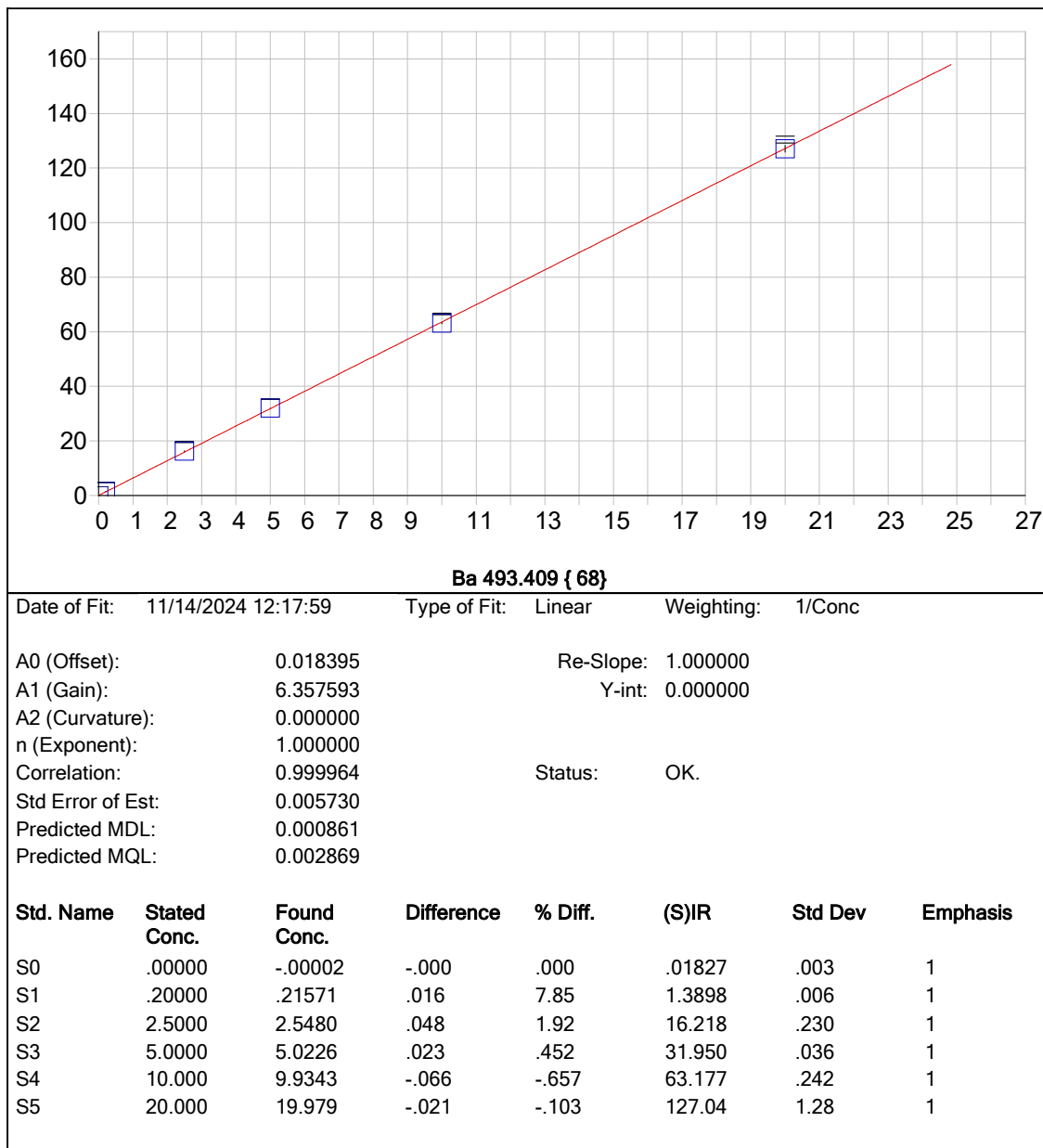


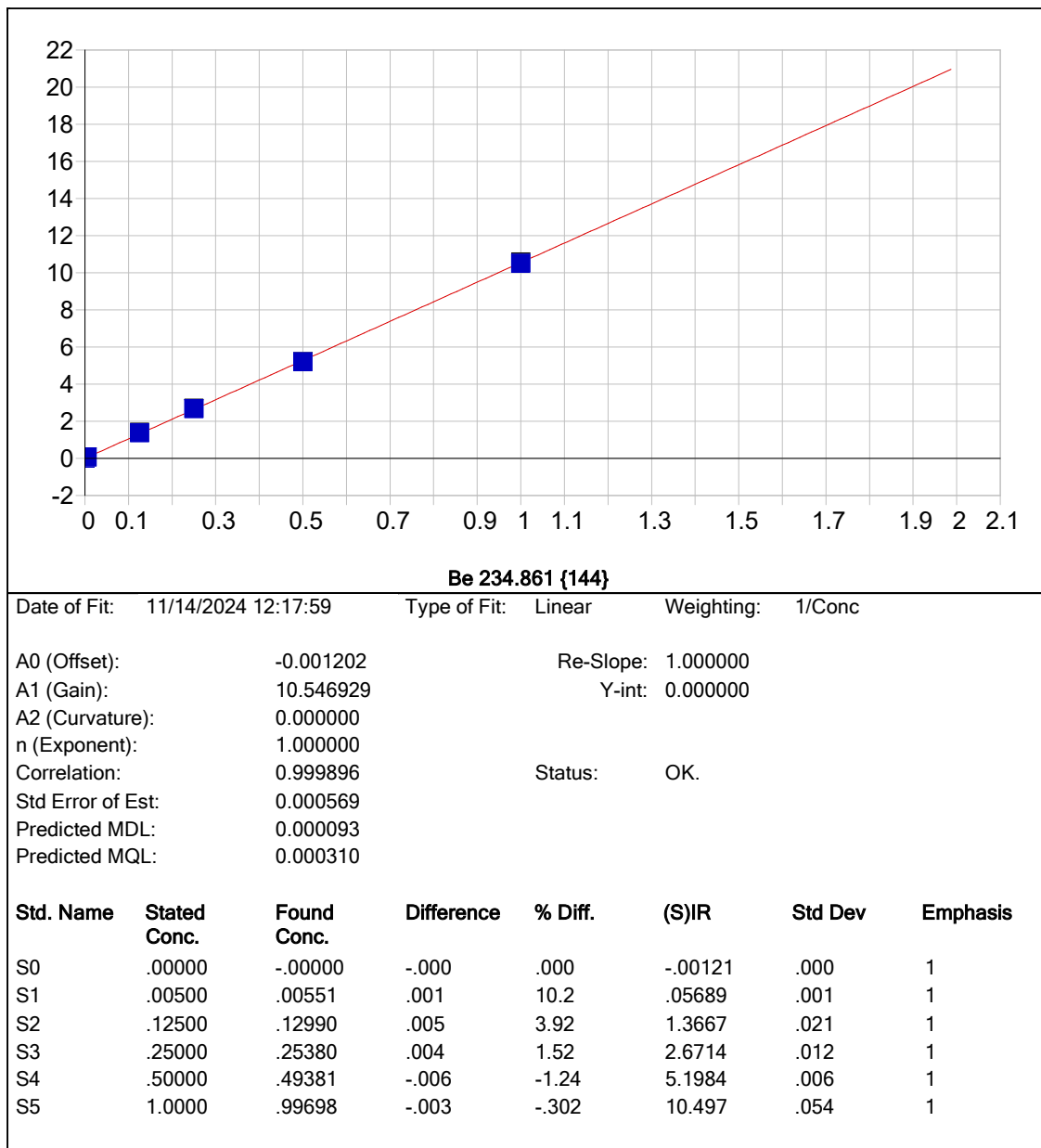


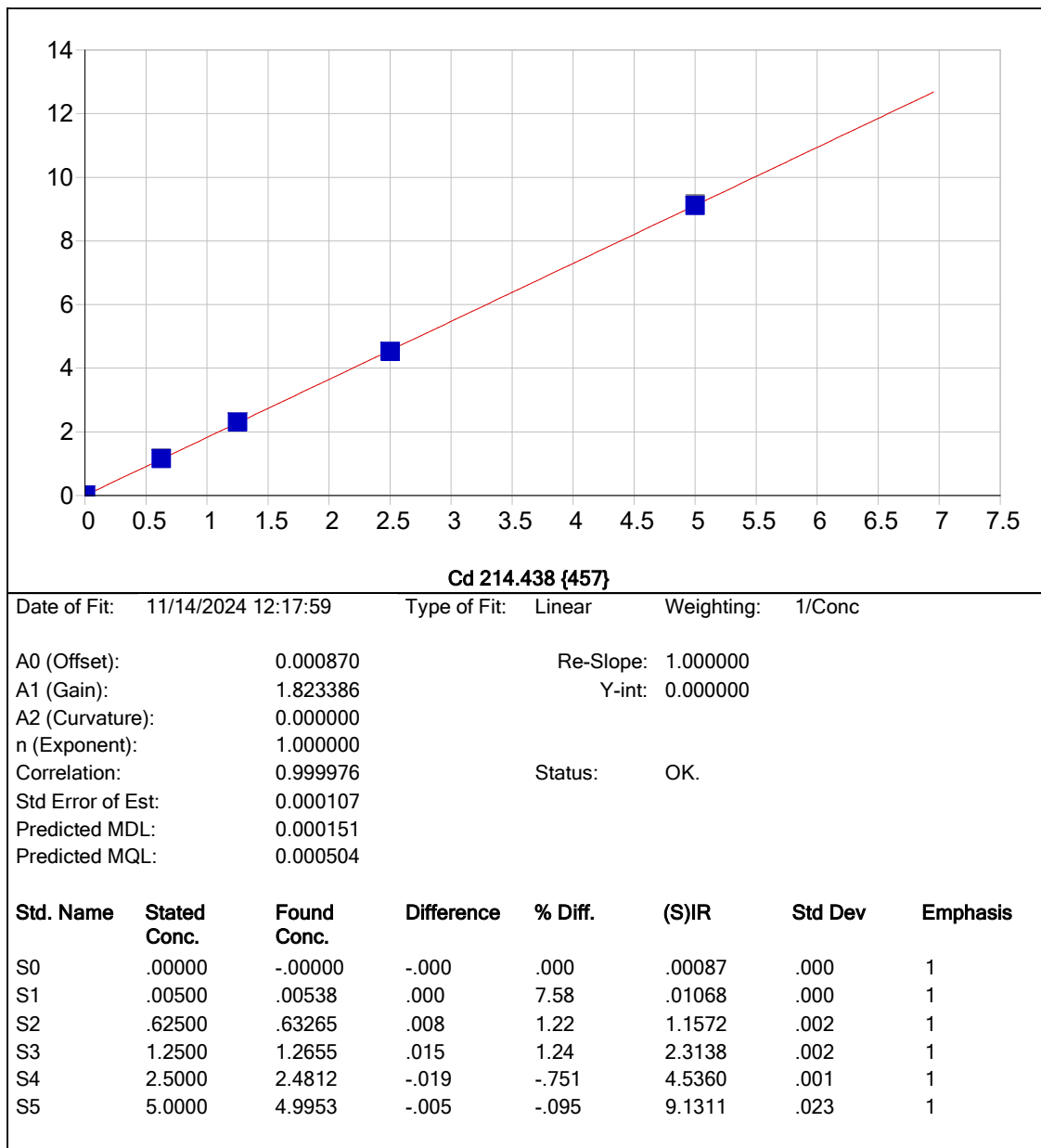


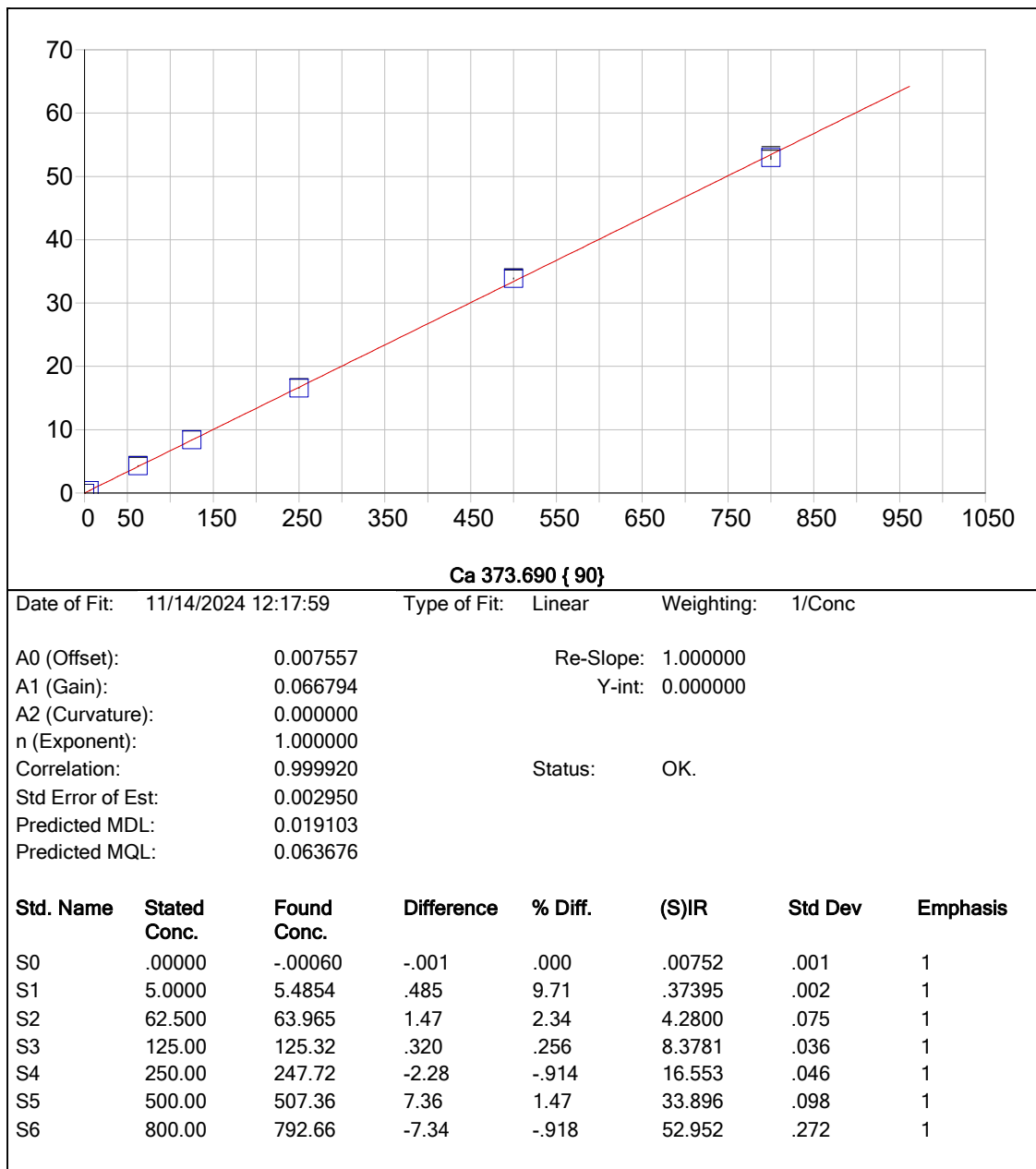


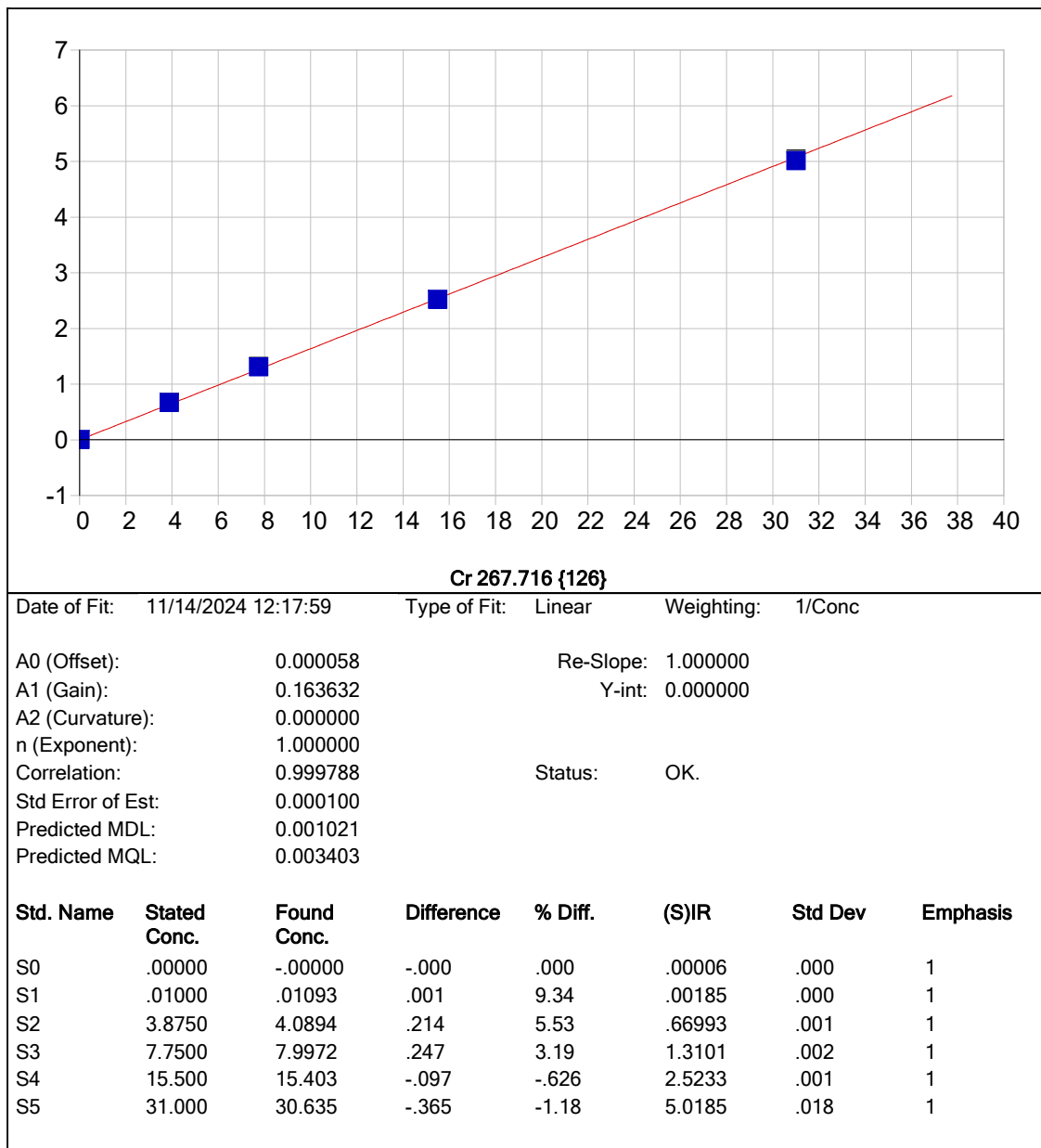


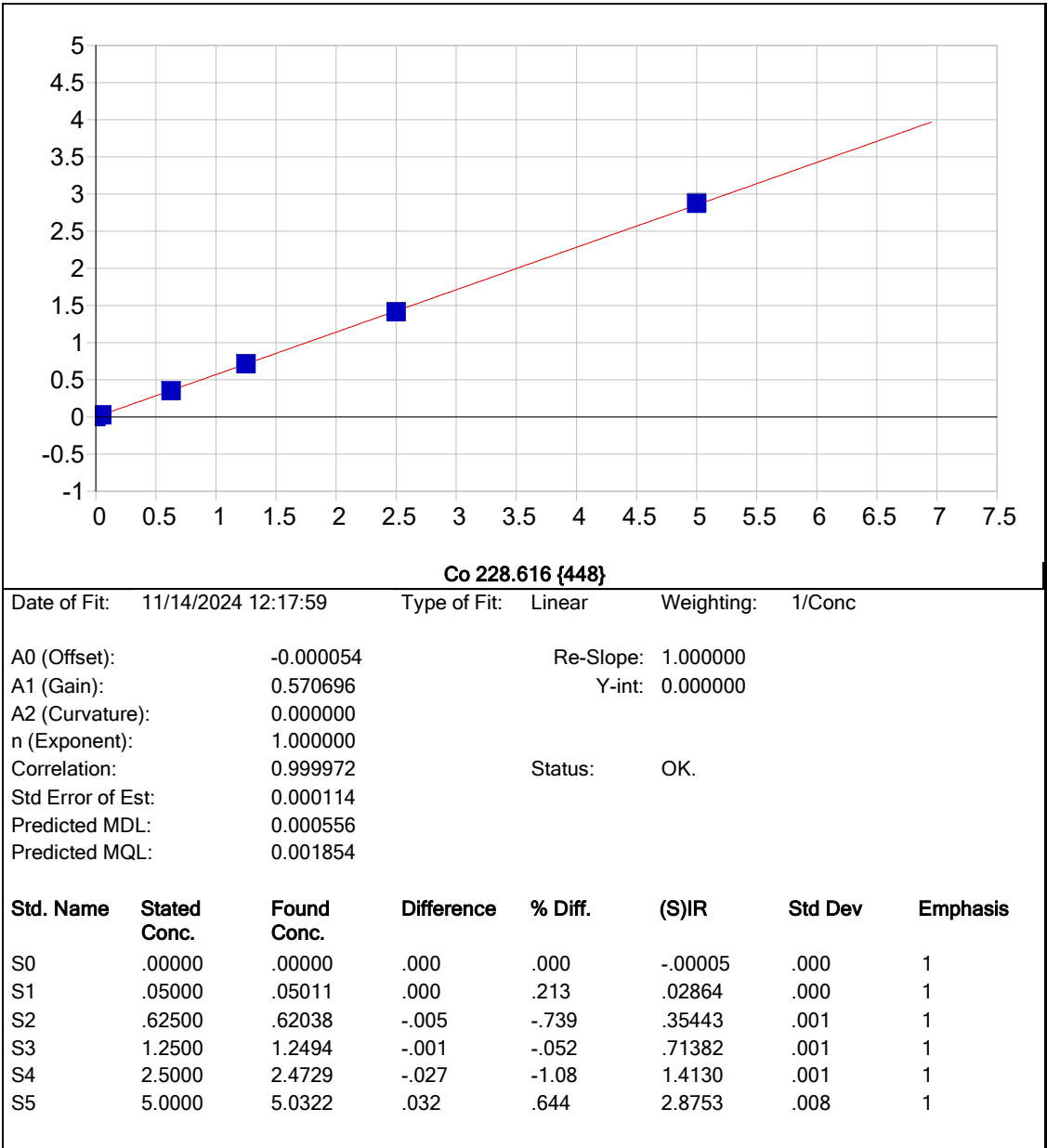


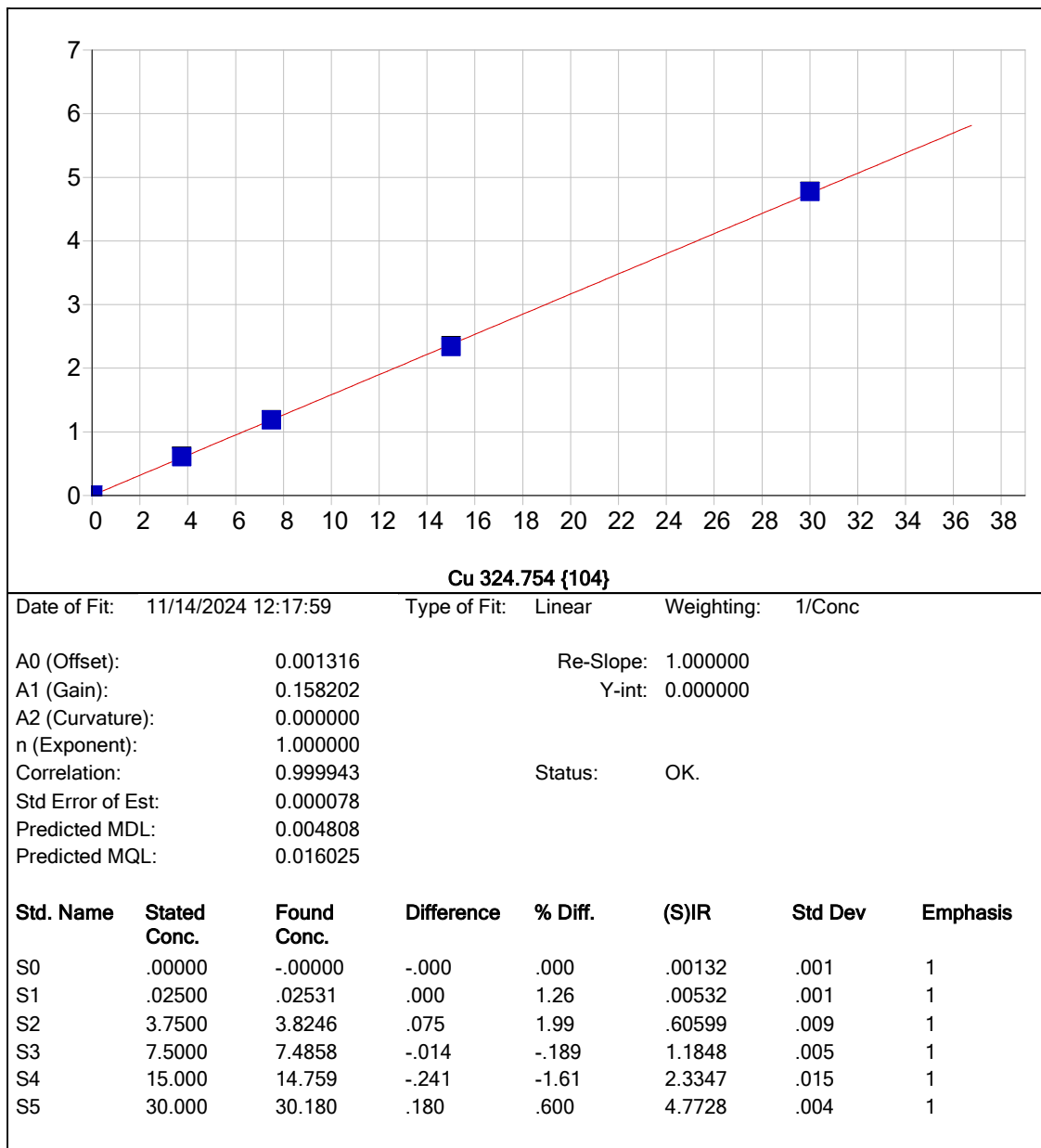


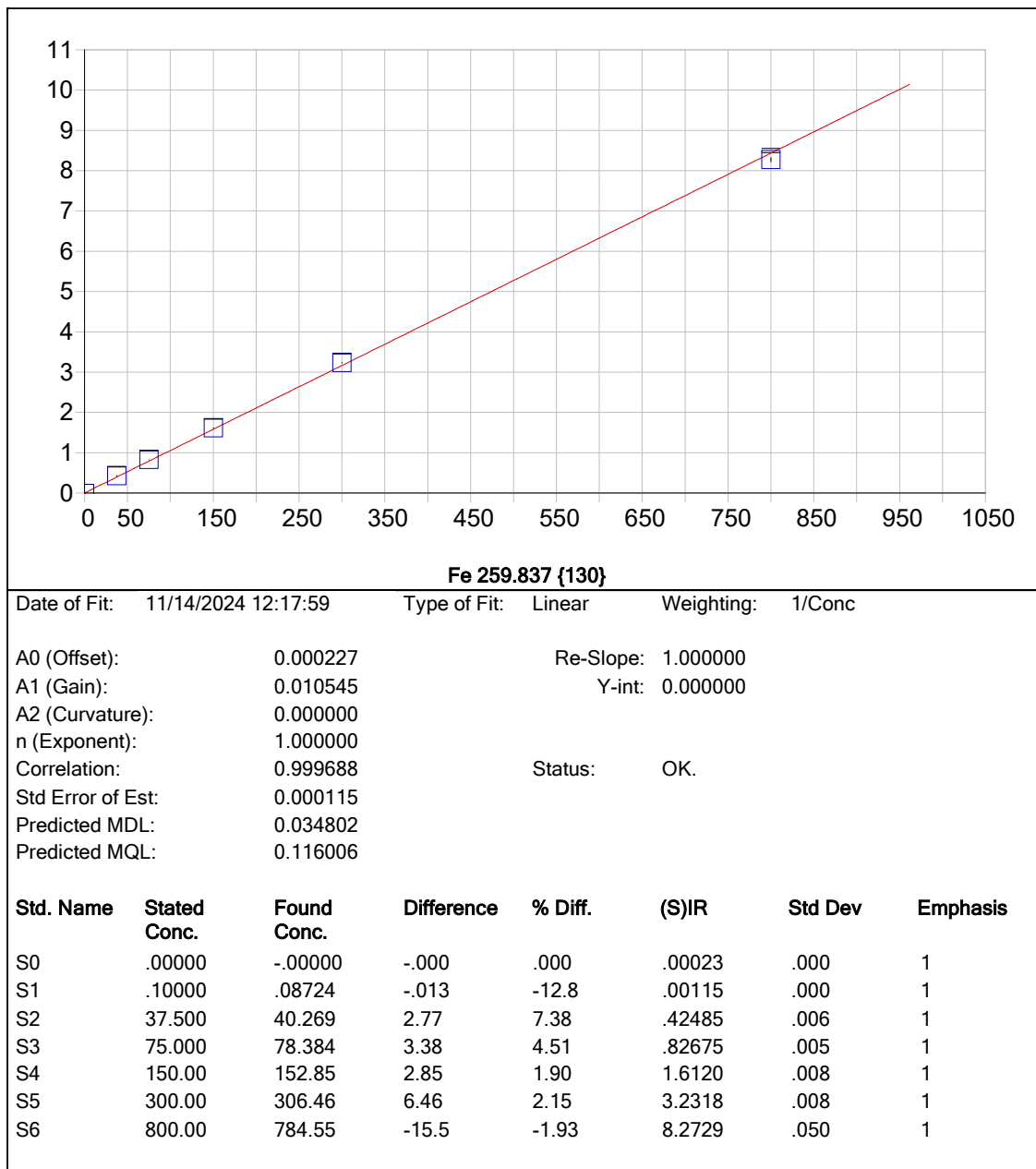


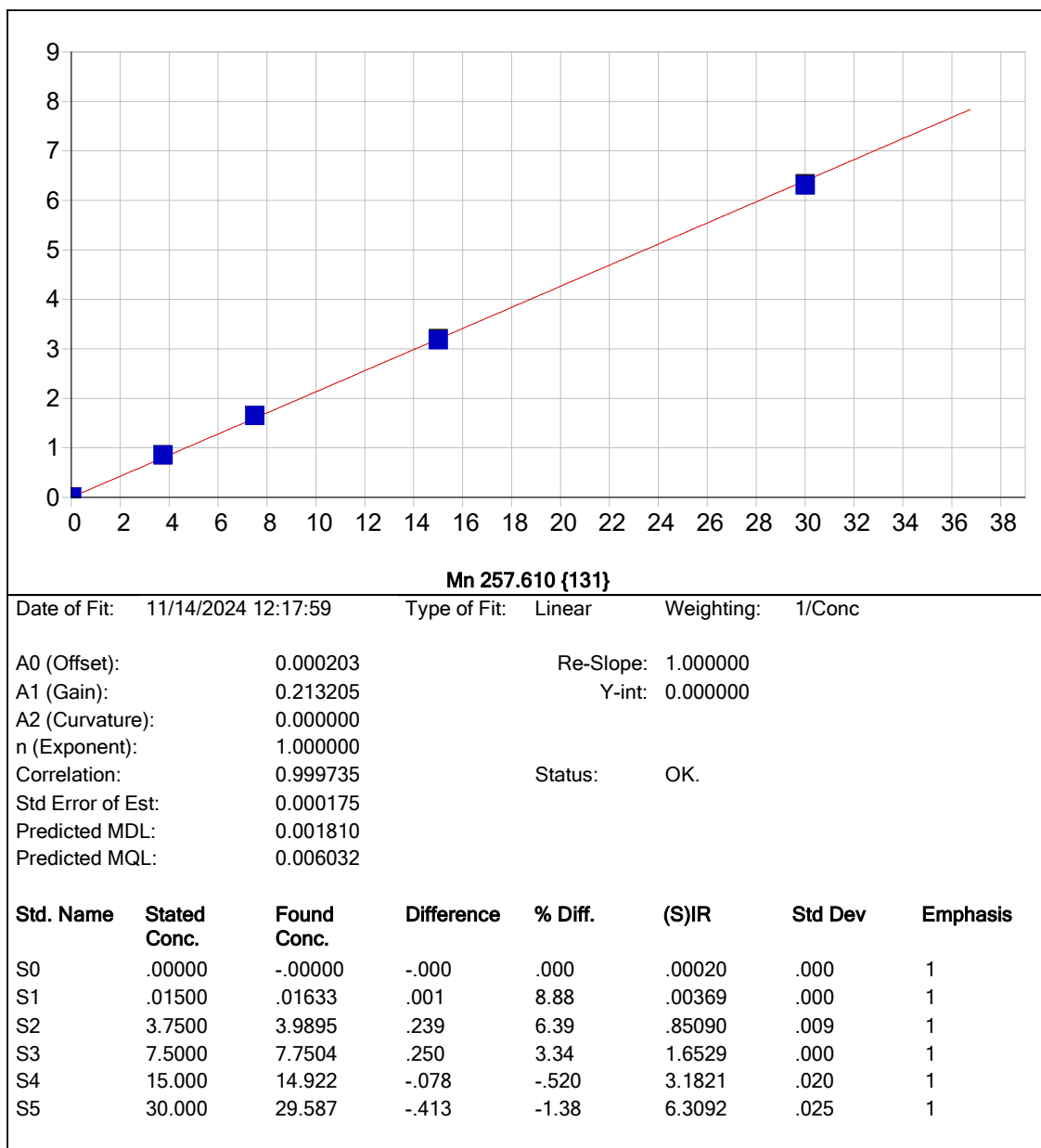


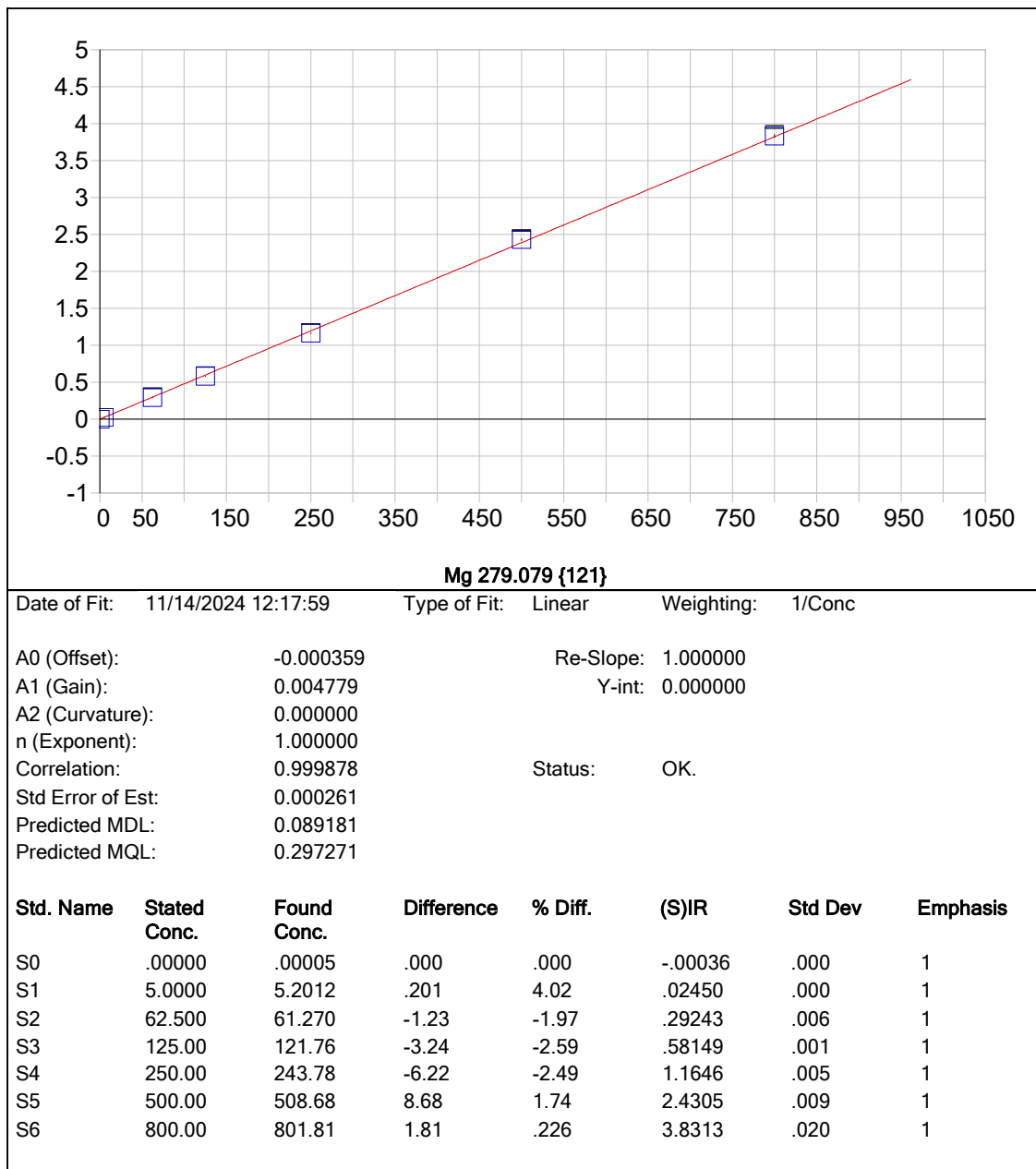


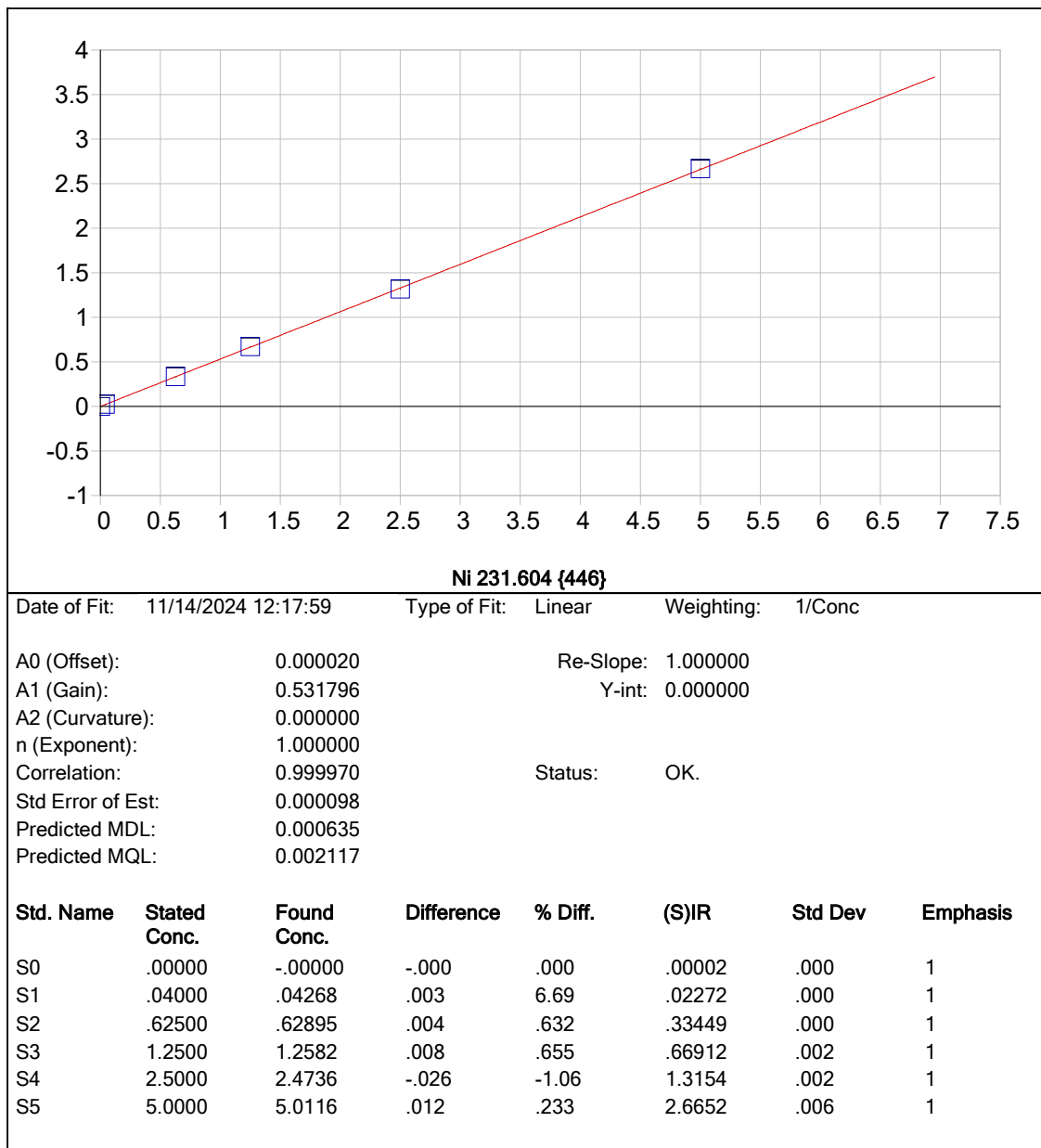


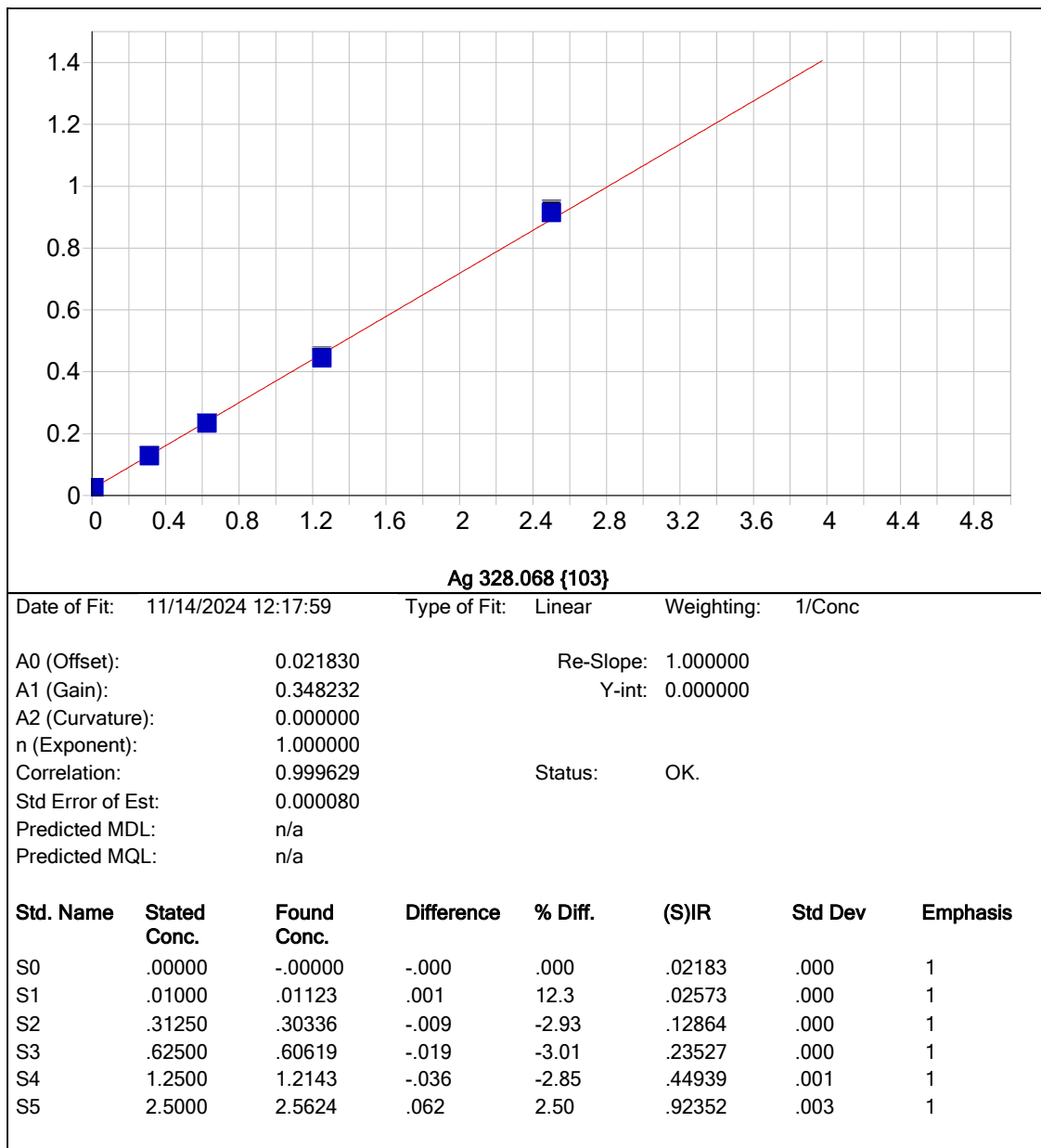


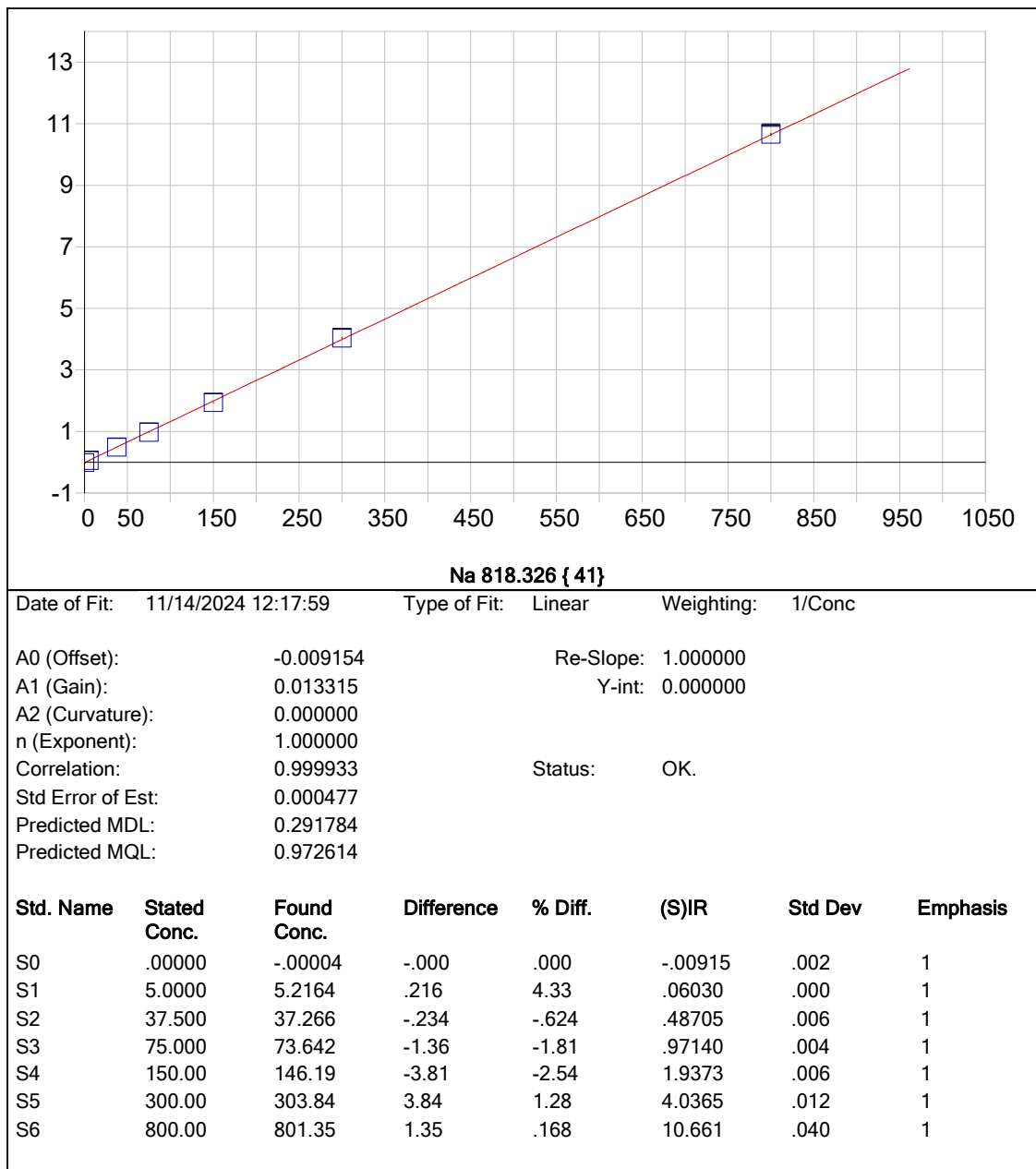


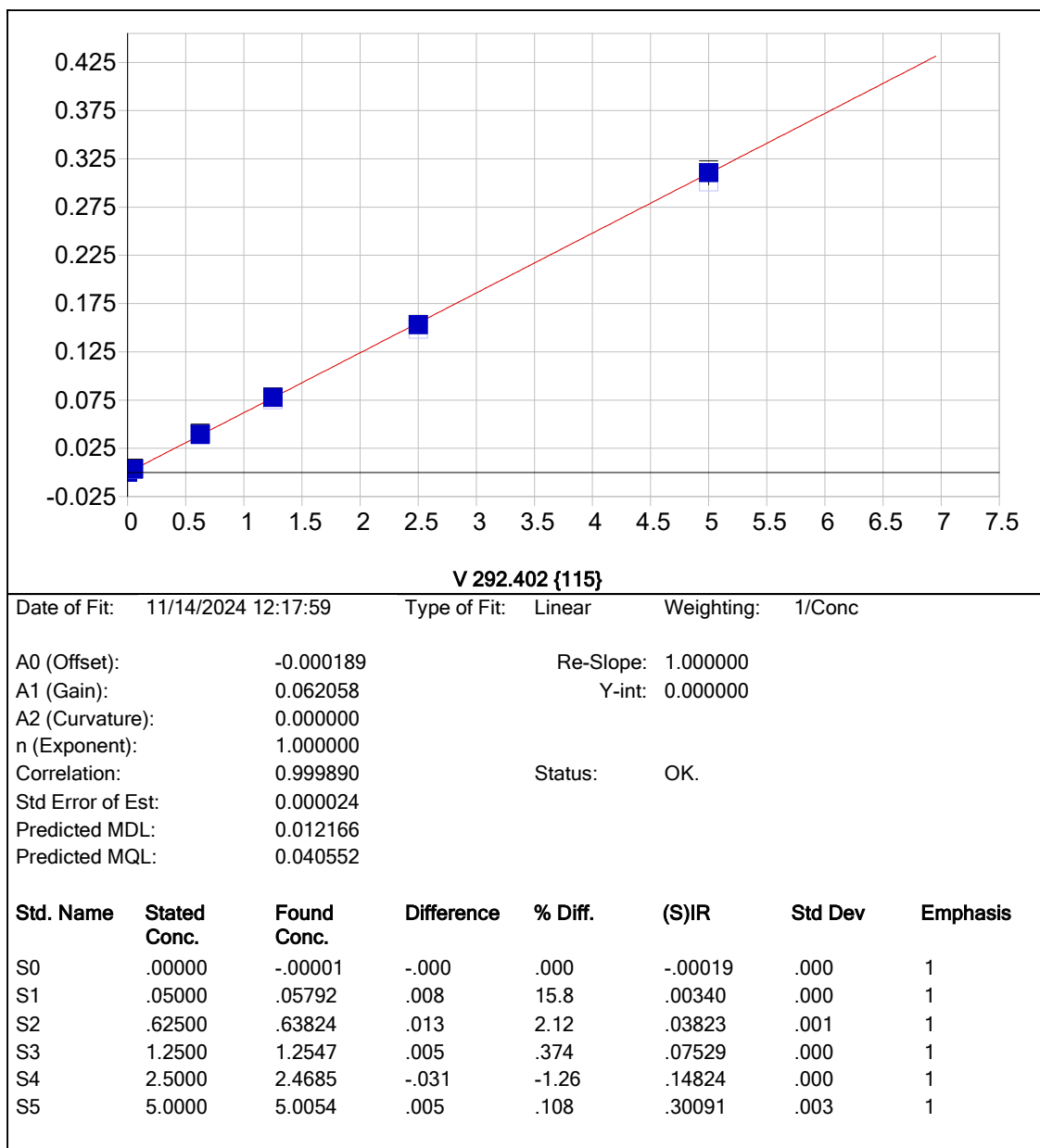


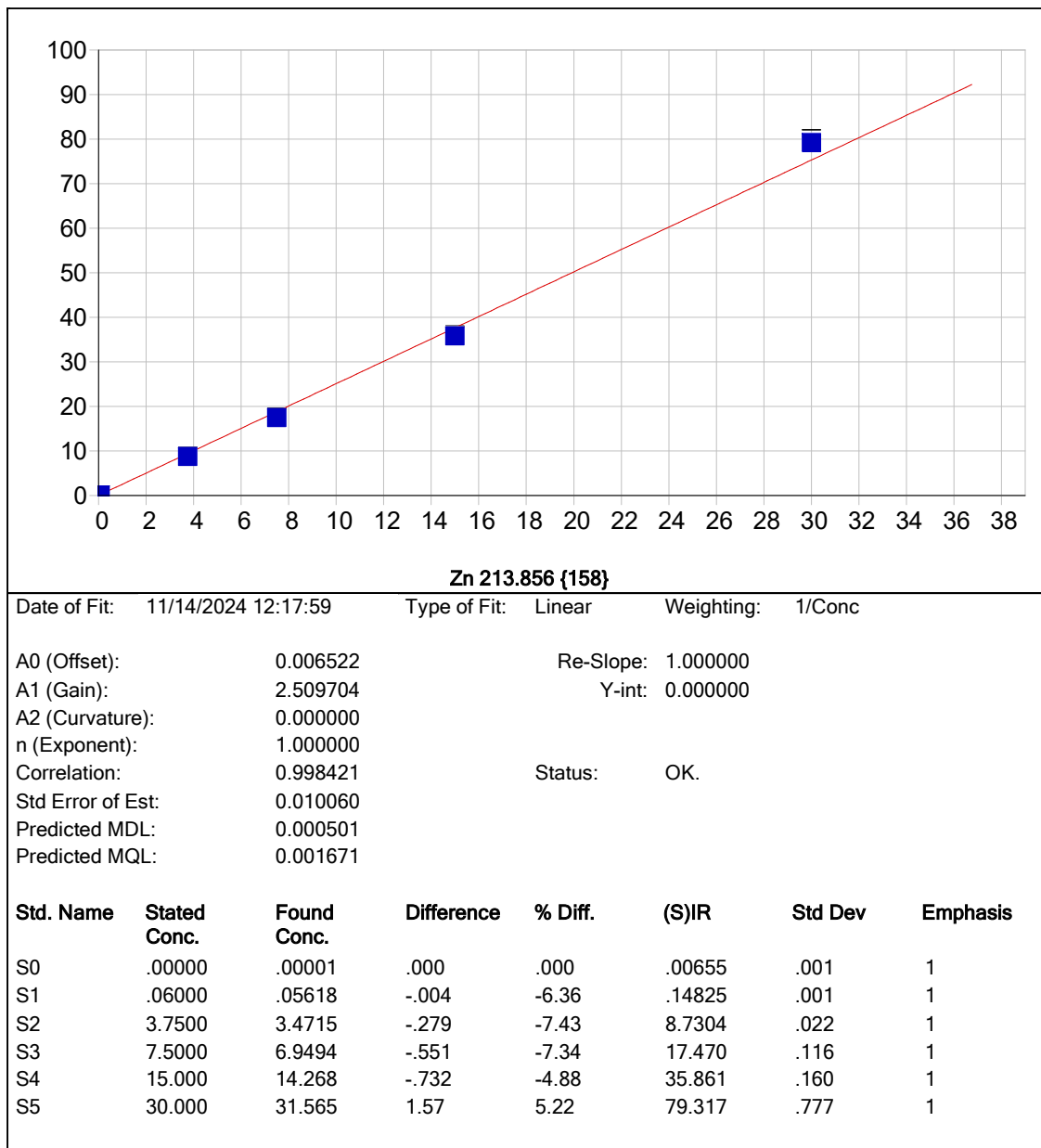


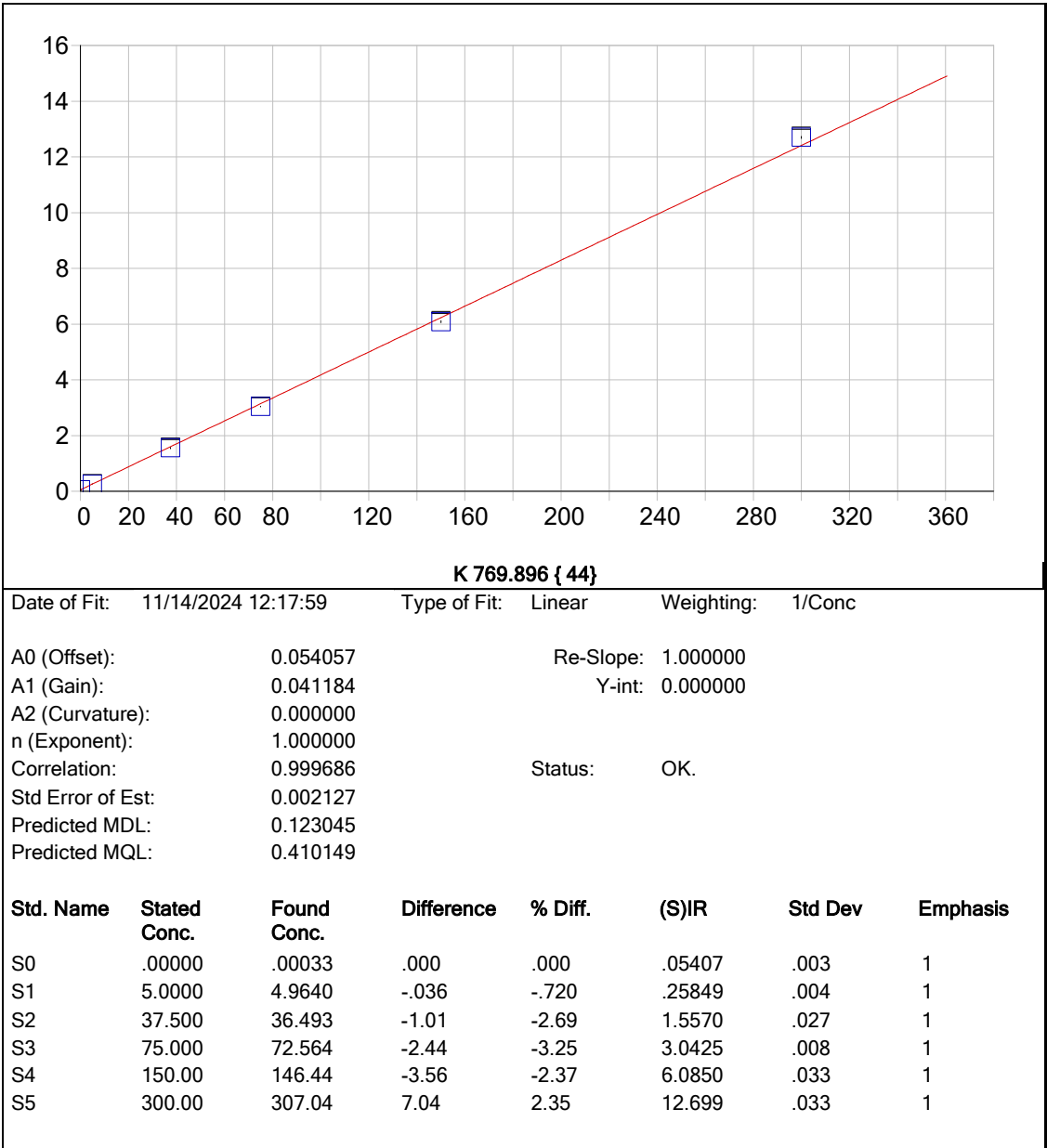


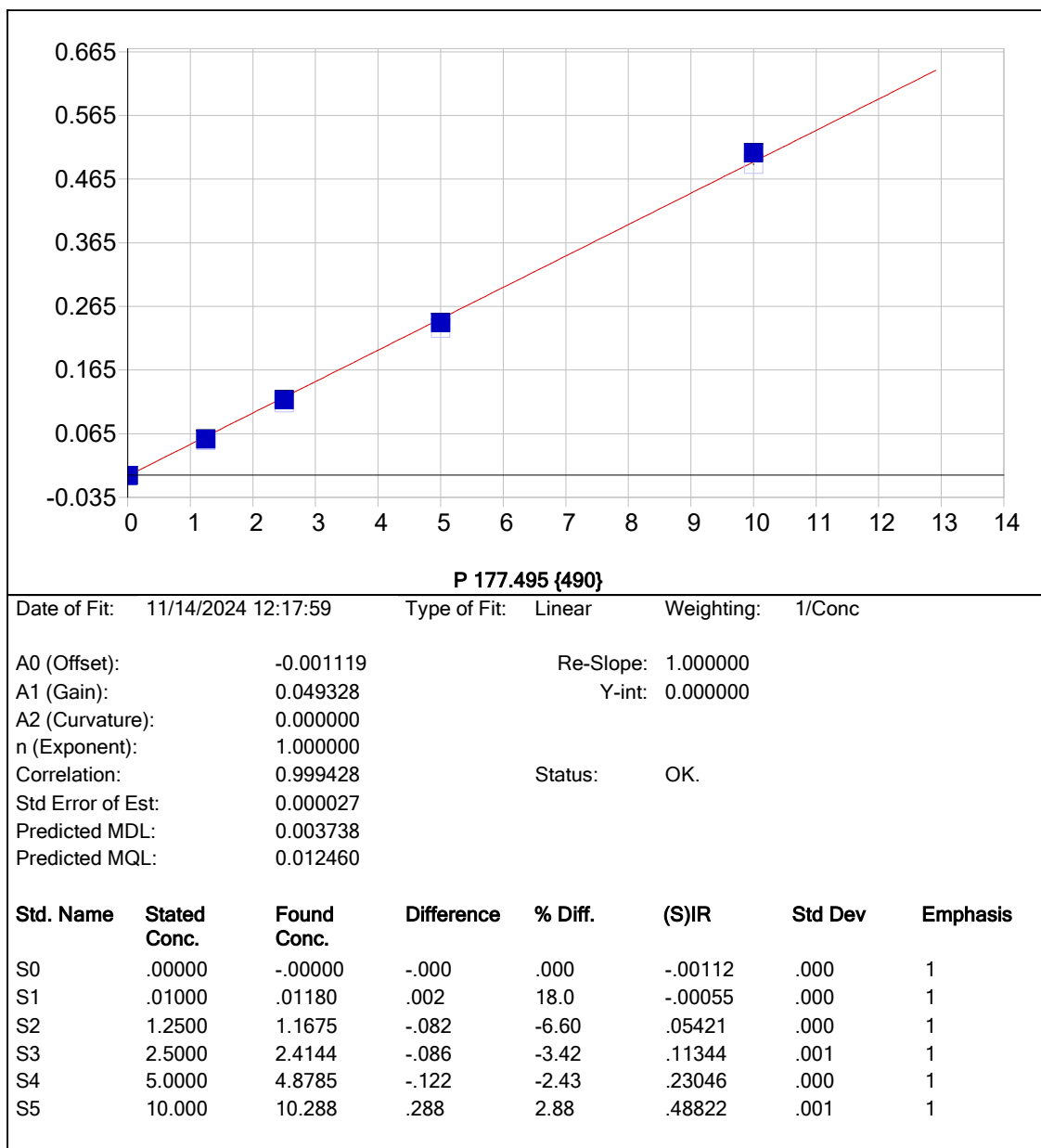


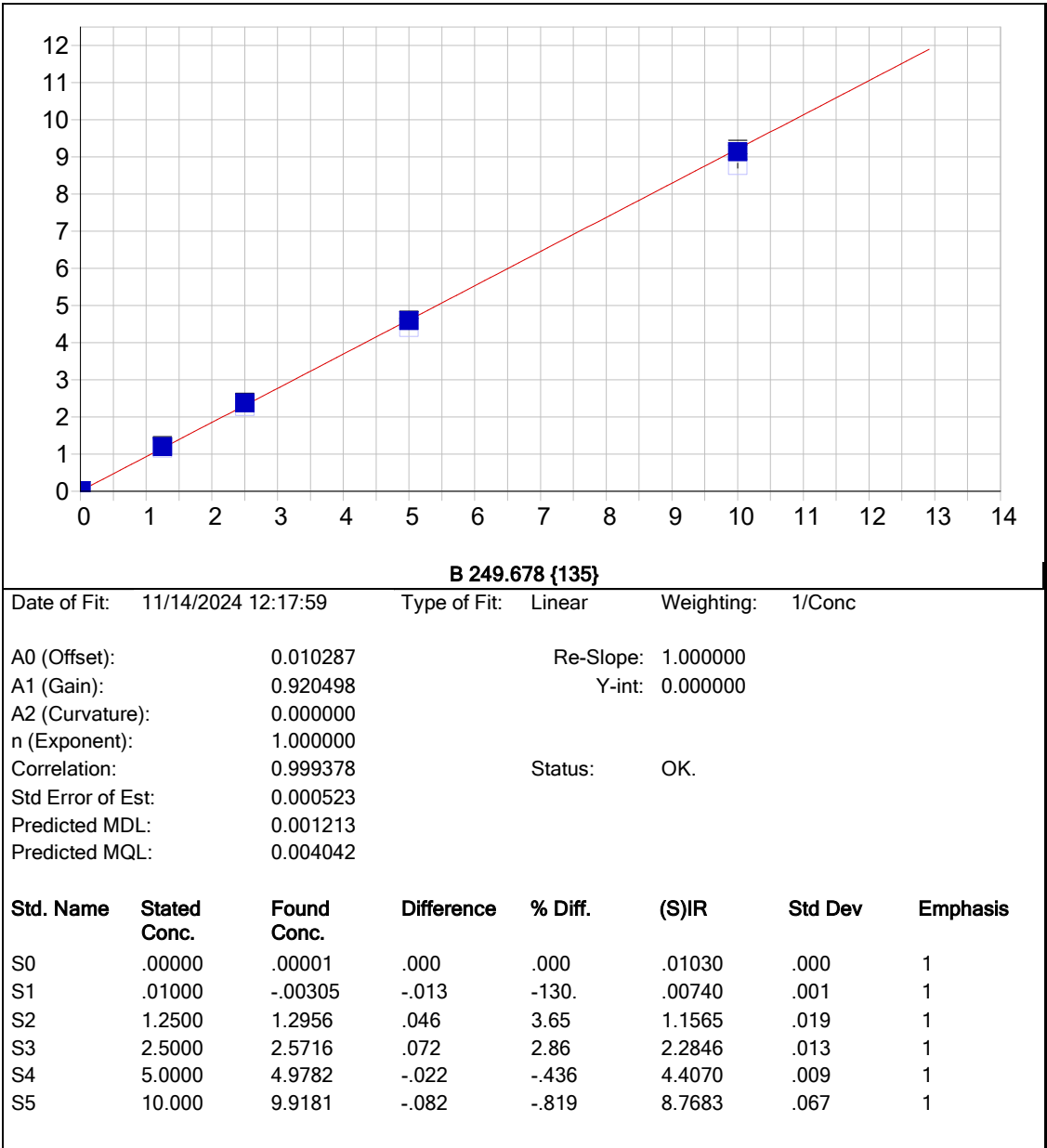


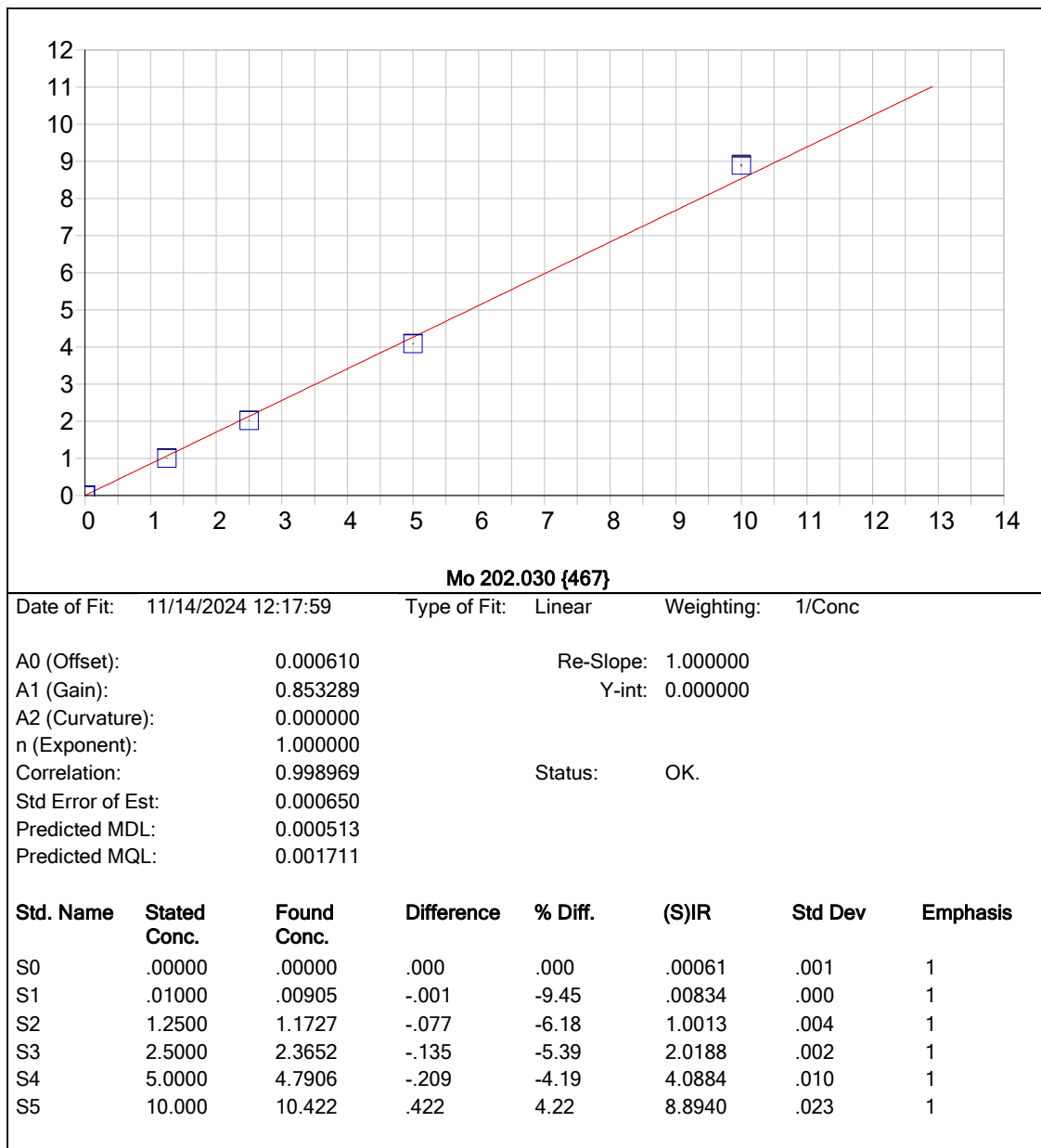


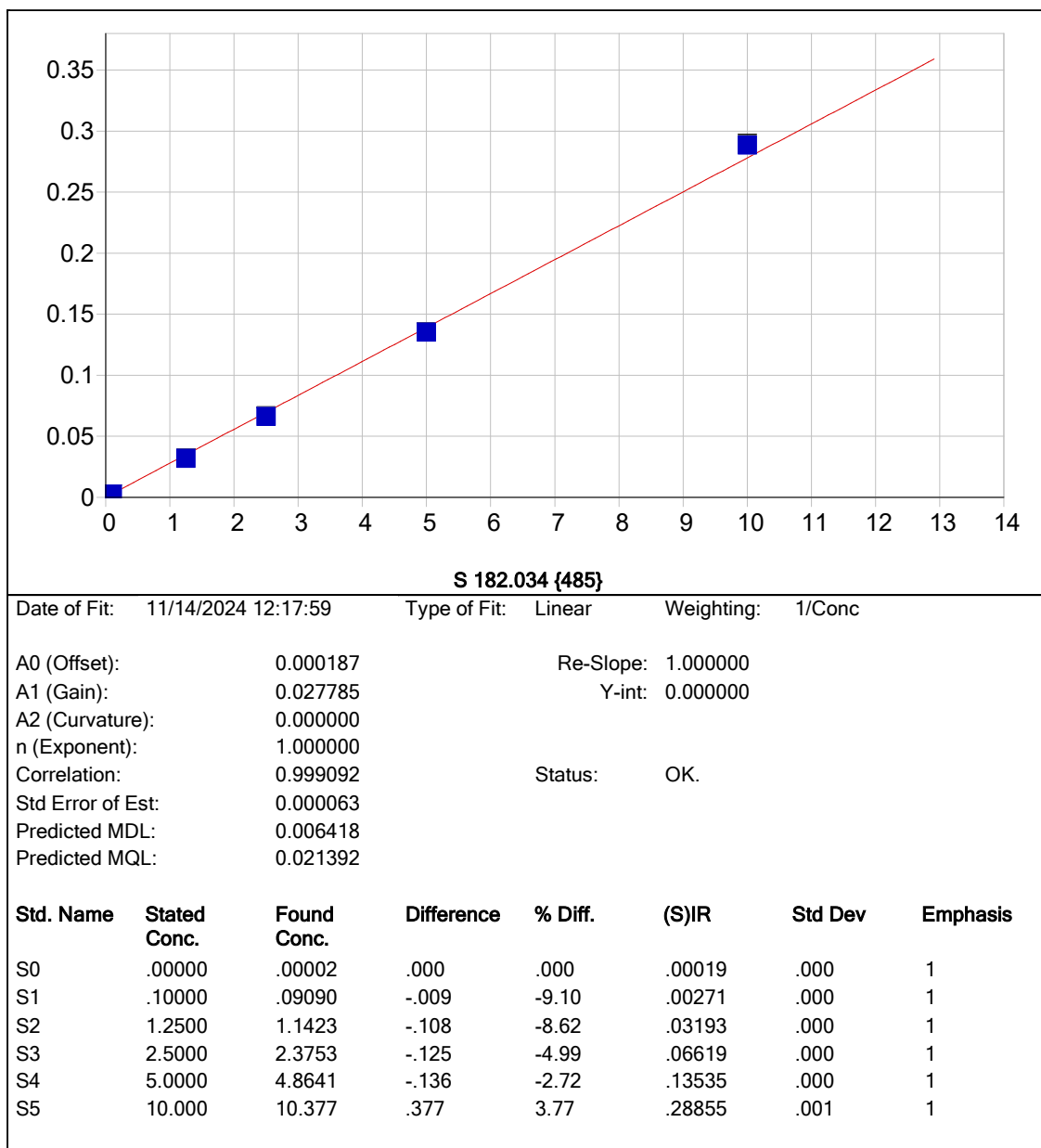


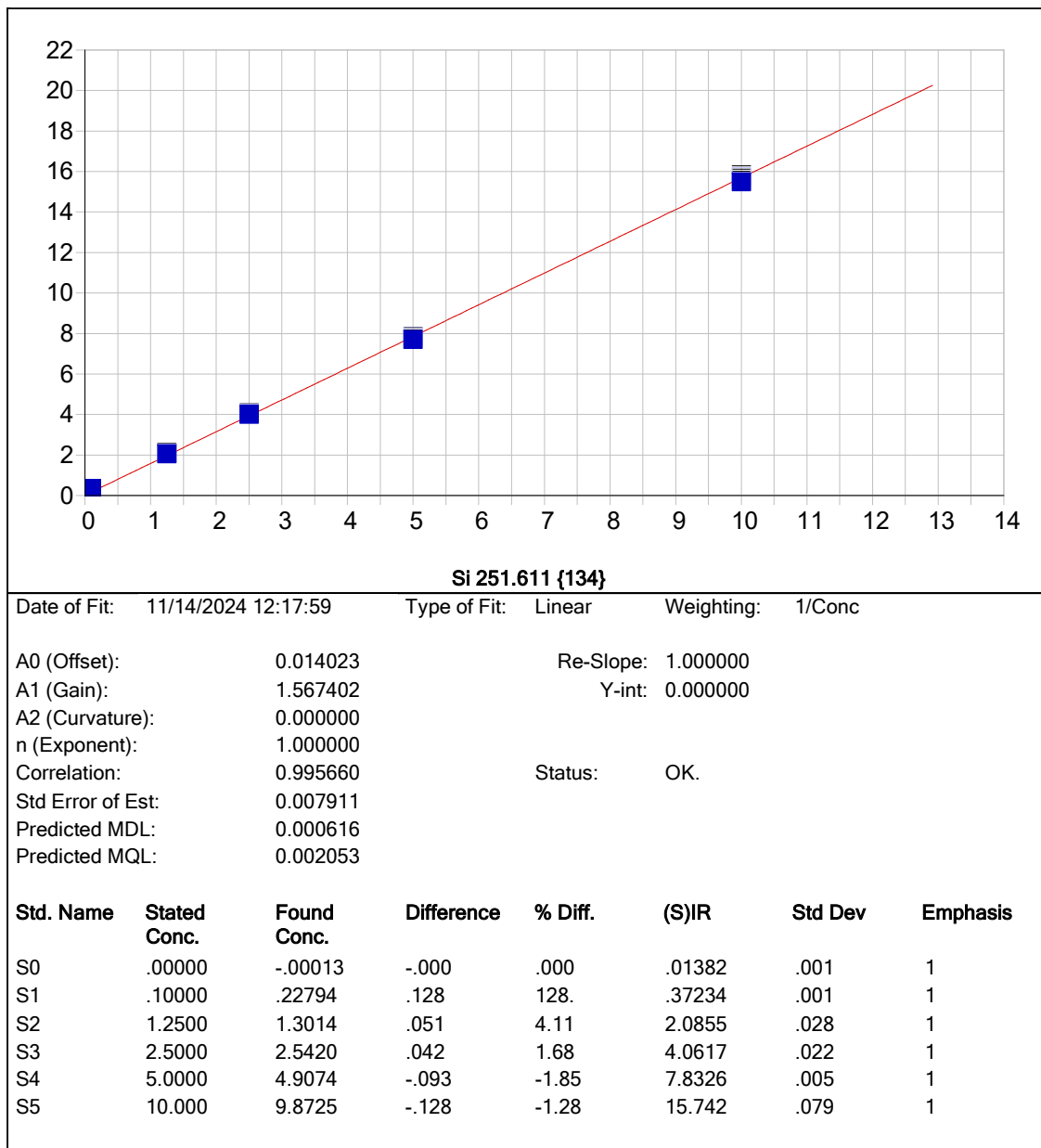


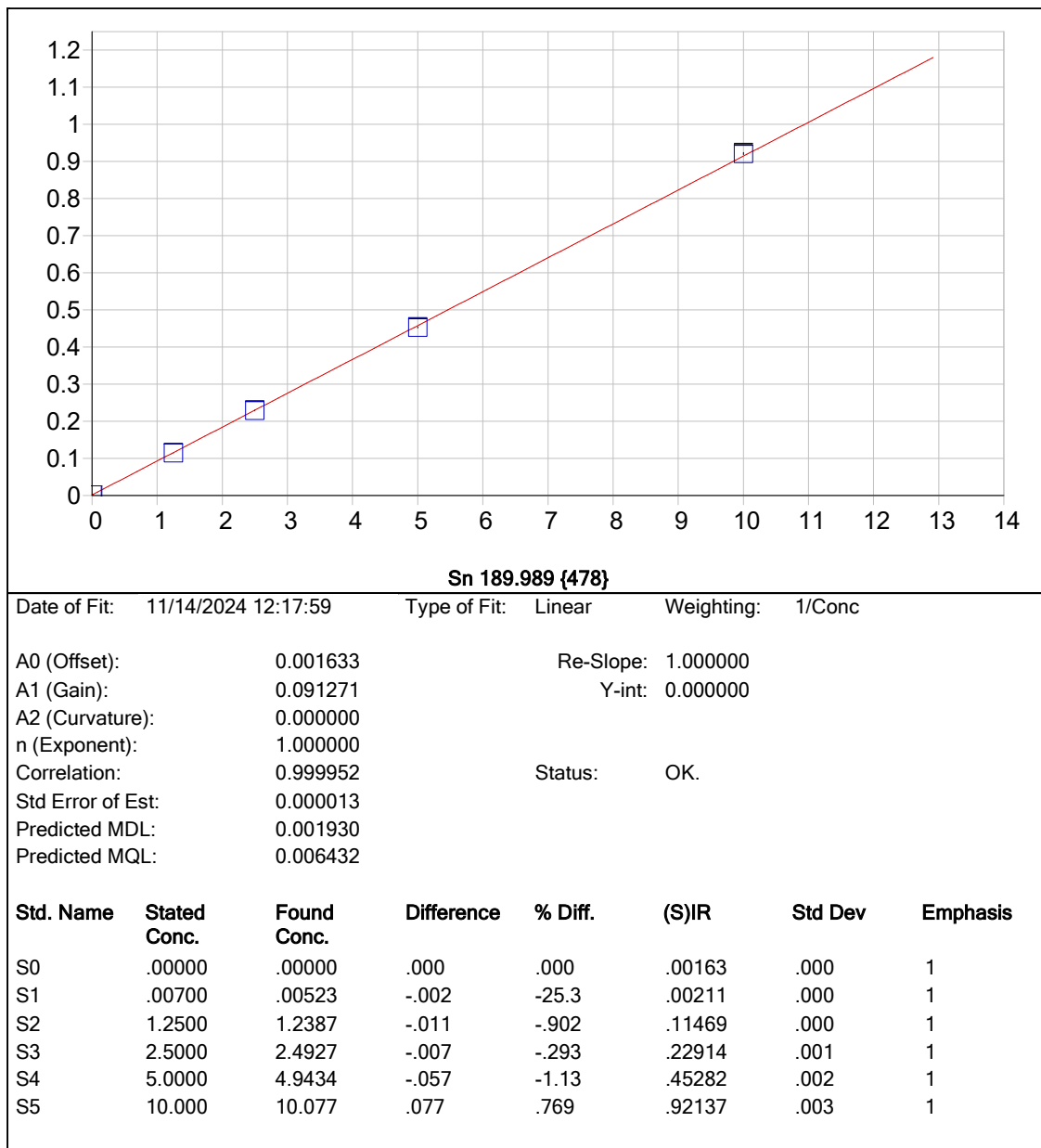


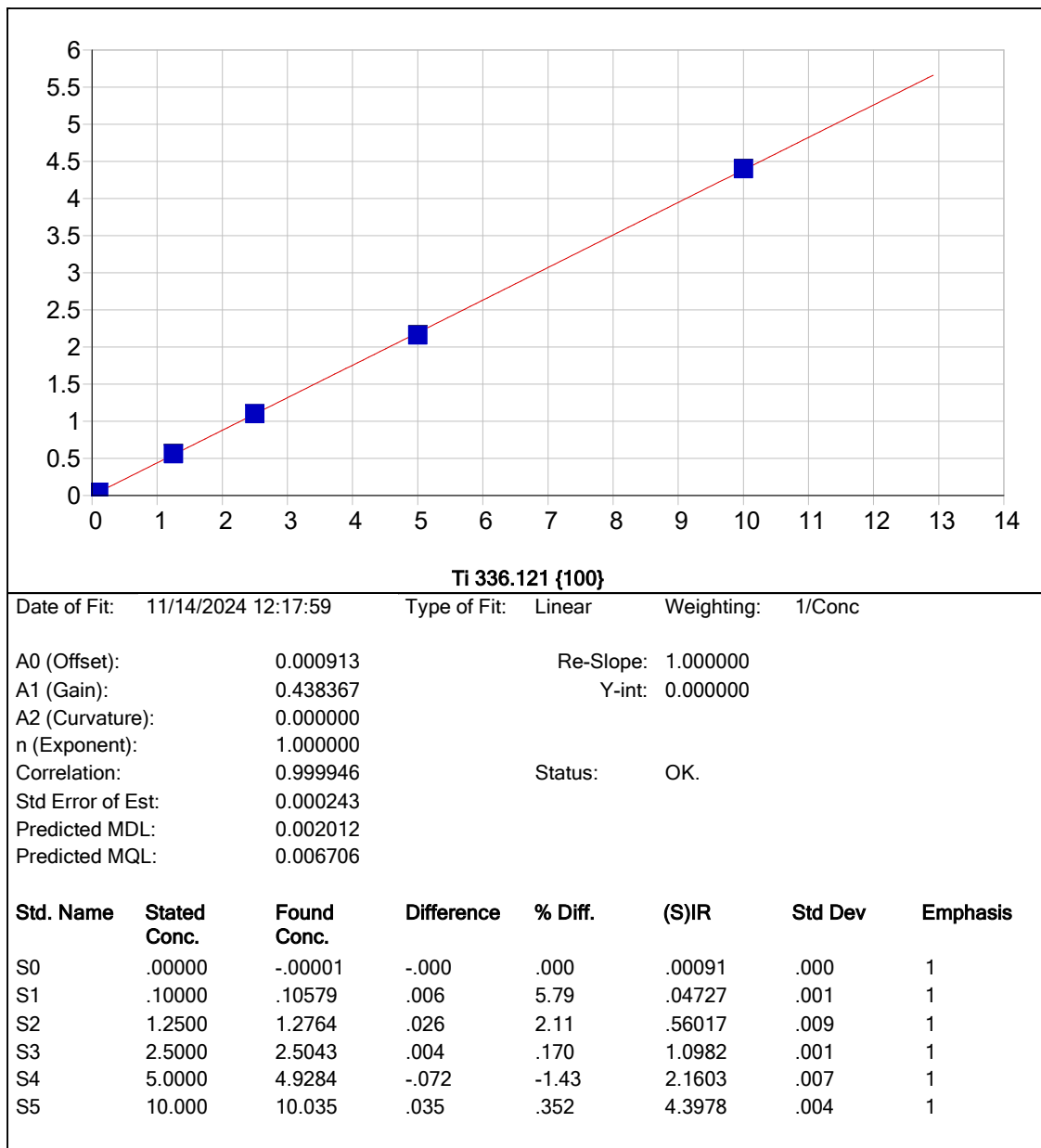


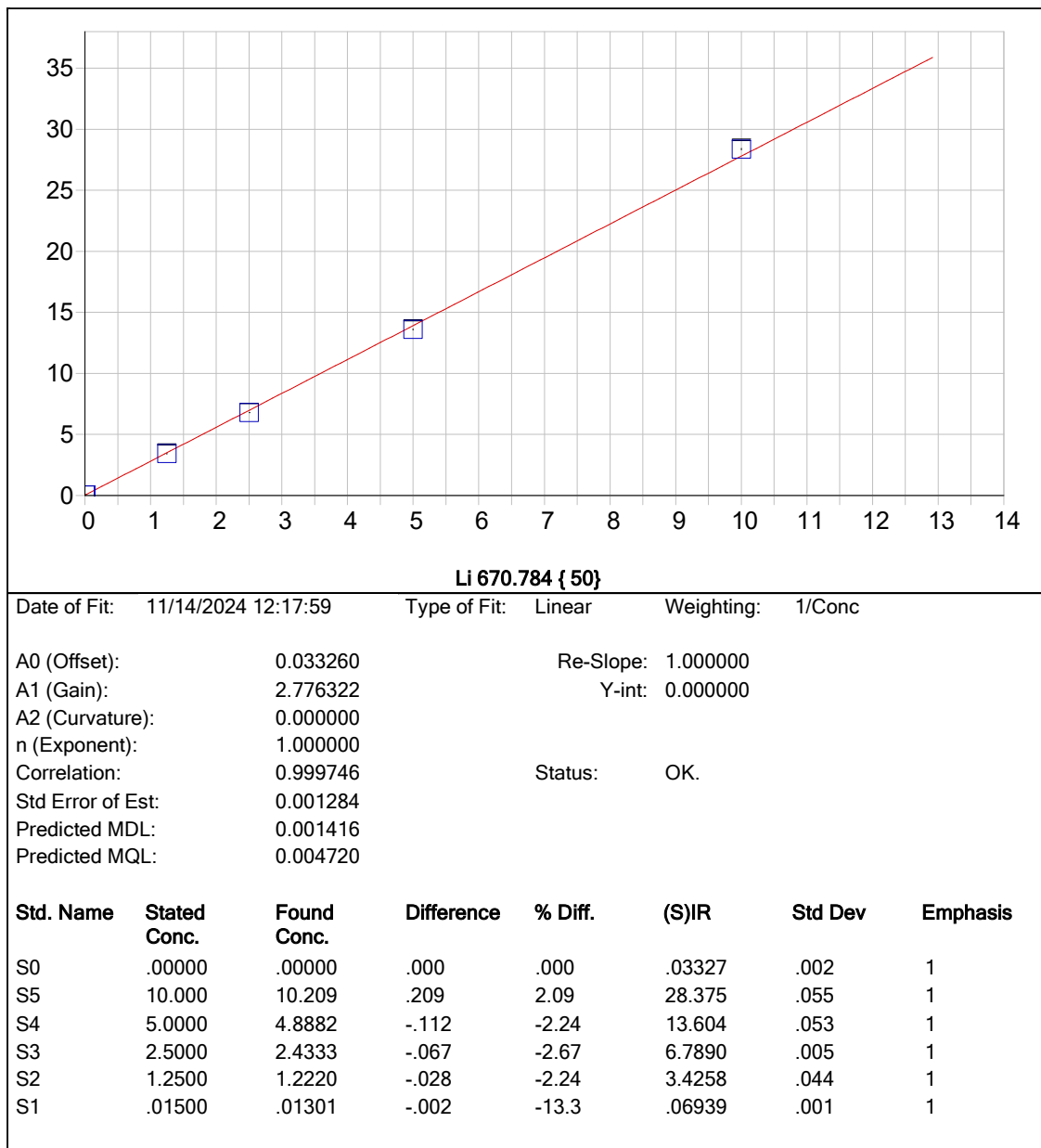


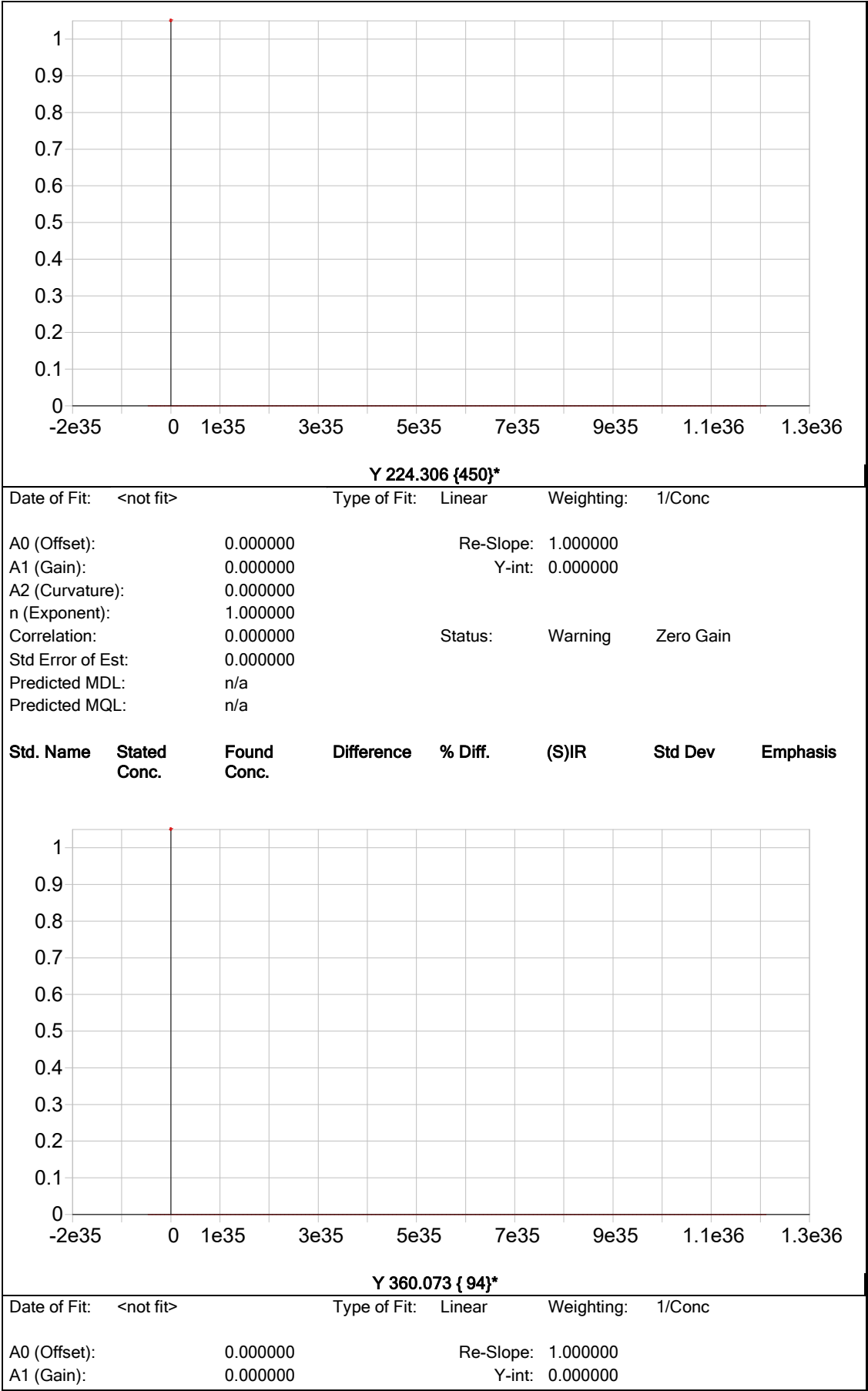


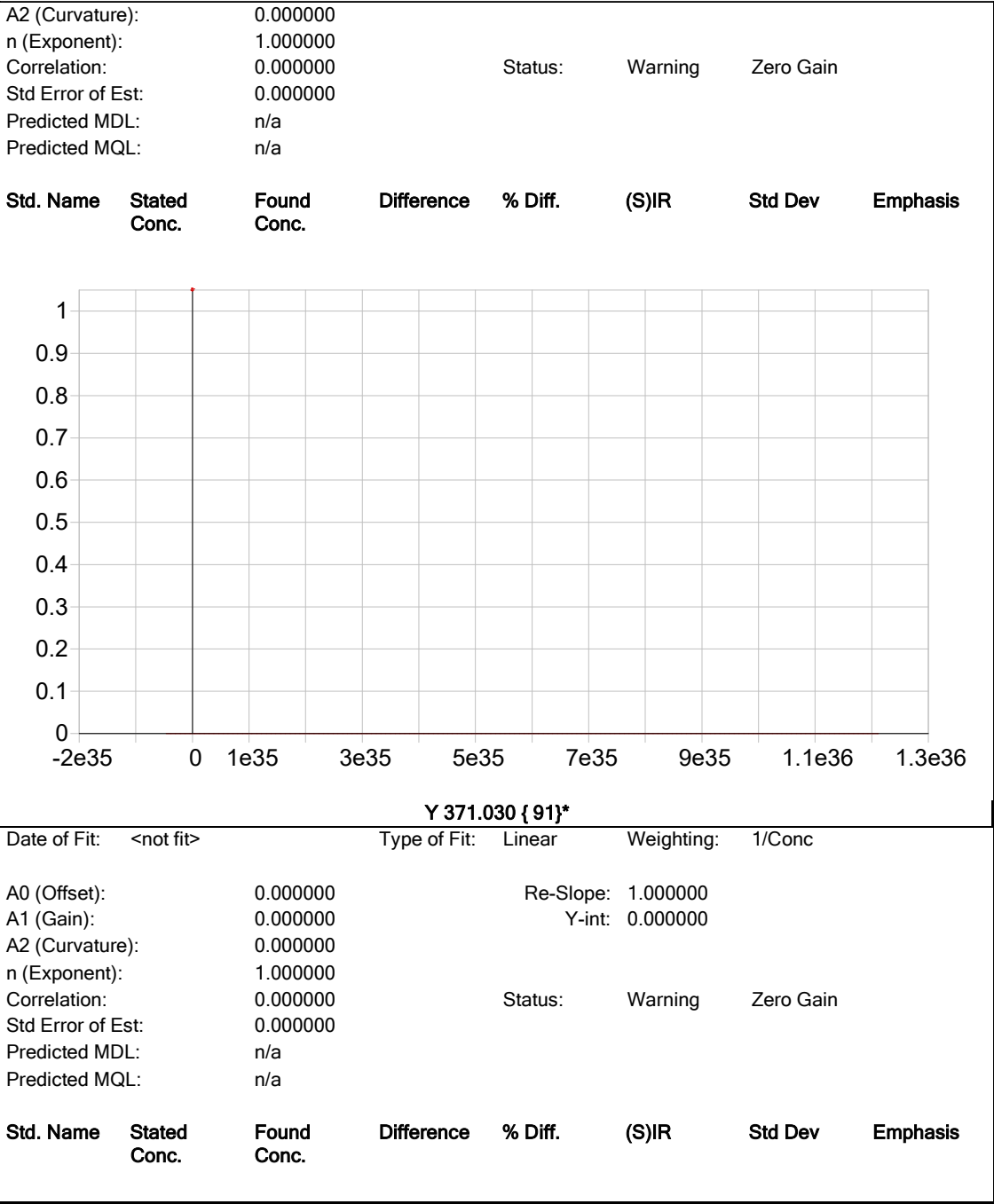


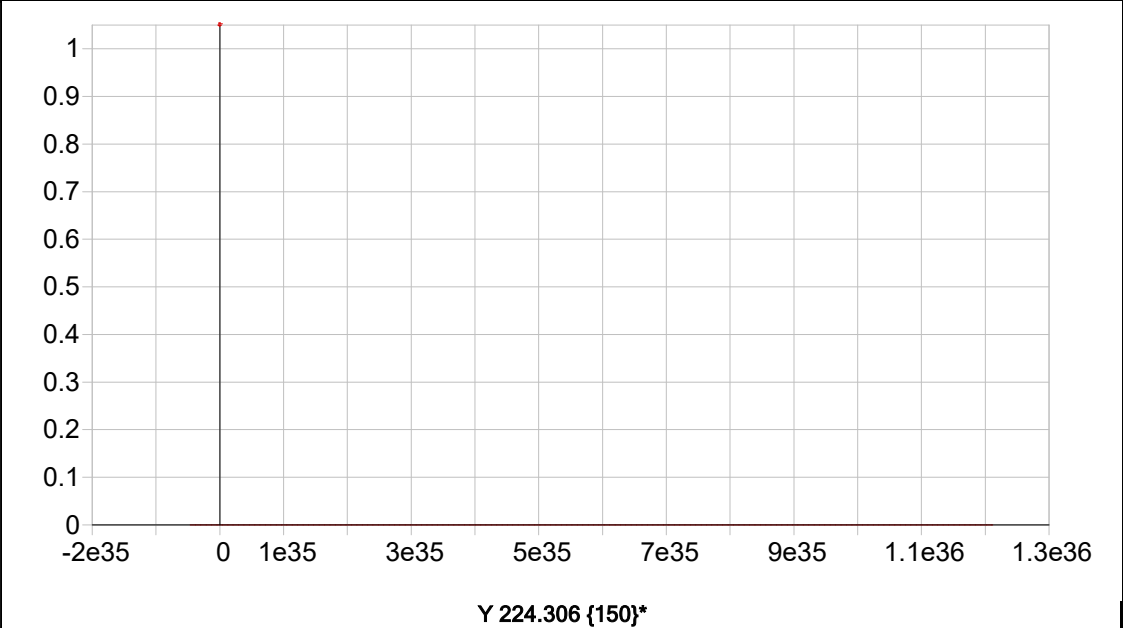






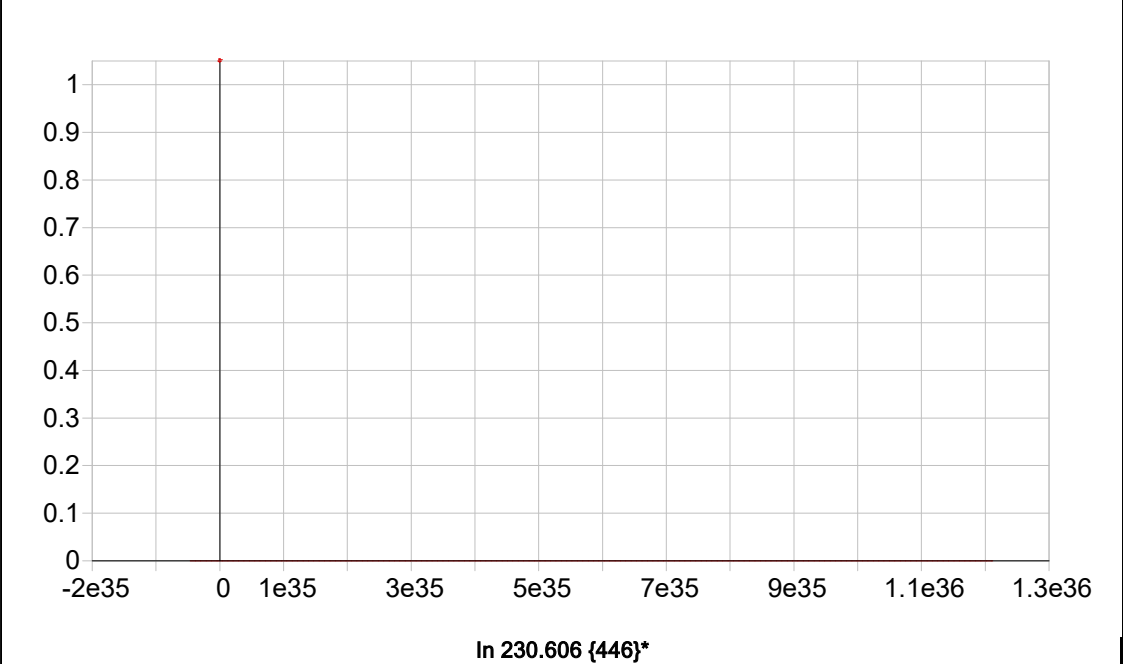




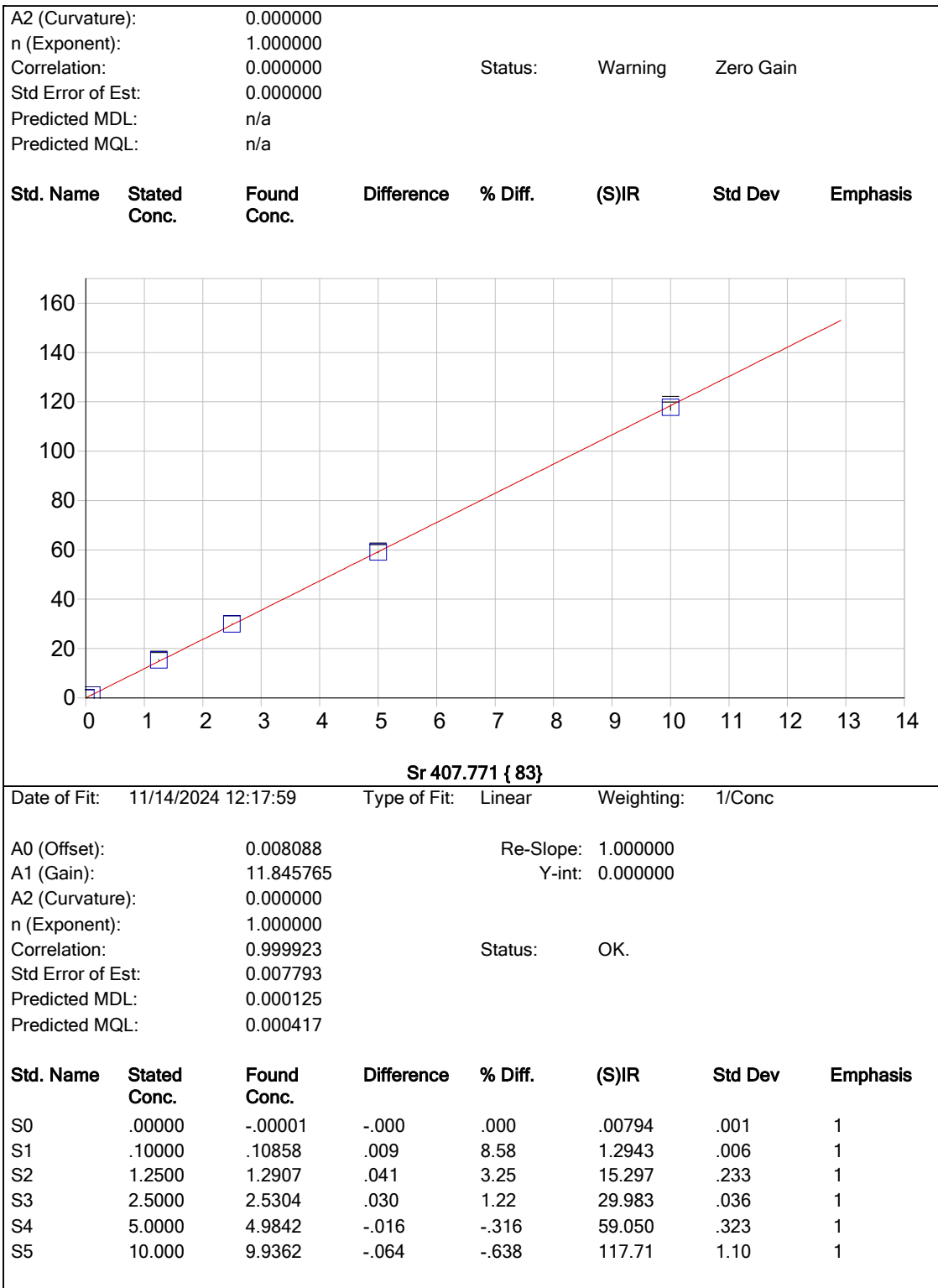


Date of Fit:	<not fit>	Type of Fit:	Linear	Weighting:	1/Conc
A0 (Offset):	0.000000		Re-Slope:	1.000000	
A1 (Gain):	0.000000		Y-int:	0.000000	
A2 (Curvature):	0.000000				
n (Exponent):	1.000000				
Correlation:	0.000000		Status:	Warning	Zero Gain
Std Error of Est:	0.000000				
Predicted MDL:	n/a				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

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



Sample Name: S0 Acquired: 11/14/2024 1:30:26 Type: Cal
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S0 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	.00023	-.00024	-.00015	.00084	-.00006	-.00078	.01827	-.00121
Stddev	.00008	.00013	.00022	.00019	.00045	.00068	.00325	.00012
%RSD	35.006	54.148	147.69	22.454	724.78	86.253	17.811	10.175

#1	.00016	-.00026	-.00040	.00087	-.00057	-.00100	.02024	-.00120
#2	.00032	-.00037	-.00008	.00101	.00024	-.00002	.01452	-.00109
#3	.00020	-.00010	.00002	.00064	.00015	-.00132	.02007	-.00134

Elem	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00087	.00752	.00006	-.00005	.00132	.00023	.00020	-.00036
Stddev	.00032	.00063	.00011	.00010	.00055	.00019	.00009	.00039
%RSD	37.117	8.4033	194.07	194.89	41.725	84.551	43.788	108.76

#1	.00096	.00773	-.00007	.00005	.00068	.00042	.00023	-.00026
#2	.00051	.00681	.00009	-.00016	.00167	.00022	.00010	-.00079
#3	.00114	.00802	.00015	-.00006	.00160	.00004	.00027	-.00003

Elem	Ni2316	Ag3280	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00002	.02183	-.00915	-.00019	.00655	.05407	-.00112	.01030
Stddev	.00025	.00009	.00236	.00034	.00131	.00308	.00000	.00033
%RSD	1316.6	.40269	25.735	177.61	20.009	5.6956	.14180	3.1583

#1	-.00026	.02174	-.00805	.00007	.00590	.05176	-.00112	.01067
#2	.00011	.02192	-.00756	-.00057	.00806	.05288	-.00112	.01013
#3	.00021	.02183	-.01186	-.00007	.00570	.05757	-.00112	.01009

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707	Sr4077	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	.00061	.00019	.01382	.00163	.00091	.03327	.00794	
Stddev	.00055	.00012	.00056	.00015	.00039	.00230	.00128	
%RSD	90.650	61.884	4.0385	8.9172	43.345	6.9274	16.158	

#1	.00064	.00005	.01321	.00150	.00047	.03167	.00941	
#2	.00115	.00024	.01394	.00162	.00124	.03591	.00701	
#3	.00004	.00027	.01430	.00179	.00101	.03223	.00742	

Sample Name: S0 Acquired: 11/14/2024 1:30:26 Type: Cal
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S0 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	954.79	25033.	2472.9	846.82	1895.1
Stddev	.96	27.	18.0	3.57	2.1
%RSD	.10100	.10809	.72715	.42128	.11070
#1	955.89	25058.	2460.7	850.52	1894.8
#2	954.38	25036.	2464.5	846.51	1897.3
#3	954.09	25004.	2493.6	843.41	1893.1

Sample Name: S1 Acquired: 11/14/2024 1:35:02 Type: Cal
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S01 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	.00050	.00150	.00099	.00276	.01036	.01871	1.3898	.05689
Stddev	.00011	.00007	.00029	.00017	.00031	.00064	.0058	.00070
%RSD	22.261	4.3633	29.604	6.1017	2.9465	3.3995	.41806	1.2323
#1	.00062	.00155	.00074	.00282	.01053	.01804	1.3921	.05653
#2	.00040	.00154	.00091	.00290	.01001	.01930	1.3940	.05645
#3	.00049	.00143	.00131	.00257	.01054	.01880	1.3831	.05770
Elem	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.01068	.37395	.00185	.02864	.00532	.00115	.00369	.02450
Stddev	.00029	.00248	.00025	.00022	.00065	.00013	.00027	.00018
%RSD	2.6756	.66193	13.771	.75995	12.291	11.056	7.2186	.75107
#1	.01072	.37680	.00203	.02859	.00537	.00101	.00356	.02445
#2	.01038	.37266	.00156	.02845	.00464	.00116	.00352	.02470
#3	.01095	.37238	.00197	.02888	.00595	.00127	.00400	.02434
Elem	Ni2316	Ag3280	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02272	.02573	.06030	.00340	.14825	.25849	-.00055	.00740
Stddev	.00009	.00009	.00044	.00039	.00146	.00448	.00018	.00149
%RSD	.40089	.33996	.72435	11.462	.98742	1.7320	33.358	20.193
#1	.02281	.02582	.05996	.00368	.14706	.25607	-.00076	.00567
#2	.02270	.02574	.06015	.00295	.14989	.25576	-.00046	.00824
#3	.02263	.02564	.06079	.00356	.14781	.26366	-.00043	.00828
Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707	Sr4077	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	.00834	.00271	.37234	.00211	.04727	.06939	1.2943	
Stddev	.00035	.00005	.00059	.00012	.00090	.00148	.0061	
%RSD	4.1754	2.0126	.15807	5.9197	1.8947	2.1368	.46798	
#1	.00848	.00276	.37192	.00219	.04636	.06969	1.3013	
#2	.00859	.00265	.37208	.00217	.04815	.06777	1.2914	
#3	.00794	.00273	.37301	.00197	.04731	.07069	1.2903	

Sample Name: S1 Acquired: 11/14/2024 1:35:02 Type: Cal
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S01 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	953.95	24974.	2463.8	849.95	1876.8
Stddev	1.41	18.	1.8	.69	4.2
%RSD	.14801	.07021	.07224	.08123	.22341
#1	952.74	24994.	2463.9	849.85	1872.4
#2	953.61	24961.	2462.0	850.68	1877.3
#3	955.50	24968.	2465.6	849.31	1880.8

Sample Name: S2 Acquired: 11/14/2024 1:39:36 Type: Cal
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S02 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	.02661	.08868	.83846	.08374	.21807	4.1938	16.218	1.3667
Stddev	.00038	.00028	.00071	.00079	.00125	.0616	.230	.0215
%RSD	1.4170	.31454	.08414	.93897	.57541	1.4694	1.4200	1.5718

#1	.02655	.08900	.83768	.08373	.21765	4.2648	16.481	1.3915
#2	.02702	.08849	.83863	.08296	.21948	4.1542	16.056	1.3531
#3	.02627	.08854	.83906	.08454	.21708	4.1624	16.115	1.3556

Elem	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1.1572	4.2800	.66993	.35443	.60599	.42485	.85090	.29243
Stddev	.0023	.0749	.00096	.00072	.00876	.00630	.00938	.00601
%RSD	.19655	1.7500	.14316	.20328	1.4457	1.4836	1.1020	2.0554

#1	1.1553	4.3664	.67027	.35405	.61545	.43202	.86136	.29907
#2	1.1566	4.2407	.67067	.35398	.59816	.42020	.84324	.29087
#3	1.1597	4.2330	.66884	.35526	.60437	.42231	.84811	.28736

Elem	Ni2316	Ag3280	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.33449	.12864	.48705	.03823	8.7304	1.5570	.05421	1.1565
Stddev	.00003	.00013	.00579	.00093	.0223	.0269	.00013	.0191
%RSD	.01000	.10094	1.1887	2.4332	.25585	1.7253	.23909	1.6484

#1	.33446	.12866	.49361	.03927	8.7324	1.5875	.05435	1.1784
#2	.33449	.12850	.48266	.03792	8.7516	1.5370	.05412	1.1438
#3	.33453	.12876	.48488	.03749	8.7071	1.5465	.05415	1.1472

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707	Sr4077	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	1.0013	.03193	2.0855	.11469	.56017	3.4258	15.297	
Stddev	.0036	.00018	.0280	.00042	.00915	.0440	.233	
%RSD	.36290	.56280	1.3422	.36950	1.6332	1.2851	1.5254	

#1	.99722	.03197	2.1178	.11467	.57072	3.4766	15.565	
#2	1.0042	.03173	2.0693	.11513	.55533	3.3978	15.135	
#3	1.0025	.03209	2.0693	.11428	.55446	3.4032	15.191	

Sample Name: S2 Acquired: 11/14/2024 1:39:36 Type: Cal
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S02 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	908.37	24475.	2401.5	795.39	1702.8
Stddev	2.12	32.	29.1	2.39	.6
%RSD	.23352	.13076	1.2132	.30051	.03736
#1	910.03	24511.	2368.0	797.78	1703.3
#2	905.98	24450.	2421.1	793.00	1702.1
#3	909.11	24463.	2415.4	795.39	1703.0

Sample Name: S3 Acquired: 11/14/2024 1:43:55 Type: Cal
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S03 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	.05462	.17354	1.6803	.16899	.44752	8.2938	31.950	2.6714
Stddev	.00011	.00015	.0033	.00034	.00102	.0206	.036	.0122
%RSD	.20814	.08898	.19449	.20376	.22716	.24817	.11163	.45578

#1	.05468	.17350	1.6765	.16875	.44636	8.2701	31.980	2.6607
#2	.05449	.17371	1.6820	.16939	.44800	8.3046	31.911	2.6846
#3	.05470	.17341	1.6824	.16885	.44821	8.3067	31.959	2.6689

Elem	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2.3138	8.3781	1.3101	.71382	1.1848	.82675	1.6529	.58149
Stddev	.0016	.0359	.0021	.00073	.0052	.00480	.0004	.00096
%RSD	.07090	.42879	.15868	.10210	.43978	.58096	.02640	.16518

#1	2.3124	8.3402	1.3077	.71298	1.1907	.82254	1.6524	.58201
#2	2.3134	8.4117	1.3115	.71420	1.1832	.83199	1.6532	.58208
#3	2.3156	8.3825	1.3110	.71427	1.1807	.82573	1.6529	.58039

Elem	Ni2316	Ag3280	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.66912	.23527	.97140	.07529	17.470	3.0425	.11344	2.2846
Stddev	.00165	.00039	.00406	.00041	.116	.0079	.00059	.0131
%RSD	.24725	.16448	.41823	.54739	.66577	.25887	.51594	.57393

#1	.66755	.23569	.97173	.07528	17.577	3.0342	.11375	2.2727
#2	.67085	.23493	.96718	.07571	17.346	3.0499	.11277	2.2986
#3	.66896	.23518	.97529	.07489	17.488	3.0435	.11382	2.2824

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2.0188	.06619	4.0617	.22914	1.0982	6.7890	29.983
Stddev	.0018	.00039	.0219	.00128	.0014	.0047	.036
%RSD	.08795	.58354	.54010	.55955	.12628	.06995	.11997

#1	2.0168	.06620	4.0443	.22767	1.0967	6.7886	29.996
#2	2.0200	.06657	4.0864	.22975	1.0995	6.7939	29.942
#3	2.0196	.06580	4.0545	.23000	1.0983	6.7844	30.010

Sample Name: S3 Acquired: 11/14/2024 1:43:55 Type: Cal
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S03 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	868.18	24080.	2402.5	755.67	1613.9
Stddev	.94	55.	7.4	6.49	1.1
%RSD	.10822	.23020	.30968	.85824	.06798
#1	868.06	24051.	2410.0	750.27	1615.2
#2	867.31	24144.	2395.1	762.86	1613.2
#3	869.18	24045.	2402.4	753.86	1613.3

Sample Name: S4 Acquired: 11/14/2024 1:48:11 Type: Cal
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S04 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	.11094	.33630	3.3048	.34454	.92164	16.611	63.177	5.1984
Stddev	.00070	.00078	.0055	.00031	.00163	.069	.242	.0063
%RSD	.62691	.23076	.16741	.09139	.17708	.41458	.38377	.12186

#1	.11020	.33665	3.3014	.34449	.92088	16.639	63.261	5.2016
#2	.11103	.33541	3.3018	.34426	.92053	16.532	62.903	5.2026
#3	.11158	.33683	3.3112	.34488	.92352	16.661	63.366	5.1912

Elem	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4.5360	16.553	2.5233	1.4130	2.3347	1.6120	3.1821	1.1646
Stddev	.0006	.046	.0011	.0015	.0151	.0082	.0198	.0046
%RSD	.01437	.27853	.04488	.10375	.64729	.51043	.62191	.39070

#1	4.5365	16.565	2.5242	1.4120	2.3416	1.6179	3.1834	1.1641
#2	4.5363	16.503	2.5220	1.4123	2.3174	1.6026	3.1617	1.1603
#3	4.5353	16.593	2.5237	1.4147	2.3452	1.6155	3.2012	1.1694

Elem	Ni2316	Ag3280	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1.3154	.44939	1.9373	.14824	35.861	6.0850	.23046	4.4070
Stddev	.0021	.00079	.0058	.00024	.160	.0328	.00045	.0093
%RSD	.15732	.17607	.29814	.16357	.44659	.53938	.19427	.21066

#1	1.3140	.44969	1.9397	.14850	35.697	6.0920	.23020	4.4156
#2	1.3146	.44998	1.9308	.14802	35.867	6.0493	.23020	4.4081
#3	1.3178	.44849	1.9416	.14819	36.017	6.1138	.23098	4.3971

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4.0884	.13535	7.8326	.45282	2.1603	13.604	59.050
Stddev	.0096	.00014	.0053	.00155	.0070	.053	.323
%RSD	.23448	.10659	.06708	.34258	.32636	.38720	.54656

#1	4.0852	.13552	7.8272	.45103	2.1667	13.619	59.149
#2	4.0808	.13528	7.8377	.45364	2.1527	13.546	58.689
#3	4.0992	.13525	7.8329	.45380	2.1614	13.648	59.311

Sample Name: S4 Acquired: 11/14/2024 1:48:11 Type: Cal
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S04 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	805.71	23392.	2385.0	674.43	1511.8
Stddev	1.27	24.	4.7	3.44	.9
%RSD	.15794	.10472	.19681	.51037	.05885
#1	805.37	23407.	2388.3	678.00	1510.8
#2	807.11	23406.	2387.1	674.18	1512.5
#3	804.63	23364.	2379.7	671.13	1512.0

Sample Name: S5 Acquired: 11/14/2024 1:52:23 Type: Cal
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S05 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	.23789	.66590	6.7602	.76378	2.0727	34.611	127.04	10.497
Stddev	.00060	.00267	.0141	.00316	.0028	.066	1.28	.054
%RSD	.25236	.40085	.20937	.41315	.13448	.19103	1.0072	.51867

#1	.23810	.66341	6.7505	.76224	2.0718	34.547	127.08	10.442
#2	.23836	.66556	6.7537	.76170	2.0705	34.608	125.74	10.497
#3	.23721	.66872	6.7764	.76741	2.0758	34.680	128.30	10.551

Elem	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	9.1311	33.896	5.0185	2.8753	4.7728	3.2318	6.3092	2.4305
Stddev	.0233	.098	.0177	.0080	.0036	.0076	.0245	.0093
%RSD	.25543	.28864	.35236	.27803	.07485	.23535	.38885	.38192

#1	9.1226	33.790	5.0122	2.8707	4.7691	3.2239	6.2888	2.4198
#2	9.1131	33.914	5.0049	2.8707	4.7763	3.2391	6.3024	2.4357
#3	9.1574	33.984	5.0385	2.8845	4.7731	3.2322	6.3364	2.4360

Elem	Ni2316	Ag3280	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2.6652	.92352	4.0365	.30091	79.317	12.699	.48822	8.7683
Stddev	.0059	.00264	.0119	.00287	.777	.033	.00057	.0670
%RSD	.22057	.28606	.29381	.95505	.97990	.26220	.11680	.76400

#1	2.6643	.92254	4.0289	.29759	78.533	12.666	.48884	8.7123
#2	2.6598	.92151	4.0305	.30241	80.087	12.699	.48812	8.7502
#3	2.6715	.92651	4.0502	.30271	79.330	12.733	.48771	8.8425

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	8.8940	.28855	15.742	.92137	4.3978	28.375	117.71
Stddev	.0228	.00113	.079	.00285	.0041	.055	1.10
%RSD	.25670	.39205	.49976	.30882	.09370	.19455	.93220

#1	8.8893	.28783	15.655	.92010	4.3948	28.312	116.90
#2	8.8738	.28797	15.762	.91937	4.3961	28.409	117.27
#3	8.9187	.28985	15.808	.92462	4.4025	28.406	118.96

Sample Name: S5 Acquired: 11/14/2024 1:52:23 Type: Cal
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S05 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	713.37	22688.	2360.4	546.81	1405.7
Stddev	.84	30.	9.7	5.06	.2
%RSD	.11789	.13405	.40986	.92549	.01543
#1	713.47	22692.	2371.5	551.20	1405.6
#2	714.15	22716.	2355.2	541.28	1405.9
#3	712.48	22656.	2354.4	547.96	1405.5

Sample Name: S6 Acquired: 11/14/2024 1:56:50 Type: Cal
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S06 Custom ID2: Custom ID3:
Comment:

Elem	Al3961	Ca3736	Fe2598	Mg2790	Na8183
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	90.368	52.952	8.2729	3.8313	10.661
Stddev	.494	.272	.0502	.0203	.040
%RSD	.54627	.51332	.60636	.53041	.37940
#1	90.776	52.848	8.2535	3.8239	10.645
#2	89.819	53.261	8.3299	3.8543	10.707
#3	90.509	52.748	8.2354	3.8157	10.631
Int. Std.	Y_3710				
Units	Cts/S				
Avg	2293.9				
Stddev	10.1				
%RSD	.44178				
#1	2293.1				
#2	2284.1				
#3	2304.4				

Sample Name: ICV011 Acquired: 11/14/2024 2:50:21 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICV011 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9285542	1.072424	.9851764	1.007233	.9482391	2.304457
Stddev	.0157833	.002131	.0015022	.003231	.0016005	.038043
%RSD	1.699768	.1987192	.1524817	.3207471	.1687854	1.650844

#1	.9363604	1.072844	.9855864	1.010265	.9467120	2.336619
#2	.9103889	1.070114	.9835118	1.003835	.9481013	2.314290
#3	.9389132	1.074314	.9864311	1.007599	.9499041	2.262463

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5175189	.5225680	.5074169	9.896770	.5649419	.4994152
Stddev	.0086179	.0057752	.0013354	.201746	.0031049	.0008765
%RSD	1.665239	1.105162	.2631800	2.038501	.5496004	.1755049

#1	.5224291	.5250406	.5059106	9.990556	.5676393	.4985573
#2	.5225596	.5266953	.5078843	10.03455	.5656386	.4993791
#3	.5075681	.5159681	.5084558	9.66520	.5615478	.5003092

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4847497	10.64653	.5363128	5.576679	.5103343	.2402035
Stddev	.0095602	.21640	.0074117	.049829	.0014398	.0024222
%RSD	1.972184	2.032561	1.381975	.8935264	.2821228	1.008392

#1	.4946378	10.64262	.5400460	5.627152	.5086999	.2422986
#2	.4840560	10.86486	.5411156	5.575366	.5114150	.2407606
#3	.4755553	10.43212	.5277768	5.527520	.5108881	.2375513

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.966894	.5297704	.9546986	8.985038	F .0021854	F .0034046
Stddev	.277289	.0096097	.0060778	.248383	.0040669	.0006817
%RSD	2.782103	1.813927	.6366196	2.764407	186.0953	20.02170

#1	10.08787	.5375824	.9604896	9.173399	-.001854	.0031497
#2	10.16314	.5326890	.9552366	9.078165	.002131	.0041770
#3	9.64967	.5190398	.9483698	8.703549	.006279	.0028871

Sample Name: ICV011 Acquired: 11/14/2024 2:50:21 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICV011 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -.001669	F .0125429	F .0017828	F -.002821	F -.000933	F -.002875
Stddev	.000753	.0015795	.0016829	.000515	.001880	.001465
%RSD	45.12069	12.59287	94.39333	18.26235	201.5624	50.96374
#1	-.000799	.0142502	.0005570	-.003362	-.002770	-.003825
#2	-.002095	.0111337	.0010900	-.002336	.000987	-.003613
#3	-.002113	.0122447	.0037015	-.002765	-.001015	-.001188

Elem	Sr4077
Units	ppm
Avg	F .0008735
Stddev	.0000548
%RSD	6.277624
#1	.0008740
#2	.0009280
#3	.0008184

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	946.4865	25010.34	2484.060	842.3976	1853.852
Stddev	1.0268	175.06	34.972	9.5284	.237
%RSD	.1084868	.6999587	1.407862	1.131105	.0127915
#1	947.6454	24844.62	2465.972	833.4910	1854.079
#2	945.6901	24992.96	2461.837	841.2568	1853.870
#3	946.1240	25193.44	2524.372	852.4451	1853.606

Sample Name: ICB011 Acquired: 11/14/2024 2:54:45 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICB011 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000750	-.000337	-.001042	-.007195	-.002585	-.012537	-.000516
Stddev	.001752	.002474	.001708	.002595	.000762	.003986	.000780
%RSD	233.5681	734.7390	163.8738	36.06840	29.46642	31.79073	151.2568

#1	-.002096	.002076	-.001485	-.005716	-.002062	-.013560	.000147
#2	.001230	-.000219	-.002484	-.005677	-.003459	-.015912	-.001376
#3	-.001384	-.002867	.000843	-.010191	-.002233	-.008140	-.000319

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000039	-.000134	-.000950	-.000833	-.000550	-.001705	.0085013
Stddev	.000085	.000020	.023570	.000357	.000097	.004323	.0152004
%RSD	218.9111	14.90528	2480.151	42.87902	17.62390	253.5666	178.8003

#1	.000059	-.000118	.002333	-.000544	-.000460	.002523	.0195272
#2	-.000092	-.000157	.020806	-.001232	-.000538	-.001520	-.008838
#3	-.000084	-.000128	-.025990	-.000723	-.000652	-.006117	.014815

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001023	-.033751	-.000463	.0007026	.1623658	-.003898	-.001578
Stddev	.002238	.083332	.000116	.0000474	.3260264	.011631	.000168
%RSD	218.7775	246.9019	24.96170	6.747610	200.7975	298.3512	10.64306

#1	.001348	-.088147	-.000593	.0006507	.5128038	-.006027	-.001677
#2	-.003098	-.075292	-.000373	.0007437	.1062606	.008650	-.001384
#3	-.001319	.062186	-.000423	.0007133	-.131967	-.014318	-.001674

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.003456	-.001939	-.005870	-.000752	-.002998	-.000508	-.001961
Stddev	.086989	.004140	.001028	.000400	.007349	.000447	.002621
%RSD	2516.706	213.5022	17.50594	53.19284	245.1013	87.91179	133.6512

#1	-.058951	-.004647	-.004746	-.000916	-.001679	-.000285	-.000108
#2	-.048217	.002827	-.006105	-.001044	.003602	-.001022	-.004960
#3	.096799	-.003998	-.006761	-.000296	-.010918	-.000217	-.000815

Sample Name: ICB011 Acquired: 11/14/2024 2:54:45 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICB011 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0006331	-.002726	-.000463
Stddev	.0010845	.002195	.000060
%RSD	171.2921	80.52161	12.90392

#1	.0018097	-.004951	-.000491
#2	-.000326	-.002667	-.000395
#3	.000416	-.000561	-.000504

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	945.9905	24900.95	2440.067	843.9952	1893.859
Stddev	.3944	30.20	5.914	3.8465	3.831
%RSD	.0416902	.1212753	.2423899	.4557443	.2022980

#1	946.3805	24909.08	2446.775	841.4086	1892.694
#2	945.9993	24926.24	2435.604	842.1617	1898.137
#3	945.5919	24867.51	2437.821	848.4154	1890.745

Sample Name: ICSA011 Acquired: 11/14/2024 3:05:08 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSA011 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0045908	-.019959	-.007330	-.014661	.0031282	243.6322
Stddev	.0084266	.002936	.003157	.004640	.0022742	.2619
%RSD	183.5530	14.70897	43.06582	31.64924	72.70050	.1075026

#1	-.001980	-.021352	-.009589	-.009432	.0017141	243.8875
#2	.001661	-.021939	-.008676	-.018287	.0019189	243.6449
#3	.014091	-.016586	-.003723	-.016264	.0057516	243.3641

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0044571	-.000221	.0003491	254.3175	.0506457	.0003949
Stddev	.0001425	.000067	.0000803	.2938	.0005081	.0003461
%RSD	3.198058	30.34830	23.00683	.1155398	1.003202	87.63499

#1	.0042968	-.000299	.0002564	254.5350	.0501884	.0007941
#2	.0045047	-.000176	.0003924	254.4343	.0505560	.0002111
#3	.0045697	-.000190	.0003984	253.9833	.0511926	.0001795

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.004546	106.2141	.0106129	248.7703	.0038592	.0026489
Stddev	.004760	.3227	.0017364	.7774	.0006299	.0001864
%RSD	104.6909	.3037932	16.36149	.3125112	16.32158	7.038450

#1	.000579	106.5827	.0122884	249.6581	.0031335	.0028072
#2	-.008828	105.9830	.0107289	248.2111	.0041800	.0024434
#3	-.005390	106.0766	.0088214	248.4417	.0042641	.0026961

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3047466	-.006975	.0111474	-.080610	.0049464	F .0848677
Stddev	.3152948	.007789	.0004822	.026854	.0078530	.0017765
%RSD	103.4613	111.6683	4.325492	33.31356	158.7633	2.093232

#1	.6460406	.001950	.0106714	-.106754	-.000856	.0868559
#2	.2438704	-.010478	.0116356	-.053098	.001813	.0843111
#3	.0243289	-.012396	.0111353	-.081978	.013882	.0834362

Sample Name: ICSA011 Acquired: 11/14/2024 3:05:08 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSA011 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.002116	.0059253	-.001274	F -.008205	-.002219	.0003616
Stddev	.000590	.0079550	.000374	.000828	.000923	.0006722
%RSD	27.85764	134.2547	29.34381	10.09519	41.58795	185.9026
#1	-.002785	-.002567	-.001609	-.008840	-.002184	.0002450
#2	-.001672	.013204	-.000871	-.008507	-.003158	-.000245
#3	-.001892	.007139	-.001342	-.007268	-.001313	.001084

Elem	Sr4077
Units	ppm
Avg	F .1056504
Stddev	.0003889
%RSD	.3680690
#1	.1060859
#2	.1053380
#3	.1055273

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	876.6844	23495.19	2398.934	790.0333	1570.620
Stddev	1.2561	24.16	7.653	6.9824	3.600
%RSD	.1432790	.1028472	.3190191	.8838082	.2292140
#1	876.3616	23498.66	2398.357	795.0300	1567.531
#2	875.6212	23517.44	2391.585	793.0148	1569.754
#3	878.0704	23469.48	2406.859	782.0551	1574.573

Sample Name: ICSAB011 Acquired: 11/14/2024 3:09:38 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSAB011 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1051083	.0882556	.0481167	.0406583	.5696241	246.5187
Stddev	.0074701	.0019615	.0056990	.0070817	.0064859	.0967
%RSD	7.107065	2.222545	11.84419	17.41762	1.138630	.0392196

#1	.0988749	.0904877	.0419532	.0356567	.5635482	246.4087
#2	.1133884	.0868068	.0531954	.0487616	.5764541	246.5901
#3	.1030617	.0874722	.0492013	.0375565	.5688701	246.5573

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5363189	.5349088	1.056437	257.8469	.6073628	.5230070
Stddev	.0015712	.0009110	.002382	.1993	.0022507	.0010807
%RSD	.2929600	.1703167	.2254368	.0772882	.3705718	.2066312

#1	.5352438	.5345908	1.057948	257.7123	.6047992	.5217674
#2	.5381221	.5341993	1.053691	257.7524	.6082749	.5235024
#3	.5355909	.5359362	1.057671	258.0758	.6090143	.5237512

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4931729	107.6530	.5424624	251.6600	1.050721	.1918995
Stddev	.0083495	.4052	.0056744	.4478	.004833	.0018989
%RSD	1.693015	.3763920	1.046041	.1779227	.4600017	.9895532

#1	.4919707	107.3993	.5394103	252.0072	1.052118	.1909167
#2	.5020583	108.1203	.5490096	251.1546	1.045343	.1940884
#3	.4854896	107.4394	.5389673	251.8181	1.054701	.1906933

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2895639	.5549257	.9408957	-.098765	.0063795	F .0882205
Stddev	.2641682	.0076950	.0027295	.043993	.0004245	.0008821
%RSD	91.22966	1.386668	.2901006	44.54287	6.654437	.9998461

#1	.1141542	.5636695	.9381723	-.084033	.0063722	.0881128
#2	.5933901	.5519221	.9436313	-.148234	.0059587	.0873973
#3	.1611475	.5491855	.9408836	-.064030	.0068077	.0891515

Sample Name: ICSAB011 Acquired: 11/14/2024 3:09:38 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSAB011 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.002740	.0150653	.0004900	F -.013165	-.005291	-.001174
Stddev	.000725	.0009478	.0002298	.002201	.001098	.001910
%RSD	26.45693	6.291334	46.89047	16.72128	20.75375	162.6222
#1	-.001914	.0146411	.0005648	-.015234	-.004886	-.001090
#2	-.003271	.0161511	.0002322	-.013409	-.004454	-.003125
#3	-.003034	.0144036	.0006730	-.010852	-.006534	.000692

Elem	Sr4077
Units	ppm
Avg	F .1068065
Stddev	.0002016
%RSD	.1887133
#1	.1065841
#2	.1069771
#3	.1068583

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	876.5437	23640.38	2412.817	788.1727	1578.584
Stddev	.6708	76.97	5.611	2.3114	1.811
%RSD	.0765243	.3255922	.2325357	.2932609	.1147121
#1	875.7887	23703.74	2418.342	789.9430	1577.389
#2	876.7714	23554.72	2407.124	785.5578	1580.667
#3	877.0710	23662.68	2412.984	789.0172	1577.695

Sample Name: CCV079 Acquired: 11/14/2024 3:14:01 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV079 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.999868	4.878208	24.57506	4.809483	4.835155	398.7973	10.14236
Stddev	.033472	.016979	.03847	.018564	.005540	1.3638	.03495
%RSD	.6694524	.3480571	.1565211	.3859786	.1145693	.3419809	.3446331

#1	4.983454	4.895297	24.60221	4.812745	4.838666	397.3047	10.10512
#2	4.977772	4.877984	24.53104	4.789504	4.838029	399.9784	10.17446
#3	5.038379	4.861341	24.59193	4.826199	4.828769	399.1089	10.14750

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4969210	2.487233	403.0404	15.27110	2.491890	14.95954	406.8439
Stddev	.0004545	.005284	1.0854	.02098	.005317	.02800	1.2728
%RSD	.0914692	.2124560	.2693143	.1374049	.2133687	.1871682	.3128489

#1	.4968222	2.487627	401.8982	15.25481	2.495710	14.93150	406.1079
#2	.4974169	2.481762	404.0585	15.26371	2.485818	14.98750	408.3136
#3	.4965241	2.492309	403.1645	15.29477	2.494143	14.95961	406.1102

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	14.88527	400.3703	2.484123	1.245942	401.9190	2.467139	14.57661
Stddev	.02861	.3005	.008024	.004191	1.6506	.024624	.07976
%RSD	.1921978	.0750555	.3230065	.3363697	.4106729	.9980966	.5471770

#1	14.85308	400.5583	2.488664	1.242145	400.2421	2.445798	14.57470
#2	14.90780	400.0237	2.474858	1.245243	403.5419	2.494082	14.65730
#3	14.89493	400.5289	2.488846	1.250439	401.9730	2.461537	14.49782

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	153.2765	4.986590	5.107554	4.790056	5.070246	4.954374	4.971804
Stddev	.2965	.012819	.018367	.002715	.010774	.005348	.004363
%RSD	.1934688	.2570603	.3596031	.0566752	.2124965	.1079376	.0877530

#1	153.1715	5.000598	5.091772	4.792585	5.067054	4.949591	4.971508
#2	153.6113	4.975446	5.127714	4.787187	5.082256	4.960148	4.967596
#3	153.0467	4.983727	5.103176	4.790397	5.061429	4.953382	4.976307

Sample Name: CCV079 Acquired: 11/14/2024 3:14:01 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV079 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.953300	5.072510	5.070092
Stddev	.010832	.019461	.010285
%RSD	.2186767	.3836657	.2028634
#1	4.942474	5.051556	5.059534
#2	4.964138	5.090019	5.080082
#3	4.953288	5.075954	5.070659

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	771.6916	22686.46	2351.163	646.6755	1419.770
Stddev	.8024	42.70	3.195	2.9693	1.954
%RSD	.1039773	.1882327	.1359013	.4591597	.1376524
#1	772.4293	22711.74	2353.315	646.9780	1420.718
#2	770.8373	22710.48	2347.492	643.5666	1421.069
#3	771.8081	22637.16	2352.682	649.4820	1417.522

Sample Name: CCB079 Acquired: 11/14/2024 3:18:13 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB079 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.002274	-.000670	-.002967	-.001404	.0006534	-.006798	-.000496
Stddev	.009980	.001727	.003126	.006395	.0032665	.016850	.000637
%RSD	438.8607	257.9557	105.3656	455.4781	499.9160	247.8654	128.6208

#1	.008001	-.002113	-.001491	.005315	-.002309	.009398	-.000062
#2	-.011930	.001244	-.000852	-.007416	.004157	-.005558	-.001227
#3	-.002893	-.001140	-.006558	-.002112	.000112	-.024235	-.000198

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000021	.0000369	.0121974	-.001050	-.000470	-.001244	.0522162
Stddev	.000087	.0001596	.0283940	.000714	.000360	.000442	.0689009
%RSD	422.5528	432.9205	232.7872	67.95690	76.62911	35.54286	131.9531

#1	.000078	-.000141	.0344706	-.000260	-.000197	-.001291	.1259925
#2	-.000088	.000168	.0218969	-.001649	-.000878	-.001661	.0411184
#3	-.000051	.000084	-.019775	-.001243	-.000335	-.000780	-.010462

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003492	-.019708	-.000800	-.000261	.3835771	.0007602	-.000677
Stddev	.0004278	.049973	.000331	.000089	.0439239	.0075933	.000514
%RSD	122.5148	253.5639	41.44450	34.02136	11.45113	998.7973	75.97647

#1	.0008347	-.070847	-.001133	-.000226	.3504619	-.007711	-.000895
#2	.0000278	.029010	-.000471	-.000195	.3668655	.006956	-.001046
#3	.0001850	-.017287	-.000795	-.000362	.4334040	.003035	-.000089

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0549660	-.000793	.0013234	-.000518	.0017253	-.000692	-.002235
Stddev	.0296776	.003305	.0009669	.000509	.0030511	.000681	.001438
%RSD	53.99259	416.9907	73.06142	98.36815	176.8446	98.44188	64.34977

#1	.0563055	-.004281	.0003684	-.000891	-.001796	.000094	-.002717
#2	.0246413	-.000387	.0023017	-.000726	.003588	-.001060	-.000617
#3	.0839510	.002290	.0013000	.000063	.003383	-.001109	-.003369

Sample Name: CCB079 Acquired: 11/14/2024 3:18:13 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB079 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.000644	-.000090	-.000215
Stddev	.003066	.001132	.000073
%RSD	475.7883	1254.540	34.22439
#1	.002576	.000936	-.000238
#2	-.000980	-.001305	-.000273
#3	-.003529	.000098	-.000132

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	942.8821	24866.32	2445.111	841.8982	1879.386
Stddev	.6761	49.69	14.088	6.2063	3.799
%RSD	.0717099	.1998145	.5761567	.7371781	.2021558
#1	943.6061	24825.22	2438.096	836.5155	1882.569
#2	942.2671	24852.19	2461.329	840.4923	1875.180
#3	942.7730	24921.54	2435.907	848.6868	1880.409

Sample Name: PB164595BL Acquired: 11/14/2024 3:22:47 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: PBS595 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001141	.0001064	-.001059	-.005507	.0011651	-.005613
Stddev	.009333	.0036651	.002157	.005113	.0023900	.008502
%RSD	817.7361	3445.374	203.5825	92.85483	205.1350	151.4768

#1	.004624	.0019778	.001036	.000397	.0018471	-.006735
#2	.003861	.0024579	-.000941	-.008363	.0031399	-.013498
#3	-.011909	-.004117	-.003273	-.008554	-.001492	.003395

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001635	-.000041	-.000056	-.027670	-.001547	-.000461
Stddev	.0004282	.000069	.000055	.014336	.000799	.000187
%RSD	261.8112	168.1497	96.86830	51.81153	51.66238	40.50528

#1	-.000167	.000038	-.000097	-.019210	-.001260	-.000287
#2	.000647	-.000075	.000006	-.044223	-.000930	-.000658
#3	.000010	-.000087	-.000077	-.019577	-.002449	-.000437

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0012277	.0144638	-.002220	-.051066	-.000374	-.000394
Stddev	.0035711	.0280063	.001133	.023481	.000549	.000257
%RSD	290.8762	193.6309	51.05840	45.98054	146.7571	65.27322

#1	.0036507	-.010868	-.003027	-.074126	.000166	-.000456
#2	.0029058	.044539	-.000924	-.051887	-.000932	-.000112
#3	-.002873	.009721	-.002708	-.027186	-.000357	-.000615

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2015578	-.005287	-.001741	.1149426	-.000713	-.003771
Stddev	.1330799	.008818	.000341	.1340866	.000651	.000761
%RSD	66.02568	166.7925	19.59005	116.6552	91.18836	20.16786

#1	.2408035	-.014533	-.001412	.2629672	-.000927	-.003732
#2	.0532684	.003029	-.002093	.0016141	.000017	-.004551
#3	.3106016	-.004357	-.001718	.0802467	-.001230	-.003031

Sample Name: PB164595BL Acquired: 11/14/2024 3:22:47 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: PBS595 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000830	.0018449	-.000010	F -.013847	-.001983	-.001513
Stddev	.000101	.0013860	.000937	.000656	.002327	.001241
%RSD	12.16816	75.12749	9114.352	4.736857	117.3492	82.00924
#1	-.000866	.0013458	-.001003	-.013099	-.004668	-.000980
#2	-.000715	.0034113	.000112	-.014325	-.000723	-.002932
#3	-.000907	.0007776	.000860	-.014116	-.000558	-.000628

Elem	Sr4077
Units	ppm
Avg	-.000461
Stddev	.000149
%RSD	32.27838
#1	-.000530
#2	-.000564
#3	-.000291

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	948.0337	24906.59	2442.720	844.5548	1887.281
Stddev	1.9781	40.93	21.748	3.0019	3.372
%RSD	.2086563	.1643164	.8903305	.3554374	.1786643
#1	950.1354	24884.91	2454.646	841.1838	1891.128
#2	947.7576	24881.07	2417.618	845.5412	1885.875
#3	946.2081	24953.79	2455.896	846.9393	1884.839

Sample Name: PB164595BS Acquired: 11/14/2024 3:27:20 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: LCS595 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0172890	.0600886	.0174981	.0657869	.1187078	.4022264
Stddev	.0058425	.0017738	.0014418	.0049816	.0030156	.0051365
%RSD	33.79313	2.951969	8.239483	7.572381	2.540335	1.277017

#1	.0208826	.0581407	.0183964	.0636083	.1218424	.4061946
#2	.0204367	.0605143	.0158351	.0714867	.1158274	.3964247
#3	.0105475	.0616108	.0182629	.0622657	.1184535	.4040598

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4529601	.0114239	.0112693	11.37018	.0220494	.1062602
Stddev	.0008466	.0001760	.0002579	.07001	.0003134	.0004152
%RSD	.1868957	1.540331	2.288584	.6157717	1.421237	.3907563

#1	.4521743	.0114867	.0114396	11.41023	.0219086	.1064340
#2	.4528495	.0115599	.0109725	11.41096	.0224085	.1057863
#3	.4538565	.0112251	.0113956	11.28933	.0218312	.1065603

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0538945	.2360360	.0339741	10.79137	.0894845	.0228286
Stddev	.0049631	.0275221	.0013731	.18041	.0011573	.0006605
%RSD	9.208940	11.66012	4.041654	1.671836	1.293349	2.893188

#1	.0556270	.2410810	.0340982	10.64810	.0885618	.0223956
#2	.0482974	.2606866	.0325432	10.99398	.0891085	.0235888
#3	.0577591	.2063404	.0352810	10.73202	.0907831	.0225013

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.83240	.1187619	.1177231	10.38942	.0190274	F -.003135
Stddev	.21894	.0036775	.0011956	.08656	.0012050	.000420
%RSD	2.021159	3.096516	1.015598	.8331322	6.332987	13.38685

#1	10.74812	.1193837	.1185250	10.34731	.0176467	-.002699
#2	11.08095	.1220889	.1163489	10.33198	.0198674	-.003537
#3	10.66812	.1148132	.1182953	10.48898	.0195681	-.003169

Sample Name: PB164595BS Acquired: 11/14/2024 3:27:20 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: LCS595 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .0197393	.1896388	F .4778666	F -.000150	.2185714	.0307581
Stddev	.0003926	.0054637	.0011892	.000901	.0040435	.0020784
%RSD	1.988933	2.881121	.2488470	598.9678	1.849969	6.757093
#1	.0196991	.1921793	.4772650	.000809	.2204020	.0302377
#2	.0201505	.1833673	.4770984	-.000283	.2213759	.0289894
#3	.0193684	.1933697	.4792363	-.000977	.2139364	.0330472

Elem	Sr4077
Units	ppm
Avg	.2275379
Stddev	.0006442
%RSD	.2830995
#1	.2277980
#2	.2280114
#3	.2268044

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	944.1187	24809.47	2458.188	837.0254	1839.548
Stddev	4.8223	34.37	2.472	3.0771	9.934
%RSD	.5107725	.1385298	.1005538	.3676193	.5400299
#1	941.4564	24793.88	2455.502	834.0823	1834.395
#2	949.6853	24785.66	2458.696	840.2209	1851.000
#3	941.2145	24848.87	2460.367	836.7729	1833.249

Sample Name: PB164595BSD Acquired: 11/14/2024 3:31:50 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: LCSD595 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0046717	.0268086	.0092394	.0344846	.0608122	.1876893	.2250992
Stddev	.0113772	.0011870	.0026494	.0019037	.0043038	.0098426	.0071500
%RSD	243.5335	4.427744	28.67488	5.520332	7.077250	5.244084	3.176390
#1	.0023980	.0276260	.0080093	.0343404	.0596251	.1979306	.2284511
#2	.0170140	.0254471	.0122802	.0326571	.0572265	.1868362	.2299574
#3	-.005397	.0273526	.0074287	.0364563	.0655850	.1783009	.2168889
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0056520	.0056904	5.638728	.0101178	.0534483	.0264424	.1210061
Stddev	.0002338	.0001990	.175200	.0001266	.0003559	.0055766	.0461554
%RSD	4.136471	3.496642	3.107086	1.251161	.6657938	21.08948	38.14300
#1	.0058383	.0057852	5.694417	.0100162	.0531119	.0322423	.1618867
#2	.0057282	.0058244	5.779314	.0102596	.0538209	.0259648	.0709533
#3	.0053897	.0054618	5.442452	.0100776	.0534120	.0211199	.1301784
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0157536	5.321402	.0446205	.0110755	5.326935	.0693162	.0594354
Stddev	.0016916	.189208	.0006030	.0004539	.588438	.0086389	.0005947
%RSD	10.73778	3.555611	1.351315	4.097938	11.04646	12.46296	1.000613
#1	.0146090	5.293460	.0452684	.0106891	5.144594	.0680823	.0588685
#2	.0176967	5.523027	.0445174	.0109621	5.984959	.0785056	.0593833
#3	.0149552	5.147717	.0440758	.0115753	4.851253	.0613606	.0600545
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.089645	.0090248	-.004904	.0094234	.0918995	.2392421	-.006077
Stddev	.099834	.0020156	.000557	.0001161	.0041359	.0065675	.000784
%RSD	1.961504	22.33404	11.35249	1.232491	4.500443	2.745131	12.89789
#1	5.188255	.0112625	-.005531	.0095388	.0935893	.2440502	-.005172
#2	5.092051	.0073518	-.004468	.0094249	.0871862	.2419169	-.006552
#3	4.988631	.0084601	-.004713	.0093065	.0949229	.2317593	-.006506

Sample Name: PB164595BSD Acquired: 11/14/2024 3:31:50 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: LCSD595 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.1081529	.0146687	.1126733
Stddev	.0032098	.0006926	.0032143
%RSD	2.967831	4.721401	2.852780
#1	.1102971	.0153234	.1143866
#2	.1096989	.0147390	.1146680
#3	.1044627	.0139437	.1089653

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	943.1724	24885.90	2487.708	843.9640	1854.980
Stddev	.4772	34.42	56.719	2.3040	2.433
%RSD	.0505914	.1383120	2.279961	.2729987	.1311713
#1	943.5650	24858.86	2456.475	841.4336	1852.183
#2	942.6413	24874.19	2453.471	845.9407	1856.153
#3	943.3109	24924.65	2553.179	844.5177	1856.606

Sample Name: P4523-01DLX2 Acquired: 11/14/2024 3:54:02 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE4T2 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5039607	-.034894	.3802607	-.046391	.0146823	108.4961	1.605864
Stddev	.0133246	.005361	.0045695	.005258	.0034078	.1161	.007001
%RSD	2.643983	15.36312	1.201670	11.33339	23.21027	.1070258	.4359577

#1	.5056785	-.032228	.3772980	-.052462	.0161686	108.5991	1.604669
#2	.4898605	-.041065	.3855232	-.043404	.0170945	108.5190	1.613385
#3	.5163431	-.031389	.3779609	-.043307	.0107838	108.3702	1.599538

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0035805	.0115606	22.60440	.2380393	.1726093	1.075759	297.8915
Stddev	.0000753	.0004817	.05527	.0017955	.0010940	.003208	.3243
%RSD	2.103721	4.166707	.2445132	.7542773	.6337815	.2981645	.1088651

#1	.0036673	.0113005	22.64674	.2363221	.1738140	1.079364	297.8589
#2	.0035321	.0121164	22.54187	.2399039	.1723362	1.073222	297.5847
#3	.0035422	.0112648	22.62459	.2378920	.1716778	1.074691	298.2308

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.120538	52.92030	.3215129	-.023267	1.420393	.5884037	.9164445
Stddev	.021686	.21348	.0003790	.000306	.124397	.0115970	.0075703
%RSD	.3045504	.4033999	.1178723	1.314399	8.757944	1.970932	.8260495

#1	7.131134	52.92460	.3211825	-.023558	1.509752	.5947334	.9082514
#2	7.095591	52.70470	.3219266	-.022948	1.473109	.5954586	.9231800
#3	7.134888	53.13160	.3214297	-.023295	1.278318	.5750192	.9179022

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	21.13842	5.680454	.2730294	-.002229	.7588478	8.046040	-.006393
Stddev	.04125	.006671	.0006135	.000093	.0143364	.070217	.001931
%RSD	.1951257	.1174416	.2246930	4.167402	1.889237	.8726901	30.21203

#1	21.09712	5.688033	.2737375	-.002186	.7729460	8.073048	-.004350
#2	21.13852	5.675472	.2726602	-.002335	.7442844	7.966329	-.006640
#3	21.17961	5.677855	.2726904	-.002165	.7593130	8.098743	-.008189

Sample Name: P4523-01DLX2 Acquired: 11/14/2024 3:54:02 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE4T2 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	3.050988	.0919624	.2695792
Stddev	.006446	.0008059	.0015274
%RSD	.2112799	.8763681	.5665855
#1	3.051785	.0924619	.2699759
#2	3.056999	.0923927	.2708691
#3	3.044181	.0910327	.2678926

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1007.213	26905.70	2719.554	896.6394	1732.649
Stddev	1.016	121.59	19.121	6.3579	1.399
%RSD	.1008855	.4519075	.7031083	.7090785	.0807329
#1	1008.308	27021.08	2704.285	901.9281	1734.022
#2	1006.301	26778.73	2741.000	889.5854	1732.699
#3	1007.030	26917.27	2713.376	898.4048	1731.226

Sample Name: P4523-02DLX2 Acquired: 11/14/2024 3:58:28 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE4T3 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4013942	-.028040	.3271939	-.046810	.0128749	83.90457	1.227307
Stddev	.0039284	.004349	.0064224	.002147	.0015695	1.75153	.027519
%RSD	.9786905	15.51037	1.962875	4.586069	12.19036	2.087525	2.242268

#1	.4058571	-.023746	.3345574	-.047590	.0114653	85.90377	1.258421
#2	.3998657	-.027930	.3242744	-.044382	.0145661	82.63990	1.206161
#3	.3984598	-.032442	.3227498	-.048458	.0125933	83.17006	1.217338

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0031630	.0082279	16.57768	.2126845	.1433824	.9169267	266.5771
Stddev	.0001781	.0000867	.33158	.0001580	.0008455	.0190828	5.4038
%RSD	5.631555	1.053117	2.000156	.0742920	.5896845	2.081166	2.027101

#1	.0033186	.0083034	16.95030	.2126284	.1430894	.9374879	272.8000
#2	.0029687	.0082470	16.31515	.2125623	.1443354	.8997846	263.0695
#3	.0032019	.0081333	16.46759	.2128630	.1427223	.9135075	263.8617

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.264990	40.89463	.2793954	-.021446	1.277188	.5245654	.7111606
Stddev	.130960	.60506	.0007875	.000213	.168114	.0101148	.0038251
%RSD	2.090342	1.479568	.2818477	.9950056	13.16284	1.928233	.5378616

#1	6.410914	41.50836	.2792500	-.021561	1.367093	.5361145	.7078423
#2	6.157675	40.29862	.2802454	-.021199	1.381234	.5172826	.7153442
#3	6.226381	40.87691	.2786907	-.021577	1.083239	.5202993	.7102952

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	15.11213	4.462650	.2412874	-.001588	.5508629	7.388271	-.003837
Stddev	.38820	.005279	.0075512	.000798	.0103124	.110542	.001527
%RSD	2.568821	.1183017	3.129525	50.22962	1.872044	1.496187	39.81225

#1	15.55295	4.468514	.2499717	-.002509	.5596710	7.514355	-.004072
#2	14.96213	4.458275	.2376216	-.001113	.5533985	7.308006	-.005233
#3	14.82130	4.461161	.2362690	-.001142	.5395192	7.342451	-.002205

Sample Name: P4523-02DLX2 Acquired: 11/14/2024 3:58:28 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE4T3 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.868495	.0718610	.2086676
Stddev	.062004	.0016286	.0046108
%RSD	2.161560	2.266356	2.209631
#1	2.939861	.0737399	.2138732
#2	2.827837	.0708540	.2050977
#3	2.837788	.0709889	.2070317

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1000.525	26751.35	2655.016	890.1110	1760.653
Stddev	3.177	43.83	49.855	4.8400	7.549
%RSD	.3175709	.1638598	1.877758	.5437575	.4287572
#1	997.721	26722.79	2597.892	891.1548	1754.979
#2	999.877	26729.44	2689.750	884.8343	1757.759
#3	1003.976	26801.82	2677.406	894.3440	1769.221

Sample Name: P4523-03DLX2 Acquired: 11/14/2024 4:02:54 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE4T4 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3022016	-.025163	.2884303	-.031802	.0096837	86.30511	1.649297
Stddev	.0124619	.000684	.0028268	.002488	.0032596	.64333	.014261
%RSD	4.123720	2.718248	.9800790	7.824384	33.66052	.7454092	.8646873

#1	.2911299	-.024443	.2852283	-.029106	.0094858	85.57767	1.634706
#2	.2997773	-.025241	.2894823	-.032291	.0130377	86.79919	1.663204
#3	.3156975	-.025805	.2905803	-.034010	.0065276	86.53847	1.649983

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0027888	.0083513	22.50573	.1970081	.1289215	.7950068	228.2797
Stddev	.0000792	.0002118	.17397	.0009923	.0008752	.0054749	1.7646
%RSD	2.839165	2.536349	.7730182	.5036720	.6788394	.6886597	.7729813

#1	.0028236	.0084598	22.31059	.1978208	.1293624	.7901752	226.4091
#2	.0028446	.0084870	22.56195	.1959023	.1294886	.7938918	229.9145
#3	.0026982	.0081073	22.64464	.1973013	.1279136	.8009533	228.5156

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.714275	47.61091	.2938585	-.017838	1.095512	.4671172	.7205487
Stddev	.083523	.55452	.0002615	.000311	.238008	.0173493	.0026543
%RSD	.9584604	1.164686	.0889920	1.744267	21.72573	3.714120	.3683734

#1	8.629501	46.97598	.2941493	-.017760	1.356056	.4482919	.7231372
#2	8.796487	48.00003	.2937835	-.018181	.889507	.4824632	.7178331
#3	8.716838	47.85674	.2936426	-.017574	1.040972	.4705965	.7206759

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	13.60358	6.015327	.2091320	-.001644	.7184309	8.119915	-.008999
Stddev	.18034	.013626	.0019574	.000219	.0062316	.023557	.000475
%RSD	1.325663	.2265158	.9359392	13.34934	.8673947	.2901152	5.278901

#1	13.48365	6.024517	.2068718	-.001820	.7150622	8.118263	-.008573
#2	13.81097	6.021792	.2102640	-.001713	.7256218	8.144255	-.008913
#3	13.51611	5.999673	.2102602	-.001398	.7146087	8.097228	-.009511

Sample Name: P4523-03DLX2 Acquired: 11/14/2024 4:02:54 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE4T4 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.316967	.0792300	.2857260
Stddev	.022550	.0001956	.0028685
%RSD	.9732619	.2468708	1.003945
#1	2.291722	.0793758	.2827858
#2	2.335115	.0793065	.2885171
#3	2.324064	.0790077	.2858752

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	994.1804	26579.02	2682.305	885.3636	1746.819
Stddev	1.4683	39.21	13.275	2.2849	.919
%RSD	.1476913	.1475407	.4948917	.2580750	.0526035
#1	993.9097	26617.25	2692.599	887.8397	1746.507
#2	995.7652	26538.89	2667.323	884.9143	1746.097
#3	992.8662	26580.92	2686.995	883.3367	1747.854

Sample Name: P4523-04DLX2 Acquired: 11/14/2024 4:07:18 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE4T5 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3317593	-.032595	.3717963	-.040792	.0084964	111.9359	1.681530
Stddev	.0144320	.006291	.0047199	.008997	.0062185	.2226	.002878
%RSD	4.350132	19.30060	1.269488	22.05648	73.18940	.1988905	.1711673
#1	.3152093	-.028429	.3664164	-.049825	.0055329	111.7045	1.678304
#2	.3383451	-.029525	.3752414	-.031831	.0043140	112.1485	1.683836
#3	.3417236	-.039832	.3737310	-.040719	.0156423	111.9548	1.682450
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0036100	.0106912	27.73058	.2550937	.1658267	1.192887	278.9029
Stddev	.0001198	.0002327	.04332	.0009972	.0004280	.002421	.8583
%RSD	3.318774	2.176514	.1562337	.3909170	.2581115	.2029161	.3077501
#1	.0036789	.0107939	27.73200	.2560075	.1662204	1.194728	278.0263
#2	.0036795	.0104248	27.77318	.2540301	.1658887	1.193787	279.7417
#3	.0034717	.0108549	27.68657	.2552436	.1653711	1.190145	278.9405
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.360657	59.95400	.3768868	-.021338	1.591915	.5612153	.8389477
Stddev	.024784	.31745	.0007458	.000201	.126898	.0100975	.0021453
%RSD	.3367135	.5294825	.1978889	.9431439	7.971429	1.799220	.2557102
#1	7.332979	59.99642	.3774026	-.021392	1.498641	.5650568	.8413108
#2	7.380799	60.24810	.3760316	-.021508	1.540683	.5688282	.8384097
#3	7.368193	59.61747	.3772261	-.021116	1.736420	.5497608	.8371227
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	15.64074	7.035961	.2545477	-.002295	.8269399	8.651072	-.005297
Stddev	.13186	.031103	.0026974	.000519	.0093013	.027330	.001003
%RSD	.8430779	.4420600	1.059683	22.61825	1.124781	.3159097	18.93790
#1	15.62710	7.029753	.2547247	-.001699	.8257399	8.621751	-.005203
#2	15.51623	7.008431	.2571522	-.002650	.8182968	8.675837	-.004344
#3	15.77889	7.069700	.2517661	-.002537	.8367829	8.655629	-.006343

Sample Name: P4523-04DLX2 Acquired: 11/14/2024 4:07:18 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE4T5 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	3.152085	.1013252	.3436407
Stddev	.003686	.0011280	.0006503
%RSD	.1169377	1.113241	.1892446
#1	3.147842	.1020711	.3429243
#2	3.153923	.1000275	.3441937
#3	3.154491	.1018769	.3438041

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1005.900	26990.65	2731.786	901.2658	1725.602
Stddev	1.686	104.02	3.646	2.0691	6.034
%RSD	.1676096	.3853856	.1334584	.2295767	.3496795
#1	1005.599	26935.43	2733.677	898.9367	1727.220
#2	1007.716	27110.63	2727.583	902.8915	1730.663
#3	1004.385	26925.88	2734.098	901.9691	1718.924

Sample Name: P4523-05DLX2 Acquired: 11/14/2024 4:11:43 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE4T6 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3317443	-.032515	.4214292	-.038292	.0129662	88.97289	1.384676
Stddev	.0154828	.004269	.0036834	.006148	.0021721	.89467	.015029
%RSD	4.667099	13.12981	.8740154	16.05527	16.75202	1.005552	1.085353

#1	.3485701	-.036453	.4252474	-.031239	.0111803	89.86044	1.397857
#2	.3180982	-.027978	.4178974	-.041119	.0123340	88.98696	1.387861
#3	.3285645	-.033115	.4211429	-.042518	.0153842	88.07127	1.368310

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0031087	.0095076	18.25453	.2116473	.1412553	1.149298	258.7640
Stddev	.0001309	.0003235	.19261	.0014761	.0010277	.006885	2.4119
%RSD	4.211810	3.402787	1.055144	.6974149	.7275323	.5990530	.9320940

#1	.0029582	.0092148	18.44130	.2100483	.1416226	1.152005	260.7901
#2	.0031965	.0094530	18.26573	.2119358	.1400944	1.154418	259.4057
#3	.0031713	.0098549	18.05656	.2129578	.1420489	1.141471	256.0961

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.615688	45.57139	.2883166	-.020539	1.403379	.4973930	.7803829
Stddev	.073820	.44196	.0014756	.000543	.163654	.0193766	.0040479
%RSD	1.115827	.9698202	.5118052	2.642471	11.66141	3.895626	.5187086

#1	6.666911	45.76583	.2887981	-.020976	1.592007	.5036277	.7812441
#2	6.649081	45.88280	.2866604	-.020711	1.318929	.4756665	.7759737
#3	6.531072	45.06555	.2894914	-.019931	1.299202	.5128847	.7839309

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	16.33487	5.105602	.2310830	-.001385	.4848248	7.817897	-.006234
Stddev	.23292	.035134	.0019988	.001202	.0012169	.067171	.001210
%RSD	1.425892	.6881481	.8649614	86.77678	.2509906	.8591908	19.40558

#1	16.58362	5.121244	.2333582	-.001315	.4847386	7.859217	-.007117
#2	16.29904	5.065363	.2302808	-.000220	.4836533	7.854082	-.006731
#3	16.12194	5.130198	.2296099	-.002621	.4860825	7.740391	-.004855

Sample Name: P4523-05DLX2 Acquired: 11/14/2024 4:11:43 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE4T6 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	3.055314	.0812772	.2253071
Stddev	.027249	.0013350	.0031058
%RSD	.8918656	1.642531	1.378468
#1	3.083719	.0801191	.2280749
#2	3.052832	.0827374	.2258980
#3	3.029391	.0809750	.2219483

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1004.779	26917.95	2716.603	895.1765	1756.508
Stddev	5.952	27.85	20.794	5.3668	8.595
%RSD	.5923761	.1034774	.7654406	.5995205	.4893257
#1	1002.074	26933.92	2706.914	898.0919	1753.240
#2	1011.603	26934.15	2702.421	898.4546	1766.258
#3	1000.659	26885.79	2740.473	888.9831	1750.027

Sample Name: P4523-06DLX2 Acquired: 11/14/2024 4:16:08 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE4T7 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2513198	-.029887	.1983816	-.035059	.0117196	99.83413	1.244877
Stddev	.0129344	.000468	.0031746	.000975	.0012647	.41107	.003220
%RSD	5.146580	1.566303	1.600259	2.780357	10.79097	.4117575	.2586877

#1	.2583209	-.029363	.1986965	-.035830	.0131522	99.72417	1.243526
#2	.2592444	-.030264	.2013871	-.033964	.0112481	100.2890	1.248553
#3	.2363939	-.030034	.1950613	-.035384	.0107584	99.4892	1.242553

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0029397	.0049019	26.79623	.2044896	.1336777	.4669638	246.6949
Stddev	.0000924	.0001772	.05648	.0017920	.0006450	.0018992	1.0179
%RSD	3.143407	3.615277	.2107735	.8763538	.4824833	.4067013	.4126155

#1	.0028457	.0047554	26.75872	.2024304	.1344224	.4686147	246.6593
#2	.0030305	.0048514	26.86119	.2053425	.1333067	.4673884	247.7301
#3	.0029429	.0050989	26.76879	.2056959	.1333040	.4648883	245.6952

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.776737	48.96572	.2794766	-.020769	1.408762	.5147187	.6030909
Stddev	.010559	.18103	.0008962	.000286	.184406	.0167639	.0017545
%RSD	.1827836	.3697030	.3206758	1.376494	13.08997	3.256897	.2909196

#1	5.776278	48.94259	.2804266	-.021055	1.449056	.5014577	.6011542
#2	5.787518	49.15720	.2793570	-.020770	1.569690	.5335614	.6035444
#3	5.766415	48.79737	.2786462	-.020483	1.207540	.5091372	.6045742

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	15.28542	6.335332	.2240647	-.001922	.8502806	8.270331	-.008067
Stddev	.12590	.015540	.0007213	.000397	.0053003	.050358	.001590
%RSD	.8236603	.2452972	.3219012	20.64117	.6233565	.6089030	19.71211

#1	15.14076	6.352811	.2232390	-.002365	.8563678	8.297764	-.006716
#2	15.37025	6.330111	.2245720	-.001600	.8477874	8.301017	-.007666
#3	15.34525	6.323074	.2243831	-.001800	.8466867	8.212213	-.009820

Sample Name: P4523-06DLX2 Acquired: 11/14/2024 4:16:08 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE4T7 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.652302	.0834390	.2260460
Stddev	.005614	.0021201	.0015120
%RSD	.2116474	2.540923	.6688705
#1	2.657878	.0810772	.2259176
#2	2.652374	.0851778	.2276180
#3	2.646652	.0840620	.2246023

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1001.201	26871.06	2691.570	895.3829	1747.654
Stddev	1.686	126.55	12.392	2.7331	4.876
%RSD	.1684174	.4709593	.4603834	.3052454	.2790022
#1	999.396	27005.45	2684.349	898.5341	1742.041
#2	1001.469	26853.56	2684.483	893.6578	1750.847
#3	1002.737	26754.17	2705.879	893.9568	1750.073

Sample Name: P4523-10DLX2 Acquired: 11/14/2024 4:20:32 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE4T9 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3614410	-.032033	.3231774	-.039987	.0113505	92.81860	1.358993
Stddev	.0052612	.003299	.0026255	.002081	.0030704	.70655	.008978
%RSD	1.455609	10.29942	.8124171	5.204897	27.05101	.7612165	.6606589

#1	.3590650	-.028305	.3260785	-.041861	.0079131	93.07168	1.360236
#2	.3674712	-.034579	.3224892	-.037747	.0123171	92.02037	1.349458
#3	.3577870	-.033214	.3209645	-.040354	.0138214	93.36376	1.367285

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0031856	.0088844	19.25101	.2260065	.1387176	.9074733	264.4286
Stddev	.0001604	.0004146	.13099	.0090378	.0003062	.0078996	2.1531
%RSD	5.034693	4.666155	.6804186	3.998912	.2207280	.8705079	.8142474

#1	.0031424	.0089867	19.30582	.2156634	.1390697	.9118711	265.1851
#2	.0030513	.0092382	19.10152	.2323813	.1385693	.8983535	261.9994
#3	.0033632	.0084283	19.34569	.2299748	.1385138	.9121952	266.1014

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.854445	45.88439	.2954819	-.020670	1.409916	.5258128	.7306800
Stddev	.055532	.38936	.0016274	.001852	.149430	.0172851	.0229204
%RSD	.8101601	.8485685	.5507688	8.958121	10.59849	3.287321	3.136858

#1	6.840397	46.03348	.2967870	-.022767	1.238268	.5194171	.7042878
#2	6.807285	45.44252	.2936584	-.019259	1.480508	.5126368	.7455884
#3	6.915651	46.17717	.2960002	-.019984	1.510971	.5453843	.7421639

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	16.80754	4.966075	.2439173	-.002309	.7294955	7.772985	-.005190
Stddev	.07072	.027302	.0028813	.000251	.0072604	.083919	.001455
%RSD	.4207427	.5497675	1.181248	10.88270	.9952633	1.079629	28.03874

#1	16.87643	4.981002	.2452907	-.002418	.7235404	7.684854	-.006856
#2	16.73513	4.934564	.2406063	-.002022	.7375835	7.782163	-.004552
#3	16.81104	4.982659	.2458549	-.002488	.7273627	7.851938	-.004163

Sample Name: P4523-10DLX2 Acquired: 11/14/2024 4:20:32 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE4T9 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	3.074096	.0822351	.2326538
Stddev	.013914	.0009832	.0016392
%RSD	.4526205	1.195648	.7045562
#1	3.074661	.0829072	.2328236
#2	3.059909	.0811066	.2309363
#3	3.087719	.0826916	.2342015

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1001.166	26930.21	2702.010	900.9426	1751.732
Stddev	1.034	729.47	15.737	23.9962	4.321
%RSD	.1032576	2.708757	.5824202	2.663453	.2466521
#1	1001.808	27768.65	2698.742	928.5572	1749.583
#2	1001.717	26440.99	2719.124	885.1628	1756.706
#3	999.973	26581.00	2688.163	889.1077	1748.907

Sample Name: P4523-11DLX2 Acquired: 11/14/2024 4:24:58 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE4W8 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2075174	-.027412	.1629090	-.039536	.0090315	95.16423	1.135331
Stddev	.0069863	.002012	.0054906	.005308	.0011078	1.82159	.022614
%RSD	3.366616	7.339513	3.370317	13.42542	12.26600	1.914153	1.991880

#1	.2141605	-.029396	.1651424	-.042752	.0101608	93.08968	1.109838
#2	.2081595	-.025373	.1669309	-.042447	.0079465	95.90093	1.143180
#3	.2002322	-.027468	.1566537	-.033410	.0089873	96.50210	1.152976

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0028295	.0045178	36.19458	.1941890	.1199022	.4068015	227.9106
Stddev	.0001188	.0002073	.71711	.0054642	.0007117	.0119640	4.1363
%RSD	4.197437	4.589139	1.981258	2.813849	.5935452	2.940990	1.814873

#1	.0027217	.0047317	35.37010	.2004985	.1206213	.3933337	223.1657
#2	.0028101	.0043177	36.54034	.1910569	.1191982	.4108707	229.8108
#3	.0029568	.0045040	36.67330	.1910117	.1198869	.4162002	230.7554

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.676870	45.00587	.2455451	-.017520	1.381809	.5102094	.4996552
Stddev	.095355	.92879	.0005223	.001622	.070149	.0141254	.0103261
%RSD	2.038856	2.063709	.2127175	9.258153	5.076611	2.768553	2.066653

#1	4.566835	43.95058	.2457215	-.015656	1.411020	.4950037	.5113769
#2	4.728460	45.36796	.2459563	-.018294	1.432633	.5127015	.4956867
#3	4.735314	45.69909	.2449574	-.018611	1.301775	.5229228	.4919020

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.52305	5.411530	.2054699	-.002778	.8264126	8.931893	-.008919
Stddev	.24057	.010165	.0050009	.000103	.0137723	.088832	.003034
%RSD	1.920981	.1878355	2.433864	3.716432	1.666513	.9945517	34.01495

#1	12.25426	5.401276	.1997392	-.002897	.8153744	8.830767	-.012029
#2	12.59671	5.421603	.2089496	-.002711	.8220173	8.997332	-.008760
#3	12.71817	5.411711	.2077210	-.002725	.8418461	8.967579	-.005967

Sample Name: P4523-11DLX2 Acquired: 11/14/2024 4:24:58 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE4W8 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.472356	.0771476	.2057531
Stddev	.049433	.0002036	.0040574
%RSD	1.999447	.2639571	1.971987
#1	2.415290	.0772525	.2010930
#2	2.499759	.0772774	.2076641
#3	2.502020	.0769129	.2085021

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	999.7727	26371.64	2685.105	876.9636	1755.247
Stddev	1.9711	464.90	37.007	15.9531	3.138
%RSD	.1971530	1.762870	1.378239	1.819128	.1787878
#1	1000.772	25834.94	2727.740	858.6209	1755.763
#2	997.502	26630.38	2661.300	884.6652	1751.883
#3	1001.044	26649.61	2666.274	887.6046	1758.096

Sample Name: P4523-12DLX2 Acquired: 11/14/2024 4:29:24 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE4W9 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2654320	-.031538	.3089264	-.040433	.0089134	97.84556	1.437299
Stddev	.0220929	.001327	.0023409	.004952	.0013277	1.27980	.016651
%RSD	8.323372	4.206249	.7577548	12.24713	14.89521	1.307980	1.158468

#1	.2504825	-.032922	.3114484	-.037610	.0073936	99.00405	1.452460
#2	.2908087	-.030278	.3085079	-.037538	.0098477	96.47176	1.419479
#3	.2550047	-.031413	.3068230	-.046151	.0094989	98.06087	1.439958

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0030827	.0085249	21.35764	.2204075	.1507416	.8080488	265.6293
Stddev	.0000354	.0001342	.33179	.0007920	.0009854	.0104053	3.2877
%RSD	1.147878	1.573731	1.553475	.3593207	.6537059	1.287709	1.237696

#1	.0030482	.0086498	21.66172	.2205063	.1516628	.8172214	268.4516
#2	.0030811	.0085418	21.00378	.2211454	.1497026	.7967418	262.0194
#3	.0031189	.0083831	21.40743	.2195708	.1508593	.8101831	266.4170

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.395217	48.94801	.3166281	-.021076	1.148597	.5416311	.7556504
Stddev	.081501	.68502	.0003212	.000560	.072475	.0085624	.0054342
%RSD	1.274407	1.399478	.1014516	2.655215	6.309903	1.580850	.7191469

#1	6.471310	49.46331	.3162627	-.021581	1.087327	.5475602	.7539027
#2	6.309214	48.17065	.3168661	-.020474	1.228599	.5455184	.7617435
#3	6.405126	49.21007	.3167555	-.021173	1.129863	.5318146	.7513051

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	15.86794	5.708099	.2400935	-.001991	.8361280	8.081825	-.005956
Stddev	.23635	.010149	.0018552	.000530	.0071027	.093088	.001842
%RSD	1.489503	.1777975	.7727119	26.63178	.8494737	1.151818	30.91755

#1	16.08729	5.705908	.2422355	-.002474	.8304380	8.171273	-.004702
#2	15.61764	5.699225	.2390437	-.002074	.8338577	7.985481	-.008071
#3	15.89890	5.719165	.2390011	-.001424	.8440883	8.088722	-.005096

Sample Name: P4523-12DLX2 Acquired: 11/14/2024 4:29:24 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE4W9 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.903166	.0867895	.2344967
Stddev	.040829	.0015443	.0023756
%RSD	1.406378	1.779409	1.013044
#1	2.941932	.0871814	.2367214
#2	2.860546	.0850869	.2319946
#3	2.907021	.0881001	.2347739

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	999.8235	26823.44	2710.622	895.6945	1746.947
Stddev	2.3709	85.34	34.629	5.6612	1.830
%RSD	.2371350	.3181446	1.277525	.6320409	.1047423
#1	1001.517	26776.24	2676.739	895.9496	1748.694
#2	1000.839	26772.12	2745.952	889.9101	1745.044
#3	997.114	26921.95	2709.175	901.2238	1747.104

Sample Name: P4523-13DLX2 Acquired: 11/14/2024 4:33:48 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE4X0 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4823123	-.036595	.4095609	-.047775	.0147155	95.74004	1.298609
Stddev	.0036185	.005605	.0035248	.002212	.0038357	.15018	.000383
%RSD	.7502469	15.31695	.8606206	4.630114	26.06589	.1568601	.0294666

#1	.4785529	-.032666	.4124248	-.045931	.0107001	95.69401	1.298938
#2	.4826129	-.034106	.4106334	-.047167	.0183419	95.61825	1.298189
#3	.4857712	-.043014	.4056244	-.050227	.0151044	95.90784	1.298699

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0032420	.0115071	17.99212	.2314807	.1561874	.9594488	303.5524
Stddev	.0000519	.0000862	.13427	.0008078	.0011648	.0035598	1.2809
%RSD	1.600694	.7487260	.7462596	.3489517	.7457611	.3710260	.4219677

#1	.0032969	.0115295	18.02278	.2323846	.1569831	.9555898	303.0298
#2	.0032352	.0115798	17.84517	.2312279	.1548505	.9626044	302.6154
#3	.0031938	.0114119	18.10841	.2308295	.1567286	.9601520	305.0120

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.294355	49.81546	.3111623	-.023259	1.545722	.6362361	.9102180
Stddev	.010390	.34333	.0013716	.000688	.085208	.0086030	.0046483
%RSD	.1650624	.6892035	.4408009	2.957873	5.512521	1.352176	.5106854

#1	6.303267	49.43292	.3118579	-.023002	1.486248	.6320300	.9117557
#2	6.282944	49.91663	.3120467	-.022736	1.507581	.6305453	.9139027
#3	6.296854	50.09684	.3095822	-.024038	1.643338	.6461329	.9049957

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	14.83033	5.237395	.2728414	-.002035	.6562336	7.653810	-.002772
Stddev	.04031	.017163	.0031037	.000198	.0092428	.044615	.002476
%RSD	.2718047	.3276972	1.137535	9.724967	1.408460	.5829081	89.31997

#1	14.79444	5.256908	.2699922	-.002195	.6599141	7.673717	-.005180
#2	14.87394	5.230638	.2723834	-.001814	.6457175	7.602707	-.002903
#3	14.82262	5.224638	.2761486	-.002096	.6630691	7.685006	-.000233

Sample Name: P4523-13DLX2 Acquired: 11/14/2024 4:33:48 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE4X0 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.931324	.0854968	.2003830
Stddev	.005984	.0010475	.0003033
%RSD	.2041549	1.225207	.1513603
#1	2.936825	.0858042	.2003481
#2	2.924952	.0843300	.2000987
#3	2.932195	.0863562	.2007023

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	996.0581	26649.91	2693.268	887.1096	1742.230
Stddev	1.5039	163.98	14.463	4.8053	1.637
%RSD	.1509866	.6153160	.5370102	.5416834	.0939349
#1	996.8555	26628.26	2693.024	884.0355	1742.208
#2	996.9955	26497.83	2707.852	884.6461	1743.878
#3	994.3235	26823.64	2678.928	892.6471	1740.605

Sample Name: P4523-14DLX2 Acquired: 11/14/2024 4:38:13 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE4X1 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2932376	-.025507	.3587196	-.035809	.0059022	89.55546	1.361441
Stddev	.0216304	.000966	.0031121	.002399	.0031393	.27938	.004983
%RSD	7.376412	3.786794	.8675533	6.700492	53.18736	.3119634	.3659784

#1	.2794588	-.024904	.3558688	-.038244	.0058771	89.23288	1.356299
#2	.2820859	-.024996	.3582503	-.033447	.0090540	89.72022	1.366247
#3	.3181682	-.026621	.3620397	-.035736	.0027756	89.71327	1.361777

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0035209	.0095351	19.23541	.2080963	.1579723	1.144384	237.3916
Stddev	.0000821	.0003369	.07197	.0010390	.0008990	.003703	.3593
%RSD	2.332422	3.533787	.3741457	.4993002	.5691207	.3235386	.1513704

#1	.0035108	.0093415	19.20271	.2089772	.1577711	1.148474	236.9831
#2	.0034443	.0099241	19.31792	.2069505	.1571909	1.141261	237.6590
#3	.0036076	.0093395	19.18560	.2083612	.1589549	1.143417	237.5328

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.808022	42.42789	.2768384	-.018500	1.267058	.5337419	.7067463
Stddev	.057290	.07749	.0004610	.000718	.081179	.0118780	.0035534
%RSD	.7337316	.1826288	.1665117	3.883583	6.406880	2.225424	.5027834

#1	7.770358	42.34163	.2763549	-.018246	1.358606	.5212479	.7075784
#2	7.873952	42.45045	.2768875	-.019311	1.238727	.5448892	.7098099
#3	7.779755	42.49159	.2772729	-.017942	1.203842	.5350885	.7028507

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	17.60170	3.833397	.2115851	-.002763	.6686620	8.558899	-.007363
Stddev	.13531	.018917	.0010487	.000456	.0009360	.021072	.000933
%RSD	.7687125	.4934749	.4956487	16.51905	.1399778	.2462038	12.66585

#1	17.50630	3.826337	.2127863	-.002259	.6679205	8.542733	-.008393
#2	17.75655	3.819026	.2111177	-.003149	.6697137	8.582731	-.007121
#3	17.54225	3.854829	.2108514	-.002880	.6683519	8.551233	-.006575

Sample Name: P4523-14DLX2 Acquired: 11/14/2024 4:38:13 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE4X1 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.399742	.0714101	.1761484
Stddev	.010230	.0007887	.0004172
%RSD	.4263040	1.104518	.2368647
#1	2.387942	.0720916	.1757112
#2	2.405180	.0715926	.1765423
#3	2.406105	.0705461	.1761917

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1007.656	26866.39	2694.701	894.1391	1752.722
Stddev	2.716	36.05	6.680	1.9367	5.677
%RSD	.2695366	.1341844	.2478919	.2165957	.3238730
#1	1006.342	26824.99	2694.440	895.9663	1758.086
#2	1010.779	26883.39	2688.155	892.1089	1753.303
#3	1005.846	26890.81	2701.507	894.3420	1746.777

Sample Name: P4523-15DLX2 Acquired: 11/14/2024 4:42:39 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE4X2 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2003667	-.028354	.2707015	-.034981	.0081141	99.94155	1.367699
Stddev	.0058049	.004036	.0055946	.007380	.0045349	.04944	.002748
%RSD	2.897159	14.23369	2.066700	21.09722	55.88971	.0494737	.2009099

#1	.1958260	-.029278	.2749304	-.043503	.0028828	99.92418	1.370815
#2	.2069071	-.031848	.2728163	-.030668	.0105278	99.90313	1.366663
#3	.1983668	-.023937	.2643578	-.030773	.0109317	99.99733	1.365620

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0032888	.0074726	22.63749	.2290078	.1395286	.7174070	241.1008
Stddev	.0001561	.0000291	.07713	.0003859	.0016095	.0054355	.7831
%RSD	4.747519	.3890959	.3407116	.1685271	1.153552	.7576586	.3247836

#1	.0032041	.0075018	22.57246	.2293413	.1398738	.7134273	240.2434
#2	.0031933	.0074436	22.72271	.2285851	.1377744	.7151937	241.2809
#3	.0034690	.0074724	22.61731	.2290970	.1409374	.7235999	241.7781

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.802582	49.63392	.2816437	-.019401	.9351328	.5175735	.8489056
Stddev	.025425	.19686	.0009386	.000142	.1820624	.0072621	.0035887
%RSD	.3737539	.3966160	.3332586	.7333495	19.46916	1.403112	.4227418

#1	6.818910	49.40899	.2819009	-.019564	1.040530	.5219860	.8529208
#2	6.773288	49.71793	.2806033	-.019303	1.039963	.5215428	.8477850
#3	6.815549	49.77483	.2824269	-.019335	.724905	.5091918	.8460108

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	14.40914	4.178164	.2184036	-.002714	.9400234	8.147727	-.008399
Stddev	.16396	.010340	.0031239	.000374	.0167085	.052730	.003103
%RSD	1.137901	.2474772	1.430353	13.79540	1.777451	.6471791	36.94172

#1	14.57145	4.189994	.2196105	-.003033	.9220407	8.120733	-.004818
#2	14.24358	4.173645	.2207440	-.002301	.9429615	8.113959	-.010108
#3	14.41238	4.170852	.2148562	-.002807	.9550679	8.208489	-.010272

Sample Name: P4523-15DLX2 Acquired: 11/14/2024 4:42:39 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE4X2 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.956796	.0836147	.1928925
Stddev	.005204	.0008142	.0005412
%RSD	.2659660	.9737944	.2805515
#1	1.956239	.0835003	.1934257
#2	1.951893	.0844801	.1923437
#3	1.962257	.0828637	.1929081

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	998.4499	26618.27	2676.873	886.7210	1746.087
Stddev	1.0636	63.02	8.683	.6293	1.704
%RSD	.1065255	.2367531	.3243680	.0709643	.0975659
#1	998.2204	26637.07	2682.810	886.0602	1746.041
#2	999.6096	26547.99	2680.901	886.7896	1747.814
#3	997.5199	26669.75	2666.907	887.3131	1744.407

Sample Name: P4523-16DLX2 Acquired: 11/14/2024 4:47:05 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE4X3 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2983354	-.035780	.2594487	-.043159	.0164636	100.6578	1.240021
Stddev	.0160292	.002010	.0025659	.000148	.0016932	2.4246	.026329
%RSD	5.372879	5.617345	.9889864	.3425944	10.28467	2.408764	2.123295
#1	.2866261	-.033599	.2600875	-.043269	.0145240	101.5245	1.250815
#2	.2917762	-.036182	.2616348	-.043218	.0172205	102.5299	1.259237
#3	.3166040	-.037558	.2566237	-.042991	.0176464	97.9189	1.210009
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0039221	.0081243	20.81491	.2587969	.1648489	.7643715	298.8200
Stddev	.0001239	.0004364	.58423	.0006212	.0011031	.0198893	8.1398
%RSD	3.159819	5.371831	2.806787	.2400393	.6691416	2.602040	2.723981
#1	.0040493	.0082149	20.94672	.2580997	.1649319	.7749555	300.5737
#2	.0039152	.0076497	21.32197	.2589996	.1637067	.7767306	305.9399
#3	.0038018	.0085083	20.17603	.2592915	.1659082	.7414282	289.9462
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.951257	43.47131	.3040401	-.024243	1.641769	.6703938	.8713767
Stddev	.160674	1.04704	.0012597	.001195	.185549	.0229434	.0037411
%RSD	2.311434	2.408581	.4143275	4.929351	11.30176	3.422376	.4293338
#1	7.020662	43.76442	.3046743	-.024987	1.831813	.6797053	.8672665
#2	7.065561	44.34056	.3025893	-.024878	1.632424	.6872177	.8745831
#3	6.767546	42.30895	.3048567	-.022865	1.461069	.6442585	.8722806
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	20.51645	4.555585	.2770178	-.001889	.9364636	9.022326	-.006054
Stddev	.45588	.020481	.0117542	.000058	.0103812	.196712	.000929
%RSD	2.222040	.4495904	4.243106	3.083668	1.108548	2.180281	15.34504
#1	20.68991	4.535080	.2773222	-.001822	.9284099	9.066687	-.007099
#2	20.86015	4.555632	.2886168	-.001930	.9328013	9.193070	-.005320
#3	19.99930	4.576043	.2651144	-.001915	.9481795	8.807222	-.005743

Sample Name: P4523-16DLX2 Acquired: 11/14/2024 4:47:05 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE4X3 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.930713	.0850761	.1927349
Stddev	.076405	.0029157	.0047149
%RSD	2.607040	3.427145	2.446327
#1	2.965671	.0863698	.1949523
#2	2.983384	.0871211	.1959324
#3	2.843083	.0817374	.1873201

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1002.264	26878.24	2711.330	897.7828	1736.556
Stddev	2.377	45.41	56.595	2.5688	4.731
%RSD	.2371455	.1689573	2.087344	.2861218	.2724555
#1	999.533	26900.62	2697.034	900.6576	1735.465
#2	1003.392	26908.11	2663.255	895.7129	1741.738
#3	1003.866	26825.98	2773.702	896.9780	1732.466

Sample Name: CCV080 Acquired: 11/14/2024 4:51:30 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV080 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.985972	4.921456	24.40768	4.796976	4.782408	395.3653	10.16372
Stddev	.015820	.002159	.02479	.009712	.008521	7.3067	.17145
%RSD	.3172958	.0438751	.1015843	.2024655	.1781666	1.848088	1.686891

#1	4.975267	4.923713	24.42405	4.792712	4.786893	387.2165	9.97004
#2	4.978505	4.919410	24.37915	4.790126	4.787750	401.3334	10.29609
#3	5.004144	4.921245	24.41984	4.808091	4.772582	397.5460	10.22503

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4854315	2.463975	395.6089	15.18271	2.470686	14.78786	398.9557
Stddev	.0083674	.003206	7.1813	.02215	.002452	.22994	7.4889
%RSD	1.723695	.1301004	1.815256	.1458932	.0992373	1.554954	1.877119

#1	.4767302	2.467601	387.8588	15.20281	2.473213	14.53228	390.7135
#2	.4934191	2.462807	402.0380	15.15896	2.470528	14.97797	405.3425
#3	.4861453	2.461517	396.9300	15.18636	2.468317	14.85333	400.8109

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	14.84632	392.7234	2.460616	1.229012	397.7340	2.440072	14.49225
Stddev	.23998	7.1007	.002272	.001708	7.5888	.060591	.03142
%RSD	1.616455	1.808064	.0923302	.1389452	1.908003	2.483178	.2168091

#1	14.57880	385.0518	2.460666	1.230978	389.4518	2.371669	14.51931
#2	15.04266	399.0651	2.458320	1.228156	404.3537	2.487003	14.49965
#3	14.91750	394.0534	2.462863	1.227902	399.3964	2.461545	14.45779

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	152.8948	4.886489	4.937427	4.738012	5.059327	4.858500	4.937392
Stddev	2.4176	.007466	.090914	.002051	.009521	.089120	.016050
%RSD	1.581233	.1527787	1.841318	.0432949	.1881799	1.834303	.3250666

#1	150.2340	4.894555	4.847945	4.736418	5.048375	4.764368	4.940863
#2	154.9566	4.885088	5.029707	4.737291	5.063971	4.941576	4.919891
#3	153.4939	4.879822	4.934628	4.740327	5.065634	4.869556	4.951423

Sample Name: CCV080 Acquired: 11/14/2024 4:51:30 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV080 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.894541	5.073852	5.048290
Stddev	.080338	.086868	.084649
%RSD	1.641384	1.712077	1.676777
#1	4.803669	4.974822	4.954612
#2	4.956128	5.137180	5.119289
#3	4.923827	5.109556	5.070969

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	774.6449	22620.71	2372.448	644.5351	1422.105
Stddev	.6178	48.25	38.420	.6653	1.215
%RSD	.0797582	.2133038	1.619439	.1032171	.0854445
#1	774.8728	22575.03	2412.464	643.9810	1421.154
#2	775.1164	22671.18	2335.853	644.3515	1423.474
#3	773.9455	22615.92	2369.026	645.2730	1421.686

Sample Name: CCB080 Acquired: 11/14/2024 4:55:43 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB080 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000850	.0024467	-.001560	-.000580	.0005904	.0072539	-.000898
Stddev	.007042	.0026465	.002809	.001524	.0021740	.0151483	.000498
%RSD	828.4173	108.1654	180.0378	262.7272	368.2148	208.8296	55.39484

#1	.005659	.0039122	.001449	-.001477	-.000196	.0211983	-.001451
#2	.000115	.0040362	-.002016	.001180	-.001081	-.008864	-.000487
#3	-.008325	-.000608	-.004113	-.001442	.003048	.009427	-.000756

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000035	-.000171	.0269171	-.000346	-.000687	-.000850	.0309590
Stddev	.000081	.000108	.0310644	.000330	.000456	.003528	.0472088
%RSD	229.4576	63.30689	115.4074	95.10437	66.41379	414.9564	152.4883

#1	-.000091	-.000066	.0619675	-.000378	-.001214	.002961	.0758524
#2	-.000073	-.000282	.0027888	-.000003	-.000447	-.001511	-.018267
#3	.000058	-.000165	.0159952	-.000659	-.000401	-.004000	.035291

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000045	-.009977	-.000480	-.001075	.0528605	-.005202	-.001008
Stddev	.001239	.112722	.000527	.000436	.3961010	.006930	.000292
%RSD	2765.294	1129.872	109.6467	40.56889	749.3318	133.2231	28.96164

#1	-.001217	.010123	-.000788	-.000689	-.063422	-.012136	-.001323
#2	-.000169	-.131396	.000128	-.001548	.494088	-.005191	-.000953
#3	.001251	.091343	-.000780	-.000987	-.272084	.001723	-.000747

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0737570	-.000422	-.000699	-.000671	.0075558	.0000113	-.002762
Stddev	.1258599	.001420	.000569	.000097	.0055053	.0003584	.002119
%RSD	170.6412	336.5041	81.49706	14.49067	72.86288	3164.846	76.70737

#1	-.067535	-.002045	-.000383	-.000758	.0138801	.0001540	-.003562
#2	.173868	.000192	-.001356	-.000690	.0038365	.0002765	-.000360
#3	.114938	.000588	-.000357	-.000566	.0049506	-.000396	-.004364

Sample Name: CCB080 Acquired: 11/14/2024 4:55:43 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB080 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.001056	-.002048	-.000193
Stddev	.000427	.000235	.000102
%RSD	40.38163	11.48049	52.69310
#1	-.000586	-.001812	-.000302
#2	-.001165	-.002049	-.000099
#3	-.001418	-.002282	-.000180

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	950.3836	24957.06	2452.170	844.5115	1890.071
Stddev	.6731	20.42	10.149	3.3215	3.323
%RSD	.0708199	.0818323	.4138759	.3933074	.1758116
#1	951.1606	24948.35	2443.654	848.0520	1893.577
#2	949.9800	24980.39	2449.457	841.4640	1889.668
#3	950.0103	24942.44	2463.400	844.0184	1886.968

Sample Name: P4523-18DLX2 Acquired: 11/14/2024 5:04:39 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE4X5 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4085693	-.034052	.5248925	-.053177	.0115494	93.39606	1.361932
Stddev	.0196131	.006171	.0046918	.006156	.0015201	.34867	.006526
%RSD	4.800426	18.12181	.8938671	11.57701	13.16151	.3733190	.4791682

#1	.4236856	-.036056	.5301808	-.048460	.0128983	93.47219	1.363321
#2	.4156158	-.027128	.5212290	-.060141	.0118475	93.70037	1.367651
#3	.3864065	-.038971	.5232678	-.050929	.0099024	93.01562	1.354823

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0036161	.0114325	16.71446	.2544760	.1702038	1.109422	334.5865
Stddev	.0001959	.0001835	.06186	.0009543	.0009407	.008930	.2727
%RSD	5.418228	1.605336	.3700755	.3749876	.5526748	.8049102	.0815131

#1	.0036402	.0114092	16.76166	.2537378	.1712810	1.100073	334.8719
#2	.0037988	.0112618	16.73727	.2541367	.1695439	1.117863	334.5591
#3	.0034092	.0116266	16.64443	.2555536	.1697867	1.110331	334.3285

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.407813	43.23626	.2895860	-.025508	1.670222	.7060587	.8606857
Stddev	.026006	.26407	.0007487	.000382	.064218	.0024069	.0081423
%RSD	.2764287	.6107703	.2585323	1.496639	3.844887	.3408917	.9460232

#1	9.397727	43.18683	.2887452	-.025803	1.650946	.7062646	.8549376
#2	9.437351	43.52156	.2898326	-.025077	1.617850	.7083561	.8571164
#3	9.388360	43.00040	.2901803	-.025644	1.741871	.7035555	.8700031

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	18.69075	4.970957	.3019113	-.002697	.6222882	8.602024	-.004493
Stddev	.05672	.015312	.0023924	.001136	.0138360	.042413	.001992
%RSD	.3034462	.3080262	.7924134	42.11916	2.223405	.4930607	44.33812

#1	18.66700	4.966447	.3033747	-.003713	.6080278	8.628613	-.002223
#2	18.64976	4.988017	.3032087	-.002906	.6356566	8.553111	-.005952
#3	18.75548	4.958406	.2991505	-.001471	.6231802	8.624346	-.005303

Sample Name: P4523-18DLX2 Acquired: 11/14/2024 5:04:39 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE4X5 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	3.074625	.0835117	.1803264
Stddev	.002857	.0007346	.0011269
%RSD	.0929158	.8796084	.6249008
#1	3.076530	.0842393	.1800545
#2	3.076004	.0835254	.1815643
#3	3.071340	.0827704	.1793604

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	997.7349	26731.72	2675.844	887.1497	1745.686
Stddev	1.5007	5.24	4.576	3.0860	2.915
%RSD	.1504138	.0196095	.1710112	.3478529	.1670053
#1	996.1880	26732.19	2671.495	889.6224	1746.397
#2	999.1847	26726.26	2675.421	888.1356	1742.481
#3	997.8320	26736.71	2680.617	883.6913	1748.180

Sample Name: P4523-19DLX2 Acquired: 11/14/2024 5:09:04 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE4X6 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2543637	-.027094	.2846085	-.030887	.0089586	97.97814	1.202416
Stddev	.0113250	.004515	.0038443	.002509	.0042356	.46743	.004232
%RSD	4.452291	16.66267	1.350731	8.122044	47.27950	.4770790	.3519759

#1	.2557159	-.028079	.2886030	-.027992	.0087940	97.59064	1.199088
#2	.2649519	-.022168	.2809345	-.032248	.0048078	97.84650	1.200980
#3	.2424233	-.031035	.2842881	-.032421	.0132742	98.49727	1.207179

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0031302	.0070055	25.07933	.2254548	.1273551	.8396706	219.3666
Stddev	.0000907	.0002224	.16243	.0004980	.0010396	.0034579	1.4036
%RSD	2.896629	3.174310	.6476747	.2208717	.8163305	.4118216	.6398483

#1	.0030545	.0067825	24.89696	.2252951	.1266742	.8413645	217.7463
#2	.0032306	.0070069	25.13255	.2250563	.1268392	.8356923	220.2082
#3	.0031054	.0072272	25.20847	.2260130	.1285517	.8419550	220.1454

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.115599	47.66583	.2645637	-.017540	1.160689	.4904806	.6349331
Stddev	.017867	.21886	.0007723	.000330	.099505	.0142015	.0012407
%RSD	.3492572	.4591489	.2919346	1.878695	8.572905	2.895417	.1954118

#1	5.099334	47.41329	.2636829	-.017370	1.069680	.4746772	.6349719
#2	5.112740	47.78402	.2651252	-.017920	1.145453	.5021731	.6336733
#3	5.134723	47.80019	.2648830	-.017329	1.266933	.4945914	.6361539

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	13.68198	4.469571	.2034155	-.002780	.9256058	9.232640	-.007725
Stddev	.02046	.005409	.0037122	.000358	.0063005	.026530	.005043
%RSD	.1495367	.1210293	1.824952	12.87806	.6806916	.2873519	65.28533

#1	13.65846	4.475817	.1992682	-.002795	.9229942	9.215217	-.012309
#2	13.69183	4.466416	.2064276	-.003131	.9210309	9.263173	-.008543
#3	13.69565	4.466479	.2045507	-.002415	.9327921	9.219530	-.002323

Sample Name: P4523-19DLX2 Acquired: 11/14/2024 5:09:04 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE4X6 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.031769	.0803459	.1880668
Stddev	.008572	.0013338	.0004685
%RSD	.4218747	1.660071	.2491416
#1	2.027214	.0789479	.1875295
#2	2.026437	.0816046	.1882802
#3	2.041657	.0804851	.1883906

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	996.9535	26587.70	2657.276	888.1291	1749.266
Stddev	1.9028	89.66	7.929	3.0495	1.624
%RSD	.1908612	.3372087	.2983834	.3433570	.0928110
#1	996.0123	26616.76	2663.997	885.3917	1749.360
#2	999.1435	26659.22	2648.532	891.4159	1747.597
#3	995.7047	26487.11	2659.301	887.5797	1750.840

Sample Name: P4523-20DLX2 Acquired: 11/14/2024 5:13:30 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE4X7 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2160668	-.027331	.2808345	-.033077	.0088427	78.43994	1.034453
Stddev	.0216654	.001314	.0018439	.003418	.0008416	1.11939	.012646
%RSD	10.02715	4.806592	.6565693	10.33236	9.517127	1.427062	1.222521

#1	.2369346	-.025817	.2787272	-.033338	.0089310	79.05753	1.038911
#2	.2175823	-.028004	.2816242	-.029537	.0096365	77.14781	1.020182
#3	.1936835	-.028171	.2821519	-.036357	.0079604	79.11449	1.044267

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0030105	.0077948	13.49843	.1943714	.1277869	.7404040	224.8552
Stddev	.0000582	.0000949	.20439	.0013215	.0005208	.0084092	3.0117
%RSD	1.932684	1.217743	1.514161	.6798580	.4075843	1.135762	1.339403

#1	.0029746	.0077642	13.68036	.1929061	.1274462	.7446272	226.7474
#2	.0029792	.0077189	13.27727	.1954727	.1283865	.7307201	221.3823
#3	.0030776	.0079012	13.53767	.1947354	.1275281	.7458645	226.4360

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.793037	38.47581	.2277082	-.018771	1.205794	.4974837	.6304223
Stddev	.087068	.81806	.0007109	.000331	.170843	.0135754	.0036735
%RSD	1.502980	2.126163	.3122123	1.763045	14.16851	2.728814	.5827078

#1	5.838153	39.02058	.2279052	-.019146	1.076198	.5076331	.6282260
#2	5.692670	37.53512	.2269195	-.018521	1.399398	.4820633	.6283778
#3	5.848289	38.87173	.2282998	-.018645	1.141787	.5027547	.6346632

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	15.56782	3.694378	.2018217	-.002546	.5164634	8.185370	-.009043
Stddev	.28894	.014374	.0030248	.000599	.0067881	.089100	.001365
%RSD	1.856026	.3890682	1.498758	23.54907	1.314351	1.088524	15.09989

#1	15.72357	3.692140	.2009387	-.002844	.5195836	8.264416	-.010581
#2	15.23442	3.709739	.1993366	-.001856	.5086762	8.088816	-.008570
#3	15.74548	3.681254	.2051898	-.002938	.5211304	8.202877	-.007976

Sample Name: P4523-20DLX2 Acquired: 11/14/2024 5:13:30 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE4X7 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.383816	.0655340	.1257097
Stddev	.032384	.0012367	.0016568
%RSD	1.358483	1.887087	1.317953
#1	2.401290	.0647781	.1266242
#2	2.346448	.0648627	.1237972
#3	2.403710	.0669611	.1267077

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	993.2771	26644.85	2669.167	887.2909	1773.851
Stddev	.7882	79.78	32.502	2.8762	3.202
%RSD	.0793491	.2994232	1.217691	.3241499	.1805110
#1	993.6734	26661.26	2638.058	890.2324	1772.584
#2	993.7885	26715.15	2702.903	887.1556	1771.477
#3	992.3694	26558.14	2666.539	884.4848	1777.493

Sample Name: P4523-21DLX2 Acquired: 11/14/2024 5:17:55 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE4X8 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2224144	-.026819	.3188421	-.039691	.0094180	91.41605	1.328295
Stddev	.0035562	.003360	.0032915	.003928	.0042003	.22254	.002642
%RSD	1.598926	12.52756	1.032314	9.897046	44.59853	.2434365	.1989368
#1	.2193238	-.030476	.3169371	-.035179	.0063177	91.55505	1.330114
#2	.2216181	-.023869	.3169465	-.041542	.0077382	91.53373	1.329506
#3	.2263013	-.026112	.3226428	-.042351	.0141983	91.15938	1.325264
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0030898	.0083896	17.70630	.2344857	.1471872	.8036924	245.2898
Stddev	.0001466	.0000502	.03376	.0005718	.0009409	.0043737	.7761
%RSD	4.743221	.5985449	.1906484	.2438562	.6392634	.5441986	.3164203
#1	.0029354	.0084312	17.74525	.2350665	.1465688	.8080635	245.8669
#2	.0032269	.0083338	17.68545	.2339233	.1467228	.7993162	245.5951
#3	.0031071	.0084038	17.68822	.2344673	.1482701	.8036975	244.4074
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.402887	49.40779	.2857687	-.020099	1.275996	.5913213	.7365340
Stddev	.025180	.20858	.0010920	.000271	.092679	.0015056	.0060739
%RSD	.3401434	.4221562	.3821116	1.349642	7.263275	.2546222	.8246626
#1	7.419138	49.64001	.2852858	-.020306	1.341331	.5917902	.7386777
#2	7.415641	49.34703	.2870188	-.020200	1.169926	.5896371	.7296789
#3	7.373881	49.23635	.2850014	-.019792	1.316731	.5925368	.7412454
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	17.12518	4.535272	.2211992	-.002832	.7769156	9.189427	-.005277
Stddev	.09758	.017569	.0013062	.000140	.0044143	.030496	.003107
%RSD	.5697777	.3873859	.5905057	4.957569	.5681824	.3318586	58.88427
#1	17.23772	4.532914	.2204074	-.002943	.7730747	9.212066	-.006497
#2	17.07375	4.553902	.2227068	-.002674	.7817380	9.201465	-.007588
#3	17.06408	4.519002	.2204835	-.002878	.7759340	9.154749	-.001745

Sample Name: P4523-21DLX2 Acquired: 11/14/2024 5:17:55 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE4X8 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.285703	.0820534	.1826255
Stddev	.005643	.0012822	.0005766
%RSD	.2468857	1.562680	.3157121
#1	2.281521	.0828924	.1831599
#2	2.292122	.0826903	.1827023
#3	2.283467	.0805774	.1820144

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	996.2104	26729.91	2674.637	890.4247	1753.315
Stddev	.9228	22.13	7.457	5.2641	1.544
%RSD	.0926320	.0828052	.2788046	.5911900	.0880523
#1	996.7919	26715.78	2672.968	888.2274	1751.840
#2	995.1464	26755.42	2668.156	896.4314	1753.186
#3	996.6930	26718.52	2682.787	886.6151	1754.919

Sample Name: P4523-22DLX2 Acquired: 11/14/2024 5:22:21 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE4X9 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2359313	-.034154	.1595521	-.039153	.0071626	104.0265	1.099684
Stddev	.0051039	.004183	.0032769	.002826	.0002325	.3599	.004092
%RSD	2.163316	12.24888	2.053825	7.216595	3.246468	.3460032	.3721479
#1	.2397793	-.029852	.1578761	-.035891	.0070941	104.2013	1.099640
#2	.2301414	-.038208	.1633280	-.040809	.0074216	104.2657	1.103799
#3	.2378731	-.034402	.1574521	-.040760	.0069720	103.6126	1.095614
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0034480	.0042808	20.82872	.2152833	.1352491	.4203531	261.0472
Stddev	.0001091	.0001214	.13139	.0020482	.0006334	.0029751	.9753
%RSD	3.163301	2.835579	.6308262	.9514065	.4683495	.7077722	.3736083
#1	.0035656	.0043468	20.90828	.2176433	.1352727	.4232505	261.5769
#2	.0034280	.0041407	20.90081	.2142382	.1346042	.4205029	261.6431
#3	.0033502	.0043549	20.67706	.2139684	.1358704	.4173058	259.9217
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.898914	38.36638	.2380250	-.021166	1.366206	.5917260	.4881976
Stddev	.014714	.15967	.0014052	.000212	.238292	.0145558	.0027811
%RSD	.3003592	.4161796	.5903398	1.003212	17.44189	2.459888	.5696587
#1	4.891914	38.49944	.2364672	-.021044	1.598504	.5952116	.4870138
#2	4.915821	38.18932	.2384107	-.021412	1.122341	.6042225	.4862043
#3	4.889006	38.41038	.2391970	-.021044	1.377773	.5757438	.4913747
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	16.06179	3.668158	.2383139	-.002684	.7370338	9.286801	-.007226
Stddev	.03607	.013981	.0010050	.000549	.0080766	.077737	.000718
%RSD	.2245534	.3811469	.4217196	20.45236	1.095829	.8370703	9.935025
#1	16.09042	3.663474	.2377014	-.002057	.7284422	9.350779	-.007987
#2	16.02128	3.657121	.2394738	-.002922	.7444713	9.309340	-.006560
#3	16.07367	3.683880	.2377666	-.003074	.7381879	9.200285	-.007132

Sample Name: P4523-22DLX2 Acquired: 11/14/2024 5:22:21 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE4X9 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.696364	.0763182	.1684656
Stddev	.008346	.0004270	.0007643
%RSD	.3095178	.5594550	.4536565
#1	2.702222	.0758518	.1684051
#2	2.700061	.0764129	.1692583
#3	2.686808	.0766899	.1677334

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	996.3223	26540.77	2667.753	885.4194	1754.639
Stddev	.8587	95.19	19.560	4.2804	2.712
%RSD	.0861848	.3586644	.7332002	.4834356	.1545677
#1	996.3644	26573.44	2646.272	884.7477	1757.696
#2	997.1591	26615.33	2672.450	889.9960	1753.703
#3	995.4433	26433.55	2684.537	881.5146	1752.520

Sample Name: P4754-01 Acquired: 11/14/2024 5:26:48 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D96 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.021979	-.019234	1.727936	-.017969	.0089466	90.48403	.4515824
Stddev	.006404	.001697	.006761	.004963	.0029691	2.91465	.0151970
%RSD	29.13694	8.820252	.3912963	27.61779	33.18698	3.221182	3.365278

#1	-.023617	-.021187	1.733377	-.019592	.0123596	87.15332	.4342070
#2	-.027405	-.018118	1.720367	-.012398	.0075211	92.56772	.4623967
#3	-.014915	-.018398	1.730066	-.021917	.0069590	91.73105	.4581434

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0017153	.0009464	1.395059	.0604928	.0327179	.0487514	161.5936
Stddev	.0000926	.0001917	.051616	.0006809	.0004877	.0033713	5.0381
%RSD	5.399812	20.25070	3.699903	1.125589	1.490701	6.915278	3.117765

#1	.0016622	.0010921	1.344914	.0612654	.0322885	.0489523	155.8297
#2	.0016615	.0010179	1.392233	.0599803	.0326170	.0520178	165.1579
#3	.0018223	.0007293	1.448030	.0602326	.0332481	.0452842	163.7931

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.989581	4.229692	.0238544	-.018963	.8200325	.3550897	.2489285
Stddev	.050646	.158256	.0004978	.000345	.1466535	.0146290	.0022973
%RSD	2.545566	3.741546	2.086781	1.817251	17.88387	4.119805	.9228741

#1	1.931866	4.118926	.0232826	-.018619	.7322133	.3386210	.2510976
#2	2.026610	4.410944	.0241914	-.019308	.7385502	.3600694	.2491665
#3	2.010267	4.159205	.0240892	-.018963	.9893338	.3665789	.2465215

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.474720	.6947428	.1412138	.0002000	.7372514	9.124399	-.001884
Stddev	.199713	.0085844	.0048522	.0003136	.0081643	.226261	.003024
%RSD	4.463131	1.235618	3.436054	156.8620	1.107398	2.479731	160.5206

#1	4.255503	.6903121	.1358674	.0002898	.7325936	8.863729	-.002737
#2	4.646321	.7046372	.1453382	-.000149	.7324822	9.269962	-.004391
#3	4.522337	.6892792	.1424358	.000459	.7466785	9.239508	.001475

Sample Name: P4754-01 Acquired: 11/14/2024 5:26:48 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D96 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	3.064691	.0140827	.0152004
Stddev	.099782	.0000690	.0004442
%RSD	3.255865	.4899837	2.922643
#1	2.951031	.0141313	.0147083
#2	3.137880	.0141129	.0155720
#3	3.105161	.0140037	.0153208

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1042.784	27663.49	2814.850	926.4319	1832.653
Stddev	1.153	91.89	69.780	5.0914	3.232
%RSD	.1105834	.3321795	2.478985	.5495673	.1763640
#1	1042.813	27578.25	2894.377	922.2278	1828.949
#2	1043.922	27651.38	2763.868	924.9751	1834.109
#3	1041.616	27760.83	2786.307	932.0929	1834.902

Sample Name: P4754-02 Acquired: 11/14/2024 5:31:16 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D97 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.012528	-.019334	.4413278	-.024491	.0050555	83.56441	.3494408
Stddev	.005635	.003825	.0046946	.005900	.0055368	.94650	.0036436
%RSD	44.97911	19.78267	1.063746	24.09043	109.5199	1.132657	1.042703

#1	-.017023	-.023089	.4415544	-.022069	.0073824	82.88891	.3465035
#2	-.006206	-.019471	.4459050	-.031217	.0090490	84.64623	.3535181
#3	-.014356	-.015443	.4365240	-.020188	-.001265	83.15809	.3483007

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0014102	.0014893	1.601576	.0657702	.0318034	.0653346	166.6426
Stddev	.0000630	.0002370	.036154	.0025589	.0006439	.0037151	1.8462
%RSD	4.470220	15.91578	2.257397	3.890588	2.024667	5.686291	1.107894

#1	.0014130	.0013251	1.562783	.0640716	.0324732	.0610750	165.2408
#2	.0013458	.0017610	1.607616	.0645257	.0317482	.0679049	168.7345
#3	.0014718	.0013817	1.634330	.0687132	.0311889	.0670239	165.9525

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.533288	3.965734	.0422915	-.018675	.8183144	.3134104	.4049797
Stddev	.020269	.121580	.0006170	.000746	.2000881	.0105613	.0075760
%RSD	1.321953	3.065769	1.458808	3.995881	24.45125	3.369808	1.870719

#1	1.521079	4.080133	.0424574	-.018717	1.047765	.3207225	.4056126
#2	1.556685	3.979008	.0428085	-.019399	.680148	.3013020	.3971070
#3	1.522099	3.838062	.0416085	-.017908	.727029	.3182066	.4122193

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.094320	.6511744	.1464525	.0010436	.7556118	7.250445	-.001706
Stddev	.027449	.0018421	.0022048	.0008070	.0080967	.067297	.001663
%RSD	.6704273	.2828826	1.505437	77.32718	1.071545	.9281744	97.46505

#1	4.062634	.6531277	.1454819	.0007837	.7466250	7.221113	.000026
#2	4.109485	.6509268	.1489760	.0019486	.7623379	7.327430	-.001854
#3	4.110841	.6494686	.1448996	.0003986	.7578725	7.202793	-.003291

Sample Name: P4754-02 Acquired: 11/14/2024 5:31:16 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D97 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.524354	.0137896	.0141712
Stddev	.023936	.0004511	.0001028
%RSD	.9482087	3.271603	.7253192
#1	2.509824	.0132780	.0142572
#2	2.551980	.0141301	.0141989
#3	2.511256	.0139609	.0140573

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1025.984	27120.13	2747.201	910.2684	1836.027
Stddev	4.005	383.10	31.079	14.4160	9.889
%RSD	.3903766	1.412596	1.131301	1.583714	.5386088
#1	1021.818	27220.80	2764.031	911.9392	1830.003
#2	1026.326	27442.84	2711.336	923.7762	1830.639
#3	1029.807	26696.75	2766.235	895.0897	1847.440

Sample Name: P4754-03 Acquired: 11/14/2024 5:35:46 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D98 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.023223	-.021587	.8670695	-.019568	.0056508	59.17566	.2680434
Stddev	.005128	.001977	.0042610	.002427	.0014636	.59738	.0030565
%RSD	22.08100	9.160094	.4914300	12.40408	25.90024	1.009496	1.140296

#1	-.024912	-.019793	.8661565	-.018300	.0039610	59.60747	.2712740
#2	-.017464	-.021260	.8717130	-.018037	.0064707	58.49390	.2651974
#3	-.027294	-.023707	.8633389	-.022367	.0065206	59.42560	.2676589

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0009144	.0017398	1.780750	.0727837	.0253395	.0934779	172.4296
Stddev	.0002072	.0000998	.050338	.0006297	.0003188	.0039817	1.7669
%RSD	22.66048	5.736331	2.826785	.8651926	1.258078	4.259482	1.024683

#1	.0011390	.0016777	1.748221	.0723230	.0249890	.0890848	173.3833
#2	.0007307	.0016868	1.755296	.0735013	.0256122	.0944998	170.3909
#3	.0008735	.0018550	1.838731	.0725269	.0254172	.0968490	173.5148

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.358883	2.864481	.0481499	-.020089	.7967113	.2208223	.3880979
Stddev	.011556	.083673	.0008631	.000305	.2031448	.0128613	.0013235
%RSD	.8504053	2.921049	1.792504	1.517486	25.49792	5.824291	.3410313

#1	1.369427	2.768405	.0474214	-.020418	.5639105	.2132316	.3888262
#2	1.346529	2.921364	.0491031	-.019816	.9380246	.2135632	.3865701
#3	1.360695	2.903674	.0479252	-.020034	.8881989	.2356720	.3888973

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.931131	.6111724	.1488895	.0016627	.7935858	9.102078	.0446244
Stddev	.125557	.0051590	.0025423	.0008036	.0058468	.090279	.0029260
%RSD	4.283567	.8441179	1.707517	48.32746	.7367506	.9918500	6.556975

#1	3.074405	.6075420	.1489469	.0014176	.7870117	9.178157	.0475665
#2	2.878698	.6170779	.1463189	.0025603	.7982035	9.002319	.0445921
#3	2.840288	.6088974	.1514026	.0010103	.7955422	9.125759	.0417148

Sample Name: P4754-03 Acquired: 11/14/2024 5:35:46 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D98 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.914711	.0067424	.0129783
Stddev	.025772	.0017374	.0001658
%RSD	1.345996	25.76884	1.277398
#1	1.931165	.0048010	.0130970
#2	1.885010	.0072750	.0127889
#3	1.927957	.0081511	.0130490

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1017.278	27165.62	2730.389	905.8045	1846.365
Stddev	4.748	38.83	24.047	4.6971	12.298
%RSD	.4667841	.1429557	.8807197	.5185605	.6660595
#1	1018.482	27139.02	2713.058	905.2258	1853.053
#2	1012.044	27210.18	2757.842	910.7642	1832.172
#3	1021.309	27147.65	2720.267	901.4236	1853.870

Sample Name: P4754-04 Acquired: 11/14/2024 5:40:15 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D99 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.036473	-.027008	1.887535	-.035356	.0160045	81.14919	.5194514
Stddev	.005808	.003872	.003526	.006238	.0032840	2.03199	.0140811
%RSD	15.92281	14.33649	.1867905	17.64236	20.51910	2.504012	2.710770

#1	-.031536	-.023080	1.891588	-.042558	.0194376	82.53811	.5284994
#2	-.042872	-.030822	1.885179	-.031787	.0128934	82.09244	.5266270
#3	-.035011	-.027123	1.885838	-.031722	.0156825	78.81700	.5032279

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0014422	.0087249	5.119817	.0996341	.0376936	.4516900	224.6020
Stddev	.0001626	.0001456	.097995	.0006705	.0000916	.0076609	5.0668
%RSD	11.27663	1.668464	1.914031	.6729367	.2429671	1.696041	2.255893

#1	.0015214	.0086435	5.217849	.0988672	.0376057	.4582424	228.1471
#2	.0015500	.0086381	5.119742	.0999258	.0377884	.4535605	226.8601
#3	.0012551	.0088929	5.021860	.1001093	.0376866	.4432672	218.7988

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.565524	3.729597	.0708460	-.024876	1.120814	.3056926	1.772851
Stddev	.071032	.023881	.0004348	.000567	.212939	.0131744	.018952
%RSD	2.768732	.6403009	.6136841	2.280662	18.99861	4.309699	1.069035

#1	2.614935	3.703249	.0712726	-.025287	1.072065	.3204975	1.794730
#2	2.597515	3.735726	.0704035	-.025112	.936476	.3013195	1.761516
#3	2.484121	3.749816	.0708620	-.024229	1.353900	.2952609	1.762305

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.695406	.9495448	.1975322	.0028653	1.086243	7.558316	.0071993
Stddev	.167663	.0027575	.0055075	.0008052	.000250	.146295	.0010973
%RSD	4.537062	.2904023	2.788164	28.10310	.0230334	1.935547	15.24207

#1	3.784444	.9508738	.2010009	.0024846	1.086078	7.673401	.0083371
#2	3.799767	.9463745	.2004140	.0037903	1.086531	7.607867	.0071132
#3	3.502008	.9513861	.1911817	.0023209	1.086120	7.393681	.0061475

Sample Name: P4754-04 Acquired: 11/14/2024 5:40:15 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D99 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.194752	.0097126	.0319413
Stddev	.051796	.0009046	.0008695
%RSD	2.359991	9.313524	2.722228
#1	2.228790	.0094021	.0325614
#2	2.220324	.0107315	.0323150
#3	2.135144	.0090042	.0309474

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1044.382	27950.91	2813.630	931.9329	1822.536
Stddev	3.117	17.77	52.252	8.7496	4.292
%RSD	.2985002	.0635901	1.857111	.9388689	.2355089
#1	1043.427	27939.53	2775.681	922.0215	1818.921
#2	1047.865	27971.39	2791.982	938.5856	1827.280
#3	1041.854	27941.80	2873.227	935.1917	1821.407

Sample Name: P4754-05 Acquired: 11/14/2024 5:44:40 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D99D Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.052896	-.027856	1.973508	-.031084	.0149148	78.52347	.5132396
Stddev	.001571	.003452	.007283	.004573	.0013083	.38280	.0021761
%RSD	2.970013	12.39397	.3690213	14.71089	8.772069	.4875002	.4239988

#1	-.051088	-.024470	1.969783	-.033798	.0160842	78.31257	.5133062
#2	-.053664	-.031372	1.981900	-.025805	.0135018	78.29249	.5110310
#3	-.053934	-.027726	1.968842	-.033649	.0151585	78.96534	.5153817

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0015077	.0081430	5.282083	.0966951	.0422457	.5133447	236.9130
Stddev	.0000710	.0003070	.036357	.0002815	.0000631	.0078521	1.0220
%RSD	4.709435	3.769813	.6883113	.2911763	.1494494	1.529591	.4313809

#1	.0014257	.0078452	5.306106	.0964644	.0421825	.5046185	235.8431
#2	.0015479	.0081256	5.240256	.0966121	.0422457	.5198399	237.0168
#3	.0015495	.0084584	5.299889	.0970088	.0423088	.5155755	237.8791

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.775427	3.613655	.0802226	-.025654	.9962721	.2928883	2.022059
Stddev	.002172	.105052	.0004856	.000278	.3047386	.0205478	.007147
%RSD	.0782719	2.907088	.6052562	1.085494	30.58788	7.015586	.3534293

#1	2.773077	3.608812	.0803288	-.025399	.8516026	.2834077	2.027255
#2	2.777362	3.511108	.0796927	-.025612	.7908145	.2787924	2.013909
#3	2.775842	3.721044	.0806462	-.025951	1.346399	.3164648	2.025012

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.598072	.9036046	.2124110	.0039066	1.058996	9.863165	.0143141
Stddev	.052028	.0132349	.0021934	.0004682	.009831	.051173	.0023264
%RSD	1.445988	1.464682	1.032609	11.98410	.9283570	.5188325	16.25282

#1	3.648621	.9154832	.2106574	.0041906	1.049682	9.830437	.0165874
#2	3.600914	.9059921	.2148704	.0041629	1.069274	9.836922	.0144170
#3	3.544682	.8893384	.2117052	.0033662	1.058032	9.922136	.0119379

Sample Name: P4754-05 Acquired: 11/14/2024 5:44:40 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D99D Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.141122	.0105170	.0327913
Stddev	.005393	.0011463	.0003050
%RSD	.2518792	10.89918	.9299580
#1	2.139584	.0117732	.0326269
#2	2.136664	.0102500	.0326038
#3	2.147117	.0095278	.0331432

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1034.064	27630.80	2779.964	916.2804	1816.248
Stddev	2.140	54.46	9.154	3.9493	3.398
%RSD	.2069524	.1970913	.3292930	.4310105	.1871160
#1	1031.806	27571.21	2779.197	913.6899	1814.378
#2	1034.324	27677.98	2789.478	920.8259	1814.195
#3	1036.063	27643.21	2771.217	914.3256	1820.171

Sample Name: P4754-06 Acquired: 11/14/2024 5:49:05 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D99S Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0406502	.0780290	1.912551	.1248637	.1805441	84.83373	4.507683
Stddev	.0012919	.0040398	.006480	.0068204	.0016686	.28246	.009378
%RSD	3.177995	5.177322	.3387933	5.462305	.9241931	.3329628	.2080517

#1	.0398848	.0738537	1.918698	.1234190	.1818035	84.95979	4.512107
#2	.0421418	.0819181	1.905783	.1188813	.1811773	85.03121	4.514030
#3	.0399241	.0783151	1.913171	.1322907	.1786517	84.51018	4.496911

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0945789	.1111974	5.266219	.5180909	1.062480	.9063704	226.5838
Stddev	.0003825	.0002213	.035341	.0006400	.000292	.0016951	.7025
%RSD	.4043813	.1989793	.6710951	.1235258	.0274734	.1870252	.3100418

#1	.0947555	.1113137	5.260662	.5174197	1.062786	.9045544	227.1058
#2	.0948412	.1113363	5.304010	.5181587	1.062451	.9066461	226.8604
#3	.0941401	.1109423	5.233986	.5186942	1.062205	.9079109	225.7850

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.560888	3.686382	1.107909	.0659194	.7070299	1.322029	2.590870
Stddev	.020650	.084475	.001916	.0006986	.0822499	.003999	.025798
%RSD	.5799161	2.291554	.1729400	1.059786	11.63315	.3024854	.9957211

#1	3.580409	3.642392	1.105699	.0661535	.6799035	1.317441	2.581135
#2	3.562987	3.632979	1.109105	.0651338	.7994167	1.324778	2.571356
#3	3.539269	3.783774	1.108923	.0664708	.6417696	1.323866	2.620119

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.755317	.9506375	.1972139	.0027691	1.104044	7.558509	.0083556
Stddev	.054718	.0040157	.0008849	.0004892	.000911	.043047	.0024421
%RSD	1.457070	.4224202	.4487187	17.66462	.0825592	.5695140	29.22754

#1	3.816204	.9518704	.1967932	.0024165	1.103048	7.601735	.0092173
#2	3.710259	.9538923	.1982307	.0033275	1.104837	7.558148	.0055995
#3	3.739488	.9461500	.1966177	.0025632	1.104247	7.515644	.0102502

Sample Name: P4754-06 Acquired: 11/14/2024 5:49:05 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D99S Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.195973	.0100692	.0318517
Stddev	.003324	.0011537	.0000905
%RSD	.1513662	11.45732	.2841812
#1	2.198542	.0089356	.0318508
#2	2.192219	.0112420	.0319427
#3	2.197159	.0100300	.0317617

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1042.827	28010.90	2802.494	926.7317	1819.564
Stddev	2.044	49.05	12.519	7.8445	2.125
%RSD	.1960090	.1751009	.4467103	.8464669	.1167830
#1	1040.468	28050.78	2791.307	931.3936	1817.338
#2	1043.956	28025.79	2800.159	931.1265	1819.784
#3	1044.057	27956.14	2816.016	917.6750	1821.570

Sample Name: P4754-04LX5 Acquired: 11/14/2024 5:53:25 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D99L Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0059490	-.005709	.3670395	-.006040	.0047308	17.09532	.1082894
Stddev	.0052600	.002392	.0021605	.002251	.0018023	.08501	.0008695
%RSD	88.41784	41.89303	.5886327	37.27360	38.09639	.4972954	.8029191

#1	.0027340	-.004793	.3694674	-.005371	.0063826	17.12252	.1073012
#2	.0030939	-.008423	.3663227	-.008550	.0028086	17.00003	.1089370
#3	.0120191	-.003911	.3653286	-.004199	.0050012	17.16340	.1086301

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002464	.0014591	1.083508	.0200442	.0067408	.0977756	47.65208
Stddev	.0000410	.0001292	.033987	.0008872	.0003402	.0061403	.38828
%RSD	16.63930	8.853002	3.136753	4.426158	5.046500	6.279948	.8148148

#1	.0002348	.0014360	1.078489	.0191909	.0064147	.0983155	47.63233
#2	.0002919	.0013430	1.052309	.0199799	.0067143	.0913832	47.27405
#3	.0002124	.0015982	1.119725	.0209618	.0070935	.1036281	48.04985

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5442298	.8055918	.0127230	-.006467	.5651181	.0556184	.3794935
Stddev	.0030858	.0537169	.0002627	.000139	.2173547	.0057937	.0019879
%RSD	.5669990	6.668005	2.064745	2.143691	38.46182	10.41678	.5238365

#1	.5407263	.8615698	.0124620	-.006517	.8122795	.0594703	.3776743
#2	.5454192	.7544651	.0129874	-.006311	.4793063	.0489555	.3816155
#3	.5465438	.8007406	.0127196	-.006574	.4037685	.0584294	.3791907

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7100164	.1790723	.0369516	-.000334	.2117061	1.696260	-.010171
Stddev	.1244165	.0022960	.0005857	.000088	.0041226	.013352	.002097
%RSD	17.52305	1.282174	1.584983	26.29532	1.947311	.7871288	20.61961

#1	.6051194	.1767955	.0368840	-.000361	.2085970	1.694479	-.008788
#2	.6774536	.1790344	.0364026	-.000236	.2101388	1.683888	-.012584
#3	.8474763	.1813871	.0375681	-.000405	.2163824	1.710413	-.009142

Sample Name: P4754-04LX5 Acquired: 11/14/2024 5:53:25 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D99L Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.4639591	-.000291	.0062308
Stddev	.0035818	.001281	.0000442
%RSD	.7720006	439.7388	.7085567

#1	.4655677	.001187	.0062597
#2	.4598550	-.001075	.0061800
#3	.4664545	-.000987	.0062527

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	976.2569	25733.50	2544.273	867.7118	1876.532
Stddev	1.3562	9.60	19.304	4.1291	5.302
%RSD	.1389171	.0373103	.7587047	.4758619	.2825401

#1	975.4096	25724.42	2543.100	872.2272	1871.091
#2	975.5399	25732.53	2564.136	864.1283	1876.823
#3	977.8211	25743.55	2525.582	866.7799	1881.682

Sample Name: P4754-07 Acquired: 11/14/2024 5:57:56 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D68 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0085410	-.013919	.6255934	-.011125	.0033129	64.58929	.5844285
Stddev	.0003453	.002443	.0001984	.002987	.0011396	.45294	.0042752
%RSD	4.042769	17.54901	.0317057	26.84479	34.39973	.7012662	.7315168

#1	.0087501	-.011427	.6254389	-.007683	.0038363	64.11181	.5810145
#2	.0087304	-.016309	.6258171	-.012660	.0020056	64.64317	.5830474
#3	.0081424	-.014022	.6255243	-.013033	.0040967	65.01288	.5892235

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0020077	.0009456	1.593070	.0579691	.0507691	.0499280	87.40041
Stddev	.0000816	.0001393	.029582	.0004189	.0004723	.0017910	.65762
%RSD	4.066603	14.72838	1.856925	.7227016	.9302010	3.587202	.7524165

#1	.0019599	.0010997	1.566272	.0583829	.0502719	.0489004	86.64167
#2	.0019612	.0008287	1.588126	.0575452	.0508240	.0519961	87.75349
#3	.0021020	.0009084	1.624813	.0579790	.0512116	.0488876	87.80607

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.339668	1.799623	.0248680	-.018228	.4601840	.1766264	1.093578
Stddev	.016605	.042081	.0004445	.000181	.1301796	.0054946	.009067
%RSD	.7097346	2.338336	1.787295	.9950825	28.28860	3.110851	.8290702

#1	2.323050	1.847600	.0246165	-.018077	.3341993	.1808430	1.084096
#2	2.339693	1.782304	.0253812	-.018178	.4521651	.1786237	1.094476
#3	2.356260	1.768965	.0246064	-.018429	.5941877	.1704125	1.102162

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.218377	.6058962	.0732070	.0003785	.9095239	7.053931	-.009217
Stddev	.063284	.0060834	.0008407	.0004271	.0105908	.060820	.001221
%RSD	2.852718	1.004031	1.148347	112.8414	1.164434	.8622108	13.25015

#1	2.238675	.6129002	.0737214	-.000039	.8994009	6.983841	-.009240
#2	2.269022	.6019293	.0722369	.000814	.9205275	7.092786	-.007985
#3	2.147435	.6028592	.0736627	.000361	.9086433	7.085167	-.010427

Sample Name: P4754-07 Acquired: 11/14/2024 5:57:56 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D68 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.104956	.0130081	.0131959
Stddev	.007305	.0007509	.0002036
%RSD	.6611213	5.772914	1.542752
#1	1.097738	.0122645	.0130922
#2	1.104785	.0137662	.0130650
#3	1.112346	.0129936	.0134304

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1135.814	30170.61	2995.764	1014.007	1853.491
Stddev	1.309	94.77	19.025	4.113	1.594
%RSD	.1152279	.3141084	.6350795	.4055862	.0860206
#1	1134.876	30279.42	3017.658	1015.544	1853.083
#2	1137.309	30106.15	2986.389	1017.129	1852.140
#3	1135.257	30126.26	2983.246	1009.347	1855.249

Sample Name: P4754-08 Acquired: 11/14/2024 6:02:23 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D69 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0010319	-.018993	.9575208	-.020120	.0063443	85.32679	.5477946
Stddev	.0050567	.003436	.0068765	.001825	.0020343	.15360	.0020781
%RSD	490.0448	18.09280	.7181589	9.070122	32.06427	.1800182	.3793487

#1	.0063715	-.017240	.9593829	-.019283	.0079554	85.50166	.5501888
#2	-.003684	-.016787	.9499050	-.018864	.0070192	85.21367	.5464602
#3	.000408	-.022953	.9632745	-.022213	.0040584	85.26505	.5467346

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0021186	.0021156	2.600465	.0745790	.0405699	.1722953	149.3144
Stddev	.0001968	.0000760	.019793	.0001663	.0013254	.0015979	.2032
%RSD	9.289446	3.592401	.7611504	.2229809	3.267049	.9273876	.1360696

#1	.0023221	.0020279	2.590668	.0743988	.0417544	.1704527	149.4781
#2	.0021043	.0021617	2.587481	.0746114	.0391383	.1732981	149.0871
#3	.0019293	.0021572	2.623246	.0747266	.0408171	.1731352	149.3782

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.779713	2.597242	.0321856	-.020721	.6577826	.3189114	.7301048
Stddev	.003788	.162025	.0003513	.000354	.1680381	.0101035	.0006345
%RSD	.2128511	6.238339	1.091434	1.708838	25.54614	3.168119	.0869025

#1	1.781544	2.558476	.0317852	-.020732	.7605140	.3111714	.7301677
#2	1.775357	2.775133	.0323296	-.021069	.4638634	.3152216	.7294412
#3	1.782237	2.458116	.0324420	-.020361	.7489703	.3303411	.7307055

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.139894	.6151406	.1302691	.0006764	1.338227	10.11359	.0088822
Stddev	.031799	.0031999	.0007167	.0009658	.002318	.01931	.0020611
%RSD	1.012753	.5201859	.5501922	142.7871	.1732009	.1909535	23.20441

#1	3.176537	.6182056	.1294857	-.000096	1.339056	10.11368	.0082677
#2	3.123606	.6153952	.1304297	.000366	1.340017	10.09423	.0071983
#3	3.119538	.6118210	.1308919	.001759	1.335609	10.13285	.0111806

Sample Name: P4754-08 Acquired: 11/14/2024 6:02:23 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D69 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.002503	.0144800	.0192637
Stddev	.006177	.0001185	.0000336
%RSD	.3084807	.8186644	.1746108
#1	2.009438	.0145961	.0192255
#2	1.997592	.0144847	.0192769
#3	2.000478	.0143591	.0192888

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1084.084	28908.24	2880.828	966.2156	1832.164
Stddev	2.336	42.84	5.543	.5392	7.313
%RSD	.2154457	.1481971	.1924209	.0558051	.3991385
#1	1081.785	28873.89	2875.777	965.6799	1823.747
#2	1084.011	28894.60	2886.758	966.7582	1835.782
#3	1086.455	28956.24	2879.947	966.2088	1836.962

Sample Name: P4754-09 Acquired: 11/14/2024 6:06:51 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D70 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.021723	-.022393	.9722970	-.019508	.0085765	86.01959	.5511740
Stddev	.004536	.001296	.0008954	.008971	.0021921	.60495	.0025197
%RSD	20.88165	5.787551	.0920920	45.98854	25.55890	.7032672	.4571562

#1	-.019393	-.022286	.9713809	-.014355	.0108635	85.86945	.5504857
#2	-.026951	-.023738	.9731702	-.014301	.0083723	86.68546	.5539664
#3	-.018826	-.021153	.9723400	-.029867	.0064937	85.50384	.5490700

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0022731	.0032378	1.964055	.0894242	.0382378	.1398962	173.7508
Stddev	.0000688	.0002130	.038135	.0009445	.0007204	.0063554	1.2617
%RSD	3.026641	6.578297	1.941621	1.056181	1.884121	4.542915	.7261476

#1	.0022997	.0034795	1.927425	.0897150	.0382281	.1454876	173.5399
#2	.0021950	.0031563	2.003534	.0901891	.0389631	.1412168	175.1047
#3	.0023247	.0030776	1.961207	.0883686	.0375223	.1329843	172.6079

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.546834	2.691921	.0412556	-.021564	.8279871	.4040497	.4160441
Stddev	.013204	.074249	.0002140	.000213	.1188045	.0138026	.0024147
%RSD	.5184588	2.758215	.5187132	.9893135	14.34860	3.416065	.5804004

#1	2.550892	2.749489	.0410088	-.021319	.8990063	.3882297	.4137216
#2	2.557532	2.718159	.0413682	-.021665	.6908324	.4136353	.4185415
#3	2.532076	2.608116	.0413898	-.021708	.8941226	.4102841	.4158691

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.017195	.6872134	.1507729	.0010243	1.168383	8.306231	-.006696
Stddev	.058997	.0119608	.0023491	.0002545	.016085	.038929	.003092
%RSD	1.955369	1.740484	1.558074	24.84989	1.376701	.4686716	46.17787

#1	2.971199	.6764402	.1493997	.0013152	1.169210	8.334839	-.003899
#2	3.083713	.7000843	.1534853	.0009153	1.184039	8.321954	-.010017
#3	2.996674	.6851158	.1494335	.0008425	1.151901	8.261900	-.006174

Sample Name: P4754-09 Acquired: 11/14/2024 6:06:51 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D70 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.310348	.0118628	.0181711
Stddev	.022880	.0003752	.0000208
%RSD	.9903399	3.162650	.1144784
#1	2.303335	.0118639	.0181496
#2	2.335913	.0114871	.0181911
#3	2.291794	.0122374	.0181727

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1066.825	28395.61	2820.400	949.3724	1844.270
Stddev	2.928	83.44	14.052	4.2457	9.233
%RSD	.2745044	.2938484	.4982161	.4472117	.5006332
#1	1069.114	28307.13	2811.065	952.0979	1850.117
#2	1063.525	28406.84	2813.573	944.4805	1833.626
#3	1067.837	28472.87	2836.560	951.5388	1849.067

Sample Name: P4754-10 Acquired: 11/14/2024 6:11:20 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D71 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.036583	-.028998	.7701984	-.027115	.0047482	101.9504	.5323932
Stddev	.012375	.003174	.0049697	.005047	.0022074	.3879	.0023404
%RSD	33.82796	10.94600	.6452502	18.61484	46.48981	.3804487	.4395986

#1	-.039041	-.032037	.7671845	-.032313	.0056667	101.5647	.5327152
#2	-.047545	-.029252	.7759344	-.022233	.0022298	101.9463	.5299084
#3	-.023163	-.025704	.7674763	-.026798	.0063480	102.3404	.5345559

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0025224	.0029812	2.431691	.0810979	.0434884	.0659514	218.3252
Stddev	.0000463	.0001152	.034218	.0012321	.0008413	.0012614	1.3639
%RSD	1.834282	3.864820	1.407163	1.519261	1.934583	1.912657	.6247307

#1	.0024889	.0028560	2.448465	.0797341	.0429889	.0645938	216.9351
#2	.0025752	.0030828	2.454286	.0821307	.0444597	.0670873	218.3790
#3	.0025032	.0030048	2.392323	.0814290	.0430165	.0661732	219.6614

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.030283	3.494701	.0354441	-.024333	.9867099	.5377114	.3791965
Stddev	.010236	.014053	.0002070	.000411	.1638942	.0083386	.0064354
%RSD	.3377937	.4021194	.5841088	1.688881	16.61017	1.550757	1.697104

#1	3.018567	3.497351	.0352058	-.024288	.8555953	.5286416	.3724576
#2	3.034785	3.479512	.0355795	-.023946	.9340807	.5450457	.3852778
#3	3.037496	3.507241	.0355470	-.024765	1.170454	.5394468	.3798543

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.589212	.7488773	.1897862	.0019151	1.424867	9.411874	-.002259
Stddev	.031812	.0085377	.0011687	.0001869	.005629	.079971	.001949
%RSD	.8863285	1.140072	.6157809	9.759595	.3950677	.8496847	86.30239

#1	3.598847	.7416285	.1907732	.0017089	1.426752	9.338007	-.003638
#2	3.553696	.7582882	.1884957	.0020733	1.418537	9.400814	-.003111
#3	3.615093	.7467150	.1900897	.0019632	1.429312	9.496799	-.000028

Sample Name: P4754-10 Acquired: 11/14/2024 6:11:20 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D71 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.854210	.0172934	.0222406
Stddev	.010882	.0017796	.0001377
%RSD	.3812615	10.29066	.6190707
#1	2.843600	.0191350	.0222639
#2	2.853684	.0171622	.0220928
#3	2.865345	.0155831	.0223652

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1061.957	28311.24	2831.353	946.2741	1815.250
Stddev	2.785	227.74	16.092	11.0817	10.435
%RSD	.2622381	.8044138	.5683356	1.171091	.5748289
#1	1064.302	28563.07	2844.400	956.9043	1824.027
#2	1058.879	28119.75	2836.286	934.7902	1803.713
#3	1062.688	28250.89	2813.372	947.1279	1818.011

Sample Name: P4754-11 Acquired: 11/14/2024 6:15:49 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D72 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0039143	-.017552	.5552626	-.015120	.0108941	72.95565	.4975182
Stddev	.0132998	.003651	.0020584	.007515	.0018610	.12690	.0007805
%RSD	339.7728	20.80178	.3706983	49.69988	17.08279	.1739461	.1568851
#1	.0088154	-.013503	.5547481	-.017630	.0117464	73.09493	.4984193
#2	.0140681	-.020594	.5535103	-.021058	.0121763	72.84656	.4970544
#3	-.011141	-.018560	.5575294	-.006672	.0087596	72.92546	.4970809
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0019395	.0032276	1.808037	.0617697	.0319123	.0718893	124.9650
Stddev	.0000424	.0000710	.019895	.0002895	.0010061	.0045169	.1914
%RSD	2.184617	2.201097	1.100387	.4686243	3.152677	6.283060	.1531850
#1	.0018910	.0031504	1.786751	.0618624	.0311912	.0736627	125.1312
#2	.0019691	.0032903	1.826164	.0614453	.0314841	.0667549	124.7557
#3	.0019584	.0032420	1.811197	.0620016	.0330617	.0752503	125.0081
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.592757	2.144911	.0276010	-.019874	.5616097	.2744987	.5137988
Stddev	.007082	.044656	.0007190	.000213	.0712278	.0079228	.0033117
%RSD	.1541906	2.081970	2.604924	1.073527	12.68279	2.886278	.6445451
#1	4.600103	2.098894	.0280482	-.019906	.5278932	.2829016	.5100698
#2	4.585973	2.188069	.0267716	-.019647	.5135004	.2671645	.5149299
#3	4.592195	2.147771	.0279831	-.020070	.6434356	.2734301	.5163967
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.384846	1.024315	.1072312	.0005111	.9786364	8.195350	-.003343
Stddev	.046935	.008377	.0006986	.0004729	.0115279	.002567	.001185
%RSD	1.968060	.8177889	.6515297	92.53643	1.177956	.0313176	35.44764
#1	2.438846	1.024858	.1066399	.0002522	.9654093	8.194980	-.002313
#2	2.361839	1.015679	.1070517	.0002241	.9865442	8.192989	-.004638
#3	2.353853	1.032406	.1080021	.0010570	.9839558	8.198082	-.003078

Sample Name: P4754-11 Acquired: 11/14/2024 6:15:49 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D72 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.574533	.0103933	.0163578
Stddev	.002962	.0006470	.0001006
%RSD	.1881377	6.225045	.6152822
#1	1.573385	.0097735	.0164683
#2	1.572316	.0110644	.0162714
#3	1.577897	.0103419	.0163337

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1107.039	29429.51	2933.802	987.7918	1842.382
Stddev	2.834	34.28	3.327	3.5997	3.001
%RSD	.2560217	.1164677	.1134083	.3644203	.1628612
#1	1110.309	29392.20	2930.247	991.8977	1845.727
#2	1105.531	29436.72	2936.842	986.2993	1839.928
#3	1105.278	29459.61	2934.315	985.1784	1841.491

Sample Name: P4754-12 Acquired: 11/14/2024 6:20:16 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D74 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.024621	-.019821	1.684293	-.027453	.0115021	38.44488	.5858358
Stddev	.015878	.002867	.004808	.006315	.0034408	.06179	.0008693
%RSD	64.48958	14.46300	.2854403	23.00338	29.91453	.1607127	.1483799

#1	-.011368	-.021554	1.686630	-.022267	.0096996	38.49445	.5851379
#2	-.020276	-.016512	1.678764	-.025606	.0154697	38.37566	.5855600
#3	-.042220	-.021397	1.687486	-.034485	.0093371	38.46453	.5868095

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0008107	.0295802	4.307728	.0730849	.0257033	.2806566	162.3287
Stddev	.0000530	.0000919	.024828	.0003452	.0004414	.0035967	.6348
%RSD	6.540377	.3107810	.5763657	.4723752	1.717190	1.281541	.3910830

#1	.0008328	.0294759	4.336385	.0727073	.0253036	.2768622	161.9285
#2	.0008492	.0296492	4.292666	.0731629	.0256292	.2840162	161.9970
#3	.0007502	.0296155	4.294134	.0733844	.0261770	.2810913	163.0607

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.485776	1.878651	.0512371	-.018306	.8106913	.1266302	1.861772
Stddev	.010983	.034429	.0003775	.000277	.1200942	.0170870	.018825
%RSD	.4418382	1.832634	.7366974	1.514968	14.81381	13.49365	1.011144

#1	2.473519	1.870172	.0508921	-.018617	.7802826	.1262781	1.840764
#2	2.494726	1.916527	.0516403	-.018216	.9430669	.1097220	1.867439
#3	2.489082	1.849254	.0511789	-.018085	.7087243	.1438906	1.877113

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.345975	.5988253	.1428361	.0023616	.8186385	8.583422	.0196380
Stddev	.016505	.0045334	.0023507	.0003924	.0015919	.058722	.0013560
%RSD	1.226236	.7570399	1.645698	16.61622	.1944598	.6841375	6.904814

#1	1.327059	.5957613	.1446834	.0019382	.8197568	8.578461	.0181443
#2	1.353419	.6040329	.1401902	.0024336	.8168159	8.527337	.0199783
#3	1.357446	.5966818	.1436347	.0027130	.8193428	8.644467	.0207914

Sample Name: P4754-12 Acquired: 11/14/2024 6:20:16 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D74 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.8437782	.0004589	.0270713
Stddev	.0040229	.0003775	.0002144
%RSD	.4767712	82.26966	.7920046
#1	.8465580	.0001012	.0268288
#2	.8391653	.0008534	.0272356
#3	.8456114	.0004219	.0271496

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1000.937	26671.59	2655.882	890.4358	1855.861
Stddev	1.946	141.41	9.786	7.7164	5.921
%RSD	.1944092	.5302010	.3684512	.8665923	.3190282
#1	999.502	26834.83	2654.548	899.3201	1849.100
#2	1003.152	26593.61	2666.266	886.5810	1858.366
#3	1000.159	26586.33	2646.831	885.4063	1860.119

Sample Name: P4754-13 Acquired: 11/14/2024 6:24:44 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D75 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.003032	-.017963	1.003202	-.013752	.0080854	66.08233	.3526942
Stddev	.008368	.000820	.001984	.003480	.0034788	.45464	.0026216
%RSD	275.9860	4.564766	.1977317	25.30324	43.02626	.6879936	.7432999

#1	-.000073	-.018766	1.000964	-.015368	.0061973	65.56234	.3504255
#2	-.012478	-.017995	1.003899	-.009758	.0059587	66.27988	.3520930
#3	.003454	-.017127	1.004744	-.016129	.0121000	66.40479	.3555642

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0014438	.0037465	2.076770	.1508776	.0297294	.1056280	128.9458
Stddev	.0000686	.0004001	.049330	.0009870	.0005512	.0022492	.8030
%RSD	4.748766	10.67823	2.375303	.6541749	1.854098	2.129361	.6227520

#1	.0014431	.0041781	2.026734	.1509169	.0292865	.1037237	128.0436
#2	.0013756	.0036734	2.078215	.1498716	.0303467	.1050508	129.2116
#3	.0015128	.0033881	2.125361	.1518444	.0295549	.1081096	129.5823

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.186019	2.184560	.0293443	-.017767	.5155143	.3095195	.3474408
Stddev	.011791	.050334	.0002902	.000460	.0716263	.0018075	.0046286
%RSD	.9941516	2.304085	.9889785	2.590255	13.89414	.5839681	1.332207

#1	1.174980	2.227132	.0293395	-.017838	.4799247	.3087639	.3511021
#2	1.184637	2.129007	.0296368	-.018187	.5979648	.3115821	.3422381
#3	1.198440	2.197540	.0290565	-.017275	.4686534	.3082123	.3489821

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.316200	.5617522	.1117608	.0003872	.6539642	9.899797	-.001045
Stddev	.088322	.0057941	.0019445	.0002383	.0094086	.059259	.001372
%RSD	3.813209	1.031438	1.739872	61.54266	1.438710	.5985906	131.2824

#1	2.254447	.5678573	.1096508	.0006191	.6504851	9.831623	-.001136
#2	2.417366	.5563294	.1121508	.0003994	.6646169	9.928796	-.002369
#3	2.276787	.5610699	.1134807	.0001430	.6467905	9.938972	.000370

Sample Name: P4754-13 Acquired: 11/14/2024 6:24:44 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D75 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.576192	.0059142	.0160491
Stddev	.008167	.0009577	.0001861
%RSD	.5181169	16.19371	1.159696
#1	1.569715	.0066692	.0159320
#2	1.573495	.0048369	.0159515
#3	1.585366	.0062364	.0162637

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1055.755	28167.87	2810.023	943.9700	1845.638
Stddev	1.421	113.41	21.821	6.4746	2.605
%RSD	.1346356	.4026045	.7765412	.6858916	.1411481
#1	1054.803	28191.89	2835.004	940.1545	1842.698
#2	1055.074	28267.34	2794.682	951.4457	1846.560
#3	1057.389	28044.38	2800.384	940.3097	1847.657

Sample Name: CCV081 Acquired: 11/14/2024 6:29:14 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV081 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.026817	4.963690	24.62674	4.813944	4.831538	400.3042	10.24097
Stddev	.019354	.017332	.10660	.030458	.020451	1.3719	.02442
%RSD	.3850086	.3491725	.4328573	.6326959	.4232828	.3427215	.2384305

#1	5.014130	4.977621	24.72364	4.778869	4.825989	399.4147	10.22496
#2	5.017229	4.944281	24.51256	4.833716	4.814433	401.8842	10.26908
#3	5.049093	4.969168	24.64403	4.829247	4.854190	399.6137	10.22888

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4934133	2.488083	402.5429	15.21381	2.493553	14.95679	402.9651
Stddev	.0037110	.009921	2.0091	.04949	.008556	.06434	1.7166
%RSD	.7521106	.3987515	.4990984	.3253283	.3431371	.4301946	.4259859

#1	.4915547	2.494950	401.3689	15.17278	2.501093	14.88526	401.6681
#2	.4976864	2.476708	404.8627	15.26878	2.484254	15.00996	404.9116
#3	.4909989	2.492592	401.3970	15.19988	2.495313	14.97514	402.3154

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	14.91947	398.4820	2.480749	1.236312	403.4098	2.460454	14.55243
Stddev	.05969	2.3226	.009493	.003490	1.5586	.003809	.12256
%RSD	.4000990	.5828526	.3826503	.2822881	.3863514	.1548275	.8421869

#1	14.87180	396.5582	2.487124	1.235876	403.0793	2.464823	14.42267
#2	14.98642	401.0621	2.469840	1.240000	405.1071	2.457828	14.66623
#3	14.90020	397.8258	2.485284	1.233062	402.0429	2.458709	14.56838

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	154.4792	4.932433	5.012326	4.775621	5.107286	4.931914	4.973510
Stddev	.1059	.009093	.029850	.009739	.018237	.027612	.016841
%RSD	.0685247	.1843542	.5955270	.2039337	.3570816	.5598568	.3386120

#1	154.4144	4.929734	4.991994	4.773643	5.107758	4.918270	4.979596
#2	154.6014	4.924995	5.046595	4.767022	5.125283	4.963692	4.954472
#3	154.4219	4.942570	4.998388	4.786197	5.088817	4.913781	4.986461

Sample Name: CCV081 Acquired: 11/14/2024 6:29:14 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV081 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.963036	5.121647	5.099840
Stddev	.013458	.009122	.012020
%RSD	.2711665	.1781072	.2356888
#1	4.956671	5.114944	5.089347
#2	4.978496	5.132035	5.112954
#3	4.953942	5.117962	5.097219

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	771.3513	22608.42	2344.186	643.5061	1414.623
Stddev	.9004	59.68	13.622	4.3849	4.258
%RSD	.1167338	.2639703	.5810824	.6814107	.3009758
#1	771.5684	22643.24	2350.155	648.1555	1410.625
#2	772.1234	22539.51	2328.599	639.4451	1419.100
#3	770.3622	22642.50	2353.804	642.9177	1414.143

Sample Name: CCB081 Acquired: 11/14/2024 6:33:27 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB081 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.002119	.0004973	-.005705	-.003140	.0006914	.0344602	-.000310
Stddev	.008308	.0008561	.002343	.004823	.0013381	.0018770	.000068
%RSD	392.1565	172.1307	41.06787	153.5922	193.5337	5.446921	22.06408

#1	.007336	-.000486	-.003202	-.008410	-.000306	.0366276	-.000386
#2	-.005437	.001077	-.006068	.001054	.000169	.0333867	-.000254
#3	-.008254	.000901	-.007846	-.002064	.002212	.0333664	-.000289

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000075	-.000080	.0232934	.0000018	-.000146	.0001202	.0295030
Stddev	.000048	.000187	.0171205	.0003524	.000176	.0052814	.0361974
%RSD	63.92073	235.3828	73.49937	19132.88	120.6326	4394.230	122.6907

#1	-.000073	-.000120	.0415927	.0003561	.000057	-.003898	-.007229
#2	-.000028	-.000243	.0076658	-.000349	-.000261	-.001844	.030597
#3	-.000124	.000125	.0206218	-.000002	-.000235	.006102	.065141

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0010179	-.069907	-.000579	-.001465	.2601639	-.004760	-.000125
Stddev	.0011288	.153078	.000227	.001700	.1207395	.004320	.000264
%RSD	110.8951	218.9734	39.21556	116.0719	46.40902	90.75718	211.2432

#1	.0018053	-.012922	-.000333	-.003426	.1378567	.000055	-.000154
#2	-.000275	.046505	-.000781	-.000394	.3792721	-.006040	-.000373
#3	.001524	-.243305	-.000624	-.000576	.2633629	-.008295	.000152

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.021338	-.000527	.0006244	-.000792	.0025330	.0002571	-.001629
Stddev	.073416	.001484	.0010909	.000186	.0020631	.0007464	.000413
%RSD	344.0629	281.2668	174.7010	23.53384	81.45211	290.3550	25.34991

#1	-.098428	.000642	.0013713	-.000997	.0045630	.0010161	-.002058
#2	-.013335	-.000027	.0011295	-.000747	.0025975	-.000476	-.001596
#3	.047749	-.002197	-.000627	-.000632	.0004383	.000231	-.001234

Sample Name: CCB081 Acquired: 11/14/2024 6:33:27 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB081 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.002021	-.002454	-.000104
Stddev	.001656	.001545	.000037
%RSD	81.93786	62.93810	35.51999
#1	-.000604	-.001354	-.000072
#2	-.001617	-.001788	-.000144
#3	-.003841	-.004220	-.000096

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	947.3127	25156.26	2444.782	851.0883	1884.952
Stddev	2.1659	576.20	8.235	21.3041	3.057
%RSD	.2286408	2.290472	.3368273	2.503160	.1621865
#1	946.1865	25815.71	2437.836	875.2747	1884.145
#2	945.9418	24750.06	2442.632	835.1059	1888.332
#3	949.8097	24903.01	2453.879	842.8842	1882.379

Sample Name: P4754-14 Acquired: 11/14/2024 6:37:59 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D76 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002681	-.016273	.8150670	-.018349	.0114569	71.59433	.4454108
Stddev	.0060399	.001498	.0025139	.005458	.0016767	2.40039	.0159421
%RSD	2253.090	9.206894	.3084334	29.74274	14.63485	3.352772	3.579198

#1	-.005062	-.017983	.8121856	-.024648	.0107119	72.01844	.4475367
#2	-.000962	-.015645	.8168126	-.015372	.0102819	73.75439	.4601832
#3	.006828	-.015191	.8162027	-.015028	.0133770	69.01014	.4285123

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0018333	.0050928	1.117854	.1015837	.0281574	.0904657	110.5938
Stddev	.0000353	.0002294	.055520	.0021392	.0007042	.0043870	3.6059
%RSD	1.926041	4.505438	4.966667	2.105851	2.501063	4.849327	3.260481

#1	.0018736	.0052857	1.125414	.0996023	.0274076	.0936360	110.7898
#2	.0018185	.0048391	1.169206	.1038518	.0282599	.0923023	114.0977
#3	.0018077	.0051538	1.058941	.1012971	.0288048	.0854589	106.8940

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.156092	2.268673	.0602528	-.016825	.6294208	.2246851	.3670855
Stddev	.033050	.160694	.0001832	.001107	.2372829	.0109719	.0077254
%RSD	2.858785	7.083185	.3040671	6.578058	37.69861	4.883252	2.104512

#1	1.165693	2.386776	.0600597	-.017870	.7269041	.2260931	.3608075
#2	1.183278	2.333562	.0604241	-.015665	.3589227	.2348851	.3757128
#3	1.119304	2.085680	.0602747	-.016939	.8024355	.2130771	.3647361

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.312388	.5130916	.0990480	.0002856	.6631806	6.314656	-.007238
Stddev	.098435	.0087523	.0019823	.0004705	.0041642	.197901	.000886
%RSD	4.256860	1.705805	2.001317	164.7279	.6279193	3.133999	12.24646

#1	2.374320	.5204563	.0993185	.0007791	.6679886	6.335344	-.006599
#2	2.363962	.5034155	.1008812	.0002357	.6608319	6.501400	-.008250
#3	2.198882	.5154029	.0969445	-.000158	.6607212	6.107223	-.006866

Sample Name: P4754-14 Acquired: 11/14/2024 6:37:59 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D76 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.450336	.0098490	.0121015
Stddev	.048593	.0017566	.0003924
%RSD	3.350453	17.83491	3.242882
#1	1.460965	.0089819	.0121473
#2	1.492735	.0118704	.0124691
#3	1.397309	.0086945	.0116882

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1062.440	27973.71	2704.333	939.1442	1847.393
Stddev	2.375	503.43	79.997	15.5613	3.279
%RSD	.2235142	1.799653	2.958109	1.656967	.1774905
#1	1063.814	28333.44	2684.170	950.9241	1847.804
#2	1063.807	27398.38	2636.347	921.5035	1850.447
#3	1059.697	28189.30	2792.483	945.0050	1843.928

Sample Name: P4754-15 Acquired: 11/14/2024 6:42:29 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D77 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0140977	-.015268	.4318854	-.014779	.0135455	59.57924	.3386664
Stddev	.0082675	.001403	.0034148	.002243	.0028881	.09659	.0009409
%RSD	58.64415	9.189974	.7906707	15.17771	21.32157	.1621257	.2778174

#1	.0214134	-.016885	.4295670	-.015245	.0167220	59.54303	.3375810
#2	.0051284	-.014370	.4358067	-.016752	.0128370	59.68870	.3392511
#3	.0157515	-.014550	.4302823	-.012339	.0110776	59.50598	.3391670

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0015096	.0019098	1.321184	.0708705	.0388862	.0563395	95.04852
Stddev	.0000822	.0002105	.014562	.0006858	.0005290	.0011447	.27917
%RSD	5.441657	11.02322	1.102214	.9677072	1.360386	2.031810	.2937150

#1	.0016006	.0020585	1.304745	.0716540	.0387440	.0576057	94.80634
#2	.0014409	.0016689	1.326336	.0703792	.0384427	.0553780	95.35386
#3	.0014874	.0020019	1.332469	.0705783	.0394717	.0560347	94.98536

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.374222	1.704550	.0296815	-.017069	.7012576	.1884182	.2294765
Stddev	.005373	.069571	.0008669	.000374	.0469099	.0013789	.0002218
%RSD	.3909902	4.081473	2.920686	2.189091	6.689393	.7318451	.0966494

#1	1.377658	1.762221	.0286940	-.017365	.7095731	.1868697	.2292854
#2	1.376977	1.724147	.0303170	-.016650	.6507460	.1888718	.2297197
#3	1.368030	1.627283	.0300336	-.017193	.7434536	.1895133	.2294244

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.920132	.4895702	.0809747	.0003988	.4460250	6.525466	-.008315
Stddev	.079214	.0055392	.0007273	.0003683	.0075792	.016548	.001533
%RSD	4.125463	1.131438	.8981683	92.35361	1.699278	.2535953	18.44330

#1	1.917913	.4902082	.0817577	.0005343	.4446285	6.521743	-.006547
#2	2.000433	.4837396	.0808462	-.000018	.4392412	6.511097	-.009293
#3	1.842051	.4947627	.0803202	.000680	.4542054	6.543559	-.009103

Sample Name: P4754-15 Acquired: 11/14/2024 6:42:29 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D77 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.192794	.0086450	.0132078
Stddev	.004301	.0007979	.0000551
%RSD	.3605411	9.229467	.4174433
#1	1.188969	.0088162	.0132410
#2	1.197449	.0077754	.0132383
#3	1.191964	.0093434	.0131442

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1092.415	28972.91	2889.667	967.5075	1860.472
Stddev	.134	76.46	2.088	2.0674	.474
%RSD	.0123058	.2638854	.0722689	.2136782	.0254666
#1	1092.456	28983.36	2887.813	969.0559	1860.872
#2	1092.523	28891.77	2891.929	965.1598	1860.595
#3	1092.264	29043.61	2889.260	968.3067	1859.949

Sample Name: P4754-16 Acquired: 11/14/2024 6:46:59 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D78 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0075800	-.006794	.3791408	-.006219	.0052801	26.41009	.1877197
Stddev	.0051623	.003012	.0030619	.001794	.0025107	1.64082	.0112919
%RSD	68.10437	44.32531	.8075934	28.85242	47.54906	6.212848	6.015295

#1	.0023837	-.010164	.3805267	-.008252	.0028743	26.99352	.1919143
#2	.0076487	-.004366	.3756310	-.005550	.0078839	24.55729	.1749308
#3	.0127076	-.005853	.3812648	-.004856	.0050822	27.67946	.1963140

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007559	.0001421	.9131458	.0275980	.0159657	.0187561	38.52640
Stddev	.0001499	.0001316	.0693360	.0012990	.0001360	.0026016	2.42701
%RSD	19.82891	92.58328	7.593092	4.706976	.8519804	13.87082	6.299595

#1	.0007334	.0000161	.9490385	.0290970	.0160126	.0160667	39.36836
#2	.0006186	.0001316	.8332215	.0268968	.0160720	.0189416	35.79054
#3	.0009158	.0002787	.9571775	.0268003	.0158124	.0212600	40.42031

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9913261	.8960740	.0077728	-.010082	.4604318	.0795794	.0783104
Stddev	.0584917	.0716618	.0001733	.000197	.2519475	.0141259	.0006148
%RSD	5.900351	7.997311	2.230020	1.954139	54.71983	17.75064	.7851319

#1	1.010238	.8163903	.0075751	-.009873	.2683284	.0695859	.0777289
#2	.925718	.9165951	.0078445	-.010109	.3672752	.0734120	.0782484
#3	1.038022	.9552368	.0078988	-.010264	.7456917	.0957402	.0789539

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9136196	.2699740	.0291300	-.000492	.2185378	6.098080	-.003165
Stddev	.1454895	.0024069	.0021762	.000538	.0067860	.301784	.002525
%RSD	15.92452	.8915291	7.470593	109.3377	3.105200	4.948834	79.77851

#1	1.050253	.2727370	.0301462	-.001109	.2117018	6.186343	-.000548
#2	.760652	.2688523	.0266316	-.000243	.2252727	5.762005	-.003360
#3	.929954	.2683327	.0306121	-.000124	.2186390	6.345891	-.005587

Sample Name: P4754-16 Acquired: 11/14/2024 6:46:59 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D78 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.7194989	-.001785	.0076518
Stddev	.0424452	.001419	.0004908
%RSD	5.899266	79.46867	6.414501
#1	.7336545	-.001296	.0078995
#2	.6717848	-.003384	.0070865
#3	.7530573	-.000676	.0079694

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1028.616	27331.52	2761.640	917.0218	1888.572
Stddev	.626	133.68	135.651	2.8536	4.989
%RSD	.0608619	.4890939	4.911957	.3111864	.2641910
#1	1028.921	27199.39	2715.994	914.2857	1883.739
#2	1029.030	27466.69	2914.227	919.9800	1888.272
#3	1027.895	27328.48	2654.701	916.7996	1893.704

Sample Name: P4754-17 Acquired: 11/14/2024 6:51:29 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D81 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.055647	-.052630	1.942858	-.040858	.0093960	202.2552	.5938625
Stddev	.001793	.007620	.004942	.007769	.0022077	.9492	.0037073
%RSD	3.222269	14.47791	.2543729	19.01461	23.49610	.4693038	.6242631

#1	-.057381	-.061428	1.939329	-.043639	.0111194	201.1811	.5902961
#2	-.053800	-.048329	1.948506	-.032082	.0101611	202.9813	.5976961
#3	-.055758	-.048133	1.940737	-.046854	.0069076	202.6030	.5935952

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0029201	.0027443	1.147159	.1210017	.0471222	.1165424	335.5799
Stddev	.0000322	.0002302	.034197	.0012866	.0011493	.0041499	.9185
%RSD	1.100856	8.388084	2.981008	1.063291	2.438875	3.560805	.2737138

#1	.0029450	.0029401	1.186492	.1195601	.0482542	.1120962	334.5728
#2	.0028838	.0024907	1.130516	.1214113	.0471558	.1203131	336.3716
#3	.0029314	.0028021	1.124470	.1220336	.0459565	.1172180	335.7953

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.260267	9.811744	.0426028	-.031173	1.383261	.7333913	.2184119
Stddev	.007397	.075990	.0008532	.000662	.182368	.0001237	.0030785
%RSD	.5869733	.7744836	2.002781	2.123144	13.18391	.0168711	1.409491

#1	1.253418	9.783865	.0419579	-.031838	1.359102	.7333083	.2149522
#2	1.268112	9.753631	.0422802	-.030514	1.576504	.7333320	.2208488
#3	1.259272	9.897736	.0435703	-.031167	1.214176	.7335335	.2194346

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.67280	.7630498	.2952938	.0014621	2.339703	9.378312	.0030848
Stddev	.11823	.0073270	.0020075	.0002299	.020772	.052532	.0037998
%RSD	.9329604	.9602263	.6798146	15.72497	.8878098	.5601441	123.1800

#1	12.56884	.7697560	.2967774	.0014361	2.363034	9.318703	-.001198
#2	12.64815	.7641638	.2930096	.0017040	2.332855	9.417849	.006052
#3	12.80141	.7552295	.2960945	.0012463	2.323219	9.398384	.004400

Sample Name: P4754-17 Acquired: 11/14/2024 6:51:29 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D81 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	7.812232	.0289394	.0171479
Stddev	.028702	.0004176	.0001504
%RSD	.3674006	1.443082	.8768805
#1	7.779725	.0286403	.0170071
#2	7.834080	.0287614	.0173063
#3	7.822891	.0294165	.0171305

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1060.222	28238.78	2863.213	943.1302	1769.846
Stddev	.536	256.51	8.289	8.6300	4.747
%RSD	.0505123	.9083562	.2894852	.9150413	.2682302
#1	1060.208	28521.25	2872.659	952.5424	1765.355
#2	1059.694	28020.37	2857.157	935.5894	1769.371
#3	1060.765	28174.73	2859.822	941.2587	1774.813

Sample Name: P4754-18 Acquired: 11/14/2024 6:55:58 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D82 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.054124	-.050362	1.638805	-.046894	.0131792	181.0468	.6047909
Stddev	.009554	.001463	.009215	.005530	.0020149	.5364	.0015968
%RSD	17.65275	2.904180	.5623096	11.79212	15.28859	.2962517	.2640288

#1	-.057981	-.050226	1.639706	-.050877	.0134947	180.4962	.6032171
#2	-.061147	-.048973	1.629173	-.040580	.0110252	181.5676	.6064097
#3	-.043244	-.051888	1.647537	-.049225	.0150178	181.0766	.6047459

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0028022	.0032414	1.320289	.1066375	.0480783	.1089684	331.8288
Stddev	.0000722	.0002111	.028813	.0045306	.0005527	.0080986	1.6508
%RSD	2.577153	6.511127	2.182349	4.248590	1.149563	7.432098	.4974966

#1	.0028622	.0033419	1.325823	.1033180	.0479098	.1081965	329.9437
#2	.0027220	.0029989	1.289110	.1047956	.0476296	.1174253	333.0161
#3	.0028223	.0033834	1.345934	.1117989	.0486957	.1012833	332.5268

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.322237	8.851392	.0428448	-.030752	1.240055	.7305840	.2075084
Stddev	.005069	.225508	.0007435	.001224	.099591	.0180956	.0059920
%RSD	.3833720	2.547709	1.735392	3.980795	8.031172	2.476863	2.887575

#1	1.321221	8.603794	.0425594	-.031579	1.125735	.7490770	.2042111
#2	1.327736	8.905365	.0422862	-.031331	1.286415	.7297611	.2038894
#3	1.317752	9.045015	.0436887	-.029345	1.308014	.7129140	.2144248

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.82601	.8539930	.2880167	.0009124	2.526239	9.707885	.0036399
Stddev	.06003	.0050420	.0016898	.0001522	.017869	.088324	.0013613
%RSD	.5545127	.5904027	.5866890	16.68388	.7073240	.9098197	37.40023

#1	10.76106	.8567140	.2860846	.0009297	2.526547	9.612650	.0051974
#2	10.87946	.8481750	.2892183	.0007522	2.508219	9.723896	.0030451
#3	10.83750	.8570899	.2887472	.0010552	2.543952	9.787108	.0026772

Sample Name: P4754-18 Acquired: 11/14/2024 6:55:58 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D82 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	6.915619	.0280960	.0174644
Stddev	.024075	.0004604	.0000570
%RSD	.3481194	1.638773	.3266525
#1	6.895768	.0278313	.0174264
#2	6.942398	.0286276	.0175300
#3	6.908691	.0278290	.0174368

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1077.536	28169.31	2895.808	942.4965	1778.119
Stddev	1.707	701.91	11.554	22.6942	2.694
%RSD	.1584111	2.491737	.3989990	2.407886	.1515130
#1	1076.372	28650.14	2908.719	953.0220	1778.260
#2	1076.741	28493.95	2886.442	958.0170	1775.357
#3	1079.496	27363.85	2892.262	916.4507	1780.739

Sample Name: P4754-19 Acquired: 11/14/2024 7:00:27 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D83 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.051486	-.047858	1.155275	-.045765	.0140104	174.7377	.5481634
Stddev	.017641	.002023	.003787	.002404	.0031051	.4630	.0021380
%RSD	34.26282	4.226095	.3278062	5.253942	22.16303	.2649916	.3900206

#1	-.052645	-.049123	1.159512	-.047381	.0138228	174.3848	.5458859
#2	-.033295	-.045525	1.152219	-.043002	.0172050	174.5664	.5484772
#3	-.068519	-.048925	1.154095	-.046913	.0110033	175.2620	.5501272

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0024047	.0030371	1.572991	.0956421	.0408152	.0810918	317.6269
Stddev	.0001893	.0002814	.024111	.0005193	.0008675	.0036288	1.4305
%RSD	7.871903	9.266112	1.532790	.5429494	2.125324	4.474880	.4503806

#1	.0022311	.0032979	1.598887	.0953045	.0411569	.0851720	317.3888
#2	.0026065	.0027388	1.551190	.0962401	.0398290	.0798776	316.3304
#3	.0023764	.0030747	1.568896	.0953817	.0414599	.0782259	319.1616

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.097110	7.518846	.0372359	-.031050	1.080652	.6853857	.2140603
Stddev	.004660	.131702	.0009112	.000309	.385999	.0119399	.0011909
%RSD	.4247586	1.751630	2.447146	.9937911	35.71907	1.742065	.5563579

#1	1.098056	7.455177	.0372528	-.031251	1.500076	.6990922	.2153081
#2	1.092049	7.431077	.0381385	-.030694	1.001547	.6772447	.2139370
#3	1.101224	7.670285	.0363163	-.031204	.740334	.6798202	.2129358

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.562059	.7654150	.2769504	.0008275	2.346703	8.099679	.0043233
Stddev	.027194	.0026169	.0014873	.0003861	.016012	.017526	.0021747
%RSD	.2843911	.3418932	.5370377	46.66333	.6823326	.2163828	50.30113

#1	9.575419	.7623955	.2759980	.0008006	2.364750	8.088248	.0023708
#2	9.530770	.7668236	.2761888	.0012264	2.341165	8.090931	.0039320
#3	9.579989	.7670258	.2786642	.0004555	2.334196	8.119857	.0066671

Sample Name: P4754-19 Acquired: 11/14/2024 7:00:27 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D83 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	6.327834	.0263157	.0180987
Stddev	.018684	.0013313	.0001458
%RSD	.2952703	5.058992	.8054023
#1	6.314115	.0264652	.0180293
#2	6.320273	.0275660	.0180005
#3	6.349113	.0249160	.0182661

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1064.229	28398.31	2875.882	947.5668	1777.679
Stddev	3.642	60.38	4.950	3.7304	6.770
%RSD	.3422146	.2126340	.1721384	.3936822	.3808457
#1	1060.561	28385.93	2879.675	944.8654	1769.901
#2	1067.844	28345.08	2877.689	946.0120	1782.249
#3	1064.282	28463.93	2870.282	951.8232	1780.886

Sample Name: P4754-20 Acquired: 11/14/2024 7:04:56 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D84 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.023542	-.029646	.6900890	-.019054	.0062588	113.3086	.4893018
Stddev	.006496	.006157	.0103228	.010782	.0018788	8.5012	.0368358
%RSD	27.59265	20.76981	1.495860	56.58681	30.01834	7.502683	7.528233

#1	-.016591	-.036638	.6946728	-.015957	.0068110	104.3106	.4504032
#2	-.024576	-.025036	.6973261	-.031046	.0041658	121.2057	.5236525
#3	-.029459	-.027263	.6782681	-.010159	.0077996	114.4094	.4938497

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0021646	.0015245	1.234878	.0685376	.0376295	.0724131	189.4897
Stddev	.0000084	.0005499	.088267	.0020949	.0009469	.0086966	14.2609
%RSD	.3873190	36.07282	7.147808	3.056585	2.516312	12.00968	7.525950

#1	.0021693	.0020904	1.140200	.0708749	.0386165	.0625242	174.3696
#2	.0021696	.0009921	1.314899	.0679087	.0375432	.0788700	202.6986
#3	.0021550	.0014910	1.249536	.0668292	.0367287	.0758450	191.4010

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.606861	4.541831	.0307636	-.023743	.8362573	.4010964	.1439717
Stddev	.124961	.362585	.0000974	.001362	.2005001	.0270464	.0010870
%RSD	7.776712	7.983242	.3166867	5.738150	23.97588	6.743107	.7550404

#1	1.475693	4.181646	.0307942	-.022461	1.066842	.3706042	.1452190
#2	1.724517	4.906770	.0306545	-.025174	.702984	.4221884	.1432262
#3	1.620375	4.537076	.0308419	-.023596	.738946	.4104966	.1434698

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.460385	.7003649	.1645786	.0010247	.9960425	7.131257	-.003822
Stddev	.488657	.0064008	.0145479	.0006012	.0038246	.423491	.001329
%RSD	8.949141	.9139300	8.839509	58.66988	.3839771	5.938514	34.78390

#1	4.970839	.6967050	.1487245	.0008289	.9963586	6.690930	-.002388
#2	5.948149	.7077559	.1773148	.0016994	.9920696	7.535617	-.004064
#3	5.462166	.6966339	.1676967	.0005458	.9996991	7.167224	-.005013

Sample Name: P4754-20 Acquired: 11/14/2024 7:04:56 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D84 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	3.374013	.0169678	.0154694
Stddev	.254486	.0022354	.0011914
%RSD	7.542521	13.17472	7.701937
#1	3.105583	.0144690	.0142232
#2	3.611775	.0187778	.0165972
#3	3.404681	.0176565	.0155879

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1095.209	29231.98	2959.142	983.7283	1810.239
Stddev	3.359	40.20	179.532	2.2786	6.680
%RSD	.3066941	.1375307	6.067031	.2316261	.3689923
#1	1094.132	29242.17	3146.859	983.2253	1812.052
#2	1092.520	29266.10	2789.102	986.2163	1802.840
#3	1098.974	29187.66	2941.466	981.7433	1815.825

Sample Name: P4754-21 Acquired: 11/14/2024 7:09:26 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D86 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.054549	-.052018	1.391086	-.037828	.0118662	182.5723	.5851963
Stddev	.002493	.003521	.006557	.000960	.0004841	.2986	.0002618
%RSD	4.569976	6.768728	.4713909	2.538616	4.079365	.1635402	.0447391

#1	-.051726	-.051731	1.392020	-.037998	.0114521	182.3425	.5854554
#2	-.056447	-.048649	1.384112	-.036794	.0117481	182.9098	.5852019
#3	-.055474	-.055673	1.397126	-.038691	.0123983	182.4647	.5849318

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0025476	.0033765	1.266607	.1085998	.0463319	.1016515	338.7286
Stddev	.0000575	.0003003	.052700	.0007239	.0009372	.0016568	1.0946
%RSD	2.256759	8.893602	4.160758	.6665628	2.022807	1.629885	.3231559

#1	.0025909	.0032240	1.325947	.1078677	.0465721	.1002462	337.5664
#2	.0024823	.0031830	1.225255	.1093152	.0452980	.1034783	339.7401
#3	.0025694	.0037224	1.248620	.1086166	.0471256	.1012299	338.8794

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.155888	9.041321	.0451162	-.031951	1.336961	.7318086	.1999738
Stddev	.001213	.118709	.0006679	.000624	.257868	.0078494	.0008387
%RSD	.1049337	1.312963	1.480431	1.953171	19.28764	1.072599	.4194300

#1	1.157281	9.140844	.0445846	-.032595	1.062278	.7282281	.2005938
#2	1.155312	9.073188	.0448980	-.031910	1.573841	.7263879	.2003081
#3	1.155070	8.909931	.0458659	-.031349	1.374764	.7408098	.1990194

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.16998	.8020775	.2968621	.0016351	2.706492	9.985093	.0051262
Stddev	.11704	.0063964	.0024103	.0002594	.008343	.051377	.0021737
%RSD	1.047813	.7974752	.8119100	15.86732	.3082650	.5145393	42.40382

#1	11.24753	.8091533	.2942529	.0014031	2.704176	9.932422	.0071533
#2	11.22705	.7967057	.2990054	.0015869	2.699552	10.03507	.0028308
#3	11.03535	.8003735	.2973281	.0019153	2.715749	9.98779	.0053947

Sample Name: P4754-21 Acquired: 11/14/2024 7:09:26 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D86 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	7.135785	.0256672	.0169553
Stddev	.006648	.0000939	.0001028
%RSD	.0931699	.3658048	.6064928
#1	7.129234	.0256606	.0168401
#2	7.142527	.0257643	.0169879
#3	7.135594	.0255768	.0170379

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1066.760	28504.93	2879.880	950.7570	1771.013
Stddev	4.273	69.41	13.567	2.4630	5.462
%RSD	.4005500	.2435039	.4710824	.2590609	.3084275
#1	1063.370	28582.79	2894.880	950.8973	1769.917
#2	1071.560	28482.48	2868.470	953.1468	1776.940
#3	1065.352	28449.52	2876.288	948.2268	1766.181

Sample Name: P4754-22 Acquired: 11/14/2024 7:13:55 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D87 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.025458	-.028095	2.124796	-.027025	.0092379	102.6789	.5132711
Stddev	.006913	.001818	.001753	.004777	.0024223	.1015	.0014734
%RSD	27.15505	6.472662	.0824930	17.67787	26.22131	.0988362	.2870538

#1	-.033438	-.028727	2.126619	-.025042	.0108547	102.5841	.5123656
#2	-.021670	-.029513	2.124646	-.032474	.0064529	102.6667	.5149712
#3	-.021268	-.026045	2.123123	-.023559	.0104060	102.7860	.5124764

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0022009	.0031598	2.404611	.1135765	.0273511	.0528673	199.1654
Stddev	.0001061	.0002216	.026657	.0009022	.0007584	.0070418	.6401
%RSD	4.821417	7.013431	1.108566	.7943153	2.772790	13.31988	.3214057

#1	.0021305	.0033929	2.424019	.1141210	.0278974	.0448759	198.5237
#2	.0023229	.0031346	2.374217	.1140735	.0264852	.0581635	199.1685
#3	.0021491	.0029518	2.415596	.1125352	.0276708	.0555624	199.8040

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.244595	2.153609	.0324046	-.023567	.8165502	.4332188	.2515255
Stddev	.011443	.128456	.0001144	.000582	.1295247	.0072724	.0007143
%RSD	.3526912	5.964668	.3529127	2.469269	15.86243	1.678696	.2839716

#1	3.232614	2.116636	.0322917	-.023052	.9045275	.4396660	.2507575
#2	3.255412	2.047695	.0324016	-.023451	.8773072	.4253355	.2516491
#3	3.245760	2.296497	.0325204	-.024198	.6678160	.4346550	.2521699

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.964695	.9418033	.1753722	.0017728	1.374749	10.62411	.0182809
Stddev	.116889	.0047276	.0011526	.0006697	.004681	.01422	.0026169
%RSD	5.949448	.5019690	.6572265	37.77578	.3405019	.1338514	14.31482

#1	1.846930	.9472427	.1741322	.0021987	1.369347	10.64005	.0211235
#2	2.080687	.9386841	.1755735	.0021188	1.377279	10.61274	.0177472
#3	1.966468	.9394831	.1764109	.0010009	1.377619	10.61952	.0159721

Sample Name: P4754-22 Acquired: 11/14/2024 7:13:55 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D87 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.665897	.0182878	.0258086
Stddev	.005373	.0002991	.0002077
%RSD	.3225329	1.635561	.8047450
#1	1.660027	.0179839	.0256225
#2	1.670572	.0185819	.0257708
#3	1.667091	.0182977	.0260326

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1066.477	28387.17	2859.514	948.2219	1819.038
Stddev	3.684	84.85	3.313	3.3201	2.147
%RSD	.3454008	.2989144	.1158605	.3501447	.1180462
#1	1067.679	28338.09	2863.118	951.4485	1818.251
#2	1062.342	28338.28	2856.600	948.4016	1817.394
#3	1069.409	28485.15	2858.824	944.8155	1821.467

Sample Name: PB164831BL Acquired: 11/14/2024 7:18:23 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: PBS831 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0040384	.0002243	-.002989	-.005116	-.000612	.0035561
Stddev	.0065188	.0031523	.002875	.004776	.001655	.0113463
%RSD	161.4173	1405.673	96.17480	93.35566	270.5904	319.0626

#1	.0085176	.0027253	-.002691	-.006182	.001281	-.000313
#2	-.003440	.0012641	-.006001	-.009269	-.001788	-.005349
#3	.007038	-.003317	-.000275	.000103	-.001328	.016331

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001506	-.000007	-.000204	-.012816	-.001285	-.000337
Stddev	.000644	.000056	.000091	.020919	.000715	.000674
%RSD	42.76380	783.2501	44.60541	163.2290	55.68200	199.8719

#1	-.001732	.000053	-.000114	-.017187	-.000916	.000326
#2	-.000780	-.000059	-.000203	.009944	-.002109	-.000316
#3	-.002007	-.000016	-.000296	-.031205	-.000829	-.001021

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007757	.0052565	-.002033	-.004459	-.000312	-.000921
Stddev	.0041479	.0145526	.001683	.111109	.000952	.000407
%RSD	534.7704	276.8508	82.77856	2491.809	305.0176	44.25246

#1	.0049902	.0090545	-.003323	-.086279	.000762	-.001324
#2	.0006389	-.010819	-.000129	-.049131	-.000645	-.000510
#3	-.003302	.017533	-.002647	.122033	-.001053	-.000928

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1747753	-.004001	-.002402	-.011433	-.001719	-.006360
Stddev	.1238147	.008192	.000236	.084174	.003750	.001075
%RSD	70.84223	204.7447	9.831777	736.2182	218.1839	16.89936

#1	.0819492	-.002277	-.002426	-.093703	-.001980	-.005176
#2	.1270206	.003191	-.002625	-.015120	-.005331	-.006629
#3	.3153562	-.012917	-.002155	.074523	.002155	-.007274

Sample Name: PB164831BL Acquired: 11/14/2024 7:18:23 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: PBS831 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000907	.0068801	.0022288	F -.014141	-.001646	-.004664
Stddev	.000393	.0037655	.0009364	.002230	.001506	.002321
%RSD	43.28892	54.72991	42.01243	15.76876	91.53643	49.77527
#1	-.001354	.0026293	.0024840	-.015749	.000093	-.007275
#2	-.000748	.0097974	.0011913	-.015080	-.002564	-.003884
#3	-.000619	.0082136	.0030112	-.011595	-.002466	-.002833

Elem	Sr4077
Units	ppm
Avg	-.000507
Stddev	.000123
%RSD	24.22056
#1	-.000469
#2	-.000645
#3	-.000409

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	945.1923	24875.36	2441.777	839.4324	1881.310
Stddev	1.0404	87.79	9.282	5.4239	1.332
%RSD	.1100759	.3529122	.3801437	.6461447	.0708043
#1	943.9949	24957.04	2431.871	845.2144	1882.596
#2	945.8756	24782.53	2443.186	834.4568	1879.936
#3	945.7065	24886.51	2450.275	838.6259	1881.399

Sample Name: PB164831BS Acquired: 11/14/2024 7:22:56 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: LCS831 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0189036	.0589785	.0189726	.0687407	.1176780	.4280224
Stddev	.0031952	.0050891	.0023751	.0003794	.0042100	.0112431
%RSD	16.90256	8.628796	12.51842	.5520048	3.577526	2.626758

#1	.0194048	.0646889	.0205806	.0691777	.1183604	.4313441
#2	.0218185	.0549221	.0200926	.0684953	.1131686	.4154927
#3	.0154874	.0573245	.0162446	.0685490	.1215051	.4372304

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4567284	.0114761	.0111987	11.36571	.0229011	.1072002
Stddev	.0014670	.0001618	.0000983	.05686	.0001462	.0002263
%RSD	.3212048	1.410152	.8779531	.5002864	.6383984	.2111048

#1	.4552364	.0113183	.0112658	11.30603	.0230562	.1069674
#2	.4581691	.0116417	.0112445	11.41925	.0227658	.1072138
#3	.4567795	.0114684	.0110859	11.37185	.0228813	.1074194

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0497917	.2426256	.0347589	10.61040	.0900584	.0224998
Stddev	.0043818	.0140141	.0031963	.11957	.0008871	.0002748
%RSD	8.800311	5.776008	9.195662	1.126874	.9850812	1.221346

#1	.0540007	.2303124	.0318064	10.47313	.0910607	.0222456
#2	.0501189	.2578752	.0343172	10.66625	.0897406	.0224624
#3	.0452554	.2396891	.0381531	10.69183	.0893739	.0227913

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.93525	.1024584	.1189092	10.55786	.0194285	F -.006109
Stddev	.29162	.0121435	.0008906	.13303	.0013145	.000325
%RSD	2.666815	11.85213	.7489522	1.259985	6.765631	5.315695

#1	10.82520	.1163821	.1182815	10.45676	.0192292	-.006063
#2	11.26589	.0940604	.1199285	10.50825	.0182250	-.006455
#3	10.71467	.0969327	.1185176	10.70856	.0208312	-.005811

Sample Name: PB164831BS Acquired: 11/14/2024 7:22:56 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: LCS831 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .0199511	.1935344	F .4829964	F .0015064	.2176442	.0291476
Stddev	.0006629	.0035798	.0026534	.0009714	.0008760	.0008801
%RSD	3.322832	1.849687	.5493617	64.48886	.4024804	3.019444
#1	.0192511	.1969106	.4827027	.0003847	.2169293	.0287145
#2	.0200327	.1939116	.4857844	.0020730	.2186213	.0285680
#3	.0205694	.1897809	.4805021	.0020614	.2173819	.0301603

Elem	Sr4077
Units	ppm
Avg	.2288231
Stddev	.0008357
%RSD	.3652218
#1	.2278832
#2	.2294825
#3	.2291036

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	944.8531	24841.94	2449.629	838.8306	1842.900
Stddev	2.9815	22.92	13.090	2.6749	3.507
%RSD	.3155504	.0922536	.5343845	.3188865	.1902782
#1	943.2027	24848.59	2455.191	841.4719	1841.618
#2	943.0617	24816.43	2434.676	836.1233	1840.215
#3	948.2948	24860.80	2459.020	838.8967	1846.867

Sample Name: P4753-01 Acquired: 11/14/2024 7:27:26 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D50 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.021901	-.034647	.2338532	-.030534	.0043785	116.4274	.5004392
Stddev	.006441	.002491	.0056129	.005392	.0004979	.0806	.0014918
%RSD	29.41136	7.190015	2.400193	17.65726	11.37076	.0691851	.2980958

#1	-.023919	-.032104	.2402888	-.029120	.0038041	116.4118	.4994490
#2	-.014692	-.034752	.2313004	-.025991	.0046455	116.5146	.5021550
#3	-.027092	-.037083	.2299704	-.036492	.0046858	116.3557	.4997137

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0021785	.0020012	.6484022	.0653227	.0380267	.0469606	220.0248
Stddev	.0001263	.0002324	.0100461	.0050282	.0007161	.0037880	.5437
%RSD	5.798783	11.61413	1.549363	7.697545	1.883178	8.066382	.2471032

#1	.0021073	.0022614	.6434121	.0681228	.0387168	.0444938	219.3997
#2	.0023244	.0018142	.6418280	.0683274	.0380761	.0450659	220.3871
#3	.0021039	.0019281	.6599663	.0595178	.0372872	.0513222	220.2877

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.554851	11.62073	.0395811	-.024956	.7702195	.4645748	.2211460
Stddev	.006898	.08225	.0012270	.002728	.1916355	.0067324	.0127935
%RSD	.2699881	.7077912	3.099923	10.93068	24.88064	1.449146	5.785068

#1	2.550594	11.58859	.0409236	-.023838	.6103984	.4635993	.2291050
#2	2.551150	11.71420	.0393020	-.022965	.9826710	.4583834	.2279444
#3	2.562810	11.55940	.0385177	-.028065	.7175893	.4717417	.2063886

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	16.91351	.9681381	.1929705	.0019984	1.014521	11.08156	.0019692
Stddev	.03673	.0136526	.0029885	.0006816	.014174	.11171	.0010139
%RSD	.2171638	1.410190	1.548669	34.10646	1.397147	1.008036	51.48860

#1	16.87128	.9815080	.1904069	.0027723	1.030888	11.17589	.0014964
#2	16.93119	.9542194	.1922519	.0017354	1.006331	11.11059	.0012781
#3	16.93805	.9686868	.1962528	.0014875	1.006343	10.95821	.0031332

Sample Name: P4753-01 Acquired: 11/14/2024 7:27:26 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D50 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	6.149076	.0212932	.0136519
Stddev	.003483	.0014343	.0000505
%RSD	.0566457	6.735963	.3700048
#1	6.146720	.0208927	.0135959
#2	6.153077	.0201018	.0136659
#3	6.147430	.0228852	.0136940

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1050.736	29153.46	2821.842	973.6363	1753.000
Stddev	11.607	1538.67	6.274	49.9179	23.800
%RSD	1.104668	5.277833	.2223341	5.126959	1.357679
#1	1037.559	28243.33	2817.232	942.1828	1725.593
#2	1055.203	28287.07	2828.987	947.5324	1768.468
#3	1059.446	30929.99	2819.308	1031.194	1764.938

Sample Name: P4753-02 Acquired: 11/14/2024 7:31:55 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D51 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.003406	-.012833	1.825880	-.021320	.0076299	62.07995	.5791934
Stddev	.010890	.000535	.003517	.006903	.0019224	4.56753	.0428381
%RSD	319.7535	4.168482	.1926216	32.37995	25.19514	7.357492	7.396168

#1	.007872	-.012956	1.826260	-.024496	.0068722	57.10271	.5323960
#2	-.013862	-.013297	1.822189	-.013400	.0098156	66.07940	.6164704
#3	-.004228	-.012248	1.829192	-.026064	.0062018	63.05773	.5887136

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0017895	.0028421	5.581716	.1639204	.0505987	.1358704	101.2112
Stddev	.0000403	.0004403	.420257	.0010776	.0001465	.0146040	7.3883
%RSD	2.254470	15.49117	7.529179	.6573709	.2894422	10.74846	7.299921

#1	.0017461	.0033474	5.126941	.1650039	.0507581	.1201822	93.1863
#2	.0017963	.0025409	5.955735	.1628489	.0505679	.1490704	107.7313
#3	.0018260	.0026380	5.662473	.1639083	.0504701	.1383586	102.7161

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.339268	2.406164	.0684973	-.016476	.7891252	.1659702	.3370635
Stddev	.247352	.263440	.0005805	.001180	.1765280	.0099917	.0014313
%RSD	7.407378	10.94854	.8474342	7.163806	22.37008	6.020177	.4246249

#1	3.070413	2.103065	.0684242	-.015326	.9769016	.1544598	.3354273
#2	3.557187	2.580051	.0679568	-.017684	.6265555	.1710421	.3376802
#3	3.390205	2.535375	.0691109	-.016417	.7639186	.1724087	.3380831

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.942874	1.100246	.0886730	.0032999	.9526491	8.600435	.0069896
Stddev	.335005	.002057	.0071839	.0006078	.0115854	.502107	.0011535
%RSD	11.38362	.1869437	8.101507	18.41759	1.216124	5.838163	16.50238

#1	2.565346	1.101173	.0807001	.0029720	.9497450	8.048095	.0082789
#2	3.204667	1.101676	.0946424	.0029265	.9427922	9.029255	.0066342
#3	3.058607	1.097889	.0906766	.0040012	.9654103	8.723954	.0060557

Sample Name: P4753-02 Acquired: 11/14/2024 7:31:55 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D51 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.284331	.0141247	.0379418
Stddev	.092649	.0022839	.0030295
%RSD	7.213827	16.16954	7.984481
#1	1.183634	.0125007	.0347183
#2	1.365968	.0167362	.0407302
#3	1.303390	.0131371	.0383771

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1083.586	28781.44	2893.003	956.5903	1817.835
Stddev	.743	115.08	169.721	1.7045	3.864
%RSD	.0686098	.3998278	5.866619	.1781839	.2125695
#1	1082.879	28663.40	3079.926	957.8921	1813.395
#2	1084.362	28893.30	2748.548	954.6610	1820.434
#3	1083.516	28787.63	2850.536	957.2178	1819.677

Sample Name: P4753-03 Acquired: 11/14/2024 7:36:22 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D52 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0172347	-.011446	1.361193	-.011770	.0072939	60.68762	.5307657
Stddev	.0063205	.005418	.004061	.005311	.0006529	.15737	.0037417
%RSD	36.67304	47.33241	.2983331	45.12579	8.951334	.2593179	.7049554

#1	.0139572	-.008857	1.358338	-.009316	.0069706	60.79256	.5342975
#2	.0245208	-.007808	1.359399	-.008129	.0080453	60.50667	.5268446
#3	.0132262	-.017672	1.365842	-.017864	.0068657	60.76363	.5311551

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0017646	.0013708	2.152254	.0558286	.0628051	.0757297	90.47129
Stddev	.0000915	.0001066	.012631	.0005349	.0012525	.0043995	.27828
%RSD	5.182301	7.775754	.5868581	.9581462	1.994306	5.809521	.3075905

#1	.0017246	.0012942	2.166778	.0553729	.0635708	.0795317	90.66429
#2	.0016999	.0013257	2.146145	.0564176	.0613597	.0709107	90.15230
#3	.0018692	.0014925	2.143839	.0556955	.0634849	.0767468	90.59728

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.010741	2.373188	.0281968	-.017200	.4997322	.1832633	.2282891
Stddev	.003530	.115970	.0011582	.000546	.1443134	.0057457	.0013962
%RSD	.1755347	4.886655	4.107649	3.175991	28.87814	3.135223	.6115979

#1	2.013146	2.412084	.0271422	-.017413	.5507445	.1790936	.2298954
#2	2.006689	2.464710	.0280118	-.016580	.3368410	.1808789	.2273661
#3	2.012389	2.242771	.0294364	-.017608	.6116112	.1898173	.2276059

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.089046	.7588414	.0776652	.0015156	.9206440	9.166696	-.001398
Stddev	.046641	.0085099	.0011524	.0003054	.0033330	.032071	.002083
%RSD	1.509894	1.121438	1.483808	20.15206	.3620338	.3498597	148.9589

#1	3.121293	.7579860	.0763346	.0013559	.9227160	9.166965	-.002075
#2	3.035566	.7507915	.0783403	.0013231	.9167992	9.134492	-.003059
#3	3.110280	.7677468	.0783207	.0018678	.9224168	9.198631	.000939

Sample Name: P4753-03 Acquired: 11/14/2024 7:36:22 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D52 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.433504	.0129399	.0188811
Stddev	.003980	.0017674	.0001577
%RSD	.2776149	13.65852	.8350912
#1	1.433115	.0140726	.0189928
#2	1.429733	.0109034	.0187007
#3	1.437664	.0138438	.0189497

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1101.276	29343.81	2884.984	981.5976	1815.680
Stddev	2.772	124.64	2.641	6.4592	6.981
%RSD	.2517162	.4247433	.0915569	.6580271	.3844789
#1	1101.278	29394.28	2884.096	980.3589	1817.128
#2	1104.047	29201.85	2887.955	975.8475	1821.824
#3	1098.503	29435.29	2882.901	988.5864	1808.089

Sample Name: P4753-04 Acquired: 11/14/2024 7:40:51 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D53 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0145885	-.014525	1.364278	-.014680	.0071786	63.56328	.7770515
Stddev	.0040746	.001342	.012318	.003046	.0009447	.39029	.0028318
%RSD	27.93053	9.236047	.9028898	20.74763	13.15952	.6140243	.3644349

#1	.0106914	-.014632	1.351676	-.014311	.0069575	63.19889	.7743996
#2	.0188200	-.013133	1.364868	-.011836	.0063641	63.51582	.7767207
#3	.0142540	-.015810	1.376291	-.017893	.0082142	63.97513	.7800342

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0023484	.0013301	2.289655	.0618731	.0571356	.0675061	97.92416
Stddev	.0001051	.0001291	.041803	.0003167	.0004850	.0026364	.60568
%RSD	4.473940	9.709573	1.825736	.5118759	.8488746	3.905395	.6185175

#1	.0023200	.0014484	2.242393	.0615473	.0566040	.0678947	97.33121
#2	.0024648	.0011923	2.304788	.0621798	.0575540	.0646970	97.89946
#3	.0022605	.0013495	2.321784	.0618923	.0572489	.0699266	98.54181

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.637501	2.151399	.0274091	-.017915	.4101666	.1753049	.2477833
Stddev	.025284	.109516	.0010331	.000357	.2811393	.0094323	.0012086
%RSD	.9586511	5.090472	3.769162	1.994051	68.54269	5.380518	.4877435

#1	2.622578	2.187760	.0263305	-.017543	.7230763	.1646837	.2465901
#2	2.623230	2.028327	.0283897	-.018256	.1788457	.1785276	.2490066
#3	2.666694	2.238110	.0275071	-.017944	.3285779	.1827036	.2477533

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.953518	.9079680	.0837715	.0011242	1.307498	9.546696	-.003151
Stddev	.063124	.0077291	.0019155	.0003869	.007880	.059390	.000222
%RSD	2.137239	.8512569	2.286579	34.41872	.6026769	.6221039	7.046541

#1	3.012858	.8999236	.0825947	.0012483	1.299810	9.478295	-.003184
#2	2.960504	.9153377	.0827380	.0014338	1.307129	9.576640	-.002915
#3	2.887192	.9086425	.0859817	.0006904	1.315557	9.585154	-.003355

Sample Name: P4753-04 Acquired: 11/14/2024 7:40:51 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D53 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.333989	.0143537	.0227387
Stddev	.007876	.0014594	.0001331
%RSD	.5904454	10.16767	.5853589
#1	1.325161	.0148014	.0226251
#2	1.336511	.0155368	.0227058
#3	1.340297	.0127228	.0228852

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1108.687	29387.70	2909.788	977.1626	1824.539
Stddev	2.590	25.57	19.326	1.9579	9.407
%RSD	.2336249	.0870188	.6641695	.2003631	.5155821
#1	1111.626	29407.24	2930.812	978.6713	1835.352
#2	1106.737	29397.09	2905.755	977.8664	1820.027
#3	1107.698	29358.75	2892.797	974.9502	1818.238

Sample Name: P4753-05 Acquired: 11/14/2024 7:45:20 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D54 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0195736	-.017609	1.528217	-.019564	.0112574	89.40989	.8471348
Stddev	.0085173	.002665	.004706	.005394	.0011207	.25156	.0005649
%RSD	43.51453	15.13220	.3079417	27.57040	9.955058	.2813611	.0666815

#1	.0101955	-.019921	1.524214	-.017905	.0116584	89.21824	.8471241
#2	.0268285	-.014695	1.533401	-.015195	.0121225	89.31668	.8477049
#3	.0216967	-.018210	1.527035	-.025593	.0099914	89.69476	.8465753

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0028954	.0013134	1.231398	.1010051	.1728325	.0448791	126.2717
Stddev	.0001710	.0001330	.028965	.0012716	.0006863	.0030124	1.1339
%RSD	5.906771	10.12653	2.352168	1.258896	.3971067	6.712211	.8979605

#1	.0030828	.0014639	1.219852	.1021105	.1720464	.0452912	124.9677
#2	.0028556	.0012645	1.209986	.1012892	.1733126	.0476643	126.8226
#3	.0027478	.0012117	1.264354	.0996155	.1731384	.0416819	127.0250

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.720151	2.325499	.0414069	-.019756	.4253552	.2773552	.1551472
Stddev	.026691	.036693	.0005725	.000600	.2629336	.0178730	.0023278
%RSD	.7174721	1.577836	1.382727	3.038936	61.81505	6.444083	1.500404

#1	3.694861	2.354225	.0416241	-.019396	.1976930	.2877514	.1567022
#2	3.748051	2.284165	.0418391	-.020449	.7131447	.2567174	.1562685
#3	3.717541	2.338108	.0407575	-.019423	.3652280	.2875967	.1524709

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.312630	.8975605	.1081758	.0012355	1.327226	9.873650	-.003690
Stddev	.101948	.0043008	.0005182	.0003730	.011194	.028893	.002131
%RSD	3.077565	.4791666	.4790453	30.19503	.8434385	.2926298	57.75488

#1	3.315280	.8946291	.1078183	.0011055	1.318293	9.883071	-.002119
#2	3.209382	.9024978	.1079389	.0009448	1.339783	9.896657	-.002835
#3	3.413227	.8955545	.1087701	.0016561	1.323602	9.841222	-.006115

Sample Name: P4753-05 Acquired: 11/14/2024 7:45:20 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D54 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.449932	.0251374	.0192300
Stddev	.007543	.0013990	.0001835
%RSD	.5202465	5.565553	.9540180
#1	1.443988	.0235435	.0190419
#2	1.447392	.0261622	.0194085
#3	1.458418	.0257065	.0192396

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1108.432	29332.88	2926.475	979.8629	1805.660
Stddev	1.049	166.44	6.361	8.1309	2.598
%RSD	.0946552	.5674099	.2173668	.8298024	.1438580
#1	1107.273	29141.79	2933.253	972.3330	1804.916
#2	1108.704	29446.17	2920.635	978.7712	1803.516
#3	1109.318	29410.68	2925.538	988.4846	1808.549

Sample Name: P4753-06 Acquired: 11/14/2024 7:49:48 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D56 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.110583	-.056205	3.716182	-.064370	.0255014	127.1718	.6416115
Stddev	.012507	.001684	.010418	.005156	.0014955	.3024	.0013106
%RSD	11.30993	2.996576	.2803460	8.010505	5.864463	.2377775	.2042635

#1	-.124918	-.056775	3.716534	-.069069	.0242265	126.8398	.6411033
#2	-.104927	-.057531	3.705592	-.065189	.0251302	127.2440	.6406311
#3	-.101902	-.054310	3.726420	-.058854	.0271476	127.4315	.6431000

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0045082	.0034867	4.771668	.1105811	.1319407	.1696861	407.5740
Stddev	.0000750	.0000644	.035069	.0033001	.0007975	.0014760	1.0391
%RSD	1.664725	1.848531	.7349476	2.984345	.6044095	.8698504	.2549465

#1	.0044865	.0034337	4.777331	.1143882	.1320155	.1681856	406.4445
#2	.0045917	.0035585	4.803562	.1088196	.1311085	.1697361	407.7881
#3	.0044464	.0034680	4.734112	.1085355	.1326981	.1711364	408.4893

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.113933	11.15539	.0517883	-.033112	1.608435	1.176204	.2246633
Stddev	.018511	.08689	.0011173	.001087	.106930	.010693	.0032181
%RSD	.5944587	.7789372	2.157333	3.283388	6.648096	.9090696	1.432406

#1	3.124375	11.17363	.0527987	-.031858	1.554311	1.187887	.2283589
#2	3.092561	11.23171	.0505885	-.033704	1.731607	1.173820	.2231508
#3	3.124865	11.06082	.0519777	-.033775	1.539388	1.166905	.2224800

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	13.49162	2.217262	.3532993	.0010412	1.600944	11.78916	.0139378
Stddev	.13545	.010760	.0005079	.0004523	.004458	.01789	.0010574
%RSD	1.003978	.4852731	.1437600	43.44321	.2784452	.1517489	7.586874

#1	13.34140	2.206603	.3527224	.0013128	1.605940	11.79067	.0127664
#2	13.60446	2.217065	.3536793	.0005190	1.597372	11.77056	.0148219
#3	13.52899	2.228119	.3534962	.0012917	1.599520	11.80624	.0142250

Sample Name: P4753-06 Acquired: 11/14/2024 7:49:48 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D56 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	9.901287	.0143245	.0345255
Stddev	.028333	.0000582	.0000469
%RSD	.2861531	.4065222	.1358506
#1	9.872188	.0143908	.0345636
#2	9.902887	.0143012	.0345397
#3	9.928786	.0142816	.0344731

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1014.160	27117.67	2719.015	903.5324	1752.536
Stddev	1.032	365.19	5.537	14.7366	3.514
%RSD	.1017876	1.346680	.2036408	1.630995	.2005169
#1	1015.340	26697.17	2723.107	886.7896	1752.146
#2	1013.717	27300.61	2721.224	909.2722	1756.229
#3	1013.423	27355.24	2712.715	914.5355	1749.233

Sample Name: P4753-07 Acquired: 11/14/2024 7:54:15 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D57 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.080545	-.065730	2.699946	-.060127	.0238252	189.2818	1.109140
Stddev	.005544	.006549	.016309	.007227	.0020972	.4815	.000211
%RSD	6.883238	9.963075	.6040630	12.02035	8.802307	.2543738	.0190054

#1	-.082930	-.061858	2.685047	-.055957	.0260775	189.5688	1.109149
#2	-.084498	-.073291	2.697420	-.068472	.0234693	188.7259	1.109346
#3	-.074208	-.062040	2.717371	-.055951	.0219287	189.5507	1.108925

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0054366	.0046967	.1548163	.1555601	.1923545	.1590930	361.4159
Stddev	.0001540	.0001611	.0320443	.0027934	.0016780	.0012234	1.0161
%RSD	2.832744	3.428964	20.69829	1.795681	.8723512	.7689991	.2811309

#1	.0054286	.0046084	.1906930	.1523347	.1905150	.1589227	362.3453
#2	.0052868	.0048825	.1447192	.1571964	.1938015	.1603927	360.3311
#3	.0055945	.0045990	.1290366	.1571492	.1927471	.1579637	361.5713

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.966747	28.90945	.1415024	-.032797	1.394619	.8069728	.2884644
Stddev	.014419	.18512	.0013058	.000899	.157948	.0031325	.0043098
%RSD	.4860242	.6403542	.9228248	2.740821	11.32554	.3881824	1.494046

#1	2.957031	28.89726	.1402314	-.033834	1.227027	.8090245	.2835042
#2	2.959895	28.73072	.1414354	-.032324	1.540723	.8033671	.2912926
#3	2.983314	29.10037	.1428404	-.032233	1.416108	.8085268	.2905965

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	41.84870	1.462989	.3123139	.0023930	2.293268	10.21192	.0134977
Stddev	.15356	.014663	.0009803	.0008374	.003689	.06570	.0021207
%RSD	.3669512	1.002281	.3138719	34.99177	.1608790	.6433472	15.71197

#1	42.02513	1.448326	.3133350	.0029514	2.295312	10.18913	.0153588
#2	41.74515	1.462988	.3122265	.0027975	2.289009	10.16065	.0139455
#3	41.77581	1.477652	.3113803	.0014302	2.295484	10.28598	.0111888

Sample Name: P4753-07 Acquired: 11/14/2024 7:54:15 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D57 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	15.07389	.0250138	.0122900
Stddev	.03421	.0008339	.0000928
%RSD	.2269781	3.333556	.7553832
#1	15.10288	.0250399	.0122853
#2	15.03616	.0241672	.0123851
#3	15.08264	.0258343	.0121996

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1124.123	29993.63	3019.488	998.2137	1708.918
Stddev	.383	299.23	18.960	12.0887	4.718
%RSD	.0340336	.9976592	.6279294	1.211035	.2760595
#1	1124.075	30339.10	3003.053	1011.964	1714.268
#2	1123.766	29815.57	3040.232	989.257	1707.129
#3	1124.527	29826.22	3015.179	993.420	1705.356

Sample Name: P4753-08 Acquired: 11/14/2024 7:58:44 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D58 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0123909	-.012971	1.527369	-.013289	.0085179	65.30233	.6167036
Stddev	.0029708	.004734	.001927	.005675	.0020512	.29521	.0014888
%RSD	23.97590	36.49765	.1261813	42.70836	24.08105	.4520733	.2414162

#1	.0092185	-.010040	1.525312	-.016447	.0108814	65.64042	.6181772
#2	.0151075	-.018432	1.529133	-.016682	.0074689	65.17100	.6167337
#3	.0128468	-.010440	1.527662	-.006737	.0072033	65.09557	.6152000

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0019222	.0014926	1.446115	.0770563	.0605053	.0916021	96.84853
Stddev	.0000123	.0001208	.018966	.0009949	.0006418	.0064596	.10474
%RSD	.6386409	8.094357	1.311545	1.291162	1.060798	7.051831	.1081435

#1	.0019082	.0013561	1.437316	.0762409	.0609775	.0890624	96.92716
#2	.0019276	.0015359	1.467883	.0767631	.0607639	.0989456	96.72964
#3	.0019309	.0015857	1.433147	.0781648	.0597745	.0867983	96.88878

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.308783	1.868094	.0306643	-.016874	.6935813	.1936524	.2771145
Stddev	.007701	.112906	.0007614	.000117	.0608891	.0084823	.0003899
%RSD	.3335674	6.043914	2.483113	.6947438	8.778940	4.380192	.1407124

#1	2.317010	1.995084	.0304252	-.016804	.6232733	.1856044	.2770972
#2	2.307593	1.830151	.0315166	-.016808	.7284690	.2025109	.2767335
#3	2.301746	1.779047	.0300511	-.017009	.7290017	.1928418	.2775128

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.507442	.6599368	.0827356	.0009639	1.050355	7.426813	-.002482
Stddev	.145960	.0036552	.0010303	.0009524	.010671	.025051	.001671
%RSD	5.821069	.5538718	1.245262	98.80534	1.015981	.3373063	67.30570

#1	2.647600	.6586356	.0838995	-.000107	1.043669	7.454601	-.003009
#2	2.356301	.6571103	.0819405	.001715	1.062662	7.405961	-.003826
#3	2.518425	.6640646	.0823667	.001284	1.044733	7.419878	-.000612

Sample Name: P4753-08 Acquired: 11/14/2024 7:58:44 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D58 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.209110	.0154302	.0152679
Stddev	.006505	.0011563	.0000549
%RSD	.5380348	7.493674	.3596663
#1	1.216490	.0157445	.0152069
#2	1.204208	.0163968	.0153134
#3	1.206632	.0141492	.0152833

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1086.899	28770.99	2863.063	961.1403	1824.678
Stddev	.707	40.96	5.872	.5383	1.714
%RSD	.0650817	.1423720	.2050843	.0560038	.0939446
#1	1086.566	28796.97	2857.706	961.1665	1823.580
#2	1087.712	28792.22	2862.143	961.6650	1823.800
#3	1086.420	28723.77	2869.340	960.5894	1826.653

Sample Name: P4753-09 Acquired: 11/14/2024 8:03:14 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D59 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0078773	-.009526	.9541521	-.011975	.0079227	58.19338	.5491508
Stddev	.0035272	.001759	.0206075	.001219	.0024452	.16698	.0032558
%RSD	44.77634	18.46529	2.159772	10.17652	30.86364	.2869389	.5928889

#1	.0039954	-.011494	.9676021	-.012829	.0079003	58.26776	.5510177
#2	.0087510	-.008975	.9644269	-.012517	.0054887	58.31025	.5510435
#3	.0108856	-.008108	.9304273	-.010580	.0103791	58.00214	.5453913

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0020367	.0024461	3.093273	.0643060	.0563742	.0515066	91.11696
Stddev	.0001418	.0000575	.020449	.0010907	.0017791	.0049848	.48692
%RSD	6.964340	2.349161	.6610756	1.696070	3.155887	9.677918	.5343850

#1	.0020454	.0024086	3.070153	.0648289	.0574801	.0510572	91.50817
#2	.0021740	.0025122	3.108986	.0650368	.0573205	.0467617	91.27106
#3	.0018907	.0024174	3.100680	.0630523	.0543219	.0567009	90.57163

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.821392	3.333197	.0307244	-.017772	.6582641	.1773116	.3484884
Stddev	.004470	.082055	.0018805	.000419	.0683632	.0021256	.0029159
%RSD	.1584378	2.461738	6.120625	2.358912	10.38538	1.198768	.8367299

#1	2.823705	3.238551	.0327690	-.017946	.6020399	.1755046	.3505539
#2	2.816239	3.376691	.0303356	-.017294	.7343622	.1767768	.3497585
#3	2.824232	3.384348	.0290687	-.018077	.6383902	.1796535	.3451529

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.468243	.6569027	.0756340	.0009392	.7026515	8.472712	-.002886
Stddev	.018469	.0123273	.0006243	.0005978	.0144965	.038775	.000528
%RSD	.7482711	1.876573	.8253896	63.64742	2.063115	.4576428	18.30793

#1	2.476881	.6661128	.0757784	.0015592	.7016476	8.514292	-.003110
#2	2.480810	.6616966	.0761734	.0008923	.7176239	8.466303	-.003265
#3	2.447038	.6428986	.0749501	.0003663	.6886831	8.437541	-.002282

Sample Name: P4753-09 Acquired: 11/14/2024 8:03:14 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MC0D59 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.463685	.0131815	.0215875
Stddev	.007295	.0006424	.0002121
%RSD	.4984189	4.873575	.9823535
#1	1.465675	.0124533	.0217067
#2	1.469778	.0136680	.0217131
#3	1.455601	.0134231	.0213427

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1127.725	29826.61	2942.705	997.6114	1838.042
Stddev	11.593	138.13	13.519	7.7561	31.707
%RSD	1.028037	.4630934	.4594144	.7774694	1.725035
#1	1120.300	29778.49	2928.230	992.4477	1819.127
#2	1121.791	29718.99	2944.882	993.8561	1820.351
#3	1141.084	29982.36	2955.004	1006.530	1874.647

Sample Name: CCV082 Acquired: 11/14/2024 8:07:42 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV082 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.047408	4.944641	24.69943	4.802001	4.821591	394.4327	10.13105
Stddev	.028231	.024302	.06862	.014986	.006658	13.0337	.33426
%RSD	.5593071	.4914806	.2778073	.3120813	.1380970	3.304406	3.299400
#1	5.026837	4.927572	24.65736	4.795843	4.820971	379.3883	9.74521
#2	5.035794	4.933885	24.66232	4.791075	4.828538	402.3118	10.33297
#3	5.079593	4.972464	24.77861	4.819085	4.815264	401.5978	10.31496
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4889193	2.493313	395.1281	15.32747	2.500433	14.72105	395.7088
Stddev	.0149065	.003658	13.2575	.03096	.007397	.49260	12.8544
%RSD	3.048878	.1467077	3.355247	.2019820	.2958088	3.346216	3.248453
#1	.4717590	2.491139	379.8425	15.32899	2.496870	14.15412	380.8659
#2	.4986606	2.491264	403.4944	15.29578	2.495493	15.04449	403.1882
#3	.4963383	2.497536	402.0475	15.35764	2.508937	14.96453	403.0722
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	14.75500	391.9343	2.488877	1.237392	398.5753	2.425842	14.63921
Stddev	.51517	13.2636	.003015	.001522	12.7523	.088611	.11945
%RSD	3.491519	3.384139	.1211445	.1229865	3.199478	3.652778	.8159728
#1	14.16014	376.6254	2.486154	1.238876	383.8572	2.323906	14.50219
#2	15.05609	399.1992	2.488358	1.235835	406.3289	2.484461	14.69402
#3	15.04877	399.9782	2.492117	1.237467	405.5397	2.469160	14.72141
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	153.0823	4.985675	4.961218	4.788454	5.101714	4.882421	5.006170
Stddev	4.6471	.011889	.150846	.003923	.015460	.145834	.015872
%RSD	3.035699	.2384720	3.040513	.0819212	.3030400	2.986923	.3170529
#1	147.7210	4.971988	4.787309	4.792759	5.096277	4.715176	4.992855
#2	155.9589	4.993447	5.056621	4.787522	5.089706	4.983061	5.001921
#3	155.5669	4.991590	5.039724	4.785081	5.119158	4.949024	5.023734

Sample Name: CCV082 Acquired: 11/14/2024 8:07:42 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV082 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.880704	5.077410	5.036854
Stddev	.166317	.170383	.164819
%RSD	3.407648	3.355706	3.272256
#1	4.688687	4.880743	4.846712
#2	4.979635	5.180429	5.138972
#3	4.973789	5.171058	5.124878

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	773.0714	22572.21	2370.276	642.1099	1415.496
Stddev	.5398	44.17	72.985	5.3170	2.767
%RSD	.0698263	.1956612	3.079164	.8280582	.1954446
#1	772.4491	22563.61	2454.400	648.2054	1416.966
#2	773.3520	22620.04	2323.837	639.6985	1417.216
#3	773.4131	22532.98	2332.592	638.4258	1412.304

Sample Name: CCB082 Acquired: 11/14/2024 8:11:54 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB082 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0016133	.0004105	-.000597	-.004596	-.002123	.0072681	-.001677
Stddev	.0042764	.0024467	.002053	.002603	.001636	.0069438	.000371
%RSD	265.0799	596.0390	343.8798	56.62833	77.05442	95.53800	22.10060

#1	.0063650	-.001198	.000014	-.005309	-.003783	.0024110	-.001537
#2	-.001926	.003226	.001081	-.001711	-.002074	.0041719	-.001396
#3	.000401	-.000797	-.002885	-.006768	-.000512	.0152213	-.002097

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000040	.0000548	.0221808	-.000121	-.000198	-.003002	-.007023
Stddev	.000054	.0000382	.0054572	.000431	.000500	.002816	.008097
%RSD	135.3121	69.70222	24.60341	356.9196	252.0622	93.82430	115.2921

#1	.000015	.0000841	.0271153	-.000596	.000369	.000201	-.016300
#2	-.000041	.0000116	.0231075	-.000010	-.000578	-.004114	-.001373
#3	-.000094	.0000687	.0163195	.000244	-.000386	-.005092	-.003397

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.002270	.0152812	-.000649	-.000910	.1358694	-.011933	-.000885
Stddev	.001051	.0679496	.000143	.000894	.0479371	.011156	.000849
%RSD	46.30202	444.6612	22.03828	98.27316	35.28173	93.49027	95.91194

#1	-.003209	-.026639	-.000532	-.001864	.1364035	-.014836	-.001865
#2	-.002465	.093680	-.000606	-.000092	.1835373	.000388	-.000350
#3	-.001135	-.021197	-.000808	-.000773	.0876675	-.021351	-.000442

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0438118	-.001619	-.000183	-.000700	.0015103	.0004548	-.000837
Stddev	.0682118	.002341	.000765	.000523	.0037566	.0008599	.000218
%RSD	155.6928	144.6497	418.3151	74.70333	248.7288	189.0846	26.10113

#1	-.020133	-.000003	.000413	-.000432	-.001227	-.000356	-.001002
#2	.035958	-.000549	.000084	-.000365	.005793	.000364	-.000919
#3	.115610	-.004304	-.001045	-.001303	-.000035	.001356	-.000589

Sample Name: CCB082 Acquired: 11/14/2024 8:11:54 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v730) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB082 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.000446	-.002368	-.000156
Stddev	.001745	.001126	.000140
%RSD	391.5414	47.55210	90.12900
#1	-.001009	-.003667	-.000191
#2	.001511	-.001670	-.000275
#3	-.001840	-.001768	-.000001

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	948.8556	24876.45	2438.583	841.4578	1886.314
Stddev	3.0037	71.41	6.137	6.5464	6.214
%RSD	.3165567	.2870407	.2516438	.7779824	.3294370
#1	949.0377	24945.70	2434.814	843.0459	1888.248
#2	951.7641	24803.07	2435.271	834.2635	1891.331
#3	945.7650	24880.58	2445.664	847.0641	1879.363

Prep Standard - Chemical Standard Summary

Order ID : P4754

Test : Metals CLP4

Prepbatch ID : PB164831,

Sequence ID/Qc Batch ID: LB133447,

Standard ID :

MP83122,MP83134,MP83136,MP83137,MP83138,MP83139,MP83140,MP83141,MP83142,MP83143,MP83144,MP83145,MP83146,MP83147,MP83148,MP83149,

Chemical ID :

M5130,M5218,M5223,M5289,M5295,M5296,M5390,M5395,M5429,M5476,M5498,M5513,M5515,M5519,M5634,M5658,M5698,M5751,M5768,M5798,M5799,M5800,M5801,M5802,M5806,M5815,M5816,M5817,M5818,M5819,M5820,M5875,M5960,M5962,M5970,M5976,M5978,M5982,M5984,M5985,M5990,M5999,M6021,M6023,M6025,M6028,M6030,M6033,M6111,M6116,M6117,M6118,W3112,

Metals STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
169	1:1HNO3	MP83122	11/07/2024	12/07/2024	Janvi Patel	None	None	Sarabjit Jaswal
								11/07/2024

FROM 1000.00000ml of M6116 + 1000.00000ml of W3112 = Final Quantity: 2000.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
902	ICP AES CAL BLK (SO/ICB/CCB)	MP83134	10/30/2024	11/30/2024	Kareem Khairalla	None	None	Mohan Bera
								11/08/2024

FROM 125.00000ml of M6111 + 2350.00000ml of W3112 + 25.00000ml of M6117 = Final Quantity: 2500.000 ml

Metals STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
2480	ICP AES STD 6 ISM01.3	MP83136	10/30/2024	11/30/2024	Kareem Khairalla	None	None	Mohan Bera
FROM 4.00000ml of M5289 + 4.00000ml of M5498 + 4.00000ml of M5515 + 4.00000ml of M5768 + 4.00000ml of M5806 + 30.00000ml of MP83134 = Final Quantity: 50.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1004	ICPAES ISM01.2 (S5)	MP83137	10/30/2024	11/30/2024	Kareem Khairalla	None	None	Mohan Bera
FROM 0.25000ml of M5798 + 0.50000ml of M5429 + 0.50000ml of M5476 + 0.50000ml of M5815 + 0.50000ml of M5817 + 12.50000ml of M5519 + 12.50000ml of M5698 + 12.50000ml of M5806 + 12.50000ml of M5819 + 13.75000ml of M5751 + 14.50000ml of M5515 + 14.50000ml of M5658 + 14.50000ml of M6033 + 2.00000ml of M5513 + 22.50000ml of M5498 + 22.50000ml of M5768 + 5.00000ml of M5296 + 5.00000ml of M5395 + 5.00000ml of M5802 + 5.00000ml of M5818 + 5.00000ml of M5875 + 303.50000ml of MP83134 = Final Quantity: 500.000 ml								

Metals STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1005	ICPAES ISM01.2(S4)	MP83138	10/30/2024	11/30/2024	Kareem Khairalla	None	None	Mohan Bera 11/08/2024

FROM 250.00000ml of MP83134 + 250.00000ml of MP83137 = Final Quantity: 500.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1007	ICPAES ISM01.2(S3)	MP83139	10/30/2024	11/30/2024	Kareem Khairalla	None	None	Mohan Bera 11/08/2024

FROM 25.00000ml of MP83137 + 75.00000ml of MP83134 = Final Quantity: 100.000 ml

Metals STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1008	ICPAES ISM01.2(S2)	MP83140	10/30/2024	11/30/2024	Kareem Khairalla	None	None	Mohan Bera
								11/08/2024

FROM 12.50000ml of MP83137 + 87.50000ml of MP83134 = Final Quantity: 100.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
994	ICPAES ISM01.2 S1 (CONC.)	MP83141	10/30/2024	11/30/2024	Kareem Khairalla	None	None	Mohan Bera
								11/08/2024

FROM 0.02000ml of M5815 + 0.03000ml of M5429 + 0.10000ml of M5798 + 0.10000ml of M6028 + 0.14000ml of M5799 + 0.20000ml of M5476 + 0.20000ml of M5515 + 0.20000ml of M5658 + 0.20000ml of M5801 + 0.20000ml of M5817 + 0.20000ml of M5976 + 0.20000ml of M6025 + 0.20000ml of M6030 + 0.30000ml of M5698 + 0.40000ml of M6033 + 0.50000ml of M5751 + 0.50000ml of M6023 + 0.70000ml of M5962 + 0.80000ml of M5960 + 1.00000ml of M5800 + 1.00000ml of M6021 + 1.20000ml of M5802 + 1.20000ml of M5819 + 10.00000ml of M5498 + 10.00000ml of M5519 + 10.00000ml of M5768 + 10.00000ml of M5806 + 10.00000ml of M5818 + 2.00000ml of M5978 + 4.00000ml of M5390 + 34.24000ml of MP83134 = Final Quantity: 100.000 ml

Metals STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1003	ICPAES ISM01.2 S1	MP83142	10/30/2024	11/30/2024	Kareem Khairalla	None	None	Mohan Bera
								11/08/2024

FROM 0.50000ml of MP83141 + 99.50000ml of MP83134 = Final Quantity: 100.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
2054	ICV-ICPAES	MP83143	10/30/2024	11/30/2024	Kareem Khairalla	None	None	Mohan Bera
								11/08/2024

FROM 0.50000ml of M5218 + 0.50000ml of M5816 + 0.50000ml of M5820 + 0.50000ml of M5970 + 0.50000ml of M5982 + 10.00000ml of M5295 + 87.50000ml of MP83134 = Final Quantity: 100.000 ml

Metals STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
904	ICP AES ICSA SOLN	MP83144	10/30/2024	11/19/2024	Kareem Khairalla	None	None	Mohan Bera
								11/08/2024

FROM 25.00000ml of M5130 + 225.00000ml of MP83134 = Final Quantity: 250.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
905	ICP AES ICSAB SOLN	MP83145	10/30/2024	11/19/2024	Kareem Khairalla	None	None	Mohan Bera
								11/08/2024

FROM 25.00000ml of M5130 + 25.00000ml of M5223 + 200.00000ml of MP83134 = Final Quantity: 250.000 ml

Metals STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1119	ICPAES ISM01.2(CCV)	MP83146	10/30/2024	11/30/2024	Kareem Khairalla	None	None	Mohan Bera
FROM 0.75000ml of M5498 + 0.75000ml of M5768 + 1.22500ml of M6033 + 1.25000ml of M5515 + 1.25000ml of M5806 + 19.77500ml of MP83134 + 25.00000ml of MP83137 = Final Quantity: 50.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
921	ICPAES SPIKE SOL#6	MP83147	10/30/2024	11/30/2024	Kareem Khairalla	None	None	Mohan Bera
FROM 2.50000ml of M5962 + 50.00000ml of M5990 + 50.00000ml of M5999 + 147.50000ml of MP83134 = Final Quantity: 250.000 ml								

Metals STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
919	ICP AES INTERNAL STD	MP83148	10/30/2024	11/30/2024	Kareem Khairalla	None	None	Mohan Bera 11/08/2024
FROM 1.00000ml of M5984 + 10.00000ml of M5985 + 1969.00000ml of W3112 + 20.00000ml of M6117 = Final Quantity: 2000.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
903	ICP AES RINSE SOLN	MP83149	10/30/2024	11/30/2024	Kareem Khairalla	None	None	Mohan Bera 11/08/2024
FROM 200.00000ml of M6117 + 9800.00000ml of W3112 = Final Quantity: 10000.000 ml								

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	11/19/2024	05/20/2024 / jaswal	04/20/2021 / bin	M5130

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CHEM-QC-4 / CHEM-QC-4, Second Source, 1000 ug/ml, B, Mo, Si, Sn, Ti	S2-MEB711674	11/02/2026	07/01/2022 / bin	09/10/2021 / bin	M5218

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
EPA	PART B / ICSAB (ICP) STOCK SOLN	ICSB-0710	11/19/2024	05/20/2024 / jaswal	04/20/2021 / bin	M5223

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58113 / Aluminum (Al) 10,000PPM	070622	07/06/2025	09/02/2022 / jaswal	07/12/2022 / jaswal	M5289

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
EPA	ICV-1 / ICV (ICP/ICPMS) STOCK SOLN	ICV-1014	02/05/2025	08/07/2024 / jaswal	02/20/2020 / bin	M5295

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

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57056 / Ba, 1000 PPM, 125 ml	072122	07/21/2025	08/07/2024 / jaswal	09/18/2022 / bin	M5390

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CLPP-CAL-3 / CLP CAL SOLUTION #3, 125mL	T2-MEB714159	01/13/2027	01/30/2024 / bin	09/19/2022 / bin	M5395

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57103 / Li, 10000 PPM, 125 ml	070622	07/06/2025	01/30/2023 / bin	01/26/2023 / bin	M5429

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57138 / Sr, 10000 PPM, 125 ml	082922	08/09/2025	07/29/2024 / jaswal	03/16/2023 / jaswal	M5476

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58120 / Ca, 10000 PPM, 500 ml	031523	03/15/2026	08/15/2023 / jaswal	03/17/2023 / bin	M5498

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	061522	06/15/2025	03/19/2023 / bin	03/17/2023 / bin	M5513

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58126 / Fe, 10000 PPM, 500 ml	092122	09/21/2025	08/01/2024 / Jaswal	03/17/2023 / bin	M5515

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	1403 / Hydrogen Peroxide, 30% 1 gal	820803	02/03/2025	04/18/2024 / jaswal	08/03/2022 / Al-Terek	M5634

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.	58025 / Mn, 1000 PPM, 500 ml	102623	10/26/2026	04/18/2024 / jaswal	10/27/2023 / jaswal	M5698

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

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58112 / Mg, 10000 PPM, 500 ml	091823	09/18/2026	01/08/2024 / bin	01/03/2024 / bin	M5768

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

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

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

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57051 / Sb, 1000 PPM, 125 ml	120523	12/05/2026	08/07/2024 / jaswal	01/03/2024 / jaswal	M5802

CHEMICAL RECEIPT LOG BOOK

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

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57016 / S, 1000 PPM, 125 ml	122923	12/29/2026	05/20/2024 / Jaswal	02/09/2024 / jaswal	M5816

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57014 / Si, 1000 PPM, 125 ml	122023	12/20/2026	03/06/2024 / jaswal	02/09/2024 / jaswal	M5818

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58030 / Zinc, Zn, 500 ml, 1000 PPM	111623	11/16/2026	03/20/2024 / jaswal	02/09/2024 / jaswal	M5819

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57015 / P, 1000 PPM, 125 ml	091123	09/11/2026	05/01/2024 / jaswal	02/09/2024 / jaswal	M5820

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CLPP-CAL-1 / CLP CAL SOLUTION #1, 125mL	T2-MEB714417	01/27/2027	04/19/2024 / jaswal	02/22/2024 / jaswal	M5875

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57028 / Ni, 1000 PPM, 125 ml	041124	04/11/2027	07/03/2024 / kareem	06/11/2024 / kareem	M5960

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57003 / Li, 1000 PPM, 125 ml	061224	06/21/2027	07/01/2024 / Jaswal	07/01/2024 / Jaswal	M5970

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGMO1-1 / MOLYBDENUM 125mL 1000ug/mL	T2-MO720876	07/17/2027	08/07/2024 / jaswal	02/22/2024 / Jaswal	M5976

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGTI1-1 / TITANIUM 125mL 1000ug/mL	T2-TI719972	06/17/2027	08/07/2024 / jaswal	02/22/2024 / Jaswal	M5978

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57038 / Sr, 1000 PPM, 125 ml	031524	03/15/2027	07/01/2024 / Jaswal	06/11/2024 / Jaswal	M5982

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGY10-1 / YTTRIUM 125mL 10,000ug/mL	V2-Y740548	02/20/2029	08/05/2024 / kareem	06/14/2024 / Jaswal	M5984

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-SPK-5 / CLP Spike Standard 5	V2-MEB742037	03/12/2029	10/04/2024 / Jaswal	02/22/2024 / Jaswal	M5990

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CLPP-SPK-1 / SOIL/WATER SPIKE SOLN 1, 125mL	T2-MEB721963	07/27/2027	09/04/2024 / Jaswal	02/22/2024 / kareem	M5999

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57023 / V, 1000 PPM, 125 ml	062424	06/24/2027	09/28/2024 / jaswal	08/05/2024 / Jaswal	M6021

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57081 / TI, 1000 PPM, 125 ml	0624724	06/27/2027	08/05/2024 / kareem	08/05/2024 / Jaswal	M6023

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57082 / Pb, 1000 PPM, 125 ml	061224	06/12/2027	08/05/2024 / Jaswal	08/05/2024 / Jaswal	M6025

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57048 / Cd, 1000 PPM, 125 ml	070124	07/01/2027	08/05/2024 / kareem	01/25/2019 / Jaswal	M6028

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58113 / Al, 10000 PPM, 500 ml	011623	01/16/2026	08/07/2024 / Jaswal	01/03/2024 / Jaswal	M6033

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9530-33 / Hydrochloric Acid, Instra-Analyzed (cs/6x2.5L)	22F0762009	05/09/2027	11/04/2024 / Eman	09/29/2024 / Janvi	M6111

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)	24B1362001	05/03/2025	11/04/2024 / Janvi	09/29/2024 / Eman	M6116

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)	24B1362001	05/06/2025	11/06/2024 / Janvi	09/29/2024 / Eman	M6117

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)	22E1662006	05/09/2025	11/09/2024 / Janvi	10/09/2024 / Janvi	M6118

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

Certificate of Analysis

R: 02/22/24 M5986, M5987, M5988, M5989, M5990

300 Technology Drive
 Christiansburg, VA 24073 USA
 inorganicventures.com

P: 800-669-6799/540-585-3030

F: 540-585-3012

info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

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



2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution
 Catalog Number: CLPP-SPK-5
 Lot Number: V2-MEB742037
 Matrix: 5% (v/v) HNO₃
 Value / Analyte(s):
 100 µg/mL ea:
 Antimony,
 50 µg/mL ea:
 Selenium, Thallium,
 Cadmium,
 40 µg/mL ea:
 Arsenic,
 20 µg/mL ea:
 Lead

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Antimony, Sb	100.0 ± 0.7 µg/mL	Arsenic, As	40.00 ± 0.26 µg/mL
Cadmium, Cd	49.99 ± 0.22 µg/mL	Lead, Pb	19.99 ± 0.09 µg/mL
Selenium, Se	50.00 ± 0.23 µg/mL	Thallium, Tl	50.00 ± 0.22 µg/mL

Density: 1.025 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
As	ICP Assay	3103a	100818
Cd	ICP Assay	3108	130116
Cd	EDTA	928	928
Cd	Calculated		See Sec. 4.2
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Pb	Calculated		See Sec. 4.2
Sb	ICP Assay	3102a	140911
Se	ICP Assay	3149	100901
Se	Calculated		See Sec. 4.2
Tl	ICP Assay	3158	151215
Tl	Calculated		See Sec. 4.2

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

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

6.2 For products attaining traceability through Inorganic Ventures' Primary Certified Reference Materials (PCRM™) see the Limited License to Use PCRM™ In the Inorganic Ventures Terms and Conditions of Sale, <https://www.inorganicventures.com/terms-and-conditions-sale>. 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

March 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

- **March 12, 2029**

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Joseph Burns
Custom VS Manager



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director





CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

57048
070124
Cadmium (Cd)

Solvent: 24002546 Nitric Acid

R: 815/24

Lot #

2% 40.0 Nitric Acid (mL)

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

<i>Aleah O'Brady</i>	
Formulated By:	Aleah O'Brady
	070124
<i>Pedro L. Rentas</i>	
Reviewed By:	Pedro L. Rentas
	070124

Compound

Lot
Number

Nominal
Conc. (µg/mL)

Purity
(%)

Uncertainty
(%)

Assay
(%)

Target
Weight (g)

Actual
Weight (g)

Actual
Conc. (µg/mL)

Expanded
Uncertainty
+/- (µg/mL)

CAS#

OSHA PEL (TWA)

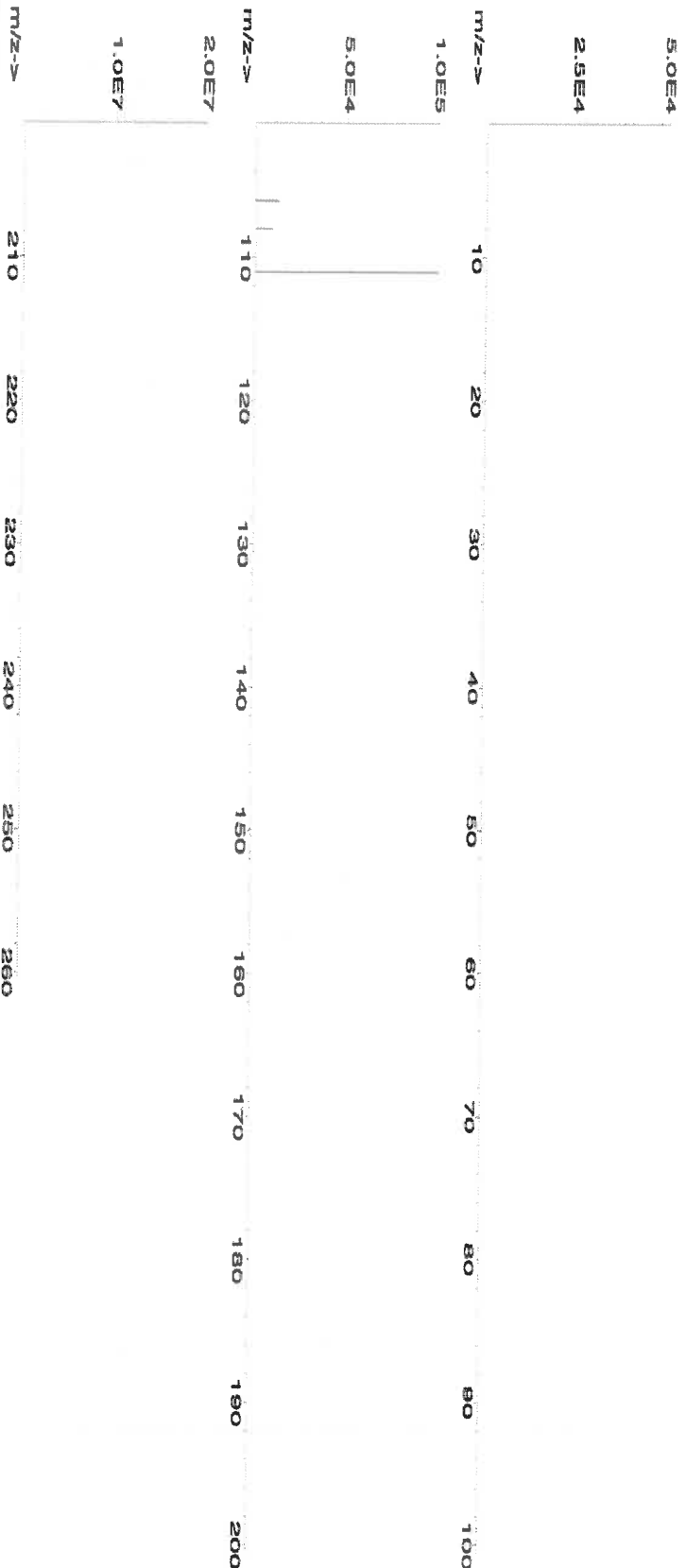
LD50

NIST
SRM

SDS Information

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

[1] Spectrum No.1 [12.514 sec]:\$8148.D# [Count] [Linear]





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

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

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

(T) = Target analyte

Physical Characterization:

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 certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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

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2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution
 Catalog Number: CHEM-CLP-4
 Lot Number: S2-MEB711673
 Matrix: 3% (v/v) HNO₃
 3% (v/v) HF
 Value / Analyte(s): 1 000 µg/mL ea:
 Boron, Molybdenum,
 Silicon, Tin,
 Titanium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Boron, B	1 000 ± 6 µg/mL	Molybdenum, Mo	1 000 ± 6 µg/mL
Silicon, Si	1 000 ± 7 µg/mL	Tin, Sn	1 000 ± 6 µg/mL
Titanium, Ti	1 000 ± 7 µg/mL		

Density: 1.030 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
B	ICP Assay	3107	110830
Mo	ICP Assay	3134	130418
Si	ICP Assay	3150	130912
Sn	ICP Assay	3161a	140917
Ti	ICP Assay	3162a	130925

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

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

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

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

November 02, 2021

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

11.2 Lot Expiration Date

- **November 02, 2026**

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



300 Technology Drive
 Christiansburg, VA 24073 USA
 inorganicventures.com

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

1.0 ACCREDITATION / REGISTRATION

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



2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution	
Catalog Number:	CLPP-CAL-1	
Lot Number:	T2-MEB714417	
Matrix:	5% (v/v) HNO ₃	
Value / Analyte(s):	5 000 µg/mL ea:	Potassium, Sodium,
	Calcium, Magnesium,	
	2 000 µg/mL ea:	Barium,
	Aluminum,	
	1 000 µg/mL ea:	
	Iron,	
	500 µg/mL ea:	Vanadium, Cobalt,
	Nickel, Zinc, Manganese,	
	250 µg/mL ea:	Copper,
	Silver,	
	200 µg/mL ea:	
	Chromium,	
	50 µg/mL ea:	
	Beryllium	

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	2 000 ± 7 µg/mL	Barium, Ba	2 000 ± 9 µg/mL
Beryllium, Be	50.00 ± 0.26 µg/mL	Calcium, Ca	5 000 ± 22 µg/mL
Chromium, Cr	200.0 ± 1.0 µg/mL	Cobalt, Co	500.0 ± 2.4 µg/mL
Copper, Cu	250.0 ± 1.0 µg/mL	Iron, Fe	1 000 ± 4 µg/mL
Magnesium, Mg	5 000 ± 20 µg/mL	Manganese, Mn	500.0 ± 2.0 µg/mL
Nickel, Ni	500.0 ± 2.2 µg/mL	Potassium, K	5 000 ± 19 µg/mL
Silver, Ag	250.0 ± 1.1 µg/mL	Sodium, Na	5 000 ± 18 µg/mL
Vanadium, V	499.7 ± 2.2 µg/mL	Zinc, Zn	500.0 ± 2.2 µg/mL

Density: 1.118 g/mL (measured at 20 ± 4 °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
Be	Calculated		See Sec. 4.2
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Co	ICP Assay	3113	190630
Co	EDTA	928	928
Cr	ICP Assay	3112a	170630
Cr	Calculated		See Sec. 4.2
Cu	ICP Assay	3114	121207
Cu	EDTA	928	928
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
V	IC Assay	3165	160906
V	EDTA	928	928
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

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

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

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 27, 2022

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

11.2 Lot Expiration Date

- **January 27, 2027**

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director





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
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2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution
Catalog Number: CLPP-CAL-3
Lot Number: T2-MEB714159
Matrix: 7% (v/v) HNO₃
Value / Analyte(s):
1 000 µg/mL ea:
Arsenic, Lead,
Selenium, Thallium,
500 µg/mL ea:
Cadmium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Arsenic, As	1 000 ± 8 µg/mL	Cadmium, Cd	500.0 ± 2.1 µg/mL
Lead, Pb	1 000 ± 5 µg/mL	Selenium, Se	1 000 ± 8 µg/mL
Thallium, Tl	1 000 ± 7 µg/mL		

Density: 1.043 g/mL (measured at 20 ± 4 °C)

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

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

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

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- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 13, 2022

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

11.2 Lot Expiration Date

- **January 13, 2027**

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director





CERTIFIED WEIGHT REPORT:

Part Number: 57182
Lot Number: 110923
Description: Lead (Pb)

Solvent: Nitric Acid
Lot #

24002546

2% 40.0 (mL) Nitric Acid

Expiration Date: 110926

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): 10000

NIST Test Number: 6UTB

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

Formulated By:	Lawrence Barry
	110923
Reviewed By:	Pedro L. Rentas
	110923

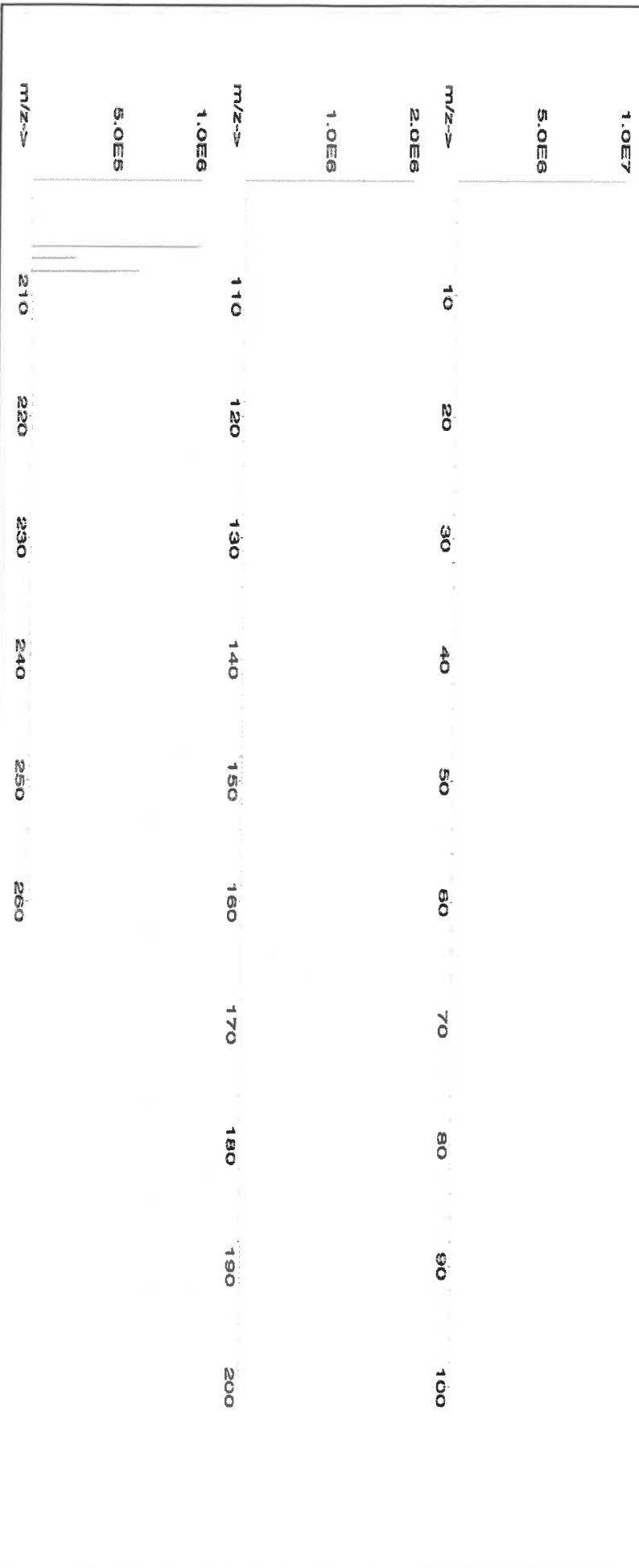
SDS Information

Compound

RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Lead(II) nitrate (Pb) IN029 PED12016A1 10000 99.999 0.10 62.5 32.0006 32.0040 10001.1 20.0 10099-74-8 0.05 mg/m3 Inhalant rat 83 mg/kg 3128

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





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

250

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

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

Physical Characterization:

(T)= Target analyte

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

Certified by:

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



QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
"An ISO 9001:2015 Certified Program"

Instructions for QATS Reference Material: ICP-AES ICS

**QATS LABORATORY INORGANIC REFERENCE MATERIAL
INTERFERENCE CHECK SAMPLE SET FOR ICP-AES (ICSA WITH ICSB)**

NOTE: These instructions are for advisory purposes only. If any apparent conflict exists between these instructions and the analytical protocol or your contract, disregard these instructions.

APPLICATION: For use with the CLP SFAM01.0 SOW and revisions.

CAUTION: Read instructions carefully before opening bottle(s) and proceeding with the analyses.

Contains Heavy Metals
HAZARDOUS MATERIAL

Safety Data Sheets
Available Upon Request

(A) SAMPLE DESCRIPTION

Enclosed is a set of one (1) or more bottles of Aqueous Reference Material, each composed of metals at various concentrations and prepared with nitrate salts and oxy-acids of the respective elements in a 5% nitric acid matrix. **For the reference material source in reporting ICSA and ICSAB mixture use "USEPA". For the reference material lot number for the ICSA use "ICSA-1211" and for the ICSAB mixture use "ICSA-1211+ICSB-0710".**

CAUTION: The bottle(s) should be protected from light during storage to ensure the stability of silver which is contained in the ICSB solution. The bottle(s) should be stored at room temperature. **Do not allow the solution(s) to freeze.**

(B) BREAKAGE OR MISSING ITEMS

Check the contents of the shipment carefully for any broken, leaking, or missing items. Check that the seal is intact on each bottle. Refer to the enclosed chain of custody record. Report any problems to Mr. Keith Strout, APTIM Federal Services, LLC, at (702) 895-8722. If requested, return the chain-of-custody record with appropriate annotations and signatures to the address provided below.

QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
APTIM Federal Services, LLC
2700 Chandler Avenue - Building C
Las Vegas, NV 89120

(C) ANALYSIS OF SAMPLES

The interference check sample set is to be used to verify inter-element and background correction factors of inductively-coupled plasma (ICP) spectrometers. This reference material set consists of two (2) concentrated solutions. The ICSA solution contains the four (4) interferent elements: Al, Ca, Fe, and Mg. The ICSB solution contains the analytes: Ag, As, Sb, Ba, Be,



Instructions for QATS Reference Material: ICP-AES ICS

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 HNO₃. 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 HNO₃. 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.

ICSA
M5126
M5127
M5128
M5129
M5130

ICSB
M5219
M5220
M5221
M5222
M5223

Certificate of Analysis

300 Technology Drive
 Christiansburg, VA 24073 USA
 inorganicventures.com

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

1.0 ACCREDITATION / REGISTRATION

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



2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution
 Catalog Number: CHEM-QC-4
 Lot Number: S2-MEB711674
 Matrix: 3% (v/v) HNO₃
 3% (v/v) HF
 Value / Analyte(s): 1 000 µg/mL ea:
 Boron, Molybdenum,
 Silicon, Tin,
 Titanium

Second Source: Whenever possible, this solution was manufactured from a second set of concentrates in our manufacturing facility.

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Boron, B	1 000 ± 7 µg/mL	Molybdenum, Mo	1 000 ± 5 µg/mL
Silicon, Si	1 000 ± 7 µg/mL	Tin, Sn	1 000 ± 5 µg/mL
Titanium, Ti	1 001 ± 6 µg/mL		

Density: 1.032 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
B	ICP Assay	3107	110830
Mo	ICP Assay	3134	130418
Si	ICP Assay	3150	130912
Sn	ICP Assay	3161a	140917
Ti	ICP Assay	3162a	130925

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

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

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

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

November 02, 2021

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

11.2 Lot Expiration Date

- **November 02, 2026**

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director





QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
"An ISO 9001:2015 Certified Program"

Instructions for QATS Reference Material: ICP-AES ICS

**QATS LABORATORY INORGANIC REFERENCE MATERIAL
INTERFERENCE CHECK SAMPLE SET FOR ICP-AES (ICSA WITH ICSB)**

NOTE: These instructions are for advisory purposes only. If any apparent conflict exists between these instructions and the analytical protocol or your contract, disregard these instructions.

APPLICATION: For use with the CLP SFAM01.0 SOW and revisions.

CAUTION: Read instructions carefully before opening bottle(s) and proceeding with the analyses.

Contains Heavy Metals
HAZARDOUS MATERIAL

Safety Data Sheets
Available Upon Request

(A) SAMPLE DESCRIPTION

Enclosed is a set of one (1) or more bottles of Aqueous Reference Material, each composed of metals at various concentrations and prepared with nitrate salts and oxy-acids of the respective elements in a 5% nitric acid matrix. **For the reference material source in reporting ICSA and ICSAB mixture use "USEPA". For the reference material lot number for the ICSA use "ICSA-1211" and for the ICSAB mixture use "ICSA-1211+ICSB-0710".**

CAUTION: The bottle(s) should be protected from light during storage to ensure the stability of silver which is contained in the ICSB solution. The bottle(s) should be stored at room temperature. **Do not allow the solution(s) to freeze.**

(B) BREAKAGE OR MISSING ITEMS

Check the contents of the shipment carefully for any broken, leaking, or missing items. Check that the seal is intact on each bottle. Refer to the enclosed chain of custody record. Report any problems to Mr. Keith Strout, APTIM Federal Services, LLC, at (702) 895-8722. If requested, return the chain-of-custody record with appropriate annotations and signatures to the address provided below.

QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
APTIM Federal Services, LLC
2700 Chandler Avenue - Building C
Las Vegas, NV 89120

(C) ANALYSIS OF SAMPLES

The interference check sample set is to be used to verify inter-element and background correction factors of inductively-coupled plasma (ICP) spectrometers. This reference material set consists of two (2) concentrated solutions. The ICSA solution contains the four (4) interferent elements: Al, Ca, Fe, and Mg. The ICSB solution contains the analytes: Ag, As, Sb, Ba, Be,



Instructions for QATS Reference Material: ICP-AES ICS

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 HNO₃. 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 HNO₃. 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.

ICSA
M5126
M5127
M5128
M5129
M5130

ICSB
M5219
M5220
M5221
M5222
M5223



M5289 R: 07/12/22
Certified Reference Material CRM

(34)



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

CERTIFIED WEIGHT REPORT:

Part Number: 58113
Lot Number: 070622
Description: Aluminum (Al)

Solvent: 20370011 Nitric Acid
Lot #

Expiration Date: 070625
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB

2% 40.0 Nitric Acid
(mL)

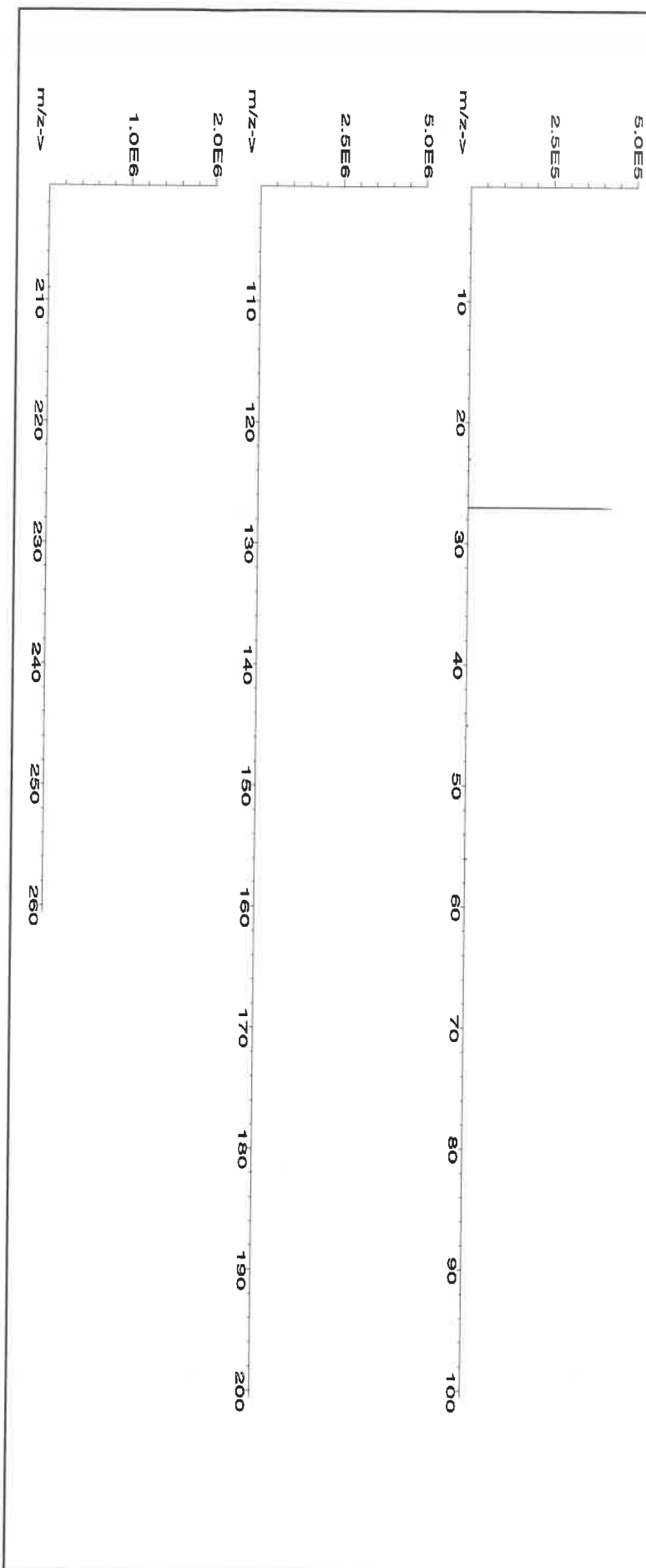
Weight shown below was diluted to (mL): 2000.02
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

Formulated By:	Lawrence Barry
	070622
Reviewed By:	Pedro L. Renteria
	070622

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

1. Aluminum nitrate nonahydrate (Al)	IN022	AUD012021A1	10000	99.999	0.10	7.10	281.6956	281.6977	10000.1	20.0	7784-27-2	2 mg/m3	or-tal 3671 mg/kg 3101a
--------------------------------------	-------	-------------	-------	--------	------	------	----------	----------	---------	------	-----------	---------	-------------------------

[1] Spectrum No. 1 [15.014 sec]:58113.D# [Count] [Linear]





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

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

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

(T) = Target analyte

Physical Characterization:

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

Certified by:

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



R: 4/20/21

Instructions for QATS Reference Material: *Inorganic ICV Solutions*

QATS LABORATORY INORGANIC REFERENCE MATERIAL
INITIAL CALIBRATION VERIFICATION SOLUTIONS
(ICV1, ICV5, AND ICV6)

NOTE: These instructions are for advisory purposes only. If any apparent conflict exists between these instructions and the analytical protocol or your contract, disregard these instructions.

APPLICATION: For use with the CLP SFAM01.0 SOW and revisions.

CAUTION: Read instructions carefully before opening bottle(s) and proceeding with the analyses.

Contains Metals in Dilute Acidic or
Cyanide in Basic Aqueous Solutions
HAZARDOUS MATERIAL

Safety Data Sheets
Available Upon Request

M5291
M15292
M15293
M15294
M15295

(A) SAMPLE DESCRIPTION

Enclosed is a set of one (1) or more Aqueous Inorganic Reference Materials containing various analyte concentrations. ICV1 and ICV5 are in a matrix of dilute nitric acid. ICV6 is in a matrix of dilute basic solution. **For the reference material source in reporting ICVs use "USEPA". For the reference material lot number for the ICV1, ICV5, and ICV6 solutions use "ICV1-1014", "ICV5-0415", and "ICV6-0400", respectively.**

(B) BREAKAGE OR MISSING ITEMS

Check the contents of the shipment carefully for any broken, leaking, or missing items. Check that the seal is intact on each bottle. Refer to the enclosed chain of custody record. Report any problems to Mr. Keith Strout, APTIM Federal Services, LLC, at (702) 895-8722. If requested, return the chain-of-custody record with appropriate annotations and signatures to the address provided below.

QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
APTIM Federal Services, LLC
2700 Chandler Avenue - Building C
Las Vegas, NV 89120

(C) ANALYSIS OF SAMPLES

The Initial Calibration Verification Solutions (ICVs) are to be used to evaluate the accuracy of the initial calibrations of ICP, AA, and Cyanide colorimetric instruments, and are to be used with the CLP SOWs and revisions. The values for each element in the ICVs are listed below in µg/L (ppb) for the resulting solution(s) after the dilution of the concentrate(s) according to the following instructions. Use Class 'A' glassware to prepare the solution(s).

ICV1-1014 For ICP-AES analysis, use a 10-fold dilution by pipetting 10 mL of the ICV1 concentrate into a 100 mL volumetric flask and dilute to volume with 2% (v/v) nitric acid.





Instructions for QATS Reference Material: *Inorganic ICV Solutions*

- ICV1-1014** For ICP-MS analysis, use a 50-fold dilution by pipetting 2 mL of the ICV1 concentrate into a 100 mL volumetric flask and dilute to volume with 1% (v/v) nitric acid.
- ICV5-0415** For the cold vapor analysis of mercury by AA, use a 100-fold dilution by pipetting 1 mL of the ICV5 concentrate into a 100 mL volumetric flask and dilute to volume with 2% (v/v) nitric acid. The ICV5 concentrate is prepared in 0.05% (w/v) $K_2Cr_2O_7$ and 5% (v/v) nitric acid.
- ICV6-0400** For the analysis of cyanide, use a 100-fold dilution by pipetting 1 mL of the ICV6 concentrate into a 100 mL volumetric flask and dilute to volume with Type II water. Distill this solution along with the samples before analysis. The cyanide concentrate is prepared from $K_3Fe(CN)_6$, Type II water, and 0.1 % sodium hydroxide, and will decompose rapidly if exposed to light.

NOTE: USE TYPE II WATER AND HIGH-PURITY ACIDS FOR ALL DILUTIONS.

(D) CERTIFIED CONCENTRATIONS OF QATS ICV1, ICV5, AND ICV6 SOLUTIONS

ICV1-1014		
Element	Concentration (µg/L) (after 10-fold dilution)	Concentration (µg/L) (after 50-fold dilution)
Al	2500	500
Sb	1000	200
As	1000	200
Ba	520	100
Be	510	100
Cd	510	100
Ca	10000	2000
Cr	520	100
Co	520	100
Cu	510	100
Fe	10000	2000
Pb	1000	200
Mg	6000	1200
Mn	520	100
Ni	530	110
K	9900	2000
Se	1000	200
Ag	250	50
Na	10000	2000
Tl	1000	210
V	500	100
Zn	1000	200

ICV5-0415		ICV6-0400	
Element	Concentration (µg/L) (after 100-fold dilution)	Analyte	Concentration (µg/L) (after 100-fold dilution)
Hg	4.0	CN ⁻	99



R-09/18/22 (RH)
Certified Reference Material CRM

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

CERTIFIED WEIGHT REPORT:

Part Number: 57056
Lot Number: 072122
Description: Barium (Ba)

Solvent: 20510011 Nitric Acid

M5387 - M5389 - M5390 - M5391 - M5392

Expiration Date: 072125
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

2% 40.0 (mL) Nitric Acid

Weight shown below was diluted to (mL): 2000.02 0.058 Balance Uncertainty
5E-05 Flask Uncertainty

<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
Reviewed By:	<i>Pedro L. Rentes</i>
	072122

SDS Information									
Compound	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)
1. Barium nitrate (Ba)	IN023 BA022019A1	1000	99.899	0.10	52.3	3.82417	3.82426	1000.0	2.0

1. Barium nitrate (Ba) IN023 BA022019A1 1000 99.899 0.10 52.3 3.82417 3.82426 1000.0 2.0 10022-31-8 0.5 mg/m3 or 1st 355 mg/kg 31044

[1] Spectrum No. 1 [12.514 sec]:58156.D# [Count] [Linear]





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

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

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

(T) = Target analyte

Physical Characterization:

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

Certified by:

Ben. P. R.

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
* Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.

* All standard containers are meticulously cleaned prior to use.

- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified ($\pm 0.5\%$) of the stated concentration.

* Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.

All Standards should be stored with caps tight and under appropriate laboratory conditions.

Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



Certified Reference Material CRM

M5429 R1 0126/23 (B)

CERTIFIED WEIGHT REPORT:

Part Number: 57103
Lot Number: 070622
Description: Lithium (Li)

Expiration Date: 070625
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB

Weight shown below was diluted to (mL): 1000.12

Solvent: 20510011 Nitric Acid

2% 20.0 Nitric Acid (mL)

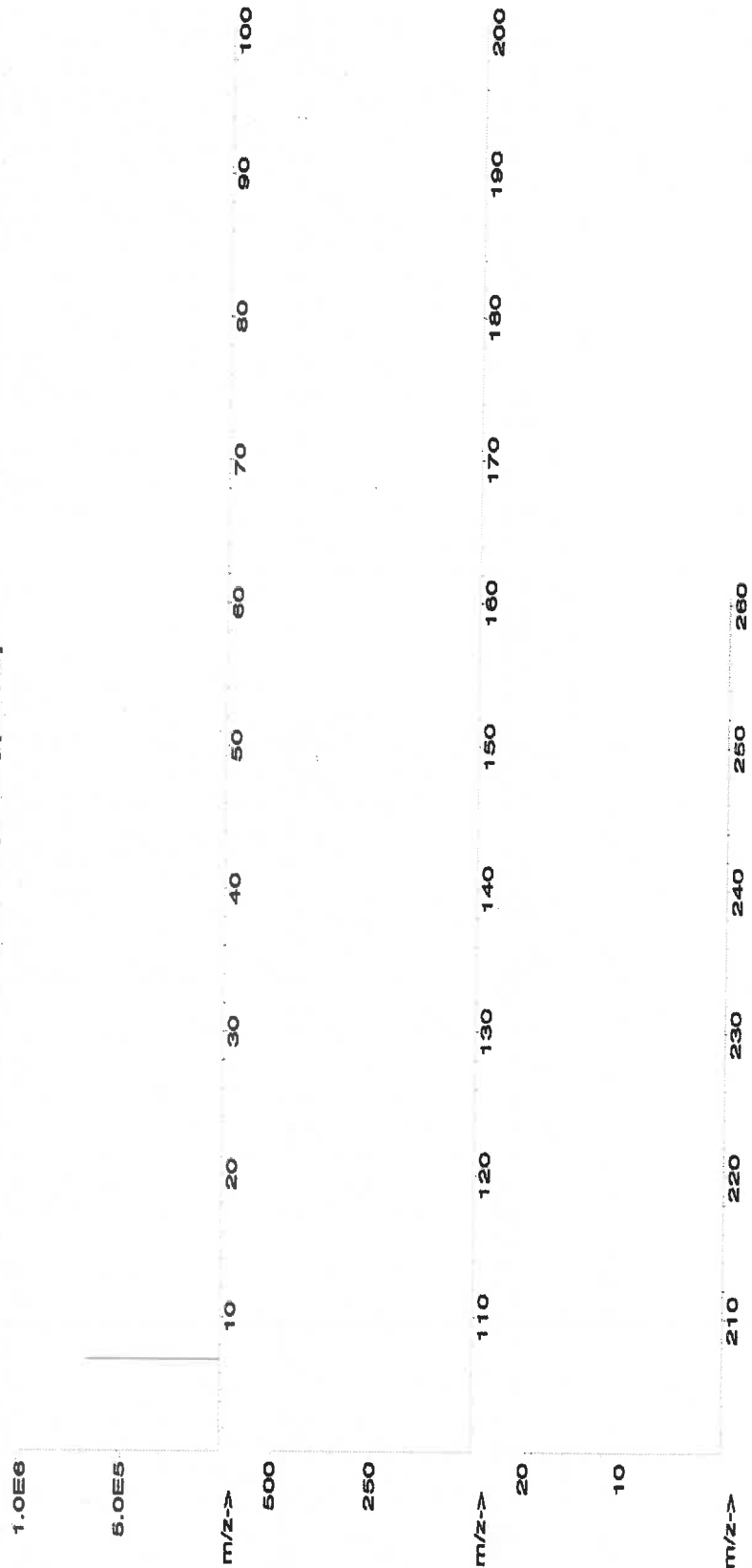
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

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

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

1. Lithium nitrate (Li)	IN019	L2042019A1	10000	99.999	0.10	10.0	100.0134	100.0173	10000.4	20.0	7790-69-4	5 mg/m3	of-rat 1426 mg/kg
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[1] Spectrum No.1 [9.619 sec]:58103.D# [Count] [Linear]



264



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	<0.2	Ho	<0.02	La	<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	<0.01	Mg	<0.02	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	<0.2	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

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



CERTIFIED WEIGHT REPORT:

Part Number:

Lot Number: 031523

Description:

Calcium (Ca)

Expiration Date:

031526

Recommended Storage: Ambient (20 °C)

10000

NIST Test Number:

6UTB

Weight shown below was diluted to (mL): 3000.41

5E-05 Balance Uncertainty

0.058 Flask Uncertainty

卷一

Solvent: 21110221 Nitric Acid

Nitric Acid

2% Nitric Acid

Nitric Acid

(mL)

(mL)

<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
<i>Pedro L. Rentas</i>	
Reviewed By:	Pedro L. Rentas
	031523

SDS Information

Expanded

Uncertainty

Actual

Actual

Target

Assay

Uncer

100

2

2.

1

2

100

1. Calcium carbonate (Ca)	IN014 CAD072022A1	10000	99.999	0.10	39.9	75.1990	75.2093	10001.4	20.0	471-34-1	5 mg/m3	ort-rat >2000mg/kg 3109a
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[1] Spectrum No.1 [12.514 sec]:58120.D# [Count] [Linear]



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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	T	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Tc	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Ti	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.2	Fe	<0.02	Hg	<0.2	P	<0.02	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	<0.2	Ta	<0.02	Tl	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

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

07



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	<0.2	Fe	<0.02	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pr	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

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

Certified by:

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

NO CO

CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

58126
092122
Iron (Fe)

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

092125
Ambient (20 °C)
10000
6UTB

Weight shown below was diluted to (mL):

5000.1

Solvent: 20510011 Nitric Acid

7.0% 350.0 Nitric Acid (mL)

5E-05 Balance Uncertainty
0.12 Flask Uncertainty

Formulated By:	Giovanni Esposito	092122
Reviewed By:	Pedro L. Rentas	092122

Expanded
Uncertainty

SDS Information

(Solvent Safety Info. On Attached pg.)
LD50

CAS#

OSHA PEL (TWA)

SRM

Actual Weight (g)

Actual Conc. (µg/mL)

Target Weight (g)

Assay (%)

Purity (%)

Nominal Conc. (µg/mL)

Lot Number

RM#

Compound

1. Iron (Fe)

IN346 2224912-500

10000

99.985

0.10

100.0

50.0034

50.0111

10001.5

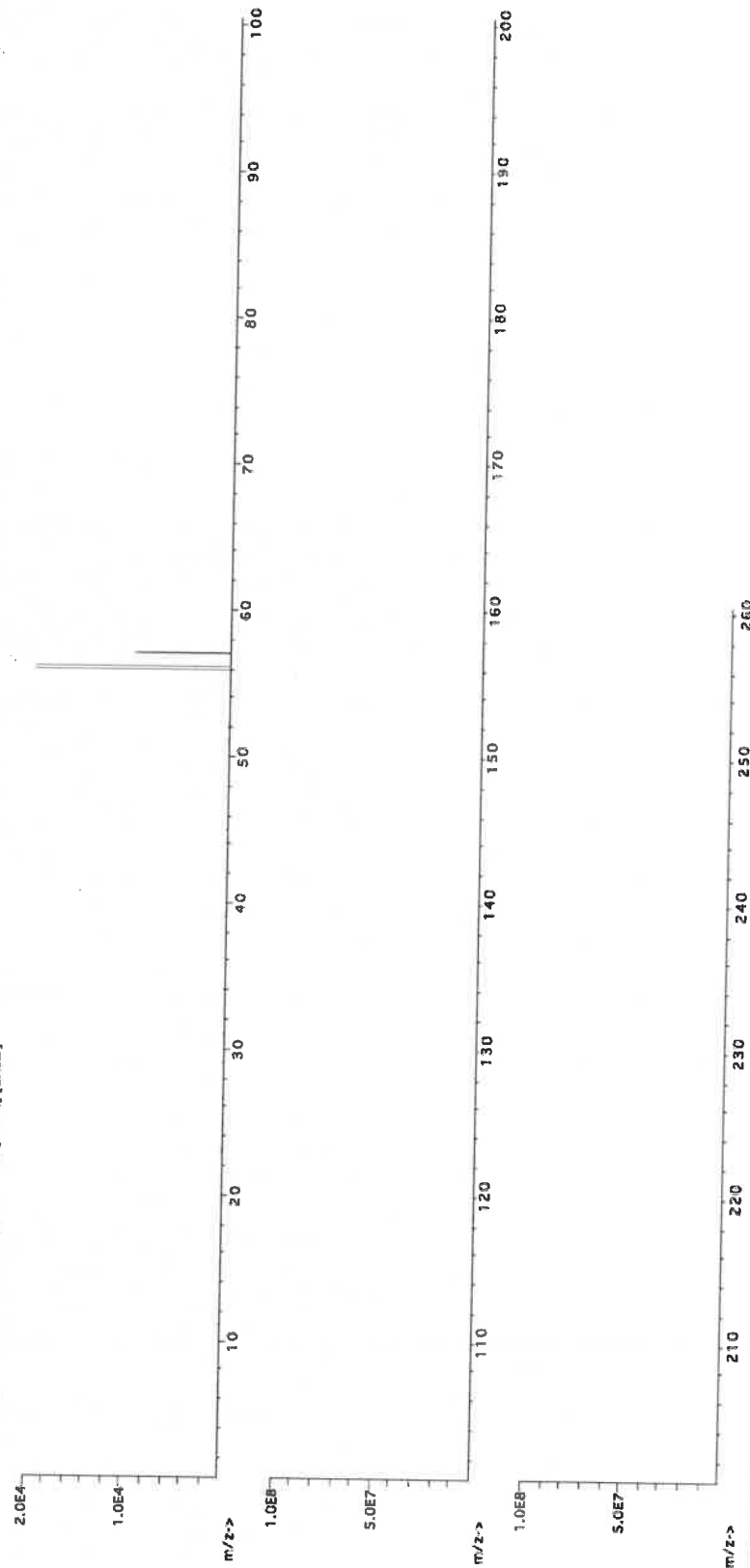
20.0

7439-88-6

5 mg/m3

orl-rat 7500mg/kg 3126a

[1] Spectrum No.1 [30.763 sec]:58126.D# [Count] [Linear]



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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.10	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	La	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.02	Os	<0.02	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	<0.05	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.10	Ge	<0.10	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.05
B	<0.02	Cu	<0.10	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

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

Certified by:

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

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Certified Reference Material CRM

CERTIFIED WEIGHT REPORT:

Part Number: **58119**
Lot Number: **120822**
Description: **Potassium (K)**

Solvent: 20510011 Nitric Acid

Lot #

Giovanni Esposito

Formulated By: Giovanni Esposito 120822

Expiration Date: 120825
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB

2% 60.0 (mL) Nitric Acid

Pedro L. Renteria

Reviewed By: Pedro L. Renteria 120822

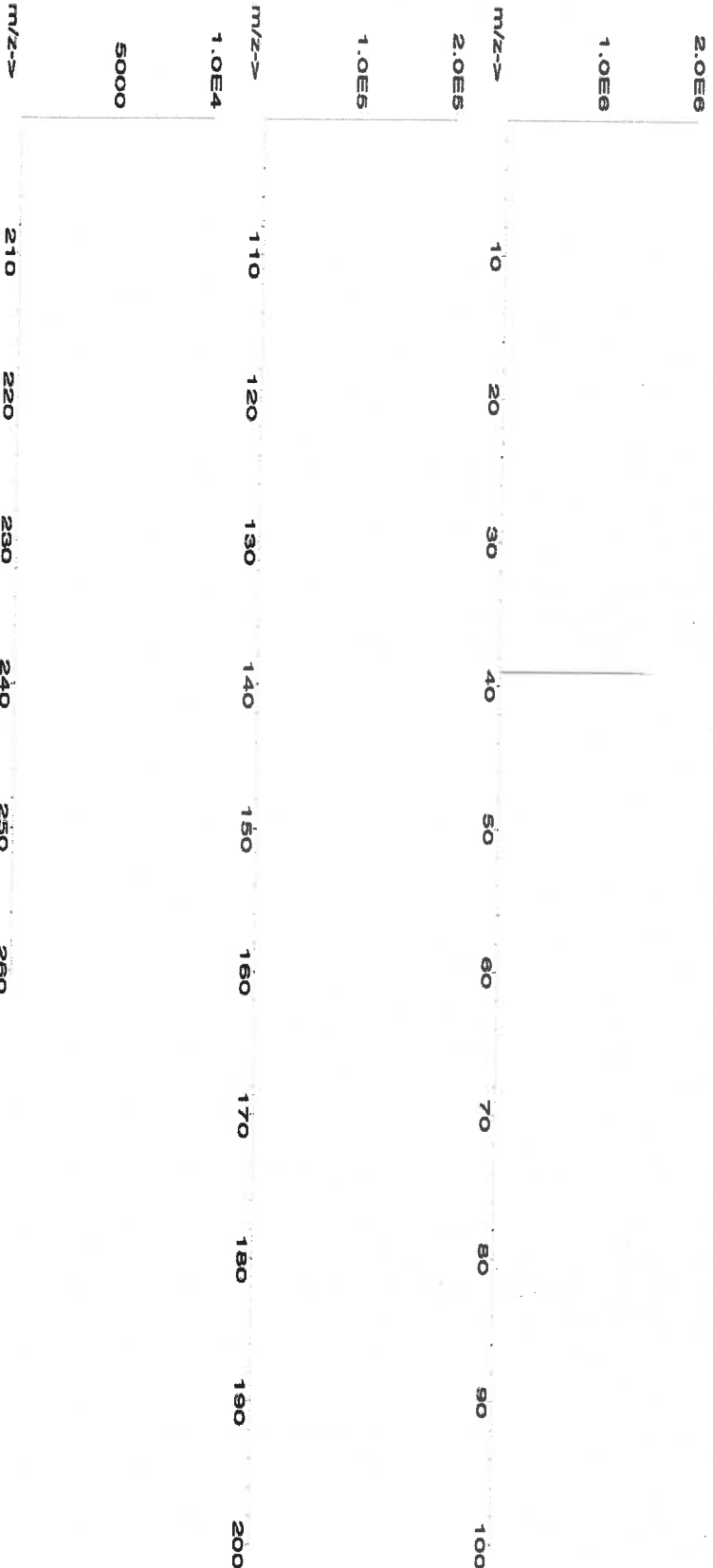
Weight shown below was diluted to (mL): 3000.4 0.06 Flask Uncertainty

Compound

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

1. Potassium nitrate (K) IN034 KD022021A1 10000 99.989 0.10 37.6 79.7990 79.8075 10001.1 20.0 7757-79-1 5 mg/m3 or/air 3015 mg/kg 3141a

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





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

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

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

(T) = Target analyte

Physical Characterization:

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.
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- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

CORCO CHEMICAL CORPORATION

Manufacturers of ACS Reagents and Semiconductor Grade Chemicals

CERTIFICATE OF ANALYSIS

Date: 8/3/2022

MS631 MS632 MS633 MS634

Lot No 820803

Hydrogen Peroxide, ACS
Reagent Grade

<u>TEST</u>	<u>MAXIMUM LIMITS</u>	<u>RESULT</u>
Appearance	Colorless and free from suspended matter or sediment	Pass
Assay	29-32%	31.4%
Color (APHA)	10	5
Residue after Evaporation	0.002%	.0001%
Titrateable Acid	0.0006 meq/g	< .0006 meq/g
Chloride (Cl)	2 ppm	< 1 ppm
Nitrate (NO ₃)	2 ppm	< 1 ppm
Phosphate	2 ppm	< 1 ppm
Sulfate (SO ₄)	5 ppm	< .5 ppm
Ammonium (NH ₄)	5 ppm	< 1 ppm
Heavy Metals (as Pb)	1 ppm	< .1 ppm
Iron (Fe)	0.5 ppm	< .1 ppm
Sodium Stannate	200 – 300 ppb	Pass

***Our Hydrogen Peroxide is considered un-stabilized because it is very slightly stabilized with Sodium Stannate, 500 ppb maximum, just for safety purposes.

Date of MFG: 8/2022

Retest date: 8/2024

Gina M. Rambo
Office Manager

CORCO CHEMICAL CORPORATION. 299 CEDAR LANE. FAIRLESS HILLS, PA 19030. 215-295-5006. FAX 215-295-0781



CERTIFIED WEIGHT REPORT:

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

Lot # 2110221 **Solvent:** Nitric Acid

2.0%

40.0 (mL)

Nitric Acid

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

275

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

Compound

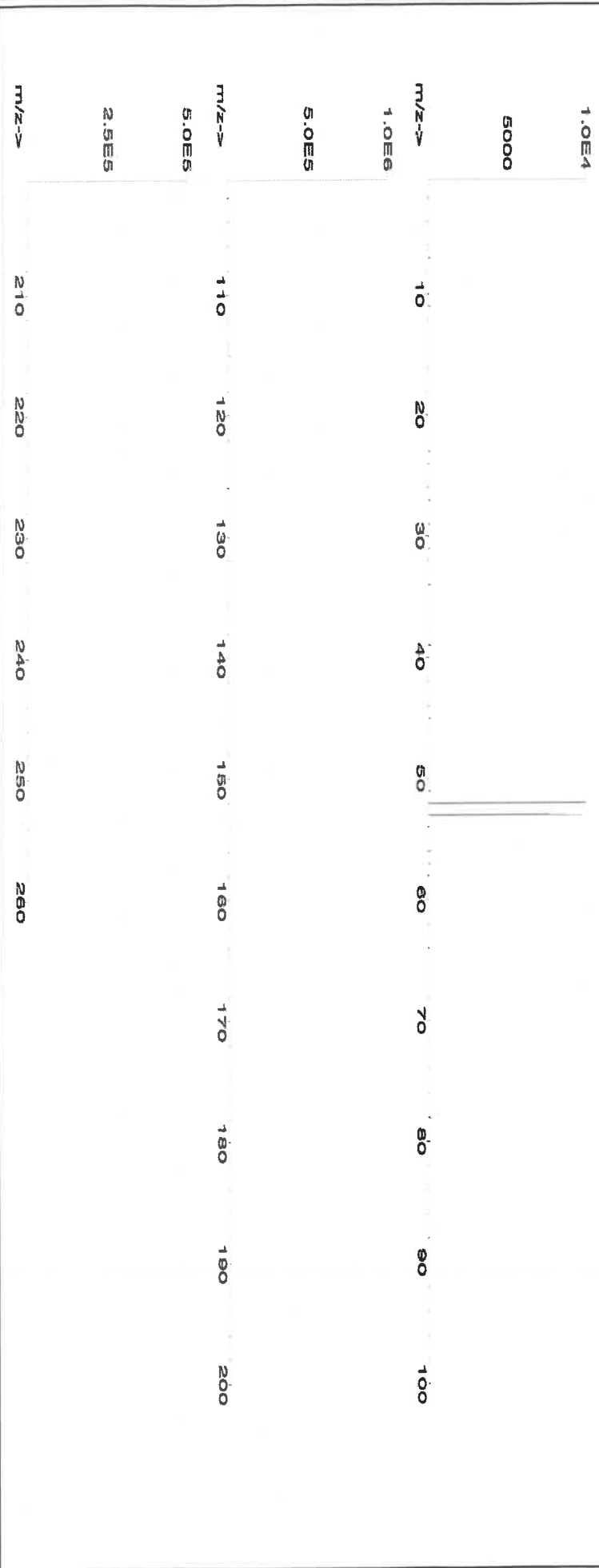
Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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SDS Information

(Solvent Safety Info. On Attached pg.)

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

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





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

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

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

(T) = Target analyte

Physical Characterization:

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

Certified by:

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



CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

58025
102623
Manganese (Mn)

Lot #
Solvent:

24002546
Nitric Acid

Expiration Date:

102626

Recommended Storage:
Ambient (20 °C)

Nominal Concentration (µg/mL):

1000

NIST Test Number:

6UTB

Volume shown below was diluted to (mL):

3000.41

5E-05
Balance Uncertainty

0.058
Flask Uncertainty

2.0%
60.0
(mL)
Nitric Acid

Formulated By:	Benson Chan	102623
Reviewed By:	Pedro L. Ruelas	102623

SDS Information

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Manganese(II) nitrate tetrahydrate (Mn) 58125 071123 0.1000 300.0 0.084 1000 10000.1 1000.0 2.1 20694-39-7 5 mg/m3 or-rel >300mg/kg 3132

[1] Spectrum No.1 [34.243 sec]:57025.D# [Count] [Linear]

5.0E6																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	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 balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number: **58029**
Lot Number: **071723**
Description: **Copper (Cu)**

Lot #: **2110221**
Solvent: **Nitric Acid**

2.0%

40.0 (mL)
Nitric Acid

Formulated By:	Benson Chan	071723
Reviewed By:	Pedro L. Ruelas	071723

Expiration Date: **071726**
Recommended Storage: **Ambient (20 °C)**
Nominal Concentration (µg/mL): **1000**

NIST Test Number: **6L7B**

Volume shown below was diluted to (mL): **2000.02**
Balance Uncertainty: **5E-05**
Flask Uncertainty: **0.058**

SDS Information

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Copper(II) nitrate trihydrate (Cu) 58129 022723 0.1000 200.0 0.084 1000 10000.5 1000.0 2.2 10031-43-3 1 mg/m3 or rat 794 mg/kg 3114

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

1.0E6	m/z-->	10	20	30	40	50	60	70	80	90	100
5.0E5	m/z-->	110	120	130	140	150	160	170	180	190	200
2.5E7	m/z-->	210	220	230	240	250	260				



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

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

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

(T) = Target analyte

Physical Characterization:

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

Certified by:

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



M5768 M5769
Certified Reference Material CRM
R: 1/13/24



CERTIFIED WEIGHT REPORT:

Part Number: 58112
Lot Number: 091823
Description: Magnesium (Mg)

Solvent: 24002546 Nitric Acid

Lot #

Expiration Date: 091826

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): 10000

NIST Test Number: 6UTB

Weight shown below was diluted to (mL): 2000.02

2% 40.0 (mL) Nitric Acid

M5768 M5769
BP R: 1/13/24

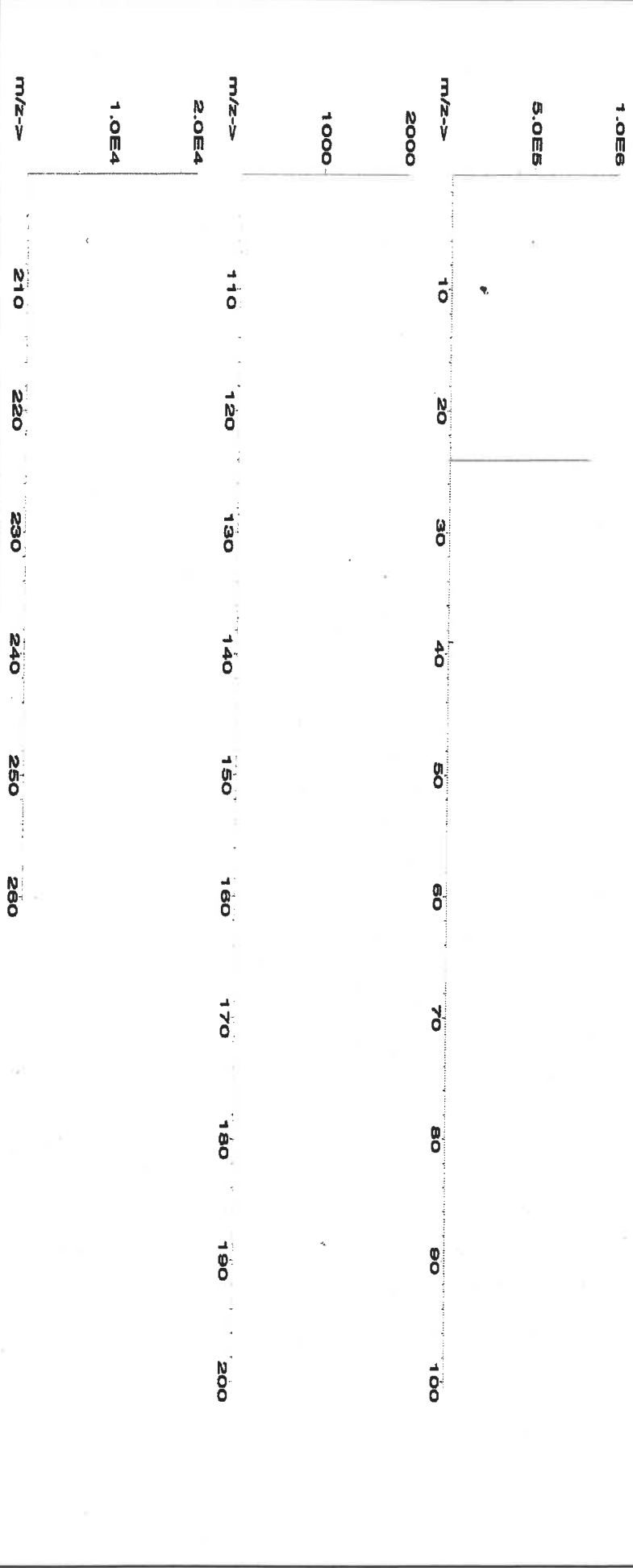
Formulated By:	Lawrence Barry	091823
Reviewed By:	Pedro L. Rentas	091823

Compound

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

1. Magnesium nitrate hexahydrate (Mg) IN030 M500222A1 10000 99.999 0.10 8.51 234.9118 234.9126 10000.0 20.0 13446-18-9 NA or-rat 5440 mg/kg 3131a

[1] Spectrum No. 1 [19.923 sec]: 58112.D# [Count] [Linear]





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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	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 certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

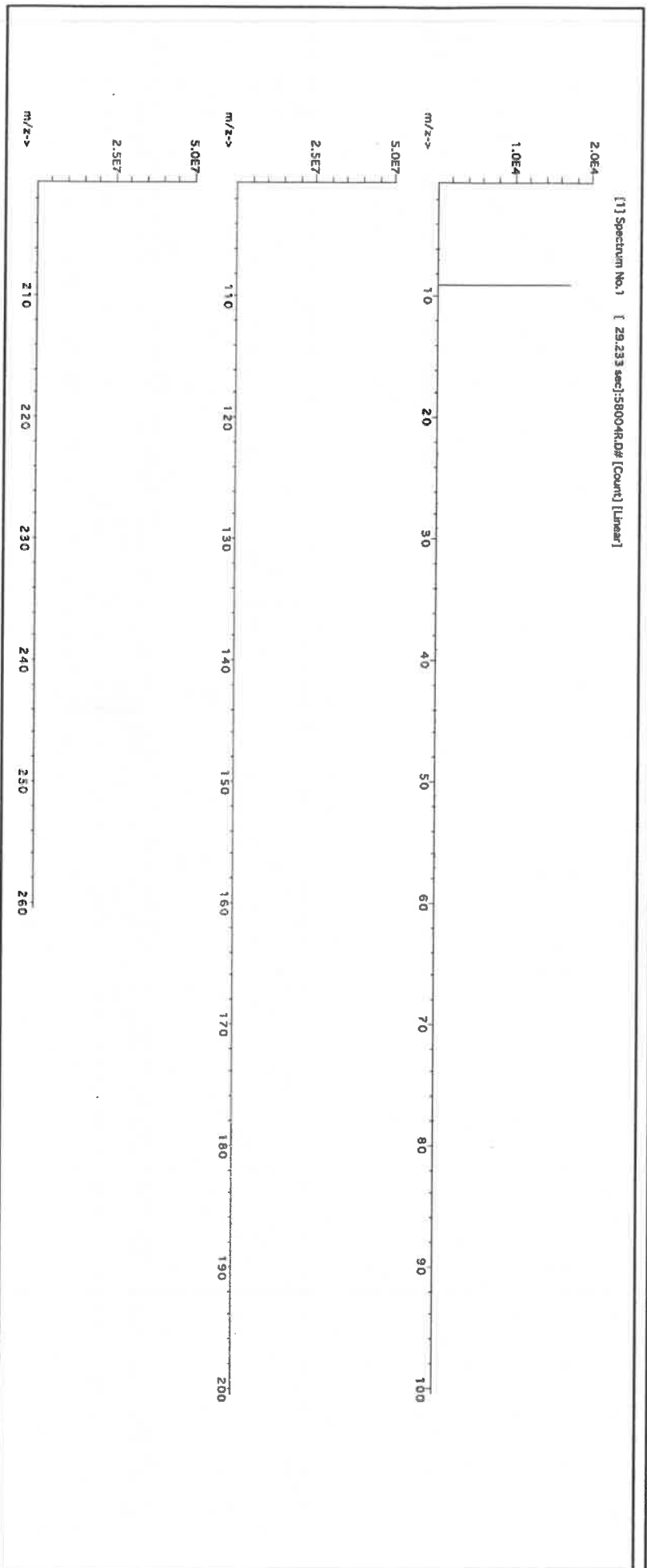
283

102523

Balance Uncertainty

[illegible]

58104	091423	0.1000	200.0	0.084	1000	10001.5	1000.0	2.2	13597.89-4	0.21g/m ³	infrane-red 3.16m/ks	NA
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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

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

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

(T) = Target analyte

Physical Characterization:

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

Certified by:

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



Certified Reference Material CRM

CERTIFIED WEIGHT REPORT:

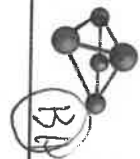
Part Number: 57050
Lot Number: 071123
Description: Tin (Sn)

Solvents: 21110221 Nitric Acid
22D0562008 Hydrochloric acid

Lot #

R-02509124

M599



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

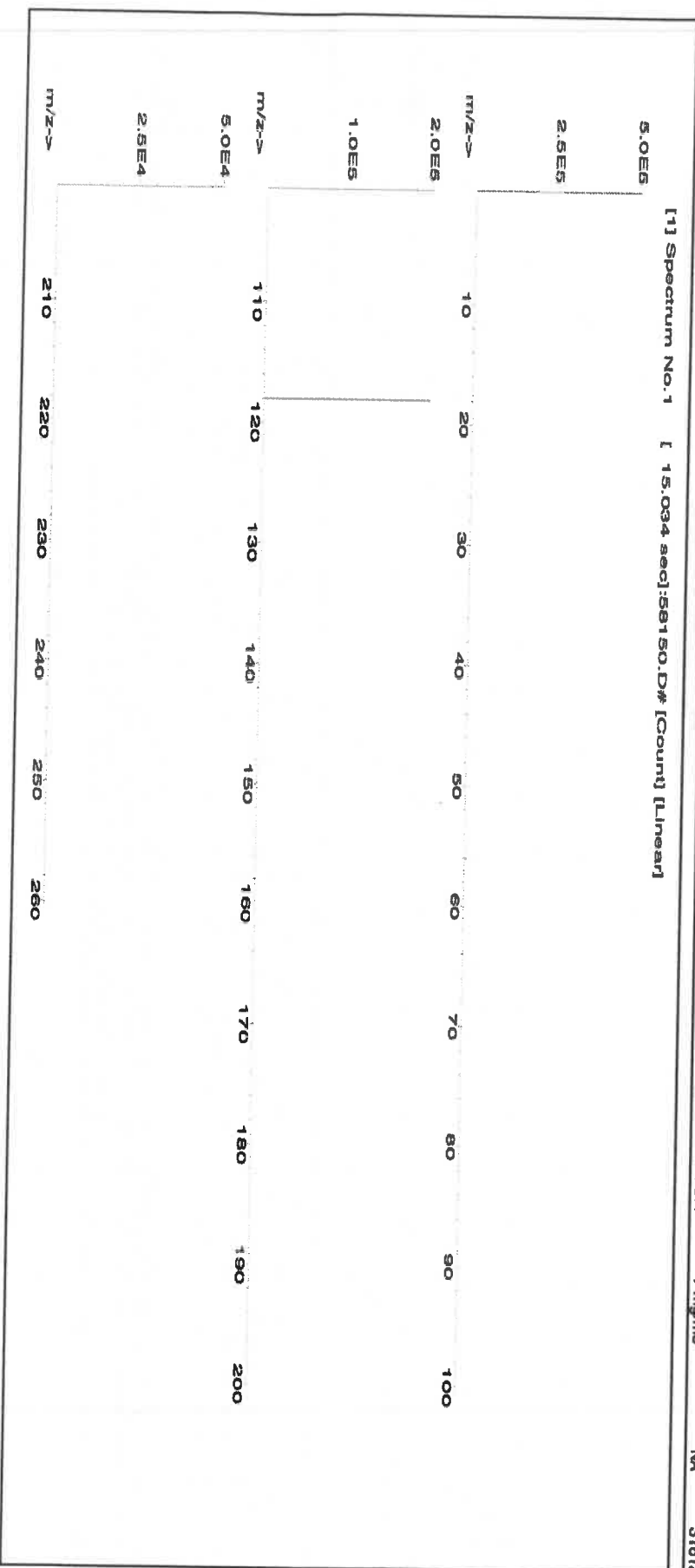
Weight shown below was diluted to (mL): 499.93
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

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

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

1. Ammonium hexafluoroantimonate(V) (Sn) IN010 SMD042023A1 1000 99.999 0.10 44.2 1.13107 1.13286 1001.6 2.0 16919-24-7 7 mg/m3 NA 3161a

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





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

286

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

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

(T) = Target analyte

Physical Characterization:

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 certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



R: 02/09/24 115800 (54)

CERTIFIED WEIGHT REPORT:

Part Number: 57027
Lot Number: 091923
Description: Cobalt (Co)

Expiration Date: 091926
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

Volume shown below was diluted to (mL): 2000.02

5E-05 Balance Uncertainty
0.058 Flask Uncertainty

Lot # 24002546
Solvent: Nitric Acid

2.0% Nitric Acid
40.0 (mL)

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

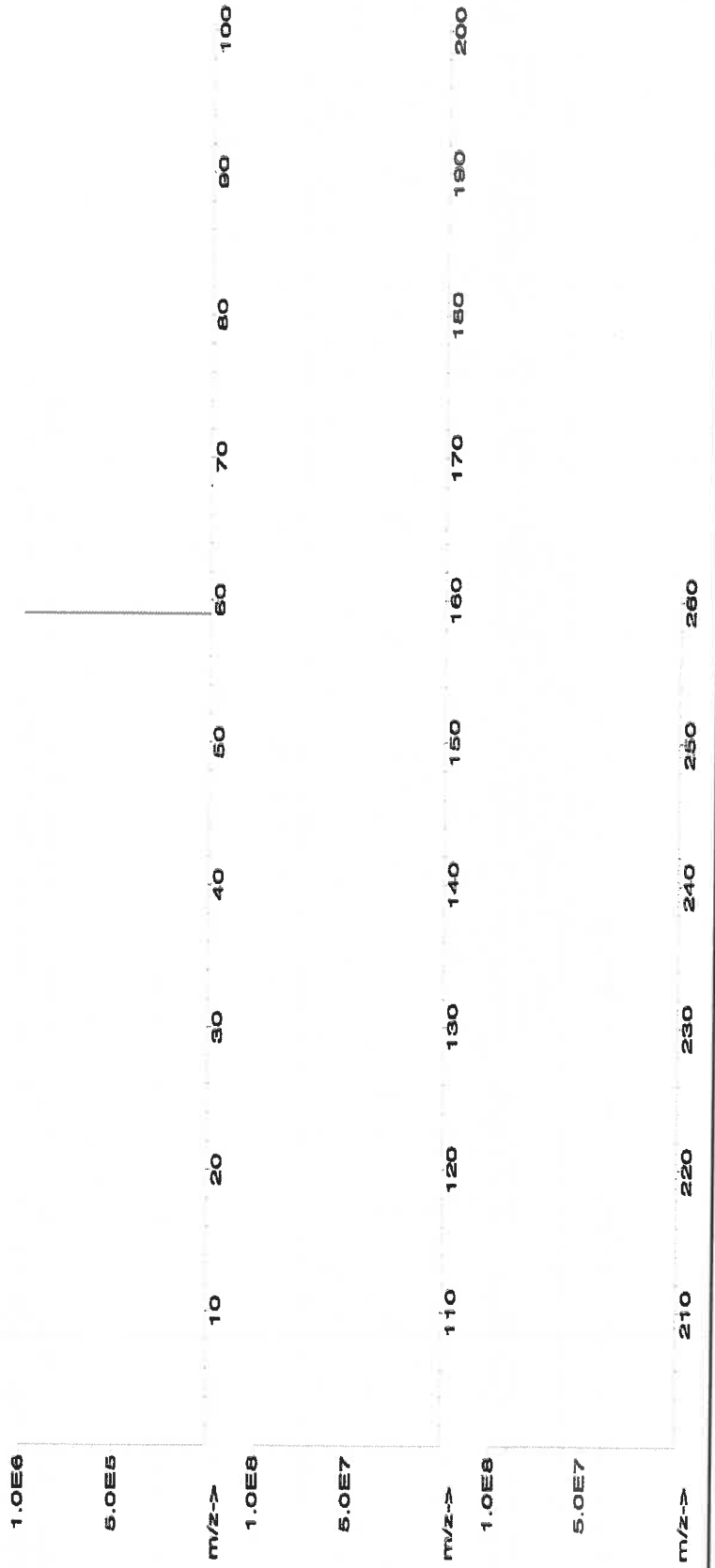
SDS Information

Expanded Uncertainty +/- (µg/mL)
Final Conc. (µg/mL)
Initial Conc. (µg/mL)
Nominal Conc. (µg/mL)
Pipette (mL)
Initial Vol. (mL)
Dilution Factor
Part Number
Lot Number

(Solvent Safety Info. On Attached pg.)
NIST SRM
CAS# OSHA PEL (TWA) LD50

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

[1] Spectrum No.1 [34.243 sec]:58027.D# [Count] [Linear]





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

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

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

(T)= Target analyte

Physical Characterization:

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

Certified by:

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



AR: 02/09/24

M5801

BA



CERTIFIED WEIGHT REPORT:

Part Number: 57033
Lot Number: 111323
Description: Arsenic (As)

Lot # 24002546
Solvent: Nitric Acid

Expiration Date: 111326

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): 1000

NIST Test Number: 6LUTB

Volume shown below was diluted to (mL): 4000.0

Balance Uncertainty: 5E-05
Flask Uncertainty: 0.06

2.0%

80.0 (mL)

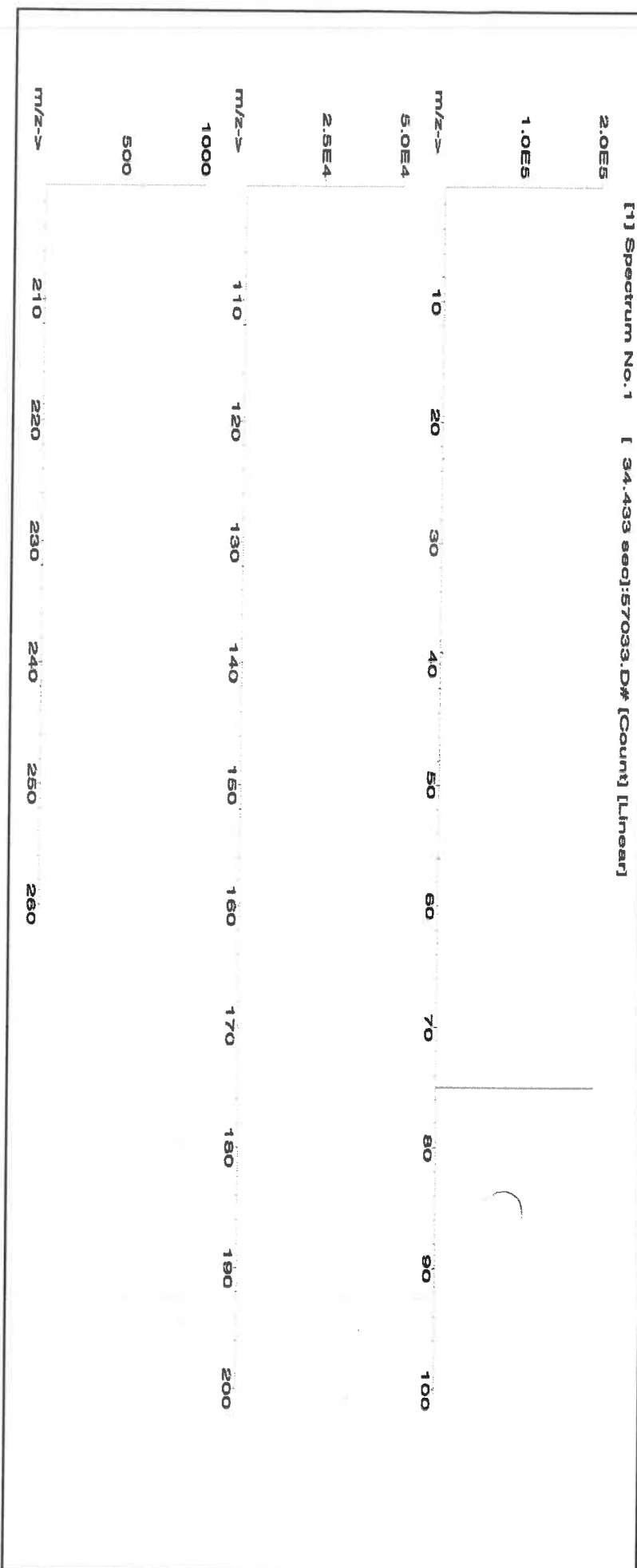
Nitric Acid

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

SDS Information									
Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)
1. Arsenic (As)	58133	020522	0.1000	400.0	0.084	1000	10001.0	1000.0	2.0

(Solvent Safety Info. On Attached pg.) CAS# OSHA PEL (TWA) LD50 NIST SRM

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





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

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

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

(T) = Target analyte

Physical Characterization:

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

Certified by:

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



CERTIFIED WEIGHT REPORT:

Part Number: 57115
Lot Number: 041723
Description: Phosphorous (P)

Solvent: 21110221 Nitric Acid

Lot #

Expiration Date: 041726

2% 40.0 (mL) Nitric Acid

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): 10000

NIST Test Number: 6UTB

5E-05 Balance Uncertainty

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

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

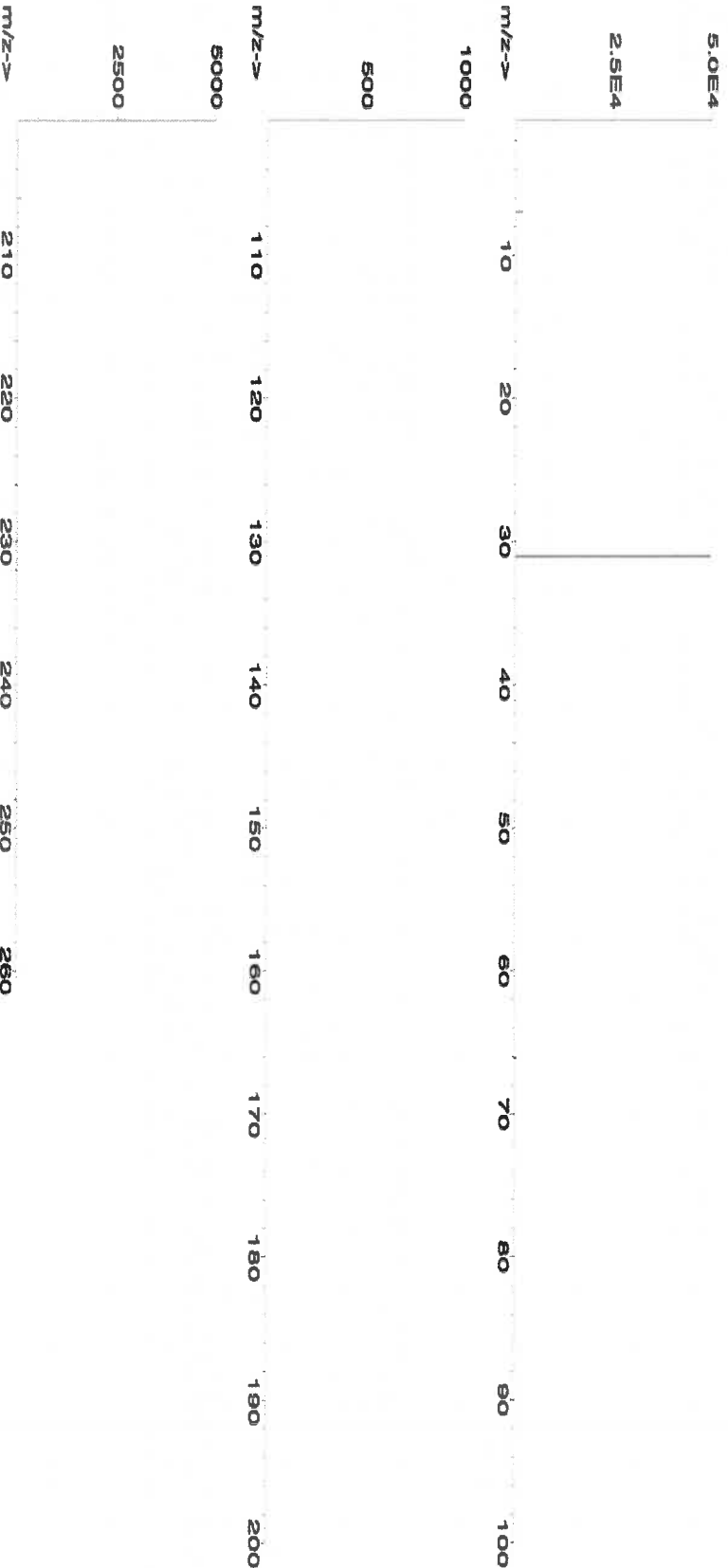
SDS Information

Compound

Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Ammonium dihydrogen phosphate (P) IN008 PVR2019A1 10000 99.999 0.10 27.5 72.7287 72.7289 10000.0 20.0 7722-76-1 5 mg/m3 or-hal->2000mg/kg 3186

[1] Spectrum No.1 [12.074 sec]:58115.D# [Count] [Linear]





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

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

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

(T) = Target analyte

Physical Characterization:

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

Certified by:

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



CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

57016
122923
Sulfur (S)

Solvent: 122923
Lot #

ASTM Type 1 Water

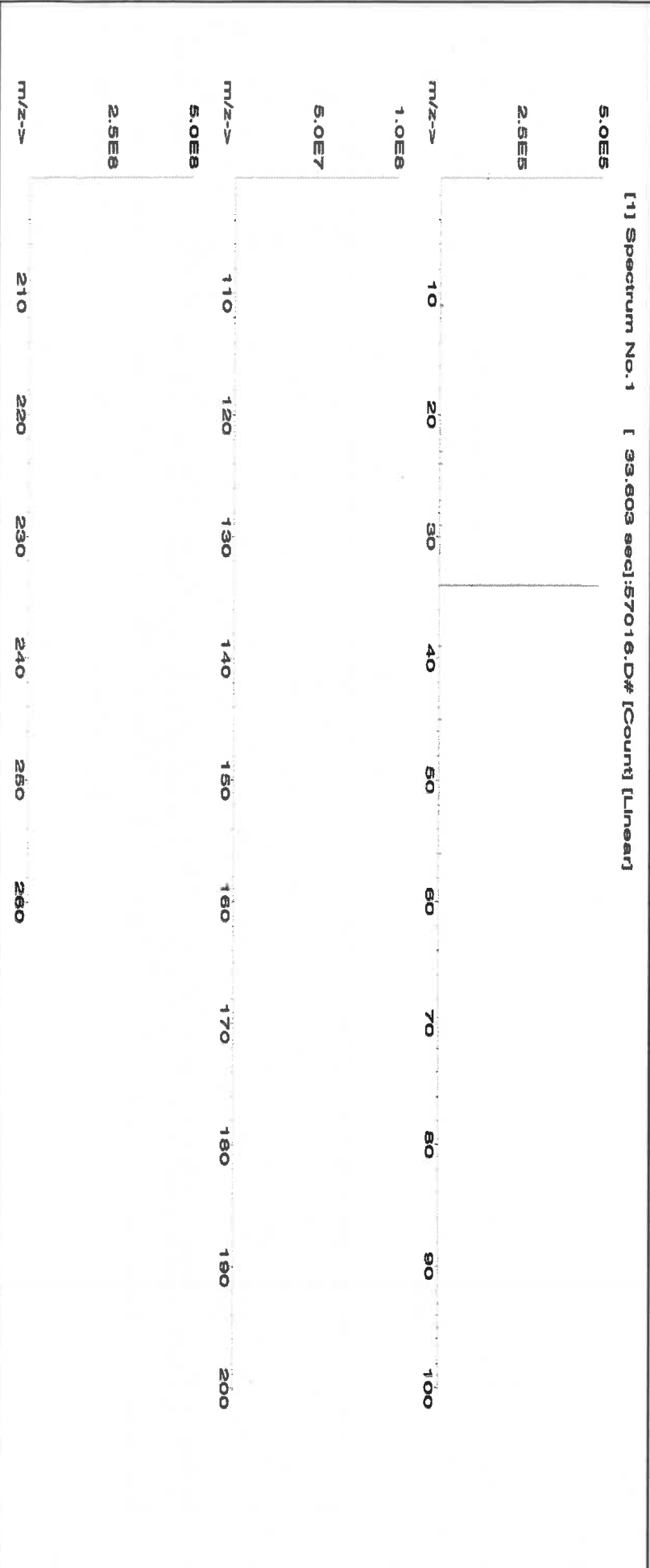
Formulated By:	Benson Chan
122923	
Reviewed By:	Pedro L. Rentas
122923	

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Expiration Date: 122926
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6L7B
Weight shown below was diluted to (mL): 4000.0
SE-05 Balance Uncertainty
0.06 Flask Uncertainty

Compound	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Ammonium sulfate (S) IN117 SLBR725V 1000 99.9 0.10 24.3 16.4979 16.4980 1000.0 2.0 7783-20-2 NA or-rel 4250mg/kg 3181





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

294

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	Ba	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Ru	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	S	<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	Ta	<0.02	Ti	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Certified by:

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

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



CERTIFIED WEIGHT REPORT:

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

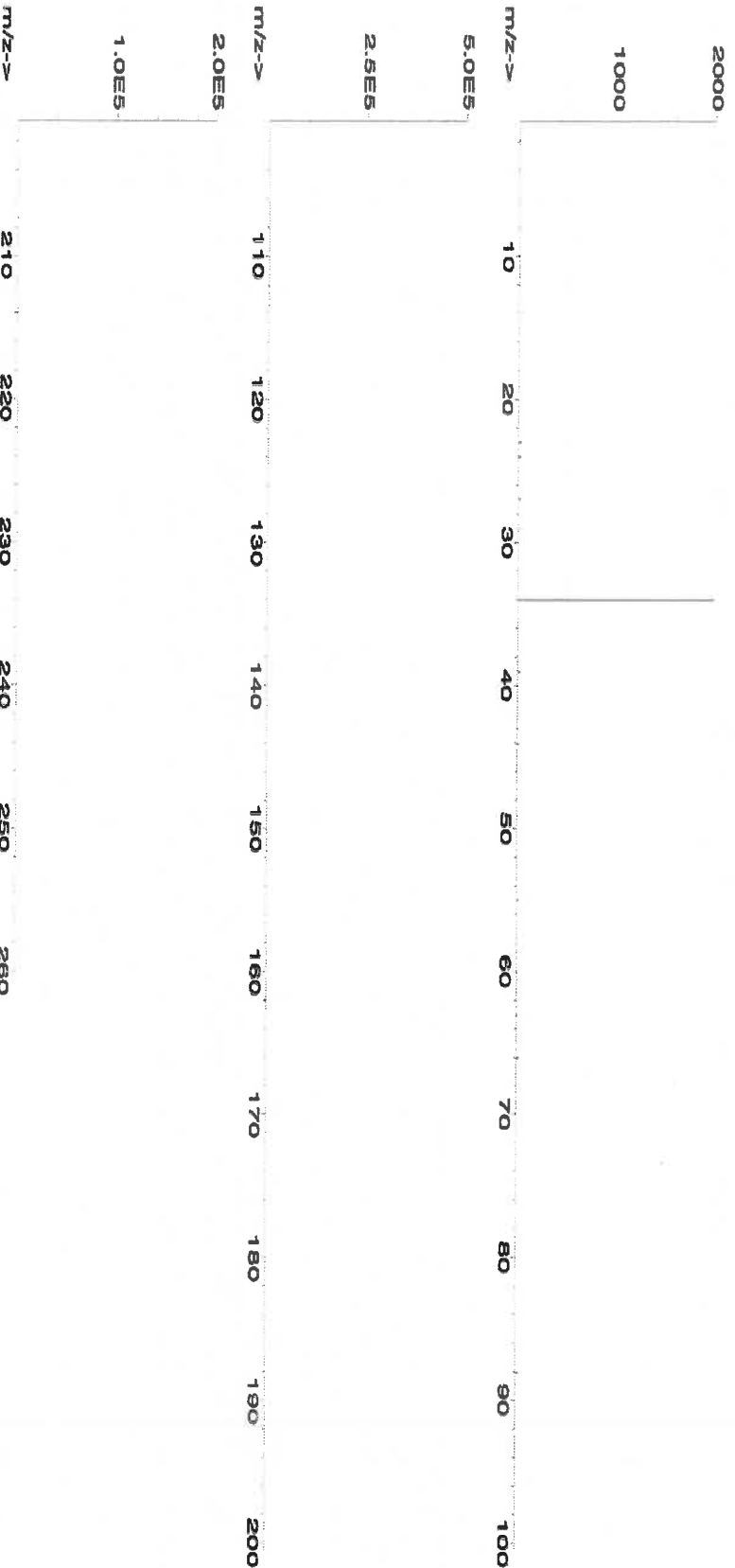
Solvent: **071123** Lot # **071123**
ASTM Type 1 Water

Formulated By:	Lawrence Barry
Reviewed By:	Pedro L. Rentas
071123	

Expiration Date: **071126**
Recommended Storage: **Ambient (20 °C)**
Nominal Concentration (µg/mL): **10000**
NIST Test Number: **6UTB**
Weight shown below was diluted to (mL): **1999.48**
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

SDS Information									
Compound	Lot	Nominal	Purity	Uncertainty	Assay	Target	Actual	Actual	Expanded
	Number	Conc. (µg/mL)	(%)	Purity (%)	(%)	Weight (g)	Weight (g)	Conc. (µg/mL)	+/- (µg/mL)
Ammonium sulfate (S)	IN117	SLBR725V	10000	99.9	0.10	24.3	82.4675	82.4692	10000.1
							20.0	7763-20-2	NA
									oral 4250mg/kg
									3181

[1] Spectrum No. 1 [24.004 sec]:58116.D# [Count] [Linear]





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

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

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

Physical Characterization:

(T)= Target analyte

Certified by:

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

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



CERTIFIED WEIGHT REPORT:

Part Number: **57014**
Lot Number: **122023**
Description: **Silicon (Si)**

Solvent: **24002546 Nitric Acid**

Lot #

Aleah O Brady

Formulated By: **Aleah O Brady** 122023

2% 40.0 (mL) Nitric Acid

Expiration Date: **122026**
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

Pedro L. Rentas

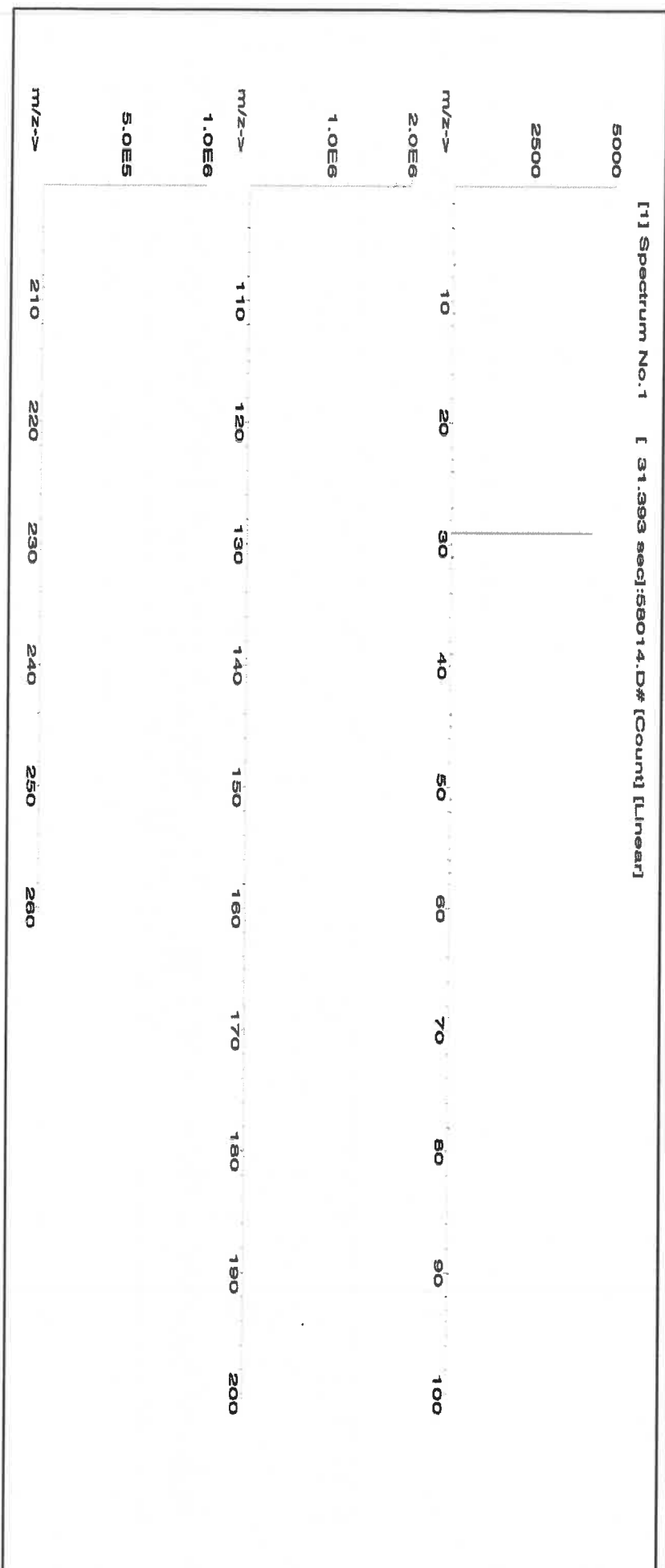
Reviewed By: **Pedro L. Rentas** 122023

SDS Information

Compound	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Ammonium hexafluorosilicate (Si) IN009 S1D08022A1 1000 99.999 0.10 14.4 13.8854 13.8855 1000.0 2.0 18919-19-0 2.5 mg/m3 off-mus 70 mg/kg NA

[1] Spectrum No. 1 [31.393 sec; 158014.D# [Count] [Linear]





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

Certified by:

Mr. J. J. [Signature]

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



CERTIFIED WEIGHT REPORT:

Part Number: 58030
Lot Number: 111623
Description: Zinc (Zn)

Solvent: 24002546 Nitric Acid

Lot # R: 02109124 MS819

2% 60.0 (mL) Nitric Acid

Expiration Date: 111626
Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): 1000

NIST Test Number: 6UTB

Weight shown below was diluted to (mL): 3000.4

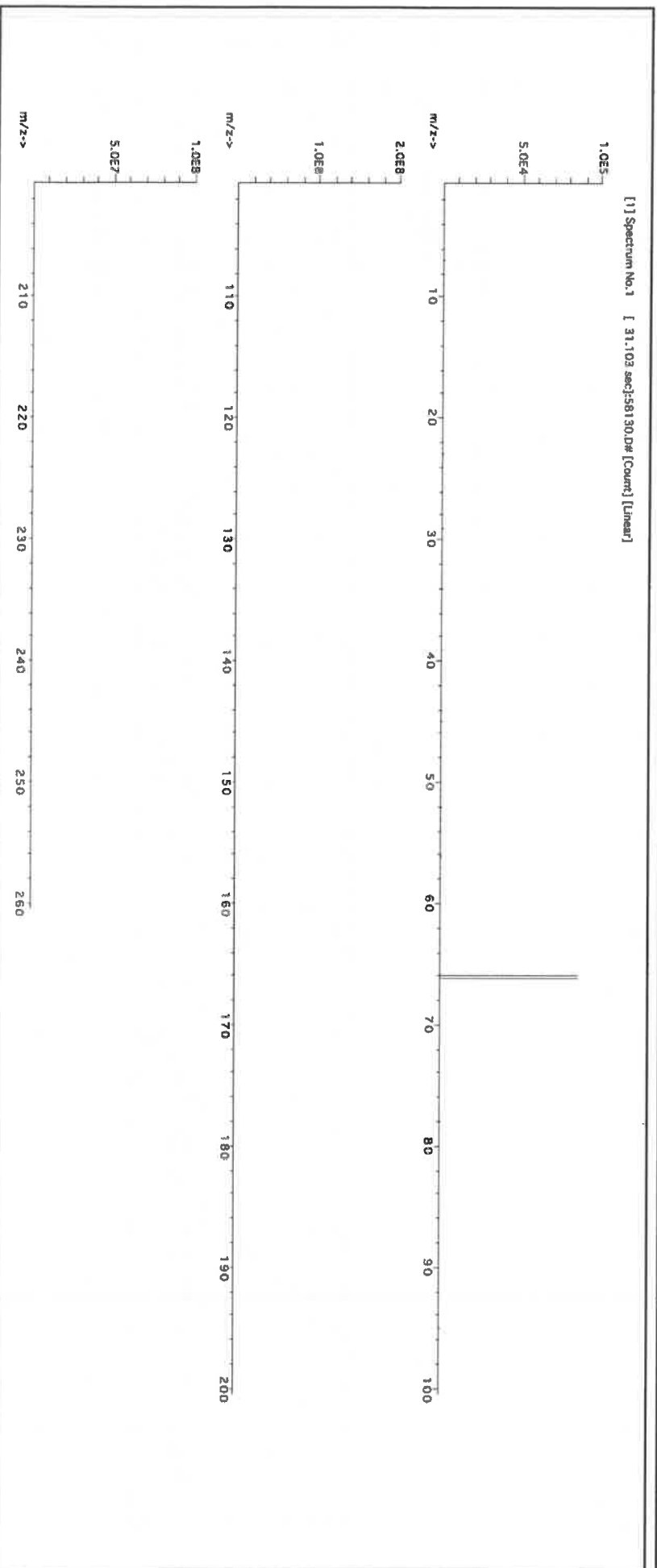
5E-05 Balance Uncertainty
0.06 Flask Uncertainty

Formulated By:	Benson Chan	111623
Reviewed By:	Pedro L. Reintas	111623

Compound

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

1. Zinc nitrate hexahydrate (Zn) IN016 ZNE03021A1 1000 99.999 0.10 24.3 12.3475 12.3502 1000.2 2.0 10196-18-6 1 mg/mL 3168 on-rat 1190mg/kg





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

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

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



CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

57015
091123
Phosphorous (P)

Solvent: 24002546 Nitric Acid

Lot #

R: 02109124 M5820

2% 40.0 (mL) Nitric Acid

Expiration Date: 091126

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): 1000

NIST Test Number: 6LJB

5E-05 Balance Uncertainty

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

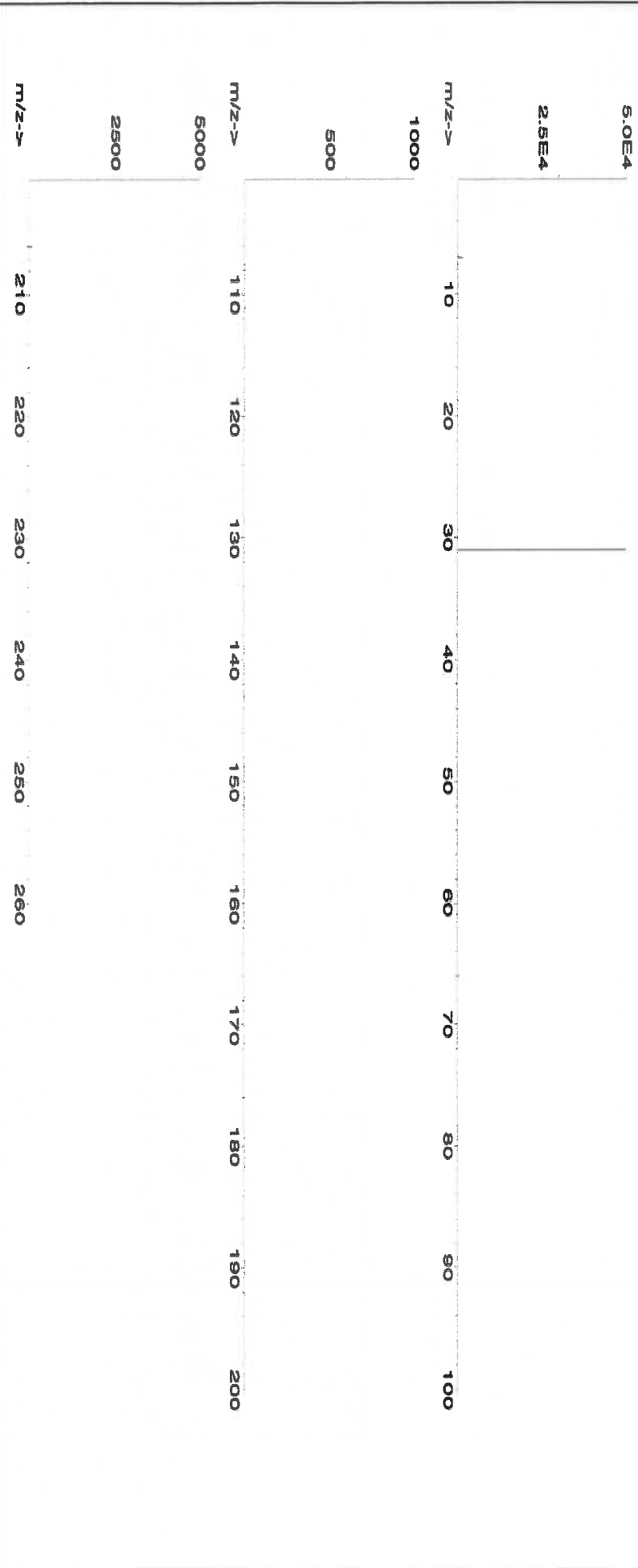
Formulated By:	Lawrence Barry	091123
Reviewed By:	Pedro L. Rentas	091123

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

1. Ammonium dihydrogen phosphate (P) IN008 PVO62019A1 1000 99.999 0.10 27.5 7.2729 7.2730 1000.0 2.0 7722-76-1 5 mg/m3 xH-rat >2000mg/kg 3186

[1] Spectrum No.1 [12.074 sec]:58115.D# [Count] [Linear]





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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Tc	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	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	Sa	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

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



CERTIFIED WEIGHT REPORT:

MS962 **R: 06/14/24**

Lot # 24002546 Solvent: Nitric Acid

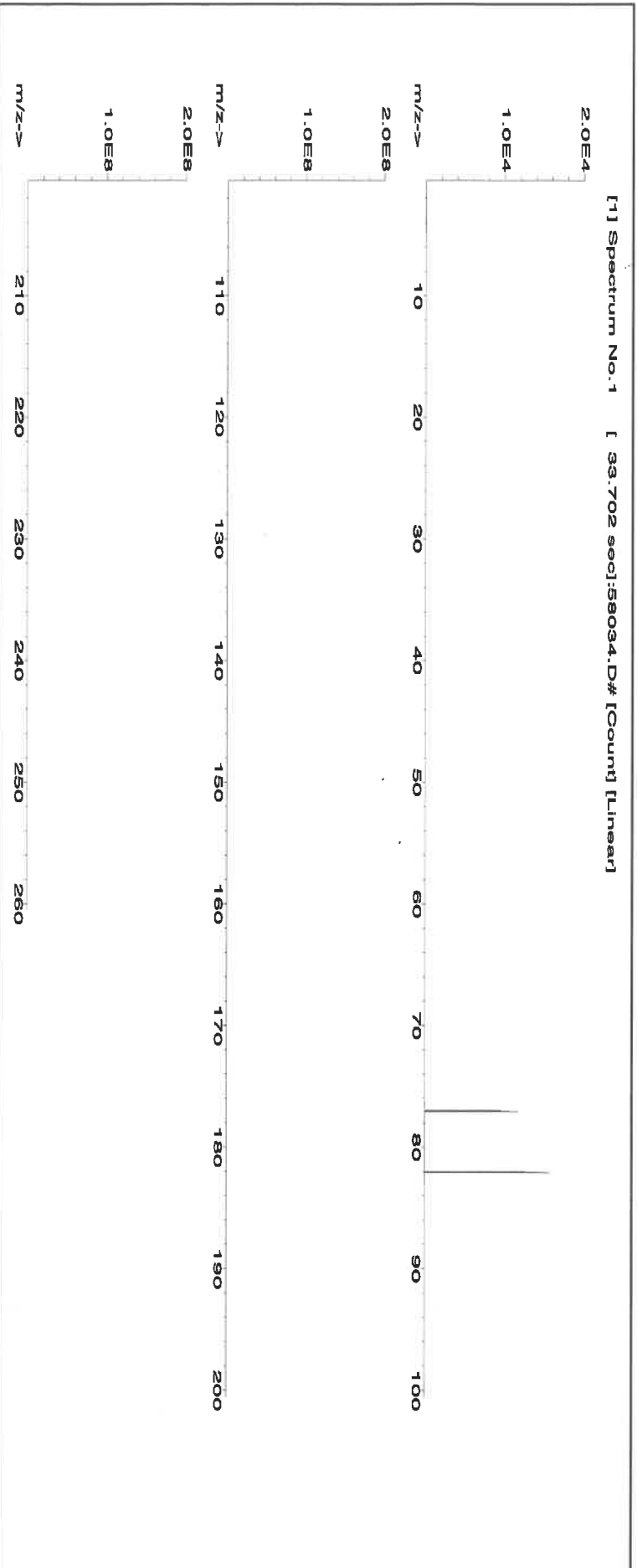
Part Number: **57034**
Lot Number: **060624**
Description: **Selenium (Se)**

2.0% 40.0 (mL) Nitric Acid

Expiration Date: 060627
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Volume shown below was diluted to (mL): 2000.07
SE-05 Balance Uncertainty 0.100
Flask Uncertainty

Formulated By:	Benson Chan	060624
Reviewed By:	Pedro L. Rantas	060624

SDS Information									
Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)
1. Selenium (Se)	58134	071223	0.1000	200.0	0.084	1000	10002.5	1000.0	2.2
						7782-49-2	0.2 mg/m3	or-tral 6700 mg/kg	31.49





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

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

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

(T) = Target analyte

Physical Characterization:

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

Certified by:

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

Absolute Standards, Inc.
800-368-1131
www.absolute-standards.com



Certified Reference Material CRM
M5970 M5971 R1 710124

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

CERTIFIED WEIGHT REPORT:

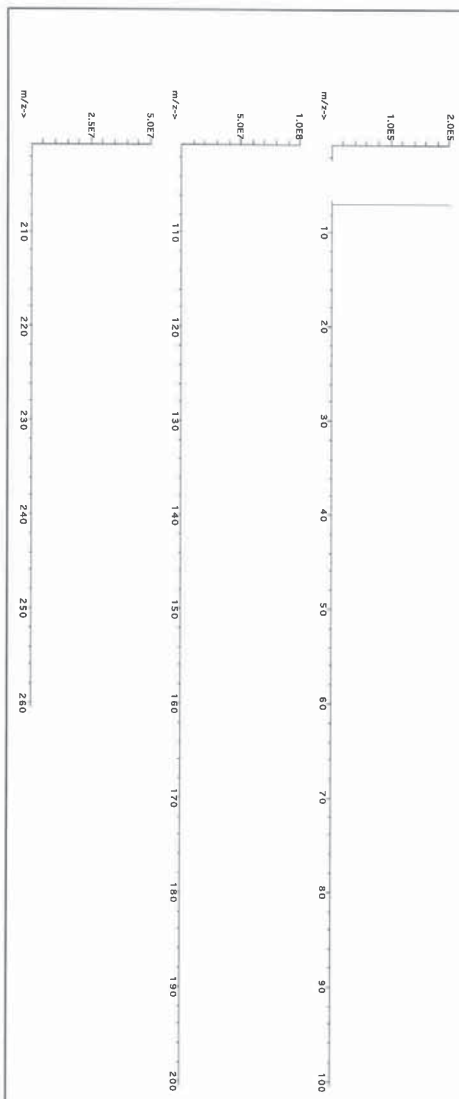
Part Number: 57003
Lot Number: 062124
Description: Lithium (Li)
Expiration Date: 06/12/27
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Volume shown below was diluted to (mL): 250.11
SE-05 Balance Uncertainty: 0.016
Fisk Uncertainty:

Microvite Capote	
Formulated By:	062124
Giovanni Episcopo	
Reviewed By: <i>[Signature]</i>	
Petro L. Parias	062124

Compound	SDS Information															
	Part		Lot		Dilution		Expanded		Exposed							
	Number	Factor	Initial	Uncertainty	Normal	Initial	Final	Uncertainty	(Solvent Safety Info. Or Attached pg.)							
			Vol. (mL)	Pipette (mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	± (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	SN	NST			

1. Lithium nitrate (Li)	58103	070622	0.1000	25.0	0.004	1000	10000.4	1000.0	2.0	7790-68-4	5 mg/m3	or-hal 1428 mg/kg	NA
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[1] Spectrum No. 1 [32.093 sec; 15000.0Hz [Count [Time]]



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Certified Reference Material CRM



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AR-1539 Certificate Number
<https://AbsoluteStandards.com>

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

Trace Metals Verification by ICP-MS (µg/mL)																			
Al	<0.02	Ca	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.02	Tb	<0.02	W	<0.02
Sb	<0.02	Ce	<0.02	Er	<0.02	In	<0.02	Mg	<0.02	Nb	<0.02	Rb	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Co	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Os	<0.02	Rh	<0.02	Ag	<0.02	Ti	<0.02	V	<0.02
Ba	<0.02	Cr	<0.02	Ga	<0.02	Pb	<0.2	Hg	<0.2	Pd	<0.02	Ru	<0.02	Nd	<0.2	Tm	<0.02	Yb	<0.02
Be	<0.01	Cu	<0.02	Ge	<0.02	Ta	<0.02	K	<0.02	P	<0.02	Sr	<0.02	S	<0.02	Sn	<0.02	Y	<0.02
Bi	<0.02	Fe	<0.02	Au	<0.02	Tl	<0.02	Na	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Tl	<0.02	Zn	<0.02
B	<0.02	Ca	<0.02																

(T) = Target analyte

Physical Characterization:

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

Certified by:

[Signature]

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
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- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
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Certificate of Analysis

M5976, M5977

R: 02/22/24

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).



2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution
Catalog Number: CGMO1
Lot Number: T2-MO720876
Matrix: H2O
tr. NH4OH
Value / Analyte(s): 1 000 µg/mL ea:
Molybdenum
Starting Material: Ammonium Molybdate
Starting Material Lot#: 2361
Starting Material Purity: 99.9893%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 998 ± 7 µg/mL
Density: 1.000 g/mL (measured at 20 ± 4 °C)
Assay Information:

Assay Method #1 998 ± 4 µg/mL
ICP Assay NIST SRM 3134 Lot Number: 130418

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

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

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

M	Ag	<	0.000590	M	Eu	<	0.000300	M	Na		0.000879	M	Se	<	0.008000	M	Zn		0.000598
M	Al		0.000563	M	Fe	<	0.006500	M	Nb	<	0.029000	i	Si	<		M	Zr	<	0.001800
M	As	<	0.002100	M	Ga	<	0.000300	i	Nd	<		M	Sm	<	0.000300				
M	Au	<	0.000300	M	Gd	<	0.000300	M	Ni	<	0.008000	M	Sn	<	0.008900				
M	B	<	0.003300	M	Ge	<	0.000300	M	Os	<	0.000590	M	Sr		0.000175				
M	Ba		0.001689	M	Hf	<	0.001800	i	P	<		M	Ta	<	0.004200				
M	Be	<	0.000890	M	Hg	<	0.003300	M	Pb	<	0.000300	M	Tb	<	0.000300				
M	Bi	<	0.000890	M	Ho	<	0.000300	M	Pd	<	0.001800	M	Te	<	0.021000				
O	Ca		0.006334	M	In	<	0.032000	M	Pr	<	0.013000	M	Th	<	0.000300				
O	Cd	<	0.026000	M	Ir	<	0.000300	M	Pt	<	0.000300	O	Tl	<	0.032000				
M	Ce	<	0.008300	M	K		0.130213	M	Rb		0.004575	M	Tl		0.001266				
M	Co		0.000598	M	La	<	0.000300	M	Re	<	0.000300	M	Tm	<	0.000300				
M	Cr		0.000527	O	Li		0.000059	M	Rh	<	0.000300	M	U	<	0.005300				
M	Cs		0.000527	M	Lu	<	0.000300	M	Ru	<	0.079000	M	V	<	0.000890				
M	Cu		0.002252	M	Mg		0.000563	i	S	<		M	W		0.087982				
M	Dy	<	0.000300	M	Mn	<	0.005900	M	Sb		0.001513	M	Y	<	0.000300				
M	Er	<	0.000300	s	Mo	<		M	Sc	<	0.001200	M	Yb	<	0.000300				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

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

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 95.94 +6 6,7,8,9

[MoO4]-2(chemical form as received)

Chemical Compatibility -Mo is received in a NH4OH matrix giving the operator the option of using HCl or HF to stabilize acidic solutions. The [MoO4]-2 is soluble in concentrated HCl [MoOCl5]-2, dilute HF / HNO3 [MoOF5]-2 and basic media [MoO4]-2. Stable at ppm levels with some metals provided it is fluorinated. Do not mix with Alkaline or Rare Earths when HF is present. Stable with most inorganic anions provided it is in the [MoO4]-2 chemical form.

Stability - 2-100 ppb levels stable (alone or mixed with all other metals that are at comparable levels) as the [MoOF5]-2 for months in 1% HNO3 / LDPE container. 1-10,000 ppm single element solutions as the [MoO4]-2 chemically stable for years in 1% NH4OH in a LDPE container.

Mo Containing Samples (Preparation and Solution) -Metal (Soluble in HF / HNO3 or hot dilute HCl); Oxide (soluble in HF or NH4OH) ; Organic Matrices (Dry ash at 450EC in Pt0 and dissolve oxide with HF or HCl).

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

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 95 amu	3 ppt	n/a	40Ar39K16O,79Br16O,190Os2+,190Pt2+
ICP-OES 202.030 nm	0.008 / 0.0002 µg/mL	1	Os, Hf
ICP-OES 203.844 nm	0.012 / 0.002 µg/mL	1	
ICP-OES 204.598 nm	0.012 / 0.001 µg/mL	1	Ir, Ta

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.569.6798; 540.585.3030, Fax: 540.585.3012; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

July 17, 2022

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

11.2 Lot Expiration Date

- July 17, 2027

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Uyen Truong
Supervisor, Product Documentation



Certificate Approved By:

Michael Booth
Director, Technical



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



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 UHPA-filtered Clean Room. An UHPA-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
M 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	<	0.00096			
O B	<	0.008929	M Ge	<	0.002146	M Os	<	0.000269	O Sr	<	0.00096			
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 Th	<	0.001341			
O Ca	<	0.000676	M In	<	0.002683	M Pr	<	0.000268	M Tl	<	0.053663			
M Cd	<	0.000268	M Ir	<	0.000269	M Pt	<	0.000536	S Ti	<				
M Co	<	0.000268	M K	<	0.001172	M Rb	<	0.000268	M Tl	<	0.000268			
M Cr	<	0.000752	O Li	<	0.000268	M Re	<	0.000268	M Tm	<	0.000268			
M Cs	<	0.000268	M Lu	<	0.000268	M Rh	<	0.000268	M U	<	0.000268			
O Cu	<	0.010890	O Mg	<	0.005445	I S	<	0.006976	M Y	<	0.002146			
M Dy	<	0.000268	O Mn	<	0.003267	M Sb	<	0.004900	M Yb	<	0.000536			
M Er	<	0.000268	M Mo	<	0.000774	O Sc	<							

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 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 forming the hydrated oxide in all dilute acids except HF. 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); K₂SiO₇ - no KF if silica not present); Organic Matrices (Dry ash at 450EC in P10 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 crystaline form).

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

Technique/Line	Estimated D.L.	14 ppt
ICP-MS 48 amu		
ICP-OES 323.452 nm	0.0054 / 0.00092 µg/mL	
ICP-OES 334.941 nm	0.0038 / 0.00028 µg/mL	
ICP-OES 336.121 nm	0.0053 / 0.00034 µg/mL	

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

HAZARDOUS INFORMATION

1
W, Mo, Co
Nb, Ta, Cr, U
Ce, Ar, Ni
Ru]]
(where X = Zr, Mo,
48Ca, [96X=2
14N17N2, 36Ar12C,
14N16O18O,
32S16O, 32S14N,
N/A

HOMOGENEITY

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

- 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

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"

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY
Inorganic Ventures, 300 Technology Drive, Chesapeake, VA 24073, USA. Telephone: 800.868.6786; 540.565.3030; Fax: 540.565.3012; info@inorganicventures.com

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

Certifying Officer:

Thomas Kozlikowski
Manager, Quality Control

Paul Gaines
Chairman / Senior Technical Director

Paul Gaines

80978



Certified Reference Material CRM



45982 R: 6/11/24

CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

57038
031524
Strontium (Sr)

Solvent: 24002546 Nitric Acid

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

031527
Ambient (20 °C)
1000
6UTB
5E-05 Balance Uncertainty
0.100 Flask Uncertainty

Weight shown below was diluted to (mL): 2000.07

Lot #

2% 40.0 Nitric Acid
(mL)

Formulated By:	Benson Chan	031524
Reviewed By:	Pedro L. Rentas	031524

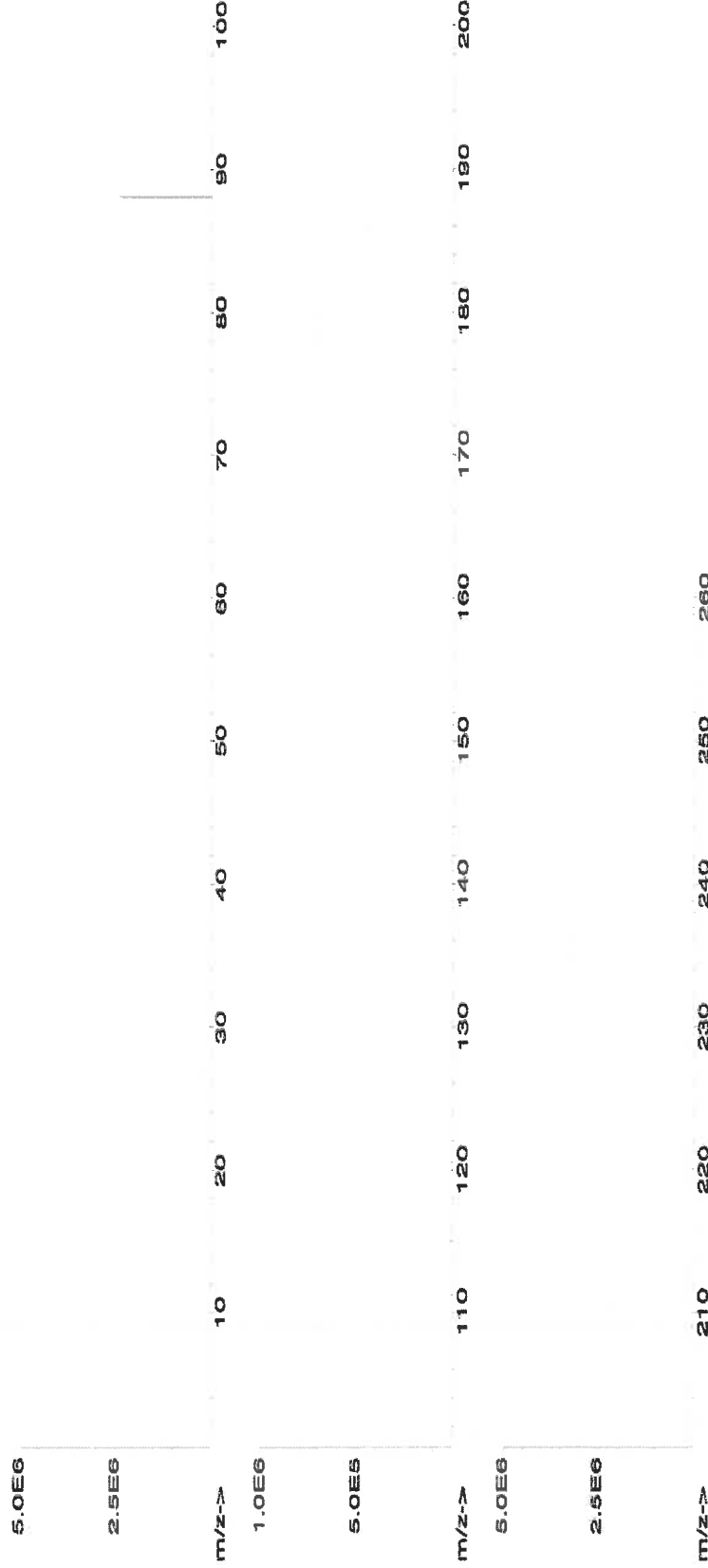
SDS Information

Expanded Uncertainty
(Solvent Safety Info. On Attached pg.)
NIST SRM

Actual Conc. (µg/mL)
Actual Weight (g)
Target Weight (g)
Assay (%)
Purity (%)
Purity (%)
Nominal Conc. (µg/mL)
Lot Number
RM#

1. Strontium nitrate (Sr) IN017 SR202018A1 1000 89.997 0.10 41.2 4.85470 4.85502 1000.1 2.0 10042-76-9 NA orl-rat >2000mg/kg 3153a

[1] Spectrum No.1 [14.495 sec]:58136.D# [Count] [Linear]





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

Trace Metals Verification by ICP-MS (µg/mL)																			
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.02	Os	<0.01	Rh	<0.02	Ag	<0.02	Ti	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<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	Tl	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

[Signature]

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

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Certificate of Analysis

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

P: 800-669-6799/540-585-3030

F: 540-585-3012

info@inorganicventures.com

M5984
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).



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:

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

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

M	Ag	<	0.004600	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 PtO 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	<u>73Ge16O</u> , <u>178Hf+2</u>
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



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

M5985
R: 6/14/24

1.0 ACCREDITATION / REGISTRATION

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



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:

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

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 PtO followed by HCl dissolution); Organic Matrices (Sulfuric/peroxide digestion or dry ash and dissolution in dilute HCl).

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

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 115 amu	1 ppt	n/a	115Sn, 99Ru16O
ICP-OES 158.583 nm	0.05 / 0.002 µg/mL	1	
ICP-OES 230.606 nm	0.1 / 0.03 µg/mL	1	Ni, Os
ICP-OES 325.609 nm	0.2 / 0.05 µg/mL	1	Mn, Mo, Th

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

February 21, 2023

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

11.2 Lot Expiration Date

- February 21, 2028

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



Certificate of Analysis

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

R: 2/22/2024
M5999

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

1.0 ACCREDITATION / REGISTRATION

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



2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution
Catalog Number: CLPP-SPK-1
Lot Number: T2-MEB721963
Matrix: 7% (v/v) HNO₃
Value / Analyte(s):
2 000 µg/mL ea: Aluminum, Barium,
1 000 µg/mL ea: Iron,
500 µg/mL ea: Manganese, Nickel,
Vanadium, Zinc,
Cobalt,
250 µg/mL ea: Copper,
200 µg/mL ea: Chromium,
50 µg/mL ea: Beryllium, Silver

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	2 000 ± 7 µg/mL	Barium, Ba	2 000 ± 9 µg/mL
Beryllium, Be	50.00 ± 0.26 µg/mL	Chromium, Cr	200.0 ± 1.1 µg/mL
Cobalt, Co	500.0 ± 2.4 µg/mL	Copper, Cu	250.0 ± 1.0 µg/mL
Iron, Fe	1 000 ± 4 µg/mL	Manganese, Mn	500.0 ± 2.0 µg/mL
Nickel, Ni	500.0 ± 2.2 µg/mL	Silver, Ag	50.00 ± 0.22 µg/mL
Vanadium, V	500.0 ± 2.2 µg/mL	Zinc, Zn	500.0 ± 2.2 µg/mL

Density: 1.070 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	160729
Ag	Volhard	999c	999c
Ag	Calculated		See Sec. 4.2
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
Ba	ICP Assay	3104a	140909
Ba	Gravimetric		See Sec. 4.2
Be	ICP Assay	3105a	090514
Be	Calculated		See Sec. 4.2
Co	ICP Assay	3113	190630
Co	EDTA	928	928
Cr	ICP Assay	3112a	170630
Cu	ICP Assay	3114	121207
Cu	EDTA	928	928
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
V	IC Assay	3165	160906
V	EDTA	928	928
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

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

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

Note: This solution contains Silver (Ag), please refer to our Sample Preparation Guide for more information.

<https://www.inorganicventures.com/sample-preparation-guide/samples-containing-silver>

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

July 27, 2022

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

11.2 Lot Expiration Date

- July 27, 2027

- The date after which this CRM/RM should not be used.
- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director





Certified Reference Material CRM
R: 01/03/24 M6033



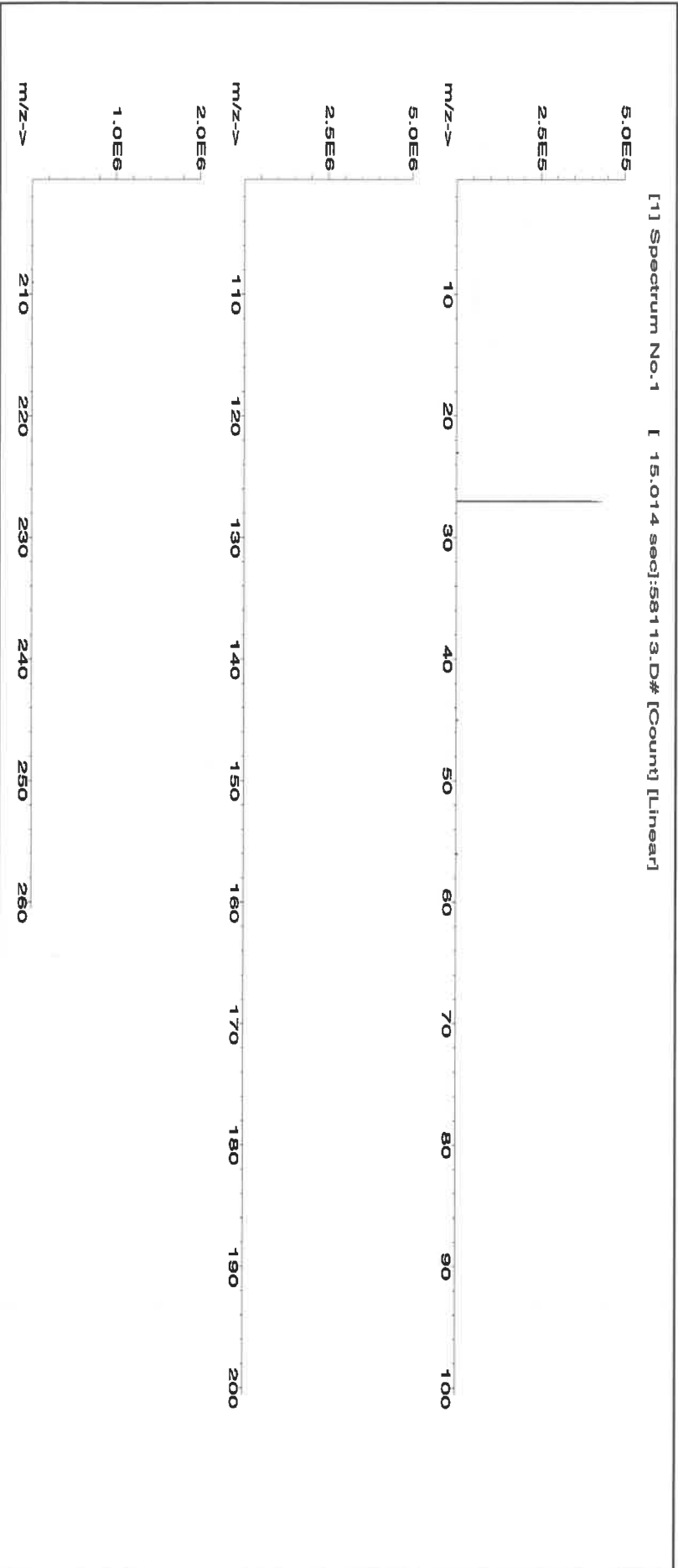
CERTIFIED WEIGHT REPORT:

Part Number: 58113
Lot Number: 011623
Description: Aluminum (Al)
Expiration Date: 011626
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6LUTB
Weight shown below was diluted to (mL): 2000.02
Solvent: 20510011 Nitric Acid
Lot #
2% 40.0 (mL) Nitric Acid
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
Reviewed By:	<i>Pedro L. Rentas</i>
	Pedro L. Rentas
	011623

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Aluminum nitrate nonahydrate (Al) IN022 ALUM12021A1 10000 99.999 0.10 7.30 273.9779 274.0078 10001.1 20.0 7784-27-2 2 mg/m3 or rat 3671 mg/kg 3101a



Hydrochloric Acid, 36.5–38.0%
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis

Receive date
9/29/24
Met diag.

 avantor™



Material No.: 9530-33
Batch No.: 22F0762009
Manufactured Date: 2022-05-10
Retest Date: 2027-05-09
Revision No.: 0

M6109
M6110
M6111

Certificate of Analysis

Test	Specification	Result
ACS – Assay (as HCl) (by acid–base titrn)	36.5 – 38.0 %	37.6 %
ACS – Color (APHA)	≤ 10	5
ACS – Residue after Ignition	≤ 3 ppm	< 1 ppm
ACS – Specific Gravity at 60°/60°F	1.185 – 1.192	1.190
ACS – Bromide (Br)	≤ 0.005 %	< 0.005 %
ACS – Extractable Organic Substances	≤ 5 ppm	< 1 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	0.8 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	14.9 ppb
Trace Impurities – Chromium (Cr)	≤ 1.0 ppb	< 0.4 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	0.2 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



Material No.: 9530-33
 Batch No.: 22F0762009

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	0.8 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	< 0.2 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	1.0 ppb
Trace Impurities – Silver (Ag)	≤ 1.0 ppb	< 0.3 ppb
Trace Impurities – Sodium (Na)	≤ 100.0 ppb	0.7 ppb
Trace Impurities – Strontium (Sr)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Tantalum (Ta)	≤ 1.0 ppb	< 0.9 ppb
Trace Impurities – Thallium (Tl)	≤ 5.0 ppb	< 2.0 ppb
Trace Impurities – Tin (Sn)	≤ 5.0 ppb	< 0.8 ppb
Trace Impurities – Titanium (Ti)	≤ 1.0 ppb	0.2 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	< 0.1 ppb

>>> Continued on page 3 >>>

Hydrochloric Acid, 36.5–38.0%
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis

 **avantor™**

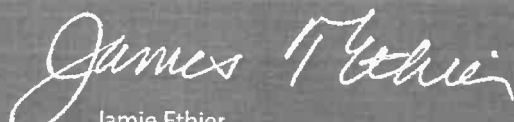


Material No.: 9530-33
Batch No.: 22F0762009

Test	Specification	Result
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For Laboratory, Research, or Manufacturing Use
Product Information (not specifications):
Appearance (clear, fuming liquid)
Meets ACS Specifications
Storage Condition: Store below 25 °C.

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


Jamie Ethier
Vice President Global Quality 332

Nitric Acid 69%
CMOS

avantor™



Receive:
9/29/24
met dig

Material No.: 9606-03
Batch No.: 24B1362001
Manufactured Date: 2024-01-25
Retest Date: 2029-01-23
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay (HNO ₃)	69.0 – 70.0 %	69.6 %
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	< 0.2 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	< 50 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 >>>

Test	Specification	Result
Trace Impurities – Niobium (Nb)	≤ 50.0 ppb	< 1.0 ppb
Trace Impurities – Potassium (K)	≤ 50 ppb	< 10 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	3 par/ml
Particle Count – 1.0 µm and greater	≤ 10 par/ml	1 par/ml

>>> Continued on page 3 >>>

Nitric Acid 69%
CMOS

 **avantor™**

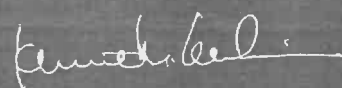


Material No.: 9606-03
Batch No.: 24B1362001

Test	Specification	Result
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For Microelectronic Use

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



Ken Koehnlein
Sr. Manager, Quality Assurance

335

Nitric Acid 69%
CMOS

avantor™



Receive:
9/29/24
met dig

Material No.: 9606-03
Batch No.: 24B1362001
Manufactured Date: 2024-01-25
Retest Date: 2029-01-23
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay (HNO ₃)	69.0 – 70.0 %	69.6 %
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	< 0.2 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	< 50 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 >>>

Test	Specification	Result
Trace Impurities – Niobium (Nb)	≤ 50.0 ppb	< 1.0 ppb
Trace Impurities – Potassium (K)	≤ 50 ppb	< 10 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	3 par/ml
Particle Count – 1.0 µm and greater	≤ 10 par/ml	1 par/ml

>>> Continued on page 3 >>>

Nitric Acid 69%
CMOS

 **avantor™**

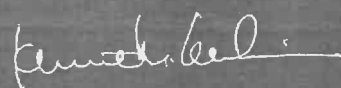


Material No.: 9606-03
Batch No.: 24B1362001

Test	Specification	Result
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For Microelectronic Use

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



Ken Koehnlein
Sr. Manager, Quality Assurance

338

Hydrochloric Acid, 36.5–38.0%
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis

avantor™



Review → 10/9/24
Met dig

M6118

Material No.: 9530-33
Batch No.: 22E1662006
Manufactured Date: 2022-04-11
Retest Date: 2027-04-10
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
ACS – Assay (as HCl) (by acid-base titrn)	36.5 – 38.0 %	37.6 %
ACS – Color (APHA)	≤ 10	5
ACS – Residue after Ignition	≤ 3 ppm	< 1 ppm
ACS – Specific Gravity at 60°/60°F	1.185 – 1.192	1.190
ACS – Bromide (Br)	≤ 0.005 %	< 0.005 %
ACS – Extractable Organic Substances	≤ 5 ppm	< 1 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	< 0.2 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	37.0 ppb
Trace Impurities – Chromium (Cr)	≤ 1.0 ppb	< 0.4 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	0.2 ppb
Heavy Metals (as Pb)	≤ 100 ppb	< 50 ppb
Trace Impurities – Iron (Fe)	≤ 15 ppb	1 ppb

>>> Continued on page 2 >>>

Hydrochloric Acid, 36.5–38.0%
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis



Material No.: 9530-33
Batch No.: 22E1662006

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	1.0 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	< 0.2 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	< 0.4 ppb
Trace Impurities – Silver (Ag)	≤ 1.0 ppb	< 0.3 ppb
Trace Impurities – Sodium (Na)	≤ 100.0 ppb	1.9 ppb
Trace Impurities – Strontium (Sr)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Tantalum (Ta)	≤ 1.0 ppb	< 0.9 ppb
Trace Impurities – Thallium (Tl)	≤ 5.0 ppb	< 2.0 ppb
Trace Impurities – Tin (Sn)	≤ 5.0 ppb	< 0.8 ppb
Trace Impurities – Titanium (Ti)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Vanadium (V)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Zinc (Zn)	≤ 5.0 ppb	< 0.3 ppb
Trace Impurities – Zirconium (Zr)	≤ 1.0 ppb	< 0.1 ppb

>>> Continued on page 3 >>>

Hydrochloric Acid, 36.5-38.0%
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis

 **avantorsm**



Material No.: 9530-33
Batch No.: 22E1662006

Test	Specification	Result
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For Laboratory, Research, or Manufacturing Use
Product Information (not specifications):
Appearance (clear, fuming liquid)
Meets ACS Specifications
Storage Condition: Store below 25 °C.

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


Jamie Ethier
Vice President Global Quality 341



CERTIFIED WEIGHT REPORT:

Part Number: 58111
Lot Number: 122223
Description: Sodium (Na)

Solvent: 24002546 Nitric Acid

Lot #

Aleah O Brady
Formulated By: Aleah O Brady

122223

Expiration Date: 122226

2% 60.0 Nitric Acid
(mL)

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): 10000

NIST Test Number: 6UTB 5E-05 Balance Uncertainty

Weight shown below was diluted to (mL): 3000.4 0.06 Flask Uncertainty

Pedro L Rentas
Reviewed By: Pedro L Rentas

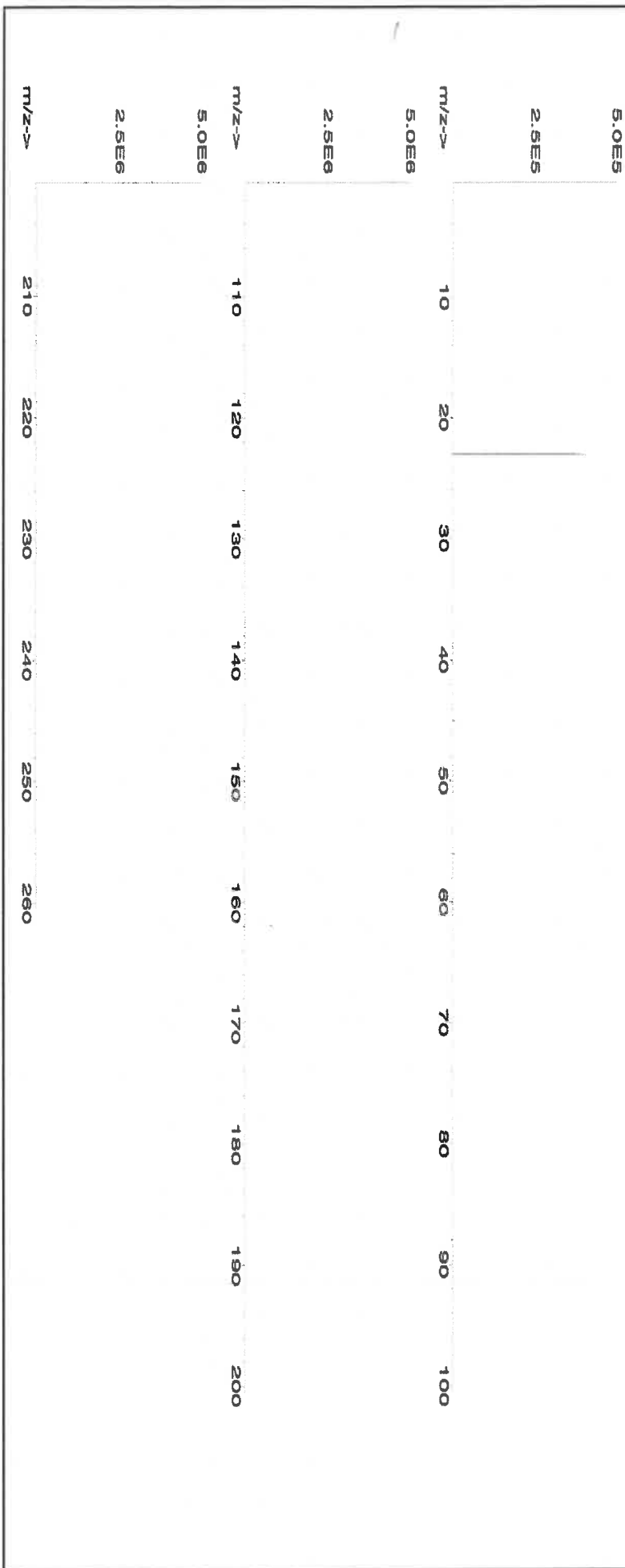
122223

SDS Information

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

1. Sodium nitrate (Na) IN036 NAV01201511 10000 99.999 0.10 26.9 111.5406 111.5479 10000.7 20.0 7631-99-4 5 mg/m3 or-trat 3430 mg/kg 3152a

[1] Spectrum No.1 [8.935 sec]:58111.D# [Count] [Linear]





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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	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	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	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.02	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	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	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

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



CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

57051
120523
Antimony (Sb)

Lot #
Solvent:

24002546
Nitric Acid

2.0%
60.0
Nitric Acid
(mL)

Expiration Date:

120526

Recommended Storage:

Ambient (20 °C)

Nominal Concentration (µg/mL):

1000

NIST Test Number:

6U7B

Volume shown below was diluted to (mL):

3000.41

5E-05 Balance Uncertainty
0.058 Flask Uncertainty

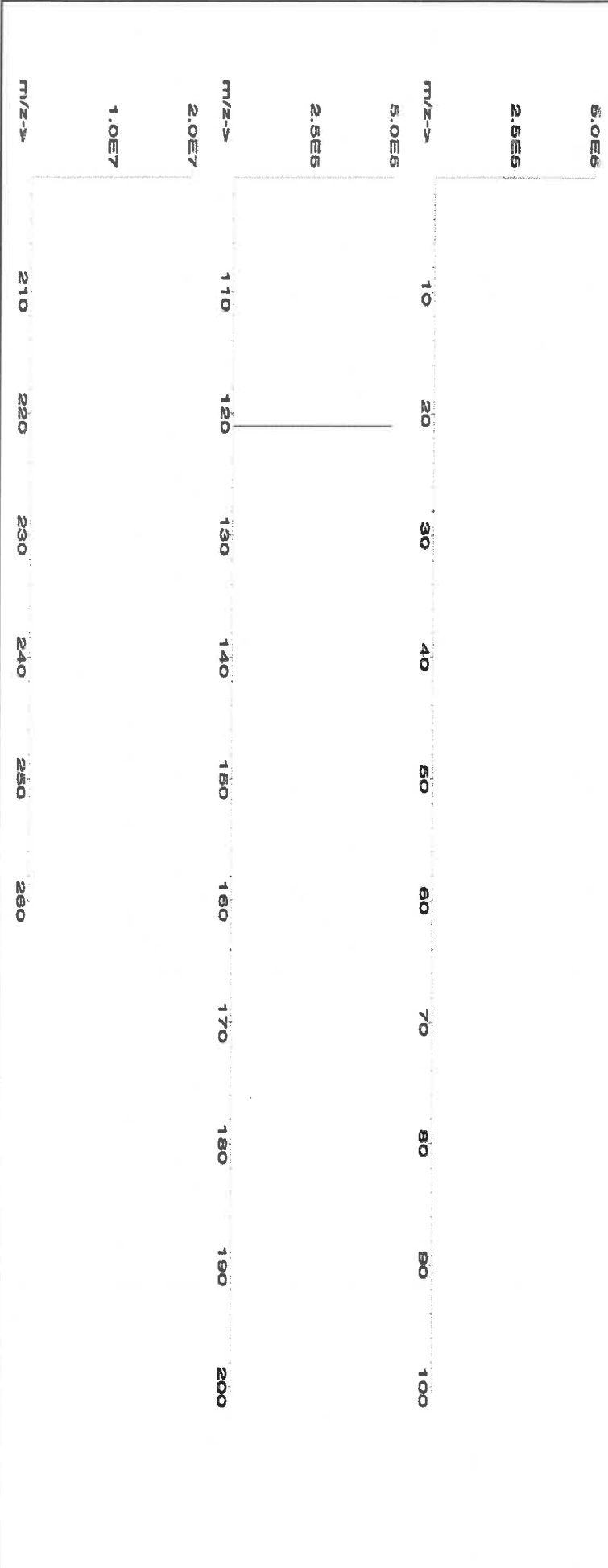
Formulated By:	Lawrence Barry	120523
Reviewed By:	Pedro L. Renteria	120523

SDS Information

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Antimony (Sb)	58151	100923	0.1000	300.0	0.084	1000	10001.4	1000.0	2.1	7440-36-0	0.5 mg/m3	or-rel 7000 mg/kg	3102a
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[1] Spectrum No.1 [17.964 sec]:58051.D# [Count] [Linear]





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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	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 certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number: **57047**
Lot Number: **122823**
Description: **Silver (Ag)**

Solvent: **24002546 Nitric Acid**

Lot #

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

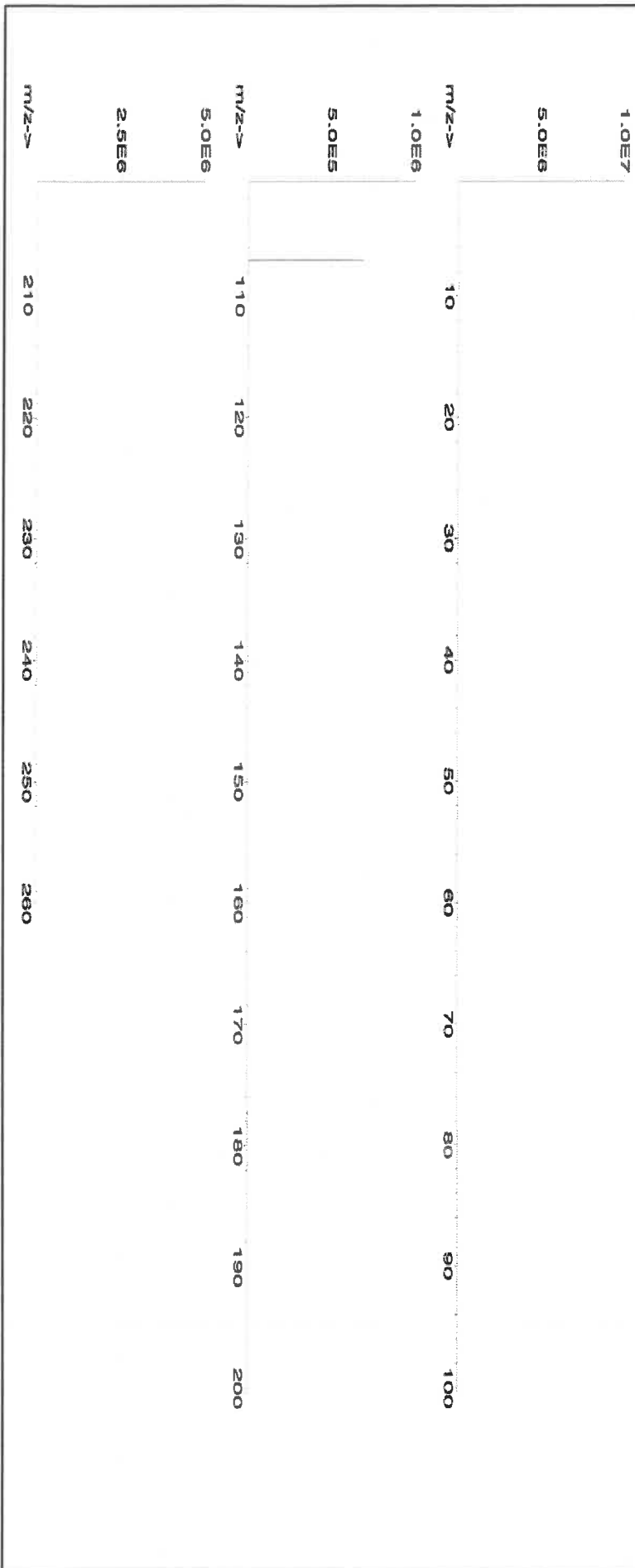
Weight shown below was diluted to (mL): **4000.30** 0.058 Flask Uncertainty

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

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

1. Silver nitrate (Ag) IN035 J0612AGA1 1000.0 99.999 0.10 63.7 6.27992 6.27998 1000.0 2.0 7761-88-8 10 µg/m³ NA 3151

[1] Spectrum No. 1 [14.044 sec]:58147.D# [Count] [Linear]





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

347

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

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

Physical Characterization:

(T)= Target analyte

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

Certified by:

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



Certified Reference Material CRM



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

CERTIFIED WEIGHT REPORT:

Part Number: **56138**
Lot Number: **082922**
Description: **Strontium (Sr)**
Expiration Date: **082925**
Recommended Storage: **Ambient (20 °C)**
Nominal Concentration (µg/mL): **10000**
NIST Test Number: **6UTB**
Weight shown below was diluted to (mL): **1000.12**

Solvent: **20510011 Nitric Acid**

Lot #

2% **20.0** Nitric Acid (mL)

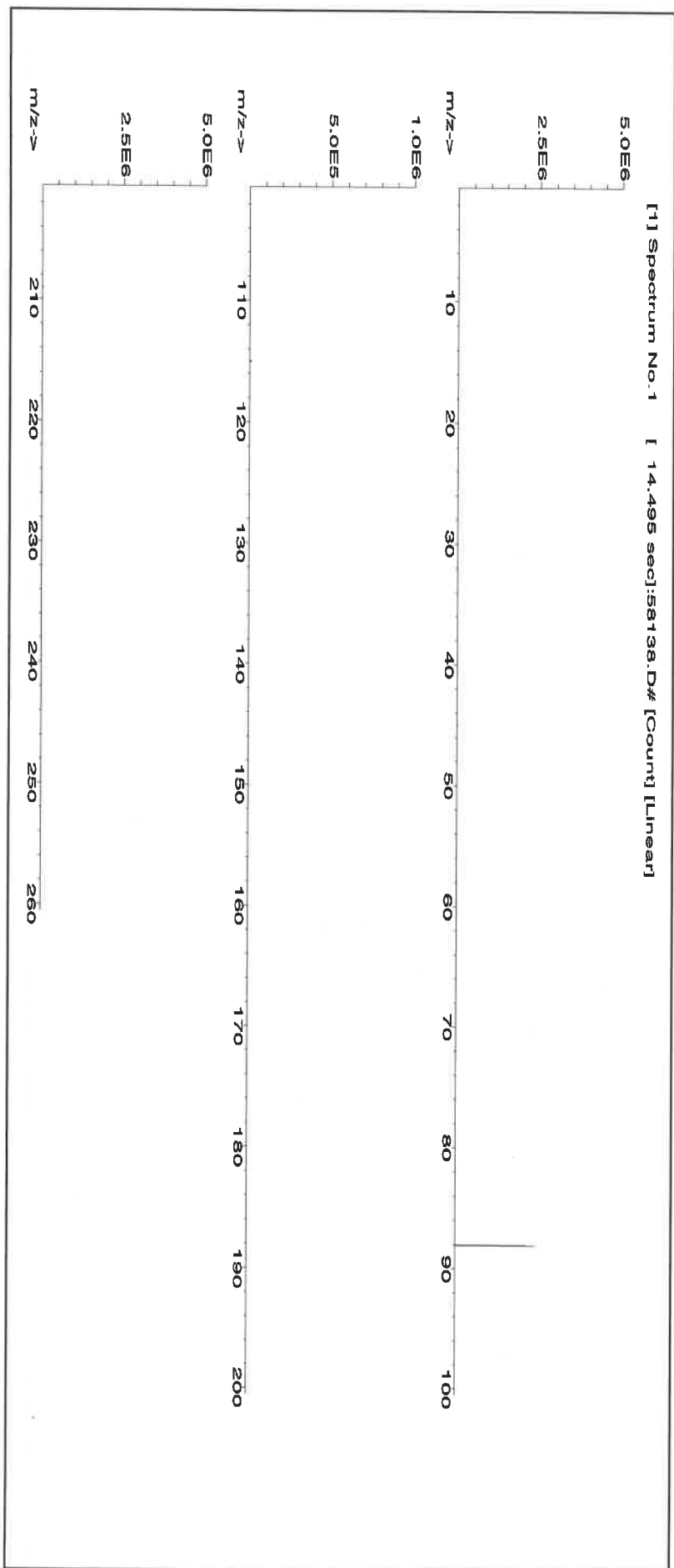
Formulated By:	Lawrence Barry	082922
Reviewed By:	Pedro L. Renteria	082922

SDS Information

Compound	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Strontium nitrate (Sr) IN017 SR2022018A1 10000 99.997 0.10 41.2 24.2756 24.2758 10000.1 20.0 10042-76-9 NA or-rat >2000mg/kg 3153a

[1] Spectrum No. 1 [14.495 sec]:56138.D# [Count] [Linear]





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

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

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

(T) = Target analyte

Physical Characterization:

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

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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CERTIFIED WEIGHT REPORT:

Part Number: 57081
Lot Number: 062724
Description: Thallium (TI)

Solvent: 24002546 Nitric Acid

Lot #

Aleah O'Brady
Formulated By: Aleah O'Brady 062724

Expiration Date:

2% 40.0 (mL) Nitric Acid

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): 1000

NIST Test Number: 6UTB

5E-05 Balance Uncertainty

Weight shown below was diluted to (mL): 2000.1 0.10 Flask Uncertainty

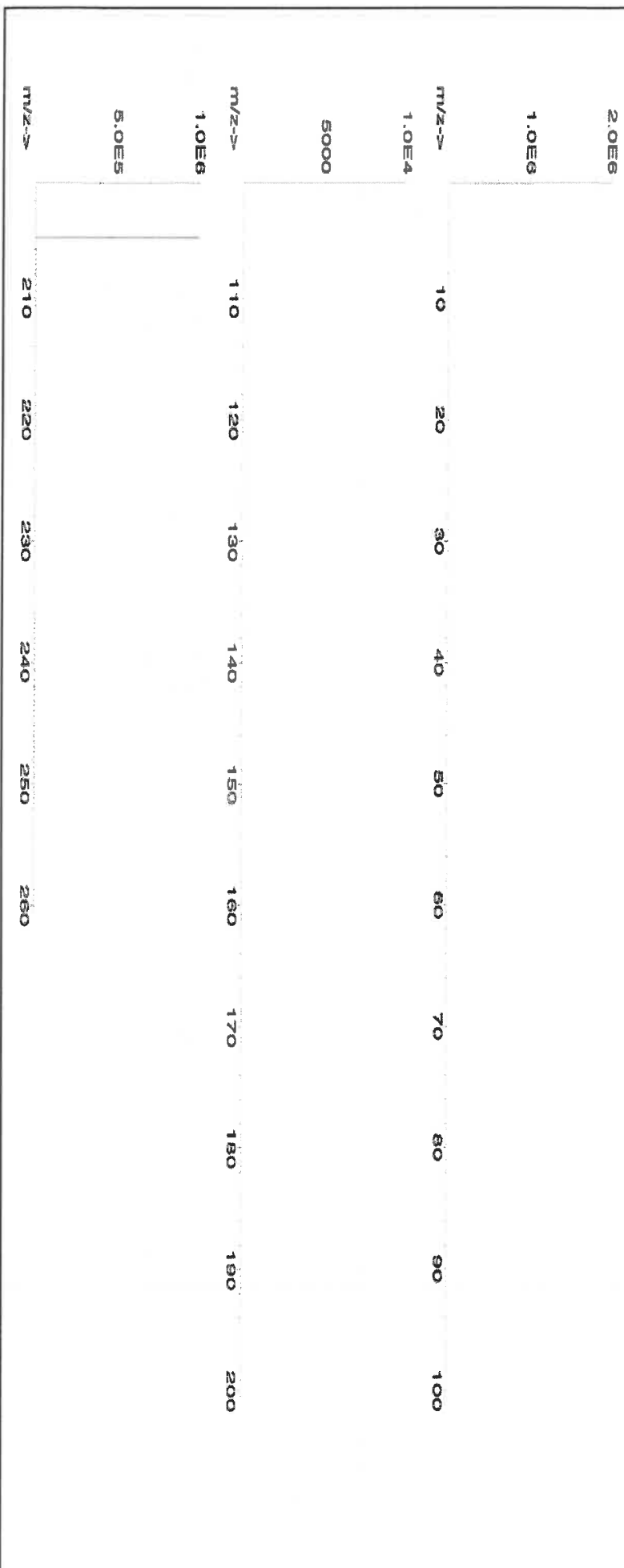
Pedro L. Renias
Reviewed By: Pedro L. Renias 062724

SDS Information

Compound	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Thallium nitrate (TI) IN037 BCCF4399 1000 99.999 0.10 77.0 2.5975 2.5977 1000.1 2.0 10102-45-1 0.1 mg/m3 or-mus 15mg/kg 3158

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





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

351

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

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

(T) = Target analyte

Physical Characterization:

Certified by:

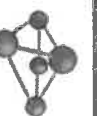
Homogeneity: No heterogeneity was observed in the preparation of this standard.

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



Certified Reference Material CRM

M6021



CERTIFIED WEIGHT REPORT:

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

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

2.0%

40.0 (mL)

Nitric Acid

Aleah O'Brady

062424

Formulated By:

Aleah O'Brady

062424

Reviewed By:

Pedro L. Rantas

062424

352

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

Reviewed By:

Pedro L. Rantas

062424

Volume shown below was diluted to (mL):

2000.3

0.06

Flask Uncertainty

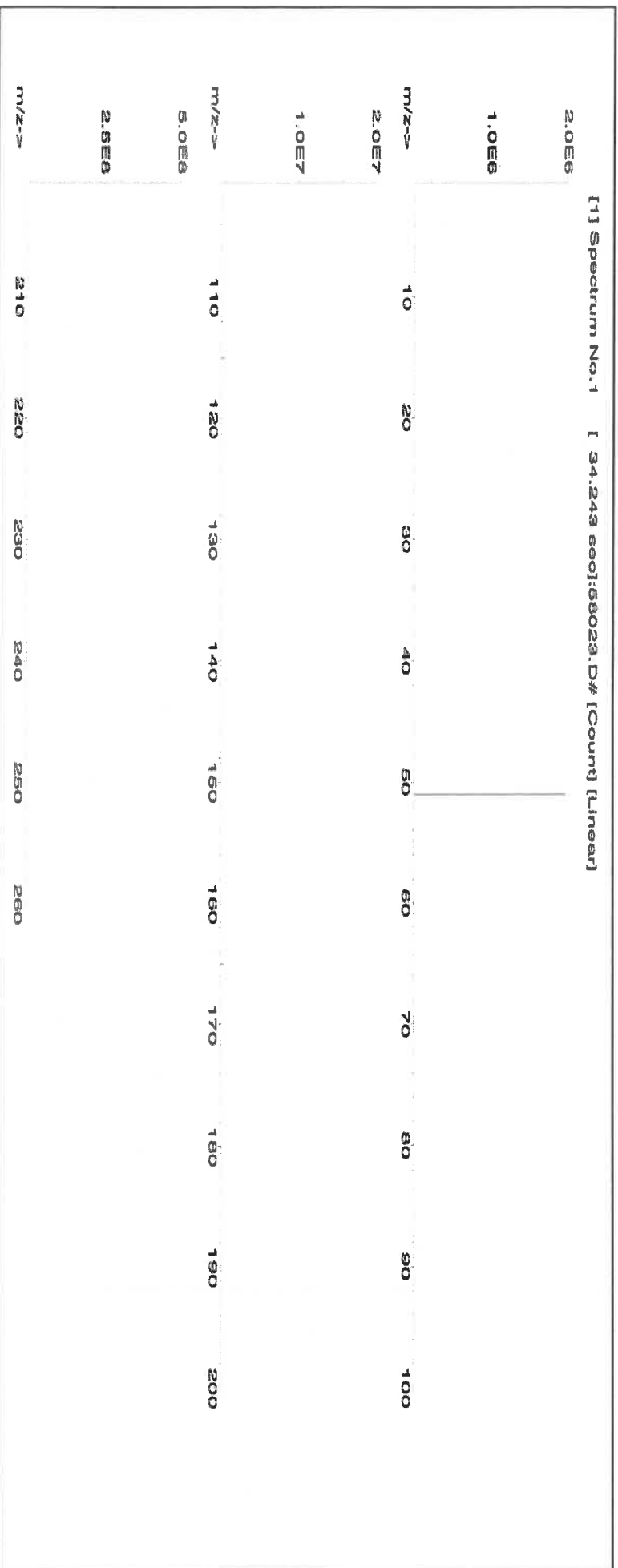
Compound

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

58123	021224	0.1000	200.0	0.084	1000	10000.3	1000.0	2.2	7803-55-6	0.05 mg/m3	or-rat 58.1mg/kg	3165
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[1] Spectrum No.1 [34.243 sec]:58023.D# [Count] [Linear]





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

353

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

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

(T) = Target analyte

Physical Characterization:

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

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
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- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

SOP ID : M3050B-Digestion-20, MSFAM01.1-Trace Metals-2

SDG No : MC0D96

Start Digest Date: 11/11/2024 Time : 10:00 Temp : 96 °C

Matrix : SOIL

End Digest Date: 11/11/2024 Time : 13:10 Temp : 96 °C

Pipette ID: ICP A

Digestion tube ID: M6054

Balance ID : M SC-2

Block thermometer ID: MET-DIG. #2

Filter paper ID : N/A

Dig Technician Signature: *JGP*

pH Strip ID : N/A

Supervisor Signature: *[Signature]*

Hood ID : #3

Temp : 1. 96°C 2. N/A

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

Standard Name	MLS USED	STD REF. # FROM LOG
LCSS	1.00	MP83141
Spike Sol 6	1.00	MP83147
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

Chemical Used	ML/SAMPLE USED	Lot Number
1:1 HNO3	10.00	MP83122
Conc. HNO3	5.00	M6117
30% H2O2	3.00	M5634
Conc. HCL	10.00	M6118
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 #3 CELL #34 : 96 C

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
11/11/24 13:50	<i>JGP Met dig</i>	<i>[Signature]</i>
	Preparation Group	Analysis Group

Lab Sample ID	Client Sample ID	pH	Initial Weight (g)	Final Vol (ml)	Color Before	Color After	Texture	Artifact	Comment	Prep Pos
P4754-01	MC0D96	N/A	1.19	100	Brown	Yellow	Medium	N/A	N/A	1
P4754-02	MC0D97	N/A	1.22	100	Brown	Yellow	Medium	N/A	N/A	2
P4754-03	MC0D98	N/A	1.25	100	Brown	Yellow	Medium	N/A	N/A	3
P4754-04	MC0D99	N/A	1.15	100	Brown	Yellow	Medium	N/A	N/A	4
P4754-05	MC0D99D	N/A	1.10	100	Brown	Yellow	Medium	N/A	N/A	5
P4754-06	MC0D99S	N/A	1.12	100	Brown	Yellow	Medium	N/A	MP83147	6
P4754-07	MC0D68	N/A	1.32	100	Light Brown	Yellow	Medium	N/A	N/A	7
P4754-08	MC0D69	N/A	1.27	100	Light Brown	Yellow	Medium	N/A	N/A	8
P4754-09	MC0D70	N/A	1.27	100	Light Brown	Yellow	Medium	N/A	N/A	9
P4754-10	MC0D71	N/A	1.13	100	Light Brown	Yellow	Medium	N/A	N/A	10
P4754-11	MC0D72	N/A	1.22	100	Light Brown	Yellow	Medium	N/A	N/A	11
P4754-12	MC0D74	N/A	1.19	100	Light Brown	Yellow	Medium	N/A	N/A	12
P4754-13	MC0D75	N/A	1.22	100	Light Brown	Yellow	Medium	N/A	N/A	13
P4754-14	MC0D76	N/A	1.15	100	Light Brown	Yellow	Medium	N/A	N/A	14
P4754-15	MC0D77	N/A	1.18	100	Light Brown	Yellow	Medium	N/A	N/A	15
P4754-16	MC0D78	N/A	1.12	100	Light Brown	Yellow	Medium	N/A	N/A	16
P4754-17	MC0D81	N/A	1.14	100	Orange	Yellow	Medium	N/A	N/A	17
P4754-18	MC0D82	N/A	1.28	100	Orange	Yellow	Medium	N/A	N/A	18
P4754-19	MC0D83	N/A	1.17	100	Orange	Yellow	Medium	N/A	N/A	19
P4754-20	MC0D84	N/A	1.21	100	Orange	Yellow	Medium	N/A	N/A	20
P4754-21	MC0D86	N/A	1.18	100	Orange	Yellow	Medium	N/A	N/A	21
P4754-22	MC0D87	N/A	1.26	100	Light Brown	Yellow	Medium	N/A	N/A	22
PB164831BL	PBS831	N/A	1.00	100	Colorless	Colorless	Fine	N/A	N/A	23
PB164831BS	LCS831	N/A	1.00	100	Colorless	Colorless	Fine	N/A	MP83141	24

Instrument ID: P5

Daily Analysis Runlog For Sequence/QC Batch ID # LB133447

Review By	Sarabjit Jaswal	Review On	11/14/2024 1:13:21 PM
Supervise By	Mohan Bera	Supervise On	11/14/2024 1:14:17 PM
STD. NAME	STD REF.#		
ICAL Standard	MP83134,MP83142,MP83140,MP83139,MP83138,MP83137,MP83136		
ICV Standard	MP83143		
CCV Standard	MP83146		
ICSA Standard	MP83144,MP83145		
CRI Standard			
LCS Standard	MP83141		
Chk Standard	MP83148,MP83149		

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	S0	S0	CAL1	11/14/24 01:30		Kareem	OK
2	S1	S01	CAL2	11/14/24 01:35		Kareem	OK
3	S2	S02	CAL3	11/14/24 01:39		Kareem	OK
4	S3	S03	CAL4	11/14/24 01:43		Kareem	OK
5	S4	S04	CAL5	11/14/24 01:48		Kareem	OK
6	S5	S05	CAL6	11/14/24 01:52		Kareem	OK
7	S6	S06	CAL7	11/14/24 01:56		Kareem	OK
8	ICV011	ICV011	ICV	11/14/24 02:50	Inst pause for calibration review	Kareem	OK
9	ICB011	ICB011	ICB	11/14/24 02:54		Kareem	OK
10	ICSA011	ICSA011	ICSA	11/14/24 03:05	Inst pause for review	Kareem	OK
11	ICSAB011	ICSAB011	ICSAB	11/14/24 03:09		Kareem	OK
12	CCV079	CCV079	CCV	11/14/24 03:14		Kareem	OK
13	CCB079	CCB079	CCB	11/14/24 03:18		Kareem	OK
14	PB164595BL	PBS595	MB	11/14/24 03:22		Kareem	OK
15	PB164595BS	LCS595	LCS	11/14/24 03:27		Kareem	OK
16	PB164595BSD	LCSD595	LCSD	11/14/24 03:31		Kareem	OK
17	P4523-01DL	MYE4T2	SAM	11/14/24 03:54		Kareem	OK
18	P4523-02DL	MYE4T3	SAM	11/14/24 03:58		Kareem	OK

Instrument ID: P5

Daily Analysis Runlog For Sequence/QC Batch ID # LB133447

Review By	Sarabjit Jaswal	Review On	11/14/2024 1:13:21 PM
Supervise By	Mohan Bera	Supervise On	11/14/2024 1:14:17 PM

STD. NAME	STD REF.#
ICAL Standard	MP83134,MP83142,MP83140,MP83139,MP83138,MP83137,MP83136
ICV Standard	MP83143
CCV Standard	MP83146
ICSA Standard	MP83144,MP83145
CRI Standard	
LCS Standard	MP83141
Chk Standard	MP83148,MP83149

19	P4523-03DL	MYE4T4	SAM	11/14/24 04:02		Kareem	OK
20	P4523-04DL	MYE4T5	SAM	11/14/24 04:07		Kareem	OK
21	P4523-05DL	MYE4T6	SAM	11/14/24 04:11		Kareem	OK
22	P4523-06DL	MYE4T7	SAM	11/14/24 04:16		Kareem	OK
23	P4523-10DL	MYE4T9	SAM	11/14/24 04:20		Kareem	OK
24	P4523-11DL	MYE4W8	SAM	11/14/24 04:24		Kareem	OK
25	P4523-12DL	MYE4W9	SAM	11/14/24 04:29		Kareem	OK
26	P4523-13DL	MYE4X0	SAM	11/14/24 04:33		Kareem	OK
27	P4523-14DL	MYE4X1	SAM	11/14/24 04:38		Kareem	OK
28	P4523-15DL	MYE4X2	SAM	11/14/24 04:42		Kareem	OK
29	P4523-16DL	MYE4X3	SAM	11/14/24 04:47		Kareem	OK
30	CCV080	CCV080	CCV	11/14/24 04:51		Kareem	OK
31	CCB080	CCB080	CCB	11/14/24 04:55		Kareem	OK
32	P4523-18DL	MYE4X5	SAM	11/14/24 05:04		Kareem	OK
33	P4523-19DL	MYE4X6	SAM	11/14/24 05:09		Kareem	OK
34	P4523-20DL	MYE4X7	SAM	11/14/24 05:13		Kareem	OK
35	P4523-21DL	MYE4X8	SAM	11/14/24 05:17		Kareem	OK
36	P4523-22DL	MYE4X9	SAM	11/14/24 05:22		Kareem	OK
37	P4754-01	MC0D96	SAM	11/14/24 05:26		Kareem	OK
38	P4754-02	MC0D97	SAM	11/14/24 05:31		Kareem	OK

Instrument ID: P5

Daily Analysis Runlog For Sequence/QC Batch ID # LB133447

Review By	Sarabjit Jaswal	Review On	11/14/2024 1:13:21 PM
Supervise By	Mohan Bera	Supervise On	11/14/2024 1:14:17 PM

STD. NAME	STD REF.#
ICAL Standard	MP83134,MP83142,MP83140,MP83139,MP83138,MP83137,MP83136
ICV Standard	MP83143
CCV Standard	MP83146
ICSA Standard	MP83144,MP83145
CRI Standard	
LCS Standard	MP83141
Chk Standard	MP83148,MP83149

39	P4754-03	MC0D98	SAM	11/14/24 05:35		Kareem	OK
40	P4754-04	MC0D99	SAM	11/14/24 05:40		Kareem	OK
41	P4754-05	MC0D99D	DUP	11/14/24 05:44		Kareem	OK
42	P4754-06	MC0D99S	MS	11/14/24 05:49		Kareem	OK
43	P4754-04L	MC0D99L	SD	11/14/24 05:53		Kareem	OK
44	P4754-07	MC0D68	SAM	11/14/24 05:57		Kareem	OK
45	P4754-08	MC0D69	SAM	11/14/24 06:02		Kareem	OK
46	P4754-09	MC0D70	SAM	11/14/24 06:06		Kareem	OK
47	P4754-10	MC0D71	SAM	11/14/24 06:11		Kareem	OK
48	P4754-11	MC0D72	SAM	11/14/24 06:15		Kareem	OK
49	P4754-12	MC0D74	SAM	11/14/24 06:20		Kareem	OK
50	P4754-13	MC0D75	SAM	11/14/24 06:24		Kareem	OK
51	CCV081	CCV081	CCV	11/14/24 06:29		Kareem	OK
52	CCB081	CCB081	CCB	11/14/24 06:33		Kareem	OK
53	P4754-14	MC0D76	SAM	11/14/24 06:37		Kareem	OK
54	P4754-15	MC0D77	SAM	11/14/24 06:42		Kareem	OK
55	P4754-16	MC0D78	SAM	11/14/24 06:46		Kareem	OK
56	P4754-17	MC0D81	SAM	11/14/24 06:51		Kareem	OK
57	P4754-18	MC0D82	SAM	11/14/24 06:55		Kareem	OK
58	P4754-19	MC0D83	SAM	11/14/24 07:00		Kareem	OK

Instrument ID: P5

Daily Analysis Runlog For Sequence/QC Batch ID # LB133447

Review By	Sarabjit Jaswal	Review On	11/14/2024 1:13:21 PM
Supervise By	Mohan Bera	Supervise On	11/14/2024 1:14:17 PM

STD. NAME	STD REF.#
ICAL Standard	MP83134,MP83142,MP83140,MP83139,MP83138,MP83137,MP83136
ICV Standard	MP83143
CCV Standard	MP83146
ICSA Standard	MP83144,MP83145
CRI Standard	
LCS Standard	MP83141
Chk Standard	MP83148,MP83149

59	P4754-20	MC0D84	SAM	11/14/24 07:04		Kareem	OK
60	P4754-21	MC0D86	SAM	11/14/24 07:09		Kareem	OK
61	P4754-22	MC0D87	SAM	11/14/24 07:13		Kareem	OK
62	PB164831BL	PBS831	MB	11/14/24 07:18		Kareem	OK
63	PB164831BS	LCS831	LCS	11/14/24 07:22		Kareem	OK
64	P4753-01	MC0D50	SAM	11/14/24 07:27		Kareem	OK
65	P4753-02	MC0D51	SAM	11/14/24 07:31		Kareem	OK
66	P4753-03	MC0D52	SAM	11/14/24 07:36		Kareem	OK
67	P4753-04	MC0D53	SAM	11/14/24 07:40		Kareem	OK
68	P4753-05	MC0D54	SAM	11/14/24 07:45		Kareem	OK
69	P4753-06	MC0D56	SAM	11/14/24 07:49		Kareem	OK
70	P4753-07	MC0D57	SAM	11/14/24 07:54		Kareem	OK
71	P4753-08	MC0D58	SAM	11/14/24 07:58		Kareem	OK
72	P4753-09	MC0D59	SAM	11/14/24 08:03		Kareem	OK
73	CCV082	CCV082	CCV	11/14/24 08:07		Kareem	OK
74	CCB082	CCB082	CCB	11/14/24 08:11		Kareem	OK
75	P4753-10	MC0D60	SAM	11/14/24 08:16		Kareem	OK
76	P4753-11	MC0D61	SAM	11/14/24 08:20		Kareem	OK
77	P4753-12	MC0D62	SAM	11/14/24 08:25		Kareem	OK
78	P4753-13	MC0D64	SAM	11/14/24 08:29		Kareem	OK

Instrument ID: P5

Daily Analysis Runlog For Sequence/QC Batch ID # LB133447

Review By	Sarabjit Jaswal	Review On	11/14/2024 1:13:21 PM
Supervise By	Mohan Bera	Supervise On	11/14/2024 1:14:17 PM
STD. NAME	STD REF.#		
ICAL Standard	MP83134,MP83142,MP83140,MP83139,MP83138,MP83137,MP83136		
ICV Standard	MP83143		
CCV Standard	MP83146		
ICSA Standard	MP83144,MP83145		
CRI Standard			
LCS Standard	MP83141		
Chk Standard	MP83148,MP83149		

79	P4753-14	MC0D66	SAM	11/14/24 08:34		Kareem	OK
80	P4753-15	MC0D66D	DUP	11/14/24 08:38		Kareem	OK
81	P4753-16	MC0D66S	MS	11/14/24 08:43		Kareem	OK
82	P4753-14L	MC0D66L	SD	11/14/24 08:47		Kareem	OK
83	P4753-17	MC0D89	SAM	11/14/24 08:52		Kareem	OK
84	P4753-18	MC0D90	SAM	11/14/24 08:56		Kareem	OK
85	P4753-19	MC0D91	SAM	11/14/24 09:00		Kareem	OK
86	P4753-20	MC0D92	SAM	11/14/24 09:05		Kareem	OK
87	P4753-21	MC0D93	SAM	11/14/24 09:09		Kareem	OK
88	P4753-22	MC0D95	SAM	11/14/24 09:14		Kareem	OK
89	PB164781BL	PBS781	MB	11/14/24 09:18		Kareem	OK
90	PB164781BS	LCS781	LCS	11/14/24 09:23		Kareem	OK
91	P4752-01	MC0D32	SAM	11/14/24 09:27		Kareem	OK
92	P4752-02	MC0D33	SAM	11/14/24 09:32		Kareem	OK
93	P4752-03	MC0D34	SAM	11/14/24 09:36		Kareem	OK
94	P4752-04	MC0D35	SAM	11/14/24 09:41		Kareem	OK
95	CCV083	CCV083	CCV	11/14/24 09:45		Kareem	OK
96	CCB083	CCB083	CCB	11/14/24 09:50		Kareem	OK
97	P4752-05	MC0D36	SAM	11/14/24 09:54		Kareem	OK
98	P4752-06	MC0D38	SAM	11/14/24 09:59		Kareem	OK

Instrument ID: P5

Daily Analysis Runlog For Sequence/QC Batch ID # LB133447

Review By	Sarabjit Jaswal	Review On	11/14/2024 1:13:21 PM
Supervise By	Mohan Bera	Supervise On	11/14/2024 1:14:17 PM
STD. NAME	STD REF.#		
ICAL Standard	MP83134,MP83142,MP83140,MP83139,MP83138,MP83137,MP83136		
ICV Standard	MP83143		
CCV Standard	MP83146		
ICSA Standard	MP83144,MP83145		
CRI Standard			
LCS Standard	MP83141		
Chk Standard	MP83148,MP83149		

99	P4752-07	MC0D39	SAM	11/14/24 10:03		Kareem	OK
100	P4752-08	MC0D40	SAM	11/14/24 10:08		Kareem	OK
101	P4752-09	MC0D41	SAM	11/14/24 10:12		Kareem	OK
102	P4752-10	MC0D42	SAM	11/14/24 10:17		Kareem	OK
103	P4752-11	MC0D44	SAM	11/14/24 10:21		Kareem	OK
104	P4752-12	MC0D45	SAM	11/14/24 10:25		Kareem	OK
105	P4752-13	MC0D46	SAM	11/14/24 10:30		Kareem	OK
106	P4752-14	MC0D47	SAM	11/14/24 10:34		Kareem	OK
107	P4752-15	MC0D48	SAM	11/14/24 10:39		Kareem	OK
108	P4752-16	MC0DA1	SAM	11/14/24 10:43		Kareem	OK
109	P4752-18	MC0DA3	SAM	11/14/24 10:48		Kareem	OK
110	P4752-19	MC0DA4	SAM	11/14/24 10:52		Kareem	OK
111	P4752-20	MC0DA4D	DUP	11/14/24 10:57		Kareem	OK
112	PB164780BS	LCS780	LCS	11/14/24 11:01		Kareem	OK
113	P4752-21	MC0DA4S	MS	11/14/24 11:06		Kareem	OK
114	P4752-19L	MC0DA4L	SD	11/14/24 11:10		Kareem	OK
115	P4752-22	MC0DA5	SAM	11/14/24 11:14		Kareem	OK
116	PB164780BL	PBS780	MB	11/14/24 11:19		Kareem	OK
117	CCV084	CCV084	CCV	11/14/24 11:23		Kareem	OK
118	CCB084	CCB084	CCB	11/14/24 11:28		Kareem	OK

Instrument ID: P5

Daily Analysis Runlog For Sequence/QC Batch ID # LB133447

Review By	Sarabjit Jaswal	Review On	11/14/2024 1:13:21 PM
Supervise By	Mohan Bera	Supervise On	11/14/2024 1:14:17 PM

STD. NAME	STD REF.#
ICAL Standard	MP83134,MP83142,MP83140,MP83139,MP83138,MP83137,MP83136
ICV Standard	MP83143
CCV Standard	MP83146
ICSA Standard	MP83144,MP83145
CRI Standard	
LCS Standard	MP83141
Chk Standard	MP83148,MP83149

119	P4752-17	MC0DA2	SAM	11/14/24 11:32		Kareem	OK
120	CCV085	CCV085	CCV	11/14/24 11:37		Kareem	OK
121	CCB085	CCB085	CCB	11/14/24 11:41		Kareem	OK

ORIGIN ID: PTA (610) 952-3637
JOE MAULE
TETRA TECH INC.
661 ANDERSEN DR
STE 200
PITTSBURGH, PA 15220
UNITED STATES

SHIP DATE: 08NOV24
ACTWTG: 45.00 LB
CAD: 7709497/NET 4760
BILL SENDER

TO MOHAMMAD AHMED

ALLANCE TECHNICAL GROUP LLC
284 SHEFFIELD STREET

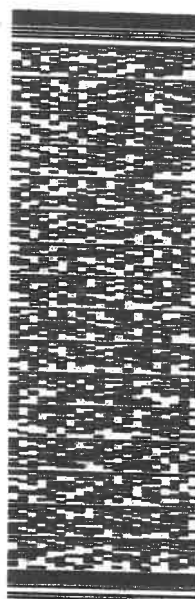
MOUNTAINSIDE NJ 07092

(908) 789-8900 REF: 103903401240302.00200C

PO: DEPT:

11-7-24
9:15
2-7

58CJ4/F74C/C6C4



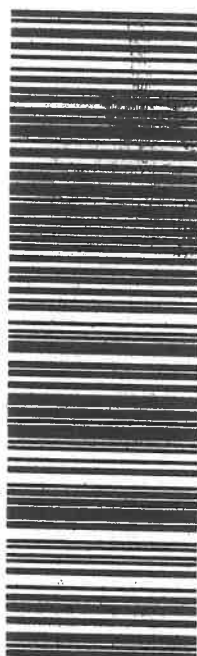
2402408188100

TRK# 7797 7289 7863
0201

THU - 07 NOV 10:30A
PRIORITY OVERNIGHT

NP KBCA

07092
NJ-US EWR



After printing this label:

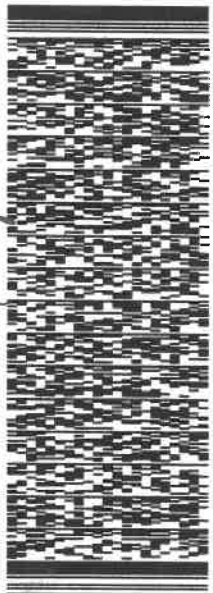
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: IMPORTANT: TRANSMIT YOUR SHIPPING DATA AND PRINT A MANIFEST:

At the end of each shipping day, you should perform the FedEx Ground End of Day Close procedure to transmit your shipping data to FedEx. To do so, click on the Ground End of Day Close Button. If required, print the pickup manifest that appears. A printed manifest is required to be tendered along with your packages if they are being picked up by FedEx Ground. If you are dropping your packages off at a FedEx drop off location, the manifest is not required.

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide and applicable tariff, available upon request. FedEx will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations, including limitations on our liability, can be found in the current FedEx Service Guide and applicable tariff apply. In no event shall FedEx Ground be liable for any special, incidental, or consequential damages, including, without limitation, loss of profit, loss to the intrinsic value of the package, loss of sale, interest income or attorney's fees. Recovery cannot exceed actual documented loss. Items of extraordinary value are subject to separate limitations of liability set forth in the Service Guide and tariff. Written claims must be filed within strict time limits, see current FedEx Service Guide.

Cooler #4
Solu

ORIGINAL ID: PTA (010) 952-3637 JOE MAULE TETRA TECH INC. 661 ANDERSEN DR STE 200 PITTSBURGH, PA 15220 UNITED STATES US		SHIP DATE: 06NOV24 ACTWGT: 45.00 LB CAD: 770949/7/NE/4760 BILL SENDER
TO MOHAMMAD AHMED ALLIANCE TECHNICAL GROUP LLC 284 SHEFFIELD STREET MOUNTAINSIDE NJ 07092 (908) 789-8900 REF: 103X034012406002.0020DC DEPT:		
 		
3 of 3 MP# 7797 6314 1341 Mstr# 7797 6314 0746 0263 THU - 07 NOV 10:30A PRIORITY OVERNIGHT NP KBCA NJ-US 07092 EWR		

58CJ4/F74G/C6C4

After printing this label:

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

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COOKER #3
 Soils

Login Summary Report

Order ID :	P4754	Order Date :	11/8/2024 9:50:00 AM	Project Mgr :	Sohil
Client :	USEPA CLP SMO	Project :	51863	Report Type :	USEPA CLP
Contact :	Anita Kapadia	Receive Date :	11/8/2024 9:50:00 AM	EDD Type :	EPA CLP
Date Sign Off :	11/8/2024 1:52:32 PM				

Sample ID	Client ID	Matrix	Sampling Date	Test	Test Group	Method	TAT Days	Fax Due Date	HC Due Date
P4754-01	MC0D96	Solid	11/05/2024						
				Metals CLP4		SFAM_AES	5	11/15/2024	07/15/2024
				Percent Solids		Chemtech -SOP	5	11/15/2024	07/15/2024
P4754-02	MC0D97	Solid	11/05/2024						
				Metals CLP4		SFAM_AES	5	11/15/2024	07/15/2024
				Percent Solids		Chemtech -SOP	5	11/15/2024	07/15/2024
P4754-03	MC0D98	Solid	11/05/2024						
				Metals CLP4		SFAM_AES	5	11/15/2024	07/15/2024
				Percent Solids		Chemtech -SOP	5	11/15/2024	07/15/2024
P4754-04	MC0D99	Solid	11/05/2024						
				Metals CLP4		SFAM_AES	5	11/15/2024	07/15/2024
				Percent Solids		Chemtech -SOP	5	11/15/2024	07/15/2024
P4754-05	MC0D99D	Solid	11/05/2024						
				Metals CLP4		SFAM_AES	5	11/15/2024	07/15/2024
				Percent Solids		Chemtech -SOP	5	11/15/2024	07/15/2024
P4754-06	MC0D99S	Solid	11/05/2024						
				Metals CLP4		SFAM_AES	5	11/15/2024	07/15/2024
				Percent Solids		Chemtech -SOP	5	11/15/2024	07/15/2024
P4754-07	MC0D68	Solid	11/05/2024						
				Metals CLP4		SFAM_AES	5	11/15/2024	07/15/2024
				Percent Solids		Chemtech -SOP	5	11/15/2024	07/15/2024
P4754-08	MC0D69	Solid	11/05/2024						
				Metals CLP4		SFAM_AES	5	11/15/2024	07/15/2024
				Percent Solids		Chemtech -SOP	5	11/15/2024	07/15/2024
P4754-09	MC0D70	Solid	11/05/2024						
				Metals CLP4		SFAM_AES	5	11/15/2024	07/15/2024
				Percent Solids		Chemtech -SOP	5	11/15/2024	07/15/2024
P4754-10	MC0D71	Solid	11/05/2024						
				Metals CLP4		SFAM_AES	5	11/15/2024	07/15/2024
				Percent Solids		Chemtech -SOP	5	11/15/2024	07/15/2024

P4754-11	MC0D72	Solid	11/05/2024		
				Metals CLP4	SFAM_AES 5 11/15/2024 07/15/2024
				Percent Solids	Chemtech -SOP 5 11/15/2024 07/15/2024
P4754-12	MC0D74	Solid	11/05/2024		
				Metals CLP4	SFAM_AES 5 11/15/2024 07/15/2024
				Percent Solids	Chemtech -SOP 5 11/15/2024 07/15/2024
P4754-13	MC0D75	Solid	11/05/2024		
				Metals CLP4	SFAM_AES 5 11/15/2024 07/15/2024
				Percent Solids	Chemtech -SOP 5 11/15/2024 07/15/2024
P4754-14	MC0D76	Solid	11/05/2024		
				Metals CLP4	SFAM_AES 5 11/15/2024 07/15/2024
				Percent Solids	Chemtech -SOP 5 11/15/2024 07/15/2024
P4754-15	MC0D77	Solid	11/05/2024		
				Metals CLP4	SFAM_AES 5 11/15/2024 07/15/2024
				Percent Solids	Chemtech -SOP 5 11/15/2024 07/15/2024
P4754-16	MC0D78	Solid	11/05/2024		
				Metals CLP4	SFAM_AES 5 11/15/2024 07/15/2024
				Percent Solids	Chemtech -SOP 5 11/15/2024 07/15/2024
P4754-17	MC0D81	Solid	11/05/2024		
				Metals CLP4	SFAM_AES 5 11/15/2024 07/15/2024
				Percent Solids	Chemtech -SOP 5 11/15/2024 07/15/2024
P4754-18	MC0D82	Solid	11/05/2024		
				Metals CLP4	SFAM_AES 5 11/15/2024 07/15/2024
				Percent Solids	Chemtech -SOP 5 11/15/2024 07/15/2024
P4754-19	MC0D83	Solid	11/05/2024		
				Metals CLP4	SFAM_AES 5 11/15/2024 07/15/2024
				Percent Solids	Chemtech -SOP 5 11/15/2024 07/15/2024
P4754-20	MC0D84	Solid	11/05/2024		
				Metals CLP4	SFAM_AES 5 11/15/2024 07/15/2024
				Percent Solids	Chemtech -SOP 5 11/15/2024 07/15/2024
P4754-21	MC0D86	Solid	11/05/2024		
				Metals CLP4	SFAM_AES 5 11/15/2024 07/15/2024
				Percent Solids	Chemtech -SOP 5 11/15/2024 07/15/2024
P4754-22	MC0D87	Solid	11/05/2024		
				Metals CLP4	SFAM_AES 5 11/15/2024 07/15/2024
				Percent Solids	Chemtech -SOP 5 11/15/2024 07/15/2024

WORKLIST(Hardcopy Internal Chain)

Worklist Name : PB164831

Worklist ID : 185295

Department : Digestion

Date : 11-09-2024 13:18:13

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
P4754-01	MC0D96	Solid	Metals CLP4	Cool 4 deg C	USEP01	Q12	11/05/2024	SFAM_AES
P4754-02	MC0D97	Solid	Metals CLP4	Cool 4 deg C	USEP01	Q12	11/05/2024	SFAM_AES
P4754-03	MC0D98	Solid	Metals CLP4	Cool 4 deg C	USEP01	Q12	11/05/2024	SFAM_AES
P4754-04	MC0D99	Solid	Metals CLP4	Cool 4 deg C	USEP01	Q12	11/05/2024	SFAM_AES
P4754-05	MC0D99D	Solid	Metals CLP4	Cool 4 deg C	USEP01	Q12	11/05/2024	SFAM_AES
P4754-06	MC0D99S	Solid	Metals CLP4	Cool 4 deg C	USEP01	Q12	11/05/2024	SFAM_AES
P4754-19	MC0D83	Solid	Metals CLP4	Cool 4 deg C	USEP01	Q12	11/05/2024	SFAM_AES
P4754-20	MC0D84	Solid	Metals CLP4	Cool 4 deg C	USEP01	Q12	11/05/2024	SFAM_AES
P4754-21	MC0D86	Solid	Metals CLP4	Cool 4 deg C	USEP01	Q12	11/05/2024	SFAM_AES
P4754-22	MC0D87	Solid	Metals CLP4	Cool 4 deg C	USEP01	Q12	11/05/2024	SFAM_AES
P4754-13	MC0D75	Solid	Metals CLP4	Cool 4 deg C	USEP01	Q12	11/05/2024	SFAM_AES
P4754-14	MC0D76	Solid	Metals CLP4	Cool 4 deg C	USEP01	Q12	11/05/2024	SFAM_AES
P4754-15	MC0D77	Solid	Metals CLP4	Cool 4 deg C	USEP01	Q12	11/05/2024	SFAM_AES
P4754-16	MC0D78	Solid	Metals CLP4	Cool 4 deg C	USEP01	Q12	11/05/2024	SFAM_AES
P4754-17	MC0D81	Solid	Metals CLP4	Cool 4 deg C	USEP01	Q12	11/05/2024	SFAM_AES
P4754-18	MC0D82	Solid	Metals CLP4	Cool 4 deg C	USEP01	Q12	11/05/2024	SFAM_AES
P4754-07	MC0D68	Solid	Metals CLP4	Cool 4 deg C	USEP01	Q12	11/05/2024	SFAM_AES
P4754-08	MC0D69	Solid	Metals CLP4	Cool 4 deg C	USEP01	Q12	11/05/2024	SFAM_AES
P4754-09	MC0D70	Solid	Metals CLP4	Cool 4 deg C	USEP01	Q12	11/05/2024	SFAM_AES
P4754-10	MC0D71	Solid	Metals CLP4	Cool 4 deg C	USEP01	Q12	11/05/2024	SFAM_AES
P4754-11	MC0D72	Solid	Metals CLP4	Cool 4 deg C	USEP01	Q12	11/05/2024	SFAM_AES

Date/Time

11/11/24 8:45

Raw Sample Received by:

Agar (not signed)

Raw Sample Relinquished by:

Agar (not signed)

Date/Time

11/11/24 18:45

Raw Sample Received by:

Agar (not signed)

Raw Sample Relinquished by:

Agar (not signed)

WORKLIST(Hardcopy Internal Chain)

Worklist Name : PB164831

Worklist ID : 185295

Department : Digestion

Date : 11-09-2024 13:18:13

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
P4754-12	MC0D74	Solid	Metals CLP4	Cool 4 deg C	USEP01	Q12	11/05/2024	SFAM_AES

Date/Time 11/09/24 18:45

Raw Sample Received by: Yegorov

Raw Sample Relinquished by: SA

Date/Time 11/09/24 10:45

Raw Sample Received by: Yegorov

Raw Sample Relinquished by: SA (not dig)