

Cover Page

Order ID : P5299

Project ID : Amtrak Sawtooth Bridges 2024

Client : Portal Partners Tri-Venture

Lab Sample Number

P5299-01
P5299-02
P5299-03
P5299-04

Client Sample Number

SB-01
SB-02
SB-01
SB-02

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

Signature : _____

Date: 12/26/2024

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012



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

CASE NARRATIVE

Portal Partners Tri-Venture

Project Name: Amtrak Sawtooth Bridges 2024

Project # N/A

Chemtech Project # P5299

Test Name: Metals ICP-TAL,Mercury

A. Number of Samples and Date of Receipt:

4 Solid samples were received on 12/16/2024.

B. Parameters:

According to the Chain of Custody document, the following analyses were requested: EPH, Hexavalent Chromium, Mercury, Metals ICP-TAL, METALS-TAL, PCB, SVOC-TCL BNA -20, Trivalent Chromium and VOC-TCLVOA-10. This data package contains results for Metals ICP-TAL,Mercury.

C. Analytical Techniques:

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

D. QA/ QC Samples:

The Holding Times were met for all analysis.

The Blank Spike met requirements for all samples.

The Duplicate analysis met criteria for all samples.

The Matrix Spike (HR-04-121624MS) analysis met criteria for all samples except for Mercury due to sample matrix interference. The Matrix Spike (SB-02MS) analysis met criteria for all samples except for Antimony, Barium, Beryllium, Chromium, Potassium, Selenium and Vanadium due to Chemical Interference during Digestion Process.

The Matrix Spike Duplicate (HR-04-121624MSD) analysis met criteria for all samples except for Mercury due to sample matrix interference. The Matrix Spike Duplicate (SB-02MSD) analysis met criteria for all samples except for Antimony, Barium, Chromium, Copper, Potassium, Selenium, Sodium, Vanadium and Zinc due to Chemical Interference during Digestion Process.

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

The Calibration met the requirements.

The Serial Dilution met the acceptable requirements.

E. Additional Comments:



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

Signature_____

DATA REPORTING QUALIFIERS- INORGANIC

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

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

APPENDIX A

QA REVIEW GENERAL DOCUMENTATION

Project #: P5299

Completed

For thorough review, the report must have the following:

GENERAL:

Are all original paperwork present (chain of custody, record of communication,airbill, sample management lab chronicle, login page)

✓

Check chain-of-custody for proper relinquish/return of samples

✓

Is the chain of custody signed and complete

✓

Check internal chain-of-custody for proper relinquish/return of samples /sample extracts

✓

Collect information for each project id from server. Were all requirements followed

✓

COVER PAGE:

Do numbers of samples correspond to the number of samples in the Chain of Custody on login page

✓

Do lab numbers and client Ids on cover page agree with the Chain of Custody

✓

CHAIN OF CUSTODY:

Do requested analyses on Chain of Custody agree with form I results

✓

Do requested analyses on Chain of Custody agree with the log-in page

✓

Were the correct method log-in for analysis according to the Analytical Request and Chain of Castody

✓

Were the samples received within hold time

✓

Were any problems found with the samples at arrival recorded in the Sample Management Laboratory Chronicle

✓

ANALYTICAL:

Was method requirement followed?

✓

Was client requirement followed?

✓

Does the case narrative summarize all QC failure?

✓

All runlogs and manual integration are reviewed for requirements

✓

All manual calculations and /or hand notations verified

✓

QA Review Signature: SHREENA PATEL

Date: 12/26/2024

LAB CHRONICLE

OrderID:	P5299	OrderDate:	12/16/2024 12:24:00 PM
Client:	Portal Partners Tri-Venture	Project:	Amtrak Sawtooth Bridges 2024
Contact:	Joseph Krupansky	Location:	L41,VOA Ref. #2 Soil

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
P5299-01	SB-01	SOIL			12/14/24			12/16/24
			Mercury	7471B		12/18/24	12/18/24	
			Metals ICP-TAL	6010D		12/18/24	12/20/24	
P5299-02	SB-02	SOIL			12/15/24			12/16/24
			Mercury	7471B		12/18/24	12/18/24	
			Metals ICP-TAL	6010D		12/18/24	12/20/24	
P5299-03	SB-01	SOIL			12/15/24			12/16/24
			Mercury	7471B		12/18/24	12/18/24	
			Metals ICP-TAL	6010D		12/18/24	12/20/24	
P5299-04	SB-02	SOIL			12/15/24			12/16/24
			Mercury	7471B		12/18/24	12/18/24	
			Metals ICP-TAL	6010D		12/18/24	12/20/24	

Hit Summary Sheet
SW-846

SDG No.: P5299

Order ID: P5299

Client: Portal Partners Tri-Venture

Project ID: Amtrak Sawtooth Bridges 2024

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
Client ID : SB-01								
P5299-01	SB-01	SOIL	Aluminum	2440		2.90	6.01	mg/Kg
P5299-01	SB-01	SOIL	Arsenic	5.96		0.35	1.20	mg/Kg
P5299-01	SB-01	SOIL	Barium	22.3		0.77	6.01	mg/Kg
P5299-01	SB-01	SOIL	Beryllium	0.25	J	0.014	0.36	mg/Kg
P5299-01	SB-01	SOIL	Calcium	1990		3.36	120	mg/Kg
P5299-01	SB-01	SOIL	Chromium	7.98		0.065	0.60	mg/Kg
P5299-01	SB-01	SOIL	Cobalt	2.15		0.070	1.80	mg/Kg
P5299-01	SB-01	SOIL	Copper	13.6		0.56	1.20	mg/Kg
P5299-01	SB-01	SOIL	Iron	12000		3.23	6.01	mg/Kg
P5299-01	SB-01	SOIL	Lead	11.0		0.18	0.72	mg/Kg
P5299-01	SB-01	SOIL	Magnesium	947		4.12	120	mg/Kg
P5299-01	SB-01	SOIL	Manganese	41.4		0.085	1.20	mg/Kg
P5299-01	SB-01	SOIL	Mercury	0.13		0.0070	0.015	mg/Kg
P5299-01	SB-01	SOIL	Nickel	4.25		0.11	2.40	mg/Kg
P5299-01	SB-01	SOIL	Potassium	937		34.5	120	mg/Kg
P5299-01	SB-01	SOIL	Sodium	122		43.4	120	mg/Kg
P5299-01	SB-01	SOIL	Vanadium	14.6		0.32	2.40	mg/Kg
P5299-01	SB-01	SOIL	Zinc	11.3		0.13	2.40	mg/Kg
Client ID : SB-02								
P5299-02	SB-02	SOIL	Aluminum	8690		2.85	5.91	mg/Kg
P5299-02	SB-02	SOIL	Arsenic	2.21		0.34	1.18	mg/Kg
P5299-02	SB-02	SOIL	Barium	31.8		0.76	5.91	mg/Kg
P5299-02	SB-02	SOIL	Beryllium	0.54		0.014	0.36	mg/Kg
P5299-02	SB-02	SOIL	Calcium	462		3.31	118	mg/Kg
P5299-02	SB-02	SOIL	Chromium	13.2		0.064	0.59	mg/Kg
P5299-02	SB-02	SOIL	Cobalt	6.16		0.069	1.77	mg/Kg
P5299-02	SB-02	SOIL	Copper	36.0		0.56	1.18	mg/Kg
P5299-02	SB-02	SOIL	Iron	14500		3.18	5.91	mg/Kg
P5299-02	SB-02	SOIL	Lead	9.33		0.18	0.71	mg/Kg
P5299-02	SB-02	SOIL	Magnesium	2130		4.06	118	mg/Kg
P5299-02	SB-02	SOIL	Manganese	124		0.084	1.18	mg/Kg
P5299-02	SB-02	SOIL	Mercury	0.11		0.0080	0.019	mg/Kg
P5299-02	SB-02	SOIL	Nickel	11.5		0.11	2.37	mg/Kg
P5299-02	SB-02	SOIL	Potassium	702		33.9	118	mg/Kg
P5299-02	SB-02	SOIL	Sodium	250		42.7	118	mg/Kg
P5299-02	SB-02	SOIL	Vanadium	17.5		0.32	2.37	mg/Kg
P5299-02	SB-02	SOIL	Zinc	22.9		0.13	2.37	mg/Kg

Hit Summary Sheet
SW-846

SDG No.: P5299

Order ID: P5299

Client: Portal Partners Tri-Venture

Project ID: Amtrak Sawtooth Bridges 2024

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
Client ID : SB-01								
P5299-03	SB-01	SOIL	Aluminum	6680		3.02	6.27	mg/Kg
P5299-03	SB-01	SOIL	Arsenic	1.34		0.36	1.25	mg/Kg
P5299-03	SB-01	SOIL	Barium	45.9		0.80	6.27	mg/Kg
P5299-03	SB-01	SOIL	Beryllium	0.51		0.015	0.38	mg/Kg
P5299-03	SB-01	SOIL	Calcium	1500		3.51	125	mg/Kg
P5299-03	SB-01	SOIL	Chromium	26.1		0.068	0.63	mg/Kg
P5299-03	SB-01	SOIL	Cobalt	7.49		0.073	1.88	mg/Kg
P5299-03	SB-01	SOIL	Copper	29.5		0.59	1.25	mg/Kg
P5299-03	SB-01	SOIL	Iron	14700		3.37	6.27	mg/Kg
P5299-03	SB-01	SOIL	Lead	13.5		0.19	0.75	mg/Kg
P5299-03	SB-01	SOIL	Magnesium	2490		4.30	125	mg/Kg
P5299-03	SB-01	SOIL	Manganese	182		0.089	1.25	mg/Kg
P5299-03	SB-01	SOIL	Mercury	0.099		0.0080	0.017	mg/Kg
P5299-03	SB-01	SOIL	Nickel	19.8		0.11	2.51	mg/Kg
P5299-03	SB-01	SOIL	Potassium	1940		36.0	125	mg/Kg
P5299-03	SB-01	SOIL	Sodium	210		45.2	125	mg/Kg
P5299-03	SB-01	SOIL	Vanadium	16.6		0.34	2.51	mg/Kg
P5299-03	SB-01	SOIL	Zinc	30.2		0.14	2.51	mg/Kg
Client ID : SB-02								
P5299-04	SB-02	SOIL	Aluminum	6080		2.82	5.85	mg/Kg
P5299-04	SB-02	SOIL	Arsenic	1.80		0.34	1.17	mg/Kg
P5299-04	SB-02	SOIL	Barium	35.4		0.75	5.85	mg/Kg
P5299-04	SB-02	SOIL	Beryllium	0.52		0.014	0.35	mg/Kg
P5299-04	SB-02	SOIL	Cadmium	0.058	J	0.019	0.35	mg/Kg
P5299-04	SB-02	SOIL	Calcium	995		3.27	117	mg/Kg
P5299-04	SB-02	SOIL	Chromium	18.6		0.063	0.59	mg/Kg
P5299-04	SB-02	SOIL	Cobalt	5.94		0.068	1.75	mg/Kg
P5299-04	SB-02	SOIL	Copper	14.6		0.55	1.17	mg/Kg
P5299-04	SB-02	SOIL	Iron	13100		3.14	5.85	mg/Kg
P5299-04	SB-02	SOIL	Lead	11.4		0.18	0.70	mg/Kg
P5299-04	SB-02	SOIL	Magnesium	1980		4.01	117	mg/Kg
P5299-04	SB-02	SOIL	Manganese	136		0.083	1.17	mg/Kg
P5299-04	SB-02	SOIL	Mercury	0.022		0.0080	0.017	mg/Kg
P5299-04	SB-02	SOIL	Nickel	12.8		0.11	2.34	mg/Kg
P5299-04	SB-02	SOIL	Potassium	801		33.6	117	mg/Kg
P5299-04	SB-02	SOIL	Sodium	120		42.2	117	mg/Kg
P5299-04	SB-02	SOIL	Vanadium	15.9		0.32	2.34	mg/Kg
P5299-04	SB-02	SOIL	Zinc	27.2		0.13	2.34	mg/Kg



SAMPLE DATA

Report of Analysis

Client:	Portal Partners Tri-Venture	Date Collected:	12/14/24
Project:	Amtrak Sawtooth Bridges 2024	Date Received:	12/16/24
Client Sample ID:	SB-01	SDG No.:	P5299
Lab Sample ID:	P5299-01	Matrix:	SOIL
Level (low/med):	low	% Solid:	78.5

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	2440		1	2.90	6.01	mg/Kg	12/18/24 12:20	12/20/24 18:38	SW6010	SW3050
7440-36-0	Antimony	0.18	UN	1	0.18	3.00	mg/Kg	12/18/24 12:20	12/20/24 18:38	SW6010	SW3050
7440-38-2	Arsenic	5.96		1	0.35	1.20	mg/Kg	12/18/24 12:20	12/20/24 18:38	SW6010	SW3050
7440-39-3	Barium	22.3	N	1	0.77	6.01	mg/Kg	12/18/24 12:20	12/20/24 18:38	SW6010	SW3050
7440-41-7	Beryllium	0.25	JN	1	0.014	0.36	mg/Kg	12/18/24 12:20	12/20/24 18:38	SW6010	SW3050
7440-43-9	Cadmium	0.019	U	1	0.019	0.36	mg/Kg	12/18/24 12:20	12/20/24 18:38	SW6010	SW3050
7440-70-2	Calcium	1990		1	3.36	120	mg/Kg	12/18/24 12:20	12/20/24 18:38	SW6010	SW3050
7440-47-3	Chromium	7.98	N	1	0.065	0.60	mg/Kg	12/18/24 12:20	12/20/24 18:38	SW6010	SW3050
7440-48-4	Cobalt	2.15		1	0.070	1.80	mg/Kg	12/18/24 12:20	12/20/24 18:38	SW6010	SW3050
7440-50-8	Copper	13.6	N	1	0.56	1.20	mg/Kg	12/18/24 12:20	12/20/24 18:38	SW6010	SW3050
7439-89-6	Iron	12000		1	3.23	6.01	mg/Kg	12/18/24 12:20	12/20/24 18:38	SW6010	SW3050
7439-92-1	Lead	11.0		1	0.18	0.72	mg/Kg	12/18/24 12:20	12/20/24 18:38	SW6010	SW3050
7439-95-4	Magnesium	947		1	4.12	120	mg/Kg	12/18/24 12:20	12/20/24 18:38	SW6010	SW3050
7439-96-5	Manganese	41.4		1	0.085	1.20	mg/Kg	12/18/24 12:20	12/20/24 18:38	SW6010	SW3050
7439-97-6	Mercury	0.13	N	1	0.0070	0.015	mg/Kg	12/18/24 08:35	12/18/24 13:57	SW7471B	
7440-02-0	Nickel	4.25		1	0.11	2.40	mg/Kg	12/18/24 12:20	12/20/24 18:38	SW6010	SW3050
7440-09-7	Potassium	937	N	1	34.5	120	mg/Kg	12/18/24 12:20	12/20/24 18:38	SW6010	SW3050
7782-49-2	Selenium	0.40	UN	1	0.40	1.20	mg/Kg	12/18/24 12:20	12/20/24 18:38	SW6010	SW3050
7440-22-4	Silver	0.062	U	1	0.062	0.60	mg/Kg	12/18/24 12:20	12/20/24 18:38	SW6010	SW3050
7440-23-5	Sodium	122	N	1	43.4	120	mg/Kg	12/18/24 12:20	12/20/24 18:38	SW6010	SW3050
7440-28-0	Thallium	0.53	U	1	0.53	2.40	mg/Kg	12/18/24 12:20	12/20/24 18:38	SW6010	SW3050
7440-62-2	Vanadium	14.6	N	1	0.32	2.40	mg/Kg	12/18/24 12:20	12/20/24 18:38	SW6010	SW3050
7440-66-6	Zinc	11.3	N	1	0.13	2.40	mg/Kg	12/18/24 12:20	12/20/24 18:38	SW6010	SW3050

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

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

D = Dilution

Q = indicates LCS control criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

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

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

OR = Over Range

N =Spiked sample recovery not within control limits

Report of Analysis

Client:	Portal Partners Tri-Venture	Date Collected:	12/15/24
Project:	Amtrak Sawtooth Bridges 2024	Date Received:	12/16/24
Client Sample ID:	SB-02	SDG No.:	P5299
Lab Sample ID:	P5299-02	Matrix:	SOIL
Level (low/med):	low	% Solid:	75.5

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	8690		1	2.85	5.91	mg/Kg	12/18/24 12:20	12/20/24 20:06	SW6010	SW3050
7440-36-0	Antimony	0.18	UN	1	0.18	2.96	mg/Kg	12/18/24 12:20	12/20/24 20:06	SW6010	SW3050
7440-38-2	Arsenic	2.21		1	0.34	1.18	mg/Kg	12/18/24 12:20	12/20/24 20:06	SW6010	SW3050
7440-39-3	Barium	31.8	N	1	0.76	5.91	mg/Kg	12/18/24 12:20	12/20/24 20:06	SW6010	SW3050
7440-41-7	Beryllium	0.54	N	1	0.014	0.36	mg/Kg	12/18/24 12:20	12/20/24 20:06	SW6010	SW3050
7440-43-9	Cadmium	0.019	U	1	0.019	0.36	mg/Kg	12/18/24 12:20	12/20/24 20:06	SW6010	SW3050
7440-70-2	Calcium	462		1	3.31	118	mg/Kg	12/18/24 12:20	12/20/24 20:06	SW6010	SW3050
7440-47-3	Chromium	13.2	N	1	0.064	0.59	mg/Kg	12/18/24 12:20	12/20/24 20:06	SW6010	SW3050
7440-48-4	Cobalt	6.16		1	0.069	1.77	mg/Kg	12/18/24 12:20	12/20/24 20:06	SW6010	SW3050
7440-50-8	Copper	36.0	N	1	0.56	1.18	mg/Kg	12/18/24 12:20	12/20/24 20:06	SW6010	SW3050
7439-89-6	Iron	14500		1	3.18	5.91	mg/Kg	12/18/24 12:20	12/20/24 20:06	SW6010	SW3050
7439-92-1	Lead	9.33		1	0.18	0.71	mg/Kg	12/18/24 12:20	12/20/24 20:06	SW6010	SW3050
7439-95-4	Magnesium	2130		1	4.06	118	mg/Kg	12/18/24 12:20	12/20/24 20:06	SW6010	SW3050
7439-96-5	Manganese	124		1	0.084	1.18	mg/Kg	12/18/24 12:20	12/20/24 20:06	SW6010	SW3050
7439-97-6	Mercury	0.11	N	1	0.0080	0.019	mg/Kg	12/18/24 08:35	12/18/24 13:59	SW7471B	
7440-02-0	Nickel	11.5		1	0.11	2.37	mg/Kg	12/18/24 12:20	12/20/24 20:06	SW6010	SW3050
7440-09-7	Potassium	702	N	1	33.9	118	mg/Kg	12/18/24 12:20	12/20/24 20:06	SW6010	SW3050
7782-49-2	Selenium	0.39	UN	1	0.39	1.18	mg/Kg	12/18/24 12:20	12/20/24 20:06	SW6010	SW3050
7440-22-4	Silver	0.061	U	1	0.061	0.59	mg/Kg	12/18/24 12:20	12/20/24 20:06	SW6010	SW3050
7440-23-5	Sodium	250	N	1	42.7	118	mg/Kg	12/18/24 12:20	12/20/24 20:06	SW6010	SW3050
7440-28-0	Thallium	0.52	U	1	0.52	2.37	mg/Kg	12/18/24 12:20	12/20/24 20:06	SW6010	SW3050
7440-62-2	Vanadium	17.5	N	1	0.32	2.37	mg/Kg	12/18/24 12:20	12/20/24 20:06	SW6010	SW3050
7440-66-6	Zinc	22.9	N	1	0.13	2.37	mg/Kg	12/18/24 12:20	12/20/24 20:06	SW6010	SW3050

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

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

D = Dilution

Q = indicates LCS control criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

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

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

OR = Over Range

N =Spiked sample recovery not within control limits

Report of Analysis

Client:	Portal Partners Tri-Venture	Date Collected:	12/15/24
Project:	Amtrak Sawtooth Bridges 2024	Date Received:	12/16/24
Client Sample ID:	SB-01	SDG No.:	P5299
Lab Sample ID:	P5299-03	Matrix:	SOIL
Level (low/med):	low	% Solid:	68.8

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	6680		1	3.02	6.27	mg/Kg	12/18/24 12:20	12/20/24 20:10	SW6010	SW3050
7440-36-0	Antimony	0.19	UN	1	0.19	3.13	mg/Kg	12/18/24 12:20	12/20/24 20:10	SW6010	SW3050
7440-38-2	Arsenic	1.34		1	0.36	1.25	mg/Kg	12/18/24 12:20	12/20/24 20:10	SW6010	SW3050
7440-39-3	Barium	45.9	N	1	0.80	6.27	mg/Kg	12/18/24 12:20	12/20/24 20:10	SW6010	SW3050
7440-41-7	Beryllium	0.51	N	1	0.015	0.38	mg/Kg	12/18/24 12:20	12/20/24 20:10	SW6010	SW3050
7440-43-9	Cadmium	0.020	U	1	0.020	0.38	mg/Kg	12/18/24 12:20	12/20/24 20:10	SW6010	SW3050
7440-70-2	Calcium	1500		1	3.51	125	mg/Kg	12/18/24 12:20	12/20/24 20:10	SW6010	SW3050
7440-47-3	Chromium	26.1	N	1	0.068	0.63	mg/Kg	12/18/24 12:20	12/20/24 20:10	SW6010	SW3050
7440-48-4	Cobalt	7.49		1	0.073	1.88	mg/Kg	12/18/24 12:20	12/20/24 20:10	SW6010	SW3050
7440-50-8	Copper	29.5	N	1	0.59	1.25	mg/Kg	12/18/24 12:20	12/20/24 20:10	SW6010	SW3050
7439-89-6	Iron	14700		1	3.37	6.27	mg/Kg	12/18/24 12:20	12/20/24 20:10	SW6010	SW3050
7439-92-1	Lead	13.5		1	0.19	0.75	mg/Kg	12/18/24 12:20	12/20/24 20:10	SW6010	SW3050
7439-95-4	Magnesium	2490		1	4.30	125	mg/Kg	12/18/24 12:20	12/20/24 20:10	SW6010	SW3050
7439-96-5	Manganese	182		1	0.089	1.25	mg/Kg	12/18/24 12:20	12/20/24 20:10	SW6010	SW3050
7439-97-6	Mercury	0.099	N	1	0.0080	0.017	mg/Kg	12/18/24 08:35	12/18/24 14:02	SW7471B	
7440-02-0	Nickel	19.8		1	0.11	2.51	mg/Kg	12/18/24 12:20	12/20/24 20:10	SW6010	SW3050
7440-09-7	Potassium	1940	N	1	36.0	125	mg/Kg	12/18/24 12:20	12/20/24 20:10	SW6010	SW3050
7782-49-2	Selenium	0.41	UN	1	0.41	1.25	mg/Kg	12/18/24 12:20	12/20/24 20:10	SW6010	SW3050
7440-22-4	Silver	0.065	U	1	0.065	0.63	mg/Kg	12/18/24 12:20	12/20/24 20:10	SW6010	SW3050
7440-23-5	Sodium	210	N	1	45.2	125	mg/Kg	12/18/24 12:20	12/20/24 20:10	SW6010	SW3050
7440-28-0	Thallium	0.55	U	1	0.55	2.51	mg/Kg	12/18/24 12:20	12/20/24 20:10	SW6010	SW3050
7440-62-2	Vanadium	16.6	N	1	0.34	2.51	mg/Kg	12/18/24 12:20	12/20/24 20:10	SW6010	SW3050
7440-66-6	Zinc	30.2	N	1	0.14	2.51	mg/Kg	12/18/24 12:20	12/20/24 20:10	SW6010	SW3050

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

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

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

Report of Analysis

Client:	Portal Partners Tri-Venture	Date Collected:	12/15/24
Project:	Amtrak Sawtooth Bridges 2024	Date Received:	12/16/24
Client Sample ID:	SB-02	SDG No.:	P5299
Lab Sample ID:	P5299-04	Matrix:	SOIL
Level (low/med):	low	% Solid:	79.2

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	6080		1	2.82	5.85	mg/Kg	12/18/24 12:20	12/20/24 20:14	SW6010	SW3050
7440-36-0	Antimony	0.18	UN	1	0.18	2.92	mg/Kg	12/18/24 12:20	12/20/24 20:14	SW6010	SW3050
7440-38-2	Arsenic	1.80		1	0.34	1.17	mg/Kg	12/18/24 12:20	12/20/24 20:14	SW6010	SW3050
7440-39-3	Barium	35.4	N	1	0.75	5.85	mg/Kg	12/18/24 12:20	12/20/24 20:14	SW6010	SW3050
7440-41-7	Beryllium	0.52	N	1	0.014	0.35	mg/Kg	12/18/24 12:20	12/20/24 20:14	SW6010	SW3050
7440-43-9	Cadmium	0.058	J	1	0.019	0.35	mg/Kg	12/18/24 12:20	12/20/24 20:14	SW6010	SW3050
7440-70-2	Calcium	995		1	3.27	117	mg/Kg	12/18/24 12:20	12/20/24 20:14	SW6010	SW3050
7440-47-3	Chromium	18.6	N	1	0.063	0.59	mg/Kg	12/18/24 12:20	12/20/24 20:14	SW6010	SW3050
7440-48-4	Cobalt	5.94		1	0.068	1.75	mg/Kg	12/18/24 12:20	12/20/24 20:14	SW6010	SW3050
7440-50-8	Copper	14.6	N	1	0.55	1.17	mg/Kg	12/18/24 12:20	12/20/24 20:14	SW6010	SW3050
7439-89-6	Iron	13100		1	3.14	5.85	mg/Kg	12/18/24 12:20	12/20/24 20:14	SW6010	SW3050
7439-92-1	Lead	11.4		1	0.18	0.70	mg/Kg	12/18/24 12:20	12/20/24 20:14	SW6010	SW3050
7439-95-4	Magnesium	1980		1	4.01	117	mg/Kg	12/18/24 12:20	12/20/24 20:14	SW6010	SW3050
7439-96-5	Manganese	136		1	0.083	1.17	mg/Kg	12/18/24 12:20	12/20/24 20:14	SW6010	SW3050
7439-97-6	Mercury	0.022	N	1	0.0080	0.017	mg/Kg	12/18/24 08:35	12/18/24 14:04	SW7471B	
7440-02-0	Nickel	12.8		1	0.11	2.34	mg/Kg	12/18/24 12:20	12/20/24 20:14	SW6010	SW3050
7440-09-7	Potassium	801	N	1	33.6	117	mg/Kg	12/18/24 12:20	12/20/24 20:14	SW6010	SW3050
7782-49-2	Selenium	0.39	UN	1	0.39	1.17	mg/Kg	12/18/24 12:20	12/20/24 20:14	SW6010	SW3050
7440-22-4	Silver	0.061	U	1	0.061	0.59	mg/Kg	12/18/24 12:20	12/20/24 20:14	SW6010	SW3050
7440-23-5	Sodium	120	N	1	42.2	117	mg/Kg	12/18/24 12:20	12/20/24 20:14	SW6010	SW3050
7440-28-0	Thallium	0.51	U	1	0.51	2.34	mg/Kg	12/18/24 12:20	12/20/24 20:14	SW6010	SW3050
7440-62-2	Vanadium	15.9	N	1	0.32	2.34	mg/Kg	12/18/24 12:20	12/20/24 20:14	SW6010	SW3050
7440-66-6	Zinc	27.2	N	1	0.13	2.34	mg/Kg	12/18/24 12:20	12/20/24 20:14	SW6010	SW3050

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

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

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



METAL CALIBRATION DATA

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Portal Partners Tri-Venture **SDG No.:** P5299
Contract: PORT06 **Lab Code:** CHEM **Case No.:** P5299 **SAS No.:** P5299
Initial Calibration Source: EPA
Continuing Calibration Source: PLASMA-PURE

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
ICV24	Mercury	4.05	4.0	101	90 - 110	CV	12/18/2024	13:36	LB133991

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Portal Partners Tri-Venture **SDG No.:** P5299
Contract: PORT06 **Lab Code:** CHEM **Case No.:** P5299 **SAS No.:** P5299
Initial Calibration Source: EPA
Continuing Calibration Source: PLASMA-PURE

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV42	Mercury	4.53	5.0	91	90 - 110	CV	12/18/2024	13:41	LB133991
CCV43	Mercury	4.72	5.0	94	90 - 110	CV	12/18/2024	14:08	LB133991
CCV44	Mercury	4.51	5.0	90	90 - 110	CV	12/18/2024	14:45	LB133991
CCV45	Mercury	4.83	5.0	97	90 - 110	CV	12/18/2024	15:07	LB133991

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Portal Partners Tri-Venture **SDG No.:** P5299

Contract: PORT06 **Lab Code:** CHEM **Case No.:** P5299 **SAS No.:** P5299

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
ICV01	Aluminum	2440	2500	98	90 - 110	P	12/20/2024	16:07	LB134054
	Antimony	985	1000	98	90 - 110	P	12/20/2024	16:07	LB134054
	Arsenic	1020	1000	102	90 - 110	P	12/20/2024	16:07	LB134054
	Barium	471	520	91	90 - 110	P	12/20/2024	16:07	LB134054
	Beryllium	486	510	95	90 - 110	P	12/20/2024	16:07	LB134054
	Cadmium	502	510	98	90 - 110	P	12/20/2024	16:07	LB134054
	Calcium	9510	10000	95	90 - 110	P	12/20/2024	16:07	LB134054
	Chromium	534	520	103	90 - 110	P	12/20/2024	16:07	LB134054
	Cobalt	508	520	98	90 - 110	P	12/20/2024	16:07	LB134054
	Copper	522	510	102	90 - 110	P	12/20/2024	16:07	LB134054
	Iron	10100	10000	101	90 - 110	P	12/20/2024	16:07	LB134054
	Lead	1000	1000	100	90 - 110	P	12/20/2024	16:07	LB134054
	Magnesium	5690	6000	95	90 - 110	P	12/20/2024	16:07	LB134054
	Manganese	494	520	95	90 - 110	P	12/20/2024	16:07	LB134054
	Nickel	510	530	96	90 - 110	P	12/20/2024	16:07	LB134054
	Potassium	9870	9900	100	90 - 110	P	12/20/2024	16:07	LB134054
	Selenium	1020	1000	102	90 - 110	P	12/20/2024	16:07	LB134054
	Silver	251	250	100	90 - 110	P	12/20/2024	16:07	LB134054
	Sodium	9880	10000	99	90 - 110	P	12/20/2024	16:07	LB134054
	Thallium	1010	1000	101	90 - 110	P	12/20/2024	16:07	LB134054
	Vanadium	465	500	93	90 - 110	P	12/20/2024	16:07	LB134054
	Zinc	1010	1000	101	90 - 110	P	12/20/2024	16:07	LB134054

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Portal Partners Tri-Venture **SDG No.:** P5299

Contract: PORT06 **Lab Code:** CHEM **Case No.:** P5299 **SAS No.:** P5299

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
LLICV01	Aluminum	98.4	100	98	80 - 120	P	12/20/2024	16:11	LB134054
	Antimony	50.1	50.0	100	80 - 120	P	12/20/2024	16:11	LB134054
	Arsenic	19.0	20.0	95	80 - 120	P	12/20/2024	16:11	LB134054
	Barium	87.9	100	88	80 - 120	P	12/20/2024	16:11	LB134054
	Beryllium	5.75	6.0	96	80 - 120	P	12/20/2024	16:11	LB134054
	Cadmium	5.80	6.0	97	80 - 120	P	12/20/2024	16:11	LB134054
	Calcium	1870	2000	93	80 - 120	P	12/20/2024	16:11	LB134054
	Chromium	9.98	10.0	100	80 - 120	P	12/20/2024	16:11	LB134054
	Cobalt	29.1	30.0	97	80 - 120	P	12/20/2024	16:11	LB134054
	Copper	21.8	20.0	109	80 - 120	P	12/20/2024	16:11	LB134054
	Iron	94.2	100	94	80 - 120	P	12/20/2024	16:11	LB134054
	Lead	12.1	12.0	101	80 - 120	P	12/20/2024	16:11	LB134054
	Magnesium	2050	2000	103	80 - 120	P	12/20/2024	16:11	LB134054
	Manganese	19.3	20.0	97	80 - 120	P	12/20/2024	16:11	LB134054
	Nickel	38.9	40.0	97	80 - 120	P	12/20/2024	16:11	LB134054
	Potassium	2020	2000	101	80 - 120	P	12/20/2024	16:11	LB134054
	Selenium	19.7	20.0	98	80 - 120	P	12/20/2024	16:11	LB134054
	Silver	10.3	10.0	103	80 - 120	P	12/20/2024	16:11	LB134054
	Sodium	1940	2000	97	80 - 120	P	12/20/2024	16:11	LB134054
	Thallium	38.7	40.0	97	80 - 120	P	12/20/2024	16:11	LB134054
	Vanadium	35.2	40.0	88	80 - 120	P	12/20/2024	16:11	LB134054
	Zinc	38.9	40.0	97	80 - 120	P	12/20/2024	16:11	LB134054

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Portal Partners Tri-Venture **SDG No.:** P5299

Contract: PORT06 **Lab Code:** CHEM **Case No.:** P5299 **SAS No.:** P5299

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV01	Aluminum	9490	10000	95	90 - 110	P	12/20/2024	16:47	LB134054
	Antimony	4820	5000	96	90 - 110	P	12/20/2024	16:47	LB134054
	Arsenic	4800	5000	96	90 - 110	P	12/20/2024	16:47	LB134054
	Barium	9130	10000	91	90 - 110	P	12/20/2024	16:47	LB134054
	Beryllium	237	250	95	90 - 110	P	12/20/2024	16:47	LB134054
	Cadmium	2420	2500	97	90 - 110	P	12/20/2024	16:47	LB134054
	Calcium	23500	25000	94	90 - 110	P	12/20/2024	16:47	LB134054
	Chromium	1000	1000	100	90 - 110	P	12/20/2024	16:47	LB134054
	Cobalt	2410	2500	96	90 - 110	P	12/20/2024	16:47	LB134054
	Copper	1220	1250	97	90 - 110	P	12/20/2024	16:47	LB134054
	Iron	4860	5000	97	90 - 110	P	12/20/2024	16:47	LB134054
	Lead	4830	5000	96	90 - 110	P	12/20/2024	16:47	LB134054
	Magnesium	24000	25000	96	90 - 110	P	12/20/2024	16:47	LB134054
	Manganese	2410	2500	96	90 - 110	P	12/20/2024	16:47	LB134054
	Nickel	2410	2500	96	90 - 110	P	12/20/2024	16:47	LB134054
	Potassium	24000	25000	96	90 - 110	P	12/20/2024	16:47	LB134054
	Selenium	4790	5000	96	90 - 110	P	12/20/2024	16:47	LB134054
	Silver	1220	1250	98	90 - 110	P	12/20/2024	16:47	LB134054
	Sodium	24400	25000	98	90 - 110	P	12/20/2024	16:47	LB134054
	Thallium	4830	5000	97	90 - 110	P	12/20/2024	16:47	LB134054
	Vanadium	2360	2500	94	90 - 110	P	12/20/2024	16:47	LB134054
	Zinc	2440	2500	98	90 - 110	P	12/20/2024	16:47	LB134054
CCV02	Aluminum	9650	10000	96	90 - 110	P	12/20/2024	17:29	LB134054
	Antimony	4990	5000	100	90 - 110	P	12/20/2024	17:29	LB134054
	Arsenic	5010	5000	100	90 - 110	P	12/20/2024	17:29	LB134054
	Barium	9240	10000	92	90 - 110	P	12/20/2024	17:29	LB134054
	Beryllium	242	250	97	90 - 110	P	12/20/2024	17:29	LB134054
	Cadmium	2490	2500	100	90 - 110	P	12/20/2024	17:29	LB134054
	Calcium	23900	25000	96	90 - 110	P	12/20/2024	17:29	LB134054
	Chromium	1020	1000	102	90 - 110	P	12/20/2024	17:29	LB134054
	Cobalt	2470	2500	99	90 - 110	P	12/20/2024	17:29	LB134054
	Copper	1260	1250	101	90 - 110	P	12/20/2024	17:29	LB134054
	Iron	4900	5000	98	90 - 110	P	12/20/2024	17:29	LB134054
	Lead	4970	5000	99	90 - 110	P	12/20/2024	17:29	LB134054

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Portal Partners Tri-Venture **SDG No.:** P5299

Contract: PORT06 **Lab Code:** CHEM **Case No.:** P5299 **SAS No.:** P5299

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV02	Magnesium	24300	25000	97	90 - 110	P	12/20/2024	17:29	LB134054
	Manganese	2460	2500	99	90 - 110	P	12/20/2024	17:29	LB134054
	Nickel	2480	2500	99	90 - 110	P	12/20/2024	17:29	LB134054
	Potassium	24600	25000	98	90 - 110	P	12/20/2024	17:29	LB134054
	Selenium	5020	5000	100	90 - 110	P	12/20/2024	17:29	LB134054
	Silver	1250	1250	100	90 - 110	P	12/20/2024	17:29	LB134054
	Sodium	25200	25000	101	90 - 110	P	12/20/2024	17:29	LB134054
	Thallium	4930	5000	99	90 - 110	P	12/20/2024	17:29	LB134054
	Vanadium	2390	2500	96	90 - 110	P	12/20/2024	17:29	LB134054
	Zinc	2500	2500	100	90 - 110	P	12/20/2024	17:29	LB134054
CCV03	Aluminum	9770	10000	98	90 - 110	P	12/20/2024	18:12	LB134054
	Antimony	4970	5000	99	90 - 110	P	12/20/2024	18:12	LB134054
	Arsenic	4960	5000	99	90 - 110	P	12/20/2024	18:12	LB134054
	Barium	9430	10000	94	90 - 110	P	12/20/2024	18:12	LB134054
	Beryllium	244	250	98	90 - 110	P	12/20/2024	18:12	LB134054
	Cadmium	2480	2500	99	90 - 110	P	12/20/2024	18:12	LB134054
	Calcium	24300	25000	97	90 - 110	P	12/20/2024	18:12	LB134054
	Chromium	1020	1000	102	90 - 110	P	12/20/2024	18:12	LB134054
	Cobalt	2470	2500	99	90 - 110	P	12/20/2024	18:12	LB134054
	Copper	1250	1250	100	90 - 110	P	12/20/2024	18:12	LB134054
	Iron	4940	5000	99	90 - 110	P	12/20/2024	18:12	LB134054
	Lead	4950	5000	99	90 - 110	P	12/20/2024	18:12	LB134054
	Magnesium	24800	25000	99	90 - 110	P	12/20/2024	18:12	LB134054
	Manganese	2480	2500	99	90 - 110	P	12/20/2024	18:12	LB134054
	Nickel	2480	2500	99	90 - 110	P	12/20/2024	18:12	LB134054
	Potassium	24700	25000	99	90 - 110	P	12/20/2024	18:12	LB134054
	Selenium	4960	5000	99	90 - 110	P	12/20/2024	18:12	LB134054
	Silver	1250	1250	100	90 - 110	P	12/20/2024	18:12	LB134054
	Sodium	25200	25000	101	90 - 110	P	12/20/2024	18:12	LB134054
	Thallium	4950	5000	99	90 - 110	P	12/20/2024	18:12	LB134054
	Vanadium	2440	2500	98	90 - 110	P	12/20/2024	18:12	LB134054
	Zinc	2500	2500	100	90 - 110	P	12/20/2024	18:12	LB134054
CCV04	Aluminum	9620	10000	96	90 - 110	P	12/20/2024	19:02	LB134054
	Antimony	4920	5000	98	90 - 110	P	12/20/2024	19:02	LB134054

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Portal Partners Tri-Venture **SDG No.:** P5299

Contract: PORT06 **Lab Code:** CHEM **Case No.:** P5299 **SAS No.:** P5299

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV04	Arsenic	4910	5000	98	90 - 110	P	12/20/2024	19:02	LB134054
	Barium	9150	10000	92	90 - 110	P	12/20/2024	19:02	LB134054
	Beryllium	240	250	96	90 - 110	P	12/20/2024	19:02	LB134054
	Cadmium	2440	2500	98	90 - 110	P	12/20/2024	19:02	LB134054
	Calcium	23800	25000	95	90 - 110	P	12/20/2024	19:02	LB134054
	Chromium	1010	1000	101	90 - 110	P	12/20/2024	19:02	LB134054
	Cobalt	2440	2500	98	90 - 110	P	12/20/2024	19:02	LB134054
	Copper	1240	1250	99	90 - 110	P	12/20/2024	19:02	LB134054
	Iron	4880	5000	98	90 - 110	P	12/20/2024	19:02	LB134054
	Lead	4890	5000	98	90 - 110	P	12/20/2024	19:02	LB134054
	Magnesium	24500	25000	98	90 - 110	P	12/20/2024	19:02	LB134054
	Manganese	2450	2500	98	90 - 110	P	12/20/2024	19:02	LB134054
	Nickel	2440	2500	98	90 - 110	P	12/20/2024	19:02	LB134054
	Potassium	24400	25000	97	90 - 110	P	12/20/2024	19:02	LB134054
	Selenium	4920	5000	98	90 - 110	P	12/20/2024	19:02	LB134054
	Silver	1240	1250	99	90 - 110	P	12/20/2024	19:02	LB134054
	Sodium	24900	25000	100	90 - 110	P	12/20/2024	19:02	LB134054
	Thallium	4930	5000	98	90 - 110	P	12/20/2024	19:02	LB134054
	Vanadium	2380	2500	95	90 - 110	P	12/20/2024	19:02	LB134054
	Zinc	2470	2500	99	90 - 110	P	12/20/2024	19:02	LB134054
CCV05	Aluminum	9790	10000	98	90 - 110	P	12/20/2024	19:57	LB134054
	Antimony	5040	5000	101	90 - 110	P	12/20/2024	19:57	LB134054
	Arsenic	5060	5000	101	90 - 110	P	12/20/2024	19:57	LB134054
	Barium	9370	10000	94	90 - 110	P	12/20/2024	19:57	LB134054
	Beryllium	242	250	97	90 - 110	P	12/20/2024	19:57	LB134054
	Cadmium	2510	2500	100	90 - 110	P	12/20/2024	19:57	LB134054
	Calcium	24300	25000	97	90 - 110	P	12/20/2024	19:57	LB134054
	Chromium	1030	1000	103	90 - 110	P	12/20/2024	19:57	LB134054
	Cobalt	2500	2500	100	90 - 110	P	12/20/2024	19:57	LB134054
	Copper	1270	1250	102	90 - 110	P	12/20/2024	19:57	LB134054
	Iron	5060	5000	101	90 - 110	P	12/20/2024	19:57	LB134054
	Lead	5020	5000	100	90 - 110	P	12/20/2024	19:57	LB134054
	Magnesium	24900	25000	100	90 - 110	P	12/20/2024	19:57	LB134054
	Manganese	2490	2500	99	90 - 110	P	12/20/2024	19:57	LB134054

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Portal Partners Tri-Venture **SDG No.:** P5299

Contract: PORT06 **Lab Code:** CHEM **Case No.:** P5299 **SAS No.:** P5299

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV05	Nickel	2510	2500	100	90 - 110	P	12/20/2024	19:57	LB134054
	Potassium	25300	25000	101	90 - 110	P	12/20/2024	19:57	LB134054
	Selenium	5070	5000	102	90 - 110	P	12/20/2024	19:57	LB134054
	Silver	1260	1250	101	90 - 110	P	12/20/2024	19:57	LB134054
	Sodium	25700	25000	103	90 - 110	P	12/20/2024	19:57	LB134054
	Thallium	5040	5000	101	90 - 110	P	12/20/2024	19:57	LB134054
	Vanadium	2430	2500	97	90 - 110	P	12/20/2024	19:57	LB134054
	Zinc	2520	2500	101	90 - 110	P	12/20/2024	19:57	LB134054
CCV06	Aluminum	9520	10000	95	90 - 110	P	12/20/2024	20:47	LB134054
	Antimony	4840	5000	97	90 - 110	P	12/20/2024	20:47	LB134054
	Arsenic	4830	5000	96	90 - 110	P	12/20/2024	20:47	LB134054
	Barium	9020	10000	90	90 - 110	P	12/20/2024	20:47	LB134054
	Beryllium	237	250	95	90 - 110	P	12/20/2024	20:47	LB134054
	Cadmium	2410	2500	96	90 - 110	P	12/20/2024	20:47	LB134054
	Calcium	23400	25000	94	90 - 110	P	12/20/2024	20:47	LB134054
	Chromium	995	1000	100	90 - 110	P	12/20/2024	20:47	LB134054
	Cobalt	2390	2500	96	90 - 110	P	12/20/2024	20:47	LB134054
	Copper	1220	1250	98	90 - 110	P	12/20/2024	20:47	LB134054
	Iron	4770	5000	95	90 - 110	P	12/20/2024	20:47	LB134054
	Lead	4800	5000	96	90 - 110	P	12/20/2024	20:47	LB134054
	Magnesium	24500	25000	98	90 - 110	P	12/20/2024	20:47	LB134054
	Manganese	2420	2500	97	90 - 110	P	12/20/2024	20:47	LB134054
	Nickel	2400	2500	96	90 - 110	P	12/20/2024	20:47	LB134054
	Potassium	23900	25000	96	90 - 110	P	12/20/2024	20:47	LB134054
	Selenium	4830	5000	97	90 - 110	P	12/20/2024	20:47	LB134054
	Silver	1210	1250	97	90 - 110	P	12/20/2024	20:47	LB134054
	Sodium	24300	25000	97	90 - 110	P	12/20/2024	20:47	LB134054
	Thallium	4850	5000	97	90 - 110	P	12/20/2024	20:47	LB134054
	Vanadium	2350	2500	94	90 - 110	P	12/20/2024	20:47	LB134054
	Zinc	2420	2500	97	90 - 110	P	12/20/2024	20:47	LB134054
CCV07	Aluminum	9680	10000	97	90 - 110	P	12/20/2024	21:37	LB134054
	Antimony	4900	5000	98	90 - 110	P	12/20/2024	21:37	LB134054
	Arsenic	4880	5000	98	90 - 110	P	12/20/2024	21:37	LB134054
	Barium	9110	10000	91	90 - 110	P	12/20/2024	21:37	LB134054

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Portal Partners Tri-Venture **SDG No.:** P5299

Contract: PORT06 **Lab Code:** CHEM **Case No.:** P5299 **SAS No.:** P5299

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV07	Beryllium	242	250	97	90 - 110	P	12/20/2024	21:37	LB134054
	Cadmium	2430	2500	97	90 - 110	P	12/20/2024	21:37	LB134054
	Calcium	23700	25000	95	90 - 110	P	12/20/2024	21:37	LB134054
	Chromium	1010	1000	101	90 - 110	P	12/20/2024	21:37	LB134054
	Cobalt	2430	2500	97	90 - 110	P	12/20/2024	21:37	LB134054
	Copper	1230	1250	99	90 - 110	P	12/20/2024	21:37	LB134054
	Iron	4820	5000	96	90 - 110	P	12/20/2024	21:37	LB134054
	Lead	4860	5000	97	90 - 110	P	12/20/2024	21:37	LB134054
	Magnesium	24700	25000	99	90 - 110	P	12/20/2024	21:37	LB134054
	Manganese	2460	2500	98	90 - 110	P	12/20/2024	21:37	LB134054
	Nickel	2430	2500	97	90 - 110	P	12/20/2024	21:37	LB134054
	Potassium	24100	25000	96	90 - 110	P	12/20/2024	21:37	LB134054
	Selenium	4890	5000	98	90 - 110	P	12/20/2024	21:37	LB134054
	Silver	1230	1250	99	90 - 110	P	12/20/2024	21:37	LB134054
	Sodium	24500	25000	98	90 - 110	P	12/20/2024	21:37	LB134054
	Thallium	4910	5000	98	90 - 110	P	12/20/2024	21:37	LB134054
	Vanadium	2380	2500	95	90 - 110	P	12/20/2024	21:37	LB134054
	Zinc	2460	2500	98	90 - 110	P	12/20/2024	21:37	LB134054
CCV08	Aluminum	9610	10000	96	90 - 110	P	12/20/2024	23:01	LB134054
	Antimony	5010	5000	100	90 - 110	P	12/20/2024	23:01	LB134054
	Arsenic	5020	5000	100	90 - 110	P	12/20/2024	23:01	LB134054
	Barium	9290	10000	93	90 - 110	P	12/20/2024	23:01	LB134054
	Beryllium	238	250	95	90 - 110	P	12/20/2024	23:01	LB134054
	Cadmium	2480	2500	99	90 - 110	P	12/20/2024	23:01	LB134054
	Calcium	23900	25000	95	90 - 110	P	12/20/2024	23:01	LB134054
	Chromium	1020	1000	102	90 - 110	P	12/20/2024	23:01	LB134054
	Cobalt	2470	2500	99	90 - 110	P	12/20/2024	23:01	LB134054
	Copper	1260	1250	101	90 - 110	P	12/20/2024	23:01	LB134054
	Iron	4980	5000	100	90 - 110	P	12/20/2024	23:01	LB134054
	Lead	4960	5000	99	90 - 110	P	12/20/2024	23:01	LB134054
	Magnesium	24500	25000	98	90 - 110	P	12/20/2024	23:01	LB134054
	Manganese	2450	2500	98	90 - 110	P	12/20/2024	23:01	LB134054
	Nickel	2480	2500	99	90 - 110	P	12/20/2024	23:01	LB134054
	Potassium	24900	25000	100	90 - 110	P	12/20/2024	23:01	LB134054

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Portal Partners Tri-Venture **SDG No.:** P5299

Contract: PORT06 **Lab Code:** CHEM **Case No.:** P5299 **SAS No.:** P5299

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV08	Selenium	5050	5000	101	90 - 110	P	12/20/2024	23:01	LB134054
	Silver	1250	1250	100	90 - 110	P	12/20/2024	23:01	LB134054
	Sodium	25400	25000	102	90 - 110	P	12/20/2024	23:01	LB134054
	Thallium	4970	5000	99	90 - 110	P	12/20/2024	23:01	LB134054
	Vanadium	2400	2500	96	90 - 110	P	12/20/2024	23:01	LB134054
	Zinc	2480	2500	99	90 - 110	P	12/20/2024	23:01	LB134054
CCV09	Aluminum	9660	10000	97	90 - 110	P	12/20/2024	23:55	LB134054
	Antimony	4970	5000	100	90 - 110	P	12/20/2024	23:55	LB134054
	Arsenic	4940	5000	99	90 - 110	P	12/20/2024	23:55	LB134054
	Barium	9220	10000	92	90 - 110	P	12/20/2024	23:55	LB134054
	Beryllium	239	250	96	90 - 110	P	12/20/2024	23:55	LB134054
	Cadmium	2450	2500	98	90 - 110	P	12/20/2024	23:55	LB134054
	Calcium	23800	25000	95	90 - 110	P	12/20/2024	23:55	LB134054
	Chromium	1020	1000	102	90 - 110	P	12/20/2024	23:55	LB134054
	Cobalt	2450	2500	98	90 - 110	P	12/20/2024	23:55	LB134054
	Copper	1250	1250	100	90 - 110	P	12/20/2024	23:55	LB134054
	Iron	4940	5000	99	90 - 110	P	12/20/2024	23:55	LB134054
	Lead	4900	5000	98	90 - 110	P	12/20/2024	23:55	LB134054
	Magnesium	24400	25000	98	90 - 110	P	12/20/2024	23:55	LB134054
	Manganese	2460	2500	98	90 - 110	P	12/20/2024	23:55	LB134054
	Nickel	2450	2500	98	90 - 110	P	12/20/2024	23:55	LB134054
	Potassium	24700	25000	99	90 - 110	P	12/20/2024	23:55	LB134054
	Selenium	4950	5000	99	90 - 110	P	12/20/2024	23:55	LB134054
	Silver	1240	1250	99	90 - 110	P	12/20/2024	23:55	LB134054
	Sodium	25200	25000	101	90 - 110	P	12/20/2024	23:55	LB134054
	Thallium	4950	5000	99	90 - 110	P	12/20/2024	23:55	LB134054
	Vanadium	2400	2500	96	90 - 110	P	12/20/2024	23:55	LB134054
	Zinc	2460	2500	98	90 - 110	P	12/20/2024	23:55	LB134054



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Metals

- 2b -

CRDL STANDARD FOR AA & ICP

Client: Portal Partners Tri-Venture **SDG No.:** P5299
Contract: PORT06 **Lab Code:** CHEM **Case No.:** P5299 **SAS No.:** P5299
Initial Calibration Source: _____
Continuing Calibration Source: _____

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CRA	Mercury	0.16	0.2	82	40 - 160	CV	12/18/2024	13:45	LB133991
CRI01	Aluminum	102	100	102	40 - 160	P	12/20/2024	16:26	LB134054
	Antimony	49.3	50.0	99	40 - 160	P	12/20/2024	16:26	LB134054
	Arsenic	21.1	20.0	106	40 - 160	P	12/20/2024	16:26	LB134054
	Barium	87.8	100	88	40 - 160	P	12/20/2024	16:26	LB134054
	Beryllium	5.71	6.0	95	40 - 160	P	12/20/2024	16:26	LB134054
	Cadmium	5.88	6.0	98	40 - 160	P	12/20/2024	16:26	LB134054
	Calcium	1880	2000	94	40 - 160	P	12/20/2024	16:26	LB134054
	Chromium	10.2	10.0	102	40 - 160	P	12/20/2024	16:26	LB134054
	Cobalt	29.0	30.0	97	40 - 160	P	12/20/2024	16:26	LB134054
	Copper	21.8	20.0	109	40 - 160	P	12/20/2024	16:26	LB134054
	Iron	96.6	100	97	40 - 160	P	12/20/2024	16:26	LB134054
	Lead	11.1	12.0	93	40 - 160	P	12/20/2024	16:26	LB134054
	Magnesium	2050	2000	103	40 - 160	P	12/20/2024	16:26	LB134054
	Manganese	18.9	20.0	95	40 - 160	P	12/20/2024	16:26	LB134054
	Nickel	39.0	40.0	98	40 - 160	P	12/20/2024	16:26	LB134054
	Potassium	2100	2000	105	40 - 160	P	12/20/2024	16:26	LB134054
	Selenium	18.3	20.0	92	40 - 160	P	12/20/2024	16:26	LB134054
	Silver	10.3	10.0	103	40 - 160	P	12/20/2024	16:26	LB134054
	Sodium	1950	2000	97	40 - 160	P	12/20/2024	16:26	LB134054
	Thallium	38.5	40.0	96	40 - 160	P	12/20/2024	16:26	LB134054
	Vanadium	33.3	40.0	83	40 - 160	P	12/20/2024	16:26	LB134054
	Zinc	38.8	40.0	97	40 - 160	P	12/20/2024	16:26	LB134054



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Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client:	Portal Partners Tri-Venture				SDG No.:	P5299			
Contract:	PORT06	Lab Code:	CHEM		Case No.:	P5299	SAS No.:	P5299	
Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB24	Mercury	0.20	+/-0.20	U	0.20	CV	12/18/2024	13:39	LB133991

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Portal Partners Tri-Venture

SDG No.: P5299

Contract: PORT06

Lab Code: CHEM

Case No.: P5299

SAS No.: P5299

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB42	Mercury	0.20	+/-0.20	U	0.20	CV	12/18/2024	13:43	LB133991
CCB43	Mercury	0.20	+/-0.20	U	0.20	CV	12/18/2024	14:11	LB133991
CCB44	Mercury	0.20	+/-0.20	U	0.20	CV	12/18/2024	14:48	LB133991
CCB45	Mercury	0.20	+/-0.20	U	0.20	CV	12/18/2024	15:09	LB133991

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Portal Partners Tri-Venture		SDG No.: P5299							
Contract: PORT06	Lab Code: CHEM	Case No.: P5299	SAS No.: P5299						
Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB01	Aluminum	100	+/-100	U	100	P	12/20/2024	16:21	LB134054
	Antimony	50.0	+/-50.0	U	50.0	P	12/20/2024	16:21	LB134054
	Arsenic	20.0	+/-20.0	U	20.0	P	12/20/2024	16:21	LB134054
	Barium	100	+/-100	U	100	P	12/20/2024	16:21	LB134054
	Beryllium	6.00	+/-6.00	U	6.00	P	12/20/2024	16:21	LB134054
	Cadmium	6.00	+/-6.00	U	6.00	P	12/20/2024	16:21	LB134054
	Calcium	2000	+/-2000	U	2000	P	12/20/2024	16:21	LB134054
	Chromium	10.0	+/-10.0	U	10.0	P	12/20/2024	16:21	LB134054
	Cobalt	30.0	+/-30.0	U	30.0	P	12/20/2024	16:21	LB134054
	Copper	20.0	+/-20.0	U	20.0	P	12/20/2024	16:21	LB134054
	Iron	100	+/-100	U	100	P	12/20/2024	16:21	LB134054
	Lead	12.0	+/-12.0	U	12.0	P	12/20/2024	16:21	LB134054
	Magnesium	2000	+/-2000	U	2000	P	12/20/2024	16:21	LB134054
	Manganese	20.0	+/-20.0	U	20.0	P	12/20/2024	16:21	LB134054
	Nickel	40.0	+/-40.0	U	40.0	P	12/20/2024	16:21	LB134054
	Potassium	2000	+/-2000	U	2000	P	12/20/2024	16:21	LB134054
	Selenium	20.0	+/-20.0	U	20.0	P	12/20/2024	16:21	LB134054
	Silver	10.0	+/-10.0	U	10.0	P	12/20/2024	16:21	LB134054
	Sodium	2000	+/-2000	U	2000	P	12/20/2024	16:21	LB134054
	Thallium	40.0	+/-40.0	U	40.0	P	12/20/2024	16:21	LB134054
	Vanadium	40.0	+/-40.0	U	40.0	P	12/20/2024	16:21	LB134054
	Zinc	40.0	+/-40.0	U	40.0	P	12/20/2024	16:21	LB134054

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Portal Partners Tri-Venture		SDG No.: P5299							
Contract: PORT06	Lab Code: CHEM	Case No.: P5299	SAS No.: P5299						
Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB01	Aluminum	100	+/-100	U	100	P	12/20/2024	16:51	LB134054
	Antimony	50.0	+/-50.0	U	50.0	P	12/20/2024	16:51	LB134054
	Arsenic	20.0	+/-20.0	U	20.0	P	12/20/2024	16:51	LB134054
	Barium	14.0	+/-100	J	100	P	12/20/2024	16:51	LB134054
	Beryllium	6.00	+/-6.00	U	6.00	P	12/20/2024	16:51	LB134054
	Cadmium	6.00	+/-6.00	U	6.00	P	12/20/2024	16:51	LB134054
	Calcium	2000	+/-2000	U	2000	P	12/20/2024	16:51	LB134054
	Chromium	10.0	+/-10.0	U	10.0	P	12/20/2024	16:51	LB134054
	Cobalt	30.0	+/-30.0	U	30.0	P	12/20/2024	16:51	LB134054
	Copper	20.0	+/-20.0	U	20.0	P	12/20/2024	16:51	LB134054
	Iron	100	+/-100	U	100	P	12/20/2024	16:51	LB134054
	Lead	12.0	+/-12.0	U	12.0	P	12/20/2024	16:51	LB134054
	Magnesium	2000	+/-2000	U	2000	P	12/20/2024	16:51	LB134054
	Manganese	5.60	+/-20.0	J	20.0	P	12/20/2024	16:51	LB134054
	Nickel	40.0	+/-40.0	U	40.0	P	12/20/2024	16:51	LB134054
	Potassium	2000	+/-2000	U	2000	P	12/20/2024	16:51	LB134054
	Selenium	20.0	+/-20.0	U	20.0	P	12/20/2024	16:51	LB134054
	Silver	10.0	+/-10.0	U	10.0	P	12/20/2024	16:51	LB134054
	Sodium	2000	+/-2000	U	2000	P	12/20/2024	16:51	LB134054
	Thallium	40.0	+/-40.0	U	40.0	P	12/20/2024	16:51	LB134054
	Vanadium	40.0	+/-40.0	U	40.0	P	12/20/2024	16:51	LB134054
	Zinc	40.0	+/-40.0	U	40.0	P	12/20/2024	16:51	LB134054
CCB02	Aluminum	100	+/-100	U	100	P	12/20/2024	17:34	LB134054
	Antimony	50.0	+/-50.0	U	50.0	P	12/20/2024	17:34	LB134054
	Arsenic	20.0	+/-20.0	U	20.0	P	12/20/2024	17:34	LB134054
	Barium	100	+/-100	U	100	P	12/20/2024	17:34	LB134054
	Beryllium	6.00	+/-6.00	U	6.00	P	12/20/2024	17:34	LB134054
	Cadmium	6.00	+/-6.00	U	6.00	P	12/20/2024	17:34	LB134054
	Calcium	2000	+/-2000	U	2000	P	12/20/2024	17:34	LB134054
	Chromium	10.0	+/-10.0	U	10.0	P	12/20/2024	17:34	LB134054
	Cobalt	30.0	+/-30.0	U	30.0	P	12/20/2024	17:34	LB134054
	Copper	20.0	+/-20.0	U	20.0	P	12/20/2024	17:34	LB134054
	Iron	100	+/-100	U	100	P	12/20/2024	17:34	LB134054
	Lead	12.0	+/-12.0	U	12.0	P	12/20/2024	17:34	LB134054
	Magnesium	2000	+/-2000	U	2000	P	12/20/2024	17:34	LB134054
	Manganese	20.0	+/-20.0	U	20.0	P	12/20/2024	17:34	LB134054
	Nickel	40.0	+/-40.0	U	40.0	P	12/20/2024	17:34	LB134054
	Potassium	2000	+/-2000	U	2000	P	12/20/2024	17:34	LB134054
	Selenium	20.0	+/-20.0	U	20.0	P	12/20/2024	17:34	LB134054

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Portal Partners Tri-Venture		SDG No.: P5299							
Contract: PORT06	Lab Code: CHEM	Case No.: P5299	SAS No.: P5299						
Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB02	Silver	10.0	+/-10.0	U	10.0	P	12/20/2024	17:34	LB134054
	Sodium	2000	+/-2000	U	2000	P	12/20/2024	17:34	LB134054
	Thallium	40.0	+/-40.0	U	40.0	P	12/20/2024	17:34	LB134054
	Vanadium	40.0	+/-40.0	U	40.0	P	12/20/2024	17:34	LB134054
	Zinc	40.0	+/-40.0	U	40.0	P	12/20/2024	17:34	LB134054
CCB03	Aluminum	100	+/-100	U	100	P	12/20/2024	18:16	LB134054
	Antimony	50.0	+/-50.0	U	50.0	P	12/20/2024	18:16	LB134054
	Arsenic	20.0	+/-20.0	U	20.0	P	12/20/2024	18:16	LB134054
	Barium	100	+/-100	U	100	P	12/20/2024	18:16	LB134054
	Beryllium	6.00	+/-6.00	U	6.00	P	12/20/2024	18:16	LB134054
	Cadmium	6.00	+/-6.00	U	6.00	P	12/20/2024	18:16	LB134054
	Calcium	2000	+/-2000	U	2000	P	12/20/2024	18:16	LB134054
	Chromium	10.0	+/-10.0	U	10.0	P	12/20/2024	18:16	LB134054
	Cobalt	30.0	+/-30.0	U	30.0	P	12/20/2024	18:16	LB134054
	Copper	20.0	+/-20.0	U	20.0	P	12/20/2024	18:16	LB134054
	Iron	100	+/-100	U	100	P	12/20/2024	18:16	LB134054
	Lead	12.0	+/-12.0	U	12.0	P	12/20/2024	18:16	LB134054
	Magnesium	2000	+/-2000	U	2000	P	12/20/2024	18:16	LB134054
	Manganese	20.0	+/-20.0	U	20.0	P	12/20/2024	18:16	LB134054
	Nickel	40.0	+/-40.0	U	40.0	P	12/20/2024	18:16	LB134054
	Potassium	2000	+/-2000	U	2000	P	12/20/2024	18:16	LB134054
	Selenium	20.0	+/-20.0	U	20.0	P	12/20/2024	18:16	LB134054
	Silver	10.0	+/-10.0	U	10.0	P	12/20/2024	18:16	LB134054
	Sodium	2000	+/-2000	U	2000	P	12/20/2024	18:16	LB134054
	Thallium	40.0	+/-40.0	U	40.0	P	12/20/2024	18:16	LB134054
	Vanadium	40.0	+/-40.0	U	40.0	P	12/20/2024	18:16	LB134054
	Zinc	40.0	+/-40.0	U	40.0	P	12/20/2024	18:16	LB134054
CCB04	Aluminum	100	+/-100	U	100	P	12/20/2024	19:11	LB134054
	Antimony	50.0	+/-50.0	U	50.0	P	12/20/2024	19:11	LB134054
	Arsenic	20.0	+/-20.0	U	20.0	P	12/20/2024	19:11	LB134054
	Barium	100	+/-100	U	100	P	12/20/2024	19:11	LB134054
	Beryllium	6.00	+/-6.00	U	6.00	P	12/20/2024	19:11	LB134054
	Cadmium	6.00	+/-6.00	U	6.00	P	12/20/2024	19:11	LB134054
	Calcium	2000	+/-2000	U	2000	P	12/20/2024	19:11	LB134054
	Chromium	10.0	+/-10.0	U	10.0	P	12/20/2024	19:11	LB134054
	Cobalt	30.0	+/-30.0	U	30.0	P	12/20/2024	19:11	LB134054
	Copper	20.0	+/-20.0	U	20.0	P	12/20/2024	19:11	LB134054
	Iron	100	+/-100	U	100	P	12/20/2024	19:11	LB134054
	Lead	12.0	+/-12.0	U	12.0	P	12/20/2024	19:11	LB134054

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Portal Partners Tri-Venture		SDG No.: P5299							
Contract: PORT06	Lab Code: CHEM	Case No.: P5299	SAS No.: P5299						
Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB04	Magnesium	2000	+/-2000	U	2000	P	12/20/2024	19:11	LB134054
	Manganese	20.0	+/-20.0	U	20.0	P	12/20/2024	19:11	LB134054
	Nickel	40.0	+/-40.0	U	40.0	P	12/20/2024	19:11	LB134054
	Potassium	2000	+/-2000	U	2000	P	12/20/2024	19:11	LB134054
	Selenium	20.0	+/-20.0	U	20.0	P	12/20/2024	19:11	LB134054
	Silver	10.0	+/-10.0	U	10.0	P	12/20/2024	19:11	LB134054
	Sodium	2000	+/-2000	U	2000	P	12/20/2024	19:11	LB134054
	Thallium	8.20	+/-40.0	J	40.0	P	12/20/2024	19:11	LB134054
	Vanadium	40.0	+/-40.0	U	40.0	P	12/20/2024	19:11	LB134054
	Zinc	40.0	+/-40.0	U	40.0	P	12/20/2024	19:11	LB134054
CCB05	Aluminum	100	+/-100	U	100	P	12/20/2024	20:01	LB134054
	Antimony	50.0	+/-50.0	U	50.0	P	12/20/2024	20:01	LB134054
	Arsenic	20.0	+/-20.0	U	20.0	P	12/20/2024	20:01	LB134054
	Barium	100	+/-100	U	100	P	12/20/2024	20:01	LB134054
	Beryllium	6.00	+/-6.00	U	6.00	P	12/20/2024	20:01	LB134054
	Cadmium	6.00	+/-6.00	U	6.00	P	12/20/2024	20:01	LB134054
	Calcium	2000	+/-2000	U	2000	P	12/20/2024	20:01	LB134054
	Chromium	10.0	+/-10.0	U	10.0	P	12/20/2024	20:01	LB134054
	Cobalt	30.0	+/-30.0	U	30.0	P	12/20/2024	20:01	LB134054
	Copper	20.0	+/-20.0	U	20.0	P	12/20/2024	20:01	LB134054
	Iron	100	+/-100	U	100	P	12/20/2024	20:01	LB134054
	Lead	12.0	+/-12.0	U	12.0	P	12/20/2024	20:01	LB134054
	Magnesium	2000	+/-2000	U	2000	P	12/20/2024	20:01	LB134054
	Manganese	20.0	+/-20.0	U	20.0	P	12/20/2024	20:01	LB134054
	Nickel	40.0	+/-40.0	U	40.0	P	12/20/2024	20:01	LB134054
	Potassium	2000	+/-2000	U	2000	P	12/20/2024	20:01	LB134054
	Selenium	20.0	+/-20.0	U	20.0	P	12/20/2024	20:01	LB134054
	Silver	10.0	+/-10.0	U	10.0	P	12/20/2024	20:01	LB134054
	Sodium	2000	+/-2000	U	2000	P	12/20/2024	20:01	LB134054
	Thallium	40.0	+/-40.0	U	40.0	P	12/20/2024	20:01	LB134054
	Vanadium	40.0	+/-40.0	U	40.0	P	12/20/2024	20:01	LB134054
	Zinc	40.0	+/-40.0	U	40.0	P	12/20/2024	20:01	LB134054
CCB06	Aluminum	100	+/-100	U	100	P	12/20/2024	20:51	LB134054
	Antimony	50.0	+/-50.0	U	50.0	P	12/20/2024	20:51	LB134054
	Arsenic	20.0	+/-20.0	U	20.0	P	12/20/2024	20:51	LB134054
	Barium	100	+/-100	U	100	P	12/20/2024	20:51	LB134054
	Beryllium	6.00	+/-6.00	U	6.00	P	12/20/2024	20:51	LB134054
	Cadmium	6.00	+/-6.00	U	6.00	P	12/20/2024	20:51	LB134054
	Calcium	2000	+/-2000	U	2000	P	12/20/2024	20:51	LB134054

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Portal Partners Tri-Venture		SDG No.: P5299							
Contract: PORT06	Lab Code: CHEM	Case No.: P5299	SAS No.: P5299						
Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB06	Chromium	10.0	+/-10.0	U	10.0	P	12/20/2024	20:51	LB134054
	Cobalt	30.0	+/-30.0	U	30.0	P	12/20/2024	20:51	LB134054
	Copper	20.0	+/-20.0	U	20.0	P	12/20/2024	20:51	LB134054
	Iron	100	+/-100	U	100	P	12/20/2024	20:51	LB134054
	Lead	12.0	+/-12.0	U	12.0	P	12/20/2024	20:51	LB134054
	Magnesium	2000	+/-2000	U	2000	P	12/20/2024	20:51	LB134054
	Manganese	20.0	+/-20.0	U	20.0	P	12/20/2024	20:51	LB134054
	Nickel	40.0	+/-40.0	U	40.0	P	12/20/2024	20:51	LB134054
	Potassium	2000	+/-2000	U	2000	P	12/20/2024	20:51	LB134054
	Selenium	20.0	+/-20.0	U	20.0	P	12/20/2024	20:51	LB134054
	Silver	10.0	+/-10.0	U	10.0	P	12/20/2024	20:51	LB134054
	Sodium	2000	+/-2000	U	2000	P	12/20/2024	20:51	LB134054
	Thallium	40.0	+/-40.0	U	40.0	P	12/20/2024	20:51	LB134054
	Vanadium	40.0	+/-40.0	U	40.0	P	12/20/2024	20:51	LB134054
	Zinc	40.0	+/-40.0	U	40.0	P	12/20/2024	20:51	LB134054
CCB07	Aluminum	100	+/-100	U	100	P	12/20/2024	22:04	LB134054
	Antimony	50.0	+/-50.0	U	50.0	P	12/20/2024	22:04	LB134054
	Arsenic	20.0	+/-20.0	U	20.0	P	12/20/2024	22:04	LB134054
	Barium	100	+/-100	U	100	P	12/20/2024	22:04	LB134054
	Beryllium	6.00	+/-6.00	U	6.00	P	12/20/2024	22:04	LB134054
	Cadmium	6.00	+/-6.00	U	6.00	P	12/20/2024	22:04	LB134054
	Calcium	2000	+/-2000	U	2000	P	12/20/2024	22:04	LB134054
	Chromium	10.0	+/-10.0	U	10.0	P	12/20/2024	22:04	LB134054
	Cobalt	30.0	+/-30.0	U	30.0	P	12/20/2024	22:04	LB134054
	Copper	20.0	+/-20.0	U	20.0	P	12/20/2024	22:04	LB134054
	Iron	100	+/-100	U	100	P	12/20/2024	22:04	LB134054
	Lead	12.0	+/-12.0	U	12.0	P	12/20/2024	22:04	LB134054
	Magnesium	2000	+/-2000	U	2000	P	12/20/2024	22:04	LB134054
	Manganese	20.0	+/-20.0	U	20.0	P	12/20/2024	22:04	LB134054
	Nickel	40.0	+/-40.0	U	40.0	P	12/20/2024	22:04	LB134054
	Potassium	2000	+/-2000	U	2000	P	12/20/2024	22:04	LB134054
	Selenium	20.0	+/-20.0	U	20.0	P	12/20/2024	22:04	LB134054
	Silver	10.0	+/-10.0	U	10.0	P	12/20/2024	22:04	LB134054
	Sodium	2000	+/-2000	U	2000	P	12/20/2024	22:04	LB134054
	Thallium	40.0	+/-40.0	U	40.0	P	12/20/2024	22:04	LB134054
	Vanadium	40.0	+/-40.0	U	40.0	P	12/20/2024	22:04	LB134054
	Zinc	40.0	+/-40.0	U	40.0	P	12/20/2024	22:04	LB134054
CCB08	Aluminum	100	+/-100	U	100	P	12/20/2024	23:12	LB134054
	Antimony	50.0	+/-50.0	U	50.0	P	12/20/2024	23:12	LB134054

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Portal Partners Tri-Venture		SDG No.: P5299							
Contract: PORT06	Lab Code: CHEM	Case No.: P5299	SAS No.: P5299						
Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB08	Arsenic	20.0	+/-20.0	U	20.0	P	12/20/2024	23:12	LB134054
	Barium	100	+/-100	U	100	P	12/20/2024	23:12	LB134054
	Beryllium	6.00	+/-6.00	U	6.00	P	12/20/2024	23:12	LB134054
	Cadmium	6.00	+/-6.00	U	6.00	P	12/20/2024	23:12	LB134054
	Calcium	2000	+/-2000	U	2000	P	12/20/2024	23:12	LB134054
	Chromium	10.0	+/-10.0	U	10.0	P	12/20/2024	23:12	LB134054
	Cobalt	30.0	+/-30.0	U	30.0	P	12/20/2024	23:12	LB134054
	Copper	20.0	+/-20.0	U	20.0	P	12/20/2024	23:12	LB134054
	Iron	100	+/-100	U	100	P	12/20/2024	23:12	LB134054
	Lead	12.0	+/-12.0	U	12.0	P	12/20/2024	23:12	LB134054
	Magnesium	2000	+/-2000	U	2000	P	12/20/2024	23:12	LB134054
	Manganese	20.0	+/-20.0	U	20.0	P	12/20/2024	23:12	LB134054
	Nickel	40.0	+/-40.0	U	40.0	P	12/20/2024	23:12	LB134054
	Potassium	2000	+/-2000	U	2000	P	12/20/2024	23:12	LB134054
	Selenium	20.0	+/-20.0	U	20.0	P	12/20/2024	23:12	LB134054
	Silver	10.0	+/-10.0	U	10.0	P	12/20/2024	23:12	LB134054
	Sodium	2000	+/-2000	U	2000	P	12/20/2024	23:12	LB134054
	Thallium	40.0	+/-40.0	U	40.0	P	12/20/2024	23:12	LB134054
	Vanadium	40.0	+/-40.0	U	40.0	P	12/20/2024	23:12	LB134054
	Zinc	40.0	+/-40.0	U	40.0	P	12/20/2024	23:12	LB134054
CCB09	Aluminum	100	+/-100	U	100	P	12/21/2024	00:05	LB134054
	Antimony	50.0	+/-50.0	U	50.0	P	12/21/2024	00:05	LB134054
	Arsenic	20.0	+/-20.0	U	20.0	P	12/21/2024	00:05	LB134054
	Barium	100	+/-100	U	100	P	12/21/2024	00:05	LB134054
	Beryllium	6.00	+/-6.00	U	6.00	P	12/21/2024	00:05	LB134054
	Cadmium	6.00	+/-6.00	U	6.00	P	12/21/2024	00:05	LB134054
	Calcium	2000	+/-2000	U	2000	P	12/21/2024	00:05	LB134054
	Chromium	10.0	+/-10.0	U	10.0	P	12/21/2024	00:05	LB134054
	Cobalt	30.0	+/-30.0	U	30.0	P	12/21/2024	00:05	LB134054
	Copper	20.0	+/-20.0	U	20.0	P	12/21/2024	00:05	LB134054
	Iron	100	+/-100	U	100	P	12/21/2024	00:05	LB134054
	Lead	12.0	+/-12.0	U	12.0	P	12/21/2024	00:05	LB134054
	Magnesium	2000	+/-2000	U	2000	P	12/21/2024	00:05	LB134054
	Manganese	20.0	+/-20.0	U	20.0	P	12/21/2024	00:05	LB134054
	Nickel	40.0	+/-40.0	U	40.0	P	12/21/2024	00:05	LB134054
	Potassium	2000	+/-2000	U	2000	P	12/21/2024	00:05	LB134054
	Selenium	20.0	+/-20.0	U	20.0	P	12/21/2024	00:05	LB134054
	Silver	10.0	+/-10.0	U	10.0	P	12/21/2024	00:05	LB134054
	Sodium	2000	+/-2000	U	2000	P	12/21/2024	00:05	LB134054

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Portal Partners Tri-Venture

SDG No.: P5299

Contract: PORT06

Lab Code: CHEM

Case No.: P5299

SAS No.: P5299

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB09	Thallium	40.0	+/-40.0	U	40.0	P	12/21/2024	00:05	LB134054
	Vanadium	40.0	+/-40.0	U	40.0	P	12/21/2024	00:05	LB134054
	Zinc	40.0	+/-40.0	U	40.0	P	12/21/2024	00:05	LB134054

Metals
- 3b -
PREPARATION BLANK SUMMARY

Client: Portal Partners Tri-Venture

SDG No.: P5299

Instrument: CV1

Sample ID	Analyte	Result (mg/Kg)	Acceptance Limit	Conc Qual	CRQL mg/Kg	M	Analysis Date	Analysis Time	Run
PB165728BL		SOLID		Batch Number:	PB165728		Prep Date:	12/18/2024	
	Mercury	0.013	<0.013	U	0.013	CV	12/18/2024	13:52	LB133991

Metals
- 3b -
PREPARATION BLANK SUMMARY

Client: Portal Partners Tri-Venture

SDG No.: P5299

Instrument: P4

Sample ID	Analyte	Result (mg/Kg)	Acceptance Limit	Conc Qual	CRQL mg/Kg	M	Analysis Date	Analysis Time	Run
PB165722BL	SOLID			Batch Number:	PB165722		Prep Date:	12/18/2024	
	Aluminum	4.41	<4.41	U	4.41	P	12/20/2024	20:38	LB134054
	Antimony	2.20	<2.20	U	2.20	P	12/20/2024	20:38	LB134054
	Arsenic	0.88	<0.88	U	0.88	P	12/20/2024	20:38	LB134054
	Barium	4.41	<4.41	U	4.41	P	12/20/2024	20:38	LB134054
	Beryllium	0.26	<0.26	U	0.26	P	12/20/2024	20:38	LB134054
	Cadmium	0.26	<0.26	U	0.26	P	12/20/2024	20:38	LB134054
	Calcium	88.1	<88.1	U	88.1	P	12/20/2024	20:38	LB134054
	Chromium	0.44	<0.44	U	0.44	P	12/20/2024	20:38	LB134054
	Cobalt	1.32	<1.32	U	1.32	P	12/20/2024	20:38	LB134054
	Copper	0.88	<0.88	U	0.88	P	12/20/2024	20:38	LB134054
	Iron	4.41	<4.41	U	4.41	P	12/20/2024	20:38	LB134054
	Lead	0.53	<0.53	U	0.53	P	12/20/2024	20:38	LB134054
	Magnesium	88.1	<88.1	U	88.1	P	12/20/2024	20:38	LB134054
	Manganese	0.88	<0.88	U	0.88	P	12/20/2024	20:38	LB134054
	Nickel	1.76	<1.76	U	1.76	P	12/20/2024	20:38	LB134054
	Potassium	88.1	<88.1	U	88.1	P	12/20/2024	20:38	LB134054
	Selenium	0.88	<0.88	U	0.88	P	12/20/2024	20:38	LB134054
	Silver	0.44	<0.44	U	0.44	P	12/20/2024	20:38	LB134054
	Sodium	88.1	<88.1	U	88.1	P	12/20/2024	20:38	LB134054
	Thallium	1.76	<1.76	U	1.76	P	12/20/2024	20:38	LB134054
	Vanadium	1.76	<1.76	U	1.76	P	12/20/2024	20:38	LB134054
	Zinc	1.76	<1.76	U	1.76	P	12/20/2024	20:38	LB134054

Metals
- 4 -
INTERFERENCE CHECK SAMPLE

Client: Portal Partners Tri-Venture **SDG No.:** P5299
Contract: PORT06 **Lab Code:** CHEM **Case No.:** P5299 **SAS No.:** P5299
ICS Source: EPA **Instrument ID:** P4

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Low Limit (ug/L)	High Limit (ug/L)	Analysis Date	Analysis Time	Run Number
ICSA01	Aluminum	239000	255000	94	216000	294000	12/20/2024	16:30	LB134054
	Antimony	0.15			-50	50	12/20/2024	16:30	LB134054
	Arsenic	-1.51			-20	20	12/20/2024	16:30	LB134054
	Barium	2.79	6.0	46	-94	106	12/20/2024	16:30	LB134054
	Beryllium	1.43			-6	6	12/20/2024	16:30	LB134054
	Cadmium	-0.99	1.0	99	-5	7	12/20/2024	16:30	LB134054
	Calcium	225000	245000	92	208000	282000	12/20/2024	16:30	LB134054
	Chromium	60.0	52.0	115	42	62	12/20/2024	16:30	LB134054
	Cobalt	1.46			-30	30	12/20/2024	16:30	LB134054
	Copper	16.4	2.0	820	-18	22	12/20/2024	16:30	LB134054
	Iron	103000	101000	102	85600	116500	12/20/2024	16:30	LB134054
	Lead	6.97			-12	12	12/20/2024	16:30	LB134054
	Magnesium	247000	255000	97	216000	294000	12/20/2024	16:30	LB134054
	Manganese	4.79	7.0	68	-13	27	12/20/2024	16:30	LB134054
	Nickel	2.13	2.0	106	-38	42	12/20/2024	16:30	LB134054
	Potassium	136			0	0	12/20/2024	16:30	LB134054
	Selenium	-16.6			-20	20	12/20/2024	16:30	LB134054
	Silver	-3.17			-10	10	12/20/2024	16:30	LB134054
	Sodium	5.98			0	0	12/20/2024	16:30	LB134054
	Thallium	11.1			-40	40	12/20/2024	16:30	LB134054
	Vanadium	4.97			-40	40	12/20/2024	16:30	LB134054
	Zinc	0.10			-40	40	12/20/2024	16:30	LB134054
ICSAB01	Aluminum	236000	247000	96	209000	285000	12/20/2024	16:34	LB134054
	Antimony	632	618	102	525	711	12/20/2024	16:34	LB134054
	Arsenic	113	104	109	88.4	120	12/20/2024	16:34	LB134054
	Barium	460	537	86	437	637	12/20/2024	16:34	LB134054
	Beryllium	492	495	99	420	570	12/20/2024	16:34	LB134054
	Cadmium	1040	972	107	826	1120	12/20/2024	16:34	LB134054
	Calcium	222000	235000	94	199000	271000	12/20/2024	16:34	LB134054
	Chromium	604	542	111	460	624	12/20/2024	16:34	LB134054
	Cobalt	523	476	110	404	548	12/20/2024	16:34	LB134054
	Copper	520	511	102	434	588	12/20/2024	16:34	LB134054
	Iron	101000	99300	102	84400	114500	12/20/2024	16:34	LB134054
	Lead	56.2	49.0	115	37	61	12/20/2024	16:34	LB134054
	Magnesium	244000	248000	98	210000	286000	12/20/2024	16:34	LB134054
	Manganese	487	507	96	430	584	12/20/2024	16:34	LB134054
	Nickel	1040	954	109	810	1100	12/20/2024	16:34	LB134054
	Potassium	163			0	0	12/20/2024	16:34	LB134054
	Selenium	34.2	46.0	74	26	66	12/20/2024	16:34	LB134054
	Silver	201	201	100	170	232	12/20/2024	16:34	LB134054
	Sodium	5.70			0	0	12/20/2024	16:34	LB134054
	Thallium	95.5	108	88	68	148	12/20/2024	16:34	LB134054

Metals

- 4 -

INTERFERENCE CHECK SAMPLE

Client: Portal Partners Tri-Venture **SDG No.:** P5299
Contract: PORT06 **Lab Code:** CHEM **Case No.:** P5299 **SAS No.:** P5299
ICS Source: EPA **Instrument ID:** P4

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Low Limit (ug/L)	High Limit (ug/L)	Analysis Date	Analysis Time	Run Number
ICSAB01	Vanadium	474	491	96	417	565	12/20/2024	16:34	LB134054
	Zinc	1080	952	113	809	1095	12/20/2024	16:34	LB134054



METAL QC DATA

metals
- 5a -
MATRIX SPIKE SUMMARY

client: Portal Partners Tri-Venture **level:** low **sdg no.:** P5299
contract: PORT06 **lab code:** CHEM **case no.:** P5299 **sas no.:** P5299
matrix: Solid **sample id:** P5299-04 **client id:** SB-02MS
Percent Solids for Sample: 79.2 **Spiked ID:** P5299-04MS **Percent Solids for Spike Sample:** 79.2

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Aluminum	mg/Kg	75 - 125	6830		6080		120	625		P
Antimony	mg/Kg	75 - 125	16.2		2.92	U	47.0	34	N	P
Arsenic	mg/Kg	75 - 125	38.9		1.80		47.0	79		P
Barium	mg/Kg	75 - 125	40.6		35.4		11.7	45	N	P
Beryllium	mg/Kg	75 - 125	9.20		0.52		11.7	74	N	P
Cadmium	mg/Kg	75 - 125	11.0		0.058	J	11.7	94		P
Calcium	mg/Kg	75 - 125	825		995		58.7	-290		P
Chromium	mg/Kg	75 - 125	34.5		18.6		23.5	67	N	P
Cobalt	mg/Kg	75 - 125	17.3		5.94		11.7	97		P
Copper	mg/Kg	75 - 125	28.0		14.6		17.6	76		P
Iron	mg/Kg	75 - 125	11400		13100		180	-992		P
Lead	mg/Kg	75 - 125	65.9		11.4		58.7	93		P
Magnesium	mg/Kg	75 - 125	2130		1980		120	121		P
Manganese	mg/Kg	75 - 125	134		136		11.7	-16		P
Nickel	mg/Kg	75 - 125	39.6		12.8		29.4	91		P
Potassium	mg/Kg	75 - 125	1180		801		590	64	N	P
Selenium	mg/Kg	75 - 125	83.1		1.17	U	120	69	N	P
Silver	mg/Kg	75 - 125	3.46		0.59	U	4.4	79		P
Sodium	mg/Kg	75 - 125	261		120		180	79		P
Thallium	mg/Kg	75 - 125	108		2.34	U	120	90		P
Vanadium	mg/Kg	75 - 125	27.8		15.9		17.6	68	N	P
Zinc	mg/Kg	75 - 125	38.4		27.2		11.7	96		P

metals
- 5a -
MATRIX SPIKE DUPLICATE SUMMARY

client: <u>Portal Partners Tri-Venture</u>	level: <u>low</u>	sdg no.: <u>P5299</u>
contract: <u>PORT06</u>	lab code: <u>CHEM</u>	case no.: <u>P5299</u> sas no.: <u>P5299</u>
matrix: <u>Solid</u>	sample id: <u>P5299-04</u>	client id: <u>SB-02MSD</u>
Percent Solids for Sample: 79.2	Spiked ID: P5299-04MSD	Percent Solids for Spike Sample: 79.2

Analyte	Units	Acceptance Limit %R	MSD Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Aluminum	mg/Kg	75 - 125	5940		6080		100	-134		P
Antimony	mg/Kg	75 - 125	14.4		2.92	U	40.9	35	N	P
Arsenic	mg/Kg	75 - 125	34.8		1.80		40.9	81		P
Barium	mg/Kg	75 - 125	35.4		35.4		10.2	0	N	P
Beryllium	mg/Kg	75 - 125	8.14		0.52		10.2	75		P
Cadmium	mg/Kg	75 - 125	9.77		0.058	J	10.2	95		P
Calcium	mg/Kg	75 - 125	711		995		51.1	-557		P
Chromium	mg/Kg	75 - 125	30.1		18.6		20.4	56	N	P
Cobalt	mg/Kg	75 - 125	15.2		5.94		10.2	91		P
Copper	mg/Kg	75 - 125	25.1		14.6		15.3	68	N	P
Iron	mg/Kg	75 - 125	9860		13100		150	-2190		P
Lead	mg/Kg	75 - 125	58.7		11.4		51.1	93		P
Magnesium	mg/Kg	75 - 125	1830		1980		100	-157		P
Manganese	mg/Kg	75 - 125	116		136		10.2	-194		P
Nickel	mg/Kg	75 - 125	35.1		12.8		25.6	87		P
Potassium	mg/Kg	75 - 125	1020		801		510	44	N	P
Selenium	mg/Kg	75 - 125	74.0		1.17	U	100	74	N	P
Silver	mg/Kg	75 - 125	3.02		0.59	U	3.8	80		P
Sodium	mg/Kg	75 - 125	225		120		150	70	N	P
Thallium	mg/Kg	75 - 125	95.0		2.34	U	100	95		P
Vanadium	mg/Kg	75 - 125	24.0		15.9		15.3	53	N	P
Zinc	mg/Kg	75 - 125	33.7		27.2		10.2	64	N	P

metals
- 5a -
MATRIX SPIKE SUMMARY

client: Portal Partners Tri-Venture **level:** low **sdg no.:** P5299
contract: PORT06 **lab code:** CHEM **case no.:** P5299 **sas no.:** P5299
matrix: Solid **sample id:** P5301-03 **client id:** HR-04-121624MS
Percent Solids for Sample: 89.4 **Spiked ID:** P5301-03MS **Percent Solids for Spike Sample:** 89.4

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Mercury	mg/Kg	80 - 124	0.25		0.035		0.28	77	N	CV

metals
- 5a -
MATRIX SPIKE DUPLICATE SUMMARY

client:	<u>Portal Partners Tri-Venture</u>	level:	<u>low</u>	sdg no.:	<u>P5299</u>		
contract:	<u>PORT06</u>	lab code:	<u>CHEM</u>	case no.:	<u>P5299</u>	sas no.:	<u>P5299</u>
matrix:	<u>Solid</u>	sample id:	<u>P5301-03</u>	client id:	<u>HR-04-121624MSD</u>		
Percent Solids for Sample:	89.4	Spiked ID:	<u>P5301-03MSD</u>	Percent Solids for Spike Sample:	89.4		

Analyte	Units	Acceptance Limit %R	MSD Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Mercury	mg/Kg	80 - 124	0.24		0.035		0.28	74	N	CV

Metals
- 5b -
POST DIGEST SPIKE SUMMARY

Client: Portal Partners Tri-Venture **SDG No.:** P5299

Contract: PORT06 **Lab Code:** CHEM **Case No.:** P5299 **SAS No.:** P5299

Matrix: Solid **Level:** LOW **Client ID:** SB-02A

Sample ID: P5299-04 **Spiked ID:** P5299-04A

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Antimony	mg/Kg	75 - 125	16.2		2.92	U	46.8	35		P
Barium	mg/Kg	75 - 125	40.4		35.4		11.7	43		P
Beryllium	mg/Kg	75 - 125	9.31		0.52		11.7	75		P
Chromium	mg/Kg	75 - 125	34.3		18.6		23.4	67		P
Copper	mg/Kg	75 - 125	28.4		14.6		17.5	79		P
Potassium	mg/Kg	75 - 125	1160		801		580	61		P
Selenium	mg/Kg	75 - 125	83.7		1.17	U	120	70		P
Sodium	mg/Kg	75 - 125	256		120		180	76		P
Vanadium	mg/Kg	75 - 125	27.7		15.9		17.5	67		P
Zinc	mg/Kg	75 - 125	38.2		27.2		11.7	94		P

Metals
- 5b -
POST DIGEST SPIKE SUMMARY

Client: Portal Partners Tri-Venture **SDG No.:** P5299
Contract: PORT06 **Lab Code:** CHEM **Case No.:** P5299 **SAS No.:** P5299
Matrix: Solid **Level:** LOW **Client ID:** HR-04-121624A
Sample ID: P5301-03 **Spiked ID:** P5301-03A

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Mercury	mg/Kg	80 - 124	0.29		0.035		0.30	85		CV

Metals

- 6 -

DUPLICATE SAMPLE SUMMARY

Client: Portal Partners Tri-Venture **Level:** LOW **SDG No.:** P5299
Contract: PORT06 **Lab Code:** CHEM **Case No.:** P5299 **SAS No.:** P5299
Matrix: Solid **Sample ID:** P5299-04 **Client ID:** SB-02DUP
Percent Solids for Sample: 79.2 **Duplicate ID** P5299-04DUP **Percent Solids for Spike Sample:** 79.2

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Aluminum	mg/Kg	20	6080		5860		4		P
Antimony	mg/Kg	20	2.92	U	2.79	U			P
Arsenic	mg/Kg	20	1.80		1.72		5		P
Barium	mg/Kg	20	35.4		33.9		4		P
Beryllium	mg/Kg	20	0.52		0.51		3		P
Cadmium	mg/Kg	20	0.058	J	0.045	J	25		P
Calcium	mg/Kg	20	995		959		4		P
Chromium	mg/Kg	20	18.6		18.0		3		P
Cobalt	mg/Kg	20	5.94		5.75		3		P
Copper	mg/Kg	20	14.6		14.1		3		P
Iron	mg/Kg	20	13100		12700		3		P
Lead	mg/Kg	20	11.4		10.9		4		P
Magnesium	mg/Kg	20	1980		1910		4		P
Manganese	mg/Kg	20	136		131		4		P
Nickel	mg/Kg	20	12.8		12.3		4		P
Potassium	mg/Kg	20	801		770		4		P
Selenium	mg/Kg	20	1.17	U	1.12	U			P
Silver	mg/Kg	20	0.59	U	0.56	U			P
Sodium	mg/Kg	20	120		115		4		P
Thallium	mg/Kg	20	2.34	U	2.23	U			P
Vanadium	mg/Kg	20	15.9		15.3		4		P
Zinc	mg/Kg	20	27.2		26.4		3		P

Metals

- 6 -

DUPLICATE SAMPLE SUMMARY

Client: Portal Partners Tri-Venture **Level:** LOW **SDG No.:** P5299
Contract: PORT06 **Lab Code:** CHEM **Case No.:** P5299 **SAS No.:** P5299
Matrix: Solid **Sample ID:** P5299-04MS **Client ID:** SB-02MSD
Percent Solids for Sample: 79.2 **Duplicate ID** P5299-04MSD **Percent Solids for Spike Sample:** 79.2

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Aluminum	mg/Kg	20	6830		5940		14		P
Antimony	mg/Kg	20	16.2		14.4		12		P
Arsenic	mg/Kg	20	38.9		34.8		11		P
Barium	mg/Kg	20	40.6		35.4		14		P
Beryllium	mg/Kg	20	9.20		8.14		12		P
Cadmium	mg/Kg	20	11.0		9.77		12		P
Calcium	mg/Kg	20	825		711		15		P
Chromium	mg/Kg	20	34.5		30.1		14		P
Cobalt	mg/Kg	20	17.3		15.2		13		P
Copper	mg/Kg	20	28.0		25.1		11		P
Iron	mg/Kg	20	11400		9860		14		P
Lead	mg/Kg	20	65.9		58.7		12		P
Magnesium	mg/Kg	20	2130		1830		15		P
Manganese	mg/Kg	20	134		116		14		P
Nickel	mg/Kg	20	39.6		35.1		12		P
Potassium	mg/Kg	20	1180		1020		15		P
Selenium	mg/Kg	20	83.1		74.0		12		P
Silver	mg/Kg	20	3.46		3.02		14		P
Sodium	mg/Kg	20	261		225		15		P
Thallium	mg/Kg	20	108		95.0		13		P
Vanadium	mg/Kg	20	27.8		24.0		15		P
Zinc	mg/Kg	20	38.4		33.7		13		P

Metals

- 6 -

DUPLICATE SAMPLE SUMMARY

Client: Portal Partners Tri-Venture **Level:** LOW **SDG No.:** P5299
Contract: PORT06 **Lab Code:** CHEM **Case No.:** P5299 **SAS No.:** P5299
Matrix: Solid **Sample ID:** P5301-03 **Client ID:** HR-04-121624DUP
Percent Solids for Sample: 89.4 **Duplicate ID** P5301-03DUP **Percent Solids for Spike Sample:** 89.4

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Mercury	mg/Kg	20	0.035		0.031		12		CV

Metals

- 6 -

DUPLICATE SAMPLE SUMMARY

Client: Portal Partners Tri-Venture **Level:** LOW **SDG No.:** P5299
Contract: PORT06 **Lab Code:** CHEM **Case No.:** P5299 **SAS No.:** P5299
Matrix: Solid **Sample ID:** P5301-03MS **Client ID:** HR-04-121624MSD
Percent Solids for Sample: 89.4 **Duplicate ID** P5301-03MSD **Percent Solids for Spike Sample:** 89.4

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Mercury	mg/Kg	20	0.25		0.24		3		CV

Metals

- 7 -

LABORATORY CONTROL SAMPLE SUMMARY

Client: Portal Partners Tri-Venture **SDG No.:** P5299
Contract: PORT06 **Lab Code:** CHEM **Case No.:** P5299 **SAS No.:** P5299

Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limits	M
PB165722BS							
Aluminum	mg/Kg	88.1	79.5		90	80 - 120	P
Antimony	mg/Kg	35.2	33.9		96	80 - 120	P
Arsenic	mg/Kg	35.2	35.1		100	80 - 120	P
Barium	mg/Kg	8.8	7.36		84	80 - 120	P
Beryllium	mg/Kg	8.8	8.30		94	80 - 120	P
Cadmium	mg/Kg	8.8	8.38		95	80 - 120	P
Calcium	mg/Kg	44.1	40.7	J	92	80 - 120	P
Chromium	mg/Kg	17.6	17.8		101	80 - 120	P
Cobalt	mg/Kg	8.8	8.42		96	80 - 120	P
Copper	mg/Kg	13.2	13.4		102	80 - 120	P
Iron	mg/Kg	130	127		98	80 - 120	P
Lead	mg/Kg	44.1	42.0		95	80 - 120	P
Magnesium	mg/Kg	88.1	84.3	J	96	80 - 120	P
Manganese	mg/Kg	8.8	8.44		96	80 - 120	P
Nickel	mg/Kg	22.0	21.3		97	80 - 120	P
Potassium	mg/Kg	440	416		94	80 - 120	P
Selenium	mg/Kg	88.1	85.7		97	80 - 120	P
Silver	mg/Kg	3.3	3.28		99	80 - 120	P
Sodium	mg/Kg	130	128		98	80 - 120	P
Thallium	mg/Kg	88.1	85.7		97	80 - 120	P
Vanadium	mg/Kg	13.2	11.9		90	80 - 120	P
Zinc	mg/Kg	8.8	8.69		99	80 - 120	P

Metals

- 7 -

LABORATORY CONTROL SAMPLE SUMMARY

Client: Portal Partners Tri-Venture

SDG No.: P5299

Contract: PORT06

Lab Code: CHEM

Case No.: P5299

SAS No.: P5299

Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limits	M
PB165728BS Mercury	mg/Kg	0.26	0.22		86	80 - 124	CV

Metals
-9 -
ICP SERIAL DILUTIONS

SAMPLE NO.

SB-02L

Lab Name: Chemtech Consulting Group

Contract: PORT06

Lab Code: CHEM **Lb No.:** lb134054 **Lab Sample ID :** P5299-04L **SDG No.:** P5299

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

Concentration Units: mg/Kg

Analyte	Initial Sample Result (I)		Serial Dilution Result (S)		% Differ- ence	Q	M
	C		C				
Aluminum	6080		7050		16		P
Antimony	2.92	U	14.6	U			P
Arsenic	1.80		5.85	U	100.0		P
Barium	35.4		40.0		13		P
Beryllium	0.52		0.64	J	22		P
Cadmium	0.058	J	1.75	U	100.0		P
Calcium	995		1180		18		P
Chromium	18.6		22.4		20		P
Cobalt	5.94		6.00	J	1		P
Copper	14.6		17.6		20		P
Iron	13100		14900		13		P
Lead	11.4		12.0		5		P
Magnesium	1980		2370		19		P
Manganese	136		162		19		P
Nickel	12.8		13.2		3		P
Potassium	801		919		15		P
Selenium	1.17	U	5.85	U			P
Silver	0.59	U	2.92	U			P
Sodium	120		585	U	100.0		P
Thallium	2.34	U	11.7	U			P
Vanadium	15.9		17.7		11		P
Zinc	27.2		31.4		15		P

Metals

-9 -

ICP SERIAL DILUTIONS

SAMPLE NO.

HR-04-121624L

Lab Name: Chemtech Consulting Group

Contract: PORT06

Lab Code: CHEM

Lb No.: lb133991

Lab Sample ID : P5301-03L

SDG No.: P5299

Matrix (soil/water): Solid

Level (low/med): LOW

Concentration Units: mg/Kg

Analyte	Initial Sample Result (I) C	Serial Dilution Result (S) C	% Differ- ence	Q	M
Mercury	0.035	0.075 U	100.0		CV



METAL PREPARATION & INSTRUMENT DATA

Metals

- 11 -

ICP INTERELEMENT CORRECTION FACTORS

Client: Portal Partners Tri-Venture

SDG No.: P5299

Contract: PORT06

Lab Code: CHEM

Case No.: P5299

SAS No.: P5299

Instrument ID:

Date:

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

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

Metals

- 11 -

ICP INTERELEMENT CORRECTION FACTORS

Client: Portal Partners Tri-Venture

SDG No.: P5299

Contract: PORT06

Lab Code: CHEM

Case No.: P5299

SAS No.: P5299

Instrument ID:

Date:

Interement Correction Factors (apparent ppb analyte/ppm interferent)

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

Metals

- 11 -

ICP INTERELEMENT CORRECTION FACTORS

Client: Portal Partners Tri-Venture

SDG No.: P5299

Contract: PORT06

Lab Code: CHEM

Case No.: P5299

SAS No.: P5299

Instrument ID:

Date:

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

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

Metals

- 11 -

ICP INTERELEMEN CORRECTION FACTORS

Client: Portal Partners Tri-Venture

SDG No.: P5299

Contract: PORT06

Lab Code: CHEM

Case No.: P5299

SAS No.: P5299

Instrument ID:

Date:

Interement Correction Factors (apparent ppb analyte/ppm interferent)

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

Metals

- 11 -

ICP INTERELEMENT CORRECTION FACTORS

Client: Portal Partners Tri-Venture

SDG No.: P5299

Contract: PORT06

Lab Code: CHEM

Case No.: P5299

SAS No.: P5299

Instrument ID:

Date:

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

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



METAL PREPARATION & ANALYICAL SUMMARY

Metals

- 13 -

SAMPLE PREPARATION SUMMARY

Client:	<u>Portal Partners Tri-Venture</u>	SDG No.:	<u>P5299</u>
Contract:	<u>PORT06</u>	Lab Code:	<u>CHEM</u>
		Method:	<u></u>
		Case No.:	<u>P5299</u>
		SAS No.:	<u>P5299</u>

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(g)	Final Sample Volume (mL)	Percent Solids
Batch Number: PB165722							
P5299-01	SB-01	SAM	SOLID	12/18/2024	2.12	100.0	78.50
P5299-02	SB-02	SAM	SOLID	12/18/2024	2.24	100.0	75.50
P5299-03	SB-01	SAM	SOLID	12/18/2024	2.32	100.0	68.80
P5299-04	SB-02	SAM	SOLID	12/18/2024	2.16	100.0	79.20
P5299-04DUP	SB-02DUP	DUP	SOLID	12/18/2024	2.26	100.0	79.20
P5299-04MS	SB-02MS	MS	SOLID	12/18/2024	2.15	100.0	79.20
P5299-04MSD	SB-02MSD	MSD	SOLID	12/18/2024	2.47	100.0	79.20
PB165722BL	PB165722BL	MB	SOLID	12/18/2024	2.27	100.0	100.00
PB165722BS	PB165722BS	LCS	SOLID	12/18/2024	2.27	100.0	100.00

Metals

- 13 -

SAMPLE PREPARATION SUMMARY

Client:	<u>Portal Partners Tri-Venture</u>	SDG No.:	<u>P5299</u>
Contract:	<u>PORT06</u>	Lab Code:	<u>CHEM</u>
		Method:	<u></u>
		Case No.:	<u>P5299</u>
		SAS No.:	<u>P5299</u>

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(g)	Final Sample Volume (mL)	Percent Solids
Batch Number: PB165728							
P5299-01	SB-01	SAM	SOLID	12/18/2024	0.60	35.0	78.50
P5299-02	SB-02	SAM	SOLID	12/18/2024	0.50	35.0	75.50
P5299-03	SB-01	SAM	SOLID	12/18/2024	0.59	35.0	68.80
P5299-04	SB-02	SAM	SOLID	12/18/2024	0.51	35.0	79.20
P5301-03DUP	HR-04-121624DUP	DUP	SOLID	12/18/2024	0.51	35.0	89.40
P5301-03MS	HR-04-121624MS	MS	SOLID	12/18/2024	0.55	35.0	89.40
P5301-03MSD	HR-04-121624MSD	MSD	SOLID	12/18/2024	0.56	35.0	89.40
PB165728BL	PB165728BL	MB	SOLID	12/18/2024	0.52	35.0	100.00
PB165728BS	PB165728BS	LCS	SOLID	12/18/2024	0.54	35.0	100.00

metals
- 14 -
ANALYSIS RUN LOG

Client: Portal Partners Tri-Venture

Contract: PORT06

Lab code: CHEM **Case no.:** P5299 **Sas no.:** P5299

Sdg no.: P5299

Instrument id number: **Method:**

Run number: LB133991

Start date: 12/18/2024 **End date:** 12/18/2024

Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	1319	HG
S0.2	S0.2	1	1322	HG
S2.5	S2.5	1	1324	HG
S5	S5	1	1326	HG
S7.5	S7.5	1	1328	HG
S10	S10	1	1331	HG
ICV24	ICV24	1	1336	HG
ICB24	ICB24	1	1339	HG
CCV42	CCV42	1	1341	HG
CCB42	CCB42	1	1343	HG
CRA	CRA	1	1345	HG
PB165728BL	PB165728BL	1	1352	HG
PB165728BS	PB165728BS	1	1355	HG
P5299-01	SB-01	1	1357	HG
P5299-02	SB-02	1	1359	HG
P5299-03	SB-01	1	1402	HG
P5299-04	SB-02	1	1404	HG
CCV43	CCV43	1	1408	HG
CCB43	CCB43	1	1411	HG
P5301-03DUP	HR-04-121624DUP	1	1425	HG
P5301-03MS	HR-04-121624MS	1	1427	HG
P5301-03MSD	HR-04-121624MSD	1	1429	HG
CCV44	CCV44	1	1445	HG
CCB44	CCB44	1	1448	HG
P5301-03L	HR-04-121624L	5	1503	HG
P5301-03A	HR-04-121624A	1	1505	HG
CCV45	CCV45	1	1507	HG
CCB45	CCB45	1	1509	HG

metals
- 14 -
ANALYSIS RUN LOG

Client: Portal Partners Tri-Venture **Contract:** PORT06

Lab code: CHEM **Case no.:** P5299 **Sas no.:** P5299 **Sdg no.:** P5299

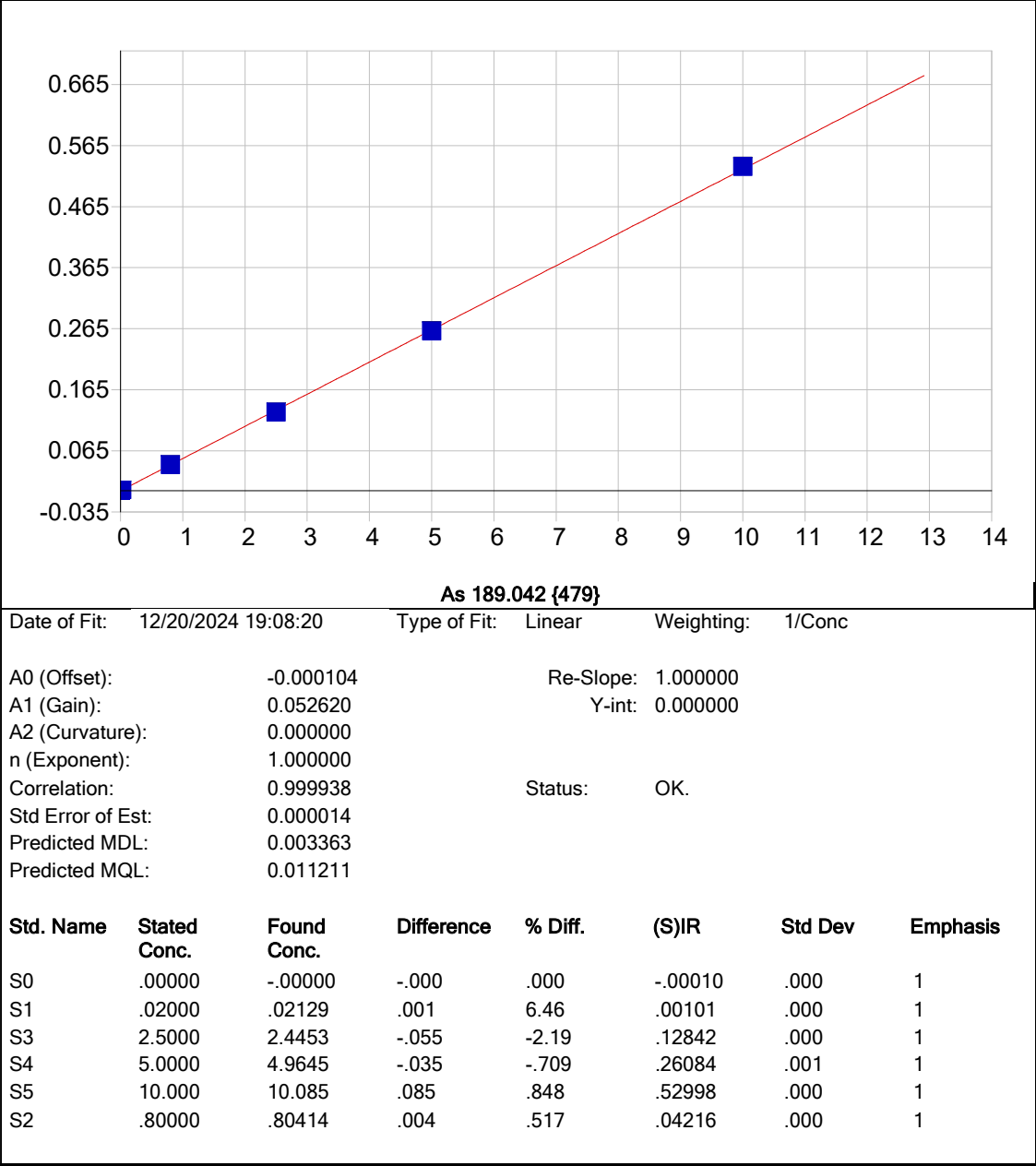
Instrument id number: **Method:** **Run number:** LB134054

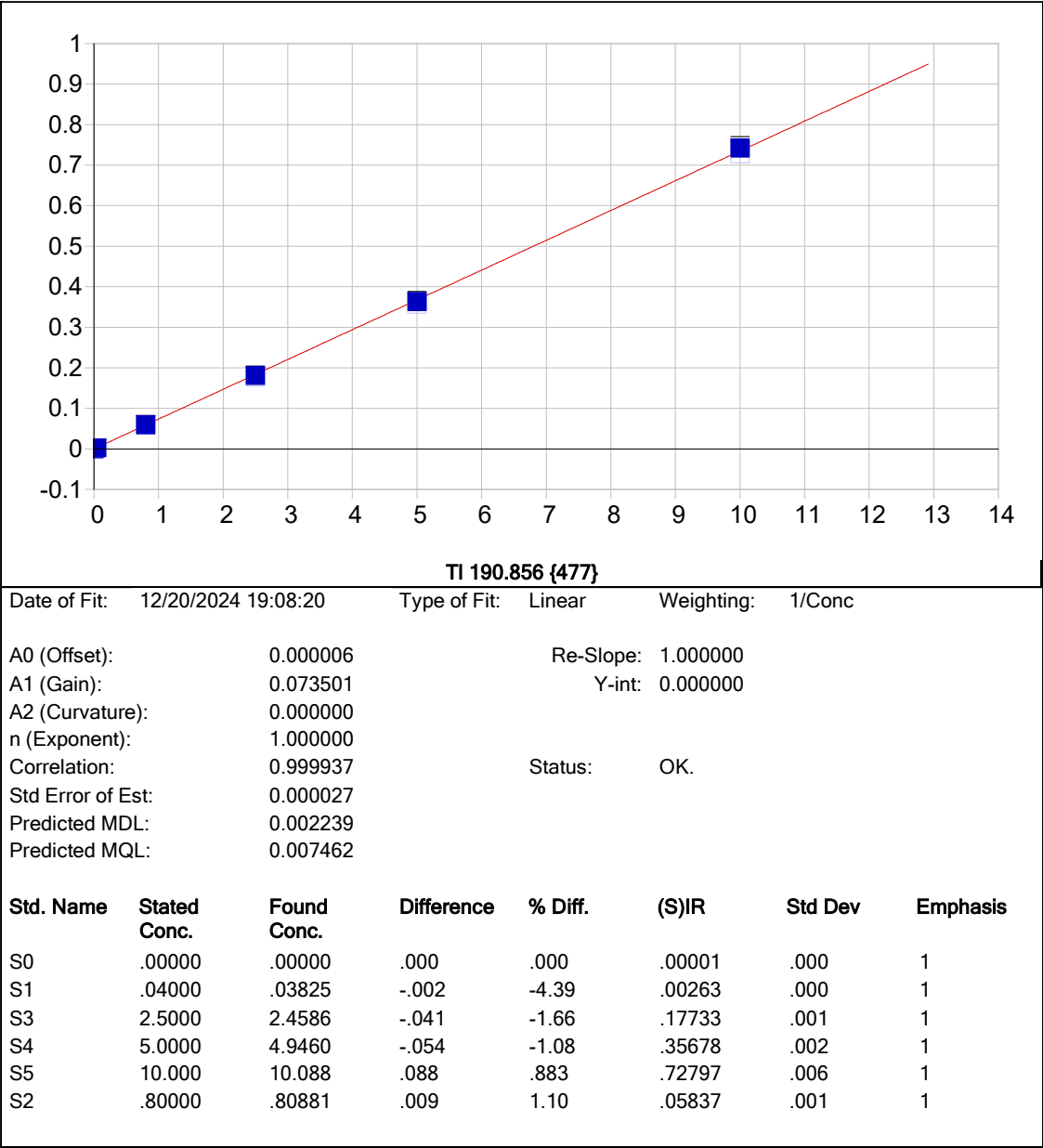
Start date: 12/20/2024 **End date:** 12/21/2024

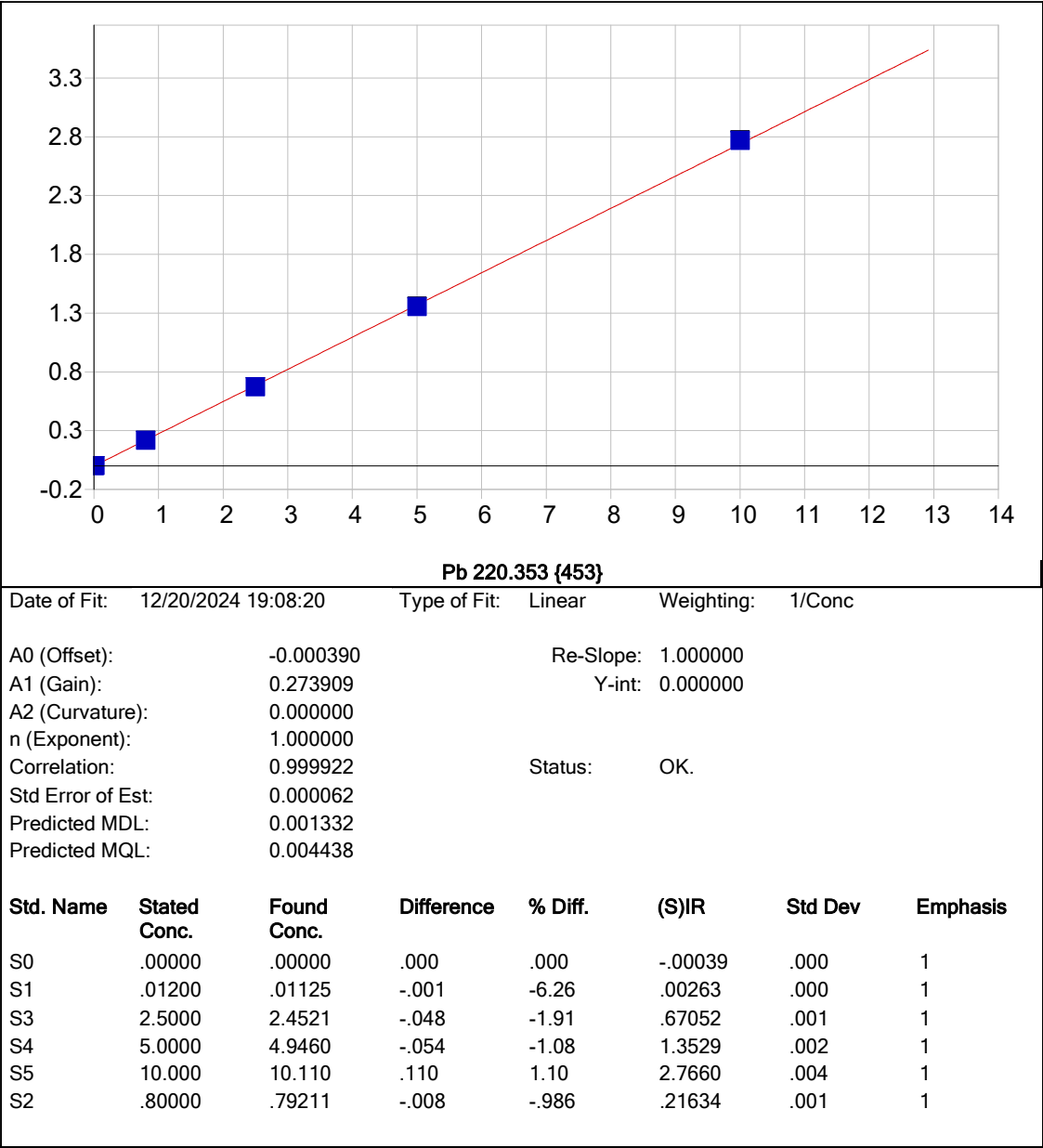
Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	1541	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
S1	S1	1	1546	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
S2	S2	1	1550	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
S3	S3	1	1554	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
S4	S4	1	1558	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
S5	S5	1	1603	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
ICV01	ICV01	1	1607	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
LLICV01	LLICV01	1	1611	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
ICB01	ICB01	1	1621	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CRI01	CRI01	1	1626	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
ICSA01	ICSA01	1	1630	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
ICSAB01	ICSAB01	1	1634	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCV01	CCV01	1	1647	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCB01	CCB01	1	1651	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCV02	CCV02	1	1729	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCB02	CCB02	1	1734	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCV03	CCV03	1	1812	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCB03	CCB03	1	1816	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
P5299-01	SB-01	1	1838	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCV04	CCV04	1	1902	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCB04	CCB04	1	1911	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCV05	CCV05	1	1957	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCB05	CCB05	1	2001	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
P5299-02	SB-02	1	2006	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
P5299-03	SB-01	1	2010	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
P5299-04	SB-02	1	2014	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
P5299-04DUP	SB-02DUP	1	2018	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
P5299-04L	SB-02L	5	2022	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
P5299-04MS	SB-02MS	1	2026	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
P5299-04MSD	SB-02MSD	1	2030	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
P5299-04A	SB-02A	1	2034	Ba,Be,Cr,Cu,K,Na,Sb,Se,V,Zn
PB165722BL	PB165722BL	1	2038	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
PB165722BS	PB165722BS	1	2043	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCV06	CCV06	1	2047	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCB06	CCB06	1	2051	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCV07	CCV07	1	2137	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCB07	CCB07	1	2204	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCV08	CCV08	1	2301	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCB08	CCB08	1	2312	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCV09	CCV09	1	2355	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn
CCB09	CCB09	1	0005	Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn

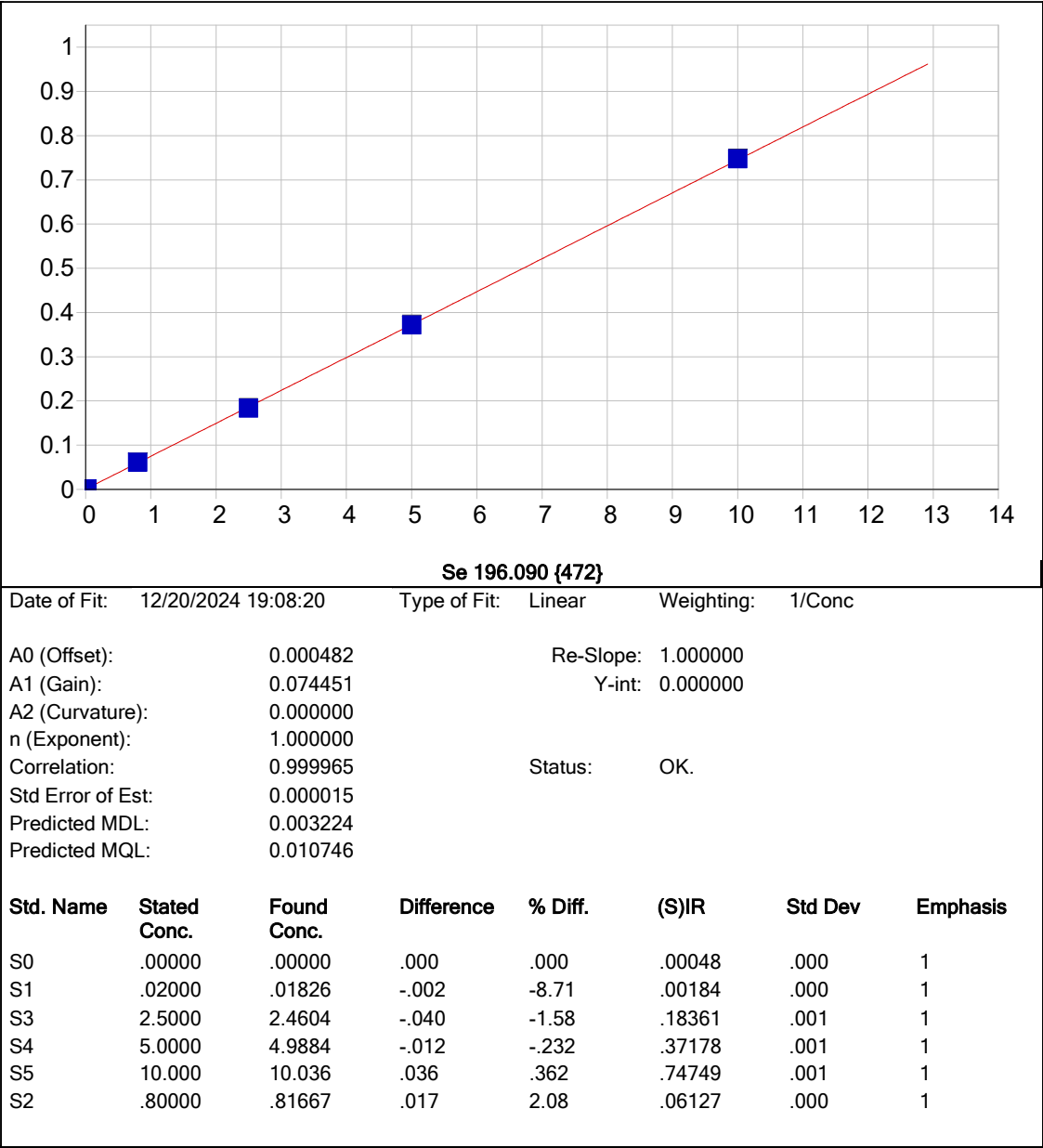


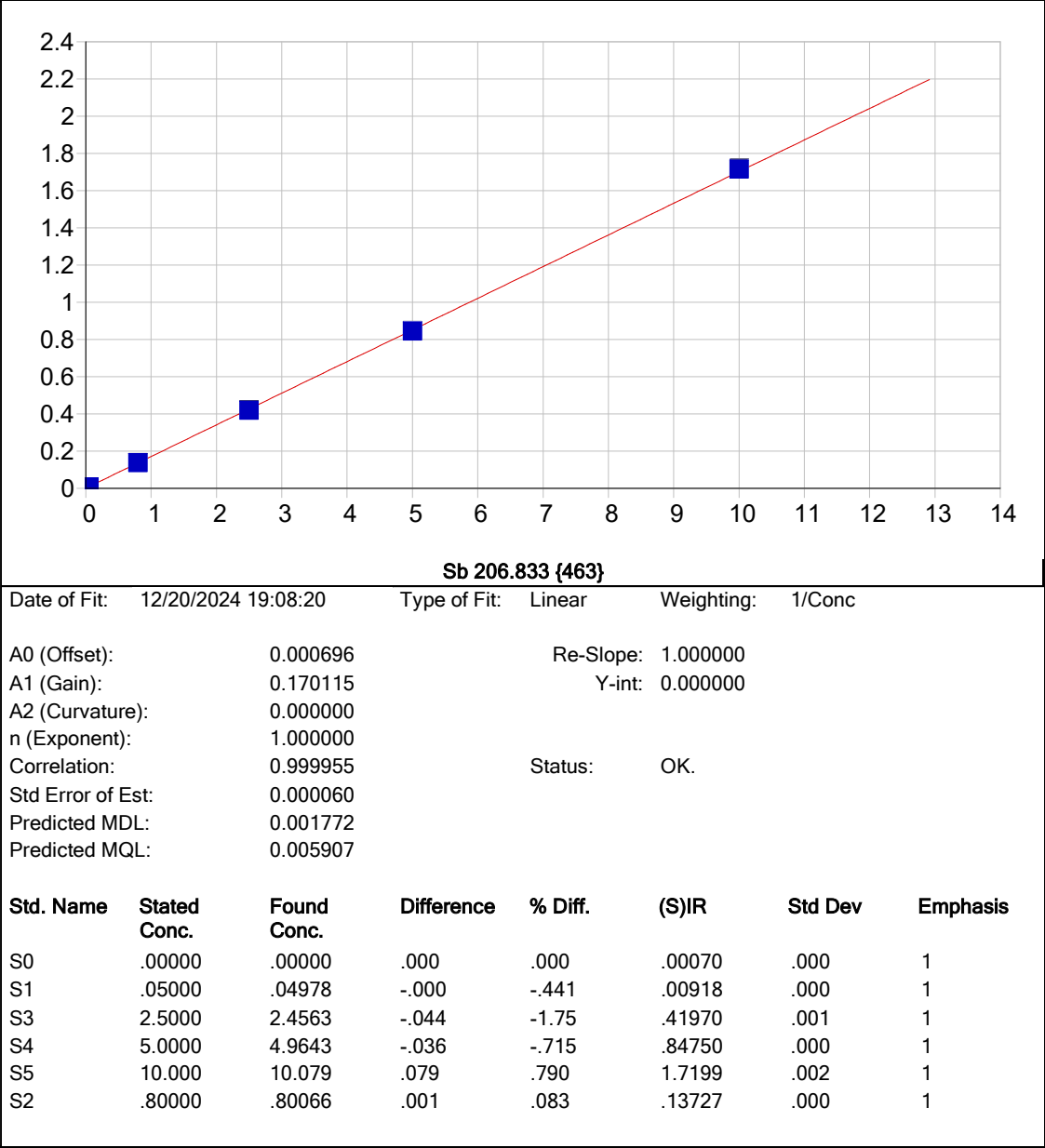
METAL RAW DATA

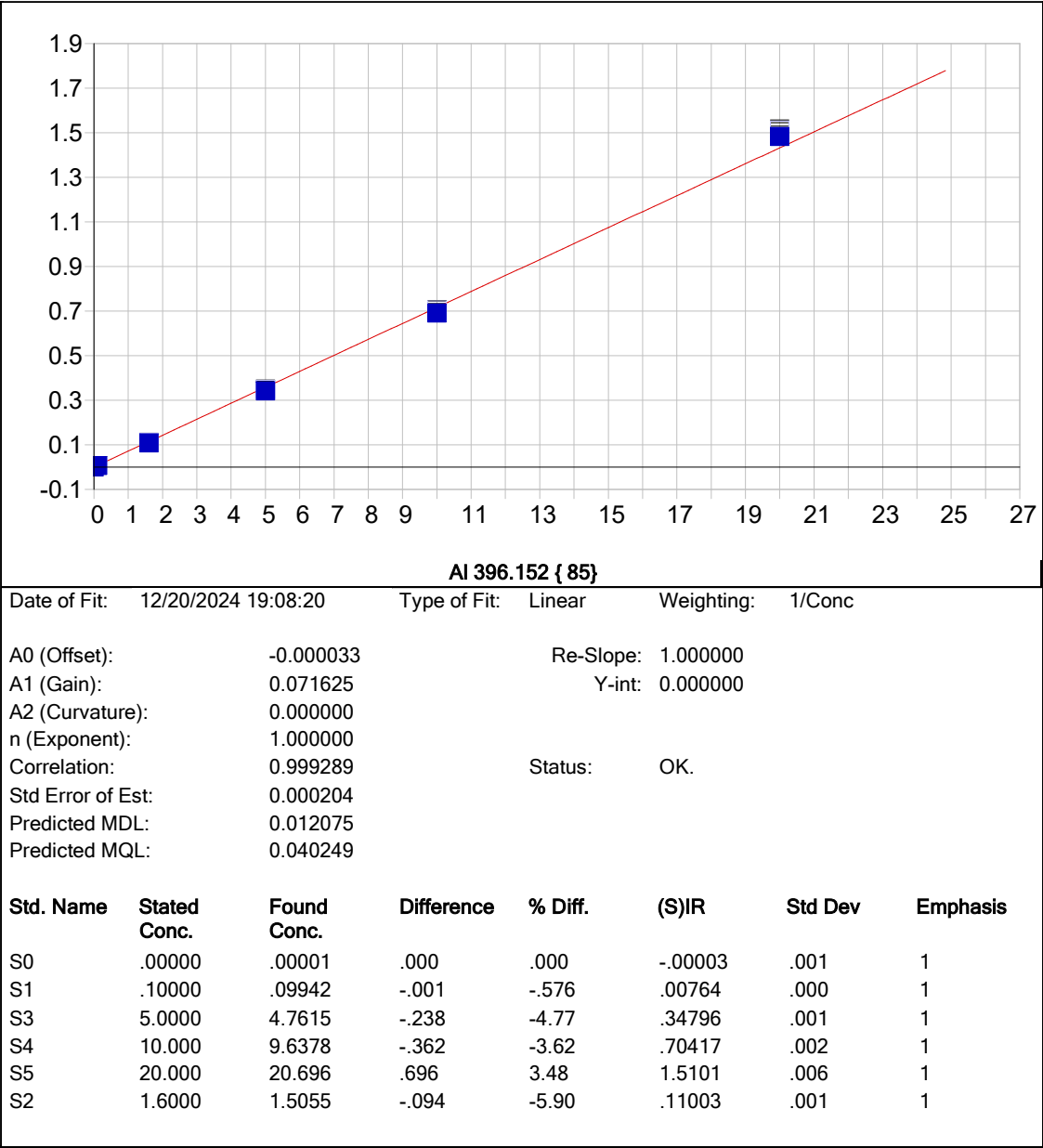


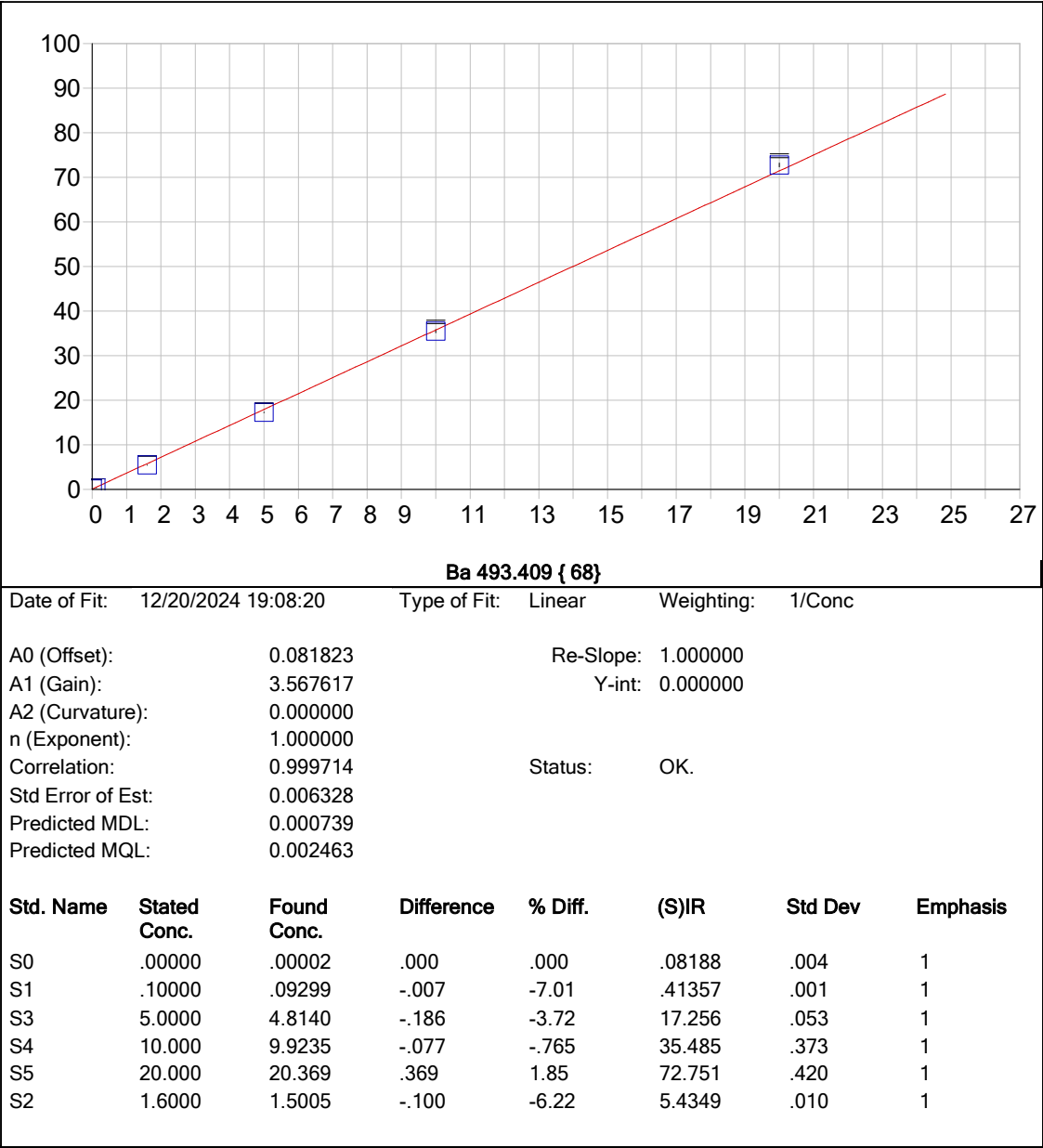


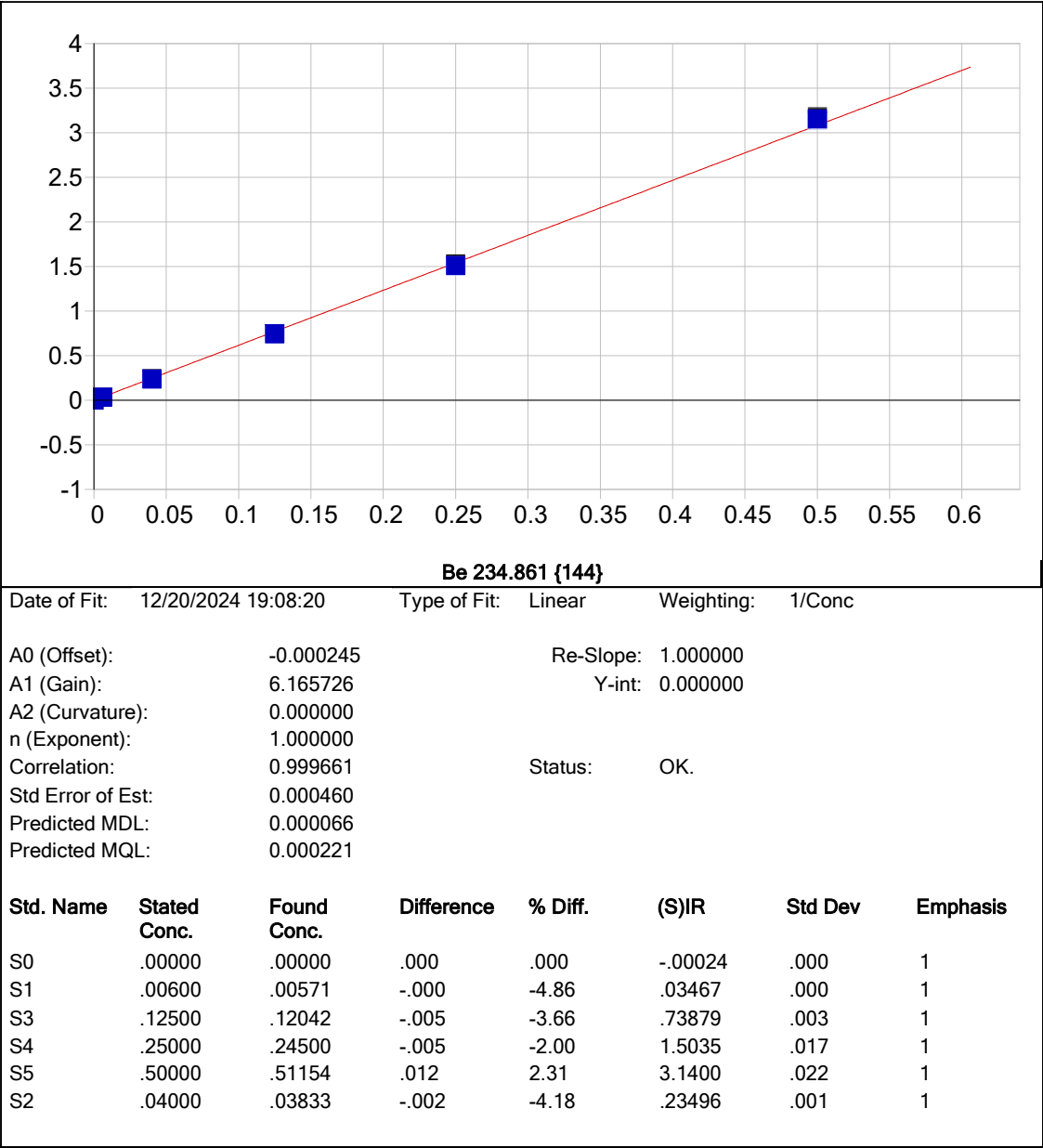


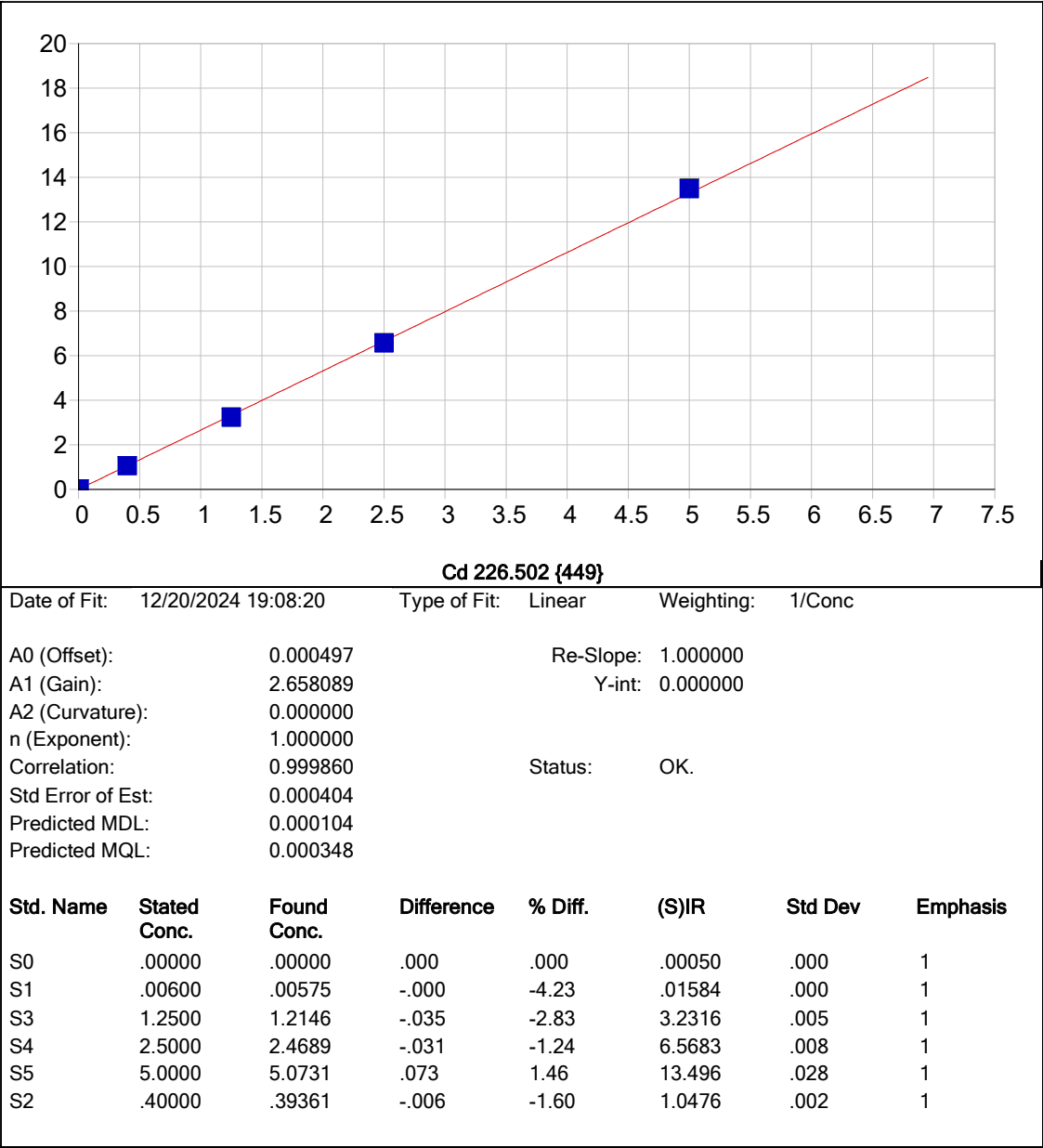


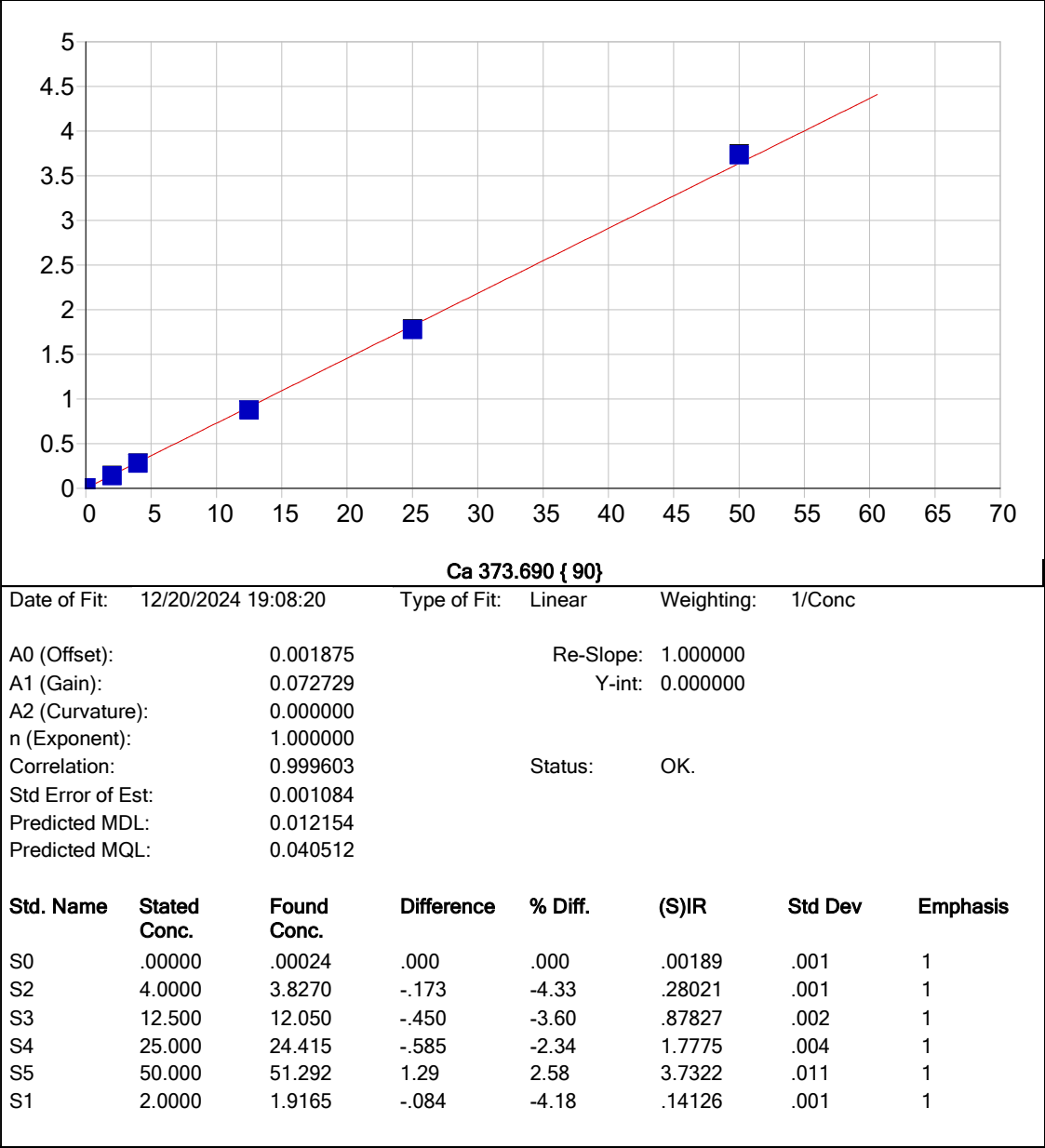


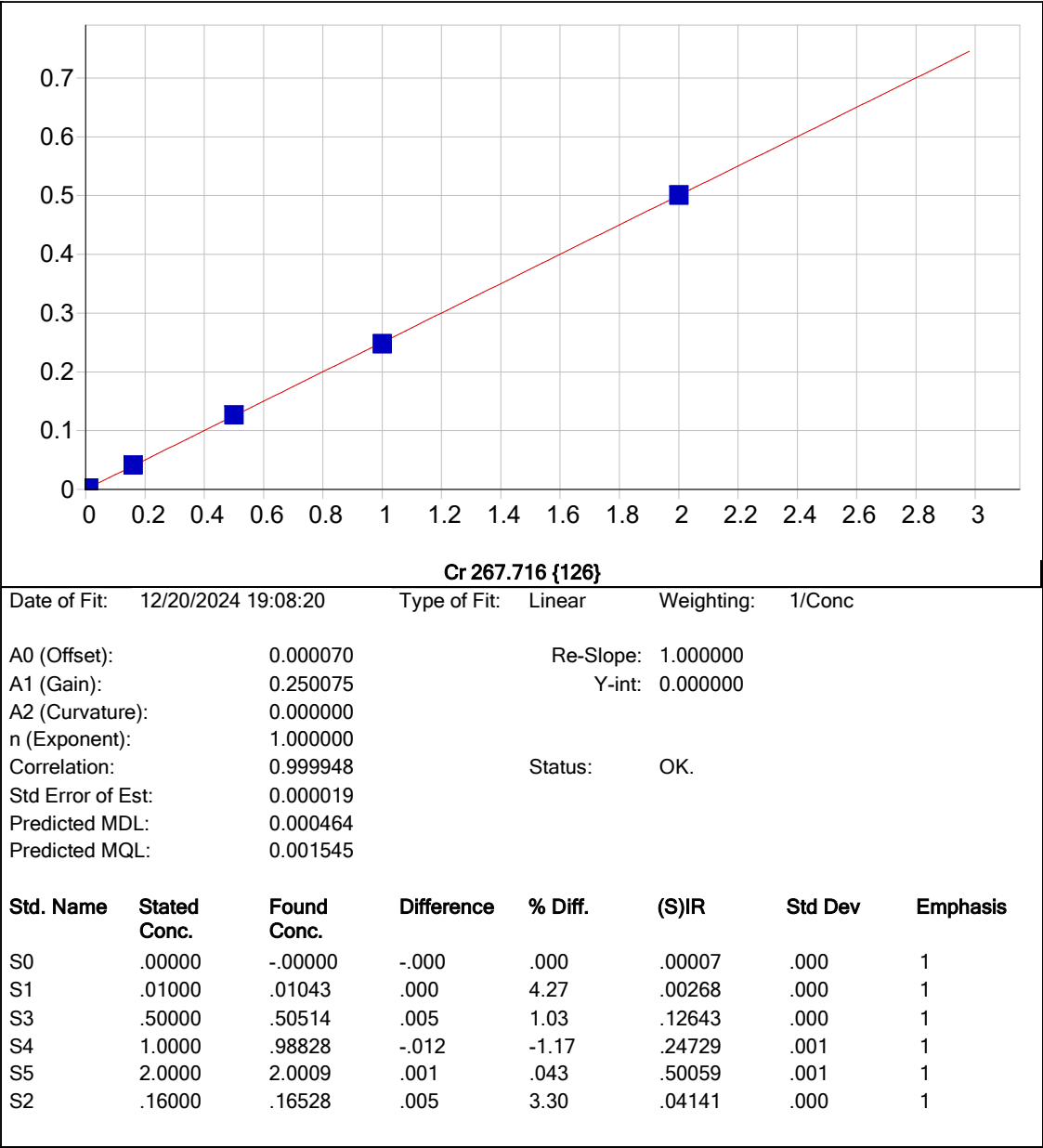


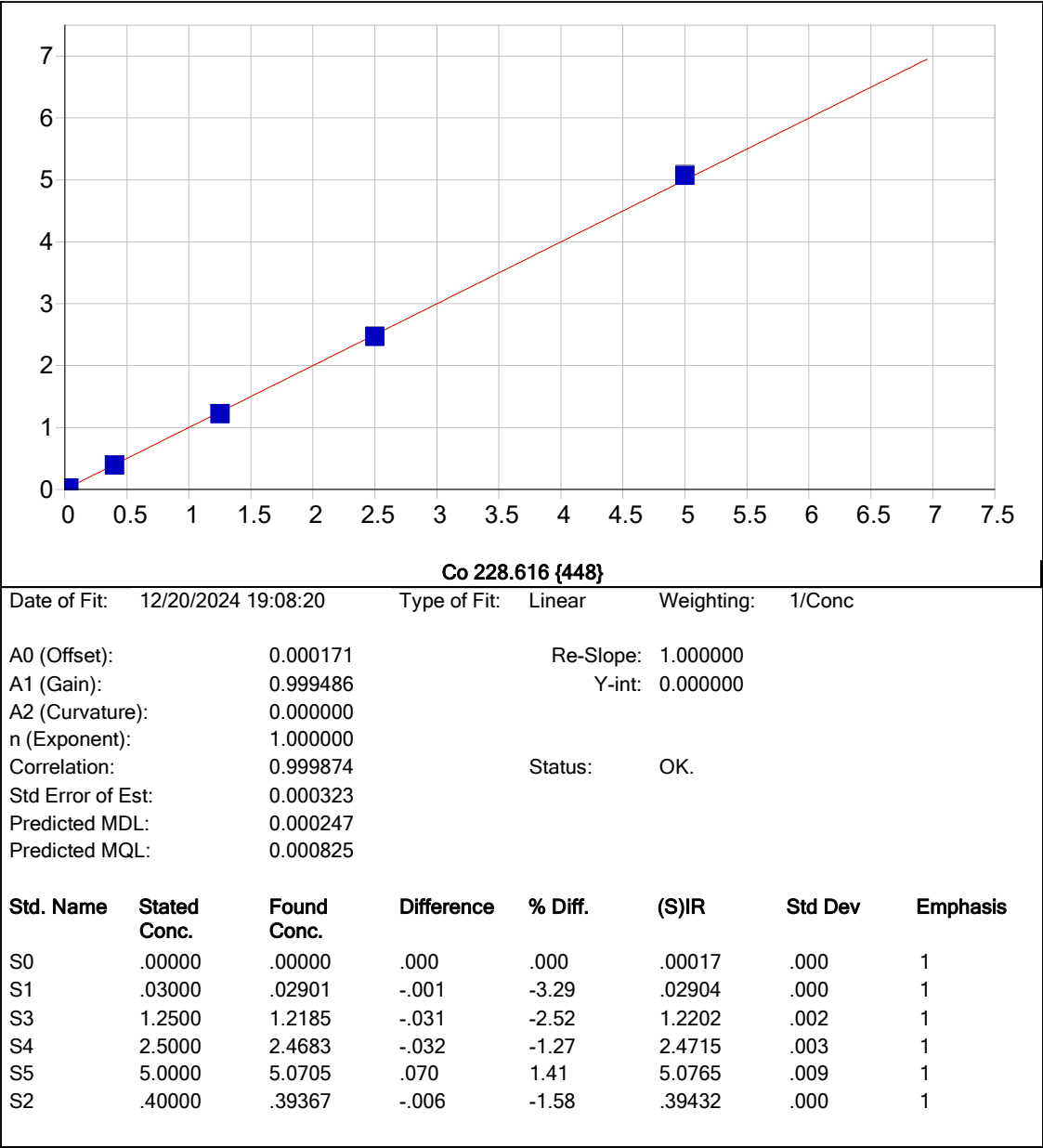


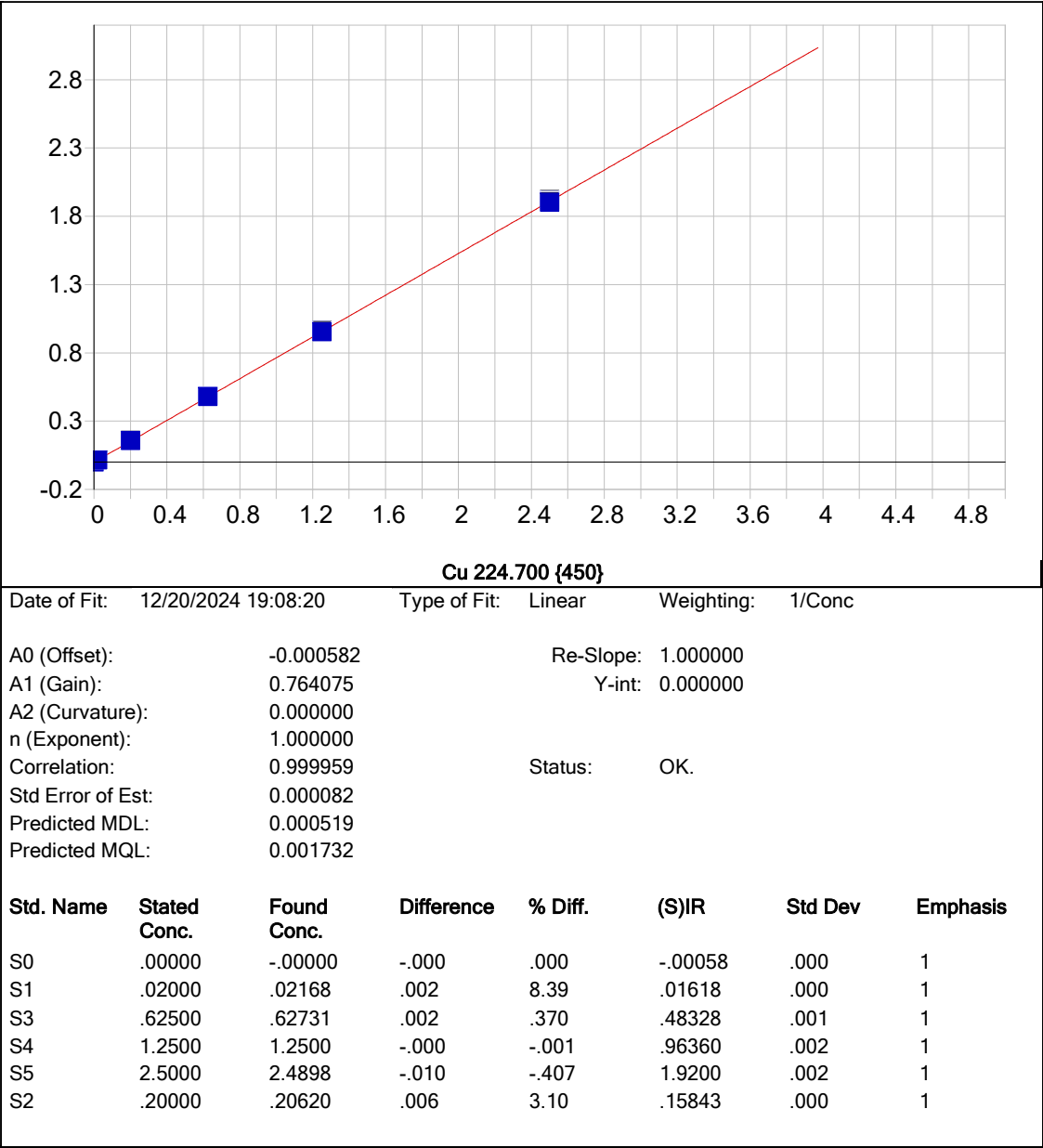


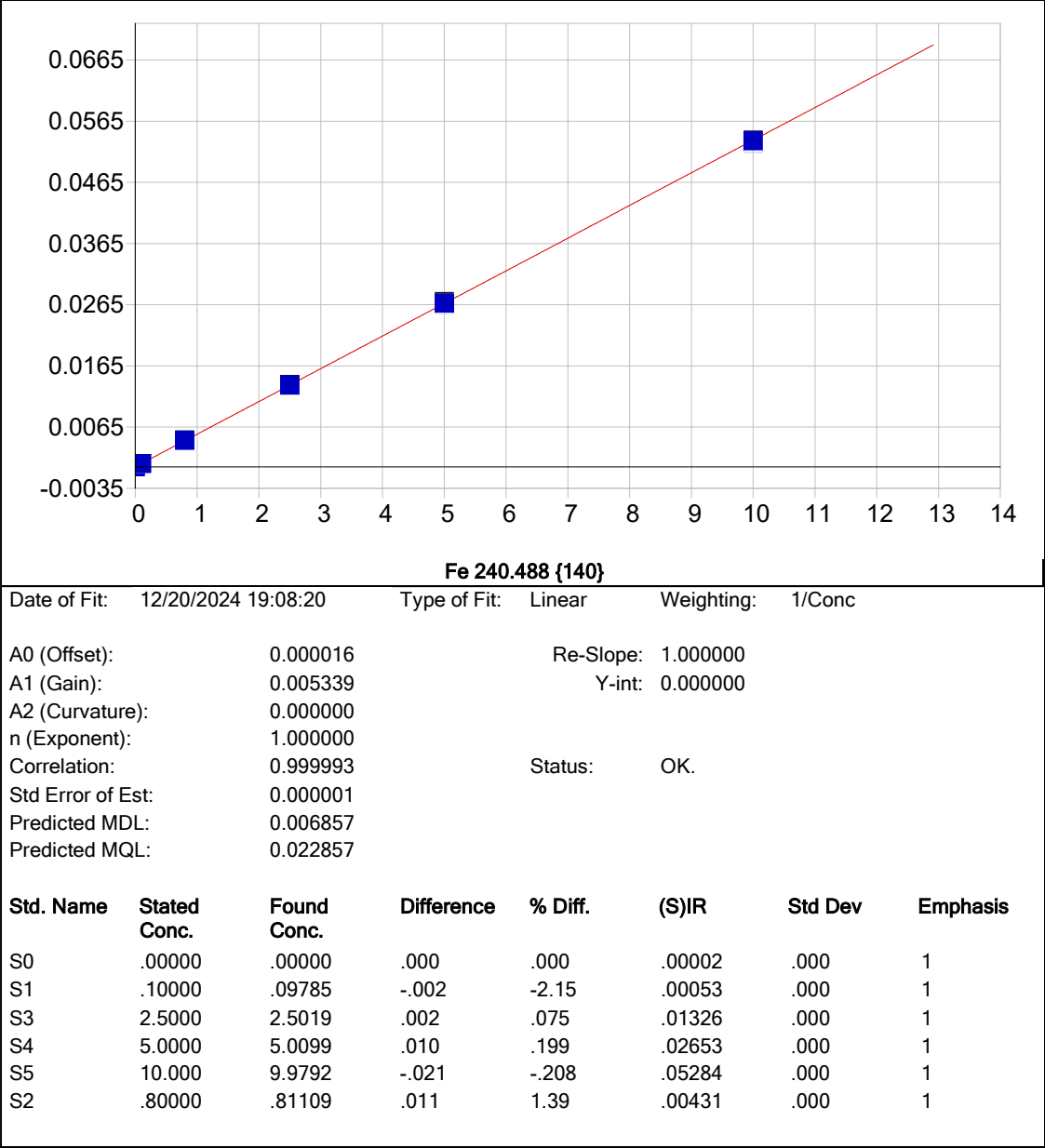


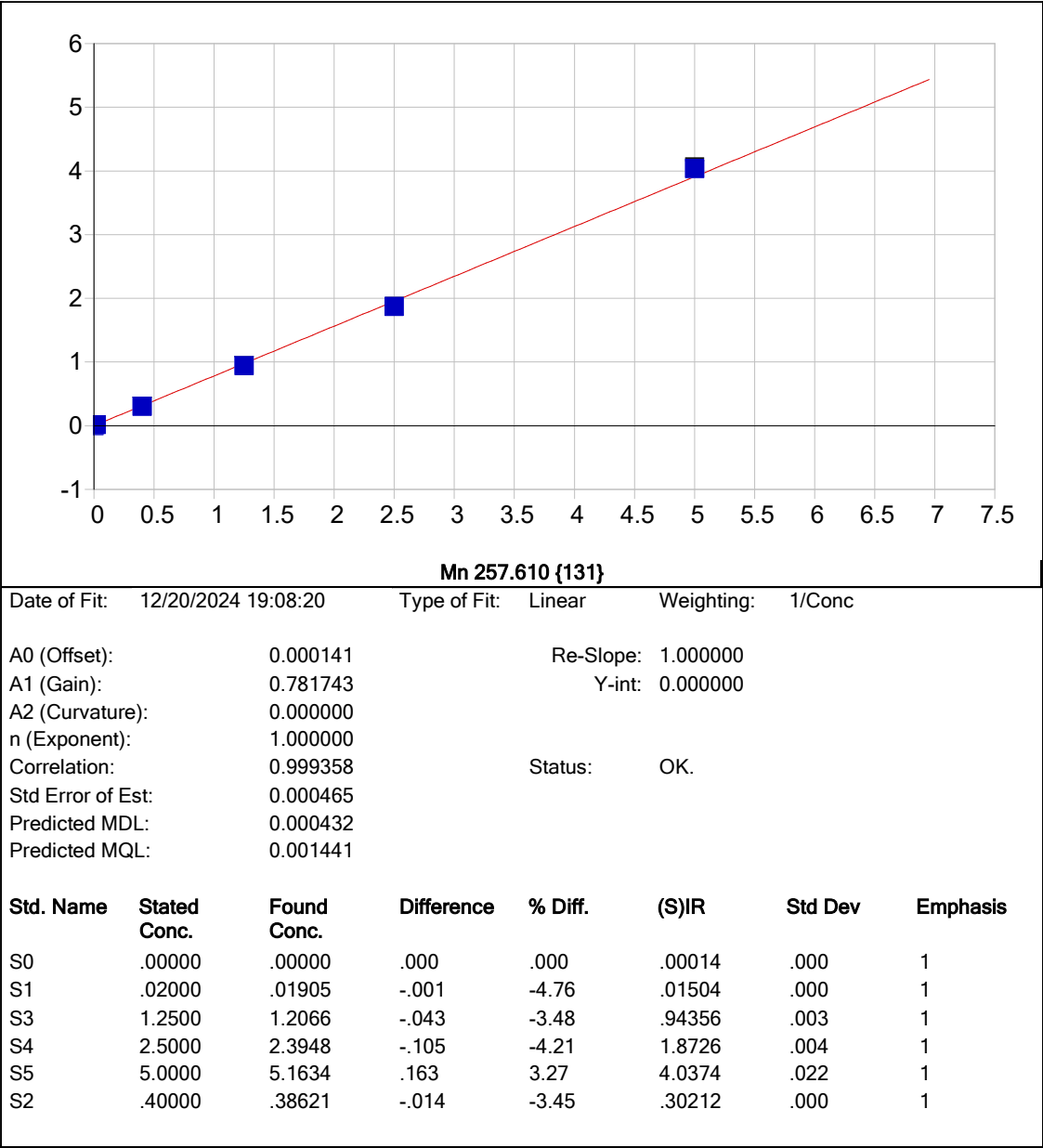


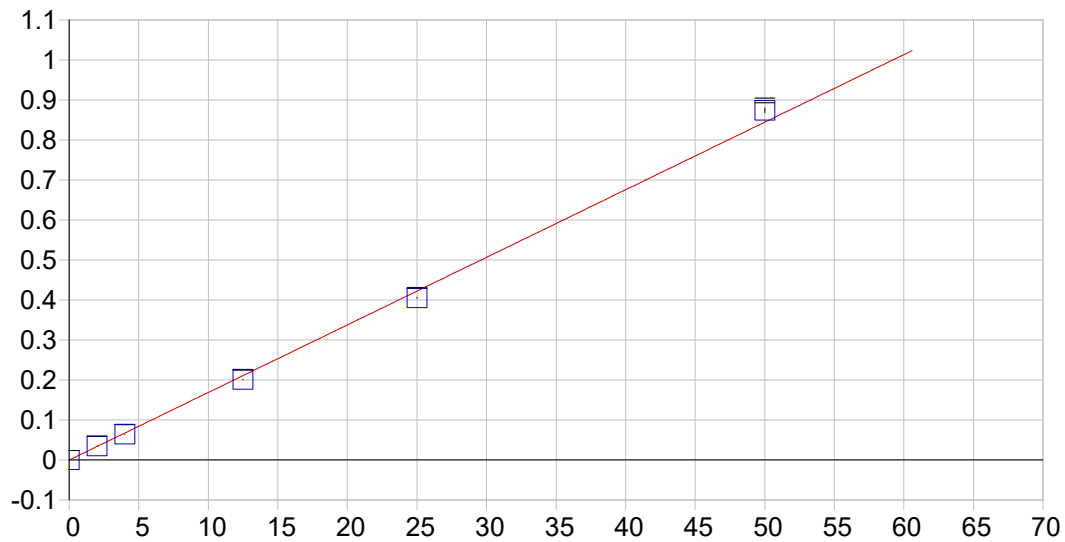










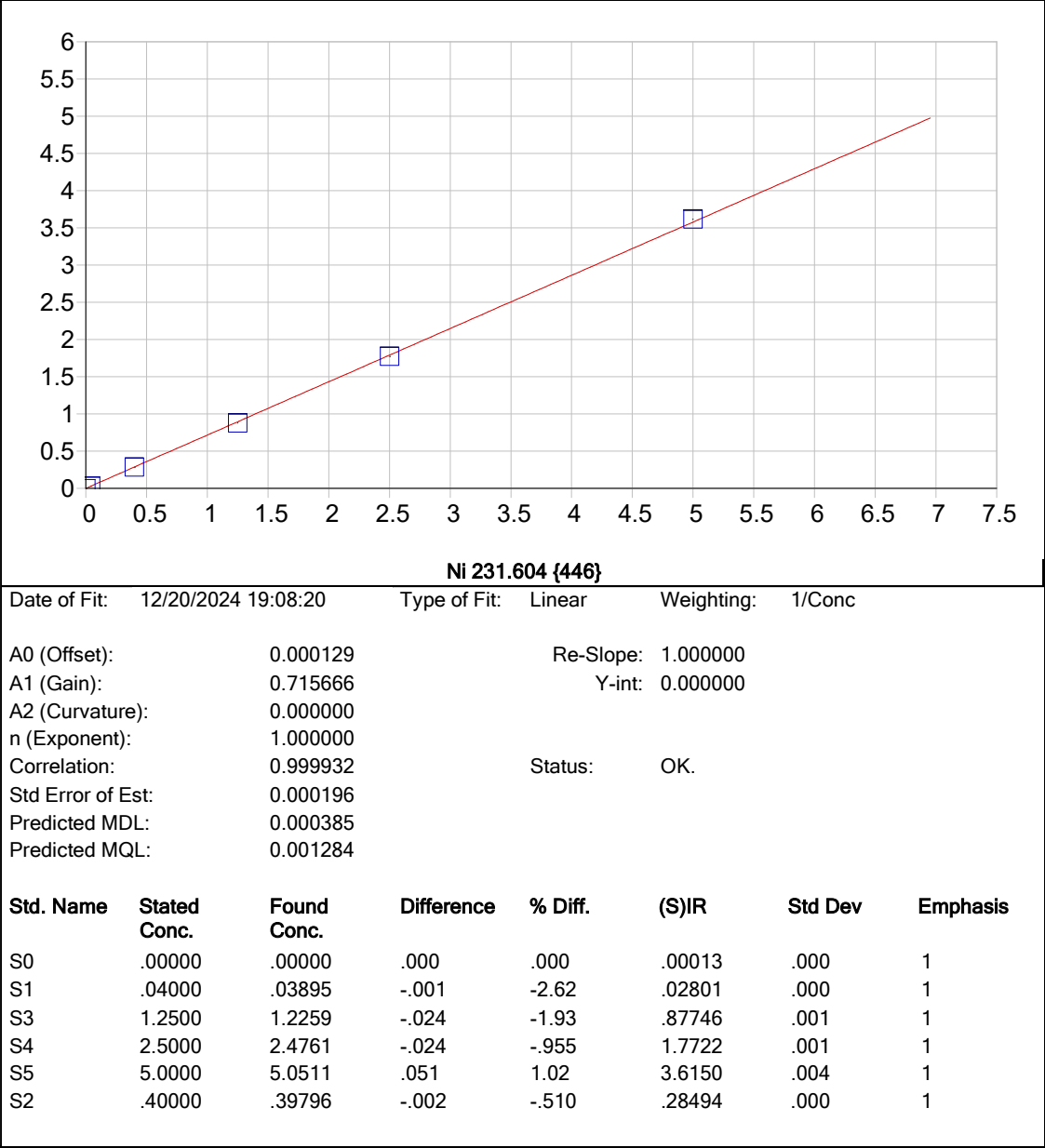


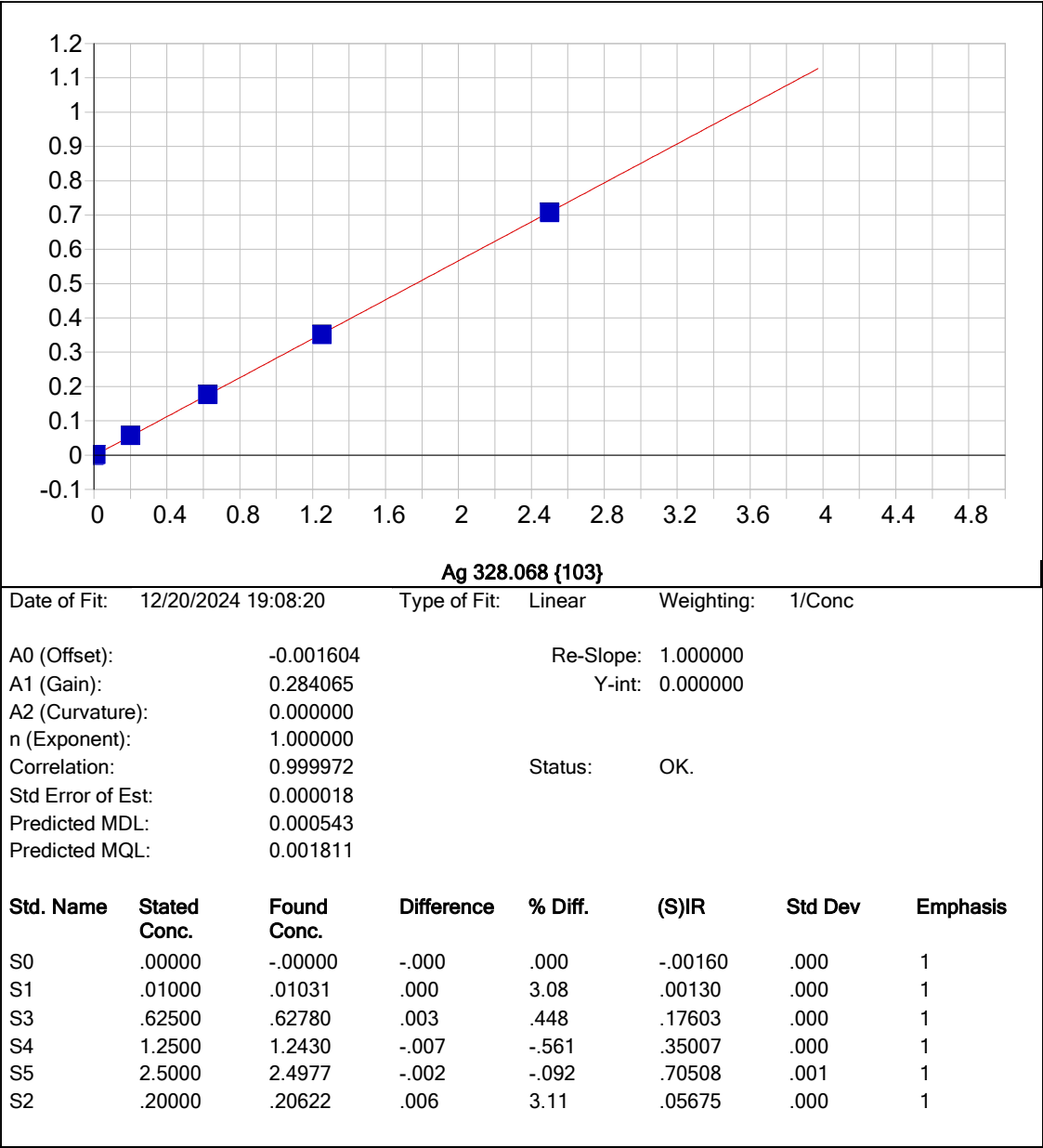
Mg 279.079 {121}

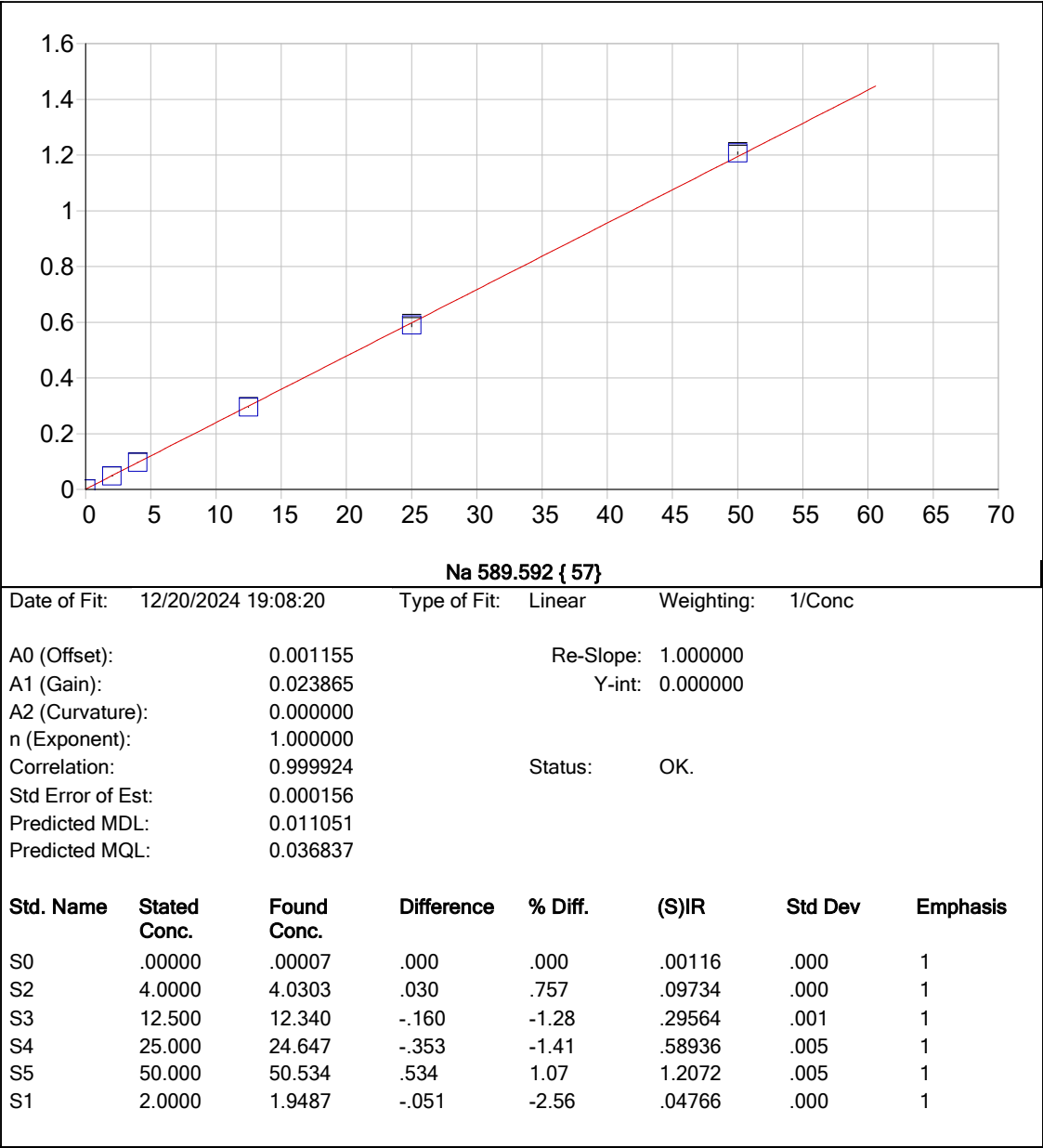
Date of Fit: 12/20/2024 19:08:20 Type of Fit: Linear Weighting: 1/Conc

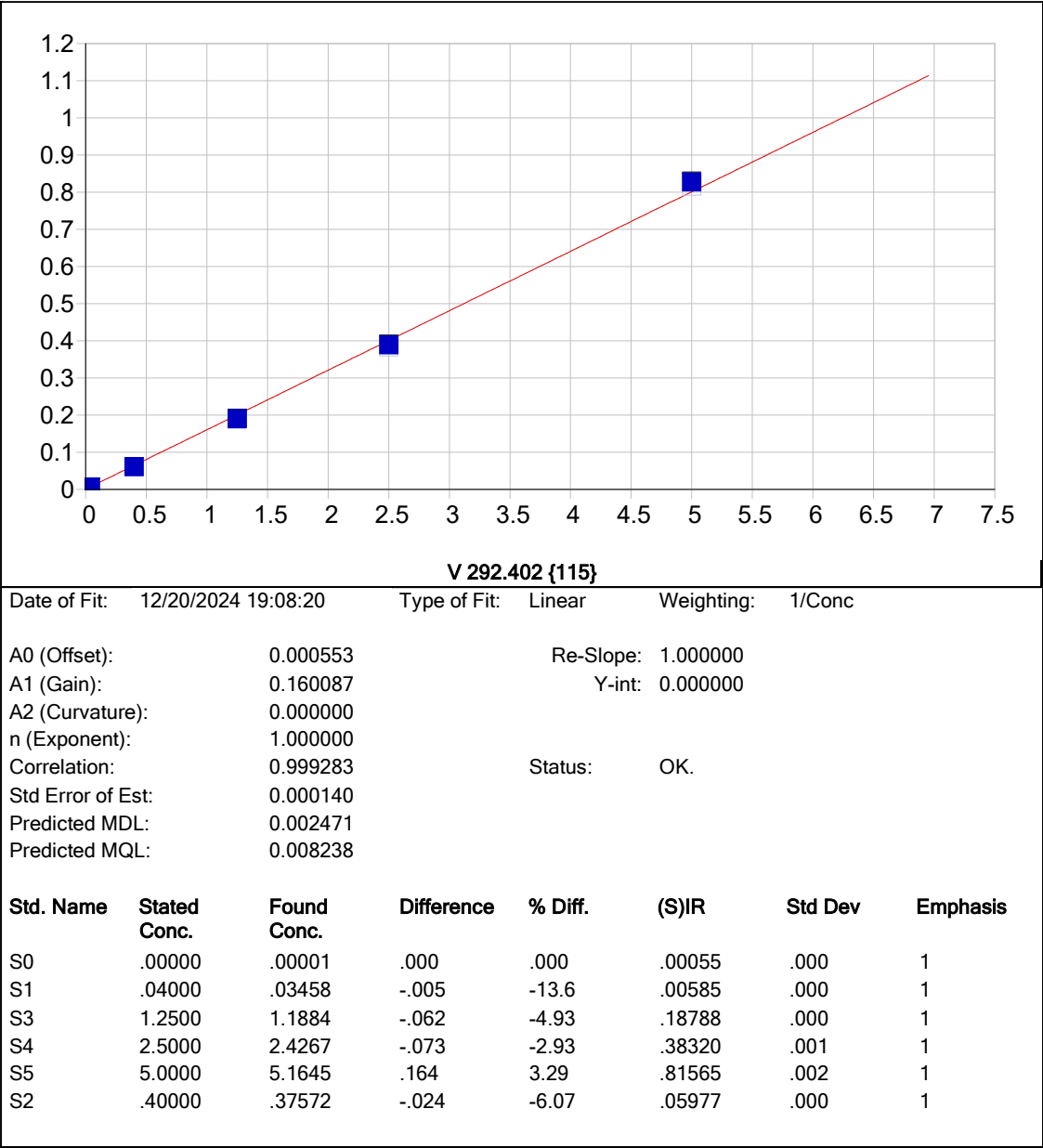
A0 (Offset): -0.000323 Re-Slope: 1.000000
A1 (Gain): 0.016893 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999250 Status: OK.
Std Error of Est: 0.000346
Predicted MDL: 0.022561
Predicted MQL: 0.075204

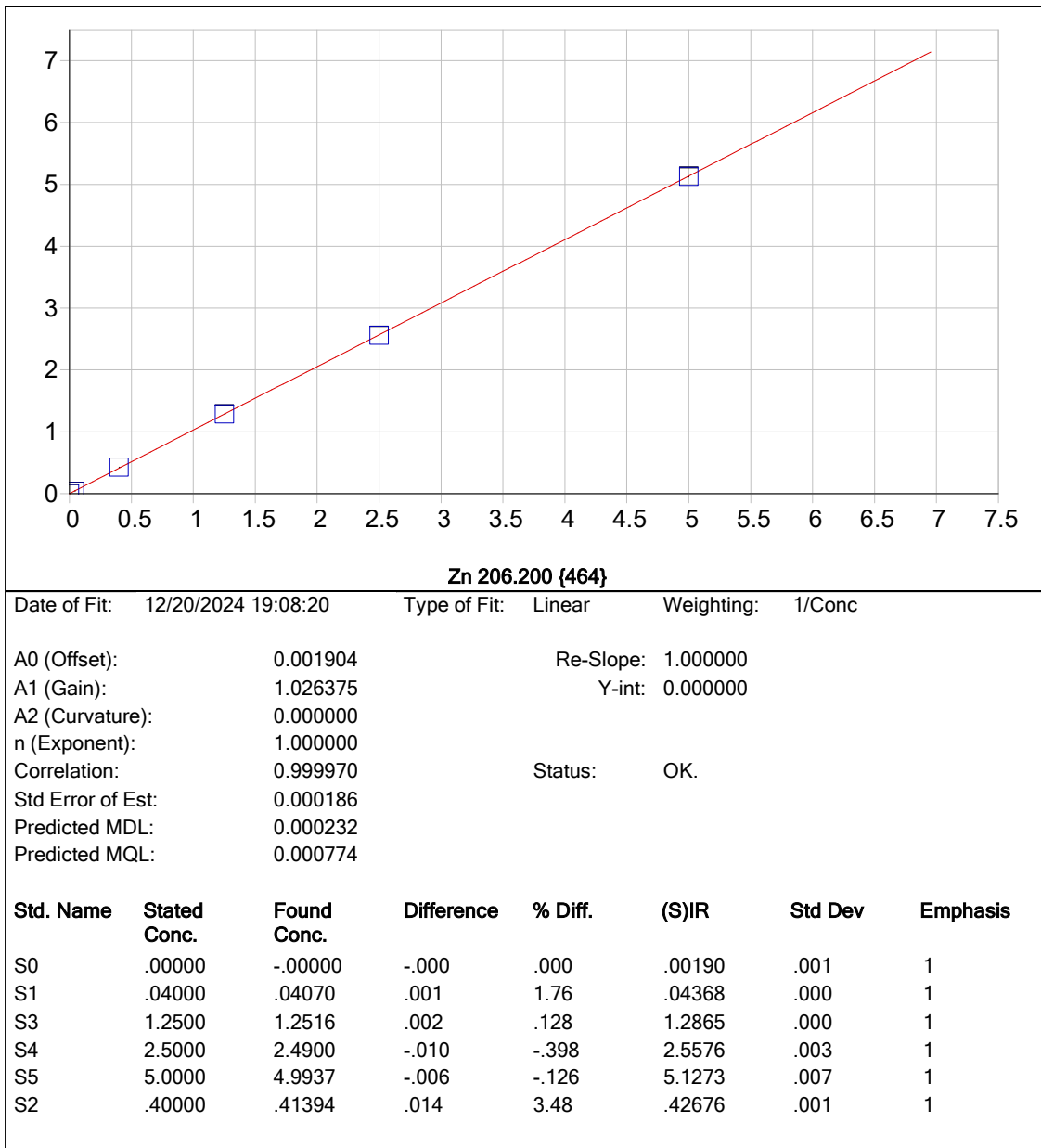
Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00015	.000	.000	-.00032	.000	1
S2	4.0000	3.7951	-.205	-5.12	.06379	.000	1
S3	12.500	11.917	-.583	-4.67	.20098	.001	1
S4	25.000	23.993	-1.01	-4.03	.40499	.001	1
S5	50.000	51.737	1.74	3.47	.87365	.006	1
S1	2.0000	2.0575	.057	2.87	.03443	.000	1

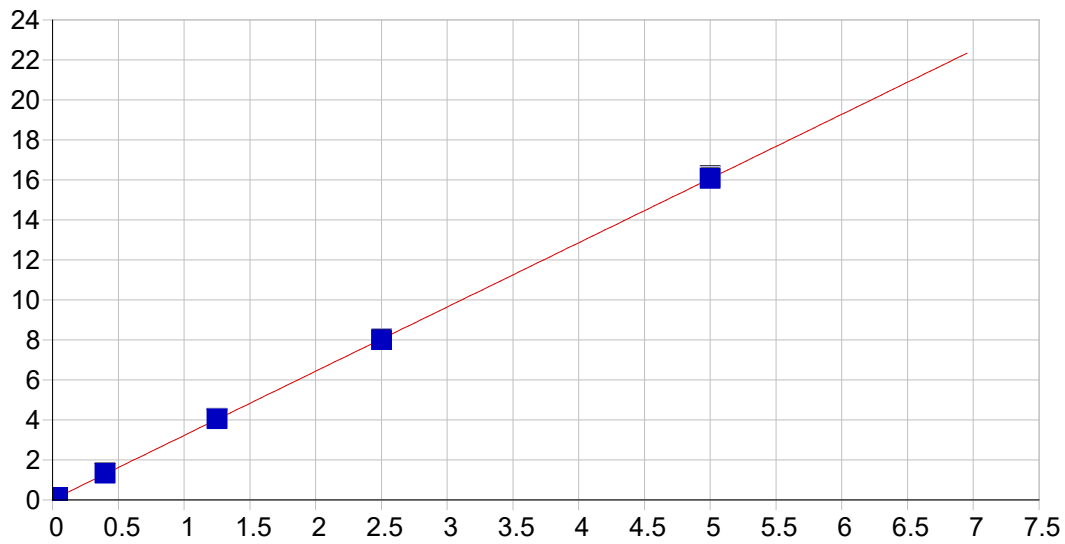










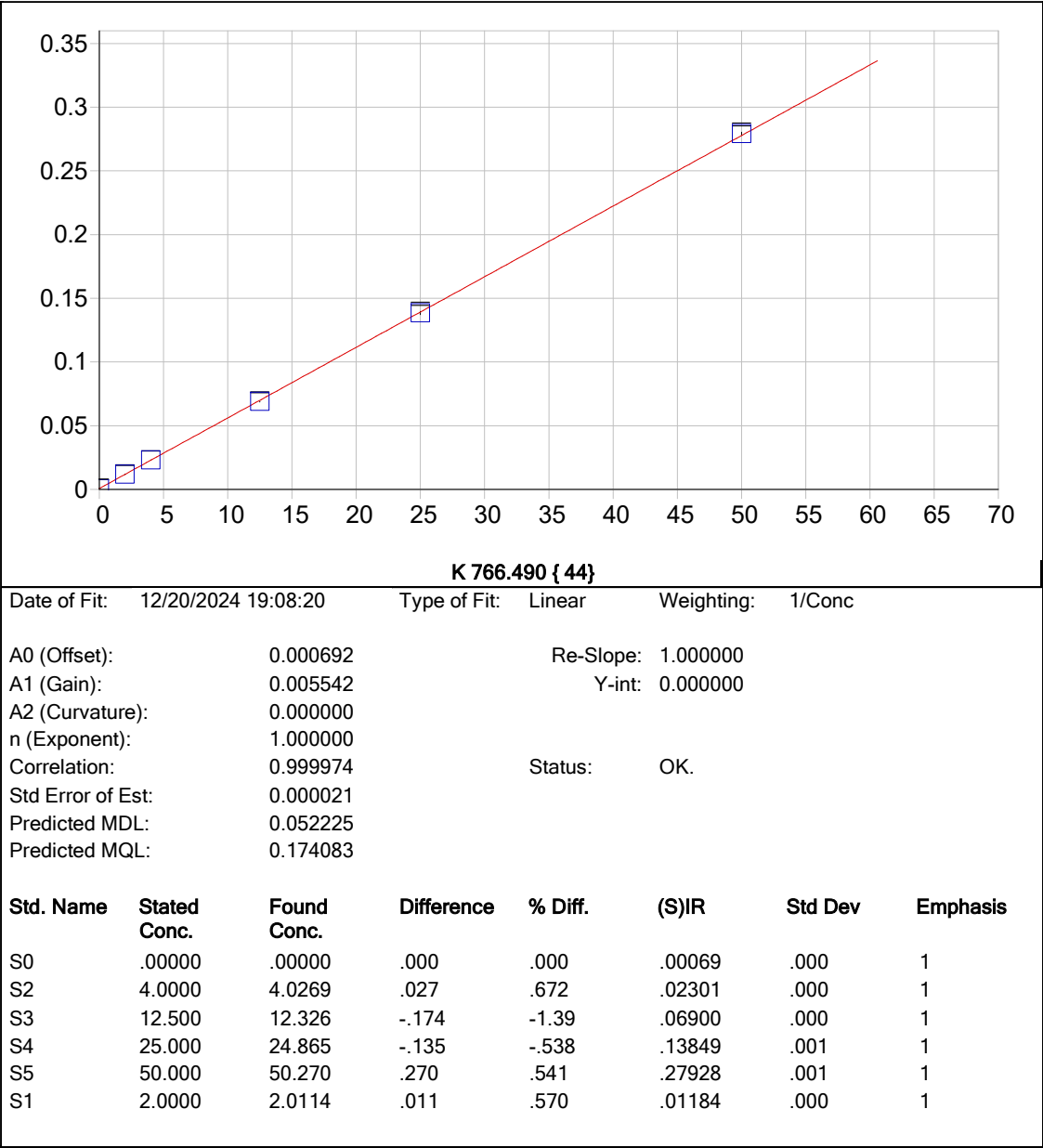


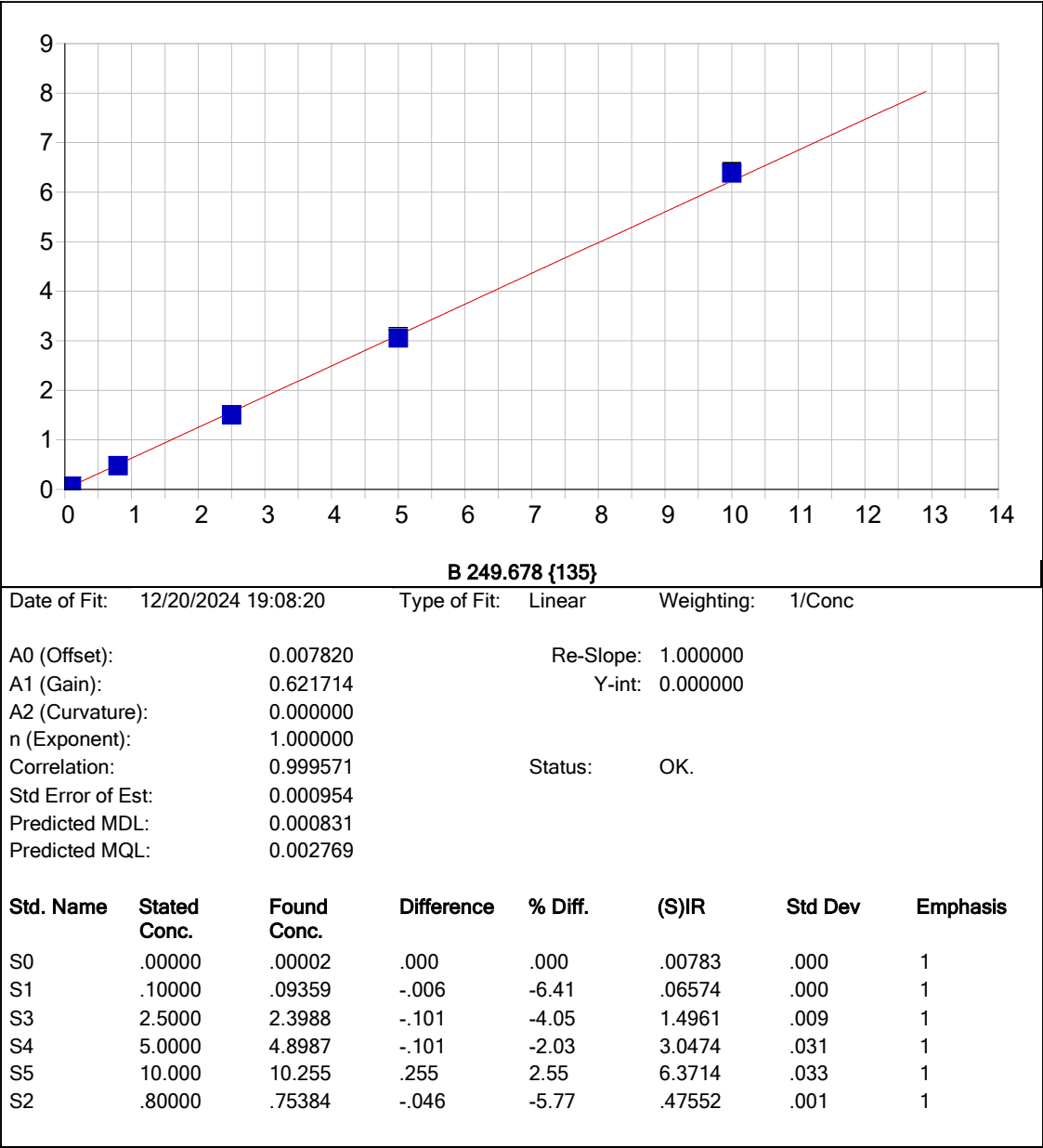
Zn 213.856 {158}

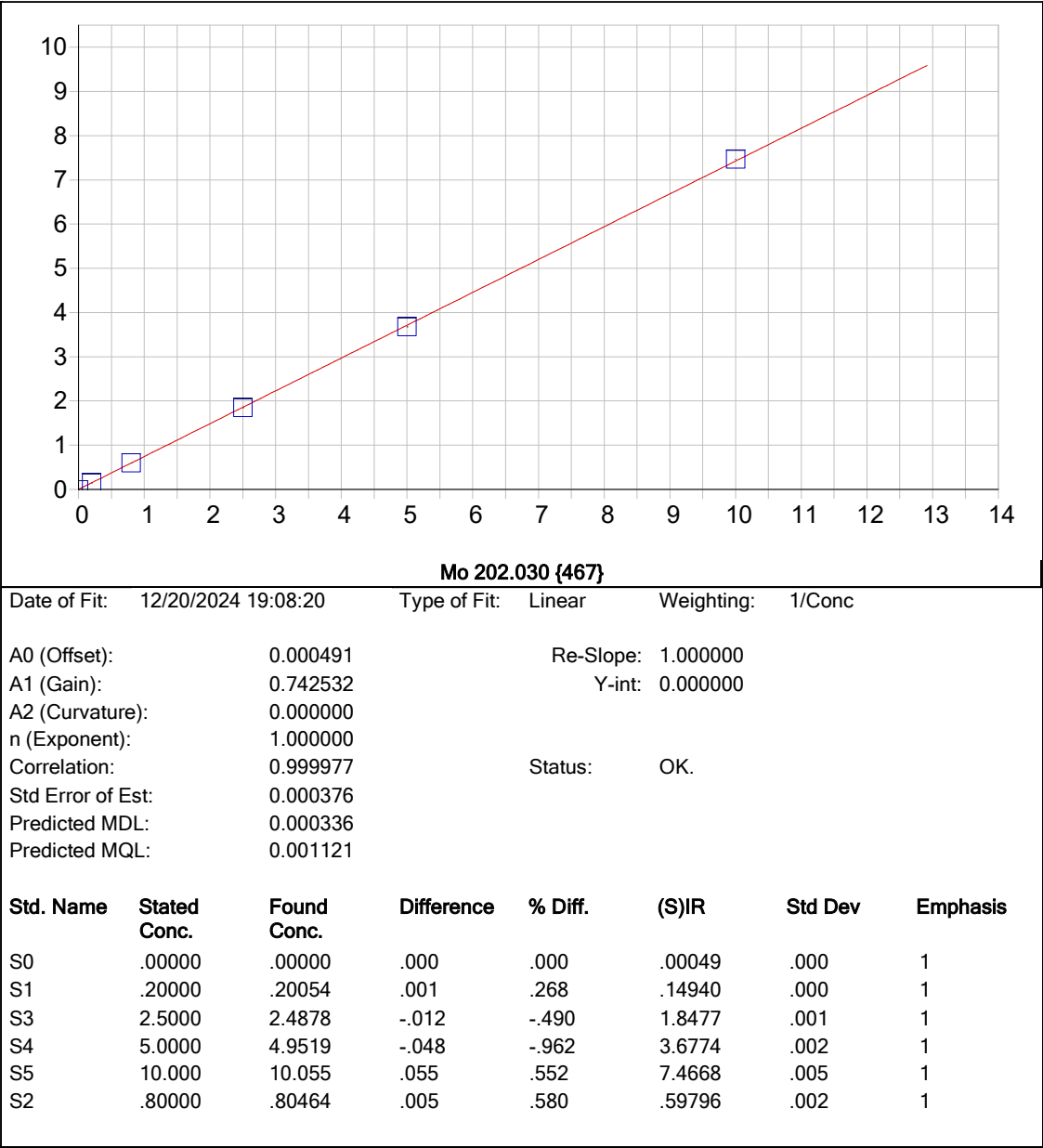
Date of Fit: 12/20/2024 19:08:20 Type of Fit: Linear Weighting: 1/Conc

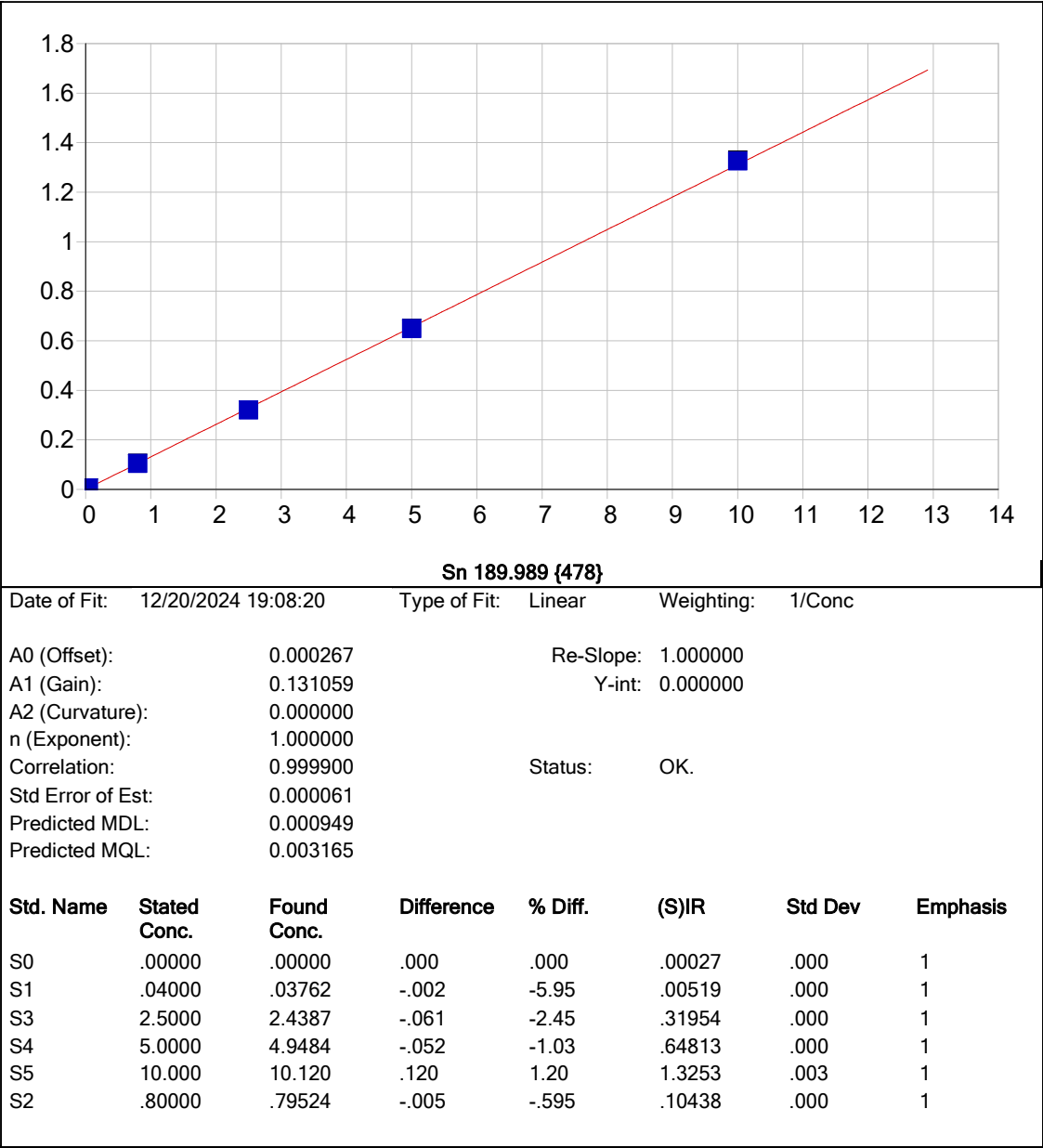
A0 (Offset): 0.012205 Re-Slope: 1.000000
A1 (Gain): 3.211260 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999982 Status: OK.
Std Error of Est: 0.000450
Predicted MDL: 0.000296
Predicted MQL: 0.000988

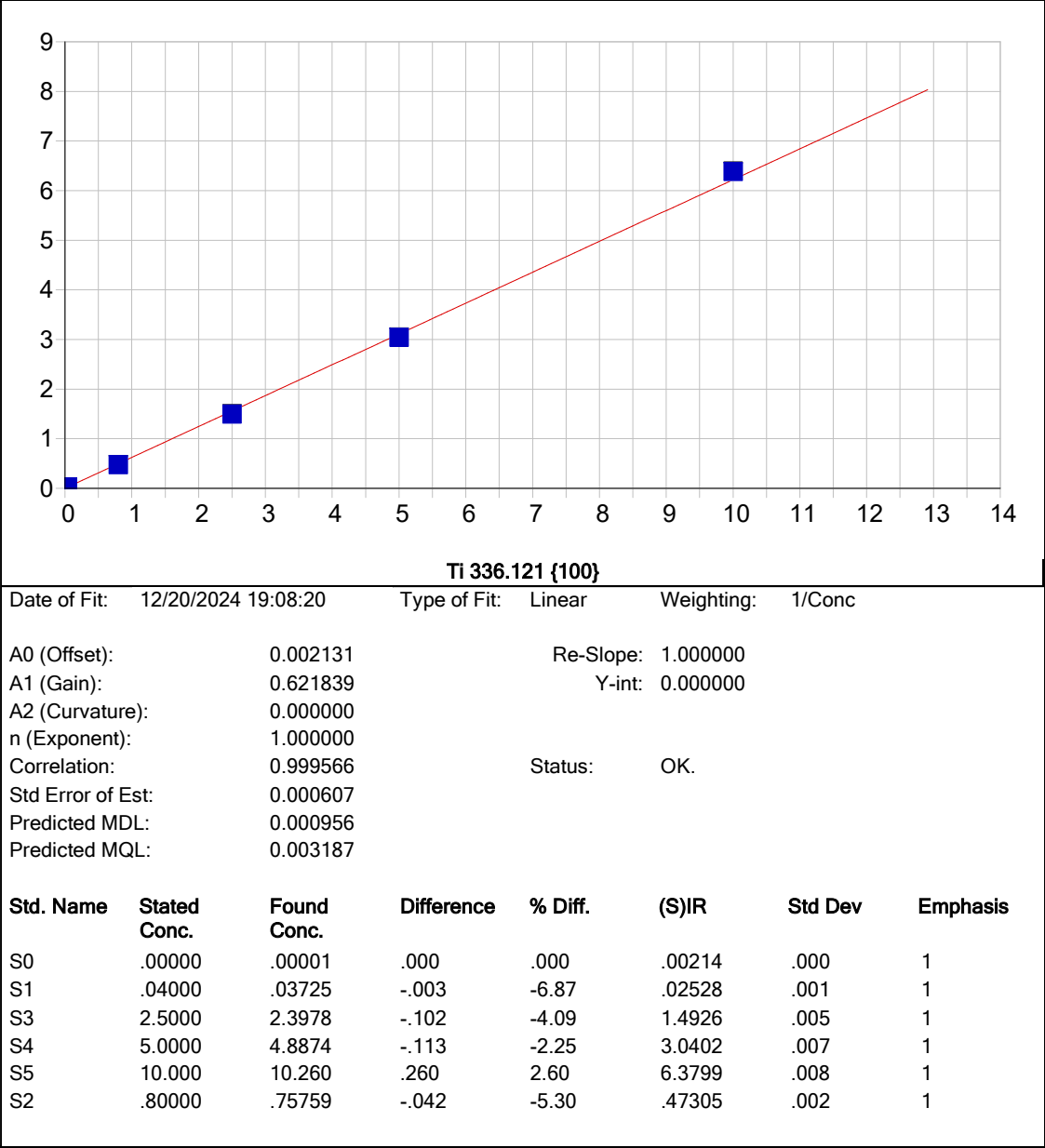
Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.01221	.003	1
S1	.04000	.03872	-.001	-3.20	.13744	.001	1
S3	1.2500	1.2543	.004	.343	4.0680	.016	1
S4	2.5000	2.4879	-.012	-.484	8.0573	.013	1
S5	5.0000	4.9999	-.000	-.003	16.180	.022	1
S2	.40000	.40922	.009	2.31	1.3353	.006	1

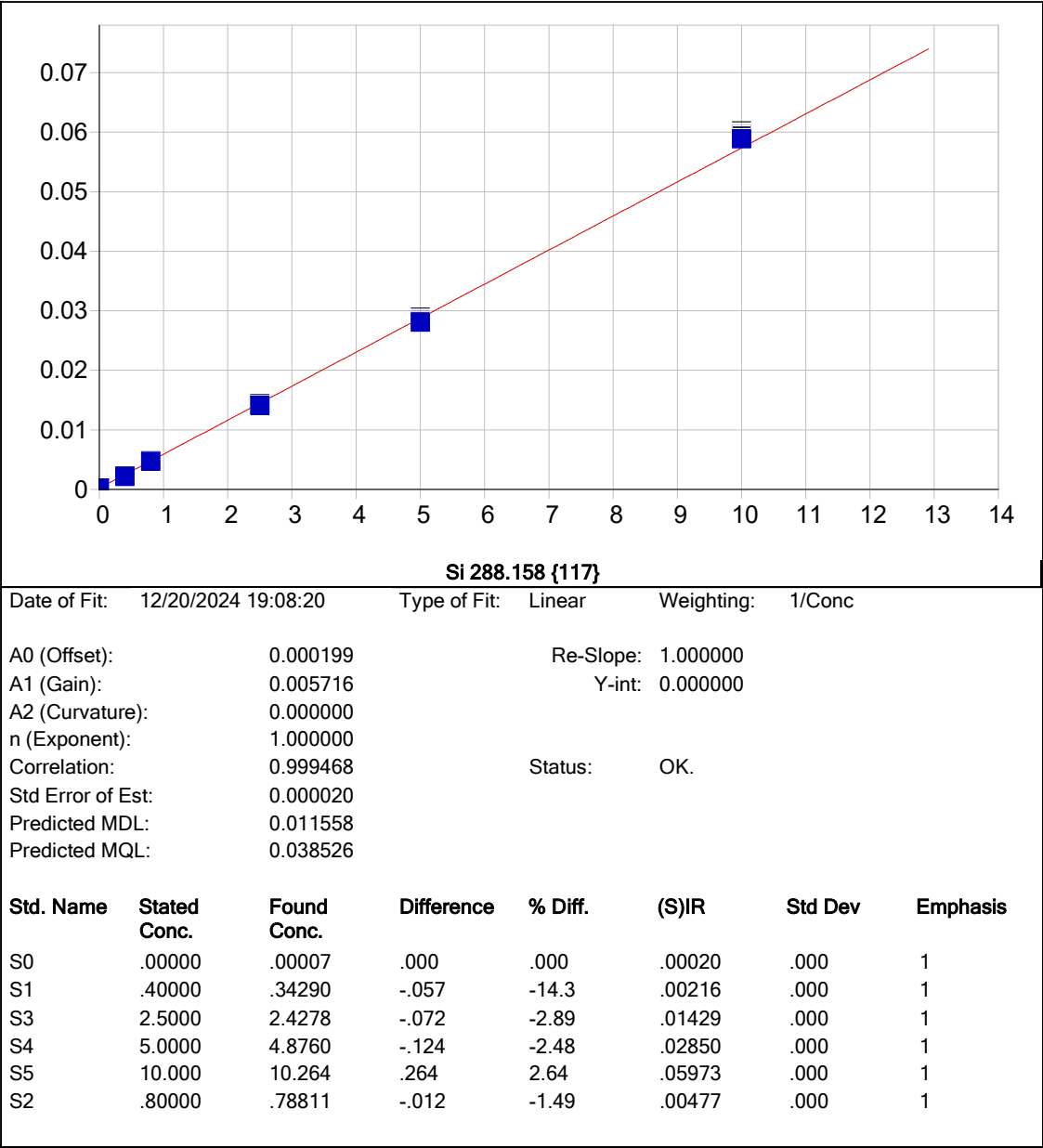


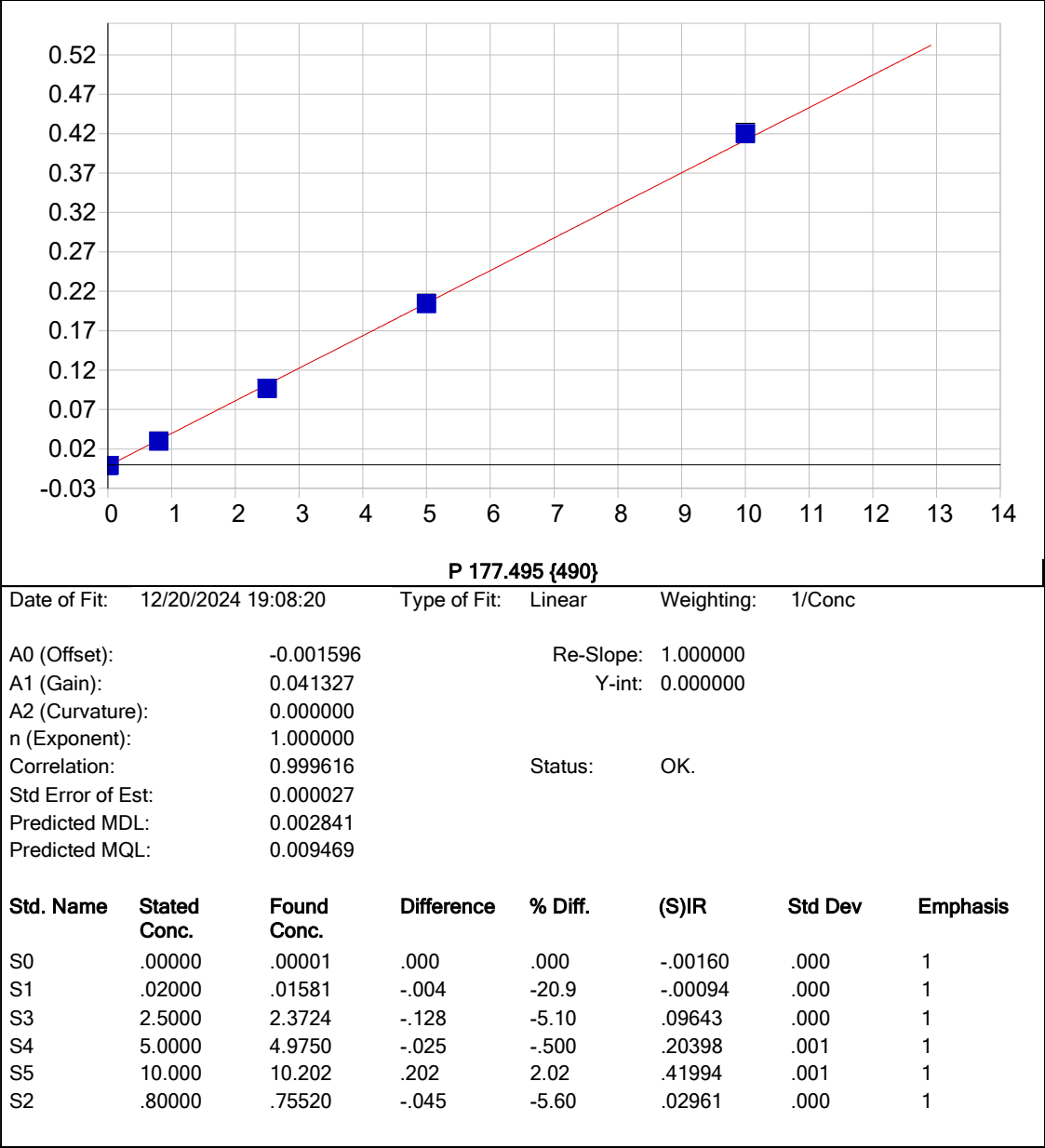


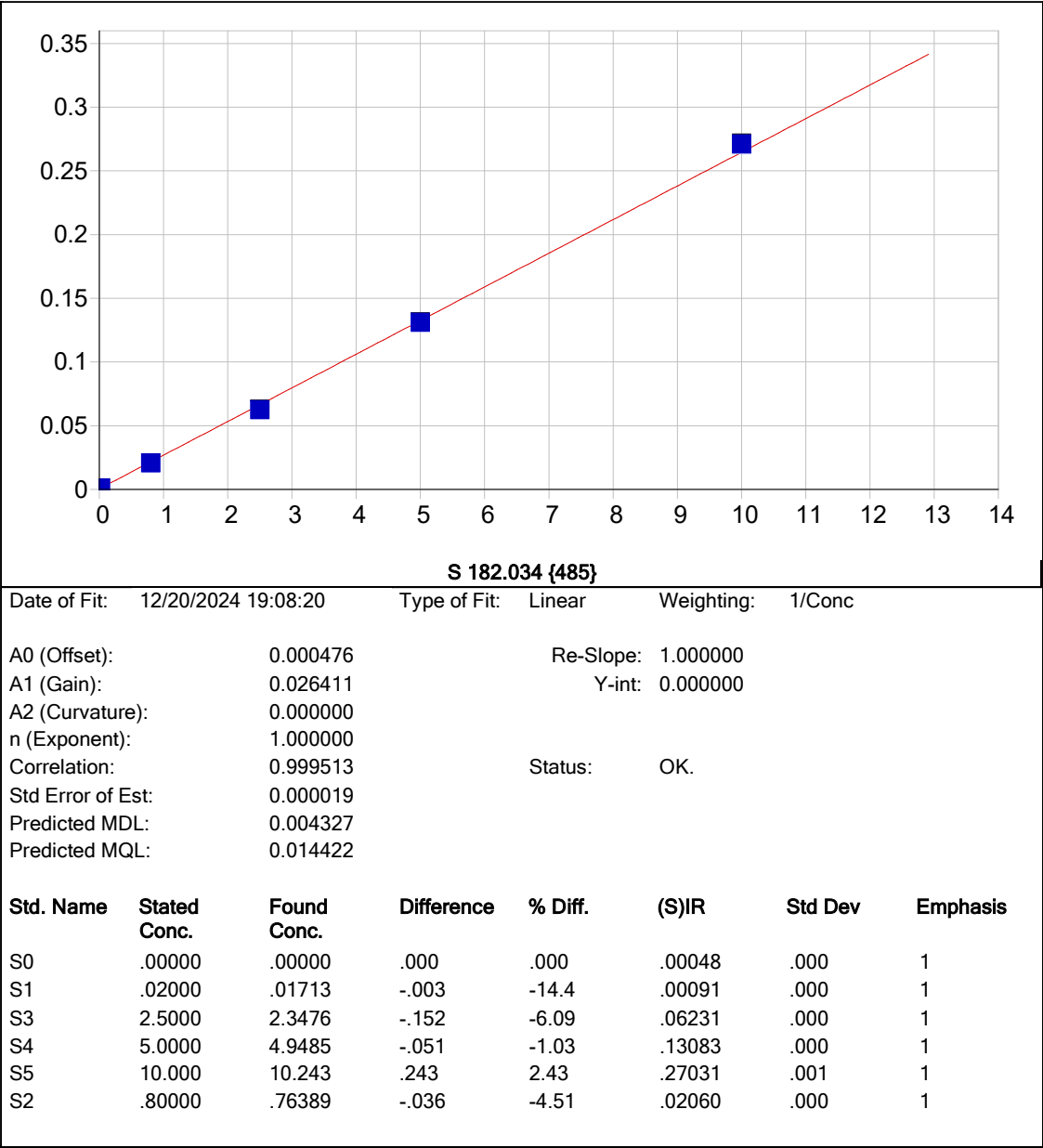


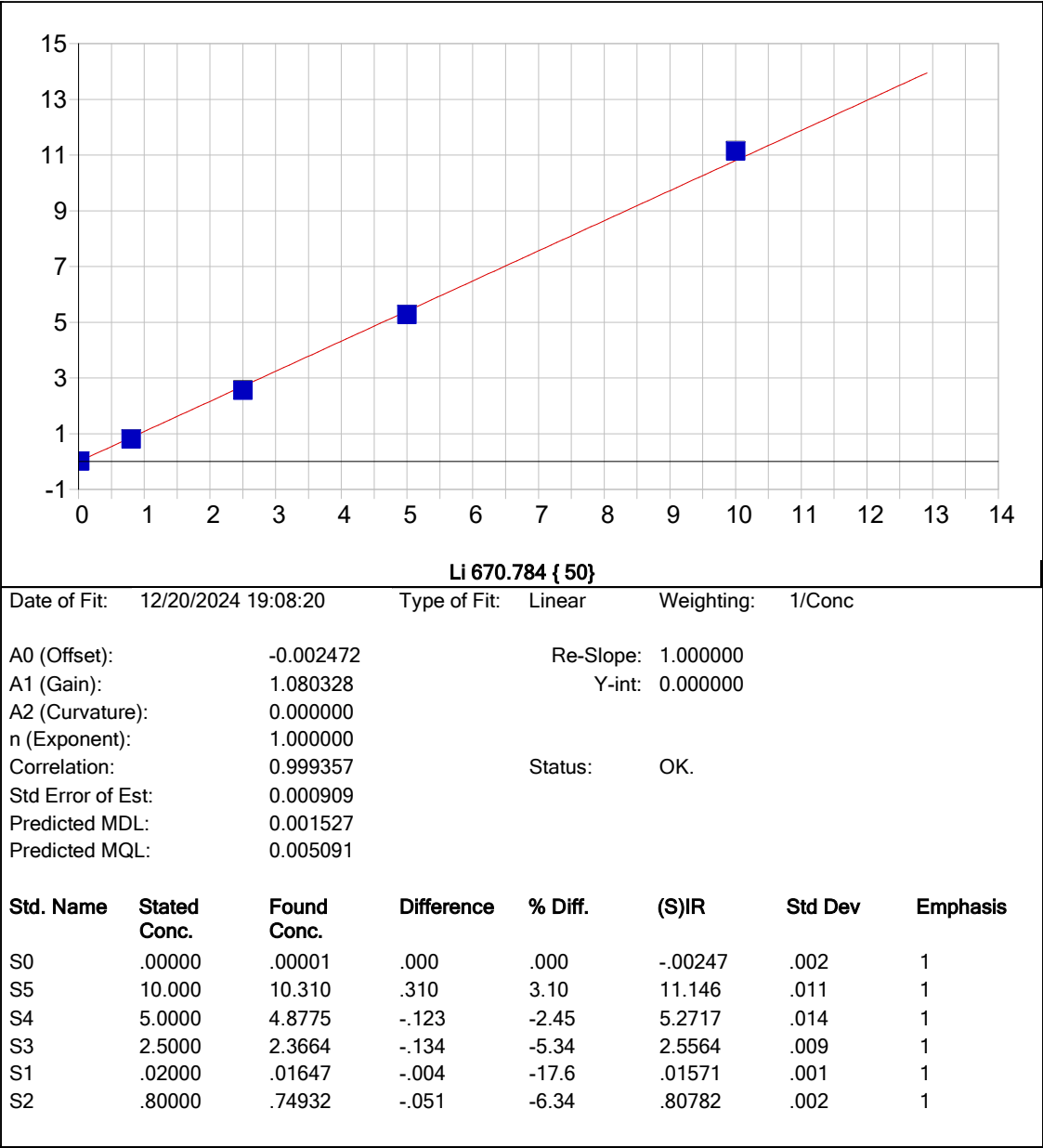


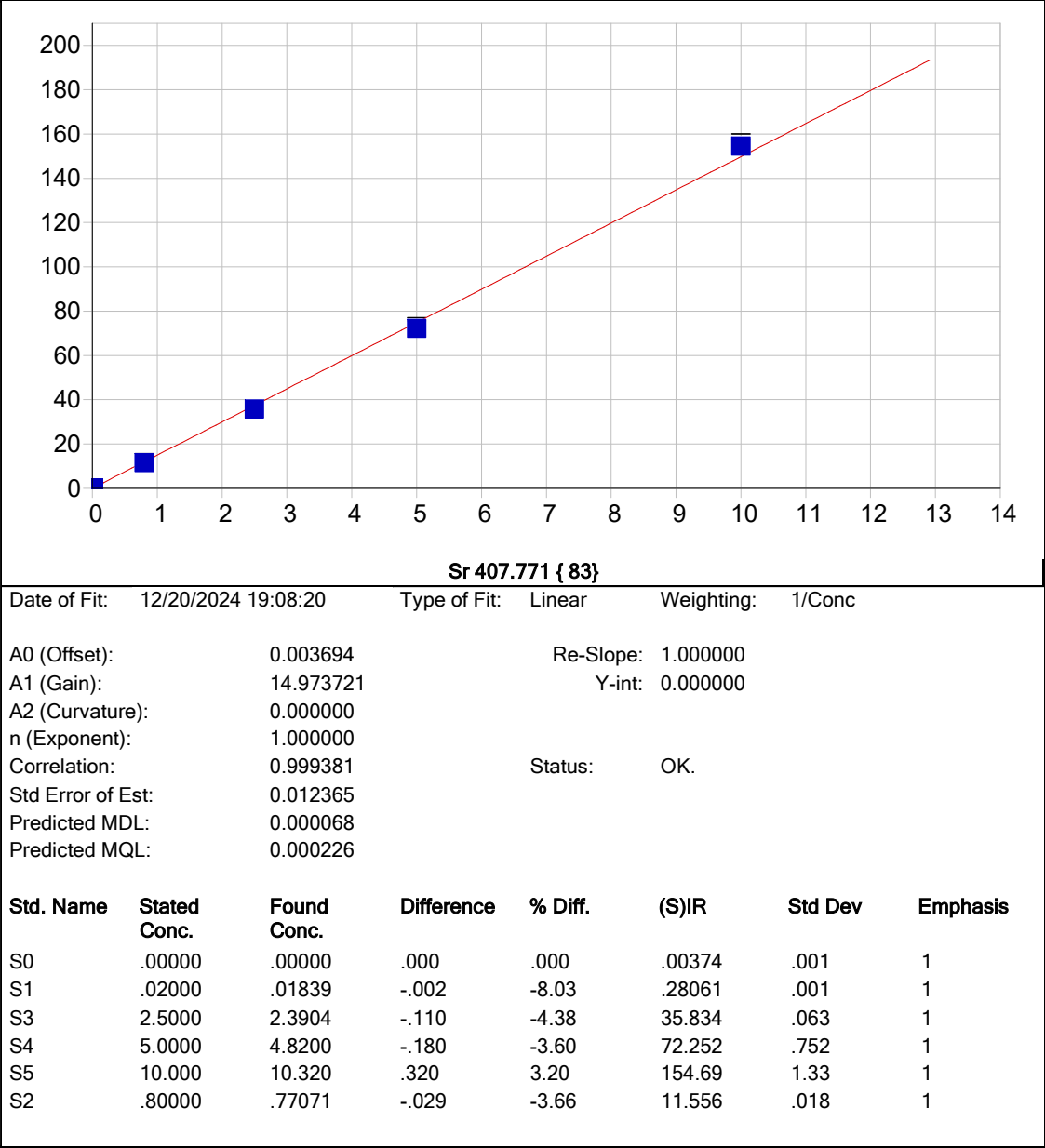


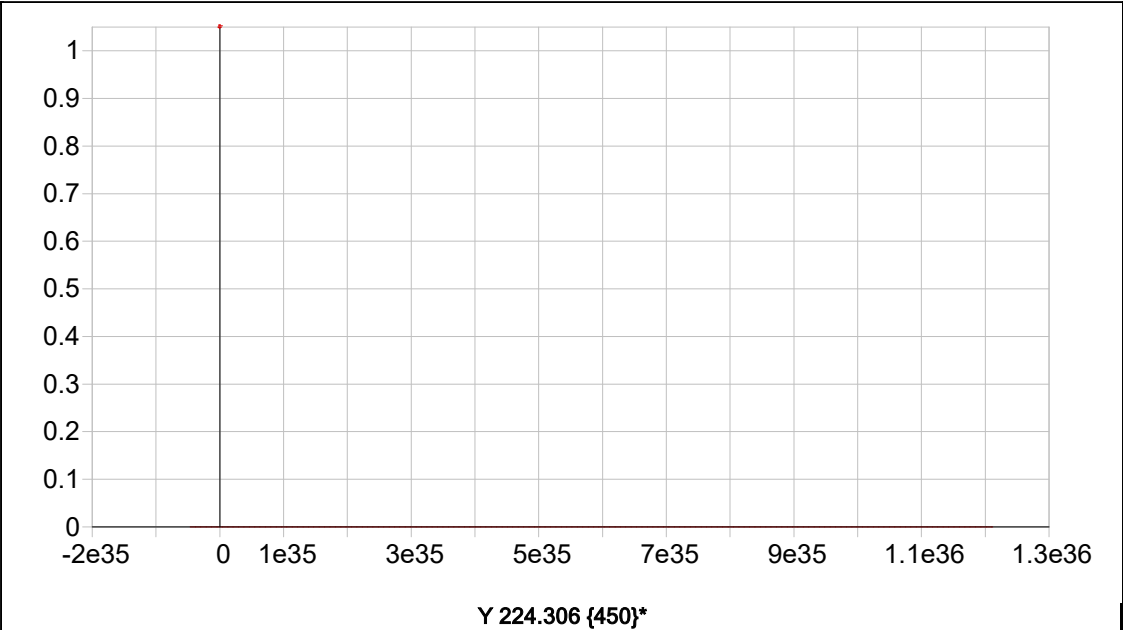






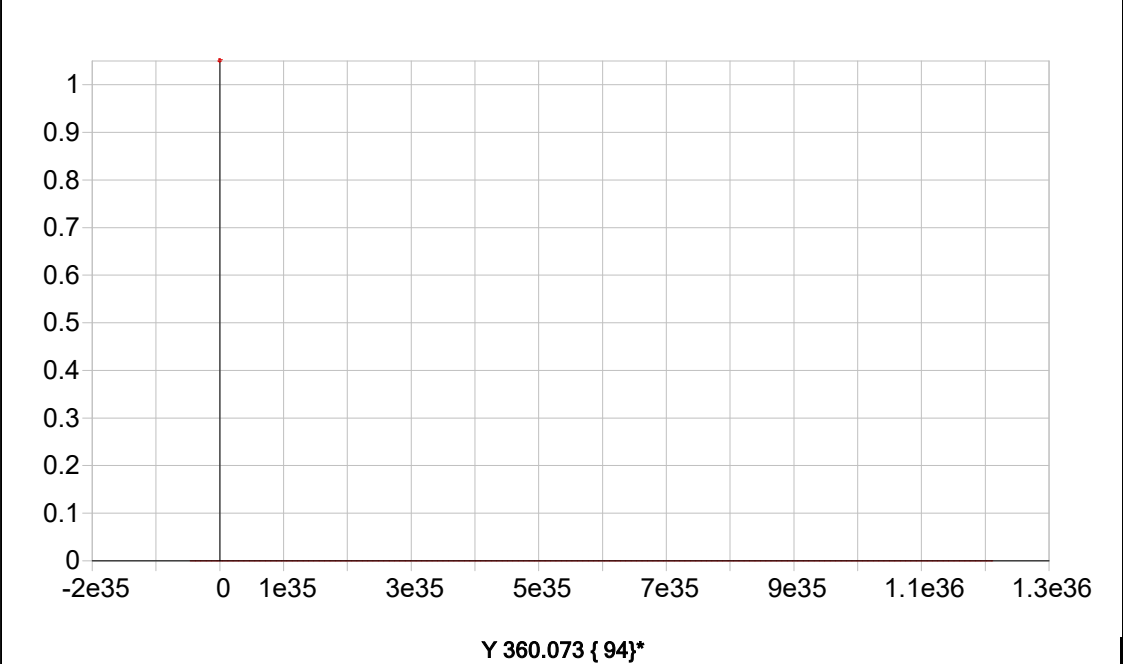




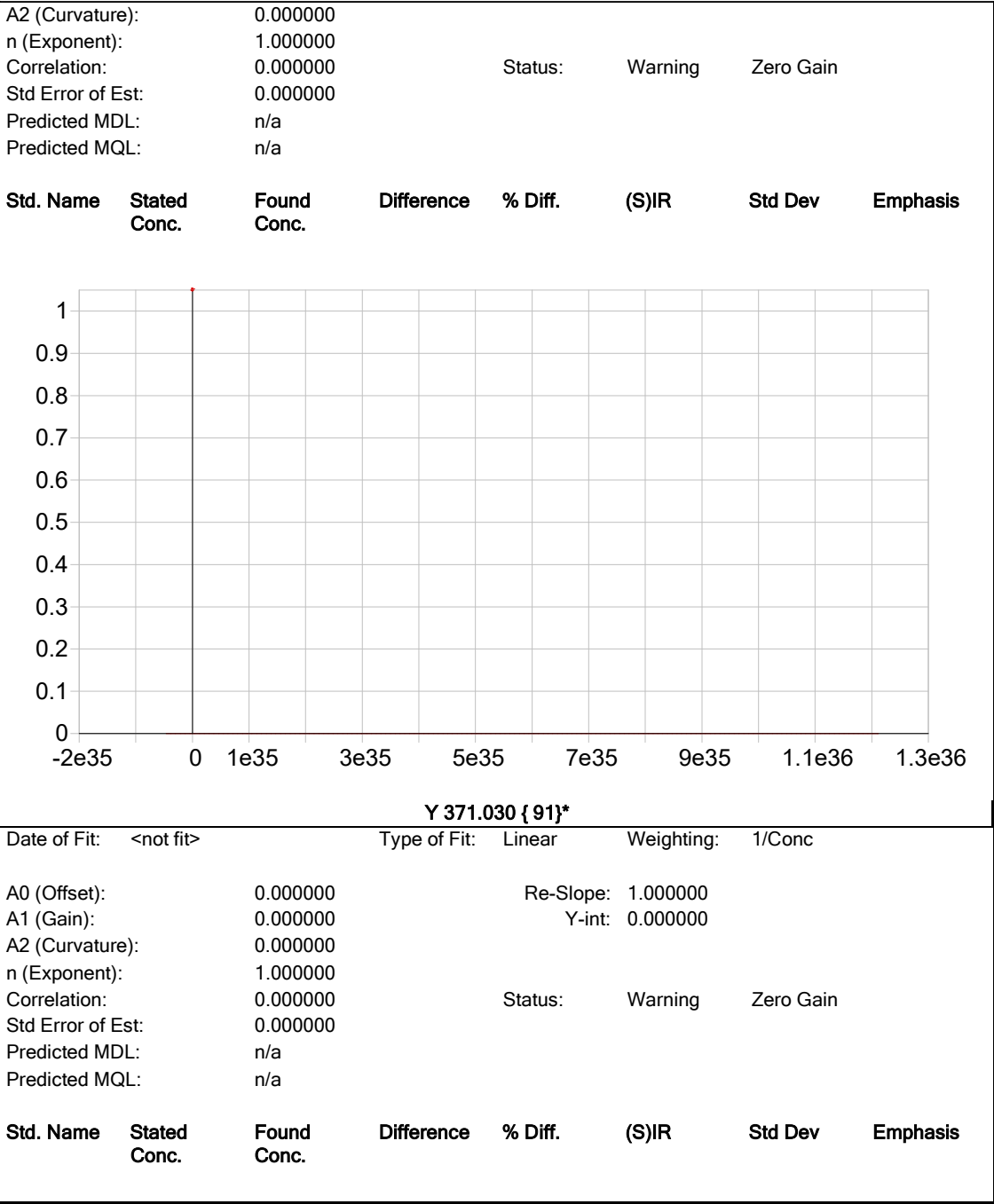


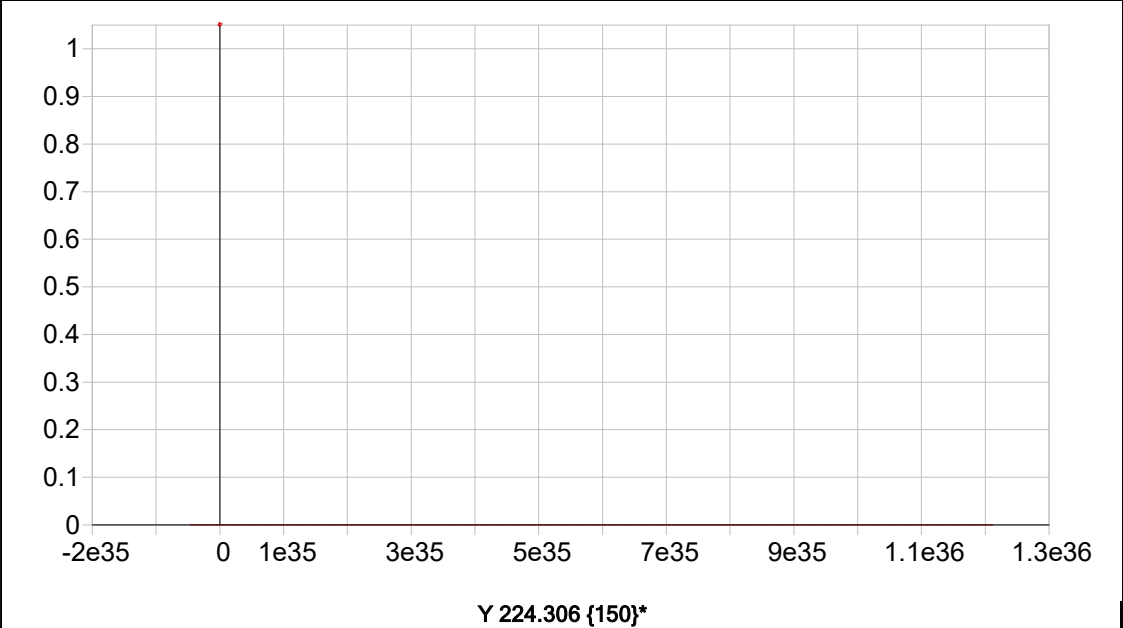
Date of Fit:	12/20/2024 19:08:20	Type of Fit:	Linear	Weighting:	1/Conc
A0 (Offset):	0.000000	Re-Slope:	1.000000		
A1 (Gain):	0.000000	Y-int:	0.000000		
A2 (Curvature):	0.000000				
n (Exponent):	1.000000				
Correlation:	0.000000	Status:	Warning	Zero Gain	
Std Error of Est:	0.000000				
Predicted MDL:	n/a				
Predicted MQL:	n/a				

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
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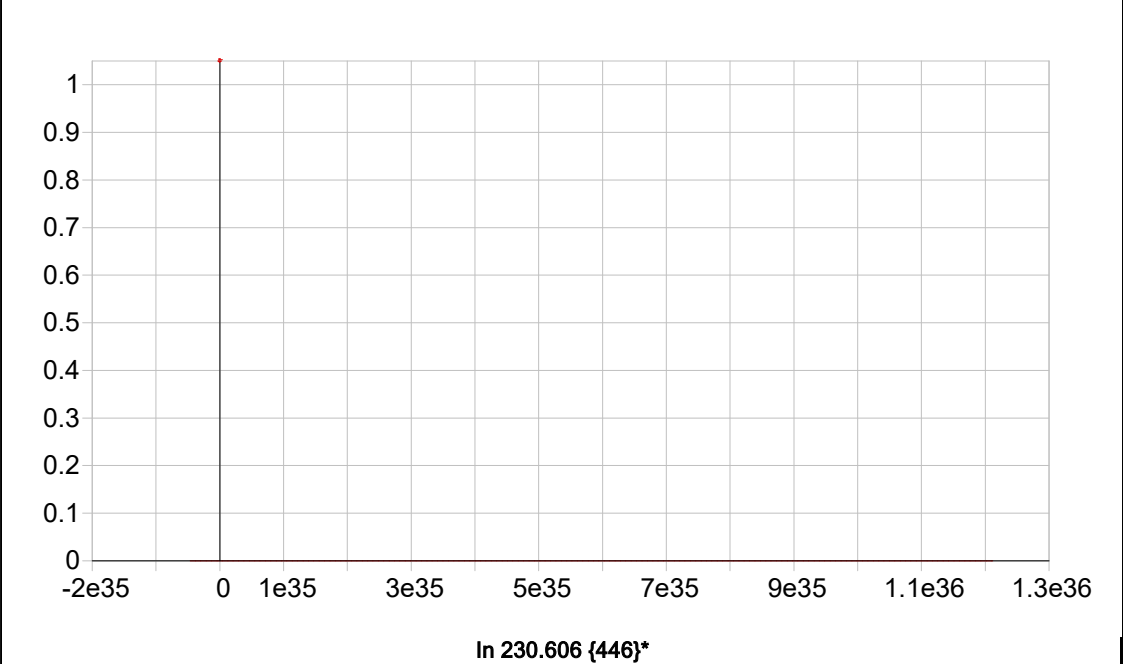
Date of Fit:	<not fit>	Type of Fit:	Linear	Weighting:	1/Conc
A0 (Offset):	0.000000	Re-Slope:	1.000000		
A1 (Gain):	0.000000	Y-int:	0.000000		





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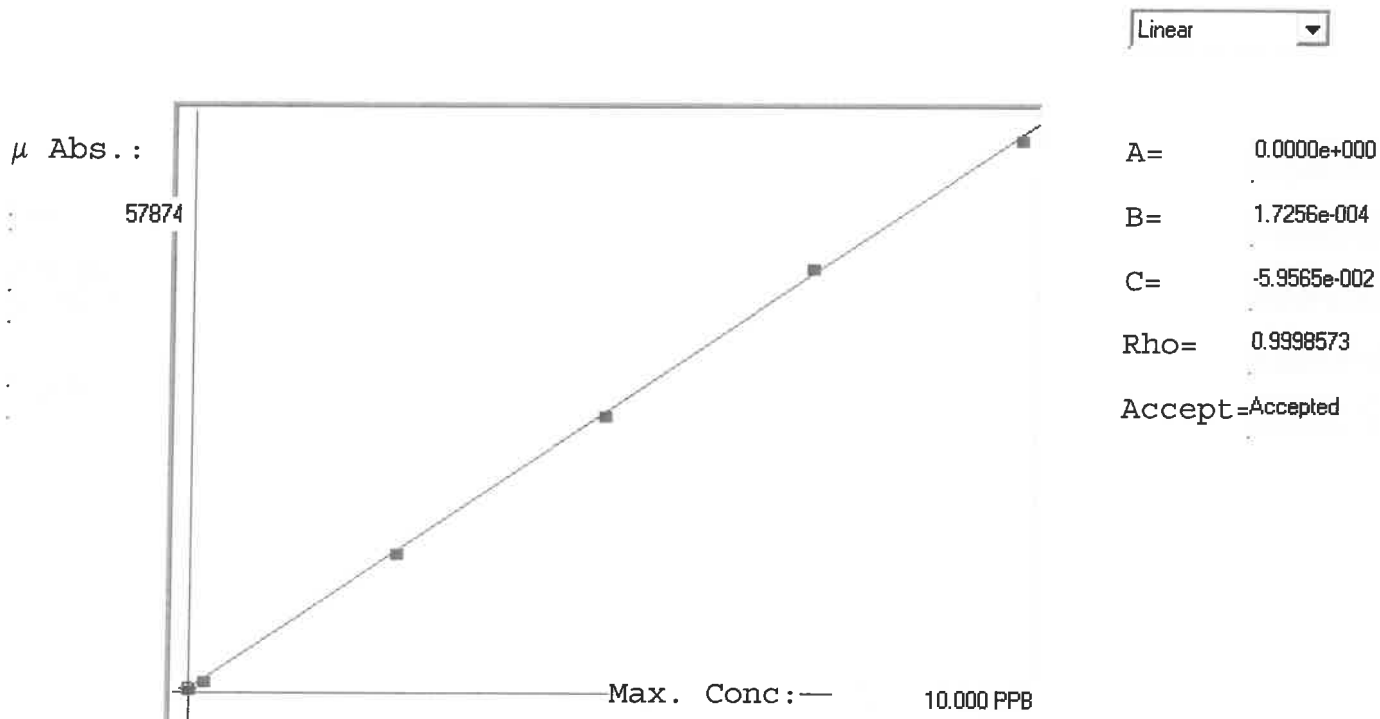
Date of Fit:	<not fit>	Type of Fit:	Linear	Weighting:	1/Conc
A0 (Offset):	0.000000	Re-Slope:	1.000000		
A1 (Gain):	0.000000	Y-int:	0.000000		

A2 (Curvature):		0.000000		Status:	Warning	Zero Gain	
n (Exponent):		1.000000					
Correlation:		0.000000					
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

7471B

LB133991

INSTRUMENT ID: CV1



Std ID	Conc.	Calc.	Dev.	Mean	SD or %RSD	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	g/a))
0.0	0.000	0.030	0.030	520	0.000	520					
0.2	0.200	0.162	-0.038	1283	0.0 %	1283					-19
2.5	2.500	2.496	-0.004	14811	0.0 %	14811					0
5.0	5.000	4.965	-0.035	29118	0.0 %	29118					-1
7.5	7.500	7.620	0.120	44504	0.0 %	44504					2
10.0	10.000	9.927	-0.073	57874	0.0 %	57874					-1

LB133991 INSTRUMENT ID : CV1

Method: 7471B

Operator: Admin

Date of Analysis: 18 Dec 2024 13:15:54

Sample ID	Extended ID	µ Abs.	Conc.	Std Conc	Method	Units	Date	Type	Type
0.0 - 1	80	520	-	0.0000	7471B	PPB	18 Dec 2024 13:19:48	S	Std
0.2 - 1	1283	1283	-	0.2000	7471B	PPB	18 Dec 2024 13:22:05	S	Std
2.5 - 1	14811	14811	-	2.5000	7471B	PPB	18 Dec 2024 13:24:22	S	Std
5.0 - 1	29118	29118	-	5.0000	7471B	PPB	18 Dec 2024 13:26:39	S	Std
7.5 - 1	44504	44504	-	7.5000	7471B	PPB	18 Dec 2024 13:28:57	S	Std
10.0 - 1	57874	57874	-	10.0000	7471B	PPB	18 Dec 2024 13:31:16	S	Std
ICV24 - 1	ICV24	23822	4.0511	-7471B	PPB	18 Dec 2024 13:36:51	U	SMPL	
ICB24 - 1	ICB24	287	-0.0100	-7471B	PPB	18 Dec 2024 13:39:06	U	SMPL	
CCV42 - 1	CCV42	26606	4.5315	-7471B	PPB	18 Dec 2024 13:41:24	U	SMPL	
CCB42 - 1	CCB42	535	0.0328	-7471B	PPB	18 Dec 2024 13:43:38	U	SMPL	
CRA - 1	CRA	1289	0.1629	-7471B	PPB	18 Dec 2024 13:45:58	U	SMPL	
HighStd - 1	HighStd	58947	10.1121	-7471B	PPB	18 Dec 2024 13:48:13	U	SMPL	
ChkStd - 1	ChkStd	40999	7.0151	-7471B	PPB	18 Dec 2024 13:50:28	U	SMPL	
PB165728BL - 1	PBS	89	-0.0442	-7471B	PPB	18 Dec 2024 13:52:49	U	SMPL	
PB165728BS - 1	LCSS	20330	3.4485	-7471B	PPB	18 Dec 2024 13:55:08	U	SMPL	
P5299-01 - 1	SB-01	10161	1.6938	-7471B	PPB	18 Dec 2024 13:57:25	U	SMPL	
P5299-02 - 1	SB-02	6996	1.1476	-7471B	PPB	18 Dec 2024 13:59:43	U	SMPL	
P5299-03 - 1	SB-01	7020	1.1518	-7471B	PPB	18 Dec 2024 14:02:03	U	SMPL	
P5299-04 - 1	SB-02	1808	0.2524	-7471B	PPB	18 Dec 2024 14:04:22	U	SMPL	
P5301-01 - 1	HR-01-121624	23554	4.0048	-7471B	PPB	18 Dec 2024 14:06:39	U	SMPL	
CCV43 - 1	CCV43	27689	4.7184	-7471B	PPB	18 Dec 2024 14:08:55	U	SMPL	
CCB43 - 1	CCB43	137	-0.0359	-7471B	PPB	18 Dec 2024 14:11:13	U	SMPL	
P5301-03 - 1	HR-04-121624	3057	0.4679	-7471B	PPB	18 Dec 2024 14:13:31	U	SMPL	
P5301-03DUP - 1	HR-04-121624DUP	2668	0.4008	-7471B	PPB	18 Dec 2024 14:25:15	U	SMPL	
P5301-03MS - 1	HR-04-121624MS	20839	3.5363	-7471B	PPB	18 Dec 2024 14:27:30	U	SMPL	
P5301-03MSD - 1	HR-04-121624MSD	20533	3.4835	-7471B	PPB	18 Dec 2024 14:29:46	U	SMPL	
P5306-01 - 1	OU4-VSL-07-121224	969	0.1076	-7471B	PPB	18 Dec 2024 14:32:05	U	SMPL	
P5306-03 - 1	OU4-VSL-08-121224	377	0.0055	-7471B	PPB	18 Dec 2024 14:34:24	U	SMPL	
P5306-05 - 1	OU4-VSL-09-121224	540	0.0336	-7471B	PPB	18 Dec 2024 14:36:41	U	SMPL	
P5306-07 - 1	OU4-VSL-10-121224	489	0.0248	-7471B	PPB	18 Dec 2024 14:38:58	U	SMPL	
P5306-09 - 1	OU4-VSL-11-121224	480	0.0233	-7471B	PPB	18 Dec 2024 14:41:14	U	SMPL	
P5306-11 - 1	OU4-VSL-12-121224	460	0.0198	-7471B	PPB	18 Dec 2024 14:43:30	U	SMPL	
CCV44 - 1	CCV44	26503	4.5137	-7471B	PPB	18 Dec 2024 14:45:45	U	SMPL	
CCB44 - 1	CCB44	125	-0.0380	-7471B	PPB	18 Dec 2024 14:48:01	U	SMPL	
P5306-13 - 1	OU4-VSL-13-121224	1044	0.1206	-7471B	PPB	18 Dec 2024 14:50:19	U	SMPL	
P5306-15 - 1	OU4-VSL-14-121224	433	0.0152	-7471B	PPB	18 Dec 2024 14:52:35	U	SMPL	
P5312-01 - 1	SOIL-VNJ-222	1155	0.1397	-7471B	PPB	18 Dec 2024 14:54:50	U	SMPL	
P5312-03 - 1	CONCRETE-VNJ-222	536	0.0329	-7471B	PPB	18 Dec 2024 14:57:06	U	SMPL	
P5301-03LX5 - 1		664	0.0550	-7471B	PPB	18 Dec 2024 15:03:03	U	SMPL	
P5301-03A - 1		22572	3.8354	-7471B	PPB	18 Dec 2024 15:05:19	U	SMPL	
CCV45 - 1	CCV45	28352	4.8328	-7471B	PPB	18 Dec 2024 15:07:36	U	SMPL	
CCB45 - 1	CCB45	197	-0.0256	-7471B	PPB	18 Dec 2024 15:09:56	U	SMPL	

SOP ID : M3050B-Digestion-20

SDG No : N/A

Matrix : SOIL

Pipette ID: ICP A

Balance ID : M SC-2

Filter paper ID : N/A

pH Strip ID : N/A

Hood ID : #3

Block ID: 1. HOT BLOC K #3 2. N/A

Start Digest Date: 12/18/2024 Time : 12:20 Temp : 96 °C

End Digest Date: 12/18/2024 Time : 14:25 Temp : 96 °C

Digestion tube ID: M6054

Block thermometer ID: MET-DIG. # 3

Dig Technician Signature: *SLK*

Supervisor Signature: *SG*

Temp : 1. 96°C 2. N/A

Standard Name	MLS USED	STD REF. # FROM LOG
LFS-1	1.00	M6000
LFS-2	1.00	M6009
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

Chemical Used	ML/SAMPLE USED	Lot Number
1:1 HNO3	10.00	MP83498
Conc. HNO3	5.00	M6126
30% H2O2	3.00	M6125
Conc. HCL	10.00	M6121
PTFE Boiling Stones	N/A	M5585
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

Extraction Conformance/Non-Conformance Comments:

HOT BLOCK#3 CELL #33 Temp: 96 C

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
12/18/24 15:20	<i>SLK, met digestion</i>	<i>SG MetLab</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
P5299-01	SB-01	N/A	2.12	100	Brown	Yellow	Medium	N/A	N/A	22
P5299-02	SB-02	N/A	2.24	100	Brown	Yellow	Medium	N/A	N/A	23
P5299-03	SB-01	N/A	2.32	100	Brown	Yellow	Medium	N/A	N/A	24
P5299-04	SB-02	N/A	2.16	100	Brown	Yellow	Medium	N/A	N/A	25
P5299-04MS	SB-02MS	N/A	2.15	100	Brown	Yellow	Medium	N/A	M6000,M6009	27
P5299-04MSD	SB-02MSD	N/A	2.47	100	Brown	Yellow	Medium	N/A	M6000,M6009	28
P5299-04DUP	SB-02DUP	N/A	2.26	100	Brown	Yellow	Medium	N/A	N/A	26
P5312-01	SOIL-VNJ-222	N/A	2.41	100	Brown	Yellow	Medium	N/A	N/A	29
P5312-03	CONCRETE-VNJ-222	N/A	2.31	100	Brown	Yellow	Medium	N/A	N/A	30
PB165722BL	PBS722	N/A	2.27	100	Colorless	Colorless	Fine	N/A	N/A	31
PB165722BS	LCS722	N/A	2.27	100	Colorless	Colorless	Fine	N/A	M6000,M6009	32

WORKLIST(Hardcopy Internal Chain)

WorkList Name : PB165722

WorkList ID : 186433

Department : Digestion

Date : 12-18-2024 11:24:31

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
P5299-01	SB-01	Solid	Metals ICP-TAL	Cool 4 deg C	PORT06	L41	12/14/2024	6010D
P5299-02	SB-02	Solid	Metals ICP-TAL	Cool 4 deg C	PORT06	L41	12/15/2024	6010D
P5299-03	SB-01	Solid	Metals ICP-TAL	Cool 4 deg C	PORT06	L41	12/15/2024	6010D
P5299-04	SB-02	Solid	Metals ICP-TAL	Cool 4 deg C	PORT06	L41	12/15/2024	6010D
P5312-01	SOIL-VNJ-222	Solid	Metals ICP-TAL	Cool 4 deg C	PSEG03	L61	12/17/2024	6010D
P5312-03	CONCRETE-VNJ-222	Solid	Metals ICP-TAL	Cool 4 deg C	PSEG03	L61	12/17/2024	6010D

Date/Time 12/18/24 11:50

Raw Sample Received by: SLD met digestion

Raw Sample Relinquished by: RM SM

Date/Time 12/18/24

Raw Sample Received by: RM SM

Raw Sample Relinquished by: SLD met digestion

SOP ID : M7471B-Mercury-18

SDG No : N/A

Matrix : SOIL

Pipette ID : HG A

Balance ID : M SC-3

Filter paper ID : NA

pH Strip ID : NA

Hood ID : #1

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

Start Digest Date: 12/18/2024 Time : 08:35 Temp : 94 °C

End Digest Date: 12/18/2024 Time : 09:05 Temp : 94 °C

Digestion tube ID: M5595

Block thermometer ID: HG-DIG#3

Dig Technician Signature:

Supervisor Signature:

Temp : 1. 94°C 2. N/A

Standard Name	MLS USED	STD REF. # FROM LOG
ICV	30mL	MP83682
CCV	30mL	MP83684
CRA	30mL	MP83686
Blank Spike	0.48mL	MP83675
Matrix Spike	0.48mL	MP83675

Chemical Used	ML/SAMPLE USED	Lot Number
AQUA REGIA	1.5mL	MP83688
KMnO4 (5%)	4.5mL	MP83208
Hydroxylamine HCL (12%)	2.0mL	MP83210
PTFE Boiling Stones	-----	M4583
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

LAB SAMPLE ID	CLIENT SAMPLE ID	Wt(g)/Vol(ml)	Comment
0.0 ppb	S0	30mL	MP83676
0.05 ppb	S0.05	N/A	N/A
0.2 ppb	S0.2	30mL	MP83677
2.5 ppb	S2.5	30mL	MP83678
5.0 ppb	S5.0	30mL	MP83679
7.5 ppb	S7.5	30mL	MP83680
10.0 ppb	S10.0	30mL	MP83681
ICV	ICV	30mL	MP83682
ICB	ICB	30mL	MP83683
CCV	CCV	30mL	MP83684
CCB	CCB	30mL	MP83685
CRI	CRI	30mL	MP83686
CHK STD	CHK STD	30mL	MP83687

Extraction Conformance/Non-Conformance Comments:

N/A		
Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
12/18/24 09:45	MS ~ N/A Lab	MS ~ metal only
	Preparation Group	Analysis Group

Lab Sample ID	Client Sample ID	Initial Weight (g)	Final Vol (ml)	pH	Comment	Prep Pos
P5299-01	SB-01	0.60	35	NA	N/A	3-1
P5299-02	SB-02	0.50	35	NA	N/A	2
P5299-03	SB-01	0.59	35	NA	N/A	3
P5299-04	SB-02	0.51	35	NA	N/A	4
P5301-01	HR-01-121624	0.57	35	NA	N/A	5
P5301-03	HR-04-121624	0.52	35	NA	N/A	6
P5301-03DUP	HR-04-121624DUP	0.51	35	NA	N/A	7
P5301-03MS	HR-04-121624MS	0.55	35	NA	MP83675	8
P5301-03MSD	HR-04-121624MSD	0.56	35	NA	MP83675	9
P5306-01	OU4-VSL-07-121224	0.59	35	NA	N/A	10
P5306-03	OU4-VSL-08-121224	0.52	35	NA	N/A	11
P5306-05	OU4-VSL-09-121224	0.57	35	NA	N/A	12
P5306-07	OU4-VSL-10-121224	0.52	35	NA	N/A	13
P5306-09	OU4-VSL-11-121224	0.55	35	NA	N/A	14
P5306-11	OU4-VSL-12-121224	0.57	35	NA	N/A	15
P5306-13	OU4-VSL-13-121224	0.58	35	NA	N/A	16
P5306-15	OU4-VSL-14-121224	0.59	35	NA	N/A	17
P5312-01	SOIL-VNJ-222	0.55	35	NA	N/A	18
P5312-03	CONCRETE-VNJ-222	0.52	35	NA	N/A	19
PB165728BL	PBS728	0.52	35	NA	N/A	20
PB165728BS	LCS728	0.54	35	NA	MP83675	21

WORKLIST(Hardcopy Internal Chain)

WorkList Name : 112322_7471 WorkList ID : 165299 Department : Digestion Date : 11-23-2022 09:22:32

Due Date	Matrix	Sample	Test	Preservative	Customer	Raw Sample Storage Location	Customer Sample	Collect Date	Method
12/05/2022	Solid	N5766-01	Mercury	Cool 4 deg C	EARTH03	K11	CR-1	11/22/2022	7471B
12/05/2022	Solid	N5766-02	Mercury	Cool 4 deg C	EARTH03	K11	CR-2	11/22/2022	7471B
12/05/2022	Solid	N5766-03	Mercury	Cool 4 deg C	EARTH03	K11	CR-3	11/22/2022	7471B
12/05/2022	Solid	N5766-04	Mercury	Cool 4 deg C	EARTH03	K11	CR-4	11/22/2022	7471B
12/05/2022	Solid	N5766-05	Mercury	Cool 4 deg C	EARTH03	K11	CR-5	11/22/2022	7471B
11/08/2022	Solid	N5317-11	Mercury	Cool 4 deg C	CHEM02	QA Of	PT-MET-SOIL	11/22/2022	7471B
11/24/2022	Solid	N5745-01	Mercury	Cool 4 deg C	PSEG03	K11	PAT-01-112122	10/24/2022	7471B
11/24/2022	Solid	N5745-03	Mercury	Cool 4 deg C	PSEG03	K11	PAT-04-112122	11/21/2022	7471B
11/24/2022	Solid	N5754-01	Mercury	Cool 4 deg C	PSEG03	K11	PSC-124019	11/21/2022	7471B
11/28/2022	Solid	N5758-01	Mercury	Cool 4 deg C	PSEG03	K11	MH-13	11/21/2022	7471B
11/29/2022	Solid	N5762-05	Mercury	Cool 4 deg C	PSEG03	M11	TP-1	11/22/2022	7471B
11/29/2022	Solid	N5762-08	Mercury	Cool 4 deg C	PSEG03	M11	TP-2	11/22/2022	7471B
11/29/2022	Solid	N5765-01	Mercury	Cool 4 deg C	PSEG03	K11	TP-L	11/22/2022	7471B
11/29/2022	Solid	N5765-04	Mercury	Cool 4 deg C	PSEG03	K11	MH-14	11/22/2022	7471B

Date/Time 11/23/22 @ 10:35
 Raw Sample Received by: DR - DIA. LAB
 Raw Sample Relinquished by: CR (S22)

Date/Time 11/23/22 @ 11:25
 Raw Sample Received by: CR (S22)
 Raw Sample Relinquished by: DR - DIA. LAB



PERCENT SOLID

Supervisor: Iwona
Analyst: jignesh
Date: 12/18/2024

OVENTEMP IN Celsius(°C): 107
Time IN: 17:00
In Date: 12/17/2024
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
OvenID: M OVEN#1

OVENTEMP OUT Celsius(°C): 103
Time OUT: 08:12
Out Date: 12/18/2024
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
BalanceID: M SC-4
Thermometer ID: % SOLID- OVEN

QC:LB133976

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
P5245-03	72-12016	1	1.15	8.37	9.52	8.99	93.7	
P5299-01	SB-01	2	1.15	8.40	9.55	7.74	78.5	
P5299-02	SB-02	3	1.16	8.70	9.86	7.73	75.5	
P5299-03	SB-01	33	1.13	8.61	9.74	7.05	68.8	
P5299-04	SB-02	4	1.15	8.75	9.9	8.08	79.2	
P5306-01	OU4-VSL-07-121224	5	1.16	8.52	9.68	8.9	90.8	
P5306-03	OU4-VSL-08-121224	6	1.17	8.73	9.9	9.1	90.8	
P5306-05	OU4-VSL-09-121224	7	1.19	8.45	9.64	8.8	90.1	
P5306-07	OU4-VSL-10-121224	8	1.15	8.65	9.8	9.37	95.0	
P5306-09	OU4-VSL-11-121224	9	1.11	8.77	9.88	9.32	93.6	
P5306-11	OU4-VSL-12-121224	10	1.12	8.65	9.77	8.97	90.8	
P5306-13	OU4-VSL-13-121224	11	1.13	8.72	9.85	8.98	90.0	
P5306-15	OU4-VSL-14-121224	12	1.18	8.46	9.64	9.29	95.9	
P5306-17	OU4-VSL-06R-121224	13	1.15	8.80	9.95	9.22	91.7	
P5307-01	1A-1B-1C-ROOF-2	14	1.00	1.00	2.00	2.00	100.0	caluk
P5307-02	2A-2B-2C-ROOF-2	15	1.00	1.00	2.00	2.00	100.0	caluk
P5307-03	3A-3B-3C-1907	16	1.00	1.00	2.00	2.00	100.0	caluk
P5307-04	4A-4B-4C-1907	17	1.00	1.00	2.00	2.00	100.0	caluk
P5307-05	5A-5B-5C-1907	18	1.00	1.00	2.00	2.00	100.0	caluk
P5307-06	6A-6B-6C-1952	19	1.00	1.00	2.00	2.00	100.0	caluk
P5307-07	1907-BLDG-GRAY	20	1.00	1.00	2.00	2.00	100.0	caluk
P5307-08	1952-BLDG	21	1.00	1.00	2.00	2.00	100.0	caluk
P5307-09	9A-9B-9C-1907	22	1.00	1.00	2.00	2.00	100.0	caluk
P5307-10	1907-BLDG-OFF-WHITE	23	1.00	1.00	2.00	2.00	100.0	caluk
P5307-11	11A-11B-11C-1952-BLDG	24	1.00	1.00	2.00	2.00	100.0	caluk
P5307-12	12A-12B-12C-1952	25	1.00	1.00	2.00	2.00	100.0	caluk
P5307-13	13A-13B-13C-1952	26	1.00	1.00	2.00	2.00	100.0	caluk
P5307-14	14A-14B-14C-1907	27	1.00	1.00	2.00	2.00	100.0	caluk



PERCENT SOLID

Supervisor: Iwona
Analyst: jignesh
Date: 12/18/2024

OVENTEMP IN Celsius(°C): 107
Time IN: 17:00
In Date: 12/17/2024
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
OvenID: M OVEN#1

OVENTEMP OUT Celsius(°C): 103
Time OUT: 08:12
Out Date: 12/18/2024
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
BalanceID: M SC-4
Thermometer ID: % SOLID- OVEN

QC:LB133976

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
P5307-15	15A-15B-15C-ROOF-7	28	1.00	1.00	2.00	2.00	100.0	caluk
P5312-01	SOIL-VNJ-222	29	1.15	8.43	9.58	8.55	87.8	
P5312-02	SOIL-VNJ-222	30	1.12	8.66	9.78	9.35	95.0	
P5312-03	CONCRETE-VNJ-222	31	1.00	1.00	2.00	2.00	100.0	CONCRETE sample
P5312-04	CONCRETE-VNJ-222	32	1.00	1.00	2.00	2.00	100.0	CONCRETE sample

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

Instrument ID: CV1

Daily Analysis Runlog For Sequence/QC Batch ID # LB133991

Review By	jaswal	Review On	12/18/2024 10:30:30 PM
Supervise By	mohan	Supervise On	12/18/2024 10:30:55 PM

STD. NAME	STD REF.#
ICAL Standard	MP83676,MP83677,MP83678,MP83679,MP83680,MP83681
ICV Standard	MP83682
CCV Standard	MP83684
ICSA Standard	
CRI Standard	MP83686
LCS Standard	
Chk Standard	MP83683,MP83685,MP83687,MP83689

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	S0	S0	CAL1	12/18/24 13:19		Mohan	OK
2	S0.2	S0.2	CAL2	12/18/24 13:22		Mohan	OK
3	S2.5	S2.5	CAL3	12/18/24 13:24		Mohan	OK
4	S5	S5	CAL4	12/18/24 13:26		Mohan	OK
5	S7.5	S7.5	CAL5	12/18/24 13:28		Mohan	OK
6	S10	S10	CAL6	12/18/24 13:31		Mohan	OK
7	ICV24	ICV24	ICV	12/18/24 13:36		Mohan	OK
8	ICB24	ICB24	ICB	12/18/24 13:39		Mohan	OK
9	CCV42	CCV42	CCV	12/18/24 13:41		Mohan	OK
10	CCB42	CCB42	CCB	12/18/24 13:43		Mohan	OK
11	CRA	CRA	CRDL	12/18/24 13:45		Mohan	OK
12	HighStd	HighStd	HIGH STD	12/18/24 13:48		Mohan	OK
13	ChkStd	ChkStd	SAM	12/18/24 13:50		Mohan	OK
14	PB165728BL	PB165728BL	MB	12/18/24 13:52		Mohan	OK
15	PB165728BS	PB165728BS	LCS	12/18/24 13:55		Mohan	OK
16	P5299-01	SB-01	SAM	12/18/24 13:57		Mohan	OK
17	P5299-02	SB-02	SAM	12/18/24 13:59		Mohan	OK
18	P5299-03	SB-01	SAM	12/18/24 14:02		Mohan	OK

Instrument ID: CV1

Daily Analysis Runlog For Sequence/QC Batch ID # LB133991

Review By	jaswal	Review On	12/18/2024 10:30:30 PM
Supervise By	mohan	Supervise On	12/18/2024 10:30:55 PM
STD. NAME	STD REF.#		
ICAL Standard	MP83676,MP83677,MP83678,MP83679,MP83680,MP83681		
ICV Standard	MP83682		
CCV Standard	MP83684		
ICSA Standard			
CRI Standard	MP83686		
LCS Standard			
Chk Standard	MP83683,MP83685,MP83687,MP83689		

19	P5299-04	SB-02	SAM	12/18/24 14:04		Mohan	OK
20	P5301-01	HR-01-121624	SAM	12/18/24 14:06		Mohan	OK
21	CCV43	CCV43	CCV	12/18/24 14:08		Mohan	OK
22	CCB43	CCB43	CCB	12/18/24 14:11		Mohan	OK
23	P5301-03	HR-04-121624	SAM	12/18/24 14:13		Mohan	OK
24	P5301-03DUP	HR-04-121624DUP	DUP	12/18/24 14:25		Mohan	OK
25	P5301-03MS	HR-04-121624MS	MS	12/18/24 14:27		Mohan	OK
26	P5301-03MSD	HR-04-121624MSD	MSD	12/18/24 14:29		Mohan	OK
27	P5306-01	OU4-VSL-07-121224	SAM	12/18/24 14:32		Mohan	OK
28	P5306-03	OU4-VSL-08-121224	SAM	12/18/24 14:34		Mohan	OK
29	P5306-05	OU4-VSL-09-121224	SAM	12/18/24 14:36		Mohan	OK
30	P5306-07	OU4-VSL-10-121224	SAM	12/18/24 14:38		Mohan	OK
31	P5306-09	OU4-VSL-11-121224	SAM	12/18/24 14:41		Mohan	OK
32	P5306-11	OU4-VSL-12-121224	SAM	12/18/24 14:43		Mohan	OK
33	CCV44	CCV44	CCV	12/18/24 14:45		Mohan	OK
34	CCB44	CCB44	CCB	12/18/24 14:48		Mohan	OK
35	P5306-13	OU4-VSL-13-121224	SAM	12/18/24 14:50		Mohan	OK
36	P5306-15	OU4-VSL-14-121224	SAM	12/18/24 14:52		Mohan	OK
37	P5312-01	SOIL-VNJ-222	SAM	12/18/24 14:54		Mohan	OK
38	P5312-03	CONCRETE-VNJ-222	SAM	12/18/24 14:57		Mohan	OK

Instrument ID: CV1

Daily Analysis Runlog For Sequence/QC Batch ID # LB133991

Review By	jaswal	Review On	12/18/2024 10:30:30 PM
Supervise By	mohan	Supervise On	12/18/2024 10:30:55 PM

STD. NAME	STD REF.#
ICAL Standard	MP83676,MP83677,MP83678,MP83679,MP83680,MP83681
ICV Standard	MP83682
CCV Standard	MP83684
ICSA Standard	
CRI Standard	MP83686
LCS Standard	
Chk Standard	MP83683,MP83685,MP83687,MP83689

39	P5301-03L	HR-04-121624L	SD	12/18/24 15:03		Mohan	OK
40	P5301-03A	HR-04-121624A	PS	12/18/24 15:05		Mohan	OK
41	CCV45	CCV45	CCV	12/18/24 15:07		Mohan	OK
42	CCB45	CCB45	CCB	12/18/24 15:09		Mohan	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QC Batch ID # LB134054

Review By	jaswal	Review On	12/25/2024 1:47:05 AM
Supervise By	Mohan	Supervise On	12/25/2024 1:47:33 AM
STD. NAME	STD REF.#		
ICAL Standard	MP83500,MP83507,MP83505,MP83504,MP83503,MP83502,MP83501		
ICV Standard	MP83508		
CCV Standard	MP83511		
ICSA Standard	MP83509,MP83510		
CRI Standard			
LCS Standard			
Chk Standard	MP83513,MP83514		

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	S0	S0	CAL1	12/20/24 15:41		Kareem	OK
2	S1	S1	CAL2	12/20/24 15:46		Kareem	OK
3	S2	S2	CAL3	12/20/24 15:50		Kareem	OK
4	S3	S3	CAL4	12/20/24 15:54		Kareem	OK
5	S4	S4	CAL5	12/20/24 15:58		Kareem	OK
6	S5	S5	CAL6	12/20/24 16:03		Kareem	OK
7	ICV01	ICV01	ICV	12/20/24 16:07	ICV fail for Ba,Mg,V (200.7)	Kareem	OK
8	LLICV01	LLICV01	LLICV	12/20/24 16:11		Kareem	OK
9	ICB01	ICB01	ICB	12/20/24 16:21		Kareem	OK
10	CRI01	CRI01	CRDL	12/20/24 16:26		Kareem	OK
11	ICSA01	ICSA01	ICSA	12/20/24 16:30		Kareem	OK
12	ICSAB01	ICSAB01	ICSAB	12/20/24 16:34		Kareem	OK
13	ICSADL	ICSADL	ICSA	12/20/24 16:38		Kareem	OK
14	ICSABDL	ICSABDL	ICSAB	12/20/24 16:43		Kareem	OK
15	CCV01	CCV01	CCV	12/20/24 16:47		Kareem	OK
16	CCB01	CCB01	CCB	12/20/24 16:51		Kareem	OK
17	P5312-01	SOIL-VNJ-222	SAM	12/20/24 16:55		Kareem	OK
18	P5343-01	VNJ210	SAM	12/20/24 17:00		Kareem	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QC Batch ID # LB134054

Review By	jaswal	Review On	12/25/2024 1:47:05 AM
Supervise By	Mohan	Supervise On	12/25/2024 1:47:33 AM

STD. NAME	STD REF.#
ICAL Standard	MP83500,MP83507,MP83505,MP83504,MP83503,MP83502,MP83501
ICV Standard	MP83508
CCV Standard	MP83511
ICSA Standard	MP83509,MP83510
CRI Standard	
LCS Standard	
Chk Standard	MP83513,MP83514

19	P5316-01	TT-304-IDWSO-2024	SAM	12/20/24 17:04		Kareem	OK
20	P5343-03	VNJ281	SAM	12/20/24 17:08		Kareem	OK
21	P5312-03	CONCRETE-VNJ-222	SAM	12/20/24 17:12		Kareem	OK
22	P5279-02	ROCKAWAY-PARK	SAM	12/20/24 17:16		Kareem	OK
23	P5192-02	EFF-WASTE WATER	SAM	12/20/24 17:21		Kareem	OK
24	P5327-01	12175-12176-12177-1	SAM	12/20/24 17:25		Kareem	OK
25	CCV02	CCV02	CCV	12/20/24 17:29		Kareem	OK
26	CCB02	CCB02	CCB	12/20/24 17:34		Kareem	OK
27	PB165738BL	PB165738BL	MB	12/20/24 17:38		Kareem	OK
28	PB165738BS	PB165738BS	LCS	12/20/24 17:42		Kareem	OK
29	PB165754BL	PB165754BL	MB	12/20/24 17:46		Kareem	OK
30	PB165754BS	PB165754BS	LCS	12/20/24 17:51		Kareem	OK
31	PB165720BL	PB165720BL	MB	12/20/24 17:55		Kareem	OK
32	PB165720BS	PB165720BS	LCS	12/20/24 17:59		Kareem	OK
33	PB165679TB	PB165679TB	MB	12/20/24 18:03		Kareem	OK
34	PB165680TB	PB165680TB	MB	12/20/24 18:08		Kareem	OK
35	CCV03	CCV03	CCV	12/20/24 18:12		Kareem	OK
36	CCB03	CCB03	CCB	12/20/24 18:16		Kareem	OK
37	P5341-01	STORMWATER-AQ-C	SAM	12/20/24 18:21		Kareem	OK
38	P5341-03RE	TOTE-425RE	SAM	12/20/24 18:25	NOT USE	Kareem	Not Ok

Instrument ID: P4

Daily Analysis Runlog For Sequence/QC Batch ID # LB134054

Review By	jaswal	Review On	12/25/2024 1:47:05 AM
Supervise By	Mohan	Supervise On	12/25/2024 1:47:33 AM
STD. NAME	STD REF.#		
ICAL Standard	MP83500,MP83507,MP83505,MP83504,MP83503,MP83502,MP83501		
ICV Standard	MP83508		
CCV Standard	MP83511		
ICSA Standard	MP83509,MP83510		
CRI Standard			
LCS Standard			
Chk Standard	MP83513,MP83514		

39	P5343-06	PUMP-WATER-271	SAM	12/20/24 18:29		Kareem	OK
40	P5291-13RE	WC-20241213RE	SAM	12/20/24 18:33	NOT USE	Kareem	Not Ok
41	P5299-01	SB-01	SAM	12/20/24 18:38		Kareem	OK
42	P5327-01DUP	12175-12176-12177-1	DUP	12/20/24 18:42		Kareem	OK
43	P5327-01L	12175-12176-12177-1	SD	12/20/24 18:46		Kareem	OK
44	P5327-01MS	12175-12176-12177-1	MS	12/20/24 18:50		Kareem	OK
45	P5327-01MSD	12175-12176-12177-1	MSD	12/20/24 18:54		Kareem	OK
46	P5327-01A	12175-12176-12177-1	PS	12/20/24 18:58		Kareem	OK
47	CCV04	CCV04	CCV	12/20/24 19:02		Kareem	OK
48	CCB04	CCB04	CCB	12/20/24 19:11		Kareem	OK
49	P5343-06L	PUMP-WATER-271L	SD	12/20/24 19:16		Kareem	OK
50	P5343-06DUP	PUMP-WATER-271DUP	DUP	12/20/24 19:20		Kareem	OK
51	P5343-06MS	PUMP-WATER-271MS	MS	12/20/24 19:24		Kareem	OK
52	P5343-06MSD	PUMP-WATER-271MSD	MSD	12/20/24 19:28		Kareem	OK
53	P5343-06A	PUMP-WATER-271A	PS	12/20/24 19:32		Kareem	OK
54	P5291-13DUP	WC-20241213DUP	DUP	12/20/24 19:37		Kareem	OK
55	P5291-13L	WC-20241213L	SD	12/20/24 19:41		Kareem	OK
56	P5291-13MS	WC-20241213MS	MS	12/20/24 19:45		Kareem	OK
57	P5291-13MSD	WC-20241213MSD	MSD	12/20/24 19:49		Kareem	OK
58	P5291-13A	WC-20241213A	PS	12/20/24 19:53		Kareem	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QC Batch ID # LB134054

Review By	jaswal	Review On	12/25/2024 1:47:05 AM
Supervise By	Mohan	Supervise On	12/25/2024 1:47:33 AM

STD. NAME	STD REF.#
ICAL Standard	MP83500,MP83507,MP83505,MP83504,MP83503,MP83502,MP83501
ICV Standard	MP83508
CCV Standard	MP83511
ICSA Standard	MP83509,MP83510
CRI Standard	
LCS Standard	
Chk Standard	MP83513,MP83514

59	CCV05	CCV05	CCV	12/20/24 19:57		Kareem	OK
60	CCB05	CCB05	CCB	12/20/24 20:01		Kareem	OK
61	P5299-02	SB-02	SAM	12/20/24 20:06		Kareem	OK
62	P5299-03	SB-01	SAM	12/20/24 20:10		Kareem	OK
63	P5299-04	SB-02	SAM	12/20/24 20:14		Kareem	OK
64	P5299-04DUP	SB-02DUP	DUP	12/20/24 20:18		Kareem	OK
65	P5299-04L	SB-02L	SD	12/20/24 20:22		Kareem	OK
66	P5299-04MS	SB-02MS	MS	12/20/24 20:26		Kareem	OK
67	P5299-04MSD	SB-02MSD	MSD	12/20/24 20:30		Kareem	OK
68	P5299-04A	SB-02A	PS	12/20/24 20:34		Kareem	OK
69	PB165722BL	PB165722BL	MB	12/20/24 20:38		Kareem	OK
70	PB165722BS	PB165722BS	LCS	12/20/24 20:43		Kareem	OK
71	CCV06	CCV06	CCV	12/20/24 20:47		Kareem	OK
72	CCB06	CCB06	CCB	12/20/24 20:51		Kareem	OK
73	P5330-01	TP-5	SAM	12/20/24 20:55		Kareem	OK
74	P5342-01	CHRT26634	SAM	12/20/24 20:59		Kareem	OK
75	P5342-03	HT2651	SAM	12/20/24 21:04		Kareem	OK
76	P5342-05	RB21198	SAM	12/20/24 21:08		Kareem	OK
77	P5343-03DUP	VNJ281DUP	DUP	12/20/24 21:12		Kareem	OK
78	P5343-03L	VNJ281L	SD	12/20/24 21:16		Kareem	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QC Batch ID # LB134054

Review By	jaswal	Review On	12/25/2024 1:47:05 AM
Supervise By	Mohan	Supervise On	12/25/2024 1:47:33 AM
STD. NAME	STD REF.#		
ICAL Standard	MP83500,MP83507,MP83505,MP83504,MP83503,MP83502,MP83501		
ICV Standard	MP83508		
CCV Standard	MP83511		
ICSA Standard	MP83509,MP83510		
CRI Standard			
LCS Standard			
Chk Standard	MP83513,MP83514		

79	P5343-03MSD	VNJ281MSD	MSD	12/20/24 21:24		Kareem	OK
80	P5343-03A	VNJ281A	PS	12/20/24 21:28		Kareem	OK
81	PB165753BL	PB165753BL	MB	12/20/24 21:32		Kareem	OK
82	CCV07	CCV07	CCV	12/20/24 21:37		Kareem	OK
83	CCB07	CCB07	CCB	12/20/24 22:04		Kareem	OK
84	PB165753BS	PB165753BS	LCS	12/20/24 22:08		Kareem	OK
85	P5337-01	ETGI-357	SAM	12/20/24 22:12		Kareem	OK
86	P5339-01	TR-06-12182024	SAM	12/20/24 22:17		Kareem	OK
87	P5355-01	RBR251688	SAM	12/20/24 22:21	MS/MSD fail for more than parameters	Kareem	Not Ok
88	P5355-01DUP	RBR251688DUP	DUP	12/20/24 22:25	MS/MSD fail for more than parameters	Kareem	Not Ok
89	P5355-01L	RBR251688L	SD	12/20/24 22:29	MS/MSD fail for more than parameters	Kareem	Not Ok
90	P5355-01MS	RBR251688MS	MS	12/20/24 22:33	MS/MSD fail for more than parameters	Kareem	Not Ok
91	P5355-01MSD	RBR251688MSD	MSD	12/20/24 22:38	MS/MSD fail for more than parameters	Kareem	Not Ok
92	P5355-01A	RBR251688A	PS	12/20/24 22:42	MS/MSD fail for more than parameters	Kareem	Not Ok
93	PB165786BL	PB165786BL	MB	12/20/24 22:46		Kareem	OK
94	CCV08	CCV08	CCV	12/20/24 23:01		Kareem	OK
95	CCB08	CCB08	CCB	12/20/24 23:12		Kareem	OK
96	PB165786BS	PB165786BS	LCS	12/20/24 23:17		Kareem	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QC Batch ID # LB134054

Review By	jaswal	Review On	12/25/2024 1:47:05 AM
Supervise By	Mohan	Supervise On	12/25/2024 1:47:33 AM
STD. NAME	STD REF.#		
ICAL Standard	MP83500,MP83507,MP83505,MP83504,MP83503,MP83502,MP83501		
ICV Standard	MP83508		
CCV Standard	MP83511		
ICSA Standard	MP83509,MP83510		
CRI Standard			
LCS Standard			
Chk Standard	MP83513,MP83514		

97	P5341-03	TOTE-425	SAM	12/20/24 23:21		Kareem	OK
98	P5291-13	WC-20241213	SAM	12/20/24 23:25		Kareem	OK
99	LR1	LR1	HIGH STD	12/20/24 23:29		Kareem	OK
100	LR2	LR2	HIGH STD	12/20/24 23:41		Kareem	OK
101	P5343-03MS	VNJ281MS	MS	12/20/24 23:46		Kareem	OK
102	CCV09	CCV09	CCV	12/20/24 23:55		Kareem	OK
103	CCB09	CCB09	CCB	12/21/24 00:05		Kareem	OK

Prep Standard - Chemical Standard Summary

Order ID : P5299

Test : Mercury, Metals ICP-TAL

Prepbatch ID : PB165722, PB165728,

Sequence ID/Qc Batch ID: LB133991, LB134054,

Standard ID :

MP83498, MP83675, MP83676, MP83677, MP83678, MP83679, MP83680, MP83681, MP83682, MP83683, MP83684, MP83685, MP83686, MP83687, MP83689,

Chemical ID :

M5062, M5585, M5882, M5953, M6000, M6009, M6121, M6125, M6126, 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	MP83498	12/09/2024	12/28/2024	Janvi Patel	None	None	Sarabjit Jaswal
								12/09/2024

FROM 1250.00000ml of M6126 + 1250.00000ml of W3112 = Final Quantity: 2500.000 ml

<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>
871	MERCURY INTERMEDIATE B 250PPB WORKING STD.	MP83675	12/18/2024	12/19/2024	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal
								12/18/2024

FROM 1.00000ml of M6126 + 2.50000ml of M5062 + 96.50000ml of W3112 = 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>
1340	Hg 0.00 PPB STD	MP83676	12/18/2024	12/19/2024	Mohan Bera	None	METALS_PIPETTE_5 (HG A)	Sarabjit Jaswal 12/18/2024
<u>FROM</u>	2.50000ml of M6126 + 247.50000ml of W3112 = 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>
1341	Hg 0.2 PPB STD	MP83677	12/18/2024	12/19/2024	Mohan Bera	None	METALS_PIPETTE_5 (HG A)	Sarabjit Jaswal 12/18/2024
<u>FROM</u>	2.50000ml of M6126 + 247.30000ml of W3112 + 0.20000ml of MP83675 = 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>
1342	Hg 2.5 PPB STD	MP83678	12/18/2024	12/19/2024	Mohan Bera	None	METALS_PIPETTE_5 (HG A)	Sarabjit Jaswal 12/18/2024
<u>FROM</u>	2.50000ml of M6126 + 245.00000ml of W3112 + 2.50000ml of MP83675 = 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>
1343	Hg 5.0 PPB STD	MP83679	12/18/2024	12/19/2024	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 12/18/2024
<u>FROM</u>	2.50000ml of M6126 + 242.50000ml of W3112 + 5.00000ml of MP83675 = 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>
1344	Hg 7.5 PPB STD	MP83680	12/18/2024	12/19/2024	Mohan Bera	None	METALS_PIPETTE_5 (HG	Sarabjit Jaswal
A) FROM 2.50000ml of M6126 + 240.00000ml of W3112 + 7.50000ml of MP83675 = 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>
1345	Hg 10.0 PPB STD	MP83681	12/18/2024	12/19/2024	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 12/18/2024
<u>FROM</u>	2.50000ml of M6126 + 237.50000ml of W3112 + 10.00000ml of MP83675 = 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>
1346	Hg ICV SOLUTION	MP83682	12/18/2024	12/19/2024	Mohan Bera	None	METALS_PIPETTE_5 (HG)	Sarabjit Jaswal
FROM 2.50000ml of M5953 + 2.50000ml of M6126 + 245.00000ml of W3112 = 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>
1351	ICB (Hg 0.00 PPB SOLUTION)	MP83683	12/18/2024	12/19/2024	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 12/18/2024
<u>FROM</u>	2.50000ml of M6126 + 247.50000ml of W3112 = 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>
1358	CCV (Hg 5.0 PPB SOLUTION)	MP83684	12/18/2024	12/19/2024	Mohan Bera	None	METALS_PIPETTE_5 (HG A)	Sarabjit Jaswal 12/18/2024
<u>FROM</u>	485.00000ml of W3112 + 5.00000ml of M6126 + 10.00000ml of MP83675 = 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>
1352	CCB (Hg 0.00 PPB SOLUTION)	MP83685	12/18/2024	12/19/2024	Mohan Bera	None	METALS_PIPETTE_5 (HG A)	Sarabjit Jaswal 12/18/2024
<u>FROM</u>	495.00000ml of W3112 + 5.00000ml of M6126 = 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>
1349	CRA/CRI (Hg 0.2 PPB SOLUTION)	MP83686	12/18/2024	12/19/2024	Mohan Bera	None	METALS_PIPETTE_5 (HG A)	Sarabjit Jaswal 12/18/2024
<u>FROM</u>	2.50000ml of M6126 + 247.30000ml of W3112 + 0.20000ml of MP83675 = 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>
1350	CHK STD (Hg 7.0 PPB SOLUTION)	MP83687	12/18/2024	12/19/2024	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 12/18/2024
<u>FROM</u>	2.50000ml of M6126 + 240.50000ml of W3112 + 7.00000ml of MP83675 = 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>PipettelD</u>	<u>Supervised By</u>
68	STANNOUS CHLORIDE SOLUTION	MP83689	12/18/2024	12/19/2024	Mohan Bera	METALS_SCALE_3 (M SC-3)	None	Sarabjit Jaswal 12/18/2024
<u>FROM</u> 450.00000ml of W3112 + 50.00000gram of M5882 + 50.00000ml of M6121 = Final Quantity: 500.000 ml								

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	MSHG-10PPM / MERCURY HCl 125mL 10ug/mL	S2-HG709270	09/22/2026	05/28/2022 / mohan	01/27/2022 / mohan	M5062

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	26397-103 / PTFE BOILING STONES	W126678	02/28/2025	01/20/2024 /	06/12/2023 / jaswal	M5585

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-3980-01 / Stannous Chloride (cs/4x500g)	232820	08/31/2028	04/30/2024 / mohan	04/25/2024 / mohan	M5882

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
EPA	ICV-5 / ICV (HG) STOCK SOLN	ICV5-0415	01/01/2025	07/01/2024 / mohan	03/30/2023 / mohan	M5953

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	WW-LFS-1 / Laboratory Fortified Stock Solution 1, 125 ml	T2-MEB723367	08/30/2026	08/13/2024 / Jaswal	05/14/2024 / Jaswal	M6000

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	WW-LFS-2 / Laboratory Fortified Stock Solution 2, 125 ml	U2-MEB731108	03/17/2028	08/13/2024 / Jaswal	05/14/2024 / Jaswal	M6009

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9530-33 / Hydrochloric Acid, Instra-Analyzed (cs/6x2.5L)	0000275677	05/13/2025	11/13/2024 / Eman	10/13/2024 / Eman	M6121

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	1403 / Hydrogen Peroxide, 30% 1 gal	820803	05/25/2025	11/26/2024 / Eman	11/22/2024 / Eman	M6125

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9598-34 / Nitric Acid, Instra-Analyzed (cs/4x2.5L)	24D1062002	06/03/2025	12/03/2024 / Janvi	11/12/2024 / Janvi	M6126

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

M5882
 M3

Certificate of Analysis

1 Reagent Lane
 Fair Lawn, NJ 07410
 201.796.7100 tel
 201.796.1329 fax

Thermo Fisher Scientific's Quality System has been found to conform to Quality Management System
 Standard ISO9001:2015 by SAI Global Certificate Number CERT – 0120633

This is to certify that units of the lot number below were tested and found to comply with the specifications of the grade listed. Certain data have been supplied by third parties. Thermo Fisher Scientific expressly disclaims all warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. Products are for research use or further manufacturing. Not for direct administration to humans or animals. It is the responsibility of the final formulator and end user to determine suitability based upon the intended use of the end product. Products are tested to meet the analytical requirements of the noted grade. The following information is the actual analytical results obtained.

Catalog Number	T142	Quality Test / Release Date	08/17/2023
Lot Number	232820		
Description	STANNOUS CHLORIDE, DIHYDRATE CERTIFIED ACS (Suitable for Mercury Determination)		
Country of Origin	United States	Suggested Retest Date	Aug/2028
Chemical Origin	Inorganic-non animal		
BSE/TSE Comment	No animal products are used as starting raw material ingredients, or used in processing, including lubricants, processing aids, or any other material that might migrate to the finished product.		

N/A			
Result Name	Units	Specifications	Test Value
APPEARANCE		REPORT	Clear crystals
ASSAY	%	Inclusive Between 98 - 103	100.65
CALCIUM	%	<= 0.005	0.0017
IDENTIFICATION	PASS/FAIL	= PASS TEST	PASS TEST
IRON (Fe)	%	<= 0.003	0.0011
LEAD (Pb)	%	<= 0.01	0.0006
MERCURY (Hg)	ppm	<= 0.05	<0.05
POTASSIUM (K)	%	<= 0.005	0.0001
SODIUM (Na)	%	<= 0.01	<0.01
SOLUBILITY IN HCL	PASS/FAIL	= PASS TEST	PASS TEST
SULFATE (SO4)	PASS/FAIL	= P.T. (ABOUT 0.003%)	P.T. (ABOUT 0.003%)



Harout Sahagian - Quality Control Supervisor - Fair Lawn

Note: The data listed is valid for all package sizes of this lot of this product, expressed as an extension of this catalog number listed above.

If there are any questions with this certificate, please call at (800) 227-6701.

*Based on suggested storage condition.



Refine your results. Redefine your industry. RD:05/14/2024

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:	WW-LFS-1
Lot Number:	T2-MEB723367
Matrix:	5% (v/v) HNO ₃

Value / Analyte(s):	1 000 µg/mL ea:	
	Potassium,	
	600 µg/mL ea:	
	Phosphorus,	
	300 µg/mL ea:	
	Sodium,	Iron,
	200 µg/mL ea:	
	Magnesium,	Aluminum,
	Cerium,	Selenium,
	Thallium,	
	100 µg/mL ea:	
	Lead,	Calcium,
	80 µg/mL ea:	
	Arsenic,	
	70 µg/mL ea:	
	Mercury,	
	50 µg/mL ea:	
	Nickel,	
	40 µg/mL ea:	
	Chromium,	
	30 µg/mL ea:	
	Copper,	Boron,
	Vanadium,	
	20 µg/mL ea:	
	Zinc,	Strontium,
	Barium,	Beryllium,
	Cadmium,	Cobalt,
	Manganese,	Lithium,
	7.5 µg/mL ea:	
	Silver	

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	200.0 ± 0.7 µg/mL	Arsenic, As	80.0 ± 0.7 µg/mL
Barium, Ba	20.00 ± 0.09 µg/mL	Beryllium, Be	20.00 ± 0.13 µg/mL
Boron, B	30.00 ± 0.18 µg/mL	Cadmium, Cd	20.00 ± 0.09 µg/mL
Calcium, Ca	100.0 ± 0.4 µg/mL	Cerium, Ce	200.0 ± 0.8 µg/mL
Chromium, Cr	40.00 ± 0.30 µg/mL	Cobalt, Co	20.00 ± 0.10 µg/mL
Copper, Cu	30.00 ± 0.13 µg/mL	Iron, Fe	300.0 ± 1.3 µg/mL
Lead, Pb	100.0 ± 0.4 µg/mL	Lithium, Li	20.00 ± 0.08 µg/mL
Magnesium, Mg	200.0 ± 0.8 µg/mL	Manganese, Mn	20.00 ± 0.08 µg/mL
Mercury, Hg	70.0 ± 0.3 µg/mL	Nickel, Ni	50.00 ± 0.22 µg/mL
Phosphorus, P	600.0 ± 2.7 µg/mL	Potassium, K	1 000 ± 4 µg/mL
Selenium, Se	200.0 ± 1.3 µg/mL	Silver, Ag	7.50 ± 0.03 µg/mL
Sodium, Na	300.0 ± 1.4 µg/mL	Strontium, Sr	20.01 ± 0.08 µg/mL
Thallium, Tl	200.0 ± 1.4 µg/mL	Vanadium, V	30.00 ± 0.13 µg/mL
Zinc, Zn	20.00 ± 0.09 µg/mL		

Density: 1.034 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	160729
Ag	Volhard	999c	999c
Ag	Calculated		See Sec. 4.2
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
As	ICP Assay	3103a	100818
B	ICP Assay	3107	190605
Ba	ICP Assay	3104a	140909
Ba	Gravimetric		See Sec. 4.2
Be	ICP Assay	3105a	090514
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Cd	ICP Assay	3108	130116
Cd	EDTA	928	928
Ce	ICP Assay	3110	090504
Ce	EDTA	928	928
Co	ICP Assay	3113	190630
Co	EDTA	928	928
Cr	ICP Assay	3112a	170630
Cu	ICP Assay	3114	121207
Cu	EDTA	928	928
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
Hg	ICP Assay	3133	160921
Hg	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Li	ICP Assay	3129a	100714
Li	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Na	ICP Assay	Traceable to 3152A	S2-NA700842
Na	Gravimetric		See Sec. 4.2
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Se	ICP Assay	3149	100901
Sr	EDTA	928	928
Sr	ICP Assay	Traceable to 3153a	K2-SR650985
Tl	ICP Assay	3158	151215
V	IC Assay	3165	160906
V	EDTA	928	928
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

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

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{\text{CRM/RM}}$, 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:

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

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

Low Silver Note: This solution contains "LOW" levels of Silver. Please store this entire bottle inside a sealed glass jar.

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

August 30, 2022

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

11.2 Lot Expiration Date

- August 30, 2026

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director





Refine your results. Redefine your industry.

RD:05/14/2024

Certificate of Analysis

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1.0 ACCREDITATION / REGISTRATION

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



2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution
Catalog Number: WW-LFS-2
Lot Number: U2-MEB731108
Matrix: 5% (v/v) HNO₃
tr. HF
Value / Analyte(s):
200 µg/mL ea:
Silica,
80 µg/mL ea:
Antimony,
70 µg/mL ea:
Tin,
40 µg/mL ea:
Molybdenum,
20 µg/mL ea:
Titanium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Antimony, Sb	80.1 ± 0.6 µg/mL	Molybdenum, Mo	40.03 ± 0.18 µg/mL
Silica, SiO ₂	200.2 ± 1.3 µg/mL	Tin, Sn	70.0 ± 0.4 µg/mL
Titanium, Ti	20.01 ± 0.13 µg/mL		

Density: 1.025 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Mo	ICP Assay	3134	130418
Mo	Calculated		See Sec. 4.2
Sb	ICP Assay	3102a	140911
SiO ₂	ICP Assay	3150	130912
Sn	ICP Assay	3161a	140917
Ti	ICP Assay	3162a	130925
Ti	Calculated		See Sec. 4.2

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

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{\text{CRM/RM}}$, 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:

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

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

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

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

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

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

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 17, 2023

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

11.2 Lot Expiration Date

- **March 17, 2028**

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



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1.0 ACCREDITATION / REGISTRATION

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



2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Mass Spec Solution
 Catalog Number: MSHG-10PPM
 Lot Number: S2-HG709270
 Matrix: 10% (v/v) HCl
 Value / Analyte(s): 10 µg/mL ea:
 Mercury
 Starting Material: Hg metal
 Starting Material Lot#: 1959
 Starting Material Purity: 99.9994%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10.001 ± 0.053 µg/mL
Density: 1.020 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Hg	ICP Assay	3133	160921
Hg	EDTA	928	928
Hg	Calculated		See Sec. 4.2

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

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

O	Ag	0.000011	M	Eu	<	0.000201	O	Na	0.000004	M	Se	<	0.015915	O	Zn	<	0.001510
O	Al	0.000001	O	Fe	0.000001	M	Nb	<	0.000201	O	Si	0.000005	M	Zr	<	0.000201	
M	As	<	0.000402	M	Ga	<	0.000201	M	Nd	<	0.000201	M	Sm	<	0.000201		
M	Au	<	0.003631	M	Gd	<	0.000201	M	Ni	<	0.000402	M	Sn	<	0.001007		
M	B	<	0.001208	M	Ge	<	0.000201	M	Os	<	0.000605	M	Sr	<	0.000201		
M	Ba	<	0.000201	M	Hf	<	0.000201	O	P	<	0.032370	M	Ta	<	0.000201		
M	Be	<	0.000201	s	Hg	<		M	Pb	<	0.000201	M	Tb	<	0.000201		
M	Bi	<	0.000201	M	Ho	<	0.000201	M	Pd	<	0.000403	M	Te	<	0.002216		
O	Ca	0.000007	M	In	<	0.000201	M	Pr	<	0.000201	M	Th	<	0.000201			
M	Cd	<	0.000201	M	Ir	<	0.000201	M	Pt	<	0.000402	M	Ti	<	0.000402		
M	Ce	<	0.000201	O	K	0.000020	M	Rb	<	0.000201	O	Tl	<	0.016508			
M	Co	<	0.000201	M	La	<	0.000201	M	Re	<	0.000201	M	Tm	<	0.000201		
O	Cr	<	0.003021	O	Li	<	0.000107	M	Rh	<	0.000201	M	U	<	0.008058		
M	Cs	<	0.001208	M	Lu	<	0.000201	M	Ru	<	0.000201	M	V	<	0.000201		
M	Cu	<	0.000402	O	Mg	0.000001	O	S	<	0.053950	M	W	<	0.000604			
M	Dy	<	0.000201	M	Mn	<	0.000604	M	Sb	<	0.001208	M	Y	<	0.000201		
M	Er	<	0.000201	M	Mo	0.000009	M	Sc	<	0.000201	M	Yb	<	0.000201			

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

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

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 200.59 +2 4 Hg(OH)(aq) 1+

Chemical Compatibility - Stable in HNO₃. Avoid basic media forming insoluble carbonate. The sulfide, basic carbonate, oxalate, phosphate, arsenite, arsenate and iodide are insoluble in water.

Stability - 2-100 ppb levels not stable in 1% HNO₃ / LDPE container, stable in 10% HNO₃ packaged in borosilicate glass. 1-100 ppm levels stable in 7% HNO₃ packaged in borosilicate glass. 1000-10,000 ppm solutions are chemically stable for years in 5-10% HNO₃ / LDPE container.

Hg Containing Samples (Preparation and Solution) - Metal (soluble in HNO₃); Oxide (Soluble in HNO₃); Ores and Organic based (The literature has more references to the preparation of Hg containing samples than any other element. Please consult the literature for your specific sample type, since such preparations are prone to error. Or e-mail our technical staff and we will contact you to discuss your particular sample preparation questions in further detail.).

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

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 202 amu	9 ppt	n/a	186W16O
ICP-OES 184.950 nm	0.03 / 0.005 µg/mL	1	
ICP-OES 194.227 nm	0.03 / 0.005 µg/mL	1	V
ICP-OES 253.652 nm	0.1 / 0.03 µg/mL	1	Ta, Co, Th ,Rh , Fe, U

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 22, 2021

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

11.2 Lot Expiration Date

- **September 22, 2026**

- The date after which this CRM/RM should not be used.
- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Uyen Truong
Supervisor, Product Documentation



Certificate Approved By:

Michael Booth
Director, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director





MATERIAL CERTIFICATE OF COMPLIANCE

DATE: JUNE 12, 2023

CUSTOMER: PCI SCIENTIFIC SUPPLY, INC

PURCHASE ORDER NO. 6054931

CATALOG NO. BOI5021-450L

PRODUCT DESCRIPTION: BOILING STONES, TFE, 454GMS

QUANTITY: 10 EACH

LOT NO. W126678

SPECIFICATION (S): Made from Virgin PTFE Resin

We certify that we have complied with the terms and conditions of the above Purchase Order and the Part Specifications in the manufacturing of the above product.



Laura Valencia
Quality Assurance Inspector

F:\J:\LCP\PCISCI\COC-55118-BOI5021-061223



QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
"An ISO 9001:2015 Certified Program"

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.



M5528-32
M5953
3/30/23

(A) **SAMPLE DESCRIPTION**

Enclosed is a set of one (1) or more Aqueous Inorganic Reference Materials containing various analyte concentrations. ICV1 and ICV5 are in a matrix of dilute nitric acid. ICV6 is in a matrix of dilute basic solution. **For the reference material source in reporting ICVs use "USEPA". For the reference material lot number for the ICV1, ICV5, and ICV6 solutions use "ICV1-1014", "ICV5-0415", and "ICV6-0400", respectively.**

(B) **BREAKAGE OR MISSING ITEMS**

Check the contents of the shipment carefully for any broken, leaking, or missing items. Check that the seal is intact on each bottle. Refer to the enclosed chain of custody record. Report any problems to Mr. Keith Strout, APTIM Federal Services, LLC, at (702) 895-8722. If requested, return the chain-of-custody record with appropriate annotations and signatures to the address provided below.

QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
APTIM Federal Services, LLC
2700 Chandler Avenue - Building C
Las Vegas, NV 89120

(C) **ANALYSIS OF SAMPLES**

The Initial Calibration Verification Solutions (ICVs) are to be used to evaluate the accuracy of the initial calibrations of ICP, AA, and Cyanide colorimetric instruments, and are to be used with the CLP SOWs and revisions. The values for each element in the ICVs are listed below in µg/L (ppb) for the resulting solution(s) after the dilution of the concentrate(s) according to the following instructions. Use Class 'A' glassware to prepare the solution(s).

ICV1-1014 For ICP-AES analysis, use a 10-fold dilution by pipetting 10 mL of the ICV1 concentrate into a 100 mL volumetric flask and dilute to volume with 2% (v/v) nitric acid.





QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
"An ISO 9001:2015 Certified Program"

Instructions for QATS Reference Material: Inorganic ICV Solutions

ICV1-1014

For ICP-MS analysis, use a 50-fold dilution by pipetting 2 mL of the ICV1 concentrate into a 100 mL volumetric flask and dilute to volume with 1% (v/v) nitric acid.

ICV5-0415

For the cold vapor analysis of mercury by AA, use a 100-fold dilution by pipetting 1 mL of the ICV5 concentrate into a 100 mL volumetric flask and dilute to volume with 2% (v/v) nitric acid. The ICV5 concentrate is prepared in 0.05% (w/v) $K_2Cr_2O_7$ and 5% (v/v) nitric acid.

ICV6-0400

For the analysis of cyanide, use a 100-fold dilution by pipetting 1 mL of the ICV6 concentrate into a 100 mL volumetric flask and dilute to volume with Type II water. Distill this solution along with the samples before analysis. The cyanide concentrate is prepared from $K_3Fe(CN)_6$, Type II water, and 0.1 % sodium hydroxide, and will decompose rapidly if exposed to light.

NOTE: USE TYPE II WATER AND HIGH-PURITY ACIDS FOR ALL DILUTIONS.

(D) CERTIFIED CONCENTRATIONS OF QATS ICV1, ICV5, AND ICV6 SOLUTIONS

ICV1-1014		
Element	Concentration (µg/L) (after 10-fold dilution)	Concentration (µg/L) (after 50-fold dilution)
Al	2500	500
Sb	1000	200
As	1000	200
Ba	520	100
Be	510	100
Cd	510	100
Ca	10000	2000
Cr	520	100
Co	520	100
Cu	510	100
Fe	10000	2000
Pb	1000	200
Mg	6000	1200
Mn	520	100
Ni	530	110
K	9900	2000
Se	1000	200
Ag	250	50
Na	10000	2000
Tl	1000	210
V	500	100
Zn	1000	200

ICV5-0415		ICV6-0400	
Element	Concentration (µg/L) (after 100-fold dilution)	Analyte	Concentration (µg/L) (after 100-fold dilution)
Hg	4.0	CN ⁻	99

Hydrochloric Acid, 36.5-38.0%
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis

avantor™



R → 16/13/24
Met dig

M 6121

Material No.: 9530-33
Batch No.: 0000275677
Manufactured Date: 2020/12/16
Retest Date: 2025/12/15
Revision No: 1

Certificate of Analysis

Test	Specification	Result
ACS - Assay (as HCl) (by acid-base titrn)	36.5 - 38.0 %	37.6
ACS - Color (APHA)	<= 10	5
ACS - Residue after Ignition	<= 3 ppm	1
ACS - Specific Gravity at 60°/60°F	1.185 - 1.192	1.190
ACS - Bromide (Br)	<= 0.005 %	< 0.005
ACS - Extractable Organic Substances	<= 5 ppm	1
ACS - Free Chlorine (as Cl ₂)	<= 0.5 ppm	< 0.5
Phosphate (PO ₄)	<= 0.05 ppm	< 0.03
Sulfate (SO ₄)	<= 0.5 ppm	< 0.3
Sulfite (SO ₃)	<= 0.8 ppm	0.3
Ammonium (NH ₄)	<= 3 ppm	< 1
Trace Impurities - Arsenic (As)	<= 0.010 ppm	< 0.003
Trace Impurities - Aluminum (Al)	<= 10.0 ppb	< 0.2
Arsenic and Antimony (as As)	<= 5 ppb	< 3
Trace Impurities - Barium (Ba)	<= 1.0 ppb	< 0.2
Trace Impurities - Beryllium (Be)	<= 1.0 ppb	< 0.2
Trace Impurities - Bismuth (Bi)	<= 10.0 ppb	< 1.0
Trace Impurities - Boron (B)	<= 20.0 ppb	< 5.0
Trace Impurities - Cadmium (Cd)	<= 1.0 ppb	< 0.3
Trace Impurities - Calcium (Ca)	<= 50.0 ppb	29.7
Trace Impurities - Chromium (Cr)	<= 1.0 ppb	< 0.4
Trace Impurities - Cobalt (Co)	<= 1.0 ppb	< 0.3
Trace Impurities - Copper (Cu)	<= 1.0 ppb	< 0.1
Trace Impurities - Gallium (Ga)	<= 1.0 ppb	< 0.2

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700

Avantor Performance Materials, LLC

100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone: 610.386.1700

Material No.: 9530-33
Batch No.: 0000275677

Test	Specification	Result
Trace Impurities – Germanium (Ge)	<= 3.0 ppb	< 2.0
Trace Impurities – Gold (Au)	<= 4.0 ppb	< 0.2
Heavy Metals (as Pb)	<= 100 ppb	< 50
Trace Impurities – Iron (Fe)	<= 15.0 ppb	< 1
Trace Impurities – Lead (Pb)	<= 1.0 ppb	< 0.5
Trace Impurities – Lithium (Li)	<= 1.0 ppb	0.2
Trace Impurities – Magnesium (Mg)	<= 10.0 ppb	0.4
Trace Impurities – Manganese (Mn)	<= 1.0 ppb	< 0.4
Trace Impurities – Mercury (Hg)	<= 0.5 ppb	0.1
Trace Impurities – Molybdenum (Mo)	<= 10.0 ppb	< 5.0
Trace Impurities – Nickel (Ni)	<= 4.0 ppb	< 0.3
Trace Impurities – Niobium (Nb)	<= 1.0 ppb	< 0.2
Trace Impurities – Potassium (K)	<= 9.0 ppb	< 2.0
Trace Impurities – Selenium (Se), For Information Only	ppb	1.0
Trace Impurities – Silicon (Si)	<= 100.0 ppb	< 10.0
Trace Impurities – Silver (Ag)	<= 1.0 ppb	< 0.3
Trace Impurities – Sodium (Na)	<= 100.0 ppb	< 5.0
Trace Impurities – Strontium (Sr)	<= 1.0 ppb	< 0.2
Trace Impurities – Tantalum (Ta)	<= 1.0 ppb	< 0.9
Trace Impurities – Thallium (Tl)	<= 5.0 ppb	< 2.0
Trace Impurities – Tin (Sn)	<= 5.0 ppb	< 0.8
Trace Impurities – Titanium (Ti)	<= 1.0 ppb	0.2
Trace Impurities – Vanadium (V)	<= 1.0 ppb	< 0.2
Trace Impurities – Zinc (Zn)	<= 5.0 ppb	0.3
Trace Impurities – Zirconium (Zr)	<= 1.0 ppb	< 0.1

For Laboratory, Research or Manufacturing Use

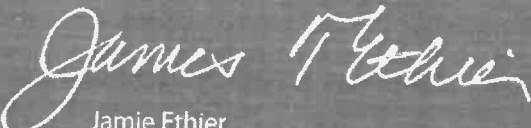
Product Information (not specifications):

Appearance (clear, fuming liquid)

Meets ACS Specifications

Country of Origin: US

Packaging Site: Phillipsburg Mfg Ctr & DC


Jamie Ethier
Vice President Global Quality

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700

Avantor Performance Materials, LLC

100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone: 610.386.1700

M612 S

Receive → 11/22/24

CORCO CHEMICAL CORPORATION

Manufacturers of ACS Reagents and Semiconductor Grade Chemicals

Office and Plant
299 Cedar Lane
Fairless Hills, PA 19030

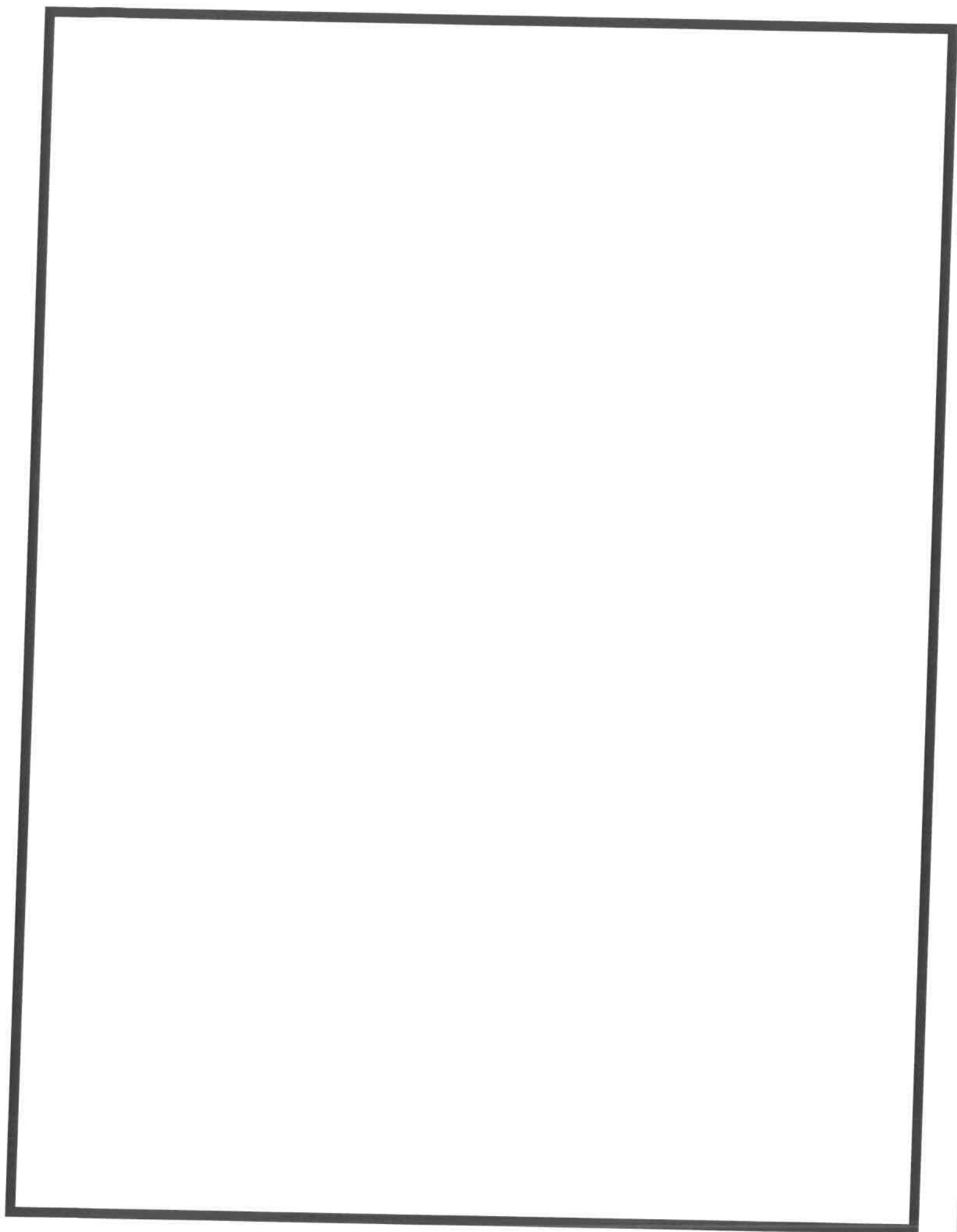
Phone: 215-295-5006
Fax: 215-295-0781

Hydrogen Peroxide 30%, ACS Reagent Grade

SPECIFICATION

MAXIMUM LIMITS

Appearance	Colorless and free from suspended matter or sediment
Assay	29-32%
Color (APHA)	10
Residue after Evaporation	0.002%
Titrateable Acid	0.0006 meq/g
Chloride (Cl)	3 ppm
Nitrate (NO ₃)	2 ppm
Phosphate	2 ppm
Sulfate (SO ₄)	5 ppm
Ammonium (NH ₄)	5 ppm
Heavy Metals (as Pb)	1 ppm
Iron (Fe)	0.5 ppm



Nitric Acid 69%
CMOS



R → 11/12/24

M6126

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

Certificate of Analysis

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

>>> Continued on page 2 >>>

Nitric Acid 69%
CMOS

 **avantor**TM



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

Test	Specification	Result
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For Microelectronic Use

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



Jamie Croak
Director Quality Operations, Bioscience Production



SHIPPING DOCUMENTS

CLIENT INFORMATION

REPORT TO BE SENT TO:

COMPANY: Gannett Fleming
ADDRESS: 1010 Adams Ave
CITY: Audobon STATE: PA ZIP: 19405
ATTENTION: JOE Krupansky
PHONE: 610-301-8342 FAX:

CLIENT PROJECT INFORMATION

PROJECT NAME: Amtrak Replacement of
PROJECT NO: 950000313 LOCATION: Kearny NJ
PROJECT MANAGER: JOE Krupansky
e-mail: QAQC@PEMSYS.COM
PHONE: 610-301-8342 FAX:

CLIENT BILLING INFORMATION

BILL TO: Alliance PO#:
ADDRESS: 284 Sheffield St
CITY: Mountainside STATE: NJ ZIP: 07093
ATTENTION: Samantha Beans PHONE: 908-788-3148

ANALYSIS

DATA TURNAROUND INFORMATION

FAX (RUSH) _____ DAYS*
HARDCOPY (DATA PACKAGE): 10 DAYS*
EDD: 10 DAYS*

*TO BE APPROVED BY CHEMTECH

STANDARD HARDCOPY TURNAROUND TIME IS 10 BUSINESS DAYS

DATA DELIVERABLE INFORMATION

☐ Level 1 (Results Only) ☐ Level 4 (QC + Full Raw Data)
☐ Level 2 (Results + QC) ☒ NJ Reduced ☐ US EPA CLP
☐ Level 3 (Results + QC) ☐ NYS ASP A ☐ NYS ASP B
+ Raw Data ☐ Other _____
☐ EDD FORMAT BEM EDD1 TCL VECTO
2 TCL FAHS
3 TAL PCBs
4 TAL metals
5 C(L)(II)
6 C(L)(VI)
7 EPH
8
9

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE		SAMPLE COLLECTION		# OF BOTTLES	PRESERVATIVES									COMMENTS	
			COMP	GRAB	DATE	TIME		1	2	3	4	5	6	7	8	9	← Specify Preservatives A-HCl D-NaOH B-HNO3 E-ICE C-H2SO4 F-OTHER	
1. B-124	SB-01	S		X	12/14	4:14 PM	5	X	X	X	X	X	X	X				
2. B-124	SB-02				12/15	10:17 AM	6	X	X	X	X	X	X	X				
3. B-134	SB-01				12/15	4:02 PM	6	X	X	X	X	X	X	X				
4. B-134	SB-02				12/15	5:27 PM	6	X	X	X	X	X	X	X				
5.																		
6.																		
7.																		
8.																		
9.																		
10.																		

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE/TIME: 1100	RECEIVED BY:	1100	Conditions of bottles or containers receipt: ☐ COMPLIANT ☐ NON COMPLIANT ☐ COOLER TEMP 3.5 °C
1. Dylan Grana	12-16-24	1.	12-16-24	Comments: [Signature]
RELINQUISHED BY SAMPLER:	DATE/TIME:	RECEIVED BY:		
2.		2.		
RELINQUISHED BY SAMPLER:	DATE/TIME: 1700	RECEIVED BY:		
3.	12-16-24	3.		
Page ____ of ____		CLIENT: ☐ Hand Delivered ☐ Other _____		Shipment Complete
		CHEMTECH: ☐ Picked Up ☐ Field Sampling		☐ YES ☐ NO



284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Laboratory Certification

Certified By	License No.
CAS EPA CLP Contract	68HERH20D0011
Connecticut	PH-0830
DOD ELAP (ANAB)	L2219
Maine	2024021
Maryland	296
New Hampshire	255424 Rev 1
New Jersey	20012
New York	11376
Pennsylvania	68-00548
Soil Permit	525-24-234-08441
Texas	T104704488

LOGIN REPORT/SAMPLE TRANSFER

Order ID : P5299	PORT06	Order Date : 12/16/2024 12:24:00 PM	Project Mgr :
Client Name : Portal Partners Tri-Venture		Project Name : Amtrak Sawtooth Bridges 2	Report Type : NJ Reduced
Client Contact : Joseph Krupansky		Receive DateTime : 12/16/2024 11:00:00 AM	EDD Type : EXCEL NJCLEANUP
Invoice Name : Portal Partners Tri-Venture		Purchase Order :	Hard Copy Date :
Invoice Contact : Joseph Krupansky			Date Signoff :

LAB ID	CLIENT ID	MATRIX	SAMPLE DATE	SAMPLE TIME	TEST	TEST GROUP	METHOD	FAX DATE	DUE DATES
P5299-01	SB-01	Solid	12/14/2024	16:14	VOC-TCLVOA-10		8260D	10 Bus. Days	
P5299-02	SB-02	Solid	12/15/2024	10:17	VOC-TCLVOA-10		8260D	10 Bus. Days	
P5299-03	SB-01	Solid	12/15/2024	16:02	VOC-TCLVOA-10		8260D	10 Bus. Days	
P5299-04	SB-02	Solid	12/15/2024	17:27	VOC-TCLVOA-10		8260D	10 Bus. Days	

Relinquished By :

Date / Time : 12/17/24 0900

Received By :

Date / Time :

Storage Area : VOA Refridgerator Room