

PREP BATCH REPORT

Prep Code: **PRP-3010**
 Prep Batch **164289** Prep Temp **90.2 °C**

Technician: **Jason E. Backes**
 Batch Units: **ML**

Prep Start Date: **3/7/2022 4:29:33 PM**
 Prep End Date: **3/8/2022 12:05:00 PM**

Sample ID	Matrix	pH	Initial Samp Amt	Sol Added	Sol Recovered	Final Vol (mL)	Factor	Balance	Prep Start Date	Prep End Date
MB-164289			50	0	0	50	1		3/7/2022	3/8/2022
LCS4-164289			50	0	0	50	1		3/7/2022	3/8/2022
B22030244-001B	Ground Water		50	0	0	50	1		3/7/2022	3/8/2022
B22030244-001BMS4			50	0	0	50	1		3/7/2022	3/8/2022
B22030244-001BMSD4			50	0	0	50	1		3/7/2022	3/8/2022
B22030244-007B	Ground Water		50	0	0	50	1		3/7/2022	3/8/2022
B22030244-012B	Ground Water		50	0	0	50	1		3/7/2022	3/8/2022
B22030244-017B	Ground Water		50	0	0	50	1		3/7/2022	3/8/2022
B22030244-022B	Ground Water		50	0	0	50	1		3/7/2022	3/8/2022
B22030244-027B	Ground Water		50	0	0	50	1		3/7/2022	3/8/2022
B22030244-032B	Ground Water		50	0	0	50	1		3/7/2022	3/8/2022
B22030244-037B	Ground Water		50	0	0	50	1		3/7/2022	3/8/2022
B22030244-042B	Ground Water		50	0	0	50	1		3/7/2022	3/8/2022
B22030244-047B	Ground Water		50	0	0	50	1		3/7/2022	3/8/2022
B22030433-001B	Ground Water		50	0	0	50	1		3/7/2022	3/8/2022
B22030433-001BMS4			50	0	0	50	1		3/7/2022	3/8/2022
B22030433-001BMSD4			50	0	0	50	1		3/7/2022	3/8/2022
B22030433-007B	Ground Water		50	0	0	50	1		3/7/2022	3/8/2022
B22030433-012B	Ground Water		50	0	0	50	1		3/7/2022	3/8/2022
B22030433-017B	Ground Water		50	0	0	50	1		3/7/2022	3/8/2022
B22030433-023B	Ground Water		50	0	0	50	1		3/7/2022	3/8/2022
B22030433-038B	Ground Water		50	0	0	50	1		3/7/2022	3/8/2022
B22030433-043B	Ground Water		50	0	0	50	1		3/7/2022	3/8/2022
B22030433-053B	Ground Water		50	0	0	50	1		3/7/2022	3/8/2022

Number	Reagent Name	Exp Date	
14614	50mL DigiTubes J526127-2104	12/10/2022	
14721	Hydrochloric Acid E1421	1/4/2027	1 mL
14778	Nitric Acid, 69.0-70.0% D0521	1/18/2027	6 mL

Spk ID	Spike Name	SampType	AmtAdd	Exp Date
ME220125 EL-MS	EL-MSICV-2	LCS4/MS4	0.05 ml	1/25/2023
ME220216 EL200	EL-200.2MS	LCS4/MS4	0.05 mL	2/16/2023
ME220223 AUDI	AUDIGSPK	LCS4/MS4	0.05 ml	10/25/2022

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Technician: **Jason E. Backes**
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Prep Start Date: **3/7/2022 4:29:33 PM**
 Prep End Date: **3/8/2022 12:05:00 PM**

Sample ID	Matrix	pH	Initial Samp Amt	Sol Added	Sol Recovered	Final Vol (mL)	Factor	Balance	Prep Start Date	Prep End Date
B22030433-058B	Ground Water		50	0	0	50	1		3/7/2022	3/8/2022
B22030433-064B	Ground Water		50	0	0	50	1		3/7/2022	3/8/2022

Number	Reagent Name	Exp Date
14614	50mL DigiTubes J526127-2104	12/10/2022
14721	Hydrochloric Acid E1421	1/4/2027
14778	Nitric Acid, 69.0-70.0% D0521	1/18/2027

Spk ID	Spike Name	SampType	AmtAdd	Exp Date
ME220125	EL-MS	EL-MSICV-2	0.05 ml	1/25/2023
ME220216	EL200	EL-200.2MS	0.05 mL	2/16/2023
ME220223	AUDI	AUDIGSPK	0.05 ml	10/25/2022

Energy Laboratories Inc

ANALYTICAL RUN Summary

14-Mar-22

Run ID ICPMS207-B_220308A

Run Start Date:	3/8/2022 1:30:19 P
Analyst:	Stacy R. Hendricks
Ical:	0
Column ID:	
Comments:	Supervised by CAR. Reviewed and reported by CAR

Instrument ID	Description
05K74291	Metals 0.5-5 mL Adjustable Pipette
06H37847	100-1000 uL volume displacement pipette
340760037	Metals 100-1000 uL Adjustable Pipette
340760040	Metals 100-1000 uL Adjustable Pipette
841980007	1000-5000uL Pipette
841980009	1000-5000uL Pipette
M38354H	eppendorf adjustable 10-100 ul pipet

Std ID	Std Name	Std Amount	Std Units	Samp Amount	Samp Units	SampType	Expiration Date
ME210901 ICSA	ICSA					ICSA	9/1/2022
ME210901 ICSAB	ICSAB					ICSAB	9/1/2022
ME211206 ICV STANDARD	ICV for ICPMS Standards					ICV	4/30/2022
ME220112 0.025 PPB STAND	0.025 ppb Standard						11/18/2022
ME220112 0.05 PPB STAND	0.5 ppb Standard						11/18/2022
ME220112 0.1 PPB STAND	0.1 ppb Standard						11/18/2022
ME220112 0.5 PPB STAND	0.5 ppb Standard						11/18/2022
ME220112 1 PPB STANDARD	1 ppb Standard						11/18/2022
ME220112 10 PPB STAND	10 ppb Standard					CCV	11/18/2022
ME220112 100 PPB STAND	100 ppb Standard					CAL8	11/18/2022
ME220112 50 PPB STAND	50 ppb Standard/CCV					CRI	11/18/2022
ME220112 SS1	SS1 ICPMS Spiking Solution					LFB/MS	12/8/2022
ME220112A 1000 PPB STAND	1000 PPB Standard					URL	11/18/2022
ME220114A Tune Solution	Tune Solution						12/7/2022

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078263	Rinse	ICPMS-6020-W- SAMP			3/8/2022 1:30:19	1	R375855			0	0					
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078264	Rinse	ICPMS-6020-W- SAMP			3/8/2022 1:36:35	1	R375855			0	0					
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078265	Rinse	ICPMS-6020-W-	SAMP		3/8/2022 1:42:50	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078266	Cal Blk	ICPMS-6020-W-	SAMP		3/8/2022 1:49:06	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0	0		0	0	0	6.768E-05	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	0	0		0	0	0	8.203E-05	0.001	1	0%	0	0	0%	
Barium	A	mg/L	0	0		0	0	0	6.762E-05	0.001	1	0%	0	0	0%	
Beryllium	A	mg/L	0	0		0	0	0	8.516E-05	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0	0		0	0	0	2.308E-05	0.001	1	0%	0	0	0%	
Cerium	A	mg/L	0	0		0	0	0	0.0000222	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	0	0		0	0	0	0.0002538	0.001	1	0%	0	0	0%	
Lanthanum	A	mg/L	0	0		0	0	0	6.805E-05	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0	0		0	0	0	3.031E-05	0.001	1	0%	0	0	0%	
Manganese	A	mg/L	0	0		0	0	0	7.309E-05	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	0	0		0	0	0	8.113E-05	0.001	0.1	0%	0	0	0%	
Silver	A	mg/L	0	0		0	0	0	2.644E-05	0.001	0.04	0%	0	0	0%	
Strontium	A	mg/L	0	0		0	0	0	9.743E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0	0		0	0	0	4.842E-05	0.001	1	0%	0	0	0%	
Thorium	A	mg/L	0	0		0	0	0	3.018E-05	0.001	1	0%	0	0	0%	
Titanium	A	mg/L	0	0		0	0	0	0.0001004	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0	0		0	0	0	2.468E-05	0.0003	1	0%	0	0	0%	
Magnesium	B	mg/L	0	0		0	0	0	0.0203306	0.00564	50	0%	0	0	0%	L
Potassium	B	mg/L	0	0		0	0	0	0.0215433	0.08139	50	0%	0	0	0%	L
Sodium	B	mg/L	0	0		0	0	0	0.0451914	0.02171	50	0%	0	0	0%	L
Tin	B	mg/L	0	0		0	0	0	0.0009928	0.00132	0.1	0%	0	0	0%	
Vanadium	B	mg/L	0	0		0	0	0	0.0018612	0.0013	1	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078267	0.025 ppb STD	ICPMS-6020B-C	Cal1		3/8/2022 1:56:34	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.000025	0.000025		0	0	0		0.001		0%			0%	
Arsenic	A	mg/L	0.000025	0.000025		0.000025	0	0		0.001		100%	80	120	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078267	0.025 ppb STD	ICPMS-6020B-C Cal1			3/8/2022 1:56:34	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Barium	A	mg/L	0.000025	0.000025		0.000025	0	0		0.0003		100%	80	120	0%	
Beryllium	A	mg/L	0.000025	0.000025		0.000025	0	0		0.001		100%	80	120	0%	
Cadmium	A	mg/L	0.000025	0.000025		0.000025	0	0		0.001		100%	80	120	0%	
Calcium	A	mg/L	0.00625	0.00625		0	0	0		1		0%			0%	
Cerium	A	mg/L	0.000025	0.000025		0.000025	0	0		0.001		100%	80	120	0%	
Chromium	A	mg/L	0.000025	0.000025		0.000025	0	0		0.001		100%	80	120	0%	
Cobalt	A	mg/L	0.000025	0.000025		0.000025	0	0		0.001		100%	80	120	0%	
Copper	A	mg/L	0.000025	0.000025		0	0	0		0.005		0%			0%	
Iron	A	mg/L	0.00065	0.00065		0	0	0		0.01		0%			0%	
Lanthanum	A	mg/L	0.000025	0.000025		0.000025	0	0		0.001		100%	80	120	0%	
Lead	A	mg/L	0.000025	0.000025		0.000025	0	0		0.001		100%	80	120	0%	
Lithium	A	mg/L	0.0003125	0.0003125		0.0003125	0	0		1		100%	80	120	0%	
Magnesium	A	mg/L	0.00625	0.00625		0	0	0		1		0%			0%	
Manganese	A	mg/L	0.000025	0.000025		0	0	0		0.001		0%			0%	
Molybdenum	A	mg/L	0.000025	0.000025		0	0	0		0.001		0%			0%	
Nickel	A	mg/L	0.000025	0.000025		0	0	0		0.005		0%			0%	
Potassium	A	mg/L	0.00625	0.00625		0.00625	0	0		1		100%	80	120	0%	
Selenium	A	mg/L	0.000025	0.000025		0.000025	0	0		0.005		100%	80	120	0%	
Silver	A	mg/L	0.00001	0.00001		0	0	0		0.001		0%			0%	
Sodium	A	mg/L	0.00625	0.00625		0.00625	0	0		1		100%	80	120	0%	
Strontium	A	mg/L	0.000025	0.000025		0	0	0		0.001		0%	80	120	0%	
Thallium	A	mg/L	0.000025	0.000025		0	0	0		0.001		0%			0%	
Thorium	A	mg/L	0.000025	0.000025		0	0	0		0.05		0%			0%	
Tin	A	mg/L	0.000025	0.000025		0	0	0		0.001		0%			0%	
Titanium	A	mg/L	0.000025	0.000025		0	0	0		0.001		0%			0%	
Uranium	A	mg/L	0.000025	0.000025		0.000025	0	0		0.001		100%	80	120	0%	
Vanadium	A	mg/L	0.000025	0.000025		0	0	0		0.005		0%			0%	
Iron, Ferrous	C	mg/L	0.00065	0.00065		0.000025	0	0		0.01	5	2600%	80	120	0%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078268	Rinse	ICPMS-6020-W- SAMP			3/8/2022 3:08:35	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078268	Rinse	ICPMS-6020-W-	SAMP		3/8/2022 3:08:35	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	-6.811E-06	0		0	0	0	6.768E-05	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	-2.499E-05	0		0	0	0	8.203E-05	0.001	1	0%	0	0	0%	
Barium	A	mg/L	-1.464E-06	0		0	0	0	6.762E-05	0.001	1	0%	0	0	0%	
Beryllium	A	mg/L	-7.995E-05	0		0	0	0	8.516E-05	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	-7.306E-07	0		0	0	0	2.308E-05	0.001	1	0%	0	0	0%	
Cerium	A	mg/L	-4.424E-08	0		0	0	0	0.0000222	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	-7.707E-06	0		0	0	0	0.0002538	0.001	1	0%	0	0	0%	
Lanthanum	A	mg/L	-3.351E-05	0		0	0	0	6.805E-05	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	-4.787E-06	0		0	0	0	3.031E-05	0.001	1	0%	0	0	0%	
Manganese	A	mg/L	-1.752E-05	0		0	0	0	7.309E-05	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	-1.504E-06	0		0	0	0	8.113E-05	0.001	0.1	0%	0	0	0%	
Silver	A	mg/L	-1.41E-06	0		0	0	0	2.644E-05	0.001	0.04	0%	0	0	0%	
Strontium	A	mg/L	-9.146E-07	0		0	0	0	9.743E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	-1.971E-06	0		0	0	0	4.842E-05	0.001	1	0%	0	0	0%	
Thorium	A	mg/L	-2.808E-06	0		0	0	0	3.018E-05	0.001	1	0%	0	0	0%	
Titanium	A	mg/L	1.889E-06	0		0	0	0	0.0001004	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	2.999E-08	0		0	0	0	2.468E-05	0.0003	1	0%	0	0	0%	
Magnesium	B	mg/L	0.001265	0		0	0	0	0.0203306	0.00564	50	0%	0	0	0%	L
Potassium	B	mg/L	0.00004815	0		0	0	0	0.0215433	0.08139	50	0%	0	0	0%	L
Sodium	B	mg/L	-0.004336	0		0	0	0	0.0451914	0.02171	50	0%	0	0	0%	L
Tin	B	mg/L	-9.34E-06	0		0	0	0	0.0009928	0.00132	0.1	0%	0	0	0%	
Vanadium	B	mg/L	0.0009483	0		0	0	0	0.0018612	0.0013	1	0%	0	0	0%	

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15078269	Rinse	ICPMS-6020-W-	SAMP		3/8/2022 3:14:50	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	-8.457E-06	0		0	0	0	6.768E-05	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	-1.294E-05	0		0	0	0	8.203E-05	0.001	1	0%	0	0	0%	
Barium	A	mg/L	-7.868E-07	0		0	0	0	6.762E-05	0.001	1	0%	0	0	0%	
Beryllium	A	mg/L	-0.0000677	0		0	0	0	8.516E-05	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	-1.419E-07	0		0	0	0	2.308E-05	0.001	1	0%	0	0	0%	
Cerium	A	mg/L	-2.032E-07	0		0	0	0	0.0000222	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	-5.818E-06	0		0	0	0	0.0002538	0.001	1	0%	0	0	0%	
Lanthanum	A	mg/L	-3.746E-05	0		0	0	0	6.805E-05	0.001	0.1	0%	0	0	0%	

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15078269	Rinse	ICPMS-6020-W-	SAMP		3/8/2022 3:14:50	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Lead	A	mg/L	-4.966E-06	0		0	0	0	3.031E-05	0.001	1	0%	0	0	0%	
Manganese	A	mg/L	-1.704E-05	0		0	0	0	7.309E-05	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	4.222E-06	0		0	0	0	8.113E-05	0.001	0.1	0%	0	0	0%	
Silver	A	mg/L	-7.308E-07	0		0	0	0	2.644E-05	0.001	0.04	0%	0	0	0%	
Strontium	A	mg/L	-1.223E-07	0		0	0	0	9.743E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	-1.935E-06	0		0	0	0	4.842E-05	0.001	1	0%	0	0	0%	
Thorium	A	mg/L	6.442E-06	0		0	0	0	3.018E-05	0.001	1	0%	0	0	0%	
Titanium	A	mg/L	-3.597E-06	0		0	0	0	0.0001004	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	6.313E-08	0		0	0	0	2.468E-05	0.0003	1	0%	0	0	0%	
Magnesium	B	mg/L	0.0009748	0		0	0	0	0.0203306	0.00564	50	0%	0	0	0%	L
Potassium	B	mg/L	0.001227	0		0	0	0	0.0215433	0.08139	50	0%	0	0	0%	L
Sodium	B	mg/L	-0.004599	0		0	0	0	0.0451914	0.02171	50	0%	0	0	0%	L
Tin	B	mg/L	-1.198E-05	0		0	0	0	0.0009928	0.00132	0.1	0%	0	0	0%	
Vanadium	B	mg/L	0.001002	0		0	0	0	0.0018612	0.0013	1	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078270	Rinse	ICPMS-6020-W-	SAMP		3/8/2022 3:21:05	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	-6.401E-06	0		0	0	0	6.768E-05	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	-2.142E-05	0		0	0	0	8.203E-05	0.001	1	0%	0	0	0%	
Barium	A	mg/L	-1.859E-07	0		0	0	0	6.762E-05	0.001	1	0%	0	0	0%	
Beryllium	A	mg/L	-7.909E-05	0		0	0	0	8.516E-05	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	1.139E-06	0		0	0	0	2.308E-05	0.001	1	0%	0	0	0%	
Cerium	A	mg/L	-2.551E-07	0		0	0	0	0.0000222	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	-8.23E-06	0		0	0	0	0.0002538	0.001	1	0%	0	0	0%	
Lanthanum	A	mg/L	-3.786E-05	0		0	0	0	6.805E-05	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	-5.706E-06	0		0	0	0	3.031E-05	0.001	1	0%	0	0	0%	
Manganese	A	mg/L	-1.546E-05	0		0	0	0	7.309E-05	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	2.701E-06	0		0	0	0	8.113E-05	0.001	0.1	0%	0	0	0%	
Silver	A	mg/L	-3.934E-07	0		0	0	0	2.644E-05	0.001	0.04	0%	0	0	0%	
Strontium	A	mg/L	-4.609E-06	0		0	0	0	9.743E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	-2.497E-06	0		0	0	0	4.842E-05	0.001	1	0%	0	0	0%	
Thorium	A	mg/L	-1.921E-06	0		0	0	0	3.018E-05	0.001	1	0%	0	0	0%	
Titanium	A	mg/L	-6.297E-06	0		0	0	0	0.0001004	0.001	1	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078270	Rinse	ICPMS-6020-W-	SAMP		3/8/2022 3:21:05	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Uranium	A	mg/L	9.479E-09	0		0	0	0	2.468E-05	0.0003	1	0%	0	0	0%	
Magnesium	B	mg/L	-0.001419	0		0	0	0	0.0203306	0.00564	50	0%	0	0	0%	L
Potassium	B	mg/L	-0.0002827	0		0	0	0	0.0215433	0.08139	50	0%	0	0	0%	L
Sodium	B	mg/L	-0.002957	0		0	0	0	0.0451914	0.02171	50	0%	0	0	0%	L
Tin	B	mg/L	-5.821E-06	0		0	0	0	0.0009928	0.00132	0.1	0%	0	0	0%	
Vanadium	B	mg/L	0.001064	0		0	0	0	0.0018612	0.0013	1	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078271	Cal Blk	ICPMS-6020-W-	SAMP		3/8/2022 3:27:20	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0	0		0	0	0	0.0017836	0.001	1	0%	0	0	0%	
Antimony	A	mg/L	0	0		0	0	0	6.768E-05	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	0	0		0	0	0	8.203E-05	0.001	1	0%	0	0	0%	
Barium	A	mg/L	0	0		0	0	0	6.762E-05	0.001	1	0%	0	0	0%	
Beryllium	A	mg/L	0	0		0	0	0	8.516E-05	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0	0		0	0	0	2.308E-05	0.001	1	0%	0	0	0%	
Cerium	A	mg/L	0	0		0	0	0	0.0000222	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	0	0		0	0	0	0.0002538	0.001	1	0%	0	0	0%	
Lanthanum	A	mg/L	0	0		0	0	0	6.805E-05	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0	0		0	0	0	3.031E-05	0.001	1	0%	0	0	0%	
Manganese	A	mg/L	0	0		0	0	0	7.309E-05	0.001	1	0%	0	0	0%	
Mercury	A	mg/L	0	0		0	0	0	3.043E-05	0.001	0.002	0%	0	0	0%	
Molybdenum	A	mg/L	0	0		0	0	0	8.113E-05	0.001	0.1	0%	0	0	0%	
Silicon	A	mg/L	0	0		0	0	0	0.0033337	0.1	0.4	0%	0	0	0%	
Silver	A	mg/L	0	0		0	0	0	2.644E-05	0.001	0.04	0%	0	0	0%	
Strontium	A	mg/L	0	0		0	0	0	9.743E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0	0		0	0	0	4.842E-05	0.001	1	0%	0	0	0%	
Thorium	A	mg/L	0	0		0	0	0	3.018E-05	0.001	1	0%	0	0	0%	
Titanium	A	mg/L	0	0		0	0	0	0.0001004	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0	0		0	0	0	2.468E-05	0.0003	1	0%	0	0	0%	
Magnesium	B	mg/L	0	0		0	0	0	0.0203306	0.00564	50	0%	0	0	0%	L
Potassium	B	mg/L	0	0		0	0	0	0.0215433	0.08139	50	0%	0	0	0%	L
Sodium	B	mg/L	0	0		0	0	0	0.0451914	0.02171	50	0%	0	0	0%	L
Tin	B	mg/L	0	0		0	0	0	0.0009928	0.00132	0.1	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078271	Cal Blk	ICPMS-6020-W-	SAMP		3/8/2022 3:27:20	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Vanadium	B	mg/L	0	0		0	0	0	0.0018612	0.0013	1	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078272	0.025 ppb STD	ICPMS-6020B-C	Cal1		3/8/2022 3:34:55	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.0002343	0.0002343		0	0	0		0.01		0%			0%	
Antimony	A	mg/L	0.00002573	0.00002573		0	0	0		0.001		0%			0%	
Arsenic	A	mg/L	0.00003411	0.00003411		0.000025	0	0		0.001		136%	80	120	0%	S
Barium	A	mg/L	0.00003754	0.00003754		0.000025	0	0		0.0003		150%	80	120	0%	S
Beryllium	A	mg/L	0.0000267	0.0000267		0.000025	0	0		0.001		107%	80	120	0%	
Boron	A	mg/L	-8.841E-05	-8.841E-05		0	0	0		0.1		0%			0%	
Cadmium	A	mg/L	0.00002492	0.00002492		0.000025	0	0		0.001		100%	80	120	0%	
Calcium	A	mg/L	0.008162	0.008162		0	0	0		1		0%			0%	
Cerium	A	mg/L	0.00002486	0.00002486		0.000025	0	0		0.001		99%	80	120	0%	
Chromium	A	mg/L	0.00003631	0.00003631		0.000025	0	0		0.001		145%	80	120	0%	S
Cobalt	A	mg/L	0.00002429	0.00002429		0.000025	0	0		0.001		97%	80	120	0%	
Copper	A	mg/L	0.00003946	0.00003946		0	0	0		0.005		0%			0%	
Iron	A	mg/L	0.0007483	0.0007483		0	0	0		0.01		0%			0%	
Lanthanum	A	mg/L	0.0000254	0.0000254		0.000025	0	0		0.001		102%	80	120	0%	
Lead	A	mg/L	0.00002534	0.00002534		0.000025	0	0		0.001		101%	80	120	0%	
Lithium	A	mg/L	0.0002371	0.0002371		0.0003125	0	0		1		76%	80	120	0%	S
Magnesium	A	mg/L	0.006708	0.006708		0	0	0		1		0%			0%	
Manganese	A	mg/L	0.00002723	0.00002723		0	0	0		0.001		0%			0%	
Mercury	A	mg/L	9.272E-07	9.272E-07		0	0	0		0.001		0%			0%	
Molybdenum	A	mg/L	0.00002731	0.00002731		0	0	0		0.001		0%			0%	
Nickel	A	mg/L	0.00003076	0.00003076		0	0	0		0.005		0%			0%	
Potassium	A	mg/L	0.006354	0.006354		0.00625	0	0		1		102%	80	120	0%	
Selenium	A	mg/L	0.00002974	0.00002974		0.000025	0	0		0.005		119%	80	120	0%	
Silicon	A	mg/L	-0.0005627	-0.0005627		0	0	0		0.1		0%			0%	
Silver	A	mg/L	0.00001105	0.00001105		0	0	0		0.001		0%			0%	
Sodium	A	mg/L	0.007476	0.007476		0.00625	0	0		1		120%	80	120	0%	
Strontium	A	mg/L	0.00003193	0.00003193		0	0	0		0.001		0%	80	120	0%	
Thallium	A	mg/L	0.00002538	0.00002538		0	0	0		0.001		0%			0%	
Thorium	A	mg/L	0.00001292	0.00001292		0	0	0		0.05		0%			0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078272	0.025 ppb STD	ICPMS-6020B-C	Cal1		3/8/2022 3:34:55	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Tin	A	mg/L	0.00002713	0.00002713		0	0	0		0.001		0%			0%	
Titanium	A	mg/L	0.0001216	0.0001216		0	0	0		0.001		0%			0%	
Uranium	A	mg/L	0.00002391	0.00002391		0.000025	0	0		0.001		96%	80	120	0%	
Vanadium	A	mg/L	0.00004264	0.00004264		0	0	0		0.005		0%			0%	
Zinc	A	mg/L	0.0001687	0.0001687		0	0	0		0.01		0%			0%	
Iron, Ferrous	C	mg/L	0.0007483	0.0007483		0.000025	0	0		0.01	5	2993%	80	120	0%	S
Silicon as SiO2	C	mg/L	-0.0012042	-0.0012042		0.0000535	0	0		0.214	0.9	-2251%	80	120	0%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078273	0.05 ppb STD	ICPMS-6020B-C	Cal2		3/8/2022 3:41:36	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.0002059	0.0002059		0	0	0		0.01		0%			0%	
Antimony	A	mg/L	0.00005225	0.00005225		0.00005	0	0		0.001		104%	80	120	0%	
Arsenic	A	mg/L	0.00005613	0.00005613		0.00005	0	0		0.001		112%	80	120	0%	
Barium	A	mg/L	0.00004727	0.00004727		0.00005	0	0		0.0003		95%	80	120	0%	
Beryllium	A	mg/L	0.00005032	0.00005032		0.00005	0	0		0.001		101%	80	120	0%	
Boron	A	mg/L	-0.0001114	-0.0001114		0	0	0		0.1		0%			0%	
Cadmium	A	mg/L	0.00005595	0.00005595		0.00005	0	0		0.001		112%	80	120	0%	
Calcium	A	mg/L	0.0184	0.0184		0.0125	0	0		1		147%	80	120	0%	S
Cerium	A	mg/L	0.00005414	0.00005414		0.00005	0	0		0.001		108%	80	120	0%	
Chromium	A	mg/L	0.0000658	0.0000658		0.00005	0	0		0.001		132%	80	120	0%	S
Cobalt	A	mg/L	0.00005684	0.00005684		0	0	0		0.001		0%			0%	
Copper	A	mg/L	0.00006719	0.00006719		0.00005	0	0		0.005		134%	80	120	0%	S
Iron	A	mg/L	0.001725	0.001725		0.00125	0	0		0.01		138%	80	120	0%	S
Lanthanum	A	mg/L	0.00006951	0.00006951		0.00005	0	0		0.001		139%	80	120	0%	S
Lead	A	mg/L	0.00005486	0.00005486		0.00005	0	0		0.001		110%	80	120	0%	
Lithium	A	mg/L	0.0005619	0.0005619		0.000625	0	0		1		90%	80	120	0%	
Magnesium	A	mg/L	0.01563	0.01563		0.0125	0	0		1		125%	80	120	0%	S
Manganese	A	mg/L	0.000064	0.000064		0.00005	0	0		0.001		128%	80	120	0%	S
Mercury	A	mg/L	-6.246E-07	-6.246E-07		0	0	0		0.001		0%			0%	
Molybdenum	A	mg/L	0.00005565	0.00005565		0.00005	0	0		0.001		111%	80	120	0%	
Nickel	A	mg/L	0.00006252	0.00006252		0	0	0		0.005		0%			0%	
Potassium	A	mg/L	0.01125	0.01125		0.0125	0	0		1		90%	80	120	0%	
Selenium	A	mg/L	0.00007474	0.00007474		0.00005	0	0		0.005		149%	80	120	0%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078273	0.05 ppb STD	ICPMS-6020B-C	Cal2		3/8/2022 3:41:36	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Silicon	A	mg/L	0.0002886	0.0002886		0	0	0		0.1		0%			0%	
Silver	A	mg/L	0.00002444	0.00002444		0.00002	0	0		0.001		122%	80	120	0%	S
Sodium	A	mg/L	0.01602	0.01602		0.0125	0	0		1		128%	80	120	0%	S
Strontium	A	mg/L	0.00004402	0.00004402		0.00005	0	0		0.001		88%	80	120	0%	
Thallium	A	mg/L	0.00005256	0.00005256		0	0	0		0.001		0%			0%	
Thorium	A	mg/L	0.00003119	0.00003119		0	0	0		0.05		0%			0%	
Tin	A	mg/L	0.00005462	0.00005462		0	0	0		0.001		0%			0%	
Titanium	A	mg/L	0.0001365	0.0001365		0	0	0		0.001		0%			0%	
Uranium	A	mg/L	0.00005232	0.00005232		0.00005	0	0		0.001		105%	80	120	0%	
Vanadium	A	mg/L	0.00007879	0.00007879		0	0	0		0.005		0%			0%	
Zinc	A	mg/L	0.00007788	0.00007788		0	0	0		0.01		0%			0%	
Iron, Ferrous	C	mg/L	0.001725	0.001725		0.00005	0	0		0.01	5	3450%	80	120	0%	S
Silicon as SiO2	C	mg/L	0.00061760	0.00061760		0.00428	0	0		0.214	0.9	14%	80	120	0%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078274	0.10 ppb STD	ICPMS-6020B-C	Cal3		3/8/2022 3:48:16	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.0003174	0.0003174		0.0001	0	0		0.01		317%	80	120	0%	S
Antimony	A	mg/L	0.0001211	0.0001211		0.0001	0	0		0.001		121%	80	120	0%	S
Arsenic	A	mg/L	0.0001088	0.0001088		0.0001	0	0		0.001		109%	80	120	0%	
Barium	A	mg/L	0.0001127	0.0001127		0.0001	0	0		0.0003		113%	80	120	0%	
Beryllium	A	mg/L	0.0001065	0.0001065		0.0001	0	0		0.001		107%	80	120	0%	
Boron	A	mg/L	-0.0003018	-0.0003018		0	0	0		0.1		0%			0%	
Cadmium	A	mg/L	0.000116	0.000116		0.0001	0	0		0.001		116%	80	120	0%	
Calcium	A	mg/L	0.03396	0.03396		0.025	0	0		1		136%	80	120	0%	S
Cerium	A	mg/L	0.0001125	0.0001125		0.0001	0	0		0.001		113%	80	120	0%	
Chromium	A	mg/L	0.0001136	0.0001136		0.0001	0	0		0.001		114%	80	120	0%	
Cobalt	A	mg/L	0.0001214	0.0001214		0.0001	0	0		0.001		121%	80	120	0%	S
Copper	A	mg/L	0.0001457	0.0001457		0.0001	0	0		0.005		146%	80	120	0%	S
Iron	A	mg/L	0.003337	0.003337		0.0025	0	0		0.01		133%	80	120	0%	S
Lanthanum	A	mg/L	0.0001185	0.0001185		0.0001	0	0		0.001		119%	80	120	0%	
Lead	A	mg/L	0.0001134	0.0001134		0.0001	0	0		0.001		113%	80	120	0%	
Lithium	A	mg/L	0.001318	0.001318		0.00125	0	0		1		105%	80	120	0%	
Magnesium	A	mg/L	0.03055	0.03055		0.025	0	0		1		122%	80	120	0%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078274	0.10 ppb STD	ICPMS-6020B-C	Cal3		3/8/2022 3:48:16	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Manganese	A	mg/L	0.0001166	0.0001166		0.0001	0	0		0.001		117%	80	120	0%	
Mercury	A	mg/L	4.714E-07	4.714E-07		0.000002	0	0		0.001		24%	80	120	0%	S
Molybdenum	A	mg/L	0.0001106	0.0001106		0.0001	0	0		0.001		111%	80	120	0%	
Nickel	A	mg/L	0.0001119	0.0001119		0.0001	0	0		0.005		112%	80	120	0%	
Potassium	A	mg/L	0.02484	0.02484		0.025	0	0		1		99%	80	120	0%	
Selenium	A	mg/L	0.0001361	0.0001361		0.0001	0	0		0.005		136%	80	120	0%	S
Silicon	A	mg/L	-0.0005621	-0.0005621		0.0004	0	0		0.1		-141%	80	120	0%	S
Silver	A	mg/L	0.00005011	0.00005011		0.00004	0	0		0.001		125%	80	120	0%	S
Sodium	A	mg/L	0.03244	0.03244		0.025	0	0		1		130%	80	120	0%	S
Strontium	A	mg/L	0.0001154	0.0001154		0.0001	0	0		0.001		115%	80	120	0%	
Thallium	A	mg/L	0.0001137	0.0001137		0.0001	0	0		0.001		114%	80	120	0%	
Thorium	A	mg/L	0.00007192	0.00007192		0.0001	0	0		0.05		72%	80	120	0%	S
Tin	A	mg/L	0.0001208	0.0001208		0.0001	0	0		0.001		121%	80	120	0%	S
Titanium	A	mg/L	0.0002061	0.0002061		0.0001	0	0		0.001		206%	80	120	0%	S
Uranium	A	mg/L	0.000111	0.000111		0.0001	0	0		0.001		111%	80	120	0%	
Vanadium	A	mg/L	-6.529E-06	-6.529E-06		0.0001	0	0		0.005		-7%	80	120	0%	S
Zinc	A	mg/L	0.0001347	0.0001347		0.0001	0	0		0.01		135%	80	120	0%	S
Iron, Ferrous	C	mg/L	0.003337	0.003337		0.0001	0	0		0.01	5	3337%	80	120	0%	S
Silicon as SiO2	C	mg/L	-0.0012029	-0.0012029		0.00856	0	0		0.214	0.9	-14%	80	120	0%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078275	0.5 ppb STD	ICPMS-6020B-C	Cal4		3/8/2022 3:54:56	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.0007959	0.0007959		0.0005	0	0		0.01		159%	80	120	0%	S
Antimony	A	mg/L	0.0005449	0.0005449		0.0005	0	0		0.001		109%	80	120	0%	
Arsenic	A	mg/L	0.0005344	0.0005344		0.0005	0	0		0.001		107%	80	120	0%	
Barium	A	mg/L	0.0005121	0.0005121		0.0005	0	0		0.0003		102%	80	120	0%	
Beryllium	A	mg/L	0.000483	0.000483		0.0005	0	0		0.001		97%	80	120	0%	
Boron	A	mg/L	0.0001522	0.0001522		0.0005	0	0		0.1		30%	80	120	0%	S
Cadmium	A	mg/L	0.0005526	0.0005526		0.0005	0	0		0.001		111%	80	120	0%	
Calcium	A	mg/L	0.1353	0.1353		0.125	0	0		1		108%	80	120	0%	
Cerium	A	mg/L	0.0004872	0.0004872		0.0005	0	0		0.001		97%	80	120	0%	
Chromium	A	mg/L	0.0004876	0.0004876		0.0005	0	0		0.001		98%	80	120	0%	
Cobalt	A	mg/L	0.0005763	0.0005763		0.0005	0	0		0.001		115%	80	120	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078275	0.5 ppb STD	ICPMS-6020B-C	CaI4		3/8/2022 3:54:56	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Copper	A	mg/L	0.0005799	0.0005799		0.0005	0	0		0.005		116%	80	120	0%	
Iron	A	mg/L	0.01372	0.01372		0.0125	0	0		0.01		110%	80	120	0%	
Lanthanum	A	mg/L	0.0004912	0.0004912		0.0005	0	0		0.001		98%	80	120	0%	
Lead	A	mg/L	0.000515	0.000515		0.0005	0	0		0.001		103%	80	120	0%	
Lithium	A	mg/L	0.00634	0.00634		0.00625	0	0		1		101%	80	120	0%	
Magnesium	A	mg/L	0.1327	0.1327		0.125	0	0		1		106%	80	120	0%	
Manganese	A	mg/L	0.00054	0.00054		0.0005	0	0		0.001		108%	80	120	0%	
Mercury	A	mg/L	5.521E-06	5.521E-06		0.00001	0	0		0.001		55%	80	120	0%	S
Molybdenum	A	mg/L	0.0005341	0.0005341		0.0005	0	0		0.001		107%	80	120	0%	
Nickel	A	mg/L	0.0005798	0.0005798		0.0005	0	0		0.005		116%	80	120	0%	
Potassium	A	mg/L	0.1288	0.1288		0.125	0	0		1		103%	80	120	0%	
Selenium	A	mg/L	0.0005431	0.0005431		0.0005	0	0		0.005		109%	80	120	0%	
Silicon	A	mg/L	0.00142	0.00142		0.002	0	0		0.1		71%	80	120	0%	S
Silver	A	mg/L	0.00022	0.00022		0.0002	0	0		0.001		110%	80	120	0%	
Sodium	A	mg/L	0.1316	0.1316		0.125	0	0		1		105%	80	120	0%	
Strontium	A	mg/L	0.0005156	0.0005156		0.0005	0	0		0.001		103%	80	120	0%	
Thallium	A	mg/L	0.0004792	0.0004792		0.0005	0	0		0.001		96%	80	120	0%	
Thorium	A	mg/L	0.0003576	0.0003576		0.0005	0	0		0.05		72%	80	120	0%	S
Tin	A	mg/L	0.0004979	0.0004979		0.0005	0	0		0.001		100%	80	120	0%	
Titanium	A	mg/L	0.0006645	0.0006645		0.0005	0	0		0.001		133%	80	120	0%	S
Uranium	A	mg/L	0.0004961	0.0004961		0.0005	0	0		0.001		99%	80	120	0%	
Vanadium	A	mg/L	0.0004768	0.0004768		0.0005	0	0		0.005		95%	80	120	0%	
Zinc	A	mg/L	0.000621	0.000621		0.0005	0	0		0.01		124%	80	120	0%	S
Iron, Ferrous	C	mg/L	0.01372	0.01372		0.0005	0	0		0.01	5	2744%	80	120	0%	S
Silicon as SiO2	C	mg/L	0.0030388	0.0030388		0.0428	0	0		0.214	0.9	7%	80	120	0%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078276	1 ppb STD	ICPMS-6020B-C	CaI5		3/8/2022 4:01:37	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.00134	0.00134		0.001	0	0		0.01		134%	80	120	0%	S
Antimony	A	mg/L	0.001121	0.001121		0.001	0	0		0.001		112%	80	120	0%	
Arsenic	A	mg/L	0.00121	0.00121		0.001	0	0		0.001		121%	80	120	0%	S
Barium	A	mg/L	0.001009	0.001009		0.001	0	0		0.0003		101%	80	120	0%	
Beryllium	A	mg/L	0.00107	0.00107		0.001	0	0		0.001		107%	80	120	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078276	1 ppb STD	ICPMS-6020B-C	Cal5		3/8/2022 4:01:37	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Boron	A	mg/L	0.000778	0.000778		0.001	0	0		0.1		78%	80	120	0%	S
Cadmium	A	mg/L	0.001105	0.001105		0.001	0	0		0.001		110%	80	120	0%	
Calcium	A	mg/L	0.2858	0.2858		0.25	0	0		1		114%	80	120	0%	
Cerium	A	mg/L	0.001134	0.001134		0.001	0	0		0.001		113%	80	120	0%	
Chromium	A	mg/L	0.0012	0.0012		0.001	0	0		0.001		120%	80	120	0%	
Cobalt	A	mg/L	0.00118	0.00118		0.001	0	0		0.001		118%	80	120	0%	
Copper	A	mg/L	0.001284	0.001284		0.001	0	0		0.005		128%	80	120	0%	S
Iron	A	mg/L	0.02917	0.02917		0.025	0	0		0.01		117%	80	120	0%	
Lanthanum	A	mg/L	0.001127	0.001127		0.001	0	0		0.001		113%	80	120	0%	
Lead	A	mg/L	0.001064	0.001064		0.001	0	0		0.001		106%	80	120	0%	
Lithium	A	mg/L	0.01343	0.01343		0.0125	0	0		1		107%	80	120	0%	
Magnesium	A	mg/L	0.3082	0.3082		0.25	0	0		1		123%	80	120	0%	S
Manganese	A	mg/L	0.001193	0.001193		0.001	0	0		0.001		119%	80	120	0%	
Mercury	A	mg/L	0.00001929	0.00001929		0.00002	0	0		0.001		96%	80	120	0%	
Molybdenum	A	mg/L	0.001087	0.001087		0.001	0	0		0.001		109%	80	120	0%	
Nickel	A	mg/L	0.001269	0.001269		0.001	0	0		0.005		127%	80	120	0%	S
Potassium	A	mg/L	0.3083	0.3083		0.25	0	0		1		123%	80	120	0%	S
Selenium	A	mg/L	0.001215	0.001215		0.001	0	0		0.005		122%	80	120	0%	S
Silicon	A	mg/L	0.003272	0.003272		0.004	0	0		0.1		82%	80	120	0%	
Silver	A	mg/L	0.0004495	0.0004495		0.0004	0	0		0.001		112%	80	120	0%	
Sodium	A	mg/L	0.3048	0.3048		0.25	0	0		1		122%	80	120	0%	S
Strontium	A	mg/L	0.001171	0.001171		0.001	0	0		0.001		117%	80	120	0%	
Thallium	A	mg/L	0.00108	0.00108		0.001	0	0		0.001		108%	80	120	0%	
Thorium	A	mg/L	0.000906	0.000906		0.001	0	0		0.05		91%	80	120	0%	
Tin	A	mg/L	0.001125	0.001125		0.001	0	0		0.001		113%	80	120	0%	
Titanium	A	mg/L	0.001239	0.001239		0.001	0	0		0.001		124%	80	120	0%	S
Uranium	A	mg/L	0.001116	0.001116		0.001	0	0		0.001		112%	80	120	0%	
Vanadium	A	mg/L	0.001165	0.001165		0.001	0	0		0.005		117%	80	120	0%	
Zinc	A	mg/L	0.001285	0.001285		0.001	0	0		0.01		128%	80	120	0%	S
Iron, Ferrous	C	mg/L	0.02917	0.02917		0.001	0	0		0.01	5	2917%	80	120	0%	S
Silicon as SiO2	C	mg/L	0.00700208	0.00700208		0.0856	0	0		0.214	0.9	8%	80	120	0%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078277	10 ppb STD	ICPMS-6020B-C Cal6			3/8/2022 4:08:18	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.01571	0.01571		0.01	0	0		0.01		157%	90	110	0%	S
Antimony	A	mg/L	0.0104	0.0104		0.01	0	0		0.001		104%	90	110	0%	
Arsenic	A	mg/L	0.01045	0.01045		0.01	0	0		0.001		104%	90	110	0%	
Barium	A	mg/L	0.01002	0.01002		0.01	0	0		0.0003		100%	90	110	0%	
Beryllium	A	mg/L	0.01025	0.01025		0.01	0	0		0.001		102%	90	110	0%	
Boron	A	mg/L	0.01022	0.01022		0.01	0	0		0.1		102%	90	110	0%	
Cadmium	A	mg/L	0.01053	0.01053		0.01	0	0		0.001		105%	90	110	0%	
Calcium	A	mg/L	2.708	2.708		2.5	0	0		1		108%	90	110	0%	
Cerium	A	mg/L	0.01022	0.01022		0.01	0	0		0.001		102%	90	110	0%	
Chromium	A	mg/L	0.01041	0.01041		0.01	0	0		0.001		104%	90	110	0%	
Cobalt	A	mg/L	0.01115	0.01115		0.01	0	0		0.001		111%	90	110	0%	S
Copper	A	mg/L	0.01098	0.01098		0.01	0	0		0.005		110%	90	110	0%	
Iron	A	mg/L	0.2821	0.2821		0.25	0	0		0.01		113%	90	110	0%	S
Lanthanum	A	mg/L	0.01015	0.01015		0.01	0	0		0.001		102%	90	110	0%	
Lead	A	mg/L	0.01021	0.01021		0.01	0	0		0.001		102%	90	110	0%	
Lithium	A	mg/L	0.1292	0.1292		0.125	0	0		1		103%	90	110	0%	
Magnesium	A	mg/L	2.637	2.637		2.5	0	0		1		105%	90	110	0%	
Manganese	A	mg/L	0.01043	0.01043		0.01	0	0		0.001		104%	90	110	0%	
Mercury	A	mg/L	0.0001824	0.0001824		0.0002	0	0		0.001		91%	90	110	0%	
Molybdenum	A	mg/L	0.01042	0.01042		0.01	0	0		0.001		104%	90	110	0%	
Nickel	A	mg/L	0.01104	0.01104		0.01	0	0		0.005		110%	90	110	0%	
Potassium	A	mg/L	2.632	2.632		2.5	0	0		1		105%	90	110	0%	
Selenium	A	mg/L	0.01123	0.01123		0.01	0	0		0.005		112%	90	110	0%	S
Silicon	A	mg/L	0.03964	0.03964		0.04	0	0		0.1		99%	90	110	0%	
Silver	A	mg/L	0.004235	0.004235		0.004	0	0		0.001		106%	90	110	0%	
Sodium	A	mg/L	2.627	2.627		2.5	0	0		1		105%	90	110	0%	
Strontium	A	mg/L	0.01027	0.01027		0.01	0	0		0.001		103%	90	110	0%	
Thallium	A	mg/L	0.009814	0.009814		0.01	0	0		0.001		98%	90	110	0%	
Thorium	A	mg/L	0.009332	0.009332		0.01	0	0		0.05		93%	90	110	0%	
Tin	A	mg/L	0.009982	0.009982		0.01	0	0		0.001		100%	90	110	0%	
Titanium	A	mg/L	0.01057	0.01057		0.01	0	0		0.001		106%	90	110	0%	
Uranium	A	mg/L	0.0101	0.0101		0.01	0	0		0.001		101%	90	110	0%	
Vanadium	A	mg/L	0.01015	0.01015		0.01	0	0		0.005		102%	90	110	0%	
Zinc	A	mg/L	0.011	0.011		0.01	0	0		0.01		110%	90	110	0%	
Iron, Ferrous	C	mg/L	0.2821	0.2821		0.01	0	0		0.01	5	2821%	90	110	0%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078277	10 ppb STD	ICPMS-6020B-C Cal6			3/8/2022 4:08:18	1	R375855			0	0					
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Silicon as SiO2	C	mg/L	0.0848296	0.0848296		0.856	0	0		0.214	0.9	10%	90	110	0%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078278	50 ppb STD	ICPMS-6020B-C Cal7			3/8/2022 4:14:58	1	R375855			0	0					
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.05371	0.05371		0.05	0	0		0.01		107%	90	110	0%	
Antimony	A	mg/L	0.05442	0.05442		0.05	0	0		0.001		109%	90	110	0%	
Arsenic	A	mg/L	0.0501	0.0501		0.05	0	0		0.001		100%	90	110	0%	
Barium	A	mg/L	0.05138	0.05138		0.05	0	0		0.0003		103%	90	110	0%	
Beryllium	A	mg/L	0.05056	0.05056		0.05	0	0		0.001		101%	90	110	0%	
Boron	A	mg/L	0.05284	0.05284		0.05	0	0		0.1		106%	90	110	0%	
Cadmium	A	mg/L	0.05361	0.05361		0.05	0	0		0.001		107%	90	110	0%	
Calcium	A	mg/L	13.1	13.1		12.5	0	0		1		105%	90	110	0%	
Cerium	A	mg/L	0.05076	0.05076		0.05	0	0		0.001		102%	90	110	0%	
Chromium	A	mg/L	0.04969	0.04969		0.05	0	0		0.001		99%	90	110	0%	
Cobalt	A	mg/L	0.05364	0.05364		0.05	0	0		0.001		107%	90	110	0%	
Copper	A	mg/L	0.05162	0.05162		0.05	0	0		0.005		103%	90	110	0%	
Iron	A	mg/L	1.384	1.384		1.25	0	0		0.01		111%	90	110	0%	S
Lanthanum	A	mg/L	0.05023	0.05023		0.05	0	0		0.001		100%	90	110	0%	
Lead	A	mg/L	0.05123	0.05123		0.05	0	0		0.001		102%	90	110	0%	
Lithium	A	mg/L	0.6351	0.6351		0.625	0	0		1		102%	90	110	0%	
Magnesium	A	mg/L	12.53	12.53		12.5	0	0		1		100%	90	110	0%	
Manganese	A	mg/L	0.05016	0.05016		0.05	0	0		0.001		100%	90	110	0%	
Mercury	A	mg/L	0.0009967	0.0009967		0.001	0	0		0.001		100%	90	110	0%	
Molybdenum	A	mg/L	0.05254	0.05254		0.05	0	0		0.001		105%	90	110	0%	
Nickel	A	mg/L	0.05219	0.05219		0.05	0	0		0.005		104%	90	110	0%	
Potassium	A	mg/L	12.35	12.35		12.5	0	0		1		99%	90	110	0%	
Selenium	A	mg/L	0.05526	0.05526		0.05	0	0		0.005		111%	90	110	0%	S
Silicon	A	mg/L	0.2078	0.2078		0.2	0	0		0.1		104%	90	110	0%	
Silver	A	mg/L	0.02131	0.02131		0.02	0	0		0.001		107%	90	110	0%	
Sodium	A	mg/L	12.5	12.5		12.5	0	0		1		100%	90	110	0%	
Strontium	A	mg/L	0.04935	0.04935		0.05	0	0		0.001		99%	90	110	0%	
Thallium	A	mg/L	0.04929	0.04929		0.05	0	0		0.001		99%	90	110	0%	
Thorium	A	mg/L	0.04852	0.04852		0.05	0	0		0.05		97%	90	110	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078278	50 ppb STD	ICPMS-6020B-C Cal7			3/8/2022 4:14:58	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Tin	A	mg/L	0.05028	0.05028		0.05	0	0		0.001		101%	90	110	0%	
Titanium	A	mg/L	0.05197	0.05197		0.05	0	0		0.001		104%	90	110	0%	
Uranium	A	mg/L	0.0499	0.0499		0.05	0	0		0.001		100%	90	110	0%	
Vanadium	A	mg/L	0.04985	0.04985		0.05	0	0		0.005		100%	90	110	0%	
Zinc	A	mg/L	0.0507	0.0507		0.05	0	0		0.01		101%	90	110	0%	
Iron, Ferrous	C	mg/L	1.384	1.384		0.05	0	0		0.01	5	2768%	90	110	0%	S
Silicon as SiO2	C	mg/L	0.444692	0.444692		4.28	0	0		0.214	0.9	10%	90	110	0%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078279	100 ppb STD	ICPMS-6020B-C Cal8			3/8/2022 4:21:35	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.097	0.097		0.1	0	0		0.01		97%	90	110	0%	
Antimony	A	mg/L	0.09775	0.09775		0.1	0	0		0.001		98%	90	110	0%	
Arsenic	A	mg/L	0.1007	0.1007		0.1	0	0		0.001		101%	90	110	0%	
Barium	A	mg/L	0.09725	0.09725		0.1	0	0		0.0003		97%	90	110	0%	
Beryllium	A	mg/L	0.0952	0.0952		0.1	0	0		0.001		95%	90	110	0%	
Boron	A	mg/L	0.09695	0.09695		0.1	0	0		0.1		97%	90	110	0%	
Cadmium	A	mg/L	0.09924	0.09924		0.1	0	0		0.001		99%	90	110	0%	
Calcium	A	mg/L	25.97	25.97		25	0	0		1		104%	90	110	0%	
Cerium	A	mg/L	0.0996	0.0996		0.1	0	0		0.001		100%	90	110	0%	
Chromium	A	mg/L	0.09976	0.09976		0.1	0	0		0.001		100%	90	110	0%	
Cobalt	A	mg/L	0.1021	0.1021		0.1	0	0		0.001		102%	90	110	0%	
Copper	A	mg/L	0.1021	0.1021		0.1	0	0		0.005		102%	90	110	0%	
Iron	A	mg/L	2.703	2.703		2.5	0	0		0.01		108%	90	110	0%	
Lanthanum	A	mg/L	0.09987	0.09987		0.1	0	0		0.001		100%	90	110	0%	
Lead	A	mg/L	0.0959	0.0959		0.1	0	0		0.001		96%	90	110	0%	
Lithium	A	mg/L	1.194	1.194		1.25	0	0		1		96%	90	110	0%	
Magnesium	A	mg/L	25.15	25.15		25	0	0		1		101%	90	110	0%	
Manganese	A	mg/L	0.1017	0.1017		0.1	0	0		0.001		102%	90	110	0%	
Mercury	A	mg/L	0.002003	0.002003		0.002	0	0		0.001		100%	90	110	0%	
Molybdenum	A	mg/L	0.09869	0.09869		0.1	0	0		0.001		99%	90	110	0%	
Nickel	A	mg/L	0.1043	0.1043		0.1	0	0		0.005		104%	90	110	0%	
Potassium	A	mg/L	25.18	25.18		25	0	0		1		101%	90	110	0%	
Selenium	A	mg/L	0.1071	0.1071		0.1	0	0		0.005		107%	90	110	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078279	100 ppb STD	ICPMS-6020B-C Cal8			3/8/2022 4:21:35	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Silicon	A	mg/L	0.3961	0.3961		0.4	0	0		0.1		99%	90	110	0%	
Silver	A	mg/L	0.03932	0.03932		0.04	0	0		0.001		98%	90	110	0%	
Sodium	A	mg/L	25.15	25.15		25	0	0		1		101%	90	110	0%	
Strontium	A	mg/L	0.1001	0.1001		0.1	0	0		0.001		100%	90	110	0%	
Thallium	A	mg/L	0.09889	0.09889		0.1	0	0		0.001		99%	90	110	0%	
Thorium	A	mg/L	0.09912	0.09912		0.1	0	0		0.05		99%	90	110	0%	
Tin	A	mg/L	0.09986	0.09986		0.1	0	0		0.001		100%	90	110	0%	
Titanium	A	mg/L	0.09895	0.09895		0.1	0	0		0.001		99%	90	110	0%	
Uranium	A	mg/L	0.09422	0.09422		0.1	0	0		0.001		94%	90	110	0%	
Vanadium	A	mg/L	0.1007	0.1007		0.1	0	0		0.005		101%	90	110	0%	
Zinc	A	mg/L	0.1024	0.1024		0.1	0	0		0.01		102%	90	110	0%	
Iron, Ferrous	C	mg/L	2.703	2.703		0.1	0	0		0.01	5	2703%	90	110	0%	S
Silicon as SiO2	C	mg/L	0.847654	0.847654		8.56	0	0		0.214	0.9	10%	90	110	0%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078280	1000 ppb STD	ICPMS-6020B-C Cal10			3/8/2022 4:28:08	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	1	1		1	0	0		0.01		100%	90	110	0%	
Antimony	A	mg/L	0.0004246	0.0004246		0	0	0		0.001		0%			0%	
Arsenic	A	mg/L	0.9999	0.9999		1	0	0		0.001		100%	90	110	0%	
Barium	A	mg/L	1	1		1	0	0		0.0003		100%	90	110	0%	
Beryllium	A	mg/L	1	1		1	0	0		0.001		100%	90	110	0%	
Boron	A	mg/L	1	1		1	0	0		0.1		100%	90	110	0%	
Cadmium	A	mg/L	0.9999	0.9999		1	0	0		0.001		100%	90	110	0%	
Calcium	A	mg/L	49.36	49.36		50	0	0		1		99%	90	110	0%	
Cerium	A	mg/L	0.00004248	0.00004248		0	0	0		0.001		0%			0%	
Chromium	A	mg/L	1	1		1	0	0		0.001		100%	90	110	0%	
Cobalt	A	mg/L	0.9996	0.9996		1	0	0		0.001		100%	90	110	0%	
Copper	A	mg/L	0.9997	0.9997		1	0	0		0.005		100%	90	110	0%	
Iron	A	mg/L	5.936	5.936		6	0	0		0.01		99%	90	110	0%	
Lanthanum	A	mg/L	8.919E-06	8.919E-06		0	0	0		0.001		0%			0%	
Lead	A	mg/L	1	1		1	0	0		0.001		100%	90	110	0%	
Lithium	A	mg/L	2.525	2.525		2.5	0	0		1		101%	90	110	0%	
Magnesium	A	mg/L	49.91	49.91		50	0	0		1		100%	90	110	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078280	1000 ppb STD	ICPMS-6020B-C	Cal10		3/8/2022 4:28:08	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Manganese	A	mg/L	0.9998	0.9998		1	0	0		0.001		100%	90		0%	
Mercury	A	mg/L	0.00001647	0.00001647		0	0	0		0.001		0%			0%	
Molybdenum	A	mg/L	0.0001122	0.0001122		0	0	0		0.001		0%			0%	
Nickel	A	mg/L	0.9995	0.9995		1	0	0		0.005		100%	90	110	0%	
Potassium	A	mg/L	49.94	49.94		50	0	0		1		100%	90	110	0%	
Selenium	A	mg/L	0.999	0.999		1	0	0		0.005		100%	90	110	0%	
Silicon	A	mg/L	0.0009033	0.0009033		0	0	0		0.1		0%			0%	
Silver	A	mg/L	0.2873	0.2873		0	0	0		0.001		0%			0%	
Sodium	A	mg/L	49.92	49.92		50	0	0		1		100%	90	110	0%	
Strontium	A	mg/L	1	1		1	0	0		0.001		100%	90	110	0%	
Thallium	A	mg/L	1	1		1	0	0		0.001		100%	90	110	0%	
Thorium	A	mg/L	1	1		1	0	0		0.05		100%	90	110	0%	
Tin	A	mg/L	0.0001781	0.0001781		0	0	0		0.001		0%			0%	
Titanium	A	mg/L	0.004395	0.004395		1	0	0		0.001		0%	90	110	0%	S
Uranium	A	mg/L	1.001	1.001		1	0	0		0.001		100%	90	110	0%	
Vanadium	A	mg/L	0.9999	0.9999		1	0	0		0.005		100%	90	110	0%	
Zinc	A	mg/L	0.9997	0.9997		1	0	0		0.01		100%	90	110	0%	
Iron, Ferrous	C	mg/L	5.936	5.936		0	0	0		0.01	5	0%			0%	
Silicon as SiO2	C	mg/L	0.00193306	0.00193306		0	0	0		0.214	0.9	0%			0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078281	100 ppb Br STD	ICPMS-6020-W-	SAMP		3/8/2022 4:34:39	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.0001919	0		0	0	0	0.0017836	0.001	1	0%	0	0	0%	
Antimony	A	mg/L	0.0001169	0.0001169		0	0	0	6.768E-05	0.001	0.1	0%	0	0	0%	J
Arsenic	A	mg/L	0.00004607	0		0	0	0	8.203E-05	0.001	1	0%	0	0	0%	
Barium	A	mg/L	5.608E-06	0		0	0	0	6.762E-05	0.001	1	0%	0	0	0%	
Beryllium	A	mg/L	0.00003459	0		0	0	0	8.516E-05	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0.00004816	0.00004816		0	0	0	2.308E-05	0.001	1	0%	0	0	0%	J
Cerium	A	mg/L	-1.126E-06	0		0	0	0	0.0000222	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	-1.544E-06	0		0	0	0	0.0002538	0.001	1	0%	0	0	0%	
Lanthanum	A	mg/L	4.383E-07	0		0	0	0	6.805E-05	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.00004043	0.00004043		0	0	0	3.031E-05	0.001	1	0%	0	0	0%	J
Manganese	A	mg/L	6.838E-06	0		0	0	0	7.309E-05	0.001	1	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078281	100 ppb Br STD	ICPMS-6020-W-	SAMP		3/8/2022 4:34:39	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Mercury	A	mg/L	4.599E-06	0		0	0	0	3.043E-05	0.001	0.002	0%	0	0	0%	
Molybdenum	A	mg/L	0.00001625	0		0	0	0	8.113E-05	0.001	0.1	0%	0	0	0%	
Silicon	A	mg/L	0.00009695	0		0	0	0	0.0033337	0.1	0.4	0%	0	0	0%	
Silver	A	mg/L	0.0008567	0.0008567		0	0	0	2.644E-05	0.001	0.04	0%	0	0	0%	J
Strontium	A	mg/L	1.959E-06	0		0	0	0	9.743E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0001651	0.0001651		0	0	0	4.842E-05	0.001	1	0%	0	0	0%	J
Thorium	A	mg/L	0.0003018	0.0003018		0	0	0	3.018E-05	0.001	1	0%	0	0	0%	J
Titanium	A	mg/L	0.0001084	0.0001084		0	0	0	0.0001004	0.001	1	0%	0	0	0%	J
Uranium	A	mg/L	0.00006267	0.00006267		0	0	0	2.468E-05	0.0003	1	0%	0	0	0%	J
Magnesium	B	mg/L	-4.201E-05	0		0	0	0	0.0203306	0.00564	50	0%	0	0	0%	L
Potassium	B	mg/L	0.5638	0.5638		0	0	0	0.0215433	0.08139	50	0%	0	0	0%	D
Sodium	B	mg/L	0.0141	0		0	0	0	0.0451914	0.02171	50	0%	0	0	0%	L
Tin	B	mg/L	0.00009678	0		0	0	0	0.0009928	0.00132	0.1	0%	0	0	0%	
Vanadium	B	mg/L	-0.0002905	0		0	0	0	0.0018612	0.0013	1	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078282	Rinse	ICPMS-6020-W-	SAMP		3/8/2022 4:41:05	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.001968	0.001968		0	0	0	0.0017836	0.001	1	0%	0	0	0%	
Antimony	A	mg/L	0.00006024	0		0	0	0	6.768E-05	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	-1.729E-05	0		0	0	0	8.203E-05	0.001	1	0%	0	0	0%	
Barium	A	mg/L	-2.208E-06	0		0	0	0	6.762E-05	0.001	1	0%	0	0	0%	
Beryllium	A	mg/L	8.772E-07	0		0	0	0	8.516E-05	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0.00001449	0		0	0	0	2.308E-05	0.001	1	0%	0	0	0%	
Cerium	A	mg/L	-1.78E-06	0		0	0	0	0.0000222	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	-3.175E-07	0		0	0	0	0.0002538	0.001	1	0%	0	0	0%	
Lanthanum	A	mg/L	1.67E-07	0		0	0	0	6.805E-05	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.00001817	0		0	0	0	3.031E-05	0.001	1	0%	0	0	0%	
Manganese	A	mg/L	6.121E-07	0		0	0	0	7.309E-05	0.001	1	0%	0	0	0%	
Mercury	A	mg/L	4.567E-06	0		0	0	0	3.043E-05	0.001	0.002	0%	0	0	0%	
Molybdenum	A	mg/L	5.977E-06	0		0	0	0	8.113E-05	0.001	0.1	0%	0	0	0%	
Silicon	A	mg/L	-0.001407	0		0	0	0	0.0033337	0.1	0.4	0%	0	0	0%	
Silver	A	mg/L	0.00001738	0		0	0	0	2.644E-05	0.001	0.04	0%	0	0	0%	
Strontium	A	mg/L	-8.802E-06	0		0	0	0	9.743E-05	0.001	1	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078282	Rinse	ICPMS-6020-W-	SAMP		3/8/2022 4:41:05	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Thallium	A	mg/L	0.00004446	0		0	0	0	4.842E-05	0.001	1	0%	0	0	0%	
Thorium	A	mg/L	0.00006171	0.00006171		0	0	0	3.018E-05	0.001	1	0%	0	0	0%	J
Titanium	A	mg/L	0.0000556	0		0	0	0	0.0001004	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00001954	0		0	0	0	2.468E-05	0.0003	1	0%	0	0	0%	
Magnesium	B	mg/L	0.002624	0		0	0	0	0.0203306	0.00564	50	0%	0	0	0%	L
Potassium	B	mg/L	0.00695	0		0	0	0	0.0215433	0.08139	50	0%	0	0	0%	L
Sodium	B	mg/L	0.01052	0		0	0	0	0.0451914	0.02171	50	0%	0	0	0%	L
Tin	B	mg/L	0.00001224	0		0	0	0	0.0009928	0.00132	0.1	0%	0	0	0%	
Vanadium	B	mg/L	-0.0004456	0		0	0	0	0.0018612	0.0013	1	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078283	QCS	ICPMS-6020-W-	ICV		3/8/2022 4:47:22	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.2732	0.2732		0.25	0	0	0.0017836	0.001	1	109%	90	110	0%	
Antimony	A	mg/L	0.05157	0.05157		0.05	0	0	6.768E-05	0.001	0.1	103%	90	110	0%	
Arsenic	A	mg/L	0.05364	0.05364		0.05	0	0	8.203E-05	0.001	1	107%	90	110	0%	
Barium	A	mg/L	0.05294	0.05294		0.05	0	0	6.762E-05	0.001	1	106%	90	110	0%	
Beryllium	A	mg/L	0.0266	0.0266		0.025	0	0	8.516E-05	0.001	1	106%	90	110	0%	
Boron	A	mg/L	0.05902	0.05902		0.05	0	0	0.0039526	0.00561	1	118%	90	110	0%	S
Cadmium	A	mg/L	0.02719	0.02719		0.025	0	0	2.308E-05	0.001	1	109%	90	110	0%	
Calcium	A	mg/L	2.883	2.883		2.5	0	0	0.2027235	0.02092	50	115%	90	110	0%	S
Cerium	A	mg/L	0.05301	0.05301		0.05	0	0	0.0000222	0.001	0.1	106%	90	110	0%	
Chromium	A	mg/L	0.05349	0.05349		0.05	0	0	0.0002538	0.001	1	107%	90	110	0%	
Cobalt	A	mg/L	0.05533	0.05533		0.05	0	0	2.141E-05	0.001	1	111%	90	110	0%	S
Copper	A	mg/L	0.05636	0.05636		0.05	0	0	0.0001748	0.001	1	113%	90	110	0%	S
Iron	A	mg/L	0.2796	0.2796		0.25	0	0	0.0021157	0.00119	5	112%	90	110	0%	S
Lanthanum	A	mg/L	0.05278	0.05278		0.05	0	0	6.805E-05	0.001	0.1	106%	90	110	0%	
Lead	A	mg/L	0.05224	0.05224		0.05	0	0	3.031E-05	0.001	1	104%	90	110	0%	
Magnesium	A	mg/L	2.674	2.674		2.5	0	0	0.0203306	0.00564	50	107%	90	110	0%	
Manganese	A	mg/L	0.2715	0.2715		0.25	0	0	7.309E-05	0.001	1	109%	90	110	0%	
Mercury	A	mg/L	0.0009773	0.0009773		0.001	0	0	3.043E-05	0.001	0.002	98%	90	110	0%	
Molybdenum	A	mg/L	0.05176	0.05176		0.05	0	0	8.113E-05	0.001	0.1	104%	90	110	0%	
Nickel	A	mg/L	0.05667	0.05667		0.05	0	0	0.0001769	0.001	1	113%	90	110	0%	S
Potassium	A	mg/L	2.652	2.652		2.5	0	0	0.0215433	0.08139	50	106%	90	110	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078283	QCS	ICPMS-6020-W- ICV			3/8/2022 4:47:22	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Selenium	A	mg/L	0.05865	0.05865		0.05	0	0	7.174E-05	0.001	1	117%	90	110	0%	S
Silicon	A	mg/L	0.5293	0.5293		0.5	0	0	0.0033337	0.1	0.4	106%	90	110	0%	
Silver	A	mg/L	0.02737	0.02737		0.025	0	0	2.644E-05	0.001	0.04	109%	90	110	0%	
Sodium	A	mg/L	2.682	2.682		2.5	0	0	0.0451914	0.02171	50	107%	90	110	0%	
Strontium	A	mg/L	0.05298	0.05298		0.05	0	0	9.743E-05	0.001	1	106%	90	110	0%	
Thallium	A	mg/L	0.05161	0.05161		0.05	0	0	4.842E-05	0.001	1	103%	90	110	0%	
Thorium	A	mg/L	0.05035	0.05035		0.05	0	0	3.018E-05	0.001	1	101%	90	110	0%	
Tin	A	mg/L	0.05433	0.05433		0.05	0	0	0.0009928	0.00132	0.1	109%	90	110	0%	
Titanium	A	mg/L	0.05272	0.05272		0.05	0	0	0.0001004	0.001	1	105%	90	110	0%	
Uranium	A	mg/L	0.05429	0.05429		0.05	0	0	2.468E-05	0.0003	1	109%	90	110	0%	
Vanadium	A	mg/L	0.05346	0.05346		0.05	0	0	0.0018612	0.0013	1	107%	90	110	0%	
Zinc	A	mg/L	0.05658	0.05658		0.05	0	0	0.0010089	0.00273	1	113%	90	110	0%	S
Iron, Ferrous	C	mg/L	0.2796	0.2796		0	0	0	0.0021157	0.00119	5	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078284	LRB	ICPMS-6020-W- MBLK			3/8/2022 4:53:37	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.0004204	0		0	0	0	0.0017836	0.001	1	0%	0	0	0%	
Antimony	A	mg/L	0.0002543	0.0002543		0	0	0	6.768E-05	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	-5.58E-06	0		0	0	0	8.203E-05	0.001	1	0%	0	0	0%	
Barium	A	mg/L	-2.267E-06	0		0	0	0	6.762E-05	0.001	1	0%	0	0	0%	
Beryllium	A	mg/L	-1.422E-05	0		0	0	0	8.516E-05	0.001	1	0%	0	0	0%	
Boron	A	mg/L	0.003755	0		0	0	0	0.0039526	0.00561	1	0%	0	0	0%	
Cadmium	A	mg/L	9.891E-06	0		0	0	0	2.308E-05	0.001	1	0%	0	0	0%	
Calcium	A	mg/L	0.003005	0		0	0	0	0.2027235	0.02092	50	0%	0	0	0%	
Cerium	A	mg/L	-1.362E-06	0		0	0	0	0.0000222	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	0.00001891	0		0	0	0	0.0002538	0.001	1	0%	0	0	0%	
Cobalt	A	mg/L	1.699E-06	0		0	0	0	2.141E-05	0.001	1	0%	0	0	0%	
Copper	A	mg/L	0.00003539	0		0	0	0	0.0001748	0.001	1	0%	0	0	0%	
Iron	A	mg/L	0.0001707	0		0	0	0	0.0021157	0.00119	5	0%	0	0	0%	
Lanthanum	A	mg/L	3.92E-07	0		0	0	0	6.805E-05	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	9.893E-06	0		0	0	0	3.031E-05	0.0005	1	0%	0	0	0%	
Magnesium	A	mg/L	0.0002464	0		0	0	0	0.0203306	0.00564	50	0%	0	0	0%	
Manganese	A	mg/L	5.711E-06	0		0	0	0	7.309E-05	0.001	1	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078284	LRB	ICPMS-6020-W-	MBLK		3/8/2022 4:53:37	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Mercury	A	mg/L	7.135E-06	0		0	0	0	3.043E-05	0.001	0.002	0%	0	0	0%	
Molybdenum	A	mg/L	0.00003284	0		0	0	0	8.113E-05	0.001	0.1	0%	0	0	0%	
Nickel	A	mg/L	0.00001314	0		0	0	0	0.0001769	0.001	1	0%	0	0	0%	
Potassium	A	mg/L	0.006267	0		0	0	0	0.0215433	0.08139	50	0%	0	0	0%	
Selenium	A	mg/L	0.00002781	0		0	0	0	7.174E-05	0.001	1	0%	0	0	0%	
Silicon	A	mg/L	-0.001113	0		0	0	0	0.0033337	0.1	0.4	0%	0	0	0%	
Silver	A	mg/L	3.386E-07	0		0	0	0	2.644E-05	0.001	0.04	0%	0	0	0%	
Sodium	A	mg/L	0.009183	0		0	0	0	0.0451914	0.02171	50	0%	0	0	0%	
Strontium	A	mg/L	-4.046E-06	0		0	0	0	9.743E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00002629	0		0	0	0	4.842E-05	0.001	1	0%	0	0	0%	
Thorium	A	mg/L	0.00005428	0.00005428		0	0	0	3.018E-05	0.001	1	0%	0	0	0%	
Tin	A	mg/L	0.00007109	0		0	0	0	0.0009928	0.00132	0.1	0%	0	0	0%	
Titanium	A	mg/L	0.00008067	0		0	0	0	0.0001004	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00001213	0		0	0	0	2.468E-05	0.0003	1	0%	0	0	0%	
Vanadium	A	mg/L	-0.0002966	0		0	0	0	0.0018612	0.0013	1	0%	0	0	0%	
Zinc	A	mg/L	0.0006928	0		0	0	0	0.0010089	0.00273	1	0%	0	0	0%	
Iron, Ferrous	C	mg/L	0.0001707	0		0	0	0	0.0021157	0.00119	5	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078285	LFB	ICPMS-6020-W-	SAMP		3/8/2022 4:59:54	1.03	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.04955	0.0510365		0	0	0	0.0018371	0.001	1	0%	0	0	0%	
Antimony	A	mg/L	0.04981	0.0513043		0	0	0	6.971E-05	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	0.04869	0.0501507		0	0	0	8.449E-05	0.001	1	0%	0	0	0%	
Barium	A	mg/L	0.04881	0.0502743		0	0	0	6.965E-05	0.001	1	0%	0	0	0%	
Beryllium	A	mg/L	0.04697	0.0483791		0	0	0	8.771E-05	0.001	1	0%	0	0	0%	
Boron	A	mg/L	0.05107	0.0526021		0	0	0	0.0040712	0.0057783	1	0%	0	0	0%	D
Cadmium	A	mg/L	0.04914	0.0506142		0	0	0	2.377E-05	0.001	1	0%	0	0	0%	
Calcium	A	mg/L	47.22	48.6366		0	0	0	0.2088052	0.0215476	50	0%	0	0	0%	D
Cerium	A	mg/L	0.05007	0.0515721		0	0	0	2.287E-05	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	0.04857	0.0500271		0	0	0	0.0002614	0.001	1	0%	0	0	0%	
Cobalt	A	mg/L	0.04986	0.0513558		0	0	0	2.205E-05	0.001	1	0%	0	0	0%	
Copper	A	mg/L	0.04989	0.0513867		0	0	0	0.0001801	0.001	1	0%	0	0	0%	
Iron	A	mg/L	4.824	4.96872		0	0	0	0.0021792	0.0012257	5	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078285	LFB	ICPMS-6020-W-	SAMP		3/8/2022 4:59:54	1.03	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Lanthanum	A	mg/L	0.05007	0.0515721		0	0	0	7.009E-05	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.04815	0.0495945		0	0	0	3.122E-05	0.001	1	0%	0	0	0%	
Magnesium	A	mg/L	47.03	48.4409		0	0	0	0.0209406	0.0058092	50	0%	0	0	0%	D
Manganese	A	mg/L	0.04914	0.0506142		0	0	0	7.528E-05	0.001	1	0%	0	0	0%	
Mercury	A	mg/L	0.000965	0.00099395		0	0	0	3.134E-05	0.001	0.002	0%	0	0	0%	J
Molybdenum	A	mg/L	0.04969	0.0511807		0	0	0	8.356E-05	0.001	0.1	0%	0	0	0%	
Nickel	A	mg/L	0.0506	0.052118		0	0	0	0.0001822	0.001	1	0%	0	0	0%	
Potassium	A	mg/L	46.84	48.2452		0	0	0	0.0221896	0.0838317	50	0%	0	0	0%	D
Selenium	A	mg/L	0.05175	0.0533025		0	0	0	7.389E-05	0.001	1	0%	0	0	0%	
Silicon	A	mg/L	0.1847	0.190241		0	0	0	0.0034337	0.1	0.4	0%	0	0	0%	
Silver	A	mg/L	0.0194	0.019982		0	0	0	2.723E-05	0.001	0.04	0%	0	0	0%	
Sodium	A	mg/L	47.04	48.4512		0	0	0	0.0465471	0.0223613	50	0%	0	0	0%	D
Strontium	A	mg/L	0.04844	0.0498932		0	0	0	0.0001004	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.04817	0.0496151		0	0	0	4.987E-05	0.001	1	0%	0	0	0%	
Thorium	A	mg/L	0.04913	0.0506039		0	0	0	3.109E-05	0.001	1	0%	0	0	0%	
Tin	A	mg/L	0.04973	0.0512219		0	0	0	0.0010226	0.0013596	0.1	0%	0	0	0%	
Titanium	A	mg/L	0.05066	0.0521798		0	0	0	0.0001034	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.04848	0.0499344		0	0	0	2.542E-05	0.0003	1	0%	0	0	0%	
Vanadium	A	mg/L	0.04947	0.0509541		0	0	0	0.001917	0.001339	1	0%	0	0	0%	
Zinc	A	mg/L	0.05066	0.0521798		0	0	0	0.0010392	0.0028119	1	0%	0	0	0%	D
Iron, Ferrous	C	mg/L	4.824	4.96872		0	0	0	0.0021792	0.0012257	5	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078286	CCV	ICPMS-6020-W-	CCV		3/8/2022 5:06:09	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.05155	0.05155		0.05	0	0	0.0017836	0.001	1	103%	90	110	0%	
Antimony	A	mg/L	0.05201	0.05201		0.05	0	0	6.768E-05	0.001	0.1	104%	90	110	0%	
Arsenic	A	mg/L	0.05111	0.05111		0.05	0	0	8.203E-05	0.001	1	102%	90	110	0%	
Barium	A	mg/L	0.04881	0.04881		0.05	0	0	6.762E-05	0.001	1	98%	90	110	0%	
Beryllium	A	mg/L	0.04883	0.04883		0.05	0	0	8.516E-05	0.001	1	98%	90	110	0%	
Boron	A	mg/L	0.05343	0.05343		0.05	0	0	0.0039526	0.00561	1	107%	90	110	0%	
Cadmium	A	mg/L	0.0509	0.0509		0.05	0	0	2.308E-05	0.001	1	102%	90	110	0%	
Calcium	A	mg/L	13.34	13.34		12.5	0	0	0.2027235	0.02092	50	107%	90	110	0%	
Cerium	A	mg/L	0.04959	0.04959		0.05	0	0	0.0000222	0.001	0.1	99%	90	110	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078286	CCV	ICPMS-6020-W-	CCV		3/8/2022 5:06:09	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Chromium	A	mg/L	0.0505	0.0505		0.05	0	0	0.0002538	0.001	1	101%	90	110	0%	
Cobalt	A	mg/L	0.05228	0.05228		0.05	0	0	2.141E-05	0.001	1	105%	90	110	0%	
Copper	A	mg/L	0.05283	0.05283		0.05	0	0	0.0001748	0.001	1	106%	90	110	0%	
Iron	A	mg/L	1.351	1.351		1.3	0	0	0.0021157	0.00119	5	104%	90	110	0%	
Lanthanum	A	mg/L	0.04971	0.04971		0.05	0	0	6.805E-05	0.001	0.1	99%	90	110	0%	
Lead	A	mg/L	0.04942	0.04942		0.05	0	0	3.031E-05	0.001	1	99%	90	110	0%	
Magnesium	A	mg/L	12.87	12.87		12.5	0	0	0.0203306	0.00564	50	103%	90	110	0%	
Manganese	A	mg/L	0.05131	0.05131		0.05	0	0	7.309E-05	0.001	1	103%	90	110	0%	
Mercury	A	mg/L	0.0009718	0.0009718		0.001	0	0	3.043E-05	0.001	0.002	97%	90	110	0%	
Molybdenum	A	mg/L	0.05022	0.05022		0.05	0	0	8.113E-05	0.001	0.1	100%	90	110	0%	
Nickel	A	mg/L	0.05466	0.05466		0.05	0	0	0.0001769	0.001	1	109%	90	110	0%	
Potassium	A	mg/L	12.76	12.76		12.5	0	0	0.0215433	0.08139	50	102%	90	110	0%	
Selenium	A	mg/L	0.05508	0.05508		0.05	0	0	7.174E-05	0.001	1	110%	90	110	0%	
Silicon	A	mg/L	0.2074	0.2074		0.2	0	0	0.0033337	0.1	0.4	104%	90	110	0%	
Silver	A	mg/L	0.02019	0.02019		0.02	0	0	2.644E-05	0.001	0.04	101%	90	110	0%	
Sodium	A	mg/L	12.63	12.63		12.5	0	0	0.0451914	0.02171	50	101%	90	110	0%	
Strontium	A	mg/L	0.05019	0.05019		0.05	0	0	9.743E-05	0.001	1	100%	90	110	0%	
Thallium	A	mg/L	0.04853	0.04853		0.05	0	0	4.842E-05	0.001	1	97%	90	110	0%	
Thorium	A	mg/L	0.04796	0.04796		0.05	0	0	3.018E-05	0.001	1	96%	90	110	0%	
Tin	A	mg/L	0.05068	0.05068		0.05	0	0	0.0009928	0.00132	0.1	101%	90	110	0%	
Titanium	A	mg/L	0.05174	0.05174		0.05	0	0	0.0001004	0.001	1	103%	90	110	0%	
Uranium	A	mg/L	0.04839	0.04839		0.05	0	0	2.468E-05	0.0003	1	97%	90	110	0%	
Vanadium	A	mg/L	0.05076	0.05076		0.05	0	0	0.0018612	0.0013	1	102%	90	110	0%	
Zinc	A	mg/L	0.05249	0.05249		0.05	0	0	0.0010089	0.00273	1	105%	90	110	0%	
Iron, Ferrous	C	mg/L	1.351	1.351		0	0	0	0.0021157	0.00119	5	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078287	CCB	ICPMS-6020-W-	CCB		3/8/2022 5:12:26	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	-2.312E-05	-2.312E-05		0	0	0	0.0017836	0.001	1	0%			0%	
Antimony	A	mg/L	0.0002622	0.0002622		0	0	0	6.768E-05	0.001	0.1	0%			0%	
Arsenic	A	mg/L	3.132E-06	3.132E-06		0	0	0	8.203E-05	0.001	1	0%			0%	
Barium	A	mg/L	-3.849E-06	-3.849E-06		0	0	0	6.762E-05	0.001	1	0%			0%	
Beryllium	A	mg/L	-7.045E-06	-7.045E-06		0	0	0	8.516E-05	0.001	1	0%			0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078287	CCB	ICPMS-6020-W-	CCB		3/8/2022 5:12:26	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Boron	A	mg/L	0.002339	0.002339		0	0	0	0.0039526	0.00561	1	0%			0%	
Cadmium	A	mg/L	5.917E-06	5.917E-06		0	0	0	2.308E-05	0.001	1	0%			0%	
Calcium	A	mg/L	0.00002805	0.00002805		0	0	0	0.2027235	0.02092	50	0%			0%	
Cerium	A	mg/L	-1.386E-06	-1.386E-06		0	0	0	0.0000222	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	-4.154E-06	-4.154E-06		0	0	0	0.0002538	0.001	1	0%			0%	
Cobalt	A	mg/L	7.933E-07	7.933E-07		0	0	0	2.141E-05	0.001	1	0%			0%	
Copper	A	mg/L	0.00003104	0.00003104		0	0	0	0.0001748	0.001	1	0%			0%	
Iron	A	mg/L	0.0001812	0.0001812		0	0	0	0.0021157	0.00119	5	0%			0%	
Lanthanum	A	mg/L	3.768E-07	3.768E-07		0	0	0	6.805E-05	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	8.125E-06	8.125E-06		0	0	0	3.031E-05	0.001	1	0%			0%	
Magnesium	A	mg/L	0.0002506	0.0002506		0	0	0	0.0203306	0.00564	50	0%			0%	
Manganese	A	mg/L	-3.644E-06	-3.644E-06		0	0	0	7.309E-05	0.001	1	0%			0%	
Mercury	A	mg/L	7.653E-06	7.653E-06		0	0	0	3.043E-05	0.001	0.002	0%			0%	
Molybdenum	A	mg/L	0.00003364	0.00003364		0	0	0	8.113E-05	0.001	0.1	0%			0%	
Nickel	A	mg/L	1.927E-06	1.927E-06		0	0	0	0.0001769	0.001	1	0%			0%	
Potassium	A	mg/L	0.009137	0.009137		0	0	0	0.0215433	0.08139	50	0%			0%	
Selenium	A	mg/L	0.00002332	0.00002332		0	0	0	7.174E-05	0.001	1	0%			0%	
Silicon	A	mg/L	-0.001624	-0.001624		0	0	0	0.0033337	0.1	0.4	0%	0	0	0%	
Silver	A	mg/L	1.592E-06	1.592E-06		0	0	0	2.644E-05	0.001	0.04	0%			0%	
Sodium	A	mg/L	0.01267	0.01267		0	0	0	0.0451914	0.02171	50	0%			0%	
Strontium	A	mg/L	-4.656E-06	-4.656E-06		0	0	0	9.743E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00006297	0.00006297		0	0	0	4.842E-05	0.001	1	0%	0	0	0%	
Thorium	A	mg/L	0.00005469	0.00005469		0	0	0	3.018E-05	0.001	1	0%	0	0	0%	
Tin	A	mg/L	0.00006785	0.00006785		0	0	0	0.0009928	0.00132	0.1	0%	0	0	0%	
Titanium	A	mg/L	0.00003689	0.00003689		0	0	0	0.0001004	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00001103	0.00001103		0	0	0	2.468E-05	0.0003	1	0%	0	0	0%	
Vanadium	A	mg/L	8.921E-06	8.921E-06		0	0	0	0.0018612	0.0013	1	0%	0	0	0%	
Zinc	A	mg/L	0.00001554	0.00001554		0	0	0	0.0010089	0.00273	1	0%	0	0	0%	
Iron, Ferrous	C	mg/L	0.0001812	0.0001812		0	0	0	0.0021157	0.00119	5	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078288	LRB	ICPMS-6020-W-	MBLK		3/8/2022 5:18:42	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078288	LRB	ICPMS-6020-W-	MBLK		3/8/2022 5:18:42	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.0003585	0		0	0	0	0.0017836	0.001	1	0%	0	0	0%	
Antimony	A	mg/L	0.0001008	0.0001008		0	0	0	6.768E-05	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	5.721E-06	0		0	0	0	8.203E-05	0.001	1	0%	0	0	0%	
Barium	A	mg/L	-3.504E-07	0		0	0	0	6.762E-05	0.001	1	0%	0	0	0%	
Beryllium	A	mg/L	-2.553E-05	0		0	0	0	8.516E-05	0.001	1	0%	0	0	0%	
Boron	A	mg/L	0.001506	0		0	0	0	0.0039526	0.00561	1	0%	0	0	0%	
Cadmium	A	mg/L	3.298E-06	0		0	0	0	2.308E-05	0.001	1	0%	0	0	0%	
Calcium	A	mg/L	0.003205	0		0	0	0	0.2027235	0.02092	50	0%	0	0	0%	
Cerium	A	mg/L	-1.583E-06	0		0	0	0	0.0000222	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	9.058E-06	0		0	0	0	0.0002538	0.001	1	0%	0	0	0%	
Cobalt	A	mg/L	-1.382E-07	0		0	0	0	2.141E-05	0.001	1	0%	0	0	0%	
Copper	A	mg/L	0.00003567	0		0	0	0	0.0001748	0.001	1	0%	0	0	0%	
Iron	A	mg/L	0.0002137	0		0	0	0	0.0021157	0.00119	5	0%	0	0	0%	
Lanthanum	A	mg/L	1.097E-07	0		0	0	0	6.805E-05	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	6.409E-06	0		0	0	0	3.031E-05	0.0005	1	0%	0	0	0%	
Magnesium	A	mg/L	0.000632	0		0	0	0	0.0203306	0.00564	50	0%	0	0	0%	
Manganese	A	mg/L	5.542E-06	0		0	0	0	7.309E-05	0.001	1	0%	0	0	0%	
Mercury	A	mg/L	6.308E-06	0		0	0	0	3.043E-05	0.001	0.002	0%	0	0	0%	
Molybdenum	A	mg/L	0.00000893	0		0	0	0	8.113E-05	0.001	0.1	0%	0	0	0%	
Nickel	A	mg/L	0.00001409	0		0	0	0	0.0001769	0.001	1	0%	0	0	0%	
Potassium	A	mg/L	0.009732	0		0	0	0	0.0215433	0.08139	50	0%	0	0	0%	
Selenium	A	mg/L	0.00001561	0		0	0	0	7.174E-05	0.001	1	0%	0	0	0%	
Silicon	A	mg/L	-0.001242	0		0	0	0	0.0033337	0.1	0.4	0%	0	0	0%	
Silver	A	mg/L	9.428E-08	0		0	0	0	2.644E-05	0.001	0.04	0%	0	0	0%	
Sodium	A	mg/L	0.0159	0		0	0	0	0.0451914	0.02171	50	0%	0	0	0%	
Strontium	A	mg/L	-4.084E-06	0		0	0	0	9.743E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00001897	0		0	0	0	4.842E-05	0.001	1	0%	0	0	0%	
Thorium	A	mg/L	0.00002666	0		0	0	0	3.018E-05	0.001	1	0%	0	0	0%	
Tin	A	mg/L	0.00003757	0		0	0	0	0.0009928	0.00132	0.1	0%	0	0	0%	
Titanium	A	mg/L	0.00008658	0		0	0	0	0.0001004	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00000515	0		0	0	0	2.468E-05	0.0003	1	0%	0	0	0%	
Vanadium	A	mg/L	-8.804E-05	0		0	0	0	0.0018612	0.0013	1	0%	0	0	0%	
Zinc	A	mg/L	0.0006691	0		0	0	0	0.0010089	0.00273	1	0%	0	0	0%	
Iron, Ferrous	C	mg/L	0.0002137	0		0	0	0	0.0021157	0.00119	5	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078289	LFB	ICPMS-6020-W-	LFB-DOD		3/8/2022 5:24:59	1.03	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.04722	0.0486366		0.05	0	0	0.0018371	0.001	1	97%	85	115	0%	
Antimony	A	mg/L	0.04829	0.0497387		0.05	0	0	6.971E-05	0.001	0.1	99%	85	115	0%	
Arsenic	A	mg/L	0.04789	0.0493267		0.05	0	0	8.449E-05	0.001	1	99%	85	115	0%	
Barium	A	mg/L	0.04616	0.0475448		0.05	0	0	6.965E-05	0.001	1	95%	85	115	0%	
Beryllium	A	mg/L	0.04285	0.0441355		0.05	0	0	8.771E-05	0.001	1	88%	85	115	0%	
Boron	A	mg/L	0.04466	0.0459998		0.05	0	0	0.0040712	0.0057783	1	92%	85	115	0%	
Cadmium	A	mg/L	0.04718	0.0485954		0.05	0	0	2.377E-05	0.001	1	97%	85	115	0%	
Calcium	A	mg/L	49.19	50.6657		50	0	0	0.2088052	0.0215476	50	101%	85	115	0%	
Cerium	A	mg/L	0.04955	0.0510365		0.05	0	0	2.287E-05	0.001	0.1	102%	85	115	0%	
Chromium	A	mg/L	0.04777	0.0492031		0.05	0	0	0.0002614	0.001	1	98%	85	115	0%	
Cobalt	A	mg/L	0.04784	0.0492752		0.05	0	0	2.205E-05	0.001	1	99%	85	115	0%	
Copper	A	mg/L	0.04851	0.0499653		0.05	0	0	0.0001801	0.001	1	100%	85	115	0%	
Iron	A	mg/L	4.986	5.13558		5.05	0	0	0.0021792	0.0012257	5	102%	85	115	0%	
Lanthanum	A	mg/L	0.04964	0.0511292		0.05	0	0	7.009E-05	0.001	0.1	102%	85	115	0%	
Lead	A	mg/L	0.04724	0.0486572		0.05	0	0	3.122E-05	0.001	1	97%	88	115	0%	
Magnesium	A	mg/L	45.86	47.2358		50	0	0	0.0209406	0.0058092	50	94%	85	115	0%	
Manganese	A	mg/L	0.04838	0.0498314		0.05	0	0	7.528E-05	0.001	1	100%	85	115	0%	
Mercury	A	mg/L	0.000969	0.00099807		0.001	0	0	3.134E-05	0.001	0.002	100%	85	115	0%	
Molybdenum	A	mg/L	0.04725	0.0486675		0.05	0	0	8.356E-05	0.001	0.1	97%	85	115	0%	
Nickel	A	mg/L	0.04894	0.0504082		0.05	0	0	0.0001822	0.001	1	101%	85	115	0%	
Potassium	A	mg/L	46.31	47.6993		50	0	0	0.0221896	0.0838317	50	95%	85	115	0%	
Selenium	A	mg/L	0.05254	0.0541162		0.05	0	0	7.389E-05	0.001	1	108%	85	115	0%	
Silicon	A	mg/L	0.1905	0.196215		0.2	0	0	0.0034337	0.1	0.4	98%	85	115	0%	
Silver	A	mg/L	0.01869	0.0192507		0.02	0	0	2.723E-05	0.001	0.04	96%	85	115	0%	
Sodium	A	mg/L	46.01	47.3903		50	0	0	0.0465471	0.0223613	50	95%	85	115	0%	
Strontium	A	mg/L	0.0481	0.049543		0.05	0	0	0.0001004	0.001	1	99%	85	115	0%	
Thallium	A	mg/L	0.04731	0.0487293		0.05	0	0	4.987E-05	0.001	1	97%	85	115	0%	
Thorium	A	mg/L	0.04756	0.0489868		0.05	0	0	3.109E-05	0.001	1	98%	85	115	0%	
Tin	A	mg/L	0.04834	0.0497902		0.05	0	0	0.0010226	0.0013596	0.1	100%	85	115	0%	
Titanium	A	mg/L	0.04902	0.0504906		0.05	0	0	0.0001034	0.001	1	101%	85	115	0%	
Uranium	A	mg/L	0.04728	0.0486984		0.05	0	0	2.542E-05	0.0003	1	97%	85	115	0%	
Vanadium	A	mg/L	0.04876	0.0502228		0.05	0	0	0.001917	0.001339	1	100%	85	115	0%	
Zinc	A	mg/L	0.04926	0.0507378		0.05	0	0	0.0010392	0.0028119	1	101%	85	115	0%	
Iron, Ferrous	C	mg/L	4.986	5.13558		0	0	0	0.0021792	0.0012257	5	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078290	ICSA	ICPMS-6020-W-	ICSA		3/8/2022 5:31:16	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	43.09	43.09		40	0	0	0.0017836	0.001	1	108%	80	120	0%	
Antimony	A	mg/L	0.0003328	0.0003328		0	0	0	6.768E-05	0.001	0.1	0%			0%	
Arsenic	A	mg/L	0.0000533	0.0000533		0	0	0	8.203E-05	0.001	1	0%			0%	
Barium	A	mg/L	0.0001861	0.0001861		0	0	0	6.762E-05	0.001	1	0%			0%	
Beryllium	A	mg/L	-0.0000373	-0.0000373		0	0	0	8.516E-05	0.001	1	0%			0%	
Boron	A	mg/L	0.001674	0.001674		0	0	0	0.0039526	0.00561	1	0%			0%	
Cadmium	A	mg/L	0.00007178	0.00007178		0	0	0	2.308E-05	0.001	1	0%			0%	
Calcium	A	mg/L	127.9	127.9		120	0	0	0.2027235	0.02092	50	107%	80	120	0%	
Cerium	A	mg/L	0.00001109	0.00001109		0	0	0	0.0000222	0.001	0.1	0%			0%	
Chromium	A	mg/L	0.002009	0.002009		0	0	0	0.0002538	0.001	1	0%			0%	
Cobalt	A	mg/L	0.0002453	0.0002453		0	0	0	2.141E-05	0.001	1	0%			0%	
Copper	A	mg/L	0.0002352	0.0002352		0	0	0	0.0001748	0.001	1	0%			0%	
Iron	A	mg/L	107.9	107.9		100	0	0	0.0021157	0.00119	5	108%	80	120	0%	
Lanthanum	A	mg/L	7.321E-06	7.321E-06		0	0	0	6.805E-05	0.001	0.1	0%			0%	
Lead	A	mg/L	0.00007424	0.00007424		0	0	0	3.031E-05	0.001	1	0%			0%	
Magnesium	A	mg/L	44.43	44.43		50	0	0	0.0203306	0.00564	50	89%			0%	
Manganese	A	mg/L	0.0003119	0.0003119		0	0	0	7.309E-05	0.001	1	0%			0%	
Mercury	A	mg/L	4.083E-06	4.083E-06		0	0	0	3.043E-05	0.001	0.002	0%			0%	
Molybdenum	A	mg/L	0.9075	0.9075		0.8	0	0	8.113E-05	0.001	0.1	113%	80	120	0%	
Nickel	A	mg/L	0.0001579	0.0001579		0	0	0	0.0001769	0.001	1	0%			0%	
Potassium	A	mg/L	43.45	43.45		50	0	0	0.0215433	0.08139	50	87%			0%	
Selenium	A	mg/L	0.0002434	0.0002434		0	0	0	7.174E-05	0.001	1	0%			0%	
Silicon	A	mg/L	0.002817	0.002817		0	0	0	0.0033337	0.1	0.4	0%			0%	
Silver	A	mg/L	0.0000151	0.0000151		0	0	0	2.644E-05	0.001	0.04	0%			0%	
Sodium	A	mg/L	109.6	109.6		100	0	0	0.0451914	0.02171	50	110%			0%	
Strontium	A	mg/L	0.001085	0.001085		0	0	0	9.743E-05	0.001	1	0%			0%	
Thallium	A	mg/L	0.00003099	0.00003099		0	0	0	4.842E-05	0.001	1	0%			0%	
Thorium	A	mg/L	0.0001092	0.0001092		0	0	0	3.018E-05	0.001	1	0%			0%	
Tin	A	mg/L	0.0001488	0.0001488		0	0	0	0.0009928	0.00132	0.1	0%			0%	
Titanium	A	mg/L	0.8504	0.8504		0.8	0	0	0.0001004	0.001	1	106%			0%	
Uranium	A	mg/L	0.00003795	0.00003795		0	0	0	2.468E-05	0.0003	1	0%			0%	
Vanadium	A	mg/L	-0.000792	-0.000792		0	0	0	0.0018612	0.0013	1	0%			0%	
Zinc	A	mg/L	0.0009749	0.0009749		0	0	0	0.0010089	0.00273	1	0%			0%	
Iron, Ferrous	C	mg/L	107.9	107.9		0	0	0	0.0021157	0.00119	5	0%			0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078291	ICSAB	ICPMS-6020-W- ICSAB			3/8/2022 5:37:35	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	41.17	41.17		40	0	0	0.0017836	0.001	1	103%	80	120	0%	
Antimony	A	mg/L	0.0001536	0.0001536		0	0	0	6.768E-05	0.001	0.1	0%			0%	
Arsenic	A	mg/L	0.01049	0.01049		0.01	0	0	8.203E-05	0.001	1	105%	80	120	0%	
Barium	A	mg/L	0.0001827	0.0001827		0	0	0	6.762E-05	0.001	1	0%			0%	
Beryllium	A	mg/L	-4.122E-05	-4.122E-05		0	0	0	8.516E-05	0.001	1	0%			0%	
Boron	A	mg/L	0.001298	0.001298		0	0	0	0.0039526	0.00561	1	0%			0%	
Cadmium	A	mg/L	0.0106	0.0106		0.01	0	0	2.308E-05	0.001	1	106%	80	120	0%	
Calcium	A	mg/L	122.6	122.6		120	0	0	0.2027235	0.02092	50	102%	80	120	0%	
Cerium	A	mg/L	7.183E-06	7.183E-06		0	0	0	0.0000222	0.001	0.1	0%			0%	
Chromium	A	mg/L	0.02244	0.02244		0.02	0	0	0.0002538	0.001	1	112%	80	120	0%	
Cobalt	A	mg/L	0.02111	0.02111		0.02	0	0	2.141E-05	0.001	1	106%	80	120	0%	
Copper	A	mg/L	0.02096	0.02096		0.02	0	0	0.0001748	0.001	1	105%	80	120	0%	
Iron	A	mg/L	105.3	105.3		100	0	0	0.0021157	0.00119	5	105%	80	120	0%	
Lanthanum	A	mg/L	5.075E-06	5.075E-06		0	0	0	6.805E-05	0.001	0.1	0%			0%	
Lead	A	mg/L	0.00005007	0.00005007		0	0	0	3.031E-05	0.001	1	0%			0%	
Magnesium	A	mg/L	42.97	42.97		40	0	0	0.0203306	0.00564	50	107%	80	120	0%	
Manganese	A	mg/L	0.02099	0.02099		0.02	0	0	7.309E-05	0.001	1	105%	80	120	0%	
Mercury	A	mg/L	6.862E-06	6.862E-06		0	0	0	3.043E-05	0.001	0.002	0%			0%	
Molybdenum	A	mg/L	0.8931	0.8931		0.8	0	0	8.113E-05	0.001	0.1	112%	80	120	0%	
Nickel	A	mg/L	0.02127	0.02127		0.02	0	0	0.0001769	0.001	1	106%	80	120	0%	
Potassium	A	mg/L	41.84	41.84		40	0	0	0.0215433	0.08139	50	105%	80	120	0%	
Selenium	A	mg/L	0.01101	0.01101		0.01	0	0	7.174E-05	0.001	1	110%	80	120	0%	
Silicon	A	mg/L	0.002457	0.002457		0	0	0	0.0033337	0.1	0.4	0%			0%	
Silver	A	mg/L	0.005257	0.005257		0.005	0	0	2.644E-05	0.001	0.04	105%	80	120	0%	
Sodium	A	mg/L	106.8	106.8		100	0	0	0.0451914	0.02171	50	107%	80	120	0%	
Strontium	A	mg/L	0.00101	0.00101		0	0	0	9.743E-05	0.001	1	0%			0%	
Thallium	A	mg/L	0.00001327	0.00001327		0	0	0	4.842E-05	0.001	1	0%			0%	
Thorium	A	mg/L	0.00005143	0.00005143		0	0	0	3.018E-05	0.001	1	0%			0%	
Tin	A	mg/L	0.00008311	0.00008311		0	0	0	0.0009928	0.00132	0.1	0%			0%	
Titanium	A	mg/L	0.8229	0.8229		0.8	0	0	0.0001004	0.001	1	103%	80	120	0%	
Uranium	A	mg/L	0.00005391	0.00005391		0	0	0	2.468E-05	0.0003	1	0%			0%	
Vanadium	A	mg/L	0.02008	0.02008		0.02	0	0	0.0018612	0.0013	1	100%	80	120	0%	
Zinc	A	mg/L	0.01067	0.01067		0.01	0	0	0.0010089	0.00273	1	107%	80	120	0%	
Iron, Ferrous	C	mg/L	105.3	105.3		0	0	0	0.0021157	0.00119	5	0%			0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078292	Rinse	ICPMS-6020-W-	SAMP		3/8/2022 5:43:53	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.001976	0.001976		0	0	0	0.0017836	0.001	1	0%	0	0	0%	
Antimony	A	mg/L	0.00005379	0		0	0	0	6.768E-05	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	-4.624E-05	0		0	0	0	8.203E-05	0.001	1	0%	0	0	0%	
Barium	A	mg/L	-6.186E-06	0		0	0	0	6.762E-05	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	1.048E-06	0		0	0	0	2.308E-05	0.001	1	0%	0	0	0%	
Cerium	A	mg/L	-1.886E-06	0		0	0	0	0.0000222	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	-7.752E-06	0		0	0	0	0.0002538	0.001	1	0%	0	0	0%	
Lanthanum	A	mg/L	1.057E-07	0		0	0	0	6.805E-05	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	2.863E-06	0		0	0	0	3.031E-05	0.001	1	0%	0	0	0%	
Manganese	A	mg/L	-2.456E-06	0		0	0	0	7.309E-05	0.001	1	0%	0	0	0%	
Mercury	A	mg/L	3.006E-06	0		0	0	0	3.043E-05	0.001	0.002	0%	0	0	0%	
Molybdenum	A	mg/L	0.0002908	0.0002908		0	0	0	8.113E-05	0.001	0.1	0%	0	0	0%	J
Silicon	A	mg/L	-0.002023	0		0	0	0	0.0033337	0.1	0.4	0%	0	0	0%	
Silver	A	mg/L	0.00000102	0		0	0	0	2.644E-05	0.001	0.04	0%	0	0	0%	
Strontium	A	mg/L	-6.74E-06	0		0	0	0	9.743E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	9.346E-06	0		0	0	0	4.842E-05	0.001	1	0%	0	0	0%	
Thorium	A	mg/L	0.00001051	0		0	0	0	3.018E-05	0.001	1	0%	0	0	0%	
Titanium	A	mg/L	0.000339	0.000339		0	0	0	0.0001004	0.001	1	0%	0	0	0%	J
Uranium	A	mg/L	3.177E-06	0		0	0	0	2.468E-05	0.0003	1	0%	0	0	0%	
Magnesium	B	mg/L	0.003227	0		0	0	0	0.0203306	0.00564	50	0%	0	0	0%	L
Potassium	B	mg/L	0.01028	0		0	0	0	0.0215433	0.08139	50	0%	0	0	0%	L
Sodium	B	mg/L	0.04164	0		0	0	0	0.0451914	0.02171	50	0%	0	0	0%	L
Tin	B	mg/L	-4.677E-06	0		0	0	0	0.0009928	0.00132	0.1	0%	0	0	0%	
Vanadium	B	mg/L	-0.0007927	0		0	0	0	0.0018612	0.0013	1	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078293	Rinse	ICPMS-6020-W-	SAMP		3/8/2022 5:50:07	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.001826	0.001826		0	0	0	0.0017836	0.001	1	0%	0	0	0%	
Antimony	A	mg/L	0.00003678	0		0	0	0	6.768E-05	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	-6.173E-05	0		0	0	0	8.203E-05	0.001	1	0%	0	0	0%	
Barium	A	mg/L	-5.78E-06	0		0	0	0	6.762E-05	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	4.633E-07	0		0	0	0	2.308E-05	0.001	1	0%	0	0	0%	
Cerium	A	mg/L	-1.884E-06	0		0	0	0	0.0000222	0.001	0.1	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078293	Rinse	ICPMS-6020-W-	SAMP		3/8/2022 5:50:07	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Chromium	A	mg/L	-1.106E-05	0		0	0	0	0.0002538	0.001	1	0%	0	0	0%	
Lanthanum	A	mg/L	1.076E-07	0		0	0	0	6.805E-05	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	2.915E-06	0		0	0	0	3.031E-05	0.001	1	0%	0	0	0%	
Manganese	A	mg/L	-3.749E-06	0		0	0	0	7.309E-05	0.001	1	0%	0	0	0%	
Mercury	A	mg/L	2.156E-06	0		0	0	0	3.043E-05	0.001	0.002	0%	0	0	0%	
Molybdenum	A	mg/L	0.00006557	0		0	0	0	8.113E-05	0.001	0.1	0%	0	0	0%	
Silicon	A	mg/L	-0.00204	0		0	0	0	0.0033337	0.1	0.4	0%	0	0	0%	
Silver	A	mg/L	1.007E-06	0		0	0	0	2.644E-05	0.001	0.04	0%	0	0	0%	
Strontium	A	mg/L	-5.04E-06	0		0	0	0	9.743E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	8.562E-06	0		0	0	0	4.842E-05	0.001	1	0%	0	0	0%	
Thorium	A	mg/L	0.00000609	0		0	0	0	3.018E-05	0.001	1	0%	0	0	0%	
Titanium	A	mg/L	0.0001703	0.0001703		0	0	0	0.0001004	0.001	1	0%	0	0	0%	J
Uranium	A	mg/L	2.973E-06	0		0	0	0	2.468E-05	0.0003	1	0%	0	0	0%	
Magnesium	B	mg/L	0.002893	0		0	0	0	0.0203306	0.00564	50	0%	0	0	0%	L
Potassium	B	mg/L	0.002555	0		0	0	0	0.0215433	0.08139	50	0%	0	0	0%	L
Sodium	B	mg/L	0.02961	0		0	0	0	0.0451914	0.02171	50	0%	0	0	0%	L
Tin	B	mg/L	-6.666E-06	0		0	0	0	0.0009928	0.00132	0.1	0%	0	0	0%	
Vanadium	B	mg/L	-0.0008273	0		0	0	0	0.0018612	0.0013	1	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078294	CCV	ICPMS-6020-W-	CCV		3/8/2022 5:56:22	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.04655	0.04655		0.05	0	0	0.0017836	0.001	1	93%	90	110	0%	
Antimony	A	mg/L	0.04947	0.04947		0.05	0	0	6.768E-05	0.001	0.1	99%	90	110	0%	
Arsenic	A	mg/L	0.05066	0.05066		0.05	0	0	8.203E-05	0.001	1	101%	90	110	0%	
Barium	A	mg/L	0.04771	0.04771		0.05	0	0	6.762E-05	0.001	1	95%	90	110	0%	
Beryllium	A	mg/L	0.03944	0.03944		0.05	0	0	8.516E-05	0.001	1	79%	90	110	0%	S
Boron	A	mg/L	0.04225	0.04225		0.05	0	0	0.0039526	0.00561	1	84%	90	110	0%	S
Cadmium	A	mg/L	0.04859	0.04859		0.05	0	0	2.308E-05	0.001	1	97%	90	110	0%	
Calcium	A	mg/L	11.81	11.81		12.5	0	0	0.2027235	0.02092	50	94%	90	110	0%	
Cerium	A	mg/L	0.05001	0.05001		0.05	0	0	0.0000222	0.001	0.1	100%	90	110	0%	
Chromium	A	mg/L	0.04978	0.04978		0.05	0	0	0.0002538	0.001	1	100%	90	110	0%	
Cobalt	A	mg/L	0.0495	0.0495		0.05	0	0	2.141E-05	0.001	1	99%	90	110	0%	
Copper	A	mg/L	0.05232	0.05232		0.05	0	0	0.0001748	0.001	1	105%	90	110	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078294	CCV	ICPMS-6020-W-	CCV		3/8/2022 5:56:22	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Iron	A	mg/L	1.275	1.275		1.3	0	0	0.0021157	0.00119	5	98%	90	110	0%	
Lanthanum	A	mg/L	0.05018	0.05018		0.05	0	0	6.805E-05	0.001	0.1	100%	90	110	0%	
Lead	A	mg/L	0.04762	0.04762		0.05	0	0	3.031E-05	0.001	1	95%	90	110	0%	
Magnesium	A	mg/L	12.33	12.33		12.5	0	0	0.0203306	0.00564	50	99%	90	110	0%	
Manganese	A	mg/L	0.05015	0.05015		0.05	0	0	7.309E-05	0.001	1	100%	90	110	0%	
Mercury	A	mg/L	0.0009973	0.0009973		0.001	0	0	3.043E-05	0.001	0.002	100%	90	110	0%	
Molybdenum	A	mg/L	0.04768	0.04768		0.05	0	0	8.113E-05	0.001	0.1	95%	90	110	0%	
Nickel	A	mg/L	0.0533	0.0533		0.05	0	0	0.0001769	0.001	1	107%	90	110	0%	
Potassium	A	mg/L	12.33	12.33		12.5	0	0	0.0215433	0.08139	50	99%	90	110	0%	
Selenium	A	mg/L	0.0527	0.0527		0.05	0	0	7.174E-05	0.001	1	105%	90	110	0%	
Silicon	A	mg/L	0.1936	0.1936		0.2	0	0	0.0033337	0.1	0.4	97%	90	110	0%	
Silver	A	mg/L	0.01943	0.01943		0.02	0	0	2.644E-05	0.001	0.04	97%	90	110	0%	
Sodium	A	mg/L	12.21	12.21		12.5	0	0	0.0451914	0.02171	50	98%	90	110	0%	
Strontium	A	mg/L	0.04969	0.04969		0.05	0	0	9.743E-05	0.001	1	99%	90	110	0%	
Thallium	A	mg/L	0.04768	0.04768		0.05	0	0	4.842E-05	0.001	1	95%	90	110	0%	
Thorium	A	mg/L	0.04837	0.04837		0.05	0	0	3.018E-05	0.001	1	97%	90	110	0%	
Tin	A	mg/L	0.04826	0.04826		0.05	0	0	0.0009928	0.00132	0.1	97%	90	110	0%	
Titanium	A	mg/L	0.04647	0.04647		0.05	0	0	0.0001004	0.001	1	93%	90	110	0%	
Uranium	A	mg/L	0.04684	0.04684		0.05	0	0	2.468E-05	0.0003	1	94%	90	110	0%	
Vanadium	A	mg/L	0.05	0.05		0.05	0	0	0.0018612	0.0013	1	100%	90	110	0%	
Zinc	A	mg/L	0.05157	0.05157		0.05	0	0	0.0010089	0.00273	1	103%	90	110	0%	
Iron, Ferrous	C	mg/L	1.275	1.275		0	0	0	0.0021157	0.00119	5	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078295	CCB	ICPMS-6020-W-	CCB		3/8/2022 6:02:37	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.0002084	0.0002084		0	0	0	0.0017836	0.001	1	0%			0%	
Antimony	A	mg/L	0.0001965	0.0001965		0	0	0	6.768E-05	0.001	0.1	0%			0%	
Arsenic	A	mg/L	-3.843E-05	-3.843E-05		0	0	0	8.203E-05	0.001	1	0%			0%	
Barium	A	mg/L	-1.837E-06	-1.837E-06		0	0	0	6.762E-05	0.001	1	0%			0%	
Beryllium	A	mg/L	-4.087E-05	-4.087E-05		0	0	0	8.516E-05	0.001	1	0%			0%	
Boron	A	mg/L	0.0005758	0.0005758		0	0	0	0.0039526	0.00561	1	0%			0%	
Cadmium	A	mg/L	5.414E-06	5.414E-06		0	0	0	2.308E-05	0.001	1	0%			0%	
Calcium	A	mg/L	-0.0002604	-0.0002604		0	0	0	0.2027235	0.02092	50	0%			0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078295	CCB	ICPMS-6020-W-	CCB		3/8/2022 6:02:37	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Cerium	A	mg/L	-1.391E-06	-1.391E-06		0	0	0	0.0000222	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	-9.117E-07	-9.117E-07		0	0	0	0.0002538	0.001	1	0%				0%
Cobalt	A	mg/L	2.018E-07	2.018E-07		0	0	0	2.141E-05	0.001	1	0%				0%
Copper	A	mg/L	0.00001376	0.00001376		0	0	0	0.0001748	0.001	1	0%				0%
Iron	A	mg/L	0.001107	0.001107		0	0	0	0.0021157	0.00119	5	0%				0%
Lanthanum	A	mg/L	5.374E-07	5.374E-07		0	0	0	6.805E-05	0.001	0.1	0%	0	0		0%
Lead	A	mg/L	4.477E-06	4.477E-06		0	0	0	3.031E-05	0.001	1	0%				0%
Magnesium	A	mg/L	0.0005418	0.0005418		0	0	0	0.0203306	0.00564	50	0%				0%
Manganese	A	mg/L	-6.06E-07	-6.06E-07		0	0	0	7.309E-05	0.001	1	0%				0%
Mercury	A	mg/L	5.125E-06	5.125E-06		0	0	0	3.043E-05	0.001	0.002	0%				0%
Molybdenum	A	mg/L	0.00004534	0.00004534		0	0	0	8.113E-05	0.001	0.1	0%				0%
Nickel	A	mg/L	0.00005299	0.00005299		0	0	0	0.0001769	0.001	1	0%				0%
Potassium	A	mg/L	0.0008311	0.0008311		0	0	0	0.0215433	0.08139	50	0%				0%
Selenium	A	mg/L	0.00001724	0.00001724		0	0	0	7.174E-05	0.001	1	0%				0%
Silicon	A	mg/L	-0.002051	-0.002051		0	0	0	0.0033337	0.1	0.4	0%	0	0		0%
Silver	A	mg/L	1.371E-06	1.371E-06		0	0	0	2.644E-05	0.001	0.04	0%				0%
Sodium	A	mg/L	0.0199	0.0199		0	0	0	0.0451914	0.02171	50	0%				0%
Strontium	A	mg/L	-3.923E-06	-3.923E-06		0	0	0	9.743E-05	0.001	1	0%	0	0		0%
Thallium	A	mg/L	0.00005666	0.00005666		0	0	0	4.842E-05	0.001	1	0%	0	0		0%
Thorium	A	mg/L	0.00003944	0.00003944		0	0	0	3.018E-05	0.001	1	0%	0	0		0%
Tin	A	mg/L	0.0000606	0.0000606		0	0	0	0.0009928	0.00132	0.1	0%	0	0		0%
Titanium	A	mg/L	0.00005663	0.00005663		0	0	0	0.0001004	0.001	1	0%	0	0		0%
Uranium	A	mg/L	5.657E-06	5.657E-06		0	0	0	2.468E-05	0.0003	1	0%	0	0		0%
Vanadium	A	mg/L	-0.0003319	-0.0003319		0	0	0	0.0018612	0.0013	1	0%	0	0		0%
Zinc	A	mg/L	0.00000989	0.00000989		0	0	0	0.0010089	0.00273	1	0%	0	0		0%
Iron, Ferrous	C	mg/L	0.001107	0.001107		0	0	0	0.0021157	0.00119	5	0%	0	0		0%

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078296	Rinse	ICPMS-6020-W-	SAMP		3/9/2022 8:05:18	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.001983	0.001983		0	0	0	0.0017836	0.001	1	0%	0	0		0%
Antimony	A	mg/L	0.00002464	0		0	0	0	6.768E-05	0.001	0.1	0%	0	0		0%
Arsenic	A	mg/L	-4.978E-05	0		0	0	0	8.203E-05	0.001	1	0%	0	0		0%
Barium	A	mg/L	-2.884E-06	0		0	0	0	6.762E-05	0.001	1	0%	0	0		0%

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078296	Rinse	ICPMS-6020-W-	SAMP		3/9/2022 8:05:18	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Cadmium	A	mg/L	8.918E-08	0		0	0	0	2.308E-05	0.001	1	0%	0	0	0%	
Cerium	A	mg/L	-1.414E-06	0		0	0	0	0.0000222	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	-9.935E-07	0		0	0	0	0.0002538	0.001	1	0%	0	0	0%	
Lanthanum	A	mg/L	6.351E-08	0		0	0	0	6.805E-05	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	8.187E-06	0		0	0	0	3.031E-05	0.001	1	0%	0	0	0%	
Manganese	A	mg/L	-6.317E-06	0		0	0	0	7.309E-05	0.001	1	0%	0	0	0%	
Mercury	A	mg/L	1.205E-07	0		0	0	0	3.043E-05	0.001	0.002	0%	0	0	0%	
Molybdenum	A	mg/L	2.33E-07	0		0	0	0	8.113E-05	0.001	0.1	0%	0	0	0%	
Silver	A	mg/L	9.524E-07	0		0	0	0	2.644E-05	0.001	0.04	0%	0	0	0%	
Strontium	A	mg/L	-3.584E-06	0		0	0	0	9.743E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00003474	0		0	0	0	4.842E-05	0.001	1	0%	0	0	0%	
Thorium	A	mg/L	7.203E-06	0		0	0	0	3.018E-05	0.001	1	0%	0	0	0%	
Titanium	A	mg/L	0.00001046	0		0	0	0	0.0001004	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	3.659E-06	0		0	0	0	2.468E-05	0.0003	1	0%	0	0	0%	
Magnesium	B	mg/L	0.002499	0		0	0	0	0.0203306	0.00564	50	0%	0	0	0%	L
Potassium	B	mg/L	-0.0005446	0		0	0	0	0.0215433	0.08139	50	0%	0	0	0%	L
Sodium	B	mg/L	-0.008973	0		0	0	0	0.0451914	0.02171	50	0%	0	0	0%	L
Tin	B	mg/L	5.524E-06	0		0	0	0	0.0009928	0.00132	0.1	0%	0	0	0%	
Vanadium	B	mg/L	-0.0007105	0		0	0	0	0.0018612	0.0013	1	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078297	MB-164289	ICPMS-6020-W-	MBLK		3/9/2022 8:11:33	1	164289	3/7/2022 4:2	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.001612	0		0	0	0	0.0029215	0.0031975	1	0%	0	0	0%	
Antimony	A	mg/L	0.00001586	0		0	0	0	0.0002485	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	0.00003234	0		0	0	0	0.0002595	0.001	1	0%	0	0	0%	
Barium	A	mg/L	0.00006605	0		0	0	0	0.0001041	0.001	1	0%	0	0	0%	
Beryllium	A	mg/L	-4.467E-05	0		0	0	0	0.0001071	0.01	1	0%	0	0	0%	
Boron	A	mg/L	-8.165E-05	0		0	0	0	0.0030301	0.01467	1	0%	0	0	0%	
Cadmium	A	mg/L	1.519E-06	0		0	0	0	0.0000141	0.005	1	0%	0	0	0%	
Calcium	A	mg/L	0.00939	0		0	0	0	0.0372936	0.1103481	50	0%	0	0	0%	
Cerium	A	mg/L	-7.513E-07	0		0	0	0	0.0000087	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	0.00007275	0		0	0	0	0.0005265	0.0015375	1	0%	0	0	0%	
Cobalt	A	mg/L	0.00001257	0		0	0	0	8.402E-05	0.001	1	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078297	MB-164289	ICPMS-6020-W-	MBLK		3/9/2022 8:11:33	1	164289	3/7/2022 4:2	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Copper	A	mg/L	0.0001348	0		0	0	0	0.0005744	0.00198	1	0%	0	0	0%	
Iron	A	mg/L	0.0006051	0		0	0	0	0.007424	0.00513	5	0%	0	0	0%	
Lanthanum	A	mg/L	5.326E-07	0		0	0	0	1.105E-05	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.00001341	0		0	0	0	5.246E-05	0.0005	1	0%	0	0	0%	
Magnesium	A	mg/L	-1.293E-05	0		0	0	0	0.0686349	0.0081522	50	0%	0	0	0%	
Manganese	A	mg/L	0.00004391	0		0	0	0	0.0002595	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	0.0001757	0.0001757		0	0	0	0.0000966	0.001	0.1	0%	0	0	0%	
Nickel	A	mg/L	0.00002136	0		0	0	0	0.0002388	0.0024200	1	0%	0	0	0%	
Potassium	A	mg/L	-0.003966	0		0	0	0	0.0289412	0.0261205	50	0%	0	0	0%	
Selenium	A	mg/L	0.00001614	0		0	0	0	6.251E-05	0.001	1	0%	0	0	0%	
Silicon	A	mg/L	0.02898	0.02898		0	0	0	0.0218797	0.0053212	0.4	0%	0	0	0%	
Silver	A	mg/L	2.754E-07	0		0	0	0	2.318E-05	0.001	0.04	0%	0	0	0%	
Sodium	A	mg/L	-0.005688	0		0	0	0	0.0721517	0.7330269	50	0%	0	0	0%	
Strontium	A	mg/L	7.063E-06	0		0	0	0	7.178E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	9.815E-06	0		0	0	0	0.0001114	0.001	1	0%	0	0	0%	
Thorium	A	mg/L	0.00004601	0		0	0	0	5.898E-05	0.00415	1	0%	0	0	0%	
Tin	A	mg/L	0.0004576	0		0	0	0	0.0018932	0.0011175	0.1	0%	0	0	0%	
Titanium	A	mg/L	0.0002979	0		0	0	0	0.0004924	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	3.514E-06	0		0	0	0	1.084E-05	0.0003	1	0%	0	0	0%	
Vanadium	A	mg/L	-0.000315	0		0	0	0	0.0012418	0.0021085	1	0%	0	0	0%	
Zinc	A	mg/L	0.0001101	0		0	0	0	0.0011617	0.0065544	1	0%	0	0	0%	
Silica	C	mg/L	0.06199402	0.06199402		0	0	0	0.0468049	0.0113831	5	0%	0	0	0%	
Silicon as SiO2	C	mg/L	0.06199402	0.06199402		0	0	0	0.0468049	0.0113831	5	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078298	LCS4-164289	ICPMS-6020-W-	LCS4-DOD		3/9/2022 8:17:48	1	164289	3/7/2022 4:2	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.4682	0.4682		0.5	0	0	0.0029215	0.0031975	1	94%	80	120	0%	
Antimony	A	mg/L	0.1019	0.1019		0.1	0	0	0.0002485	0.001	0.1	102%	80	120	0%	
Arsenic	A	mg/L	0.09387	0.09387		0.1	0	0	0.0002595	0.001	1	94%	80	120	0%	
Barium	A	mg/L	0.09131	0.09131		0.1	0	0	0.0001041	0.001	1	91%	80	120	0%	
Beryllium	A	mg/L	0.04173	0.04173		0.05	0	0	0.0001071	0.01	1	83%	80	120	0%	
Boron	A	mg/L	0.09086	0.09086		0.1	0	0	0.0030301	0.01467	1	91%	80	120	0%	
Cadmium	A	mg/L	0.05156	0.05156		0.05	0	0	0.0000141	0.005	1	103%	80	120	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078298	LCS4-164289	ICPMS-6020-W-	LCS4-DOD		3/9/2022 8:17:48	1	164289	3/7/2022 4:2	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Calcium	A	mg/L	5.127	5.127		5	0	0	0.0372936	0.1103481	50	103%	80	120	0%	
Cerium	A	mg/L	0.1052	0.1052		0.1	0	0	0.0000087	0.001	0.1	105%	80	120	0%	
Chromium	A	mg/L	0.09823	0.09823		0.1	0	0	0.0005265	0.0015375	1	98%	80	120	0%	
Cobalt	A	mg/L	0.09619	0.09619		0.1	0	0	8.402E-05	0.001	1	96%	80	120	0%	
Copper	A	mg/L	0.1032	0.1032		0.1	0	0	0.0005744	0.00198	1	103%	80	120	0%	
Iron	A	mg/L	0.5057	0.5057		0.5	0	0	0.007424	0.00513	5	101%	80	120	0%	
Lanthanum	A	mg/L	0.1039	0.1039		0.1	0	0	1.105E-05	0.001	0.1	104%	80	120	0%	
Lead	A	mg/L	0.09542	0.09542		0.1	0	0	5.246E-05	0.001	1	95%	88	115	0%	
Magnesium	A	mg/L	5.064	5.064		5	0	0	0.0686349	0.0081522	50	101%	80	120	0%	
Manganese	A	mg/L	0.4959	0.4959		0.5	0	0	0.0002595	0.001	1	99%	80	120	0%	
Molybdenum	A	mg/L	0.09477	0.09477		0.1	0	0	0.0000966	0.001	0.1	95%	80	120	0%	
Nickel	A	mg/L	0.1034	0.1034		0.1	0	0	0.0002388	0.0024200	1	103%	80	120	0%	
Potassium	A	mg/L	4.743	4.743		5	0	0	0.0289412	0.0261205	50	95%	80	120	0%	
Selenium	A	mg/L	0.09546	0.09546		0.1	0	0	6.251E-05	0.001	1	95%	80	120	0%	
Silicon	A	mg/L	1.018	1.018		1	0	0	0.0218797	0.0053212	0.4	102%	80	120	0%	
Silver	A	mg/L	0.009489	0.009489		0.01	0	0	2.318E-05	0.001	0.04	95%	80	120	0%	
Sodium	A	mg/L	5.014	5.014		5	0	0	0.0721517	0.7330269	50	100%	80	120	0%	
Strontium	A	mg/L	0.09859	0.09859		0.1	0	0	7.178E-05	0.001	1	99%	80	120	0%	
Thallium	A	mg/L	0.09724	0.09724		0.1	0	0	0.0001114	0.001	1	97%	80	120	0%	
Thorium	A	mg/L	0.09519	0.09519		0.1	0	0	5.898E-05	0.00415	1	95%	80	120	0%	
Tin	A	mg/L	0.1022	0.1022		0.1	0	0	0.0018932	0.0011175	0.1	102%	80	120	0%	
Titanium	A	mg/L	0.08863	0.08863		0.1	0	0	0.0004924	0.001	1	89%	80	120	0%	
Uranium	A	mg/L	0.09509	0.09509		0.1	0	0	1.084E-05	0.0003	1	95%	80	120	0%	
Vanadium	A	mg/L	0.09754	0.09754		0.1	0	0	0.0012418	0.0021085	1	98%	80	120	0%	
Zinc	A	mg/L	0.09745	0.09745		0.1	0	0	0.0011617	0.0065544	1	97%	80	120	0%	
Silica	C	mg/L	2.1777056	2.1777056		0	0	0	0.0468049	0.0113831	5	0%	0	0	0%	
Silicon as SiO2	C	mg/L	2.1777056	2.1777056		2.14	0	0	0.0468049	0.0113831	5	102%	80	120	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078299	Rinse	ICPMS-6020-W-	SAMP		3/9/2022 8:24:03	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.001942	0.001942		0	0	0	0.0017836	0.001	1	0%	0	0	0%	
Antimony	A	mg/L	0.0002801	0.0002801		0	0	0	6.768E-05	0.001	0.1	0%	0	0	0%	J
Arsenic	A	mg/L	-4.275E-05	0		0	0	0	8.203E-05	0.001	1	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078299	Rinse	ICPMS-6020-W-	SAMP		3/9/2022 8:24:03	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Barium	A	mg/L	-2.142E-06	0		0	0	0	6.762E-05	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	3.961E-06	0		0	0	0	2.308E-05	0.001	1	0%	0	0	0%	
Cerium	A	mg/L	-1.216E-06	0		0	0	0	0.0000222	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	-8.666E-07	0		0	0	0	0.0002538	0.001	1	0%	0	0	0%	
Lanthanum	A	mg/L	6.722E-07	0		0	0	0	6.805E-05	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	4.657E-06	0		0	0	0	3.031E-05	0.001	1	0%	0	0	0%	
Manganese	A	mg/L	1.696E-07	0		0	0	0	7.309E-05	0.001	1	0%	0	0	0%	
Mercury	A	mg/L	1.219E-06	0		0	0	0	3.043E-05	0.001	0.002	0%	0	0	0%	
Molybdenum	A	mg/L	0.00001498	0		0	0	0	8.113E-05	0.001	0.1	0%	0	0	0%	
Silver	A	mg/L	8.543E-07	0		0	0	0	2.644E-05	0.001	0.04	0%	0	0	0%	
Strontium	A	mg/L	-1.255E-05	0		0	0	0	9.743E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00009363	0.00009363		0	0	0	4.842E-05	0.001	1	0%	0	0	0%	J
Thorium	A	mg/L	0.00004765	0.00004765		0	0	0	3.018E-05	0.001	1	0%	0	0	0%	J
Titanium	A	mg/L	0.00003859	0		0	0	0	0.0001004	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	3.727E-06	0		0	0	0	2.468E-05	0.0003	1	0%	0	0	0%	
Magnesium	B	mg/L	0.002609	0		0	0	0	0.0203306	0.00564	50	0%	0	0	0%	L
Potassium	B	mg/L	-0.009428	0		0	0	0	0.0215433	0.08139	50	0%	0	0	0%	L
Sodium	B	mg/L	-0.007826	0		0	0	0	0.0451914	0.02171	50	0%	0	0	0%	L
Tin	B	mg/L	0.00001806	0		0	0	0	0.0009928	0.00132	0.1	0%	0	0	0%	
Vanadium	B	mg/L	-0.0005993	0		0	0	0	0.0018612	0.0013	1	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078300	B22030244-001	ICPMS-6020-W-	SAMP		3/9/2022 8:30:18	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.003494	0.003494		0	0	0	0.0017836	0.001	1	0%	0	0	0%	U
Antimony	A	mg/L	0.00006306	0		0	0	0	6.768E-05	0.001	0.1	0%	0	0	0%	U
Arsenic	A	mg/L	0.0005015	0.0005015		0	0	0	8.203E-05	0.001	1	0%	0	0	0%	J
Barium	A	mg/L	0.01252	0.01252		0	0	0	6.762E-05	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	5.288E-06	0		0	0	0	2.308E-05	0.001	1	0%	0	0	0%	U
Cerium	A	mg/L	5.093E-06	0		0	0	0	0.0000222	0.001	0.1	0%	0	0	0%	U
Chromium	A	mg/L	0.0006729	0.0006729		0	0	0	0.0002538	0.001	1	0%	0	0	0%	J
Lanthanum	A	mg/L	3.224E-06	0		0	0	0	6.805E-05	0.001	0.1	0%	0	0	0%	U
Lead	A	mg/L	0.00001354	0		0	0	0	3.031E-05	0.001	1	0%	0	0	0%	U
Manganese	A	mg/L	0.001908	0.001908		0	0	0	7.309E-05	0.001	1	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078300	B22030244-001	ICPMS-6020-W-	SAMP		3/9/2022 8:30:18	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Mercury	A	mg/L	0.0004257	0.0004257		0	0	0	3.043E-05	0.001	0.002	0%	0	0	0%	J
Molybdenum	A	mg/L	0.001097	0.001097		0	0	0	8.113E-05	0.001	0.1	0%	0	0	0%	
Silver	A	mg/L	0.00002193	0		0	0	0	2.644E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.2901	0.2901		0	0	0	9.743E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00002806	0		0	0	0	4.842E-05	0.001	1	0%	0	0	0%	U
Thorium	A	mg/L	9.069E-06	0		0	0	0	3.018E-05	0.001	1	0%	0	0	0%	U
Titanium	A	mg/L	0.001991	0.001991		0	0	0	0.0001004	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00005582	0.00005582		0	0	0	2.468E-05	0.0003	1	0%	0	0	0%	J
Magnesium	B	mg/L	37.79	37.79		0	0	0	0.0203306	0.00564	50	0%	0	0	0%	D
Potassium	B	mg/L	2.503	2.503		0	0	0	0.0215433	0.08139	50	0%	0	0	0%	D
Tin	B	mg/L	-2.301E-05	0		0	0	0	0.0009928	0.00132	0.1	0%	0	0	0%	U

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078301	B22030244-001	ICPMS-6020-W-	SD		3/9/2022 8:36:33	5	R375855		0	2E+07						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.001546	0		0	0	0.003494	0.0089181	0.0043	1	0%				
Antimony	A	mg/L	0.00004683	0		0	0	0	0.0003384	0.0021	0.1	0%				
Arsenic	A	mg/L	0.0001198	0.000599		0	0	0.0005015	0.0004102	0.001	1	0%				N
Barium	A	mg/L	0.002563	0.012815		0	0	0.01252	0.0003381	0.001	1	0%			2%	
Beryllium	A	mg/L	-5.547E-05	0		0	0	0	0.0004258	0.001	1	0%				
Boron	A	mg/L	0.01368	0.0684		0	0	0.06464	0.0197631	0.02805	1	0%				N
Cadmium	A	mg/L	1.648E-06	0		0	0	0	0.0001154	0.001	1	0%				
Calcium	A	mg/L	7.07	35.35		0	0	37.23	1.0136175	0.1046	50	0%			5%	
Cerium	A	mg/L	-7.25E-07	0		0	0	0	0.000111	0.001	0.1	0%				
Chromium	A	mg/L	0.0001789	0		0	0	0.0006729	0.001269	0.001	1	0%				
Cobalt	A	mg/L	0.00002738	0.0001369		0	0	0.0001411	0.0001071	0.001	1	0%				N
Copper	A	mg/L	0.0001802	0.000901		0	0	0.0003125	0.0008742	0.00135	1	0%				N
Iron	A	mg/L	0.01205	0.06025		0	0	0.05998	0.0105787	0.00595	5	0%				N
Lanthanum	A	mg/L	9.133E-07	0		0	0	0	0.0003403	0.001	0.1	0%				
Lead	A	mg/L	0.0000192	0		0	0	0	0.0001516	0.001	1	0%				
Magnesium	A	mg/L	7.689	38.445		0	0	37.79	0.1016532	0.0282	50	0%			2%	
Manganese	A	mg/L	0.0003989	0.0019945		0	0	0.001908	0.0003655	0.001	1	0%				N
Mercury	A	mg/L	0.0001015	0.0005075		0	0	0.0004257	0.0001522	0.001	0.002	0%				N
Molybdenum	A	mg/L	0.0002263	0.0011315		0	0	0.001097	0.0004057	0.001	0.1	0%				N

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078301	B22030244-001	ICPMS-6020-W-	SD		3/9/2022 8:36:33	5	R375855			0	2E+07					
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Nickel	A	mg/L	0.00009076	0		0	0	0.0004143	0.0008844	0.00315	1	0%				
Potassium	A	mg/L	0.4872	2.436		0	0	2.503	0.1077164	0.40695	50	0%			3%	
Selenium	A	mg/L	0.00009139	0.00045695		0	0	0.0004547	0.0003587	0.00165	1	0%				N
Silicon	A	mg/L	4.962	24.81		0	0	25.2	0.0166685	0.1	0.4	0%			2%	
Silver	A	mg/L	3.937E-06	0		0	0	0	0.0001322	0.001	0.04	0%				
Sodium	A	mg/L	18.88	94.4		0	0	92.62	0.225957	0.10855	50	0%			2%	
Strontium	A	mg/L	0.0577	0.2885		0	0	0.2901	0.0004872	0.001	1	0%			1%	
Thallium	A	mg/L	0.00001197	0		0	0	0	0.0002421	0.001	1	0%				
Thorium	A	mg/L	0.00001036	0		0	0	0	0.0001509	0.00305	1	0%				
Tin	A	mg/L	0.00001671	0		0	0	0	0.0049642	0.0066	0.1	0%				
Titanium	A	mg/L	0.0004321	0.0021605		0	0	0.001991	0.000502	0.001	1	0%				N
Uranium	A	mg/L	0.00001191	0		0	0	5.582E-05	0.0001234	0.0003	1	0%				
Vanadium	A	mg/L	0.003584	0.01792		0	0	0.01483	0.0093058	0.0065	1	0%				N
Zinc	A	mg/L	0.0008691	0		0	0	0	0.0050446	0.01365	1	0%				
Iron, Ferrous	C	mg/L	0.01205	0.06025		0	0	0	0.0105787	0.00595	5	0%				N

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078302	B22030244-001	ICPMS-6020-W-	MS-DOD		3/9/2022 8:42:49	1.03	R375855			2E+07	0					
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.04737	0.0487911		0.05	0.003494	0	0.0018371	0.001	1	91%	75	125	0%	
Antimony	A	mg/L	0.05128	0.0528184		0.05	0	0	6.971E-05	0.001	0.1	106%	75	125	0%	
Arsenic	A	mg/L	0.04934	0.0508202		0.05	0.0005015	0	8.449E-05	0.001	1	101%	75	125	0%	
Barium	A	mg/L	0.06281	0.0646943		0.05	0.01252	0	6.965E-05	0.001	1	104%	75	125	0%	
Beryllium	A	mg/L	0.0371	0.038213		0.05	0	0	8.771E-05	0.001	1	76%	75	125	0%	
Boron	A	mg/L	0.103	0.10609		0.05	0.06464	0	0.0040712	0.0057783	1	83%	75	125	0%	
Cadmium	A	mg/L	0.04867	0.0501301		0.05	0	0	2.377E-05	0.001	1	100%	75	125	0%	
Calcium	A	mg/L	75.66	77.9298		50	37.23	0	0.2088052	0.0215476	50	81%	75	125	0%	
Cerium	A	mg/L	0.05167	0.0532201		0.05	0	0	2.287E-05	0.001	0.1	106%	75	125	0%	
Chromium	A	mg/L	0.04649	0.0478847		0.05	0.0006729	0	0.0002614	0.001	1	94%	75	125	0%	
Cobalt	A	mg/L	0.04746	0.0488838		0.05	0.0001411	0	2.205E-05	0.001	1	97%	75	125	0%	
Copper	A	mg/L	0.04714	0.0485542		0.05	0.0003125	0	0.0001801	0.001	1	96%	75	125	0%	
Iron	A	mg/L	4.479	4.61337		5.05	0.05998	0	0.0021792	0.0012257	5	90%	75	125	0%	
Lanthanum	A	mg/L	0.05164	0.0531892		0.05	0	0	7.009E-05	0.001	0.1	106%	75	125	0%	
Lead	A	mg/L	0.04823	0.0496769		0.05	0	0	3.122E-05	0.001	1	99%	88	115	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078302	B22030244-001	ICPMS-6020-W-	MS-DOD		3/9/2022 8:42:49	1.03	R375855		2E+07	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Magnesium	A	mg/L	82.06	84.5218		50	37.79	0	0.0209406	0.0058092	50	93%	75	125	0%	
Manganese	A	mg/L	0.04791	0.0493473		0.05	0.001908	0	7.528E-05	0.001	1	95%	75	125	0%	
Mercury	A	mg/L	0.001485	0.00152955		0.001	0.0004257	0	3.134E-05	0.001	0.002	110%	75	125	0%	
Molybdenum	A	mg/L	0.04881	0.0502743		0.05	0.001097	0	8.356E-05	0.001	0.1	98%	75	125	0%	
Nickel	A	mg/L	0.04748	0.0489044		0.05	0.0004143	0	0.0001822	0.001	1	97%	75	125	0%	
Potassium	A	mg/L	45.93	47.3079		50	2.503	0	0.0221896	0.0838317	50	90%	75	125	0%	
Selenium	A	mg/L	0.05104	0.0525712		0.05	0.0004547	0	7.389E-05	0.001	1	104%	75	125	0%	
Silicon	A	mg/L	23.32	24.0196		0.2	25.2	0	0.0034337	0.1	0.4		75	125	0%	A
Silver	A	mg/L	0.0188	0.019364		0.02	0	0	2.723E-05	0.001	0.04	97%	75	125	0%	
Sodium	A	mg/L	134.3	138.329		50	92.62	0	0.0465471	0.0223613	50	91%	75	125	0%	
Strontium	A	mg/L	0.3289	0.338767		0.05	0.2901	0	0.0001004	0.001	1		75	125	0%	A
Thallium	A	mg/L	0.04758	0.0490074		0.05	0	0	4.987E-05	0.001	1	98%	75	125	0%	
Thorium	A	mg/L	0.04953	0.0510159		0.05	0	0	3.109E-05	0.001	1	102%	75	125	0%	
Tin	A	mg/L	0.0492	0.050676		0.05	0	0	0.0010226	0.0013596	0.1	101%	75	125	0%	
Titanium	A	mg/L	0.04833	0.0497799		0.05	0.001991	0	0.0001034	0.001	1	96%	75	125	0%	
Uranium	A	mg/L	0.04873	0.0501919		0.05	5.582E-05	0	2.542E-05	0.0003	1	100%	75	125	0%	
Vanadium	A	mg/L	0.06223	0.0640969		0.05	0.01483	0	0.001917	0.001339	1	99%	75	125	0%	
Zinc	A	mg/L	0.04942	0.0509026		0.05	0	0	0.0010392	0.0028119	1	102%	75	125	0%	
Iron, Ferrous	C	mg/L	4.479	4.61337		0	0	0	0.0021792	0.0012257	5	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078303	B22030244-001	ICPMS-6020-W-	MSD-DOD		3/9/2022 8:49:05	1.03	R375855		2E+07	2E+07						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.04777	0.0492031		0.05	0.003494	0.0487911	0.0018371	0.001	1	91%	75	125	1%	
Antimony	A	mg/L	0.05187	0.0534261		0.05	0	0.0528184	6.971E-05	0.001	0.1	107%	75	125	1%	
Arsenic	A	mg/L	0.0506	0.052118		0.05	0.0005015	0.0508202	8.449E-05	0.001	1	103%	75	125	3%	
Barium	A	mg/L	0.06325	0.0651475		0.05	0.01252	0.0646943	6.965E-05	0.001	1	105%	75	125	1%	
Beryllium	A	mg/L	0.03767	0.0388001		0.05	0	0.038213	8.771E-05	0.001	1	78%	75	125	2%	
Boron	A	mg/L	0.1048	0.107944		0.05	0.06464	0.10609	0.0040712	0.0057783	1	87%	75	125	2%	
Cadmium	A	mg/L	0.04903	0.0505009		0.05	0	0.0501301	2.377E-05	0.001	1	101%	75	125	1%	
Calcium	A	mg/L	76	78.28		50	37.23	77.9298	0.2088052	0.0215476	50	82%	75	125	0%	
Cerium	A	mg/L	0.05171	0.0532613		0.05	0	0.0532201	2.287E-05	0.001	0.1	107%	75	125	0%	
Chromium	A	mg/L	0.04809	0.0495327		0.05	0.0006729	0.0478847	0.0002614	0.001	1	98%	75	125	3%	
Cobalt	A	mg/L	0.04749	0.0489147		0.05	0.0001411	0.0488838	2.205E-05	0.001	1	98%	75	125	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078303	B22030244-001	ICPMS-6020-W-	MSD-DOD		3/9/2022 8:49:05	1.03	R375855		2E+07	2E+07						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Copper	A	mg/L	0.04837	0.0498211		0.05	0.0003125	0.0485542	0.0001801	0.001	1	99%	75	125	3%	
Iron	A	mg/L	4.568	4.70504		5.05	0.05998	4.61337	0.0021792	0.0012257	5	92%	75	125	2%	
Lanthanum	A	mg/L	0.05188	0.0534364		0.05	0	0.0531892	7.009E-05	0.001	0.1	107%	75	125	0%	
Lead	A	mg/L	0.04908	0.0505524		0.05	0	0.0496769	3.122E-05	0.001	1	101%	88	115	2%	
Magnesium	A	mg/L	82.47	84.9441		50	37.79	84.5218	0.0209406	0.0058092	50	94%	75	125	0%	
Manganese	A	mg/L	0.04912	0.0505936		0.05	0.001908	0.0493473	7.528E-05	0.001	1	97%	75	125	2%	
Mercury	A	mg/L	0.001494	0.00153882		0.001	0.0004257	0.0015296	3.134E-05	0.001	0.002	111%	75	125	1%	
Molybdenum	A	mg/L	0.04907	0.0505421		0.05	0.001097	0.0502743	8.356E-05	0.001	0.1	99%	75	125	1%	
Nickel	A	mg/L	0.04816	0.0496048		0.05	0.0004143	0.0489044	0.0001822	0.001	1	98%	75	125	1%	
Potassium	A	mg/L	47.81	49.2443		50	2.503	47.3079	0.0221896	0.0838317	50	93%	75	125	4%	
Selenium	A	mg/L	0.05151	0.0530553		0.05	0.0004547	0.0525712	7.389E-05	0.001	1	105%	75	125	1%	
Silicon	A	mg/L	23.37	24.0711		0.2	25.2	24.0196	0.0034337	0.1	0.4		75	125	0%	A
Silver	A	mg/L	0.01894	0.0195082		0.02	0	0.019364	2.723E-05	0.001	0.04	98%	75	125	1%	
Sodium	A	mg/L	135.1	139.153		50	92.62	138.329	0.0465471	0.0223613	50	93%	75	125	1%	
Strontium	A	mg/L	0.3333	0.343299		0.05	0.2901	0.338767	0.0001004	0.001	1		75	125	1%	A
Thallium	A	mg/L	0.04869	0.0501507		0.05	0	0.0490074	4.987E-05	0.001	1	100%	75	125	2%	
Thorium	A	mg/L	0.05009	0.0515927		0.05	0	0.0510159	3.109E-05	0.001	1	103%	75	125	1%	
Tin	A	mg/L	0.04945	0.0509335		0.05	0	0.050676	0.0010226	0.0013596	0.1	102%	75	125	1%	
Titanium	A	mg/L	0.04881	0.0502743		0.05	0.001991	0.0497799	0.0001034	0.001	1	97%	75	125	1%	
Uranium	A	mg/L	0.04948	0.0509644		0.05	5.582E-05	0.0501919	2.542E-05	0.0003	1	102%	75	125	2%	
Vanadium	A	mg/L	0.06386	0.0657758		0.05	0.01483	0.0640969	0.001917	0.001339	1	102%	75	125	3%	
Zinc	A	mg/L	0.04981	0.0513043		0.05	0	0.0509026	0.0010392	0.0028119	1	103%	75	125	1%	
Iron, Ferrous	C	mg/L	4.568	4.70504		0	0	4.61337	0.0021792	0.0012257	5	0%	0	0	2%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078304	Rinse	ICPMS-6020-W-	SAMP		3/9/2022 8:55:21	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.001864	0.001864		0	0	0	0.0017836	0.001	1	0%	0	0	0%	
Antimony	A	mg/L	0.0004371	0.0004371		0	0	0	6.768E-05	0.001	0.1	0%	0	0	0%	J
Arsenic	A	mg/L	0.0000639	0		0	0	0	8.203E-05	0.001	1	0%	0	0	0%	
Barium	A	mg/L	-1.368E-06	0		0	0	0	6.762E-05	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	4.569E-06	0		0	0	0	2.308E-05	0.001	1	0%	0	0	0%	
Cerium	A	mg/L	-1.471E-06	0		0	0	0	0.0000222	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	0.00002354	0		0	0	0	0.0002538	0.001	1	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078304	Rinse	ICPMS-6020-W-	SAMP		3/9/2022 8:55:21	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Lanthanum	A	mg/L	6.671E-07	0		0	0	0	6.805E-05	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	2.389E-06	0		0	0	0	3.031E-05	0.001	1	0%	0	0	0%	
Manganese	A	mg/L	3.283E-06	0		0	0	0	7.309E-05	0.001	1	0%	0	0	0%	
Mercury	A	mg/L	8.266E-06	0		0	0	0	3.043E-05	0.001	0.002	0%	0	0	0%	
Molybdenum	A	mg/L	0.00005684	0		0	0	0	8.113E-05	0.001	0.1	0%	0	0	0%	
Silver	A	mg/L	1.317E-06	0		0	0	0	2.644E-05	0.001	0.04	0%	0	0	0%	
Strontium	A	mg/L	-8.354E-06	0		0	0	0	9.743E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00003399	0		0	0	0	4.842E-05	0.001	1	0%	0	0	0%	
Thorium	A	mg/L	0.00005266	0.00005266		0	0	0	3.018E-05	0.001	1	0%	0	0	0%	J
Titanium	A	mg/L	0.00006345	0		0	0	0	0.0001004	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	4.091E-06	0		0	0	0	2.468E-05	0.0003	1	0%	0	0	0%	
Magnesium	B	mg/L	0.005839	0		0	0	0	0.0203306	0.00564	50	0%	0	0	0%	L
Potassium	B	mg/L	-0.0002344	0		0	0	0	0.0215433	0.08139	50	0%	0	0	0%	L
Tin	B	mg/L	0.0001868	0		0	0	0	0.0009928	0.00132	0.1	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078305	B22030244-001	ICPMS-6020-W-	SAMP		3/9/2022 9:01:36	1	164289	3/7/2022 4:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.0002339	0		0	0	0	0.0002485	0.001	0.1	0%	0	0	0%	U
Arsenic	A	mg/L	0.0006422	0.0006422		0	0	0	0.0002595	0.001	1	0%	0	0	0%	J
Barium	A	mg/L	0.0132	0.0132		0	0	0	0.0001041	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0.00000647	0		0	0	0	0.0000141	0.005	1	0%	0	0	0%	U
Cerium	A	mg/L	2.54E-07	0		0	0	0	0.0000087	0.001	0.1	0%	0	0	0%	U
Lanthanum	A	mg/L	1.783E-06	0		0	0	0	1.105E-05	0.001	0.1	0%	0	0	0%	U
Lead	A	mg/L	0.0000304	0		0	0	0	5.246E-05	0.001	1	0%	0	0	0%	U
Manganese	A	mg/L	0.001999	0.001999		0	0	0	0.0002595	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	0.001283	0.001283		0	0	0	0.0000966	0.001	0.1	0%	0	0	0%	
Silver	A	mg/L	0.00001056	0		0	0	0	2.318E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.2954	0.2954		0	0	0	7.178E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0000238	0		0	0	0	0.0001114	0.001	1	0%	0	0	0%	U
Titanium	A	mg/L	0.001967	0.001967		0	0	0	0.0004924	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00006168	0.00006168		0	0	0	1.084E-05	0.0003	1	0%	0	0	0%	J
Aluminum	B	mg/L	0.005627	0.005627		0	0	0	0.0029215	0.0031975	1	0%	0	0	0%	D
Chromium	B	mg/L	0.0006032	0.0006032		0	0	0	0.0005265	0.0015375	1	0%	0	0	0%	JL

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078305	B22030244-001	ICPMS-6020-W-	SAMP		3/9/2022 9:01:36	1	164289	3/7/2022 4:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Magnesium	B	mg/L	38.79	38.79		0	0	0.0686349	0.0081522		50	0%	0	0	0%	D
Potassium	B	mg/L	2.5	2.5		0	0	0.0289412	0.0261205		50	0%	0	0	0%	D
Thorium	B	mg/L	0.000134	0.000134		0	0	5.898E-05	0.00415		1	0%	0	0	0%	JL
Tin	B	mg/L	0.000536	0		0	0	0.0018932	0.0011175		0.1	0%	0	0	0%	U

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078306	B22030244-001	ICPMS-6020-W-	SD		3/9/2022 9:07:51	5	164289	3/7/2022 4:3	0	2E+07						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.002284	0		0	0	0.005627	0.0146074	0.0159875	1	0%	0	0		
Antimony	A	mg/L	0.0000872	0		0	0	0.0012426	0.0049		0.1	0%	0	0		
Arsenic	A	mg/L	0.0001568	0		0	0	0.0006422	0.0012977	0.0013383	1	0%	0	0		
Barium	A	mg/L	0.002544	0.01272		0	0	0.0132	0.0005204	0.0012039	1	0%	0	0	4%	
Beryllium	A	mg/L	-5.649E-05	0		0	0	0.0005353	0.01		1	0%	0	0		
Boron	A	mg/L	0.01394	0.0697		0	0	0.06651	0.0151506	0.07335	1	0%	0	0		N
Cadmium	A	mg/L	6.791E-06	0		0	0	0.0000705	0.005		1	0%	0	0		
Calcium	A	mg/L	7.182	35.91		0	0	35.19	0.1864681	0.5517403	50	0%	0	0	2%	
Cerium	A	mg/L	-8.222E-07	0		0	0	0.0000435	0.001		0.1	0%	0	0		
Chromium	A	mg/L	0.0001395	0		0	0	0.0006032	0.0026324	0.0076875	1	0%	0	0		
Cobalt	A	mg/L	0.00003348	0		0	0	0.0001752	0.0004201	0.001	1	0%	0	0		
Copper	A	mg/L	0.0001548	0		0	0	0.0005966	0.0028718	0.0099	1	0%	0	0		
Iron	A	mg/L	0.004576	0		0	0	0.02172	0.0371198	0.02565	5	0%	0	0		
Lanthanum	A	mg/L	6.391E-07	0		0	0	5.525E-05	0.001		0.1	0%	0	0		
Lead	A	mg/L	9.203E-06	0		0	0	0.0002623	0.001		1	0%	0	0		
Magnesium	A	mg/L	7.891	39.455		0	0	38.79	0.3431747	0.0407608	50	0%	0	0	2%	
Manganese	A	mg/L	0.0004131	0.0020655		0	0	0.001999	0.0012975	0.0010695	1	0%	0	0		N
Molybdenum	A	mg/L	0.0002529	0.0012645		0	0	0.001283	0.000483	0.001	0.1	0%	0	0		N
Nickel	A	mg/L	0.0001021	0		0	0	0.0005492	0.0011941	0.0121000	1	0%	0	0		
Potassium	A	mg/L	0.4838	2.419		0	0	2.5	0.1447062	0.1306027	50	0%	0	0	3%	
Selenium	A	mg/L	0.00009918	0.0004959		0	0	0.0004143	0.0003126	0.0029274	1	0%	0	0		N
Silicon	A	mg/L	3.835	19.175		0	0	18.94	0.1093983	0.026606	0.4	0%	0	0	1%	
Silver	A	mg/L	8.756E-07	0		0	0	0.0001159	0.001		0.04	0%	0	0		
Sodium	A	mg/L	19.22	96.1		0	0	94.56	0.3607583	3.6651346	50	0%	0	0	2%	
Strontium	A	mg/L	0.05709	0.28545		0	0	0.2954	0.0003589	0.001	1	0%	0	0	3%	
Thallium	A	mg/L	0.00001113	0		0	0	0.0005569	0.001		1	0%	0	0		

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078306	B22030244-001	ICPMS-6020-W-	SD		3/9/2022 9:07:51	5	164289	3/7/2022 4:3	0	2E+07						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Thorium	A	mg/L	0.00001375	0		0	0	0.000134	0.0002949	0.02075	1	0%	0	0		
Tin	A	mg/L	0.00009993	0		0	0	0.0094659	0.0055874		0.1	0%	0	0		
Titanium	A	mg/L	0.0003955	0		0	0	0.001967	0.0024621	0.001	1	0%	0	0		
Uranium	A	mg/L	0.00001126	0.0000563		0	0	6.168E-05	0.0000542	0.0004224	1	0%	0	0		N
Vanadium	A	mg/L	0.004262	0.02131		0	0	0.01686	0.0062091	0.0105423	1	0%	0	0		N
Zinc	A	mg/L	0.001219	0.006095		0	0	0.001738	0.0058087	0.0327721	1	0%	0	0		N
Silica	C	mg/L	8.203832	41.01916		0	0	0.2340247	0.0569155		5	0%	0	0		N
Silicon as SiO2	C	mg/L	8.203832	41.01916		0	0	0.2340247	0.0569155		5	0%	0	0		N

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078307	B22030244-001	ICPMS-6020-W-	PDS1-DOD		3/9/2022 9:14:05	1.03	164289	3/7/2022 4:3	2E+07	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.04859	0.0500477		0.0515	0.005627	0	0.0030091	0.0032934	1	86%	75	125	0%	
Antimony	A	mg/L	0.04914	0.0506142		0.0515	0	0	0.000256	0.0010094	0.1	98%	75	125	0%	
Arsenic	A	mg/L	0.04709	0.0485027		0.0515	0.0006422	0	0.0002673	0.001	1	93%	75	125	0%	
Barium	A	mg/L	0.06215	0.0640145		0.0515	0.0132	0	0.0001072	0.001	1	99%	75	125	0%	
Beryllium	A	mg/L	0.03626	0.0373478		0.0515	0	0	0.0001103	0.01	1	73%	75	125	0%	S
Boron	A	mg/L	0.1064	0.109592		0.0515	0.06651	0	0.0031210	0.0151101	1	84%	75	125	0%	
Cadmium	A	mg/L	0.04878	0.0502434		0.0515	0	0	1.452E-05	0.005	1	98%	75	125	0%	
Calcium	A	mg/L	76.75	79.0525		51.5	35.19	0	0.0384124	0.1136585	50	85%	75	125	0%	
Cerium	A	mg/L	0.05156	0.0531068		0.0515	0	0	8.961E-06	0.001	0.1	103%	75	125	0%	
Chromium	A	mg/L	0.04832	0.0497696		0.0515	0.0006032	0	0.0005423	0.0015836	1	95%	75	125	0%	
Cobalt	A	mg/L	0.04632	0.0477096		0.0515	0.0001752	0	8.654E-05	0.001	1	92%	75	125	0%	
Copper	A	mg/L	0.04848	0.0499344		0.0515	0.0005966	0	0.0005916	0.0020394	1	96%	75	125	0%	
Iron	A	mg/L	4.639	4.77817		5.15	0.02172	0	0.0076467	0.0052839	5	92%	75	125	0%	
Lanthanum	A	mg/L	0.05167	0.0532201		0.0515	0	0	1.138E-05	0.001	0.1	103%	75	125	0%	
Lead	A	mg/L	0.04818	0.0496254		0.0515	0	0	5.403E-05	0.001	1	96%	80	120	0%	
Magnesium	A	mg/L	83.12	85.6136		51.5	38.79	0	0.070694	0.0083967	50	91%	75	125	0%	
Manganese	A	mg/L	0.04957	0.0510571		0.0515	0.001999	0	0.0002673	0.001	1	95%	75	125	0%	
Molybdenum	A	mg/L	0.04944	0.0509232		0.0515	0.001283	0	9.95E-05	0.001	0.1	96%	75	125	0%	
Nickel	A	mg/L	0.04891	0.0503773		0.0515	0.0005492	0	0.000246	0.0024926	1	97%	75	125	0%	
Potassium	A	mg/L	47.3	48.719		51.5	2.5	0	0.0298095	0.0269042	50	90%	75	125	0%	
Selenium	A	mg/L	0.04588	0.0472564		0.0515	0.0004143	0	6.439E-05	0.001	1	91%	75	125	0%	
Silicon	A	mg/L	20.33	20.9399		0.206	18.94	0	0.0225360	0.0054808	0.4		75	125	0%	A

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078307	B22030244-001	ICPMS-6020-W-	PDS1-DOD		3/9/2022 9:14:05	1.03	164289	3/7/2022 4:3	2E+07	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Silver	A	mg/L	0.01867	0.0192301		0.0206	0	0	2.388E-05	0.001	0.04	93%	75	125	0%	
Sodium	A	mg/L	136.8	140.904		51.5	94.56	0	0.0743162	0.7550177	50	90%	75	125	0%	
Strontium	A	mg/L	0.334	0.34402		0.0515	0.2954	0	7.393E-05	0.001	1		75	125	0%	A
Thallium	A	mg/L	0.04851	0.0499653		0.0515	0	0	0.0001147	0.001	1	97%	75	125	0%	
Thorium	A	mg/L	0.04944	0.0509232		0.0515	0.000134	0	6.075E-05	0.0042745	1	99%	75	125	0%	
Tin	A	mg/L	0.05073	0.0522519		0.0515	0	0	0.00195	0.001151	0.1	101%	75	125	0%	
Titanium	A	mg/L	0.04745	0.0488735		0.0515	0.001967	0	0.0005072	0.001	1	91%	75	125	0%	
Uranium	A	mg/L	0.04861	0.0500683		0.0515	6.168E-05	0	1.117E-05	0.0003	1	97%	75	125	0%	
Vanadium	A	mg/L	0.06566	0.0676298		0.0515	0.01686	0	0.0012791	0.0021717	1	99%	75	125	0%	
Zinc	A	mg/L	0.04838	0.0498314		0.0515	0.001738	0	0.0011966	0.0067511	1	93%	75	125	0%	
Silica	C	mg/L	43.489936	44.7946341		0	0	0	0.0482091	0.0117246	5	0%	0	0	0%	
Silicon as SiO2	C	mg/L	43.489936	44.7946341		0.0515	0	0	0.0482091	0.0117246	5	86980%	75	125	0%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078308	B22030244-001	ICPMS-6020-W-	MS4-DOD		3/9/2022 9:20:21	1	164289	3/7/2022 4:3	2E+07	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.4508	0.4508		0.5	0.005627	0	0.0029215	0.0031975	1	89%	75	125	0%	
Antimony	A	mg/L	0.1024	0.1024		0.1	0	0	0.0002485	0.001	0.1	102%	75	125	0%	
Arsenic	A	mg/L	0.09694	0.09694		0.1	0.0006422	0	0.0002595	0.001	1	96%	75	125	0%	
Barium	A	mg/L	0.1084	0.1084		0.1	0.0132	0	0.0001041	0.001	1	95%	75	125	0%	
Beryllium	A	mg/L	0.03892	0.03892		0.05	0	0	0.0001071	0.01	1	78%	75	125	0%	
Boron	A	mg/L	0.1533	0.1533		0.1	0.06651	0	0.0030301	0.01467	1	87%	75	125	0%	
Cadmium	A	mg/L	0.0513	0.0513		0.05	0	0	0.0000141	0.005	1	103%	75	125	0%	
Calcium	A	mg/L	40.79	40.79		5	35.19	0	0.0372936	0.1103481	50		75	125	0%	A
Cerium	A	mg/L	0.104	0.104		0.1	0	0	0.0000087	0.001	0.1	104%	75	125	0%	
Chromium	A	mg/L	0.0992	0.0992		0.1	0.0006032	0	0.0005265	0.0015375	1	99%	75	125	0%	
Cobalt	A	mg/L	0.09478	0.09478		0.1	0.0001752	0	8.402E-05	0.001	1	95%	75	125	0%	
Copper	A	mg/L	0.09999	0.09999		0.1	0.0005966	0	0.0005744	0.00198	1	99%	75	125	0%	
Iron	A	mg/L	0.5115	0.5115		0.5	0.02172	0	0.007424	0.00513	5	98%	75	125	0%	
Lanthanum	A	mg/L	0.1046	0.1046		0.1	0	0	1.105E-05	0.001	0.1	105%	75	125	0%	
Lead	A	mg/L	0.1007	0.1007		0.1	0	0	5.246E-05	0.001	1	101%	88	115	0%	
Magnesium	A	mg/L	43.4	43.4		5	38.79	0	0.0686349	0.0081522	50		75	125	0%	A
Manganese	A	mg/L	0.4931	0.4931		0.5	0.001999	0	0.0002595	0.001	1	98%	75	125	0%	
Molybdenum	A	mg/L	0.1013	0.1013		0.1	0.001283	0	0.0000966	0.001	0.1	100%	75	125	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078308	B22030244-001	ICPMS-6020-W-	MS4-DOD		3/9/2022 9:20:21	1	164289	3/7/2022 4:3	2E+07	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Nickel	A	mg/L	0.1009	0.1009		0.1	0.0005492	0	0.0002388	0.0024200	1	100%	75	125	0%	
Potassium	A	mg/L	7.32	7.32		5	2.5	0	0.0289412	0.0261205	50	96%	75	125	0%	
Selenium	A	mg/L	0.09582	0.09582		0.1	0.0004143	0	6.251E-05	0.001	1	95%	75	125	0%	
Silicon	A	mg/L	22	22		1	18.94	0	0.0218797	0.0053212	0.4		75	125	0%	A
Silver	A	mg/L	0.009656	0.009656		0.01	0	0	2.318E-05	0.001	0.04	97%	75	125	0%	
Sodium	A	mg/L	98.66	98.66		5	94.56	0	0.0721517	0.7330269	50		75	125	0%	A
Strontium	A	mg/L	0.39	0.39		0.1	0.2954	0	7.178E-05	0.001	1	95%	75	125	0%	
Thallium	A	mg/L	0.1001	0.1001		0.1	0	0	0.0001114	0.001	1	100%	75	125	0%	
Thorium	A	mg/L	0.1005	0.1005		0.1	0.000134	0	5.898E-05	0.00415	1	100%	75	125	0%	
Tin	A	mg/L	0.1062	0.1062		0.1	0	0	0.0018932	0.0011175	0.1	106%	75	125	0%	
Titanium	A	mg/L	0.09303	0.09303		0.1	0.001967	0	0.0004924	0.001	1	91%	75	125	0%	
Uranium	A	mg/L	0.1013	0.1013		0.1	6.168E-05	0	1.084E-05	0.0003	1	101%	75	125	0%	
Vanadium	A	mg/L	0.1162	0.1162		0.1	0.01686	0	0.0012418	0.0021085	1	99%	75	125	0%	
Zinc	A	mg/L	0.09735	0.09735		0.1	0.001738	0	0.0011617	0.0065544	1	96%	75	125	0%	
Silica	C	mg/L	47.0624	47.0624		0	0	0	0.0468049	0.0113831	5	0%	0	0	0%	
Silicon as SiO2	C	mg/L	47.0624	47.0624		2.14	0	0	0.0468049	0.0113831	5	2199%	75	125	0%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078309	CCV	ICPMS-6020-W-	CCV		3/9/2022 9:26:37	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.04876	0.04876		0.05	0	0	0.0017836	0.001	1	98%	90	110	0%	
Antimony	A	mg/L	0.05418	0.05418		0.05	0	0	6.768E-05	0.001	0.1	108%	90	110	0%	
Arsenic	A	mg/L	0.05057	0.05057		0.05	0	0	8.203E-05	0.001	1	101%	90	110	0%	
Barium	A	mg/L	0.05143	0.05143		0.05	0	0	6.762E-05	0.001	1	103%	90	110	0%	
Beryllium	A	mg/L	0.04259	0.04259		0.05	0	0	8.516E-05	0.001	1	85%	90	110	0%	S
Boron	A	mg/L	0.04672	0.04672		0.05	0	0	0.0039526	0.00561	1	93%	90	110	0%	
Cadmium	A	mg/L	0.05181	0.05181		0.05	0	0	2.308E-05	0.001	1	104%	90	110	0%	
Calcium	A	mg/L	12.31	12.31		12.5	0	0	0.2027235	0.02092	50	98%	90	110	0%	
Cerium	A	mg/L	0.05121	0.05121		0.05	0	0	0.0000222	0.001	0.1	102%	90	110	0%	
Chromium	A	mg/L	0.04998	0.04998		0.05	0	0	0.0002538	0.001	1	100%	90	110	0%	
Cobalt	A	mg/L	0.0498	0.0498		0.05	0	0	2.141E-05	0.001	1	100%	90	110	0%	
Copper	A	mg/L	0.0519	0.0519		0.05	0	0	0.0001748	0.001	1	104%	90	110	0%	
Iron	A	mg/L	1.289	1.289		1.3	0	0	0.0021157	0.00119	5	99%	90	110	0%	
Lanthanum	A	mg/L	0.05087	0.05087		0.05	0	0	6.805E-05	0.001	0.1	102%	90	110	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078309	CCV	ICPMS-6020-W-	CCV		3/9/2022 9:26:37	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Lead	A	mg/L	0.04978	0.04978		0.05	0	0	3.031E-05	0.001	1	100%	90	110	0%	
Magnesium	A	mg/L	12.41	12.41		12.5	0	0	0.0203306	0.00564	50	99%	90	110	0%	
Manganese	A	mg/L	0.05016	0.05016		0.05	0	0	7.309E-05	0.001	1	100%	90	110	0%	
Mercury	A	mg/L	0.001014	0.001014		0.001	0	0	3.043E-05	0.001	0.002	101%	90	110	0%	
Molybdenum	A	mg/L	0.05015	0.05015		0.05	0	0	8.113E-05	0.001	0.1	100%	90	110	0%	
Nickel	A	mg/L	0.05254	0.05254		0.05	0	0	0.0001769	0.001	1	105%	90	110	0%	
Potassium	A	mg/L	12.18	12.18		12.5	0	0	0.0215433	0.08139	50	97%	90	110	0%	
Selenium	A	mg/L	0.05322	0.05322		0.05	0	0	7.174E-05	0.001	1	106%	90	110	0%	
Silicon	A	mg/L	0.3064	0.3064		0.2	0	0	0.0033337	0.1	0.4	153%	90	110	0%	S
Silver	A	mg/L	0.02052	0.02052		0.02	0	0	2.644E-05	0.001	0.04	103%	90	110	0%	
Sodium	A	mg/L	12.59	12.59		12.5	0	0	0.0451914	0.02171	50	101%	90	110	0%	
Strontium	A	mg/L	0.04965	0.04965		0.05	0	0	9.743E-05	0.001	1	99%	90	110	0%	
Thallium	A	mg/L	0.04939	0.04939		0.05	0	0	4.842E-05	0.001	1	99%	90	110	0%	
Thorium	A	mg/L	0.04943	0.04943		0.05	0	0	3.018E-05	0.001	1	99%	90	110	0%	
Tin	A	mg/L	0.05258	0.05258		0.05	0	0	0.0009928	0.00132	0.1	105%	90	110	0%	
Titanium	A	mg/L	0.04625	0.04625		0.05	0	0	0.0001004	0.001	1	92%	90	110	0%	
Uranium	A	mg/L	0.04888	0.04888		0.05	0	0	2.468E-05	0.0003	1	98%	90	110	0%	
Vanadium	A	mg/L	0.05139	0.05139		0.05	0	0	0.0018612	0.0013	1	103%	90	110	0%	
Zinc	A	mg/L	0.05201	0.05201		0.05	0	0	0.0010089	0.00273	1	104%	90	110	0%	
Iron, Ferrous	C	mg/L	1.289	1.289		0	0	0	0.0021157	0.00119	5	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078310	CCB	ICPMS-6020-W-	CCB		3/9/2022 9:32:53	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	-3.828E-05	-3.828E-05		0	0	0	0.0017836	0.001	1	0%			0%	
Antimony	A	mg/L	0.000477	0.000477		0	0	0	6.768E-05	0.001	0.1	0%			0%	
Arsenic	A	mg/L	0.00006214	0.00006214		0	0	0	8.203E-05	0.001	1	0%			0%	
Barium	A	mg/L	-1.177E-06	-1.177E-06		0	0	0	6.762E-05	0.001	1	0%			0%	
Beryllium	A	mg/L	-5.069E-05	-5.069E-05		0	0	0	8.516E-05	0.001	1	0%			0%	
Boron	A	mg/L	0.001132	0.001132		0	0	0	0.0039526	0.00561	1	0%			0%	
Cadmium	A	mg/L	8.352E-06	8.352E-06		0	0	0	2.308E-05	0.001	1	0%			0%	
Calcium	A	mg/L	0.0001236	0.0001236		0	0	0	0.2027235	0.02092	50	0%			0%	
Cerium	A	mg/L	-1.765E-06	-1.765E-06		0	0	0	0.0000222	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	0.00001745	0.00001745		0	0	0	0.0002538	0.001	1	0%			0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078310	CCB	ICPMS-6020-W-	CCB		3/9/2022 9:32:53	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Cobalt	A	mg/L	-7.085E-07	-7.085E-07		0	0	0	2.141E-05	0.001	1	0%			0%	
Copper	A	mg/L	0.00003759	0.00003759		0	0	0	0.0001748	0.001	1	0%			0%	
Iron	A	mg/L	-0.0000423	-0.0000423		0	0	0	0.0021157	0.00119	5	0%			0%	
Lanthanum	A	mg/L	2.974E-07	2.974E-07		0	0	0	6.805E-05	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	3.181E-06	3.181E-06		0	0	0	3.031E-05	0.001	1	0%			0%	
Magnesium	A	mg/L	0.00207	0.00207		0	0	0	0.0203306	0.00564	50	0%			0%	
Manganese	A	mg/L	-9.857E-07	-9.857E-07		0	0	0	7.309E-05	0.001	1	0%			0%	
Mercury	A	mg/L	4.187E-06	4.187E-06		0	0	0	3.043E-05	0.001	0.002	0%			0%	
Molybdenum	A	mg/L	0.00002695	0.00002695		0	0	0	8.113E-05	0.001	0.1	0%			0%	
Nickel	A	mg/L	-2.253E-05	-2.253E-05		0	0	0	0.0001769	0.001	1	0%			0%	
Potassium	A	mg/L	0.00187	0.00187		0	0	0	0.0215433	0.08139	50	0%			0%	
Selenium	A	mg/L	0.00001447	0.00001447		0	0	0	7.174E-05	0.001	1	0%			0%	
Silicon	A	mg/L	0.04089	0.04089		0	0	0	0.0033337	0.1	0.4	0%	0	0	0%	
Silver	A	mg/L	3.539E-07	3.539E-07		0	0	0	2.644E-05	0.001	0.04	0%			0%	
Sodium	A	mg/L	0.03708	0.03708		0	0	0	0.0451914	0.02171	50	0%			0%	
Strontium	A	mg/L	-6.697E-06	-6.697E-06		0	0	0	9.743E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00008527	0.00008527		0	0	0	4.842E-05	0.001	1	0%	0	0	0%	
Thorium	A	mg/L	0.00005139	0.00005139		0	0	0	3.018E-05	0.001	1	0%	0	0	0%	
Tin	A	mg/L	0.00007878	0.00007878		0	0	0	0.0009928	0.00132	0.1	0%	0	0	0%	
Titanium	A	mg/L	0.00004433	0.00004433		0	0	0	0.0001004	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	4.171E-06	4.171E-06		0	0	0	2.468E-05	0.0003	1	0%	0	0	0%	
Vanadium	A	mg/L	0.001874	0.001874		0	0	0	0.0018612	0.0013	1	0%	0	0	0%	
Zinc	A	mg/L	-3.067E-05	-3.067E-05		0	0	0	0.0010089	0.00273	1	0%	0	0	0%	
Iron, Ferrous	C	mg/L	-0.0000423	-0.0000423		0	0	0	0.0021157	0.00119	5	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078311	B22030244-001	ICPMS-6020-W-	MSD4-DOD		3/9/2022 9:39:09	1	164289	3/7/2022 4:3	2E+07	2E+07						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.459	0.459		0.5	0.005627	0.4508	0.0029215	0.0031975	1	91%	75	125	2%	
Antimony	A	mg/L	0.106	0.106		0.1	0	0.1024	0.0002485	0.001	0.1	106%	75	125	3%	
Arsenic	A	mg/L	0.09625	0.09625		0.1	0.0006422	0.09694	0.0002595	0.001	1	96%	75	125	1%	
Barium	A	mg/L	0.1082	0.1082		0.1	0.0132	0.1084	0.0001041	0.001	1	95%	75	125	0%	
Beryllium	A	mg/L	0.04042	0.04042		0.05	0	0.03892	0.0001071	0.01	1	81%	75	125	4%	
Boron	A	mg/L	0.1609	0.1609		0.1	0.06651	0.1533	0.0030301	0.01467	1	94%	75	125	5%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078311	B22030244-001	ICPMS-6020-W-	MSD4-DOD		3/9/2022 9:39:09	1	164289	3/7/2022 4:3	2E+07	2E+07						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Cadmium	A	mg/L	0.05145	0.05145		0.05	0	0.0513	0.0000141	0.005	1	103%	75	125	0%	
Calcium	A	mg/L	41.24	41.24		5	35.19	40.79	0.0372936	0.1103481	50		75	125	1%	A
Cerium	A	mg/L	0.1044	0.1044		0.1	0	0.104	0.0000087	0.001	0.1	104%	75	125	0%	
Chromium	A	mg/L	0.09778	0.09778		0.1	0.0006032	0.0992	0.0005265	0.0015375	1	97%	75	125	1%	
Cobalt	A	mg/L	0.09394	0.09394		0.1	0.0001752	0.09478	8.402E-05	0.001	1	94%	75	125	1%	
Copper	A	mg/L	0.09858	0.09858		0.1	0.0005966	0.09999	0.0005744	0.00198	1	98%	75	125	1%	
Iron	A	mg/L	0.5077	0.5077		0.5	0.02172	0.5115	0.007424	0.00513	5	97%	75	125	1%	
Lanthanum	A	mg/L	0.1046	0.1046		0.1	0	0.1046	1.105E-05	0.001	0.1	105%	75	125	0%	
Lead	A	mg/L	0.1001	0.1001		0.1	0	0.1007	5.246E-05	0.001	1	100%	88	115	1%	
Magnesium	A	mg/L	43.77	43.77		5	38.79	43.4	0.0686349	0.0081522	50		75	125	1%	A
Manganese	A	mg/L	0.4839	0.4839		0.5	0.001999	0.4931	0.0002595	0.001	1	96%	75	125	2%	
Molybdenum	A	mg/L	0.09961	0.09961		0.1	0.001283	0.1013	0.0000966	0.001	0.1	98%	75	125	2%	
Nickel	A	mg/L	0.09997	0.09997		0.1	0.0005492	0.1009	0.0002388	0.0024200	1	99%	75	125	1%	
Potassium	A	mg/L	7.126	7.126		5	2.5	7.32	0.0289412	0.0261205	50	93%	75	125	3%	
Selenium	A	mg/L	0.0972	0.0972		0.1	0.0004143	0.09582	6.251E-05	0.001	1	97%	75	125	1%	
Silicon	A	mg/L	22.32	22.32		1	18.94	22	0.0218797	0.0053212	0.4		75	125	1%	A
Silver	A	mg/L	0.009564	0.009564		0.01	0	0.009656	2.318E-05	0.001	0.04	96%	75	125	1%	
Sodium	A	mg/L	100.2	100.2		5	94.56	98.66	0.0721517	0.7330269	50		75	125	2%	A
Strontium	A	mg/L	0.3951	0.3951		0.1	0.2954	0.39	7.178E-05	0.001	1	100%	75	125	1%	
Thallium	A	mg/L	0.1011	0.1011		0.1	0	0.1001	0.0001114	0.001	1	101%	75	125	1%	
Thorium	A	mg/L	0.1013	0.1013		0.1	0.000134	0.1005	5.898E-05	0.00415	1	101%	75	125	1%	
Tin	A	mg/L	0.1047	0.1047		0.1	0	0.1062	0.0018932	0.0011175	0.1	105%	75	125	1%	
Titanium	A	mg/L	0.09254	0.09254		0.1	0.001967	0.09303	0.0004924	0.001	1	91%	75	125	1%	
Uranium	A	mg/L	0.1008	0.1008		0.1	6.168E-05	0.1013	1.084E-05	0.0003	1	101%	75	125	0%	
Vanadium	A	mg/L	0.1159	0.1159		0.1	0.01686	0.1162	0.0012418	0.0021085	1	99%	75	125	0%	
Zinc	A	mg/L	0.09763	0.09763		0.1	0.001738	0.09735	0.0011617	0.0065544	1	96%	75	125	0%	
Silica	C	mg/L	47.746944	47.746944		0	0	47.0624	0.0468049	0.0113831	5	0%	0	0	1%	
Silicon as SiO2	C	mg/L	47.746944	47.746944		2.14	0	47.0624	0.0468049	0.0113831	5	2231%	75	125	1%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078312	Rinse	ICPMS-6020-W-	SAMP		3/9/2022 9:45:24	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078312	Rinse	ICPMS-6020-W-	SAMP		3/9/2022 9:45:24	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.001959	0.001959		0	0	0	0.0017836	0.001	1	0%	0	0	0%	
Antimony	A	mg/L	0.000528	0.000528		0	0	0	6.768E-05	0.001	0.1	0%	0	0	0%	J
Arsenic	A	mg/L	0.00004718	0		0	0	0	8.203E-05	0.001	1	0%	0	0	0%	
Barium	A	mg/L	-1.956E-06	0		0	0	0	6.762E-05	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	6.003E-06	0		0	0	0	2.308E-05	0.001	1	0%	0	0	0%	
Cerium	A	mg/L	-9.752E-07	0		0	0	0	0.0000222	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	0.00001041	0		0	0	0	0.0002538	0.001	1	0%	0	0	0%	
Lanthanum	A	mg/L	2.979E-07	0		0	0	0	6.805E-05	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	3.441E-06	0		0	0	0	3.031E-05	0.001	1	0%	0	0	0%	
Manganese	A	mg/L	-8.63E-07	0		0	0	0	7.309E-05	0.001	1	0%	0	0	0%	
Mercury	A	mg/L	4.061E-06	0		0	0	0	3.043E-05	0.001	0.002	0%	0	0	0%	
Molybdenum	A	mg/L	0.00002197	0		0	0	0	8.113E-05	0.001	0.1	0%	0	0	0%	
Silver	A	mg/L	9.264E-07	0		0	0	0	2.644E-05	0.001	0.04	0%	0	0	0%	
Strontium	A	mg/L	-8.167E-06	0		0	0	0	9.743E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0001084	0.0001084		0	0	0	4.842E-05	0.001	1	0%	0	0	0%	J
Thorium	A	mg/L	0.00004968	0.00004968		0	0	0	3.018E-05	0.001	1	0%	0	0	0%	J
Titanium	A	mg/L	0.00002976	0		0	0	0	0.0001004	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	3.607E-06	0		0	0	0	2.468E-05	0.0003	1	0%	0	0	0%	
Magnesium	B	mg/L	0.005525	0		0	0	0	0.0203306	0.00564	50	0%	0	0	0%	L
Potassium	B	mg/L	0.00008697	0		0	0	0	0.0215433	0.08139	50	0%	0	0	0%	L
Tin	B	mg/L	0.0000333	0		0	0	0	0.0009928	0.00132	0.1	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078313	B22030244-007	ICPMS-6020-W-	SAMP		3/9/2022 9:51:39	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.003095	0.003095		0	0	0	0.0017836	0.001	1	0%	0	0	0%	U
Antimony	A	mg/L	0.000433	0.000433		0	0	0	6.768E-05	0.001	0.1	0%	0	0	0%	J
Arsenic	A	mg/L	0.00003351	0		0	0	0	8.203E-05	0.001	1	0%	0	0	0%	U
Barium	A	mg/L	0.004235	0.004235		0	0	0	6.762E-05	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	5.221E-06	0		0	0	0	2.308E-05	0.001	1	0%	0	0	0%	U
Cerium	A	mg/L	8.319E-07	0		0	0	0	0.0000222	0.001	0.1	0%	0	0	0%	U
Chromium	A	mg/L	0.0007711	0.0007711		0	0	0	0.0002538	0.001	1	0%	0	0	0%	J
Lanthanum	A	mg/L	1.136E-06	0		0	0	0	6.805E-05	0.001	0.1	0%	0	0	0%	U
Lead	A	mg/L	0.00001262	0		0	0	0	3.031E-05	0.001	1	0%	0	0	0%	U

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078313	B22030244-007	ICPMS-6020-W-	SAMP		3/9/2022 9:51:39	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Manganese	A	mg/L	0.006055	0.006055		0	0	0	7.309E-05	0.001	1	0%	0	0	0%	
Mercury	A	mg/L	-2.436E-07	0		0	0	0	3.043E-05	0.001	0.002	0%	0	0	0%	U
Molybdenum	A	mg/L	0.0003814	0.0003814		0	0	0	8.113E-05	0.001	0.1	0%	0	0	0%	J
Silver	A	mg/L	1.507E-06	0		0	0	0	2.644E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.1689	0.1689		0	0	0	9.743E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00004162	0		0	0	0	4.842E-05	0.001	1	0%	0	0	0%	U
Thorium	A	mg/L	5.749E-06	0		0	0	0	3.018E-05	0.001	1	0%	0	0	0%	U
Titanium	A	mg/L	0.001984	0.001984		0	0	0	0.0001004	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00001217	0		0	0	0	2.468E-05	0.0003	1	0%	0	0	0%	U
Magnesium	B	mg/L	17.51	17.51		0	0	0	0.0203306	0.00564	50	0%	0	0	0%	D
Potassium	B	mg/L	3.297	3.297		0	0	0	0.0215433	0.08139	50	0%	0	0	0%	D
Sodium	B	mg/L	37.38	37.38		0	0	0	0.0451914	0.02171	50	0%	0	0	0%	D
Tin	B	mg/L	-3.379E-05	0		0	0	0	0.0009928	0.00132	0.1	0%	0	0	0%	U

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078314	B22030244-007	ICPMS-6020-W-	SAMP		3/9/2022 9:57:54	1	164289	3/7/2022 4:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.0005772	0.0005772		0	0	0	0.0002485	0.001	0.1	0%	0	0	0%	J
Arsenic	A	mg/L	0.000292	0.000292		0	0	0	0.0002595	0.001	1	0%	0	0	0%	J
Barium	A	mg/L	0.004385	0.004385		0	0	0	0.0001041	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	2.561E-06	0		0	0	0	0.0000141	0.005	1	0%	0	0	0%	U
Cerium	A	mg/L	0.00002022	0.00002022		0	0	0	0.0000087	0.001	0.1	0%	0	0	0%	J
Lanthanum	A	mg/L	0.00001069	0		0	0	0	1.105E-05	0.001	0.1	0%	0	0	0%	U
Lead	A	mg/L	0.00001747	0		0	0	0	5.246E-05	0.001	1	0%	0	0	0%	U
Manganese	A	mg/L	0.008794	0.008794		0	0	0	0.0002595	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	0.0004422	0.0004422		0	0	0	0.0000966	0.001	0.1	0%	0	0	0%	J
Silver	A	mg/L	8.674E-06	0		0	0	0	2.318E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.1675	0.1675		0	0	0	7.178E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00004241	0		0	0	0	0.0001114	0.001	1	0%	0	0	0%	U
Titanium	A	mg/L	0.003649	0.003649		0	0	0	0.0004924	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00001652	0.00001652		0	0	0	1.084E-05	0.0003	1	0%	0	0	0%	J
Aluminum	B	mg/L	0.03225	0.03225		0	0	0	0.0029215	0.0031975	1	0%	0	0	0%	D
Chromium	B	mg/L	0.0009813	0.0009813		0	0	0	0.0005265	0.0015375	1	0%	0	0	0%	JL
Magnesium	B	mg/L	17.09	17.09		0	0	0	0.0686349	0.0081522	50	0%	0	0	0%	D

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078314	B22030244-007	ICPMS-6020-W-	SAMP		3/9/2022 9:57:54	1	164289	3/7/2022 4:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Potassium	B	mg/L	3.091	3.091		0	0	0	0.0289412	0.0261205	50	0%	0	0	0%	D
Sodium	B	mg/L	36.48	36.48		0	0	0	0.0721517	0.7330269	50	0%	0	0	0%	D
Thorium	B	mg/L	0.0001248	0.0001248		0	0	0	5.898E-05	0.00415	1	0%	0	0	0%	JL
Tin	B	mg/L	0.0003443	0		0	0	0	0.0018932	0.0011175	0.1	0%	0	0	0%	U

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078315	B22030244-012	ICPMS-6020-W-	SAMP		3/9/2022 10:04:1	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.03461	0.03461		0	0	0	0.0017836	0.001	1	0%	0	0	0%	
Arsenic	A	mg/L	0.000157	0.000157		0	0	0	8.203E-05	0.001	1	0%	0	0	0%	J
Barium	A	mg/L	0.003373	0.003373		0	0	0	6.762E-05	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0.00001243	0		0	0	0	2.308E-05	0.001	1	0%	0	0	0%	U
Cerium	A	mg/L	0.00009809	0.00009809		0	0	0	0.0000222	0.001	0.1	0%	0	0	0%	J
Chromium	A	mg/L	0.001382	0.001382		0	0	0	0.0002538	0.001	1	0%	0	0	0%	
Lanthanum	A	mg/L	0.0000414	0		0	0	0	6.805E-05	0.001	0.1	0%	0	0	0%	U
Lead	A	mg/L	0.0001062	0.0001062		0	0	0	3.031E-05	0.001	1	0%	0	0	0%	J
Manganese	A	mg/L	0.003821	0.003821		0	0	0	7.309E-05	0.001	1	0%	0	0	0%	
Mercury	A	mg/L	7.249E-06	0		0	0	0	3.043E-05	0.001	0.002	0%	0	0	0%	U
Molybdenum	A	mg/L	0.0002245	0.0002245		0	0	0	8.113E-05	0.001	0.1	0%	0	0	0%	J
Silver	A	mg/L	0.00003416	0.00003416		0	0	0	2.644E-05	0.001	0.04	0%	0	0	0%	J
Strontium	A	mg/L	0.1271	0.1271		0	0	0	9.743E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00001637	0		0	0	0	4.842E-05	0.001	1	0%	0	0	0%	U
Thorium	A	mg/L	4.498E-06	0		0	0	0	3.018E-05	0.001	1	0%	0	0	0%	U
Titanium	A	mg/L	0.005268	0.005268		0	0	0	0.0001004	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00001306	0		0	0	0	2.468E-05	0.0003	1	0%	0	0	0%	U
Magnesium	B	mg/L	16.11	16.11		0	0	0	0.0203306	0.00564	50	0%	0	0	0%	D
Potassium	B	mg/L	1.457	1.457		0	0	0	0.0215433	0.08139	50	0%	0	0	0%	D
Sodium	B	mg/L	42.53	42.53		0	0	0	0.0451914	0.02171	50	0%	0	0	0%	D
Tin	B	mg/L	0.001321	0.001321		0	0	0	0.0009928	0.00132	0.1	0%	0	0	0%	U

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078316	B22030244-012	ICPMS-6020-W-	SAMP		3/9/2022 10:10:2	1	164289	3/7/2022 4:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.0008611	0.0008611		0	0	0	0.0002485	0.001	0.1	0%	0	0	0%	J
Arsenic	A	mg/L	0.0004215	0.0004215		0	0	0	0.0002595	0.001	1	0%	0	0	0%	J
Barium	A	mg/L	0.002768	0.002768		0	0	0	0.0001041	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0.00000649	0		0	0	0	0.0000141	0.005	1	0%	0	0	0%	U
Cerium	A	mg/L	3.855E-06	0		0	0	0	0.0000087	0.001	0.1	0%	0	0	0%	U
Lanthanum	A	mg/L	2.327E-06	0		0	0	0	1.105E-05	0.001	0.1	0%	0	0	0%	U
Lead	A	mg/L	0.00002938	0		0	0	0	5.246E-05	0.001	1	0%	0	0	0%	U
Manganese	A	mg/L	0.001001	0.001001		0	0	0	0.0002595	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	0.00105	0.00105		0	0	0	0.0000966	0.001	0.1	0%	0	0	0%	
Silver	A	mg/L	2.495E-06	0		0	0	0	2.318E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.1253	0.1253		0	0	0	7.178E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00002222	0		0	0	0	0.0001114	0.001	1	0%	0	0	0%	U
Titanium	A	mg/L	0.002247	0.002247		0	0	0	0.0004924	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00001215	0.00001215		0	0	0	1.084E-05	0.0003	1	0%	0	0	0%	J
Aluminum	B	mg/L	0.005702	0.005702		0	0	0	0.0029215	0.0031975	1	0%	0	0	0%	D
Chromium	B	mg/L	0.00103	0.00103		0	0	0	0.0005265	0.0015375	1	0%	0	0	0%	JL
Magnesium	B	mg/L	16.24	16.24		0	0	0	0.0686349	0.0081522	50	0%	0	0	0%	D
Potassium	B	mg/L	1.437	1.437		0	0	0	0.0289412	0.0261205	50	0%	0	0	0%	D
Sodium	B	mg/L	43.02	43.02		0	0	0	0.0721517	0.7330269	50	0%	0	0	0%	D
Thorium	B	mg/L	0.00006348	0.00006348		0	0	0	5.898E-05	0.00415	1	0%	0	0	0%	JL
Tin	B	mg/L	0.001012	0		0	0	0	0.0018932	0.0011175	0.1	0%	0	0	0%	U

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078317	B22030244-017	ICPMS-6020-W-	SAMP		3/9/2022 10:16:4	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.005242	0.005242		0	0	0	0.0017836	0.001	1	0%	0	0	0%	
Antimony	A	mg/L	0.0005059	0.0005059		0	0	0	6.768E-05	0.001	0.1	0%	0	0	0%	J
Arsenic	A	mg/L	0.006406	0.006406		0	0	0	8.203E-05	0.001	1	0%	0	0	0%	
Barium	A	mg/L	0.003335	0.003335		0	0	0	6.762E-05	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	4.628E-06	0		0	0	0	2.308E-05	0.001	1	0%	0	0	0%	U
Cerium	A	mg/L	0.00001279	0		0	0	0	0.0000222	0.001	0.1	0%	0	0	0%	U
Chromium	A	mg/L	0.001415	0.001415		0	0	0	0.0002538	0.001	1	0%	0	0	0%	
Lanthanum	A	mg/L	4.938E-06	0		0	0	0	6.805E-05	0.001	0.1	0%	0	0	0%	U
Lead	A	mg/L	0.00002308	0		0	0	0	3.031E-05	0.001	1	0%	0	0	0%	U

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078317	B22030244-017	ICPMS-6020-W-	SAMP		3/9/2022 10:16:4	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Manganese	A	mg/L	0.000858	0.000858		0	0	0	7.309E-05	0.001	1	0%	0	0	0%	J
Molybdenum	A	mg/L	0.008762	0.008762		0	0	0	8.113E-05	0.001	0.1	0%	0	0	0%	
Silver	A	mg/L	0.00001217	0		0	0	0	2.644E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.1103	0.1103		0	0	0	9.743E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0000108	0		0	0	0	4.842E-05	0.001	1	0%	0	0	0%	U
Thorium	A	mg/L	1.039E-06	0		0	0	0	3.018E-05	0.001	1	0%	0	0	0%	U
Titanium	A	mg/L	0.002125	0.002125		0	0	0	0.0001004	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.000385	0.000385		0	0	0	2.468E-05	0.0003	1	0%	0	0	0%	
Magnesium	B	mg/L	25.68	25.68		0	0	0	0.0203306	0.00564	50	0%	0	0	0%	D
Potassium	B	mg/L	2.834	2.834		0	0	0	0.0215433	0.08139	50	0%	0	0	0%	D
Tin	B	mg/L	0.00007162	0		0	0	0	0.0009928	0.00132	0.1	0%	0	0	0%	U
Vanadium	B	mg/L	0.03651	0.03651		0	0	0	0.0018612	0.0013	1	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078318	B22030244-017	ICPMS-6020-W-	SAMP		3/9/2022 10:22:5	1	164289	3/7/2022 4:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.0006609	0.0006609		0	0	0	0.0002485	0.001	0.1	0%	0	0	0%	J
Arsenic	A	mg/L	0.006354	0.006354		0	0	0	0.0002595	0.001	1	0%	0	0	0%	
Barium	A	mg/L	0.004653	0.004653		0	0	0	0.0001041	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0.00001001	0		0	0	0	0.0000141	0.005	1	0%	0	0	0%	U
Cerium	A	mg/L	0.0005	0.0005		0	0	0	0.0000087	0.001	0.1	0%	0	0	0%	J
Lanthanum	A	mg/L	0.0001911	0.0001911		0	0	0	1.105E-05	0.001	0.1	0%	0	0	0%	J
Lead	A	mg/L	0.0004147	0.0004147		0	0	0	5.246E-05	0.001	1	0%	0	0	0%	J
Manganese	A	mg/L	0.01539	0.01539		0	0	0	0.0002595	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	0.009271	0.009271		0	0	0	0.0000966	0.001	0.1	0%	0	0	0%	
Silver	A	mg/L	0.0002727	0.0002727		0	0	0	2.318E-05	0.001	0.04	0%	0	0	0%	J
Strontium	A	mg/L	0.1131	0.1131		0	0	0	7.178E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00001863	0		0	0	0	0.0001114	0.001	1	0%	0	0	0%	U
Titanium	A	mg/L	0.03489	0.03489		0	0	0	0.0004924	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.0004185	0.0004185		0	0	0	1.084E-05	0.0003	1	0%	0	0	0%	
Aluminum	B	mg/L	0.433	0.433		0	0	0	0.0029215	0.0031975	1	0%	0	0	0%	D
Chromium	B	mg/L	0.004807	0.004807		0	0	0	0.0005265	0.0015375	1	0%	0	0	0%	D
Magnesium	B	mg/L	25.61	25.61		0	0	0	0.0686349	0.0081522	50	0%	0	0	0%	D
Potassium	B	mg/L	2.743	2.743		0	0	0	0.0289412	0.0261205	50	0%	0	0	0%	D

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078318	B22030244-017	ICPMS-6020-W-	SAMP		3/9/2022 10:22:5	1	164289	3/7/2022 4:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Thorium	B	mg/L	0.00008383	0.00008383		0	0	0	5.898E-05	0.00415	1	0%	0	0	0%	JL
Tin	B	mg/L	0.001008	0		0	0	0	0.0018932	0.0011175	0.1	0%	0	0	0%	U
Vanadium	B	mg/L	0.04162	0.04162		0	0	0	0.0012418	0.0021085	1	0%	0	0	0%	D

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078319	B22030244-022	ICPMS-6020-W-	SAMP		3/9/2022 10:29:1	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.001409	0		0	0	0	0.0017836	0.001	1	0%	0	0	0%	U
Antimony	A	mg/L	0.00003906	0		0	0	0	6.768E-05	0.001	0.1	0%	0	0	0%	U
Arsenic	A	mg/L	0.0001186	0.0001186		0	0	0	8.203E-05	0.001	1	0%	0	0	0%	J
Barium	A	mg/L	0.01668	0.01668		0	0	0	6.762E-05	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	7.214E-06	0		0	0	0	2.308E-05	0.001	1	0%	0	0	0%	U
Cerium	A	mg/L	-2.22E-08	0		0	0	0	0.0000222	0.001	0.1	0%	0	0	0%	U
Chromium	A	mg/L	0.001356	0.001356		0	0	0	0.0002538	0.001	1	0%	0	0	0%	
Lanthanum	A	mg/L	1.771E-06	0		0	0	0	6.805E-05	0.001	0.1	0%	0	0	0%	U
Lead	A	mg/L	9.266E-06	0		0	0	0	3.031E-05	0.001	1	0%	0	0	0%	U
Manganese	A	mg/L	0.0001772	0.0001772		0	0	0	7.309E-05	0.001	1	0%	0	0	0%	J
Mercury	A	mg/L	8.502E-06	0		0	0	0	3.043E-05	0.001	0.002	0%	0	0	0%	U
Molybdenum	A	mg/L	0.00008888	0.00008888		0	0	0	8.113E-05	0.001	0.1	0%	0	0	0%	J
Silver	A	mg/L	4.244E-06	0		0	0	0	2.644E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.3827	0.3827		0	0	0	9.743E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	6.122E-06	0		0	0	0	4.842E-05	0.001	1	0%	0	0	0%	U
Thorium	A	mg/L	-4.04E-09	0		0	0	0	3.018E-05	0.001	1	0%	0	0	0%	U
Titanium	A	mg/L	0.00215	0.00215		0	0	0	0.0001004	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00002104	0		0	0	0	2.468E-05	0.0003	1	0%	0	0	0%	U
Potassium	B	mg/L	2.571	2.571		0	0	0	0.0215433	0.08139	50	0%	0	0	0%	D
Tin	B	mg/L	-0.0000306	0		0	0	0	0.0009928	0.00132	0.1	0%	0	0	0%	U

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078320	B22030244-022	ICPMS-6020-W-	SAMP		3/9/2022 10:35:2	1	164289	3/7/2022 4:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078320	B22030244-022	ICPMS-6020-W-	SAMP		3/9/2022 10:35:2	1	164289	3/7/2022 4:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.00009058	0		0	0	0	0.0002485	0.001	0.1	0%	0	0	0%	U
Arsenic	A	mg/L	0.0004278	0.0004278		0	0	0	0.0002595	0.001	1	0%	0	0	0%	J
Barium	A	mg/L	0.01733	0.01733		0	0	0	0.0001041	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	9.287E-06	0		0	0	0	0.0000141	0.005	1	0%	0	0	0%	U
Cerium	A	mg/L	0.00001325	0.00001325		0	0	0	0.0000087	0.001	0.1	0%	0	0	0%	J
Lanthanum	A	mg/L	6.833E-06	0		0	0	0	1.105E-05	0.001	0.1	0%	0	0	0%	U
Lead	A	mg/L	0.00007543	0.00007543		0	0	0	5.246E-05	0.001	1	0%	0	0	0%	J
Manganese	A	mg/L	0.0006689	0.0006689		0	0	0	0.0002595	0.001	1	0%	0	0	0%	J
Molybdenum	A	mg/L	0.0001734	0.0001734		0	0	0	0.0000966	0.001	0.1	0%	0	0	0%	J
Silver	A	mg/L	0.00001057	0		0	0	0	2.318E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.3933	0.3933		0	0	0	7.178E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00001058	0		0	0	0	0.0001114	0.001	1	0%	0	0	0%	U
Titanium	A	mg/L	0.00316	0.00316		0	0	0	0.0004924	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00002099	0.00002099		0	0	0	1.084E-05	0.0003	1	0%	0	0	0%	J
Aluminum	B	mg/L	0.008974	0.008974		0	0	0	0.0029215	0.0031975	1	0%	0	0	0%	D
Chromium	B	mg/L	0.002207	0.002207		0	0	0	0.0005265	0.0015375	1	0%	0	0	0%	D
Potassium	B	mg/L	2.555	2.555		0	0	0	0.0289412	0.0261205	50	0%	0	0	0%	D
Thorium	B	mg/L	0.00002807	0		0	0	0	5.898E-05	0.00415	1	0%	0	0	0%	LU
Tin	B	mg/L	0.0003504	0		0	0	0	0.0018932	0.0011175	0.1	0%	0	0	0%	U

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078321	B22030244-027	ICPMS-6020-W-	SAMP		3/9/2022 10:41:4	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.01989	0.01989		0	0	0	0.0017836	0.001	1	0%	0	0	0%	
Antimony	A	mg/L	0.0001225	0.0001225		0	0	0	6.768E-05	0.001	0.1	0%	0	0	0%	J
Arsenic	A	mg/L	-3.432E-05	0		0	0	0	8.203E-05	0.001	1	0%	0	0	0%	U
Barium	A	mg/L	0.00447	0.00447		0	0	0	6.762E-05	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	1.373E-06	0		0	0	0	2.308E-05	0.001	1	0%	0	0	0%	U
Cerium	A	mg/L	0.00008368	0.00008368		0	0	0	0.0000222	0.001	0.1	0%	0	0	0%	J
Chromium	A	mg/L	0.002533	0.002533		0	0	0	0.0002538	0.001	1	0%	0	0	0%	
Lanthanum	A	mg/L	0.00003359	0		0	0	0	6.805E-05	0.001	0.1	0%	0	0	0%	U
Lead	A	mg/L	0.0001296	0.0001296		0	0	0	3.031E-05	0.001	1	0%	0	0	0%	J
Manganese	A	mg/L	0.02486	0.02486		0	0	0	7.309E-05	0.001	1	0%	0	0	0%	
Mercury	A	mg/L	4.333E-06	0		0	0	0	3.043E-05	0.001	0.002	0%	0	0	0%	U

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078321	B22030244-027	ICPMS-6020-W-	SAMP		3/9/2022 10:41:4	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Molybdenum	A	mg/L	0.00009668	0.00009668		0	0	0	8.113E-05	0.001	0.1	0%	0	0	0%	J
Silver	A	mg/L	0.00001164	0		0	0	0	2.644E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.1011	0.1011		0	0	0	9.743E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	4.999E-06	0		0	0	0	4.842E-05	0.001	1	0%	0	0	0%	U
Thorium	A	mg/L	-1.786E-07	0		0	0	0	3.018E-05	0.001	1	0%	0	0	0%	U
Titanium	A	mg/L	0.002608	0.002608		0	0	0	0.0001004	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00001115	0		0	0	0	2.468E-05	0.0003	1	0%	0	0	0%	U
Magnesium	B	mg/L	18.44	18.44		0	0	0	0.0203306	0.00564	50	0%	0	0	0%	D
Potassium	B	mg/L	2.061	2.061		0	0	0	0.0215433	0.08139	50	0%	0	0	0%	D
Sodium	B	mg/L	37.05	37.05		0	0	0	0.0451914	0.02171	50	0%	0	0	0%	D
Tin	B	mg/L	-7.279E-06	0		0	0	0	0.0009928	0.00132	0.1	0%	0	0	0%	U

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078322	CCV	ICPMS-6020-W-	CCV		3/9/2022 10:47:5	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.04881	0.04881		0.05	0	0	0.0017836	0.001	1	98%	90	110	0%	
Antimony	A	mg/L	0.05093	0.05093		0.05	0	0	6.768E-05	0.001	0.1	102%	90	110	0%	
Arsenic	A	mg/L	0.05082	0.05082		0.05	0	0	8.203E-05	0.001	1	102%	90	110	0%	
Barium	A	mg/L	0.0486	0.0486		0.05	0	0	6.762E-05	0.001	1	97%	90	110	0%	
Beryllium	A	mg/L	0.04322	0.04322		0.05	0	0	8.516E-05	0.001	1	86%	90	110	0%	S
Boron	A	mg/L	0.04666	0.04666		0.05	0	0	0.0039526	0.00561	1	93%	90	110	0%	
Cadmium	A	mg/L	0.05006	0.05006		0.05	0	0	2.308E-05	0.001	1	100%	90	110	0%	
Calcium	A	mg/L	11.86	11.86		12.5	0	0	0.2027235	0.02092	50	95%	90	110	0%	
Cerium	A	mg/L	0.05117	0.05117		0.05	0	0	0.0000222	0.001	0.1	102%	90	110	0%	
Chromium	A	mg/L	0.04908	0.04908		0.05	0	0	0.0002538	0.001	1	98%	90	110	0%	
Cobalt	A	mg/L	0.05027	0.05027		0.05	0	0	2.141E-05	0.001	1	101%	90	110	0%	
Copper	A	mg/L	0.05154	0.05154		0.05	0	0	0.0001748	0.001	1	103%	90	110	0%	
Iron	A	mg/L	1.275	1.275		1.3	0	0	0.0021157	0.00119	5	98%	90	110	0%	
Lanthanum	A	mg/L	0.05132	0.05132		0.05	0	0	6.805E-05	0.001	0.1	103%	90	110	0%	
Lead	A	mg/L	0.04964	0.04964		0.05	0	0	3.031E-05	0.001	1	99%	90	110	0%	
Magnesium	A	mg/L	12.68	12.68		12.5	0	0	0.0203306	0.00564	50	101%	90	110	0%	
Manganese	A	mg/L	0.04998	0.04998		0.05	0	0	7.309E-05	0.001	1	100%	90	110	0%	
Mercury	A	mg/L	0.0009885	0.0009885		0.001	0	0	3.043E-05	0.001	0.002	99%	90	110	0%	
Molybdenum	A	mg/L	0.0473	0.0473		0.05	0	0	8.113E-05	0.001	0.1	95%	90	110	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078322	CCV	ICPMS-6020-W- CCV			3/9/2022 10:47:5	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Nickel	A	mg/L	0.05151	0.05151		0.05	0	0	0.0001769	0.001	1	103%	90	110	0%	
Potassium	A	mg/L	12.18	12.18		12.5	0	0	0.0215433	0.08139	50	97%	90	110	0%	
Selenium	A	mg/L	0.05244	0.05244		0.05	0	0	7.174E-05	0.001	1	105%	90	110	0%	
Silicon	A	mg/L	0.3266	0.3266		0.2	0	0	0.0033337	0.1	0.4	163%	90	110	0%	S
Silver	A	mg/L	0.01953	0.01953		0.02	0	0	2.644E-05	0.001	0.04	98%	90	110	0%	
Sodium	A	mg/L	12.78	12.78		12.5	0	0	0.0451914	0.02171	50	102%	90	110	0%	
Strontium	A	mg/L	0.04915	0.04915		0.05	0	0	9.743E-05	0.001	1	98%	90	110	0%	
Thallium	A	mg/L	0.04867	0.04867		0.05	0	0	4.842E-05	0.001	1	97%	90	110	0%	
Thorium	A	mg/L	0.04828	0.04828		0.05	0	0	3.018E-05	0.001	1	97%	90	110	0%	
Tin	A	mg/L	0.04963	0.04963		0.05	0	0	0.0009928	0.00132	0.1	99%	90	110	0%	
Titanium	A	mg/L	0.04712	0.04712		0.05	0	0	0.0001004	0.001	1	94%	90	110	0%	
Uranium	A	mg/L	0.04865	0.04865		0.05	0	0	2.468E-05	0.0003	1	97%	90	110	0%	
Vanadium	A	mg/L	0.05164	0.05164		0.05	0	0	0.0018612	0.0013	1	103%	90	110	0%	
Zinc	A	mg/L	0.05214	0.05214		0.05	0	0	0.0010089	0.00273	1	104%	90	110	0%	
Iron, Ferrous	C	mg/L	1.275	1.275		0	0	0	0.0021157	0.00119	5	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078323	CCB	ICPMS-6020-W- CCB			3/9/2022 10:54:1	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	-3.996E-05	-3.996E-05		0	0	0	0.0017836	0.001	1	0%			0%	
Antimony	A	mg/L	0.0002725	0.0002725		0	0	0	6.768E-05	0.001	0.1	0%			0%	
Arsenic	A	mg/L	0.0000901	0.0000901		0	0	0	8.203E-05	0.001	1	0%			0%	
Barium	A	mg/L	7.97E-07	7.97E-07		0	0	0	6.762E-05	0.001	1	0%			0%	
Beryllium	A	mg/L	-4.997E-05	-4.997E-05		0	0	0	8.516E-05	0.001	1	0%			0%	
Boron	A	mg/L	0.001099	0.001099		0	0	0	0.0039526	0.00561	1	0%			0%	
Cadmium	A	mg/L	4.835E-06	4.835E-06		0	0	0	2.308E-05	0.001	1	0%			0%	
Calcium	A	mg/L	0.0001285	0.0001285		0	0	0	0.2027235	0.02092	50	0%			0%	
Cerium	A	mg/L	-1.695E-06	-1.695E-06		0	0	0	0.0000222	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	0.00002261	0.00002261		0	0	0	0.0002538	0.001	1	0%			0%	
Cobalt	A	mg/L	6.995E-08	6.995E-08		0	0	0	2.141E-05	0.001	1	0%			0%	
Copper	A	mg/L	0.00008062	0.00008062		0	0	0	0.0001748	0.001	1	0%			0%	
Iron	A	mg/L	-4.405E-05	-4.405E-05		0	0	0	0.0021157	0.00119	5	0%			0%	
Lanthanum	A	mg/L	3.746E-07	3.746E-07		0	0	0	6.805E-05	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	1.541E-06	1.541E-06		0	0	0	3.031E-05	0.001	1	0%			0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078323	CCB	ICPMS-6020-W-	CCB		3/9/2022 10:54:1	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Magnesium	A	mg/L	0.002797	0.002797		0	0	0	0.0203306	0.00564	50	0%			0%	
Manganese	A	mg/L	-4.834E-06	-4.834E-06		0	0	0	7.309E-05	0.001	1	0%			0%	
Mercury	A	mg/L	4.427E-06	4.427E-06		0	0	0	3.043E-05	0.001	0.002	0%			0%	
Molybdenum	A	mg/L	0.00002651	0.00002651		0	0	0	8.113E-05	0.001	0.1	0%			0%	
Nickel	A	mg/L	-2.655E-05	-2.655E-05		0	0	0	0.0001769	0.001	1	0%			0%	
Potassium	A	mg/L	0.002152	0.002152		0	0	0	0.0215433	0.08139	50	0%			0%	
Selenium	A	mg/L	0.00001722	0.00001722		0	0	0	7.174E-05	0.001	1	0%			0%	
Silicon	A	mg/L	0.06793	0.06793		0	0	0	0.0033337	0.1	0.4	0%	0	0	0%	
Silver	A	mg/L	6.676E-07	6.676E-07		0	0	0	2.644E-05	0.001	0.04	0%			0%	
Sodium	A	mg/L	0.06976	0.06976		0	0	0	0.0451914	0.02171	50	0%			0%	
Strontium	A	mg/L	-5.958E-06	-5.958E-06		0	0	0	9.743E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00008235	0.00008235		0	0	0	4.842E-05	0.001	1	0%	0	0	0%	
Thorium	A	mg/L	0.00004342	0.00004342		0	0	0	3.018E-05	0.001	1	0%	0	0	0%	
Tin	A	mg/L	0.00009156	0.00009156		0	0	0	0.0009928	0.00132	0.1	0%	0	0	0%	
Titanium	A	mg/L	0.0000544	0.0000544		0	0	0	0.0001004	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	3.093E-06	3.093E-06		0	0	0	2.468E-05	0.0003	1	0%	0	0	0%	
Vanadium	A	mg/L	0.002771	0.002771		0	0	0	0.0018612	0.0013	1	0%	0	0	0%	
Zinc	A	mg/L	-3.844E-05	-3.844E-05		0	0	0	0.0010089	0.00273	1	0%	0	0	0%	
Iron, Ferrous	C	mg/L	-4.405E-05	-4.405E-05		0	0	0	0.0021157	0.00119	5	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078324	B22030244-027	ICPMS-6020-W-	SAMP		3/9/2022 11:00:3	1	164289	3/7/2022 4:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.0002459	0		0	0	0	0.0002485	0.001	0.1	0%	0	0	0%	U
Arsenic	A	mg/L	0.0002973	0.0002973		0	0	0	0.0002595	0.001	1	0%	0	0	0%	J
Barium	A	mg/L	0.00641	0.00641		0	0	0	0.0001041	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	9.966E-06	0		0	0	0	0.0000141	0.005	1	0%	0	0	0%	U
Cerium	A	mg/L	0.0004745	0.0004745		0	0	0	0.0000087	0.001	0.1	0%	0	0	0%	J
Lanthanum	A	mg/L	0.0001895	0.0001895		0	0	0	1.105E-05	0.001	0.1	0%	0	0	0%	J
Lead	A	mg/L	0.0006462	0.0006462		0	0	0	5.246E-05	0.001	1	0%	0	0	0%	J
Manganese	A	mg/L	0.1206	0.1206		0	0	0	0.0002595	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	0.001363	0.001363		0	0	0	0.0000966	0.001	0.1	0%	0	0	0%	
Silver	A	mg/L	0.00006454	0.00006454		0	0	0	2.318E-05	0.001	0.04	0%	0	0	0%	J
Strontium	A	mg/L	0.1035	0.1035		0	0	0	7.178E-05	0.001	1	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078324	B22030244-027	ICPMS-6020-W-	SAMP		3/9/2022 11:00:3	1	164289	3/7/2022 4:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Thallium	A	mg/L	0.00003358	0		0	0	0	0.0001114	0.001	1	0%	0	0	0%	U
Titanium	A	mg/L	0.02754	0.02754		0	0	0	0.0004924	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00001765	0.00001765		0	0	0	1.084E-05	0.0003	1	0%	0	0	0%	J
Aluminum	B	mg/L	0.3624	0.3624		0	0	0	0.0029215	0.0031975	1	0%	0	0	0%	D
Chromium	B	mg/L	0.003968	0.003968		0	0	0	0.0005265	0.0015375	1	0%	0	0	0%	D
Magnesium	B	mg/L	18.05	18.05		0	0	0	0.0686349	0.0081522	50	0%	0	0	0%	D
Potassium	B	mg/L	1.981	1.981		0	0	0	0.0289412	0.0261205	50	0%	0	0	0%	D
Sodium	B	mg/L	36.02	36.02		0	0	0	0.0721517	0.7330269	50	0%	0	0	0%	D
Thorium	B	mg/L	0.0001091	0.0001091		0	0	0	5.898E-05	0.00415	1	0%	0	0	0%	JL
Tin	B	mg/L	0.0006803	0		0	0	0	0.0018932	0.0011175	0.1	0%	0	0	0%	U

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078325	B22030244-032	ICPMS-6020-W-	SAMP		3/9/2022 11:06:4	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.001873	0.001873		0	0	0	0.0017836	0.001	1	0%	0	0	0%	U
Antimony	A	mg/L	0.00009633	0.00009633		0	0	0	6.768E-05	0.001	0.1	0%	0	0	0%	J
Arsenic	A	mg/L	0.0005391	0.0005391		0	0	0	8.203E-05	0.001	1	0%	0	0	0%	J
Barium	A	mg/L	0.02012	0.02012		0	0	0	6.762E-05	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	9.953E-06	0		0	0	0	2.308E-05	0.001	1	0%	0	0	0%	U
Cerium	A	mg/L	1.797E-06	0		0	0	0	0.0000222	0.001	0.1	0%	0	0	0%	U
Chromium	A	mg/L	0.0003588	0.0003588		0	0	0	0.0002538	0.001	1	0%	0	0	0%	J
Lanthanum	A	mg/L	1.878E-06	0		0	0	0	6.805E-05	0.001	0.1	0%	0	0	0%	U
Lead	A	mg/L	0.00004694	0.00004694		0	0	0	3.031E-05	0.001	1	0%	0	0	0%	J
Manganese	A	mg/L	0.0004938	0.0004938		0	0	0	7.309E-05	0.001	1	0%	0	0	0%	J
Mercury	A	mg/L	0.00002362	0		0	0	0	3.043E-05	0.001	0.002	0%	0	0	0%	U
Molybdenum	A	mg/L	0.0005071	0.0005071		0	0	0	8.113E-05	0.001	0.1	0%	0	0	0%	J
Silver	A	mg/L	0.00002125	0		0	0	0	2.644E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.4665	0.4665		0	0	0	9.743E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00001669	0		0	0	0	4.842E-05	0.001	1	0%	0	0	0%	U
Thorium	A	mg/L	1.497E-06	0		0	0	0	3.018E-05	0.001	1	0%	0	0	0%	U
Titanium	A	mg/L	0.002449	0.002449		0	0	0	0.0001004	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.0005092	0.0005092		0	0	0	2.468E-05	0.0003	1	0%	0	0	0%	
Potassium	B	mg/L	2.895	2.895		0	0	0	0.0215433	0.08139	50	0%	0	0	0%	D
Tin	B	mg/L	-1.803E-05	0		0	0	0	0.0009928	0.00132	0.1	0%	0	0	0%	U

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078325	B22030244-032	ICPMS-6020-W-	SAMP		3/9/2022 11:06:4	1	R375855			0	0					
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078326	B22030244-032	ICPMS-6020-W-	SAMP		3/9/2022 11:13:0	1	164289	3/7/2022 4:3		0	0					
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q

Antimony	A	mg/L	0.0001698	0		0	0	0	0.0002485	0.001	0.1	0%	0	0	0%	U
Arsenic	A	mg/L	0.0008981	0.0008981		0	0	0	0.0002595	0.001	1	0%	0	0	0%	J
Barium	A	mg/L	0.01992	0.01992		0	0	0	0.0001041	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	7.442E-06	0		0	0	0	0.0000141	0.005	1	0%	0	0	0%	U
Cerium	A	mg/L	0.00002574	0.00002574		0	0	0	0.0000087	0.001	0.1	0%	0	0	0%	J
Lanthanum	A	mg/L	0.00001338	0.00001338		0	0	0	1.105E-05	0.001	0.1	0%	0	0	0%	J
Lead	A	mg/L	0.0002148	0.0002148		0	0	0	5.246E-05	0.001	1	0%	0	0	0%	J
Manganese	A	mg/L	0.002663	0.002663		0	0	0	0.0002595	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	0.001098	0.001098		0	0	0	0.0000966	0.001	0.1	0%	0	0	0%	
Silver	A	mg/L	0.00008446	0.00008446		0	0	0	2.318E-05	0.001	0.04	0%	0	0	0%	J
Strontium	A	mg/L	0.4679	0.4679		0	0	0	7.178E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00001594	0		0	0	0	0.0001114	0.001	1	0%	0	0	0%	U
Titanium	A	mg/L	0.003697	0.003697		0	0	0	0.0004924	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.0006806	0.0006806		0	0	0	1.084E-05	0.0003	1	0%	0	0	0%	
Aluminum	B	mg/L	0.01988	0.01988		0	0	0	0.0029215	0.0031975	1	0%	0	0	0%	D
Chromium	B	mg/L	0.003343	0.003343		0	0	0	0.0005265	0.0015375	1	0%	0	0	0%	D
Potassium	B	mg/L	2.828	2.828		0	0	0	0.0289412	0.0261205	50	0%	0	0	0%	D
Thorium	B	mg/L	0.00004576	0		0	0	0	5.898E-05	0.00415	1	0%	0	0	0%	LU
Tin	B	mg/L	0.0004304	0		0	0	0	0.0018932	0.0011175	0.1	0%	0	0	0%	U

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078327	B22030244-037	ICPMS-6020-W-	SAMP		3/9/2022 11:19:1	1	R375855			0	0					
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q

Aluminum	A	mg/L	0.006791	0.006791		0	0	0	0.0017836	0.001	1	0%	0	0	0%	
Antimony	A	mg/L	0.0005122	0.0005122		0	0	0	6.768E-05	0.001	0.1	0%	0	0	0%	J
Arsenic	A	mg/L	0.001462	0.001462		0	0	0	8.203E-05	0.001	1	0%	0	0	0%	
Barium	A	mg/L	0.02187	0.02187		0	0	0	6.762E-05	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	2.535E-06	0		0	0	0	2.308E-05	0.001	1	0%	0	0	0%	U

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078327	B22030244-037	ICPMS-6020-W-	SAMP		3/9/2022 11:19:1	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Cerium	A	mg/L	0.00000623	0		0	0	0	0.0000222	0.001	0.1	0%	0	0	0%	U
Chromium	A	mg/L	0.002625	0.002625		0	0	0	0.0002538	0.001	1	0%	0	0	0%	
Lanthanum	A	mg/L	4.719E-06	0		0	0	0	6.805E-05	0.001	0.1	0%	0	0	0%	U
Lead	A	mg/L	5.756E-06	0		0	0	0	3.031E-05	0.001	1	0%	0	0	0%	U
Manganese	A	mg/L	0.0007406	0.0007406		0	0	0	7.309E-05	0.001	1	0%	0	0	0%	J
Mercury	A	mg/L	0.000141	0.000141		0	0	0	3.043E-05	0.001	0.002	0%	0	0	0%	J
Molybdenum	A	mg/L	0.004293	0.004293		0	0	0	8.113E-05	0.001	0.1	0%	0	0	0%	
Silver	A	mg/L	1.367E-06	0		0	0	0	2.644E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.1171	0.1171		0	0	0	9.743E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00001366	0		0	0	0	4.842E-05	0.001	1	0%	0	0	0%	U
Thorium	A	mg/L	4.024E-07	0		0	0	0	3.018E-05	0.001	1	0%	0	0	0%	U
Titanium	A	mg/L	0.001302	0.001302		0	0	0	0.0001004	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.0002638	0.0002638		0	0	0	2.468E-05	0.0003	1	0%	0	0	0%	J
Magnesium	B	mg/L	9.347	9.347		0	0	0	0.0203306	0.00564	50	0%	0	0	0%	D
Potassium	B	mg/L	3.764	3.764		0	0	0	0.0215433	0.08139	50	0%	0	0	0%	D
Sodium	B	mg/L	43.94	43.94		0	0	0	0.0451914	0.02171	50	0%	0	0	0%	D
Tin	B	mg/L	0.00001543	0		0	0	0	0.0009928	0.00132	0.1	0%	0	0	0%	U

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078328	B22030244-037	ICPMS-6020-W-	SAMP		3/9/2022 11:25:3	1	164289	3/7/2022 4:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.0005726	0.0005726		0	0	0	0.0002485	0.001	0.1	0%	0	0	0%	J
Arsenic	A	mg/L	0.001719	0.001719		0	0	0	0.0002595	0.001	1	0%	0	0	0%	
Barium	A	mg/L	0.02277	0.02277		0	0	0	0.0001041	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	2.308E-06	0		0	0	0	0.0000141	0.005	1	0%	0	0	0%	U
Cerium	A	mg/L	0.0001491	0.0001491		0	0	0	0.0000087	0.001	0.1	0%	0	0	0%	J
Lanthanum	A	mg/L	0.00006804	0.00006804		0	0	0	1.105E-05	0.001	0.1	0%	0	0	0%	J
Lead	A	mg/L	0.0000378	0		0	0	0	5.246E-05	0.001	1	0%	0	0	0%	U
Manganese	A	mg/L	0.006832	0.006832		0	0	0	0.0002595	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	0.004784	0.004784		0	0	0	0.0000966	0.001	0.1	0%	0	0	0%	
Silver	A	mg/L	9.771E-06	0		0	0	0	2.318E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.1215	0.1215		0	0	0	7.178E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00001645	0		0	0	0	0.0001114	0.001	1	0%	0	0	0%	U
Titanium	A	mg/L	0.009147	0.009147		0	0	0	0.0004924	0.001	1	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078328	B22030244-037	ICPMS-6020-W-	SAMP		3/9/2022 11:25:3	1	164289	3/7/2022 4:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Uranium	A	mg/L	0.000285	0.000285		0	0	0	1.084E-05	0.0003	1	0%	0	0	0%	J
Aluminum	B	mg/L	0.1136	0.1136		0	0	0	0.0029215	0.0031975	1	0%	0	0	0%	D
Chromium	B	mg/L	0.003022	0.003022		0	0	0	0.0005265	0.0015375	1	0%	0	0	0%	D
Magnesium	B	mg/L	9.371	9.371		0	0	0	0.0686349	0.0081522	50	0%	0	0	0%	D
Potassium	B	mg/L	3.705	3.705		0	0	0	0.0289412	0.0261205	50	0%	0	0	0%	D
Sodium	B	mg/L	44.37	44.37		0	0	0	0.0721517	0.7330269	50	0%	0	0	0%	D
Thorium	B	mg/L	0.00004892	0		0	0	0	5.898E-05	0.00415	1	0%	0	0	0%	LU
Tin	B	mg/L	0.0004016	0		0	0	0	0.0018932	0.0011175	0.1	0%	0	0	0%	U

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078329	B22030244-042	ICPMS-6020-W-	SAMP		3/9/2022 11:31:4	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.00744	0.00744		0	0	0	0.0017836	0.001	1	0%	0	0	0%	
Antimony	A	mg/L	0.00002336	0		0	0	0	6.768E-05	0.001	0.1	0%	0	0	0%	U
Arsenic	A	mg/L	0.0004653	0.0004653		0	0	0	8.203E-05	0.001	1	0%	0	0	0%	J
Barium	A	mg/L	0.006813	0.006813		0	0	0	6.762E-05	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	-2.404E-07	0		0	0	0	2.308E-05	0.001	1	0%	0	0	0%	U
Cerium	A	mg/L	0.00001837	0		0	0	0	0.0000222	0.001	0.1	0%	0	0	0%	U
Chromium	A	mg/L	0.001918	0.001918		0	0	0	0.0002538	0.001	1	0%	0	0	0%	
Lanthanum	A	mg/L	7.069E-06	0		0	0	0	6.805E-05	0.001	0.1	0%	0	0	0%	U
Lead	A	mg/L	0.00001226	0		0	0	0	3.031E-05	0.001	1	0%	0	0	0%	U
Manganese	A	mg/L	0.0004321	0.0004321		0	0	0	7.309E-05	0.001	1	0%	0	0	0%	J
Mercury	A	mg/L	8.335E-07	0		0	0	0	3.043E-05	0.001	0.002	0%	0	0	0%	U
Molybdenum	A	mg/L	0.001725	0.001725		0	0	0	8.113E-05	0.001	0.1	0%	0	0	0%	
Silver	A	mg/L	0.00001937	0		0	0	0	2.644E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.118	0.118		0	0	0	9.743E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	9.421E-06	0		0	0	0	4.842E-05	0.001	1	0%	0	0	0%	U
Thorium	A	mg/L	-9.328E-08	0		0	0	0	3.018E-05	0.001	1	0%	0	0	0%	U
Titanium	A	mg/L	0.001609	0.001609		0	0	0	0.0001004	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00003927	0.00003927		0	0	0	2.468E-05	0.0003	1	0%	0	0	0%	J
Magnesium	B	mg/L	16.04	16.04		0	0	0	0.0203306	0.00564	50	0%	0	0	0%	D
Potassium	B	mg/L	2.588	2.588		0	0	0	0.0215433	0.08139	50	0%	0	0	0%	D
Sodium	B	mg/L	37.2	37.2		0	0	0	0.0451914	0.02171	50	0%	0	0	0%	D
Tin	B	mg/L	-4.598E-05	0		0	0	0	0.0009928	0.00132	0.1	0%	0	0	0%	U

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078329	B22030244-042	ICPMS-6020-W-	SAMP		3/9/2022 11:31:4	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078330	B22030244-042	ICPMS-6020-W-	SAMP		3/9/2022 11:38:0	1	164289	3/7/2022 4:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q

Antimony	A	mg/L	0.00004514	0		0	0	0	0.0002485	0.001	0.1	0%	0	0	0%	U
Arsenic	A	mg/L	0.0007711	0.0007711		0	0	0	0.0002595	0.001	1	0%	0	0	0%	J
Barium	A	mg/L	0.007252	0.007252		0	0	0	0.0001041	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	1.656E-06	0		0	0	0	0.0000141	0.005	1	0%	0	0	0%	U
Cerium	A	mg/L	0.00006388	0.00006388		0	0	0	0.0000087	0.001	0.1	0%	0	0	0%	J
Lanthanum	A	mg/L	0.00002753	0.00002753		0	0	0	1.105E-05	0.001	0.1	0%	0	0	0%	J
Lead	A	mg/L	0.00001675	0		0	0	0	5.246E-05	0.001	1	0%	0	0	0%	U
Manganese	A	mg/L	0.001429	0.001429		0	0	0	0.0002595	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	0.0019	0.0019		0	0	0	0.0000966	0.001	0.1	0%	0	0	0%	
Silver	A	mg/L	0.00002627	0.00002627		0	0	0	2.318E-05	0.001	0.04	0%	0	0	0%	J
Strontium	A	mg/L	0.122	0.122		0	0	0	7.178E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00001271	0		0	0	0	0.0001114	0.001	1	0%	0	0	0%	U
Titanium	A	mg/L	0.009743	0.009743		0	0	0	0.0004924	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00004121	0.00004121		0	0	0	1.084E-05	0.0003	1	0%	0	0	0%	J
Aluminum	B	mg/L	0.1037	0.1037		0	0	0	0.0029215	0.0031975	1	0%	0	0	0%	D
Chromium	B	mg/L	0.002507	0.002507		0	0	0	0.0005265	0.0015375	1	0%	0	0	0%	D
Magnesium	B	mg/L	16.09	16.09		0	0	0	0.0686349	0.0081522	50	0%	0	0	0%	D
Potassium	B	mg/L	2.589	2.589		0	0	0	0.0289412	0.0261205	50	0%	0	0	0%	D
Sodium	B	mg/L	37.65	37.65		0	0	0	0.0721517	0.7330269	50	0%	0	0	0%	D
Thorium	B	mg/L	0.00002157	0		0	0	0	5.898E-05	0.00415	1	0%	0	0	0%	LU
Tin	B	mg/L	0.0004087	0		0	0	0	0.0018932	0.0011175	0.1	0%	0	0	0%	U

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078331	B22030244-047	ICPMS-6020-W-	SAMP		3/9/2022 11:44:1	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q

Aluminum	A	mg/L	0.001486	0		0	0	0	0.0017836	0.001	1	0%	0	0	0%	U
Antimony	A	mg/L	0.00003224	0		0	0	0	6.768E-05	0.001	0.1	0%	0	0	0%	U
Arsenic	A	mg/L	7.948E-06	0		0	0	0	8.203E-05	0.001	1	0%	0	0	0%	U

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078331	B22030244-047	ICPMS-6020-W-	SAMP		3/9/2022 11:44:1	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Barium	A	mg/L	0.001889	0.001889		0	0	0	6.762E-05	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	-1.625E-08	0		0	0	0	2.308E-05	0.001	1	0%	0	0	0%	U
Cerium	A	mg/L	-1.308E-06	0		0	0	0	0.0000222	0.001	0.1	0%	0	0	0%	U
Chromium	A	mg/L	0.00301	0.00301		0	0	0	0.0002538	0.001	1	0%	0	0	0%	
Lanthanum	A	mg/L	4.524E-07	0		0	0	0	6.805E-05	0.001	0.1	0%	0	0	0%	U
Lead	A	mg/L	0.00001702	0		0	0	0	3.031E-05	0.001	1	0%	0	0	0%	U
Manganese	A	mg/L	0.0004304	0.0004304		0	0	0	7.309E-05	0.001	1	0%	0	0	0%	J
Mercury	A	mg/L	0.00001898	0		0	0	0	3.043E-05	0.001	0.002	0%	0	0	0%	U
Molybdenum	A	mg/L	0.001356	0.001356		0	0	0	8.113E-05	0.001	0.1	0%	0	0	0%	
Silver	A	mg/L	1.189E-06	0		0	0	0	2.644E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.05885	0.05885		0	0	0	9.743E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00000642	0		0	0	0	4.842E-05	0.001	1	0%	0	0	0%	U
Thorium	A	mg/L	-8.143E-07	0		0	0	0	3.018E-05	0.001	1	0%	0	0	0%	U
Titanium	A	mg/L	0.001504	0.001504		0	0	0	0.0001004	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	6.597E-06	0		0	0	0	2.468E-05	0.0003	1	0%	0	0	0%	U
Magnesium	B	mg/L	8.642	8.642		0	0	0	0.0203306	0.00564	50	0%	0	0	0%	D
Potassium	B	mg/L	1.77	1.77		0	0	0	0.0215433	0.08139	50	0%	0	0	0%	D
Sodium	B	mg/L	35.63	35.63		0	0	0	0.0451914	0.02171	50	0%	0	0	0%	D
Tin	B	mg/L	0.00006772	0		0	0	0	0.0009928	0.00132	0.1	0%	0	0	0%	U

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078332	B22030244-047	ICPMS-6020-W-	SAMP		3/9/2022 11:50:3	1	164289	3/7/2022 4:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.00005463	0		0	0	0	0.0002485	0.001	0.1	0%	0	0	0%	U
Arsenic	A	mg/L	0.0002719	0.0002719		0	0	0	0.0002595	0.001	1	0%	0	0	0%	J
Barium	A	mg/L	0.002261	0.002261		0	0	0	0.0001041	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	8.778E-07	0		0	0	0	0.0000141	0.005	1	0%	0	0	0%	U
Cerium	A	mg/L	2.559E-07	0		0	0	0	0.0000087	0.001	0.1	0%	0	0	0%	U
Lanthanum	A	mg/L	1.446E-06	0		0	0	0	1.105E-05	0.001	0.1	0%	0	0	0%	U
Lead	A	mg/L	0.00001708	0		0	0	0	5.246E-05	0.001	1	0%	0	0	0%	U
Manganese	A	mg/L	0.0004249	0.0004249		0	0	0	0.0002595	0.001	1	0%	0	0	0%	J
Molybdenum	A	mg/L	0.001418	0.001418		0	0	0	0.0000966	0.001	0.1	0%	0	0	0%	
Silver	A	mg/L	9.488E-06	0		0	0	0	2.318E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.06028	0.06028		0	0	0	7.178E-05	0.001	1	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078332	B22030244-047	ICPMS-6020-W-	SAMP		3/9/2022 11:50:3	1	164289	3/7/2022 4:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Thallium	A	mg/L	0.00000849	0		0	0	0	0.0001114	0.001	1	0%	0	0	0%	U
Titanium	A	mg/L	0.001892	0.001892		0	0	0	0.0004924	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	6.959E-06	0		0	0	0	1.084E-05	0.0003	1	0%	0	0	0%	U
Aluminum	B	mg/L	0.003492	0.003492		0	0	0	0.0029215	0.0031975	1	0%	0	0	0%	DU
Chromium	B	mg/L	0.003303	0.003303		0	0	0	0.0005265	0.0015375	1	0%	0	0	0%	D
Magnesium	B	mg/L	8.564	8.564		0	0	0	0.0686349	0.0081522	50	0%	0	0	0%	D
Potassium	B	mg/L	1.732	1.732		0	0	0	0.0289412	0.0261205	50	0%	0	0	0%	D
Sodium	B	mg/L	35.52	35.52		0	0	0	0.0721517	0.7330269	50	0%	0	0	0%	D
Thorium	B	mg/L	0.00001922	0		0	0	0	5.898E-05	0.00415	1	0%	0	0	0%	LU
Tin	B	mg/L	0.0003354	0		0	0	0	0.0018932	0.0011175	0.1	0%	0	0	0%	U

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078333	B22030433-001	ICPMS-6020-W-	SAMP		3/9/2022 11:56:4	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.002553	0.002553		0	0	0	0.0017836	0.001	1	0%	0	0	0%	U
Antimony	A	mg/L	0.0002331	0.0002331		0	0	0	6.768E-05	0.001	0.1	0%	0	0	0%	J
Arsenic	A	mg/L	0.0006296	0.0006296		0	0	0	8.203E-05	0.001	1	0%	0	0	0%	J
Barium	A	mg/L	0.003972	0.003972		0	0	0	6.762E-05	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	3.285E-06	0		0	0	0	2.308E-05	0.001	1	0%	0	0	0%	U
Cerium	A	mg/L	7.416E-08	0		0	0	0	0.0000222	0.001	0.1	0%	0	0	0%	U
Chromium	A	mg/L	0.0001036	0		0	0	0	0.0002538	0.001	1	0%	0	0	0%	U
Lanthanum	A	mg/L	9.793E-07	0		0	0	0	6.805E-05	0.001	0.1	0%	0	0	0%	U
Lead	A	mg/L	0.00001419	0		0	0	0	3.031E-05	0.001	1	0%	0	0	0%	U
Manganese	A	mg/L	0.1817	0.1817		0	0	0	7.309E-05	0.001	1	0%	0	0	0%	
Mercury	A	mg/L	0.00003825	0.00003825		0	0	0	3.043E-05	0.001	0.002	0%	0	0	0%	J
Molybdenum	A	mg/L	0.00711	0.00711		0	0	0	8.113E-05	0.001	0.1	0%	0	0	0%	
Silver	A	mg/L	1.336E-08	0		0	0	0	2.644E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.2285	0.2285		0	0	0	9.743E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	6.102E-06	0		0	0	0	4.842E-05	0.001	1	0%	0	0	0%	U
Thorium	A	mg/L	-4.119E-07	0		0	0	0	3.018E-05	0.001	1	0%	0	0	0%	U
Titanium	A	mg/L	0.001228	0.001228		0	0	0	0.0001004	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00007645	0.00007645		0	0	0	2.468E-05	0.0003	1	0%	0	0	0%	J
Magnesium	B	mg/L	32.61	32.61		0	0	0	0.0203306	0.00564	50	0%	0	0	0%	D
Potassium	B	mg/L	2.835	2.835		0	0	0	0.0215433	0.08139	50	0%	0	0	0%	D

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078333	B22030433-001	ICPMS-6020-W-	SAMP		3/9/2022 11:56:4	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Tin	B	mg/L	-0.0000187	0		0	0	0	0.0009928	0.00132	0.1	0%	0	0	0%	U

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078334	CCV	ICPMS-6020-W-	CCV		3/9/2022 12:03:0	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.04829	0.04829		0.05	0	0	0.0017836	0.001	1	97%	90	110	0%	
Antimony	A	mg/L	0.05288	0.05288		0.05	0	0	6.768E-05	0.001	0.1	106%	90	110	0%	
Arsenic	A	mg/L	0.05025	0.05025		0.05	0	0	8.203E-05	0.001	1	100%	90	110	0%	
Barium	A	mg/L	0.05076	0.05076		0.05	0	0	6.762E-05	0.001	1	102%	90	110	0%	
Beryllium	A	mg/L	0.04192	0.04192		0.05	0	0	8.516E-05	0.001	1	84%	90	110	0%	S
Boron	A	mg/L	0.04577	0.04577		0.05	0	0	0.0039526	0.00561	1	92%	90	110	0%	
Cadmium	A	mg/L	0.05152	0.05152		0.05	0	0	2.308E-05	0.001	1	103%	90	110	0%	
Calcium	A	mg/L	12.03	12.03		12.5	0	0	0.2027235	0.02092	50	96%	90	110	0%	
Cerium	A	mg/L	0.05142	0.05142		0.05	0	0	0.0000222	0.001	0.1	103%	90	110	0%	
Chromium	A	mg/L	0.0489	0.0489		0.05	0	0	0.0002538	0.001	1	98%	90	110	0%	
Cobalt	A	mg/L	0.05068	0.05068		0.05	0	0	2.141E-05	0.001	1	101%	90	110	0%	
Copper	A	mg/L	0.0507	0.0507		0.05	0	0	0.0001748	0.001	1	101%	90	110	0%	
Iron	A	mg/L	1.289	1.289		1.3	0	0	0.0021157	0.00119	5	99%	90	110	0%	
Lanthanum	A	mg/L	0.05137	0.05137		0.05	0	0	6.805E-05	0.001	0.1	103%	90	110	0%	
Lead	A	mg/L	0.04963	0.04963		0.05	0	0	3.031E-05	0.001	1	99%	90	110	0%	
Magnesium	A	mg/L	12.38	12.38		12.5	0	0	0.0203306	0.00564	50	99%	90	110	0%	
Manganese	A	mg/L	0.04883	0.04883		0.05	0	0	7.309E-05	0.001	1	98%	90	110	0%	
Mercury	A	mg/L	0.001016	0.001016		0.001	0	0	3.043E-05	0.001	0.002	102%	90	110	0%	
Molybdenum	A	mg/L	0.0495	0.0495		0.05	0	0	8.113E-05	0.001	0.1	99%	90	110	0%	
Nickel	A	mg/L	0.05123	0.05123		0.05	0	0	0.0001769	0.001	1	102%	90	110	0%	
Potassium	A	mg/L	11.94	11.94		12.5	0	0	0.0215433	0.08139	50	96%	90	110	0%	
Selenium	A	mg/L	0.05342	0.05342		0.05	0	0	7.174E-05	0.001	1	107%	90	110	0%	
Silicon	A	mg/L	0.2541	0.2541		0.2	0	0	0.0033337	0.1	0.4	127%	90	110	0%	S
Silver	A	mg/L	0.02016	0.02016		0.02	0	0	2.644E-05	0.001	0.04	101%	90	110	0%	
Sodium	A	mg/L	12.45	12.45		12.5	0	0	0.0451914	0.02171	50	100%	90	110	0%	
Strontium	A	mg/L	0.04876	0.04876		0.05	0	0	9.743E-05	0.001	1	98%	90	110	0%	
Thallium	A	mg/L	0.04858	0.04858		0.05	0	0	4.842E-05	0.001	1	97%	90	110	0%	
Thorium	A	mg/L	0.04856	0.04856		0.05	0	0	3.018E-05	0.001	1	97%	90	110	0%	
Tin	A	mg/L	0.05111	0.05111		0.05	0	0	0.0009928	0.00132	0.1	102%	90	110	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078334	CCV	ICPMS-6020-W-	CCV		3/9/2022 12:03:0	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Titanium	A	mg/L	0.04701	0.04701		0.05	0	0	0.0001004	0.001	1	94%	90	110	0%	
Uranium	A	mg/L	0.0481	0.0481		0.05	0	0	2.468E-05	0.0003	1	96%	90	110	0%	
Vanadium	A	mg/L	0.05134	0.05134		0.05	0	0	0.0018612	0.0013	1	103%	90	110	0%	
Zinc	A	mg/L	0.05112	0.05112		0.05	0	0	0.0010089	0.00273	1	102%	90	110	0%	
Iron, Ferrous	C	mg/L	1.289	1.289		0	0	0	0.0021157	0.00119	5	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078335	CCB	ICPMS-6020-W-	CCB		3/9/2022 12:09:2	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	-5.112E-05	-5.112E-05		0	0	0	0.0017836	0.001	1	0%			0%	
Antimony	A	mg/L	0.0002773	0.0002773		0	0	0	6.768E-05	0.001	0.1	0%			0%	
Arsenic	A	mg/L	0.0001014	0.0001014		0	0	0	8.203E-05	0.001	1	0%			0%	
Barium	A	mg/L	-2.564E-06	-2.564E-06		0	0	0	6.762E-05	0.001	1	0%			0%	
Beryllium	A	mg/L	-4.734E-05	-4.734E-05		0	0	0	8.516E-05	0.001	1	0%			0%	
Boron	A	mg/L	0.0008694	0.0008694		0	0	0	0.0039526	0.00561	1	0%			0%	
Cadmium	A	mg/L	6.262E-06	6.262E-06		0	0	0	2.308E-05	0.001	1	0%			0%	
Calcium	A	mg/L	0.0005598	0.0005598		0	0	0	0.2027235	0.02092	50	0%			0%	
Cerium	A	mg/L	-1.525E-06	-1.525E-06		0	0	0	0.0000222	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	0.00002182	0.00002182		0	0	0	0.0002538	0.001	1	0%			0%	
Cobalt	A	mg/L	-9.39E-07	-9.39E-07		0	0	0	2.141E-05	0.001	1	0%			0%	
Copper	A	mg/L	0.00009411	0.00009411		0	0	0	0.0001748	0.001	1	0%			0%	
Iron	A	mg/L	-2.748E-05	-2.748E-05		0	0	0	0.0021157	0.00119	5	0%			0%	
Lanthanum	A	mg/L	3.838E-07	3.838E-07		0	0	0	6.805E-05	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	1.036E-06	1.036E-06		0	0	0	3.031E-05	0.001	1	0%			0%	
Magnesium	A	mg/L	0.00236	0.00236		0	0	0	0.0203306	0.00564	50	0%			0%	
Manganese	A	mg/L	-6.764E-06	-6.764E-06		0	0	0	7.309E-05	0.001	1	0%			0%	
Mercury	A	mg/L	3.296E-06	3.296E-06		0	0	0	3.043E-05	0.001	0.002	0%			0%	
Molybdenum	A	mg/L	0.00003552	0.00003552		0	0	0	8.113E-05	0.001	0.1	0%			0%	
Nickel	A	mg/L	0.00001347	0.00001347		0	0	0	0.0001769	0.001	1	0%			0%	
Potassium	A	mg/L	-0.000731	-0.000731		0	0	0	0.0215433	0.08139	50	0%			0%	
Selenium	A	mg/L	0.00002703	0.00002703		0	0	0	7.174E-05	0.001	1	0%			0%	
Silicon	A	mg/L	0.04147	0.04147		0	0	0	0.0033337	0.1	0.4	0%	0	0	0%	
Silver	A	mg/L	9.774E-07	9.774E-07		0	0	0	2.644E-05	0.001	0.04	0%			0%	
Sodium	A	mg/L	0.06107	0.06107		0	0	0	0.0451914	0.02171	50	0%			0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078335	CCB	ICPMS-6020-W-	CCB		3/9/2022 12:09:2	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Strontium	A	mg/L	-1.185E-06	-1.185E-06		0	0	0	9.743E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00008059	0.00008059		0	0	0	4.842E-05	0.001	1	0%	0	0	0%	
Thorium	A	mg/L	0.00004487	0.00004487		0	0	0	3.018E-05	0.001	1	0%	0	0	0%	
Tin	A	mg/L	0.00008522	0.00008522		0	0	0	0.0009928	0.00132	0.1	0%	0	0	0%	
Titanium	A	mg/L	0.00004546	0.00004546		0	0	0	0.0001004	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	3.112E-06	3.112E-06		0	0	0	2.468E-05	0.0003	1	0%	0	0	0%	
Vanadium	A	mg/L	0.00296	0.00296		0	0	0	0.0018612	0.0013	1	0%	0	0	0%	
Zinc	A	mg/L	-0.0000089	-0.0000089		0	0	0	0.0010089	0.00273	1	0%	0	0	0%	
Iron, Ferrous	C	mg/L	-2.748E-05	-2.748E-05		0	0	0	0.0021157	0.00119	5	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078336	B22030433-001	ICPMS-6020-W-	SD		3/9/2022 12:15:3	5	R375855		0	2E+07						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.001768	0		0	0	0.002553	0.0089181	0.0043	1	0%				
Antimony	A	mg/L	0.0001184	0.000592		0	0	0.0002331	0.0003384	0.0021	0.1	0%				N
Arsenic	A	mg/L	0.0002361	0.0011805		0	0	0.0006296	0.0004102	0.001	1	0%				N
Barium	A	mg/L	0.0009658	0.004829		0	0	0.003972	0.0003381	0.001	1	0%			19%	R
Beryllium	A	mg/L	-5.249E-05	0		0	0	0	0.0004258	0.001	1	0%				
Boron	A	mg/L	0.01469	0.07345		0	0	0.06577	0.0197631	0.02805	1	0%				N
Cadmium	A	mg/L	0.00001032	0		0	0	0	0.0001154	0.001	1	0%				
Calcium	A	mg/L	5.776	28.88		0	0	28.83	1.0136175	0.1046	50	0%			0%	
Cerium	A	mg/L	-4.979E-08	0		0	0	0	0.000111	0.001	0.1	0%				
Chromium	A	mg/L	0.00006644	0		0	0	0	0.001269	0.001	1	0%				
Cobalt	A	mg/L	0.00006775	0.00033875		0	0	0.0003288	0.0001071	0.001	1	0%				N
Copper	A	mg/L	0.0002121	0.0010605		0	0	0.0003246	0.0008742	0.00135	1	0%				N
Iron	A	mg/L	0.003508	0.01754		0	0	0.01493	0.0105787	0.00595	5	0%				N
Lanthanum	A	mg/L	6.984E-07	0		0	0	0	0.0003403	0.001	0.1	0%				
Lead	A	mg/L	0.00005617	0.00028085		0	0	0	0.0001516	0.001	1	0%				N
Magnesium	A	mg/L	6.596	32.98		0	0	32.61	0.1016532	0.0282	50	0%			1%	
Manganese	A	mg/L	0.03807	0.19035		0	0	0.1817	0.0003655	0.001	1	0%			5%	
Mercury	A	mg/L	0.00001622	0		0	0	3.825E-05	0.0001522	0.001	0.002	0%				
Molybdenum	A	mg/L	0.00147	0.00735		0	0	0.00711	0.0004057	0.001	0.1	0%			3%	
Nickel	A	mg/L	0.0003056	0.001528		0	0	0.001268	0.0008844	0.00315	1	0%				N
Potassium	A	mg/L	0.5789	2.8945		0	0	2.835	0.1077164	0.40695	50	0%			2%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078336	B22030433-001	ICPMS-6020-W- SD			3/9/2022 12:15:3	5	R375855			0	2E+07					
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Selenium	A	mg/L	0.00003457	0		0	0	0.0001151	0.0003587	0.00165	1	0%				
Silicon	A	mg/L	3.603	18.015		0	0	17.38	0.0166685	0.1	0.4	0%			4%	
Silver	A	mg/L	-2.26E-07	0		0	0	0	0.0001322	0.001	0.04	0%				
Sodium	A	mg/L	12.48	62.4		0	0	56.13	0.225957	0.10855	50	0%			11%	R
Strontium	A	mg/L	0.04674	0.2337		0	0	0.2285	0.0004872	0.001	1	0%			2%	
Thallium	A	mg/L	0.00001946	0		0	0	0	0.0002421	0.001	1	0%				
Thorium	A	mg/L	0.00001197	0		0	0	0	0.0001509	0.00305	1	0%				
Tin	A	mg/L	0.00006676	0		0	0	0	0.0049642	0.0066	0.1	0%				
Titanium	A	mg/L	0.0002873	0.0014365		0	0	0.001228	0.000502	0.001	1	0%				N
Uranium	A	mg/L	0.00001651	0		0	0	7.645E-05	0.0001234	0.0003	1	0%				
Vanadium	A	mg/L	0.004342	0.02171		0	0	0.007877	0.0093058	0.0065	1	0%				N
Zinc	A	mg/L	0.001332	0.00666		0	0	0.002028	0.0050446	0.01365	1	0%				N
Iron, Ferrous	C	mg/L	0.003508	0.01754		0	0	0	0.0105787	0.00595	5	0%				N

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078337	B22030433-001	ICPMS-6020-W- MS-DOD			3/9/2022 12:21:5	1.03	R375855			2E+07	0					
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.04656	0.0479568		0.05	0.002553	0	0.0018371	0.001	1	91%	75	125	0%	
Antimony	A	mg/L	0.05007	0.0515721		0.05	0.0002331	0	6.971E-05	0.001	0.1	103%	75	125	0%	
Arsenic	A	mg/L	0.04962	0.0511086		0.05	0.0006296	0	8.449E-05	0.001	1	101%	75	125	0%	
Barium	A	mg/L	0.05156	0.0531068		0.05	0.003972	0	6.965E-05	0.001	1	98%	75	125	0%	
Beryllium	A	mg/L	0.03956	0.0407468		0.05	0	0	8.771E-05	0.001	1	81%	75	125	0%	
Boron	A	mg/L	0.1085	0.111755		0.05	0.06577	0	0.0040712	0.0057783	1	92%	75	125	0%	
Cadmium	A	mg/L	0.04726	0.0486778		0.05	0	0	2.377E-05	0.001	1	97%	75	125	0%	
Calcium	A	mg/L	71.92	74.0776		50	28.83	0	0.2088052	0.0215476	50	90%	75	125	0%	
Cerium	A	mg/L	0.05021	0.0517163		0.05	0	0	2.287E-05	0.001	0.1	103%	75	125	0%	
Chromium	A	mg/L	0.04583	0.0472049		0.05	0	0	0.0002614	0.001	1	94%	75	125	0%	
Cobalt	A	mg/L	0.04526	0.0466178		0.05	0.0003288	0	2.205E-05	0.001	1	93%	75	125	0%	
Copper	A	mg/L	0.04693	0.0483379		0.05	0.0003246	0	0.0001801	0.001	1	96%	75	125	0%	
Iron	A	mg/L	4.712	4.85336		5.05	0.01493	0	0.0021792	0.0012257	5	96%	75	125	0%	
Lanthanum	A	mg/L	0.05068	0.0522004		0.05	0	0	7.009E-05	0.001	0.1	104%	75	125	0%	
Lead	A	mg/L	0.04779	0.0492237		0.05	0	0	3.122E-05	0.001	1	98%	88	115	0%	
Magnesium	A	mg/L	77.38	79.7014		50	32.61	0	0.0209406	0.0058092	50	94%	75	125	0%	
Manganese	A	mg/L	0.2265	0.233295		0.05	0.1817	0	7.528E-05	0.001	1	103%	75	125	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078337	B22030433-001	ICPMS-6020-W-	MS-DOD		3/9/2022 12:21:5	1.03	R375855		2E+07	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Mercury	A	mg/L	0.001043	0.00107429		0.001	3.825E-05	0	3.134E-05	0.001	0.002	104%	75	125	0%	
Molybdenum	A	mg/L	0.05375	0.0553625		0.05	0.00711	0	8.356E-05	0.001	0.1	97%	75	125	0%	
Nickel	A	mg/L	0.04775	0.0491825		0.05	0.001268	0	0.0001822	0.001	1	96%	75	125	0%	
Potassium	A	mg/L	47.2	48.616		50	2.835	0	0.0221896	0.0838317	50	92%	75	125	0%	
Selenium	A	mg/L	0.05139	0.0529317		0.05	0.0001151	0	7.389E-05	0.001	1	106%	75	125	0%	
Silicon	A	mg/L	16.97	17.4791		0.2	17.38	0	0.0034337	0.1	0.4		75	125	0%	A
Silver	A	mg/L	0.01851	0.0190653		0.02	0	0	2.723E-05	0.001	0.04	95%	75	125	0%	
Sodium	A	mg/L	101.6	104.648		50	56.13	0	0.0465471	0.0223613	50	97%	75	125	0%	
Strontium	A	mg/L	0.2691	0.277173		0.05	0.2285	0	0.0001004	0.001	1		75	125	0%	A
Thallium	A	mg/L	0.04697	0.0483791		0.05	0	0	4.987E-05	0.001	1	97%	75	125	0%	
Thorium	A	mg/L	0.04831	0.0497593		0.05	0	0	3.109E-05	0.001	1	100%	75	125	0%	
Tin	A	mg/L	0.04705	0.0484615		0.05	0	0	0.0010226	0.0013596	0.1	97%	75	125	0%	
Titanium	A	mg/L	0.04871	0.0501713		0.05	0.001228	0	0.0001034	0.001	1	98%	75	125	0%	
Uranium	A	mg/L	0.04737	0.0487911		0.05	7.645E-05	0	2.542E-05	0.0003	1	97%	75	125	0%	
Vanadium	A	mg/L	0.05734	0.0590602		0.05	0.007877	0	0.001917	0.001339	1	102%	75	125	0%	
Zinc	A	mg/L	0.05035	0.0518605		0.05	0.002028	0	0.0010392	0.0028119	1	100%	75	125	0%	
Iron, Ferrous	C	mg/L	4.712	4.85336		0	0	0	0.0021792	0.0012257	5	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078338	B22030433-001	ICPMS-6020-W-	MSD-DOD		3/9/2022 12:28:0	1.03	R375855		2E+07	2E+07						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.0489	0.050367		0.05	0.002553	0.0479568	0.0018371	0.001	1	96%	75	125	5%	
Antimony	A	mg/L	0.05177	0.0533231		0.05	0.0002331	0.0515721	6.971E-05	0.001	0.1	106%	75	125	3%	
Arsenic	A	mg/L	0.04963	0.0511189		0.05	0.0006296	0.0511086	8.449E-05	0.001	1	101%	75	125	0%	
Barium	A	mg/L	0.05292	0.0545076		0.05	0.003972	0.0531068	6.965E-05	0.001	1	101%	75	125	3%	
Beryllium	A	mg/L	0.04213	0.0433939		0.05	0	0.0407468	8.771E-05	0.001	1	87%	75	125	6%	
Boron	A	mg/L	0.1151	0.118553		0.05	0.06577	0.111755	0.0040712	0.0057783	1	106%	75	125	6%	
Cadmium	A	mg/L	0.04916	0.0506348		0.05	0	0.0486778	2.377E-05	0.001	1	101%	75	125	4%	
Calcium	A	mg/L	72.1	74.263		50	28.83	74.0776	0.2088052	0.0215476	50	91%	75	125	0%	
Cerium	A	mg/L	0.0503	0.051809		0.05	0	0.0517163	2.287E-05	0.001	0.1	104%	75	125	0%	
Chromium	A	mg/L	0.04599	0.0473697		0.05	0	0.0472049	0.0002614	0.001	1	95%	75	125	0%	
Cobalt	A	mg/L	0.04682	0.0482246		0.05	0.0003288	0.0466178	2.205E-05	0.001	1	96%	75	125	3%	
Copper	A	mg/L	0.04669	0.0480907		0.05	0.0003246	0.0483379	0.0001801	0.001	1	96%	75	125	1%	
Iron	A	mg/L	4.608	4.74624		5.05	0.01493	4.85336	0.0021792	0.0012257	5	94%	75	125	2%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078338	B22030433-001	ICPMS-6020-W-	MSD-DOD		3/9/2022 12:28:0	1.03	R375855		2E+07	2E+07						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Lanthanum	A	mg/L	0.05093	0.0524579		0.05	0	0.0522004	7.009E-05	0.001	0.1	105%	75	125	0%	
Lead	A	mg/L	0.04892	0.0503876		0.05	0	0.0492237	3.122E-05	0.001	1	101%	88	115	2%	
Magnesium	A	mg/L	77.56	79.8868		50	32.61	79.7014	0.0209406	0.0058092	50	95%	75	125	0%	
Manganese	A	mg/L	0.2246	0.231338		0.05	0.1817	0.233295	7.528E-05	0.001	1	99%	75	125	1%	
Mercury	A	mg/L	0.001029	0.00105987		0.001	3.825E-05	0.0010743	3.134E-05	0.001	0.002	102%	75	125	1%	
Molybdenum	A	mg/L	0.05583	0.0575049		0.05	0.00711	0.0553625	8.356E-05	0.001	0.1	101%	75	125	4%	
Nickel	A	mg/L	0.04817	0.0496151		0.05	0.001268	0.0491825	0.0001822	0.001	1	97%	75	125	1%	
Potassium	A	mg/L	46.34	47.7302		50	2.835	48.616	0.0221896	0.0838317	50	90%	75	125	2%	
Selenium	A	mg/L	0.05166	0.0532098		0.05	0.0001151	0.0529317	7.389E-05	0.001	1	106%	75	125	1%	
Silicon	A	mg/L	17.11	17.6233		0.2	17.38	17.4791	0.0034337	0.1	0.4		75	125	1%	A
Silver	A	mg/L	0.01895	0.0195185		0.02	0	0.0190653	2.723E-05	0.001	0.04	98%	75	125	2%	
Sodium	A	mg/L	100	103		50	56.13	104.648	0.0465471	0.0223613	50	94%	75	125	2%	
Strontium	A	mg/L	0.2685	0.276555		0.05	0.2285	0.277173	0.0001004	0.001	1		75	125	0%	A
Thallium	A	mg/L	0.04773	0.0491619		0.05	0	0.0483791	4.987E-05	0.001	1	98%	75	125	2%	
Thorium	A	mg/L	0.04863	0.0500889		0.05	0	0.0497593	3.109E-05	0.001	1	100%	75	125	1%	
Tin	A	mg/L	0.04848	0.0499344		0.05	0	0.0484615	0.0010226	0.0013596	0.1	100%	75	125	3%	
Titanium	A	mg/L	0.04932	0.0507996		0.05	0.001228	0.0501713	0.0001034	0.001	1	99%	75	125	1%	
Uranium	A	mg/L	0.04843	0.0498829		0.05	7.645E-05	0.0487911	2.542E-05	0.0003	1	100%	75	125	2%	
Vanadium	A	mg/L	0.0569	0.058607		0.05	0.007877	0.0590602	0.001917	0.001339	1	101%	75	125	1%	
Zinc	A	mg/L	0.04967	0.0511601		0.05	0.002028	0.0518605	0.0010392	0.0028119	1	98%	75	125	1%	
Iron, Ferrous	C	mg/L	4.608	4.74624		0	0	4.85336	0.0021792	0.0012257	5	0%	0	0	2%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078339	Rinse	ICPMS-6020-W-	SAMP		3/9/2022 12:34:2	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.001958	0.001958		0	0	0	0.0017836	0.001	1	0%	0	0	0%	
Antimony	A	mg/L	0.0005355	0.0005355		0	0	0	6.768E-05	0.001	0.1	0%	0	0	0%	J
Arsenic	A	mg/L	0.0001057	0.0001057		0	0	0	8.203E-05	0.001	1	0%	0	0	0%	J
Barium	A	mg/L	-3.389E-06	0		0	0	0	6.762E-05	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0.00000578	0		0	0	0	2.308E-05	0.001	1	0%	0	0	0%	
Cerium	A	mg/L	-1.405E-06	0		0	0	0	0.0000222	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	0.00001873	0		0	0	0	0.0002538	0.001	1	0%	0	0	0%	
Lanthanum	A	mg/L	1.114E-06	0		0	0	0	6.805E-05	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	1.918E-06	0		0	0	0	3.031E-05	0.001	1	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078339	Rinse	ICPMS-6020-W-	SAMP		3/9/2022 12:34:2	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Manganese	A	mg/L	4.77E-07	0		0	0	0	7.309E-05	0.001	1	0%	0	0	0%	
Mercury	A	mg/L	7.192E-06	0		0	0	0	3.043E-05	0.001	0.002	0%	0	0	0%	
Molybdenum	A	mg/L	0.00007105	0		0	0	0	8.113E-05	0.001	0.1	0%	0	0	0%	
Silver	A	mg/L	1.022E-06	0		0	0	0	2.644E-05	0.001	0.04	0%	0	0	0%	
Strontium	A	mg/L	-1.016E-05	0		0	0	0	9.743E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00005157	0.00005157		0	0	0	4.842E-05	0.001	1	0%	0	0	0%	J
Thorium	A	mg/L	0.00005075	0.00005075		0	0	0	3.018E-05	0.001	1	0%	0	0	0%	J
Titanium	A	mg/L	0.0001222	0.0001222		0	0	0	0.0001004	0.001	1	0%	0	0	0%	J
Uranium	A	mg/L	3.836E-06	0		0	0	0	2.468E-05	0.0003	1	0%	0	0	0%	
Magnesium	B	mg/L	0.008849	0		0	0	0	0.0203306	0.00564	50	0%	0	0	0%	L
Potassium	B	mg/L	0.005936	0		0	0	0	0.0215433	0.08139	50	0%	0	0	0%	L
Tin	B	mg/L	0.0002303	0		0	0	0	0.0009928	0.00132	0.1	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078340	B22030433-001	ICPMS-6020-W-	SAMP		3/9/2022 12:40:3	1	164289	3/7/2022 4:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.00046	0.00046		0	0	0	0.0002485	0.001	0.1	0%	0	0	0%	J
Arsenic	A	mg/L	0.0009122	0.0009122		0	0	0	0.0002595	0.001	1	0%	0	0	0%	J
Barium	A	mg/L	0.004059	0.004059		0	0	0	0.0001041	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0.00002151	0.00002151		0	0	0	0.0000141	0.005	1	0%	0	0	0%	J
Cerium	A	mg/L	0.00001159	0.00001159		0	0	0	0.0000087	0.001	0.1	0%	0	0	0%	J
Lanthanum	A	mg/L	6.299E-06	0		0	0	0	1.105E-05	0.001	0.1	0%	0	0	0%	U
Lead	A	mg/L	0.00003919	0		0	0	0	5.246E-05	0.001	1	0%	0	0	0%	U
Manganese	A	mg/L	0.1917	0.1917		0	0	0	0.0002595	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	0.007704	0.007704		0	0	0	0.0000966	0.001	0.1	0%	0	0	0%	
Silver	A	mg/L	3.686E-06	0		0	0	0	2.318E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.2346	0.2346		0	0	0	7.178E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00003288	0		0	0	0	0.0001114	0.001	1	0%	0	0	0%	U
Titanium	A	mg/L	0.002214	0.002214		0	0	0	0.0004924	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00008279	0.00008279		0	0	0	1.084E-05	0.0003	1	0%	0	0	0%	J
Aluminum	B	mg/L	0.01205	0.01205		0	0	0	0.0029215	0.0031975	1	0%	0	0	0%	D
Chromium	B	mg/L	0.0002764	0		0	0	0	0.0005265	0.0015375	1	0%	0	0	0%	LU
Magnesium	B	mg/L	32.43	32.43		0	0	0	0.0686349	0.0081522	50	0%	0	0	0%	D
Potassium	B	mg/L	2.827	2.827		0	0	0	0.0289412	0.0261205	50	0%	0	0	0%	D

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078340	B22030433-001	ICPMS-6020-W-	SAMP		3/9/2022 12:40:3	1	164289	3/7/2022 4:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Thorium	B	mg/L	0.0001246	0.0001246		0	0	0	5.898E-05	0.00415	1	0%	0	0	0%	JL
Tin	B	mg/L	0.0006725	0		0	0	0	0.0018932	0.0011175	0.1	0%	0	0	0%	U

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078341	B22030433-001	ICPMS-6020-W-	SD		3/9/2022 12:46:5	5	164289	3/7/2022 4:3	0	2E+07						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.003297	0.016485		0	0	0.01205	0.0146074	0.0159875	1	0%	0	0		N
Antimony	A	mg/L	0.0001467	0		0	0	0.00046	0.0012426	0.0049	0.1	0%	0	0		
Arsenic	A	mg/L	0.0002455	0		0	0	0.0009122	0.0012977	0.0013383	1	0%	0	0		
Barium	A	mg/L	0.0008215	0.0041075		0	0	0.004059	0.0005204	0.0012039	1	0%	0	0		N
Beryllium	A	mg/L	-5.212E-05	0		0	0	0	0.0005353	0.01	1	0%	0	0		
Boron	A	mg/L	0.01425	0.07125		0	0	0.07144	0.0151506	0.07335	1	0%	0	0		N
Cadmium	A	mg/L	8.481E-06	0		0	0	2.151E-05	0.0000705	0.005	1	0%	0	0		
Calcium	A	mg/L	5.601	28.005		0	0	27.66	0.1864681	0.5517403	50	0%	0	0	1%	
Cerium	A	mg/L	8.812E-07	0		0	0	1.159E-05	0.0000435	0.001	0.1	0%	0	0		
Chromium	A	mg/L	0.00009031	0		0	0	0	0.0026324	0.0076875	1	0%	0	0		
Cobalt	A	mg/L	0.00007523	0		0	0	0.0003796	0.0004201	0.001	1	0%	0	0		
Copper	A	mg/L	0.0002358	0		0	0	0.0006618	0.0028718	0.0099	1	0%	0	0		
Iron	A	mg/L	0.009151	0.045755		0	0	0.04428	0.0371198	0.02565	5	0%	0	0		N
Lanthanum	A	mg/L	1.534E-06	0		0	0	0	5.525E-05	0.001	0.1	0%	0	0		
Lead	A	mg/L	0.00001632	0		0	0	0	0.0002623	0.001	1	0%	0	0		
Magnesium	A	mg/L	6.599	32.995		0	0	32.43	0.3431747	0.0407608	50	0%	0	0	2%	
Manganese	A	mg/L	0.03853	0.19265		0	0	0.1917	0.0012975	0.0010695	1	0%	0	0	0%	
Molybdenum	A	mg/L	0.001485	0.007425		0	0	0.007704	0.000483	0.001	0.1	0%	0	0	4%	
Nickel	A	mg/L	0.0003232	0.001616		0	0	0.001461	0.0011941	0.0121000	1	0%	0	0		N
Potassium	A	mg/L	0.568	2.84		0	0	2.827	0.1447062	0.1306027	50	0%	0	0	0%	
Selenium	A	mg/L	0.00004149	0		0	0	0.0001719	0.0003126	0.0029274	1	0%	0	0		
Silicon	A	mg/L	3.46	17.3		0	0	16.92	0.1093983	0.026606	0.4	0%	0	0	2%	
Silver	A	mg/L	4.732E-07	0		0	0	0	0.0001159	0.001	0.04	0%	0	0		
Sodium	A	mg/L	11.33	56.65		0	0	55.78	0.3607583	3.6651346	50	0%	0	0	2%	
Strontium	A	mg/L	0.04639	0.23195		0	0	0.2346	0.0003589	0.001	1	0%	0	0	1%	
Thallium	A	mg/L	0.00001858	0		0	0	0	0.0005569	0.001	1	0%	0	0		
Thorium	A	mg/L	0.00001201	0		0	0	0.0001246	0.0002949	0.02075	1	0%	0	0		
Tin	A	mg/L	0.00008584	0		0	0	0	0.0094659	0.0055874	0.1	0%	0	0		

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078341	B22030433-001	ICPMS-6020-W-	SD		3/9/2022 12:46:5	5	164289	3/7/2022 4:3	0	2E+07						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Titanium	A	mg/L	0.000459	0		0	0	0.002214	0.0024621	0.001	1	0%	0	0		
Uranium	A	mg/L	0.00001618	0.0000809		0	0	8.279E-05	0.0000542	0.0004224	1	0%	0	0		N
Vanadium	A	mg/L	0.003448	0.01724		0	0	0.01099	0.0062091	0.0105423	1	0%	0	0		N
Zinc	A	mg/L	0.001486	0.00743		0	0	0.002476	0.0058087	0.0327721	1	0%	0	0		N
Silica	C	mg/L	7.401632	37.00816		0	0	0	0.2340247	0.0569155	5	0%	0	0		N
Silicon as SiO2	C	mg/L	7.401632	37.00816		0	0	0	0.2340247	0.0569155	5	0%	0	0		N

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078342	B22030433-001	ICPMS-6020-W-	PDS1-DOD		3/9/2022 12:53:0	1.03	164289	3/7/2022 4:3	2E+07	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.05474	0.0563822		0.0515	0.01205	0	0.0030091	0.0032934	1	86%	75	125	0%	
Antimony	A	mg/L	0.04925	0.0507275		0.0515	0.00046	0	0.000256	0.0010094	0.1	98%	75	125	0%	
Arsenic	A	mg/L	0.04684	0.0482452		0.0515	0.0009122	0	0.0002673	0.001	1	92%	75	125	0%	
Barium	A	mg/L	0.05258	0.0541574		0.0515	0.004059	0	0.0001072	0.001	1	97%	75	125	0%	
Beryllium	A	mg/L	0.03593	0.0370079		0.0515	0	0	0.0001103	0.01	1	72%	75	125	0%	S
Boron	A	mg/L	0.1104	0.113712		0.0515	0.07144	0	0.0031210	0.0151101	1	82%	75	125	0%	
Cadmium	A	mg/L	0.04882	0.0502846		0.0515	2.151E-05	0	1.452E-05	0.005	1	98%	75	125	0%	
Calcium	A	mg/L	68.95	71.0185		51.5	27.66	0	0.0384124	0.1136585	50	84%	75	125	0%	
Cerium	A	mg/L	0.05097	0.0524991		0.0515	1.159E-05	0	8.961E-06	0.001	0.1	102%	75	125	0%	
Chromium	A	mg/L	0.04659	0.0479877		0.0515	0	0	0.0005423	0.0015836	1	93%	75	125	0%	
Cobalt	A	mg/L	0.0451	0.046453		0.0515	0.0003796	0	8.654E-05	0.001	1	89%	75	125	0%	
Copper	A	mg/L	0.04735	0.0487705		0.0515	0.0006618	0	0.0005916	0.0020394	1	93%	75	125	0%	
Iron	A	mg/L	4.573	4.71019		5.15	0.04428	0	0.0076467	0.0052839	5	91%	75	125	0%	
Lanthanum	A	mg/L	0.05082	0.0523446		0.0515	0	0	1.138E-05	0.001	0.1	102%	75	125	0%	
Lead	A	mg/L	0.0482	0.049646		0.0515	0	0	5.403E-05	0.001	1	96%	80	120	0%	
Magnesium	A	mg/L	76.75	79.0525		51.5	32.43	0	0.070694	0.0083967	50	91%	75	125	0%	
Manganese	A	mg/L	0.2328	0.239784		0.0515	0.1917	0	0.0002673	0.001	1	93%	75	125	0%	
Molybdenum	A	mg/L	0.0548	0.056444		0.0515	0.007704	0	9.95E-05	0.001	0.1	95%	75	125	0%	
Nickel	A	mg/L	0.04842	0.0498726		0.0515	0.001461	0	0.000246	0.0024926	1	94%	75	125	0%	
Potassium	A	mg/L	45.81	47.1843		51.5	2.827	0	0.0298095	0.0269042	50	86%	75	125	0%	
Selenium	A	mg/L	0.04521	0.0465663		0.0515	0.0001719	0	6.439E-05	0.001	1	90%	75	125	0%	
Silicon	A	mg/L	16.68	17.1804		0.206	16.92	0	0.0225360	0.0054808	0.4		75	125	0%	A
Silver	A	mg/L	0.01846	0.0190138		0.0206	0	0	2.388E-05	0.001	0.04	92%	75	125	0%	
Sodium	A	mg/L	99.72	102.7116		51.5	55.78	0	0.0743162	0.7550177	50	91%	75	125	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078342	B22030433-001	ICPMS-6020-W-	PDS1-DOD		3/9/2022 12:53:0	1.03	164289	3/7/2022 4:3	2E+07	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Strontium	A	mg/L	0.2775	0.285825		0.0515	0.2346	0	7.393E-05	0.001	1		75	125	0%	A
Thallium	A	mg/L	0.0482	0.049646		0.0515	0	0	0.0001147	0.001	1	96%	75	125	0%	
Thorium	A	mg/L	0.04935	0.0508305		0.0515	0.0001246	0	6.075E-05	0.0042745	1	98%	75	125	0%	
Tin	A	mg/L	0.05053	0.0520459		0.0515	0	0	0.00195	0.001151	0.1	101%	75	125	0%	
Titanium	A	mg/L	0.04744	0.0488632		0.0515	0.002214	0	0.0005072	0.001	1	91%	75	125	0%	
Uranium	A	mg/L	0.04839	0.0498417		0.0515	8.279E-05	0	1.117E-05	0.0003	1	97%	75	125	0%	
Vanadium	A	mg/L	0.05841	0.0601623		0.0515	0.01099	0	0.0012791	0.0021717	1	95%	75	125	0%	
Zinc	A	mg/L	0.04857	0.0500271		0.0515	0.002476	0	0.0011966	0.0067511	1	92%	75	125	0%	
Silica	C	mg/L	35.681856	36.7523117		0	0	0	0.0482091	0.0117246	5	0%	0	0	0%	
Silicon as SiO2	C	mg/L	35.681856	36.7523117		0.0515	0	0	0.0482091	0.0117246	5	71364%	75	125	0%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078343	B22030433-001	ICPMS-6020-W-	MS4-DOD		3/9/2022 12:59:2	1	164289	3/7/2022 4:3	2E+07	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.4605	0.4605		0.5	0.01205	0	0.0029215	0.0031975	1	90%	75	125	0%	
Antimony	A	mg/L	0.1064	0.1064		0.1	0.00046	0	0.0002485	0.001	0.1	106%	75	125	0%	
Arsenic	A	mg/L	0.09685	0.09685		0.1	0.0009122	0	0.0002595	0.001	1	96%	75	125	0%	
Barium	A	mg/L	0.09815	0.09815		0.1	0.004059	0	0.0001041	0.001	1	94%	75	125	0%	
Beryllium	A	mg/L	0.03968	0.03968		0.05	0	0	0.0001071	0.01	1	79%	75	125	0%	
Boron	A	mg/L	0.1623	0.1623		0.1	0.07144	0	0.0030301	0.01467	1	91%	75	125	0%	
Cadmium	A	mg/L	0.05104	0.05104		0.05	2.151E-05	0	0.0000141	0.005	1	102%	75	125	0%	
Calcium	A	mg/L	33.07	33.07		5	27.66	0	0.0372936	0.1103481	50		75	125	0%	A
Cerium	A	mg/L	0.103	0.103		0.1	1.159E-05	0	0.0000087	0.001	0.1	103%	75	125	0%	
Chromium	A	mg/L	0.09804	0.09804		0.1	0	0	0.0005265	0.0015375	1	98%	75	125	0%	
Cobalt	A	mg/L	0.09402	0.09402		0.1	0.0003796	0	8.402E-05	0.001	1	94%	75	125	0%	
Copper	A	mg/L	0.0994	0.0994		0.1	0.0006618	0	0.0005744	0.00198	1	99%	75	125	0%	
Iron	A	mg/L	0.5321	0.5321		0.5	0.04428	0	0.007424	0.00513	5	98%	75	125	0%	
Lanthanum	A	mg/L	0.1027	0.1027		0.1	0	0	1.105E-05	0.001	0.1	103%	75	125	0%	
Lead	A	mg/L	0.09974	0.09974		0.1	0	0	5.246E-05	0.001	1	100%	88	115	0%	
Magnesium	A	mg/L	36.77	36.77		5	32.43	0	0.0686349	0.0081522	50		75	125	0%	A
Manganese	A	mg/L	0.6762	0.6762		0.5	0.1917	0	0.0002595	0.001	1	97%	75	125	0%	
Molybdenum	A	mg/L	0.1052	0.1052		0.1	0.007704	0	0.0000966	0.001	0.1	97%	75	125	0%	
Nickel	A	mg/L	0.1021	0.1021		0.1	0.001461	0	0.0002388	0.0024200	1	101%	75	125	0%	
Potassium	A	mg/L	7.402	7.402		5	2.827	0	0.0289412	0.0261205	50	92%	75	125	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078343	B22030433-001	ICPMS-6020-W-	MS4-DOD		3/9/2022 12:59:2	1	164289	3/7/2022 4:3	2E+07	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Selenium	A	mg/L	0.09587	0.09587		0.1	0.0001719	0	6.251E-05	0.001	1	96%	75	125	0%	
Silicon	A	mg/L	17.83	17.83		1	16.92	0	0.0218797	0.0053212	0.4		75	125	0%	A
Silver	A	mg/L	0.009488	0.009488		0.01	0	0	2.318E-05	0.001	0.04	95%	75	125	0%	
Sodium	A	mg/L	60.4	60.4		5	55.78	0	0.0721517	0.7330269	50		75	125	0%	A
Strontium	A	mg/L	0.3326	0.3326		0.1	0.2346	0	7.178E-05	0.001	1	98%	75	125	0%	
Thallium	A	mg/L	0.1011	0.1011		0.1	0	0	0.0001114	0.001	1	101%	75	125	0%	
Thorium	A	mg/L	0.09986	0.09986		0.1	0.0001246	0	5.898E-05	0.00415	1	100%	75	125	0%	
Tin	A	mg/L	0.1052	0.1052		0.1	0	0	0.0018932	0.0011175	0.1	105%	75	125	0%	
Titanium	A	mg/L	0.09241	0.09241		0.1	0.002214	0	0.0004924	0.001	1	90%	75	125	0%	
Uranium	A	mg/L	0.09959	0.09959		0.1	8.279E-05	0	1.084E-05	0.0003	1	100%	75	125	0%	
Vanadium	A	mg/L	0.1097	0.1097		0.1	0.01099	0	0.0012418	0.0021085	1	99%	75	125	0%	
Zinc	A	mg/L	0.09784	0.09784		0.1	0.002476	0	0.0011617	0.0065544	1	95%	75	125	0%	
Silica	C	mg/L	38.141936	38.141936		0	0	0	0.0468049	0.0113831	5	0%	0	0	0%	
Silicon as SiO2	C	mg/L	38.141936	38.141936		2.14	0	0	0.0468049	0.0113831	5	1782%	75	125	0%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078344	B22030433-001	ICPMS-6020-W-	MSD4-DOD		3/9/2022 1:05:40	1	164289	3/7/2022 4:3	2E+07	2E+07						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.4574	0.4574		0.5	0.01205	0.4605	0.0029215	0.0031975	1	89%	75	125	1%	
Antimony	A	mg/L	0.1067	0.1067		0.1	0.00046	0.1064	0.0002485	0.001	0.1	106%	75	125	0%	
Arsenic	A	mg/L	0.09747	0.09747		0.1	0.0009122	0.09685	0.0002595	0.001	1	97%	75	125	1%	
Barium	A	mg/L	0.09798	0.09798		0.1	0.004059	0.09815	0.0001041	0.001	1	94%	75	125	0%	
Beryllium	A	mg/L	0.03954	0.03954		0.05	0	0.03968	0.0001071	0.01	1	79%	75	125	0%	
Boron	A	mg/L	0.1612	0.1612		0.1	0.07144	0.1623	0.0030301	0.01467	1	90%	75	125	1%	
Cadmium	A	mg/L	0.05166	0.05166		0.05	2.151E-05	0.05104	0.0000141	0.005	1	103%	75	125	1%	
Calcium	A	mg/L	32.82	32.82		5	27.66	33.07	0.0372936	0.1103481	50		75	125	1%	A
Cerium	A	mg/L	0.1059	0.1059		0.1	1.159E-05	0.103	0.0000087	0.001	0.1	106%	75	125	3%	
Chromium	A	mg/L	0.09865	0.09865		0.1	0	0.09804	0.0005265	0.0015375	1	99%	75	125	1%	
Cobalt	A	mg/L	0.09398	0.09398		0.1	0.0003796	0.09402	8.402E-05	0.001	1	94%	75	125	0%	
Copper	A	mg/L	0.1006	0.1006		0.1	0.0006618	0.0994	0.0005744	0.00198	1	100%	75	125	1%	
Iron	A	mg/L	0.5371	0.5371		0.5	0.04428	0.5321	0.007424	0.00513	5	99%	75	125	1%	
Lanthanum	A	mg/L	0.1037	0.1037		0.1	0	0.1027	1.105E-05	0.001	0.1	104%	75	125	1%	
Lead	A	mg/L	0.1015	0.1015		0.1	0	0.09974	5.246E-05	0.001	1	101%	88	115	2%	
Magnesium	A	mg/L	37.63	37.63		5	32.43	36.77	0.0686349	0.0081522	50		75	125	2%	A

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078344	B22030433-001	ICPMS-6020-W-	MSD4-DOD		3/9/2022 1:05:40	1	164289	3/7/2022 4:3	2E+07	2E+07						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Manganese	A	mg/L	0.6772	0.6772		0.5	0.1917	0.6762	0.0002595	0.001	1	97%	75	125	0%	
Molybdenum	A	mg/L	0.1061	0.1061		0.1	0.007704	0.1052	0.0000966	0.001	0.1	98%	75	125	1%	
Nickel	A	mg/L	0.1022	0.1022		0.1	0.001461	0.1021	0.0002388	0.0024200	1	101%	75	125	0%	
Potassium	A	mg/L	7.422	7.422		5	2.827	7.402	0.0289412	0.0261205	50	92%	75	125	0%	
Selenium	A	mg/L	0.0962	0.0962		0.1	0.0001719	0.09587	6.251E-05	0.001	1	96%	75	125	0%	
Silicon	A	mg/L	18.19	18.19		1	16.92	17.83	0.0218797	0.0053212	0.4		75	125	2%	A
Silver	A	mg/L	0.009567	0.009567		0.01	0	0.009488	2.318E-05	0.001	0.04	96%	75	125	1%	
Sodium	A	mg/L	60.84	60.84		5	55.78	60.4	0.0721517	0.7330269	50		75	125	1%	A
Strontium	A	mg/L	0.3378	0.3378		0.1	0.2346	0.3326	7.178E-05	0.001	1	103%	75	125	2%	
Thallium	A	mg/L	0.1007	0.1007		0.1	0	0.1011	0.0001114	0.001	1	101%	75	125	0%	
Thorium	A	mg/L	0.1003	0.1003		0.1	0.0001246	0.09986	5.898E-05	0.00415	1	100%	75	125	0%	
Tin	A	mg/L	0.1063	0.1063		0.1	0	0.1052	0.0018932	0.0011175	0.1	106%	75	125	1%	
Titanium	A	mg/L	0.09229	0.09229		0.1	0.002214	0.09241	0.0004924	0.001	1	90%	75	125	0%	
Uranium	A	mg/L	0.1018	0.1018		0.1	8.279E-05	0.09959	1.084E-05	0.0003	1	102%	75	125	2%	
Vanadium	A	mg/L	0.1109	0.1109		0.1	0.01099	0.1097	0.0012418	0.0021085	1	100%	75	125	1%	
Zinc	A	mg/L	0.0999	0.0999		0.1	0.002476	0.09784	0.0011617	0.0065544	1	97%	75	125	2%	
Silica	C	mg/L	38.912048	38.912048		0	0	38.141936	0.0468049	0.0113831	5	0%	0	0	2%	
Silicon as SiO2	C	mg/L	38.912048	38.912048		2.14	0	38.141936	0.0468049	0.0113831	5	1818%	75	125	2%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078345	Rinse	ICPMS-6020-W-	SAMP		3/9/2022 1:11:55	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.001959	0.001959		0	0	0	0.0017836	0.001	1	0%	0	0	0%	
Antimony	A	mg/L	0.0004725	0.0004725		0	0	0	6.768E-05	0.001	0.1	0%	0	0	0%	J
Arsenic	A	mg/L	0.00008163	0		0	0	0	8.203E-05	0.001	1	0%	0	0	0%	
Barium	A	mg/L	-2.574E-06	0		0	0	0	6.762E-05	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	8.349E-06	0		0	0	0	2.308E-05	0.001	1	0%	0	0	0%	
Cerium	A	mg/L	-5.704E-07	0		0	0	0	0.0000222	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	0.00002293	0		0	0	0	0.0002538	0.001	1	0%	0	0	0%	
Lanthanum	A	mg/L	7.495E-07	0		0	0	0	6.805E-05	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	4.933E-06	0		0	0	0	3.031E-05	0.001	1	0%	0	0	0%	
Manganese	A	mg/L	0.00000669	0		0	0	0	7.309E-05	0.001	1	0%	0	0	0%	
Mercury	A	mg/L	1.366E-06	0		0	0	0	3.043E-05	0.001	0.002	0%	0	0	0%	
Molybdenum	A	mg/L	0.00002503	0		0	0	0	8.113E-05	0.001	0.1	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078345	Rinse	ICPMS-6020-W-	SAMP		3/9/2022 1:11:55	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Silver	A	mg/L	8.752E-07	0		0	0	0	2.644E-05	0.001	0.04	0%	0	0	0%	
Strontium	A	mg/L	-9.186E-06	0		0	0	0	9.743E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0001519	0.0001519		0	0	0	4.842E-05	0.001	1	0%	0	0	0%	J
Thorium	A	mg/L	0.0000517	0.0000517		0	0	0	3.018E-05	0.001	1	0%	0	0	0%	J
Titanium	A	mg/L	0.00004819	0		0	0	0	0.0001004	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	3.493E-06	0		0	0	0	2.468E-05	0.0003	1	0%	0	0	0%	
Magnesium	B	mg/L	0.01044	0		0	0	0	0.0203306	0.00564	50	0%	0	0	0%	L
Potassium	B	mg/L	-0.002126	0		0	0	0	0.0215433	0.08139	50	0%	0	0	0%	L
Tin	B	mg/L	0.00001639	0		0	0	0	0.0009928	0.00132	0.1	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078346	B22030433-007	ICPMS-6020-W-	SAMP		3/9/2022 1:18:09	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.002034	0.002034		0	0	0	0.0017836	0.001	1	0%	0	0	0%	U
Antimony	A	mg/L	0.0003671	0.0003671		0	0	0	6.768E-05	0.001	0.1	0%	0	0	0%	J
Arsenic	A	mg/L	0.0008022	0.0008022		0	0	0	8.203E-05	0.001	1	0%	0	0	0%	J
Barium	A	mg/L	0.01414	0.01414		0	0	0	6.762E-05	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0.00001131	0		0	0	0	2.308E-05	0.001	1	0%	0	0	0%	U
Cerium	A	mg/L	5.356E-06	0		0	0	0	0.0000222	0.001	0.1	0%	0	0	0%	U
Chromium	A	mg/L	0.0004753	0.0004753		0	0	0	0.0002538	0.001	1	0%	0	0	0%	J
Lanthanum	A	mg/L	3.114E-06	0		0	0	0	6.805E-05	0.001	0.1	0%	0	0	0%	U
Lead	A	mg/L	0.00002033	0		0	0	0	3.031E-05	0.001	1	0%	0	0	0%	U
Manganese	A	mg/L	0.1525	0.1525		0	0	0	7.309E-05	0.001	1	0%	0	0	0%	
Mercury	A	mg/L	0.0003109	0.0003109		0	0	0	3.043E-05	0.001	0.002	0%	0	0	0%	J
Molybdenum	A	mg/L	0.003902	0.003902		0	0	0	8.113E-05	0.001	0.1	0%	0	0	0%	
Silver	A	mg/L	9.569E-07	0		0	0	0	2.644E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.1565	0.1565		0	0	0	9.743E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00005816	0.00005816		0	0	0	4.842E-05	0.001	1	0%	0	0	0%	J
Thorium	A	mg/L	0.00001407	0		0	0	0	3.018E-05	0.001	1	0%	0	0	0%	U
Titanium	A	mg/L	0.002812	0.002812		0	0	0	0.0001004	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.0001127	0.0001127		0	0	0	2.468E-05	0.0003	1	0%	0	0	0%	J
Magnesium	B	mg/L	31.04	31.04		0	0	0	0.0203306	0.00564	50	0%	0	0	0%	D
Potassium	B	mg/L	3.682	3.682		0	0	0	0.0215433	0.08139	50	0%	0	0	0%	D
Tin	B	mg/L	-3.567E-05	0		0	0	0	0.0009928	0.00132	0.1	0%	0	0	0%	U

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078346	B22030433-007	ICPMS-6020-W-	SAMP		3/9/2022 1:18:09	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078347	B22030433-007	ICPMS-6020-W-	SAMP		3/9/2022 1:24:25	1	164289	3/7/2022 4:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q

Antimony	A	mg/L	0.0003327	0.0003327		0	0	0	0.0002485	0.001	0.1	0%	0	0	0%	J
Arsenic	A	mg/L	0.0007776	0.0007776		0	0	0	0.0002595	0.001	1	0%	0	0	0%	J
Barium	A	mg/L	0.01425	0.01425		0	0	0	0.0001041	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	9.251E-06	0		0	0	0	0.0000141	0.005	1	0%	0	0	0%	U
Cerium	A	mg/L	0.00006733	0.00006733		0	0	0	0.0000087	0.001	0.1	0%	0	0	0%	J
Lanthanum	A	mg/L	0.00002658	0.00002658		0	0	0	1.105E-05	0.001	0.1	0%	0	0	0%	J
Lead	A	mg/L	0.0005926	0.0005926		0	0	0	5.246E-05	0.001	1	0%	0	0	0%	J
Manganese	A	mg/L	0.1176	0.1176		0	0	0	0.0002595	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	0.003733	0.003733		0	0	0	0.0000966	0.001	0.1	0%	0	0	0%	
Silver	A	mg/L	0.00001283	0		0	0	0	2.318E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.1505	0.1505		0	0	0	7.178E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0000593	0		0	0	0	0.0001114	0.001	1	0%	0	0	0%	U
Titanium	A	mg/L	0.01113	0.01113		0	0	0	0.0004924	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00014	0.00014		0	0	0	1.084E-05	0.0003	1	0%	0	0	0%	J
Aluminum	B	mg/L	0.07981	0.07981		0	0	0	0.0029215	0.0031975	1	0%	0	0	0%	D
Chromium	B	mg/L	0.001187	0.001187		0	0	0	0.0005265	0.0015375	1	0%	0	0	0%	JL
Magnesium	B	mg/L	32.31	32.31		0	0	0	0.0686349	0.0081522	50	0%	0	0	0%	D
Potassium	B	mg/L	3.38	3.38		0	0	0	0.0289412	0.0261205	50	0%	0	0	0%	D
Thorium	B	mg/L	0.000119	0.000119		0	0	0	5.898E-05	0.00415	1	0%	0	0	0%	JL
Tin	B	mg/L	0.0003726	0		0	0	0	0.0018932	0.0011175	0.1	0%	0	0	0%	U

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078348	CCV	ICPMS-6020-W-	CCV		3/9/2022 1:30:40	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q

Aluminum	A	mg/L	0.04774	0.04774		0.05	0	0	0.0017836	0.001	1	95%	90	110	0%	
Antimony	A	mg/L	0.05308	0.05308		0.05	0	0	6.768E-05	0.001	0.1	106%	90	110	0%	
Arsenic	A	mg/L	0.0512	0.0512		0.05	0	0	8.203E-05	0.001	1	102%	90	110	0%	
Barium	A	mg/L	0.05085	0.05085		0.05	0	0	6.762E-05	0.001	1	102%	90	110	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078348	CCV	ICPMS-6020-W- CCV			3/9/2022 1:30:40	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Beryllium	A	mg/L	0.0425	0.0425		0.05	0	0	8.516E-05	0.001	1	85%	90	110	0%	S
Boron	A	mg/L	0.04733	0.04733		0.05	0	0	0.0039526	0.00561	1	95%	90	110	0%	
Cadmium	A	mg/L	0.05134	0.05134		0.05	0	0	2.308E-05	0.001	1	103%	90	110	0%	
Calcium	A	mg/L	11.74	11.74		12.5	0	0	0.2027235	0.02092	50	94%	90	110	0%	
Cerium	A	mg/L	0.05171	0.05171		0.05	0	0	0.0000222	0.001	0.1	103%	90	110	0%	
Chromium	A	mg/L	0.04958	0.04958		0.05	0	0	0.0002538	0.001	1	99%	90	110	0%	
Cobalt	A	mg/L	0.05056	0.05056		0.05	0	0	2.141E-05	0.001	1	101%	90	110	0%	
Copper	A	mg/L	0.05136	0.05136		0.05	0	0	0.0001748	0.001	1	103%	90	110	0%	
Iron	A	mg/L	1.281	1.281		1.3	0	0	0.0021157	0.00119	5	99%	90	110	0%	
Lanthanum	A	mg/L	0.05148	0.05148		0.05	0	0	6.805E-05	0.001	0.1	103%	90	110	0%	
Lead	A	mg/L	0.05013	0.05013		0.05	0	0	3.031E-05	0.001	1	100%	90	110	0%	
Magnesium	A	mg/L	12.7	12.7		12.5	0	0	0.0203306	0.00564	50	102%	90	110	0%	
Manganese	A	mg/L	0.04981	0.04981		0.05	0	0	7.309E-05	0.001	1	100%	90	110	0%	
Mercury	A	mg/L	0.0009872	0.0009872		0.001	0	0	3.043E-05	0.001	0.002	99%	90	110	0%	
Molybdenum	A	mg/L	0.0499	0.0499		0.05	0	0	8.113E-05	0.001	0.1	100%	90	110	0%	
Nickel	A	mg/L	0.05168	0.05168		0.05	0	0	0.0001769	0.001	1	103%	90	110	0%	
Potassium	A	mg/L	12.2	12.2		12.5	0	0	0.0215433	0.08139	50	98%	90	110	0%	
Selenium	A	mg/L	0.05267	0.05267		0.05	0	0	7.174E-05	0.001	1	105%	90	110	0%	
Silicon	A	mg/L	0.4443	0.4443		0.2	0	0	0.0033337	0.1	0.4	222%	90	110	0%	S
Silver	A	mg/L	0.0203	0.0203		0.02	0	0	2.644E-05	0.001	0.04	102%	90	110	0%	
Sodium	A	mg/L	12.88	12.88		12.5	0	0	0.0451914	0.02171	50	103%	90	110	0%	
Strontium	A	mg/L	0.04974	0.04974		0.05	0	0	9.743E-05	0.001	1	99%	90	110	0%	
Thallium	A	mg/L	0.0492	0.0492		0.05	0	0	4.842E-05	0.001	1	98%	90	110	0%	
Thorium	A	mg/L	0.04906	0.04906		0.05	0	0	3.018E-05	0.001	1	98%	90	110	0%	
Tin	A	mg/L	0.0524	0.0524		0.05	0	0	0.0009928	0.00132	0.1	105%	90	110	0%	
Titanium	A	mg/L	0.047	0.047		0.05	0	0	0.0001004	0.001	1	94%	90	110	0%	
Uranium	A	mg/L	0.04909	0.04909		0.05	0	0	2.468E-05	0.0003	1	98%	90	110	0%	
Vanadium	A	mg/L	0.0517	0.0517		0.05	0	0	0.0018612	0.0013	1	103%	90	110	0%	
Zinc	A	mg/L	0.0519	0.0519		0.05	0	0	0.0010089	0.00273	1	104%	90	110	0%	
Iron, Ferrous	C	mg/L	1.281	1.281		0	0	0	0.0021157	0.00119	5	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078349	CCB	ICPMS-6020-W- CCB			3/9/2022 1:36:55	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078349	CCB	ICPMS-6020-W-	CCB		3/9/2022 1:36:55	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	-0.0000603	-0.0000603		0	0	0	0.0017836	0.001	1	0%				0%
Antimony	A	mg/L	0.0002987	0.0002987		0	0	0	6.768E-05	0.001	0.1	0%				0%
Arsenic	A	mg/L	0.00008503	0.00008503		0	0	0	8.203E-05	0.001	1	0%				0%
Barium	A	mg/L	4.906E-07	4.906E-07		0	0	0	6.762E-05	0.001	1	0%				0%
Beryllium	A	mg/L	-5.062E-05	-5.062E-05		0	0	0	8.516E-05	0.001	1	0%				0%
Boron	A	mg/L	0.001778	0.001778		0	0	0	0.0039526	0.00561	1	0%				0%
Cadmium	A	mg/L	4.759E-06	4.759E-06		0	0	0	2.308E-05	0.001	1	0%				0%
Calcium	A	mg/L	0.0004175	0.0004175		0	0	0	0.2027235	0.02092	50	0%				0%
Cerium	A	mg/L	-9.57E-07	-9.57E-07		0	0	0	0.0000222	0.001	0.1	0%	0	0		0%
Chromium	A	mg/L	9.513E-06	9.513E-06		0	0	0	0.0002538	0.001	1	0%				0%
Cobalt	A	mg/L	-1.632E-06	-1.632E-06		0	0	0	2.141E-05	0.001	1	0%				0%
Copper	A	mg/L	0.0001129	0.0001129		0	0	0	0.0001748	0.001	1	0%				0%
Iron	A	mg/L	-3.507E-05	-3.507E-05		0	0	0	0.0021157	0.00119	5	0%				0%
Lanthanum	A	mg/L	5.136E-07	5.136E-07		0	0	0	6.805E-05	0.001	0.1	0%	0	0		0%
Lead	A	mg/L	2.304E-06	2.304E-06		0	0	0	3.031E-05	0.001	1	0%				0%
Magnesium	A	mg/L	0.003713	0.003713		0	0	0	0.0203306	0.00564	50	0%				0%
Manganese	A	mg/L	-4.35E-07	-4.35E-07		0	0	0	7.309E-05	0.001	1	0%				0%
Mercury	A	mg/L	4.542E-06	4.542E-06		0	0	0	3.043E-05	0.001	0.002	0%				0%
Molybdenum	A	mg/L	0.00002572	0.00002572		0	0	0	8.113E-05	0.001	0.1	0%				0%
Nickel	A	mg/L	-1.512E-05	-1.512E-05		0	0	0	0.0001769	0.001	1	0%				0%
Potassium	A	mg/L	0.00105	0.00105		0	0	0	0.0215433	0.08139	50	0%				0%
Selenium	A	mg/L	0.00002155	0.00002155		0	0	0	7.174E-05	0.001	1	0%				0%
Silicon	A	mg/L	0.09045	0.09045		0	0	0	0.0033337	0.1	0.4	0%	0	0		0%
Silver	A	mg/L	4.393E-07	4.393E-07		0	0	0	2.644E-05	0.001	0.04	0%				0%
Sodium	A	mg/L	0.06065	0.06065		0	0	0	0.0451914	0.02171	50	0%				0%
Strontium	A	mg/L	-1.563E-05	-1.563E-05		0	0	0	9.743E-05	0.001	1	0%	0	0		0%
Thallium	A	mg/L	0.00009974	0.00009974		0	0	0	4.842E-05	0.001	1	0%	0	0		0%
Thorium	A	mg/L	0.00004421	0.00004421		0	0	0	3.018E-05	0.001	1	0%	0	0		0%
Tin	A	mg/L	0.0000637	0.0000637		0	0	0	0.0009928	0.00132	0.1	0%	0	0		0%
Titanium	A	mg/L	0.00002117	0.00002117		0	0	0	0.0001004	0.001	1	0%	0	0		0%
Uranium	A	mg/L	2.995E-06	2.995E-06		0	0	0	2.468E-05	0.0003	1	0%	0	0		0%
Vanadium	A	mg/L	0.002407	0.002407		0	0	0	0.0018612	0.0013	1	0%	0	0		0%
Zinc	A	mg/L	-3.514E-05	-3.514E-05		0	0	0	0.0010089	0.00273	1	0%	0	0		0%
Iron, Ferrous	C	mg/L	-3.507E-05	-3.507E-05		0	0	0	0.0021157	0.00119	5	0%	0	0		0%

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078350	B22030433-012	ICPMS-6020-W-	SAMP		3/9/2022 1:43:11	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.00258	0.00258		0	0	0	0.0017836	0.001	1	0%	0	0	0%	U
Antimony	A	mg/L	0.00009383	0.00009383		0	0	0	6.768E-05	0.001	0.1	0%	0	0	0%	J
Arsenic	A	mg/L	-3.061E-05	0		0	0	0	8.203E-05	0.001	1	0%	0	0	0%	U
Barium	A	mg/L	0.01999	0.01999		0	0	0	6.762E-05	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	3.317E-06	0		0	0	0	2.308E-05	0.001	1	0%	0	0	0%	U
Cerium	A	mg/L	0.00005721	0.00005721		0	0	0	0.0000222	0.001	0.1	0%	0	0	0%	J
Chromium	A	mg/L	0.0002793	0.0002793		0	0	0	0.0002538	0.001	1	0%	0	0	0%	J
Lanthanum	A	mg/L	0.00001197	0		0	0	0	6.805E-05	0.001	0.1	0%	0	0	0%	U
Lead	A	mg/L	0.00002364	0		0	0	0	3.031E-05	0.001	1	0%	0	0	0%	U
Mercury	A	mg/L	0.00001608	0		0	0	0	3.043E-05	0.001	0.002	0%	0	0	0%	U
Molybdenum	A	mg/L	0.0000921	0.0000921		0	0	0	8.113E-05	0.001	0.1	0%	0	0	0%	J
Silver	A	mg/L	-2.815E-07	0		0	0	0	2.644E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.1016	0.1016		0	0	0	9.743E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00003825	0		0	0	0	4.842E-05	0.001	1	0%	0	0	0%	U
Thorium	A	mg/L	0.00001823	0		0	0	0	3.018E-05	0.001	1	0%	0	0	0%	U
Titanium	A	mg/L	0.003774	0.003774		0	0	0	0.0001004	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00000241	0		0	0	0	2.468E-05	0.0003	1	0%	0	0	0%	U
Magnesium	B	mg/L	25.98	25.98		0	0	0	0.0203306	0.00564	50	0%	0	0	0%	D
Potassium	B	mg/L	2.485	2.485		0	0	0	0.0215433	0.08139	50	0%	0	0	0%	D
Tin	B	mg/L	-4.327E-05	0		0	0	0	0.0009928	0.00132	0.1	0%	0	0	0%	U

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078351	B22030433-012	ICPMS-6020-W-	SAMP		3/9/2022 1:49:25	1	164289	3/7/2022 4:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.0001011	0		0	0	0	0.0002485	0.001	0.1	0%	0	0	0%	U
Arsenic	A	mg/L	0.00006889	0		0	0	0	0.0002595	0.001	1	0%	0	0	0%	U
Barium	A	mg/L	0.02053	0.02053		0	0	0	0.0001041	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	2.393E-06	0		0	0	0	0.0000141	0.005	1	0%	0	0	0%	U
Cerium	A	mg/L	0.0001135	0.0001135		0	0	0	0.0000087	0.001	0.1	0%	0	0	0%	J
Lanthanum	A	mg/L	0.00002681	0.00002681		0	0	0	1.105E-05	0.001	0.1	0%	0	0	0%	J
Lead	A	mg/L	0.00007979	0.00007979		0	0	0	5.246E-05	0.001	1	0%	0	0	0%	J
Molybdenum	A	mg/L	0.0001735	0.0001735		0	0	0	0.0000966	0.001	0.1	0%	0	0	0%	J
Silver	A	mg/L	1.797E-06	0		0	0	0	2.318E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.1031	0.1031		0	0	0	7.178E-05	0.001	1	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078351	B22030433-012	ICPMS-6020-W-	SAMP		3/9/2022 1:49:25	1	164289	3/7/2022 4:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Thallium	A	mg/L	0.00003056	0		0	0	0	0.0001114	0.001	1	0%	0	0	0%	U
Titanium	A	mg/L	0.005289	0.005289		0	0	0	0.0004924	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	6.832E-06	0		0	0	0	1.084E-05	0.0003	1	0%	0	0	0%	U
Aluminum	B	mg/L	0.01268	0.01268		0	0	0	0.0029215	0.0031975	1	0%	0	0	0%	D
Chromium	B	mg/L	0.0004248	0		0	0	0	0.0005265	0.0015375	1	0%	0	0	0%	LU
Magnesium	B	mg/L	26.25	26.25		0	0	0	0.0686349	0.0081522	50	0%	0	0	0%	D
Potassium	B	mg/L	2.464	2.464		0	0	0	0.0289412	0.0261205	50	0%	0	0	0%	D
Thorium	B	mg/L	0.00007736	0.00007736		0	0	0	5.898E-05	0.00415	1	0%	0	0	0%	JL
Tin	B	mg/L	0.0002799	0		0	0	0	0.0018932	0.0011175	0.1	0%	0	0	0%	U

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078352	B22030433-017	ICPMS-6020-W-	SAMP		3/9/2022 1:55:40	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.003756	0.003756		0	0	0	0.0017836	0.001	1	0%	0	0	0%	U
Antimony	A	mg/L	0.0004537	0.0004537		0	0	0	6.768E-05	0.001	0.1	0%	0	0	0%	J
Arsenic	A	mg/L	0.0005262	0.0005262		0	0	0	8.203E-05	0.001	1	0%	0	0	0%	J
Barium	A	mg/L	0.004546	0.004546		0	0	0	6.762E-05	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	1.572E-06	0		0	0	0	2.308E-05	0.001	1	0%	0	0	0%	U
Cerium	A	mg/L	0.00001812	0		0	0	0	0.0000222	0.001	0.1	0%	0	0	0%	U
Chromium	A	mg/L	0.00002662	0		0	0	0	0.0002538	0.001	1	0%	0	0	0%	U
Lanthanum	A	mg/L	4.189E-06	0		0	0	0	6.805E-05	0.001	0.1	0%	0	0	0%	U
Lead	A	mg/L	0.00001038	0		0	0	0	3.031E-05	0.001	1	0%	0	0	0%	U
Manganese	A	mg/L	0.495	0.495		0	0	0	7.309E-05	0.001	1	0%	0	0	0%	
Mercury	A	mg/L	0.0001373	0.0001373		0	0	0	3.043E-05	0.001	0.002	0%	0	0	0%	J
Molybdenum	A	mg/L	0.0003061	0.0003061		0	0	0	8.113E-05	0.001	0.1	0%	0	0	0%	J
Silver	A	mg/L	2.901E-07	0		0	0	0	2.644E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.06788	0.06788		0	0	0	9.743E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00001829	0		0	0	0	4.842E-05	0.001	1	0%	0	0	0%	U
Thorium	A	mg/L	1.399E-06	0		0	0	0	3.018E-05	0.001	1	0%	0	0	0%	U
Titanium	A	mg/L	0.002201	0.002201		0	0	0	0.0001004	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00001046	0		0	0	0	2.468E-05	0.0003	1	0%	0	0	0%	U
Magnesium	B	mg/L	10.11	10.11		0	0	0	0.0203306	0.00564	50	0%	0	0	0%	D
Potassium	B	mg/L	2.002	2.002		0	0	0	0.0215433	0.08139	50	0%	0	0	0%	D
Sodium	B	mg/L	38.83	38.83		0	0	0	0.0451914	0.02171	50	0%	0	0	0%	D

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078352	B22030433-017	ICPMS-6020-W-	SAMP		3/9/2022 1:55:40	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Tin	B	mg/L	-4.495E-05	0		0	0	0	0.0009928	0.00132	0.1	0%	0	0	0%	U
Vanadium	B	mg/L	0.0005592	0		0	0	0	0.0018612	0.0013	1	0%	0	0	0%	U

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078353	B22030433-017	ICPMS-6020-W-	SAMP		3/9/2022 2:01:55	1	164289	3/7/2022 4:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.0008102	0.0008102		0	0	0	0.0002485	0.001	0.1	0%	0	0	0%	J
Arsenic	A	mg/L	0.000564	0.000564		0	0	0	0.0002595	0.001	1	0%	0	0	0%	J
Barium	A	mg/L	0.004841	0.004841		0	0	0	0.0001041	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0.00000376	0		0	0	0	0.0000141	0.005	1	0%	0	0	0%	U
Cerium	A	mg/L	0.00005301	0.00005301		0	0	0	0.0000087	0.001	0.1	0%	0	0	0%	J
Lanthanum	A	mg/L	0.00001273	0.00001273		0	0	0	1.105E-05	0.001	0.1	0%	0	0	0%	J
Lead	A	mg/L	0.00004086	0		0	0	0	5.246E-05	0.001	1	0%	0	0	0%	U
Manganese	A	mg/L	0.5085	0.5085		0	0	0	0.0002595	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	0.0003507	0.0003507		0	0	0	0.0000966	0.001	0.1	0%	0	0	0%	J
Silver	A	mg/L	0.00002564	0.00002564		0	0	0	2.318E-05	0.001	0.04	0%	0	0	0%	J
Strontium	A	mg/L	0.06918	0.06918		0	0	0	7.178E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00002383	0		0	0	0	0.0001114	0.001	1	0%	0	0	0%	U
Titanium	A	mg/L	0.003172	0.003172		0	0	0	0.0004924	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00001195	0.00001195		0	0	0	1.084E-05	0.0003	1	0%	0	0	0%	J
Aluminum	B	mg/L	0.01247	0.01247		0	0	0	0.0029215	0.0031975	1	0%	0	0	0%	D
Chromium	B	mg/L	0.0001538	0		0	0	0	0.0005265	0.0015375	1	0%	0	0	0%	LU
Magnesium	B	mg/L	9.992	9.992		0	0	0	0.0686349	0.0081522	50	0%	0	0	0%	D
Potassium	B	mg/L	2.026	2.026		0	0	0	0.0289412	0.0261205	50	0%	0	0	0%	D
Sodium	B	mg/L	38.63	38.63		0	0	0	0.0721517	0.7330269	50	0%	0	0	0%	D
Thorium	B	mg/L	0.00003527	0		0	0	0	5.898E-05	0.00415	1	0%	0	0	0%	LU
Tin	B	mg/L	0.0002922	0		0	0	0	0.0018932	0.0011175	0.1	0%	0	0	0%	U

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078354	B22030433-023	ICPMS-6020-W-	SAMP		3/9/2022 2:08:11	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078354	B22030433-023	ICPMS-6020-W-	SAMP		3/9/2022 2:08:11	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.006125	0.006125		0	0	0	0.0017836	0.001	1	0%	0	0	0%	
Antimony	A	mg/L	0.00006803	0.00006803		0	0	0	6.768E-05	0.001	0.1	0%	0	0	0%	J
Arsenic	A	mg/L	0.00004986	0		0	0	0	8.203E-05	0.001	1	0%	0	0	0%	U
Barium	A	mg/L	0.02007	0.02007		0	0	0	6.762E-05	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0.00001505	0		0	0	0	2.308E-05	0.001	1	0%	0	0	0%	U
Cerium	A	mg/L	3.917E-06	0		0	0	0	0.0000222	0.001	0.1	0%	0	0	0%	U
Chromium	A	mg/L	0.00169	0.00169		0	0	0	0.0002538	0.001	1	0%	0	0	0%	
Lanthanum	A	mg/L	3.087E-06	0		0	0	0	6.805E-05	0.001	0.1	0%	0	0	0%	U
Lead	A	mg/L	0.00009226	0.00009226		0	0	0	3.031E-05	0.001	1	0%	0	0	0%	J
Manganese	A	mg/L	0.01551	0.01551		0	0	0	7.309E-05	0.001	1	0%	0	0	0%	
Mercury	A	mg/L	3.516E-06	0		0	0	0	3.043E-05	0.001	0.002	0%	0	0	0%	U
Molybdenum	A	mg/L	0.0003505	0.0003505		0	0	0	8.113E-05	0.001	0.1	0%	0	0	0%	J
Silver	A	mg/L	-3.476E-07	0		0	0	0	2.644E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.1851	0.1851		0	0	0	9.743E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00001248	0		0	0	0	4.842E-05	0.001	1	0%	0	0	0%	U
Thorium	A	mg/L	2.572E-06	0		0	0	0	3.018E-05	0.001	1	0%	0	0	0%	U
Titanium	A	mg/L	0.001379	0.001379		0	0	0	0.0001004	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00002737	0.00002737		0	0	0	2.468E-05	0.0003	1	0%	0	0	0%	J
Magnesium	B	mg/L	23.38	23.38		0	0	0	0.0203306	0.00564	50	0%	0	0	0%	D
Potassium	B	mg/L	2.827	2.827		0	0	0	0.0215433	0.08139	50	0%	0	0	0%	D
Tin	B	mg/L	-4.753E-05	0		0	0	0	0.0009928	0.00132	0.1	0%	0	0	0%	U

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078355	B22030433-023	ICPMS-6020-W-	SAMP		3/9/2022 2:14:27	1	164289	3/7/2022 4:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.0001219	0		0	0	0	0.0002485	0.001	0.1	0%	0	0	0%	U
Arsenic	A	mg/L	0.0002702	0.0002702		0	0	0	0.0002595	0.001	1	0%	0	0	0%	J
Barium	A	mg/L	0.02045	0.02045		0	0	0	0.0001041	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0.00001976	0.00001976		0	0	0	0.0000141	0.005	1	0%	0	0	0%	J
Cerium	A	mg/L	0.00005931	0.00005931		0	0	0	0.0000087	0.001	0.1	0%	0	0	0%	J
Lanthanum	A	mg/L	0.00002902	0.00002902		0	0	0	1.105E-05	0.001	0.1	0%	0	0	0%	J
Lead	A	mg/L	0.001006	0.001006		0	0	0	5.246E-05	0.001	1	0%	0	0	0%	
Manganese	A	mg/L	0.01872	0.01872		0	0	0	0.0002595	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	0.000405	0.000405		0	0	0	0.0000966	0.001	0.1	0%	0	0	0%	J

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078355	B22030433-023	ICPMS-6020-W-	SAMP		3/9/2022 2:14:27	1	164289	3/7/2022 4:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Silver	A	mg/L	2.334E-06	0		0	0	0	2.318E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.1884	0.1884		0	0	0	7.178E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00001702	0		0	0	0	0.0001114	0.001	1	0%	0	0	0%	U
Titanium	A	mg/L	0.004929	0.004929		0	0	0	0.0004924	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00003008	0.00003008		0	0	0	1.084E-05	0.0003	1	0%	0	0	0%	J
Aluminum	B	mg/L	0.05198	0.05198		0	0	0	0.0029215	0.0031975	1	0%	0	0	0%	D
Chromium	B	mg/L	0.002228	0.002228		0	0	0	0.0005265	0.0015375	1	0%	0	0	0%	D
Magnesium	B	mg/L	23.66	23.66		0	0	0	0.0686349	0.0081522	50	0%	0	0	0%	D
Potassium	B	mg/L	2.802	2.802		0	0	0	0.0289412	0.0261205	50	0%	0	0	0%	D
Thorium	B	mg/L	0.00003302	0		0	0	0	5.898E-05	0.00415	1	0%	0	0	0%	LU
Tin	B	mg/L	0.0002879	0		0	0	0	0.0018932	0.0011175	0.1	0%	0	0	0%	U

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078356	B22030433-038	ICPMS-6020-W-	SAMP		3/9/2022 2:20:42	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.0009884	0		0	0	0	0.0017836	0.001	1	0%	0	0	0%	U
Antimony	A	mg/L	0.00001026	0		0	0	0	6.768E-05	0.001	0.1	0%	0	0	0%	U
Arsenic	A	mg/L	-4.485E-05	0		0	0	0	8.203E-05	0.001	1	0%	0	0	0%	U
Barium	A	mg/L	0.007628	0.007628		0	0	0	6.762E-05	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	1.795E-06	0		0	0	0	2.308E-05	0.001	1	0%	0	0	0%	U
Cerium	A	mg/L	-1.369E-06	0		0	0	0	0.0000222	0.001	0.1	0%	0	0	0%	U
Chromium	A	mg/L	0.001888	0.001888		0	0	0	0.0002538	0.001	1	0%	0	0	0%	
Lanthanum	A	mg/L	7.266E-07	0		0	0	0	6.805E-05	0.001	0.1	0%	0	0	0%	U
Lead	A	mg/L	0.00001159	0		0	0	0	3.031E-05	0.001	1	0%	0	0	0%	U
Manganese	A	mg/L	0.0007222	0.0007222		0	0	0	7.309E-05	0.001	1	0%	0	0	0%	J
Mercury	A	mg/L	7.655E-07	0		0	0	0	3.043E-05	0.001	0.002	0%	0	0	0%	U
Molybdenum	A	mg/L	0.0002991	0.0002991		0	0	0	8.113E-05	0.001	0.1	0%	0	0	0%	J
Silver	A	mg/L	-4.556E-08	0		0	0	0	2.644E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.1574	0.1574		0	0	0	9.743E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	6.361E-06	0		0	0	0	4.842E-05	0.001	1	0%	0	0	0%	U
Thorium	A	mg/L	-1.955E-07	0		0	0	0	3.018E-05	0.001	1	0%	0	0	0%	U
Titanium	A	mg/L	0.001362	0.001362		0	0	0	0.0001004	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00002635	0.00002635		0	0	0	2.468E-05	0.0003	1	0%	0	0	0%	J
Magnesium	B	mg/L	21.26	21.26		0	0	0	0.0203306	0.00564	50	0%	0	0	0%	D

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078356	B22030433-038	ICPMS-6020-W-	SAMP		3/9/2022 2:20:42	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Potassium	B	mg/L	2.759	2.759		0	0	0	0.0215433	0.08139	50	0%	0	0	0%	D
Sodium	B	mg/L	49.83	49.83		0	0	0	0.0451914	0.02171	50	0%	0	0	0%	D
Tin	B	mg/L	-5.822E-05	0		0	0	0	0.0009928	0.00132	0.1	0%	0	0	0%	U

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078357	B22030433-038	ICPMS-6020-W-	SAMP		3/9/2022 2:26:58	1	164289	3/7/2022 4:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.00004421	0		0	0	0	0.0002485	0.001	0.1	0%	0	0	0%	U
Arsenic	A	mg/L	0.0002459	0		0	0	0	0.0002595	0.001	1	0%	0	0	0%	U
Barium	A	mg/L	0.008076	0.008076		0	0	0	0.0001041	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0.00000318	0		0	0	0	0.0000141	0.005	1	0%	0	0	0%	U
Cerium	A	mg/L	7.913E-07	0		0	0	0	0.0000087	0.001	0.1	0%	0	0	0%	U
Lanthanum	A	mg/L	1.727E-06	0		0	0	0	1.105E-05	0.001	0.1	0%	0	0	0%	U
Lead	A	mg/L	0.00001148	0		0	0	0	5.246E-05	0.001	1	0%	0	0	0%	U
Manganese	A	mg/L	0.000811	0.000811		0	0	0	0.0002595	0.001	1	0%	0	0	0%	J
Molybdenum	A	mg/L	0.0004	0.0004		0	0	0	0.0000966	0.001	0.1	0%	0	0	0%	J
Silver	A	mg/L	1.154E-06	0		0	0	0	2.318E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.1629	0.1629		0	0	0	7.178E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00001059	0		0	0	0	0.0001114	0.001	1	0%	0	0	0%	U
Titanium	A	mg/L	0.001629	0.001629		0	0	0	0.0004924	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00002845	0.00002845		0	0	0	1.084E-05	0.0003	1	0%	0	0	0%	J
Aluminum	B	mg/L	0.002693	0		0	0	0	0.0029215	0.0031975	1	0%	0	0	0%	LU
Chromium	B	mg/L	0.002177	0.002177		0	0	0	0.0005265	0.0015375	1	0%	0	0	0%	D
Magnesium	B	mg/L	21.58	21.58		0	0	0	0.0686349	0.0081522	50	0%	0	0	0%	D
Potassium	B	mg/L	2.758	2.758		0	0	0	0.0289412	0.0261205	50	0%	0	0	0%	D
Thorium	B	mg/L	0.00002141	0		0	0	0	5.898E-05	0.00415	1	0%	0	0	0%	LU
Tin	B	mg/L	0.0002883	0		0	0	0	0.0018932	0.0011175	0.1	0%	0	0	0%	U

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078358	B22030433-043	ICPMS-6020-W-	SAMP		3/9/2022 2:33:13	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078358	B22030433-043	ICPMS-6020-W-	SAMP		3/9/2022 2:33:13	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.00131	0		0	0	0	0.0017836	0.001	1	0%	0	0	0%	U
Antimony	A	mg/L	0.00003168	0		0	0	0	6.768E-05	0.001	0.1	0%	0	0	0%	U
Arsenic	A	mg/L	-3.797E-05	0		0	0	0	8.203E-05	0.001	1	0%	0	0	0%	U
Barium	A	mg/L	0.008178	0.008178		0	0	0	6.762E-05	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	2.424E-06	0		0	0	0	2.308E-05	0.001	1	0%	0	0	0%	U
Cerium	A	mg/L	1.222E-06	0		0	0	0	0.0000222	0.001	0.1	0%	0	0	0%	U
Chromium	A	mg/L	0.0019	0.0019		0	0	0	0.0002538	0.001	1	0%	0	0	0%	
Lanthanum	A	mg/L	1.687E-06	0		0	0	0	6.805E-05	0.001	0.1	0%	0	0	0%	U
Lead	A	mg/L	0.00001984	0		0	0	0	3.031E-05	0.001	1	0%	0	0	0%	U
Manganese	A	mg/L	0.001318	0.001318		0	0	0	7.309E-05	0.001	1	0%	0	0	0%	
Mercury	A	mg/L	6.026E-07	0		0	0	0	3.043E-05	0.001	0.002	0%	0	0	0%	U
Molybdenum	A	mg/L	0.0003241	0.0003241		0	0	0	8.113E-05	0.001	0.1	0%	0	0	0%	J
Silver	A	mg/L	1.848E-07	0		0	0	0	2.644E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.1585	0.1585		0	0	0	9.743E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	5.751E-06	0		0	0	0	4.842E-05	0.001	1	0%	0	0	0%	U
Thorium	A	mg/L	-7.832E-07	0		0	0	0	3.018E-05	0.001	1	0%	0	0	0%	U
Titanium	A	mg/L	0.001331	0.001331		0	0	0	0.0001004	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00002755	0.00002755		0	0	0	2.468E-05	0.0003	1	0%	0	0	0%	J
Magnesium	B	mg/L	22.08	22.08		0	0	0	0.0203306	0.00564	50	0%	0	0	0%	D
Potassium	B	mg/L	2.774	2.774		0	0	0	0.0215433	0.08139	50	0%	0	0	0%	D
Tin	B	mg/L	-4.397E-05	0		0	0	0	0.0009928	0.00132	0.1	0%	0	0	0%	U

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078359	B22030433-043	ICPMS-6020-W-	SAMP		3/9/2022 2:39:28	1	164289	3/7/2022 4:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.00003302	0		0	0	0	0.0002485	0.001	0.1	0%	0	0	0%	U
Arsenic	A	mg/L	0.000191	0		0	0	0	0.0002595	0.001	1	0%	0	0	0%	U
Barium	A	mg/L	0.008693	0.008693		0	0	0	0.0001041	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	3.989E-06	0		0	0	0	0.0000141	0.005	1	0%	0	0	0%	U
Cerium	A	mg/L	1.977E-06	0		0	0	0	0.0000087	0.001	0.1	0%	0	0	0%	U
Lanthanum	A	mg/L	2.042E-06	0		0	0	0	1.105E-05	0.001	0.1	0%	0	0	0%	U
Lead	A	mg/L	0.00002585	0		0	0	0	5.246E-05	0.001	1	0%	0	0	0%	U
Manganese	A	mg/L	0.001607	0.001607		0	0	0	0.0002595	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	0.0004114	0.0004114		0	0	0	0.0000966	0.001	0.1	0%	0	0	0%	J

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078359	B22030433-043	ICPMS-6020-W-	SAMP		3/9/2022 2:39:28	1	164289	3/7/2022 4:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Silver	A	mg/L	8.475E-07	0		0	0	0	2.318E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.1632	0.1632		0	0	0	7.178E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	9.361E-06	0		0	0	0	0.0001114	0.001	1	0%	0	0	0%	U
Titanium	A	mg/L	0.001761	0.001761		0	0	0	0.0004924	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00002913	0.00002913		0	0	0	1.084E-05	0.0003	1	0%	0	0	0%	J
Aluminum	B	mg/L	0.008277	0.008277		0	0	0	0.0029215	0.0031975	1	0%	0	0	0%	D
Chromium	B	mg/L	0.002111	0.002111		0	0	0	0.0005265	0.0015375	1	0%	0	0	0%	D
Magnesium	B	mg/L	21.77	21.77		0	0	0	0.0686349	0.0081522	50	0%	0	0	0%	D
Potassium	B	mg/L	2.74	2.74		0	0	0	0.0289412	0.0261205	50	0%	0	0	0%	D
Thorium	B	mg/L	0.00001729	0		0	0	0	5.898E-05	0.00415	1	0%	0	0	0%	LU
Tin	B	mg/L	0.0003033	0		0	0	0	0.0018932	0.0011175	0.1	0%	0	0	0%	U

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078360	CCV	ICPMS-6020-W-	CCV		3/9/2022 2:45:42	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.04866	0.04866		0.05	0	0	0.0017836	0.001	1	97%	90	110	0%	
Antimony	A	mg/L	0.05208	0.05208		0.05	0	0	6.768E-05	0.001	0.1	104%	90	110	0%	
Arsenic	A	mg/L	0.05041	0.05041		0.05	0	0	8.203E-05	0.001	1	101%	90	110	0%	
Barium	A	mg/L	0.04961	0.04961		0.05	0	0	6.762E-05	0.001	1	99%	90	110	0%	
Beryllium	A	mg/L	0.04274	0.04274		0.05	0	0	8.516E-05	0.001	1	85%	90	110	0%	S
Boron	A	mg/L	0.04656	0.04656		0.05	0	0	0.0039526	0.00561	1	93%	90	110	0%	
Cadmium	A	mg/L	0.05103	0.05103		0.05	0	0	2.308E-05	0.001	1	102%	90	110	0%	
Calcium	A	mg/L	11.87	11.87		12.5	0	0	0.2027235	0.02092	50	95%	90	110	0%	
Cerium	A	mg/L	0.0507	0.0507		0.05	0	0	0.0000222	0.001	0.1	101%	90	110	0%	
Chromium	A	mg/L	0.04878	0.04878		0.05	0	0	0.0002538	0.001	1	98%	90	110	0%	
Cobalt	A	mg/L	0.04959	0.04959		0.05	0	0	2.141E-05	0.001	1	99%	90	110	0%	
Copper	A	mg/L	0.05085	0.05085		0.05	0	0	0.0001748	0.001	1	102%	90	110	0%	
Iron	A	mg/L	1.3	1.3		1.3	0	0	0.0021157	0.00119	5	100%	90	110	0%	
Lanthanum	A	mg/L	0.05124	0.05124		0.05	0	0	6.805E-05	0.001	0.1	102%	90	110	0%	
Lead	A	mg/L	0.04952	0.04952		0.05	0	0	3.031E-05	0.001	1	99%	90	110	0%	
Magnesium	A	mg/L	12.68	12.68		12.5	0	0	0.0203306	0.00564	50	101%	90	110	0%	
Manganese	A	mg/L	0.04887	0.04887		0.05	0	0	7.309E-05	0.001	1	98%	90	110	0%	
Mercury	A	mg/L	0.001002	0.001002		0.001	0	0	3.043E-05	0.001	0.002	100%	90	110	0%	
Molybdenum	A	mg/L	0.04878	0.04878		0.05	0	0	8.113E-05	0.001	0.1	98%	90	110	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078360	CCV	ICPMS-6020-W- CCV			3/9/2022 2:45:42	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Nickel	A	mg/L	0.0512	0.0512		0.05	0	0	0.0001769	0.001	1	102%	90	110	0%	
Potassium	A	mg/L	11.92	11.92		12.5	0	0	0.0215433	0.08139	50	95%	90	110	0%	
Selenium	A	mg/L	0.05303	0.05303		0.05	0	0	7.174E-05	0.001	1	106%	90	110	0%	
Silicon	A	mg/L	0.4034	0.4034		0.2	0	0	0.0033337	0.1	0.4	202%	90	110	0%	S
Silver	A	mg/L	0.01987	0.01987		0.02	0	0	2.644E-05	0.001	0.04	99%	90	110	0%	
Sodium	A	mg/L	12.72	12.72		12.5	0	0	0.0451914	0.02171	50	102%	90	110	0%	
Strontium	A	mg/L	0.04846	0.04846		0.05	0	0	9.743E-05	0.001	1	97%	90	110	0%	
Thallium	A	mg/L	0.04881	0.04881		0.05	0	0	4.842E-05	0.001	1	98%	90	110	0%	
Thorium	A	mg/L	0.04874	0.04874		0.05	0	0	3.018E-05	0.001	1	97%	90	110	0%	
Tin	A	mg/L	0.05109	0.05109		0.05	0	0	0.0009928	0.00132	0.1	102%	90	110	0%	
Titanium	A	mg/L	0.04671	0.04671		0.05	0	0	0.0001004	0.001	1	93%	90	110	0%	
Uranium	A	mg/L	0.04838	0.04838		0.05	0	0	2.468E-05	0.0003	1	97%	90	110	0%	
Vanadium	A	mg/L	0.05218	0.05218		0.05	0	0	0.0018612	0.0013	1	104%	90	110	0%	
Zinc	A	mg/L	0.05209	0.05209		0.05	0	0	0.0010089	0.00273	1	104%	90	110	0%	
Iron, Ferrous	C	mg/L	1.3	1.3		0	0	0	0.0021157	0.00119	5	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078361	CCB	ICPMS-6020-W- CCB			3/9/2022 2:51:58	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	-5.239E-05	-5.239E-05		0	0	0	0.0017836	0.001	1	0%			0%	
Antimony	A	mg/L	0.0002869	0.0002869		0	0	0	6.768E-05	0.001	0.1	0%			0%	
Arsenic	A	mg/L	0.0001016	0.0001016		0	0	0	8.203E-05	0.001	1	0%			0%	
Barium	A	mg/L	3.956E-07	3.956E-07		0	0	0	6.762E-05	0.001	1	0%			0%	
Beryllium	A	mg/L	-5.442E-05	-5.442E-05		0	0	0	8.516E-05	0.001	1	0%			0%	
Boron	A	mg/L	0.001021	0.001021		0	0	0	0.0039526	0.00561	1	0%			0%	
Cadmium	A	mg/L	1.815E-06	1.815E-06		0	0	0	2.308E-05	0.001	1	0%			0%	
Calcium	A	mg/L	0.000424	0.000424		0	0	0	0.2027235	0.02092	50	0%			0%	
Cerium	A	mg/L	-1.619E-06	-1.619E-06		0	0	0	0.0000222	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	4.334E-06	4.334E-06		0	0	0	0.0002538	0.001	1	0%			0%	
Cobalt	A	mg/L	-3.505E-06	-3.505E-06		0	0	0	2.141E-05	0.001	1	0%			0%	
Copper	A	mg/L	0.0001007	0.0001007		0	0	0	0.0001748	0.001	1	0%			0%	
Iron	A	mg/L	-0.0000374	-0.0000374		0	0	0	0.0021157	0.00119	5	0%			0%	
Lanthanum	A	mg/L	9.336E-08	9.336E-08		0	0	0	6.805E-05	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	1.064E-06	1.064E-06		0	0	0	3.031E-05	0.001	1	0%			0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078361	CCB	ICPMS-6020-W-	CCB		3/9/2022 2:51:58	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Magnesium	A	mg/L	0.003307	0.003307		0	0	0	0.0203306	0.00564	50	0%			0%	
Manganese	A	mg/L	-8.321E-06	-8.321E-06		0	0	0	7.309E-05	0.001	1	0%			0%	
Mercury	A	mg/L	3.158E-06	3.158E-06		0	0	0	3.043E-05	0.001	0.002	0%			0%	
Molybdenum	A	mg/L	0.00002836	0.00002836		0	0	0	8.113E-05	0.001	0.1	0%			0%	
Nickel	A	mg/L	0.00001792	0.00001792		0	0	0	0.0001769	0.001	1	0%			0%	
Potassium	A	mg/L	-0.002263	-0.002263		0	0	0	0.0215433	0.08139	50	0%			0%	
Selenium	A	mg/L	0.00002391	0.00002391		0	0	0	7.174E-05	0.001	1	0%			0%	
Silicon	A	mg/L	0.09102	0.09102		0	0	0	0.0033337	0.1	0.4	0%	0	0	0%	
Silver	A	mg/L	5.978E-07	5.978E-07		0	0	0	2.644E-05	0.001	0.04	0%			0%	
Sodium	A	mg/L	0.05638	0.05638		0	0	0	0.0451914	0.02171	50	0%			0%	
Strontium	A	mg/L	-1.118E-05	-1.118E-05		0	0	0	9.743E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0000866	0.0000866		0	0	0	4.842E-05	0.001	1	0%	0	0	0%	
Thorium	A	mg/L	0.00004498	0.00004498		0	0	0	3.018E-05	0.001	1	0%	0	0	0%	
Tin	A	mg/L	0.00008235	0.00008235		0	0	0	0.0009928	0.00132	0.1	0%	0	0	0%	
Titanium	A	mg/L	0.00004469	0.00004469		0	0	0	0.0001004	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	2.656E-06	2.656E-06		0	0	0	2.468E-05	0.0003	1	0%	0	0	0%	
Vanadium	A	mg/L	0.002686	0.002686		0	0	0	0.0018612	0.0013	1	0%	0	0	0%	
Zinc	A	mg/L	-0.0000306	-0.0000306		0	0	0	0.0010089	0.00273	1	0%	0	0	0%	
Iron, Ferrous	C	mg/L	-0.0000374	-0.0000374		0	0	0	0.0021157	0.00119	5	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078362	B22030433-053	ICPMS-6020-W-	SAMP		3/9/2022 2:58:14	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.03123	0.03123		0	0	0	0.0017836	0.001	1	0%	0	0	0%	
Antimony	A	mg/L	0.0001544	0.0001544		0	0	0	6.768E-05	0.001	0.1	0%	0	0	0%	J
Arsenic	A	mg/L	0.0001694	0.0001694		0	0	0	8.203E-05	0.001	1	0%	0	0	0%	J
Barium	A	mg/L	0.005345	0.005345		0	0	0	6.762E-05	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	6.627E-06	0		0	0	0	2.308E-05	0.001	1	0%	0	0	0%	U
Cerium	A	mg/L	0.0001266	0.0001266		0	0	0	0.0000222	0.001	0.1	0%	0	0	0%	J
Chromium	A	mg/L	0.0041	0.0041		0	0	0	0.0002538	0.001	1	0%	0	0	0%	
Lanthanum	A	mg/L	0.0000337	0		0	0	0	6.805E-05	0.001	0.1	0%	0	0	0%	U
Lead	A	mg/L	0.0001085	0.0001085		0	0	0	3.031E-05	0.001	1	0%	0	0	0%	J
Manganese	A	mg/L	0.004076	0.004076		0	0	0	7.309E-05	0.001	1	0%	0	0	0%	
Mercury	A	mg/L	0.00001068	0		0	0	0	3.043E-05	0.001	0.002	0%	0	0	0%	U

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078362	B22030433-053	ICPMS-6020-W-	SAMP		3/9/2022 2:58:14	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Molybdenum	A	mg/L	0.0005937	0.0005937		0	0	0	8.113E-05	0.001	0.1	0%	0	0	0%	J
Silver	A	mg/L	2.069E-06	0		0	0	0	2.644E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.05591	0.05591		0	0	0	9.743E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00002866	0		0	0	0	4.842E-05	0.001	1	0%	0	0	0%	U
Thorium	A	mg/L	0.00001034	0		0	0	0	3.018E-05	0.001	1	0%	0	0	0%	U
Titanium	A	mg/L	0.003522	0.003522		0	0	0	0.0001004	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00001911	0		0	0	0	2.468E-05	0.0003	1	0%	0	0	0%	U
Magnesium	B	mg/L	9.345	9.345		0	0	0	0.0203306	0.00564	50	0%	0	0	0%	D
Potassium	B	mg/L	3.38	3.38		0	0	0	0.0215433	0.08139	50	0%	0	0	0%	D
Tin	B	mg/L	-3.725E-05	0		0	0	0	0.0009928	0.00132	0.1	0%	0	0	0%	U
Vanadium	B	mg/L	0.04566	0.04566		0	0	0	0.0018612	0.0013	1	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078363	B22030433-053	ICPMS-6020-W-	SAMP		3/9/2022 3:04:29	1	164289	3/7/2022 4:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.000123	0		0	0	0	0.0002485	0.001	0.1	0%	0	0	0%	U
Arsenic	A	mg/L	0.0003241	0.0003241		0	0	0	0.0002595	0.001	1	0%	0	0	0%	J
Barium	A	mg/L	0.005271	0.005271		0	0	0	0.0001041	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	9.308E-06	0		0	0	0	0.0000141	0.005	1	0%	0	0	0%	U
Cerium	A	mg/L	0.0003355	0.0003355		0	0	0	0.0000087	0.001	0.1	0%	0	0	0%	J
Lanthanum	A	mg/L	0.00008556	0.00008556		0	0	0	1.105E-05	0.001	0.1	0%	0	0	0%	J
Lead	A	mg/L	0.0001329	0.0001329		0	0	0	5.246E-05	0.001	1	0%	0	0	0%	J
Manganese	A	mg/L	0.01387	0.01387		0	0	0	0.0002595	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	0.0006095	0.0006095		0	0	0	0.0000966	0.001	0.1	0%	0	0	0%	J
Silver	A	mg/L	3.915E-06	0		0	0	0	2.318E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.05382	0.05382		0	0	0	7.178E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0000217	0		0	0	0	0.0001114	0.001	1	0%	0	0	0%	U
Titanium	A	mg/L	0.02148	0.02148		0	0	0	0.0004924	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00002376	0.00002376		0	0	0	1.084E-05	0.0003	1	0%	0	0	0%	J
Aluminum	B	mg/L	0.3265	0.3265		0	0	0	0.0029215	0.0031975	1	0%	0	0	0%	D
Chromium	B	mg/L	0.004741	0.004741		0	0	0	0.0005265	0.0015375	1	0%	0	0	0%	D
Magnesium	B	mg/L	9.104	9.104		0	0	0	0.0686349	0.0081522	50	0%	0	0	0%	D
Potassium	B	mg/L	2.934	2.934		0	0	0	0.0289412	0.0261205	50	0%	0	0	0%	D
Thorium	B	mg/L	0.00008147	0.00008147		0	0	0	5.898E-05	0.00415	1	0%	0	0	0%	JL

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078363	B22030433-053	ICPMS-6020-W-	SAMP		3/9/2022 3:04:29	1	164289	3/7/2022 4:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Tin	B	mg/L	0.0003691	0		0	0	0	0.0018932	0.0011175	0.1	0%	0	0	0%	U
Vanadium	B	mg/L	0.04347	0.04347		0	0	0	0.0012418	0.0021085	1	0%	0	0	0%	D
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078364	B22030433-058	ICPMS-6020-W-	SAMP		3/9/2022 3:10:44	1	R375855				0	0				
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.006268	0.006268		0	0	0	0.0017836	0.001	1	0%	0	0	0%	
Antimony	A	mg/L	0.0001714	0.0001714		0	0	0	6.768E-05	0.001	0.1	0%	0	0	0%	J
Arsenic	A	mg/L	0.003503	0.003503		0	0	0	8.203E-05	0.001	1	0%	0	0	0%	
Barium	A	mg/L	0.01925	0.01925		0	0	0	6.762E-05	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	7.103E-07	0		0	0	0	2.308E-05	0.001	1	0%	0	0	0%	U
Cerium	A	mg/L	0.00002197	0		0	0	0	0.0000222	0.001	0.1	0%	0	0	0%	U
Chromium	A	mg/L	0.001459	0.001459		0	0	0	0.0002538	0.001	1	0%	0	0	0%	
Lanthanum	A	mg/L	0.00001243	0		0	0	0	6.805E-05	0.001	0.1	0%	0	0	0%	U
Lead	A	mg/L	0.00002943	0		0	0	0	3.031E-05	0.001	1	0%	0	0	0%	U
Manganese	A	mg/L	0.001345	0.001345		0	0	0	7.309E-05	0.001	1	0%	0	0	0%	
Mercury	A	mg/L	0.0004611	0.0004611		0	0	0	3.043E-05	0.001	0.002	0%	0	0	0%	J
Molybdenum	A	mg/L	0.008026	0.008026		0	0	0	8.113E-05	0.001	0.1	0%	0	0	0%	
Silver	A	mg/L	1.885E-06	0		0	0	0	2.644E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.2638	0.2638		0	0	0	9.743E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00001152	0		0	0	0	4.842E-05	0.001	1	0%	0	0	0%	U
Thorium	A	mg/L	9.101E-06	0		0	0	0	3.018E-05	0.001	1	0%	0	0	0%	U
Titanium	A	mg/L	0.002058	0.002058		0	0	0	0.0001004	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.0002802	0.0002802		0	0	0	2.468E-05	0.0003	1	0%	0	0	0%	J
Magnesium	B	mg/L	32.64	32.64		0	0	0	0.0203306	0.00564	50	0%	0	0	0%	D
Potassium	B	mg/L	4.674	4.674		0	0	0	0.0215433	0.08139	50	0%	0	0	0%	D
Tin	B	mg/L	0.0001233	0		0	0	0	0.0009928	0.00132	0.1	0%	0	0	0%	U
Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078365	B22030433-058	ICPMS-6020-W-	SAMP		3/9/2022 3:16:59	1	164289	3/7/2022 4:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078365	B22030433-058	ICPMS-6020-W-	SAMP		3/9/2022 3:16:59	1	164289	3/7/2022 4:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.000192	0		0	0	0	0.0002485	0.001	0.1	0%	0	0	0%	U
Arsenic	A	mg/L	0.003547	0.003547		0	0	0	0.0002595	0.001	1	0%	0	0	0%	
Barium	A	mg/L	0.0198	0.0198		0	0	0	0.0001041	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	7.456E-06	0		0	0	0	0.0000141	0.005	1	0%	0	0	0%	U
Cerium	A	mg/L	0.0001163	0.0001163		0	0	0	0.0000087	0.001	0.1	0%	0	0	0%	J
Lanthanum	A	mg/L	0.00005445	0.00005445		0	0	0	1.105E-05	0.001	0.1	0%	0	0	0%	J
Lead	A	mg/L	0.00006291	0.00006291		0	0	0	5.246E-05	0.001	1	0%	0	0	0%	J
Manganese	A	mg/L	0.004518	0.004518		0	0	0	0.0002595	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	0.008408	0.008408		0	0	0	0.0000966	0.001	0.1	0%	0	0	0%	
Silver	A	mg/L	0.00001394	0		0	0	0	2.318E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.2681	0.2681		0	0	0	7.178E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00001452	0		0	0	0	0.0001114	0.001	1	0%	0	0	0%	U
Titanium	A	mg/L	0.008706	0.008706		0	0	0	0.0004924	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.0003005	0.0003005		0	0	0	1.084E-05	0.0003	1	0%	0	0	0%	
Aluminum	B	mg/L	0.09423	0.09423		0	0	0	0.0029215	0.0031975	1	0%	0	0	0%	D
Chromium	B	mg/L	0.001771	0.001771		0	0	0	0.0005265	0.0015375	1	0%	0	0	0%	D
Magnesium	B	mg/L	33.15	33.15		0	0	0	0.0686349	0.0081522	50	0%	0	0	0%	D
Potassium	B	mg/L	4.603	4.603		0	0	0	0.0289412	0.0261205	50	0%	0	0	0%	D
Thorium	B	mg/L	0.00005222	0		0	0	0	5.898E-05	0.00415	1	0%	0	0	0%	LU
Tin	B	mg/L	0.0005224	0		0	0	0	0.0018932	0.0011175	0.1	0%	0	0	0%	U

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078366	B22030433-064	ICPMS-6020-W-	SAMP		3/9/2022 3:23:15	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.001044	0		0	0	0	0.0017836	0.001	1	0%	0	0	0%	U
Antimony	A	mg/L	0.00004025	0		0	0	0	6.768E-05	0.001	0.1	0%	0	0	0%	U
Arsenic	A	mg/L	0.00005575	0		0	0	0	8.203E-05	0.001	1	0%	0	0	0%	U
Barium	A	mg/L	0.002743	0.002743		0	0	0	6.762E-05	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	7.511E-07	0		0	0	0	2.308E-05	0.001	1	0%	0	0	0%	U
Cerium	A	mg/L	-1.043E-06	0		0	0	0	0.0000222	0.001	0.1	0%	0	0	0%	U
Chromium	A	mg/L	0.00002507	0		0	0	0	0.0002538	0.001	1	0%	0	0	0%	U
Lanthanum	A	mg/L	2.584E-07	0		0	0	0	6.805E-05	0.001	0.1	0%	0	0	0%	U
Lead	A	mg/L	0.00001638	0		0	0	0	3.031E-05	0.001	1	0%	0	0	0%	U
Manganese	A	mg/L	0.01742	0.01742		0	0	0	7.309E-05	0.001	1	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078366	B22030433-064	ICPMS-6020-W-	SAMP		3/9/2022 3:23:15	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Mercury	A	mg/L	0.00001349	0		0	0	0	3.043E-05	0.001	0.002	0%	0	0	0%	U
Molybdenum	A	mg/L	0.01817	0.01817		0	0	0	8.113E-05	0.001	0.1	0%	0	0	0%	
Silver	A	mg/L	-3.644E-07	0		0	0	0	2.644E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.08872	0.08872		0	0	0	9.743E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00000769	0		0	0	0	4.842E-05	0.001	1	0%	0	0	0%	U
Thorium	A	mg/L	-2.843E-08	0		0	0	0	3.018E-05	0.001	1	0%	0	0	0%	U
Titanium	A	mg/L	0.0003996	0.0003996		0	0	0	0.0001004	0.001	1	0%	0	0	0%	J
Uranium	A	mg/L	6.882E-06	0		0	0	0	2.468E-05	0.0003	1	0%	0	0	0%	U
Magnesium	B	mg/L	13.61	13.61		0	0	0	0.0203306	0.00564	50	0%	0	0	0%	D
Potassium	B	mg/L	5.184	5.184		0	0	0	0.0215433	0.08139	50	0%	0	0	0%	D
Sodium	B	mg/L	48.57	48.57		0	0	0	0.0451914	0.02171	50	0%	0	0	0%	D
Tin	B	mg/L	0.00002392	0		0	0	0	0.0009928	0.00132	0.1	0%	0	0	0%	U
Vanadium	B	mg/L	-0.0001728	0		0	0	0	0.0018612	0.0013	1	0%	0	0	0%	U

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078367	B22030433-064	ICPMS-6020-W-	SAMP		3/9/2022 3:29:30	1	164289	3/7/2022 4:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.00006711	0		0	0	0	0.0002485	0.001	0.1	0%	0	0	0%	U
Arsenic	A	mg/L	0.0002892	0.0002892		0	0	0	0.0002595	0.001	1	0%	0	0	0%	J
Barium	A	mg/L	0.002779	0.002779		0	0	0	0.0001041	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	2.592E-06	0		0	0	0	0.0000141	0.005	1	0%	0	0	0%	U
Cerium	A	mg/L	1.406E-06	0		0	0	0	0.0000087	0.001	0.1	0%	0	0	0%	U
Lanthanum	A	mg/L	1.346E-06	0		0	0	0	1.105E-05	0.001	0.1	0%	0	0	0%	U
Lead	A	mg/L	0.00001002	0		0	0	0	5.246E-05	0.001	1	0%	0	0	0%	U
Manganese	A	mg/L	0.02171	0.02171		0	0	0	0.0002595	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	0.0196	0.0196		0	0	0	0.0000966	0.001	0.1	0%	0	0	0%	
Silver	A	mg/L	6.305E-07	0		0	0	0	2.318E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.0908	0.0908		0	0	0	7.178E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00001017	0		0	0	0	0.0001114	0.001	1	0%	0	0	0%	U
Titanium	A	mg/L	0.0007053	0.0007053		0	0	0	0.0004924	0.001	1	0%	0	0	0%	J
Uranium	A	mg/L	7.662E-06	0		0	0	0	1.084E-05	0.0003	1	0%	0	0	0%	U
Aluminum	B	mg/L	0.003594	0.003594		0	0	0	0.0029215	0.0031975	1	0%	0	0	0%	DU
Chromium	B	mg/L	0.0002145	0		0	0	0	0.0005265	0.0015375	1	0%	0	0	0%	LU
Magnesium	B	mg/L	13.49	13.49		0	0	0	0.0686349	0.0081522	50	0%	0	0	0%	D

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078367	B22030433-064	ICPMS-6020-W-	SAMP		3/9/2022 3:29:30	1	164289	3/7/2022 4:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Potassium	B	mg/L	4.952	4.952		0	0	0	0.0289412	0.0261205	50	0%	0	0	0%	D
Sodium	B	mg/L	47.9	47.9		0	0	0	0.0721517	0.7330269	50	0%	0	0	0%	D
Thorium	B	mg/L	0.00001872	0		0	0	0	5.898E-05	0.00415	1	0%	0	0	0%	LU
Tin	B	mg/L	0.000332	0		0	0	0	0.0018932	0.0011175	0.1	0%	0	0	0%	U

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078368	CCV	ICPMS-6020-W-	CCV		3/9/2022 3:35:44	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.04938	0.04938		0.05	0	0	0.0017836	0.001	1	99%	90	110	0%	
Antimony	A	mg/L	0.0519	0.0519		0.05	0	0	6.768E-05	0.001	0.1	104%	90	110	0%	
Arsenic	A	mg/L	0.0507	0.0507		0.05	0	0	8.203E-05	0.001	1	101%	90	110	0%	
Barium	A	mg/L	0.04992	0.04992		0.05	0	0	6.762E-05	0.001	1	100%	90	110	0%	
Beryllium	A	mg/L	0.04295	0.04295		0.05	0	0	8.516E-05	0.001	1	86%	90	110	0%	S
Boron	A	mg/L	0.04776	0.04776		0.05	0	0	0.0039526	0.00561	1	96%	90	110	0%	
Cadmium	A	mg/L	0.05071	0.05071		0.05	0	0	2.308E-05	0.001	1	101%	90	110	0%	
Calcium	A	mg/L	12.27	12.27		12.5	0	0	0.2027235	0.02092	50	98%	90	110	0%	
Cerium	A	mg/L	0.05078	0.05078		0.05	0	0	0.0000222	0.001	0.1	102%	90	110	0%	
Chromium	A	mg/L	0.04856	0.04856		0.05	0	0	0.0002538	0.001	1	97%	90	110	0%	
Cobalt	A	mg/L	0.04923	0.04923		0.05	0	0	2.141E-05	0.001	1	98%	90	110	0%	
Copper	A	mg/L	0.05092	0.05092		0.05	0	0	0.0001748	0.001	1	102%	90	110	0%	
Iron	A	mg/L	1.315	1.315		1.3	0	0	0.0021157	0.00119	5	101%	90	110	0%	
Lanthanum	A	mg/L	0.05068	0.05068		0.05	0	0	6.805E-05	0.001	0.1	101%	90	110	0%	
Lead	A	mg/L	0.04906	0.04906		0.05	0	0	3.031E-05	0.001	1	98%	90	110	0%	
Magnesium	A	mg/L	12.79	12.79		12.5	0	0	0.0203306	0.00564	50	102%	90	110	0%	
Manganese	A	mg/L	0.04932	0.04932		0.05	0	0	7.309E-05	0.001	1	99%	90	110	0%	
Mercury	A	mg/L	0.0009719	0.0009719		0.001	0	0	3.043E-05	0.001	0.002	97%	90	110	0%	
Molybdenum	A	mg/L	0.04877	0.04877		0.05	0	0	8.113E-05	0.001	0.1	98%	90	110	0%	
Nickel	A	mg/L	0.05085	0.05085		0.05	0	0	0.0001769	0.001	1	102%	90	110	0%	
Potassium	A	mg/L	12.06	12.06		12.5	0	0	0.0215433	0.08139	50	96%	90	110	0%	
Selenium	A	mg/L	0.05375	0.05375		0.05	0	0	7.174E-05	0.001	1	107%	90	110	0%	
Silicon	A	mg/L	0.2666	0.2666		0.2	0	0	0.0033337	0.1	0.4	133%	90	110	0%	S
Silver	A	mg/L	0.01999	0.01999		0.02	0	0	2.644E-05	0.001	0.04	100%	90	110	0%	
Sodium	A	mg/L	12.8	12.8		12.5	0	0	0.0451914	0.02171	50	102%	90	110	0%	
Strontium	A	mg/L	0.04876	0.04876		0.05	0	0	9.743E-05	0.001	1	98%	90	110	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078368	CCV	ICPMS-6020-W-	CCV		3/9/2022 3:35:44	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Thallium	A	mg/L	0.04859	0.04859		0.05	0	0	4.842E-05	0.001	1	97%	90	110	0%	
Thorium	A	mg/L	0.04892	0.04892		0.05	0	0	3.018E-05	0.001	1	98%	90	110	0%	
Tin	A	mg/L	0.05038	0.05038		0.05	0	0	0.0009928	0.00132	0.1	101%	90	110	0%	
Titanium	A	mg/L	0.04627	0.04627		0.05	0	0	0.0001004	0.001	1	93%	90	110	0%	
Uranium	A	mg/L	0.04823	0.04823		0.05	0	0	2.468E-05	0.0003	1	96%	90	110	0%	
Vanadium	A	mg/L	0.05125	0.05125		0.05	0	0	0.0018612	0.0013	1	102%	90	110	0%	
Zinc	A	mg/L	0.05178	0.05178		0.05	0	0	0.0010089	0.00273	1	104%	90	110	0%	
Iron, Ferrous	C	mg/L	1.315	1.315		0	0	0	0.0021157	0.00119	5	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078369	CCB	ICPMS-6020-W-	CCB		3/9/2022 3:42:00	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	-5.547E-05	-5.547E-05		0	0	0	0.0017836	0.001	1	0%			0%	
Antimony	A	mg/L	0.0002818	0.0002818		0	0	0	6.768E-05	0.001	0.1	0%			0%	
Arsenic	A	mg/L	0.00009676	0.00009676		0	0	0	8.203E-05	0.001	1	0%			0%	
Barium	A	mg/L	-1.418E-06	-1.418E-06		0	0	0	6.762E-05	0.001	1	0%			0%	
Beryllium	A	mg/L	-0.0000529	-0.0000529		0	0	0	8.516E-05	0.001	1	0%			0%	
Boron	A	mg/L	0.002125	0.002125		0	0	0	0.0039526	0.00561	1	0%			0%	
Cadmium	A	mg/L	2.786E-06	2.786E-06		0	0	0	2.308E-05	0.001	1	0%			0%	
Calcium	A	mg/L	0.000461	0.000461		0	0	0	0.2027235	0.02092	50	0%			0%	
Cerium	A	mg/L	-1.84E-06	-1.84E-06		0	0	0	0.0000222	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	6.953E-06	6.953E-06		0	0	0	0.0002538	0.001	1	0%			0%	
Cobalt	A	mg/L	1.835E-07	1.835E-07		0	0	0	2.141E-05	0.001	1	0%			0%	
Copper	A	mg/L	0.0001101	0.0001101		0	0	0	0.0001748	0.001	1	0%			0%	
Iron	A	mg/L	-3.952E-05	-3.952E-05		0	0	0	0.0021157	0.00119	5	0%			0%	
Lanthanum	A	mg/L	-8.833E-08	-8.833E-08		0	0	0	6.805E-05	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	1.248E-06	1.248E-06		0	0	0	3.031E-05	0.001	1	0%			0%	
Magnesium	A	mg/L	0.002581	0.002581		0	0	0	0.0203306	0.00564	50	0%			0%	
Manganese	A	mg/L	-1.033E-05	-1.033E-05		0	0	0	7.309E-05	0.001	1	0%			0%	
Mercury	A	mg/L	6.813E-06	6.813E-06		0	0	0	3.043E-05	0.001	0.002	0%			0%	
Molybdenum	A	mg/L	0.00003011	0.00003011		0	0	0	8.113E-05	0.001	0.1	0%			0%	
Nickel	A	mg/L	-4.534E-07	-4.534E-07		0	0	0	0.0001769	0.001	1	0%			0%	
Potassium	A	mg/L	0.001194	0.001194		0	0	0	0.0215433	0.08139	50	0%			0%	
Selenium	A	mg/L	0.00003015	0.00003015		0	0	0	7.174E-05	0.001	1	0%			0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
15078369	CCB	ICPMS-6020-W-	CCB		3/9/2022 3:42:00	1	R375855		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Silicon	A	mg/L	0.04361	0.04361		0	0	0	0.0033337	0.1	0.4	0%	0	0	0%	
Silver	A	mg/L	-6.552E-08	-6.552E-08		0	0	0	2.644E-05	0.001	0.04	0%			0%	
Sodium	A	mg/L	0.0646	0.0646		0	0	0	0.0451914	0.02171	50	0%			0%	
Strontium	A	mg/L	-1.435E-05	-1.435E-05		0	0	0	9.743E-05	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00008498	0.00008498		0	0	0	4.842E-05	0.001	1	0%	0	0	0%	
Thorium	A	mg/L	0.00003992	0.00003992		0	0	0	3.018E-05	0.001	1	0%	0	0	0%	
Tin	A	mg/L	0.00008456	0.00008456		0	0	0	0.0009928	0.00132	0.1	0%	0	0	0%	
Titanium	A	mg/L	0.00003638	0.00003638		0	0	0	0.0001004	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	2.654E-06	2.654E-06		0	0	0	2.468E-05	0.0003	1	0%	0	0	0%	
Vanadium	A	mg/L	0.002757	0.002757		0	0	0	0.0018612	0.0013	1	0%	0	0	0%	
Zinc	A	mg/L	-1.366E-05	-1.366E-05		0	0	0	0.0010089	0.00273	1	0%	0	0	0%	
Iron, Ferrous	C	mg/L	-3.952E-05	-3.952E-05		0	0	0	0.0021157	0.00119	5	0%	0	0	0%	

Batch Summary Report

Batch Folder: D:\Agilent\ICPMH1\DATA\220308BDoD.b\

 Analysis File: 220308BDoD.batch.bin

 Tune Step: #1 No Gas

 #2 H2

 #3 He

	Rjct	Acq. Date-Time	Data File	Sample Name	Type	Level	Dilution
1		2022-03-08 15:21:05	008BLKV.d	Rinse	BlkVrfy		1.0000
2		2022-03-08 15:27:20	009CALB.d	Cal Blk	CalBlk	1	1.0000
3		2022-03-08 15:34:55	010CAL.S.d	0.025 ppb STD	CalStd	2	1.0000
4		2022-03-08 15:41:36	011CAL.S.d	0.05 ppb STD	CalStd	3	1.0000
5		2022-03-08 15:48:16	012CAL.S.d	0.10 ppb STD	CalStd	4	1.0000
6		2022-03-08 15:54:56	013CAL.S.d	0.5 ppb STD	CalStd	5	1.0000
7		2022-03-08 16:01:37	014CAL.S.d	1 ppb STD	CalStd	6	1.0000
8		2022-03-08 16:08:18	015CAL.S.d	10 ppb STD	CalStd	7	1.0000
9		2022-03-08 16:14:58	016CAL.S.d	50 ppb STD	CalStd	8	1.0000
10		2022-03-08 16:21:35	017CAL.S.d	100 ppb STD	CalStd	9	1.0000
11		2022-03-08 16:28:08	018CAL.S.d	1000 ppb STD	CalStd	10	1.0000
12		2022-03-08 16:34:39	019CAL.S.d	100 ppb Br STD	CalStd	11	1.0000
13		2022-03-08 16:41:05	020BLKV.d	Rinse	BlkVrfy		1.0000
14		2022-03-08 16:47:22	021_QC1.d	QCS	QC1		1.0000
15		2022-03-08 16:53:37	022MBLK.d	LRB	MBLK		1.0000
16		2022-03-08 16:59:54	023_LFB.d	LFB	LFB		1.0300
17		2022-03-08 17:06:09	024_CCV.d	CCV	CCV		1.0000
18		2022-03-08 17:12:26	025_CCB.d	CCB	CCB		1.0000
19		2022-03-08 17:18:42	026MBLK.d	LRB	MBLK		1.0000
20		2022-03-08 17:24:59	027_LFB.d	LFB	LFB		1.0300
21		2022-03-08 17:31:16	028ICSA.d	ICSA	ICSA		1.0000
22		2022-03-08 17:37:35	029ICSAB.d	ICSAB	ICSAB		1.0000
23		2022-03-08 17:43:53	030BLKV.d	Rinse	BlkVrfy		1.0000
24		2022-03-08 17:50:07	031BLKV.d	Rinse	BlkVrfy		1.0000
25		2022-03-08 17:56:22	032_CCV.d	CCV	CCV		1.0000

Batch Summary Report

	Rjct	Acq. Date-Time	Data File	Sample Name	Type	Level	Dilution
26		2022-03-08 18:02:37	033 CCB.d	CCB	CCB		1.0000
27		2022-03-09 08:05:18	034BLKV.d	Rinse	BlkVrfy		1.0000
28		2022-03-09 08:11:33	035ARef.d	MB-164289	AllRef		1.0000
29		2022-03-09 08:17:48	036LCS4.d	LCS4-164289	LCS4		1.0000
30		2022-03-09 08:24:03	037BLKV.d	Rinse	BlkVrfy		1.0000
31		2022-03-09 08:30:18	038ARef.d	B22030244-001A	AllRef		1.0000
32		2022-03-09 08:36:33	039SMPL.d	B22030244-001ADIL	Sample		5.0000
33		2022-03-09 08:42:49	040MS.d	B22030244-001AMS	MS		1.0300
34		2022-03-09 08:49:05	041MSD.d	B22030244-001AMSD	MSD		1.0300
35		2022-03-09 08:55:21	042BLKV.d	Rinse	BlkVrfy		1.0000
36		2022-03-09 09:01:36	043ARef.d	B22030244-001B	AllRef		1.0000
37		2022-03-09 09:07:51	044MS.d	B22030244-001BDIL	MS		5.0000
38		2022-03-09 09:14:05	045MSD.d	B22030244-001BPDS1	MSD		1.0300
39		2022-03-09 09:20:21	046MS4.d	B22030244-001BMS4	MS4		1.0000
40		2022-03-09 09:26:37	047 CCV.d	CCV	CCV		1.0000
41		2022-03-09 09:32:53	048 CCB.d	CCB	CCB		1.0000
42		2022-03-09 09:39:09	049MSD4.d	B22030244-001BMSD4	MSD4		1.0000
43		2022-03-09 09:45:24	050BLKV.d	Rinse	BlkVrfy		1.0000
44		2022-03-09 09:51:39	051SMPL.d	B22030244-007A	Sample		1.0000
45		2022-03-09 09:57:54	052SMPL.d	B22030244-007B	Sample		1.0000
46		2022-03-09 10:04:10	053SMPL.d	B22030244-012A	Sample		1.0000
47		2022-03-09 10:10:24	054SMPL.d	B22030244-012B	Sample		1.0000
48		2022-03-09 10:16:41	055SMPL.d	B22030244-017A	Sample		1.0000
49		2022-03-09 10:22:56	056SMPL.d	B22030244-017B	Sample		1.0000
50		2022-03-09 10:29:12	057SMPL.d	B22030244-022A	Sample		1.0000
51		2022-03-09 10:35:28	058SMPL.d	B22030244-022B	Sample		1.0000
52		2022-03-09 10:41:44	059SMPL.d	B22030244-027A	Sample		1.0000
53		2022-03-09 10:47:59	060 CCV.d	CCV	CCV		1.0000
54		2022-03-09 10:54:14	061 CCB.d	CCB	CCB		1.0000
55		2022-03-09 11:00:30	062SMPL.d	B22030244-027B	Sample		1.0000
56		2022-03-09 11:06:45	063SMPL.d	B22030244-032A	Sample		1.0000
57		2022-03-09 11:13:01	064SMPL.d	B22030244-032B	Sample		1.0000

Batch Summary Report

	Rjct	Acq. Date-Time	Data File	Sample Name	Type	Level	Dilution
58		2022-03-09 11:19:18	065SMPL.d	B22030244-037A	Sample		1.0000
59		2022-03-09 11:25:32	066SMPL.d	B22030244-037B	Sample		1.0000
60		2022-03-09 11:31:46	067SMPL.d	B22030244-042A	Sample		1.0000
61		2022-03-09 11:38:02	068SMPL.d	B22030244-042B	Sample		1.0000
62		2022-03-09 11:44:17	069SMPL.d	B22030244-047A	Sample		1.0000
63		2022-03-09 11:50:33	070SMPL.d	B22030244-047B	Sample		1.0000
64		2022-03-09 11:56:49	071ARef.d	B22030433-001A	AllRef		1.0000
65		2022-03-09 12:03:06	072_CCV.d	CCV	CCV		1.0000
66		2022-03-09 12:09:22	073_CCB.d	CCB	CCB		1.0000
67		2022-03-09 12:15:38	074SMPL.d	B22030433-001ADIL	Sample		5.0000
68		2022-03-09 12:21:53	075MS.d	B22030433-001AMS	MS		1.0300
69		2022-03-09 12:28:08	076MSD.d	B22030433-001AMSD	MSD		1.0300
70		2022-03-09 12:34:23	077BLKV.d	Rinse	BlkVrfy		1.0000
71		2022-03-09 12:40:38	078ARef.d	B22030433-001B	AllRef		1.0000
72		2022-03-09 12:46:53	079MS.d	B22030433-001BDIL	MS		5.0000
73		2022-03-09 12:53:08	080MSD.d	B22030433-001BPDS1	MSD		1.0300
74		2022-03-09 12:59:23	081MS4.d	B22030433-001BMS4	MS4		1.0000
75		2022-03-09 13:05:40	082MSD4.d	B22030433-001BMSD4	MSD4		1.0000
76		2022-03-09 13:11:55	083BLKV.d	Rinse	BlkVrfy		1.0000
77		2022-03-09 13:18:09	084SMPL.d	B22030433-007A	Sample		1.0000
78		2022-03-09 13:24:25	085SMPL.d	B22030433-007B	Sample		1.0000
79		2022-03-09 13:30:40	086_CCV.d	CCV	CCV		1.0000
80		2022-03-09 13:36:55	087_CCB.d	CCB	CCB		1.0000
81		2022-03-09 13:43:11	088SMPL.d	B22030433-012A	Sample		1.0000
82		2022-03-09 13:49:25	089SMPL.d	B22030433-012B	Sample		1.0000
83		2022-03-09 13:55:40	090SMPL.d	B22030433-017A	Sample		1.0000
84		2022-03-09 14:01:55	091SMPL.d	B22030433-017B	Sample		1.0000
85		2022-03-09 14:08:11	092SMPL.d	B22030433-023A	Sample		1.0000
86		2022-03-09 14:14:27	093SMPL.d	B22030433-023B	Sample		1.0000
87		2022-03-09 14:20:42	094SMPL.d	B22030433-038A	Sample		1.0000
88		2022-03-09 14:26:58	095SMPL.d	B22030433-038B	Sample		1.0000
89		2022-03-09 14:33:13	096SMPL.d	B22030433-043A	Sample		1.0000

Batch Summary Report

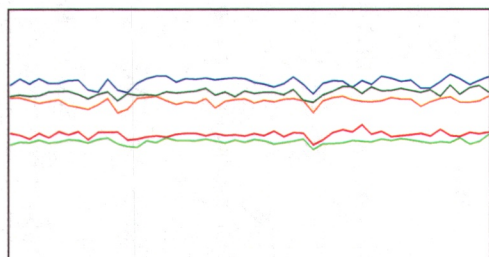
	Rjct	Acq. Date-Time	Data File	Sample Name	Type	Level	Dilution
90		2022-03-09 14:39:28	097SMPL.d	B22030433-043B	Sample		1.0000
91		2022-03-09 14:45:42	098_CCV.d	CCV	CCV		1.0000
92		2022-03-09 14:51:58	099_CCB.d	CCB	CCB		1.0000
93		2022-03-09 14:58:14	100SMPL.d	B22030433-053A	Sample		1.0000
94		2022-03-09 15:04:29	101SMPL.d	B22030433-053B	Sample		1.0000
95		2022-03-09 15:10:44	102SMPL.d	B22030433-058A	Sample		1.0000
96		2022-03-09 15:16:59	103SMPL.d	B22030433-058B	Sample		1.0000
97		2022-03-09 15:23:15	104SMPL.d	B22030433-064A	Sample		1.0000
98		2022-03-09 15:29:30	105SMPL.d	B22030433-064B	Sample		1.0000
99		2022-03-09 15:35:44	106_CCV.d	CCV	CCV		1.0000
100		2022-03-09 15:42:00	107_CCB.d	CCB	CCB		1.0000

Tune Report

Operator Name elim
 Acq/Data Batch D:\Agilent\ICPMH\1\DATA\220308BDoD.b
 Acq. Date-Time 2022-03-08 11:59:28
 Report Comment ICPMS207-B JPV
 Instrument Name G8403A JP17281923

[No Gas]

Sensitivity



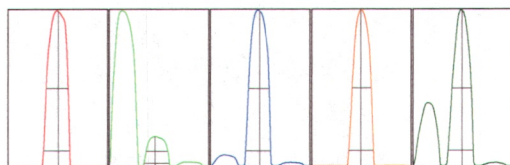
Mass	Range	Count	RSD%	Background
9	500000	251160	2.581	2.000
24	100000	47342	2.125	1.100
59	100000	71057	2.588	1.000
115	100000	63344	2.511	1.100
208	50000	33366	2.250	2.700

Sampling Period [sec] 0.514
 Integration Time [sec] 0.1

Oxide/Doubly Charged Ratio

Oxide 156 / 140 0.698 %
 Doubly Charged 70 / 140 0.751 %

Resolution/Axis



Mass	Peak Height	Axis	W-50%	W-10%
9	250523.45	9.05	0.67	0.803
24	48512.46	23.90	0.66	0.776
59	70785.35	59.00	0.63	0.764
115	63586.93	115.00	0.58	0.745
208	33352.92	208.00	0.58	0.758

Integration Time [sec] 0.1
 Acquisition Time [sec] 37.4
 Y Axis Linear

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas	0.91 L/min	Dilution Gas	0.18 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.00 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Omega Lens	10.9 V	Deflect	15.0 V
Extract 2	-175.0 V	Cell Entrance	-30 V	Plate Bias	-35 V

Tune Report

Omega Bias -70 V Cell Exit -50 V

Cell Parameters

Use Gas No 3rd Gas Flow --- Energy Discrimination 5.0 V
 He Flow 0.0 mL/min OctP Bias -8.0 V
 H2 Flow 0.0 mL/min OctP RF 180 V

QP Parameters

Mass Gain 125 Axis Gain 0.9990 QP Bias -3.0 V
 Mass Offset 125 Axis Offset 0.10

Hardware Settings

Torch

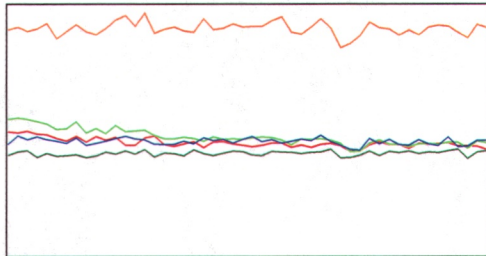
Torch H -0.7 mm Torch V -0.1 mm

EM

Discriminator 5.0 mV Analog HV 2360 V Pulse HV 1809 V

[H2]

Sensitivity



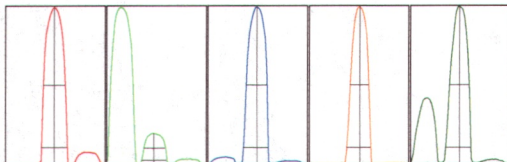
Mass	Range	Count	RSD%	Background
9	50000	22452	4.313	0.300
24	20000	9434	7.109	0.400
59	50000	22664	3.038	0.100
115	50000	45459	2.885	0.000
208	50000	20314	2.380	0.000

Sampling Period [sec] 0.514
 Integration Time [sec] 0.1

Oxide/Doubly Charged Ratio

Oxide ---
 Doubly Charged 70 / 140 0.699 %

Resolution/Axis



Mass	Peak Height	Axis	W-50%	W-10%
9	21406.55	9.00	0.66	0.776
24	8889.06	23.95	0.66	0.774
59	22269.86	59.00	0.63	0.758
115	44419.92	115.05	0.57	0.734
208	20051.12	208.00	0.60	0.758

Integration Time [sec] 0.1
 Acquisition Time [sec] 37.4
 Y Axis Linear

Tune Parameters

Plasma Parameters

Tune Report

Plasma Mode	---	Nebulizer Gas	0.91 L/min	Dilution Gas	0.18 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.00 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Omega Lens	11.2 V	Deflect	3.4 V
Extract 2	-170.0 V	Cell Entrance	-30 V	Plate Bias	-80 V
Omega Bias	-75 V	Cell Exit	-50 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	0.0 mL/min	OctP Bias	-18.0 V		
H2 Flow	3.8 mL/min	OctP RF	180 V		

QP Parameters

Mass Gain	125	Axis Gain	0.9990	QP Bias	-13.0 V
Mass Offset	125	Axis Offset	0.10		

Hardware Settings

Torch

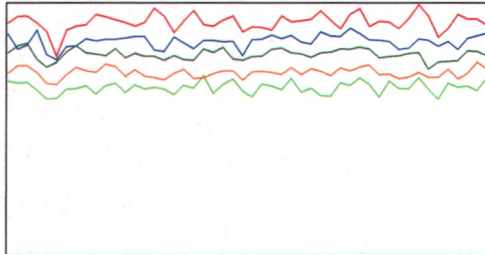
Torch H	-0.7 mm	Torch V	-0.1 mm
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EM

Discriminator	5.0 mV	Analog HV	2360 V	Pulse HV	1809 V
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[He]

Sensitivity



Mass	Range	Count	RSD%	Background
9	2000	1860	3.639	0.600
24	2000	1331	3.648	0.300
59	20000	17042	3.140	0.300
115	20000	14524	2.794	0.200
208	20000	15988	2.767	0.300

Sampling Period [sec] 0.514

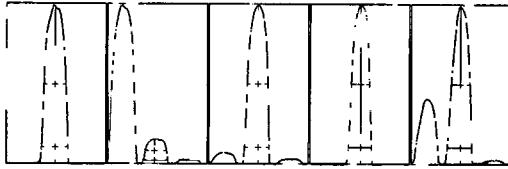
Integration Time [sec] 0.1

Oxide/Doubly Charged Ratio

Oxide	---
Doubly Charged	70 / 140 0.808 %

Resolution/Axis

Tune Report



Mass	Peak Height	Axis	W-50%	W-10%
9	1879.97	9.00	0.66	0.802
24	1338.38	23.95	0.66	0.760
59	16811.98	59.00	0.63	0.752
115	14275.21	115.05	0.56	0.714
208	15833.59	208.00	0.56	0.735

Integration Time [sec] 0.1
 Acquisition Time [sec] 37.4
 Y Axis Linear

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas	0.91 L/min	Dilution Gas	0.18 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.00 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Omega Lens	11.3 V	Deflect	0.2 V
Extract 2	-175.0 V	Cell Entrance	-30 V	Plate Bias	-80 V
Omega Bias	-65 V	Cell Exit	-50 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	4.0 mL/min	OctP Bias	-18.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	125	Axis Gain	0.9990	QP Bias	-13.0 V
Mass Offset	125	Axis Offset	0.10		

Hardware Settings

Torch

Torch H	-0.7 mm	Torch V	-0.1 mm
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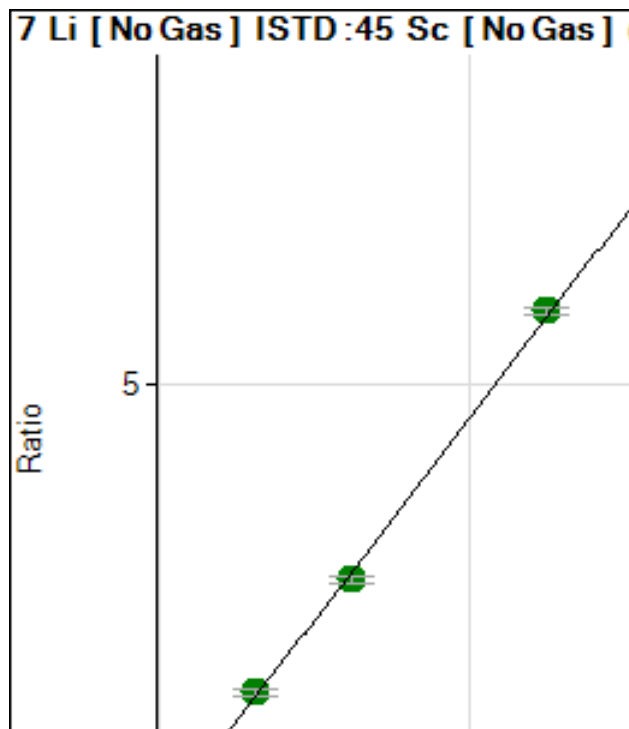
EM

Discriminator	5.0 mV	Analog HV	2360 V	Pulse HV	1809 V
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Calibration for 019CAL.S.d

Batch Folder: D:\Agilent\ICPMH\1\DATA\220308BDoD.b\
 Analysis File: 220308BDoD.batch.bin
 DA Date-Time: 2022-03-08 16:37:49
 Calibration Title:
 Calibration Method: External Calibration
 VIS Interpolation Fit:

Level	Standard Data File	Sample Name	Acq. Date-Time
1	009CALB.d	Cal Blk	2022-03-08 15:27:20
2	010CAL.S.d	0.025 ppb STD	2022-03-08 15:34:55
3	011CAL.S.d	0.05 ppb STD	2022-03-08 15:41:36
4	012CAL.S.d	0.10 ppb STD	2022-03-08 15:48:16
5	013CAL.S.d	0.5 ppb STD	2022-03-08 15:54:56
6	014CAL.S.d	1 ppb STD	2022-03-08 16:01:37
7	015CAL.S.d	10 ppb STD	2022-03-08 16:08:18
8	016CAL.S.d	50 ppb STD	2022-03-08 16:14:58
9	017CAL.S.d	100 ppb STD	2022-03-08 16:21:35
10	018CAL.S.d	1000 ppb STD	2022-03-08 16:28:08
11	019CAL.S.d	100 ppb Br STD	2022-03-08 16:34:39



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	10202.18	0.002		2.5	
2	<input type="checkbox"/>	0.313	0.237	12835.89	0.002		0.7	-24
3	<input type="checkbox"/>	0.625	0.562	16794.63	0.003		9.4	-10
4	<input type="checkbox"/>	1.250	1.318	24765.34	0.005		0.9	5.4
5	<input type="checkbox"/>	6.250	6.340	74936.34	0.016		17.	1.4
6	<input type="checkbox"/>	12.500	13.430	151843.26	0.033		7.8	7.4
7	<input type="checkbox"/>	125.00	129.21	1367001.0	0.301		3.1	3.4
8	<input type="checkbox"/>	625.00	635.14	6574121.5	1.472		5.9	1.6
9	<input type="checkbox"/>	1250.0	1193.9	13295148.	2.766		3.1	-4.
10	<input type="checkbox"/>	2500.0	2525.2	27409267.	5.848		1.4	1.0
11	<input type="checkbox"/>			39977.55	0.008		1.8	

$y = 0.0023 * x + 0.0022$

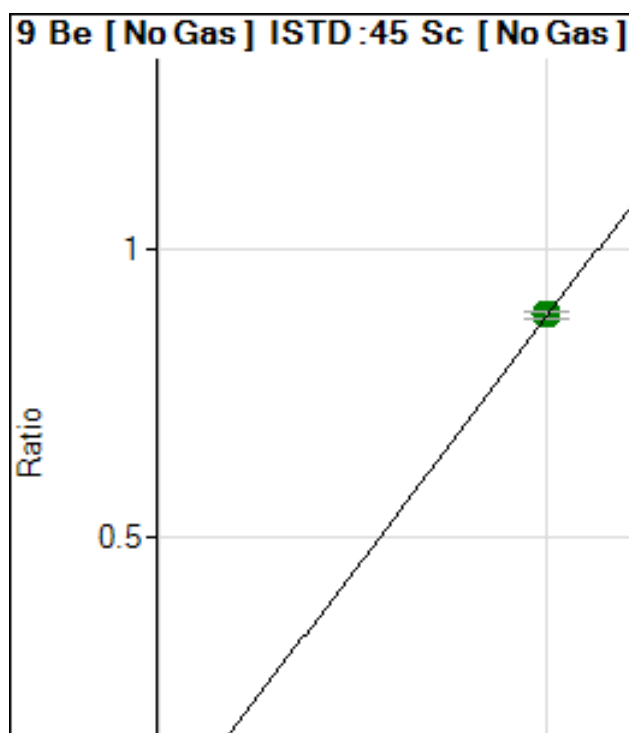
$R = 0.9997$

DL = 0.07096 ug/l

BEC = 0.9363 ug/l

Weight: 1/y

Min Conc: <None>

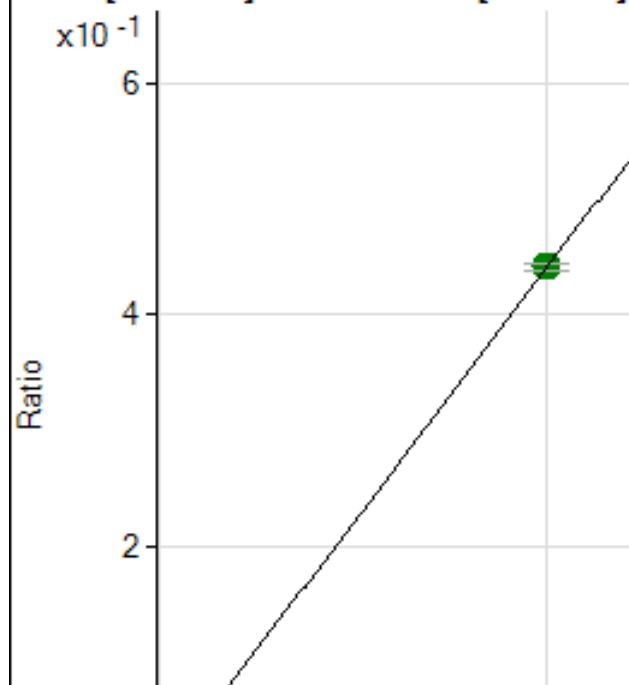


	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	307.94	0.000		3.9	
2	<input type="checkbox"/>	0.025	0.027	420.92	0.000		7.7	6.8
3	<input type="checkbox"/>	0.050	0.050	532.23	0.000		11.	0.6
4	<input type="checkbox"/>	0.100	0.106	758.87	0.000		1.3	6.5
5	<input type="checkbox"/>	0.500	0.483	2201.39	0.000		15.	-3.
6	<input type="checkbox"/>	1.000	1.070	4632.45	0.001		7.8	7.0
7	<input type="checkbox"/>	10.000	10.254	41567.96	0.009		4.0	2.5
8	<input type="checkbox"/>	50.000	50.555	200652.53	0.044		5.0	1.1
9	<input type="checkbox"/>	100.00	95.204	406390.85	0.084		3.0	-4.
10	<input type="checkbox"/>	1000.0	1000.4	4161053.2	0.887		1.3	0.0
11	<input type="checkbox"/>			454.92	0.000		4.4	

$y = 8.8735E-004 * x + 6.5420E-005$

$R = 1.0000$

11 B [No Gas] ISTD:45 Sc [No Gas]



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	3423.10	0.000		1.2	
2	<input type="checkbox"/>			3250.99	0.000		1.7	
3	<input type="checkbox"/>	0.050	-0.111	3285.01	0.000		8.2	-32
4	<input type="checkbox"/>	0.100	-0.302	2819.40	0.000		5.0	-40
5	<input type="checkbox"/>	0.500	0.152	3529.16	0.000		18.	-69
6	<input type="checkbox"/>	1.000	0.778	4888.09	0.001		6.7	-22
7	<input type="checkbox"/>	10.000	10.216	23732.05	0.005		3.7	2.2
8	<input type="checkbox"/>	50.000	52.843	107347.27	0.024		3.8	5.7
9	<input type="checkbox"/>	100.00	96.951	209000.57	0.043		2.7	-3.
10	<input type="checkbox"/>	1000.0	1000.1	2070237.5	0.441		1.4	0.0
11	<input type="checkbox"/>			31973.06	0.006		3.8	

$y = 4.4091E-004 * x + 7.2697E-004$

R = 1.0000

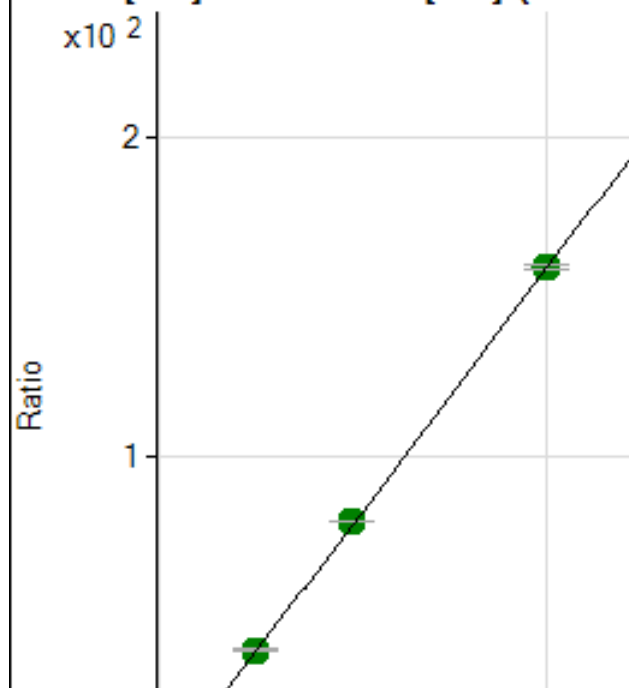
DL = 0.05959 ug/l

BEC = 1.649 ug/l

Weight: 1/y

Min Conc: <None>

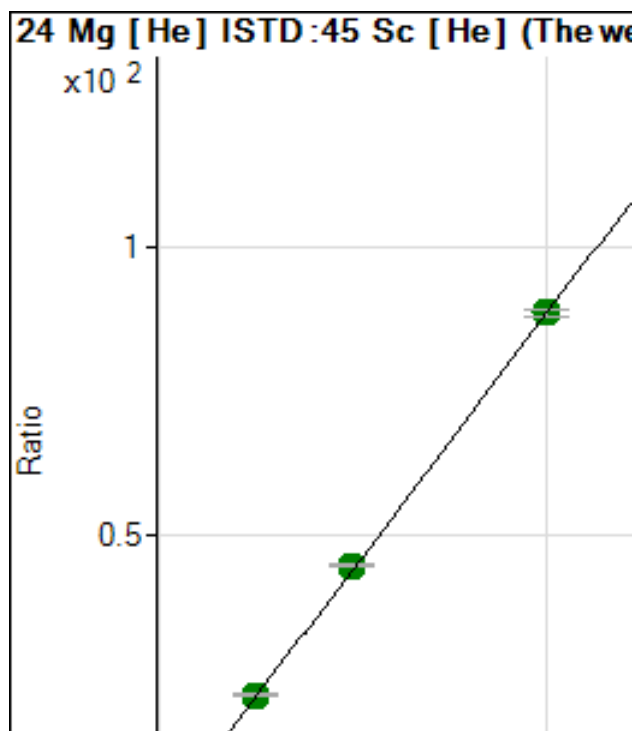
23 Na [He] ISTD:45 Sc [He] (The we



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	36899.53	0.128		2.1	
2	<input type="checkbox"/>	6.250	7.476	42520.93	0.152		1.2	19.
3	<input type="checkbox"/>	12.500	16.017	50213.38	0.179		1.9	28.
4	<input type="checkbox"/>	25.000	32.443	64787.60	0.231		1.5	29.
5	<input type="checkbox"/>	125.00	131.62	152856.03	0.547		1.2	5.3
6	<input type="checkbox"/>	250.00	304.78	283410.21	1.099		13.	21.
7	<input type="checkbox"/>	2500.0	2626.9	2377672.6	8.494		1.9	5.1
8	<input type="checkbox"/>	12500.	12500.	11250282.	39.93		0.6	0.0
9	<input type="checkbox"/>	25000.	25147.	22792680.	80.21		0.5	0.6
10	<input type="checkbox"/>	50000.	49919.	44726751.	159.1		1.0	-0.
11	<input type="checkbox"/>			48022.97	0.173		0.5	

$y = 0.0032 * x + 0.1284$

R = 1.0000



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	505.68	0.001		20.	
2	<input type="checkbox"/>	6.250	6.708	3812.93	0.013		4.1	7.3
3	<input type="checkbox"/>	12.500	15.631	8249.29	0.029		3.2	25.
4	<input type="checkbox"/>	25.000	30.553	15630.52	0.055		7.5	22.
5	<input type="checkbox"/>	125.00	132.68	66150.42	0.237		1.1	6.1
6	<input type="checkbox"/>	250.00	308.19	141440.16	0.548		12.	23.
7	<input type="checkbox"/>	2500.0	2637.3	1309404.0	4.677		0.0	5.5
8	<input type="checkbox"/>	12500.	12529.	6257296.5	22.21		1.4	0.2
9	<input type="checkbox"/>	25000.	25154.	12670902.	44.59		0.7	0.6
10	<input type="checkbox"/>	50000.	49908.	24871961.	88.47		1.4	-0.
11	<input type="checkbox"/>			465.75	0.001		7.1	

$y = 0.0018 * x + 0.0018$

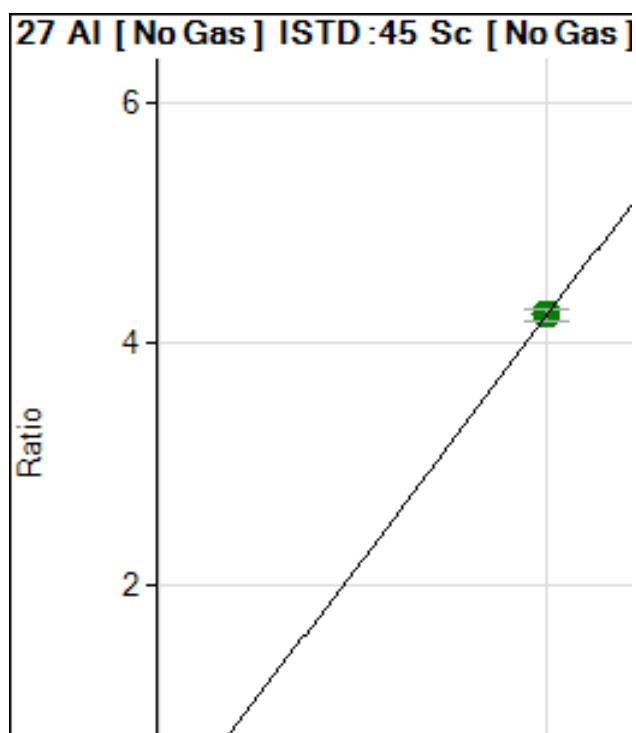
R = 1.0000

DL = 0.6205 ug/l

BEC = 0.9898 ug/l

Weight: 1/y

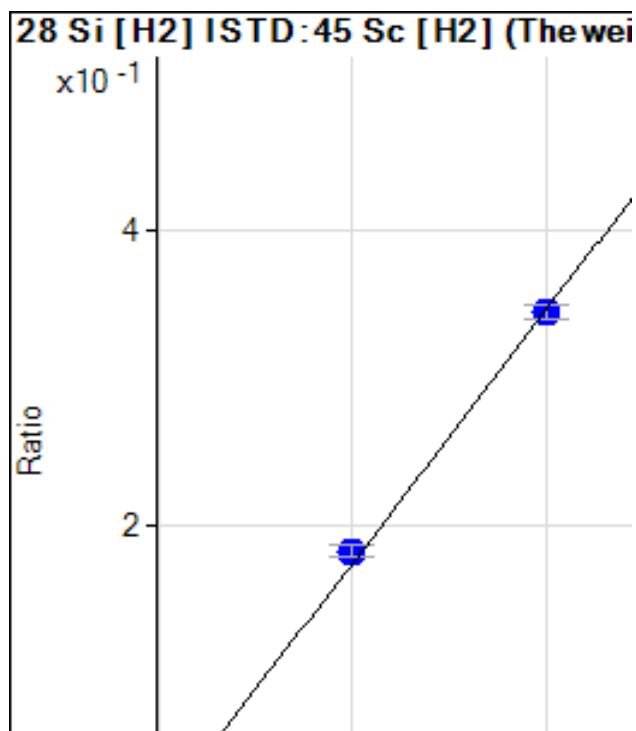
Min Conc: <None>



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	4202.84	0.000		2.9	
2	<input type="checkbox"/>			8908.25	0.001		1.1	
3	<input type="checkbox"/>	0.050	0.206	8562.48	0.001		7.1	31
4	<input type="checkbox"/>	0.100	0.317	10619.35	0.002		3.3	21
5	<input type="checkbox"/>	0.500	0.796	19008.78	0.004		15.	59.
6	<input type="checkbox"/>	1.000	1.340	30011.13	0.006		6.7	34.
7	<input type="checkbox"/>	10.000	15.706	301947.50	0.067		52.	57.
8	<input type="checkbox"/>	50.000	53.707	1020191.4	0.228		5.3	7.4
9	<input type="checkbox"/>	100.00	97.003	1979803.1	0.411		3.5	-3.
10	<input type="checkbox"/>	1000.0	1000.0	19862376.	4.238		2.1	0.0
11	<input type="checkbox"/>			8063.32	0.001		6.4	

$y = 0.0042 * x + 8.9248E-004$

R = 1.0000



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	12381.73	0.006		4.4	
2	<input type="checkbox"/>			11832.10	0.006		3.3	
3	<input type="checkbox"/>	0.200	0.289	12169.17	0.006		6.0	44.
4	<input type="checkbox"/>	0.400	-0.562	11776.31	0.006		10.	-24
5	<input type="checkbox"/>	2.000	1.420	15047.15	0.007		6.8	-29
6	<input type="checkbox"/>	4.000	3.272	18002.04	0.009		1.6	-18
7	<input type="checkbox"/>	40.000	39.644	78097.19	0.040		2.0	-0.
8	<input type="checkbox"/>	200.00	207.84	356320.15	0.183		3.6	3.9
9	<input type="checkbox"/>	400.00	396.12	661308.21	0.343		2.8	-1.
10	<input type="checkbox"/>			14411.38	0.007		2.6	
11	<input type="checkbox"/>			12573.68	0.006		3.1	

$y = 8.5154E-004 * x + 0.0065$

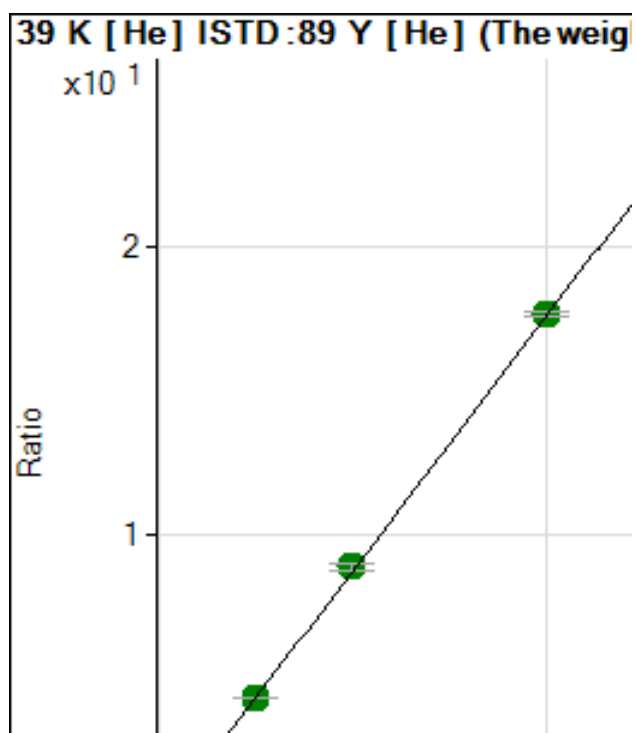
R = 0.9997

DL = 1.02 ug/l

BEC = 7.644 ug/l

Weight: 1/y

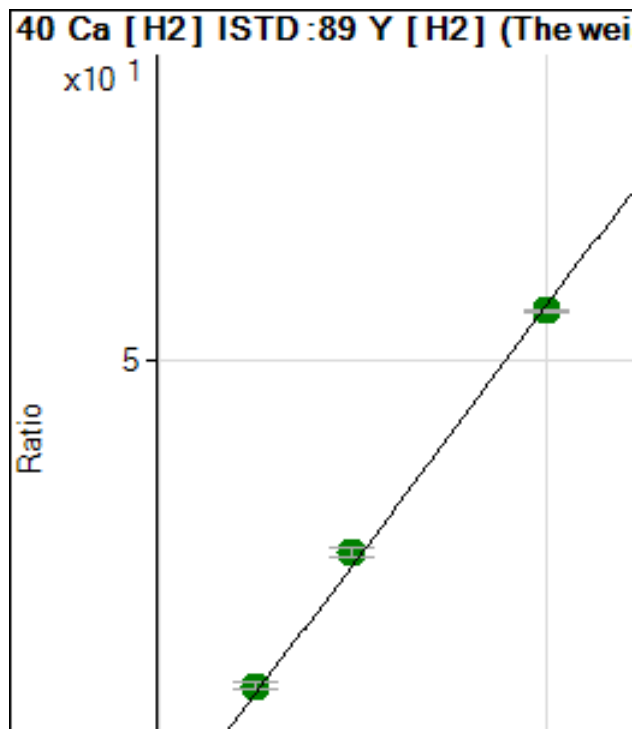
Min Conc: <None>



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	66404.02	0.047		3.5	
2	<input type="checkbox"/>	6.250	6.354	68762.31	0.049		0.5	1.7
3	<input type="checkbox"/>	12.500	11.245	71107.62	0.051		1.4	-10
4	<input type="checkbox"/>	25.000	24.835	78864.24	0.056		0.7	-0.
5	<input type="checkbox"/>	125.00	128.84	128294.70	0.092		0.6	3.1
6	<input type="checkbox"/>	250.00	308.33	197889.60	0.155		15.	23.
7	<input type="checkbox"/>	2500.0	2631.7	1348674.3	0.973		0.9	5.3
8	<input type="checkbox"/>	12500.	12352.	6206593.5	4.392		1.5	-1.
9	<input type="checkbox"/>	25000.	25178.	12468551.	8.903		2.1	0.7
10	<input type="checkbox"/>	50000.	49940.	24338962.	17.61		1.1	-0.
11	<input type="checkbox"/>			339990.60	0.245		3.4	

$y = 3.5175E-004 * x + 0.0473$

R = 1.0000



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	56069.87	0.010		0.8	
2	<input type="checkbox"/>	6.250	8.162	110802.28	0.019		1.8	30.
3	<input type="checkbox"/>	12.500	18.395	163056.19	0.030		6.4	47.
4	<input type="checkbox"/>	25.000	33.959	273332.66	0.048		3.7	35.
5	<input type="checkbox"/>	125.00	135.28	937844.89	0.162		5.4	8.2
6	<input type="checkbox"/>	250.00	285.79	1877358.6	0.331		4.9	14.
7	<input type="checkbox"/>	2500.0	2708.4	17239621.	3.056		5.1	8.3
8	<input type="checkbox"/>	12500.	13102.	81900802.	14.74		4.1	4.8
9	<input type="checkbox"/>	25000.	25967.	16134587	29.21		3.4	3.9
10	<input type="checkbox"/>	50000.	49355.	31517648	55.52		0.5	-1.
11	<input type="checkbox"/>			64921.26	0.011		2.0	

$y = 0.0011 * x + 0.0100$

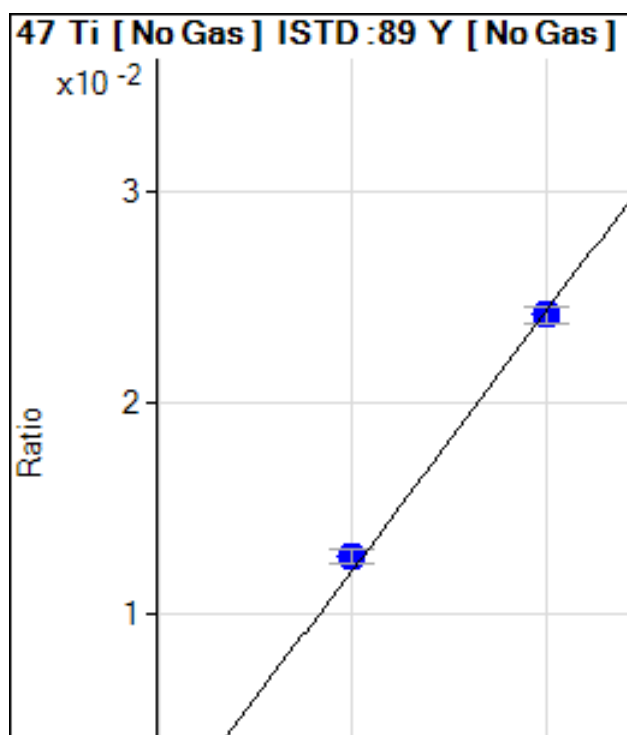
$R = 0.9997$

DL = 0.2112 ug/l

BEC = 8.88 ug/l

Weight: 1/y

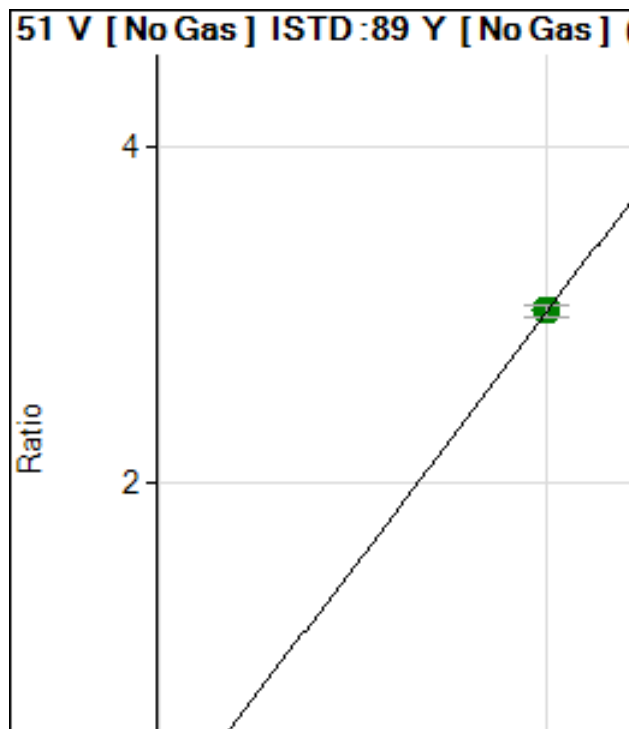
Min Conc: <None>



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	171.84	0.000		17.	
2	<input type="checkbox"/>	0.025	0.122	443.79	0.000		9.6	38
3	<input type="checkbox"/>	0.050	0.136	478.83	0.000		17.	17
4	<input type="checkbox"/>	0.100	0.206	627.31	0.000		1.9	10
5	<input type="checkbox"/>	0.500	0.664	1568.34	0.000		10.	32.
6	<input type="checkbox"/>	1.000	1.239	2753.03	0.000		10.	23.
7	<input type="checkbox"/>	10.000	10.574	22467.95	0.002		3.8	5.7
8	<input type="checkbox"/>	50.000	51.973	108808.73	0.012		5.0	3.9
9	<input type="checkbox"/>	100.00	98.953	215161.42	0.024		3.5	-1.
10	<input type="checkbox"/>			9591.11	0.001		2.9	
11	<input type="checkbox"/>			410.42	0.000		18.	

$y = 2.4374E-004 * x + 1.9519E-005$

$R = 0.9998$



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	-11426.83	-0.00		-22	
2	<input type="checkbox"/>	0.025	0.303	-3446.34	-0.00		-20	11
3	<input type="checkbox"/>	0.050	0.540	2767.99	0.000		20	97
4	<input type="checkbox"/>	0.100	0.075	-9640.44	-0.00		-82	-25
5	<input type="checkbox"/>	0.500	0.590	5127.12	0.000		26	18.
6	<input type="checkbox"/>	1.000	1.054	16759.24	0.001		56.	5.4
7	<input type="checkbox"/>	10.000	11.877	299894.20	0.034		2.9	18.
8	<input type="checkbox"/>	50.000	50.429	1297135.7	0.151		5.3	0.9
9	<input type="checkbox"/>	100.00	95.344	2560121.1	0.287		3.6	-4.
10	<input type="checkbox"/>	1000.0	1000.4	26598514.	3.025		2.3	0.0
11	<input type="checkbox"/>			-7172.63	-0.00		-19	

$y = 0.0030 * x - 0.0013$

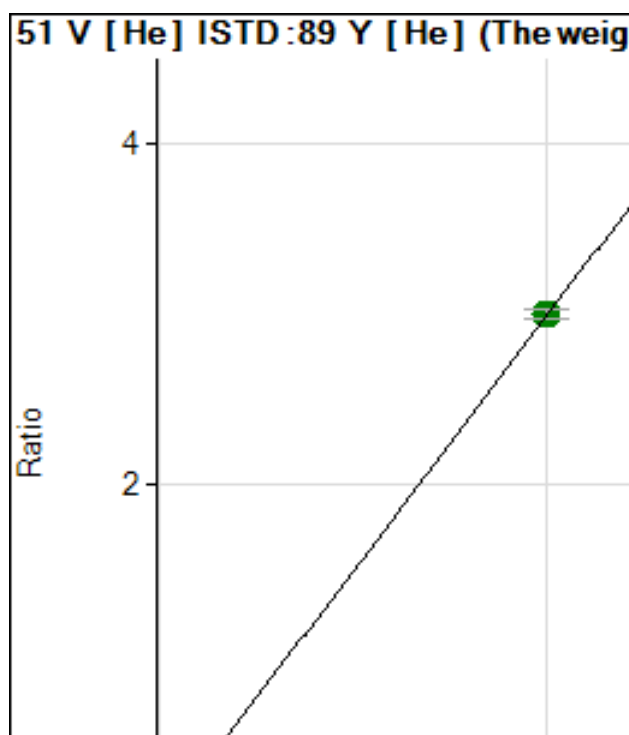
R = 1.0000

DL = 0.2944 ug/l

BEC = -0.429 ug/l

Weight: 1/y

Min Conc: <None>

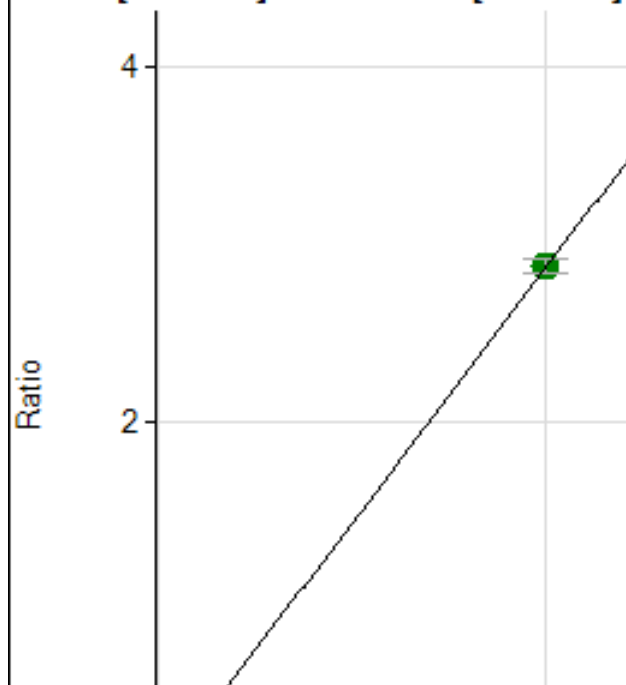


	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	5019.77	0.003		4.5	
2	<input type="checkbox"/>	0.025	0.043	5140.94	0.003		2.5	70.
3	<input type="checkbox"/>	0.050	0.079	5287.64	0.003		2.4	57.
4	<input type="checkbox"/>	0.100	-0.007	5006.44	0.003		2.3	-10
5	<input type="checkbox"/>	0.500	0.477	6928.33	0.005		1.5	-4.
6	<input type="checkbox"/>	1.000	1.165	8990.57	0.007		13.	16.
7	<input type="checkbox"/>	10.000	10.147	47018.08	0.033		0.5	1.5
8	<input type="checkbox"/>	50.000	49.847	215720.15	0.152		1.0	-0.
9	<input type="checkbox"/>	100.00	100.69	426742.61	0.304		1.7	0.7
10	<input type="checkbox"/>	1000.0	999.93	4136788.5	2.994		1.8	0.0
11	<input type="checkbox"/>			3744.94	0.002		4.8	

$y = 0.0030 * x + 0.0036$

R = 1.0000

52 Cr [No Gas] ISTD :89 Y [No Gas]



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	37169.69	0.004		0.8	
2	<input type="checkbox"/>	0.025	0.041	39197.53	0.004		1.8	65.
3	<input type="checkbox"/>	0.050	0.077	40488.72	0.004		8.0	54.
4	<input type="checkbox"/>	0.100	0.083	40124.93	0.004		1.9	-16
5	<input type="checkbox"/>	0.500	0.578	50349.32	0.005		14.	15.
6	<input type="checkbox"/>	1.000	1.199	65615.42	0.007		10.	19.
7	<input type="checkbox"/>	10.000	10.857	306073.19	0.035		3.5	8.6
8	<input type="checkbox"/>	50.000	52.929	1338978.1	0.156		4.2	5.9
9	<input type="checkbox"/>	100.00	98.498	2556926.5	0.286		3.4	-1.
10	<input type="checkbox"/>	1000.0	999.99	25261485.	2.873		2.7	0.0
11	<input type="checkbox"/>			32861.33	0.003		2.3	

$y = 0.0029 * x + 0.0042$

R = 1.0000

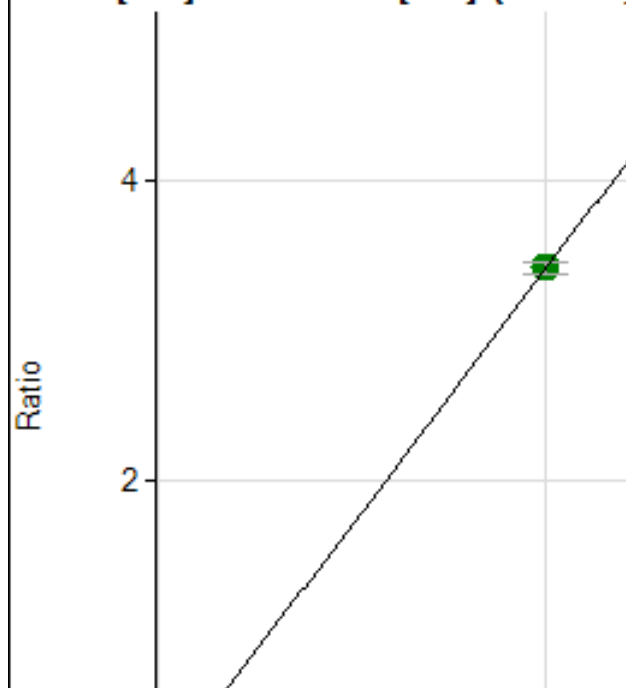
DL = 0.03661 ug/l

BEC = 1.472 ug/l

Weight: 1/y

Min Conc: <None>

52 Cr [He] ISTD :89 Y [He] (The wei

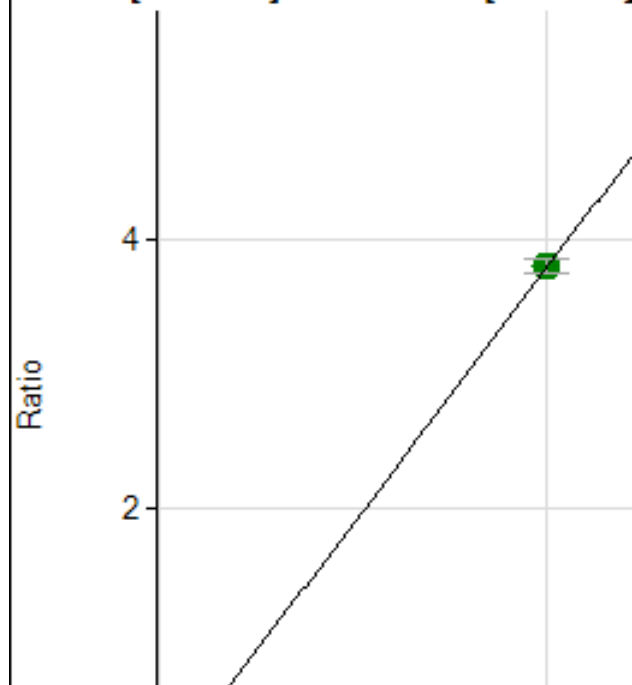


	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	333.34	0.000		7.4	
2	<input type="checkbox"/>	0.025	0.036	502.23	0.000		8.0	45.
3	<input type="checkbox"/>	0.050	0.066	642.24	0.000		3.9	31.
4	<input type="checkbox"/>	0.100	0.114	881.14	0.000		0.6	13.
5	<input type="checkbox"/>	0.500	0.488	2639.15	0.001		1.0	-2.
6	<input type="checkbox"/>	1.000	1.200	5513.29	0.004		16.	20.
7	<input type="checkbox"/>	10.000	10.410	49673.47	0.035		1.9	4.1
8	<input type="checkbox"/>	50.000	49.686	240454.23	0.170		0.8	-0.
9	<input type="checkbox"/>	100.00	99.757	478068.29	0.341		2.3	-0.
10	<input type="checkbox"/>	1000.0	1000.0	4725254.7	3.420		2.1	0.0
11	<input type="checkbox"/>			321.12	0.000		12.	

$y = 0.0034 * x + 2.3744E-004$

R = 1.0000

55 Mn [No Gas] ISTD :89 Y [No Gas]



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	5183.99	0.000		5.4	
2	<input type="checkbox"/>	0.025	0.017	5882.86	0.000		3.1	-33
3	<input type="checkbox"/>	0.050	0.064	7573.61	0.000		12.	28.
4	<input type="checkbox"/>	0.100	0.119	9347.78	0.001		0.4	18.
5	<input type="checkbox"/>	0.500	0.554	22952.42	0.002		17.	10.
6	<input type="checkbox"/>	1.000	1.196	43818.20	0.005		12.	19.
7	<input type="checkbox"/>	10.000	10.994	365595.80	0.042		3.6	9.9
8	<input type="checkbox"/>	50.000	52.352	1706910.6	0.199		4.4	4.7
9	<input type="checkbox"/>	100.00	99.414	3363924.7	0.377		3.5	-0.
10	<input type="checkbox"/>	1000.0	999.93	33321756.	3.790		2.8	0.0
11	<input type="checkbox"/>			6914.62	0.000		5.2	

$y = 0.0038 * x + 5.8892E-004$

R = 1.0000

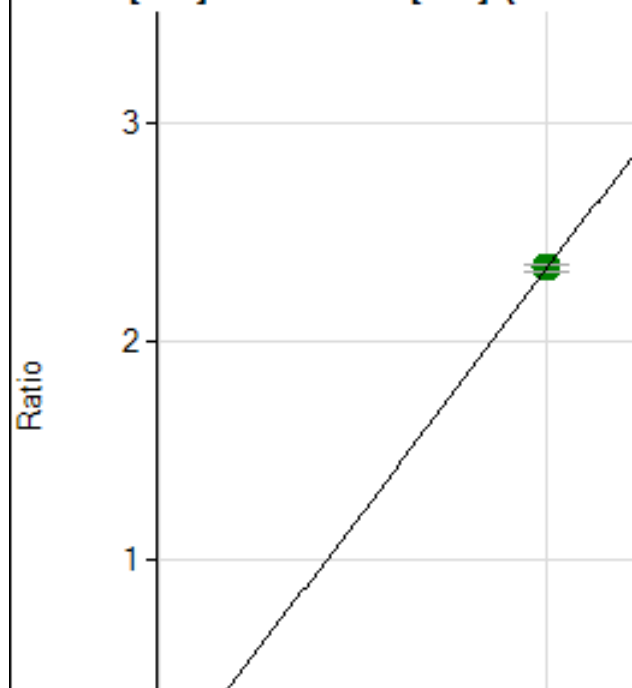
DL = 0.0254 ug/l

BEC = 0.1554 ug/l

Weight: 1/y

Min Conc: <None>

55 Mn [He] ISTD :89 Y [He] (The wei

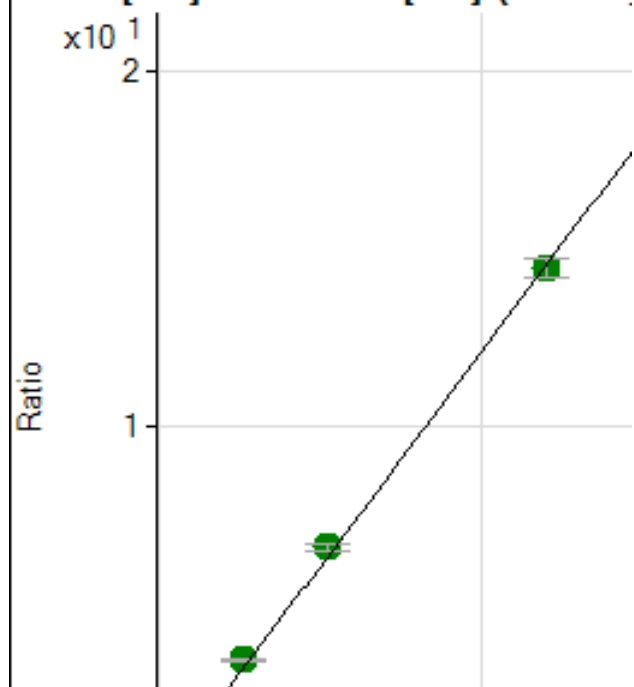


	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	122.31	0.000		6.0	
2	<input type="checkbox"/>	0.025	0.027	209.29	0.000		6.8	8.9
3	<input type="checkbox"/>	0.050	0.064	327.94	0.000		8.9	28.
4	<input type="checkbox"/>	0.100	0.117	505.91	0.000		1.4	16.
5	<input type="checkbox"/>	0.500	0.540	1868.08	0.001		0.9	8.0
6	<input type="checkbox"/>	1.000	1.193	3651.39	0.002		15.	19.
7	<input type="checkbox"/>	10.000	10.433	33900.39	0.024		0.6	4.3
8	<input type="checkbox"/>	50.000	50.162	165693.75	0.117		1.8	0.3
9	<input type="checkbox"/>	100.00	101.69	332742.99	0.237		2.6	1.7
10	<input type="checkbox"/>	1000.0	999.81	3227043.5	2.335		1.5	0.0
11	<input type="checkbox"/>			142.64	0.000		5.7	

$y = 0.0023 * x + 8.7076E-005$

R = 1.0000

56 Fe [H2] ISTD :89 Y [H2] (The wei



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	6851.84	0.001		0.1	
2	<input type="checkbox"/>	0.650	0.748	17558.14	0.003		3.0	15.
3	<input type="checkbox"/>	1.300	1.725	28763.69	0.005		3.5	32.
4	<input type="checkbox"/>	2.600	3.337	52889.56	0.009		1.5	28.
5	<input type="checkbox"/>	13.000	13.718	199785.85	0.034		2.6	5.5
6	<input type="checkbox"/>	26.000	29.167	408001.88	0.072		0.1	12.
7	<input type="checkbox"/>	260.00	282.10	3870659.4	0.686		0.4	8.5
8	<input type="checkbox"/>	1300.0	1384.1	18658085.	3.363		1.4	6.5
9	<input type="checkbox"/>	2600.0	2702.5	36256077.	6.565		2.8	3.9
10	<input type="checkbox"/>	6000.0	5936.3	81761637.	14.41		3.9	-1.
11	<input type="checkbox"/>			10230.56	0.001		3.2	

$y = 0.0024 * x + 0.0012$

R = 0.9997

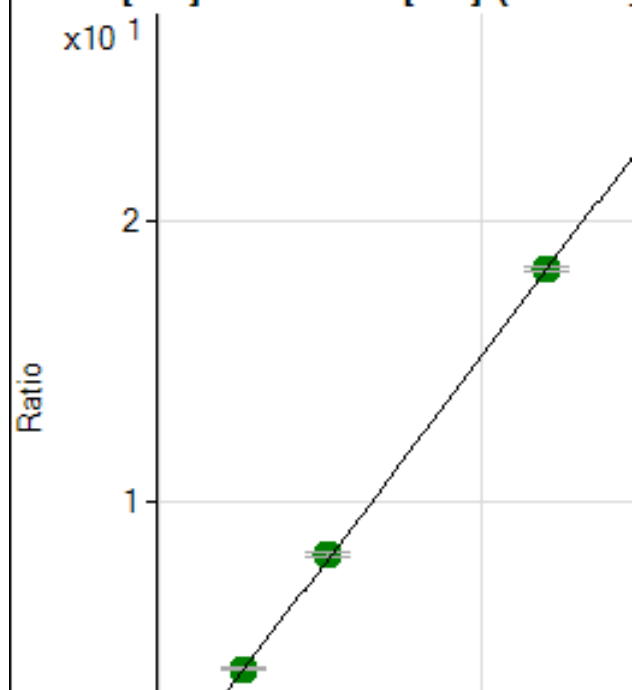
DL = 0.00128 ug/l

BEC = 0.5025 ug/l

Weight: 1/y

Min Conc: <None>

56 Fe [He] ISTD :89 Y [He] (The wei

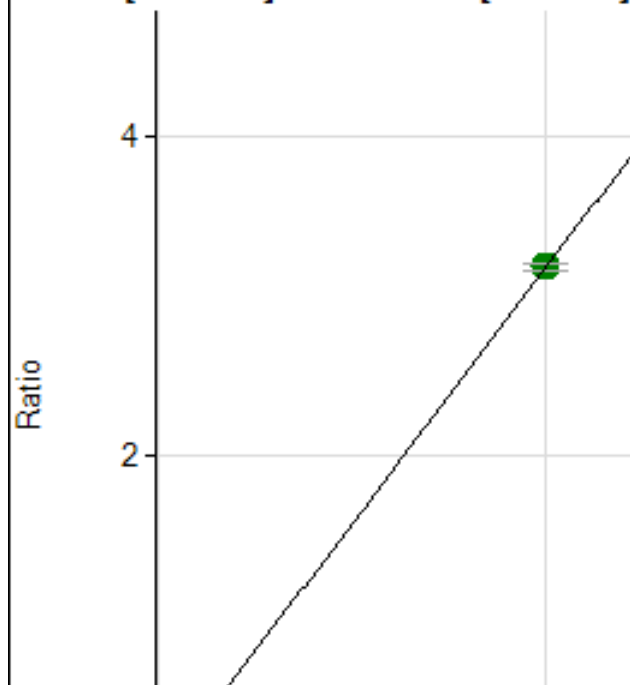


	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	4435.15	0.003		6.3	
2	<input type="checkbox"/>	0.650	0.825	7888.41	0.005		1.4	26.
3	<input type="checkbox"/>	1.300	1.614	11228.94	0.008		2.2	24.
4	<input type="checkbox"/>	2.600	3.268	18508.68	0.013		2.3	25.
5	<input type="checkbox"/>	13.000	13.825	62927.40	0.045		2.3	6.3
6	<input type="checkbox"/>	26.000	31.781	127514.19	0.100		15.	22.
7	<input type="checkbox"/>	260.00	280.81	1194170.3	0.861		1.3	8.0
8	<input type="checkbox"/>	1300.0	1299.9	5619185.5	3.976		2.1	0.0
9	<input type="checkbox"/>	2600.0	2637.8	11295973.	8.066		2.3	1.5
10	<input type="checkbox"/>	6000.0	5982.6	25273447.	18.29		1.1	-0.
11	<input type="checkbox"/>			5783.63	0.004		4.1	

$y = 0.0031 * x + 0.0032$

R = 1.0000

59 Co [No Gas] ISTD :89 Y [No Gas]



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	282.78	0.000		21.	
2	<input type="checkbox"/>	0.025	0.024	988.08	0.000		12.	-2.
3	<input type="checkbox"/>	0.050	0.057	1939.62	0.000		10.	13.
4	<input type="checkbox"/>	0.100	0.121	3763.04	0.000		5.1	21.
5	<input type="checkbox"/>	0.500	0.576	16000.36	0.001		13.	15.
6	<input type="checkbox"/>	1.000	1.180	32404.78	0.003		12.	18.
7	<input type="checkbox"/>	10.000	11.146	307367.03	0.035		3.0	11.
8	<input type="checkbox"/>	50.000	53.638	1464647.9	0.170		4.7	7.3
9	<input type="checkbox"/>	100.00	102.10	2897079.1	0.325		4.1	2.1
10	<input type="checkbox"/>	1000.0	999.59	27975530.	3.181		1.7	0.0
11	<input type="checkbox"/>			479.06	0.000		22.	

$y = 0.0032 * x + 3.2119E-005$

R = 1.0000

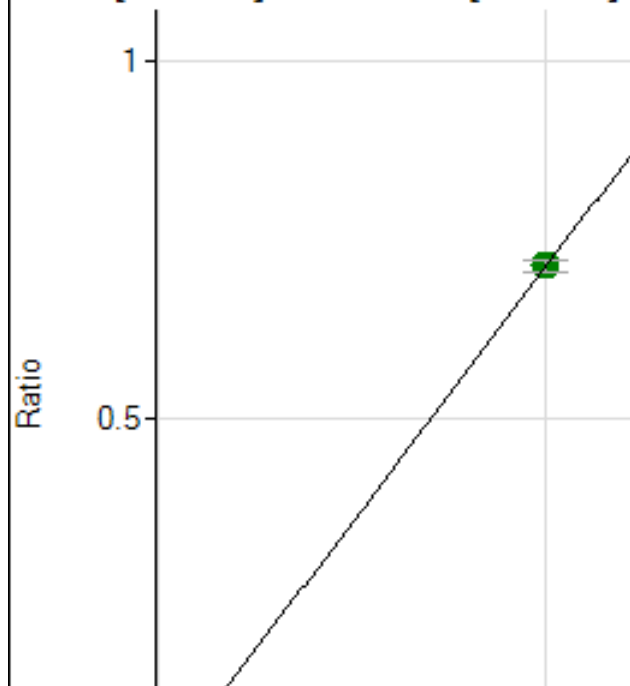
DL = 0.006519 ug/l

BEC = 0.01009 ug/l

Weight: 1/y

Min Conc: <None>

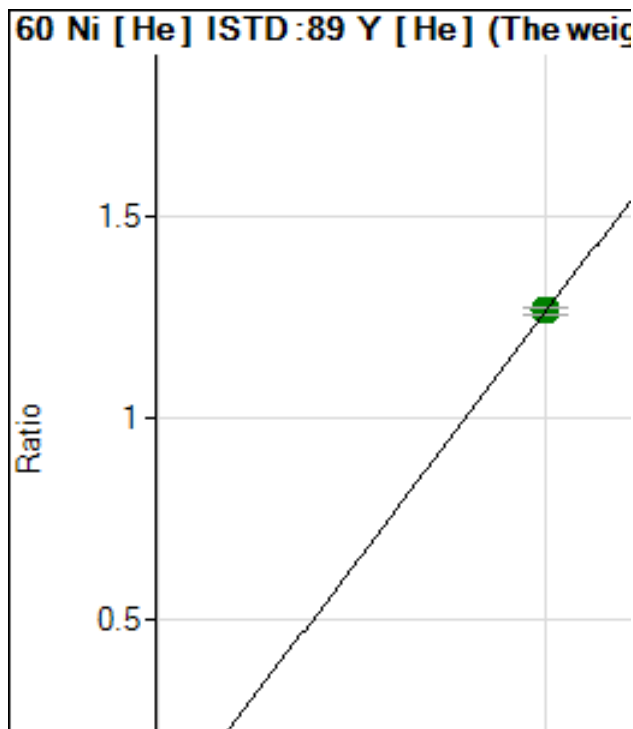
60 Ni [No Gas] ISTD :89 Y [No Gas]



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	362.62	0.000		10.	
2	<input type="checkbox"/>	0.025	0.053	715.27	0.000		12.	11
3	<input type="checkbox"/>	0.050	0.087	938.17	0.000		11.	73.
4	<input type="checkbox"/>	0.100	0.143	1287.51	0.000		8.2	42.
5	<input type="checkbox"/>	0.500	0.585	3936.07	0.000		15.	17.
6	<input type="checkbox"/>	1.000	1.175	7546.97	0.000		10.	17.
7	<input type="checkbox"/>	10.000	11.104	69075.24	0.008		1.2	11.
8	<input type="checkbox"/>	50.000	53.930	331033.91	0.038		4.5	7.9
9	<input type="checkbox"/>	100.00	101.33	645942.02	0.072		4.1	1.3
10	<input type="checkbox"/>	1000.0	999.65	6283034.3	0.714		2.1	0.0
11	<input type="checkbox"/>			718.60	0.000		3.0	

$y = 7.1480E-004 * x + 4.1198E-005$

R = 1.0000



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	83.33	0.000		25.	
2	<input type="checkbox"/>	0.025	0.031	136.67	0.000		4.2	23.
3	<input type="checkbox"/>	0.050	0.063	192.23	0.000		6.3	25.
4	<input type="checkbox"/>	0.100	0.112	283.34	0.000		4.9	11.
5	<input type="checkbox"/>	0.500	0.580	1098.94	0.000		7.8	16.
6	<input type="checkbox"/>	1.000	1.269	2114.61	0.001		16.	26.
7	<input type="checkbox"/>	10.000	11.037	19450.71	0.014		1.1	10.
8	<input type="checkbox"/>	50.000	52.189	93446.93	0.066		1.7	4.4
9	<input type="checkbox"/>	100.00	104.26	184957.08	0.132		1.1	4.3
10	<input type="checkbox"/>	1000.0	999.45	1748381.6	1.265		1.4	-0.
11	<input type="checkbox"/>			120.00	0.000		13.	

$y = 0.0013 * x + 5.9464E-005$

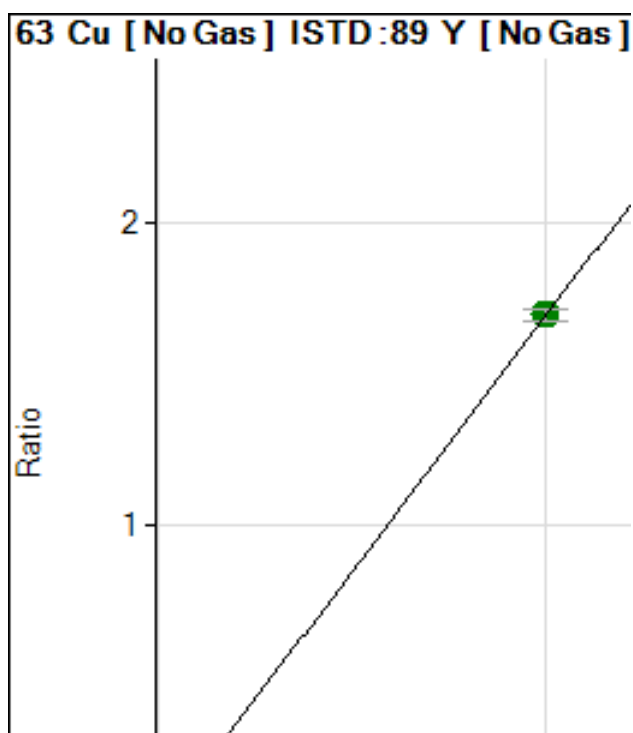
R = 1.0000

DL = 0.03595 ug/l

BEC = 0.04697 ug/l

Weight: 1/y

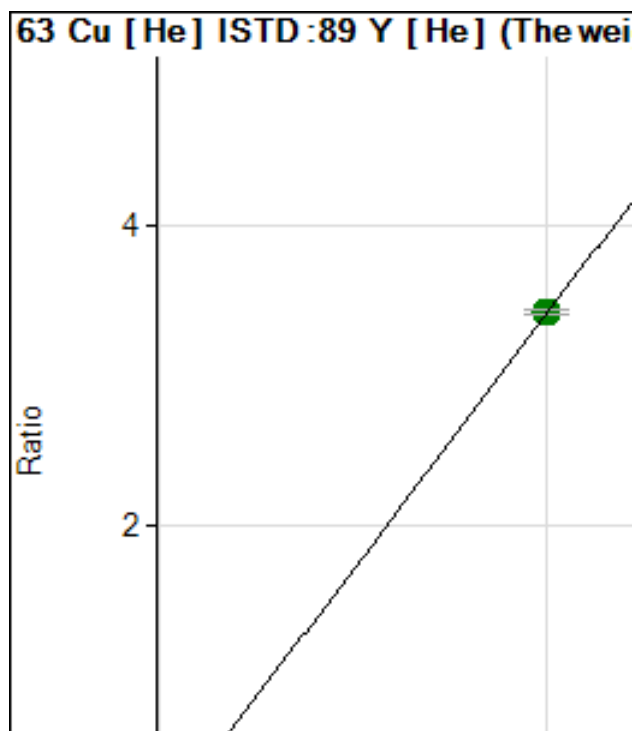
Min Conc: <None>



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	957.08	0.000		7.8	
2	<input type="checkbox"/>	0.025	0.039	1572.05	0.000		4.6	54.
3	<input type="checkbox"/>	0.050	0.063	1966.26	0.000		7.3	26.
4	<input type="checkbox"/>	0.100	0.152	3305.70	0.000		5.0	52.
5	<input type="checkbox"/>	0.500	0.611	9807.90	0.001		15.	22.
6	<input type="checkbox"/>	1.000	1.230	18826.97	0.002		8.4	23.
7	<input type="checkbox"/>	10.000	11.483	169583.96	0.019		4.2	14.
8	<input type="checkbox"/>	50.000	55.672	811352.51	0.094		5.3	11.
9	<input type="checkbox"/>	100.00	102.22	1547672.8	0.173		4.1	2.2
10	<input type="checkbox"/>	1000.0	999.47	14919083.	1.696		2.3	-0.
11	<input type="checkbox"/>			2666.65	0.000		4.4	

$y = 0.0017 * x + 1.0873E-004$

R = 1.0000



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	237.95	0.000		4.7	
2	<input type="checkbox"/>	0.025	0.039	422.59	0.000		2.3	57.
3	<input type="checkbox"/>	0.050	0.067	553.90	0.000		3.2	34.
4	<input type="checkbox"/>	0.100	0.146	940.18	0.000		2.0	45.
5	<input type="checkbox"/>	0.500	0.580	2983.05	0.002		2.1	16.
6	<input type="checkbox"/>	1.000	1.284	5797.66	0.004		15.	28.
7	<input type="checkbox"/>	10.000	10.984	52315.72	0.037		0.4	9.8
8	<input type="checkbox"/>	50.000	51.621	249784.04	0.176		1.0	3.2
9	<input type="checkbox"/>	100.00	102.07	489247.87	0.349		2.1	2.1
10	<input type="checkbox"/>	1000.0	999.70	4725658.7	3.420		0.9	0.0
11	<input type="checkbox"/>			517.24	0.000		5.7	

$y = 0.0034 * x + 1.6938E-004$

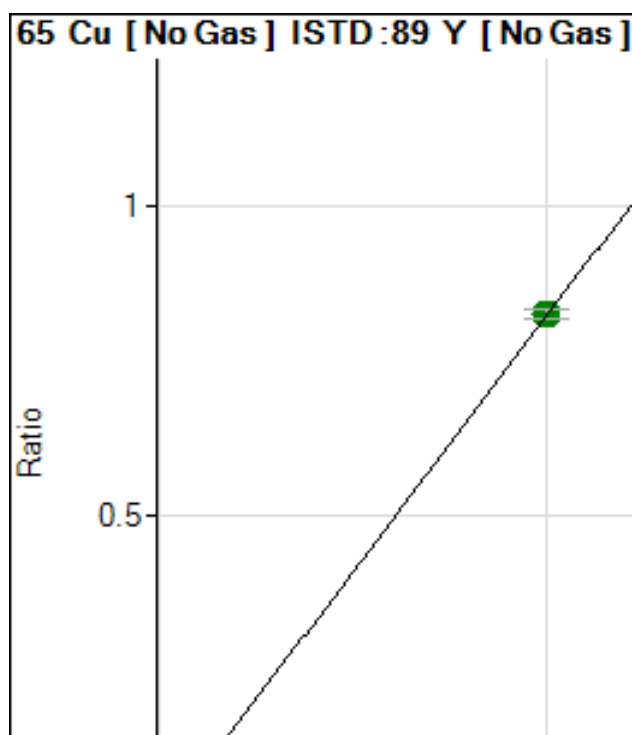
R = 1.0000

DL = 0.007015 ug/l

BEC = 0.04951 ug/l

Weight: 1/y

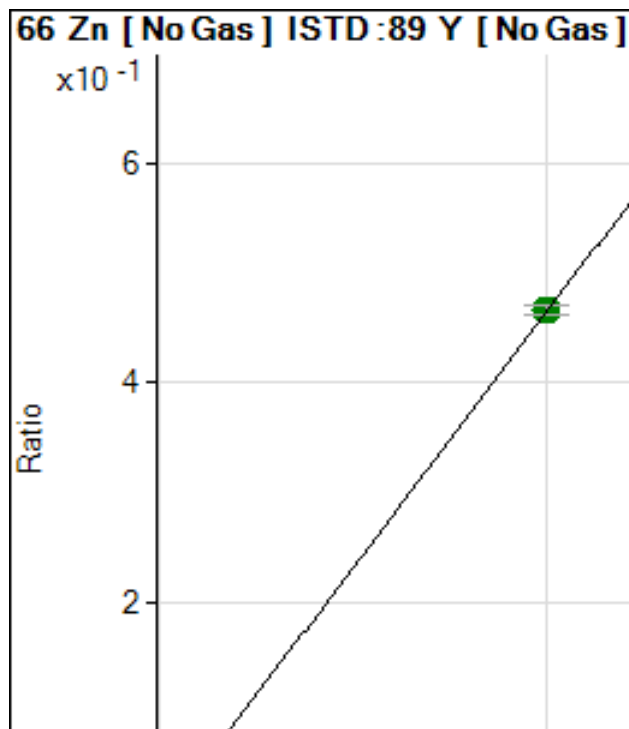
Min Conc: <None>



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	428.18	0.000		7.7	
2	<input type="checkbox"/>	0.025	0.035	696.96	0.000		0.7	38.
3	<input type="checkbox"/>	0.050	0.059	883.05	0.000		10.	17.
4	<input type="checkbox"/>	0.100	0.137	1455.33	0.000		5.1	37.
5	<input type="checkbox"/>	0.500	0.567	4419.12	0.000		14.	13.
6	<input type="checkbox"/>	1.000	1.205	8936.32	0.001		9.7	20.
7	<input type="checkbox"/>	10.000	11.192	80333.97	0.009		2.1	11.
8	<input type="checkbox"/>	50.000	54.207	383937.03	0.044		4.8	8.4
9	<input type="checkbox"/>	100.00	102.81	756345.45	0.084		3.9	2.8
10	<input type="checkbox"/>	1000.0	999.49	7249535.5	0.824		1.9	-0.
11	<input type="checkbox"/>			917.07	0.000		4.6	

$y = 8.2489E-004 * x + 4.8632E-005$

R = 1.0000



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	531.93	0.000		33.	
2	<input type="checkbox"/>			987.51	0.000		7.1	
3	<input type="checkbox"/>	0.050	0.019	631.50	0.000		0.3	-63
4	<input type="checkbox"/>	0.100	0.119	1040.77	0.000		1.9	18.
5	<input type="checkbox"/>	0.500	0.569	2800.48	0.000		10.	13.
6	<input type="checkbox"/>	1.000	1.193	5282.55	0.000		8.9	19.
7	<input type="checkbox"/>	10.000	11.305	46128.76	0.005		3.0	13.
8	<input type="checkbox"/>	50.000	55.649	222988.58	0.026		4.5	11.
9	<input type="checkbox"/>	100.00	103.26	429683.66	0.048		2.4	3.3
10	<input type="checkbox"/>	1000.0	999.37	4095799.6	0.465		1.9	-0.
11	<input type="checkbox"/>			1386.96	0.000		10.	

$y = 4.6606E-004 * x + 6.0396E-005$

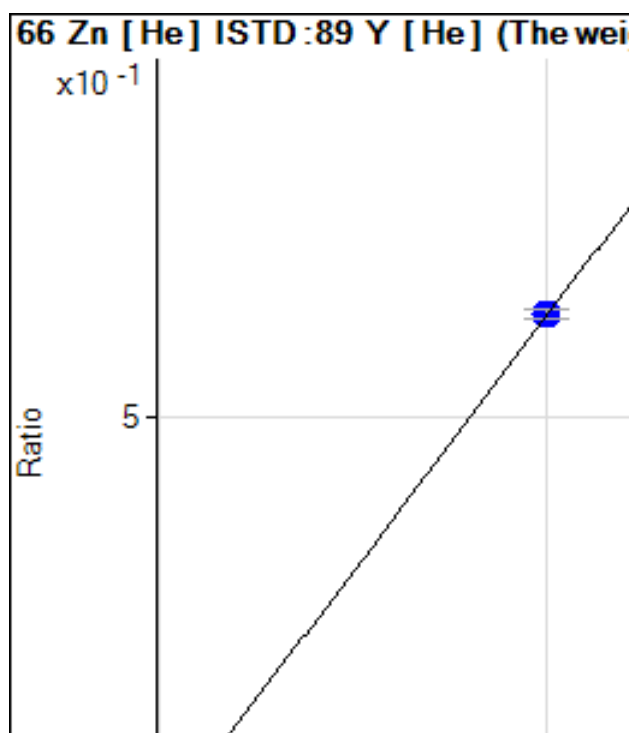
R = 1.0000

DL = 0.1315 ug/l

BEC = 0.1296 ug/l

Weight: 1/y

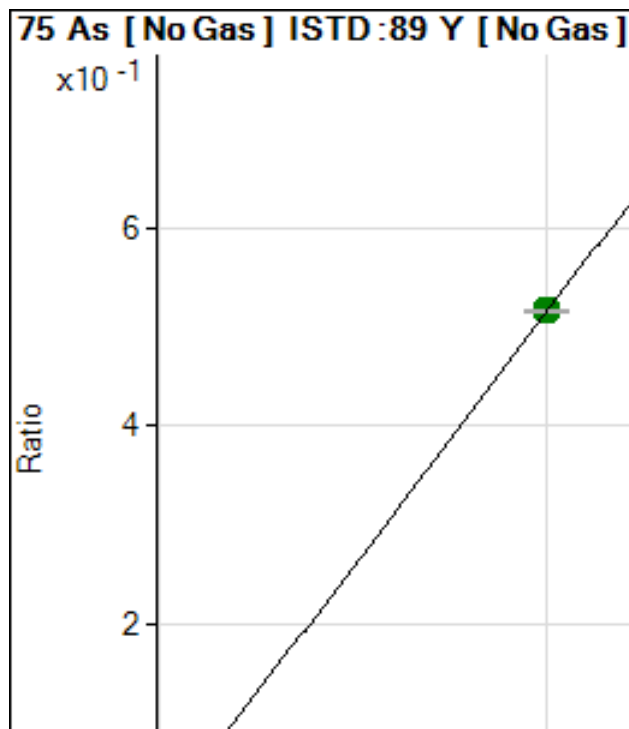
Min Conc: <None>



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	80.00	0.000		19.	
2	<input type="checkbox"/>			225.56	0.000		18.	
3	<input type="checkbox"/>	0.050	0.078	146.67	0.000		6.4	55.
4	<input type="checkbox"/>	0.100	0.135	198.89	0.000		5.0	34.
5	<input type="checkbox"/>	0.500	0.621	616.68	0.000		5.3	24.
6	<input type="checkbox"/>	1.000	1.285	1097.83	0.000		11.	28.
7	<input type="checkbox"/>	10.000	10.998	9610.99	0.006		3.2	10.
8	<input type="checkbox"/>	50.000	50.698	44872.07	0.031		2.0	1.4
9	<input type="checkbox"/>	100.00	102.40	89740.82	0.064		2.3	2.4
10	<input type="checkbox"/>	1000.0	999.71	863704.65	0.625		2.0	0.0
11	<input type="checkbox"/>			258.89	0.000		22.	

$y = 6.2525E-004 * x + 5.6973E-005$

R = 1.0000



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	13834.85	0.001		10.	
2	<input type="checkbox"/>	0.025	-0.012	14132.43	0.001		6.4	-14
3	<input type="checkbox"/>	0.050	-0.277	12943.47	0.001		19.	-65
4	<input type="checkbox"/>	0.100	-0.070	13810.25	0.001		12.	-17
5	<input type="checkbox"/>	0.500	0.772	16844.06	0.002		18.	54.
6	<input type="checkbox"/>	1.000	0.615	16180.54	0.001		10.	-38
7	<input type="checkbox"/>	10.000	10.452	60258.81	0.007		1.0	4.5
8	<input type="checkbox"/>	50.000	52.266	244532.12	0.028		5.1	4.5
9	<input type="checkbox"/>	100.00	99.494	471170.29	0.052		3.2	-0.
10	<input type="checkbox"/>	1000.0	999.93	4546072.5	0.517		0.7	0.0
11	<input type="checkbox"/>			14144.42	0.001		4.6	

$y = 5.1548E-004 * x + 0.0016$

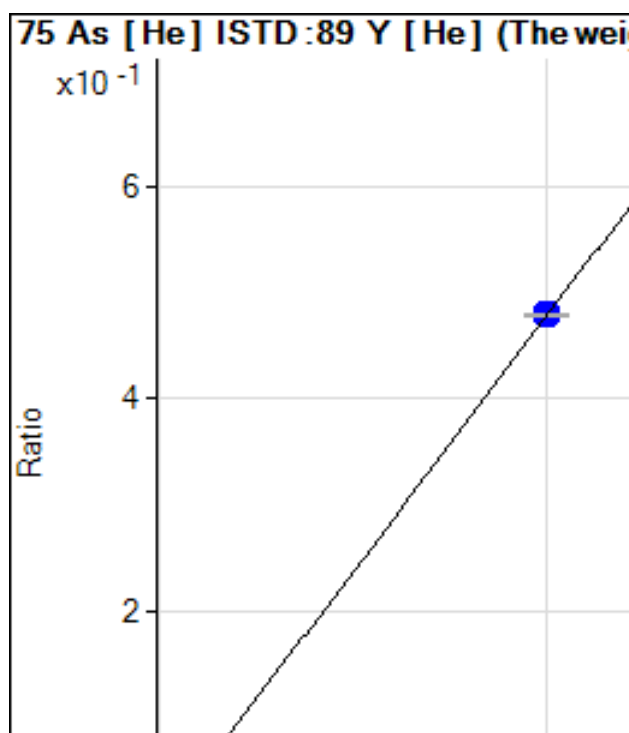
R = 1.0000

DL = 0.9348 ug/l

BEC = 3.049 ug/l

Weight: 1/y

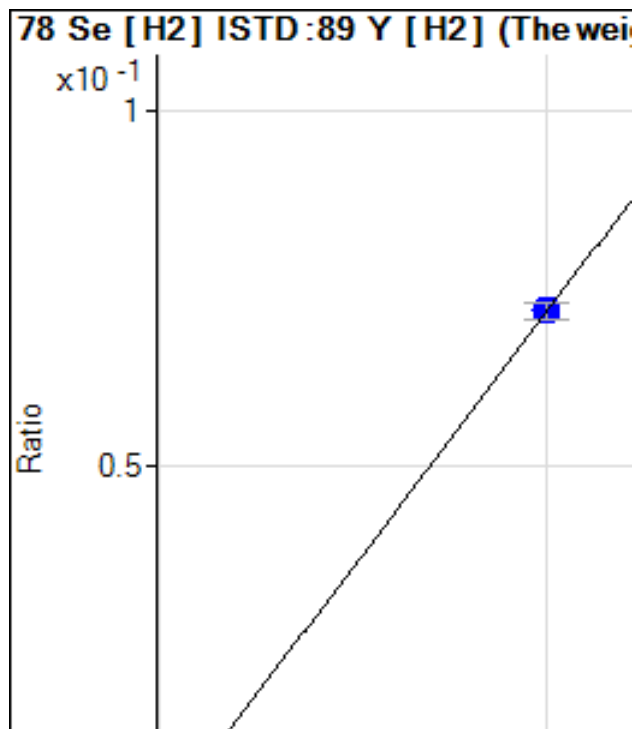
Min Conc: <None>



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	115.13	0.000		8.6	
2	<input type="checkbox"/>	0.025	0.034	136.53	0.000		3.1	36.
3	<input type="checkbox"/>	0.050	0.056	151.07	0.000		3.2	12.
4	<input type="checkbox"/>	0.100	0.109	188.87	0.000		3.0	8.8
5	<input type="checkbox"/>	0.500	0.534	468.00	0.000		2.9	6.9
6	<input type="checkbox"/>	1.000	1.210	840.28	0.000		16.	21.
7	<input type="checkbox"/>	10.000	10.445	7046.69	0.005		0.7	4.5
8	<input type="checkbox"/>	50.000	50.099	34018.41	0.024		0.9	0.2
9	<input type="checkbox"/>	100.00	100.70	67651.72	0.048		2.0	0.7
10	<input type="checkbox"/>	1000.0	999.92	661760.69	0.478		0.7	0.0
11	<input type="checkbox"/>			144.07	0.000		2.2	

$y = 4.7887E-004 * x + 8.1993E-005$

R = 1.0000



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	10.33	0.000		17.	
2	<input type="checkbox"/>	0.025	0.030	23.00	0.000		4.4	19.
3	<input type="checkbox"/>	0.050	0.075	38.33	0.000		3.5	49.
4	<input type="checkbox"/>	0.100	0.136	65.89	0.000		6.5	36.
5	<input type="checkbox"/>	0.500	0.543	236.22	0.000		0.7	8.6
6	<input type="checkbox"/>	1.000	1.215	504.34	0.000		1.6	21.
7	<input type="checkbox"/>	10.000	11.231	4557.71	0.000		0.7	12.
8	<input type="checkbox"/>	50.000	55.257	22019.86	0.004		1.9	10.
9	<input type="checkbox"/>	100.00	107.06	42458.55	0.007		0.9	7.1
10	<input type="checkbox"/>	1000.0	999.01	406851.94	0.071		3.1	-0.
11	<input type="checkbox"/>			71.22	0.000		7.5	

$y = 7.1804E-005 * x + 1.8420E-006$

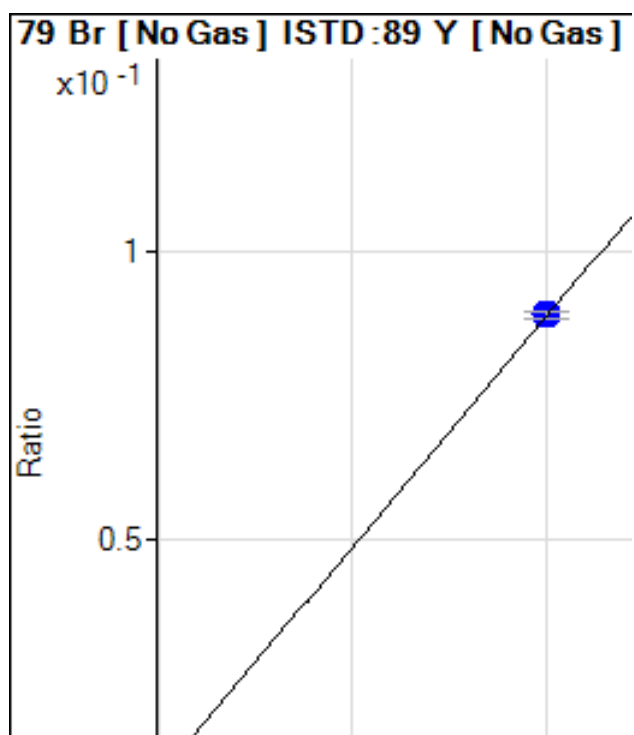
R = 1.0000

DL = 0.01355 ug/l

BEC = 0.02565 ug/l

Weight: 1/y

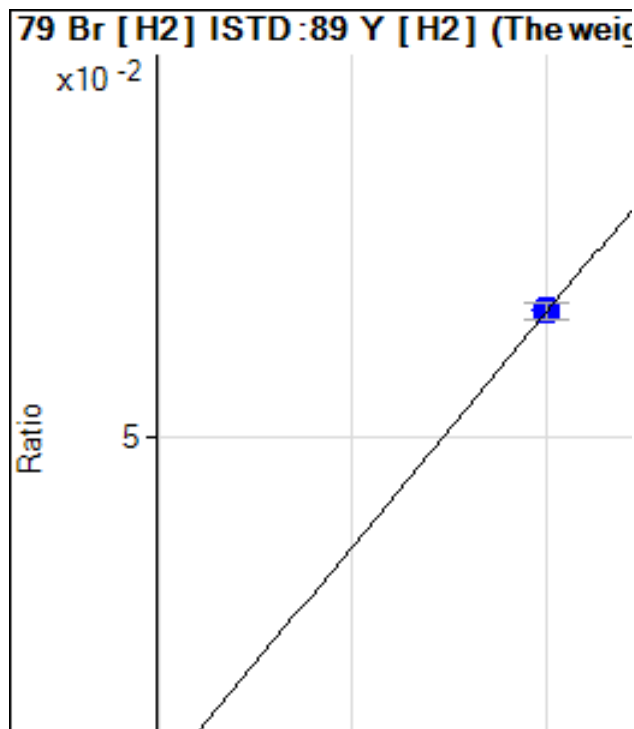
Min Conc: <None>



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	78024.71	0.008		2.4	
2	<input type="checkbox"/>			90790.54	0.010		2.3	
3	<input type="checkbox"/>			68418.95	0.007		13.	
4	<input type="checkbox"/>			56818.77	0.006		6.6	
5	<input type="checkbox"/>			81029.04	0.009		12.	
6	<input type="checkbox"/>			63442.85	0.007		14.	
7	<input type="checkbox"/>			112021.55	0.013		6.3	
8	<input type="checkbox"/>			98640.80	0.011		15.	
9	<input type="checkbox"/>			67710.71	0.007		8.4	
10	<input type="checkbox"/>			62219.96	0.007		4.7	
11	<input type="checkbox"/>	100.00	100.00	797433.73	0.089		1.2	0.0

$y = 8.0172E-004 * x + 0.0089$

R = 1.0000



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	32412.12	0.005		3.3	
2	<input type="checkbox"/>			39298.63	0.006		4.1	
3	<input type="checkbox"/>			27104.84	0.005		5.7	
4	<input type="checkbox"/>			23862.48	0.004		5.0	
5	<input type="checkbox"/>			35713.22	0.006		5.5	
6	<input type="checkbox"/>			26248.44	0.004		2.9	
7	<input type="checkbox"/>			48318.05	0.008		4.9	
8	<input type="checkbox"/>			38664.91	0.007		2.3	
9	<input type="checkbox"/>			26648.29	0.004		3.2	
10	<input type="checkbox"/>			30458.19	0.005		3.4	
11	<input type="checkbox"/>	100.00	100.00	367109.16	0.066		3.1	0.0

$y = 6.0636E-004 * x + 0.0058$

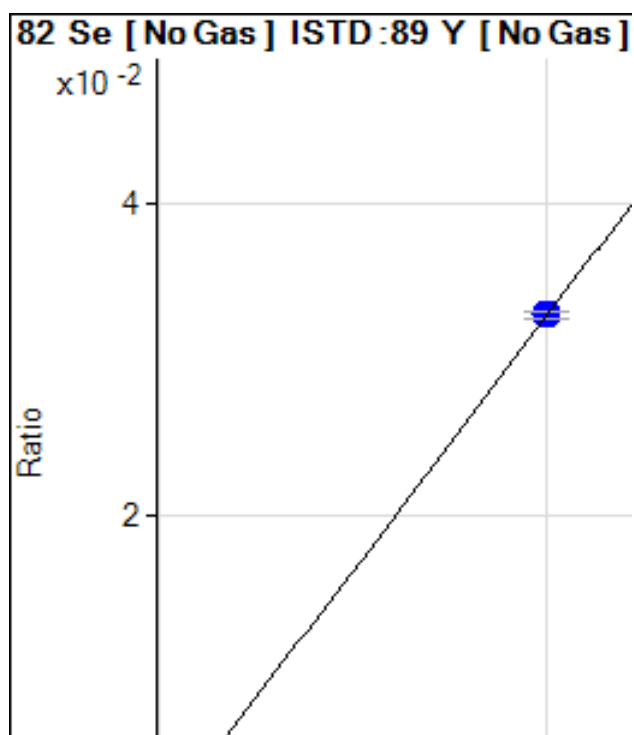
R = 1.0000

DL = 0.9331 ug/l

BEC = 9.522 ug/l

Weight: 1/y

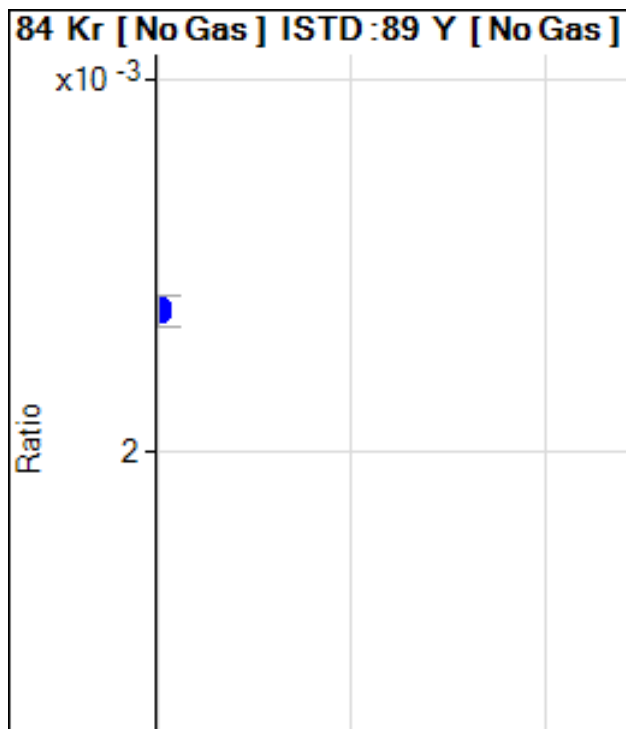
Min Conc: <None>



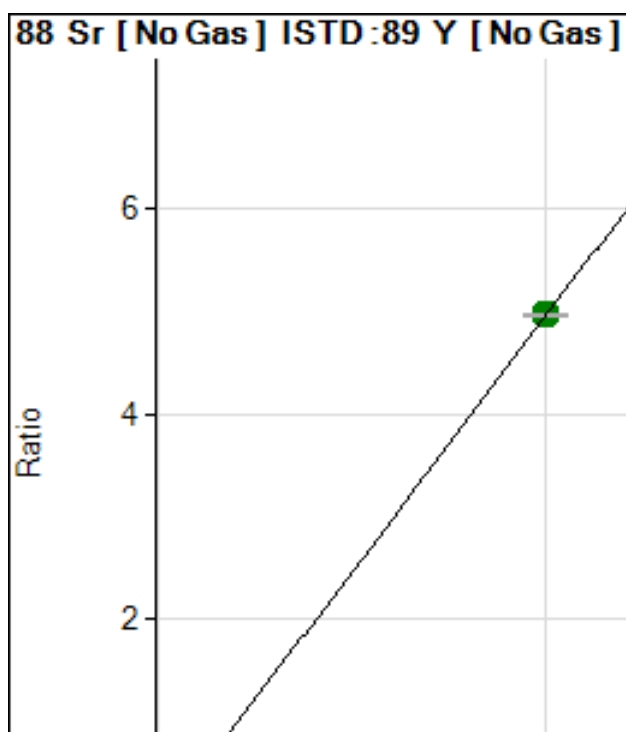
	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	855.03	0.000		14.	
2	<input type="checkbox"/>	0.025	0.608	1057.18	0.000		5.5	23
3	<input type="checkbox"/>	0.050	0.341	981.97	0.000		18.	58
4	<input type="checkbox"/>	0.100	-0.100	844.21	0.000		4.6	-20
5	<input type="checkbox"/>	0.500	0.823	1069.85	0.000		7.4	64.
6	<input type="checkbox"/>	1.000	1.377	1228.14	0.000		8.7	37.
7	<input type="checkbox"/>	10.000	11.723	4160.72	0.000		8.6	17.
8	<input type="checkbox"/>	50.000	54.932	16279.83	0.001		4.5	9.9
9	<input type="checkbox"/>	100.00	104.53	31408.67	0.003		3.9	4.5
10	<input type="checkbox"/>	1000.0	999.28	288894.85	0.032		1.1	-0.
11	<input type="checkbox"/>			1540.05	0.000		15.	

$y = 3.2782E-005 * x + 9.7147E-005$

R = 1.0000



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000		24272.29	0.002		6.1	
2	<input type="checkbox"/>			23972.47	0.002		3.6	
3	<input type="checkbox"/>			23955.80	0.002		7.8	
4	<input type="checkbox"/>			24575.54	0.002		5.1	
5	<input type="checkbox"/>			24212.33	0.002		14.	
6	<input type="checkbox"/>			24392.25	0.002		8.4	
7	<input type="checkbox"/>			26545.09	0.003		1.4	
8	<input type="checkbox"/>			39018.74	0.004		6.4	
9	<input type="checkbox"/>			52050.30	0.005		3.6	
10	<input type="checkbox"/>			293006.84	0.033		1.0	
11	<input type="checkbox"/>			23269.30	0.002		7.9	



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	425.83	0.000		31.	
2	<input type="checkbox"/>	0.025	0.030	1799.88	0.000		8.6	21.
3	<input type="checkbox"/>	0.050	0.061	3170.74	0.000		14.	21.
4	<input type="checkbox"/>	0.100	0.126	6055.95	0.000		8.4	25.
5	<input type="checkbox"/>	0.500	0.541	23372.83	0.002		16.	8.2
6	<input type="checkbox"/>	1.000	1.149	49339.83	0.005		8.6	14.
7	<input type="checkbox"/>	10.000	10.803	464946.14	0.053		2.8	8.0
8	<input type="checkbox"/>	50.000	52.790	2250779.1	0.262		3.9	5.6
9	<input type="checkbox"/>	100.00	99.914	4424807.4	0.496		3.6	-0.
10	<input type="checkbox"/>	1000.0	999.86	43679023.	4.967		0.7	0.0
11	<input type="checkbox"/>			838.37	0.000		5.1	

$y = 0.0050 * x + 4.8352E-005$

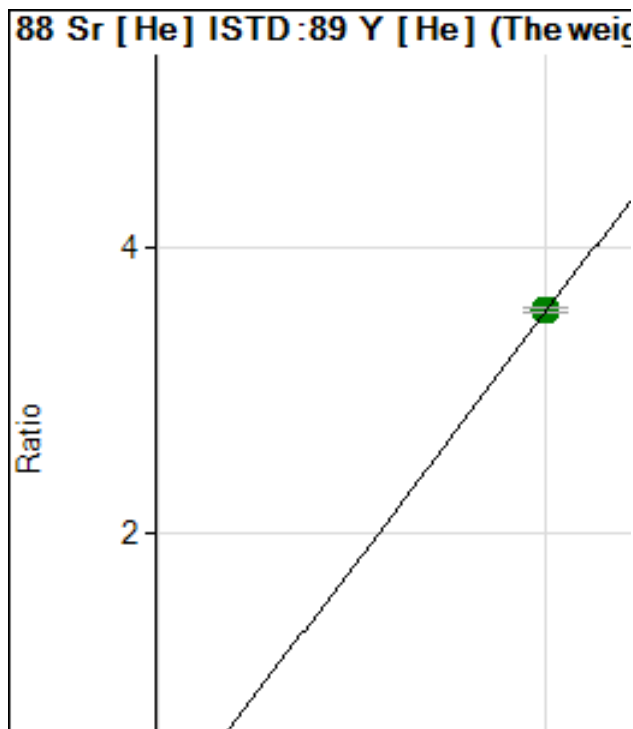
R = 1.0000

DL = 0.00925 ug/l

BEC = 0.009732 ug/l

Weight: 1/y

Min Conc: <None>



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	240.00	0.000		10.	
2	<input type="checkbox"/>	0.025	0.032	394.45	0.000		10.	27.
3	<input type="checkbox"/>	0.050	0.044	454.45	0.000		8.6	-12
4	<input type="checkbox"/>	0.100	0.115	817.81	0.000		3.1	15.
5	<input type="checkbox"/>	0.500	0.516	2775.84	0.002		1.0	3.1
6	<input type="checkbox"/>	1.000	1.171	5507.76	0.004		14.	17.
7	<input type="checkbox"/>	10.000	10.269	50834.02	0.036		0.8	2.7
8	<input type="checkbox"/>	50.000	49.348	248149.46	0.175		0.5	-1.
9	<input type="checkbox"/>	100.00	100.06	498402.31	0.355		2.1	0.1
10	<input type="checkbox"/>	1000.0	1000.0	4912217.8	3.555		1.0	0.0
11	<input type="checkbox"/>			245.56	0.000		16.	

$y = 0.0036 * x + 1.7069E-004$

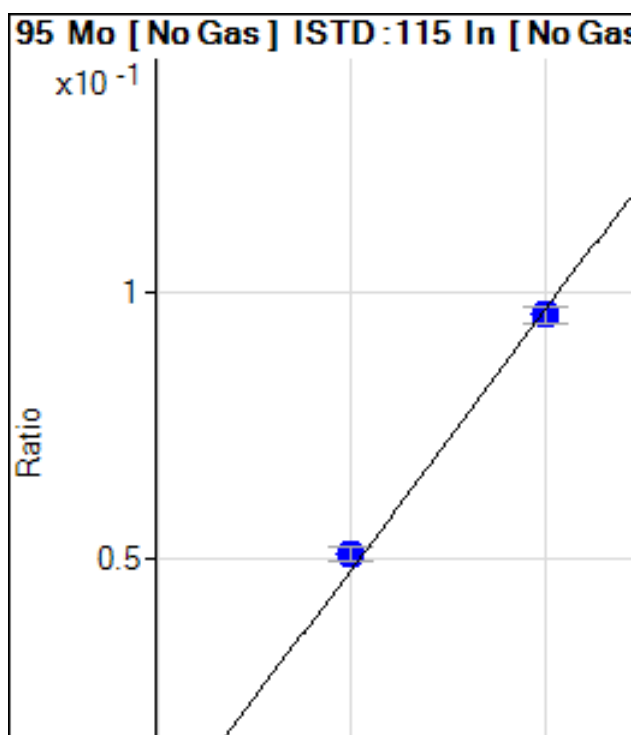
R = 1.0000

DL = 0.01446 ug/l

BEC = 0.04802 ug/l

Weight: 1/y

Min Conc: <None>

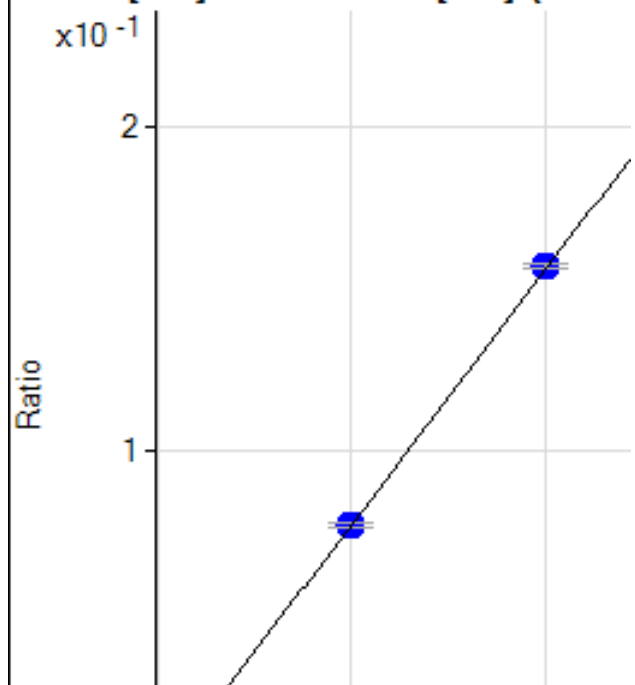


	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	51.11	0.000		26.	
2	<input type="checkbox"/>	0.025	0.027	296.67	0.000		5.2	9.2
3	<input type="checkbox"/>	0.050	0.056	560.02	0.000		14.	11.
4	<input type="checkbox"/>	0.100	0.111	1044.49	0.000		13.	10.
5	<input type="checkbox"/>	0.500	0.534	4542.97	0.000		15.	6.8
6	<input type="checkbox"/>	1.000	1.087	9510.99	0.001		9.8	8.7
7	<input type="checkbox"/>	10.000	10.417	91242.24	0.010		3.5	4.2
8	<input type="checkbox"/>	50.000	52.537	443950.03	0.051		5.3	5.1
9	<input type="checkbox"/>	100.00	98.689	883613.72	0.095		3.4	-1.
10	<input type="checkbox"/>			1022.27	0.000		7.2	
11	<input type="checkbox"/>			198.89	0.000		12.	

$y = 9.6980E-004 * x + 5.5480E-006$

R = 0.9996

95 Mo [He] ISTD:115 In [He] (The



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	22.22	0.000		8.7	
2	<input type="checkbox"/>	0.025	0.036	125.56	0.000		34.	45.
3	<input type="checkbox"/>	0.050	0.051	170.00	0.000		12.	2.4
4	<input type="checkbox"/>	0.100	0.126	384.45	0.000		10.	25.
5	<input type="checkbox"/>	0.500	0.525	1543.43	0.000		0.2	5.1
6	<input type="checkbox"/>	1.000	1.130	3011.45	0.001		15.	13.
7	<input type="checkbox"/>	10.000	10.108	28656.53	0.015		0.8	1.1
8	<input type="checkbox"/>	50.000	49.563	139669.73	0.077		1.5	-0.
9	<input type="checkbox"/>	100.00	100.20	280917.58	0.156		0.9	0.2
10	<input type="checkbox"/>			236.67	0.000		9.2	
11	<input type="checkbox"/>			62.22	0.000		27.	

$y = 0.0016 * x + 1.2089E-005$

R = 1.0000

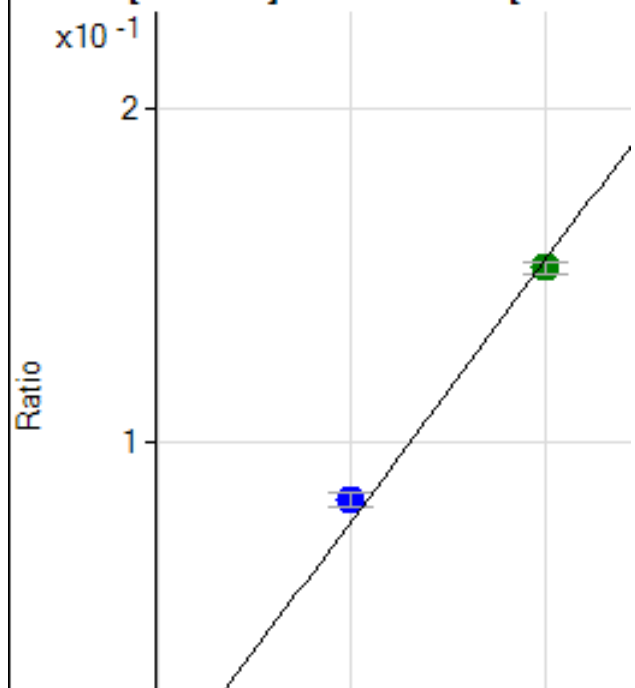
DL = 0.00201 ug/l

BEC = 0.007721 ug/l

Weight: 1/y

Min Conc: <None>

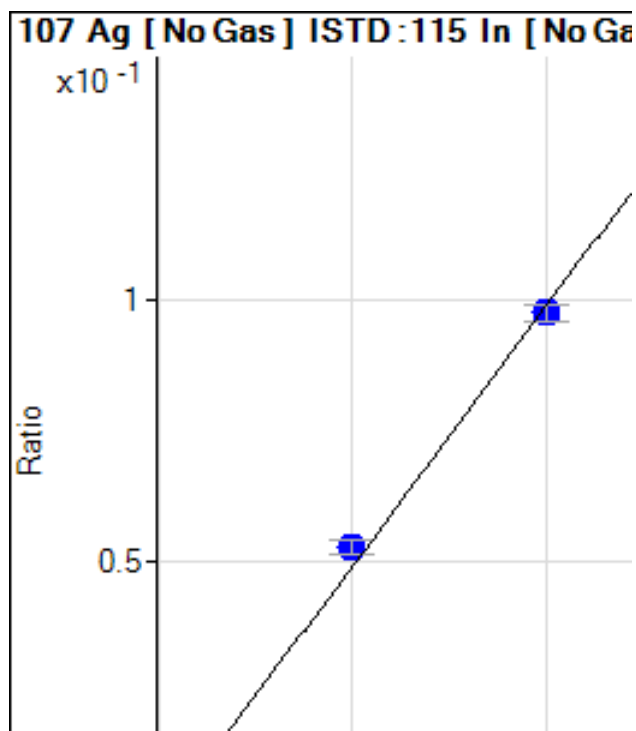
98 Mo [No Gas] ISTD:115 In [No Gas]



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	88.89	0.000		18.	
2	<input type="checkbox"/>	0.025	0.026	469.81	0.000		6.0	5.9
3	<input type="checkbox"/>	0.050	0.055	903.79	0.000		7.7	10.
4	<input type="checkbox"/>	0.100	0.116	1761.85	0.000		6.9	16.
5	<input type="checkbox"/>	0.500	0.527	7181.30	0.000		15.	5.4
6	<input type="checkbox"/>	1.000	1.093	15313.60	0.001		8.8	9.3
7	<input type="checkbox"/>	10.000	10.467	146667.08	0.016		3.6	4.7
8	<input type="checkbox"/>	50.000	53.562	724179.14	0.083		4.8	7.1
9	<input type="checkbox"/>	100.00	98.171	1406416.7	0.152		2.5	-1.
10	<input type="checkbox"/>			1785.49	0.000		7.1	
11	<input type="checkbox"/>			274.73	0.000		13.	

$y = 0.0016 * x + 9.6580E-006$

R = 0.9992



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	73.36	0.000		21.	
2	<input type="checkbox"/>	0.010	0.011	327.47	0.000		1.6	10.
3	<input type="checkbox"/>	0.020	0.024	644.27	0.000		5.6	22.
4	<input type="checkbox"/>	0.040	0.050	1225.22	0.000		6.4	25.
5	<input type="checkbox"/>	0.200	0.220	4796.08	0.000		17.	10.
6	<input type="checkbox"/>	0.400	0.450	10096.32	0.001		7.6	12.
7	<input type="checkbox"/>	4.000	4.235	94916.56	0.010		3.6	5.9
8	<input type="checkbox"/>	20.000	21.312	460782.00	0.052		4.9	6.6
9	<input type="checkbox"/>	40.000	39.320	900673.91	0.097		3.2	-1.
10	<input type="checkbox"/>			6369318.3	0.712		4.5	
11	<input type="checkbox"/>			19898.05	0.002		13.	

$y = 0.0025 * x + 7.9469E-006$

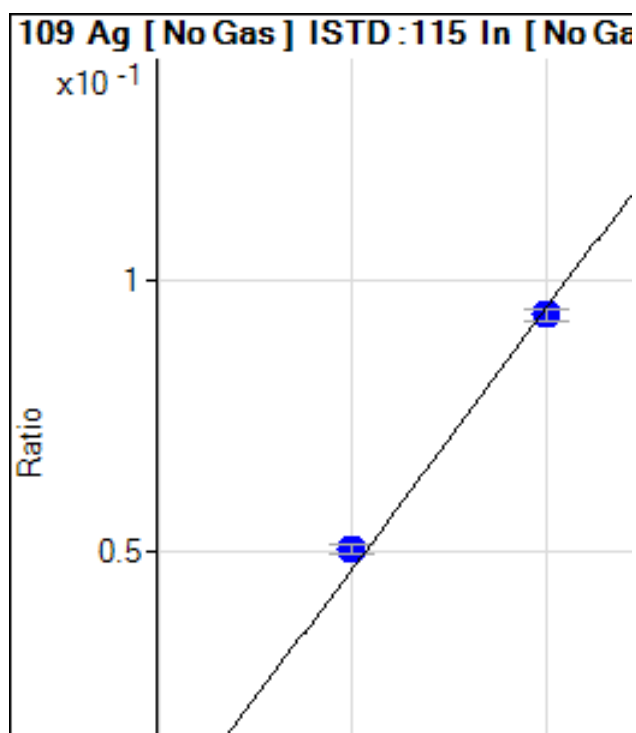
R = 0.9993

DL = 0.002098 ug/l

BEC = 0.003203 ug/l

Weight: 1/y

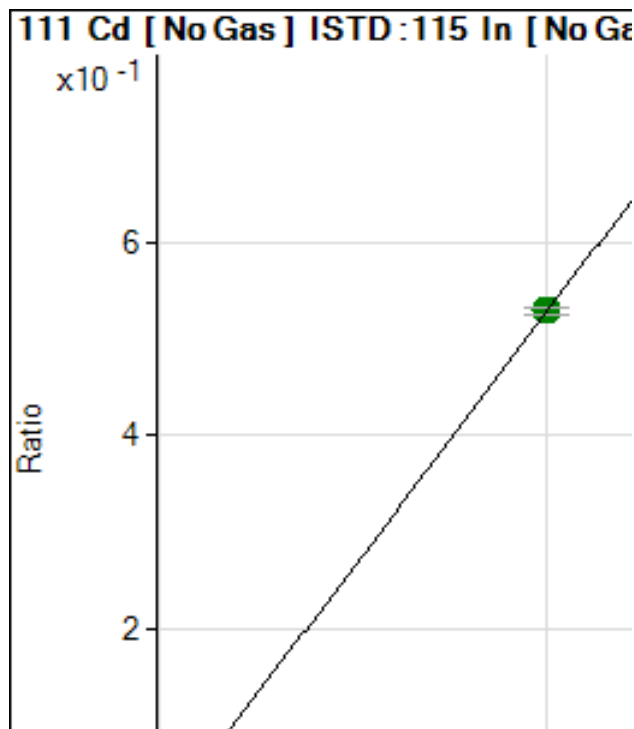
Min Conc: <None>



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	54.02	0.000		23.	
2	<input type="checkbox"/>	0.010	0.010	283.45	0.000		10.	4.0
3	<input type="checkbox"/>	0.020	0.024	589.58	0.000		14.	20.
4	<input type="checkbox"/>	0.040	0.050	1155.18	0.000		2.3	24.
5	<input type="checkbox"/>	0.200	0.222	4634.63	0.000		16.	11.
6	<input type="checkbox"/>	0.400	0.449	9638.48	0.001		11.	12.
7	<input type="checkbox"/>	4.000	4.233	91008.83	0.010		2.9	5.8
8	<input type="checkbox"/>	20.000	21.257	441105.66	0.050		4.1	6.3
9	<input type="checkbox"/>	40.000	39.347	864884.24	0.093		2.6	-1.
10	<input type="checkbox"/>			6711936.8	0.750		6.0	
11	<input type="checkbox"/>			19053.89	0.002		12.	

$y = 0.0024 * x + 5.8527E-006$

R = 0.9994



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	2771.51	0.000		8.5	
2	<input type="checkbox"/>	0.025	0.053	3047.42	0.000		9.8	11
3	<input type="checkbox"/>	0.050	0.073	3183.01	0.000		8.8	46.
4	<input type="checkbox"/>	0.100	0.114	3344.10	0.000		4.1	13.
5	<input type="checkbox"/>	0.500	0.557	5209.75	0.000		8.6	11.
6	<input type="checkbox"/>	1.000	1.066	7779.39	0.000		7.2	6.6
7	<input type="checkbox"/>	10.000	10.398	52396.13	0.005		3.5	4.0
8	<input type="checkbox"/>	50.000	52.470	244607.39	0.028		5.0	4.9
9	<input type="checkbox"/>	100.00	97.394	478708.51	0.051		3.4	-2.
10	<input type="checkbox"/>	1000.0	1000.1	4732510.0	0.529		1.5	0.0
11	<input type="checkbox"/>			3141.37	0.000		8.7	

$y = 5.2931E-004 * x + 3.0091E-004$

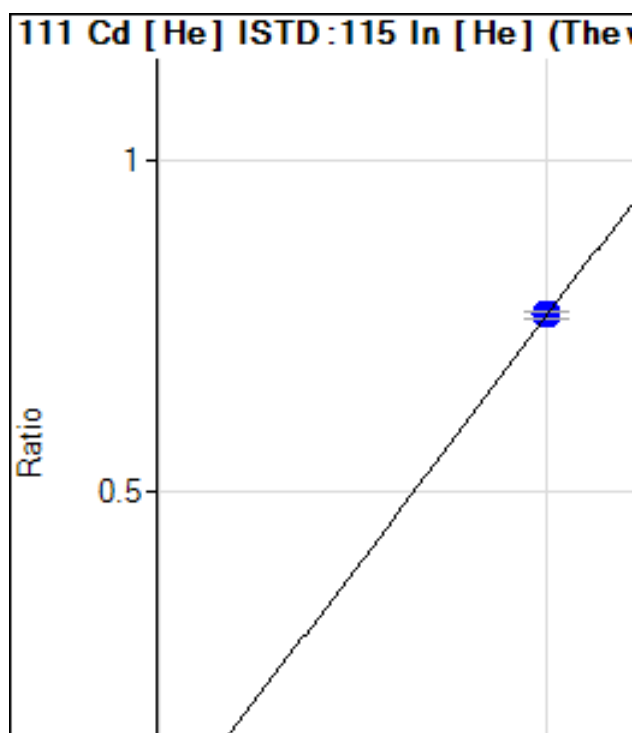
R = 1.0000

DL = 0.1443 ug/l

BEC = 0.5685 ug/l

Weight: 1/y

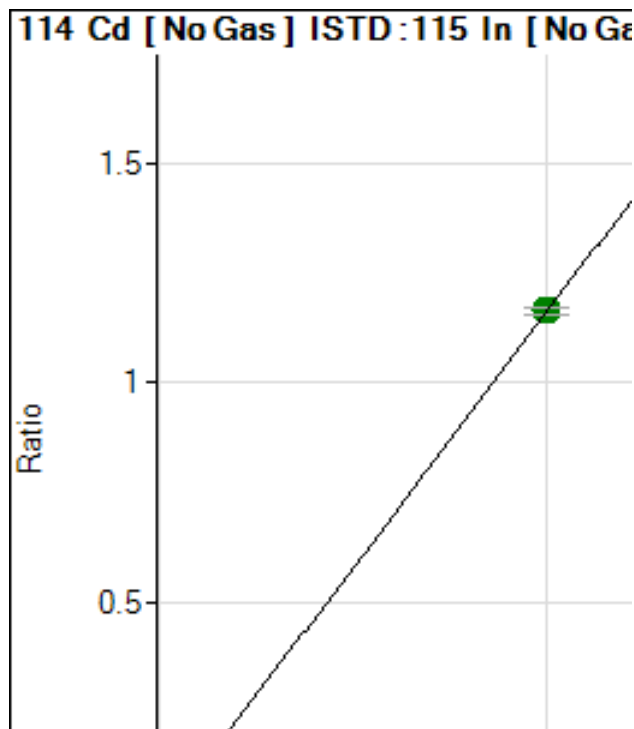
Min Conc: <None>



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	0.44	0.000		11	
2	<input type="checkbox"/>	0.025	0.028	38.89	0.000		5.5	10.
3	<input type="checkbox"/>	0.050	0.060	84.78	0.000		4.4	19.
4	<input type="checkbox"/>	0.100	0.123	173.22	0.000		0.8	22.
5	<input type="checkbox"/>	0.500	0.513	727.24	0.000		1.5	2.5
6	<input type="checkbox"/>	1.000	1.205	1565.42	0.000		12.	20.
7	<input type="checkbox"/>	10.000	10.546	14630.73	0.008		0.5	5.5
8	<input type="checkbox"/>	50.000	51.339	70840.49	0.039		1.1	2.7
9	<input type="checkbox"/>	100.00	101.85	139818.70	0.078		0.5	1.9
10	<input type="checkbox"/>	1000.0	999.74	1349656.1	0.766		1.2	0.0
11	<input type="checkbox"/>			51.78	0.000		4.3	

$y = 7.6676E-004 * x + 2.4055E-007$

R = 1.0000



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	0.53	0.000		28	
2	<input type="checkbox"/>	0.025	0.025	269.37	0.000		7.9	-0.
3	<input type="checkbox"/>	0.050	0.056	611.56	0.000		9.2	11.
4	<input type="checkbox"/>	0.100	0.116	1253.23	0.000		4.0	16.
5	<input type="checkbox"/>	0.500	0.553	5584.85	0.000		15.	10.
6	<input type="checkbox"/>	1.000	1.105	11565.82	0.001		9.4	10.
7	<input type="checkbox"/>	10.000	10.532	110791.03	0.012		3.5	5.3
8	<input type="checkbox"/>	50.000	53.607	544307.83	0.062		5.0	7.2
9	<input type="checkbox"/>	100.00	99.244	1067799.6	0.115		3.0	-0.
10	<input type="checkbox"/>	1000.0	999.89	10411079.	1.165		1.4	0.0
11	<input type="checkbox"/>			524.82	0.000		14.	

$y = 0.0012 * x + 4.6847E-008$

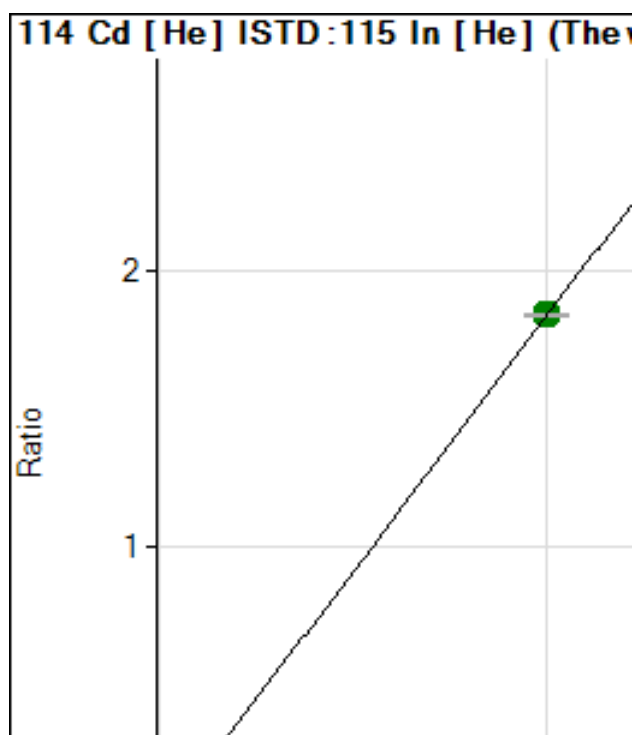
R = 1.0000

DL = 0.003462 ug/l

BEC = 4.02E-05 ug/l

Weight: 1/y

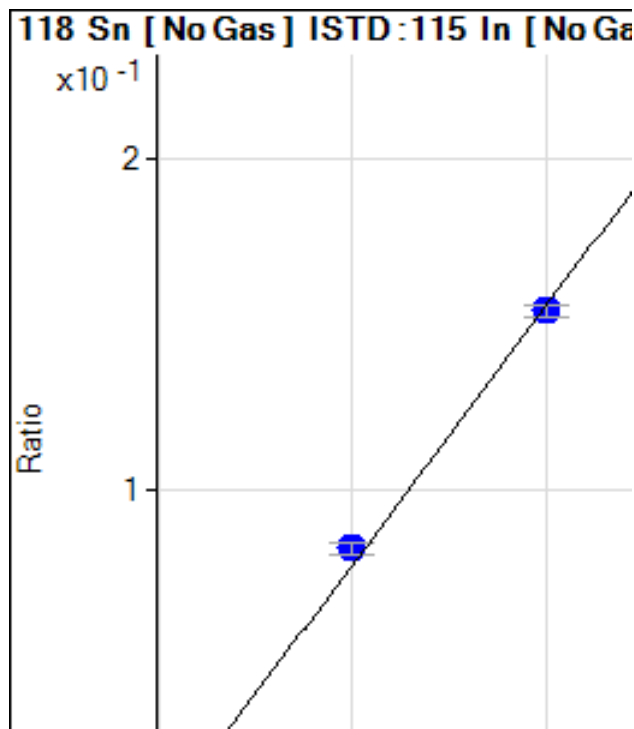
Min Conc: <None>



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	1.76	0.000		15	
2	<input type="checkbox"/>	0.025	0.027	92.80	0.000		1.2	8.7
3	<input type="checkbox"/>	0.050	0.059	201.13	0.000		8.2	17.
4	<input type="checkbox"/>	0.100	0.120	407.80	0.000		2.6	20.
5	<input type="checkbox"/>	0.500	0.519	1769.44	0.001		1.1	3.9
6	<input type="checkbox"/>	1.000	1.192	3715.34	0.002		12.	19.
7	<input type="checkbox"/>	10.000	10.648	35454.05	0.019		0.9	6.5
8	<input type="checkbox"/>	50.000	51.919	171936.16	0.095		1.2	3.8
9	<input type="checkbox"/>	100.00	102.52	337774.46	0.188		0.4	2.5
10	<input type="checkbox"/>	1000.0	999.64	3239042.0	1.839		0.3	0.0
11	<input type="checkbox"/>			121.79	0.000		6.6	

$y = 0.0018 * x + 9.5947E-007$

R = 1.0000



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	1191.03	0.000		10.	
2	<input type="checkbox"/>	0.025	0.022	1510.43	0.000		3.5	-13
3	<input type="checkbox"/>	0.050	0.069	2229.09	0.000		7.9	38.
4	<input type="checkbox"/>	0.100	0.116	2877.93	0.000		5.9	16.
5	<input type="checkbox"/>	0.500	0.552	8635.58	0.001		11.	10.
6	<input type="checkbox"/>	1.000	1.125	16929.95	0.001		10.	12.
7	<input type="checkbox"/>	10.000	10.351	147201.94	0.016		1.7	3.5
8	<input type="checkbox"/>	50.000	52.683	718331.55	0.082		4.5	5.4
9	<input type="checkbox"/>	100.00	98.622	1423863.1	0.154		2.5	-1.
10	<input type="checkbox"/>			3809.65	0.000		6.4	
11	<input type="checkbox"/>			2618.39	0.000		2.2	

$y = 0.0016 * x + 1.2930E-004$

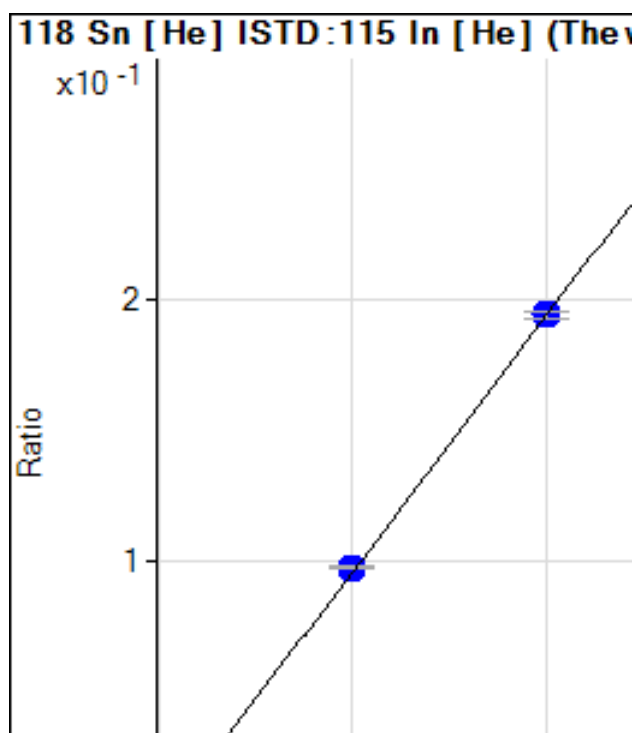
R = 0.9995

DL = 0.0253 ug/l

BEC = 0.08277 ug/l

Weight: 1/y

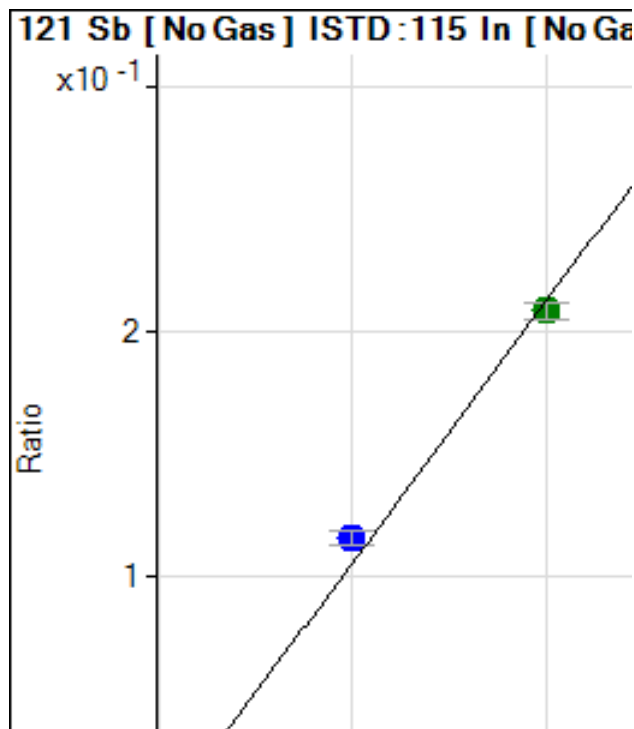
Min Conc: <None>



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	284.45	0.000		3.8	
2	<input type="checkbox"/>	0.025	0.027	377.78	0.000		1.4	8.5
3	<input type="checkbox"/>	0.050	0.055	481.12	0.000		0.1	9.2
4	<input type="checkbox"/>	0.100	0.121	715.58	0.000		8.6	20.
5	<input type="checkbox"/>	0.500	0.498	2074.61	0.001		5.1	-0.
6	<input type="checkbox"/>	1.000	1.125	3965.03	0.002		12.	12.
7	<input type="checkbox"/>	10.000	9.982	35358.78	0.019		2.1	-0.
8	<input type="checkbox"/>	50.000	50.282	176058.52	0.097		0.9	0.6
9	<input type="checkbox"/>	100.00	99.860	347569.06	0.194		1.1	-0.
10	<input type="checkbox"/>			881.15	0.000		11.	
11	<input type="checkbox"/>			633.35	0.000		4.2	

$y = 0.0019 * x + 1.5473E-004$

R = 1.0000



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	201.35	0.000		12.	
2	<input type="checkbox"/>	0.025	0.026	710.09	0.000		2.6	2.9
3	<input type="checkbox"/>	0.050	0.052	1243.18	0.000		13.	4.5
4	<input type="checkbox"/>	0.100	0.121	2592.84	0.000		1.5	21.
5	<input type="checkbox"/>	0.500	0.545	10263.44	0.001		14.	9.0
6	<input type="checkbox"/>	1.000	1.121	21623.35	0.002		9.9	12.
7	<input type="checkbox"/>	10.000	10.403	200212.51	0.022		2.9	4.0
8	<input type="checkbox"/>	50.000	54.416	1009870.8	0.115		5.1	8.8
9	<input type="checkbox"/>	100.00	97.750	1922156.7	0.208		3.2	-2.
10	<input type="checkbox"/>			8268.61	0.000		8.3	
11	<input type="checkbox"/>			2492.48	0.000		5.6	

$y = 0.0021 * x + 2.1873E-005$

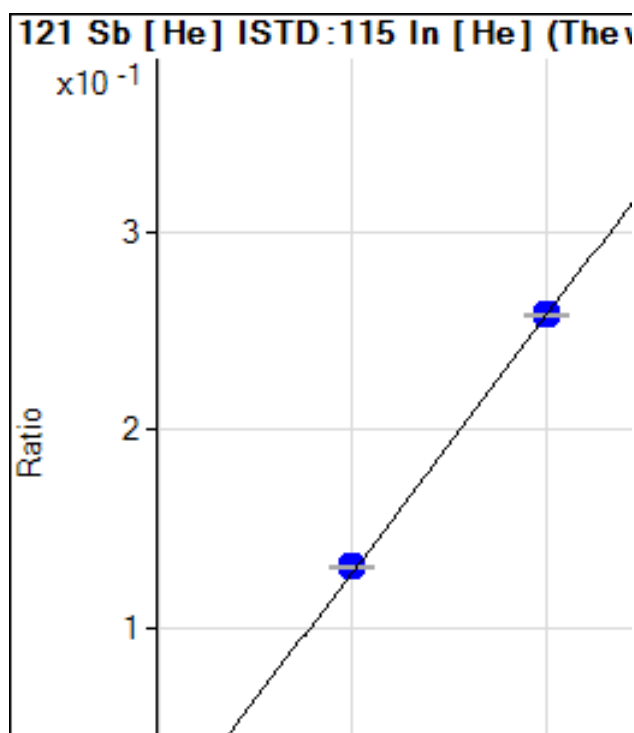
R = 0.9988

DL = 0.003724 ug/l

BEC = 0.01027 ug/l

Weight: 1/y

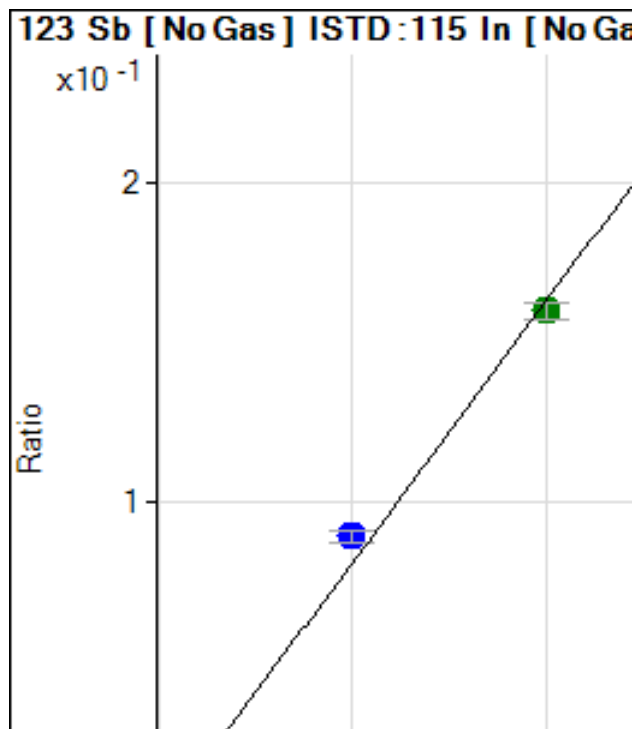
Min Conc: <None>



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	56.01	0.000		31.	
2	<input type="checkbox"/>	0.025	0.027	183.69	0.000		10.	8.8
3	<input type="checkbox"/>	0.050	0.055	317.70	0.000		8.4	9.6
4	<input type="checkbox"/>	0.100	0.116	607.74	0.000		3.5	16.
5	<input type="checkbox"/>	0.500	0.502	2457.13	0.001		1.2	0.3
6	<input type="checkbox"/>	1.000	1.135	5031.08	0.003		12.	13.
7	<input type="checkbox"/>	10.000	10.016	46969.89	0.026		0.4	0.2
8	<input type="checkbox"/>	50.000	50.445	235067.07	0.130		1.2	0.9
9	<input type="checkbox"/>	100.00	99.775	462495.11	0.258		0.5	-0.
10	<input type="checkbox"/>			1558.24	0.000		6.0	
11	<input type="checkbox"/>			562.40	0.000		4.3	

$y = 0.0026 * x + 3.0483E-005$

R = 1.0000



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	153.35	0.000		4.8	
2	<input type="checkbox"/>	0.025	0.025	533.06	0.000		1.7	-0.
3	<input type="checkbox"/>	0.050	0.056	1020.14	0.000		9.7	12.
4	<input type="checkbox"/>	0.100	0.121	1982.01	0.000		5.0	20.
5	<input type="checkbox"/>	0.500	0.538	7791.94	0.000		13.	7.5
6	<input type="checkbox"/>	1.000	1.111	16497.97	0.001		8.1	11.
7	<input type="checkbox"/>	10.000	10.402	153925.98	0.017		3.4	4.0
8	<input type="checkbox"/>	50.000	54.473	777766.05	0.089		3.9	8.9
9	<input type="checkbox"/>	100.00	97.722	1477743.0	0.160		3.1	-2.
10	<input type="checkbox"/>			6535.19	0.000		9.0	
11	<input type="checkbox"/>			1942.33	0.000		3.3	

$y = 0.0016 * x + 1.6645E-005$

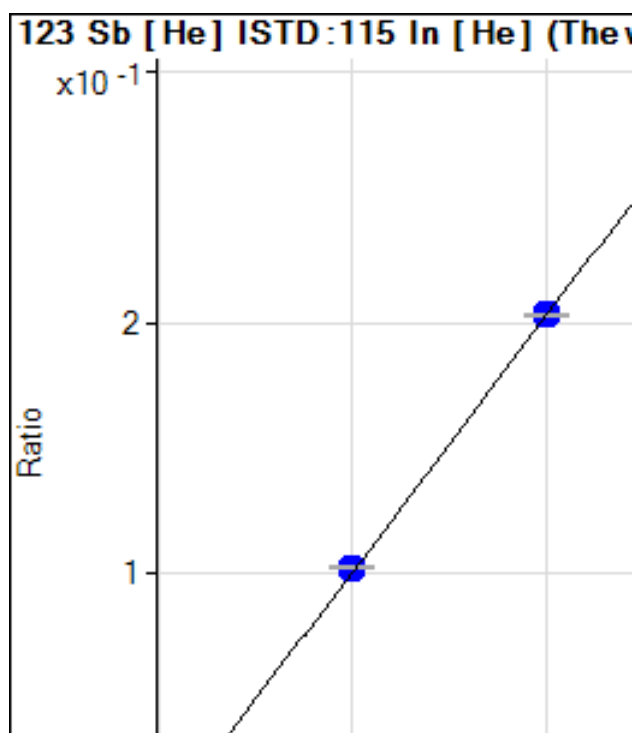
$R = 0.9987$

DL = 0.001468 ug/l

BEC = 0.01016 ug/l

Weight: 1/y

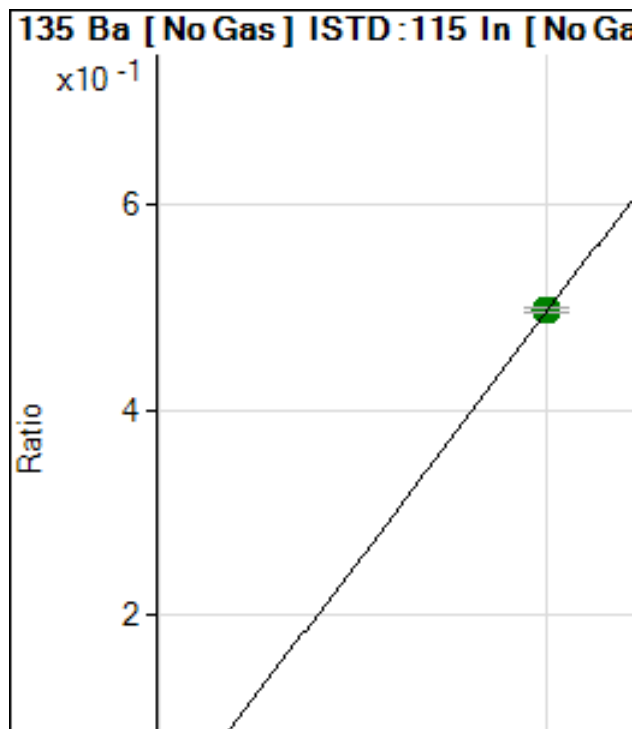
Min Conc: <None>



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	45.67	0.000		14.	
2	<input type="checkbox"/>	0.025	0.022	127.68	0.000		14.	-11
3	<input type="checkbox"/>	0.050	0.051	238.69	0.000		8.2	2.7
4	<input type="checkbox"/>	0.100	0.112	465.06	0.000		3.3	12.
5	<input type="checkbox"/>	0.500	0.506	1952.33	0.001		3.1	1.2
6	<input type="checkbox"/>	1.000	1.134	3950.62	0.002		14.	13.
7	<input type="checkbox"/>	10.000	10.112	37317.62	0.020		0.7	1.1
8	<input type="checkbox"/>	50.000	50.324	184554.04	0.102		1.0	0.6
9	<input type="checkbox"/>	100.00	99.825	364161.21	0.203		0.4	-0.
10	<input type="checkbox"/>			1244.85	0.000		7.4	
11	<input type="checkbox"/>			459.39	0.000		0.9	

$y = 0.0020 * x + 2.4855E-005$

$R = 1.0000$



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	16.63	0.000		35.	
2	<input type="checkbox"/>	0.025	0.028	146.38	0.000		26.	12.
3	<input type="checkbox"/>	0.050	0.048	239.53	0.000		17.	-3.
4	<input type="checkbox"/>	0.100	0.109	518.98	0.000		22.	9.0
5	<input type="checkbox"/>	0.500	0.535	2322.27	0.000		18.	7.1
6	<input type="checkbox"/>	1.000	1.101	4927.79	0.000		9.8	10.
7	<input type="checkbox"/>	10.000	10.166	45644.30	0.005		2.9	1.7
8	<input type="checkbox"/>	50.000	52.485	227430.77	0.026		4.3	5.0
9	<input type="checkbox"/>	100.00	99.761	457943.75	0.049		2.9	-0.
10	<input type="checkbox"/>	1000.0	999.89	4442000.0	0.497		0.9	0.0
11	<input type="checkbox"/>			63.21	0.000		26.	

$y = 4.9718E-004 * x + 1.8075E-006$

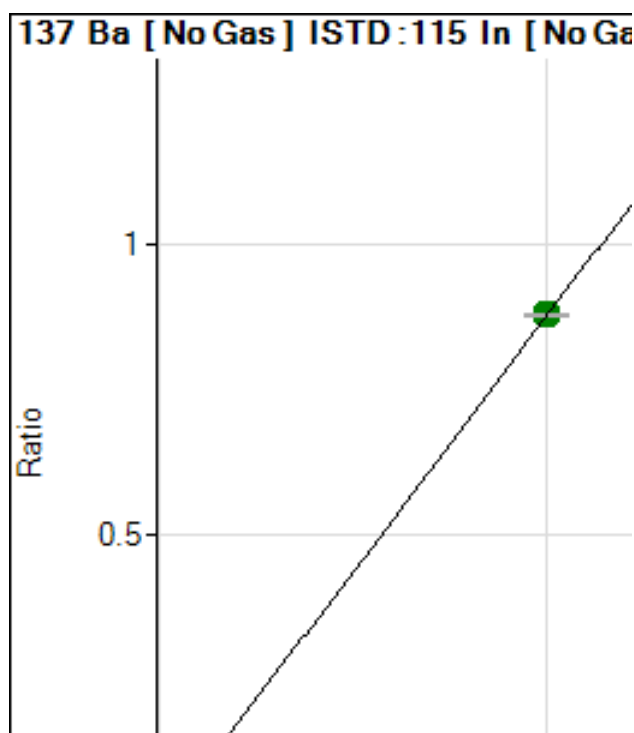
R = 1.0000

DL = 0.003824 ug/l

BEC = 0.003636 ug/l

Weight: 1/y

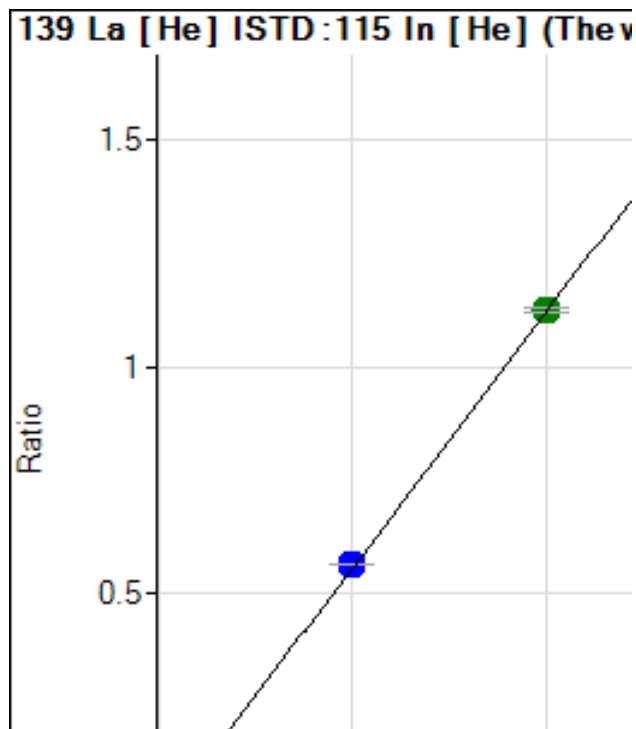
Min Conc: <None>



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	59.88	0.000		17.	
2	<input type="checkbox"/>	0.025	0.038	365.95	0.000		23.	50.
3	<input type="checkbox"/>	0.050	0.047	452.45	0.000		7.3	-5.
4	<input type="checkbox"/>	0.100	0.113	978.10	0.000		3.6	12.
5	<input type="checkbox"/>	0.500	0.512	3962.72	0.000		15.	2.4
6	<input type="checkbox"/>	1.000	1.009	8019.76	0.000		10.	0.9
7	<input type="checkbox"/>	10.000	10.022	79588.78	0.008		4.6	0.2
8	<input type="checkbox"/>	50.000	51.383	393750.42	0.045		4.9	2.8
9	<input type="checkbox"/>	100.00	97.246	789453.43	0.085		3.7	-2.
10	<input type="checkbox"/>	1000.0	1000.2	7860196.1	0.879		0.7	0.0
11	<input type="checkbox"/>			106.45	0.000		39.	

$y = 8.7933E-004 * x + 6.5070E-006$

R = 1.0000



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	4.44	0.000		43.	
2	<input type="checkbox"/>	0.025	0.025	525.57	0.000		2.6	1.6
3	<input type="checkbox"/>	0.050	0.070	1451.63	0.000		32.	39.
4	<input type="checkbox"/>	0.100	0.118	2456.90	0.001		4.1	18.
5	<input type="checkbox"/>	0.500	0.491	10236.05	0.005		1.2	-1.
6	<input type="checkbox"/>	1.000	1.127	21497.77	0.012		13.	12.
7	<input type="checkbox"/>	10.000	10.152	206901.92	0.114		0.8	1.5
8	<input type="checkbox"/>	50.000	50.225	1018190.0	0.565		0.7	0.5
9	<input type="checkbox"/>	100.00	99.871	2014129.1	1.125		0.8	-0.
10	<input type="checkbox"/>			181.11	0.000		9.4	
11	<input type="checkbox"/>			13.33	0.000		25.	

$y = 0.0113 * x + 2.4195E-006$

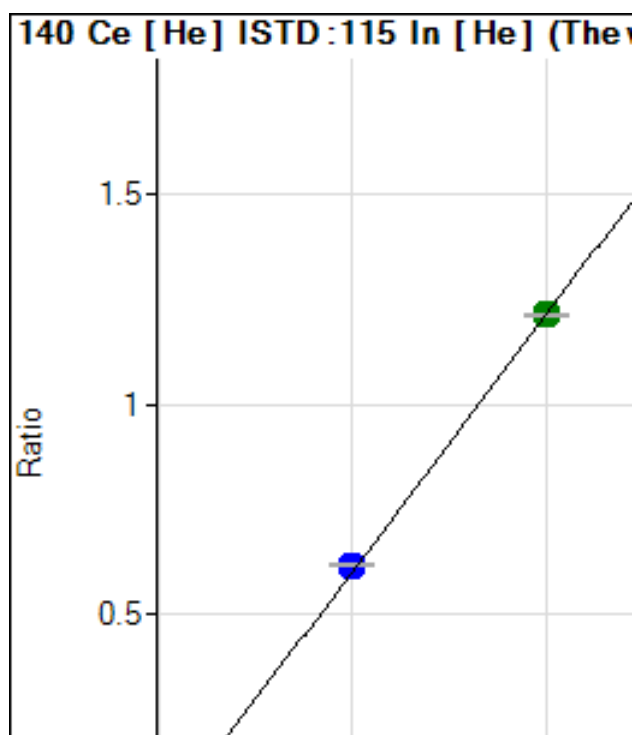
R = 1.0000

DL = 0.0002819 ug/l

BEC = 0.0002148 ug/l

Weight: 1/y

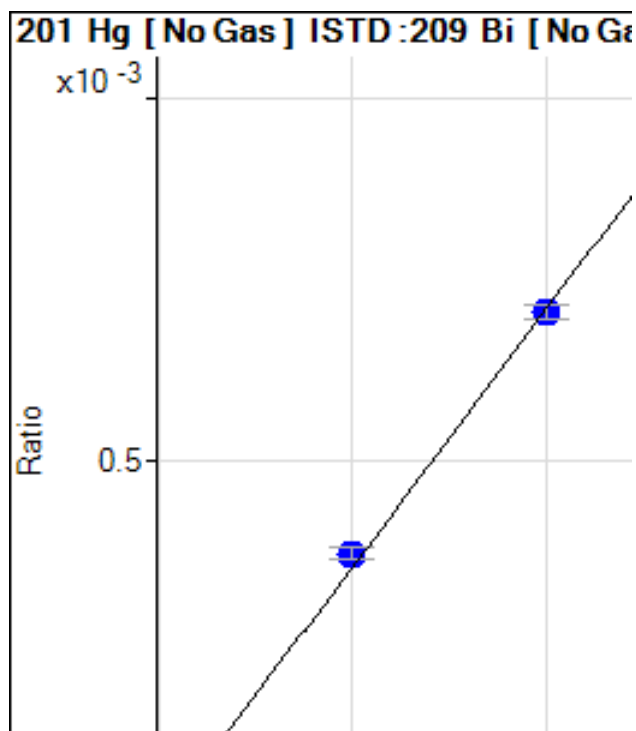
Min Conc: <None>



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	47.78	0.000		15	
2	<input type="checkbox"/>	0.025	0.025	598.91	0.000		6.7	-0.
3	<input type="checkbox"/>	0.050	0.054	1264.51	0.000		1.7	8.3
4	<input type="checkbox"/>	0.100	0.113	2566.92	0.001		7.7	12.
5	<input type="checkbox"/>	0.500	0.487	11025.55	0.006		1.1	-2.
6	<input type="checkbox"/>	1.000	1.134	23443.14	0.013		12.	13.
7	<input type="checkbox"/>	10.000	10.215	225239.67	0.124		1.7	2.2
8	<input type="checkbox"/>	50.000	50.762	1113146.7	0.618		1.1	1.5
9	<input type="checkbox"/>	100.00	99.596	2172739.4	1.213		0.6	-0.
10	<input type="checkbox"/>			962.57	0.000		83.	
11	<input type="checkbox"/>			22.22	0.000		17.	

$y = 0.0122 * x + 2.5984E-005$

R = 1.0000



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	17.00	0.000		21.	
2	<input type="checkbox"/>			17.00	0.000		6.1	
3	<input type="checkbox"/>	0.001	-0.001	15.33	0.000		19.	-15
4	<input type="checkbox"/>	0.002	0.001	19.66	0.000		36.	-58
5	<input type="checkbox"/>	0.010	0.010	43.66	0.000		22.	-3.
6	<input type="checkbox"/>	0.020	0.021	78.98	0.000		15.	6.7
7	<input type="checkbox"/>	0.200	0.199	595.90	0.000		3.4	-0.
8	<input type="checkbox"/>	1.000	1.044	2963.41	0.000		4.0	4.4
9	<input type="checkbox"/>	2.000	1.978	5871.79	0.000		2.7	-1.
10	<input type="checkbox"/>			47.32	0.000		9.9	
11	<input type="checkbox"/>			34.66	0.000		13.	

$y = 3.5544E-004 * x + 2.0108E-006$

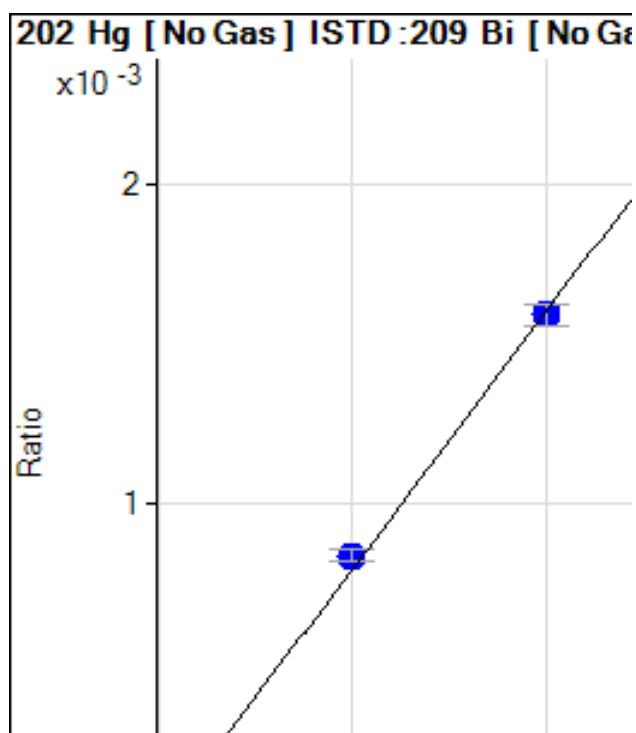
R = 0.9997

DL = 0.003699 ug/l

BEC = 0.005657 ug/l

Weight: 1/y

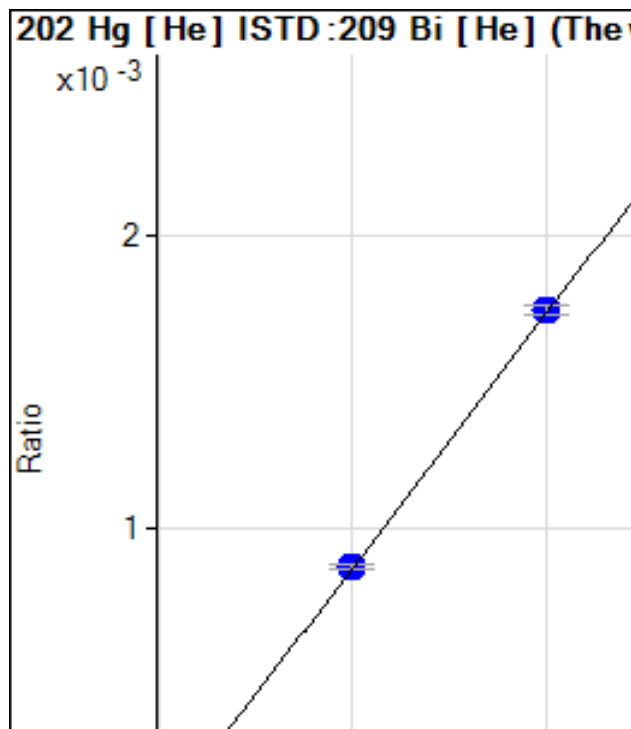
Min Conc: <None>



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	45.66	0.000		11.	
2	<input type="checkbox"/>			52.66	0.000		26.	
3	<input type="checkbox"/>	0.001	0.000	47.99	0.000		19.	-63
4	<input type="checkbox"/>	0.002	0.003	63.32	0.000		21.	28.
5	<input type="checkbox"/>	0.010	0.009	103.98	0.000		6.0	-6.
6	<input type="checkbox"/>	0.020	0.019	173.97	0.000		3.8	-2.
7	<input type="checkbox"/>	0.200	0.208	1409.13	0.000		2.5	4.0
8	<input type="checkbox"/>	1.000	1.040	6663.67	0.000		4.6	4.0
9	<input type="checkbox"/>	2.000	1.979	13249.57	0.001		4.1	-1.
10	<input type="checkbox"/>			121.98	0.000		5.1	
11	<input type="checkbox"/>			88.31	0.000		8.7	

$y = 8.0146E-004 * x + 5.3932E-006$

R = 0.9997



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	16.67	0.000		16.	
2	<input type="checkbox"/>			19.00	0.000		27.	
3	<input type="checkbox"/>	0.001	-0.001	15.33	0.000		13.	-16
4	<input type="checkbox"/>	0.002	0.000	18.00	0.000		26.	-76
5	<input type="checkbox"/>	0.010	0.006	31.32	0.000		23.	-44
6	<input type="checkbox"/>	0.020	0.019	63.99	0.000		11.	-3.
7	<input type="checkbox"/>	0.200	0.182	493.58	0.000		3.5	-8.
8	<input type="checkbox"/>	1.000	0.997	2570.74	0.000		2.5	-0.
9	<input type="checkbox"/>	2.000	2.003	4974.60	0.001		1.9	0.2
10	<input type="checkbox"/>			55.32	0.000		9.7	
11	<input type="checkbox"/>			28.66	0.000		8.5	

$y = 8.6698E-004 * x + 5.5177E-006$

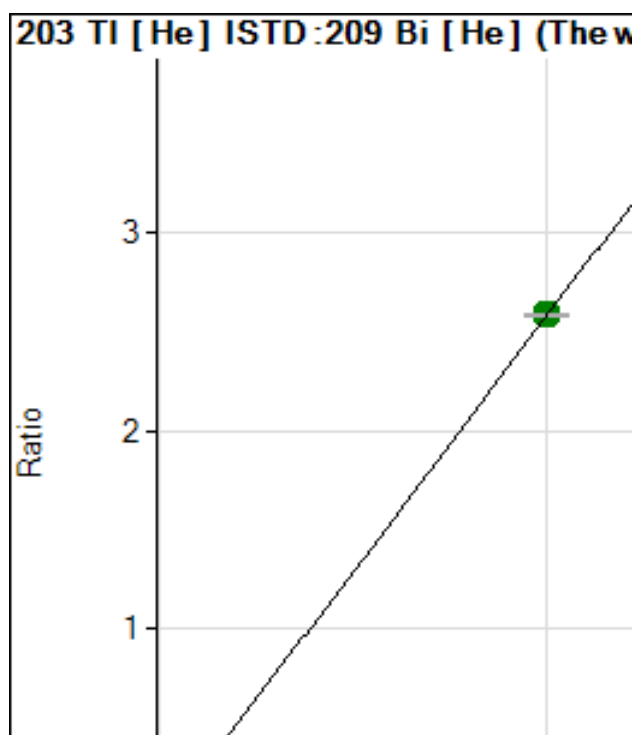
R = 1.0000

DL = 0.003233 ug/l

BEC = 0.006364 ug/l

Weight: 1/y

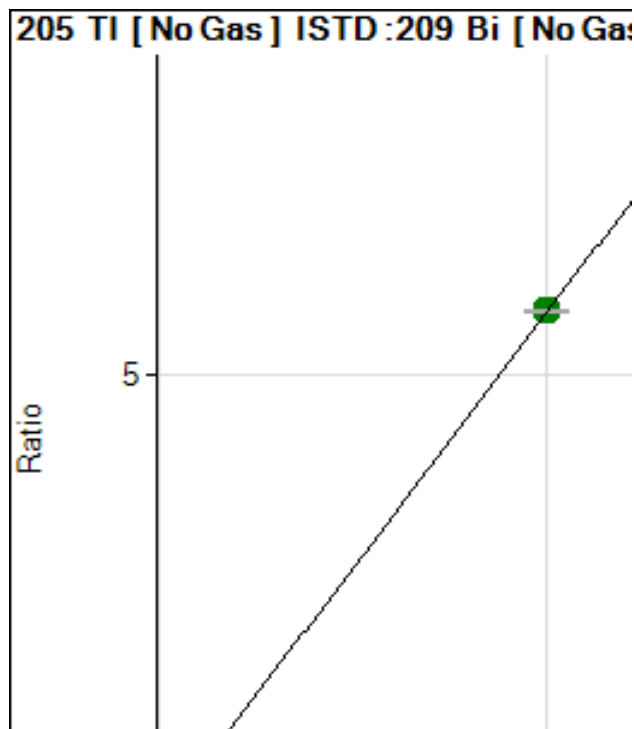
Min Conc: <None>



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	20.68	0.000		19.	
2	<input type="checkbox"/>	0.025	0.027	230.76	0.000		6.5	8.1
3	<input type="checkbox"/>	0.050	0.057	472.20	0.000		4.1	13.
4	<input type="checkbox"/>	0.100	0.109	875.05	0.000		2.4	8.6
5	<input type="checkbox"/>	0.500	0.479	3777.39	0.001		1.2	-4.
6	<input type="checkbox"/>	1.000	1.068	7940.89	0.002		10.	6.8
7	<input type="checkbox"/>	10.000	9.705	75714.96	0.025		0.6	-3.
8	<input type="checkbox"/>	50.000	48.464	370518.04	0.125		0.9	-3.
9	<input type="checkbox"/>	100.00	99.724	736223.50	0.257		0.6	-0.
10	<input type="checkbox"/>	1000.0	1000.1	7228148.4	2.586		0.7	0.0
11	<input type="checkbox"/>			1153.85	0.000		14.	

$y = 0.0026 * x + 6.8421E-006$

R = 1.0000



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	155.56	0.000		16.	
2	<input type="checkbox"/>	0.025	0.025	1361.19	0.000		5.1	1.6
3	<input type="checkbox"/>	0.050	0.053	2735.86	0.000		8.3	6.4
4	<input type="checkbox"/>	0.100	0.115	5724.60	0.000		1.1	14.
5	<input type="checkbox"/>	0.500	0.502	23169.08	0.002		12.	0.3
6	<input type="checkbox"/>	1.000	1.046	49512.72	0.006		7.5	4.6
7	<input type="checkbox"/>	10.000	10.036	470034.62	0.057		2.8	0.4
8	<input type="checkbox"/>	50.000	50.851	2309853.3	0.290		4.7	1.7
9	<input type="checkbox"/>	100.00	94.357	4491448.2	0.539		4.3	-5.
10	<input type="checkbox"/>	1000.0	1000.5	44633755.	5.721		0.6	0.1
11	<input type="checkbox"/>			8307.12	0.001		15.	

$y = 0.0057 * x + 1.8376E-005$

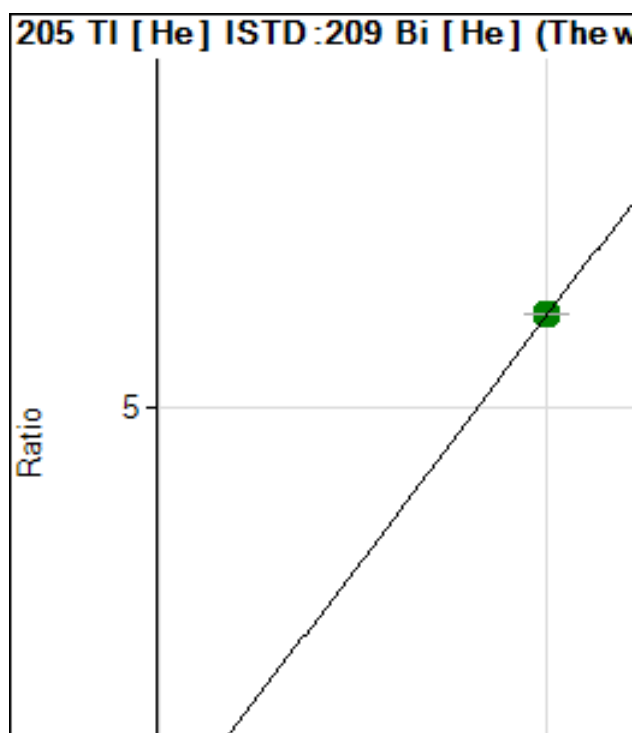
R = 1.0000

DL = 0.001629 ug/l

BEC = 0.003213 ug/l

Weight: 1/y

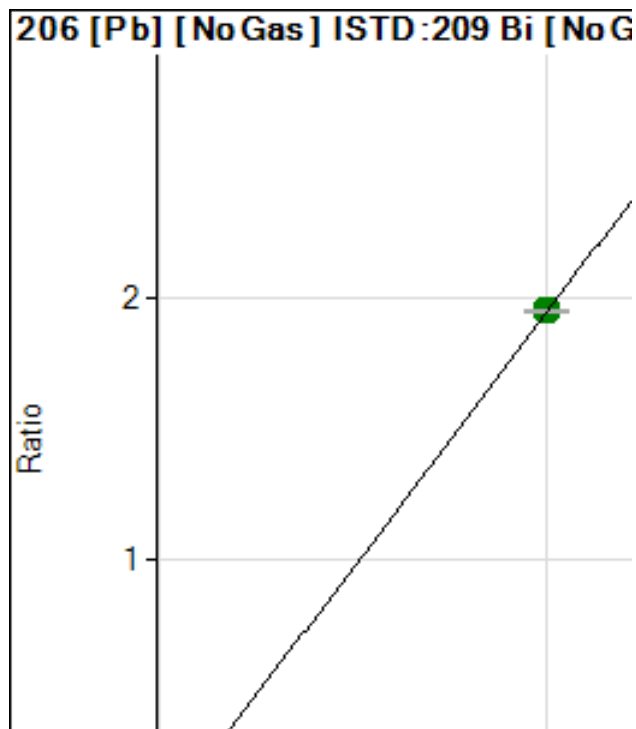
Min Conc: <None>



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	44.02	0.000		7.6	
2	<input type="checkbox"/>	0.025	0.025	510.21	0.000		3.9	1.5
3	<input type="checkbox"/>	0.050	0.053	1035.79	0.000		4.8	5.1
4	<input type="checkbox"/>	0.100	0.114	2159.71	0.000		3.1	13.
5	<input type="checkbox"/>	0.500	0.479	8943.26	0.002		0.9	-4.
6	<input type="checkbox"/>	1.000	1.080	18971.73	0.006		12.	8.0
7	<input type="checkbox"/>	10.000	9.814	181132.51	0.060		0.3	-1.
8	<input type="checkbox"/>	50.000	49.290	891464.56	0.301		1.2	-1.
9	<input type="checkbox"/>	100.00	98.895	1727197.2	0.605		0.1	-1.
10	<input type="checkbox"/>	1000.0	1000.1	17100744.	6.118		0.1	0.0
11	<input type="checkbox"/>			2702.03	0.000		11.	

$y = 0.0061 * x + 1.4577E-005$

R = 1.0000



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	118.89	0.000		6.3	
2	<input type="checkbox"/>	0.025	0.025	523.35	0.000		4.9	0.2
3	<input type="checkbox"/>	0.050	0.052	987.82	0.000		6.0	4.7
4	<input type="checkbox"/>	0.100	0.114	2001.28	0.000		2.5	13.
5	<input type="checkbox"/>	0.500	0.512	8116.97	0.001		12.	2.4
6	<input type="checkbox"/>	1.000	1.057	17101.03	0.002		9.0	5.7
7	<input type="checkbox"/>	10.000	10.265	163934.48	0.020		1.3	2.7
8	<input type="checkbox"/>	50.000	51.620	799152.99	0.100		4.3	3.2
9	<input type="checkbox"/>	100.00	95.984	1557727.2	0.187		2.3	-4.
10	<input type="checkbox"/>	1000.0	1000.3	15206698.	1.949		0.2	0.0
11	<input type="checkbox"/>			854.48	0.000		14.	

$y = 0.0019 * x + 1.4046E-005$

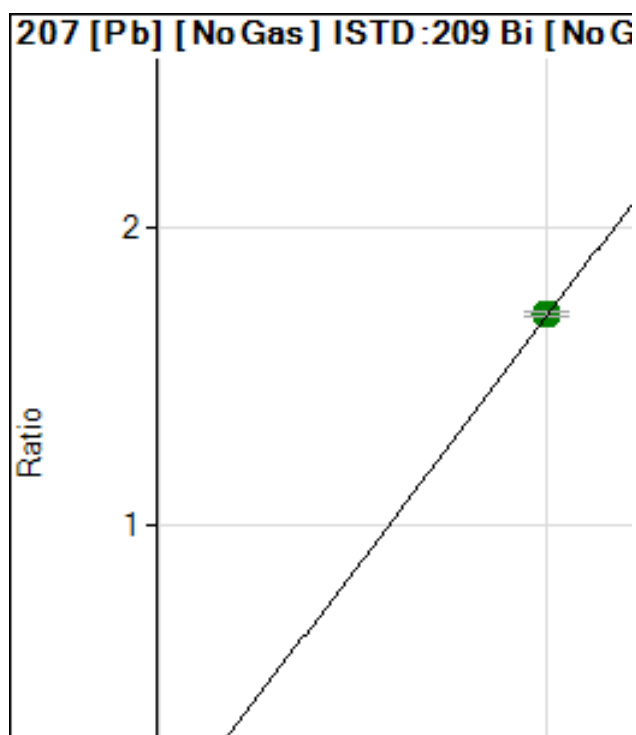
R = 1.0000

DL = 0.001369 ug/l

BEC = 0.007208 ug/l

Weight: 1/y

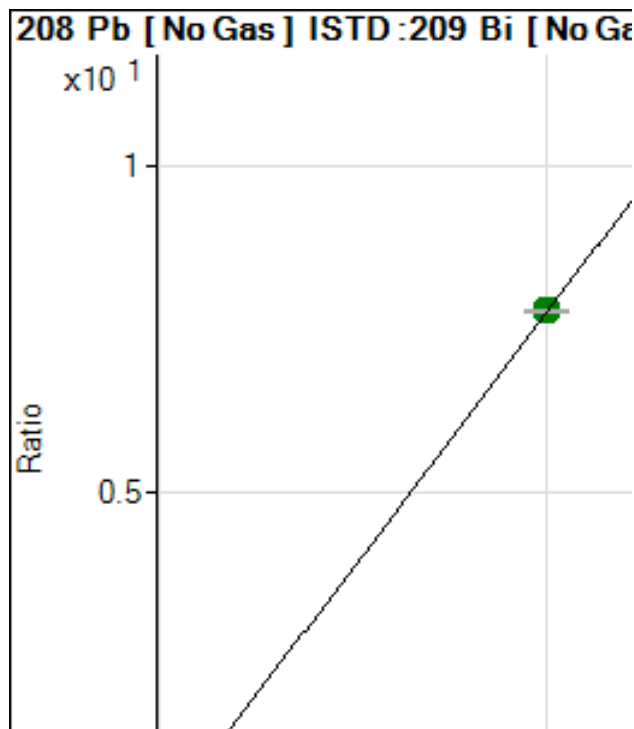
Min Conc: <None>



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	101.11	0.000		7.2	
2	<input type="checkbox"/>	0.025	0.025	461.12	0.000		0.9	1.8
3	<input type="checkbox"/>	0.050	0.055	895.59	0.000		6.1	9.5
4	<input type="checkbox"/>	0.100	0.112	1727.90	0.000		2.7	12.
5	<input type="checkbox"/>	0.500	0.517	7193.10	0.000		9.8	3.5
6	<input type="checkbox"/>	1.000	1.054	14974.03	0.001		5.0	5.4
7	<input type="checkbox"/>	10.000	10.022	140191.96	0.017		1.5	0.2
8	<input type="checkbox"/>	50.000	50.832	689304.60	0.086		4.5	1.7
9	<input type="checkbox"/>	100.00	96.269	1368224.2	0.164		3.7	-3.
10	<input type="checkbox"/>	1000.0	1000.3	13320806.	1.707		1.1	0.0
11	<input type="checkbox"/>			688.91	0.000		8.2	

$y = 0.0017 * x + 1.1947E-005$

R = 1.0000



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	462.23	0.000		2.9	
2	<input type="checkbox"/>	0.025	0.025	2094.52	0.000		4.9	1.4
3	<input type="checkbox"/>	0.050	0.055	4083.61	0.000		8.2	9.7
4	<input type="checkbox"/>	0.100	0.113	7965.44	0.000		1.0	13.
5	<input type="checkbox"/>	0.500	0.515	32572.46	0.004		12.	3.0
6	<input type="checkbox"/>	1.000	1.064	68759.95	0.008		7.3	6.4
7	<input type="checkbox"/>	10.000	10.214	650958.69	0.079		1.6	2.1
8	<input type="checkbox"/>	50.000	51.229	3165494.3	0.398		4.2	2.5
9	<input type="checkbox"/>	100.00	95.902	6210390.4	0.745		3.3	-4.
10	<input type="checkbox"/>	1000.0	1000.3	60693611.	7.780		0.4	0.0
11	<input type="checkbox"/>			3187.96	0.000		9.9	

$y = 0.0078 * x + 5.4632E-005$

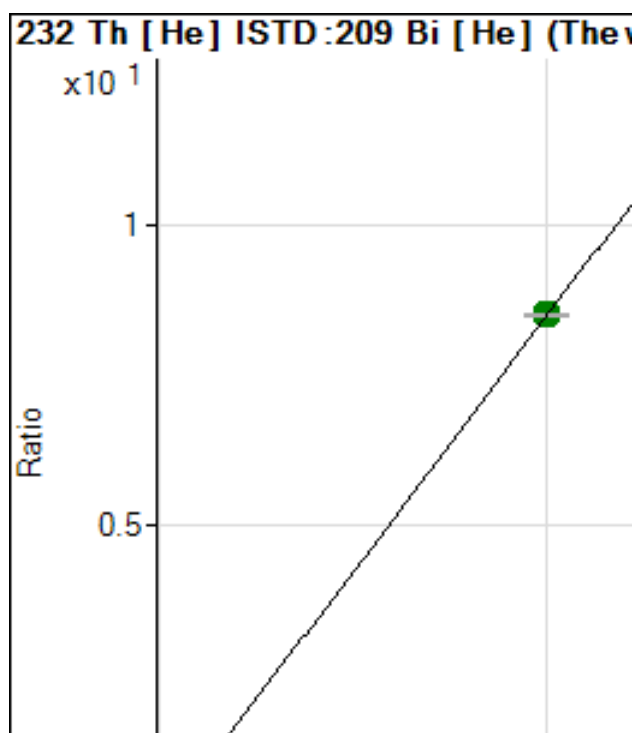
R = 1.0000

DL = 0.0006176 ug/l

BEC = 0.007025 ug/l

Weight: 1/y

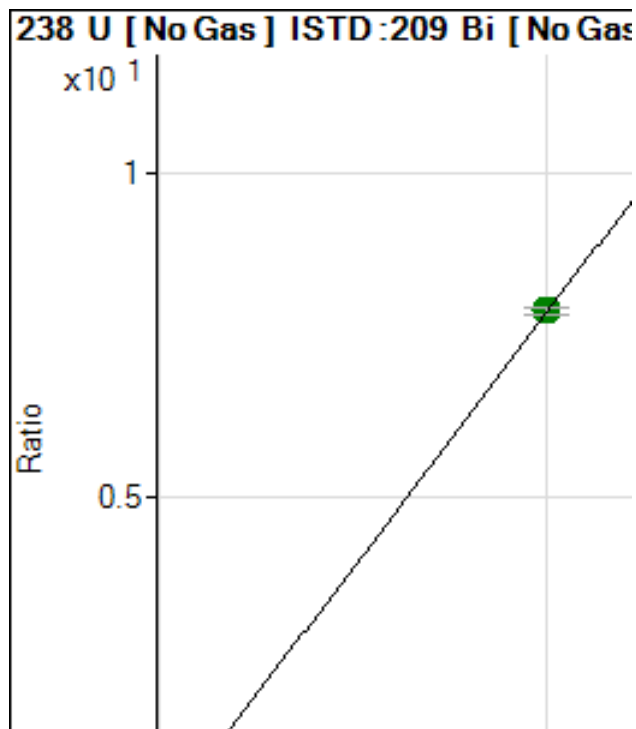
Min Conc: <None>



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	110.71	0.000		14.	
2	<input type="checkbox"/>	0.025	0.013	440.19	0.000		3.2	-48
3	<input type="checkbox"/>	0.050	0.031	929.74	0.000		7.2	-37
4	<input type="checkbox"/>	0.100	0.072	1970.28	0.000		2.5	-28
5	<input type="checkbox"/>	0.500	0.358	9337.08	0.003		2.3	-28
6	<input type="checkbox"/>	1.000	0.906	22224.36	0.007		8.7	-9.
7	<input type="checkbox"/>	10.000	9.332	239317.01	0.079		0.5	-6.
8	<input type="checkbox"/>	50.000	48.524	1219264.1	0.412		0.9	-3.
9	<input type="checkbox"/>	100.00	99.118	2404974.2	0.842		0.6	-0.
10	<input type="checkbox"/>	1000.0	1000.1	23757610.	8.500		0.6	0.0
11	<input type="checkbox"/>			7841.51	0.002		6.4	

$y = 0.0085 * x + 3.6650E-005$

R = 1.0000



	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	0.000	0.000	4.33	0.000		57.	
2	<input type="checkbox"/>	0.025	0.024	1572.78	0.000		3.5	-4.
3	<input type="checkbox"/>	0.050	0.052	3501.44	0.000		9.5	4.6
4	<input type="checkbox"/>	0.100	0.111	7443.63	0.000		0.6	11.
5	<input type="checkbox"/>	0.500	0.496	31391.57	0.003		12.	-0.
6	<input type="checkbox"/>	1.000	1.116	72183.31	0.008		20.	11.
7	<input type="checkbox"/>	10.000	10.102	652093.13	0.079		2.6	1.0
8	<input type="checkbox"/>	50.000	49.896	3124698.0	0.393		4.6	-0.
9	<input type="checkbox"/>	100.00	94.216	6183714.9	0.742		4.1	-5.
10	<input type="checkbox"/>	1000.0	1000.5	61542903.	7.888		1.1	0.1
11	<input type="checkbox"/>			4272.88	0.000		21.	

$y = 0.0079 * x + 5.1082E-007$

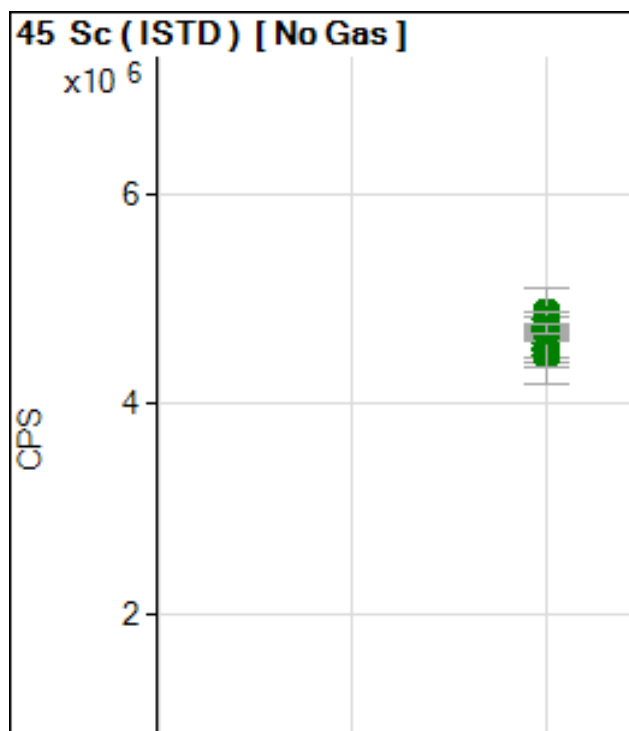
R = 1.0000

DL = 0.0001121 ug/l

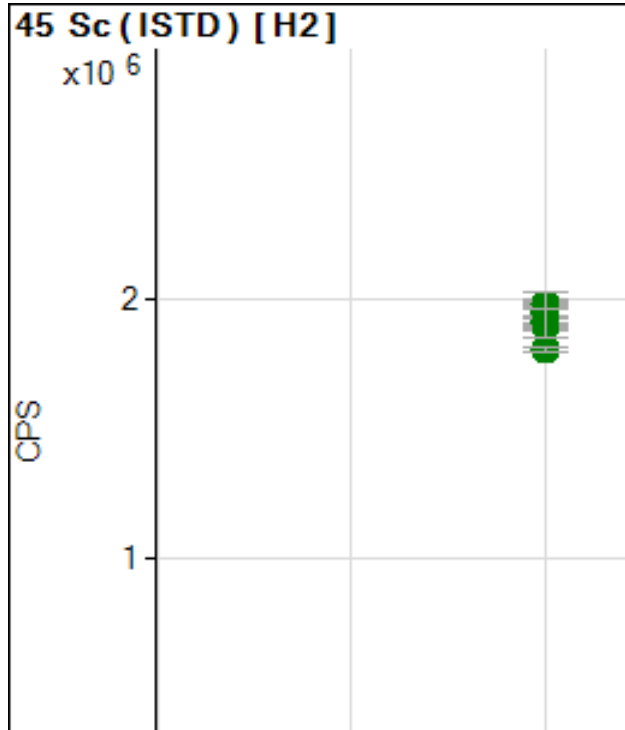
BEC = 6.479E-05 ug/l

Weight: 1/y

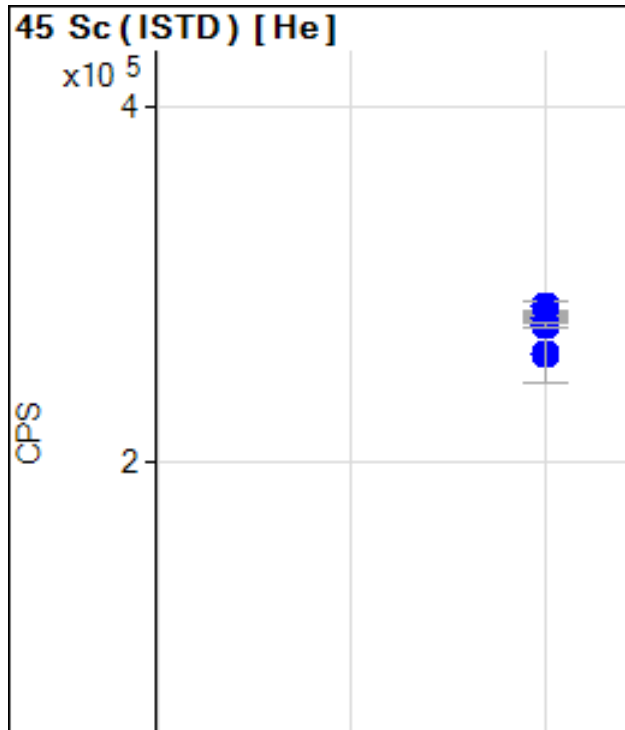
Min Conc: <None>



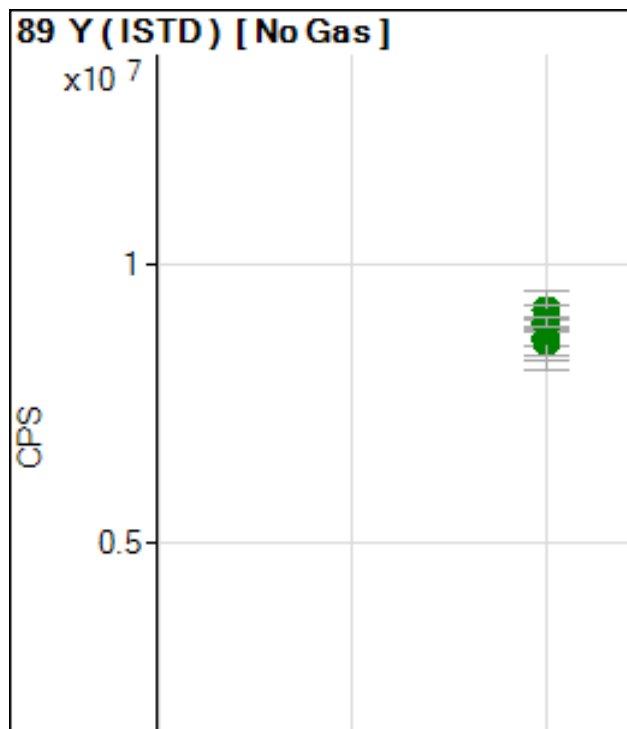
	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	1.000		4708334.3			1.8	
2	<input type="checkbox"/>	1.000		4725267.4			1.1	
3	<input type="checkbox"/>	1.000		4873501.3			10.	
4	<input type="checkbox"/>	1.000		4745995.9			0.8	
5	<input type="checkbox"/>	1.000		4523753.8			14.	
6	<input type="checkbox"/>	1.000		4584190.9			7.8	
7	<input type="checkbox"/>	1.000		4540750.0			4.0	
8	<input type="checkbox"/>	1.000		4474196.3			5.5	
9	<input type="checkbox"/>	1.000		4809860.7			3.3	
10	<input type="checkbox"/>	1.000		4687243.2			1.4	
11	<input type="checkbox"/>	1.000		4731180.0			2.0	



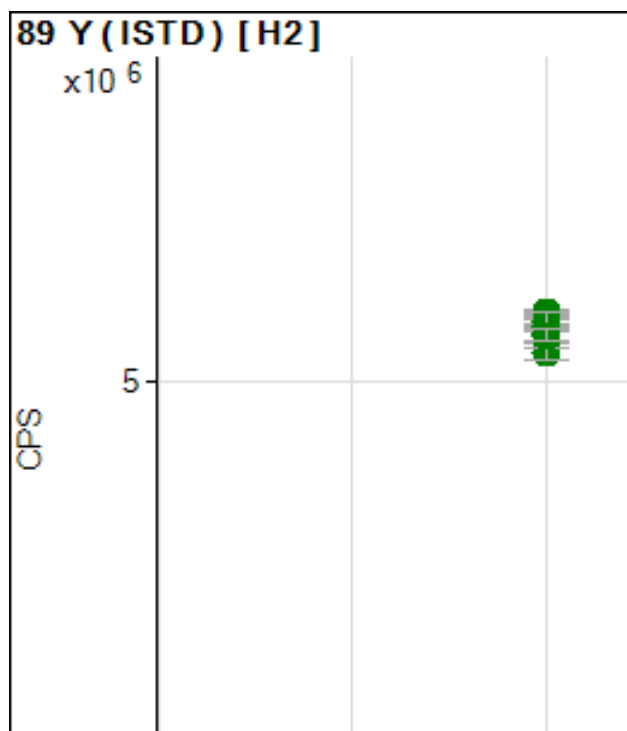
	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	1.000		1902334.8			0.9	
2	<input type="checkbox"/>	1.000		1960851.8			3.6	
3	<input type="checkbox"/>	1.000		1801980.0			1.0	
4	<input type="checkbox"/>	1.000		1954684.0			4.6	
5	<input type="checkbox"/>	1.000		1946101.6			3.9	
6	<input type="checkbox"/>	1.000		1936083.2			4.9	
7	<input type="checkbox"/>	1.000		1938601.3			4.0	
8	<input type="checkbox"/>	1.000		1939573.0			5.1	
9	<input type="checkbox"/>	1.000		1922223.0			4.0	
10	<input type="checkbox"/>	1.000		1980007.5			4.7	
11	<input type="checkbox"/>	1.000		1906398.7			5.8	



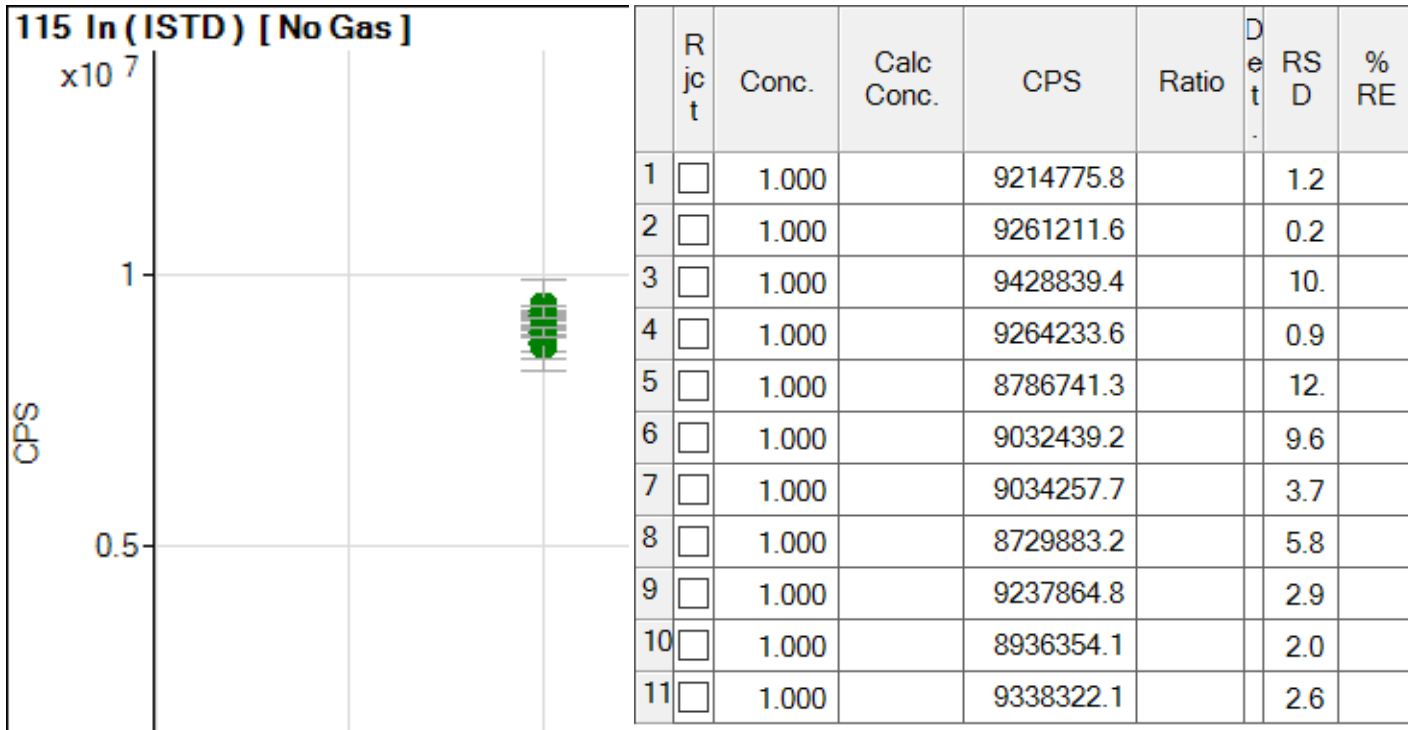
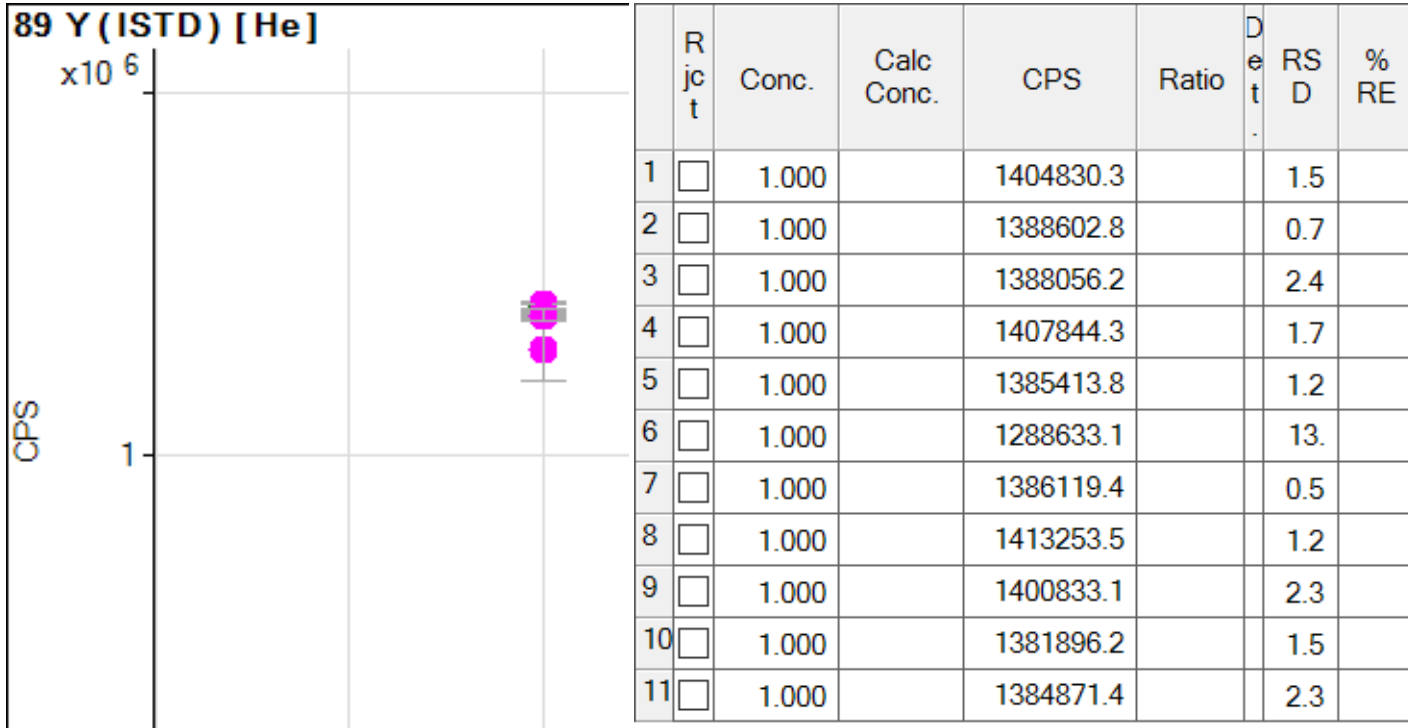
	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	1.000		287467.46			1.9	
2	<input type="checkbox"/>	1.000		279393.57			1.0	
3	<input type="checkbox"/>	1.000		279915.57			1.1	
4	<input type="checkbox"/>	1.000		279634.63			1.1	
5	<input type="checkbox"/>	1.000		279151.57			0.1	
6	<input type="checkbox"/>	1.000		260636.98			12.	
7	<input type="checkbox"/>	1.000		279955.92			1.4	
8	<input type="checkbox"/>	1.000		281691.61			0.5	
9	<input type="checkbox"/>	1.000		284143.54			0.5	
10	<input type="checkbox"/>	1.000		281133.32			0.8	
11	<input type="checkbox"/>	1.000		277085.36			1.1	

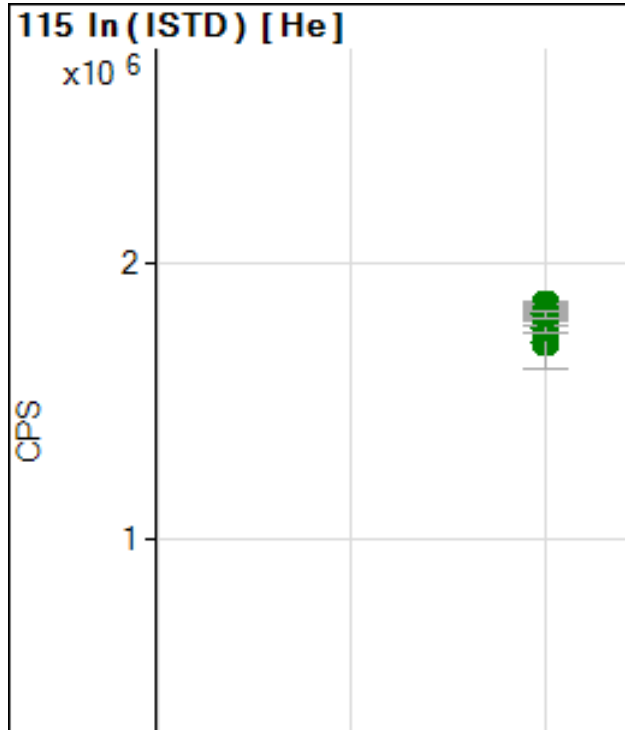


	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	1.000		8803335.4			0.2	
2	<input type="checkbox"/>	1.000		9028616.1			0.5	
3	<input type="checkbox"/>	1.000		9150913.4			8.2	
4	<input type="checkbox"/>	1.000		8994044.3			0.1	
5	<input type="checkbox"/>	1.000		8674674.3			13.	
6	<input type="checkbox"/>	1.000		8613434.8			8.3	
7	<input type="checkbox"/>	1.000		8660336.3			3.7	
8	<input type="checkbox"/>	1.000		8592558.5			5.8	
9	<input type="checkbox"/>	1.000		8918824.6			2.7	
10	<input type="checkbox"/>	1.000		8793264.2			0.8	
11	<input type="checkbox"/>	1.000		8957724.6			2.1	

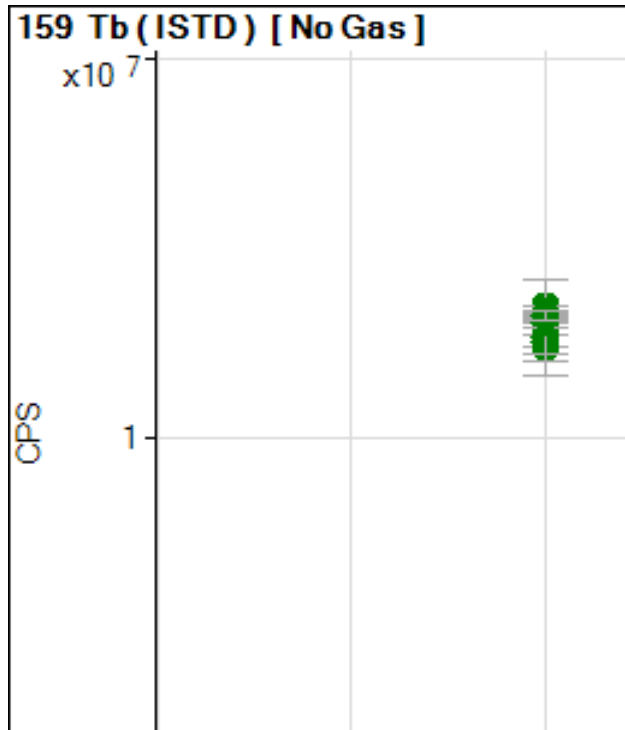


	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	1.000		5613814.1			1.2	
2	<input type="checkbox"/>	1.000		5779979.1			1.6	
3	<input type="checkbox"/>	1.000		5319800.2			2.2	
4	<input type="checkbox"/>	1.000		5671204.4			1.7	
5	<input type="checkbox"/>	1.000		5784230.8			0.5	
6	<input type="checkbox"/>	1.000		5661715.3			1.5	
7	<input type="checkbox"/>	1.000		5638851.7			1.0	
8	<input type="checkbox"/>	1.000		5549519.4			3.7	
9	<input type="checkbox"/>	1.000		5521922.7			1.7	
10	<input type="checkbox"/>	1.000		5676018.1			4.0	
11	<input type="checkbox"/>	1.000		5527601.1			2.5	

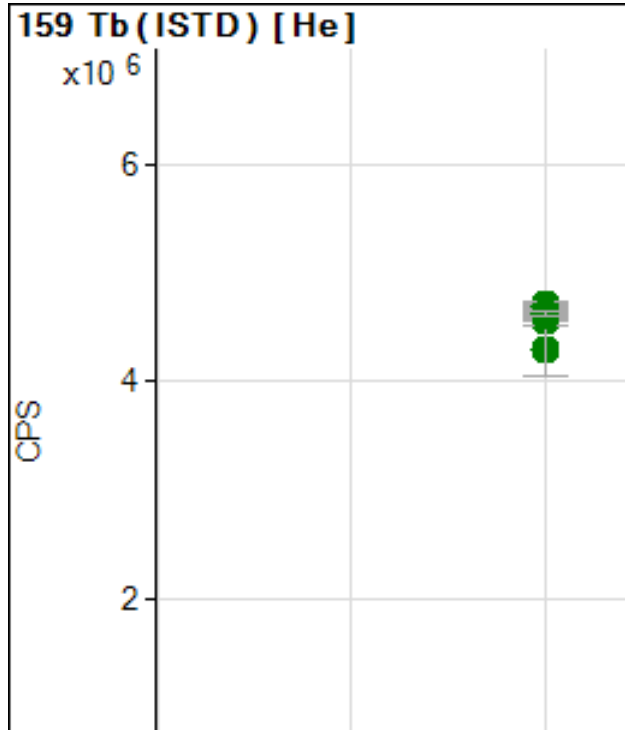




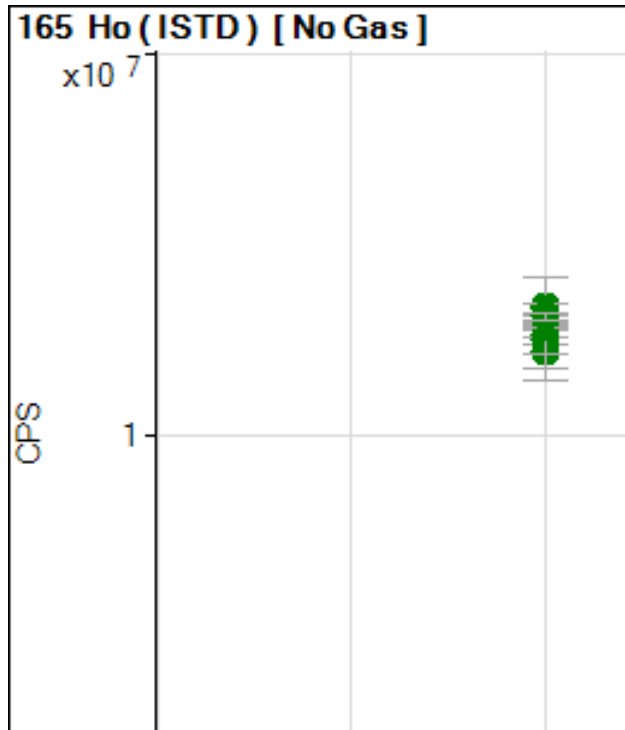
	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	1.000		1838142.6			0.4	
2	<input type="checkbox"/>	1.000		1821286.8			0.5	
3	<input type="checkbox"/>	1.000		1844488.9			1.3	
4	<input type="checkbox"/>	1.000		1837726.2			0.5	
5	<input type="checkbox"/>	1.000		1849125.6			0.3	
6	<input type="checkbox"/>	1.000		1709798.5			11.	
7	<input type="checkbox"/>	1.000		1809288.2			0.6	
8	<input type="checkbox"/>	1.000		1799678.0			0.8	
9	<input type="checkbox"/>	1.000		1790326.9			0.3	
10	<input type="checkbox"/>	1.000		1760800.2			1.0	
11	<input type="checkbox"/>	1.000		1813220.7			1.4	



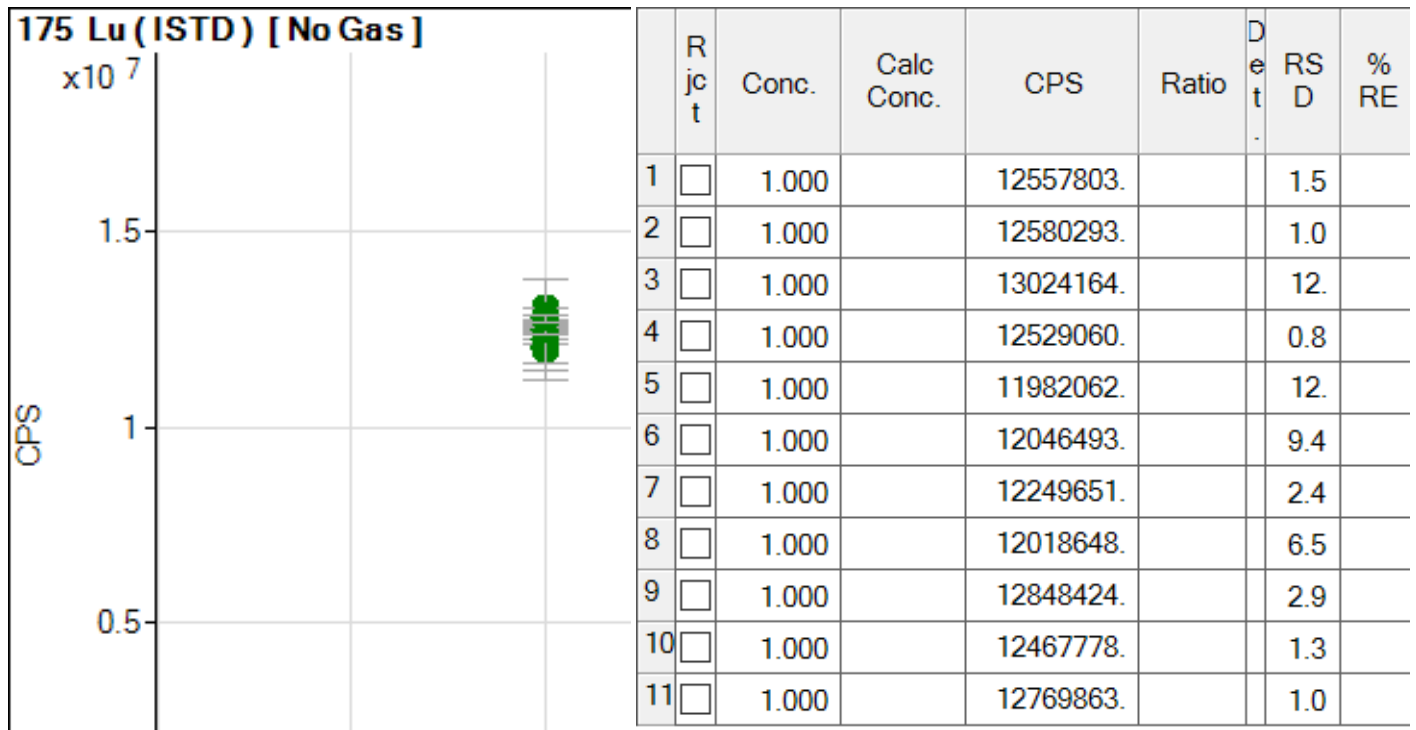
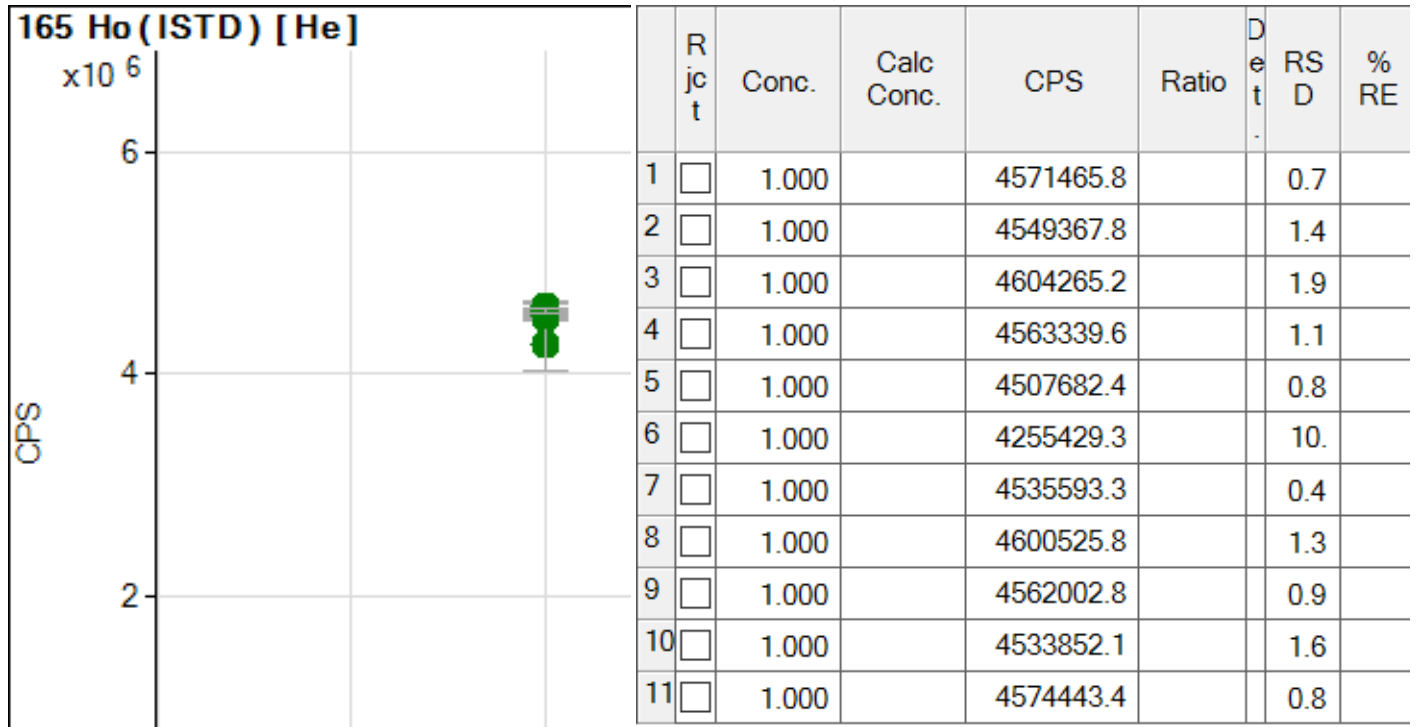
	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	1.000		13146384.			1.5	
2	<input type="checkbox"/>	1.000		13223020.			0.2	
3	<input type="checkbox"/>	1.000		13466152.			11.	
4	<input type="checkbox"/>	1.000		13190925.			1.0	
5	<input type="checkbox"/>	1.000		12385612.			12.	
6	<input type="checkbox"/>	1.000		12657282.			9.9	
7	<input type="checkbox"/>	1.000		12671290.			4.0	
8	<input type="checkbox"/>	1.000		12560180.			5.7	
9	<input type="checkbox"/>	1.000		13355123.			1.8	
10	<input type="checkbox"/>	1.000		13044306.			2.4	
11	<input type="checkbox"/>	1.000		13227290.			1.9	

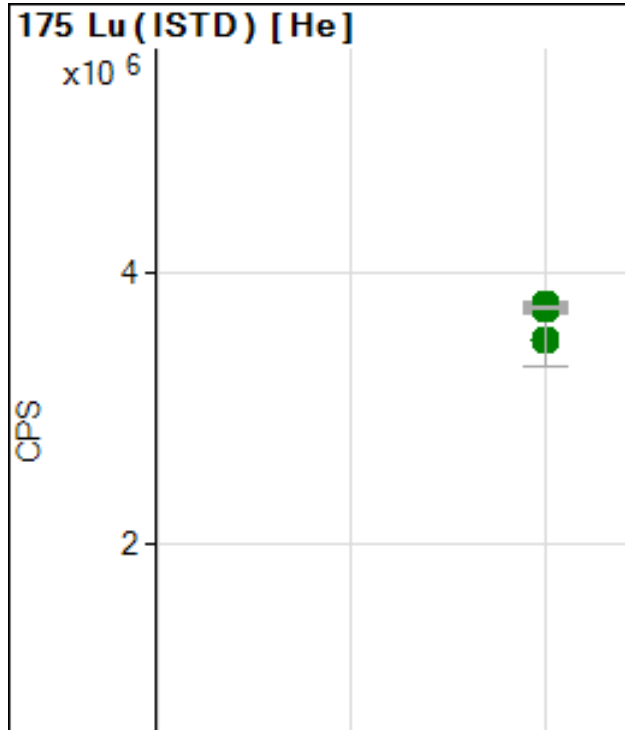


	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	1.000		4669055.3			0.7	
2	<input type="checkbox"/>	1.000		4612908.4			2.0	
3	<input type="checkbox"/>	1.000		4701359.4			0.5	
4	<input type="checkbox"/>	1.000		4559060.5			0.3	
5	<input type="checkbox"/>	1.000		4622046.5			1.3	
6	<input type="checkbox"/>	1.000		4284742.0			10.	
7	<input type="checkbox"/>	1.000		4687412.9			1.6	
8	<input type="checkbox"/>	1.000		4630973.9			1.6	
9	<input type="checkbox"/>	1.000		4604125.9			0.7	
10	<input type="checkbox"/>	1.000		4596635.6			0.2	
11	<input type="checkbox"/>	1.000		4620125.7			0.5	

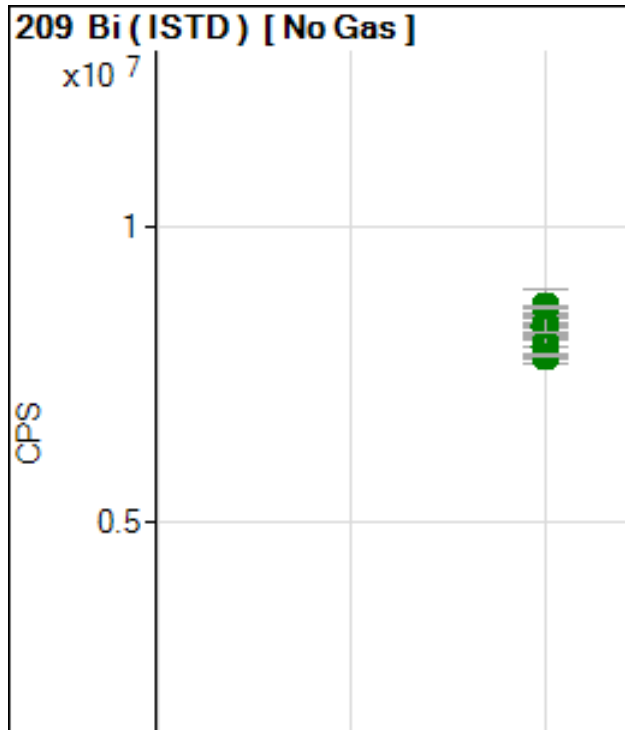


	R j c t	Conc.	Calc Conc.	CPS	Ratio	D e t	RS D	% RE
1	<input type="checkbox"/>	1.000		12821373.			0.7	
2	<input type="checkbox"/>	1.000		12898861.			0.2	
3	<input type="checkbox"/>	1.000		13357724.			11.	
4	<input type="checkbox"/>	1.000		12977803.			0.7	
5	<input type="checkbox"/>	1.000		12213704.			12.	
6	<input type="checkbox"/>	1.000		12353616.			9.7	
7	<input type="checkbox"/>	1.000		12597689.			3.4	
8	<input type="checkbox"/>	1.000		12524967.			6.3	
9	<input type="checkbox"/>	1.000		13291540.			2.4	
10	<input type="checkbox"/>	1.000		12838781.			0.1	
11	<input type="checkbox"/>	1.000		13116867.			1.5	

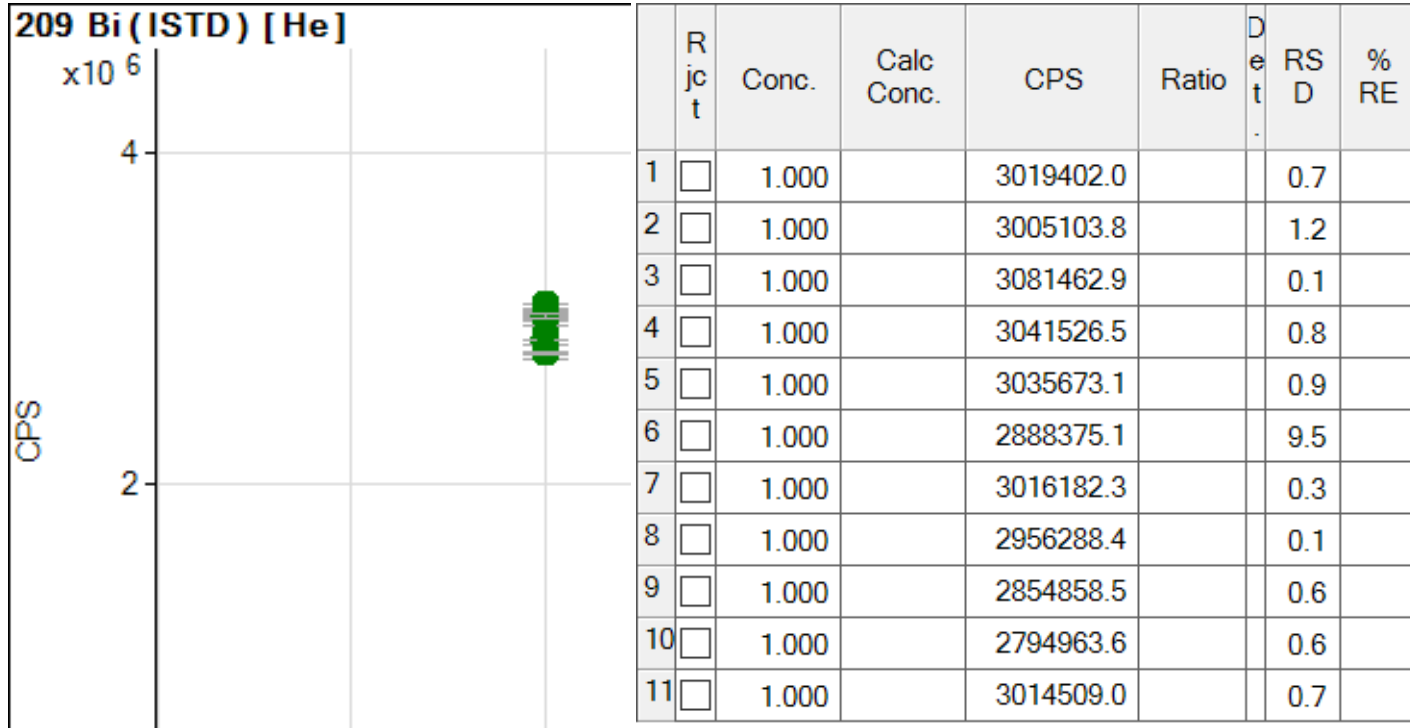




	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RS D	% RE
1	<input type="checkbox"/>	1.000		3725926.0			0.4	
2	<input type="checkbox"/>	1.000		3754505.9			1.2	
3	<input type="checkbox"/>	1.000		3751935.1			0.8	
4	<input type="checkbox"/>	1.000		3725042.9			1.8	
5	<input type="checkbox"/>	1.000		3738548.1			1.0	
6	<input type="checkbox"/>	1.000		3497377.2			10.	
7	<input type="checkbox"/>	1.000		3756318.5			0.1	
8	<input type="checkbox"/>	1.000		3731441.8			1.5	
9	<input type="checkbox"/>	1.000		3752601.5			0.1	
10	<input type="checkbox"/>	1.000		3741226.3			0.8	
11	<input type="checkbox"/>	1.000		3732882.9			0.3	



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RS D	% RE
1	<input type="checkbox"/>	1.000		8461850.7			0.8	
2	<input type="checkbox"/>	1.000		8323533.4			0.8	
3	<input type="checkbox"/>	1.000		8526621.2			9.2	
4	<input type="checkbox"/>	1.000		8503125.2			0.8	
5	<input type="checkbox"/>	1.000		8089306.0			10.	
6	<input type="checkbox"/>	1.000		8286313.9			7.7	
7	<input type="checkbox"/>	1.000		8191824.5			3.2	
8	<input type="checkbox"/>	1.000		7956415.9			5.5	
9	<input type="checkbox"/>	1.000		8332160.0			3.6	
10	<input type="checkbox"/>	1.000		7801227.6			0.5	
11	<input type="checkbox"/>	1.000		8635163.2			0.8	



ICPMS207-B Analytical Data

Sample Name Rinse
File Name 008BLKV.d
Data Path Name D:\Agilent\ICPMH1\DATA\220308BDoD.b
Acq Time 2022-03-08 15:21:05
Sample Type BlkVrfy
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	-1.345	ug/l	10520.53
Be	9	45	1	No Gas	-0.079	ug/l	340.27
B	11	45	1	No Gas		ug/l	3323.04
Na	23	45	3	He	-2.957	ug/l	35378.14
Mg	24	45	3	He	-1.419	ug/l	465.75
Al	27	45	1	No Gas		ug/l	4065.02
Si	28	45	2	H2		ug/l	11184.03
K	39	89	3	He	-0.283	ug/l	65360.57
Ca	40	89	2	H2	-0.134	ug/l	53072.49
Ti	47	89	1	No Gas	-0.006	ug/l	186.86
V	51	89	1	No Gas	0.200	ug/l	-14724.87
V	51	89	3	He	1.064	ug/l	4976.43
Cr	52	89	1	No Gas	-0.295	ug/l	37319.87
Cr	52	89	3	He	-0.008	ug/l	332.23
Mn	55	89	1	No Gas	-0.013	ug/l	5546.74
Mn	55	89	3	He	-0.015	ug/l	124.31
Fe	56	89	2	H2	-0.009	ug/l	6664.90
Fe	56	89	3	He	0.000	ug/l	4415.12
Co	59	89	1	No Gas	0.035	ug/l	276.12
Ni	60	89	1	No Gas	-0.086	ug/l	432.48
Ni	60	89	3	He	-0.002	ug/l	102.22
Cu	63	89	1	No Gas	-0.030	ug/l	1014.44
Cu	63	89	3	He	-0.011	ug/l	243.62
Cu	65	89	1	No Gas	-0.017	ug/l	422.84
Zn	66	89	1	No Gas		ug/l	345.48
Zn	66	89	3	He		ug/l	90.00
As	75	89	1	No Gas	-0.039	ug/l	11913.75
As	75	89	3	He	-0.021	ug/l	106.87
Se	78	89	2	H2	0.001	ug/l	11.78
Br	79	89	1	No Gas		ug/l	87900.42
Br	79	89	2	H2		ug/l	37927.94
Se	82	89	1	No Gas	0.015	ug/l	870.63
Kr	84	89	1	No Gas		ug/l	23046.08
Sr	88	89	1	No Gas	-0.002	ug/l	342.66
Sr	88	89	3	He	-0.005	ug/l	172.23
Mo	95	115	1	No Gas	0.003	ug/l	62.22
Mo	95	115	3	He	-0.013	ug/l	10.00
Mo	98	115	1	No Gas	0.002	ug/l	80.29
Ag	107	115	1	No Gas	0.000	ug/l	89.37
Ag	109	115	1	No Gas	0.000	ug/l	50.02
Cd	111	115	1	No Gas	0.073	ug/l	3125.84

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.000	ug/l	1.22
Cd	114	115	1	No Gas	0.001	ug/l	8.31
Cd	114	115	3	He	0.000	ug/l	1.36
Sn	118	115	1	No Gas	-0.006	ug/l	1021.35
Sn	118	115	3	He	-0.001	ug/l	278.89
Sb	121	115	1	No Gas	-0.007	ug/l	184.35
Sb	121	115	3	He	-0.004	ug/l	47.67
Sb	123	115	1	No Gas	-0.006	ug/l	157.35
Sb	123	115	3	He	-0.007	ug/l	40.34
Ba	135	115	1	No Gas	-0.002	ug/l	19.96
Ba	137	115	1	No Gas	0.000	ug/l	33.27
La	139	115	3	He	-0.038	ug/l	4.44
Ce	140	115	3	He	0.000	ug/l	5.56
Hg	201	209	1	No Gas		ug/l	10.33
Hg	202	209	1	No Gas		ug/l	45.66
Hg	202	209	3	He		ug/l	14.00
Tl	203	209	3	He	-0.003	ug/l	17.34
Tl	205	209	1	No Gas	-0.002	ug/l	128.89
Tl	205	209	3	He	-0.004	ug/l	40.02
[Pb]	206	209	1	No Gas	-0.004	ug/l	134.44
[Pb]	207	209	1	No Gas	-0.006	ug/l	103.33
Pb	208	209	1	No Gas	-0.006	ug/l	484.45
Th	232	209	3	He	-0.002	ug/l	110.71
U	238	209	1	No Gas	0.000	ug/l	6.67

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4736902.26	100.5
Sc	45	2	H2	1985111.12	103.5
Sc	45	3	He	275861.25	95.2
Y	89	1	No Gas	8877277.80	99.7
Y	89	2	H2	5548972.79	98.9
Y	89	3	He	1375776.72	95.4
In	115	1	No Gas	9182559.78	99.5
In	115	3	He	1821413.25	98.3
Tb	159	1	No Gas	12920565.84	98.8
Tb	159	3	He	4577974.06	97.3
Ho	165	1	No Gas	12661746.93	98.6
Ho	165	3	He	4522960.41	96.6
Lu	175	1	No Gas	12591913.34	100.0
Lu	175	3	He	3729975.83	97.8
Bi	209	1	No Gas	8446714.17	101.0
Bi	209	3	He	3006038.05	97.1

ICPMS207-B Analytical Data

Sample Name Cal Blk
File Name 009CALB.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-08 15:27:20
Sample Type CalBlk
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	0.000	ug/l	10202.18
Be	9	45	1	No Gas	0.000	ug/l	307.94
B	11	45	1	No Gas	0.000	ug/l	3423.10
Na	23	45	3	He	0.000	ug/l	36899.53
Mg	24	45	3	He	0.000	ug/l	505.68
Al	27	45	1	No Gas	0.000	ug/l	4202.84
Si	28	45	2	H2	0.000	ug/l	12381.73
K	39	89	3	He	0.000	ug/l	66404.02
Ca	40	89	2	H2	0.000	ug/l	56069.87
Ti	47	89	1	No Gas	0.000	ug/l	171.84
V	51	89	1	No Gas	0.000	ug/l	-11426.83
V	51	89	3	He	0.000	ug/l	5019.77
Cr	52	89	1	No Gas	0.000	ug/l	37169.69
Cr	52	89	3	He	0.000	ug/l	333.34
Mn	55	89	1	No Gas	0.000	ug/l	5183.99
Mn	55	89	3	He	0.000	ug/l	122.31
Fe	56	89	2	H2	0.000	ug/l	6851.84
Fe	56	89	3	He	0.000	ug/l	4435.15
Co	59	89	1	No Gas	0.000	ug/l	282.78
Ni	60	89	1	No Gas	0.000	ug/l	362.62
Ni	60	89	3	He	0.000	ug/l	83.33
Cu	63	89	1	No Gas	0.000	ug/l	957.08
Cu	63	89	3	He	0.000	ug/l	237.95
Cu	65	89	1	No Gas	0.000	ug/l	428.18
Zn	66	89	1	No Gas	0.000	ug/l	531.93
Zn	66	89	3	He	0.000	ug/l	80.00
As	75	89	1	No Gas	0.000	ug/l	13834.85
As	75	89	3	He	0.000	ug/l	115.13
Se	78	89	2	H2	0.000	ug/l	10.33
Br	79	89	1	No Gas	0.000	ug/l	78024.71
Br	79	89	2	H2	0.000	ug/l	32412.12
Se	82	89	1	No Gas	0.000	ug/l	855.03
Kr	84	89	1	No Gas		ug/l	24272.29
Sr	88	89	1	No Gas	0.000	ug/l	425.83
Sr	88	89	3	He	0.000	ug/l	240.00
Mo	95	115	1	No Gas	0.000	ug/l	51.11
Mo	95	115	3	He	0.000	ug/l	22.22
Mo	98	115	1	No Gas	0.000	ug/l	88.89
Ag	107	115	1	No Gas	0.000	ug/l	73.36
Ag	109	115	1	No Gas	0.000	ug/l	54.02
Cd	111	115	1	No Gas	0.000	ug/l	2771.51

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.000	ug/l	0.44
Cd	114	115	1	No Gas	0.000	ug/l	0.53
Cd	114	115	3	He	0.000	ug/l	1.76
Sn	118	115	1	No Gas	0.000	ug/l	1191.03
Sn	118	115	3	He	0.000	ug/l	284.45
Sb	121	115	1	No Gas	0.000	ug/l	201.35
Sb	121	115	3	He	0.000	ug/l	56.01
Sb	123	115	1	No Gas	0.000	ug/l	153.35
Sb	123	115	3	He	0.000	ug/l	45.67
Ba	135	115	1	No Gas	0.000	ug/l	16.63
Ba	137	115	1	No Gas	0.000	ug/l	59.88
La	139	115	3	He	0.000	ug/l	4.44
Ce	140	115	3	He	0.000	ug/l	47.78
Hg	201	209	1	No Gas	0.000	ug/l	17.00
Hg	202	209	1	No Gas	0.000	ug/l	45.66
Hg	202	209	3	He	0.000	ug/l	16.67
Tl	203	209	3	He	0.000	ug/l	20.68
Tl	205	209	1	No Gas	0.000	ug/l	155.56
Tl	205	209	3	He	0.000	ug/l	44.02
[Pb]	206	209	1	No Gas	0.000	ug/l	118.89
[Pb]	207	209	1	No Gas	0.000	ug/l	101.11
Pb	208	209	1	No Gas	0.000	ug/l	462.23
Th	232	209	3	He	0.000	ug/l	110.71
U	238	209	1	No Gas	0.000	ug/l	4.33

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4708334.39	100.0
Sc	45	2	H2	1902334.87	100.0
Sc	45	3	He	287467.46	100.0
Y	89	1	No Gas	8803335.42	100.0
Y	89	2	H2	5613814.14	100.0
Y	89	3	He	1404830.30	100.0
In	115	1	No Gas	9214775.86	100.0
In	115	3	He	1838142.61	100.0
Tb	159	1	No Gas	13146384.57	100.0
Tb	159	3	He	4669055.35	100.0
Ho	165	1	No Gas	12821373.32	100.0
Ho	165	3	He	4571465.84	100.0
Lu	175	1	No Gas	12557803.40	100.0
Lu	175	3	He	3725926.05	100.0
Bi	209	1	No Gas	8461850.76	100.0
Bi	209	3	He	3019402.00	100.0

ICPMS207-B Analytical Data

Sample Name 0.025 ppb STD
File Name 010CAL.S.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-08 15:34:55
Sample Type CalStd
Total Dilution 1.0000
Comment ICPMS-6020B-Cal
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	0.237	ug/l	12835.89
Be	9	45	1	No Gas	0.027	ug/l	420.92
B	11	45	1	No Gas	-0.088	ug/l	3250.99
Na	23	45	3	He	7.476	ug/l	42520.93
Mg	24	45	3	He	6.708	ug/l	3812.93
Al	27	45	1	No Gas	0.234	ug/l	8908.25
Si	28	45	2	H2	-0.563	ug/l	11832.10
K	39	89	3	He	6.354	ug/l	68762.31
Ca	40	89	2	H2	8.162	ug/l	110802.28
Ti	47	89	1	No Gas	0.122	ug/l	443.79
V	51	89	1	No Gas	0.303	ug/l	-3446.34
V	51	89	3	He	0.043	ug/l	5140.94
Cr	52	89	1	No Gas	0.041	ug/l	39197.53
Cr	52	89	3	He	0.036	ug/l	502.23
Mn	55	89	1	No Gas	0.017	ug/l	5882.86
Mn	55	89	3	He	0.027	ug/l	209.29
Fe	56	89	2	H2	0.748	ug/l	17558.14
Fe	56	89	3	He	0.825	ug/l	7888.41
Co	59	89	1	No Gas	0.024	ug/l	988.08
Ni	60	89	1	No Gas	0.053	ug/l	715.27
Ni	60	89	3	He	0.031	ug/l	136.67
Cu	63	89	1	No Gas	0.039	ug/l	1572.05
Cu	63	89	3	He	0.039	ug/l	422.59
Cu	65	89	1	No Gas	0.035	ug/l	696.96
Zn	66	89	1	No Gas	0.105	ug/l	987.51
Zn	66	89	3	He	0.169	ug/l	225.56
As	75	89	1	No Gas	-0.012	ug/l	14132.43
As	75	89	3	He	0.034	ug/l	136.53
Se	78	89	2	H2	0.030	ug/l	23.00
Br	79	89	1	No Gas	1.488	ug/l	90790.54
Br	79	89	2	H2	1.687	ug/l	39298.63
Se	82	89	1	No Gas	0.608	ug/l	1057.18
Kr	84	89	1	No Gas		ug/l	23972.47
Sr	88	89	1	No Gas	0.030	ug/l	1799.88
Sr	88	89	3	He	0.032	ug/l	394.45
Mo	95	115	1	No Gas	0.027	ug/l	296.67
Mo	95	115	3	He	0.036	ug/l	125.56
Mo	98	115	1	No Gas	0.026	ug/l	469.81
Ag	107	115	1	No Gas	0.011	ug/l	327.47
Ag	109	115	1	No Gas	0.010	ug/l	283.45
Cd	111	115	1	No Gas	0.053	ug/l	3047.42

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.028	ug/l	38.89
Cd	114	115	1	No Gas	0.025	ug/l	269.37
Cd	114	115	3	He	0.027	ug/l	92.80
Sn	118	115	1	No Gas	0.022	ug/l	1510.43
Sn	118	115	3	He	0.027	ug/l	377.78
Sb	121	115	1	No Gas	0.026	ug/l	710.09
Sb	121	115	3	He	0.027	ug/l	183.69
Sb	123	115	1	No Gas	0.025	ug/l	533.06
Sb	123	115	3	He	0.022	ug/l	127.68
Ba	135	115	1	No Gas	0.028	ug/l	146.38
Ba	137	115	1	No Gas	0.038	ug/l	365.95
La	139	115	3	He	0.025	ug/l	525.57
Ce	140	115	3	He	0.025	ug/l	598.91
Hg	201	209	1	No Gas	0.000	ug/l	17.00
Hg	202	209	1	No Gas	0.001	ug/l	52.66
Hg	202	209	3	He	0.001	ug/l	19.00
Tl	203	209	3	He	0.027	ug/l	230.76
Tl	205	209	1	No Gas	0.025	ug/l	1361.19
Tl	205	209	3	He	0.025	ug/l	510.21
[Pb]	206	209	1	No Gas	0.025	ug/l	523.35
[Pb]	207	209	1	No Gas	0.025	ug/l	461.12
Pb	208	209	1	No Gas	0.025	ug/l	2094.52
Th	232	209	3	He	0.013	ug/l	440.19
U	238	209	1	No Gas	0.024	ug/l	1572.78

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4725267.40	100.4
Sc	45	2	H2	1960851.86	103.1
Sc	45	3	He	279393.57	97.2
Y	89	1	No Gas	9028616.11	102.6
Y	89	2	H2	5779979.10	103.0
Y	89	3	He	1388602.86	98.8
In	115	1	No Gas	9261211.62	100.5
In	115	3	He	1821286.83	99.1
Tb	159	1	No Gas	13223020.26	100.6
Tb	159	3	He	4612908.47	98.8
Ho	165	1	No Gas	12898861.53	100.6
Ho	165	3	He	4549367.80	99.5
Lu	175	1	No Gas	12580293.18	100.2
Lu	175	3	He	3754505.99	100.8
Bi	209	1	No Gas	8323533.43	98.4
Bi	209	3	He	3005103.80	99.5

ICPMS207-B Analytical Data

Sample Name 0.05 ppb STD
File Name 011CAL.S.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-08 15:41:36
Sample Type CalStd
Total Dilution 1.0000
Comment ICPMS-6020B-Cal
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	0.562	ug/l	16794.63
Be	9	45	1	No Gas	0.050	ug/l	532.23
B	11	45	1	No Gas	-0.111	ug/l	3285.01
Na	23	45	3	He	16.017	ug/l	50213.38
Mg	24	45	3	He	15.631	ug/l	8249.29
Al	27	45	1	No Gas	0.206	ug/l	8562.48
Si	28	45	2	H2	0.289	ug/l	12169.17
K	39	89	3	He	11.245	ug/l	71107.62
Ca	40	89	2	H2	18.395	ug/l	163056.19
Ti	47	89	1	No Gas	0.136	ug/l	478.83
V	51	89	1	No Gas	0.540	ug/l	2767.99
V	51	89	3	He	0.079	ug/l	5287.64
Cr	52	89	1	No Gas	0.077	ug/l	40488.72
Cr	52	89	3	He	0.066	ug/l	642.24
Mn	55	89	1	No Gas	0.064	ug/l	7573.61
Mn	55	89	3	He	0.064	ug/l	327.94
Fe	56	89	2	H2	1.725	ug/l	28763.69
Fe	56	89	3	He	1.614	ug/l	11228.94
Co	59	89	1	No Gas	0.057	ug/l	1939.62
Ni	60	89	1	No Gas	0.087	ug/l	938.17
Ni	60	89	3	He	0.063	ug/l	192.23
Cu	63	89	1	No Gas	0.063	ug/l	1966.26
Cu	63	89	3	He	0.067	ug/l	553.90
Cu	65	89	1	No Gas	0.059	ug/l	883.05
Zn	66	89	1	No Gas	0.019	ug/l	631.50
Zn	66	89	3	He	0.078	ug/l	146.67
As	75	89	1	No Gas	-0.277	ug/l	12943.47
As	75	89	3	He	0.056	ug/l	151.07
Se	78	89	2	H2	0.075	ug/l	38.33
Br	79	89	1	No Gas	-1.663	ug/l	68418.95
Br	79	89	2	H2	-1.115	ug/l	27104.84
Se	82	89	1	No Gas	0.341	ug/l	981.97
Kr	84	89	1	No Gas		ug/l	23955.80
Sr	88	89	1	No Gas	0.061	ug/l	3170.74
Sr	88	89	3	He	0.044	ug/l	454.45
Mo	95	115	1	No Gas	0.056	ug/l	560.02
Mo	95	115	3	He	0.051	ug/l	170.00
Mo	98	115	1	No Gas	0.055	ug/l	903.79
Ag	107	115	1	No Gas	0.024	ug/l	644.27
Ag	109	115	1	No Gas	0.024	ug/l	589.58
Cd	111	115	1	No Gas	0.073	ug/l	3183.01

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.060	ug/l	84.78
Cd	114	115	1	No Gas	0.056	ug/l	611.56
Cd	114	115	3	He	0.059	ug/l	201.13
Sn	118	115	1	No Gas	0.069	ug/l	2229.09
Sn	118	115	3	He	0.055	ug/l	481.12
Sb	121	115	1	No Gas	0.052	ug/l	1243.18
Sb	121	115	3	He	0.055	ug/l	317.70
Sb	123	115	1	No Gas	0.056	ug/l	1020.14
Sb	123	115	3	He	0.051	ug/l	238.69
Ba	135	115	1	No Gas	0.048	ug/l	239.53
Ba	137	115	1	No Gas	0.047	ug/l	452.45
La	139	115	3	He	0.070	ug/l	1451.63
Ce	140	115	3	He	0.054	ug/l	1264.51
Hg	201	209	1	No Gas	-0.001	ug/l	15.33
Hg	202	209	1	No Gas	0.000	ug/l	47.99
Hg	202	209	3	He	-0.001	ug/l	15.33
Tl	203	209	3	He	0.057	ug/l	472.20
Tl	205	209	1	No Gas	0.053	ug/l	2735.86
Tl	205	209	3	He	0.053	ug/l	1035.79
[Pb]	206	209	1	No Gas	0.052	ug/l	987.82
[Pb]	207	209	1	No Gas	0.055	ug/l	895.59
Pb	208	209	1	No Gas	0.055	ug/l	4083.61
Th	232	209	3	He	0.031	ug/l	929.74
U	238	209	1	No Gas	0.052	ug/l	3501.44

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4873501.30	103.5
Sc	45	2	H2	1801980.00	94.7
Sc	45	3	He	279915.57	97.4
Y	89	1	No Gas	9150913.41	103.9
Y	89	2	H2	5319800.29	94.8
Y	89	3	He	1388056.22	98.8
In	115	1	No Gas	9428839.43	102.3
In	115	3	He	1844488.92	100.3
Tb	159	1	No Gas	13466152.76	102.4
Tb	159	3	He	4701359.42	100.7
Ho	165	1	No Gas	13357724.23	104.2
Ho	165	3	He	4604265.20	100.7
Lu	175	1	No Gas	13024164.54	103.7
Lu	175	3	He	3751935.11	100.7
Bi	209	1	No Gas	8526621.20	100.8
Bi	209	3	He	3081462.96	102.1

ICPMS207-B Analytical Data

Sample Name 0.10 ppb STD
File Name 012CAL.S.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-08 15:48:16
Sample Type CalStd
Total Dilution 1.0000
Comment ICPMS-6020B-Cal
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	1.318	ug/l	24765.34
Be	9	45	1	No Gas	0.106	ug/l	758.87
B	11	45	1	No Gas	-0.302	ug/l	2819.40
Na	23	45	3	He	32.443	ug/l	64787.60
Mg	24	45	3	He	30.553	ug/l	15630.52
Al	27	45	1	No Gas	0.317	ug/l	10619.35
Si	28	45	2	H2	-0.562	ug/l	11776.31
K	39	89	3	He	24.835	ug/l	78864.24
Ca	40	89	2	H2	33.959	ug/l	273332.66
Ti	47	89	1	No Gas	0.206	ug/l	627.31
V	51	89	1	No Gas	0.075	ug/l	-9640.44
V	51	89	3	He	-0.007	ug/l	5006.44
Cr	52	89	1	No Gas	0.083	ug/l	40124.93
Cr	52	89	3	He	0.114	ug/l	881.14
Mn	55	89	1	No Gas	0.119	ug/l	9347.78
Mn	55	89	3	He	0.117	ug/l	505.91
Fe	56	89	2	H2	3.337	ug/l	52889.56
Fe	56	89	3	He	3.268	ug/l	18508.68
Co	59	89	1	No Gas	0.121	ug/l	3763.04
Ni	60	89	1	No Gas	0.143	ug/l	1287.51
Ni	60	89	3	He	0.112	ug/l	283.34
Cu	63	89	1	No Gas	0.152	ug/l	3305.70
Cu	63	89	3	He	0.146	ug/l	940.18
Cu	65	89	1	No Gas	0.137	ug/l	1455.33
Zn	66	89	1	No Gas	0.119	ug/l	1040.77
Zn	66	89	3	He	0.135	ug/l	198.89
As	75	89	1	No Gas	-0.070	ug/l	13810.25
As	75	89	3	He	0.109	ug/l	188.87
Se	78	89	2	H2	0.136	ug/l	65.89
Br	79	89	1	No Gas	-3.176	ug/l	56818.77
Br	79	89	2	H2	-2.585	ug/l	23862.48
Se	82	89	1	No Gas	-0.100	ug/l	844.21
Kr	84	89	1	No Gas		ug/l	24575.54
Sr	88	89	1	No Gas	0.126	ug/l	6055.95
Sr	88	89	3	He	0.115	ug/l	817.81
Mo	95	115	1	No Gas	0.111	ug/l	1044.49
Mo	95	115	3	He	0.126	ug/l	384.45
Mo	98	115	1	No Gas	0.116	ug/l	1761.85
Ag	107	115	1	No Gas	0.050	ug/l	1225.22
Ag	109	115	1	No Gas	0.050	ug/l	1155.18
Cd	111	115	1	No Gas	0.114	ug/l	3344.10

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.123	ug/l	173.22
Cd	114	115	1	No Gas	0.116	ug/l	1253.23
Cd	114	115	3	He	0.120	ug/l	407.80
Sn	118	115	1	No Gas	0.116	ug/l	2877.93
Sn	118	115	3	He	0.121	ug/l	715.58
Sb	121	115	1	No Gas	0.121	ug/l	2592.84
Sb	121	115	3	He	0.116	ug/l	607.74
Sb	123	115	1	No Gas	0.121	ug/l	1982.01
Sb	123	115	3	He	0.112	ug/l	465.06
Ba	135	115	1	No Gas	0.109	ug/l	518.98
Ba	137	115	1	No Gas	0.113	ug/l	978.10
La	139	115	3	He	0.118	ug/l	2456.90
Ce	140	115	3	He	0.113	ug/l	2566.92
Hg	201	209	1	No Gas	0.001	ug/l	19.66
Hg	202	209	1	No Gas	0.003	ug/l	63.32
Hg	202	209	3	He	0.000	ug/l	18.00
Tl	203	209	3	He	0.109	ug/l	875.05
Tl	205	209	1	No Gas	0.115	ug/l	5724.60
Tl	205	209	3	He	0.114	ug/l	2159.71
[Pb]	206	209	1	No Gas	0.114	ug/l	2001.28
[Pb]	207	209	1	No Gas	0.112	ug/l	1727.90
Pb	208	209	1	No Gas	0.113	ug/l	7965.44
Th	232	209	3	He	0.072	ug/l	1970.28
U	238	209	1	No Gas	0.111	ug/l	7443.63

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4745995.99	100.8
Sc	45	2	H2	1954684.04	102.8
Sc	45	3	He	279634.63	97.3
Y	89	1	No Gas	8994044.35	102.2
Y	89	2	H2	5671204.49	101.0
Y	89	3	He	1407844.38	100.2
In	115	1	No Gas	9264233.65	100.5
In	115	3	He	1837726.24	100.0
Tb	159	1	No Gas	13190925.46	100.3
Tb	159	3	He	4559060.57	97.6
Ho	165	1	No Gas	12977803.49	101.2
Ho	165	3	He	4563339.63	99.8
Lu	175	1	No Gas	12529060.18	99.8
Lu	175	3	He	3725042.96	100.0
Bi	209	1	No Gas	8503125.24	100.5
Bi	209	3	He	3041526.52	100.7

ICPMS207-B Analytical Data

Sample Name 0.5 ppb STD
File Name 013CAL.S.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-08 15:54:56
Sample Type CalStd
Total Dilution 1.0000
Comment ICPMS-6020B-Cal
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	6.340	ug/l	74936.34
Be	9	45	1	No Gas	0.483	ug/l	2201.39
B	11	45	1	No Gas	0.152	ug/l	3529.16
Na	23	45	3	He	131.626	ug/l	152856.03
Mg	24	45	3	He	132.683	ug/l	66150.42
Al	27	45	1	No Gas	0.796	ug/l	19008.78
Si	28	45	2	H2	1.420	ug/l	15047.15
K	39	89	3	He	128.848	ug/l	128294.70
Ca	40	89	2	H2	135.288	ug/l	937844.89
Ti	47	89	1	No Gas	0.664	ug/l	1568.34
V	51	89	1	No Gas	0.590	ug/l	5127.12
V	51	89	3	He	0.477	ug/l	6928.33
Cr	52	89	1	No Gas	0.578	ug/l	50349.32
Cr	52	89	3	He	0.488	ug/l	2639.15
Mn	55	89	1	No Gas	0.554	ug/l	22952.42
Mn	55	89	3	He	0.540	ug/l	1868.08
Fe	56	89	2	H2	13.718	ug/l	199785.85
Fe	56	89	3	He	13.825	ug/l	62927.40
Co	59	89	1	No Gas	0.576	ug/l	16000.36
Ni	60	89	1	No Gas	0.585	ug/l	3936.07
Ni	60	89	3	He	0.580	ug/l	1098.94
Cu	63	89	1	No Gas	0.611	ug/l	9807.90
Cu	63	89	3	He	0.580	ug/l	2983.05
Cu	65	89	1	No Gas	0.567	ug/l	4419.12
Zn	66	89	1	No Gas	0.569	ug/l	2800.48
Zn	66	89	3	He	0.621	ug/l	616.68
As	75	89	1	No Gas	0.772	ug/l	16844.06
As	75	89	3	He	0.534	ug/l	468.00
Se	78	89	2	H2	0.543	ug/l	236.22
Br	79	89	1	No Gas	0.719	ug/l	81029.04
Br	79	89	2	H2	0.661	ug/l	35713.22
Se	82	89	1	No Gas	0.823	ug/l	1069.85
Kr	84	89	1	No Gas		ug/l	24212.33
Sr	88	89	1	No Gas	0.541	ug/l	23372.83
Sr	88	89	3	He	0.516	ug/l	2775.84
Mo	95	115	1	No Gas	0.534	ug/l	4542.97
Mo	95	115	3	He	0.525	ug/l	1543.43
Mo	98	115	1	No Gas	0.527	ug/l	7181.30
Ag	107	115	1	No Gas	0.220	ug/l	4796.08
Ag	109	115	1	No Gas	0.222	ug/l	4634.63
Cd	111	115	1	No Gas	0.557	ug/l	5209.75

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.513	ug/l	727.24
Cd	114	115	1	No Gas	0.553	ug/l	5584.85
Cd	114	115	3	He	0.519	ug/l	1769.44
Sn	118	115	1	No Gas	0.552	ug/l	8635.58
Sn	118	115	3	He	0.498	ug/l	2074.61
Sb	121	115	1	No Gas	0.545	ug/l	10263.44
Sb	121	115	3	He	0.502	ug/l	2457.13
Sb	123	115	1	No Gas	0.538	ug/l	7791.94
Sb	123	115	3	He	0.506	ug/l	1952.33
Ba	135	115	1	No Gas	0.535	ug/l	2322.27
Ba	137	115	1	No Gas	0.512	ug/l	3962.72
La	139	115	3	He	0.491	ug/l	10236.05
Ce	140	115	3	He	0.487	ug/l	11025.55
Hg	201	209	1	No Gas	0.010	ug/l	43.66
Hg	202	209	1	No Gas	0.009	ug/l	103.98
Hg	202	209	3	He	0.006	ug/l	31.32
Tl	203	209	3	He	0.479	ug/l	3777.39
Tl	205	209	1	No Gas	0.502	ug/l	23169.08
Tl	205	209	3	He	0.479	ug/l	8943.26
[Pb]	206	209	1	No Gas	0.512	ug/l	8116.97
[Pb]	207	209	1	No Gas	0.517	ug/l	7193.10
Pb	208	209	1	No Gas	0.515	ug/l	32572.46
Th	232	209	3	He	0.358	ug/l	9337.08
U	238	209	1	No Gas	0.496	ug/l	31391.57

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4523753.86	96.1
Sc	45	2	H2	1946101.60	102.3
Sc	45	3	He	279151.57	97.1
Y	89	1	No Gas	8674674.37	98.5
Y	89	2	H2	5784230.85	103.0
Y	89	3	He	1385413.85	98.6
In	115	1	No Gas	8786741.37	95.4
In	115	3	He	1849125.66	100.6
Tb	159	1	No Gas	12385612.26	94.2
Tb	159	3	He	4622046.52	99.0
Ho	165	1	No Gas	12213704.21	95.3
Ho	165	3	He	4507682.47	98.6
Lu	175	1	No Gas	11982062.37	95.4
Lu	175	3	He	3738548.18	100.3
Bi	209	1	No Gas	8089306.00	95.6
Bi	209	3	He	3035673.11	100.5

ICPMS207-B Analytical Data

Sample Name 1 ppb STD
File Name 014CAL.S.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-08 16:01:37
Sample Type CalStd
Total Dilution 1.0000
Comment ICPMS-6020B-Cal
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	13.430	ug/l	151843.26
Be	9	45	1	No Gas	1.070	ug/l	4632.45
B	11	45	1	No Gas	0.778	ug/l	4888.09
Na	23	45	3	He	304.783	ug/l	283410.21
Mg	24	45	3	He	308.196	ug/l	141440.16
Al	27	45	1	No Gas	1.340	ug/l	30011.13
Si	28	45	2	H2	3.272	ug/l	18002.04
K	39	89	3	He	308.334	ug/l	197889.60
Ca	40	89	2	H2	285.796	ug/l	1877358.69
Ti	47	89	1	No Gas	1.239	ug/l	2753.03
V	51	89	1	No Gas	1.054	ug/l	16759.24
V	51	89	3	He	1.165	ug/l	8990.57
Cr	52	89	1	No Gas	1.199	ug/l	65615.42
Cr	52	89	3	He	1.200	ug/l	5513.29
Mn	55	89	1	No Gas	1.196	ug/l	43818.20
Mn	55	89	3	He	1.193	ug/l	3651.39
Fe	56	89	2	H2	29.167	ug/l	408001.88
Fe	56	89	3	He	31.781	ug/l	127514.19
Co	59	89	1	No Gas	1.180	ug/l	32404.78
Ni	60	89	1	No Gas	1.175	ug/l	7546.97
Ni	60	89	3	He	1.269	ug/l	2114.61
Cu	63	89	1	No Gas	1.230	ug/l	18826.97
Cu	63	89	3	He	1.284	ug/l	5797.66
Cu	65	89	1	No Gas	1.205	ug/l	8936.32
Zn	66	89	1	No Gas	1.193	ug/l	5282.55
Zn	66	89	3	He	1.285	ug/l	1097.83
As	75	89	1	No Gas	0.615	ug/l	16180.54
As	75	89	3	He	1.210	ug/l	840.28
Se	78	89	2	H2	1.215	ug/l	504.34
Br	79	89	1	No Gas	-1.797	ug/l	63442.85
Br	79	89	2	H2	-1.878	ug/l	26248.44
Se	82	89	1	No Gas	1.377	ug/l	1228.14
Kr	84	89	1	No Gas		ug/l	24392.25
Sr	88	89	1	No Gas	1.149	ug/l	49339.83
Sr	88	89	3	He	1.171	ug/l	5507.76
Mo	95	115	1	No Gas	1.087	ug/l	9510.99
Mo	95	115	3	He	1.130	ug/l	3011.45
Mo	98	115	1	No Gas	1.093	ug/l	15313.60
Ag	107	115	1	No Gas	0.450	ug/l	10096.32
Ag	109	115	1	No Gas	0.449	ug/l	9638.48
Cd	111	115	1	No Gas	1.066	ug/l	7779.39

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	1.205	ug/l	1565.42
Cd	114	115	1	No Gas	1.105	ug/l	11565.82
Cd	114	115	3	He	1.192	ug/l	3715.34
Sn	118	115	1	No Gas	1.125	ug/l	16929.95
Sn	118	115	3	He	1.125	ug/l	3965.03
Sb	121	115	1	No Gas	1.121	ug/l	21623.35
Sb	121	115	3	He	1.135	ug/l	5031.08
Sb	123	115	1	No Gas	1.111	ug/l	16497.97
Sb	123	115	3	He	1.134	ug/l	3950.62
Ba	135	115	1	No Gas	1.101	ug/l	4927.79
Ba	137	115	1	No Gas	1.009	ug/l	8019.76
La	139	115	3	He	1.127	ug/l	21497.77
Ce	140	115	3	He	1.134	ug/l	23443.14
Hg	201	209	1	No Gas	0.021	ug/l	78.98
Hg	202	209	1	No Gas	0.019	ug/l	173.97
Hg	202	209	3	He	0.019	ug/l	63.99
Tl	203	209	3	He	1.068	ug/l	7940.89
Tl	205	209	1	No Gas	1.046	ug/l	49512.72
Tl	205	209	3	He	1.080	ug/l	18971.73
[Pb]	206	209	1	No Gas	1.057	ug/l	17101.03
[Pb]	207	209	1	No Gas	1.054	ug/l	14974.03
Pb	208	209	1	No Gas	1.064	ug/l	68759.95
Th	232	209	3	He	0.906	ug/l	22224.36
U	238	209	1	No Gas	1.116	ug/l	72183.31

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4584190.95	97.4
Sc	45	2	H2	1936083.29	101.8
Sc	45	3	He	260636.98	90.7
Y	89	1	No Gas	8613434.80	97.8
Y	89	2	H2	5661715.37	100.9
Y	89	3	He	1288633.12	91.7
In	115	1	No Gas	9032439.25	98.0
In	115	3	He	1709798.59	93.0
Tb	159	1	No Gas	12657282.77	96.3
Tb	159	3	He	4284742.07	91.8
Ho	165	1	No Gas	12353616.83	96.4
Ho	165	3	He	4255429.32	93.1
Lu	175	1	No Gas	12046493.26	95.9
Lu	175	3	He	3497377.25	93.9
Bi	209	1	No Gas	8286313.93	97.9
Bi	209	3	He	2888375.19	95.7

ICPMS207-B Analytical Data

Sample Name 10 ppb STD
File Name 015CAL.S.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-08 16:08:18
Sample Type CalStd
Total Dilution 1.0000
Comment ICPMS-6020B-Cal
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	129.219	ug/l	1367001.07
Be	9	45	1	No Gas	10.254	ug/l	41567.96
B	11	45	1	No Gas	10.216	ug/l	23732.05
Na	23	45	3	He	2626.992	ug/l	2377672.69
Mg	24	45	3	He	2637.382	ug/l	1309404.00
Al	27	45	1	No Gas	15.706	ug/l	301947.50
Si	28	45	2	H2	39.644	ug/l	78097.19
K	39	89	3	He	2631.785	ug/l	1348674.39
Ca	40	89	2	H2	2708.491	ug/l	17239621.93
Ti	47	89	1	No Gas	10.574	ug/l	22467.95
V	51	89	1	No Gas	11.877	ug/l	299894.20
V	51	89	3	He	10.147	ug/l	47018.08
Cr	52	89	1	No Gas	10.857	ug/l	306073.19
Cr	52	89	3	He	10.410	ug/l	49673.47
Mn	55	89	1	No Gas	10.994	ug/l	365595.80
Mn	55	89	3	He	10.433	ug/l	33900.39
Fe	56	89	2	H2	282.109	ug/l	3870659.43
Fe	56	89	3	He	280.818	ug/l	1194170.36
Co	59	89	1	No Gas	11.146	ug/l	307367.03
Ni	60	89	1	No Gas	11.104	ug/l	69075.24
Ni	60	89	3	He	11.037	ug/l	19450.71
Cu	63	89	1	No Gas	11.483	ug/l	169583.96
Cu	63	89	3	He	10.984	ug/l	52315.72
Cu	65	89	1	No Gas	11.192	ug/l	80333.97
Zn	66	89	1	No Gas	11.305	ug/l	46128.76
Zn	66	89	3	He	10.998	ug/l	9610.99
As	75	89	1	No Gas	10.452	ug/l	60258.81
As	75	89	3	He	10.445	ug/l	7046.69
Se	78	89	2	H2	11.231	ug/l	4557.71
Br	79	89	1	No Gas	5.101	ug/l	112021.55
Br	79	89	2	H2	4.606	ug/l	48318.05
Se	82	89	1	No Gas	11.723	ug/l	4160.72
Kr	84	89	1	No Gas		ug/l	26545.09
Sr	88	89	1	No Gas	10.803	ug/l	464946.14
Sr	88	89	3	He	10.269	ug/l	50834.02
Mo	95	115	1	No Gas	10.417	ug/l	91242.24
Mo	95	115	3	He	10.108	ug/l	28656.53
Mo	98	115	1	No Gas	10.467	ug/l	146667.08
Ag	107	115	1	No Gas	4.235	ug/l	94916.56
Ag	109	115	1	No Gas	4.233	ug/l	91008.83
Cd	111	115	1	No Gas	10.398	ug/l	52396.13

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	10.546	ug/l	14630.73
Cd	114	115	1	No Gas	10.532	ug/l	110791.03
Cd	114	115	3	He	10.648	ug/l	35454.05
Sn	118	115	1	No Gas	10.351	ug/l	147201.94
Sn	118	115	3	He	9.982	ug/l	35358.78
Sb	121	115	1	No Gas	10.403	ug/l	200212.51
Sb	121	115	3	He	10.016	ug/l	46969.89
Sb	123	115	1	No Gas	10.402	ug/l	153925.98
Sb	123	115	3	He	10.112	ug/l	37317.62
Ba	135	115	1	No Gas	10.166	ug/l	45644.30
Ba	137	115	1	No Gas	10.022	ug/l	79588.78
La	139	115	3	He	10.152	ug/l	206901.92
Ce	140	115	3	He	10.215	ug/l	225239.67
Hg	201	209	1	No Gas	0.199	ug/l	595.90
Hg	202	209	1	No Gas	0.208	ug/l	1409.13
Hg	202	209	3	He	0.182	ug/l	493.58
Tl	203	209	3	He	9.705	ug/l	75714.96
Tl	205	209	1	No Gas	10.036	ug/l	470034.62
Tl	205	209	3	He	9.814	ug/l	181132.51
[Pb]	206	209	1	No Gas	10.265	ug/l	163934.48
[Pb]	207	209	1	No Gas	10.022	ug/l	140191.96
Pb	208	209	1	No Gas	10.214	ug/l	650958.69
Th	232	209	3	He	9.332	ug/l	239317.01
U	238	209	1	No Gas	10.102	ug/l	652093.13

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4540750.02	96.4
Sc	45	2	H2	1938601.37	101.9
Sc	45	3	He	279955.92	97.4
Y	89	1	No Gas	8660336.38	98.4
Y	89	2	H2	5638851.73	100.4
Y	89	3	He	1386119.42	98.7
In	115	1	No Gas	9034257.71	98.0
In	115	3	He	1809288.20	98.4
Tb	159	1	No Gas	12671290.95	96.4
Tb	159	3	He	4687412.92	100.4
Ho	165	1	No Gas	12597689.01	98.3
Ho	165	3	He	4535593.30	99.2
Lu	175	1	No Gas	12249651.41	97.5
Lu	175	3	He	3756318.53	100.8
Bi	209	1	No Gas	8191824.56	96.8
Bi	209	3	He	3016182.35	99.9

ICPMS207-B Analytical Data

Sample Name 50 ppb STD
File Name 016CAL.S.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-08 16:14:58
Sample Type CalStd
Total Dilution 1.0000
Comment ICPMS-6020B-Cal
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	635.140	ug/l	6574121.50
Be	9	45	1	No Gas	50.555	ug/l	200652.53
B	11	45	1	No Gas	52.843	ug/l	107347.27
Na	23	45	3	He	12500.733	ug/l	11250282.61
Mg	24	45	3	He	12529.500	ug/l	6257296.51
Al	27	45	1	No Gas	53.707	ug/l	1020191.40
Si	28	45	2	H2	207.843	ug/l	356320.15
K	39	89	3	He	12352.365	ug/l	6206593.52
Ca	40	89	2	H2	13102.111	ug/l	81900802.08
Ti	47	89	1	No Gas	51.973	ug/l	108808.73
V	51	89	1	No Gas	50.429	ug/l	1297135.77
V	51	89	3	He	49.847	ug/l	215720.15
Cr	52	89	1	No Gas	52.929	ug/l	1338978.12
Cr	52	89	3	He	49.686	ug/l	240454.23
Mn	55	89	1	No Gas	52.352	ug/l	1706910.64
Mn	55	89	3	He	50.162	ug/l	165693.75
Fe	56	89	2	H2	1384.183	ug/l	18658085.76
Fe	56	89	3	He	1299.906	ug/l	5619185.55
Co	59	89	1	No Gas	53.638	ug/l	1464647.93
Ni	60	89	1	No Gas	53.930	ug/l	331033.91
Ni	60	89	3	He	52.189	ug/l	93446.93
Cu	63	89	1	No Gas	55.672	ug/l	811352.51
Cu	63	89	3	He	51.621	ug/l	249784.04
Cu	65	89	1	No Gas	54.207	ug/l	383937.03
Zn	66	89	1	No Gas	55.649	ug/l	222988.58
Zn	66	89	3	He	50.698	ug/l	44872.07
As	75	89	1	No Gas	52.266	ug/l	244532.12
As	75	89	3	He	50.099	ug/l	34018.41
Se	78	89	2	H2	55.257	ug/l	22019.86
Br	79	89	1	No Gas	3.351	ug/l	98640.80
Br	79	89	2	H2	1.963	ug/l	38664.91
Se	82	89	1	No Gas	54.932	ug/l	16279.83
Kr	84	89	1	No Gas		ug/l	39018.74
Sr	88	89	1	No Gas	52.790	ug/l	2250779.15
Sr	88	89	3	He	49.348	ug/l	248149.46
Mo	95	115	1	No Gas	52.537	ug/l	443950.03
Mo	95	115	3	He	49.563	ug/l	139669.73
Mo	98	115	1	No Gas	53.562	ug/l	724179.14
Ag	107	115	1	No Gas	21.312	ug/l	460782.00
Ag	109	115	1	No Gas	21.257	ug/l	441105.66
Cd	111	115	1	No Gas	52.470	ug/l	244607.39

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	51.339	ug/l	70840.49
Cd	114	115	1	No Gas	53.607	ug/l	544307.83
Cd	114	115	3	He	51.919	ug/l	171936.16
Sn	118	115	1	No Gas	52.683	ug/l	718331.55
Sn	118	115	3	He	50.282	ug/l	176058.52
Sb	121	115	1	No Gas	54.416	ug/l	1009870.84
Sb	121	115	3	He	50.445	ug/l	235067.07
Sb	123	115	1	No Gas	54.473	ug/l	777766.05
Sb	123	115	3	He	50.324	ug/l	184554.04
Ba	135	115	1	No Gas	52.485	ug/l	227430.77
Ba	137	115	1	No Gas	51.383	ug/l	393750.42
La	139	115	3	He	50.225	ug/l	1018190.06
Ce	140	115	3	He	50.762	ug/l	1113146.74
Hg	201	209	1	No Gas	1.044	ug/l	2963.41
Hg	202	209	1	No Gas	1.040	ug/l	6663.67
Hg	202	209	3	He	0.997	ug/l	2570.74
Tl	203	209	3	He	48.464	ug/l	370518.04
Tl	205	209	1	No Gas	50.851	ug/l	2309853.35
Tl	205	209	3	He	49.290	ug/l	891464.56
[Pb]	206	209	1	No Gas	51.620	ug/l	799152.99
[Pb]	207	209	1	No Gas	50.832	ug/l	689304.60
Pb	208	209	1	No Gas	51.229	ug/l	3165494.37
Th	232	209	3	He	48.524	ug/l	1219264.14
U	238	209	1	No Gas	49.896	ug/l	3124698.00

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4474196.31	95.0
Sc	45	2	H2	1939573.08	102.0
Sc	45	3	He	281691.61	98.0
Y	89	1	No Gas	8592558.51	97.6
Y	89	2	H2	5549519.43	98.9
Y	89	3	He	1413253.59	100.6
In	115	1	No Gas	8729883.23	94.7
In	115	3	He	1799678.06	97.9
Tb	159	1	No Gas	12560180.57	95.5
Tb	159	3	He	4630973.93	99.2
Ho	165	1	No Gas	12524967.75	97.7
Ho	165	3	He	4600525.83	100.6
Lu	175	1	No Gas	12018648.64	95.7
Lu	175	3	He	3731441.86	100.1
Bi	209	1	No Gas	7956415.94	94.0
Bi	209	3	He	2956288.45	97.9

ICPMS207-B Analytical Data

Sample Name 100 ppb STD
File Name 017CAL5.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-08 16:21:35
Sample Type CalStd
Total Dilution 1.0000
Comment ICPMS-6020B-Cal
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	1193.914	ug/l	13295148.09
Be	9	45	1	No Gas	95.204	ug/l	406390.85
B	11	45	1	No Gas	96.951	ug/l	209000.57
Na	23	45	3	He	25147.792	ug/l	22792680.21
Mg	24	45	3	He	25154.283	ug/l	12670902.48
Al	27	45	1	No Gas	97.003	ug/l	1979803.11
Si	28	45	2	H2	396.125	ug/l	661308.21
K	39	89	3	He	25178.113	ug/l	12468551.20
Ca	40	89	2	H2	25967.217	ug/l	161345873.52
Ti	47	89	1	No Gas	98.953	ug/l	215161.42
V	51	89	1	No Gas	95.344	ug/l	2560121.16
V	51	89	3	He	100.693	ug/l	426742.61
Cr	52	89	1	No Gas	98.498	ug/l	2556926.52
Cr	52	89	3	He	99.757	ug/l	478068.29
Mn	55	89	1	No Gas	99.414	ug/l	3363924.79
Mn	55	89	3	He	101.691	ug/l	332742.99
Fe	56	89	2	H2	2702.585	ug/l	36256077.72
Fe	56	89	3	He	2637.861	ug/l	11295973.49
Co	59	89	1	No Gas	102.105	ug/l	2897079.12
Ni	60	89	1	No Gas	101.338	ug/l	645942.02
Ni	60	89	3	He	104.264	ug/l	184957.08
Cu	63	89	1	No Gas	102.227	ug/l	1547672.88
Cu	63	89	3	He	102.078	ug/l	489247.87
Cu	65	89	1	No Gas	102.810	ug/l	756345.45
Zn	66	89	1	No Gas	103.262	ug/l	429683.66
Zn	66	89	3	He	102.400	ug/l	89740.82
As	75	89	1	No Gas	99.494	ug/l	471170.29
As	75	89	3	He	100.708	ug/l	67651.72
Se	78	89	2	H2	107.062	ug/l	42458.55
Br	79	89	1	No Gas	-1.580	ug/l	67710.71
Br	79	89	2	H2	-1.563	ug/l	26648.29
Se	82	89	1	No Gas	104.534	ug/l	31408.67
Kr	84	89	1	No Gas		ug/l	52050.30
Sr	88	89	1	No Gas	99.914	ug/l	4424807.43
Sr	88	89	3	He	100.069	ug/l	498402.31
Mo	95	115	1	No Gas	98.689	ug/l	883613.72
Mo	95	115	3	He	100.206	ug/l	280917.58
Mo	98	115	1	No Gas	98.171	ug/l	1406416.78
Ag	107	115	1	No Gas	39.320	ug/l	900673.91
Ag	109	115	1	No Gas	39.347	ug/l	864884.24
Cd	111	115	1	No Gas	97.394	ug/l	478708.51

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	101.852	ug/l	139818.70
Cd	114	115	1	No Gas	99.244	ug/l	1067799.65
Cd	114	115	3	He	102.525	ug/l	337774.46
Sn	118	115	1	No Gas	98.622	ug/l	1423863.13
Sn	118	115	3	He	99.860	ug/l	347569.06
Sb	121	115	1	No Gas	97.750	ug/l	1922156.73
Sb	121	115	3	He	99.775	ug/l	462495.11
Sb	123	115	1	No Gas	97.722	ug/l	1477743.00
Sb	123	115	3	He	99.825	ug/l	364161.21
Ba	135	115	1	No Gas	99.761	ug/l	457943.75
Ba	137	115	1	No Gas	97.246	ug/l	789453.43
La	139	115	3	He	99.871	ug/l	2014129.17
Ce	140	115	3	He	99.596	ug/l	2172739.43
Hg	201	209	1	No Gas	1.978	ug/l	5871.79
Hg	202	209	1	No Gas	1.979	ug/l	13249.57
Hg	202	209	3	He	2.003	ug/l	4974.60
Tl	203	209	3	He	99.724	ug/l	736223.50
Tl	205	209	1	No Gas	94.357	ug/l	4491448.23
Tl	205	209	3	He	98.895	ug/l	1727197.20
[Pb]	206	209	1	No Gas	95.984	ug/l	1557727.25
[Pb]	207	209	1	No Gas	96.269	ug/l	1368224.29
Pb	208	209	1	No Gas	95.902	ug/l	6210390.45
Th	232	209	3	He	99.118	ug/l	2404974.25
U	238	209	1	No Gas	94.216	ug/l	6183714.93

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4809860.76	102.2
Sc	45	2	H2	1922223.09	101.0
Sc	45	3	He	284143.54	98.8
Y	89	1	No Gas	8918824.66	101.3
Y	89	2	H2	5521922.72	98.4
Y	89	3	He	1400833.14	99.7
In	115	1	No Gas	9237864.84	100.3
In	115	3	He	1790326.96	97.4
Tb	159	1	No Gas	13355123.61	101.6
Tb	159	3	He	4604125.95	98.6
Ho	165	1	No Gas	13291540.24	103.7
Ho	165	3	He	4562002.88	99.8
Lu	175	1	No Gas	12848424.95	102.3
Lu	175	3	He	3752601.51	100.7
Bi	209	1	No Gas	8332160.02	98.5
Bi	209	3	He	2854858.57	94.6

ICPMS207-B Analytical Data

Sample Name 1000 ppb STD
File Name 018CAL.S.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-08 16:28:08
Sample Type CalStd
Total Dilution 1.0000
Comment ICPMS-6020B-Cal
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	2525.292	ug/l	27409267.41
Be	9	45	1	No Gas	1000.449	ug/l	4161053.28
B	11	45	1	No Gas	1000.161	ug/l	2070237.55
Na	23	45	3	He	49919.276	ug/l	44726751.55
Mg	24	45	3	He	49908.301	ug/l	24871961.30
Al	27	45	1	No Gas	1000.057	ug/l	19862376.37
Si	28	45	2	H2	0.903	ug/l	14411.38
K	39	89	3	He	49940.962	ug/l	24338962.41
Ca	40	89	2	H2	49355.229	ug/l	315176485.38
Ti	47	89	1	No Gas	4.395	ug/l	9591.11
V	51	89	1	No Gas	1000.425	ug/l	26598514.15
V	51	89	3	He	999.937	ug/l	4136788.52
Cr	52	89	1	No Gas	999.995	ug/l	25261485.18
Cr	52	89	3	He	1000.036	ug/l	4725254.79
Mn	55	89	1	No Gas	999.931	ug/l	33321756.93
Mn	55	89	3	He	999.818	ug/l	3227043.53
Fe	56	89	2	H2	5936.333	ug/l	81761637.09
Fe	56	89	3	He	5982.684	ug/l	25273447.77
Co	59	89	1	No Gas	999.596	ug/l	27975530.70
Ni	60	89	1	No Gas	999.658	ug/l	6283034.35
Ni	60	89	3	He	999.453	ug/l	1748381.69
Cu	63	89	1	No Gas	999.479	ug/l	14919083.46
Cu	63	89	3	He	999.701	ug/l	4725658.71
Cu	65	89	1	No Gas	999.496	ug/l	7249535.56
Zn	66	89	1	No Gas	999.378	ug/l	4095799.60
Zn	66	89	3	He	999.715	ug/l	863704.65
As	75	89	1	No Gas	999.933	ug/l	4546072.53
As	75	89	3	He	999.920	ug/l	661760.69
Se	78	89	2	H2	999.018	ug/l	406851.94
Br	79	89	1	No Gas	-2.231	ug/l	62219.96
Br	79	89	2	H2	-0.664	ug/l	30458.19
Se	82	89	1	No Gas	999.282	ug/l	288894.85
Kr	84	89	1	No Gas		ug/l	293006.84
Sr	88	89	1	No Gas	999.861	ug/l	43679023.50
Sr	88	89	3	He	1000.023	ug/l	4912217.85
Mo	95	115	1	No Gas	0.112	ug/l	1022.27
Mo	95	115	3	He	0.078	ug/l	236.67
Mo	98	115	1	No Gas	0.122	ug/l	1785.49
Ag	107	115	1	No Gas	287.254	ug/l	6369318.37
Ag	109	115	1	No Gas	315.368	ug/l	6711936.83
Cd	111	115	1	No Gas	1000.133	ug/l	4732510.08

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	999.742	ug/l	1349656.12
Cd	114	115	1	No Gas	999.890	ug/l	10411079.93
Cd	114	115	3	He	999.645	ug/l	3239042.01
Sn	118	115	1	No Gas	0.190	ug/l	3809.65
Sn	118	115	3	He	0.178	ug/l	881.15
Sb	121	115	1	No Gas	0.425	ug/l	8268.61
Sb	121	115	3	He	0.330	ug/l	1558.24
Sb	123	115	1	No Gas	0.437	ug/l	6535.19
Sb	123	115	3	He	0.335	ug/l	1244.85
Ba	135	115	1	No Gas	999.898	ug/l	4442000.02
Ba	137	115	1	No Gas	1000.206	ug/l	7860196.11
La	139	115	3	He	0.009	ug/l	181.11
Ce	140	115	3	He	0.042	ug/l	962.57
Hg	201	209	1	No Gas	0.011	ug/l	47.32
Hg	202	209	1	No Gas	0.013	ug/l	121.98
Hg	202	209	3	He	0.016	ug/l	55.32
Tl	203	209	3	He	1000.107	ug/l	7228148.43
Tl	205	209	1	No Gas	1000.521	ug/l	44633755.44
Tl	205	209	3	He	1000.148	ug/l	17100744.23
[Pb]	206	209	1	No Gas	1000.318	ug/l	15206698.11
[Pb]	207	209	1	No Gas	1000.331	ug/l	13320806.47
Pb	208	209	1	No Gas	1000.346	ug/l	60693611.04
Th	232	209	3	He	1000.169	ug/l	23757610.83
U	238	209	1	No Gas	1000.582	ug/l	61542903.38

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4687243.29	99.6
Sc	45	2	H2	1980007.58	104.1
Sc	45	3	He	281133.32	97.8
Y	89	1	No Gas	8793264.21	99.9
Y	89	2	H2	5676018.16	101.1
Y	89	3	He	1381896.24	98.4
In	115	1	No Gas	8936354.16	97.0
In	115	3	He	1760800.22	95.8
Tb	159	1	No Gas	13044306.03	99.2
Tb	159	3	He	4596635.69	98.4
Ho	165	1	No Gas	12838781.35	100.1
Ho	165	3	He	4533852.13	99.2
Lu	175	1	No Gas	12467778.69	99.3
Lu	175	3	He	3741226.38	100.4
Bi	209	1	No Gas	7801227.69	92.2
Bi	209	3	He	2794963.62	92.6

ICPMS207-B Analytical Data

Sample Name 100 ppb Br STD
File Name 019CAL.S.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-08 16:34:39
Sample Type CalStd
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	2.715	ug/l	39977.55
Be	9	45	1	No Gas	0.035	ug/l	454.92
B	11	45	1	No Gas	13.675	ug/l	31973.06
Na	23	45	3	He	14.104	ug/l	48022.97
Mg	24	45	3	He	-0.042	ug/l	465.75
Al	27	45	1	No Gas	0.192	ug/l	8063.32
Si	28	45	2	H2	0.097	ug/l	12573.68
K	39	89	3	He	563.790	ug/l	339990.60
Ca	40	89	2	H2	1.561	ug/l	64921.26
Ti	47	89	1	No Gas	0.108	ug/l	410.42
V	51	89	1	No Gas	0.168	ug/l	-7172.63
V	51	89	3	He	-0.290	ug/l	3744.94
Cr	52	89	1	No Gas	-0.193	ug/l	32861.33
Cr	52	89	3	He	-0.002	ug/l	321.12
Mn	55	89	1	No Gas	0.048	ug/l	6914.62
Mn	55	89	3	He	0.007	ug/l	142.64
Fe	56	89	2	H2	0.260	ug/l	10230.56
Fe	56	89	3	He	0.334	ug/l	5783.63
Co	59	89	1	No Gas	0.007	ug/l	479.06
Ni	60	89	1	No Gas	0.055	ug/l	718.60
Ni	60	89	3	He	0.022	ug/l	120.00
Cu	63	89	1	No Gas	0.111	ug/l	2666.65
Cu	63	89	3	He	0.060	ug/l	517.24
Cu	65	89	1	No Gas	0.065	ug/l	917.07
Zn	66	89	1	No Gas	0.203	ug/l	1386.96
Zn	66	89	3	He	0.209	ug/l	258.89
As	75	89	1	No Gas	0.014	ug/l	14144.42
As	75	89	3	He	0.046	ug/l	144.07
Se	78	89	2	H2	0.154	ug/l	71.22
Br	79	89	1	No Gas	100.000	ug/l	797433.73
Br	79	89	2	H2	100.000	ug/l	367109.16
Se	82	89	1	No Gas	2.292	ug/l	1540.05
Kr	84	89	1	No Gas		ug/l	23269.30
Sr	88	89	1	No Gas	0.009	ug/l	838.37
Sr	88	89	3	He	0.002	ug/l	245.56
Mo	95	115	1	No Gas	0.016	ug/l	198.89
Mo	95	115	3	He	0.014	ug/l	62.22
Mo	98	115	1	No Gas	0.013	ug/l	274.73
Ag	107	115	1	No Gas	0.857	ug/l	19898.05
Ag	109	115	1	No Gas	0.856	ug/l	19053.89
Cd	111	115	1	No Gas	0.068	ug/l	3141.37

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.037	ug/l	51.78
Cd	114	115	1	No Gas	0.048	ug/l	524.82
Cd	114	115	3	He	0.036	ug/l	121.79
Sn	118	115	1	No Gas	0.097	ug/l	2618.39
Sn	118	115	3	He	0.100	ug/l	633.35
Sb	121	115	1	No Gas	0.115	ug/l	2492.48
Sb	121	115	3	He	0.108	ug/l	562.40
Sb	123	115	1	No Gas	0.117	ug/l	1942.33
Sb	123	115	3	He	0.112	ug/l	459.39
Ba	135	115	1	No Gas	0.010	ug/l	63.21
Ba	137	115	1	No Gas	0.006	ug/l	106.45
La	139	115	3	He	0.000	ug/l	13.33
Ce	140	115	3	He	-0.001	ug/l	22.22
Hg	201	209	1	No Gas	0.006	ug/l	34.66
Hg	202	209	1	No Gas	0.006	ug/l	88.31
Hg	202	209	3	He	0.005	ug/l	28.66
Tl	203	209	3	He	0.145	ug/l	1153.85
Tl	205	209	1	No Gas	0.165	ug/l	8307.12
Tl	205	209	3	He	0.144	ug/l	2702.03
[Pb]	206	209	1	No Gas	0.044	ug/l	854.48
[Pb]	207	209	1	No Gas	0.040	ug/l	688.91
Pb	208	209	1	No Gas	0.040	ug/l	3187.96
Th	232	209	3	He	0.302	ug/l	7841.51
U	238	209	1	No Gas	0.063	ug/l	4272.88

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4731180.00	100.5
Sc	45	2	H2	1906398.70	100.2
Sc	45	3	He	277085.36	96.4
Y	89	1	No Gas	8957724.60	101.8
Y	89	2	H2	5527601.10	98.5
Y	89	3	He	1384871.48	98.6
In	115	1	No Gas	9338322.14	101.3
In	115	3	He	1813220.72	98.6
Tb	159	1	No Gas	13227290.89	100.6
Tb	159	3	He	4620125.74	99.0
Ho	165	1	No Gas	13116867.45	102.3
Ho	165	3	He	4574443.40	100.1
Lu	175	1	No Gas	12769863.16	101.7
Lu	175	3	He	3732882.99	100.2
Bi	209	1	No Gas	8635163.29	102.0
Bi	209	3	He	3014509.05	99.8

ICPMS207-B Analytical Data

Sample Name Rinse
File Name 020BLKV.d
Data Path Name D:\Agilent\ICPMH1\DATA\220308BDoD.b
Acq Time 2022-03-08 16:41:05
Sample Type BlkVrfy
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	1.330	ug/l	23160.20
Be	9	45	1	No Gas	0.001	ug/l	291.61
B	11	45	1	No Gas	6.144	ug/l	15163.65
Na	23	45	3	He	10.517	ug/l	44448.74
Mg	24	45	3	He	2.624	ug/l	1759.95
Al	27	45	1	No Gas	1.968	ug/l	40738.60
Si	28	45	2	H2	-1.407	ug/l	10581.64
K	39	89	3	He	6.950	ug/l	68128.42
Ca	40	89	2	H2	0.756	ug/l	61258.69
Ti	47	89	1	No Gas	0.056	ug/l	276.95
V	51	89	1	No Gas	-0.238	ug/l	-16992.49
V	51	89	3	He	-0.446	ug/l	3072.56
Cr	52	89	1	No Gas	-0.295	ug/l	28384.28
Cr	52	89	3	He	0.000	ug/l	323.34
Mn	55	89	1	No Gas	0.042	ug/l	6285.55
Mn	55	89	3	He	0.001	ug/l	121.31
Fe	56	89	2	H2	0.119	ug/l	8539.42
Fe	56	89	3	He	0.170	ug/l	5037.62
Co	59	89	1	No Gas	0.001	ug/l	302.74
Ni	60	89	1	No Gas	0.043	ug/l	605.48
Ni	60	89	3	He	-0.005	ug/l	72.22
Cu	63	89	1	No Gas	0.079	ug/l	2044.30
Cu	63	89	3	He	0.044	ug/l	436.25
Cu	65	89	1	No Gas	0.043	ug/l	707.64
Zn	66	89	1	No Gas	-0.032	ug/l	382.31
Zn	66	89	3	He	0.015	ug/l	91.11
As	75	89	1	No Gas	-0.287	ug/l	11969.59
As	75	89	3	He	-0.017	ug/l	101.00
Se	78	89	2	H2	0.044	ug/l	28.22
Br	79	89	1	No Gas	3.721	ug/l	99440.37
Br	79	89	2	H2	2.790	ug/l	42231.46
Se	82	89	1	No Gas	0.343	ug/l	906.63
Kr	84	89	1	No Gas		ug/l	23502.58
Sr	88	89	1	No Gas	0.003	ug/l	542.27
Sr	88	89	3	He	-0.009	ug/l	191.11
Mo	95	115	1	No Gas	0.006	ug/l	98.89
Mo	95	115	3	He	0.004	ug/l	33.33
Mo	98	115	1	No Gas	0.006	ug/l	167.44
Ag	107	115	1	No Gas	0.017	ug/l	442.85
Ag	109	115	1	No Gas	0.015	ug/l	366.82
Cd	111	115	1	No Gas	0.061	ug/l	2894.37

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.014	ug/l	19.89
Cd	114	115	1	No Gas	0.014	ug/l	146.99
Cd	114	115	3	He	0.012	ug/l	42.19
Sn	118	115	1	No Gas	0.012	ug/l	1287.51
Sn	118	115	3	He	0.012	ug/l	322.23
Sb	121	115	1	No Gas	0.061	ug/l	1322.91
Sb	121	115	3	He	0.050	ug/l	291.37
Sb	123	115	1	No Gas	0.060	ug/l	999.80
Sb	123	115	3	He	0.054	ug/l	243.03
Ba	135	115	1	No Gas	0.004	ug/l	33.27
Ba	137	115	1	No Gas	-0.002	ug/l	39.92
La	139	115	3	He	0.000	ug/l	7.78
Ce	140	115	3	He	-0.002	ug/l	7.78
Hg	201	209	1	No Gas	0.004	ug/l	28.66
Hg	202	209	1	No Gas	0.004	ug/l	70.99
Hg	202	209	3	He	0.005	ug/l	28.66
Tl	203	209	3	He	0.048	ug/l	399.50
Tl	205	209	1	No Gas	0.044	ug/l	2232.42
Tl	205	209	3	He	0.048	ug/l	931.74
[Pb]	206	209	1	No Gas	0.021	ug/l	452.24
[Pb]	207	209	1	No Gas	0.017	ug/l	336.67
Pb	208	209	1	No Gas	0.018	ug/l	1601.16
Th	232	209	3	He	0.062	ug/l	1696.80
U	238	209	1	No Gas	0.020	ug/l	1258.82

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4425613.16	94.0
Sc	45	2	H2	1984897.62	104.3
Sc	45	3	He	274637.37	95.5
Y	89	1	No Gas	8413442.05	95.6
Y	89	2	H2	5651524.50	100.7
Y	89	3	He	1369995.59	97.5
In	115	1	No Gas	8685488.61	94.3
In	115	3	He	1812553.31	98.6
Tb	159	1	No Gas	12375547.82	94.1
Tb	159	3	He	4611558.74	98.8
Ho	165	1	No Gas	12163521.22	94.9
Ho	165	3	He	4574915.48	100.1
Lu	175	1	No Gas	11874257.49	94.6
Lu	175	3	He	3742190.00	100.4
Bi	209	1	No Gas	8173351.13	96.6
Bi	209	3	He	3023768.74	100.1

ICPMS207-B Analytical Data

Sample Name QCS
File Name 021_QC1.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-08 16:47:22
Sample Type QC1
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	55.039	ug/l	590984.67
Be	9	45	1	No Gas	26.604	ug/l	107970.02
B	11	45	1	No Gas	59.019	ug/l	122021.82
Na	23	45	3	He	2681.727	ug/l	2445286.54
Mg	24	45	3	He	2674.400	ug/l	1337866.93
Al	27	45	1	No Gas	273.208	ug/l	5283946.38
Si	28	45	2	H2	529.325	ug/l	889614.43
K	39	89	3	He	2651.591	ug/l	1351096.02
Ca	40	89	2	H2	2883.356	ug/l	17889822.32
Ti	47	89	1	No Gas	52.722	ug/l	112196.38
V	51	89	1	No Gas	52.062	ug/l	1361969.87
V	51	89	3	He	53.458	ug/l	225359.43
Cr	52	89	1	No Gas	54.284	ug/l	1394832.45
Cr	52	89	3	He	53.491	ug/l	252532.30
Mn	55	89	1	No Gas	274.588	ug/l	9077982.60
Mn	55	89	3	He	271.471	ug/l	874386.02
Fe	56	89	2	H2	279.601	ug/l	3739229.88
Fe	56	89	3	He	273.875	ug/l	1158624.22
Co	59	89	1	No Gas	55.328	ug/l	1535743.40
Ni	60	89	1	No Gas	54.305	ug/l	338829.96
Ni	60	89	3	He	56.668	ug/l	98992.80
Cu	63	89	1	No Gas	57.036	ug/l	845302.03
Cu	63	89	3	He	56.357	ug/l	266050.88
Cu	65	89	1	No Gas	55.656	ug/l	400747.59
Zn	66	89	1	No Gas	56.516	ug/l	230197.36
Zn	66	89	3	He	56.584	ug/l	48857.01
As	75	89	1	No Gas	52.701	ug/l	250624.11
As	75	89	3	He	53.639	ug/l	35527.70
Se	78	89	2	H2	58.655	ug/l	23154.83
Br	79	89	1	No Gas	7.158	ug/l	127322.67
Br	79	89	2	H2	7.852	ug/l	57914.35
Se	82	89	1	No Gas	56.433	ug/l	16977.19
Kr	84	89	1	No Gas		ug/l	38524.89
Sr	88	89	1	No Gas	55.175	ug/l	2390904.74
Sr	88	89	3	He	52.978	ug/l	259891.73
Mo	95	115	1	No Gas	51.758	ug/l	451023.15
Mo	95	115	3	He	51.922	ug/l	145796.14
Mo	98	115	1	No Gas	52.603	ug/l	733196.10
Ag	107	115	1	No Gas	27.371	ug/l	609949.33
Ag	109	115	1	No Gas	27.260	ug/l	582898.72
Cd	111	115	1	No Gas	26.911	ug/l	130646.55

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	27.224	ug/l	37430.51
Cd	114	115	1	No Gas	27.188	ug/l	284618.56
Cd	114	115	3	He	27.508	ug/l	90769.84
Sn	118	115	1	No Gas	54.326	ug/l	763611.95
Sn	118	115	3	He	52.440	ug/l	182933.51
Sb	121	115	1	No Gas	51.433	ug/l	984309.00
Sb	121	115	3	He	51.109	ug/l	237297.41
Sb	123	115	1	No Gas	51.571	ug/l	758991.30
Sb	123	115	3	He	51.675	ug/l	188826.05
Ba	135	115	1	No Gas	53.709	ug/l	239885.43
Ba	137	115	1	No Gas	52.944	ug/l	418240.66
La	139	115	3	He	52.778	ug/l	1066111.48
Ce	140	115	3	He	53.010	ug/l	1158267.99
Hg	201	209	1	No Gas	0.991	ug/l	2920.07
Hg	202	209	1	No Gas	1.028	ug/l	6837.39
Hg	202	209	3	He	0.977	ug/l	2564.07
Tl	203	209	3	He	50.282	ug/l	390966.07
Tl	205	209	1	No Gas	51.607	ug/l	2433026.51
Tl	205	209	3	He	50.594	ug/l	930645.28
[Pb]	206	209	1	No Gas	52.379	ug/l	841579.23
[Pb]	207	209	1	No Gas	51.676	ug/l	727211.54
Pb	208	209	1	No Gas	52.236	ug/l	3349397.38
Th	232	209	3	He	50.354	ug/l	1286838.81
U	238	209	1	No Gas	54.287	ug/l	3528435.94

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4561413.38	96.9
Sc	45	2	H2	1942697.12	102.1
Sc	45	3	He	282085.89	98.1
Y	89	1	No Gas	8721245.00	99.1
Y	89	2	H2	5494796.95	97.9
Y	89	3	He	1378816.44	98.1
In	115	1	No Gas	8984424.16	97.5
In	115	3	He	1793145.26	97.6
Tb	159	1	No Gas	12808741.10	97.4
Tb	159	3	He	4535355.92	97.1
Ho	165	1	No Gas	12683859.98	98.9
Ho	165	3	He	4525355.09	99.0
Lu	175	1	No Gas	12421286.16	98.9
Lu	175	3	He	3732102.47	100.2
Bi	209	1	No Gas	8244167.11	97.4
Bi	209	3	He	3006840.09	99.6

ICPMS207-B Analytical Data

Sample Name LRB
File Name 022MBLK.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-08 16:53:37
Sample Type MBLK
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	0.735	ug/l	17187.90
Be	9	45	1	No Gas	-0.014	ug/l	234.62
B	11	45	1	No Gas	3.755	ug/l	10581.95
Na	23	45	3	He	9.183	ug/l	43560.60
Mg	24	45	3	He	0.246	ug/l	605.48
Al	27	45	1	No Gas	0.420	ug/l	11896.99
Si	28	45	2	H2	-1.113	ug/l	10730.28
K	39	89	3	He	6.267	ug/l	67178.59
Ca	40	89	2	H2	3.005	ug/l	73925.24
Ti	47	89	1	No Gas	0.081	ug/l	337.01
V	51	89	1	No Gas	0.273	ug/l	-4087.33
V	51	89	3	He	-0.297	ug/l	3648.25
Cr	52	89	1	No Gas	-0.192	ug/l	31557.84
Cr	52	89	3	He	0.019	ug/l	410.01
Mn	55	89	1	No Gas	0.023	ug/l	5812.99
Mn	55	89	3	He	0.006	ug/l	136.30
Fe	56	89	2	H2	0.171	ug/l	9041.88
Fe	56	89	3	He	0.197	ug/l	5104.37
Co	59	89	1	No Gas	0.002	ug/l	322.70
Ni	60	89	1	No Gas	0.033	ug/l	558.91
Ni	60	89	3	He	0.013	ug/l	103.33
Cu	63	89	1	No Gas	0.055	ug/l	1740.81
Cu	63	89	3	He	0.035	ug/l	394.26
Cu	65	89	1	No Gas	0.032	ug/l	642.28
Zn	66	89	1	No Gas	0.748	ug/l	3513.20
Zn	66	89	3	He	0.693	ug/l	665.57
As	75	89	1	No Gas	-0.074	ug/l	13185.98
As	75	89	3	He	-0.006	ug/l	107.67
Se	78	89	2	H2	0.028	ug/l	21.22
Br	79	89	1	No Gas	9.708	ug/l	143024.72
Br	79	89	2	H2	9.112	ug/l	62487.65
Se	82	89	1	No Gas	0.441	ug/l	958.90
Kr	84	89	1	No Gas		ug/l	22996.14
Sr	88	89	1	No Gas	0.004	ug/l	568.89
Sr	88	89	3	He	-0.004	ug/l	212.23
Mo	95	115	1	No Gas	0.033	ug/l	332.23
Mo	95	115	3	He	0.022	ug/l	84.44
Mo	98	115	1	No Gas	0.028	ug/l	470.50
Ag	107	115	1	No Gas	0.000	ug/l	78.03
Ag	109	115	1	No Gas	0.000	ug/l	52.02
Cd	111	115	1	No Gas	0.071	ug/l	3003.83

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.010	ug/l	13.66
Cd	114	115	1	No Gas	0.010	ug/l	102.71
Cd	114	115	3	He	0.009	ug/l	30.39
Sn	118	115	1	No Gas	0.071	ug/l	2135.93
Sn	118	115	3	He	0.076	ug/l	541.12
Sb	121	115	1	No Gas	0.252	ug/l	4958.71
Sb	121	115	3	He	0.216	ug/l	1054.81
Sb	123	115	1	No Gas	0.254	ug/l	3846.92
Sb	123	115	3	He	0.216	ug/l	831.44
Ba	135	115	1	No Gas	0.004	ug/l	33.27
Ba	137	115	1	No Gas	-0.002	ug/l	39.92
La	139	115	3	He	0.000	ug/l	12.22
Ce	140	115	3	He	-0.001	ug/l	16.67
Hg	201	209	1	No Gas	0.009	ug/l	44.32
Hg	202	209	1	No Gas	0.009	ug/l	108.65
Hg	202	209	3	He	0.007	ug/l	35.32
Tl	203	209	3	He	0.030	ug/l	253.44
Tl	205	209	1	No Gas	0.026	ug/l	1422.31
Tl	205	209	3	He	0.027	ug/l	551.57
[Pb]	206	209	1	No Gas	0.010	ug/l	286.67
[Pb]	207	209	1	No Gas	0.009	ug/l	232.22
Pb	208	209	1	No Gas	0.010	ug/l	1108.91
Th	232	209	3	He	0.054	ug/l	1502.69
U	238	209	1	No Gas	0.012	ug/l	810.53

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4442763.54	94.4
Sc	45	2	H2	1930374.98	101.5
Sc	45	3	He	276339.91	96.1
Y	89	1	No Gas	8595648.47	97.6
Y	89	2	H2	5530036.09	98.5
Y	89	3	He	1357562.41	96.6
In	115	1	No Gas	8887064.77	96.4
In	115	3	He	1786002.81	97.2
Tb	159	1	No Gas	12832750.63	97.6
Tb	159	3	He	4575437.31	98.0
Ho	165	1	No Gas	12585047.31	98.2
Ho	165	3	He	4490723.28	98.2
Lu	175	1	No Gas	12454504.28	99.2
Lu	175	3	He	3709342.83	99.6
Bi	209	1	No Gas	8427634.63	99.6
Bi	209	3	He	3017975.02	100.0

ICPMS207-B Analytical Data

Sample Name LFB
File Name 023_LFB.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-08 16:59:54
Sample Type LFB
Total Dilution 1.0300
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	2265.672	ug/l	22786557.43
Be	9	45	1	No Gas	48.380	ug/l	186720.27
B	11	45	1	No Gas	52.606	ug/l	103958.91
Na	23	45	3	He	48451.418	ug/l	41392837.16
Mg	24	45	3	He	48440.000	ug/l	23017218.65
Al	27	45	1	No Gas	51.035	ug/l	943080.94
Si	28	45	2	H2	190.223	ug/l	305237.97
K	39	89	3	He	48246.153	ug/l	22352223.56
Ca	40	89	2	H2	48638.380	ug/l	288904671.16
Ti	47	89	1	No Gas	52.179	ug/l	107203.10
V	51	89	1	No Gas	48.134	ug/l	1214315.76
V	51	89	3	He	50.956	ug/l	205001.20
Cr	52	89	1	No Gas	51.621	ug/l	1282940.65
Cr	52	89	3	He	50.029	ug/l	225029.59
Mn	55	89	1	No Gas	50.138	ug/l	1604134.22
Mn	55	89	3	He	50.613	ug/l	155393.59
Fe	56	89	2	H2	4968.368	ug/l	63695669.26
Fe	56	89	3	He	4943.200	ug/l	19850512.11
Co	59	89	1	No Gas	51.351	ug/l	1375845.15
Ni	60	89	1	No Gas	51.025	ug/l	307280.14
Ni	60	89	3	He	52.117	ug/l	86745.22
Cu	63	89	1	No Gas	52.012	ug/l	744082.60
Cu	63	89	3	He	51.382	ug/l	231096.75
Cu	65	89	1	No Gas	50.180	ug/l	348878.89
Zn	66	89	1	No Gas	52.353	ug/l	205845.83
Zn	66	89	3	He	52.181	ug/l	42927.40
As	75	89	1	No Gas	49.477	ug/l	228292.00
As	75	89	3	He	50.152	ug/l	31655.89
Se	78	89	2	H2	53.298	ug/l	20205.89
Br	79	89	1	No Gas	13.715	ug/l	169332.86
Br	79	89	2	H2	12.519	ug/l	71460.59
Se	82	89	1	No Gas	52.084	ug/l	15212.75
Kr	84	89	1	No Gas		ug/l	37417.71
Sr	88	89	1	No Gas	50.929	ug/l	2129820.85
Sr	88	89	3	He	49.897	ug/l	233202.05
Mo	95	115	1	No Gas	51.182	ug/l	420676.34
Mo	95	115	3	He	49.707	ug/l	131326.03
Mo	98	115	1	No Gas	51.780	ug/l	680852.85
Ag	107	115	1	No Gas	19.983	ug/l	420179.76
Ag	109	115	1	No Gas	20.011	ug/l	403695.06
Cd	111	115	1	No Gas	49.761	ug/l	225819.73

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	50.205	ug/l	64950.33
Cd	114	115	1	No Gas	50.616	ug/l	499844.41
Cd	114	115	3	He	50.962	ug/l	158232.10
Sn	118	115	1	No Gas	51.218	ug/l	679168.86
Sn	118	115	3	He	49.427	ug/l	162273.35
Sb	121	115	1	No Gas	51.633	ug/l	932032.08
Sb	121	115	3	He	49.856	ug/l	217828.68
Sb	123	115	1	No Gas	51.307	ug/l	712195.94
Sb	123	115	3	He	49.957	ug/l	171772.07
Ba	135	115	1	No Gas	50.985	ug/l	214816.20
Ba	137	115	1	No Gas	50.273	ug/l	374678.39
La	139	115	3	He	51.569	ug/l	980091.89
Ce	140	115	3	He	51.571	ug/l	1060272.80
Hg	201	209	1	No Gas	1.028	ug/l	2826.07
Hg	202	209	1	No Gas	1.038	ug/l	6437.27
Hg	202	209	3	He	0.994	ug/l	2353.07
Tl	203	209	3	He	49.529	ug/l	347457.44
Tl	205	209	1	No Gas	49.618	ug/l	2181588.65
Tl	205	209	3	He	49.966	ug/l	829216.73
[Pb]	206	209	1	No Gas	49.626	ug/l	743679.87
[Pb]	207	209	1	No Gas	49.583	ug/l	650835.20
Pb	208	209	1	No Gas	49.596	ug/l	2966266.94
Th	232	209	3	He	50.601	ug/l	1166663.44
U	238	209	1	No Gas	49.935	ug/l	3027094.29

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4473599.89	95.0
Sc	45	2	H2	1862330.51	97.9
Sc	45	3	He	276071.18	96.0
Y	89	1	No Gas	8670286.44	98.5
Y	89	2	H2	5435859.31	96.8
Y	89	3	He	1353087.40	96.3
In	115	1	No Gas	8728414.96	94.7
In	115	3	He	1737894.16	94.5
Tb	159	1	No Gas	12964402.17	98.6
Tb	159	3	He	4494628.69	96.3
Ho	165	1	No Gas	12597937.08	98.3
Ho	165	3	He	4505817.85	98.6
Lu	175	1	No Gas	12443141.66	99.1
Lu	175	3	He	3716494.39	99.7
Bi	209	1	No Gas	7920177.24	93.6
Bi	209	3	He	2794060.79	92.5

ICPMS207-B Analytical Data

Sample Name CCV
File Name 024_CCV.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-08 17:06:09
Sample Type CCV
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	613.703	ug/l	6765579.74
Be	9	45	1	No Gas	48.833	ug/l	206350.63
B	11	45	1	No Gas	53.434	ug/l	115492.90
Na	23	45	3	He	12633.471	ug/l	11587610.66
Mg	24	45	3	He	12868.355	ug/l	6549856.91
Al	27	45	1	No Gas	51.549	ug/l	1042686.18
Si	28	45	2	H2	207.393	ug/l	368183.83
K	39	89	3	He	12755.567	ug/l	6359926.64
Ca	40	89	2	H2	13335.091	ug/l	85258075.91
Ti	47	89	1	No Gas	51.735	ug/l	112201.28
V	51	89	1	No Gas	49.253	ug/l	1312404.15
V	51	89	3	He	50.758	ug/l	217949.37
Cr	52	89	1	No Gas	51.928	ug/l	1361604.79
Cr	52	89	3	He	50.501	ug/l	242590.27
Mn	55	89	1	No Gas	51.526	ug/l	1740696.05
Mn	55	89	3	He	51.315	ug/l	168259.56
Fe	56	89	2	H2	1351.348	ug/l	18627881.18
Fe	56	89	3	He	1329.633	ug/l	5705678.08
Co	59	89	1	No Gas	52.283	ug/l	1479480.67
Ni	60	89	1	No Gas	52.059	ug/l	331016.42
Ni	60	89	3	He	54.657	ug/l	97134.70
Cu	63	89	1	No Gas	54.688	ug/l	825807.13
Cu	63	89	3	He	52.835	ug/l	253764.76
Cu	65	89	1	No Gas	53.028	ug/l	389192.79
Zn	66	89	1	No Gas	53.905	ug/l	223825.40
Zn	66	89	3	He	52.486	ug/l	46112.67
As	75	89	1	No Gas	50.844	ug/l	246850.37
As	75	89	3	He	51.113	ug/l	34448.41
Se	78	89	2	H2	55.080	ug/l	22449.86
Br	79	89	1	No Gas	4.381	ug/l	109969.82
Br	79	89	2	H2	2.367	ug/l	40913.41
Se	82	89	1	No Gas	52.854	ug/l	16263.64
Kr	84	89	1	No Gas		ug/l	38588.23
Sr	88	89	1	No Gas	51.268	ug/l	2263787.09
Sr	88	89	3	He	50.191	ug/l	250504.98
Mo	95	115	1	No Gas	50.223	ug/l	448413.50
Mo	95	115	3	He	49.120	ug/l	140940.43
Mo	98	115	1	No Gas	50.769	ug/l	725158.32
Ag	107	115	1	No Gas	20.186	ug/l	461049.63
Ag	109	115	1	No Gas	20.180	ug/l	442233.26
Cd	111	115	1	No Gas	49.912	ug/l	245949.56

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	50.976	ug/l	71621.28
Cd	114	115	1	No Gas	50.904	ug/l	546031.86
Cd	114	115	3	He	51.295	ug/l	172964.79
Sn	118	115	1	No Gas	50.683	ug/l	729984.90
Sn	118	115	3	He	48.719	ug/l	173680.33
Sb	121	115	1	No Gas	52.350	ug/l	1026416.86
Sb	121	115	3	He	49.651	ug/l	235588.94
Sb	123	115	1	No Gas	52.013	ug/l	784202.95
Sb	123	115	3	He	50.254	ug/l	187652.04
Ba	135	115	1	No Gas	50.336	ug/l	230390.08
Ba	137	115	1	No Gas	48.809	ug/l	395102.87
La	139	115	3	He	49.708	ug/l	1025984.92
Ce	140	115	3	He	49.585	ug/l	1107119.79
Hg	201	209	1	No Gas	1.012	ug/l	3025.07
Hg	202	209	1	No Gas	1.018	ug/l	6867.40
Hg	202	209	3	He	0.972	ug/l	2576.74
Tl	203	209	3	He	47.638	ug/l	374307.97
Tl	205	209	1	No Gas	48.529	ug/l	2321863.77
Tl	205	209	3	He	48.333	ug/l	898409.83
[Pb]	206	209	1	No Gas	49.811	ug/l	812013.88
[Pb]	207	209	1	No Gas	49.077	ug/l	700920.47
Pb	208	209	1	No Gas	49.421	ug/l	3215790.14
Th	232	209	3	He	47.965	ug/l	1238720.45
U	238	209	1	No Gas	48.388	ug/l	3191298.95

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4758233.81	101.1
Sc	45	2	H2	2007547.64	105.5
Sc	45	3	He	287097.82	99.9
Y	89	1	No Gas	8891025.82	101.0
Y	89	2	H2	5674056.62	101.1
Y	89	3	He	1402729.53	99.9
In	115	1	No Gas	9206022.68	99.9
In	115	3	He	1832386.15	99.7
Tb	159	1	No Gas	13172031.78	100.2
Tb	159	3	He	4613432.91	98.8
Ho	165	1	No Gas	12971066.86	101.2
Ho	165	3	He	4580992.19	100.2
Lu	175	1	No Gas	12722618.32	101.3
Lu	175	3	He	3765846.89	101.1
Bi	209	1	No Gas	8367059.93	98.9
Bi	209	3	He	3038468.48	100.6

ICPMS207-B Analytical Data

Sample Name CCB
File Name 025_CCB.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-08 17:12:26
Sample Type CCB
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	1.800	ug/l	30667.75
Be	9	45	1	No Gas	-0.007	ug/l	282.97
B	11	45	1	No Gas	2.339	ug/l	8528.50
Na	23	45	3	He	12.666	ug/l	47259.38
Mg	24	45	3	He	0.251	ug/l	615.46
Al	27	45	1	No Gas	-0.023	ug/l	3851.63
Si	28	45	2	H2	-1.624	ug/l	10144.87
K	39	89	3	He	9.137	ug/l	70665.55
Ca	40	89	2	H2	0.028	ug/l	56920.59
Ti	47	89	1	No Gas	0.037	ug/l	260.26
V	51	89	1	No Gas	0.043	ug/l	-10212.92
V	51	89	3	He	0.009	ug/l	5039.78
Cr	52	89	1	No Gas	-0.054	ug/l	37146.44
Cr	52	89	3	He	-0.004	ug/l	312.23
Mn	55	89	1	No Gas	0.030	ug/l	6432.05
Mn	55	89	3	He	-0.004	ug/l	109.98
Fe	56	89	2	H2	0.181	ug/l	9430.89
Fe	56	89	3	He	0.270	ug/l	5575.02
Co	59	89	1	No Gas	0.001	ug/l	316.05
Ni	60	89	1	No Gas	0.024	ug/l	532.29
Ni	60	89	3	He	0.002	ug/l	86.67
Cu	63	89	1	No Gas	0.082	ug/l	2262.42
Cu	63	89	3	He	0.031	ug/l	385.60
Cu	65	89	1	No Gas	0.031	ug/l	678.95
Zn	66	89	1	No Gas	-0.053	ug/l	325.52
Zn	66	89	3	He	0.016	ug/l	93.33
As	75	89	1	No Gas	-0.243	ug/l	13208.47
As	75	89	3	He	0.003	ug/l	116.87
Se	78	89	2	H2	0.023	ug/l	20.00
Br	79	89	1	No Gas	0.180	ug/l	82646.33
Br	79	89	2	H2	-0.129	ug/l	32375.38
Se	82	89	1	No Gas	-0.403	ug/l	767.68
Kr	84	89	1	No Gas		ug/l	24468.90
Sr	88	89	1	No Gas	-0.001	ug/l	412.52
Sr	88	89	3	He	-0.005	ug/l	215.56
Mo	95	115	1	No Gas	0.034	ug/l	361.12
Mo	95	115	3	He	0.024	ug/l	92.22
Mo	98	115	1	No Gas	0.032	ug/l	568.01
Ag	107	115	1	No Gas	0.002	ug/l	112.04
Ag	109	115	1	No Gas	0.001	ug/l	71.36
Cd	111	115	1	No Gas	0.057	ug/l	3133.59

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.007	ug/l	10.22
Cd	114	115	1	No Gas	0.006	ug/l	66.34
Cd	114	115	3	He	0.005	ug/l	17.21
Sn	118	115	1	No Gas	0.068	ug/l	2225.79
Sn	118	115	3	He	0.079	ug/l	564.48
Sb	121	115	1	No Gas	0.265	ug/l	5544.33
Sb	121	115	3	He	0.212	ug/l	1059.81
Sb	123	115	1	No Gas	0.262	ug/l	4224.40
Sb	123	115	3	He	0.206	ug/l	815.11
Ba	135	115	1	No Gas	0.001	ug/l	19.96
Ba	137	115	1	No Gas	-0.004	ug/l	29.94
La	139	115	3	He	0.000	ug/l	12.22
Ce	140	115	3	He	-0.001	ug/l	16.67
Hg	201	209	1	No Gas	0.009	ug/l	45.32
Hg	202	209	1	No Gas	0.009	ug/l	107.65
Hg	202	209	3	He	0.008	ug/l	36.99
Tl	203	209	3	He	0.068	ug/l	556.90
Tl	205	209	1	No Gas	0.063	ug/l	3288.21
Tl	205	209	3	He	0.067	ug/l	1295.92
[Pb]	206	209	1	No Gas	0.010	ug/l	288.89
[Pb]	207	209	1	No Gas	0.010	ug/l	250.00
Pb	208	209	1	No Gas	0.008	ug/l	1026.69
Th	232	209	3	He	0.055	ug/l	1527.37
U	238	209	1	No Gas	0.011	ug/l	762.87

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4856579.00	103.1
Sc	45	2	H2	1975919.89	103.9
Sc	45	3	He	280099.74	97.4
Y	89	1	No Gas	9159346.52	104.0
Y	89	2	H2	5682449.33	101.2
Y	89	3	He	1399370.08	99.6
In	115	1	No Gas	9457660.28	102.6
In	115	3	He	1833010.22	99.7
Tb	159	1	No Gas	13348808.03	101.5
Tb	159	3	He	4663719.65	99.9
Ho	165	1	No Gas	13224273.39	103.1
Ho	165	3	He	4595917.27	100.5
Lu	175	1	No Gas	12967697.34	103.3
Lu	175	3	He	3784991.03	101.6
Bi	209	1	No Gas	8712149.05	103.0
Bi	209	3	He	3047825.91	100.9

ICPMS207-B Analytical Data

Sample Name LRB
File Name 026MBLK.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-08 17:18:42
Sample Type MBLK
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	1.046	ug/l	21056.33
Be	9	45	1	No Gas	-0.026	ug/l	196.30
B	11	45	1	No Gas	1.506	ug/l	6379.24
Na	23	45	3	He	15.896	ug/l	49655.96
Mg	24	45	3	He	0.632	ug/l	798.44
Al	27	45	1	No Gas	0.358	ug/l	11065.03
Si	28	45	2	H2	-1.242	ug/l	10672.11
K	39	89	3	He	9.732	ug/l	69227.91
Ca	40	89	2	H2	3.205	ug/l	76364.93
Ti	47	89	1	No Gas	0.087	ug/l	358.70
V	51	89	1	No Gas	0.216	ug/l	-5703.27
V	51	89	3	He	-0.088	ug/l	4521.83
Cr	52	89	1	No Gas	-0.013	ug/l	36949.55
Cr	52	89	3	He	0.009	ug/l	366.68
Mn	55	89	1	No Gas	0.029	ug/l	6179.10
Mn	55	89	3	He	0.006	ug/l	136.64
Fe	56	89	2	H2	0.214	ug/l	9773.12
Fe	56	89	3	He	0.355	ug/l	5793.67
Co	59	89	1	No Gas	0.000	ug/l	279.45
Ni	60	89	1	No Gas	0.017	ug/l	472.41
Ni	60	89	3	He	0.014	ug/l	105.55
Cu	63	89	1	No Gas	0.065	ug/l	1930.91
Cu	63	89	3	He	0.036	ug/l	397.93
Cu	65	89	1	No Gas	0.029	ug/l	643.61
Zn	66	89	1	No Gas	0.744	ug/l	3592.93
Zn	66	89	3	He	0.669	ug/l	648.91
As	75	89	1	No Gas	-0.574	ug/l	11276.23
As	75	89	3	He	0.006	ug/l	115.67
Se	78	89	2	H2	0.016	ug/l	16.67
Br	79	89	1	No Gas	10.356	ug/l	151558.34
Br	79	89	2	H2	9.448	ug/l	64622.10
Se	82	89	1	No Gas	0.161	ug/l	904.76
Kr	84	89	1	No Gas		ug/l	23905.78
Sr	88	89	1	No Gas	0.005	ug/l	625.44
Sr	88	89	3	He	-0.004	ug/l	213.34
Mo	95	115	1	No Gas	0.009	ug/l	128.89
Mo	95	115	3	He	0.013	ug/l	57.78
Mo	98	115	1	No Gas	0.008	ug/l	193.96
Ag	107	115	1	No Gas	0.000	ug/l	74.03
Ag	109	115	1	No Gas	0.000	ug/l	46.02
Cd	111	115	1	No Gas	0.067	ug/l	3048.92

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.006	ug/l	9.11
Cd	114	115	1	No Gas	0.003	ug/l	35.38
Cd	114	115	3	He	0.005	ug/l	17.97
Sn	118	115	1	No Gas	0.038	ug/l	1703.41
Sn	118	115	3	He	0.030	ug/l	387.79
Sb	121	115	1	No Gas	0.149	ug/l	3072.24
Sb	121	115	3	He	0.096	ug/l	506.73
Sb	123	115	1	No Gas	0.101	ug/l	1645.93
Sb	123	115	3	He	0.093	ug/l	391.38
Ba	135	115	1	No Gas	0.006	ug/l	43.25
Ba	137	115	1	No Gas	0.000	ug/l	56.55
La	139	115	3	He	0.000	ug/l	6.67
Ce	140	115	3	He	-0.002	ug/l	12.22
Hg	201	209	1	No Gas	0.006	ug/l	35.66
Hg	202	209	1	No Gas	0.007	ug/l	90.65
Hg	202	209	3	He	0.006	ug/l	32.99
Tl	203	209	3	He	0.025	ug/l	214.76
Tl	205	209	1	No Gas	0.019	ug/l	1068.94
Tl	205	209	3	He	0.025	ug/l	500.88
[Pb]	206	209	1	No Gas	0.007	ug/l	227.78
[Pb]	207	209	1	No Gas	0.008	ug/l	212.23
Pb	208	209	1	No Gas	0.006	ug/l	881.13
Th	232	209	3	He	0.027	ug/l	791.01
U	238	209	1	No Gas	0.005	ug/l	346.60

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4586635.91	97.4
Sc	45	2	H2	1956300.23	102.8
Sc	45	3	He	277384.21	96.5
Y	89	1	No Gas	8828215.09	100.3
Y	89	2	H2	5618623.12	100.1
Y	89	3	He	1365487.59	97.2
In	115	1	No Gas	9062185.43	98.3
In	115	3	He	1824621.69	99.3
Tb	159	1	No Gas	13022123.43	99.1
Tb	159	3	He	4599445.01	98.5
Ho	165	1	No Gas	12740552.71	99.4
Ho	165	3	He	4539660.86	99.3
Lu	175	1	No Gas	12482154.01	99.4
Lu	175	3	He	3751703.68	100.7
Bi	209	1	No Gas	8432534.12	99.7
Bi	209	3	He	3004360.46	99.5

ICPMS207-B Analytical Data

Sample Name LFB
File Name 027_LFB.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-08 17:24:59
Sample Type LFB
Total Dilution 1.0300
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	2038.961	ug/l	21706923.77
Be	9	45	1	No Gas	44.137	ug/l	180445.65
B	11	45	1	No Gas	46.005	ug/l	96743.85
Na	23	45	3	He	47385.251	ug/l	39980389.41
Mg	24	45	3	He	47238.668	ug/l	22167933.04
Al	27	45	1	No Gas	48.640	ug/l	951087.29
Si	28	45	2	H2	196.229	ug/l	308488.62
K	39	89	3	He	47704.282	ug/l	21987781.06
Ca	40	89	2	H2	50666.560	ug/l	284349509.49
Ti	47	89	1	No Gas	50.493	ug/l	106278.88
V	51	89	1	No Gas	47.152	ug/l	1218176.16
V	51	89	3	He	50.227	ug/l	201072.96
Cr	52	89	1	No Gas	49.245	ug/l	1256771.09
Cr	52	89	3	He	49.199	ug/l	220174.26
Mn	55	89	1	No Gas	48.379	ug/l	1587005.26
Mn	55	89	3	He	49.835	ug/l	152218.49
Fe	56	89	2	H2	5135.179	ug/l	62295041.60
Fe	56	89	3	He	4845.979	ug/l	19362089.12
Co	59	89	1	No Gas	49.280	ug/l	1353360.80
Ni	60	89	1	No Gas	48.197	ug/l	297390.05
Ni	60	89	3	He	50.406	ug/l	83459.86
Cu	63	89	1	No Gas	50.090	ug/l	735385.13
Cu	63	89	3	He	49.963	ug/l	223551.16
Cu	65	89	1	No Gas	48.734	ug/l	347527.02
Zn	66	89	1	No Gas	51.271	ug/l	206743.54
Zn	66	89	3	He	50.738	ug/l	41525.66
As	75	89	1	No Gas	47.981	ug/l	227372.29
As	75	89	3	He	49.326	ug/l	30975.80
Se	78	89	2	H2	54.115	ug/l	19513.85
Br	79	89	1	No Gas	13.387	ug/l	170816.05
Br	79	89	2	H2	13.005	ug/l	69845.89
Se	82	89	1	No Gas	49.914	ug/l	14985.12
Kr	84	89	1	No Gas		ug/l	37347.72
Sr	88	89	1	No Gas	49.056	ug/l	2104209.08
Sr	88	89	3	He	49.542	ug/l	230353.60
Mo	95	115	1	No Gas	48.666	ug/l	408209.10
Mo	95	115	3	He	49.097	ug/l	128517.98
Mo	98	115	1	No Gas	50.252	ug/l	673912.57
Ag	107	115	1	No Gas	19.251	ug/l	412934.35
Ag	109	115	1	No Gas	19.157	ug/l	394404.68
Cd	111	115	1	No Gas	47.845	ug/l	221648.84

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	49.610	ug/l	63583.99
Cd	114	115	1	No Gas	48.596	ug/l	489608.60
Cd	114	115	3	He	50.040	ug/l	153927.00
Sn	118	115	1	No Gas	49.787	ug/l	673439.41
Sn	118	115	3	He	48.477	ug/l	157669.60
Sb	121	115	1	No Gas	50.158	ug/l	923649.80
Sb	121	115	3	He	49.417	ug/l	213902.63
Sb	123	115	1	No Gas	49.741	ug/l	704153.18
Sb	123	115	3	He	49.565	ug/l	168838.70
Ba	135	115	1	No Gas	49.135	ug/l	211392.26
Ba	137	115	1	No Gas	47.543	ug/l	361778.53
La	139	115	3	He	51.133	ug/l	962805.39
Ce	140	115	3	He	51.038	ug/l	1039493.29
Hg	201	209	1	No Gas	0.985	ug/l	2707.41
Hg	202	209	1	No Gas	1.014	ug/l	6288.22
Hg	202	209	3	He	0.998	ug/l	2353.07
Tl	203	209	3	He	48.446	ug/l	338551.69
Tl	205	209	1	No Gas	48.727	ug/l	2141964.62
Tl	205	209	3	He	48.636	ug/l	804010.25
[Pb]	206	209	1	No Gas	48.539	ug/l	727461.37
[Pb]	207	209	1	No Gas	48.611	ug/l	638152.27
Pb	208	209	1	No Gas	48.657	ug/l	2910650.94
Th	232	209	3	He	48.984	ug/l	1125082.76
U	238	209	1	No Gas	48.703	ug/l	2952413.21

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4755793.43	101.0
Sc	45	2	H2	2043797.12	107.4
Sc	45	3	He	272676.88	94.9
Y	89	1	No Gas	8947021.92	101.6
Y	89	2	H2	6019094.82	107.2
Y	89	3	He	1345975.91	95.8
In	115	1	No Gas	8936850.78	97.0
In	115	3	He	1721758.05	93.7
Tb	159	1	No Gas	13221596.23	100.6
Tb	159	3	He	4498450.53	96.3
Ho	165	1	No Gas	13008852.46	101.5
Ho	165	3	He	4445828.80	97.3
Lu	175	1	No Gas	12717865.96	101.3
Lu	175	3	He	3703649.25	99.4
Bi	209	1	No Gas	7936866.34	93.8
Bi	209	3	He	2783591.05	92.2

ICPMS207-B Analytical Data

Sample Name ICSA
File Name 028ICSA.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-08 17:31:16
Sample Type ICSA
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	1.842	ug/l	27922.02
Be	9	45	1	No Gas	-0.037	ug/l	140.30
B	11	45	1	No Gas	1.674	ug/l	6363.90
Na	23	45	3	He	109646.079	ug/l	91037025.31
Mg	24	45	3	He	44428.956	ug/l	20528089.77
Al	27	45	1	No Gas	43092.300	ug/l	793041934.85
Si	28	45	2	H2	2.817	ug/l	15950.90
K	39	89	3	He	43446.988	ug/l	20043350.40
Ca	40	89	2	H2	127867.398	ug/l	774886399.10
Ti	47	89	1	No Gas	850.426	ug/l	1758986.49
V	51	89	1	No Gas	0.498	ug/l	1653.59
V	51	89	3	He	-0.792	ug/l	1576.76
Cr	52	89	1	No Gas	1.581	ug/l	74295.76
Cr	52	89	3	He	2.009	ug/l	9294.09
Mn	55	89	1	No Gas	0.330	ug/l	15607.36
Mn	55	89	3	He	0.312	ug/l	1066.50
Fe	56	89	2	H2	107887.314	ug/l	1410783707.34
Fe	56	89	3	He	109631.065	ug/l	438187041.61
Co	59	89	1	No Gas	0.245	ug/l	6887.99
Ni	60	89	1	No Gas	1.148	ug/l	7310.71
Ni	60	89	3	He	0.158	ug/l	338.89
Cu	63	89	1	No Gas	2.736	ug/l	40329.39
Cu	63	89	3	He	0.235	ug/l	1273.14
Cu	65	89	1	No Gas	0.831	ug/l	6232.51
Zn	66	89	1	No Gas	1.494	ug/l	6423.92
Zn	66	89	3	He	0.975	ug/l	871.14
As	75	89	1	No Gas	-0.590	ug/l	10773.79
As	75	89	3	He	0.053	ug/l	140.60
Se	78	89	2	H2	0.243	ug/l	104.00
Br	79	89	1	No Gas	-0.333	ug/l	72861.57
Br	79	89	2	H2	-1.136	ug/l	27368.47
Se	82	89	1	No Gas	0.332	ug/l	916.76
Kr	84	89	1	No Gas		ug/l	24409.06
Sr	88	89	1	No Gas	1.082	ug/l	45992.26
Sr	88	89	3	He	1.085	ug/l	5265.44
Mo	95	115	1	No Gas	907.523	ug/l	7606422.87
Mo	95	115	3	He	895.482	ug/l	2368645.52
Mo	98	115	1	No Gas	897.087	ug/l	12028327.40
Ag	107	115	1	No Gas	0.015	ug/l	392.16
Ag	109	115	1	No Gas	0.014	ug/l	333.47
Cd	111	115	1	No Gas	0.101	ug/l	3060.90

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.232	ug/l	301.45
Cd	114	115	1	No Gas	0.072	ug/l	728.34
Cd	114	115	3	He	0.180	ug/l	560.65
Sn	118	115	1	No Gas	0.149	ug/l	3127.50
Sn	118	115	3	He	0.136	ug/l	708.91
Sb	121	115	1	No Gas	0.334	ug/l	6336.74
Sb	121	115	3	He	0.284	ug/l	1292.52
Sb	123	115	1	No Gas	0.333	ug/l	4849.00
Sb	123	115	3	He	0.281	ug/l	1007.81
Ba	135	115	1	No Gas	0.190	ug/l	831.71
Ba	137	115	1	No Gas	0.186	ug/l	1470.50
La	139	115	3	He	0.007	ug/l	143.34
Ce	140	115	3	He	0.011	ug/l	272.23
Hg	201	209	1	No Gas	0.006	ug/l	30.99
Hg	202	209	1	No Gas	0.008	ug/l	90.65
Hg	202	209	3	He	0.004	ug/l	24.99
Tl	203	209	3	He	0.033	ug/l	254.11
Tl	205	209	1	No Gas	0.031	ug/l	1510.10
Tl	205	209	3	He	0.031	ug/l	570.91
[Pb]	206	209	1	No Gas	0.076	ug/l	1251.18
[Pb]	207	209	1	No Gas	0.069	ug/l	995.60
Pb	208	209	1	No Gas	0.074	ug/l	4872.61
Th	232	209	3	He	0.109	ug/l	2665.35
U	238	209	1	No Gas	0.038	ug/l	2308.75

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4343971.75	92.3
Sc	45	2	H2	1789716.07	94.1
Sc	45	3	He	260624.97	90.7
Y	89	1	No Gas	8487750.47	96.4
Y	89	2	H2	5383749.34	95.9
Y	89	3	He	1307646.41	93.1
In	115	1	No Gas	8643048.36	93.8
In	115	3	He	1689399.82	91.9
Tb	159	1	No Gas	12834103.13	97.6
Tb	159	3	He	4462332.17	95.6
Ho	165	1	No Gas	12701665.59	99.1
Ho	165	3	He	4455004.22	97.5
Lu	175	1	No Gas	12332212.30	98.2
Lu	175	3	He	3660266.46	98.2
Bi	209	1	No Gas	7714450.63	91.2
Bi	209	3	He	2762454.10	91.5

ICPMS207-B Analytical Data

Sample Name ICSAB
File Name 029ICSB.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-08 17:37:35
Sample Type ICSAB
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	0.871	ug/l	18165.43
Be	9	45	1	No Gas	-0.041	ug/l	124.98
B	11	45	1	No Gas	1.298	ug/l	5641.99
Na	23	45	3	He	106818.167	ug/l	89497033.11
Mg	24	45	3	He	42965.968	ug/l	20032587.42
Al	27	45	1	No Gas	41170.975	ug/l	757608308.71
Si	28	45	2	H2	2.457	ug/l	15351.37
K	39	89	3	He	41844.626	ug/l	19714339.71
Ca	40	89	2	H2	122574.190	ug/l	747806460.12
Ti	47	89	1	No Gas	822.852	ug/l	1743886.05
V	51	89	1	No Gas	22.636	ug/l	583823.39
V	51	89	3	He	20.080	ug/l	84949.75
Cr	52	89	1	No Gas	21.872	ug/l	582144.24
Cr	52	89	3	He	22.444	ug/l	102794.49
Mn	55	89	1	No Gas	20.908	ug/l	693906.85
Mn	55	89	3	He	20.986	ug/l	65566.60
Fe	56	89	2	H2	105305.671	ug/l	1386885543.36
Fe	56	89	3	He	107279.298	ug/l	437825169.75
Co	59	89	1	No Gas	21.113	ug/l	584527.01
Ni	60	89	1	No Gas	21.150	ug/l	131754.68
Ni	60	89	3	He	21.271	ug/l	36032.09
Cu	63	89	1	No Gas	23.512	ug/l	347953.16
Cu	63	89	3	He	20.958	ug/l	95948.62
Cu	65	89	1	No Gas	20.895	ug/l	150256.53
Zn	66	89	1	No Gas	11.039	ug/l	45216.47
Zn	66	89	3	He	10.670	ug/l	8983.93
As	75	89	1	No Gas	10.081	ug/l	58830.16
As	75	89	3	He	10.494	ug/l	6818.86
Se	78	89	2	H2	11.012	ug/l	4297.41
Br	79	89	1	No Gas	-1.383	ug/l	67355.99
Br	79	89	2	H2	-1.913	ug/l	25012.00
Se	82	89	1	No Gas	10.774	ug/l	3914.02
Kr	84	89	1	No Gas		ug/l	24418.91
Sr	88	89	1	No Gas	1.076	ug/l	46899.93
Sr	88	89	3	He	1.010	ug/l	5023.13
Mo	95	115	1	No Gas	893.134	ug/l	7530604.54
Mo	95	115	3	He	868.252	ug/l	2328827.83
Mo	98	115	1	No Gas	899.296	ug/l	12131718.16
Ag	107	115	1	No Gas	5.257	ug/l	113460.38
Ag	109	115	1	No Gas	5.238	ug/l	108451.05
Cd	111	115	1	No Gas	10.428	ug/l	50607.18

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	10.535	ug/l	13838.72
Cd	114	115	1	No Gas	10.598	ug/l	107378.59
Cd	114	115	3	He	10.762	ug/l	33925.43
Sn	118	115	1	No Gas	0.083	ug/l	2252.40
Sn	118	115	3	He	0.078	ug/l	526.68
Sb	121	115	1	No Gas	0.152	ug/l	3008.63
Sb	121	115	3	He	0.142	ug/l	681.08
Sb	123	115	1	No Gas	0.154	ug/l	2329.43
Sb	123	115	3	He	0.137	ug/l	520.73
Ba	135	115	1	No Gas	0.188	ug/l	828.38
Ba	137	115	1	No Gas	0.183	ug/l	1453.86
La	139	115	3	He	0.005	ug/l	102.22
Ce	140	115	3	He	0.007	ug/l	194.45
Hg	201	209	1	No Gas	0.004	ug/l	28.32
Hg	202	209	1	No Gas	0.007	ug/l	85.98
Hg	202	209	3	He	0.007	ug/l	32.32
Tl	203	209	3	He	0.019	ug/l	154.06
Tl	205	209	1	No Gas	0.013	ug/l	746.69
Tl	205	209	3	He	0.015	ug/l	308.13
[Pb]	206	209	1	No Gas	0.052	ug/l	915.59
[Pb]	207	209	1	No Gas	0.046	ug/l	710.03
Pb	208	209	1	No Gas	0.050	ug/l	3517.99
Th	232	209	3	He	0.051	ug/l	1335.94
U	238	209	1	No Gas	0.054	ug/l	3366.67

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4344556.21	92.3
Sc	45	2	H2	1784338.21	93.8
Sc	45	3	He	262999.85	91.5
Y	89	1	No Gas	8695547.64	98.8
Y	89	2	H2	5422545.84	96.6
Y	89	3	He	1335158.77	95.0
In	115	1	No Gas	8697087.23	94.4
In	115	3	He	1713182.55	93.2
Tb	159	1	No Gas	13089596.01	99.6
Tb	159	3	He	4557338.43	97.6
Ho	165	1	No Gas	12880337.28	100.5
Ho	165	3	He	4532808.64	99.2
Lu	175	1	No Gas	12741614.61	101.5
Lu	175	3	He	3756175.96	100.8
Bi	209	1	No Gas	7922473.51	93.6
Bi	209	3	He	2819715.31	93.4

ICPMS207-B Analytical Data

Sample Name Rinse
File Name 030BLKV.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-08 17:43:53
Sample Type BlkVrfy
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	0.922	ug/l	19493.64
Be	9	45	1	No Gas	-0.038	ug/l	143.64
B	11	45	1	No Gas	0.450	ug/l	4190.93
Na	23	45	3	He	41.642	ug/l	71880.61
Mg	24	45	3	He	3.227	ug/l	2059.39
Al	27	45	1	No Gas	1.976	ug/l	41975.21
Si	28	45	2	H2	-2.023	ug/l	9064.40
K	39	89	3	He	10.282	ug/l	70526.15
Ca	40	89	2	H2	1.474	ug/l	66702.44
Ti	47	89	1	No Gas	0.339	ug/l	917.62
V	51	89	1	No Gas	0.343	ug/l	-2333.35
V	51	89	3	He	-0.793	ug/l	1667.89
Cr	52	89	1	No Gas	-0.726	ug/l	19231.07
Cr	52	89	3	He	-0.008	ug/l	292.23
Mn	55	89	1	No Gas	0.022	ug/l	6042.62
Mn	55	89	3	He	-0.002	ug/l	112.65
Fe	56	89	2	H2	1.576	ug/l	28899.08
Fe	56	89	3	He	1.695	ug/l	11554.53
Co	59	89	1	No Gas	0.000	ug/l	276.13
Ni	60	89	1	No Gas	0.051	ug/l	695.30
Ni	60	89	3	He	0.006	ug/l	93.33
Cu	63	89	1	No Gas	0.438	ug/l	7649.75
Cu	63	89	3	He	0.032	ug/l	385.93
Cu	65	89	1	No Gas	0.041	ug/l	740.99
Zn	66	89	1	No Gas	-0.041	ug/l	369.15
Zn	66	89	3	He	0.014	ug/l	91.11
As	75	89	1	No Gas	-0.716	ug/l	10816.80
As	75	89	3	He	-0.046	ug/l	82.93
Se	78	89	2	H2	0.034	ug/l	24.55
Br	79	89	1	No Gas	3.044	ug/l	101459.61
Br	79	89	2	H2	2.582	ug/l	42047.65
Se	82	89	1	No Gas	0.043	ug/l	883.95
Kr	84	89	1	No Gas		ug/l	24169.05
Sr	88	89	1	No Gas	0.000	ug/l	449.12
Sr	88	89	3	He	-0.007	ug/l	203.34
Mo	95	115	1	No Gas	0.291	ug/l	2673.60
Mo	95	115	3	He	0.223	ug/l	665.58
Mo	98	115	1	No Gas	0.290	ug/l	4269.85
Ag	107	115	1	No Gas	0.001	ug/l	97.37
Ag	109	115	1	No Gas	0.000	ug/l	62.69
Cd	111	115	1	No Gas	0.018	ug/l	2885.18

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.002	ug/l	3.11
Cd	114	115	1	No Gas	0.001	ug/l	11.59
Cd	114	115	3	He	0.002	ug/l	8.81
Sn	118	115	1	No Gas	-0.005	ug/l	1134.47
Sn	118	115	3	He	0.000	ug/l	286.67
Sb	121	115	1	No Gas	0.055	ug/l	1296.19
Sb	121	115	3	He	0.057	ug/l	328.37
Sb	123	115	1	No Gas	0.054	ug/l	975.13
Sb	123	115	3	He	0.056	ug/l	257.36
Ba	135	115	1	No Gas	0.002	ug/l	26.61
Ba	137	115	1	No Gas	-0.006	ug/l	9.98
La	139	115	3	He	0.000	ug/l	6.67
Ce	140	115	3	He	-0.002	ug/l	5.56
Hg	201	209	1	No Gas	0.003	ug/l	27.99
Hg	202	209	1	No Gas	0.003	ug/l	68.99
Hg	202	209	3	He	0.003	ug/l	24.66
Tl	203	209	3	He	0.011	ug/l	108.04
Tl	205	209	1	No Gas	0.009	ug/l	620.02
Tl	205	209	3	He	0.012	ug/l	272.11
[Pb]	206	209	1	No Gas	0.004	ug/l	186.67
[Pb]	207	209	1	No Gas	0.003	ug/l	141.11
Pb	208	209	1	No Gas	0.003	ug/l	663.34
Th	232	209	3	He	0.011	ug/l	382.83
U	238	209	1	No Gas	0.003	ug/l	220.62

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4530963.34	96.2
Sc	45	2	H2	1891349.77	99.4
Sc	45	3	He	275423.01	95.8
Y	89	1	No Gas	8989741.72	102.1
Y	89	2	H2	5727043.09	102.0
Y	89	3	He	1385546.98	98.6
In	115	1	No Gas	9309663.56	101.0
In	115	3	He	1846508.30	100.5
Tb	159	1	No Gas	13250337.58	100.8
Tb	159	3	He	4686608.16	100.4
Ho	165	1	No Gas	13328087.72	104.0
Ho	165	3	He	4609665.81	100.8
Lu	175	1	No Gas	12832237.10	102.2
Lu	175	3	He	3826464.56	102.7
Bi	209	1	No Gas	8630948.62	102.0
Bi	209	3	He	3038378.46	100.6

ICPMS207-B Analytical Data

Sample Name Rinse
File Name 031BLKV.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-08 17:50:07
Sample Type BlkVrfy
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	1.023	ug/l	20333.72
Be	9	45	1	No Gas	-0.037	ug/l	144.65
B	11	45	1	No Gas	0.337	ug/l	3924.09
Na	23	45	3	He	29.613	ug/l	60247.72
Mg	24	45	3	He	2.893	ug/l	1863.09
Al	27	45	1	No Gas	1.826	ug/l	38673.18
Si	28	45	2	H2	-2.040	ug/l	8917.63
K	39	89	3	He	2.555	ug/l	65829.24
Ca	40	89	2	H2	0.637	ug/l	61828.30
Ti	47	89	1	No Gas	0.170	ug/l	553.90
V	51	89	1	No Gas	0.519	ug/l	2454.03
V	51	89	3	He	-0.827	ug/l	1502.31
Cr	52	89	1	No Gas	-0.719	ug/l	19577.60
Cr	52	89	3	He	-0.011	ug/l	273.34
Mn	55	89	1	No Gas	0.015	ug/l	5856.26
Mn	55	89	3	He	-0.004	ug/l	106.98
Fe	56	89	2	H2	0.691	ug/l	16754.70
Fe	56	89	3	He	0.806	ug/l	7681.42
Co	59	89	1	No Gas	-0.001	ug/l	269.47
Ni	60	89	1	No Gas	0.024	ug/l	525.64
Ni	60	89	3	He	-0.009	ug/l	65.56
Cu	63	89	1	No Gas	0.217	ug/l	4323.05
Cu	63	89	3	He	0.022	ug/l	334.94
Cu	65	89	1	No Gas	0.021	ug/l	595.59
Zn	66	89	1	No Gas	-0.049	ug/l	339.25
Zn	66	89	3	He	-0.010	ug/l	68.89
As	75	89	1	No Gas	-0.462	ug/l	12088.52
As	75	89	3	He	-0.062	ug/l	71.67
Se	78	89	2	H2	0.012	ug/l	15.78
Br	79	89	1	No Gas	2.612	ug/l	99185.04
Br	79	89	2	H2	2.347	ug/l	41593.90
Se	82	89	1	No Gas	0.065	ug/l	896.62
Kr	84	89	1	No Gas		ug/l	24908.80
Sr	88	89	1	No Gas	0.001	ug/l	475.73
Sr	88	89	3	He	-0.005	ug/l	208.89
Mo	95	115	1	No Gas	0.066	ug/l	648.91
Mo	95	115	3	He	0.054	ug/l	177.78
Mo	98	115	1	No Gas	0.065	ug/l	1044.15
Ag	107	115	1	No Gas	0.001	ug/l	98.04
Ag	109	115	1	No Gas	0.000	ug/l	62.03
Cd	111	115	1	No Gas	0.026	ug/l	2955.06

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.002	ug/l	3.22
Cd	114	115	1	No Gas	0.000	ug/l	5.68
Cd	114	115	3	He	0.002	ug/l	8.24
Sn	118	115	1	No Gas	-0.007	ug/l	1114.51
Sn	118	115	3	He	0.003	ug/l	295.56
Sb	121	115	1	No Gas	0.038	ug/l	957.80
Sb	121	115	3	He	0.035	ug/l	220.69
Sb	123	115	1	No Gas	0.037	ug/l	721.09
Sb	123	115	3	He	0.040	ug/l	194.03
Ba	135	115	1	No Gas	0.001	ug/l	23.29
Ba	137	115	1	No Gas	-0.006	ug/l	13.31
La	139	115	3	He	0.000	ug/l	6.67
Ce	140	115	3	He	-0.002	ug/l	5.56
Hg	201	209	1	No Gas	0.001	ug/l	21.33
Hg	202	209	1	No Gas	0.002	ug/l	62.32
Hg	202	209	3	He	0.002	ug/l	23.00
Tl	203	209	3	He	0.009	ug/l	90.04
Tl	205	209	1	No Gas	0.009	ug/l	591.13
Tl	205	209	3	He	0.010	ug/l	226.76
[Pb]	206	209	1	No Gas	0.001	ug/l	147.78
[Pb]	207	209	1	No Gas	0.003	ug/l	145.56
Pb	208	209	1	No Gas	0.003	ug/l	677.79
Th	232	209	3	He	0.006	ug/l	275.45
U	238	209	1	No Gas	0.003	ug/l	209.63

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4482409.98	95.2
Sc	45	2	H2	1864763.15	98.0
Sc	45	3	He	270531.60	94.1
Y	89	1	No Gas	9064203.67	103.0
Y	89	2	H2	5777760.58	102.9
Y	89	3	He	1368034.54	97.4
In	115	1	No Gas	9384046.37	101.8
In	115	3	He	1837409.43	100.0
Tb	159	1	No Gas	13364695.26	101.7
Tb	159	3	He	4719182.87	101.1
Ho	165	1	No Gas	13148870.49	102.6
Ho	165	3	He	4666515.47	102.1
Lu	175	1	No Gas	13028325.68	103.7
Lu	175	3	He	3802042.35	102.0
Bi	209	1	No Gas	8775449.96	103.7
Bi	209	3	He	3115786.92	103.2

ICPMS207-B Analytical Data

Sample Name CCV
File Name 032_CCV.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-08 17:56:22
Sample Type CCV
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	453.581	ug/l	4844065.26
Be	9	45	1	No Gas	39.444	ug/l	161399.48
B	11	45	1	No Gas	42.250	ug/l	89112.28
Na	23	45	3	He	12207.608	ug/l	10872307.90
Mg	24	45	3	He	12328.289	ug/l	6092286.47
Al	27	45	1	No Gas	46.549	ug/l	912127.00
Si	28	45	2	H2	193.554	ug/l	318256.69
K	39	89	3	He	12334.057	ug/l	6088529.70
Ca	40	89	2	H2	11806.033	ug/l	76419864.67
Ti	47	89	1	No Gas	46.466	ug/l	103984.45
V	51	89	1	No Gas	45.710	ug/l	1255900.90
V	51	89	3	He	50.002	ug/l	212567.88
Cr	52	89	1	No Gas	46.782	ug/l	1269284.90
Cr	52	89	3	He	49.784	ug/l	236677.20
Mn	55	89	1	No Gas	48.563	ug/l	1693418.43
Mn	55	89	3	He	50.148	ug/l	162733.78
Fe	56	89	2	H2	1274.753	ug/l	17804052.18
Fe	56	89	3	He	1302.939	ug/l	5534088.37
Co	59	89	1	No Gas	49.500	ug/l	1444630.29
Ni	60	89	1	No Gas	48.784	ug/l	320128.97
Ni	60	89	3	He	53.301	ug/l	93756.87
Cu	63	89	1	No Gas	50.951	ug/l	794180.84
Cu	63	89	3	He	52.323	ug/l	248705.24
Cu	65	89	1	No Gas	50.102	ug/l	379435.19
Zn	66	89	1	No Gas	51.254	ug/l	219506.37
Zn	66	89	3	He	51.574	ug/l	44840.88
As	75	89	1	No Gas	48.035	ug/l	241758.99
As	75	89	3	He	50.662	ug/l	33794.30
Se	78	89	2	H2	52.701	ug/l	21760.69
Br	79	89	1	No Gas	4.128	ug/l	112507.59
Br	79	89	2	H2	1.868	ug/l	39705.61
Se	82	89	1	No Gas	50.366	ug/l	16048.80
Kr	84	89	1	No Gas		ug/l	39435.45
Sr	88	89	1	No Gas	50.738	ug/l	2312326.68
Sr	88	89	3	He	49.693	ug/l	245476.77
Mo	95	115	1	No Gas	47.677	ug/l	445118.69
Mo	95	115	3	He	48.968	ug/l	140248.45
Mo	98	115	1	No Gas	48.119	ug/l	719238.59
Ag	107	115	1	No Gas	19.430	ug/l	464276.93
Ag	109	115	1	No Gas	19.280	ug/l	442236.62
Cd	111	115	1	No Gas	47.445	ug/l	244617.80

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	50.731	ug/l	71144.69
Cd	114	115	1	No Gas	48.587	ug/l	545241.82
Cd	114	115	3	He	51.453	ug/l	173169.96
Sn	118	115	1	No Gas	48.258	ug/l	727751.81
Sn	118	115	3	He	49.412	ug/l	175830.33
Sb	121	115	1	No Gas	49.763	ug/l	1020456.34
Sb	121	115	3	He	49.773	ug/l	235723.01
Sb	123	115	1	No Gas	49.469	ug/l	780022.84
Sb	123	115	3	He	50.423	ug/l	187924.09
Ba	135	115	1	No Gas	48.576	ug/l	232624.45
Ba	137	115	1	No Gas	47.709	ug/l	403980.03
La	139	115	3	He	50.181	ug/l	1033860.61
Ce	140	115	3	He	50.013	ug/l	1114642.15
Hg	201	209	1	No Gas	0.972	ug/l	3075.74
Hg	202	209	1	No Gas	0.979	ug/l	6993.77
Hg	202	209	3	He	0.997	ug/l	2630.74
Tl	203	209	3	He	48.719	ug/l	380923.68
Tl	205	209	1	No Gas	47.678	ug/l	2412611.44
Tl	205	209	3	He	49.121	ug/l	908579.93
[Pb]	206	209	1	No Gas	47.736	ug/l	822695.90
[Pb]	207	209	1	No Gas	47.399	ug/l	715592.23
Pb	208	209	1	No Gas	47.618	ug/l	3277396.54
Th	232	209	3	He	48.372	ug/l	1243081.30
U	238	209	1	No Gas	46.841	ug/l	3267544.26

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4656676.97	98.9
Sc	45	2	H2	1855016.01	97.5
Sc	45	3	He	278755.54	97.0
Y	89	1	No Gas	9234906.25	104.9
Y	89	2	H2	5747362.73	102.4
Y	89	3	He	1388350.44	98.8
In	115	1	No Gas	9702872.40	105.3
In	115	3	He	1829013.51	99.5
Tb	159	1	No Gas	13993623.65	106.4
Tb	159	3	He	4742805.71	101.6
Ho	165	1	No Gas	13794806.92	107.6
Ho	165	3	He	4702772.97	102.9
Lu	175	1	No Gas	13561492.37	108.0
Lu	175	3	He	3887951.12	104.3
Bi	209	1	No Gas	8882288.46	105.0
Bi	209	3	He	3023484.45	100.1

ICPMS207-B Analytical Data

Sample Name CCB
File Name 033_CCB.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-08 18:02:37
Sample Type CCB
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	1.263	ug/l	22786.17
Be	9	45	1	No Gas	-0.041	ug/l	129.98
B	11	45	1	No Gas	0.576	ug/l	4393.08
Na	23	45	3	He	19.895	ug/l	52206.75
Mg	24	45	3	He	0.542	ug/l	738.55
Al	27	45	1	No Gas	0.208	ug/l	7951.64
Si	28	45	2	H2	-2.051	ug/l	8668.01
K	39	89	3	He	0.831	ug/l	66090.33
Ca	40	89	2	H2	-0.260	ug/l	55582.49
Ti	47	89	1	No Gas	0.057	ug/l	300.31
V	51	89	1	No Gas	0.174	ug/l	-7218.68
V	51	89	3	He	-0.332	ug/l	3587.13
Cr	52	89	1	No Gas	-0.450	ug/l	26448.01
Cr	52	89	3	He	-0.001	ug/l	325.56
Mn	55	89	1	No Gas	0.020	ug/l	5992.68
Mn	55	89	3	He	-0.001	ug/l	118.98
Fe	56	89	2	H2	1.107	ug/l	22423.44
Fe	56	89	3	He	0.728	ug/l	7477.78
Co	59	89	1	No Gas	0.000	ug/l	299.41
Ni	60	89	1	No Gas	0.006	ug/l	409.20
Ni	60	89	3	He	0.053	ug/l	175.61
Cu	63	89	1	No Gas	0.105	ug/l	2582.60
Cu	63	89	3	He	0.014	ug/l	300.61
Cu	65	89	1	No Gas	0.008	ug/l	495.54
Zn	66	89	1	No Gas	-0.044	ug/l	359.00
Zn	66	89	3	He	0.010	ug/l	87.78
As	75	89	1	No Gas	-0.355	ug/l	12597.35
As	75	89	3	He	-0.038	ug/l	88.33
Se	78	89	2	H2	0.017	ug/l	17.67
Br	79	89	1	No Gas	0.648	ug/l	84949.76
Br	79	89	2	H2	-0.075	ug/l	32842.21
Se	82	89	1	No Gas	-0.103	ug/l	843.16
Kr	84	89	1	No Gas		ug/l	23605.94
Sr	88	89	1	No Gas	0.001	ug/l	489.04
Sr	88	89	3	He	-0.004	ug/l	217.78
Mo	95	115	1	No Gas	0.045	ug/l	472.23
Mo	95	115	3	He	0.039	ug/l	134.45
Mo	98	115	1	No Gas	0.630	ug/l	9792.89
Ag	107	115	1	No Gas	0.001	ug/l	108.05
Ag	109	115	1	No Gas	0.001	ug/l	74.70
Cd	111	115	1	No Gas	-0.026	ug/l	2749.01

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.005	ug/l	7.56
Cd	114	115	1	No Gas	0.005	ug/l	60.93
Cd	114	115	3	He	0.003	ug/l	11.09
Sn	118	115	1	No Gas	0.061	ug/l	2139.27
Sn	118	115	3	He	0.082	ug/l	581.19
Sb	121	115	1	No Gas	0.197	ug/l	4210.40
Sb	121	115	3	He	0.145	ug/l	751.76
Sb	123	115	1	No Gas	0.196	ug/l	3232.71
Sb	123	115	3	He	0.147	ug/l	599.08
Ba	135	115	1	No Gas	0.003	ug/l	33.27
Ba	137	115	1	No Gas	-0.002	ug/l	46.57
La	139	115	3	He	0.001	ug/l	15.56
Ce	140	115	3	He	-0.001	ug/l	16.67
Hg	201	209	1	No Gas	0.004	ug/l	33.32
Hg	202	209	1	No Gas	0.006	ug/l	93.65
Hg	202	209	3	He	0.005	ug/l	31.32
Tl	203	209	3	He	0.056	ug/l	480.87
Tl	205	209	1	No Gas	0.057	ug/l	3148.18
Tl	205	209	3	He	0.059	ug/l	1186.53
[Pb]	206	209	1	No Gas	0.005	ug/l	226.67
[Pb]	207	209	1	No Gas	0.003	ug/l	164.45
Pb	208	209	1	No Gas	0.004	ug/l	826.68
Th	232	209	3	He	0.039	ug/l	1169.19
U	238	209	1	No Gas	0.006	ug/l	418.59

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4495685.51	95.5
Sc	45	2	H2	1818850.86	95.6
Sc	45	3	He	272269.67	94.7
Y	89	1	No Gas	9064966.21	103.0
Y	89	2	H2	5732337.50	102.1
Y	89	3	He	1389160.40	98.9
In	115	1	No Gas	9558033.01	103.7
In	115	3	He	1846963.49	100.5
Tb	159	1	No Gas	13848115.44	105.3
Tb	159	3	He	4716368.50	101.0
Ho	165	1	No Gas	13743994.14	107.2
Ho	165	3	He	4655049.10	101.8
Lu	175	1	No Gas	13347470.02	106.3
Lu	175	3	He	3815952.09	102.4
Bi	209	1	No Gas	9233157.88	109.1
Bi	209	3	He	3144570.00	104.1

ICPMS207-B Analytical Data

Sample Name Rinse
File Name 034BLKV.d
Data Path Name D:\Agilent\ICPMH1\DATA\220308BDoD.b
Acq Time 2022-03-09 08:05:18
Sample Type BlkVrfy
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	-0.227	ug/l	6986.41
Be	9	45	1	No Gas	-0.053	ug/l	77.32
B	11	45	1	No Gas	-0.204	ug/l	2712.67
Na	23	45	3	He	-8.973	ug/l	26100.53
Mg	24	45	3	He	2.499	ug/l	1616.89
Al	27	45	1	No Gas	1.983	ug/l	39566.55
Si	28	45	2	H2	0.484	ug/l	14553.67
K	39	89	3	He	-0.545	ug/l	60552.59
Ca	40	89	2	H2	3.662	ug/l	79875.16
Ti	47	89	1	No Gas	0.010	ug/l	188.52
V	51	89	1	No Gas	0.367	ug/l	-1613.36
V	51	89	3	He	-0.710	ug/l	1864.58
Cr	52	89	1	No Gas	-0.623	ug/l	20790.09
Cr	52	89	3	He	-0.001	ug/l	301.12
Mn	55	89	1	No Gas	0.034	ug/l	6125.83
Mn	55	89	3	He	-0.006	ug/l	92.98
Fe	56	89	2	H2	-0.051	ug/l	6204.25
Fe	56	89	3	He	-0.117	ug/l	3600.74
Co	59	89	1	No Gas	-0.002	ug/l	216.24
Ni	60	89	1	No Gas	-0.015	ug/l	259.49
Ni	60	89	3	He	-0.019	ug/l	45.56
Cu	63	89	1	No Gas	-0.004	ug/l	875.72
Cu	63	89	3	He	0.008	ug/l	252.62
Cu	65	89	1	No Gas	-0.003	ug/l	390.83
Zn	66	89	1	No Gas	-0.006	ug/l	492.29
Zn	66	89	3	He	-0.008	ug/l	66.67
As	75	89	1	No Gas	-0.634	ug/l	10637.49
As	75	89	3	He	-0.050	ug/l	74.80
Se	78	89	2	H2	0.007	ug/l	13.44
Br	79	89	1	No Gas	-1.136	ug/l	67937.19
Br	79	89	2	H2	0.575	ug/l	34666.24
Se	82	89	1	No Gas	0.369	ug/l	931.57
Kr	84	89	1	No Gas		ug/l	22326.31
Sr	88	89	1	No Gas	0.003	ug/l	552.25
Sr	88	89	3	He	-0.004	ug/l	203.33
Mo	95	115	1	No Gas	0.000	ug/l	53.33
Mo	95	115	3	He	-0.003	ug/l	13.33
Mo	98	115	1	No Gas	0.000	ug/l	94.94
Ag	107	115	1	No Gas	0.001	ug/l	95.38
Ag	109	115	1	No Gas	0.000	ug/l	60.69
Cd	111	115	1	No Gas	-0.069	ug/l	2443.88

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.003	ug/l	4.22
Cd	114	115	1	No Gas	0.000	ug/l	1.17
Cd	114	115	3	He	0.003	ug/l	11.97
Sn	118	115	1	No Gas	0.006	ug/l	1274.20
Sn	118	115	3	He	0.005	ug/l	293.34
Sb	121	115	1	No Gas	0.023	ug/l	647.08
Sb	121	115	3	He	0.013	ug/l	114.34
Sb	123	115	1	No Gas	0.025	ug/l	526.73
Sb	123	115	3	He	0.017	ug/l	107.01
Ba	135	115	1	No Gas	0.001	ug/l	19.96
Ba	137	115	1	No Gas	-0.003	ug/l	36.59
La	139	115	3	He	0.000	ug/l	5.56
Ce	140	115	3	He	-0.001	ug/l	15.56
Hg	201	209	1	No Gas	0.003	ug/l	29.99
Hg	202	209	1	No Gas	0.002	ug/l	71.65
Hg	202	209	3	He	0.000	ug/l	17.67
Tl	203	209	3	He	0.021	ug/l	192.75
Tl	205	209	1	No Gas	0.035	ug/l	2103.52
Tl	205	209	3	He	0.023	ug/l	485.54
[Pb]	206	209	1	No Gas	0.007	ug/l	277.79
[Pb]	207	209	1	No Gas	0.007	ug/l	230.00
Pb	208	209	1	No Gas	0.008	ug/l	1146.70
Th	232	209	3	He	0.007	ug/l	307.46
U	238	209	1	No Gas	0.004	ug/l	284.62

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4258514.07	90.4
Sc	45	2	H2	2097955.28	110.3
Sc	45	3	He	261454.26	91.0
Y	89	1	No Gas	8542986.02	97.0
Y	89	2	H2	5659961.17	100.8
Y	89	3	He	1286000.94	91.5
In	115	1	No Gas	9242044.47	100.3
In	115	3	He	1773601.17	96.5
Tb	159	1	No Gas	13973457.34	106.3
Tb	159	3	He	4633194.07	99.2
Ho	165	1	No Gas	13871185.28	108.2
Ho	165	3	He	4506780.01	98.6
Lu	175	1	No Gas	13857174.50	110.3
Lu	175	3	He	3708855.78	99.5
Bi	209	1	No Gas	9691256.11	114.5
Bi	209	3	He	3140956.38	104.0

ICPMS207-B Analytical Data

Sample Name MB-164289
File Name 035ARef.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 08:11:33
Sample Type AIRRef
Total Dilution 1.0000
Comment ICPMS-6020-W-T
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	-0.021	ug/l	8507.80
Be	9	45	1	No Gas	-0.045	ug/l	103.65
B	11	45	1	No Gas	-0.082	ug/l	2774.04
Na	23	45	3	He	-5.688	ug/l	27328.14
Mg	24	45	3	He	-0.013	ug/l	429.16
Al	27	45	1	No Gas	1.612	ug/l	31001.99
Si	28	45	2	H2	28.984	ug/l	58286.88
K	39	89	3	He	-3.966	ug/l	57605.53
Ca	40	89	2	H2	9.390	ug/l	112683.44
Ti	47	89	1	No Gas	0.298	ug/l	769.13
V	51	89	1	No Gas	0.847	ug/l	10595.61
V	51	89	3	He	-0.315	ug/l	3301.50
Cr	52	89	1	No Gas	0.050	ug/l	36435.91
Cr	52	89	3	He	0.073	ug/l	611.13
Mn	55	89	1	No Gas	0.378	ug/l	16882.83
Mn	55	89	3	He	0.044	ug/l	237.96
Fe	56	89	2	H2	0.605	ug/l	14732.22
Fe	56	89	3	He	0.686	ug/l	6596.47
Co	59	89	1	No Gas	0.013	ug/l	602.16
Ni	60	89	1	No Gas	0.018	ug/l	452.45
Ni	60	89	3	He	0.021	ug/l	108.89
Cu	63	89	1	No Gas	0.126	ug/l	2700.01
Cu	63	89	3	He	0.135	ug/l	792.20
Cu	65	89	1	No Gas	0.115	ug/l	1197.87
Zn	66	89	1	No Gas	0.059	ug/l	735.00
Zn	66	89	3	He	0.110	ug/l	157.78
As	75	89	1	No Gas	-0.029	ug/l	12989.72
As	75	89	3	He	0.032	ug/l	122.40
Se	78	89	2	H2	0.016	ug/l	16.45
Br	79	89	1	No Gas	12.821	ug/l	159877.24
Br	79	89	2	H2	12.223	ug/l	72317.46
Se	82	89	1	No Gas	0.479	ug/l	942.36
Kr	84	89	1	No Gas		ug/l	22962.68
Sr	88	89	1	No Gas	0.010	ug/l	818.40
Sr	88	89	3	He	0.007	ug/l	245.56
Mo	95	115	1	No Gas	0.176	ug/l	1573.43
Mo	95	115	3	He	0.187	ug/l	524.46
Mo	98	115	1	No Gas	0.167	ug/l	2398.84
Ag	107	115	1	No Gas	0.000	ug/l	77.36
Ag	109	115	1	No Gas	-0.001	ug/l	33.35
Cd	111	115	1	No Gas	0.006	ug/l	2722.65

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.005	ug/l	7.00
Cd	114	115	1	No Gas	0.002	ug/l	17.80
Cd	114	115	3	He	0.002	ug/l	6.45
Sn	118	115	1	No Gas	0.458	ug/l	7560.42
Sn	118	115	3	He	0.461	ug/l	1802.35
Sb	121	115	1	No Gas	0.016	ug/l	495.72
Sb	121	115	3	He	0.017	ug/l	126.68
Sb	123	115	1	No Gas	0.016	ug/l	381.37
Sb	123	115	3	He	0.017	ug/l	103.01
Ba	135	115	1	No Gas	0.062	ug/l	292.76
Ba	137	115	1	No Gas	0.066	ug/l	578.87
La	139	115	3	He	0.001	ug/l	14.45
Ce	140	115	3	He	-0.001	ug/l	28.89
Hg	201	209	1	No Gas	0.001	ug/l	22.00
Hg	202	209	1	No Gas	0.005	ug/l	85.31
Hg	202	209	3	He	0.006	ug/l	33.66
Tl	203	209	3	He	0.010	ug/l	102.04
Tl	205	209	1	No Gas	0.012	ug/l	802.25
Tl	205	209	3	He	0.010	ug/l	231.43
[Pb]	206	209	1	No Gas	0.014	ug/l	385.56
[Pb]	207	209	1	No Gas	0.013	ug/l	318.90
Pb	208	209	1	No Gas	0.013	ug/l	1481.15
Th	232	209	3	He	0.046	ug/l	1325.27
U	238	209	1	No Gas	0.004	ug/l	262.95

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4017028.91	85.3
Sc	45	2	H2	1865508.03	98.1
Sc	45	3	He	247809.30	86.2
Y	89	1	No Gas	8349024.77	94.8
Y	89	2	H2	5478990.31	97.6
Y	89	3	He	1257170.41	89.5
In	115	1	No Gas	8952004.80	97.1
In	115	3	He	1716384.65	93.4
Tb	159	1	No Gas	13631932.18	103.7
Tb	159	3	He	4609560.85	98.7
Ho	165	1	No Gas	13512158.97	105.4
Ho	165	3	He	4544516.65	99.4
Lu	175	1	No Gas	13437316.11	107.0
Lu	175	3	He	3696056.42	99.2
Bi	209	1	No Gas	9316130.39	110.1
Bi	209	3	He	3100346.04	102.7

ICPMS207-B Analytical Data

Sample Name LCS4-164289
File Name 036LCS4.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 08:17:48
Sample Type LCS4
Total Dilution 1.0000
Comment ICPMS-6020-W-T
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	83.681	ug/l	784548.84
Be	9	45	1	No Gas	41.734	ug/l	148586.77
B	11	45	1	No Gas	90.856	ug/l	163361.78
Na	23	45	3	He	5013.955	ug/l	4128715.84
Mg	24	45	3	He	5063.599	ug/l	2302989.52
Al	27	45	1	No Gas	468.178	ug/l	7949127.38
Si	28	45	2	H2	1018.352	ug/l	1556754.78
K	39	89	3	He	4742.754	ug/l	2275769.36
Ca	40	89	2	H2	5126.900	ug/l	31159287.98
Ti	47	89	1	No Gas	88.632	ug/l	182883.22
V	51	89	1	No Gas	89.557	ug/l	2280894.67
V	51	89	3	He	97.539	ug/l	391693.99
Cr	52	89	1	No Gas	93.761	ug/l	2311617.35
Cr	52	89	3	He	98.229	ug/l	445927.36
Mn	55	89	1	No Gas	473.498	ug/l	15186396.87
Mn	55	89	3	He	495.929	ug/l	1536777.53
Fe	56	89	2	H2	505.689	ug/l	6626089.19
Fe	56	89	3	He	499.179	ug/l	2028282.09
Co	59	89	1	No Gas	96.194	ug/l	2590756.23
Ni	60	89	1	No Gas	93.112	ug/l	563290.19
Ni	60	89	3	He	103.390	ug/l	173711.32
Cu	63	89	1	No Gas	95.879	ug/l	1377575.28
Cu	63	89	3	He	103.160	ug/l	468356.34
Cu	65	89	1	No Gas	94.858	ug/l	662242.85
Zn	66	89	1	No Gas	92.891	ug/l	366683.30
Zn	66	89	3	He	97.453	ug/l	80897.60
As	75	89	1	No Gas	89.974	ug/l	405573.97
As	75	89	3	He	93.870	ug/l	59738.02
Se	78	89	2	H2	95.461	ug/l	36949.68
Br	79	89	1	No Gas	7.704	ug/l	127261.19
Br	79	89	2	H2	7.592	ug/l	55937.26
Se	82	89	1	No Gas	92.836	ug/l	26563.98
Kr	84	89	1	No Gas		ug/l	49770.32
Sr	88	89	1	No Gas	101.563	ug/l	4268585.39
Sr	88	89	3	He	98.592	ug/l	465186.28
Mo	95	115	1	No Gas	94.770	ug/l	834580.73
Mo	95	115	3	He	101.289	ug/l	270148.10
Mo	98	115	1	No Gas	96.787	ug/l	1363895.93
Ag	107	115	1	No Gas	9.489	ug/l	213819.18
Ag	109	115	1	No Gas	9.564	ug/l	206779.81
Cd	111	115	1	No Gas	47.117	ug/l	229184.46

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	50.968	ug/l	66566.85
Cd	114	115	1	No Gas	48.287	ug/l	510975.07
Cd	114	115	3	He	51.557	ug/l	161602.95
Sn	118	115	1	No Gas	102.198	ug/l	1450894.16
Sn	118	115	3	He	104.256	ug/l	345201.80
Sb	121	115	1	No Gas	99.881	ug/l	1931787.92
Sb	121	115	3	He	100.172	ug/l	441801.71
Sb	123	115	1	No Gas	101.868	ug/l	1514981.69
Sb	123	115	3	He	101.565	ug/l	352488.72
Ba	135	115	1	No Gas	92.005	ug/l	415287.48
Ba	137	115	1	No Gas	91.314	ug/l	729026.31
La	139	115	3	He	103.926	ug/l	1994028.58
Ce	140	115	3	He	105.186	ug/l	2182959.83
Hg	201	209	1	No Gas	0.005	ug/l	36.32
Hg	202	209	1	No Gas	0.007	ug/l	100.98
Hg	202	209	3	He	0.009	ug/l	39.32
Tl	203	209	3	He	96.923	ug/l	761773.27
Tl	205	209	1	No Gas	95.019	ug/l	5021064.41
Tl	205	209	3	He	97.237	ug/l	1807993.61
[Pb]	206	209	1	No Gas	95.946	ug/l	1727761.43
[Pb]	207	209	1	No Gas	93.171	ug/l	1469753.03
Pb	208	209	1	No Gas	95.416	ug/l	6857527.44
Th	232	209	3	He	95.190	ug/l	2458950.06
U	238	209	1	No Gas	95.090	ug/l	6927254.74

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4005787.88	85.1
Sc	45	2	H2	1778755.73	93.5
Sc	45	3	He	256508.93	89.2
Y	89	1	No Gas	8462262.90	96.1
Y	89	2	H2	5390163.20	96.0
Y	89	3	He	1326755.05	94.4
In	115	1	No Gas	9087654.08	98.6
In	115	3	He	1703484.98	92.7
Tb	159	1	No Gas	13660329.85	103.9
Tb	159	3	He	4598301.06	98.5
Ho	165	1	No Gas	13653993.10	106.5
Ho	165	3	He	4549958.44	99.5
Lu	175	1	No Gas	13514711.21	107.6
Lu	175	3	He	3686032.54	98.9
Bi	209	1	No Gas	9242910.43	109.2
Bi	209	3	He	3039603.56	100.7

ICPMS207-B Analytical Data

Sample Name Rinse
File Name 037BLKV.d
Data Path Name D:\Agilent\ICPMH1\DATA\220308BDoD.b
Acq Time 2022-03-09 08:24:03
Sample Type BlkVrfy
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	-0.002	ug/l	9021.63
Be	9	45	1	No Gas	-0.050	ug/l	89.65
B	11	45	1	No Gas	-0.108	ug/l	2830.07
Na	23	45	3	He	-7.826	ug/l	26875.10
Mg	24	45	3	He	2.609	ug/l	1656.82
Al	27	45	1	No Gas	1.942	ug/l	38040.41
Si	28	45	2	H2	-1.350	ug/l	10000.06
K	39	89	3	He	-9.428	ug/l	58107.27
Ca	40	89	2	H2	0.964	ug/l	62468.34
Ti	47	89	1	No Gas	0.039	ug/l	251.92
V	51	89	1	No Gas	0.429	ug/l	17.96
V	51	89	3	He	-0.599	ug/l	2355.76
Cr	52	89	1	No Gas	-0.503	ug/l	24215.26
Cr	52	89	3	He	-0.001	ug/l	310.00
Mn	55	89	1	No Gas	0.040	ug/l	6458.63
Mn	55	89	3	He	0.000	ug/l	115.65
Fe	56	89	2	H2	-0.118	ug/l	5264.59
Fe	56	89	3	He	-0.103	ug/l	3759.29
Co	59	89	1	No Gas	0.000	ug/l	272.80
Ni	60	89	1	No Gas	-0.012	ug/l	286.11
Ni	60	89	3	He	-0.010	ug/l	62.22
Cu	63	89	1	No Gas	0.016	ug/l	1184.53
Cu	63	89	3	He	0.015	ug/l	292.95
Cu	65	89	1	No Gas	0.013	ug/l	516.22
Zn	66	89	1	No Gas	-0.038	ug/l	372.39
Zn	66	89	3	He	-0.002	ug/l	73.33
As	75	89	1	No Gas	-0.090	ug/l	13298.02
As	75	89	3	He	-0.043	ug/l	81.33
Se	78	89	2	H2	0.013	ug/l	15.55
Br	79	89	1	No Gas	3.031	ug/l	98428.71
Br	79	89	2	H2	3.596	ug/l	44887.12
Se	82	89	1	No Gas	0.185	ug/l	899.83
Kr	84	89	1	No Gas		ug/l	23535.89
Sr	88	89	1	No Gas	0.001	ug/l	479.06
Sr	88	89	3	He	-0.013	ug/l	166.67
Mo	95	115	1	No Gas	0.015	ug/l	188.89
Mo	95	115	3	He	0.010	ug/l	48.89
Mo	98	115	1	No Gas	0.013	ug/l	283.69
Ag	107	115	1	No Gas	0.001	ug/l	94.71
Ag	109	115	1	No Gas	0.000	ug/l	52.69
Cd	111	115	1	No Gas	-0.029	ug/l	2687.09

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.004	ug/l	5.56
Cd	114	115	1	No Gas	0.004	ug/l	43.76
Cd	114	115	3	He	0.004	ug/l	13.33
Sn	118	115	1	No Gas	0.018	ug/l	1480.49
Sn	118	115	3	He	0.005	ug/l	292.23
Sb	121	115	1	No Gas	0.281	ug/l	5822.48
Sb	121	115	3	He	0.186	ug/l	912.79
Sb	123	115	1	No Gas	0.280	ug/l	4467.17
Sb	123	115	3	He	0.182	ug/l	704.76
Ba	135	115	1	No Gas	0.003	ug/l	33.27
Ba	137	115	1	No Gas	-0.002	ug/l	43.25
La	139	115	3	He	0.001	ug/l	17.78
Ce	140	115	3	He	-0.001	ug/l	20.00
Hg	201	209	1	No Gas	0.001	ug/l	21.67
Hg	202	209	1	No Gas	0.001	ug/l	62.99
Hg	202	209	3	He	0.001	ug/l	20.66
Tl	203	209	3	He	0.075	ug/l	627.60
Tl	205	209	1	No Gas	0.094	ug/l	5312.22
Tl	205	209	3	He	0.079	ug/l	1566.73
[Pb]	206	209	1	No Gas	0.004	ug/l	216.67
[Pb]	207	209	1	No Gas	0.004	ug/l	174.45
Pb	208	209	1	No Gas	0.005	ug/l	871.13
Th	232	209	3	He	0.048	ug/l	1387.30
U	238	209	1	No Gas	0.004	ug/l	286.61

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4172279.61	88.6
Sc	45	2	H2	1861394.06	97.8
Sc	45	3	He	259725.49	90.3
Y	89	1	No Gas	8717143.19	99.0
Y	89	2	H2	5642356.74	100.5
Y	89	3	He	1321800.13	94.1
In	115	1	No Gas	9410097.98	102.1
In	115	3	He	1780267.98	96.9
Tb	159	1	No Gas	14106093.93	107.3
Tb	159	3	He	4653798.32	99.7
Ho	165	1	No Gas	14010408.77	109.3
Ho	165	3	He	4628093.82	101.2
Lu	175	1	No Gas	13864470.86	110.4
Lu	175	3	He	3764755.01	101.0
Bi	209	1	No Gas	9589226.01	113.3
Bi	209	3	He	3140197.85	104.0

ICPMS207-B Analytical Data

Sample Name B22030244-001A
File Name 038ARef.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 08:30:18
Sample Type AllRef
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	0.423	ug/l	14738.38
Be	9	45	1	No Gas	-0.057	ug/l	68.99
B	11	45	1	No Gas	64.638	ug/l	136901.08
Na	23	45	3	He	92621.449	ug/l	80246470.47
Mg	24	45	3	He	37793.458	ug/l	18220021.47
Al	27	45	1	No Gas	3.494	ug/l	73526.89
Si	28	45	2	H2	25200.822	ug/l	40373601.84
K	39	89	3	He	2503.356	ug/l	1268008.81
Ca	40	89	2	H2	37232.526	ug/l	238517041.97
Ti	47	89	1	No Gas	1.991	ug/l	4560.31
V	51	89	1	No Gas	17.446	ug/l	464954.57
V	51	89	3	He	14.825	ug/l	65479.18
Cr	52	89	1	No Gas	0.101	ug/l	40745.41
Cr	52	89	3	He	0.673	ug/l	3468.21
Mn	55	89	1	No Gas	1.860	ug/l	68997.57
Mn	55	89	3	He	1.908	ug/l	6209.07
Fe	56	89	2	H2	59.981	ug/l	836333.01
Fe	56	89	3	He	61.408	ug/l	260845.85
Co	59	89	1	No Gas	0.141	ug/l	4352.03
Ni	60	89	1	No Gas	0.641	ug/l	4515.10
Ni	60	89	3	He	0.414	ug/l	797.80
Cu	63	89	1	No Gas	1.220	ug/l	19697.20
Cu	63	89	3	He	0.313	ug/l	1692.76
Cu	65	89	1	No Gas	0.444	ug/l	3747.99
Zn	66	89	1	No Gas	1.003	ug/l	4768.21
Zn	66	89	3	He	0.811	ug/l	771.14
As	75	89	1	No Gas	0.393	ug/l	16029.50
As	75	89	3	He	0.501	ug/l	440.27
Se	78	89	2	H2	0.455	ug/l	196.23
Br	79	89	1	No Gas	68.039	ug/l	572792.51
Br	79	89	2	H2	68.080	ug/l	267917.90
Se	82	89	1	No Gas	1.703	ug/l	1381.90
Kr	84	89	1	No Gas		ug/l	105286.35
Sr	88	89	1	No Gas	298.971	ug/l	13418356.03
Sr	88	89	3	He	290.104	ug/l	1409572.35
Mo	95	115	1	No Gas	1.097	ug/l	10096.94
Mo	95	115	3	He	1.124	ug/l	3154.81
Mo	98	115	1	No Gas	1.125	ug/l	16575.32
Ag	107	115	1	No Gas	0.022	ug/l	588.92
Ag	109	115	1	No Gas	0.021	ug/l	531.56
Cd	111	115	1	No Gas	-0.087	ug/l	2405.55

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.007	ug/l	9.66
Cd	114	115	1	No Gas	0.005	ug/l	58.66
Cd	114	115	3	He	0.007	ug/l	23.73
Sn	118	115	1	No Gas	-0.023	ug/l	881.62
Sn	118	115	3	He	-0.024	ug/l	191.11
Sb	121	115	1	No Gas	0.059	ug/l	1391.88
Sb	121	115	3	He	0.048	ug/l	273.36
Sb	123	115	1	No Gas	0.063	ug/l	1132.16
Sb	123	115	3	He	0.048	ug/l	217.36
Ba	135	115	1	No Gas	12.848	ug/l	60327.25
Ba	137	115	1	No Gas	12.525	ug/l	104053.74
La	139	115	3	He	0.003	ug/l	68.89
Ce	140	115	3	He	0.005	ug/l	156.67
Hg	201	209	1	No Gas	0.030	ug/l	113.65
Hg	202	209	1	No Gas	0.502	ug/l	3651.44
Hg	202	209	3	He	0.426	ug/l	1103.16
Tl	203	209	3	He	0.032	ug/l	265.44
Tl	205	209	1	No Gas	0.028	ug/l	1600.11
Tl	205	209	3	He	0.029	ug/l	573.58
[Pb]	206	209	1	No Gas	0.014	ug/l	362.23
[Pb]	207	209	1	No Gas	0.013	ug/l	305.56
Pb	208	209	1	No Gas	0.014	ug/l	1431.15
Th	232	209	3	He	0.009	ug/l	334.81
U	238	209	1	No Gas	0.056	ug/l	3943.81

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4684306.30	99.5
Sc	45	2	H2	1877935.05	98.7
Sc	45	3	He	271939.08	94.6
Y	89	1	No Gas	9035716.65	102.6
Y	89	2	H2	5692648.39	101.4
Y	89	3	He	1366673.44	97.3
In	115	1	No Gas	9442186.22	102.5
In	115	3	He	1779803.94	96.8
Tb	159	1	No Gas	14232250.91	108.3
Tb	159	3	He	4687252.09	100.4
Ho	165	1	No Gas	14070893.63	109.7
Ho	165	3	He	4643535.25	101.6
Lu	175	1	No Gas	13979254.18	111.3
Lu	175	3	He	3822914.26	102.6
Bi	209	1	No Gas	8950887.75	105.8
Bi	209	3	He	2944608.71	97.5

ICPMS207-B Analytical Data

Sample Name B22030244-001ADIL
File Name 039SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 08:36:33
Sample Type Sample
Total Dilution 5.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	0.163	ug/l	9274.54
Be	9	45	1	No Gas	-0.277	ug/l	66.99
B	11	45	1	No Gas	68.407	ug/l	27951.60
Na	23	45	3	He	94389.379	ug/l	15353348.80
Mg	24	45	3	He	38442.675	ug/l	3473809.19
Al	27	45	1	No Gas	7.728	ug/l	30772.86
Si	28	45	2	H2	24809.945	ug/l	7382935.51
K	39	89	3	He	2436.068	ug/l	284564.62
Ca	40	89	2	H2	35351.992	ug/l	44113916.53
Ti	47	89	1	No Gas	2.161	ug/l	1082.80
V	51	89	1	No Gas	13.980	ug/l	62375.49
V	51	89	3	He	17.921	ug/l	18604.03
Cr	52	89	1	No Gas	0.674	ug/l	39968.23
Cr	52	89	3	He	0.895	ug/l	1106.72
Mn	55	89	1	No Gas	2.098	ug/l	18894.73
Mn	55	89	3	He	1.995	ug/l	1326.13
Fe	56	89	2	H2	60.256	ug/l	168881.99
Fe	56	89	3	He	64.032	ug/l	55049.73
Co	59	89	1	No Gas	0.137	ug/l	1034.66
Ni	60	89	1	No Gas	0.603	ug/l	1104.52
Ni	60	89	3	He	0.454	ug/l	226.67
Cu	63	89	1	No Gas	1.836	ug/l	6349.94
Cu	63	89	3	He	0.901	ug/l	1022.83
Cu	65	89	1	No Gas	0.990	ug/l	1838.86
Zn	66	89	1	No Gas	4.346	ug/l	4036.99
Zn	66	89	3	He	4.345	ug/l	781.14
As	75	89	1	No Gas	-0.653	ug/l	13031.50
As	75	89	3	He	0.599	ug/l	181.47
Se	78	89	2	H2	0.457	ug/l	46.56
Br	79	89	1	No Gas	98.868	ug/l	214341.02
Br	79	89	2	H2	96.983	ug/l	97135.54
Se	82	89	1	No Gas	3.801	ug/l	1059.45
Kr	84	89	1	No Gas		ug/l	39669.15
Sr	88	89	1	No Gas	298.611	ug/l	2573785.39
Sr	88	89	3	He	288.477	ug/l	267094.48
Mo	95	115	1	No Gas	1.132	ug/l	2076.83
Mo	95	115	3	He	1.167	ug/l	660.02
Mo	98	115	1	No Gas	1.167	ug/l	3430.02
Ag	107	115	1	No Gas	0.020	ug/l	163.40
Ag	109	115	1	No Gas	0.015	ug/l	120.05
Cd	111	115	1	No Gas	-0.202	ug/l	2578.19

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.018	ug/l	5.22
Cd	114	115	1	No Gas	0.008	ug/l	18.12
Cd	114	115	3	He	0.013	ug/l	9.91
Sn	118	115	1	No Gas	0.084	ug/l	1433.90
Sn	118	115	3	He	0.055	ug/l	307.78
Sb	121	115	1	No Gas	0.235	ug/l	1125.49
Sb	121	115	3	He	0.186	ug/l	221.69
Sb	123	115	1	No Gas	0.234	ug/l	861.11
Sb	123	115	3	He	0.174	ug/l	167.69
Ba	135	115	1	No Gas	13.371	ug/l	12284.41
Ba	137	115	1	No Gas	12.815	ug/l	20854.32
La	139	115	3	He	0.005	ug/l	22.22
Ce	140	115	3	He	-0.004	ug/l	30.00
Hg	201	209	1	No Gas	0.042	ug/l	45.66
Hg	202	209	1	No Gas	0.596	ug/l	921.18
Hg	202	209	3	He	0.508	ug/l	281.95
Tl	203	209	3	He	0.075	ug/l	137.39
Tl	205	209	1	No Gas	0.060	ug/l	793.36
Tl	205	209	3	He	0.076	ug/l	325.47
[Pb]	206	209	1	No Gas	0.099	ug/l	480.02
[Pb]	207	209	1	No Gas	0.099	ug/l	418.90
Pb	208	209	1	No Gas	0.096	ug/l	1861.18
Th	232	209	3	He	0.052	ug/l	375.49
U	238	209	1	No Gas	0.060	ug/l	861.86

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4135842.17	87.8
Sc	45	2	H2	1742068.93	91.6
Sc	45	3	He	254833.71	88.6
Y	89	1	No Gas	8675043.39	98.5
Y	89	2	H2	5538430.16	98.7
Y	89	3	He	1301574.38	92.6
In	115	1	No Gas	9226361.92	100.1
In	115	3	He	1748928.35	95.1
Tb	159	1	No Gas	13877426.21	105.6
Tb	159	3	He	4627142.13	99.1
Ho	165	1	No Gas	13803887.98	107.7
Ho	165	3	He	4638423.84	101.5
Lu	175	1	No Gas	13784474.82	109.8
Lu	175	3	He	3764266.40	101.0
Bi	209	1	No Gas	9125572.43	107.8
Bi	209	3	He	3015101.52	99.9

ICPMS207-B Analytical Data

Sample Name B22030244-001AMS
File Name 040MS.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 08:42:49
Sample Type MS
Total Dilution 1.0300
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	1662.506	ug/l	15809402.90
Be	9	45	1	No Gas	38.210	ug/l	139475.87
B	11	45	1	No Gas	106.118	ug/l	195178.24
Na	23	45	3	He	138303.522	ug/l	110540071.69
Mg	24	45	3	He	84523.489	ug/l	37594883.29
Al	27	45	1	No Gas	48.794	ug/l	852619.92
Si	28	45	2	H2	24017.102	ug/l	33448583.66
K	39	89	3	He	47312.679	ug/l	21477649.68
Ca	40	89	2	H2	77932.823	ug/l	451030421.20
Ti	47	89	1	No Gas	49.782	ug/l	100740.49
V	51	89	1	No Gas	58.297	ug/l	1450970.82
V	51	89	3	He	64.098	ug/l	251407.66
Cr	52	89	1	No Gas	47.980	ug/l	1176991.91
Cr	52	89	3	He	47.886	ug/l	211042.51
Mn	55	89	1	No Gas	48.509	ug/l	1528546.34
Mn	55	89	3	He	49.351	ug/l	148452.14
Fe	56	89	2	H2	4613.859	ug/l	57672430.81
Fe	56	89	3	He	4693.993	ug/l	18467361.92
Co	59	89	1	No Gas	48.882	ug/l	1289786.29
Ni	60	89	1	No Gas	47.077	ug/l	279233.16
Ni	60	89	3	He	48.906	ug/l	79750.60
Cu	63	89	1	No Gas	50.006	ug/l	704578.27
Cu	63	89	3	He	48.554	ug/l	213946.26
Cu	65	89	1	No Gas	47.912	ug/l	328011.30
Zn	66	89	1	No Gas	51.708	ug/l	200251.61
Zn	66	89	3	He	50.900	ug/l	41027.48
As	75	89	1	No Gas	49.448	ug/l	224704.21
As	75	89	3	He	50.817	ug/l	31421.52
Se	78	89	2	H2	52.571	ug/l	19433.96
Br	79	89	1	No Gas	80.333	ug/l	609632.71
Br	79	89	2	H2	74.403	ug/l	262779.96
Se	82	89	1	No Gas	51.931	ug/l	14940.81
Kr	84	89	1	No Gas		ug/l	114611.53
Sr	88	89	1	No Gas	353.947	ug/l	14579105.91
Sr	88	89	3	He	338.760	ug/l	1549829.23
Mo	95	115	1	No Gas	50.275	ug/l	420644.91
Mo	95	115	3	He	52.273	ug/l	132664.93
Mo	98	115	1	No Gas	51.191	ug/l	685136.18
Ag	107	115	1	No Gas	19.362	ug/l	414393.50
Ag	109	115	1	No Gas	19.455	ug/l	399493.12
Cd	111	115	1	No Gas	48.899	ug/l	225941.49

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	50.813	ug/l	63141.90
Cd	114	115	1	No Gas	50.132	ug/l	503956.82
Cd	114	115	3	He	51.343	ug/l	153122.17
Sn	118	115	1	No Gas	50.681	ug/l	684073.07
Sn	118	115	3	He	49.713	ug/l	156761.74
Sb	121	115	1	No Gas	52.677	ug/l	967920.48
Sb	121	115	3	He	51.183	ug/l	214794.85
Sb	123	115	1	No Gas	52.821	ug/l	746299.57
Sb	123	115	3	He	52.070	ug/l	171969.95
Ba	135	115	1	No Gas	65.492	ug/l	280902.20
Ba	137	115	1	No Gas	64.690	ug/l	490737.71
La	139	115	3	He	53.189	ug/l	971053.02
Ce	140	115	3	He	53.219	ug/l	1051026.73
Hg	201	209	1	No Gas	1.091	ug/l	3251.75
Hg	202	209	1	No Gas	1.635	ug/l	10978.98
Hg	202	209	3	He	1.529	ug/l	3630.11
Tl	203	209	3	He	49.332	ug/l	347800.93
Tl	205	209	1	No Gas	49.005	ug/l	2337691.67
Tl	205	209	3	He	50.302	ug/l	839004.21
[Pb]	206	209	1	No Gas	49.963	ug/l	812234.61
[Pb]	207	209	1	No Gas	49.571	ug/l	705893.16
Pb	208	209	1	No Gas	49.674	ug/l	3222954.18
Th	232	209	3	He	51.011	ug/l	1182038.68
U	238	209	1	No Gas	50.191	ug/l	3300805.61

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4229220.63	89.8
Sc	45	2	H2	1683718.03	88.5
Sc	45	3	He	258424.50	89.9
Y	89	1	No Gas	8538604.86	97.0
Y	89	2	H2	5301460.34	94.4
Y	89	3	He	1325418.97	94.3
In	115	1	No Gas	8886040.57	96.4
In	115	3	He	1669293.97	90.8
Tb	159	1	No Gas	13870216.81	105.5
Tb	159	3	He	4551496.86	97.5
Ho	165	1	No Gas	13785236.31	107.5
Ho	165	3	He	4510450.92	98.7
Lu	175	1	No Gas	13750950.47	109.5
Lu	175	3	He	3710704.04	99.6
Bi	209	1	No Gas	8591681.02	101.5
Bi	209	3	He	2808234.20	93.0

ICPMS207-B Analytical Data

Sample Name B22030244-001AMSD
File Name 041MSD.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 08:49:05
Sample Type MSD
Total Dilution 1.0300
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	1690.178	ug/l	16537467.94
Be	9	45	1	No Gas	38.798	ug/l	145729.89
B	11	45	1	No Gas	107.969	ug/l	204353.96
Na	23	45	3	He	139123.385	ug/l	112021118.33
Mg	24	45	3	He	84943.464	ug/l	38062267.69
Al	27	45	1	No Gas	49.198	ug/l	884731.50
Si	28	45	2	H2	24075.572	ug/l	33824452.67
K	39	89	3	He	49243.196	ug/l	22078817.73
Ca	40	89	2	H2	78281.476	ug/l	455778632.58
Ti	47	89	1	No Gas	50.279	ug/l	102665.21
V	51	89	1	No Gas	59.494	ug/l	1494100.95
V	51	89	3	He	65.780	ug/l	254757.92
Cr	52	89	1	No Gas	48.380	ug/l	1197248.32
Cr	52	89	3	He	49.537	ug/l	215682.99
Mn	55	89	1	No Gas	49.007	ug/l	1558742.19
Mn	55	89	3	He	50.591	ug/l	150351.27
Fe	56	89	2	H2	4705.382	ug/l	59129494.50
Fe	56	89	3	He	4812.370	ug/l	18705100.69
Co	59	89	1	No Gas	48.918	ug/l	1302840.15
Ni	60	89	1	No Gas	47.639	ug/l	285191.58
Ni	60	89	3	He	49.608	ug/l	79920.24
Cu	63	89	1	No Gas	49.862	ug/l	708920.45
Cu	63	89	3	He	49.821	ug/l	216873.10
Cu	65	89	1	No Gas	48.153	ug/l	332672.64
Zn	66	89	1	No Gas	51.997	ug/l	203210.73
Zn	66	89	3	He	51.300	ug/l	40849.28
As	75	89	1	No Gas	51.002	ug/l	233453.44
As	75	89	3	He	52.115	ug/l	31833.75
Se	78	89	2	H2	53.055	ug/l	19719.02
Br	79	89	1	No Gas	79.634	ug/l	610360.22
Br	79	89	2	H2	74.483	ug/l	264469.04
Se	82	89	1	No Gas	54.092	ug/l	15669.03
Kr	84	89	1	No Gas		ug/l	116677.88
Sr	88	89	1	No Gas	349.849	ug/l	14539359.47
Sr	88	89	3	He	343.284	ug/l	1551649.99
Mo	95	115	1	No Gas	50.544	ug/l	423457.13
Mo	95	115	3	He	51.482	ug/l	131366.38
Mo	98	115	1	No Gas	52.134	ug/l	698734.29
Ag	107	115	1	No Gas	19.505	ug/l	418058.34
Ag	109	115	1	No Gas	19.667	ug/l	404416.67
Cd	111	115	1	No Gas	49.210	ug/l	227671.96

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	51.018	ug/l	63747.15
Cd	114	115	1	No Gas	50.501	ug/l	508353.33
Cd	114	115	3	He	51.482	ug/l	154387.63
Sn	118	115	1	No Gas	50.935	ug/l	688462.29
Sn	118	115	3	He	50.621	ug/l	160506.85
Sb	121	115	1	No Gas	53.858	ug/l	990914.79
Sb	121	115	3	He	52.275	ug/l	220588.22
Sb	123	115	1	No Gas	53.431	ug/l	755970.56
Sb	123	115	3	He	53.071	ug/l	176260.19
Ba	135	115	1	No Gas	66.855	ug/l	287125.76
Ba	137	115	1	No Gas	65.144	ug/l	494855.84
La	139	115	3	He	53.433	ug/l	980904.12
Ce	140	115	3	He	53.260	ug/l	1057676.53
Hg	201	209	1	No Gas	1.100	ug/l	3193.08
Hg	202	209	1	No Gas	1.702	ug/l	11132.41
Hg	202	209	3	He	1.538	ug/l	3661.44
Tl	203	209	3	He	49.730	ug/l	351491.22
Tl	205	209	1	No Gas	50.147	ug/l	2330344.17
Tl	205	209	3	He	50.245	ug/l	840215.46
[Pb]	206	209	1	No Gas	51.528	ug/l	816010.61
[Pb]	207	209	1	No Gas	50.497	ug/l	700475.83
Pb	208	209	1	No Gas	50.555	ug/l	3195324.89
Th	232	209	3	He	51.594	ug/l	1198611.69
U	238	209	1	No Gas	50.964	ug/l	3265148.53

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4353139.20	92.5
Sc	45	2	H2	1698158.60	89.3
Sc	45	3	He	260343.17	90.6
Y	89	1	No Gas	8616279.21	97.9
Y	89	2	H2	5329676.73	94.9
Y	89	3	He	1309484.83	93.2
In	115	1	No Gas	8897167.84	96.6
In	115	3	He	1678788.41	91.3
Tb	159	1	No Gas	13622656.13	103.6
Tb	159	3	He	4535579.95	97.1
Ho	165	1	No Gas	13501954.92	105.3
Ho	165	3	He	4504261.60	98.5
Lu	175	1	No Gas	13549064.73	107.9
Lu	175	3	He	3712442.39	99.6
Bi	209	1	No Gas	8369522.38	98.9
Bi	209	3	He	2815686.07	93.3

ICPMS207-B Analytical Data

Sample Name Rinse
File Name 042BLKV.d
Data Path Name D:\Agilent\ICPMH1\DATA\220308BDoD.b
Acq Time 2022-03-09 08:55:21
Sample Type BlkVrfy
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	3.118	ug/l	39995.01
Be	9	45	1	No Gas	-0.053	ug/l	79.32
B	11	45	1	No Gas	1.242	ug/l	5429.83
Na	23	45	3	He	35.251	ug/l	63408.40
Mg	24	45	3	He	5.839	ug/l	3190.69
Al	27	45	1	No Gas	1.864	ug/l	37447.89
Si	28	45	2	H2	0.788	ug/l	12780.64
K	39	89	3	He	-0.234	ug/l	62824.18
Ca	40	89	2	H2	1.551	ug/l	65976.60
Ti	47	89	1	No Gas	0.063	ug/l	308.65
V	51	89	1	No Gas	-2.105	ug/l	-67949.07
V	51	89	3	He	2.047	ug/l	12909.04
Cr	52	89	1	No Gas	0.504	ug/l	49995.46
Cr	52	89	3	He	0.024	ug/l	423.34
Mn	55	89	1	No Gas	0.074	ug/l	7673.45
Mn	55	89	3	He	0.003	ug/l	125.97
Fe	56	89	2	H2	0.080	ug/l	7953.51
Fe	56	89	3	He	0.255	ug/l	5241.22
Co	59	89	1	No Gas	-0.002	ug/l	222.89
Ni	60	89	1	No Gas	-0.011	ug/l	292.76
Ni	60	89	3	He	-0.023	ug/l	40.00
Cu	63	89	1	No Gas	0.053	ug/l	1756.15
Cu	63	89	3	He	0.047	ug/l	439.92
Cu	65	89	1	No Gas	0.049	ug/l	788.34
Zn	66	89	1	No Gas	-0.056	ug/l	304.96
Zn	66	89	3	He	-0.036	ug/l	45.56
As	75	89	1	No Gas	0.243	ug/l	15007.85
As	75	89	3	He	0.064	ug/l	149.87
Se	78	89	2	H2	0.025	ug/l	20.44
Br	79	89	1	No Gas	5.015	ug/l	113581.94
Br	79	89	2	H2	4.483	ug/l	47773.93
Se	82	89	1	No Gas	0.727	ug/l	1067.45
Kr	84	89	1	No Gas		ug/l	24958.60
Sr	88	89	1	No Gas	0.005	ug/l	665.37
Sr	88	89	3	He	-0.008	ug/l	187.78
Mo	95	115	1	No Gas	0.057	ug/l	574.46
Mo	95	115	3	He	0.043	ug/l	141.11
Mo	98	115	1	No Gas	0.058	ug/l	935.80
Ag	107	115	1	No Gas	0.001	ug/l	106.04
Ag	109	115	1	No Gas	0.000	ug/l	60.69
Cd	111	115	1	No Gas	-0.018	ug/l	2760.40

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.006	ug/l	8.78
Cd	114	115	1	No Gas	0.005	ug/l	50.78
Cd	114	115	3	He	0.005	ug/l	17.71
Sn	118	115	1	No Gas	0.187	ug/l	3986.01
Sn	118	115	3	He	0.117	ug/l	685.58
Sb	121	115	1	No Gas	0.433	ug/l	8944.09
Sb	121	115	3	He	0.321	ug/l	1540.58
Sb	123	115	1	No Gas	0.437	ug/l	6932.75
Sb	123	115	3	He	0.312	ug/l	1182.84
Ba	135	115	1	No Gas	0.003	ug/l	33.27
Ba	137	115	1	No Gas	-0.001	ug/l	49.90
La	139	115	3	He	0.001	ug/l	17.78
Ce	140	115	3	He	-0.001	ug/l	14.45
Hg	201	209	1	No Gas	0.008	ug/l	44.66
Hg	202	209	1	No Gas	0.013	ug/l	145.30
Hg	202	209	3	He	0.008	ug/l	39.66
Tl	203	209	3	He	0.036	ug/l	312.80
Tl	205	209	1	No Gas	0.034	ug/l	1970.16
Tl	205	209	3	He	0.035	ug/l	712.31
[Pb]	206	209	1	No Gas	0.003	ug/l	186.67
[Pb]	207	209	1	No Gas	0.002	ug/l	143.34
Pb	208	209	1	No Gas	0.002	ug/l	677.79
Th	232	209	3	He	0.053	ug/l	1513.37
U	238	209	1	No Gas	0.004	ug/l	303.28

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4261230.25	90.5
Sc	45	2	H2	1776350.54	93.4
Sc	45	3	He	263492.97	91.7
Y	89	1	No Gas	8823044.71	100.2
Y	89	2	H2	5623695.06	100.2
Y	89	3	He	1331094.29	94.8
In	115	1	No Gas	9473503.71	102.8
In	115	3	He	1790176.29	97.4
Tb	159	1	No Gas	14092939.63	107.2
Tb	159	3	He	4704999.89	100.8
Ho	165	1	No Gas	13980629.93	109.0
Ho	165	3	He	4662134.37	102.0
Lu	175	1	No Gas	13539868.35	107.8
Lu	175	3	He	3803790.72	102.1
Bi	209	1	No Gas	9258770.65	109.4
Bi	209	3	He	3125520.91	103.5

ICPMS207-B Analytical Data

Sample Name B22030244-001B
File Name 043ARef.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 09:01:36
Sample Type AIRRef
Total Dilution 1.0000
Comment ICPMS-6020-W-T
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	2.159	ug/l	30295.53
Be	9	45	1	No Gas	-0.053	ug/l	78.65
B	11	45	1	No Gas	66.513	ug/l	127067.80
Na	23	45	3	He	94562.547	ug/l	75195587.77
Mg	24	45	3	He	38792.578	ug/l	17164961.56
Al	27	45	1	No Gas	5.627	ug/l	104574.10
Si	28	45	2	H2	18941.179	ug/l	26764713.44
K	39	89	3	He	2499.699	ug/l	1194725.49
Ca	40	89	2	H2	35185.447	ug/l	211216932.82
Ti	47	89	1	No Gas	1.967	ug/l	4313.32
V	51	89	1	No Gas	12.703	ug/l	321276.04
V	51	89	3	He	16.860	ug/l	69636.76
Cr	52	89	1	No Gas	1.250	ug/l	67543.75
Cr	52	89	3	He	0.603	ug/l	2968.09
Mn	55	89	1	No Gas	2.242	ug/l	78592.80
Mn	55	89	3	He	1.999	ug/l	6135.39
Fe	56	89	2	H2	21.720	ug/l	288054.38
Fe	56	89	3	He	22.826	ug/l	94053.49
Co	59	89	1	No Gas	0.175	ug/l	5100.78
Ni	60	89	1	No Gas	0.823	ug/l	5446.88
Ni	60	89	3	He	0.549	ug/l	974.48
Cu	63	89	1	No Gas	1.591	ug/l	24300.59
Cu	63	89	3	He	0.597	ug/l	2851.38
Cu	65	89	1	No Gas	0.737	ug/l	5682.06
Zn	66	89	1	No Gas	1.763	ug/l	7628.78
Zn	66	89	3	He	1.738	ug/l	1475.64
As	75	89	1	No Gas	0.471	ug/l	15703.56
As	75	89	3	He	0.642	ug/l	502.53
Se	78	89	2	H2	0.414	ug/l	168.55
Br	79	89	1	No Gas	18.462	ug/l	204694.85
Br	79	89	2	H2	16.354	ug/l	83722.05
Se	82	89	1	No Gas	0.677	ug/l	1033.71
Kr	84	89	1	No Gas		ug/l	102367.95
Sr	88	89	1	No Gas	304.374	ug/l	13081588.72
Sr	88	89	3	He	295.449	ug/l	1354819.94
Mo	95	115	1	No Gas	1.283	ug/l	11156.62
Mo	95	115	3	He	1.340	ug/l	3543.80
Mo	98	115	1	No Gas	1.300	ug/l	18098.59
Ag	107	115	1	No Gas	0.011	ug/l	304.79
Ag	109	115	1	No Gas	0.009	ug/l	239.43
Cd	111	115	1	No Gas	0.044	ug/l	2897.97

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.009	ug/l	12.33
Cd	114	115	1	No Gas	0.009	ug/l	92.02
Cd	114	115	3	He	0.006	ug/l	21.58
Sn	118	115	1	No Gas	0.536	ug/l	8626.25
Sn	118	115	3	He	0.436	ug/l	1682.33
Sb	121	115	1	No Gas	0.228	ug/l	4536.53
Sb	121	115	3	He	0.195	ug/l	899.46
Sb	123	115	1	No Gas	0.234	ug/l	3571.15
Sb	123	115	3	He	0.186	ug/l	676.42
Ba	135	115	1	No Gas	13.317	ug/l	59147.68
Ba	137	115	1	No Gas	13.198	ug/l	103707.94
La	139	115	3	He	0.002	ug/l	37.78
Ce	140	115	3	He	0.000	ug/l	48.89
Hg	201	209	1	No Gas	0.077	ug/l	248.95
Hg	202	209	1	No Gas	0.757	ug/l	5171.97
Hg	202	209	3	He	0.645	ug/l	1578.78
Tl	203	209	3	He	0.028	ug/l	224.76
Tl	205	209	1	No Gas	0.020	ug/l	1108.94
Tl	205	209	3	He	0.024	ug/l	448.19
[Pb]	206	209	1	No Gas	0.030	ug/l	620.02
[Pb]	207	209	1	No Gas	0.030	ug/l	535.57
Pb	208	209	1	No Gas	0.030	ug/l	2460.11
Th	232	209	3	He	0.134	ug/l	3289.07
U	238	209	1	No Gas	0.062	ug/l	4115.50

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4228912.44	89.8
Sc	45	2	H2	1656874.69	87.1
Sc	45	3	He	249605.13	86.8
Y	89	1	No Gas	8651556.04	98.3
Y	89	2	H2	5337385.12	95.1
Y	89	3	He	1290706.61	91.9
In	115	1	No Gas	8932886.47	96.9
In	115	3	He	1679397.82	91.4
Tb	159	1	No Gas	13613865.47	103.6
Tb	159	3	He	4573145.22	97.9
Ho	165	1	No Gas	13574680.35	105.9
Ho	165	3	He	4504345.96	98.5
Lu	175	1	No Gas	13341187.80	106.2
Lu	175	3	He	3647780.54	97.9
Bi	209	1	No Gas	8454284.67	99.9
Bi	209	3	He	2797092.74	92.6

ICPMS207-B Analytical Data

Sample Name B22030244-001BDIL
File Name 044MS.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 09:07:51
Sample Type MS
Total Dilution 5.0000
Comment ICPMS-6020-W-T
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	5.773	ug/l	20147.39
Be	9	45	1	No Gas	-0.282	ug/l	63.66
B	11	45	1	No Gas	69.709	ug/l	28613.74
Na	23	45	3	He	96114.328	ug/l	15619671.71
Mg	24	45	3	He	39455.664	ug/l	3562421.76
Al	27	45	1	No Gas	11.420	ug/l	44001.12
Si	28	45	2	H2	19172.878	ug/l	5685230.88
K	39	89	3	He	2418.847	ug/l	288124.93
Ca	40	89	2	H2	35911.350	ug/l	44065347.13
Ti	47	89	1	No Gas	1.977	ug/l	1014.39
V	51	89	1	No Gas	6.988	ug/l	25669.40
V	51	89	3	He	21.311	ug/l	21624.77
Cr	52	89	1	No Gas	2.349	ug/l	48750.52
Cr	52	89	3	He	0.697	ug/l	946.70
Mn	55	89	1	No Gas	2.556	ug/l	22109.45
Mn	55	89	3	He	2.066	ug/l	1394.12
Fe	56	89	2	H2	22.878	ug/l	67128.47
Fe	56	89	3	He	24.262	ug/l	23835.01
Co	59	89	1	No Gas	0.167	ug/l	1214.31
Ni	60	89	1	No Gas	0.852	ug/l	1427.25
Ni	60	89	3	He	0.510	ug/l	250.00
Cu	63	89	1	No Gas	1.749	ug/l	6148.43
Cu	63	89	3	He	0.774	ug/l	925.85
Cu	65	89	1	No Gas	0.926	ug/l	1762.82
Zn	66	89	1	No Gas	5.271	ug/l	4828.61
Zn	66	89	3	He	6.093	ug/l	1084.49
As	75	89	1	No Gas	0.372	ug/l	14085.61
As	75	89	3	He	0.784	ug/l	208.13
Se	78	89	2	H2	0.496	ug/l	48.67
Br	79	89	1	No Gas	47.485	ug/l	144216.67
Br	79	89	2	H2	46.967	ug/l	62424.47
Se	82	89	1	No Gas	3.216	ug/l	1035.05
Kr	84	89	1	No Gas		ug/l	39282.23
Sr	88	89	1	No Gas	297.606	ug/l	2588491.94
Sr	88	89	3	He	285.457	ug/l	269144.82
Mo	95	115	1	No Gas	1.264	ug/l	2350.21
Mo	95	115	3	He	1.324	ug/l	741.14
Mo	98	115	1	No Gas	1.237	ug/l	3688.63
Ag	107	115	1	No Gas	0.004	ug/l	94.70
Ag	109	115	1	No Gas	0.002	ug/l	62.02
Cd	111	115	1	No Gas	-0.098	ug/l	2720.48

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.037	ug/l	10.33
Cd	114	115	1	No Gas	0.020	ug/l	44.31
Cd	114	115	3	He	0.034	ug/l	23.38
Sn	118	115	1	No Gas	0.500	ug/l	2674.97
Sn	118	115	3	He	0.411	ug/l	545.57
Sb	121	115	1	No Gas	0.416	ug/l	1867.65
Sb	121	115	3	He	0.390	ug/l	404.05
Sb	123	115	1	No Gas	0.436	ug/l	1494.57
Sb	123	115	3	He	0.405	ug/l	329.71
Ba	135	115	1	No Gas	13.443	ug/l	12544.13
Ba	137	115	1	No Gas	12.721	ug/l	21037.57
La	139	115	3	He	0.003	ug/l	16.67
Ce	140	115	3	He	-0.004	ug/l	27.78
Hg	201	209	1	No Gas	0.064	ug/l	58.99
Hg	202	209	1	No Gas	0.682	ug/l	1029.84
Hg	202	209	3	He	0.512	ug/l	283.62
Tl	203	209	3	He	0.068	ug/l	126.05
Tl	205	209	1	No Gas	0.045	ug/l	624.46
Tl	205	209	3	He	0.056	ug/l	248.77
[Pb]	206	209	1	No Gas	0.048	ug/l	294.45
[Pb]	207	209	1	No Gas	0.043	ug/l	240.00
Pb	208	209	1	No Gas	0.046	ug/l	1133.36
Th	232	209	3	He	0.069	ug/l	461.53
U	238	209	1	No Gas	0.056	ug/l	802.20

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4162822.22	88.4
Sc	45	2	H2	1735114.96	91.2
Sc	45	3	He	254636.23	88.6
Y	89	1	No Gas	8752175.10	99.4
Y	89	2	H2	5441202.16	96.9
Y	89	3	He	1325082.86	94.3
In	115	1	No Gas	9376164.30	101.8
In	115	3	He	1736907.74	94.5
Tb	159	1	No Gas	13898652.85	105.7
Tb	159	3	He	4599536.51	98.5
Ho	165	1	No Gas	13850571.33	108.0
Ho	165	3	He	4579535.52	100.2
Lu	175	1	No Gas	13910446.21	110.8
Lu	175	3	He	3725445.31	100.0
Bi	209	1	No Gas	8987570.01	106.2
Bi	209	3	He	3007084.24	99.6

ICPMS207-B Analytical Data

Sample Name B22030244-001BPDS1
File Name 045MSD.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 09:14:05
Sample Type MSD
Total Dilution 1.0300
Comment ICPMS-6020-W-T
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	1736.594	ug/l	15966402.03
Be	9	45	1	No Gas	37.351	ug/l	131835.06
B	11	45	1	No Gas	109.641	ug/l	194887.83
Na	23	45	3	He	140916.415	ug/l	108304493.94
Mg	24	45	3	He	85615.178	ug/l	36622468.09
Al	27	45	1	No Gas	50.049	ug/l	845494.25
Si	28	45	2	H2	20935.508	ug/l	28374083.65
K	39	89	3	He	48721.452	ug/l	21141454.97
Ca	40	89	2	H2	79052.568	ug/l	445038402.73
Ti	47	89	1	No Gas	48.870	ug/l	96357.04
V	51	89	1	No Gas	55.727	ug/l	1350633.31
V	51	89	3	He	67.634	ug/l	253342.99
Cr	52	89	1	No Gas	48.002	ug/l	1147347.00
Cr	52	89	3	He	49.767	ug/l	209654.41
Mn	55	89	1	No Gas	48.821	ug/l	1499197.06
Mn	55	89	3	He	51.053	ug/l	146806.03
Fe	56	89	2	H2	4777.718	ug/l	58092255.21
Fe	56	89	3	He	4858.098	ug/l	18271448.31
Co	59	89	1	No Gas	47.710	ug/l	1226662.74
Ni	60	89	1	No Gas	45.930	ug/l	265529.88
Ni	60	89	3	He	50.380	ug/l	78533.74
Cu	63	89	1	No Gas	48.605	ug/l	667323.55
Cu	63	89	3	He	49.936	ug/l	210344.99
Cu	65	89	1	No Gas	46.895	ug/l	312820.67
Zn	66	89	1	No Gas	48.646	ug/l	183613.53
Zn	66	89	3	He	49.831	ug/l	38398.23
As	75	89	1	No Gas	47.771	ug/l	211974.94
As	75	89	3	He	48.500	ug/l	28673.01
Se	78	89	2	H2	47.259	ug/l	16995.69
Br	79	89	1	No Gas	20.620	ug/l	207339.03
Br	79	89	2	H2	17.869	ug/l	84003.03
Se	82	89	1	No Gas	45.874	ug/l	12955.67
Kr	84	89	1	No Gas		ug/l	110994.39
Sr	88	89	1	No Gas	348.845	ug/l	13998997.36
Sr	88	89	3	He	344.021	ug/l	1504536.56
Mo	95	115	1	No Gas	50.926	ug/l	412068.76
Mo	95	115	3	He	53.176	ug/l	130102.09
Mo	98	115	1	No Gas	51.410	ug/l	665473.47
Ag	107	115	1	No Gas	19.226	ug/l	397966.10
Ag	109	115	1	No Gas	19.339	ug/l	384050.83
Cd	111	115	1	No Gas	47.632	ug/l	212906.82

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	50.091	ug/l	60004.68
Cd	114	115	1	No Gas	48.601	ug/l	472451.79
Cd	114	115	3	He	50.247	ug/l	144457.29
Sn	118	115	1	No Gas	52.251	ug/l	681978.05
Sn	118	115	3	He	52.168	ug/l	158545.86
Sb	121	115	1	No Gas	50.894	ug/l	904325.36
Sb	121	115	3	He	50.358	ug/l	203717.94
Sb	123	115	1	No Gas	50.617	ug/l	691576.48
Sb	123	115	3	He	50.620	ug/l	161170.31
Ba	135	115	1	No Gas	64.970	ug/l	269471.05
Ba	137	115	1	No Gas	64.011	ug/l	469533.71
La	139	115	3	He	53.220	ug/l	936535.83
Ce	140	115	3	He	53.112	ug/l	1011092.34
Hg	201	209	1	No Gas	1.023	ug/l	2891.41
Hg	202	209	1	No Gas	1.746	ug/l	11101.39
Hg	202	209	3	He	1.597	ug/l	3673.78
Tl	203	209	3	He	49.628	ug/l	339256.90
Tl	205	209	1	No Gas	49.873	ug/l	2254487.62
Tl	205	209	3	He	49.970	ug/l	808079.80
[Pb]	206	209	1	No Gas	49.744	ug/l	766335.47
[Pb]	207	209	1	No Gas	49.505	ug/l	668110.07
Pb	208	209	1	No Gas	49.624	ug/l	3051308.38
Th	232	209	3	He	50.923	ug/l	1144122.92
U	238	209	1	No Gas	50.069	ug/l	3120363.51

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4088995.65	86.8
Sc	45	2	H2	1637441.86	86.1
Sc	45	3	He	248526.97	86.5
Y	89	1	No Gas	8320751.71	94.5
Y	89	2	H2	5156202.06	91.8
Y	89	3	He	1267016.14	90.2
In	115	1	No Gas	8595150.72	93.3
In	115	3	He	1609267.35	87.5
Tb	159	1	No Gas	13181718.55	100.3
Tb	159	3	He	4350379.96	93.2
Ho	165	1	No Gas	12999786.93	101.4
Ho	165	3	He	4340945.22	95.0
Lu	175	1	No Gas	12900546.34	102.7
Lu	175	3	He	3510763.58	94.2
Bi	209	1	No Gas	8145615.09	96.3
Bi	209	3	He	2722685.84	90.2

ICPMS207-B Analytical Data

Sample Name B22030244-001BMS4
File Name 046MS4.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 09:20:21
Sample Type MS4
Total Dilution 1.0000
Comment ICPMS-6020-W-T
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	78.206	ug/l	781147.89
Be	9	45	1	No Gas	38.924	ug/l	147543.94
B	11	45	1	No Gas	153.336	ug/l	291378.52
Na	23	45	3	He	98664.305	ug/l	79714850.48
Mg	24	45	3	He	43402.032	ug/l	19512543.13
Al	27	45	1	No Gas	450.765	ug/l	8148196.20
Si	28	45	2	H2	21997.553	ug/l	31595499.14
K	39	89	3	He	7319.699	ug/l	3402173.94
Ca	40	89	2	H2	40793.402	ug/l	238921674.92
Ti	47	89	1	No Gas	93.033	ug/l	193037.99
V	51	89	1	No Gas	101.409	ug/l	2599006.47
V	51	89	3	He	116.244	ug/l	455731.33
Cr	52	89	1	No Gas	94.346	ug/l	2339100.66
Cr	52	89	3	He	99.196	ug/l	440467.60
Mn	55	89	1	No Gas	478.841	ug/l	15442457.67
Mn	55	89	3	He	493.059	ug/l	1494556.57
Fe	56	89	2	H2	511.542	ug/l	6474912.76
Fe	56	89	3	He	513.287	ug/l	2040002.20
Co	59	89	1	No Gas	94.783	ug/l	2566672.84
Ni	60	89	1	No Gas	93.476	ug/l	568764.69
Ni	60	89	3	He	100.919	ug/l	165861.33
Cu	63	89	1	No Gas	97.930	ug/l	1415228.78
Cu	63	89	3	He	99.985	ug/l	444036.45
Cu	65	89	1	No Gas	94.766	ug/l	665491.82
Zn	66	89	1	No Gas	96.485	ug/l	383071.85
Zn	66	89	3	He	97.349	ug/l	79053.16
As	75	89	1	No Gas	93.655	ug/l	424096.97
As	75	89	3	He	96.945	ug/l	60343.76
Se	78	89	2	H2	95.822	ug/l	35823.92
Br	79	89	1	No Gas	13.614	ug/l	168352.75
Br	79	89	2	H2	12.620	ug/l	69889.67
Se	82	89	1	No Gas	93.444	ug/l	26887.97
Kr	84	89	1	No Gas		ug/l	128329.76
Sr	88	89	1	No Gas	400.743	ug/l	16938747.73
Sr	88	89	3	He	389.960	ug/l	1798928.39
Mo	95	115	1	No Gas	101.288	ug/l	863694.44
Mo	95	115	3	He	103.466	ug/l	268122.84
Mo	98	115	1	No Gas	101.510	ug/l	1384898.24
Ag	107	115	1	No Gas	9.656	ug/l	210721.01
Ag	109	115	1	No Gas	9.620	ug/l	201394.35
Cd	111	115	1	No Gas	49.044	ug/l	230888.12

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	50.706	ug/l	64335.82
Cd	114	115	1	No Gas	49.647	ug/l	508744.38
Cd	114	115	3	He	51.298	ug/l	156206.24
Sn	118	115	1	No Gas	106.222	ug/l	1459954.67
Sn	118	115	3	He	104.372	ug/l	335749.74
Sb	121	115	1	No Gas	99.590	ug/l	1864892.60
Sb	121	115	3	He	99.576	ug/l	426619.94
Sb	123	115	1	No Gas	102.446	ug/l	1475589.07
Sb	123	115	3	He	102.060	ug/l	344135.23
Ba	135	115	1	No Gas	109.989	ug/l	480845.63
Ba	137	115	1	No Gas	108.433	ug/l	838365.49
La	139	115	3	He	104.551	ug/l	1948665.16
Ce	140	115	3	He	104.008	ug/l	2096928.54
Hg	201	209	1	No Gas	0.068	ug/l	214.96
Hg	202	209	1	No Gas	0.772	ug/l	5139.30
Hg	202	209	3	He	0.609	ug/l	1479.12
Tl	203	209	3	He	100.345	ug/l	719938.03
Tl	205	209	1	No Gas	100.438	ug/l	4730618.57
Tl	205	209	3	He	100.142	ug/l	1699733.69
[Pb]	206	209	1	No Gas	100.407	ug/l	1611548.10
[Pb]	207	209	1	No Gas	100.936	ug/l	1419072.77
Pb	208	209	1	No Gas	100.668	ug/l	6448699.47
Th	232	209	3	He	100.529	ug/l	2370489.45
U	238	209	1	No Gas	101.335	ug/l	6580385.37

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4264816.31	90.6
Sc	45	2	H2	1684835.00	88.6
Sc	45	3	He	253603.33	88.2
Y	89	1	No Gas	8511231.76	96.7
Y	89	2	H2	5206254.56	92.7
Y	89	3	He	1297562.93	92.4
In	115	1	No Gas	8795005.58	95.4
In	115	3	He	1654893.22	90.0
Tb	159	1	No Gas	13419255.35	102.1
Tb	159	3	He	4445384.45	95.2
Ho	165	1	No Gas	13373589.26	104.3
Ho	165	3	He	4402788.62	96.3
Lu	175	1	No Gas	13244062.45	105.5
Lu	175	3	He	3614130.22	97.0
Bi	209	1	No Gas	8237591.85	97.3
Bi	209	3	He	2774469.09	91.9

ICPMS207-B Analytical Data

Sample Name CCV
File Name 047_CCV.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 09:26:37
Sample Type CCV
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	506.648	ug/l	4997523.23
Be	9	45	1	No Gas	42.592	ug/l	161015.13
B	11	45	1	No Gas	46.725	ug/l	90714.44
Na	23	45	3	He	12585.463	ug/l	10763802.76
Mg	24	45	3	He	12408.869	ug/l	5889368.97
Al	27	45	1	No Gas	48.757	ug/l	882607.86
Si	28	45	2	H2	306.395	ug/l	482226.19
K	39	89	3	He	12175.269	ug/l	5794066.03
Ca	40	89	2	H2	12310.498	ug/l	75705682.18
Ti	47	89	1	No Gas	46.246	ug/l	98398.93
V	51	89	1	No Gas	44.014	ug/l	1149065.45
V	51	89	3	He	51.388	ug/l	210435.20
Cr	52	89	1	No Gas	48.706	ug/l	1254375.75
Cr	52	89	3	He	49.982	ug/l	229044.58
Mn	55	89	1	No Gas	49.188	ug/l	1629488.45
Mn	55	89	3	He	50.162	ug/l	156890.47
Fe	56	89	2	H2	1288.844	ug/l	17114712.44
Fe	56	89	3	He	1291.237	ug/l	5285576.69
Co	59	89	1	No Gas	49.802	ug/l	1381411.21
Ni	60	89	1	No Gas	49.620	ug/l	309395.49
Ni	60	89	3	He	52.545	ug/l	89060.06
Cu	63	89	1	No Gas	51.183	ug/l	758111.83
Cu	63	89	3	He	51.900	ug/l	237779.22
Cu	65	89	1	No Gas	50.445	ug/l	363046.94
Zn	66	89	1	No Gas	52.234	ug/l	212636.39
Zn	66	89	3	He	52.013	ug/l	43593.85
As	75	89	1	No Gas	48.827	ug/l	233013.69
As	75	89	3	He	50.571	ug/l	32513.22
Se	78	89	2	H2	53.220	ug/l	20894.32
Br	79	89	1	No Gas	-0.663	ug/l	72541.06
Br	79	89	2	H2	-0.531	ug/l	29788.28
Se	82	89	1	No Gas	52.143	ug/l	15743.04
Kr	84	89	1	No Gas		ug/l	36076.83
Sr	88	89	1	No Gas	51.626	ug/l	2235216.35
Sr	88	89	3	He	49.652	ug/l	236404.61
Mo	95	115	1	No Gas	50.149	ug/l	444496.80
Mo	95	115	3	He	50.389	ug/l	136738.95
Mo	98	115	1	No Gas	51.268	ug/l	727074.56
Ag	107	115	1	No Gas	20.524	ug/l	465363.08
Ag	109	115	1	No Gas	20.504	ug/l	446075.97
Cd	111	115	1	No Gas	50.412	ug/l	246601.78

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	51.922	ug/l	68986.78
Cd	114	115	1	No Gas	51.811	ug/l	551770.81
Cd	114	115	3	He	52.371	ug/l	167000.33
Sn	118	115	1	No Gas	52.577	ug/l	751685.81
Sn	118	115	3	He	50.758	ug/l	171114.11
Sb	121	115	1	No Gas	54.412	ug/l	1059288.32
Sb	121	115	3	He	52.042	ug/l	233516.87
Sb	123	115	1	No Gas	54.181	ug/l	810973.18
Sb	123	115	3	He	52.149	ug/l	184150.56
Ba	135	115	1	No Gas	52.759	ug/l	239699.20
Ba	137	115	1	No Gas	51.430	ug/l	413357.45
La	139	115	3	He	50.871	ug/l	993000.57
Ce	140	115	3	He	51.213	ug/l	1081383.14
Hg	201	209	1	No Gas	1.031	ug/l	3297.08
Hg	202	209	1	No Gas	1.036	ug/l	7483.27
Hg	202	209	3	He	1.014	ug/l	2641.74
Tl	203	209	3	He	48.791	ug/l	376838.70
Tl	205	209	1	No Gas	49.390	ug/l	2528722.62
Tl	205	209	3	He	50.086	ug/l	915240.34
[Pb]	206	209	1	No Gas	49.982	ug/l	872096.72
[Pb]	207	209	1	No Gas	49.950	ug/l	763484.61
Pb	208	209	1	No Gas	49.776	ug/l	3466376.74
Th	232	209	3	He	49.429	ug/l	1254948.30
U	238	209	1	No Gas	48.882	ug/l	3450364.61

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4253589.29	90.3
Sc	45	2	H2	1799674.75	94.6
Sc	45	3	He	267706.68	93.1
Y	89	1	No Gas	8715807.58	99.0
Y	89	2	H2	5465713.96	97.4
Y	89	3	He	1338360.50	95.3
In	115	1	No Gas	9140502.37	99.2
In	115	3	He	1732870.38	94.3
Tb	159	1	No Gas	13713571.00	104.3
Tb	159	3	He	4608518.20	98.7
Ho	165	1	No Gas	13661333.04	106.6
Ho	165	3	He	4578899.10	100.2
Lu	175	1	No Gas	13653400.00	108.7
Lu	175	3	He	3744648.37	100.5
Bi	209	1	No Gas	8953577.57	105.8
Bi	209	3	He	2987235.40	98.9

ICPMS207-B Analytical Data

Sample Name CCB
File Name 048_CCB.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 09:32:53
Sample Type CCB
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	2.552	ug/l	33636.48
Be	9	45	1	No Gas	-0.051	ug/l	85.32
B	11	45	1	No Gas	1.132	ug/l	5104.25
Na	23	45	3	He	37.079	ug/l	63794.55
Mg	24	45	3	He	2.070	ug/l	1403.95
Al	27	45	1	No Gas	-0.038	ug/l	3039.21
Si	28	45	2	H2	40.895	ug/l	73605.17
K	39	89	3	He	1.870	ug/l	62022.98
Ca	40	89	2	H2	0.124	ug/l	54952.91
Ti	47	89	1	No Gas	0.044	ug/l	256.93
V	51	89	1	No Gas	-2.384	ug/l	-72239.04
V	51	89	3	He	1.874	ug/l	11872.61
Cr	52	89	1	No Gas	0.529	ug/l	48670.24
Cr	52	89	3	He	0.017	ug/l	384.45
Mn	55	89	1	No Gas	0.077	ug/l	7473.77
Mn	55	89	3	He	-0.001	ug/l	109.65
Fe	56	89	2	H2	-0.042	ug/l	6062.38
Fe	56	89	3	He	0.150	ug/l	4678.79
Co	59	89	1	No Gas	-0.001	ug/l	252.84
Ni	60	89	1	No Gas	-0.014	ug/l	262.82
Ni	60	89	3	He	-0.023	ug/l	40.00
Cu	63	89	1	No Gas	0.040	ug/l	1496.68
Cu	63	89	3	He	0.038	ug/l	385.60
Cu	65	89	1	No Gas	0.040	ug/l	691.63
Zn	66	89	1	No Gas	-0.055	ug/l	295.03
Zn	66	89	3	He	-0.031	ug/l	48.89
As	75	89	1	No Gas	-0.524	ug/l	11036.59
As	75	89	3	He	0.062	ug/l	144.60
Se	78	89	2	H2	0.014	ug/l	15.66
Br	79	89	1	No Gas	-0.746	ug/l	69965.47
Br	79	89	2	H2	-1.113	ug/l	27688.22
Se	82	89	1	No Gas	0.191	ug/l	877.17
Kr	84	89	1	No Gas		ug/l	21296.89
Sr	88	89	1	No Gas	0.001	ug/l	435.81
Sr	88	89	3	He	-0.007	ug/l	190.00
Mo	95	115	1	No Gas	0.027	ug/l	290.00
Mo	95	115	3	He	0.017	ug/l	67.78
Mo	98	115	1	No Gas	0.030	ug/l	507.17
Ag	107	115	1	No Gas	0.000	ug/l	80.70
Ag	109	115	1	No Gas	0.000	ug/l	48.02
Cd	111	115	1	No Gas	-0.011	ug/l	2697.31

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.007	ug/l	9.78
Cd	114	115	1	No Gas	0.008	ug/l	89.35
Cd	114	115	3	He	0.006	ug/l	21.06
Sn	118	115	1	No Gas	0.079	ug/l	2305.63
Sn	118	115	3	He	0.072	ug/l	512.24
Sb	121	115	1	No Gas	0.490	ug/l	9725.68
Sb	121	115	3	He	0.382	ug/l	1769.96
Sb	123	115	1	No Gas	0.477	ug/l	7290.62
Sb	123	115	3	He	0.378	ug/l	1378.54
Ba	135	115	1	No Gas	0.007	ug/l	49.90
Ba	137	115	1	No Gas	-0.001	ug/l	49.90
La	139	115	3	He	0.000	ug/l	10.00
Ce	140	115	3	He	-0.002	ug/l	7.78
Hg	201	209	1	No Gas	0.007	ug/l	40.99
Hg	202	209	1	No Gas	0.008	ug/l	104.65
Hg	202	209	3	He	0.004	ug/l	27.99
Tl	203	209	3	He	0.078	ug/l	640.28
Tl	205	209	1	No Gas	0.085	ug/l	4565.27
Tl	205	209	3	He	0.084	ug/l	1625.42
[Pb]	206	209	1	No Gas	0.003	ug/l	187.78
[Pb]	207	209	1	No Gas	0.002	ug/l	134.45
Pb	208	209	1	No Gas	0.003	ug/l	716.68
Th	232	209	3	He	0.051	ug/l	1450.00
U	238	209	1	No Gas	0.004	ug/l	301.61

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4166846.62	88.5
Sc	45	2	H2	1776784.78	93.4
Sc	45	3	He	258844.49	90.0
Y	89	1	No Gas	8479205.37	96.3
Y	89	2	H2	5427097.95	96.7
Y	89	3	He	1293799.56	92.1
In	115	1	No Gas	9139744.72	99.2
In	115	3	He	1735447.56	94.4
Tb	159	1	No Gas	13313911.98	101.3
Tb	159	3	He	4580727.55	98.1
Ho	165	1	No Gas	13143615.44	102.5
Ho	165	3	He	4513238.65	98.7
Lu	175	1	No Gas	13210888.65	105.2
Lu	175	3	He	3673935.29	98.6
Bi	209	1	No Gas	9029672.37	106.7
Bi	209	3	He	3063187.56	101.5

ICPMS207-B Analytical Data

Sample Name B22030244-001BMSD4
File Name 049MSD4.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 09:39:09
Sample Type MSD4
Total Dilution 1.0000
Comment ICPMS-6020-W-T
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	79.793	ug/l	749056.03
Be	9	45	1	No Gas	40.416	ug/l	144028.80
B	11	45	1	No Gas	160.865	ug/l	287241.41
Na	23	45	3	He	100211.605	ug/l	78043720.51
Mg	24	45	3	He	43769.643	ug/l	18968499.95
Al	27	45	1	No Gas	458.996	ug/l	7800032.11
Si	28	45	2	H2	22322.198	ug/l	30763262.60
K	39	89	3	He	7126.295	ug/l	3232565.13
Ca	40	89	2	H2	41242.979	ug/l	231700076.92
Ti	47	89	1	No Gas	92.536	ug/l	182160.51
V	51	89	1	No Gas	102.481	ug/l	2491621.23
V	51	89	3	He	115.942	ug/l	443404.94
Cr	52	89	1	No Gas	94.995	ug/l	2233784.44
Cr	52	89	3	He	97.785	ug/l	423563.11
Mn	55	89	1	No Gas	473.656	ug/l	14488815.45
Mn	55	89	3	He	483.932	ug/l	1430902.60
Fe	56	89	2	H2	507.693	ug/l	6160163.23
Fe	56	89	3	He	512.917	ug/l	1988556.42
Co	59	89	1	No Gas	93.939	ug/l	2413265.77
Ni	60	89	1	No Gas	92.529	ug/l	534183.15
Ni	60	89	3	He	99.968	ug/l	160263.83
Cu	63	89	1	No Gas	96.733	ug/l	1326046.33
Cu	63	89	3	He	98.578	ug/l	427039.33
Cu	65	89	1	No Gas	94.557	ug/l	629777.12
Zn	66	89	1	No Gas	98.007	ug/l	369140.82
Zn	66	89	3	He	97.629	ug/l	77335.83
As	75	89	1	No Gas	92.962	ug/l	399499.59
As	75	89	3	He	96.248	ug/l	58442.16
Se	78	89	2	H2	97.198	ug/l	34839.75
Br	79	89	1	No Gas	17.269	ug/l	183336.27
Br	79	89	2	H2	14.924	ug/l	73989.03
Se	82	89	1	No Gas	95.378	ug/l	26020.88
Kr	84	89	1	No Gas		ug/l	123906.88
Sr	88	89	1	No Gas	404.516	ug/l	16220063.83
Sr	88	89	3	He	395.066	ug/l	1777772.77
Mo	95	115	1	No Gas	99.611	ug/l	813087.03
Mo	95	115	3	He	103.347	ug/l	260550.86
Mo	98	115	1	No Gas	101.732	ug/l	1328704.69
Ag	107	115	1	No Gas	9.564	ug/l	199842.40
Ag	109	115	1	No Gas	9.627	ug/l	192945.02
Cd	111	115	1	No Gas	49.001	ug/l	220850.74

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	51.028	ug/l	62996.51
Cd	114	115	1	No Gas	50.095	ug/l	491379.97
Cd	114	115	3	He	51.448	ug/l	152436.79
Sn	118	115	1	No Gas	104.734	ug/l	1378533.75
Sn	118	115	3	He	104.909	ug/l	328368.41
Sb	121	115	1	No Gas	102.119	ug/l	1830809.78
Sb	121	115	3	He	101.628	ug/l	423662.34
Sb	123	115	1	No Gas	106.045	ug/l	1462018.30
Sb	123	115	3	He	103.810	ug/l	340570.90
Ba	135	115	1	No Gas	110.212	ug/l	461269.03
Ba	137	115	1	No Gas	108.230	ug/l	801024.30
La	139	115	3	He	104.636	ug/l	1897769.44
Ce	140	115	3	He	104.426	ug/l	2048758.53
Hg	201	209	1	No Gas	0.063	ug/l	196.63
Hg	202	209	1	No Gas	0.776	ug/l	5045.95
Hg	202	209	3	He	0.617	ug/l	1459.46
Tl	203	209	3	He	101.826	ug/l	710825.88
Tl	205	209	1	No Gas	100.151	ug/l	4607297.64
Tl	205	209	3	He	101.130	ug/l	1670205.88
[Pb]	206	209	1	No Gas	100.912	ug/l	1581953.14
[Pb]	207	209	1	No Gas	99.346	ug/l	1364170.31
Pb	208	209	1	No Gas	100.089	ug/l	6262136.28
Th	232	209	3	He	101.317	ug/l	2325064.77
U	238	209	1	No Gas	100.820	ug/l	6393893.68

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4009510.53	85.2
Sc	45	2	H2	1616437.17	85.0
Sc	45	3	He	244492.19	85.1
Y	89	1	No Gas	8072477.61	91.7
Y	89	2	H2	4990454.29	88.9
Y	89	3	He	1265739.31	90.1
In	115	1	No Gas	8423367.10	91.4
In	115	3	He	1610095.93	87.6
Tb	159	1	No Gas	12902269.63	98.1
Tb	159	3	He	4343345.38	93.0
Ho	165	1	No Gas	12780089.33	99.7
Ho	165	3	He	4315495.61	94.4
Lu	175	1	No Gas	12620660.21	100.5
Lu	175	3	He	3498854.69	93.9
Bi	209	1	No Gas	8047194.95	95.1
Bi	209	3	He	2700911.92	89.5

ICPMS207-B Analytical Data

Sample Name Rinse
File Name 050BLKV.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 09:45:24
Sample Type BlkVrfy
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	0.864	ug/l	17359.50
Be	9	45	1	No Gas	-0.051	ug/l	85.31
B	11	45	1	No Gas	1.415	ug/l	5623.98
Na	23	45	3	He	28.537	ug/l	55847.51
Mg	24	45	3	He	5.525	ug/l	2941.13
Al	27	45	1	No Gas	1.959	ug/l	38268.81
Si	28	45	2	H2	105.216	ug/l	169692.95
K	39	89	3	He	0.087	ug/l	60094.00
Ca	40	89	2	H2	1.019	ug/l	60709.37
Ti	47	89	1	No Gas	0.030	ug/l	231.90
V	51	89	1	No Gas	-0.753	ug/l	-30953.21
V	51	89	3	He	1.346	ug/l	9650.98
Cr	52	89	1	No Gas	0.299	ug/l	44037.99
Cr	52	89	3	He	0.010	ug/l	346.68
Mn	55	89	1	No Gas	0.060	ug/l	7084.37
Mn	55	89	3	He	-0.001	ug/l	107.98
Fe	56	89	2	H2	-0.063	ug/l	5820.36
Fe	56	89	3	He	0.085	ug/l	4340.03
Co	59	89	1	No Gas	-0.001	ug/l	256.16
Ni	60	89	1	No Gas	-0.015	ug/l	262.82
Ni	60	89	3	He	-0.006	ug/l	65.55
Cu	63	89	1	No Gas	0.050	ug/l	1679.44
Cu	63	89	3	He	0.045	ug/l	411.26
Cu	65	89	1	No Gas	0.049	ug/l	768.33
Zn	66	89	1	No Gas	-0.061	ug/l	278.57
Zn	66	89	3	He	0.005	ug/l	76.67
As	75	89	1	No Gas	-0.404	ug/l	11818.19
As	75	89	3	He	0.047	ug/l	132.80
Se	78	89	2	H2	0.017	ug/l	16.78
Br	79	89	1	No Gas	3.624	ug/l	102018.74
Br	79	89	2	H2	3.459	ug/l	42928.48
Se	82	89	1	No Gas	-0.285	ug/l	763.82
Kr	84	89	1	No Gas		ug/l	21476.92
Sr	88	89	1	No Gas	0.004	ug/l	585.52
Sr	88	89	3	He	-0.008	ug/l	180.00
Mo	95	115	1	No Gas	0.022	ug/l	244.45
Mo	95	115	3	He	0.016	ug/l	64.44
Mo	98	115	1	No Gas	0.022	ug/l	397.44
Ag	107	115	1	No Gas	0.001	ug/l	93.37
Ag	109	115	1	No Gas	0.000	ug/l	58.02
Cd	111	115	1	No Gas	-0.053	ug/l	2494.96

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.005	ug/l	7.33
Cd	114	115	1	No Gas	0.006	ug/l	63.97
Cd	114	115	3	He	0.004	ug/l	15.21
Sn	118	115	1	No Gas	0.033	ug/l	1653.49
Sn	118	115	3	He	0.013	ug/l	313.34
Sb	121	115	1	No Gas	0.526	ug/l	10415.91
Sb	121	115	3	He	0.389	ug/l	1795.97
Sb	123	115	1	No Gas	0.528	ug/l	8036.78
Sb	123	115	3	He	0.399	ug/l	1452.22
Ba	135	115	1	No Gas	0.005	ug/l	39.92
Ba	137	115	1	No Gas	-0.002	ug/l	43.25
La	139	115	3	He	0.000	ug/l	10.00
Ce	140	115	3	He	-0.001	ug/l	24.44
Hg	201	209	1	No Gas	0.003	ug/l	27.00
Hg	202	209	1	No Gas	0.004	ug/l	80.98
Hg	202	209	3	He	0.004	ug/l	27.66
Tl	203	209	3	He	0.097	ug/l	788.34
Tl	205	209	1	No Gas	0.108	ug/l	5869.12
Tl	205	209	3	He	0.098	ug/l	1870.22
[Pb]	206	209	1	No Gas	0.003	ug/l	183.34
[Pb]	207	209	1	No Gas	0.002	ug/l	145.56
Pb	208	209	1	No Gas	0.003	ug/l	747.79
Th	232	209	3	He	0.050	ug/l	1403.98
U	238	209	1	No Gas	0.004	ug/l	265.95

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4165258.70	88.5
Sc	45	2	H2	1761564.79	92.6
Sc	45	3	He	254688.84	88.6
Y	89	1	No Gas	8672432.65	98.5
Y	89	2	H2	5451572.00	97.1
Y	89	3	He	1270264.01	90.4
In	115	1	No Gas	9137788.05	99.2
In	115	3	He	1731862.63	94.2
Tb	159	1	No Gas	13723981.52	104.4
Tb	159	3	He	4586036.24	98.2
Ho	165	1	No Gas	13546815.72	105.7
Ho	165	3	He	4508907.60	98.6
Lu	175	1	No Gas	13453315.34	107.1
Lu	175	3	He	3697211.40	99.2
Bi	209	1	No Gas	9190669.80	108.6
Bi	209	3	He	3058327.10	101.3

ICPMS207-B Analytical Data

Sample Name B22030244-007A
File Name 051SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 09:51:39
Sample Type Sample
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	0.768	ug/l	18314.39
Be	9	45	1	No Gas	-0.059	ug/l	58.66
B	11	45	1	No Gas	38.391	ug/l	81970.33
Na	23	45	3	He	37384.842	ug/l	31707825.08
Mg	24	45	3	He	17511.244	ug/l	8259231.85
Al	27	45	1	No Gas	3.095	ug/l	65021.08
Si	28	45	2	H2	26203.121	ug/l	41278726.21
K	39	89	3	He	3296.767	ug/l	1588725.24
Ca	40	89	2	H2	16548.633	ug/l	101202182.79
Ti	47	89	1	No Gas	1.984	ug/l	4465.18
V	51	89	1	No Gas	8.472	ug/l	215853.67
V	51	89	3	He	7.481	ug/l	34155.09
Cr	52	89	1	No Gas	0.244	ug/l	43684.79
Cr	52	89	3	He	0.771	ug/l	3783.84
Mn	55	89	1	No Gas	5.909	ug/l	203907.25
Mn	55	89	3	He	6.055	ug/l	18734.15
Fe	56	89	2	H2	0.868	ug/l	18093.22
Fe	56	89	3	He	0.919	ug/l	7853.44
Co	59	89	1	No Gas	0.041	ug/l	1437.22
Ni	60	89	1	No Gas	0.838	ug/l	5679.85
Ni	60	89	3	He	0.835	ug/l	1470.08
Cu	63	89	1	No Gas	0.617	ug/l	10255.06
Cu	63	89	3	He	0.289	ug/l	1524.44
Cu	65	89	1	No Gas	0.340	ug/l	2920.14
Zn	66	89	1	No Gas	0.827	ug/l	3955.86
Zn	66	89	3	He	0.961	ug/l	865.59
As	75	89	1	No Gas	-0.152	ug/l	13242.60
As	75	89	3	He	0.034	ug/l	129.07
Se	78	89	2	H2	0.268	ug/l	114.78
Br	79	89	1	No Gas	9.777	ug/l	148181.96
Br	79	89	2	H2	10.330	ug/l	65420.96
Se	82	89	1	No Gas	0.375	ug/l	969.17
Kr	84	89	1	No Gas		ug/l	68593.09
Sr	88	89	1	No Gas	172.219	ug/l	7591861.68
Sr	88	89	3	He	168.938	ug/l	790734.88
Mo	95	115	1	No Gas	0.381	ug/l	3429.33
Mo	95	115	3	He	0.379	ug/l	1062.27
Mo	98	115	1	No Gas	0.365	ug/l	5259.55
Ag	107	115	1	No Gas	0.002	ug/l	106.71
Ag	109	115	1	No Gas	0.001	ug/l	74.03
Cd	111	115	1	No Gas	-0.046	ug/l	2526.18

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.007	ug/l	9.56
Cd	114	115	1	No Gas	0.005	ug/l	56.11
Cd	114	115	3	He	0.006	ug/l	19.92
Sn	118	115	1	No Gas	-0.034	ug/l	698.63
Sn	118	115	3	He	-0.035	ug/l	151.11
Sb	121	115	1	No Gas	0.437	ug/l	8692.22
Sb	121	115	3	He	0.420	ug/l	1962.00
Sb	123	115	1	No Gas	0.433	ug/l	6628.90
Sb	123	115	3	He	0.425	ug/l	1560.58
Ba	135	115	1	No Gas	4.299	ug/l	19538.45
Ba	137	115	1	No Gas	4.235	ug/l	34077.52
La	139	115	3	He	0.001	ug/l	26.67
Ce	140	115	3	He	0.001	ug/l	63.33
Hg	201	209	1	No Gas	-0.001	ug/l	15.67
Hg	202	209	1	No Gas	0.002	ug/l	62.32
Hg	202	209	3	He	0.000	ug/l	15.67
Tl	203	209	3	He	0.047	ug/l	376.82
Tl	205	209	1	No Gas	0.042	ug/l	2246.88
Tl	205	209	3	He	0.048	ug/l	915.73
[Pb]	206	209	1	No Gas	0.012	ug/l	334.45
[Pb]	207	209	1	No Gas	0.013	ug/l	298.90
Pb	208	209	1	No Gas	0.013	ug/l	1340.04
Th	232	209	3	He	0.006	ug/l	252.10
U	238	209	1	No Gas	0.012	ug/l	845.86

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4643647.41	98.6
Sc	45	2	H2	1847335.47	97.1
Sc	45	3	He	266042.93	92.5
Y	89	1	No Gas	8873451.06	100.8
Y	89	2	H2	5434112.47	96.8
Y	89	3	He	1316375.08	93.7
In	115	1	No Gas	9133713.69	99.1
In	115	3	He	1753661.58	95.4
Tb	159	1	No Gas	13675746.83	104.0
Tb	159	3	He	4585727.50	98.2
Ho	165	1	No Gas	13531275.38	105.5
Ho	165	3	He	4534553.93	99.2
Lu	175	1	No Gas	13486910.29	107.4
Lu	175	3	He	3734201.62	100.2
Bi	209	1	No Gas	8770508.00	103.6
Bi	209	3	He	2948031.36	97.6

ICPMS207-B Analytical Data

Sample Name B22030244-007B
File Name 052SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 09:57:54
Sample Type Sample
Total Dilution 1.0000
Comment ICPMS-6020-W-T
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	1.636	ug/l	23951.75
Be	9	45	1	No Gas	-0.047	ug/l	95.65
B	11	45	1	No Gas	39.513	ug/l	73000.68
Na	23	45	3	He	36476.299	ug/l	28095142.64
Mg	24	45	3	He	17086.657	ug/l	7319345.66
Al	27	45	1	No Gas	32.254	ug/l	553321.82
Si	28	45	2	H2	22154.234	ug/l	30761432.86
K	39	89	3	He	3090.564	ug/l	1401911.32
Ca	40	89	2	H2	15719.709	ug/l	89239462.15
Ti	47	89	1	No Gas	3.649	ug/l	7414.34
V	51	89	1	No Gas	5.992	ug/l	137191.45
V	51	89	3	He	10.534	ug/l	43354.72
Cr	52	89	1	No Gas	2.138	ug/l	84480.18
Cr	52	89	3	He	0.981	ug/l	4439.58
Mn	55	89	1	No Gas	8.712	ug/l	274189.01
Mn	55	89	3	He	8.794	ug/l	25492.57
Fe	56	89	2	H2	23.425	ug/l	292946.38
Fe	56	89	3	He	24.374	ug/l	95973.32
Co	59	89	1	No Gas	0.090	ug/l	2605.08
Ni	60	89	1	No Gas	0.926	ug/l	5733.13
Ni	60	89	3	He	0.895	ug/l	1474.53
Cu	63	89	1	No Gas	0.937	ug/l	13870.81
Cu	63	89	3	He	0.563	ug/l	2590.72
Cu	65	89	1	No Gas	0.623	ug/l	4593.24
Zn	66	89	1	No Gas	0.798	ug/l	3527.71
Zn	66	89	3	He	0.741	ug/l	642.24
As	75	89	1	No Gas	0.892	ug/l	16612.48
As	75	89	3	He	0.292	ug/l	274.33
Se	78	89	2	H2	0.241	ug/l	96.45
Br	79	89	1	No Gas	10.414	ug/l	140518.21
Br	79	89	2	H2	8.277	ug/l	54420.86
Se	82	89	1	No Gas	1.734	ug/l	1257.64
Kr	84	89	1	No Gas		ug/l	70955.05
Sr	88	89	1	No Gas	176.818	ug/l	7167622.23
Sr	88	89	3	He	167.538	ug/l	736269.51
Mo	95	115	1	No Gas	0.442	ug/l	3721.61
Mo	95	115	3	He	0.471	ug/l	1220.06
Mo	98	115	1	No Gas	0.454	ug/l	6120.74
Ag	107	115	1	No Gas	0.009	ug/l	252.10
Ag	109	115	1	No Gas	0.008	ug/l	220.09
Cd	111	115	1	No Gas	-0.016	ug/l	2505.25

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.007	ug/l	9.22
Cd	114	115	1	No Gas	0.001	ug/l	13.27
Cd	114	115	3	He	0.003	ug/l	9.24
Sn	118	115	1	No Gas	0.344	ug/l	5716.52
Sn	118	115	3	He	0.361	ug/l	1394.53
Sb	121	115	1	No Gas	0.576	ug/l	10696.46
Sb	121	115	3	He	0.539	ug/l	2323.10
Sb	123	115	1	No Gas	0.577	ug/l	8238.57
Sb	123	115	3	He	0.534	ug/l	1812.64
Ba	135	115	1	No Gas	4.451	ug/l	18968.66
Ba	137	115	1	No Gas	4.385	ug/l	33086.99
La	139	115	3	He	0.011	ug/l	200.00
Ce	140	115	3	He	0.020	ug/l	443.34
Hg	201	209	1	No Gas	0.008	ug/l	39.32
Hg	202	209	1	No Gas	0.016	ug/l	148.64
Hg	202	209	3	He	0.014	ug/l	48.99
Tl	203	209	3	He	0.039	ug/l	298.12
Tl	205	209	1	No Gas	0.032	ug/l	1639.00
Tl	205	209	3	He	0.042	ug/l	761.00
[Pb]	206	209	1	No Gas	0.018	ug/l	403.34
[Pb]	207	209	1	No Gas	0.019	ug/l	357.79
Pb	208	209	1	No Gas	0.017	ug/l	1566.71
Th	232	209	3	He	0.125	ug/l	3048.25
U	238	209	1	No Gas	0.017	ug/l	1075.16

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4024438.20	85.5
Sc	45	2	H2	1627961.35	85.6
Sc	45	3	He	241616.61	84.1
Y	89	1	No Gas	8160095.33	92.7
Y	89	2	H2	5041408.21	89.8
Y	89	3	He	1236465.04	88.0
In	115	1	No Gas	8568176.91	93.0
In	115	3	He	1628067.80	88.6
Tb	159	1	No Gas	12910604.73	98.2
Tb	159	3	He	4320242.33	92.5
Ho	165	1	No Gas	12990827.77	101.3
Ho	165	3	He	4273950.26	93.5
Lu	175	1	No Gas	12840206.21	102.2
Lu	175	3	He	3521004.21	94.5
Bi	209	1	No Gas	8223857.33	97.2
Bi	209	3	He	2777740.85	92.0

ICPMS207-B Analytical Data

Sample Name B22030244-012A
File Name 053SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 10:04:10
Sample Type Sample
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	0.195	ug/l	12132.37
Be	9	45	1	No Gas	-0.058	ug/l	66.66
B	11	45	1	No Gas	45.383	ug/l	96040.15
Na	23	45	3	He	42529.697	ug/l	36367697.23
Mg	24	45	3	He	16105.658	ug/l	7660164.19
Al	27	45	1	No Gas	34.615	ug/l	683333.79
Si	28	45	2	H2	29902.053	ug/l	47232132.76
K	39	89	3	He	1456.619	ug/l	764443.07
Ca	40	89	2	H2	13931.482	ug/l	89920562.39
Ti	47	89	1	No Gas	5.268	ug/l	11972.18
V	51	89	1	No Gas	16.466	ug/l	445029.68
V	51	89	3	He	14.959	ug/l	65988.05
Cr	52	89	1	No Gas	0.744	ug/l	58316.12
Cr	52	89	3	He	1.382	ug/l	6777.16
Mn	55	89	1	No Gas	3.776	ug/l	136654.55
Mn	55	89	3	He	3.821	ug/l	12311.69
Fe	56	89	2	H2	126.182	ug/l	1764419.10
Fe	56	89	3	He	129.429	ug/l	544744.72
Co	59	89	1	No Gas	0.442	ug/l	13186.48
Ni	60	89	1	No Gas	0.813	ug/l	5709.86
Ni	60	89	3	He	0.833	ug/l	1520.12
Cu	63	89	1	No Gas	1.691	ug/l	27336.44
Cu	63	89	3	He	1.330	ug/l	6446.47
Cu	65	89	1	No Gas	1.334	ug/l	10543.38
Zn	66	89	1	No Gas	56.915	ug/l	243908.51
Zn	66	89	3	He	58.834	ug/l	50323.19
As	75	89	1	No Gas	0.064	ug/l	14714.43
As	75	89	3	He	0.157	ug/l	214.73
Se	78	89	2	H2	0.240	ug/l	109.22
Br	79	89	1	No Gas	22.121	ug/l	244043.26
Br	79	89	2	H2	22.835	ug/l	112505.63
Se	82	89	1	No Gas	0.376	ug/l	1003.85
Kr	84	89	1	No Gas		ug/l	61502.95
Sr	88	89	1	No Gas	131.022	ug/l	5972203.66
Sr	88	89	3	He	127.097	ug/l	617342.07
Mo	95	115	1	No Gas	0.224	ug/l	2124.62
Mo	95	115	3	He	0.224	ug/l	655.57
Mo	98	115	1	No Gas	0.208	ug/l	3162.30
Ag	107	115	1	No Gas	0.034	ug/l	882.48
Ag	109	115	1	No Gas	0.030	ug/l	733.65
Cd	111	115	1	No Gas	-0.076	ug/l	2485.44

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.018	ug/l	25.89
Cd	114	115	1	No Gas	0.012	ug/l	138.47
Cd	114	115	3	He	0.012	ug/l	42.85
Sn	118	115	1	No Gas	1.321	ug/l	20874.38
Sn	118	115	3	He	1.292	ug/l	4816.42
Sb	121	115	1	No Gas	1.028	ug/l	21045.43
Sb	121	115	3	He	1.025	ug/l	4851.33
Sb	123	115	1	No Gas	1.030	ug/l	16218.95
Sb	123	115	3	He	1.028	ug/l	3831.58
Ba	135	115	1	No Gas	3.393	ug/l	16070.75
Ba	137	115	1	No Gas	3.373	ug/l	28289.24
La	139	115	3	He	0.041	ug/l	847.81
Ce	140	115	3	He	0.098	ug/l	2207.97
Hg	201	209	1	No Gas	0.002	ug/l	24.99
Hg	202	209	1	No Gas	0.003	ug/l	72.99
Hg	202	209	3	He	0.007	ug/l	35.99
Tl	203	209	3	He	0.023	ug/l	201.42
Tl	205	209	1	No Gas	0.016	ug/l	1023.38
Tl	205	209	3	He	0.022	ug/l	448.86
[Pb]	206	209	1	No Gas	0.109	ug/l	2064.62
[Pb]	207	209	1	No Gas	0.106	ug/l	1766.80
Pb	208	209	1	No Gas	0.106	ug/l	8052.11
Th	232	209	3	He	0.004	ug/l	228.09
U	238	209	1	No Gas	0.013	ug/l	945.85

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4631596.93	98.4
Sc	45	2	H2	1852019.20	97.4
Sc	45	3	He	268265.25	93.3
Y	89	1	No Gas	9174758.29	104.2
Y	89	2	H2	5734693.76	102.2
Y	89	3	He	1366132.37	97.2
In	115	1	No Gas	9523057.60	103.3
In	115	3	He	1808131.50	98.4
Tb	159	1	No Gas	14309885.95	108.9
Tb	159	3	He	4736664.73	101.4
Ho	165	1	No Gas	14268502.90	111.3
Ho	165	3	He	4711600.91	103.1
Lu	175	1	No Gas	13900747.55	110.7
Lu	175	3	He	3836479.50	103.0
Bi	209	1	No Gas	9142648.34	108.0
Bi	209	3	He	3047933.37	100.9

ICPMS207-B Analytical Data

Sample Name B22030244-012B
File Name 054SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 10:10:24
Sample Type Sample
Total Dilution 1.0000
Comment ICPMS-6020-W-T
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	1.091	ug/l	18906.65
Be	9	45	1	No Gas	-0.055	ug/l	65.32
B	11	45	1	No Gas	47.264	ug/l	86897.13
Na	23	45	3	He	43019.448	ug/l	32808454.51
Mg	24	45	3	He	16240.190	ug/l	6888337.57
Al	27	45	1	No Gas	5.702	ug/l	100936.54
Si	28	45	2	H2	24143.387	ug/l	32644343.32
K	39	89	3	He	1437.061	ug/l	678490.88
Ca	40	89	2	H2	13345.469	ug/l	76138907.89
Ti	47	89	1	No Gas	2.247	ug/l	4718.86
V	51	89	1	No Gas	11.222	ug/l	271557.61
V	51	89	3	He	17.956	ug/l	70309.99
Cr	52	89	1	No Gas	2.190	ug/l	87408.33
Cr	52	89	3	He	1.030	ug/l	4616.31
Mn	55	89	1	No Gas	1.315	ug/l	46377.39
Mn	55	89	3	He	1.001	ug/l	2978.38
Fe	56	89	2	H2	8.246	ug/l	107698.47
Fe	56	89	3	He	8.750	ug/l	36712.57
Co	59	89	1	No Gas	0.257	ug/l	7067.74
Ni	60	89	1	No Gas	0.917	ug/l	5793.02
Ni	60	89	3	He	1.004	ug/l	1633.44
Cu	63	89	1	No Gas	1.974	ug/l	28795.80
Cu	63	89	3	He	1.598	ug/l	6918.26
Cu	65	89	1	No Gas	1.545	ug/l	11010.57
Zn	66	89	1	No Gas	14.547	ug/l	56950.77
Zn	66	89	3	He	15.288	ug/l	11803.71
As	75	89	1	No Gas	1.154	ug/l	17992.61
As	75	89	3	He	0.422	ug/l	348.40
Se	78	89	2	H2	0.237	ug/l	95.44
Br	79	89	1	No Gas	12.335	ug/l	156174.21
Br	79	89	2	H2	11.031	ug/l	63169.39
Se	82	89	1	No Gas	1.373	ug/l	1181.47
Kr	84	89	1	No Gas		ug/l	60537.25
Sr	88	89	1	No Gas	127.272	ug/l	5263811.00
Sr	88	89	3	He	125.308	ug/l	546958.24
Mo	95	115	1	No Gas	1.050	ug/l	8741.60
Mo	95	115	3	He	1.075	ug/l	2764.73
Mo	98	115	1	No Gas	1.064	ug/l	14178.25
Ag	107	115	1	No Gas	0.002	ug/l	120.72
Ag	109	115	1	No Gas	0.002	ug/l	86.70
Cd	111	115	1	No Gas	-0.017	ug/l	2492.23

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.013	ug/l	16.11
Cd	114	115	1	No Gas	0.006	ug/l	63.60
Cd	114	115	3	He	0.006	ug/l	21.05
Sn	118	115	1	No Gas	1.012	ug/l	14608.69
Sn	118	115	3	He	0.978	ug/l	3348.19
Sb	121	115	1	No Gas	0.861	ug/l	15844.81
Sb	121	115	3	He	0.864	ug/l	3697.19
Sb	123	115	1	No Gas	0.861	ug/l	12184.16
Sb	123	115	3	He	0.841	ug/l	2833.24
Ba	135	115	1	No Gas	2.807	ug/l	11931.48
Ba	137	115	1	No Gas	2.768	ug/l	20837.61
La	139	115	3	He	0.002	ug/l	46.67
Ce	140	115	3	He	0.004	ug/l	118.89
Hg	201	209	1	No Gas	0.010	ug/l	44.66
Hg	202	209	1	No Gas	0.013	ug/l	133.97
Hg	202	209	3	He	0.012	ug/l	44.66
Tl	203	209	3	He	0.021	ug/l	167.40
Tl	205	209	1	No Gas	0.015	ug/l	880.04
Tl	205	209	3	He	0.022	ug/l	417.51
[Pb]	206	209	1	No Gas	0.030	ug/l	593.35
[Pb]	207	209	1	No Gas	0.030	ug/l	521.12
Pb	208	209	1	No Gas	0.029	ug/l	2338.98
Th	232	209	3	He	0.063	ug/l	1598.08
U	238	209	1	No Gas	0.012	ug/l	795.87

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4030364.45	85.6
Sc	45	2	H2	1585734.68	83.4
Sc	45	3	He	239258.64	83.2
Y	89	1	No Gas	8325658.59	94.6
Y	89	2	H2	5068938.50	90.3
Y	89	3	He	1227679.95	87.4
In	115	1	No Gas	8539044.80	92.7
In	115	3	He	1630270.86	88.7
Tb	159	1	No Gas	13047614.86	99.2
Tb	159	3	He	4349430.42	93.2
Ho	165	1	No Gas	12809207.82	99.9
Ho	165	3	He	4335929.74	94.8
Lu	175	1	No Gas	12669758.27	100.9
Lu	175	3	He	3569022.31	95.8
Bi	209	1	No Gas	8264769.62	97.7
Bi	209	3	He	2773726.85	91.9

ICPMS207-B Analytical Data

Sample Name B22030244-017A
File Name 055SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 10:16:41
Sample Type Sample
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	1.255	ug/l	23079.42
Be	9	45	1	No Gas	-0.060	ug/l	53.99
B	11	45	1	No Gas	93.660	ug/l	191171.51
Na	23	45	3	He	79214.551	ug/l	67012525.67
Mg	24	45	3	He	25679.163	ug/l	12087042.58
Al	27	45	1	No Gas	5.242	ug/l	105128.53
Si	28	45	2	H2	28613.637	ug/l	43748502.06
K	39	89	3	He	2834.133	ug/l	1376241.56
Ca	40	89	2	H2	23417.446	ug/l	144388581.83
Ti	47	89	1	No Gas	2.125	ug/l	4750.55
V	51	89	1	No Gas	34.963	ug/l	923101.35
V	51	89	3	He	36.508	ug/l	148607.44
Cr	52	89	1	No Gas	0.889	ug/l	59849.19
Cr	52	89	3	He	1.415	ug/l	6691.57
Mn	55	89	1	No Gas	0.817	ug/l	32544.76
Mn	55	89	3	He	0.858	ug/l	2756.38
Fe	56	89	2	H2	5.648	ug/l	81817.68
Fe	56	89	3	He	4.180	ug/l	21002.86
Co	59	89	1	No Gas	0.055	ug/l	1836.48
Ni	60	89	1	No Gas	0.702	ug/l	4797.97
Ni	60	89	3	He	0.610	ug/l	1096.72
Cu	63	89	1	No Gas	1.260	ug/l	19863.43
Cu	63	89	3	He	0.575	ug/l	2817.38
Cu	65	89	1	No Gas	0.660	ug/l	5242.39
Zn	66	89	1	No Gas	7.020	ug/l	29441.96
Zn	66	89	3	He	6.740	ug/l	5628.89
As	75	89	1	No Gas	5.834	ug/l	40467.22
As	75	89	3	He	6.406	ug/l	4151.18
Se	78	89	2	H2	0.827	ug/l	335.34
Br	79	89	1	No Gas	36.233	ug/l	335013.99
Br	79	89	2	H2	35.710	ug/l	150284.84
Se	82	89	1	No Gas	1.182	ug/l	1200.14
Kr	84	89	1	No Gas		ug/l	54434.42
Sr	88	89	1	No Gas	112.397	ug/l	4934474.05
Sr	88	89	3	He	110.338	ug/l	517163.74
Mo	95	115	1	No Gas	8.762	ug/l	78079.58
Mo	95	115	3	He	9.059	ug/l	24711.36
Mo	98	115	1	No Gas	8.884	ug/l	126640.57
Ag	107	115	1	No Gas	0.012	ug/l	350.15
Ag	109	115	1	No Gas	0.011	ug/l	292.12
Cd	111	115	1	No Gas	-0.079	ug/l	2380.92

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.007	ug/l	9.78
Cd	114	115	1	No Gas	0.005	ug/l	49.97
Cd	114	115	3	He	0.005	ug/l	18.68
Sn	118	115	1	No Gas	0.072	ug/l	2215.79
Sn	118	115	3	He	0.078	ug/l	534.46
Sb	121	115	1	No Gas	0.503	ug/l	10047.59
Sb	121	115	3	He	0.504	ug/l	2323.09
Sb	123	115	1	No Gas	0.506	ug/l	7759.59
Sb	123	115	3	He	0.515	ug/l	1868.65
Ba	135	115	1	No Gas	3.359	ug/l	15358.07
Ba	137	115	1	No Gas	3.335	ug/l	26989.27
La	139	115	3	He	0.005	ug/l	101.11
Ce	140	115	3	He	0.013	ug/l	316.67
Hg	201	209	1	No Gas	0.146	ug/l	476.25
Hg	202	209	1	No Gas	2.344	ug/l	16613.00
Hg	202	209	3	He	2.054	ug/l	5238.65
Tl	203	209	3	He	0.034	ug/l	278.12
Tl	205	209	1	No Gas	0.011	ug/l	706.69
Tl	205	209	3	He	0.014	ug/l	295.46
[Pb]	206	209	1	No Gas	0.023	ug/l	525.57
[Pb]	207	209	1	No Gas	0.023	ug/l	452.23
Pb	208	209	1	No Gas	0.023	ug/l	2064.52
Th	232	209	3	He	0.001	ug/l	133.39
U	238	209	1	No Gas	0.385	ug/l	26775.25

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4551119.80	96.7
Sc	45	2	H2	1793598.82	94.3
Sc	45	3	He	265504.14	92.4
Y	89	1	No Gas	8837030.37	100.4
Y	89	2	H2	5479132.12	97.6
Y	89	3	He	1318019.25	93.8
In	115	1	No Gas	9184553.31	99.7
In	115	3	He	1740767.24	94.7
Tb	159	1	No Gas	13789181.61	104.9
Tb	159	3	He	4548683.99	97.4
Ho	165	1	No Gas	13731662.64	107.1
Ho	165	3	He	4511669.64	98.7
Lu	175	1	No Gas	13552080.15	107.9
Lu	175	3	He	3740384.86	100.4
Bi	209	1	No Gas	8818524.13	104.2
Bi	209	3	He	2933229.65	97.1

ICPMS207-B Analytical Data

Sample Name B22030244-017B
File Name 056SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 10:22:56
Sample Type Sample
Total Dilution 1.0000
Comment ICPMS-6020-W-T
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	1.879	ug/l	26102.82
Be	9	45	1	No Gas	-0.046	ug/l	97.31
B	11	45	1	No Gas	94.785	ug/l	170301.63
Na	23	45	3	He	78497.575	ug/l	58935089.68
Mg	24	45	3	He	25613.720	ug/l	10700299.68
Al	27	45	1	No Gas	433.033	ug/l	7352896.00
Si	28	45	2	H2	24824.618	ug/l	33397237.13
K	39	89	3	He	2742.626	ug/l	1217248.19
Ca	40	89	2	H2	23092.556	ug/l	128563067.70
Ti	47	89	1	No Gas	34.890	ug/l	69007.56
V	51	89	1	No Gas	33.063	ug/l	799192.09
V	51	89	3	He	41.621	ug/l	154035.40
Cr	52	89	1	No Gas	5.912	ug/l	171526.30
Cr	52	89	3	He	4.807	ug/l	20063.73
Mn	55	89	1	No Gas	14.907	ug/l	462166.64
Mn	55	89	3	He	15.385	ug/l	43335.47
Fe	56	89	2	H2	487.056	ug/l	5857261.38
Fe	56	89	3	He	499.478	ug/l	1840328.10
Co	59	89	1	No Gas	0.372	ug/l	9847.18
Ni	60	89	1	No Gas	2.162	ug/l	12843.50
Ni	60	89	3	He	2.310	ug/l	3588.24
Cu	63	89	1	No Gas	3.388	ug/l	47451.16
Cu	63	89	3	He	2.861	ug/l	11975.83
Cu	65	89	1	No Gas	2.740	ug/l	18693.44
Zn	66	89	1	No Gas	37.216	ug/l	140928.16
Zn	66	89	3	He	40.214	ug/l	30312.62
As	75	89	1	No Gas	6.354	ug/l	39246.27
As	75	89	3	He	6.354	ug/l	3758.81
Se	78	89	2	H2	0.726	ug/l	267.00
Br	79	89	1	No Gas	13.373	ug/l	158566.64
Br	79	89	2	H2	12.232	ug/l	65251.03
Se	82	89	1	No Gas	1.437	ug/l	1168.27
Kr	84	89	1	No Gas		ug/l	53526.14
Sr	88	89	1	No Gas	114.649	ug/l	4612772.28
Sr	88	89	3	He	113.146	ug/l	484087.37
Mo	95	115	1	No Gas	9.271	ug/l	75424.61
Mo	95	115	3	He	9.666	ug/l	24121.52
Mo	98	115	1	No Gas	9.418	ug/l	122574.70
Ag	107	115	1	No Gas	0.273	ug/l	5740.14
Ag	109	115	1	No Gas	0.273	ug/l	5492.61
Cd	111	115	1	No Gas	-0.004	ug/l	2506.32

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.015	ug/l	18.78
Cd	114	115	1	No Gas	0.006	ug/l	55.09
Cd	114	115	3	He	0.010	ug/l	30.89
Sn	118	115	1	No Gas	1.008	ug/l	14282.35
Sn	118	115	3	He	1.068	ug/l	3551.59
Sb	121	115	1	No Gas	0.656	ug/l	11902.21
Sb	121	115	3	He	0.661	ug/l	2772.89
Sb	123	115	1	No Gas	0.661	ug/l	9212.94
Sb	123	115	3	He	0.661	ug/l	2184.06
Ba	135	115	1	No Gas	4.617	ug/l	19258.53
Ba	137	115	1	No Gas	4.653	ug/l	34364.25
La	139	115	3	He	0.191	ug/l	3432.66
Ce	140	115	3	He	0.500	ug/l	9744.59
Hg	201	209	1	No Gas	0.235	ug/l	686.22
Hg	202	209	1	No Gas	3.449	ug/l	22197.64
Hg	202	209	3	He	2.769	ug/l	6516.96
Tl	203	209	3	He	0.039	ug/l	290.79
Tl	205	209	1	No Gas	0.014	ug/l	767.81
Tl	205	209	3	He	0.019	ug/l	348.14
[Pb]	206	209	1	No Gas	0.431	ug/l	6846.24
[Pb]	207	209	1	No Gas	0.407	ug/l	5666.80
Pb	208	209	1	No Gas	0.415	ug/l	26289.11
Th	232	209	3	He	0.084	ug/l	2028.98
U	238	209	1	No Gas	0.418	ug/l	26448.01

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4005436.39	85.1
Sc	45	2	H2	1578477.33	83.0
Sc	45	3	He	235647.18	82.0
Y	89	1	No Gas	8097585.32	92.0
Y	89	2	H2	4945508.93	88.1
Y	89	3	He	1203024.11	85.6
In	115	1	No Gas	8386895.26	91.0
In	115	3	He	1592545.19	86.6
Tb	159	1	No Gas	12592556.49	95.8
Tb	159	3	He	4254379.86	91.1
Ho	165	1	No Gas	12519796.86	97.6
Ho	165	3	He	4266594.20	93.3
Lu	175	1	No Gas	12601299.50	100.3
Lu	175	3	He	3479918.83	93.4
Bi	209	1	No Gas	8015355.82	94.7
Bi	209	3	He	2708235.67	89.7

ICPMS207-B Analytical Data

Sample Name B22030244-022A
File Name 057SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 10:29:12
Sample Type Sample
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	-0.092	ug/l	8857.47
Be	9	45	1	No Gas	-0.056	ug/l	71.32
B	11	45	1	No Gas	43.570	ug/l	90370.42
Na	23	45	3	He	199662.830	ug/l	165559860.87
Mg	24	45	3	He	66058.488	ug/l	30484723.21
Al	27	45	1	No Gas	1.409	ug/l	31092.73
Si	28	45	2	H2	30512.907	ug/l	45885696.56
K	39	89	3	He	2570.898	ug/l	1231669.94
Ca	40	89	2	H2	37120.623	ug/l	225353595.66
Ti	47	89	1	No Gas	2.150	ug/l	4733.88
V	51	89	1	No Gas	18.329	ug/l	471442.71
V	51	89	3	He	16.655	ug/l	69094.56
Cr	52	89	1	No Gas	0.868	ug/l	58422.85
Cr	52	89	3	He	1.356	ug/l	6311.39
Mn	55	89	1	No Gas	0.132	ug/l	9474.31
Mn	55	89	3	He	0.177	ug/l	648.55
Fe	56	89	2	H2	1.822	ug/l	30463.31
Fe	56	89	3	He	1.812	ug/l	11257.33
Co	59	89	1	No Gas	0.060	ug/l	1942.95
Ni	60	89	1	No Gas	0.749	ug/l	5017.61
Ni	60	89	3	He	0.546	ug/l	971.15
Cu	63	89	1	No Gas	1.962	ug/l	29937.96
Cu	63	89	3	He	0.230	ug/l	1236.14
Cu	65	89	1	No Gas	0.427	ug/l	3491.83
Zn	66	89	1	No Gas	5.050	ug/l	21012.31
Zn	66	89	3	He	4.915	ug/l	4050.59
As	75	89	1	No Gas	0.122	ug/l	14229.71
As	75	89	3	He	0.119	ug/l	179.60
Se	78	89	2	H2	0.249	ug/l	106.22
Br	79	89	1	No Gas	119.557	ug/l	911469.44
Br	79	89	2	H2	113.702	ug/l	403111.40
Se	82	89	1	No Gas	2.072	ug/l	1437.63
Kr	84	89	1	No Gas		ug/l	120686.04
Sr	88	89	1	No Gas	383.192	ug/l	16572935.81
Sr	88	89	3	He	382.696	ug/l	1760908.74
Mo	95	115	1	No Gas	0.089	ug/l	827.81
Mo	95	115	3	He	0.099	ug/l	282.23
Mo	98	115	1	No Gas	0.086	ug/l	1285.70
Ag	107	115	1	No Gas	0.004	ug/l	166.73
Ag	109	115	1	No Gas	0.003	ug/l	125.38
Cd	111	115	1	No Gas	-0.094	ug/l	2265.03

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.008	ug/l	10.67
Cd	114	115	1	No Gas	0.007	ug/l	76.24
Cd	114	115	3	He	0.008	ug/l	26.92
Sn	118	115	1	No Gas	-0.031	ug/l	735.23
Sn	118	115	3	He	-0.025	ug/l	180.00
Sb	121	115	1	No Gas	0.037	ug/l	905.12
Sb	121	115	3	He	0.035	ug/l	205.02
Sb	123	115	1	No Gas	0.039	ug/l	727.43
Sb	123	115	3	He	0.029	ug/l	143.02
Ba	135	115	1	No Gas	17.024	ug/l	76386.98
Ba	137	115	1	No Gas	16.683	ug/l	132424.18
La	139	115	3	He	0.002	ug/l	37.78
Ce	140	115	3	He	0.000	ug/l	43.33
Hg	201	209	1	No Gas	0.002	ug/l	22.66
Hg	202	209	1	No Gas	0.015	ug/l	146.97
Hg	202	209	3	He	0.009	ug/l	35.66
Tl	203	209	3	He	0.008	ug/l	78.03
Tl	205	209	1	No Gas	0.006	ug/l	448.90
Tl	205	209	3	He	0.007	ug/l	159.40
[Pb]	206	209	1	No Gas	0.010	ug/l	283.34
[Pb]	207	209	1	No Gas	0.010	ug/l	246.67
Pb	208	209	1	No Gas	0.009	ug/l	1065.58
Th	232	209	3	He	0.000	ug/l	101.37
U	238	209	1	No Gas	0.021	ug/l	1399.47

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4533040.60	96.3
Sc	45	2	H2	1764510.26	92.8
Sc	45	3	He	260329.76	90.6
Y	89	1	No Gas	8705658.27	98.9
Y	89	2	H2	5394944.13	96.1
Y	89	3	He	1294361.63	92.1
In	115	1	No Gas	9023384.28	97.9
In	115	3	He	1688859.76	91.9
Tb	159	1	No Gas	13562576.68	103.2
Tb	159	3	He	4475241.96	95.8
Ho	165	1	No Gas	13431578.50	104.8
Ho	165	3	He	4440481.42	97.1
Lu	175	1	No Gas	13364771.38	106.4
Lu	175	3	He	3659498.59	98.2
Bi	209	1	No Gas	8411768.04	99.4
Bi	209	3	He	2770624.36	91.8

ICPMS207-B Analytical Data

Sample Name B22030244-022B
File Name 058SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 10:35:28
Sample Type Sample
Total Dilution 1.0000
Comment ICPMS-6020-W-T
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	0.559	ug/l	13837.84
Be	9	45	1	No Gas	-0.050	ug/l	84.65
B	11	45	1	No Gas	46.611	ug/l	85022.99
Na	23	45	3	He	200511.066	ug/l	148447733.34
Mg	24	45	3	He	66344.482	ug/l	27336645.54
Al	27	45	1	No Gas	8.974	ug/l	155517.39
Si	28	45	2	H2	27541.105	ug/l	36425878.51
K	39	89	3	He	2554.522	ug/l	1104435.97
Ca	40	89	2	H2	36973.942	ug/l	201563005.90
Ti	47	89	1	No Gas	3.160	ug/l	6172.53
V	51	89	1	No Gas	13.845	ug/l	317516.10
V	51	89	3	He	19.954	ug/l	73857.20
Cr	52	89	1	No Gas	3.602	ug/l	113798.13
Cr	52	89	3	He	2.207	ug/l	9089.51
Mn	55	89	1	No Gas	1.001	ug/l	34275.38
Mn	55	89	3	He	0.669	ug/l	1926.08
Fe	56	89	2	H2	32.883	ug/l	392754.23
Fe	56	89	3	He	34.724	ug/l	127630.88
Co	59	89	1	No Gas	0.112	ug/l	3047.61
Ni	60	89	1	No Gas	1.455	ug/l	8452.36
Ni	60	89	3	He	1.090	ug/l	1680.11
Cu	63	89	1	No Gas	2.669	ug/l	36254.08
Cu	63	89	3	He	0.846	ug/l	3576.73
Cu	65	89	1	No Gas	1.025	ug/l	6988.49
Zn	66	89	1	No Gas	10.875	ug/l	40098.35
Zn	66	89	3	He	10.995	ug/l	8094.51
As	75	89	1	No Gas	0.749	ug/l	15351.25
As	75	89	3	He	0.428	ug/l	334.93
Se	78	89	2	H2	0.263	ug/l	100.44
Br	79	89	1	No Gas	27.725	ug/l	243227.72
Br	79	89	2	H2	24.630	ug/l	100314.04
Se	82	89	1	No Gas	0.819	ug/l	968.91
Kr	84	89	1	No Gas		ug/l	114769.98
Sr	88	89	1	No Gas	388.402	ug/l	15085498.45
Sr	88	89	3	He	393.321	ug/l	1632740.60
Mo	95	115	1	No Gas	0.173	ug/l	1404.52
Mo	95	115	3	He	0.166	ug/l	420.01
Mo	98	115	1	No Gas	0.166	ug/l	2156.51
Ag	107	115	1	No Gas	0.011	ug/l	276.12
Ag	109	115	1	No Gas	0.010	ug/l	230.76
Cd	111	115	1	No Gas	0.008	ug/l	2467.49

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.010	ug/l	11.67
Cd	114	115	1	No Gas	0.004	ug/l	36.90
Cd	114	115	3	He	0.009	ug/l	27.84
Sn	118	115	1	No Gas	0.350	ug/l	5466.90
Sn	118	115	3	He	0.338	ug/l	1248.95
Sb	121	115	1	No Gas	0.087	ug/l	1679.60
Sb	121	115	3	He	0.088	ug/l	396.71
Sb	123	115	1	No Gas	0.091	ug/l	1333.20
Sb	123	115	3	He	0.088	ug/l	315.04
Ba	135	115	1	No Gas	17.574	ug/l	70635.25
Ba	137	115	1	No Gas	17.331	ug/l	123210.61
La	139	115	3	He	0.007	ug/l	122.22
Ce	140	115	3	He	0.013	ug/l	288.89
Hg	201	209	1	No Gas	0.008	ug/l	36.32
Hg	202	209	1	No Gas	0.021	ug/l	168.97
Hg	202	209	3	He	0.015	ug/l	47.32
Tl	203	209	3	He	0.012	ug/l	96.70
Tl	205	209	1	No Gas	0.007	ug/l	443.34
Tl	205	209	3	He	0.011	ug/l	202.75
[Pb]	206	209	1	No Gas	0.078	ug/l	1286.74
[Pb]	207	209	1	No Gas	0.073	ug/l	1047.83
Pb	208	209	1	No Gas	0.075	ug/l	4944.84
Th	232	209	3	He	0.028	ug/l	703.64
U	238	209	1	No Gas	0.021	ug/l	1279.81

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3997224.77	84.9
Sc	45	2	H2	1552027.23	81.6
Sc	45	3	He	232446.74	80.9
Y	89	1	No Gas	7820041.33	88.8
Y	89	2	H2	4843725.38	86.3
Y	89	3	He	1167707.69	83.1
In	115	1	No Gas	8083200.95	87.7
In	115	3	He	1541083.64	83.8
Tb	159	1	No Gas	12419956.19	94.5
Tb	159	3	He	4180375.54	89.5
Ho	165	1	No Gas	12192976.92	95.1
Ho	165	3	He	4141166.44	90.6
Lu	175	1	No Gas	12068309.66	96.1
Lu	175	3	He	3377802.40	90.7
Bi	209	1	No Gas	7710277.01	91.1
Bi	209	3	He	2556823.95	84.7

ICPMS207-B Analytical Data

Sample Name B22030244-027A
File Name 059SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 10:41:44
Sample Type Sample
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	0.033	ug/l	10511.18
Be	9	45	1	No Gas	-0.059	ug/l	62.66
B	11	45	1	No Gas	35.773	ug/l	77330.96
Na	23	45	3	He	37045.921	ug/l	31593063.14
Mg	24	45	3	He	18435.669	ug/l	8743364.02
Al	27	45	1	No Gas	19.893	ug/l	399226.93
Si	28	45	2	H2	23885.955	ug/l	37769328.53
K	39	89	3	He	2060.820	ug/l	1033369.23
Ca	40	89	2	H2	16147.304	ug/l	100020237.55
Ti	47	89	1	No Gas	2.608	ug/l	5838.74
V	51	89	1	No Gas	17.291	ug/l	454789.18
V	51	89	3	He	17.620	ug/l	75303.50
Cr	52	89	1	No Gas	1.961	ug/l	87752.67
Cr	52	89	3	He	2.533	ug/l	11910.41
Mn	55	89	1	No Gas	24.346	ug/l	827329.23
Mn	55	89	3	He	24.864	ug/l	77841.49
Fe	56	89	2	H2	36.095	ug/l	489096.03
Fe	56	89	3	He	36.940	ug/l	155333.97
Co	59	89	1	No Gas	0.116	ug/l	3586.69
Ni	60	89	1	No Gas	0.821	ug/l	5596.67
Ni	60	89	3	He	0.745	ug/l	1341.18
Cu	63	89	1	No Gas	1.114	ug/l	17826.68
Cu	63	89	3	He	0.790	ug/l	3842.07
Cu	65	89	1	No Gas	0.835	ug/l	6573.47
Zn	66	89	1	No Gas	4.920	ug/l	20966.75
Zn	66	89	3	He	5.090	ug/l	4335.11
As	75	89	1	No Gas	0.016	ug/l	14091.87
As	75	89	3	He	-0.034	ug/l	87.73
Se	78	89	2	H2	0.207	ug/l	92.00
Br	79	89	1	No Gas	18.629	ug/l	212065.52
Br	79	89	2	H2	18.407	ug/l	93187.63
Se	82	89	1	No Gas	0.555	ug/l	1028.77
Kr	84	89	1	No Gas		ug/l	50758.60
Sr	88	89	1	No Gas	104.164	ug/l	4612080.33
Sr	88	89	3	He	101.136	ug/l	481355.37
Mo	95	115	1	No Gas	0.097	ug/l	924.48
Mo	95	115	3	He	0.105	ug/l	311.11
Mo	98	115	1	No Gas	0.093	ug/l	1430.08
Ag	107	115	1	No Gas	0.012	ug/l	342.81
Ag	109	115	1	No Gas	0.010	ug/l	282.79
Cd	111	115	1	No Gas	-0.107	ug/l	2276.46

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.008	ug/l	11.00
Cd	114	115	1	No Gas	0.001	ug/l	15.29
Cd	114	115	3	He	0.007	ug/l	25.39
Sn	118	115	1	No Gas	-0.007	ug/l	1097.87
Sn	118	115	3	He	-0.011	ug/l	236.67
Sb	121	115	1	No Gas	0.120	ug/l	2577.16
Sb	121	115	3	He	0.113	ug/l	568.41
Sb	123	115	1	No Gas	0.122	ug/l	2022.35
Sb	123	115	3	He	0.112	ug/l	446.72
Ba	135	115	1	No Gas	4.580	ug/l	21217.49
Ba	137	115	1	No Gas	4.470	ug/l	36665.43
La	139	115	3	He	0.034	ug/l	671.13
Ce	140	115	3	He	0.084	ug/l	1843.47
Hg	201	209	1	No Gas	0.001	ug/l	21.33
Hg	202	209	1	No Gas	0.002	ug/l	62.99
Hg	202	209	3	He	0.004	ug/l	27.33
Tl	203	209	3	He	0.008	ug/l	82.70
Tl	205	209	1	No Gas	0.005	ug/l	412.23
Tl	205	209	3	He	0.009	ug/l	196.75
[Pb]	206	209	1	No Gas	0.129	ug/l	2325.77
[Pb]	207	209	1	No Gas	0.127	ug/l	2007.94
Pb	208	209	1	No Gas	0.130	ug/l	9320.24
Th	232	209	3	He	0.000	ug/l	103.38
U	238	209	1	No Gas	0.011	ug/l	776.20

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4686715.23	99.5
Sc	45	2	H2	1855022.57	97.5
Sc	45	3	He	267514.53	93.1
Y	89	1	No Gas	8911887.83	101.2
Y	89	2	H2	5501305.80	98.0
Y	89	3	He	1338275.96	95.3
In	115	1	No Gas	9311573.56	101.1
In	115	3	He	1762736.53	95.9
Tb	159	1	No Gas	13854511.63	105.4
Tb	159	3	He	4591529.70	98.3
Ho	165	1	No Gas	13748524.60	107.2
Ho	165	3	He	4515504.51	98.8
Lu	175	1	No Gas	13718960.98	109.2
Lu	175	3	He	3741833.42	100.4
Bi	209	1	No Gas	8778205.88	103.7
Bi	209	3	He	2945915.29	97.6

ICPMS207-B Analytical Data

Sample Name CCV
File Name 060_CCV.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 10:47:59
Sample Type CCV
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	502.407	ug/l	4742274.51
Be	9	45	1	No Gas	43.224	ug/l	156356.12
B	11	45	1	No Gas	46.663	ug/l	86693.77
Na	23	45	3	He	12775.708	ug/l	10323974.29
Mg	24	45	3	He	12676.706	ug/l	5684489.60
Al	27	45	1	No Gas	48.811	ug/l	845314.11
Si	28	45	2	H2	326.615	ug/l	475190.85
K	39	89	3	He	12181.287	ug/l	5537350.20
Ca	40	89	2	H2	11862.498	ug/l	70272033.72
Ti	47	89	1	No Gas	47.124	ug/l	94325.19
V	51	89	1	No Gas	44.843	ug/l	1101399.97
V	51	89	3	He	51.638	ug/l	201976.11
Cr	52	89	1	No Gas	49.688	ug/l	1203638.23
Cr	52	89	3	He	49.079	ug/l	214841.44
Mn	55	89	1	No Gas	49.663	ug/l	1547978.11
Mn	55	89	3	He	49.984	ug/l	149355.33
Fe	56	89	2	H2	1275.339	ug/l	16306486.54
Fe	56	89	3	He	1289.812	ug/l	5043459.84
Co	59	89	1	No Gas	50.265	ug/l	1312167.01
Ni	60	89	1	No Gas	48.899	ug/l	286968.49
Ni	60	89	3	He	51.505	ug/l	83421.83
Cu	63	89	1	No Gas	51.477	ug/l	717443.20
Cu	63	89	3	He	51.544	ug/l	225597.62
Cu	65	89	1	No Gas	50.641	ug/l	342965.52
Zn	66	89	1	No Gas	53.648	ug/l	205543.89
Zn	66	89	3	He	52.143	ug/l	41746.13
As	75	89	1	No Gas	50.152	ug/l	224846.10
As	75	89	3	He	50.821	ug/l	31212.14
Se	78	89	2	H2	52.436	ug/l	19820.93
Br	79	89	1	No Gas	-0.073	ug/l	72146.41
Br	79	89	2	H2	-0.377	ug/l	29181.66
Se	82	89	1	No Gas	52.140	ug/l	14811.52
Kr	84	89	1	No Gas		ug/l	34856.25
Sr	88	89	1	No Gas	51.318	ug/l	2091353.28
Sr	88	89	3	He	49.146	ug/l	223521.82
Mo	95	115	1	No Gas	47.302	ug/l	405657.93
Mo	95	115	3	He	50.077	ug/l	129636.51
Mo	98	115	1	No Gas	48.361	ug/l	663483.73
Ag	107	115	1	No Gas	19.530	ug/l	428451.57
Ag	109	115	1	No Gas	19.546	ug/l	411399.58
Cd	111	115	1	No Gas	48.776	ug/l	230931.12

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	51.780	ug/l	65636.30
Cd	114	115	1	No Gas	50.055	ug/l	515763.83
Cd	114	115	3	He	52.436	ug/l	159517.14
Sn	118	115	1	No Gas	49.633	ug/l	686822.86
Sn	118	115	3	He	50.200	ug/l	161458.56
Sb	121	115	1	No Gas	51.116	ug/l	962762.15
Sb	121	115	3	He	51.251	ug/l	219397.00
Sb	123	115	1	No Gas	50.927	ug/l	737605.02
Sb	123	115	3	He	51.857	ug/l	174704.18
Ba	135	115	1	No Gas	49.610	ug/l	218102.82
Ba	137	115	1	No Gas	48.601	ug/l	377921.30
La	139	115	3	He	51.323	ug/l	955767.53
Ce	140	115	3	He	51.172	ug/l	1030839.45
Hg	201	209	1	No Gas	1.020	ug/l	3039.07
Hg	202	209	1	No Gas	1.010	ug/l	6795.71
Hg	202	209	3	He	0.989	ug/l	2460.07
Tl	203	209	3	He	48.035	ug/l	354267.11
Tl	205	209	1	No Gas	48.665	ug/l	2320181.88
Tl	205	209	3	He	48.722	ug/l	850115.47
[Pb]	206	209	1	No Gas	49.533	ug/l	804863.11
[Pb]	207	209	1	No Gas	49.444	ug/l	703738.30
Pb	208	209	1	No Gas	49.639	ug/l	3219116.67
Th	232	209	3	He	48.283	ug/l	1170411.16
U	238	209	1	No Gas	48.647	ug/l	3197465.94

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4069829.61	86.4
Sc	45	2	H2	1667440.67	87.7
Sc	45	3	He	252976.60	88.0
Y	89	1	No Gas	8200982.67	93.2
Y	89	2	H2	5261889.21	93.7
Y	89	3	He	1278228.69	91.0
In	115	1	No Gas	8841978.98	96.0
In	115	3	He	1653178.26	89.9
Tb	159	1	No Gas	12926294.38	98.3
Tb	159	3	He	4329988.85	92.7
Ho	165	1	No Gas	12856790.19	100.3
Ho	165	3	He	4317972.87	94.5
Lu	175	1	No Gas	12682616.54	101.0
Lu	175	3	He	3546991.68	95.2
Bi	209	1	No Gas	8337341.16	98.5
Bi	209	3	He	2852301.91	94.5

ICPMS207-B Analytical Data

Sample Name CCB
File Name 061_CCB.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 10:54:14
Sample Type CCB
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	0.741	ug/l	15652.31
Be	9	45	1	No Gas	-0.050	ug/l	84.98
B	11	45	1	No Gas	1.099	ug/l	4885.43
Na	23	45	3	He	69.758	ug/l	87902.81
Mg	24	45	3	He	2.797	ug/l	1683.43
Al	27	45	1	No Gas	-0.040	ug/l	2915.86
Si	28	45	2	H2	67.934	ug/l	108024.65
K	39	89	3	He	2.152	ug/l	60028.36
Ca	40	89	2	H2	0.129	ug/l	52377.81
Ti	47	89	1	No Gas	0.054	ug/l	273.61
V	51	89	1	No Gas	-1.378	ug/l	-45812.49
V	51	89	3	He	2.771	ug/l	14818.63
Cr	52	89	1	No Gas	0.700	ug/l	51985.18
Cr	52	89	3	He	0.023	ug/l	393.34
Mn	55	89	1	No Gas	0.053	ug/l	6605.07
Mn	55	89	3	He	-0.005	ug/l	94.65
Fe	56	89	2	H2	-0.044	ug/l	5758.61
Fe	56	89	3	He	0.193	ug/l	4683.81
Co	59	89	1	No Gas	0.000	ug/l	269.47
Ni	60	89	1	No Gas	-0.003	ug/l	322.70
Ni	60	89	3	He	-0.027	ug/l	32.22
Cu	63	89	1	No Gas	0.085	ug/l	2106.33
Cu	63	89	3	He	0.081	ug/l	556.24
Cu	65	89	1	No Gas	0.075	ug/l	924.40
Zn	66	89	1	No Gas	-0.060	ug/l	271.27
Zn	66	89	3	He	-0.038	ug/l	41.11
As	75	89	1	No Gas	-0.066	ug/l	12831.87
As	75	89	3	He	0.090	ug/l	156.40
Se	78	89	2	H2	0.017	ug/l	15.89
Br	79	89	1	No Gas	0.568	ug/l	77814.43
Br	79	89	2	H2	-0.340	ug/l	28774.80
Se	82	89	1	No Gas	0.225	ug/l	871.30
Kr	84	89	1	No Gas		ug/l	23032.78
Sr	88	89	1	No Gas	0.001	ug/l	425.83
Sr	88	89	3	He	-0.006	ug/l	186.67
Mo	95	115	1	No Gas	0.027	ug/l	273.34
Mo	95	115	3	He	0.016	ug/l	63.33
Mo	98	115	1	No Gas	0.022	ug/l	380.36
Ag	107	115	1	No Gas	0.001	ug/l	84.03
Ag	109	115	1	No Gas	0.000	ug/l	54.02
Cd	111	115	1	No Gas	-0.055	ug/l	2376.57

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.005	ug/l	6.33
Cd	114	115	1	No Gas	0.005	ug/l	49.52
Cd	114	115	3	He	0.004	ug/l	14.36
Sn	118	115	1	No Gas	0.092	ug/l	2385.48
Sn	118	115	3	He	0.062	ug/l	460.01
Sb	121	115	1	No Gas	0.273	ug/l	5277.20
Sb	121	115	3	He	0.196	ug/l	899.79
Sb	123	115	1	No Gas	0.273	ug/l	4051.33
Sb	123	115	3	He	0.195	ug/l	705.42
Ba	135	115	1	No Gas	0.001	ug/l	19.96
Ba	137	115	1	No Gas	0.001	ug/l	63.21
La	139	115	3	He	0.000	ug/l	11.11
Ce	140	115	3	He	-0.002	ug/l	8.89
Hg	201	209	1	No Gas	0.005	ug/l	33.32
Hg	202	209	1	No Gas	0.008	ug/l	98.98
Hg	202	209	3	He	0.004	ug/l	27.33
Tl	203	209	3	He	0.087	ug/l	682.96
Tl	205	209	1	No Gas	0.082	ug/l	4232.93
Tl	205	209	3	He	0.095	ug/l	1744.82
[Pb]	206	209	1	No Gas	0.002	ug/l	147.78
[Pb]	207	209	1	No Gas	0.002	ug/l	134.45
Pb	208	209	1	No Gas	0.002	ug/l	576.68
Th	232	209	3	He	0.043	ug/l	1187.87
U	238	209	1	No Gas	0.003	ug/l	215.29

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4032268.22	85.6
Sc	45	2	H2	1675329.42	88.1
Sc	45	3	He	250759.66	87.2
Y	89	1	No Gas	8345434.31	94.8
Y	89	2	H2	5167672.70	92.1
Y	89	3	He	1249430.28	88.9
In	115	1	No Gas	8754882.42	95.0
In	115	3	He	1672407.51	91.0
Tb	159	1	No Gas	12982554.49	98.8
Tb	159	3	He	4373509.97	93.7
Ho	165	1	No Gas	12720911.50	99.2
Ho	165	3	He	4339953.44	94.9
Lu	175	1	No Gas	12544957.43	99.9
Lu	175	3	He	3516458.79	94.4
Bi	209	1	No Gas	8651557.61	102.2
Bi	209	3	He	2928975.79	97.0

ICPMS207-B Analytical Data

Sample Name B22030244-027B
File Name 062SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 11:00:30
Sample Type Sample
Total Dilution 1.0000
Comment ICPMS-6020-W-T
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	0.974	ug/l	17727.41
Be	9	45	1	No Gas	-0.044	ug/l	107.31
B	11	45	1	No Gas	36.875	ug/l	68092.01
Na	23	45	3	He	36018.958	ug/l	27298123.76
Mg	24	45	3	He	18045.151	ug/l	7604739.73
Al	27	45	1	No Gas	362.421	ug/l	6160976.44
Si	28	45	2	H2	20578.892	ug/l	27996617.00
K	39	89	3	He	1981.429	ug/l	913807.85
Ca	40	89	2	H2	15688.700	ug/l	88229876.77
Ti	47	89	1	No Gas	27.542	ug/l	54447.92
V	51	89	1	No Gas	14.449	ug/l	343905.36
V	51	89	3	He	22.992	ug/l	88816.87
Cr	52	89	1	No Gas	5.476	ug/l	161269.41
Cr	52	89	3	He	3.968	ug/l	16954.26
Mn	55	89	1	No Gas	117.370	ug/l	3602097.30
Mn	55	89	3	He	120.623	ug/l	346074.43
Fe	56	89	2	H2	441.111	ug/l	5355780.17
Fe	56	89	3	He	439.904	ug/l	1654926.70
Co	59	89	1	No Gas	0.446	ug/l	11731.45
Ni	60	89	1	No Gas	3.437	ug/l	20203.93
Ni	60	89	3	He	3.733	ug/l	5874.54
Cu	63	89	1	No Gas	3.034	ug/l	42542.09
Cu	63	89	3	He	2.824	ug/l	12068.23
Cu	65	89	1	No Gas	2.666	ug/l	18179.26
Zn	66	89	1	No Gas	10.953	ug/l	41793.46
Zn	66	89	3	He	11.476	ug/l	8879.42
As	75	89	1	No Gas	1.010	ug/l	16938.26
As	75	89	3	He	0.297	ug/l	275.47
Se	78	89	2	H2	0.205	ug/l	82.55
Br	79	89	1	No Gas	9.123	ug/l	131041.24
Br	79	89	2	H2	8.085	ug/l	53309.04
Se	82	89	1	No Gas	0.956	ug/l	1038.11
Kr	84	89	1	No Gas		ug/l	49002.93
Sr	88	89	1	No Gas	106.907	ug/l	4296914.61
Sr	88	89	3	He	103.451	ug/l	451743.85
Mo	95	115	1	No Gas	1.363	ug/l	11171.09
Mo	95	115	3	He	1.417	ug/l	3547.13
Mo	98	115	1	No Gas	1.366	ug/l	17926.71
Ag	107	115	1	No Gas	0.065	ug/l	1413.98
Ag	109	115	1	No Gas	0.064	ug/l	1339.94
Cd	111	115	1	No Gas	-0.018	ug/l	2453.80

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.014	ug/l	17.78
Cd	114	115	1	No Gas	0.004	ug/l	40.64
Cd	114	115	3	He	0.010	ug/l	30.71
Sn	118	115	1	No Gas	0.680	ug/l	10037.04
Sn	118	115	3	He	0.676	ug/l	2335.77
Sb	121	115	1	No Gas	0.246	ug/l	4603.22
Sb	121	115	3	He	0.229	ug/l	989.80
Sb	123	115	1	No Gas	0.246	ug/l	3531.80
Sb	123	115	3	He	0.236	ug/l	805.77
Ba	135	115	1	No Gas	6.530	ug/l	27345.98
Ba	137	115	1	No Gas	6.410	ug/l	47490.11
La	139	115	3	He	0.190	ug/l	3399.33
Ce	140	115	3	He	0.474	ug/l	9235.33
Hg	201	209	1	No Gas	0.018	ug/l	67.66
Hg	202	209	1	No Gas	0.021	ug/l	179.63
Hg	202	209	3	He	0.016	ug/l	52.66
Tl	203	209	3	He	0.035	ug/l	260.78
Tl	205	209	1	No Gas	0.028	ug/l	1425.64
Tl	205	209	3	He	0.034	ug/l	589.58
[Pb]	206	209	1	No Gas	0.672	ug/l	10549.79
[Pb]	207	209	1	No Gas	0.637	ug/l	8759.59
Pb	208	209	1	No Gas	0.646	ug/l	40499.61
Th	232	209	3	He	0.109	ug/l	2582.63
U	238	209	1	No Gas	0.018	ug/l	1113.83

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4013140.65	85.2
Sc	45	2	H2	1595323.41	83.9
Sc	45	3	He	237719.76	82.7
Y	89	1	No Gas	8093376.68	91.9
Y	89	2	H2	4992934.37	88.9
Y	89	3	He	1227875.44	87.4
In	115	1	No Gas	8423607.30	91.4
In	115	3	He	1590456.15	86.5
Tb	159	1	No Gas	12546149.56	95.4
Tb	159	3	He	4235397.59	90.7
Ho	165	1	No Gas	12509638.67	97.6
Ho	165	3	He	4253462.37	93.0
Lu	175	1	No Gas	12348414.75	98.3
Lu	175	3	He	3462268.97	92.9
Bi	209	1	No Gas	7977018.25	94.3
Bi	209	3	He	2679684.82	88.7

ICPMS207-B Analytical Data

Sample Name B22030244-032A
File Name 063SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 11:06:45
Sample Type Sample
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	0.550	ug/l	15497.44
Be	9	45	1	No Gas	-0.055	ug/l	75.99
B	11	45	1	No Gas	64.684	ug/l	131721.25
Na	23	45	3	He	157531.028	ug/l	131722264.70
Mg	24	45	3	He	74135.936	ug/l	34499013.69
Al	27	45	1	No Gas	1.873	ug/l	39768.89
Si	28	45	2	H2	32151.832	ug/l	48530300.00
K	39	89	3	He	2894.765	ug/l	1385493.30
Ca	40	89	2	H2	46697.216	ug/l	280501701.82
Ti	47	89	1	No Gas	2.449	ug/l	5442.52
V	51	89	1	No Gas	12.287	ug/l	316632.50
V	51	89	3	He	11.364	ug/l	48850.67
Cr	52	89	1	No Gas	-0.135	ug/l	33835.50
Cr	52	89	3	He	0.359	ug/l	1905.69
Mn	55	89	1	No Gas	0.442	ug/l	19970.54
Mn	55	89	3	He	0.494	ug/l	1612.10
Fe	56	89	2	H2	3.577	ug/l	52894.82
Fe	56	89	3	He	3.733	ug/l	18931.04
Co	59	89	1	No Gas	0.068	ug/l	2205.80
Ni	60	89	1	No Gas	1.268	ug/l	8362.49
Ni	60	89	3	He	1.079	ug/l	1854.58
Cu	63	89	1	No Gas	2.106	ug/l	32519.75
Cu	63	89	3	He	0.697	ug/l	3320.72
Cu	65	89	1	No Gas	0.894	ug/l	6934.44
Zn	66	89	1	No Gas	4.366	ug/l	18491.91
Zn	66	89	3	He	4.270	ug/l	3543.78
As	75	89	1	No Gas	0.789	ug/l	17460.25
As	75	89	3	He	0.539	ug/l	442.40
Se	78	89	2	H2	0.931	ug/l	366.78
Br	79	89	1	No Gas	119.157	ug/l	921401.04
Br	79	89	2	H2	117.864	ug/l	412412.38
Se	82	89	1	No Gas	2.503	ug/l	1581.52
Kr	84	89	1	No Gas		ug/l	144757.37
Sr	88	89	1	No Gas	463.464	ug/l	20323356.52
Sr	88	89	3	He	466.531	ug/l	2156950.20
Mo	95	115	1	No Gas	0.507	ug/l	4410.70
Mo	95	115	3	He	0.492	ug/l	1324.51
Mo	98	115	1	No Gas	0.511	ug/l	7117.17
Ag	107	115	1	No Gas	0.021	ug/l	538.23
Ag	109	115	1	No Gas	0.020	ug/l	468.20
Cd	111	115	1	No Gas	-0.059	ug/l	2389.62

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.013	ug/l	17.66
Cd	114	115	1	No Gas	0.010	ug/l	102.90
Cd	114	115	3	He	0.013	ug/l	41.68
Sn	118	115	1	No Gas	-0.018	ug/l	898.25
Sn	118	115	3	He	-0.019	ug/l	201.12
Sb	121	115	1	No Gas	0.094	ug/l	1975.67
Sb	121	115	3	He	0.091	ug/l	449.05
Sb	123	115	1	No Gas	0.096	ug/l	1547.24
Sb	123	115	3	He	0.089	ug/l	348.04
Ba	135	115	1	No Gas	20.435	ug/l	90113.84
Ba	137	115	1	No Gas	20.124	ug/l	156989.44
La	139	115	3	He	0.002	ug/l	40.00
Ce	140	115	3	He	0.002	ug/l	81.11
Hg	201	209	1	No Gas	0.006	ug/l	34.66
Hg	202	209	1	No Gas	0.026	ug/l	217.63
Hg	202	209	3	He	0.024	ug/l	71.65
Tl	203	209	3	He	0.022	ug/l	178.74
Tl	205	209	1	No Gas	0.017	ug/l	943.37
Tl	205	209	3	He	0.023	ug/l	426.85
[Pb]	206	209	1	No Gas	0.047	ug/l	871.14
[Pb]	207	209	1	No Gas	0.048	ug/l	774.48
Pb	208	209	1	No Gas	0.047	ug/l	3477.98
Th	232	209	3	He	0.001	ug/l	136.05
U	238	209	1	No Gas	0.509	ug/l	33273.83

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4508079.58	95.7
Sc	45	2	H2	1770862.26	93.1
Sc	45	3	He	262499.17	91.3
Y	89	1	No Gas	8826235.61	100.3
Y	89	2	H2	5338086.44	95.1
Y	89	3	He	1300614.46	92.6
In	115	1	No Gas	8871044.47	96.3
In	115	3	He	1692994.80	92.1
Tb	159	1	No Gas	13666362.24	104.0
Tb	159	3	He	4489381.93	96.2
Ho	165	1	No Gas	13429628.32	104.7
Ho	165	3	He	4423495.11	96.8
Lu	175	1	No Gas	13292891.90	105.9
Lu	175	3	He	3663369.15	98.3
Bi	209	1	No Gas	8287049.99	97.9
Bi	209	3	He	2756695.08	91.3

ICPMS207-B Analytical Data

Sample Name B22030244-032B
File Name 064SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 11:13:01
Sample Type Sample
Total Dilution 1.0000
Comment ICPMS-6020-W-T
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	1.198	ug/l	19482.26
Be	9	45	1	No Gas	-0.047	ug/l	93.98
B	11	45	1	No Gas	68.187	ug/l	121390.61
Na	23	45	3	He	157312.345	ug/l	117783243.80
Mg	24	45	3	He	72570.246	ug/l	30239871.04
Al	27	45	1	No Gas	19.882	ug/l	335620.73
Si	28	45	2	H2	27159.748	ug/l	36541888.91
K	39	89	3	He	2827.926	ug/l	1239654.91
Ca	40	89	2	H2	45652.557	ug/l	249125897.12
Ti	47	89	1	No Gas	3.697	ug/l	7289.16
V	51	89	1	No Gas	8.766	ug/l	199567.08
V	51	89	3	He	14.545	ug/l	55999.19
Cr	52	89	1	No Gas	4.906	ug/l	144903.29
Cr	52	89	3	He	3.343	ug/l	13886.60
Mn	55	89	1	No Gas	2.880	ug/l	91063.05
Mn	55	89	3	He	2.663	ug/l	7504.42
Fe	56	89	2	H2	49.607	ug/l	590297.25
Fe	56	89	3	He	51.416	ug/l	190754.37
Co	59	89	1	No Gas	0.159	ug/l	4252.19
Ni	60	89	1	No Gas	2.008	ug/l	11694.88
Ni	60	89	3	He	1.761	ug/l	2722.49
Cu	63	89	1	No Gas	3.035	ug/l	41651.72
Cu	63	89	3	He	1.533	ug/l	6439.13
Cu	65	89	1	No Gas	1.678	ug/l	11345.62
Zn	66	89	1	No Gas	8.816	ug/l	33012.33
Zn	66	89	3	He	9.131	ug/l	6859.44
As	75	89	1	No Gas	1.072	ug/l	16855.25
As	75	89	3	He	0.898	ug/l	609.20
Se	78	89	2	H2	0.880	ug/l	315.34
Br	79	89	1	No Gas	32.730	ug/l	278153.57
Br	79	89	2	H2	30.684	ug/l	118259.05
Se	82	89	1	No Gas	1.804	ug/l	1238.00
Kr	84	89	1	No Gas		ug/l	133224.17
Sr	88	89	1	No Gas	466.565	ug/l	18356881.92
Sr	88	89	3	He	467.947	ug/l	1979330.94
Mo	95	115	1	No Gas	1.098	ug/l	8806.08
Mo	95	115	3	He	1.084	ug/l	2691.38
Mo	98	115	1	No Gas	1.102	ug/l	14142.23
Ag	107	115	1	No Gas	0.084	ug/l	1787.50
Ag	109	115	1	No Gas	0.082	ug/l	1650.10
Cd	111	115	1	No Gas	-0.035	ug/l	2321.08

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.011	ug/l	13.33
Cd	114	115	1	No Gas	-0.012	ug/l	-114.35
Cd	114	115	3	He	0.007	ug/l	23.06
Sn	118	115	1	No Gas	0.430	ug/l	6591.87
Sn	118	115	3	He	0.432	ug/l	1565.65
Sb	121	115	1	No Gas	0.162	ug/l	3013.63
Sb	121	115	3	He	0.164	ug/l	717.09
Sb	123	115	1	No Gas	0.170	ug/l	2423.45
Sb	123	115	3	He	0.164	ug/l	564.74
Ba	135	115	1	No Gas	20.588	ug/l	84202.35
Ba	137	115	1	No Gas	19.915	ug/l	144112.00
La	139	115	3	He	0.013	ug/l	241.11
Ce	140	115	3	He	0.026	ug/l	534.46
Hg	201	209	1	No Gas	0.013	ug/l	48.99
Hg	202	209	1	No Gas	0.051	ug/l	349.94
Hg	202	209	3	He	0.043	ug/l	109.98
Tl	203	209	3	He	0.021	ug/l	159.40
Tl	205	209	1	No Gas	0.013	ug/l	682.25
Tl	205	209	3	He	0.016	ug/l	287.45
[Pb]	206	209	1	No Gas	0.220	ug/l	3319.33
[Pb]	207	209	1	No Gas	0.203	ug/l	2693.63
Pb	208	209	1	No Gas	0.215	ug/l	12951.47
Th	232	209	3	He	0.046	ug/l	1091.15
U	238	209	1	No Gas	0.681	ug/l	40283.64

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3943522.59	83.8
Sc	45	2	H2	1578614.05	83.0
Sc	45	3	He	235066.58	81.8
Y	89	1	No Gas	7921409.62	90.0
Y	89	2	H2	4851244.61	86.4
Y	89	3	He	1189836.36	84.7
In	115	1	No Gas	8227394.43	89.3
In	115	3	He	1573976.10	85.6
Tb	159	1	No Gas	12322101.88	93.7
Tb	159	3	He	4191175.77	89.8
Ho	165	1	No Gas	12194849.11	95.1
Ho	165	3	He	4152158.11	90.8
Lu	175	1	No Gas	12063456.15	96.1
Lu	175	3	He	3411836.64	91.6
Bi	209	1	No Gas	7508312.95	88.7
Bi	209	3	He	2564099.98	84.9

ICPMS207-B Analytical Data

Sample Name B22030244-037A
File Name 065SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 11:19:18
Sample Type Sample
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	2.127	ug/l	33327.12
Be	9	45	1	No Gas	-0.058	ug/l	65.32
B	11	45	1	No Gas	33.388	ug/l	72574.49
Na	23	45	3	He	43943.545	ug/l	38001041.10
Mg	24	45	3	He	9346.567	ug/l	4494670.51
Al	27	45	1	No Gas	6.791	ug/l	139299.86
Si	28	45	2	H2	17260.548	ug/l	27817995.89
K	39	89	3	He	3763.617	ug/l	1864303.01
Ca	40	89	2	H2	12991.313	ug/l	82100668.61
Ti	47	89	1	No Gas	1.302	ug/l	3035.05
V	51	89	1	No Gas	10.273	ug/l	268530.10
V	51	89	3	He	8.874	ug/l	40945.64
Cr	52	89	1	No Gas	1.985	ug/l	89415.87
Cr	52	89	3	He	2.625	ug/l	12526.48
Mn	55	89	1	No Gas	0.725	ug/l	30087.75
Mn	55	89	3	He	0.741	ug/l	2470.72
Fe	56	89	2	H2	1.957	ug/l	33531.32
Fe	56	89	3	He	1.887	ug/l	12137.30
Co	59	89	1	No Gas	0.023	ug/l	961.47
Ni	60	89	1	No Gas	0.631	ug/l	4435.23
Ni	60	89	3	He	0.576	ug/l	1071.16
Cu	63	89	1	No Gas	0.690	ug/l	11549.87
Cu	63	89	3	He	0.252	ug/l	1403.12
Cu	65	89	1	No Gas	0.306	ug/l	2712.68
Zn	66	89	1	No Gas	0.476	ug/l	2545.42
Zn	66	89	3	He	0.450	ug/l	460.01
As	75	89	1	No Gas	1.513	ug/l	21189.03
As	75	89	3	He	1.462	ug/l	1063.62
Se	78	89	2	H2	0.117	ug/l	57.33
Br	79	89	1	No Gas	14.770	ug/l	186685.90
Br	79	89	2	H2	14.791	ug/l	82691.37
Se	82	89	1	No Gas	-0.007	ug/l	873.69
Kr	84	89	1	No Gas		ug/l	56261.12
Sr	88	89	1	No Gas	122.805	ug/l	5500414.32
Sr	88	89	3	He	117.103	ug/l	566184.42
Mo	95	115	1	No Gas	4.293	ug/l	39237.09
Mo	95	115	3	He	4.525	ug/l	12612.28
Mo	98	115	1	No Gas	4.402	ug/l	64367.69
Ag	107	115	1	No Gas	0.001	ug/l	106.71
Ag	109	115	1	No Gas	0.002	ug/l	97.37
Cd	111	115	1	No Gas	-0.125	ug/l	2211.06

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.005	ug/l	6.89
Cd	114	115	1	No Gas	0.003	ug/l	28.70
Cd	114	115	3	He	0.004	ug/l	14.98
Sn	118	115	1	No Gas	0.015	ug/l	1443.88
Sn	118	115	3	He	0.023	ug/l	354.45
Sb	121	115	1	No Gas	0.505	ug/l	10320.14
Sb	121	115	3	He	0.514	ug/l	2417.79
Sb	123	115	1	No Gas	0.512	ug/l	8054.45
Sb	123	115	3	He	0.507	ug/l	1880.98
Ba	135	115	1	No Gas	22.244	ug/l	104127.06
Ba	137	115	1	No Gas	21.869	ug/l	181111.52
La	139	115	3	He	0.005	ug/l	98.89
Ce	140	115	3	He	0.006	ug/l	181.12
Hg	201	209	1	No Gas	0.008	ug/l	43.66
Hg	202	209	1	No Gas	0.170	ug/l	1249.81
Hg	202	209	3	He	0.141	ug/l	377.93
Tl	203	209	3	He	0.019	ug/l	162.73
Tl	205	209	1	No Gas	0.014	ug/l	852.26
Tl	205	209	3	He	0.016	ug/l	338.14
[Pb]	206	209	1	No Gas	0.006	ug/l	218.89
[Pb]	207	209	1	No Gas	0.005	ug/l	187.78
Pb	208	209	1	No Gas	0.006	ug/l	877.80
Th	232	209	3	He	0.000	ug/l	118.71
U	238	209	1	No Gas	0.264	ug/l	18386.87

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4699936.96	99.8
Sc	45	2	H2	1889569.62	99.3
Sc	45	3	He	271315.53	94.4
Y	89	1	No Gas	9018015.72	102.4
Y	89	2	H2	5609723.85	99.9
Y	89	3	He	1359699.87	96.8
In	115	1	No Gas	9417608.44	102.2
In	115	3	He	1777311.30	96.7
Tb	159	1	No Gas	13951694.95	106.1
Tb	159	3	He	4540945.58	97.3
Ho	165	1	No Gas	13715491.36	107.0
Ho	165	3	He	4564576.65	99.8
Lu	175	1	No Gas	13569139.28	108.1
Lu	175	3	He	3737042.33	100.3
Bi	209	1	No Gas	8838902.52	104.5
Bi	209	3	He	2960065.96	98.0

ICPMS207-B Analytical Data

Sample Name B22030244-037B
File Name 066SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 11:25:32
Sample Type Sample
Total Dilution 1.0000
Comment ICPMS-6020-W-T
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	2.570	ug/l	32133.41
Be	9	45	1	No Gas	-0.051	ug/l	81.32
B	11	45	1	No Gas	36.137	ug/l	65943.95
Na	23	45	3	He	44366.572	ug/l	33826395.33
Mg	24	45	3	He	9371.015	ug/l	3974001.55
Al	27	45	1	No Gas	113.638	ug/l	1909712.59
Si	28	45	2	H2	17002.632	ug/l	23338817.32
K	39	89	3	He	3704.567	ug/l	1646071.38
Ca	40	89	2	H2	12607.216	ug/l	71180092.58
Ti	47	89	1	No Gas	9.147	ug/l	18306.46
V	51	89	1	No Gas	6.523	ug/l	150157.13
V	51	89	3	He	13.568	ug/l	53821.03
Cr	52	89	1	No Gas	4.461	ug/l	138536.07
Cr	52	89	3	He	3.022	ug/l	12885.69
Mn	55	89	1	No Gas	6.803	ug/l	214629.44
Mn	55	89	3	He	6.832	ug/l	19557.37
Fe	56	89	2	H2	91.374	ug/l	1118806.38
Fe	56	89	3	He	93.355	ug/l	351725.18
Co	59	89	1	No Gas	0.101	ug/l	2871.26
Ni	60	89	1	No Gas	0.905	ug/l	5596.69
Ni	60	89	3	He	0.895	ug/l	1453.42
Cu	63	89	1	No Gas	1.231	ug/l	17892.78
Cu	63	89	3	He	0.759	ug/l	3370.72
Cu	65	89	1	No Gas	0.807	ug/l	5811.50
Zn	66	89	1	No Gas	3.660	ug/l	14374.65
Zn	66	89	3	He	3.619	ug/l	2826.96
As	75	89	1	No Gas	1.759	ug/l	20175.76
As	75	89	3	He	1.719	ug/l	1103.55
Se	78	89	2	H2	0.134	ug/l	57.44
Br	79	89	1	No Gas	12.538	ug/l	153952.13
Br	79	89	2	H2	10.778	ug/l	61715.76
Se	82	89	1	No Gas	0.260	ug/l	860.09
Kr	84	89	1	No Gas		ug/l	53849.99
Sr	88	89	1	No Gas	123.877	ug/l	5009898.88
Sr	88	89	3	He	121.517	ug/l	526768.58
Mo	95	115	1	No Gas	4.784	ug/l	38966.37
Mo	95	115	3	He	4.939	ug/l	12521.09
Mo	98	115	1	No Gas	4.941	ug/l	64386.37
Ag	107	115	1	No Gas	0.010	ug/l	270.11
Ag	109	115	1	No Gas	0.008	ug/l	216.75
Cd	111	115	1	No Gas	-0.014	ug/l	2463.74

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.005	ug/l	6.67
Cd	114	115	1	No Gas	0.002	ug/l	21.60
Cd	114	115	3	He	0.002	ug/l	8.42
Sn	118	115	1	No Gas	0.402	ug/l	6348.88
Sn	118	115	3	He	0.403	ug/l	1515.65
Sb	121	115	1	No Gas	0.567	ug/l	10321.48
Sb	121	115	3	He	0.558	ug/l	2384.45
Sb	123	115	1	No Gas	0.573	ug/l	8007.75
Sb	123	115	3	He	0.572	ug/l	1923.33
Ba	135	115	1	No Gas	23.081	ug/l	96283.40
Ba	137	115	1	No Gas	22.768	ug/l	168027.29
La	139	115	3	He	0.068	ug/l	1243.40
Ce	140	115	3	He	0.149	ug/l	2979.23
Hg	201	209	1	No Gas	0.022	ug/l	75.99
Hg	202	209	1	No Gas	0.272	ug/l	1756.77
Hg	202	209	3	He	0.211	ug/l	512.58
Tl	203	209	3	He	0.017	ug/l	135.39
Tl	205	209	1	No Gas	0.013	ug/l	725.58
Tl	205	209	3	He	0.016	ug/l	313.47
[Pb]	206	209	1	No Gas	0.041	ug/l	740.03
[Pb]	207	209	1	No Gas	0.036	ug/l	574.46
Pb	208	209	1	No Gas	0.038	ug/l	2739.02
Th	232	209	3	He	0.049	ug/l	1232.55
U	238	209	1	No Gas	0.285	ug/l	17655.36

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3960005.64	84.1
Sc	45	2	H2	1609203.04	84.6
Sc	45	3	He	239197.91	83.2
Y	89	1	No Gas	8139503.49	92.5
Y	89	2	H2	5012552.12	89.3
Y	89	3	He	1218999.20	86.8
In	115	1	No Gas	8391275.16	91.1
In	115	3	He	1616955.91	88.0
Tb	159	1	No Gas	12583676.98	95.7
Tb	159	3	He	4297259.09	92.0
Ho	165	1	No Gas	12436512.22	97.0
Ho	165	3	He	4234093.16	92.6
Lu	175	1	No Gas	12329636.91	98.2
Lu	175	3	He	3448461.33	92.6
Bi	209	1	No Gas	7862646.86	92.9
Bi	209	3	He	2723579.99	90.2

ICPMS207-B Analytical Data

Sample Name B22030244-042A
File Name 067SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 11:31:46
Sample Type Sample
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	0.148	ug/l	11642.46
Be	9	45	1	No Gas	-0.058	ug/l	65.99
B	11	45	1	No Gas	25.275	ug/l	55042.13
Na	23	45	3	He	37201.747	ug/l	32074208.41
Mg	24	45	3	He	16041.804	ug/l	7691066.87
Al	27	45	1	No Gas	7.440	ug/l	150331.75
Si	28	45	2	H2	17822.364	ug/l	28415088.38
K	39	89	3	He	2587.801	ug/l	1294661.08
Ca	40	89	2	H2	17551.250	ug/l	109974241.20
Ti	47	89	1	No Gas	1.609	ug/l	3714.22
V	51	89	1	No Gas	10.411	ug/l	272452.28
V	51	89	3	He	9.031	ug/l	41352.29
Cr	52	89	1	No Gas	1.400	ug/l	74345.70
Cr	52	89	3	He	1.918	ug/l	9191.81
Mn	55	89	1	No Gas	0.382	ug/l	18379.36
Mn	55	89	3	He	0.432	ug/l	1482.45
Fe	56	89	2	H2	7.287	ug/l	105349.49
Fe	56	89	3	He	7.326	ug/l	34547.12
Co	59	89	1	No Gas	0.036	ug/l	1317.45
Ni	60	89	1	No Gas	0.625	ug/l	4401.96
Ni	60	89	3	He	0.555	ug/l	1031.16
Cu	63	89	1	No Gas	0.633	ug/l	10674.86
Cu	63	89	3	He	0.254	ug/l	1403.12
Cu	65	89	1	No Gas	0.325	ug/l	2856.76
Zn	66	89	1	No Gas	10.552	ug/l	44910.65
Zn	66	89	3	He	10.535	ug/l	8983.92
As	75	89	1	No Gas	-0.041	ug/l	13994.32
As	75	89	3	He	0.465	ug/l	412.07
Se	78	89	2	H2	0.074	ug/l	40.00
Br	79	89	1	No Gas	22.987	ug/l	246242.82
Br	79	89	2	H2	22.567	ug/l	108348.61
Se	82	89	1	No Gas	0.269	ug/l	956.50
Kr	84	89	1	No Gas		ug/l	56321.31
Sr	88	89	1	No Gas	121.929	ug/l	5465718.81
Sr	88	89	3	He	118.025	ug/l	567559.62
Mo	95	115	1	No Gas	1.725	ug/l	15545.15
Mo	95	115	3	He	1.710	ug/l	4808.62
Mo	98	115	1	No Gas	1.728	ug/l	24918.47
Ag	107	115	1	No Gas	0.019	ug/l	518.89
Ag	109	115	1	No Gas	0.017	ug/l	431.51
Cd	111	115	1	No Gas	-0.092	ug/l	2336.87

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.004	ug/l	5.44
Cd	114	115	1	No Gas	0.000	ug/l	-2.19
Cd	114	115	3	He	0.003	ug/l	10.16
Sn	118	115	1	No Gas	-0.046	ug/l	532.29
Sn	118	115	3	He	-0.039	ug/l	142.22
Sb	121	115	1	No Gas	0.022	ug/l	632.74
Sb	121	115	3	He	0.020	ug/l	145.02
Sb	123	115	1	No Gas	0.023	ug/l	508.40
Sb	123	115	3	He	0.018	ug/l	108.34
Ba	135	115	1	No Gas	7.091	ug/l	32666.99
Ba	137	115	1	No Gas	6.813	ug/l	55540.53
La	139	115	3	He	0.007	ug/l	146.67
Ce	140	115	3	He	0.018	ug/l	446.68
Hg	201	209	1	No Gas	0.001	ug/l	19.66
Hg	202	209	1	No Gas	0.002	ug/l	59.66
Hg	202	209	3	He	0.001	ug/l	18.33
Tl	203	209	3	He	0.015	ug/l	134.72
Tl	205	209	1	No Gas	0.009	ug/l	630.02
Tl	205	209	3	He	0.013	ug/l	268.11
[Pb]	206	209	1	No Gas	0.011	ug/l	315.56
[Pb]	207	209	1	No Gas	0.012	ug/l	284.45
Pb	208	209	1	No Gas	0.012	ug/l	1307.82
Th	232	209	3	He	0.000	ug/l	105.38
U	238	209	1	No Gas	0.039	ug/l	2704.74

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4637001.33	98.5
Sc	45	2	H2	1869764.91	98.3
Sc	45	3	He	270453.02	94.1
Y	89	1	No Gas	9022487.48	102.5
Y	89	2	H2	5568565.03	99.2
Y	89	3	He	1352227.58	96.3
In	115	1	No Gas	9262618.14	100.5
In	115	3	He	1788665.89	97.3
Tb	159	1	No Gas	13605281.88	103.5
Tb	159	3	He	4572345.73	97.9
Ho	165	1	No Gas	13479662.52	105.1
Ho	165	3	He	4526595.29	99.0
Lu	175	1	No Gas	13265085.97	105.6
Lu	175	3	He	3720899.36	99.9
Bi	209	1	No Gas	8720844.34	103.1
Bi	209	3	He	2939210.01	97.3

ICPMS207-B Analytical Data

Sample Name B22030244-042B
File Name 068SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 11:38:02
Sample Type Sample
Total Dilution 1.0000
Comment ICPMS-6020-W-T
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	0.619	ug/l	14446.66
Be	9	45	1	No Gas	-0.050	ug/l	84.31
B	11	45	1	No Gas	26.804	ug/l	50318.04
Na	23	45	3	He	37648.341	ug/l	28594384.30
Mg	24	45	3	He	16088.641	ug/l	6794870.90
Al	27	45	1	No Gas	103.673	ug/l	1766301.40
Si	28	45	2	H2	16331.953	ug/l	22681271.15
K	39	89	3	He	2589.068	ug/l	1158329.15
Ca	40	89	2	H2	17591.828	ug/l	98719455.14
Ti	47	89	1	No Gas	9.743	ug/l	19308.72
V	51	89	1	No Gas	6.550	ug/l	149138.65
V	51	89	3	He	13.222	ug/l	52124.01
Cr	52	89	1	No Gas	3.949	ug/l	125428.42
Cr	52	89	3	He	2.507	ug/l	10652.79
Mn	55	89	1	No Gas	1.722	ug/l	57387.92
Mn	55	89	3	He	1.429	ug/l	4141.76
Fe	56	89	2	H2	87.760	ug/l	1067775.60
Fe	56	89	3	He	89.979	ug/l	336373.78
Co	59	89	1	No Gas	0.088	ug/l	2528.55
Ni	60	89	1	No Gas	0.948	ug/l	5796.32
Ni	60	89	3	He	0.863	ug/l	1392.30
Cu	63	89	1	No Gas	1.011	ug/l	14719.98
Cu	63	89	3	He	0.609	ug/l	2723.38
Cu	65	89	1	No Gas	0.648	ug/l	4701.32
Zn	66	89	1	No Gas	19.282	ug/l	72959.32
Zn	66	89	3	He	19.956	ug/l	15152.37
As	75	89	1	No Gas	1.709	ug/l	19807.94
As	75	89	3	He	0.771	ug/l	545.53
Se	78	89	2	H2	0.078	ug/l	37.22
Br	79	89	1	No Gas	10.092	ug/l	136775.73
Br	79	89	2	H2	9.307	ug/l	56855.31
Se	82	89	1	No Gas	0.454	ug/l	904.63
Kr	84	89	1	No Gas		ug/l	54254.34
Sr	88	89	1	No Gas	127.223	ug/l	5097439.11
Sr	88	89	3	He	121.973	ug/l	524418.03
Mo	95	115	1	No Gas	1.900	ug/l	15563.00
Mo	95	115	3	He	1.946	ug/l	4926.43
Mo	98	115	1	No Gas	1.911	ug/l	25052.62
Ag	107	115	1	No Gas	0.026	ug/l	616.26
Ag	109	115	1	No Gas	0.023	ug/l	514.89
Cd	111	115	1	No Gas	-0.009	ug/l	2493.48

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.003	ug/l	4.11
Cd	114	115	1	No Gas	0.001	ug/l	8.03
Cd	114	115	3	He	0.002	ug/l	6.47
Sn	118	115	1	No Gas	0.409	ug/l	6472.03
Sn	118	115	3	He	0.423	ug/l	1571.21
Sb	121	115	1	No Gas	0.043	ug/l	960.80
Sb	121	115	3	He	0.047	ug/l	246.70
Sb	123	115	1	No Gas	0.045	ug/l	762.43
Sb	123	115	3	He	0.044	ug/l	184.69
Ba	135	115	1	No Gas	7.396	ug/l	30979.90
Ba	137	115	1	No Gas	7.252	ug/l	53760.33
La	139	115	3	He	0.028	ug/l	503.34
Ce	140	115	3	He	0.064	ug/l	1295.62
Hg	201	209	1	No Gas	0.005	ug/l	29.99
Hg	202	209	1	No Gas	0.010	ug/l	106.65
Hg	202	209	3	He	0.008	ug/l	33.32
Tl	203	209	3	He	0.012	ug/l	104.71
Tl	205	209	1	No Gas	0.011	ug/l	663.36
Tl	205	209	3	He	0.013	ug/l	248.77
[Pb]	206	209	1	No Gas	0.017	ug/l	380.01
[Pb]	207	209	1	No Gas	0.015	ug/l	302.23
Pb	208	209	1	No Gas	0.017	ug/l	1471.15
Th	232	209	3	He	0.022	ug/l	592.92
U	238	209	1	No Gas	0.041	ug/l	2587.41

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4014173.03	85.3
Sc	45	2	H2	1627039.94	85.5
Sc	45	3	He	238250.50	82.9
Y	89	1	No Gas	8065895.09	91.6
Y	89	2	H2	4980253.78	88.7
Y	89	3	He	1209189.85	86.1
In	115	1	No Gas	8426434.01	91.4
In	115	3	He	1610747.68	87.6
Tb	159	1	No Gas	12544198.76	95.4
Tb	159	3	He	4212816.73	90.2
Ho	165	1	No Gas	12521823.15	97.7
Ho	165	3	He	4224802.99	92.4
Lu	175	1	No Gas	12380122.50	98.6
Lu	175	3	He	3438098.16	92.3
Bi	209	1	No Gas	7955031.61	94.0
Bi	209	3	He	2696049.21	89.3

ICPMS207-B Analytical Data

Sample Name B22030244-047A
File Name 069SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 11:44:17
Sample Type Sample
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	-0.267	ug/l	7251.98
Be	9	45	1	No Gas	-0.059	ug/l	58.99
B	11	45	1	No Gas	58.545	ug/l	124117.59
Na	23	45	3	He	35625.866	ug/l	30123382.05
Mg	24	45	3	He	8641.903	ug/l	4063387.24
Al	27	45	1	No Gas	1.486	ug/l	33610.64
Si	28	45	2	H2	21447.549	ug/l	34059509.02
K	39	89	3	He	1769.532	ug/l	893035.66
Ca	40	89	2	H2	7592.163	ug/l	47791379.28
Ti	47	89	1	No Gas	1.504	ug/l	3460.57
V	51	89	1	No Gas	18.473	ug/l	489322.98
V	51	89	3	He	19.554	ug/l	82740.79
Cr	52	89	1	No Gas	2.329	ug/l	97741.41
Cr	52	89	3	He	3.010	ug/l	14038.96
Mn	55	89	1	No Gas	0.394	ug/l	18668.17
Mn	55	89	3	He	0.430	ug/l	1456.12
Fe	56	89	2	H2	1.537	ug/l	27686.18
Fe	56	89	3	He	1.584	ug/l	10666.31
Co	59	89	1	No Gas	0.013	ug/l	668.69
Ni	60	89	1	No Gas	0.166	ug/l	1430.58
Ni	60	89	3	He	0.110	ug/l	264.45
Cu	63	89	1	No Gas	0.562	ug/l	9525.60
Cu	63	89	3	He	0.201	ug/l	1144.15
Cu	65	89	1	No Gas	0.231	ug/l	2145.69
Zn	66	89	1	No Gas	5.347	ug/l	22884.04
Zn	66	89	3	He	5.368	ug/l	4550.73
As	75	89	1	No Gas	-0.382	ug/l	12317.35
As	75	89	3	He	0.008	ug/l	114.40
Se	78	89	2	H2	0.191	ug/l	87.00
Br	79	89	1	No Gas	10.897	ug/l	157738.70
Br	79	89	2	H2	10.472	ug/l	67767.20
Se	82	89	1	No Gas	-0.087	ug/l	844.89
Kr	84	89	1	No Gas		ug/l	40076.02
Sr	88	89	1	No Gas	60.968	ug/l	2715556.28
Sr	88	89	3	He	58.846	ug/l	279157.15
Mo	95	115	1	No Gas	1.356	ug/l	12369.85
Mo	95	115	3	He	1.413	ug/l	3945.01
Mo	98	115	1	No Gas	1.381	ug/l	20167.80
Ag	107	115	1	No Gas	0.001	ug/l	102.04
Ag	109	115	1	No Gas	0.001	ug/l	68.70
Cd	111	115	1	No Gas	-0.132	ug/l	2163.98

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.002	ug/l	3.78
Cd	114	115	1	No Gas	0.000	ug/l	0.17
Cd	114	115	3	He	0.001	ug/l	6.40
Sn	118	115	1	No Gas	0.068	ug/l	2202.48
Sn	118	115	3	He	0.068	ug/l	507.79
Sb	121	115	1	No Gas	0.033	ug/l	862.78
Sb	121	115	3	He	0.033	ug/l	204.69
Sb	123	115	1	No Gas	0.032	ug/l	650.75
Sb	123	115	3	He	0.034	ug/l	168.35
Ba	135	115	1	No Gas	1.939	ug/l	9045.02
Ba	137	115	1	No Gas	1.889	ug/l	15621.17
La	139	115	3	He	0.000	ug/l	13.33
Ce	140	115	3	He	-0.001	ug/l	17.78
Hg	201	209	1	No Gas	0.002	ug/l	24.33
Hg	202	209	1	No Gas	0.022	ug/l	200.29
Hg	202	209	3	He	0.019	ug/l	65.32
Tl	203	209	3	He	0.009	ug/l	88.04
Tl	205	209	1	No Gas	0.006	ug/l	483.35
Tl	205	209	3	He	0.008	ug/l	198.08
[Pb]	206	209	1	No Gas	0.017	ug/l	407.79
[Pb]	207	209	1	No Gas	0.015	ug/l	331.12
Pb	208	209	1	No Gas	0.017	ug/l	1641.17
Th	232	209	3	He	-0.001	ug/l	88.70
U	238	209	1	No Gas	0.007	ug/l	460.92

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4677053.20	99.3
Sc	45	2	H2	1862039.23	97.9
Sc	45	3	He	265203.88	92.3
Y	89	1	No Gas	8964546.00	101.8
Y	89	2	H2	5589208.54	99.6
Y	89	3	He	1333352.54	94.9
In	115	1	No Gas	9368147.18	101.7
In	115	3	He	1774090.70	96.5
Tb	159	1	No Gas	13514388.29	102.8
Tb	159	3	He	4496164.65	96.3
Ho	165	1	No Gas	13477060.13	105.1
Ho	165	3	He	4511495.98	98.7
Lu	175	1	No Gas	13301933.86	105.9
Lu	175	3	He	3729625.20	100.1
Bi	209	1	No Gas	8774577.62	103.7
Bi	209	3	He	2981099.81	98.7

ICPMS207-B Analytical Data

Sample Name B22030244-047B
File Name 070SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 11:50:33
Sample Type Sample
Total Dilution 1.0000
Comment ICPMS-6020-W-T
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	0.223	ug/l	10850.89
Be	9	45	1	No Gas	-0.061	ug/l	45.32
B	11	45	1	No Gas	60.566	ug/l	110903.72
Na	23	45	3	He	35519.104	ug/l	26875139.04
Mg	24	45	3	He	8564.459	ug/l	3603455.06
Al	27	45	1	No Gas	3.492	ug/l	63407.26
Si	28	45	2	H2	20856.985	ug/l	27881556.98
K	39	89	3	He	1732.308	ug/l	794310.74
Ca	40	89	2	H2	7089.875	ug/l	40549045.95
Ti	47	89	1	No Gas	1.892	ug/l	3944.51
V	51	89	1	No Gas	15.604	ug/l	377200.75
V	51	89	3	He	23.140	ug/l	88038.99
Cr	52	89	1	No Gas	4.367	ug/l	137474.36
Cr	52	89	3	He	3.303	ug/l	13950.02
Mn	55	89	1	No Gas	0.779	ug/l	29071.05
Mn	55	89	3	He	0.425	ug/l	1306.13
Fe	56	89	2	H2	10.643	ug/l	137380.32
Fe	56	89	3	He	11.222	ug/l	45315.17
Co	59	89	1	No Gas	0.028	ug/l	998.06
Ni	60	89	1	No Gas	0.212	ug/l	1583.62
Ni	60	89	3	He	0.126	ug/l	265.56
Cu	63	89	1	No Gas	0.700	ug/l	10646.82
Cu	63	89	3	He	0.277	ug/l	1350.13
Cu	65	89	1	No Gas	0.350	ug/l	2773.38
Zn	66	89	1	No Gas	5.240	ug/l	20550.02
Zn	66	89	3	He	5.700	ug/l	4379.57
As	75	89	1	No Gas	0.943	ug/l	16870.29
As	75	89	3	He	0.272	ug/l	256.67
Se	78	89	2	H2	0.167	ug/l	70.22
Br	79	89	1	No Gas	11.373	ug/l	147721.11
Br	79	89	2	H2	9.851	ug/l	59631.08
Se	82	89	1	No Gas	1.220	ug/l	1127.46
Kr	84	89	1	No Gas		ug/l	37677.79
Sr	88	89	1	No Gas	61.155	ug/l	2493811.56
Sr	88	89	3	He	60.280	ug/l	259446.26
Mo	95	115	1	No Gas	1.418	ug/l	11641.45
Mo	95	115	3	He	1.478	ug/l	3729.40
Mo	98	115	1	No Gas	1.443	ug/l	18949.68
Ag	107	115	1	No Gas	0.009	ug/l	265.44
Ag	109	115	1	No Gas	0.009	ug/l	222.09
Cd	111	115	1	No Gas	-0.045	ug/l	2335.02

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.003	ug/l	3.78
Cd	114	115	1	No Gas	-0.002	ug/l	-16.22
Cd	114	115	3	He	0.001	ug/l	4.12
Sn	118	115	1	No Gas	0.335	ug/l	5506.86
Sn	118	115	3	He	0.343	ug/l	1316.74
Sb	121	115	1	No Gas	0.056	ug/l	1184.51
Sb	121	115	3	He	0.053	ug/l	266.70
Sb	123	115	1	No Gas	0.055	ug/l	894.78
Sb	123	115	3	He	0.057	ug/l	224.69
Ba	135	115	1	No Gas	2.285	ug/l	9590.93
Ba	137	115	1	No Gas	2.261	ug/l	16820.18
La	139	115	3	He	0.001	ug/l	30.00
Ce	140	115	3	He	0.000	ug/l	46.67
Hg	201	209	1	No Gas	0.004	ug/l	28.33
Hg	202	209	1	No Gas	0.035	ug/l	267.95
Hg	202	209	3	He	0.031	ug/l	86.98
Tl	203	209	3	He	0.009	ug/l	82.70
Tl	205	209	1	No Gas	0.007	ug/l	465.57
Tl	205	209	3	He	0.008	ug/l	180.08
[Pb]	206	209	1	No Gas	0.016	ug/l	371.12
[Pb]	207	209	1	No Gas	0.017	ug/l	327.79
Pb	208	209	1	No Gas	0.017	ug/l	1514.49
Th	232	209	3	He	0.019	ug/l	541.57
U	238	209	1	No Gas	0.007	ug/l	447.25

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4043369.64	85.9
Sc	45	2	H2	1567982.02	82.4
Sc	45	3	He	237324.39	82.6
Y	89	1	No Gas	8210792.07	93.3
Y	89	2	H2	5074626.58	90.4
Y	89	3	He	1209820.30	86.1
In	115	1	No Gas	8430744.30	91.5
In	115	3	He	1602792.92	87.2
Tb	159	1	No Gas	12607505.81	95.9
Tb	159	3	He	4267733.21	91.4
Ho	165	1	No Gas	12349302.93	96.3
Ho	165	3	He	4227464.40	92.5
Lu	175	1	No Gas	12369824.60	98.5
Lu	175	3	He	3467233.57	93.1
Bi	209	1	No Gas	8077083.36	95.5
Bi	209	3	He	2707453.27	89.7

ICPMS207-B Analytical Data

Sample Name B22030433-001A
File Name 071ARef.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 11:56:49
Sample Type AIRRef
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	-0.237	ug/l	7449.49
Be	9	45	1	No Gas	0.079	ug/l	623.43
B	11	45	1	No Gas	65.772	ug/l	136698.39
Na	23	45	3	He	56133.849	ug/l	47182052.63
Mg	24	45	3	He	32613.234	ug/l	15249498.48
Al	27	45	1	No Gas	2.553	ug/l	53845.49
Si	28	45	2	H2	17383.710	ug/l	26528499.46
K	39	89	3	He	2835.330	ug/l	1408755.64
Ca	40	89	2	H2	28825.859	ug/l	177486104.85
Ti	47	89	1	No Gas	1.228	ug/l	2846.48
V	51	89	1	No Gas	8.853	ug/l	227331.81
V	51	89	3	He	7.877	ug/l	36595.32
Cr	52	89	1	No Gas	-0.378	ug/l	27997.90
Cr	52	89	3	He	0.104	ug/l	797.80
Mn	55	89	1	No Gas	183.955	ug/l	6222915.32
Mn	55	89	3	He	181.731	ug/l	572662.70
Fe	56	89	2	H2	14.926	ug/l	204940.84
Fe	56	89	3	He	14.910	ug/l	65730.52
Co	59	89	1	No Gas	0.329	ug/l	9624.12
Ni	60	89	1	No Gas	1.402	ug/l	9307.83
Ni	60	89	3	He	1.268	ug/l	2244.63
Cu	63	89	1	No Gas	0.883	ug/l	14338.13
Cu	63	89	3	He	0.325	ug/l	1726.09
Cu	65	89	1	No Gas	0.421	ug/l	3527.18
Zn	66	89	1	No Gas	2.028	ug/l	8968.08
Zn	66	89	3	He	2.028	ug/l	1786.79
As	75	89	1	No Gas	0.571	ug/l	16620.30
As	75	89	3	He	0.630	ug/l	517.00
Se	78	89	2	H2	0.115	ug/l	55.33
Br	79	89	1	No Gas	46.372	ug/l	410696.61
Br	79	89	2	H2	45.999	ug/l	184132.51
Se	82	89	1	No Gas	1.098	ug/l	1188.53
Kr	84	89	1	No Gas		ug/l	86771.12
Sr	88	89	1	No Gas	236.728	ug/l	10491550.71
Sr	88	89	3	He	228.470	ug/l	1095705.65
Mo	95	115	1	No Gas	7.110	ug/l	62790.58
Mo	95	115	3	He	7.381	ug/l	20077.48
Mo	98	115	1	No Gas	7.258	ug/l	102539.19
Ag	107	115	1	No Gas	0.000	ug/l	72.69
Ag	109	115	1	No Gas	0.000	ug/l	43.35
Cd	111	115	1	No Gas	-0.080	ug/l	2354.27

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.007	ug/l	10.00
Cd	114	115	1	No Gas	0.003	ug/l	35.49
Cd	114	115	3	He	0.006	ug/l	21.66
Sn	118	115	1	No Gas	-0.019	ug/l	911.56
Sn	118	115	3	He	-0.005	ug/l	251.12
Sb	121	115	1	No Gas	0.235	ug/l	4744.28
Sb	121	115	3	He	0.226	ug/l	1066.15
Sb	123	115	1	No Gas	0.233	ug/l	3623.84
Sb	123	115	3	He	0.229	ug/l	852.45
Ba	135	115	1	No Gas	4.093	ug/l	18532.29
Ba	137	115	1	No Gas	3.972	ug/l	31839.88
La	139	115	3	He	0.001	ug/l	23.33
Ce	140	115	3	He	0.000	ug/l	46.67
Hg	201	209	1	No Gas	0.006	ug/l	34.32
Hg	202	209	1	No Gas	0.050	ug/l	379.26
Hg	202	209	3	He	0.038	ug/l	109.65
Tl	203	209	3	He	0.009	ug/l	86.70
Tl	205	209	1	No Gas	0.006	ug/l	447.79
Tl	205	209	3	He	0.007	ug/l	157.40
[Pb]	206	209	1	No Gas	0.013	ug/l	336.67
[Pb]	207	209	1	No Gas	0.015	ug/l	320.01
Pb	208	209	1	No Gas	0.014	ug/l	1386.71
Th	232	209	3	He	0.000	ug/l	94.04
U	238	209	1	No Gas	0.076	ug/l	5069.98

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4598470.00	97.7
Sc	45	2	H2	1790491.74	94.1
Sc	45	3	He	263827.13	91.8
Y	89	1	No Gas	8921053.34	101.3
Y	89	2	H2	5470471.06	97.4
Y	89	3	He	1349132.56	96.0
In	115	1	No Gas	9101412.69	98.8
In	115	3	He	1735592.31	94.4
Tb	159	1	No Gas	13480806.27	102.5
Tb	159	3	He	4512150.90	96.6
Ho	165	1	No Gas	13408278.22	104.6
Ho	165	3	He	4442229.78	97.2
Lu	175	1	No Gas	13194064.02	105.1
Lu	175	3	He	3666845.78	98.4
Bi	209	1	No Gas	8405782.11	99.3
Bi	209	3	He	2835018.45	93.9

ICPMS207-B Analytical Data

Sample Name CCV
File Name 072_CCV.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 12:03:06
Sample Type CCV
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	469.146	ug/l	4365969.58
Be	9	45	1	No Gas	41.922	ug/l	149463.49
B	11	45	1	No Gas	45.767	ug/l	83850.54
Na	23	45	3	He	12454.518	ug/l	10009907.35
Mg	24	45	3	He	12379.787	ug/l	5521672.11
Al	27	45	1	No Gas	48.287	ug/l	823986.76
Si	28	45	2	H2	254.056	ug/l	372650.61
K	39	89	3	He	11942.772	ug/l	5468454.23
Ca	40	89	2	H2	12028.730	ug/l	69986890.26
Ti	47	89	1	No Gas	47.010	ug/l	94132.08
V	51	89	1	No Gas	42.704	ug/l	1048437.15
V	51	89	3	He	51.338	ug/l	202221.31
Cr	52	89	1	No Gas	49.259	ug/l	1193503.60
Cr	52	89	3	He	48.905	ug/l	215554.65
Mn	55	89	1	No Gas	48.948	ug/l	1525933.76
Mn	55	89	3	He	48.832	ug/l	146944.56
Fe	56	89	2	H2	1288.699	ug/l	16167861.56
Fe	56	89	3	He	1261.158	ug/l	4966887.91
Co	59	89	1	No Gas	50.685	ug/l	1323343.35
Ni	60	89	1	No Gas	49.359	ug/l	289683.44
Ni	60	89	3	He	51.232	ug/l	83570.32
Cu	63	89	1	No Gas	51.255	ug/l	714521.88
Cu	63	89	3	He	50.699	ug/l	223455.11
Cu	65	89	1	No Gas	50.898	ug/l	344750.41
Zn	66	89	1	No Gas	52.572	ug/l	201434.46
Zn	66	89	3	He	51.120	ug/l	41216.93
As	75	89	1	No Gas	50.346	ug/l	225737.52
As	75	89	3	He	50.251	ug/l	31080.74
Se	78	89	2	H2	53.424	ug/l	19817.92
Br	79	89	1	No Gas	1.157	ug/l	80236.87
Br	79	89	2	H2	0.696	ug/l	32022.21
Se	82	89	1	No Gas	53.533	ug/l	15189.12
Kr	84	89	1	No Gas		ug/l	36834.03
Sr	88	89	1	No Gas	51.198	ug/l	2086548.36
Sr	88	89	3	He	48.765	ug/l	223356.52
Mo	95	115	1	No Gas	49.498	ug/l	411312.15
Mo	95	115	3	He	49.782	ug/l	127417.56
Mo	98	115	1	No Gas	50.424	ug/l	670315.62
Ag	107	115	1	No Gas	20.163	ug/l	428623.52
Ag	109	115	1	No Gas	20.418	ug/l	416440.98
Cd	111	115	1	No Gas	50.410	ug/l	231178.90

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	51.710	ug/l	64793.51
Cd	114	115	1	No Gas	51.520	ug/l	514383.52
Cd	114	115	3	He	52.296	ug/l	157273.59
Sn	118	115	1	No Gas	51.107	ug/l	685123.12
Sn	118	115	3	He	50.802	ug/l	161533.08
Sb	121	115	1	No Gas	53.072	ug/l	968513.94
Sb	121	115	3	He	51.613	ug/l	218390.92
Sb	123	115	1	No Gas	52.882	ug/l	742126.61
Sb	123	115	3	He	52.326	ug/l	174254.11
Ba	135	115	1	No Gas	51.998	ug/l	221500.57
Ba	137	115	1	No Gas	50.765	ug/l	382496.68
La	139	115	3	He	51.366	ug/l	945554.83
Ce	140	115	3	He	51.418	ug/l	1023813.54
Hg	201	209	1	No Gas	1.007	ug/l	2924.41
Hg	202	209	1	No Gas	1.018	ug/l	6675.34
Hg	202	209	3	He	1.016	ug/l	2458.07
Tl	203	209	3	He	48.434	ug/l	347294.83
Tl	205	209	1	No Gas	48.583	ug/l	2257742.26
Tl	205	209	3	He	49.201	ug/l	834599.17
[Pb]	206	209	1	No Gas	50.203	ug/l	795060.86
[Pb]	207	209	1	No Gas	49.495	ug/l	686653.94
Pb	208	209	1	No Gas	49.633	ug/l	3137321.60
Th	232	209	3	He	48.560	ug/l	1144481.20
U	238	209	1	No Gas	48.098	ug/l	3081459.88

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4011289.55	85.2
Sc	45	2	H2	1669116.86	87.7
Sc	45	3	He	251578.87	87.5
Y	89	1	No Gas	8202827.23	93.2
Y	89	2	H2	5163718.79	92.0
Y	89	3	He	1287350.86	91.6
In	115	1	No Gas	8567407.35	93.0
In	115	3	He	1634424.69	88.9
Tb	159	1	No Gas	12505148.66	95.1
Tb	159	3	He	4300712.85	92.1
Ho	165	1	No Gas	12628803.36	98.5
Ho	165	3	He	4265777.14	93.3
Lu	175	1	No Gas	12453876.67	99.2
Lu	175	3	He	3434911.87	92.2
Bi	209	1	No Gas	8128378.43	96.1
Bi	209	3	He	2772848.94	91.8

ICPMS207-B Analytical Data

Sample Name CCB
File Name 073_CCB.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 12:09:22
Sample Type CCB
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	0.411	ug/l	12472.77
Be	9	45	1	No Gas	-0.047	ug/l	93.65
B	11	45	1	No Gas	0.869	ug/l	4439.11
Na	23	45	3	He	61.068	ug/l	78869.75
Mg	24	45	3	He	2.360	ug/l	1450.53
Al	27	45	1	No Gas	-0.051	ug/l	2704.71
Si	28	45	2	H2	41.474	ug/l	69235.63
K	39	89	3	He	-0.731	ug/l	58031.54
Ca	40	89	2	H2	0.560	ug/l	54258.11
Ti	47	89	1	No Gas	0.045	ug/l	248.59
V	51	89	1	No Gas	-3.485	ug/l	-96323.95
V	51	89	3	He	2.960	ug/l	15332.47
Cr	52	89	1	No Gas	0.853	ug/l	54148.68
Cr	52	89	3	He	0.022	ug/l	385.57
Mn	55	89	1	No Gas	0.051	ug/l	6342.17
Mn	55	89	3	He	-0.007	ug/l	87.98
Fe	56	89	2	H2	-0.027	ug/l	5897.14
Fe	56	89	3	He	0.200	ug/l	4650.44
Co	59	89	1	No Gas	-0.001	ug/l	236.20
Ni	60	89	1	No Gas	0.011	ug/l	395.89
Ni	60	89	3	He	0.013	ug/l	94.44
Cu	63	89	1	No Gas	0.110	ug/l	2397.16
Cu	63	89	3	He	0.094	ug/l	606.22
Cu	65	89	1	No Gas	0.094	ug/l	1021.78
Zn	66	89	1	No Gas	-0.063	ug/l	251.31
Zn	66	89	3	He	-0.009	ug/l	63.33
As	75	89	1	No Gas	0.622	ug/l	15368.57
As	75	89	3	He	0.101	ug/l	161.07
Se	78	89	2	H2	0.027	ug/l	19.33
Br	79	89	1	No Gas	0.447	ug/l	74774.91
Br	79	89	2	H2	0.428	ug/l	30841.75
Se	82	89	1	No Gas	0.104	ug/l	817.42
Kr	84	89	1	No Gas		ug/l	23882.54
Sr	88	89	1	No Gas	0.003	ug/l	502.35
Sr	88	89	3	He	-0.001	ug/l	205.56
Mo	95	115	1	No Gas	0.036	ug/l	343.34
Mo	95	115	3	He	0.019	ug/l	70.00
Mo	98	115	1	No Gas	0.025	ug/l	421.33
Ag	107	115	1	No Gas	0.001	ug/l	88.70
Ag	109	115	1	No Gas	0.000	ug/l	47.35
Cd	111	115	1	No Gas	-0.019	ug/l	2501.83

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.005	ug/l	6.22
Cd	114	115	1	No Gas	0.006	ug/l	63.34
Cd	114	115	3	He	0.004	ug/l	13.33
Sn	118	115	1	No Gas	0.085	ug/l	2255.72
Sn	118	115	3	He	0.081	ug/l	514.46
Sb	121	115	1	No Gas	0.273	ug/l	5178.15
Sb	121	115	3	He	0.195	ug/l	883.12
Sb	123	115	1	No Gas	0.277	ug/l	4044.66
Sb	123	115	3	He	0.201	ug/l	717.76
Ba	135	115	1	No Gas	-0.001	ug/l	9.98
Ba	137	115	1	No Gas	-0.003	ug/l	36.59
La	139	115	3	He	0.000	ug/l	11.11
Ce	140	115	3	He	-0.002	ug/l	12.22
Hg	201	209	1	No Gas	0.006	ug/l	34.32
Hg	202	209	1	No Gas	0.006	ug/l	87.65
Hg	202	209	3	He	0.003	ug/l	24.00
Tl	203	209	3	He	0.099	ug/l	754.99
Tl	205	209	1	No Gas	0.081	ug/l	4048.44
Tl	205	209	3	He	0.101	ug/l	1814.19
[Pb]	206	209	1	No Gas	0.000	ug/l	117.78
[Pb]	207	209	1	No Gas	0.002	ug/l	135.56
Pb	208	209	1	No Gas	0.001	ug/l	527.79
Th	232	209	3	He	0.045	ug/l	1197.20
U	238	209	1	No Gas	0.003	ug/l	210.96

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4000792.58	85.0
Sc	45	2	H2	1654372.70	87.0
Sc	45	3	He	244279.16	85.0
Y	89	1	No Gas	8123715.51	92.3
Y	89	2	H2	5110045.23	91.0
Y	89	3	He	1233927.99	87.8
In	115	1	No Gas	8607437.41	93.4
In	115	3	He	1650408.60	89.8
Tb	159	1	No Gas	12672203.32	96.4
Tb	159	3	He	4323310.71	92.6
Ho	165	1	No Gas	12397935.41	96.7
Ho	165	3	He	4279826.71	93.6
Lu	175	1	No Gas	12331143.11	98.2
Lu	175	3	He	3480394.31	93.4
Bi	209	1	No Gas	8427756.47	99.6
Bi	209	3	He	2863014.71	94.8

ICPMS207-B Analytical Data

Sample Name B22030433-001ADIL
File Name 074SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 12:15:38
Sample Type Sample
Total Dilution 5.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	0.541	ug/l	9668.29
Be	9	45	1	No Gas	-0.262	ug/l	75.32
B	11	45	1	No Gas	73.433	ug/l	28800.16
Na	23	45	3	He	62381.637	ug/l	9703731.59
Mg	24	45	3	He	32981.797	ug/l	2846973.55
Al	27	45	1	No Gas	8.842	ug/l	33516.58
Si	28	45	2	H2	18016.997	ug/l	5094232.57
K	39	89	3	He	2894.557	ug/l	305413.19
Ca	40	89	2	H2	28878.042	ug/l	33133751.96
Ti	47	89	1	No Gas	1.437	ug/l	729.09
V	51	89	1	No Gas	-6.289	ug/l	-42082.15
V	51	89	3	He	21.709	ug/l	20156.06
Cr	52	89	1	No Gas	3.749	ug/l	51897.99
Cr	52	89	3	He	0.332	ug/l	565.57
Mn	55	89	1	No Gas	186.880	ug/l	1158487.42
Mn	55	89	3	He	190.366	ug/l	108356.29
Fe	56	89	2	H2	17.538	ug/l	49558.24
Fe	56	89	3	He	19.172	ug/l	18111.07
Co	59	89	1	No Gas	0.339	ug/l	2016.16
Ni	60	89	1	No Gas	1.511	ug/l	2092.68
Ni	60	89	3	He	1.528	ug/l	543.35
Cu	63	89	1	No Gas	1.589	ug/l	5279.74
Cu	63	89	3	He	1.060	ug/l	1089.16
Cu	65	89	1	No Gas	1.057	ug/l	1816.18
Zn	66	89	1	No Gas	6.445	ug/l	5384.79
Zn	66	89	3	He	6.662	ug/l	1083.38
As	75	89	1	No Gas	1.291	ug/l	13922.33
As	75	89	3	He	1.180	ug/l	237.40
Se	78	89	2	H2	0.173	ug/l	22.00
Br	79	89	1	No Gas	93.023	ug/l	193495.56
Br	79	89	2	H2	87.035	ug/l	83113.39
Se	82	89	1	No Gas	2.642	ug/l	930.63
Kr	84	89	1	No Gas		ug/l	36577.12
Sr	88	89	1	No Gas	241.313	ug/l	1953135.59
Sr	88	89	3	He	233.710	ug/l	202453.05
Mo	95	115	1	No Gas	7.351	ug/l	12248.62
Mo	95	115	3	He	7.665	ug/l	3908.33
Mo	98	115	1	No Gas	7.443	ug/l	19849.64
Ag	107	115	1	No Gas	-0.001	ug/l	63.36
Ag	109	115	1	No Gas	-0.005	ug/l	30.68
Cd	111	115	1	No Gas	-0.290	ug/l	2313.57

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.065	ug/l	16.55
Cd	114	115	1	No Gas	0.052	ug/l	104.28
Cd	114	115	3	He	0.079	ug/l	48.67
Sn	118	115	1	No Gas	0.334	ug/l	1999.52
Sn	118	115	3	He	0.262	ug/l	415.56
Sb	121	115	1	No Gas	0.606	ug/l	2396.11
Sb	121	115	3	He	0.552	ug/l	512.06
Sb	123	115	1	No Gas	0.592	ug/l	1801.30
Sb	123	115	3	He	0.529	ug/l	389.38
Ba	135	115	1	No Gas	4.951	ug/l	4228.93
Ba	137	115	1	No Gas	4.829	ug/l	7330.77
La	139	115	3	He	0.003	ug/l	16.67
Ce	140	115	3	He	0.000	ug/l	41.11
Hg	201	209	1	No Gas	0.018	ug/l	27.33
Hg	202	209	1	No Gas	0.097	ug/l	171.30
Hg	202	209	3	He	0.081	ug/l	54.66
Tl	203	209	3	He	0.140	ug/l	220.76
Tl	205	209	1	No Gas	0.097	ug/l	1065.61
Tl	205	209	3	He	0.153	ug/l	562.24
[Pb]	206	209	1	No Gas	0.293	ug/l	1051.16
[Pb]	207	209	1	No Gas	0.270	ug/l	853.37
Pb	208	209	1	No Gas	0.281	ug/l	4031.38
Th	232	209	3	He	0.060	ug/l	386.16
U	238	209	1	No Gas	0.083	ug/l	1072.17

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3998819.60	84.9
Sc	45	2	H2	1654066.03	86.9
Sc	45	3	He	243460.78	84.7
Y	89	1	No Gas	8146258.26	92.5
Y	89	2	H2	5087215.74	90.6
Y	89	3	He	1217198.21	86.6
In	115	1	No Gas	8562130.88	92.9
In	115	3	He	1620057.65	88.1
Tb	159	1	No Gas	12603169.29	95.9
Tb	159	3	He	4261748.99	91.3
Ho	165	1	No Gas	12551863.29	97.9
Ho	165	3	He	4254699.44	93.1
Lu	175	1	No Gas	12362765.25	98.4
Lu	175	3	He	3470713.38	93.2
Bi	209	1	No Gas	8203857.96	97.0
Bi	209	3	He	2792224.67	92.5

ICPMS207-B Analytical Data

Sample Name B22030433-001AMS
File Name 075MS.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 12:21:53
Sample Type MS
Total Dilution 1.0300
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	1861.743	ug/l	17075375.92
Be	9	45	1	No Gas	40.749	ug/l	143452.92
B	11	45	1	No Gas	111.714	ug/l	198011.79
Na	23	45	3	He	104685.410	ug/l	77760854.95
Mg	24	45	3	He	79698.527	ug/l	32942065.47
Al	27	45	1	No Gas	47.961	ug/l	808379.37
Si	28	45	2	H2	17479.689	ug/l	22937536.65
K	39	89	3	He	48611.322	ug/l	20189114.56
Ca	40	89	2	H2	74082.393	ug/l	390096085.68
Ti	47	89	1	No Gas	50.175	ug/l	94367.32
V	51	89	1	No Gas	50.336	ug/l	1162355.59
V	51	89	3	He	59.057	ug/l	212265.54
Cr	52	89	1	No Gas	47.178	ug/l	1076207.72
Cr	52	89	3	He	47.209	ug/l	190360.99
Mn	55	89	1	No Gas	230.160	ug/l	6724086.17
Mn	55	89	3	He	233.311	ug/l	641722.24
Fe	56	89	2	H2	4853.050	ug/l	55164064.62
Fe	56	89	3	He	4663.648	ug/l	16788694.14
Co	59	89	1	No Gas	46.622	ug/l	1143344.12
Ni	60	89	1	No Gas	46.994	ug/l	259099.31
Ni	60	89	3	He	49.183	ug/l	73375.93
Cu	63	89	1	No Gas	48.871	ug/l	640004.56
Cu	63	89	3	He	48.336	ug/l	194863.85
Cu	65	89	1	No Gas	47.275	ug/l	300810.90
Zn	66	89	1	No Gas	51.737	ug/l	186247.69
Zn	66	89	3	He	51.861	ug/l	38241.14
As	75	89	1	No Gas	49.615	ug/l	209454.69
As	75	89	3	He	51.111	ug/l	28913.93
Se	78	89	2	H2	52.931	ug/l	17795.65
Br	79	89	1	No Gas	58.450	ug/l	431336.04
Br	79	89	2	H2	55.213	ug/l	184523.39
Se	82	89	1	No Gas	52.680	ug/l	14072.04
Kr	84	89	1	No Gas		ug/l	93265.51
Sr	88	89	1	No Gas	290.434	ug/l	11116850.44
Sr	88	89	3	He	277.127	ug/l	1160039.23
Mo	95	115	1	No Gas	55.365	ug/l	429101.30
Mo	95	115	3	He	57.578	ug/l	133344.29
Mo	98	115	1	No Gas	55.756	ug/l	691380.96
Ag	107	115	1	No Gas	19.069	ug/l	378150.87
Ag	109	115	1	No Gas	18.970	ug/l	360908.78
Cd	111	115	1	No Gas	47.724	ug/l	204349.20

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	49.999	ug/l	56702.18
Cd	114	115	1	No Gas	48.676	ug/l	453344.08
Cd	114	115	3	He	50.675	ug/l	137922.83
Sn	118	115	1	No Gas	48.463	ug/l	606171.46
Sn	118	115	3	He	48.724	ug/l	140233.15
Sb	121	115	1	No Gas	51.456	ug/l	875945.65
Sb	121	115	3	He	51.687	ug/l	197967.66
Sb	123	115	1	No Gas	51.576	ug/l	675133.80
Sb	123	115	3	He	51.677	ug/l	155760.82
Ba	135	115	1	No Gas	53.995	ug/l	214523.13
Ba	137	115	1	No Gas	53.104	ug/l	373244.52
La	139	115	3	He	52.203	ug/l	869748.55
Ce	140	115	3	He	51.715	ug/l	932143.04
Hg	201	209	1	No Gas	1.035	ug/l	2749.07
Hg	202	209	1	No Gas	1.093	ug/l	6551.30
Hg	202	209	3	He	1.074	ug/l	2327.41
Tl	203	209	3	He	48.042	ug/l	308583.93
Tl	205	209	1	No Gas	48.377	ug/l	2055231.06
Tl	205	209	3	He	48.820	ug/l	741820.79
[Pb]	206	209	1	No Gas	49.165	ug/l	711805.55
[Pb]	207	209	1	No Gas	48.610	ug/l	616414.95
Pb	208	209	1	No Gas	49.221	ug/l	2844045.76
Th	232	209	3	He	49.756	ug/l	1050416.03
U	238	209	1	No Gas	48.787	ug/l	2857218.13

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4078684.25	86.6
Sc	45	2	H2	1585845.22	83.4
Sc	45	3	He	240145.50	83.5
Y	89	1	No Gas	7935967.77	90.1
Y	89	2	H2	4820242.94	85.9
Y	89	3	He	1212660.59	86.3
In	115	1	No Gas	8233234.66	89.3
In	115	3	He	1523517.03	82.9
Tb	159	1	No Gas	12320432.39	93.7
Tb	159	3	He	4128673.32	88.4
Ho	165	1	No Gas	12105298.10	94.4
Ho	165	3	He	4118593.71	90.1
Lu	175	1	No Gas	12275341.06	97.8
Lu	175	3	He	3364705.26	90.3
Bi	209	1	No Gas	7652341.10	90.4
Bi	209	3	He	2558238.96	84.7

ICPMS207-B Analytical Data

Sample Name B22030433-001AMSD
File Name 076MSD.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 12:28:08
Sample Type MSD
Total Dilution 1.0300
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	1975.704	ug/l	18075508.45
Be	9	45	1	No Gas	43.397	ug/l	152379.85
B	11	45	1	No Gas	118.601	ug/l	209521.37
Na	23	45	3	He	103047.135	ug/l	76911061.07
Mg	24	45	3	He	79885.042	ug/l	33177499.19
Al	27	45	1	No Gas	50.365	ug/l	846631.22
Si	28	45	2	H2	17619.313	ug/l	23404708.68
K	39	89	3	He	47733.973	ug/l	20121507.76
Ca	40	89	2	H2	74259.551	ug/l	397435761.76
Ti	47	89	1	No Gas	50.797	ug/l	96401.97
V	51	89	1	No Gas	50.784	ug/l	1183802.31
V	51	89	3	He	58.605	ug/l	213822.43
Cr	52	89	1	No Gas	48.501	ug/l	1115441.81
Cr	52	89	3	He	47.369	ug/l	193845.93
Mn	55	89	1	No Gas	229.474	ug/l	6764923.35
Mn	55	89	3	He	231.374	ug/l	645837.73
Fe	56	89	2	H2	4746.319	ug/l	54840389.71
Fe	56	89	3	He	4616.072	ug/l	16860484.26
Co	59	89	1	No Gas	48.227	ug/l	1193476.05
Ni	60	89	1	No Gas	48.650	ug/l	270643.88
Ni	60	89	3	He	49.615	ug/l	75113.60
Cu	63	89	1	No Gas	49.820	ug/l	658308.92
Cu	63	89	3	He	48.091	ug/l	196772.68
Cu	65	89	1	No Gas	47.660	ug/l	305986.94
Zn	66	89	1	No Gas	52.161	ug/l	189464.00
Zn	66	89	3	He	51.158	ug/l	38276.78
As	75	89	1	No Gas	50.283	ug/l	214075.53
As	75	89	3	He	51.119	ug/l	29350.61
Se	78	89	2	H2	53.208	ug/l	18181.68
Br	79	89	1	No Gas	57.958	ug/l	432157.38
Br	79	89	2	H2	54.170	ug/l	184524.69
Se	82	89	1	No Gas	53.808	ug/l	14488.53
Kr	84	89	1	No Gas		ug/l	95047.48
Sr	88	89	1	No Gas	293.084	ug/l	11319525.30
Sr	88	89	3	He	276.593	ug/l	1175049.71
Mo	95	115	1	No Gas	57.505	ug/l	438691.69
Mo	95	115	3	He	58.115	ug/l	135847.39
Mo	98	115	1	No Gas	58.080	ug/l	708829.00
Ag	107	115	1	No Gas	19.516	ug/l	380885.09
Ag	109	115	1	No Gas	19.617	ug/l	367313.63
Cd	111	115	1	No Gas	49.388	ug/l	208054.63

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	50.593	ug/l	57911.58
Cd	114	115	1	No Gas	50.638	ug/l	464151.29
Cd	114	115	3	He	51.169	ug/l	140567.54
Sn	118	115	1	No Gas	49.938	ug/l	614642.84
Sn	118	115	3	He	49.833	ug/l	144753.55
Sb	121	115	1	No Gas	53.542	ug/l	897035.50
Sb	121	115	3	He	52.232	ug/l	201903.34
Sb	123	115	1	No Gas	53.320	ug/l	686981.28
Sb	123	115	3	He	52.132	ug/l	158591.33
Ba	135	115	1	No Gas	56.371	ug/l	220462.91
Ba	137	115	1	No Gas	54.504	ug/l	377036.46
La	139	115	3	He	52.461	ug/l	882134.23
Ce	140	115	3	He	51.813	ug/l	942504.93
Hg	201	209	1	No Gas	1.053	ug/l	2755.74
Hg	202	209	1	No Gas	1.128	ug/l	6657.67
Hg	202	209	3	He	1.060	ug/l	2292.41
Tl	203	209	3	He	48.181	ug/l	309029.39
Tl	205	209	1	No Gas	49.160	ug/l	2057932.97
Tl	205	209	3	He	48.910	ug/l	742124.61
[Pb]	206	209	1	No Gas	50.398	ug/l	718992.60
[Pb]	207	209	1	No Gas	49.497	ug/l	618584.82
Pb	208	209	1	No Gas	50.385	ug/l	2868940.48
Th	232	209	3	He	50.086	ug/l	1055795.12
U	238	209	1	No Gas	49.885	ug/l	2879131.16

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4068837.48	86.4
Sc	45	2	H2	1605138.15	84.4
Sc	45	3	He	241299.75	83.9
Y	89	1	No Gas	8006924.82	91.0
Y	89	2	H2	4899517.00	87.3
Y	89	3	He	1230969.02	87.6
In	115	1	No Gas	8101343.05	87.9
In	115	3	He	1537693.59	83.7
Tb	159	1	No Gas	12237705.71	93.1
Tb	159	3	He	4090852.53	87.6
Ho	165	1	No Gas	12065479.85	94.1
Ho	165	3	He	4055444.47	88.7
Lu	175	1	No Gas	11990362.75	95.5
Lu	175	3	He	3345500.15	89.8
Bi	209	1	No Gas	7540218.33	89.1
Bi	209	3	He	2554750.16	84.6

ICPMS207-B Analytical Data

Sample Name Rinse
File Name 077BLKV.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 12:34:23
Sample Type BlkVrfy
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	2.524	ug/l	31958.91
Be	9	45	1	No Gas	-0.038	ug/l	124.98
B	11	45	1	No Gas	2.137	ug/l	6660.14
Na	23	45	3	He	57.519	ug/l	76728.70
Mg	24	45	3	He	8.849	ug/l	4295.45
Al	27	45	1	No Gas	1.958	ug/l	36650.32
Si	28	45	2	H2	23.761	ug/l	45191.08
K	39	89	3	He	5.936	ug/l	60775.70
Ca	40	89	2	H2	2.521	ug/l	65427.20
Ti	47	89	1	No Gas	0.122	ug/l	398.74
V	51	89	1	No Gas	-1.961	ug/l	-58451.82
V	51	89	3	He	2.372	ug/l	13131.44
Cr	52	89	1	No Gas	1.015	ug/l	57727.98
Cr	52	89	3	He	0.019	ug/l	371.12
Mn	55	89	1	No Gas	0.060	ug/l	6618.38
Mn	55	89	3	He	0.000	ug/l	108.65
Fe	56	89	2	H2	0.129	ug/l	7824.97
Fe	56	89	3	He	0.318	ug/l	5084.35
Co	59	89	1	No Gas	0.000	ug/l	252.84
Ni	60	89	1	No Gas	0.033	ug/l	522.31
Ni	60	89	3	He	0.040	ug/l	135.56
Cu	63	89	1	No Gas	0.118	ug/l	2499.89
Cu	63	89	3	He	0.095	ug/l	608.56
Cu	65	89	1	No Gas	0.107	ug/l	1109.16
Zn	66	89	1	No Gas	-0.050	ug/l	298.06
Zn	66	89	3	He	-0.030	ug/l	46.67
As	75	89	1	No Gas	0.661	ug/l	15449.14
As	75	89	3	He	0.106	ug/l	163.20
Se	78	89	2	H2	0.033	ug/l	21.45
Br	79	89	1	No Gas	7.195	ug/l	118313.52
Br	79	89	2	H2	6.257	ug/l	48815.30
Se	82	89	1	No Gas	0.416	ug/l	893.70
Kr	84	89	1	No Gas		ug/l	24553.25
Sr	88	89	1	No Gas	0.004	ug/l	545.60
Sr	88	89	3	He	-0.010	ug/l	165.56
Mo	95	115	1	No Gas	0.071	ug/l	633.35
Mo	95	115	3	He	0.050	ug/l	147.78
Mo	98	115	1	No Gas	0.069	ug/l	994.35
Ag	107	115	1	No Gas	0.001	ug/l	89.37
Ag	109	115	1	No Gas	0.000	ug/l	48.02
Cd	111	115	1	No Gas	-0.006	ug/l	2531.86

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.007	ug/l	9.22
Cd	114	115	1	No Gas	0.006	ug/l	57.64
Cd	114	115	3	He	0.007	ug/l	22.38
Sn	118	115	1	No Gas	0.230	ug/l	4159.10
Sn	118	115	3	He	0.167	ug/l	784.47
Sb	121	115	1	No Gas	0.537	ug/l	9914.51
Sb	121	115	3	He	0.377	ug/l	1646.26
Sb	123	115	1	No Gas	0.536	ug/l	7600.49
Sb	123	115	3	He	0.383	ug/l	1317.53
Ba	135	115	1	No Gas	0.001	ug/l	19.96
Ba	137	115	1	No Gas	-0.003	ug/l	29.94
La	139	115	3	He	0.001	ug/l	24.45
Ce	140	115	3	He	-0.001	ug/l	14.44
Hg	201	209	1	No Gas	0.006	ug/l	33.32
Hg	202	209	1	No Gas	0.009	ug/l	104.65
Hg	202	209	3	He	0.007	ug/l	32.66
Tl	203	209	3	He	0.073	ug/l	540.90
Tl	205	209	1	No Gas	0.052	ug/l	2542.49
Tl	205	209	3	He	0.070	ug/l	1228.56
[Pb]	206	209	1	No Gas	0.002	ug/l	148.89
[Pb]	207	209	1	No Gas	0.002	ug/l	120.00
Pb	208	209	1	No Gas	0.002	ug/l	563.34
Th	232	209	3	He	0.051	ug/l	1300.59
U	238	209	1	No Gas	0.004	ug/l	248.95

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3989600.33	84.7
Sc	45	2	H2	1687397.77	88.7
Sc	45	3	He	246268.12	85.7
Y	89	1	No Gas	8094640.81	91.9
Y	89	2	H2	5101855.64	90.9
Y	89	3	He	1231235.10	87.6
In	115	1	No Gas	8508986.40	92.3
In	115	3	He	1634831.48	88.9
Tb	159	1	No Gas	12370387.87	94.1
Tb	159	3	He	4200873.28	90.0
Ho	165	1	No Gas	12250695.89	95.5
Ho	165	3	He	4155511.30	90.9
Lu	175	1	No Gas	12148359.28	96.7
Lu	175	3	He	3412454.16	91.6
Bi	209	1	No Gas	8105834.51	95.8
Bi	209	3	He	2779799.47	92.1

ICPMS207-B Analytical Data

Sample Name B22030433-001B
File Name 078ARef.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 12:40:38
Sample Type AIRRef
Total Dilution 1.0000
Comment ICPMS-6020-W-T
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	2.074	ug/l	27036.10
Be	9	45	1	No Gas	-0.045	ug/l	97.65
B	11	45	1	No Gas	71.442	ug/l	125038.69
Na	23	45	3	He	55781.341	ug/l	41602288.55
Mg	24	45	3	He	32429.121	ug/l	13454370.15
Al	27	45	1	No Gas	12.051	ug/l	201561.94
Si	28	45	2	H2	16922.976	ug/l	22376392.54
K	39	89	3	He	2826.680	ug/l	1258156.92
Ca	40	89	2	H2	27657.715	ug/l	155235508.37
Ti	47	89	1	No Gas	2.214	ug/l	4465.18
V	51	89	1	No Gas	5.659	ug/l	126265.41
V	51	89	3	He	10.994	ug/l	44031.13
Cr	52	89	1	No Gas	2.057	ug/l	80837.02
Cr	52	89	3	He	0.276	ug/l	1428.97
Mn	55	89	1	No Gas	184.588	ug/l	5588010.06
Mn	55	89	3	He	191.717	ug/l	541074.44
Fe	56	89	2	H2	44.277	ug/l	542230.80
Fe	56	89	3	He	45.485	ug/l	171773.63
Co	59	89	1	No Gas	0.380	ug/l	9897.08
Ni	60	89	1	No Gas	1.631	ug/l	9634.12
Ni	60	89	3	He	1.461	ug/l	2306.87
Cu	63	89	1	No Gas	1.276	ug/l	18161.90
Cu	63	89	3	He	0.662	ug/l	2939.38
Cu	65	89	1	No Gas	0.764	ug/l	5420.53
Zn	66	89	1	No Gas	2.422	ug/l	9492.45
Zn	66	89	3	He	2.476	ug/l	1939.03
As	75	89	1	No Gas	1.475	ug/l	18620.98
As	75	89	3	He	0.912	ug/l	626.73
Se	78	89	2	H2	0.172	ug/l	70.67
Br	79	89	1	No Gas	18.901	ug/l	191798.46
Br	79	89	2	H2	16.895	ug/l	79854.48
Se	82	89	1	No Gas	0.886	ug/l	1007.18
Kr	84	89	1	No Gas		ug/l	81203.55
Sr	88	89	1	No Gas	242.573	ug/l	9619563.83
Sr	88	89	3	He	234.579	ug/l	1007581.57
Mo	95	115	1	No Gas	7.704	ug/l	61527.34
Mo	95	115	3	He	7.908	ug/l	19516.72
Mo	98	115	1	No Gas	7.809	ug/l	99782.44
Ag	107	115	1	No Gas	0.004	ug/l	140.73
Ag	109	115	1	No Gas	0.002	ug/l	86.70
Cd	111	115	1	No Gas	0.009	ug/l	2518.07

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.021	ug/l	26.11
Cd	114	115	1	No Gas	0.019	ug/l	179.39
Cd	114	115	3	He	0.022	ug/l	63.85
Sn	118	115	1	No Gas	0.673	ug/l	9707.51
Sn	118	115	3	He	0.595	ug/l	2063.50
Sb	121	115	1	No Gas	0.457	ug/l	8194.87
Sb	121	115	3	He	0.447	ug/l	1870.32
Sb	123	115	1	No Gas	0.460	ug/l	6337.40
Sb	123	115	3	He	0.452	ug/l	1489.90
Ba	135	115	1	No Gas	4.344	ug/l	17789.45
Ba	137	115	1	No Gas	4.059	ug/l	29426.22
La	139	115	3	He	0.006	ug/l	115.56
Ce	140	115	3	He	0.012	ug/l	263.34
Hg	201	209	1	No Gas	0.029	ug/l	93.98
Hg	202	209	1	No Gas	0.109	ug/l	701.88
Hg	202	209	3	He	0.087	ug/l	208.96
Tl	203	209	3	He	0.031	ug/l	222.76
Tl	205	209	1	No Gas	0.023	ug/l	1151.17
Tl	205	209	3	He	0.033	ug/l	557.57
[Pb]	206	209	1	No Gas	0.041	ug/l	707.80
[Pb]	207	209	1	No Gas	0.039	ug/l	591.13
Pb	208	209	1	No Gas	0.039	ug/l	2717.91
Th	232	209	3	He	0.125	ug/l	2833.45
U	238	209	1	No Gas	0.083	ug/l	4941.29

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3880435.01	82.4
Sc	45	2	H2	1550165.33	81.5
Sc	45	3	He	234026.23	81.4
Y	89	1	No Gas	7983395.20	90.7
Y	89	2	H2	4984718.81	88.8
Y	89	3	He	1208047.94	86.0
In	115	1	No Gas	8230728.95	89.3
In	115	3	He	1574772.52	85.7
Tb	159	1	No Gas	12320103.00	93.7
Tb	159	3	He	4146248.91	88.8
Ho	165	1	No Gas	12317302.70	96.1
Ho	165	3	He	4120033.79	90.1
Lu	175	1	No Gas	12085298.10	96.2
Lu	175	3	He	3350939.70	89.9
Bi	209	1	No Gas	7568944.12	89.4
Bi	209	3	He	2587209.79	85.7

ICPMS207-B Analytical Data

Sample Name B22030433-001BDIL
File Name 079MS.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 12:46:53
Sample Type MS
Total Dilution 5.0000
Comment ICPMS-6020-W-T
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	3.119	ug/l	14672.96
Be	9	45	1	No Gas	-0.261	ug/l	77.98
B	11	45	1	No Gas	71.266	ug/l	28490.12
Na	23	45	3	He	56626.023	ug/l	8736948.41
Mg	24	45	3	He	32995.320	ug/l	2824104.00
Al	27	45	1	No Gas	16.484	ug/l	60391.14
Si	28	45	2	H2	17300.194	ug/l	4763386.28
K	39	89	3	He	2839.791	ug/l	304591.93
Ca	40	89	2	H2	28003.609	ug/l	32541033.01
Ti	47	89	1	No Gas	2.295	ug/l	1106.16
V	51	89	1	No Gas	1.379	ug/l	-3931.47
V	51	89	3	He	17.238	ug/l	17118.85
Cr	52	89	1	No Gas	4.221	ug/l	55921.65
Cr	52	89	3	He	0.452	ug/l	673.35
Mn	55	89	1	No Gas	184.745	ug/l	1183513.65
Mn	55	89	3	He	192.656	ug/l	111068.02
Fe	56	89	2	H2	45.755	ug/l	120885.99
Fe	56	89	3	He	47.839	ug/l	39950.89
Co	59	89	1	No Gas	0.376	ug/l	2285.65
Ni	60	89	1	No Gas	1.736	ug/l	2435.38
Ni	60	89	3	He	1.616	ug/l	577.79
Cu	63	89	1	No Gas	1.842	ug/l	6178.46
Cu	63	89	3	He	1.179	ug/l	1203.48
Cu	65	89	1	No Gas	1.291	ug/l	2202.39
Zn	66	89	1	No Gas	6.589	ug/l	5678.10
Zn	66	89	3	He	7.430	ug/l	1215.61
As	75	89	1	No Gas	-0.753	ug/l	12576.40
As	75	89	3	He	1.227	ug/l	246.00
Se	78	89	2	H2	0.207	ug/l	24.89
Br	79	89	1	No Gas	53.736	ug/l	147144.98
Br	79	89	2	H2	51.568	ug/l	62043.27
Se	82	89	1	No Gas	2.042	ug/l	930.23
Kr	84	89	1	No Gas		ug/l	33445.97
Sr	88	89	1	No Gas	238.993	ug/l	1999137.57
Sr	88	89	3	He	231.938	ug/l	203500.92
Mo	95	115	1	No Gas	7.426	ug/l	12692.36
Mo	95	115	3	He	7.818	ug/l	4025.03
Mo	98	115	1	No Gas	7.626	ug/l	20855.26
Ag	107	115	1	No Gas	0.002	ug/l	80.03
Ag	109	115	1	No Gas	-0.006	ug/l	28.01
Cd	111	115	1	No Gas	-0.400	ug/l	2269.86

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.051	ug/l	13.22
Cd	114	115	1	No Gas	0.045	ug/l	91.74
Cd	114	115	3	He	0.042	ug/l	27.10
Sn	118	115	1	No Gas	0.429	ug/l	2312.30
Sn	118	115	3	He	0.483	ug/l	560.02
Sb	121	115	1	No Gas	0.738	ug/l	2952.61
Sb	121	115	3	He	0.703	ug/l	645.75
Sb	123	115	1	No Gas	0.734	ug/l	2256.08
Sb	123	115	3	He	0.707	ug/l	511.73
Ba	135	115	1	No Gas	4.107	ug/l	3600.03
Ba	137	115	1	No Gas	4.107	ug/l	6398.80
La	139	115	3	He	0.008	ug/l	32.22
Ce	140	115	3	He	0.004	ug/l	60.00
Hg	201	209	1	No Gas	0.047	ug/l	43.99
Hg	202	209	1	No Gas	0.115	ug/l	196.63
Hg	202	209	3	He	0.089	ug/l	58.66
Tl	203	209	3	He	0.089	ug/l	148.06
Tl	205	209	1	No Gas	0.053	ug/l	654.46
Tl	205	209	3	He	0.093	ug/l	359.48
[Pb]	206	209	1	No Gas	0.083	ug/l	384.45
[Pb]	207	209	1	No Gas	0.075	ug/l	310.01
Pb	208	209	1	No Gas	0.082	ug/l	1498.94
Th	232	209	3	He	0.060	ug/l	388.83
U	238	209	1	No Gas	0.081	ug/l	1056.84

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4064305.87	86.3
Sc	45	2	H2	1611136.46	84.7
Sc	45	3	He	241383.69	84.0
Y	89	1	No Gas	8416790.35	95.6
Y	89	2	H2	5155770.64	91.8
Y	89	3	He	1232848.14	87.8
In	115	1	No Gas	8778435.04	95.3
In	115	3	He	1636032.58	89.0
Tb	159	1	No Gas	12812278.28	97.5
Tb	159	3	He	4258945.46	91.2
Ho	165	1	No Gas	12690175.88	99.0
Ho	165	3	He	4261369.97	93.2
Lu	175	1	No Gas	12544474.34	99.9
Lu	175	3	He	3485745.49	93.6
Bi	209	1	No Gas	8256330.35	97.6
Bi	209	3	He	2805157.76	92.9

ICPMS207-B Analytical Data

Sample Name B22030433-001BPDS1
File Name 080MSD.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 12:53:08
Sample Type MSD
Total Dilution 1.0300
Comment ICPMS-6020-W-T
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	1694.361	ug/l	14427017.47
Be	9	45	1	No Gas	37.012	ug/l	120966.17
B	11	45	1	No Gas	113.699	ug/l	187042.29
Na	23	45	3	He	102714.198	ug/l	72247333.92
Mg	24	45	3	He	79051.293	ug/l	30940334.50
Al	27	45	1	No Gas	56.384	ug/l	881609.14
Si	28	45	2	H2	17182.040	ug/l	21099249.21
K	39	89	3	He	47184.201	ug/l	18956607.50
Ca	40	89	2	H2	71018.446	ug/l	364560280.77
Ti	47	89	1	No Gas	48.865	ug/l	90244.11
V	51	89	1	No Gas	46.323	ug/l	1049845.55
V	51	89	3	He	60.164	ug/l	209105.34
Cr	52	89	1	No Gas	48.024	ug/l	1075085.72
Cr	52	89	3	He	47.985	ug/l	187164.75
Mn	55	89	1	No Gas	229.561	ug/l	6585744.41
Mn	55	89	3	He	239.750	ug/l	637900.96
Fe	56	89	2	H2	4710.042	ug/l	52221125.12
Fe	56	89	3	He	4682.220	ug/l	16303638.27
Co	59	89	1	No Gas	46.451	ug/l	1118823.38
Ni	60	89	1	No Gas	46.295	ug/l	250644.37
Ni	60	89	3	He	49.867	ug/l	71967.94
Cu	63	89	1	No Gas	47.035	ug/l	604866.94
Cu	63	89	3	He	48.765	ug/l	190183.07
Cu	65	89	1	No Gas	45.936	ug/l	287022.46
Zn	66	89	1	No Gas	48.961	ug/l	173085.31
Zn	66	89	3	He	50.026	ug/l	35687.97
As	75	89	1	No Gas	46.190	ug/l	192341.22
As	75	89	3	He	48.246	ug/l	26407.12
Se	78	89	2	H2	46.563	ug/l	15267.12
Br	79	89	1	No Gas	21.473	ug/l	199219.29
Br	79	89	2	H2	19.770	ug/l	81851.53
Se	82	89	1	No Gas	45.969	ug/l	12154.67
Kr	84	89	1	No Gas		ug/l	90613.32
Sr	88	89	1	No Gas	289.347	ug/l	10874870.02
Sr	88	89	3	He	285.851	ug/l	1157420.35
Mo	95	115	1	No Gas	56.449	ug/l	426600.68
Mo	95	115	3	He	58.903	ug/l	135173.33
Mo	98	115	1	No Gas	57.043	ug/l	689596.40
Ag	107	115	1	No Gas	19.012	ug/l	367573.02
Ag	109	115	1	No Gas	19.124	ug/l	354736.39
Cd	111	115	1	No Gas	46.935	ug/l	195961.29

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	49.475	ug/l	55596.44
Cd	114	115	1	No Gas	47.975	ug/l	435610.30
Cd	114	115	3	He	50.283	ug/l	135605.13
Sn	118	115	1	No Gas	52.048	ug/l	634663.68
Sn	118	115	3	He	52.235	ug/l	148931.59
Sb	121	115	1	No Gas	50.585	ug/l	839435.72
Sb	121	115	3	He	50.283	ug/l	190817.77
Sb	123	115	1	No Gas	50.729	ug/l	647420.76
Sb	123	115	3	He	51.030	ug/l	152392.34
Ba	135	115	1	No Gas	54.704	ug/l	211870.14
Ba	137	115	1	No Gas	54.162	ug/l	371141.15
La	139	115	3	He	52.350	ug/l	864229.77
Ce	140	115	3	He	52.498	ug/l	937485.22
Hg	201	209	1	No Gas	0.997	ug/l	2553.74
Hg	202	209	1	No Gas	1.067	ug/l	6166.53
Hg	202	209	3	He	1.046	ug/l	2209.41
Tl	203	209	3	He	49.270	ug/l	308574.06
Tl	205	209	1	No Gas	48.978	ug/l	2006750.82
Tl	205	209	3	He	49.642	ug/l	735540.89
[Pb]	206	209	1	No Gas	49.324	ug/l	688639.22
[Pb]	207	209	1	No Gas	48.892	ug/l	597945.97
Pb	208	209	1	No Gas	49.651	ug/l	2766523.32
Th	232	209	3	He	50.833	ug/l	1046538.10
U	238	209	1	No Gas	49.843	ug/l	2815255.75

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3787158.93	80.4
Sc	45	2	H2	1484074.52	78.0
Sc	45	3	He	227410.56	79.1
Y	89	1	No Gas	7791164.95	88.5
Y	89	2	H2	4701171.06	83.7
Y	89	3	He	1173027.32	83.5
In	115	1	No Gas	8028968.08	87.1
In	115	3	He	1509556.01	82.1
Tb	159	1	No Gas	12101293.58	92.1
Tb	159	3	He	4067168.07	87.1
Ho	165	1	No Gas	11890327.10	92.7
Ho	165	3	He	4007784.15	87.7
Lu	175	1	No Gas	11715379.45	93.3
Lu	175	3	He	3272294.03	87.8
Bi	209	1	No Gas	7381397.42	87.2
Bi	209	3	He	2495065.77	82.6

ICPMS207-B Analytical Data

Sample Name B22030433-001BMS4
File Name 081MS4.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 12:59:23
Sample Type MS4
Total Dilution 1.0000
Comment ICPMS-6020-W-T
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	82.138	ug/l	749649.30
Be	9	45	1	No Gas	39.683	ug/l	137516.04
B	11	45	1	No Gas	162.330	ug/l	281900.78
Na	23	45	3	He	60400.259	ug/l	44942656.55
Mg	24	45	3	He	36768.945	ug/l	15220720.10
Al	27	45	1	No Gas	460.487	ug/l	7609816.55
Si	28	45	2	H2	17830.328	ug/l	23853582.72
K	39	89	3	He	7401.881	ug/l	3183219.75
Ca	40	89	2	H2	33071.950	ug/l	183274623.17
Ti	47	89	1	No Gas	92.406	ug/l	178539.90
V	51	89	1	No Gas	92.506	ug/l	2205929.54
V	51	89	3	He	109.655	ug/l	397970.35
Cr	52	89	1	No Gas	93.989	ug/l	2169047.84
Cr	52	89	3	He	98.037	ug/l	402754.38
Mn	55	89	1	No Gas	663.654	ug/l	19924313.35
Mn	55	89	3	He	676.232	ug/l	1896689.24
Fe	56	89	2	H2	532.103	ug/l	6368123.68
Fe	56	89	3	He	532.384	ug/l	1957788.73
Co	59	89	1	No Gas	94.022	ug/l	2370247.35
Ni	60	89	1	No Gas	93.200	ug/l	527930.25
Ni	60	89	3	He	102.075	ug/l	155194.30
Cu	63	89	1	No Gas	96.399	ug/l	1296878.19
Cu	63	89	3	He	99.401	ug/l	408422.48
Cu	65	89	1	No Gas	93.753	ug/l	612836.66
Zn	66	89	1	No Gas	96.712	ug/l	357459.27
Zn	66	89	3	He	97.843	ug/l	73532.06
As	75	89	1	No Gas	94.567	ug/l	398522.01
As	75	89	3	He	96.847	ug/l	55788.08
Se	78	89	2	H2	95.872	ug/l	33896.29
Br	79	89	1	No Gas	18.432	ug/l	187263.62
Br	79	89	2	H2	17.246	ug/l	79921.65
Se	82	89	1	No Gas	93.640	ug/l	25082.81
Kr	84	89	1	No Gas		ug/l	107183.94
Sr	88	89	1	No Gas	345.332	ug/l	13588495.86
Sr	88	89	3	He	332.630	ug/l	1420224.56
Mo	95	115	1	No Gas	105.210	ug/l	844308.09
Mo	95	115	3	He	108.391	ug/l	265259.18
Mo	98	115	1	No Gas	106.827	ug/l	1371273.71
Ag	107	115	1	No Gas	9.488	ug/l	194822.32
Ag	109	115	1	No Gas	9.581	ug/l	188749.27
Cd	111	115	1	No Gas	48.548	ug/l	215108.48

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	50.465	ug/l	60474.12
Cd	114	115	1	No Gas	49.375	ug/l	476084.45
Cd	114	115	3	He	51.039	ug/l	146784.76
Sn	118	115	1	No Gas	105.219	ug/l	1361384.93
Sn	118	115	3	He	104.651	ug/l	317947.80
Sb	121	115	1	No Gas	102.426	ug/l	1804929.90
Sb	121	115	3	He	102.586	ug/l	415087.01
Sb	123	115	1	No Gas	106.414	ug/l	1441960.72
Sb	123	115	3	He	104.424	ug/l	332527.70
Ba	135	115	1	No Gas	101.208	ug/l	416421.28
Ba	137	115	1	No Gas	98.148	ug/l	714222.14
La	139	115	3	He	102.703	ug/l	1808090.56
Ce	140	115	3	He	102.991	ug/l	1961372.02
Hg	201	209	1	No Gas	0.029	ug/l	93.98
Hg	202	209	1	No Gas	0.102	ug/l	670.88
Hg	202	209	3	He	0.094	ug/l	224.96
Tl	203	209	3	He	99.947	ug/l	667170.49
Tl	205	209	1	No Gas	99.593	ug/l	4385321.15
Tl	205	209	3	He	101.122	ug/l	1596938.67
[Pb]	206	209	1	No Gas	100.738	ug/l	1511269.35
[Pb]	207	209	1	No Gas	99.510	ug/l	1307988.71
Pb	208	209	1	No Gas	99.743	ug/l	5973282.40
Th	232	209	3	He	99.859	ug/l	2190882.61
U	238	209	1	No Gas	99.590	ug/l	6044658.45

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3899827.82	82.8
Sc	45	2	H2	1568890.89	82.5
Sc	45	3	He	233505.68	81.2
Y	89	1	No Gas	7920604.39	90.0
Y	89	2	H2	4922732.82	87.7
Y	89	3	He	1201153.18	85.5
In	115	1	No Gas	8275428.63	89.8
In	115	3	He	1562910.16	85.0
Tb	159	1	No Gas	12403963.11	94.4
Tb	159	3	He	4156378.73	89.0
Ho	165	1	No Gas	12353162.31	96.3
Ho	165	3	He	4140832.51	90.6
Lu	175	1	No Gas	12179896.86	97.0
Lu	175	3	He	3380153.99	90.7
Bi	209	1	No Gas	7702804.15	91.0
Bi	209	3	He	2581495.29	85.5

ICPMS207-B Analytical Data

Sample Name B22030433-001BMSD4
File Name 082MSD4.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 13:05:40
Sample Type MSD4
Total Dilution 1.0000
Comment ICPMS-6020-W-T
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	78.944	ug/l	726478.80
Be	9	45	1	No Gas	39.537	ug/l	138107.25
B	11	45	1	No Gas	161.245	ug/l	282194.50
Na	23	45	3	He	60836.588	ug/l	44780949.89
Mg	24	45	3	He	37628.750	ug/l	15407890.86
Al	27	45	1	No Gas	457.437	ug/l	7619457.94
Si	28	45	2	H2	18187.180	ug/l	23865611.03
K	39	89	3	He	7422.205	ug/l	3171801.86
Ca	40	89	2	H2	32819.226	ug/l	180001108.10
Ti	47	89	1	No Gas	92.295	ug/l	178359.56
V	51	89	1	No Gas	90.794	ug/l	2165590.56
V	51	89	3	He	110.950	ug/l	400206.12
Cr	52	89	1	No Gas	93.541	ug/l	2159217.64
Cr	52	89	3	He	98.651	ug/l	402814.86
Mn	55	89	1	No Gas	655.100	ug/l	19671809.18
Mn	55	89	3	He	677.238	ug/l	1887779.24
Fe	56	89	2	H2	537.118	ug/l	6360230.01
Fe	56	89	3	He	535.916	ug/l	1958410.11
Co	59	89	1	No Gas	93.975	ug/l	2369632.62
Ni	60	89	1	No Gas	93.527	ug/l	529878.89
Ni	60	89	3	He	102.155	ug/l	154391.94
Cu	63	89	1	No Gas	96.391	ug/l	1297099.81
Cu	63	89	3	He	100.627	ug/l	410949.31
Cu	65	89	1	No Gas	94.517	ug/l	617975.33
Zn	66	89	1	No Gas	96.892	ug/l	358184.09
Zn	66	89	3	He	99.900	ug/l	74605.16
As	75	89	1	No Gas	93.796	ug/l	395453.87
As	75	89	3	He	97.467	ug/l	55790.21
Se	78	89	2	H2	96.205	ug/l	33656.08
Br	79	89	1	No Gas	17.065	ug/l	178627.93
Br	79	89	2	H2	16.278	ug/l	76202.14
Se	82	89	1	No Gas	95.215	ug/l	25495.02
Kr	84	89	1	No Gas		ug/l	107210.37
Sr	88	89	1	No Gas	344.872	ug/l	13573653.15
Sr	88	89	3	He	337.784	ug/l	1432920.38
Mo	95	115	1	No Gas	106.097	ug/l	849067.57
Mo	95	115	3	He	111.247	ug/l	268216.74
Mo	98	115	1	No Gas	108.233	ug/l	1385672.50
Ag	107	115	1	No Gas	9.567	ug/l	195911.68
Ag	109	115	1	No Gas	9.603	ug/l	188654.34
Cd	111	115	1	No Gas	48.955	ug/l	216296.64

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	51.204	ug/l	60450.59
Cd	114	115	1	No Gas	49.677	ug/l	477740.06
Cd	114	115	3	He	51.655	ug/l	146369.25
Sn	118	115	1	No Gas	106.255	ug/l	1370705.20
Sn	118	115	3	He	106.894	ug/l	319993.18
Sb	121	115	1	No Gas	103.271	ug/l	1814915.81
Sb	121	115	3	He	103.929	ug/l	414354.41
Sb	123	115	1	No Gas	106.734	ug/l	1442456.06
Sb	123	115	3	He	105.729	ug/l	331748.54
Ba	135	115	1	No Gas	99.840	ug/l	409596.17
Ba	137	115	1	No Gas	97.984	ug/l	710985.87
La	139	115	3	He	103.734	ug/l	1799395.96
Ce	140	115	3	He	105.940	ug/l	1987691.15
Hg	201	209	1	No Gas	0.017	ug/l	62.32
Hg	202	209	1	No Gas	0.092	ug/l	600.23
Hg	202	209	3	He	0.086	ug/l	208.96
Tl	203	209	3	He	100.101	ug/l	671743.86
Tl	205	209	1	No Gas	100.111	ug/l	4358902.89
Tl	205	209	3	He	100.738	ug/l	1599118.48
[Pb]	206	209	1	No Gas	102.327	ug/l	1518333.87
[Pb]	207	209	1	No Gas	101.285	ug/l	1316416.86
Pb	208	209	1	No Gas	101.503	ug/l	6010772.87
Th	232	209	3	He	100.318	ug/l	2212737.19
U	238	209	1	No Gas	101.844	ug/l	6113757.96

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3929957.87	83.5
Sc	45	2	H2	1538115.79	80.9
Sc	45	3	He	231036.80	80.4
Y	89	1	No Gas	7923428.51	90.0
Y	89	2	H2	4870677.07	86.8
Y	89	3	He	1193407.47	85.0
In	115	1	No Gas	8254572.59	89.6
In	115	3	He	1539951.54	83.8
Tb	159	1	No Gas	12120496.11	92.2
Tb	159	3	He	4124766.08	88.3
Ho	165	1	No Gas	12109265.19	94.4
Ho	165	3	He	4125893.51	90.3
Lu	175	1	No Gas	12162171.01	96.8
Lu	175	3	He	3324425.74	89.2
Bi	209	1	No Gas	7615151.56	90.0
Bi	209	3	He	2595321.46	86.0

ICPMS207-B Analytical Data

Sample Name Rinse
File Name 083BLKV.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 13:11:55
Sample Type BlkVrfy
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	0.738	ug/l	15825.93
Be	9	45	1	No Gas	-0.046	ug/l	99.31
B	11	45	1	No Gas	1.562	ug/l	5777.43
Na	23	45	3	He	63.574	ug/l	81308.13
Mg	24	45	3	He	10.438	ug/l	4977.63
Al	27	45	1	No Gas	1.959	ug/l	37521.05
Si	28	45	2	H2	53.201	ug/l	89076.65
K	39	89	3	He	-2.126	ug/l	58444.28
Ca	40	89	2	H2	1.856	ug/l	63208.59
Ti	47	89	1	No Gas	0.048	ug/l	258.60
V	51	89	1	No Gas	-1.777	ug/l	-55391.06
V	51	89	3	He	1.561	ug/l	10350.33
Cr	52	89	1	No Gas	0.644	ug/l	50252.24
Cr	52	89	3	He	0.023	ug/l	396.67
Mn	55	89	1	No Gas	0.069	ug/l	7037.75
Mn	55	89	3	He	0.007	ug/l	128.97
Fe	56	89	2	H2	-0.041	ug/l	5872.10
Fe	56	89	3	He	0.136	ug/l	4488.57
Co	59	89	1	No Gas	0.002	ug/l	319.37
Ni	60	89	1	No Gas	0.019	ug/l	455.77
Ni	60	89	3	He	0.004	ug/l	81.11
Cu	63	89	1	No Gas	0.102	ug/l	2329.13
Cu	63	89	3	He	0.107	ug/l	670.55
Cu	65	89	1	No Gas	0.100	ug/l	1085.81
Zn	66	89	1	No Gas	-0.055	ug/l	288.33
Zn	66	89	3	He	0.005	ug/l	75.56
As	75	89	1	No Gas	-0.033	ug/l	12873.27
As	75	89	3	He	0.082	ug/l	152.00
Se	78	89	2	H2	0.021	ug/l	17.67
Br	79	89	1	No Gas	6.085	ug/l	113732.16
Br	79	89	2	H2	5.973	ug/l	49165.95
Se	82	89	1	No Gas	0.650	ug/l	981.83
Kr	84	89	1	No Gas		ug/l	23132.59
Sr	88	89	1	No Gas	0.005	ug/l	595.50
Sr	88	89	3	He	-0.009	ug/l	173.34
Mo	95	115	1	No Gas	0.025	ug/l	257.78
Mo	95	115	3	He	0.022	ug/l	75.56
Mo	98	115	1	No Gas	0.024	ug/l	406.68
Ag	107	115	1	No Gas	0.001	ug/l	87.37
Ag	109	115	1	No Gas	-0.001	ug/l	38.68
Cd	111	115	1	No Gas	-0.001	ug/l	2591.97

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.006	ug/l	7.56
Cd	114	115	1	No Gas	0.008	ug/l	84.58
Cd	114	115	3	He	0.006	ug/l	19.21
Sn	118	115	1	No Gas	0.016	ug/l	1337.42
Sn	118	115	3	He	0.019	ug/l	313.34
Sb	121	115	1	No Gas	0.478	ug/l	8986.77
Sb	121	115	3	He	0.357	ug/l	1562.91
Sb	123	115	1	No Gas	0.473	ug/l	6832.03
Sb	123	115	3	He	0.359	ug/l	1238.18
Ba	135	115	1	No Gas	0.000	ug/l	16.63
Ba	137	115	1	No Gas	-0.003	ug/l	36.59
La	139	115	3	He	0.001	ug/l	17.78
Ce	140	115	3	He	-0.001	ug/l	31.11
Hg	201	209	1	No Gas	0.002	ug/l	22.00
Hg	202	209	1	No Gas	0.002	ug/l	56.99
Hg	202	209	3	He	0.001	ug/l	19.33
Tl	203	209	3	He	0.180	ug/l	1360.62
Tl	205	209	1	No Gas	0.152	ug/l	7515.61
Tl	205	209	3	He	0.185	ug/l	3293.74
[Pb]	206	209	1	No Gas	0.004	ug/l	186.67
[Pb]	207	209	1	No Gas	0.005	ug/l	174.45
Pb	208	209	1	No Gas	0.005	ug/l	785.57
Th	232	209	3	He	0.052	ug/l	1367.96
U	238	209	1	No Gas	0.003	ug/l	236.96

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4080318.97	86.7
Sc	45	2	H2	1716095.38	90.2
Sc	45	3	He	245800.05	85.5
Y	89	1	No Gas	8280067.59	94.1
Y	89	2	H2	5235257.31	93.3
Y	89	3	He	1255694.34	89.4
In	115	1	No Gas	8637562.19	93.7
In	115	3	He	1635565.97	89.0
Tb	159	1	No Gas	12632716.75	96.1
Tb	159	3	He	4258535.36	91.2
Ho	165	1	No Gas	12561200.76	98.0
Ho	165	3	He	4186394.89	91.6
Lu	175	1	No Gas	12463987.19	99.3
Lu	175	3	He	3433195.65	92.1
Bi	209	1	No Gas	8442233.54	99.8
Bi	209	3	He	2875159.96	95.2

ICPMS207-B Analytical Data

Sample Name B22030433-007A
File Name 084SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 13:18:09
Sample Type Sample
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	3.886	ug/l	48365.51
Be	9	45	1	No Gas	-0.053	ug/l	80.32
B	11	45	1	No Gas	176.447	ug/l	340676.98
Na	23	45	3	He	98377.883	ug/l	80108452.14
Mg	24	45	3	He	31038.821	ug/l	14064581.72
Al	27	45	1	No Gas	2.034	ug/l	40962.47
Si	28	45	2	H2	35856.863	ug/l	54251754.12
K	39	89	3	He	3681.513	ug/l	1674922.11
Ca	40	89	2	H2	23401.290	ug/l	137891938.75
Ti	47	89	1	No Gas	2.812	ug/l	5862.09
V	51	89	1	No Gas	15.518	ug/l	379555.13
V	51	89	3	He	14.240	ug/l	57609.79
Cr	52	89	1	No Gas	0.384	ug/l	44235.14
Cr	52	89	3	He	0.475	ug/l	2325.76
Mn	55	89	1	No Gas	150.960	ug/l	4773057.55
Mn	55	89	3	He	152.488	ug/l	444600.39
Fe	56	89	2	H2	105.863	ug/l	1351680.82
Fe	56	89	3	He	106.779	ug/l	411290.39
Co	59	89	1	No Gas	1.190	ug/l	31734.75
Ni	60	89	1	No Gas	7.643	ug/l	45840.79
Ni	60	89	3	He	8.128	ug/l	12913.51
Cu	63	89	1	No Gas	1.655	ug/l	24301.24
Cu	63	89	3	He	0.748	ug/l	3405.05
Cu	65	89	1	No Gas	0.851	ug/l	6247.86
Zn	66	89	1	No Gas	1.512	ug/l	6372.44
Zn	66	89	3	He	1.552	ug/l	1282.29
As	75	89	1	No Gas	0.514	ug/l	15268.19
As	75	89	3	He	0.802	ug/l	581.67
Se	78	89	2	H2	0.217	ug/l	91.11
Br	79	89	1	No Gas	15.378	ug/l	176470.00
Br	79	89	2	H2	14.984	ug/l	77747.88
Se	82	89	1	No Gas	0.322	ug/l	891.30
Kr	84	89	1	No Gas		ug/l	62831.53
Sr	88	89	1	No Gas	161.425	ug/l	6674527.26
Sr	88	89	3	He	156.541	ug/l	694717.93
Mo	95	115	1	No Gas	3.902	ug/l	32378.85
Mo	95	115	3	He	3.956	ug/l	10124.74
Mo	98	115	1	No Gas	3.938	ug/l	52323.25
Ag	107	115	1	No Gas	0.001	ug/l	90.70
Ag	109	115	1	No Gas	0.000	ug/l	52.69
Cd	111	115	1	No Gas	-0.095	ug/l	2194.60

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.015	ug/l	18.56
Cd	114	115	1	No Gas	0.011	ug/l	110.57
Cd	114	115	3	He	0.016	ug/l	50.34
Sn	118	115	1	No Gas	-0.036	ug/l	625.44
Sn	118	115	3	He	-0.033	ug/l	147.78
Sb	121	115	1	No Gas	0.366	ug/l	6864.03
Sb	121	115	3	He	0.354	ug/l	1545.24
Sb	123	115	1	No Gas	0.367	ug/l	5299.87
Sb	123	115	3	He	0.363	ug/l	1246.85
Ba	135	115	1	No Gas	14.461	ug/l	61550.11
Ba	137	115	1	No Gas	14.145	ug/l	106731.82
La	139	115	3	He	0.003	ug/l	61.11
Ce	140	115	3	He	0.005	ug/l	148.89
Hg	201	209	1	No Gas	0.023	ug/l	81.98
Hg	202	209	1	No Gas	0.364	ug/l	2354.08
Hg	202	209	3	He	0.311	ug/l	745.87
Tl	203	209	3	He	0.078	ug/l	562.90
Tl	205	209	1	No Gas	0.058	ug/l	2763.65
Tl	205	209	3	He	0.081	ug/l	1381.30
[Pb]	206	209	1	No Gas	0.023	ug/l	465.57
[Pb]	207	209	1	No Gas	0.020	ug/l	370.01
Pb	208	209	1	No Gas	0.020	ug/l	1697.83
Th	232	209	3	He	0.014	ug/l	423.51
U	238	209	1	No Gas	0.113	ug/l	7067.83

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4410549.28	93.7
Sc	45	2	H2	1774205.71	93.3
Sc	45	3	He	255597.25	88.9
Y	89	1	No Gas	8459426.26	96.1
Y	89	2	H2	5231399.18	93.2
Y	89	3	He	1248032.87	88.8
In	115	1	No Gas	8691748.31	94.3
In	115	3	He	1631673.87	88.8
Tb	159	1	No Gas	12632582.24	96.1
Tb	159	3	He	4242849.47	90.9
Ho	165	1	No Gas	12540964.38	97.8
Ho	165	3	He	4207737.33	92.0
Lu	175	1	No Gas	12424873.60	98.9
Lu	175	3	He	3474257.34	93.2
Bi	209	1	No Gas	8029074.91	94.9
Bi	209	3	He	2711290.46	89.8

ICPMS207-B Analytical Data

Sample Name B22030433-007B
File Name 085SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 13:24:25
Sample Type Sample
Total Dilution 1.0000
Comment ICPMS-6020-W-T
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	4.212	ug/l	46451.99
Be	9	45	1	No Gas	-0.050	ug/l	81.98
B	11	45	1	No Gas	177.456	ug/l	307789.58
Na	23	45	3	He	97182.021	ug/l	70868315.06
Mg	24	45	3	He	32306.338	ug/l	13109255.79
Al	27	45	1	No Gas	79.805	ug/l	1321424.82
Si	28	45	2	H2	32568.475	ug/l	42707085.18
K	39	89	3	He	3379.663	ug/l	1472747.83
Ca	40	89	2	H2	22666.958	ug/l	122823344.85
Ti	47	89	1	No Gas	11.131	ug/l	20810.57
V	51	89	1	No Gas	13.746	ug/l	306817.66
V	51	89	3	He	20.024	ug/l	75606.96
Cr	52	89	1	No Gas	3.009	ug/l	97895.69
Cr	52	89	3	He	1.187	ug/l	5119.81
Mn	55	89	1	No Gas	116.434	ug/l	3365298.78
Mn	55	89	3	He	117.559	ug/l	327277.25
Fe	56	89	2	H2	144.424	ug/l	1694025.29
Fe	56	89	3	He	145.936	ug/l	535255.29
Co	59	89	1	No Gas	1.393	ug/l	34005.29
Ni	60	89	1	No Gas	7.198	ug/l	39501.63
Ni	60	89	3	He	7.643	ug/l	11599.09
Cu	63	89	1	No Gas	2.586	ug/l	34263.72
Cu	63	89	3	He	1.616	ug/l	6786.22
Cu	65	89	1	No Gas	1.721	ug/l	11181.44
Zn	66	89	1	No Gas	1.823	ug/l	6929.19
Zn	66	89	3	He	1.632	ug/l	1283.40
As	75	89	1	No Gas	0.366	ug/l	13413.75
As	75	89	3	He	0.778	ug/l	541.33
Se	78	89	2	H2	0.178	ug/l	70.45
Br	79	89	1	No Gas	14.394	ug/l	155372.42
Br	79	89	2	H2	11.941	ug/l	62637.81
Se	82	89	1	No Gas	0.769	ug/l	931.70
Kr	84	89	1	No Gas		ug/l	57426.87
Sr	88	89	1	No Gas	157.028	ug/l	5942437.41
Sr	88	89	3	He	150.457	ug/l	637414.98
Mo	95	115	1	No Gas	3.733	ug/l	28796.77
Mo	95	115	3	He	3.917	ug/l	9428.70
Mo	98	115	1	No Gas	3.783	ug/l	46695.08
Ag	107	115	1	No Gas	0.013	ug/l	315.46
Ag	109	115	1	No Gas	0.011	ug/l	254.11
Cd	111	115	1	No Gas	-0.002	ug/l	2379.82

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.010	ug/l	12.33
Cd	114	115	1	No Gas	0.003	ug/l	25.51
Cd	114	115	3	He	0.009	ug/l	27.63
Sn	118	115	1	No Gas	0.373	ug/l	5649.94
Sn	118	115	3	He	0.366	ug/l	1326.74
Sb	121	115	1	No Gas	0.324	ug/l	5651.37
Sb	121	115	3	He	0.327	ug/l	1345.87
Sb	123	115	1	No Gas	0.333	ug/l	4458.16
Sb	123	115	3	He	0.312	ug/l	1013.81
Ba	135	115	1	No Gas	14.516	ug/l	57320.50
Ba	137	115	1	No Gas	14.252	ug/l	99561.36
La	139	115	3	He	0.027	ug/l	463.35
Ce	140	115	3	He	0.067	ug/l	1298.96
Hg	201	209	1	No Gas	0.044	ug/l	131.31
Hg	202	209	1	No Gas	0.560	ug/l	3354.09
Hg	202	209	3	He	0.455	ug/l	1008.17
Tl	203	209	3	He	0.060	ug/l	406.84
Tl	205	209	1	No Gas	0.041	ug/l	1856.81
Tl	205	209	3	He	0.059	ug/l	951.75
[Pb]	206	209	1	No Gas	0.630	ug/l	9178.76
[Pb]	207	209	1	No Gas	0.574	ug/l	7328.72
Pb	208	209	1	No Gas	0.593	ug/l	34458.55
Th	232	209	3	He	0.119	ug/l	2643.33
U	238	209	1	No Gas	0.140	ug/l	8160.92

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3897909.18	82.8
Sc	45	2	H2	1538015.67	80.8
Sc	45	3	He	228909.89	79.6
Y	89	1	No Gas	7616379.76	86.5
Y	89	2	H2	4812507.75	85.7
Y	89	3	He	1191455.59	84.8
In	115	1	No Gas	7944670.07	86.2
In	115	3	He	1534758.58	83.5
Tb	159	1	No Gas	11925712.37	90.7
Tb	159	3	He	4106856.92	88.0
Ho	165	1	No Gas	11814638.49	92.1
Ho	165	3	He	4077572.69	89.2
Lu	175	1	No Gas	11747698.53	93.5
Lu	175	3	He	3290061.72	88.3
Bi	209	1	No Gas	7388629.79	87.3
Bi	209	3	He	2522463.09	83.5

ICPMS207-B Analytical Data

Sample Name CCV
File Name 086_CCV.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 13:30:40
Sample Type CCV
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	500.985	ug/l	4659114.37
Be	9	45	1	No Gas	42.497	ug/l	151463.58
B	11	45	1	No Gas	47.335	ug/l	86597.19
Na	23	45	3	He	12878.080	ug/l	10032883.46
Mg	24	45	3	He	12700.522	ug/l	5491214.53
Al	27	45	1	No Gas	47.741	ug/l	814552.12
Si	28	45	2	H2	444.329	ug/l	624115.03
K	39	89	3	He	12204.985	ug/l	5362326.86
Ca	40	89	2	H2	11738.146	ug/l	67416463.25
Ti	47	89	1	No Gas	46.996	ug/l	91853.70
V	51	89	1	No Gas	43.682	ug/l	1047386.08
V	51	89	3	He	51.701	ug/l	195458.21
Cr	52	89	1	No Gas	49.430	ug/l	1169059.88
Cr	52	89	3	He	49.577	ug/l	209764.66
Mn	55	89	1	No Gas	49.968	ug/l	1520648.85
Mn	55	89	3	He	49.807	ug/l	143846.81
Fe	56	89	2	H2	1281.088	ug/l	15893778.84
Fe	56	89	3	He	1266.046	ug/l	4784577.27
Co	59	89	1	No Gas	50.555	ug/l	1288483.27
Ni	60	89	1	No Gas	48.903	ug/l	280164.19
Ni	60	89	3	He	51.677	ug/l	80895.40
Cu	63	89	1	No Gas	51.341	ug/l	698614.43
Cu	63	89	3	He	51.363	ug/l	217275.48
Cu	65	89	1	No Gas	50.437	ug/l	333468.73
Zn	66	89	1	No Gas	53.068	ug/l	198484.21
Zn	66	89	3	He	51.898	ug/l	40169.60
As	75	89	1	No Gas	50.210	ug/l	219787.85
As	75	89	3	He	51.197	ug/l	30391.63
Se	78	89	2	H2	52.665	ug/l	19319.58
Br	79	89	1	No Gas	1.163	ug/l	78383.05
Br	79	89	2	H2	0.660	ug/l	31511.85
Se	82	89	1	No Gas	53.850	ug/l	14910.44
Kr	84	89	1	No Gas		ug/l	35683.22
Sr	88	89	1	No Gas	51.529	ug/l	2049879.70
Sr	88	89	3	He	49.736	ug/l	218668.61
Mo	95	115	1	No Gas	49.898	ug/l	407153.47
Mo	95	115	3	He	50.191	ug/l	125442.02
Mo	98	115	1	No Gas	50.208	ug/l	655413.68
Ag	107	115	1	No Gas	20.297	ug/l	423617.46
Ag	109	115	1	No Gas	20.225	ug/l	405005.72
Cd	111	115	1	No Gas	50.179	ug/l	225970.61

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	51.987	ug/l	63619.05
Cd	114	115	1	No Gas	51.342	ug/l	503312.50
Cd	114	115	3	He	52.224	ug/l	153378.86
Sn	118	115	1	No Gas	52.396	ug/l	689668.70
Sn	118	115	3	He	50.799	ug/l	157740.75
Sb	121	115	1	No Gas	52.850	ug/l	947050.69
Sb	121	115	3	He	52.134	ug/l	215455.68
Sb	123	115	1	No Gas	53.085	ug/l	731544.97
Sb	123	115	3	He	52.414	ug/l	170471.58
Ba	135	115	1	No Gas	51.980	ug/l	217434.38
Ba	137	115	1	No Gas	50.846	ug/l	376244.97
La	139	115	3	He	51.477	ug/l	925453.14
Ce	140	115	3	He	51.714	ug/l	1005726.53
Hg	201	209	1	No Gas	1.027	ug/l	2950.74
Hg	202	209	1	No Gas	1.035	ug/l	6711.01
Hg	202	209	3	He	0.987	ug/l	2351.07
Tl	203	209	3	He	48.109	ug/l	339642.75
Tl	205	209	1	No Gas	49.196	ug/l	2261816.49
Tl	205	209	3	He	48.431	ug/l	808862.15
[Pb]	206	209	1	No Gas	50.713	ug/l	794629.81
[Pb]	207	209	1	No Gas	49.636	ug/l	681357.53
Pb	208	209	1	No Gas	50.134	ug/l	3135563.84
Th	232	209	3	He	49.056	ug/l	1138395.47
U	238	209	1	No Gas	49.086	ug/l	3111767.00

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4009522.05	85.2
Sc	45	2	H2	1619388.19	85.1
Sc	45	3	He	243874.38	84.8
Y	89	1	No Gas	8005755.58	90.9
Y	89	2	H2	5106968.61	91.0
Y	89	3	He	1235814.22	88.0
In	115	1	No Gas	8413479.20	91.3
In	115	3	He	1596022.70	86.8
Tb	159	1	No Gas	12493125.50	95.0
Tb	159	3	He	4239669.83	90.8
Ho	165	1	No Gas	12383980.42	96.6
Ho	165	3	He	4194835.05	91.8
Lu	175	1	No Gas	12308142.81	98.0
Lu	175	3	He	3431260.62	92.1
Bi	209	1	No Gas	8041438.53	95.0
Bi	209	3	He	2730444.82	90.4

ICPMS207-B Analytical Data

Sample Name CCB
File Name 087_CCB.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 13:36:55
Sample Type CCB
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	0.451	ug/l	12802.53
Be	9	45	1	No Gas	-0.051	ug/l	81.65
B	11	45	1	No Gas	1.778	ug/l	6023.63
Na	23	45	3	He	60.648	ug/l	78153.90
Mg	24	45	3	He	3.713	ug/l	2026.12
Al	27	45	1	No Gas	-0.060	ug/l	2539.12
Si	28	45	2	H2	90.450	ug/l	139081.93
K	39	89	3	He	1.050	ug/l	58833.63
Ca	40	89	2	H2	0.417	ug/l	53211.55
Ti	47	89	1	No Gas	0.021	ug/l	198.53
V	51	89	1	No Gas	-2.548	ug/l	-72465.08
V	51	89	3	He	2.407	ug/l	13302.73
Cr	52	89	1	No Gas	0.764	ug/l	51630.98
Cr	52	89	3	He	0.010	ug/l	333.34
Mn	55	89	1	No Gas	0.056	ug/l	6451.98
Mn	55	89	3	He	0.000	ug/l	106.31
Fe	56	89	2	H2	-0.035	ug/l	5781.96
Fe	56	89	3	He	0.160	ug/l	4501.89
Co	59	89	1	No Gas	-0.002	ug/l	216.24
Ni	60	89	1	No Gas	-0.005	ug/l	306.06
Ni	60	89	3	He	-0.015	ug/l	50.00
Cu	63	89	1	No Gas	0.123	ug/l	2550.59
Cu	63	89	3	He	0.113	ug/l	685.88
Cu	65	89	1	No Gas	0.118	ug/l	1177.86
Zn	66	89	1	No Gas	-0.067	ug/l	234.84
Zn	66	89	3	He	-0.035	ug/l	43.33
As	75	89	1	No Gas	0.055	ug/l	12876.73
As	75	89	3	He	0.085	ug/l	151.53
Se	78	89	2	H2	0.022	ug/l	17.22
Br	79	89	1	No Gas	0.328	ug/l	73384.05
Br	79	89	2	H2	-0.016	ug/l	29358.52
Se	82	89	1	No Gas	0.301	ug/l	862.63
Kr	84	89	1	No Gas		ug/l	22869.60
Sr	88	89	1	No Gas	0.000	ug/l	375.93
Sr	88	89	3	He	-0.016	ug/l	142.22
Mo	95	115	1	No Gas	0.026	ug/l	263.34
Mo	95	115	3	He	0.018	ug/l	66.67
Mo	98	115	1	No Gas	0.028	ug/l	458.00
Ag	107	115	1	No Gas	0.000	ug/l	78.03
Ag	109	115	1	No Gas	0.000	ug/l	48.02
Cd	111	115	1	No Gas	-0.049	ug/l	2375.65

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.008	ug/l	9.89
Cd	114	115	1	No Gas	0.005	ug/l	48.28
Cd	114	115	3	He	0.005	ug/l	17.16
Sn	118	115	1	No Gas	0.064	ug/l	1976.23
Sn	118	115	3	He	0.076	ug/l	492.24
Sb	121	115	1	No Gas	0.295	ug/l	5615.70
Sb	121	115	3	He	0.228	ug/l	1008.81
Sb	123	115	1	No Gas	0.299	ug/l	4368.12
Sb	123	115	3	He	0.230	ug/l	801.77
Ba	135	115	1	No Gas	0.003	ug/l	26.61
Ba	137	115	1	No Gas	0.000	ug/l	59.88
La	139	115	3	He	0.001	ug/l	13.34
Ce	140	115	3	He	-0.001	ug/l	23.33
Hg	201	209	1	No Gas	0.006	ug/l	33.66
Hg	202	209	1	No Gas	0.008	ug/l	97.65
Hg	202	209	3	He	0.005	ug/l	26.66
Tl	203	209	3	He	0.142	ug/l	1054.47
Tl	205	209	1	No Gas	0.100	ug/l	4868.73
Tl	205	209	3	He	0.138	ug/l	2411.19
[Pb]	206	209	1	No Gas	0.001	ug/l	137.78
[Pb]	207	209	1	No Gas	0.003	ug/l	134.45
Pb	208	209	1	No Gas	0.002	ug/l	598.90
Th	232	209	3	He	0.044	ug/l	1160.52
U	238	209	1	No Gas	0.003	ug/l	198.96

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3986636.98	84.7
Sc	45	2	H2	1661552.41	87.3
Sc	45	3	He	243092.68	84.6
Y	89	1	No Gas	8049824.80	91.4
Y	89	2	H2	5090573.10	90.7
Y	89	3	He	1234563.21	87.9
In	115	1	No Gas	8635832.81	93.7
In	115	3	He	1625163.45	88.4
Tb	159	1	No Gas	12325919.96	93.8
Tb	159	3	He	4154000.26	89.0
Ho	165	1	No Gas	12250292.26	95.5
Ho	165	3	He	4127998.69	90.3
Lu	175	1	No Gas	12113006.64	96.5
Lu	175	3	He	3363900.58	90.3
Bi	209	1	No Gas	8254809.78	97.6
Bi	209	3	He	2814329.60	93.2

ICPMS207-B Analytical Data

Sample Name B22030433-012A
File Name 088SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 13:43:11
Sample Type Sample
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	1.954	ug/l	30237.43
Be	9	45	1	No Gas	-0.046	ug/l	110.98
B	11	45	1	No Gas	77.077	ug/l	156890.64
Na	23	45	3	He	52067.074	ug/l	42724168.81
Mg	24	45	3	He	25984.211	ug/l	11859285.90
Al	27	45	1	No Gas	2.580	ug/l	53446.51
Si	28	45	2	H2	34369.280	ug/l	53527066.26
K	39	89	3	He	2485.281	ug/l	1166367.84
Ca	40	89	2	H2	12942.399	ug/l	77767501.43
Ti	47	89	1	No Gas	3.774	ug/l	8020.28
V	51	89	1	No Gas	1.295	ug/l	22329.83
V	51	89	3	He	1.115	ug/l	8747.09
Cr	52	89	1	No Gas	0.139	ug/l	39461.30
Cr	52	89	3	He	0.279	ug/l	1510.09
Mn	55	89	1	No Gas	1622.475	ug/l	52517162.45
Mn	55	89	3	He	1690.362	ug/l	4997594.44
Fe	56	89	2	H2	2394.667	ug/l	31056697.27
Fe	56	89	3	He	2420.605	ug/l	9368940.49
Co	59	89	1	No Gas	0.301	ug/l	8455.72
Ni	60	89	1	No Gas	0.582	ug/l	3906.12
Ni	60	89	3	He	0.573	ug/l	993.37
Cu	63	89	1	No Gas	0.895	ug/l	13899.60
Cu	63	89	3	He	0.382	ug/l	1869.42
Cu	65	89	1	No Gas	0.432	ug/l	3456.48
Zn	66	89	1	No Gas	0.996	ug/l	4481.21
Zn	66	89	3	He	0.933	ug/l	810.03
As	75	89	1	No Gas	-0.097	ug/l	12986.13
As	75	89	3	He	-0.031	ug/l	85.27
Se	78	89	2	H2	0.261	ug/l	110.00
Br	79	89	1	No Gas	11.282	ug/l	152958.39
Br	79	89	2	H2	10.933	ug/l	66213.43
Se	82	89	1	No Gas	0.346	ug/l	925.83
Kr	84	89	1	No Gas		ug/l	49292.76
Sr	88	89	1	No Gas	105.138	ug/l	4461930.11
Sr	88	89	3	He	101.598	ug/l	457382.14
Mo	95	115	1	No Gas	0.092	ug/l	831.14
Mo	95	115	3	He	0.071	ug/l	206.67
Mo	98	115	1	No Gas	0.081	ug/l	1183.67
Ag	107	115	1	No Gas	0.000	ug/l	63.36
Ag	109	115	1	No Gas	-0.001	ug/l	30.01
Cd	111	115	1	No Gas	-0.044	ug/l	2429.29

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.005	ug/l	7.00
Cd	114	115	1	No Gas	0.003	ug/l	34.43
Cd	114	115	3	He	0.004	ug/l	15.04
Sn	118	115	1	No Gas	-0.043	ug/l	538.94
Sn	118	115	3	He	-0.043	ug/l	117.78
Sb	121	115	1	No Gas	0.091	ug/l	1882.65
Sb	121	115	3	He	0.086	ug/l	422.71
Sb	123	115	1	No Gas	0.094	ug/l	1490.56
Sb	123	115	3	He	0.087	ug/l	337.04
Ba	135	115	1	No Gas	20.353	ug/l	88598.00
Ba	137	115	1	No Gas	19.993	ug/l	153929.57
La	139	115	3	He	0.012	ug/l	230.01
Ce	140	115	3	He	0.057	ug/l	1211.17
Hg	201	209	1	No Gas	0.009	ug/l	40.32
Hg	202	209	1	No Gas	0.017	ug/l	149.97
Hg	202	209	3	He	0.016	ug/l	52.99
Tl	203	209	3	He	0.057	ug/l	420.18
Tl	205	209	1	No Gas	0.038	ug/l	1881.26
Tl	205	209	3	He	0.056	ug/l	977.76
[Pb]	206	209	1	No Gas	0.025	ug/l	495.57
[Pb]	207	209	1	No Gas	0.020	ug/l	361.12
Pb	208	209	1	No Gas	0.024	ug/l	1893.41
Th	232	209	3	He	0.018	ug/l	521.55
U	238	209	1	No Gas	0.002	ug/l	154.97

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4519896.21	96.0
Sc	45	2	H2	1826668.69	96.0
Sc	45	3	He	257469.53	89.6
Y	89	1	No Gas	8542208.78	97.0
Y	89	2	H2	5338328.09	95.1
Y	89	3	He	1265909.42	90.1
In	115	1	No Gas	8754385.11	95.0
In	115	3	He	1675099.48	91.1
Tb	159	1	No Gas	12797503.09	97.3
Tb	159	3	He	4324207.44	92.6
Ho	165	1	No Gas	12574234.84	98.1
Ho	165	3	He	4265839.75	93.3
Lu	175	1	No Gas	12483058.45	99.4
Lu	175	3	He	3516377.24	94.4
Bi	209	1	No Gas	7943321.90	93.9
Bi	209	3	He	2720855.13	90.1

ICPMS207-B Analytical Data

Sample Name B22030433-012B
File Name 089SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 13:49:25
Sample Type Sample
Total Dilution 1.0000
Comment ICPMS-6020-W-T
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	2.201	ug/l	30336.98
Be	9	45	1	No Gas	-0.043	ug/l	112.65
B	11	45	1	No Gas	76.182	ug/l	143356.06
Na	23	45	3	He	52515.735	ug/l	39653929.96
Mg	24	45	3	He	26247.769	ug/l	11024602.33
Al	27	45	1	No Gas	12.678	ug/l	228114.89
Si	28	45	2	H2	29923.237	ug/l	42033647.83
K	39	89	3	He	2464.133	ug/l	1106209.98
Ca	40	89	2	H2	12830.426	ug/l	72032685.15
Ti	47	89	1	No Gas	5.289	ug/l	10519.40
V	51	89	1	No Gas	-0.251	ug/l	-16465.36
V	51	89	3	He	2.833	ug/l	14582.81
Cr	52	89	1	No Gas	0.916	ug/l	55086.45
Cr	52	89	3	He	0.425	ug/l	2045.71
Mn	55	89	1	No Gas	1635.263	ug/l	49823342.10
Mn	55	89	3	He	1703.391	ug/l	4815611.93
Fe	56	89	2	H2	2472.816	ug/l	29946788.86
Fe	56	89	3	He	2475.920	ug/l	9163760.21
Co	59	89	1	No Gas	0.284	ug/l	7510.37
Ni	60	89	1	No Gas	0.716	ug/l	4445.21
Ni	60	89	3	He	0.689	ug/l	1127.83
Cu	63	89	1	No Gas	1.820	ug/l	25715.51
Cu	63	89	3	He	1.244	ug/l	5354.25
Cu	65	89	1	No Gas	1.288	ug/l	8935.00
Zn	66	89	1	No Gas	1.299	ug/l	5350.45
Zn	66	89	3	He	1.328	ug/l	1073.38
As	75	89	1	No Gas	0.425	ug/l	14406.18
As	75	89	3	He	0.069	ug/l	139.13
Se	78	89	2	H2	0.051	ug/l	27.45
Br	79	89	1	No Gas	10.461	ug/l	138740.47
Br	79	89	2	H2	9.121	ug/l	56364.62
Se	82	89	1	No Gas	0.782	ug/l	986.24
Kr	84	89	1	No Gas		ug/l	49286.08
Sr	88	89	1	No Gas	105.245	ug/l	4203514.33
Sr	88	89	3	He	103.082	ug/l	443686.23
Mo	95	115	1	No Gas	0.173	ug/l	1442.30
Mo	95	115	3	He	0.163	ug/l	422.23
Mo	98	115	1	No Gas	0.160	ug/l	2133.10
Ag	107	115	1	No Gas	0.002	ug/l	102.71
Ag	109	115	1	No Gas	0.001	ug/l	69.36
Cd	111	115	1	No Gas	-0.017	ug/l	2421.08

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.006	ug/l	7.11
Cd	114	115	1	No Gas	-0.002	ug/l	-16.37
Cd	114	115	3	He	0.002	ug/l	8.46
Sn	118	115	1	No Gas	0.280	ug/l	4698.15
Sn	118	115	3	He	0.294	ug/l	1143.38
Sb	121	115	1	No Gas	0.105	ug/l	2036.69
Sb	121	115	3	He	0.109	ug/l	493.06
Sb	123	115	1	No Gas	0.101	ug/l	1510.23
Sb	123	115	3	He	0.113	ug/l	403.38
Ba	135	115	1	No Gas	20.945	ug/l	86318.20
Ba	137	115	1	No Gas	20.531	ug/l	149631.64
La	139	115	3	He	0.027	ug/l	480.01
Ce	140	115	3	He	0.114	ug/l	2222.41
Hg	201	209	1	No Gas	0.023	ug/l	76.32
Hg	202	209	1	No Gas	0.036	ug/l	256.29
Hg	202	209	3	He	0.031	ug/l	82.98
Tl	203	209	3	He	0.028	ug/l	205.41
Tl	205	209	1	No Gas	0.019	ug/l	960.04
Tl	205	209	3	He	0.031	ug/l	520.22
[Pb]	206	209	1	No Gas	0.082	ug/l	1315.63
[Pb]	207	209	1	No Gas	0.078	ug/l	1090.05
Pb	208	209	1	No Gas	0.080	ug/l	5082.63
Th	232	209	3	He	0.077	ug/l	1793.51
U	238	209	1	No Gas	0.007	ug/l	409.26

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4178505.86	88.7
Sc	45	2	H2	1647082.98	86.6
Sc	45	3	He	236924.45	82.4
Y	89	1	No Gas	8040775.86	91.3
Y	89	2	H2	4984242.45	88.8
Y	89	3	He	1210269.65	86.2
In	115	1	No Gas	8295788.63	90.0
In	115	3	He	1576833.26	85.8
Tb	159	1	No Gas	12242253.28	93.1
Tb	159	3	He	4105519.02	87.9
Ho	165	1	No Gas	12161299.20	94.9
Ho	165	3	He	4059533.25	88.8
Lu	175	1	No Gas	11826569.48	94.2
Lu	175	3	He	3321565.04	89.1
Bi	209	1	No Gas	7528036.43	89.0
Bi	209	3	He	2583062.24	85.5

ICPMS207-B Analytical Data

Sample Name B22030433-017A
File Name 090SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 13:55:40
Sample Type Sample
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	0.509	ug/l	15111.55
Be	9	45	1	No Gas	-0.049	ug/l	98.66
B	11	45	1	No Gas	56.533	ug/l	115878.51
Na	23	45	3	He	38826.713	ug/l	32108048.69
Mg	24	45	3	He	10109.795	ug/l	4649641.72
Al	27	45	1	No Gas	3.756	ug/l	75924.49
Si	28	45	2	H2	26390.165	ug/l	41106405.62
K	39	89	3	He	2001.555	ug/l	965658.33
Ca	40	89	2	H2	9178.953	ug/l	56041859.89
Ti	47	89	1	No Gas	2.201	ug/l	4802.29
V	51	89	1	No Gas	1.215	ug/l	20556.23
V	51	89	3	He	0.559	ug/l	6743.80
Cr	52	89	1	No Gas	-0.459	ug/l	25098.22
Cr	52	89	3	He	0.027	ug/l	422.23
Mn	55	89	1	No Gas	489.466	ug/l	16026718.43
Mn	55	89	3	He	495.020	ug/l	1486255.03
Fe	56	89	2	H2	406.319	ug/l	5356084.38
Fe	56	89	3	He	398.846	ug/l	1571092.13
Co	59	89	1	No Gas	0.347	ug/l	9827.19
Ni	60	89	1	No Gas	0.872	ug/l	5736.45
Ni	60	89	3	He	0.792	ug/l	1365.63
Cu	63	89	1	No Gas	0.549	ug/l	8991.75
Cu	63	89	3	He	0.160	ug/l	919.18
Cu	65	89	1	No Gas	0.191	ug/l	1784.16
Zn	66	89	1	No Gas	1.187	ug/l	5299.80
Zn	66	89	3	He	1.217	ug/l	1051.16
As	75	89	1	No Gas	0.339	ug/l	15083.36
As	75	89	3	He	0.526	ug/l	429.27
Se	78	89	2	H2	0.017	ug/l	16.45
Br	79	89	1	No Gas	9.846	ug/l	144741.39
Br	79	89	2	H2	9.822	ug/l	63583.39
Se	82	89	1	No Gas	-0.092	ug/l	812.89
Kr	84	89	1	No Gas		ug/l	42090.90
Sr	88	89	1	No Gas	70.030	ug/l	3005181.56
Sr	88	89	3	He	67.877	ug/l	310351.48
Mo	95	115	1	No Gas	0.306	ug/l	2723.61
Mo	95	115	3	He	0.313	ug/l	853.36
Mo	98	115	1	No Gas	0.302	ug/l	4306.16
Ag	107	115	1	No Gas	0.000	ug/l	78.03
Ag	109	115	1	No Gas	0.000	ug/l	50.02
Cd	111	115	1	No Gas	-0.102	ug/l	2223.47

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.003	ug/l	4.34
Cd	114	115	1	No Gas	0.002	ug/l	16.94
Cd	114	115	3	He	0.003	ug/l	10.88
Sn	118	115	1	No Gas	-0.045	ug/l	532.29
Sn	118	115	3	He	-0.041	ug/l	127.78
Sb	121	115	1	No Gas	0.454	ug/l	8897.03
Sb	121	115	3	He	0.472	ug/l	2130.71
Sb	123	115	1	No Gas	0.454	ug/l	6842.02
Sb	123	115	3	He	0.459	ug/l	1632.59
Ba	135	115	1	No Gas	4.701	ug/l	21067.42
Ba	137	115	1	No Gas	4.546	ug/l	36065.28
La	139	115	3	He	0.004	ug/l	84.44
Ce	140	115	3	He	0.018	ug/l	420.01
Hg	201	209	1	No Gas	0.010	ug/l	45.32
Hg	202	209	1	No Gas	0.167	ug/l	1152.15
Hg	202	209	3	He	0.137	ug/l	350.93
Tl	203	209	3	He	0.031	ug/l	244.10
Tl	205	209	1	No Gas	0.018	ug/l	1018.93
Tl	205	209	3	He	0.029	ug/l	533.56
[Pb]	206	209	1	No Gas	0.010	ug/l	272.23
[Pb]	207	209	1	No Gas	0.012	ug/l	274.45
Pb	208	209	1	No Gas	0.010	ug/l	1121.14
Th	232	209	3	He	0.001	ug/l	136.72
U	238	209	1	No Gas	0.010	ug/l	687.55

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4518383.35	96.0
Sc	45	2	H2	1827017.12	96.0
Sc	45	3	He	259405.85	90.2
Y	89	1	No Gas	8637826.69	98.1
Y	89	2	H2	5420300.11	96.6
Y	89	3	He	1285363.52	91.5
In	115	1	No Gas	9006359.40	97.7
In	115	3	He	1701698.71	92.6
Tb	159	1	No Gas	13129232.84	99.9
Tb	159	3	He	4344321.72	93.0
Ho	165	1	No Gas	12964847.10	101.1
Ho	165	3	He	4278134.08	93.6
Lu	175	1	No Gas	12736713.87	101.4
Lu	175	3	He	3548615.34	95.2
Bi	209	1	No Gas	8284133.85	97.9
Bi	209	3	He	2818060.44	93.3

ICPMS207-B Analytical Data

Sample Name B22030433-017B
File Name 091SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 14:01:55
Sample Type Sample
Total Dilution 1.0000
Comment ICPMS-6020-W-T
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	0.727	ug/l	16089.63
Be	9	45	1	No Gas	-0.058	ug/l	58.99
B	11	45	1	No Gas	56.325	ug/l	106799.66
Na	23	45	3	He	38631.281	ug/l	29966758.16
Mg	24	45	3	He	9991.818	ug/l	4310994.48
Al	27	45	1	No Gas	12.466	ug/l	224384.12
Si	28	45	2	H2	23123.162	ug/l	33075149.30
K	39	89	3	He	2026.417	ug/l	919566.27
Ca	40	89	2	H2	9056.263	ug/l	52163783.61
Ti	47	89	1	No Gas	3.172	ug/l	6538.03
V	51	89	1	No Gas	-0.074	ug/l	-12628.87
V	51	89	3	He	1.679	ug/l	10400.39
Cr	52	89	1	No Gas	0.261	ug/l	41002.34
Cr	52	89	3	He	0.154	ug/l	923.37
Mn	55	89	1	No Gas	475.134	ug/l	14847726.91
Mn	55	89	3	He	508.476	ug/l	1437006.67
Fe	56	89	2	H2	433.145	ug/l	5386256.74
Fe	56	89	3	He	440.775	ug/l	1633765.44
Co	59	89	1	No Gas	0.372	ug/l	10023.56
Ni	60	89	1	No Gas	0.914	ug/l	5723.12
Ni	60	89	3	He	0.853	ug/l	1377.85
Cu	63	89	1	No Gas	1.167	ug/l	17221.72
Cu	63	89	3	He	0.774	ug/l	3407.05
Cu	65	89	1	No Gas	0.783	ug/l	5727.43
Zn	66	89	1	No Gas	4.291	ug/l	16981.92
Zn	66	89	3	He	4.525	ug/l	3492.66
As	75	89	1	No Gas	0.256	ug/l	14052.24
As	75	89	3	He	0.564	ug/l	425.93
Se	78	89	2	H2	0.038	ug/l	23.33
Br	79	89	1	No Gas	5.100	ug/l	106817.82
Br	79	89	2	H2	4.342	ug/l	42998.84
Se	82	89	1	No Gas	0.295	ug/l	881.97
Kr	84	89	1	No Gas		ug/l	40793.38
Sr	88	89	1	No Gas	69.960	ug/l	2865618.99
Sr	88	89	3	He	69.182	ug/l	297727.90
Mo	95	115	1	No Gas	0.351	ug/l	2938.10
Mo	95	115	3	He	0.361	ug/l	934.48
Mo	98	115	1	No Gas	0.355	ug/l	4765.21
Ag	107	115	1	No Gas	0.026	ug/l	608.26
Ag	109	115	1	No Gas	0.025	ug/l	548.23
Cd	111	115	1	No Gas	-0.057	ug/l	2301.41

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.004	ug/l	5.22
Cd	114	115	1	No Gas	0.001	ug/l	14.70
Cd	114	115	3	He	0.004	ug/l	12.75
Sn	118	115	1	No Gas	0.292	ug/l	4981.05
Sn	118	115	3	He	0.284	ug/l	1141.17
Sb	121	115	1	No Gas	0.807	ug/l	14803.91
Sb	121	115	3	He	0.822	ug/l	3486.11
Sb	123	115	1	No Gas	0.810	ug/l	11423.11
Sb	123	115	3	He	0.819	ug/l	2734.55
Ba	135	115	1	No Gas	4.868	ug/l	20594.41
Ba	137	115	1	No Gas	4.841	ug/l	36252.17
La	139	115	3	He	0.013	ug/l	235.56
Ce	140	115	3	He	0.053	ug/l	1085.61
Hg	201	209	1	No Gas	0.030	ug/l	98.31
Hg	202	209	1	No Gas	0.245	ug/l	1569.11
Hg	202	209	3	He	0.212	ug/l	489.25
Tl	203	209	3	He	0.024	ug/l	176.07
Tl	205	209	1	No Gas	0.015	ug/l	794.47
Tl	205	209	3	He	0.024	ug/l	414.84
[Pb]	206	209	1	No Gas	0.041	ug/l	731.14
[Pb]	207	209	1	No Gas	0.038	ug/l	601.13
Pb	208	209	1	No Gas	0.041	ug/l	2892.37
Th	232	209	3	He	0.035	ug/l	870.38
U	238	209	1	No Gas	0.012	ug/l	735.87

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4179305.20	88.8
Sc	45	2	H2	1675514.06	88.1
Sc	45	3	He	243373.07	84.7
Y	89	1	No Gas	8246113.84	93.7
Y	89	2	H2	5113487.68	91.1
Y	89	3	He	1209867.37	86.1
In	115	1	No Gas	8503400.85	92.3
In	115	3	He	1615056.24	87.9
Tb	159	1	No Gas	12424029.74	94.5
Tb	159	3	He	4150020.13	88.9
Ho	165	1	No Gas	12224190.64	95.3
Ho	165	3	He	4067888.53	89.0
Lu	175	1	No Gas	12033309.97	95.8
Lu	175	3	He	3307313.45	88.8
Bi	209	1	No Gas	7766809.96	91.8
Bi	209	3	He	2587391.04	85.7

ICPMS207-B Analytical Data

Sample Name B22030433-023A
File Name 092SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 14:08:11
Sample Type Sample
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	0.116	ug/l	10862.23
Be	9	45	1	No Gas	-0.061	ug/l	48.66
B	11	45	1	No Gas	51.084	ug/l	103692.91
Na	23	45	3	He	57251.549	ug/l	46888650.97
Mg	24	45	3	He	23375.926	ug/l	10649826.66
Al	27	45	1	No Gas	6.125	ug/l	119717.85
Si	28	45	2	H2	20053.411	ug/l	30585680.23
K	39	89	3	He	2826.506	ug/l	1345403.61
Ca	40	89	2	H2	23721.848	ug/l	145335885.77
Ti	47	89	1	No Gas	1.379	ug/l	3073.42
V	51	89	1	No Gas	15.731	ug/l	400089.38
V	51	89	3	He	14.070	ug/l	58974.00
Cr	52	89	1	No Gas	1.150	ug/l	65014.07
Cr	52	89	3	He	1.690	ug/l	7770.98
Mn	55	89	1	No Gas	15.376	ug/l	508727.04
Mn	55	89	3	He	15.510	ug/l	46909.92
Fe	56	89	2	H2	73.076	ug/l	972529.12
Fe	56	89	3	He	73.794	ug/l	295463.31
Co	59	89	1	No Gas	0.080	ug/l	2468.66
Ni	60	89	1	No Gas	1.007	ug/l	6575.16
Ni	60	89	3	He	0.935	ug/l	1604.54
Cu	63	89	1	No Gas	1.249	ug/l	19268.40
Cu	63	89	3	He	0.677	ug/l	3210.05
Cu	65	89	1	No Gas	0.740	ug/l	5696.07
Zn	66	89	1	No Gas	3.396	ug/l	14195.06
Zn	66	89	3	He	3.388	ug/l	2811.40
As	75	89	1	No Gas	0.178	ug/l	14369.31
As	75	89	3	He	0.050	ug/l	136.80
Se	78	89	2	H2	0.395	ug/l	164.33
Br	79	89	1	No Gas	34.053	ug/l	312517.19
Br	79	89	2	H2	34.088	ug/l	143915.35
Se	82	89	1	No Gas	1.450	ug/l	1252.28
Kr	84	89	1	No Gas		ug/l	71675.03
Sr	88	89	1	No Gas	190.746	ug/l	8189593.73
Sr	88	89	3	He	185.097	ug/l	850134.49
Mo	95	115	1	No Gas	0.351	ug/l	3089.24
Mo	95	115	3	He	0.352	ug/l	958.93
Mo	98	115	1	No Gas	0.351	ug/l	4958.61
Ag	107	115	1	No Gas	0.000	ug/l	63.36
Ag	109	115	1	No Gas	-0.001	ug/l	38.68
Cd	111	115	1	No Gas	-0.099	ug/l	2223.40

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.016	ug/l	21.33
Cd	114	115	1	No Gas	0.015	ug/l	157.17
Cd	114	115	3	He	0.017	ug/l	54.94
Sn	118	115	1	No Gas	-0.048	ug/l	492.37
Sn	118	115	3	He	-0.042	ug/l	125.56
Sb	121	115	1	No Gas	0.068	ug/l	1496.57
Sb	121	115	3	He	0.068	ug/l	353.37
Sb	123	115	1	No Gas	0.068	ug/l	1145.16
Sb	123	115	3	He	0.067	ug/l	275.70
Ba	135	115	1	No Gas	20.191	ug/l	89769.22
Ba	137	115	1	No Gas	20.067	ug/l	157838.99
La	139	115	3	He	0.003	ug/l	63.34
Ce	140	115	3	He	0.004	ug/l	125.56
Hg	201	209	1	No Gas	0.004	ug/l	27.99
Hg	202	209	1	No Gas	0.003	ug/l	62.32
Hg	202	209	3	He	0.004	ug/l	23.66
Tl	203	209	3	He	0.017	ug/l	143.39
Tl	205	209	1	No Gas	0.012	ug/l	733.36
Tl	205	209	3	He	0.018	ug/l	340.14
[Pb]	206	209	1	No Gas	0.093	ug/l	1592.33
[Pb]	207	209	1	No Gas	0.093	ug/l	1401.19
Pb	208	209	1	No Gas	0.092	ug/l	6315.07
Th	232	209	3	He	0.003	ug/l	162.07
U	238	209	1	No Gas	0.027	ug/l	1769.10

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4459733.77	94.7
Sc	45	2	H2	1788474.99	94.0
Sc	45	3	He	257005.73	89.4
Y	89	1	No Gas	8644415.15	98.2
Y	89	2	H2	5442245.28	96.9
Y	89	3	He	1291824.76	92.0
In	115	1	No Gas	8941534.48	97.0
In	115	3	He	1701719.02	92.6
Tb	159	1	No Gas	13199229.60	100.4
Tb	159	3	He	4353681.60	93.2
Ho	165	1	No Gas	12982158.58	101.3
Ho	165	3	He	4326375.60	94.6
Lu	175	1	No Gas	12556917.52	100.0
Lu	175	3	He	3558629.73	95.5
Bi	209	1	No Gas	8179830.17	96.7
Bi	209	3	He	2766498.54	91.6

ICPMS207-B Analytical Data

Sample Name B22030433-023B
File Name 093SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 14:14:27
Sample Type Sample
Total Dilution 1.0000
Comment ICPMS-6020-W-T
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	0.642	ug/l	14411.94
Be	9	45	1	No Gas	-0.056	ug/l	60.32
B	11	45	1	No Gas	54.324	ug/l	97329.02
Na	23	45	3	He	58353.659	ug/l	43450426.57
Mg	24	45	3	He	23659.190	ug/l	9800210.36
Al	27	45	1	No Gas	51.981	ug/l	872165.25
Si	28	45	2	H2	17727.044	ug/l	23949619.46
K	39	89	3	He	2802.306	ug/l	1233056.83
Ca	40	89	2	H2	23505.568	ug/l	132160320.67
Ti	47	89	1	No Gas	4.929	ug/l	9694.62
V	51	89	1	No Gas	11.808	ug/l	273262.50
V	51	89	3	He	16.999	ug/l	64946.61
Cr	52	89	1	No Gas	3.102	ug/l	104186.55
Cr	52	89	3	He	2.228	ug/l	9377.49
Mn	55	89	1	No Gas	18.278	ug/l	554625.57
Mn	55	89	3	He	18.724	ug/l	52307.59
Fe	56	89	2	H2	97.021	ug/l	1183198.08
Fe	56	89	3	He	100.123	ug/l	369086.80
Co	59	89	1	No Gas	0.125	ug/l	3423.64
Ni	60	89	1	No Gas	1.232	ug/l	7317.33
Ni	60	89	3	He	1.161	ug/l	1824.57
Cu	63	89	1	No Gas	1.841	ug/l	25672.11
Cu	63	89	3	He	1.307	ug/l	5539.28
Cu	65	89	1	No Gas	1.322	ug/l	9039.78
Zn	66	89	1	No Gas	4.674	ug/l	17775.82
Zn	66	89	3	He	4.753	ug/l	3614.92
As	75	89	1	No Gas	1.019	ug/l	16638.11
As	75	89	3	He	0.270	ug/l	252.33
Se	78	89	2	H2	0.396	ug/l	151.11
Br	79	89	1	No Gas	10.794	ug/l	139190.76
Br	79	89	2	H2	8.998	ug/l	56087.41
Se	82	89	1	No Gas	1.020	ug/l	1036.52
Kr	84	89	1	No Gas		ug/l	68265.59
Sr	88	89	1	No Gas	191.317	ug/l	7546892.55
Sr	88	89	3	He	188.358	ug/l	799409.38
Mo	95	115	1	No Gas	0.405	ug/l	3288.18
Mo	95	115	3	He	0.437	ug/l	1084.49
Mo	98	115	1	No Gas	0.408	ug/l	5300.90
Ag	107	115	1	No Gas	0.002	ug/l	113.38
Ag	109	115	1	No Gas	0.003	ug/l	98.71
Cd	111	115	1	No Gas	-0.036	ug/l	2326.11

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.022	ug/l	26.11
Cd	114	115	1	No Gas	0.021	ug/l	202.62
Cd	114	115	3	He	0.020	ug/l	58.15
Sn	118	115	1	No Gas	0.288	ug/l	4778.01
Sn	118	115	3	He	0.322	ug/l	1216.73
Sb	121	115	1	No Gas	0.117	ug/l	2241.74
Sb	121	115	3	He	0.117	ug/l	521.39
Sb	123	115	1	No Gas	0.122	ug/l	1784.30
Sb	123	115	3	He	0.125	ug/l	435.72
Ba	135	115	1	No Gas	21.051	ug/l	86334.80
Ba	137	115	1	No Gas	20.450	ug/l	148390.33
La	139	115	3	He	0.029	ug/l	513.34
Ce	140	115	3	He	0.059	ug/l	1166.72
Hg	201	209	1	No Gas	0.015	ug/l	55.66
Hg	202	209	1	No Gas	0.015	ug/l	131.64
Hg	202	209	3	He	0.019	ug/l	57.32
Tl	203	209	3	He	0.018	ug/l	136.06
Tl	205	209	1	No Gas	0.011	ug/l	625.57
Tl	205	209	3	He	0.017	ug/l	306.13
[Pb]	206	209	1	No Gas	1.001	ug/l	15049.68
[Pb]	207	209	1	No Gas	0.983	ug/l	12943.02
Pb	208	209	1	No Gas	1.006	ug/l	60345.37
Th	232	209	3	He	0.033	ug/l	817.69
U	238	209	1	No Gas	0.030	ug/l	1820.10

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3946623.78	83.8
Sc	45	2	H2	1584236.12	83.3
Sc	45	3	He	233650.87	81.3
Y	89	1	No Gas	7941076.06	90.2
Y	89	2	H2	4995915.06	89.0
Y	89	3	He	1193663.65	85.0
In	115	1	No Gas	8254472.27	89.6
In	115	3	He	1558360.39	84.8
Tb	159	1	No Gas	12144700.94	92.4
Tb	159	3	He	4085111.94	87.5
Ho	165	1	No Gas	12115472.96	94.5
Ho	165	3	He	4043313.90	88.4
Lu	175	1	No Gas	11896987.30	94.7
Lu	175	3	He	3270498.90	87.8
Bi	209	1	No Gas	7657586.46	90.5
Bi	209	3	He	2577811.10	85.4

ICPMS207-B Analytical Data

Sample Name B22030433-038A
File Name 094SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 14:20:42
Sample Type Sample
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	0.055	ug/l	10239.55
Be	9	45	1	No Gas	-0.060	ug/l	55.99
B	11	45	1	No Gas	45.410	ug/l	92613.96
Na	23	45	3	He	49828.616	ug/l	40427426.62
Mg	24	45	3	He	21262.377	ug/l	9595036.43
Al	27	45	1	No Gas	0.988	ug/l	22677.44
Si	28	45	2	H2	19970.628	ug/l	30129229.00
K	39	89	3	He	2758.565	ug/l	1298186.38
Ca	40	89	2	H2	21296.411	ug/l	126351920.80
Ti	47	89	1	No Gas	1.362	ug/l	3010.02
V	51	89	1	No Gas	16.417	ug/l	414022.30
V	51	89	3	He	14.656	ug/l	60479.02
Cr	52	89	1	No Gas	1.324	ug/l	68649.58
Cr	52	89	3	He	1.888	ug/l	8539.19
Mn	55	89	1	No Gas	0.677	ug/l	27011.20
Mn	55	89	3	He	0.722	ug/l	2263.39
Fe	56	89	2	H2	0.382	ug/l	11324.14
Fe	56	89	3	He	0.385	ug/l	5528.30
Co	59	89	1	No Gas	0.033	ug/l	1181.05
Ni	60	89	1	No Gas	0.260	ug/l	1946.27
Ni	60	89	3	He	0.141	ug/l	303.34
Cu	63	89	1	No Gas	0.573	ug/l	9256.65
Cu	63	89	3	He	0.080	ug/l	565.90
Cu	65	89	1	No Gas	0.171	ug/l	1625.41
Zn	66	89	1	No Gas	0.290	ug/l	1671.48
Zn	66	89	3	He	0.258	ug/l	278.89
As	75	89	1	No Gas	-0.133	ug/l	12873.02
As	75	89	3	He	-0.045	ug/l	77.20
Se	78	89	2	H2	0.317	ug/l	129.67
Br	79	89	1	No Gas	33.472	ug/l	305567.98
Br	79	89	2	H2	33.048	ug/l	136103.93
Se	82	89	1	No Gas	0.449	ug/l	956.37
Kr	84	89	1	No Gas		ug/l	65915.75
Sr	88	89	1	No Gas	163.707	ug/l	6962824.64
Sr	88	89	3	He	157.435	ug/l	714191.33
Mo	95	115	1	No Gas	0.299	ug/l	2614.70
Mo	95	115	3	He	0.300	ug/l	807.81
Mo	98	115	1	No Gas	0.286	ug/l	4012.47
Ag	107	115	1	No Gas	0.000	ug/l	69.36
Ag	109	115	1	No Gas	0.000	ug/l	42.68
Cd	111	115	1	No Gas	-0.082	ug/l	2282.63

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.003	ug/l	3.67
Cd	114	115	1	No Gas	0.002	ug/l	19.01
Cd	114	115	3	He	0.003	ug/l	9.92
Sn	118	115	1	No Gas	-0.058	ug/l	339.33
Sn	118	115	3	He	-0.058	ug/l	68.89
Sb	121	115	1	No Gas	0.011	ug/l	395.38
Sb	121	115	3	He	0.010	ug/l	93.68
Sb	123	115	1	No Gas	0.010	ug/l	295.70
Sb	123	115	3	He	0.006	ug/l	62.01
Ba	135	115	1	No Gas	7.839	ug/l	34484.26
Ba	137	115	1	No Gas	7.628	ug/l	59361.84
La	139	115	3	He	0.001	ug/l	17.78
Ce	140	115	3	He	-0.001	ug/l	15.56
Hg	201	209	1	No Gas	0.003	ug/l	24.33
Hg	202	209	1	No Gas	0.001	ug/l	48.66
Hg	202	209	3	He	0.001	ug/l	17.00
Tl	203	209	3	He	0.012	ug/l	100.71
Tl	205	209	1	No Gas	0.006	ug/l	450.01
Tl	205	209	3	He	0.012	ug/l	238.77
[Pb]	206	209	1	No Gas	0.012	ug/l	312.23
[Pb]	207	209	1	No Gas	0.012	ug/l	261.12
Pb	208	209	1	No Gas	0.012	ug/l	1193.36
Th	232	209	3	He	0.000	ug/l	96.04
U	238	209	1	No Gas	0.026	ug/l	1716.44

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4464283.01	94.8
Sc	45	2	H2	1769553.93	93.0
Sc	45	3	He	254567.00	88.6
Y	89	1	No Gas	8562121.93	97.3
Y	89	2	H2	5272033.98	93.9
Y	89	3	He	1275838.96	90.8
In	115	1	No Gas	8846123.68	96.0
In	115	3	He	1675862.47	91.2
Tb	159	1	No Gas	13027492.14	99.1
Tb	159	3	He	4318317.28	92.5
Ho	165	1	No Gas	12772897.97	99.6
Ho	165	3	He	4298059.00	94.0
Lu	175	1	No Gas	12627195.71	100.6
Lu	175	3	He	3538888.63	95.0
Bi	209	1	No Gas	8242073.74	97.4
Bi	209	3	He	2750273.06	91.1

ICPMS207-B Analytical Data

Sample Name B22030433-038B
File Name 095SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 14:26:58
Sample Type Sample
Total Dilution 1.0000
Comment ICPMS-6020-W-T
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	0.732	ug/l	14680.97
Be	9	45	1	No Gas	-0.059	ug/l	48.32
B	11	45	1	No Gas	49.697	ug/l	86049.69
Na	23	45	3	He	50174.184	ug/l	36085655.85
Mg	24	45	3	He	21580.300	ug/l	8633225.65
Al	27	45	1	No Gas	2.693	ug/l	46754.96
Si	28	45	2	H2	18357.489	ug/l	23959110.76
K	39	89	3	He	2757.672	ug/l	1163315.12
Ca	40	89	2	H2	20790.088	ug/l	111276279.86
Ti	47	89	1	No Gas	1.629	ug/l	3183.56
V	51	89	1	No Gas	11.527	ug/l	256784.08
V	51	89	3	He	18.726	ug/l	68133.11
Cr	52	89	1	No Gas	3.555	ug/l	110087.11
Cr	52	89	3	He	2.177	ug/l	8786.01
Mn	55	89	1	No Gas	1.157	ug/l	37963.71
Mn	55	89	3	He	0.811	ug/l	2265.72
Fe	56	89	2	H2	1.478	ug/l	22855.80
Fe	56	89	3	He	1.699	ug/l	9551.08
Co	59	89	1	No Gas	0.044	ug/l	1304.14
Ni	60	89	1	No Gas	0.336	ug/l	2149.23
Ni	60	89	3	He	0.168	ug/l	311.12
Cu	63	89	1	No Gas	0.811	ug/l	11344.31
Cu	63	89	3	He	0.292	ug/l	1333.80
Cu	65	89	1	No Gas	0.395	ug/l	2857.43
Zn	66	89	1	No Gas	0.474	ug/l	2145.60
Zn	66	89	3	He	0.502	ug/l	424.45
As	75	89	1	No Gas	0.767	ug/l	15021.38
As	75	89	3	He	0.246	ug/l	228.47
Se	78	89	2	H2	0.305	ug/l	112.78
Br	79	89	1	No Gas	13.520	ug/l	150554.04
Br	79	89	2	H2	11.926	ug/l	61808.86
Se	82	89	1	No Gas	0.771	ug/l	935.83
Kr	84	89	1	No Gas		ug/l	60874.37
Sr	88	89	1	No Gas	166.434	ug/l	6312446.83
Sr	88	89	3	He	162.922	ug/l	662417.25
Mo	95	115	1	No Gas	0.400	ug/l	3134.81
Mo	95	115	3	He	0.389	ug/l	947.82
Mo	98	115	1	No Gas	0.391	ug/l	4911.52
Ag	107	115	1	No Gas	0.001	ug/l	86.03
Ag	109	115	1	No Gas	0.000	ug/l	42.02
Cd	111	115	1	No Gas	-0.001	ug/l	2392.93

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.005	ug/l	6.11
Cd	114	115	1	No Gas	0.003	ug/l	24.57
Cd	114	115	3	He	0.003	ug/l	10.41
Sn	118	115	1	No Gas	0.288	ug/l	4614.96
Sn	118	115	3	He	0.282	ug/l	1071.16
Sb	121	115	1	No Gas	0.040	ug/l	856.78
Sb	121	115	3	He	0.040	ug/l	203.02
Sb	123	115	1	No Gas	0.044	ug/l	709.42
Sb	123	115	3	He	0.044	ug/l	175.69
Ba	135	115	1	No Gas	8.122	ug/l	32169.89
Ba	137	115	1	No Gas	8.076	ug/l	56603.08
La	139	115	3	He	0.002	ug/l	33.33
Ce	140	115	3	He	0.001	ug/l	54.44
Hg	201	209	1	No Gas	0.006	ug/l	30.99
Hg	202	209	1	No Gas	0.008	ug/l	88.98
Hg	202	209	3	He	0.012	ug/l	40.66
Tl	203	209	3	He	0.009	ug/l	75.36
Tl	205	209	1	No Gas	0.008	ug/l	470.01
Tl	205	209	3	He	0.011	ug/l	203.42
[Pb]	206	209	1	No Gas	0.010	ug/l	251.12
[Pb]	207	209	1	No Gas	0.013	ug/l	252.23
Pb	208	209	1	No Gas	0.011	ug/l	1075.58
Th	232	209	3	He	0.021	ug/l	560.24
U	238	209	1	No Gas	0.028	ug/l	1680.78

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3802027.58	80.8
Sc	45	2	H2	1530280.18	80.4
Sc	45	3	He	225659.99	78.5
Y	89	1	No Gas	7637459.11	86.8
Y	89	2	H2	4751208.91	84.6
Y	89	3	He	1143602.17	81.4
In	115	1	No Gas	7964778.23	86.4
In	115	3	He	1525342.47	83.0
Tb	159	1	No Gas	11791073.16	89.7
Tb	159	3	He	4043334.29	86.6
Ho	165	1	No Gas	11684529.12	91.1
Ho	165	3	He	3971424.38	86.9
Lu	175	1	No Gas	11732393.12	93.4
Lu	175	3	He	3238230.85	86.9
Bi	209	1	No Gas	7475309.27	88.3
Bi	209	3	He	2563267.69	84.9

ICPMS207-B Analytical Data

Sample Name B22030433-043A
File Name 096SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 14:33:13
Sample Type Sample
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	0.127	ug/l	10675.37
Be	9	45	1	No Gas	-0.060	ug/l	50.99
B	11	45	1	No Gas	49.283	ug/l	97362.68
Na	23	45	3	He	51582.867	ug/l	41406804.66
Mg	24	45	3	He	22081.138	ug/l	9860312.02
Al	27	45	1	No Gas	1.310	ug/l	27944.00
Si	28	45	2	H2	20758.485	ug/l	31144731.84
K	39	89	3	He	2774.165	ug/l	1310328.21
Ca	40	89	2	H2	21843.507	ug/l	128292797.44
Ti	47	89	1	No Gas	1.331	ug/l	2924.92
V	51	89	1	No Gas	16.114	ug/l	403363.23
V	51	89	3	He	14.838	ug/l	61402.81
Cr	52	89	1	No Gas	1.360	ug/l	69070.97
Cr	52	89	3	He	1.900	ug/l	8625.91
Mn	55	89	1	No Gas	1.246	ug/l	45162.90
Mn	55	89	3	He	1.318	ug/l	4053.75
Fe	56	89	2	H2	2.657	ug/l	40042.87
Fe	56	89	3	He	2.594	ug/l	14202.83
Co	59	89	1	No Gas	0.034	ug/l	1201.00
Ni	60	89	1	No Gas	0.317	ug/l	2275.66
Ni	60	89	3	He	0.185	ug/l	375.56
Cu	63	89	1	No Gas	19.789	ug/l	286525.33
Cu	63	89	3	He	19.862	ug/l	87223.10
Cu	65	89	1	No Gas	19.162	ug/l	134799.84
Zn	66	89	1	No Gas	1.216	ug/l	5338.00
Zn	66	89	3	He	1.091	ug/l	946.70
As	75	89	1	No Gas	-0.273	ug/l	12155.43
As	75	89	3	He	-0.038	ug/l	81.67
Se	78	89	2	H2	0.342	ug/l	137.89
Br	79	89	1	No Gas	34.194	ug/l	308384.81
Br	79	89	2	H2	34.411	ug/l	139024.84
Se	82	89	1	No Gas	1.146	ug/l	1145.33
Kr	84	89	1	No Gas		ug/l	63607.15
Sr	88	89	1	No Gas	167.649	ug/l	7081051.83
Sr	88	89	3	He	158.520	ug/l	721842.32
Mo	95	115	1	No Gas	0.324	ug/l	2770.29
Mo	95	115	3	He	0.340	ug/l	901.15
Mo	98	115	1	No Gas	0.310	ug/l	4252.54
Ag	107	115	1	No Gas	0.000	ug/l	72.70
Ag	109	115	1	No Gas	-0.001	ug/l	26.01
Cd	111	115	1	No Gas	-0.078	ug/l	2251.48

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.003	ug/l	4.45
Cd	114	115	1	No Gas	0.002	ug/l	25.09
Cd	114	115	3	He	0.003	ug/l	11.27
Sn	118	115	1	No Gas	-0.044	ug/l	525.64
Sn	118	115	3	He	-0.044	ug/l	113.34
Sb	121	115	1	No Gas	0.031	ug/l	755.43
Sb	121	115	3	He	0.031	ug/l	185.35
Sb	123	115	1	No Gas	0.032	ug/l	593.74
Sb	123	115	3	He	0.031	ug/l	144.68
Ba	135	115	1	No Gas	8.484	ug/l	36552.02
Ba	137	115	1	No Gas	8.178	ug/l	62338.61
La	139	115	3	He	0.002	ug/l	35.56
Ce	140	115	3	He	0.001	ug/l	67.78
Hg	201	209	1	No Gas	0.001	ug/l	19.66
Hg	202	209	1	No Gas	0.001	ug/l	52.99
Hg	202	209	3	He	0.001	ug/l	16.67
Tl	203	209	3	He	0.009	ug/l	80.03
Tl	205	209	1	No Gas	0.006	ug/l	413.34
Tl	205	209	3	He	0.009	ug/l	194.75
[Pb]	206	209	1	No Gas	0.019	ug/l	417.79
[Pb]	207	209	1	No Gas	0.019	ug/l	353.34
Pb	208	209	1	No Gas	0.020	ug/l	1684.50
Th	232	209	3	He	-0.001	ug/l	82.70
U	238	209	1	No Gas	0.028	ug/l	1755.10

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4337555.10	92.1
Sc	45	2	H2	1759054.00	92.5
Sc	45	3	He	251890.77	87.6
Y	89	1	No Gas	8502561.32	96.6
Y	89	2	H2	5219539.31	93.0
Y	89	3	He	1280665.93	91.2
In	115	1	No Gas	8666474.27	94.0
In	115	3	He	1656654.26	90.1
Tb	159	1	No Gas	12632928.73	96.1
Tb	159	3	He	4258001.08	91.2
Ho	165	1	No Gas	12521611.49	97.7
Ho	165	3	He	4251547.59	93.0
Lu	175	1	No Gas	12418144.17	98.9
Lu	175	3	He	3510604.23	94.2
Bi	209	1	No Gas	8062208.13	95.3
Bi	209	3	He	2758722.17	91.4

ICPMS207-B Analytical Data

Sample Name B22030433-043B
File Name 097SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 14:39:28
Sample Type Sample
Total Dilution 1.0000
Comment ICPMS-6020-W-T
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	0.579	ug/l	13323.84
Be	9	45	1	No Gas	-0.058	ug/l	52.66
B	11	45	1	No Gas	51.226	ug/l	88541.63
Na	23	45	3	He	51906.317	ug/l	37148465.28
Mg	24	45	3	He	21766.570	ug/l	8665324.58
Al	27	45	1	No Gas	8.277	ug/l	136586.98
Si	28	45	2	H2	18398.068	ug/l	24052891.60
K	39	89	3	He	2740.294	ug/l	1160051.98
Ca	40	89	2	H2	21201.611	ug/l	112899209.40
Ti	47	89	1	No Gas	1.761	ug/l	3428.87
V	51	89	1	No Gas	11.302	ug/l	251354.85
V	51	89	3	He	17.862	ug/l	65385.18
Cr	52	89	1	No Gas	3.158	ug/l	101513.46
Cr	52	89	3	He	2.111	ug/l	8553.63
Mn	55	89	1	No Gas	1.902	ug/l	59575.36
Mn	55	89	3	He	1.607	ug/l	4406.11
Fe	56	89	2	H2	7.705	ug/l	94302.29
Fe	56	89	3	He	8.138	ug/l	32160.74
Co	59	89	1	No Gas	0.062	ug/l	1743.32
Ni	60	89	1	No Gas	0.409	ug/l	2548.52
Ni	60	89	3	He	0.258	ug/l	442.23
Cu	63	89	1	No Gas	1.107	ug/l	15200.66
Cu	63	89	3	He	0.632	ug/l	2675.05
Cu	65	89	1	No Gas	0.691	ug/l	4728.67
Zn	66	89	1	No Gas	1.670	ug/l	6408.14
Zn	66	89	3	He	1.621	ug/l	1227.84
As	75	89	1	No Gas	1.130	ug/l	16465.72
As	75	89	3	He	0.191	ug/l	199.00
Se	78	89	2	H2	0.309	ug/l	113.45
Br	79	89	1	No Gas	10.405	ug/l	131543.56
Br	79	89	2	H2	9.340	ug/l	54116.82
Se	82	89	1	No Gas	1.416	ug/l	1097.18
Kr	84	89	1	No Gas		ug/l	61244.58
Sr	88	89	1	No Gas	170.022	ug/l	6455119.56
Sr	88	89	3	He	163.161	ug/l	665574.30
Mo	95	115	1	No Gas	0.411	ug/l	3165.93
Mo	95	115	3	He	0.435	ug/l	1031.16
Mo	98	115	1	No Gas	0.396	ug/l	4890.33
Ag	107	115	1	No Gas	0.001	ug/l	78.70
Ag	109	115	1	No Gas	0.000	ug/l	44.02
Cd	111	115	1	No Gas	-0.029	ug/l	2232.75

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.008	ug/l	9.78
Cd	114	115	1	No Gas	-0.005	ug/l	-44.35
Cd	114	115	3	He	0.004	ug/l	12.39
Sn	118	115	1	No Gas	0.303	ug/l	4714.79
Sn	118	115	3	He	0.314	ug/l	1137.83
Sb	121	115	1	No Gas	0.032	ug/l	705.09
Sb	121	115	3	He	0.033	ug/l	171.02
Sb	123	115	1	No Gas	0.033	ug/l	553.07
Sb	123	115	3	He	0.039	ug/l	156.02
Ba	135	115	1	No Gas	8.956	ug/l	34847.76
Ba	137	115	1	No Gas	8.693	ug/l	59873.18
La	139	115	3	He	0.002	ug/l	37.78
Ce	140	115	3	He	0.002	ug/l	74.45
Hg	201	209	1	No Gas	0.007	ug/l	31.99
Hg	202	209	1	No Gas	0.012	ug/l	110.98
Hg	202	209	3	He	0.011	ug/l	38.32
Tl	203	209	3	He	0.008	ug/l	69.36
Tl	205	209	1	No Gas	0.006	ug/l	374.46
Tl	205	209	3	He	0.009	ug/l	181.41
[Pb]	206	209	1	No Gas	0.026	ug/l	471.12
[Pb]	207	209	1	No Gas	0.026	ug/l	416.68
Pb	208	209	1	No Gas	0.026	ug/l	1881.18
Th	232	209	3	He	0.017	ug/l	463.53
U	238	209	1	No Gas	0.029	ug/l	1695.77

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3799680.16	80.7
Sc	45	2	H2	1533368.23	80.6
Sc	45	3	He	224557.40	78.1
Y	89	1	No Gas	7643501.51	86.8
Y	89	2	H2	4729521.49	84.2
Y	89	3	He	1147221.30	81.7
In	115	1	No Gas	7830011.72	85.0
In	115	3	He	1489066.65	81.0
Tb	159	1	No Gas	11645611.76	88.6
Tb	159	3	He	3935591.70	84.3
Ho	165	1	No Gas	11711598.69	91.3
Ho	165	3	He	3975270.71	87.0
Lu	175	1	No Gas	11506227.90	91.6
Lu	175	3	He	3267666.07	87.7
Bi	209	1	No Gas	7371897.39	87.1
Bi	209	3	He	2525009.95	83.6

ICPMS207-B Analytical Data

Sample Name CCV
File Name 098_CCV.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 14:45:42
Sample Type CCV
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	509.324	ug/l	4586015.76
Be	9	45	1	No Gas	42.739	ug/l	147487.10
B	11	45	1	No Gas	46.555	ug/l	82511.48
Na	23	45	3	He	12715.978	ug/l	9757879.58
Mg	24	45	3	He	12680.994	ug/l	5399935.47
Al	27	45	1	No Gas	48.657	ug/l	803798.93
Si	28	45	2	H2	403.385	ug/l	569899.21
K	39	89	3	He	11924.121	ug/l	5213178.25
Ca	40	89	2	H2	11872.814	ug/l	66758635.87
Ti	47	89	1	No Gas	46.707	ug/l	90210.79
V	51	89	1	No Gas	44.091	ug/l	1044885.93
V	51	89	3	He	52.184	ug/l	196215.56
Cr	52	89	1	No Gas	48.834	ug/l	1141634.68
Cr	52	89	3	He	48.783	ug/l	205333.01
Mn	55	89	1	No Gas	48.787	ug/l	1467121.90
Mn	55	89	3	He	48.868	ug/l	140399.01
Fe	56	89	2	H2	1299.980	ug/l	15778644.23
Fe	56	89	3	He	1260.913	ug/l	4741248.17
Co	59	89	1	No Gas	49.595	ug/l	1248983.57
Ni	60	89	1	No Gas	48.696	ug/l	275657.67
Ni	60	89	3	He	51.195	ug/l	79729.02
Cu	63	89	1	No Gas	50.462	ug/l	678494.59
Cu	63	89	3	He	50.848	ug/l	213982.96
Cu	65	89	1	No Gas	50.167	ug/l	327732.18
Zn	66	89	1	No Gas	52.310	ug/l	193328.56
Zn	66	89	3	He	52.092	ug/l	40099.46
As	75	89	1	No Gas	50.358	ug/l	217765.22
As	75	89	3	He	50.411	ug/l	29770.31
Se	78	89	2	H2	53.026	ug/l	19030.33
Br	79	89	1	No Gas	1.397	ug/l	78972.11
Br	79	89	2	H2	0.822	ug/l	31335.36
Se	82	89	1	No Gas	52.568	ug/l	14399.44
Kr	84	89	1	No Gas		ug/l	35186.34
Sr	88	89	1	No Gas	51.413	ug/l	2020949.01
Sr	88	89	3	He	48.460	ug/l	211924.51
Mo	95	115	1	No Gas	48.780	ug/l	393638.52
Mo	95	115	3	He	49.410	ug/l	122140.69
Mo	98	115	1	No Gas	49.328	ug/l	636792.89
Ag	107	115	1	No Gas	19.868	ug/l	410134.57
Ag	109	115	1	No Gas	19.990	ug/l	395929.98
Cd	111	115	1	No Gas	49.730	ug/l	221505.35

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	51.523	ug/l	62366.87
Cd	114	115	1	No Gas	51.031	ug/l	494802.62
Cd	114	115	3	He	52.029	ug/l	151148.17
Sn	118	115	1	No Gas	51.094	ug/l	665188.02
Sn	118	115	3	He	50.325	ug/l	154574.24
Sb	121	115	1	No Gas	52.163	ug/l	924450.07
Sb	121	115	3	He	51.809	ug/l	211773.92
Sb	123	115	1	No Gas	52.085	ug/l	709844.97
Sb	123	115	3	He	51.806	ug/l	166654.14
Ba	135	115	1	No Gas	50.665	ug/l	209595.01
Ba	137	115	1	No Gas	49.614	ug/l	363035.99
La	139	115	3	He	51.241	ug/l	911158.50
Ce	140	115	3	He	50.702	ug/l	975324.27
Hg	201	209	1	No Gas	1.009	ug/l	2849.74
Hg	202	209	1	No Gas	1.015	ug/l	6470.94
Hg	202	209	3	He	1.002	ug/l	2332.41
Tl	203	209	3	He	47.682	ug/l	328885.46
Tl	205	209	1	No Gas	48.810	ug/l	2206300.50
Tl	205	209	3	He	48.406	ug/l	789838.45
[Pb]	206	209	1	No Gas	49.667	ug/l	765138.71
[Pb]	207	209	1	No Gas	49.402	ug/l	666585.19
Pb	208	209	1	No Gas	49.523	ug/l	3044733.90
Th	232	209	3	He	48.740	ug/l	1105056.10
U	238	209	1	No Gas	48.376	ug/l	3014696.19

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3882340.50	82.5
Sc	45	2	H2	1626730.00	85.5
Sc	45	3	He	240220.63	83.6
Y	89	1	No Gas	7910311.44	89.9
Y	89	2	H2	4996132.20	89.0
Y	89	3	He	1229208.53	87.5
In	115	1	No Gas	8320277.03	90.3
In	115	3	He	1578714.40	85.9
Tb	159	1	No Gas	12094197.73	92.0
Tb	159	3	He	4091440.51	87.6
Ho	165	1	No Gas	11975119.28	93.4
Ho	165	3	He	4077059.88	89.2
Lu	175	1	No Gas	11858471.18	94.4
Lu	175	3	He	3322400.78	89.2
Bi	209	1	No Gas	7905494.02	93.4
Bi	209	3	He	2667744.72	88.4

ICPMS207-B Analytical Data

Sample Name CCB
File Name 099_CCB.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 14:51:58
Sample Type CCB
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	0.443	ug/l	12417.39
Be	9	45	1	No Gas	-0.054	ug/l	66.66
B	11	45	1	No Gas	1.021	ug/l	4579.87
Na	23	45	3	He	56.385	ug/l	72370.71
Mg	24	45	3	He	3.307	ug/l	1789.90
Al	27	45	1	No Gas	-0.052	ug/l	2611.35
Si	28	45	2	H2	91.025	ug/l	134545.97
K	39	89	3	He	-2.263	ug/l	56078.51
Ca	40	89	2	H2	0.424	ug/l	51838.51
Ti	47	89	1	No Gas	0.045	ug/l	240.24
V	51	89	1	No Gas	-2.650	ug/l	-73858.62
V	51	89	3	He	2.686	ug/l	14000.02
Cr	52	89	1	No Gas	0.865	ug/l	53050.10
Cr	52	89	3	He	0.004	ug/l	304.45
Mn	55	89	1	No Gas	0.044	ug/l	5979.40
Mn	55	89	3	He	-0.008	ug/l	81.65
Fe	56	89	2	H2	-0.037	ug/l	5593.38
Fe	56	89	3	He	0.099	ug/l	4173.14
Co	59	89	1	No Gas	-0.004	ug/l	166.34
Ni	60	89	1	No Gas	0.006	ug/l	359.29
Ni	60	89	3	He	0.018	ug/l	98.89
Cu	63	89	1	No Gas	0.110	ug/l	2341.80
Cu	63	89	3	He	0.101	ug/l	619.56
Cu	65	89	1	No Gas	0.108	ug/l	1089.15
Zn	66	89	1	No Gas	-0.072	ug/l	211.52
Zn	66	89	3	He	-0.031	ug/l	45.56
As	75	89	1	No Gas	-0.304	ug/l	11196.55
As	75	89	3	He	0.102	ug/l	157.53
Se	78	89	2	H2	0.024	ug/l	17.66
Br	79	89	1	No Gas	-0.043	ug/l	69804.39
Br	79	89	2	H2	-0.189	ug/l	28058.48
Se	82	89	1	No Gas	0.291	ug/l	844.62
Kr	84	89	1	No Gas		ug/l	22849.49
Sr	88	89	1	No Gas	-0.001	ug/l	326.02
Sr	88	89	3	He	-0.011	ug/l	157.78
Mo	95	115	1	No Gas	0.028	ug/l	273.34
Mo	95	115	3	He	0.016	ug/l	58.89
Mo	98	115	1	No Gas	0.029	ug/l	446.54
Ag	107	115	1	No Gas	0.001	ug/l	78.03
Ag	109	115	1	No Gas	0.000	ug/l	40.02
Cd	111	115	1	No Gas	-0.040	ug/l	2312.38

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.006	ug/l	7.45
Cd	114	115	1	No Gas	0.002	ug/l	17.81
Cd	114	115	3	He	0.004	ug/l	13.44
Sn	118	115	1	No Gas	0.082	ug/l	2132.62
Sn	118	115	3	He	0.073	ug/l	473.34
Sb	121	115	1	No Gas	0.290	ug/l	5285.20
Sb	121	115	3	He	0.202	ug/l	883.12
Sb	123	115	1	No Gas	0.287	ug/l	4022.99
Sb	123	115	3	He	0.214	ug/l	738.10
Ba	135	115	1	No Gas	0.004	ug/l	33.27
Ba	137	115	1	No Gas	0.000	ug/l	56.55
La	139	115	3	He	0.000	ug/l	5.56
Ce	140	115	3	He	-0.002	ug/l	10.00
Hg	201	209	1	No Gas	0.004	ug/l	28.33
Hg	202	209	1	No Gas	0.008	ug/l	97.65
Hg	202	209	3	He	0.003	ug/l	22.33
Tl	203	209	3	He	0.121	ug/l	867.71
Tl	205	209	1	No Gas	0.087	ug/l	4128.46
Tl	205	209	3	He	0.120	ug/l	2027.64
[Pb]	206	209	1	No Gas	0.001	ug/l	134.45
[Pb]	207	209	1	No Gas	0.001	ug/l	110.00
Pb	208	209	1	No Gas	0.001	ug/l	505.56
Th	232	209	3	He	0.045	ug/l	1134.51
U	238	209	1	No Gas	0.003	ug/l	172.30

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3890892.93	82.6
Sc	45	2	H2	1600216.41	84.1
Sc	45	3	He	235035.89	81.8
Y	89	1	No Gas	7914588.47	89.9
Y	89	2	H2	4954283.12	88.3
Y	89	3	He	1206133.97	85.9
In	115	1	No Gas	8274415.32	89.8
In	115	3	He	1597757.20	86.9
Tb	159	1	No Gas	12069738.48	91.8
Tb	159	3	He	4103920.91	87.9
Ho	165	1	No Gas	11953523.10	93.2
Ho	165	3	He	4043132.89	88.4
Lu	175	1	No Gas	11760978.27	93.7
Lu	175	3	He	3323451.67	89.2
Bi	209	1	No Gas	8035645.73	95.0
Bi	209	3	He	2708450.56	89.7

ICPMS207-B Analytical Data

Sample Name B22030433-053A
File Name 100SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 14:58:14
Sample Type Sample
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	0.596	ug/l	15383.27
Be	9	45	1	No Gas	-0.057	ug/l	65.65
B	11	45	1	No Gas	193.465	ug/l	373159.21
Na	23	45	3	He	98106.691	ug/l	77019784.96
Mg	24	45	3	He	9345.105	ug/l	4082589.93
Al	27	45	1	No Gas	31.228	ug/l	577709.92
Si	28	45	2	H2	29398.292	ug/l	44306910.08
K	39	89	3	He	3379.603	ug/l	1518992.23
Ca	40	89	2	H2	5851.774	ug/l	34010568.95
Ti	47	89	1	No Gas	3.522	ug/l	7282.52
V	51	89	1	No Gas	42.823	ug/l	1063979.30
V	51	89	3	He	45.655	ug/l	172185.85
Cr	52	89	1	No Gas	3.361	ug/l	115007.50
Cr	52	89	3	He	4.100	ug/l	17521.59
Mn	55	89	1	No Gas	3.986	ug/l	130171.89
Mn	55	89	3	He	4.076	ug/l	11806.04
Fe	56	89	2	H2	26.290	ug/l	335805.21
Fe	56	89	3	He	25.281	ug/l	98849.00
Co	59	89	1	No Gas	0.130	ug/l	3693.15
Ni	60	89	1	No Gas	0.373	ug/l	2555.16
Ni	60	89	3	He	0.310	ug/l	555.57
Cu	63	89	1	No Gas	1.534	ug/l	22501.66
Cu	63	89	3	He	0.550	ug/l	2518.72
Cu	65	89	1	No Gas	0.598	ug/l	4495.17
Zn	66	89	1	No Gas	0.629	ug/l	2933.20
Zn	66	89	3	He	0.687	ug/l	597.79
As	75	89	1	No Gas	0.097	ug/l	13435.97
As	75	89	3	He	0.169	ug/l	200.47
Se	78	89	2	H2	0.409	ug/l	161.00
Br	79	89	1	No Gas	31.473	ug/l	282864.61
Br	79	89	2	H2	31.216	ug/l	127435.53
Se	82	89	1	No Gas	0.660	ug/l	984.38
Kr	84	89	1	No Gas		ug/l	37404.36
Sr	88	89	1	No Gas	57.114	ug/l	2354269.65
Sr	88	89	3	He	55.913	ug/l	244460.55
Mo	95	115	1	No Gas	0.594	ug/l	5033.14
Mo	95	115	3	He	0.630	ug/l	1616.77
Mo	98	115	1	No Gas	0.575	ug/l	7801.21
Ag	107	115	1	No Gas	0.002	ug/l	113.38
Ag	109	115	1	No Gas	0.001	ug/l	68.03
Cd	111	115	1	No Gas	-0.083	ug/l	2227.34

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.008	ug/l	10.67
Cd	114	115	1	No Gas	0.007	ug/l	67.34
Cd	114	115	3	He	0.009	ug/l	27.28
Sn	118	115	1	No Gas	-0.037	ug/l	615.46
Sn	118	115	3	He	-0.032	ug/l	150.00
Sb	121	115	1	No Gas	0.157	ug/l	3075.65
Sb	121	115	3	He	0.151	ug/l	682.76
Sb	123	115	1	No Gas	0.154	ug/l	2333.10
Sb	123	115	3	He	0.162	ug/l	574.74
Ba	135	115	1	No Gas	5.476	ug/l	23590.00
Ba	137	115	1	No Gas	5.345	ug/l	40755.29
La	139	115	3	He	0.034	ug/l	618.91
Ce	140	115	3	He	0.127	ug/l	2540.25
Hg	201	209	1	No Gas	0.009	ug/l	39.99
Hg	202	209	1	No Gas	0.009	ug/l	101.31
Hg	202	209	3	He	0.011	ug/l	39.32
Tl	203	209	3	He	0.047	ug/l	344.15
Tl	205	209	1	No Gas	0.029	ug/l	1427.87
Tl	205	209	3	He	0.047	ug/l	802.35
[Pb]	206	209	1	No Gas	0.111	ug/l	1797.91
[Pb]	207	209	1	No Gas	0.106	ug/l	1506.76
Pb	208	209	1	No Gas	0.108	ug/l	7031.89
Th	232	209	3	He	0.010	ug/l	331.47
U	238	209	1	No Gas	0.019	ug/l	1183.82

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4338608.83	92.1
Sc	45	2	H2	1767451.17	92.9
Sc	45	3	He	246423.81	85.7
Y	89	1	No Gas	8295975.27	94.2
Y	89	2	H2	5158937.77	91.9
Y	89	3	He	1228900.12	87.5
In	115	1	No Gas	8658620.72	94.0
In	115	3	He	1619744.64	88.1
Tb	159	1	No Gas	12409604.17	94.4
Tb	159	3	He	4154130.65	89.0
Ho	165	1	No Gas	12275782.33	95.7
Ho	165	3	He	4181222.27	91.5
Lu	175	1	No Gas	12070453.68	96.1
Lu	175	3	He	3438241.76	92.3
Bi	209	1	No Gas	7829961.27	92.5
Bi	209	3	He	2662564.10	88.2

ICPMS207-B Analytical Data

Sample Name B22030433-053B
File Name 101SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 15:04:29
Sample Type Sample
Total Dilution 1.0000
Comment ICPMS-6020-W-T
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	0.925	ug/l	16999.65
Be	9	45	1	No Gas	-0.050	ug/l	81.65
B	11	45	1	No Gas	164.767	ug/l	289505.25
Na	23	45	3	He	80427.081	ug/l	58985811.90
Mg	24	45	3	He	9103.560	ug/l	3715142.88
Al	27	45	1	No Gas	326.489	ug/l	5461198.39
Si	28	45	2	H2	24800.119	ug/l	32991389.13
K	39	89	3	He	2934.436	ug/l	1282086.06
Ca	40	89	2	H2	5697.593	ug/l	31295779.26
Ti	47	89	1	No Gas	21.477	ug/l	41665.32
V	51	89	1	No Gas	36.256	ug/l	859536.79
V	51	89	3	He	43.467	ug/l	158652.50
Cr	52	89	1	No Gas	5.425	ug/l	156884.50
Cr	52	89	3	He	4.741	ug/l	19538.58
Mn	55	89	1	No Gas	13.546	ug/l	411688.96
Mn	55	89	3	He	13.874	ug/l	38594.96
Fe	56	89	2	H2	345.298	ug/l	4094120.12
Fe	56	89	3	He	339.885	ug/l	1237787.17
Co	59	89	1	No Gas	0.309	ug/l	8059.59
Ni	60	89	1	No Gas	0.916	ug/l	5513.47
Ni	60	89	3	He	0.943	ug/l	1488.98
Cu	63	89	1	No Gas	1.882	ug/l	26193.29
Cu	63	89	3	He	1.031	ug/l	4387.78
Cu	65	89	1	No Gas	1.061	ug/l	7322.79
Zn	66	89	1	No Gas	0.769	ug/l	3319.39
Zn	66	89	3	He	0.811	ug/l	670.02
As	75	89	1	No Gas	0.515	ug/l	14539.36
As	75	89	3	He	0.324	ug/l	281.73
Se	78	89	2	H2	0.299	ug/l	113.56
Br	79	89	1	No Gas	10.769	ug/l	138831.19
Br	79	89	2	H2	8.642	ug/l	53693.15
Se	82	89	1	No Gas	1.160	ug/l	1070.65
Kr	84	89	1	No Gas		ug/l	36367.02
Sr	88	89	1	No Gas	55.730	ug/l	2195773.04
Sr	88	89	3	He	53.822	ug/l	227432.59
Mo	95	115	1	No Gas	0.609	ug/l	4847.51
Mo	95	115	3	He	0.642	ug/l	1557.87
Mo	98	115	1	No Gas	0.617	ug/l	7853.69
Ag	107	115	1	No Gas	0.004	ug/l	143.39
Ag	109	115	1	No Gas	0.002	ug/l	90.70
Cd	111	115	1	No Gas	-0.057	ug/l	2203.24

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.011	ug/l	13.00
Cd	114	115	1	No Gas	0.002	ug/l	17.58
Cd	114	115	3	He	0.009	ug/l	27.68
Sn	118	115	1	No Gas	0.369	ug/l	5733.15
Sn	118	115	3	He	0.348	ug/l	1271.18
Sb	121	115	1	No Gas	0.123	ug/l	2306.42
Sb	121	115	3	He	0.122	ug/l	528.73
Sb	123	115	1	No Gas	0.123	ug/l	1771.96
Sb	123	115	3	He	0.116	ug/l	401.05
Ba	135	115	1	No Gas	5.368	ug/l	21693.96
Ba	137	115	1	No Gas	5.271	ug/l	37706.30
La	139	115	3	He	0.086	ug/l	1478.98
Ce	140	115	3	He	0.336	ug/l	6297.02
Hg	201	209	1	No Gas	0.021	ug/l	71.99
Hg	202	209	1	No Gas	0.023	ug/l	176.30
Hg	202	209	3	He	0.019	ug/l	54.99
Tl	203	209	3	He	0.021	ug/l	152.06
Tl	205	209	1	No Gas	0.016	ug/l	824.48
Tl	205	209	3	He	0.022	ug/l	374.16
[Pb]	206	209	1	No Gas	0.133	ug/l	2042.39
[Pb]	207	209	1	No Gas	0.130	ug/l	1752.35
Pb	208	209	1	No Gas	0.133	ug/l	8128.81
Th	232	209	3	He	0.081	ug/l	1852.21
U	238	209	1	No Gas	0.024	ug/l	1403.13

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3946537.57	83.8
Sc	45	2	H2	1560268.91	82.0
Sc	45	3	He	230184.74	80.1
Y	89	1	No Gas	7931796.47	90.1
Y	89	2	H2	4874523.00	86.8
Y	89	3	He	1187947.40	84.6
In	115	1	No Gas	8126871.64	88.2
In	115	3	He	1530523.40	83.3
Tb	159	1	No Gas	11957377.90	91.0
Tb	159	3	He	3975414.52	85.1
Ho	165	1	No Gas	11832556.62	92.3
Ho	165	3	He	3966938.46	86.8
Lu	175	1	No Gas	11767978.61	93.7
Lu	175	3	He	3254060.87	87.3
Bi	209	1	No Gas	7473909.56	88.3
Bi	209	3	He	2540149.18	84.1

ICPMS207-B Analytical Data

Sample Name B22030433-058A
File Name 102SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 15:10:44
Sample Type Sample
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	2.835	ug/l	38578.24
Be	9	45	1	No Gas	-0.061	ug/l	49.99
B	11	45	1	No Gas	92.562	ug/l	183565.90
Na	23	45	3	He	99822.668	ug/l	8024882.14
Mg	24	45	3	He	32635.211	ug/l	14598648.50
Al	27	45	1	No Gas	6.268	ug/l	121286.93
Si	28	45	2	H2	25856.873	ug/l	38113545.54
K	39	89	3	He	4673.679	ug/l	2145713.68
Ca	40	89	2	H2	25637.022	ug/l	152191327.64
Ti	47	89	1	No Gas	2.058	ug/l	4431.88
V	51	89	1	No Gas	15.698	ug/l	392647.42
V	51	89	3	He	14.077	ug/l	57935.60
Cr	52	89	1	No Gas	0.978	ug/l	59738.79
Cr	52	89	3	He	1.459	ug/l	6628.19
Mn	55	89	1	No Gas	1.275	ug/l	46087.33
Mn	55	89	3	He	1.345	ug/l	4096.09
Fe	56	89	2	H2	4.790	ug/l	67748.83
Fe	56	89	3	He	4.623	ug/l	21936.89
Co	59	89	1	No Gas	0.057	ug/l	1803.21
Ni	60	89	1	No Gas	0.645	ug/l	4265.51
Ni	60	89	3	He	0.527	ug/l	922.26
Cu	63	89	1	No Gas	2.200	ug/l	32668.19
Cu	63	89	3	He	1.156	ug/l	5229.89
Cu	65	89	1	No Gas	1.255	ug/l	9218.62
Zn	66	89	1	No Gas	1.148	ug/l	5061.18
Zn	66	89	3	He	0.946	ug/l	822.25
As	75	89	1	No Gas	3.195	ug/l	27341.19
As	75	89	3	He	3.503	ug/l	2232.06
Se	78	89	2	H2	0.767	ug/l	300.00
Br	79	89	1	No Gas	40.424	ug/l	350911.83
Br	79	89	2	H2	39.470	ug/l	156650.84
Se	82	89	1	No Gas	1.558	ug/l	1258.68
Kr	84	89	1	No Gas		ug/l	92377.64
Sr	88	89	1	No Gas	270.854	ug/l	11441733.81
Sr	88	89	3	He	263.814	ug/l	1190075.87
Mo	95	115	1	No Gas	8.026	ug/l	67828.82
Mo	95	115	3	He	8.183	ug/l	21213.54
Mo	98	115	1	No Gas	8.043	ug/l	108740.46
Ag	107	115	1	No Gas	0.002	ug/l	110.04
Ag	109	115	1	No Gas	0.001	ug/l	76.70
Cd	111	115	1	No Gas	-0.085	ug/l	2230.10

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.006	ug/l	7.67
Cd	114	115	1	No Gas	0.001	ug/l	7.71
Cd	114	115	3	He	0.004	ug/l	12.36
Sn	118	115	1	No Gas	0.123	ug/l	2804.73
Sn	118	115	3	He	0.120	ug/l	641.13
Sb	121	115	1	No Gas	0.167	ug/l	3296.39
Sb	121	115	3	He	0.166	ug/l	762.77
Sb	123	115	1	No Gas	0.171	ug/l	2589.84
Sb	123	115	3	He	0.167	ug/l	604.74
Ba	135	115	1	No Gas	19.508	ug/l	84484.27
Ba	137	115	1	No Gas	19.249	ug/l	147478.86
La	139	115	3	He	0.012	ug/l	235.56
Ce	140	115	3	He	0.022	ug/l	485.57
Hg	201	209	1	No Gas	0.033	ug/l	109.98
Hg	202	209	1	No Gas	0.557	ug/l	3610.10
Hg	202	209	3	He	0.461	ug/l	1083.50
Tl	203	209	3	He	0.023	ug/l	180.74
Tl	205	209	1	No Gas	0.012	ug/l	673.35
Tl	205	209	3	He	0.022	ug/l	395.50
[Pb]	206	209	1	No Gas	0.031	ug/l	594.46
[Pb]	207	209	1	No Gas	0.029	ug/l	484.46
Pb	208	209	1	No Gas	0.029	ug/l	2263.43
Th	232	209	3	He	0.009	ug/l	304.80
U	238	209	1	No Gas	0.280	ug/l	17645.35

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4419915.34	93.9
Sc	45	2	H2	1729490.23	90.9
Sc	45	3	He	252336.63	87.8
Y	89	1	No Gas	8502784.57	96.6
Y	89	2	H2	5273304.21	93.9
Y	89	3	He	1268871.01	90.3
In	115	1	No Gas	8710547.60	94.5
In	115	3	He	1653966.51	90.0
Tb	159	1	No Gas	12994454.10	98.8
Tb	159	3	He	4267178.75	91.4
Ho	165	1	No Gas	12671619.72	98.8
Ho	165	3	He	4249978.22	93.0
Lu	175	1	No Gas	12598972.48	100.3
Lu	175	3	He	3507528.40	94.1
Bi	209	1	No Gas	7985700.27	94.4
Bi	209	3	He	2673901.93	88.6

ICPMS207-B Analytical Data

Sample Name B22030433-058B
File Name 103SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 15:16:59
Sample Type Sample
Total Dilution 1.0000
Comment ICPMS-6020-W-T
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	3.257	ug/l	37680.36
Be	9	45	1	No Gas	-0.058	ug/l	55.32
B	11	45	1	No Gas	100.625	ug/l	175028.06
Na	23	45	3	He	101920.936	ug/l	74225530.00
Mg	24	45	3	He	33152.642	ug/l	13434961.77
Al	27	45	1	No Gas	94.230	ug/l	1553194.14
Si	28	45	2	H2	23425.501	ug/l	30510571.19
K	39	89	3	He	4603.148	ug/l	1942050.56
Ca	40	89	2	H2	25931.042	ug/l	138457744.53
Ti	47	89	1	No Gas	8.706	ug/l	16758.02
V	51	89	1	No Gas	13.069	ug/l	299160.51
V	51	89	3	He	17.490	ug/l	65135.25
Cr	52	89	1	No Gas	2.782	ug/l	95535.00
Cr	52	89	3	He	1.771	ug/l	7338.54
Mn	55	89	1	No Gas	4.657	ug/l	142739.04
Mn	55	89	3	He	4.518	ug/l	12402.07
Fe	56	89	2	H2	72.566	ug/l	842633.41
Fe	56	89	3	He	72.882	ug/l	263385.06
Co	59	89	1	No Gas	0.128	ug/l	3443.58
Ni	60	89	1	No Gas	0.874	ug/l	5213.95
Ni	60	89	3	He	0.700	ug/l	1102.27
Cu	63	89	1	No Gas	2.574	ug/l	35060.55
Cu	63	89	3	He	1.601	ug/l	6582.50
Cu	65	89	1	No Gas	1.651	ug/l	11039.94
Zn	66	89	1	No Gas	1.617	ug/l	6373.01
Zn	66	89	3	He	1.639	ug/l	1260.06
As	75	89	1	No Gas	4.445	ug/l	30221.84
As	75	89	3	He	3.547	ug/l	2075.71
Se	78	89	2	H2	0.732	ug/l	258.22
Br	79	89	1	No Gas	12.086	ug/l	145318.30
Br	79	89	2	H2	11.394	ug/l	60202.25
Se	82	89	1	No Gas	1.240	ug/l	1080.12
Kr	84	89	1	No Gas		ug/l	86426.20
Sr	88	89	1	No Gas	275.268	ug/l	10704546.39
Sr	88	89	3	He	268.131	ug/l	1111355.74
Mo	95	115	1	No Gas	8.408	ug/l	65003.98
Mo	95	115	3	He	8.701	ug/l	20504.72
Mo	98	115	1	No Gas	8.546	ug/l	105705.47
Ag	107	115	1	No Gas	0.014	ug/l	338.81
Ag	109	115	1	No Gas	0.013	ug/l	297.46
Cd	111	115	1	No Gas	0.006	ug/l	2422.13

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.013	ug/l	15.00
Cd	114	115	1	No Gas	0.008	ug/l	75.01
Cd	114	115	3	He	0.007	ug/l	22.16
Sn	118	115	1	No Gas	0.522	ug/l	7530.49
Sn	118	115	3	He	0.545	ug/l	1821.24
Sb	121	115	1	No Gas	0.188	ug/l	3362.08
Sb	121	115	3	He	0.185	ug/l	767.77
Sb	123	115	1	No Gas	0.192	ug/l	2638.52
Sb	123	115	3	He	0.194	ug/l	631.41
Ba	135	115	1	No Gas	19.886	ug/l	78779.10
Ba	137	115	1	No Gas	19.800	ug/l	138768.77
La	139	115	3	He	0.054	ug/l	925.59
Ce	140	115	3	He	0.116	ug/l	2167.96
Hg	201	209	1	No Gas	0.058	ug/l	164.97
Hg	202	209	1	No Gas	0.800	ug/l	4730.57
Hg	202	209	3	He	0.669	ug/l	1445.79
Tl	203	209	3	He	0.019	ug/l	140.06
Tl	205	209	1	No Gas	0.010	ug/l	548.90
Tl	205	209	3	He	0.015	ug/l	254.77
[Pb]	206	209	1	No Gas	0.067	ug/l	1062.27
[Pb]	207	209	1	No Gas	0.059	ug/l	823.36
Pb	208	209	1	No Gas	0.063	ug/l	3978.04
Th	232	209	3	He	0.052	ug/l	1184.53
U	238	209	1	No Gas	0.301	ug/l	17343.34

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3883728.14	82.5
Sc	45	2	H2	1527877.73	80.3
Sc	45	3	He	228599.21	79.5
Y	89	1	No Gas	7829693.58	88.9
Y	89	2	H2	4748173.42	84.6
Y	89	3	He	1165727.42	83.0
In	115	1	No Gas	7967877.26	86.5
In	115	3	He	1503588.60	81.8
Tb	159	1	No Gas	11918605.37	90.7
Tb	159	3	He	3942329.41	84.4
Ho	165	1	No Gas	11734369.27	91.5
Ho	165	3	He	3914061.27	85.6
Lu	175	1	No Gas	11604644.03	92.4
Lu	175	3	He	3245448.15	87.1
Bi	209	1	No Gas	7320458.04	86.5
Bi	209	3	He	2467268.02	81.7

ICPMS207-B Analytical Data

Sample Name B22030433-064A
File Name 104SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 15:23:15
Sample Type Sample
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	-0.200	ug/l	7526.23
Be	9	45	1	No Gas	-0.060	ug/l	54.66
B	11	45	1	No Gas	60.591	ug/l	121127.42
Na	23	45	3	He	48570.148	ug/l	38887295.25
Mg	24	45	3	He	13614.941	ug/l	6063392.90
Al	27	45	1	No Gas	1.044	ug/l	23475.26
Si	28	45	2	H2	6309.893	ug/l	9582655.34
K	39	89	3	He	5184.169	ug/l	2351841.46
Ca	40	89	2	H2	13744.474	ug/l	80678338.83
Ti	47	89	1	No Gas	0.400	ug/l	987.70
V	51	89	1	No Gas	0.475	ug/l	1183.86
V	51	89	3	He	-0.173	ug/l	3844.97
Cr	52	89	1	No Gas	-0.420	ug/l	25488.16
Cr	52	89	3	He	0.025	ug/l	406.67
Mn	55	89	1	No Gas	17.359	ug/l	560888.61
Mn	55	89	3	He	17.420	ug/l	51261.16
Fe	56	89	2	H2	23.607	ug/l	305340.77
Fe	56	89	3	He	23.114	ug/l	92796.02
Co	59	89	1	No Gas	0.022	ug/l	874.96
Ni	60	89	1	No Gas	0.293	ug/l	2119.30
Ni	60	89	3	He	0.211	ug/l	410.01
Cu	63	89	1	No Gas	0.557	ug/l	8914.31
Cu	63	89	3	He	0.114	ug/l	703.88
Cu	65	89	1	No Gas	0.177	ug/l	1648.09
Zn	66	89	1	No Gas	2.114	ug/l	8836.28
Zn	66	89	3	He	2.179	ug/l	1785.68
As	75	89	1	No Gas	-0.188	ug/l	12442.49
As	75	89	3	He	0.056	ug/l	136.53
Se	78	89	2	H2	0.013	ug/l	14.33
Br	79	89	1	No Gas	12.395	ug/l	158853.76
Br	79	89	2	H2	12.804	ug/l	70591.60
Se	82	89	1	No Gas	0.883	ug/l	1063.46
Kr	84	89	1	No Gas		ug/l	47283.76
Sr	88	89	1	No Gas	91.683	ug/l	3848847.95
Sr	88	89	3	He	88.722	ug/l	396653.86
Mo	95	115	1	No Gas	18.167	ug/l	153441.46
Mo	95	115	3	He	18.653	ug/l	48710.45
Mo	98	115	1	No Gas	18.279	ug/l	246986.44
Ag	107	115	1	No Gas	0.000	ug/l	61.36
Ag	109	115	1	No Gas	-0.001	ug/l	26.01
Cd	111	115	1	No Gas	-0.062	ug/l	2335.26

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.007	ug/l	9.89
Cd	114	115	1	No Gas	0.001	ug/l	8.08
Cd	114	115	3	He	0.005	ug/l	17.43
Sn	118	115	1	No Gas	0.024	ug/l	1450.54
Sn	118	115	3	He	0.021	ug/l	325.56
Sb	121	115	1	No Gas	0.040	ug/l	931.46
Sb	121	115	3	He	0.039	ug/l	217.69
Sb	123	115	1	No Gas	0.040	ug/l	718.76
Sb	123	115	3	He	0.040	ug/l	176.02
Ba	135	115	1	No Gas	2.856	ug/l	12377.68
Ba	137	115	1	No Gas	2.743	ug/l	21064.11
La	139	115	3	He	0.000	ug/l	8.89
Ce	140	115	3	He	-0.001	ug/l	22.22
Hg	201	209	1	No Gas	0.002	ug/l	21.00
Hg	202	209	1	No Gas	0.016	ug/l	149.30
Hg	202	209	3	He	0.013	ug/l	46.66
Tl	203	209	3	He	0.012	ug/l	105.38
Tl	205	209	1	No Gas	0.008	ug/l	505.57
Tl	205	209	3	He	0.011	ug/l	225.43
[Pb]	206	209	1	No Gas	0.015	ug/l	354.45
[Pb]	207	209	1	No Gas	0.017	ug/l	336.67
Pb	208	209	1	No Gas	0.016	ug/l	1475.60
Th	232	209	3	He	0.000	ug/l	98.71
U	238	209	1	No Gas	0.007	ug/l	443.92

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4417805.75	93.8
Sc	45	2	H2	1779521.06	93.5
Sc	45	3	He	251217.56	87.4
Y	89	1	No Gas	8450281.55	96.0
Y	89	2	H2	5214330.76	92.9
Y	89	3	He	1257295.26	89.5
In	115	1	No Gas	8707701.15	94.5
In	115	3	He	1667359.64	90.7
Tb	159	1	No Gas	12826503.34	97.6
Tb	159	3	He	4199337.21	89.9
Ho	165	1	No Gas	12590240.00	98.2
Ho	165	3	He	4225371.73	92.4
Lu	175	1	No Gas	12370162.22	98.5
Lu	175	3	He	3466126.42	93.0
Bi	209	1	No Gas	8108878.82	95.8
Bi	209	3	He	2711617.08	89.8

ICPMS207-B Analytical Data

Sample Name B22030433-064B
File Name 105SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 15:29:30
Sample Type Sample
Total Dilution 1.0000
Comment ICPMS-6020-W-T
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	0.262	ug/l	10557.24
Be	9	45	1	No Gas	-0.057	ug/l	55.99
B	11	45	1	No Gas	67.637	ug/l	116214.10
Na	23	45	3	He	47896.798	ug/l	33946472.27
Mg	24	45	3	He	13488.057	ug/l	5317204.74
Al	27	45	1	No Gas	3.594	ug/l	61329.20
Si	28	45	2	H2	6273.082	ug/l	8172856.54
K	39	89	3	He	4951.770	ug/l	2054103.39
Ca	40	89	2	H2	13229.729	ug/l	70563584.43
Ti	47	89	1	No Gas	0.705	ug/l	1468.22
V	51	89	1	No Gas	-1.651	ug/l	-48201.04
V	51	89	3	He	2.525	ug/l	12777.82
Cr	52	89	1	No Gas	1.623	ug/l	68169.03
Cr	52	89	3	He	0.214	ug/l	1114.49
Mn	55	89	1	No Gas	21.099	ug/l	618015.65
Mn	55	89	3	He	21.712	ug/l	58332.14
Fe	56	89	2	H2	39.455	ug/l	459761.81
Fe	56	89	3	He	40.257	ug/l	144908.28
Co	59	89	1	No Gas	0.041	ug/l	1237.61
Ni	60	89	1	No Gas	0.433	ug/l	2691.59
Ni	60	89	3	He	0.338	ug/l	560.01
Cu	63	89	1	No Gas	0.806	ug/l	11334.94
Cu	63	89	3	He	0.340	ug/l	1530.44
Cu	65	89	1	No Gas	0.394	ug/l	2869.44
Zn	66	89	1	No Gas	2.409	ug/l	9088.01
Zn	66	89	3	He	2.402	ug/l	1789.01
As	75	89	1	No Gas	1.238	ug/l	17021.50
As	75	89	3	He	0.289	ug/l	253.13
Se	78	89	2	H2	0.035	ug/l	20.78
Br	79	89	1	No Gas	7.990	ug/l	117365.14
Br	79	89	2	H2	6.497	ug/l	46028.77
Se	82	89	1	No Gas	0.862	ug/l	961.57
Kr	84	89	1	No Gas		ug/l	43572.70
Sr	88	89	1	No Gas	91.346	ug/l	3484254.86
Sr	88	89	3	He	90.801	ug/l	370797.57
Mo	95	115	1	No Gas	19.595	ug/l	150562.51
Mo	95	115	3	He	20.125	ug/l	47937.97
Mo	98	115	1	No Gas	19.768	ug/l	243002.66
Ag	107	115	1	No Gas	0.001	ug/l	75.36
Ag	109	115	1	No Gas	-0.001	ug/l	36.01
Cd	111	115	1	No Gas	0.004	ug/l	2398.36

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.007	ug/l	9.00
Cd	114	115	1	No Gas	0.003	ug/l	31.11
Cd	114	115	3	He	0.003	ug/l	8.65
Sn	118	115	1	No Gas	0.332	ug/l	5130.77
Sn	118	115	3	He	0.393	ug/l	1395.67
Sb	121	115	1	No Gas	0.066	ug/l	1284.19
Sb	121	115	3	He	0.071	ug/l	324.71
Sb	123	115	1	No Gas	0.067	ug/l	1001.14
Sb	123	115	3	He	0.064	ug/l	236.03
Ba	135	115	1	No Gas	2.811	ug/l	11082.49
Ba	137	115	1	No Gas	2.779	ug/l	19401.87
La	139	115	3	He	0.001	ug/l	26.67
Ce	140	115	3	He	0.001	ug/l	65.56
Hg	201	209	1	No Gas	0.009	ug/l	37.66
Hg	202	209	1	No Gas	0.034	ug/l	239.29
Hg	202	209	3	He	0.023	ug/l	64.65
Tl	203	209	3	He	0.011	ug/l	90.03
Tl	205	209	1	No Gas	0.007	ug/l	450.01
Tl	205	209	3	He	0.010	ug/l	194.08
[Pb]	206	209	1	No Gas	0.010	ug/l	246.67
[Pb]	207	209	1	No Gas	0.010	ug/l	210.00
Pb	208	209	1	No Gas	0.010	ug/l	977.80
Th	232	209	3	He	0.019	ug/l	494.21
U	238	209	1	No Gas	0.008	ug/l	449.59

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3805532.99	80.8
Sc	45	2	H2	1526520.77	80.2
Sc	45	3	He	222376.95	77.4
Y	89	1	No Gas	7682087.86	87.3
Y	89	2	H2	4736306.09	84.4
Y	89	3	He	1148261.10	81.7
In	115	1	No Gas	7923843.39	86.0
In	115	3	He	1520681.44	82.7
Tb	159	1	No Gas	11646749.88	88.6
Tb	159	3	He	3928368.41	84.1
Ho	165	1	No Gas	11569281.79	90.2
Ho	165	3	He	3919721.59	85.7
Lu	175	1	No Gas	11489424.75	91.5
Lu	175	3	He	3193441.12	85.7
Bi	209	1	No Gas	7384392.90	87.3
Bi	209	3	He	2526074.52	83.7

ICPMS207-B Analytical Data

Sample Name CCV
File Name 106_CCV.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 15:35:44
Sample Type CCV
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	515.364	ug/l	4626784.27
Be	9	45	1	No Gas	42.946	ug/l	147767.82
B	11	45	1	No Gas	47.763	ug/l	84334.87
Na	23	45	3	He	12800.754	ug/l	9593322.63
Mg	24	45	3	He	12787.643	ug/l	5318683.76
Al	27	45	1	No Gas	49.381	ug/l	813472.70
Si	28	45	2	H2	266.558	ug/l	374067.55
K	39	89	3	He	12058.854	ug/l	5168279.85
Ca	40	89	2	H2	12268.372	ug/l	67430867.66
Ti	47	89	1	No Gas	46.274	ug/l	88538.81
V	51	89	1	No Gas	43.263	ug/l	1015213.03
V	51	89	3	He	51.254	ug/l	188987.67
Cr	52	89	1	No Gas	49.370	ug/l	1143102.94
Cr	52	89	3	He	48.557	ug/l	200364.26
Mn	55	89	1	No Gas	48.612	ug/l	1448370.82
Mn	55	89	3	He	49.319	ug/l	138912.62
Fe	56	89	2	H2	1314.929	ug/l	15593341.65
Fe	56	89	3	He	1260.250	ug/l	4645469.47
Co	59	89	1	No Gas	49.233	ug/l	1228459.29
Ni	60	89	1	No Gas	48.722	ug/l	273229.64
Ni	60	89	3	He	50.851	ug/l	77636.51
Cu	63	89	1	No Gas	50.970	ug/l	679005.25
Cu	63	89	3	He	50.919	ug/l	210085.12
Cu	65	89	1	No Gas	50.250	ug/l	325245.68
Zn	66	89	1	No Gas	52.457	ug/l	192092.52
Zn	66	89	3	He	51.783	ug/l	39082.17
As	75	89	1	No Gas	50.296	ug/l	215499.50
As	75	89	3	He	50.697	ug/l	29351.06
Se	78	89	2	H2	53.747	ug/l	18842.85
Br	79	89	1	No Gas	1.380	ug/l	78091.91
Br	79	89	2	H2	1.178	ug/l	31678.61
Se	82	89	1	No Gas	53.273	ug/l	14448.91
Kr	84	89	1	No Gas		ug/l	35309.94
Sr	88	89	1	No Gas	51.652	ug/l	2011570.04
Sr	88	89	3	He	48.758	ug/l	209041.92
Mo	95	115	1	No Gas	48.770	ug/l	389555.23
Mo	95	115	3	He	50.175	ug/l	121680.06
Mo	98	115	1	No Gas	49.640	ug/l	634299.87
Ag	107	115	1	No Gas	19.993	ug/l	408538.77
Ag	109	115	1	No Gas	20.059	ug/l	393271.16
Cd	111	115	1	No Gas	49.544	ug/l	218438.67

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	51.633	ug/l	61312.98
Cd	114	115	1	No Gas	50.713	ug/l	486700.37
Cd	114	115	3	He	52.208	ug/l	148787.58
Sn	118	115	1	No Gas	50.379	ug/l	649166.51
Sn	118	115	3	He	49.903	ug/l	150365.92
Sb	121	115	1	No Gas	51.957	ug/l	911398.25
Sb	121	115	3	He	51.575	ug/l	206828.75
Sb	123	115	1	No Gas	51.898	ug/l	700090.13
Sb	123	115	3	He	51.873	ug/l	163709.98
Ba	135	115	1	No Gas	51.435	ug/l	210612.28
Ba	137	115	1	No Gas	49.924	ug/l	361564.58
La	139	115	3	He	50.675	ug/l	884043.51
Ce	140	115	3	He	50.782	ug/l	958332.44
Hg	201	209	1	No Gas	0.999	ug/l	2794.74
Hg	202	209	1	No Gas	1.005	ug/l	6341.24
Hg	202	209	3	He	0.972	ug/l	2201.75
Tl	203	209	3	He	48.199	ug/l	323584.72
Tl	205	209	1	No Gas	48.592	ug/l	2174100.65
Tl	205	209	3	He	48.778	ug/l	774692.63
[Pb]	206	209	1	No Gas	49.349	ug/l	752477.75
[Pb]	207	209	1	No Gas	48.306	ug/l	645208.84
Pb	208	209	1	No Gas	49.059	ug/l	2985567.62
Th	232	209	3	He	48.919	ug/l	1079406.93
U	238	209	1	No Gas	48.234	ug/l	2975228.50

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3871687.79	82.2
Sc	45	2	H2	1599334.88	84.1
Sc	45	3	He	234585.58	81.6
Y	89	1	No Gas	7837986.15	89.0
Y	89	2	H2	4880425.88	86.9
Y	89	3	He	1205020.60	85.8
In	115	1	No Gas	8235385.65	89.4
In	115	3	He	1548691.33	84.3
Tb	159	1	No Gas	12082637.84	91.9
Tb	159	3	He	4067908.13	87.1
Ho	165	1	No Gas	11957782.16	93.3
Ho	165	3	He	4058790.47	88.8
Lu	175	1	No Gas	11720227.00	93.3
Lu	175	3	He	3280671.10	88.0
Bi	209	1	No Gas	7823866.00	92.5
Bi	209	3	He	2596382.73	86.0

ICPMS207-B Analytical Data

Sample Name CCB
File Name 107_CCB.d
Data Path Name D:\Agilent\ICPMH\1\DATA\220308BDoD.b
Acq Time 2022-03-09 15:42:00
Sample Type CCB
Total Dilution 1.0000
Comment ICPMS-6020-W-D
Operator CAR/SRH/JPV/AEM
Method SW6020/SW6020B

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Li	7	45	1	No Gas	0.405	ug/l	11743.90
Be	9	45	1	No Gas	-0.053	ug/l	69.99
B	11	45	1	No Gas	2.125	ug/l	6294.51
Na	23	45	3	He	64.599	ug/l	77445.96
Mg	24	45	3	He	2.581	ug/l	1467.16
Al	27	45	1	No Gas	-0.055	ug/l	2486.89
Si	28	45	2	H2	43.605	ug/l	69547.58
K	39	89	3	He	1.194	ug/l	55807.51
Ca	40	89	2	H2	0.461	ug/l	51177.29
Ti	47	89	1	No Gas	0.036	ug/l	221.89
V	51	89	1	No Gas	-2.415	ug/l	-67508.20
V	51	89	3	He	2.757	ug/l	13828.77
Cr	52	89	1	No Gas	0.962	ug/l	54572.46
Cr	52	89	3	He	0.007	ug/l	305.56
Mn	55	89	1	No Gas	0.057	ug/l	6292.22
Mn	55	89	3	He	-0.010	ug/l	73.65
Fe	56	89	2	H2	-0.040	ug/l	5479.89
Fe	56	89	3	He	0.131	ug/l	4164.80
Co	59	89	1	No Gas	0.000	ug/l	256.16
Ni	60	89	1	No Gas	0.003	ug/l	336.01
Ni	60	89	3	He	0.000	ug/l	68.89
Cu	63	89	1	No Gas	0.120	ug/l	2439.19
Cu	63	89	3	He	0.110	ug/l	638.89
Cu	65	89	1	No Gas	0.116	ug/l	1129.83
Zn	66	89	1	No Gas	-0.073	ug/l	204.80
Zn	66	89	3	He	-0.014	ug/l	56.67
As	75	89	1	No Gas	0.451	ug/l	14097.27
As	75	89	3	He	0.097	ug/l	150.13
Se	78	89	2	H2	0.030	ug/l	19.55
Br	79	89	1	No Gas	-0.206	ug/l	67915.19
Br	79	89	2	H2	-0.168	ug/l	27665.00
Se	82	89	1	No Gas	-0.150	ug/l	720.48
Kr	84	89	1	No Gas		ug/l	22999.57
Sr	88	89	1	No Gas	-0.001	ug/l	345.98
Sr	88	89	3	He	-0.014	ug/l	140.00
Mo	95	115	1	No Gas	0.030	ug/l	285.56
Mo	95	115	3	He	0.033	ug/l	100.00
Mo	98	115	1	No Gas	0.031	ug/l	478.49
Ag	107	115	1	No Gas	0.000	ug/l	64.02
Ag	109	115	1	No Gas	-0.001	ug/l	38.01
Cd	111	115	1	No Gas	-0.045	ug/l	2280.06

ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.005	ug/l	6.56
Cd	114	115	1	No Gas	0.003	ug/l	27.10
Cd	114	115	3	He	0.004	ug/l	12.00
Sn	118	115	1	No Gas	0.085	ug/l	2149.25
Sn	118	115	3	He	0.057	ug/l	415.57
Sb	121	115	1	No Gas	0.289	ug/l	5243.51
Sb	121	115	3	He	0.196	ug/l	838.78
Sb	123	115	1	No Gas	0.282	ug/l	3930.62
Sb	123	115	3	He	0.195	ug/l	659.75
Ba	135	115	1	No Gas	0.001	ug/l	19.96
Ba	137	115	1	No Gas	-0.001	ug/l	43.25
La	139	115	3	He	0.000	ug/l	2.22
Ce	140	115	3	He	-0.002	ug/l	5.56
Hg	201	209	1	No Gas	0.004	ug/l	27.33
Hg	202	209	1	No Gas	0.007	ug/l	83.98
Hg	202	209	3	He	0.007	ug/l	30.66
Tl	203	209	3	He	0.122	ug/l	863.71
Tl	205	209	1	No Gas	0.085	ug/l	3997.30
Tl	205	209	3	He	0.121	ug/l	2026.97
[Pb]	206	209	1	No Gas	0.001	ug/l	132.22
[Pb]	207	209	1	No Gas	0.001	ug/l	105.56
Pb	208	209	1	No Gas	0.001	ug/l	508.89
Th	232	209	3	He	0.040	ug/l	1009.11
U	238	209	1	No Gas	0.003	ug/l	169.30

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3783815.72	80.4
Sc	45	2	H2	1590712.90	83.6
Sc	45	3	He	231794.04	80.6
Y	89	1	No Gas	7816809.35	88.8
Y	89	2	H2	4872911.49	86.8
Y	89	3	He	1169881.24	83.3
In	115	1	No Gas	8222922.93	89.2
In	115	3	He	1561430.45	84.9
Tb	159	1	No Gas	12005230.43	91.3
Tb	159	3	He	3986525.94	85.4
Ho	165	1	No Gas	11803104.67	92.1
Ho	165	3	He	4035202.40	88.3
Lu	175	1	No Gas	11601707.97	92.4
Lu	175	3	He	3283226.24	88.1
Bi	209	1	No Gas	7909687.52	93.5
Bi	209	3	He	2685106.38	88.9

Energy Laboratories Inc

Spike LOG

Standard ID: ME220223 AUDIGSPK

Standard Name: AUDIGSPK

Date Prepared: 2/23/2022

Date Expires: 10/25/2022

Department: ME

Vendor:

Lot Number:

Balance ID:

Comments:

Type: Secondary

BY: Amanda E. McDani

Status: Open

<u>Stock Source</u>	<u>Base Units</u>	<u>Final Volume:</u>	<u>Amount Added</u>
ME211202A U Stock	ug/mL	50 mL	5 mL
ME220215 Th Sec Th Secondary Stock	ug/mL		5 mL
ME211222 Ce 2nd Ce Secondary Stock	ug/mL		5 mL
ME211222 La Sec La Secondary Stock	ug/mL		5 mL
ME220103Au Au Stock	ug/mL		15 mL
ME211025A Te Stock	ug/mL		15 mL
<u>Analvtes</u>	<u>CAS</u>	<u>Conc:</u>	<u>ug/mL</u>

Energy Laboratories Inc

Standard LOG

Standard ID: ME211025A
Standard Name: Te Stock
Date Prepared: 10/25/2021
Date Expires: 10/25/2022
Department: ME
Vendor: SCP Science
Lot Number: S200130018
Balance ID:
Comments: Opened 10/25/2021; Expires 10/25/2022

Type: Primary
BY: Stacy R. Hendricks
Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
ICP/ICPMS Standard Tellurium	14418	500	mL	10/25

Final Volume: 500 mL

Stock Source

Base Units

Amount Added

Analyses

CAS

Conc: **ug/mL**

Te

1.0 DESCRIPTION: *PlasmaCAL ICP/ICPMS Standard - Tellurium 1000 µg/ml*
 Catalogue Number: 140-051-520/-521/-525
 Starting Material: Tellurium Metal 99.99+%
 Lot Number: **S210615004**
 Matrix: 10% HNO₃ (See Section 3 for actual matrix)
 Expiration Date (End of month): **June 2023** (or 15 months after bottle is opened, whichever comes first)

2.0 CERTIFIED VALUES AND ASSOCIATED UNCERTAINTY:
 Certified Concentration: **1005 µg/ml +/- 5 µg/ml**
958 µg/g +/- 5 µg/g
 Method of analysis: Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP-AES)
 Traceability: NIST Standard Reference Material 3156 Lot: **140830**

Note: The uncertainty of the certified value has been calculated from applicable uncertainty contributors (u_i) including uncertainty established during characterization of the material (u_{char}), the between bottle variation (u_{bb}), short-term stability (u_{sts}) and long-term stability (u_{lts}) according to the model $u_c = \sqrt{(u_{char}^2 + u_{bb}^2 + u_{sts}^2 + u_{lts}^2)}$. This combined uncertainty has been further multiplied by a coverage factor (k) of 2 to provide a 95% confidence interval.

3.0 REFERENCE VALUES:
 Density: **1.049 g/ml @ 25.5 °C**
 Actual Matrix: **10.0% (v/v) HNO₃**

ID #: 14418
 Opened: _____
 ICP/ICPMS Standard Tellurium
Expires: 6/30/2023
 Rec'd: 10/20/2021
 Energy Laboratories Inc 1120 So. 27th Street
 Billings MT 59107

Trace Metal Impurities as tested by ICP-AES:

Element	Conc. (ppm)	Element	Conc. (ppm)	Element	Conc. (ppm)	Element	Conc. (ppm)
Ag	<0.0010	Fe	<0.0018	Nd	0.0449	Sn	<0.0010
Al	<0.0010	Ga	<0.0010	Ni	<0.0010	Sr	<0.0025
As	<0.0010	Gd	<0.0010	Os	<0.0010	Ta	<0.0010
Au	<0.0010	Ge	<0.0010	P	0.0184	Tb	<0.0010
B	<0.0015	Hf	<0.0010	Pb	<0.0010	Te	N/A
Ba	<0.0010	Hg	*	Pd	<0.0010	Th	<0.0010
Be	<0.0010	Ho	<0.0010	Pr	0.0028	Ti	<0.0012
Bi	<0.0010	In	0.0020	Pt	<0.0010	Tl	<0.0011
Ca	<0.0135	Ir	<0.0010	Rb	<0.0010	Tm	<0.0010
Cd	<0.0010	K	<0.0024	Re	<0.0010	U	<0.0010
Ce	<0.0010	La	<0.0010	Rh	<0.0010	V	<0.0010
Co	<0.0010	Li	<0.0010	Ru	<0.0010	W	<0.0020
Cr	<0.0010	Lu	<0.0010	S	*	Y	<0.0010
Cs	<0.0010	Mg	<0.0020	Sb	<0.0010	Yb	<0.0010
Cu	<0.0010	Mn	<0.0010	Sc	<0.0010	Zn	<0.0010
Dy	<0.0010	Mo	<0.0010	Se	<0.1	Zr	<0.0010
Er	<0.0010	Na	<0.0025	Si	<0.1		
Eu	<0.0010	Nb	<0.0010	Sm	<0.0010		

*: Not tested

4.0 APPROVAL AND DATE OF CERTIFICATION:
 Certification Approval: Daniel Boisvert, Chemist
 Certification Date: June 30, 2021

Daniel Boisvert

5.0 INTENDED USE / UTILISATION PRÉVUE:

- ICP Standards: For the calibration of, including but not limited to: ICP-AES, ICP-MS, FAAS, GFAA, XRF and DCP. / *Étalons ICP* : Pour l'étalonnage de instruments de mesure tels que: ICP-AES, ICP-MS, FAAS, GFAA, XRF et DCP.
 - AA Standards: For the calibration of Flame (FAAS) and Graphite Furnace (GFAA) Atomic Absorption Spectrometers. / *Étalons AA* : Pour l'étalonnage de spectromètres d'absorption atomique flamme (FAAS) et four au graphite (GFAA).
 - Matrix Modifiers: For the optimization of analytical conditions to provide better Graphite Furnace Atomic Absorption (GFAA) instrument response and improved detection limits. / *Modificateur de matrice* : Pour l'optimisation des conditions analytiques afin de fournir des meilleurs réponses instrumentales et limites de détection pour SAA four au graphite.
 - pH Standards: For the calibrating pH meters or for other wet chemistry applications. / *Étalons pH* : Pour étalonnage de pH mètres et autres applications de chimie humide.
 - Conductivity Standards: For electrolytic conductivity measurement as a calibration standard. / *Étalons de conductivité* : Comme étalon pour les mesures de conductivité électrolytiques.
 - IC Standards: For calibration of, but not limited to IC, HPLC, TLC, ISE, IR, NMR, MS, UV/VIS or other wet chemistry applications. / *Étalons IC* : Pour étalonnage d'instruments tels que : IC, HPLC, TLC, ISE, IR, NMR, MS, UV/VIS et autres applications de chimie humide.
- For any inquiries, please contact **SCP SCIENCE**. / *Pour toute question, veuillez contacter SCP SCIENCE.*

6.0 INSTRUCTIONS FOR USE / INSTRUCTIONS D'UTILISATION:

Handling and Storage / Manutention et entreposage: Keep product tightly capped when not in use. The solution should be opened for a minimum amount of time necessary to dispense the amount required. Do not pipet or use directly from container. Do not return unused portions back to container. Store under normal laboratory conditions. Avoid exposure to excessive sources of heat and humidity or direct sunlight. / *Garder les contenants bien fermés lorsque non utilisés. Le contenant devrait être ouvert seulement pour le temps requis afin de prélever la quantité nécessaire. Ne pas pipetter ou utiliser directement du contenant. Ne pas retourner les portions non-utilisées dans le contenant. Conserver dans des conditions normales de laboratoire. Éviter l'exposition à des sources de chaleur et d'humidité excessives ou à l'exposition solaire directe.*

Stability / Stabilité: This Standard is guaranteed to be stable and accurate to within the specified uncertainty of measurement up to the unopened expiry date, if sealed, or up to the opened expiry date (when indicated), whichever comes first, provided the solution is kept tightly capped and stored under the indicated storage conditions. Purchasers will be notified of any significant changes resulting in re-certification or withdrawal of the product prior to the expiration date. / *La stabilité et l'exactitude de cet étalon sont garanties d'être à l'intérieur de l'incertitude de mesure, jusqu'à la date d'expiration de la bouteille non-ouverte, si scellée, ou jusqu'à la date d'expiration de la bouteille ouverte (si indiquée), en presumant que le contenant est maintenu fermé et gardé dans les conditions d'entreposage indiquées. Les acheteurs seront avisés dans le cas où il y aura des changements significatifs nécessitant une re-certification ou un rappel du produit avant la date d'expiration.*

7.0 HAZARDOUS INFORMATION / INFORMATION SUR LES RISQUES POTENTIELS:

Please refer to the associated Safety Data Sheet (SDS) for information regarding this product (available at www.SCPSCIENCE.com). / *SVP vous référer à la Fiche Signalétique applicable pour de l'information sur ce produit (Disponible à www.SCPSCIENCE.com).*

8.0 HOMOGENEITY / HOMOGÉNÉITÉ:

This solution has been blended according to an in-house procedure and its homogeneity is guaranteed to be fit for purpose when a sample size sufficient for the intended method of analysis is used. / *Cette solution a été préparée selon une procédure maison et nous assurons que sa homogénéité est approprié à l'emploi lorsqu'un échantillon suffisant pour la méthode d'analyse prévue est utilisé.*

9.0 TRACEABILITY / TRAÇABILITÉ:

This CRM (Certified Reference Material) is traceable to the NIST SRM (Standard Reference Material) indicated in section 2 through an unbroken chain of comparisons. In addition, balances used are regularly calibrated using weights which are traceable to NIST (National Institute of Standards and Technology) or NRC (National Research Council of Canada) standards. All conductivity meters used to analyze this standard have been regularly calibrated using a NIST or NRC traceable thermometer and standards. All pH meters used to analyze this standard have been regularly calibrated using a NIST or NRC traceable thermometer and pH/MV simulator. / *Ce matériel de référence certifié est traçable au Matériel de Référence Standardisé de NIST indiqué à la section 2 par une chaîne de comparaison ininterrompue. De plus, les balances utilisées sont étalonnées régulièrement en utilisant des poids qui sont traçables au NIST (National Institute of Standards and Technology) ou au CRNC (Conseil National de Recherches Canada). Tout conductimètre utilisé afin d'analyser cet étalon a été sujet à un étalonnage périodique utilisant des thermomètres et étalons traçables au NIST ou au CNRC. Tout pH mètre utilisé afin d'analyser cet étalon a été sujet à un étalonnage périodique utilisant des thermomètres et un simulateur pH/MV traçables au NIST ou au CNRC.*

10.0 PREPARATION / PRÉPARATION:

For the preparation of these solutions, 18 megohm/cm double deionized water, high-purity acids and glassware calibrated to ASTM Class A specifications are used. / *Une eau de 18 megohm/cm doublement déionisé, de l'acide de haute pureté, ainsi que de la verrerie étalonnée afin de satisfaire les spécifications Classe A de ASTM ont été utilisés pour la préparation de cet étalon.*

11.0 QUALITY SYSTEM CERTIFICATIONS / CERTIFICATIONS DE SYSTÈME QUALITÉ:

ISO 9001 Certification / Certification ISO 9001: This standard was produced in a facility which operates under a registered ISO 9001 Quality Management System. Please consult our web site for a copy of the most recent revision of our certificate of registration. / *Cet étalon a été fabriqué dans un laboratoire qui utilise un Système de Gestion de la Qualité enregistré à la norme ISO 9001. Veuillez consulter notre site web pour obtenir la version la plus récente de notre certificat d'enregistrement.*

ISO 17025 Accreditation / Accréditation ISO 17025: SCP SCIENCE (Corporate Headquarters) operates an ISO 17025 accredited laboratory. Please consult our web site for a copy of the most recent revision of our certificate and scope of accreditation. / *SCP SCIENCE (Siège social) est accréditée ISO 17025. Veuillez consulter notre site web afin d'obtenir la plus récente version de notre certificat d'accréditation ainsi que la portée de notre accréditation.*

ISO 17034 Accreditation / Accréditation ISO 17034: SCP SCIENCE (Corporate Headquarters) is an ISO 17034 accredited Reference Material Producer. Please consult our website for a copy of our most recent certificate and scope of accreditation. / *SCP SCIENCE (Siège social) est un Fabricant de Matériaux de Référence Accrédité ISO 17034. Veuillez consulter notre site web afin d'obtenir la plus récente version de notre certificat d'accréditation ainsi que la portée de notre accréditation.*

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91140, Villebon-sur-Yvette
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GERMANY
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Marktberdorf
Phone: +49 (0) 8342-89560-61
Fax: +49 (0) 8342-89560-69

Energy Laboratories Inc

Standard LOG

Standard ID: ME211202A
Standard Name: U Stock
Date Prepared: 12/2/2021
Date Expires: 12/2/2022
Department: ME
Vendor: SCP Science
Lot Number: S210517021
Balance ID:
Comments:

Type: Primary
BY: Amanda E. McDani
Status: New

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
ICP/ICPMS Standard Uranium	14419	500	mL	12/2/2022

Final Volume:
500 mL

Stock Source

Base Units

Amount Added

Analytes

CAS

Conc: **ug/mL**

U

1.0 DESCRIPTION:

PlasmaCAL ICP/ICPMS Standard - Uranium 1000 µg/ml
 Catalogue Number: 140-051-920/-921/-925
 Starting Material: Uranyl Nitrate 99.99%
 Lot Number: **S210517021**
 Matrix: 4% HNO₃ (See Section 3 for actual matrix)
 Expiration Date (End of month): **May 2023** (or 15 months after bottle is opened, whichever comes first)

2.0 CERTIFIED VALUES AND ASSOCIATED UNCERTAINTY:

Certified Concentration: **1004 µg/ml +/- 4 µg/ml**
985 µg/g +/- 4 µg/g
 Method of analysis: Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP-AES)
 Traceability: NIST Standard Reference Material 3164 Lot: **080521**

Note: The uncertainty of the certified value has been calculated from applicable uncertainty contributors (u_i) including uncertainty established during characterization of the material (u_{char}), the between bottle variation (u_{bb}), short-term stability (u_{sts}) and long-term stability (u_{lts}) according to the model $u_c = \sqrt{(u_{char}^2 + u_{bb}^2 + u_{sts}^2 + u_{lts}^2)}$. This combined uncertainty has been further multiplied by a coverage factor (k) of 2 to provide a 95% confidence interval.

3.0 REFERENCE VALUES:

Density: **1.020 g/ml @ 24.0 °C**
 Actual Matrix: **4.0% (v/v) HNO₃**

% abundance of stable isotopes : ²³⁸U : 99.82% ; ²³⁵U : 0.18%

Note : The uranyl nitrate comes from a depleted source of uranium.

ID #: 14419

Opened: _____
 ICP/ICPMS Standard Uranium
Expires: 5/31/2023
 Rec'd: 10/20/2021
 Enerav Laboratories Inc 1120 So. 27th Street
 Billings MT 59107

Trace Metal Impurities as tested by ICP-MS:

Element	Conc. (ppm)	Element	Conc. (ppm)	Element	Conc. (ppm)	Element	Conc. (ppm)
Ag	<0.0010	Fe	<0.0018	Nd	<0.0010	Sn	<0.0010
Al	0.0252	Ga	<0.0010	Ni	<0.0010	Sr	<0.0025
As	<0.0010	Gd	<0.0010	Os	<0.0010	Ta	<0.0010
Au	<0.0010	Ge	<0.0010	P	<0.0026	Tb	<0.0010
B	<0.0015	Hf	<0.0010	Pb	<0.0010	Te	<0.0010
Ba	<0.0010	Hg	*	Pd	<0.0010	Th	<0.0010
Be	<0.0010	Ho	<0.0010	Pr	<0.0010	Ti	<0.0012
Bi	<0.0010	In	<0.0010	Pt	<0.0010	Tl	<0.0011
Ca	<0.0135	Ir	<0.0010	Rb	<0.0010	Tm	<0.0010
Cd	<0.0010	K	<0.0024	Re	<0.0010	U	N/A
Ce	<0.0010	La	<0.0010	Rh	<0.0010	V	<0.0010
Co	<0.0010	Li	<0.0010	Ru	<0.0010	W	<0.0020
Cr	<0.0010	Lu	<0.0010	S	*	Y	<0.0010
Cs	<0.0010	Mg	<0.0020	Sb	<0.0010	Yb	<0.0010
Cu	<0.0010	Mn	<0.0010	Sc	<0.0010	Zn	<0.0010
Dy	<0.0010	Mo	<0.0010	Se	<0.0010	Zr	<0.0010
Er	<0.0010	Na	<0.0010	Si	<0.1		
Eu	<0.0010	Nb	<0.0010	Sm	<0.0010		

*: Not tested

4.0 APPROVAL AND DATE OF CERTIFICATION:

Certification Approval: Yaling Sui, Chemist
 Certification Date: May 27, 2021

Yaling Sui

5.0 INTENDED USE / UTILISATION PRÉVUE:

- ICP Standards: For the calibration of, including but not limited to: ICP-AES, ICP-MS, FAAS, GFAA, XRF and DCP. / *Étalons ICP : Pour l'étalonnage d'instruments de mesure tels que: ICP-AES, ICP-MS, FAAS, GFAA, XRF et DCP.*
 - AA Standards: For the calibration of Flame (FAAS) and Graphite Furnace (GFAA) Atomic Absorption Spectrometers. / *Étalons AA : Pour l'étalonnage de spectromètres d'absorption atomique flamme (FAAS) et four au graphite (GFAA).*
 - Matrix Modifiers: For the optimization of analytical conditions to provide better Graphite Furnace Atomic Absorption (GFAA) instrument response and improved detection limits. / *Modificateur de matrice : Pour l'optimisation des conditions analytiques afin de fournir des meilleures réponses instrumentales et limites de détection pour SAA four au graphite.*
 - pH Standards: For the calibrating pH meters or for other wet chemistry applications. / *Étalons pH : Pour étalonnage de pH mètres et autres applications de chimie humide.*
 - Conductivity Standards: For electrolytic conductivity measurement as a calibration standard. / *Étalons de conductivité : Comme étalon pour les mesures de conductivité électrolytiques.*
 - IC Standards: for calibration of, but not limited to IC, HPLC, TLC, ISE, IR, NMR, MS, UV/VIS or other wet chemistry applications. / *Étalons IC : Pour étalonnage d'instruments tels que : IC, HPLC, TLC, ISE, IR, NMR, MS, UV/VIS et autres applications de chimie humide.*
- For any inquiries, please contact **SCP SCIENCE**. / *Pour toute question, veuillez contacter SCP SCIENCE.*

6.0 INSTRUCTIONS FOR USE / INSTRUCTIONS D'UTILISATION:

Handling and Storage / Manutention et entreposage: Keep product tightly capped when not in use. The solution should be opened for a minimum amount of time necessary to dispense the amount required. Do not pipet or use directly from container. Do not return unused portions back to container. Store under normal laboratory conditions. Avoid exposure to excessive sources of heat and humidity or direct sunlight. / *Garder les contenants bien fermés lorsque non utilisés. Le contenant devrait être ouvert seulement pour le temps requis afin de prélever la quantité nécessaire. Ne pas pipetter ou utiliser directement du contenant. Ne pas retourner les portions non-utilisées dans le contenant. Conserver dans des conditions normales de laboratoire. Éviter l'exposition à des sources de chaleur et d'humidité excessives ou à l'exposition solaire directe.*

Stability / Stabilité: This Standard is guaranteed to be stable and accurate to within the specified uncertainty of measurement up to the unopened expiry date, if sealed, or up to the opened expiry date (when indicated), whichever comes first, provided the solution is kept tightly capped and stored under the indicated storage conditions. Purchasers will be notified of any significant changes resulting in re-certification or withdrawal of the product prior to the expiration date. / *La stabilité et l'exactitude de cet étalon sont garanties d'être à l'intérieur de l'incertitude de mesure, jusqu'à la date d'expiration de la bouteille non-ouverte, si scellée, ou jusqu'à la date d'expiration de la bouteille ouverte (si indiquée), en presumant que le contenant est maintenu fermé et gardé dans les conditions d'entreposage indiquées. Les acheteurs seront avisés dans le cas où il y aura des changements significatifs nécessitant une re-certification ou un rappel du produit avant la date d'expiration.*

7.0 HAZARDOUS INFORMATION / INFORMATION SUR LES RISQUES POTENTIELS:

Please refer to the associated Safety Data Sheet (SDS) for information regarding this product (available at www.SCPSCIENCE.com). / *SVP vous référer à la Fiche Signalétique applicable pour de l'information sur ce produit (Disponible à www.SCPSCIENCE.com).*

8.0 HOMOGENEITY / HOMOGÉNÉITÉ:

This solution has been blended according to an in-house procedure and its homogeneity is guaranteed to be fit for purpose when a sample size sufficient for the intended method of analysis is used. / *Cette solution a été préparée selon une procédure maison et nous assurons que sa homogénéité est appropriée à l'emploi lorsqu'un échantillon suffisant pour la méthode d'analyse prévue est utilisé.*

9.0 TRACEABILITY / TRAÇABILITÉ:

This CRM (Certified Reference Material) is traceable to the NIST SRM (Standard Reference Material) indicated in section 2 through an unbroken chain of comparisons. In addition, balances used are regularly calibrated using weights which are traceable to NIST (National Institute of Standards and Technology) or NRC (National Research Council of Canada) standards. All conductivity meters used to analyze this standard have been regularly calibrated using a NIST or NRC traceable Thermometer and standards. All pH meters used to analyze this standard have been regularly calibrated using a NIST or NRC traceable thermometer and pH/MV simulator. / *Ce matériel de référence certifié est traçable au Matériel de Référence Standardisé de NIST indiqué à la section 2 par une chaîne de comparaison ininterrompue. De plus, les balances utilisées sont étalonnées régulièrement en utilisant des poids qui sont traçables au NIST (National Institute of Standards and Technology) ou au CRNC (Conseil National de Recherches Canada). Tout conductimètre utilisé afin d'analyser cet étalon a été sujet à un étalonnage périodique utilisant des thermomètres et étalons traçables au NIST ou CNRC. Tout pH mètre utilisé afin d'analyser cet étalon a été sujet à un étalonnage périodique utilisant des thermomètres et un simulateur pH/MV traçables au NIST ou au CNRC.*

10.0 PREPARATION / PRÉPARATION:

For the preparation of these solutions, 18 megohm/cm double deionized water, high-purity acids and glassware calibrated to ASTM Class A specifications are used. / *Une eau de 18 megohm/cm doublement déionisé, de l'acide de haute pureté, ainsi que de la verrerie étalonnée afin de satisfaire les spécifications Classe A de ASTM ont été utilisés pour la préparation de cet étalon.*

11.0 QUALITY SYSTEM CERTIFICATIONS / CERTIFICATIONS DE SYSTÈME QUALITÉ:

ISO 9001 Certification / Certification ISO 9001: This standard was produced in a facility which operates under a registered ISO 9001 Quality Management System. Please consult our web site for a copy of the most recent revision of our certificate of registration. / *Cet étalon a été fabriqué dans un laboratoire qui utilise un Système de Gestion de la Qualité enregistré à la norme ISO 9001. Veuillez consulter notre site web pour obtenir la version la plus récente de notre certificat d'enregistrement.*

ISO 17025 Accreditation / Accréditation ISO 17025: SCP SCIENCE (Corporate Headquarters) operates an ISO 17025 accredited laboratory. Please consult our web site for a copy of the most recent revision of our certificate and scope of accreditation. / *SCP SCIENCE (Siège social) est accréditée ISO 17025. Veuillez consulter notre site web afin d'obtenir la plus récente version de notre certificat d'accréditation ainsi que la portée de notre accréditation.*

ISO 17034 Accreditation / Accréditation ISO 17034 : SCP SCIENCE (Corporate Headquarters) is an ISO 17034 accredited Reference Material Producer. Please consult our website for a copy of our most recent certificate and scope of accreditation. / *SCP SCIENCE (Siège social) est un Fabricant de Matériaux de Référence Accrédité ISO 17034. Veuillez consulter notre site web afin d'obtenir la plus récente version de notre certificat d'accréditation ainsi que la portée de notre accréditation.*

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348 Route 11, Champlain,
N.Y. 12919-4816
Phone: +1 (800) 361-6820
Fax: +1 (800) 253-5549

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12 Ave. de Québec, Bat. IRIS
SILIC 642, 91965
Villebon sur Yvette, France
Phone: +33 (0) 1 69 18 71 17
Fax: +33 (0) 1 60 92 05 67

GERMANY
Alte Marktoberdorfer Straße 14, 87616
Marktoberdorf
Phone: +49 (0) 8342-89560-61
Fax: +49 (0) 8342-89560-69

Energy Laboratories Inc

Standard LOG

Standard ID: ME211222 LA SECOND SOURCE
Standard Name: La Secondary Stock
Date Prepared: 12/22/2021
Date Expires: 12/22/2022
Department: ME
Vendor: SCP Science
Lot Number: S210803016
Balance ID:
Comments: opened 12/22/2021, expires 12/22/2022

Type: Primary
BY: Amanda E. McDani
Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
Lanthanum PlasmaCal Standard	14326	125	mL	12/22/2022

Final Volume:
mL

Stock Source

Base Units

Amount Added

Analytes

CAS

Conc: **ug/mL**

La

1.0 DESCRIPTION: **PlasmaCAL ICP/ICPMS Standard - Lanthanum 1000 µg/ml**
 Catalogue Number: 140-051-570/-571/-575
 Starting Material: Lanthanum(III) Oxide 99.99+%
 Lot Number: **S210803016**
 Matrix: 4% HNO₃ (See Section 3 for actual matrix)
 Expiration Date (End of month): **August 2023** (or 15 months after bottle is opened, whichever comes first)

2.0 CERTIFIED VALUES AND ASSOCIATED UNCERTAINTY:
 Certified Concentration: **1005 µg/ml +/- 4 µg/ml**
985 µg/g +/- 3 µg/g
 Method of analysis: Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP-AES)
 Traceability: NIST Standard Reference Material 3127a Lot: **151030**

Note: The uncertainty of the certified value has been calculated from applicable uncertainty contributors (u_i) including uncertainty established during characterization of the material (u_{char}), the between bottle variation (u_{bb}), short-term stability (u_{sts}) and long-term stability (u_{lts}) according to the model $u_c = \sqrt{(u_{char}^2 + u_{bb}^2 + u_{sts}^2 + u_{lts}^2)}$. This combined uncertainty has been further multiplied by a coverage factor (k) of 2 to provide a 95% confidence interval.

3.0 REFERENCE VALUES:
 Density: **1.020 g/ml @ 23.2 °C**
 Actual Matrix: **4.0% (v/v) HNO₃**

ID #: 14326

Opened: _____

Lanthanum PlasmaCal Standard

Expires: 8/31/2023

Rec'd: 9/29/2021

Energy Laboratories Inc 1120 So. 27th Street
 Billings MT 59107

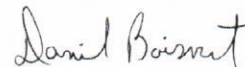
Trace Metal Impurities as tested by ICP-MS:

Element	Conc. (ppm)	Element	Conc. (ppm)	Element	Conc. (ppm)	Element	Conc. (ppm)
Ag	<0.0010	Fe	<0.0018	Nd	<0.0010	Sn	<0.0010
Al	0.0106	Ga	<0.0010	Ni	<0.0010	Sr	<0.0025
As	<0.0010	Gd	0.0889	Os	<0.0010	Ta	<0.0010
Au	<0.0010	Ge	<0.0010	P	<0.0026	Tb	<0.0010
B	<0.0015	Hf	<0.0010	Pb	<0.0010	Te	<0.0010
Ba	0.0031	Hg	*	Pd	<0.0010	Th	<0.0010
Be	<0.0010	Ho	<0.0010	Pr	<0.0010	Ti	<0.0062
Bi	<0.0010	In	<0.0010	Pt	<0.0010	Tl	<0.0011
Ca	0.0169	Ir	<0.0010	Rb	<0.0010	Tm	<0.0010
Cd	<0.0010	K	<0.0024	Re	<0.0010	U	<0.0010
Ce	0.0272	La	N/A	Rh	<0.0010	V	<0.0010
Co	<0.0010	Li	<0.0010	Ru	<0.0010	W	<0.0020
Cr	<0.0010	Lu	<0.0010	S	*	Y	0.0020
Cs	<0.0010	Mg	<0.0010	Sb	<0.0010	Yb	<0.0010
Cu	<0.0010	Mn	<0.0010	Sc	<0.0010	Zn	<0.0010
Dy	<0.0010	Mo	<0.0010	Se	<0.0010	Zr	<0.0010
Er	<0.0010	Na	0.0156	Si	<0.1		
Eu	<0.0010	Nb	<0.0010	Sm	<0.0010		

*: Not tested

4.0 APPROVAL AND DATE OF CERTIFICATION:

Certification Approval: Daniel Boisvert, Chemist
 Certification Date: August 12, 2021



5.0 INTENDED USE / UTILISATION PRÉVUE:

- ICP Standards: For the calibration of, including but not limited to: ICP-AES, ICP-MS, FAAS, GFAA, XRF and DCP. / *Étalons ICP : Pour l'étalonnage d'instruments de mesure tels que: ICP-AES, ICP-MS, FAAS, GFAA, XRF et DCP.*
 - AA Standards: For the calibration of Flame (FAAS) and Graphite Furnace (GFAA) Atomic Absorption Spectrometers. / *Étalons AA : Pour l'étalonnage de spectromètres d'absorption atomique flamme (GFAA) et four au graphite (GFAA).*
 - Matrix Modifiers: For the optimization of analytical conditions to provide better Graphite Furnace Atomic Absorption (GFAA) instrument response and improved detection limits. / *Modificateur de matrice : Pour l'optimisation des conditions analytiques afin de fournir des meilleures réponses instrumentales et limites de détection pour SAA four au graphite.*
 - pH Standards: For the calibrating pH meters or for other wet chemistry applications. / *Étalons pH : Pour étalonnage de pH mètres et autres applications de chimie humide.*
 - Conductivity Standards: For electrolytic conductivity measurement as a calibration standard. / *Étalons de conductivité : Comme étalon pour les mesures de conductivité électrolytiques.*
 - IC Standards: for calibration of, but not limited to IC, HPLC, TLC, ISE, IR, NMR, MS, UV/VIS or other wet chemistry applications. / *Étalons IC : Pour étalonnage d'instruments tels que : IC, HPLC, TLC, ISE, IR, NMR, MS, UV/VIS et autres applications de chimie humide.*
 For any inquiries, please contact **SCP SCIENCE**. / *Pour toute question, veuillez contacter SCP SCIENCE.*

6.0 INSTRUCTIONS FOR USE / INSTRUCTIONS D'UTILISATION:

Handling and Storage / Manutention et entreposage: Keep product tightly capped when not in use. The solution should be opened for a minimum amount of time necessary to dispense the amount required. Do not pipet or use directly from container. Do not return unused portions back to container. Store under normal laboratory conditions. Avoid exposure to excessive sources of heat and humidity or direct sunlight. / *Garder les contenants bien fermés lorsque non utilisés. Le contenant devrait être ouvert seulement pour le temps requis afin de prélever la quantité nécessaire. Ne pas pipetter ou utiliser directement du contenant. Ne pas retourner les portions non-utilisées dans le contenant. Conserver dans des conditions normales de laboratoire. Éviter l'exposition à des sources de chaleur et d'humidité excessives ou à l'exposition solaire directe.*

Stability / Stabilité: This Standard is guaranteed to be stable and accurate to within the specified uncertainty of measurement up to the unopened expiry date, if sealed, or up to the opened expiry date (when indicated), whichever comes first, provided the solution is kept tightly capped and stored under the indicated storage conditions. Purchasers will be notified of any significant changes resulting in re-certification or withdrawal of the product prior to the expiration date. / *La stabilité et l'exactitude de cet étalon sont garanties d'être à l'intérieur de l'incertitude de mesure, jusqu'à la date d'expiration de la bouteille non-ouverte, si scellée, ou jusqu'à la date d'expiration de la bouteille ouverte (si indiquée), en présumant que le contenant est maintenu fermé et gardé dans les conditions d'entreposage indiquées. Les acheteurs seront avisés dans le cas où il y aura des changements significatifs nécessitant une re-certification ou un rappel du produit avant la date d'expiration.*

7.0 HAZARDOUS INFORMATION / INFORMATION SUR LES RISQUES POTENTIELS:

Please refer to the associated Safety Data Sheet (SDS) for information regarding this product (available at www.SCPSCIENCE.com). / *SVP vous référer à la Fiche Signalétique applicable pour de l'information sur ce produit (Disponible à www.SCPSCIENCE.com).*

8.0 HOMOGENEITY / HOMOGÉNÉITÉ:

This solution has been blended according to an in-house procedure and its homogeneity is guaranteed to be fit for purpose when a sample size sufficient for the intended method of analysis is used. / *Cette solution a été préparée selon une procédure maison et nous assurons que sa homogénéité est approprié à l'emploi lorsqu'un échantillon suffisant pour la méthode d'analyse prévue est utilisé.*

9.0 TRACEABILITY / TRAÇABILITÉ:

This CRM (Certified Reference Material) is traceable to the NIST SRM (Standard Reference Material) indicated in section 2 through an unbroken chain of comparisons. In addition, balances used are regularly calibrated using weights which are traceable to NIST (National Institute of Standards and Technology) or NRC (National Research Council of Canada) standards. All conductivity meters used to analyze this standard have been regularly calibrated using a NIST or NRC traceable Thermometer and standards. All pH meters used to analyze this standard have been regularly calibrated using a NIST or NRC traceable thermometer and pH/MV simulator. / *Ce matériel de référence certifié est traçable au Matériel de Référence Standardisé de NIST indiqué à la section 2 par une chaîne de comparaison ininterrompue. De plus, les balances utilisées sont étalonnées régulièrement en utilisant des poids qui sont traçables au NIST (National Institute of Standards and Technology) ou au CRNC (Conseil National de Recherches Canada). Tout conductimètre utilisé afin d'analyser cet étalon a été sujet à un étalonnage périodique utilisant des thermomètres et étalons traçables au NIST ou au CNRC. Tout pH mètre utilisé afin d'analyser cet étalon a été sujet à un étalonnage périodique utilisant des thermomètres et un simulateur pH/MV traçables au NIST ou au CNRC.*

10.0 PREPARATION / PRÉPARATION:

For the preparation of these solutions, 18 megohm/cm double deionized water, high-purity acids and glassware calibrated to ASTM Class A specifications are used. / *Une eau de 18 megohm/cm doublement déionisé, de l'acide de haute pureté, ainsi que de la verrerie étalonnée afin de satisfaire les spécifications Classe A de ASTM ont été utilisés pour la préparation de cet étalon.*

11.0 QUALITY SYSTEM CERTIFICATIONS / CERTIFICATIONS DE SYSTÈME QUALITÉ:

ISO 9001 Certification / Certification ISO 9001: This standard was produced in a facility which operates under a registered ISO 9001 Quality Management System. Please consult our web site for a copy of the most recent revision of our certificate of registration. / *Cet étalon a été fabriqué dans un laboratoire qui utilise un Système de Gestion de la Qualité enregistré à la norme ISO 9001. Veuillez consulter notre site web pour obtenir la version la plus récente de notre certificat d'enregistrement.*

ISO 17025 Accreditation / Accréditation ISO 17025: SCP SCIENCE (Corporate Headquarters) operates an ISO 17025 accredited laboratory. Please consult our web site for a copy of the most recent revision of our certificate and scope of accreditation. / *SCP SCIENCE (Siège social) est accréditée ISO 17025. Veuillez consulter notre site web afin d'obtenir la plus récente version de notre certificat d'accréditation ainsi que la portée de notre accréditation.*

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Fax: +33 (0) 1 60 92 05 67

GERMANY
Alte Marktberdorfer Straße 14, 87616
Marktberdorf
Phone: +49 (0) 8342-89560-61
Fax: +49 (0) 8342-89560-69

Energy Laboratories Inc

Standard LOG

Standard ID: ME211222 CE 2ND SOURCE
Standard Name: Ce Secondary Stock
Date Prepared: 12/22/2021
Date Expires: 12/22/2022
Department: ME
Vendor: SCP Science
Lot Number: S210208003
Balance ID:
Type: Primary
BY: Amanda E. McDani
Status: Open
Comments: opened 12/22/2021, expires 12/22/2022

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
Cerium PlasmaCal Standard	14327	125	mL	12/22/2022

Final Volume:
125 mL

Stock Source

Base Units

Amount Added

Analytes

CAS

Conc: **ug/mL**

A Cerium

7440-45-1

1000

Ce

1.0 DESCRIPTION: **PlasmaCAL ICP/ICPMS Standard - Cerium 1000 µg/ml**
 Catalogue Number: 140-051-580/-581/-585
 Starting Material: Cerium(III) Nitrate Hexahydrate 99.99+%
 Lot Number: **S210208003**
 Matrix: 4% HNO₃ (See Section 3 for actual matrix)
 Expiration Date (End of month): **February 2023** (or 15 months after bottle is opened, whichever comes first)

2.0 CERTIFIED VALUES AND ASSOCIATED UNCERTAINTY:
 Certified Concentration: **1003 µg/ml +/- 4 µg/ml**
982 µg/g +/- 4 µg/g
 Method of analysis: Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP-AES)
 Traceability: NIST Standard Reference Material 3110 Lot: **090504**

Note: The uncertainty of the certified value has been calculated from applicable uncertainty contributors (u_i) including uncertainty established during characterization of the material (u_{char}), the between bottle variation (u_{bb}), short-term stability (u_{sts}) and long-term stability (u_{lts}) according to the model $u_c = \sqrt{(u_{char}^2 + u_{bb}^2 + u_{sts}^2 + u_{lts}^2)}$. This combined uncertainty has been further multiplied by a coverage factor (k) of 2 to provide a 95% confidence interval.

3.0 REFERENCE VALUES:
 Density: **1.021 g/ml @ 22.5 °C**
 Actual Matrix: **4.0% (v/v) HNO₃**

Trace Metal Impurities as tested by ICP-MS:

ID #: 14327
 Opened: _____
 Cerium PlasmaCal Standard
Expires: 2/28/2023
 Rec'd: 9/29/2021
 Energy Laboratories Inc 1120 So. 27th Street
 Billings MT 59107

Element	Conc. (ppm)	Element	Conc. (ppm)	Element	Conc. (ppm)	Element	Conc. (ppm)
Ag	<0.0010	Fe	<0.0018	Nd	0.0102	Sn	<0.0010
Al	0.0148	Ga	0.0526	Ni	0.0064	Sr	<0.0025
As	<0.0010	Gd	<0.0010	Os	<0.0010	Ta	<0.0010
Au	<0.0010	Ge	<0.0010	P	<0.0132	Tb	<0.0010
B	<0.0015	Hf	<0.0010	Pb	<0.0010	Te	<0.0010
Ba	<0.0010	Hg	*	Pd	<0.0010	Th	<0.0010
Be	<0.0010	Ho	<0.0010	Pr	0.0235	Ti	<0.0012
Bi	<0.0010	In	<0.0010	Pt	<0.0010	Tl	<0.0011
Ca	0.0375	Ir	<0.0010	Rb	<0.0010	Tm	<0.0010
Cd	<0.0010	K	<0.0024	Re	<0.0010	U	<0.0010
Ce	N/A	La	<0.10	Rh	<0.0010	V	<0.0010
Co	<0.0010	Li	<0.0010	Ru	<0.0010	W	<0.0020
Cr	<0.0010	Lu	<0.0010	S	*	Y	<0.0010
Cs	<0.0010	Mg	<0.0010	Sb	<0.0010	Yb	<0.0010
Cu	0.0121	Mn	<0.0010	Sc	<0.0010	Zn	<0.0010
Dy	<0.0010	Mo	<0.0010	Se	<0.0010	Zr	<0.0010
Er	<0.0010	Na	<0.0010	Si	<0.10		
Eu	0.0035	Nb	<0.0010	Sm	<0.0010		

*: Not tested

4.0 APPROVAL AND DATE OF CERTIFICATION:
 Certification Approval: Yaling Sui, Chemist
 Certification Date: February 22, 2021

Yaling Sui

5.0 INTENDED USE / UTILISATION PRÉVUE:

- ICP Standards: For the calibration of, including but not limited to: ICP-AES, ICP-MS, FAAS, GFAA, XRF and DCP. / *Étalons ICP : Pour l'étalonnage d'instruments de mesure tels que: ICP-AES, ICP-MS, FAAS, GFAA, XRF et DCP.*
 - AA Standards: For the calibration of Flame (FAAS) and Graphite Furnace (GFAA) Atomic Absorption Spectrometers. / *Étalons AA : Pour l'étalonnage de spectromètres d'absorption atomique flamme (FAAS) et four au graphite (GFAA).*
 - Matrix Modifiers: For the optimization of analytical conditions to provide better Graphite Furnace Atomic Absorption (GFAA) instrument response and improved detection limits. / *Modificateur de matrice : Pour l'optimisation des conditions analytiques afin de fournir des meilleurs réponses instrumentales et limites de détection pour SAA four au graphite.*
 - pH Standards: For the calibrating pH meters or for other wet chemistry applications. / *Étalons pH : Pour étalonnage de pH mètres et autres applications de chimie humide.*
 - Conductivity Standards: For electrolytic conductivity measurement as a calibration standard. / *Étalons de conductivité : Comme étalon pour les mesures de conductivité électrolytiques.*
 - IC Standards: for calibration of, but not limited to IC, HPLC, TLC, ISE, IR, NMR, MS, UV/VIS or other wet chemistry applications. / *Étalons IC : Pour étalonnage d'instruments tels que : IC, HPLC, TLC, ISE, IR, NMR, MS, UV/VIS et autres applications de chimie humide.*
- For any inquiries, please contact **SCP SCIENCE**. / *Pour toute question, veuillez contacter SCP SCIENCE.*

6.0 INSTRUCTIONS FOR USE / INSTRUCTIONS D'UTILISATION:

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Stability / Stabilité: This Standard is guaranteed to be stable and accurate to within the specified uncertainty of measurement up to the unopened expiry date, if sealed, or up to the opened expiry date (when indicated), whichever comes first, provided the solution is kept tightly capped and stored under the indicated storage conditions. Purchasers will be notified of any significant changes resulting in re-certification or withdrawal of the product prior to the expiration date. / *La stabilité et l'exactitude de cet étalon sont garanties d'être à l'intérieur de l'incertitude de mesure, jusqu'à la date d'expiration de la bouteille non-ouverte, si scellée, ou jusqu'à la date d'expiration de la bouteille ouverte (si indiquée), en présumant que le contenant est maintenu fermé et gardé dans les conditions d'entreposage indiquées. Les acheteurs seront avisés dans le cas où il y aura des changements significatifs nécessitant une re-certification ou un rappel du produit avant la date d'expiration.*

7.0 HAZARDOUS INFORMATION / INFORMATION SUR LES RISQUES POTENTIELS:

Please refer to the associated Safety Data Sheet (SDS) for information regarding this product (available at www.SCPSCIENCE.com). / *SVP vous référer à la Fiche Signalétique applicable pour de l'information sur ce produit (Disponible à www.SCPSCIENCE.com).*

8.0 HOMOGENEITY / HOMOGÉNÉITÉ:

This solution has been blended according to an in-house procedure and its homogeneity is guaranteed to be fit for purpose when a sample size sufficient for the intended method of analysis is used. / *Cette solution a été préparée selon une procédure maison et nous assurons que sa homogénéité est approprié à l'emploi lorsqu'un échantillon suffisant pour la méthode d'analyse prévue est utilisé.*

9.0 TRACEABILITY / TRAÇABILITÉ:

This CRM (Certified Reference Material) is traceable to the NIST SRM (Standard Reference Material) indicated in section 2 through an unbroken chain of comparisons. In addition, balances used are regularly calibrated using weights which are traceable to NIST (National Institute of Standards and Technology) or NRC (National Research Council of Canada) standards. All conductivity meters used to analyze this standard have been regularly calibrated using a NIST or NRC traceable Thermometer and standards. All pH meters used to analyze this standard have been regularly calibrated using a NIST or NRC traceable thermometer and pH/MV simulator. / *Ce matériel de référence certifié est traçable au Matériel de Référence Standardisé de NIST indiqué à la section 2 par une chaîne de comparaison ininterrompue. De plus, les balances utilisées sont étalonnées régulièrement en utilisant des poids qui sont traçables au NIST (National Institute of Standards and Technology) ou au CRNC (Conseil National de Recherches Canada). Tout conductimètre utilisé afin d'analyser cet étalon a été sujet à un étalonnage périodique utilisant des thermomètres et étalons traçables au NIST ou CNRC. Tout pH mètre utilisé afin d'analyser cet étalon a été sujet à un étalonnage périodique utilisant des thermomètres et un simulateur pH/MV traçables au NIST ou au CNRC.*

10.0 PREPARATION / PRÉPARATION:

For the preparation of these solutions, 18 megohm/cm double deionized water, high-purity acids and glassware calibrated to ASTM Class A specifications are used. / *Une eau de 18 megohm/cm doublement déionisé, de l'acide de haute pureté, ainsi que de la verrerie étalonnée afin de satisfaire les spécifications Classe A de ASTM ont été utilisés pour la préparation de cet étalon.*

11.0 QUALITY SYSTEM CERTIFICATIONS / CERTIFICATIONS DE SYSTÈME QUALITÉ:

ISO 9001 Certification / Certification ISO 9001: This standard was produced in a facility which operates under a registered ISO 9001 Quality Management System. Please consult our web site for a copy of the most recent revision of our certificate of registration. / *Cet étalon a été fabriqué dans un laboratoire qui utilise un Système de Gestion de la Qualité enregistré à la norme ISO 9001. Veuillez consulter notre site web pour obtenir la version la plus récente de notre certificat d'enregistrement.*

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Fax: +33 (0) 1 60 92 05 67

GERMANY
Alte Marktoberdorfer Straße 14, 87616
Marktoberdorf
Phone: +49 (0) 8342-89560-61
Fax: +49 (0) 8342-89560-69

Energy Laboratories Inc

Standard LOG

Standard ID: ME220103AU
Standard Name: Au Stock
Date Prepared: 1/3/2022
Date Expires: 1/8/2023
Department: ME
Vendor: Inorganic Ventures
Lot Number: S2-AU706428
Balance ID:

Type: Primary
BY: Ron Hunt
Status: Open

Comments:

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Gold Single Analyte Custom Grade So	14213	500	mL	7/4/23

Final Volume: 500 mL

Stock Source

Base Units

Amount Added

Analtes

CAS

Conc: **ug/mL**

A Gold

7440-57-5

1000

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: Single Analyte Custom Grade Solution
Catalog Number: CGAU1
Lot Number: S2-AU706428
Matrix: 10% (v/v) HCl
Value / Analyte(s): 1 000 µg/mL ea:
Gold
Starting Material: HAuCl4
Starting Material Lot#: 2426
Starting Material Purity: 99.9985%

ID #: 14213

Opened: _____
Gold Single Analyte Custom Grade Solution
Expires: 7/4/2025
Rec'd: 8/27/2021
Energy Laboratories Inc 1120 So. 27th Street
Billings MT 59107

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 999 ± 6 µg/mL
Density: 1.021 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1 999 ± 5 µg/mL
ICP Assay NIST SRM 3121 Lot Number: 170531

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

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

Characterization of CRM/RM by Two or More Methods

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

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

X_i = mean of Assay Method i with standard uncertainty $u_{char i}$
 w_i = the weighting factors for each method calculated using the inverse square of the variance:
 $w_i = (1/u_{char i})^2 / (\sum(1/(u_{char i})^2))$

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

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

M Ag	0.022000	M Eu <	0.000011	O Na	0.003500	M Se <	0.013000	M Zn	0.002700
M Al	0.000960	O Fe	0.001600	M Nb <	0.000011	O Si <	0.005000	M Zr <	0.000210
M As <	0.002100	M Ga <	0.000150	M Nd <	0.000011	M Sm <	0.000011		
s Au <		M Gd <	0.000011	M Ni <	0.000650	M Sn	0.000420		
O B <	0.003000	M Ge <	0.000130	M Os <	0.001200	M Sr <	0.000062		
M Ba <	0.000045	M Hf <	0.000011	M P <	0.026000	M Ta <	0.000011		
O Be <	0.000072	M Hg <	0.001200	M Pb <	0.000031	M Tb <	0.000011		
M Bi <	0.000011	M Ho <	0.000011	M Pd	0.001300	M Te <	0.000240		
O Ca	0.007500	M In <	0.000098	M Pr <	0.000011	M Th <	0.000190		
M Cd <	0.000021	M Ir <	0.000170	M Pt	0.005100	O Ti <	0.000380		
M Ce <	0.000041	M K <	0.004500	M Rb <	0.000011	M Tl <	0.000011		
M Co <	0.000038	M La <	0.000011	M Re <	0.000011	M Tm <	0.000011		
O Cr <	0.001600	O Li <	0.000079	M Rh	0.000070	M U <	0.000011		
M Cs <	0.000060	M Lu <	0.000011	M Ru <	0.000065	O V <	0.000710		
M Cu	0.002900	O Mg	0.000880	O S <	0.022000	M W <	0.000140		
M Dy <	0.000011	M Mn <	0.000130	M Sb <	0.000031	M Y <	0.000011		
M Er <	0.000011	M Mo <	0.000046	M Sc <	0.000120	M Yb <	0.000011		

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 - 196.97 +3 6 Au(Cl)₆

Chemical Compatibility - Stable in HCl, and HNO₃, as the chloride complex. Avoid basic media. Stable with most metals and inorganic anions in acidic media.

Stability - 2-100 ppb levels. 2-10 ppb Au is stable for #1 day maximum in 1% HNO₃ / LDPE container. 100 ppb is stable for #2 days maximum in 1% HNO₃ / LDPE container. 1-10,000 ppm solutions chemically stable for years in 10% HCl / LDPE container.

Au Containing Samples (Preparation and Solution) - Metal (Aqua Regia); Oxides (Soluble in HCl); Ores (Dissolve in HCl / HNO₃).

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

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 197 amu	5 ppt	N/A	181Ta16O
ICP-OES 208.209 nm	0.04/0.01 µg/mL	1	Ir, Re
ICP-OES 242.795 nm	0.02/0.003 µg/mL	1	Mn, Os, Th, Ta, Pt, Co, F
ICP-OES 267.595 nm	0.03/0.003 µg/mL	1	Nb, Ta, U, Cr, Th, Rh, Ru

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

July 04, 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

- **July 04, 2025**

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

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

11.3 Period of Validity

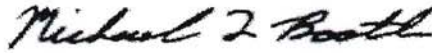
- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



Energy Laboratories Inc

Standard LOG

Standard ID: ME220215 TH SECONDARY STOCK
Standard Name: Th Seondary Stock
Date Prepared: 2/15/2022
Date Expires: 2/15/2023
Department: ME
Vendor: Inorganic Ventures
Lot Number: S2-TH706436
Balance ID:
Comments: Opened 2/15/2022; expires 2/15/2023

Type: Secondary
BY: Amanda E. McDani
Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Thorium Single Analyste Custom Grad	13749	500	mL	2/15/

Final Volume: 500 mL

Stock Source

Base Units

Amount Added

Analvtes

CAS

Conc: **ug/mL**

1.0 ACCREDITATION / REGISTRATION

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



2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution
 Catalog Number: CGTH1
 Lot Number: R2-TH698957
 Matrix: 5% (v/v) HNO3
 Value / Analyte(s): 1 000 µg/mL ea:
 Thorium
 Starting Material: TH(NO3)4*4H2O
 Starting Material Lot#: 2250
 Starting Material Purity: 99.9905%

ID #: 13749

Opened: _____
 Thorium Single Analyte Custom Grade Solut
Expires: 11/16/2024
 Rec'd: 4/12/2021
 Eneray Laboratories Inc 1120 So. 27th Street
 Billings MT 59107

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1000 ± 4 µg/mL
Density: 1.026 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1 **1000 ± 3 µg/mL**
 EDTA NIST SRM 928 Lot Number: 928

Assay Method #2 **1002 ± 4 µg/mL**
 Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u^2_{char} + u^2_{bb} + u^2_{Its} + u^2_{ts})^{1/2}$$

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{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 ($\mu\text{g/mL}$)

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

M Ag < 0.000448	M Eu < 0.000224	O Na 0.064009	M Se < 0.005827	M Zn 0.003180
O Al 0.010950	M Fe 0.012379	M Nb < 0.003138	i Si <	M Zr < 0.010310
M As < 0.038776	M Ga < 0.004931	M Nd 0.004692	M Sm 0.000870	
M Au < 0.000224	M Gd 0.000300	M Ni < 0.006724	M Sn < 0.028242	
M B < 0.021293	M Ge < 0.008965	M Os < 0.000224	M Sr 0.002579	
M Ba 0.001315	M Hf < 0.000224	i P <	M Ta < 0.001344	
M Be < 0.000224	M Hg < 0.000448	M Pb 0.003283	M Tb < 0.001793	
M Bi < 0.001793	M Ho < 0.001344	M Pd < 0.000448	M Te < 0.010086	
O Ca 0.051913	M In 0.000134	M Pr 0.001201	s Th <	
M Cd < 0.001344	M Ir < 0.000224	M Pt < 0.000224	M Ti < 0.004258	
M Ce 0.015404	O K 0.028897	M Rb < 0.005155	M Tl < 0.000224	
M Co < 0.001344	M La 0.003573	M Re < 0.000224	M Tm < 0.000224	
M Cr < 0.015465	M Li < 0.000448	M Rh < 0.000224	M U 0.006557	
M Cs < 0.013896	M Lu < 0.000224	M Ru < 0.000224	M V < 0.001793	
M Cu 0.001470	O Mg 0.027885	i S <	M W < 0.000224	
M Dy 0.000196	M Mn 0.001812	M Sb < 0.004931	M Y 0.000859	
M Er < 0.002241	M Mo < 0.000896	M Sc < 0.000672	M Yb < 0.000224	

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 - 232.04 +4 8 Th(OH) 3+ and Th(OH)22+

Chemical Compatibility -Soluble in HCl, and HNO₃. Avoid H₃PO₄, H₂SO₄ and HF although solubilities may not be a problem depending upon pH and matrix (For example: ThF₄ is soluble in acids). Avoid neutral to basic media. Th⁴⁺ is stable with most metals and inorganic anions forming an insoluble carbonate, oxide, fluoride, oxalate, sulfate and phosphate in neutral to slightly acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO₃ / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO₃ / LDPE container.

Th Containing Samples (Preparation and Solution) -Metal (Soluble in Aqua Regia); Oxide (The heated oxide is not soluble in acids except hot conc. H₂SO₄); Ores (Na₂O₂ fusion at 480 ± 20EC for 7 minutes, cool and treat sintered mass with 50 mL cold water and stand until disintegrated. The mass is transferred to a beaker and acidified with HCl with 25 mL excess HCl added. Any residue is collected on a Whatman No. 42 filter, dried and ignited to 1000 EC in PtO crucible and the ash treated with H₂SO₄ / HF and fumed. If residue remains, then treat it by peroxide fusion as above.)

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 232 amu	1 ppt	N/A	
ICP-OES 274.716 nm	0.08 / 0.008 µg/mL	1	Ti, Ta, Fe, V
ICP-OES 283.231 nm	0.07 / 0.007 µg/mL	1	U, Mo, Ti, Fe, Cr
ICP-OES 283.730 nm	0.07 / 0.007 µg/mL	1	U, Zr

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

November 16, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/WRM 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/WRM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **November 16, 2024**

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

- The lot expiration date reflects the period of time that the stability of a CRM/WRM can be supported by long term stability studies conducted on properly stored and handled CRM/WRMs. 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/WRM 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/WRM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



Energy Laboratories Inc

Standard LOG

Standard ID: ME220125 EL-MSICV-2
Standard Name: EL-MSICV-2
Date Prepared: 1/25/2022
Date Expires: 1/25/2023
Department: ME
Vendor: Inorganic Ventures
Lot Number: R2-MEB696849
Balance ID:
Comments: opened 1/25/2022, expires 1/25/2023

Type: Primary
BY: Amanda E. McDani
Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Multi Analyte Custom Grade Solution	14673	500	mL	1/25/

Final Volume: mL

Stock Source

Base Units

Amount Added

Analtes

CAS

Conc: ug/mL

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: EL-MSICV-2
 Lot Number: R2-MEB696849
 Matrix: 3% (v/v) HNO₃
 tr. HF
 Value / Analyte(s):
 1 000 µg/mL ea:
 Silicon,
 100 µg/mL ea:
 Tin, Titanium,
 Molybdenum, Antimony

ID #: 14673

Opened:

Multi Analyte Custom Grade Solution

Expires: 9/14/2024

Rec'd: 12/28/2021

 Enerav Laboratories Inc 1120 So. 27th Street
 Billings MT 59107

Second Source: Whenever possible, this solution was manufactured from a second set of concentrates in our manufacturing facility.

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Antimony, Sb	100.0 ± 0.6 µg/mL	Molybdenum, Mo	100.0 ± 0.5 µg/mL
Silicon, Si	1 000 ± 7 µg/mL	Tin, Sn	99.9 ± 0.4 µg/mL
Titanium, Ti	99.9 ± 0.6 µg/mL		

Density: 1.019 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Mo	ICP Assay	3134	130418
Sb	ICP Assay	3102a	140911
Si	ICP Assay	3150	130912
Sn	ICP Assay	3161a	070330
Sn	Calculated		See Sec. 4.2
Ti	ICP Assay	3162a	130925

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRMRM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRMRM 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 ($\mu\text{g/mL}$)

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.

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

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 14, 2020

- 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 14, 2024**

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



Energy Laboratories Inc

Standard LOG

Standard ID: ME220216 EL200.2MS
Standard Name: EL-200.2MS
Date Prepared: 2/16/2022
Date Expires: 2/16/2023
Department: ME
Vendor: Inorganic Ventures
Lot Number: P2-MEB685870
Balance ID:
Comments: opened 2/16/2022; expires 2/16/2023

Type: Primary
BY: Amanda E. McDani
Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Multi Analyte Custom Grade Solution	14672	500	mL	2/16/

Final Volume: 500 mL

Stock Source

Base Units

Amount Added

Analyses

CAS

Conc: **ug/mL**

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:	EL-200.2MS	
Lot Number:	S2-MEB702960	
Matrix:	5% (v/v) HNO3	
Value / Analyte(s):	5 000 µg/mL ea:	Potassium, Sodium,
	Calcium, Magnesium,	
	1 000 µg/mL ea:	
	Phosphorus,	
	500 µg/mL ea:	Iron,
	Manganese, Aluminum,	
	100 µg/mL ea:	Boron, Cobalt, Copper, Nickel, Selenium, Thallium, Zinc,
	Arsenic, Barium, Chromium, Lithium, Lead, Strontium, Vanadium,	
	50 µg/mL ea:	Beryllium,
	Cadmium,	
10 µg/mL ea:		
Silver		

ID #: 14672
 Opened:
 Multi Analyte Custom Grade Solution
Expires: 3/8/2025
 Rec'd: 12/28/2021
 Enerqy Laboratories Inc 1120 So. 27th Street
 Billings MT 59107

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	499.9 ± 1.9 µg/mL	Arsenic, As	100.0 ± 0.8 µg/mL
Barium, Ba	100.0 ± 0.4 µg/mL	Beryllium, Be	50.01 ± 0.30 µg/mL
Boron, B	100.0 ± 0.7 µg/mL	Cadmium, Cd	50.01 ± 0.22 µg/mL
Calcium, Ca	5 000 ± 20 µg/mL	Chromium, Cr	100.0 ± 0.7 µg/mL
Cobalt, Co	100.0 ± 0.5 µg/mL	Copper, Cu	100.0 ± 0.4 µg/mL
Iron, Fe	499.8 ± 2.1 µg/mL	Lead, Pb	100.0 ± 0.5 µg/mL
Lithium, Li	100.0 ± 0.4 µg/mL	Magnesium, Mg	5 000 ± 20 µg/mL
Manganese, Mn	500.1 ± 2.0 µg/mL	Nickel, Ni	100.0 ± 0.5 µg/mL
Phosphorus, P	1 000 ± 6 µg/mL	Potassium, K	5 000 ± 19 µg/mL
Selenium, Se	100.0 ± 0.8 µg/mL	Silver, Ag	10.00 ± 0.05 µg/mL
Sodium, Na	5 000 ± 18 µg/mL	Strontium, Sr	100.0 ± 0.4 µg/mL
Thallium, Tl	100.0 ± 0.7 µg/mL	Vanadium, V	100.0 ± 0.5 µg/mL
Zinc, Zn	100.1 ± 0.4 µg/mL		

Density: 1.097 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	160729
Ag	Volhard	999c	999c
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
As	ICP Assay	3103a	100818
B	ICP Assay	3107	110830
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
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
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Li	ICP Assay	3129a	100714
Li	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Se	ICP Assay	3149	100901
Sr	EDTA	928	928
Sr	ICP Assay	Traceable to 3153a	K2-SR650985
Tl	ICP Assay	3158	151215
V	ICP Assay	3165	160906
V	EDTA	928	928
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

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

Characterization of CRM/RM by Two or More Methods

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

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

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:

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

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

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

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

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 ($\mu\text{g/mL}$)

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.

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, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 08, 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

- **March 08, 2025**

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



Energy Laboratories Inc

Standard LOG

Standard ID: ME220114A TUNE SOLUTION
 Standard Name: Tune Solution Type: Secondary
 Date Prepared: 1/14/2022 BY: Stacy R. Hendricks
 Date Expires: 12/7/2022
 Department: ME Status: Open
 Vendor:
 Lot Number:
 Balance ID:

Comments: All elements except Be at 10 ppb. Be is spiked at 210 ppb.

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Nitric Acid, 69.0-70.0%,0000282671	14178	5	mL	4/11/
Milli-Q H2O	391	493	mL	6/1/2
Multi Analyte Custom Grade Solution	13795	0.5	mL	12/7/
Beryllium Single Analyte Custom Grad	14679	0.2	mL	9/17/

Final Volume: 500 mL

Stock Source
 ME220114 TUNE S Tune Solution Stock

Base Units
 ug/mL

Amount Added
 1 mL

Analvtes

CAS

Conc: **ug/mL**

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: 2008TS
 Lot Number: R2-MEB691898
 Matrix: 3% (v/v) HNO3
 Value / Analyte(s): 10 µg/mL ea:
 Beryllium, Cobalt,
 Indium, Magnesium,
 Lead

ID #: 13795
 Opened: _____
 Multi Analyte Custom Grade Solution
Expires: 4/8/2024
 Rec'd: 4/29/2021
 Energy Laboratories Inc 1120 So. 27th Street
 Billings MT 59107

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Beryllium, Be	10.01 ± 0.06 µg/mL	Cobalt, Co	10.01 ± 0.04 µg/mL
Indium, In	10.01 ± 0.04 µg/mL	Lead, Pb	10.01 ± 0.04 µg/mL
Magnesium, Mg	10.01 ± 0.05 µg/mL		

Density: 1.014 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Be	ICP Assay	3105a	090514
Co	EDTA	928	928
Co	ICP Assay	traceable to 3113	M2-CO661665
Co	Calculated		See Sec. 4.2
In	ICP Assay	3124a	110516
In	EDTA	928	928
In	Calculated		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Mg	Calculated		See Sec. 4.2
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Pb	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:

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{TS} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{TS} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES ($\mu\text{g/mL}$)

N/A

6.0 INTENDED USE

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

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

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

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

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

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

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

April 08, 2020

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

11.2 Lot Expiration Date

- **April 08, 2024**

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control



Certifying Officer:

Paul Gaines
CEO, Senior Technical Director



300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

P: 800-669-6799/540-585-3030
F: 540-585-3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

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



2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution
Catalog Number: CGBE1
Lot Number: S2-BE708103
Matrix: 3% (v/v) HNO₃
Value / Analyte(s): 1 000 µg/mL ea:
Beryllium
Starting Material: Beryllium Acetate
Starting Material Lot#: 2354
Starting Material Purity: 99.9997%

ID #: 14679
Opened: _____
Beryllium Single Analyte Custom Grade Solut
Expires: 9/17/2026
Rec'd: 12/28/2021
Energy Laboratories Inc 1120 So. 27th Street
Billings MT 59107

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1002 ± 5 µg/mL
Density: 1.020 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1	1003 ± 5 µg/mL ICP Assay NIST SRM 3105a Lot Number: 090514
Assay Method #2	1002 ± 6 µg/mL Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

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.

M Ag < 0.000940	M Eu < 0.000240	O Na 0.003944	M Se < 0.018000	O Zn 0.001126
M Al 0.005019	O Fe 0.001024	M Nb < 0.000240	O Si 0.021513	M Zr < 0.000470
M As < 0.005500	M Ga < 0.000710	M Ni < 0.000240	M Sm < 0.000240	
M Au < 0.000240	M Gd < 0.000240	M Ni <i>SSN/2</i> < 0.004700	M Sn < 0.003300	
M B < 0.045000	M Ge < 0.003100	M Os <i>SSN/2</i> < 0.000240	M Sr < 0.001900	
M Ba < 0.001900	M Hf < 0.000240	O P < 0.130000	M Ta < 0.000240	
s Be < 0.003300	M Hg < 0.000470	M Pb < 0.000470	M Tb < 0.000240	
M Bi < 0.003300	M Ho < 0.000240	M Pd < 0.000470	M Te < 0.009700	
O Ca 0.002919	M In < 0.001900	M Pr < 0.000240	M Th < 0.000240	
M Cd < 0.000470	M Ir < 0.000240	M Pt < 0.000240	O Ti < 0.003600	
M Ce < 0.000240	M K 0.004968	M Rb < 0.001500	M Tl < 0.000240	
O Co < 0.002100	M La < 0.000240	M Re < 0.000240	M Tm < 0.000240	
O Cr < 0.002100	M Li < 0.002200	M Rh < 0.000240	M U < 0.000240	
M Cs 0.000133	M Lu < 0.000240	M Ru < 0.000710	M V < 0.001500	
O Cu < 0.013000	O Mg 0.000819	i S < 0.000940	M W < 0.001700	
M Dy < 0.000240	O Mn < 0.001900	M Sb < 0.000940	M Y < 0.000940	
M Er < 0.000240	M Mo < 0.001700	M Sc < 0.003600	M Yb < 0.000240	

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 - 9.01 ; +2 ; 4 ; Be(H₂O)₄+2

Chemical Compatibility -Soluble in HCl, HNO₃, H₂SO₄ and HF aqueous matrices. Stable with all metals and inorganic anions.

Stability - 2-100 ppb levels stable for months in 1 % HNO₃ / LDPE container. 1-10,000 ppm solutions chemically stable for years in 5-10 % HNO₃ / LDPE container.

Be Containing Samples (Preparation and Solution) - Meta l(is best dissolved in diluted H₂SO₄); BeO (boiling nitric, hydrochloric, or sulfuric acids or KHSO₄ fusion); Ores (H₂SO₄/HF digestion or carbonate fusion in Pt0); Organic Matrices (sulfuric/peroxide digestion or nitric/sulfuric/perchloric acid decomposition, or dry ash and dissolution according to the BeO procedure above).

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 9 amu	4 ppt	N/A	
ICP-OES 234.861 nm	0.0003/0.00016 µg/mL	1	Fe, Ta, Mo
ICP-OES 313.042 nm	0.0003/0.00009 µg/mL	1	V, Ce, U
ICP-OES 313.107 nm	0.0007/0.0005 µg/mL	1	Ce, Th, Tm

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 17, 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 17, 2026**

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



Energy Laboratories Inc

Standard LOG

Standard ID: ME220114 TUNE STOCK
 Standard Name: Tune Solution Stock
 Date Prepared: 1/14/2022
 Date Expires: 12/22/2022
 Department: ME
 Vendor:
 Lot Number:
 Balance ID:
 Comments: Solution is 1% HNO3 preserved

Type: Secondary
 BY: Stacy R. Hendricks
 Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Nitric Acid Instra Analyzed 000026478	13061	5	mL	5/12/
Milli-Q H2O	391	482.25	mL	6/1/2
Yittrium Single Analyte Custom Grade	14210	2.5	mL	1/25/
Cerium PlasmaCal Standard	14327	2.5	mL	12/22
Cobalt Single Analyte Custom Grade S	14683	2.5	mL	3/22/
Lithium Single Analyte Custom Grade	14687	2.5	mL	2/11/
Magnesium Single Analyte Custom Gr	14688	0.25	mL	4/23/
Thallium Single Analyte Custom Grade	14693	2.5	mL	8/5/2

Final Volume: 500 mL

Stock Source

Base Units

Amount Added

Analvtes

CAS

Conc: **ug/mL**

1.0 ACCREDITATION / REGISTRATION

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

**2.0 PRODUCT DESCRIPTION**

Product Code: Single Analyte Custom Grade Solution
Catalog Number: CGY1
Lot Number: S2-Y700840
Matrix: 2% (v/v) HNO₃
Value / Analyte(s): 1 000 µg/mL ea:
Yttrium
Starting Material: Yttrium Oxide
Starting Material Lot#: 623052
Starting Material Purity: 99.9991%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1000 ± 4 µg/mL
Density: 1.011 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1	999 ± 3 µg/mL EDTA NIST SRM 928 Lot Number: 928
Assay Method #2	1000 ± 5 µg/mL ICP Assay NIST SRM 3167a Lot Number: 120314
Assay Method #3	1001 ± 3 µg/mL Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

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

ID #: 14210

Opened: _____

Yttrium Single Analyte Custom Grade Solution

Expires: 1/25/2025

Rec'd: 8/27/2021

Eneray Laboratories Inc 1120 So. 27th Street
Billings MT 59107

Characterization of CRM/RM by Two or More Methods

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

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

X_i = mean of Assay Method i with standard uncertainty $u_{char i}$
 w_i = the weighting factors for each method calculated using the inverse square of the variance:
 $w_i = (1/u_{char i}^2) / (\sum(1/(u_{char i}^2)))$

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

k = coverage factor = 2
 $u_{char} = [\sum((w_i)^2 (u_{char i}^2))]^{1/2}$ where $u_{char i}$ are the errors from each characterization method
 u_{bb} = bottle to bottle homogeneity standard uncertainty
 u_{Its} = long term stability standard uncertainty (storage)
 u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with
 $u_{char a}$ = the standard uncertainty of characterization Method A

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

k = coverage factor = 2
 $u_{char a}$ = the errors from characterization
 u_{bb} = bottle to bottle homogeneity standard uncertainty
 u_{Its} = long term stability standard uncertainty (storage)
 u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

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

M Ag < 0.038000	M Eu < 0.002235	O Na < 0.060000	M Se < 0.027000	O Zn < 0.002642
O Al < 0.016000	O Fe < 0.000193	M Nb < 0.000570	O Si < 0.003658	O Zr < 0.012000
M As < 0.002300	M Ga < 0.000570	M Nd < 0.000570	M Sm < 0.000570	
M Au < 0.008000	M Gd < 0.000570	M Ni < 0.004600	M Sn < 0.001800	
O B < 0.022000	M Ge < 0.001200	M Os < 0.000570	O Sr < 0.003100	
M Ba < 0.001200	M Hf < 0.000570	n P <	M Ta < 0.000570	
O Be < 0.002900	M Hg < 0.002900	M Pb < 0.000833	M Tb < 0.000570	
M Bi < 0.005600	M Ho < 0.001524	i Pd <	M Te < 0.006900	
O Ca < 0.000304	M In < 0.002500	M Pr < 0.000570	M Th < 0.000570	
M Cd < 0.000570	M Ir < 0.000570	M Pt < 0.000570	M Ti < 0.005700	
M Ce < 0.000570	O K < 0.001117	M Rb < 0.001400	M Tl < 0.000570	
M Co < 0.000570	M La < 0.000570	M Re < 0.000570	M Tm < 0.001200	
M Cr < 0.003500	O Li < 0.004200	M Rh < 0.011000	M U < 0.000570	
M Cs < 0.005700	M Lu < 0.000570	M Ru < 0.000570	O V < 0.013000	
M Cu < 0.000365	O Mg < 0.000223	n S <	M W < 0.006900	
M Dy < 0.000508	O Mn < 0.001400	M Sb < 0.000365	s Y <	
M Er < 0.000197	M Mo < 0.006200	O Sc < 0.011000	M Yb < 0.003500	

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 - 88.91 +3 6 Y(OH)(H₂O)_{x+2}

Chemical Compatibility -Soluble in HCl, H₂SO₄ and HNO₃. Avoid HF, H₃PO₄ and neutral to basic media.

Stable with most metals and inorganic anions forming an insoluble carbonate, oxide, oxalate, and fluoride.

Avoid mixing with elements / solutions containing moderate amounts of fluoride.

Stability - 2-100 ppb levels stable for months in 1% HNO₃ / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO₃ / LDPE container.

Y Containing Samples (Preparation and Solution) - Metal (Soluble in acids); Oxide (Dissolve by heating in H₂O/ HNO₃); Ores (Carbonate fusion in PtO followed by HCl dissolution); Organic Matrices (Dry ash and dissolve in 1:1 H₂O / HCl or HNO₃).

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

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 89 amu	0.8 ppt	N/A	<u>73Ge16O</u> , <u>178Hf+2</u>
ICP-OES 360.073 nm	0.005 / 0.000036 µg/mL	1	Ce, Th
ICP-OES 371.030 nm	0.004 / 0.00007 µg/mL	1	Ce
ICP-OES 377.433 nm	0.005 / 0.0009 µg/mL	1	Ta, Th

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 25, 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

- **January 25, 2025**

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



Ce

1.0 DESCRIPTION: **PlasmaCAL ICP/ICPMS Standard - Cerium 1000 µg/ml**
 Catalogue Number: 140-051-580/-581/-585
 Starting Material: Cerium(III) Nitrate Hexahydrate 99.99+%
 Lot Number: **S210208003**
 Matrix: 4% HNO₃ (See Section 3 for actual matrix)
 Expiration Date (End of month): **February 2023** (or 15 months after bottle is opened, whichever comes first)

2.0 CERTIFIED VALUES AND ASSOCIATED UNCERTAINTY:
 Certified Concentration: **1003 µg/ml +/- 4 µg/ml**
982 µg/g +/- 4 µg/g
 Method of analysis: Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP-AES)
 Traceability: NIST Standard Reference Material 3110 Lot: **090504**

Note: The uncertainty of the certified value has been calculated from applicable uncertainty contributors (u_i) including uncertainty established during characterization of the material (u_{char}), the between bottle variation (u_{bb}), short-term stability (u_{sts}) and long-term stability (u_{lts}) according to the model $u_c = \sqrt{(u_{char}^2 + u_{bb}^2 + u_{sts}^2 + u_{lts}^2)}$. This combined uncertainty has been further multiplied by a coverage factor (k) of 2 to provide a 95% confidence interval.

3.0 REFERENCE VALUES:
 Density: **1.021 g/ml @ 22.5 °C**
 Actual Matrix: **4.0% (v/v) HNO₃**
 Trace Metal Impurities as tested by ICP-MS:

ID #: 14327
 Opened: _____
 Cerium PlasmaCal Standard
Expires: 2/28/2023
 Rec'd: 9/29/2021
 Energy Laboratories Inc 1120 So. 27th Street
 Billings MT 59107

Element	Conc. (ppm)	Element	Conc. (ppm)	Element	Conc. (ppm)	Element	Conc. (ppm)
Ag	<0.0010	Fe	<0.0018	Nd	0.0102	Sn	<0.0010
Al	0.0148	Ga	0.0526	Ni	0.0064	Sr	<0.0025
As	<0.0010	Gd	<0.0010	Os	<0.0010	Ta	<0.0010
Au	<0.0010	Ge	<0.0010	P	<0.0132	Tb	<0.0010
B	<0.0015	Hf	<0.0010	Pb	<0.0010	Te	<0.0010
Ba	<0.0010	Hg	*	Pd	<0.0010	Th	<0.0010
Be	<0.0010	Ho	<0.0010	Pr	0.0235	Ti	<0.0012
Bi	<0.0010	In	<0.0010	Pt	<0.0010	Tl	<0.0011
Ca	0.0375	Ir	<0.0010	Rb	<0.0010	Tm	<0.0010
Cd	<0.0010	K	<0.0024	Re	<0.0010	U	<0.0010
Ce	N/A	La	<0.10	Rh	<0.0010	V	<0.0010
Co	<0.0010	Li	<0.0010	Ru	<0.0010	W	<0.0020
Cr	<0.0010	Lu	<0.0010	S	*	Y	<0.0010
Cs	<0.0010	Mg	<0.0010	Sb	<0.0010	Yb	<0.0010
Cu	0.0121	Mn	<0.0010	Sc	<0.0010	Zn	<0.0010
Dy	<0.0010	Mo	<0.0010	Se	<0.0010	Zr	<0.0010
Er	<0.0010	Na	<0.0010	Si	<0.10		
Eu	0.0035	Nb	<0.0010	Sm	<0.0010		

*: Not tested

4.0 APPROVAL AND DATE OF CERTIFICATION:
 Certification Approval: Yaling Sui, Chemist
 Certification Date: February 22, 2021

Yaling Sui

5.0 INTENDED USE / UTILISATION PRÉVUE:

- ICP Standards: For the calibration of, including but not limited to: ICP-AES, ICP-MS, FAAS, GFAA, XRF and DCP. / *Étalons ICP : Pour l'étalonnage d'instruments de mesure tels que: ICP-AES, ICP-MS, FAAS, GFAA, XRF et DCP.*
 - AA Standards: For the calibration of Flame (FAAS) and Graphite Furnace (GFAA) Atomic Absorption Spectrometers. / *Étalons AA : Pour l'étalonnage de spectromètres d'absorption atomique flamme (FAAS) et four au graphite (GFAA).*
 - Matrix Modifiers: For the optimization of analytical conditions to provide better Graphite Furnace Atomic Absorption (GFAA) instrument response and improved detection limits. / *Modificateur de matrice : Pour l'optimisation des conditions analytiques afin de fournir des meilleurs réponses instrumentales et limites de détection pour SAA four au graphite.*
 - pH Standards: For the calibrating pH meters or for other wet chemistry applications. / *Étalons pH : Pour étalonnage de pH mètres et autres applications de chimie humide.*
 - Conductivity Standards: For electrolytic conductivity measurement as a calibration standard. / *Étalons de conductivité : Comme étalon pour les mesures de conductivité électrolytiques.*
 - IC Standards: for calibration of, but not limited to IC, HPLC, TLC, ISE, IR, NMR, MS, UV/VIS or other wet chemistry applications. / *Étalons IC : Pour étalonnage d'instruments tels que : IC, HPLC, TLC, ISE, IR, NMR, MS, UV/VIS et autres applications de chimie humide.*
- For any inquiries, please contact **SCP SCIENCE**. / *Pour toute question, veuillez contacter SCP SCIENCE.*

6.0 INSTRUCTIONS FOR USE / INSTRUCTIONS D'UTILISATION:

Handling and Storage / Manutention et entreposage: Keep product tightly capped when not in use. The solution should be opened for a minimum amount of time necessary to dispense the amount required. Do not pipet or use directly from container. Do not return unused portions back to container. Store under normal laboratory conditions. Avoid exposure to excessive sources of heat and humidity or direct sunlight. / *Garder les contenants bien fermés lorsque non utilisés. Le contenant devrait être ouvert seulement pour le temps requis afin de prélever la quantité nécessaire. Ne pas pipetter ou utiliser directement du contenant. Ne pas retourner les portions non-utilisées dans le contenant. Conserver dans des conditions normales de laboratoire. Éviter l'exposition à des sources de chaleur et d'humidité excessives ou à l'exposition solaire directe.*

Stability / Stabilité: This Standard is guaranteed to be stable and accurate to within the specified uncertainty of measurement up to the unopened expiry date, if sealed, or up to the opened expiry date (when indicated), whichever comes first, provided the solution is kept tightly capped and stored under the indicated storage conditions. Purchasers will be notified of any significant changes resulting in re-certification or withdrawal of the product prior to the expiration date. / *La stabilité et l'exactitude de cet étalon sont garanties d'être à l'intérieur de l'incertitude de mesure, jusqu'à la date d'expiration de la bouteille non-ouverte, si scellée, ou jusqu'à la date d'expiration de la bouteille ouverte (si indiquée), en présumant que le contenant est maintenu fermé et gardé dans les conditions d'entreposage indiquées. Les acheteurs seront avisés dans le cas où il y aura des changements significatifs nécessitant une re-certification ou un rappel du produit avant la date d'expiration.*

7.0 HAZARDOUS INFORMATION / INFORMATION SUR LES RISQUES POTENTIELS:

Please refer to the associated Safety Data Sheet (SDS) for information regarding this product (available at www.SCPSCIENCE.com). / *SVP vous référer à la Fiche Signalétique applicable pour de l'information sur ce produit (Disponible à www.SCPSCIENCE.com).*

8.0 HOMOGENEITY / HOMOGÉNÉITÉ:

This solution has been blended according to an in-house procedure and its homogeneity is guaranteed to be fit for purpose when a sample size sufficient for the intended method of analysis is used. / *Cette solution a été préparée selon une procédure maison et nous assurons que sa homogénéité est approprié à l'emploi lorsqu'un échantillon suffisant pour la méthode d'analyse prévue est utilisé.*

9.0 TRACEABILITY / TRAÇABILITÉ:

This CRM (Certified Reference Material) is traceable to the NIST SRM (Standard Reference Material) indicated in section 2 through an unbroken chain of comparisons. In addition, balances used are regularly calibrated using weights which are traceable to NIST (National Institute of Standards and Technology) or NRC (National Research Council of Canada) standards. All conductivity meters used to analyze this standard have been regularly calibrated using a NIST or NRC traceable Thermometer and standards. All pH meters used to analyze this standard have been regularly calibrated using a NIST or NRC traceable thermometer and pH/MV simulator. / *Ce matériel de référence certifié est traçable au Matériel de Référence Standardisé de NIST indiqué à la section 2 par une chaîne de comparaison ininterrompue. De plus, les balances utilisées sont étalonnées régulièrement en utilisant des poids qui sont traçables au NIST (National Institute of Standards and Technology) ou au CRNC (Conseil National de Recherches Canada). Tout conductimètre utilisé afin d'analyser cet étalon a été sujet à un étalonnage périodique utilisant des thermomètres et étalons traçables au NIST ou CNRC. Tout pH mètre utilisé afin d'analyser cet étalon a été sujet à un étalonnage périodique utilisant des thermomètres et un simulateur pH/MV traçables au NIST ou au CNRC.*

10.0 PREPARATION / PRÉPARATION:

For the preparation of these solutions, 18 megohm/cm double deionized water, high-purity acids and glassware calibrated to ASTM Class A specifications are used. / *Une eau de 18 megohm/cm doublement déionisé, de l'acide de haute pureté, ainsi que de la verrerie étalonnée afin de satisfaire les spécifications Classe A de ASTM ont été utilisés pour la préparation de cet étalon.*

11.0 QUALITY SYSTEM CERTIFICATIONS / CERTIFICATIONS DE SYSTÈME QUALITÉ:

ISO 9001 Certification / Certification ISO 9001: This standard was produced in a facility which operates under a registered ISO 9001 Quality Management System. Please consult our web site for a copy of the most recent revision of our certificate of registration. / *Cet étalon a été fabriqué dans un laboratoire qui utilise un Système de Gestion de la Qualité enregistré à la norme ISO 9001. Veuillez consulter notre site web pour obtenir la version la plus récente de notre certificat d'enregistrement.*

ISO 17025 Accreditation / Accréditation ISO 17025: SCP SCIENCE (Corporate Headquarters) operates an ISO 17025 accredited laboratory. Please consult our web site for a copy of the most recent revision of our certificate and scope of accreditation. / *SCP SCIENCE (Siège social) est accréditée ISO 17025. Veuillez consulter notre site web afin d'obtenir la plus récente version de notre certificat d'accréditation ainsi que la portée de notre accréditation.*

ISO 17034 Accreditation / Accréditation ISO 17034: SCP SCIENCE (Corporate Headquarters) is an ISO 17034 accredited Reference Material Producer. Please consult our website for a copy of our most recent certificate and scope of accreditation. / *SCP SCIENCE (Siège social) est un Fabricant de Matériaux de Référence Accrédité ISO 17034. Veuillez consulter notre site web afin d'obtenir la plus récente version de notre certificat d'accréditation ainsi que la portée de notre accréditation.*

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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 Custom Grade Solution
 Catalog Number: CGCO1
 Lot Number: S2-CO702699
 Matrix: 3% (v/v) HNO₃
 Value / Analyte(s): 1 000 µg/mL ea:
 Cobalt
 Starting Material: Co Metal
 Starting Material Lot#: 2326
 Starting Material Purity: 99.9934%

ID #: 14683

Opened:

Cobalt Single Analyte Custom Grade Solution

Expires: 3/22/2025

Rec'd: 12/28/2021

 Eneray Laboratories Inc 1120 So. 27th Street
 Billings MT 59107

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 998 ± 3 µg/mL
Density: 1.018 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1	994 ± 5 µg/mL ICP Assay NIST SRM 3113 Lot Number: 190630
Assay Method #2	997 ± 3 µg/mL EDTA NIST SRM 928 Lot Number: 928
Assay Method #3	1001 ± 3 µg/mL Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

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

Characterization of CRM/RM by Two or More Methods

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

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

X_i = mean of Assay Method i with standard uncertainty $u_{char i}$
 w_i = the weighting factors for each method calculated using the inverse square of the variance:
 $w_i = (1/u_{char i}^2) / (\sum(1/u_{char i}^2))$

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

k = coverage factor = 2
 $u_{char} = [\sum((w_i)^2 (u_{char i}^2))]^{1/2}$ where $u_{char i}$ are the errors from each characterization method
 u_{bb} = bottle to bottle homogeneity standard uncertainty
 u_{Its} = long term stability standard uncertainty (storage)
 u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with
 $u_{char a}$ = the standard uncertainty of characterization Method A

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

k = coverage factor = 2
 $u_{char a}$ = the errors from characterization
 u_{bb} = bottle to bottle homogeneity standard uncertainty
 u_{Its} = long term stability standard uncertainty (storage)
 u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES ($\mu\text{g/mL}$)

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

M Ag	<	0.001515	M Eu	<	0.000590	O Na	<	0.000778	M Se	<	0.019000	M Zn	<	0.000357
M Al	<	0.024000	M Fe	<	0.005262	M Nb	<	0.000590	O Si	<	0.007789	M Zr	<	0.001200
i As	<		M Ga	<	0.000590	M Nd	<	0.000590	M Sm	<	0.000590			
M Au	<	0.004100	M Gd	<	0.000590	O Ni	<	0.044207	M Sn	<	0.001200			
M B	<	0.031000	M Ge	<	0.003000	M Os	<	0.000590	O Sr	<	0.000260			
M Ba	<	0.000590	M Hf	<	0.000590	n P	<		M Ta	<	0.001200			
O Be	<	0.001300	M Hg	<	0.001800	M Pb	<	0.000336	M Tb	<	0.000590			
M Bi	<	0.003000	M Ho	<	0.000590	M Pd	<	0.000590	M Te	<	0.005300			
O Ca	<	0.001094	M In	<	0.001200	M Pr	<	0.000590	M Th	<	0.000590			
M Cd	<	0.004700	M Ir	<	0.001200	M Pt	<	0.002400	M Ti	<	0.014000			
M Ce	<	0.000590	O K	<	0.000842	M Rb	<	0.000590	M Tl	<	0.000273			
s Co	<		M La	<	0.000590	M Re	<	0.000590	M Tm	<	0.000590			
M Cr	<	0.021000	O Li	<	0.000130	M Rh	<	0.000590	M U	<	0.000590			
M Cs	<	0.002400	M Lu	<	0.000590	M Ru	<	0.007100	O V	<	0.000880			
M Cu	<	0.019577	O Mg	<	0.000195	n S	<		M W	<	0.000590			
M Dy	<	0.000590	M Mn	<	0.001800	M Sb	<	0.003600	M Y	<	0.000590			
M Er	<	0.000590	M Mo	<	0.002400	O Sc	<	0.001600	M Yb	<	0.000590			

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 - 58.93 +2 6 Co(H₂O)₆2+
Chemical Compatibility - Stable in HCl, HNO₃, H₂SO₄, HF, H₃PO₄. Avoid basic media. Stable with most metals and inorganic anions in acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO₃ / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO₃ / LDPE container.

Co Containing Samples (Preparation and Solution) - Metal (soluble in HNO₃); Oxides (Soluble in HCl); Ore (dissolve in HCl / HNO₃).

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

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 59 amu	2 ppt	n/a	42Ca16O1H , 40Ar18O1H , 36Ar23Na, 43Ca16O, 24Mg35Cl
ICP-OES 228.616 nm	0.01/0.001 µg/mL	1	
ICP-OES 237.862 nm	0.01/0.002 µg/mL	1	W, Re, Al, Ta
ICP-OES 238.892 nm	0.01/0.002 µg/mL	1	Fe, W, Ta

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

1.0 ACCREDITATION / REGISTRATION

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



2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution
 Catalog Number: CGLI1
 Lot Number: S2-LI701641
 Matrix: 0.1% (v/v) HNO3
 Value / Analyte(s): 1 000 µg/mL ea:
 Lithium
 Starting Material: Lithium Carbonate
 Starting Material Lot#: 1613
 Starting Material Purity: 99.9962%

ID #: 14687
 Opened:
 Lithium Single Analyte Custom Grade Solution
Expires: 2/11/2025
 Rec'd: 12/28/2021
 Energy Laboratories Inc 1120 So. 27th Street
 Billings MT 59107

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1000 ± 3 µg/mL
Density: 1.005 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1	997 ± 4 µg/mL ICP Assay NIST SRM 3129a Lot Number: 100714
Assay Method #2	1000 ± 1 µg/mL Gravimetric NIST SRM Lot Number: See Sec. 4.2
Assay Method #3	1001 ± 3 µg/mL Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

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

M Ag <	0.000500	M Eu <	0.000500	O Na	0.018534	M Se <	0.011000	M Zn	0.003494
O Al	0.000741	O Fe	0.004342	M Nb <	0.000500	M Si	0.111204	M Zr <	0.002000
M As <	0.011000	M Ga <	0.000500	M Nd <	0.000500	M Sm <	0.000500		
M Au <	0.010000	M Gd <	0.000500	M Ni <	0.007000	M Sn <	0.001000		
O B	0.000503	M Ge <	0.004500	M Os <	0.001000	M Sr	0.000243		
O Ba	0.000381	M Hf <	0.000500	O P <	0.045000	M Ta <	0.000500		
O Be	0.000046	M Hg <	0.000500	M Pb <	0.003000	M Tb <	0.000500		
M Bi <	0.000500	M Ho <	0.000500	M Pd <	0.000500	M Te <	0.005000		
O Ca	0.058249	M In <	0.000500	M Pr <	0.000500	M Th <	0.000500		
M Cd <	0.000500	M Ir <	0.000500	M Pt <	0.000500	M Ti <	0.002500		
M Ce <	0.000500	O K	0.029124	M Rb <	0.001000	M Tl <	0.000500		
M Co <	0.000500	M La <	0.000500	M Re <	0.000500	M Tm <	0.000500		
M Cr	0.000153	s Li <		M Rh <	0.000500	M U <	0.000500		
M Cs <	0.000500	M Lu <	0.000500	M Ru <	0.000500	M V	0.000953		
M Cu <	0.002000	O Mg	0.011649	O S	0.031772	M W <	0.001000		
M Dy <	0.000500	O Mn	0.000164	M Sb <	0.003000	M Y <	0.000500		
M Er <	0.000500	M Mo <	0.000500	M Sc <	0.001500	M Yb <	0.000500		

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 - 6.94 +1 (6) Li+(aq) large effective radius due to hydration sphere

Chemical Compatibility -Soluble in HCl, HNO₃, H₂SO₄ and HF aqueous matrices. Stable with all metals and inorganic anions.

Stability - 2-100 ppb levels stable for months in 1% HNO₃ / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO₃ / LDPE container.

Li Containing Samples (Preparation and Solution) -Metal (Dissolves very rapidly in water); Ores (Sodium carbonate fusion in Pt0 followed by HCl dissolution-blank levels of Li in sodium carbonate critical); Organic Matrices (Sulfuric / peroxide digestion or nitric / sulfuric / perchloric acid decomposition).

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 7 amu	10 ppt	n/a	
ICP-OES 323.261 nm	1.1 / 0.05 micro;g/mL	1	Sb, Th, Ni
ICP-OES 460.286 nm	0.9 / 0.04 µg/mL	1	Zr, Th
ICP-OES 670.784 nm	0.002 / 0.00002 µg/mL	1	2nd order radiation from R.E.s on some optical designs

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

February 11, 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

- **February 11, 2025**

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

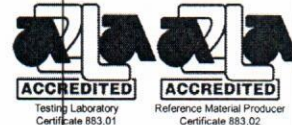


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 F: 540-585-3012
 info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

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



2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution
 Catalog Number: CGMG10
 Lot Number: S2-MG704239
 Matrix: 2% (v/v) HNO3
 Value / Analyte(s): 10 000 µg/mL ea:
 Magnesium
 Starting Material: Magnesium Metal
 Starting Material Lot#: 2168
 Starting Material Purity: 99.9984%

ID #: 14688
 Opened:
 Magnesium Single Analyte Custom Grade Sol
Expires: 4/23/2025
 Rec'd: 12/28/2021
 Enerav Laboratories Inc 1120 So. 27th Street
 Billings MT 59107

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10053 ± 30 µg/mL
Density: 1.053 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1	10022 ± 62 µg/mL ICP Assay NIST SRM 3131a Lot Number: 140110
Assay Method #2	10078 ± 26 µg/mL EDTA NIST SRM 928 Lot Number: 928
Assay Method #3	10033 ± 26 µg/mL Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

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

O Ag	0.002106	M	Eu	<	0.000910	O Na	0.071075	O Se	<	0.048000	O Zn	0.003299		
M Al	0.003553	M	Fe		0.002538	M Nb	<	0.000460	O Si	<	0.032000	O Zr	<	0.002700
M As	<	0.001400	M Ga	<	0.000460	M Nd	<	0.000910	M Sm	<	0.000460			
M Au	<	0.001400	M Gd	<	0.000460	O Ni	<	0.001600	M Sn	<	0.002300			
O B	0.006853	M	Ge	<	0.001400	M Os	<	0.000460	O Sr		0.000279			
O Ba	0.000964	M	Hf	<	0.000460	O P		0.015230	M Ta	<	0.000460			
O Be	<	0.000120	M Hg	<	0.000460	M Pb	<	0.000460	M Tb	<	0.000460			
M Bi	<	0.000460	M Ho	<	0.000460	M Pd	<	0.003200	M Te	<	0.007300			
O Ca	0.053306	M	In	<	0.000460	M Pr	<	0.000460	M Th	<	0.000460			
O Cd	<	0.000360	M Ir	<	0.000460	M Pt	<	0.001900	O Ti	<	0.001700			
M Ce	<	0.002300	M K		0.048229	M Rb		0.002411	M Tl		0.003046			
M Co	<	0.000910	M La	<	0.002800	M Re	<	0.000460	M Tm	<	0.000460			
M Cr	<	0.002300	O Li		0.027922	M Rh	<	0.000460	M U	<	0.000460			
M Cs	0.001040	M	Lu	<	0.000460	M Ru	<	0.000460	M V	<	0.000460			
O Cu	<	0.003000	s Mg	<		O S	<	0.190000	M W	<	0.000460			
M Dy	<	0.000460	O Mn		0.015230	M Sb		0.020814	O Y	<	0.000720			
M Er	<	0.000460	M Mo	<	0.000910	O Sc	<	0.000480	M Yb	<	0.000460			

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 - 24.31 +2 6 Mg(H₂O)₆+2
Chemical Compatibility -Soluble in HCl, HNO₃, and H₂SO₄ avoid HF, H₃PO₄ and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicates, carbonates, hydroxides, oxides, and tungstates in neutral and slightly acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO₃ / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-10% HNO₃ / LDPE container.

Mg Containing Samples (Preparation and Solution) -Metal (Best dissolved in diluted HNO₃); Oxide (Readily soluble in above compatible aqueous acidic solutions); Ores (Carbonate fusion in Pt₀ followed by HCl dissolution); Organic Matrices (Sulfuric / peroxide digestion or nitric / sulfuric / perchloric acid decomposition, or dry ash and dissolution in dilute HCl).

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

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 24 amu	42 ppt	n/a	7Li17O, 48Ti+2 , 48Ca+2
ICP-OES 279.553 nm	0.0002 / 0.00003 µg/mL	1	Th
ICP-OES 280.270 nm	0.0003 / 0.00005 µg/mL	1	U, V
ICP-OES 285.213 nm	0.002 / 0.00003 µg/mL	1	U, Hf, Cr, Zr

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

April 23, 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

- **April 23, 2025**

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



1.0 ACCREDITATION / REGISTRATION

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



2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution
Catalog Number: CGTL1
Lot Number: R2-TL694852
Matrix: 1% (v/v) HNO3
Value / Analyte(s): 1 000 µg/mL ea:
Thallium
Starting Material: TINO3
Starting Material Lot#: 2118
Starting Material Purity: 99.9998%

ID #: 14693
Opened: _____
Thallium Single Analyte Custom Grade Solution
Expires: 8/5/2024
Rec'd: 12/28/2021
Energy Laboratories Inc 1120 So. 27th Street
Billings MT 59107

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1002 ± 5 µg/mL
Density: 1.005 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1 **1003 ± 4 µg/mL**
ICP Assay NIST SRM 3158 Lot Number: 151215

Assay Method #2 **1000 ± 7 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

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

Characterization of CRM/RM by Two or More Methods

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

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

X_i = mean of Assay Method i with standard uncertainty $u_{char i}$
 w_i = the weighting factors for each method calculated using the inverse square of the variance:
 $w_i = (1/u_{char i}^2) / (\sum(1/u_{char i}^2))$

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

k = coverage factor = 2
 $u_{char} = (\sum((w_i)^2 (u_{char i})^2))^{1/2}$ where $u_{char i}$ are the errors from each characterization method
 u_{bb} = bottle to bottle homogeneity standard uncertainty
 u_{lts} = long term stability standard uncertainty (storage)
 u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with
 $u_{char a}$ = the standard uncertainty of characterization Method A

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

k = coverage factor = 2
 $u_{char a}$ = the errors from characterization
 u_{bb} = bottle to bottle homogeneity standard uncertainty
 u_{lts} = long term stability standard uncertainty (storage)
 u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

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

M Ag < 0.000200	M Eu < 0.000200	O Na < 0.000256	M Se < 0.011019	O Zn < 0.000236
O Al < 0.004184	O Fe < 0.002824	M Nb < 0.000200	O Si < 0.000387	M Zr < 0.000200
M As < 0.002003	M Ga < 0.000200	M ⁱ Nd < 0.000200	M Sm < 0.000200	
O Au < 0.002824	M Gd < 0.000200	M ⁱ Ni < 0.000177	M Sn < 0.000601	
O B < 0.004184	M Ge < 0.000801	M ⁱ Os < 0.000198	O Sr < 0.000313	
M Ba < 0.000400	M Hf < 0.000200	O P < 0.010460	M Ta < 0.000200	
O Be < 0.000104	M Hg < 0.000794	M Pb < 0.000083	M Tb < 0.000200	
M Bi < 0.005209	M Ho < 0.000200	M Pd < 0.000400	M Te < 0.005008	
O Ca < 0.000250	M In < 0.000200	M Pr < 0.000200	M Th < 0.000200	
M Cd < 0.000135	M Ir < 0.000198	M Pt < 0.000801	O Ti < 0.001255	
M Ce < 0.000200	O K < 0.000636	M Rb < 0.000200	s Tl <	
M Co < 0.000601	M La < 0.000200	M Re < 0.000200	M Tm < 0.000200	
M Cr < 0.000801	O Li < 0.000177	M Rh < 0.000200	M U < 0.000200	
M Cs < 0.003606	M Lu < 0.000200	M Ru < 0.000397	M V < 0.002203	
M Cu < 0.001001	O Mg < 0.000054	O S < 0.015690	M W < 0.000601	
M Dy < 0.000200	M Mn < 0.000801	M Sb < 0.000400	M Y < 0.000200	
M Er < 0.000200	M Mo < 0.001202	O Sc < 0.000711	M Yb < 0.000200	

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 - 204.38 + 16 Ti(H₂O)₆1+

Chemical Compatibility - Soluble in HCl, HNO₃, and H₂SO₄. Stable with most metals and inorganic anions. The sulfite, thiocyanate and oxalate are moderately soluble; the phosphate and arsenite are slightly soluble and the sulfide is insoluble.

Stability - 2-100 ppb levels stable for months in 1% HNO₃ / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO₃ / LDPE container.

Ti Containing Samples (Preparation and Solution) -Metal (Best dissolved in HNO₃ which forms chiefly the Ti³⁺ ion.); Oxide (The thalious oxide is readily soluble in water. The thallic oxide requires high levels of acid); Ores (Carbonate fusion in PtO followed by HCl dissolution); Organic Matrices (Sulfuric/peroxide digestion or dry ash and dissolution in HCl).

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

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 205 amu	2 ppt	N/A	189Os16O
ICP-OES 190.864 nm	0.04 / 0.004 µg/mL	1	V, Ti
ICP-OES 276.787 nm	0.1 / 0.01 µg/mL	1	Ta, V, Fe, Cr
ICP-OES 351.924 nm	0.2 / 0.02 µg/mL	1	Th, Ce, Zr

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 05, 2020

- 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 05, 2024**

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



Energy Laboratories Inc

Standard LOG

Standard ID: ME220112A 1000 PPB STANDARD
Standard Name: 1000 PPB Standard
Date Prepared: 1/12/2022
Date Expires: 11/18/2022
Department: ME
Vendor:
Lot Number:
Balance ID:
Comments: Made fresh daily

Type: Secondary
BY: Cindy Rohrer
Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
Hydrochloric Acid E1421	14721	0.25	mL	1/4/2027
Nitric Acid 69.0- 70.0% D0521	14626	0.5	mL	12/14/2026
Milli-Q H2O	391	48.25	mL	6/1/2100

Final Volume:
50 mL

Stock Source

ME211208 MSCAL MSCAL 2B
ME211118 MSCAL EL-MSCAL-5A
ME211229A AU 2n Au 2nd source Stock

Base Units

ug/mL
ug/mL
ug/mL

Amount Added

0.5 mL
0.5 mL
0.01 mL

Analytes

CAS

Conc: **mg/L**

Energy Laboratories Inc

Standard LOG

Standard ID: ME211208 MSCAL2B
Standard Name: MSCAL 2B
Date Prepared: 12/8/2021
Date Expires: 12/8/2022
Department: ME
Vendor: Inorganic Ventures
Lot Number: S2-MEB704403
Balance ID:
Comments: Opened 12/08/2021; Expires 12/08/2022

Type: Primary
BY: Stacy R. Hendricks
Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
Multi Analyte Custom Grade Solution	13793		mL	12/8/2022

Final Volume:
mL

Stock Source

Base Units

Amount Added

Analytes

CAS

Conc: **ug/mL**

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: EL-MSCAL-2B
 Lot Number: S2-MEB704403
 Matrix: 5% (v/v) HNO3
 Value / Analyte(s):
 100 µg/mL ea:
 Aluminum, Arsenic,
 Boron, Barium,
 Beryllium, Cadmium,
 Cobalt, Chromium,
 Copper, Iron,
 Manganese, Nickel,
 Lead, Selenium,
 Strontium, Thorium,
 Thallium, Uranium,
 Vanadium, Zinc,
 40 µg/mL ea:
 Silver

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ID #: 13793

Opened: _____

Multi Analyte Custom Grade Solution

Expires: 4/21/2025

Rec'd: 4/29/2021

Energy Laboratories Inc 1120 So. 27th Street
Billings MT 59107

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	100.0 ± 0.4 µg/mL	Arsenic, As	100.0 ± 0.9 µg/mL
Barium, Ba	100.0 ± 0.5 µg/mL	Beryllium, Be	100.0 ± 0.7 µg/mL
Boron, B	100.0 ± 0.7 µg/mL	Cadmium, Cd	100.0 ± 0.5 µg/mL
Chromium, Cr	100.0 ± 0.8 µg/mL	Cobalt, Co	100.0 ± 0.6 µg/mL
Copper, Cu	100.0 ± 0.5 µg/mL	Iron, Fe	100.1 ± 0.4 µg/mL
Lead, Pb	100.0 ± 0.6 µg/mL	Manganese, Mn	100.0 ± 0.5 µg/mL
Nickel, Ni	100.0 ± 0.6 µg/mL	Selenium, Se	100.0 ± 0.7 µg/mL
Silver, Ag	39.99 ± 0.18 µg/mL	Strontium, Sr	100.0 ± 0.4 µg/mL
Thallium, Tl	100.0 ± 0.6 µg/mL	Thorium, Th	100.0 ± 0.5 µg/mL
Uranium, U	100.0 ± 0.5 µg/mL	Vanadium, V	100.0 ± 0.5 µg/mL
Zinc, Zn	100.0 ± 0.5 µg/mL		

Density: 1.033 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	160729
Ag	Volhard	999c	999c
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
As	ICP Assay	3103a	100818
B	ICP Assay	3107	110830
Ba	ICP Assay	3104a	140909
Ba	Gravimetric		See Sec. 4.2
Be	ICP Assay	3105a	090514
Cd	ICP Assay	3108	130116
Cd	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
Fe	Calculated		See Sec. 4.2
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Se	ICP Assay	3149	100901
Se	Calculated		See Sec. 4.2
Sr	EDTA	928	928
Sr	ICP Assay	Traceable to 3153a	K2-SR650985
Sr	Calculated		See Sec. 4.2
Th	EDTA	928	928
Th	Calculated		See Sec. 4.2
Tl	ICP Assay	3158	151215
U	ICP Assay	3164	080521
U	Calculated		See Sec. 4.2
V	ICP Assay	3165	160906
V	EDTA	928	928
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u^2_{char} + u^2_{bb} + u^2_{Its} + u^2_{ts})^{1/2}$$

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Certified Abundance:

IV's Certified Abundance

Isotope

Uranium 238U

Uranium 235U

Atom %

99.8 ± 0.1

0.24 ± 0.05

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

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

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

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

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

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

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

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

April 21, 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

- **April 21, 2025**

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



Energy Laboratories Inc

Standard LOG

Standard ID: ME211118 MSCAL-5A
Standard Name: EL-MSCAL-5A
Date Prepared: 11/18/2021
Date Expires: 11/18/2022
Department: ME
Vendor: Inorganic Ventures
Lot Number: P2-MEB687200
Balance ID:
Comments: Opened 11/18/2021; Expires 11/18/2022

Type: Primary
BY: Stacy R. Hendricks
Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
Multi Analyte Custom Grade Solution	13175	500	mL	11/18/2022

Final Volume:
500 mL

Stock Source

Base Units

Amount Added

Analytes

CAS

Conc: **ug/mL**

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: EL-MSCAL-5A

Lot Number: P2-MEB687200

Matrix: 3% (v/v) HNO₃

Value / Analyte(s):

5 000 µg/mL ea:	Calcium,	Potassium,	Magnesium,
	Sodium,		
500 µg/mL ea:	Phosphorus,	Iron,	
250 µg/mL ea:	Lithium		

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Calcium, Ca	5 000 ± 20 µg/mL	Iron, Fe	499.9 ± 2.1 µg/mL
Lithium, Li	250.0 ± 1.1 µg/mL	Magnesium, Mg	5 000 ± 21 µg/mL
Phosphorus, P	499.8 ± 2.5 µg/mL	Potassium, K	5 000 ± 18 µg/mL
Sodium, Na	5 000 ± 18 µg/mL		

Density: 1.076 g/mL (measured at 20 ± 4 °C)

Assay Information:

ID #: 13175
 Opened: _____
 Multi Analyte Custom Grade Solution
Expires: 12/2/2023
 Rec'd: 10/12/2020
 Energy Laboratories Inc 1120 So. 27th Street
 Billings MT 59107

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Fe	ICP Assay	3126a	140812
Fe	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
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES ($\mu\text{g/mL}$)

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 outer bag.

- While stored in the sealed outer bag, transpiration of this CRM/RM is negligible. After opening the sealed outer 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 outer 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.

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, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

December 02, 2019

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

11.2 Lot Expiration Date

- **December 02, 2023**

- 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 outer Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control



Certifying Officer:

Paul Gaines
CEO, Senior Technical Director



Energy Laboratories Inc

Standard LOG

Standard ID: ME211229A AU 2ND SOURCE
Standard Name: Au 2nd source Stock
Date Prepared: 12/29/2021
Date Expires: 12/29/2022
Department: ME
Vendor: SCP Science
Lot Number: S211129013
Balance ID:
Comments: opened 12/29/2021; expires 12/29/2022

Type: Primary
BY: Amanda E. McDani
Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
ICP/ICPMS Standard Gold	14710	500	mL	12/29/2022

Final Volume:
500 mL

Stock Source

Base Units

Amount Added

Analytes

CAS

Conc: **ug/mL**

ID #: 14710

Opened:

ICP/ICPMS Standard Gold

Expires: 12/31/2023

Rec'd: 12/29/2021

Eneray Laboratories Inc 1120 So. 27th Street

Billings MT 59107

SCP SCIENC

Providing Innovative Solutions to Analytical

Certificate of Analysis**Au****1.0 DESCRIPTION:****PlasmaCAL ICP/ICPMS Standard - Gold 1000 µg/ml**

Catalogue Number: 140-052-790/-791/-795

Starting Material: Gold Metal 99.99%+

Lot Number: **S211129013**

Matrix: 10% HCl (See Section 3 for actual matrix)

Expiration Date (End of month): **December 2023** (or 15 months after bottle is opened, whichever comes first)**2.0 CERTIFIED VALUES AND ASSOCIATED UNCERTAINTY:**Certified Concentration: **1001 µg/ml +/- 4 µg/ml****982 µg/g +/- 4 µg/g**

Method of analysis: Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP-AES)

Traceability: NIST Standard Reference Material 3121 Lot: **991806**

Note: The uncertainty of the certified value has been calculated from applicable uncertainty contributors (u_i) including uncertainty established during characterization of the material (u_{char}), the between bottle variation (u_{bb}), short-term stability (u_{sts}) and long-term stability (u_{lts}) according to the model $u_c = \sqrt{(u_{char}^2 + u_{bb}^2 + u_{sts}^2 + u_{lts}^2)}$. This combined uncertainty has been further multiplied by a coverage factor (k) of 2 to provide a 95% confidence interval.

3.0 REFERENCE VALUES:Density: **1.019 g/ml @ 22.4 °C**Actual Matrix: **10.0% (v/v) HCl**

Trace Metal Impurities as tested by ICP-MS:

Element	Conc. (ppm)	Element	Conc. (ppm)	Element	Conc. (ppm)	Element	Conc. (ppm)
Ag	0.3851	Fe	<0.0090	Nd	<0.0010	Sn	<0.0010
Al	0.0062	Ga	<0.0010	Ni	<0.0010	Sr	<0.0025
As	<0.0010	Gd	<0.0010	Os	<0.0010	Ta	<0.0010
Au	N/A	Ge	<0.0010	P	<0.0132	Tb	<0.0010
B	<0.0015	Hf	<0.0010	Pb	<0.0010	Te	<0.0010
Ba	<0.0010	Hg	*	Pd	0.0434	Th	<0.0010
Be	<0.0010	Ho	<0.0010	Pr	<0.0010	Ti	<0.0012
Bi	<0.0010	In	<0.0010	Pt	0.0048	Tl	<0.0011
Ca	<0.0135	Ir	<0.0010	Rb	<0.0010	Tm	<0.0010
Cd	<0.0010	K	0.0362	Re	<0.0010	U	<0.0010
Ce	<0.0010	La	<0.0010	Rh	<0.0010	V	<0.0010
Co	<0.0010	Li	<0.0010	Ru	<0.0010	W	<0.0020
Cr	<0.0010	Lu	<0.0010	S	*	Y	<0.0010
Cs	0.0029	Mg	<0.0010	Sb	<0.0010	Yb	<0.0010
Cu	0.0023	Mn	<0.0010	Sc	<0.0010	Zn	<0.0010
Dy	<0.0010	Mo	<0.0010	Se	<0.01	Zr	<0.0010
Er	<0.0010	Na	0.0070	Si	<0.1		
Eu	<0.0010	Nb	<0.0010	Sm	<0.0010		

*: Not tested

4.0 APPROVAL AND DATE OF CERTIFICATION:

Certification Approval: Daniel Boisvert, Chemist

Certification Date: December 10, 2021

Daniel Boisvert

5.0 INTENDED USE / UTILISATION PRÉVUE:

- ICP Standards: For the calibration of, including but not limited to: ICP-AES, ICP-MS, FAAS, GFAA, XRF and DCP. / *Étalons ICP : Pour l'étalonnage d'instruments de mesure tels que: ICP-AES, ICP-MS, FAAS, GFAA, XRF et DCP.*
 - AA Standards: For the calibration of Flame (FAAS) and Graphite Furnace (GFAA) Atomic Absorption Spectrometers. / *Étalons AA : Pour l'étalonnage de spectromètres d'absorption atomique flamme (GFAA) et four au graphite (GFAA).*
 - Matrix Modifiers: For the optimization of analytical conditions to provide better Graphite Furnace Atomic Absorption (GFAA) instrument response and improved detection limits. / *Modificateur de matrice : Pour l'optimisation des conditions analytiques afin de fournir des meilleures réponses instrumentales et limites de détection pour SAA four au graphite.*
 - pH Standards: For the calibrating pH meters or for other wet chemistry applications. / *Étalons pH : Pour étalonnage de pH mètres et autres applications de chimie humide.*
 - Conductivity Standards: For electrolytic conductivity measurement as a calibration standard. / *Étalons de conductivité : Comme étalon pour les mesures de conductivité électrolytiques.*
 - IC Standards: for calibration of, but not limited to IC, HPLC, TLC, ISE, IR, NMR, MS, UV/VIS or other wet chemistry applications. / *Étalons IC : Pour étalonnage d'instruments tels que : IC, HPLC, TLC, ISE, IR, NMR, MS, UV/VIS et autres applications de chimie humide.*
- For any inquiries, please contact **SCP SCIENCE**. / *Pour toute question, veuillez contacter SCP SCIENCE.*

6.0 INSTRUCTIONS FOR USE / INSTRUCTIONS D'UTILISATION:

Handling and Storage / Manutention et entreposage: Keep product tightly capped when not in use. The solution should be opened for a minimum amount of time necessary to dispense the amount required. Do not pipet or use directly from container. Do not return unused portions back to container. Store under normal laboratory conditions. Avoid exposure to excessive sources of heat and humidity or direct sunlight. / *Garder les contenants bien fermés lorsque non utilisés. Le contenant devrait être ouvert seulement pour le temps requis afin de prélever la quantité nécessaire. Ne pas pipetter ou utiliser directement du contenant. Ne pas retourner les portions non-utilisées dans le contenant. Conserver dans des conditions normales de laboratoire. Éviter l'exposition à des sources de chaleur et d'humidité excessives ou à l'exposition solaire directe.*

Stability / Stabilité: This Standard is guaranteed to be stable and accurate to within the specified uncertainty of measurement up to the unopened expiry date, if sealed, or up to the opened expiry date (when indicated), whichever comes first, provided the solution is kept tightly capped and stored under the indicated storage conditions. Purchasers will be notified of any significant changes resulting in re-certification or withdrawal of the product prior to the expiration date. / *La stabilité et l'exactitude de cet étalon sont garanties d'être à l'intérieur de l'incertitude de mesure, jusqu'à la date d'expiration de la bouteille non-ouverte, si scellée, ou jusqu'à la date d'expiration de la bouteille ouverte (si indiquée), en présumant que le contenant est maintenu fermé et gardé dans les conditions d'entreposage indiquées. Les acheteurs seront avisés dans le cas où il y aura des changements significatifs nécessitant une re-certification ou un rappel du produit avant la date d'expiration.*

7.0 HAZARDOUS INFORMATION / INFORMATION SUR LES RISQUES POTENTIELS:

Please refer to the associated Safety Data Sheet (SDS) for information regarding this product (available at www.SCPSCIENCE.com). / *SVP vous référer à la Fiche Signalétique applicable pour de l'information sur ce produit (Disponible à www.SCPSCIENCE.com).*

8.0 HOMOGENEITY / HOMOGÉNÉITÉ:

This solution has been blended according to an in-house procedure and its homogeneity is guaranteed to be fit for purpose when a sample size sufficient for the intended method of analysis is used. / *Cette solution a été préparée selon une procédure maison et nous assurons que sa homogénéité est approprié à l'emploi lorsqu'un échantillon suffisant pour la méthode d'analyse prévue est utilisé.*

9.0 TRACEABILITY / TRAÇABILITÉ:

This CRM (Certified Reference Material) is traceable to the NIST SRM (Standard Reference Material) indicated in section 2 through an unbroken chain of comparisons. In addition, balances used are regularly calibrated using weights which are traceable to NIST (National Institute of Standards and Technology) or NRC (National Research Council of Canada) standards. All conductivity meters used to analyze this standard have been regularly calibrated using a NIST or NRC traceable Thermometer and standards. All pH meters used to analyze this standard have been regularly calibrated using a NIST or NRC traceable thermometer and pH/MV simulator. / *Ce matériel de référence certifié est traçable au Matériel de Référence Standardisé de NIST indiqué à la section 2 par une chaîne de comparaison ininterrompue. De plus, les balances utilisées sont étalonnées régulièrement en utilisant des poids qui sont traçables au NIST (National Institute of Standards and Technology) ou au CRNC (Conseil National de Recherches Canada). Tout conductimètre utilisé afin d'analyser cet étalon a été sujet à un étalonnage périodique utilisant des thermomètres et étalons traçables au NIST ou CNRC. Tout pH mètre utilisé afin d'analyser cet étalon a été sujet à un étalonnage périodique utilisant des thermomètres et un simulateur pH/MV traçables au NIST ou au CNRC.*

10.0 PREPARATION / PRÉPARATION:

For the preparation of these solutions, 18 meghom/cm double deionized water, high-purity acids and glassware calibrated to ASTM Class A specifications are used. / *Une eau de 18 meghom/cm doublement déionisé, de l'acide de haute pureté, ainsi que de la verrerie étalonnée afin de satisfaire les spécifications Classe A de ASTM ont été utilisés pour la préparation de cet étalon.*

11.0 QUALITY SYSTEM CERTIFICATIONS / CERTIFICATIONS DE SYSTÈME QUALITÉ:

ISO 9001 Certification / Certification ISO 9001: This standard was produced in a facility which operates under a registered ISO 9001 Quality Management System. Please consult our web site for a copy of the most recent revision of our certificate of registration. / *Cet étalon a été fabriqué dans un laboratoire qui utilise un Système de Gestion de la Qualité enregistré à la norme ISO 9001. Veuillez consulter notre site web pour obtenir la version la plus récente de notre certificat d'enregistrement.*

ISO 17025 Accreditation / Accréditation ISO 17025: SCP SCIENCE (Corporate Headquarters) operates an ISO 17025 accredited laboratory. Please consult our web site for a copy of the most recent revision of our certificate and scope of accreditation. / *SCP SCIENCE (Siège social) est accréditée ISO 17025. Veuillez consulter notre site web afin d'obtenir la plus récente version de notre certificat d'accréditation ainsi que la portée de notre accréditation.*

ISO 17034 Accreditation / Accréditation ISO 17034: SCP SCIENCE (Corporate Headquarters) is an ISO 17034 accredited Reference Material Producer. Please consult our website for a copy of our most recent certificate and scope of accreditation. / *SCP SCIENCE (Siège social) est un Fabricant de Matériaux de Référence Accrédité ISO 17034. Veuillez consulter notre site web afin d'obtenir la plus récente version de notre certificat d'accréditation ainsi que la portée de notre accréditation.*

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Baie D'Urfé (Montréal), Quebec,
H9X 4B6 Canada
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Fax: +1 (800) 253-5549

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348 Route 11, Champlain,
N.Y. 12919-4816
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91140, Villebon-sur-Yvette
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Fax: +33 (0) 1 60 92 05 67

GERMANY
Alte Marktoberdorfer Straße 14, 87616
Marktoberdorf
Phone: +49 (0) 8342-89560-61
Fax: +49 (0) 8342-89560-69

Energy Laboratories Inc

Standard LOG

Standard ID: ME220112 100 PPB STANDARD
 Standard Name: 100 ppb Standard
 Date Prepared: 1/12/2022
 Date Expires: 11/18/2022
 Department: ME
 Vendor: Inorganic Ventures
 Lot Number:
 Balance ID:
 Comments: Made Fresh Daily

Type: Secondary
 BY: Cindy Rohrer
 Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
Hydrochloric Acid E1421	14721	0.25	mL	1/4/2027
Nitric Acid 69.0- 70.0% D0521	14626	0.5	mL	12/14/2026
Milli-Q H2O	391	48.335	mL	6/1/2100

Final Volume:
 50 mL

<u>Stock Source</u>	<u>Base Units</u>	<u>Amount Added</u>
ME211221 MSCAL MSCAL 3C	ug/mL	0.05 mL
ME211118 MSCAL EL-MSCAL-5A	ug/mL	0.25 mL
ME220105 HgPrim Primary Hg Stock 2 PPM	ug/mL	0.05 mL
ME211208 MSCAL MSCAL 2B	ug/mL	0.05 mL
ME211229A AU 2n Au 2nd source Stock	ug/mL	0.01 mL
ME220110 Ce, La Ce, La Primary	ug/mL	0.05 mL

<u>Analytes</u>	<u>CAS</u>	Conc:	<u>mg/L</u>
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Energy Laboratories Inc

Standard LOG

Standard ID: ME211221 MSCAL 3C
Standard Name: MSCAL 3C
Date Prepared: 12/21/2021
Date Expires: 12/21/2022
Department: ME
Vendor: Inorganic Ventures
Lot Number: S2-MEB700780
Balance ID:
Comments: Opened 12/21/21; expires 12/21/22

Type: Primary
BY: Stacy R. Hendricks
Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
Multi Analyte Custom Grade Solution	13473	250	mL	12/21/2022

Final Volume:
250 mL

Stock Source

Base Units

Amount Added

Analytes

CAS

Conc: **ug/mL**

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: EL-MSCAL-3C
 Lot Number: S2-MEB700780
 Matrix: 3% (v/v) HNO₃
 tr. HF
 Value / Analyte(s): 400 µg/mL ea:
 Silicon,
 100 µg/mL ea:
 Tin,
 Molybdenum,
 Titanium,
 Antimony

1-6-2025

ID #: 13473

Opened: _____

Multi Analyte Custom Grade Solution

Expires: 1/6/2025

Rec'd: 1/15/2021

Energy Laboratories Inc 1120 So. 27th Street
 Billings MT 59107

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Antimony, Sb	100.0 ± 0.8 µg/mL	Molybdenum, Mo	100.0 ± 0.6 µg/mL
Silicon, Si	399.9 ± 3.0 µg/mL	Tin, Sn	100.0 ± 0.6 µg/mL
Titanium, Ti	100.0 ± 0.7 µg/mL		

Density: 1.018 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Mo	ICP Assay	3134	130418
Sb	ICP Assay	3102a	140911
Si	ICP Assay	3150	130912
Sn	ICP Assay	3161a	140917
Ti	ICP Assay	3162a	130925

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES ($\mu\text{g/mL}$)

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° \pm 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

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

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

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800 669 6799; 540 585 3030, Fax: 540 585 3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 06, 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

- **January 06, 2025**

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



Energy Laboratories Inc

Standard LOG

Standard ID: ME211118 MSCAL-5A
Standard Name: EL-MSCAL-5A
Date Prepared: 11/18/2021
Date Expires: 11/18/2022
Department: ME
Vendor: Inorganic Ventures
Lot Number: P2-MEB687200
Balance ID:
Comments: Opened 11/18/2021; Expires 11/18/2022

Type: Primary
BY: Stacy R. Hendricks
Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
Multi Analyte Custom Grade Solution	13175	500	mL	11/18/2022

Final Volume:
500 mL

Stock Source

Base Units

Amount Added

Analytes

CAS

Conc: **ug/mL**

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: EL-MSCAL-5A

Lot Number: P2-MEB687200

Matrix: 3% (v/v) HNO₃

Value / Analyte(s):

5 000 µg/mL ea:	Calcium,	Potassium,	Magnesium,
	Sodium,		
500 µg/mL ea:	Phosphorus,	Iron,	
250 µg/mL ea:	Lithium		

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Calcium, Ca	5 000 ± 20 µg/mL	Iron, Fe	499.9 ± 2.1 µg/mL
Lithium, Li	250.0 ± 1.1 µg/mL	Magnesium, Mg	5 000 ± 21 µg/mL
Phosphorus, P	499.8 ± 2.5 µg/mL	Potassium, K	5 000 ± 18 µg/mL
Sodium, Na	5 000 ± 18 µg/mL		

Density: 1.076 g/mL (measured at 20 ± 4 °C)

Assay Information:

ID #: 13175
 Opened: _____
 Multi Analyte Custom Grade Solution
Expires: 12/2/2023
 Rec'd: 10/12/2020
 Energy Laboratories Inc 1120 So. 27th Street
 Billings MT 59107

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Fe	ICP Assay	3126a	140812
Fe	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
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES ($\mu\text{g/mL}$)

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 outer bag.

- While stored in the sealed outer bag, transpiration of this CRM/RM is negligible. After opening the sealed outer 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 outer 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.

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, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

December 02, 2019

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

11.2 Lot Expiration Date

- **December 02, 2023**

- 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 outer Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control



Certifying Officer:

Paul Gaines
CEO, Senior Technical Director



Energy Laboratories Inc

Spike LOG

Standard ID: ME220105 HGPRIMARY
Standard Name: Primary Hg Stock 2 PPM
Date Prepared: 1/5/2022
Date Expires: 12/29/2022
Department: ME
Vendor: Inorganic Ventures
Lot Number:
Balance ID:
Type: Secondary
BY: Amanda E. McDani
Status: Open
Comments: Made with different HG stock than QCS

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
Nitric Acid 69.0- 70.0% D0521	14626	0.5	mL	12/14/2026
Hydrochloric Acid E1421	14721	0.25	mL	1/4/2027

Final Volume:
25 mL

Stock Source

ME220110HG HG Stock
ME211229A AU 2N Au 2nd source Stock

Base Units

ug/mL
ug/mL

Amount Added

0.05 mL
0.05 mL

Analytes

CAS

Conc: ug/mL

Energy Laboratories Inc

Standard LOG

Standard ID: ME220110HG
Standard Name: HG Stock
Date Prepared: 1/10/2022
Date Expires: 1/10/2023
Department: ME
Vendor: SCP Science
Lot Number: S210729017
Balance ID:

Type: Primary
BY: Amanda E. McDani
Status: Open

Comments:

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
ICP/ICPMS Standard Mercury	14711	125	mL	1/10/2023

Final Volume:
125 mL

Stock Source

Base Units

Amount Added

Analytes

CAS

Conc: **ug/mL**

ID #: 14711

Opened: _____

ICP/ICPMS Standard Mercury

Expires: 7/31/2023

Rec'd: 12/29/2021

Energy Laboratories Inc 1120 So. 27th Street
Billings MT 59107

SCP SCIENCE

Providing Innovative Solutions to Analytical Chemists

rtificate of Analysis

Hg

1.0 DESCRIPTION:

PlasmaCAL ICP/ICPMS Standard - Mercury 1000 µg/ml
 Catalogue Number: 140-051-800/-801/-805
 Starting Material: Mercury(II) oxide 99.99+%
 Lot Number: **S210729017**
 Matrix: 10% HNO₃ (See Section 3 for actual matrix)
 Expiration Date (End of month): **July 2023** (or 15 months after bottle is opened, whichever comes first)

2.0 CERTIFIED VALUES AND ASSOCIATED UNCERTAINTY:

Certified Concentration: **999 µg/ml +/- 5 µg/ml**
952 µg/g +/- 5 µg/g
 Method of analysis: Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP-AES)
 Traceability: NIST Standard Reference Material 3133 Lot: **160921**

Note: The uncertainty of the certified value has been calculated from applicable uncertainty contributors (u_i) including uncertainty established during characterization of the material (u_{char}), the between bottle variation (u_{bb}), short-term stability (u_{sts}) and long-term stability (u_{lts}) according to the model $u_c = \sqrt{(u_{char}^2 + u_{bb}^2 + u_{sts}^2 + u_{lts}^2)}$. This combined uncertainty has been further multiplied by a coverage factor (k) of 2 to provide a 95% confidence interval.

3.0 REFERENCE VALUES:

Density: **1.050 g/ml @ 23.6 °C**
 Actual Matrix: **10.0% (v/v) HNO₃**

Trace Metal Impurities as tested by ICP-MS:

Element	Conc. (ppm)	Element	Conc. (ppm)	Element	Conc. (ppm)	Element	Conc. (ppm)
Ag	<0.0010	Fe	0.0322	Nd	<0.0010	Sn	<0.0010
Al	0.0042	Ga	<0.0010	Ni	0.0039	Sr	<0.0025
As	<0.0010	Gd	<0.0010	Os	<0.0010	Ta	<0.0010
Au	<0.0010	Ge	<0.0010	P	<0.0132	Tb	<0.0010
B	<0.0015	Hf	<0.0010	Pb	<0.0010	Te	<0.0010
Ba	<0.0010	Hg	N/A	Pd	<0.0010	Th	<0.0010
Be	<0.0010	Ho	<0.0010	Pr	<0.0010	Ti	<0.0012
Bi	<0.0010	In	<0.0010	Pt	<0.0010	Tl	0.0117
Ca	<0.0135	Ir	<0.0010	Rb	<0.0010	Tm	<0.0010
Cd	<0.0010	K	<0.0024	Re	<0.0010	U	<0.0010
Ce	<0.0010	La	<0.0010	Rh	<0.0010	V	<0.0010
Co	<0.0010	Li	<0.0010	Ru	<0.0010	W	<0.0020
Cr	0.0112	Lu	<0.0010	S	*	Y	<0.0010
Cs	<0.0010	Mg	<0.0010	Sb	<0.0010	Yb	<0.0010
Cu	0.0060	Mn	<0.0010	Sc	<0.0010	Zn	<0.0010
Dy	<0.0010	Mo	<0.0010	Se	<0.0010	Zr	<0.0010
Er	<0.0010	Na	0.0092	Si	<0.1		
Eu	<0.0010	Nb	<0.0010	Sm	<0.0010		

*: Not tested

4.0 APPROVAL AND DATE OF CERTIFICATION:

Certification Approval: Daniel Boisvert, Chemist
 Certification Date: August 12, 2021

5.0 INTENDED USE / UTILISATION PRÉVUE:

- ICP Standards: For the calibration of, including but not limited to: ICP-AES, ICP-MS, FAAS, GFAA, XRF and DCP. / *Étalons ICP: Pour l'étalonnage d'instruments de mesure tels que: ICP-AES, ICP-MS, FAAS, GFAA, XRF et DCP.*
 - AA Standards: For the calibration of Flame (FAAS) and Graphite Furnace (GFAA) Atomic Absorption Spectrometers. / *Étalons AA: Pour l'étalonnage de spectromètres d'absorption atomique flamme (GFAA) et four au graphite (GFAA).*
 - Matrix Modifiers: For the optimization of analytical conditions to provide better Graphite Furnace Atomic Absorption (GFAA) instrument response and improved detection limits. / *Modificateur de matrice: Pour l'optimisation des conditions analytiques afin de fournir des meilleures réponses instrumentales et limites de détection pour SAA four au graphite.*
 - pH Standards: For the calibrating pH meters or for other wet chemistry applications. / *Étalons pH: Pour étalonnage de pH mètres et autres applications de chimie humide.*
 - Conductivity Standards: For electrolytic conductivity measurement as a calibration standard. / *Étalons de conductivité: Comme étalon pour les mesures de conductivité électrolytiques.*
 - IC Standards: for calibration of, but not limited to IC, HPLC, TLC, ISE, IR, NMR, MS, UV/VIS or other wet chemistry applications. / *Étalons IC: Pour étalonnage d'instruments tels que: IC, HPLC, TLC, ISE, IR, NMR, MS, UV/VIS et autres applications de chimie humide.*
- For any inquiries, please contact **SCP SCIENCE**. / *Pour toute question, veuillez contacter SCP SCIENCE.*

6.0 INSTRUCTIONS FOR USE / INSTRUCTIONS D'UTILISATION:

Handling and Storage / Manutention et entreposage: Keep product tightly capped when not in use. The solution should be opened for a minimum amount of time necessary to dispense the amount required. Do not pipet or use directly from container. Do not return unused portions back to container. Store under normal laboratory conditions. Avoid exposure to excessive sources of heat and humidity or direct sunlight. / *Garder les contenants bien fermés lorsque non utilisés. Le contenant devrait être ouvert seulement pour le temps requis afin de prélever la quantité nécessaire. Ne pas pipetter ou utiliser directement du contenant. Ne pas retourner les portions non-utilisées dans le contenant. Conserver dans des conditions normales de laboratoire. Éviter l'exposition à des sources de chaleur et d'humidité excessives ou à l'exposition solaire directe.*

Stability / Stabilité: This Standard is guaranteed to be stable and accurate to within the specified uncertainty of measurement up to the unopened expiry date, if sealed, or up to the opened expiry date (when indicated), whichever comes first, provided the solution is kept tightly capped and stored under the indicated storage conditions. Purchasers will be notified of any significant changes resulting in re-certification or withdrawal of the product prior to the expiration date. / *La stabilité et l'exactitude de cet étalon sont garanties d'être à l'intérieur de l'incertitude de mesure, jusqu'à la date d'expiration de la bouteille non-ouverte, si scellée, ou jusqu'à la date d'expiration de la bouteille ouverte (si indiquée), en présumant que le contenant est maintenu fermé et gardé dans les conditions d'entreposage indiquées. Les acheteurs seront avisés dans le cas où il y aura des changements significatifs nécessitant une re-certification ou un rappel du produit avant la date d'expiration.*

7.0 HAZARDOUS INFORMATION / INFORMATION SUR LES RISQUES POTENTIELS:

Please refer to the associated Safety Data Sheet (SDS) for information regarding this product (available at www.SCPSCIENCE.com). / *SVP vous référer à la Fiche Signalétique applicable pour de l'information sur ce produit (Disponible à www.SCPSCIENCE.com).*

8.0 HOMOGENEITY / HOMOGÉNÉITÉ:

This solution has been blended according to an in-house procedure and its homogeneity is guaranteed to be fit for purpose when a sample size sufficient for the intended method of analysis is used. / *Cette solution a été préparée selon une procédure maison et nous assurons que sa homogénéité est approprié à l'emploi lorsqu'un échantillon suffisant pour la méthode d'analyse prévue est utilisé.*

9.0 TRACEABILITY / TRAÇABILITÉ:

This CRM (Certified Reference Material) is traceable to the NIST SRM (Standard Reference Material) indicated in section 2 through an unbroken chain of comparisons. In addition, balances used are regularly calibrated using weights which are traceable to NIST (National Institute of Standards and Technology) or NRC (National Research Council of Canada) standards. All conductivity meters used to analyze this standard have been regularly calibrated using a NIST or NRC traceable Thermometer and standards. All pH meters used to analyze this standard have been regularly calibrated using a NIST or NRC traceable thermometer and pH/MV simulator. / *Ce matériel de référence certifié est traçable au Matériel de Référence Standardisé de NIST indiqué à la section 2 par une chaîne de comparaison ininterrompue. De plus, les balances utilisées sont étalonnées régulièrement en utilisant des poids qui sont traçables au NIST (National Institute of Standards and Technology) ou au CRNC (Conseil National de Recherches Canada). Tout conductimètre utilisé afin d'analyser cet étalon a été sujet à un étalonnage périodique utilisant des thermomètres et étalons traçables au NIST ou CNRC. Tout pH mètre utilisé afin d'analyser cet étalon a été sujet à un étalonnage périodique utilisant des thermomètres et un simulateur pH/MV traçables au NIST ou au CNRC.*

10.0 PREPARATION / PRÉPARATION:

For the preparation of these solutions, 18 megohm/cm double deionized water, high-purity acids and glassware calibrated to ASTM Class A specifications are used. / *Une eau de 18 megohm/cm doublement déionisé, de l'acide de haute pureté, ainsi que de la verrerie étalonnée afin de satisfaire les spécifications Classe A de ASTM ont été utilisés pour la préparation de cet étalon.*

11.0 QUALITY SYSTEM CERTIFICATIONS / CERTIFICATIONS DE SYSTÈME QUALITÉ:

ISO 9001 Certification / Certification ISO 9001: This standard was produced in a facility which operates under a registered ISO 9001 Quality Management System. Please consult our web site for a copy of the most recent revision of our certificate of registration. / *Cet étalon a été fabriqué dans un laboratoire qui utilise un Système de Gestion de la Qualité enregistré à la norme ISO 9001. Veuillez consulter notre site web pour obtenir la version la plus récente de notre certificat d'enregistrement.*

ISO 17025 Accreditation / Accréditation ISO 17025: SCP SCIENCE (Corporate Headquarters) operates an ISO 17025 accredited laboratory. Please consult our web site for a copy of the most recent revision of our certificate and scope of accreditation. / *SCP SCIENCE (Siège social) est accréditée ISO 17025. Veuillez consulter notre site web afin d'obtenir la plus récente version de notre certificat d'accréditation ainsi que la portée de notre accréditation.*

ISO 17034 Accreditation / Accréditation ISO 17034: SCP SCIENCE (Corporate Headquarters) is an ISO 17034 accredited Reference Material Producer. Please consult our website for a copy of our most recent certificate and scope of accreditation. / *SCP SCIENCE (Siège social) est un Fabricant de Matériaux de Référence Accrédité ISO 17034. Veuillez consulter notre site web afin d'obtenir la plus récente version de notre certificat d'accréditation ainsi que la portée de notre accréditation.*

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Marktberdorf
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Fax: +49 (0) 8342-89560-69

Energy Laboratories Inc

Standard LOG

Standard ID: ME211229A AU 2ND SOURCE
Standard Name: Au 2nd source Stock
Date Prepared: 12/29/2021
Date Expires: 12/29/2022
Department: ME
Vendor: SCP Science
Lot Number: S211129013
Balance ID:
Comments: opened 12/29/2021; expires 12/29/2022

Type: Primary
BY: Amanda E. McDani
Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
ICP/ICPMS Standard Gold	14710	500	mL	12/29/2022

Final Volume:
500 mL

Stock Source

Base Units

Amount Added

Analytes

CAS

Conc: **ug/mL**

ID #: 14710

Opened:

ICP/ICPMS Standard Gold

Expires: 12/31/2023

Rec'd: 12/29/2021

Eneray Laboratories Inc 1120 So. 27th Street

Billings MT 59107

SCP SCIENC

Providing Innovative Solutions to Analytical

Certificate of Analysis**Au****1.0 DESCRIPTION:****PlasmaCAL ICP/ICPMS Standard - Gold 1000 µg/ml**

Catalogue Number: 140-052-790/-791/-795

Starting Material: Gold Metal 99.99%+

Lot Number: **S211129013**

Matrix: 10% HCl (See Section 3 for actual matrix)

Expiration Date (End of month): **December 2023** (or 15 months after bottle is opened, whichever comes first)**2.0 CERTIFIED VALUES AND ASSOCIATED UNCERTAINTY:**Certified Concentration: **1001 µg/ml +/- 4 µg/ml****982 µg/g +/- 4 µg/g**

Method of analysis: Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP-AES)

Traceability: NIST Standard Reference Material 3121 Lot: **991806**

Note: The uncertainty of the certified value has been calculated from applicable uncertainty contributors (u_i) including uncertainty established during characterization of the material (u_{char}), the between bottle variation (u_{bb}), short-term stability (u_{sts}) and long-term stability (u_{lts}) according to the model $u_c = \sqrt{(u_{char}^2 + u_{bb}^2 + u_{sts}^2 + u_{lts}^2)}$. This combined uncertainty has been further multiplied by a coverage factor (k) of 2 to provide a 95% confidence interval.

3.0 REFERENCE VALUES:Density: **1.019 g/ml @ 22.4 °C**Actual Matrix: **10.0% (v/v) HCl**

Trace Metal Impurities as tested by ICP-MS:

Element	Conc. (ppm)	Element	Conc. (ppm)	Element	Conc. (ppm)	Element	Conc. (ppm)
Ag	0.3851	Fe	<0.0090	Nd	<0.0010	Sn	<0.0010
Al	0.0062	Ga	<0.0010	Ni	<0.0010	Sr	<0.0025
As	<0.0010	Gd	<0.0010	Os	<0.0010	Ta	<0.0010
Au	N/A	Ge	<0.0010	P	<0.0132	Tb	<0.0010
B	<0.0015	Hf	<0.0010	Pb	<0.0010	Te	<0.0010
Ba	<0.0010	Hg	*	Pd	0.0434	Th	<0.0010
Be	<0.0010	Ho	<0.0010	Pr	<0.0010	Ti	<0.0012
Bi	<0.0010	In	<0.0010	Pt	0.0048	Tl	<0.0011
Ca	<0.0135	Ir	<0.0010	Rb	<0.0010	Tm	<0.0010
Cd	<0.0010	K	0.0362	Re	<0.0010	U	<0.0010
Ce	<0.0010	La	<0.0010	Rh	<0.0010	V	<0.0010
Co	<0.0010	Li	<0.0010	Ru	<0.0010	W	<0.0020
Cr	<0.0010	Lu	<0.0010	S	*	Y	<0.0010
Cs	0.0029	Mg	<0.0010	Sb	<0.0010	Yb	<0.0010
Cu	0.0023	Mn	<0.0010	Sc	<0.0010	Zn	<0.0010
Dy	<0.0010	Mo	<0.0010	Se	<0.01	Zr	<0.0010
Er	<0.0010	Na	0.0070	Si	<0.1		
Eu	<0.0010	Nb	<0.0010	Sm	<0.0010		

*: Not tested

4.0 APPROVAL AND DATE OF CERTIFICATION:

Certification Approval: Daniel Boisvert, Chemist

Certification Date: December 10, 2021

Daniel Boisvert

5.0 INTENDED USE / UTILISATION PRÉVUE:

- ICP Standards: For the calibration of, including but not limited to: ICP-AES, ICP-MS, FAAS, GFAA, XRF and DCP. / *Étalons ICP* : Pour l'étalonnage d'instruments de mesure tels que: ICP-AES, ICP-MS, FAAS, GFAA, XRF et DCP.
 - AA Standards: For the calibration of Flame (FAAS) and Graphite Furnace (GFAA) Atomic Absorption Spectrometers. / *Étalons AA* : Pour l'étalonnage de spectromètres d'absorption atomique flamme (GFAA) et four au graphite (GFAA).
 - Matrix Modifiers: For the optimization of analytical conditions to provide better Graphite Furnace Atomic Absorption (GFAA) instrument response and improved detection limits. / *Modificateur de matrice* : Pour l'optimisation des conditions analytiques afin de fournir des meilleures réponses instrumentales et limites de détection pour SAA four au graphite.
 - pH Standards: For the calibrating pH meters or for other wet chemistry applications. / *Étalons pH* : Pour étalonnage de pH mètres et autres applications de chimie humide.
 - Conductivity Standards: For electrolytic conductivity measurement as a calibration standard. / *Étalons de conductivité* : Comme étalon pour les mesures de conductivité électrolytiques.
 - IC Standards: for calibration of, but not limited to IC, HPLC, TLC, ISE, IR, NMR, MS, UV/VIS or other wet chemistry applications. / *Étalons IC* : Pour étalonnage d'instruments tels que : IC, HPLC, TLC, ISE, IR, NMR, MS, UV/VIS et autres applications de chimie humide.
- For any inquiries, please contact **SCP SCIENCE**. / *Pour toute question, veuillez contacter SCP SCIENCE.*

6.0 INSTRUCTIONS FOR USE / INSTRUCTIONS D'UTILISATION:

Handling and Storage / Manutention et entreposage: Keep product tightly capped when not in use. The solution should be opened for a minimum amount of time necessary to dispense the amount required. Do not pipet or use directly from container. Do not return unused portions back to container. Store under normal laboratory conditions. Avoid exposure to excessive sources of heat and humidity or direct sunlight. / *Garder les contenants bien fermés lorsque non utilisés. Le contenant devrait être ouvert seulement pour le temps requis afin de prélever la quantité nécessaire. Ne pas pipetter ou utiliser directement du contenant. Ne pas retourner les portions non-utilisées dans le contenant. Conserver dans des conditions normales de laboratoire. Éviter l'exposition à des sources de chaleur et d'humidité excessives ou à l'exposition solaire directe.*

Stability / Stabilité: This Standard is guaranteed to be stable and accurate to within the specified uncertainty of measurement up to the unopened expiry date, if sealed, or up to the opened expiry date (when indicated), whichever comes first, provided the solution is kept tightly capped and stored under the indicated storage conditions. Purchasers will be notified of any significant changes resulting in re-certification or withdrawal of the product prior to the expiration date. / *La stabilité et l'exactitude de cet étalon sont garanties d'être à l'intérieur de l'incertitude de mesure, jusqu'à la date d'expiration de la bouteille non-ouverte, si scellée, ou jusqu'à la date d'expiration de la bouteille ouverte (si indiquée), en présumant que le contenant est maintenu fermé et gardé dans les conditions d'entreposage indiquées. Les acheteurs seront avisés dans le cas où il y aura des changements significatifs nécessitant une re-certification ou un rappel du produit avant la date d'expiration.*

7.0 HAZARDOUS INFORMATION / INFORMATION SUR LES RISQUES POTENTIELS:

Please refer to the associated Safety Data Sheet (SDS) for information regarding this product (available at www.SCPSCIENCE.com). / *SVP vous référer à la Fiche Signalétique applicable pour de l'information sur ce produit (Disponible à www.SCPSCIENCE.com).*

8.0 HOMOGENEITY / HOMOGÉNÉITÉ:

This solution has been blended according to an in-house procedure and its homogeneity is guaranteed to be fit for purpose when a sample size sufficient for the intended method of analysis is used. / *Cette solution a été préparée selon une procédure maison et nous assurons que sa homogénéité est approprié à l'emploi lorsqu'un échantillon suffisant pour la méthode d'analyse prévue est utilisé.*

9.0 TRACEABILITY / TRAÇABILITÉ:

This CRM (Certified Reference Material) is traceable to the NIST SRM (Standard Reference Material) indicated in section 2 through an unbroken chain of comparisons. In addition, balances used are regularly calibrated using weights which are traceable to NIST (National Institute of Standards and Technology) or NRC (National Research Council of Canada) standards. All conductivity meters used to analyze this standard have been regularly calibrated using a NIST or NRC traceable Thermometer and standards. All pH meters used to analyze this standard have been regularly calibrated using a NIST or NRC traceable thermometer and pH/MV simulator. / *Ce matériel de référence certifié est traçable au Matériel de Référence Standardisé de NIST indiqué à la section 2 par une chaîne de comparaison ininterrompue. De plus, les balances utilisées sont étalonnées régulièrement en utilisant des poids qui sont traçables au NIST (National Institute of Standards and Technology) ou au CRNC (Conseil National de Recherches Canada). Tout conductimètre utilisé afin d'analyser cet étalon a été sujet à un étalonnage périodique utilisant des thermomètres et étalons traçables au NIST ou CNRC. Tout pH mètre utilisé afin d'analyser cet étalon a été sujet à un étalonnage périodique utilisant des thermomètres et un simulateur pH/MV traçables au NIST ou au CNRC.*

10.0 PREPARATION / PRÉPARATION:

For the preparation of these solutions, 18 megohm/cm double deionized water, high-purity acids and glassware calibrated to ASTM Class A specifications are used. / *Une eau de 18 megohm/cm doublement déionisée, de l'acide de haute pureté, ainsi que de la verrerie étalonnée afin de satisfaire les spécifications Classe A de ASTM ont été utilisés pour la préparation de cet étalon.*

11.0 QUALITY SYSTEM CERTIFICATIONS / CERTIFICATIONS DE SYSTÈME QUALITÉ:

ISO 9001 Certification / Certification ISO 9001: This standard was produced in a facility which operates under a registered ISO 9001 Quality Management System. Please consult our web site for a copy of the most recent revision of our certificate of registration. / *Cet étalon a été fabriqué dans un laboratoire qui utilise un Système de Gestion de la Qualité enregistré à la norme ISO 9001. Veuillez consulter notre site web pour obtenir la version la plus récente de notre certificat d'enregistrement.*

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Marktoberdorf
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Fax: +49 (0) 8342-89560-69

Energy Laboratories Inc

Standard LOG

Standard ID: ME211208 MSCAL2B
Standard Name: MSCAL 2B
Date Prepared: 12/8/2021
Date Expires: 12/8/2022
Department: ME
Vendor: Inorganic Ventures
Lot Number: S2-MEB704403
Balance ID:
Comments: Opened 12/08/2021; Expires 12/08/2022

Type: Primary
BY: Stacy R. Hendricks
Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
Multi Analyte Custom Grade Solution	13793		mL	12/8/2022

Final Volume:
mL

Stock Source

Base Units

Amount Added

Analytes

CAS

Conc: **ug/mL**

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:	EL-MSCAL-2B
Lot Number:	S2-MEB704403
Matrix:	5% (v/v) HNO ₃
Value / Analyte(s):	100 µg/mL ea: Aluminum, Arsenic, Boron, Barium, Beryllium, Cadmium, Cobalt, Chromium, Copper, Iron, Manganese, Nickel, Lead, Selenium, Strontium, Thorium, Thallium, Uranium, Vanadium, Zinc, 40 µg/mL ea: Silver

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ID #: 13793

Opened: _____

Multi Analyte Custom Grade Solution
Expires: 4/21/2025

Rec'd: 4/29/2021

 Energy Laboratories Inc 1120 So. 27th Street
 Billings MT 59107

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	100.0 ± 0.4 µg/mL	Arsenic, As	100.0 ± 0.9 µg/mL
Barium, Ba	100.0 ± 0.5 µg/mL	Beryllium, Be	100.0 ± 0.7 µg/mL
Boron, B	100.0 ± 0.7 µg/mL	Cadmium, Cd	100.0 ± 0.5 µg/mL
Chromium, Cr	100.0 ± 0.8 µg/mL	Cobalt, Co	100.0 ± 0.6 µg/mL
Copper, Cu	100.0 ± 0.5 µg/mL	Iron, Fe	100.1 ± 0.4 µg/mL
Lead, Pb	100.0 ± 0.6 µg/mL	Manganese, Mn	100.0 ± 0.5 µg/mL
Nickel, Ni	100.0 ± 0.6 µg/mL	Selenium, Se	100.0 ± 0.7 µg/mL
Silver, Ag	39.99 ± 0.18 µg/mL	Strontium, Sr	100.0 ± 0.4 µg/mL
Thallium, Tl	100.0 ± 0.6 µg/mL	Thorium, Th	100.0 ± 0.5 µg/mL
Uranium, U	100.0 ± 0.5 µg/mL	Vanadium, V	100.0 ± 0.5 µg/mL
Zinc, Zn	100.0 ± 0.5 µg/mL		

Density: 1.033 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	160729
Ag	Volhard	999c	999c
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
As	ICP Assay	3103a	100818
B	ICP Assay	3107	110830
Ba	ICP Assay	3104a	140909
Ba	Gravimetric		See Sec. 4.2
Be	ICP Assay	3105a	090514
Cd	ICP Assay	3108	130116
Cd	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
Fe	Calculated		See Sec. 4.2
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Se	ICP Assay	3149	100901
Se	Calculated		See Sec. 4.2
Sr	EDTA	928	928
Sr	ICP Assay	Traceable to 3153a	K2-SR650985
Sr	Calculated		See Sec. 4.2
Th	EDTA	928	928
Th	Calculated		See Sec. 4.2
Tl	ICP Assay	3158	151215
U	ICP Assay	3164	080521
U	Calculated		See Sec. 4.2
V	ICP Assay	3165	160906
V	EDTA	928	928
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u^2_{char} + u^2_{bb} + u^2_{Its} + u^2_{ts})^{1/2}$$

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Certified Abundance:

IV's Certified Abundance

Isotope

Uranium 238U

Uranium 235U

Atom %

99.8 ± 0.1

0.24 ± 0.05

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

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

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

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

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

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

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

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

April 21, 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

- **April 21, 2025**

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



Energy Laboratories Inc

Standard LOG

Standard ID: ME211229A AU 2ND SOURCE
Standard Name: Au 2nd source Stock
Date Prepared: 12/29/2021
Date Expires: 12/29/2022
Department: ME
Vendor: SCP Science
Lot Number: S211129013
Balance ID:
Comments: opened 12/29/2021; expires 12/29/2022

Type: Primary
BY: Amanda E. McDani
Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
ICP/ICPMS Standard Gold	14710	500	mL	12/29/2022

Final Volume:
500 mL

Stock Source

Base Units

Amount Added

Analytes

CAS

Conc: **ug/mL**

ID #: 14710

Opened:

ICP/ICPMS Standard Gold

Expires: 12/31/2023

Rec'd: 12/29/2021

Eneray Laboratories Inc 1120 So. 27th Street

Billings MT 59107

SCP SCIENCE

Providing Innovative Solutions to Analytical

Certificate of Analysis**Au****1.0 DESCRIPTION:****PlasmaCAL ICP/ICPMS Standard - Gold 1000 µg/ml**

Catalogue Number: 140-052-790/-791/-795

Starting Material: Gold Metal 99.99+%

Lot Number: **S211129013**

Matrix: 10% HCl (See Section 3 for actual matrix)

Expiration Date (End of month): **December 2023** (or 15 months after bottle is opened, whichever comes first)**2.0 CERTIFIED VALUES AND ASSOCIATED UNCERTAINTY:**Certified Concentration: **1001 µg/ml +/- 4 µg/ml****982 µg/g +/- 4 µg/g**

Method of analysis: Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP-AES)

Traceability: NIST Standard Reference Material 3121 Lot: **991806**

Note: The uncertainty of the certified value has been calculated from applicable uncertainty contributors (u_i) including uncertainty established during characterization of the material (u_{char}), the between bottle variation (u_{bb}), short-term stability (u_{sts}) and long-term stability (u_{lts}) according to the model $u_c = \sqrt{(u_{char}^2 + u_{bb}^2 + u_{sts}^2 + u_{lts}^2)}$. This combined uncertainty has been further multiplied by a coverage factor (k) of 2 to provide a 95% confidence interval.

3.0 REFERENCE VALUES:Density: **1.019 g/ml @ 22.4 °C**Actual Matrix: **10.0% (v/v) HCl**

Trace Metal Impurities as tested by ICP-MS:

Element	Conc. (ppm)	Element	Conc. (ppm)	Element	Conc. (ppm)	Element	Conc. (ppm)
Ag	0.3851	Fe	<0.0090	Nd	<0.0010	Sn	<0.0010
Al	0.0062	Ga	<0.0010	Ni	<0.0010	Sr	<0.0025
As	<0.0010	Gd	<0.0010	Os	<0.0010	Ta	<0.0010
Au	N/A	Ge	<0.0010	P	<0.0132	Tb	<0.0010
B	<0.0015	Hf	<0.0010	Pb	<0.0010	Te	<0.0010
Ba	<0.0010	Hg	*	Pd	0.0434	Th	<0.0010
Be	<0.0010	Ho	<0.0010	Pr	<0.0010	Ti	<0.0012
Bi	<0.0010	In	<0.0010	Pt	0.0048	Tl	<0.0011
Ca	<0.0135	Ir	<0.0010	Rb	<0.0010	Tm	<0.0010
Cd	<0.0010	K	0.0362	Re	<0.0010	U	<0.0010
Ce	<0.0010	La	<0.0010	Rh	<0.0010	V	<0.0010
Co	<0.0010	Li	<0.0010	Ru	<0.0010	W	<0.0020
Cr	<0.0010	Lu	<0.0010	S	*	Y	<0.0010
Cs	0.0029	Mg	<0.0010	Sb	<0.0010	Yb	<0.0010
Cu	0.0023	Mn	<0.0010	Sc	<0.0010	Zn	<0.0010
Dy	<0.0010	Mo	<0.0010	Se	<0.01	Zr	<0.0010
Er	<0.0010	Na	0.0070	Si	<0.1		
Eu	<0.0010	Nb	<0.0010	Sm	<0.0010		

*: Not tested

4.0 APPROVAL AND DATE OF CERTIFICATION:

Certification Approval: Daniel Boisvert, Chemist

Certification Date: December 10, 2021

Daniel Boisvert

5.0 INTENDED USE / UTILISATION PRÉVUE:

- ICP Standards: For the calibration of, including but not limited to: ICP-AES, ICP-MS, FAAS, GFAA, XRF and DCP. / *Étalons ICP* : Pour l'étalonnage d'instruments de mesure tels que: ICP-AES, ICP-MS, FAAS, GFAA, XRF et DCP.
 - AA Standards: For the calibration of Flame (FAAS) and Graphite Furnace (GFAA) Atomic Absorption Spectrometers. / *Étalons AA* : Pour l'étalonnage de spectromètres d'absorption atomique flamme (GFAA) et four au graphite (GFAA).
 - Matrix Modifiers: For the optimization of analytical conditions to provide better Graphite Furnace Atomic Absorption (GFAA) instrument response and improved detection limits. / *Modificateur de matrice* : Pour l'optimisation des conditions analytiques afin de fournir des meilleures réponses instrumentales et limites de détection pour SAA four au graphite.
 - pH Standards: For the calibrating pH meters or for other wet chemistry applications. / *Étalons pH* : Pour étalonnage de pH mètres et autres applications de chimie humide.
 - Conductivity Standards: For electrolytic conductivity measurement as a calibration standard. / *Étalons de conductivité* : Comme étalon pour les mesures de conductivité électrolytiques.
 - IC Standards: for calibration of, but not limited to IC, HPLC, TLC, ISE, IR, NMR, MS, UV/VIS or other wet chemistry applications. / *Étalons IC* : Pour étalonnage d'instruments tels que : IC, HPLC, TLC, ISE, IR, NMR, MS, UV/VIS et autres applications de chimie humide.
 For any inquiries, please contact **SCP SCIENCE**. / *Pour toute question, veuillez contacter SCP SCIENCE.*

6.0 INSTRUCTIONS FOR USE / INSTRUCTIONS D'UTILISATION:

Handling and Storage / Manutention et entreposage: Keep product tightly capped when not in use. The solution should be opened for a minimum amount of time necessary to dispense the amount required. Do not pipet or use directly from container. Do not return unused portions back to container. Store under normal laboratory conditions. Avoid exposure to excessive sources of heat and humidity or direct sunlight. / *Garder les contenants bien fermés lorsque non utilisés. Le contenant devrait être ouvert seulement pour le temps requis afin de prélever la quantité nécessaire. Ne pas pipetter ou utiliser directement du contenant. Ne pas retourner les portions non-utilisées dans le contenant. Conserver dans des conditions normales de laboratoire. Éviter l'exposition à des sources de chaleur et d'humidité excessives ou à l'exposition solaire directe.*

Stability / Stabilité: This Standard is guaranteed to be stable and accurate to within the specified uncertainty of measurement up to the unopened expiry date, if sealed, or up to the opened expiry date (when indicated), whichever comes first, provided the solution is kept tightly capped and stored under the indicated storage conditions. Purchasers will be notified of any significant changes resulting in re-certification or withdrawal of the product prior to the expiration date. / *La stabilité et l'exactitude de cet étalon sont garanties d'être à l'intérieur de l'incertitude de mesure, jusqu'à la date d'expiration de la bouteille non-ouverte, si scellée, ou jusqu'à la date d'expiration de la bouteille ouverte (si indiquée), en présumant que le contenant est maintenu fermé et gardé dans les conditions d'entreposage indiquées. Les acheteurs seront avisés dans le cas où il y aura des changements significatifs nécessitant une re-certification ou un rappel du produit avant la date d'expiration.*

7.0 HAZARDOUS INFORMATION / INFORMATION SUR LES RISQUES POTENTIELS:

Please refer to the associated Safety Data Sheet (SDS) for information regarding this product (available at www.SCPSCIENCE.com). / *SVP vous référer à la Fiche Signalétique applicable pour de l'information sur ce produit (Disponible à www.SCPSCIENCE.com).*

8.0 HOMOGENEITY / HOMOGÉNÉITÉ:

This solution has been blended according to an in-house procedure and its homogeneity is guaranteed to be fit for purpose when a sample size sufficient for the intended method of analysis is used. / *Cette solution a été préparée selon une procédure maison et nous assurons que sa homogénéité est approprié à l'emploi lorsqu'un échantillon suffisant pour la méthode d'analyse prévue est utilisé.*

9.0 TRACEABILITY / TRAÇABILITÉ:

This CRM (Certified Reference Material) is traceable to the NIST SRM (Standard Reference Material) indicated in section 2 through an unbroken chain of comparisons. In addition, balances used are regularly calibrated using weights which are traceable to NIST (National Institute of Standards and Technology) or NRC (National Research Council of Canada) standards. All conductivity meters used to analyze this standard have been regularly calibrated using a NIST or NRC traceable Thermometer and standards. All pH meters used to analyze this standard have been regularly calibrated using a NIST or NRC traceable thermometer and pH/MV simulator. / *Ce matériel de référence certifié est traçable au Matériel de Référence Standardisé de NIST indiqué à la section 2 par une chaîne de comparaison ininterrompue. De plus, les balances utilisées sont étalonnées régulièrement en utilisant des poids qui sont traçables au NIST (National Institute of Standards and Technology) ou au CRNC (Conseil National de Recherches Canada). Tout conductimètre utilisé afin d'analyser cet étalon a été sujet à un étalonnage périodique utilisant des thermomètres et étalons traçables au NIST ou CNRC. Tout pH mètre utilisé afin d'analyser cet étalon a été sujet à un étalonnage périodique utilisant des thermomètres et un simulateur pH/MV traçables au NIST ou au CNRC.*

10.0 PREPARATION / PRÉPARATION:

For the preparation of these solutions, 18 megohm/cm double deionized water, high-purity acids and glassware calibrated to ASTM Class A specifications are used. / *Une eau de 18 megohm/cm doublement déionisée, de l'acide de haute pureté, ainsi que de la verrerie étalonnée afin de satisfaire les spécifications Classe A de ASTM ont été utilisés pour la préparation de cet étalon.*

11.0 QUALITY SYSTEM CERTIFICATIONS / CERTIFICATIONS DE SYSTÈME QUALITÉ:

ISO 9001 Certification / Certification ISO 9001: This standard was produced in a facility which operates under a registered ISO 9001 Quality Management System. Please consult our web site for a copy of the most recent revision of our certificate of registration. / *Cet étalon a été fabriqué dans un laboratoire qui utilise un Système de Gestion de la Qualité enregistré à la norme ISO 9001. Veuillez consulter notre site web pour obtenir la version la plus récente de notre certificat d'enregistrement.*

ISO 17025 Accreditation / Accréditation ISO 17025: SCP SCIENCE (Corporate Headquarters) operates an ISO 17025 accredited laboratory. Please consult our web site for a copy of the most recent revision of our certificate and scope of accreditation. / *SCP SCIENCE (Siège social) est accréditée ISO 17025. Veuillez consulter notre site web afin d'obtenir la plus récente version de notre certificat d'accréditation ainsi que la portée de notre accréditation.*

ISO 17034 Accreditation / Accréditation ISO 17034: SCP SCIENCE (Corporate Headquarters) is an ISO 17034 accredited Reference Material Producer. Please consult our website for a copy of our most recent certificate and scope of accreditation. / *SCP SCIENCE (Siège social) est un Fabricant de Matériaux de Référence Accrédité ISO 17034. Veuillez consulter notre site web afin d'obtenir la plus récente version de notre certificat d'accréditation ainsi que la portée de notre accréditation.*

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Fax: +49 (0) 8342-89560-69

Energy Laboratories Inc

Standard LOG

Standard ID: ME220110 CE, LA PRIMARY
Standard Name: Ce, La Primary Type: Secondary
Date Prepared: 1/10/2022 BY: Amanda E. McDani
Date Expires: 1/6/2023
Department: ME Status: Open
Vendor: Inorganic Ventures
Lot Number: M2-CE657768/M2-
Balance ID:
Comments: Used to make standards and spiking solutions; No primary La available

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
Nitric Acid 69.0- 70.0% D0521	14626	0.5	mL	12/14/2026
Milli-Q H2O	391	39.5	mL	6/1/2100

Final Volume:
50 mL

Stock Source

ME220106-CE Ce Primary Stock

Base Units

ug/mL

Amount Added

5 mL

Analytes

CAS

Conc: ug/mL

Energy Laboratories Inc

Standard LOG

Standard ID: ME220112 50 PPB STANDARD_CCV
 Standard Name: 50 ppb Standard/CCV
 Date Prepared: 1/12/2022
 Date Expires: 11/18/2022
 Department: ME
 Vendor: Inorganic Ventures
 Lot Number:
 Balance ID:
 Comments: Made Fresh Daily

Type: Secondary
 BY: Cindy Rohrer
 Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
Hydrochloric Acid E1421	14721	0.25	mL	1/4/2027
Nitric Acid 69.0- 70.0% D0521	14626	0.5	mL	12/14/2026
Milli-Q H2O	391	48.335	mL	6/1/2100

Final Volume:
100 mL

Stock Source

ME211221 MSCAL MSCAL 3C
 ME211118 MSCAL EL-MSCAL-5A
 ME220105 HgPrim Primary Hg Stock 2 PPM
 ME211208 MSCAL MSCAL 2B
 ME211229A AU 2n Au 2nd source Stock
 ME220110 Ce, La Ce, La Primary

Base Units

ug/mL
 ug/mL
 ug/mL
 ug/mL
 ug/mL
 ug/mL

Amount Added

0.05 mL
 0.25 mL
 0.05 mL
 0.05 mL
 0.01 mL
 0.05 mL

Analytes

CAS

Conc: **mg/L**

Energy Laboratories Inc

Standard LOG

Standard ID: ME211221 MSCAL 3C
Standard Name: MSCAL 3C
Date Prepared: 12/21/2021
Date Expires: 12/21/2022
Department: ME
Vendor: Inorganic Ventures
Lot Number: S2-MEB700780
Balance ID:
Comments: Opened 12/21/21; expires 12/21/22

Type: Primary
BY: Stacy R. Hendricks
Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
Multi Analyte Custom Grade Solution	13473	250	mL	12/21/2022

Final Volume:
250 mL

Stock Source

Base Units

Amount Added

Analytes

CAS

Conc: **ug/mL**

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: EL-MSCAL-3C
 Lot Number: S2-MEB700780
 Matrix: 3% (v/v) HNO₃
 tr. HF
 Value / Analyte(s): 400 µg/mL ea:
 Silicon,
 100 µg/mL ea:
 Tin,
 Molybdenum,

1-6-2025

ID #: 13473

Opened: _____

Multi Analyte Custom Grade Solution

Expires: 1/6/2025

Rec'd: 1/15/2021

Energy Laboratories Inc 1120 So. 27th Street
 Billings MT 59107

Titanium,
 Antimony

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Antimony, Sb	100.0 ± 0.8 µg/mL	Molybdenum, Mo	100.0 ± 0.6 µg/mL
Silicon, Si	399.9 ± 3.0 µg/mL	Tin, Sn	100.0 ± 0.6 µg/mL
Titanium, Ti	100.0 ± 0.7 µg/mL		

Density: 1.018 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Mo	ICP Assay	3134	130418
Sb	ICP Assay	3102a	140911
Si	ICP Assay	3150	130912
Sn	ICP Assay	3161a	140917
Ti	ICP Assay	3162a	130925

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES ($\mu\text{g/mL}$)

N/A

6.0 INTENDED USE

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

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

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

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

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

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

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

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800 669 6799; 540 585 3030, Fax: 540 585 3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 06, 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

- **January 06, 2025**

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



Energy Laboratories Inc

Standard LOG

Standard ID: ME211118 MSCAL-5A
Standard Name: EL-MSCAL-5A
Date Prepared: 11/18/2021
Date Expires: 11/18/2022
Department: ME
Vendor: Inorganic Ventures
Lot Number: P2-MEB687200
Balance ID:
Comments: Opened 11/18/2021; Expires 11/18/2022

Type: Primary
BY: Stacy R. Hendricks
Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
Multi Analyte Custom Grade Solution	13175	500	mL	11/18/2022

Final Volume:
500 mL

Stock Source

Base Units

Amount Added

Analytes

CAS

Conc: **ug/mL**

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: EL-MSCAL-5A

Lot Number: P2-MEB687200

Matrix: 3% (v/v) HNO₃

Value / Analyte(s):

5 000 µg/mL ea:	Calcium,	Potassium,	Magnesium,
	Sodium,		
500 µg/mL ea:	Phosphorus,	Iron,	
250 µg/mL ea:	Lithium		

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Calcium, Ca	5 000 ± 20 µg/mL	Iron, Fe	499.9 ± 2.1 µg/mL
Lithium, Li	250.0 ± 1.1 µg/mL	Magnesium, Mg	5 000 ± 21 µg/mL
Phosphorus, P	499.8 ± 2.5 µg/mL	Potassium, K	5 000 ± 18 µg/mL
Sodium, Na	5 000 ± 18 µg/mL		

Density: 1.076 g/mL (measured at 20 ± 4 °C)

Assay Information:

ID #: 13175
 Opened: _____
 Multi Analyte Custom Grade Solution
Expires: 12/2/2023
 Rec'd: 10/12/2020
 Energy Laboratories Inc 1120 So. 27th Street
 Billings MT 59107

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Fe	ICP Assay	3126a	140812
Fe	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
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES ($\mu\text{g/mL}$)

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 outer bag.

- While stored in the sealed outer bag, transpiration of this CRM/RM is negligible. After opening the sealed outer 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 outer 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.

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, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

December 02, 2019

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

11.2 Lot Expiration Date

- **December 02, 2023**

- 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 outer Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control



Certifying Officer:

Paul Gaines
CEO, Senior Technical Director



Energy Laboratories Inc

Spike LOG

Standard ID: ME220105 HGPRIMARY
Standard Name: Primary Hg Stock 2 PPM
Date Prepared: 1/5/2022
Date Expires: 12/29/2022
Department: ME
Vendor: Inorganic Ventures
Lot Number:
Balance ID:
Type: Secondary
BY: Amanda E. McDani
Status: Open
Comments: Made with different HG stock than QCS

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
Nitric Acid 69.0- 70.0% D0521	14626	0.5	mL	12/14/2026
Hydrochloric Acid E1421	14721	0.25	mL	1/4/2027

Final Volume:
25 mL

Stock Source

ME220110HG HG Stock
ME211229A AU 2N Au 2nd source Stock

Base Units

ug/mL
ug/mL

Amount Added

0.05 mL
0.05 mL

Analytes

CAS

Conc: ug/mL

Energy Laboratories Inc

Standard LOG

Standard ID: ME220110HG
Standard Name: HG Stock
Date Prepared: 1/10/2022
Date Expires: 1/10/2023
Department: ME
Vendor: SCP Science
Lot Number: S210729017
Balance ID:
Comments:

Type: Primary
BY: Amanda E. McDani
Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
ICP/ICPMS Standard Mercury	14711	125	mL	1/10/2023

Final Volume:
125 mL

Stock Source

Base Units

Amount Added

Analytes

CAS

Conc: **ug/mL**

ID #: 14711

Opened: _____

ICP/ICPMS Standard Mercury

Expires: 7/31/2023

Rec'd: 12/29/2021

Energy Laboratories Inc 1120 So. 27th Street
Billings MT 59107**SCP SCIENCE**

Providing Innovative Solutions to Analytical Chemists

rtificate of Analysis**Hg****1.0 DESCRIPTION:**

PlasmaCAL ICP/ICPMS Standard - Mercury 1000 µg/ml
 Catalogue Number: 140-051-800/-801/-805
 Starting Material: Mercury(II) oxide 99.99+%
 Lot Number: **S210729017**
 Matrix: 10% HNO₃ (See Section 3 for actual matrix)
 Expiration Date (End of month): **July 2023** (or 15 months after bottle is opened, whichever comes first)

2.0 CERTIFIED VALUES AND ASSOCIATED UNCERTAINTY:

Certified Concentration: **999 µg/ml +/- 5 µg/ml**
952 µg/g +/- 5 µg/g
 Method of analysis: Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP-AES)
 Traceability: NIST Standard Reference Material 3133 Lot: **160921**

Note: The uncertainty of the certified value has been calculated from applicable uncertainty contributors (u_i) including uncertainty established during characterization of the material (u_{char}), the between bottle variation (u_{bb}), short-term stability (u_{sts}) and long-term stability (u_{lts}) according to the model $u_c = \sqrt{(u_{char}^2 + u_{bb}^2 + u_{sts}^2 + u_{lts}^2)}$. This combined uncertainty has been further multiplied by a coverage factor (k) of 2 to provide a 95% confidence interval.

3.0 REFERENCE VALUES:

Density: **1.050 g/ml @ 23.6 °C**
 Actual Matrix: **10.0% (v/v) HNO₃**

Trace Metal Impurities as tested by ICP-MS:

Element	Conc. (ppm)	Element	Conc. (ppm)	Element	Conc. (ppm)	Element	Conc. (ppm)
Ag	<0.0010	Fe	0.0322	Nd	<0.0010	Sn	<0.0010
Al	0.0042	Ga	<0.0010	Ni	0.0039	Sr	<0.0025
As	<0.0010	Gd	<0.0010	Os	<0.0010	Ta	<0.0010
Au	<0.0010	Ge	<0.0010	P	<0.0132	Tb	<0.0010
B	<0.0015	Hf	<0.0010	Pb	<0.0010	Te	<0.0010
Ba	<0.0010	Hg	N/A	Pd	<0.0010	Th	<0.0010
Be	<0.0010	Ho	<0.0010	Pr	<0.0010	Ti	<0.0012
Bi	<0.0010	In	<0.0010	Pt	<0.0010	Tl	0.0117
Ca	<0.0135	Ir	<0.0010	Rb	<0.0010	Tm	<0.0010
Cd	<0.0010	K	<0.0024	Re	<0.0010	U	<0.0010
Ce	<0.0010	La	<0.0010	Rh	<0.0010	V	<0.0010
Co	<0.0010	Li	<0.0010	Ru	<0.0010	W	<0.0020
Cr	0.0112	Lu	<0.0010	S	*	Y	<0.0010
Cs	<0.0010	Mg	<0.0010	Sb	<0.0010	Yb	<0.0010
Cu	0.0060	Mn	<0.0010	Sc	<0.0010	Zn	<0.0010
Dy	<0.0010	Mo	<0.0010	Se	<0.0010	Zr	<0.0010
Er	<0.0010	Na	0.0092	Si	<0.1		
Eu	<0.0010	Nb	<0.0010	Sm	<0.0010		

*: Not tested

4.0 APPROVAL AND DATE OF CERTIFICATION:

Certification Approval: Daniel Boisvert, Chemist
 Certification Date: August 12, 2021

Daniel Boisvert

5.0 INTENDED USE / UTILISATION PRÉVUE:

- ICP Standards: For the calibration of, including but not limited to: ICP-AES, ICP-MS, FAAS, GFAA, XRF and DCP. / *Étalons ICP* : Pour l'étalonnage d'instruments de mesure tels que: ICP-AES, ICP-MS, FAAS, GFAA, XRF et DCP.
 - AA Standards: For the calibration of Flame (FAAS) and Graphite Furnace (GFAA) Atomic Absorption Spectrometers. / *Étalons AA* : Pour l'étalonnage de spectromètres d'absorption atomique flamme (GFAA) et four au graphite (GFAA).
 - Matrix Modifiers: For the optimization of analytical conditions to provide better Graphite Furnace Atomic Absorption (GFAA) instrument response and improved detection limits. / *Modificateur de matrice* : Pour l'optimisation des conditions analytiques afin de fournir des meilleures réponses instrumentales et limites de détection pour SAA four au graphite.
 - pH Standards: For the calibrating pH meters or for other wet chemistry applications. / *Étalons pH* : Pour étalonnage de pH mètres et autres applications de chimie humide.
 - Conductivity Standards: For electrolytic conductivity measurement as a calibration standard. / *Étalons de conductivité* : Comme étalon pour les mesures de conductivité électrolytiques.
 - IC Standards: for calibration of, but not limited to IC, HPLC, TLC, ISE, IR, NMR, MS, UV/VIS or other wet chemistry applications. / *Étalons IC* : Pour étalonnage d'instruments tels que : IC, HPLC, TLC, ISE, IR, NMR, MS, UV/VIS et autres applications de chimie humide.
- For any inquiries, please contact **SCP SCIENCE**. / *Pour toute question, veuillez contacter SCP SCIENCE.*

6.0 INSTRUCTIONS FOR USE / INSTRUCTIONS D'UTILISATION:

Handling and Storage / Manutention et entreposage: Keep product tightly capped when not in use. The solution should be opened for a minimum amount of time necessary to dispense the amount required. Do not pipet or use directly from container. Do not return unused portions back to container. Store under normal laboratory conditions. Avoid exposure to excessive sources of heat and humidity or direct sunlight. / *Garder les contenants bien fermés lorsque non utilisés. Le contenant devrait être ouvert seulement pour le temps requis afin de prélever la quantité nécessaire. Ne pas pipetter ou utiliser directement du contenant. Ne pas retourner les portions non-utilisées dans le contenant. Conserver dans des conditions normales de laboratoire. Éviter l'exposition à des sources de chaleur et d'humidité excessives ou à l'exposition solaire directe.*

Stability / Stabilité: This Standard is guaranteed to be stable and accurate to within the specified uncertainty of measurement up to the unopened expiry date, if sealed, or up to the opened expiry date (when indicated), whichever comes first, provided the solution is kept tightly capped and stored under the indicated storage conditions. Purchasers will be notified of any significant changes resulting in re-certification or withdrawal of the product prior to the expiration date. / *La stabilité et l'exactitude de cet étalon sont garanties d'être à l'intérieur de l'incertitude de mesure, jusqu'à la date d'expiration de la bouteille non-ouverte, si scellée, ou jusqu'à la date d'expiration de la bouteille ouverte (si indiquée), en présumant que le contenant est maintenu fermé et gardé dans les conditions d'entreposage indiquées. Les acheteurs seront avisés dans le cas où il y aura des changements significatifs nécessitant une re-certification ou un rappel du produit avant la date d'expiration.*

7.0 HAZARDOUS INFORMATION / INFORMATION SUR LES RISQUES POTENTIELS:

Please refer to the associated Safety Data Sheet (SDS) for information regarding this product (available at www.SCPSCIENCE.com). / *SVP vous référer à la Fiche Signalétique applicable pour de l'information sur ce produit (Disponible à www.SCPSCIENCE.com).*

8.0 HOMOGENEITY / HOMOGÉNÉITÉ:

This solution has been blended according to an in-house procedure and its homogeneity is guaranteed to be fit for purpose when a sample size sufficient for the intended method of analysis is used. / *Cette solution a été préparée selon une procédure maison et nous assurons que sa homogénéité est approprié à l'emploi lorsqu'un échantillon suffisant pour la méthode d'analyse prévue est utilisé.*

9.0 TRACEABILITY / TRAÇABILITÉ:

This CRM (Certified Reference Material) is traceable to the NIST SRM (Standard Reference Material) indicated in section 2 through an unbroken chain of comparisons. In addition, balances used are regularly calibrated using weights which are traceable to NIST (National Institute of Standards and Technology) or NRC (National Research Council of Canada) standards. All conductivity meters used to analyze this standard have been regularly calibrated using a NIST or NRC traceable Thermometer and standards. All pH meters used to analyze this standard have been regularly calibrated using a NIST or NRC traceable thermometer and pH/MV simulator. / *Ce matériel de référence certifié est traçable au Matériel de Référence Standardisé de NIST indiqué à la section 2 par une chaîne de comparaison ininterrompue. De plus, les balances utilisées sont étalonnées régulièrement en utilisant des poids qui sont traçables au NIST (National Institute of Standards and Technology) ou au CRNC (Conseil National de Recherches Canada). Tout conductimètre utilisé afin d'analyser cet étalon a été sujet à un étalonnage périodique utilisant des thermomètres et étalons traçables au NIST ou CNRC. Tout pH mètre utilisé afin d'analyser cet étalon a été sujet à un étalonnage périodique utilisant des thermomètres et un simulateur pH/MV traçables au NIST ou au CNRC.*

10.0 PREPARATION / PRÉPARATION:

For the preparation of these solutions, 18 megohm/cm double deionized water, high-purity acids and glassware calibrated to ASTM Class A specifications are used. / *Une eau de 18 megohm/cm doublement déionisé, de l'acide de haute pureté, ainsi que de la verrerie étalonnée afin de satisfaire les spécifications Classe A de ASTM ont été utilisés pour la préparation de cet étalon.*

11.0 QUALITY SYSTEM CERTIFICATIONS / CERTIFICATIONS DE SYSTÈME QUALITÉ:

ISO 9001 Certification / Certification ISO 9001: This standard was produced in a facility which operates under a registered ISO 9001 Quality Management System. Please consult our web site for a copy of the most recent revision of our certificate of registration. / *Cet étalon a été fabriqué dans un laboratoire qui utilise un Système de Gestion de la Qualité enregistré à la norme ISO 9001. Veuillez consulter notre site web pour obtenir la version la plus récente de notre certificat d'enregistrement.*

ISO 17025 Accreditation / Accréditation ISO 17025: SCP SCIENCE (Corporate Headquarters) operates an ISO 17025 accredited laboratory. Please consult our web site for a copy of the most recent revision of our certificate and scope of accreditation. / *SCP SCIENCE (Siège social) est accréditée ISO 17025. Veuillez consulter notre site web afin d'obtenir la plus récente version de notre certificat d'accréditation ainsi que la portée de notre accréditation.*

ISO 17034 Accreditation / Accréditation ISO 17034 : SCP SCIENCE (Corporate Headquarters) is an ISO 17034 accredited Reference Material Producer. Please consult our website for a copy of our most recent certificate and scope of accreditation. / *SCP SCIENCE (Siège social) est un Fabricant de Matériaux de Référence Accrédité ISO 17034. Veuillez consulter notre site web afin d'obtenir la plus récente version de notre certificat d'accréditation ainsi que la portée de notre accréditation.*

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Fax: +49 (0) 8342-89560-69

Energy Laboratories Inc

Standard LOG

Standard ID: ME211229A AU 2ND SOURCE
Standard Name: Au 2nd source Stock
Date Prepared: 12/29/2021
Date Expires: 12/29/2022
Department: ME
Vendor: SCP Science
Lot Number: S211129013
Balance ID:
Comments: opened 12/29/2021; expires 12/29/2022

Type: Primary
BY: Amanda E. McDani
Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
ICP/ICPMS Standard Gold	14710	500	mL	12/29/2022

Final Volume:
500 mL

Stock Source

Base Units

Amount Added

Analytes

CAS

Conc: **ug/mL**

ID #: 14710

Opened:

ICP/ICPMS Standard Gold

Expires: 12/31/2023

Rec'd: 12/29/2021

Eneray Laboratories Inc 1120 So. 27th Street

Billings MT 59107

SCP SCIENC

Providing Innovative Solutions to Analytical

Certificate of Analysis**Au****1.0 DESCRIPTION:****PlasmaCAL ICP/ICPMS Standard - Gold 1000 µg/ml**

Catalogue Number: 140-052-790/-791/-795

Starting Material: Gold Metal 99.99+%

Lot Number: **S211129013**

Matrix: 10% HCl (See Section 3 for actual matrix)

Expiration Date (End of month): **December 2023** (or 15 months after bottle is opened, whichever comes first)**2.0 CERTIFIED VALUES AND ASSOCIATED UNCERTAINTY:**Certified Concentration: **1001 µg/ml +/- 4 µg/ml****982 µg/g +/- 4 µg/g**

Method of analysis: Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP-AES)

Traceability: NIST Standard Reference Material 3121 Lot: **991806**

Note: The uncertainty of the certified value has been calculated from applicable uncertainty contributors (u_i) including uncertainty established during characterization of the material (u_{char}), the between bottle variation (u_{bb}), short-term stability (u_{sts}) and long-term stability (u_{lts}) according to the model $u_c = \sqrt{(u_{char}^2 + u_{bb}^2 + u_{sts}^2 + u_{lts}^2)}$. This combined uncertainty has been further multiplied by a coverage factor (k) of 2 to provide a 95% confidence interval.

3.0 REFERENCE VALUES:Density: **1.019 g/ml @ 22.4 °C**Actual Matrix: **10.0% (v/v) HCl**

Trace Metal Impurities as tested by ICP-MS:

Element	Conc. (ppm)	Element	Conc. (ppm)	Element	Conc. (ppm)	Element	Conc. (ppm)
Ag	0.3851	Fe	<0.0090	Nd	<0.0010	Sn	<0.0010
Al	0.0062	Ga	<0.0010	Ni	<0.0010	Sr	<0.0025
As	<0.0010	Gd	<0.0010	Os	<0.0010	Ta	<0.0010
Au	N/A	Ge	<0.0010	P	<0.0132	Tb	<0.0010
B	<0.0015	Hf	<0.0010	Pb	<0.0010	Te	<0.0010
Ba	<0.0010	Hg	*	Pd	0.0434	Th	<0.0010
Be	<0.0010	Ho	<0.0010	Pr	<0.0010	Ti	<0.0012
Bi	<0.0010	In	<0.0010	Pt	0.0048	Tl	<0.0011
Ca	<0.0135	Ir	<0.0010	Rb	<0.0010	Tm	<0.0010
Cd	<0.0010	K	0.0362	Re	<0.0010	U	<0.0010
Ce	<0.0010	La	<0.0010	Rh	<0.0010	V	<0.0010
Co	<0.0010	Li	<0.0010	Ru	<0.0010	W	<0.0020
Cr	<0.0010	Lu	<0.0010	S	*	Y	<0.0010
Cs	0.0029	Mg	<0.0010	Sb	<0.0010	Yb	<0.0010
Cu	0.0023	Mn	<0.0010	Sc	<0.0010	Zn	<0.0010
Dy	<0.0010	Mo	<0.0010	Se	<0.01	Zr	<0.0010
Er	<0.0010	Na	0.0070	Si	<0.1		
Eu	<0.0010	Nb	<0.0010	Sm	<0.0010		

*: Not tested

4.0 APPROVAL AND DATE OF CERTIFICATION:

Certification Approval: Daniel Boisvert, Chemist

Certification Date: December 10, 2021

Daniel Boisvert

5.0 INTENDED USE / UTILISATION PRÉVUE:

- ICP Standards: For the calibration of, including but not limited to: ICP-AES, ICP-MS, FAAS, GFAA, XRF and DCP. / *Étalons ICP* : Pour l'étalonnage d'instruments de mesure tels que: ICP-AES, ICP-MS, FAAS, GFAA, XRF et DCP.
- AA Standards: For the calibration of Flame (FAAS) and Graphite Furnace (GFAA) Atomic Absorption Spectrometers. / *Étalons AA* : Pour l'étalonnage de spectromètres d'absorption atomique flamme (GFAA) et four au graphite (GFAA).
- Matrix Modifiers: For the optimization of analytical conditions to provide better Graphite Furnace Atomic Absorption (GFAA) instrument response and improved detection limits. / *Modificateur de matrice* : Pour l'optimisation des conditions analytiques afin de fournir des meilleures réponses instrumentales et limites de détection pour SAA four au graphite.
- pH Standards: For the calibrating pH meters or for other wet chemistry applications. / *Étalons pH* : Pour étalonnage de pH mètres et autres applications de chimie humide.
- Conductivity Standards: For electrolytic conductivity measurement as a calibration standard. / *Étalons de conductivité* : Comme étalon pour les mesures de conductivité électrolytiques.
- IC Standards: for calibration of, but not limited to IC, HPLC, TLC, ISE, IR, NMR, MS, UV/VIS or other wet chemistry applications. / *Étalons IC* : Pour étalonnage d'instruments tels que : IC, HPLC, TLC, ISE, IR, NMR, MS, UV/VIS et autres applications de chimie humide.
For any inquiries, please contact **SCP SCIENCE**. / *Pour toute question, veuillez contacter SCP SCIENCE.*

6.0 INSTRUCTIONS FOR USE / INSTRUCTIONS D'UTILISATION:

Handling and Storage / Manutention et entreposage: Keep product tightly capped when not in use. The solution should be opened for a minimum amount of time necessary to dispense the amount required. Do not pipet or use directly from container. Do not return unused portions back to container. Store under normal laboratory conditions. Avoid exposure to excessive sources of heat and humidity or direct sunlight. / *Garder les contenants bien fermés lorsque non utilisés. Le contenant devrait être ouvert seulement pour le temps requis afin de prélever la quantité nécessaire. Ne pas pipetter ou utiliser directement du contenant. Ne pas retourner les portions non-utilisées dans le contenant. Conserver dans des conditions normales de laboratoire. Éviter l'exposition à des sources de chaleur et d'humidité excessives ou à l'exposition solaire directe.*

Stability / Stabilité: This Standard is guaranteed to be stable and accurate to within the specified uncertainty of measurement up to the unopened expiry date, if sealed, or up to the opened expiry date (when indicated), whichever comes first, provided the solution is kept tightly capped and stored under the indicated storage conditions. Purchasers will be notified of any significant changes resulting in re-certification or withdrawal of the product prior to the expiration date. / *La stabilité et l'exactitude de cet étalon sont garanties d'être à l'intérieur de l'incertitude de mesure, jusqu'à la date d'expiration de la bouteille non-ouverte, si scellée, ou jusqu'à la date d'expiration de la bouteille ouverte (si indiquée), en présumant que le contenant est maintenu fermé et gardé dans les conditions d'entreposage indiquées. Les acheteurs seront avisés dans le cas où il y aura des changements significatifs nécessitant une re-certification ou un rappel du produit avant la date d'expiration.*

7.0 HAZARDOUS INFORMATION / INFORMATION SUR LES RISQUES POTENTIELS:

Please refer to the associated Safety Data Sheet (SDS) for information regarding this product (available at www.SCPSCIENCE.com). / *SVP vous référer à la Fiche Signalétique applicable pour de l'information sur ce produit (Disponible à www.SCPSCIENCE.com).*

8.0 HOMOGENEITY / HOMOGÉNÉITÉ:

This solution has been blended according to an in-house procedure and its homogeneity is guaranteed to be fit for purpose when a sample size sufficient for the intended method of analysis is used. / *Cette solution a été préparée selon une procédure maison et nous assurons que sa homogénéité est approprié à l'emploi lorsqu'un échantillon suffisant pour la méthode d'analyse prévue est utilisé.*

9.0 TRACEABILITY / TRAÇABILITÉ:

This CRM (Certified Reference Material) is traceable to the NIST SRM (Standard Reference Material) indicated in section 2 through an unbroken chain of comparisons. In addition, balances used are regularly calibrated using weights which are traceable to NIST (National Institute of Standards and Technology) or NRC (National Research Council of Canada) standards. All conductivity meters used to analyze this standard have been regularly calibrated using a NIST or NRC traceable Thermometer and standards. All pH meters used to analyze this standard have been regularly calibrated using a NIST or NRC traceable thermometer and pH/MV simulator. / *Ce matériel de référence certifié est traçable au Matériel de Référence Standardisé de NIST indiqué à la section 2 par une chaîne de comparaison ininterrompue. De plus, les balances utilisées sont étalonnées régulièrement en utilisant des poids qui sont traçables au NIST (National Institute of Standards and Technology) ou au CRNC (Conseil National de Recherches Canada). Tout conductimètre utilisé afin d'analyser cet étalon a été sujet à un étalonnage périodique utilisant des thermomètres et étalons traçables au NIST ou CNRC. Tout pH mètre utilisé afin d'analyser cet étalon a été sujet à un étalonnage périodique utilisant des thermomètres et un simulateur pH/MV traçables au NIST ou au CNRC.*

10.0 PREPARATION / PRÉPARATION:

For the preparation of these solutions, 18 megohm/cm double deionized water, high-purity acids and glassware calibrated to ASTM Class A specifications are used. / *Une eau de 18 megohm/cm doublement déionisé, de l'acide de haute pureté, ainsi que de la verrerie étalonnée afin de satisfaire les spécifications Classe A de ASTM ont été utilisés pour la préparation de cet étalon.*

11.0 QUALITY SYSTEM CERTIFICATIONS / CERTIFICATIONS DE SYSTÈME QUALITÉ:

ISO 9001 Certification / Certification ISO 9001: This standard was produced in a facility which operates under a registered ISO 9001 Quality Management System. Please consult our web site for a copy of the most recent revision of our certificate of registration. / *Cet étalon a été fabriqué dans un laboratoire qui utilise un Système de Gestion de la Qualité enregistré à la norme ISO 9001. Veuillez consulter notre site web pour obtenir la version la plus récente de notre certificat d'enregistrement.*

ISO 17025 Accreditation / Accréditation ISO 17025: SCP SCIENCE (Corporate Headquarters) operates an ISO 17025 accredited laboratory. Please consult our web site for a copy of the most recent revision of our certificate and scope of accreditation. / *SCP SCIENCE (Siège social) est accréditée ISO 17025. Veuillez consulter notre site web afin d'obtenir la plus récente version de notre certificat d'accréditation ainsi que la portée de notre accréditation.*

ISO 17034 Accreditation / Accréditation ISO 17034: SCP SCIENCE (Corporate Headquarters) is an ISO 17034 accredited Reference Material Producer. Please consult our website for a copy of our most recent certificate and scope of accreditation. / *SCP SCIENCE (Siège social) est un Fabricant de Matériaux de Référence Accrédité ISO 17034. Veuillez consulter notre site web afin d'obtenir la plus récente version de notre certificat d'accréditation ainsi que la portée de notre accréditation.*

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91140, Villebon-sur-Yvette
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Fax: +33 (0) 1 60 92 05 67

GERMANY
Alte Marktoberdorfer Straße 14, 87616
Marktoberdorf
Phone: +49 (0) 8342-89560-61
Fax: +49 (0) 8342-89560-69

Energy Laboratories Inc

Standard LOG

Standard ID: ME211208 MSCAL2B
Standard Name: MSCAL 2B
Date Prepared: 12/8/2021
Date Expires: 12/8/2022
Department: ME
Vendor: Inorganic Ventures
Lot Number: S2-MEB704403
Balance ID:
Comments: Opened 12/08/2021; Expires 12/08/2022

Type: Primary
BY: Stacy R. Hendricks
Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
Multi Analyte Custom Grade Solution	13793		mL	12/8/2022

Final Volume:
mL

Stock Source

Base Units

Amount Added

Analytes

CAS

Conc: **ug/mL**

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: EL-MSCAL-2B
Lot Number: S2-MEB704403
Matrix: 5% (v/v) HNO3
Value / Analyte(s):
100 µg/mL ea:
Aluminum, Arsenic,
Boron, Barium,
Beryllium, Cadmium,
Cobalt, Chromium,
Copper, Iron,
Manganese, Nickel,
Lead, Selenium,
Strontium, Thorium,
Thallium, Uranium,
Vanadium, Zinc,
40 µg/mL ea:
Silver

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ID #: 13793

Opened: _____

Multi Analyte Custom Grade Solution

Expires: 4/21/2025

Rec'd: 4/29/2021

Energy Laboratories Inc 1120 So. 27th Street
Billings MT 59107

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	100.0 ± 0.4 µg/mL	Arsenic, As	100.0 ± 0.9 µg/mL
Barium, Ba	100.0 ± 0.5 µg/mL	Beryllium, Be	100.0 ± 0.7 µg/mL
Boron, B	100.0 ± 0.7 µg/mL	Cadmium, Cd	100.0 ± 0.5 µg/mL
Chromium, Cr	100.0 ± 0.8 µg/mL	Cobalt, Co	100.0 ± 0.6 µg/mL
Copper, Cu	100.0 ± 0.5 µg/mL	Iron, Fe	100.1 ± 0.4 µg/mL
Lead, Pb	100.0 ± 0.6 µg/mL	Manganese, Mn	100.0 ± 0.5 µg/mL
Nickel, Ni	100.0 ± 0.6 µg/mL	Selenium, Se	100.0 ± 0.7 µg/mL
Silver, Ag	39.99 ± 0.18 µg/mL	Strontium, Sr	100.0 ± 0.4 µg/mL
Thallium, Tl	100.0 ± 0.6 µg/mL	Thorium, Th	100.0 ± 0.5 µg/mL
Uranium, U	100.0 ± 0.5 µg/mL	Vanadium, V	100.0 ± 0.5 µg/mL
Zinc, Zn	100.0 ± 0.5 µg/mL		

Density: 1.033 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	160729
Ag	Volhard	999c	999c
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
As	ICP Assay	3103a	100818
B	ICP Assay	3107	110830
Ba	ICP Assay	3104a	140909
Ba	Gravimetric		See Sec. 4.2
Be	ICP Assay	3105a	090514
Cd	ICP Assay	3108	130116
Cd	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
Fe	Calculated		See Sec. 4.2
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Se	ICP Assay	3149	100901
Se	Calculated		See Sec. 4.2
Sr	EDTA	928	928
Sr	ICP Assay	Traceable to 3153a	K2-SR650985
Sr	Calculated		See Sec. 4.2
Th	EDTA	928	928
Th	Calculated		See Sec. 4.2
Tl	ICP Assay	3158	151215
U	ICP Assay	3164	080521
U	Calculated		See Sec. 4.2
V	ICP Assay	3165	160906
V	EDTA	928	928
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u^2_{char} + u^2_{bb} + u^2_{Its} + u^2_{ts})^{1/2}$$

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Certified Abundance:

IV's Certified Abundance

Isotope

Uranium 238U

Uranium 235U

Atom %

99.8 ± 0.1

0.24 ± 0.05

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{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 ($\mu\text{g/mL}$)

N/A

6.0 INTENDED USE

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

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

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

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

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

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

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

April 21, 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

- **April 21, 2025**

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



Energy Laboratories Inc

Standard LOG

Standard ID: ME211229A AU 2ND SOURCE
Standard Name: Au 2nd source Stock
Date Prepared: 12/29/2021
Date Expires: 12/29/2022
Department: ME
Vendor: SCP Science
Lot Number: S211129013
Balance ID:
Comments: opened 12/29/2021; expires 12/29/2022

Type: Primary
BY: Amanda E. McDani
Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
ICP/ICPMS Standard Gold	14710	500	mL	12/29/2022

Final Volume:
500 mL

Stock Source

Base Units

Amount Added

Analytes

CAS

Conc: **ug/mL**

ID #: 14710

Opened:

ICP/ICPMS Standard Gold

Expires: 12/31/2023

Rec'd: 12/29/2021

Eneray Laboratories Inc 1120 So. 27th Street

Billings MT 59107

SCP SCIENC

Providing Innovative Solutions to Analytical

Certificate of Analysis**Au****1.0 DESCRIPTION:****PlasmaCAL ICP/ICPMS Standard - Gold 1000 µg/ml**

Catalogue Number: 140-052-790/-791/-795

Starting Material: Gold Metal 99.99%+

Lot Number: **S211129013**

Matrix: 10% HCl (See Section 3 for actual matrix)

Expiration Date (End of month): **December 2023** (or 15 months after bottle is opened, whichever comes first)**2.0 CERTIFIED VALUES AND ASSOCIATED UNCERTAINTY:**Certified Concentration: **1001 µg/ml +/- 4 µg/ml****982 µg/g +/- 4 µg/g**

Method of analysis: Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP-AES)

Traceability: NIST Standard Reference Material 3121 Lot: **991806**

Note: The uncertainty of the certified value has been calculated from applicable uncertainty contributors (u_i) including uncertainty established during characterization of the material (u_{char}), the between bottle variation (u_{bb}), short-term stability (u_{sts}) and long-term stability (u_{lts}) according to the model $u_c = \sqrt{(u_{char}^2 + u_{bb}^2 + u_{sts}^2 + u_{lts}^2)}$. This combined uncertainty has been further multiplied by a coverage factor (k) of 2 to provide a 95% confidence interval.

3.0 REFERENCE VALUES:Density: **1.019 g/ml @ 22.4 °C**Actual Matrix: **10.0% (v/v) HCl**

Trace Metal Impurities as tested by ICP-MS:

Element	Conc. (ppm)	Element	Conc. (ppm)	Element	Conc. (ppm)	Element	Conc. (ppm)
Ag	0.3851	Fe	<0.0090	Nd	<0.0010	Sn	<0.0010
Al	0.0062	Ga	<0.0010	Ni	<0.0010	Sr	<0.0025
As	<0.0010	Gd	<0.0010	Os	<0.0010	Ta	<0.0010
Au	N/A	Ge	<0.0010	P	<0.0132	Tb	<0.0010
B	<0.0015	Hf	<0.0010	Pb	<0.0010	Te	<0.0010
Ba	<0.0010	Hg	*	Pd	0.0434	Th	<0.0010
Be	<0.0010	Ho	<0.0010	Pr	<0.0010	Ti	<0.0012
Bi	<0.0010	In	<0.0010	Pt	0.0048	Tl	<0.0011
Ca	<0.0135	Ir	<0.0010	Rb	<0.0010	Tm	<0.0010
Cd	<0.0010	K	0.0362	Re	<0.0010	U	<0.0010
Ce	<0.0010	La	<0.0010	Rh	<0.0010	V	<0.0010
Co	<0.0010	Li	<0.0010	Ru	<0.0010	W	<0.0020
Cr	<0.0010	Lu	<0.0010	S	*	Y	<0.0010
Cs	0.0029	Mg	<0.0010	Sb	<0.0010	Yb	<0.0010
Cu	0.0023	Mn	<0.0010	Sc	<0.0010	Zn	<0.0010
Dy	<0.0010	Mo	<0.0010	Se	<0.01	Zr	<0.0010
Er	<0.0010	Na	0.0070	Si	<0.1		
Eu	<0.0010	Nb	<0.0010	Sm	<0.0010		

*: Not tested

4.0 APPROVAL AND DATE OF CERTIFICATION:

Certification Approval: Daniel Boisvert, Chemist

Certification Date: December 10, 2021

Daniel Boisvert

5.0 INTENDED USE / UTILISATION PRÉVUE:

- ICP Standards: For the calibration of, including but not limited to: ICP-AES, ICP-MS, FAAS, GFAA, XRF and DCP. / *Étalons ICP : Pour l'étalonnage d'instruments de mesure tels que: ICP-AES, ICP-MS, FAAS, GFAA, XRF et DCP.*
 - AA Standards: For the calibration of Flame (FAAS) and Graphite Furnace (GFAA) Atomic Absorption Spectrometers. / *Étalons AA : Pour l'étalonnage de spectromètres d'absorption atomique flamme (GFAA) et four au graphite (GFAA).*
 - Matrix Modifiers: For the optimization of analytical conditions to provide better Graphite Furnace Atomic Absorption (GFAA) instrument response and improved detection limits. / *Modificateur de matrice : Pour l'optimisation des conditions analytiques afin de fournir des meilleures réponses instrumentales et limites de détection pour SAA four au graphite.*
 - pH Standards: For the calibrating pH meters or for other wet chemistry applications. / *Étalons pH : Pour étalonnage de pH mètres et autres applications de chimie humide.*
 - Conductivity Standards: For electrolytic conductivity measurement as a calibration standard. / *Étalons de conductivité : Comme étalon pour les mesures de conductivité électrolytiques.*
 - IC Standards: for calibration of, but not limited to IC, HPLC, TLC, ISE, IR, NMR, MS, UV/VIS or other wet chemistry applications. / *Étalons IC : Pour étalonnage d'instruments tels que : IC, HPLC, TLC, ISE, IR, NMR, MS, UV/VIS et autres applications de chimie humide.*
 For any inquiries, please contact **SCP SCIENCE**. / *Pour toute question, veuillez contacter SCP SCIENCE.*

6.0 INSTRUCTIONS FOR USE / INSTRUCTIONS D'UTILISATION:

Handling and Storage / Manutention et entreposage: Keep product tightly capped when not in use. The solution should be opened for a minimum amount of time necessary to dispense the amount required. Do not pipet or use directly from container. Do not return unused portions back to container. Store under normal laboratory conditions. Avoid exposure to excessive sources of heat and humidity or direct sunlight. / *Garder les contenants bien fermés lorsque non utilisés. Le contenant devrait être ouvert seulement pour le temps requis afin de prélever la quantité nécessaire. Ne pas pipetter ou utiliser directement du contenant. Ne pas retourner les portions non-utilisées dans le contenant. Conserver dans des conditions normales de laboratoire. Éviter l'exposition à des sources de chaleur et d'humidité excessives ou à l'exposition solaire directe.*

Stability / Stabilité: This Standard is guaranteed to be stable and accurate to within the specified uncertainty of measurement up to the unopened expiry date, if sealed, or up to the opened expiry date (when indicated), whichever comes first, provided the solution is kept tightly capped and stored under the indicated storage conditions. Purchasers will be notified of any significant changes resulting in re-certification or withdrawal of the product prior to the expiration date. / *La stabilité et l'exactitude de cet étalon sont garanties d'être à l'intérieur de l'incertitude de mesure, jusqu'à la date d'expiration de la bouteille non-ouverte, si scellée, ou jusqu'à la date d'expiration de la bouteille ouverte (si indiquée), en presumant que le contenant est maintenu fermé et gardé dans les conditions d'entreposage indiquées. Les acheteurs seront avisés dans le cas où il y aura des changements significatifs nécessitant une re-certification ou un rappel du produit avant la date d'expiration.*

7.0 HAZARDOUS INFORMATION / INFORMATION SUR LES RISQUES POTENTIELS:

Please refer to the associated Safety Data Sheet (SDS) for information regarding this product (available at www.SCPSCIENCE.com). / *SVP vous référer à la Fiche Signalétique applicable pour de l'information sur ce produit (Disponible à www.SCPSCIENCE.com).*

8.0 HOMOGENEITY / HOMOGÉNÉITÉ:

This solution has been blended according to an in-house procedure and its homogeneity is guaranteed to be fit for purpose when a sample size sufficient for the intended method of analysis is used. / *Cette solution a été préparée selon une procédure maison et nous assurons que sa homogénéité est approprié à l'emploi lorsqu'un échantillon suffisant pour la méthode d'analyse prévue est utilisé.*

9.0 TRACEABILITY / TRAÇABILITÉ:

This CRM (Certified Reference Material) is traceable to the NIST SRM (Standard Reference Material) indicated in section 2 through an unbroken chain of comparisons. In addition, balances used are regularly calibrated using weights which are traceable to NIST (National Institute of Standards and Technology) or NRC (National Research Council of Canada) standards. All conductivity meters used to analyze this standard have been regularly calibrated using a NIST or NRC traceable Thermometer and standards. All pH meters used to analyze this standard have been regularly calibrated using a NIST or NRC traceable thermometer and pH/MV simulator. / *Ce matériel de référence certifié est traçable au Matériel de Référence Standardisé de NIST indiqué à la section 2 par une chaîne de comparaison ininterrompue. De plus, les balances utilisées sont étalonnées régulièrement en utilisant des poids qui sont traçables au NIST (National Institute of Standards and Technology) ou au CRNC (Conseil National de Recherches Canada). Tout conductimètre utilisé afin d'analyser cet étalon a été sujet à un étalonnage périodique utilisant des thermomètres et étalons traçables au NIST ou CNRC. Tout pH mètre utilisé afin d'analyser cet étalon a été sujet à un étalonnage périodique utilisant des thermomètres et un simulateur pH/MV traçables au NIST ou au CNRC.*

10.0 PREPARATION / PRÉPARATION:

For the preparation of these solutions, 18 meghom/cm double deionized water, high-purity acids and glassware calibrated to ASTM Class A specifications are used. / *Une eau de 18 meghom/cm doublement déionisé, de l'acide de haute pureté, ainsi que de la verrerie étalonnée afin de satisfaire les spécifications Classe A de ASTM ont été utilisés pour la préparation de cet étalon.*

11.0 QUALITY SYSTEM CERTIFICATIONS / CERTIFICATIONS DE SYSTÈME QUALITÉ:

ISO 9001 Certification / Certification ISO 9001: This standard was produced in a facility which operates under a registered ISO 9001 Quality Management System. Please consult our web site for a copy of the most recent revision of our certificate of registration. / *Cet étalon a été fabriqué dans un laboratoire qui utilise un Système de Gestion de la Qualité enregistré à la norme ISO 9001. Veuillez consulter notre site web pour obtenir la version la plus récente de notre certificat d'enregistrement.*

ISO 17025 Accreditation / Accréditation ISO 17025: SCP SCIENCE (Corporate Headquarters) operates an ISO 17025 accredited laboratory. Please consult our web site for a copy of the most recent revision of our certificate and scope of accreditation. / *SCP SCIENCE (Siège social) est accréditée ISO 17025. Veuillez consulter notre site web afin d'obtenir la plus récente version de notre certificat d'accréditation ainsi que la portée de notre accréditation.*

ISO 17034 Accreditation / Accréditation ISO 17034: SCP SCIENCE (Corporate Headquarters) is an ISO 17034 accredited Reference Material Producer. Please consult our website for a copy of our most recent certificate and scope of accreditation. / *SCP SCIENCE (Siège social) est un Fabricant de Matériaux de Référence Accrédité ISO 17034. Veuillez consulter notre site web afin d'obtenir la plus récente version de notre certificat d'accréditation ainsi que la portée de notre accréditation.*

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Fax: +33 (0) 1 60 92 05 67

GERMANY
Alte Marktoberdorfer Straße 14, 87616
Marktoberdorf
Phone: +49 (0) 8342-89560-61
Fax: +49 (0) 8342-89560-69

Energy Laboratories Inc

Standard LOG

Standard ID: ME220110 CE, LA PRIMARY
Standard Name: Ce, La Primary
Date Prepared: 1/10/2022
Date Expires: 1/6/2023
Department: ME
Vendor: Inorganic Ventures
Lot Number: M2-CE657768/M2-
Balance ID:
Type: Secondary
BY: Amanda E. McDani
Status: Open
Comments: Used to make standards and spiking solutions; No primary La available

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
Nitric Acid 69.0- 70.0% D0521	14626	0.5	mL	12/14/2026
Milli-Q H2O	391	39.5	mL	6/1/2100

Final Volume:
50 mL

Stock Source

ME220106-CE Ce Primary Stock

Base Units

ug/mL

Amount Added

5 mL

Analytes

CAS

Conc: ug/mL

Energy Laboratories Inc

Standard LOG

Standard ID: ME220112 10 PPB STANDARD
Standard Name: 10 ppb Standard
Date Prepared: 1/12/2022
Date Expires: 11/18/2022
Department: ME
Vendor: Inorganic Ventures
Lot Number:
Balance ID:
Comments: Made Fresh Daily

Type: Secondary
BY: Cindy Rohrer
Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
Hydrochloric Acid E1421	14721	0.25	mL	1/4/2027
Nitric Acid 69.0- 70.0% D0521	14626	0.5	mL	12/14/2026
Milli-Q H2O	391	48.335	mL	6/1/2100

Final Volume:
50 mL

Stock Source
ME220112 100 PP 100 ppb Standard

Base Units
ug/mL

Amount Added
5 mL

Analytes

CAS

Conc: **mg/L**

Energy Laboratories Inc

Standard LOG

Standard ID: ME220112 1 PPB STANDARD
Standard Name: 1 ppb Standard
Date Prepared: 1/12/2022
Date Expires: 11/18/2022
Department: ME
Vendor: Inorganic Ventures
Lot Number:
Balance ID:
Comments: Made Fresh Daily

Type: Secondary
BY: Cindy Rohrer
Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
Hydrochloric Acid E1421	14721	0.25	mL	1/4/2027
Nitric Acid 69.0- 70.0% D0521	14626	0.5	mL	12/14/2026
Milli-Q H2O	391	48.335	mL	6/1/2100

Final Volume:
50 mL

Stock Source
ME220112 10 PPB 10 ppb Standard

Base Units
ug/mL

Amount Added
5 mL

Analytes

CAS

Conc: **mg/L**

Energy Laboratories Inc

Standard LOG

Standard ID: ME220112 0.5 PPB STANDARD
Standard Name: 0.5 ppb Standard
Date Prepared: 1/12/2022
Date Expires: 11/18/2022
Department: ME
Vendor: Inorganic Ventures
Lot Number:
Balance ID:
Comments: Made Fresh Daily

Type: Secondary
BY: Cindy Rohrer
Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
Hydrochloric Acid E1421	14721	0.25	mL	1/4/2027
Nitric Acid 69.0- 70.0% D0521	14626	0.5	mL	12/14/2026
Milli-Q H2O	391	48.335	mL	6/1/2100

Final Volume:
50 mL

Stock Source
ME220112 10 PPB 10 ppb Standard

Base Units
ug/mL

Amount Added
2.5 mL

Analytes

CAS

Conc: **mg/L**

Energy Laboratories Inc

Standard LOG

Standard ID: ME220112 0.1 PPB STANDARD
Standard Name: 0.1 ppb Standard
Date Prepared: 1/12/2022
Date Expires: 11/18/2022
Department: ME
Vendor: Inorganic Ventures
Lot Number:
Balance ID:
Comments: Made Fresh Daily

Type: Secondary
BY: Cindy Rohrer
Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
Hydrochloric Acid E1421	14721	0.25	mL	1/4/2027
Nitric Acid 69.0- 70.0% D0521	14626	0.5	mL	12/14/2026
Milli-Q H2O	391	48.335	mL	6/1/2100

Final Volume:
50 mL

Stock Source

ME220112 1 PPB 1 ppb Standard

Base Units

ug/mL

Amount Added

5 mL

Analytes

CAS

Conc: **mg/L**

Energy Laboratories Inc

Standard LOG

Standard ID: ME220112 0.05 PPB STANDARD
Standard Name: 0.5 ppb Standard
Date Prepared: 1/12/2022
Date Expires: 11/18/2022
Department: ME
Vendor: Inorganic Ventures
Lot Number:
Balance ID:
Comments: Made Fresh Daily

Type: Secondary
BY: Cindy Rohrer
Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
Hydrochloric Acid E1421	14721	0.25	mL	1/4/2027
Nitric Acid 69.0- 70.0% D0521	14626	0.5	mL	12/14/2026
Milli-Q H2O	391	48.335	mL	6/1/2100

Final Volume:
50 mL

Stock Source
ME220112 0.5 PP 0.5 ppb Standard

Base Units
ug/mL

Amount Added
5 mL

Analytes

CAS

Conc: **mg/L**

Energy Laboratories Inc

Standard LOG

Standard ID: ME220112 0.025 PPB STANDARD
Standard Name: 0.025 ppb Standard
Date Prepared: 1/12/2022
Date Expires: 11/18/2022
Department: ME
Vendor: Inorganic Ventures
Lot Number:
Balance ID:
Comments: Made Fresh Daily

Type: Secondary
BY: Cindy Rohrer
Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
Hydrochloric Acid E1421	14721	0.25	mL	1/4/2027
Nitric Acid 69.0- 70.0% D0521	14626	0.5	mL	12/14/2026
Milli-Q H2O	391	48.335	mL	6/1/2100

Final Volume:
50 mL

Stock Source
ME220112 0.5 PP 0.5 ppb Standard

Base Units
ug/mL

Amount Added
2.5 mL

Analytes

CAS

Conc: **mg/L**

Energy Laboratories Inc

Standard LOG

Standard ID: ME211206 ICV STANDARD
 Standard Name: ICV for ICPMS Standards
 Date Prepared: 12/6/2021
 Date Expires: 4/30/2022
 Department:
 Vendor:
 Lot Number:
 Balance ID:
 Comments: Made fresh daily

Type: Secondary
 BY: Stacy R. Hendricks
 Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Hydrochloric Acid Instra Analyzed 000	14028	1	mL	3/29/
Nitric Acid Instra Analyzed 000028856	14572	2	mL	6/28/
Milli-Q H2O	391		mL	6/1/2

Final Volume: 100 mL

<u>Stock Source</u>	Base Units	Amount Added
ME210211 U Seco U 2' QCS	ug/mL	0.05 mL
ME211206 Th QC Th QCS Stock	ug/mL	0.05 mL
ME210901 Hg Sec Secondary Hg Stock 2 PPM	ug/mL	0.05 mL
ME211124 EL-MSI EL-MSICV-2	ug/mL	0.05 mL
ME210817 ICV-1A EL-MSICV-1A	ug/mL	0.05 mL
ME210903 Ce, La Ce, La Secondary solution	ug/mL	0.05 mL

Analvtes **CAS** Conc: **mg/L**

Energy Laboratories Inc

Spike LOG

Standard ID: ME210211 U SECOND SOURCE
Standard Name: U 2' QCS
Date Prepared: 2/11/2021
Date Expires: 4/30/2022
Department: ME
Vendor:
Lot Number:
Balance ID:
Comments:

Type: Secondary
BY: Alyssa A. Olson
Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
Nitric Acid Instra Analyzed 0000264786	13061	0.25	mL	5/12/2025
Milli-Q H2O	391	22.25	mL	6/1/2100

Final Volume:
25 mL

Stock Source

ME200624A U Stock

Base Units

ug/mL

Amount Added

2.5 mL

Analytes

CAS

Conc: ug/mL

Energy Laboratories Inc

Standard LOG

Standard ID: ME200624A
Standard Name: U Stock
Date Prepared: 6/24/2020
Date Expires: 4/30/2022
Department: ME
Vendor: SCP Science
Lot Number: S200422002
Balance ID:
Comments:

Type: Primary
BY: Ron Hunt
Status: Empty/Disposed

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
PlasmaCal Standard Uranium	12767	500	mL	4/30/

Final Volume: 500 mL

Stock Source

Base Units

Amount Added

Analvtes

CAS

Conc: **ug/mL**

A Uranium

7440-61-1

1000

U

1.0 DESCRIPTION: **PlasmaCAL ICP/ICPMS Standard - Uranium 1000 µg/ml**
 Catalogue Number: 140-051-920/-921/-925
 Starting Material: Uranyl Nitrate 99.99%
 Lot Number: **S200422002**
 Matrix: 4% HNO₃ (See Section 3 for actual matrix)
 Expiration Date (End of month): **April 2022** (or 15 months after bottle is opened, whichever comes first)

2.0 CERTIFIED VALUES AND ASSOCIATED UNCERTAINTY:
 Certified Concentration: **1003 µg/ml +/- 4 µg/ml**
983 µg/g +/- 4 µg/g
 Method of analysis: Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP-AES)
 Traceability: NIST Standard Reference Material 3164 Lot: **080521**

Note: The uncertainty of the certified value has been calculated from applicable uncertainty contributors (u) including uncertainty established during characterization of the material (u_{char}), the between bottle variation (u_{bb}), short-term stability (u_{sts}) and long-term stability (u_{lts}) according to the model $u_c = \sqrt{(u_{char}^2 + u_{bb}^2 + u_{sts}^2 + u_{lts}^2)}$. This combined uncertainty has been further multiplied by a coverage factor (k) of 2 to provide a 95% confidence interval.

3.0 REFERENCE VALUES:
 Density: **1.020 g/ml @ 21.7 °C**
 Actual Matrix: **4.0% (v/v) HNO₃**

ID #: 12767
 Opened: _____
 PlasmaCAL Standard Uranium
Expires: 4/30/2022
 Rec'd: 6/15/2020
 Energy Laboratories Inc 1120 So. 27th Street
 Billings MT 59107

% abundance of stable isotopes : ²³⁸U : 99.79% ; ²³⁵U : 0.21%
 Note : The uranyl nitrate comes from a depleted source of uranium.

Trace Metal Impurities as tested by ICP-MS:

Element	Conc. (ppm)	Element	Conc. (ppm)	Element	Conc. (ppm)	Element	Conc. (ppm)
Ag	<0.0010	Fe	<0.0018	Nd	<0.0010	Sn	<0.0010
Al	0.0073	Ga	<0.0010	Ni	0.0038	Sr	<0.0025
As	<0.0010	Gd	<0.0010	Os	*	Ta	<0.0010
Au	<0.0010	Ge	<0.0010	P	<0.0026	Tb	<0.0010
B	<0.0015	Hf	<0.0010	Pb	<0.0010	Te	<0.0031
Ba	<0.0010	Hg	*	Pd	<0.0010	Th	0.0020
Be	<0.0010	Ho	<0.0010	Pr	<0.0010	Ti	<0.0012
Bi	<0.0010	In	<0.0010	Pt	<0.0010	Tl	<0.0011
Ca	0.0340	Ir	<0.0010	Rb	<0.0010	Tm	<0.0010
Cd	<0.0010	K	<0.0024	Re	<0.0010	U	N/A
Ce	<0.0010	La	*	Rh	<0.0010	V	<0.0010
Co	<0.0010	Li	<0.0010	Ru	<0.0010	W	<0.0020
Cr	<0.0010	Lu	<0.0010	S	<1.0000	Y	0.0049
Cs	<0.0010	Mg	<0.0010	Sb	<0.0010	Yb	<0.0010
Cu	<0.0010	Mn	<0.0010	Sc	<0.0010	Zn	<0.0010
Dy	<0.0010	Mo	<0.0010	Se	*	Zr	<0.0010
Er	<0.0010	Na	<0.0010	Si	<1.0000		
Eu	<0.0010	Nb	<0.0010	Sm	<0.0010		*: Not tested

4.0 APPROVAL AND DATE OF CERTIFICATION:
 Certification Approval: Daniel Boisvert, Chemist
 Certification Date: April 28, 2020

Daniel Boisvert

5.0 INTENDED USE / UTILISATION PRÉVUE:

- ICP Standards: For the calibration of, including but not limited to: ICP-AES, ICP-MS, FAAS, GFAA, XRF and DCP. / *Étalons ICP : Pour l'étalonnage d'instruments de mesure tels que: ICP-AES, ICP-MS, FAAS, GFAA, XRF et DCP.*
 - AA Standards: For the calibration of Flame (FAAS) and Graphite Furnace (GFAA) Atomic Absorption Spectrometers. / *Étalons AA : Pour l'étalonnage de spectromètres d'absorption atomique flamme (GFAA) et four au graphite (GFAA).*
 - Matrix Modifiers: For the optimization of analytical conditions to provide better Graphite Furnace Atomic Absorption (GFAA) instrument response and improved detection limits. / *Modificateur de matrice : Pour l'optimisation des conditions analytiques afin de fournir des meilleurs réponses instrumentales et limites de détection pour SAA four au graphite.*
 - pH Standards: For the calibrating pH meters or for other wet chemistry applications. / *Étalons pH : Pour étalonnage de pH mètres et autres applications de chimie humide.*
 - Conductivity Standards: For electrolytic conductivity measurement as a calibration standard. / *Étalons de conductivité : Comme étalon pour les mesures de conductivité électrolytiques.*
 - IC Standards: for calibration of, but not limited to IC, HPLC, TLC, ISE, IR, NMR, MS, UV/VIS or other wet chemistry applications. / *Étalons IC : Pour étalonnage d'instruments tels que : IC, HPLC, TLC, ISE, IR, NMR, MS, UV/VIS et autres applications de chimie humide.*
- For any inquiries, please contact **SCP SCIENCE**. / *Pour toute question, veuillez contacter SCP SCIENCE.*

6.0 INSTRUCTIONS FOR USE / INSTRUCTIONS D'UTILISATION:

Handling and Storage / Manutention et entreposage: Keep product tightly capped when not in use. The solution should be opened for a minimum amount of time necessary to dispense the amount required. Do not pipet or use directly from container. Do not return unused portions back to container. Store under normal laboratory conditions. Avoid exposure to excessive sources of heat and humidity or direct sunlight. / *Garder les contenants bien fermés lorsque non utilisés. Le contenant devrait être ouvert seulement pour le temps requis afin de prélever la quantité nécessaire. Ne pas pipetter ou utiliser directement du contenant. Ne pas retourner les portions non-utilisées dans le contenant. Conserver dans des conditions normales de laboratoire. Éviter l'exposition à des sources de chaleur et d'humidité excessives ou à l'exposition solaire directe.*

Stability / Stabilité: This Standard is guaranteed to be stable and accurate to within the specified uncertainty of measurement up to the unopened expiry date, if sealed, or up to the opened expiry date (when indicated), whichever comes first, provided the solution is kept tightly capped and stored under the indicated storage conditions. Purchasers will be notified of any significant changes resulting in re-certification or withdrawal of the product prior to the expiration date. / *La stabilité et l'exactitude de cet étalon sont garanties d'être à l'intérieur de l'incertitude de mesure, jusqu'à la date d'expiration de la bouteille non-ouverte, si scellée, ou jusqu'à la date d'expiration de la bouteille ouverte (si indiquée), en presumant que le contenant est maintenu fermé et gardé dans les conditions d'entreposage indiquées. Les acheteurs seront avisés dans le cas où il y aura des changements significatifs nécessitant une re-certification ou un rappel du produit avant la date d'expiration.*

7.0 HAZARDOUS INFORMATION / INFORMATION SUR LES RISQUES POTENTIELS:

Please refer to the associated Safety Data Sheet (SDS) for information regarding this product (available at www.SCPSCIENCE.com). / *SVP vous référer à la Fiche Signalétique applicable pour de l'information sur ce produit (Disponible à www.SCPSCIENCE.com).*

8.0 HOMOGENEITY / HOMOGÉNÉITÉ:

This solution has been blended according to an in-house procedure and its homogeneity is guaranteed to be fit for purpose when a sample size sufficient for the intended method of analysis is used. / *Cette solution a été préparée selon une procédure maison et nous assurons que sa homogénéité est approprié à l'emploi lorsqu'un échantillon suffisant pour la méthode d'analyse prévue est utilisé.*

9.0 TRACEABILITY / TRAÇABILITÉ:

This CRM (Certified Reference Material) is traceable to the NIST SRM (Standard Reference Material) indicated in section 2 through an unbroken chain of comparisons. In addition, balances used are regularly calibrated using weights which are traceable to NIST (National Institute of Standards and Technology) or NRC (National Research Council of Canada) standards. All conductivity meters used to analyze this standard have been regularly calibrated using a NIST or NRC traceable Thermometer and standards. All pH meters used to analyze this standard have been regularly calibrated using a NIST or NRC traceable thermometer and pH/MV simulator. / *Ce matériel de référence certifié est traçable au Matériel de Référence Standardisé de NIST indiqué à la section 2 par une chaîne de comparaison ininterrompue. De plus, les balances utilisées sont étalonnées régulièrement en utilisant des poids qui sont traçables au NIST (National Institute of Standards and Technology) ou au CRNC (Conseil National de Recherches Canada). Tout conductimètre utilisé afin d'analyser cet étalon a été sujet à un étalonnage périodique utilisant des thermomètres et étalons traçables au NIST ou CNRC. Tout pH mètre utilisé afin d'analyser cet étalon a été sujet à un étalonnage périodique utilisant des thermomètres et un simulateur pH/MV traçables au NIST ou au CNRC.*

10.0 PREPARATION / PRÉPARATION:

For the preparation of these solutions, 18 megohm/cm double deionized water, high-purity acids and glassware calibrated to ASTM Class A specifications are used. / *Une eau de 18 megohm/cm doublement déionisée, de l'acide de haute pureté, ainsi que de la verrerie étalonnée afin de satisfaire les spécifications Classe A de ASTM ont été utilisés pour la préparation de cet étalon.*

11.0 QUALITY SYSTEM CERTIFICATIONS / CERTIFICATIONS DE SYSTÈME QUALITÉ:

ISO 9001 Certification / Certification ISO 9001: This standard was produced in a facility which operates under a registered ISO 9001 Quality Management System. Please consult our web site for a copy of the most recent revision of our certificate of registration. / *Cet étalon a été fabriqué dans un laboratoire qui utilise un Système de Gestion de la Qualité enregistré à la norme ISO 9001. Veuillez consulter notre site web pour obtenir la version la plus récente de notre certificat d'enregistrement.*

ISO 17025 Accreditation / Accréditation ISO 17025: SCP SCIENCE (Corporate Headquarters) operates an ISO 17025 accredited laboratory. Please consult our web site for a copy of the most recent revision of our certificate and scope of accreditation. / *SCP SCIENCE (Siège social) est accréditée ISO 17025. Veuillez consulter notre site web afin d'obtenir la plus récente version de notre certificat d'accréditation ainsi que la portée de notre accréditation.*

ISO 17034 Accreditation / Accréditation ISO 17034 : SCP SCIENCE (Corporate Headquarters) is an ISO 17034 accredited Reference Material Producer. Please consult our website for a copy of our most recent certificate and scope of accreditation. / *SCP SCIENCE (Siège social) est un Fabricant de Matériaux de Référence Accrédité ISO 17034. Veuillez consulter notre site web afin d'obtenir la plus récente version de notre certificat d'accréditation ainsi que la portée de notre accréditation.*

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Marktobendorf
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Fax: +49 (0) 8342-89560-69

Energy Laboratories Inc

Spike LOG

Standard ID: ME211206 TH QCS STOCK
Standard Name: Th QCS Stock
Date Prepared: 12/6/2021
Date Expires: 10/25/2022
Department: ME
Vendor:
Lot Number:
Balance ID:
Comments:

Type: Secondary
BY: Stacy R. Hendricks
Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Nitric Acid Instra Analyzed 000028856	14572	0.25	mL	6/28/
Milli-Q H2O	391	22.25	mL	6/1/2

Final Volume: 25 mL

Stock Source
ME 211025 Th Sec Th Secondary Stock

Base Units
ug/mL

Amount Added
2.5 mL

Analvtes

CAS

Conc: **ug/mL**

Energy Laboratories Inc

Standard LOG

Standard ID: ME 211025 TH SECONDARY STOCK
Standard Name: Th Secondary Stock
Date Prepared: 10/25/2021
Date Expires: 10/25/2022
Department: ME
Vendor: Inorganic Ventures
Lot Number: S2-TH706436
Balance ID:
Comments: Opened 10/25/2021; Expires 10/25/2022

Type: Primary
BY: Stacy R. Hendricks
Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
Thorium Single Analyte Custom Grade Sol	14318	125	mL	10/25/2022

Final Volume:
500 mL

Stock Source

Base Units

Amount Added

Analytes

CAS

Conc: **ug/mL**

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: Single Analyte Custom Grade Solution
Catalog Number: CGTH1
Lot Number: S2-TH706436
Matrix: 5% (v/v) HNO3
Value / Analyte(s): 1 000 µg/mL ea:
Thorium
Starting Material: TH(NO3)4*4H2O
Starting Material Lot#: 2250
Starting Material Purity: 99.9905%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1001 ± 4 µg/mL
Density: 1.026 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1 **1001 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #2 **1001 ± 6 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

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

ID #: 14318
Opened:
Thorium Single Analyte Custom Grade Solution
Expires: 7/4/2025
Rec'd: 9/24/2021
Energy Laboratories Inc 1120 So. 27th Street
Billings MT 59107

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES ($\mu\text{g/mL}$)

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

M Ag <	0.000448	M Eu <	0.000224	O Na	0.064077	M Se <	0.005827	M Zn	0.003183
O Al	0.010962	M Fe	0.012392	M Nb <	0.003138	i Si <		M Zr <	0.010310
M As <	0.038776	M Ga <	0.004931	M Nd	0.004697	M Sm	0.000871		
M Au <	0.000224	M Gd	0.000300	M Ni <	0.006724	M Sn <	0.028242		
M B <	0.021293	M Ge <	0.008965	M Os <	0.000224	M Sr	0.002582		
M Ba	0.001317	M Hf <	0.000224	i P <		M Ta <	0.001344		
M Be <	0.000224	M Hg <	0.000448	M Pb	0.003287	M Tb <	0.001793		
M Bi <	0.001793	M Ho <	0.001344	M Pd <	0.000448	M Te <	0.010086		
O Ca	0.051969	M In	0.000134	M Pr	0.001202	s Th <			
M Cd <	0.001344	M Ir <	0.000224	M Pt <	0.000224	M Ti <	0.004258		
M Ce	0.015420	O K	0.028928	M Rb <	0.005155	M Tl <	0.000224		
M Co <	0.001344	M La	0.003577	M Re <	0.000224	M Tm <	0.000224		
M Cr <	0.015465	M Li <	0.000448	M Rh <	0.000224	M U	0.006564		
M Cs <	0.013896	M Lu <	0.000224	M Ru <	0.000224	M V <	0.001793		
M Cu	0.001472	O Mg	0.027914	i S <		M W <	0.000224		
M Dy	0.000197	M Mn	0.001814	M Sb <	0.004931	M Y	0.000860		
M Er <	0.002241	M Mo <	0.000896	M Sc <	0.000672	M Yb <	0.000224		

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 - 232.04 +4 8 Th(OH) 3+ and Th(OH)22+

Chemical Compatibility -Soluble in HCl, and HNO3. Avoid H3PO4, H2SO4 and HF although solubilities may not be a problem depending upon pH and matrix (For example: ThF4 is soluble in acids). Avoid neutral to basic media. Th4+ is stable with most metals and inorganic anions forming an insoluble carbonate, oxide, fluoride, oxalate, sulfate and phosphate in neutral to slightly acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO3 / LDPE container.

Th Containing Samples (Preparation and Solution) -Metal (Soluble in Aqua Regia); Oxide (The heated oxide is not soluble in acids except hot conc. H2SO4); Ores (Na2O2 fusion at 480 ± 20EC for 7 minutes, cool and treat sintered mass with 50 mL cold water and stand until disintegrated. The mass is transferred to a beaker and acidified with HCl with 25 mL excess HCl added. Any residue is collected on a Whatman No. 42 filter, dried and ignited to 1000 EC in Pt0 crucible and the ash treated with H2SO4 / HF and fumed. If residue remains, then treat it by peroxide fusion as above.)

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 232 amu	1 ppt	N/A	
ICP-OES 274.716 nm	0.08 / 0.008 µg/mL	1	Ti, Ta, Fe, V
ICP-OES 283.231 nm	0.07 / 0.007 µg/mL	1	U, Mo, Ti, Fe, Cr
ICP-OES 283.730 nm	0.07 / 0.007 µg/mL	1	U, Zr

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

July 04, 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

- July 04, 2025

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



Energy Laboratories Inc

Spike LOG

Standard ID: ME210901 HG SECOND SOURCE
Standard Name: Secondary Hg Stock 2 PPM
Date Prepared: 9/1/2021
Date Expires: 7/26/2022
Department: ME
Vendor: Inorganic Ventures
Lot Number:
Balance ID:
Comments:

Type: Secondary
BY: Alyssa A. espinoza
Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Nitric Acid, 69.0-70.0%,0000282671	14178	0.1	mL	4/11/
Hydrochloric Acid Instra Analyzed 000	14028	0.05	mL	3/29/

Final Volume: 50 mL

Stock Source
ME210726 Hg Secondary Source

Base Units
ug/mL

Amount Added
0.1 mL

Analvtes

CAS

Conc: **ug/mL**

Energy Laboratories Inc

Spike LOG

Standard ID: ME210726
Standard Name: Hg Secondary Source
Date Prepared: 7/26/2021
Date Expires: 7/26/2022
Department: _____
Vendor: _____
Lot Number: _____
Balance ID: _____
Comments: _____

Type: _____
BY: Jordan A. Gjerde
Status: New

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Mercury Single Analyte Custom Grade	13979	120	mL	7/26/

Final Volume: mL

Stock Source

Base Units

Amount Added

Analvtes

CAS

Conc: **ug/mL**

1.0 ACCREDITATION / REGISTRATION

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



2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution
 Catalog Number: CGHG1
 Lot Number: R2-HG696409
 Matrix: 5% (v/v) HNO3
 Value / Analyte(s): 1 000 µg/mL ea:
 Mercury
 Starting Material: Hg metal
 Starting Material Lot#: 1959
 Starting Material Purity: 99.9994%

ID #: 13979
 Opened:
 Mercury Single Analyte Custom Grade Solution
Expires: 9/15/2024
 Rec'd: 6/23/2021
 Energy Laboratories Inc 1120 So. 27th Street
 Billings MT 59107

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1002 ± 3 µg/mL
Density: 1.026 g/mL (measured at 20 ± 4 °C)

Assay Information:

- Assay Method #1** **1004 ± 8 µg/mL**
 ICP Assay NIST SRM 3133 Lot Number: 160921
- Assay Method #2** **1003 ± 3 µg/mL**
 EDTA NIST SRM 928 Lot Number: 928
- Assay Method #3** **1001 ± 3 µg/mL**
 Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

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

O	Ag	0.001159	M	Eu	<	0.000201	O	Na	0.000435	M	Se	<	0.015915	O	Zn	<	0.001510
O	Al	0.000090	O	Fe	0.000113	M	Nb	<	0.000201	O	Si	0.000525	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	0.000746	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	0.002007	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	0.000096	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	0.000971	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 15, 2020

- 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 15, 2024**

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



Energy Laboratories Inc

Standard LOG

Standard ID: ME211124 EL-MSICV-2
Standard Name: EL-MSICV-2
Date Prepared: 11/24/2021
Date Expires: 11/24/2022
Department: ME
Vendor: Inorganic Ventures
Lot Number:
Balance ID:
Comments:

Type: Primary
BY: Amanda E. McDani
Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Multi Analyte Custom Grade Solution	14023	500	mL	11/24

Final Volume: mL

Stock Source

Base Units

Amount Added

Analvtes

CAS

Conc: **ug/mL**

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: EL-MSICV-2
 Lot Number: R2-MEB696849
 Matrix: 3% (v/v) HNO₃
 tr. HF
 Value / Analyte(s):
 1 000 µg/mL ea:
 Silicon,
 100 µg/mL ea:
 Tin, Titanium,
 Molybdenum, Antimony

Second Source: Whenever possible, this solution was manufactured from a second set of concentrates in our manufacturing facility.

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Antimony, Sb	100.0 ± 0.6 µg/mL	Molybdenum, Mo	100.0 ± 0.5 µg/mL
Silicon, Si	1 000 ± 7 µg/mL	Tin, Sn	99.9 ± 0.4 µg/mL
Titanium, Ti	99.9 ± 0.6 µg/mL		

Density: 1.019 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Mo	ICP Assay	3134	130418
Sb	ICP Assay	3102a	140911
Si	ICP Assay	3150	130912
Sn	ICP Assay	3161a	070330
Sn	Calculated		See Sec. 4.2
Ti	ICP Assay	3162a	130925

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

ID #: 14023

Opened: _____

Multi Analyte Custom Grade Solution

Expires: 9/14/2024

Rec'd: 7/7/2021

 Eneray Laboratories Inc 1120 So. 27th Street
 Billings MT 59107

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{TS} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{TS} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES ($\mu\text{g/mL}$)

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.

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

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 14, 2020

- 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 14, 2024**

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



Energy Laboratories Inc

Standard LOG

Standard ID: ME210817 ICV-1A
Standard Name: EL-MSICV-1A
Date Prepared: 8/17/2021
Date Expires: 8/17/2022
Department: ME
Vendor: Inorganic Ventures
Lot Number: R2-MEB688457
Balance ID:
Comments: Opened 8/17/2021; Expires 8/17/2022

Type: Primary
BY: Alyssa A. espinoza
Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Multi Analyte Custom Grade Solution	13475	500	mL	8/17/

Final Volume: 500 mL

Stock Source

Base Units

Amount Added

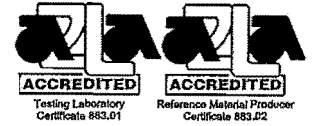
Analvtes

CAS

Conc: **ug/mL**

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: EL-MSICV-1A

Lot Number: R2-MEB688457

Matrix: 5% (v/v) HNO₃

Value / Analyte(s):

5 000 µg/mL ea:	Calcium,	Potassium,	Magnesium,
	Sodium,		
1 000 µg/mL ea:	Phosphorus,		
500 µg/mL ea:	Manganese,	Iron,	Aluminum,
100 µg/mL ea:	Arsenic,	Boron,	Barium,
	Cobalt,	Chromium,	Copper,
	Lithium,	Nickel,	Lead,
	Selenium,	Strontium,	Thallium,
	Vanadium,	Zinc,	
50 µg/mL ea:	Silver,	Cadmium,	Beryllium

ID #: 13475

Opened: _____

Multi Analyte Custom Grade Solution

Expires: 1/10/2024

Rec'd: 1/15/2021

 Energy Laboratories Inc 1120 So. 27th Street
 Billings MT 59107

Second Source: Whenever possible, this solution was manufactured from a second set of concentrates in our manufacturing facility.

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	500.3 ± 1.8 µg/mL	Arsenic, As	100.0 ± 0.8 µg/mL
Barium, Ba	99.9 ± 0.4 µg/mL	Beryllium, Be	49.96 ± 0.33 µg/mL
Boron, B	100.0 ± 0.6 µg/mL	Cadmium, Cd	50.10 ± 0.22 µg/mL
Calcium, Ca	5 001 ± 20 µg/mL	Chromium, Cr	100.0 ± 0.6 µg/mL
Cobalt, Co	100.0 ± 0.5 µg/mL	Copper, Cu	100.1 ± 0.4 µg/mL
Iron, Fe	499.7 ± 2.1 µg/mL	Lead, Pb	100.1 ± 0.4 µg/mL
Lithium, Li	100.0 ± 0.4 µg/mL	Magnesium, Mg	5 000 ± 21 µg/mL
Manganese, Mn	499.8 ± 1.9 µg/mL	Nickel, Ni	100.1 ± 0.4 µg/mL
Phosphorus, P	1 000 ± 5 µg/mL	Potassium, K	5 000 ± 18 µg/mL
Selenium, Se	100.1 ± 0.8 µg/mL	Silver, Ag	50.02 ± 0.22 µg/mL
Sodium, Na	5 000 ± 18 µg/mL	Strontium, Sr	100.1 ± 0.4 µg/mL
Thallium, Tl	100.0 ± 0.7 µg/mL	Vanadium, V	99.9 ± 0.5 µg/mL
Zinc, Zn	100.0 ± 0.4 µg/mL		

Density: 1.098 g/mL (measured at 20 ± 4 °C)

Assay Information:

1.098 g/mL
measured at 20 ± 4 °C

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	160729
Ag	Volhard	999c	999c
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
As	ICP Assay	3103a	100818
B	ICP Assay	3107	110830
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
Co	EDTA	928	928
Co	ICP Assay	traceable to 3113	M2-CO661665
Cr	ICP Assay	3112a	170630
Cu	ICP Assay	3114	121207
Cu	EDTA	928	928
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Li	ICP Assay	3129a	100714
Li	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Na	ICP Assay	3152a	120715
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	3153a	990906
Tl	ICP Assay	3158	993012
V	ICP Assay	3165	160906
V	EDTA	928	928
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

$$X_{\text{CRM/RM}} = (X_n) (u_{\text{char } n})$$

X_n = mean of Assay Method n with

$u_{\text{char } n}$ = the standard uncertainty of characterization Method n

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

k = coverage factor = 2

$u_{\text{char } n}$ = 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 ($\mu\text{g/mL}$)

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 outer bag.

- While stored in the sealed outer bag, transpiration of this CRM/RM is negligible. After opening the sealed outer 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 outer 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.

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, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 10, 2020

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

11.2 Lot Expiration Date

- **January 10, 2024**

- 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 outer Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control



Certifying Officer:

Paul Gaines
CEO, Senior Technical Director



Energy Laboratories Inc

Standard LOG

Standard ID: ME210903 CE, LA SECONDARY
Standard Name: Ce, La Secondary solution
Date Prepared: 9/3/2021
Date Expires: 5/25/2022
Department: ME
Vendor:
Lot Number:
Balance ID:
Comments: Second Source Stock Solution

Type: Secondary
BY: Parker A. Pearsall
Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Nitric Acid Instra Analyzed 000020579	10902	0.5	mL	7/1/2
Milli-Q H2O	391	39.5	mL	6/1/2

Final Volume: 50 mL

Stock Source

ME210903 La Sec La Secondary Stock
ME210525 Ce 2nd Ce Secondary Stock

Base Units

ug/mL
ug/mL

Amount Added

5 mL
5 mL

Analvtes

CAS

Conc: **ug/mL**

Energy Laboratories Inc

Standard LOG

Standard ID: ME210903 LA SECOND SOURCE
Standard Name: La Secondary Stock
Date Prepared: 9/3/2021
Date Expires: 9/3/2022
Department: ME
Vendor: SCP Science
Lot Number: S201029004
Balance ID:
Comments: Opened 9/3/2021; Expires 9/3/2022

Type: Primary
BY: Alyssa A. espinoza
Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
Lanthanum PlasmaCal Standard	14019	125	mL	9/3/2022

Final Volume:
mL

Stock Source

Base Units

Amount Added

Analytes

CAS

Conc: **ug/mL**

La

1.0 DESCRIPTION: **PlasmaCAL ICP/ICPMS Standard - Lanthanum 1000 µg/ml**
 Catalogue Number: 140-051-570/-571/-575
 Starting Material: Lanthanum(III) Oxide 99.99+%
 Lot Number: **S201029004**
 Matrix: 4% HNO₃ (See Section 3 for actual matrix)
 Expiration Date (End of month): **November 2022** (or 15 months after bottle is opened, whichever comes first)

2.0 CERTIFIED VALUES AND ASSOCIATED UNCERTAINTY:
 Certified Concentration: **1005 µg/ml +/- 4 µg/ml**
985 µg/g +/- 4 µg/g
 Method of analysis: Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP-AES)
 Traceability: NIST Standard Reference Material 3127a Lot: **151030**

Note: The uncertainty of the certified value has been calculated from applicable uncertainty contributors (u_i) including uncertainty established during characterization of the material (u_{char}), the between bottle variation (u_{bb}), short-term stability (u_{sts}) and long-term stability (u_{lts}) according to the model $u_c = \sqrt{(u_{char}^2 + u_{bb}^2 + u_{sts}^2 + u_{lts}^2)}$. This combined uncertainty has been further multiplied by a coverage factor (k) of 2 to provide a 95% confidence interval.

ID #: 14019
 Opened: _____
 Lanthanum PlasmaCal Standard
Expires: 11/30/2022
 Rec'd: 7/6/2021
 Energv Laboratories Inc 1120 So. 27th Street
 Billings MT 59107

3.0 REFERENCE VALUES:
 Density: **1.020 g/ml @ 23.4 °C**
 Actual Matrix: **4.0% (v/v) HNO₃**

Trace Metal Impurities as tested by ICP-AES:

Element	Conc. (ppm)	Element	Conc. (ppm)	Element	Conc. (ppm)	Element	Conc. (ppm)
Ag	<0.0049	Fe	<0.0102	Nd	<0.1595	Sn	<0.0307
Al	<0.0280	Ga	<0.0260	Ni	<0.0139	Sr	<0.0004
As	<0.0525	Gd	<0.0685	Os	*	Ta	<0.0635
Au	<0.0085	Ge	<0.0548	P	<0.0104	Tb	<0.0146
B	<0.2535	Hf	<0.0339	Pb	<0.2460	Te	<0.4025
Ba	<0.0025	Hg	*	Pd	<0.1410	Th	<0.0471
Be	<0.0022	Ho	<0.0065	Pr	<0.0274	Ti	<0.0013
Bi	<0.0780	In	<0.0105	Pt	<0.0533	Tl	<0.5600
Ca	0.0164	Ir	<0.0243	Rb	*	Tm	<0.0105
Cd	<0.0048	K	<0.0128	Re	<0.0076	U	<0.2490
Ce	<0.0393	La	N/A	Rh	<0.0163	V	<0.0049
Co	<0.0224	Li	<0.0006	Ru	<0.0304	W	<0.0443
Cr	<0.0063	Lu	<0.0021	S	<0.0515	Y	<0.0033
Cs	*	Mg	<0.0045	Sb	<0.0197	Yb	<0.0057
Cu	<0.0040	Mn	<0.0018	Sc	<0.0055	Zn	<0.0045
Dy	<0.0043	Mo	<0.0229	Se	<0.0249	Zr	<0.0061
Er	<0.0070	Na	<0.0038	Si	<0.0455		
Eu	<0.0086	Nb	<0.0112	Sm	<0.1105		

*: Not tested

4.0 APPROVAL AND DATE OF CERTIFICATION:
 Certification Approval: Daniel Boisvert, Chemist
 Certification Date: November 04, 2020

Daniel Boisvert

5.0 INTENDED USE / UTILISATION PRÉVUE:

- ICP Standards: For the calibration of, including but not limited to: ICP-AES, ICP-MS, FAAS, GFAA, XRF and DCP. / *Étalons ICP : Pour l'étalonnage d'instruments de mesure tels que: ICP-AES, ICP-MS, FAAS, GFAA, XRF et DCP.*
 - AA Standards: For the calibration of Flame (FAAS) and Graphite Furnace (GFAA) Atomic Absorption Spectrometers. / *Étalons AA : Pour l'étalonnage de spectromètres d'absorption atomique flamme (FAAS) et four au graphite (GFAA).*
 - Matrix Modifiers: For the optimization of analytical conditions to provide better Graphite Furnace Atomic Absorption (GFAA) instrument response and improved detection limits. / *Modificateur de matrice : Pour l'optimisation des conditions analytiques afin de fournir des meilleurs réponses instrumentales et limites de détection pour SAA four au graphite.*
 - pH Standards: For the calibrating pH meters or for other wet chemistry applications. / *Étalons pH : Pour étalonnage de pH mètres et autres applications de chimie humide.*
 - Conductivity Standards: For electrolytic conductivity measurement as a calibration standard. / *Étalons de conductivité : Comme étalon pour les mesures de conductivité électrolytiques.*
 - IC Standards: for calibration of, but not limited to IC, HPLC, TLC, ISE, IR, NMR, MS, UV/VIS or other wet chemistry applications. / *Étalons IC : Pour étalonnage d'instruments tels que : IC, HPLC, TLC, ISE, IR, NMR, MS, UV/VIS et autres applications de chimie humide.*
- For any inquiries, please contact **SCP SCIENCE**. / *Pour toute question, veuillez contacter SCP SCIENCE.*

6.0 INSTRUCTIONS FOR USE / INSTRUCTIONS D'UTILISATION:

Handling and Storage / Manutention et entreposage: Keep product tightly capped when not in use. The solution should be opened for a minimum amount of time necessary to dispense the amount required. Do not pipet or use directly from container. Do not return unused portions back to container. Store under normal laboratory conditions. Avoid exposure to excessive sources of heat and humidity or direct sunlight. / *Garder les contenants bien fermés lorsque non utilisés. Le contenant devrait être ouvert seulement pour le temps requis afin de prélever la quantité nécessaire. Ne pas pipetter ou utiliser directement du contenant. Ne pas retourner les portions non-utilisées dans le contenant. Conserver dans des conditions normales de laboratoire. Éviter l'exposition à des sources de chaleur et d'humidité excessives ou à l'exposition solaire directe.*

Stability / Stabilité: This Standard is guaranteed to be stable and accurate to within the specified uncertainty of measurement up to the unopened expiry date, if sealed, or up to the opened expiry date (when indicated), whichever comes first, provided the solution is kept tightly capped and stored under the indicated storage conditions. Purchasers will be notified of any significant changes resulting in re-certification or withdrawal of the product prior to the expiration date. / *La stabilité et l'exactitude de cet étalon sont garanties d'être à l'intérieur de l'incertitude de mesure, jusqu'à la date d'expiration de la bouteille non-ouverte, si scellée, ou jusqu'à la date d'expiration de la bouteille ouverte (si indiquée), en présupant que le contenant est maintenu fermé et gardé dans les conditions d'entreposage indiquées. Les acheteurs seront avisés dans le cas où il y aura des changements significatifs nécessitant une re-certification ou un rappel du produit avant la date d'expiration.*

7.0 HAZARDOUS INFORMATION / INFORMATION SUR LES RISQUES POTENTIELS:

Please refer to the associated Safety Data Sheet (SDS) for information regarding this product (available at www.SCPSCIENCE.com). / *SVP vous référer à la Fiche Signalétique applicable pour de l'information sur ce produit (Disponible à www.SCPSCIENCE.com).*

8.0 HOMOGENEITY / HOMOGÉNÉITÉ:

This solution has been blended according to an in-house procedure and its homogeneity is guaranteed to be fit for purpose when a sample size sufficient for the intended method of analysis is used. / *Cette solution a été préparée selon une procédure maison et nous assurons que sa homogénéité est approprié à l'emploi lorsqu'un échantillon suffisant pour la méthode d'analyse prévue est utilisé.*

9.0 TRACEABILITY / TRAÇABILITÉ:

This CRM (Certified Reference Material) is traceable to the NIST SRM (Standard Reference Material) indicated in section 2 through an unbroken chain of comparisons. In addition, balances used are regularly calibrated using weights which are traceable to NIST (National Institute of Standards and Technology) or NRC (National Research Council of Canada) standards. All conductivity meters used to analyze this standard have been regularly calibrated using a NIST or NRC traceable Thermometer and standards. All pH meters used to analyze this standard have been regularly calibrated using a NIST or NRC traceable thermometer and pH/MV simulator. / *Ce matériel de référence certifié est traçable au Matériel de Référence Standardisé de NIST indiqué à la section 2 par une chaîne de comparaison ininterrompue. De plus, les balances utilisées sont étalonnées régulièrement en utilisant des poids qui sont traçables au NIST (National Institute of Standards and Technology) ou au CRNC (Conseil National de Recherches Canada). Tout conductimètre utilisé afin d'analyser cet étalon a été sujet à un étalonnage périodique utilisant des thermomètres et étalons traçables au NIST ou CNRC. Tout pH mètre utilisé afin d'analyser cet étalon a été sujet à un étalonnage périodique utilisant des thermomètres et un simulateur pH/MV traçables au NIST ou au CNRC.*

10.0 PREPARATION / PRÉPARATION:

For the preparation of these solutions, 18 meghom/cm double deionized water, high-purity acids and glassware calibrated to ASTM Class A specifications are used. / *Une eau de 18 meghom/cm doublement déionisé, de l'acide de haute pureté, ainsi que de la verrerie étalonnée afin de satisfaire les spécifications Classe A de ASTM ont été utilisés pour la préparation de cet étalon.*

11.0 QUALITY SYSTEM CERTIFICATIONS / CERTIFICATIONS DE SYSTÈME QUALITÉ:

ISO 9001 Certification / Certification ISO 9001: This standard was produced in a facility which operates under a registered ISO 9001 Quality Management System. Please consult our web site for a copy of the most recent revision of our certificate of registration. / *Cet étalon a été fabriqué dans un laboratoire qui utilise un Système de Gestion de la Qualité enregistré à la norme ISO 9001. Veuillez consulter notre site web pour obtenir la version la plus récente de notre certificat d'enregistrement.*

ISO 17025 Accreditation / Accréditation ISO 17025: SCP SCIENCE (Corporate Headquarters) operates an ISO 17025 accredited laboratory. Please consult our web site for a copy of the most recent revision of our certificate and scope of accreditation. / *SCP SCIENCE (Siège social) est accréditée ISO 17025. Veuillez consulter notre site web afin d'obtenir la plus récente version de notre certificat d'accréditation ainsi que la portée de notre accréditation.*

ISO 17034 Accreditation / Accréditation ISO 17034 : SCP SCIENCE (Corporate Headquarters) is an ISO 17034 accredited Reference Material Producer. Please consult our website for a copy of our most recent certificate and scope of accreditation. / *SCP SCIENCE (Siège social) est un Fabricant de Matériaux de Référence Accrédité ISO 17034. Veuillez consulter notre site web afin d'obtenir la plus récente version de notre certificat d'accréditation ainsi que la portée de notre accréditation.*

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GERMANY
Alte Marktoberdorfer Straße 14, 87616
Marktoberdorf
Phone: +49 (0) 8342-89560-61
Fax: +49 (0) 8342-89560-69

Energy Laboratories Inc

Standard LOG

Standard ID: ME210525 CE 2ND SOURCE
Standard Name: Ce Secondary Stock
Date Prepared: 5/25/2021
Date Expires: 5/25/2022
Department: ME
Vendor: SCP Science
Lot Number: S210208003
Balance ID:
Comments: opened 5/25/2021, expires 5/25/2022

Type: Primary
BY: Stacy R. Hendricks
Status: Empty/Disposed

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
ICP/ICPMS Standard Cerium	13642	125	mL	5/25/2022

Final Volume:
125 mL

Stock Source

Base Units

Amount Added

Analytes

CAS

Conc: **ug/mL**

Ce

1.0 DESCRIPTION: *PlasmaCAL ICP/ICPMS Standard - Cerium 1000 µg/ml*
 Catalogue Number: 140-051-580/-581/-585
 Starting Material: Cerium(III) Nitrate Hexahydrate 99.99+%
 Lot Number: **S210208003**
 Matrix: 4% HNO₃ (See Section 3 for actual matrix)
 Expiration Date (End of month): **February 2023** (or 15 months after bottle is opened, whichever comes first)

2.0 CERTIFIED VALUES AND ASSOCIATED UNCERTAINTY:
 Certified Concentration: **1003 µg/ml +/- 4 µg/ml**
982 µg/g +/- 4 µg/g
 Method of analysis: Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP-AES)
 Traceability: NIST Standard Reference Material 3110 Lot: **090504**

Note: The uncertainty of the certified value has been calculated from applicable uncertainty contributors (u_i) including uncertainty established during characterization of the material (u_{char}), the between bottle variation (u_{bb}), short-term stability (u_{sts}) and long-term stability (u_{lts}) according to the model $u_c = \sqrt{(u_{char}^2 + u_{bb}^2 + u_{sts}^2 + u_{lts}^2)}$. This combined uncertainty has been further multiplied by a coverage factor (k) of 2 to provide a 95% confidence interval.

3.0 REFERENCE VALUES:
 Density: **1.021 g/ml @ 22.5 °C**
 Actual Matrix: **4.0% (v/v) HNO₃**

Trace Metal Impurities as tested by ICP-MS:

ID #: 13642
 Opened: _____
 ICP/ICPMS Standard Cerium
Expires: 2/28/2023
 Rec'd: 3/16/2021
 Energy Laboratories Inc 1120 So. 27th Street
 Billings MT 59107

Element	Conc. (ppm)	Element	Conc. (ppm)	Element	Conc. (ppm)	Element	Conc. (ppm)
Ag	<0.0010	Fe	<0.0018	Nd	0.0102	Sn	<0.0010
Al	0.0148	Ga	0.0526	Ni	0.0064	Sr	<0.0025
As	<0.0010	Gd	<0.0010	Os	<0.0010	Ta	<0.0010
Au	<0.0010	Ge	<0.0010	P	<0.0132	Tb	<0.0010
B	<0.0015	Hf	<0.0010	Pb	<0.0010	Te	<0.0010
Ba	<0.0010	Hg	*	Pd	<0.0010	Th	<0.0010
Be	<0.0010	Ho	<0.0010	Pr	0.0235	Ti	<0.0012
Bi	<0.0010	In	<0.0010	Pt	<0.0010	Tl	<0.0011
Ca	0.0375	Ir	<0.0010	Rb	<0.0010	Tm	<0.0010
Cd	<0.0010	K	<0.0024	Re	<0.0010	U	<0.0010
Ce	N/A	La	<0.10	Rh	<0.0010	V	<0.0010
Co	<0.0010	Li	<0.0010	Ru	<0.0010	W	<0.0020
Cr	<0.0010	Lu	<0.0010	S	*	Y	<0.0010
Cs	<0.0010	Mg	<0.0010	Sb	<0.0010	Yb	<0.0010
Cu	0.0121	Mn	<0.0010	Sc	<0.0010	Zn	<0.0010
Dy	<0.0010	Mo	<0.0010	Se	<0.0010	Zr	<0.0010
Er	<0.0010	Na	<0.0010	Si	<0.10		
Eu	0.0035	Nb	<0.0010	Sm	<0.0010		

*: Not tested

4.0 APPROVAL AND DATE OF CERTIFICATION:
 Certification Approval: Yaling Sui, Chemist
 Certification Date: February 22, 2021

Yaling Sui

5.0 INTENDED USE / UTILISATION PRÉVUE:

- ICP Standards: For the calibration of, including but not limited to: ICP-AES, ICP-MS, FAAS, GFAA, XRF and DCP. / *Étalons ICP : Pour l'étalonnage d'instruments de mesure tels que: ICP-AES, ICP-MS, FAAS, GFAA, XRF et DCP.*
 - AA Standards: For the calibration of Flame (FAAS) and Graphite Furnace (GFAA) Atomic Absorption Spectrometers. / *Étalons AA : Pour l'étalonnage de spectromètres d'absorption atomique flamme (FAAS) et four au graphite (GFAA).*
 - Matrix Modifiers: For the optimization of analytical conditions to provide better Graphite Furnace Atomic Absorption (GFAA) instrument response and improved detection limits. / *Modificateur de matrice : Pour l'optimisation des conditions analytiques afin de fournir des meilleures réponses instrumentales et limites de détection pour SAA four au graphite.*
 - pH Standards: For the calibrating pH meters or for other wet chemistry applications. / *Étalons pH : Pour étalonnage de pH mètres et autres applications de chimie humide.*
 - Conductivity Standards: For electrolytic conductivity measurement as a calibration standard. / *Étalons de conductivité : Comme étalon pour les mesures de conductivité électrolytiques.*
 - IC Standards: for calibration of, but not limited to IC, HPLC, TLC, ISE, IR, NMR, MS, UV/VIS or other wet chemistry applications. / *Étalons IC : Pour étalonnage d'instruments tels que : IC, HPLC, TLC, ISE, IR, NMR, MS, UV/VIS et autres applications de chimie humide.*
- For any inquiries, please contact SCP SCIENCE. / *Pour toute question, veuillez contacter SCP SCIENCE.*

6.0 INSTRUCTIONS FOR USE / INSTRUCTIONS D'UTILISATION:

Handling and Storage / Manutention et entreposage: Keep product tightly capped when not in use. The solution should be opened for a minimum amount of time necessary to dispense the amount required. Do not pipet or use directly from container. Do not return unused portions back to container. Store under normal laboratory conditions. Avoid exposure to excessive sources of heat and humidity or direct sunlight. / *Garder les contenants bien fermés lorsque non utilisés. Le contenant devrait être ouvert seulement pour le temps requis afin de prélever la quantité nécessaire. Ne pas pipetter ou utiliser directement du contenant. Ne pas retourner les portions non-utilisées dans le contenant. Conserver dans des conditions normales de laboratoire. Éviter l'exposition à des sources de chaleur et d'humidité excessives ou à l'exposition solaire directe.*

Stability / Stabilité: This Standard is guaranteed to be stable and accurate to within the specified uncertainty of measurement up to the unopened expiry date, if sealed, or up to the opened expiry date (when indicated), whichever comes first, provided the solution is kept tightly capped and stored under the indicated storage conditions. Purchasers will be notified of any significant changes resulting in re-certification or withdrawal of the product prior to the expiration date. / *La stabilité et l'exactitude de cet étalon sont garanties d'être à l'intérieur de l'incertitude de mesure, jusqu'à la date d'expiration de la bouteille non-ouverte, si scellée, ou jusqu'à la date d'expiration de la bouteille ouverte (si indiquée), en présumant que le contenant est maintenu fermé et gardé dans les conditions d'entreposage indiquées. Les acheteurs seront avisés dans le cas où il y aura des changements significatifs nécessitant une re-certification ou un rappel du produit avant la date d'expiration.*

7.0 HAZARDOUS INFORMATION / INFORMATION SUR LES RISQUES POTENTIELS:

Please refer to the associated Safety Data Sheet (SDS) for information regarding this product (available at www.SCPSCIENCE.com). / *SVP vous référer à la Fiche Signalétique applicable pour de l'information sur ce produit (Disponible à www.SCPSCIENCE.com).*

8.0 HOMOGENEITY / HOMOGÉNÉITÉ:

This solution has been blended according to an in-house procedure and its homogeneity is guaranteed to be fit for purpose when a sample size sufficient for the intended method of analysis is used. / *Cette solution a été préparée selon une procédure maison et nous assurons que sa homogénéité est approprié à l'emploi lorsqu'un échantillon suffisant pour la méthode d'analyse prévue est utilisé.*

9.0 TRACEABILITY / TRAÇABILITÉ:

This CRM (Certified Reference Material) is traceable to the NIST SRM (Standard Reference Material) indicated in section 2 through an unbroken chain of comparisons. In addition, balances used are regularly calibrated using weights which are traceable to NIST (National Institute of Standards and Technology) or NRC (National Research Council of Canada) standards. All conductivity meters used to analyze this standard have been regularly calibrated using a NIST or NRC traceable Thermometer and standards. All pH meters used to analyze this standard have been regularly calibrated using a NIST or NRC traceable thermometer and pH/MV simulator. / *Ce matériel de référence certifié est traçable au Matériel de Référence Standardisé de NIST indiqué à la section 2 par une chaîne de comparaison ininterrompue. De plus, les balances utilisées sont étalonnées régulièrement en utilisant des poids qui sont traçables au NIST (National Institute of Standards and Technology) ou au CRNC (Conseil National de Recherches Canada). Tout conductimètre utilisé afin d'analyser cet étalon a été sujet à un étalonnage périodique utilisant des thermomètres et étalons traçables au NIST ou CNRC. Tout pH mètre utilisé afin d'analyser cet étalon a été sujet à un étalonnage périodique utilisant des thermomètres et un simulateur pH/MV traçables au NIST ou au CNRC.*

10.0 PREPARATION / PRÉPARATION:

For the preparation of these solutions, 18 megohm/cm double deionized water, high-purity acids and glassware calibrated to ASTM Class A specifications are used. / *Une eau de 18 megohm/cm doublement déionisée, de l'acide de haute pureté, ainsi que de la verrerie étalonnée afin de satisfaire les spécifications Classe A de ASTM ont été utilisés pour la préparation de cet étalon.*

11.0 QUALITY SYSTEM CERTIFICATIONS / CERTIFICATIONS DE SYSTÈME QUALITÉ:

ISO 9001 Certification / Certification ISO 9001: This standard was produced in a facility which operates under a registered ISO 9001 Quality Management System. Please consult our web site for a copy of the most recent revision of our certificate of registration. / *Cet étalon a été fabriqué dans un laboratoire qui utilise un Système de Gestion de la Qualité enregistré à la norme ISO 9001. Veuillez consulter notre site web pour obtenir la version la plus récente de notre certificat d'enregistrement.*

ISO 17025 Accreditation / Accréditation ISO 17025: SCP SCIENCE (Corporate Headquarters) operates an ISO 17025 accredited laboratory. Please consult our web site for a copy of the most recent revision of our certificate and scope of accreditation. / *SCP SCIENCE (Siège social) est accréditée ISO 17025. Veuillez consulter notre site web afin d'obtenir la plus récente version de notre certificat d'accréditation ainsi que la portée de notre accréditation.*

ISO 17034 Accreditation / Accréditation ISO 17034: SCP SCIENCE (Corporate Headquarters) is an ISO 17034 accredited Reference Material Producer. Please consult our website for a copy of our most recent certificate and scope of accreditation. / *SCP SCIENCE (Siège social) est un Fabricant de Matériaux de Référence Accrédité ISO 17034. Veuillez consulter notre site web afin d'obtenir la plus récente version de notre certificat d'accréditation ainsi que la portée de notre accréditation.*

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Energy Laboratories Inc

Standard LOG

Standard ID: ME210901 ICSAB
 Standard Name: ICSAB
 Date Prepared: 9/1/2021
 Date Expires: 9/1/2022
 Department: ME
 Vendor:
 Lot Number:
 Balance ID:

Type: Secondary
 BY: Cindy Rohrer
 Status: Open

Comments: Made fresh every Monday, Wednesday, and Friday

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Nitric Acid, 69.0-70.0%,0000282671	14178	1	mL	4/11/
Milli-Q H2O	391	46.45	mL	6/1/2
Hydrochloric Acid Instra Analyzed 000	14028	0.5	mL	3/29/

Final Volume: 50 mL

Stock Source

ME210901 6020IC 6020ICS-8A
 ME 210901 6020IC 6020ICS-9B

Base Units

ug/mL
 ug/mL

Amount Added

2 mL
 0.05 mL

Analvtes

CAS

Conc: **mg/L**

Energy Laboratories Inc

Standard LOG

Standard ID: ME 210901 6020ICS-9B
Standard Name: 6020ICS-9B
Date Prepared: 9/1/2021
Date Expires: 9/1/2022
Department: ME
Vendor: Inorganic Ventures
Lot Number: P2-MEB678862
Balance ID:
Comments: Opened 9/1/2021; Expires 9/1/2022

Type: Primary
BY: Alyssa A. espinoza
Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
Multi Analyte Custom Grade Solution	13478	125	mL	9/1/2022

Final Volume:
125 mL

Stock Source

Base Units

Amount Added

Analytes

CAS

Conc: **mg/L**

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: 6020ICS-9B
 Lot Number: P2-MEB678862
 Matrix: 3% (v/v) HNO₃
 Value / Analyte(s):
 20 µg/mL ea:
 Cobalt, Chromium, Copper,
 Manganese, Nickel, Vanadium,
 10 µg/mL ea:
 Zinc, Arsenic, Cadmium,
 Selenium,
 5 µg/mL ea:
 Silver

ID #: 13478
 Opened: _____
 Multi Analyte Custom Grade Solution
 Expires: 5/17/2023
 Rec'd: 1/15/2021
 Energy Laboratories Inc 1120 So. 27th Street
 Billings MT 59107

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Arsenic, As	10.01 ± 0.05 µg/mL	Cadmium, Cd	10.01 ± 0.04 µg/mL
Chromium, Cr	20.02 ± 0.12 µg/mL	Cobalt, Co	20.01 ± 0.10 µg/mL
Copper, Cu	20.02 ± 0.08 µg/mL	Manganese, Mn	20.02 ± 0.09 µg/mL
Nickel, Ni	20.02 ± 0.09 µg/mL	Selenium, Se	10.01 ± 0.06 µg/mL
Silver, Ag	5.005 ± 0.022 µg/mL	Vanadium, V	20.02 ± 0.08 µg/mL
Zinc, Zn	10.01 ± 0.04 µg/mL		

Density: 1.015 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	160729
Ag	Volhard	999c	999c
As	ICP Assay	3103a	100818
As	Calculated		See Sec. 4.2
Cd	ICP Assay	3108	130116
Cd	EDTA	928	928
Co	EDTA	928	928
Co	ICP Assay	traceable to 3113	M2-CO661665
Cr	ICP Assay	3112a	170630
Cu	ICP Assay	3114	121207
Cu	EDTA	928	928
Mn	EDTA	928	928
Mn	ICP Assay	Traceable to 3132	N2-MN665236
Mn	Calculated		See Sec. 4.2
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
Se	ICP Assay	3149	100901
Se	Calculated		See Sec. 4.2
V	EDTA	928	928
V	ICP Assay	3165	992706
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

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

May 17, 2019

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

11.2 Lot Expiration Date

- **May 17, 2023**

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

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

11.3 Period of Validity

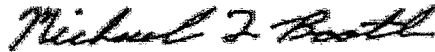
- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Supervisor, Quality Control



Certifying Officer:

Paul Gaines
CEO, Senior Technical Director



Energy Laboratories Inc

Standard LOG

Standard ID: ME220112 SS1
 Standard Name: SS1 ICPMS Spiking Solution
 Date Prepared: 1/12/2022
 Date Expires: 12/8/2022
 Department: ME
 Vendor: Inorganic Ventures
 Lot Number:
 Balance ID:
 Comments:

Type: Secondary
 BY: Stacy R. Hendricks
 Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
Nitric Acid, 69.0-70.0%,0000277202	13781	0.8	mL	1/14/2026
Hydrochloric Acid, 36.5-38.0% 000027567	13784	2	mL	12/15/2025
Milli-Q H2O	391	28.8	mL	6/1/2100

Final Volume:
 40 mL

Stock Source

ME220105 HgPrim Primary Hg Stock 2 PPM
 ME211208 MSCAL MSCAL 2B
 ME211221 MSCAL MSCAL 3C
 ME220110 Ce, La Ce, La Primary

Base Units

ug/mL
 ug/mL
 ug/mL
 ug/mL

Amount Added

2 mL
 2 mL
 2 mL
 2 mL

Analytes

CAS

Conc: **mg/L**

Energy Laboratories Inc

Spike LOG

Standard ID: ME220105 HGPRIMARY
Standard Name: Primary Hg Stock 2 PPM
Date Prepared: 1/5/2022
Date Expires: 12/29/2022
Department: ME
Vendor: Inorganic Ventures
Lot Number:
Balance ID:
Type: Secondary
BY: Amanda E. McDani
Status: Open
Comments: Made with different HG stock than QCS

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
Nitric Acid 69.0- 70.0% D0521	14626	0.5	mL	12/14/2026
Hydrochloric Acid E1421	14721	0.25	mL	1/4/2027

Final Volume:
25 mL

Stock Source

ME220110HG HG Stock
ME211229A AU 2N Au 2nd source Stock

Base Units

ug/mL
ug/mL

Amount Added

0.05 mL
0.05 mL

Analytes

CAS

Conc: ug/mL

Energy Laboratories Inc

Standard LOG

Standard ID: ME220110HG
Standard Name: HG Stock
Date Prepared: 1/10/2022
Date Expires: 1/10/2023
Department: ME
Vendor: SCP Science
Lot Number: S210729017
Balance ID:

Type: Primary
BY: Amanda E. McDani
Status: Open

Comments:

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
ICP/ICPMS Standard Mercury	14711	125	mL	1/10/2023

Final Volume:
125 mL

Stock Source

Base Units

Amount Added

Analytes

CAS

Conc: **ug/mL**

ID #: 14711

Opened: _____

ICP/ICPMS Standard Mercury

Expires: 7/31/2023

Rec'd: 12/29/2021

Energy Laboratories Inc 1120 So. 27th Street
Billings MT 59107

SCP SCIENCE

Providing Innovative Solutions to Analytical Chemists

rtificate of Analysis

Hg

1.0 DESCRIPTION:

PlasmaCAL ICP/ICPMS Standard - Mercury 1000 µg/ml
 Catalogue Number: 140-051-800/-801/-805
 Starting Material: Mercury(II) oxide 99.99+%
 Lot Number: **S210729017**
 Matrix: 10% HNO₃ (See Section 3 for actual matrix)
 Expiration Date (End of month): **July 2023** (or 15 months after bottle is opened, whichever comes first)

2.0 CERTIFIED VALUES AND ASSOCIATED UNCERTAINTY:

Certified Concentration: **999 µg/ml +/- 5 µg/ml**
952 µg/g +/- 5 µg/g
 Method of analysis: Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP-AES)
 Traceability: NIST Standard Reference Material 3133 Lot: **160921**

Note: The uncertainty of the certified value has been calculated from applicable uncertainty contributors (u_i) including uncertainty established during characterization of the material (u_{char}), the between bottle variation (u_{bb}), short-term stability (u_{sts}) and long-term stability (u_{lts}) according to the model $u_c = \sqrt{(u_{char}^2 + u_{bb}^2 + u_{sts}^2 + u_{lts}^2)}$. This combined uncertainty has been further multiplied by a coverage factor (k) of 2 to provide a 95% confidence interval.

3.0 REFERENCE VALUES:

Density: **1.050 g/ml @ 23.6 °C**
 Actual Matrix: **10.0% (v/v) HNO₃**

Trace Metal Impurities as tested by ICP-MS:

Element	Conc. (ppm)	Element	Conc. (ppm)	Element	Conc. (ppm)	Element	Conc. (ppm)
Ag	<0.0010	Fe	0.0322	Nd	<0.0010	Sn	<0.0010
Al	0.0042	Ga	<0.0010	Ni	0.0039	Sr	<0.0025
As	<0.0010	Gd	<0.0010	Os	<0.0010	Ta	<0.0010
Au	<0.0010	Ge	<0.0010	P	<0.0132	Tb	<0.0010
B	<0.0015	Hf	<0.0010	Pb	<0.0010	Te	<0.0010
Ba	<0.0010	Hg	N/A	Pd	<0.0010	Th	<0.0010
Be	<0.0010	Ho	<0.0010	Pr	<0.0010	Ti	<0.0012
Bi	<0.0010	In	<0.0010	Pt	<0.0010	Tl	0.0117
Ca	<0.0135	Ir	<0.0010	Rb	<0.0010	Tm	<0.0010
Cd	<0.0010	K	<0.0024	Re	<0.0010	U	<0.0010
Ce	<0.0010	La	<0.0010	Rh	<0.0010	V	<0.0010
Co	<0.0010	Li	<0.0010	Ru	<0.0010	W	<0.0020
Cr	0.0112	Lu	<0.0010	S	*	Y	<0.0010
Cs	<0.0010	Mg	<0.0010	Sb	<0.0010	Yb	<0.0010
Cu	0.0060	Mn	<0.0010	Sc	<0.0010	Zn	<0.0010
Dy	<0.0010	Mo	<0.0010	Se	<0.0010	Zr	<0.0010
Er	<0.0010	Na	0.0092	Si	<0.1		
Eu	<0.0010	Nb	<0.0010	Sm	<0.0010		

*: Not tested

4.0 APPROVAL AND DATE OF CERTIFICATION:

Certification Approval: Daniel Boisvert, Chemist
 Certification Date: August 12, 2021

Daniel Boisvert

5.0 INTENDED USE / UTILISATION PRÉVUE:

- ICP Standards: For the calibration of, including but not limited to: ICP-AES, ICP-MS, FAAS, GFAA, XRF and DCP. / *Étalons ICP* : Pour l'étalonnage d'instruments de mesure tels que: ICP-AES, ICP-MS, FAAS, GFAA, XRF et DCP.
 - AA Standards: For the calibration of Flame (FAAS) and Graphite Furnace (GFAA) Atomic Absorption Spectrometers. / *Étalons AA* : Pour l'étalonnage de spectromètres d'absorption atomique flamme (GFAA) et four au graphite (GFAA).
 - Matrix Modifiers: For the optimization of analytical conditions to provide better Graphite Furnace Atomic Absorption (GFAA) instrument response and improved detection limits. / *Modificateur de matrice* : Pour l'optimisation des conditions analytiques afin de fournir des meilleures réponses instrumentales et limites de détection pour SAA four au graphite.
 - pH Standards: For the calibrating pH meters or for other wet chemistry applications. / *Étalons pH* : Pour étalonnage de pH mètres et autres applications de chimie humide.
 - Conductivity Standards: For electrolytic conductivity measurement as a calibration standard. / *Étalons de conductivité* : Comme étalon pour les mesures de conductivité électrolytiques.
 - IC Standards: for calibration of, but not limited to IC, HPLC, TLC, ISE, IR, NMR, MS, UV/VIS or other wet chemistry applications. / *Étalons IC* : Pour étalonnage d'instruments tels que : IC, HPLC, TLC, ISE, IR, NMR, MS, UV/VIS et autres applications de chimie humide.
- For any inquiries, please contact **SCP SCIENCE**. / *Pour toute question, veuillez contacter SCP SCIENCE.*

6.0 INSTRUCTIONS FOR USE / INSTRUCTIONS D'UTILISATION:

Handling and Storage / Manutention et entreposage: Keep product tightly capped when not in use. The solution should be opened for a minimum amount of time necessary to dispense the amount required. Do not pipet or use directly from container. Do not return unused portions back to container. Store under normal laboratory conditions. Avoid exposure to excessive sources of heat and humidity or direct sunlight. / *Garder les contenants bien fermés lorsque non utilisés. Le contenant devrait être ouvert seulement pour le temps requis afin de prélever la quantité nécessaire. Ne pas pipetter ou utiliser directement du contenant. Ne pas retourner les portions non-utilisées dans le contenant. Conserver dans des conditions normales de laboratoire. Éviter l'exposition à des sources de chaleur et d'humidité excessives ou à l'exposition solaire directe.*

Stability / Stabilité: This Standard is guaranteed to be stable and accurate to within the specified uncertainty of measurement up to the unopened expiry date, if sealed, or up to the opened expiry date (when indicated), whichever comes first, provided the solution is kept tightly capped and stored under the indicated storage conditions. Purchasers will be notified of any significant changes resulting in re-certification or withdrawal of the product prior to the expiration date. / *La stabilité et l'exactitude de cet étalon sont garanties d'être à l'intérieur de l'incertitude de mesure, jusqu'à la date d'expiration de la bouteille non-ouverte, si scellée, ou jusqu'à la date d'expiration de la bouteille ouverte (si indiquée), en présumant que le contenant est maintenu fermé et gardé dans les conditions d'entreposage indiquées. Les acheteurs seront avisés dans le cas où il y aura des changements significatifs nécessitant une re-certification ou un rappel du produit avant la date d'expiration.*

7.0 HAZARDOUS INFORMATION / INFORMATION SUR LES RISQUES POTENTIELS:

Please refer to the associated Safety Data Sheet (SDS) for information regarding this product (available at www.SCPSCIENCE.com). / *SVP vous référer à la Fiche Signalétique applicable pour de l'information sur ce produit (Disponible à www.SCPSCIENCE.com).*

8.0 HOMOGENEITY / HOMOGÉNÉITÉ:

This solution has been blended according to an in-house procedure and its homogeneity is guaranteed to be fit for purpose when a sample size sufficient for the intended method of analysis is used. / *Cette solution a été préparée selon une procédure maison et nous assurons que sa homogénéité est approprié à l'emploi lorsqu'un échantillon suffisant pour la méthode d'analyse prévue est utilisé.*

9.0 TRACEABILITY / TRAÇABILITÉ:

This CRM (Certified Reference Material) is traceable to the NIST SRM (Standard Reference Material) indicated in section 2 through an unbroken chain of comparisons. In addition, balances used are regularly calibrated using weights which are traceable to NIST (National Institute of Standards and Technology) or NRC (National Research Council of Canada) standards. All conductivity meters used to analyze this standard have been regularly calibrated using a NIST or NRC traceable Thermometer and standards. All pH meters used to analyze this standard have been regularly calibrated using a NIST or NRC traceable thermometer and pH/MV simulator. / *Ce matériel de référence certifié est traçable au Matériel de Référence Standardisé de NIST indiqué à la section 2 par une chaîne de comparaison ininterrompue. De plus, les balances utilisées sont étalonnées régulièrement en utilisant des poids qui sont traçables au NIST (National Institute of Standards and Technology) ou au CRNC (Conseil National de Recherches Canada). Tout conductimètre utilisé afin d'analyser cet étalon a été sujet à un étalonnage périodique utilisant des thermomètres et étalons traçables au NIST ou CNRC. Tout pH mètre utilisé afin d'analyser cet étalon a été sujet à un étalonnage périodique utilisant des thermomètres et un simulateur pH/MV traçables au NIST ou au CNRC.*

10.0 PREPARATION / PRÉPARATION:

For the preparation of these solutions, 18 megohm/cm double deionized water, high-purity acids and glassware calibrated to ASTM Class A specifications are used. / *Une eau de 18 megohm/cm doublement déionisé, de l'acide de haute pureté, ainsi que de la verrerie étalonnée afin de satisfaire les spécifications Classe A de ASTM ont été utilisés pour la préparation de cet étalon.*

11.0 QUALITY SYSTEM CERTIFICATIONS / CERTIFICATIONS DE SYSTÈME QUALITÉ:

ISO 9001 Certification / Certification ISO 9001: This standard was produced in a facility which operates under a registered ISO 9001 Quality Management System. Please consult our web site for a copy of the most recent revision of our certificate of registration. / *Cet étalon a été fabriqué dans un laboratoire qui utilise un Système de Gestion de la Qualité enregistré à la norme ISO 9001. Veuillez consulter notre site web pour obtenir la version la plus récente de notre certificat d'enregistrement.*

ISO 17025 Accreditation / Accréditation ISO 17025: SCP SCIENCE (Corporate Headquarters) operates an ISO 17025 accredited laboratory. Please consult our web site for a copy of the most recent revision of our certificate and scope of accreditation. / *SCP SCIENCE (Siège social) est accréditée ISO 17025. Veuillez consulter notre site web afin d'obtenir la plus récente version de notre certificat d'accréditation ainsi que la portée de notre accréditation.*

ISO 17034 Accreditation / Accréditation ISO 17034 : SCP SCIENCE (Corporate Headquarters) is an ISO 17034 accredited Reference Material Producer. Please consult our website for a copy of our most recent certificate and scope of accreditation. / *SCP SCIENCE (Siège social) est un Fabricant de Matériaux de Référence Accrédité ISO 17034. Veuillez consulter notre site web afin d'obtenir la plus récente version de notre certificat d'accréditation ainsi que la portée de notre accréditation.*

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Marktberdorf
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Fax: +49 (0) 8342-89560-69

Energy Laboratories Inc

Standard LOG

Standard ID: ME211229A AU 2ND SOURCE
Standard Name: Au 2nd source Stock
Date Prepared: 12/29/2021
Date Expires: 12/29/2022
Department: ME
Vendor: SCP Science
Lot Number: S211129013
Balance ID:
Comments: opened 12/29/2021; expires 12/29/2022

Type: Primary
BY: Amanda E. McDani
Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
ICP/ICPMS Standard Gold	14710	500	mL	12/29/2022

Final Volume:
500 mL

Stock Source

Base Units

Amount Added

Analytes

CAS

Conc: **ug/mL**

ID #: 14710

Opened:

ICP/ICPMS Standard Gold

Expires: 12/31/2023

Rec'd: 12/29/2021

Eneray Laboratories Inc 1120 So. 27th Street

Billings MT 59107

SCP SCIENC

Providing Innovative Solutions to Analytical

Certificate of Analysis**Au****1.0 DESCRIPTION:****PlasmaCAL ICP/ICPMS Standard - Gold 1000 µg/ml**

Catalogue Number: 140-052-790/-791/-795

Starting Material: Gold Metal 99.99+%

Lot Number: **S211129013**

Matrix: 10% HCl (See Section 3 for actual matrix)

Expiration Date (End of month): **December 2023** (or 15 months after bottle is opened, whichever comes first)**2.0 CERTIFIED VALUES AND ASSOCIATED UNCERTAINTY:**Certified Concentration: **1001 µg/ml +/- 4 µg/ml****982 µg/g +/- 4 µg/g**

Method of analysis: Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP-AES)

Traceability: NIST Standard Reference Material 3121 Lot: **991806**

Note: The uncertainty of the certified value has been calculated from applicable uncertainty contributors (u_i) including uncertainty established during characterization of the material (u_{char}), the between bottle variation (u_{bb}), short-term stability (u_{sts}) and long-term stability (u_{lts}) according to the model $u_c = \sqrt{(u_{char}^2 + u_{bb}^2 + u_{sts}^2 + u_{lts}^2)}$. This combined uncertainty has been further multiplied by a coverage factor (k) of 2 to provide a 95% confidence interval.

3.0 REFERENCE VALUES:Density: **1.019 g/ml @ 22.4 °C**Actual Matrix: **10.0% (v/v) HCl**

Trace Metal Impurities as tested by ICP-MS:

Element	Conc. (ppm)	Element	Conc. (ppm)	Element	Conc. (ppm)	Element	Conc. (ppm)
Ag	0.3851	Fe	<0.0090	Nd	<0.0010	Sn	<0.0010
Al	0.0062	Ga	<0.0010	Ni	<0.0010	Sr	<0.0025
As	<0.0010	Gd	<0.0010	Os	<0.0010	Ta	<0.0010
Au	N/A	Ge	<0.0010	P	<0.0132	Tb	<0.0010
B	<0.0015	Hf	<0.0010	Pb	<0.0010	Te	<0.0010
Ba	<0.0010	Hg	*	Pd	0.0434	Th	<0.0010
Be	<0.0010	Ho	<0.0010	Pr	<0.0010	Ti	<0.0012
Bi	<0.0010	In	<0.0010	Pt	0.0048	Tl	<0.0011
Ca	<0.0135	Ir	<0.0010	Rb	<0.0010	Tm	<0.0010
Cd	<0.0010	K	0.0362	Re	<0.0010	U	<0.0010
Ce	<0.0010	La	<0.0010	Rh	<0.0010	V	<0.0010
Co	<0.0010	Li	<0.0010	Ru	<0.0010	W	<0.0020
Cr	<0.0010	Lu	<0.0010	S	*	Y	<0.0010
Cs	0.0029	Mg	<0.0010	Sb	<0.0010	Yb	<0.0010
Cu	0.0023	Mn	<0.0010	Sc	<0.0010	Zn	<0.0010
Dy	<0.0010	Mo	<0.0010	Se	<0.01	Zr	<0.0010
Er	<0.0010	Na	0.0070	Si	<0.1		
Eu	<0.0010	Nb	<0.0010	Sm	<0.0010		

*: Not tested

4.0 APPROVAL AND DATE OF CERTIFICATION:

Certification Approval: Daniel Boisvert, Chemist

Certification Date: December 10, 2021

Daniel Boisvert

5.0 INTENDED USE / UTILISATION PRÉVUE:

- ICP Standards: For the calibration of, including but not limited to: ICP-AES, ICP-MS, FAAS, GFAA, XRF and DCP. / *Étalons ICP* : Pour l'étalonnage d'instruments de mesure tels que: ICP-AES, ICP-MS, FAAS, GFAA, XRF et DCP.
 - AA Standards: For the calibration of Flame (FAAS) and Graphite Furnace (GFAA) Atomic Absorption Spectrometers. / *Étalons AA* : Pour l'étalonnage de spectromètres d'absorption atomique flamme (GFAA) et four au graphite (GFAA).
 - Matrix Modifiers: For the optimization of analytical conditions to provide better Graphite Furnace Atomic Absorption (GFAA) instrument response and improved detection limits. / *Modificateur de matrice* : Pour l'optimisation des conditions analytiques afin de fournir des meilleures réponses instrumentales et limites de détection pour SAA four au graphite.
 - pH Standards: For the calibrating pH meters or for other wet chemistry applications. / *Étalons pH* : Pour étalonnage de pH mètres et autres applications de chimie humide.
 - Conductivity Standards: For electrolytic conductivity measurement as a calibration standard. / *Étalons de conductivité* : Comme étalon pour les mesures de conductivité électrolytiques.
 - IC Standards: for calibration of, but not limited to IC, HPLC, TLC, ISE, IR, NMR, MS, UV/VIS or other wet chemistry applications. / *Étalons IC* : Pour étalonnage d'instruments tels que : IC, HPLC, TLC, ISE, IR, NMR, MS, UV/VIS et autres applications de chimie humide.
 For any inquiries, please contact **SCP SCIENCE**. / *Pour toute question, veuillez contacter SCP SCIENCE.*

6.0 INSTRUCTIONS FOR USE / INSTRUCTIONS D'UTILISATION:

Handling and Storage / Manutention et entreposage: Keep product tightly capped when not in use. The solution should be opened for a minimum amount of time necessary to dispense the amount required. Do not pipet or use directly from container. Do not return unused portions back to container. Store under normal laboratory conditions. Avoid exposure to excessive sources of heat and humidity or direct sunlight. / *Garder les contenants bien fermés lorsque non utilisés. Le contenant devrait être ouvert seulement pour le temps requis afin de prélever la quantité nécessaire. Ne pas pipetter ou utiliser directement du contenant. Ne pas retourner les portions non-utilisées dans le contenant. Conserver dans des conditions normales de laboratoire. Éviter l'exposition à des sources de chaleur et d'humidité excessives ou à l'exposition solaire directe.*

Stability / Stabilité: This Standard is guaranteed to be stable and accurate to within the specified uncertainty of measurement up to the unopened expiry date, if sealed, or up to the opened expiry date (when indicated), whichever comes first, provided the solution is kept tightly capped and stored under the indicated storage conditions. Purchasers will be notified of any significant changes resulting in re-certification or withdrawal of the product prior to the expiration date. / *La stabilité et l'exactitude de cet étalon sont garanties d'être à l'intérieur de l'incertitude de mesure, jusqu'à la date d'expiration de la bouteille non-ouverte, si scellée, ou jusqu'à la date d'expiration de la bouteille ouverte (si indiquée), en présumant que le contenant est maintenu fermé et gardé dans les conditions d'entreposage indiquées. Les acheteurs seront avisés dans le cas où il y aura des changements significatifs nécessitant une re-certification ou un rappel du produit avant la date d'expiration.*

7.0 HAZARDOUS INFORMATION / INFORMATION SUR LES RISQUES POTENTIELS:

Please refer to the associated Safety Data Sheet (SDS) for information regarding this product (available at www.SCPSCIENCE.com). / *SVP vous référer à la Fiche Signalétique applicable pour de l'information sur ce produit (Disponible à www.SCPSCIENCE.com).*

8.0 HOMOGENEITY / HOMOGÉNÉITÉ:

This solution has been blended according to an in-house procedure and its homogeneity is guaranteed to be fit for purpose when a sample size sufficient for the intended method of analysis is used. / *Cette solution a été préparée selon une procédure maison et nous assurons que sa homogénéité est approprié à l'emploi lorsqu'un échantillon suffisant pour la méthode d'analyse prévue est utilisé.*

9.0 TRACEABILITY / TRAÇABILITÉ:

This CRM (Certified Reference Material) is traceable to the NIST SRM (Standard Reference Material) indicated in section 2 through an unbroken chain of comparisons. In addition, balances used are regularly calibrated using weights which are traceable to NIST (National Institute of Standards and Technology) or NRC (National Research Council of Canada) standards. All conductivity meters used to analyze this standard have been regularly calibrated using a NIST or NRC traceable Thermometer and standards. All pH meters used to analyze this standard have been regularly calibrated using a NIST or NRC traceable thermometer and pH/MV simulator. / *Ce matériel de référence certifié est traçable au Matériel de Référence Standardisé de NIST indiqué à la section 2 par une chaîne de comparaison ininterrompue. De plus, les balances utilisées sont étalonnées régulièrement en utilisant des poids qui sont traçables au NIST (National Institute of Standards and Technology) ou au CRNC (Conseil National de Recherches Canada). Tout conductimètre utilisé afin d'analyser cet étalon a été sujet à un étalonnage périodique utilisant des thermomètres et étalons traçables au NIST ou CNRC. Tout pH mètre utilisé afin d'analyser cet étalon a été sujet à un étalonnage périodique utilisant des thermomètres et un simulateur pH/MV traçables au NIST ou au CNRC.*

10.0 PREPARATION / PRÉPARATION:

For the preparation of these solutions, 18 megohm/cm double deionized water, high-purity acids and glassware calibrated to ASTM Class A specifications are used. / *Une eau de 18 megohm/cm doublement déionisée, de l'acide de haute pureté, ainsi que de la verrerie étalonnée afin de satisfaire les spécifications Classe A de ASTM ont été utilisés pour la préparation de cet étalon.*

11.0 QUALITY SYSTEM CERTIFICATIONS / CERTIFICATIONS DE SYSTÈME QUALITÉ:

ISO 9001 Certification / Certification ISO 9001: This standard was produced in a facility which operates under a registered ISO 9001 Quality Management System. Please consult our web site for a copy of the most recent revision of our certificate of registration. / *Cet étalon a été fabriqué dans un laboratoire qui utilise un Système de Gestion de la Qualité enregistré à la norme ISO 9001. Veuillez consulter notre site web pour obtenir la version la plus récente de notre certificat d'enregistrement.*

ISO 17025 Accreditation / Accréditation ISO 17025: SCP SCIENCE (Corporate Headquarters) operates an ISO 17025 accredited laboratory. Please consult our web site for a copy of the most recent revision of our certificate and scope of accreditation. / *SCP SCIENCE (Siège social) est accréditée ISO 17025. Veuillez consulter notre site web afin d'obtenir la plus récente version de notre certificat d'accréditation ainsi que la portée de notre accréditation.*

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Marktoberdorf
Phone: +49 (0) 8342-89560-61
Fax: +49 (0) 8342-89560-69

Energy Laboratories Inc

Standard LOG

Standard ID: ME211208 MSCAL2B
Standard Name: MSCAL 2B
Date Prepared: 12/8/2021
Date Expires: 12/8/2022
Department: ME
Vendor: Inorganic Ventures
Lot Number: S2-MEB704403
Balance ID:
Comments: Opened 12/08/2021; Expires 12/08/2022

Type: Primary
BY: Stacy R. Hendricks
Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
Multi Analyte Custom Grade Solution	13793		mL	12/8/2022

Final Volume:
mL

Stock Source

Base Units

Amount Added

Analytes

CAS

Conc: **ug/mL**

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: EL-MSCAL-2B
Lot Number: S2-MEB704403
Matrix: 5% (v/v) HNO3
Value / Analyte(s):
100 µg/mL ea:
Aluminum, Arsenic,
Boron, Barium,
Beryllium, Cadmium,
Cobalt, Chromium,
Copper, Iron,
Manganese, Nickel,
Lead, Selenium,
Strontium, Thorium,
Thallium, Uranium,
Vanadium, Zinc,
40 µg/mL ea:
Silver

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ID #: 13793

Opened: _____

Multi Analyte Custom Grade Solution

Expires: 4/21/2025

Rec'd: 4/29/2021

Energy Laboratories Inc 1120 So. 27th Street
Billings MT 59107

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	100.0 ± 0.4 µg/mL	Arsenic, As	100.0 ± 0.9 µg/mL
Barium, Ba	100.0 ± 0.5 µg/mL	Beryllium, Be	100.0 ± 0.7 µg/mL
Boron, B	100.0 ± 0.7 µg/mL	Cadmium, Cd	100.0 ± 0.5 µg/mL
Chromium, Cr	100.0 ± 0.8 µg/mL	Cobalt, Co	100.0 ± 0.6 µg/mL
Copper, Cu	100.0 ± 0.5 µg/mL	Iron, Fe	100.1 ± 0.4 µg/mL
Lead, Pb	100.0 ± 0.6 µg/mL	Manganese, Mn	100.0 ± 0.5 µg/mL
Nickel, Ni	100.0 ± 0.6 µg/mL	Selenium, Se	100.0 ± 0.7 µg/mL
Silver, Ag	39.99 ± 0.18 µg/mL	Strontium, Sr	100.0 ± 0.4 µg/mL
Thallium, Tl	100.0 ± 0.6 µg/mL	Thorium, Th	100.0 ± 0.5 µg/mL
Uranium, U	100.0 ± 0.5 µg/mL	Vanadium, V	100.0 ± 0.5 µg/mL
Zinc, Zn	100.0 ± 0.5 µg/mL		

Density: 1.033 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	160729
Ag	Volhard	999c	999c
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
As	ICP Assay	3103a	100818
B	ICP Assay	3107	110830
Ba	ICP Assay	3104a	140909
Ba	Gravimetric		See Sec. 4.2
Be	ICP Assay	3105a	090514
Cd	ICP Assay	3108	130116
Cd	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
Fe	Calculated		See Sec. 4.2
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Se	ICP Assay	3149	100901
Se	Calculated		See Sec. 4.2
Sr	EDTA	928	928
Sr	ICP Assay	Traceable to 3153a	K2-SR650985
Sr	Calculated		See Sec. 4.2
Th	EDTA	928	928
Th	Calculated		See Sec. 4.2
Tl	ICP Assay	3158	151215
U	ICP Assay	3164	080521
U	Calculated		See Sec. 4.2
V	ICP Assay	3165	160906
V	EDTA	928	928
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Certified Abundance:

IV's Certified Abundance

Isotope

Uranium 238U

Uranium 235U

Atom %

99.8 ± 0.1

0.24 ± 0.05

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

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

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

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

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

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

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

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

April 21, 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

- **April 21, 2025**

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



Energy Laboratories Inc

Standard LOG

Standard ID: ME211221 MSCAL 3C
Standard Name: MSCAL 3C
Date Prepared: 12/21/2021
Date Expires: 12/21/2022
Department: ME
Vendor: Inorganic Ventures
Lot Number: S2-MEB700780
Balance ID:
Comments: Opened 12/21/21; expires 12/21/22

Type: Primary
BY: Stacy R. Hendricks
Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
Multi Analyte Custom Grade Solution	13473	250	mL	12/21/2022

Final Volume:
250 mL

Stock Source

Base Units

Amount Added

Analytes

CAS

Conc: **ug/mL**

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: EL-MSCAL-3C
 Lot Number: S2-MEB700780
 Matrix: 3% (v/v) HNO₃
 tr. HF
 Value / Analyte(s): 400 µg/mL ea:
 Silicon,
 100 µg/mL ea:
 Tin,
 Molybdenum,

1-6-2025

ID #: 13473

Opened: _____

Multi Analyte Custom Grade Solution

Expires: 1/6/2025

Rec'd: 1/15/2021

Energy Laboratories Inc 1120 So. 27th Street
 Billings MT 59107

Titanium,
 Antimony

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Antimony, Sb	100.0 ± 0.8 µg/mL	Molybdenum, Mo	100.0 ± 0.6 µg/mL
Silicon, Si	399.9 ± 3.0 µg/mL	Tin, Sn	100.0 ± 0.6 µg/mL
Titanium, Ti	100.0 ± 0.7 µg/mL		

Density: 1.018 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Mo	ICP Assay	3134	130418
Sb	ICP Assay	3102a	140911
Si	ICP Assay	3150	130912
Sn	ICP Assay	3161a	140917
Ti	ICP Assay	3162a	130925

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES ($\mu\text{g/mL}$)

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° \pm 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

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- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 06, 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

- **January 06, 2025**

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



Energy Laboratories Inc

Standard LOG

Standard ID: ME220110 CE, LA PRIMARY
Standard Name: Ce, La Primary Type: Secondary
Date Prepared: 1/10/2022 BY: Amanda E. McDani
Date Expires: 1/6/2023
Department: ME Status: Open
Vendor: Inorganic Ventures
Lot Number: M2-CE657768/M2-
Balance ID:
Comments: Used to make standards and spiking solutions; No primary La available

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
Nitric Acid 69.0- 70.0% D0521	14626	0.5	mL	12/14/2026
Milli-Q H2O	391	39.5	mL	6/1/2100

Final Volume:
50 mL

Stock Source

ME220106-CE Ce Primary Stock

Base Units

ug/mL

Amount Added

5 mL

Analytes

CAS

Conc: ug/mL