

# PREP BATCH REPORT

Prep Code: **PRP-3010**  
 Prep Batch **162708** Prep Temp **92.6 °C**

Technician: **Amanda E. McDaniels**  
 Batch Units: **ML**

Prep Start Date: **1/5/2022 8:36:11 AM**  
 Prep End Date: **1/5/2022 4:26:00 PM**

Sample ID	Matrix	pH	Initial Samp Amt	Sol Added	Sol Recovered	Final Vol (mL)	Factor	Balance	Prep Start Date	Prep End Date
MB-162708			50	0	0	50	1		1/5/2022	1/5/2022
	Temp cell A3									
LCS4-162708			50	0	0	50	1		1/5/2022	1/5/2022
B22010141-001B	Ground Water		50	0	0	50	1		1/5/2022	1/5/2022
B22010141-001BMS4			50	0	0	50	1		1/5/2022	1/5/2022
B22010141-001BMSD4			50	0	0	50	1		1/5/2022	1/5/2022
B22010142-001B	Ground Water		50	0	0	50	1		1/5/2022	1/5/2022
B22010143-001B	Ground Water		50	0	0	50	1		1/5/2022	1/5/2022
B22010145-001B	Ground Water		50	0	0	50	1		1/5/2022	1/5/2022
B22010148-001B	Ground Water		50	0	0	50	1		1/5/2022	1/5/2022

Number	Reagent Name	Exp Date	
14344	Hydrochloric Acid, 36.5-38.0% 0000285454	5/10/2026	1 mL
14614	50mL DigiTubes J526127-2104	12/10/2022	
14626	Nitric Acid 69.0- 70.0% D0521	12/14/2026	6 mL

Spk ID	Spike Name	SampType	AmtAdd	Exp Date
ME211124 EL-MS	EL-MSICV-2	LCS4/MS4	0.05 ml	11/24/2022
ME211202 EL200	EL-200.2MS	LCS4/MS4	0.05 mL	12/2/2022
ME211229 AUDI	AUDIGSPK	LCS4/MS4	0.05 ml	10/25/2022



# Energy Laboratories Inc

# ANALYTICAL RUN Summary

26-Jan-22

Run ID ICPMS207-B\_220106A

<b>Run Start Date:</b> 1/6/2022 11:32:27 A
<b>Analyst:</b> Stacy R. Hendricks
<b>Ical:</b> 0
<b>Column ID:</b>
<b>Comments:</b>

Instrument ID	Description
04F07114	Metals 5-50 uL Adjustable Pipette
340760037	Metals 100-1000 uL Adjustable Pipette
340760040	Metals 100-1000 uL Adjustable Pipette
440780018	Metals 1-5 mL Adjustable Pipette
440780025	Metals 1-5 mL Adjustable Pipette
841980007	1000-5000uL Pipette
841980009	1000-5000uL Pipette

Std ID	Std Name	Std Amount	Std Units	Samp Amount	Samp Units	SampType	Expiration Date
ME210106 0.05 PPB STANDA	0.05 ppb Standard						1/7/2022
ME210901 ICSA	ICSA						9/1/2022
ME210901 ICSAB	ICSAB						9/1/2022
ME211006 SS1	SS1 ICPMS Spiking Solution						1/5/2022
ME211117A INTERNAL STAN	Internal Standards 2 mg/L						1/4/2022
ME211206 ICV STANDARD	ICV for ICPMS Standards						4/30/2022
ME211207 2008TS	200.8 Tune Solution						12/7/2022
ME220106 0.025 PPB STAND	0.025 ppb Standard						1/7/2022
ME220106 0.1 PPB STANDAR	0.1 ppb Standard						1/7/2022
ME220106 0.5 PPB STANDAR	0.5 ppb Standard						1/7/2022
ME220106 1 PPB STANDARD	1 PPB STANDARD						1/7/2022
ME220106 10 PPB STANDAR	10 ppb Standard						1/7/2022
ME220106 100 PPB STANDAR	100 ppb Standard						1/7/2022
ME220106 1000 PPB STANDA	1000 PPB Standard						11/18/2022
ME220106 CCV STANDARD	100 ppb Standard						1/7/2022

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968301	Rinse	ICPMS-6020-W- SAMP			1/6/2022 11:32:2	1	R372863		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					
14968302	Rinse	ICPMS-6020-W- SAMP			1/6/2022 11:38:3	1	R372863		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					
14968303	Rinse	ICPMS-6020-W-	SAMP		1/6/2022 11:44:4	1	R372863		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					
14968304	Cal Blk	ICPMS-6020-W-	SAMP		1/6/2022 11:50:5	1	R372863		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	0.00086	0.001	1	0%	0	0	0%	
Antimony	A	mg/L	0	0		0	0	0	0.00042	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	0	0		0	0	0	0.00019	0.001	1	0%	0	0	0%	
Barium	A	mg/L	0	0		0	0	0	0.000042	0.001	1	0%	0	0	0%	
Beryllium	A	mg/L	0	0		0	0	0	0.00012	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0	0		0	0	0	0.000025	0.001	1	0%	0	0	0%	
Calcium	A	mg/L	0	0		0	0	0	0.02092	0.02092	50	0%	0	0	0%	L
Cerium	A	mg/L	0	0		0	0	0	0.000012	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	0	0		0	0	0	0.00018	0.001	1	0%	0	0	0%	
Cobalt	A	mg/L	0	0		0	0	0	0.000042	0.001	1	0%	0	0	0%	
Copper	A	mg/L	0	0		0	0	0	0.00027	0.001	1	0%	0	0	0%	
Iron	A	mg/L	0	0		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Lanthanum	A	mg/L	0	0		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0	0		0	0	0	0.000056	0.001	1	0%	0	0	0%	
Magnesium	A	mg/L	0	0		0	0	0	0.00564	0.00564	50	0%	0	0	0%	L
Manganese	A	mg/L	0	0		0	0	0	0.000095	0.001	1	0%	0	0	0%	
Mercury	A	mg/L	0	0		0	0	0	0.00016	0.001	0.002	0%	0	0	0%	
Molybdenum	A	mg/L	0	0		0	0	0	0.00005	0.001	0.1	0%	0	0	0%	
Nickel	A	mg/L	0	0		0	0	0	0.00063	0.001	1	0%	0	0	0%	
Potassium	A	mg/L	0	0		0	0	0	0.08139	0.08139	50	0%	0	0	0%	L
Selenium	A	mg/L	0	0		0	0	0	0.00033	0.001	1	0%	0	0	0%	
Silicon	A	mg/L	0	0		0	0	0	0.01223	0.1	0.4	0%	0	0	0%	
Silver	A	mg/L	0	0		0	0	0	0.00002	0.001	0.04	0%	0	0	0%	
Sodium	A	mg/L	0	0		0	0	0	0.02171	0.02171	50	0%	0	0	0%	L
Strontium	A	mg/L	0	0		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0	0		0	0	0	0.000041	0.001	1	0%	0	0	0%	
Thorium	A	mg/L	0	0		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Tin	A	mg/L	0	0		0	0	0	0.00132	0.00132	0.1	0%	0	0	0%	
Titanium	A	mg/L	0	0		0	0	0	0.000094	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0	0		0	0	0	0.000052	0.0003	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					
14968304	Cal Blk	ICPMS-6020-W-	SAMP		1/6/2022 11:50:5	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Vanadium	A	mg/L	0	0		0	0	0	0.0013	0.0013	1	0%	0	0	0%	
Zinc	A	mg/L	0	0		0	0	0	0.00273	0.00273	1	0%	0	0	0%	L
Iron, Ferrous	C	mg/L	0	0		0	0	0	0.00119	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					
14968305	0.025 ppb STD	ICPMS-6020B-C	Cal1		1/6/2022 11:58:1	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	-0.0003934	-0.0003934		0	0	0		0.01		0%			0%	
Antimony	A	mg/L	0.0000266	0.0000266		0	0	0		0.001		0%			0%	
Arsenic	A	mg/L	0.00002404	0.00002404		0.000025	0	0		0.001		96%	80	120	0%	
Barium	A	mg/L	0.00001647	0.00001647		0.000025	0	0		0.0003		66%	80	120	0%	S
Beryllium	A	mg/L	0.00002082	0.00002082		0.000025	0	0		0.001		83%	80	120	0%	
Boron	A	mg/L	-0.000283	-0.000283		0	0	0		0.1		0%			0%	
Cadmium	A	mg/L	0.00002787	0.00002787		0.000025	0	0		0.001		111%	80	120	0%	
Calcium	A	mg/L	0.008276	0.008276		0	0	0		1		0%			0%	
Cerium	A	mg/L	0.00002791	0.00002791		0.000025	0	0		0.001		112%	80	120	0%	
Chromium	A	mg/L	0.00002806	0.00002806		0.000025	0	0		0.001		112%	80	120	0%	
Cobalt	A	mg/L	0.00003222	0.00003222		0.000025	0	0		0.001		129%	80	120	0%	S
Copper	A	mg/L	0.0000101	0.0000101		0	0	0		0.005		0%			0%	
Iron	A	mg/L	0.0006508	0.0006508		0	0	0		0.01		0%			0%	
Lanthanum	A	mg/L	0.0000266	0.0000266		0.000025	0	0		0.001		106%	80	120	0%	
Lead	A	mg/L	0.00002304	0.00002304		0.000025	0	0		0.001		92%	80	120	0%	
Lithium	A	mg/L	0.0003378	0.0003378		0.0003125	0	0		1		108%	80	120	0%	
Magnesium	A	mg/L	0.007528	0.007528		0	0	0		1		0%			0%	
Manganese	A	mg/L	0.00003435	0.00003435		0	0	0		0.001		0%			0%	
Mercury	A	mg/L	-8.778E-07	-8.778E-07		0	0	0		0.001		0%			0%	
Molybdenum	A	mg/L	0.00002168	0.00002168		0	0	0		0.001		0%			0%	
Nickel	A	mg/L	0.00005024	0.00005024		0	0	0		0.005		0%			0%	
Potassium	A	mg/L	0.007724	0.007724		0.00625	0	0		1		124%	80	120	0%	S
Selenium	A	mg/L	0.00003411	0.00003411		0.000025	0	0		0.005		136%	80	120	0%	S
Silicon	A	mg/L	0.0006024	0.0006024		0	0	0		0.1		0%			0%	
Silver	A	mg/L	0.0000138	0.0000138		0	0	0		0.001		0%			0%	
Sodium	A	mg/L	0.006665	0.006665		0.00625	0	0		1		107%	80	120	0%	
Strontium	A	mg/L	0.00002862	0.00002862		0	0	0		0.001		0%	80	120	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968305	0.025 ppb STD	ICPMS-6020B-C	Cal1		1/6/2022 11:58:1	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Thallium	A	mg/L	8.477E-06	8.477E-06		0	0	0		0.001		0%			0%	
Thorium	A	mg/L	0.00001777	0.00001777		0	0	0		0.05		0%			0%	
Tin	A	mg/L	0.00007551	0.00007551		0	0	0		0.001		0%			0%	
Titanium	A	mg/L	0.00006571	0.00006571		0	0	0		0.001		0%			0%	
Uranium	A	mg/L	0.00002731	0.00002731		0.000025	0	0		0.001		109%	80	120	0%	
Vanadium	A	mg/L	0.00007584	0.00007584		0	0	0		0.005		0%			0%	
Zinc	A	mg/L	0.0001749	0.0001749		0	0	0		0.01		0%			0%	
Iron, Ferrous	C	mg/L	0.0006508	0.0006508		0.000025	0	0		0.01	5	2603%	80	120	0%	S
Silicon as SiO2	C	mg/L	0.00128914	0.00128914		0.0000535	0	0		0.214	0.9	2410%	80	120	0%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968306	0.05 ppb STD	ICPMS-6020B-C	Cal2		1/6/2022 12:04:4	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	-0.0003781	-0.0003781		0	0	0		0.01		0%			0%	
Antimony	A	mg/L	0.00005538	0.00005538		0.00005	0	0		0.001		111%	80	120	0%	
Arsenic	A	mg/L	0.00005815	0.00005815		0.00005	0	0		0.001		116%	80	120	0%	
Barium	A	mg/L	0.00004408	0.00004408		0.00005	0	0		0.0003		88%	80	120	0%	
Beryllium	A	mg/L	0.00005475	0.00005475		0.00005	0	0		0.001		110%	80	120	0%	
Boron	A	mg/L	-0.0003055	-0.0003055		0	0	0		0.1		0%			0%	
Cadmium	A	mg/L	0.00005767	0.00005767		0.00005	0	0		0.001		115%	80	120	0%	
Calcium	A	mg/L	0.01608	0.01608		0.0125	0	0		1		129%	80	120	0%	S
Cerium	A	mg/L	0.00005776	0.00005776		0.00005	0	0		0.001		116%	80	120	0%	
Chromium	A	mg/L	0.000068	0.000068		0.00005	0	0		0.001		136%	80	120	0%	S
Cobalt	A	mg/L	0.00006345	0.00006345		0	0	0		0.001		0%			0%	
Copper	A	mg/L	0.00005087	0.00005087		0.00005	0	0		0.005		102%	80	120	0%	
Iron	A	mg/L	0.001482	0.001482		0.00125	0	0		0.01		119%	80	120	0%	
Lanthanum	A	mg/L	0.00005549	0.00005549		0.00005	0	0		0.001		111%	80	120	0%	
Lead	A	mg/L	0.00005609	0.00005609		0.00005	0	0		0.001		112%	80	120	0%	
Lithium	A	mg/L	0.0007019	0.0007019		0.000625	0	0		1		112%	80	120	0%	
Magnesium	A	mg/L	0.01597	0.01597		0.0125	0	0		1		128%	80	120	0%	S
Manganese	A	mg/L	0.00006098	0.00006098		0.00005	0	0		0.001		122%	80	120	0%	S
Mercury	A	mg/L	-6.98E-07	-6.98E-07		0	0	0		0.001		0%			0%	
Molybdenum	A	mg/L	0.00005016	0.00005016		0.00005	0	0		0.001		100%	80	120	0%	
Nickel	A	mg/L	0.00008039	0.00008039		0	0	0		0.005		0%			0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968306	0.05 ppb STD	ICPMS-6020B-C	Cal2		1/6/2022 12:04:4	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Potassium	A	mg/L	0.01395	0.01395		0.0125	0	0		1		112%	80	120	0%	
Selenium	A	mg/L	0.00006083	0.00006083		0.00005	0	0		0.005		122%	80	120	0%	S
Silicon	A	mg/L	0.000379	0.000379		0	0	0		0.1		0%			0%	
Silver	A	mg/L	0.00002887	0.00002887		0.00002	0	0		0.001		144%	80	120	0%	S
Sodium	A	mg/L	0.01367	0.01367		0.0125	0	0		1		109%	80	120	0%	
Strontium	A	mg/L	0.0000582	0.0000582		0.00005	0	0		0.001		116%	80	120	0%	
Thallium	A	mg/L	0.00002912	0.00002912		0	0	0		0.001		0%			0%	
Thorium	A	mg/L	0.00004019	0.00004019		0	0	0		0.05		0%			0%	
Tin	A	mg/L	0.0001091	0.0001091		0	0	0		0.001		0%			0%	
Titanium	A	mg/L	0.00007323	0.00007323		0	0	0		0.001		0%			0%	
Uranium	A	mg/L	0.00005658	0.00005658		0.00005	0	0		0.001		113%	80	120	0%	
Vanadium	A	mg/L	0.0000714	0.0000714		0	0	0		0.005		0%			0%	
Zinc	A	mg/L	0.0001042	0.0001042		0	0	0		0.01		0%			0%	
Iron, Ferrous	C	mg/L	0.001482	0.001482		0.00005	0	0		0.01	5	2964%	80	120	0%	S
Silicon as SiO2	C	mg/L	0.00081106	0.00081106		0.00428	0	0		0.214	0.9	19%	80	120	0%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968307	0.10 ppb STD	ICPMS-6020B-C	Cal3		1/6/2022 12:11:2	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	-0.001393	-0.001393		0.0001	0	0		0.01		-1393%	80	120	0%	S
Antimony	A	mg/L	0.0001093	0.0001093		0.0001	0	0		0.001		109%	80	120	0%	
Arsenic	A	mg/L	0.0001191	0.0001191		0.0001	0	0		0.001		119%	80	120	0%	
Barium	A	mg/L	0.0001019	0.0001019		0.0001	0	0		0.0003		102%	80	120	0%	
Beryllium	A	mg/L	0.0001278	0.0001278		0.0001	0	0		0.001		128%	80	120	0%	S
Boron	A	mg/L	-0.0004341	-0.0004341		0	0	0		0.1		0%			0%	
Cadmium	A	mg/L	0.0001167	0.0001167		0.0001	0	0		0.001		117%	80	120	0%	
Calcium	A	mg/L	0.03151	0.03151		0.025	0	0		1		126%	80	120	0%	S
Cerium	A	mg/L	0.0001116	0.0001116		0.0001	0	0		0.001		112%	80	120	0%	
Chromium	A	mg/L	0.0001138	0.0001138		0.0001	0	0		0.001		114%	80	120	0%	
Cobalt	A	mg/L	0.0001229	0.0001229		0.0001	0	0		0.001		123%	80	120	0%	S
Copper	A	mg/L	0.0001038	0.0001038		0.0001	0	0		0.005		104%	80	120	0%	
Iron	A	mg/L	0.003124	0.003124		0.0025	0	0		0.01		125%	80	120	0%	S
Lanthanum	A	mg/L	0.000112	0.000112		0.0001	0	0		0.001		112%	80	120	0%	
Lead	A	mg/L	0.0001081	0.0001081		0.0001	0	0		0.001		108%	80	120	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968307	0.10 ppb STD	ICPMS-6020B-C	Cal3		1/6/2022 12:11:2	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Lithium	A	mg/L	0.001522	0.001522		0.00125	0	0		1		122%	80	120	0%	S
Magnesium	A	mg/L	0.03119	0.03119		0.025	0	0		1		125%	80	120	0%	S
Manganese	A	mg/L	0.0001152	0.0001152		0.0001	0	0		0.001		115%	80	120	0%	
Mercury	A	mg/L	-1.033E-06	-1.033E-06		0.000002	0	0		0.001		-52%	80	120	0%	S
Molybdenum	A	mg/L	0.000108	0.000108		0.0001	0	0		0.001		108%	80	120	0%	
Nickel	A	mg/L	0.0001358	0.0001358		0.0001	0	0		0.005		136%	80	120	0%	S
Potassium	A	mg/L	0.02889	0.02889		0.025	0	0		1		116%	80	120	0%	
Selenium	A	mg/L	0.0001279	0.0001279		0.0001	0	0		0.005		128%	80	120	0%	S
Silicon	A	mg/L	0.0004868	0.0004868		0.0004	0	0		0.1		122%	80	120	0%	S
Silver	A	mg/L	0.00005002	0.00005002		0.00004	0	0		0.001		125%	80	120	0%	S
Sodium	A	mg/L	0.0285	0.0285		0.025	0	0		1		114%	80	120	0%	
Strontium	A	mg/L	0.0001202	0.0001202		0.0001	0	0		0.001		120%	80	120	0%	
Thallium	A	mg/L	0.00008711	0.00008711		0.0001	0	0		0.001		87%	80	120	0%	
Thorium	A	mg/L	0.00008628	0.00008628		0.0001	0	0		0.05		86%	80	120	0%	
Tin	A	mg/L	0.0001545	0.0001545		0.0001	0	0		0.001		155%	80	120	0%	S
Titanium	A	mg/L	0.000128	0.000128		0.0001	0	0		0.001		128%	80	120	0%	S
Uranium	A	mg/L	0.0001117	0.0001117		0.0001	0	0		0.001		112%	80	120	0%	
Vanadium	A	mg/L	0.0001212	0.0001212		0.0001	0	0		0.005		121%	80	120	0%	S
Zinc	A	mg/L	0.0001718	0.0001718		0.0001	0	0		0.01		172%	80	120	0%	S
Iron, Ferrous	C	mg/L	0.003124	0.003124		0.0001	0	0		0.01	5	3124%	80	120	0%	S
Silicon as SiO2	C	mg/L	0.00104175	0.00104175		0.00856	0	0		0.214	0.9	12%	80	120	0%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968308	0.5 ppb STD	ICPMS-6020B-C	Cal4		1/6/2022 12:18:0	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	-0.001038	-0.001038		0.0005	0	0		0.01		-208%	80	120	0%	S
Antimony	A	mg/L	0.000511	0.000511		0.0005	0	0		0.001		102%	80	120	0%	
Arsenic	A	mg/L	0.0005447	0.0005447		0.0005	0	0		0.001		109%	80	120	0%	
Barium	A	mg/L	0.0005348	0.0005348		0.0005	0	0		0.0003		107%	80	120	0%	
Beryllium	A	mg/L	0.000556	0.000556		0.0005	0	0		0.001		111%	80	120	0%	
Boron	A	mg/L	-0.0001219	-0.0001219		0.0005	0	0		0.1		-24%	80	120	0%	S
Cadmium	A	mg/L	0.000541	0.000541		0.0005	0	0		0.001		108%	80	120	0%	
Calcium	A	mg/L	0.1423	0.1423		0.125	0	0		1		114%	80	120	0%	
Cerium	A	mg/L	0.0005362	0.0005362		0.0005	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					
14968308	0.5 ppb STD	ICPMS-6020B-C Cal4			1/6/2022 12:18:0	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Chromium	A	mg/L	0.0005434	0.0005434		0.0005	0	0		0.001		109%	80	120	0%	
Cobalt	A	mg/L	0.0005827	0.0005827		0.0005	0	0		0.001		117%	80	120	0%	
Copper	A	mg/L	0.0005853	0.0005853		0.0005	0	0		0.005		117%	80	120	0%	
Iron	A	mg/L	0.01459	0.01459		0.0125	0	0		0.01		117%	80	120	0%	
Lanthanum	A	mg/L	0.0005328	0.0005328		0.0005	0	0		0.001		107%	80	120	0%	
Lead	A	mg/L	0.0005317	0.0005317		0.0005	0	0		0.001		106%	80	120	0%	
Lithium	A	mg/L	0.006735	0.006735		0.00625	0	0		1		108%	80	120	0%	
Magnesium	A	mg/L	0.141	0.141		0.125	0	0		1		113%	80	120	0%	
Manganese	A	mg/L	0.0005588	0.0005588		0.0005	0	0		0.001		112%	80	120	0%	
Mercury	A	mg/L	0.00001021	0.00001021		0.00001	0	0		0.001		102%	80	120	0%	
Molybdenum	A	mg/L	0.0004812	0.0004812		0.0005	0	0		0.001		96%	80	120	0%	
Nickel	A	mg/L	0.0005796	0.0005796		0.0005	0	0		0.005		116%	80	120	0%	
Potassium	A	mg/L	0.1337	0.1337		0.125	0	0		1		107%	80	120	0%	
Selenium	A	mg/L	0.0005458	0.0005458		0.0005	0	0		0.005		109%	80	120	0%	
Silicon	A	mg/L	0.002173	0.002173		0.002	0	0		0.1		109%	80	120	0%	
Silver	A	mg/L	0.0002144	0.0002144		0.0002	0	0		0.001		107%	80	120	0%	
Sodium	A	mg/L	0.1358	0.1358		0.125	0	0		1		109%	80	120	0%	
Strontium	A	mg/L	0.0005653	0.0005653		0.0005	0	0		0.001		113%	80	120	0%	
Thallium	A	mg/L	0.0004891	0.0004891		0.0005	0	0		0.001		98%	80	120	0%	
Thorium	A	mg/L	0.0004588	0.0004588		0.0005	0	0		0.05		92%	80	120	0%	
Tin	A	mg/L	0.0005637	0.0005637		0.0005	0	0		0.001		113%	80	120	0%	
Titanium	A	mg/L	0.0005157	0.0005157		0.0005	0	0		0.001		103%	80	120	0%	
Uranium	A	mg/L	0.0005223	0.0005223		0.0005	0	0		0.001		104%	80	120	0%	
Vanadium	A	mg/L	0.0005539	0.0005539		0.0005	0	0		0.005		111%	80	120	0%	
Zinc	A	mg/L	0.00068	0.00068		0.0005	0	0		0.01		136%	80	120	0%	S
Iron, Ferrous	C	mg/L	0.01459	0.01459		0.0005	0	0		0.01	5	2918%	80	120	0%	S
Silicon as SiO2	C	mg/L	0.00465022	0.00465022		0.0428	0	0		0.214	0.9	11%	80	120	0%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968309	1 ppb STD	ICPMS-6020B-C Cal5			1/6/2022 12:24:3	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	-0.0003797	-0.0003797		0.001	0	0		0.01		-38%	80	120	0%	S
Antimony	A	mg/L	0.001097	0.001097		0.001	0	0		0.001		110%	80	120	0%	
Arsenic	A	mg/L	0.001195	0.001195		0.001	0	0		0.001		120%	80	120	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968309	1 ppb STD	ICPMS-6020B-C Cal5			1/6/2022 12:24:3	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Barium	A	mg/L	0.001155	0.001155		0.001	0	0		0.0003		116%	80	120	0%	
Beryllium	A	mg/L	0.001174	0.001174		0.001	0	0		0.001		117%	80	120	0%	
Boron	A	mg/L	0.0002566	0.0002566		0.001	0	0		0.1		26%	80	120	0%	S
Cadmium	A	mg/L	0.001137	0.001137		0.001	0	0		0.001		114%	80	120	0%	
Calcium	A	mg/L	0.3025	0.3025		0.25	0	0		1		121%	80	120	0%	S
Cerium	A	mg/L	0.001145	0.001145		0.001	0	0		0.001		115%	80	120	0%	
Chromium	A	mg/L	0.001213	0.001213		0.001	0	0		0.001		121%	80	120	0%	S
Cobalt	A	mg/L	0.001241	0.001241		0.001	0	0		0.001		124%	80	120	0%	S
Copper	A	mg/L	0.001302	0.001302		0.001	0	0		0.005		130%	80	120	0%	S
Iron	A	mg/L	0.0325	0.0325		0.025	0	0		0.01		130%	80	120	0%	S
Lanthanum	A	mg/L	0.00114	0.00114		0.001	0	0		0.001		114%	80	120	0%	
Lead	A	mg/L	0.001113	0.001113		0.001	0	0		0.001		111%	80	120	0%	
Lithium	A	mg/L	0.01435	0.01435		0.0125	0	0		1		115%	80	120	0%	
Magnesium	A	mg/L	0.3207	0.3207		0.25	0	0		1		128%	80	120	0%	S
Manganese	A	mg/L	0.001239	0.001239		0.001	0	0		0.001		124%	80	120	0%	S
Mercury	A	mg/L	0.00001765	0.00001765		0.00002	0	0		0.001		88%	80	120	0%	
Molybdenum	A	mg/L	0.001089	0.001089		0.001	0	0		0.001		109%	80	120	0%	
Nickel	A	mg/L	0.00128	0.00128		0.001	0	0		0.005		128%	80	120	0%	S
Potassium	A	mg/L	0.3032	0.3032		0.25	0	0		1		121%	80	120	0%	S
Selenium	A	mg/L	0.001238	0.001238		0.001	0	0		0.005		124%	80	120	0%	S
Silicon	A	mg/L	0.004647	0.004647		0.004	0	0		0.1		116%	80	120	0%	
Silver	A	mg/L	0.0004603	0.0004603		0.0004	0	0		0.001		115%	80	120	0%	
Sodium	A	mg/L	0.3037	0.3037		0.25	0	0		1		121%	80	120	0%	S
Strontium	A	mg/L	0.001207	0.001207		0.001	0	0		0.001		121%	80	120	0%	S
Thallium	A	mg/L	0.001074	0.001074		0.001	0	0		0.001		107%	80	120	0%	
Thorium	A	mg/L	0.001031	0.001031		0.001	0	0		0.05		103%	80	120	0%	
Tin	A	mg/L	0.00123	0.00123		0.001	0	0		0.001		123%	80	120	0%	S
Titanium	A	mg/L	0.001123	0.001123		0.001	0	0		0.001		112%	80	120	0%	
Uranium	A	mg/L	0.001118	0.001118		0.001	0	0		0.001		112%	80	120	0%	
Vanadium	A	mg/L	0.001176	0.001176		0.001	0	0		0.005		118%	80	120	0%	
Zinc	A	mg/L	0.001473	0.001473		0.001	0	0		0.01		147%	80	120	0%	S
Iron, Ferrous	C	mg/L	0.0325	0.0325		0.001	0	0		0.01	5	3250%	80	120	0%	S
Silicon as SiO2	C	mg/L	0.00994458	0.00994458		0.0856	0	0		0.214	0.9	12%	80	120	0%	S



Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968310	10 ppb STD	ICPMS-6020B-C Cal6			1/6/2022 12:31:1	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.008846	0.008846		0.01	0	0		0.01		88%	90	110	0%	S
Antimony	A	mg/L	0.009962	0.009962		0.01	0	0		0.001		100%	90	110	0%	
Arsenic	A	mg/L	0.01049	0.01049		0.01	0	0		0.001		105%	90	110	0%	
Barium	A	mg/L	0.0109	0.0109		0.01	0	0		0.0003		109%	90	110	0%	
Beryllium	A	mg/L	0.01131	0.01131		0.01	0	0		0.001		113%	90	110	0%	S
Boron	A	mg/L	0.01023	0.01023		0.01	0	0		0.1		102%	90	110	0%	
Cadmium	A	mg/L	0.01054	0.01054		0.01	0	0		0.001		105%	90	110	0%	
Calcium	A	mg/L	2.66	2.66		2.5	0	0		1		106%	90	110	0%	
Cerium	A	mg/L	0.01019	0.01019		0.01	0	0		0.001		102%	90	110	0%	
Chromium	A	mg/L	0.01061	0.01061		0.01	0	0		0.001		106%	90	110	0%	
Cobalt	A	mg/L	0.01089	0.01089		0.01	0	0		0.001		109%	90	110	0%	
Copper	A	mg/L	0.0115	0.0115		0.01	0	0		0.005		115%	90	110	0%	S
Iron	A	mg/L	0.2737	0.2737		0.25	0	0		0.01		109%	90	110	0%	
Lanthanum	A	mg/L	0.01015	0.01015		0.01	0	0		0.001		102%	90	110	0%	
Lead	A	mg/L	0.01037	0.01037		0.01	0	0		0.001		104%	90	110	0%	
Lithium	A	mg/L	0.1365	0.1365		0.125	0	0		1		109%	90	110	0%	
Magnesium	A	mg/L	2.75	2.75		2.5	0	0		1		110%	90	110	0%	
Manganese	A	mg/L	0.01078	0.01078		0.01	0	0		0.001		108%	90	110	0%	
Mercury	A	mg/L	0.0002036	0.0002036		0.0002	0	0		0.001		102%	90	110	0%	
Molybdenum	A	mg/L	0.009939	0.009939		0.01	0	0		0.001		99%	90	110	0%	
Nickel	A	mg/L	0.01108	0.01108		0.01	0	0		0.005		111%	90	110	0%	S
Potassium	A	mg/L	2.69	2.69		2.5	0	0		1		108%	90	110	0%	
Selenium	A	mg/L	0.01083	0.01083		0.01	0	0		0.005		108%	90	110	0%	
Silicon	A	mg/L	0.03981	0.03981		0.04	0	0		0.1		100%	90	110	0%	
Silver	A	mg/L	0.004122	0.004122		0.004	0	0		0.001		103%	90	110	0%	
Sodium	A	mg/L	2.7	2.7		2.5	0	0		1		108%	90	110	0%	
Strontium	A	mg/L	0.01052	0.01052		0.01	0	0		0.001		105%	90	110	0%	
Thallium	A	mg/L	0.01043	0.01043		0.01	0	0		0.001		104%	90	110	0%	
Thorium	A	mg/L	0.01004	0.01004		0.01	0	0		0.05		100%	90	110	0%	
Tin	A	mg/L	0.01004	0.01004		0.01	0	0		0.001		100%	90	110	0%	
Titanium	A	mg/L	0.009702	0.009702		0.01	0	0		0.001		97%	90	110	0%	
Uranium	A	mg/L	0.01041	0.01041		0.01	0	0		0.001		104%	90	110	0%	
Vanadium	A	mg/L	0.01052	0.01052		0.01	0	0		0.005		105%	90	110	0%	
Zinc	A	mg/L	0.01106	0.01106		0.01	0	0		0.01		111%	90	110	0%	S
Iron, Ferrous	C	mg/L	0.2737	0.2737		0.01	0	0		0.01	5	2737%	90	110	0%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968310	10 ppb STD	ICPMS-6020B-C Cal6			1/6/2022 12:31:1	1	R372863		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	0.0851934	0.0851934		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					
14968311	50 ppb STD	ICPMS-6020B-C Cal7			1/6/2022 12:37:4	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.05014	0.05014		0.05	0	0		0.01		100%	90	110	0%	
Antimony	A	mg/L	0.05064	0.05064		0.05	0	0		0.001		101%	90	110	0%	
Arsenic	A	mg/L	0.05413	0.05413		0.05	0	0		0.001		108%	90	110	0%	
Barium	A	mg/L	0.05418	0.05418		0.05	0	0		0.0003		108%	90	110	0%	
Beryllium	A	mg/L	0.05525	0.05525		0.05	0	0		0.001		110%	90	110	0%	
Boron	A	mg/L	0.05296	0.05296		0.05	0	0		0.1		106%	90	110	0%	
Cadmium	A	mg/L	0.05185	0.05185		0.05	0	0		0.001		104%	90	110	0%	
Calcium	A	mg/L	12.32	12.32		12.5	0	0		1		99%	90	110	0%	
Cerium	A	mg/L	0.05057	0.05057		0.05	0	0		0.001		101%	90	110	0%	
Chromium	A	mg/L	0.05372	0.05372		0.05	0	0		0.001		107%	90	110	0%	
Cobalt	A	mg/L	0.05339	0.05339		0.05	0	0		0.001		107%	90	110	0%	
Copper	A	mg/L	0.05682	0.05682		0.05	0	0		0.005		114%	90	110	0%	S
Iron	A	mg/L	1.26	1.26		1.25	0	0		0.01		101%	90	110	0%	
Lanthanum	A	mg/L	0.05065	0.05065		0.05	0	0		0.001		101%	90	110	0%	
Lead	A	mg/L	0.05244	0.05244		0.05	0	0		0.001		105%	90	110	0%	
Lithium	A	mg/L	0.6294	0.6294		0.625	0	0		1		101%	90	110	0%	
Magnesium	A	mg/L	12.55	12.55		12.5	0	0		1		100%	90	110	0%	
Manganese	A	mg/L	0.05361	0.05361		0.05	0	0		0.001		107%	90	110	0%	
Mercury	A	mg/L	0.000975	0.000975		0.001	0	0		0.001		97%	90	110	0%	
Molybdenum	A	mg/L	0.0506	0.0506		0.05	0	0		0.001		101%	90	110	0%	
Nickel	A	mg/L	0.05506	0.05506		0.05	0	0		0.005		110%	90	110	0%	
Potassium	A	mg/L	12.48	12.48		12.5	0	0		1		100%	90	110	0%	
Selenium	A	mg/L	0.05407	0.05407		0.05	0	0		0.005		108%	90	110	0%	
Silicon	A	mg/L	0.2101	0.2101		0.2	0	0		0.1		105%	90	110	0%	
Silver	A	mg/L	0.02029	0.02029		0.02	0	0		0.001		101%	90	110	0%	
Sodium	A	mg/L	12.48	12.48		12.5	0	0		1		100%	90	110	0%	
Strontium	A	mg/L	0.05381	0.05381		0.05	0	0		0.001		108%	90	110	0%	
Thallium	A	mg/L	0.05248	0.05248		0.05	0	0		0.001		105%	90	110	0%	
Thorium	A	mg/L	0.0542	0.0542		0.05	0	0		0.05		108%	90	110	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968311	50 ppb STD	ICPMS-6020B-C Cal7			1/6/2022 12:37:4	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Tin	A	mg/L	0.05341	0.05341		0.05	0	0		0.001		107%	90	110	0%	
Titanium	A	mg/L	0.0509	0.0509		0.05	0	0		0.001		102%	90	110	0%	
Uranium	A	mg/L	0.05241	0.05241		0.05	0	0		0.001		105%	90	110	0%	
Vanadium	A	mg/L	0.05397	0.05397		0.05	0	0		0.005		108%	90	110	0%	
Zinc	A	mg/L	0.05587	0.05587		0.05	0	0		0.01		112%	90	110	0%	S
Iron, Ferrous	C	mg/L	1.26	1.26		0.05	0	0		0.01	5	2520%	90	110	0%	S
Silicon as SiO2	C	mg/L	0.449614	0.449614		4.28	0	0		0.214	0.9	11%	90	110	0%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968312	100 ppb STD	ICPMS-6020B-C Cal8			1/6/2022 12:44:0	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.1029	0.1029		0.1	0	0		0.01		103%	90	110	0%	
Antimony	A	mg/L	0.09968	0.09968		0.1	0	0		0.001		100%	90	110	0%	
Arsenic	A	mg/L	0.1015	0.1015		0.1	0	0		0.001		101%	90	110	0%	
Barium	A	mg/L	0.1082	0.1082		0.1	0	0		0.0003		108%	90	110	0%	
Beryllium	A	mg/L	0.1087	0.1087		0.1	0	0		0.001		109%	90	110	0%	
Boron	A	mg/L	0.1058	0.1058		0.1	0	0		0.1		106%	90	110	0%	
Cadmium	A	mg/L	0.1039	0.1039		0.1	0	0		0.001		104%	90	110	0%	
Calcium	A	mg/L	25.49	25.49		25	0	0		1		102%	90	110	0%	
Cerium	A	mg/L	0.0997	0.0997		0.1	0	0		0.001		100%	90	110	0%	
Chromium	A	mg/L	0.1005	0.1005		0.1	0	0		0.001		100%	90	110	0%	
Cobalt	A	mg/L	0.1028	0.1028		0.1	0	0		0.001		103%	90	110	0%	
Copper	A	mg/L	0.1045	0.1045		0.1	0	0		0.005		104%	90	110	0%	
Iron	A	mg/L	2.621	2.621		2.5	0	0		0.01		105%	90	110	0%	
Lanthanum	A	mg/L	0.09966	0.09966		0.1	0	0		0.001		100%	90	110	0%	
Lead	A	mg/L	0.1032	0.1032		0.1	0	0		0.001		103%	90	110	0%	
Lithium	A	mg/L	1.337	1.337		1.25	0	0		1		107%	90	110	0%	
Magnesium	A	mg/L	25.18	25.18		25	0	0		1		101%	90	110	0%	
Manganese	A	mg/L	0.1015	0.1015		0.1	0	0		0.001		101%	90	110	0%	
Mercury	A	mg/L	0.002012	0.002012		0.002	0	0		0.001		101%	90	110	0%	
Molybdenum	A	mg/L	0.09971	0.09971		0.1	0	0		0.001		100%	90	110	0%	
Nickel	A	mg/L	0.1026	0.1026		0.1	0	0		0.005		103%	90	110	0%	
Potassium	A	mg/L	25.05	25.05		25	0	0		1		100%	90	110	0%	
Selenium	A	mg/L	0.1027	0.1027		0.1	0	0		0.005		103%	90	110	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968312	100 ppb STD	ICPMS-6020B-C Cal8			1/6/2022 12:44:0	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Silicon	A	mg/L	0.395	0.395		0.4	0	0		0.1		99%	90	110	0%	
Silver	A	mg/L	0.03984	0.03984		0.04	0	0		0.001		100%	90	110	0%	
Sodium	A	mg/L	25.02	25.02		25	0	0		1		100%	90	110	0%	
Strontium	A	mg/L	0.09958	0.09958		0.1	0	0		0.001		100%	90	110	0%	
Thallium	A	mg/L	0.1035	0.1035		0.1	0	0		0.001		103%	90	110	0%	
Thorium	A	mg/L	0.1025	0.1025		0.1	0	0		0.05		102%	90	110	0%	
Tin	A	mg/L	0.09829	0.09829		0.1	0	0		0.001		98%	90	110	0%	
Titanium	A	mg/L	0.09958	0.09958		0.1	0	0		0.001		100%	90	110	0%	
Uranium	A	mg/L	0.1047	0.1047		0.1	0	0		0.001		105%	90	110	0%	
Vanadium	A	mg/L	0.1025	0.1025		0.1	0	0		0.005		102%	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	2.621	2.621		0.1	0	0		0.01	5	2621%	90	110	0%	S
Silicon as SiO2	C	mg/L	0.8453	0.8453		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					
14968313	1000 ppb STD	ICPMS-6020B-C Cal10			1/6/2022 12:50:0	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.9997	0.9997		1	0	0		0.01		100%	90	110	0%	
Antimony	A	mg/L	0.0002147	0.0002147		0	0	0		0.001		0%			0%	
Arsenic	A	mg/L	0.9996	0.9996		1	0	0		0.001		100%	90	110	0%	
Barium	A	mg/L	0.999	0.999		1	0	0		0.0003		100%	90	110	0%	
Beryllium	A	mg/L	0.9989	0.9989		1	0	0		0.001		100%	90	110	0%	
Boron	A	mg/L	0.9993	0.9993		1	0	0		0.1		100%	90	110	0%	
Cadmium	A	mg/L	0.9995	0.9995		1	0	0		0.001		100%	90	110	0%	
Calcium	A	mg/L	49.79	49.79		50	0	0		1		100%	90	110	0%	
Cerium	A	mg/L	0.00003794	0.00003794		0	0	0		0.001		0%			0%	
Chromium	A	mg/L	0.9998	0.9998		1	0	0		0.001		100%	90	110	0%	
Cobalt	A	mg/L	0.9995	0.9995		1	0	0		0.001		100%	90	110	0%	
Copper	A	mg/L	0.9992	0.9992		1	0	0		0.005		100%	90	110	0%	
Iron	A	mg/L	5.999	5.999		6	0	0		0.01		100%	90	110	0%	
Lanthanum	A	mg/L	0.00002434	0.00002434		0	0	0		0.001		0%			0%	
Lead	A	mg/L	0.9996	0.9996		1	0	0		0.001		100%	90	110	0%	
Lithium	A	mg/L	2.455	2.455		2.5	0	0		1		98%	90	110	0%	
Magnesium	A	mg/L	49.88	49.88		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					
14968313	1000 ppb STD	ICPMS-6020B-C	Cal10		1/6/2022 12:50:0	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Manganese	A	mg/L	0.9997	0.9997		1	0	0		0.001		100%	90		0%	
Mercury	A	mg/L	0.00001121	0.00001121		0	0	0		0.001		0%			0%	
Molybdenum	A	mg/L	0.0001254	0.0001254		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	49.97	49.97		50	0	0		1		100%	90	110	0%	
Selenium	A	mg/L	0.9995	0.9995		1	0	0		0.005		100%	90	110	0%	
Silicon	A	mg/L	0.002057	0.002057		0	0	0		0.1		0%			0%	
Silver	A	mg/L	0.3706	0.3706		0	0	0		0.001		0%			0%	
Sodium	A	mg/L	49.98	49.98		50	0	0		1		100%	90	110	0%	
Strontium	A	mg/L	0.9998	0.9998		1	0	0		0.001		100%	90	110	0%	
Thallium	A	mg/L	0.9995	0.9995		1	0	0		0.001		100%	90	110	0%	
Thorium	A	mg/L	0.9995	0.9995		1	0	0		0.05		100%	90	110	0%	
Tin	A	mg/L	0.0001972	0.0001972		0	0	0		0.001		0%			0%	
Titanium	A	mg/L	0.004388	0.004388		1	0	0		0.001		0%	90	110	0%	S
Uranium	A	mg/L	0.9994	0.9994		1	0	0		0.001		100%	90	110	0%	
Vanadium	A	mg/L	0.9995	0.9995		1	0	0		0.005		100%	90	110	0%	
Zinc	A	mg/L	0.9995	0.9995		1	0	0		0.01		100%	90	110	0%	
Iron, Ferrous	C	mg/L	5.999	5.999		0	0	0		0.01	5	0%			0%	
Silicon as SiO2	C	mg/L	0.00440198	0.00440198		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					
14968314	100 ppb Br STD	ICPMS-6020-W-	SAMP		1/6/2022 12:55:4	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.0006717	0		0	0	0	0.00086	0.001	1	0%	0	0	0%	
Antimony	A	mg/L	0.00007668	0		0	0	0	0.00042	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	0.0002732	0.0002732		0	0	0	0.00019	0.001	1	0%	0	0	0%	J
Barium	A	mg/L	0.0001653	0.0001653		0	0	0	0.000042	0.001	1	0%	0	0	0%	J
Beryllium	A	mg/L	0.0001839	0.0001839		0	0	0	0.00012	0.001	1	0%	0	0	0%	J
Cadmium	A	mg/L	0.00004436	0.00004436		0	0	0	0.000025	0.001	1	0%	0	0	0%	J
Calcium	A	mg/L	0.04631	0.04631		0	0	0	0.02092	0.02092	50	0%	0	0	0%	D
Cerium	A	mg/L	0.00001758	0.00001758		0	0	0	0.000012	0.001	0.1	0%	0	0	0%	J
Chromium	A	mg/L	0.0001755	0		0	0	0	0.00018	0.001	1	0%	0	0	0%	
Cobalt	A	mg/L	0.00006181	0.00006181		0	0	0	0.000042	0.001	1	0%	0	0	0%	J
Copper	A	mg/L	0.0001247	0		0	0	0	0.00027	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					
14968314	100 ppb Br STD	ICPMS-6020-W-	SAMP		1/6/2022 12:55:4	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Iron	A	mg/L	0.002947	0.002947		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Lanthanum	A	mg/L	0.00000824	0		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.0001031	0.0001031		0	0	0	0.000056	0.001	1	0%	0	0	0%	J
Magnesium	A	mg/L	0.005459	0		0	0	0	0.00564	0.00564	50	0%	0	0	0%	L
Manganese	A	mg/L	0.0001527	0.0001527		0	0	0	0.000095	0.001	1	0%	0	0	0%	J
Mercury	A	mg/L	5.917E-06	0		0	0	0	0.00016	0.001	0.002	0%	0	0	0%	
Molybdenum	A	mg/L	0.000016	0		0	0	0	0.00005	0.001	0.1	0%	0	0	0%	
Nickel	A	mg/L	0.00009395	0		0	0	0	0.00063	0.001	1	0%	0	0	0%	
Potassium	A	mg/L	0.01465	0		0	0	0	0.08139	0.08139	50	0%	0	0	0%	L
Selenium	A	mg/L	0.0002875	0		0	0	0	0.00033	0.001	1	0%	0	0	0%	
Silicon	A	mg/L	0.007936	0		0	0	0	0.01223	0.1	0.4	0%	0	0	0%	
Silver	A	mg/L	0.0003623	0.0003623		0	0	0	0.00002	0.001	0.04	0%	0	0	0%	J
Sodium	A	mg/L	0.02712	0.02712		0	0	0	0.02171	0.02171	50	0%	0	0	0%	D
Strontium	A	mg/L	0.0001046	0		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0005056	0.0005056		0	0	0	0.000041	0.001	1	0%	0	0	0%	J
Thorium	A	mg/L	0.000164	0		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Tin	A	mg/L	0.001319	0		0	0	0	0.00132	0.00132	0.1	0%	0	0	0%	
Titanium	A	mg/L	0.0002076	0.0002076		0	0	0	0.000094	0.001	1	0%	0	0	0%	J
Uranium	A	mg/L	0.00002591	0		0	0	0	0.000052	0.0003	1	0%	0	0	0%	
Vanadium	A	mg/L	0.001049	0		0	0	0	0.0013	0.0013	1	0%	0	0	0%	
Zinc	A	mg/L	0.0007718	0		0	0	0	0.00273	0.00273	1	0%	0	0	0%	L
Iron, Ferrous	C	mg/L	0.002947	0.002947		0	0	0	0.00119	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					
14968315	Rinse	ICPMS-6020-W-	SAMP		1/6/2022 1:02:02	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	-0.0005645	0		0	0	0	0.00086	0.001	1	0%	0	0	0%	
Antimony	A	mg/L	0.00001237	0		0	0	0	0.00042	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	0.000044	0		0	0	0	0.00019	0.001	1	0%	0	0	0%	
Barium	A	mg/L	-7.586E-06	0		0	0	0	0.000042	0.001	1	0%	0	0	0%	
Beryllium	A	mg/L	0.00006347	0		0	0	0	0.00012	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0.00001393	0		0	0	0	0.000025	0.001	1	0%	0	0	0%	
Calcium	A	mg/L	0.0003826	0		0	0	0	0.02092	0.02092	50	0%	0	0	0%	L
Cerium	A	mg/L	8.978E-07	0		0	0	0	0.000012	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					
14968315	Rinse	ICPMS-6020-W-	SAMP		1/6/2022 1:02:02	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Chromium	A	mg/L	8.243E-06	0		0	0	0	0.00018	0.001	1	0%	0	0	0%	
Cobalt	A	mg/L	0.00002217	0		0	0	0	0.000042	0.001	1	0%	0	0	0%	
Copper	A	mg/L	-2.337E-05	0		0	0	0	0.00027	0.001	1	0%	0	0	0%	
Iron	A	mg/L	-0.0001319	0		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Lanthanum	A	mg/L	3.322E-07	0		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.0000349	0		0	0	0	0.000056	0.001	1	0%	0	0	0%	
Magnesium	A	mg/L	0.0007496	0		0	0	0	0.00564	0.00564	50	0%	0	0	0%	L
Manganese	A	mg/L	0.00001729	0		0	0	0	0.000095	0.001	1	0%	0	0	0%	
Mercury	A	mg/L	-4.459E-07	0		0	0	0	0.00016	0.001	0.002	0%	0	0	0%	
Molybdenum	A	mg/L	-1.851E-06	0		0	0	0	0.00005	0.001	0.1	0%	0	0	0%	
Nickel	A	mg/L	0.00002264	0		0	0	0	0.00063	0.001	1	0%	0	0	0%	
Potassium	A	mg/L	0.007181	0		0	0	0	0.08139	0.08139	50	0%	0	0	0%	L
Selenium	A	mg/L	0.00004745	0		0	0	0	0.00033	0.001	1	0%	0	0	0%	
Silicon	A	mg/L	0.00008241	0		0	0	0	0.01223	0.1	0.4	0%	0	0	0%	
Silver	A	mg/L	7.186E-07	0		0	0	0	0.00002	0.001	0.04	0%	0	0	0%	
Sodium	A	mg/L	0.001962	0		0	0	0	0.02171	0.02171	50	0%	0	0	0%	L
Strontium	A	mg/L	0.00001754	0		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0002039	0.0002039		0	0	0	0.000041	0.001	1	0%	0	0	0%	J
Thorium	A	mg/L	0.00001122	0		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Tin	A	mg/L	0.00001881	0		0	0	0	0.00132	0.00132	0.1	0%	0	0	0%	
Titanium	A	mg/L	0.00002113	0		0	0	0	0.000094	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	5.395E-06	0		0	0	0	0.000052	0.0003	1	0%	0	0	0%	
Vanadium	A	mg/L	0.0001014	0		0	0	0	0.0013	0.0013	1	0%	0	0	0%	
Zinc	A	mg/L	0.00003881	0		0	0	0	0.00273	0.00273	1	0%	0	0	0%	L
Iron, Ferrous	C	mg/L	-0.0001319	0		0	0	0	0.00119	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					
14968316	QCS	ICPMS-6020-W-	ICV		1/6/2022 1:08:13	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.2578	0.2578		0.25	0	0	0.00086	0.001	1	103%	90	110	0%	
Antimony	A	mg/L	0.04778	0.04778		0.05	0	0	0.00042	0.001	0.1	96%	90	110	0%	
Arsenic	A	mg/L	0.04842	0.04842		0.05	0	0	0.00019	0.001	1	97%	90	110	0%	
Barium	A	mg/L	0.05094	0.05094		0.05	0	0	0.000042	0.001	1	102%	90	110	0%	
Beryllium	A	mg/L	0.02644	0.02644		0.025	0	0	0.00012	0.001	1	106%	90	110	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968316	QCS	ICPMS-6020-W- ICV			1/6/2022 1:08:13	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Boron	A	mg/L	0.05705	0.05705		0.05	0	0	0.00561	0.00561	1	114%	90	110	0%	S
Cadmium	A	mg/L	0.02491	0.02491		0.025	0	0	0.000025	0.001	1	100%	90	110	0%	
Calcium	A	mg/L	2.598	2.598		2.5	0	0	0.02092	0.02092	50	104%	90	110	0%	
Cerium	A	mg/L	0.04955	0.04955		0.05	0	0	0.000012	0.001	0.1	99%	90	110	0%	
Chromium	A	mg/L	0.05022	0.05022		0.05	0	0	0.00018	0.001	1	100%	90	110	0%	
Cobalt	A	mg/L	0.05076	0.05076		0.05	0	0	0.000042	0.001	1	102%	90	110	0%	
Copper	A	mg/L	0.05386	0.05386		0.05	0	0	0.00027	0.001	1	108%	90	110	0%	
Iron	A	mg/L	0.2531	0.2531		0.25	0	0	0.00119	0.00119	5	101%	90	110	0%	
Lanthanum	A	mg/L	0.04962	0.04962		0.05	0	0	0.000011	0.001	0.1	99%	90	110	0%	
Lead	A	mg/L	0.04814	0.04814		0.05	0	0	0.000056	0.001	1	96%	90	110	0%	
Magnesium	A	mg/L	2.686	2.686		2.5	0	0	0.00564	0.00564	50	107%	90	110	0%	
Manganese	A	mg/L	0.2575	0.2575		0.25	0	0	0.000095	0.001	1	103%	90	110	0%	
Mercury	A	mg/L	0.0009381	0.0009381		0.001	0	0	0.00016	0.001	0.002	94%	90	110	0%	
Molybdenum	A	mg/L	0.04879	0.04879		0.05	0	0	0.00005	0.001	0.1	98%	90	110	0%	
Nickel	A	mg/L	0.05152	0.05152		0.05	0	0	0.00063	0.001	1	103%	90	110	0%	
Potassium	A	mg/L	2.638	2.638		2.5	0	0	0.08139	0.08139	50	106%	90	110	0%	
Selenium	A	mg/L	0.05038	0.05038		0.05	0	0	0.00033	0.001	1	101%	90	110	0%	
Silicon	A	mg/L	0.4905	0.4905		0.5	0	0	0.01223	0.1	0.4	98%	90	110	0%	
Silver	A	mg/L	0.02555	0.02555		0.025	0	0	0.00002	0.001	0.04	102%	90	110	0%	
Sodium	A	mg/L	2.676	2.676		2.5	0	0	0.02171	0.02171	50	107%	90	110	0%	
Strontium	A	mg/L	0.0477	0.0477		0.05	0	0	0.00014	0.001	1	95%	90	110	0%	
Thallium	A	mg/L	0.04547	0.04547		0.05	0	0	0.000041	0.001	1	91%	90	110	0%	
Thorium	A	mg/L	0.04787	0.04787		0.05	0	0	0.00061	0.001	1	96%	90	110	0%	
Tin	A	mg/L	0.04796	0.04796		0.05	0	0	0.00132	0.00132	0.1	96%	90	110	0%	
Titanium	A	mg/L	0.04869	0.04869		0.05	0	0	0.000094	0.001	1	97%	90	110	0%	
Uranium	A	mg/L	0.05088	0.05088		0.05	0	0	0.000052	0.0003	1	102%	90	110	0%	
Vanadium	A	mg/L	0.04996	0.04996		0.05	0	0	0.0013	0.0013	1	100%	90	110	0%	
Zinc	A	mg/L	0.05265	0.05265		0.05	0	0	0.00273	0.00273	1	105%	90	110	0%	
Iron, Ferrous	C	mg/L	0.2531	0.2531		0	0	0	0.00119	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					
14968317	CCV	ICPMS-6020-W- CCV			1/6/2022 1:14:13	1	R372863		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					
14968317	CCV	ICPMS-6020-W-	CCV		1/6/2022 1:14:13	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.05249	0.05249		0.05	0	0	0.00086	0.001	1	105%	90	110	0%	
Antimony	A	mg/L	0.05323	0.05323		0.05	0	0	0.00042	0.001	0.1	106%	90	110	0%	
Arsenic	A	mg/L	0.05286	0.05286		0.05	0	0	0.00019	0.001	1	106%	90	110	0%	
Barium	A	mg/L	0.05429	0.05429		0.05	0	0	0.000042	0.001	1	109%	90	110	0%	
Beryllium	A	mg/L	0.05657	0.05657		0.05	0	0	0.00012	0.001	1	113%	90	110	0%	S
Boron	A	mg/L	0.05767	0.05767		0.05	0	0	0.00561	0.00561	1	115%	90	110	0%	S
Cadmium	A	mg/L	0.05211	0.05211		0.05	0	0	0.000025	0.001	1	104%	90	110	0%	
Calcium	A	mg/L	12.52	12.52		12.5	0	0	0.02092	0.02092	50	100%	90	110	0%	
Cerium	A	mg/L	0.04817	0.04817		0.05	0	0	0.000012	0.001	0.1	96%	90	110	0%	
Chromium	A	mg/L	0.05327	0.05327		0.05	0	0	0.00018	0.001	1	107%	90	110	0%	
Cobalt	A	mg/L	0.05637	0.05637		0.05	0	0	0.000042	0.001	1	113%	90	110	0%	S
Copper	A	mg/L	0.05572	0.05572		0.05	0	0	0.00027	0.001	1	111%	90	110	0%	S
Iron	A	mg/L	1.296	1.296		1.3	0	0	0.00119	0.00119	5	100%	90	110	0%	
Lanthanum	A	mg/L	0.04855	0.04855		0.05	0	0	0.000011	0.001	0.1	97%	90	110	0%	
Lead	A	mg/L	0.05173	0.05173		0.05	0	0	0.000056	0.001	1	103%	90	110	0%	
Magnesium	A	mg/L	12.64	12.64		12.5	0	0	0.00564	0.00564	50	101%	90	110	0%	
Manganese	A	mg/L	0.0535	0.0535		0.05	0	0	0.000095	0.001	1	107%	90	110	0%	
Mercury	A	mg/L	0.0009392	0.0009392		0.001	0	0	0.00016	0.001	0.002	94%	90	110	0%	
Molybdenum	A	mg/L	0.05101	0.05101		0.05	0	0	0.00005	0.001	0.1	102%	90	110	0%	
Nickel	A	mg/L	0.05455	0.05455		0.05	0	0	0.00063	0.001	1	109%	90	110	0%	
Potassium	A	mg/L	12.76	12.76		12.5	0	0	0.08139	0.08139	50	102%	90	110	0%	
Selenium	A	mg/L	0.05232	0.05232		0.05	0	0	0.00033	0.001	1	105%	90	110	0%	
Silicon	A	mg/L	0.2164	0.2164		0.2	0	0	0.01223	0.1	0.4	108%	90	110	0%	
Silver	A	mg/L	0.02025	0.02025		0.02	0	0	0.00002	0.001	0.04	101%	90	110	0%	
Sodium	A	mg/L	12.75	12.75		12.5	0	0	0.02171	0.02171	50	102%	90	110	0%	
Strontium	A	mg/L	0.0521	0.0521		0.05	0	0	0.00014	0.001	1	104%	90	110	0%	
Thallium	A	mg/L	0.04914	0.04914		0.05	0	0	0.000041	0.001	1	98%	90	110	0%	
Thorium	A	mg/L	0.05284	0.05284		0.05	0	0	0.00061	0.001	1	106%	90	110	0%	
Tin	A	mg/L	0.05187	0.05187		0.05	0	0	0.00132	0.00132	0.1	104%	90	110	0%	
Titanium	A	mg/L	0.05595	0.05595		0.05	0	0	0.000094	0.001	1	112%	90	110	0%	S
Uranium	A	mg/L	0.05097	0.05097		0.05	0	0	0.000052	0.0003	1	102%	90	110	0%	
Vanadium	A	mg/L	0.05378	0.05378		0.05	0	0	0.0013	0.0013	1	108%	90	110	0%	
Zinc	A	mg/L	0.0556	0.0556		0.05	0	0	0.00273	0.00273	1	111%	90	110	0%	S
Iron, Ferrous	C	mg/L	1.296	1.296		0	0	0	0.00119	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					
14968318	CCB	ICPMS-6020-W-	CCB		1/6/2022 1:20:11	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.000129	0.000129		0	0	0	0.00086	0.001	1	0%				0%
Antimony	A	mg/L	0.00005593	0.00005593		0	0	0	0.00042	0.001	0.1	0%				0%
Arsenic	A	mg/L	0.00002792	0.00002792		0	0	0	0.00019	0.001	1	0%				0%
Barium	A	mg/L	0.00001535	0.00001535		0	0	0	0.000042	0.001	1	0%				0%
Beryllium	A	mg/L	0.00004426	0.00004426		0	0	0	0.00012	0.001	1	0%				0%
Boron	A	mg/L	0.002343	0.002343		0	0	0	0.00561	0.00561	1	0%				0%
Cadmium	A	mg/L	8.438E-06	8.438E-06		0	0	0	0.000025	0.001	1	0%				0%
Calcium	A	mg/L	0.000574	0.000574		0	0	0	0.02092	0.02092	50	0%				0%
Cerium	A	mg/L	1.286E-06	1.286E-06		0	0	0	0.000012	0.001	0.1	0%	0	0		0%
Chromium	A	mg/L	0.00001568	0.00001568		0	0	0	0.00018	0.001	1	0%				0%
Cobalt	A	mg/L	0.00001363	0.00001363		0	0	0	0.000042	0.001	1	0%				0%
Copper	A	mg/L	-6.399E-06	-6.399E-06		0	0	0	0.00027	0.001	1	0%				0%
Iron	A	mg/L	4.284E-06	4.284E-06		0	0	0	0.00119	0.00119	5	0%				0%
Lanthanum	A	mg/L	1.001E-06	1.001E-06		0	0	0	0.000011	0.001	0.1	0%	0	0		0%
Lead	A	mg/L	0.00003342	0.00003342		0	0	0	0.000056	0.001	1	0%				0%
Magnesium	A	mg/L	0.0008979	0.0008979		0	0	0	0.00564	0.00564	50	0%				0%
Manganese	A	mg/L	0.00001327	0.00001327		0	0	0	0.000095	0.001	1	0%				0%
Mercury	A	mg/L	-3.158E-06	-3.158E-06		0	0	0	0.00016	0.001	0.002	0%				0%
Molybdenum	A	mg/L	0.00001558	0.00001558		0	0	0	0.00005	0.001	0.1	0%				0%
Nickel	A	mg/L	0.00002639	0.00002639		0	0	0	0.00063	0.001	1	0%				0%
Potassium	A	mg/L	0.009584	0.009584		0	0	0	0.08139	0.08139	50	0%				0%
Selenium	A	mg/L	0.00004139	0.00004139		0	0	0	0.00033	0.001	1	0%				0%
Silicon	A	mg/L	0.00006988	0.00006988		0	0	0	0.01223	0.1	0.4	0%	0	0		0%
Silver	A	mg/L	1.451E-06	1.451E-06		0	0	0	0.00002	0.001	0.04	0%				0%
Sodium	A	mg/L	0.002009	0.002009		0	0	0	0.02171	0.02171	50	0%				0%
Strontium	A	mg/L	8.813E-06	8.813E-06		0	0	0	0.00014	0.001	1	0%	0	0		0%
Thallium	A	mg/L	0.0003808	0.0003808		0	0	0	0.000041	0.001	1	0%	0	0		0%
Thorium	A	mg/L	0.00002039	0.00002039		0	0	0	0.00061	0.001	1	0%	0	0		0%
Tin	A	mg/L	0.00002772	0.00002772		0	0	0	0.00132	0.00132	0.1	0%	0	0		0%
Titanium	A	mg/L	8.369E-06	8.369E-06		0	0	0	0.000094	0.001	1	0%	0	0		0%
Uranium	A	mg/L	6.118E-06	6.118E-06		0	0	0	0.000052	0.0003	1	0%	0	0		0%
Vanadium	A	mg/L	0.0001348	0.0001348		0	0	0	0.0013	0.0013	1	0%	0	0		0%
Zinc	A	mg/L	0.00003456	0.00003456		0	0	0	0.00273	0.00273	1	0%	0	0		0%
Iron, Ferrous	C	mg/L	4.284E-06	4.284E-06		0	0	0	0.00119	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					
14968319	Rinse	ICPMS-6020-W-	SAMP		1/6/2022 1:26:22	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.00008068	0		0	0	0	0.00086	0.001	1	0%	0	0	0%	
Antimony	A	mg/L	0.00001384	0		0	0	0	0.00042	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	0.00001894	0		0	0	0	0.00019	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	7.121E-06	0		0	0	0	0.000025	0.001	1	0%	0	0	0%	
Calcium	A	mg/L	0.00004568	0		0	0	0	0.02092	0.02092	50	0%	0	0	0%	L
Cerium	A	mg/L	2.147E-07	0		0	0	0	0.000012	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	0.00001434	0		0	0	0	0.00018	0.001	1	0%	0	0	0%	
Iron	A	mg/L	-0.0001337	0		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Lanthanum	A	mg/L	7.57E-07	0		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.00002175	0		0	0	0	0.000056	0.001	1	0%	0	0	0%	
Magnesium	A	mg/L	0.0003042	0		0	0	0	0.00564	0.00564	50	0%	0	0	0%	L
Manganese	A	mg/L	0.0000088	0		0	0	0	0.000095	0.001	1	0%	0	0	0%	
Mercury	A	mg/L	-7.972E-06	0		0	0	0	0.00016	0.001	0.002	0%	0	0	0%	
Molybdenum	A	mg/L	-6.252E-07	0		0	0	0	0.00005	0.001	0.1	0%	0	0	0%	
Nickel	A	mg/L	0.00001242	0		0	0	0	0.00063	0.001	1	0%	0	0	0%	
Potassium	A	mg/L	0.007345	0		0	0	0	0.08139	0.08139	50	0%	0	0	0%	L
Selenium	A	mg/L	0.00002527	0		0	0	0	0.00033	0.001	1	0%	0	0	0%	
Silicon	A	mg/L	-6.616E-05	0		0	0	0	0.01223	0.1	0.4	0%	0	0	0%	
Silver	A	mg/L	-1.286E-06	0		0	0	0	0.00002	0.001	0.04	0%	0	0	0%	
Sodium	A	mg/L	-0.0003728	0		0	0	0	0.02171	0.02171	50	0%	0	0	0%	L
Strontium	A	mg/L	5.776E-06	0		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0001454	0.0001454		0	0	0	0.000041	0.001	1	0%	0	0	0%	J
Thorium	A	mg/L	7.811E-06	0		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Tin	A	mg/L	0.00001115	0		0	0	0	0.00132	0.00132	0.1	0%	0	0	0%	
Uranium	A	mg/L	3.029E-06	0		0	0	0	0.000052	0.0003	1	0%	0	0	0%	
Vanadium	A	mg/L	0.0001379	0		0	0	0	0.0013	0.0013	1	0%	0	0	0%	
Iron, Ferrous	C	mg/L	-0.0001337	0		0	0	0	0.00119	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					
14968320	LRB	ICPMS-6020-W-	MBLK		1/6/2022 1:32:33	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	-0.001505	0		0	0	0	0.00086	0.001	1	0%	0	0	0%	
Antimony	A	mg/L	7.111E-06	0		0	0	0	0.00042	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	0.00001999	0		0	0	0	0.00019	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					
14968320	LRB	ICPMS-6020-W- MBLK				1/6/2022 1:32:33	1	R372863		0	0					
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Barium	A	mg/L	-1.002E-05	0		0	0	0	0.000042	0.001	1	0%	0	0	0%	
Beryllium	A	mg/L	0.00002828	0		0	0	0	0.00012	0.001	1	0%	0	0	0%	
Boron	A	mg/L	0.0008963	0		0	0	0	0.00561	0.00561	1	0%	0	0	0%	
Cadmium	A	mg/L	0.00001979	0		0	0	0	0.000025	0.001	1	0%	0	0	0%	
Calcium	A	mg/L	0.001289	0		0	0	0	0.02092	0.02092	50	0%	0	0	0%	
Cerium	A	mg/L	2.601E-07	0		0	0	0	0.000012	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	0.00003517	0		0	0	0	0.00018	0.001	1	0%	0	0	0%	
Cobalt	A	mg/L	4.965E-06	0		0	0	0	0.000042	0.001	1	0%	0	0	0%	
Copper	A	mg/L	-3.308E-05	0		0	0	0	0.00027	0.001	1	0%	0	0	0%	
Iron	A	mg/L	-6.835E-05	0		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Lanthanum	A	mg/L	1.963E-07	0		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.0000155	0		0	0	0	0.000056	0.0005	1	0%	0	0	0%	
Magnesium	A	mg/L	0.0005512	0		0	0	0	0.00564	0.00564	50	0%	0	0	0%	
Manganese	A	mg/L	3.705E-06	0		0	0	0	0.000095	0.001	1	0%	0	0	0%	
Mercury	A	mg/L	-4.574E-06	0		0	0	0	0.00016	0.001	0.002	0%	0	0	0%	
Molybdenum	A	mg/L	-4.919E-06	0		0	0	0	0.00005	0.001	0.1	0%	0	0	0%	
Nickel	A	mg/L	0.00002478	0		0	0	0	0.00063	0.001	1	0%	0	0	0%	
Potassium	A	mg/L	0.008372	0		0	0	0	0.08139	0.08139	50	0%	0	0	0%	
Selenium	A	mg/L	0.00001275	0		0	0	0	0.00033	0.001	1	0%	0	0	0%	
Silicon	A	mg/L	0.001482	0		0	0	0	0.01223	0.1	0.4	0%	0	0	0%	
Silver	A	mg/L	-0.0000698	0		0	0	0	0.00002	0.001	0.04	0%	0	0	0%	
Sodium	A	mg/L	0.002242	0		0	0	0	0.02171	0.02171	50	0%	0	0	0%	
Strontium	A	mg/L	5.484E-06	0		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00005222	0.00005222		0	0	0	0.000041	0.001	1	0%	0	0	0%	
Thorium	A	mg/L	4.059E-06	0		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Tin	A	mg/L	-0.0000155	0		0	0	0	0.00132	0.00132	0.1	0%	0	0	0%	
Titanium	A	mg/L	5.681E-06	0		0	0	0	0.000094	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	1.913E-06	0		0	0	0	0.000052	0.0003	1	0%	0	0	0%	
Vanadium	A	mg/L	0.0001369	0		0	0	0	0.0013	0.0013	1	0%	0	0	0%	
Zinc	A	mg/L	0.0001685	0		0	0	0	0.00273	0.00273	1	0%	0	0	0%	
Iron, Ferrous	C	mg/L	-6.835E-05	0		0	0	0	0.00119	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					
14968321	LFB	ICPMS-6020-W-	LFB		1/6/2022 1:38:43	1.03	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.04662	0.0480186		0.05	0	0	0.0008858	0.001	1	96%	85	115	0%	
Antimony	A	mg/L	0.04657	0.0479671		0.05	0	0	0.0004326	0.001	0.1	96%	85	115	0%	
Arsenic	A	mg/L	0.04831	0.0497593		0.05	0	0	0.0001957	0.001	1	100%	85	115	0%	
Barium	A	mg/L	0.04954	0.0510262		0.05	0	0	4.326E-05	0.001	1	102%	85	115	0%	
Beryllium	A	mg/L	0.05079	0.0523137		0.05	0	0	0.0001236	0.001	1	105%	85	115	0%	
Boron	A	mg/L	0.05048	0.0519944		0.05	0	0	0.0057783	0.0057783	1	104%	85	115	0%	
Cadmium	A	mg/L	0.04659	0.0479877		0.05	0	0	2.575E-05	0.001	1	96%	85	115	0%	
Calcium	A	mg/L	47.75	49.1825		50	0	0	0.0215476	0.0215476	50	98%	85	115	0%	
Cerium	A	mg/L	0.04582	0.0471946		0.05	0	0	1.236E-05	0.001	0.1	94%	85	115	0%	
Chromium	A	mg/L	0.0482	0.049646		0.05	0	0	0.0001854	0.001	1	99%	85	115	0%	
Cobalt	A	mg/L	0.04938	0.0508614		0.05	0	0	4.326E-05	0.001	1	102%	85	115	0%	
Copper	A	mg/L	0.05004	0.0515412		0.05	0	0	0.0002781	0.001	1	103%	85	115	0%	
Iron	A	mg/L	4.802	4.94606		5.05	0	0	0.0012257	0.0012257	5	98%	85	115	0%	
Lanthanum	A	mg/L	0.04652	0.0479156		0.05	0	0	1.133E-05	0.001	0.1	96%	85	115	0%	
Lead	A	mg/L	0.04849	0.0499447		0.05	0	0	5.768E-05	0.001	1	100%	88	115	0%	
Magnesium	A	mg/L	48.67	50.1301		50	0	0	0.0058092	0.0058092	50	100%	85	115	0%	
Manganese	A	mg/L	0.04858	0.0500374		0.05	0	0	9.785E-05	0.001	1	100%	85	115	0%	
Mercury	A	mg/L	0.0009528	0.00098138		0.001	0	0	0.0001648	0.001	0.002	98%	85	115	0%	
Molybdenum	A	mg/L	0.04531	0.0466693		0.05	0	0	0.0000515	0.001	0.1	93%	85	115	0%	
Nickel	A	mg/L	0.04872	0.0501816		0.05	0	0	0.0006489	0.001	1	100%	85	115	0%	
Potassium	A	mg/L	48.58	50.0374		50	0	0	0.0838317	0.0838317	50	100%	85	115	0%	
Selenium	A	mg/L	0.04837	0.0498211		0.05	0	0	0.0003399	0.001	1	100%	85	115	0%	
Silicon	A	mg/L	0.1948	0.200644		0.2	0	0	0.0125969	0.1	0.4	100%	85	115	0%	
Silver	A	mg/L	0.01826	0.0188078		0.02	0	0	0.0000206	0.001	0.04	94%	85	115	0%	
Sodium	A	mg/L	48.14	49.5842		50	0	0	0.0223613	0.0223613	50	99%	85	115	0%	
Strontium	A	mg/L	0.04955	0.0510365		0.05	0	0	0.0001442	0.001	1	102%	85	115	0%	
Thallium	A	mg/L	0.04768	0.0491104		0.05	0	0	4.223E-05	0.001	1	98%	85	115	0%	
Thorium	A	mg/L	0.04995	0.0514485		0.05	0	0	0.0006283	0.001	1	103%	85	115	0%	
Tin	A	mg/L	0.04749	0.0489147		0.05	0	0	0.0013596	0.0013596	0.1	98%	85	115	0%	
Titanium	A	mg/L	0.05078	0.0523034		0.05	0	0	9.682E-05	0.001	1	105%	85	115	0%	
Uranium	A	mg/L	0.04988	0.0513764		0.05	0	0	5.356E-05	0.0003	1	103%	85	115	0%	
Vanadium	A	mg/L	0.04903	0.0505009		0.05	0	0	0.001339	0.001339	1	101%	85	115	0%	
Zinc	A	mg/L	0.04871	0.0501713		0.05	0	0	0.0028119	0.0028119	1	100%	85	115	0%	
Iron, Ferrous	C	mg/L	4.802	4.94606		0	0	0	0.0012257	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					
14968322	ICSA	ICPMS-6020-W-	ICSA		1/6/2022 1:44:44	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	43.3	43.3		40	0	0	0.00086	0.001	1	108%	80	120	0%	
Antimony	A	mg/L	0.00008523	0.00008523		0	0	0	0.00042	0.001	0.1	0%			0%	
Arsenic	A	mg/L	0.0001157	0.0001157		0	0	0	0.00019	0.001	1	0%			0%	
Barium	A	mg/L	0.00007039	0.00007039		0	0	0	0.000042	0.001	1	0%			0%	
Beryllium	A	mg/L	0.0000306	0.0000306		0	0	0	0.00012	0.001	1	0%			0%	
Boron	A	mg/L	0.001073	0.001073		0	0	0	0.00561	0.00561	1	0%			0%	
Cadmium	A	mg/L	0.0000727	0.0000727		0	0	0	0.000025	0.001	1	0%			0%	
Calcium	A	mg/L	133.8	133.8		120	0	0	0.02092	0.02092	50	111%	80	120	0%	
Cerium	A	mg/L	3.885E-06	3.885E-06		0	0	0	0.000012	0.001	0.1	0%			0%	
Chromium	A	mg/L	0.001009	0.001009		0	0	0	0.00018	0.001	1	0%			0%	
Cobalt	A	mg/L	0.0003719	0.0003719		0	0	0	0.000042	0.001	1	0%			0%	
Copper	A	mg/L	-1.407E-06	-1.407E-06		0	0	0	0.00027	0.001	1	0%			0%	
Iron	A	mg/L	110.9	110.9		100	0	0	0.00119	0.00119	5	111%	80	120	0%	
Lanthanum	A	mg/L	9.889E-06	9.889E-06		0	0	0	0.000011	0.001	0.1	0%			0%	
Lead	A	mg/L	0.00003325	0.00003325		0	0	0	0.000056	0.001	1	0%			0%	
Magnesium	A	mg/L	44.55	44.55		50	0	0	0.00564	0.00564	50	89%			0%	
Manganese	A	mg/L	0.0002106	0.0002106		0	0	0	0.000095	0.001	1	0%			0%	
Mercury	A	mg/L	-2.684E-06	-2.684E-06		0	0	0	0.00016	0.001	0.002	0%			0%	
Molybdenum	A	mg/L	0.8809	0.8809		0.8	0	0	0.00005	0.001	0.1	110%	80	120	0%	
Nickel	A	mg/L	0.0002247	0.0002247		0	0	0	0.00063	0.001	1	0%			0%	
Potassium	A	mg/L	44.14	44.14		50	0	0	0.08139	0.08139	50	88%			0%	
Selenium	A	mg/L	0.0001402	0.0001402		0	0	0	0.00033	0.001	1	0%			0%	
Silicon	A	mg/L	0.001535	0.001535		0	0	0	0.01223	0.1	0.4	0%			0%	
Silver	A	mg/L	6.031E-06	6.031E-06		0	0	0	0.00002	0.001	0.04	0%			0%	
Sodium	A	mg/L	109.1	109.1		100	0	0	0.02171	0.02171	50	109%			0%	
Strontium	A	mg/L	0.002144	0.002144		0	0	0	0.00014	0.001	1	0%			0%	
Thallium	A	mg/L	0.0001623	0.0001623		0	0	0	0.000041	0.001	1	0%			0%	
Thorium	A	mg/L	0.00003148	0.00003148		0	0	0	0.00061	0.001	1	0%			0%	
Tin	A	mg/L	0.00009383	0.00009383		0	0	0	0.00132	0.00132	0.1	0%			0%	
Titanium	A	mg/L	0.8784	0.8784		0.8	0	0	0.000094	0.001	1	110%			0%	
Uranium	A	mg/L	6.058E-06	6.058E-06		0	0	0	0.000052	0.0003	1	0%			0%	
Vanadium	A	mg/L	-0.0002263	-0.0002263		0	0	0	0.0013	0.0013	1	0%			0%	
Zinc	A	mg/L	0.0003456	0.0003456		0	0	0	0.00273	0.00273	1	0%			0%	
Iron, Ferrous	C	mg/L	110.9	110.9		0	0	0	0.00119	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					
14968323	ICSAB	ICPMS-6020-W- ICSAB			1/6/2022 1:50:53	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	42.12	42.12		40	0	0	0.00086	0.001	1	105%	80	120	0%	
Antimony	A	mg/L	0.00004064	0.00004064		0	0	0	0.00042	0.001	0.1	0%			0%	
Arsenic	A	mg/L	0.01176	0.01176		0.01	0	0	0.00019	0.001	1	118%	80	120	0%	
Barium	A	mg/L	0.00006235	0.00006235		0	0	0	0.000042	0.001	1	0%			0%	
Beryllium	A	mg/L	0.00001234	0.00001234		0	0	0	0.00012	0.001	1	0%			0%	
Boron	A	mg/L	0.0002986	0.0002986		0	0	0	0.00561	0.00561	1	0%			0%	
Cadmium	A	mg/L	0.01069	0.01069		0.01	0	0	0.000025	0.001	1	107%	80	120	0%	
Calcium	A	mg/L	134.5	134.5		120	0	0	0.02092	0.02092	50	112%	80	120	0%	
Cerium	A	mg/L	3.388E-06	3.388E-06		0	0	0	0.000012	0.001	0.1	0%			0%	
Chromium	A	mg/L	0.02372	0.02372		0.02	0	0	0.00018	0.001	1	119%	80	120	0%	
Cobalt	A	mg/L	0.02246	0.02246		0.02	0	0	0.000042	0.001	1	112%	80	120	0%	
Copper	A	mg/L	0.02315	0.02315		0.02	0	0	0.00027	0.001	1	116%	80	120	0%	
Iron	A	mg/L	112.9	112.9		100	0	0	0.00119	0.00119	5	113%	80	120	0%	
Lanthanum	A	mg/L	0.00001095	0.00001095		0	0	0	0.000011	0.001	0.1	0%			0%	
Lead	A	mg/L	0.00003123	0.00003123		0	0	0	0.000056	0.001	1	0%			0%	
Magnesium	A	mg/L	46.21	46.21		40	0	0	0.00564	0.00564	50	116%	80	120	0%	
Manganese	A	mg/L	0.02298	0.02298		0.02	0	0	0.000095	0.001	1	115%	80	120	0%	
Mercury	A	mg/L	-3.23E-06	-3.23E-06		0	0	0	0.00016	0.001	0.002	0%			0%	
Molybdenum	A	mg/L	0.868	0.868		0.8	0	0	0.00005	0.001	0.1	108%	80	120	0%	
Nickel	A	mg/L	0.02295	0.02295		0.02	0	0	0.00063	0.001	1	115%	80	120	0%	
Potassium	A	mg/L	45.94	45.94		40	0	0	0.08139	0.08139	50	115%	80	120	0%	
Selenium	A	mg/L	0.01144	0.01144		0.01	0	0	0.00033	0.001	1	114%	80	120	0%	
Silicon	A	mg/L	0.001514	0.001514		0	0	0	0.01223	0.1	0.4	0%			0%	
Silver	A	mg/L	0.005181	0.005181		0.005	0	0	0.00002	0.001	0.04	104%	80	120	0%	
Sodium	A	mg/L	113.3	113.3		100	0	0	0.02171	0.02171	50	113%	80	120	0%	
Strontium	A	mg/L	0.001424	0.001424		0	0	0	0.00014	0.001	1	0%			0%	
Thallium	A	mg/L	0.00006676	0.00006676		0	0	0	0.000041	0.001	1	0%			0%	
Thorium	A	mg/L	0.00001458	0.00001458		0	0	0	0.00061	0.001	1	0%			0%	
Tin	A	mg/L	0.00007465	0.00007465		0	0	0	0.00132	0.00132	0.1	0%			0%	
Titanium	A	mg/L	0.893	0.893		0.8	0	0	0.000094	0.001	1	112%	80	120	0%	
Uranium	A	mg/L	4.987E-06	4.987E-06		0	0	0	0.000052	0.0003	1	0%			0%	
Vanadium	A	mg/L	0.02296	0.02296		0.02	0	0	0.0013	0.0013	1	115%	80	120	0%	
Zinc	A	mg/L	0.01158	0.01158		0.01	0	0	0.00273	0.00273	1	116%	80	120	0%	
Iron, Ferrous	C	mg/L	112.9	112.9		0	0	0	0.00119	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					
14968324	Rinse	ICPMS-6020-W-	SAMP		1/6/2022 1:57:03	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.0001526	0		0	0	0	0.00086	0.001	1	0%	0	0	0%	
Antimony	A	mg/L	0.00001062	0		0	0	0	0.00042	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	-0.0000207	0		0	0	0	0.00019	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	-2.2E-07	0		0	0	0	0.000025	0.001	1	0%	0	0	0%	
Calcium	A	mg/L	0.002719	0		0	0	0	0.02092	0.02092	50	0%	0	0	0%	L
Cerium	A	mg/L	1.079E-06	0		0	0	0	0.000012	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	-1.88E-07	0		0	0	0	0.00018	0.001	1	0%	0	0	0%	
Iron	A	mg/L	0.002578	0.002578		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Lanthanum	A	mg/L	6.845E-09	0		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.00001104	0		0	0	0	0.000056	0.001	1	0%	0	0	0%	
Magnesium	A	mg/L	0.001209	0		0	0	0	0.00564	0.00564	50	0%	0	0	0%	L
Manganese	A	mg/L	-8.639E-06	0		0	0	0	0.000095	0.001	1	0%	0	0	0%	
Mercury	A	mg/L	-4.664E-06	0		0	0	0	0.00016	0.001	0.002	0%	0	0	0%	
Molybdenum	A	mg/L	0.0001958	0.0001958		0	0	0	0.00005	0.001	0.1	0%	0	0	0%	J
Nickel	A	mg/L	9.751E-06	0		0	0	0	0.00063	0.001	1	0%	0	0	0%	
Potassium	A	mg/L	0.01444	0		0	0	0	0.08139	0.08139	50	0%	0	0	0%	L
Selenium	A	mg/L	0.00000808	0		0	0	0	0.00033	0.001	1	0%	0	0	0%	
Silicon	A	mg/L	-7.452E-05	0		0	0	0	0.01223	0.1	0.4	0%	0	0	0%	
Silver	A	mg/L	-1.73E-06	0		0	0	0	0.00002	0.001	0.04	0%	0	0	0%	
Sodium	A	mg/L	0.02116	0		0	0	0	0.02171	0.02171	50	0%	0	0	0%	L
Strontium	A	mg/L	1.604E-06	0		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00003809	0		0	0	0	0.000041	0.001	1	0%	0	0	0%	
Thorium	A	mg/L	4.967E-06	0		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Tin	A	mg/L	3.784E-06	0		0	0	0	0.00132	0.00132	0.1	0%	0	0	0%	
Uranium	A	mg/L	0.00000209	0		0	0	0	0.000052	0.0003	1	0%	0	0	0%	
Vanadium	A	mg/L	-0.0002212	0		0	0	0	0.0013	0.0013	1	0%	0	0	0%	
Iron, Ferrous	C	mg/L	0.002578	0.002578		0	0	0	0.00119	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					
14968325	Rinse	ICPMS-6020-W-	SAMP		1/6/2022 2:03:12	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	-0.0003269	0		0	0	0	0.00086	0.001	1	0%	0	0	0%	
Antimony	A	mg/L	3.849E-06	0		0	0	0	0.00042	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	-2.321E-05	0		0	0	0	0.00019	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					
14968325	Rinse	ICPMS-6020-W-	SAMP		1/6/2022 2:03:12	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Cadmium	A	mg/L	3.196E-06	0		0	0	0	0.000025	0.001	1	0%	0	0	0%	
Calcium	A	mg/L	0.001139	0		0	0	0	0.02092	0.02092	50	0%	0	0	0%	L
Cerium	A	mg/L	4.109E-08	0		0	0	0	0.000012	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	2.059E-06	0		0	0	0	0.00018	0.001	1	0%	0	0	0%	
Iron	A	mg/L	0.001246	0.001246		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Lanthanum	A	mg/L	-1.108E-07	0		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.00001133	0		0	0	0	0.000056	0.001	1	0%	0	0	0%	
Magnesium	A	mg/L	0.000827	0		0	0	0	0.00564	0.00564	50	0%	0	0	0%	L
Manganese	A	mg/L	-1.003E-05	0		0	0	0	0.000095	0.001	1	0%	0	0	0%	
Mercury	A	mg/L	-7.426E-06	0		0	0	0	0.00016	0.001	0.002	0%	0	0	0%	
Molybdenum	A	mg/L	0.00004942	0		0	0	0	0.00005	0.001	0.1	0%	0	0	0%	
Nickel	A	mg/L	0.00001511	0		0	0	0	0.00063	0.001	1	0%	0	0	0%	
Potassium	A	mg/L	0.009534	0		0	0	0	0.08139	0.08139	50	0%	0	0	0%	L
Selenium	A	mg/L	7.097E-06	0		0	0	0	0.00033	0.001	1	0%	0	0	0%	
Silicon	A	mg/L	-4.964E-05	0		0	0	0	0.01223	0.1	0.4	0%	0	0	0%	
Silver	A	mg/L	-3.284E-06	0		0	0	0	0.00002	0.001	0.04	0%	0	0	0%	
Sodium	A	mg/L	0.01188	0		0	0	0	0.02171	0.02171	50	0%	0	0	0%	L
Strontium	A	mg/L	-3.36E-06	0		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	7.694E-06	0		0	0	0	0.000041	0.001	1	0%	0	0	0%	
Thorium	A	mg/L	2.847E-06	0		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Tin	A	mg/L	-3.123E-07	0		0	0	0	0.00132	0.00132	0.1	0%	0	0	0%	
Uranium	A	mg/L	5.994E-07	0		0	0	0	0.000052	0.0003	1	0%	0	0	0%	
Vanadium	A	mg/L	-0.0002128	0		0	0	0	0.0013	0.0013	1	0%	0	0	0%	
Iron, Ferrous	C	mg/L	0.001246	0.001246		0	0	0	0.00119	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					
14968326	CCV	ICPMS-6020-W-	CCV		1/6/2022 2:09:22	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.05121	0.05121		0.05	0	0	0.00086	0.001	1	102%	90	110	0%	
Antimony	A	mg/L	0.05306	0.05306		0.05	0	0	0.00042	0.001	0.1	106%	90	110	0%	
Arsenic	A	mg/L	0.05319	0.05319		0.05	0	0	0.00019	0.001	1	106%	90	110	0%	
Barium	A	mg/L	0.05535	0.05535		0.05	0	0	0.000042	0.001	1	111%	90	110	0%	S
Beryllium	A	mg/L	0.05355	0.05355		0.05	0	0	0.00012	0.001	1	107%	90	110	0%	
Boron	A	mg/L	0.05179	0.05179		0.05	0	0	0.00561	0.00561	1	104%	90	110	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968326	CCV	ICPMS-6020-W- CCV			1/6/2022 2:09:22	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Cadmium	A	mg/L	0.05313	0.05313		0.05	0	0	0.000025	0.001	1	106%	90	110	0%	
Calcium	A	mg/L	12.51	12.51		12.5	0	0	0.02092	0.02092	50	100%	90	110	0%	
Cerium	A	mg/L	0.04961	0.04961		0.05	0	0	0.000012	0.001	0.1	99%	90	110	0%	
Chromium	A	mg/L	0.05353	0.05353		0.05	0	0	0.00018	0.001	1	107%	90	110	0%	
Cobalt	A	mg/L	0.05325	0.05325		0.05	0	0	0.000042	0.001	1	106%	90	110	0%	
Copper	A	mg/L	0.05625	0.05625		0.05	0	0	0.00027	0.001	1	113%	90	110	0%	S
Iron	A	mg/L	1.311	1.311		1.3	0	0	0.00119	0.00119	5	101%	90	110	0%	
Lanthanum	A	mg/L	0.04889	0.04889		0.05	0	0	0.000011	0.001	0.1	98%	90	110	0%	
Lead	A	mg/L	0.05195	0.05195		0.05	0	0	0.000056	0.001	1	104%	90	110	0%	
Magnesium	A	mg/L	12.58	12.58		12.5	0	0	0.00564	0.00564	50	101%	90	110	0%	
Manganese	A	mg/L	0.05375	0.05375		0.05	0	0	0.000095	0.001	1	107%	90	110	0%	
Mercury	A	mg/L	0.0009322	0.0009322		0.001	0	0	0.00016	0.001	0.002	93%	90	110	0%	
Molybdenum	A	mg/L	0.05351	0.05351		0.05	0	0	0.00005	0.001	0.1	107%	90	110	0%	
Nickel	A	mg/L	0.0547	0.0547		0.05	0	0	0.00063	0.001	1	109%	90	110	0%	
Potassium	A	mg/L	12.66	12.66		12.5	0	0	0.08139	0.08139	50	101%	90	110	0%	
Selenium	A	mg/L	0.05317	0.05317		0.05	0	0	0.00033	0.001	1	106%	90	110	0%	
Silicon	A	mg/L	0.211	0.211		0.2	0	0	0.01223	0.1	0.4	105%	90	110	0%	
Silver	A	mg/L	0.0213	0.0213		0.02	0	0	0.00002	0.001	0.04	106%	90	110	0%	
Sodium	A	mg/L	12.65	12.65		12.5	0	0	0.02171	0.02171	50	101%	90	110	0%	
Strontium	A	mg/L	0.05278	0.05278		0.05	0	0	0.00014	0.001	1	106%	90	110	0%	
Thallium	A	mg/L	0.04964	0.04964		0.05	0	0	0.000041	0.001	1	99%	90	110	0%	
Thorium	A	mg/L	0.05322	0.05322		0.05	0	0	0.00061	0.001	1	106%	90	110	0%	
Tin	A	mg/L	0.05314	0.05314		0.05	0	0	0.00132	0.00132	0.1	106%	90	110	0%	
Titanium	A	mg/L	0.05096	0.05096		0.05	0	0	0.000094	0.001	1	102%	90	110	0%	
Uranium	A	mg/L	0.05182	0.05182		0.05	0	0	0.000052	0.0003	1	104%	90	110	0%	
Vanadium	A	mg/L	0.0542	0.0542		0.05	0	0	0.0013	0.0013	1	108%	90	110	0%	
Zinc	A	mg/L	0.05503	0.05503		0.05	0	0	0.00273	0.00273	1	110%	90	110	0%	
Iron, Ferrous	C	mg/L	1.311	1.311		0	0	0	0.00119	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					
14968327	CCB	ICPMS-6020-W- CCB			1/6/2022 2:15:21	1	R372863		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					
14968327	CCB	ICPMS-6020-W-	CCB		1/6/2022 2:15:21	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.0004766	0.0004766		0	0	0	0.00086	0.001	1	0%				0%
Antimony	A	mg/L	0.00004689	0.00004689		0	0	0	0.00042	0.001	0.1	0%				0%
Arsenic	A	mg/L	8.05E-07	8.05E-07		0	0	0	0.00019	0.001	1	0%				0%
Barium	A	mg/L	1.151E-06	1.151E-06		0	0	0	0.000042	0.001	1	0%				0%
Beryllium	A	mg/L	0.00001553	0.00001553		0	0	0	0.00012	0.001	1	0%				0%
Boron	A	mg/L	0.00004273	0.00004273		0	0	0	0.00561	0.00561	1	0%				0%
Cadmium	A	mg/L	4.058E-06	4.058E-06		0	0	0	0.000025	0.001	1	0%				0%
Calcium	A	mg/L	0.001461	0.001461		0	0	0	0.02092	0.02092	50	0%				0%
Cerium	A	mg/L	8.517E-07	8.517E-07		0	0	0	0.000012	0.001	0.1	0%	0	0		0%
Chromium	A	mg/L	3.519E-06	3.519E-06		0	0	0	0.00018	0.001	1	0%				0%
Cobalt	A	mg/L	2.933E-06	2.933E-06		0	0	0	0.000042	0.001	1	0%				0%
Copper	A	mg/L	5.441E-06	5.441E-06		0	0	0	0.00027	0.001	1	0%				0%
Iron	A	mg/L	0.001214	0.001214		0	0	0	0.00119	0.00119	5	0%				0%
Lanthanum	A	mg/L	9.216E-07	9.216E-07		0	0	0	0.000011	0.001	0.1	0%	0	0		0%
Lead	A	mg/L	0.00001877	0.00001877		0	0	0	0.000056	0.001	1	0%				0%
Magnesium	A	mg/L	0.001216	0.001216		0	0	0	0.00564	0.00564	50	0%				0%
Manganese	A	mg/L	-8.319E-06	-8.319E-06		0	0	0	0.000095	0.001	1	0%				0%
Mercury	A	mg/L	-3.191E-06	-3.191E-06		0	0	0	0.00016	0.001	0.002	0%				0%
Molybdenum	A	mg/L	0.00003219	0.00003219		0	0	0	0.00005	0.001	0.1	0%				0%
Nickel	A	mg/L	0.00001207	0.00001207		0	0	0	0.00063	0.001	1	0%				0%
Potassium	A	mg/L	0.01181	0.01181		0	0	0	0.08139	0.08139	50	0%				0%
Selenium	A	mg/L	0.00002668	0.00002668		0	0	0	0.00033	0.001	1	0%				0%
Silicon	A	mg/L	-8.514E-05	-8.514E-05		0	0	0	0.01223	0.1	0.4	0%	0	0		0%
Silver	A	mg/L	-1.453E-06	-1.453E-06		0	0	0	0.00002	0.001	0.04	0%				0%
Sodium	A	mg/L	0.00781	0.00781		0	0	0	0.02171	0.02171	50	0%				0%
Strontium	A	mg/L	3.94E-08	3.94E-08		0	0	0	0.00014	0.001	1	0%	0	0		0%
Thallium	A	mg/L	0.0002702	0.0002702		0	0	0	0.000041	0.001	1	0%	0	0		0%
Thorium	A	mg/L	0.00001457	0.00001457		0	0	0	0.00061	0.001	1	0%	0	0		0%
Tin	A	mg/L	0.00001234	0.00001234		0	0	0	0.00132	0.00132	0.1	0%	0	0		0%
Titanium	A	mg/L	0.00003344	0.00003344		0	0	0	0.000094	0.001	1	0%	0	0		0%
Uranium	A	mg/L	2.332E-06	2.332E-06		0	0	0	0.000052	0.0003	1	0%	0	0		0%
Vanadium	A	mg/L	-0.0001025	-0.0001025		0	0	0	0.0013	0.0013	1	0%	0	0		0%
Zinc	A	mg/L	-6.935E-06	-6.935E-06		0	0	0	0.00273	0.00273	1	0%	0	0		0%
Iron, Ferrous	C	mg/L	0.001214	0.001214		0	0	0	0.00119	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					
14968328	MB-162587	ICPMS-6020-W-	MBLK		1/6/2022 2:21:33	1	162587	12/29/2021	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.0007749	0		0	0	0	0.0038747	0.0031975	1	0%	0	0	0%	
Antimony	A	mg/L	0.00002262	0		0	0	0	0.0002799	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	0.00008613	0		0	0	0	0.0003412	0.001	1	0%	0	0	0%	
Barium	A	mg/L	6.615E-06	0		0	0	0	0.0002682	0.001	1	0%	0	0	0%	
Beryllium	A	mg/L	0.00002005	0		0	0	0	0.0001071	0.01	1	0%	0	0	0%	
Boron	A	mg/L	0.0006851	0		0	0	0	0.0203802	0.01467	1	0%	0	0	0%	
Cadmium	A	mg/L	-1.062E-06	0		0	0	0	1.821E-05	0.005	1	0%	0	0	0%	
Calcium	A	mg/L	0.008152	0		0	0	0	0.0372936	0.1103481	50	0%	0	0	0%	
Cerium	A	mg/L	2.437E-06	0		0	0	0	2.738E-05	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	0.00004336	0		0	0	0	0.0015375	0.0015375	1	0%	0	0	0%	
Cobalt	A	mg/L	0.00005724	0		0	0	0	9.541E-05	0.001	1	0%	0	0	0%	
Copper	A	mg/L	0.0002055	0		0	0	0	0.0008747	0.00198	1	0%	0	0	0%	
Iron	A	mg/L	0.001532	0		0	0	0	0.007424	0.00513	5	0%	0	0	0%	
Lanthanum	A	mg/L	9.959E-07	0		0	0	0	0.000055	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.00006629	0		0	0	0	7.716E-05	0.0005	1	0%	0	0	0%	
Magnesium	A	mg/L	0.001449	0		0	0	0	0.0104254	0.0081522	50	0%	0	0	0%	
Manganese	A	mg/L	0.00007926	0		0	0	0	0.0005399	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	0.00003384	0		0	0	0	0.0001763	0.001	0.1	0%	0	0	0%	
Nickel	A	mg/L	0.00001926	0		0	0	0	0.0002288	0.0024200	1	0%	0	0	0%	
Potassium	A	mg/L	0.01204	0		0	0	0	0.0765619	0.0261205	50	0%	0	0	0%	
Selenium	A	mg/L	0.0000277	0		0	0	0	0.0001357	0.001	1	0%	0	0	0%	
Silicon	A	mg/L	0.01701	0		0	0	0	0.0422089	0.0053212	0.4	0%	0	0	0%	
Silver	A	mg/L	-0.0000694	0		0	0	0	4.281E-05	0.001	0.04	0%	0	0	0%	
Sodium	A	mg/L	0.02075	0		0	0	0	0.1019461	0.7330269	50	0%	0	0	0%	
Strontium	A	mg/L	0.00001101	0		0	0	0	0.0002433	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0002415	0.0002415		0	0	0	0.0001114	0.001	1	0%	0	0	0%	
Thorium	A	mg/L	0.00005771	0		0	0	0	0.0003796	0.00415	1	0%	0	0	0%	
Tin	A	mg/L	0.0002651	0		0	0	0	0.0018932	0.0011175	0.1	0%	0	0	0%	
Titanium	A	mg/L	0.0003078	0		0	0	0	0.0005733	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	1.052E-06	0		0	0	0	1.699E-05	0.0003	1	0%	0	0	0%	
Vanadium	A	mg/L	0.0004427	0		0	0	0	0.0039127	0.0021085	1	0%	0	0	0%	
Zinc	A	mg/L	0.0001458	0		0	0	0	0.0011617	0.0065544	1	0%	0	0	0%	
Silica	C	mg/L	0.03638779	0		0	0	0	0.0902933	0.0113831	5	0%	0	0	0%	
Silicon as SiO2	C	mg/L	0.03638779	0		0	0	0	0.0902933	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					
14968329	MB-162611	ICPMS-6020-W-	MBLK		1/6/2022 2:27:42	1	162611	12/30/2021	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.0004061	0		0	0	0	0.0038747	0.0031975	1	0%	0	0	0%	
Antimony	A	mg/L	0.00001517	0		0	0	0	0.0002799	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	0.00006415	0		0	0	0	0.0003412	0.001	1	0%	0	0	0%	
Barium	A	mg/L	0.00001228	0		0	0	0	0.0002682	0.001	1	0%	0	0	0%	
Beryllium	A	mg/L	0.00001498	0		0	0	0	0.0001071	0.01	1	0%	0	0	0%	
Boron	A	mg/L	0.0003678	0		0	0	0	0.0203802	0.01467	1	0%	0	0	0%	
Cadmium	A	mg/L	-1.19E-06	0		0	0	0	1.821E-05	0.005	1	0%	0	0	0%	
Calcium	A	mg/L	0.01334	0		0	0	0	0.0372936	0.1103481	50	0%	0	0	0%	
Cerium	A	mg/L	1.686E-06	0		0	0	0	2.738E-05	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	0.00005905	0		0	0	0	0.0015375	0.0015375	1	0%	0	0	0%	
Cobalt	A	mg/L	0.00008839	0		0	0	0	9.541E-05	0.001	1	0%	0	0	0%	
Copper	A	mg/L	0.0002329	0		0	0	0	0.0008747	0.00198	1	0%	0	0	0%	
Iron	A	mg/L	0.001282	0		0	0	0	0.007424	0.00513	5	0%	0	0	0%	
Lanthanum	A	mg/L	9.237E-07	0		0	0	0	0.000055	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.0000677	0		0	0	0	7.716E-05	0.0005	1	0%	0	0	0%	
Magnesium	A	mg/L	0.001255	0		0	0	0	0.0104254	0.0081522	50	0%	0	0	0%	
Manganese	A	mg/L	0.0001081	0		0	0	0	0.0005399	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	0.00002262	0		0	0	0	0.0001763	0.001	0.1	0%	0	0	0%	
Nickel	A	mg/L	0.00001742	0		0	0	0	0.0002288	0.0024200	1	0%	0	0	0%	
Potassium	A	mg/L	0.008058	0		0	0	0	0.0765619	0.0261205	50	0%	0	0	0%	
Selenium	A	mg/L	0.00001741	0		0	0	0	0.0001357	0.001	1	0%	0	0	0%	
Silicon	A	mg/L	0.01694	0		0	0	0	0.0422089	0.0053212	0.4	0%	0	0	0%	
Silver	A	mg/L	-7.028E-05	0		0	0	0	4.281E-05	0.001	0.04	0%	0	0	0%	
Sodium	A	mg/L	0.01657	0		0	0	0	0.1019461	0.7330269	50	0%	0	0	0%	
Strontium	A	mg/L	0.0000181	0		0	0	0	0.0002433	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0001584	0.0001584		0	0	0	0.0001114	0.001	1	0%	0	0	0%	
Thorium	A	mg/L	0.00002847	0		0	0	0	0.0003796	0.00415	1	0%	0	0	0%	
Tin	A	mg/L	0.0002779	0		0	0	0	0.0018932	0.0011175	0.1	0%	0	0	0%	
Titanium	A	mg/L	0.000261	0		0	0	0	0.0005733	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	3.247E-07	0		0	0	0	1.699E-05	0.0003	1	0%	0	0	0%	
Vanadium	A	mg/L	0.0003249	0		0	0	0	0.0039127	0.0021085	1	0%	0	0	0%	
Zinc	A	mg/L	0.0007032	0		0	0	0	0.0011617	0.0065544	1	0%	0	0	0%	
Silica	C	mg/L	0.03623805	0		0	0	0	0.0902933	0.0113831	5	0%	0	0	0%	
Silicon as SiO2	C	mg/L	0.03623805	0		0	0	0	0.0902933	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					
14968330	MB-162627	ICPMS-6020-W-	MBLK		1/6/2022 2:33:53	1	162627	1/3/2022 8:2	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.001157	0		0	0	0	0.0038747	0.0031975	1	0%	0	0	0%	
Antimony	A	mg/L	0.00001003	0		0	0	0	0.0002799	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	0.00006246	0		0	0	0	0.0003412	0.001	1	0%	0	0	0%	
Barium	A	mg/L	0.00005217	0		0	0	0	0.0002682	0.001	1	0%	0	0	0%	
Beryllium	A	mg/L	0.00000927	0		0	0	0	0.0001071	0.01	1	0%	0	0	0%	
Boron	A	mg/L	0.00003177	0		0	0	0	0.0203802	0.01467	1	0%	0	0	0%	
Cadmium	A	mg/L	-3.267E-07	0		0	0	0	1.821E-05	0.005	1	0%	0	0	0%	
Calcium	A	mg/L	0.0108	0		0	0	0	0.0372936	0.1103481	50	0%	0	0	0%	
Cerium	A	mg/L	1.674E-06	0		0	0	0	2.738E-05	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	0.00005151	0		0	0	0	0.0015375	0.0015375	1	0%	0	0	0%	
Cobalt	A	mg/L	0.00009797	0.00009797		0	0	0	9.541E-05	0.001	1	0%	0	0	0%	
Copper	A	mg/L	0.0001958	0		0	0	0	0.0008747	0.00198	1	0%	0	0	0%	
Iron	A	mg/L	0.002602	0		0	0	0	0.007424	0.00513	5	0%	0	0	0%	
Lanthanum	A	mg/L	9.392E-07	0		0	0	0	0.000055	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.00006915	0		0	0	0	7.716E-05	0.0005	1	0%	0	0	0%	
Magnesium	A	mg/L	0.00141	0		0	0	0	0.0104254	0.0081522	50	0%	0	0	0%	
Manganese	A	mg/L	0.0001118	0		0	0	0	0.0005399	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	0.0000134	0		0	0	0	0.0001763	0.001	0.1	0%	0	0	0%	
Nickel	A	mg/L	0.0000496	0		0	0	0	0.0002288	0.0024200	1	0%	0	0	0%	
Potassium	A	mg/L	0.00618	0		0	0	0	0.0765619	0.0261205	50	0%	0	0	0%	
Selenium	A	mg/L	0.0000159	0		0	0	0	0.0001357	0.001	1	0%	0	0	0%	
Silicon	A	mg/L	0.01558	0		0	0	0	0.0422089	0.0053212	0.4	0%	0	0	0%	
Silver	A	mg/L	-7.022E-05	0		0	0	0	4.281E-05	0.001	0.04	0%	0	0	0%	
Sodium	A	mg/L	0.01316	0		0	0	0	0.1019461	0.7330269	50	0%	0	0	0%	
Strontium	A	mg/L	0.0000184	0		0	0	0	0.0002433	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.000137	0.000137		0	0	0	0.0001114	0.001	1	0%	0	0	0%	
Thorium	A	mg/L	0.00002013	0		0	0	0	0.0003796	0.00415	1	0%	0	0	0%	
Tin	A	mg/L	0.0002877	0		0	0	0	0.0018932	0.0011175	0.1	0%	0	0	0%	
Titanium	A	mg/L	0.0002589	0		0	0	0	0.0005733	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	-6.041E-08	0		0	0	0	1.699E-05	0.0003	1	0%	0	0	0%	
Vanadium	A	mg/L	0.0003146	0		0	0	0	0.0039127	0.0021085	1	0%	0	0	0%	
Zinc	A	mg/L	0.0001265	0		0	0	0	0.0011617	0.0065544	1	0%	0	0	0%	
Silica	C	mg/L	0.03332874	0		0	0	0	0.0902933	0.0113831	5	0%	0	0	0%	
Silicon as SiO2	C	mg/L	0.03332874	0		0	0	0	0.0902933	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					
14968331	MB-162695	ICPMS-6020-W-	MBLK		1/6/2022 2:40:03	1	162695	1/4/2022 2:1	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.000432	0		0	0	0	0.0038747	0.0031975	1	0%	0	0	0%	
Antimony	A	mg/L	8.918E-06	0		0	0	0	0.0002799	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	0.00006546	0		0	0	0	0.0003412	0.001	1	0%	0	0	0%	
Barium	A	mg/L	0.00001237	0		0	0	0	0.0002682	0.001	1	0%	0	0	0%	
Beryllium	A	mg/L	0.00001252	0		0	0	0	0.0001071	0.01	1	0%	0	0	0%	
Boron	A	mg/L	-0.0003917	0		0	0	0	0.0203802	0.01467	1	0%	0	0	0%	
Cadmium	A	mg/L	-2.576E-06	0		0	0	0	1.821E-05	0.005	1	0%	0	0	0%	
Calcium	A	mg/L	0.005958	0		0	0	0	0.0372936	0.1103481	50	0%	0	0	0%	
Cerium	A	mg/L	0.00001662	0		0	0	0	2.738E-05	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	0.00004806	0		0	0	0	0.0015375	0.0015375	1	0%	0	0	0%	
Cobalt	A	mg/L	0.00009958	0.00009958		0	0	0	9.541E-05	0.001	1	0%	0	0	0%	
Copper	A	mg/L	0.000172	0		0	0	0	0.0008747	0.00198	1	0%	0	0	0%	
Iron	A	mg/L	0.0005016	0		0	0	0	0.007424	0.00513	5	0%	0	0	0%	
Lanthanum	A	mg/L	0.00001828	0		0	0	0	0.000055	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.00004755	0		0	0	0	7.716E-05	0.0005	1	0%	0	0	0%	
Magnesium	A	mg/L	0.0008396	0		0	0	0	0.0104254	0.0081522	50	0%	0	0	0%	
Manganese	A	mg/L	0.00008097	0		0	0	0	0.0005399	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	7.782E-06	0		0	0	0	0.0001763	0.001	0.1	0%	0	0	0%	
Nickel	A	mg/L	0.0000197	0		0	0	0	0.0002288	0.0024200	1	0%	0	0	0%	
Potassium	A	mg/L	0.006175	0		0	0	0	0.0765619	0.0261205	50	0%	0	0	0%	
Selenium	A	mg/L	6.421E-06	0		0	0	0	0.0001357	0.001	1	0%	0	0	0%	
Silicon	A	mg/L	0.01215	0		0	0	0	0.0422089	0.0053212	0.4	0%	0	0	0%	
Silver	A	mg/L	-0.0000699	0		0	0	0	4.281E-05	0.001	0.04	0%	0	0	0%	
Sodium	A	mg/L	0.01404	0		0	0	0	0.1019461	0.7330269	50	0%	0	0	0%	
Strontium	A	mg/L	0.00001337	0		0	0	0	0.0002433	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0001092	0		0	0	0	0.0001114	0.001	1	0%	0	0	0%	
Thorium	A	mg/L	0.00003417	0		0	0	0	0.0003796	0.00415	1	0%	0	0	0%	
Tin	A	mg/L	0.0002986	0		0	0	0	0.0018932	0.0011175	0.1	0%	0	0	0%	
Titanium	A	mg/L	0.0003059	0		0	0	0	0.0005733	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00001492	0		0	0	0	1.699E-05	0.0003	1	0%	0	0	0%	
Vanadium	A	mg/L	0.0002861	0		0	0	0	0.0039127	0.0021085	1	0%	0	0	0%	
Zinc	A	mg/L	0.0003483	0		0	0	0	0.0011617	0.0065544	1	0%	0	0	0%	
Silica	C	mg/L	0.02599128	0		0	0	0	0.0902933	0.0113831	5	0%	0	0	0%	
Silicon as SiO2	C	mg/L	0.02599128	0		0	0	0	0.0902933	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					
14968332	MB-162708	ICPMS-6020-W-	MBLK		1/6/2022 2:46:13	1	162708	1/5/2022 8:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.0009185	0		0	0	0	0.0038747	0.0031975	1	0%	0	0	0%	
Antimony	A	mg/L	6.165E-06	0		0	0	0	0.0002799	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	0.00006091	0		0	0	0	0.0003412	0.001	1	0%	0	0	0%	
Barium	A	mg/L	0.00001273	0		0	0	0	0.0002682	0.001	1	0%	0	0	0%	
Beryllium	A	mg/L	0.00001008	0		0	0	0	0.0001071	0.01	1	0%	0	0	0%	
Boron	A	mg/L	-0.0006238	0		0	0	0	0.0203802	0.01467	1	0%	0	0	0%	
Cadmium	A	mg/L	-1.449E-06	0		0	0	0	1.821E-05	0.005	1	0%	0	0	0%	
Calcium	A	mg/L	0.007889	0		0	0	0	0.0372936	0.1103481	50	0%	0	0	0%	
Cerium	A	mg/L	1.375E-06	0		0	0	0	2.738E-05	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	0.00004437	0		0	0	0	0.0015375	0.0015375	1	0%	0	0	0%	
Cobalt	A	mg/L	0.0001014	0.0001014		0	0	0	9.541E-05	0.001	1	0%	0	0	0%	
Copper	A	mg/L	0.0001739	0		0	0	0	0.0008747	0.00198	1	0%	0	0	0%	
Iron	A	mg/L	0.0008911	0		0	0	0	0.007424	0.00513	5	0%	0	0	0%	
Lanthanum	A	mg/L	3.558E-07	0		0	0	0	0.000055	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.0002749	0.0002749		0	0	0	7.716E-05	0.0005	1	0%	0	0	0%	
Magnesium	A	mg/L	0.001084	0		0	0	0	0.0104254	0.0081522	50	0%	0	0	0%	
Manganese	A	mg/L	0.00008671	0		0	0	0	0.0005399	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	7.183E-06	0		0	0	0	0.0001763	0.001	0.1	0%	0	0	0%	
Nickel	A	mg/L	0.00003117	0		0	0	0	0.0002288	0.0024200	1	0%	0	0	0%	
Potassium	A	mg/L	0.005013	0		0	0	0	0.0765619	0.0261205	50	0%	0	0	0%	
Selenium	A	mg/L	0.00001125	0		0	0	0	0.0001357	0.001	1	0%	0	0	0%	
Silicon	A	mg/L	0.01572	0		0	0	0	0.0422089	0.0053212	0.4	0%	0	0	0%	
Silver	A	mg/L	-7.017E-05	0		0	0	0	4.281E-05	0.001	0.04	0%	0	0	0%	
Sodium	A	mg/L	0.02966	0		0	0	0	0.1019461	0.7330269	50	0%	0	0	0%	
Strontium	A	mg/L	0.00002622	0		0	0	0	0.0002433	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.000102	0		0	0	0	0.0001114	0.001	1	0%	0	0	0%	
Thorium	A	mg/L	0.00001205	0		0	0	0	0.0003796	0.00415	1	0%	0	0	0%	
Tin	A	mg/L	0.0002855	0		0	0	0	0.0018932	0.0011175	0.1	0%	0	0	0%	
Titanium	A	mg/L	0.0003078	0		0	0	0	0.0005733	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	-1.343E-07	0		0	0	0	1.699E-05	0.0003	1	0%	0	0	0%	
Vanadium	A	mg/L	0.0002791	0		0	0	0	0.0039127	0.0021085	1	0%	0	0	0%	
Zinc	A	mg/L	0.0002961	0		0	0	0	0.0011617	0.0065544	1	0%	0	0	0%	
Silica	C	mg/L	0.03362822	0		0	0	0	0.0902933	0.0113831	5	0%	0	0	0%	
Silicon as SiO2	C	mg/L	0.03362822	0		0	0	0	0.0902933	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					
14968333	LCS4-162587	ICPMS-6020-W-	LCS4		1/6/2022 2:52:23	1	162587	12/29/2021	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.5082	0.5082		0.5	0	0	0.0038747	0.0031975	1	102%	80	120	0%	
Antimony	A	mg/L	0.09969	0.09969		0.1	0	0	0.0002799	0.001	0.1	100%	80	120	0%	
Arsenic	A	mg/L	0.09792	0.09792		0.1	0	0	0.0003412	0.001	1	98%	80	120	0%	
Barium	A	mg/L	0.09965	0.09965		0.1	0	0	0.0002682	0.001	1	100%	80	120	0%	
Beryllium	A	mg/L	0.05178	0.05178		0.05	0	0	0.0001071	0.01	1	104%	80	120	0%	
Boron	A	mg/L	0.1068	0.1068		0.1	0	0	0.0203802	0.01467	1	107%	80	120	0%	
Cadmium	A	mg/L	0.04878	0.04878		0.05	0	0	1.821E-05	0.005	1	98%	80	120	0%	
Calcium	A	mg/L	5.157	5.157		5	0	0	0.0372936	0.1103481	50	103%	80	120	0%	
Cerium	A	mg/L	0.1026	0.1026		0.1	0	0	2.738E-05	0.001	0.1	103%	80	120	0%	
Chromium	A	mg/L	0.102	0.102		0.1	0	0	0.0015375	0.0015375	1	102%	80	120	0%	
Cobalt	A	mg/L	0.1009	0.1009		0.1	0	0	9.541E-05	0.001	1	101%	80	120	0%	
Copper	A	mg/L	0.1069	0.1069		0.1	0	0	0.0008747	0.00198	1	107%	80	120	0%	
Iron	A	mg/L	0.5127	0.5127		0.5	0	0	0.007424	0.00513	5	103%	80	120	0%	
Lanthanum	A	mg/L	0.103	0.103		0.1	0	0	0.000055	0.001	0.1	103%	80	120	0%	
Lead	A	mg/L	0.1011	0.1011		0.1	0	0	7.716E-05	0.001	1	101%	88	115	0%	
Magnesium	A	mg/L	5.335	5.335		5	0	0	0.0104254	0.0081522	50	107%	80	120	0%	
Manganese	A	mg/L	0.5281	0.5281		0.5	0	0	0.0005399	0.001	1	106%	80	120	0%	
Molybdenum	A	mg/L	0.09888	0.09888		0.1	0	0	0.0001763	0.001	0.1	99%	80	120	0%	
Nickel	A	mg/L	0.1024	0.1024		0.1	0	0	0.0002288	0.0024200	1	102%	80	120	0%	
Potassium	A	mg/L	5.167	5.167		5	0	0	0.0765619	0.0261205	50	103%	80	120	0%	
Selenium	A	mg/L	0.09892	0.09892		0.1	0	0	0.0001357	0.001	1	99%	80	120	0%	
Silicon	A	mg/L	1.03	1.03		1	0	0	0.0422089	0.0053212	0.4	103%	80	120	0%	
Silver	A	mg/L	0.009474	0.009474		0.01	0	0	4.281E-05	0.001	0.04	95%	80	120	0%	
Sodium	A	mg/L	5.217	5.217		5	0	0	0.1019461	0.7330269	50	104%	80	120	0%	
Strontium	A	mg/L	0.101	0.101		0.1	0	0	0.0002433	0.001	1	101%	80	120	0%	
Thallium	A	mg/L	0.0987	0.0987		0.1	0	0	0.0001114	0.001	1	99%	80	120	0%	
Thorium	A	mg/L	0.1028	0.1028		0.1	0	0	0.0003796	0.00415	1	103%	80	120	0%	
Tin	A	mg/L	0.1009	0.1009		0.1	0	0	0.0018932	0.0011175	0.1	101%	80	120	0%	
Titanium	A	mg/L	0.09615	0.09615		0.1	0	0	0.0005733	0.001	1	96%	80	120	0%	
Uranium	A	mg/L	0.101	0.101		0.1	0	0	1.699E-05	0.0003	1	101%	80	120	0%	
Vanadium	A	mg/L	0.101	0.101		0.1	0	0	0.0039127	0.0021085	1	101%	80	120	0%	
Zinc	A	mg/L	0.09828	0.09828		0.1	0	0	0.0011617	0.0065544	1	98%	80	120	0%	
Silica	C	mg/L	2.203376	2.203376		0	0	0	0.0902933	0.0113831	5	0%	0	0	0%	
Silicon as SiO2	C	mg/L	2.203376	2.203376		2.14	0	0	0.0902933	0.0113831	5	103%	80	120	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968334	LCS4-162611	ICPMS-6020-W-	LCS4		1/6/2022 2:58:14	1	162611	12/30/2021	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.4816	0.4816		0.5	0	0	0.0038747	0.0031975	1	96%	80	120	0%	
Antimony	A	mg/L	0.1009	0.1009		0.1	0	0	0.0002799	0.001	0.1	101%	80	120	0%	
Arsenic	A	mg/L	0.09523	0.09523		0.1	0	0	0.0003412	0.001	1	95%	80	120	0%	
Barium	A	mg/L	0.09932	0.09932		0.1	0	0	0.0002682	0.001	1	99%	80	120	0%	
Beryllium	A	mg/L	0.05092	0.05092		0.05	0	0	0.0001071	0.01	1	102%	80	120	0%	
Boron	A	mg/L	0.1042	0.1042		0.1	0	0	0.0203802	0.01467	1	104%	80	120	0%	
Cadmium	A	mg/L	0.04894	0.04894		0.05	0	0	1.821E-05	0.005	1	98%	80	120	0%	
Calcium	A	mg/L	4.943	4.943		5	0	0	0.0372936	0.1103481	50	99%	80	120	0%	
Cerium	A	mg/L	0.1006	0.1006		0.1	0	0	2.738E-05	0.001	0.1	101%	80	120	0%	
Chromium	A	mg/L	0.0986	0.0986		0.1	0	0	0.0015375	0.0015375	1	99%	80	120	0%	
Cobalt	A	mg/L	0.101	0.101		0.1	0	0	9.541E-05	0.001	1	101%	80	120	0%	
Copper	A	mg/L	0.104	0.104		0.1	0	0	0.0008747	0.00198	1	104%	80	120	0%	
Iron	A	mg/L	0.4951	0.4951		0.5	0	0	0.007424	0.00513	5	99%	80	120	0%	
Lanthanum	A	mg/L	0.1018	0.1018		0.1	0	0	0.000055	0.001	0.1	102%	80	120	0%	
Lead	A	mg/L	0.1005	0.1005		0.1	0	0	7.716E-05	0.001	1	100%	88	115	0%	
Magnesium	A	mg/L	5.217	5.217		5	0	0	0.0104254	0.0081522	50	104%	80	120	0%	
Manganese	A	mg/L	0.5058	0.5058		0.5	0	0	0.0005399	0.001	1	101%	80	120	0%	
Molybdenum	A	mg/L	0.09523	0.09523		0.1	0	0	0.0001763	0.001	0.1	95%	80	120	0%	
Nickel	A	mg/L	0.1003	0.1003		0.1	0	0	0.0002288	0.0024200	1	100%	80	120	0%	
Potassium	A	mg/L	4.901	4.901		5	0	0	0.0765619	0.0261205	50	98%	80	120	0%	
Selenium	A	mg/L	0.09603	0.09603		0.1	0	0	0.0001357	0.001	1	96%	80	120	0%	
Silicon	A	mg/L	0.9966	0.9966		1	0	0	0.0422089	0.0053212	0.4	100%	80	120	0%	
Silver	A	mg/L	0.00956	0.00956		0.01	0	0	4.281E-05	0.001	0.04	96%	80	120	0%	
Sodium	A	mg/L	5.195	5.195		5	0	0	0.1019461	0.7330269	50	104%	80	120	0%	
Strontium	A	mg/L	0.09713	0.09713		0.1	0	0	0.0002433	0.001	1	97%	80	120	0%	
Thallium	A	mg/L	0.09756	0.09756		0.1	0	0	0.0001114	0.001	1	98%	80	120	0%	
Thorium	A	mg/L	0.09948	0.09948		0.1	0	0	0.0003796	0.00415	1	99%	80	120	0%	
Tin	A	mg/L	0.09745	0.09745		0.1	0	0	0.0018932	0.0011175	0.1	97%	80	120	0%	
Titanium	A	mg/L	0.0933	0.0933		0.1	0	0	0.0005733	0.001	1	93%	80	120	0%	
Uranium	A	mg/L	0.09865	0.09865		0.1	0	0	1.699E-05	0.0003	1	99%	80	120	0%	
Vanadium	A	mg/L	0.09702	0.09702		0.1	0	0	0.0039127	0.0021085	1	97%	80	120	0%	
Zinc	A	mg/L	0.1016	0.1016		0.1	0	0	0.0011617	0.0065544	1	102%	80	120	0%	
Silica	C	mg/L	2.13192672	2.13192672		0	0	0	0.0902933	0.0113831	5	0%	0	0	0%	
Silicon as SiO2	C	mg/L	2.13192672	2.13192672		2.14	0	0	0.0902933	0.0113831	5	100%	80	120	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968335	LCS4-162627	ICPMS-6020-W-	LCS4		1/6/2022 3:04:04	1	162627	1/3/2022 8:2	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.506	0.506		0.5	0	0	0.0038747	0.0031975	1	101%	80	120	0%	
Antimony	A	mg/L	0.1003	0.1003		0.1	0	0	0.0002799	0.001	0.1	100%	80	120	0%	
Arsenic	A	mg/L	0.09838	0.09838		0.1	0	0	0.0003412	0.001	1	98%	80	120	0%	
Barium	A	mg/L	0.101	0.101		0.1	0	0	0.0002682	0.001	1	101%	80	120	0%	
Beryllium	A	mg/L	0.05002	0.05002		0.05	0	0	0.0001071	0.01	1	100%	80	120	0%	
Boron	A	mg/L	0.1055	0.1055		0.1	0	0	0.0203802	0.01467	1	105%	80	120	0%	
Cadmium	A	mg/L	0.04997	0.04997		0.05	0	0	1.821E-05	0.005	1	100%	80	120	0%	
Calcium	A	mg/L	5.184	5.184		5	0	0	0.0372936	0.1103481	50	104%	80	120	0%	
Cerium	A	mg/L	0.1018	0.1018		0.1	0	0	2.738E-05	0.001	0.1	102%	80	120	0%	
Chromium	A	mg/L	0.1029	0.1029		0.1	0	0	0.0015375	0.0015375	1	103%	80	120	0%	
Cobalt	A	mg/L	0.1022	0.1022		0.1	0	0	9.541E-05	0.001	1	102%	80	120	0%	
Copper	A	mg/L	0.1082	0.1082		0.1	0	0	0.0008747	0.00198	1	108%	80	120	0%	
Iron	A	mg/L	0.5322	0.5322		0.5	0	0	0.007424	0.00513	5	106%	80	120	0%	
Lanthanum	A	mg/L	0.104	0.104		0.1	0	0	0.000055	0.001	0.1	104%	80	120	0%	
Lead	A	mg/L	0.1016	0.1016		0.1	0	0	7.716E-05	0.001	1	102%	88	115	0%	
Magnesium	A	mg/L	5.297	5.297		5	0	0	0.0104254	0.0081522	50	106%	80	120	0%	
Manganese	A	mg/L	0.5284	0.5284		0.5	0	0	0.0005399	0.001	1	106%	80	120	0%	
Molybdenum	A	mg/L	0.09781	0.09781		0.1	0	0	0.0001763	0.001	0.1	98%	80	120	0%	
Nickel	A	mg/L	0.1056	0.1056		0.1	0	0	0.0002288	0.0024200	1	106%	80	120	0%	
Potassium	A	mg/L	5.183	5.183		5	0	0	0.0765619	0.0261205	50	104%	80	120	0%	
Selenium	A	mg/L	0.1013	0.1013		0.1	0	0	0.0001357	0.001	1	101%	80	120	0%	
Silicon	A	mg/L	1.045	1.045		1	0	0	0.0422089	0.0053212	0.4	104%	80	120	0%	
Silver	A	mg/L	0.009659	0.009659		0.01	0	0	4.281E-05	0.001	0.04	97%	80	120	0%	
Sodium	A	mg/L	5.325	5.325		5	0	0	0.1019461	0.7330269	50	106%	80	120	0%	
Strontium	A	mg/L	0.1027	0.1027		0.1	0	0	0.0002433	0.001	1	103%	80	120	0%	
Thallium	A	mg/L	0.1006	0.1006		0.1	0	0	0.0001114	0.001	1	101%	80	120	0%	
Thorium	A	mg/L	0.101	0.101		0.1	0	0	0.0003796	0.00415	1	101%	80	120	0%	
Tin	A	mg/L	0.09802	0.09802		0.1	0	0	0.0018932	0.0011175	0.1	98%	80	120	0%	
Titanium	A	mg/L	0.0929	0.0929		0.1	0	0	0.0005733	0.001	1	93%	80	120	0%	
Uranium	A	mg/L	0.09878	0.09878		0.1	0	0	1.699E-05	0.0003	1	99%	80	120	0%	
Vanadium	A	mg/L	0.1017	0.1017		0.1	0	0	0.0039127	0.0021085	1	102%	80	120	0%	
Zinc	A	mg/L	0.09916	0.09916		0.1	0	0	0.0011617	0.0065544	1	99%	80	120	0%	
Silica	C	mg/L	2.235464	2.235464		0	0	0	0.0902933	0.0113831	5	0%	0	0	0%	
Silicon as SiO2	C	mg/L	2.235464	2.235464		2.14	0	0	0.0902933	0.0113831	5	104%	80	120	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968336	LCS4-162695	ICPMS-6020-W-	LCS4		1/6/2022 3:09:54	1	162695	1/4/2022 2:1	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.5054	0.5054		0.5	0	0	0.0038747	0.0031975	1	101%	80	120	0%	
Antimony	A	mg/L	0.09943	0.09943		0.1	0	0	0.0002799	0.001	0.1	99%	80	120	0%	
Arsenic	A	mg/L	0.09795	0.09795		0.1	0	0	0.0003412	0.001	1	98%	80	120	0%	
Barium	A	mg/L	0.09978	0.09978		0.1	0	0	0.0002682	0.001	1	100%	80	120	0%	
Beryllium	A	mg/L	0.05073	0.05073		0.05	0	0	0.0001071	0.01	1	101%	80	120	0%	
Boron	A	mg/L	0.1068	0.1068		0.1	0	0	0.0203802	0.01467	1	107%	80	120	0%	
Cadmium	A	mg/L	0.05015	0.05015		0.05	0	0	1.821E-05	0.005	1	100%	80	120	0%	
Calcium	A	mg/L	5.11	5.11		5	0	0	0.0372936	0.1103481	50	102%	80	120	0%	
Cerium	A	mg/L	0.1035	0.1035		0.1	0	0	2.738E-05	0.001	0.1	103%	80	120	0%	
Chromium	A	mg/L	0.1029	0.1029		0.1	0	0	0.0015375	0.0015375	1	103%	80	120	0%	
Cobalt	A	mg/L	0.1056	0.1056		0.1	0	0	9.541E-05	0.001	1	106%	80	120	0%	
Copper	A	mg/L	0.1075	0.1075		0.1	0	0	0.0008747	0.00198	1	107%	80	120	0%	
Iron	A	mg/L	0.5063	0.5063		0.5	0	0	0.007424	0.00513	5	101%	80	120	0%	
Lanthanum	A	mg/L	0.1043	0.1043		0.1	0	0	0.000055	0.001	0.1	104%	80	120	0%	
Lead	A	mg/L	0.1018	0.1018		0.1	0	0	7.716E-05	0.001	1	102%	88	115	0%	
Magnesium	A	mg/L	5.318	5.318		5	0	0	0.0104254	0.0081522	50	106%	80	120	0%	
Manganese	A	mg/L	0.5114	0.5114		0.5	0	0	0.0005399	0.001	1	102%	80	120	0%	
Molybdenum	A	mg/L	0.09655	0.09655		0.1	0	0	0.0001763	0.001	0.1	97%	80	120	0%	
Nickel	A	mg/L	0.1047	0.1047		0.1	0	0	0.0002288	0.0024200	1	105%	80	120	0%	
Potassium	A	mg/L	5.118	5.118		5	0	0	0.0765619	0.0261205	50	102%	80	120	0%	
Selenium	A	mg/L	0.09914	0.09914		0.1	0	0	0.0001357	0.001	1	99%	80	120	0%	
Silicon	A	mg/L	1.002	1.002		1	0	0	0.0422089	0.0053212	0.4	100%	80	120	0%	
Silver	A	mg/L	0.00936	0.00936		0.01	0	0	4.281E-05	0.001	0.04	94%	80	120	0%	
Sodium	A	mg/L	5.331	5.331		5	0	0	0.1019461	0.7330269	50	107%	80	120	0%	
Strontium	A	mg/L	0.1003	0.1003		0.1	0	0	0.0002433	0.001	1	100%	80	120	0%	
Thallium	A	mg/L	0.1013	0.1013		0.1	0	0	0.0001114	0.001	1	101%	80	120	0%	
Thorium	A	mg/L	0.1011	0.1011		0.1	0	0	0.0003796	0.00415	1	101%	80	120	0%	
Tin	A	mg/L	0.09887	0.09887		0.1	0	0	0.0018932	0.0011175	0.1	99%	80	120	0%	
Titanium	A	mg/L	0.09606	0.09606		0.1	0	0	0.0005733	0.001	1	96%	80	120	0%	
Uranium	A	mg/L	0.09996	0.09996		0.1	0	0	1.699E-05	0.0003	1	100%	80	120	0%	
Vanadium	A	mg/L	0.1018	0.1018		0.1	0	0	0.0039127	0.0021085	1	102%	80	120	0%	
Zinc	A	mg/L	0.09966	0.09966		0.1	0	0	0.0011617	0.0065544	1	100%	80	120	0%	
Silica	C	mg/L	2.1434784	2.1434784		0	0	0	0.0902933	0.0113831	5	0%	0	0	0%	
Silicon as SiO2	C	mg/L	2.1434784	2.1434784		2.14	0	0	0.0902933	0.0113831	5	100%	80	120	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968337	LCS4-162708	ICPMS-6020-W-	LCS4		1/6/2022 3:15:44	1	162708	1/5/2022 8:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.5005	0.5005		0.5	0	0	0.0038747	0.0031975	1	100%	80	120	0%	
Antimony	A	mg/L	0.09983	0.09983		0.1	0	0	0.0002799	0.001	0.1	100%	80	120	0%	
Arsenic	A	mg/L	0.09652	0.09652		0.1	0	0	0.0003412	0.001	1	97%	80	120	0%	
Barium	A	mg/L	0.09913	0.09913		0.1	0	0	0.0002682	0.001	1	99%	80	120	0%	
Beryllium	A	mg/L	0.0514	0.0514		0.05	0	0	0.0001071	0.01	1	103%	80	120	0%	
Boron	A	mg/L	0.1058	0.1058		0.1	0	0	0.0203802	0.01467	1	106%	80	120	0%	
Cadmium	A	mg/L	0.04894	0.04894		0.05	0	0	1.821E-05	0.005	1	98%	80	120	0%	
Calcium	A	mg/L	5.026	5.026		5	0	0	0.0372936	0.1103481	50	101%	80	120	0%	
Cerium	A	mg/L	0.1013	0.1013		0.1	0	0	2.738E-05	0.001	0.1	101%	80	120	0%	
Chromium	A	mg/L	0.1008	0.1008		0.1	0	0	0.0015375	0.0015375	1	101%	80	120	0%	
Cobalt	A	mg/L	0.1014	0.1014		0.1	0	0	9.541E-05	0.001	1	101%	80	120	0%	
Copper	A	mg/L	0.1064	0.1064		0.1	0	0	0.0008747	0.00198	1	106%	80	120	0%	
Iron	A	mg/L	0.5007	0.5007		0.5	0	0	0.007424	0.00513	5	100%	80	120	0%	
Lanthanum	A	mg/L	0.1017	0.1017		0.1	0	0	0.000055	0.001	0.1	102%	80	120	0%	
Lead	A	mg/L	0.1036	0.1036		0.1	0	0	7.716E-05	0.001	1	104%	88	115	0%	
Magnesium	A	mg/L	5.311	5.311		5	0	0	0.0104254	0.0081522	50	106%	80	120	0%	
Manganese	A	mg/L	0.5053	0.5053		0.5	0	0	0.0005399	0.001	1	101%	80	120	0%	
Molybdenum	A	mg/L	0.09572	0.09572		0.1	0	0	0.0001763	0.001	0.1	96%	80	120	0%	
Nickel	A	mg/L	0.1037	0.1037		0.1	0	0	0.0002288	0.0024200	1	104%	80	120	0%	
Potassium	A	mg/L	5.093	5.093		5	0	0	0.0765619	0.0261205	50	102%	80	120	0%	
Selenium	A	mg/L	0.09783	0.09783		0.1	0	0	0.0001357	0.001	1	98%	80	120	0%	
Silicon	A	mg/L	1.008	1.008		1	0	0	0.0422089	0.0053212	0.4	101%	80	120	0%	
Silver	A	mg/L	0.009669	0.009669		0.01	0	0	4.281E-05	0.001	0.04	97%	80	120	0%	
Sodium	A	mg/L	5.24	5.24		5	0	0	0.1019461	0.7330269	50	105%	80	120	0%	
Strontium	A	mg/L	0.1012	0.1012		0.1	0	0	0.0002433	0.001	1	101%	80	120	0%	
Thallium	A	mg/L	0.1007	0.1007		0.1	0	0	0.0001114	0.001	1	101%	80	120	0%	
Thorium	A	mg/L	0.1016	0.1016		0.1	0	0	0.0003796	0.00415	1	102%	80	120	0%	
Tin	A	mg/L	0.09822	0.09822		0.1	0	0	0.0018932	0.0011175	0.1	98%	80	120	0%	
Titanium	A	mg/L	0.09319	0.09319		0.1	0	0	0.0005733	0.001	1	93%	80	120	0%	
Uranium	A	mg/L	0.1022	0.1022		0.1	0	0	1.699E-05	0.0003	1	102%	80	120	0%	
Vanadium	A	mg/L	0.1009	0.1009		0.1	0	0	0.0039127	0.0021085	1	101%	80	120	0%	
Zinc	A	mg/L	0.09811	0.09811		0.1	0	0	0.0011617	0.0065544	1	98%	80	120	0%	
Silica	C	mg/L	2.1563136	2.1563136		0	0	0	0.0902933	0.0113831	5	0%	0	0	0%	
Silicon as SiO2	C	mg/L	2.1563136	2.1563136		2.14	0	0	0.0902933	0.0113831	5	101%	80	120	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968338	CCV	ICPMS-6020-W-	CCV		1/6/2022 3:21:35	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.05005	0.05005		0.05	0	0	0.00086	0.001	1	100%	90	110	0%	
Antimony	A	mg/L	0.05205	0.05205		0.05	0	0	0.00042	0.001	0.1	104%	90	110	0%	
Arsenic	A	mg/L	0.05229	0.05229		0.05	0	0	0.00019	0.001	1	105%	90	110	0%	
Barium	A	mg/L	0.05484	0.05484		0.05	0	0	0.000042	0.001	1	110%	90	110	0%	
Beryllium	A	mg/L	0.05343	0.05343		0.05	0	0	0.00012	0.001	1	107%	90	110	0%	
Boron	A	mg/L	0.05295	0.05295		0.05	0	0	0.00561	0.00561	1	106%	90	110	0%	
Cadmium	A	mg/L	0.05286	0.05286		0.05	0	0	0.000025	0.001	1	106%	90	110	0%	
Calcium	A	mg/L	12.37	12.37		12.5	0	0	0.02092	0.02092	50	99%	90	110	0%	
Cerium	A	mg/L	0.0481	0.0481		0.05	0	0	0.000012	0.001	0.1	96%	90	110	0%	
Chromium	A	mg/L	0.05192	0.05192		0.05	0	0	0.00018	0.001	1	104%	90	110	0%	
Cobalt	A	mg/L	0.05294	0.05294		0.05	0	0	0.000042	0.001	1	106%	90	110	0%	
Copper	A	mg/L	0.05497	0.05497		0.05	0	0	0.00027	0.001	1	110%	90	110	0%	
Iron	A	mg/L	1.305	1.305		1.3	0	0	0.00119	0.00119	5	100%	90	110	0%	
Lanthanum	A	mg/L	0.04885	0.04885		0.05	0	0	0.000011	0.001	0.1	98%	90	110	0%	
Lead	A	mg/L	0.05235	0.05235		0.05	0	0	0.000056	0.001	1	105%	90	110	0%	
Magnesium	A	mg/L	12.67	12.67		12.5	0	0	0.00564	0.00564	50	101%	90	110	0%	
Manganese	A	mg/L	0.05269	0.05269		0.05	0	0	0.000095	0.001	1	105%	90	110	0%	
Mercury	A	mg/L	0.0009619	0.0009619		0.001	0	0	0.00016	0.001	0.002	96%	90	110	0%	
Molybdenum	A	mg/L	0.05087	0.05087		0.05	0	0	0.00005	0.001	0.1	102%	90	110	0%	
Nickel	A	mg/L	0.05311	0.05311		0.05	0	0	0.00063	0.001	1	106%	90	110	0%	
Potassium	A	mg/L	12.27	12.27		12.5	0	0	0.08139	0.08139	50	98%	90	110	0%	
Selenium	A	mg/L	0.05303	0.05303		0.05	0	0	0.00033	0.001	1	106%	90	110	0%	
Silicon	A	mg/L	0.2116	0.2116		0.2	0	0	0.01223	0.1	0.4	106%	90	110	0%	
Silver	A	mg/L	0.02047	0.02047		0.02	0	0	0.00002	0.001	0.04	102%	90	110	0%	
Sodium	A	mg/L	12.46	12.46		12.5	0	0	0.02171	0.02171	50	100%	90	110	0%	
Strontium	A	mg/L	0.05166	0.05166		0.05	0	0	0.00014	0.001	1	103%	90	110	0%	
Thallium	A	mg/L	0.04963	0.04963		0.05	0	0	0.000041	0.001	1	99%	90	110	0%	
Thorium	A	mg/L	0.05418	0.05418		0.05	0	0	0.00061	0.001	1	108%	90	110	0%	
Tin	A	mg/L	0.052	0.052		0.05	0	0	0.00132	0.00132	0.1	104%	90	110	0%	
Titanium	A	mg/L	0.05059	0.05059		0.05	0	0	0.000094	0.001	1	101%	90	110	0%	
Uranium	A	mg/L	0.05216	0.05216		0.05	0	0	0.000052	0.0003	1	104%	90	110	0%	
Vanadium	A	mg/L	0.05242	0.05242		0.05	0	0	0.0013	0.0013	1	105%	90	110	0%	
Zinc	A	mg/L	0.05648	0.05648		0.05	0	0	0.00273	0.00273	1	113%	90	110	0%	S
Iron, Ferrous	C	mg/L	1.305	1.305		0	0	0	0.00119	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					
14968339	CCB	ICPMS-6020-W-	CCB		1/6/2022 3:27:31	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.0002413	0.0002413		0	0	0	0.00086	0.001	1	0%			0%	
Antimony	A	mg/L	0.00007477	0.00007477		0	0	0	0.00042	0.001	0.1	0%			0%	
Arsenic	A	mg/L	4.927E-06	4.927E-06		0	0	0	0.00019	0.001	1	0%			0%	
Barium	A	mg/L	9.944E-06	9.944E-06		0	0	0	0.000042	0.001	1	0%			0%	
Beryllium	A	mg/L	0.00001971	0.00001971		0	0	0	0.00012	0.001	1	0%			0%	
Boron	A	mg/L	0.0002395	0.0002395		0	0	0	0.00561	0.00561	1	0%			0%	
Cadmium	A	mg/L	5.533E-06	5.533E-06		0	0	0	0.000025	0.001	1	0%			0%	
Calcium	A	mg/L	0.0003534	0.0003534		0	0	0	0.02092	0.02092	50	0%			0%	
Cerium	A	mg/L	1.949E-06	1.949E-06		0	0	0	0.000012	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	0.00000779	0.00000779		0	0	0	0.00018	0.001	1	0%			0%	
Cobalt	A	mg/L	9.887E-06	9.887E-06		0	0	0	0.000042	0.001	1	0%			0%	
Copper	A	mg/L	-4.69E-06	-4.69E-06		0	0	0	0.00027	0.001	1	0%			0%	
Iron	A	mg/L	0.0002452	0.0002452		0	0	0	0.00119	0.00119	5	0%			0%	
Lanthanum	A	mg/L	1.861E-06	1.861E-06		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.00004338	0.00004338		0	0	0	0.000056	0.001	1	0%			0%	
Magnesium	A	mg/L	0.0008892	0.0008892		0	0	0	0.00564	0.00564	50	0%			0%	
Manganese	A	mg/L	0.00003412	0.00003412		0	0	0	0.000095	0.001	1	0%			0%	
Mercury	A	mg/L	-1.999E-06	-1.999E-06		0	0	0	0.00016	0.001	0.002	0%			0%	
Molybdenum	A	mg/L	0.00002318	0.00002318		0	0	0	0.00005	0.001	0.1	0%			0%	
Nickel	A	mg/L	0.00003164	0.00003164		0	0	0	0.00063	0.001	1	0%			0%	
Potassium	A	mg/L	0.007027	0.007027		0	0	0	0.08139	0.08139	50	0%			0%	
Selenium	A	mg/L	0.00002325	0.00002325		0	0	0	0.00033	0.001	1	0%			0%	
Silicon	A	mg/L	0.00001044	0.00001044		0	0	0	0.01223	0.1	0.4	0%	0	0	0%	
Silver	A	mg/L	3.563E-07	3.563E-07		0	0	0	0.00002	0.001	0.04	0%			0%	
Sodium	A	mg/L	0.003947	0.003947		0	0	0	0.02171	0.02171	50	0%			0%	
Strontium	A	mg/L	7.291E-07	7.291E-07		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0007366	0.0007366		0	0	0	0.000041	0.001	1	0%	0	0	0%	
Thorium	A	mg/L	0.00002158	0.00002158		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Tin	A	mg/L	0.00002286	0.00002286		0	0	0	0.00132	0.00132	0.1	0%	0	0	0%	
Titanium	A	mg/L	0.00001829	0.00001829		0	0	0	0.000094	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	2.923E-06	2.923E-06		0	0	0	0.000052	0.0003	1	0%	0	0	0%	
Vanadium	A	mg/L	-7.285E-05	-7.285E-05		0	0	0	0.0013	0.0013	1	0%	0	0	0%	
Zinc	A	mg/L	0.0001416	0.0001416		0	0	0	0.00273	0.00273	1	0%	0	0	0%	
Iron, Ferrous	C	mg/L	0.0002452	0.0002452		0	0	0	0.00119	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					
14968340	Rinse	ICPMS-6020-W-	SAMP		1/6/2022 3:33:42	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	-0.0006243	0		0	0	0	0.00086	0.001	1	0%	0	0	0%	
Antimony	A	mg/L	0.00002519	0		0	0	0	0.00042	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	9.115E-06	0		0	0	0	0.00019	0.001	1	0%	0	0	0%	
Barium	A	mg/L	-0.0000091	0		0	0	0	0.000042	0.001	1	0%	0	0	0%	
Beryllium	A	mg/L	0.00001068	0		0	0	0	0.00012	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	4.177E-06	0		0	0	0	0.000025	0.001	1	0%	0	0	0%	
Calcium	A	mg/L	-3.489E-05	0		0	0	0	0.02092	0.02092	50	0%	0	0	0%	L
Cerium	A	mg/L	1.056E-06	0		0	0	0	0.000012	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	8.802E-06	0		0	0	0	0.00018	0.001	1	0%	0	0	0%	
Iron	A	mg/L	-5.729E-05	0		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Lanthanum	A	mg/L	9.945E-07	0		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.00003233	0		0	0	0	0.000056	0.001	1	0%	0	0	0%	
Magnesium	A	mg/L	0.0006079	0		0	0	0	0.00564	0.00564	50	0%	0	0	0%	L
Manganese	A	mg/L	0.00002427	0		0	0	0	0.000095	0.001	1	0%	0	0	0%	
Mercury	A	mg/L	-9.525E-06	0		0	0	0	0.00016	0.001	0.002	0%	0	0	0%	
Molybdenum	A	mg/L	-5.641E-07	0		0	0	0	0.00005	0.001	0.1	0%	0	0	0%	
Nickel	A	mg/L	0.00001987	0		0	0	0	0.00063	0.001	1	0%	0	0	0%	
Potassium	A	mg/L	0.01143	0		0	0	0	0.08139	0.08139	50	0%	0	0	0%	L
Selenium	A	mg/L	0.00001456	0		0	0	0	0.00033	0.001	1	0%	0	0	0%	
Silver	A	mg/L	-3.809E-06	0		0	0	0	0.00002	0.001	0.04	0%	0	0	0%	
Sodium	A	mg/L	0.002042	0		0	0	0	0.02171	0.02171	50	0%	0	0	0%	L
Strontium	A	mg/L	3.734E-06	0		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.000264	0.000264		0	0	0	0.000041	0.001	1	0%	0	0	0%	J
Thorium	A	mg/L	7.694E-06	0		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Tin	A	mg/L	-1.095E-05	0		0	0	0	0.00132	0.00132	0.1	0%	0	0	0%	
Titanium	A	mg/L	0.00002098	0		0	0	0	0.000094	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	1.167E-06	0		0	0	0	0.000052	0.0003	1	0%	0	0	0%	
Vanadium	A	mg/L	-5.057E-05	0		0	0	0	0.0013	0.0013	1	0%	0	0	0%	
Iron, Ferrous	C	mg/L	-5.729E-05	0		0	0	0	0.00119	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					
14968341	B21122077-001	ICPMS-6020-W-	SAMP		1/6/2022 3:39:53	1	R372863		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					
14968341	B21122077-001	ICPMS-6020-W-	SAMP		1/6/2022 3:39:53	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.00001462	0		0	0	0	0.00042	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	0.00008971	0		0	0	0	0.00019	0.001	1	0%	0	0	0%	
Barium	A	mg/L	0.007429	0.007429		0	0	0	0.000042	0.001	1	0%	0	0	0%	
Beryllium	A	mg/L	6.793E-06	0		0	0	0	0.00012	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0.00002193	0		0	0	0	0.000025	0.001	1	0%	0	0	0%	
Cerium	A	mg/L	5.407E-06	0		0	0	0	0.000012	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	0.001676	0.001676		0	0	0	0.00018	0.001	1	0%	0	0	0%	
Lanthanum	A	mg/L	2.395E-06	0		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.00003411	0		0	0	0	0.000056	0.0005	1	0%	0	0	0%	U
Manganese	A	mg/L	0.000151	0.000151		0	0	0	0.000095	0.001	1	0%	0	0	0%	J
Mercury	A	mg/L	-1.081E-05	0		0	0	0	0.00016	0.001	0.002	0%	0	0	0%	
Molybdenum	A	mg/L	0.0002426	0.0002426		0	0	0	0.00005	0.001	0.1	0%	0	0	0%	J
Nickel	A	mg/L	0.0001091	0		0	0	0	0.00063	0.001	1	0%	0	0	0%	
Selenium	A	mg/L	0.00007667	0		0	0	0	0.00033	0.001	1	0%	0	0	0%	
Silver	A	mg/L	-6.807E-05	0		0	0	0	0.00002	0.001	0.04	0%	0	0	0%	
Strontium	A	mg/L	0.1146	0.1146		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.000266	0.000266		0	0	0	0.000041	0.001	1	0%	0	0	0%	J
Thorium	A	mg/L	2.343E-06	0		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Titanium	A	mg/L	0.001256	0.001256		0	0	0	0.000094	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00002691	0		0	0	0	0.000052	0.0003	1	0%	0	0	0%	
Calcium	B	mg/L	19.4	19.4		0	0	0	0.02092	0.02092	50	0%	0	0	0%	D
Iron	B	mg/L	0.002389	0.002389		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Iron, Ferrous	B	mg/L	0.002389	0.002389		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Magnesium	B	mg/L	16.67	16.67		0	0	0	0.00564	0.00564	50	0%	0	0	0%	D
Potassium	B	mg/L	2.764	2.764		0	0	0	0.08139	0.08139	50	0%	0	0	0%	D
Sodium	B	mg/L	39.06	39.06		0	0	0	0.02171	0.02171	50	0%	0	0	0%	D
Tin	B	mg/L	-6.701E-05	0		0	0	0	0.00132	0.00132	0.1	0%	0	0	0%	
Vanadium	B	mg/L	0.01026	0.01026		0	0	0	0.0013	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					
14968342	B21122077-001	ICPMS-6020-W-	SD		1/6/2022 3:46:01	5	R372863		0	1E+07						
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					
14968342	B21122077-001	ICPMS-6020-W-	SD		1/6/2022 3:46:01	5	R372863			0	1E+07					
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.0002251	0		0	0	0.001852	0.0043	0.0043	1	0%				
Antimony	A	mg/L	0.00001208	0		0	0	0	0.0021	0.0021	0.1	0%				
Arsenic	A	mg/L	9.298E-06	0		0	0	0	0.00095	0.001	1	0%				
Barium	A	mg/L	0.001486	0.00743		0	0	0.007429	0.00021	0.001	1	0%			0%	
Beryllium	A	mg/L	0.00001033	0		0	0	0	0.0006	0.001	1	0%				
Boron	A	mg/L	0.005049	0		0	0	0.02423	0.02805	0.02805	1	0%				
Cadmium	A	mg/L	0.00001859	0		0	0	0	0.000125	0.001	1	0%				
Calcium	A	mg/L	3.448	17.24		0	0	19.4	0.1046	0.1046	50	0%			12%	R
Cerium	A	mg/L	0.0000144	0.000072		0	0	0	0.00006	0.001	0.1	0%				N
Chromium	A	mg/L	0.0003299	0.0016495		0	0	0.001676	0.0009	0.001	1	0%				N
Cobalt	A	mg/L	7.168E-06	0		0	0	0	0.00021	0.001	1	0%				
Copper	A	mg/L	0.0001636	0		0	0	0	0.00135	0.00135	1	0%				
Iron	A	mg/L	0.0007721	0		0	0	0.002389	0.00595	0.00595	5	0%				
Lanthanum	A	mg/L	7.996E-06	0		0	0	0	0.000055	0.001	0.1	0%				
Lead	A	mg/L	0.00003145	0		0	0	0	0.00028	0.001	1	0%				
Magnesium	A	mg/L	3.33	16.65		0	0	16.67	0.0282	0.0282	50	0%			0%	
Manganese	A	mg/L	0.00006471	0		0	0	0.000151	0.000475	0.001	1	0%				
Mercury	A	mg/L	-1.373E-05	0		0	0	0	0.0008	0.001	0.002	0%				
Molybdenum	A	mg/L	0.00005231	0.00026155		0	0	0.0002426	0.00025	0.001	0.1	0%				N
Nickel	A	mg/L	0.00003027	0		0	0	0	0.00315	0.00315	1	0%				
Potassium	A	mg/L	0.4921	2.4605		0	0	2.764	0.40695	0.40695	50	0%				N
Selenium	A	mg/L	0.00001555	0		0	0	0	0.00165	0.00165	1	0%				
Silicon	A	mg/L	3.73	18.65		0	0	21.06	0.06115	0.1	0.4	0%			12%	R
Silver	A	mg/L	-0.0000695	0		0	0	0	0.0001	0.001	0.04	0%				
Sodium	A	mg/L	7.456	37.28		0	0	39.06	0.10855	0.10855	50	0%			5%	
Strontium	A	mg/L	0.02214	0.1107		0	0	0.1146	0.0007	0.001	1	0%			3%	
Thallium	A	mg/L	0.00008352	0.0004176		0	0	0.000266	0.000205	0.001	1	0%				N
Thorium	A	mg/L	2.709E-06	0		0	0	0	0.00305	0.00305	1	0%				
Tin	A	mg/L	-7.585E-06	0		0	0	0	0.0066	0.0066	0.1	0%				
Titanium	A	mg/L	0.000256	0.00128		0	0	0.001256	0.00047	0.001	1	0%				N
Uranium	A	mg/L	5.743E-06	0		0	0	0	0.00026	0.0003	1	0%				
Vanadium	A	mg/L	0.002035	0.010175		0	0	0.01026	0.0065	0.0065	1	0%				N
Zinc	A	mg/L	0.001359	0		0	0	0.005231	0.01365	0.01365	1	0%				
Iron, Ferrous	C	mg/L	0.0007721	0		0	0	0.002389	0.00595	0.00595	5	0%				

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968343	B21122077-001	ICPMS-6020-W- MS			1/6/2022 3:52:09	1.03	R372863		1E+07	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.05792	0.0596576		0.05	0.001852	0	0.0008858	0.001	1	116%	75	125	0%	
Antimony	A	mg/L	0.04854	0.0499962		0.05	0	0	0.0004326	0.001	0.1	100%	75	125	0%	
Arsenic	A	mg/L	0.05019	0.0516957		0.05	0	0	0.0001957	0.001	1	103%	75	125	0%	
Barium	A	mg/L	0.05876	0.0605228		0.05	0.007429	0	4.326E-05	0.001	1	106%	75	125	0%	
Beryllium	A	mg/L	0.04906	0.0505318		0.05	0	0	0.0001236	0.001	1	101%	75	125	0%	
Boron	A	mg/L	0.07174	0.0738922		0.05	0.02423	0	0.0057783	0.0057783	1	99%	75	125	0%	
Cadmium	A	mg/L	0.04874	0.0502022		0.05	0	0	2.575E-05	0.001	1	100%	75	125	0%	
Calcium	A	mg/L	64.18	66.1054		50	19.4	0	0.0215476	0.0215476	50	93%	75	125	0%	E
Cerium	A	mg/L	0.04836	0.0498108		0.05	0	0	1.236E-05	0.001	0.1	100%	75	125	0%	
Chromium	A	mg/L	0.05083	0.0523549		0.05	0.001676	0	0.0001854	0.001	1	101%	75	125	0%	
Cobalt	A	mg/L	0.04824	0.0496872		0.05	0	0	4.326E-05	0.001	1	99%	75	125	0%	
Copper	A	mg/L	0.05048	0.0519944		0.05	0	0	0.0002781	0.001	1	104%	75	125	0%	
Iron	A	mg/L	4.965	5.11395		5.05	0.002389	0	0.0012257	0.0012257	5	101%	75	125	0%	
Lanthanum	A	mg/L	0.0486	0.050058		0.05	0	0	1.133E-05	0.001	0.1	100%	75	125	0%	
Lead	A	mg/L	0.04915	0.0506245		0.05	0	0	5.768E-05	0.001	1	101%	88	115	0%	
Magnesium	A	mg/L	64.22	66.1466		50	16.67	0	0.0058092	0.0058092	50	99%	75	125	0%	E
Manganese	A	mg/L	0.049	0.05047		0.05	0.000151	0	9.785E-05	0.001	1	101%	75	125	0%	
Mercury	A	mg/L	0.0009689	0.0009797		0.001	0	0	0.0001648	0.001	0.002	100%	75	125	0%	
Molybdenum	A	mg/L	0.04752	0.0489456		0.05	0.0002426	0	0.0000515	0.001	0.1	97%	75	125	0%	
Nickel	A	mg/L	0.04868	0.0501404		0.05	0	0	0.0006489	0.001	1	100%	75	125	0%	
Potassium	A	mg/L	51.41	52.9523		50	2.764	0	0.0838317	0.0838317	50	100%	75	125	0%	E
Selenium	A	mg/L	0.05049	0.0520047		0.05	0	0	0.0003399	0.001	1	104%	75	125	0%	
Silicon	A	mg/L	18.6	19.158		0.2	21.06	0	0.0125969	0.1	0.4		75	125	0%	AE
Silver	A	mg/L	0.0195	0.020085		0.02	0	0	0.0000206	0.001	0.04	100%	75	125	0%	
Sodium	A	mg/L	83.08	85.5724		50	39.06	0	0.0223613	0.0223613	50	93%	75	125	0%	E
Strontium	A	mg/L	0.162	0.16686		0.05	0.1146	0	0.0001442	0.001	1	105%	75	125	0%	
Thallium	A	mg/L	0.04769	0.0491207		0.05	0.000266	0	4.223E-05	0.001	1	98%	75	125	0%	
Thorium	A	mg/L	0.0513	0.052839		0.05	0	0	0.0006283	0.001	1	106%	75	125	0%	
Tin	A	mg/L	0.04892	0.0503876		0.05	0	0	0.0013596	0.0013596	0.1	101%	75	125	0%	
Titanium	A	mg/L	0.05037	0.0518811		0.05	0.001256	0	9.682E-05	0.001	1	101%	75	125	0%	
Uranium	A	mg/L	0.05063	0.0521489		0.05	0	0	5.356E-05	0.0003	1	104%	75	125	0%	
Vanadium	A	mg/L	0.05937	0.0611511		0.05	0.01026	0	0.001339	0.001339	1	102%	75	125	0%	
Zinc	A	mg/L	0.05419	0.0558157		0.05	0.005231	0	0.0028119	0.0028119	1	101%	75	125	0%	
Iron, Ferrous	C	mg/L	4.965	5.11395		0	0.002389	0	0.0012257	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					
14968344	B21122077-001	ICPMS-6020-W- MSD			1/6/2022 3:58:08	1.03	R372863		1E+07	1E+07						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.05097	0.0524991		0.05	0.001852	0.0596576	0.0008858	0.001	1	101%	75	125	13%	
Antimony	A	mg/L	0.04806	0.0495018		0.05	0	0.0499962	0.0004326	0.001	0.1	99%	75	125	1%	
Arsenic	A	mg/L	0.05052	0.0520356		0.05	0	0.0516957	0.0001957	0.001	1	104%	75	125	1%	
Barium	A	mg/L	0.05833	0.0600799		0.05	0.007429	0.0605228	4.326E-05	0.001	1	105%	75	125	1%	
Beryllium	A	mg/L	0.04961	0.0510983		0.05	0	0.0505318	0.0001236	0.001	1	102%	75	125	1%	
Boron	A	mg/L	0.07154	0.0736862		0.05	0.02423	0.0738922	0.0057783	0.0057783	1	99%	75	125	0%	
Cadmium	A	mg/L	0.04806	0.0495018		0.05	0	0.0502022	2.575E-05	0.001	1	99%	75	125	1%	
Calcium	A	mg/L	68.69	70.7507		50	19.4	66.1054	0.0215476	0.0215476	50	103%	75	125	7%	E
Cerium	A	mg/L	0.04947	0.0509541		0.05	0	0.0498108	1.236E-05	0.001	0.1	102%	75	125	2%	
Chromium	A	mg/L	0.05167	0.0532201		0.05	0.001676	0.0523549	0.0001854	0.001	1	103%	75	125	2%	
Cobalt	A	mg/L	0.05194	0.0534982		0.05	0	0.0496872	4.326E-05	0.001	1	107%	75	125	7%	
Copper	A	mg/L	0.05124	0.0527772		0.05	0	0.0519944	0.0002781	0.001	1	106%	75	125	1%	
Iron	A	mg/L	5.237	5.39411		5.05	0.002389	5.11395	0.0012257	0.0012257	5	107%	75	125	5%	E
Lanthanum	A	mg/L	0.0501	0.051603		0.05	0	0.050058	1.133E-05	0.001	0.1	103%	75	125	3%	
Lead	A	mg/L	0.0497	0.051191		0.05	0	0.0506245	5.768E-05	0.001	1	102%	88	115	1%	
Magnesium	A	mg/L	65.82	67.7946		50	16.67	66.1466	0.0058092	0.0058092	50	102%	75	125	2%	E
Manganese	A	mg/L	0.04964	0.0511292		0.05	0.000151	0.05047	9.785E-05	0.001	1	102%	75	125	1%	
Mercury	A	mg/L	0.0009742	0.00100343		0.001	0	0.000998	0.0001648	0.001	0.002	100%	75	125		
Molybdenum	A	mg/L	0.0478	0.049234		0.05	0.0002426	0.0489456	0.0000515	0.001	0.1	98%	75	125	1%	
Nickel	A	mg/L	0.0496	0.051088		0.05	0	0.0501404	0.0006489	0.001	1	102%	75	125	2%	
Potassium	A	mg/L	53.03	54.6209		50	2.764	52.9523	0.0838317	0.0838317	50	104%	75	125	3%	E
Selenium	A	mg/L	0.05232	0.0538896		0.05	0	0.0520047	0.0003399	0.001	1	108%	75	125	4%	
Silicon	A	mg/L	19.7	20.291		0.2	21.06	19.158	0.0125969	0.1	0.4		75	125	6%	AE
Silver	A	mg/L	0.01934	0.0199202		0.02	0	0.020085	0.0000206	0.001	0.04	100%	75	125	1%	
Sodium	A	mg/L	85.31	87.8693		50	39.06	85.5724	0.0223613	0.0223613	50	98%	75	125	3%	E
Strontium	A	mg/L	0.1643	0.169229		0.05	0.1146	0.16686	0.0001442	0.001	1	109%	75	125	1%	
Thallium	A	mg/L	0.04873	0.0501919		0.05	0.000266	0.0491207	4.223E-05	0.001	1	100%	75	125	2%	
Thorium	A	mg/L	0.052	0.05356		0.05	0	0.052839	0.0006283	0.001	1	107%	75	125	1%	
Tin	A	mg/L	0.04852	0.0499756		0.05	0	0.0503876	0.0013596	0.0013596	0.1	100%	75	125	1%	
Titanium	A	mg/L	0.05289	0.0544767		0.05	0.001256	0.0518811	9.682E-05	0.001	1	106%	75	125	5%	
Uranium	A	mg/L	0.05038	0.0518914		0.05	0	0.0521489	5.356E-05	0.0003	1	104%	75	125	0%	
Vanadium	A	mg/L	0.06103	0.0628609		0.05	0.01026	0.0611511	0.001339	0.001339	1	105%	75	125	3%	
Zinc	A	mg/L	0.0552	0.056856		0.05	0.005231	0.0558157	0.0028119	0.0028119	1	103%	75	125	2%	
Iron, Ferrous	C	mg/L	5.237	5.39411		0	0.002389	5.11395	0.0012257	0.0012257	5	0%	0	0	5%	E

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968345	Rinse	ICPMS-6020-W-	SAMP		1/6/2022 4:04:06	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	-0.0005923	0		0	0	0	0.00086	0.001	1	0%	0	0	0%	
Antimony	A	mg/L	0.0001152	0		0	0	0	0.00042	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	0.00002346	0		0	0	0	0.00019	0.001	1	0%	0	0	0%	
Barium	A	mg/L	-4.29E-06	0		0	0	0	0.000042	0.001	1	0%	0	0	0%	
Beryllium	A	mg/L	0.00002513	0		0	0	0	0.00012	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	2.234E-06	0		0	0	0	0.000025	0.001	1	0%	0	0	0%	
Calcium	A	mg/L	0.001587	0		0	0	0	0.02092	0.02092	50	0%	0	0	0%	L
Cerium	A	mg/L	1.247E-06	0		0	0	0	0.000012	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	0.00001312	0		0	0	0	0.00018	0.001	1	0%	0	0	0%	
Iron	A	mg/L	0.00005384	0		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Lanthanum	A	mg/L	1.575E-06	0		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.00002162	0		0	0	0	0.000056	0.001	1	0%	0	0	0%	
Magnesium	A	mg/L	0.003325	0		0	0	0	0.00564	0.00564	50	0%	0	0	0%	L
Manganese	A	mg/L	0.00001541	0		0	0	0	0.000095	0.001	1	0%	0	0	0%	
Mercury	A	mg/L	-1.366E-05	0		0	0	0	0.00016	0.001	0.002	0%	0	0	0%	
Molybdenum	A	mg/L	0.00004435	0		0	0	0	0.00005	0.001	0.1	0%	0	0	0%	
Nickel	A	mg/L	0.00001373	0		0	0	0	0.00063	0.001	1	0%	0	0	0%	
Potassium	A	mg/L	0.01439	0		0	0	0	0.08139	0.08139	50	0%	0	0	0%	L
Selenium	A	mg/L	0.00002641	0		0	0	0	0.00033	0.001	1	0%	0	0	0%	
Silver	A	mg/L	-2.393E-06	0		0	0	0	0.00002	0.001	0.04	0%	0	0	0%	
Sodium	A	mg/L	0.01089	0		0	0	0	0.02171	0.02171	50	0%	0	0	0%	L
Strontium	A	mg/L	0.00000192	0		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0002503	0.0002503		0	0	0	0.000041	0.001	1	0%	0	0	0%	J
Thorium	A	mg/L	0.00001761	0		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Tin	A	mg/L	0.00004078	0		0	0	0	0.00132	0.00132	0.1	0%	0	0	0%	
Titanium	A	mg/L	0.0001075	0.0001075		0	0	0	0.000094	0.001	1	0%	0	0	0%	J
Uranium	A	mg/L	1.816E-06	0		0	0	0	0.000052	0.0003	1	0%	0	0	0%	
Vanadium	A	mg/L	0.0004216	0		0	0	0	0.0013	0.0013	1	0%	0	0	0%	
Iron, Ferrous	C	mg/L	0.00005384	0		0	0	0	0.00119	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					
14968346	B21122088-001	ICPMS-6020-W-	SAMP		1/6/2022 4:10:17	1	R372863		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					
14968346	B21122088-001	ICPMS-6020-W-	SAMP		1/6/2022 4:10:17	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.0009196	0.0009196		0	0	0	0.00042	0.001	0.1	0%	0	0	0%	J
Arsenic	A	mg/L	0.00003897	0		0	0	0	0.00019	0.001	1	0%	0	0	0%	
Barium	A	mg/L	0.004917	0.004917		0	0	0	0.000042	0.001	1	0%	0	0	0%	
Beryllium	A	mg/L	8.082E-06	0		0	0	0	0.00012	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0.00001929	0		0	0	0	0.000025	0.001	1	0%	0	0	0%	
Cerium	A	mg/L	6.983E-06	0		0	0	0	0.000012	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	0.002283	0.002283		0	0	0	0.00018	0.001	1	0%	0	0	0%	
Lanthanum	A	mg/L	3.756E-06	0		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.00007791	0.00007791		0	0	0	0.000056	0.001	1	0%	0	0	0%	J
Manganese	A	mg/L	0.001411	0.001411		0	0	0	0.000095	0.001	1	0%	0	0	0%	
Mercury	A	mg/L	-1.593E-05	0		0	0	0	0.00016	0.001	0.002	0%	0	0	0%	
Molybdenum	A	mg/L	0.0001576	0.0001576		0	0	0	0.00005	0.001	0.1	0%	0	0	0%	J
Nickel	A	mg/L	0.0003188	0		0	0	0	0.00063	0.001	1	0%	0	0	0%	
Selenium	A	mg/L	0.0001706	0		0	0	0	0.00033	0.001	1	0%	0	0	0%	
Silver	A	mg/L	-6.535E-05	0		0	0	0	0.00002	0.001	0.04	0%	0	0	0%	
Strontium	A	mg/L	0.07554	0.07554		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0002235	0.0002235		0	0	0	0.000041	0.001	1	0%	0	0	0%	J
Thorium	A	mg/L	3.014E-06	0		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Titanium	A	mg/L	0.001617	0.001617		0	0	0	0.000094	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00001549	0		0	0	0	0.000052	0.0003	1	0%	0	0	0%	
Calcium	B	mg/L	11.8	11.8		0	0	0	0.02092	0.02092	50	0%	0	0	0%	D
Iron	B	mg/L	0.007084	0.007084		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Iron, Ferrous	B	mg/L	0.007084	0.007084		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Magnesium	B	mg/L	11.9	11.9		0	0	0	0.00564	0.00564	50	0%	0	0	0%	D
Potassium	B	mg/L	2.169	2.169		0	0	0	0.08139	0.08139	50	0%	0	0	0%	D
Sodium	B	mg/L	36.89	36.89		0	0	0	0.02171	0.02171	50	0%	0	0	0%	D
Tin	B	mg/L	-2.173E-06	0		0	0	0	0.00132	0.00132	0.1	0%	0	0	0%	
Vanadium	B	mg/L	0.0164	0.0164		0	0	0	0.0013	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					
14968347	B21122088-001	ICPMS-6020-W-	SAMP		1/6/2022 4:16:26	1	162587	12/29/2021	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					
14968347	B21122088-001	ICPMS-6020-W-	SAMP		1/6/2022 4:16:26	1	162587	12/29/2021	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.001429	0.001429		0	0	0	0.0002799	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	0.0002561	0		0	0	0	0.0003412	0.001	1	0%	0	0	0%	U
Barium	A	mg/L	0.007544	0.007544		0	0	0	0.0002682	0.001	1	0%	0	0	0%	
Beryllium	A	mg/L	0.00001259	0		0	0	0	0.0001071	0.01	1	0%	0	0	0%	U
Cadmium	A	mg/L	-9.107E-07	0		0	0	0	1.821E-05	0.005	1	0%	0	0	0%	U
Cerium	A	mg/L	0.0001042	0.0001042		0	0	0	2.738E-05	0.001	0.1	0%	0	0	0%	J
Lanthanum	A	mg/L	0.00005121	0		0	0	0	0.000055	0.001	0.1	0%	0	0	0%	U
Lead	A	mg/L	0.0004727	0.0004727		0	0	0	7.716E-05	0.001	1	0%	0	0	0%	J
Manganese	A	mg/L	0.004261	0.004261		0	0	0	0.0005399	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	0.0003565	0.0003565		0	0	0	0.0001763	0.001	0.1	0%	0	0	0%	J
Selenium	A	mg/L	0.0002117	0.0002117		0	0	0	0.0001357	0.001	1	0%	0	0	0%	J
Silver	A	mg/L	0.00002274	0		0	0	0	4.281E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.08047	0.08047		0	0	0	0.0002433	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0002018	0.0002018		0	0	0	0.0001114	0.001	1	0%	0	0	0%	J
Titanium	A	mg/L	0.008899	0.008899		0	0	0	0.0005733	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00001856	0.00001856		0	0	0	1.699E-05	0.0003	1	0%	0	0	0%	J
Aluminum	B	mg/L	0.1053	0.1053		0	0	0	0.0038747	0.0031975	1	0%	0	0	0%	D
Calcium	B	mg/L	11.91	11.91		0	0	0	0.0372936	0.1103481	50	0%	0	0	0%	D
Chromium	B	mg/L	0.00528	0.00528		0	0	0	0.0015375	0.0015375	1	0%	0	0	0%	D
Iron	B	mg/L	0.1868	0.1868		0	0	0	0.007424	0.00513	5	0%	0	0	0%	D
Magnesium	B	mg/L	12.98	12.98		0	0	0	0.0104254	0.0081522	50	0%	0	0	0%	D
Nickel	B	mg/L	0.001239	0.001239		0	0	0	0.0002288	0.0024200	1	0%	0	0	0%	JL
Potassium	B	mg/L	2.212	2.212		0	0	0	0.0765619	0.0261205	50	0%	0	0	0%	D
Sodium	B	mg/L	39.45	39.45		0	0	0	0.1019461	0.7330269	50	0%	0	0	0%	D
Thorium	B	mg/L	0.00007058	0		0	0	0	0.0003796	0.00415	1	0%	0	0	0%	UL
Tin	B	mg/L	0.0006813	0		0	0	0	0.0018932	0.0011175	0.1	0%	0	0	0%	U
Vanadium	B	mg/L	0.01907	0.01907		0	0	0	0.0039127	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					
14968348	B21122088-001	ICPMS-6020-W-	SD		1/6/2022 4:22:33	5	162587	12/29/2021	0	1E+07						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.02035	0.10175		0	0	0.1053	0.0193736	0.0159875	1	0%	0	0		N
Antimony	A	mg/L	0.000291	0.001455		0	0	0.001429	0.0013997	0.0049	0.1	0%	0	0		N
Arsenic	A	mg/L	0.00003902	0		0	0	0	0.0017061	0.0013383	1	0%	0	0		

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968348	B21122088-001	ICPMS-6020-W-	SD		1/6/2022 4:22:33	5	162587	12/29/2021	0	1E+07						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Barium	A	mg/L	0.001467	0.007335		0	0	0.007544	0.0013411	0.0012039	1	0%	0	0		N
Beryllium	A	mg/L	1.067E-06	0		0	0	0	0.0005353	0.01	1	0%	0	0		
Boron	A	mg/L	0.01092	0		0	0	0.06042	0.1019008	0.07335	1	0%	0	0		
Cadmium	A	mg/L	3.17E-07	0		0	0	0	9.105E-05	0.005	1	0%	0	0		
Calcium	A	mg/L	2.415	12.075		0	0	11.91	0.1864681	0.5517403	50	0%	0	0	1%	
Cerium	A	mg/L	0.00001968	0		0	0	0.0001042	0.0001369	0.001	0.1	0%	0	0		
Chromium	A	mg/L	0.001064	0		0	0	0.00528	0.0076875	0.0076875	1	0%	0	0		
Cobalt	A	mg/L	0.00004492	0		0	0	0.0001784	0.0004771	0.001	1	0%	0	0		
Copper	A	mg/L	0.0004643	0		0	0	0.00218	0.0043735	0.0099	1	0%	0	0		
Iron	A	mg/L	0.0377	0.1885		0	0	0.1868	0.0371198	0.02565	5	0%	0	0		N
Lanthanum	A	mg/L	9.353E-06	0		0	0	0	0.000275	0.001	0.1	0%	0	0		
Lead	A	mg/L	0.0001171	0.0005855		0	0	0.0004727	0.0003858	0.001	1	0%	0	0		N
Magnesium	A	mg/L	2.47	12.35		0	0	12.98	0.0521269	0.0407608	50	0%	0	0	5%	
Manganese	A	mg/L	0.000856	0.00428		0	0	0.004261	0.0026994	0.0010695	1	0%	0	0		N
Molybdenum	A	mg/L	0.00006775	0		0	0	0.0003565	0.0008814	0.001	0.1	0%	0	0		
Nickel	A	mg/L	0.000268	0.00134		0	0	0.001239	0.0011441	0.0121000	1	0%	0	0		N
Potassium	A	mg/L	0.4145	2.0725		0	0	2.212	0.3828097	0.1306027	50	0%	0	0		N
Selenium	A	mg/L	0.00004588	0		0	0	0.0002117	0.0006787	0.0029274	1	0%	0	0		
Silicon	A	mg/L	4.495	22.475		0	0	22.77	0.2110446	0.026606	0.4	0%	0	0	1%	
Silver	A	mg/L	-5.346E-05	0		0	0	0	0.0002141	0.001	0.04	0%	0	0		
Sodium	A	mg/L	7.711	38.555		0	0	39.45	0.5097304	3.6651346	50	0%	0	0	2%	
Strontium	A	mg/L	0.01585	0.07925		0	0	0.08047	0.0012164	0.001	1	0%	0	0	2%	
Thallium	A	mg/L	0.0001203	0.0006015		0	0	0.0002018	0.0005569	0.001	1	0%	0	0		N
Thorium	A	mg/L	5.792E-06	0		0	0	0	0.0018981	0.02075	1	0%	0	0		
Tin	A	mg/L	0.0001195	0		0	0	0	0.0094659	0.0055874	0.1	0%	0	0		
Titanium	A	mg/L	0.00182	0.0091		0	0	0.008899	0.0028666	0.001	1	0%	0	0		N
Uranium	A	mg/L	4.256E-06	0		0	0	1.856E-05	8.495E-05	0.0004224	1	0%	0	0		
Vanadium	A	mg/L	0.00382	0		0	0	0.01907	0.0195637	0.0105423	1	0%	0	0		
Zinc	A	mg/L	0.01792	0.0896		0	0	0.08579	0.0058087	0.0327721	1	0%	0	0	4%	
Silica	C	mg/L	9.615704	48.07852		0	0	0	0.4514666	0.0569155	5	0%	0	0		N
Silicon as SiO2	C	mg/L	9.615704	48.07852		0	0	0	0.4514666	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					
14968349	B21122088-001	ICPMS-6020-W-	PDS1		1/6/2022 4:28:42	1.03	162587	12/29/2021	1E+07	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.1483	0.152749		0.0515	0.1053	0	0.003991	0.0032934	1	92%	75	125	0%	
Antimony	A	mg/L	0.04847	0.0499241		0.0515	0.001429	0	0.0002883	0.0010094	0.1	94%	75	125	0%	
Arsenic	A	mg/L	0.04711	0.0485233		0.0515	0	0	0.0003514	0.001	1	94%	75	125	0%	
Barium	A	mg/L	0.06011	0.0619133		0.0515	0.007544	0	0.0002763	0.001	1	106%	75	125	0%	
Beryllium	A	mg/L	0.04747	0.0488941		0.0515	0	0	0.0001103	0.01	1	95%	75	125	0%	
Boron	A	mg/L	0.1007	0.103721		0.0515	0.06042	0	0.0209916	0.0151101	1	84%	75	125	0%	
Cadmium	A	mg/L	0.04694	0.0483482		0.0515	0	0	1.876E-05	0.005	1	94%	75	125	0%	
Calcium	A	mg/L	55.98	57.6594		51.5	11.91	0	0.0384124	0.1136585	50	89%	75	125	0%	
Cerium	A	mg/L	0.04867	0.0501301		0.0515	0.0001042	0	2.820E-05	0.001	0.1	97%	75	125	0%	
Chromium	A	mg/L	0.05264	0.0542192		0.0515	0.00528	0	0.0015836	0.0015836	1	95%	75	125	0%	
Cobalt	A	mg/L	0.04694	0.0483482		0.0515	0.0001784	0	9.827E-05	0.001	1	94%	75	125	0%	
Copper	A	mg/L	0.051	0.05253		0.0515	0.00218	0	0.0009009	0.0020394	1	98%	75	125	0%	
Iron	A	mg/L	4.907	5.05421		5.15	0.1868	0	0.0076467	0.0052839	5	95%	75	125	0%	
Lanthanum	A	mg/L	0.04933	0.0508099		0.0515	0	0	5.665E-05	0.001	0.1	99%	75	125	0%	
Lead	A	mg/L	0.04846	0.0499138		0.0515	0.0004727	0	7.947E-05	0.001	1	96%	80	120	0%	
Magnesium	A	mg/L	58.03	59.7709		51.5	12.98	0	0.0107381	0.0083967	50	91%	75	125	0%	
Manganese	A	mg/L	0.05117	0.0527051		0.0515	0.004261	0	0.0005561	0.001	1	94%	75	125	0%	
Molybdenum	A	mg/L	0.04745	0.0488735		0.0515	0.0003565	0	0.0001816	0.001	0.1	94%	75	125	0%	
Nickel	A	mg/L	0.04859	0.0500477		0.0515	0.001239	0	0.0002357	0.0024926	1	95%	75	125	0%	
Potassium	A	mg/L	47.28	48.6984		51.5	2.212	0	0.0788588	0.0269042	50	90%	75	125	0%	
Selenium	A	mg/L	0.0478	0.049234		0.0515	0.0002117	0	0.0001398	0.001	1	95%	75	125	0%	
Silicon	A	mg/L	21.46	22.1038		0.206	22.77	0	0.0434752	0.0054808	0.4		0	0	0%	A
Silver	A	mg/L	0.01928	0.0198584		0.0206	0	0	4.409E-05	0.001	0.04	96%	75	125	0%	
Sodium	A	mg/L	79.05	81.4215		51.5	39.45	0	0.1050045	0.7550177	50	81%	75	125	0%	
Strontium	A	mg/L	0.1206	0.124218		0.0515	0.08047	0	0.0002506	0.001	1	85%	75	125	0%	
Thallium	A	mg/L	0.04791	0.0493473		0.0515	0.0002018	0	0.0001147	0.001	1	95%	75	125	0%	
Thorium	A	mg/L	0.05051	0.0520253		0.0515	0	0	0.000391	0.0042745	1	101%	75	125	0%	
Tin	A	mg/L	0.04908	0.0505524		0.0515	0	0	0.00195	0.001151	0.1	98%	75	125	0%	
Titanium	A	mg/L	0.05641	0.0581023		0.0515	0.008899	0	0.0005905	0.001	1	96%	75	125	0%	
Uranium	A	mg/L	0.0501	0.051603		0.0515	1.856E-05	0	1.75E-05	0.0003	1	100%	75	125	0%	
Vanadium	A	mg/L	0.06572	0.0676916		0.0515	0.01907	0	0.0040301	0.0021717	1	94%	75	125	0%	
Zinc	A	mg/L	0.123	0.12669		0.0515	0.08579	0	0.0011966	0.0067511	1	79%	75	125	0%	
Silica	C	mg/L	45.907232	47.284449		0	0	0	0.0930021	0.0117246	5	0%	0	0	0%	
Silicon as SiO2	C	mg/L	45.907232	47.284449		0.0515	0	0	0.0930021	0.0117246	5	91814%	75	125	0%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968350	B21122088-001	ICPMS-6020-W- MS4			1/6/2022 4:35:02	1	162587	12/29/2021	1E+07	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.6019	0.6019		0.5	0.1053	0	0.0038747	0.0031975	1	99%	75	125	0%	
Antimony	A	mg/L	0.103	0.103		0.1	0.001429	0	0.0002799	0.001	0.1	102%	75	125	0%	
Arsenic	A	mg/L	0.1031	0.1031		0.1	0	0	0.0003412	0.001	1	103%	75	125	0%	
Barium	A	mg/L	0.1068	0.1068		0.1	0.007544	0	0.0002682	0.001	1	99%	75	125	0%	
Beryllium	A	mg/L	0.04929	0.04929		0.05	0	0	0.0001071	0.01	1	99%	75	125	0%	
Boron	A	mg/L	0.1604	0.1604		0.1	0.06042	0	0.0203802	0.01467	1	100%	75	125	0%	
Cadmium	A	mg/L	0.05103	0.05103		0.05	0	0	1.821E-05	0.005	1	102%	75	125	0%	
Calcium	A	mg/L	16.48	16.48		5	11.91	0	0.0372936	0.1103481	50	91%	75	125	0%	
Cerium	A	mg/L	0.1041	0.1041		0.1	0.0001042	0	2.738E-05	0.001	0.1	104%	75	125	0%	
Chromium	A	mg/L	0.1114	0.1114		0.1	0.00528	0	0.0015375	0.0015375	1	106%	75	125	0%	
Cobalt	A	mg/L	0.103	0.103		0.1	0.0001784	0	9.541E-05	0.001	1	103%	75	125	0%	
Copper	A	mg/L	0.1129	0.1129		0.1	0.00218	0	0.0008747	0.00198	1	111%	75	125	0%	
Iron	A	mg/L	0.6698	0.6698		0.5	0.1868	0	0.007424	0.00513	5	97%	75	125	0%	
Lanthanum	A	mg/L	0.1047	0.1047		0.1	0	0	0.000055	0.001	0.1	105%	75	125	0%	
Lead	A	mg/L	0.102	0.102		0.1	0.0004727	0	7.716E-05	0.001	1	102%	88	115	0%	
Magnesium	A	mg/L	17.13	17.13		5	12.98	0	0.0104254	0.0081522	50	83%	75	125	0%	
Manganese	A	mg/L	0.5497	0.5497		0.5	0.004261	0	0.0005399	0.001	1	109%	75	125	0%	
Molybdenum	A	mg/L	0.1011	0.1011		0.1	0.0003565	0	0.0001763	0.001	0.1	101%	75	125	0%	
Nickel	A	mg/L	0.1085	0.1085		0.1	0.001239	0	0.0002288	0.0024200	1	107%	75	125	0%	
Potassium	A	mg/L	7.521	7.521		5	2.212	0	0.0765619	0.0261205	50	106%	75	125	0%	
Selenium	A	mg/L	0.09784	0.09784		0.1	0.0002117	0	0.0001357	0.001	1	98%	75	125	0%	
Silicon	A	mg/L	23.96	23.96		1	22.77	0	0.0422089	0.0053212	0.4		75	125	0%	A
Silver	A	mg/L	0.009529	0.009529		0.01	0	0	4.281E-05	0.001	0.04	95%	75	125	0%	
Sodium	A	mg/L	42.79	42.79		5	39.45	0	0.1019461	0.7330269	50		75	125	0%	A
Strontium	A	mg/L	0.1993	0.1993		0.1	0.08047	0	0.0002433	0.001	1	119%	75	125	0%	
Thallium	A	mg/L	0.1027	0.1027		0.1	0.0002018	0	0.0001114	0.001	1	102%	75	125	0%	
Thorium	A	mg/L	0.1091	0.1091		0.1	0	0	0.0003796	0.00415	1	109%	75	125	0%	
Tin	A	mg/L	0.1027	0.1027		0.1	0	0	0.0018932	0.0011175	0.1	103%	75	125	0%	
Titanium	A	mg/L	0.109	0.109		0.1	0.008899	0	0.0005733	0.001	1	100%	75	125	0%	
Uranium	A	mg/L	0.1026	0.1026		0.1	1.856E-05	0	1.699E-05	0.0003	1	103%	75	125	0%	
Vanadium	A	mg/L	0.1264	0.1264		0.1	0.01907	0	0.0039127	0.0021085	1	107%	75	125	0%	
Zinc	A	mg/L	0.1857	0.1857		0.1	0.08579	0	0.0011617	0.0065544	1	100%	75	125	0%	
Silica	C	mg/L	51.255232	51.255232		0	0	0	0.0902933	0.0113831	5	0%	0	0	0%	
Silicon as SiO2	C	mg/L	51.255232	51.255232		2.14	0	0	0.0902933	0.0113831	5	2395%	75	125	0%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968351	B21122088-001	ICPMS-6020-W-	MSD4		1/6/2022 4:40:52	1	162587	12/29/2021	1E+07	1E+07						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.6092	0.6092		0.5	0.1053	0.6019	0.0038747	0.0031975	1	101%	75	125	1%	
Antimony	A	mg/L	0.1037	0.1037		0.1	0.001429	0.103	0.0002799	0.001	0.1	102%	75	125	1%	
Arsenic	A	mg/L	0.09579	0.09579		0.1	0	0.1031	0.0003412	0.001	1	96%	75	125	7%	
Barium	A	mg/L	0.1081	0.1081		0.1	0.007544	0.1068	0.0002682	0.001	1	101%	75	125	1%	
Beryllium	A	mg/L	0.05144	0.05144		0.05	0	0.04929	0.0001071	0.01	1	103%	75	125	4%	
Boron	A	mg/L	0.1653	0.1653		0.1	0.06042	0.1604	0.0203802	0.01467	1	105%	75	125	3%	
Cadmium	A	mg/L	0.04845	0.04845		0.05	0	0.05103	1.821E-05	0.005	1	97%	75	125	5%	
Calcium	A	mg/L	16.71	16.71		5	11.91	16.48	0.0372936	0.1103481	50	96%	75	125	1%	
Cerium	A	mg/L	0.1077	0.1077		0.1	0.0001042	0.1041	2.738E-05	0.001	0.1	108%	75	125	3%	
Chromium	A	mg/L	0.1078	0.1078		0.1	0.00528	0.1114	0.0015375	0.0015375	1	103%	75	125	3%	
Cobalt	A	mg/L	0.1016	0.1016		0.1	0.0001784	0.103	9.541E-05	0.001	1	101%	75	125	1%	
Copper	A	mg/L	0.1091	0.1091		0.1	0.00218	0.1129	0.0008747	0.00198	1	107%	75	125	3%	
Iron	A	mg/L	0.6708	0.6708		0.5	0.1868	0.6698	0.007424	0.00513	5	97%	75	125	0%	
Lanthanum	A	mg/L	0.1075	0.1075		0.1	0	0.1047	0.000055	0.001	0.1	107%	75	125	3%	
Lead	A	mg/L	0.104	0.104		0.1	0.0004727	0.102	7.716E-05	0.001	1	104%	88	115	2%	
Magnesium	A	mg/L	17.27	17.27		5	12.98	17.13	0.0104254	0.0081522	50	86%	75	125	1%	
Manganese	A	mg/L	0.5316	0.5316		0.5	0.004261	0.5497	0.0005399	0.001	1	105%	75	125	3%	
Molybdenum	A	mg/L	0.1037	0.1037		0.1	0.0003565	0.1011	0.0001763	0.001	0.1	103%	75	125	3%	
Nickel	A	mg/L	0.1055	0.1055		0.1	0.001239	0.1085	0.0002288	0.0024200	1	104%	75	125	3%	
Potassium	A	mg/L	7.336	7.336		5	2.212	7.521	0.0765619	0.0261205	50	102%	75	125	2%	
Selenium	A	mg/L	0.09937	0.09937		0.1	0.0002117	0.09784	0.0001357	0.001	1	99%	75	125	2%	
Silicon	A	mg/L	23.62	23.62		1	22.77	23.96	0.0422089	0.0053212	0.4		75	125	1%	A
Silver	A	mg/L	0.009763	0.009763		0.01	0	0.009529	4.281E-05	0.001	0.04	98%	75	125	2%	
Sodium	A	mg/L	41.57	41.57		5	39.45	42.79	0.1019461	0.7330269	50		75	125	3%	A
Strontium	A	mg/L	0.1744	0.1744		0.1	0.08047	0.1993	0.0002433	0.001	1	94%	75	125	13%	
Thallium	A	mg/L	0.09949	0.09949		0.1	0.0002018	0.1027	0.0001114	0.001	1	99%	75	125	3%	
Thorium	A	mg/L	0.1037	0.1037		0.1	0	0.1091	0.0003796	0.00415	1	104%	75	125	5%	
Tin	A	mg/L	0.1037	0.1037		0.1	0	0.1027	0.0018932	0.0011175	0.1	104%	75	125	1%	
Titanium	A	mg/L	0.1106	0.1106		0.1	0.008899	0.109	0.0005733	0.001	1	102%	75	125	1%	
Uranium	A	mg/L	0.1061	0.1061		0.1	1.856E-05	0.1026	1.699E-05	0.0003	1	106%	75	125	3%	
Vanadium	A	mg/L	0.1213	0.1213		0.1	0.01907	0.1264	0.0039127	0.0021085	1	102%	75	125	4%	
Zinc	A	mg/L	0.1784	0.1784		0.1	0.08579	0.1857	0.0011617	0.0065544	1	93%	75	125	4%	
Silica	C	mg/L	50.527904	50.527904		0	0	51.255232	0.0902933	0.0113831	5	0%	0	0	1%	
Silicon as SiO2	C	mg/L	50.527904	50.527904		2.14	0	51.255232	0.0902933	0.0113831	5	2361%	75	125	1%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968352	CCV	ICPMS-6020-W-	CCV		1/6/2022 4:46:43	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.05057	0.05057		0.05	0	0	0.00086	0.001	1	101%	90	110	0%	
Antimony	A	mg/L	0.05074	0.05074		0.05	0	0	0.00042	0.001	0.1	101%	90	110	0%	
Arsenic	A	mg/L	0.05226	0.05226		0.05	0	0	0.00019	0.001	1	105%	90	110	0%	
Barium	A	mg/L	0.05438	0.05438		0.05	0	0	0.000042	0.001	1	109%	90	110	0%	
Beryllium	A	mg/L	0.05306	0.05306		0.05	0	0	0.00012	0.001	1	106%	90	110	0%	
Boron	A	mg/L	0.0525	0.0525		0.05	0	0	0.00561	0.00561	1	105%	90	110	0%	
Cadmium	A	mg/L	0.05169	0.05169		0.05	0	0	0.000025	0.001	1	103%	90	110	0%	
Calcium	A	mg/L	12.81	12.81		12.5	0	0	0.02092	0.02092	50	102%	90	110	0%	
Cerium	A	mg/L	0.04894	0.04894		0.05	0	0	0.000012	0.001	0.1	98%	90	110	0%	
Chromium	A	mg/L	0.05291	0.05291		0.05	0	0	0.00018	0.001	1	106%	90	110	0%	
Cobalt	A	mg/L	0.05577	0.05577		0.05	0	0	0.000042	0.001	1	112%	90	110	0%	S
Copper	A	mg/L	0.05556	0.05556		0.05	0	0	0.00027	0.001	1	111%	90	110	0%	S
Iron	A	mg/L	1.335	1.335		1.3	0	0	0.00119	0.00119	5	103%	90	110	0%	
Lanthanum	A	mg/L	0.04857	0.04857		0.05	0	0	0.000011	0.001	0.1	97%	90	110	0%	
Lead	A	mg/L	0.05082	0.05082		0.05	0	0	0.000056	0.001	1	102%	90	110	0%	
Magnesium	A	mg/L	12.92	12.92		12.5	0	0	0.00564	0.00564	50	103%	90	110	0%	
Manganese	A	mg/L	0.05307	0.05307		0.05	0	0	0.000095	0.001	1	106%	90	110	0%	
Mercury	A	mg/L	0.0009213	0.0009213		0.001	0	0	0.00016	0.001	0.002	92%	90	110	0%	
Molybdenum	A	mg/L	0.05094	0.05094		0.05	0	0	0.00005	0.001	0.1	102%	90	110	0%	
Nickel	A	mg/L	0.05401	0.05401		0.05	0	0	0.00063	0.001	1	108%	90	110	0%	
Potassium	A	mg/L	12.73	12.73		12.5	0	0	0.08139	0.08139	50	102%	90	110	0%	
Selenium	A	mg/L	0.05249	0.05249		0.05	0	0	0.00033	0.001	1	105%	90	110	0%	
Silicon	A	mg/L	0.222	0.222		0.2	0	0	0.01223	0.1	0.4	111%	90	110	0%	S
Silver	A	mg/L	0.02016	0.02016		0.02	0	0	0.00002	0.001	0.04	101%	90	110	0%	
Sodium	A	mg/L	13.06	13.06		12.5	0	0	0.02171	0.02171	50	104%	90	110	0%	
Strontium	A	mg/L	0.05177	0.05177		0.05	0	0	0.00014	0.001	1	104%	90	110	0%	
Thallium	A	mg/L	0.04825	0.04825		0.05	0	0	0.000041	0.001	1	96%	90	110	0%	
Thorium	A	mg/L	0.05315	0.05315		0.05	0	0	0.00061	0.001	1	106%	90	110	0%	
Tin	A	mg/L	0.05164	0.05164		0.05	0	0	0.00132	0.00132	0.1	103%	90	110	0%	
Titanium	A	mg/L	0.05261	0.05261		0.05	0	0	0.000094	0.001	1	105%	90	110	0%	
Uranium	A	mg/L	0.05162	0.05162		0.05	0	0	0.000052	0.0003	1	103%	90	110	0%	
Vanadium	A	mg/L	0.05389	0.05389		0.05	0	0	0.0013	0.0013	1	108%	90	110	0%	
Zinc	A	mg/L	0.0548	0.0548		0.05	0	0	0.00273	0.00273	1	110%	90	110	0%	
Iron, Ferrous	C	mg/L	1.335	1.335		0	0	0	0.00119	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					
14968353	CCB	ICPMS-6020-W-	CCB		1/6/2022 4:52:41	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.0001336	0.0001336		0	0	0	0.00086	0.001	1	0%				0%
Antimony	A	mg/L	0.00006917	0.00006917		0	0	0	0.00042	0.001	0.1	0%				0%
Arsenic	A	mg/L	0.00002068	0.00002068		0	0	0	0.00019	0.001	1	0%				0%
Barium	A	mg/L	-1.217E-06	-1.217E-06		0	0	0	0.000042	0.001	1	0%				0%
Beryllium	A	mg/L	0.00001395	0.00001395		0	0	0	0.00012	0.001	1	0%				0%
Boron	A	mg/L	0.0006471	0.0006471		0	0	0	0.00561	0.00561	1	0%				0%
Cadmium	A	mg/L	1.805E-06	1.805E-06		0	0	0	0.000025	0.001	1	0%				0%
Calcium	A	mg/L	0.0004329	0.0004329		0	0	0	0.02092	0.02092	50	0%				0%
Cerium	A	mg/L	1.562E-06	1.562E-06		0	0	0	0.000012	0.001	0.1	0%	0	0		0%
Chromium	A	mg/L	8.305E-06	8.305E-06		0	0	0	0.00018	0.001	1	0%				0%
Cobalt	A	mg/L	9.818E-06	9.818E-06		0	0	0	0.000042	0.001	1	0%				0%
Copper	A	mg/L	-5.995E-06	-5.995E-06		0	0	0	0.00027	0.001	1	0%				0%
Iron	A	mg/L	-8.786E-05	-8.786E-05		0	0	0	0.00119	0.00119	5	0%				0%
Lanthanum	A	mg/L	1.398E-06	1.398E-06		0	0	0	0.000011	0.001	0.1	0%	0	0		0%
Lead	A	mg/L	0.00003126	0.00003126		0	0	0	0.000056	0.001	1	0%				0%
Magnesium	A	mg/L	0.002373	0.002373		0	0	0	0.00564	0.00564	50	0%				0%
Manganese	A	mg/L	0.00004103	0.00004103		0	0	0	0.000095	0.001	1	0%				0%
Mercury	A	mg/L	-4.049E-06	-4.049E-06		0	0	0	0.00016	0.001	0.002	0%				0%
Molybdenum	A	mg/L	0.00001553	0.00001553		0	0	0	0.00005	0.001	0.1	0%				0%
Nickel	A	mg/L	0.00002274	0.00002274		0	0	0	0.00063	0.001	1	0%				0%
Potassium	A	mg/L	0.009022	0.009022		0	0	0	0.08139	0.08139	50	0%				0%
Selenium	A	mg/L	0.00001915	0.00001915		0	0	0	0.00033	0.001	1	0%				0%
Silicon	A	mg/L	0.001696	0.001696		0	0	0	0.01223	0.1	0.4	0%	0	0		0%
Silver	A	mg/L	-5.779E-06	-5.779E-06		0	0	0	0.00002	0.001	0.04	0%				0%
Sodium	A	mg/L	0.009221	0.009221		0	0	0	0.02171	0.02171	50	0%				0%
Strontium	A	mg/L	6.697E-07	6.697E-07		0	0	0	0.00014	0.001	1	0%	0	0		0%
Thallium	A	mg/L	0.0006539	0.0006539		0	0	0	0.000041	0.001	1	0%	0	0		0%
Thorium	A	mg/L	0.00002032	0.00002032		0	0	0	0.00061	0.001	1	0%	0	0		0%
Tin	A	mg/L	0.00001998	0.00001998		0	0	0	0.00132	0.00132	0.1	0%	0	0		0%
Titanium	A	mg/L	0.00004334	0.00004334		0	0	0	0.000094	0.001	1	0%	0	0		0%
Uranium	A	mg/L	1.447E-06	1.447E-06		0	0	0	0.000052	0.0003	1	0%	0	0		0%
Vanadium	A	mg/L	0.0004401	0.0004401		0	0	0	0.0013	0.0013	1	0%	0	0		0%
Zinc	A	mg/L	0.00001595	0.00001595		0	0	0	0.00273	0.00273	1	0%	0	0		0%
Iron, Ferrous	C	mg/L	-8.786E-05	-8.786E-05		0	0	0	0.00119	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					
14968354	Rinse	ICPMS-6020-W-	SAMP		1/6/2022 4:58:51	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	-0.0006791	0		0	0	0	0.00086	0.001	1	0%	0	0	0%	
Antimony	A	mg/L	0.00002255	0		0	0	0	0.00042	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	0.00001088	0		0	0	0	0.00019	0.001	1	0%	0	0	0%	
Barium	A	mg/L	-7.236E-06	0		0	0	0	0.000042	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0.00000402	0		0	0	0	0.000025	0.001	1	0%	0	0	0%	
Calcium	A	mg/L	-3.342E-05	0		0	0	0	0.02092	0.02092	50	0%	0	0	0%	L
Cerium	A	mg/L	7.07E-07	0		0	0	0	0.000012	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	3.847E-06	0		0	0	0	0.00018	0.001	1	0%	0	0	0%	
Iron	A	mg/L	-0.0002923	0		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Lanthanum	A	mg/L	2.306E-07	0		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.00001869	0		0	0	0	0.000056	0.001	1	0%	0	0	0%	
Magnesium	A	mg/L	0.001202	0		0	0	0	0.00564	0.00564	50	0%	0	0	0%	L
Manganese	A	mg/L	0.00002586	0		0	0	0	0.000095	0.001	1	0%	0	0	0%	
Mercury	A	mg/L	-1.017E-05	0		0	0	0	0.00016	0.001	0.002	0%	0	0	0%	
Molybdenum	A	mg/L	-7.085E-07	0		0	0	0	0.00005	0.001	0.1	0%	0	0	0%	
Nickel	A	mg/L	0.00002185	0		0	0	0	0.00063	0.001	1	0%	0	0	0%	
Potassium	A	mg/L	0.009085	0		0	0	0	0.08139	0.08139	50	0%	0	0	0%	L
Selenium	A	mg/L	7.023E-06	0		0	0	0	0.00033	0.001	1	0%	0	0	0%	
Silver	A	mg/L	-4.897E-06	0		0	0	0	0.00002	0.001	0.04	0%	0	0	0%	
Sodium	A	mg/L	0.005384	0		0	0	0	0.02171	0.02171	50	0%	0	0	0%	L
Strontium	A	mg/L	-1.409E-06	0		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.000292	0.000292		0	0	0	0.000041	0.001	1	0%	0	0	0%	J
Thorium	A	mg/L	6.805E-06	0		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Tin	A	mg/L	-3.094E-06	0		0	0	0	0.00132	0.00132	0.1	0%	0	0	0%	
Titanium	A	mg/L	0.00001833	0		0	0	0	0.000094	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	-3.601E-07	0		0	0	0	0.000052	0.0003	1	0%	0	0	0%	
Vanadium	A	mg/L	0.0003992	0		0	0	0	0.0013	0.0013	1	0%	0	0	0%	
Zinc	A	mg/L	0.00002173	0		0	0	0	0.00273	0.00273	1	0%	0	0	0%	L
Iron, Ferrous	C	mg/L	-0.0002923	0		0	0	0	0.00119	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					
14968355	B21122090-001	ICPMS-6020-W-	SAMP		1/6/2022 5:05:01	1	R372863		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					
14968355	B21122090-001	ICPMS-6020-W-	SAMP		1/6/2022 5:05:01	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.00008954	0		0	0	0	0.00086	0.001	1	0%	0	0	0%	
Antimony	A	mg/L	0.00002439	0		0	0	0	0.00042	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	0.0001072	0		0	0	0	0.00019	0.001	1	0%	0	0	0%	
Barium	A	mg/L	0.0025	0.0025		0	0	0	0.000042	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0.00001942	0		0	0	0	0.000025	0.001	1	0%	0	0	0%	
Cerium	A	mg/L	7.457E-07	0		0	0	0	0.000012	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	0.00003191	0		0	0	0	0.00018	0.001	1	0%	0	0	0%	
Lanthanum	A	mg/L	1.178E-07	0		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.00003463	0		0	0	0	0.000056	0.001	1	0%	0	0	0%	U
Manganese	A	mg/L	0.0699	0.0699		0	0	0	0.000095	0.001	1	0%	0	0	0%	
Mercury	A	mg/L	2.432E-06	0		0	0	0	0.00016	0.001	0.002	0%	0	0	0%	
Molybdenum	A	mg/L	0.01444	0.01444		0	0	0	0.00005	0.001	0.1	0%	0	0	0%	
Nickel	A	mg/L	0.0003582	0		0	0	0	0.00063	0.001	1	0%	0	0	0%	
Selenium	A	mg/L	0.00005111	0		0	0	0	0.00033	0.001	1	0%	0	0	0%	
Silver	A	mg/L	-7.047E-05	0		0	0	0	0.00002	0.001	0.04	0%	0	0	0%	
Strontium	A	mg/L	0.07626	0.07626		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0003256	0.0003256		0	0	0	0.000041	0.001	1	0%	0	0	0%	J
Thorium	A	mg/L	1.663E-06	0		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Titanium	A	mg/L	0.0004684	0.0004684		0	0	0	0.000094	0.001	1	0%	0	0	0%	J
Uranium	A	mg/L	1.572E-06	0		0	0	0	0.000052	0.0003	1	0%	0	0	0%	
Calcium	B	mg/L	12.81	12.81		0	0	0	0.02092	0.02092	50	0%	0	0	0%	D
Iron	B	mg/L	0.04712	0.04712		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Iron, Ferrous	B	mg/L	0.04712	0.04712		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Magnesium	B	mg/L	12.86	12.86		0	0	0	0.00564	0.00564	50	0%	0	0	0%	D
Potassium	B	mg/L	5.533	5.533		0	0	0	0.08139	0.08139	50	0%	0	0	0%	D
Sodium	B	mg/L	46.77	46.77		0	0	0	0.02171	0.02171	50	0%	0	0	0%	D
Tin	B	mg/L	-8.178E-06	0		0	0	0	0.00132	0.00132	0.1	0%	0	0	0%	
Vanadium	B	mg/L	-0.0002291	0		0	0	0	0.0013	0.0013	1	0%	0	0	0%	
Zinc	B	mg/L	0.001877	0		0	0	0	0.00273	0.00273	1	0%	0	0	0%	L

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968356	B21122090-001	ICPMS-6020-W-	SAMP		1/6/2022 5:11:09	1	162611	12/30/2021	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					
14968356	B21122090-001	ICPMS-6020-W-	SAMP		1/6/2022 5:11:09	1	162611	12/30/2021	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.00004179	0		0	0	0	0.0002799	0.001	0.1	0%	0	0	0%	U
Arsenic	A	mg/L	0.0002663	0		0	0	0	0.0003412	0.001	1	0%	0	0	0%	U
Barium	A	mg/L	0.002969	0.002969		0	0	0	0.0002682	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	-1.711E-05	0		0	0	0	1.821E-05	0.005	1	0%	0	0	0%	U
Cerium	A	mg/L	0.00001057	0		0	0	0	2.738E-05	0.001	0.1	0%	0	0	0%	U
Lanthanum	A	mg/L	2.734E-06	0		0	0	0	0.000055	0.001	0.1	0%	0	0	0%	U
Lead	A	mg/L	0.00008452	0.00008452		0	0	0	7.716E-05	0.001	1	0%	0	0	0%	J
Manganese	A	mg/L	0.06877	0.06877		0	0	0	0.0005399	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	0.01652	0.01652		0	0	0	0.0001763	0.001	0.1	0%	0	0	0%	
Selenium	A	mg/L	0.0000698	0		0	0	0	0.0001357	0.001	1	0%	0	0	0%	U
Silver	A	mg/L	-7.052E-05	0		0	0	0	4.281E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.07784	0.07784		0	0	0	0.0002433	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0001999	0.0001999		0	0	0	0.0001114	0.001	1	0%	0	0	0%	J
Titanium	A	mg/L	0.0009072	0.0009072		0	0	0	0.0005733	0.001	1	0%	0	0	0%	J
Uranium	A	mg/L	3.902E-06	0		0	0	0	1.699E-05	0.0003	1	0%	0	0	0%	U
Aluminum	B	mg/L	0.00298	0		0	0	0	0.0038747	0.0031975	1	0%	0	0	0%	UL
Calcium	B	mg/L	12.28	12.28		0	0	0	0.0372936	0.1103481	50	0%	0	0	0%	D
Chromium	B	mg/L	0.0006633	0		0	0	0	0.0015375	0.0015375	1	0%	0	0	0%	UL
Iron	B	mg/L	0.1324	0.1324		0	0	0	0.007424	0.00513	5	0%	0	0	0%	D
Magnesium	B	mg/L	12.81	12.81		0	0	0	0.0104254	0.0081522	50	0%	0	0	0%	D
Nickel	B	mg/L	0.0008411	0.0008411		0	0	0	0.0002288	0.0024200	1	0%	0	0	0%	JL
Potassium	B	mg/L	5.307	5.307		0	0	0	0.0765619	0.0261205	50	0%	0	0	0%	D
Sodium	B	mg/L	46.69	46.69		0	0	0	0.1019461	0.7330269	50	0%	0	0	0%	D
Thorium	B	mg/L	0.00005464	0		0	0	0	0.0003796	0.00415	1	0%	0	0	0%	UL
Tin	B	mg/L	0.006388	0.006388		0	0	0	0.0018932	0.0011175	0.1	0%	0	0	0%	
Vanadium	B	mg/L	0.001214	0		0	0	0	0.0039127	0.0021085	1	0%	0	0	0%	UL
Zinc	B	mg/L	0.005225	0.005225		0	0	0	0.0011617	0.0065544	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					
14968357	B21122090-001	ICPMS-6020-W-	SD		1/6/2022 5:17:18	5	162611	12/30/2021	0	1E+07						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.0003419	0		0	0	0	0.0193736	0.0159875	1	0%	0	0		
Antimony	A	mg/L	0.00001261	0		0	0	0	0.0013997	0.0049	0.1	0%	0	0		
Arsenic	A	mg/L	0.00005962	0		0	0	0	0.0017061	0.0013383	1	0%	0	0		



Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968357	B21122090-001	ICPMS-6020-W-	SD		1/6/2022 5:17:18	5	162611	12/30/2021	0	1E+07						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Barium	A	mg/L	0.0005992	0.002996		0	0	0.002969	0.0013411	0.0012039	1	0%	0	0		N
Beryllium	A	mg/L	5.133E-06	0		0	0	0	0.0005353	0.01	1	0%	0	0		
Boron	A	mg/L	0.01511	0		0	0	0.08001	0.1019008	0.07335	1	0%	0	0		
Cadmium	A	mg/L	-5.219E-06	0		0	0	0	9.105E-05	0.005	1	0%	0	0		
Calcium	A	mg/L	2.522	12.61		0	0	12.28	0.1864681	0.5517403	50	0%	0	0	3%	
Cerium	A	mg/L	2.703E-06	0		0	0	0	0.0001369	0.001	0.1	0%	0	0		
Chromium	A	mg/L	0.000164	0		0	0	0	0.0076875	0.0076875	1	0%	0	0		
Cobalt	A	mg/L	0.00003697	0		0	0	0.0001704	0.0004771	0.001	1	0%	0	0		
Copper	A	mg/L	0.0002196	0		0	0	0	0.0043735	0.0099	1	0%	0	0		
Iron	A	mg/L	0.02606	0.1303		0	0	0.1324	0.0371198	0.02565	5	0%	0	0		N
Lanthanum	A	mg/L	1.136E-06	0		0	0	0	0.000275	0.001	0.1	0%	0	0		
Lead	A	mg/L	0.00004643	0		0	0	8.452E-05	0.0003858	0.001	1	0%	0	0		
Magnesium	A	mg/L	2.645	13.225		0	0	12.81	0.0521269	0.0407608	50	0%	0	0	3%	
Manganese	A	mg/L	0.01379	0.06895		0	0	0.06877	0.0026994	0.0010695	1	0%	0	0	0%	
Molybdenum	A	mg/L	0.003192	0.01596		0	0	0.01652	0.0008814	0.001	0.1	0%	0	0	3%	
Nickel	A	mg/L	0.000222	0		0	0	0.0008411	0.0011441	0.0121000	1	0%	0	0		
Potassium	A	mg/L	1.066	5.33		0	0	5.307	0.3828097	0.1306027	50	0%	0	0	0%	
Selenium	A	mg/L	0.00001114	0		0	0	0	0.0006787	0.0029274	1	0%	0	0		
Silicon	A	mg/L	1.49	7.45		0	0	7.27	0.2110446	0.026606	0.4	0%	0	0	2%	
Silver	A	mg/L	-7.129E-05	0		0	0	0	0.0002141	0.001	0.04	0%	0	0		
Sodium	A	mg/L	9.732	48.66		0	0	46.69	0.5097304	3.6651346	50	0%	0	0	4%	
Strontium	A	mg/L	0.01565	0.07825		0	0	0.07784	0.0012164	0.001	1	0%	0	0	1%	
Thallium	A	mg/L	0.0001381	0.0006905		0	0	0.0001999	0.0005569	0.001	1	0%	0	0		N
Thorium	A	mg/L	5.847E-06	0		0	0	0	0.0018981	0.02075	1	0%	0	0		
Tin	A	mg/L	0.00128	0		0	0	0.006388	0.0094659	0.0055874	0.1	0%	0	0		
Titanium	A	mg/L	0.0001909	0		0	0	0.0009072	0.0028666	0.001	1	0%	0	0		
Uranium	A	mg/L	-1.889E-07	0		0	0	0	8.495E-05	0.0004224	1	0%	0	0		
Vanadium	A	mg/L	0.0005462	0		0	0	0	0.0195637	0.0105423	1	0%	0	0		
Zinc	A	mg/L	0.001597	0.007985		0	0	0.005225	0.0058087	0.0327721	1	0%	0	0		N
Silica	C	mg/L	3.187408	15.93704		0	0	0	0.4514666	0.0569155	5	0%	0	0		N
Silicon as SiO2	C	mg/L	3.187408	15.93704		0	0	0	0.4514666	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					
14968358	B21122090-001	ICPMS-6020-W-	PDS1		1/6/2022 5:23:26	1.03	162611	12/30/2021	1E+07	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.04962	0.0511086		0.0515	0	0	0.003991	0.0032934	1	99%	75	125	0%	
Antimony	A	mg/L	0.04729	0.0487087		0.0515	0	0	0.0002883	0.0010094	0.1	95%	75	125	0%	
Arsenic	A	mg/L	0.04868	0.0501404		0.0515	0	0	0.0003514	0.001	1	97%	75	125	0%	
Barium	A	mg/L	0.05446	0.0560938		0.0515	0.002969	0	0.0002763	0.001	1	103%	75	125	0%	
Beryllium	A	mg/L	0.04893	0.0503979		0.0515	0	0	0.0001103	0.01	1	98%	75	125	0%	
Boron	A	mg/L	0.1274	0.131222		0.0515	0.08001	0	0.0209916	0.0151101	1	99%	75	125	0%	
Cadmium	A	mg/L	0.04656	0.0479568		0.0515	0	0	1.876E-05	0.005	1	93%	75	125	0%	
Calcium	A	mg/L	70.45	72.5635		51.5	12.28	0	0.0384124	0.1136585	50	117%	75	125	0%	
Cerium	A	mg/L	0.04793	0.0493679		0.0515	0	0	2.820E-05	0.001	0.1	96%	75	125	0%	
Chromium	A	mg/L	0.04968	0.0511704		0.0515	0	0	0.0015836	0.0015836	1	99%	75	125	0%	
Cobalt	A	mg/L	0.04785	0.0492855		0.0515	0.0001704	0	9.827E-05	0.001	1	95%	75	125	0%	
Copper	A	mg/L	0.05101	0.0525403		0.0515	0	0	0.0009009	0.0020394	1	102%	75	125	0%	
Iron	A	mg/L	6.011	6.19133		5.15	0.1324	0	0.0076467	0.0052839	5	118%	75	125	0%	
Lanthanum	A	mg/L	0.04744	0.0488632		0.0515	0	0	5.665E-05	0.001	0.1	95%	75	125	0%	
Lead	A	mg/L	0.04857	0.0500271		0.0515	8.452E-05	0	7.947E-05	0.001	1	97%	80	120	0%	
Magnesium	A	mg/L	61.7	63.551		51.5	12.81	0	0.0107381	0.0083967	50	99%	75	125	0%	
Manganese	A	mg/L	0.1143	0.117729		0.0515	0.06877	0	0.0005561	0.001	1	95%	75	125	0%	
Molybdenum	A	mg/L	0.06515	0.0671045		0.0515	0.01652	0	0.0001816	0.001	0.1	98%	75	125	0%	
Nickel	A	mg/L	0.04922	0.0506966		0.0515	0.0008411	0	0.0002357	0.0024926	1	97%	75	125	0%	
Potassium	A	mg/L	54.59	56.2277		51.5	5.307	0	0.0788588	0.0269042	50	99%	75	125	0%	
Selenium	A	mg/L	0.05609	0.0577727		0.0515	0	0	0.0001398	0.001	1	112%	75	125	0%	
Silicon	A	mg/L	9.367	9.64801		0.206	7.27	0	0.0434752	0.0054808	0.4		0	0	0%	A
Silver	A	mg/L	0.01931	0.0198893		0.0206	0	0	4.409E-05	0.001	0.04	97%	75	125	0%	
Sodium	A	mg/L	93.66	96.4698		51.5	46.69	0	0.1050045	0.7550177	50	97%	75	125	0%	
Strontium	A	mg/L	0.1254	0.129162		0.0515	0.07784	0	0.0002506	0.001	1	100%	75	125	0%	
Thallium	A	mg/L	0.04752	0.0489456		0.0515	0.0001999	0	0.0001147	0.001	1	95%	75	125	0%	
Thorium	A	mg/L	0.05097	0.0524991		0.0515	0	0	0.000391	0.0042745	1	102%	75	125	0%	
Tin	A	mg/L	0.05591	0.0575873		0.0515	0.006388	0	0.00195	0.001151	0.1	99%	75	125	0%	
Titanium	A	mg/L	0.0521	0.053663		0.0515	0.0009072	0	0.0005905	0.001	1	102%	75	125	0%	
Uranium	A	mg/L	0.05133	0.0528699		0.0515	0	0	1.75E-05	0.0003	1	103%	75	125	0%	
Vanadium	A	mg/L	0.0512	0.052736		0.0515	0	0	0.0040301	0.0021717	1	102%	75	125	0%	
Zinc	A	mg/L	0.0522	0.053766		0.0515	0.005225	0	0.0011966	0.0067511	1	94%	75	125	0%	
Silica	C	mg/L	20.0378864	20.639023		0	0	0	0.0930021	0.0117246	5	0%	0	0	0%	
Silicon as SiO2	C	mg/L	20.0378864	20.639023		0.0515	0	0	0.0930021	0.0117246	5	40076%	75	125	0%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968359	B21122090-001	ICPMS-6020-W- MS4			1/6/2022 5:29:23	1	162611	12/30/2021	1E+07	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.5175	0.5175		0.5	0	0	0.0038747	0.0031975	1	103%	75	125	0%	
Antimony	A	mg/L	0.0984	0.0984		0.1	0	0	0.0002799	0.001	0.1	98%	75	125	0%	
Arsenic	A	mg/L	0.09552	0.09552		0.1	0	0	0.0003412	0.001	1	96%	75	125	0%	
Barium	A	mg/L	0.1001	0.1001		0.1	0.002969	0	0.0002682	0.001	1	97%	75	125	0%	
Beryllium	A	mg/L	0.05232	0.05232		0.05	0	0	0.0001071	0.01	1	105%	75	125	0%	
Boron	A	mg/L	0.1913	0.1913		0.1	0.08001	0	0.0203802	0.01467	1	111%	75	125	0%	
Cadmium	A	mg/L	0.04703	0.04703		0.05	0	0	1.821E-05	0.005	1	94%	75	125	0%	
Calcium	A	mg/L	17.7	17.7		5	12.28	0	0.0372936	0.1103481	50	108%	75	125	0%	
Cerium	A	mg/L	0.1007	0.1007		0.1	0	0	2.738E-05	0.001	0.1	101%	75	125	0%	
Chromium	A	mg/L	0.1033	0.1033		0.1	0	0	0.0015375	0.0015375	1	103%	75	125	0%	
Cobalt	A	mg/L	0.1035	0.1035		0.1	0.0001704	0	9.541E-05	0.001	1	103%	75	125	0%	
Copper	A	mg/L	0.1054	0.1054		0.1	0	0	0.0008747	0.00198	1	105%	75	125	0%	
Iron	A	mg/L	0.6295	0.6295		0.5	0.1324	0	0.007424	0.00513	5	99%	75	125	0%	
Lanthanum	A	mg/L	0.1036	0.1036		0.1	0	0	0.000055	0.001	0.1	104%	75	125	0%	
Lead	A	mg/L	0.1001	0.1001		0.1	8.452E-05	0	7.716E-05	0.001	1	100%	88	115	0%	
Magnesium	A	mg/L	18.29	18.29		5	12.81	0	0.0104254	0.0081522	50	110%	75	125	0%	
Manganese	A	mg/L	0.601	0.601		0.5	0.06877	0	0.0005399	0.001	1	106%	75	125	0%	
Molybdenum	A	mg/L	0.1179	0.1179		0.1	0.01652	0	0.0001763	0.001	0.1	101%	75	125	0%	
Nickel	A	mg/L	0.1028	0.1028		0.1	0.0008411	0	0.0002288	0.0024200	1	102%	75	125	0%	
Potassium	A	mg/L	10.85	10.85		5	5.307	0	0.0765619	0.0261205	50	111%	75	125	0%	
Selenium	A	mg/L	0.09628	0.09628		0.1	0	0	0.0001357	0.001	1	96%	75	125	0%	
Silicon	A	mg/L	8.826	8.826		1	7.27	0	0.0422089	0.0053212	0.4		75	125	0%	A
Silver	A	mg/L	0.009466	0.009466		0.01	0	0	4.281E-05	0.001	0.04	95%	75	125	0%	
Sodium	A	mg/L	53.74	53.74		5	46.69	0	0.1019461	0.7330269	50		75	125	0%	A
Strontium	A	mg/L	0.1792	0.1792		0.1	0.07784	0	0.0002433	0.001	1	101%	75	125	0%	
Thallium	A	mg/L	0.09639	0.09639		0.1	0.0001999	0	0.0001114	0.001	1	96%	75	125	0%	
Thorium	A	mg/L	0.101	0.101		0.1	0	0	0.0003796	0.00415	1	101%	75	125	0%	
Tin	A	mg/L	0.1047	0.1047		0.1	0.006388	0	0.0018932	0.0011175	0.1	98%	75	125	0%	
Titanium	A	mg/L	0.1033	0.1033		0.1	0.0009072	0	0.0005733	0.001	1	102%	75	125	0%	
Uranium	A	mg/L	0.09954	0.09954		0.1	0	0	1.699E-05	0.0003	1	100%	75	125	0%	
Vanadium	A	mg/L	0.1056	0.1056		0.1	0	0	0.0039127	0.0021085	1	106%	75	125	0%	
Zinc	A	mg/L	0.104	0.104		0.1	0.005225	0	0.0011617	0.0065544	1	99%	75	125	0%	
Silica	C	mg/L	18.8805792	18.8805792		0	0	0	0.0902933	0.0113831	5	0%	0	0	0%	
Silicon as SiO2	C	mg/L	18.8805792	18.8805792		2.14	0	0	0.0902933	0.0113831	5	882%	75	125	0%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968360	B21122090-001	ICPMS-6020-W-	MSD4		1/6/2022 5:35:13	1	162611	12/30/2021	1E+07	1E+07						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.5334	0.5334		0.5	0	0.5175	0.0038747	0.0031975	1	107%	75	125	3%	
Antimony	A	mg/L	0.09759	0.09759		0.1	0	0.0984	0.0002799	0.001	0.1	98%	75	125	1%	
Arsenic	A	mg/L	0.09867	0.09867		0.1	0	0.09552	0.0003412	0.001	1	99%	75	125	3%	
Barium	A	mg/L	0.09841	0.09841		0.1	0.002969	0.1001	0.0002682	0.001	1	95%	75	125	2%	
Beryllium	A	mg/L	0.05294	0.05294		0.05	0	0.05232	0.0001071	0.01	1	106%	75	125	1%	
Boron	A	mg/L	0.1959	0.1959		0.1	0.08001	0.1913	0.0203802	0.01467	1	116%	75	125	2%	
Cadmium	A	mg/L	0.04781	0.04781		0.05	0	0.04703	1.821E-05	0.005	1	96%	75	125	2%	
Calcium	A	mg/L	17.58	17.58		5	12.28	17.7	0.0372936	0.1103481	50	106%	75	125	1%	
Cerium	A	mg/L	0.09764	0.09764		0.1	0	0.1007	2.738E-05	0.001	0.1	98%	75	125	3%	
Chromium	A	mg/L	0.1029	0.1029		0.1	0	0.1033	0.0015375	0.0015375	1	103%	75	125	0%	
Cobalt	A	mg/L	0.1036	0.1036		0.1	0.0001704	0.1035	9.541E-05	0.001	1	103%	75	125	0%	
Copper	A	mg/L	0.1052	0.1052		0.1	0	0.1054	0.0008747	0.00198	1	105%	75	125	0%	
Iron	A	mg/L	0.6296	0.6296		0.5	0.1324	0.6295	0.007424	0.00513	5	99%	75	125	0%	
Lanthanum	A	mg/L	0.0981	0.0981		0.1	0	0.1036	0.000055	0.001	0.1	98%	75	125	5%	
Lead	A	mg/L	0.09998	0.09998		0.1	8.452E-05	0.1001	7.716E-05	0.001	1	100%	88	115	0%	
Magnesium	A	mg/L	17.99	17.99		5	12.81	18.29	0.0104254	0.0081522	50	104%	75	125	2%	
Manganese	A	mg/L	0.5954	0.5954		0.5	0.06877	0.601	0.0005399	0.001	1	105%	75	125	1%	
Molybdenum	A	mg/L	0.1149	0.1149		0.1	0.01652	0.1179	0.0001763	0.001	0.1	98%	75	125	3%	
Nickel	A	mg/L	0.1019	0.1019		0.1	0.0008411	0.1028	0.0002288	0.0024200	1	101%	75	125	1%	
Potassium	A	mg/L	10.63	10.63		5	5.307	10.85	0.0765619	0.0261205	50	106%	75	125	2%	
Selenium	A	mg/L	0.09474	0.09474		0.1	0	0.09628	0.0001357	0.001	1	95%	75	125	2%	
Silicon	A	mg/L	8.576	8.576		1	7.27	8.826	0.0422089	0.0053212	0.4		75	125	3%	A
Silver	A	mg/L	0.009171	0.009171		0.01	0	0.009466	4.281E-05	0.001	0.04	92%	75	125	3%	
Sodium	A	mg/L	52.4	52.4		5	46.69	53.74	0.1019461	0.7330269	50		75	125	3%	A
Strontium	A	mg/L	0.1912	0.1912		0.1	0.07784	0.1792	0.0002433	0.001	1	113%	75	125	6%	
Thallium	A	mg/L	0.09664	0.09664		0.1	0.0001999	0.09639	0.0001114	0.001	1	96%	75	125	0%	
Thorium	A	mg/L	0.1023	0.1023		0.1	0	0.101	0.0003796	0.00415	1	102%	75	125	1%	
Tin	A	mg/L	0.1034	0.1034		0.1	0.006388	0.1047	0.0018932	0.0011175	0.1	97%	75	125	1%	
Titanium	A	mg/L	0.102	0.102		0.1	0.0009072	0.1033	0.0005733	0.001	1	101%	75	125	1%	
Uranium	A	mg/L	0.0994	0.0994		0.1	0	0.09954	1.699E-05	0.0003	1	99%	75	125	0%	
Vanadium	A	mg/L	0.1034	0.1034		0.1	0	0.1056	0.0039127	0.0021085	1	103%	75	125	2%	
Zinc	A	mg/L	0.1011	0.1011		0.1	0.005225	0.104	0.0011617	0.0065544	1	96%	75	125	3%	
Silica	C	mg/L	18.3457792	18.3457792		0	0	18.880579	0.0902933	0.0113831	5	0%	0	0	3%	
Silicon as SiO2	C	mg/L	18.3457792	18.3457792		2.14	0	18.880579	0.0902933	0.0113831	5	857%	75	125	3%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968361	Rinse	ICPMS-6020-W-	SAMP		1/6/2022 5:41:04	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	-0.0005748	0		0	0	0	0.00086	0.001	1	0%	0	0	0%	
Antimony	A	mg/L	0.00006564	0		0	0	0	0.00042	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	0.00003186	0		0	0	0	0.00019	0.001	1	0%	0	0	0%	
Barium	A	mg/L	-8.078E-06	0		0	0	0	0.000042	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	-9.056E-07	0		0	0	0	0.000025	0.001	1	0%	0	0	0%	
Calcium	A	mg/L	0.0006124	0		0	0	0	0.02092	0.02092	50	0%	0	0	0%	L
Cerium	A	mg/L	2.168E-06	0		0	0	0	0.000012	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	0.00000934	0		0	0	0	0.00018	0.001	1	0%	0	0	0%	
Iron	A	mg/L	-0.0002142	0		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Lanthanum	A	mg/L	1.929E-06	0		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.00002896	0		0	0	0	0.000056	0.001	1	0%	0	0	0%	
Magnesium	A	mg/L	0.002341	0		0	0	0	0.00564	0.00564	50	0%	0	0	0%	L
Manganese	A	mg/L	0.00005696	0		0	0	0	0.000095	0.001	1	0%	0	0	0%	
Mercury	A	mg/L	-3.798E-06	0		0	0	0	0.00016	0.001	0.002	0%	0	0	0%	
Molybdenum	A	mg/L	0.000011	0		0	0	0	0.00005	0.001	0.1	0%	0	0	0%	
Nickel	A	mg/L	0.00002344	0		0	0	0	0.00063	0.001	1	0%	0	0	0%	
Potassium	A	mg/L	0.008733	0		0	0	0	0.08139	0.08139	50	0%	0	0	0%	L
Selenium	A	mg/L	0.00001625	0		0	0	0	0.00033	0.001	1	0%	0	0	0%	
Silver	A	mg/L	-6.766E-06	0		0	0	0	0.00002	0.001	0.04	0%	0	0	0%	
Sodium	A	mg/L	0.01518	0		0	0	0	0.02171	0.02171	50	0%	0	0	0%	L
Strontium	A	mg/L	4.311E-06	0		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0008662	0.0008662		0	0	0	0.000041	0.001	1	0%	0	0	0%	J
Thorium	A	mg/L	0.0000158	0		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Tin	A	mg/L	0.00009973	0		0	0	0	0.00132	0.00132	0.1	0%	0	0	0%	
Titanium	A	mg/L	0.00002513	0		0	0	0	0.000094	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	1.698E-06	0		0	0	0	0.000052	0.0003	1	0%	0	0	0%	
Vanadium	A	mg/L	0.0005535	0		0	0	0	0.0013	0.0013	1	0%	0	0	0%	
Zinc	A	mg/L	0.00003681	0		0	0	0	0.00273	0.00273	1	0%	0	0	0%	L
Iron, Ferrous	C	mg/L	-0.0002142	0		0	0	0	0.00119	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					
14968362	B21122105-001	ICPMS-6020-W-	SAMP		1/6/2022 5:47:15	1	R372863		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					
14968362	B21122105-001	ICPMS-6020-W-	SAMP		1/6/2022 5:47:15	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.0004773	0.0004773		0	0	0	0.00042	0.001	0.1	0%	0	0	0%	J
Arsenic	A	mg/L	0.00132	0.00132		0	0	0	0.00019	0.001	1	0%	0	0	0%	
Barium	A	mg/L	0.02107	0.02107		0	0	0	0.000042	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0.00001941	0		0	0	0	0.000025	0.001	1	0%	0	0	0%	
Cerium	A	mg/L	0.00001066	0		0	0	0	0.000012	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	0.001801	0.001801		0	0	0	0.00018	0.001	1	0%	0	0	0%	
Lanthanum	A	mg/L	4.396E-06	0		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.00003389	0		0	0	0	0.000056	0.001	1	0%	0	0	0%	U
Manganese	A	mg/L	0.01134	0.01134		0	0	0	0.000095	0.001	1	0%	0	0	0%	
Mercury	A	mg/L	0.0002327	0.0002327		0	0	0	0.00016	0.001	0.002	0%	0	0	0%	J
Molybdenum	A	mg/L	0.004912	0.004912		0	0	0	0.00005	0.001	0.1	0%	0	0	0%	
Nickel	A	mg/L	0.0006106	0		0	0	0	0.00063	0.001	1	0%	0	0	0%	
Selenium	A	mg/L	0.00009768	0		0	0	0	0.00033	0.001	1	0%	0	0	0%	
Silver	A	mg/L	-6.978E-05	0		0	0	0	0.00002	0.001	0.04	0%	0	0	0%	
Strontium	A	mg/L	0.1161	0.1161		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0004566	0.0004566		0	0	0	0.000041	0.001	1	0%	0	0	0%	J
Thorium	A	mg/L	3.868E-06	0		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Titanium	A	mg/L	0.001323	0.001323		0	0	0	0.000094	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.0003091	0.0003091		0	0	0	0.000052	0.0003	1	0%	0	0	0%	
Calcium	B	mg/L	12.98	12.98		0	0	0	0.02092	0.02092	50	0%	0	0	0%	D
Iron	B	mg/L	0.004474	0.004474		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Iron, Ferrous	B	mg/L	0.004474	0.004474		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Magnesium	B	mg/L	9.768	9.768		0	0	0	0.00564	0.00564	50	0%	0	0	0%	D
Potassium	B	mg/L	3.443	3.443		0	0	0	0.08139	0.08139	50	0%	0	0	0%	D
Sodium	B	mg/L	46.98	46.98		0	0	0	0.02171	0.02171	50	0%	0	0	0%	D
Tin	B	mg/L	0.00004263	0		0	0	0	0.00132	0.00132	0.1	0%	0	0	0%	
Vanadium	B	mg/L	0.00933	0.00933		0	0	0	0.0013	0.0013	1	0%	0	0	0%	
Zinc	B	mg/L	0.001326	0		0	0	0	0.00273	0.00273	1	0%	0	0	0%	L

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968363	B21122105-001	ICPMS-6020-W-	SAMP		1/6/2022 5:53:23	1	162587	12/29/2021	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					
14968363	B21122105-001	ICPMS-6020-W-	SAMP		1/6/2022 5:53:23	1	162587	12/29/2021	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.0005104	0.0005104		0	0	0	0.0002799	0.001	0.1	0%	0	0	0%	J
Arsenic	A	mg/L	0.001565	0.001565		0	0	0	0.0003412	0.001	1	0%	0	0	0%	
Barium	A	mg/L	0.02225	0.02225		0	0	0	0.0002682	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	-7.84E-07	0		0	0	0	1.821E-05	0.005	1	0%	0	0	0%	U
Cerium	A	mg/L	0.00001195	0		0	0	0	2.738E-05	0.001	0.1	0%	0	0	0%	U
Lanthanum	A	mg/L	5.445E-06	0		0	0	0	0.000055	0.001	0.1	0%	0	0	0%	U
Lead	A	mg/L	0.00004856	0		0	0	0	7.716E-05	0.001	1	0%	0	0	0%	U
Manganese	A	mg/L	0.01212	0.01212		0	0	0	0.0005399	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	0.0053	0.0053		0	0	0	0.0001763	0.001	0.1	0%	0	0	0%	
Selenium	A	mg/L	0.000147	0.000147		0	0	0	0.0001357	0.001	1	0%	0	0	0%	J
Silver	A	mg/L	-6.975E-05	0		0	0	0	4.281E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.1226	0.1226		0	0	0	0.0002433	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0002538	0.0002538		0	0	0	0.0001114	0.001	1	0%	0	0	0%	J
Titanium	A	mg/L	0.001985	0.001985		0	0	0	0.0005733	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.000327	0.000327		0	0	0	1.699E-05	0.0003	1	0%	0	0	0%	
Aluminum	B	mg/L	0.009078	0.009078		0	0	0	0.0038747	0.0031975	1	0%	0	0	0%	UD
Calcium	B	mg/L	15.6	15.6		0	0	0	0.0372936	0.1103481	50	0%	0	0	0%	D
Chromium	B	mg/L	0.001975	0.001975		0	0	0	0.0015375	0.0015375	1	0%	0	0	0%	UD
Iron	B	mg/L	0.008924	0.008924		0	0	0	0.007424	0.00513	5	0%	0	0	0%	UD
Magnesium	B	mg/L	10.31	10.31		0	0	0	0.0104254	0.0081522	50	0%	0	0	0%	D
Nickel	B	mg/L	0.0006815	0.0006815		0	0	0	0.0002288	0.0024200	1	0%	0	0	0%	JL
Potassium	B	mg/L	3.496	3.496		0	0	0	0.0765619	0.0261205	50	0%	0	0	0%	D
Thorium	B	mg/L	0.00005626	0		0	0	0	0.0003796	0.00415	1	0%	0	0	0%	UL
Tin	B	mg/L	0.0003819	0		0	0	0	0.0018932	0.0011175	0.1	0%	0	0	0%	U
Vanadium	B	mg/L	0.01172	0.01172		0	0	0	0.0039127	0.0021085	1	0%	0	0	0%	D
Zinc	B	mg/L	0.00131	0.00131		0	0	0	0.0011617	0.0065544	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					
14968364	B21122168-001	ICPMS-6020-W-	SAMP		1/6/2022 5:59:32	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.000704	0		0	0	0	0.00086	0.001	1	0%	0	0	0%	
Antimony	A	mg/L	0.0002824	0		0	0	0	0.00042	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	0.0001778	0		0	0	0	0.00019	0.001	1	0%	0	0	0%	
Barium	A	mg/L	0.005037	0.005037		0	0	0	0.000042	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					
14968364	B21122168-001	ICPMS-6020-W-	SAMP		1/6/2022 5:59:32	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Cadmium	A	mg/L	0.00001803	0		0	0	0	0.000025	0.001	1	0%	0	0	0%	
Cerium	A	mg/L	1.564E-06	0		0	0	0	0.000012	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	0.003803	0.003803		0	0	0	0.00018	0.001	1	0%	0	0	0%	
Lanthanum	A	mg/L	1.233E-06	0		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.00006021	0.00006021		0	0	0	0.000056	0.001	1	0%	0	0	0%	J
Manganese	A	mg/L	0.00008831	0		0	0	0	0.000095	0.001	1	0%	0	0	0%	
Mercury	A	mg/L	5.747E-06	0		0	0	0	0.00016	0.001	0.002	0%	0	0	0%	
Molybdenum	A	mg/L	0.000535	0.000535		0	0	0	0.00005	0.001	0.1	0%	0	0	0%	J
Nickel	A	mg/L	0.0001689	0		0	0	0	0.00063	0.001	1	0%	0	0	0%	
Selenium	A	mg/L	0.0003344	0.0003344		0	0	0	0.00033	0.001	1	0%	0	0	0%	J
Silver	A	mg/L	-6.852E-05	0		0	0	0	0.00002	0.001	0.04	0%	0	0	0%	
Strontium	A	mg/L	0.05263	0.05263		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0001791	0.0001791		0	0	0	0.000041	0.001	1	0%	0	0	0%	J
Thorium	A	mg/L	2.885E-07	0		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Titanium	A	mg/L	0.002273	0.002273		0	0	0	0.000094	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00001456	0		0	0	0	0.000052	0.0003	1	0%	0	0	0%	
Calcium	B	mg/L	5.905	5.905		0	0	0	0.02092	0.02092	50	0%	0	0	0%	D
Iron	B	mg/L	0.0002993	0		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Iron, Ferrous	B	mg/L	0.0002993	0		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Magnesium	B	mg/L	9.612	9.612		0	0	0	0.00564	0.00564	50	0%	0	0	0%	D
Potassium	B	mg/L	3.752	3.752		0	0	0	0.08139	0.08139	50	0%	0	0	0%	D
Tin	B	mg/L	-0.0000133	0		0	0	0	0.00132	0.00132	0.1	0%	0	0	0%	
Vanadium	B	mg/L	0.04603	0.04603		0	0	0	0.0013	0.0013	1	0%	0	0	0%	
Zinc	B	mg/L	0.0008379	0		0	0	0	0.00273	0.00273	1	0%	0	0	0%	L

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968365	B21122168-001	ICPMS-6020-W-	SD		1/6/2022 6:05:40	5	R372863		0	1E+07						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	-0.0002357	0		0	0	0	0.0043	0.0043	1	0%				
Antimony	A	mg/L	0.00006756	0		0	0	0	0.0021	0.0021	0.1	0%				
Arsenic	A	mg/L	0.00004359	0		0	0	0	0.00095	0.001	1	0%				
Barium	A	mg/L	0.0009856	0.004928		0	0	0.005037	0.00021	0.001	1	0%			2%	
Beryllium	A	mg/L	4.815E-06	0		0	0	0	0.0006	0.001	1	0%				
Boron	A	mg/L	0.04732	0.2366		0	0	0.2174	0.02805	0.02805	1	0%				N



Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968365	B21122168-001	ICPMS-6020-W- SD			1/6/2022 6:05:40	5	R372863		0	1E+07						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Cadmium	A	mg/L	0.00001459	0		0	0	0	0.000125	0.001	1	0%				
Calcium	A	mg/L	1.186	5.93		0	0	5.905	0.1046	0.1046	50	0%			0%	
Cerium	A	mg/L	1.077E-06	0		0	0	0	0.00006	0.001	0.1	0%				
Chromium	A	mg/L	0.0008052	0.004026		0	0	0.003803	0.0009	0.001	1	0%				N
Cobalt	A	mg/L	4.753E-06	0		0	0	0	0.00021	0.001	1	0%				
Copper	A	mg/L	0.00006589	0		0	0	0.0002833	0.00135	0.00135	1	0%				
Iron	A	mg/L	-8.414E-05	0		0	0	0	0.00595	0.00595	5	0%				
Lanthanum	A	mg/L	4.214E-07	0		0	0	0	0.000055	0.001	0.1	0%				
Lead	A	mg/L	0.0004543	0.0022715		0	0	6.021E-05	0.00028	0.001	1	0%				N
Magnesium	A	mg/L	1.912	9.56		0	0	9.612	0.0282	0.0282	50	0%			1%	
Manganese	A	mg/L	0.00005075	0		0	0	0	0.000475	0.001	1	0%				
Mercury	A	mg/L	-1.181E-05	0		0	0	0	0.0008	0.001	0.002	0%				
Molybdenum	A	mg/L	0.0001097	0.0005485		0	0	0.000535	0.00025	0.001	0.1	0%				N
Nickel	A	mg/L	0.0000537	0		0	0	0	0.00315	0.00315	1	0%				
Potassium	A	mg/L	0.6952	3.476		0	0	3.752	0.40695	0.40695	50	0%				N
Selenium	A	mg/L	0.0000741	0		0	0	0.0003344	0.00165	0.00165	1	0%				
Silicon	A	mg/L	6.19	30.95		0	0	32.57	0.06115	0.1	0.4	0%			5%	
Silver	A	mg/L	-7.104E-05	0		0	0	0	0.0001	0.001	0.04	0%				
Sodium	A	mg/L	20.61	103.05		0	0	103.4	0.10855	0.10855	50	0%			0%	
Strontium	A	mg/L	0.01056	0.0528		0	0	0.05263	0.0007	0.001	1	0%			0%	
Thallium	A	mg/L	0.00002628	0		0	0	0.0001791	0.000205	0.001	1	0%				
Thorium	A	mg/L	1.498E-07	0		0	0	0	0.00305	0.00305	1	0%				
Tin	A	mg/L	8.826E-06	0		0	0	0	0.0066	0.0066	0.1	0%				
Titanium	A	mg/L	0.000496	0.00248		0	0	0.002273	0.00047	0.001	1	0%				N
Uranium	A	mg/L	2.343E-06	0		0	0	0	0.00026	0.0003	1	0%				
Vanadium	A	mg/L	0.00935	0.04675		0	0	0.04603	0.0065	0.0065	1	0%				N
Zinc	A	mg/L	0.0007645	0		0	0	0	0.01365	0.01365	1	0%				
Iron, Ferrous	C	mg/L	-8.414E-05	0		0	0	0	0.00595	0.00595	5	0%				

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968366	CCV	ICPMS-6020-W- CCV			1/6/2022 6:11:49	1	R372863		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					
14968366	CCV	ICPMS-6020-W-	CCV		1/6/2022 6:11:49	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.05144	0.05144		0.05	0	0	0.00086	0.001	1	103%	90	110	0%	
Antimony	A	mg/L	0.05314	0.05314		0.05	0	0	0.00042	0.001	0.1	106%	90	110	0%	
Arsenic	A	mg/L	0.05254	0.05254		0.05	0	0	0.00019	0.001	1	105%	90	110	0%	
Barium	A	mg/L	0.05428	0.05428		0.05	0	0	0.000042	0.001	1	109%	90	110	0%	
Beryllium	A	mg/L	0.05526	0.05526		0.05	0	0	0.00012	0.001	1	111%	90	110	0%	S
Boron	A	mg/L	0.05654	0.05654		0.05	0	0	0.00561	0.00561	1	113%	90	110	0%	S
Cadmium	A	mg/L	0.05169	0.05169		0.05	0	0	0.000025	0.001	1	103%	90	110	0%	
Calcium	A	mg/L	12.51	12.51		12.5	0	0	0.02092	0.02092	50	100%	90	110	0%	
Cerium	A	mg/L	0.04804	0.04804		0.05	0	0	0.000012	0.001	0.1	96%	90	110	0%	
Chromium	A	mg/L	0.05286	0.05286		0.05	0	0	0.00018	0.001	1	106%	90	110	0%	
Cobalt	A	mg/L	0.05581	0.05581		0.05	0	0	0.000042	0.001	1	112%	90	110	0%	S
Copper	A	mg/L	0.05584	0.05584		0.05	0	0	0.00027	0.001	1	112%	90	110	0%	S
Iron	A	mg/L	1.311	1.311		1.3	0	0	0.00119	0.00119	5	101%	90	110	0%	
Lanthanum	A	mg/L	0.04809	0.04809		0.05	0	0	0.000011	0.001	0.1	96%	90	110	0%	
Lead	A	mg/L	0.05201	0.05201		0.05	0	0	0.000056	0.001	1	104%	90	110	0%	
Magnesium	A	mg/L	12.94	12.94		12.5	0	0	0.00564	0.00564	50	104%	90	110	0%	
Manganese	A	mg/L	0.05316	0.05316		0.05	0	0	0.000095	0.001	1	106%	90	110	0%	
Mercury	A	mg/L	0.0009101	0.0009101		0.001	0	0	0.00016	0.001	0.002	91%	90	110	0%	
Molybdenum	A	mg/L	0.04931	0.04931		0.05	0	0	0.00005	0.001	0.1	99%	90	110	0%	
Nickel	A	mg/L	0.05421	0.05421		0.05	0	0	0.00063	0.001	1	108%	90	110	0%	
Potassium	A	mg/L	12.9	12.9		12.5	0	0	0.08139	0.08139	50	103%	90	110	0%	
Selenium	A	mg/L	0.05222	0.05222		0.05	0	0	0.00033	0.001	1	104%	90	110	0%	
Silicon	A	mg/L	0.2156	0.2156		0.2	0	0	0.01223	0.1	0.4	108%	90	110	0%	
Silver	A	mg/L	0.02002	0.02002		0.02	0	0	0.00002	0.001	0.04	100%	90	110	0%	
Sodium	A	mg/L	13.09	13.09		12.5	0	0	0.02171	0.02171	50	105%	90	110	0%	
Strontium	A	mg/L	0.05245	0.05245		0.05	0	0	0.00014	0.001	1	105%	90	110	0%	
Thallium	A	mg/L	0.05066	0.05066		0.05	0	0	0.000041	0.001	1	101%	90	110	0%	
Thorium	A	mg/L	0.05276	0.05276		0.05	0	0	0.00061	0.001	1	106%	90	110	0%	
Tin	A	mg/L	0.05142	0.05142		0.05	0	0	0.00132	0.00132	0.1	103%	90	110	0%	
Titanium	A	mg/L	0.05492	0.05492		0.05	0	0	0.000094	0.001	1	110%	90	110	0%	
Uranium	A	mg/L	0.05254	0.05254		0.05	0	0	0.000052	0.0003	1	105%	90	110	0%	
Vanadium	A	mg/L	0.05381	0.05381		0.05	0	0	0.0013	0.0013	1	108%	90	110	0%	
Zinc	A	mg/L	0.05421	0.05421		0.05	0	0	0.00273	0.00273	1	108%	90	110	0%	
Iron, Ferrous	C	mg/L	1.311	1.311		0	0	0	0.00119	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					
14968367	CCB	ICPMS-6020-W-	CCB		1/6/2022 6:17:47	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.0001715	0.0001715		0	0	0	0.00086	0.001	1	0%			0%	
Antimony	A	mg/L	0.00004577	0.00004577		0	0	0	0.00042	0.001	0.1	0%			0%	
Arsenic	A	mg/L	0.00001791	0.00001791		0	0	0	0.00019	0.001	1	0%			0%	
Barium	A	mg/L	4.019E-07	4.019E-07		0	0	0	0.000042	0.001	1	0%			0%	
Beryllium	A	mg/L	0.00001183	0.00001183		0	0	0	0.00012	0.001	1	0%			0%	
Boron	A	mg/L	0.00161	0.00161		0	0	0	0.00561	0.00561	1	0%			0%	
Cadmium	A	mg/L	3.373E-06	3.373E-06		0	0	0	0.000025	0.001	1	0%			0%	
Calcium	A	mg/L	0.0001347	0.0001347		0	0	0	0.02092	0.02092	50	0%			0%	
Cerium	A	mg/L	5.442E-07	5.442E-07		0	0	0	0.000012	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	0.00001146	0.00001146		0	0	0	0.00018	0.001	1	0%			0%	
Cobalt	A	mg/L	0.00000377	0.00000377		0	0	0	0.000042	0.001	1	0%			0%	
Copper	A	mg/L	-9.669E-06	-9.669E-06		0	0	0	0.00027	0.001	1	0%			0%	
Iron	A	mg/L	-0.0001757	-0.0001757		0	0	0	0.00119	0.00119	5	0%			0%	
Lanthanum	A	mg/L	4.471E-07	4.471E-07		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.00002148	0.00002148		0	0	0	0.000056	0.001	1	0%			0%	
Magnesium	A	mg/L	0.001527	0.001527		0	0	0	0.00564	0.00564	50	0%			0%	
Manganese	A	mg/L	0.00002404	0.00002404		0	0	0	0.000095	0.001	1	0%			0%	
Mercury	A	mg/L	-1.542E-05	-1.542E-05		0	0	0	0.00016	0.001	0.002	0%			0%	
Molybdenum	A	mg/L	0.00001125	0.00001125		0	0	0	0.00005	0.001	0.1	0%			0%	
Nickel	A	mg/L	0.00002906	0.00002906		0	0	0	0.00063	0.001	1	0%			0%	
Potassium	A	mg/L	0.01002	0.01002		0	0	0	0.08139	0.08139	50	0%			0%	
Selenium	A	mg/L	0.00001095	0.00001095		0	0	0	0.00033	0.001	1	0%			0%	
Silicon	A	mg/L	0.001095	0.001095		0	0	0	0.01223	0.1	0.4	0%	0	0	0%	
Silver	A	mg/L	-4.82E-06	-4.82E-06		0	0	0	0.00002	0.001	0.04	0%			0%	
Sodium	A	mg/L	0.01217	0.01217		0	0	0	0.02171	0.02171	50	0%			0%	
Strontium	A	mg/L	-3.791E-06	-3.791E-06		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0003057	0.0003057		0	0	0	0.000041	0.001	1	0%	0	0	0%	
Thorium	A	mg/L	0.00001412	0.00001412		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Tin	A	mg/L	0.00001991	0.00001991		0	0	0	0.00132	0.00132	0.1	0%	0	0	0%	
Titanium	A	mg/L	0.000026	0.000026		0	0	0	0.000094	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	1.477E-07	1.477E-07		0	0	0	0.000052	0.0003	1	0%	0	0	0%	
Vanadium	A	mg/L	0.0005196	0.0005196		0	0	0	0.0013	0.0013	1	0%	0	0	0%	
Zinc	A	mg/L	-1.163E-06	-1.163E-06		0	0	0	0.00273	0.00273	1	0%	0	0	0%	
Iron, Ferrous	C	mg/L	-0.0001757	-0.0001757		0	0	0	0.00119	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					
14968368	B21122168-001	ICPMS-6020-W- MS			1/6/2022 6:23:59	1.03	R372863		1E+07	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.047	0.04841		0.05	0	0	0.0008858	0.001	1	97%	75	125	0%	
Antimony	A	mg/L	0.04564	0.0470092		0.05	0	0	0.0004326	0.001	0.1	94%	75	125	0%	
Arsenic	A	mg/L	0.04761	0.0490383		0.05	0	0	0.0001957	0.001	1	98%	75	125	0%	
Barium	A	mg/L	0.05263	0.0542089		0.05	0.005037	0	4.326E-05	0.001	1	98%	75	125	0%	
Beryllium	A	mg/L	0.04765	0.0490795		0.05	0	0	0.0001236	0.001	1	98%	75	125	0%	
Boron	A	mg/L	0.2516	0.259148		0.05	0.2174	0	0.0057783	0.0057783	1		75	125	0%	A
Cadmium	A	mg/L	0.04551	0.0468753		0.05	0	0	2.575E-05	0.001	1	94%	75	125	0%	
Calcium	A	mg/L	53.89	55.5067		50	5.905	0	0.0215476	0.0215476	50	99%	75	125	0%	E
Cerium	A	mg/L	0.04535	0.0467105		0.05	0	0	1.236E-05	0.001	0.1	93%	75	125	0%	
Chromium	A	mg/L	0.05015	0.0516545		0.05	0.003803	0	0.0001854	0.001	1	96%	75	125	0%	
Cobalt	A	mg/L	0.04857	0.0500271		0.05	0	0	4.326E-05	0.001	1	100%	75	125	0%	
Copper	A	mg/L	0.04846	0.0499138		0.05	0.0002833	0	0.0002781	0.001	1	99%	75	125	0%	
Iron	A	mg/L	4.804	4.94812		5.05	0	0	0.0012257	0.0012257	5	98%	75	125	0%	
Lanthanum	A	mg/L	0.04582	0.0471946		0.05	0	0	1.133E-05	0.001	0.1	94%	75	125	0%	
Lead	A	mg/L	0.04633	0.0477199		0.05	6.021E-05	0	5.768E-05	0.001	1	95%	88	115	0%	
Magnesium	A	mg/L	58.35	60.1005		50	9.612	0	0.0058092	0.0058092	50	101%	75	125	0%	E
Manganese	A	mg/L	0.04669	0.0480907		0.05	0	0	9.785E-05	0.001	1	96%	75	125	0%	
Mercury	A	mg/L	0.000895	0.00092185		0.001	0	0	0.0001648	0.001	0.002	92%	75	125	0%	
Molybdenum	A	mg/L	0.0464	0.047792		0.05	0.000535	0	0.0000515	0.001	0.1	95%	75	125	0%	
Nickel	A	mg/L	0.04643	0.0478229		0.05	0	0	0.0006489	0.001	1	96%	75	125	0%	
Potassium	A	mg/L	51.58	53.1274		50	3.752	0	0.0838317	0.0838317	50	99%	75	125	0%	E
Selenium	A	mg/L	0.04751	0.0489353		0.05	0.0003344	0	0.0003399	0.001	1	97%	75	125	0%	
Silicon	A	mg/L	30.24	31.1472		0.2	32.57	0	0.0125969	0.1	0.4		75	125	0%	AE
Silver	A	mg/L	0.01832	0.0188696		0.02	0	0	0.0000206	0.001	0.04	94%	75	125	0%	
Sodium	A	mg/L	139.9	144.097		50	103.4	0	0.0223613	0.0223613	50	81%	75	125	0%	E
Strontium	A	mg/L	0.09738	0.1003014		0.05	0.05263	0	0.0001442	0.001	1	95%	75	125	0%	
Thallium	A	mg/L	0.04457	0.0459071		0.05	0.0001791	0	4.223E-05	0.001	1	91%	75	125	0%	
Thorium	A	mg/L	0.04889	0.0503567		0.05	0	0	0.0006283	0.001	1	101%	75	125	0%	
Tin	A	mg/L	0.0463	0.047689		0.05	0	0	0.0013596	0.0013596	0.1	95%	75	125	0%	
Titanium	A	mg/L	0.05231	0.0538793		0.05	0.002273	0	9.682E-05	0.001	1	103%	75	125	0%	
Uranium	A	mg/L	0.04846	0.0499138		0.05	0	0	5.356E-05	0.0003	1	100%	75	125	0%	
Vanadium	A	mg/L	0.09178	0.0945334		0.05	0.04603	0	0.001339	0.001339	1	97%	75	125	0%	
Zinc	A	mg/L	0.04752	0.0489456		0.05	0	0	0.0028119	0.0028119	1	98%	75	125	0%	
Iron, Ferrous	C	mg/L	4.804	4.94812		0	0	0	0.0012257	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					
14968369	B21122168-001	ICPMS-6020-W- MSD			1/6/2022 6:29:59	1.03	R372863		1E+07	1E+07						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.06483	0.0667749		0.05	0	0.04841	0.0008858	0.001	1	134%	75	125	32%	SR
Antimony	A	mg/L	0.04693	0.0483379		0.05	0	0.0470092	0.0004326	0.001	0.1	97%	75	125	3%	
Arsenic	A	mg/L	0.04974	0.0512322		0.05	0	0.0490383	0.0001957	0.001	1	102%	75	125	4%	
Barium	A	mg/L	0.05463	0.0562689		0.05	0.005037	0.0542089	4.326E-05	0.001	1	102%	75	125	4%	
Beryllium	A	mg/L	0.04853	0.0499859		0.05	0	0.0490795	0.0001236	0.001	1	100%	75	125	2%	
Boron	A	mg/L	0.2584	0.266152		0.05	0.2174	0.259148	0.0057783	0.0057783	1		75	125	3%	A
Cadmium	A	mg/L	0.0463	0.047689		0.05	0	0.0468753	2.575E-05	0.001	1	95%	75	125	2%	
Calcium	A	mg/L	55.13	56.7839		50	5.905	55.5067	0.0215476	0.0215476	50	102%	75	125	2%	E
Cerium	A	mg/L	0.04753	0.0489559		0.05	0	0.0467105	1.236E-05	0.001	0.1	98%	75	125	5%	
Chromium	A	mg/L	0.05288	0.0544664		0.05	0.003803	0.0516545	0.0001854	0.001	1	101%	75	125	5%	
Cobalt	A	mg/L	0.04982	0.0513146		0.05	0	0.0500271	4.326E-05	0.001	1	103%	75	125	3%	
Copper	A	mg/L	0.05056	0.0520768		0.05	0.0002833	0.0499138	0.0002781	0.001	1	104%	75	125	4%	
Iron	A	mg/L	4.948	5.09644		5.05	0	4.94812	0.0012257	0.0012257	5	101%	75	125	3%	
Lanthanum	A	mg/L	0.04843	0.0498829		0.05	0	0.0471946	1.133E-05	0.001	0.1	100%	75	125	6%	
Lead	A	mg/L	0.04839	0.0498417		0.05	6.021E-05	0.0477199	5.768E-05	0.001	1	100%	88	115	4%	
Magnesium	A	mg/L	58.56	60.3168		50	9.612	60.1005	0.0058092	0.0058092	50	101%	75	125	0%	E
Manganese	A	mg/L	0.04863	0.0500889		0.05	0	0.0480907	9.785E-05	0.001	1	100%	75	125	4%	
Mercury	A	mg/L	0.000909	0.00093627		0.001	0	0.0009219	0.0001648	0.001	0.002	94%	75	125		
Molybdenum	A	mg/L	0.04732	0.0487396		0.05	0.000535	0.047792	0.0000515	0.001	0.1	96%	75	125	2%	
Nickel	A	mg/L	0.0488	0.050264		0.05	0	0.0478229	0.0006489	0.001	1	101%	75	125	5%	
Potassium	A	mg/L	54.37	56.0011		50	3.752	53.1274	0.0838317	0.0838317	50	104%	75	125	5%	E
Selenium	A	mg/L	0.04867	0.0501301		0.05	0.0003344	0.0489353	0.0003399	0.001	1	100%	75	125	2%	
Silicon	A	mg/L	30.94	31.8682		0.2	32.57	31.1472	0.0125969	0.1	0.4		75	125	2%	AE
Silver	A	mg/L	0.01873	0.0192919		0.02	0	0.0188696	0.0000206	0.001	0.04	96%	75	125	2%	
Sodium	A	mg/L	142.2	146.466		50	103.4	144.097	0.0223613	0.0223613	50	86%	75	125	2%	E
Strontium	A	mg/L	0.1004	0.103412		0.05	0.05263	0.1003014	0.0001442	0.001	1	102%	75	125	3%	
Thallium	A	mg/L	0.04699	0.0483997		0.05	0.0001791	0.0459071	4.223E-05	0.001	1	96%	75	125	5%	
Thorium	A	mg/L	0.05021	0.0517163		0.05	0	0.0503567	0.0006283	0.001	1	103%	75	125	3%	
Tin	A	mg/L	0.04702	0.0484306		0.05	0	0.047689	0.0013596	0.0013596	0.1	97%	75	125	2%	
Titanium	A	mg/L	0.05608	0.0577624		0.05	0.002273	0.0538793	9.682E-05	0.001	1	111%	75	125	7%	
Uranium	A	mg/L	0.04947	0.0509541		0.05	0	0.0499138	5.356E-05	0.0003	1	102%	75	125	2%	
Vanadium	A	mg/L	0.09627	0.0991581		0.05	0.04603	0.0945334	0.001339	0.001339	1	106%	75	125	5%	
Zinc	A	mg/L	0.04995	0.0514485		0.05	0	0.0489456	0.0028119	0.0028119	1	103%	75	125	5%	
Iron, Ferrous	C	mg/L	4.948	5.09644		0	0	4.94812	0.0012257	0.0012257	5	0%	0	0	3%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968370	Rinse	ICPMS-6020-W-	SAMP		1/6/2022 6:35:56	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	-0.0006784	0		0	0	0	0.00086	0.001	1	0%	0	0	0%	
Antimony	A	mg/L	0.00009458	0		0	0	0	0.00042	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	0.00004105	0		0	0	0	0.00019	0.001	1	0%	0	0	0%	
Barium	A	mg/L	-2.699E-06	0		0	0	0	0.000042	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	-1.449E-06	0		0	0	0	0.000025	0.001	1	0%	0	0	0%	
Calcium	A	mg/L	0.001057	0		0	0	0	0.02092	0.02092	50	0%	0	0	0%	L
Cerium	A	mg/L	1.016E-06	0		0	0	0	0.000012	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	0.00001008	0		0	0	0	0.00018	0.001	1	0%	0	0	0%	
Iron	A	mg/L	-0.0001755	0		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Lanthanum	A	mg/L	1.087E-06	0		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.00002035	0		0	0	0	0.000056	0.001	1	0%	0	0	0%	
Magnesium	A	mg/L	0.003745	0		0	0	0	0.00564	0.00564	50	0%	0	0	0%	L
Manganese	A	mg/L	0.00002089	0		0	0	0	0.000095	0.001	1	0%	0	0	0%	
Mercury	A	mg/L	-1.604E-05	0		0	0	0	0.00016	0.001	0.002	0%	0	0	0%	
Molybdenum	A	mg/L	0.00003412	0		0	0	0	0.00005	0.001	0.1	0%	0	0	0%	
Nickel	A	mg/L	0.00002191	0		0	0	0	0.00063	0.001	1	0%	0	0	0%	
Potassium	A	mg/L	0.01982	0		0	0	0	0.08139	0.08139	50	0%	0	0	0%	L
Selenium	A	mg/L	0.00002344	0		0	0	0	0.00033	0.001	1	0%	0	0	0%	
Silver	A	mg/L	-6.634E-06	0		0	0	0	0.00002	0.001	0.04	0%	0	0	0%	
Sodium	A	mg/L	0.02437	0.02437		0	0	0	0.02171	0.02171	50	0%	0	0	0%	D
Strontium	A	mg/L	1.948E-06	0		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0001868	0.0001868		0	0	0	0.000041	0.001	1	0%	0	0	0%	J
Thorium	A	mg/L	0.00001808	0		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Tin	A	mg/L	0.0000412	0		0	0	0	0.00132	0.00132	0.1	0%	0	0	0%	
Titanium	A	mg/L	0.0001646	0.0001646		0	0	0	0.000094	0.001	1	0%	0	0	0%	J
Uranium	A	mg/L	3.394E-07	0		0	0	0	0.000052	0.0003	1	0%	0	0	0%	
Vanadium	A	mg/L	0.0009431	0		0	0	0	0.0013	0.0013	1	0%	0	0	0%	
Zinc	A	mg/L	-0.0000341	0		0	0	0	0.00273	0.00273	1	0%	0	0	0%	L
Iron, Ferrous	C	mg/L	-0.0001755	0		0	0	0	0.00119	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					
14968371	B21122168-001	ICPMS-6020-W-	SAMP		1/6/2022 6:42:07	1	162627	1/3/2022 8:3	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					
14968371	B21122168-001	ICPMS-6020-W-	SAMP		1/6/2022 6:42:07	1	162627	1/3/2022 8:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.0005063	0.0005063		0	0	0	0.0002799	0.001	0.1	0%	0	0	0%	J
Arsenic	A	mg/L	0.0006383	0.0006383		0	0	0	0.0003412	0.001	1	0%	0	0	0%	J
Barium	A	mg/L	0.0165	0.0165		0	0	0	0.0002682	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0.0001664	0.0001664		0	0	0	1.821E-05	0.005	1	0%	0	0	0%	J
Cerium	A	mg/L	0.005207	0.005207		0	0	0	2.738E-05	0.001	0.1	0%	0	0	0%	
Lanthanum	A	mg/L	0.001425	0.001425		0	0	0	0.000055	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.001364	0.001364		0	0	0	7.716E-05	0.001	1	0%	0	0	0%	
Manganese	A	mg/L	0.2466	0.2466		0	0	0	0.0005399	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	0.001134	0.001134		0	0	0	0.0001763	0.001	0.1	0%	0	0	0%	
Selenium	A	mg/L	0.0003536	0.0003536		0	0	0	0.0001357	0.001	1	0%	0	0	0%	J
Silver	A	mg/L	0.00001769	0		0	0	0	4.281E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.07286	0.07286		0	0	0	0.0002433	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0002782	0.0002782		0	0	0	0.0001114	0.001	1	0%	0	0	0%	J
Titanium	A	mg/L	0.3144	0.3144		0	0	0	0.0005733	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00009088	0.00009088		0	0	0	1.699E-05	0.0003	1	0%	0	0	0%	J
Calcium	B	mg/L	5.951	5.951		0	0	0	0.0372936	0.1103481	50	0%	0	0	0%	D
Chromium	B	mg/L	0.03147	0.03147		0	0	0	0.0015375	0.0015375	1	0%	0	0	0%	D
Iron	B	mg/L	4.042	4.042		0	0	0	0.007424	0.00513	5	0%	0	0	0%	D
Magnesium	B	mg/L	11.42	11.42		0	0	0	0.0104254	0.0081522	50	0%	0	0	0%	D
Nickel	B	mg/L	0.01441	0.01441		0	0	0	0.0002288	0.0024200	1	0%	0	0	0%	D
Potassium	B	mg/L	4.157	4.157		0	0	0	0.0765619	0.0261205	50	0%	0	0	0%	D
Thorium	B	mg/L	0.0004465	0.0004465		0	0	0	0.0003796	0.00415	1	0%	0	0	0%	JL
Tin	B	mg/L	0.0006218	0		0	0	0	0.0018932	0.0011175	0.1	0%	0	0	0%	U
Vanadium	B	mg/L	0.06802	0.06802		0	0	0	0.0039127	0.0021085	1	0%	0	0	0%	D
Zinc	B	mg/L	0.01047	0.01047		0	0	0	0.0011617	0.0065544	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					
14968372	B21122168-001	ICPMS-6020-W-	SD		1/6/2022 6:48:13	5	162627	1/3/2022 8:3	0	1E+07						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	1.101	5.505		0	0	5.287	0.0193736	0.0159875	1	0%	0	0	4%	
Antimony	A	mg/L	0.0001051	0		0	0	0.0005063	0.0013997	0.0049	0.1	0%	0	0		
Arsenic	A	mg/L	0.0001206	0		0	0	0.0006383	0.0017061	0.0013383	1	0%	0	0		
Barium	A	mg/L	0.00333	0.01665		0	0	0.0165	0.0013411	0.0012039	1	0%	0	0	1%	
Beryllium	A	mg/L	0.00003386	0		0	0	0.0001565	0.0005353	0.01	1	0%	0	0		

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968372	B21122168-001	ICPMS-6020-W-	SD		1/6/2022 6:48:13	5	162627	1/3/2022 8:3	0	1E+07						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Boron	A	mg/L	0.04764	0.2382		0	0	0.2268	0.1019008	0.07335	1	0%	0	0		N
Cadmium	A	mg/L	0.00002853	0.00014265		0	0	0.0001664	9.105E-05	0.005	1	0%	0	0		N
Calcium	A	mg/L	1.478	7.39		0	0	5.951	0.1864681	0.5517403	50	0%	0	0	22%	R
Cerium	A	mg/L	0.0009287	0.0046435		0	0	0.005207	0.0001369	0.001	0.1	0%	0	0	11%	R
Chromium	A	mg/L	0.005706	0.02853		0	0	0.03147	0.0076875	0.0076875	1	0%	0	0		N
Cobalt	A	mg/L	0.0008837	0.0044185		0	0	0.004118	0.0004771	0.001	1	0%	0	0		N
Copper	A	mg/L	0.002448	0.01224		0	0	0.01286	0.0043735	0.0099	1	0%	0	0		N
Iron	A	mg/L	1.024	5.12		0	0	4.042	0.0371198	0.02565	5	0%	0	0	24%	R
Lanthanum	A	mg/L	0.0002529	0.0012645		0	0	0.001425	0.000275	0.001	0.1	0%	0	0		N
Lead	A	mg/L	0.0002937	0.0014685		0	0	0.001364	0.0003858	0.001	1	0%	0	0		N
Magnesium	A	mg/L	2.097	10.485		0	0	11.42	0.0521269	0.0407608	50	0%	0	0	9%	
Manganese	A	mg/L	0.04533	0.22665		0	0	0.2466	0.0026994	0.0010695	1	0%	0	0	8%	
Molybdenum	A	mg/L	0.0002167	0.0010835		0	0	0.001134	0.0008814	0.001	0.1	0%	0	0		N
Nickel	A	mg/L	0.002696	0.01348		0	0	0.01441	0.0011441	0.0121000	1	0%	0	0	7%	
Potassium	A	mg/L	0.7269	3.6345		0	0	4.157	0.3828097	0.1306027	50	0%	0	0		N
Selenium	A	mg/L	0.00009156	0		0	0	0.0003536	0.0006787	0.0029274	1	0%	0	0		
Silicon	A	mg/L	5.7	28.5		0	0	19.83	0.2110446	0.026606	0.4	0%	0	0	36%	R
Silver	A	mg/L	-5.441E-05	0		0	0	0	0.0002141	0.001	0.04	0%	0	0		
Sodium	A	mg/L	20.68	103.4		0	0	111.8	0.5097304	3.6651346	50	0%	0	0	8%	
Strontium	A	mg/L	0.01334	0.0667		0	0	0.07286	0.0012164	0.001	1	0%	0	0	9%	
Thallium	A	mg/L	0.0001274	0.000637		0	0	0.0002782	0.0005569	0.001	1	0%	0	0		N
Thorium	A	mg/L	0.00007101	0		0	0	0.0004465	0.0018981	0.02075	1	0%	0	0		
Tin	A	mg/L	0.0001187	0		0	0	0	0.0094659	0.0055874	0.1	0%	0	0		
Titanium	A	mg/L	0.06274	0.3137		0	0	0.3144	0.0028666	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00001737	0.00008685		0	0	9.088E-05	8.495E-05	0.0004224	1	0%	0	0		N
Vanadium	A	mg/L	0.01288	0.0644		0	0	0.06802	0.0195637	0.0105423	1	0%	0	0		N
Zinc	A	mg/L	0.00247	0.01235		0	0	0.01047	0.0058087	0.0327721	1	0%	0	0		N
Silica	C	mg/L	12.19344	60.9672		0	0	0	0.4514666	0.0569155	5	0%	0	0		N
Silicon as SiO2	C	mg/L	12.19344	60.9672		0	0	0	0.4514666	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					
14968373	B21122168-001	ICPMS-6020-W-	PDS1		1/6/2022 6:54:19	1.03	162627	1/3/2022 8:3	1E+07	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					
14968373	B21122168-001	ICPMS-6020-W-	PDS1		1/6/2022 6:54:19	1.03	162627	1/3/2022 8:3	1E+07	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	4.994	5.14382		0.0515	5.287	0	0.003991	0.0032934	1		75	125	0%	A
Antimony	A	mg/L	0.04697	0.0483791		0.0515	0.0005063	0	0.0002883	0.0010094	0.1	93%	75	125	0%	
Arsenic	A	mg/L	0.04821	0.0496563		0.0515	0.0006383	0	0.0003514	0.001	1	95%	75	125	0%	
Barium	A	mg/L	0.06795	0.0699885		0.0515	0.0165	0	0.0002763	0.001	1	104%	75	125	0%	
Beryllium	A	mg/L	0.04722	0.0486366		0.0515	0.0001565	0	0.0001103	0.01	1	94%	75	125	0%	
Boron	A	mg/L	0.264	0.27192		0.0515	0.2268	0	0.0209916	0.0151101	1		75	125	0%	A
Cadmium	A	mg/L	0.04665	0.0480495		0.0515	0.0001664	0	1.876E-05	0.005	1	93%	75	125	0%	
Calcium	A	mg/L	54.44	56.0732		51.5	5.951	0	0.0384124	0.1136585	50	97%	75	125	0%	
Cerium	A	mg/L	0.0522	0.053766		0.0515	0.005207	0	2.820E-05	0.001	0.1	94%	75	125	0%	
Chromium	A	mg/L	0.07584	0.0781152		0.0515	0.03147	0	0.0015836	0.0015836	1	91%	75	125	0%	
Cobalt	A	mg/L	0.0525	0.054075		0.0515	0.004118	0	9.827E-05	0.001	1	97%	75	125	0%	
Copper	A	mg/L	0.06049	0.0623047		0.0515	0.01286	0	0.0009009	0.0020394	1	96%	75	125	0%	
Iron	A	mg/L	9.604	9.89212		5.15	4.042	0	0.0076467	0.0052839	5	114%	75	125	0%	
Lanthanum	A	mg/L	0.04932	0.0507996		0.0515	0.001425	0	5.665E-05	0.001	0.1	96%	75	125	0%	
Lead	A	mg/L	0.04998	0.0514794		0.0515	0.001364	0	7.947E-05	0.001	1	97%	80	120	0%	
Magnesium	A	mg/L	58.96	60.7288		51.5	11.42	0	0.0107381	0.0083967	50	96%	75	125	0%	
Manganese	A	mg/L	0.2611	0.268933		0.0515	0.2466	0	0.0005561	0.001	1		75	125	0%	A
Molybdenum	A	mg/L	0.04884	0.0503052		0.0515	0.001134	0	0.0001816	0.001	0.1	95%	75	125	0%	
Nickel	A	mg/L	0.05953	0.0613159		0.0515	0.01441	0	0.0002357	0.0024926	1	91%	75	125	0%	
Potassium	A	mg/L	52.48	54.0544		51.5	4.157	0	0.0788588	0.0269042	50	97%	75	125	0%	
Selenium	A	mg/L	0.04771	0.0491413		0.0515	0.0003536	0	0.0001398	0.001	1	95%	75	125	0%	
Silicon	A	mg/L	30.95	31.8785		0.206	19.83	0	0.0434752	0.0054808	0.4		0	0	0%	A
Silver	A	mg/L	0.01909	0.0196627		0.0206	0	0	4.409E-05	0.001	0.04	95%	75	125	0%	
Sodium	A	mg/L	143.3	147.599		51.5	111.8	0	0.1050045	0.7550177	50	70%	75	125	0%	S
Strontium	A	mg/L	0.1121	0.115463		0.0515	0.07286	0	0.0002506	0.001	1	83%	75	125	0%	
Thallium	A	mg/L	0.04709	0.0485027		0.0515	0.0002782	0	0.0001147	0.001	1	94%	75	125	0%	
Thorium	A	mg/L	0.05087	0.0523961		0.0515	0.0004465	0	0.000391	0.0042745	1	101%	75	125	0%	
Tin	A	mg/L	0.04967	0.0511601		0.0515	0	0	0.00195	0.001151	0.1	99%	75	125	0%	
Titanium	A	mg/L	0.3487	0.359161		0.0515	0.3144	0	0.0005905	0.001	1		75	125	0%	A
Uranium	A	mg/L	0.05054	0.0520562		0.0515	9.088E-05	0	1.75E-05	0.0003	1	101%	75	125	0%	
Vanadium	A	mg/L	0.1092	0.112476		0.0515	0.06802	0	0.0040301	0.0021717	1	86%	75	125	0%	
Zinc	A	mg/L	0.05529	0.0569487		0.0515	0.01047	0	0.0011966	0.0067511	1	90%	75	125	0%	
Silica	C	mg/L	66.20824	68.1944872		0	0	0	0.0930021	0.0117246	5	0%	0	0	0%	
Silicon as SiO2	C	mg/L	66.20824	68.1944872		0.0515	0	0	0.0930021	0.0117246	5	132416%	75	125	0%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968374	B21122168-001	ICPMS-6020-W- MS4			1/6/2022 7:00:18	1	162627	1/3/2022 8:3	1E+07	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	7.653	7.653		0.5	5.287	0	0.0038747	0.0031975	1		75	125	0%	A
Antimony	A	mg/L	0.09352	0.09352		0.1	0.0005063	0	0.0002799	0.001	0.1	93%	75	125	0%	
Arsenic	A	mg/L	0.1004	0.1004		0.1	0.0006383	0	0.0003412	0.001	1	100%	75	125	0%	
Barium	A	mg/L	0.1154	0.1154		0.1	0.0165	0	0.0002682	0.001	1	99%	75	125	0%	
Beryllium	A	mg/L	0.05058	0.05058		0.05	0.0001565	0	0.0001071	0.01	1	101%	75	125	0%	
Boron	A	mg/L	0.3325	0.3325		0.1	0.2268	0	0.0203802	0.01467	1	106%	75	125	0%	
Cadmium	A	mg/L	0.04873	0.04873		0.05	0.0001664	0	1.821E-05	0.005	1	97%	75	125	0%	
Calcium	A	mg/L	12.48	12.48		5	5.951	0	0.0372936	0.1103481	50	131%	75	125	0%	S
Cerium	A	mg/L	0.1041	0.1041		0.1	0.005207	0	2.738E-05	0.001	0.1	99%	75	125	0%	
Chromium	A	mg/L	0.132	0.132		0.1	0.03147	0	0.0015375	0.0015375	1	101%	75	125	0%	
Cobalt	A	mg/L	0.1082	0.1082		0.1	0.004118	0	9.541E-05	0.001	1	104%	75	125	0%	
Copper	A	mg/L	0.1176	0.1176		0.1	0.01286	0	0.0008747	0.00198	1	105%	75	125	0%	
Iron	A	mg/L	5.857	5.857		0.5	4.042	0	0.007424	0.00513	5		75	125	0%	A
Lanthanum	A	mg/L	0.1018	0.1018		0.1	0.001425	0	0.000055	0.001	0.1	100%	75	125	0%	
Lead	A	mg/L	0.1041	0.1041		0.1	0.001364	0	7.716E-05	0.001	1	103%	88	115	0%	
Magnesium	A	mg/L	15.29	15.29		5	11.42	0	0.0104254	0.0081522	50	77%	75	125	0%	
Manganese	A	mg/L	0.7517	0.7517		0.5	0.2466	0	0.0005399	0.001	1	101%	75	125	0%	
Molybdenum	A	mg/L	0.09994	0.09994		0.1	0.001134	0	0.0001763	0.001	0.1	99%	75	125	0%	
Nickel	A	mg/L	0.118	0.118		0.1	0.01441	0	0.0002288	0.0024200	1	104%	75	125	0%	
Potassium	A	mg/L	8.887	8.887		5	4.157	0	0.0765619	0.0261205	50	95%	75	125	0%	
Selenium	A	mg/L	0.09739	0.09739		0.1	0.0003536	0	0.0001357	0.001	1	97%	75	125	0%	
Silicon	A	mg/L	35.42	35.42		1	19.83	0	0.0422089	0.0053212	0.4		75	125	0%	A
Silver	A	mg/L	0.009347	0.009347		0.01	0	0	4.281E-05	0.001	0.04	93%	75	125	0%	
Sodium	A	mg/L	102.7	102.7		5	111.8	0	0.1019461	0.7330269	50		75	125	0%	A
Strontium	A	mg/L	0.1807	0.1807		0.1	0.07286	0	0.0002433	0.001	1	108%	75	125	0%	
Thallium	A	mg/L	0.1006	0.1006		0.1	0.0002782	0	0.0001114	0.001	1	100%	75	125	0%	
Thorium	A	mg/L	0.1028	0.1028		0.1	0.0004465	0	0.0003796	0.00415	1	102%	75	125	0%	
Tin	A	mg/L	0.09905	0.09905		0.1	0	0	0.0018932	0.0011175	0.1	99%	75	125	0%	
Titanium	A	mg/L	0.4275	0.4275		0.1	0.3144	0	0.0005733	0.001	1	113%	75	125	0%	
Uranium	A	mg/L	0.1018	0.1018		0.1	9.088E-05	0	1.699E-05	0.0003	1	102%	75	125	0%	
Vanadium	A	mg/L	0.1646	0.1646		0.1	0.06802	0	0.0039127	0.0021085	1	97%	75	125	0%	
Zinc	A	mg/L	0.1093	0.1093		0.1	0.01047	0	0.0011617	0.0065544	1	99%	75	125	0%	
Silica	C	mg/L	75.770464	75.770464		0	0	0	0.0902933	0.0113831	5	0%	0	0	0%	
Silicon as SiO2	C	mg/L	75.770464	75.770464		2.14	0	0	0.0902933	0.0113831	5	3541%	75	125	0%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968375	B21122168-001	ICPMS-6020-W-	MSD4		1/6/2022 7:06:08	1	162627	1/3/2022 8:3	1E+07	1E+07						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	7.239	7.239		0.5	5.287	7.653	0.0038747	0.0031975	1		75	125	6%	A
Antimony	A	mg/L	0.09438	0.09438		0.1	0.0005063	0.09352	0.0002799	0.001	0.1	94%	75	125	1%	
Arsenic	A	mg/L	0.1002	0.1002		0.1	0.0006383	0.1004	0.0003412	0.001	1	100%	75	125	0%	
Barium	A	mg/L	0.1182	0.1182		0.1	0.0165	0.1154	0.0002682	0.001	1	102%	75	125	2%	
Beryllium	A	mg/L	0.05095	0.05095		0.05	0.0001565	0.05058	0.0001071	0.01	1	102%	75	125	1%	
Boron	A	mg/L	0.3319	0.3319		0.1	0.2268	0.3325	0.0203802	0.01467	1	105%	75	125	0%	
Cadmium	A	mg/L	0.04933	0.04933		0.05	0.0001664	0.04873	1.821E-05	0.005	1	98%	75	125	1%	
Calcium	A	mg/L	12.29	12.29		5	5.951	12.48	0.0372936	0.1103481	50	127%	75	125	2%	S
Cerium	A	mg/L	0.1053	0.1053		0.1	0.005207	0.1041	2.738E-05	0.001	0.1	100%	75	125	1%	
Chromium	A	mg/L	0.1315	0.1315		0.1	0.03147	0.132	0.0015375	0.0015375	1	100%	75	125	0%	
Cobalt	A	mg/L	0.1083	0.1083		0.1	0.004118	0.1082	9.541E-05	0.001	1	104%	75	125	0%	
Copper	A	mg/L	0.1171	0.1171		0.1	0.01286	0.1176	0.0008747	0.00198	1	104%	75	125	0%	
Iron	A	mg/L	5.573	5.573		0.5	4.042	5.857	0.007424	0.00513	5		75	125	5%	A
Lanthanum	A	mg/L	0.1029	0.1029		0.1	0.001425	0.1018	0.000055	0.001	0.1	101%	75	125	1%	
Lead	A	mg/L	0.1038	0.1038		0.1	0.001364	0.1041	7.716E-05	0.001	1	102%	88	115	0%	
Magnesium	A	mg/L	15.38	15.38		5	11.42	15.29	0.0104254	0.0081522	50	79%	75	125	1%	
Manganese	A	mg/L	0.7552	0.7552		0.5	0.2466	0.7517	0.0005399	0.001	1	102%	75	125	0%	
Molybdenum	A	mg/L	0.1004	0.1004		0.1	0.001134	0.09994	0.0001763	0.001	0.1	99%	75	125	0%	
Nickel	A	mg/L	0.1162	0.1162		0.1	0.01441	0.118	0.0002288	0.0024200	1	102%	75	125	2%	
Potassium	A	mg/L	8.916	8.916		5	4.157	8.887	0.0765619	0.0261205	50	95%	75	125	0%	
Selenium	A	mg/L	0.09792	0.09792		0.1	0.0003536	0.09739	0.0001357	0.001	1	98%	75	125	1%	
Silicon	A	mg/L	34.57	34.57		1	19.83	35.42	0.0422089	0.0053212	0.4		75	125	2%	A
Silver	A	mg/L	0.009555	0.009555		0.01	0	0.009347	4.281E-05	0.001	0.04	96%	75	125	2%	
Sodium	A	mg/L	103.8	103.8		5	111.8	102.7	0.1019461	0.7330269	50		75	125	1%	A
Strontium	A	mg/L	0.1787	0.1787		0.1	0.07286	0.1807	0.0002433	0.001	1	106%	75	125	1%	
Thallium	A	mg/L	0.0983	0.0983		0.1	0.0002782	0.1006	0.0001114	0.001	1	98%	75	125	2%	
Thorium	A	mg/L	0.1046	0.1046		0.1	0.0004465	0.1028	0.0003796	0.00415	1	104%	75	125	2%	
Tin	A	mg/L	0.09774	0.09774		0.1	0	0.09905	0.0018932	0.0011175	0.1	98%	75	125	1%	
Titanium	A	mg/L	0.4132	0.4132		0.1	0.3144	0.4275	0.0005733	0.001	1	99%	75	125	3%	
Uranium	A	mg/L	0.1021	0.1021		0.1	9.088E-05	0.1018	1.699E-05	0.0003	1	102%	75	125	0%	
Vanadium	A	mg/L	0.165	0.165		0.1	0.06802	0.1646	0.0039127	0.0021085	1	97%	75	125	0%	
Zinc	A	mg/L	0.1093	0.1093		0.1	0.01047	0.1093	0.0011617	0.0065544	1	99%	75	125	0%	
Silica	C	mg/L	73.952144	73.952144		0	0	75.770464	0.0902933	0.0113831	5	0%	0	0	2%	
Silicon as SiO2	C	mg/L	73.952144	73.952144		2.14	0	75.770464	0.0902933	0.0113831	5	3456%	75	125	2%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968376	Rinse	ICPMS-6020-W-	SAMP		1/6/2022 7:11:59	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	-0.0005698	0		0	0	0	0.00086	0.001	1	0%	0	0	0%	
Antimony	A	mg/L	0.00009608	0		0	0	0	0.00042	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	0.00002696	0		0	0	0	0.00019	0.001	1	0%	0	0	0%	
Barium	A	mg/L	-1.094E-05	0		0	0	0	0.000042	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	6.211E-06	0		0	0	0	0.000025	0.001	1	0%	0	0	0%	
Calcium	A	mg/L	0.0006573	0		0	0	0	0.02092	0.02092	50	0%	0	0	0%	L
Cerium	A	mg/L	1.855E-06	0		0	0	0	0.000012	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	-3.045E-06	0		0	0	0	0.00018	0.001	1	0%	0	0	0%	
Iron	A	mg/L	-0.0001297	0		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Lanthanum	A	mg/L	1.355E-06	0		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.0000399	0		0	0	0	0.000056	0.001	1	0%	0	0	0%	
Magnesium	A	mg/L	0.00344	0		0	0	0	0.00564	0.00564	50	0%	0	0	0%	L
Manganese	A	mg/L	0.0000663	0		0	0	0	0.000095	0.001	1	0%	0	0	0%	
Mercury	A	mg/L	-1.666E-06	0		0	0	0	0.00016	0.001	0.002	0%	0	0	0%	
Molybdenum	A	mg/L	6.038E-06	0		0	0	0	0.00005	0.001	0.1	0%	0	0	0%	
Nickel	A	mg/L	0.0000296	0		0	0	0	0.00063	0.001	1	0%	0	0	0%	
Potassium	A	mg/L	0.005179	0		0	0	0	0.08139	0.08139	50	0%	0	0	0%	L
Selenium	A	mg/L	0.00001998	0		0	0	0	0.00033	0.001	1	0%	0	0	0%	
Silver	A	mg/L	-4.605E-06	0		0	0	0	0.00002	0.001	0.04	0%	0	0	0%	
Sodium	A	mg/L	0.02823	0.02823		0	0	0	0.02171	0.02171	50	0%	0	0	0%	D
Strontium	A	mg/L	0.00000434	0		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0008013	0.0008013		0	0	0	0.000041	0.001	1	0%	0	0	0%	J
Thorium	A	mg/L	0.00001485	0		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Tin	A	mg/L	9.993E-06	0		0	0	0	0.00132	0.00132	0.1	0%	0	0	0%	
Titanium	A	mg/L	0.00007076	0		0	0	0	0.000094	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	1.625E-06	0		0	0	0	0.000052	0.0003	1	0%	0	0	0%	
Vanadium	A	mg/L	0.0008098	0		0	0	0	0.0013	0.0013	1	0%	0	0	0%	
Zinc	A	mg/L	0.00003357	0		0	0	0	0.00273	0.00273	1	0%	0	0	0%	L
Iron, Ferrous	C	mg/L	-0.0001297	0		0	0	0	0.00119	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					
14968377	B21122168-006	ICPMS-6020-W-	SAMP		1/6/2022 7:18:09	1	R372863		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					
14968377	B21122168-006	ICPMS-6020-W-	SAMP		1/6/2022 7:18:09	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.00006654	0		0	0	0	0.00042	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	0.0007749	0.0007749		0	0	0	0.00019	0.001	1	0%	0	0	0%	J
Barium	A	mg/L	0.003599	0.003599		0	0	0	0.000042	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0.00001652	0		0	0	0	0.000025	0.001	1	0%	0	0	0%	
Cerium	A	mg/L	0.00001855	0.00001855		0	0	0	0.000012	0.001	0.1	0%	0	0	0%	J
Chromium	A	mg/L	0.00002449	0		0	0	0	0.00018	0.001	1	0%	0	0	0%	
Lanthanum	A	mg/L	4.994E-06	0		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.00005918	0.00005918		0	0	0	0.000056	0.001	1	0%	0	0	0%	J
Manganese	A	mg/L	0.5425	0.5425		0	0	0	0.000095	0.001	1	0%	0	0	0%	
Mercury	A	mg/L	0.0003303	0.0003303		0	0	0	0.00016	0.001	0.002	0%	0	0	0%	J
Molybdenum	A	mg/L	0.0004374	0.0004374		0	0	0	0.00005	0.001	0.1	0%	0	0	0%	J
Nickel	A	mg/L	0.001015	0.001015		0	0	0	0.00063	0.001	1	0%	0	0	0%	
Selenium	A	mg/L	0.00001591	0		0	0	0	0.00033	0.001	1	0%	0	0	0%	
Silver	A	mg/L	-6.939E-05	0		0	0	0	0.00002	0.001	0.04	0%	0	0	0%	
Strontium	A	mg/L	0.06909	0.06909		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0004279	0.0004279		0	0	0	0.000041	0.001	1	0%	0	0	0%	J
Thorium	A	mg/L	4.399E-06	0		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Titanium	A	mg/L	0.002482	0.002482		0	0	0	0.000094	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00001417	0		0	0	0	0.000052	0.0003	1	0%	0	0	0%	
Calcium	B	mg/L	10.65	10.65		0	0	0	0.02092	0.02092	50	0%	0	0	0%	D
Iron	B	mg/L	0.373	0.373		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Iron, Ferrous	B	mg/L	0.373	0.373		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Magnesium	B	mg/L	10.94	10.94		0	0	0	0.00564	0.00564	50	0%	0	0	0%	D
Potassium	B	mg/L	2.307	2.307		0	0	0	0.08139	0.08139	50	0%	0	0	0%	D
Sodium	B	mg/L	41.26	41.26		0	0	0	0.02171	0.02171	50	0%	0	0	0%	D
Tin	B	mg/L	-5.565E-05	0		0	0	0	0.00132	0.00132	0.1	0%	0	0	0%	
Vanadium	B	mg/L	0.000553	0		0	0	0	0.0013	0.0013	1	0%	0	0	0%	
Zinc	B	mg/L	0.001255	0		0	0	0	0.00273	0.00273	1	0%	0	0	0%	L

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968378	B21122168-006	ICPMS-6020-W-	SAMP		1/6/2022 7:24:15	1	162627	1/3/2022 9:1	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					
14968378	B21122168-006	ICPMS-6020-W-	SAMP		1/6/2022 7:24:15	1	162627	1/3/2022 9:1	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.00004915	0		0	0	0	0.0002799	0.001	0.1	0%	0	0	0%	U
Arsenic	A	mg/L	0.0007118	0.0007118		0	0	0	0.0003412	0.001	1	0%	0	0	0%	J
Barium	A	mg/L	0.004057	0.004057		0	0	0	0.0002682	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	-2.727E-07	0		0	0	0	1.821E-05	0.005	1	0%	0	0	0%	U
Cerium	A	mg/L	0.00006091	0.00006091		0	0	0	2.738E-05	0.001	0.1	0%	0	0	0%	J
Lanthanum	A	mg/L	0.00001343	0		0	0	0	0.000055	0.001	0.1	0%	0	0	0%	U
Lead	A	mg/L	0.00007168	0		0	0	0	7.716E-05	0.001	1	0%	0	0	0%	U
Manganese	A	mg/L	0.5495	0.5495		0	0	0	0.0005399	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	0.0005094	0.0005094		0	0	0	0.0001763	0.001	0.1	0%	0	0	0%	J
Selenium	A	mg/L	0.0000275	0		0	0	0	0.0001357	0.001	1	0%	0	0	0%	U
Silver	A	mg/L	-6.265E-05	0		0	0	0	4.281E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.07203	0.07203		0	0	0	0.0002433	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0002364	0.0002364		0	0	0	0.0001114	0.001	1	0%	0	0	0%	J
Titanium	A	mg/L	0.003753	0.003753		0	0	0	0.0005733	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00001409	0		0	0	0	1.699E-05	0.0003	1	0%	0	0	0%	U
Aluminum	B	mg/L	0.01343	0.01343		0	0	0	0.0038747	0.0031975	1	0%	0	0	0%	D
Calcium	B	mg/L	8.802	8.802		0	0	0	0.0372936	0.1103481	50	0%	0	0	0%	D
Chromium	B	mg/L	0.0001326	0		0	0	0	0.0015375	0.0015375	1	0%	0	0	0%	UL
Iron	B	mg/L	0.4022	0.4022		0	0	0	0.007424	0.00513	5	0%	0	0	0%	D
Magnesium	B	mg/L	10.88	10.88		0	0	0	0.0104254	0.0081522	50	0%	0	0	0%	D
Nickel	B	mg/L	0.001066	0.001066		0	0	0	0.0002288	0.0024200	1	0%	0	0	0%	JL
Potassium	B	mg/L	2.22	2.22		0	0	0	0.0765619	0.0261205	50	0%	0	0	0%	D
Sodium	B	mg/L	41.85	41.85		0	0	0	0.1019461	0.7330269	50	0%	0	0	0%	D
Thorium	B	mg/L	0.00003813	0		0	0	0	0.0003796	0.00415	1	0%	0	0	0%	UL
Tin	B	mg/L	0.0002292	0		0	0	0	0.0018932	0.0011175	0.1	0%	0	0	0%	U
Vanadium	B	mg/L	0.002499	0		0	0	0	0.0039127	0.0021085	1	0%	0	0	0%	UL
Zinc	B	mg/L	0.0007838	0		0	0	0	0.0011617	0.0065544	1	0%	0	0	0%	UL

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968379	B21122180-001	ICPMS-6020-W-	SAMP		1/6/2022 7:30:21	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.0001737	0		0	0	0	0.00086	0.001	1	0%	0	0	0%	
Antimony	A	mg/L	0.0003546	0		0	0	0	0.00042	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	0.0008141	0.0008141		0	0	0	0.00019	0.001	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					
14968379	B21122180-001	ICPMS-6020-W-	SAMP		1/6/2022 7:30:21	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Barium	A	mg/L	0.01398	0.01398		0	0	0	0.000042	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0.00001664	0		0	0	0	0.000025	0.001	1	0%	0	0	0%	
Cerium	A	mg/L	9.517E-06	0		0	0	0	0.000012	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	0.0006646	0.0006646		0	0	0	0.00018	0.001	1	0%	0	0	0%	J
Lanthanum	A	mg/L	4.213E-06	0		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.00006169	0.00006169		0	0	0	0.000056	0.001	1	0%	0	0	0%	J
Manganese	A	mg/L	0.1733	0.1733		0	0	0	0.000095	0.001	1	0%	0	0	0%	
Mercury	A	mg/L	0.0004045	0.0004045		0	0	0	0.00016	0.001	0.002	0%	0	0	0%	J
Molybdenum	A	mg/L	0.0026	0.0026		0	0	0	0.00005	0.001	0.1	0%	0	0	0%	
Nickel	A	mg/L	0.004016	0.004016		0	0	0	0.00063	0.001	1	0%	0	0	0%	
Selenium	A	mg/L	0.0001733	0		0	0	0	0.00033	0.001	1	0%	0	0	0%	
Silver	A	mg/L	-6.902E-05	0		0	0	0	0.00002	0.001	0.04	0%	0	0	0%	
Strontium	A	mg/L	0.1629	0.1629		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0001894	0.0001894		0	0	0	0.000041	0.001	1	0%	0	0	0%	J
Thorium	A	mg/L	2.017E-06	0		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Titanium	A	mg/L	0.002469	0.002469		0	0	0	0.000094	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.0001336	0.0001336		0	0	0	0.000052	0.0003	1	0%	0	0	0%	J
Calcium	B	mg/L	24.36	24.36		0	0	0	0.02092	0.02092	50	0%	0	0	0%	D
Iron	B	mg/L	0.11	0.11		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Iron, Ferrous	B	mg/L	0.11	0.11		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Magnesium	B	mg/L	33.48	33.48		0	0	0	0.00564	0.00564	50	0%	0	0	0%	D
Potassium	B	mg/L	4.006	4.006		0	0	0	0.08139	0.08139	50	0%	0	0	0%	D
Tin	B	mg/L	-4.996E-05	0		0	0	0	0.00132	0.00132	0.1	0%	0	0	0%	
Vanadium	B	mg/L	0.01849	0.01849		0	0	0	0.0013	0.0013	1	0%	0	0	0%	
Zinc	B	mg/L	0.001896	0		0	0	0	0.00273	0.00273	1	0%	0	0	0%	L

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968380	CCV	ICPMS-6020-W-	CCV		1/6/2022 7:36:28	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.05116	0.05116		0.05	0	0	0.00086	0.001	1	102%	90	110	0%	
Antimony	A	mg/L	0.05305	0.05305		0.05	0	0	0.00042	0.001	0.1	106%	90	110	0%	
Arsenic	A	mg/L	0.05282	0.05282		0.05	0	0	0.00019	0.001	1	106%	90	110	0%	
Barium	A	mg/L	0.05426	0.05426		0.05	0	0	0.000042	0.001	1	109%	90	110	0%	
Beryllium	A	mg/L	0.05375	0.05375		0.05	0	0	0.00012	0.001	1	107%	90	110	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968380	CCV	ICPMS-6020-W- CCV			1/6/2022 7:36:28	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Boron	A	mg/L	0.05625	0.05625		0.05	0	0	0.00561	0.00561	1	113%	90	110	0%	S
Cadmium	A	mg/L	0.05159	0.05159		0.05	0	0	0.000025	0.001	1	103%	90	110	0%	
Calcium	A	mg/L	12.66	12.66		12.5	0	0	0.02092	0.02092	50	101%	90	110	0%	
Cerium	A	mg/L	0.04717	0.04717		0.05	0	0	0.000012	0.001	0.1	94%	90	110	0%	
Chromium	A	mg/L	0.05344	0.05344		0.05	0	0	0.00018	0.001	1	107%	90	110	0%	
Cobalt	A	mg/L	0.05564	0.05564		0.05	0	0	0.000042	0.001	1	111%	90	110	0%	S
Copper	A	mg/L	0.05591	0.05591		0.05	0	0	0.00027	0.001	1	112%	90	110	0%	S
Iron	A	mg/L	1.315	1.315		1.3	0	0	0.00119	0.00119	5	101%	90	110	0%	
Lanthanum	A	mg/L	0.04768	0.04768		0.05	0	0	0.000011	0.001	0.1	95%	90	110	0%	
Lead	A	mg/L	0.05185	0.05185		0.05	0	0	0.000056	0.001	1	104%	90	110	0%	
Magnesium	A	mg/L	13.16	13.16		12.5	0	0	0.00564	0.00564	50	105%	90	110	0%	
Manganese	A	mg/L	0.05367	0.05367		0.05	0	0	0.000095	0.001	1	107%	90	110	0%	
Mercury	A	mg/L	0.0009178	0.0009178		0.001	0	0	0.00016	0.001	0.002	92%	90	110	0%	
Molybdenum	A	mg/L	0.04975	0.04975		0.05	0	0	0.00005	0.001	0.1	99%	90	110	0%	
Nickel	A	mg/L	0.05428	0.05428		0.05	0	0	0.00063	0.001	1	109%	90	110	0%	
Potassium	A	mg/L	12.98	12.98		12.5	0	0	0.08139	0.08139	50	104%	90	110	0%	
Selenium	A	mg/L	0.05307	0.05307		0.05	0	0	0.00033	0.001	1	106%	90	110	0%	
Silicon	A	mg/L	0.2317	0.2317		0.2	0	0	0.01223	0.1	0.4	116%	90	110	0%	S
Silver	A	mg/L	0.01988	0.01988		0.02	0	0	0.00002	0.001	0.04	99%	90	110	0%	
Sodium	A	mg/L	13.21	13.21		12.5	0	0	0.02171	0.02171	50	106%	90	110	0%	
Strontium	A	mg/L	0.05284	0.05284		0.05	0	0	0.00014	0.001	1	106%	90	110	0%	
Thallium	A	mg/L	0.05044	0.05044		0.05	0	0	0.000041	0.001	1	101%	90	110	0%	
Thorium	A	mg/L	0.05348	0.05348		0.05	0	0	0.00061	0.001	1	107%	90	110	0%	
Tin	A	mg/L	0.0514	0.0514		0.05	0	0	0.00132	0.00132	0.1	103%	90	110	0%	
Titanium	A	mg/L	0.05492	0.05492		0.05	0	0	0.000094	0.001	1	110%	90	110	0%	
Uranium	A	mg/L	0.05255	0.05255		0.05	0	0	0.000052	0.0003	1	105%	90	110	0%	
Vanadium	A	mg/L	0.05519	0.05519		0.05	0	0	0.0013	0.0013	1	110%	90	110	0%	
Zinc	A	mg/L	0.05516	0.05516		0.05	0	0	0.00273	0.00273	1	110%	90	110	0%	
Iron, Ferrous	C	mg/L	1.315	1.315		0	0	0	0.00119	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					
14968381	CCB	ICPMS-6020-W- CCB			1/6/2022 7:42:27	1	R372863		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					
14968381	CCB	ICPMS-6020-W-	CCB		1/6/2022 7:42:27	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.0008292	0.0008292		0	0	0	0.00086	0.001	1	0%				0%
Antimony	A	mg/L	0.00005437	0.00005437		0	0	0	0.00042	0.001	0.1	0%				0%
Arsenic	A	mg/L	0.00003231	0.00003231		0	0	0	0.00019	0.001	1	0%				0%
Barium	A	mg/L	2.888E-06	2.888E-06		0	0	0	0.000042	0.001	1	0%				0%
Beryllium	A	mg/L	6.419E-06	6.419E-06		0	0	0	0.00012	0.001	1	0%				0%
Boron	A	mg/L	0.003166	0.003166		0	0	0	0.00561	0.00561	1	0%				0%
Cadmium	A	mg/L	9.305E-07	9.305E-07		0	0	0	0.000025	0.001	1	0%				0%
Calcium	A	mg/L	0.0009429	0.0009429		0	0	0	0.02092	0.02092	50	0%				0%
Cerium	A	mg/L	1.745E-06	1.745E-06		0	0	0	0.000012	0.001	0.1	0%	0	0		0%
Chromium	A	mg/L	8.922E-06	8.922E-06		0	0	0	0.00018	0.001	1	0%				0%
Cobalt	A	mg/L	0.00001027	0.00001027		0	0	0	0.000042	0.001	1	0%				0%
Copper	A	mg/L	-1.281E-06	-1.281E-06		0	0	0	0.00027	0.001	1	0%				0%
Iron	A	mg/L	0.00002265	0.00002265		0	0	0	0.00119	0.00119	5	0%				0%
Lanthanum	A	mg/L	1.464E-06	1.464E-06		0	0	0	0.000011	0.001	0.1	0%	0	0		0%
Lead	A	mg/L	0.00002747	0.00002747		0	0	0	0.000056	0.001	1	0%				0%
Magnesium	A	mg/L	0.00341	0.00341		0	0	0	0.00564	0.00564	50	0%				0%
Manganese	A	mg/L	0.00005919	0.00005919		0	0	0	0.000095	0.001	1	0%				0%
Mercury	A	mg/L	-1.142E-05	-1.142E-05		0	0	0	0.00016	0.001	0.002	0%				0%
Molybdenum	A	mg/L	8.581E-06	8.581E-06		0	0	0	0.00005	0.001	0.1	0%				0%
Nickel	A	mg/L	0.00004291	0.00004291		0	0	0	0.00063	0.001	1	0%				0%
Potassium	A	mg/L	0.0137	0.0137		0	0	0	0.08139	0.08139	50	0%				0%
Selenium	A	mg/L	0.00001375	0.00001375		0	0	0	0.00033	0.001	1	0%				0%
Silicon	A	mg/L	0.01142	0.01142		0	0	0	0.01223	0.1	0.4	0%	0	0		0%
Silver	A	mg/L	-6.035E-06	-6.035E-06		0	0	0	0.00002	0.001	0.04	0%				0%
Sodium	A	mg/L	0.02706	0.02706		0	0	0	0.02171	0.02171	50	0%				0%
Strontium	A	mg/L	3.885E-06	3.885E-06		0	0	0	0.00014	0.001	1	0%	0	0		0%
Thallium	A	mg/L	0.0002618	0.0002618		0	0	0	0.000041	0.001	1	0%	0	0		0%
Thorium	A	mg/L	0.0000162	0.0000162		0	0	0	0.00061	0.001	1	0%	0	0		0%
Tin	A	mg/L	0.0000175	0.0000175		0	0	0	0.00132	0.00132	0.1	0%	0	0		0%
Titanium	A	mg/L	0.00004114	0.00004114		0	0	0	0.000094	0.001	1	0%	0	0		0%
Uranium	A	mg/L	1.205E-06	1.205E-06		0	0	0	0.000052	0.0003	1	0%	0	0		0%
Vanadium	A	mg/L	0.0009557	0.0009557		0	0	0	0.0013	0.0013	1	0%	0	0		0%
Zinc	A	mg/L	-4.836E-06	-4.836E-06		0	0	0	0.00273	0.00273	1	0%	0	0		0%
Iron, Ferrous	C	mg/L	0.00002265	0.00002265		0	0	0	0.00119	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					
14968382	B21122180-001	ICPMS-6020-W-	SAMP		1/6/2022 7:48:38	1	162627	1/3/2022 8:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.000317	0.000317		0	0	0	0.0002799	0.001	0.1	0%	0	0	0%	J
Arsenic	A	mg/L	0.0008466	0.0008466		0	0	0	0.0003412	0.001	1	0%	0	0	0%	J
Barium	A	mg/L	0.01495	0.01495		0	0	0	0.0002682	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0.00000449	0		0	0	0	1.821E-05	0.005	1	0%	0	0	0%	U
Cerium	A	mg/L	0.0002119	0.0002119		0	0	0	2.738E-05	0.001	0.1	0%	0	0	0%	J
Lanthanum	A	mg/L	0.0000823	0.0000823		0	0	0	0.000055	0.001	0.1	0%	0	0	0%	J
Lead	A	mg/L	0.0004381	0.0004381		0	0	0	7.716E-05	0.001	1	0%	0	0	0%	J
Manganese	A	mg/L	0.144	0.144		0	0	0	0.0005399	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	0.002645	0.002645		0	0	0	0.0001763	0.001	0.1	0%	0	0	0%	
Selenium	A	mg/L	0.0002091	0.0002091		0	0	0	0.0001357	0.001	1	0%	0	0	0%	J
Silver	A	mg/L	-3.543E-05	0		0	0	0	4.281E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.1456	0.1456		0	0	0	0.0002433	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0002427	0.0002427		0	0	0	0.0001114	0.001	1	0%	0	0	0%	J
Uranium	A	mg/L	0.0001479	0.0001479		0	0	0	1.699E-05	0.0003	1	0%	0	0	0%	J
Calcium	B	mg/L	23.74	23.74		0	0	0	0.0372936	0.1103481	50	0%	0	0	0%	D
Chromium	B	mg/L	0.001465	0		0	0	0	0.0015375	0.0015375	1	0%	0	0	0%	UL
Iron	B	mg/L	0.4353	0.4353		0	0	0	0.007424	0.00513	5	0%	0	0	0%	D
Magnesium	B	mg/L	31.51	31.51		0	0	0	0.0104254	0.0081522	50	0%	0	0	0%	D
Nickel	B	mg/L	0.004829	0.004829		0	0	0	0.0002288	0.0024200	1	0%	0	0	0%	D
Potassium	B	mg/L	3.658	3.658		0	0	0	0.0765619	0.0261205	50	0%	0	0	0%	D
Thorium	B	mg/L	0.00004543	0		0	0	0	0.0003796	0.00415	1	0%	0	0	0%	UL
Tin	B	mg/L	0.0003497	0		0	0	0	0.0018932	0.0011175	0.1	0%	0	0	0%	U
Zinc	B	mg/L	0.002938	0.002938		0	0	0	0.0011617	0.0065544	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					
14968383	B21122188-001	ICPMS-6020-W-	SAMP		1/6/2022 7:54:45	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.0000154	0		0	0	0	0.00042	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	0.00001392	0		0	0	0	0.00019	0.001	1	0%	0	0	0%	
Barium	A	mg/L	0.001892	0.001892		0	0	0	0.000042	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0.00001675	0		0	0	0	0.000025	0.001	1	0%	0	0	0%	
Cerium	A	mg/L	4.359E-07	0		0	0	0	0.000012	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	0.003288	0.003288		0	0	0	0.00018	0.001	1	0%	0	0	0%	
Lanthanum	A	mg/L	7.986E-07	0		0	0	0	0.000011	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					
14968383	B21122188-001	ICPMS-6020-W-	SAMP		1/6/2022 7:54:45	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Lead	A	mg/L	0.00005664	0.00005664		0	0	0	0.000056	0.001	1	0%	0	0	0%	J
Manganese	A	mg/L	0.0002931	0.0002931		0	0	0	0.000095	0.001	1	0%	0	0	0%	J
Molybdenum	A	mg/L	0.0005724	0.0005724		0	0	0	0.00005	0.001	0.1	0%	0	0	0%	J
Nickel	A	mg/L	0.0001194	0		0	0	0	0.00063	0.001	1	0%	0	0	0%	
Selenium	A	mg/L	0.0001477	0		0	0	0	0.00033	0.001	1	0%	0	0	0%	
Silver	A	mg/L	-6.908E-05	0		0	0	0	0.00002	0.001	0.04	0%	0	0	0%	
Strontium	A	mg/L	0.05423	0.05423		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0001413	0.0001413		0	0	0	0.000041	0.001	1	0%	0	0	0%	J
Thorium	A	mg/L	6.127E-07	0		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	5.311E-06	0		0	0	0	0.000052	0.0003	1	0%	0	0	0%	
Calcium	B	mg/L	7.676	7.676		0	0	0	0.02092	0.02092	50	0%	0	0	0%	D
Iron	B	mg/L	0.003006	0.003006		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Iron, Ferrous	B	mg/L	0.003006	0.003006		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Magnesium	B	mg/L	9.144	9.144		0	0	0	0.00564	0.00564	50	0%	0	0	0%	D
Potassium	B	mg/L	1.999	1.999		0	0	0	0.08139	0.08139	50	0%	0	0	0%	D
Tin	B	mg/L	-5.447E-05	0		0	0	0	0.00132	0.00132	0.1	0%	0	0	0%	
Zinc	B	mg/L	0.006756	0.006756		0	0	0	0.00273	0.00273	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					
14968384	B21122188-001	ICPMS-6020-W-	SAMP		1/6/2022 8:00:54	1	162627	1/3/2022 8:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.00003514	0		0	0	0	0.0002799	0.001	0.1	0%	0	0	0%	U
Arsenic	A	mg/L	0.0002103	0		0	0	0	0.0003412	0.001	1	0%	0	0	0%	U
Barium	A	mg/L	0.001998	0.001998		0	0	0	0.0002682	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	-2.312E-06	0		0	0	0	1.821E-05	0.005	1	0%	0	0	0%	U
Cerium	A	mg/L	3.365E-06	0		0	0	0	2.738E-05	0.001	0.1	0%	0	0	0%	U
Lanthanum	A	mg/L	1.256E-06	0		0	0	0	0.000055	0.001	0.1	0%	0	0	0%	U
Lead	A	mg/L	0.00005677	0		0	0	0	7.716E-05	0.001	1	0%	0	0	0%	U
Manganese	A	mg/L	0.0007893	0.0007893		0	0	0	0.0005399	0.001	1	0%	0	0	0%	J
Molybdenum	A	mg/L	0.0007434	0.0007434		0	0	0	0.0001763	0.001	0.1	0%	0	0	0%	J
Selenium	A	mg/L	0.0001836	0.0001836		0	0	0	0.0001357	0.001	1	0%	0	0	0%	J
Silver	A	mg/L	-0.000069	0		0	0	0	4.281E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.05645	0.05645		0	0	0	0.0002433	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0001103	0		0	0	0	0.0001114	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					
14968384	B21122188-001	ICPMS-6020-W-	SAMP		1/6/2022 8:00:54	1	162627	1/3/2022 8:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Uranium	A	mg/L	5.578E-06	0		0	0	0	1.699E-05	0.0003	1	0%	0	0	0%	U
Calcium	B	mg/L	7.645	7.645		0	0	0	0.0372936	0.1103481	50	0%	0	0	0%	D
Chromium	B	mg/L	0.003497	0.003497		0	0	0	0.0015375	0.0015375	1	0%	0	0	0%	UD
Iron	B	mg/L	0.02458	0.02458		0	0	0	0.007424	0.00513	5	0%	0	0	0%	D
Magnesium	B	mg/L	8.915	8.915		0	0	0	0.0104254	0.0081522	50	0%	0	0	0%	D
Nickel	B	mg/L	0.0002312	0.0002312		0	0	0	0.0002288	0.0024200	1	0%	0	0	0%	JL
Potassium	B	mg/L	1.915	1.915		0	0	0	0.0765619	0.0261205	50	0%	0	0	0%	D
Thorium	B	mg/L	0.00002617	0		0	0	0	0.0003796	0.00415	1	0%	0	0	0%	UL
Tin	B	mg/L	0.0002336	0		0	0	0	0.0018932	0.0011175	0.1	0%	0	0	0%	U
Zinc	B	mg/L	0.00698	0.00698		0	0	0	0.0011617	0.0065544	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					
14968385	B21122190-001	ICPMS-6020-W-	SAMP		1/6/2022 8:07:03	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.00006135	0		0	0	0	0.00042	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	0.00005597	0		0	0	0	0.00019	0.001	1	0%	0	0	0%	
Barium	A	mg/L	0.01892	0.01892		0	0	0	0.000042	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0.00001634	0		0	0	0	0.000025	0.001	1	0%	0	0	0%	
Cerium	A	mg/L	0.00005457	0.00005457		0	0	0	0.000012	0.001	0.1	0%	0	0	0%	J
Chromium	A	mg/L	0.0002139	0.0002139		0	0	0	0.00018	0.001	1	0%	0	0	0%	J
Lanthanum	A	mg/L	0.00001361	0.00001361		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	J
Lead	A	mg/L	0.00006004	0.00006004		0	0	0	0.000056	0.001	1	0%	0	0	0%	J
Molybdenum	A	mg/L	0.000111	0.000111		0	0	0	0.00005	0.001	0.1	0%	0	0	0%	J
Nickel	A	mg/L	0.0007834	0.0007834		0	0	0	0.00063	0.001	1	0%	0	0	0%	J
Selenium	A	mg/L	0.00001162	0		0	0	0	0.00033	0.001	1	0%	0	0	0%	
Silver	A	mg/L	-7.027E-05	0		0	0	0	0.00002	0.001	0.04	0%	0	0	0%	
Strontium	A	mg/L	0.09807	0.09807		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00006355	0.00006355		0	0	0	0.000041	0.001	1	0%	0	0	0%	J
Thorium	A	mg/L	2.378E-06	0		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	1.973E-06	0		0	0	0	0.000052	0.0003	1	0%	0	0	0%	
Calcium	B	mg/L	13.44	13.44		0	0	0	0.02092	0.02092	50	0%	0	0	0%	D
Iron	B	mg/L	1.915	1.915		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Iron, Ferrous	B	mg/L	1.915	1.915		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Magnesium	B	mg/L	27.12	27.12		0	0	0	0.00564	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					
14968385	B21122190-001	ICPMS-6020-W-	SAMP		1/6/2022 8:07:03	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Potassium	B	mg/L	2.772	2.772		0	0	0	0.08139	0.08139	50	0%	0	0	0%	D
Tin	B	mg/L	-0.0000367	0		0	0	0	0.00132	0.00132	0.1	0%	0	0	0%	
Zinc	B	mg/L	0.0007709	0		0	0	0	0.00273	0.00273	1	0%	0	0	0%	L

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968386	B21122190-001	ICPMS-6020-W-	SAMP		1/6/2022 8:13:11	1	162627	1/3/2022 8:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.00005503	0		0	0	0	0.0002799	0.001	0.1	0%	0	0	0%	U
Arsenic	A	mg/L	0.0002104	0		0	0	0	0.0003412	0.001	1	0%	0	0	0%	U
Barium	A	mg/L	0.02012	0.02012		0	0	0	0.0002682	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	-2.123E-06	0		0	0	0	1.821E-05	0.005	1	0%	0	0	0%	U
Cerium	A	mg/L	0.0001295	0.0001295		0	0	0	2.738E-05	0.001	0.1	0%	0	0	0%	J
Lanthanum	A	mg/L	0.00003331	0		0	0	0	0.000055	0.001	0.1	0%	0	0	0%	U
Lead	A	mg/L	0.0000934	0.0000934		0	0	0	7.716E-05	0.001	1	0%	0	0	0%	J
Molybdenum	A	mg/L	0.0001378	0		0	0	0	0.0001763	0.001	0.1	0%	0	0	0%	U
Selenium	A	mg/L	0.00004357	0		0	0	0	0.0001357	0.001	1	0%	0	0	0%	U
Silver	A	mg/L	-0.0000633	0		0	0	0	4.281E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.1011	0.1011		0	0	0	0.0002433	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00008986	0		0	0	0	0.0001114	0.001	1	0%	0	0	0%	U
Uranium	A	mg/L	4.196E-06	0		0	0	0	1.699E-05	0.0003	1	0%	0	0	0%	U
Calcium	B	mg/L	13.34	13.34		0	0	0	0.0372936	0.1103481	50	0%	0	0	0%	D
Chromium	B	mg/L	0.000414	0		0	0	0	0.0015375	0.0015375	1	0%	0	0	0%	UL
Iron	B	mg/L	2.175	2.175		0	0	0	0.007424	0.00513	5	0%	0	0	0%	D
Magnesium	B	mg/L	26.65	26.65		0	0	0	0.0104254	0.0081522	50	0%	0	0	0%	D
Nickel	B	mg/L	0.0006702	0.0006702		0	0	0	0.0002288	0.0024200	1	0%	0	0	0%	JL
Potassium	B	mg/L	2.693	2.693		0	0	0	0.0765619	0.0261205	50	0%	0	0	0%	D
Thorium	B	mg/L	0.00001966	0		0	0	0	0.0003796	0.00415	1	0%	0	0	0%	UL
Tin	B	mg/L	0.0002491	0		0	0	0	0.0018932	0.0011175	0.1	0%	0	0	0%	U
Zinc	B	mg/L	0.0008578	0		0	0	0	0.0011617	0.0065544	1	0%	0	0	0%	UL

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968387	B21122198-001	ICPMS-6020-W-	SAMP		1/6/2022 8:19:19	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.0003782	0		0	0	0	0.00042	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	0.0001418	0		0	0	0	0.00019	0.001	1	0%	0	0	0%	
Barium	A	mg/L	0.01162	0.01162		0	0	0	0.000042	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0.00001767	0		0	0	0	0.000025	0.001	1	0%	0	0	0%	
Cerium	A	mg/L	5.147E-06	0		0	0	0	0.000012	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	0.002431	0.002431		0	0	0	0.00018	0.001	1	0%	0	0	0%	
Lanthanum	A	mg/L	1.708E-06	0		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.0002531	0.0002531		0	0	0	0.000056	0.001	1	0%	0	0	0%	J
Manganese	A	mg/L	0.001327	0.001327		0	0	0	0.000095	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	0.0003413	0.0003413		0	0	0	0.00005	0.001	0.1	0%	0	0	0%	J
Nickel	A	mg/L	0.000601	0		0	0	0	0.00063	0.001	1	0%	0	0	0%	
Selenium	A	mg/L	0.0002453	0		0	0	0	0.00033	0.001	1	0%	0	0	0%	
Silver	A	mg/L	-6.853E-05	0		0	0	0	0.00002	0.001	0.04	0%	0	0	0%	
Strontium	A	mg/L	0.2745	0.2745		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00002541	0		0	0	0	0.000041	0.001	1	0%	0	0	0%	
Thorium	A	mg/L	-6.975E-08	0		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00001136	0		0	0	0	0.000052	0.0003	1	0%	0	0	0%	
Calcium	B	mg/L	28.5	28.5		0	0	0	0.02092	0.02092	50	0%	0	0	0%	D
Iron	B	mg/L	0.01026	0.01026		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Iron, Ferrous	B	mg/L	0.01026	0.01026		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Magnesium	B	mg/L	47.06	47.06		0	0	0	0.00564	0.00564	50	0%	0	0	0%	D
Potassium	B	mg/L	2.342	2.342		0	0	0	0.08139	0.08139	50	0%	0	0	0%	D
Tin	B	mg/L	0.00002893	0		0	0	0	0.00132	0.00132	0.1	0%	0	0	0%	
Zinc	B	mg/L	0.01076	0.01076		0	0	0	0.00273	0.00273	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					
14968388	B21122198-001	ICPMS-6020-W-	SAMP		1/6/2022 8:25:29	1	162627	1/3/2022 8:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.0001499	0		0	0	0	0.0002799	0.001	0.1	0%	0	0	0%	U
Arsenic	A	mg/L	0.0003571	0.0003571		0	0	0	0.0003412	0.001	1	0%	0	0	0%	J
Barium	A	mg/L	0.01126	0.01126		0	0	0	0.0002682	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	1.823E-06	0		0	0	0	1.821E-05	0.005	1	0%	0	0	0%	U
Cerium	A	mg/L	0.0000647	0.0000647		0	0	0	2.738E-05	0.001	0.1	0%	0	0	0%	J
Lanthanum	A	mg/L	0.00002562	0		0	0	0	0.000055	0.001	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					
14968388	B21122198-001	ICPMS-6020-W-	SAMP		1/6/2022 8:25:29	1	162627	1/3/2022 8:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Lead	A	mg/L	0.001164	0.001164		0	0	0	7.716E-05	0.001	1	0%	0	0	0%	
Manganese	A	mg/L	0.002431	0.002431		0	0	0	0.0005399	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	0.0009741	0.0009741		0	0	0	0.0001763	0.001	0.1	0%	0	0	0%	J
Selenium	A	mg/L	0.0002676	0.0002676		0	0	0	0.0001357	0.001	1	0%	0	0	0%	J
Silver	A	mg/L	-0.0000594	0		0	0	0	4.281E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.2656	0.2656		0	0	0	0.0002433	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0000684	0		0	0	0	0.0001114	0.001	1	0%	0	0	0%	U
Uranium	A	mg/L	0.00001411	0		0	0	0	1.699E-05	0.0003	1	0%	0	0	0%	U
Calcium	B	mg/L	27.84	27.84		0	0	0	0.0372936	0.1103481	50	0%	0	0	0%	D
Chromium	B	mg/L	0.01752	0.01752		0	0	0	0.0015375	0.0015375	1	0%	0	0	0%	D
Iron	B	mg/L	0.1734	0.1734		0	0	0	0.007424	0.00513	5	0%	0	0	0%	D
Magnesium	B	mg/L	44.42	44.42		0	0	0	0.0104254	0.0081522	50	0%	0	0	0%	D
Nickel	B	mg/L	0.0008047	0.0008047		0	0	0	0.0002288	0.0024200	1	0%	0	0	0%	JL
Potassium	B	mg/L	2.17	2.17		0	0	0	0.0765619	0.0261205	50	0%	0	0	0%	D
Thorium	B	mg/L	0.00002152	0		0	0	0	0.0003796	0.00415	1	0%	0	0	0%	UL
Tin	B	mg/L	0.0002759	0		0	0	0	0.0018932	0.0011175	0.1	0%	0	0	0%	U
Zinc	B	mg/L	0.05717	0.05717		0	0	0	0.0011617	0.0065544	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					
14968389	B21122204-001	ICPMS-6020-W-	SAMP		1/6/2022 8:31:37	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.0001933	0		0	0	0	0.00042	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	0.0003489	0.0003489		0	0	0	0.00019	0.001	1	0%	0	0	0%	J
Barium	A	mg/L	0.04389	0.04389		0	0	0	0.000042	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0.00009524	0.00009524		0	0	0	0.000025	0.001	1	0%	0	0	0%	J
Cerium	A	mg/L	8.874E-06	0		0	0	0	0.000012	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	0.0005727	0.0005727		0	0	0	0.00018	0.001	1	0%	0	0	0%	J
Lanthanum	A	mg/L	4.472E-06	0		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.0002327	0.0002327		0	0	0	0.000056	0.001	1	0%	0	0	0%	J
Manganese	A	mg/L	0.1861	0.1861		0	0	0	0.000095	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	0.00045	0.00045		0	0	0	0.00005	0.001	0.1	0%	0	0	0%	J
Nickel	A	mg/L	0.007171	0.007171		0	0	0	0.00063	0.001	1	0%	0	0	0%	
Selenium	A	mg/L	0.001527	0.001527		0	0	0	0.00033	0.001	1	0%	0	0	0%	
Silver	A	mg/L	-6.903E-05	0		0	0	0	0.00002	0.001	0.04	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968389	B21122204-001	ICPMS-6020-W-	SAMP		1/6/2022 8:31:37	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Strontium	A	mg/L	0.2531	0.2531		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00003658	0		0	0	0	0.000041	0.001	1	0%	0	0	0%	
Thorium	A	mg/L	3.169E-07	0		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00004991	0		0	0	0	0.000052	0.0003	1	0%	0	0	0%	
Calcium	B	mg/L	33.57	33.57		0	0	0	0.02092	0.02092	50	0%	0	0	0%	D
Iron	B	mg/L	0.02148	0.02148		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Iron, Ferrous	B	mg/L	0.02148	0.02148		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Magnesium	B	mg/L	29.92	29.92		0	0	0	0.00564	0.00564	50	0%	0	0	0%	D
Potassium	B	mg/L	2.842	2.842		0	0	0	0.08139	0.08139	50	0%	0	0	0%	D
Tin	B	mg/L	-4.546E-05	0		0	0	0	0.00132	0.00132	0.1	0%	0	0	0%	
Zinc	B	mg/L	0.01193	0.01193		0	0	0	0.00273	0.00273	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					
14968390	B21122204-001	ICPMS-6020-W-	SAMP		1/6/2022 8:37:45	1	162627	1/3/2022 9:1	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.0002597	0		0	0	0	0.0002799	0.001	0.1	0%	0	0	0%	U
Arsenic	A	mg/L	0.0007939	0.0007939		0	0	0	0.0003412	0.001	1	0%	0	0	0%	J
Barium	A	mg/L	0.04309	0.04309		0	0	0	0.0002682	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0.0001222	0.0001222		0	0	0	1.821E-05	0.005	1	0%	0	0	0%	J
Cerium	A	mg/L	0.0003244	0.0003244		0	0	0	2.738E-05	0.001	0.1	0%	0	0	0%	J
Lanthanum	A	mg/L	0.0001476	0.0001476		0	0	0	0.000055	0.001	0.1	0%	0	0	0%	J
Lead	A	mg/L	0.006016	0.006016		0	0	0	7.716E-05	0.001	1	0%	0	0	0%	
Manganese	A	mg/L	0.2003	0.2003		0	0	0	0.0005399	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	0.0004575	0.0004575		0	0	0	0.0001763	0.001	0.1	0%	0	0	0%	J
Selenium	A	mg/L	0.001567	0.001567		0	0	0	0.0001357	0.001	1	0%	0	0	0%	
Silver	A	mg/L	-6.322E-05	0		0	0	0	4.281E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.2667	0.2667		0	0	0	0.0002433	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00006107	0		0	0	0	0.0001114	0.001	1	0%	0	0	0%	U
Uranium	A	mg/L	0.00005532	0.00005532		0	0	0	1.699E-05	0.0003	1	0%	0	0	0%	J
Calcium	B	mg/L	34.32	34.32		0	0	0	0.0372936	0.1103481	50	0%	0	0	0%	D
Chromium	B	mg/L	0.002579	0.002579		0	0	0	0.0015375	0.0015375	1	0%	0	0	0%	UD
Iron	B	mg/L	0.7906	0.7906		0	0	0	0.007424	0.00513	5	0%	0	0	0%	D
Magnesium	B	mg/L	31.07	31.07		0	0	0	0.0104254	0.0081522	50	0%	0	0	0%	D
Nickel	B	mg/L	0.009168	0.009168		0	0	0	0.0002288	0.0024200	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					
14968390	B21122204-001	ICPMS-6020-W-	SAMP		1/6/2022 8:37:45	1	162627	1/3/2022 9:1	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Potassium	B	mg/L	2.95	2.95		0	0	0	0.0765619	0.0261205	50	0%	0	0	0%	D
Thorium	B	mg/L	0.00002401	0		0	0	0	0.0003796	0.00415	1	0%	0	0	0%	UL
Tin	B	mg/L	0.000364	0		0	0	0	0.0018932	0.0011175	0.1	0%	0	0	0%	U
Zinc	B	mg/L	0.02495	0.02495		0	0	0	0.0011617	0.0065544	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					
14968391	B21122211-001	ICPMS-6020-W-	SAMP		1/6/2022 8:43:51	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.0001314	0		0	0	0	0.00042	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	0.001155	0.001155		0	0	0	0.00019	0.001	1	0%	0	0	0%	
Barium	A	mg/L	0.0716	0.0716		0	0	0	0.000042	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0.00003064	0.00003064		0	0	0	0.000025	0.001	1	0%	0	0	0%	J
Cerium	A	mg/L	1.016E-06	0		0	0	0	0.000012	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	0.0094	0.0094		0	0	0	0.00018	0.001	1	0%	0	0	0%	
Lanthanum	A	mg/L	6.758E-07	0		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.00003891	0		0	0	0	0.000056	0.001	1	0%	0	0	0%	U
Manganese	A	mg/L	0.004248	0.004248		0	0	0	0.000095	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	0.00106	0.00106		0	0	0	0.00005	0.001	0.1	0%	0	0	0%	
Nickel	A	mg/L	0.09822	0.09822		0	0	0	0.00063	0.001	1	0%	0	0	0%	
Selenium	A	mg/L	0.004399	0.004399		0	0	0	0.00033	0.001	1	0%	0	0	0%	
Silver	A	mg/L	-6.633E-05	0		0	0	0	0.00002	0.001	0.04	0%	0	0	0%	
Thallium	A	mg/L	-4.606E-06	0		0	0	0	0.000041	0.001	1	0%	0	0	0%	
Thorium	A	mg/L	-6.351E-07	0		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00007537	0.00007537		0	0	0	0.000052	0.0003	1	0%	0	0	0%	J
Iron	B	mg/L	0.02919	0.02919		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Iron, Ferrous	B	mg/L	0.02919	0.02919		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Potassium	B	mg/L	7.823	7.823		0	0	0	0.08139	0.08139	50	0%	0	0	0%	D
Tin	B	mg/L	-5.211E-05	0		0	0	0	0.00132	0.00132	0.1	0%	0	0	0%	
Zinc	B	mg/L	0.0007351	0		0	0	0	0.00273	0.00273	1	0%	0	0	0%	L

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968392	CCV	ICPMS-6020-W-	CCV		1/6/2022 8:49:59	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.05696	0.05696		0.05	0	0	0.00086	0.001	1	114%	90	110	0%	S
Antimony	A	mg/L	0.05156	0.05156		0.05	0	0	0.00042	0.001	0.1	103%	90	110	0%	
Arsenic	A	mg/L	0.05233	0.05233		0.05	0	0	0.00019	0.001	1	105%	90	110	0%	
Barium	A	mg/L	0.05362	0.05362		0.05	0	0	0.000042	0.001	1	107%	90	110	0%	
Beryllium	A	mg/L	0.05749	0.05749		0.05	0	0	0.00012	0.001	1	115%	90	110	0%	S
Boron	A	mg/L	0.06002	0.06002		0.05	0	0	0.00561	0.00561	1	120%	90	110	0%	S
Cadmium	A	mg/L	0.05118	0.05118		0.05	0	0	0.000025	0.001	1	102%	90	110	0%	
Calcium	A	mg/L	13.25	13.25		12.5	0	0	0.02092	0.02092	50	106%	90	110	0%	
Cerium	A	mg/L	0.04712	0.04712		0.05	0	0	0.000012	0.001	0.1	94%	90	110	0%	
Chromium	A	mg/L	0.05397	0.05397		0.05	0	0	0.00018	0.001	1	108%	90	110	0%	
Cobalt	A	mg/L	0.05545	0.05545		0.05	0	0	0.000042	0.001	1	111%	90	110	0%	S
Copper	A	mg/L	0.05553	0.05553		0.05	0	0	0.00027	0.001	1	111%	90	110	0%	S
Iron	A	mg/L	1.335	1.335		1.3	0	0	0.00119	0.00119	5	103%	90	110	0%	
Lanthanum	A	mg/L	0.04732	0.04732		0.05	0	0	0.000011	0.001	0.1	95%	90	110	0%	
Lead	A	mg/L	0.05225	0.05225		0.05	0	0	0.000056	0.001	1	104%	90	110	0%	
Magnesium	A	mg/L	13.71	13.71		12.5	0	0	0.00564	0.00564	50	110%	90	110	0%	
Manganese	A	mg/L	0.05435	0.05435		0.05	0	0	0.000095	0.001	1	109%	90	110	0%	
Mercury	A	mg/L	0.0008939	0.0008939		0.001	0	0	0.00016	0.001	0.002	89%	90	110	0%	S
Molybdenum	A	mg/L	0.05096	0.05096		0.05	0	0	0.00005	0.001	0.1	102%	90	110	0%	
Nickel	A	mg/L	0.05402	0.05402		0.05	0	0	0.00063	0.001	1	108%	90	110	0%	
Potassium	A	mg/L	13.61	13.61		12.5	0	0	0.08139	0.08139	50	109%	90	110	0%	
Selenium	A	mg/L	0.05188	0.05188		0.05	0	0	0.00033	0.001	1	104%	90	110	0%	
Silicon	A	mg/L	0.2345	0.2345		0.2	0	0	0.01223	0.1	0.4	117%	90	110	0%	S
Silver	A	mg/L	0.02037	0.02037		0.02	0	0	0.00002	0.001	0.04	102%	90	110	0%	
Sodium	A	mg/L	13.82	13.82		12.5	0	0	0.02171	0.02171	50	111%	90	110	0%	S
Strontium	A	mg/L	0.05254	0.05254		0.05	0	0	0.00014	0.001	1	105%	90	110	0%	
Thallium	A	mg/L	0.05058	0.05058		0.05	0	0	0.000041	0.001	1	101%	90	110	0%	
Thorium	A	mg/L	0.0525	0.0525		0.05	0	0	0.00061	0.001	1	105%	90	110	0%	
Tin	A	mg/L	0.05147	0.05147		0.05	0	0	0.00132	0.00132	0.1	103%	90	110	0%	
Titanium	A	mg/L	0.05841	0.05841		0.05	0	0	0.000094	0.001	1	117%	90	110	0%	S
Uranium	A	mg/L	0.05203	0.05203		0.05	0	0	0.000052	0.0003	1	104%	90	110	0%	
Vanadium	A	mg/L	0.05663	0.05663		0.05	0	0	0.0013	0.0013	1	113%	90	110	0%	S
Zinc	A	mg/L	0.05386	0.05386		0.05	0	0	0.00273	0.00273	1	108%	90	110	0%	
Iron, Ferrous	C	mg/L	1.335	1.335		0	0	0	0.00119	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					
14968393	CCB	ICPMS-6020-W-	CCB		1/6/2022 8:55:56	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.0004649	0.0004649		0	0	0	0.00086	0.001	1	0%				0%
Antimony	A	mg/L	0.00004923	0.00004923		0	0	0	0.00042	0.001	0.1	0%				0%
Arsenic	A	mg/L	0.00006987	0.00006987		0	0	0	0.00019	0.001	1	0%				0%
Barium	A	mg/L	2.558E-06	2.558E-06		0	0	0	0.000042	0.001	1	0%				0%
Beryllium	A	mg/L	4.181E-06	4.181E-06		0	0	0	0.00012	0.001	1	0%				0%
Boron	A	mg/L	0.002374	0.002374		0	0	0	0.00561	0.00561	1	0%				0%
Cadmium	A	mg/L	-1.395E-07	-1.395E-07		0	0	0	0.000025	0.001	1	0%				0%
Calcium	A	mg/L	0.004283	0.004283		0	0	0	0.02092	0.02092	50	0%				0%
Cerium	A	mg/L	6.292E-07	6.292E-07		0	0	0	0.000012	0.001	0.1	0%	0	0		0%
Chromium	A	mg/L	0.00008062	0.00008062		0	0	0	0.00018	0.001	1	0%				0%
Cobalt	A	mg/L	5.974E-06	5.974E-06		0	0	0	0.000042	0.001	1	0%				0%
Copper	A	mg/L	4.727E-06	4.727E-06		0	0	0	0.00027	0.001	1	0%				0%
Iron	A	mg/L	0.0001534	0.0001534		0	0	0	0.00119	0.00119	5	0%				0%
Lanthanum	A	mg/L	8.76E-07	8.76E-07		0	0	0	0.000011	0.001	0.1	0%	0	0		0%
Lead	A	mg/L	0.00002394	0.00002394		0	0	0	0.000056	0.001	1	0%				0%
Magnesium	A	mg/L	0.009839	0.009839		0	0	0	0.00564	0.00564	50	0%				0%
Manganese	A	mg/L	0.00005336	0.00005336		0	0	0	0.000095	0.001	1	0%				0%
Mercury	A	mg/L	-0.0000164	-0.0000164		0	0	0	0.00016	0.001	0.002	0%				0%
Molybdenum	A	mg/L	9.698E-06	9.698E-06		0	0	0	0.00005	0.001	0.1	0%				0%
Nickel	A	mg/L	0.00002641	0.00002641		0	0	0	0.00063	0.001	1	0%				0%
Potassium	A	mg/L	0.02061	0.02061		0	0	0	0.08139	0.08139	50	0%				0%
Selenium	A	mg/L	0.00002357	0.00002357		0	0	0	0.00033	0.001	1	0%				0%
Silicon	A	mg/L	0.01158	0.01158		0	0	0	0.01223	0.1	0.4	0%	0	0		0%
Silver	A	mg/L	-6.623E-07	-6.623E-07		0	0	0	0.00002	0.001	0.04	0%				0%
Sodium	A	mg/L	0.05378	0.05378		0	0	0	0.02171	0.02171	50	0%				0%
Strontium	A	mg/L	0.00001821	0.00001821		0	0	0	0.00014	0.001	1	0%	0	0		0%
Thallium	A	mg/L	0.0002272	0.0002272		0	0	0	0.000041	0.001	1	0%	0	0		0%
Thorium	A	mg/L	0.000015	0.000015		0	0	0	0.00061	0.001	1	0%	0	0		0%
Tin	A	mg/L	0.00002446	0.00002446		0	0	0	0.00132	0.00132	0.1	0%	0	0		0%
Titanium	A	mg/L	0.00003324	0.00003324		0	0	0	0.000094	0.001	1	0%	0	0		0%
Uranium	A	mg/L	2.457E-07	2.457E-07		0	0	0	0.000052	0.0003	1	0%	0	0		0%
Vanadium	A	mg/L	0.001775	0.001775		0	0	0	0.0013	0.0013	1	0%	0	0		0%
Zinc	A	mg/L	0.00001553	0.00001553		0	0	0	0.00273	0.00273	1	0%	0	0		0%
Iron, Ferrous	C	mg/L	0.0001534	0.0001534		0	0	0	0.00119	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					
14968394	B21122211-001	ICPMS-6020-W-	SAMP		1/6/2022 9:02:07	1	162627	1/3/2022 9:1	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.0002009	0		0	0	0	0.0002799	0.001	0.1	0%	0	0	0%	U
Arsenic	A	mg/L	0.001546	0.001546		0	0	0	0.0003412	0.001	1	0%	0	0	0%	
Barium	A	mg/L	0.07401	0.07401		0	0	0	0.0002682	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	1.187E-06	0		0	0	0	1.821E-05	0.005	1	0%	0	0	0%	U
Cerium	A	mg/L	8.548E-06	0		0	0	0	2.738E-05	0.001	0.1	0%	0	0	0%	U
Lanthanum	A	mg/L	4.375E-06	0		0	0	0	0.000055	0.001	0.1	0%	0	0	0%	U
Lead	A	mg/L	0.00006079	0		0	0	0	7.716E-05	0.001	1	0%	0	0	0%	U
Manganese	A	mg/L	0.004611	0.004611		0	0	0	0.0005399	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	0.001141	0.001141		0	0	0	0.0001763	0.001	0.1	0%	0	0	0%	
Selenium	A	mg/L	0.004501	0.004501		0	0	0	0.0001357	0.001	1	0%	0	0	0%	
Silver	A	mg/L	-6.606E-05	0		0	0	0	4.281E-05	0.001	0.04	0%	0	0	0%	U
Thallium	A	mg/L	0.0001632	0.0001632		0	0	0	0.0001114	0.001	1	0%	0	0	0%	J
Uranium	A	mg/L	0.00007781	0.00007781		0	0	0	1.699E-05	0.0003	1	0%	0	0	0%	J
Chromium	B	mg/L	0.01468	0.01468		0	0	0	0.0015375	0.0015375	1	0%	0	0	0%	D
Iron	B	mg/L	0.1565	0.1565		0	0	0	0.007424	0.00513	5	0%	0	0	0%	D
Nickel	B	mg/L	0.09769	0.09769		0	0	0	0.0002288	0.0024200	1	0%	0	0	0%	D
Potassium	B	mg/L	7.976	7.976		0	0	0	0.0765619	0.0261205	50	0%	0	0	0%	D
Thorium	B	mg/L	0.00003521	0		0	0	0	0.0003796	0.00415	1	0%	0	0	0%	UL
Tin	B	mg/L	0.0002721	0		0	0	0	0.0018932	0.0011175	0.1	0%	0	0	0%	U
Zinc	B	mg/L	0.0003913	0		0	0	0	0.0011617	0.0065544	1	0%	0	0	0%	UL

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968395	B22010002-001	ICPMS-6020-W-	SAMP		1/6/2022 9:08:15	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.00001665	0		0	0	0	0.00042	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	0.00001162	0		0	0	0	0.00019	0.001	1	0%	0	0	0%	
Barium	A	mg/L	0.01011	0.01011		0	0	0	0.000042	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0.00003174	0.00003174		0	0	0	0.000025	0.001	1	0%	0	0	0%	J
Cerium	A	mg/L	1.514E-06	0		0	0	0	0.000012	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	0.0007022	0.0007022		0	0	0	0.00018	0.001	1	0%	0	0	0%	J
Lanthanum	A	mg/L	1.097E-06	0		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.0002509	0.0002509		0	0	0	0.000056	0.001	1	0%	0	0	0%	J
Manganese	A	mg/L	0.08873	0.08873		0	0	0	0.000095	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	0.0002131	0.0002131		0	0	0	0.00005	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					
14968395	B22010002-001	ICPMS-6020-W-	SAMP		1/6/2022 9:08:15	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Nickel	A	mg/L	0.002741	0.002741		0	0	0	0.00063	0.001	1	0%	0	0	0%	
Selenium	A	mg/L	0.0004966	0.0004966		0	0	0	0.00033	0.001	1	0%	0	0	0%	J
Silver	A	mg/L	-6.964E-05	0		0	0	0	0.00002	0.001	0.04	0%	0	0	0%	
Strontium	A	mg/L	0.1674	0.1674		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00006497	0.00006497		0	0	0	0.000041	0.001	1	0%	0	0	0%	J
Thorium	A	mg/L	-2.152E-08	0		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00002266	0		0	0	0	0.000052	0.0003	1	0%	0	0	0%	
Calcium	B	mg/L	23.4	23.4		0	0	0	0.02092	0.02092	50	0%	0	0	0%	D
Iron	B	mg/L	0.04334	0.04334		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Iron, Ferrous	B	mg/L	0.04334	0.04334		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Magnesium	B	mg/L	23.31	23.31		0	0	0	0.00564	0.00564	50	0%	0	0	0%	D
Potassium	B	mg/L	3.007	3.007		0	0	0	0.08139	0.08139	50	0%	0	0	0%	D
Tin	B	mg/L	-5.987E-05	0		0	0	0	0.00132	0.00132	0.1	0%	0	0	0%	
Zinc	B	mg/L	0.01015	0.01015		0	0	0	0.00273	0.00273	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					
14968396	B22010002-001	ICPMS-6020-W-	SAMP		1/6/2022 9:14:22	1	162627	1/3/2022 9:1	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.00003232	0		0	0	0	0.0002799	0.001	0.1	0%	0	0	0%	U
Arsenic	A	mg/L	0.0002679	0		0	0	0	0.0003412	0.001	1	0%	0	0	0%	U
Barium	A	mg/L	0.01037	0.01037		0	0	0	0.0002682	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0.00001237	0		0	0	0	1.821E-05	0.005	1	0%	0	0	0%	U
Cerium	A	mg/L	0.00001358	0		0	0	0	2.738E-05	0.001	0.1	0%	0	0	0%	U
Lanthanum	A	mg/L	5.346E-06	0		0	0	0	0.000055	0.001	0.1	0%	0	0	0%	U
Lead	A	mg/L	0.000181	0.000181		0	0	0	7.716E-05	0.001	1	0%	0	0	0%	J
Manganese	A	mg/L	0.1021	0.1021		0	0	0	0.0005399	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	0.0002548	0.0002548		0	0	0	0.0001763	0.001	0.1	0%	0	0	0%	J
Selenium	A	mg/L	0.0005447	0.0005447		0	0	0	0.0001357	0.001	1	0%	0	0	0%	J
Silver	A	mg/L	-6.887E-05	0		0	0	0	4.281E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.1758	0.1758		0	0	0	0.0002433	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00007552	0		0	0	0	0.0001114	0.001	1	0%	0	0	0%	U
Uranium	A	mg/L	0.00002613	0.00002613		0	0	0	1.699E-05	0.0003	1	0%	0	0	0%	J
Calcium	B	mg/L	23.83	23.83		0	0	0	0.0372936	0.1103481	50	0%	0	0	0%	D
Chromium	B	mg/L	0.001278	0		0	0	0	0.0015375	0.0015375	1	0%	0	0	0%	UL

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968396	B22010002-001	ICPMS-6020-W-	SAMP		1/6/2022 9:14:22	1	162627	1/3/2022 9:1	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Iron	B	mg/L	0.1558	0.1558		0	0	0	0.007424	0.00513	5	0%	0	0	0%	D
Magnesium	B	mg/L	23.72	23.72		0	0	0	0.0104254	0.0081522	50	0%	0	0	0%	D
Nickel	B	mg/L	0.002924	0.002924		0	0	0	0.0002288	0.0024200	1	0%	0	0	0%	D
Potassium	B	mg/L	3.086	3.086		0	0	0	0.0765619	0.0261205	50	0%	0	0	0%	D
Thorium	B	mg/L	0.00001691	0		0	0	0	0.0003796	0.00415	1	0%	0	0	0%	UL
Tin	B	mg/L	0.0003189	0		0	0	0	0.0018932	0.0011175	0.1	0%	0	0	0%	U
Zinc	B	mg/L	0.008794	0.008794		0	0	0	0.0011617	0.0065544	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					
14968397	B22010002-002	ICPMS-6020-W-	SAMP		1/6/2022 9:20:30	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.00000912	0		0	0	0	0.00042	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	5.122E-06	0		0	0	0	0.00019	0.001	1	0%	0	0	0%	
Barium	A	mg/L	0.00834	0.00834		0	0	0	0.000042	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0.00002249	0		0	0	0	0.000025	0.001	1	0%	0	0	0%	
Cerium	A	mg/L	5.404E-07	0		0	0	0	0.000012	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	0.0007796	0.0007796		0	0	0	0.00018	0.001	1	0%	0	0	0%	J
Lanthanum	A	mg/L	0.00000067	0		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.00007253	0.00007253		0	0	0	0.000056	0.001	1	0%	0	0	0%	J
Manganese	A	mg/L	0.02799	0.02799		0	0	0	0.000095	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	0.0002065	0.0002065		0	0	0	0.00005	0.001	0.1	0%	0	0	0%	J
Nickel	A	mg/L	0.00118	0.00118		0	0	0	0.00063	0.001	1	0%	0	0	0%	
Selenium	A	mg/L	0.000423	0.000423		0	0	0	0.00033	0.001	1	0%	0	0	0%	J
Silver	A	mg/L	-6.925E-05	0		0	0	0	0.00002	0.001	0.04	0%	0	0	0%	
Strontium	A	mg/L	0.1562	0.1562		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00002628	0		0	0	0	0.000041	0.001	1	0%	0	0	0%	
Thorium	A	mg/L	-5.96E-07	0		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00002421	0		0	0	0	0.000052	0.0003	1	0%	0	0	0%	
Calcium	B	mg/L	21.62	21.62		0	0	0	0.02092	0.02092	50	0%	0	0	0%	D
Iron	B	mg/L	0.01	0.01		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Iron, Ferrous	B	mg/L	0.01	0.01		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Magnesium	B	mg/L	21.65	21.65		0	0	0	0.00564	0.00564	50	0%	0	0	0%	D
Potassium	B	mg/L	2.931	2.931		0	0	0	0.08139	0.08139	50	0%	0	0	0%	D
Tin	B	mg/L	-6.784E-05	0		0	0	0	0.00132	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					
14968397	B22010002-002	ICPMS-6020-W-	SAMP		1/6/2022 9:20:30	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Zinc	B	mg/L	0.003134	0.003134		0	0	0	0.00273	0.00273	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					
14968398	B22010002-002	ICPMS-6020-W-	SAMP		1/6/2022 9:26:39	1	162627	1/3/2022 9:1	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.00002344	0		0	0	0	0.0002799	0.001	0.1	0%	0	0	0%	U
Arsenic	A	mg/L	0.0002342	0		0	0	0	0.0003412	0.001	1	0%	0	0	0%	U
Barium	A	mg/L	0.008708	0.008708		0	0	0	0.0002682	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0.00001792	0		0	0	0	1.821E-05	0.005	1	0%	0	0	0%	U
Cerium	A	mg/L	4.067E-06	0		0	0	0	2.738E-05	0.001	0.1	0%	0	0	0%	U
Lanthanum	A	mg/L	1.848E-06	0		0	0	0	0.000055	0.001	0.1	0%	0	0	0%	U
Lead	A	mg/L	0.00004595	0		0	0	0	7.716E-05	0.001	1	0%	0	0	0%	U
Manganese	A	mg/L	0.02916	0.02916		0	0	0	0.0005399	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	0.0002254	0.0002254		0	0	0	0.0001763	0.001	0.1	0%	0	0	0%	J
Selenium	A	mg/L	0.0004428	0.0004428		0	0	0	0.0001357	0.001	1	0%	0	0	0%	J
Silver	A	mg/L	-6.932E-05	0		0	0	0	4.281E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.1523	0.1523		0	0	0	0.0002433	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00004908	0		0	0	0	0.0001114	0.001	1	0%	0	0	0%	U
Uranium	A	mg/L	0.00002583	0.00002583		0	0	0	1.699E-05	0.0003	1	0%	0	0	0%	J
Calcium	B	mg/L	22.06	22.06		0	0	0	0.0372936	0.1103481	50	0%	0	0	0%	D
Chromium	B	mg/L	0.001202	0		0	0	0	0.0015375	0.0015375	1	0%	0	0	0%	UL
Iron	B	mg/L	0.04913	0.04913		0	0	0	0.007424	0.00513	5	0%	0	0	0%	D
Magnesium	B	mg/L	22.09	22.09		0	0	0	0.0104254	0.0081522	50	0%	0	0	0%	D
Nickel	B	mg/L	0.001356	0.001356		0	0	0	0.0002288	0.0024200	1	0%	0	0	0%	JL
Potassium	B	mg/L	3.036	3.036		0	0	0	0.0765619	0.0261205	50	0%	0	0	0%	D
Thorium	B	mg/L	0.00001005	0		0	0	0	0.0003796	0.00415	1	0%	0	0	0%	UL
Tin	B	mg/L	0.0002522	0		0	0	0	0.0018932	0.0011175	0.1	0%	0	0	0%	U
Zinc	B	mg/L	0.002368	0.002368		0	0	0	0.0011617	0.0065544	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					
14968399	B22010096-001	ICPMS-6020-W-	SAMP		1/6/2022 9:32:47	1	R372863		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					
14968399	B22010096-001	ICPMS-6020-W-	SAMP		1/6/2022 9:32:47	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	-8.665E-07	0		0	0	0	0.00042	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	-2.266E-06	0		0	0	0	0.00019	0.001	1	0%	0	0	0%	
Barium	A	mg/L	0.003129	0.003129		0	0	0	0.000042	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0.00001854	0		0	0	0	0.000025	0.001	1	0%	0	0	0%	
Cerium	A	mg/L	6.376E-07	0		0	0	0	0.000012	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	0.001947	0.001947		0	0	0	0.00018	0.001	1	0%	0	0	0%	
Lanthanum	A	mg/L	9.053E-07	0		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.00004365	0		0	0	0	0.000056	0.001	1	0%	0	0	0%	U
Manganese	A	mg/L	0.0003063	0.0003063		0	0	0	0.000095	0.001	1	0%	0	0	0%	J
Molybdenum	A	mg/L	0.000174	0.000174		0	0	0	0.00005	0.001	0.1	0%	0	0	0%	J
Nickel	A	mg/L	0.001775	0.001775		0	0	0	0.00063	0.001	1	0%	0	0	0%	
Selenium	A	mg/L	0.0001337	0		0	0	0	0.00033	0.001	1	0%	0	0	0%	
Silver	A	mg/L	-6.889E-05	0		0	0	0	0.00002	0.001	0.04	0%	0	0	0%	
Strontium	A	mg/L	0.06345	0.06345		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	3.887E-07	0		0	0	0	0.000041	0.001	1	0%	0	0	0%	
Thorium	A	mg/L	-1.428E-06	0		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	6.694E-06	0		0	0	0	0.000052	0.0003	1	0%	0	0	0%	
Calcium	B	mg/L	9.981	9.981		0	0	0	0.02092	0.02092	50	0%	0	0	0%	D
Iron	B	mg/L	0.0003867	0		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Iron, Ferrous	B	mg/L	0.0003867	0		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Magnesium	B	mg/L	11.83	11.83		0	0	0	0.00564	0.00564	50	0%	0	0	0%	D
Potassium	B	mg/L	2.227	2.227		0	0	0	0.08139	0.08139	50	0%	0	0	0%	D
Tin	B	mg/L	-5.613E-05	0		0	0	0	0.00132	0.00132	0.1	0%	0	0	0%	
Zinc	B	mg/L	0.005646	0.005646		0	0	0	0.00273	0.00273	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					
14968400	B22010096-001	ICPMS-6020-W-	SD		1/6/2022 9:38:54	5	R372863		0	1E+07						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	-0.0003045	0		0	0	0	0.0043	0.0043	1	0%				
Antimony	A	mg/L	-2.557E-06	0		0	0	0	0.0021	0.0021	0.1	0%				
Arsenic	A	mg/L	0.00003315	0		0	0	0	0.00095	0.001	1	0%				
Barium	A	mg/L	0.000622	0.00311		0	0	0.003129	0.00021	0.001	1	0%			1%	
Beryllium	A	mg/L	-9.905E-06	0		0	0	0	0.0006	0.001	1	0%				
Boron	A	mg/L	0.01381	0.06905		0	0	0.05951	0.02805	0.02805	1	0%				N



Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968400	B22010096-001	ICPMS-6020-W- SD			1/6/2022 9:38:54	5	R372863		0	1E+07						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Cadmium	A	mg/L	0.0000295	0.0001475		0	0	0	0.000125	0.001	1	0%				N
Calcium	A	mg/L	1.919	9.595		0	0	9.981	0.1046	0.1046	50	0%			4%	
Cerium	A	mg/L	9.893E-07	0		0	0	0	0.00006	0.001	0.1	0%				
Chromium	A	mg/L	0.0004144	0.002072		0	0	0.001947	0.0009	0.001	1	0%				N
Cobalt	A	mg/L	0.00001107	0		0	0	0	0.00021	0.001	1	0%				
Copper	A	mg/L	0.0000445	0		0	0	0	0.00135	0.00135	1	0%				
Iron	A	mg/L	0.0001137	0		0	0	0	0.00595	0.00595	5	0%				
Lanthanum	A	mg/L	-9.346E-08	0		0	0	0	0.000055	0.001	0.1	0%				
Lead	A	mg/L	0.00002285	0		0	0	0	0.00028	0.001	1	0%				
Magnesium	A	mg/L	2.389	11.945		0	0	11.83	0.0282	0.0282	50	0%			1%	
Manganese	A	mg/L	0.0001031	0.0005155		0	0	0.0003063	0.000475	0.001	1	0%				N
Mercury	A	mg/L	-1.521E-05	0		0	0	0	0.0008	0.001	0.002	0%				
Molybdenum	A	mg/L	0.00002863	0		0	0	0.000174	0.00025	0.001	0.1	0%				
Nickel	A	mg/L	0.0003928	0		0	0	0.001775	0.00315	0.00315	1	0%				
Potassium	A	mg/L	0.4225	2.1125		0	0	2.227	0.40695	0.40695	50	0%				N
Selenium	A	mg/L	0.00002105	0		0	0	0	0.00165	0.00165	1	0%				
Silicon	A	mg/L	5.001	25.005		0	0	25.07	0.06115	0.1	0.4	0%			0%	
Silver	A	mg/L	-7.078E-05	0		0	0	0	0.0001	0.001	0.04	0%				
Sodium	A	mg/L	7.713	38.565		0	0	39.09	0.10855	0.10855	50	0%			1%	
Strontium	A	mg/L	0.01267	0.06335		0	0	0.06345	0.0007	0.001	1	0%			0%	
Thallium	A	mg/L	-3.546E-05	0		0	0	0	0.000205	0.001	1	0%				
Thorium	A	mg/L	-7.721E-07	0		0	0	0	0.00305	0.00305	1	0%				
Tin	A	mg/L	-2.023E-05	0		0	0	0	0.0066	0.0066	0.1	0%				
Titanium	A	mg/L	0.0003931	0.0019655		0	0	0.001677	0.00047	0.001	1	0%				N
Uranium	A	mg/L	5.002E-07	0		0	0	0	0.00026	0.0003	1	0%				
Vanadium	A	mg/L	0.005035	0.025175		0	0	0.0207	0.0065	0.0065	1	0%				N
Zinc	A	mg/L	0.00176	0		0	0	0.005646	0.01365	0.01365	1	0%				
Iron, Ferrous	C	mg/L	0.0001137	0		0	0	0	0.00595	0.00595	5	0%				

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968401	B22010096-001	ICPMS-6020-W- MS			1/6/2022 9:45:03	1.03	R372863		1E+07	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					
14968401	B22010096-001	ICPMS-6020-W- MS			1/6/2022 9:45:03	1.03	R372863		1E+07	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.05057	0.0520871		0.05	0	0	0.0008858	0.001	1	104%	75	125	0%	
Antimony	A	mg/L	0.04615	0.0475345		0.05	0	0	0.0004326	0.001	0.1	95%	75	125	0%	
Arsenic	A	mg/L	0.04842	0.0498726		0.05	0	0	0.0001957	0.001	1	100%	75	125	0%	
Barium	A	mg/L	0.05243	0.0540029		0.05	0.003129	0	4.326E-05	0.001	1	102%	75	125	0%	
Beryllium	A	mg/L	0.05022	0.0517266		0.05	0	0	0.0001236	0.001	1	103%	75	125	0%	
Boron	A	mg/L	0.1071	0.110313		0.05	0.05951	0	0.0057783	0.0057783	1	102%	75	125	0%	
Cadmium	A	mg/L	0.04644	0.0478332		0.05	0	0	2.575E-05	0.001	1	96%	75	125	0%	
Calcium	A	mg/L	60.57	62.3871		50	9.981	0	0.0215476	0.0215476	50	105%	75	125	0%	E
Cerium	A	mg/L	0.04764	0.0490692		0.05	0	0	1.236E-05	0.001	0.1	98%	75	125	0%	
Chromium	A	mg/L	0.0516	0.053148		0.05	0.001947	0	0.0001854	0.001	1	102%	75	125	0%	
Cobalt	A	mg/L	0.05002	0.0515206		0.05	0	0	4.326E-05	0.001	1	103%	75	125	0%	
Copper	A	mg/L	0.04963	0.0511189		0.05	0	0	0.0002781	0.001	1	102%	75	125	0%	
Iron	A	mg/L	5.001	5.15103		5.05	0	0	0.0012257	0.0012257	5	102%	75	125	0%	E
Lanthanum	A	mg/L	0.04789	0.0493267		0.05	0	0	1.133E-05	0.001	0.1	99%	75	125	0%	
Lead	A	mg/L	0.04754	0.0489662		0.05	0	0	5.768E-05	0.001	1	98%	88	115	0%	
Magnesium	A	mg/L	61.08	62.9124		50	11.83	0	0.0058092	0.0058092	50	102%	75	125	0%	E
Manganese	A	mg/L	0.04888	0.0503464		0.05	0.0003063	0	9.785E-05	0.001	1	100%	75	125	0%	
Mercury	A	mg/L	0.0008806	0.00090702		0.001	0	0	0.0001648	0.001	0.002	91%	75	125	0%	
Molybdenum	A	mg/L	0.04728	0.0486984		0.05	0.000174	0	0.0000515	0.001	0.1	97%	75	125	0%	
Nickel	A	mg/L	0.04967	0.0511601		0.05	0.001775	0	0.0006489	0.001	1	99%	75	125	0%	
Potassium	A	mg/L	54.82	56.4646		50	2.227	0	0.0838317	0.0838317	50	108%	75	125	0%	E
Selenium	A	mg/L	0.04829	0.0497387		0.05	0	0	0.0003399	0.001	1	99%	75	125	0%	
Silicon	A	mg/L	24.69	25.4307		0.2	25.07	0	0.0125969	0.1	0.4		75	125	0%	AE
Silver	A	mg/L	0.01898	0.0195494		0.02	0	0	0.0000206	0.001	0.04	98%	75	125	0%	
Sodium	A	mg/L	85.25	87.8075		50	39.09	0	0.0223613	0.0223613	50	97%	75	125	0%	E
Strontium	A	mg/L	0.1108	0.114124		0.05	0.06345	0	0.0001442	0.001	1	101%	75	125	0%	
Thallium	A	mg/L	0.04643	0.0478229		0.05	0	0	4.223E-05	0.001	1	96%	75	125	0%	
Thorium	A	mg/L	0.04908	0.0505524		0.05	0	0	0.0006283	0.001	1	101%	75	125	0%	
Tin	A	mg/L	0.04692	0.0483276		0.05	0	0	0.0013596	0.0013596	0.1	97%	75	125	0%	
Titanium	A	mg/L	0.0557	0.057371		0.05	0.001677	0	9.682E-05	0.001	1	111%	75	125	0%	
Uranium	A	mg/L	0.04794	0.0493782		0.05	0	0	5.356E-05	0.0003	1	99%	75	125	0%	
Vanadium	A	mg/L	0.07073	0.0728519		0.05	0.0207	0	0.001339	0.001339	1	104%	75	125	0%	
Zinc	A	mg/L	0.0529	0.054487		0.05	0.005646	0	0.0028119	0.0028119	1	98%	75	125	0%	
Iron, Ferrous	C	mg/L	5.001	5.15103		0	0	0	0.0012257	0.0012257	5	0%	0	0	0%	E

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968402	B22010096-001	ICPMS-6020-W- MSD			1/6/2022 9:51:02	1.03	R372863		1E+07	1E+07						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.05213	0.0536939		0.05	0	0.0520871	0.0008858	0.001	1	107%	75	125	3%	
Antimony	A	mg/L	0.04701	0.0484203		0.05	0	0.0475345	0.0004326	0.001	0.1	97%	75	125	2%	
Arsenic	A	mg/L	0.04885	0.0503155		0.05	0	0.0498726	0.0001957	0.001	1	101%	75	125	1%	
Barium	A	mg/L	0.05335	0.0549505		0.05	0.003129	0.0540029	4.326E-05	0.001	1	104%	75	125	2%	
Beryllium	A	mg/L	0.04889	0.0503567		0.05	0	0.0517266	0.0001236	0.001	1	101%	75	125	3%	
Boron	A	mg/L	0.1063	0.109489		0.05	0.05951	0.110313	0.0057783	0.0057783	1	100%	75	125	1%	
Cadmium	A	mg/L	0.04715	0.0485645		0.05	0	0.0478332	2.575E-05	0.001	1	97%	75	125	2%	
Calcium	A	mg/L	60.9	62.727		50	9.981	62.3871	0.0215476	0.0215476	50	105%	75	125	1%	E
Cerium	A	mg/L	0.04602	0.0474006		0.05	0	0.0490692	1.236E-05	0.001	0.1	95%	75	125	3%	
Chromium	A	mg/L	0.05156	0.0531068		0.05	0.001947	0.053148	0.0001854	0.001	1	102%	75	125	0%	
Cobalt	A	mg/L	0.05073	0.0522519		0.05	0	0.0515206	4.326E-05	0.001	1	105%	75	125	1%	
Copper	A	mg/L	0.05029	0.0517987		0.05	0	0.0511189	0.0002781	0.001	1	104%	75	125	1%	
Iron	A	mg/L	5.077	5.22931		5.05	0	5.15103	0.0012257	0.0012257	5	104%	75	125	2%	E
Lanthanum	A	mg/L	0.04678	0.0481834		0.05	0	0.0493267	1.133E-05	0.001	0.1	96%	75	125	2%	
Lead	A	mg/L	0.04771	0.0491413		0.05	0	0.0489662	5.768E-05	0.001	1	98%	88	115	0%	
Magnesium	A	mg/L	61.14	62.9742		50	11.83	62.9124	0.0058092	0.0058092	50	102%	75	125	0%	E
Manganese	A	mg/L	0.04962	0.0511086		0.05	0.0003063	0.0503464	9.785E-05	0.001	1	102%	75	125	2%	
Mercury	A	mg/L	0.0009156	0.00094307		0.001	0	0.0009070	0.0001648	0.001	0.002	94%	75	125		
Molybdenum	A	mg/L	0.04822	0.0496666		0.05	0.000174	0.0486984	0.0000515	0.001	0.1	99%	75	125	2%	
Nickel	A	mg/L	0.05008	0.0515824		0.05	0.001775	0.0511601	0.0006489	0.001	1	100%	75	125	1%	
Potassium	A	mg/L	54.31	55.9393		50	2.227	56.4646	0.0838317	0.0838317	50	107%	75	125	1%	E
Selenium	A	mg/L	0.04903	0.0505009		0.05	0	0.0497387	0.0003399	0.001	1	101%	75	125	2%	
Silicon	A	mg/L	23.43	24.1329		0.2	25.07	25.4307	0.0125969	0.1	0.4		75	125	5%	AE
Silver	A	mg/L	0.0192	0.019776		0.02	0	0.0195494	0.0000206	0.001	0.04	99%	75	125	1%	
Sodium	A	mg/L	86.1	88.683		50	39.09	87.8075	0.0223613	0.0223613	50	99%	75	125	1%	E
Strontium	A	mg/L	0.1101	0.113403		0.05	0.06345	0.114124	0.0001442	0.001	1	100%	75	125	1%	
Thallium	A	mg/L	0.04668	0.0480804		0.05	0	0.0478229	4.223E-05	0.001	1	96%	75	125	1%	
Thorium	A	mg/L	0.04954	0.0510262		0.05	0	0.0505524	0.0006283	0.001	1	102%	75	125	1%	
Tin	A	mg/L	0.04737	0.0487911		0.05	0	0.0483276	0.0013596	0.0013596	0.1	98%	75	125	1%	
Titanium	A	mg/L	0.05698	0.0586894		0.05	0.001677	0.057371	9.682E-05	0.001	1	114%	75	125	2%	
Uranium	A	mg/L	0.04877	0.0502331		0.05	0	0.0493782	5.356E-05	0.0003	1	100%	75	125	2%	
Vanadium	A	mg/L	0.07136	0.0735008		0.05	0.0207	0.0728519	0.001339	0.001339	1	106%	75	125	1%	
Zinc	A	mg/L	0.05324	0.0548372		0.05	0.005646	0.054487	0.0028119	0.0028119	1	98%	75	125	1%	
Iron, Ferrous	C	mg/L	5.077	5.22931		0	0	5.15103	0.0012257	0.0012257	5	0%	0	0	2%	E

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968403	Rinse	ICPMS-200.8-W	SAMP		1/6/2022 9:57:01	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.0001038	0		0	0	0	0.0002882	0.05	0.1	0%	0	0	0%	
Arsenic	A	mg/L	0.00006944	0		0	0	0	0.0001626	0.005	1	0%	0	0	0%	
Barium	A	mg/L	-4.11E-06	0		0	0	0	8.917E-05	0.1	1	0%	0	0	0%	
Cadmium	A	mg/L	-1.114E-06	0		0	0	0	2.969E-05	0.001	1	0%	0	0	0%	
Calcium	A	mg/L	0.003965	0		0	0	0	0.0254163	0.5	50	0%	0	0	0%	
Cerium	A	mg/L	7.041E-07	0		0	0	0	8.97E-06	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	0.00001503	0		0	0	0	0.0002078	0.01	1	0%	0	0	0%	
Iron	A	mg/L	0.00001639	0		0	0	0	0.0021231	0.02	5	0%	0	0	0%	
Lanthanum	A	mg/L	5.753E-07	0		0	0	0	1.209E-05	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.00001464	0		0	0	0	3.957E-05	0.01	1	0%	0	0	0%	
Magnesium	A	mg/L	0.009336	0.009336		0	0	0	0.0084694	0.5	50	0%	0	0	0%	J
Manganese	A	mg/L	0.00003668	0		0	0	0	5.319E-05	0.01	1	0%	0	0	0%	
Molybdenum	A	mg/L	0.00003396	0		0	0	0	0.0000598	0.005	0.1	0%	0	0	0%	
Nickel	A	mg/L	0.00002972	0		0	0	0	0.0001477	0.01	1	0%	0	0	0%	
Potassium	A	mg/L	0.02785	0		0	0	0	0.0951865	0.5	50	0%	0	0	0%	
Selenium	A	mg/L	0.00002426	0		0	0	0	6.961E-05	0.005	1	0%	0	0	0%	
Silver	A	mg/L	-5.075E-06	0		0	0	0	1.541E-05	0.005	0.04	0%	0	0	0%	
Strontium	A	mg/L	0.00001739	0		0	0	0	9.136E-05	0.1	1	0%	0	0	0%	
Thallium	A	mg/L	0.0001441	0.0001441		0	0	0	0.0001262	0.1	1	0%	0	0	0%	J
Thorium	A	mg/L	0.00001743	0		0	0	0	7.051E-05	0.001	1	0%	0	0	0%	
Thorium 232	A	mg/L	0.00001743	0		0	0	0	7.051E-05	0.01	1	0%	0	0	0%	
Tin	A	mg/L	0.00004595	0		0	0	0	0.0021596	0.1	0.1	0%	0	0	0%	
Uranium	A	mg/L	8.323E-07	0		0	0	0	1.948E-05	0.0003	1	0%	0	0	0%	
Zinc	A	mg/L	-1.513E-05	0		0	0	0	0.0006119	0.01	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					
14968404	B22010096-001	ICPMS-6020-W-	SAMP		1/6/2022 10:03:1	1	162695	1/4/2022 2:1	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.00004853	0		0	0	0	0.0002799	0.001	0.1	0%	0	0	0%	U
Arsenic	A	mg/L	0.0002583	0		0	0	0	0.0003412	0.001	1	0%	0	0	0%	U
Barium	A	mg/L	0.003191	0.003191		0	0	0	0.0002682	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	-2.119E-07	0		0	0	0	1.821E-05	0.005	1	0%	0	0	0%	U
Cerium	A	mg/L	2.321E-06	0		0	0	0	2.738E-05	0.001	0.1	0%	0	0	0%	U
Lanthanum	A	mg/L	1.718E-06	0		0	0	0	0.000055	0.001	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					
14968404	B22010096-001	ICPMS-6020-W-	SAMP		1/6/2022 10:03:1	1	162695	1/4/2022 2:1	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Lead	A	mg/L	0.0000507	0		0	0	0	7.716E-05	0.001	1	0%	0	0	0%	U
Manganese	A	mg/L	0.0004521	0		0	0	0	0.0005399	0.001	1	0%	0	0	0%	U
Molybdenum	A	mg/L	0.0002718	0.0002718		0	0	0	0.0001763	0.001	0.1	0%	0	0	0%	J
Selenium	A	mg/L	0.0001799	0.0001799		0	0	0	0.0001357	0.001	1	0%	0	0	0%	J
Silver	A	mg/L	-6.847E-05	0		0	0	0	4.281E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.06532	0.06532		0	0	0	0.0002433	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0001546	0.0001546		0	0	0	0.0001114	0.001	1	0%	0	0	0%	J
Uranium	A	mg/L	8.512E-06	0		0	0	0	1.699E-05	0.0003	1	0%	0	0	0%	U
Calcium	B	mg/L	10.09	10.09		0	0	0	0.0372936	0.1103481	50	0%	0	0	0%	D
Chromium	B	mg/L	0.002542	0.002542		0	0	0	0.0015375	0.0015375	1	0%	0	0	0%	UD
Iron	B	mg/L	0.004534	0		0	0	0	0.007424	0.00513	5	0%	0	0	0%	UL
Magnesium	B	mg/L	11.88	11.88		0	0	0	0.0104254	0.0081522	50	0%	0	0	0%	D
Nickel	B	mg/L	0.002236	0.002236		0	0	0	0.0002288	0.0024200	1	0%	0	0	0%	JL
Potassium	B	mg/L	2.211	2.211		0	0	0	0.0765619	0.0261205	50	0%	0	0	0%	D
Thorium	B	mg/L	0.00004605	0		0	0	0	0.0003796	0.00415	1	0%	0	0	0%	UL
Tin	B	mg/L	0.000298	0		0	0	0	0.0018932	0.0011175	0.1	0%	0	0	0%	U
Zinc	B	mg/L	0.004189	0.004189		0	0	0	0.0011617	0.0065544	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					
14968405	CCV	ICPMS-6020-W-	CCV		1/6/2022 10:09:1	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.05574	0.05574		0.05	0	0	0.00086	0.001	1	111%	90	110	0%	S
Antimony	A	mg/L	0.05217	0.05217		0.05	0	0	0.00042	0.001	0.1	104%	90	110	0%	
Arsenic	A	mg/L	0.05202	0.05202		0.05	0	0	0.00019	0.001	1	104%	90	110	0%	
Barium	A	mg/L	0.05404	0.05404		0.05	0	0	0.000042	0.001	1	108%	90	110	0%	
Beryllium	A	mg/L	0.05515	0.05515		0.05	0	0	0.00012	0.001	1	110%	90	110	0%	
Boron	A	mg/L	0.05613	0.05613		0.05	0	0	0.00561	0.00561	1	112%	90	110	0%	S
Cadmium	A	mg/L	0.05056	0.05056		0.05	0	0	0.000025	0.001	1	101%	90	110	0%	
Calcium	A	mg/L	13.11	13.11		12.5	0	0	0.02092	0.02092	50	105%	90	110	0%	
Cerium	A	mg/L	0.04663	0.04663		0.05	0	0	0.000012	0.001	0.1	93%	90	110	0%	
Chromium	A	mg/L	0.05372	0.05372		0.05	0	0	0.00018	0.001	1	107%	90	110	0%	
Cobalt	A	mg/L	0.05632	0.05632		0.05	0	0	0.000042	0.001	1	113%	90	110	0%	S
Copper	A	mg/L	0.05517	0.05517		0.05	0	0	0.00027	0.001	1	110%	90	110	0%	
Iron	A	mg/L	1.342	1.342		1.3	0	0	0.00119	0.00119	5	103%	90	110	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968405	CCV	ICPMS-6020-W-	CCV		1/6/2022 10:09:1	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Lanthanum	A	mg/L	0.04742	0.04742		0.05	0	0	0.000011	0.001	0.1	95%	90	110	0%	
Lead	A	mg/L	0.05172	0.05172		0.05	0	0	0.000056	0.001	1	103%	90	110	0%	
Magnesium	A	mg/L	13.39	13.39		12.5	0	0	0.00564	0.00564	50	107%	90	110	0%	
Manganese	A	mg/L	0.05386	0.05386		0.05	0	0	0.000095	0.001	1	108%	90	110	0%	
Mercury	A	mg/L	0.0008791	0.0008791		0.001	0	0	0.00016	0.001	0.002	88%	90	110	0%	S
Molybdenum	A	mg/L	0.05198	0.05198		0.05	0	0	0.00005	0.001	0.1	104%	90	110	0%	
Nickel	A	mg/L	0.05425	0.05425		0.05	0	0	0.00063	0.001	1	108%	90	110	0%	
Potassium	A	mg/L	13.57	13.57		12.5	0	0	0.08139	0.08139	50	109%	90	110	0%	
Selenium	A	mg/L	0.05159	0.05159		0.05	0	0	0.00033	0.001	1	103%	90	110	0%	
Silicon	A	mg/L	0.2274	0.2274		0.2	0	0	0.01223	0.1	0.4	114%	90	110	0%	S
Silver	A	mg/L	0.02032	0.02032		0.02	0	0	0.00002	0.001	0.04	102%	90	110	0%	
Sodium	A	mg/L	13.25	13.25		12.5	0	0	0.02171	0.02171	50	106%	90	110	0%	
Strontium	A	mg/L	0.05181	0.05181		0.05	0	0	0.00014	0.001	1	104%	90	110	0%	
Thallium	A	mg/L	0.04885	0.04885		0.05	0	0	0.000041	0.001	1	98%	90	110	0%	
Thorium	A	mg/L	0.05251	0.05251		0.05	0	0	0.00061	0.001	1	105%	90	110	0%	
Tin	A	mg/L	0.0515	0.0515		0.05	0	0	0.00132	0.00132	0.1	103%	90	110	0%	
Titanium	A	mg/L	0.05828	0.05828		0.05	0	0	0.000094	0.001	1	117%	90	110	0%	S
Uranium	A	mg/L	0.05159	0.05159		0.05	0	0	0.000052	0.0003	1	103%	90	110	0%	
Vanadium	A	mg/L	0.05616	0.05616		0.05	0	0	0.0013	0.0013	1	112%	90	110	0%	S
Zinc	A	mg/L	0.05337	0.05337		0.05	0	0	0.00273	0.00273	1	107%	90	110	0%	
Iron, Ferrous	C	mg/L	1.342	1.342		0	0	0	0.00119	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					
14968406	CCB	ICPMS-6020-W-	CCB		1/6/2022 10:15:1	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.0003121	0.0003121		0	0	0	0.00086	0.001	1	0%			0%	
Antimony	A	mg/L	0.0000542	0.0000542		0	0	0	0.00042	0.001	0.1	0%			0%	
Arsenic	A	mg/L	0.00005919	0.00005919		0	0	0	0.00019	0.001	1	0%			0%	
Barium	A	mg/L	5.733E-06	5.733E-06		0	0	0	0.000042	0.001	1	0%			0%	
Beryllium	A	mg/L	9.065E-06	9.065E-06		0	0	0	0.00012	0.001	1	0%			0%	
Boron	A	mg/L	0.001147	0.001147		0	0	0	0.00561	0.00561	1	0%			0%	
Cadmium	A	mg/L	-2.809E-06	-2.809E-06		0	0	0	0.000025	0.001	1	0%			0%	
Calcium	A	mg/L	0.00244	0.00244		0	0	0	0.02092	0.02092	50	0%			0%	
Cerium	A	mg/L	1.098E-06	1.098E-06		0	0	0	0.000012	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					
14968406	CCB	ICPMS-6020-W-	CCB		1/6/2022 10:15:1	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Chromium	A	mg/L	0.00001766	0.00001766		0	0	0	0.00018	0.001	1	0%			0%	
Cobalt	A	mg/L	4.275E-06	4.275E-06		0	0	0	0.000042	0.001	1	0%			0%	
Copper	A	mg/L	8.873E-06	8.873E-06		0	0	0	0.00027	0.001	1	0%			0%	
Iron	A	mg/L	-4.107E-05	-4.107E-05		0	0	0	0.00119	0.00119	5	0%			0%	
Lanthanum	A	mg/L	1.202E-06	1.202E-06		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.00002091	0.00002091		0	0	0	0.000056	0.001	1	0%			0%	
Magnesium	A	mg/L	0.005708	0.005708		0	0	0	0.00564	0.00564	50	0%			0%	
Manganese	A	mg/L	0.00002564	0.00002564		0	0	0	0.000095	0.001	1	0%			0%	
Mercury	A	mg/L	-0.0000124	-0.0000124		0	0	0	0.00016	0.001	0.002	0%			0%	
Molybdenum	A	mg/L	0.0000136	0.0000136		0	0	0	0.00005	0.001	0.1	0%			0%	
Nickel	A	mg/L	0.00002296	0.00002296		0	0	0	0.00063	0.001	1	0%			0%	
Potassium	A	mg/L	0.02077	0.02077		0	0	0	0.08139	0.08139	50	0%			0%	
Selenium	A	mg/L	0.00001484	0.00001484		0	0	0	0.00033	0.001	1	0%			0%	
Silicon	A	mg/L	0.005578	0.005578		0	0	0	0.01223	0.1	0.4	0%	0	0	0%	
Silver	A	mg/L	-5.74E-06	-5.74E-06		0	0	0	0.00002	0.001	0.04	0%			0%	
Sodium	A	mg/L	0.04867	0.04867		0	0	0	0.02171	0.02171	50	0%			0%	
Strontium	A	mg/L	0.00001492	0.00001492		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0003558	0.0003558		0	0	0	0.000041	0.001	1	0%	0	0	0%	
Thorium	A	mg/L	0.00001666	0.00001666		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Tin	A	mg/L	0.00001658	0.00001658		0	0	0	0.00132	0.00132	0.1	0%	0	0	0%	
Titanium	A	mg/L	0.0000669	0.0000669		0	0	0	0.000094	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00001098	0.00001098		0	0	0	0.000052	0.0003	1	0%	0	0	0%	
Vanadium	A	mg/L	0.001689	0.001689		0	0	0	0.0013	0.0013	1	0%	0	0	0%	
Zinc	A	mg/L	-4.444E-06	-4.444E-06		0	0	0	0.00273	0.00273	1	0%	0	0	0%	
Iron, Ferrous	C	mg/L	-4.107E-05	-4.107E-05		0	0	0	0.00119	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					
14968407	B22010096-001	ICPMS-6020-W-	SD		1/6/2022 10:21:2	5	162695	1/4/2022 2:1	0	1E+07						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.0002674	0		0	0	0	0.0193736	0.0159875	1	0%	0	0		
Antimony	A	mg/L	0.00001803	0		0	0	0	0.0013997	0.0049	0.1	0%	0	0		
Arsenic	A	mg/L	0.00009055	0		0	0	0	0.0017061	0.0013383	1	0%	0	0		
Barium	A	mg/L	0.0006428	0.003214		0	0	0.003191	0.0013411	0.0012039	1	0%	0	0		N
Beryllium	A	mg/L	-1.571E-06	0		0	0	0	0.0005353	0.01	1	0%	0	0		

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968407	B22010096-001	ICPMS-6020-W-	SD		1/6/2022 10:21:2	5	162695	1/4/2022 2:1	0	1E+07						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Boron	A	mg/L	0.01283	0		0	0	0.06741	0.1019008	0.07335	1	0%	0	0		
Cadmium	A	mg/L	-2.713E-06	0		0	0	0	9.105E-05	0.005	1	0%	0	0		
Calcium	A	mg/L	1.999	9.995		0	0	10.09	0.1864681	0.5517403	50	0%	0	0	1%	
Cerium	A	mg/L	1.928E-06	0		0	0	0	0.0001369	0.001	0.1	0%	0	0		
Chromium	A	mg/L	0.0005287	0		0	0	0.002542	0.0076875	0.0076875	1	0%	0	0		
Cobalt	A	mg/L	0.00002363	0		0	0	0.0001156	0.0004771	0.001	1	0%	0	0		
Copper	A	mg/L	0.00008141	0		0	0	0	0.0043735	0.0099	1	0%	0	0		
Iron	A	mg/L	0.001028	0		0	0	0	0.0371198	0.02565	5	0%	0	0		
Lanthanum	A	mg/L	6.302E-07	0		0	0	0	0.000275	0.001	0.1	0%	0	0		
Lead	A	mg/L	0.00002871	0		0	0	0	0.0003858	0.001	1	0%	0	0		
Magnesium	A	mg/L	2.42	12.1		0	0	11.88	0.0521269	0.0407608	50	0%	0	0	2%	
Manganese	A	mg/L	0.0001185	0		0	0	0	0.0026994	0.0010695	1	0%	0	0		
Molybdenum	A	mg/L	0.00004668	0		0	0	0.0002718	0.0008814	0.001	0.1	0%	0	0		
Nickel	A	mg/L	0.0004756	0.002378		0	0	0.002236	0.0011441	0.0121000	1	0%	0	0		N
Potassium	A	mg/L	0.4379	2.1895		0	0	2.211	0.3828097	0.1306027	50	0%	0	0		N
Selenium	A	mg/L	0.00003765	0		0	0	0.0001799	0.0006787	0.0029274	1	0%	0	0		
Silicon	A	mg/L	4.786	23.93		0	0	24.49	0.2110446	0.026606	0.4	0%	0	0	2%	
Silver	A	mg/L	-7.056E-05	0		0	0	0	0.0002141	0.001	0.04	0%	0	0		
Sodium	A	mg/L	7.843	39.215		0	0	39.74	0.5097304	3.6651346	50	0%	0	0	1%	
Strontium	A	mg/L	0.01294	0.0647		0	0	0.06532	0.0012164	0.001	1	0%	0	0	1%	
Thallium	A	mg/L	0.0001807	0.0009035		0	0	0.0001546	0.0005569	0.001	1	0%	0	0		N
Thorium	A	mg/L	0.00001272	0		0	0	0	0.0018981	0.02075	1	0%	0	0		
Tin	A	mg/L	0.0003422	0		0	0	0	0.0094659	0.0055874	0.1	0%	0	0		
Titanium	A	mg/L	0.0005199	0		0	0	0.002563	0.0028666	0.001	1	0%	0	0		
Uranium	A	mg/L	0.00000112	0		0	0	0	8.495E-05	0.0004224	1	0%	0	0		
Vanadium	A	mg/L	0.006195	0.030975		0	0	0.02443	0.0195637	0.0105423	1	0%	0	0		N
Zinc	A	mg/L	0.001164	0.00582		0	0	0.004189	0.0058087	0.0327721	1	0%	0	0		N
Silica	C	mg/L	10.2382112	51.191056		0	0	0	0.4514666	0.0569155	5	0%	0	0		N
Silicon as SiO2	C	mg/L	10.2382112	51.191056		0	0	0	0.4514666	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					
14968408	B22010096-001	ICPMS-6020-W-	PDS1		1/6/2022 10:27:3	1.03	162695	1/4/2022 2:1	1E+07	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					
14968408	B22010096-001	ICPMS-6020-W-	PDS1		1/6/2022 10:27:3	1.03	162695	1/4/2022 2:1	1E+07	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.05281	0.0543943		0.0515	0	0	0.003991	0.0032934	1	106%	75	125	0%	
Antimony	A	mg/L	0.04576	0.0471328		0.0515	0	0	0.0002883	0.0010094	0.1	92%	75	125	0%	
Arsenic	A	mg/L	0.04753	0.0489559		0.0515	0	0	0.0003514	0.001	1	95%	75	125	0%	
Barium	A	mg/L	0.05329	0.0548887		0.0515	0.003191	0	0.0002763	0.001	1	100%	75	125	0%	
Beryllium	A	mg/L	0.05101	0.0525403		0.0515	0	0	0.0001103	0.01	1	102%	75	125	0%	
Boron	A	mg/L	0.1193	0.122879		0.0515	0.06741	0	0.0209916	0.0151101	1	108%	75	125	0%	
Cadmium	A	mg/L	0.04715	0.0485645		0.0515	0	0	1.876E-05	0.005	1	94%	75	125	0%	
Calcium	A	mg/L	60.53	62.3459		51.5	10.09	0	0.0384124	0.1136585	50	101%	75	125	0%	
Cerium	A	mg/L	0.0489	0.050367		0.0515	0	0	2.820E-05	0.001	0.1	98%	75	125	0%	
Chromium	A	mg/L	0.0523	0.053869		0.0515	0.002542	0	0.0015836	0.0015836	1	100%	75	125	0%	
Cobalt	A	mg/L	0.05192	0.0534776		0.0515	0.0001156	0	9.827E-05	0.001	1	104%	75	125	0%	
Copper	A	mg/L	0.05026	0.0517678		0.0515	0	0	0.0009009	0.0020394	1	101%	75	125	0%	
Iron	A	mg/L	5.093	5.24579		5.15	0	0	0.0076467	0.0052839	5	102%	75	125	0%	
Lanthanum	A	mg/L	0.04987	0.0513661		0.0515	0	0	5.665E-05	0.001	0.1	100%	75	125	0%	
Lead	A	mg/L	0.04872	0.0501816		0.0515	0	0	7.947E-05	0.001	1	97%	80	120	0%	
Magnesium	A	mg/L	63.3	65.199		51.5	11.88	0	0.0107381	0.0083967	50	104%	75	125	0%	
Manganese	A	mg/L	0.04938	0.0508614		0.0515	0	0	0.0005561	0.001	1	99%	75	125	0%	
Molybdenum	A	mg/L	0.0498	0.051294		0.0515	0.0002718	0	0.0001816	0.001	0.1	99%	75	125	0%	
Nickel	A	mg/L	0.04989	0.0513867		0.0515	0.002236	0	0.0002357	0.0024926	1	95%	75	125	0%	
Potassium	A	mg/L	54.8	56.444		51.5	2.211	0	0.0788588	0.0269042	50	105%	75	125	0%	
Selenium	A	mg/L	0.04708	0.0484924		0.0515	0.0001799	0	0.0001398	0.001	1	94%	75	125	0%	
Silicon	A	mg/L	24.14	24.8642		0.206	24.49	0	0.0434752	0.0054808	0.4		0	0	0%	A
Silver	A	mg/L	0.01944	0.0200232		0.0206	0	0	4.409E-05	0.001	0.04	97%	75	125	0%	
Sodium	A	mg/L	89.5	92.185		51.5	39.74	0	0.1050045	0.7550177	50	102%	75	125	0%	
Strontium	A	mg/L	0.11	0.1133		0.0515	0.06532	0	0.0002506	0.001	1	93%	75	125	0%	
Thallium	A	mg/L	0.04745	0.0488735		0.0515	0.0001546	0	0.0001147	0.001	1	95%	75	125	0%	
Thorium	A	mg/L	0.05126	0.0527978		0.0515	0	0	0.000391	0.0042745	1	103%	75	125	0%	
Tin	A	mg/L	0.0488	0.050264		0.0515	0	0	0.00195	0.001151	0.1	98%	75	125	0%	
Titanium	A	mg/L	0.05847	0.0602241		0.0515	0.002563	0	0.0005905	0.001	1	112%	75	125	0%	
Uranium	A	mg/L	0.04958	0.0510674		0.0515	0	0	1.75E-05	0.0003	1	99%	75	125	0%	
Vanadium	A	mg/L	0.07336	0.0755608		0.0515	0.02443	0	0.0040301	0.0021717	1	99%	75	125	0%	
Zinc	A	mg/L	0.05436	0.0559908		0.0515	0.004189	0	0.0011966	0.0067511	1	101%	75	125	0%	
Silica	C	mg/L	51.640288	53.1894966		0	0	0	0.0930021	0.0117246	5	0%	0	0	0%	
Silicon as SiO2	C	mg/L	51.640288	53.1894966		0.0515	0	0	0.0930021	0.0117246	5	103281%	75	125	0%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968409	B22010096-001	ICPMS-6020-W- MS4			1/6/2022 10:33:3	1	162695	1/4/2022 2:1	1E+07	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.5485	0.5485		0.5	0	0	0.0038747	0.0031975	1	110%	75	125	0%	
Antimony	A	mg/L	0.09999	0.09999		0.1	0	0	0.0002799	0.001	0.1	100%	75	125	0%	
Arsenic	A	mg/L	0.1012	0.1012		0.1	0	0	0.0003412	0.001	1	101%	75	125	0%	
Barium	A	mg/L	0.1016	0.1016		0.1	0.003191	0	0.0002682	0.001	1	98%	75	125	0%	
Beryllium	A	mg/L	0.05363	0.05363		0.05	0	0	0.0001071	0.01	1	107%	75	125	0%	
Boron	A	mg/L	0.181	0.181		0.1	0.06741	0	0.0203802	0.01467	1	114%	75	125	0%	
Cadmium	A	mg/L	0.04955	0.04955		0.05	0	0	1.821E-05	0.005	1	99%	75	125	0%	
Calcium	A	mg/L	15.36	15.36		5	10.09	0	0.0372936	0.1103481	50	105%	75	125	0%	
Cerium	A	mg/L	0.1037	0.1037		0.1	0	0	2.738E-05	0.001	0.1	104%	75	125	0%	
Chromium	A	mg/L	0.1096	0.1096		0.1	0.002542	0	0.0015375	0.0015375	1	107%	75	125	0%	
Cobalt	A	mg/L	0.1092	0.1092		0.1	0.0001156	0	9.541E-05	0.001	1	109%	75	125	0%	
Copper	A	mg/L	0.1103	0.1103		0.1	0	0	0.0008747	0.00198	1	110%	75	125	0%	
Iron	A	mg/L	0.5359	0.5359		0.5	0	0	0.007424	0.00513	5	107%	75	125	0%	
Lanthanum	A	mg/L	0.1039	0.1039		0.1	0	0	0.000055	0.001	0.1	104%	75	125	0%	
Lead	A	mg/L	0.1012	0.1012		0.1	0	0	7.716E-05	0.001	1	101%	88	115	0%	
Magnesium	A	mg/L	17.76	17.76		5	11.88	0	0.0104254	0.0081522	50	118%	75	125	0%	
Manganese	A	mg/L	0.5504	0.5504		0.5	0	0	0.0005399	0.001	1	110%	75	125	0%	
Molybdenum	A	mg/L	0.1013	0.1013		0.1	0.0002718	0	0.0001763	0.001	0.1	101%	75	125	0%	
Nickel	A	mg/L	0.1094	0.1094		0.1	0.002236	0	0.0002288	0.0024200	1	107%	75	125	0%	
Potassium	A	mg/L	7.876	7.876		5	2.211	0	0.0765619	0.0261205	50	113%	75	125	0%	
Selenium	A	mg/L	0.09753	0.09753		0.1	0.0001799	0	0.0001357	0.001	1	97%	75	125	0%	
Silicon	A	mg/L	25.69	25.69		1	24.49	0	0.0422089	0.0053212	0.4		75	125	0%	A
Silver	A	mg/L	0.009343	0.009343		0.01	0	0	4.281E-05	0.001	0.04	93%	75	125	0%	
Sodium	A	mg/L	44.99	44.99		5	39.74	0	0.1019461	0.7330269	50		75	125	0%	A
Strontium	A	mg/L	0.1754	0.1754		0.1	0.06532	0	0.0002433	0.001	1	110%	75	125	0%	
Thallium	A	mg/L	0.1028	0.1028		0.1	0.0001546	0	0.0001114	0.001	1	103%	75	125	0%	
Thorium	A	mg/L	0.1066	0.1066		0.1	0	0	0.0003796	0.00415	1	107%	75	125	0%	
Tin	A	mg/L	0.09841	0.09841		0.1	0	0	0.0018932	0.0011175	0.1	98%	75	125	0%	
Titanium	A	mg/L	0.1102	0.1102		0.1	0.002563	0	0.0005733	0.001	1	108%	75	125	0%	
Uranium	A	mg/L	0.09929	0.09929		0.1	0	0	1.699E-05	0.0003	1	99%	75	125	0%	
Vanadium	A	mg/L	0.1328	0.1328		0.1	0.02443	0	0.0039127	0.0021085	1	108%	75	125	0%	
Zinc	A	mg/L	0.1048	0.1048		0.1	0.004189	0	0.0011617	0.0065544	1	101%	75	125	0%	
Silica	C	mg/L	54.956048	54.956048		0	0	0	0.0902933	0.0113831	5	0%	0	0	0%	
Silicon as SiO2	C	mg/L	54.956048	54.956048		2.14	0	0	0.0902933	0.0113831	5	2568%	75	125	0%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968410	B22010096-001	ICPMS-6020-W-	MSD4		1/6/2022 10:39:2	1	162695	1/4/2022 2:1	1E+07	1E+07						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.5333	0.5333		0.5	0	0.5485	0.0038747	0.0031975	1	107%	75	125	3%	
Antimony	A	mg/L	0.09715	0.09715		0.1	0	0.09999	0.0002799	0.001	0.1	97%	75	125	3%	
Arsenic	A	mg/L	0.09537	0.09537		0.1	0	0.1012	0.0003412	0.001	1	95%	75	125	6%	
Barium	A	mg/L	0.1006	0.1006		0.1	0.003191	0.1016	0.0002682	0.001	1	97%	75	125	1%	
Beryllium	A	mg/L	0.05086	0.05086		0.05	0	0.05363	0.0001071	0.01	1	102%	75	125	5%	
Boron	A	mg/L	0.1702	0.1702		0.1	0.06741	0.181	0.0203802	0.01467	1	103%	75	125	6%	
Cadmium	A	mg/L	0.04733	0.04733		0.05	0	0.04955	1.821E-05	0.005	1	95%	75	125	5%	
Calcium	A	mg/L	15.13	15.13		5	10.09	15.36	0.0372936	0.1103481	50	101%	75	125	2%	
Cerium	A	mg/L	0.1013	0.1013		0.1	0	0.1037	2.738E-05	0.001	0.1	101%	75	125	2%	
Chromium	A	mg/L	0.106	0.106		0.1	0.002542	0.1096	0.0015375	0.0015375	1	103%	75	125	3%	
Cobalt	A	mg/L	0.1081	0.1081		0.1	0.0001156	0.1092	9.541E-05	0.001	1	108%	75	125	1%	
Copper	A	mg/L	0.1064	0.1064		0.1	0	0.1103	0.0008747	0.00198	1	106%	75	125	4%	
Iron	A	mg/L	0.532	0.532		0.5	0	0.5359	0.007424	0.00513	5	106%	75	125	1%	
Lanthanum	A	mg/L	0.1011	0.1011		0.1	0	0.1039	0.000055	0.001	0.1	101%	75	125	3%	
Lead	A	mg/L	0.09839	0.09839		0.1	0	0.1012	7.716E-05	0.001	1	98%	88	115	3%	
Magnesium	A	mg/L	17.13	17.13		5	11.88	17.76	0.0104254	0.0081522	50	105%	75	125	4%	
Manganese	A	mg/L	0.5334	0.5334		0.5	0	0.5504	0.0005399	0.001	1	107%	75	125	3%	
Molybdenum	A	mg/L	0.1001	0.1001		0.1	0.0002718	0.1013	0.0001763	0.001	0.1	100%	75	125	1%	
Nickel	A	mg/L	0.1055	0.1055		0.1	0.002236	0.1094	0.0002288	0.0024200	1	103%	75	125	4%	
Potassium	A	mg/L	7.74	7.74		5	2.211	7.876	0.0765619	0.0261205	50	111%	75	125	2%	
Selenium	A	mg/L	0.09797	0.09797		0.1	0.0001799	0.09753	0.0001357	0.001	1	98%	75	125	0%	
Silicon	A	mg/L	26.56	26.56		1	24.49	25.69	0.0422089	0.0053212	0.4		75	125	3%	A
Silver	A	mg/L	0.009181	0.009181		0.01	0	0.009343	4.281E-05	0.001	0.04	92%	75	125	2%	
Sodium	A	mg/L	43.57	43.57		5	39.74	44.99	0.1019461	0.7330269	50		75	125	3%	A
Strontium	A	mg/L	0.1708	0.1708		0.1	0.06532	0.1754	0.0002433	0.001	1	105%	75	125	3%	
Thallium	A	mg/L	0.09868	0.09868		0.1	0.0001546	0.1028	0.0001114	0.001	1	99%	75	125	4%	
Thorium	A	mg/L	0.1012	0.1012		0.1	0	0.1066	0.0003796	0.00415	1	101%	75	125	5%	
Tin	A	mg/L	0.0984	0.0984		0.1	0	0.09841	0.0018932	0.0011175	0.1	98%	75	125	0%	
Titanium	A	mg/L	0.11	0.11		0.1	0.002563	0.1102	0.0005733	0.001	1	107%	75	125	0%	
Uranium	A	mg/L	0.09782	0.09782		0.1	0	0.09929	1.699E-05	0.0003	1	98%	75	125	1%	
Vanadium	A	mg/L	0.1307	0.1307		0.1	0.02443	0.1328	0.0039127	0.0021085	1	106%	75	125	2%	
Zinc	A	mg/L	0.09966	0.09966		0.1	0.004189	0.1048	0.0011617	0.0065544	1	95%	75	125	5%	
Silica	C	mg/L	56.817152	56.817152		0	0	54.956048	0.0902933	0.0113831	5	0%	0	0	3%	
Silicon as SiO2	C	mg/L	56.817152	56.817152		2.14	0	54.956048	0.0902933	0.0113831	5	2655%	75	125	3%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968411	Rinse	ICPMS-6020-W-	SAMP		1/6/2022 10:45:1	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.00008035	0		0	0	0	0.00042	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	0.00006193	0		0	0	0	0.00019	0.001	1	0%	0	0	0%	
Barium	A	mg/L	-1.091E-05	0		0	0	0	0.000042	0.001	1	0%	0	0	0%	
Beryllium	A	mg/L	0.00001631	0		0	0	0	0.00012	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	7.199E-06	0		0	0	0	0.000025	0.001	1	0%	0	0	0%	
Calcium	A	mg/L	0.002598	0		0	0	0	0.02092	0.02092	50	0%	0	0	0%	L
Cerium	A	mg/L	1.694E-06	0		0	0	0	0.000012	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	2.201E-06	0		0	0	0	0.00018	0.001	1	0%	0	0	0%	
Iron	A	mg/L	-0.0001506	0		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Lanthanum	A	mg/L	1.968E-06	0		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.00003314	0		0	0	0	0.000056	0.001	1	0%	0	0	0%	
Magnesium	A	mg/L	0.006711	0.006711		0	0	0	0.00564	0.00564	50	0%	0	0	0%	D
Manganese	A	mg/L	0.00006118	0		0	0	0	0.000095	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	5.566E-06	0		0	0	0	0.00005	0.001	0.1	0%	0	0	0%	
Nickel	A	mg/L	0.00002612	0		0	0	0	0.00063	0.001	1	0%	0	0	0%	
Potassium	A	mg/L	0.01656	0		0	0	0	0.08139	0.08139	50	0%	0	0	0%	L
Selenium	A	mg/L	0.00001557	0		0	0	0	0.00033	0.001	1	0%	0	0	0%	
Silver	A	mg/L	-4.84E-06	0		0	0	0	0.00002	0.001	0.04	0%	0	0	0%	
Sodium	A	mg/L	0.04777	0.04777		0	0	0	0.02171	0.02171	50	0%	0	0	0%	D
Strontium	A	mg/L	0.00001435	0		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00076	0.00076		0	0	0	0.000041	0.001	1	0%	0	0	0%	J
Thorium	A	mg/L	0.00001675	0		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Tin	A	mg/L	8.497E-06	0		0	0	0	0.00132	0.00132	0.1	0%	0	0	0%	
Uranium	A	mg/L	2.233E-06	0		0	0	0	0.000052	0.0003	1	0%	0	0	0%	
Zinc	A	mg/L	0.0000076	0		0	0	0	0.00273	0.00273	1	0%	0	0	0%	L
Iron, Ferrous	C	mg/L	-0.0001506	0		0	0	0	0.00119	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					
14968412	B22010120-001	ICPMS-6020-W-	SAMP		1/6/2022 10:51:2	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.0006774	0.0006774		0	0	0	0.00042	0.001	0.1	0%	0	0	0%	J
Arsenic	A	mg/L	0.006621	0.006621		0	0	0	0.00019	0.001	1	0%	0	0	0%	
Barium	A	mg/L	0.003178	0.003178		0	0	0	0.000042	0.001	1	0%	0	0	0%	
Beryllium	A	mg/L	0.00000146	0		0	0	0	0.00012	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					
14968412	B22010120-001	ICPMS-6020-W-	SAMP		1/6/2022 10:51:2	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Cadmium	A	mg/L	0.00002175	0		0	0	0	0.000025	0.001	1	0%	0	0	0%	
Cerium	A	mg/L	4.047E-06	0		0	0	0	0.000012	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	0.001128	0.001128		0	0	0	0.00018	0.001	1	0%	0	0	0%	
Lanthanum	A	mg/L	5.775E-06	0		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.00007171	0.00007171		0	0	0	0.000056	0.001	1	0%	0	0	0%	J
Manganese	A	mg/L	0.02272	0.02272		0	0	0	0.000095	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	0.007617	0.007617		0	0	0	0.00005	0.001	0.1	0%	0	0	0%	
Nickel	A	mg/L	0.001239	0.001239		0	0	0	0.00063	0.001	1	0%	0	0	0%	
Selenium	A	mg/L	0.0007637	0.0007637		0	0	0	0.00033	0.001	1	0%	0	0	0%	J
Silver	A	mg/L	-6.609E-05	0		0	0	0	0.00002	0.001	0.04	0%	0	0	0%	
Strontium	A	mg/L	0.1011	0.1011		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.000354	0.000354		0	0	0	0.000041	0.001	1	0%	0	0	0%	J
Thorium	A	mg/L	0.00000389	0		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.0003238	0.0003238		0	0	0	0.000052	0.0003	1	0%	0	0	0%	
Calcium	B	mg/L	24.7	24.7		0	0	0	0.02092	0.02092	50	0%	0	0	0%	D
Iron	B	mg/L	0.03337	0.03337		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Iron, Ferrous	B	mg/L	0.03337	0.03337		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Magnesium	B	mg/L	26.37	26.37		0	0	0	0.00564	0.00564	50	0%	0	0	0%	D
Potassium	B	mg/L	3.242	3.242		0	0	0	0.08139	0.08139	50	0%	0	0	0%	D
Tin	B	mg/L	0.000074	0		0	0	0	0.00132	0.00132	0.1	0%	0	0	0%	
Zinc	B	mg/L	0.008664	0.008664		0	0	0	0.00273	0.00273	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					
14968413	B22010120-001	ICPMS-6020-W-	SAMP		1/6/2022 10:57:3	1	162695	1/4/2022 2:1	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.0007472	0.0007472		0	0	0	0.0002799	0.001	0.1	0%	0	0	0%	J
Arsenic	A	mg/L	0.006955	0.006955		0	0	0	0.0003412	0.001	1	0%	0	0	0%	
Barium	A	mg/L	0.003438	0.003438		0	0	0	0.0002682	0.001	1	0%	0	0	0%	
Beryllium	A	mg/L	4.477E-06	0		0	0	0	0.0001071	0.01	1	0%	0	0	0%	U
Cadmium	A	mg/L	8.853E-07	0		0	0	0	1.821E-05	0.005	1	0%	0	0	0%	U
Cerium	A	mg/L	0.00002225	0		0	0	0	2.738E-05	0.001	0.1	0%	0	0	0%	U
Lanthanum	A	mg/L	0.00001004	0		0	0	0	0.000055	0.001	0.1	0%	0	0	0%	U
Lead	A	mg/L	0.0001741	0.0001741		0	0	0	7.716E-05	0.001	1	0%	0	0	0%	J
Manganese	A	mg/L	0.02352	0.02352		0	0	0	0.0005399	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					
14968413	B22010120-001	ICPMS-6020-W-	SAMP		1/6/2022 10:57:3	1	162695	1/4/2022 2:1	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Molybdenum	A	mg/L	0.008245	0.008245		0	0	0	0.0001763	0.001	0.1	0%	0	0	0%	
Selenium	A	mg/L	0.000759	0.000759		0	0	0	0.0001357	0.001	1	0%	0	0	0%	J
Silver	A	mg/L	-5.032E-05	0		0	0	0	4.281E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.1042	0.1042		0	0	0	0.0002433	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0002388	0.0002388		0	0	0	0.0001114	0.001	1	0%	0	0	0%	J
Uranium	A	mg/L	0.000322	0.000322		0	0	0	1.699E-05	0.0003	1	0%	0	0	0%	
Calcium	B	mg/L	22.78	22.78		0	0	0	0.0372936	0.1103481	50	0%	0	0	0%	D
Chromium	B	mg/L	0.001796	0.001796		0	0	0	0.0015375	0.0015375	1	0%	0	0	0%	UD
Iron	B	mg/L	0.05662	0.05662		0	0	0	0.007424	0.00513	5	0%	0	0	0%	D
Magnesium	B	mg/L	27.12	27.12		0	0	0	0.0104254	0.0081522	50	0%	0	0	0%	D
Nickel	B	mg/L	0.001477	0.001477		0	0	0	0.0002288	0.0024200	1	0%	0	0	0%	JL
Potassium	B	mg/L	3.321	3.321		0	0	0	0.0765619	0.0261205	50	0%	0	0	0%	D
Thorium	B	mg/L	0.00004499	0		0	0	0	0.0003796	0.00415	1	0%	0	0	0%	UL
Tin	B	mg/L	0.000463	0		0	0	0	0.0018932	0.0011175	0.1	0%	0	0	0%	U
Zinc	B	mg/L	0.01329	0.01329		0	0	0	0.0011617	0.0065544	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					
14968414	B22010134-001	ICPMS-6020-W-	SAMP		1/6/2022 11:03:4	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.00002736	0		0	0	0	0.00042	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	0.0001091	0		0	0	0	0.00019	0.001	1	0%	0	0	0%	
Barium	A	mg/L	0.002288	0.002288		0	0	0	0.000042	0.001	1	0%	0	0	0%	
Beryllium	A	mg/L	-6.374E-06	0		0	0	0	0.00012	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0.00003204	0.00003204		0	0	0	0.000025	0.001	1	0%	0	0	0%	J
Cerium	A	mg/L	1.917E-06	0		0	0	0	0.000012	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	0.00001763	0		0	0	0	0.00018	0.001	1	0%	0	0	0%	
Lanthanum	A	mg/L	1.036E-06	0		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.000055	0		0	0	0	0.000056	0.001	1	0%	0	0	0%	U
Manganese	A	mg/L	0.08241	0.08241		0	0	0	0.000095	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	0.01179	0.01179		0	0	0	0.00005	0.001	0.1	0%	0	0	0%	
Nickel	A	mg/L	0.0004515	0		0	0	0	0.00063	0.001	1	0%	0	0	0%	
Selenium	A	mg/L	0.00006363	0		0	0	0	0.00033	0.001	1	0%	0	0	0%	
Silver	A	mg/L	-6.969E-05	0		0	0	0	0.00002	0.001	0.04	0%	0	0	0%	
Strontium	A	mg/L	0.07829	0.07829		0	0	0	0.00014	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					
14968414	B22010134-001	ICPMS-6020-W-	SAMP		1/6/2022 11:03:4	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Thallium	A	mg/L	0.0001595	0.0001595		0	0	0	0.000041	0.001	1	0%	0	0	0%	J
Thorium	A	mg/L	2.892E-07	0		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	1.514E-06	0		0	0	0	0.000052	0.0003	1	0%	0	0	0%	
Calcium	B	mg/L	12.83	12.83		0	0	0	0.02092	0.02092	50	0%	0	0	0%	D
Iron	B	mg/L	0.05432	0.05432		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Iron, Ferrous	B	mg/L	0.05432	0.05432		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Magnesium	B	mg/L	13.07	13.07		0	0	0	0.00564	0.00564	50	0%	0	0	0%	D
Potassium	B	mg/L	4.557	4.557		0	0	0	0.08139	0.08139	50	0%	0	0	0%	D
Sodium	B	mg/L	47.1	47.1		0	0	0	0.02171	0.02171	50	0%	0	0	0%	D
Tin	B	mg/L	-3.339E-05	0		0	0	0	0.00132	0.00132	0.1	0%	0	0	0%	
Zinc	B	mg/L	0.002507	0		0	0	0	0.00273	0.00273	1	0%	0	0	0%	L

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968415	B22010134-001	ICPMS-6020-W-	SAMP		1/6/2022 11:09:4	1	162695	1/4/2022 3:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.000039	0		0	0	0	0.0002799	0.001	0.1	0%	0	0	0%	U
Arsenic	A	mg/L	0.0003433	0.0003433		0	0	0	0.0003412	0.001	1	0%	0	0	0%	J
Barium	A	mg/L	0.002445	0.002445		0	0	0	0.0002682	0.001	1	0%	0	0	0%	
Beryllium	A	mg/L	-2.292E-06	0		0	0	0	0.0001071	0.01	1	0%	0	0	0%	U
Cadmium	A	mg/L	1.734E-06	0		0	0	0	1.821E-05	0.005	1	0%	0	0	0%	U
Cerium	A	mg/L	8.032E-06	0		0	0	0	2.738E-05	0.001	0.1	0%	0	0	0%	U
Lanthanum	A	mg/L	2.076E-06	0		0	0	0	0.000055	0.001	0.1	0%	0	0	0%	U
Lead	A	mg/L	0.0000339	0		0	0	0	7.716E-05	0.001	1	0%	0	0	0%	U
Manganese	A	mg/L	0.09359	0.09359		0	0	0	0.0005399	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	0.01215	0.01215		0	0	0	0.0001763	0.001	0.1	0%	0	0	0%	
Selenium	A	mg/L	0.00009946	0		0	0	0	0.0001357	0.001	1	0%	0	0	0%	U
Silver	A	mg/L	-7.138E-05	0		0	0	0	4.281E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.08079	0.08079		0	0	0	0.0002433	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0001204	0.0001204		0	0	0	0.0001114	0.001	1	0%	0	0	0%	J
Uranium	A	mg/L	1.174E-06	0		0	0	0	1.699E-05	0.0003	1	0%	0	0	0%	U
Calcium	B	mg/L	13.35	13.35		0	0	0	0.0372936	0.1103481	50	0%	0	0	0%	D
Chromium	B	mg/L	0.0001176	0		0	0	0	0.0015375	0.0015375	1	0%	0	0	0%	UL
Iron	B	mg/L	0.1366	0.1366		0	0	0	0.007424	0.00513	5	0%	0	0	0%	D
Magnesium	B	mg/L	13.12	13.12		0	0	0	0.0104254	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					
14968415	B22010134-001	ICPMS-6020-W-	SAMP		1/6/2022 11:09:4	1	162695	1/4/2022 3:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Nickel	B	mg/L	0.0004569	0.0004569		0	0	0	0.0002288	0.0024200	1	0%	0	0	0%	JL
Potassium	B	mg/L	4.288	4.288		0	0	0	0.0765619	0.0261205	50	0%	0	0	0%	D
Sodium	B	mg/L	47.15	47.15		0	0	0	0.1019461	0.7330269	50	0%	0	0	0%	D
Thorium	B	mg/L	0.00002118	0		0	0	0	0.0003796	0.00415	1	0%	0	0	0%	UL
Tin	B	mg/L	0.0002577	0		0	0	0	0.0018932	0.0011175	0.1	0%	0	0	0%	U
Zinc	B	mg/L	0.000754	0		0	0	0	0.0011617	0.0065544	1	0%	0	0	0%	UL

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968416	B22010141-001	ICPMS-6020-W-	SAMP		1/6/2022 11:15:5	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	7.657E-06	0		0	0	0	0.00042	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	0.0001794	0		0	0	0	0.00019	0.001	1	0%	0	0	0%	
Barium	A	mg/L	0.006921	0.006921		0	0	0	0.000042	0.001	1	0%	0	0	0%	
Beryllium	A	mg/L	-7.808E-06	0		0	0	0	0.00012	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0.00001369	0		0	0	0	0.000025	0.001	1	0%	0	0	0%	
Cerium	A	mg/L	2.857E-06	0		0	0	0	0.000012	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	0.001697	0.001697		0	0	0	0.00018	0.001	1	0%	0	0	0%	
Lanthanum	A	mg/L	0.00000201	0		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.000038	0		0	0	0	0.000056	0.001	1	0%	0	0	0%	U
Manganese	A	mg/L	0.0001512	0.0001512		0	0	0	0.000095	0.001	1	0%	0	0	0%	J
Molybdenum	A	mg/L	0.0004055	0.0004055		0	0	0	0.00005	0.001	0.1	0%	0	0	0%	J
Nickel	A	mg/L	0.000496	0		0	0	0	0.00063	0.001	1	0%	0	0	0%	
Selenium	A	mg/L	0.00006258	0		0	0	0	0.00033	0.001	1	0%	0	0	0%	
Silver	A	mg/L	-6.092E-05	0		0	0	0	0.00002	0.001	0.04	0%	0	0	0%	
Strontium	A	mg/L	0.1128	0.1128		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00006737	0.00006737		0	0	0	0.000041	0.001	1	0%	0	0	0%	J
Thorium	A	mg/L	-4.227E-07	0		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.00002908	0		0	0	0	0.000052	0.0003	1	0%	0	0	0%	
Calcium	B	mg/L	18.34	18.34		0	0	0	0.02092	0.02092	50	0%	0	0	0%	D
Iron	B	mg/L	0.0002174	0		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Iron, Ferrous	B	mg/L	0.0002174	0		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Magnesium	B	mg/L	17.44	17.44		0	0	0	0.00564	0.00564	50	0%	0	0	0%	D
Potassium	B	mg/L	2.944	2.944		0	0	0	0.08139	0.08139	50	0%	0	0	0%	D
Sodium	B	mg/L	41	41		0	0	0	0.02171	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					
14968416	B22010141-001	ICPMS-6020-W-	SAMP		1/6/2022 11:15:5	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Tin	B	mg/L	-5.514E-05	0		0	0	0	0.00132	0.00132	0.1	0%	0	0	0%	
Zinc	B	mg/L	0.00523	0.00523		0	0	0	0.00273	0.00273	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					
14968417	B22010141-001	ICPMS-6020-W-	SAMP		1/6/2022 11:22:0	1	162708	1/5/2022 8:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.00002839	0		0	0	0	0.0002799	0.001	0.1	0%	0	0	0%	U
Arsenic	A	mg/L	0.0004405	0.0004405		0	0	0	0.0003412	0.001	1	0%	0	0	0%	J
Barium	A	mg/L	0.008244	0.008244		0	0	0	0.0002682	0.001	1	0%	0	0	0%	
Beryllium	A	mg/L	1.859E-06	0		0	0	0	0.0001071	0.01	1	0%	0	0	0%	U
Cadmium	A	mg/L	-2.372E-06	0		0	0	0	1.821E-05	0.005	1	0%	0	0	0%	U
Cerium	A	mg/L	0.0003041	0.0003041		0	0	0	2.738E-05	0.001	0.1	0%	0	0	0%	J
Lanthanum	A	mg/L	0.0001279	0.0001279		0	0	0	0.000055	0.001	0.1	0%	0	0	0%	J
Lead	A	mg/L	0.00008877	0.00008877		0	0	0	7.716E-05	0.001	1	0%	0	0	0%	J
Manganese	A	mg/L	0.007689	0.007689		0	0	0	0.0005399	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	0.0005418	0.0005418		0	0	0	0.0001763	0.001	0.1	0%	0	0	0%	J
Selenium	A	mg/L	0.00007935	0		0	0	0	0.0001357	0.001	1	0%	0	0	0%	U
Silver	A	mg/L	-4.947E-05	0		0	0	0	4.281E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.1197	0.1197		0	0	0	0.0002433	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00009223	0		0	0	0	0.0001114	0.001	1	0%	0	0	0%	U
Uranium	A	mg/L	0.00003294	0.00003294		0	0	0	1.699E-05	0.0003	1	0%	0	0	0%	J
Calcium	B	mg/L	19.88	19.88		0	0	0	0.0372936	0.1103481	50	0%	0	0	0%	D
Chromium	B	mg/L	0.003036	0.003036		0	0	0	0.0015375	0.0015375	1	0%	0	0	0%	UD
Iron	B	mg/L	0.5329	0.5329		0	0	0	0.007424	0.00513	5	0%	0	0	0%	D
Magnesium	B	mg/L	17.29	17.29		0	0	0	0.0104254	0.0081522	50	0%	0	0	0%	D
Nickel	B	mg/L	0.00122	0.00122		0	0	0	0.0002288	0.0024200	1	0%	0	0	0%	JL
Potassium	B	mg/L	2.919	2.919		0	0	0	0.0765619	0.0261205	50	0%	0	0	0%	D
Sodium	B	mg/L	40.41	40.41		0	0	0	0.1019461	0.7330269	50	0%	0	0	0%	D
Thorium	B	mg/L	0.00002885	0		0	0	0	0.0003796	0.00415	1	0%	0	0	0%	UL
Tin	B	mg/L	0.0004965	0		0	0	0	0.0018932	0.0011175	0.1	0%	0	0	0%	U
Zinc	B	mg/L	0.1216	0.1216		0	0	0	0.0011617	0.0065544	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					
14968418	CCV	ICPMS-6020-W-	CCV		1/6/2022 11:28:1	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.05365	0.05365		0.05	0	0	0.00086	0.001	1	107%	90	110	0%	
Antimony	A	mg/L	0.0519	0.0519		0.05	0	0	0.00042	0.001	0.1	104%	90	110	0%	
Arsenic	A	mg/L	0.05212	0.05212		0.05	0	0	0.00019	0.001	1	104%	90	110	0%	
Barium	A	mg/L	0.05405	0.05405		0.05	0	0	0.000042	0.001	1	108%	90	110	0%	
Beryllium	A	mg/L	0.05435	0.05435		0.05	0	0	0.00012	0.001	1	109%	90	110	0%	
Boron	A	mg/L	0.0551	0.0551		0.05	0	0	0.00561	0.00561	1	110%	90	110	0%	
Cadmium	A	mg/L	0.05122	0.05122		0.05	0	0	0.000025	0.001	1	102%	90	110	0%	
Calcium	A	mg/L	13.2	13.2		12.5	0	0	0.02092	0.02092	50	106%	90	110	0%	
Cerium	A	mg/L	0.04916	0.04916		0.05	0	0	0.000012	0.001	0.1	98%	90	110	0%	
Chromium	A	mg/L	0.05355	0.05355		0.05	0	0	0.00018	0.001	1	107%	90	110	0%	
Cobalt	A	mg/L	0.0551	0.0551		0.05	0	0	0.000042	0.001	1	110%	90	110	0%	
Copper	A	mg/L	0.05575	0.05575		0.05	0	0	0.00027	0.001	1	111%	90	110	0%	S
Iron	A	mg/L	1.344	1.344		1.3	0	0	0.00119	0.00119	5	103%	90	110	0%	
Lanthanum	A	mg/L	0.04928	0.04928		0.05	0	0	0.000011	0.001	0.1	99%	90	110	0%	
Lead	A	mg/L	0.05122	0.05122		0.05	0	0	0.000056	0.001	1	102%	90	110	0%	
Magnesium	A	mg/L	13.45	13.45		12.5	0	0	0.00564	0.00564	50	108%	90	110	0%	
Manganese	A	mg/L	0.05362	0.05362		0.05	0	0	0.000095	0.001	1	107%	90	110	0%	
Mercury	A	mg/L	0.0008824	0.0008824		0.001	0	0	0.00016	0.001	0.002	88%	90	110	0%	S
Molybdenum	A	mg/L	0.05116	0.05116		0.05	0	0	0.00005	0.001	0.1	102%	90	110	0%	
Nickel	A	mg/L	0.05484	0.05484		0.05	0	0	0.00063	0.001	1	110%	90	110	0%	
Potassium	A	mg/L	13.49	13.49		12.5	0	0	0.08139	0.08139	50	108%	90	110	0%	
Selenium	A	mg/L	0.05221	0.05221		0.05	0	0	0.00033	0.001	1	104%	90	110	0%	
Silicon	A	mg/L	0.2334	0.2334		0.2	0	0	0.01223	0.1	0.4	117%	90	110	0%	S
Silver	A	mg/L	0.02021	0.02021		0.02	0	0	0.00002	0.001	0.04	101%	90	110	0%	
Sodium	A	mg/L	13.41	13.41		12.5	0	0	0.02171	0.02171	50	107%	90	110	0%	
Strontium	A	mg/L	0.05213	0.05213		0.05	0	0	0.00014	0.001	1	104%	90	110	0%	
Thallium	A	mg/L	0.04864	0.04864		0.05	0	0	0.000041	0.001	1	97%	90	110	0%	
Thorium	A	mg/L	0.05247	0.05247		0.05	0	0	0.00061	0.001	1	105%	90	110	0%	
Tin	A	mg/L	0.05168	0.05168		0.05	0	0	0.00132	0.00132	0.1	103%	90	110	0%	
Titanium	A	mg/L	0.05679	0.05679		0.05	0	0	0.000094	0.001	1	114%	90	110	0%	S
Uranium	A	mg/L	0.05213	0.05213		0.05	0	0	0.000052	0.0003	1	104%	90	110	0%	
Vanadium	A	mg/L	0.05553	0.05553		0.05	0	0	0.0013	0.0013	1	111%	90	110	0%	S
Zinc	A	mg/L	0.05332	0.05332		0.05	0	0	0.00273	0.00273	1	107%	90	110	0%	
Iron, Ferrous	C	mg/L	1.344	1.344		0	0	0	0.00119	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					
14968419	CCB	ICPMS-6020-W-	CCB		1/6/2022 11:34:0	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.000401	0.000401		0	0	0	0.00086	0.001	1	0%			0%	
Antimony	A	mg/L	0.00004735	0.00004735		0	0	0	0.00042	0.001	0.1	0%			0%	
Arsenic	A	mg/L	0.00005004	0.00005004		0	0	0	0.00019	0.001	1	0%			0%	
Barium	A	mg/L	-2.191E-06	-2.191E-06		0	0	0	0.000042	0.001	1	0%			0%	
Beryllium	A	mg/L	4.654E-06	4.654E-06		0	0	0	0.00012	0.001	1	0%			0%	
Boron	A	mg/L	0.0008615	0.0008615		0	0	0	0.00561	0.00561	1	0%			0%	
Cadmium	A	mg/L	-6.315E-07	-6.315E-07		0	0	0	0.000025	0.001	1	0%			0%	
Calcium	A	mg/L	0.002043	0.002043		0	0	0	0.02092	0.02092	50	0%			0%	
Cerium	A	mg/L	1.594E-06	1.594E-06		0	0	0	0.000012	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	0.00001675	0.00001675		0	0	0	0.00018	0.001	1	0%			0%	
Cobalt	A	mg/L	7.393E-06	7.393E-06		0	0	0	0.000042	0.001	1	0%			0%	
Copper	A	mg/L	2.253E-06	2.253E-06		0	0	0	0.00027	0.001	1	0%			0%	
Iron	A	mg/L	-7.325E-05	-7.325E-05		0	0	0	0.00119	0.00119	5	0%			0%	
Lanthanum	A	mg/L	1.151E-06	1.151E-06		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.00002197	0.00002197		0	0	0	0.000056	0.001	1	0%			0%	
Magnesium	A	mg/L	0.004235	0.004235		0	0	0	0.00564	0.00564	50	0%			0%	
Manganese	A	mg/L	0.00002463	0.00002463		0	0	0	0.000095	0.001	1	0%			0%	
Mercury	A	mg/L	-1.607E-05	-1.607E-05		0	0	0	0.00016	0.001	0.002	0%			0%	
Molybdenum	A	mg/L	0.00001008	0.00001008		0	0	0	0.00005	0.001	0.1	0%			0%	
Nickel	A	mg/L	0.00001489	0.00001489		0	0	0	0.00063	0.001	1	0%			0%	
Potassium	A	mg/L	0.01778	0.01778		0	0	0	0.08139	0.08139	50	0%			0%	
Selenium	A	mg/L	0.00001498	0.00001498		0	0	0	0.00033	0.001	1	0%			0%	
Silicon	A	mg/L	0.003431	0.003431		0	0	0	0.01223	0.1	0.4	0%	0	0	0%	
Silver	A	mg/L	-4.689E-06	-4.689E-06		0	0	0	0.00002	0.001	0.04	0%			0%	
Sodium	A	mg/L	0.0421	0.0421		0	0	0	0.02171	0.02171	50	0%			0%	
Strontium	A	mg/L	5.645E-06	5.645E-06		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0003211	0.0003211		0	0	0	0.000041	0.001	1	0%	0	0	0%	
Thorium	A	mg/L	0.00001435	0.00001435		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Tin	A	mg/L	0.00001894	0.00001894		0	0	0	0.00132	0.00132	0.1	0%	0	0	0%	
Titanium	A	mg/L	0.00002936	0.00002936		0	0	0	0.000094	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	8.91E-07	8.91E-07		0	0	0	0.000052	0.0003	1	0%	0	0	0%	
Vanadium	A	mg/L	0.0015	0.0015		0	0	0	0.0013	0.0013	1	0%	0	0	0%	
Zinc	A	mg/L	-9.504E-07	-9.504E-07		0	0	0	0.00273	0.00273	1	0%	0	0	0%	
Iron, Ferrous	C	mg/L	-7.325E-05	-7.325E-05		0	0	0	0.00119	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					
14968420	B22010141-001	ICPMS-6020-W-	SD		1/6/2022 11:40:1	5	162708	1/5/2022 8:3	0	1E+07						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.1508	0.754		0	0	0.701	0.0193736	0.0159875	1	0%	0	0	7%	
Antimony	A	mg/L	0.00001784	0		0	0	0	0.0013997	0.0049	0.1	0%	0	0		
Arsenic	A	mg/L	0.000132	0		0	0	0.0004405	0.0017061	0.0013383	1	0%	0	0		
Barium	A	mg/L	0.001662	0.00831		0	0	0.008244	0.0013411	0.0012039	1	0%	0	0		N
Beryllium	A	mg/L	2.827E-06	0		0	0	0	0.0005353	0.01	1	0%	0	0		
Boron	A	mg/L	0.006834	0		0	0	0.03304	0.1019008	0.07335	1	0%	0	0		
Cadmium	A	mg/L	2.653E-06	0		0	0	0	9.105E-05	0.005	1	0%	0	0		
Calcium	A	mg/L	3.848	19.24		0	0	19.88	0.1864681	0.5517403	50	0%	0	0	3%	
Cerium	A	mg/L	0.00006401	0.00032005		0	0	0.0003041	0.0001369	0.001	0.1	0%	0	0		N
Chromium	A	mg/L	0.0008024	0		0	0	0.003036	0.0076875	0.0076875	1	0%	0	0		
Cobalt	A	mg/L	0.00007162	0		0	0	0.0003518	0.0004771	0.001	1	0%	0	0		
Copper	A	mg/L	0.01141	0.05705		0	0	0.001636	0.0043735	0.0099	1	0%	0	0		N
Iron	A	mg/L	0.1093	0.5465		0	0	0.5329	0.0371198	0.02565	5	0%	0	0	3%	
Lanthanum	A	mg/L	0.00002685	0		0	0	0.0001279	0.000275	0.001	0.1	0%	0	0		
Lead	A	mg/L	0.00005172	0		0	0	8.877E-05	0.0003858	0.001	1	0%	0	0		
Magnesium	A	mg/L	3.597	17.985		0	0	17.29	0.0521269	0.0407608	50	0%	0	0	4%	
Manganese	A	mg/L	0.001653	0.008265		0	0	0.007689	0.0026994	0.0010695	1	0%	0	0		N
Molybdenum	A	mg/L	0.0001066	0		0	0	0.0005418	0.0008814	0.001	0.1	0%	0	0		
Nickel	A	mg/L	0.000421	0.002105		0	0	0.00122	0.0011441	0.0121000	1	0%	0	0		N
Potassium	A	mg/L	0.5916	2.958		0	0	2.919	0.3828097	0.1306027	50	0%	0	0		N
Selenium	A	mg/L	0.00002003	0		0	0	0	0.0006787	0.0029274	1	0%	0	0		
Silicon	A	mg/L	4.365	21.825		0	0	21.63	0.2110446	0.026606	0.4	0%	0	0	1%	
Silver	A	mg/L	-6.667E-05	0		0	0	0	0.0002141	0.001	0.04	0%	0	0		
Sodium	A	mg/L	8.322	41.61		0	0	40.41	0.5097304	3.6651346	50	0%	0	0	3%	
Strontium	A	mg/L	0.02461	0.12305		0	0	0.1197	0.0012164	0.001	1	0%	0	0	3%	
Thallium	A	mg/L	0.0001664	0.000832		0	0	0	0.0005569	0.001	1	0%	0	0		N
Thorium	A	mg/L	0.00001372	0		0	0	0	0.0018981	0.02075	1	0%	0	0		
Tin	A	mg/L	0.00009578	0		0	0	0	0.0094659	0.0055874	0.1	0%	0	0		
Titanium	A	mg/L	0.01102	0.0551		0	0	0.05529	0.0028666	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	5.954E-06	0		0	0	3.294E-05	8.495E-05	0.0004224	1	0%	0	0		
Vanadium	A	mg/L	0.004512	0.02256		0	0	0.0146	0.0195637	0.0105423	1	0%	0	0		N
Zinc	A	mg/L	0.03497	0.17485		0	0	0.1216	0.0058087	0.0327721	1	0%	0	0	36%	R
Silica	C	mg/L	9.337608	46.68804		0	0	0	0.4514666	0.0569155	5	0%	0	0		N
Silicon as SiO2	C	mg/L	9.337608	46.68804		0	0	0	0.4514666	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					
14968421	B22010141-001	ICPMS-6020-W-	PDS1		1/6/2022 11:46:2	1.03	162708	1/5/2022 8:3	1E+07	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.7375	0.759625		0.0515	0.701	0	0.003991	0.0032934	1		75	125	0%	A
Antimony	A	mg/L	0.04589	0.0472667		0.0515	0	0	0.0002883	0.0010094	0.1	92%	75	125	0%	
Arsenic	A	mg/L	0.04761	0.0490383		0.0515	0.0004405	0	0.0003514	0.001	1	94%	75	125	0%	
Barium	A	mg/L	0.05779	0.0595237		0.0515	0.008244	0	0.0002763	0.001	1	100%	75	125	0%	
Beryllium	A	mg/L	0.05035	0.0518605		0.0515	0	0	0.0001103	0.01	1	101%	75	125	0%	
Boron	A	mg/L	0.08404	0.0865612		0.0515	0.03304	0	0.0209916	0.0151101	1	104%	75	125	0%	
Cadmium	A	mg/L	0.04487	0.0462161		0.0515	0	0	1.876E-05	0.005	1	90%	75	125	0%	
Calcium	A	mg/L	68.98	71.0494		51.5	19.88	0	0.0384124	0.1136585	50	99%	75	125	0%	
Cerium	A	mg/L	0.0468	0.048204		0.0515	0.0003041	0	2.820E-05	0.001	0.1	93%	75	125	0%	
Chromium	A	mg/L	0.05226	0.0538278		0.0515	0.003036	0	0.0015836	0.0015836	1	99%	75	125	0%	
Cobalt	A	mg/L	0.05066	0.0521798		0.0515	0.0003518	0	9.827E-05	0.001	1	101%	75	125	0%	
Copper	A	mg/L	0.05122	0.0527566		0.0515	0.001636	0	0.0009009	0.0020394	1	99%	75	125	0%	
Iron	A	mg/L	5.466	5.62998		5.15	0.5329	0	0.0076467	0.0052839	5	99%	75	125	0%	
Lanthanum	A	mg/L	0.04739	0.0488117		0.0515	0.0001279	0	5.665E-05	0.001	0.1	95%	75	125	0%	
Lead	A	mg/L	0.04763	0.0490589		0.0515	8.877E-05	0	7.947E-05	0.001	1	95%	80	120	0%	
Magnesium	A	mg/L	66.84	68.8452		51.5	17.29	0	0.0107381	0.0083967	50	100%	75	125	0%	
Manganese	A	mg/L	0.05627	0.0579581		0.0515	0.007689	0	0.0005561	0.001	1	98%	75	125	0%	
Molybdenum	A	mg/L	0.04878	0.0502434		0.0515	0.0005418	0	0.0001816	0.001	0.1	97%	75	125	0%	
Nickel	A	mg/L	0.04998	0.0514794		0.0515	0.00122	0	0.0002357	0.0024926	1	98%	75	125	0%	
Potassium	A	mg/L	55.38	57.0414		51.5	2.919	0	0.0788588	0.0269042	50	105%	75	125	0%	
Selenium	A	mg/L	0.04605	0.0474315		0.0515	0	0	0.0001398	0.001	1	92%	75	125	0%	
Silicon	A	mg/L	20.78	21.4034		0.206	21.63	0	0.0434752	0.0054808	0.4		0	0	0%	A
Silver	A	mg/L	0.01901	0.0195803		0.0206	0	0	4.409E-05	0.001	0.04	95%	75	125	0%	
Sodium	A	mg/L	89.01	91.6803		51.5	40.41	0	0.1050045	0.7550177	50	100%	75	125	0%	
Strontium	A	mg/L	0.1681	0.173143		0.0515	0.1197	0	0.0002506	0.001	1	104%	75	125	0%	
Thallium	A	mg/L	0.04633	0.0477199		0.0515	0	0	0.0001147	0.001	1	93%	75	125	0%	
Thorium	A	mg/L	0.05	0.0515		0.0515	0	0	0.000391	0.0042745	1	100%	75	125	0%	
Tin	A	mg/L	0.04815	0.0495945		0.0515	0	0	0.00195	0.001151	0.1	96%	75	125	0%	
Titanium	A	mg/L	0.1112	0.114536		0.0515	0.05529	0	0.0005905	0.001	1	115%	75	125	0%	
Uranium	A	mg/L	0.0493	0.050779		0.0515	3.294E-05	0	1.75E-05	0.0003	1	99%	75	125	0%	
Vanadium	A	mg/L	0.06504	0.0669912		0.0515	0.0146	0	0.0040301	0.0021717	1	102%	75	125	0%	
Zinc	A	mg/L	0.1634	0.168302		0.0515	0.1216	0	0.0011966	0.0067511	1	91%	75	125	0%	
Silica	C	mg/L	44.452576	45.7861533		0	0	0	0.0930021	0.0117246	5	0%	0	0	0%	
Silicon as SiO2	C	mg/L	44.452576	45.7861533		0.0515	0	0	0.0930021	0.0117246	5	88905%	75	125	0%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968422	B22010141-001	ICPMS-6020-W- MS4			1/6/2022 11:52:2	1	162708	1/5/2022 8:3	1E+07	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	1.419	1.419		0.5	0.701	0	0.0038747	0.0031975	1	144%	75	125	0%	S
Antimony	A	mg/L	0.09926	0.09926		0.1	0	0	0.0002799	0.001	0.1	99%	75	125	0%	
Arsenic	A	mg/L	0.09694	0.09694		0.1	0.0004405	0	0.0003412	0.001	1	96%	75	125	0%	
Barium	A	mg/L	0.1058	0.1058		0.1	0.008244	0	0.0002682	0.001	1	98%	75	125	0%	
Beryllium	A	mg/L	0.05346	0.05346		0.05	0	0	0.0001071	0.01	1	107%	75	125	0%	
Boron	A	mg/L	0.1465	0.1465		0.1	0.03304	0	0.0203802	0.01467	1	113%	75	125	0%	
Cadmium	A	mg/L	0.04637	0.04637		0.05	0	0	1.821E-05	0.005	1	93%	75	125	0%	
Calcium	A	mg/L	24.44	24.44		5	19.88	0	0.0372936	0.1103481	50	91%	75	125	0%	
Cerium	A	mg/L	0.09892	0.09892		0.1	0.0003041	0	2.738E-05	0.001	0.1	99%	75	125	0%	
Chromium	A	mg/L	0.1059	0.1059		0.1	0.003036	0	0.0015375	0.0015375	1	103%	75	125	0%	
Cobalt	A	mg/L	0.1075	0.1075		0.1	0.0003518	0	9.541E-05	0.001	1	107%	75	125	0%	
Copper	A	mg/L	0.1052	0.1052		0.1	0.001636	0	0.0008747	0.00198	1	104%	75	125	0%	
Iron	A	mg/L	1.082	1.082		0.5	0.5329	0	0.007424	0.00513	5	110%	75	125	0%	
Lanthanum	A	mg/L	0.1017	0.1017		0.1	0.0001279	0	0.000055	0.001	0.1	102%	75	125	0%	
Lead	A	mg/L	0.1014	0.1014		0.1	8.877E-05	0	7.716E-05	0.001	1	101%	88	115	0%	
Magnesium	A	mg/L	22.56	22.56		5	17.29	0	0.0104254	0.0081522	50	105%	75	125	0%	
Manganese	A	mg/L	0.5415	0.5415		0.5	0.007689	0	0.0005399	0.001	1	107%	75	125	0%	
Molybdenum	A	mg/L	0.1034	0.1034		0.1	0.0005418	0	0.0001763	0.001	0.1	103%	75	125	0%	
Nickel	A	mg/L	0.1025	0.1025		0.1	0.00122	0	0.0002288	0.0024200	1	101%	75	125	0%	
Potassium	A	mg/L	8.269	8.269		5	2.919	0	0.0765619	0.0261205	50	107%	75	125	0%	
Selenium	A	mg/L	0.0963	0.0963		0.1	0	0	0.0001357	0.001	1	96%	75	125	0%	
Silicon	A	mg/L	22.16	22.16		1	21.63	0	0.0422089	0.0053212	0.4		75	125	0%	A
Silver	A	mg/L	0.009597	0.009597		0.01	0	0	4.281E-05	0.001	0.04	96%	75	125	0%	
Sodium	A	mg/L	45.13	45.13		5	40.41	0	0.1019461	0.7330269	50		75	125	0%	A
Strontium	A	mg/L	0.2276	0.2276		0.1	0.1197	0	0.0002433	0.001	1	108%	75	125	0%	
Thallium	A	mg/L	0.09713	0.09713		0.1	0	0	0.0001114	0.001	1	97%	75	125	0%	
Thorium	A	mg/L	0.1018	0.1018		0.1	0	0	0.0003796	0.00415	1	102%	75	125	0%	
Tin	A	mg/L	0.09904	0.09904		0.1	0	0	0.0018932	0.0011175	0.1	99%	75	125	0%	
Titanium	A	mg/L	0.1673	0.1673		0.1	0.05529	0	0.0005733	0.001	1	112%	75	125	0%	
Uranium	A	mg/L	0.1005	0.1005		0.1	3.294E-05	0	1.699E-05	0.0003	1	100%	75	125	0%	
Vanadium	A	mg/L	0.1168	0.1168		0.1	0.0146	0	0.0039127	0.0021085	1	102%	75	125	0%	
Zinc	A	mg/L	0.2149	0.2149		0.1	0.1216	0	0.0011617	0.0065544	1	93%	75	125	0%	
Silica	C	mg/L	47.404672	47.404672		0	0	0	0.0902933	0.0113831	5	0%	0	0	0%	
Silicon as SiO2	C	mg/L	47.404672	47.404672		2.14	0	0	0.0902933	0.0113831	5	2215%	75	125	0%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968423	B22010141-001	ICPMS-6020-W-	MSD4		1/6/2022 11:58:1	1	162708	1/5/2022 8:3	1E+07	1E+07						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	1.338	1.338		0.5	0.701	1.419	0.0038747	0.0031975	1	127%	75	125	6%	S
Antimony	A	mg/L	0.1003	0.1003		0.1	0	0.09926	0.0002799	0.001	0.1	100%	75	125	1%	
Arsenic	A	mg/L	0.09559	0.09559		0.1	0.0004405	0.09694	0.0003412	0.001	1	95%	75	125	1%	
Barium	A	mg/L	0.1052	0.1052		0.1	0.008244	0.1058	0.0002682	0.001	1	97%	75	125	1%	
Beryllium	A	mg/L	0.05466	0.05466		0.05	0	0.05346	0.0001071	0.01	1	109%	75	125	2%	
Boron	A	mg/L	0.1476	0.1476		0.1	0.03304	0.1465	0.0203802	0.01467	1	115%	75	125	1%	
Cadmium	A	mg/L	0.04685	0.04685		0.05	0	0.04637	1.821E-05	0.005	1	94%	75	125	1%	
Calcium	A	mg/L	24.29	24.29		5	19.88	24.44	0.0372936	0.1103481	50	88%	75	125	1%	
Cerium	A	mg/L	0.1032	0.1032		0.1	0.0003041	0.09892	2.738E-05	0.001	0.1	103%	75	125	4%	
Chromium	A	mg/L	0.1097	0.1097		0.1	0.003036	0.1059	0.0015375	0.0015375	1	107%	75	125	4%	
Cobalt	A	mg/L	0.1071	0.1071		0.1	0.0003518	0.1075	9.541E-05	0.001	1	107%	75	125	0%	
Copper	A	mg/L	0.1082	0.1082		0.1	0.001636	0.1052	0.0008747	0.00198	1	107%	75	125	3%	
Iron	A	mg/L	1.031	1.031		0.5	0.5329	1.082	0.007424	0.00513	5	100%	75	125	5%	
Lanthanum	A	mg/L	0.1048	0.1048		0.1	0.0001279	0.1017	0.000055	0.001	0.1	105%	75	125	3%	
Lead	A	mg/L	0.103	0.103		0.1	8.877E-05	0.1014	7.716E-05	0.001	1	103%	88	115	2%	
Magnesium	A	mg/L	22.66	22.66		5	17.29	22.56	0.0104254	0.0081522	50	107%	75	125	0%	
Manganese	A	mg/L	0.5552	0.5552		0.5	0.007689	0.5415	0.0005399	0.001	1	110%	75	125	2%	
Molybdenum	A	mg/L	0.1008	0.1008		0.1	0.0005418	0.1034	0.0001763	0.001	0.1	100%	75	125	3%	
Nickel	A	mg/L	0.106	0.106		0.1	0.00122	0.1025	0.0002288	0.0024200	1	105%	75	125	3%	
Potassium	A	mg/L	8.678	8.678		5	2.919	8.269	0.0765619	0.0261205	50	115%	75	125	5%	
Selenium	A	mg/L	0.09607	0.09607		0.1	0	0.0963	0.0001357	0.001	1	96%	75	125	0%	
Silicon	A	mg/L	21.84	21.84		1	21.63	22.16	0.0422089	0.0053212	0.4		75	125	1%	A
Silver	A	mg/L	0.009487	0.009487		0.01	0	0.009597	4.281E-05	0.001	0.04	95%	75	125	1%	
Sodium	A	mg/L	45.62	45.62		5	40.41	45.13	0.1019461	0.7330269	50		75	125	1%	A
Strontium	A	mg/L	0.221	0.221		0.1	0.1197	0.2276	0.0002433	0.001	1	101%	75	125	3%	
Thallium	A	mg/L	0.1001	0.1001		0.1	0	0.09713	0.0001114	0.001	1	100%	75	125	3%	
Thorium	A	mg/L	0.1024	0.1024		0.1	0	0.1018	0.0003796	0.00415	1	102%	75	125	1%	
Tin	A	mg/L	0.1002	0.1002		0.1	0	0.09904	0.0018932	0.0011175	0.1	100%	75	125	1%	
Titanium	A	mg/L	0.1662	0.1662		0.1	0.05529	0.1673	0.0005733	0.001	1	111%	75	125	1%	
Uranium	A	mg/L	0.1012	0.1012		0.1	3.294E-05	0.1005	1.699E-05	0.0003	1	101%	75	125	1%	
Vanadium	A	mg/L	0.123	0.123		0.1	0.0146	0.1168	0.0039127	0.0021085	1	108%	75	125	5%	
Zinc	A	mg/L	0.2177	0.2177		0.1	0.1216	0.2149	0.0011617	0.0065544	1	96%	75	125	1%	
Silica	C	mg/L	46.720128	46.720128		0	0	47.404672	0.0902933	0.0113831	5	0%	0	0	1%	
Silicon as SiO2	C	mg/L	46.720128	46.720128		2.14	0	47.404672	0.0902933	0.0113831	5	2183%	75	125	1%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968424	Rinse	ICPMS-6020-W-	SAMP		1/7/2022 12:04:0	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.0000721	0		0	0	0	0.00042	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	0.00006405	0		0	0	0	0.00019	0.001	1	0%	0	0	0%	
Barium	A	mg/L	-2.228E-06	0		0	0	0	0.000042	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	2.003E-06	0		0	0	0	0.000025	0.001	1	0%	0	0	0%	
Calcium	A	mg/L	0.002721	0		0	0	0	0.02092	0.02092	50	0%	0	0	0%	L
Cerium	A	mg/L	3.232E-06	0		0	0	0	0.000012	0.001	0.1	0%	0	0	0%	
Iron	A	mg/L	-0.000146	0		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Lanthanum	A	mg/L	2.495E-06	0		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.00003106	0		0	0	0	0.000056	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	5.164E-06	0		0	0	0	0.00005	0.001	0.1	0%	0	0	0%	
Selenium	A	mg/L	0.00001565	0		0	0	0	0.00033	0.001	1	0%	0	0	0%	
Silver	A	mg/L	-7.407E-06	0		0	0	0	0.00002	0.001	0.04	0%	0	0	0%	
Strontium	A	mg/L	0.00001393	0		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0007166	0.0007166		0	0	0	0.000041	0.001	1	0%	0	0	0%	J
Thorium	A	mg/L	0.00001601	0		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Tin	A	mg/L	9.985E-07	0		0	0	0	0.00132	0.00132	0.1	0%	0	0	0%	
Uranium	A	mg/L	0.00000279	0		0	0	0	0.000052	0.0003	1	0%	0	0	0%	
Iron, Ferrous	C	mg/L	-0.000146	0		0	0	0	0.00119	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					
14968425	B22010142-001	ICPMS-6020-W-	SAMP		1/7/2022 12:10:1	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.0004168	0		0	0	0	0.00042	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	0.001379	0.001379		0	0	0	0.00019	0.001	1	0%	0	0	0%	
Barium	A	mg/L	0.02062	0.02062		0	0	0	0.000042	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0.0000163	0		0	0	0	0.000025	0.001	1	0%	0	0	0%	
Cerium	A	mg/L	2.401E-06	0		0	0	0	0.000012	0.001	0.1	0%	0	0	0%	
Lanthanum	A	mg/L	2.113E-06	0		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.00003375	0		0	0	0	0.000056	0.001	1	0%	0	0	0%	U
Molybdenum	A	mg/L	0.00461	0.00461		0	0	0	0.00005	0.001	0.1	0%	0	0	0%	
Selenium	A	mg/L	0.00009836	0		0	0	0	0.00033	0.001	1	0%	0	0	0%	
Silver	A	mg/L	-6.908E-05	0		0	0	0	0.00002	0.001	0.04	0%	0	0	0%	
Strontium	A	mg/L	0.1164	0.1164		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0003171	0.0003171		0	0	0	0.000041	0.001	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					
14968425	B22010142-001	ICPMS-6020-W-	SAMP		1/7/2022 12:10:1	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Thorium	A	mg/L	2.891E-06	0		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.0002916	0.0002916		0	0	0	0.000052	0.0003	1	0%	0	0	0%	J
Calcium	B	mg/L	13.65	13.65		0	0	0	0.02092	0.02092	50	0%	0	0	0%	D
Iron	B	mg/L	0.006515	0.006515		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Iron, Ferrous	B	mg/L	0.006515	0.006515		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Tin	B	mg/L	0.00001595	0		0	0	0	0.00132	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					
14968426	B22010142-001	ICPMS-6020-W-	SAMP		1/7/2022 12:16:2	1	162708	1/5/2022 8:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.0004651	0.0004651		0	0	0	0.0002799	0.001	0.1	0%	0	0	0%	J
Arsenic	A	mg/L	0.001588	0.001588		0	0	0	0.0003412	0.001	1	0%	0	0	0%	
Barium	A	mg/L	0.02239	0.02239		0	0	0	0.0002682	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	-5.155E-08	0		0	0	0	1.821E-05	0.005	1	0%	0	0	0%	U
Cerium	A	mg/L	0.0002244	0.0002244		0	0	0	2.738E-05	0.001	0.1	0%	0	0	0%	J
Lanthanum	A	mg/L	0.000103	0.000103		0	0	0	0.000055	0.001	0.1	0%	0	0	0%	J
Lead	A	mg/L	0.00008316	0.00008316		0	0	0	7.716E-05	0.001	1	0%	0	0	0%	J
Molybdenum	A	mg/L	0.004859	0.004859		0	0	0	0.0001763	0.001	0.1	0%	0	0	0%	
Selenium	A	mg/L	0.0001195	0		0	0	0	0.0001357	0.001	1	0%	0	0	0%	U
Silver	A	mg/L	-6.784E-05	0		0	0	0	4.281E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.1184	0.1184		0	0	0	0.0002433	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0002284	0.0002284		0	0	0	0.0001114	0.001	1	0%	0	0	0%	J
Uranium	A	mg/L	0.0003299	0.0003299		0	0	0	1.699E-05	0.0003	1	0%	0	0	0%	
Calcium	B	mg/L	14.33	14.33		0	0	0	0.0372936	0.1103481	50	0%	0	0	0%	D
Iron	B	mg/L	0.173	0.173		0	0	0	0.007424	0.00513	5	0%	0	0	0%	D
Thorium	B	mg/L	0.00007405	0		0	0	0	0.0003796	0.00415	1	0%	0	0	0%	UL
Tin	B	mg/L	0.0003533	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					
14968427	B22010143-001	ICPMS-6020-W-	SAMP		1/7/2022 12:22:2	1	R372863		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					
14968427	B22010143-001	ICPMS-6020-W-	SAMP		1/7/2022 12:22:2	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.0001928	0		0	0	0	0.00042	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	0.003367	0.003367		0	0	0	0.00019	0.001	1	0%	0	0	0%	
Barium	A	mg/L	0.03059	0.03059		0	0	0	0.000042	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0.00001681	0		0	0	0	0.000025	0.001	1	0%	0	0	0%	
Cerium	A	mg/L	2.378E-06	0		0	0	0	0.000012	0.001	0.1	0%	0	0	0%	
Lanthanum	A	mg/L	1.402E-06	0		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.00004357	0		0	0	0	0.000056	0.001	1	0%	0	0	0%	U
Molybdenum	A	mg/L	0.009839	0.009839		0	0	0	0.00005	0.001	0.1	0%	0	0	0%	
Selenium	A	mg/L	0.0006711	0.0006711		0	0	0	0.00033	0.001	1	0%	0	0	0%	J
Silver	A	mg/L	-0.0000695	0		0	0	0	0.00002	0.001	0.04	0%	0	0	0%	
Strontium	A	mg/L	0.2931	0.2931		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0001137	0.0001137		0	0	0	0.000041	0.001	1	0%	0	0	0%	J
Thorium	A	mg/L	3.028E-06	0		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.0004521	0.0004521		0	0	0	0.000052	0.0003	1	0%	0	0	0%	
Calcium	B	mg/L	27.3	27.3		0	0	0	0.02092	0.02092	50	0%	0	0	0%	D
Iron	B	mg/L	0.0009603	0		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Iron, Ferrous	B	mg/L	0.0009603	0		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Tin	B	mg/L	0.0001816	0		0	0	0	0.00132	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					
14968428	B22010143-001	ICPMS-6020-W-	SAMP		1/7/2022 12:28:3	1	162708	1/5/2022 8:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.0002281	0		0	0	0	0.0002799	0.001	0.1	0%	0	0	0%	U
Arsenic	A	mg/L	0.003553	0.003553		0	0	0	0.0003412	0.001	1	0%	0	0	0%	
Barium	A	mg/L	0.03206	0.03206		0	0	0	0.0002682	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	1.915E-07	0		0	0	0	1.821E-05	0.005	1	0%	0	0	0%	U
Cerium	A	mg/L	0.00006594	0.00006594		0	0	0	2.738E-05	0.001	0.1	0%	0	0	0%	J
Lanthanum	A	mg/L	0.00003012	0		0	0	0	0.000055	0.001	0.1	0%	0	0	0%	U
Lead	A	mg/L	0.00008126	0.00008126		0	0	0	7.716E-05	0.001	1	0%	0	0	0%	J
Molybdenum	A	mg/L	0.01025	0.01025		0	0	0	0.0001763	0.001	0.1	0%	0	0	0%	
Selenium	A	mg/L	0.0007076	0.0007076		0	0	0	0.0001357	0.001	1	0%	0	0	0%	J
Silver	A	mg/L	-6.435E-05	0		0	0	0	4.281E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.2902	0.2902		0	0	0	0.0002433	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0001083	0		0	0	0	0.0001114	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					
14968428	B22010143-001	ICPMS-6020-W-	SAMP		1/7/2022 12:28:3	1	162708	1/5/2022 8:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Uranium	A	mg/L	0.0004993	0.0004993		0	0	0	1.699E-05	0.0003	1	0%	0	0	0%	
Calcium	B	mg/L	26.94	26.94		0	0	0	0.0372936	0.1103481	50	0%	0	0	0%	D
Iron	B	mg/L	0.0506	0.0506		0	0	0	0.007424	0.00513	5	0%	0	0	0%	D
Thorium	B	mg/L	0.00003282	0		0	0	0	0.0003796	0.00415	1	0%	0	0	0%	UL
Tin	B	mg/L	0.000515	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					
14968429	B22010145-001	ICPMS-6020-W-	SAMP		1/7/2022 12:34:4	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.0000105	0		0	0	0	0.00042	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	0.0001105	0		0	0	0	0.00019	0.001	1	0%	0	0	0%	
Barium	A	mg/L	0.002373	0.002373		0	0	0	0.000042	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0.00001515	0		0	0	0	0.000025	0.001	1	0%	0	0	0%	
Cerium	A	mg/L	2.937E-06	0		0	0	0	0.000012	0.001	0.1	0%	0	0	0%	
Lanthanum	A	mg/L	6.558E-07	0		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.0000361	0		0	0	0	0.000056	0.001	1	0%	0	0	0%	U
Molybdenum	A	mg/L	0.006196	0.006196		0	0	0	0.00005	0.001	0.1	0%	0	0	0%	
Selenium	A	mg/L	-9.413E-07	0		0	0	0	0.00033	0.001	1	0%	0	0	0%	
Silver	A	mg/L	-7.047E-05	0		0	0	0	0.00002	0.001	0.04	0%	0	0	0%	
Strontium	A	mg/L	0.1542	0.1542		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.00006335	0.00006335		0	0	0	0.000041	0.001	1	0%	0	0	0%	J
Thorium	A	mg/L	-2.305E-07	0		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	5.659E-06	0		0	0	0	0.000052	0.0003	1	0%	0	0	0%	
Calcium	B	mg/L	17.82	17.82		0	0	0	0.02092	0.02092	50	0%	0	0	0%	D
Iron	B	mg/L	0.1086	0.1086		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Iron, Ferrous	B	mg/L	0.1086	0.1086		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Tin	B	mg/L	-5.423E-05	0		0	0	0	0.00132	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					
14968430	B22010145-001	ICPMS-6020-W-	SAMP		1/7/2022 12:40:5	1	162708	1/5/2022 8:3	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					
14968430	B22010145-001	ICPMS-6020-W-	SAMP		1/7/2022 12:40:5	1	162708	1/5/2022 8:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.00002545	0		0	0	0	0.0002799	0.001	0.1	0%	0	0	0%	U
Arsenic	A	mg/L	0.0003225	0		0	0	0	0.0003412	0.001	1	0%	0	0	0%	U
Barium	A	mg/L	0.002446	0.002446		0	0	0	0.0002682	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	-1.705E-07	0		0	0	0	1.821E-05	0.005	1	0%	0	0	0%	U
Cerium	A	mg/L	4.869E-06	0		0	0	0	2.738E-05	0.001	0.1	0%	0	0	0%	U
Lanthanum	A	mg/L	2.542E-06	0		0	0	0	0.000055	0.001	0.1	0%	0	0	0%	U
Lead	A	mg/L	0.00002964	0		0	0	0	7.716E-05	0.001	1	0%	0	0	0%	U
Molybdenum	A	mg/L	0.006809	0.006809		0	0	0	0.0001763	0.001	0.1	0%	0	0	0%	
Selenium	A	mg/L	0.00001803	0		0	0	0	0.0001357	0.001	1	0%	0	0	0%	U
Silver	A	mg/L	-7.018E-05	0		0	0	0	4.281E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.155	0.155		0	0	0	0.0002433	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0000798	0		0	0	0	0.0001114	0.001	1	0%	0	0	0%	U
Uranium	A	mg/L	6.075E-06	0		0	0	0	1.699E-05	0.0003	1	0%	0	0	0%	U
Calcium	B	mg/L	18.87	18.87		0	0	0	0.0372936	0.1103481	50	0%	0	0	0%	D
Iron	B	mg/L	0.1467	0.1467		0	0	0	0.007424	0.00513	5	0%	0	0	0%	D
Thorium	B	mg/L	0.00001292	0		0	0	0	0.0003796	0.00415	1	0%	0	0	0%	UL
Tin	B	mg/L	0.0003478	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					
14968431	CCV	ICPMS-6020-W-	CCV		1/7/2022 12:47:0	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.05558	0.05558		0.05	0	0	0.00086	0.001	1	111%	90	110	0%	S
Antimony	A	mg/L	0.05129	0.05129		0.05	0	0	0.00042	0.001	0.1	103%	90	110	0%	
Arsenic	A	mg/L	0.05365	0.05365		0.05	0	0	0.00019	0.001	1	107%	90	110	0%	
Barium	A	mg/L	0.05419	0.05419		0.05	0	0	0.000042	0.001	1	108%	90	110	0%	
Beryllium	A	mg/L	0.05668	0.05668		0.05	0	0	0.00012	0.001	1	113%	90	110	0%	S
Boron	A	mg/L	0.05775	0.05775		0.05	0	0	0.00561	0.00561	1	116%	90	110	0%	S
Cadmium	A	mg/L	0.05098	0.05098		0.05	0	0	0.000025	0.001	1	102%	90	110	0%	
Calcium	A	mg/L	13.26	13.26		12.5	0	0	0.02092	0.02092	50	106%	90	110	0%	
Cerium	A	mg/L	0.05037	0.05037		0.05	0	0	0.000012	0.001	0.1	101%	90	110	0%	
Chromium	A	mg/L	0.05538	0.05538		0.05	0	0	0.00018	0.001	1	111%	90	110	0%	S
Cobalt	A	mg/L	0.05645	0.05645		0.05	0	0	0.000042	0.001	1	113%	90	110	0%	S
Copper	A	mg/L	0.05761	0.05761		0.05	0	0	0.00027	0.001	1	115%	90	110	0%	S
Iron	A	mg/L	1.319	1.319		1.3	0	0	0.00119	0.00119	5	101%	90	110	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968431	CCV	ICPMS-6020-W-	CCV		1/7/2022 12:47:0	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Lanthanum	A	mg/L	0.05081	0.05081		0.05	0	0	0.000011	0.001	0.1	102%	90	110	0%	
Lead	A	mg/L	0.05129	0.05129		0.05	0	0	0.000056	0.001	1	103%	90	110	0%	
Magnesium	A	mg/L	14.13	14.13		12.5	0	0	0.00564	0.00564	50	113%	90	110	0%	S
Manganese	A	mg/L	0.05551	0.05551		0.05	0	0	0.000095	0.001	1	111%	90	110	0%	S
Mercury	A	mg/L	0.0009263	0.0009263		0.001	0	0	0.00016	0.001	0.002	93%	90	110	0%	
Molybdenum	A	mg/L	0.05142	0.05142		0.05	0	0	0.00005	0.001	0.1	103%	90	110	0%	
Nickel	A	mg/L	0.05677	0.05677		0.05	0	0	0.00063	0.001	1	114%	90	110	0%	S
Potassium	A	mg/L	14.21	14.21		12.5	0	0	0.08139	0.08139	50	114%	90	110	0%	S
Selenium	A	mg/L	0.05167	0.05167		0.05	0	0	0.00033	0.001	1	103%	90	110	0%	
Silicon	A	mg/L	0.2361	0.2361		0.2	0	0	0.01223	0.1	0.4	118%	90	110	0%	S
Silver	A	mg/L	0.0203	0.0203		0.02	0	0	0.00002	0.001	0.04	102%	90	110	0%	
Sodium	A	mg/L	14.16	14.16		12.5	0	0	0.02171	0.02171	50	113%	90	110	0%	S
Strontium	A	mg/L	0.05357	0.05357		0.05	0	0	0.00014	0.001	1	107%	90	110	0%	
Thallium	A	mg/L	0.04943	0.04943		0.05	0	0	0.000041	0.001	1	99%	90	110	0%	
Thorium	A	mg/L	0.05406	0.05406		0.05	0	0	0.00061	0.001	1	108%	90	110	0%	
Tin	A	mg/L	0.0512	0.0512		0.05	0	0	0.00132	0.00132	0.1	102%	90	110	0%	
Titanium	A	mg/L	0.05758	0.05758		0.05	0	0	0.000094	0.001	1	115%	90	110	0%	S
Uranium	A	mg/L	0.05158	0.05158		0.05	0	0	0.000052	0.0003	1	103%	90	110	0%	
Vanadium	A	mg/L	0.05772	0.05772		0.05	0	0	0.0013	0.0013	1	115%	90	110	0%	S
Zinc	A	mg/L	0.0555	0.0555		0.05	0	0	0.00273	0.00273	1	111%	90	110	0%	S
Iron, Ferrous	C	mg/L	1.319	1.319		0	0	0	0.00119	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					
14968432	CCB	ICPMS-6020-W-	CCB		1/7/2022 12:52:5	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.0004241	0.0004241		0	0	0	0.00086	0.001	1	0%			0%	
Antimony	A	mg/L	0.00004775	0.00004775		0	0	0	0.00042	0.001	0.1	0%			0%	
Arsenic	A	mg/L	0.0000543	0.0000543		0	0	0	0.00019	0.001	1	0%			0%	
Barium	A	mg/L	4.157E-06	4.157E-06		0	0	0	0.000042	0.001	1	0%			0%	
Beryllium	A	mg/L	8.342E-06	8.342E-06		0	0	0	0.00012	0.001	1	0%			0%	
Boron	A	mg/L	0.0006982	0.0006982		0	0	0	0.00561	0.00561	1	0%			0%	
Cadmium	A	mg/L	3.078E-06	3.078E-06		0	0	0	0.000025	0.001	1	0%			0%	
Calcium	A	mg/L	0.002121	0.002121		0	0	0	0.02092	0.02092	50	0%			0%	
Cerium	A	mg/L	7.964E-07	7.964E-07		0	0	0	0.000012	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					
14968432	CCB	ICPMS-6020-W-	CCB		1/7/2022 12:52:5	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Chromium	A	mg/L	0.00001259	0.00001259		0	0	0	0.00018	0.001	1	0%			0%	
Cobalt	A	mg/L	1.784E-06	1.784E-06		0	0	0	0.000042	0.001	1	0%			0%	
Copper	A	mg/L	-4.353E-07	-4.353E-07		0	0	0	0.00027	0.001	1	0%			0%	
Iron	A	mg/L	-0.0001026	-0.0001026		0	0	0	0.00119	0.00119	5	0%			0%	
Lanthanum	A	mg/L	1.162E-06	1.162E-06		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.0000178	0.0000178		0	0	0	0.000056	0.001	1	0%			0%	
Magnesium	A	mg/L	0.004356	0.004356		0	0	0	0.00564	0.00564	50	0%			0%	
Manganese	A	mg/L	0.00003926	0.00003926		0	0	0	0.000095	0.001	1	0%			0%	
Mercury	A	mg/L	-1.545E-05	-1.545E-05		0	0	0	0.00016	0.001	0.002	0%			0%	
Molybdenum	A	mg/L	8.791E-06	8.791E-06		0	0	0	0.00005	0.001	0.1	0%			0%	
Nickel	A	mg/L	0.00002377	0.00002377		0	0	0	0.00063	0.001	1	0%			0%	
Potassium	A	mg/L	0.01797	0.01797		0	0	0	0.08139	0.08139	50	0%			0%	
Selenium	A	mg/L	0.00001818	0.00001818		0	0	0	0.00033	0.001	1	0%			0%	
Silicon	A	mg/L	0.006313	0.006313		0	0	0	0.01223	0.1	0.4	0%	0	0	0%	
Silver	A	mg/L	-5.422E-06	-5.422E-06		0	0	0	0.00002	0.001	0.04	0%			0%	
Sodium	A	mg/L	0.04084	0.04084		0	0	0	0.02171	0.02171	50	0%			0%	
Strontium	A	mg/L	0.00001141	0.00001141		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0003274	0.0003274		0	0	0	0.000041	0.001	1	0%	0	0	0%	
Thorium	A	mg/L	0.0000165	0.0000165		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Tin	A	mg/L	8.658E-06	8.658E-06		0	0	0	0.00132	0.00132	0.1	0%	0	0	0%	
Titanium	A	mg/L	0.00004093	0.00004093		0	0	0	0.000094	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	1.145E-06	1.145E-06		0	0	0	0.000052	0.0003	1	0%	0	0	0%	
Vanadium	A	mg/L	0.001549	0.001549		0	0	0	0.0013	0.0013	1	0%	0	0	0%	
Zinc	A	mg/L	0.00002039	0.00002039		0	0	0	0.00273	0.00273	1	0%	0	0	0%	
Iron, Ferrous	C	mg/L	-0.0001026	-0.0001026		0	0	0	0.00119	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					
14968433	B22010148-001	ICPMS-6020-W-	SAMP		1/7/2022 12:59:0	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.00006228	0		0	0	0	0.00042	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	0.00177	0.00177		0	0	0	0.00019	0.001	1	0%	0	0	0%	
Barium	A	mg/L	0.009979	0.009979		0	0	0	0.000042	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0.00001774	0		0	0	0	0.000025	0.001	1	0%	0	0	0%	
Cerium	A	mg/L	8.994E-07	0		0	0	0	0.000012	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					
14968433	B22010148-001	ICPMS-6020-W-	SAMP		1/7/2022 12:59:0	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Lanthanum	A	mg/L	9.26E-07	0		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.00004667	0		0	0	0	0.000056	0.001	1	0%	0	0	0%	U
Molybdenum	A	mg/L	0.004361	0.004361		0	0	0	0.00005	0.001	0.1	0%	0	0	0%	
Selenium	A	mg/L	0.0003842	0.0003842		0	0	0	0.00033	0.001	1	0%	0	0	0%	J
Silver	A	mg/L	-6.514E-05	0		0	0	0	0.00002	0.001	0.04	0%	0	0	0%	
Strontium	A	mg/L	0.3037	0.3037		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0001437	0.0001437		0	0	0	0.000041	0.001	1	0%	0	0	0%	J
Thorium	A	mg/L	1.705E-06	0		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	0.0001938	0.0001938		0	0	0	0.000052	0.0003	1	0%	0	0	0%	J
Calcium	B	mg/L	44.5	44.5		0	0	0	0.02092	0.02092	50	0%	0	0	0%	D
Iron	B	mg/L	0.01672	0.01672		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Iron, Ferrous	B	mg/L	0.01672	0.01672		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Tin	B	mg/L	0.00001654	0		0	0	0	0.00132	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					
14968434	B22010148-001	ICPMS-6020-W-	SAMP		1/7/2022 1:05:16	1	162708	1/5/2022 8:3	0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.00009025	0		0	0	0	0.0002799	0.001	0.1	0%	0	0	0%	U
Arsenic	A	mg/L	0.002098	0.002098		0	0	0	0.0003412	0.001	1	0%	0	0	0%	
Barium	A	mg/L	0.01058	0.01058		0	0	0	0.0002682	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	1.357E-06	0		0	0	0	1.821E-05	0.005	1	0%	0	0	0%	U
Cerium	A	mg/L	0.00005685	0.00005685		0	0	0	2.738E-05	0.001	0.1	0%	0	0	0%	J
Lanthanum	A	mg/L	0.00002614	0		0	0	0	0.000055	0.001	0.1	0%	0	0	0%	U
Lead	A	mg/L	0.00008452	0.00008452		0	0	0	7.716E-05	0.001	1	0%	0	0	0%	J
Molybdenum	A	mg/L	0.004858	0.004858		0	0	0	0.0001763	0.001	0.1	0%	0	0	0%	
Selenium	A	mg/L	0.0003891	0.0003891		0	0	0	0.0001357	0.001	1	0%	0	0	0%	J
Silver	A	mg/L	-4.867E-05	0		0	0	0	4.281E-05	0.001	0.04	0%	0	0	0%	U
Strontium	A	mg/L	0.3188	0.3188		0	0	0	0.0002433	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0001163	0.0001163		0	0	0	0.0001114	0.001	1	0%	0	0	0%	J
Uranium	A	mg/L	0.0002073	0.0002073		0	0	0	1.699E-05	0.0003	1	0%	0	0	0%	J
Calcium	B	mg/L	45.21	45.21		0	0	0	0.0372936	0.1103481	50	0%	0	0	0%	D
Iron	B	mg/L	0.1906	0.1906		0	0	0	0.007424	0.00513	5	0%	0	0	0%	D
Thorium	B	mg/L	0.00002869	0		0	0	0	0.0003796	0.00415	1	0%	0	0	0%	UL
Tin	B	mg/L	0.0004915	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					
14968434	B22010148-001	ICPMS-6020-W-	SAMP		1/7/2022 1:05:16	1	162708	1/5/2022 8:3	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					
14968435	CCV	ICPMS-6020-W-	CCV		1/7/2022 1:11:23	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q

Aluminum	A	mg/L	0.05615	0.05615		0.05	0	0	0.00086	0.001	1	112%	90	110	0%	S
Antimony	A	mg/L	0.05058	0.05058		0.05	0	0	0.00042	0.001	0.1	101%	90	110	0%	
Arsenic	A	mg/L	0.0518	0.0518		0.05	0	0	0.00019	0.001	1	104%	90	110	0%	
Barium	A	mg/L	0.0537	0.0537		0.05	0	0	0.000042	0.001	1	107%	90	110	0%	
Beryllium	A	mg/L	0.05639	0.05639		0.05	0	0	0.00012	0.001	1	113%	90	110	0%	S
Boron	A	mg/L	0.05748	0.05748		0.05	0	0	0.00561	0.00561	1	115%	90	110	0%	S
Cadmium	A	mg/L	0.05029	0.05029		0.05	0	0	0.000025	0.001	1	101%	90	110	0%	
Calcium	A	mg/L	13.35	13.35		12.5	0	0	0.02092	0.02092	50	107%	90	110	0%	
Cerium	A	mg/L	0.04854	0.04854		0.05	0	0	0.000012	0.001	0.1	97%	90	110	0%	
Chromium	A	mg/L	0.05457	0.05457		0.05	0	0	0.00018	0.001	1	109%	90	110	0%	
Cobalt	A	mg/L	0.05799	0.05799		0.05	0	0	0.000042	0.001	1	116%	90	110	0%	S
Copper	A	mg/L	0.05582	0.05582		0.05	0	0	0.00027	0.001	1	112%	90	110	0%	S
Iron	A	mg/L	1.337	1.337		1.3	0	0	0.00119	0.00119	5	103%	90	110	0%	
Lanthanum	A	mg/L	0.04948	0.04948		0.05	0	0	0.000011	0.001	0.1	99%	90	110	0%	
Lead	A	mg/L	0.05215	0.05215		0.05	0	0	0.000056	0.001	1	104%	90	110	0%	
Magnesium	A	mg/L	13.49	13.49		12.5	0	0	0.00564	0.00564	50	108%	90	110	0%	
Manganese	A	mg/L	0.05384	0.05384		0.05	0	0	0.000095	0.001	1	108%	90	110	0%	
Mercury	A	mg/L	0.0008911	0.0008911		0.001	0	0	0.00016	0.001	0.002	89%	90	110	0%	S
Molybdenum	A	mg/L	0.05129	0.05129		0.05	0	0	0.00005	0.001	0.1	103%	90	110	0%	
Nickel	A	mg/L	0.0549	0.0549		0.05	0	0	0.00063	0.001	1	110%	90	110	0%	
Potassium	A	mg/L	13.75	13.75		12.5	0	0	0.08139	0.08139	50	110%	90	110	0%	
Selenium	A	mg/L	0.05206	0.05206		0.05	0	0	0.00033	0.001	1	104%	90	110	0%	
Silicon	A	mg/L	0.2297	0.2297		0.2	0	0	0.01223	0.1	0.4	115%	90	110	0%	S
Silver	A	mg/L	0.02022	0.02022		0.02	0	0	0.00002	0.001	0.04	101%	90	110	0%	
Sodium	A	mg/L	13.4	13.4		12.5	0	0	0.02171	0.02171	50	107%	90	110	0%	
Strontium	A	mg/L	0.05218	0.05218		0.05	0	0	0.00014	0.001	1	104%	90	110	0%	
Thallium	A	mg/L	0.04959	0.04959		0.05	0	0	0.000041	0.001	1	99%	90	110	0%	
Thorium	A	mg/L	0.05237	0.05237		0.05	0	0	0.00061	0.001	1	105%	90	110	0%	
Tin	A	mg/L	0.05083	0.05083		0.05	0	0	0.00132	0.00132	0.1	102%	90	110	0%	
Titanium	A	mg/L	0.0584	0.0584		0.05	0	0	0.000094	0.001	1	117%	90	110	0%	S



Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968435	CCV	ICPMS-6020-W-	CCV		1/7/2022 1:11:23	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Uranium	A	mg/L	0.05202	0.05202		0.05	0	0	0.000052	0.0003	1	104%	90	110	0%	
Vanadium	A	mg/L	0.05662	0.05662		0.05	0	0	0.0013	0.0013	1	113%	90	110	0%	S
Zinc	A	mg/L	0.05248	0.05248		0.05	0	0	0.00273	0.00273	1	105%	90	110	0%	
Iron, Ferrous	C	mg/L	1.337	1.337		0	0	0	0.00119	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					
14968436	CCB	ICPMS-6020-W-	CCB		1/7/2022 1:17:21	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.0005217	0.0005217		0	0	0	0.00086	0.001	1	0%				0%
Antimony	A	mg/L	0.00004401	0.00004401		0	0	0	0.00042	0.001	0.1	0%				0%
Arsenic	A	mg/L	0.00005091	0.00005091		0	0	0	0.00019	0.001	1	0%				0%
Barium	A	mg/L	3.607E-06	3.607E-06		0	0	0	0.000042	0.001	1	0%				0%
Beryllium	A	mg/L	5.845E-06	5.845E-06		0	0	0	0.00012	0.001	1	0%				0%
Boron	A	mg/L	0.0008634	0.0008634		0	0	0	0.00561	0.00561	1	0%				0%
Cadmium	A	mg/L	1.237E-06	1.237E-06		0	0	0	0.000025	0.001	1	0%				0%
Calcium	A	mg/L	0.00231	0.00231		0	0	0	0.02092	0.02092	50	0%				0%
Cerium	A	mg/L	9.274E-07	9.274E-07		0	0	0	0.000012	0.001	0.1	0%	0	0		0%
Chromium	A	mg/L	6.598E-06	6.598E-06		0	0	0	0.00018	0.001	1	0%				0%
Cobalt	A	mg/L	6.187E-06	6.187E-06		0	0	0	0.000042	0.001	1	0%				0%
Copper	A	mg/L	1.782E-07	1.782E-07		0	0	0	0.00027	0.001	1	0%				0%
Iron	A	mg/L	-0.0001272	-0.0001272		0	0	0	0.00119	0.00119	5	0%				0%
Lanthanum	A	mg/L	0.00000128	0.00000128		0	0	0	0.000011	0.001	0.1	0%	0	0		0%
Lead	A	mg/L	0.0000142	0.0000142		0	0	0	0.000056	0.001	1	0%				0%
Magnesium	A	mg/L	0.004649	0.004649		0	0	0	0.00564	0.00564	50	0%				0%
Manganese	A	mg/L	0.00002154	0.00002154		0	0	0	0.000095	0.001	1	0%				0%
Mercury	A	mg/L	-1.818E-05	-1.818E-05		0	0	0	0.00016	0.001	0.002	0%				0%
Molybdenum	A	mg/L	7.325E-06	7.325E-06		0	0	0	0.00005	0.001	0.1	0%				0%
Nickel	A	mg/L	0.00001248	0.00001248		0	0	0	0.00063	0.001	1	0%				0%
Potassium	A	mg/L	0.02069	0.02069		0	0	0	0.08139	0.08139	50	0%				0%
Selenium	A	mg/L	0.00001384	0.00001384		0	0	0	0.00033	0.001	1	0%				0%
Silicon	A	mg/L	0.005026	0.005026		0	0	0	0.01223	0.1	0.4	0%	0	0		0%
Silver	A	mg/L	-4.122E-06	-4.122E-06		0	0	0	0.00002	0.001	0.04	0%				0%
Sodium	A	mg/L	0.04397	0.04397		0	0	0	0.02171	0.02171	50	0%				0%
Strontium	A	mg/L	0.00001319	0.00001319		0	0	0	0.00014	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					
14968436	CCB	ICPMS-6020-W-	CCB		1/7/2022 1:17:21	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Thallium	A	mg/L	0.0003066	0.0003066		0	0	0	0.000041	0.001	1	0%	0	0	0%	
Thorium	A	mg/L	0.00001565	0.00001565		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Tin	A	mg/L	0.00004098	0.00004098		0	0	0	0.00132	0.00132	0.1	0%	0	0	0%	
Titanium	A	mg/L	0.00003815	0.00003815		0	0	0	0.000094	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	1.199E-06	1.199E-06		0	0	0	0.000052	0.0003	1	0%	0	0	0%	
Vanadium	A	mg/L	0.001559	0.001559		0	0	0	0.0013	0.0013	1	0%	0	0	0%	
Zinc	A	mg/L	0.00001204	0.00001204		0	0	0	0.00273	0.00273	1	0%	0	0	0%	
Iron, Ferrous	C	mg/L	-0.0001272	-0.0001272		0	0	0	0.00119	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					
14968437	Cal Blk	ICPMS-6020-W-	SAMP		1/7/2022 1:23:31	1	R372863		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	0.00042	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	0	0		0	0	0	0.00019	0.001	1	0%	0	0	0%	
Barium	A	mg/L	0	0		0	0	0	0.000042	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0	0		0	0	0	0.000025	0.001	1	0%	0	0	0%	
Calcium	A	mg/L	0	0		0	0	0	0.02092	0.02092	50	0%	0	0	0%	L
Chromium	A	mg/L	0	0		0	0	0	0.00018	0.001	1	0%	0	0	0%	
Iron	A	mg/L	0	0		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Lanthanum	A	mg/L	0	0		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0	0		0	0	0	0.000056	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	0	0		0	0	0	0.00005	0.001	0.1	0%	0	0	0%	
Nickel	A	mg/L	0	0		0	0	0	0.00063	0.001	1	0%	0	0	0%	
Potassium	A	mg/L	0	0		0	0	0	0.08139	0.08139	50	0%	0	0	0%	L
Selenium	A	mg/L	0	0		0	0	0	0.00033	0.001	1	0%	0	0	0%	
Silver	A	mg/L	0	0		0	0	0	0.00002	0.001	0.04	0%	0	0	0%	
Strontium	A	mg/L	0	0		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0	0		0	0	0	0.000041	0.001	1	0%	0	0	0%	
Thorium	A	mg/L	0	0		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Tin	A	mg/L	0	0		0	0	0	0.00132	0.00132	0.1	0%	0	0	0%	
Uranium	A	mg/L	0	0		0	0	0	0.000052	0.0003	1	0%	0	0	0%	
Iron, Ferrous	C	mg/L	0	0		0	0	0	0.00119	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					
14968438	0.025 ppb STD	ICPMS-6020B-C Cal1			1/7/2022 1:29:49	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	-0.000648	-0.000648		0	0	0		0.01		0%			0%	
Antimony	A	mg/L	0.00002289	0.00002289		0	0	0		0.001		0%			0%	
Arsenic	A	mg/L	0.00003672	0.00003672		0.000025	0	0		0.001		147%	80	120	0%	S
Barium	A	mg/L	0.00001451	0.00001451		0.000025	0	0		0.0003		58%	80	120	0%	S
Beryllium	A	mg/L	0.00002911	0.00002911		0.000025	0	0		0.001		116%	80	120	0%	
Boron	A	mg/L	-0.0003368	-0.0003368		0	0	0		0.1		0%			0%	
Cadmium	A	mg/L	0.00003008	0.00003008		0.000025	0	0		0.001		120%	80	120	0%	
Calcium	A	mg/L	0.008555	0.008555		0	0	0		1		0%			0%	
Cerium	A	mg/L	0.00002588	0.00002588		0.000025	0	0		0.001		104%	80	120	0%	
Chromium	A	mg/L	0.00003204	0.00003204		0.000025	0	0		0.001		128%	80	120	0%	S
Cobalt	A	mg/L	0.00003251	0.00003251		0.000025	0	0		0.001		130%	80	120	0%	S
Copper	A	mg/L	0.00001255	0.00001255		0	0	0		0.005		0%			0%	
Iron	A	mg/L	-0.002098	-0.002098		0	0	0		0.01		0%			0%	
Lanthanum	A	mg/L	0.00002717	0.00002717		0.000025	0	0		0.001		109%	80	120	0%	
Lead	A	mg/L	0.00002697	0.00002697		0.000025	0	0		0.001		108%	80	120	0%	
Lithium	A	mg/L	0.0002914	0.0002914		0.0003125	0	0		1		93%	80	120	0%	
Magnesium	A	mg/L	0.007678	0.007678		0	0	0		1		0%			0%	
Manganese	A	mg/L	0.00002912	0.00002912		0	0	0		0.001		0%			0%	
Mercury	A	mg/L	4.073E-07	4.073E-07		0	0	0		0.001		0%			0%	
Molybdenum	A	mg/L	0.00002575	0.00002575		0	0	0		0.001		0%			0%	
Nickel	A	mg/L	0.00004424	0.00004424		0	0	0		0.005		0%			0%	
Potassium	A	mg/L	0.004276	0.004276		0.00625	0	0		1		68%	80	120	0%	S
Selenium	A	mg/L	0.00002422	0.00002422		0.000025	0	0		0.005		97%	80	120	0%	
Silicon	A	mg/L	0.0001494	0.0001494		0	0	0		0.1		0%			0%	
Silver	A	mg/L	0.00002284	0.00002284		0	0	0		0.001		0%			0%	
Sodium	A	mg/L	0.003593	0.003593		0.00625	0	0		1		57%	80	120	0%	S
Strontium	A	mg/L	0.00003458	0.00003458		0	0	0		0.001		0%	80	120	0%	
Thallium	A	mg/L	-6.477E-05	-6.477E-05		0	0	0		0.001		0%			0%	
Thorium	A	mg/L	0.00001787	0.00001787		0	0	0		0.05		0%			0%	
Tin	A	mg/L	0.00009165	0.00009165		0	0	0		0.001		0%			0%	
Titanium	A	mg/L	0.00005315	0.00005315		0	0	0		0.001		0%			0%	
Uranium	A	mg/L	0.00002528	0.00002528		0.000025	0	0		0.001		101%	80	120	0%	
Vanadium	A	mg/L	0.0001764	0.0001764		0	0	0		0.005		0%			0%	
Zinc	A	mg/L	0.0001225	0.0001225		0	0	0		0.01		0%			0%	
Iron, Ferrous	C	mg/L	-0.002098	-0.002098		0.000025	0	0		0.01	5	-8392%	80	120	0%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968438	0.025 ppb STD	ICPMS-6020B-C Cal1			1/7/2022 1:29:49	1	R372863		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	0.00031972	0.00031972		0.0000535	0	0		0.214	0.9	598%	80	120	0%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968439	0.05 ppb STD	ICPMS-6020B-C Cal2			1/7/2022 1:36:08	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	-0.0004765	-0.0004765		0	0	0		0.01		0%				0%
Antimony	A	mg/L	0.0000477	0.0000477		0.00005	0	0		0.001		95%	80	120		0%
Arsenic	A	mg/L	0.00007352	0.00007352		0.00005	0	0		0.001		147%	80	120		S
Barium	A	mg/L	0.00004824	0.00004824		0.00005	0	0		0.0003		96%	80	120		0%
Beryllium	A	mg/L	0.00005348	0.00005348		0.00005	0	0		0.001		107%	80	120		0%
Boron	A	mg/L	-0.0006974	-0.0006974		0	0	0		0.1		0%				0%
Cadmium	A	mg/L	0.00005513	0.00005513		0.00005	0	0		0.001		110%	80	120		0%
Calcium	A	mg/L	0.01614	0.01614		0.0125	0	0		1		129%	80	120		S
Cerium	A	mg/L	0.00005719	0.00005719		0.00005	0	0		0.001		114%	80	120		0%
Chromium	A	mg/L	0.00006634	0.00006634		0.00005	0	0		0.001		133%	80	120		S
Cobalt	A	mg/L	0.00007092	0.00007092		0	0	0		0.001		0%				0%
Copper	A	mg/L	0.00006303	0.00006303		0.00005	0	0		0.005		126%	80	120		S
Iron	A	mg/L	-0.001276	-0.001276		0.00125	0	0		0.01		-102%	80	120		S
Lanthanum	A	mg/L	0.00005388	0.00005388		0.00005	0	0		0.001		108%	80	120		0%
Lead	A	mg/L	0.00005588	0.00005588		0.00005	0	0		0.001		112%	80	120		0%
Lithium	A	mg/L	0.000588	0.000588		0.000625	0	0		1		94%	80	120		0%
Magnesium	A	mg/L	0.01502	0.01502		0.0125	0	0		1		120%	80	120		0%
Manganese	A	mg/L	0.00005853	0.00005853		0.00005	0	0		0.001		117%	80	120		0%
Mercury	A	mg/L	-3.057E-06	-3.057E-06		0	0	0		0.001		0%				0%
Molybdenum	A	mg/L	0.00006049	0.00006049		0.00005	0	0		0.001		121%	80	120		S
Nickel	A	mg/L	0.00006871	0.00006871		0	0	0		0.005		0%				0%
Potassium	A	mg/L	0.01473	0.01473		0.0125	0	0		1		118%	80	120		0%
Selenium	A	mg/L	0.00005919	0.00005919		0.00005	0	0		0.005		118%	80	120		0%
Silicon	A	mg/L	-9.555E-05	-9.555E-05		0	0	0		0.1		0%				0%
Silver	A	mg/L	0.00003354	0.00003354		0.00002	0	0		0.001		168%	80	120		S
Sodium	A	mg/L	0.01225	0.01225		0.0125	0	0		1		98%	80	120		0%
Strontium	A	mg/L	0.00006718	0.00006718		0.00005	0	0		0.001		134%	80	120		S
Thallium	A	mg/L	-7.886E-05	-7.886E-05		0	0	0		0.001		0%				0%
Thorium	A	mg/L	0.00003903	0.00003903		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					
14968439	0.05 ppb STD	ICPMS-6020B-C	Cal2		1/7/2022 1:36:08	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Tin	A	mg/L	0.0001151	0.0001151		0	0	0		0.001		0%			0%	
Titanium	A	mg/L	0.0003606	0.0003606		0	0	0		0.001		0%			0%	
Uranium	A	mg/L	0.00005459	0.00005459		0.00005	0	0		0.001		109%	80	120	0%	
Vanadium	A	mg/L	0.0003568	0.0003568		0	0	0		0.005		0%			0%	
Zinc	A	mg/L	0.0001067	0.0001067		0	0	0		0.01		0%			0%	
Iron, Ferrous	C	mg/L	-0.001276	-0.001276		0.00005	0	0		0.01	5	-2552%	80	120	0%	S
Silicon as SiO2	C	mg/L	-0.0002045	-0.0002045		0.00428	0	0		0.214	0.9	-5%	80	120	0%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968440	0.10 ppb STD	ICPMS-6020B-C	Cal3		1/7/2022 1:42:26	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	-0.00181	-0.00181		0.0001	0	0		0.01		-1810%	80	120	0%	S
Antimony	A	mg/L	0.0001027	0.0001027		0.0001	0	0		0.001		103%	80	120	0%	
Arsenic	A	mg/L	0.000147	0.000147		0.0001	0	0		0.001		147%	80	120	0%	S
Barium	A	mg/L	0.0001015	0.0001015		0.0001	0	0		0.0003		102%	80	120	0%	
Beryllium	A	mg/L	0.0001155	0.0001155		0.0001	0	0		0.001		116%	80	120	0%	
Boron	A	mg/L	-0.0006329	-0.0006329		0	0	0		0.1		0%			0%	
Cadmium	A	mg/L	0.000118	0.000118		0.0001	0	0		0.001		118%	80	120	0%	
Calcium	A	mg/L	0.03084	0.03084		0.025	0	0		1		123%	80	120	0%	S
Cerium	A	mg/L	0.0001103	0.0001103		0.0001	0	0		0.001		110%	80	120	0%	
Chromium	A	mg/L	0.0001304	0.0001304		0.0001	0	0		0.001		130%	80	120	0%	S
Cobalt	A	mg/L	0.0001318	0.0001318		0.0001	0	0		0.001		132%	80	120	0%	S
Copper	A	mg/L	0.000111	0.000111		0.0001	0	0		0.005		111%	80	120	0%	
Iron	A	mg/L	0.0002955	0.0002955		0.0025	0	0		0.01		12%	80	120	0%	S
Lanthanum	A	mg/L	0.0001174	0.0001174		0.0001	0	0		0.001		117%	80	120	0%	
Lead	A	mg/L	0.0001115	0.0001115		0.0001	0	0		0.001		111%	80	120	0%	
Lithium	A	mg/L	0.001396	0.001396		0.00125	0	0		1		112%	80	120	0%	
Magnesium	A	mg/L	0.03185	0.03185		0.025	0	0		1		127%	80	120	0%	S
Manganese	A	mg/L	0.0001136	0.0001136		0.0001	0	0		0.001		114%	80	120	0%	
Mercury	A	mg/L	-5.449E-07	-5.449E-07		0.000002	0	0		0.001		-27%	80	120	0%	S
Molybdenum	A	mg/L	0.0001144	0.0001144		0.0001	0	0		0.001		114%	80	120	0%	
Nickel	A	mg/L	0.0001292	0.0001292		0.0001	0	0		0.005		129%	80	120	0%	S
Potassium	A	mg/L	0.02944	0.02944		0.025	0	0		1		118%	80	120	0%	
Selenium	A	mg/L	0.0001138	0.0001138		0.0001	0	0		0.005		114%	80	120	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968440	0.10 ppb STD	ICPMS-6020B-C Cal3			1/7/2022 1:42:26	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Silicon	A	mg/L	0.0001557	0.0001557		0.0004	0	0		0.1		39%	80	120	0%	S
Silver	A	mg/L	0.0000567	0.0000567		0.00004	0	0		0.001		142%	80	120	0%	S
Sodium	A	mg/L	0.03035	0.03035		0.025	0	0		1		121%	80	120	0%	S
Strontium	A	mg/L	0.0001243	0.0001243		0.0001	0	0		0.001		124%	80	120	0%	S
Thallium	A	mg/L	-2.634E-05	-2.634E-05		0.0001	0	0		0.001		-26%	80	120	0%	S
Thorium	A	mg/L	0.00008742	0.00008742		0.0001	0	0		0.05		87%	80	120	0%	S
Tin	A	mg/L	0.0001708	0.0001708		0.0001	0	0		0.001		171%	80	120	0%	S
Titanium	A	mg/L	0.0001227	0.0001227		0.0001	0	0		0.001		123%	80	120	0%	S
Uranium	A	mg/L	0.000109	0.000109		0.0001	0	0		0.001		109%	80	120	0%	S
Vanadium	A	mg/L	0.0004722	0.0004722		0.0001	0	0		0.005		472%	80	120	0%	S
Zinc	A	mg/L	0.0001184	0.0001184		0.0001	0	0		0.01		118%	80	120	0%	S
Iron, Ferrous	C	mg/L	0.0002955	0.0002955		0.0001	0	0		0.01	5	296%	80	120	0%	S
Silicon as SiO2	C	mg/L	0.0003332	0.0003332		0.00856	0	0		0.214	0.9	4%	80	120	0%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968441	0.5 ppb STD	ICPMS-6020B-C Cal4			1/7/2022 1:48:44	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	-0.001319	-0.001319		0.0005	0	0		0.01		-264%	80	120	0%	S
Antimony	A	mg/L	0.0005042	0.0005042		0.0005	0	0		0.001		101%	80	120	0%	S
Arsenic	A	mg/L	0.0005649	0.0005649		0.0005	0	0		0.001		113%	80	120	0%	S
Barium	A	mg/L	0.0005378	0.0005378		0.0005	0	0		0.0003		108%	80	120	0%	S
Beryllium	A	mg/L	0.0005505	0.0005505		0.0005	0	0		0.001		110%	80	120	0%	S
Boron	A	mg/L	-0.0003786	-0.0003786		0.0005	0	0		0.1		-76%	80	120	0%	S
Cadmium	A	mg/L	0.0005326	0.0005326		0.0005	0	0		0.001		107%	80	120	0%	S
Calcium	A	mg/L	0.146	0.146		0.125	0	0		1		117%	80	120	0%	S
Cerium	A	mg/L	0.000515	0.000515		0.0005	0	0		0.001		103%	80	120	0%	S
Chromium	A	mg/L	0.0005431	0.0005431		0.0005	0	0		0.001		109%	80	120	0%	S
Cobalt	A	mg/L	0.0005687	0.0005687		0.0005	0	0		0.001		114%	80	120	0%	S
Copper	A	mg/L	0.0005969	0.0005969		0.0005	0	0		0.005		119%	80	120	0%	S
Iron	A	mg/L	0.01152	0.01152		0.0125	0	0		0.01		92%	80	120	0%	S
Lanthanum	A	mg/L	0.0005137	0.0005137		0.0005	0	0		0.001		103%	80	120	0%	S
Lead	A	mg/L	0.0005253	0.0005253		0.0005	0	0		0.001		105%	80	120	0%	S
Lithium	A	mg/L	0.006711	0.006711		0.00625	0	0		1		107%	80	120	0%	S
Magnesium	A	mg/L	0.1468	0.1468		0.125	0	0		1		117%	80	120	0%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968441	0.5 ppb STD	ICPMS-6020B-C Cal4			1/7/2022 1:48:44	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Manganese	A	mg/L	0.0005558	0.0005558		0.0005	0	0		0.001		111%	80	120	0%	
Mercury	A	mg/L	6.754E-06	6.754E-06		0.00001	0	0		0.001		68%	80	120	0%	S
Molybdenum	A	mg/L	0.000496	0.000496		0.0005	0	0		0.001		99%	80	120	0%	
Nickel	A	mg/L	0.0005736	0.0005736		0.0005	0	0		0.005		115%	80	120	0%	
Potassium	A	mg/L	0.1335	0.1335		0.125	0	0		1		107%	80	120	0%	
Selenium	A	mg/L	0.0005563	0.0005563		0.0005	0	0		0.005		111%	80	120	0%	
Silicon	A	mg/L	0.001267	0.001267		0.002	0	0		0.1		63%	80	120	0%	S
Silver	A	mg/L	0.0002193	0.0002193		0.0002	0	0		0.001		110%	80	120	0%	
Sodium	A	mg/L	0.1365	0.1365		0.125	0	0		1		109%	80	120	0%	
Strontium	A	mg/L	0.0005731	0.0005731		0.0005	0	0		0.001		115%	80	120	0%	
Thallium	A	mg/L	0.0003497	0.0003497		0.0005	0	0		0.001		70%	80	120	0%	S
Thorium	A	mg/L	0.0004392	0.0004392		0.0005	0	0		0.05		88%	80	120	0%	
Tin	A	mg/L	0.0005634	0.0005634		0.0005	0	0		0.001		113%	80	120	0%	
Titanium	A	mg/L	0.0005402	0.0005402		0.0005	0	0		0.001		108%	80	120	0%	
Uranium	A	mg/L	0.0005154	0.0005154		0.0005	0	0		0.001		103%	80	120	0%	
Vanadium	A	mg/L	0.000793	0.000793		0.0005	0	0		0.005		159%	80	120	0%	S
Zinc	A	mg/L	0.0006877	0.0006877		0.0005	0	0		0.01		138%	80	120	0%	S
Iron, Ferrous	C	mg/L	0.01152	0.01152		0.0005	0	0		0.01	5	2304%	80	120	0%	S
Silicon as SiO2	C	mg/L	0.00271138	0.00271138		0.0428	0	0		0.214	0.9	6%	80	120	0%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968442	1 ppb STD	ICPMS-6020B-C Cal5			1/7/2022 1:55:01	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	-0.0005837	-0.0005837		0.001	0	0		0.01		-58%	80	120	0%	S
Antimony	A	mg/L	0.001146	0.001146		0.001	0	0		0.001		115%	80	120	0%	
Arsenic	A	mg/L	0.001251	0.001251		0.001	0	0		0.001		125%	80	120	0%	S
Barium	A	mg/L	0.001243	0.001243		0.001	0	0		0.0003		124%	80	120	0%	S
Beryllium	A	mg/L	0.001219	0.001219		0.001	0	0		0.001		122%	80	120	0%	S
Boron	A	mg/L	0.00009102	0.00009102		0.001	0	0		0.1		9%	80	120	0%	S
Cadmium	A	mg/L	0.001192	0.001192		0.001	0	0		0.001		119%	80	120	0%	
Calcium	A	mg/L	0.3175	0.3175		0.25	0	0		1		127%	80	120	0%	S
Cerium	A	mg/L	0.001175	0.001175		0.001	0	0		0.001		118%	80	120	0%	
Chromium	A	mg/L	0.001233	0.001233		0.001	0	0		0.001		123%	80	120	0%	S
Cobalt	A	mg/L	0.001309	0.001309		0.001	0	0		0.001		131%	80	120	0%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968442	1 ppb STD	ICPMS-6020B-C Cal5			1/7/2022 1:55:01	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Copper	A	mg/L	0.001317	0.001317		0.001	0	0		0.005		132%	80	120	0%	S
Iron	A	mg/L	0.02977	0.02977		0.025	0	0		0.01		119%	80	120	0%	
Lanthanum	A	mg/L	0.001184	0.001184		0.001	0	0		0.001		118%	80	120	0%	
Lead	A	mg/L	0.001171	0.001171		0.001	0	0		0.001		117%	80	120	0%	
Lithium	A	mg/L	0.01489	0.01489		0.0125	0	0		1		119%	80	120	0%	
Magnesium	A	mg/L	0.3237	0.3237		0.25	0	0		1		129%	80	120	0%	S
Manganese	A	mg/L	0.001211	0.001211		0.001	0	0		0.001		121%	80	120	0%	S
Mercury	A	mg/L	0.0000178	0.0000178		0.00002	0	0		0.001		89%	80	120	0%	
Molybdenum	A	mg/L	0.001141	0.001141		0.001	0	0		0.001		114%	80	120	0%	
Nickel	A	mg/L	0.001292	0.001292		0.001	0	0		0.005		129%	80	120	0%	S
Potassium	A	mg/L	0.2978	0.2978		0.25	0	0		1		119%	80	120	0%	
Selenium	A	mg/L	0.001231	0.001231		0.001	0	0		0.005		123%	80	120	0%	S
Silicon	A	mg/L	0.004024	0.004024		0.004	0	0		0.1		101%	80	120	0%	
Silver	A	mg/L	0.0004958	0.0004958		0.0004	0	0		0.001		124%	80	120	0%	S
Sodium	A	mg/L	0.2976	0.2976		0.25	0	0		1		119%	80	120	0%	
Strontium	A	mg/L	0.001227	0.001227		0.001	0	0		0.001		123%	80	120	0%	S
Thallium	A	mg/L	0.0009773	0.0009773		0.001	0	0		0.001		98%	80	120	0%	
Thorium	A	mg/L	0.001039	0.001039		0.001	0	0		0.05		104%	80	120	0%	
Tin	A	mg/L	0.001254	0.001254		0.001	0	0		0.001		125%	80	120	0%	S
Titanium	A	mg/L	0.001149	0.001149		0.001	0	0		0.001		115%	80	120	0%	
Uranium	A	mg/L	0.00115	0.00115		0.001	0	0		0.001		115%	80	120	0%	
Vanadium	A	mg/L	0.001512	0.001512		0.001	0	0		0.005		151%	80	120	0%	S
Zinc	A	mg/L	0.001474	0.001474		0.001	0	0		0.01		147%	80	120	0%	S
Iron, Ferrous	C	mg/L	0.02977	0.02977		0.001	0	0		0.01	5	2977%	80	120	0%	S
Silicon as SiO2	C	mg/L	0.00861136	0.00861136		0.0856	0	0		0.214	0.9	10%	80	120	0%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968443	10 ppb STD	ICPMS-6020B-C Cal6			1/7/2022 2:01:18	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.008498	0.008498		0.01	0	0		0.01		85%	90	110	0%	S
Antimony	A	mg/L	0.009906	0.009906		0.01	0	0		0.001		99%	90	110	0%	
Arsenic	A	mg/L	0.01039	0.01039		0.01	0	0		0.001		104%	90	110	0%	
Barium	A	mg/L	0.01065	0.01065		0.01	0	0		0.0003		106%	90	110	0%	
Beryllium	A	mg/L	0.01024	0.01024		0.01	0	0		0.001		102%	90	110	0%	



Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968443	10 ppb STD	ICPMS-6020B-C Cal6			1/7/2022 2:01:18	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Boron	A	mg/L	0.008805	0.008805		0.01	0	0		0.1		88%	90	110	0%	S
Cadmium	A	mg/L	0.01029	0.01029		0.01	0	0		0.001		103%	90	110	0%	
Calcium	A	mg/L	2.579	2.579		2.5	0	0		1		103%	90	110	0%	
Cerium	A	mg/L	0.01001	0.01001		0.01	0	0		0.001		100%	90	110	0%	
Chromium	A	mg/L	0.01026	0.01026		0.01	0	0		0.001		103%	90	110	0%	
Cobalt	A	mg/L	0.01082	0.01082		0.01	0	0		0.001		108%	90	110	0%	
Copper	A	mg/L	0.01099	0.01099		0.01	0	0		0.005		110%	90	110	0%	
Iron	A	mg/L	0.2667	0.2667		0.25	0	0		0.01		107%	90	110	0%	
Lanthanum	A	mg/L	0.01007	0.01007		0.01	0	0		0.001		101%	90	110	0%	
Lead	A	mg/L	0.0103	0.0103		0.01	0	0		0.001		103%	90	110	0%	
Lithium	A	mg/L	0.1234	0.1234		0.125	0	0		1		99%	90	110	0%	
Magnesium	A	mg/L	2.771	2.771		2.5	0	0		1		111%	90	110	0%	S
Manganese	A	mg/L	0.01024	0.01024		0.01	0	0		0.001		102%	90	110	0%	
Mercury	A	mg/L	0.0002003	0.0002003		0.0002	0	0		0.001		100%	90	110	0%	
Molybdenum	A	mg/L	0.00982	0.00982		0.01	0	0		0.001		98%	90	110	0%	
Nickel	A	mg/L	0.01065	0.01065		0.01	0	0		0.005		106%	90	110	0%	
Potassium	A	mg/L	2.685	2.685		2.5	0	0		1		107%	90	110	0%	
Selenium	A	mg/L	0.01044	0.01044		0.01	0	0		0.005		104%	90	110	0%	
Silicon	A	mg/L	0.03917	0.03917		0.04	0	0		0.1		98%	90	110	0%	
Silver	A	mg/L	0.004161	0.004161		0.004	0	0		0.001		104%	90	110	0%	
Sodium	A	mg/L	2.693	2.693		2.5	0	0		1		108%	90	110	0%	
Strontium	A	mg/L	0.01039	0.01039		0.01	0	0		0.001		104%	90	110	0%	
Thallium	A	mg/L	0.009954	0.009954		0.01	0	0		0.001		100%	90	110	0%	
Thorium	A	mg/L	0.009328	0.009328		0.01	0	0		0.05		93%	90	110	0%	
Tin	A	mg/L	0.01008	0.01008		0.01	0	0		0.001		101%	90	110	0%	
Titanium	A	mg/L	0.01011	0.01011		0.01	0	0		0.001		101%	90	110	0%	
Uranium	A	mg/L	0.01017	0.01017		0.01	0	0		0.001		102%	90	110	0%	
Vanadium	A	mg/L	0.01014	0.01014		0.01	0	0		0.005		101%	90	110	0%	
Zinc	A	mg/L	0.01059	0.01059		0.01	0	0		0.01		106%	90	110	0%	
Iron, Ferrous	C	mg/L	0.2667	0.2667		0.01	0	0		0.01	5	2667%	90	110	0%	S
Silicon as SiO2	C	mg/L	0.0838238	0.0838238		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					
14968444	50 ppb STD	ICPMS-6020B-C Cal7			1/7/2022 2:07:34	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.05161	0.05161		0.05	0	0		0.01		103%	90	110	0%	
Antimony	A	mg/L	0.05157	0.05157		0.05	0	0		0.001		103%	90	110	0%	
Arsenic	A	mg/L	0.05181	0.05181		0.05	0	0		0.001		104%	90	110	0%	
Barium	A	mg/L	0.05262	0.05262		0.05	0	0		0.0003		105%	90	110	0%	
Beryllium	A	mg/L	0.05265	0.05265		0.05	0	0		0.001		105%	90	110	0%	
Boron	A	mg/L	0.0507	0.0507		0.05	0	0		0.1		101%	90	110	0%	
Cadmium	A	mg/L	0.05077	0.05077		0.05	0	0		0.001		102%	90	110	0%	
Calcium	A	mg/L	12.03	12.03		12.5	0	0		1		96%	90	110	0%	
Cerium	A	mg/L	0.04887	0.04887		0.05	0	0		0.001		98%	90	110	0%	
Chromium	A	mg/L	0.05104	0.05104		0.05	0	0		0.001		102%	90	110	0%	
Cobalt	A	mg/L	0.05429	0.05429		0.05	0	0		0.001		109%	90	110	0%	
Copper	A	mg/L	0.05368	0.05368		0.05	0	0		0.005		107%	90	110	0%	
Iron	A	mg/L	1.26	1.26		1.25	0	0		0.01		101%	90	110	0%	
Lanthanum	A	mg/L	0.04812	0.04812		0.05	0	0		0.001		96%	90	110	0%	
Lead	A	mg/L	0.05176	0.05176		0.05	0	0		0.001		104%	90	110	0%	
Lithium	A	mg/L	0.6109	0.6109		0.625	0	0		1		98%	90	110	0%	
Magnesium	A	mg/L	12.48	12.48		12.5	0	0		1		100%	90	110	0%	
Manganese	A	mg/L	0.05029	0.05029		0.05	0	0		0.001		101%	90	110	0%	
Mercury	A	mg/L	0.0009496	0.0009496		0.001	0	0		0.001		95%	90	110	0%	
Molybdenum	A	mg/L	0.05045	0.05045		0.05	0	0		0.001		101%	90	110	0%	
Nickel	A	mg/L	0.05163	0.05163		0.05	0	0		0.005		103%	90	110	0%	
Potassium	A	mg/L	12.27	12.27		12.5	0	0		1		98%	90	110	0%	
Selenium	A	mg/L	0.05251	0.05251		0.05	0	0		0.005		105%	90	110	0%	
Silicon	A	mg/L	0.2101	0.2101		0.2	0	0		0.1		105%	90	110	0%	
Silver	A	mg/L	0.0202	0.0202		0.02	0	0		0.001		101%	90	110	0%	
Sodium	A	mg/L	12.52	12.52		12.5	0	0		1		100%	90	110	0%	
Strontium	A	mg/L	0.05097	0.05097		0.05	0	0		0.001		102%	90	110	0%	
Thallium	A	mg/L	0.05009	0.05009		0.05	0	0		0.001		100%	90	110	0%	
Thorium	A	mg/L	0.05092	0.05092		0.05	0	0		0.05		102%	90	110	0%	
Tin	A	mg/L	0.05169	0.05169		0.05	0	0		0.001		103%	90	110	0%	
Titanium	A	mg/L	0.05189	0.05189		0.05	0	0		0.001		104%	90	110	0%	
Uranium	A	mg/L	0.05187	0.05187		0.05	0	0		0.001		104%	90	110	0%	
Vanadium	A	mg/L	0.05044	0.05044		0.05	0	0		0.005		101%	90	110	0%	
Zinc	A	mg/L	0.05283	0.05283		0.05	0	0		0.01		106%	90	110	0%	
Iron, Ferrous	C	mg/L	1.26	1.26		0.05	0	0		0.01	5	2520%	90	110	0%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968444	50 ppb STD	ICPMS-6020B-C Cal7			1/7/2022 2:07:34	1	R372863		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	0.449614	0.449614		4.28	0	0		0.214	0.9	11%	90	110	0%	S

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968445	100 ppb STD	ICPMS-6020B-C Cal8			1/7/2022 2:13:39	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.1078	0.1078		0.1	0	0		0.01		108%	90	110	0%	
Antimony	A	mg/L	0.09922	0.09922		0.1	0	0		0.001		99%	90	110	0%	
Arsenic	A	mg/L	0.1013	0.1013		0.1	0	0		0.001		101%	90	110	0%	
Barium	A	mg/L	0.1035	0.1035		0.1	0	0		0.0003		103%	90	110	0%	
Beryllium	A	mg/L	0.09995	0.09995		0.1	0	0		0.001		100%	90	110	0%	
Boron	A	mg/L	0.09765	0.09765		0.1	0	0		0.1		98%	90	110	0%	
Cadmium	A	mg/L	0.1015	0.1015		0.1	0	0		0.001		101%	90	110	0%	
Calcium	A	mg/L	25.08	25.08		25	0	0		1		100%	90	110	0%	
Cerium	A	mg/L	0.1006	0.1006		0.1	0	0		0.001		101%	90	110	0%	
Chromium	A	mg/L	0.09933	0.09933		0.1	0	0		0.001		99%	90	110	0%	
Cobalt	A	mg/L	0.1051	0.1051		0.1	0	0		0.001		105%	90	110	0%	
Copper	A	mg/L	0.1027	0.1027		0.1	0	0		0.005		103%	90	110	0%	
Iron	A	mg/L	2.591	2.591		2.5	0	0		0.01		104%	90	110	0%	
Lanthanum	A	mg/L	0.1009	0.1009		0.1	0	0		0.001		101%	90	110	0%	
Lead	A	mg/L	0.1032	0.1032		0.1	0	0		0.001		103%	90	110	0%	
Lithium	A	mg/L	1.271	1.271		1.25	0	0		1		102%	90	110	0%	
Magnesium	A	mg/L	25.47	25.47		25	0	0		1		102%	90	110	0%	
Manganese	A	mg/L	0.09936	0.09936		0.1	0	0		0.001		99%	90	110	0%	
Mercury	A	mg/L	0.002025	0.002025		0.002	0	0		0.001		101%	90	110	0%	
Molybdenum	A	mg/L	0.09979	0.09979		0.1	0	0		0.001		100%	90	110	0%	
Nickel	A	mg/L	0.1005	0.1005		0.1	0	0		0.005		100%	90	110	0%	
Potassium	A	mg/L	24.81	24.81		25	0	0		1		99%	90	110	0%	
Selenium	A	mg/L	0.1012	0.1012		0.1	0	0		0.005		101%	90	110	0%	
Silicon	A	mg/L	0.395	0.395		0.4	0	0		0.1		99%	90	110	0%	
Silver	A	mg/L	0.03988	0.03988		0.04	0	0		0.001		100%	90	110	0%	
Sodium	A	mg/L	25.01	25.01		25	0	0		1		100%	90	110	0%	
Strontium	A	mg/L	0.09911	0.09911		0.1	0	0		0.001		99%	90	110	0%	
Thallium	A	mg/L	0.1032	0.1032		0.1	0	0		0.001		103%	90	110	0%	
Thorium	A	mg/L	0.1012	0.1012		0.1	0	0		0.05		101%	90	110	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968445	100 ppb STD	ICPMS-6020B-C Cal8			1/7/2022 2:13:39	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Tin	A	mg/L	0.09914	0.09914		0.1	0	0		0.001		99%	90	110	0%	
Titanium	A	mg/L	0.09904	0.09904		0.1	0	0		0.001		99%	90	110	0%	
Uranium	A	mg/L	0.1023	0.1023		0.1	0	0		0.001		102%	90	110	0%	
Vanadium	A	mg/L	0.09831	0.09831		0.1	0	0		0.005		98%	90	110	0%	
Zinc	A	mg/L	0.1013	0.1013		0.1	0	0		0.01		101%	90	110	0%	
Iron, Ferrous	C	mg/L	2.591	2.591		0.1	0	0		0.01	5	2591%	90	110	0%	S
Silicon as SiO2	C	mg/L	0.8453	0.8453		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					
14968446	1000 ppb STD	ICPMS-6020B-C Cal10			1/7/2022 2:19:29	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.9992	0.9992		1	0	0		0.01		100%	90	110	0%	
Antimony	A	mg/L	0.000219	0.000219		0	0	0		0.001		0%			0%	
Arsenic	A	mg/L	0.9998	0.9998		1	0	0		0.001		100%	90	110	0%	
Barium	A	mg/L	0.9995	0.9995		1	0	0		0.0003		100%	90	110	0%	
Beryllium	A	mg/L	0.9999	0.9999		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	0.9998	0.9998		1	0	0		0.001		100%	90	110	0%	
Calcium	A	mg/L	50.07	50.07		50	0	0		1		100%	90	110	0%	
Cerium	A	mg/L	0.00003653	0.00003653		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	0.9993	0.9993		1	0	0		0.001		100%	90	110	0%	
Copper	A	mg/L	0.9995	0.9995		1	0	0		0.005		100%	90	110	0%	
Iron	A	mg/L	6.012	6.012		6	0	0		0.01		100%	90	110	0%	
Lanthanum	A	mg/L	0.00002471	0.00002471		0	0	0		0.001		0%			0%	
Lead	A	mg/L	0.9996	0.9996		1	0	0		0.001		100%	90	110	0%	
Lithium	A	mg/L	2.493	2.493		2.5	0	0		1		100%	90	110	0%	
Magnesium	A	mg/L	49.76	49.76		50	0	0		1		100%	90	110	0%	
Manganese	A	mg/L	1	1		1	0	0		0.001		100%	90		0%	
Mercury	A	mg/L	0.00000647	0.00000647		0	0	0		0.001		0%			0%	
Molybdenum	A	mg/L	0.0001305	0.0001305		0	0	0		0.001		0%			0%	
Nickel	A	mg/L	0.9999	0.9999		1	0	0		0.005		100%	90	110	0%	
Potassium	A	mg/L	50.14	50.14		50	0	0		1		100%	90	110	0%	
Selenium	A	mg/L	0.9997	0.9997		1	0	0		0.005		100%	90	110	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968446	1000 ppb STD	ICPMS-6020B-C	Cal10		1/7/2022 2:19:29	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Silicon	A	mg/L	0.0009701	0.0009701		0	0	0		0.1		0%			0%	
Silver	A	mg/L	0.3042	0.3042		0	0	0		0.001		0%			0%	
Sodium	A	mg/L	49.98	49.98		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	0.9997	0.9997		1	0	0		0.001		100%	90	110	0%	
Thorium	A	mg/L	0.9998	0.9998		1	0	0		0.05		100%	90	110	0%	
Tin	A	mg/L	0.0002237	0.0002237		0	0	0		0.001		0%			0%	
Titanium	A	mg/L	0.004156	0.004156		1	0	0		0.001		0%	90	110	0%	S
Uranium	A	mg/L	0.9997	0.9997		1	0	0		0.001		100%	90	110	0%	
Vanadium	A	mg/L	1	1		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	6.012	6.012		0	0	0		0.01	5	0%			0%	
Silicon as SiO2	C	mg/L	0.00207601	0.00207601		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					
14968447	100 ppb Br STD	ICPMS-6020-W-	SAMP		1/7/2022 2:25:09	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	0.00007679	0		0	0	0	0.00042	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	0.0003473	0.0003473		0	0	0	0.00019	0.001	1	0%	0	0	0%	J
Barium	A	mg/L	0.0001711	0.0001711		0	0	0	0.000042	0.001	1	0%	0	0	0%	J
Cadmium	A	mg/L	0.00004929	0.00004929		0	0	0	0.000025	0.001	1	0%	0	0	0%	J
Calcium	A	mg/L	0.04768	0.04768		0	0	0	0.02092	0.02092	50	0%	0	0	0%	D
Chromium	A	mg/L	0.0001961	0.0001961		0	0	0	0.00018	0.001	1	0%	0	0	0%	J
Iron	A	mg/L	0.0007443	0		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Lanthanum	A	mg/L	7.857E-06	0		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.00009815	0.00009815		0	0	0	0.000056	0.001	1	0%	0	0	0%	J
Molybdenum	A	mg/L	0.00001502	0		0	0	0	0.00005	0.001	0.1	0%	0	0	0%	
Nickel	A	mg/L	0.0001024	0		0	0	0	0.00063	0.001	1	0%	0	0	0%	
Potassium	A	mg/L	0.01075	0		0	0	0	0.08139	0.08139	50	0%	0	0	0%	L
Selenium	A	mg/L	0.0002959	0		0	0	0	0.00033	0.001	1	0%	0	0	0%	
Silver	A	mg/L	0.000218	0.000218		0	0	0	0.00002	0.001	0.04	0%	0	0	0%	J
Strontium	A	mg/L	0.0001046	0		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0003665	0.0003665		0	0	0	0.000041	0.001	1	0%	0	0	0%	J
Thorium	A	mg/L	0.0001643	0		0	0	0	0.00061	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					
14968447	100 ppb Br STD	ICPMS-6020-W-	SAMP		1/7/2022 2:25:09	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Tin	A	mg/L	0.001422	0.001422		0	0	0	0.00132	0.00132	0.1	0%	0	0	0%	
Uranium	A	mg/L	0.0000289	0		0	0	0	0.000052	0.0003	1	0%	0	0	0%	
Iron, Ferrous	C	mg/L	0.0007443	0		0	0	0	0.00119	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					
14968448	Rinse	ICPMS-6020-W-	SAMP		1/7/2022 2:31:25	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Antimony	A	mg/L	4.814E-06	0		0	0	0	0.00042	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	0.00002296	0		0	0	0	0.00019	0.001	1	0%	0	0	0%	
Barium	A	mg/L	3.352E-06	0		0	0	0	0.000042	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0.00002089	0		0	0	0	0.000025	0.001	1	0%	0	0	0%	
Calcium	A	mg/L	0.0003527	0		0	0	0	0.02092	0.02092	50	0%	0	0	0%	L
Chromium	A	mg/L	0.00001222	0		0	0	0	0.00018	0.001	1	0%	0	0	0%	
Iron	A	mg/L	-0.002788	0		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Lanthanum	A	mg/L	4.411E-07	0		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.00002809	0		0	0	0	0.000056	0.001	1	0%	0	0	0%	
Molybdenum	A	mg/L	1.463E-06	0		0	0	0	0.00005	0.001	0.1	0%	0	0	0%	
Nickel	A	mg/L	0.0000243	0		0	0	0	0.00063	0.001	1	0%	0	0	0%	
Potassium	A	mg/L	0.0005691	0		0	0	0	0.08139	0.08139	50	0%	0	0	0%	L
Selenium	A	mg/L	0.0000509	0		0	0	0	0.00033	0.001	1	0%	0	0	0%	
Silver	A	mg/L	6.484E-06	0		0	0	0	0.00002	0.001	0.04	0%	0	0	0%	
Strontium	A	mg/L	5.668E-06	0		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0001487	0.0001487		0	0	0	0.000041	0.001	1	0%	0	0	0%	J
Thorium	A	mg/L	7.786E-06	0		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Tin	A	mg/L	7.504E-06	0		0	0	0	0.00132	0.00132	0.1	0%	0	0	0%	
Uranium	A	mg/L	7.903E-06	0		0	0	0	0.000052	0.0003	1	0%	0	0	0%	
Iron, Ferrous	C	mg/L	-0.002788	0		0	0	0	0.00119	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					
14968449	QCS	ICPMS-6020-W-	ICV		1/7/2022 2:37:36	1	R372863		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					
14968449	QCS	ICPMS-6020-W- ICV			1/7/2022 2:37:36	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.2752	0.2752		0.25	0	0	0.00086	0.001	1	110%	90	110	0%	
Antimony	A	mg/L	0.05214	0.05214		0.05	0	0	0.00042	0.001	0.1	104%	90	110	0%	
Arsenic	A	mg/L	0.0552	0.0552		0.05	0	0	0.00019	0.001	1	110%	90	110	0%	
Barium	A	mg/L	0.05292	0.05292		0.05	0	0	0.000042	0.001	1	106%	90	110	0%	
Beryllium	A	mg/L	0.02649	0.02649		0.025	0	0	0.00012	0.001	1	106%	90	110	0%	
Boron	A	mg/L	0.0564	0.0564		0.05	0	0	0.00561	0.00561	1	113%	90	110	0%	S
Cadmium	A	mg/L	0.02544	0.02544		0.025	0	0	0.000025	0.001	1	102%	90	110	0%	
Calcium	A	mg/L	2.739	2.739		2.5	0	0	0.02092	0.02092	50	110%	90	110	0%	
Cerium	A	mg/L	0.05565	0.05565		0.05	0	0	0.000012	0.001	0.1	111%	90	110	0%	S
Chromium	A	mg/L	0.05351	0.05351		0.05	0	0	0.00018	0.001	1	107%	90	110	0%	
Cobalt	A	mg/L	0.05614	0.05614		0.05	0	0	0.000042	0.001	1	112%	90	110	0%	S
Copper	A	mg/L	0.05677	0.05677		0.05	0	0	0.00027	0.001	1	114%	90	110	0%	S
Iron	A	mg/L	0.2609	0.2609		0.25	0	0	0.00119	0.00119	5	104%	90	110	0%	
Lanthanum	A	mg/L	0.05476	0.05476		0.05	0	0	0.000011	0.001	0.1	110%	90	110	0%	
Lead	A	mg/L	0.05173	0.05173		0.05	0	0	0.000056	0.001	1	103%	90	110	0%	
Magnesium	A	mg/L	2.82	2.82		2.5	0	0	0.00564	0.00564	50	113%	90	110	0%	S
Manganese	A	mg/L	0.2766	0.2766		0.25	0	0	0.000095	0.001	1	111%	90	110	0%	S
Mercury	A	mg/L	0.001081	0.001081		0.001	0	0	0.00016	0.001	0.002	108%	90	110	0%	
Molybdenum	A	mg/L	0.04986	0.04986		0.05	0	0	0.00005	0.001	0.1	100%	90	110	0%	
Nickel	A	mg/L	0.05405	0.05405		0.05	0	0	0.00063	0.001	1	108%	90	110	0%	
Potassium	A	mg/L	2.732	2.732		2.5	0	0	0.08139	0.08139	50	109%	90	110	0%	
Selenium	A	mg/L	0.05241	0.05241		0.05	0	0	0.00033	0.001	1	105%	90	110	0%	
Silicon	A	mg/L	0.5466	0.5466		0.5	0	0	0.01223	0.1	0.4	109%	90	110	0%	
Silver	A	mg/L	0.02609	0.02609		0.025	0	0	0.00002	0.001	0.04	104%	90	110	0%	
Sodium	A	mg/L	2.794	2.794		2.5	0	0	0.02171	0.02171	50	112%	90	110	0%	S
Strontium	A	mg/L	0.05415	0.05415		0.05	0	0	0.00014	0.001	1	108%	90	110	0%	
Thallium	A	mg/L	0.05065	0.05065		0.05	0	0	0.000041	0.001	1	101%	90	110	0%	
Thorium	A	mg/L	0.05273	0.05273		0.05	0	0	0.00061	0.001	1	105%	90	110	0%	
Tin	A	mg/L	0.05234	0.05234		0.05	0	0	0.00132	0.00132	0.1	105%	90	110	0%	
Titanium	A	mg/L	0.0519	0.0519		0.05	0	0	0.000094	0.001	1	104%	90	110	0%	
Uranium	A	mg/L	0.054	0.054		0.05	0	0	0.000052	0.0003	1	108%	90	110	0%	
Vanadium	A	mg/L	0.05202	0.05202		0.05	0	0	0.0013	0.0013	1	104%	90	110	0%	
Zinc	A	mg/L	0.05644	0.05644		0.05	0	0	0.00273	0.00273	1	113%	90	110	0%	S
Iron, Ferrous	C	mg/L	0.2609	0.2609		0	0	0	0.00119	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					
14968450	ICSA	ICPMS-6020-W-	ICSA		1/7/2022 2:43:32	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	44.42	44.42		40	0	0	0.00086	0.001	1	111%	80	120	0%	
Antimony	A	mg/L	0.00005824	0.00005824		0	0	0	0.00042	0.001	0.1	0%			0%	
Arsenic	A	mg/L	0.0001318	0.0001318		0	0	0	0.00019	0.001	1	0%			0%	
Barium	A	mg/L	0.00008339	0.00008339		0	0	0	0.000042	0.001	1	0%			0%	
Beryllium	A	mg/L	0.00004629	0.00004629		0	0	0	0.00012	0.001	1	0%			0%	
Boron	A	mg/L	0.002294	0.002294		0	0	0	0.00561	0.00561	1	0%			0%	
Cadmium	A	mg/L	0.00009923	0.00009923		0	0	0	0.000025	0.001	1	0%			0%	
Calcium	A	mg/L	136.5	136.5		120	0	0	0.02092	0.02092	50	114%	80	120	0%	
Cerium	A	mg/L	4.436E-06	4.436E-06		0	0	0	0.000012	0.001	0.1	0%			0%	
Chromium	A	mg/L	0.001011	0.001011		0	0	0	0.00018	0.001	1	0%			0%	
Cobalt	A	mg/L	0.0004088	0.0004088		0	0	0	0.000042	0.001	1	0%			0%	
Copper	A	mg/L	0.00004779	0.00004779		0	0	0	0.00027	0.001	1	0%			0%	
Iron	A	mg/L	114.9	114.9		100	0	0	0.00119	0.00119	5	115%	80	120	0%	
Lanthanum	A	mg/L	0.00001216	0.00001216		0	0	0	0.000011	0.001	0.1	0%			0%	
Lead	A	mg/L	0.00004199	0.00004199		0	0	0	0.000056	0.001	1	0%			0%	
Magnesium	A	mg/L	45.64	45.64		50	0	0	0.00564	0.00564	50	91%			0%	
Manganese	A	mg/L	0.0001969	0.0001969		0	0	0	0.000095	0.001	1	0%			0%	
Mercury	A	mg/L	2.253E-06	2.253E-06		0	0	0	0.00016	0.001	0.002	0%			0%	
Molybdenum	A	mg/L	0.9271	0.9271		0.8	0	0	0.00005	0.001	0.1	116%	80	120	0%	
Nickel	A	mg/L	0.0002291	0.0002291		0	0	0	0.00063	0.001	1	0%			0%	
Potassium	A	mg/L	45.74	45.74		50	0	0	0.08139	0.08139	50	91%			0%	
Selenium	A	mg/L	0.0001876	0.0001876		0	0	0	0.00033	0.001	1	0%			0%	
Silicon	A	mg/L	0.0003524	0.0003524		0	0	0	0.01223	0.1	0.4	0%			0%	
Silver	A	mg/L	0.00001816	0.00001816		0	0	0	0.00002	0.001	0.04	0%			0%	
Sodium	A	mg/L	113.1	113.1		100	0	0	0.02171	0.02171	50	113%			0%	
Strontium	A	mg/L	0.001386	0.001386		0	0	0	0.00014	0.001	1	0%			0%	
Thallium	A	mg/L	0.0001616	0.0001616		0	0	0	0.000041	0.001	1	0%			0%	
Thorium	A	mg/L	0.00002912	0.00002912		0	0	0	0.00061	0.001	1	0%			0%	
Tin	A	mg/L	0.0001121	0.0001121		0	0	0	0.00132	0.00132	0.1	0%			0%	
Titanium	A	mg/L	0.8948	0.8948		0.8	0	0	0.000094	0.001	1	112%			0%	
Uranium	A	mg/L	0.00004615	0.00004615		0	0	0	0.000052	0.0003	1	0%			0%	
Vanadium	A	mg/L	-0.001344	-0.001344		0	0	0	0.0013	0.0013	1	0%			0%	
Zinc	A	mg/L	0.0003501	0.0003501		0	0	0	0.00273	0.00273	1	0%			0%	
Iron, Ferrous	C	mg/L	114.9	114.9		0	0	0	0.00119	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					
14968451	ICSAB	ICPMS-6020-W-	ICSAB		1/7/2022 2:49:43	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	44.51	44.51		40	0	0	0.00086	0.001	1	111%	80	120	0%	
Antimony	A	mg/L	0.00002937	0.00002937		0	0	0	0.00042	0.001	0.1	0%			0%	
Arsenic	A	mg/L	0.01202	0.01202		0.01	0	0	0.00019	0.001	1	120%	80	120	0%	
Barium	A	mg/L	0.00008698	0.00008698		0	0	0	0.000042	0.001	1	0%			0%	
Beryllium	A	mg/L	0.00003248	0.00003248		0	0	0	0.00012	0.001	1	0%			0%	
Boron	A	mg/L	0.00115	0.00115		0	0	0	0.00561	0.00561	1	0%			0%	
Cadmium	A	mg/L	0.01112	0.01112		0.01	0	0	0.000025	0.001	1	111%	80	120	0%	
Calcium	A	mg/L	138.4	138.4		120	0	0	0.02092	0.02092	50	115%	80	120	0%	
Cerium	A	mg/L	3.436E-06	3.436E-06		0	0	0	0.000012	0.001	0.1	0%			0%	
Chromium	A	mg/L	0.02355	0.02355		0.02	0	0	0.00018	0.001	1	118%	80	120	0%	
Cobalt	A	mg/L	0.02348	0.02348		0.02	0	0	0.000042	0.001	1	117%	80	120	0%	
Copper	A	mg/L	0.02317	0.02317		0.02	0	0	0.00027	0.001	1	116%	80	120	0%	
Iron	A	mg/L	115.3	115.3		100	0	0	0.00119	0.00119	5	115%	80	120	0%	
Lanthanum	A	mg/L	0.00001117	0.00001117		0	0	0	0.000011	0.001	0.1	0%			0%	
Lead	A	mg/L	0.00003382	0.00003382		0	0	0	0.000056	0.001	1	0%			0%	
Magnesium	A	mg/L	46.3	46.3		40	0	0	0.00564	0.00564	50	116%	80	120	0%	
Manganese	A	mg/L	0.02286	0.02286		0.02	0	0	0.000095	0.001	1	114%	80	120	0%	
Mercury	A	mg/L	-1.141E-07	-1.141E-07		0	0	0	0.00016	0.001	0.002	0%			0%	
Molybdenum	A	mg/L	0.941	0.941		0.8	0	0	0.00005	0.001	0.1	118%	80	120	0%	
Nickel	A	mg/L	0.02303	0.02303		0.02	0	0	0.00063	0.001	1	115%	80	120	0%	
Potassium	A	mg/L	45.64	45.64		40	0	0	0.08139	0.08139	50	114%	80	120	0%	
Selenium	A	mg/L	0.01194	0.01194		0.01	0	0	0.00033	0.001	1	119%	80	120	0%	
Silicon	A	mg/L	0.0003551	0.0003551		0	0	0	0.01223	0.1	0.4	0%			0%	
Silver	A	mg/L	0.005474	0.005474		0.005	0	0	0.00002	0.001	0.04	109%	80	120	0%	
Sodium	A	mg/L	115.6	115.6		100	0	0	0.02171	0.02171	50	116%	80	120	0%	
Strontium	A	mg/L	0.001449	0.001449		0	0	0	0.00014	0.001	1	0%			0%	
Thallium	A	mg/L	0.00003323	0.00003323		0	0	0	0.000041	0.001	1	0%			0%	
Thorium	A	mg/L	0.00001294	0.00001294		0	0	0	0.00061	0.001	1	0%			0%	
Tin	A	mg/L	0.0001011	0.0001011		0	0	0	0.00132	0.00132	0.1	0%			0%	
Titanium	A	mg/L	0.8973	0.8973		0.8	0	0	0.000094	0.001	1	112%	80	120	0%	
Uranium	A	mg/L	7.176E-06	7.176E-06		0	0	0	0.000052	0.0003	1	0%			0%	
Vanadium	A	mg/L	0.02133	0.02133		0.02	0	0	0.0013	0.0013	1	107%	80	120	0%	
Zinc	A	mg/L	0.01197	0.01197		0.01	0	0	0.00273	0.00273	1	120%	80	120	0%	
Iron, Ferrous	C	mg/L	115.3	115.3		0	0	0	0.00119	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					
14968452	Rinse	ICPMS-6020-W-	SAMP		1/7/2022 2:55:51	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	-6.524E-05	0		0	0	0	0.00086	0.001	1	0%	0	0	0%	
Antimony	A	mg/L	-2.204E-06	0		0	0	0	0.00042	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	-5.638E-05	0		0	0	0	0.00019	0.001	1	0%	0	0	0%	
Barium	A	mg/L	3.402E-06	0		0	0	0	0.000042	0.001	1	0%	0	0	0%	
Beryllium	A	mg/L	0.00008129	0		0	0	0	0.00012	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0.00001049	0		0	0	0	0.000025	0.001	1	0%	0	0	0%	
Calcium	A	mg/L	0.002885	0		0	0	0	0.02092	0.02092	50	0%	0	0	0%	L
Chromium	A	mg/L	-1.366E-05	0		0	0	0	0.00018	0.001	1	0%	0	0	0%	
Iron	A	mg/L	0.0005284	0		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Lanthanum	A	mg/L	3.364E-07	0		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.0000127	0		0	0	0	0.000056	0.001	1	0%	0	0	0%	
Mercury	A	mg/L	-4.893E-06	0		0	0	0	0.00016	0.001	0.002	0%	0	0	0%	
Molybdenum	A	mg/L	0.0002082	0.0002082		0	0	0	0.00005	0.001	0.1	0%	0	0	0%	J
Nickel	A	mg/L	9.021E-06	0		0	0	0	0.00063	0.001	1	0%	0	0	0%	
Potassium	A	mg/L	0.006036	0		0	0	0	0.08139	0.08139	50	0%	0	0	0%	L
Selenium	A	mg/L	0.00001069	0		0	0	0	0.00033	0.001	1	0%	0	0	0%	
Silicon	A	mg/L	-0.001564	0		0	0	0	0.01223	0.1	0.4	0%	0	0	0%	
Silver	A	mg/L	3.832E-06	0		0	0	0	0.00002	0.001	0.04	0%	0	0	0%	
Strontium	A	mg/L	4.763E-06	0		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	-5.361E-06	0		0	0	0	0.000041	0.001	1	0%	0	0	0%	
Thorium	A	mg/L	6.903E-07	0		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Tin	A	mg/L	-2.315E-06	0		0	0	0	0.00132	0.00132	0.1	0%	0	0	0%	
Titanium	A	mg/L	0.00005478	0		0	0	0	0.000094	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	2.579E-06	0		0	0	0	0.000052	0.0003	1	0%	0	0	0%	
Vanadium	A	mg/L	-0.001493	0		0	0	0	0.0013	0.0013	1	0%	0	0	0%	
Iron, Ferrous	C	mg/L	0.0005284	0		0	0	0	0.00119	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					
14968453	Rinse	ICPMS-6020-W-	SAMP		1/7/2022 3:02:01	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	-0.0004746	0		0	0	0	0.00086	0.001	1	0%	0	0	0%	
Antimony	A	mg/L	-7.618E-06	0		0	0	0	0.00042	0.001	0.1	0%	0	0	0%	
Arsenic	A	mg/L	-5.494E-05	0		0	0	0	0.00019	0.001	1	0%	0	0	0%	
Barium	A	mg/L	-7.078E-06	0		0	0	0	0.000042	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					
14968453	Rinse	ICPMS-6020-W-	SAMP		1/7/2022 3:02:01	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Beryllium	A	mg/L	0.00002018	0		0	0	0	0.00012	0.001	1	0%	0	0	0%	
Cadmium	A	mg/L	0.00001037	0		0	0	0	0.000025	0.001	1	0%	0	0	0%	
Calcium	A	mg/L	0.001439	0		0	0	0	0.02092	0.02092	50	0%	0	0	0%	L
Chromium	A	mg/L	-1.108E-05	0		0	0	0	0.00018	0.001	1	0%	0	0	0%	
Iron	A	mg/L	-0.0009725	0		0	0	0	0.00119	0.00119	5	0%	0	0	0%	
Lanthanum	A	mg/L	1.427E-07	0		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.00001037	0		0	0	0	0.000056	0.001	1	0%	0	0	0%	
Mercury	A	mg/L	-4.577E-06	0		0	0	0	0.00016	0.001	0.002	0%	0	0	0%	
Molybdenum	A	mg/L	0.00005674	0.00005674		0	0	0	0.00005	0.001	0.1	0%	0	0	0%	J
Nickel	A	mg/L	7.123E-06	0		0	0	0	0.00063	0.001	1	0%	0	0	0%	
Potassium	A	mg/L	0.003101	0		0	0	0	0.08139	0.08139	50	0%	0	0	0%	L
Selenium	A	mg/L	1.875E-06	0		0	0	0	0.00033	0.001	1	0%	0	0	0%	
Silicon	A	mg/L	-0.001905	0		0	0	0	0.01223	0.1	0.4	0%	0	0	0%	
Silver	A	mg/L	2.318E-06	0		0	0	0	0.00002	0.001	0.04	0%	0	0	0%	
Strontium	A	mg/L	6.485E-06	0		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	-5.112E-05	0		0	0	0	0.000041	0.001	1	0%	0	0	0%	
Thorium	A	mg/L	-9.843E-07	0		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Tin	A	mg/L	-8.714E-06	0		0	0	0	0.00132	0.00132	0.1	0%	0	0	0%	
Titanium	A	mg/L	0.00003265	0		0	0	0	0.000094	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	9.103E-07	0		0	0	0	0.000052	0.0003	1	0%	0	0	0%	
Vanadium	A	mg/L	-0.001479	0		0	0	0	0.0013	0.0013	1	0%	0	0	0%	
Iron, Ferrous	C	mg/L	-0.0009725	0		0	0	0	0.00119	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					
14968454	CCV	ICPMS-6020-W-	CCV		1/7/2022 3:08:10	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.0515	0.0515		0.05	0	0	0.00086	0.001	1	103%	90	110	0%	
Antimony	A	mg/L	0.05313	0.05313		0.05	0	0	0.00042	0.001	0.1	106%	90	110	0%	
Arsenic	A	mg/L	0.05268	0.05268		0.05	0	0	0.00019	0.001	1	105%	90	110	0%	
Barium	A	mg/L	0.05417	0.05417		0.05	0	0	0.000042	0.001	1	108%	90	110	0%	
Beryllium	A	mg/L	0.05128	0.05128		0.05	0	0	0.00012	0.001	1	103%	90	110	0%	
Boron	A	mg/L	0.0507	0.0507		0.05	0	0	0.00561	0.00561	1	101%	90	110	0%	
Cadmium	A	mg/L	0.05112	0.05112		0.05	0	0	0.000025	0.001	1	102%	90	110	0%	
Calcium	A	mg/L	12.23	12.23		12.5	0	0	0.02092	0.02092	50	98%	90	110	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist					
14968454	CCV	ICPMS-6020-W- CCV			1/7/2022 3:08:10	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Cerium	A	mg/L	0.04921	0.04921		0.05	0	0	0.000012	0.001	0.1	98%	90	110	0%	
Chromium	A	mg/L	0.05142	0.05142		0.05	0	0	0.00018	0.001	1	103%	90	110	0%	
Cobalt	A	mg/L	0.05534	0.05534		0.05	0	0	0.000042	0.001	1	111%	90	110	0%	S
Copper	A	mg/L	0.0541	0.0541		0.05	0	0	0.00027	0.001	1	108%	90	110	0%	
Iron	A	mg/L	1.252	1.252		1.3	0	0	0.00119	0.00119	5	96%	90	110	0%	
Lanthanum	A	mg/L	0.0487	0.0487		0.05	0	0	0.000011	0.001	0.1	97%	90	110	0%	
Lead	A	mg/L	0.05165	0.05165		0.05	0	0	0.000056	0.001	1	103%	90	110	0%	
Magnesium	A	mg/L	12.52	12.52		12.5	0	0	0.00564	0.00564	50	100%	90	110	0%	
Manganese	A	mg/L	0.05144	0.05144		0.05	0	0	0.000095	0.001	1	103%	90	110	0%	
Mercury	A	mg/L	0.0009897	0.0009897		0.001	0	0	0.00016	0.001	0.002	99%	90	110	0%	
Molybdenum	A	mg/L	0.05063	0.05063		0.05	0	0	0.00005	0.001	0.1	101%	90	110	0%	
Nickel	A	mg/L	0.05243	0.05243		0.05	0	0	0.00063	0.001	1	105%	90	110	0%	
Potassium	A	mg/L	12.43	12.43		12.5	0	0	0.08139	0.08139	50	99%	90	110	0%	
Selenium	A	mg/L	0.05275	0.05275		0.05	0	0	0.00033	0.001	1	105%	90	110	0%	
Silicon	A	mg/L	0.2138	0.2138		0.2	0	0	0.01223	0.1	0.4	107%	90	110	0%	
Silver	A	mg/L	0.02027	0.02027		0.02	0	0	0.00002	0.001	0.04	101%	90	110	0%	
Sodium	A	mg/L	12.4	12.4		12.5	0	0	0.02171	0.02171	50	99%	90	110	0%	
Strontium	A	mg/L	0.05168	0.05168		0.05	0	0	0.00014	0.001	1	103%	90	110	0%	
Thallium	A	mg/L	0.05132	0.05132		0.05	0	0	0.000041	0.001	1	103%	90	110	0%	
Thorium	A	mg/L	0.05197	0.05197		0.05	0	0	0.00061	0.001	1	104%	90	110	0%	
Tin	A	mg/L	0.05222	0.05222		0.05	0	0	0.00132	0.00132	0.1	104%	90	110	0%	
Titanium	A	mg/L	0.0534	0.0534		0.05	0	0	0.000094	0.001	1	107%	90	110	0%	
Uranium	A	mg/L	0.05124	0.05124		0.05	0	0	0.000052	0.0003	1	102%	90	110	0%	
Vanadium	A	mg/L	0.05033	0.05033		0.05	0	0	0.0013	0.0013	1	101%	90	110	0%	
Zinc	A	mg/L	0.05409	0.05409		0.05	0	0	0.00273	0.00273	1	108%	90	110	0%	
Iron, Ferrous	C	mg/L	1.252	1.252		0	0	0	0.00119	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					
14968455	CCB	ICPMS-6020-W- CCB			1/7/2022 3:14:08	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Aluminum	A	mg/L	0.0006489	0.0006489		0	0	0	0.00086	0.001	1	0%			0%	
Antimony	A	mg/L	0.000039	0.000039		0	0	0	0.00042	0.001	0.1	0%			0%	
Arsenic	A	mg/L	-3.227E-05	-3.227E-05		0	0	0	0.00019	0.001	1	0%			0%	
Barium	A	mg/L	9.276E-06	9.276E-06		0	0	0	0.000042	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					
14968455	CCB	ICPMS-6020-W-	CCB		1/7/2022 3:14:08	1	R372863		0	0						
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Beryllium	A	mg/L	0.0000282	0.0000282		0	0	0	0.00012	0.001	1	0%			0%	
Boron	A	mg/L	0.0002873	0.0002873		0	0	0	0.00561	0.00561	1	0%			0%	
Cadmium	A	mg/L	0.00001053	0.00001053		0	0	0	0.000025	0.001	1	0%			0%	
Calcium	A	mg/L	0.02689	0.02689		0	0	0	0.02092	0.02092	50	0%			0%	
Cerium	A	mg/L	9.026E-07	9.026E-07		0	0	0	0.000012	0.001	0.1	0%	0	0	0%	
Chromium	A	mg/L	1.768E-06	1.768E-06		0	0	0	0.00018	0.001	1	0%			0%	
Cobalt	A	mg/L	0.00001163	0.00001163		0	0	0	0.000042	0.001	1	0%			0%	
Copper	A	mg/L	0.00003757	0.00003757		0	0	0	0.00027	0.001	1	0%			0%	
Iron	A	mg/L	-0.0011	-0.0011		0	0	0	0.00119	0.00119	5	0%			0%	
Lanthanum	A	mg/L	8.919E-07	8.919E-07		0	0	0	0.000011	0.001	0.1	0%	0	0	0%	
Lead	A	mg/L	0.00001892	0.00001892		0	0	0	0.000056	0.001	1	0%			0%	
Magnesium	A	mg/L	0.00008342	0.00008342		0	0	0	0.00564	0.00564	50	0%			0%	
Manganese	A	mg/L	-1.975E-05	-1.975E-05		0	0	0	0.000095	0.001	1	0%			0%	
Mercury	A	mg/L	-1.874E-07	-1.874E-07		0	0	0	0.00016	0.001	0.002	0%			0%	
Molybdenum	A	mg/L	0.00004143	0.00004143		0	0	0	0.00005	0.001	0.1	0%			0%	
Nickel	A	mg/L	7.394E-06	7.394E-06		0	0	0	0.00063	0.001	1	0%			0%	
Potassium	A	mg/L	0.007106	0.007106		0	0	0	0.08139	0.08139	50	0%			0%	
Selenium	A	mg/L	0.00001669	0.00001669		0	0	0	0.00033	0.001	1	0%			0%	
Silicon	A	mg/L	-0.001327	-0.001327		0	0	0	0.01223	0.1	0.4	0%	0	0	0%	
Silver	A	mg/L	4.754E-06	4.754E-06		0	0	0	0.00002	0.001	0.04	0%			0%	
Sodium	A	mg/L	0.01365	0.01365		0	0	0	0.02171	0.02171	50	0%			0%	
Strontium	A	mg/L	4.033E-06	4.033E-06		0	0	0	0.00014	0.001	1	0%	0	0	0%	
Thallium	A	mg/L	0.0001454	0.0001454		0	0	0	0.000041	0.001	1	0%	0	0	0%	
Thorium	A	mg/L	0.0000116	0.0000116		0	0	0	0.00061	0.001	1	0%	0	0	0%	
Tin	A	mg/L	0.00001684	0.00001684		0	0	0	0.00132	0.00132	0.1	0%	0	0	0%	
Titanium	A	mg/L	0.00003163	0.00003163		0	0	0	0.000094	0.001	1	0%	0	0	0%	
Uranium	A	mg/L	2.534E-06	2.534E-06		0	0	0	0.000052	0.0003	1	0%	0	0	0%	
Vanadium	A	mg/L	-0.001304	-0.001304		0	0	0	0.0013	0.0013	1	0%	0	0	0%	
Zinc	A	mg/L	-1.067E-05	-1.067E-05		0	0	0	0.00273	0.00273	1	0%	0	0	0%	
Iron, Ferrous	C	mg/L	-0.0011	-0.0011		0	0	0	0.00119	0.00119	5	0%	0	0	0%	

## Batch Summary Report

Batch Folder: D:\Agilent\ICPMH\1\DATA\220106DoD.b\  
 Analysis File: 220106DoD.batch.bin  
 Tune Step: #1 No Gas  
           #2 H2  
           #3 He

	Rjct	Acq. Date-Time	Data File	Sample Name	Type	Level	Dilution
1		2022-01-06 11:32:27	001BLKV.d	Rinse	BlkVrfy		1.0000
2		2022-01-06 11:38:36	002BLKV.d	Rinse	BlkVrfy		1.0000
3		2022-01-06 11:44:46	003BLKV.d	Rinse	BlkVrfy		1.0000
4		2022-01-06 11:50:57	004CALB.d	Cal Blk	CalBlk	1	1.0000
5		2022-01-06 11:58:13	005CAL.S.d	0.025 ppb STD	CalStd	2	1.0000
6		2022-01-06 12:04:49	006CAL.S.d	0.05 ppb STD	CalStd	3	1.0000
7		2022-01-06 12:11:25	007CAL.S.d	0.10 ppb STD	CalStd	4	1.0000
8		2022-01-06 12:18:00	008CAL.S.d	0.5 ppb STD	CalStd	5	1.0000
9		2022-01-06 12:24:35	009CAL.S.d	1 ppb STD	CalStd	6	1.0000
10		2022-01-06 12:31:10	010CAL.S.d	10 ppb STD	CalStd	7	1.0000
11		2022-01-06 12:37:43	011CAL.S.d	50 ppb STD	CalStd	8	1.0000
12		2022-01-06 12:44:02	012CAL.S.d	100 ppb STD	CalStd	9	1.0000
13		2022-01-06 12:50:01	013CAL.S.d	1000 ppb STD	CalStd	10	1.0000
14		2022-01-06 12:55:45	014CAL.S.d	100 ppb Br STD	CalStd	11	1.0000
15		2022-01-06 13:02:02	015BLKV.d	Rinse	BlkVrfy		1.0000
16		2022-01-06 13:08:13	016_QC1.d	QCS	QC1		1.0000
17		2022-01-06 13:14:13	017_CCV.d	CCV	CCV		1.0000
18		2022-01-06 13:20:11	018_CCB.d	CCB	CCB		1.0000
19		2022-01-06 13:26:22	019BLKV.d	Rinse	BlkVrfy		1.0000
20		2022-01-06 13:32:33	020MBLK.d	LRB	MBLK		1.0000
21		2022-01-06 13:38:43	021_LFB.d	LFB	LFB		1.0300
22		2022-01-06 13:44:44	022ICSA.d	ICSA	ICSA		1.0000
23		2022-01-06 13:50:53	023ICSB.d	ICSAB	ICSAB		1.0000
24		2022-01-06 13:57:03	024BLKV.d	Rinse	BlkVrfy		1.0000
25		2022-01-06 14:03:12	025BLKV.d	Rinse	BlkVrfy		1.0000

## Batch Summary Report

	Rjct	Acq. Date-Time	Data File	Sample Name	Type	Level	Dilution
26		2022-01-06 14:09:22	026_CCV.d	CCV	CCV		1.0000
27		2022-01-06 14:15:21	027_CCB.d	CCB	CCB		1.0000
28		2022-01-06 14:21:33	028ARef.d	MB-162587	AllRef		1.0000
29		2022-01-06 14:27:42	029ARef.d	MB-162611	AllRef		1.0000
30		2022-01-06 14:33:53	030ARef.d	MB-162627	AllRef		1.0000
31		2022-01-06 14:40:03	031ARef.d	MB-162695	AllRef		1.0000
32		2022-01-06 14:46:13	032ARef.d	MB-162708	AllRef		1.0000
33		2022-01-06 14:52:23	033LCS4.d	LCS4-162587	LCS4		1.0000
34		2022-01-06 14:58:14	034LCS4.d	LCS4-162611	LCS4		1.0000
35		2022-01-06 15:04:04	035LCS4.d	LCS4-162627	LCS4		1.0000
36		2022-01-06 15:09:54	036LCS4.d	LCS4-162695	LCS4		1.0000
37		2022-01-06 15:15:44	037LCS4.d	LCS4-162708	LCS4		1.0000
38		2022-01-06 15:21:35	038_CCV.d	CCV	CCV		1.0000
39		2022-01-06 15:27:31	039_CCB.d	CCB	CCB		1.0000
40		2022-01-06 15:33:42	040BLKV.d	Rinse	BlkVrfy		1.0000
41		2022-01-06 15:39:53	041SMPL.d	B21122077-001A	Sample		1.0000
42		2022-01-06 15:46:01	042ARef.d	B21122077-001ADIL	AllRef		5.0000
43		2022-01-06 15:52:09	043MS.d	B21122077-001AMS	MS		1.0300
44		2022-01-06 15:58:08	044MSD.d	B21122077-001AMSD	MSD		1.0300
45		2022-01-06 16:04:06	045BLKV.d	Rinse	BlkVrfy		1.0000
46		2022-01-06 16:10:17	046SMPL.d	B21122088-001A	Sample		1.0000
47		2022-01-06 16:16:26	047SMPL.d	B21122088-001B	Sample		1.0000
48		2022-01-06 16:22:33	048SMPL.d	B21122088-001BDIL	Sample		5.0000
49		2022-01-06 16:28:42	049ARef.d	B21122088-001BPDS1	AllRef		1.0300
50		2022-01-06 16:35:02	050MS4.d	B21122088-001BMS4	MS4		1.0000
51		2022-01-06 16:40:52	051MSD4.d	B21122088-001BMSD4	MSD4		1.0000
52		2022-01-06 16:46:43	052_CCV.d	CCV	CCV		1.0000
53		2022-01-06 16:52:41	053_CCB.d	CCB	CCB		1.0000
54		2022-01-06 16:58:51	054BLKV.d	Rinse	BlkVrfy		1.0000
55		2022-01-06 17:05:01	055SMPL.d	B21122090-001A	Sample		1.0000
56		2022-01-06 17:11:09	056SMPL.d	B21122090-001B	Sample		1.0000
57		2022-01-06 17:17:18	057SMPL.d	B21122090-001BDIL	Sample		5.0000

## Batch Summary Report

	Rjct	Acq. Date-Time	Data File	Sample Name	Type	Level	Dilution
58		2022-01-06 17:23:26	058ARef.d	B21122090-001BPDS1	AllRef		1.0300
59		2022-01-06 17:29:23	059MS4.d	B21122090-001BMS4	MS4		1.0000
60		2022-01-06 17:35:13	060MSD4.d	B21122090-001BMSD4	MSD4		1.0000
61		2022-01-06 17:41:04	061BLKV.d	Rinse	BlkVrfy		1.0000
62		2022-01-06 17:47:15	062SMPL.d	B21122105-001A	Sample		1.0000
63		2022-01-06 17:53:23	063SMPL.d	B21122105-001B	Sample		1.0000
64		2022-01-06 17:59:32	064SMPL.d	B21122168-001A	Sample		1.0000
65		2022-01-06 18:05:40	065ARef.d	B21122168-001ADIL	AllRef		5.0000
66		2022-01-06 18:11:49	066_CCV.d	CCV	CCV		1.0000
67		2022-01-06 18:17:47	067_CCB.d	CCB	CCB		1.0000
68		2022-01-06 18:23:59	068MS.d	B21122168-001AMS	MS		1.0300
69		2022-01-06 18:29:59	069MSD.d	B21122168-001AMSD	MSD		1.0300
70		2022-01-06 18:35:56	070BLKV.d	Rinse	BlkVrfy		1.0000
71		2022-01-06 18:42:07	071SMPL.d	B21122168-001B	Sample		1.0000
72		2022-01-06 18:48:13	072SMPL.d	B21122168-001BDIL	Sample		5.0000
73		2022-01-06 18:54:19	073ARef.d	B21122168-001BPDS1	AllRef		1.0300
74		2022-01-06 19:00:18	074MS4.d	B21122168-001BMS4	MS4		1.0000
75		2022-01-06 19:06:08	075MSD4.d	B21122168-001BMSD4	MSD4		1.0000
76		2022-01-06 19:11:59	076BLKV.d	Rinse	BlkVrfy		1.0000
77		2022-01-06 19:18:09	077SMPL.d	B21122168-006A	Sample		1.0000
78		2022-01-06 19:24:15	078SMPL.d	B21122168-006B	Sample		1.0000
79		2022-01-06 19:30:21	079SMPL.d	B21122180-001A	Sample		1.0000
80		2022-01-06 19:36:28	080_CCV.d	CCV	CCV		1.0000
81		2022-01-06 19:42:27	081_CCB.d	CCB	CCB		1.0000
82		2022-01-06 19:48:38	082SMPL.d	B21122180-001B	Sample		1.0000
83		2022-01-06 19:54:45	083SMPL.d	B21122188-001A	Sample		1.0000
84		2022-01-06 20:00:54	084SMPL.d	B21122188-001B	Sample		1.0000
85		2022-01-06 20:07:03	085SMPL.d	B21122190-001A	Sample		1.0000
86		2022-01-06 20:13:11	086SMPL.d	B21122190-001B	Sample		1.0000
87		2022-01-06 20:19:19	087SMPL.d	B21122198-001A	Sample		1.0000
88		2022-01-06 20:25:29	088SMPL.d	B21122198-001B	Sample		1.0000
89		2022-01-06 20:31:37	089SMPL.d	B21122204-001A	Sample		1.0000



## Batch Summary Report

	Rjct	Acq. Date-Time	Data File	Sample Name	Type	Level	Dilution
90		2022-01-06 20:37:45	090SMPL.d	B21122204-001B	Sample		1.0000
91		2022-01-06 20:43:51	091SMPL.d	B21122211-001A	Sample		1.0000
92		2022-01-06 20:49:59	092_CCV.d	CCV	CCV		1.0000
93		2022-01-06 20:55:56	093_CCB.d	CCB	CCB		1.0000
94		2022-01-06 21:02:07	094SMPL.d	B21122211-001B	Sample		1.0000
95		2022-01-06 21:08:15	095SMPL.d	B22010002-001A	Sample		1.0000
96		2022-01-06 21:14:22	096SMPL.d	B22010002-001B	Sample		1.0000
97		2022-01-06 21:20:30	097SMPL.d	B22010002-002A	Sample		1.0000
98		2022-01-06 21:26:39	098SMPL.d	B22010002-002B	Sample		1.0000
99		2022-01-06 21:32:47	099SMPL.d	B22010096-001A	Sample		1.0000
100		2022-01-06 21:38:54	100ARef.d	B22010096-001ADIL	AllRef		5.0000
101		2022-01-06 21:45:03	101MS.d	B22010096-001AMS	MS		1.0300
102		2022-01-06 21:51:02	102MSD.d	B22010096-001AMSD	MSD		1.0300
103		2022-01-06 21:57:01	103BLKV.d	Rinse	BlkVrfy		1.0000
104		2022-01-06 22:03:10	104SMPL.d	B22010096-001B	Sample		1.0000
105		2022-01-06 22:09:19	105_CCV.d	CCV	CCV		1.0000
106		2022-01-06 22:15:16	106_CCB.d	CCB	CCB		1.0000
107		2022-01-06 22:21:28	107SMPL.d	B22010096-001BDIL	Sample		5.0000
108		2022-01-06 22:27:37	108ARef.d	B22010096-001BPDS1	AllRef		1.0300
109		2022-01-06 22:33:35	109MS4.d	B22010096-001BMS4	MS4		1.0000
110		2022-01-06 22:39:25	110MSD4.d	B22010096-001BMSD4	MSD4		1.0000
111		2022-01-06 22:45:16	111BLKV.d	Rinse	BlkVrfy		1.0000
112		2022-01-06 22:51:26	112SMPL.d	B22010120-001A	Sample		1.0000
113		2022-01-06 22:57:33	113SMPL.d	B22010120-001B	Sample		1.0000
114		2022-01-06 23:03:42	114SMPL.d	B22010134-001A	Sample		1.0000
115		2022-01-06 23:09:49	115SMPL.d	B22010134-001B	Sample		1.0000
116		2022-01-06 23:15:56	116SMPL.d	B22010141-001A	Sample		1.0000
117		2022-01-06 23:22:05	117SMPL.d	B22010141-001B	Sample		1.0000
118		2022-01-06 23:28:12	118_CCV.d	CCV	CCV		1.0000
119		2022-01-06 23:34:09	119_CCB.d	CCB	CCB		1.0000
120		2022-01-06 23:40:19	120SMPL.d	B22010141-001BDIL	Sample		5.0000
121		2022-01-06 23:46:26	121ARef.d	B22010141-001BPDS1	AllRef		1.0300

## Batch Summary Report

	Rjct	Acq. Date-Time	Data File	Sample Name	Type	Level	Dilution
122		2022-01-06 23:52:24	122MS4.d	B22010141-001BMS4	MS4		1.0000
123		2022-01-06 23:58:14	123MSD4.d	B22010141-001BMSD4	MSD4		1.0000
124		2022-01-07 00:04:04	124BLKV.d	Rinse	BlkVrfy		1.0000
125		2022-01-07 00:10:13	125SMPL.d	B22010142-001A	Sample		1.0000
126		2022-01-07 00:16:22	126SMPL.d	B22010142-001B	Sample		1.0000
127		2022-01-07 00:22:29	127SMPL.d	B22010143-001A	Sample		1.0000
128		2022-01-07 00:28:37	128SMPL.d	B22010143-001B	Sample		1.0000
129		2022-01-07 00:34:47	129SMPL.d	B22010145-001A	Sample		1.0000
130		2022-01-07 00:40:54	130SMPL.d	B22010145-001B	Sample		1.0000
131		2022-01-07 00:47:01	131_CCV.d	CCV	CCV		1.0000
132		2022-01-07 00:52:59	132_CCB.d	CCB	CCB		1.0000
133		2022-01-07 00:59:08	133SMPL.d	B22010148-001A	Sample		1.0000
134		2022-01-07 01:05:16	134SMPL.d	B22010148-001B	Sample		1.0000
135		2022-01-07 01:11:23	135_CCV.d	CCV	CCV		1.0000
136		2022-01-07 01:17:21	136_CCB.d	CCB	CCB		1.0000
137		2022-01-07 01:23:31	137CALB.d	Cal Blk	CalBlk	1	1.0000
138		2022-01-07 01:29:49	138CAL.S.d	0.025 ppb STD	CalStd	2	1.0000
139		2022-01-07 01:36:08	139CAL.S.d	0.05 ppb STD	CalStd	3	1.0000
140		2022-01-07 01:42:26	140CAL.S.d	0.10 ppb STD	CalStd	4	1.0000
141		2022-01-07 01:48:44	141CAL.S.d	0.5 ppb STD	CalStd	5	1.0000
142		2022-01-07 01:55:01	142CAL.S.d	1 ppb STD	CalStd	6	1.0000
143		2022-01-07 02:01:18	143CAL.S.d	10 ppb STD	CalStd	7	1.0000
144		2022-01-07 02:07:34	144CAL.S.d	50 ppb STD	CalStd	8	1.0000
145		2022-01-07 02:13:39	145CAL.S.d	100 ppb STD	CalStd	9	1.0000
146		2022-01-07 02:19:29	146CAL.S.d	1000 ppb STD	CalStd	10	1.0000
147		2022-01-07 02:25:09	147CAL.S.d	100 ppb Br STD	CalStd	11	1.0000
148		2022-01-07 02:31:25	148BLKV.d	Rinse	BlkVrfy		1.0000
149		2022-01-07 02:37:36	149_QC1.d	QCS	QC1		1.0000
150		2022-01-07 02:43:32	150ICSA.d	ICSA	ICSA		1.0000
151		2022-01-07 02:49:43	151ICSB.d	ICSAB	ICSAB		1.0000
152		2022-01-07 02:55:51	152BLKV.d	Rinse	BlkVrfy		1.0000
153		2022-01-07 03:02:01	153BLKV.d	Rinse	BlkVrfy		1.0000

## Batch Summary Report

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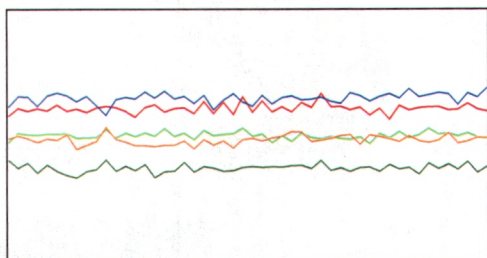
	Rjct	Acq. Date-Time	Data File	Sample Name	Type	Level	Dilution
154		2022-01-07 03:08:10	154_CCV.d	CCV	CCV		1.0000
155		2022-01-07 03:14:08	155_CCB.d	CCB	CCB		1.0000

# Tune Report

Operator Name elim  
 Acq/Data Batch D:\Agilent\ICPMH\1\DATA\220105A.b  
 Acq. Date-Time 2022-01-05 16:13:11  
 Report Comment ICPMS207-B JPV  
 Instrument Name G8403A JP17281923

[No Gas]

## Sensitivity



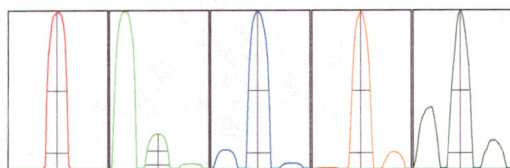
Mass	Range	Count	RSD%	Background
9	200000	122393	3.066	5.300
24	50000	25183	2.772	2.100
59	50000	32583	3.208	1.400
115	10000	4875	3.663	4.800
208	5000	1866	4.380	11.300

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

## Oxide/Doubly Charged Ratio

Oxide 156 / 140 1.155 %  
 Doubly Charged 70 / 140 1.394 %

## Resolution/Axis



Mass	Peak Height	Axis	W-50%	W-10%
9	125390.56	9.00	0.60	0.685
24	25231.25	24.00	0.62	0.736
59	32978.96	58.95	0.61	0.725
115	4860.28	115.00	0.55	0.704
208	1921.21	207.95	0.56	0.749

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

## Tune Parameters

### Plasma Parameters

Plasma Mode	---	Nebulizer Gas	0.80 L/min	Dilution Gas	0.12 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	10.2 V	Deflect	14.8 V
Extract 2	-245.0 V	Cell Entrance	-30 V	Plate Bias	-35 V

# Tune Report

Omega Bias -95 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 200 V

## QP Parameters

Mass Gain 125

Axis Gain 0.9988

QP Bias -3.0 V

Mass Offset 127

Axis Offset 0.09

## Hardware Settings

### Torch

Torch H -0.5 mm

Torch V 0.2 mm

### EM

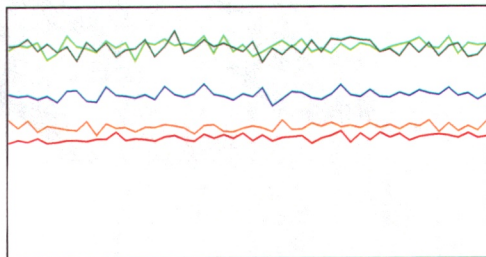
Discriminator 4.9 mV

Analog HV 2285 V

Pulse HV 1609 V

[H2]

## Sensitivity



Mass	Range	Count	RSD%	Background
9	50000	24050	2.697	0.300
24	10000	8473	2.745	0.100
59	20000	13076	2.792	0.000
115	10000	5257	2.901	0.300
208	2000	1687	3.156	0.300

Sampling Period [sec] 0.514

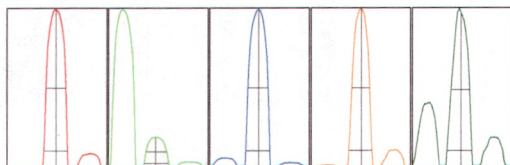
Integration Time [sec] 0.1

## Oxide/Doubly Charged Ratio

Oxide ---

Doubly Charged 70 / 140 1.080 %

## Resolution/Axis



Mass	Peak Height	Axis	W-50%	W-10%
9	24021.11	9.00	0.60	0.712
24	8453.17	23.95	0.62	0.730
59	13016.19	59.00	0.60	0.722
115	5229.04	115.05	0.54	0.698
208	1649.58	208.00	0.56	0.750

Integration Time [sec] 0.1

Acquisition Time [sec] 37.4

Y Axis Linear

## Tune Parameters

### Plasma Parameters



# Tune Report

Plasma Mode	---	Nebulizer Gas	0.80 L/min	Dilution Gas	0.12 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	10.2 V	Deflect	3.8 V
Extract 2	-225.0 V	Cell Entrance	-30 V	Plate Bias	-80 V
Omega Bias	-105 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	190 V		

## QP Parameters

Mass Gain	125	Axis Gain	0.9988	QP Bias	-13.0 V
Mass Offset	127	Axis Offset	0.09		

## Hardware Settings

### Torch

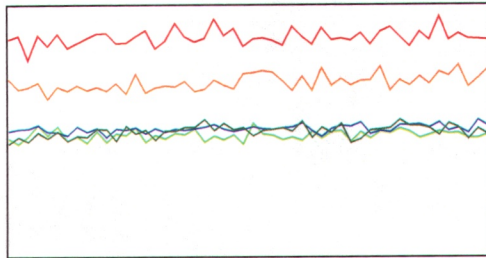
Torch H	-0.5 mm	Torch V	0.2 mm
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### EM

Discriminator	4.9 mV	Analog HV	2285 V	Pulse HV	1609 V
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[He]

## Sensitivity



Mass	Range	Count	RSD%	Background
9	2000	1751	3.490	4.200
24	2000	973	3.954	1.100
59	20000	10248	2.783	0.900
115	2000	1397	4.426	1.100
208	2000	1005	4.785	2.700

Sampling Period [sec] 0.514

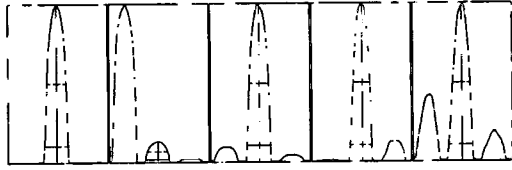
Integration Time [sec] 0.1

## Oxide/Doubly Charged Ratio

Oxide	---
Doubly Charged	70 / 140 1.217 %

## Resolution/Axis

# Tune Report



Mass	Peak Height	Axis	W-50%	W-10%
9	1786.61	9.00	0.58	0.709
24	991.36	24.00	0.61	0.727
59	10378.82	59.00	0.59	0.718
115	1415.51	115.05	0.51	0.659
208	1013.17	208.00	0.52	0.722

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

## Tune Parameters

### Plasma Parameters

Plasma Mode	---	Nebulizer Gas	0.80 L/min	Dilution Gas	0.12 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	10.2 V	Deflect	1.6 V
Extract 2	-225.0 V	Cell Entrance	-30 V	Plate Bias	-80 V
Omega Bias	-105 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	0.9988	QP Bias	-13.0 V
Mass Offset	127	Axis Offset	0.09		

## Hardware Settings

### Torch

Torch H	-0.5 mm	Torch V	0.2 mm
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### EM

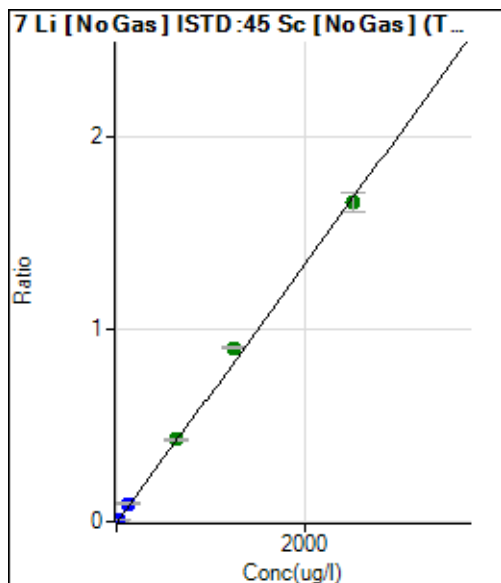
Discriminator	4.9 mV	Analog HV	2285 V	Pulse HV	1609 V
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Calibration for 016\_QC1.d

Batch Folder: D:\Agilent\ICPMH\1\DATA\220106DoD.b\  
 Analysis File: 220106DoD.batch.bin  
 DA Date-Time: 2022-01-06 13:10:46  
 Calibration Title:  
 Calibration Method: External Calibration  
 VIS Interpolation Fit:

Level	Standard Data File	Sample Name	Acq. Date-Time
1	004CALB.d	Cal Blk	2022-01-06 11:50:57
2	005CALS.d	0.025 ppb STD	2022-01-06 11:58:13
3	006CALS.d	0.05 ppb STD	2022-01-06 12:04:49
4	007CALS.d	0.10 ppb STD	2022-01-06 12:11:25
5	008CALS.d	0.5 ppb STD	2022-01-06 12:18:00
6	009CALS.d	1 ppb STD	2022-01-06 12:24:35
7	010CALS.d	10 ppb STD	2022-01-06 12:31:10
8	011CALS.d	50 ppb STD	2022-01-06 12:37:43
9	012CALS.d	100 ppb STD	2022-01-06 12:44:02
10	013CALS.d	1000 ppb STD	2022-01-06 12:50:01
11	014CALS.d	100 ppb Br STD	2022-01-06 12:55:45





	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	3373.07	0.0009	P	3.8	
2	<input type="checkbox"/>	0.313	0.338	4142.90	0.0012	P	3.5	8.1
3	<input type="checkbox"/>	0.625	0.702	4880.08	0.0014	P	2.5	12.3
4	<input type="checkbox"/>	1.250	1.522	7098.51	0.0020	P	0.6	21.8
5	<input type="checkbox"/>	6.250	6.735	19372.11	0.0055	P	2.9	7.8
6	<input type="checkbox"/>	12.500	14.347	39561.99	0.0106	P	7.6	14.8
7	<input type="checkbox"/>	125.000	136.537	322602.40	0.0933	P	4.0	9.2
8	<input type="checkbox"/>	625.000	629.433	1525406.78	0.4268	A	2.2	0.7
9	<input type="checkbox"/>	1250.000	1336.534	3362762.46	0.9051	A	0.8	6.9
10	<input type="checkbox"/>	2500.000	2455.037	6650603.29	1.6618	A	5.4	-1.8
11	<input type="checkbox"/>			14140.24	0.0039	P	0.6	

$$y = 6.7650E-004 * x + 9.4157E-004$$

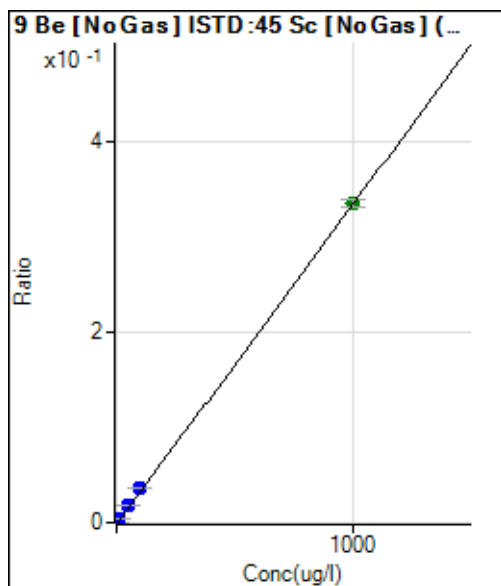
R = 0.9993

DL = 0.1573 ug/l

BEC = 1.392 ug/l

Weight: 1/y

Min Conc: <None>



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	18.67	0.0000	P	21.1	
2	<input type="checkbox"/>	0.025	0.021	43.32	0.0000	P	16.8	-16.7
3	<input type="checkbox"/>	0.050	0.055	81.31	0.0000	P	5.5	9.5
4	<input type="checkbox"/>	0.100	0.128	173.30	0.0000	P	4.5	27.8
5	<input type="checkbox"/>	0.500	0.556	675.55	0.0002	P	6.3	11.2
6	<input type="checkbox"/>	1.000	1.174	1484.44	0.0004	P	7.2	17.4
7	<input type="checkbox"/>	10.000	11.314	13144.41	0.0038	P	5.6	13.1
8	<input type="checkbox"/>	50.000	55.249	66285.13	0.0186	P	2.3	10.5
9	<input type="checkbox"/>	100.000	108.670	135425.29	0.0365	P	2.8	8.7
10	<input type="checkbox"/>	1000.000	998.857	1342094.33	0.3354	A	2.8	-0.1
11	<input type="checkbox"/>			245.62	0.0001	P	2.4	

$$y = 3.3576E-004 * x + 5.2415E-006$$

R = 1.0000

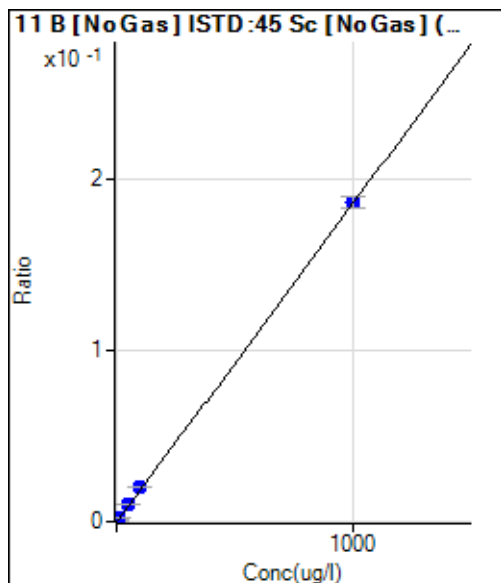
DL = 0.009902 ug/l

BEC = 0.01561 ug/l

Weight: 1/y

Min Conc: <None>

Calibration for 016\_QC1.d



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	1929.57	0.0005	P	7.2	
2	<input type="checkbox"/>			1720.79	0.0005	P	4.3	
3	<input type="checkbox"/>	0.050	-0.305	1660.09	0.0005	P	2.5	-710.9
4	<input type="checkbox"/>	0.100	-0.434	1648.75	0.0005	P	1.0	-534.1
5	<input type="checkbox"/>	0.500	-0.122	1816.18	0.0005	P	7.4	-124.4
6	<input type="checkbox"/>	1.000	0.257	2180.37	0.0006	P	9.0	-74.3
7	<input type="checkbox"/>	10.000	10.228	8455.77	0.0024	P	4.3	2.3
8	<input type="checkbox"/>	50.000	52.964	37230.07	0.0104	P	1.6	5.9
9	<input type="checkbox"/>	100.000	105.847	75261.41	0.0203	P	2.0	5.8
10	<input type="checkbox"/>	1000.000	999.266	747792.78	0.1868	P	4.0	-0.1
11	<input type="checkbox"/>			10088.10	0.0028	P	6.8	

$$y = 1.8644E-004 * x + 5.3892E-004$$

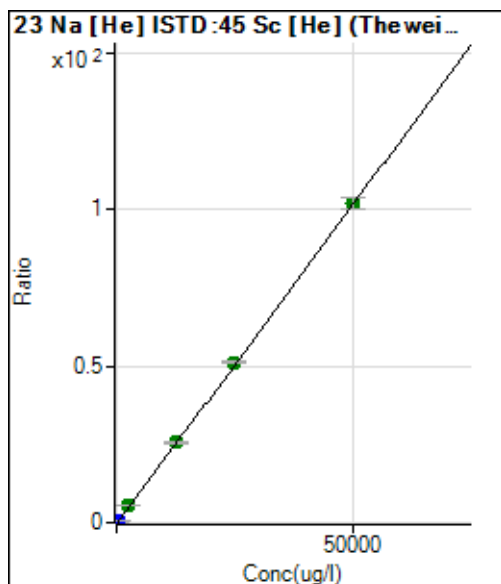
R = 1.0000

DL = 0.6248 ug/l

BEC = 2.891 ug/l

Weight: 1/y

Min Conc: <None>



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	24829.37	0.0577	P	2.3	
2	<input type="checkbox"/>	6.250	6.665	29989.82	0.0713	P	2.7	6.6
3	<input type="checkbox"/>	12.500	13.675	35967.33	0.0856	P	0.5	9.4
4	<input type="checkbox"/>	25.000	28.499	48390.92	0.1158	P	1.1	14.0
5	<input type="checkbox"/>	125.000	135.843	139878.30	0.3347	P	1.1	8.7
6	<input type="checkbox"/>	250.000	303.698	286161.26	0.6770	P	1.2	21.5
7	<input type="checkbox"/>	2500.000	2700.353	2392491.91	5.5642	A	1.3	8.0
8	<input type="checkbox"/>	12500.00	12477.81	10674832.41	25.5023	A	3.7	-0.2
9	<input type="checkbox"/>	25000.00	25022.12	22597853.27	51.0824	A	0.9	0.1
10	<input type="checkbox"/>	50000.00	49984.16	44745569.33	101.984	A	3.0	0.0
11	<input type="checkbox"/>			46852.84	0.1130	P	2.0	

$$y = 0.0020 * x + 0.0577$$

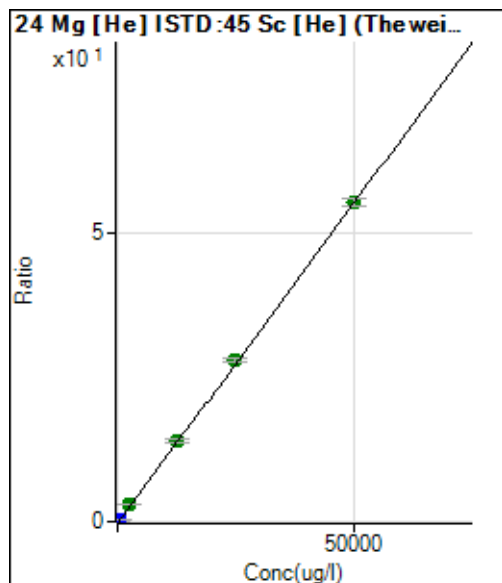
R = 1.0000

DL = 1.949 ug/l

BEC = 28.31 ug/l

Weight: 1/y

Min Conc: <None>



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	602.15	0.0014	P	20.0	
2	<input type="checkbox"/>	6.250	7.528	4095.78	0.0097	P	4.9	20.4
3	<input type="checkbox"/>	12.500	15.968	8022.98	0.0191	P	4.4	27.7
4	<input type="checkbox"/>	25.000	31.189	15021.10	0.0360	P	3.1	24.8
5	<input type="checkbox"/>	125.000	141.000	65877.46	0.1577	P	0.8	12.8
6	<input type="checkbox"/>	250.000	320.734	150854.67	0.3568	P	0.8	28.3
7	<input type="checkbox"/>	2500.000	2749.964	1310914.84	3.0489	A	2.2	10.0
8	<input type="checkbox"/>	12500.00	12554.15	5820075.15	13.9140	A	5.7	0.4
9	<input type="checkbox"/>	25000.00	25179.29	12345066.43	27.9053	A	2.1	0.7
10	<input type="checkbox"/>	50000.00	49883.91	24256294.70	55.2831	A	2.6	-0.2
11	<input type="checkbox"/>			3087.54	0.0074	P	7.8	

$$y = 0.0011 * x + 0.0014$$

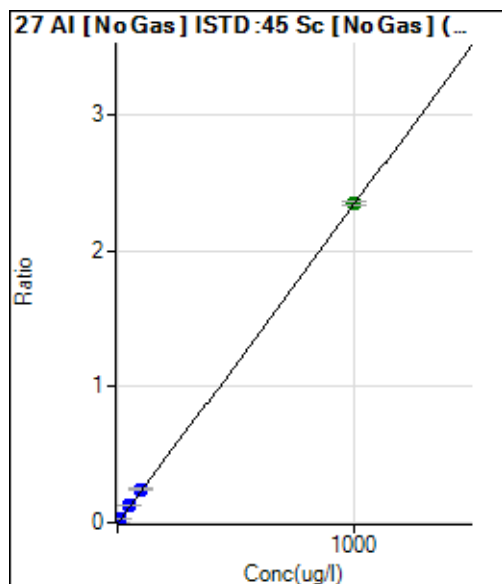
$$R = 1.0000$$

$$DL = 0.7564 \text{ ug/l}$$

$$BEC = 1.263 \text{ ug/l}$$

$$\text{Weight: } 1/y$$

$$\text{Min Conc: } <\text{None}>$$



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	19806.66	0.0055	P	4.9	
2	<input type="checkbox"/>			16323.47	0.0046	P	2.2	
3	<input type="checkbox"/>	0.050	-0.378	16007.56	0.0046	P	2.9	-856.1
4	<input type="checkbox"/>	0.100	-1.393	8155.62	0.0023	P	5.5	-1493.
5	<input type="checkbox"/>	0.500	-1.038	10915.14	0.0031	P	6.1	-307.7
6	<input type="checkbox"/>	1.000	-0.380	17261.18	0.0046	P	6.5	-138.0
7	<input type="checkbox"/>	10.000	8.846	90894.37	0.0263	P	4.2	-11.5
8	<input type="checkbox"/>	50.000	50.135	439701.98	0.1231	P	2.4	0.3
9	<input type="checkbox"/>	100.000	102.878	915663.50	0.2468	P	3.2	2.9
10	<input type="checkbox"/>	1000.000	999.719	9403387.08	2.3496	A	1.2	0.0
11	<input type="checkbox"/>			26056.24	0.0071	P	2.4	

$$y = 0.0023 * x + 0.0055$$

$$R = 1.0000$$

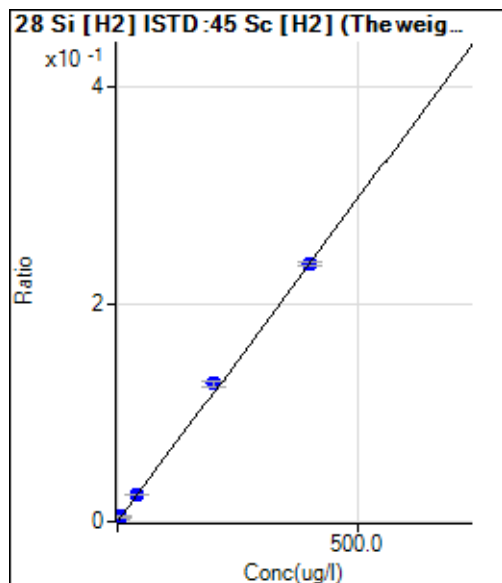
$$DL = 0.3491 \text{ ug/l}$$

$$BEC = 2.36 \text{ ug/l}$$

$$\text{Weight: } 1/y$$

$$\text{Min Conc: } <\text{None}>$$

Calibration for 016\_QC1.d



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	5682.04	0.0017	P	0.2	
2	<input type="checkbox"/>			6745.57	0.0021	P	7.4	
3	<input type="checkbox"/>	0.200	0.379	6318.55	0.0019	P	4.9	89.5
4	<input type="checkbox"/>	0.400	0.487	6622.14	0.0020	P	4.7	21.7
5	<input type="checkbox"/>	2.000	2.173	9910.61	0.0030	P	1.2	8.6
6	<input type="checkbox"/>	4.000	4.647	14487.51	0.0045	P	1.9	16.2
7	<input type="checkbox"/>	40.000	39.808	83373.13	0.0254	P	1.6	-0.5
8	<input type="checkbox"/>	200.000	210.104	410255.24	0.1269	P	3.3	5.1
9	<input type="checkbox"/>	400.000	394.960	788963.07	0.2372	P	1.7	-1.3
10	<input type="checkbox"/>			9549.67	0.0029	P	2.0	
11	<input type="checkbox"/>			20923.04	0.0064	P	4.7	

$$y = 5.9617E-004 * x + 0.0017$$

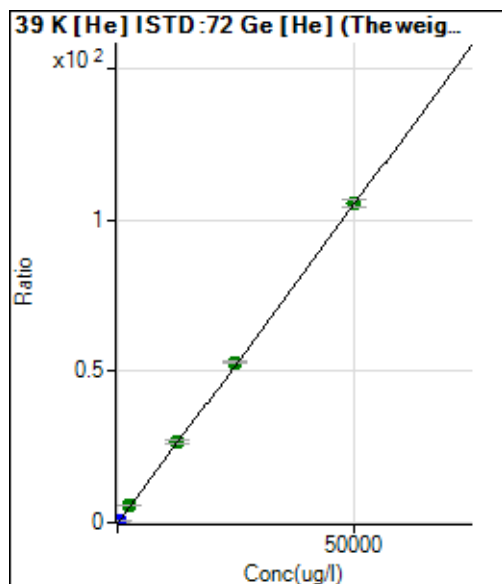
$$R = 0.9996$$

$$DL = 0.01439 \text{ ug/l}$$

$$BEC = 2.838 \text{ ug/l}$$

Weight: 1/y

Min Conc: <None>



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	66168.84	0.2095	P	2.4	
2	<input type="checkbox"/>	6.250	7.724	69654.42	0.2258	P	0.3	23.6
3	<input type="checkbox"/>	12.500	13.952	74043.35	0.2389	P	0.6	11.6
4	<input type="checkbox"/>	25.000	28.891	83944.26	0.2704	P	2.3	15.6
5	<input type="checkbox"/>	125.000	133.732	152412.30	0.4913	P	0.4	7.0
6	<input type="checkbox"/>	250.000	303.239	261188.87	0.8485	P	1.8	21.3
7	<input type="checkbox"/>	2500.000	2689.794	1833550.18	5.8778	A	2.4	7.6
8	<input type="checkbox"/>	12500.00	12477.98	8088951.96	26.5047	A	4.2	-0.2
9	<input type="checkbox"/>	25000.00	25045.43	16769218.64	52.9885	A	1.9	0.2
10	<input type="checkbox"/>	50000.00	49973.00	33126373.12	105.519	A	1.8	-0.1
11	<input type="checkbox"/>			72620.69	0.2404	P	2.3	

$$y = 0.0021 * x + 0.2095$$

$$R = 1.0000$$

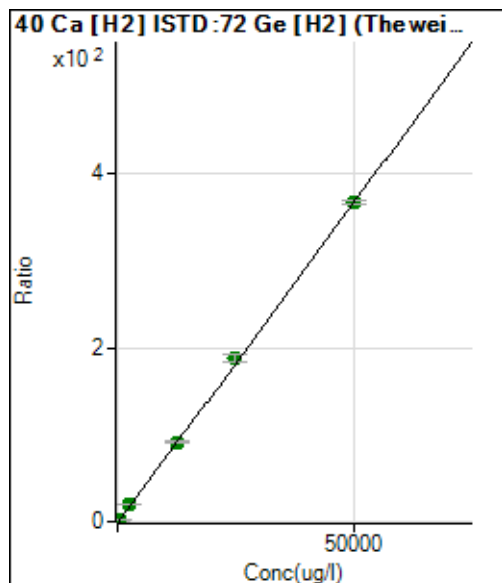
$$DL = 7.089 \text{ ug/l}$$

$$BEC = 99.41 \text{ ug/l}$$

Weight: 1/y

Min Conc: <None>

Calibration for 016\_QC1.d



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	79950.24	0.0602	P	0.6	
2	<input type="checkbox"/>	6.250	8.276	161399.97	0.1213	P	1.6	32.4
3	<input type="checkbox"/>	12.500	16.078	233823.82	0.1789	P	0.4	28.6
4	<input type="checkbox"/>	25.000	31.514	378309.87	0.2928	P	1.7	26.1
5	<input type="checkbox"/>	125.000	142.302	1478418.87	1.1108	A	3.1	13.8
6	<input type="checkbox"/>	250.000	302.506	3002920.47	2.2936	A	5.8	21.0
7	<input type="checkbox"/>	2500.000	2659.672	26115479.98	19.6966	A	0.6	6.4
8	<input type="checkbox"/>	12500.00	12322.16	119490647.2	91.0352	A	2.2	-1.4
9	<input type="checkbox"/>	25000.00	25493.10	249940970.5	188.276	A	3.6	2.0
10	<input type="checkbox"/>	50000.00	49789.61	477946693.1	367.658	A	1.5	-0.4
11	<input type="checkbox"/>			513256.73	0.4021	P	1.1	

$$y = 0.0074 * x + 0.0602$$

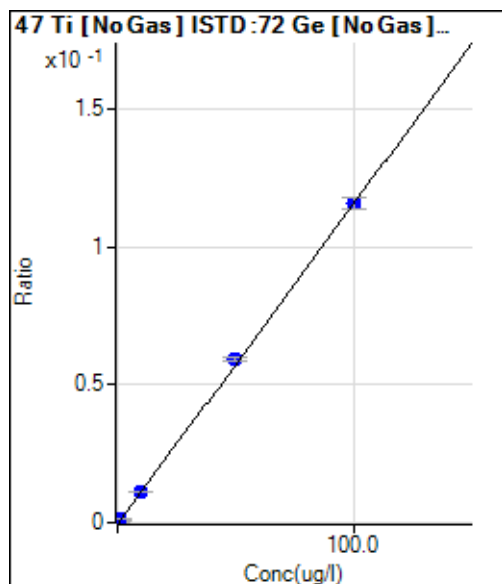
$$R = 0.9999$$

$$DL = 0.1463 \text{ ug/l}$$

$$BEC = 8.148 \text{ ug/l}$$

Weight: 1/y

Min Conc: <None>



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	96.77	0.0001	P	11.5	
2	<input type="checkbox"/>	0.025	0.066	210.21	0.0001	P	30.2	162.8
3	<input type="checkbox"/>	0.050	0.073	221.89	0.0001	P	20.5	46.5
4	<input type="checkbox"/>	0.100	0.128	325.33	0.0002	P	3.1	28.0
5	<input type="checkbox"/>	0.500	0.516	994.37	0.0007	P	13.7	3.1
6	<input type="checkbox"/>	1.000	1.123	2113.96	0.0014	P	8.4	12.3
7	<input type="checkbox"/>	10.000	9.702	17125.56	0.0114	P	2.4	-3.0
8	<input type="checkbox"/>	50.000	50.899	89113.51	0.0593	P	2.2	1.8
9	<input type="checkbox"/>	100.000	99.579	177133.57	0.1160	P	3.2	-0.4
10	<input type="checkbox"/>			7856.71	0.0052	P	6.9	
11	<input type="checkbox"/>			467.15	0.0003	P	13.0	

$$y = 0.0012 * x + 6.4258E-005$$

$$R = 0.9999$$

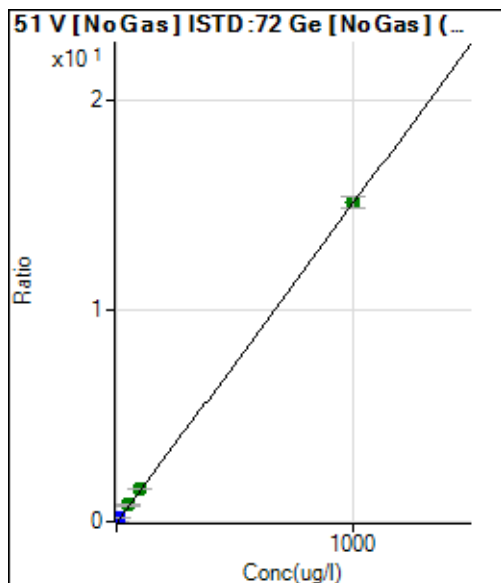
$$DL = 0.01908 \text{ ug/l}$$

$$BEC = 0.05519 \text{ ug/l}$$

Weight: 1/y

Min Conc: <None>

Calibration for 016\_QC1.d



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	598.97	0.0003	P	871.5	
2	<input type="checkbox"/>	0.025	0.037	1360.04	0.0009	P	115.1	49.6
3	<input type="checkbox"/>	0.050	-0.200	-3962.80	-0.0027	P	-228.	-499.9
4	<input type="checkbox"/>	0.100	-0.121	-2209.19	-0.0015	P	-672.	-221.3
5	<input type="checkbox"/>	0.500	0.758	17631.19	0.0118	P	37.8	51.7
6	<input type="checkbox"/>	1.000	1.028	24606.21	0.0159	P	31.2	2.8
7	<input type="checkbox"/>	10.000	11.785	269663.58	0.1789	P	3.8	17.8
8	<input type="checkbox"/>	50.000	51.160	1165457.54	0.7755	A	0.9	2.3
9	<input type="checkbox"/>	100.000	103.005	2385492.90	1.5609	A	3.2	3.0
10	<input type="checkbox"/>	1000.000	999.624	22996946.19	15.1454	A	3.8	0.0
11	<input type="checkbox"/>			8288.79	0.0054	P	418.9	

$$y = 0.0152 * x + 3.4555E-004$$

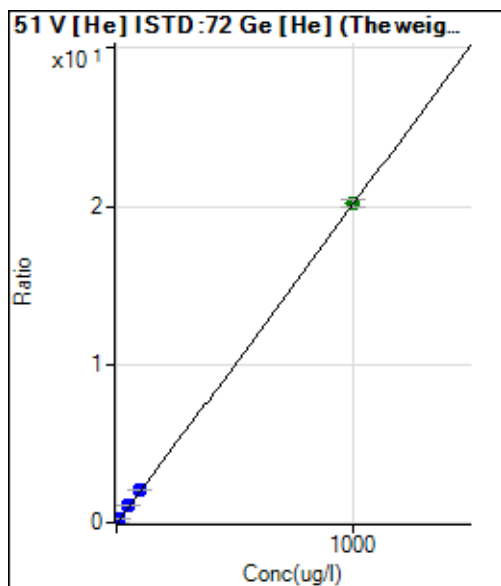
R = 1.0000

DL = 0.5963 ug/l

BEC = 0.02281 ug/l

Weight: 1/y

Min Conc: <None>



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	4807.48	0.0152	P	0.7	
2	<input type="checkbox"/>	0.025	0.076	5166.49	0.0167	P	4.1	203.4
3	<input type="checkbox"/>	0.050	0.071	5163.17	0.0167	P	3.3	42.8
4	<input type="checkbox"/>	0.100	0.121	5485.50	0.0177	P	0.7	21.2
5	<input type="checkbox"/>	0.500	0.554	8187.87	0.0264	P	3.9	10.8
6	<input type="checkbox"/>	1.000	1.176	11986.03	0.0389	P	3.6	17.6
7	<input type="checkbox"/>	10.000	10.519	70974.60	0.2275	P	0.8	5.2
8	<input type="checkbox"/>	50.000	53.971	337028.77	1.1044	P	4.9	7.9
9	<input type="checkbox"/>	100.000	102.492	659474.73	2.0836	P	0.7	2.5
10	<input type="checkbox"/>	1000.000	999.547	6338108.66	20.1871	A	1.9	0.0
11	<input type="checkbox"/>			10996.40	0.0364	P	2.6	

$$y = 0.0202 * x + 0.0152$$

R = 1.0000

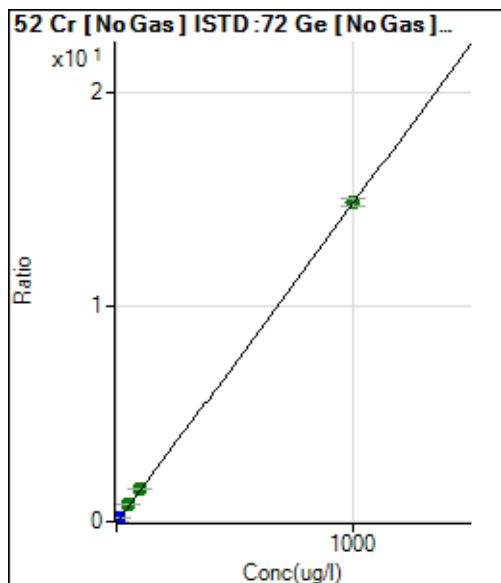
DL = 0.01656 ug/l

BEC = 0.7541 ug/l

Weight: 1/y

Min Conc: <None>

Calibration for 016\_QC1.d



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	20706.95	0.0137	P	8.4	
2	<input type="checkbox"/>	0.025	0.046	21506.49	0.0144	P	2.8	84.2
3	<input type="checkbox"/>	0.050	0.078	22112.85	0.0149	P	2.8	55.6
4	<input type="checkbox"/>	0.100	0.126	23798.88	0.0156	P	5.8	25.9
5	<input type="checkbox"/>	0.500	0.559	32944.90	0.0220	P	1.3	11.8
6	<input type="checkbox"/>	1.000	1.220	49134.83	0.0319	P	4.9	22.0
7	<input type="checkbox"/>	10.000	10.858	264036.47	0.1751	P	1.9	8.6
8	<input type="checkbox"/>	50.000	52.228	1187001.95	0.7901	A	1.9	4.5
9	<input type="checkbox"/>	100.000	103.595	2373870.55	1.5538	A	0.9	3.6
10	<input type="checkbox"/>	1000.000	999.520	22582736.98	14.8723	A	2.7	0.0
11	<input type="checkbox"/>			42547.11	0.0279	P	5.9	

$$y = 0.0149 * x + 0.0137$$

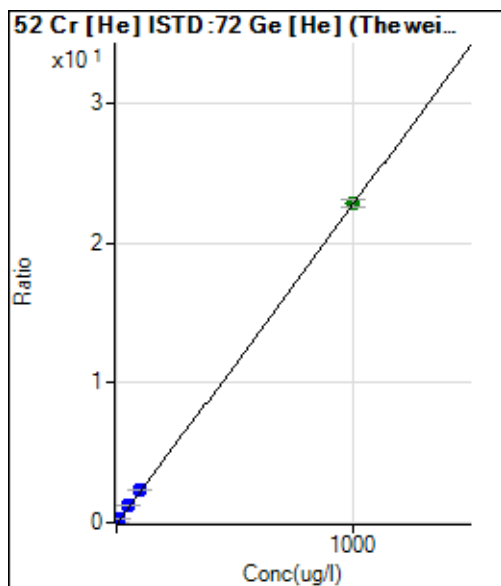
$$R = 1.0000$$

$$DL = 0.2317 \text{ ug/l}$$

$$BEC = 0.9241 \text{ ug/l}$$

$$\text{Weight: } 1/y$$

$$\text{Min Conc: } <\text{None}>$$



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	527.79	0.0017	P	3.6	
2	<input type="checkbox"/>	0.025	0.028	713.36	0.0023	P	6.2	12.2
3	<input type="checkbox"/>	0.050	0.068	998.93	0.0032	P	3.6	36.0
4	<input type="checkbox"/>	0.100	0.114	1324.51	0.0043	P	5.8	13.8
5	<input type="checkbox"/>	0.500	0.543	4366.22	0.0141	P	1.5	8.7
6	<input type="checkbox"/>	1.000	1.213	9040.59	0.0294	P	0.8	21.3
7	<input type="checkbox"/>	10.000	10.611	76081.35	0.2439	P	0.1	6.1
8	<input type="checkbox"/>	50.000	53.719	374789.21	1.2278	P	3.9	7.4
9	<input type="checkbox"/>	100.000	100.543	726795.86	2.2966	P	1.7	0.5
10	<input type="checkbox"/>	1000.000	999.753	7165510.17	22.8212	A	3.0	0.0
11	<input type="checkbox"/>			1715.67	0.0057	P	3.2	

$$y = 0.0228 * x + 0.0017$$

$$R = 1.0000$$

$$DL = 0.007821 \text{ ug/l}$$

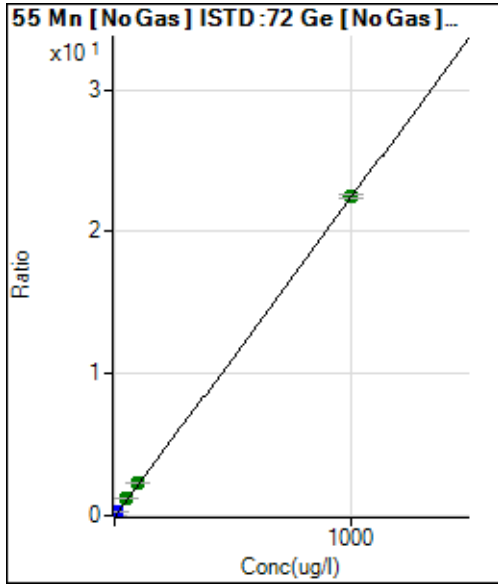
$$BEC = 0.07321 \text{ ug/l}$$

$$\text{Weight: } 1/y$$

$$\text{Min Conc: } <\text{None}>$$



Calibration for 016\_QC1.d



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	5550.05	0.0037	P	5.1	
2	<input type="checkbox"/>	0.025	0.038	6744.87	0.0045	P	8.4	50.3
3	<input type="checkbox"/>	0.050	0.054	7280.72	0.0049	P	3.8	8.8
4	<input type="checkbox"/>	0.100	0.107	9284.56	0.0061	P	5.3	7.0
5	<input type="checkbox"/>	0.500	0.536	23512.27	0.0157	P	3.7	7.2
6	<input type="checkbox"/>	1.000	1.200	47275.89	0.0307	P	5.2	20.0
7	<input type="checkbox"/>	10.000	10.719	368992.80	0.2447	P	4.5	7.2
8	<input type="checkbox"/>	50.000	52.461	1777698.64	1.1834	A	2.3	4.9
9	<input type="checkbox"/>	100.000	100.933	3472133.79	2.2735	A	1.8	0.9
10	<input type="checkbox"/>	1000.000	999.776	34144997.97	22.4866	A	1.0	0.0
11	<input type="checkbox"/>			14258.72	0.0093	P	4.2	

$y = 0.0225 * x + 0.0037$

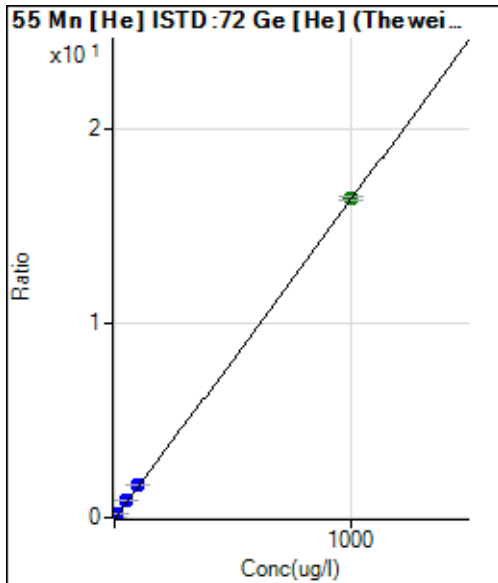
R = 1.0000

DL = 0.02504 ug/l

BEC = 0.1636 ug/l

Weight: 1/y

Min Conc: <None>



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	253.62	0.0008	P	5.6	
2	<input type="checkbox"/>	0.025	0.034	421.92	0.0014	P	8.1	37.4
3	<input type="checkbox"/>	0.050	0.061	559.90	0.0018	P	2.4	22.0
4	<input type="checkbox"/>	0.100	0.115	837.52	0.0027	P	5.6	15.2
5	<input type="checkbox"/>	0.500	0.559	3103.04	0.0100	P	2.5	11.8
6	<input type="checkbox"/>	1.000	1.239	6527.48	0.0212	P	0.9	23.9
7	<input type="checkbox"/>	10.000	10.782	55634.12	0.1783	P	0.9	7.8
8	<input type="checkbox"/>	50.000	53.610	269585.35	0.8835	P	4.8	7.2
9	<input type="checkbox"/>	100.000	101.514	529204.32	1.6722	P	1.9	1.5
10	<input type="checkbox"/>	1000.000	999.660	5167902.92	16.4603	A	1.1	0.0
11	<input type="checkbox"/>			1001.84	0.0033	P	3.4	

$y = 0.0165 * x + 8.0251E-004$

R = 1.0000

DL = 0.008218 ug/l

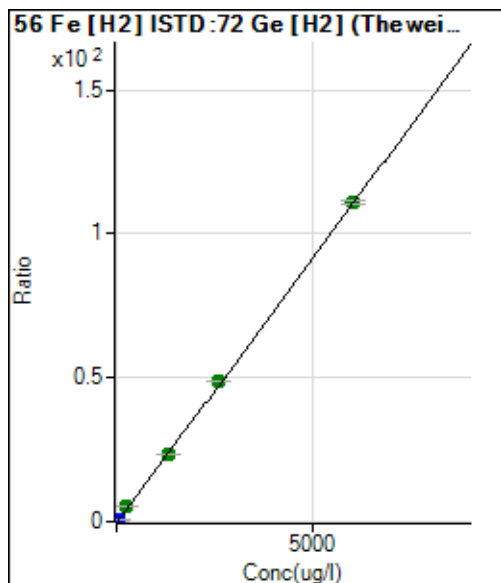
BEC = 0.04874 ug/l

Weight: 1/y

Min Conc: <None>



Calibration for 016\_QC1.d



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	22695.38	0.0171	P	3.6	
2	<input type="checkbox"/>	0.650	0.651	38733.12	0.0291	P	3.0	0.1
3	<input type="checkbox"/>	1.300	1.482	58131.33	0.0445	P	1.4	14.0
4	<input type="checkbox"/>	2.600	3.124	96686.50	0.0748	P	0.9	20.1
5	<input type="checkbox"/>	13.000	14.592	381806.25	0.2869	P	1.1	12.2
6	<input type="checkbox"/>	26.000	32.495	809021.35	0.6179	P	0.5	25.0
7	<input type="checkbox"/>	260.000	273.705	6732839.43	5.0778	A	1.7	5.3
8	<input type="checkbox"/>	1300.000	1260.073	30610719.85	23.3156	A	1.9	-3.1
9	<input type="checkbox"/>	2600.000	2621.442	64370077.81	48.4872	A	0.0	0.8
10	<input type="checkbox"/>	6000.000	5998.734	144218413.3	110.932	A	1.6	0.0
11	<input type="checkbox"/>			91335.18	0.0716	P	1.9	

$$y = 0.0185 * x + 0.0171$$

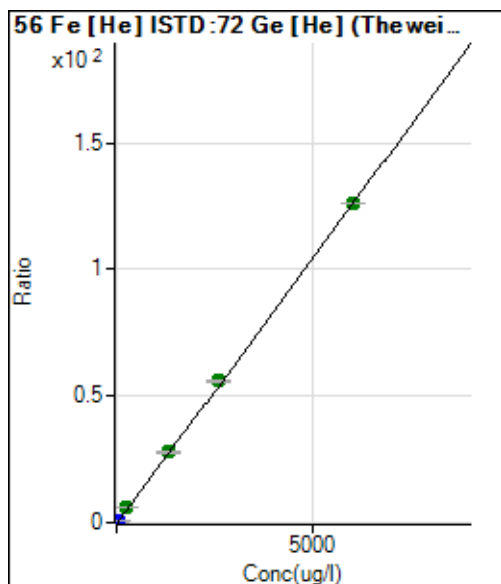
$$R = 1.0000$$

$$DL = 0.09914 \text{ ug/l}$$

$$BEC = 0.9234 \text{ ug/l}$$

$$\text{Weight: } 1/y$$

$$\text{Min Conc: } <\text{None}>$$



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	8941.77	0.0283	P	4.7	
2	<input type="checkbox"/>	0.650	0.684	13185.89	0.0427	P	1.1	5.2
3	<input type="checkbox"/>	1.300	1.452	18269.78	0.0589	P	0.6	11.7
4	<input type="checkbox"/>	2.600	3.050	28765.26	0.0927	P	2.4	17.3
5	<input type="checkbox"/>	13.000	14.536	103897.29	0.3349	P	2.0	11.8
6	<input type="checkbox"/>	26.000	31.336	212213.90	0.6893	P	1.2	20.5
7	<input type="checkbox"/>	260.000	280.802	1856679.01	5.9515	A	0.8	8.0
8	<input type="checkbox"/>	1300.000	1313.847	8468688.18	27.7425	A	3.5	1.1
9	<input type="checkbox"/>	2600.000	2646.225	17676510.26	55.8476	A	0.5	1.8
10	<input type="checkbox"/>	6000.000	5976.041	39586460.48	126.086	A	0.6	-0.4
11	<input type="checkbox"/>			26632.58	0.0882	P	4.4	

$$y = 0.0211 * x + 0.0283$$

$$R = 1.0000$$

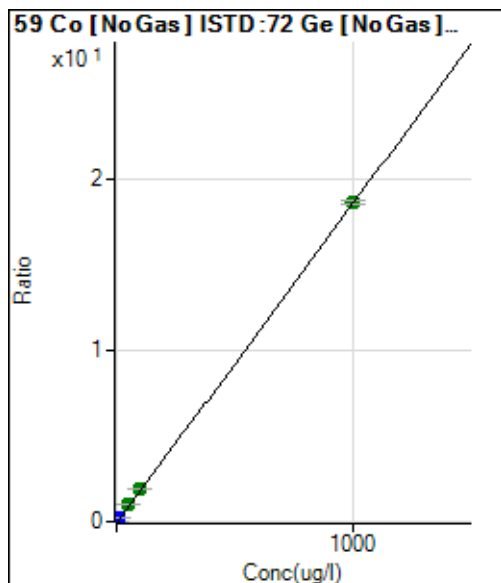
$$DL = 0.188 \text{ ug/l}$$

$$BEC = 1.342 \text{ ug/l}$$

$$\text{Weight: } 1/y$$

$$\text{Min Conc: } <\text{None}>$$

Calibration for 016\_QC1.d



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	382.58	0.0003	P	30.4	
2	<input type="checkbox"/>	0.025	0.032	1274.20	0.0009	P	17.0	28.9
3	<input type="checkbox"/>	0.050	0.063	2135.94	0.0014	P	4.7	26.9
4	<input type="checkbox"/>	0.100	0.123	3889.48	0.0026	P	5.6	22.9
5	<input type="checkbox"/>	0.500	0.583	16653.18	0.0111	P	2.0	16.5
6	<input type="checkbox"/>	1.000	1.241	36143.07	0.0234	P	4.4	24.1
7	<input type="checkbox"/>	10.000	10.893	307342.39	0.2039	P	2.0	8.9
8	<input type="checkbox"/>	50.000	53.395	1499311.04	0.9983	A	3.2	6.8
9	<input type="checkbox"/>	100.000	102.767	2935211.89	1.9211	A	3.0	2.8
10	<input type="checkbox"/>	1000.000	999.544	28368528.46	18.6827	A	0.9	0.0
11	<input type="checkbox"/>			2145.91	0.0014	P	11.4	

$$y = 0.0187 * x + 2.5278E-004$$

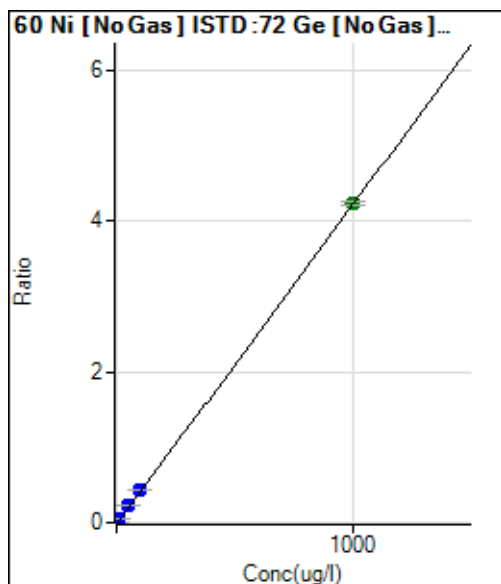
$$R = 1.0000$$

$$DL = 0.01233 \text{ ug/l}$$

$$BEC = 0.01352 \text{ ug/l}$$

$$\text{Weight: } 1/y$$

$$\text{Min Conc: } <\text{None}>$$



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	302.74	0.0002	P	35.8	
2	<input type="checkbox"/>	0.025	0.052	632.10	0.0004	P	13.8	109.4
3	<input type="checkbox"/>	0.050	0.086	838.36	0.0006	P	13.6	71.1
4	<input type="checkbox"/>	0.100	0.124	1107.85	0.0007	P	11.2	23.8
5	<input type="checkbox"/>	0.500	0.596	4075.83	0.0027	P	1.1	19.2
6	<input type="checkbox"/>	1.000	1.262	8548.90	0.0055	P	5.5	26.2
7	<input type="checkbox"/>	10.000	10.763	69019.55	0.0458	P	3.5	7.6
8	<input type="checkbox"/>	50.000	53.913	343256.50	0.2285	P	3.3	7.8
9	<input type="checkbox"/>	100.000	102.900	666077.54	0.4360	P	3.6	2.9
10	<input type="checkbox"/>	1000.000	999.506	6428365.47	4.2336	A	1.3	0.0
11	<input type="checkbox"/>			1041.31	0.0007	P	11.8	

$$y = 0.0042 * x + 2.0208E-004$$

$$R = 1.0000$$

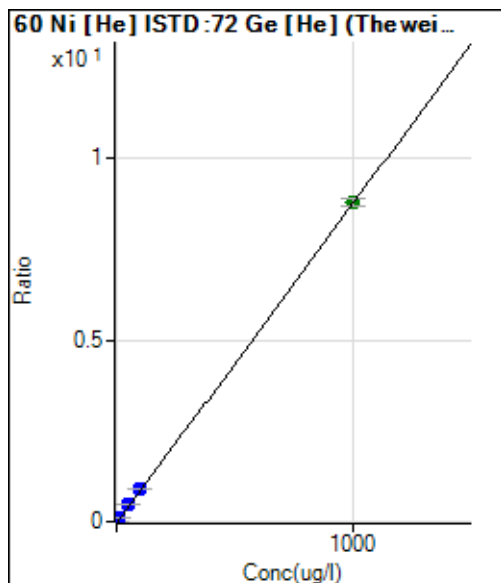
$$DL = 0.05126 \text{ ug/l}$$

$$BEC = 0.04771 \text{ ug/l}$$

$$\text{Weight: } 1/y$$

$$\text{Min Conc: } <\text{None}>$$

Calibration for 016\_QC1.d



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	124.44	0.0004	P	7.4	
2	<input type="checkbox"/>	0.025	0.050	257.78	0.0008	P	6.1	101.0
3	<input type="checkbox"/>	0.050	0.080	341.12	0.0011	P	6.1	60.8
4	<input type="checkbox"/>	0.100	0.136	492.23	0.0016	P	13.6	35.8
5	<input type="checkbox"/>	0.500	0.580	1702.33	0.0055	P	3.1	15.9
6	<input type="checkbox"/>	1.000	1.280	3583.80	0.0116	P	1.9	28.0
7	<input type="checkbox"/>	10.000	11.082	30504.06	0.0978	P	0.6	10.8
8	<input type="checkbox"/>	50.000	55.060	147846.98	0.4842	P	2.8	10.1
9	<input type="checkbox"/>	100.000	102.637	285550.12	0.9023	P	2.0	2.6
10	<input type="checkbox"/>	1000.000	999.472	2757876.07	8.7833	A	2.5	-0.1
11	<input type="checkbox"/>			368.90	0.0012	P	10.7	

$$y = 0.0088 * x + 3.9406E-004$$

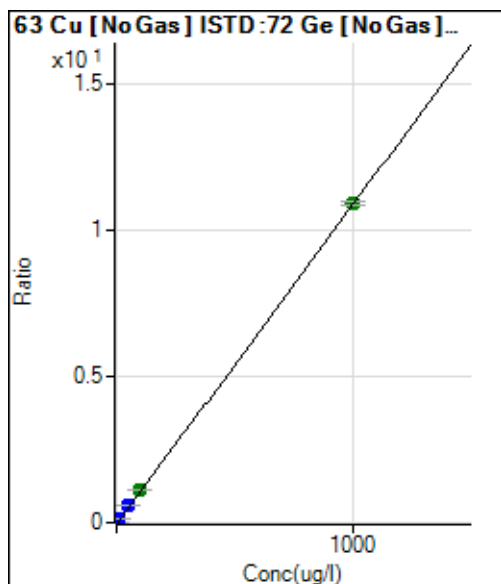
$$R = 1.0000$$

$$DL = 0.009973 \text{ ug/l}$$

$$BEC = 0.04484 \text{ ug/l}$$

$$\text{Weight: } 1/y$$

$$\text{Min Conc: } <\text{None}>$$



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	2444.53	0.0016	P	4.3	
2	<input type="checkbox"/>	0.025	0.005	2500.56	0.0017	P	1.1	-79.4
3	<input type="checkbox"/>	0.050	0.041	3069.56	0.0021	P	1.3	-18.4
4	<input type="checkbox"/>	0.100	0.080	3811.36	0.0025	P	2.7	-19.7
5	<input type="checkbox"/>	0.500	0.534	11163.41	0.0075	P	1.2	6.9
6	<input type="checkbox"/>	1.000	1.186	22509.67	0.0146	P	3.9	18.6
7	<input type="checkbox"/>	10.000	10.955	183222.95	0.1215	P	0.7	9.6
8	<input type="checkbox"/>	50.000	53.766	886579.48	0.5902	P	3.1	7.5
9	<input type="checkbox"/>	100.000	103.151	1727206.61	1.1308	A	1.1	3.2
10	<input type="checkbox"/>	1000.000	999.487	16614759.69	10.9427	A	1.1	-0.1
11	<input type="checkbox"/>			4370.42	0.0029	P	1.6	

$$y = 0.0109 * x + 0.0016$$

$$R = 1.0000$$

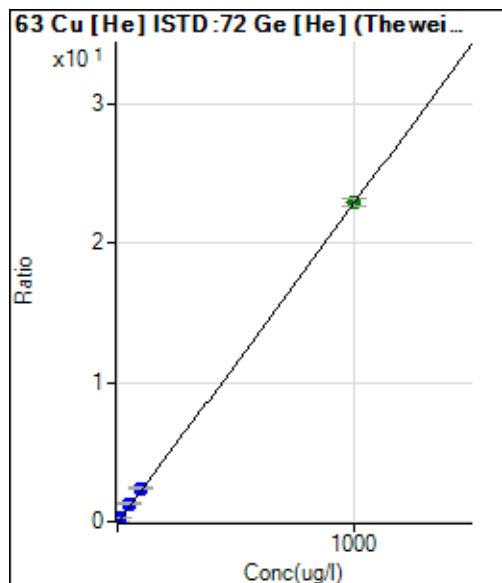
$$DL = 0.01891 \text{ ug/l}$$

$$BEC = 0.1481 \text{ ug/l}$$

$$\text{Weight: } 1/y$$

$$\text{Min Conc: } <\text{None}>$$

Calibration for 016\_QC1.d



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	981.50	0.0031	P	4.9	
2	<input type="checkbox"/>	0.025	0.010	1030.50	0.0033	P	4.1	-59.6
3	<input type="checkbox"/>	0.050	0.051	1325.80	0.0043	P	2.1	1.7
4	<input type="checkbox"/>	0.100	0.104	1706.09	0.0055	P	1.4	3.8
5	<input type="checkbox"/>	0.500	0.585	5137.87	0.0166	P	2.2	17.1
6	<input type="checkbox"/>	1.000	1.302	10168.83	0.0330	P	2.7	30.2
7	<input type="checkbox"/>	10.000	11.504	83465.29	0.2676	P	1.4	15.0
8	<input type="checkbox"/>	50.000	56.818	399469.64	1.3092	P	5.0	13.6
9	<input type="checkbox"/>	100.000	104.453	760890.59	2.4043	P	1.6	4.5
10	<input type="checkbox"/>	1000.000	999.198	7213383.00	22.9727	A	1.9	-0.1
11	<input type="checkbox"/>			1805.09	0.0060	P	2.3	

$$y = 0.0230 * x + 0.0031$$

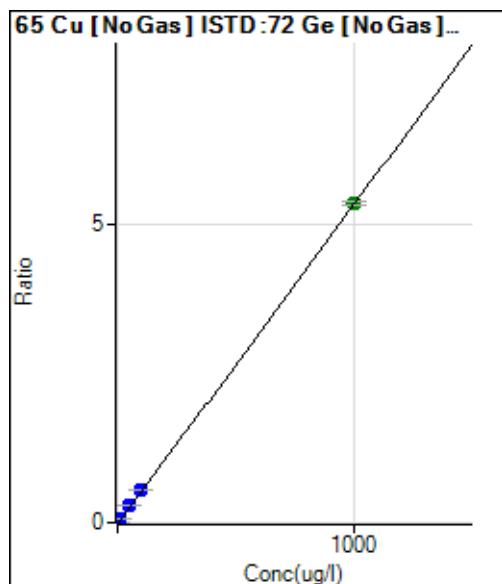
$$R = 1.0000$$

$$DL = 0.02001 \text{ ug/l}$$

$$BEC = 0.1352 \text{ ug/l}$$

$$\text{Weight: } 1/y$$

$$\text{Min Conc: } <\text{None}>$$



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	1188.53	0.0008	P	5.0	
2	<input type="checkbox"/>	0.025	0.001	1185.20	0.0008	P	0.9	-94.4
3	<input type="checkbox"/>	0.050	0.038	1472.67	0.0010	P	3.0	-23.6
4	<input type="checkbox"/>	0.100	0.078	1840.19	0.0012	P	4.3	-21.6
5	<input type="checkbox"/>	0.500	0.529	5401.18	0.0036	P	3.4	5.7
6	<input type="checkbox"/>	1.000	1.207	11162.09	0.0072	P	4.3	20.7
7	<input type="checkbox"/>	10.000	10.952	89505.80	0.0594	P	2.4	9.5
8	<input type="checkbox"/>	50.000	53.464	430857.91	0.2868	P	1.7	6.9
9	<input type="checkbox"/>	100.000	102.692	840267.17	0.5501	P	1.8	2.7
10	<input type="checkbox"/>	1000.000	999.548	8119107.12	5.3474	A	1.6	0.0
11	<input type="checkbox"/>			2107.67	0.0014	P	1.0	

$$y = 0.0053 * x + 7.8741E-004$$

$$R = 1.0000$$

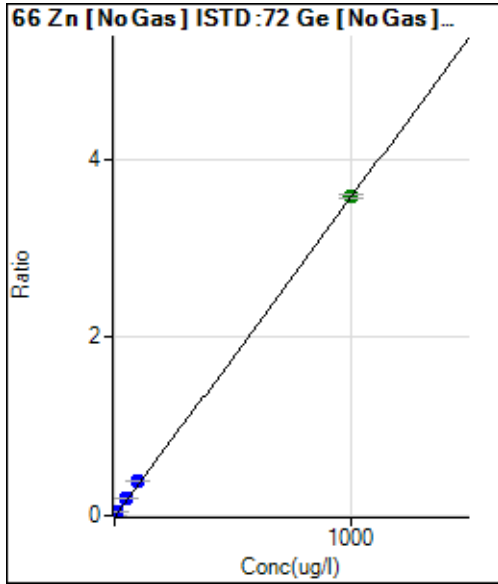
$$DL = 0.02187 \text{ ug/l}$$

$$BEC = 0.1472 \text{ ug/l}$$

$$\text{Weight: } 1/y$$

$$\text{Min Conc: } <\text{None}>$$

Calibration for 016\_QC1.d



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	1104.37	0.0007	P	13.7	
2	<input type="checkbox"/>			1842.96	0.0012	P	7.2	
3	<input type="checkbox"/>	0.050	0.093	1583.45	0.0011	P	4.8	85.5
4	<input type="checkbox"/>	0.100	0.116	1753.08	0.0011	P	14.2	15.6
5	<input type="checkbox"/>	0.500	0.701	4854.20	0.0032	P	1.7	40.2
6	<input type="checkbox"/>	1.000	1.376	8741.14	0.0057	P	4.6	37.6
7	<input type="checkbox"/>	10.000	11.198	61665.10	0.0409	P	2.3	12.0
8	<input type="checkbox"/>	50.000	55.549	300448.45	0.2000	P	3.6	11.1
9	<input type="checkbox"/>	100.000	106.678	585736.66	0.3834	P	0.7	6.7
10	<input type="checkbox"/>	1000.000	999.042	5442737.03	3.5846	A	0.9	-0.1
11	<input type="checkbox"/>			5802.67	0.0038	P	8.2	

$$y = 0.0036 * x + 7.3396E-004$$

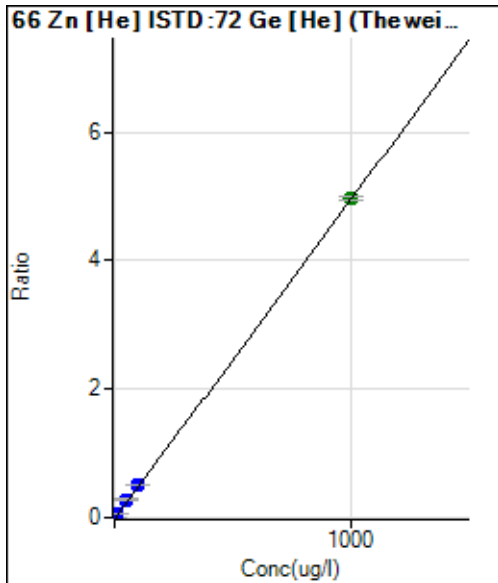
R = 1.0000

DL = 0.08439 ug/l

BEC = 0.2046 ug/l

Weight: 1/y

Min Conc: <None>



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	275.56	0.0009	P	6.2	
2	<input type="checkbox"/>			537.79	0.0017	P	7.8	
3	<input type="checkbox"/>	0.050	0.104	431.12	0.0014	P	4.0	108.4
4	<input type="checkbox"/>	0.100	0.172	536.68	0.0017	P	10.5	71.8
5	<input type="checkbox"/>	0.500	0.680	1320.07	0.0043	P	2.2	36.0
6	<input type="checkbox"/>	1.000	1.473	2525.79	0.0082	P	6.1	47.3
7	<input type="checkbox"/>	10.000	11.059	17433.81	0.0559	P	2.3	10.6
8	<input type="checkbox"/>	50.000	55.871	85055.37	0.2788	P	5.5	11.7
9	<input type="checkbox"/>	100.000	102.394	161482.09	0.5102	P	1.5	2.4
10	<input type="checkbox"/>	1000.000	999.456	1561219.13	4.9728	A	1.6	-0.1
11	<input type="checkbox"/>			1423.42	0.0047	P	4.1	

$$y = 0.0050 * x + 8.7259E-004$$

R = 1.0000

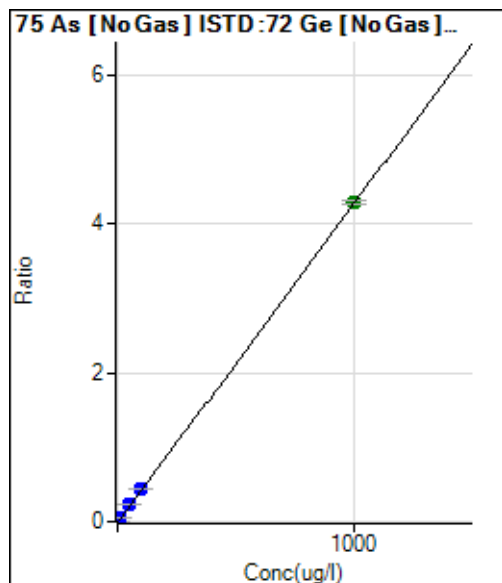
DL = 0.03262 ug/l

BEC = 0.1754 ug/l

Weight: 1/y

Min Conc: <None>

Calibration for 016\_QC1.d



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	7948.78	0.0053	P	21.2	
2	<input type="checkbox"/>	0.025	0.384	10322.83	0.0069	P	21.2	1436.9
3	<input type="checkbox"/>	0.050	0.064	8240.36	0.0055	P	16.8	28.2
4	<input type="checkbox"/>	0.100	0.120	8824.69	0.0058	P	26.5	19.8
5	<input type="checkbox"/>	0.500	0.679	12229.54	0.0082	P	4.0	35.8
6	<input type="checkbox"/>	1.000	0.977	14565.76	0.0095	P	17.6	-2.3
7	<input type="checkbox"/>	10.000	10.154	73661.17	0.0489	P	3.5	1.5
8	<input type="checkbox"/>	50.000	53.015	349822.97	0.2329	P	2.8	6.0
9	<input type="checkbox"/>	100.000	101.168	671365.98	0.4396	P	2.4	1.2
10	<input type="checkbox"/>	1000.000	999.731	6525328.96	4.2975	A	0.9	0.0
11	<input type="checkbox"/>			12690.37	0.0083	P	8.3	

$$y = 0.0043 * x + 0.0053$$

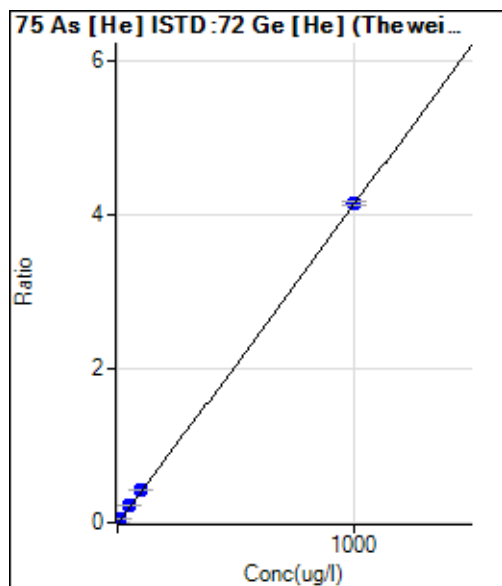
$$R = 1.0000$$

$$DL = 0.7825 \text{ ug/l}$$

$$BEC = 1.228 \text{ ug/l}$$

$$\text{Weight: } 1/y$$

$$\text{Min Conc: } <\text{None}>$$



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	163.47	0.0005	P	0.7	
2	<input type="checkbox"/>	0.025	0.024	190.47	0.0006	P	4.3	-3.8
3	<input type="checkbox"/>	0.050	0.058	235.20	0.0008	P	0.8	16.3
4	<input type="checkbox"/>	0.100	0.119	314.13	0.0010	P	5.1	19.1
5	<input type="checkbox"/>	0.500	0.545	862.08	0.0028	P	0.9	8.9
6	<input type="checkbox"/>	1.000	1.195	1686.60	0.0055	P	0.6	19.5
7	<input type="checkbox"/>	10.000	10.494	13753.21	0.0441	P	1.0	4.9
8	<input type="checkbox"/>	50.000	54.126	68707.78	0.2252	P	5.6	8.3
9	<input type="checkbox"/>	100.000	101.528	133554.82	0.4220	P	1.7	1.5
10	<input type="checkbox"/>	1000.000	999.636	1303071.37	4.1505	P	0.8	0.0
11	<input type="checkbox"/>			499.00	0.0017	P	3.0	

$$y = 0.0042 * x + 5.1744E-004$$

$$R = 1.0000$$

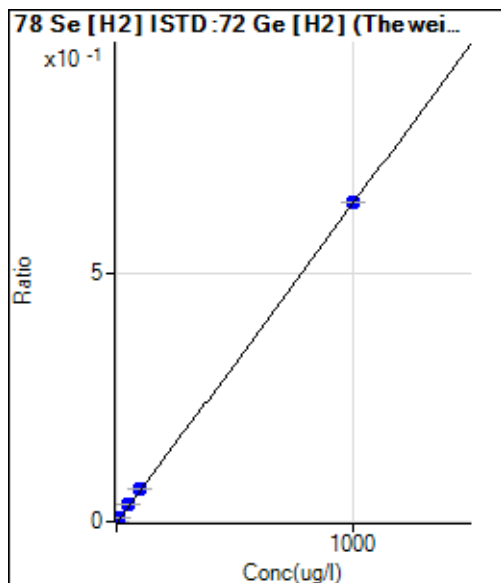
$$DL = 0.002538 \text{ ug/l}$$

$$BEC = 0.1246 \text{ ug/l}$$

$$\text{Weight: } 1/y$$

$$\text{Min Conc: } <\text{None}>$$

Calibration for 016\_QC1.d



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	29.45	0.0000	P	4.3	
2	<input type="checkbox"/>	0.025	0.034	58.78	0.0000	P	1.1	36.4
3	<input type="checkbox"/>	0.050	0.061	80.22	0.0001	P	1.8	21.7
4	<input type="checkbox"/>	0.100	0.128	135.11	0.0001	P	5.4	27.9
5	<input type="checkbox"/>	0.500	0.546	497.79	0.0004	P	2.5	9.2
6	<input type="checkbox"/>	1.000	1.238	1073.93	0.0008	P	0.6	23.8
7	<input type="checkbox"/>	10.000	10.832	9288.41	0.0070	P	0.4	8.3
8	<input type="checkbox"/>	50.000	54.069	45784.38	0.0349	P	1.0	8.1
9	<input type="checkbox"/>	100.000	102.654	87882.78	0.0662	P	1.3	2.7
10	<input type="checkbox"/>	1000.000	999.523	837695.11	0.6444	P	0.6	0.0
11	<input type="checkbox"/>			264.78	0.0002	P	2.1	

$$y = 6.4466E-004 * x + 2.2154E-005$$

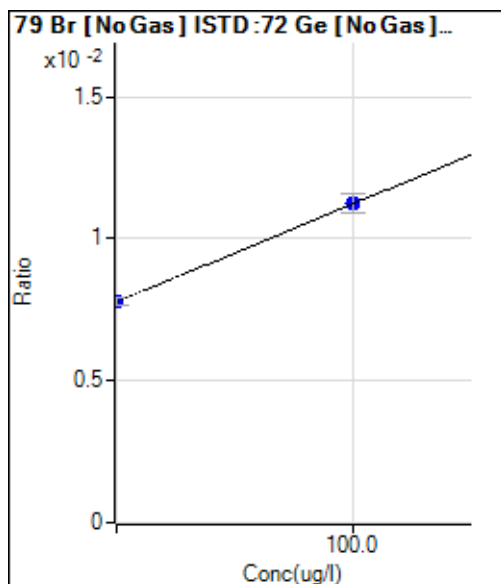
$$R = 1.0000$$

$$DL = 0.004388 \text{ ug/l}$$

$$BEC = 0.03437 \text{ ug/l}$$

$$\text{Weight: } 1/y$$

$$\text{Min Conc: } <\text{None}>$$



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	11754.81	0.0078	P	4.2	
2	<input type="checkbox"/>			13329.81	0.0089	P	5.3	
3	<input type="checkbox"/>			13263.11	0.0089	P	4.5	
4	<input type="checkbox"/>			13619.42	0.0089	P	3.2	
5	<input type="checkbox"/>			13489.56	0.0090	P	2.2	
6	<input type="checkbox"/>			13989.07	0.0091	P	3.4	
7	<input type="checkbox"/>			14615.15	0.0097	P	1.2	
8	<input type="checkbox"/>			11974.60	0.0080	P	1.0	
9	<input type="checkbox"/>			14581.79	0.0095	P	1.3	
10	<input type="checkbox"/>			16300.23	0.0107	P	4.4	
11	<input type="checkbox"/>	100.000	100.000	17156.26	0.0112	P	6.0	0.0

$$y = 3.4505E-005 * x + 0.0078$$

$$R = 1.0000$$

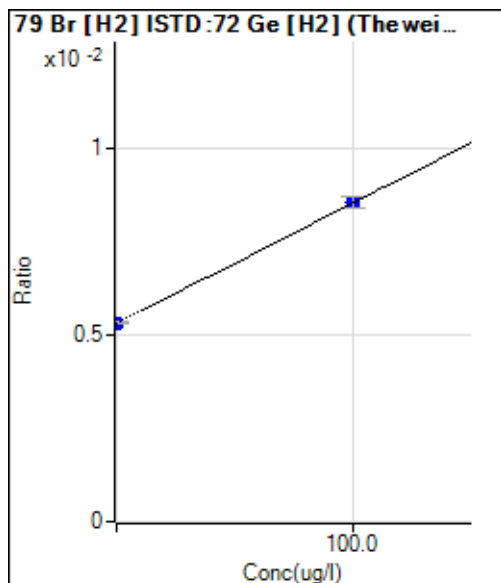
$$DL = 28.15 \text{ ug/l}$$

$$BEC = 225.8 \text{ ug/l}$$

$$\text{Weight: } 1/y$$

$$\text{Min Conc: } <\text{None}>$$

Calibration for 016\_QC1.d



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	7097.69	0.0053	P	1.5	
2	<input type="checkbox"/>			8498.97	0.0064	P	5.1	
3	<input type="checkbox"/>			8555.59	0.0065	P	1.8	
4	<input type="checkbox"/>			8865.16	0.0069	P	3.5	
5	<input type="checkbox"/>			8628.83	0.0065	P	6.1	
6	<input type="checkbox"/>			8565.63	0.0065	P	2.1	
7	<input type="checkbox"/>			9184.74	0.0069	P	3.1	
8	<input type="checkbox"/>			7670.19	0.0058	P	2.7	
9	<input type="checkbox"/>			9374.50	0.0071	P	0.5	
10	<input type="checkbox"/>			19804.31	0.0152	P	4.9	
11	<input type="checkbox"/>	100.000	100.000	10932.51	0.0086	P	3.8	0.0

$$y = 3.2273E-005 * x + 0.0053$$

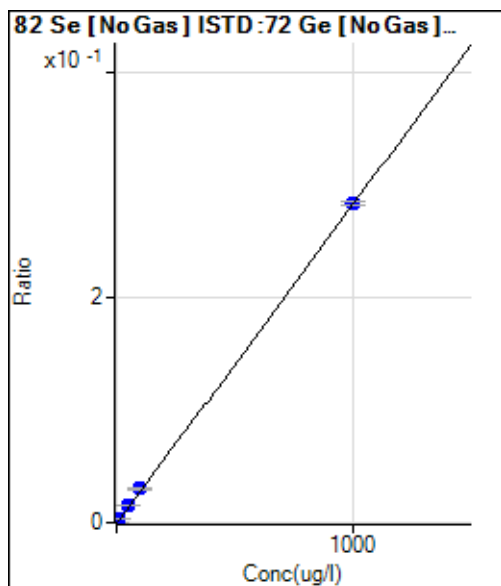
$$R = 1.0000$$

$$DL = 7.261 \text{ ug/l}$$

$$BEC = 165.5 \text{ ug/l}$$

Weight: 1/y

Min Conc: <None>



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	589.28	0.0004	P	15.3	
2	<input type="checkbox"/>	0.025	0.032	597.68	0.0004	P	5.1	26.8
3	<input type="checkbox"/>	0.050	-0.060	555.81	0.0004	P	33.2	-220.2
4	<input type="checkbox"/>	0.100	0.006	599.67	0.0004	P	14.7	-94.4
5	<input type="checkbox"/>	0.500	0.475	787.02	0.0005	P	10.3	-5.0
6	<input type="checkbox"/>	1.000	0.807	958.88	0.0006	P	13.6	-19.3
7	<input type="checkbox"/>	10.000	10.408	5041.15	0.0033	P	2.4	4.1
8	<input type="checkbox"/>	50.000	54.540	23829.45	0.0159	P	2.4	9.1
9	<input type="checkbox"/>	100.000	104.260	45775.28	0.0300	P	1.4	4.3
10	<input type="checkbox"/>	1000.000	999.343	431020.19	0.2839	P	1.6	-0.1
11	<input type="checkbox"/>			721.95	0.0005	P	24.9	

$$y = 2.8365E-004 * x + 3.9180E-004$$

$$R = 1.0000$$

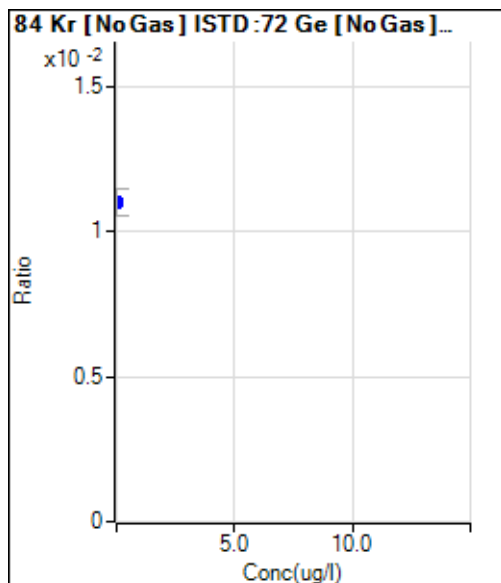
$$DL = 0.6357 \text{ ug/l}$$

$$BEC = 1.381 \text{ ug/l}$$

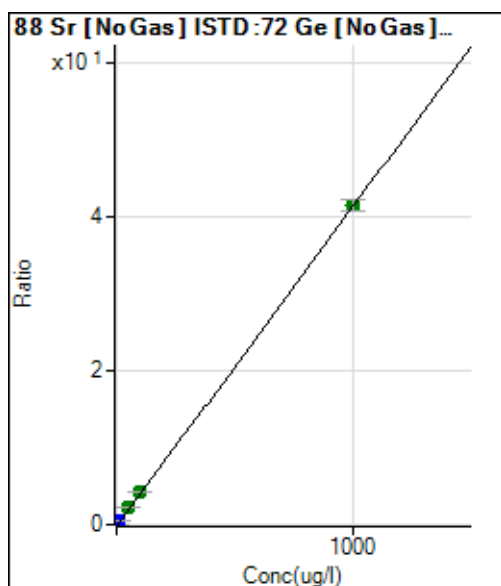
Weight: 1/y

Min Conc: <None>





	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000		16576.66	0.0110	P	8.3	
2	<input type="checkbox"/>			16733.29	0.0112	P	7.4	
3	<input type="checkbox"/>			16776.62	0.0113	P	12.7	
4	<input type="checkbox"/>			17242.86	0.0113	P	11.3	
5	<input type="checkbox"/>			17835.71	0.0119	P	3.7	
6	<input type="checkbox"/>			14515.18	0.0094	P	1.0	
7	<input type="checkbox"/>			18102.12	0.0120	P	2.1	
8	<input type="checkbox"/>			40943.58	0.0273	P	2.6	
9	<input type="checkbox"/>			61161.32	0.0400	P	2.4	
10	<input type="checkbox"/>			418804.73	0.2758	P	2.1	
11	<input type="checkbox"/>			19584.48	0.0128	P	4.8	



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	1540.36	0.0010	P	12.6	
2	<input type="checkbox"/>	0.025	0.033	3540.11	0.0024	P	1.9	30.0
3	<input type="checkbox"/>	0.050	0.264	17730.07	0.0120	P	118.2	427.6
4	<input type="checkbox"/>	0.100	0.126	9530.98	0.0062	P	1.5	25.7
5	<input type="checkbox"/>	0.500	0.603	39032.39	0.0261	P	2.0	20.7
6	<input type="checkbox"/>	1.000	1.267	82793.65	0.0537	P	3.6	26.7
7	<input type="checkbox"/>	10.000	11.356	713617.56	0.4734	P	1.9	13.6
8	<input type="checkbox"/>	50.000	54.531	3409599.46	2.2694	A	3.0	9.1
9	<input type="checkbox"/>	100.000	103.336	6567231.07	4.2996	A	1.2	3.3
10	<input type="checkbox"/>	1000.000	999.426	63133036.80	41.5750	A	3.1	-0.1
11	<input type="checkbox"/>			7986.44	0.0052	P	5.3	

$$y = 0.0416 * x + 0.0010$$

$$R = 1.0000$$

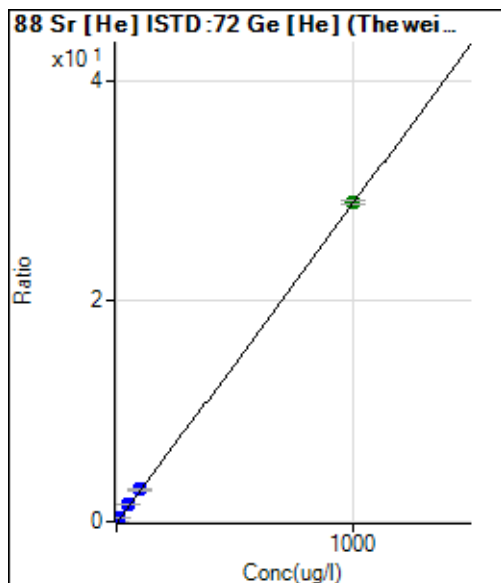
$$DL = 0.009261 \text{ ug/l}$$

$$BEC = 0.02457 \text{ ug/l}$$

$$\text{Weight: } 1/y$$

$$\text{Min Conc: } <\text{None}>$$

Calibration for 016\_QC1.d



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	333.34	0.0011	P	32.8	
2	<input type="checkbox"/>	0.025	0.029	582.24	0.0019	P	13.3	14.5
3	<input type="checkbox"/>	0.050	0.058	850.03	0.0027	P	2.1	16.4
4	<input type="checkbox"/>	0.100	0.120	1408.97	0.0045	P	4.6	20.2
5	<input type="checkbox"/>	0.500	0.565	5405.49	0.0174	P	0.5	13.1
6	<input type="checkbox"/>	1.000	1.207	11081.00	0.0360	P	0.9	20.7
7	<input type="checkbox"/>	10.000	10.523	95364.07	0.3057	P	1.8	5.2
8	<input type="checkbox"/>	50.000	53.813	475514.43	1.5590	P	6.1	7.6
9	<input type="checkbox"/>	100.000	99.584	912755.02	2.8842	P	1.7	-0.4
10	<input type="checkbox"/>	1000.000	999.845	9089415.21	28.9481	A	1.3	0.0
11	<input type="checkbox"/>			1234.51	0.0041	P	4.7	

$$y = 0.0290 * x + 0.0011$$

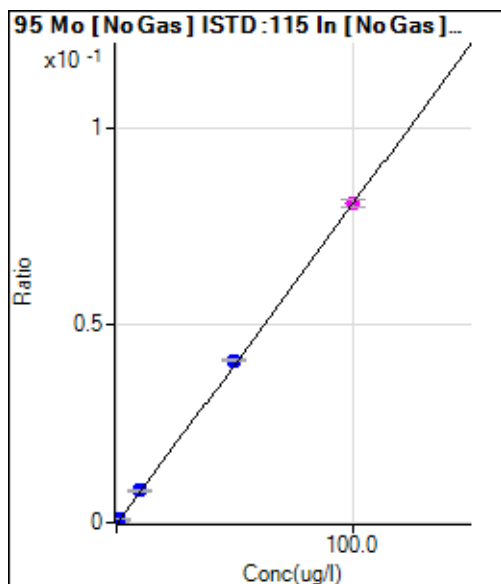
$$R = 1.0000$$

$$DL = 0.03595 \text{ ug/l}$$

$$BEC = 0.03653 \text{ ug/l}$$

$$\text{Weight: } 1/y$$

$$\text{Min Conc: } <\text{None}>$$



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	221.11	0.0000	P	45.8	
2	<input type="checkbox"/>	0.025	0.022	526.68	0.0000	P	12.6	-13.3
3	<input type="checkbox"/>	0.050	0.050	903.37	0.0001	P	6.7	0.3
4	<input type="checkbox"/>	0.100	0.108	1706.78	0.0001	P	7.5	8.0
5	<input type="checkbox"/>	0.500	0.481	6990.63	0.0004	P	2.7	-3.8
6	<input type="checkbox"/>	1.000	1.089	15783.20	0.0009	P	2.9	8.9
7	<input type="checkbox"/>	10.000	9.939	137821.22	0.0081	P	2.0	-0.6
8	<input type="checkbox"/>	50.000	50.596	696383.69	0.0410	P	1.6	1.2
9	<input type="checkbox"/>	100.000	99.707	1349526.27	0.0809	M	2.8	-0.3
10	<input type="checkbox"/>			1869.02	0.0001	P	5.6	
11	<input type="checkbox"/>			431.12	0.0000	P	7.0	

$$y = 8.1094E-004 * x + 1.2966E-005$$

$$R = 1.0000$$

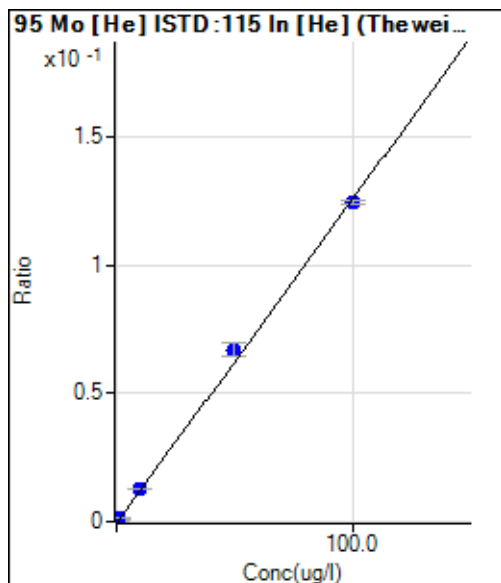
$$DL = 0.02195 \text{ ug/l}$$

$$BEC = 0.01599 \text{ ug/l}$$

$$\text{Weight: } 1/y$$

$$\text{Min Conc: } <\text{None}>$$

Calibration for 016\_QC1.d



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	73.33	0.0000	P	19.3	
2	<input type="checkbox"/>	0.025	0.027	216.67	0.0001	P	4.1	9.3
3	<input type="checkbox"/>	0.050	0.056	360.01	0.0001	P	7.1	12.4
4	<input type="checkbox"/>	0.100	0.106	621.13	0.0002	P	9.9	5.7
5	<input type="checkbox"/>	0.500	0.516	2746.95	0.0007	P	3.1	3.2
6	<input type="checkbox"/>	1.000	1.074	5713.40	0.0014	P	4.0	7.4
7	<input type="checkbox"/>	10.000	9.847	51931.72	0.0125	P	1.4	-1.5
8	<input type="checkbox"/>	50.000	53.082	262120.14	0.0672	P	7.3	6.2
9	<input type="checkbox"/>	100.000	98.473	500389.22	0.1247	P	1.3	-1.5
10	<input type="checkbox"/>			712.25	0.0002	P	2.4	
11	<input type="checkbox"/>			184.45	0.0000	P	18.0	

$$y = 0.0013 * x + 1.7398E-005$$

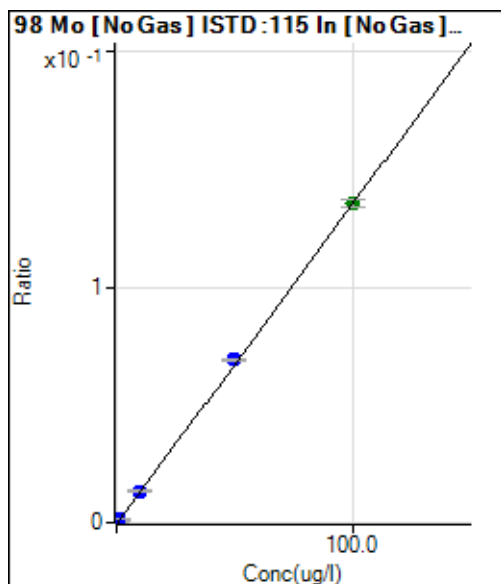
$$R = 0.9994$$

$$DL = 0.007967 \text{ ug/l}$$

$$BEC = 0.01374 \text{ ug/l}$$

Weight: 1/y

Min Conc: <None>



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	362.85	0.0000	P	23.6	
2	<input type="checkbox"/>	0.025	0.022	896.21	0.0001	P	3.5	-10.0
3	<input type="checkbox"/>	0.050	0.051	1530.23	0.0001	P	2.9	2.2
4	<input type="checkbox"/>	0.100	0.106	2801.40	0.0002	P	7.4	5.6
5	<input type="checkbox"/>	0.500	0.500	12179.24	0.0007	P	1.2	0.0
6	<input type="checkbox"/>	1.000	1.064	25917.60	0.0015	P	3.3	6.4
7	<input type="checkbox"/>	10.000	9.828	228933.45	0.0134	P	1.9	-1.7
8	<input type="checkbox"/>	50.000	50.742	1173224.05	0.0691	P	1.8	1.5
9	<input type="checkbox"/>	100.000	99.646	2264987.73	0.1358	A	2.8	-0.4
10	<input type="checkbox"/>			3350.07	0.0002	P	3.0	
11	<input type="checkbox"/>			786.70	0.0000	P	10.6	

$$y = 0.0014 * x + 2.1332E-005$$

$$R = 1.0000$$

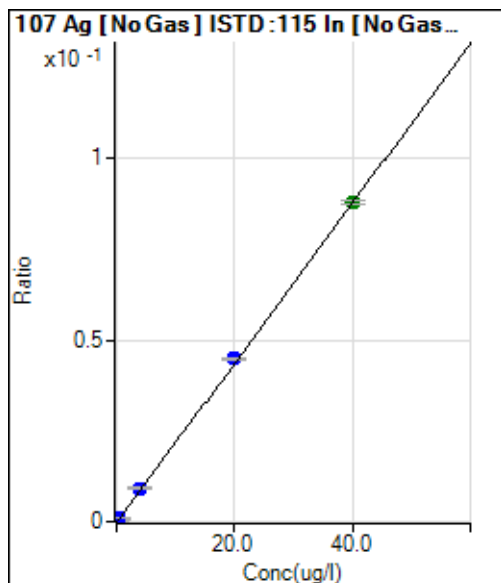
$$DL = 0.01107 \text{ ug/l}$$

$$BEC = 0.01566 \text{ ug/l}$$

Weight: 1/y

Min Conc: <None>

Calibration for 016\_QC1.d



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	2755.38	0.0002	P	3.3	
2	<input type="checkbox"/>	0.010	0.014	3328.40	0.0002	P	1.3	38.0
3	<input type="checkbox"/>	0.020	0.029	3806.05	0.0002	P	3.0	44.3
4	<input type="checkbox"/>	0.040	0.050	4629.29	0.0003	P	1.7	25.0
5	<input type="checkbox"/>	0.200	0.214	11010.70	0.0006	P	2.0	7.2
6	<input type="checkbox"/>	0.400	0.460	20728.75	0.0012	P	3.7	15.1
7	<input type="checkbox"/>	4.000	4.122	157888.43	0.0092	P	1.0	3.1
8	<input type="checkbox"/>	20.000	20.292	761558.82	0.0449	P	1.4	1.5
9	<input type="checkbox"/>	40.000	39.841	1467728.88	0.0880	A	1.8	-0.4
10	<input type="checkbox"/>			13283910.92	0.8168	A	26.8	
11	<input type="checkbox"/>			16261.15	0.0010	P	107.1	

$$y = 0.0022 * x + 1.6249E-004$$

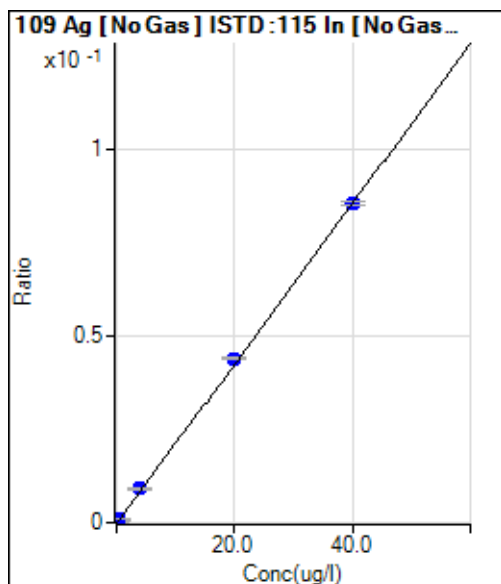
R = 1.0000

DL = 0.007219 ug/l

BEC = 0.07373 ug/l

Weight: 1/y

Min Conc: <None>



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	2663.33	0.0002	P	3.5	
2	<input type="checkbox"/>	0.010	0.014	3242.35	0.0002	P	2.9	44.3
3	<input type="checkbox"/>	0.020	0.030	3738.67	0.0002	P	3.9	51.8
4	<input type="checkbox"/>	0.040	0.052	4568.58	0.0003	P	2.7	30.5
5	<input type="checkbox"/>	0.200	0.219	10876.54	0.0006	P	1.1	9.5
6	<input type="checkbox"/>	0.400	0.466	20383.50	0.0012	P	5.3	16.5
7	<input type="checkbox"/>	4.000	4.154	154943.86	0.0091	P	2.0	3.9
8	<input type="checkbox"/>	20.000	20.426	746858.60	0.0440	P	1.4	2.1
9	<input type="checkbox"/>	40.000	39.771	1427266.25	0.0855	P	1.3	-0.6
10	<input type="checkbox"/>			10459249.04	0.6424	A	7.4	
11	<input type="checkbox"/>			6500.18	0.0004	P	19.3	

$$y = 0.0021 * x + 1.5707E-004$$

R = 0.9999

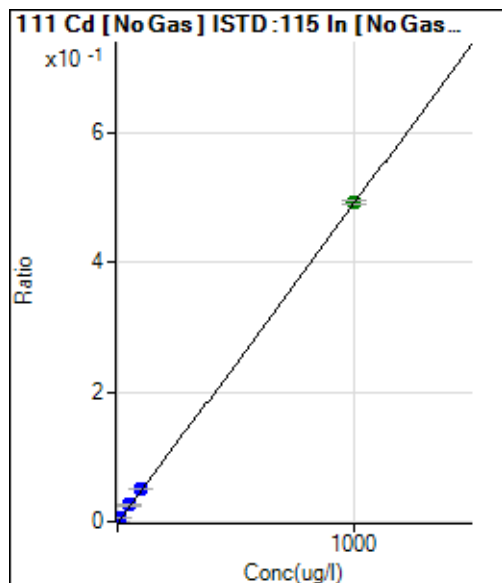
DL = 0.007728 ug/l

BEC = 0.07316 ug/l

Weight: 1/y

Min Conc: <None>

Calibration for 016\_QC1.d



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	13.02	0.0000	P	228.0	
2	<input type="checkbox"/>	0.025	0.030	268.73	0.0000	P	13.1	20.0
3	<input type="checkbox"/>	0.050	0.055	472.93	0.0000	P	6.0	10.8
4	<input type="checkbox"/>	0.100	0.114	970.74	0.0001	P	8.3	14.4
5	<input type="checkbox"/>	0.500	0.540	4631.15	0.0003	P	4.5	8.1
6	<input type="checkbox"/>	1.000	1.132	9842.93	0.0006	P	3.5	13.2
7	<input type="checkbox"/>	10.000	10.390	87424.44	0.0051	P	1.3	3.9
8	<input type="checkbox"/>	50.000	51.388	429678.00	0.0253	P	0.9	2.8
9	<input type="checkbox"/>	100.000	101.050	830826.63	0.0498	P	0.6	1.0
10	<input type="checkbox"/>	1000.000	999.822	8026770.89	0.4927	A	1.1	0.0
11	<input type="checkbox"/>			333.73	0.0000	P	3.3	

$$y = 4.9276E-004 * x + 8.2065E-007$$

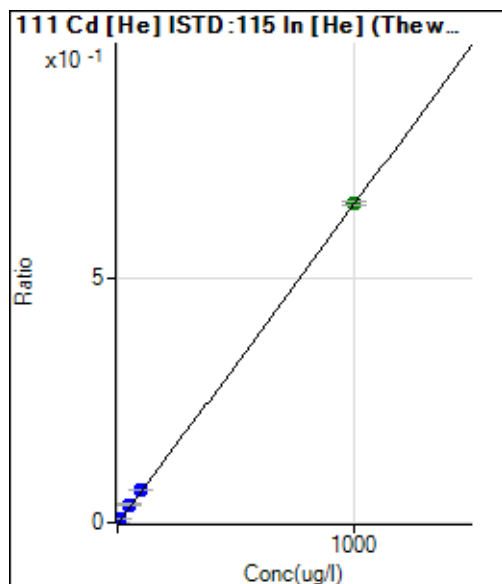
$$R = 1.0000$$

$$DL = 0.01139 \text{ ug/l}$$

$$BEC = 0.001665 \text{ ug/l}$$

$$\text{Weight: } 1/y$$

$$\text{Min Conc: } <\text{None}>$$



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	14.22	0.0000	P	5.1	
2	<input type="checkbox"/>	0.025	0.029	94.11	0.0000	P	7.8	17.4
3	<input type="checkbox"/>	0.050	0.063	180.33	0.0000	P	5.8	25.2
4	<input type="checkbox"/>	0.100	0.120	336.23	0.0001	P	2.9	19.6
5	<input type="checkbox"/>	0.500	0.568	1537.42	0.0004	P	4.0	13.6
6	<input type="checkbox"/>	1.000	1.208	3296.61	0.0008	P	2.5	20.8
7	<input type="checkbox"/>	10.000	10.577	28830.81	0.0069	P	1.2	5.8
8	<input type="checkbox"/>	50.000	55.649	142171.70	0.0365	P	6.8	11.3
9	<input type="checkbox"/>	100.000	102.572	269586.51	0.0672	P	2.5	2.6
10	<input type="checkbox"/>	1000.000	999.454	2633641.69	0.6548	A	1.1	-0.1
11	<input type="checkbox"/>			106.78	0.0000	P	6.1	

$$y = 6.5519E-004 * x + 3.3744E-006$$

$$R = 1.0000$$

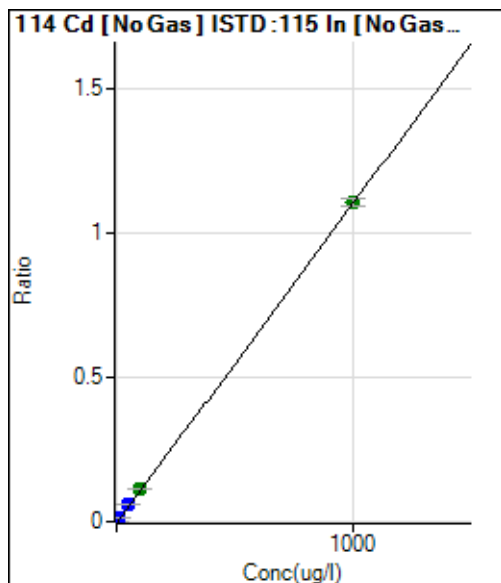
$$DL = 0.0007818 \text{ ug/l}$$

$$BEC = 0.00515 \text{ ug/l}$$

$$\text{Weight: } 1/y$$

$$\text{Min Conc: } <\text{None}>$$

Calibration for 016\_QC1.d



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	-172.64	0.0000	P	-24.0	
2	<input type="checkbox"/>	0.025	0.028	358.17	0.0000	P	8.3	11.5
3	<input type="checkbox"/>	0.050	0.058	904.10	0.0001	P	10.0	15.3
4	<input type="checkbox"/>	0.100	0.117	2023.35	0.0001	P	3.4	16.7
5	<input type="checkbox"/>	0.500	0.541	10218.63	0.0006	P	1.6	8.2
6	<input type="checkbox"/>	1.000	1.137	21998.12	0.0012	P	4.4	13.7
7	<input type="checkbox"/>	10.000	10.544	199295.36	0.0117	P	1.4	5.4
8	<input type="checkbox"/>	50.000	51.851	974733.24	0.0574	P	0.2	3.7
9	<input type="checkbox"/>	100.000	103.867	1920454.04	0.1151	A	2.6	3.9
10	<input type="checkbox"/>	1000.000	999.515	18040712.60	1.1075	A	2.5	0.0
11	<input type="checkbox"/>			649.09	0.0000	P	4.3	

$$y = 0.0011 * x - 1.0126E-005$$

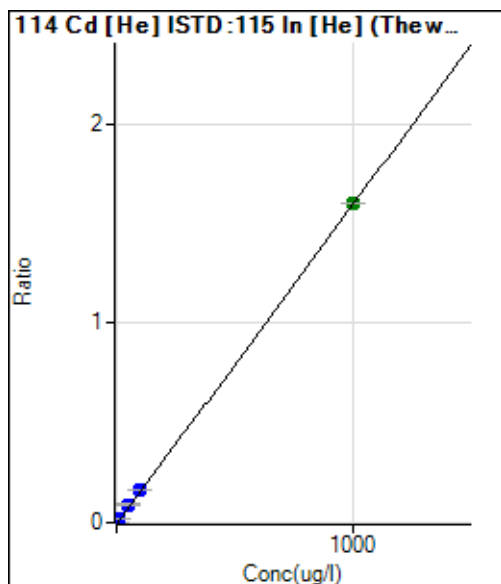
$$R = 1.0000$$

$$DL = 0.006586 \text{ ug/l}$$

$$BEC = -0.009139 \text{ ug/l}$$

$$\text{Weight: } 1/y$$

$$\text{Min Conc: } <\text{None}>$$



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	41.69	0.0000	P	7.1	
2	<input type="checkbox"/>	0.025	0.027	224.23	0.0001	P	8.1	9.6
3	<input type="checkbox"/>	0.050	0.061	436.48	0.0001	P	1.4	21.7
4	<input type="checkbox"/>	0.100	0.113	783.65	0.0002	P	2.3	12.7
5	<input type="checkbox"/>	0.500	0.557	3693.84	0.0009	P	2.4	11.3
6	<input type="checkbox"/>	1.000	1.202	8030.48	0.0019	P	1.5	20.2
7	<input type="checkbox"/>	10.000	10.606	70724.00	0.0170	P	1.2	6.1
8	<input type="checkbox"/>	50.000	55.615	347659.86	0.0891	P	6.0	11.2
9	<input type="checkbox"/>	100.000	102.498	658922.19	0.1643	P	2.8	2.5
10	<input type="checkbox"/>	1000.000	999.463	6441681.97	1.6018	A	0.5	-0.1
11	<input type="checkbox"/>			241.15	0.0001	P	9.3	

$$y = 0.0016 * x + 9.9049E-006$$

$$R = 1.0000$$

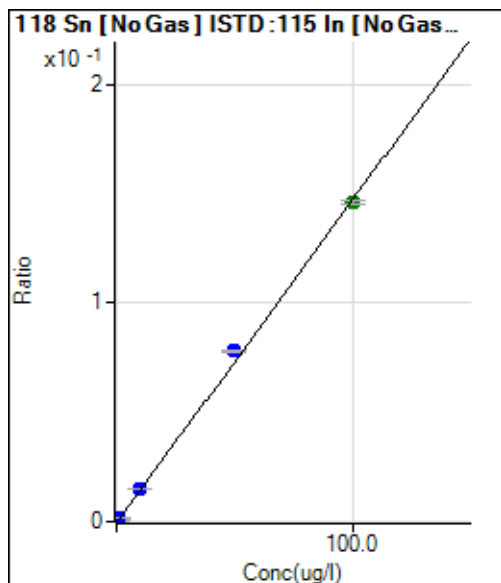
$$DL = 0.001324 \text{ ug/l}$$

$$BEC = 0.00618 \text{ ug/l}$$

$$\text{Weight: } 1/y$$

$$\text{Min Conc: } <\text{None}>$$

Calibration for 016\_QC1.d



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	3300.52	0.0002	P	6.8	
2	<input type="checkbox"/>	0.025	0.071	5164.10	0.0003	P	3.5	183.6
3	<input type="checkbox"/>	0.050	0.111	6026.04	0.0004	P	3.0	121.1
4	<input type="checkbox"/>	0.100	0.159	7310.74	0.0004	P	4.0	59.4
5	<input type="checkbox"/>	0.500	0.548	17412.93	0.0010	P	3.0	9.5
6	<input type="checkbox"/>	1.000	1.191	34453.82	0.0020	P	3.3	19.1
7	<input type="checkbox"/>	10.000	10.149	259550.77	0.0152	P	1.0	1.5
8	<input type="checkbox"/>	50.000	52.584	1322540.09	0.0779	P	0.8	5.2
9	<input type="checkbox"/>	100.000	98.691	2437787.66	0.1461	A	1.1	-1.3
10	<input type="checkbox"/>			8033.07	0.0005	P	4.4	
11	<input type="checkbox"/>			35677.77	0.0021	P	2.8	

$$y = 0.0015 * x + 1.9471E-004$$

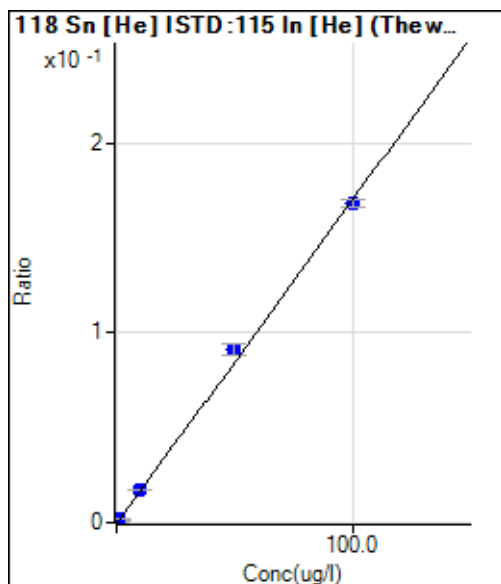
$$R = 0.9996$$

$$DL = 0.02703 \text{ ug/l}$$

$$BEC = 0.1317 \text{ ug/l}$$

$$\text{Weight: } 1/y$$

$$\text{Min Conc: } <\text{None}>$$



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	957.82	0.0002	P	3.6	
2	<input type="checkbox"/>	0.025	0.076	1485.64	0.0004	P	3.7	202.0
3	<input type="checkbox"/>	0.050	0.109	1682.33	0.0004	P	4.9	118.2
4	<input type="checkbox"/>	0.100	0.154	2022.38	0.0005	P	3.4	54.5
5	<input type="checkbox"/>	0.500	0.564	4885.32	0.0012	P	2.5	12.7
6	<input type="checkbox"/>	1.000	1.230	9676.72	0.0023	P	2.8	23.0
7	<input type="checkbox"/>	10.000	10.037	72391.61	0.0174	P	0.3	0.4
8	<input type="checkbox"/>	50.000	53.409	357389.69	0.0916	P	6.2	6.8
9	<input type="checkbox"/>	100.000	98.289	675760.09	0.1685	P	1.9	-1.7
10	<input type="checkbox"/>			2272.42	0.0006	P	3.7	
11	<input type="checkbox"/>			9776.77	0.0024	P	1.5	

$$y = 0.0017 * x + 2.2745E-004$$

$$R = 0.9993$$

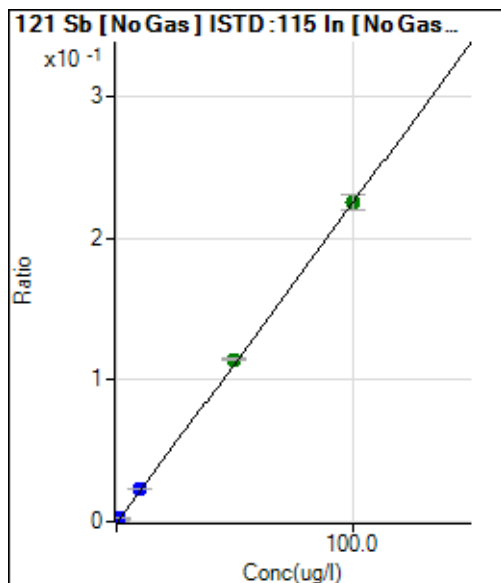
$$DL = 0.01434 \text{ ug/l}$$

$$BEC = 0.1329 \text{ ug/l}$$

$$\text{Weight: } 1/y$$

$$\text{Min Conc: } <\text{None}>$$

Calibration for 016\_QC1.d



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	621.08	0.0000	P	8.3	
2	<input type="checkbox"/>	0.025	0.027	1669.60	0.0001	P	3.9	6.4
3	<input type="checkbox"/>	0.050	0.055	2725.87	0.0002	P	2.5	10.8
4	<input type="checkbox"/>	0.100	0.109	4817.65	0.0003	P	3.4	9.3
5	<input type="checkbox"/>	0.500	0.511	20680.54	0.0012	P	0.7	2.2
6	<input type="checkbox"/>	1.000	1.097	44359.92	0.0025	P	2.4	9.7
7	<input type="checkbox"/>	10.000	9.962	385401.26	0.0226	P	1.3	-0.4
8	<input type="checkbox"/>	50.000	50.642	1944554.59	0.1146	A	0.7	1.3
9	<input type="checkbox"/>	100.000	99.682	3762480.27	0.2255	A	4.4	-0.3
10	<input type="checkbox"/>			8508.09	0.0005	P	1.6	
11	<input type="checkbox"/>			3526.80	0.0002	P	1.5	

$$y = 0.0023 * x + 3.6657E-005$$

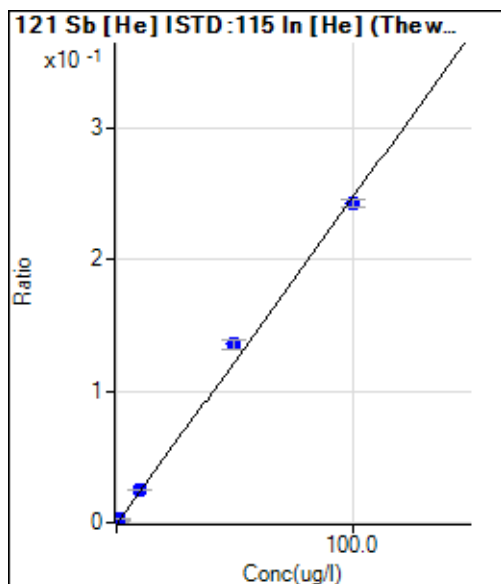
$$R = 1.0000$$

$$DL = 0.00404 \text{ ug/l}$$

$$BEC = 0.0162 \text{ ug/l}$$

$$\text{Weight: } 1/y$$

$$\text{Min Conc: } <\text{None}>$$



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	178.35	0.0000	P	7.5	
2	<input type="checkbox"/>	0.025	0.026	448.05	0.0001	P	2.6	5.2
3	<input type="checkbox"/>	0.050	0.054	713.76	0.0002	P	3.1	7.5
4	<input type="checkbox"/>	0.100	0.110	1298.19	0.0003	P	2.1	10.2
5	<input type="checkbox"/>	0.500	0.527	5524.31	0.0013	P	3.2	5.4
6	<input type="checkbox"/>	1.000	1.117	11668.00	0.0028	P	2.0	11.7
7	<input type="checkbox"/>	10.000	9.950	102783.96	0.0247	P	1.1	-0.5
8	<input type="checkbox"/>	50.000	54.500	527387.76	0.1352	P	5.6	9.0
9	<input type="checkbox"/>	100.000	97.753	972510.88	0.2425	P	2.8	-2.2
10	<input type="checkbox"/>			2117.04	0.0005	P	0.5	
11	<input type="checkbox"/>			875.45	0.0002	P	3.5	

$$y = 0.0025 * x + 4.2366E-005$$

$$R = 0.9987$$

$$DL = 0.003859 \text{ ug/l}$$

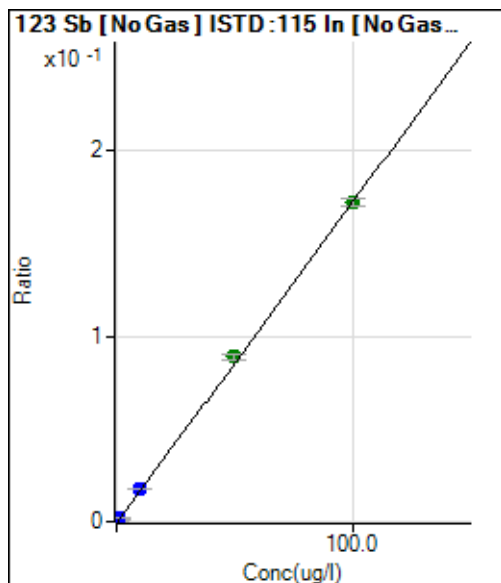
$$BEC = 0.01708 \text{ ug/l}$$

$$\text{Weight: } 1/y$$

$$\text{Min Conc: } <\text{None}>$$



Calibration for 016\_QC1.d



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	501.06	0.0000	P	11.8	
2	<input type="checkbox"/>	0.025	0.026	1293.19	0.0001	P	4.9	4.9
3	<input type="checkbox"/>	0.050	0.054	2076.36	0.0001	P	4.3	8.4
4	<input type="checkbox"/>	0.100	0.110	3721.20	0.0002	P	3.3	9.6
5	<input type="checkbox"/>	0.500	0.508	15755.06	0.0009	P	1.0	1.5
6	<input type="checkbox"/>	1.000	1.094	33873.65	0.0019	P	3.0	9.4
7	<input type="checkbox"/>	10.000	9.969	295190.26	0.0173	P	0.5	-0.3
8	<input type="checkbox"/>	50.000	51.219	1505107.40	0.0887	A	3.2	2.4
9	<input type="checkbox"/>	100.000	99.392	2871308.37	0.1721	A	3.0	-0.6
10	<input type="checkbox"/>			7045.81	0.0004	P	2.6	
11	<input type="checkbox"/>			2701.87	0.0002	P	1.4	

$$y = 0.0017 * x + 2.9614E-005$$

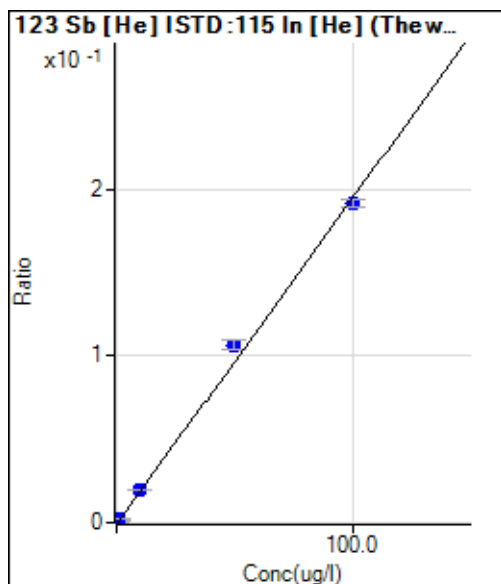
$$R = 0.9999$$

$$DL = 0.00604 \text{ ug/l}$$

$$BEC = 0.01711 \text{ ug/l}$$

Weight: 1/y

Min Conc: <None>



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	127.68	0.0000	P	11.0	
2	<input type="checkbox"/>	0.025	0.029	362.37	0.0001	P	2.5	15.8
3	<input type="checkbox"/>	0.050	0.052	540.73	0.0001	P	0.8	5.0
4	<input type="checkbox"/>	0.100	0.108	992.14	0.0002	P	1.7	7.7
5	<input type="checkbox"/>	0.500	0.521	4303.43	0.0011	P	2.1	4.2
6	<input type="checkbox"/>	1.000	1.134	9334.03	0.0023	P	3.2	13.4
7	<input type="checkbox"/>	10.000	9.968	81260.76	0.0195	P	2.1	-0.3
8	<input type="checkbox"/>	50.000	54.334	415073.09	0.1064	P	5.2	8.7
9	<input type="checkbox"/>	100.000	97.835	768305.15	0.1915	P	2.7	-2.2
10	<input type="checkbox"/>			1673.27	0.0004	P	1.4	
11	<input type="checkbox"/>			714.09	0.0002	P	4.1	

$$y = 0.0020 * x + 3.0341E-005$$

$$R = 0.9988$$

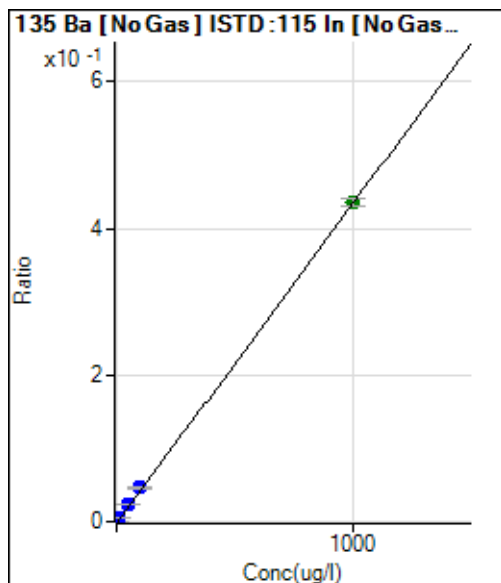
$$DL = 0.005131 \text{ ug/l}$$

$$BEC = 0.0155 \text{ ug/l}$$

Weight: 1/y

Min Conc: <None>

Calibration for 016\_QC1.d



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	359.30	0.0000	P	10.7	
2	<input type="checkbox"/>	0.025	0.012	452.44	0.0000	P	14.8	-53.5
3	<input type="checkbox"/>	0.050	0.038	638.75	0.0000	P	7.9	-23.3
4	<input type="checkbox"/>	0.100	0.099	1091.21	0.0001	P	4.0	-1.3
5	<input type="checkbox"/>	0.500	0.520	4298.83	0.0002	P	2.3	3.9
6	<input type="checkbox"/>	1.000	1.137	9108.27	0.0005	P	5.7	13.7
7	<input type="checkbox"/>	10.000	10.794	80730.33	0.0047	P	2.5	7.9
8	<input type="checkbox"/>	50.000	53.192	393999.88	0.0232	P	1.1	6.4
9	<input type="checkbox"/>	100.000	105.832	770371.16	0.0462	P	3.3	5.8
10	<input type="checkbox"/>	1000.000	999.249	7099661.74	0.4358	A	2.4	-0.1
11	<input type="checkbox"/>			1327.44	0.0001	P	10.0	

$$y = 4.3614E-004 * x + 2.1224E-005$$

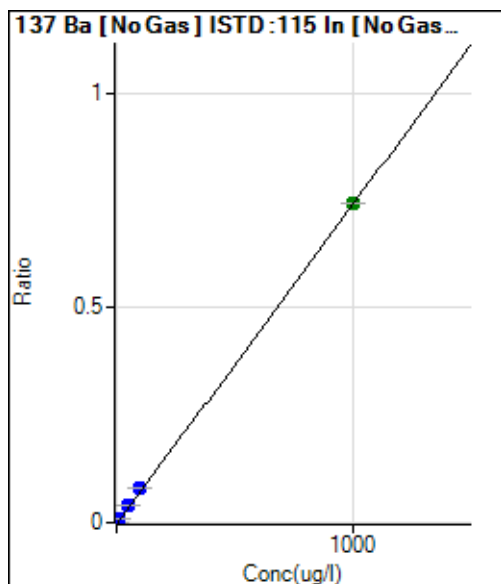
R = 1.0000

DL = 0.01568 ug/l

BEC = 0.04866 ug/l

Weight: 1/y

Min Conc: <None>



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	518.98	0.0000	P	14.7	
2	<input type="checkbox"/>	0.025	0.016	738.56	0.0000	P	10.1	-34.1
3	<input type="checkbox"/>	0.050	0.044	1064.60	0.0001	P	8.0	-11.8
4	<input type="checkbox"/>	0.100	0.102	1806.54	0.0001	P	4.7	1.9
5	<input type="checkbox"/>	0.500	0.535	7433.94	0.0004	P	5.4	7.0
6	<input type="checkbox"/>	1.000	1.155	15687.83	0.0009	P	3.2	15.5
7	<input type="checkbox"/>	10.000	10.902	139098.05	0.0081	P	2.3	9.0
8	<input type="checkbox"/>	50.000	54.184	685091.31	0.0404	P	1.4	8.4
9	<input type="checkbox"/>	100.000	108.206	1344933.07	0.0806	P	1.8	8.2
10	<input type="checkbox"/>	1000.000	998.961	12120507.32	0.7439	A	0.5	-0.1
11	<input type="checkbox"/>			2551.87	0.0002	P	7.2	

$$y = 7.4465E-004 * x + 3.0463E-005$$

R = 1.0000

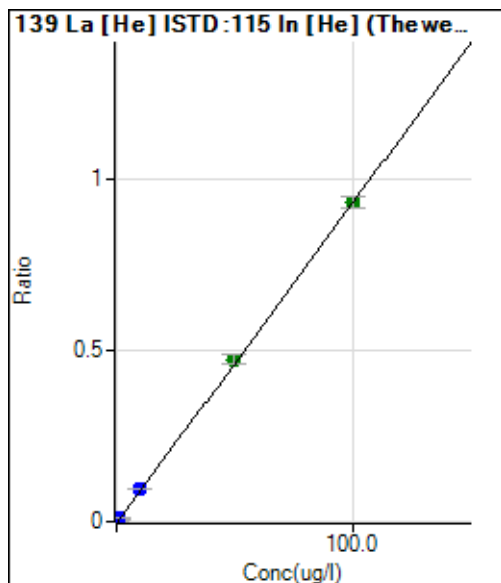
DL = 0.01805 ug/l

BEC = 0.04091 ug/l

Weight: 1/y

Min Conc: <None>

Calibration for 016\_QC1.d



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	51.11	0.0000	P	2.1	
2	<input type="checkbox"/>	0.025	0.027	1084.49	0.0003	P	2.6	6.4
3	<input type="checkbox"/>	0.050	0.055	2153.52	0.0005	P	2.5	11.0
4	<input type="checkbox"/>	0.100	0.112	4350.71	0.0011	P	1.4	12.0
5	<input type="checkbox"/>	0.500	0.533	20417.32	0.0050	P	2.1	6.6
6	<input type="checkbox"/>	1.000	1.140	44175.63	0.0107	P	3.2	14.0
7	<input type="checkbox"/>	10.000	10.153	394044.23	0.0948	P	1.7	1.5
8	<input type="checkbox"/>	50.000	50.653	1844014.38	0.4727	A	5.7	1.3
9	<input type="checkbox"/>	100.000	99.657	3730878.41	0.9301	A	3.2	-0.3
10	<input type="checkbox"/>			962.26	0.0002	P	1.5	
11	<input type="checkbox"/>			362.23	0.0001	P	7.3	

$$y = 0.0093 * x + 1.2130E-005$$

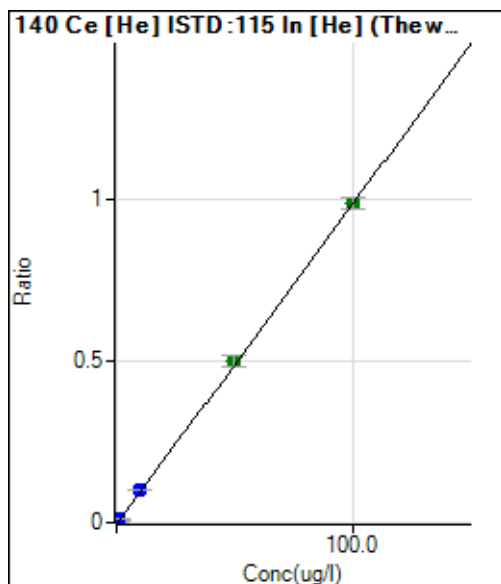
$$R = 1.0000$$

$$DL = 8.353E-05 \text{ ug/l}$$

$$BEC = 0.0013 \text{ ug/l}$$

$$\text{Weight: } 1/y$$

$$\text{Min Conc: } <\text{None}>$$



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	107.78	0.0000	P	5.0	
2	<input type="checkbox"/>	0.025	0.028	1261.18	0.0003	P	6.7	11.7
3	<input type="checkbox"/>	0.050	0.058	2434.68	0.0006	P	1.2	15.5
4	<input type="checkbox"/>	0.100	0.112	4664.14	0.0011	P	2.8	11.6
5	<input type="checkbox"/>	0.500	0.536	21921.77	0.0054	P	1.2	7.2
6	<input type="checkbox"/>	1.000	1.145	47295.91	0.0114	P	2.3	14.5
7	<input type="checkbox"/>	10.000	10.190	420994.23	0.1012	P	1.8	1.9
8	<input type="checkbox"/>	50.000	50.566	1958347.50	0.5023	A	6.9	1.1
9	<input type="checkbox"/>	100.000	99.696	3971893.52	0.9903	A	3.8	-0.3
10	<input type="checkbox"/>			1620.11	0.0004	P	10.1	
11	<input type="checkbox"/>			814.48	0.0002	P	3.5	

$$y = 0.0099 * x + 2.5572E-005$$

$$R = 1.0000$$

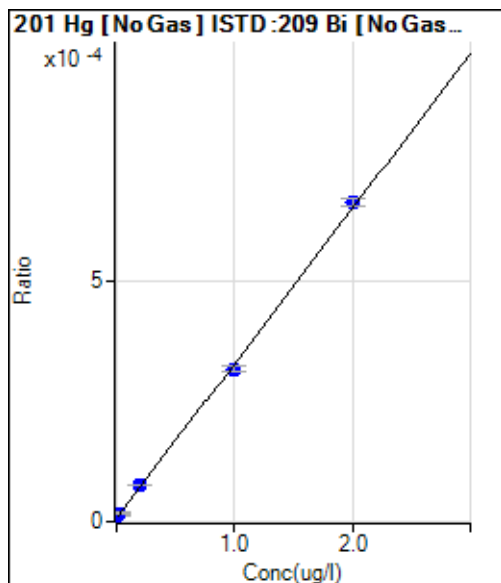
$$DL = 0.0003896 \text{ ug/l}$$

$$BEC = 0.002574 \text{ ug/l}$$

$$\text{Weight: } 1/y$$

$$\text{Min Conc: } <\text{None}>$$

Calibration for 016\_QC1.d



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	183.30	0.0000	P	9.2	
2	<input type="checkbox"/>			178.97	0.0000	P	13.2	
3	<input type="checkbox"/>	0.001	0.000	184.30	0.0000	P	11.2	-79.3
4	<input type="checkbox"/>	0.002	-0.001	185.30	0.0000	P	15.8	-144.4
5	<input type="checkbox"/>	0.010	0.010	239.96	0.0000	P	11.7	0.4
6	<input type="checkbox"/>	0.020	0.021	306.94	0.0000	P	8.4	6.1
7	<input type="checkbox"/>	0.200	0.201	1245.14	0.0001	P	2.3	0.6
8	<input type="checkbox"/>	1.000	0.948	5048.28	0.0003	P	3.9	-5.2
9	<input type="checkbox"/>	2.000	2.026	10270.23	0.0007	P	2.5	1.3
10	<input type="checkbox"/>			204.63	0.0000	P	13.0	
11	<input type="checkbox"/>			203.63	0.0000	P	5.2	

$$y = 3.2213E-004 * x + 1.1155E-005$$

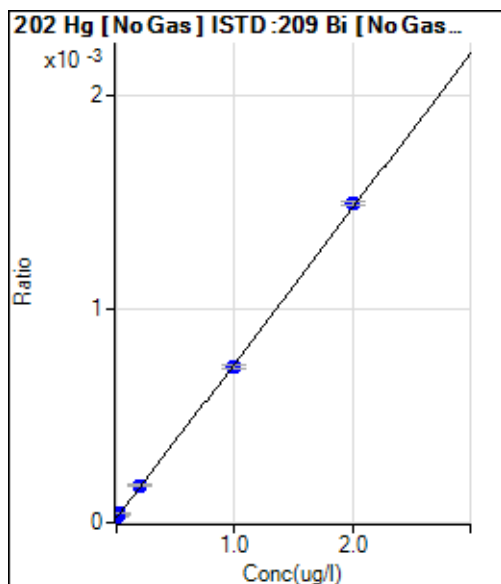
R = 0.9996

DL = 0.009577 ug/l

BEC = 0.03463 ug/l

Weight: 1/y

Min Conc: <None>



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	475.58	0.0000	P	11.1	
2	<input type="checkbox"/>			470.25	0.0000	P	8.3	
3	<input type="checkbox"/>	0.001	0.002	503.91	0.0000	P	5.8	147.4
4	<input type="checkbox"/>	0.002	0.001	508.58	0.0000	P	6.0	-39.0
5	<input type="checkbox"/>	0.010	0.010	607.56	0.0000	P	4.2	3.9
6	<input type="checkbox"/>	0.020	0.020	744.21	0.0000	P	7.4	1.4
7	<input type="checkbox"/>	0.200	0.197	2819.74	0.0002	P	4.2	-1.4
8	<input type="checkbox"/>	1.000	0.962	11601.39	0.0007	P	2.0	-3.8
9	<input type="checkbox"/>	2.000	2.019	23134.65	0.0015	P	1.6	1.0
10	<input type="checkbox"/>			552.24	0.0000	P	5.2	
11	<input type="checkbox"/>			558.90	0.0000	P	8.4	

$$y = 7.2603E-004 * x + 2.8891E-005$$

R = 0.9998

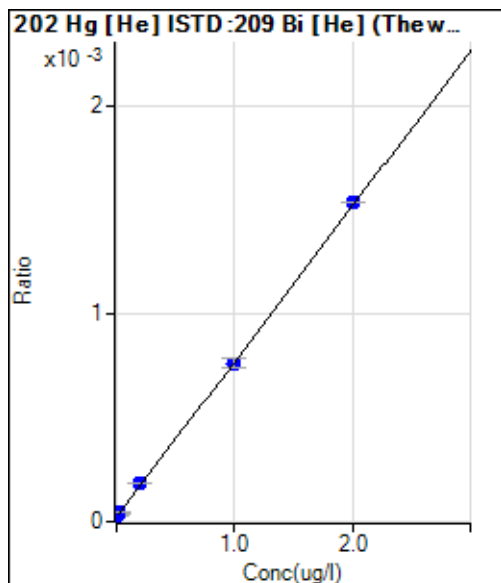
DL = 0.01328 ug/l

BEC = 0.03979 ug/l

Weight: 1/y

Min Conc: <None>

Calibration for 016\_QC1.d



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	214.96	0.0000	P	3.8	
2	<input type="checkbox"/>			211.29	0.0000	P	4.6	
3	<input type="checkbox"/>	0.001	-0.001	213.29	0.0000	P	12.2	-169.8
4	<input type="checkbox"/>	0.002	-0.001	208.29	0.0000	P	7.6	-151.7
5	<input type="checkbox"/>	0.010	0.010	264.95	0.0000	P	4.9	2.1
6	<input type="checkbox"/>	0.020	0.018	304.28	0.0000	P	5.6	-11.8
7	<input type="checkbox"/>	0.200	0.204	1179.49	0.0002	P	3.0	1.8
8	<input type="checkbox"/>	1.000	0.975	4737.56	0.0008	P	5.7	-2.5
9	<input type="checkbox"/>	2.000	2.012	9407.10	0.0015	P	0.1	0.6
10	<input type="checkbox"/>			244.29	0.0000	P	8.3	
11	<input type="checkbox"/>			235.29	0.0000	P	8.8	

$$y = 7.4741E-004 * x + 3.2444E-005$$

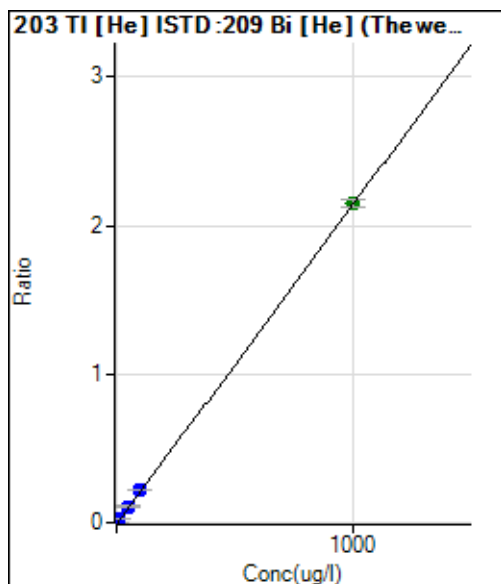
R = 0.9999

DL = 0.004952 ug/l

BEC = 0.04341 ug/l

Weight: 1/y

Min Conc: <None>



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	1592.07	0.0002	P	3.9	
2	<input type="checkbox"/>	0.025	0.011	1760.16	0.0003	P	3.8	-54.2
3	<input type="checkbox"/>	0.050	0.037	2137.03	0.0003	P	1.5	-26.1
4	<input type="checkbox"/>	0.100	0.088	2823.44	0.0004	P	3.3	-12.0
5	<input type="checkbox"/>	0.500	0.483	8456.07	0.0013	P	1.3	-3.4
6	<input type="checkbox"/>	1.000	1.057	16741.86	0.0025	P	2.9	5.7
7	<input type="checkbox"/>	10.000	10.245	142235.21	0.0223	P	0.8	2.4
8	<input type="checkbox"/>	50.000	50.811	680910.56	0.1094	P	6.7	1.6
9	<input type="checkbox"/>	100.000	101.625	1338824.61	0.2187	P	0.8	1.6
10	<input type="checkbox"/>	1000.000	999.794	12867158.23	2.1490	A	2.0	0.0
11	<input type="checkbox"/>			8207.17	0.0013	P	7.6	

$$y = 0.0021 * x + 2.4028E-004$$

R = 1.0000

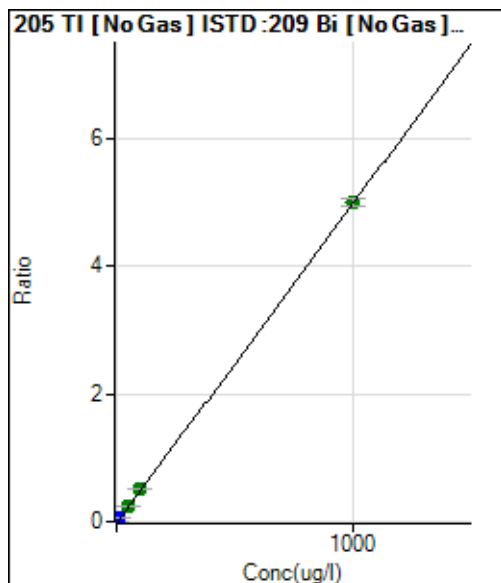
DL = 0.01316 ug/l

BEC = 0.1118 ug/l

Weight: 1/y

Min Conc: <None>

Calibration for 016\_QC1.d



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	8568.39	0.0005	P	9.0	
2	<input type="checkbox"/>	0.025	0.000	8736.29	0.0005	P	6.7	-101.7
3	<input type="checkbox"/>	0.050	0.025	10640.98	0.0006	P	8.7	-49.1
4	<input type="checkbox"/>	0.100	0.071	14954.02	0.0009	P	7.3	-29.0
5	<input type="checkbox"/>	0.500	0.472	48052.03	0.0029	P	2.7	-5.5
6	<input type="checkbox"/>	1.000	1.036	97269.01	0.0057	P	5.2	3.6
7	<input type="checkbox"/>	10.000	10.074	834051.62	0.0509	P	3.1	0.7
8	<input type="checkbox"/>	50.000	48.940	3912407.93	0.2452	A	0.6	-2.1
9	<input type="checkbox"/>	100.000	101.524	7861152.52	0.5080	A	2.5	1.5
10	<input type="checkbox"/>	1000.000	999.900	74820564.99	4.9991	A	2.4	0.0
11	<input type="checkbox"/>			48304.63	0.0030	P	4.7	

$$y = 0.0050 * x + 5.2070E-004$$

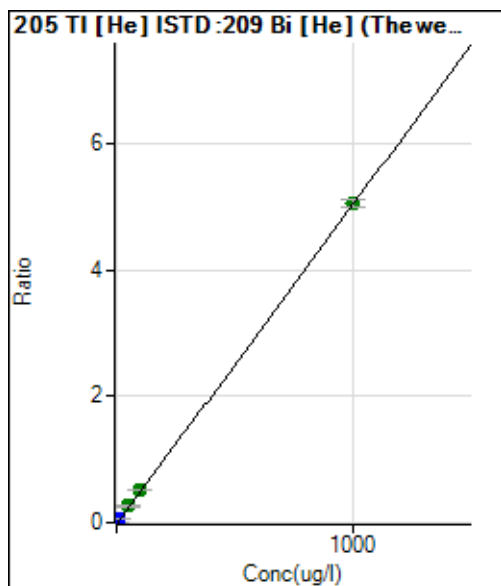
$$R = 1.0000$$

$$DL = 0.02802 \text{ ug/l}$$

$$BEC = 0.1042 \text{ ug/l}$$

$$\text{Weight: } 1/y$$

$$\text{Min Conc: } <\text{None}>$$



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	3924.16	0.0006	P	1.9	
2	<input type="checkbox"/>	0.025	0.008	4221.04	0.0006	P	1.5	-66.1
3	<input type="checkbox"/>	0.050	0.029	4941.58	0.0007	P	2.7	-41.8
4	<input type="checkbox"/>	0.100	0.087	6789.13	0.0010	P	1.3	-12.9
5	<input type="checkbox"/>	0.500	0.489	20251.45	0.0031	P	3.2	-2.2
6	<input type="checkbox"/>	1.000	1.074	40136.19	0.0060	P	0.6	7.4
7	<input type="checkbox"/>	10.000	10.426	340432.98	0.0533	P	0.7	4.3
8	<input type="checkbox"/>	50.000	52.481	1653225.14	0.2658	A	7.3	5.0
9	<input type="checkbox"/>	100.000	103.520	3206453.63	0.5237	A	1.8	3.5
10	<input type="checkbox"/>	1000.000	999.520	30238016.51	5.0511	A	2.9	0.0
11	<input type="checkbox"/>			19858.74	0.0031	P	5.9	

$$y = 0.0051 * x + 5.9223E-004$$

$$R = 1.0000$$

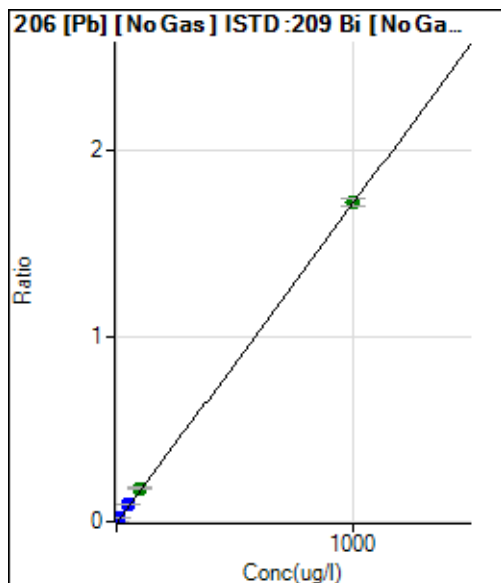
$$DL = 0.006788 \text{ ug/l}$$

$$BEC = 0.1172 \text{ ug/l}$$

$$\text{Weight: } 1/y$$

$$\text{Min Conc: } <\text{None}>$$

Calibration for 016\_QC1.d



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	1690.12	0.0001	P	6.0	
2	<input type="checkbox"/>	0.025	0.024	2431.35	0.0001	P	2.9	-3.6
3	<input type="checkbox"/>	0.050	0.057	3304.88	0.0002	P	1.8	14.2
4	<input type="checkbox"/>	0.100	0.108	4948.73	0.0003	P	7.5	8.5
5	<input type="checkbox"/>	0.500	0.521	16697.20	0.0010	P	2.5	4.2
6	<input type="checkbox"/>	1.000	1.120	34682.95	0.0020	P	5.1	12.0
7	<input type="checkbox"/>	10.000	10.322	293388.63	0.0179	P	2.4	3.2
8	<input type="checkbox"/>	50.000	51.745	1424878.00	0.0893	P	1.1	3.5
9	<input type="checkbox"/>	100.000	104.787	2797424.02	0.1807	A	1.7	4.8
10	<input type="checkbox"/>	1000.000	999.431	25791151.29	1.7231	A	2.4	-0.1
11	<input type="checkbox"/>			4378.52	0.0003	P	1.5	

$$y = 0.0017 * x + 1.0284E-004$$

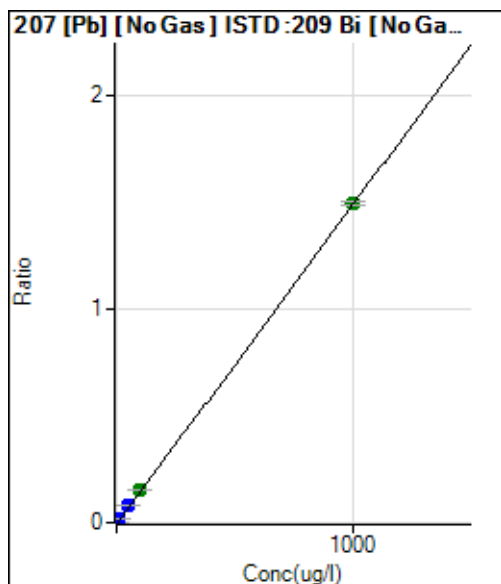
$$R = 1.0000$$

$$DL = 0.01079 \text{ ug/l}$$

$$BEC = 0.05966 \text{ ug/l}$$

$$\text{Weight: } 1/y$$

$$\text{Min Conc: } <\text{None}>$$



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	1507.87	0.0001	P	2.6	
2	<input type="checkbox"/>	0.025	0.020	2054.62	0.0001	P	5.0	-18.8
3	<input type="checkbox"/>	0.050	0.056	2879.22	0.0002	P	2.0	11.9
4	<input type="checkbox"/>	0.100	0.103	4198.47	0.0002	P	2.6	3.0
5	<input type="checkbox"/>	0.500	0.532	14798.30	0.0009	P	1.4	6.4
6	<input type="checkbox"/>	1.000	1.110	29895.86	0.0018	P	4.2	11.0
7	<input type="checkbox"/>	10.000	10.098	249090.74	0.0152	P	2.2	1.0
8	<input type="checkbox"/>	50.000	51.296	1225565.28	0.0768	P	0.5	2.6
9	<input type="checkbox"/>	100.000	102.506	2374017.41	0.1534	A	1.3	2.5
10	<input type="checkbox"/>	1000.000	999.684	22383390.78	1.4952	A	1.5	0.0
11	<input type="checkbox"/>			3848.36	0.0002	P	2.6	

$$y = 0.0015 * x + 9.1679E-005$$

$$R = 1.0000$$

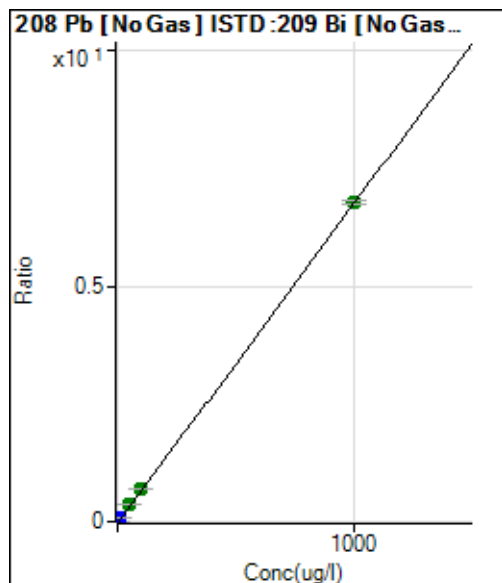
$$DL = 0.004793 \text{ ug/l}$$

$$BEC = 0.0613 \text{ ug/l}$$

$$\text{Weight: } 1/y$$

$$\text{Min Conc: } <\text{None}>$$

Calibration for 016\_QC1.d



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	6702.93	0.0004	P	2.5	
2	<input type="checkbox"/>	0.025	0.023	9498.05	0.0006	P	2.9	-7.8
3	<input type="checkbox"/>	0.050	0.056	12942.52	0.0008	P	2.8	12.2
4	<input type="checkbox"/>	0.100	0.108	19496.84	0.0011	P	5.3	8.1
5	<input type="checkbox"/>	0.500	0.532	66959.44	0.0040	P	0.5	6.3
6	<input type="checkbox"/>	1.000	1.113	135775.47	0.0080	P	4.1	11.3
7	<input type="checkbox"/>	10.000	10.374	1160791.05	0.0708	P	2.3	3.7
8	<input type="checkbox"/>	50.000	52.442	5684725.14	0.3563	A	0.3	4.9
9	<input type="checkbox"/>	100.000	103.215	10847839.20	0.7008	A	0.3	3.2
10	<input type="checkbox"/>	1000.000	999.553	101541745.7	6.7833	A	1.4	0.0
11	<input type="checkbox"/>			17549.07	0.0011	P	0.1	

$$y = 0.0068 * x + 4.0764E-004$$

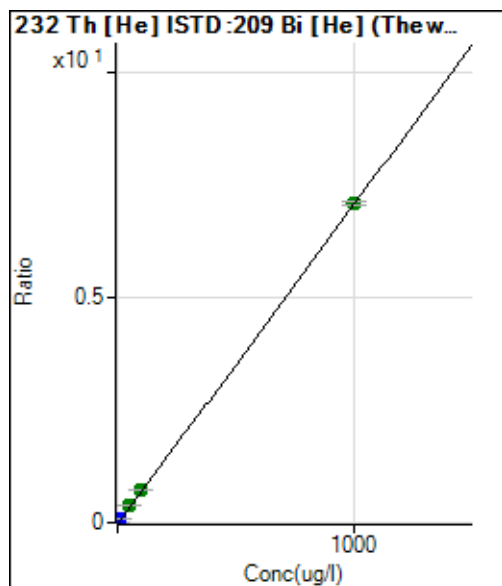
$$R = 1.0000$$

$$DL = 0.004419 \text{ ug/l}$$

$$BEC = 0.06007 \text{ ug/l}$$

$$\text{Weight: } 1/y$$

$$\text{Min Conc: } <\text{None}>$$



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	308.79	0.0000	P	9.7	
2	<input type="checkbox"/>	0.025	0.018	1145.85	0.0002	P	5.9	-28.9
3	<input type="checkbox"/>	0.050	0.040	2213.75	0.0003	P	3.8	-19.6
4	<input type="checkbox"/>	0.100	0.086	4325.13	0.0007	P	1.3	-13.7
5	<input type="checkbox"/>	0.500	0.459	21790.80	0.0033	P	2.8	-8.2
6	<input type="checkbox"/>	1.000	1.031	48993.27	0.0073	P	2.0	3.1
7	<input type="checkbox"/>	10.000	10.037	454540.61	0.0711	P	1.3	0.4
8	<input type="checkbox"/>	50.000	54.204	2389612.04	0.3839	A	5.9	8.4
9	<input type="checkbox"/>	100.000	102.541	4447002.03	0.7263	A	0.5	2.5
10	<input type="checkbox"/>	1000.000	999.535	42393429.06	7.0792	A	0.7	0.0
11	<input type="checkbox"/>			7713.37	0.0012	P	2.6	

$$y = 0.0071 * x + 4.6590E-005$$

$$R = 1.0000$$

$$DL = 0.001913 \text{ ug/l}$$

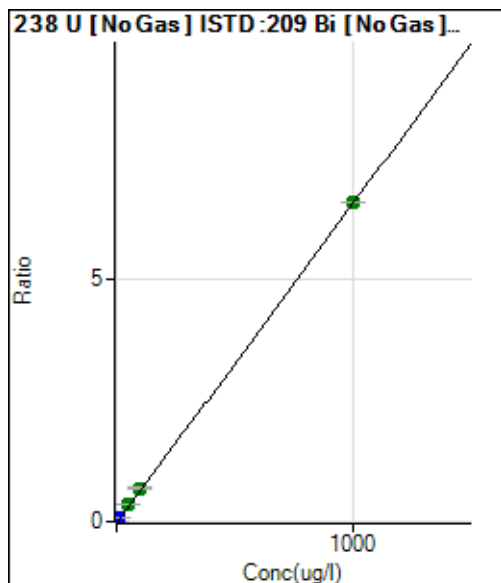
$$BEC = 0.006578 \text{ ug/l}$$

$$\text{Weight: } 1/y$$

$$\text{Min Conc: } <\text{None}>$$



Calibration for 016\_QC1.d



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	0.000	0.000	328.61	0.0000	P	4.9	
2	<input type="checkbox"/>	0.025	0.027	3378.43	0.0002	P	2.8	9.2
3	<input type="checkbox"/>	0.050	0.057	6472.65	0.0004	P	0.6	13.2
4	<input type="checkbox"/>	0.100	0.112	12967.51	0.0008	P	4.3	11.7
5	<input type="checkbox"/>	0.500	0.522	57938.78	0.0035	P	0.2	4.5
6	<input type="checkbox"/>	1.000	1.118	126534.92	0.0074	P	4.5	11.8
7	<input type="checkbox"/>	10.000	10.414	1129668.88	0.0689	P	1.5	4.1
8	<input type="checkbox"/>	50.000	52.412	5532070.15	0.3467	A	0.8	4.8
9	<input type="checkbox"/>	100.000	104.660	10713641.92	0.6923	A	1.5	4.7
10	<input type="checkbox"/>	1000.000	999.409	98973292.06	6.6108	A	0.5	-0.1
11	<input type="checkbox"/>			3032.09	0.0002	P	3.1	

$$y = 0.0066 * x + 1.9993E-005$$

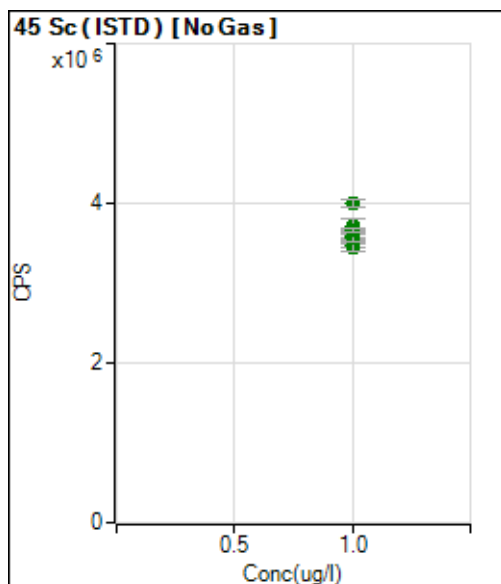
$$R = 1.0000$$

$$DL = 0.000442 \text{ ug/l}$$

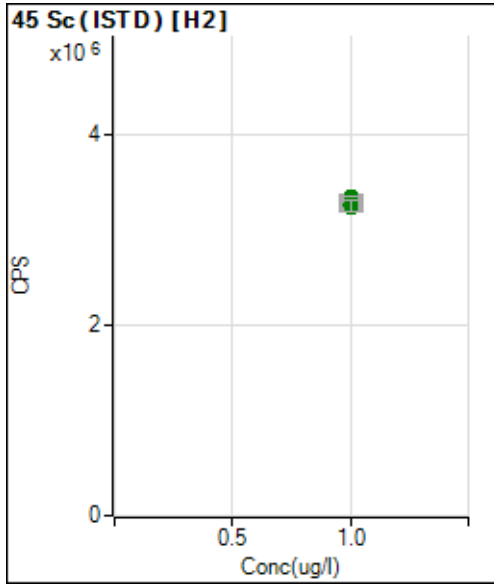
$$BEC = 0.003023 \text{ ug/l}$$

$$\text{Weight: } 1/y$$

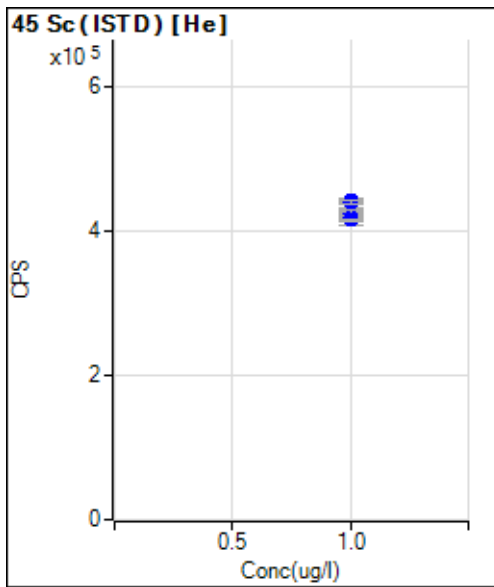
$$\text{Min Conc: } <\text{None}>$$



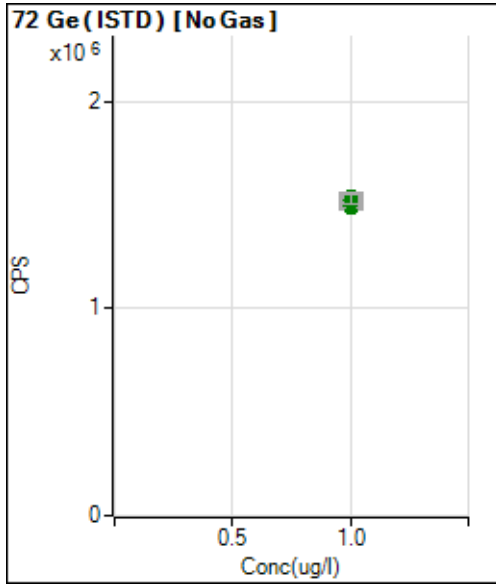
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	1.000		3584655.24		A	4.7	
2	<input type="checkbox"/>	1.000		3540430.66		A	1.6	
3	<input type="checkbox"/>	1.000		3445783.05		A	3.2	
4	<input type="checkbox"/>	1.000		3600556.32		A	2.7	
5	<input type="checkbox"/>	1.000		3526692.72		A	4.9	
6	<input type="checkbox"/>	1.000		3724235.79		A	4.6	
7	<input type="checkbox"/>	1.000		3460729.10		A	4.2	
8	<input type="checkbox"/>	1.000		3574282.20		A	3.6	
9	<input type="checkbox"/>	1.000		3714520.56		A	4.9	
10	<input type="checkbox"/>	1.000		4001758.72		A	2.4	
11	<input type="checkbox"/>	1.000		3666248.01		A	1.7	



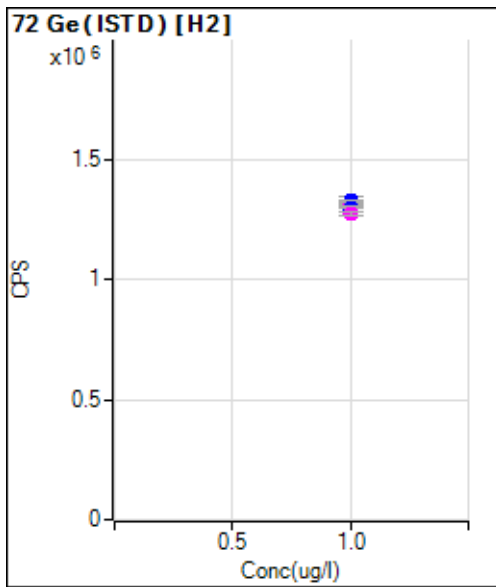
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	1.000		3358588.73		A	1.2	
2	<input type="checkbox"/>	1.000		3284995.13		A	3.8	
3	<input type="checkbox"/>	1.000		3296725.95		A	1.8	
4	<input type="checkbox"/>	1.000		3341857.67		A	1.2	
5	<input type="checkbox"/>	1.000		3318048.52		A	1.4	
6	<input type="checkbox"/>	1.000		3246907.44		A	3.1	
7	<input type="checkbox"/>	1.000		3279136.54		A	0.7	
8	<input type="checkbox"/>	1.000		3233541.55		A	2.8	
9	<input type="checkbox"/>	1.000		3326093.94		A	1.9	
10	<input type="checkbox"/>	1.000		3271533.95		A	2.5	
11	<input type="checkbox"/>	1.000		3258440.68		A	3.6	



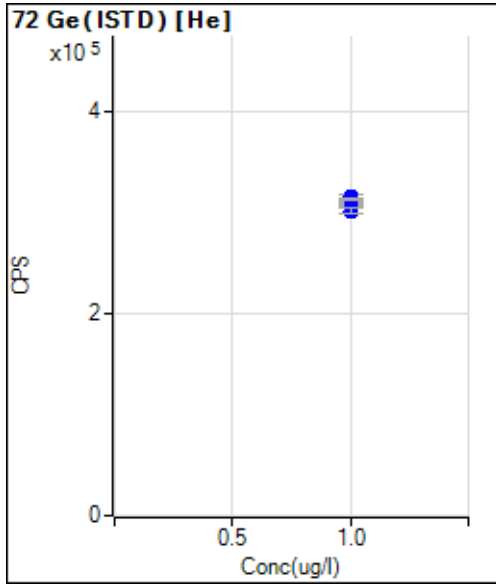
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	1.000		430036.34		P	0.7	
2	<input type="checkbox"/>	1.000		420567.45		P	1.4	
3	<input type="checkbox"/>	1.000		420096.86		P	0.9	
4	<input type="checkbox"/>	1.000		417711.36		P	0.6	
5	<input type="checkbox"/>	1.000		417857.08		P	0.5	
6	<input type="checkbox"/>	1.000		422732.88		P	1.7	
7	<input type="checkbox"/>	1.000		429936.58		P	1.5	
8	<input type="checkbox"/>	1.000		419120.90		P	5.2	
9	<input type="checkbox"/>	1.000		442399.06		P	0.8	
10	<input type="checkbox"/>	1.000		438856.09		P	1.2	
11	<input type="checkbox"/>	1.000		414479.37		P	0.1	



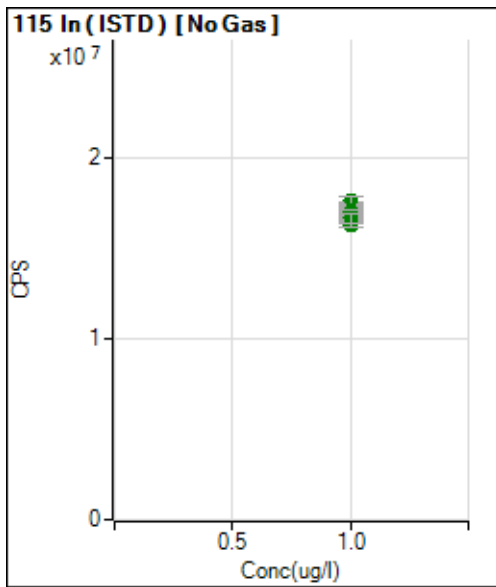
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	1.000		1510051.90		A	4.0	
2	<input type="checkbox"/>	1.000		1491063.61		A	0.8	
3	<input type="checkbox"/>	1.000		1484834.67		A	0.6	
4	<input type="checkbox"/>	1.000		1525157.77		A	0.7	
5	<input type="checkbox"/>	1.000		1494389.91		A	1.3	
6	<input type="checkbox"/>	1.000		1542334.01		A	2.2	
7	<input type="checkbox"/>	1.000		1507459.88		A	0.8	
8	<input type="checkbox"/>	1.000		1502734.46		A	2.5	
9	<input type="checkbox"/>	1.000		1527642.27		A	2.2	
10	<input type="checkbox"/>	1.000		1518402.71		A	0.5	
11	<input type="checkbox"/>	1.000		1527740.34		A	3.5	



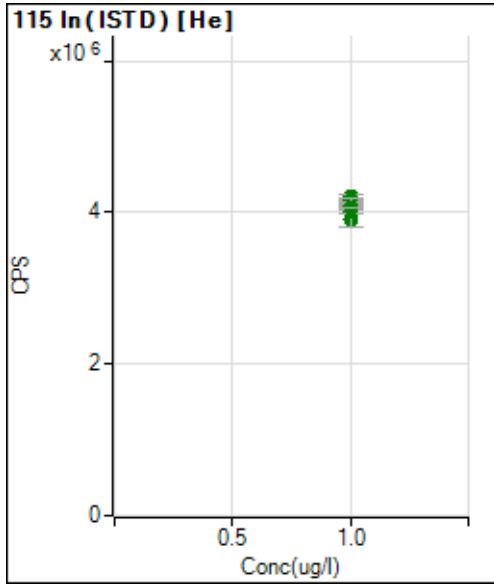
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	1.000		1329097.55		M	0.7	
2	<input type="checkbox"/>	1.000		1331317.63		M	2.4	
3	<input type="checkbox"/>	1.000		1307306.38		M	0.9	
4	<input type="checkbox"/>	1.000		1292045.32		P	1.0	
5	<input type="checkbox"/>	1.000		1330885.32		M	0.5	
6	<input type="checkbox"/>	1.000		1309290.14		P	0.6	
7	<input type="checkbox"/>	1.000		1325895.57		M	0.5	
8	<input type="checkbox"/>	1.000		1312805.74		M	1.2	
9	<input type="checkbox"/>	1.000		1327569.28		P	0.2	
10	<input type="checkbox"/>	1.000		1300047.90		P	0.6	
11	<input type="checkbox"/>	1.000		1276365.39		M	1.4	



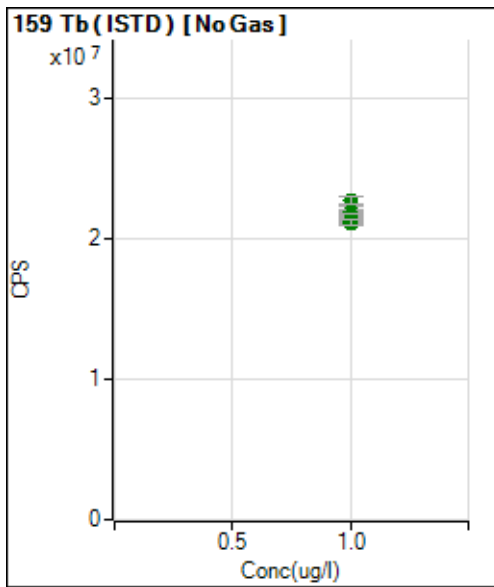
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	1.000		315905.47		P	1.1	
2	<input type="checkbox"/>	1.000		308521.81		P	0.7	
3	<input type="checkbox"/>	1.000		309941.69		P	0.2	
4	<input type="checkbox"/>	1.000		310556.38		P	1.8	
5	<input type="checkbox"/>	1.000		310218.01		P	0.4	
6	<input type="checkbox"/>	1.000		307836.79		P	1.0	
7	<input type="checkbox"/>	1.000		311979.07		P	0.7	
8	<input type="checkbox"/>	1.000		305582.19		P	4.6	
9	<input type="checkbox"/>	1.000		316529.39		P	1.7	
10	<input type="checkbox"/>	1.000		313966.13		P	0.9	
11	<input type="checkbox"/>	1.000		302191.94		P	1.3	



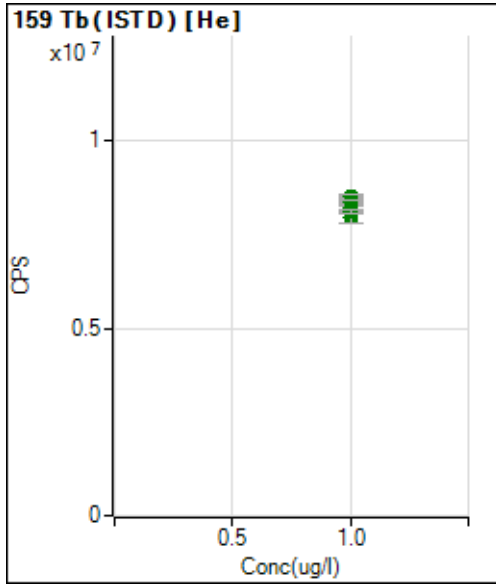
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	1.000		16973638.37		A	4.3	
2	<input type="checkbox"/>	1.000		17252951.34		A	3.0	
3	<input type="checkbox"/>	1.000		16828541.11		A	1.5	
4	<input type="checkbox"/>	1.000		16979963.72		A	2.5	
5	<input type="checkbox"/>	1.000		17340550.18		A	0.6	
6	<input type="checkbox"/>	1.000		17623986.57		A	3.0	
7	<input type="checkbox"/>	1.000		17075989.84		A	2.3	
8	<input type="checkbox"/>	1.000		16968697.79		A	1.1	
9	<input type="checkbox"/>	1.000		16686104.57		A	1.2	
10	<input type="checkbox"/>	1.000		16293667.42		A	1.5	
11	<input type="checkbox"/>	1.000		16645916.71		A	3.2	



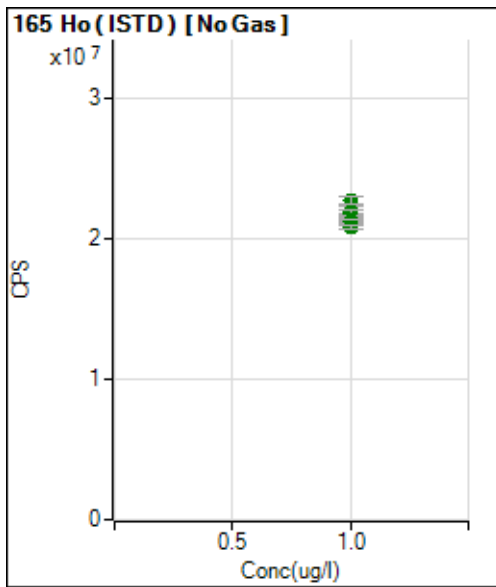
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	1.000		4212767.49		A	1.7	
2	<input type="checkbox"/>	1.000		4165040.22		A	0.9	
3	<input type="checkbox"/>	1.000		4062613.99		A	1.0	
4	<input type="checkbox"/>	1.000		4113702.79		A	2.1	
5	<input type="checkbox"/>	1.000		4096656.04		A	1.7	
6	<input type="checkbox"/>	1.000		4149214.46		A	1.7	
7	<input type="checkbox"/>	1.000		4158864.83		A	1.4	
8	<input type="checkbox"/>	1.000		3909356.91		A	5.9	
9	<input type="checkbox"/>	1.000		4012505.81		A	2.0	
10	<input type="checkbox"/>	1.000		4021739.18		A	1.4	
11	<input type="checkbox"/>	1.000		4068164.23		A	0.2	



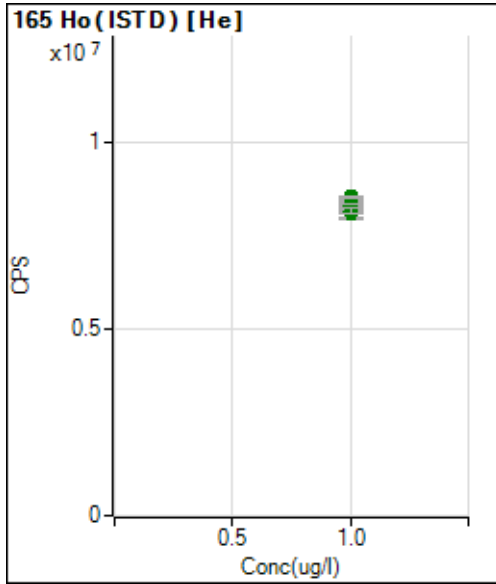
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	1.000		21590098.72		A	3.9	
2	<input type="checkbox"/>	1.000		22041520.54		A	2.7	
3	<input type="checkbox"/>	1.000		21447418.95		A	1.7	
4	<input type="checkbox"/>	1.000		21968953.80		A	1.7	
5	<input type="checkbox"/>	1.000		21665767.71		A	2.1	
6	<input type="checkbox"/>	1.000		22770991.44		A	2.4	
7	<input type="checkbox"/>	1.000		21918562.58		A	1.0	
8	<input type="checkbox"/>	1.000		21624481.85		A	0.3	
9	<input type="checkbox"/>	1.000		21443093.38		A	3.8	
10	<input type="checkbox"/>	1.000		21219721.89		A	2.2	
11	<input type="checkbox"/>	1.000		21183215.39		A	2.5	



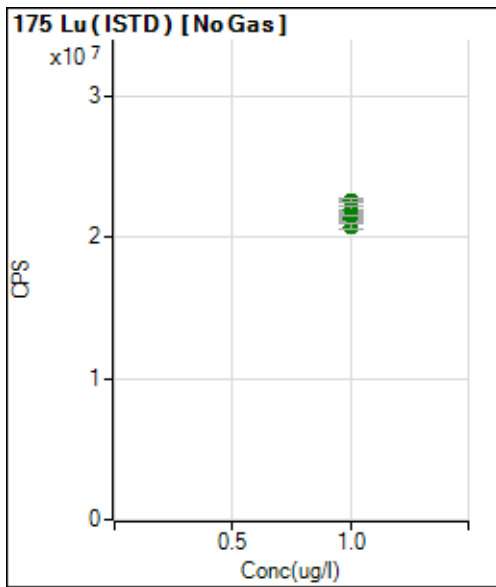
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	1.000		8452068.12		A	1.1	
2	<input type="checkbox"/>	1.000		8374293.17		A	0.8	
3	<input type="checkbox"/>	1.000		8423073.61		A	1.3	
4	<input type="checkbox"/>	1.000		8358237.21		A	1.6	
5	<input type="checkbox"/>	1.000		8469833.91		A	1.3	
6	<input type="checkbox"/>	1.000		8527529.00		A	0.6	
7	<input type="checkbox"/>	1.000		8358149.63		A	1.9	
8	<input type="checkbox"/>	1.000		7969887.31		A	4.2	
9	<input type="checkbox"/>	1.000		8203792.67		A	2.0	
10	<input type="checkbox"/>	1.000		8149724.02		A	1.0	
11	<input type="checkbox"/>	1.000		8119576.27		A	0.8	



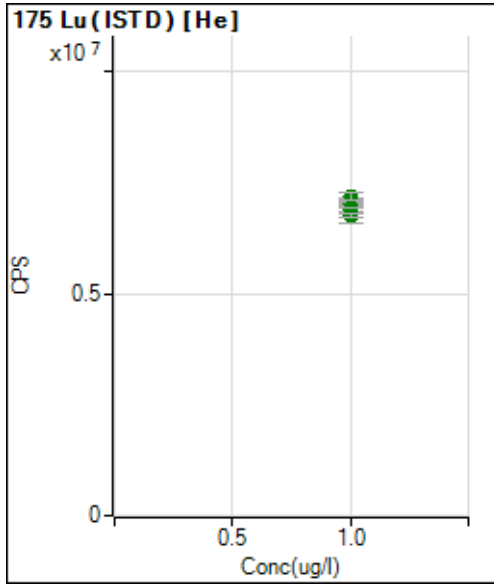
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	1.000		21644376.95		A	5.6	
2	<input type="checkbox"/>	1.000		21302647.94		A	1.1	
3	<input type="checkbox"/>	1.000		21373622.45		A	0.7	
4	<input type="checkbox"/>	1.000		21893224.33		A	1.4	
5	<input type="checkbox"/>	1.000		21730592.12		A	2.1	
6	<input type="checkbox"/>	1.000		22695083.24		A	2.0	
7	<input type="checkbox"/>	1.000		21790111.85		A	2.5	
8	<input type="checkbox"/>	1.000		21389273.52		A	1.7	
9	<input type="checkbox"/>	1.000		21246181.06		A	3.2	
10	<input type="checkbox"/>	1.000		21189793.21		A	1.3	
11	<input type="checkbox"/>	1.000		20818726.32		A	1.0	



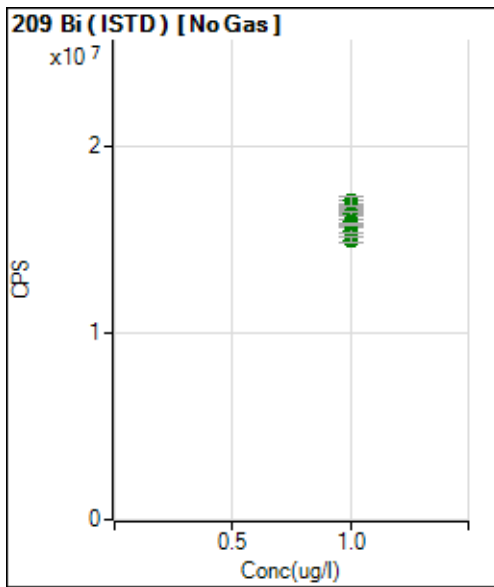
	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	1.000		8465532.42		A	1.0	
2	<input type="checkbox"/>	1.000		8372861.84		A	3.9	
3	<input type="checkbox"/>	1.000		8532557.36		A	0.7	
4	<input type="checkbox"/>	1.000		8419417.98		A	0.5	
5	<input type="checkbox"/>	1.000		8380238.59		A	0.7	
6	<input type="checkbox"/>	1.000		8560844.08		A	0.5	
7	<input type="checkbox"/>	1.000		8534892.82		A	0.6	
8	<input type="checkbox"/>	1.000		8118922.39		A	4.9	
9	<input type="checkbox"/>	1.000		8289237.49		A	1.1	
10	<input type="checkbox"/>	1.000		8074959.20		A	1.8	
11	<input type="checkbox"/>	1.000		8154561.98		A	2.0	



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	1.000		21961476.54		A	5.2	
2	<input type="checkbox"/>	1.000		21615596.50		A	0.6	
3	<input type="checkbox"/>	1.000		21372299.46		A	1.7	
4	<input type="checkbox"/>	1.000		21494016.18		A	2.6	
5	<input type="checkbox"/>	1.000		21837499.44		A	0.2	
6	<input type="checkbox"/>	1.000		22596140.97		A	1.4	
7	<input type="checkbox"/>	1.000		21948242.47		A	2.3	
8	<input type="checkbox"/>	1.000		21465753.33		A	2.6	
9	<input type="checkbox"/>	1.000		21261909.28		A	1.9	
10	<input type="checkbox"/>	1.000		21499394.47		A	0.5	
11	<input type="checkbox"/>	1.000		20750660.14		A	1.6	

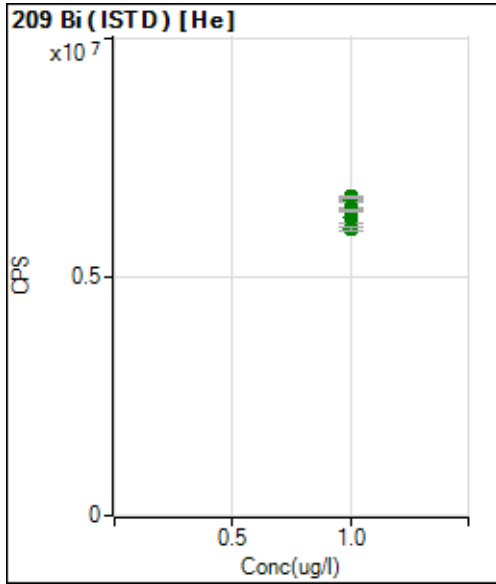


	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	1.000		7075269.71		A	1.2	
2	<input type="checkbox"/>	1.000		7040600.15		A	2.7	
3	<input type="checkbox"/>	1.000		7040184.78		A	0.7	
4	<input type="checkbox"/>	1.000		6954455.77		A	1.1	
5	<input type="checkbox"/>	1.000		7033863.41		A	0.2	
6	<input type="checkbox"/>	1.000		7013571.61		A	0.9	
7	<input type="checkbox"/>	1.000		7195179.46		A	2.3	
8	<input type="checkbox"/>	1.000		6776497.35		A	5.1	
9	<input type="checkbox"/>	1.000		6902427.08		A	1.3	
10	<input type="checkbox"/>	1.000		6755472.37		A	1.1	
11	<input type="checkbox"/>	1.000		6762103.32		A	1.0	



	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	1.000		16443109.57		A	1.5	
2	<input type="checkbox"/>	1.000		16846605.64		A	2.5	
3	<input type="checkbox"/>	1.000		16417483.42		A	0.6	
4	<input type="checkbox"/>	1.000		17097135.26		A	2.8	
5	<input type="checkbox"/>	1.000		16675303.98		A	0.3	
6	<input type="checkbox"/>	1.000		17074465.63		A	3.1	
7	<input type="checkbox"/>	1.000		16395602.67		A	1.2	
8	<input type="checkbox"/>	1.000		15956491.11		A	1.7	
9	<input type="checkbox"/>	1.000		15478524.96		A	2.3	
10	<input type="checkbox"/>	1.000		14972218.06		A	2.2	
11	<input type="checkbox"/>	1.000		15844337.91		A	0.5	





	Rj ct	Conc.	Calc Conc.	CPS	Ratio	Det .	RSD	%RE
1	<input type="checkbox"/>	1.000		6626157.70		A	0.6	
2	<input type="checkbox"/>	1.000		6645955.70		A	1.0	
3	<input type="checkbox"/>	1.000		6683903.01		A	0.4	
4	<input type="checkbox"/>	1.000		6576138.93		A	0.2	
5	<input type="checkbox"/>	1.000		6612885.87		A	1.7	
6	<input type="checkbox"/>	1.000		6667258.25		A	0.5	
7	<input type="checkbox"/>	1.000		6390239.92		A	0.6	
8	<input type="checkbox"/>	1.000		6239600.11		A	6.5	
9	<input type="checkbox"/>	1.000		6122917.54		A	0.3	
10	<input type="checkbox"/>	1.000		5988051.83		A	1.5	
11	<input type="checkbox"/>	1.000		6383739.28		A	0.5	

# ICPMS207-B Analytical Data

**Sample Name** Rinse  
**File Name** 001BLKV.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 11:32:27  
**Sample Type** BlkVrfy  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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		ug/l	4158.24
Be	9	45	1	No Gas		ug/l	17.00
B	11	45	1	No Gas		ug/l	1872.87
Na	23	45	3	He		ug/l	37075.56
Mg	24	45	3	He		ug/l	292.76
Al	27	45	1	No Gas		ug/l	11500.05
Si	28	45	2	H2		ug/l	8454.51
K	39	72	3	He		ug/l	62837.61
Ca	40	72	2	H2		ug/l	76189.52
Ti	47	72	1	No Gas		ug/l	63.40
V	51	72	1	No Gas		ug/l	-11043.81
V	51	72	3	He		ug/l	5318.77
Cr	52	72	1	No Gas		ug/l	20200.54
Cr	52	72	3	He		ug/l	602.24
Mn	55	72	1	No Gas		ug/l	5763.07
Mn	55	72	3	He		ug/l	337.60
Fe	56	72	2	H2		ug/l	15181.46
Fe	56	72	3	He		ug/l	7462.76
Co	59	72	1	No Gas		ug/l	462.43
Ni	60	72	1	No Gas		ug/l	389.24
Ni	60	72	3	He		ug/l	140.00
Cu	63	72	1	No Gas		ug/l	4026.18
Cu	63	72	3	He		ug/l	1472.45
Cu	65	72	1	No Gas		ug/l	1711.46
Zn	66	72	1	No Gas		ug/l	1041.21
Zn	66	72	3	He		ug/l	338.90
As	75	72	1	No Gas		ug/l	9059.80
As	75	72	3	He		ug/l	177.80
Se	78	72	2	H2		ug/l	36.44
Br	79	72	1	No Gas		ug/l	32789.01
Br	79	72	2	H2		ug/l	19411.23
Se	82	72	1	No Gas		ug/l	550.48
Kr	84	72	1	No Gas		ug/l	15780.81
Sr	88	72	1	No Gas		ug/l	984.75
Sr	88	72	3	He		ug/l	306.67
Mo	95	115	1	No Gas		ug/l	241.12
Mo	95	115	3	He		ug/l	102.22
Mo	98	115	1	No Gas		ug/l	372.23
Ag	107	115	1	No Gas		ug/l	2683.34
Ag	109	115	1	No Gas		ug/l	2720.03
Cd	111	115	1	No Gas		ug/l	35.24

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He		ug/l	20.89
Cd	114	115	1	No Gas		ug/l	-136.23
Cd	114	115	3	He		ug/l	46.99
Sn	118	115	1	No Gas		ug/l	4082.52
Sn	118	115	3	He		ug/l	1091.16
Sb	121	115	1	No Gas		ug/l	928.46
Sb	121	115	3	He		ug/l	250.70
Sb	123	115	1	No Gas		ug/l	710.09
Sb	123	115	3	He		ug/l	213.69
Ba	135	115	1	No Gas		ug/l	209.59
Ba	137	115	1	No Gas		ug/l	375.93
La	139	115	3	He		ug/l	27.78
Ce	140	115	3	He		ug/l	92.22
Hg	201	209	1	No Gas		ug/l	100.31
Hg	202	209	1	No Gas		ug/l	319.94
Hg	202	209	3	He		ug/l	135.97
Tl	203	209	3	He		ug/l	2545.27
Tl	205	209	1	No Gas		ug/l	9466.84
Tl	205	209	3	He		ug/l	5948.40
[Pb]	206	209	1	No Gas		ug/l	1300.07
[Pb]	207	209	1	No Gas		ug/l	1116.72
Pb	208	209	1	No Gas		ug/l	5110.42
Th	232	209	3	He		ug/l	321.47
U	238	209	1	No Gas		ug/l	110.65

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3666187.07	
Sc	45	2	H2	3667512.13	
Sc	45	3	He	437200.97	
Ge	72	1	No Gas	1687161.32	
Ge	72	2	H2	1525199.25	
Ge	72	3	He	324291.71	
In	115	1	No Gas	19804530.79	
In	115	3	He	4728182.31	
Tb	159	1	No Gas	23908553.34	
Tb	159	3	He	9486574.68	
Ho	165	1	No Gas	23528970.64	
Ho	165	3	He	9423181.50	
Lu	175	1	No Gas	23496341.56	
Lu	175	3	He	7926007.86	
Bi	209	1	No Gas	20201241.53	
Bi	209	3	He	7338852.24	

# ICPMS207-B Analytical Data

**Sample Name** Rinse  
**File Name** 002BLKV.d  
**Data Path Name** D:\Agilent\ICPMH1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 11:38:36  
**Sample Type** BlkVrfy  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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		ug/l	3605.88
Be	9	45	1	No Gas		ug/l	18.00
B	11	45	1	No Gas		ug/l	2030.29
Na	23	45	3	He		ug/l	31009.76
Mg	24	45	3	He		ug/l	658.71
Al	27	45	1	No Gas		ug/l	14445.99
Si	28	45	2	H2		ug/l	6249.17
K	39	72	3	He		ug/l	65875.03
Ca	40	72	2	H2		ug/l	84809.18
Ti	47	72	1	No Gas		ug/l	100.10
V	51	72	1	No Gas		ug/l	-3488.98
V	51	72	3	He		ug/l	4893.06
Cr	52	72	1	No Gas		ug/l	20550.33
Cr	52	72	3	He		ug/l	575.57
Mn	55	72	1	No Gas		ug/l	5357.05
Mn	55	72	3	He		ug/l	292.61
Fe	56	72	2	H2		ug/l	23144.86
Fe	56	72	3	He		ug/l	8886.65
Co	59	72	1	No Gas		ug/l	399.21
Ni	60	72	1	No Gas		ug/l	399.21
Ni	60	72	3	He		ug/l	156.67
Cu	63	72	1	No Gas		ug/l	3000.19
Cu	63	72	3	He		ug/l	1113.49
Cu	65	72	1	No Gas		ug/l	1419.98
Zn	66	72	1	No Gas		ug/l	1081.07
Zn	66	72	3	He		ug/l	280.00
As	75	72	1	No Gas		ug/l	8606.57
As	75	72	3	He		ug/l	163.27
Se	78	72	2	H2		ug/l	34.33
Br	79	72	1	No Gas		ug/l	16390.17
Br	79	72	2	H2		ug/l	10609.57
Se	82	72	1	No Gas		ug/l	573.94
Kr	84	72	1	No Gas		ug/l	17925.62
Sr	88	72	1	No Gas		ug/l	1713.38
Sr	88	72	3	He		ug/l	377.79
Mo	95	115	1	No Gas		ug/l	230.01
Mo	95	115	3	He		ug/l	96.67
Mo	98	115	1	No Gas		ug/l	310.00
Ag	107	115	1	No Gas		ug/l	2762.05
Ag	109	115	1	No Gas		ug/l	2672.00
Cd	111	115	1	No Gas		ug/l	35.20

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He		ug/l	19.55
Cd	114	115	1	No Gas		ug/l	-193.55
Cd	114	115	3	He		ug/l	44.29
Sn	118	115	1	No Gas		ug/l	3493.52
Sn	118	115	3	He		ug/l	968.93
Sb	121	115	1	No Gas		ug/l	699.75
Sb	121	115	3	He		ug/l	199.69
Sb	123	115	1	No Gas		ug/l	583.07
Sb	123	115	3	He		ug/l	151.68
Ba	135	115	1	No Gas		ug/l	229.55
Ba	137	115	1	No Gas		ug/l	422.50
La	139	115	3	He		ug/l	45.56
Ce	140	115	3	He		ug/l	105.56
Hg	201	209	1	No Gas		ug/l	151.64
Hg	202	209	1	No Gas		ug/l	371.26
Hg	202	209	3	He		ug/l	180.97
Tl	203	209	3	He		ug/l	1926.25
Tl	205	209	1	No Gas		ug/l	7746.84
Tl	205	209	3	He		ug/l	4718.07
[Pb]	206	209	1	No Gas		ug/l	1374.53
[Pb]	207	209	1	No Gas		ug/l	1340.08
Pb	208	209	1	No Gas		ug/l	5782.76
Th	232	209	3	He		ug/l	355.48
U	238	209	1	No Gas		ug/l	343.60

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3990637.99	
Sc	45	2	H2	3672521.30	
Sc	45	3	He	434818.53	
Ge	72	1	No Gas	1774095.75	
Ge	72	2	H2	1480059.86	
Ge	72	3	He	315787.94	
In	115	1	No Gas	19366806.51	
In	115	3	He	4541346.71	
Tb	159	1	No Gas	23378172.14	
Tb	159	3	He	8949394.39	
Ho	165	1	No Gas	23393482.87	
Ho	165	3	He	9009019.95	
Lu	175	1	No Gas	23704124.96	
Lu	175	3	He	7758850.35	
Bi	209	1	No Gas	19546769.26	
Bi	209	3	He	7168936.85	

# ICPMS207-B Analytical Data

**Sample Name** Rinse  
**File Name** 003BLKV.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 11:44:46  
**Sample Type** BlkVrfy  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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		ug/l	3283.01
Be	9	45	1	No Gas		ug/l	16.00
B	11	45	1	No Gas		ug/l	1950.25
Na	23	45	3	He		ug/l	27707.76
Mg	24	45	3	He		ug/l	801.77
Al	27	45	1	No Gas		ug/l	19216.90
Si	28	45	2	H2		ug/l	5948.92
K	39	72	3	He		ug/l	67045.99
Ca	40	72	2	H2		ug/l	85739.50
Ti	47	72	1	No Gas		ug/l	75.08
V	51	72	1	No Gas		ug/l	-7430.15
V	51	72	3	He		ug/l	4799.70
Cr	52	72	1	No Gas		ug/l	20330.54
Cr	52	72	3	He		ug/l	606.68
Mn	55	72	1	No Gas		ug/l	5386.99
Mn	55	72	3	He		ug/l	268.95
Fe	56	72	2	H2		ug/l	27226.02
Fe	56	72	3	He		ug/l	9958.44
Co	59	72	1	No Gas		ug/l	412.52
Ni	60	72	1	No Gas		ug/l	349.31
Ni	60	72	3	He		ug/l	173.34
Cu	63	72	1	No Gas		ug/l	2771.38
Cu	63	72	3	He		ug/l	1148.15
Cu	65	72	1	No Gas		ug/l	1313.26
Zn	66	72	1	No Gas		ug/l	1047.79
Zn	66	72	3	He		ug/l	258.89
As	75	72	1	No Gas		ug/l	9322.92
As	75	72	3	He		ug/l	151.60
Se	78	72	2	H2		ug/l	30.22
Br	79	72	1	No Gas		ug/l	12617.18
Br	79	72	2	H2		ug/l	8236.03
Se	82	72	1	No Gas		ug/l	465.01
Kr	84	72	1	No Gas		ug/l	15704.18
Sr	88	72	1	No Gas		ug/l	2062.73
Sr	88	72	3	He		ug/l	386.67
Mo	95	115	1	No Gas		ug/l	247.78
Mo	95	115	3	He		ug/l	97.78
Mo	98	115	1	No Gas		ug/l	306.67
Ag	107	115	1	No Gas		ug/l	2740.04
Ag	109	115	1	No Gas		ug/l	2697.35
Cd	111	115	1	No Gas		ug/l	11.53

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He		ug/l	18.56
Cd	114	115	1	No Gas		ug/l	-147.61
Cd	114	115	3	He		ug/l	40.67
Sn	118	115	1	No Gas		ug/l	3240.62
Sn	118	115	3	He		ug/l	925.59
Sb	121	115	1	No Gas		ug/l	663.42
Sb	121	115	3	He		ug/l	183.35
Sb	123	115	1	No Gas		ug/l	511.73
Sb	123	115	3	He		ug/l	136.68
Ba	135	115	1	No Gas		ug/l	326.03
Ba	137	115	1	No Gas		ug/l	545.60
La	139	115	3	He		ug/l	40.00
Ce	140	115	3	He		ug/l	142.22
Hg	201	209	1	No Gas		ug/l	149.64
Hg	202	209	1	No Gas		ug/l	414.59
Hg	202	209	3	He		ug/l	182.63
Tl	203	209	3	He		ug/l	1734.81
Tl	205	209	1	No Gas		ug/l	6977.48
Tl	205	209	3	He		ug/l	3985.54
[Pb]	206	209	1	No Gas		ug/l	1540.10
[Pb]	207	209	1	No Gas		ug/l	1286.74
Pb	208	209	1	No Gas		ug/l	5971.68
Th	232	209	3	He		ug/l	334.14
U	238	209	1	No Gas		ug/l	414.26

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3967953.57	
Sc	45	2	H2	3624518.60	
Sc	45	3	He	431834.93	
Ge	72	1	No Gas	1751141.97	
Ge	72	2	H2	1467313.16	
Ge	72	3	He	320651.47	
In	115	1	No Gas	19380310.01	
In	115	3	He	4498787.21	
Tb	159	1	No Gas	23129513.28	
Tb	159	3	He	8845301.13	
Ho	165	1	No Gas	23015685.71	
Ho	165	3	He	8924521.71	
Lu	175	1	No Gas	23235713.64	
Lu	175	3	He	7449464.15	
Bi	209	1	No Gas	19796926.97	
Bi	209	3	He	7147550.99	

# ICPMS207-B Analytical Data

**Sample Name** Cal Blk  
**File Name** 004CALB.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 11:50:57  
**Sample Type** CalBlk  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	3373.07
Be	9	45	1	No Gas	0.000	ug/l	18.67
B	11	45	1	No Gas	0.000	ug/l	1929.57
Na	23	45	3	He	0.000	ug/l	24829.37
Mg	24	45	3	He	0.000	ug/l	602.15
Al	27	45	1	No Gas	0.000	ug/l	19806.66
Si	28	45	2	H2	0.000	ug/l	5682.04
K	39	72	3	He	0.000	ug/l	66168.84
Ca	40	72	2	H2	0.000	ug/l	79950.24
Ti	47	72	1	No Gas	0.000	ug/l	96.77
V	51	72	1	No Gas	0.000	ug/l	598.97
V	51	72	3	He	0.000	ug/l	4807.48
Cr	52	72	1	No Gas	0.000	ug/l	20706.95
Cr	52	72	3	He	0.000	ug/l	527.79
Mn	55	72	1	No Gas	0.000	ug/l	5550.05
Mn	55	72	3	He	0.000	ug/l	253.62
Fe	56	72	2	H2	0.000	ug/l	22695.38
Fe	56	72	3	He	0.000	ug/l	8941.77
Co	59	72	1	No Gas	0.000	ug/l	382.58
Ni	60	72	1	No Gas	0.000	ug/l	302.74
Ni	60	72	3	He	0.000	ug/l	124.44
Cu	63	72	1	No Gas	0.000	ug/l	2444.53
Cu	63	72	3	He	0.000	ug/l	981.50
Cu	65	72	1	No Gas	0.000	ug/l	1188.53
Zn	66	72	1	No Gas	0.000	ug/l	1104.37
Zn	66	72	3	He	0.000	ug/l	275.56
As	75	72	1	No Gas	0.000	ug/l	7948.78
As	75	72	3	He	0.000	ug/l	163.47
Se	78	72	2	H2	0.000	ug/l	29.45
Br	79	72	1	No Gas	0.000	ug/l	11754.81
Br	79	72	2	H2	0.000	ug/l	7097.69
Se	82	72	1	No Gas	0.000	ug/l	589.28
Kr	84	72	1	No Gas		ug/l	16576.66
Sr	88	72	1	No Gas	0.000	ug/l	1540.36
Sr	88	72	3	He	0.000	ug/l	333.34
Mo	95	115	1	No Gas	0.000	ug/l	221.11
Mo	95	115	3	He	0.000	ug/l	73.33
Mo	98	115	1	No Gas	0.000	ug/l	362.85
Ag	107	115	1	No Gas	0.000	ug/l	2755.38
Ag	109	115	1	No Gas	0.000	ug/l	2663.33
Cd	111	115	1	No Gas	0.000	ug/l	13.02



# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.000	ug/l	14.22
Cd	114	115	1	No Gas	0.000	ug/l	-172.64
Cd	114	115	3	He	0.000	ug/l	41.69
Sn	118	115	1	No Gas	0.000	ug/l	3300.52
Sn	118	115	3	He	0.000	ug/l	957.82
Sb	121	115	1	No Gas	0.000	ug/l	621.08
Sb	121	115	3	He	0.000	ug/l	178.35
Sb	123	115	1	No Gas	0.000	ug/l	501.06
Sb	123	115	3	He	0.000	ug/l	127.68
Ba	135	115	1	No Gas	0.000	ug/l	359.30
Ba	137	115	1	No Gas	0.000	ug/l	518.98
La	139	115	3	He	0.000	ug/l	51.11
Ce	140	115	3	He	0.000	ug/l	107.78
Hg	201	209	1	No Gas	0.000	ug/l	183.30
Hg	202	209	1	No Gas	0.000	ug/l	475.58
Hg	202	209	3	He	0.000	ug/l	214.96
Tl	203	209	3	He	0.000	ug/l	1592.07
Tl	205	209	1	No Gas	0.000	ug/l	8568.39
Tl	205	209	3	He	0.000	ug/l	3924.16
[Pb]	206	209	1	No Gas	0.000	ug/l	1690.12
[Pb]	207	209	1	No Gas	0.000	ug/l	1507.87
Pb	208	209	1	No Gas	0.000	ug/l	6702.93
Th	232	209	3	He	0.000	ug/l	308.79
U	238	209	1	No Gas	0.000	ug/l	328.61

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3584655.24	100.0
Sc	45	2	H2	3358588.73	100.0
Sc	45	3	He	430036.34	100.0
Ge	72	1	No Gas	1510051.90	100.0
Ge	72	2	H2	1329097.55	100.0
Ge	72	3	He	315905.47	100.0
In	115	1	No Gas	16973638.37	100.0
In	115	3	He	4212767.49	100.0
Tb	159	1	No Gas	21590098.72	100.0
Tb	159	3	He	8452068.12	100.0
Ho	165	1	No Gas	21644376.95	100.0
Ho	165	3	He	8465532.42	100.0
Lu	175	1	No Gas	21961476.54	100.0
Lu	175	3	He	7075269.71	100.0
Bi	209	1	No Gas	16443109.57	100.0
Bi	209	3	He	6626157.70	100.0

# ICPMS207-B Analytical Data

**Sample Name** 0.025 ppb STD  
**File Name** 005CAL.S.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 11:58:13  
**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	0.338	ug/l	4142.90
Be	9	45	1	No Gas	0.021	ug/l	43.32
B	11	45	1	No Gas	-0.283	ug/l	1720.79
Na	23	45	3	He	6.665	ug/l	29989.82
Mg	24	45	3	He	7.528	ug/l	4095.78
Al	27	45	1	No Gas	-0.393	ug/l	16323.47
Si	28	45	2	H2	0.602	ug/l	6745.57
K	39	72	3	He	7.724	ug/l	69654.42
Ca	40	72	2	H2	8.276	ug/l	161399.97
Ti	47	72	1	No Gas	0.066	ug/l	210.21
V	51	72	1	No Gas	0.037	ug/l	1360.04
V	51	72	3	He	0.076	ug/l	5166.49
Cr	52	72	1	No Gas	0.046	ug/l	21506.49
Cr	52	72	3	He	0.028	ug/l	713.36
Mn	55	72	1	No Gas	0.038	ug/l	6744.87
Mn	55	72	3	He	0.034	ug/l	421.92
Fe	56	72	2	H2	0.651	ug/l	38733.12
Fe	56	72	3	He	0.684	ug/l	13185.89
Co	59	72	1	No Gas	0.032	ug/l	1274.20
Ni	60	72	1	No Gas	0.052	ug/l	632.10
Ni	60	72	3	He	0.050	ug/l	257.78
Cu	63	72	1	No Gas	0.005	ug/l	2500.56
Cu	63	72	3	He	0.010	ug/l	1030.50
Cu	65	72	1	No Gas	0.001	ug/l	1185.20
Zn	66	72	1	No Gas	0.140	ug/l	1842.96
Zn	66	72	3	He	0.175	ug/l	537.79
As	75	72	1	No Gas	0.384	ug/l	10322.83
As	75	72	3	He	0.024	ug/l	190.47
Se	78	72	2	H2	0.034	ug/l	58.78
Br	79	72	1	No Gas	33.308	ug/l	13329.81
Br	79	72	2	H2	32.475	ug/l	8498.97
Se	82	72	1	No Gas	0.032	ug/l	597.68
Kr	84	72	1	No Gas		ug/l	16733.29
Sr	88	72	1	No Gas	0.033	ug/l	3540.11
Sr	88	72	3	He	0.029	ug/l	582.24
Mo	95	115	1	No Gas	0.022	ug/l	526.68
Mo	95	115	3	He	0.027	ug/l	216.67
Mo	98	115	1	No Gas	0.022	ug/l	896.21
Ag	107	115	1	No Gas	0.014	ug/l	3328.40
Ag	109	115	1	No Gas	0.014	ug/l	3242.35
Cd	111	115	1	No Gas	0.030	ug/l	268.73

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.029	ug/l	94.11
Cd	114	115	1	No Gas	0.028	ug/l	358.17
Cd	114	115	3	He	0.027	ug/l	224.23
Sn	118	115	1	No Gas	0.071	ug/l	5164.10
Sn	118	115	3	He	0.076	ug/l	1485.64
Sb	121	115	1	No Gas	0.027	ug/l	1669.60
Sb	121	115	3	He	0.026	ug/l	448.05
Sb	123	115	1	No Gas	0.026	ug/l	1293.19
Sb	123	115	3	He	0.029	ug/l	362.37
Ba	135	115	1	No Gas	0.012	ug/l	452.44
Ba	137	115	1	No Gas	0.016	ug/l	738.56
La	139	115	3	He	0.027	ug/l	1084.49
Ce	140	115	3	He	0.028	ug/l	1261.18
Hg	201	209	1	No Gas	-0.002	ug/l	178.97
Hg	202	209	1	No Gas	-0.001	ug/l	470.25
Hg	202	209	3	He	-0.001	ug/l	211.29
Tl	203	209	3	He	0.011	ug/l	1760.16
Tl	205	209	1	No Gas	0.000	ug/l	8736.29
Tl	205	209	3	He	0.008	ug/l	4221.04
[Pb]	206	209	1	No Gas	0.024	ug/l	2431.35
[Pb]	207	209	1	No Gas	0.020	ug/l	2054.62
Pb	208	209	1	No Gas	0.023	ug/l	9498.05
Th	232	209	3	He	0.018	ug/l	1145.85
U	238	209	1	No Gas	0.027	ug/l	3378.43

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3540430.66	98.8
Sc	45	2	H2	3284995.13	97.8
Sc	45	3	He	420567.45	97.8
Ge	72	1	No Gas	1491063.61	98.7
Ge	72	2	H2	1331317.63	100.2
Ge	72	3	He	308521.81	97.7
In	115	1	No Gas	17252951.34	101.6
In	115	3	He	4165040.22	98.9
Tb	159	1	No Gas	22041520.54	102.1
Tb	159	3	He	8374293.17	99.1
Ho	165	1	No Gas	21302647.94	98.4
Ho	165	3	He	8372861.84	98.9
Lu	175	1	No Gas	21615596.50	98.4
Lu	175	3	He	7040600.15	99.5
Bi	209	1	No Gas	16846605.64	102.5
Bi	209	3	He	6645955.70	100.3

# ICPMS207-B Analytical Data

**Sample Name** 0.05 ppb STD  
**File Name** 006CAL.S.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 12:04:49  
**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	0.702	ug/l	4880.08
Be	9	45	1	No Gas	0.055	ug/l	81.31
B	11	45	1	No Gas	-0.305	ug/l	1660.09
Na	23	45	3	He	13.675	ug/l	35967.33
Mg	24	45	3	He	15.968	ug/l	8022.98
Al	27	45	1	No Gas	-0.378	ug/l	16007.56
Si	28	45	2	H2	0.379	ug/l	6318.55
K	39	72	3	He	13.952	ug/l	74043.35
Ca	40	72	2	H2	16.078	ug/l	233823.82
Ti	47	72	1	No Gas	0.073	ug/l	221.89
V	51	72	1	No Gas	-0.200	ug/l	-3962.80
V	51	72	3	He	0.071	ug/l	5163.17
Cr	52	72	1	No Gas	0.078	ug/l	22112.85
Cr	52	72	3	He	0.068	ug/l	998.93
Mn	55	72	1	No Gas	0.054	ug/l	7280.72
Mn	55	72	3	He	0.061	ug/l	559.90
Fe	56	72	2	H2	1.482	ug/l	58131.33
Fe	56	72	3	He	1.452	ug/l	18269.78
Co	59	72	1	No Gas	0.063	ug/l	2135.94
Ni	60	72	1	No Gas	0.086	ug/l	838.36
Ni	60	72	3	He	0.080	ug/l	341.12
Cu	63	72	1	No Gas	0.041	ug/l	3069.56
Cu	63	72	3	He	0.051	ug/l	1325.80
Cu	65	72	1	No Gas	0.038	ug/l	1472.67
Zn	66	72	1	No Gas	0.093	ug/l	1583.45
Zn	66	72	3	He	0.104	ug/l	431.12
As	75	72	1	No Gas	0.064	ug/l	8240.36
As	75	72	3	He	0.058	ug/l	235.20
Se	78	72	2	H2	0.061	ug/l	80.22
Br	79	72	1	No Gas	33.049	ug/l	13263.11
Br	79	72	2	H2	37.346	ug/l	8555.59
Se	82	72	1	No Gas	-0.060	ug/l	555.81
Kr	84	72	1	No Gas		ug/l	16776.62
Sr	88	72	1	No Gas	0.264	ug/l	17730.07
Sr	88	72	3	He	0.058	ug/l	850.03
Mo	95	115	1	No Gas	0.050	ug/l	903.37
Mo	95	115	3	He	0.056	ug/l	360.01
Mo	98	115	1	No Gas	0.051	ug/l	1530.23
Ag	107	115	1	No Gas	0.029	ug/l	3806.05
Ag	109	115	1	No Gas	0.030	ug/l	3738.67
Cd	111	115	1	No Gas	0.055	ug/l	472.93

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.063	ug/l	180.33
Cd	114	115	1	No Gas	0.058	ug/l	904.10
Cd	114	115	3	He	0.061	ug/l	436.48
Sn	118	115	1	No Gas	0.111	ug/l	6026.04
Sn	118	115	3	He	0.109	ug/l	1682.33
Sb	121	115	1	No Gas	0.055	ug/l	2725.87
Sb	121	115	3	He	0.054	ug/l	713.76
Sb	123	115	1	No Gas	0.054	ug/l	2076.36
Sb	123	115	3	He	0.052	ug/l	540.73
Ba	135	115	1	No Gas	0.038	ug/l	638.75
Ba	137	115	1	No Gas	0.044	ug/l	1064.60
La	139	115	3	He	0.055	ug/l	2153.52
Ce	140	115	3	He	0.058	ug/l	2434.68
Hg	201	209	1	No Gas	0.000	ug/l	184.30
Hg	202	209	1	No Gas	0.002	ug/l	503.91
Hg	202	209	3	He	-0.001	ug/l	213.29
Tl	203	209	3	He	0.037	ug/l	2137.03
Tl	205	209	1	No Gas	0.025	ug/l	10640.98
Tl	205	209	3	He	0.029	ug/l	4941.58
[Pb]	206	209	1	No Gas	0.057	ug/l	3304.88
[Pb]	207	209	1	No Gas	0.056	ug/l	2879.22
Pb	208	209	1	No Gas	0.056	ug/l	12942.52
Th	232	209	3	He	0.040	ug/l	2213.75
U	238	209	1	No Gas	0.057	ug/l	6472.65

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3445783.05	96.1
Sc	45	2	H2	3296725.95	98.2
Sc	45	3	He	420096.86	97.7
Ge	72	1	No Gas	1484834.67	98.3
Ge	72	2	H2	1307306.38	98.4
Ge	72	3	He	309941.69	98.1
In	115	1	No Gas	16828541.11	99.1
In	115	3	He	4062613.99	96.4
Tb	159	1	No Gas	21447418.95	99.3
Tb	159	3	He	8423073.61	99.7
Ho	165	1	No Gas	21373622.45	98.7
Ho	165	3	He	8532557.36	100.8
Lu	175	1	No Gas	21372299.46	97.3
Lu	175	3	He	7040184.78	99.5
Bi	209	1	No Gas	16417483.42	99.8
Bi	209	3	He	6683903.01	100.9

# ICPMS207-B Analytical Data

**Sample Name** 0.10 ppb STD  
**File Name** 007CAL5.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 12:11:25  
**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	1.522	ug/l	7098.51
Be	9	45	1	No Gas	0.128	ug/l	173.30
B	11	45	1	No Gas	-0.434	ug/l	1648.75
Na	23	45	3	He	28.499	ug/l	48390.92
Mg	24	45	3	He	31.189	ug/l	15021.10
Al	27	45	1	No Gas	-1.393	ug/l	8155.62
Si	28	45	2	H2	0.487	ug/l	6622.14
K	39	72	3	He	28.891	ug/l	83944.26
Ca	40	72	2	H2	31.514	ug/l	378309.87
Ti	47	72	1	No Gas	0.128	ug/l	325.33
V	51	72	1	No Gas	-0.121	ug/l	-2209.19
V	51	72	3	He	0.121	ug/l	5485.50
Cr	52	72	1	No Gas	0.126	ug/l	23798.88
Cr	52	72	3	He	0.114	ug/l	1324.51
Mn	55	72	1	No Gas	0.107	ug/l	9284.56
Mn	55	72	3	He	0.115	ug/l	837.52
Fe	56	72	2	H2	3.124	ug/l	96686.50
Fe	56	72	3	He	3.050	ug/l	28765.26
Co	59	72	1	No Gas	0.123	ug/l	3889.48
Ni	60	72	1	No Gas	0.124	ug/l	1107.85
Ni	60	72	3	He	0.136	ug/l	492.23
Cu	63	72	1	No Gas	0.080	ug/l	3811.36
Cu	63	72	3	He	0.104	ug/l	1706.09
Cu	65	72	1	No Gas	0.078	ug/l	1840.19
Zn	66	72	1	No Gas	0.116	ug/l	1753.08
Zn	66	72	3	He	0.172	ug/l	536.68
As	75	72	1	No Gas	0.120	ug/l	8824.69
As	75	72	3	He	0.119	ug/l	314.13
Se	78	72	2	H2	0.128	ug/l	135.11
Br	79	72	1	No Gas	32.972	ug/l	13619.42
Br	79	72	2	H2	47.124	ug/l	8865.16
Se	82	72	1	No Gas	0.006	ug/l	599.67
Kr	84	72	1	No Gas		ug/l	17242.86
Sr	88	72	1	No Gas	0.126	ug/l	9530.98
Sr	88	72	3	He	0.120	ug/l	1408.97
Mo	95	115	1	No Gas	0.108	ug/l	1706.78
Mo	95	115	3	He	0.106	ug/l	621.13
Mo	98	115	1	No Gas	0.106	ug/l	2801.40
Ag	107	115	1	No Gas	0.050	ug/l	4629.29
Ag	109	115	1	No Gas	0.052	ug/l	4568.58
Cd	111	115	1	No Gas	0.114	ug/l	970.74

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.120	ug/l	336.23
Cd	114	115	1	No Gas	0.117	ug/l	2023.35
Cd	114	115	3	He	0.113	ug/l	783.65
Sn	118	115	1	No Gas	0.159	ug/l	7310.74
Sn	118	115	3	He	0.154	ug/l	2022.38
Sb	121	115	1	No Gas	0.109	ug/l	4817.65
Sb	121	115	3	He	0.110	ug/l	1298.19
Sb	123	115	1	No Gas	0.110	ug/l	3721.20
Sb	123	115	3	He	0.108	ug/l	992.14
Ba	135	115	1	No Gas	0.099	ug/l	1091.21
Ba	137	115	1	No Gas	0.102	ug/l	1806.54
La	139	115	3	He	0.112	ug/l	4350.71
Ce	140	115	3	He	0.112	ug/l	4664.14
Hg	201	209	1	No Gas	-0.001	ug/l	185.30
Hg	202	209	1	No Gas	0.001	ug/l	508.58
Hg	202	209	3	He	-0.001	ug/l	208.29
Tl	203	209	3	He	0.088	ug/l	2823.44
Tl	205	209	1	No Gas	0.071	ug/l	14954.02
Tl	205	209	3	He	0.087	ug/l	6789.13
[Pb]	206	209	1	No Gas	0.108	ug/l	4948.73
[Pb]	207	209	1	No Gas	0.103	ug/l	4198.47
Pb	208	209	1	No Gas	0.108	ug/l	19496.84
Th	232	209	3	He	0.086	ug/l	4325.13
U	238	209	1	No Gas	0.112	ug/l	12967.51

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3600556.32	100.4
Sc	45	2	H2	3341857.67	99.5
Sc	45	3	He	417711.36	97.1
Ge	72	1	No Gas	1525157.77	101.0
Ge	72	2	H2	1292045.32	97.2
Ge	72	3	He	310556.38	98.3
In	115	1	No Gas	16979963.72	100.0
In	115	3	He	4113702.79	97.6
Tb	159	1	No Gas	21968953.80	101.8
Tb	159	3	He	8358237.21	98.9
Ho	165	1	No Gas	21893224.33	101.1
Ho	165	3	He	8419417.98	99.5
Lu	175	1	No Gas	21494016.18	97.9
Lu	175	3	He	6954455.77	98.3
Bi	209	1	No Gas	17097135.26	104.0
Bi	209	3	He	6576138.93	99.2

# ICPMS207-B Analytical Data

**Sample Name** 0.5 ppb STD  
**File Name** 008CAL.S.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 12:18:00  
**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	6.735	ug/l	19372.11
Be	9	45	1	No Gas	0.556	ug/l	675.55
B	11	45	1	No Gas	-0.122	ug/l	1816.18
Na	23	45	3	He	135.843	ug/l	139878.30
Mg	24	45	3	He	141.000	ug/l	65877.46
Al	27	45	1	No Gas	-1.038	ug/l	10915.14
Si	28	45	2	H2	2.173	ug/l	9910.61
K	39	72	3	He	133.732	ug/l	152412.30
Ca	40	72	2	H2	142.302	ug/l	1478418.87
Ti	47	72	1	No Gas	0.516	ug/l	994.37
V	51	72	1	No Gas	0.758	ug/l	17631.19
V	51	72	3	He	0.554	ug/l	8187.87
Cr	52	72	1	No Gas	0.559	ug/l	32944.90
Cr	52	72	3	He	0.543	ug/l	4366.22
Mn	55	72	1	No Gas	0.536	ug/l	23512.27
Mn	55	72	3	He	0.559	ug/l	3103.04
Fe	56	72	2	H2	14.592	ug/l	381806.25
Fe	56	72	3	He	14.536	ug/l	103897.29
Co	59	72	1	No Gas	0.583	ug/l	16653.18
Ni	60	72	1	No Gas	0.596	ug/l	4075.83
Ni	60	72	3	He	0.580	ug/l	1702.33
Cu	63	72	1	No Gas	0.534	ug/l	11163.41
Cu	63	72	3	He	0.585	ug/l	5137.87
Cu	65	72	1	No Gas	0.529	ug/l	5401.18
Zn	66	72	1	No Gas	0.701	ug/l	4854.20
Zn	66	72	3	He	0.680	ug/l	1320.07
As	75	72	1	No Gas	0.679	ug/l	12229.54
As	75	72	3	He	0.545	ug/l	862.08
Se	78	72	2	H2	0.546	ug/l	497.79
Br	79	72	1	No Gas	35.806	ug/l	13489.56
Br	79	72	2	H2	35.405	ug/l	8628.83
Se	82	72	1	No Gas	0.475	ug/l	787.02
Kr	84	72	1	No Gas		ug/l	17835.71
Sr	88	72	1	No Gas	0.603	ug/l	39032.39
Sr	88	72	3	He	0.565	ug/l	5405.49
Mo	95	115	1	No Gas	0.481	ug/l	6990.63
Mo	95	115	3	He	0.516	ug/l	2746.95
Mo	98	115	1	No Gas	0.500	ug/l	12179.24
Ag	107	115	1	No Gas	0.214	ug/l	11010.70
Ag	109	115	1	No Gas	0.219	ug/l	10876.54
Cd	111	115	1	No Gas	0.540	ug/l	4631.15



# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.568	ug/l	1537.42
Cd	114	115	1	No Gas	0.541	ug/l	10218.63
Cd	114	115	3	He	0.557	ug/l	3693.84
Sn	118	115	1	No Gas	0.548	ug/l	17412.93
Sn	118	115	3	He	0.564	ug/l	4885.32
Sb	121	115	1	No Gas	0.511	ug/l	20680.54
Sb	121	115	3	He	0.527	ug/l	5524.31
Sb	123	115	1	No Gas	0.508	ug/l	15755.06
Sb	123	115	3	He	0.521	ug/l	4303.43
Ba	135	115	1	No Gas	0.520	ug/l	4298.83
Ba	137	115	1	No Gas	0.535	ug/l	7433.94
La	139	115	3	He	0.533	ug/l	20417.32
Ce	140	115	3	He	0.536	ug/l	21921.77
Hg	201	209	1	No Gas	0.010	ug/l	239.96
Hg	202	209	1	No Gas	0.010	ug/l	607.56
Hg	202	209	3	He	0.010	ug/l	264.95
Tl	203	209	3	He	0.483	ug/l	8456.07
Tl	205	209	1	No Gas	0.472	ug/l	48052.03
Tl	205	209	3	He	0.489	ug/l	20251.45
[Pb]	206	209	1	No Gas	0.521	ug/l	16697.20
[Pb]	207	209	1	No Gas	0.532	ug/l	14798.30
Pb	208	209	1	No Gas	0.532	ug/l	66959.44
Th	232	209	3	He	0.459	ug/l	21790.80
U	238	209	1	No Gas	0.522	ug/l	57938.78

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3526692.72	98.4
Sc	45	2	H2	3318048.52	98.8
Sc	45	3	He	417857.08	97.2
Ge	72	1	No Gas	1494389.91	99.0
Ge	72	2	H2	1330885.32	100.1
Ge	72	3	He	310218.01	98.2
In	115	1	No Gas	17340550.18	102.2
In	115	3	He	4096656.04	97.2
Tb	159	1	No Gas	21665767.71	100.4
Tb	159	3	He	8469833.91	100.2
Ho	165	1	No Gas	21730592.12	100.4
Ho	165	3	He	8380238.59	99.0
Lu	175	1	No Gas	21837499.44	99.4
Lu	175	3	He	7033863.41	99.4
Bi	209	1	No Gas	16675303.98	101.4
Bi	209	3	He	6612885.87	99.8

# ICPMS207-B Analytical Data

**Sample Name** 1 ppb STD  
**File Name** 009CAL.S.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 12:24:35  
**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	14.347	ug/l	39561.99
Be	9	45	1	No Gas	1.174	ug/l	1484.44
B	11	45	1	No Gas	0.257	ug/l	2180.37
Na	23	45	3	He	303.698	ug/l	286161.26
Mg	24	45	3	He	320.734	ug/l	150854.67
Al	27	45	1	No Gas	-0.380	ug/l	17261.18
Si	28	45	2	H2	4.647	ug/l	14487.51
K	39	72	3	He	303.239	ug/l	261188.87
Ca	40	72	2	H2	302.506	ug/l	3002920.47
Ti	47	72	1	No Gas	1.123	ug/l	2113.96
V	51	72	1	No Gas	1.028	ug/l	24606.21
V	51	72	3	He	1.176	ug/l	11986.03
Cr	52	72	1	No Gas	1.220	ug/l	49134.83
Cr	52	72	3	He	1.213	ug/l	9040.59
Mn	55	72	1	No Gas	1.200	ug/l	47275.89
Mn	55	72	3	He	1.239	ug/l	6527.48
Fe	56	72	2	H2	32.495	ug/l	809021.35
Fe	56	72	3	He	31.336	ug/l	212213.90
Co	59	72	1	No Gas	1.241	ug/l	36143.07
Ni	60	72	1	No Gas	1.262	ug/l	8548.90
Ni	60	72	3	He	1.280	ug/l	3583.80
Cu	63	72	1	No Gas	1.186	ug/l	22509.67
Cu	63	72	3	He	1.302	ug/l	10168.83
Cu	65	72	1	No Gas	1.207	ug/l	11162.09
Zn	66	72	1	No Gas	1.376	ug/l	8741.14
Zn	66	72	3	He	1.473	ug/l	2525.79
As	75	72	1	No Gas	0.977	ug/l	14565.76
As	75	72	3	He	1.195	ug/l	1686.60
Se	78	72	2	H2	1.238	ug/l	1073.93
Br	79	72	1	No Gas	37.026	ug/l	13989.07
Br	79	72	2	H2	37.239	ug/l	8565.63
Se	82	72	1	No Gas	0.807	ug/l	958.88
Kr	84	72	1	No Gas		ug/l	14515.18
Sr	88	72	1	No Gas	1.267	ug/l	82793.65
Sr	88	72	3	He	1.207	ug/l	11081.00
Mo	95	115	1	No Gas	1.089	ug/l	15783.20
Mo	95	115	3	He	1.074	ug/l	5713.40
Mo	98	115	1	No Gas	1.064	ug/l	25917.60
Ag	107	115	1	No Gas	0.460	ug/l	20728.75
Ag	109	115	1	No Gas	0.466	ug/l	20383.50
Cd	111	115	1	No Gas	1.132	ug/l	9842.93

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	1.208	ug/l	3296.61
Cd	114	115	1	No Gas	1.137	ug/l	21998.12
Cd	114	115	3	He	1.202	ug/l	8030.48
Sn	118	115	1	No Gas	1.191	ug/l	34453.82
Sn	118	115	3	He	1.230	ug/l	9676.72
Sb	121	115	1	No Gas	1.097	ug/l	44359.92
Sb	121	115	3	He	1.117	ug/l	11668.00
Sb	123	115	1	No Gas	1.094	ug/l	33873.65
Sb	123	115	3	He	1.134	ug/l	9334.03
Ba	135	115	1	No Gas	1.137	ug/l	9108.27
Ba	137	115	1	No Gas	1.155	ug/l	15687.83
La	139	115	3	He	1.140	ug/l	44175.63
Ce	140	115	3	He	1.145	ug/l	47295.91
Hg	201	209	1	No Gas	0.021	ug/l	306.94
Hg	202	209	1	No Gas	0.020	ug/l	744.21
Hg	202	209	3	He	0.018	ug/l	304.28
Tl	203	209	3	He	1.057	ug/l	16741.86
Tl	205	209	1	No Gas	1.036	ug/l	97269.01
Tl	205	209	3	He	1.074	ug/l	40136.19
[Pb]	206	209	1	No Gas	1.120	ug/l	34682.95
[Pb]	207	209	1	No Gas	1.110	ug/l	29895.86
Pb	208	209	1	No Gas	1.113	ug/l	135775.47
Th	232	209	3	He	1.031	ug/l	48993.27
U	238	209	1	No Gas	1.118	ug/l	126534.92

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3724235.79	103.9
Sc	45	2	H2	3246907.44	96.7
Sc	45	3	He	422732.88	98.3
Ge	72	1	No Gas	1542334.01	102.1
Ge	72	2	H2	1309290.14	98.5
Ge	72	3	He	307836.79	97.4
In	115	1	No Gas	17623986.57	103.8
In	115	3	He	4149214.46	98.5
Tb	159	1	No Gas	22770991.44	105.5
Tb	159	3	He	8527529.00	100.9
Ho	165	1	No Gas	22695083.24	104.9
Ho	165	3	He	8560844.08	101.1
Lu	175	1	No Gas	22596140.97	102.9
Lu	175	3	He	7013571.61	99.1
Bi	209	1	No Gas	17074465.63	103.8
Bi	209	3	He	6667258.25	100.6

# ICPMS207-B Analytical Data

**Sample Name** 10 ppb STD  
**File Name** 010CAL5.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 12:31:10  
**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	136.537	ug/l	322602.40
Be	9	45	1	No Gas	11.314	ug/l	13144.41
B	11	45	1	No Gas	10.228	ug/l	8455.77
Na	23	45	3	He	2700.353	ug/l	2392491.91
Mg	24	45	3	He	2749.964	ug/l	1310914.84
Al	27	45	1	No Gas	8.846	ug/l	90894.37
Si	28	45	2	H2	39.808	ug/l	83373.13
K	39	72	3	He	2689.794	ug/l	1833550.18
Ca	40	72	2	H2	2659.672	ug/l	26115479.98
Ti	47	72	1	No Gas	9.702	ug/l	17125.56
V	51	72	1	No Gas	11.785	ug/l	269663.58
V	51	72	3	He	10.519	ug/l	70974.60
Cr	52	72	1	No Gas	10.858	ug/l	264036.47
Cr	52	72	3	He	10.611	ug/l	76081.35
Mn	55	72	1	No Gas	10.719	ug/l	368992.80
Mn	55	72	3	He	10.782	ug/l	55634.12
Fe	56	72	2	H2	273.705	ug/l	6732839.43
Fe	56	72	3	He	280.802	ug/l	1856679.01
Co	59	72	1	No Gas	10.893	ug/l	307342.39
Ni	60	72	1	No Gas	10.763	ug/l	69019.55
Ni	60	72	3	He	11.082	ug/l	30504.06
Cu	63	72	1	No Gas	10.955	ug/l	183222.95
Cu	63	72	3	He	11.504	ug/l	83465.29
Cu	65	72	1	No Gas	10.952	ug/l	89505.80
Zn	66	72	1	No Gas	11.198	ug/l	61665.10
Zn	66	72	3	He	11.059	ug/l	17433.81
As	75	72	1	No Gas	10.154	ug/l	73661.17
As	75	72	3	He	10.494	ug/l	13753.21
Se	78	72	2	H2	10.832	ug/l	9288.41
Br	79	72	1	No Gas	55.142	ug/l	14615.15
Br	79	72	2	H2	49.208	ug/l	9184.74
Se	82	72	1	No Gas	10.408	ug/l	5041.15
Kr	84	72	1	No Gas		ug/l	18102.12
Sr	88	72	1	No Gas	11.356	ug/l	713617.56
Sr	88	72	3	He	10.523	ug/l	95364.07
Mo	95	115	1	No Gas	9.939	ug/l	137821.22
Mo	95	115	3	He	9.847	ug/l	51931.72
Mo	98	115	1	No Gas	9.828	ug/l	228933.45
Ag	107	115	1	No Gas	4.122	ug/l	157888.43
Ag	109	115	1	No Gas	4.154	ug/l	154943.86
Cd	111	115	1	No Gas	10.390	ug/l	87424.44

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	10.577	ug/l	28830.81
Cd	114	115	1	No Gas	10.544	ug/l	199295.36
Cd	114	115	3	He	10.606	ug/l	70724.00
Sn	118	115	1	No Gas	10.149	ug/l	259550.77
Sn	118	115	3	He	10.037	ug/l	72391.61
Sb	121	115	1	No Gas	9.962	ug/l	385401.26
Sb	121	115	3	He	9.950	ug/l	102783.96
Sb	123	115	1	No Gas	9.969	ug/l	295190.26
Sb	123	115	3	He	9.968	ug/l	81260.76
Ba	135	115	1	No Gas	10.794	ug/l	80730.33
Ba	137	115	1	No Gas	10.902	ug/l	139098.05
La	139	115	3	He	10.153	ug/l	394044.23
Ce	140	115	3	He	10.190	ug/l	420994.23
Hg	201	209	1	No Gas	0.201	ug/l	1245.14
Hg	202	209	1	No Gas	0.197	ug/l	2819.74
Hg	202	209	3	He	0.204	ug/l	1179.49
Tl	203	209	3	He	10.245	ug/l	142235.21
Tl	205	209	1	No Gas	10.074	ug/l	834051.62
Tl	205	209	3	He	10.426	ug/l	340432.98
[Pb]	206	209	1	No Gas	10.322	ug/l	293388.63
[Pb]	207	209	1	No Gas	10.098	ug/l	249090.74
Pb	208	209	1	No Gas	10.374	ug/l	1160791.05
Th	232	209	3	He	10.037	ug/l	454540.61
U	238	209	1	No Gas	10.414	ug/l	1129668.88

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3460729.10	96.5
Sc	45	2	H2	3279136.54	97.6
Sc	45	3	He	429936.58	100.0
Ge	72	1	No Gas	1507459.88	99.8
Ge	72	2	H2	1325895.57	99.8
Ge	72	3	He	311979.07	98.8
In	115	1	No Gas	17075989.84	100.6
In	115	3	He	4158864.83	98.7
Tb	159	1	No Gas	21918562.58	101.5
Tb	159	3	He	8358149.63	98.9
Ho	165	1	No Gas	21790111.85	100.7
Ho	165	3	He	8534892.82	100.8
Lu	175	1	No Gas	21948242.47	99.9
Lu	175	3	He	7195179.46	101.7
Bi	209	1	No Gas	16395602.67	99.7
Bi	209	3	He	6390239.92	96.4

# ICPMS207-B Analytical Data

**Sample Name** 50 ppb STD  
**File Name** 011CAL.S.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 12:37:43  
**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	629.433	ug/l	1525406.78
Be	9	45	1	No Gas	55.249	ug/l	66285.13
B	11	45	1	No Gas	52.964	ug/l	37230.07
Na	23	45	3	He	12477.816	ug/l	10674832.41
Mg	24	45	3	He	12554.158	ug/l	5820075.15
Al	27	45	1	No Gas	50.135	ug/l	439701.98
Si	28	45	2	H2	210.104	ug/l	410255.24
K	39	72	3	He	12477.984	ug/l	8088951.96
Ca	40	72	2	H2	12322.166	ug/l	119490647.27
Ti	47	72	1	No Gas	50.899	ug/l	89113.51
V	51	72	1	No Gas	51.160	ug/l	1165457.54
V	51	72	3	He	53.971	ug/l	337028.77
Cr	52	72	1	No Gas	52.228	ug/l	1187001.95
Cr	52	72	3	He	53.719	ug/l	374789.21
Mn	55	72	1	No Gas	52.461	ug/l	1777698.64
Mn	55	72	3	He	53.610	ug/l	269585.35
Fe	56	72	2	H2	1260.073	ug/l	30610719.85
Fe	56	72	3	He	1313.847	ug/l	8468688.18
Co	59	72	1	No Gas	53.395	ug/l	1499311.04
Ni	60	72	1	No Gas	53.913	ug/l	343256.50
Ni	60	72	3	He	55.060	ug/l	147846.98
Cu	63	72	1	No Gas	53.766	ug/l	886579.48
Cu	63	72	3	He	56.818	ug/l	399469.64
Cu	65	72	1	No Gas	53.464	ug/l	430857.91
Zn	66	72	1	No Gas	55.549	ug/l	300448.45
Zn	66	72	3	He	55.871	ug/l	85055.37
As	75	72	1	No Gas	53.015	ug/l	349822.97
As	75	72	3	He	54.126	ug/l	68707.78
Se	78	72	2	H2	54.069	ug/l	45784.38
Br	79	72	1	No Gas	5.119	ug/l	11974.60
Br	79	72	2	H2	15.612	ug/l	7670.19
Se	82	72	1	No Gas	54.540	ug/l	23829.45
Kr	84	72	1	No Gas		ug/l	40943.58
Sr	88	72	1	No Gas	54.531	ug/l	3409599.46
Sr	88	72	3	He	53.813	ug/l	475514.43
Mo	95	115	1	No Gas	50.596	ug/l	696383.69
Mo	95	115	3	He	53.082	ug/l	262120.14
Mo	98	115	1	No Gas	50.742	ug/l	1173224.05
Ag	107	115	1	No Gas	20.292	ug/l	761558.82
Ag	109	115	1	No Gas	20.426	ug/l	746858.60
Cd	111	115	1	No Gas	51.388	ug/l	429678.00

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	55.649	ug/l	142171.70
Cd	114	115	1	No Gas	51.851	ug/l	974733.24
Cd	114	115	3	He	55.615	ug/l	347659.86
Sn	118	115	1	No Gas	52.584	ug/l	1322540.09
Sn	118	115	3	He	53.409	ug/l	357389.69
Sb	121	115	1	No Gas	50.642	ug/l	1944554.59
Sb	121	115	3	He	54.500	ug/l	527387.76
Sb	123	115	1	No Gas	51.219	ug/l	1505107.40
Sb	123	115	3	He	54.334	ug/l	415073.09
Ba	135	115	1	No Gas	53.192	ug/l	393999.88
Ba	137	115	1	No Gas	54.184	ug/l	685091.31
La	139	115	3	He	50.653	ug/l	1844014.38
Ce	140	115	3	He	50.566	ug/l	1958347.50
Hg	201	209	1	No Gas	0.948	ug/l	5048.28
Hg	202	209	1	No Gas	0.962	ug/l	11601.39
Hg	202	209	3	He	0.975	ug/l	4737.56
Tl	203	209	3	He	50.811	ug/l	680910.56
Tl	205	209	1	No Gas	48.940	ug/l	3912407.93
Tl	205	209	3	He	52.481	ug/l	1653225.14
[Pb]	206	209	1	No Gas	51.745	ug/l	1424878.00
[Pb]	207	209	1	No Gas	51.296	ug/l	1225565.28
Pb	208	209	1	No Gas	52.442	ug/l	5684725.14
Th	232	209	3	He	54.204	ug/l	2389612.04
U	238	209	1	No Gas	52.412	ug/l	5532070.15

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3574282.20	99.7
Sc	45	2	H2	3233541.55	96.3
Sc	45	3	He	419120.90	97.5
Ge	72	1	No Gas	1502734.46	99.5
Ge	72	2	H2	1312805.74	98.8
Ge	72	3	He	305582.19	96.7
In	115	1	No Gas	16968697.79	100.0
In	115	3	He	3909356.91	92.8
Tb	159	1	No Gas	21624481.85	100.2
Tb	159	3	He	7969887.31	94.3
Ho	165	1	No Gas	21389273.52	98.8
Ho	165	3	He	8118922.39	95.9
Lu	175	1	No Gas	21465753.33	97.7
Lu	175	3	He	6776497.35	95.8
Bi	209	1	No Gas	15956491.11	97.0
Bi	209	3	He	6239600.11	94.2

# ICPMS207-B Analytical Data

**Sample Name** 100 ppb STD  
**File Name** 012CAL.S.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 12:44:02  
**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	1336.534	ug/l	3362762.46
Be	9	45	1	No Gas	108.670	ug/l	135425.29
B	11	45	1	No Gas	105.847	ug/l	75261.41
Na	23	45	3	He	25022.127	ug/l	22597853.27
Mg	24	45	3	He	25179.291	ug/l	12345066.43
Al	27	45	1	No Gas	102.878	ug/l	915663.50
Si	28	45	2	H2	394.960	ug/l	788963.07
K	39	72	3	He	25045.433	ug/l	16769218.64
Ca	40	72	2	H2	25493.106	ug/l	249940970.50
Ti	47	72	1	No Gas	99.579	ug/l	177133.57
V	51	72	1	No Gas	103.005	ug/l	2385492.90
V	51	72	3	He	102.492	ug/l	659474.73
Cr	52	72	1	No Gas	103.595	ug/l	2373870.55
Cr	52	72	3	He	100.543	ug/l	726795.86
Mn	55	72	1	No Gas	100.933	ug/l	3472133.79
Mn	55	72	3	He	101.514	ug/l	529204.32
Fe	56	72	2	H2	2621.442	ug/l	64370077.81
Fe	56	72	3	He	2646.225	ug/l	17676510.26
Co	59	72	1	No Gas	102.767	ug/l	2935211.89
Ni	60	72	1	No Gas	102.900	ug/l	666077.54
Ni	60	72	3	He	102.637	ug/l	285550.12
Cu	63	72	1	No Gas	103.151	ug/l	1727206.61
Cu	63	72	3	He	104.453	ug/l	760890.59
Cu	65	72	1	No Gas	102.692	ug/l	840267.17
Zn	66	72	1	No Gas	106.678	ug/l	585736.66
Zn	66	72	3	He	102.394	ug/l	161482.09
As	75	72	1	No Gas	101.168	ug/l	671365.98
As	75	72	3	He	101.528	ug/l	133554.82
Se	78	72	2	H2	102.654	ug/l	87882.78
Br	79	72	1	No Gas	50.746	ug/l	14581.79
Br	79	72	2	H2	53.342	ug/l	9374.50
Se	82	72	1	No Gas	104.260	ug/l	45775.28
Kr	84	72	1	No Gas		ug/l	61161.32
Sr	88	72	1	No Gas	103.336	ug/l	6567231.07
Sr	88	72	3	He	99.584	ug/l	912755.02
Mo	95	115	1	No Gas	99.707	ug/l	1349526.27
Mo	95	115	3	He	98.473	ug/l	500389.22
Mo	98	115	1	No Gas	99.646	ug/l	2264987.73
Ag	107	115	1	No Gas	39.841	ug/l	1467728.88
Ag	109	115	1	No Gas	39.771	ug/l	1427266.25
Cd	111	115	1	No Gas	101.050	ug/l	830826.63



# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	102.572	ug/l	269586.51
Cd	114	115	1	No Gas	103.867	ug/l	1920454.04
Cd	114	115	3	He	102.498	ug/l	658922.19
Sn	118	115	1	No Gas	98.691	ug/l	2437787.66
Sn	118	115	3	He	98.289	ug/l	675760.09
Sb	121	115	1	No Gas	99.682	ug/l	3762480.27
Sb	121	115	3	He	97.753	ug/l	972510.88
Sb	123	115	1	No Gas	99.392	ug/l	2871308.37
Sb	123	115	3	He	97.835	ug/l	768305.15
Ba	135	115	1	No Gas	105.832	ug/l	770371.16
Ba	137	115	1	No Gas	108.206	ug/l	1344933.07
La	139	115	3	He	99.657	ug/l	3730878.41
Ce	140	115	3	He	99.696	ug/l	3971893.52
Hg	201	209	1	No Gas	2.026	ug/l	10270.23
Hg	202	209	1	No Gas	2.019	ug/l	23134.65
Hg	202	209	3	He	2.012	ug/l	9407.10
Tl	203	209	3	He	101.625	ug/l	1338824.61
Tl	205	209	1	No Gas	101.524	ug/l	7861152.52
Tl	205	209	3	He	103.520	ug/l	3206453.63
[Pb]	206	209	1	No Gas	104.787	ug/l	2797424.02
[Pb]	207	209	1	No Gas	102.506	ug/l	2374017.41
Pb	208	209	1	No Gas	103.215	ug/l	10847839.20
Th	232	209	3	He	102.541	ug/l	4447002.03
U	238	209	1	No Gas	104.660	ug/l	10713641.92

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3714520.56	103.6
Sc	45	2	H2	3326093.94	99.0
Sc	45	3	He	442399.06	102.9
Ge	72	1	No Gas	1527642.27	101.2
Ge	72	2	H2	1327569.28	99.9
Ge	72	3	He	316529.39	100.2
In	115	1	No Gas	16686104.57	98.3
In	115	3	He	4012505.81	95.2
Tb	159	1	No Gas	21443093.38	99.3
Tb	159	3	He	8203792.67	97.1
Ho	165	1	No Gas	21246181.06	98.2
Ho	165	3	He	8289237.49	97.9
Lu	175	1	No Gas	21261909.28	96.8
Lu	175	3	He	6902427.08	97.6
Bi	209	1	No Gas	15478524.96	94.1
Bi	209	3	He	6122917.54	92.4

# ICPMS207-B Analytical Data

**Sample Name** 1000 ppb STD  
**File Name** 013CAL.S.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 12:50:01  
**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	2455.037	ug/l	6650603.29
Be	9	45	1	No Gas	998.857	ug/l	1342094.33
B	11	45	1	No Gas	999.266	ug/l	747792.78
Na	23	45	3	He	49984.167	ug/l	44745569.33
Mg	24	45	3	He	49883.919	ug/l	24256294.70
Al	27	45	1	No Gas	999.719	ug/l	9403387.08
Si	28	45	2	H2	2.057	ug/l	9549.67
K	39	72	3	He	49973.007	ug/l	33126373.12
Ca	40	72	2	H2	49789.612	ug/l	477946693.19
Ti	47	72	1	No Gas	4.388	ug/l	7856.71
V	51	72	1	No Gas	999.624	ug/l	22996946.19
V	51	72	3	He	999.547	ug/l	6338108.66
Cr	52	72	1	No Gas	999.520	ug/l	22582736.98
Cr	52	72	3	He	999.753	ug/l	7165510.17
Mn	55	72	1	No Gas	999.776	ug/l	34144997.97
Mn	55	72	3	He	999.660	ug/l	5167902.92
Fe	56	72	2	H2	5998.734	ug/l	144218413.34
Fe	56	72	3	He	5976.041	ug/l	39586460.48
Co	59	72	1	No Gas	999.544	ug/l	28368528.46
Ni	60	72	1	No Gas	999.506	ug/l	6428365.47
Ni	60	72	3	He	999.472	ug/l	2757876.07
Cu	63	72	1	No Gas	999.487	ug/l	16614759.69
Cu	63	72	3	He	999.198	ug/l	7213383.00
Cu	65	72	1	No Gas	999.548	ug/l	8119107.12
Zn	66	72	1	No Gas	999.042	ug/l	5442737.03
Zn	66	72	3	He	999.456	ug/l	1561219.13
As	75	72	1	No Gas	999.731	ug/l	6525328.96
As	75	72	3	He	999.636	ug/l	1303071.37
Se	78	72	2	H2	999.523	ug/l	837695.11
Br	79	72	1	No Gas	85.220	ug/l	16300.23
Br	79	72	2	H2	306.652	ug/l	19804.31
Se	82	72	1	No Gas	999.343	ug/l	431020.19
Kr	84	72	1	No Gas		ug/l	418804.73
Sr	88	72	1	No Gas	999.426	ug/l	63133036.80
Sr	88	72	3	He	999.845	ug/l	9089415.21
Mo	95	115	1	No Gas	0.125	ug/l	1869.02
Mo	95	115	3	He	0.126	ug/l	712.25
Mo	98	115	1	No Gas	0.135	ug/l	3350.07
Ag	107	115	1	No Gas	370.562	ug/l	13283910.92
Ag	109	115	1	No Gas	299.128	ug/l	10459249.04
Cd	111	115	1	No Gas	999.822	ug/l	8026770.89

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	999.454	ug/l	2633641.69
Cd	114	115	1	No Gas	999.515	ug/l	18040712.60
Cd	114	115	3	He	999.463	ug/l	6441681.97
Sn	118	115	1	No Gas	0.202	ug/l	8033.07
Sn	118	115	3	He	0.197	ug/l	2272.42
Sb	121	115	1	No Gas	0.215	ug/l	8508.09
Sb	121	115	3	He	0.195	ug/l	2117.04
Sb	123	115	1	No Gas	0.233	ug/l	7045.81
Sb	123	115	3	He	0.197	ug/l	1673.27
Ba	135	115	1	No Gas	999.249	ug/l	7099661.74
Ba	137	115	1	No Gas	998.961	ug/l	12120507.32
La	139	115	3	He	0.024	ug/l	962.26
Ce	140	115	3	He	0.038	ug/l	1620.11
Hg	201	209	1	No Gas	0.008	ug/l	204.63
Hg	202	209	1	No Gas	0.011	ug/l	552.24
Hg	202	209	3	He	0.011	ug/l	244.29
Tl	203	209	3	He	999.794	ug/l	12867158.23
Tl	205	209	1	No Gas	999.900	ug/l	74820564.99
Tl	205	209	3	He	999.520	ug/l	30238016.51
[Pb]	206	209	1	No Gas	999.431	ug/l	25791151.29
[Pb]	207	209	1	No Gas	999.684	ug/l	22383390.78
Pb	208	209	1	No Gas	999.553	ug/l	101541745.71
Th	232	209	3	He	999.535	ug/l	42393429.06
U	238	209	1	No Gas	999.409	ug/l	98973292.06

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4001758.72	111.6
Sc	45	2	H2	3271533.95	97.4
Sc	45	3	He	438856.09	102.1
Ge	72	1	No Gas	1518402.71	100.6
Ge	72	2	H2	1300047.90	97.8
Ge	72	3	He	313966.13	99.4
In	115	1	No Gas	16293667.42	96.0
In	115	3	He	4021739.18	95.5
Tb	159	1	No Gas	21219721.89	98.3
Tb	159	3	He	8149724.02	96.4
Ho	165	1	No Gas	21189793.21	97.9
Ho	165	3	He	8074959.20	95.4
Lu	175	1	No Gas	21499394.47	97.9
Lu	175	3	He	6755472.37	95.5
Bi	209	1	No Gas	14972218.06	91.1
Bi	209	3	He	5988051.83	90.4

# ICPMS207-B Analytical Data

**Sample Name** 100 ppb Br STD  
**File Name** 014CAL.S.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 12:55:45  
**Sample Type** CalStd  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	4.309	ug/l	14140.24
Be	9	45	1	No Gas	0.184	ug/l	245.62
B	11	45	1	No Gas	11.873	ug/l	10088.10
Na	23	45	3	He	27.122	ug/l	46852.84
Mg	24	45	3	He	5.459	ug/l	3087.54
Al	27	45	1	No Gas	0.672	ug/l	26056.24
Si	28	45	2	H2	7.936	ug/l	20923.04
K	39	72	3	He	14.648	ug/l	72620.69
Ca	40	72	2	H2	46.314	ug/l	513256.73
Ti	47	72	1	No Gas	0.208	ug/l	467.15
V	51	72	1	No Gas	0.335	ug/l	8288.79
V	51	72	3	He	1.049	ug/l	10996.40
Cr	52	72	1	No Gas	0.951	ug/l	42547.11
Cr	52	72	3	He	0.176	ug/l	1715.67
Mn	55	72	1	No Gas	0.252	ug/l	14258.72
Mn	55	72	3	He	0.153	ug/l	1001.84
Fe	56	72	2	H2	2.947	ug/l	91335.18
Fe	56	72	3	He	2.837	ug/l	26632.58
Co	59	72	1	No Gas	0.062	ug/l	2145.91
Ni	60	72	1	No Gas	0.114	ug/l	1041.31
Ni	60	72	3	He	0.094	ug/l	368.90
Cu	63	72	1	No Gas	0.113	ug/l	4370.42
Cu	63	72	3	He	0.125	ug/l	1805.09
Cu	65	72	1	No Gas	0.111	ug/l	2107.67
Zn	66	72	1	No Gas	0.856	ug/l	5802.67
Zn	66	72	3	He	0.772	ug/l	1423.42
As	75	72	1	No Gas	0.709	ug/l	12690.37
As	75	72	3	He	0.273	ug/l	499.00
Se	78	72	2	H2	0.287	ug/l	264.78
Br	79	72	1	No Gas	100.000	ug/l	17156.26
Br	79	72	2	H2	100.000	ug/l	10932.51
Se	82	72	1	No Gas	0.294	ug/l	721.95
Kr	84	72	1	No Gas		ug/l	19584.48
Sr	88	72	1	No Gas	0.101	ug/l	7986.44
Sr	88	72	3	He	0.105	ug/l	1234.51
Mo	95	115	1	No Gas	0.016	ug/l	431.12
Mo	95	115	3	He	0.022	ug/l	184.45
Mo	98	115	1	No Gas	0.019	ug/l	786.70
Ag	107	115	1	No Gas	0.362	ug/l	16261.15
Ag	109	115	1	No Gas	0.108	ug/l	6500.18
Cd	111	115	1	No Gas	0.039	ug/l	333.73

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.035	ug/l	106.78
Cd	114	115	1	No Gas	0.044	ug/l	649.09
Cd	114	115	3	He	0.031	ug/l	241.15
Sn	118	115	1	No Gas	1.319	ug/l	35677.77
Sn	118	115	3	He	1.271	ug/l	9776.77
Sb	121	115	1	No Gas	0.077	ug/l	3526.80
Sb	121	115	3	He	0.070	ug/l	875.45
Sb	123	115	1	No Gas	0.077	ug/l	2701.87
Sb	123	115	3	He	0.074	ug/l	714.09
Ba	135	115	1	No Gas	0.135	ug/l	1327.44
Ba	137	115	1	No Gas	0.165	ug/l	2551.87
La	139	115	3	He	0.008	ug/l	362.23
Ce	140	115	3	He	0.018	ug/l	814.48
Hg	201	209	1	No Gas	0.005	ug/l	203.63
Hg	202	209	1	No Gas	0.009	ug/l	558.90
Hg	202	209	3	He	0.006	ug/l	235.29
Tl	203	209	3	He	0.486	ug/l	8207.17
Tl	205	209	1	No Gas	0.506	ug/l	48304.63
Tl	205	209	3	He	0.498	ug/l	19858.74
[Pb]	206	209	1	No Gas	0.101	ug/l	4378.52
[Pb]	207	209	1	No Gas	0.101	ug/l	3848.36
Pb	208	209	1	No Gas	0.103	ug/l	17549.07
Th	232	209	3	He	0.164	ug/l	7713.37
U	238	209	1	No Gas	0.026	ug/l	3032.09

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3666248.01	102.3
Sc	45	2	H2	3258440.68	97.0
Sc	45	3	He	414479.37	96.4
Ge	72	1	No Gas	1527740.34	101.2
Ge	72	2	H2	1276365.39	96.0
Ge	72	3	He	302191.94	95.7
In	115	1	No Gas	16645916.71	98.1
In	115	3	He	4068164.23	96.6
Tb	159	1	No Gas	21183215.39	98.1
Tb	159	3	He	8119576.27	96.1
Ho	165	1	No Gas	20818726.32	96.2
Ho	165	3	He	8154561.98	96.3
Lu	175	1	No Gas	20750660.14	94.5
Lu	175	3	He	6762103.32	95.6
Bi	209	1	No Gas	15844337.91	96.4
Bi	209	3	He	6383739.28	96.3

# ICPMS207-B Analytical Data

**Sample Name** Rinse  
**File Name** 015BLKV.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 13:02:02  
**Sample Type** BlkVrfy  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	0.789	ug/l	6165.73
Be	9	45	1	No Gas	0.063	ug/l	110.98
B	11	45	1	No Gas	4.514	ug/l	5770.76
Na	23	45	3	He	1.962	ug/l	28085.14
Mg	24	45	3	He	0.750	ug/l	1014.69
Al	27	45	1	No Gas	-0.564	ug/l	17616.05
Si	28	45	2	H2	0.082	ug/l	6299.20
K	39	72	3	He	7.181	ug/l	71958.47
Ca	40	72	2	H2	0.383	ug/l	86893.23
Ti	47	72	1	No Gas	0.021	ug/l	145.15
V	51	72	1	No Gas	0.154	ug/l	4156.37
V	51	72	3	He	0.101	ug/l	5529.96
Cr	52	72	1	No Gas	0.105	ug/l	24945.02
Cr	52	72	3	He	0.008	ug/l	595.57
Mn	55	72	1	No Gas	0.022	ug/l	6791.44
Mn	55	72	3	He	0.017	ug/l	348.27
Fe	56	72	2	H2	-0.132	ug/l	20187.50
Fe	56	72	3	He	-0.045	ug/l	8763.13
Co	59	72	1	No Gas	0.022	ug/l	1087.89
Ni	60	72	1	No Gas	0.022	ug/l	482.38
Ni	60	72	3	He	0.023	ug/l	190.00
Cu	63	72	1	No Gas	-0.032	ug/l	2066.98
Cu	63	72	3	He	-0.023	ug/l	823.53
Cu	65	72	1	No Gas	-0.029	ug/l	1034.45
Zn	66	72	1	No Gas	-0.006	ug/l	1164.25
Zn	66	72	3	He	0.039	ug/l	341.12
As	75	72	1	No Gas	0.431	ug/l	11610.95
As	75	72	3	He	0.044	ug/l	224.27
Se	78	72	2	H2	0.047	ug/l	72.78
Br	79	72	1	No Gas	-22.657	ug/l	11435.21
Br	79	72	2	H2	-16.062	ug/l	6651.69
Se	82	72	1	No Gas	-0.129	ug/l	579.81
Kr	84	72	1	No Gas		ug/l	18841.65
Sr	88	72	1	No Gas	0.002	ug/l	1813.20
Sr	88	72	3	He	0.018	ug/l	502.31
Mo	95	115	1	No Gas	-0.002	ug/l	201.11
Mo	95	115	3	He	0.003	ug/l	92.22
Mo	98	115	1	No Gas	0.000	ug/l	381.12
Ag	107	115	1	No Gas	0.001	ug/l	2877.45
Ag	109	115	1	No Gas	0.002	ug/l	2828.75
Cd	111	115	1	No Gas	0.013	ug/l	126.45

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.014	ug/l	52.78
Cd	114	115	1	No Gas	0.014	ug/l	93.15
Cd	114	115	3	He	0.011	ug/l	119.64
Sn	118	115	1	No Gas	0.019	ug/l	3902.82
Sn	118	115	3	He	-0.001	ug/l	960.04
Sb	121	115	1	No Gas	0.014	ug/l	1203.18
Sb	121	115	3	He	0.014	ug/l	328.04
Sb	123	115	1	No Gas	0.012	ug/l	894.79
Sb	123	115	3	He	0.015	ug/l	255.70
Ba	135	115	1	No Gas	-0.013	ug/l	276.12
Ba	137	115	1	No Gas	-0.008	ug/l	435.81
La	139	115	3	He	0.000	ug/l	64.44
Ce	140	115	3	He	0.001	ug/l	145.56
Hg	201	209	1	No Gas	-0.004	ug/l	164.97
Hg	202	209	1	No Gas	0.000	ug/l	479.92
Hg	202	209	3	He	0.000	ug/l	213.29
Tl	203	209	3	He	0.305	ug/l	5946.39
Tl	205	209	1	No Gas	0.204	ug/l	25565.49
Tl	205	209	3	He	0.306	ug/l	14203.25
[Pb]	206	209	1	No Gas	0.034	ug/l	2670.29
[Pb]	207	209	1	No Gas	0.035	ug/l	2393.57
Pb	208	209	1	No Gas	0.035	ug/l	10677.29
Th	232	209	3	He	0.011	ug/l	837.03
U	238	209	1	No Gas	0.005	ug/l	920.85

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4183312.18	116.7
Sc	45	2	H2	3614609.84	107.6
Sc	45	3	He	454944.54	105.8
Ge	72	1	No Gas	1631558.01	108.0
Ge	72	2	H2	1379484.75	103.8
Ge	72	3	He	320363.75	101.4
In	115	1	No Gas	17540302.07	103.3
In	115	3	He	4234793.81	100.5
Tb	159	1	No Gas	22433273.32	103.9
Tb	159	3	He	8614226.42	101.9
Ho	165	1	No Gas	22161754.73	102.4
Ho	165	3	He	8537341.31	100.8
Lu	175	1	No Gas	22230607.33	101.2
Lu	175	3	He	7115234.20	100.6
Bi	209	1	No Gas	16557529.33	100.7
Bi	209	3	He	6641585.25	100.2

# ICPMS207-B Analytical Data

**Sample Name** QCS  
**File Name** 016\_QC1.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 13:08:13  
**Sample Type** QC1  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	52.616	ug/l	153145.98
Be	9	45	1	No Gas	26.444	ug/l	37227.43
B	11	45	1	No Gas	57.052	ug/l	46812.94
Na	23	45	3	He	2675.674	ug/l	2527232.53
Mg	24	45	3	He	2685.755	ug/l	1364922.56
Al	27	45	1	No Gas	257.753	ug/l	2558113.83
Si	28	45	2	H2	490.541	ug/l	1026415.99
K	39	72	3	He	2638.355	ug/l	1863238.36
Ca	40	72	2	H2	2598.370	ug/l	26235278.31
Ti	47	72	1	No Gas	48.694	ug/l	93627.05
V	51	72	1	No Gas	49.770	ug/l	1245705.31
V	51	72	3	He	49.957	ug/l	330538.06
Cr	52	72	1	No Gas	51.609	ug/l	1288680.29
Cr	52	72	3	He	50.219	ug/l	370784.85
Mn	55	72	1	No Gas	245.566	ug/l	9114252.35
Mn	55	72	3	He	257.521	ug/l	1369787.87
Fe	56	72	2	H2	253.125	ug/l	6399576.54
Fe	56	72	3	He	261.480	ug/l	1790596.86
Co	59	72	1	No Gas	50.759	ug/l	1565322.14
Ni	60	72	1	No Gas	50.248	ug/l	351374.01
Ni	60	72	3	He	51.519	ug/l	146350.68
Cu	63	72	1	No Gas	51.569	ug/l	933896.98
Cu	63	72	3	He	53.857	ug/l	400889.92
Cu	65	72	1	No Gas	51.846	ug/l	458804.69
Zn	66	72	1	No Gas	52.413	ug/l	311285.67
Zn	66	72	3	He	52.652	ug/l	84882.27
As	75	72	1	No Gas	48.536	ug/l	352348.59
As	75	72	3	He	48.422	ug/l	65097.81
Se	78	72	2	H2	50.378	ug/l	44278.31
Br	79	72	1	No Gas	48.456	ug/l	15610.82
Br	79	72	2	H2	59.813	ug/l	9903.77
Se	82	72	1	No Gas	50.807	ug/l	24405.90
Kr	84	72	1	No Gas		ug/l	41667.35
Sr	88	72	1	No Gas	49.379	ug/l	3389282.17
Sr	88	72	3	He	47.696	ug/l	446361.25
Mo	95	115	1	No Gas	48.792	ug/l	666505.34
Mo	95	115	3	He	44.762	ug/l	235394.27
Mo	98	115	1	No Gas	48.104	ug/l	1103925.19
Ag	107	115	1	No Gas	25.549	ug/l	950954.10
Ag	109	115	1	No Gas	25.357	ug/l	919570.37
Cd	111	115	1	No Gas	25.071	ug/l	208080.88



# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	24.231	ug/l	65917.77
Cd	114	115	1	No Gas	24.912	ug/l	464713.84
Cd	114	115	3	He	24.234	ug/l	161280.21
Sn	118	115	1	No Gas	47.964	ug/l	1197505.01
Sn	118	115	3	He	47.849	ug/l	341038.65
Sb	121	115	1	No Gas	47.639	ug/l	1815427.70
Sb	121	115	3	He	47.677	ug/l	491164.34
Sb	123	115	1	No Gas	47.781	ug/l	1393572.85
Sb	123	115	3	He	48.086	ug/l	391025.74
Ba	135	115	1	No Gas	50.227	ug/l	369299.01
Ba	137	115	1	No Gas	50.938	ug/l	639257.76
La	139	115	3	He	49.616	ug/l	1922572.80
Ce	140	115	3	He	49.551	ug/l	2044114.33
Hg	201	209	1	No Gas	0.934	ug/l	5176.64
Hg	202	209	1	No Gas	0.934	ug/l	11730.13
Hg	202	209	3	He	0.938	ug/l	4918.92
Tl	203	209	3	He	45.316	ug/l	654700.29
Tl	205	209	1	No Gas	45.470	ug/l	3782220.95
Tl	205	209	3	He	46.190	ug/l	1568789.67
[Pb]	206	209	1	No Gas	47.231	ug/l	1353195.35
[Pb]	207	209	1	No Gas	47.038	ug/l	1169156.26
Pb	208	209	1	No Gas	48.143	ug/l	5430235.70
Th	232	209	3	He	47.873	ug/l	2273944.13
U	238	209	1	No Gas	50.879	ug/l	5586974.17

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4191465.15	116.9
Sc	45	2	H2	3489378.71	103.9
Sc	45	3	He	458220.61	106.6
Ge	72	1	No Gas	1650530.60	109.3
Ge	72	2	H2	1362684.88	102.5
Ge	72	3	He	322995.32	102.2
In	115	1	No Gas	16844465.40	99.2
In	115	3	He	4152602.06	98.6
Tb	159	1	No Gas	21312519.48	98.7
Tb	159	3	He	8421315.81	99.6
Ho	165	1	No Gas	21373606.81	98.7
Ho	165	3	He	8507657.77	100.5
Lu	175	1	No Gas	21569843.46	98.2
Lu	175	3	He	7147688.11	101.0
Bi	209	1	No Gas	16602312.53	101.0
Bi	209	3	He	6707065.40	101.2

# ICPMS207-B Analytical Data

**Sample Name** CCV  
**File Name** 017\_CCV.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 13:14:13  
**Sample Type** CCV  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	651.747	ug/l	1819904.67
Be	9	45	1	No Gas	56.570	ug/l	78207.02
B	11	45	1	No Gas	57.671	ug/l	46491.51
Na	23	45	3	He	12753.633	ug/l	11799813.44
Mg	24	45	3	He	12639.314	ug/l	6341974.81
Al	27	45	1	No Gas	52.490	ug/l	529829.15
Si	28	45	2	H2	216.443	ug/l	453178.79
K	39	72	3	He	12759.755	ug/l	8604886.88
Ca	40	72	2	H2	12522.497	ug/l	126855835.54
Ti	47	72	1	No Gas	55.949	ug/l	100040.74
V	51	72	1	No Gas	56.931	ug/l	1324009.82
V	51	72	3	He	53.780	ug/l	349502.50
Cr	52	72	1	No Gas	56.834	ug/l	1317158.29
Cr	52	72	3	He	53.268	ug/l	386635.38
Mn	55	72	1	No Gas	55.291	ug/l	1912578.21
Mn	55	72	3	He	53.498	ug/l	279995.84
Fe	56	72	2	H2	1296.083	ug/l	32882289.05
Fe	56	72	3	He	1322.270	ug/l	8866211.31
Co	59	72	1	No Gas	56.371	ug/l	1616770.25
Ni	60	72	1	No Gas	56.305	ug/l	366228.47
Ni	60	72	3	He	54.549	ug/l	152348.04
Cu	63	72	1	No Gas	56.374	ug/l	949367.11
Cu	63	72	3	He	55.721	ug/l	407772.20
Cu	65	72	1	No Gas	56.383	ug/l	464017.49
Zn	66	72	1	No Gas	57.892	ug/l	319834.46
Zn	66	72	3	He	55.604	ug/l	88121.27
As	75	72	1	No Gas	53.711	ug/l	362049.47
As	75	72	3	He	52.863	ug/l	69858.14
Se	78	72	2	H2	52.316	ug/l	46275.95
Br	79	72	1	No Gas	8.707	ug/l	12414.06
Br	79	72	2	H2	14.168	ug/l	7949.79
Se	82	72	1	No Gas	54.951	ug/l	24519.87
Kr	84	72	1	No Gas		ug/l	41881.02
Sr	88	72	1	No Gas	54.581	ug/l	3485250.45
Sr	88	72	3	He	52.101	ug/l	479333.26
Mo	95	115	1	No Gas	51.012	ug/l	710732.12
Mo	95	115	3	He	52.292	ug/l	267043.84
Mo	98	115	1	No Gas	50.591	ug/l	1184190.16
Ag	107	115	1	No Gas	20.254	ug/l	769601.42
Ag	109	115	1	No Gas	20.249	ug/l	749546.66
Cd	111	115	1	No Gas	51.275	ug/l	434020.30

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	53.214	ug/l	140554.91
Cd	114	115	1	No Gas	52.113	ug/l	991796.72
Cd	114	115	3	He	53.117	ug/l	343196.33
Sn	118	115	1	No Gas	51.867	ug/l	1320814.24
Sn	118	115	3	He	51.774	ug/l	358142.50
Sb	121	115	1	No Gas	51.903	ug/l	2017886.78
Sb	121	115	3	He	52.250	ug/l	522426.25
Sb	123	115	1	No Gas	53.229	ug/l	1583662.43
Sb	123	115	3	He	52.034	ug/l	410686.05
Ba	135	115	1	No Gas	54.113	ug/l	405759.84
Ba	137	115	1	No Gas	54.287	ug/l	694952.22
La	139	115	3	He	48.552	ug/l	1826538.01
Ce	140	115	3	He	48.168	ug/l	1928763.65
Hg	201	209	1	No Gas	0.948	ug/l	5137.63
Hg	202	209	1	No Gas	0.935	ug/l	11493.64
Hg	202	209	3	He	0.939	ug/l	4638.55
Tl	203	209	3	He	50.430	ug/l	686138.19
Tl	205	209	1	No Gas	49.137	ug/l	3995832.48
Tl	205	209	3	He	51.960	ug/l	1662199.22
[Pb]	206	209	1	No Gas	50.906	ug/l	1426204.72
[Pb]	207	209	1	No Gas	50.032	ug/l	1216120.41
Pb	208	209	1	No Gas	51.728	ug/l	5704818.42
Th	232	209	3	He	52.843	ug/l	2364194.71
U	238	209	1	No Gas	50.968	ug/l	5473462.83

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4118575.58	114.9
Sc	45	2	H2	3471905.10	103.4
Sc	45	3	He	452715.34	105.3
Ge	72	1	No Gas	1535162.98	101.7
Ge	72	2	H2	1371262.55	103.2
Ge	72	3	He	317568.35	100.5
In	115	1	No Gas	17184025.64	101.2
In	115	3	He	4033600.61	95.7
Tb	159	1	No Gas	21800236.34	101.0
Tb	159	3	He	8266306.75	97.8
Ho	165	1	No Gas	21472065.27	99.2
Ho	165	3	He	8272790.31	97.7
Lu	175	1	No Gas	21852071.72	99.5
Lu	175	3	He	6845388.38	96.8
Bi	209	1	No Gas	16232571.58	98.7
Bi	209	3	He	6316627.55	95.3

# ICPMS207-B Analytical Data

**Sample Name** CCB  
**File Name** 018\_CCB.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 13:20:11  
**Sample Type** CCB  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	0.672	ug/l	5830.79
Be	9	45	1	No Gas	0.044	ug/l	83.98
B	11	45	1	No Gas	2.343	ug/l	4078.86
Na	23	45	3	He	2.009	ug/l	27830.19
Mg	24	45	3	He	0.898	ug/l	1077.90
Al	27	45	1	No Gas	0.129	ug/l	24392.19
Si	28	45	2	H2	0.070	ug/l	5998.29
K	39	72	3	He	9.584	ug/l	72550.44
Ca	40	72	2	H2	0.574	ug/l	87241.96
Ti	47	72	1	No Gas	0.008	ug/l	118.45
V	51	72	1	No Gas	-0.427	ug/l	-9903.93
V	51	72	3	He	0.135	ug/l	5666.68
Cr	52	72	1	No Gas	0.124	ug/l	24958.46
Cr	52	72	3	He	0.016	ug/l	641.13
Mn	55	72	1	No Gas	0.014	ug/l	6392.06
Mn	55	72	3	He	0.013	ug/l	322.61
Fe	56	72	2	H2	0.004	ug/l	23235.02
Fe	56	72	3	He	0.086	ug/l	9517.67
Co	59	72	1	No Gas	0.014	ug/l	811.75
Ni	60	72	1	No Gas	0.023	ug/l	482.39
Ni	60	72	3	He	0.026	ug/l	197.78
Cu	63	72	1	No Gas	-0.018	ug/l	2285.10
Cu	63	72	3	He	-0.006	ug/l	935.18
Cu	65	72	1	No Gas	-0.020	ug/l	1088.48
Zn	66	72	1	No Gas	0.002	ug/l	1187.47
Zn	66	72	3	He	0.035	ug/l	330.00
As	75	72	1	No Gas	0.572	ug/l	12354.04
As	75	72	3	He	0.028	ug/l	200.07
Se	78	72	2	H2	0.041	ug/l	66.22
Br	79	72	1	No Gas	-35.187	ug/l	10532.98
Br	79	72	2	H2	-19.035	ug/l	6405.40
Se	82	72	1	No Gas	0.575	ug/l	891.03
Kr	84	72	1	No Gas		ug/l	21366.76
Sr	88	72	1	No Gas	0.003	ug/l	1836.49
Sr	88	72	3	He	0.009	ug/l	414.45
Mo	95	115	1	No Gas	0.016	ug/l	443.34
Mo	95	115	3	He	0.019	ug/l	174.45
Mo	98	115	1	No Gas	0.017	ug/l	773.98
Ag	107	115	1	No Gas	0.001	ug/l	2868.12
Ag	109	115	1	No Gas	0.002	ug/l	2782.06
Cd	111	115	1	No Gas	0.007	ug/l	74.61

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.009	ug/l	40.00
Cd	114	115	1	No Gas	0.008	ug/l	-13.67
Cd	114	115	3	He	0.007	ug/l	85.87
Sn	118	115	1	No Gas	0.028	ug/l	4079.20
Sn	118	115	3	He	0.027	ug/l	1148.96
Sb	121	115	1	No Gas	0.055	ug/l	2773.89
Sb	121	115	3	He	0.040	ug/l	592.41
Sb	123	115	1	No Gas	0.056	ug/l	2188.40
Sb	123	115	3	He	0.042	ug/l	470.39
Ba	135	115	1	No Gas	-0.001	ug/l	362.62
Ba	137	115	1	No Gas	0.015	ug/l	725.25
La	139	115	3	He	0.001	ug/l	90.00
Ce	140	115	3	He	0.001	ug/l	161.11
Hg	201	209	1	No Gas	0.000	ug/l	184.30
Hg	202	209	1	No Gas	0.003	ug/l	511.91
Hg	202	209	3	He	-0.003	ug/l	196.96
Tl	203	209	3	He	0.520	ug/l	8879.86
Tl	205	209	1	No Gas	0.381	ug/l	39528.99
Tl	205	209	3	He	0.526	ug/l	21279.49
[Pb]	206	209	1	No Gas	0.032	ug/l	2569.16
[Pb]	207	209	1	No Gas	0.031	ug/l	2244.65
Pb	208	209	1	No Gas	0.033	ug/l	10343.89
Th	232	209	3	He	0.020	ug/l	1249.90
U	238	209	1	No Gas	0.006	ug/l	985.84

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4182989.55	116.7
Sc	45	2	H2	3459240.95	103.0
Sc	45	3	He	450298.57	104.7
Ge	72	1	No Gas	1602562.76	106.1
Ge	72	2	H2	1354510.59	101.9
Ge	72	3	He	315852.75	100.0
In	115	1	No Gas	17312080.26	102.0
In	115	3	He	4195929.24	99.6
Tb	159	1	No Gas	21928529.63	101.6
Tb	159	3	He	8393355.14	99.3
Ho	165	1	No Gas	21889516.87	101.1
Ho	165	3	He	8433858.25	99.6
Lu	175	1	No Gas	22085789.80	100.6
Lu	175	3	He	7020976.36	99.2
Bi	209	1	No Gas	16305297.48	99.2
Bi	209	3	He	6545097.99	98.8

# ICPMS207-B Analytical Data

**Sample Name** Rinse  
**File Name** 019BLKV.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 13:26:22  
**Sample Type** BlkVrfy  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	0.354	ug/l	4934.12
Be	9	45	1	No Gas	0.029	ug/l	62.66
B	11	45	1	No Gas	1.428	ug/l	3365.73
Na	23	45	3	He	-0.373	ug/l	25428.16
Mg	24	45	3	He	0.304	ug/l	775.15
Al	27	45	1	No Gas	0.081	ug/l	23920.35
Si	28	45	2	H2	-0.066	ug/l	5668.69
K	39	72	3	He	7.345	ug/l	71028.62
Ca	40	72	2	H2	0.046	ug/l	81874.76
Ti	47	72	1	No Gas	0.001	ug/l	105.11
V	51	72	1	No Gas	-0.329	ug/l	-7487.79
V	51	72	3	He	0.138	ug/l	5683.35
Cr	52	72	1	No Gas	0.083	ug/l	24115.35
Cr	52	72	3	He	0.014	ug/l	631.13
Mn	55	72	1	No Gas	0.007	ug/l	6162.42
Mn	55	72	3	He	0.009	ug/l	299.28
Fe	56	72	2	H2	-0.134	ug/l	19761.48
Fe	56	72	3	He	-0.058	ug/l	8552.76
Co	59	72	1	No Gas	0.009	ug/l	685.33
Ni	60	72	1	No Gas	0.028	ug/l	512.33
Ni	60	72	3	He	0.012	ug/l	158.89
Cu	63	72	1	No Gas	-0.023	ug/l	2209.73
Cu	63	72	3	He	-0.011	ug/l	903.52
Cu	65	72	1	No Gas	-0.024	ug/l	1059.13
Zn	66	72	1	No Gas	-0.024	ug/l	1044.42
Zn	66	72	3	He	-0.020	ug/l	244.45
As	75	72	1	No Gas	0.053	ug/l	8846.82
As	75	72	3	He	0.019	ug/l	188.13
Se	78	72	2	H2	0.025	ug/l	52.00
Br	79	72	1	No Gas	-28.998	ug/l	10939.19
Br	79	72	2	H2	-20.962	ug/l	6308.89
Se	82	72	1	No Gas	0.013	ug/l	635.81
Kr	84	72	1	No Gas		ug/l	22170.76
Sr	88	72	1	No Gas	-0.003	ug/l	1460.52
Sr	88	72	3	He	0.006	ug/l	386.68
Mo	95	115	1	No Gas	-0.001	ug/l	215.56
Mo	95	115	3	He	0.007	ug/l	107.78
Mo	98	115	1	No Gas	0.001	ug/l	396.67
Ag	107	115	1	No Gas	-0.001	ug/l	2763.39
Ag	109	115	1	No Gas	0.001	ug/l	2775.39
Cd	111	115	1	No Gas	0.005	ug/l	56.16

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.005	ug/l	28.66
Cd	114	115	1	No Gas	0.007	ug/l	-38.01
Cd	114	115	3	He	0.004	ug/l	68.08
Sn	118	115	1	No Gas	0.011	ug/l	3656.59
Sn	118	115	3	He	0.002	ug/l	960.04
Sb	121	115	1	No Gas	0.015	ug/l	1208.51
Sb	121	115	3	He	0.014	ug/l	321.37
Sb	123	115	1	No Gas	0.014	ug/l	927.46
Sb	123	115	3	He	0.015	ug/l	248.36
Ba	135	115	1	No Gas	-0.011	ug/l	282.78
Ba	137	115	1	No Gas	0.004	ug/l	582.19
La	139	115	3	He	0.001	ug/l	80.00
Ce	140	115	3	He	0.000	ug/l	115.55
Hg	201	209	1	No Gas	-0.005	ug/l	155.30
Hg	202	209	1	No Gas	-0.002	ug/l	449.58
Hg	202	209	3	He	-0.008	ug/l	175.64
Tl	203	209	3	He	0.233	ug/l	4914.22
Tl	205	209	1	No Gas	0.145	ug/l	20521.50
Tl	205	209	3	He	0.224	ug/l	11430.84
[Pb]	206	209	1	No Gas	0.022	ug/l	2315.77
[Pb]	207	209	1	No Gas	0.018	ug/l	1951.27
Pb	208	209	1	No Gas	0.022	ug/l	9134.63
Th	232	209	3	He	0.008	ug/l	675.63
U	238	209	1	No Gas	0.003	ug/l	658.22

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4181262.84	116.6
Sc	45	2	H2	3430527.01	102.1
Sc	45	3	He	446437.64	103.8
Ge	72	1	No Gas	1610316.30	106.6
Ge	72	2	H2	1353321.82	101.8
Ge	72	3	He	315746.56	99.9
In	115	1	No Gas	17316608.19	102.0
In	115	3	He	4169561.96	99.0
Tb	159	1	No Gas	21787087.99	100.9
Tb	159	3	He	8376034.60	99.1
Ho	165	1	No Gas	21444470.80	99.1
Ho	165	3	He	8337824.30	98.5
Lu	175	1	No Gas	21443405.98	97.6
Lu	175	3	He	6878730.21	97.2
Bi	209	1	No Gas	16453223.56	100.1
Bi	209	3	He	6630316.89	100.1

# ICPMS207-B Analytical Data

**Sample Name** LRB  
**File Name** 020MBLK.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 13:32:33  
**Sample Type** MBLK  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	0.252	ug/l	4532.50
Be	9	45	1	No Gas	0.028	ug/l	59.99
B	11	45	1	No Gas	0.896	ug/l	2878.10
Na	23	45	3	He	2.242	ug/l	27339.29
Mg	24	45	3	He	0.551	ug/l	881.61
Al	27	45	1	No Gas	-1.505	ug/l	8166.72
Si	28	45	2	H2	1.482	ug/l	8998.35
K	39	72	3	He	8.372	ug/l	70985.01
Ca	40	72	2	H2	1.289	ug/l	96379.13
Ti	47	72	1	No Gas	0.006	ug/l	113.45
V	51	72	1	No Gas	0.140	ug/l	3894.77
V	51	72	3	He	0.137	ug/l	5619.99
Cr	52	72	1	No Gas	0.089	ug/l	24062.10
Cr	52	72	3	He	0.035	ug/l	773.36
Mn	55	72	1	No Gas	-0.003	ug/l	5773.04
Mn	55	72	3	He	0.004	ug/l	269.95
Fe	56	72	2	H2	-0.068	ug/l	21868.22
Fe	56	72	3	He	0.071	ug/l	9315.68
Co	59	72	1	No Gas	0.005	ug/l	552.25
Ni	60	72	1	No Gas	0.021	ug/l	465.75
Ni	60	72	3	He	0.025	ug/l	191.11
Cu	63	72	1	No Gas	-0.045	ug/l	1805.51
Cu	63	72	3	He	-0.033	ug/l	733.87
Cu	65	72	1	No Gas	-0.046	ug/l	867.71
Zn	66	72	1	No Gas	0.152	ug/l	2042.53
Zn	66	72	3	He	0.169	ug/l	534.46
As	75	72	1	No Gas	-0.314	ug/l	6263.42
As	75	72	3	He	0.020	ug/l	187.67
Se	78	72	2	H2	0.013	ug/l	42.00
Br	79	72	1	No Gas	-34.956	ug/l	10526.27
Br	79	72	2	H2	-17.751	ug/l	6591.79
Se	82	72	1	No Gas	-0.338	ug/l	472.61
Kr	84	72	1	No Gas		ug/l	12627.17
Sr	88	72	1	No Gas	0.003	ug/l	1826.50
Sr	88	72	3	He	0.005	ug/l	380.01
Mo	95	115	1	No Gas	-0.005	ug/l	157.78
Mo	95	115	3	He	0.002	ug/l	86.67
Mo	98	115	1	No Gas	-0.005	ug/l	262.23
Ag	107	115	1	No Gas	-0.070	ug/l	152.73
Ag	109	115	1	No Gas	-0.070	ug/l	129.39
Cd	111	115	1	No Gas	0.010	ug/l	105.54



# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.005	ug/l	27.67
Cd	114	115	1	No Gas	0.020	ug/l	207.96
Cd	114	115	3	He	0.002	ug/l	57.48
Sn	118	115	1	No Gas	-0.016	ug/l	3027.68
Sn	118	115	3	He	-0.011	ug/l	883.37
Sb	121	115	1	No Gas	0.008	ug/l	949.46
Sb	121	115	3	He	0.008	ug/l	262.36
Sb	123	115	1	No Gas	0.007	ug/l	738.43
Sb	123	115	3	He	0.008	ug/l	190.69
Ba	135	115	1	No Gas	-0.017	ug/l	242.86
Ba	137	115	1	No Gas	-0.010	ug/l	405.87
La	139	115	3	He	0.000	ug/l	58.89
Ce	140	115	3	He	0.000	ug/l	118.89
Hg	201	209	1	No Gas	-0.005	ug/l	158.64
Hg	202	209	1	No Gas	-0.005	ug/l	421.92
Hg	202	209	3	He	-0.005	ug/l	190.63
Tl	203	209	3	He	0.118	ug/l	3250.38
Tl	205	209	1	No Gas	0.052	ug/l	13130.15
Tl	205	209	3	He	0.112	ug/l	7609.90
[Pb]	206	209	1	No Gas	0.013	ug/l	2097.96
[Pb]	207	209	1	No Gas	0.014	ug/l	1890.15
Pb	208	209	1	No Gas	0.015	ug/l	8594.49
Th	232	209	3	He	0.004	ug/l	494.88
U	238	209	1	No Gas	0.002	ug/l	546.90

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4075394.58	113.7
Sc	45	2	H2	3497001.68	104.1
Sc	45	3	He	438959.92	102.1
Ge	72	1	No Gas	1598276.53	105.8
Ge	72	2	H2	1383860.36	104.1
Ge	72	3	He	312522.46	98.9
In	115	1	No Gas	17623837.78	103.8
In	115	3	He	4231527.24	100.4
Tb	159	1	No Gas	22499610.07	104.2
Tb	159	3	He	8422946.29	99.7
Ho	165	1	No Gas	22113081.89	102.2
Ho	165	3	He	8430165.81	99.6
Lu	175	1	No Gas	22115335.18	100.7
Lu	175	3	He	7093761.17	100.3
Bi	209	1	No Gas	16753801.30	101.9
Bi	209	3	He	6568784.46	99.1

# ICPMS207-B Analytical Data

**Sample Name** LFB  
**File Name** 021\_LFB.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 13:38:43  
**Sample Type** LFB  
**Total Dilution** 1.0300  
**Comment** ICPMS-200.8-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	2548.096	ug/l	6132874.72
Be	9	45	1	No Gas	52.312	ug/l	62477.40
B	11	45	1	No Gas	51.991	ug/l	36445.95
Na	23	45	3	He	49581.287	ug/l	40609286.89
Mg	24	45	3	He	50127.275	ug/l	22299471.84
Al	27	45	1	No Gas	48.021	ug/l	420645.83
Si	28	45	2	H2	200.629	ug/l	363802.51
K	39	72	3	He	50040.370	ug/l	30278762.05
Ca	40	72	2	H2	49187.241	ug/l	442034111.87
Ti	47	72	1	No Gas	52.305	ug/l	86315.33
V	51	72	1	No Gas	50.874	ug/l	1091805.42
V	51	72	3	He	50.496	ug/l	296547.05
Cr	52	72	1	No Gas	51.578	ug/l	1105804.58
Cr	52	72	3	He	49.645	ug/l	325226.47
Mn	55	72	1	No Gas	50.065	ug/l	1599458.64
Mn	55	72	3	He	50.041	ug/l	236361.83
Fe	56	72	2	H2	4946.204	ug/l	111323914.16
Fe	56	72	3	He	4910.787	ug/l	29694557.89
Co	59	72	1	No Gas	50.859	ug/l	1346088.22
Ni	60	72	1	No Gas	49.691	ug/l	298295.81
Ni	60	72	3	He	50.185	ug/l	126496.29
Cu	63	72	1	No Gas	49.400	ug/l	768042.69
Cu	63	72	3	He	51.544	ug/l	340474.78
Cu	65	72	1	No Gas	49.432	ug/l	375519.38
Zn	66	72	1	No Gas	50.834	ug/l	259235.50
Zn	66	72	3	He	50.167	ug/l	71771.02
As	75	72	1	No Gas	48.475	ug/l	302283.80
As	75	72	3	He	49.756	ug/l	59346.77
Se	78	72	2	H2	49.824	ug/l	39115.11
Br	79	72	1	No Gas	97.781	ug/l	16140.41
Br	79	72	2	H2	45.146	ug/l	8465.75
Se	82	72	1	No Gas	49.999	ug/l	20646.30
Kr	84	72	1	No Gas		ug/l	33232.54
Sr	88	72	1	No Gas	52.482	ug/l	3091368.44
Sr	88	72	3	He	51.038	ug/l	423760.98
Mo	95	115	1	No Gas	46.667	ug/l	600983.27
Mo	95	115	3	He	47.113	ug/l	225752.14
Mo	98	115	1	No Gas	46.420	ug/l	1004428.61
Ag	107	115	1	No Gas	18.811	ug/l	660981.94
Ag	109	115	1	No Gas	19.219	ug/l	657674.67
Cd	111	115	1	No Gas	46.681	ug/l	365270.68

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	47.778	ug/l	118404.12
Cd	114	115	1	No Gas	47.984	ug/l	843905.75
Cd	114	115	3	He	48.257	ug/l	292526.41
Sn	118	115	1	No Gas	48.917	ug/l	1151205.31
Sn	118	115	3	He	47.792	ug/l	310258.66
Sb	121	115	1	No Gas	47.854	ug/l	1718913.65
Sb	121	115	3	He	47.655	ug/l	447156.94
Sb	123	115	1	No Gas	47.963	ug/l	1318455.01
Sb	123	115	3	He	47.374	ug/l	350877.63
Ba	135	115	1	No Gas	50.994	ug/l	353353.62
Ba	137	115	1	No Gas	51.030	ug/l	603605.27
La	139	115	3	He	47.913	ug/l	1691165.89
Ce	140	115	3	He	47.196	ug/l	1773053.31
Hg	201	209	1	No Gas	0.985	ug/l	4689.56
Hg	202	209	1	No Gas	0.992	ug/l	10702.81
Hg	202	209	3	He	0.981	ug/l	4326.51
Tl	203	209	3	He	48.051	ug/l	583991.21
Tl	205	209	1	No Gas	49.112	ug/l	3510487.90
Tl	205	209	3	He	48.781	ug/l	1394008.15
[Pb]	206	209	1	No Gas	49.856	ug/l	1227849.74
[Pb]	207	209	1	No Gas	48.801	ug/l	1042624.47
Pb	208	209	1	No Gas	49.949	ug/l	4841853.94
Th	232	209	3	He	51.453	ug/l	2056210.94
U	238	209	1	No Gas	51.376	ug/l	4849280.11

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3662250.59	102.2
Sc	45	2	H2	3090094.36	92.0
Sc	45	3	He	413454.73	96.1
Ge	72	1	No Gas	1458142.57	96.6
Ge	72	2	H2	1253453.10	94.3
Ge	72	3	He	295196.95	93.4
In	115	1	No Gas	16355215.53	96.4
In	115	3	He	3896074.04	92.5
Tb	159	1	No Gas	21117646.07	97.8
Tb	159	3	He	7733643.95	91.5
Ho	165	1	No Gas	20685660.56	95.6
Ho	165	3	He	7787547.48	92.0
Lu	175	1	No Gas	20901321.00	95.2
Lu	175	3	He	6586515.34	93.1
Bi	209	1	No Gas	14693571.07	89.4
Bi	209	3	He	5811392.33	87.7

# ICPMS207-B Analytical Data

**Sample Name** ICSA  
**File Name** 022ICSA.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 13:44:44  
**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	1.718	ug/l	7725.73
Be	9	45	1	No Gas	0.031	ug/l	56.66
B	11	45	1	No Gas	1.073	ug/l	2710.67
Na	23	45	3	He	109138.212	ug/l	88447575.35
Mg	24	45	3	He	44553.933	ug/l	19617623.80
Al	27	45	1	No Gas	43297.913	ug/l	372065145.57
Si	28	45	2	H2	1.535	ug/l	8079.43
K	39	72	3	He	44142.842	ug/l	26589172.66
Ca	40	72	2	H2	133783.847	ug/l	1186138149.70
Ti	47	72	1	No Gas	878.363	ug/l	1501137.28
V	51	72	1	No Gas	-0.123	ug/l	-2131.00
V	51	72	3	He	-0.226	ug/l	3038.11
Cr	52	72	1	No Gas	1.186	ug/l	46030.45
Cr	52	72	3	He	1.009	ug/l	7045.07
Mn	55	72	1	No Gas	0.178	ug/l	11265.35
Mn	55	72	3	He	0.211	ug/l	1217.81
Fe	56	72	2	H2	110871.154	ug/l	2461599539.49
Fe	56	72	3	He	109923.329	ug/l	661234965.01
Co	59	72	1	No Gas	0.372	ug/l	10572.88
Ni	60	72	1	No Gas	0.802	ug/l	5283.83
Ni	60	72	3	He	0.225	ug/l	675.58
Cu	63	72	1	No Gas	1.346	ug/l	24000.66
Cu	63	72	3	He	-0.001	ug/l	876.85
Cu	65	72	1	No Gas	0.417	ug/l	4432.47
Zn	66	72	1	No Gas	0.645	ug/l	4478.09
Zn	66	72	3	He	0.346	ug/l	740.02
As	75	72	1	No Gas	-0.246	ug/l	6195.54
As	75	72	3	He	0.116	ug/l	284.60
Se	78	72	2	H2	0.140	ug/l	135.11
Br	79	72	1	No Gas	86.583	ug/l	15824.03
Br	79	72	2	H2	27.427	ug/l	7473.80
Se	82	72	1	No Gas	-0.373	ug/l	419.01
Kr	84	72	1	No Gas		ug/l	13116.70
Sr	88	72	1	No Gas	1.391	ug/l	86407.50
Sr	88	72	3	He	2.144	ug/l	18095.31
Mo	95	115	1	No Gas	880.943	ug/l	11024557.48
Mo	95	115	3	He	863.421	ug/l	4071329.10
Mo	98	115	1	No Gas	863.985	ug/l	18166144.31
Ag	107	115	1	No Gas	0.006	ug/l	2712.69
Ag	109	115	1	No Gas	0.009	ug/l	2726.03
Cd	111	115	1	No Gas	0.053	ug/l	408.55

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.268	ug/l	666.13
Cd	114	115	1	No Gas	0.073	ug/l	1081.81
Cd	114	115	3	He	0.196	ug/l	1204.70
Sn	118	115	1	No Gas	0.094	ug/l	5144.09
Sn	118	115	3	He	0.080	ug/l	1358.96
Sb	121	115	1	No Gas	0.086	ug/l	3581.83
Sb	121	115	3	He	0.064	ug/l	749.76
Sb	123	115	1	No Gas	0.085	ug/l	2736.21
Sb	123	115	3	He	0.078	ug/l	680.78
Ba	135	115	1	No Gas	0.054	ug/l	688.66
Ba	137	115	1	No Gas	0.070	ug/l	1277.54
La	139	115	3	He	0.010	ug/l	388.90
Ce	140	115	3	He	0.004	ug/l	238.89
Hg	201	209	1	No Gas	-0.004	ug/l	144.31
Hg	202	209	1	No Gas	-0.001	ug/l	405.59
Hg	202	209	3	He	-0.003	ug/l	170.97
Tl	203	209	3	He	0.234	ug/l	4175.00
Tl	205	209	1	No Gas	0.162	ug/l	19262.35
Tl	205	209	3	He	0.226	ug/l	9745.48
[Pb]	206	209	1	No Gas	0.032	ug/l	2285.77
[Pb]	207	209	1	No Gas	0.027	ug/l	1906.82
Pb	208	209	1	No Gas	0.033	ug/l	9150.21
Th	232	209	3	He	0.031	ug/l	1515.37
U	238	209	1	No Gas	0.006	ug/l	867.52

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3673698.87	102.5
Sc	45	2	H2	3099365.89	92.3
Sc	45	3	He	397349.05	92.4
Ge	72	1	No Gas	1468137.96	97.2
Ge	72	2	H2	1200813.33	90.3
Ge	72	3	He	285206.58	90.3
In	115	1	No Gas	15439190.59	91.0
In	115	3	He	3723486.12	88.4
Tb	159	1	No Gas	20344648.10	94.2
Tb	159	3	He	7699114.42	91.1
Ho	165	1	No Gas	20345604.05	94.0
Ho	165	3	He	7845389.54	92.7
Lu	175	1	No Gas	20726741.85	94.4
Lu	175	3	He	6563331.69	92.8
Bi	209	1	No Gas	14446985.98	87.9
Bi	209	3	He	5621765.38	84.8

# ICPMS207-B Analytical Data

**Sample Name** ICSAB  
**File Name** 023ICSB.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 13:50:53  
**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	1.408	ug/l	6526.02
Be	9	45	1	No Gas	0.012	ug/l	32.32
B	11	45	1	No Gas	0.299	ug/l	2048.30
Na	23	45	3	He	113324.252	ug/l	87824257.58
Mg	24	45	3	He	46214.698	ug/l	19467606.54
Al	27	45	1	No Gas	42119.925	ug/l	340276974.93
Si	28	45	2	H2	1.514	ug/l	7836.56
K	39	72	3	He	45942.511	ug/l	26479402.10
Ca	40	72	2	H2	134495.998	ug/l	1174508120.08
Ti	47	72	1	No Gas	893.016	ug/l	1453016.39
V	51	72	1	No Gas	24.666	ug/l	522598.79
V	51	72	3	He	22.964	ug/l	130615.94
Cr	52	72	1	No Gas	23.737	ug/l	512501.15
Cr	52	72	3	He	23.723	ug/l	148267.49
Mn	55	72	1	No Gas	22.080	ug/l	699384.36
Mn	55	72	3	He	22.976	ug/l	103474.49
Fe	56	72	2	H2	112874.173	ug/l	2468328668.39
Fe	56	72	3	He	113618.966	ug/l	654763293.56
Co	59	72	1	No Gas	22.458	ug/l	587235.90
Ni	60	72	1	No Gas	22.292	ug/l	132317.47
Ni	60	72	3	He	22.953	ug/l	55183.72
Cu	63	72	1	No Gas	22.951	ug/l	353527.39
Cu	63	72	3	He	23.154	ug/l	146118.97
Cu	65	72	1	No Gas	22.144	ug/l	166700.39
Zn	66	72	1	No Gas	11.839	ug/l	60409.36
Zn	66	72	3	He	11.581	ug/l	15959.89
As	75	72	1	No Gas	10.872	ug/l	72604.58
As	75	72	3	He	11.765	ug/l	13471.95
Se	78	72	2	H2	11.444	ug/l	8751.41
Br	79	72	1	No Gas	84.464	ug/l	14974.81
Br	79	72	2	H2	24.501	ug/l	7250.81
Se	82	72	1	No Gas	11.405	ug/l	5073.12
Kr	84	72	1	No Gas		ug/l	13646.04
Sr	88	72	1	No Gas	1.466	ug/l	86674.96
Sr	88	72	3	He	1.424	ug/l	11544.69
Mo	95	115	1	No Gas	868.036	ug/l	10961628.52
Mo	95	115	3	He	903.816	ug/l	4047359.66
Mo	98	115	1	No Gas	839.889	ug/l	17818443.55
Ag	107	115	1	No Gas	5.181	ug/l	180371.58
Ag	109	115	1	No Gas	5.171	ug/l	175331.12
Cd	111	115	1	No Gas	10.514	ug/l	80703.17

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	11.479	ug/l	26617.28
Cd	114	115	1	No Gas	10.686	ug/l	184248.59
Cd	114	115	3	He	11.354	ug/l	64408.76
Sn	118	115	1	No Gas	0.075	ug/l	4751.41
Sn	118	115	3	He	0.091	ug/l	1360.08
Sb	121	115	1	No Gas	0.041	ug/l	2021.68
Sb	121	115	3	He	0.040	ug/l	498.06
Sb	123	115	1	No Gas	0.041	ug/l	1556.91
Sb	123	115	3	He	0.044	ug/l	411.38
Ba	135	115	1	No Gas	0.066	ug/l	781.81
Ba	137	115	1	No Gas	0.062	ug/l	1197.68
La	139	115	3	He	0.011	ug/l	404.45
Ce	140	115	3	He	0.003	ug/l	207.78
Hg	201	209	1	No Gas	-0.003	ug/l	144.97
Hg	202	209	1	No Gas	0.000	ug/l	400.93
Hg	202	209	3	He	-0.003	ug/l	160.64
Tl	203	209	3	He	0.131	ug/l	2797.42
Tl	205	209	1	No Gas	0.067	ug/l	12016.82
Tl	205	209	3	He	0.124	ug/l	6518.89
[Pb]	206	209	1	No Gas	0.031	ug/l	2197.98
[Pb]	207	209	1	No Gas	0.030	ug/l	1922.37
Pb	208	209	1	No Gas	0.031	ug/l	8696.73
Th	232	209	3	He	0.015	ug/l	803.68
U	238	209	1	No Gas	0.005	ug/l	743.21

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3445605.96	96.1
Sc	45	2	H2	3021139.89	90.0
Sc	45	3	He	380597.78	88.5
Ge	72	1	No Gas	1398639.63	92.6
Ge	72	2	H2	1182708.84	89.0
Ge	72	3	He	273575.01	86.6
In	115	1	No Gas	15575999.10	91.8
In	115	3	He	3547299.01	84.2
Tb	159	1	No Gas	20305132.54	94.0
Tb	159	3	He	7262970.37	85.9
Ho	165	1	No Gas	19947566.24	92.2
Ho	165	3	He	7319691.20	86.5
Lu	175	1	No Gas	20350675.38	92.7
Lu	175	3	He	6206893.45	87.7
Bi	209	1	No Gas	14031698.16	85.3
Bi	209	3	He	5366539.94	81.0

# ICPMS207-B Analytical Data

**Sample Name** Rinse  
**File Name** 024BLKV.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 13:57:03  
**Sample Type** BlkVrfy  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	1.897	ug/l	8680.63
Be	9	45	1	No Gas	0.011	ug/l	35.32
B	11	45	1	No Gas	-0.123	ug/l	2011.61
Na	23	45	3	He	21.156	ug/l	43960.81
Mg	24	45	3	He	1.209	ug/l	1194.35
Al	27	45	1	No Gas	0.153	ug/l	22981.11
Si	28	45	2	H2	-0.075	ug/l	5610.65
K	39	72	3	He	14.438	ug/l	73439.09
Ca	40	72	2	H2	2.719	ug/l	105523.02
Ti	47	72	1	No Gas	0.041	ug/l	178.51
V	51	72	1	No Gas	-0.312	ug/l	-6845.33
V	51	72	3	He	-0.221	ug/l	3291.50
Cr	52	72	1	No Gas	-0.121	ug/l	19071.31
Cr	52	72	3	He	0.000	ug/l	510.01
Mn	55	72	1	No Gas	-0.033	ug/l	4694.79
Mn	55	72	3	He	-0.009	ug/l	202.30
Fe	56	72	2	H2	2.578	ug/l	85145.42
Fe	56	72	3	He	2.247	ug/l	23179.96
Co	59	72	1	No Gas	0.002	ug/l	449.12
Ni	60	72	1	No Gas	0.023	ug/l	479.06
Ni	60	72	3	He	0.010	ug/l	146.67
Cu	63	72	1	No Gas	0.058	ug/l	3603.23
Cu	63	72	3	He	0.030	ug/l	1160.81
Cu	65	72	1	No Gas	0.045	ug/l	1643.42
Zn	66	72	1	No Gas	-0.032	ug/l	987.95
Zn	66	72	3	He	0.002	ug/l	270.00
As	75	72	1	No Gas	-0.016	ug/l	8287.24
As	75	72	3	He	-0.021	ug/l	132.07
Se	78	72	2	H2	0.008	ug/l	36.00
Br	79	72	1	No Gas	-32.271	ug/l	10659.54
Br	79	72	2	H2	-20.296	ug/l	6162.45
Se	82	72	1	No Gas	-0.352	ug/l	465.68
Kr	84	72	1	No Gas		ug/l	13186.57
Sr	88	72	1	No Gas	-0.001	ug/l	1557.00
Sr	88	72	3	He	0.002	ug/l	337.79
Mo	95	115	1	No Gas	0.196	ug/l	2911.43
Mo	95	115	3	He	0.226	ug/l	1245.62
Mo	98	115	1	No Gas	0.194	ug/l	4836.42
Ag	107	115	1	No Gas	-0.002	ug/l	2692.01
Ag	109	115	1	No Gas	-0.001	ug/l	2643.32
Cd	111	115	1	No Gas	-0.007	ug/l	-41.85



# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.003	ug/l	21.67
Cd	114	115	1	No Gas	0.000	ug/l	-176.08
Cd	114	115	3	He	0.002	ug/l	56.59
Sn	118	115	1	No Gas	0.004	ug/l	3400.39
Sn	118	115	3	He	-0.002	ug/l	916.70
Sb	121	115	1	No Gas	0.011	ug/l	1049.15
Sb	121	115	3	He	0.007	ug/l	244.36
Sb	123	115	1	No Gas	0.011	ug/l	814.11
Sb	123	115	3	He	0.012	ug/l	222.36
Ba	135	115	1	No Gas	-0.010	ug/l	289.43
Ba	137	115	1	No Gas	-0.009	ug/l	399.22
La	139	115	3	He	0.000	ug/l	50.00
Ce	140	115	3	He	0.001	ug/l	148.89
Hg	201	209	1	No Gas	-0.008	ug/l	139.31
Hg	202	209	1	No Gas	-0.007	ug/l	387.60
Hg	202	209	3	He	-0.005	ug/l	183.63
Tl	203	209	3	He	0.086	ug/l	2702.03
Tl	205	209	1	No Gas	0.038	ug/l	11685.33
Tl	205	209	3	He	0.089	ug/l	6616.31
[Pb]	206	209	1	No Gas	0.012	ug/l	2036.84
[Pb]	207	209	1	No Gas	0.008	ug/l	1701.23
Pb	208	209	1	No Gas	0.011	ug/l	7928.76
Th	232	209	3	He	0.005	ug/l	518.89
U	238	209	1	No Gas	0.002	ug/l	555.57

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3901823.41	108.8
Sc	45	2	H2	3405457.64	101.4
Sc	45	3	He	435776.21	101.3
Ge	72	1	No Gas	1597546.27	105.8
Ge	72	2	H2	1315266.09	99.0
Ge	72	3	He	306089.21	96.9
In	115	1	No Gas	16967099.43	100.0
In	115	3	He	4099547.36	97.3
Tb	159	1	No Gas	21405223.63	99.1
Tb	159	3	He	8173589.24	96.7
Ho	165	1	No Gas	21113525.49	97.5
Ho	165	3	He	8337495.23	98.5
Lu	175	1	No Gas	21399079.79	97.4
Lu	175	3	He	6920535.66	97.8
Bi	209	1	No Gas	16431849.53	99.9
Bi	209	3	He	6342325.91	95.7

# ICPMS207-B Analytical Data

**Sample Name** Rinse  
**File Name** 025BLKV.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 14:03:12  
**Sample Type** BlkVrfy  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	1.423	ug/l	7523.55
Be	9	45	1	No Gas	0.008	ug/l	31.33
B	11	45	1	No Gas	-0.473	ug/l	1780.83
Na	23	45	3	He	11.882	ug/l	34840.28
Mg	24	45	3	He	0.827	ug/l	984.75
Al	27	45	1	No Gas	-0.327	ug/l	18828.65
Si	28	45	2	H2	-0.050	ug/l	5505.23
K	39	72	3	He	9.534	ug/l	70667.98
Ca	40	72	2	H2	1.139	ug/l	90807.14
Ti	47	72	1	No Gas	0.033	ug/l	160.16
V	51	72	1	No Gas	0.054	ug/l	1815.18
V	51	72	3	He	-0.213	ug/l	3361.52
Cr	52	72	1	No Gas	-0.102	ug/l	19157.85
Cr	52	72	3	He	0.002	ug/l	528.90
Mn	55	72	1	No Gas	-0.037	ug/l	4478.48
Mn	55	72	3	He	-0.010	ug/l	195.96
Fe	56	72	2	H2	1.246	ug/l	53097.02
Fe	56	72	3	He	1.209	ug/l	16562.71
Co	59	72	1	No Gas	-0.001	ug/l	372.60
Ni	60	72	1	No Gas	0.019	ug/l	445.79
Ni	60	72	3	He	0.015	ug/l	162.23
Cu	63	72	1	No Gas	-0.002	ug/l	2506.56
Cu	63	72	3	He	-0.002	ug/l	944.84
Cu	65	72	1	No Gas	-0.005	ug/l	1193.87
Zn	66	72	1	No Gas	-0.044	ug/l	904.75
Zn	66	72	3	He	0.000	ug/l	268.89
As	75	72	1	No Gas	0.391	ug/l	10896.77
As	75	72	3	He	-0.023	ug/l	129.60
Se	78	72	2	H2	0.007	ug/l	35.33
Br	79	72	1	No Gas	-28.065	ug/l	10702.75
Br	79	72	2	H2	-21.720	ug/l	6139.16
Se	82	72	1	No Gas	0.095	ug/l	656.61
Kr	84	72	1	No Gas		ug/l	20453.97
Sr	88	72	1	No Gas	-0.006	ug/l	1240.94
Sr	88	72	3	He	-0.003	ug/l	295.56
Mo	95	115	1	No Gas	0.049	ug/l	926.71
Mo	95	115	3	He	0.076	ug/l	470.01
Mo	98	115	1	No Gas	0.051	ug/l	1578.50
Ag	107	115	1	No Gas	-0.003	ug/l	2712.02
Ag	109	115	1	No Gas	-0.003	ug/l	2619.96
Cd	111	115	1	No Gas	0.002	ug/l	33.06

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.001	ug/l	16.56
Cd	114	115	1	No Gas	0.003	ug/l	-115.18
Cd	114	115	3	He	0.000	ug/l	40.63
Sn	118	115	1	No Gas	0.000	ug/l	3393.69
Sn	118	115	3	He	0.006	ug/l	976.72
Sb	121	115	1	No Gas	0.004	ug/l	791.77
Sb	121	115	3	He	0.004	ug/l	218.69
Sb	123	115	1	No Gas	0.004	ug/l	633.75
Sb	123	115	3	He	0.004	ug/l	160.68
Ba	135	115	1	No Gas	-0.015	ug/l	259.49
Ba	137	115	1	No Gas	-0.009	ug/l	409.20
La	139	115	3	He	0.000	ug/l	45.56
Ce	140	115	3	He	0.000	ug/l	106.66
Hg	201	209	1	No Gas	-0.007	ug/l	145.31
Hg	202	209	1	No Gas	-0.005	ug/l	411.26
Hg	202	209	3	He	-0.007	ug/l	174.97
Tl	203	209	3	He	0.048	ug/l	2241.10
Tl	205	209	1	No Gas	0.008	ug/l	9075.44
Tl	205	209	3	He	0.041	ug/l	5186.44
[Pb]	206	209	1	No Gas	0.012	ug/l	2003.50
[Pb]	207	209	1	No Gas	0.008	ug/l	1676.79
Pb	208	209	1	No Gas	0.011	ug/l	7866.53
Th	232	209	3	He	0.003	ug/l	434.18
U	238	209	1	No Gas	0.001	ug/l	388.93

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3952638.57	110.3
Sc	45	2	H2	3309478.63	98.5
Sc	45	3	He	425038.35	98.8
Ge	72	1	No Gas	1567945.67	103.8
Ge	72	2	H2	1323973.37	99.6
Ge	72	3	He	307784.26	97.4
In	115	1	No Gas	17469629.07	102.9
In	115	3	He	4119975.77	97.8
Tb	159	1	No Gas	21546391.26	99.8
Tb	159	3	He	8125683.73	96.1
Ho	165	1	No Gas	21320358.57	98.5
Ho	165	3	He	8272533.39	97.7
Lu	175	1	No Gas	21788011.20	99.2
Lu	175	3	He	6910222.79	97.7
Bi	209	1	No Gas	16234822.04	98.7
Bi	209	3	He	6507590.20	98.2

# ICPMS207-B Analytical Data

**Sample Name** CCV  
**File Name** 026\_CCV.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 14:09:22  
**Sample Type** CCV  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	614.073	ug/l	1565657.34
Be	9	45	1	No Gas	53.548	ug/l	67624.73
B	11	45	1	No Gas	51.792	ug/l	38344.19
Na	23	45	3	He	12654.260	ug/l	11007430.25
Mg	24	45	3	He	12579.498	ug/l	5935257.35
Al	27	45	1	No Gas	51.211	ug/l	472256.78
Si	28	45	2	H2	210.976	ug/l	418542.28
K	39	72	3	He	12659.087	ug/l	8110803.21
Ca	40	72	2	H2	12514.565	ug/l	119882719.33
Ti	47	72	1	No Gas	50.965	ug/l	92276.98
V	51	72	1	No Gas	52.129	ug/l	1227529.36
V	51	72	3	He	54.197	ug/l	334497.72
Cr	52	72	1	No Gas	53.422	ug/l	1254547.38
Cr	52	72	3	He	53.526	ug/l	369027.35
Mn	55	72	1	No Gas	51.700	ug/l	1810828.30
Mn	55	72	3	He	53.750	ug/l	267174.13
Fe	56	72	2	H2	1310.748	ug/l	31443413.14
Fe	56	72	3	He	1325.809	ug/l	8443722.28
Co	59	72	1	No Gas	53.253	ug/l	1546117.56
Ni	60	72	1	No Gas	52.689	ug/l	346830.02
Ni	60	72	3	He	54.704	ug/l	145111.91
Cu	63	72	1	No Gas	53.077	ug/l	904552.11
Cu	63	72	3	He	56.250	ug/l	390967.35
Cu	65	72	1	No Gas	53.828	ug/l	448235.31
Zn	66	72	1	No Gas	55.108	ug/l	308111.30
Zn	66	72	3	He	55.030	ug/l	82839.28
As	75	72	1	No Gas	51.392	ug/l	350787.25
As	75	72	3	He	53.188	ug/l	66754.50
Se	78	72	2	H2	53.167	ug/l	44453.27
Br	79	72	1	No Gas	-7.372	ug/l	11708.19
Br	79	72	2	H2	1.192	ug/l	6971.23
Se	82	72	1	No Gas	52.695	ug/l	23814.51
Kr	84	72	1	No Gas		ug/l	41363.85
Sr	88	72	1	No Gas	53.911	ug/l	3482510.80
Sr	88	72	3	He	52.782	ug/l	461235.62
Mo	95	115	1	No Gas	53.506	ug/l	708305.58
Mo	95	115	3	He	51.185	ug/l	254850.25
Mo	98	115	1	No Gas	52.450	ug/l	1166357.79
Ag	107	115	1	No Gas	21.305	ug/l	769109.90
Ag	109	115	1	No Gas	21.217	ug/l	746066.12
Cd	111	115	1	No Gas	53.194	ug/l	427772.31

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	53.106	ug/l	136772.05
Cd	114	115	1	No Gas	53.128	ug/l	960406.23
Cd	114	115	3	He	53.200	ug/l	335142.58
Sn	118	115	1	No Gas	53.144	ug/l	1285532.87
Sn	118	115	3	He	51.990	ug/l	350630.60
Sb	121	115	1	No Gas	52.437	ug/l	1936092.74
Sb	121	115	3	He	51.767	ug/l	504737.61
Sb	123	115	1	No Gas	53.057	ug/l	1498928.42
Sb	123	115	3	He	51.988	ug/l	400091.61
Ba	135	115	1	No Gas	55.235	ug/l	393366.29
Ba	137	115	1	No Gas	55.350	ug/l	672994.63
La	139	115	3	He	48.886	ug/l	1793424.30
Ce	140	115	3	He	49.612	ug/l	1936860.39
Hg	201	209	1	No Gas	0.950	ug/l	4950.93
Hg	202	209	1	No Gas	0.939	ug/l	11085.71
Hg	202	209	3	He	0.932	ug/l	4525.20
Tl	203	209	3	He	49.194	ug/l	657666.17
Tl	205	209	1	No Gas	49.645	ug/l	3882020.43
Tl	205	209	3	He	50.379	ug/l	1583479.44
[Pb]	206	209	1	No Gas	50.841	ug/l	1369363.33
[Pb]	207	209	1	No Gas	51.258	ug/l	1197713.87
Pb	208	209	1	No Gas	51.953	ug/l	5508007.23
Th	232	209	3	He	53.224	ug/l	2339620.90
U	238	209	1	No Gas	51.822	ug/l	5350647.57

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3761591.37	104.9
Sc	45	2	H2	3286105.64	97.8
Sc	45	3	He	425727.05	99.0
Ge	72	1	No Gas	1553440.65	102.9
Ge	72	2	H2	1296315.32	97.5
Ge	72	3	He	301637.83	95.5
In	115	1	No Gas	16337433.39	96.3
In	115	3	He	3930793.48	93.3
Tb	159	1	No Gas	21683311.92	100.4
Tb	159	3	He	8028950.12	95.0
Ho	165	1	No Gas	21540072.86	99.5
Ho	165	3	He	7975401.32	94.2
Lu	175	1	No Gas	21592928.00	98.3
Lu	175	3	He	6716909.12	94.9
Bi	209	1	No Gas	15609029.70	94.9
Bi	209	3	He	6207536.23	93.7

# ICPMS207-B Analytical Data

**Sample Name** CCB  
**File Name** 027\_CCB.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 14:15:21  
**Sample Type** CCB  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	1.560	ug/l	7897.22
Be	9	45	1	No Gas	0.016	ug/l	41.32
B	11	45	1	No Gas	0.043	ug/l	2162.36
Na	23	45	3	He	7.810	ug/l	31430.56
Mg	24	45	3	He	1.216	ug/l	1171.06
Al	27	45	1	No Gas	0.477	ug/l	26301.09
Si	28	45	2	H2	-0.085	ug/l	5553.94
K	39	72	3	He	11.812	ug/l	71833.56
Ca	40	72	2	H2	1.461	ug/l	93101.26
Ti	47	72	1	No Gas	0.033	ug/l	161.83
V	51	72	1	No Gas	-0.266	ug/l	-5755.81
V	51	72	3	He	-0.103	ug/l	4030.58
Cr	52	72	1	No Gas	-0.017	ug/l	21149.99
Cr	52	72	3	He	0.004	ug/l	536.68
Mn	55	72	1	No Gas	-0.015	ug/l	5250.56
Mn	55	72	3	He	-0.008	ug/l	203.96
Fe	56	72	2	H2	1.214	ug/l	51858.08
Fe	56	72	3	He	1.115	ug/l	15884.57
Co	59	72	1	No Gas	0.003	ug/l	482.39
Ni	60	72	1	No Gas	0.015	ug/l	419.17
Ni	60	72	3	He	0.012	ug/l	153.33
Cu	63	72	1	No Gas	-0.005	ug/l	2455.86
Cu	63	72	3	He	0.005	ug/l	990.84
Cu	65	72	1	No Gas	-0.004	ug/l	1201.87
Zn	66	72	1	No Gas	-0.028	ug/l	994.58
Zn	66	72	3	He	-0.007	ug/l	256.67
As	75	72	1	No Gas	0.205	ug/l	9638.96
As	75	72	3	He	0.001	ug/l	159.60
Se	78	72	2	H2	0.027	ug/l	51.67
Br	79	72	1	No Gas	-32.895	ug/l	10446.42
Br	79	72	2	H2	-19.208	ug/l	6195.72
Se	82	72	1	No Gas	-0.070	ug/l	583.54
Kr	84	72	1	No Gas		ug/l	18828.21
Sr	88	72	1	No Gas	-0.002	ug/l	1493.79
Sr	88	72	3	He	0.000	ug/l	324.45
Mo	95	115	1	No Gas	0.032	ug/l	678.91
Mo	95	115	3	He	0.040	ug/l	277.78
Mo	98	115	1	No Gas	0.033	ug/l	1155.75
Ag	107	115	1	No Gas	-0.001	ug/l	2759.38
Ag	109	115	1	No Gas	-0.003	ug/l	2622.63
Cd	111	115	1	No Gas	0.003	ug/l	41.03

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.004	ug/l	23.11
Cd	114	115	1	No Gas	0.004	ug/l	-98.14
Cd	114	115	3	He	0.002	ug/l	50.82
Sn	118	115	1	No Gas	0.012	ug/l	3696.51
Sn	118	115	3	He	0.009	ug/l	990.04
Sb	121	115	1	No Gas	0.046	ug/l	2447.46
Sb	121	115	3	He	0.034	ug/l	512.73
Sb	123	115	1	No Gas	0.047	ug/l	1918.99
Sb	123	115	3	He	0.032	ug/l	376.04
Ba	135	115	1	No Gas	-0.012	ug/l	276.12
Ba	137	115	1	No Gas	0.001	ug/l	542.27
La	139	115	3	He	0.001	ug/l	84.45
Ce	140	115	3	He	0.001	ug/l	138.89
Hg	201	209	1	No Gas	-0.004	ug/l	161.30
Hg	202	209	1	No Gas	-0.002	ug/l	445.59
Hg	202	209	3	He	-0.003	ug/l	196.63
Tl	203	209	3	He	0.359	ug/l	6613.64
Tl	205	209	1	No Gas	0.270	ug/l	30498.75
Tl	205	209	3	He	0.372	ug/l	16157.60
[Pb]	206	209	1	No Gas	0.021	ug/l	2273.55
[Pb]	207	209	1	No Gas	0.016	ug/l	1891.26
Pb	208	209	1	No Gas	0.019	ug/l	8725.62
Th	232	209	3	He	0.015	ug/l	979.76
U	238	209	1	No Gas	0.002	ug/l	577.56

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3955023.15	110.3
Sc	45	2	H2	3385388.41	100.8
Sc	45	3	He	426680.95	99.2
Ge	72	1	No Gas	1568856.86	103.9
Ge	72	2	H2	1312230.49	98.7
Ge	72	3	He	306472.64	97.0
In	115	1	No Gas	17347291.39	102.2
In	115	3	He	4084348.58	97.0
Tb	159	1	No Gas	21791382.07	100.9
Tb	159	3	He	8291682.95	98.1
Ho	165	1	No Gas	21649220.54	100.0
Ho	165	3	He	8334958.73	98.5
Lu	175	1	No Gas	21765030.51	99.1
Lu	175	3	He	6875096.99	97.2
Bi	209	1	No Gas	16310030.80	99.2
Bi	209	3	He	6540820.57	98.7

# ICPMS207-B Analytical Data

**Sample Name** MB-162587  
**File Name** 028ARef.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 14:21:33  
**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	1.933	ug/l	8453.07
Be	9	45	1	No Gas	0.020	ug/l	44.99
B	11	45	1	No Gas	0.685	ug/l	2504.55
Na	23	45	3	He	20.750	ug/l	40928.86
Mg	24	45	3	He	1.449	ug/l	1230.95
Al	27	45	1	No Gas	0.775	ug/l	27614.45
Si	28	45	2	H2	17.013	ug/l	37334.79
K	39	72	3	He	12.038	ug/l	69938.03
Ca	40	72	2	H2	8.152	ug/l	152766.39
Ti	47	72	1	No Gas	0.308	ug/l	640.66
V	51	72	1	No Gas	0.044	ug/l	1616.77
V	51	72	3	He	0.443	ug/l	7192.92
Cr	52	72	1	No Gas	0.511	ug/l	32364.77
Cr	52	72	3	He	0.043	ug/l	792.25
Mn	55	72	1	No Gas	0.243	ug/l	13882.40
Mn	55	72	3	He	0.079	ug/l	627.55
Fe	56	72	2	H2	1.532	ug/l	57632.08
Fe	56	72	3	He	1.740	ug/l	19360.57
Co	59	72	1	No Gas	0.057	ug/l	2006.17
Ni	60	72	1	No Gas	0.026	ug/l	475.73
Ni	60	72	3	He	0.019	ug/l	167.78
Cu	63	72	1	No Gas	0.158	ug/l	5082.27
Cu	63	72	3	He	0.205	ug/l	2332.73
Cu	65	72	1	No Gas	0.139	ug/l	2317.79
Zn	66	72	1	No Gas	0.119	ug/l	1763.03
Zn	66	72	3	He	0.146	ug/l	475.57
As	75	72	1	No Gas	0.187	ug/l	9195.59
As	75	72	3	He	0.086	ug/l	260.60
Se	78	72	2	H2	0.028	ug/l	50.78
Br	79	72	1	No Gas	146.574	ug/l	19497.87
Br	79	72	2	H2	145.380	ug/l	12733.70
Se	82	72	1	No Gas	0.312	ug/l	727.29
Kr	84	72	1	No Gas		ug/l	19914.24
Sr	88	72	1	No Gas	0.006	ug/l	1919.66
Sr	88	72	3	He	0.011	ug/l	410.01
Mo	95	115	1	No Gas	0.034	ug/l	661.13
Mo	95	115	3	He	0.043	ug/l	284.45
Mo	98	115	1	No Gas	0.034	ug/l	1104.50
Ag	107	115	1	No Gas	-0.069	ug/l	156.06
Ag	109	115	1	No Gas	-0.069	ug/l	160.73
Cd	111	115	1	No Gas	0.006	ug/l	62.94



# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.002	ug/l	18.55
Cd	114	115	1	No Gas	0.016	ug/l	126.34
Cd	114	115	3	He	-0.001	ug/l	32.77
Sn	118	115	1	No Gas	0.265	ug/l	9594.31
Sn	118	115	3	He	0.320	ug/l	3094.80
Sb	121	115	1	No Gas	0.025	ug/l	1510.57
Sb	121	115	3	He	0.021	ug/l	372.71
Sb	123	115	1	No Gas	0.023	ug/l	1124.83
Sb	123	115	3	He	0.028	ug/l	337.04
Ba	135	115	1	No Gas	0.002	ug/l	359.30
Ba	137	115	1	No Gas	0.007	ug/l	578.87
La	139	115	3	He	0.001	ug/l	85.55
Ce	140	115	3	He	0.002	ug/l	198.89
Hg	201	209	1	No Gas	0.044	ug/l	394.26
Hg	202	209	1	No Gas	0.047	ug/l	981.18
Hg	202	209	3	He	0.065	ug/l	512.91
Tl	203	209	3	He	0.247	ug/l	4883.53
Tl	205	209	1	No Gas	0.159	ug/l	20488.51
Tl	205	209	3	He	0.241	ug/l	11472.88
[Pb]	206	209	1	No Gas	0.066	ug/l	3381.57
[Pb]	207	209	1	No Gas	0.066	ug/l	2968.14
Pb	208	209	1	No Gas	0.066	ug/l	13383.83
Th	232	209	3	He	0.058	ug/l	2882.15
U	238	209	1	No Gas	0.001	ug/l	420.59

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3758738.79	104.9
Sc	45	2	H2	3154552.62	93.9
Sc	45	3	He	409150.36	95.1
Ge	72	1	No Gas	1516883.97	100.5
Ge	72	2	H2	1269225.93	95.5
Ge	72	3	He	297821.74	94.3
In	115	1	No Gas	16355645.73	96.4
In	115	3	He	3991837.42	94.8
Tb	159	1	No Gas	21089453.71	97.7
Tb	159	3	He	8116578.06	96.0
Ho	165	1	No Gas	20770068.92	96.0
Ho	165	3	He	8053575.32	95.1
Lu	175	1	No Gas	20527258.20	93.5
Lu	175	3	He	6760848.84	95.6
Bi	209	1	No Gas	15614983.51	95.0
Bi	209	3	He	6330947.69	95.5

# ICPMS207-B Analytical Data

**Sample Name** MB-162611  
**File Name** 029ARef.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 14:27:42  
**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	1.396	ug/l	7071.15
Be	9	45	1	No Gas	0.015	ug/l	38.66
B	11	45	1	No Gas	0.368	ug/l	2279.76
Na	23	45	3	He	16.569	ug/l	37864.16
Mg	24	45	3	He	1.255	ug/l	1147.78
Al	27	45	1	No Gas	0.406	ug/l	24325.59
Si	28	45	2	H2	16.936	ug/l	38597.93
K	39	72	3	He	8.058	ug/l	68108.43
Ca	40	72	2	H2	13.341	ug/l	202295.74
Ti	47	72	1	No Gas	0.261	ug/l	573.93
V	51	72	1	No Gas	0.149	ug/l	3851.29
V	51	72	3	He	0.325	ug/l	6550.39
Cr	52	72	1	No Gas	0.344	ug/l	29344.57
Cr	52	72	3	He	0.059	ug/l	905.59
Mn	55	72	1	No Gas	0.277	ug/l	15417.64
Mn	55	72	3	He	0.108	ug/l	776.20
Fe	56	72	2	H2	1.282	ug/l	51980.43
Fe	56	72	3	He	1.399	ug/l	17384.48
Co	59	72	1	No Gas	0.088	ug/l	2961.10
Ni	60	72	1	No Gas	0.034	ug/l	535.61
Ni	60	72	3	He	0.017	ug/l	164.45
Cu	63	72	1	No Gas	0.183	ug/l	5634.69
Cu	63	72	3	He	0.233	ug/l	2543.38
Cu	65	72	1	No Gas	0.175	ug/l	2680.00
Zn	66	72	1	No Gas	0.660	ug/l	4827.67
Zn	66	72	3	He	0.703	ug/l	1312.29
As	75	72	1	No Gas	0.449	ug/l	11177.42
As	75	72	3	He	0.064	ug/l	235.67
Se	78	72	2	H2	0.017	ug/l	42.56
Br	79	72	1	No Gas	134.668	ug/l	19351.27
Br	79	72	2	H2	130.919	ug/l	12194.39
Se	82	72	1	No Gas	0.111	ug/l	657.81
Kr	84	72	1	No Gas		ug/l	18671.75
Sr	88	72	1	No Gas	0.008	ug/l	2079.37
Sr	88	72	3	He	0.018	ug/l	475.57
Mo	95	115	1	No Gas	0.023	ug/l	512.24
Mo	95	115	3	He	0.039	ug/l	263.34
Mo	98	115	1	No Gas	0.021	ug/l	825.58
Ag	107	115	1	No Gas	-0.070	ug/l	124.05
Ag	109	115	1	No Gas	-0.069	ug/l	162.07
Cd	111	115	1	No Gas	0.006	ug/l	62.24

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.002	ug/l	19.56
Cd	114	115	1	No Gas	0.015	ug/l	104.49
Cd	114	115	3	He	-0.001	ug/l	31.95
Sn	118	115	1	No Gas	0.278	ug/l	9897.31
Sn	118	115	3	He	0.321	ug/l	3075.91
Sb	121	115	1	No Gas	0.015	ug/l	1164.84
Sb	121	115	3	He	0.017	ug/l	339.71
Sb	123	115	1	No Gas	0.015	ug/l	912.46
Sb	123	115	3	He	0.019	ug/l	271.36
Ba	135	115	1	No Gas	-0.006	ug/l	306.06
Ba	137	115	1	No Gas	0.012	ug/l	645.41
La	139	115	3	He	0.001	ug/l	82.22
Ce	140	115	3	He	0.002	ug/l	167.78
Hg	201	209	1	No Gas	0.058	ug/l	466.92
Hg	202	209	1	No Gas	0.064	ug/l	1183.15
Hg	202	209	3	He	0.079	ug/l	591.23
Tl	203	209	3	He	0.155	ug/l	3717.35
Tl	205	209	1	No Gas	0.105	ug/l	16430.41
Tl	205	209	3	He	0.158	ug/l	9028.72
[Pb]	206	209	1	No Gas	0.066	ug/l	3392.68
[Pb]	207	209	1	No Gas	0.066	ug/l	2992.58
Pb	208	209	1	No Gas	0.068	ug/l	13606.15
Th	232	209	3	He	0.028	ug/l	1604.75
U	238	209	1	No Gas	0.000	ug/l	347.60

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3752350.50	104.7
Sc	45	2	H2	3275158.11	97.5
Sc	45	3	He	415287.38	96.6
Ge	72	1	No Gas	1556573.96	103.1
Ge	72	2	H2	1274834.02	95.9
Ge	72	3	He	300954.38	95.3
In	115	1	No Gas	16328888.86	96.2
In	115	3	He	3974863.60	94.4
Tb	159	1	No Gas	21409086.88	99.2
Tb	159	3	He	8169294.79	96.7
Ho	165	1	No Gas	21298072.74	98.4
Ho	165	3	He	8338900.01	98.5
Lu	175	1	No Gas	21359707.08	97.3
Lu	175	3	He	6979382.73	98.6
Bi	209	1	No Gas	15694028.65	95.4
Bi	209	3	He	6482956.98	97.8

# ICPMS207-B Analytical Data

**Sample Name** MB-162627  
**File Name** 030ARef.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 14:33:53  
**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	1.213	ug/l	6367.23
Be	9	45	1	No Gas	0.009	ug/l	29.99
B	11	45	1	No Gas	0.032	ug/l	1972.92
Na	23	45	3	He	13.156	ug/l	35339.23
Mg	24	45	3	He	1.410	ug/l	1237.61
Al	27	45	1	No Gas	1.157	ug/l	29849.99
Si	28	45	2	H2	15.578	ug/l	35988.35
K	39	72	3	He	6.180	ug/l	67323.82
Ca	40	72	2	H2	10.800	ug/l	179859.24
Ti	47	72	1	No Gas	0.259	ug/l	545.56
V	51	72	1	No Gas	0.137	ug/l	3564.57
V	51	72	3	He	0.315	ug/l	6524.82
Cr	52	72	1	No Gas	0.354	ug/l	28461.33
Cr	52	72	3	He	0.052	ug/l	861.14
Mn	55	72	1	No Gas	0.281	ug/l	14984.65
Mn	55	72	3	He	0.112	ug/l	799.86
Fe	56	72	2	H2	2.602	ug/l	83789.90
Fe	56	72	3	He	2.635	ug/l	25385.78
Co	59	72	1	No Gas	0.098	ug/l	3110.84
Ni	60	72	1	No Gas	0.042	ug/l	568.89
Ni	60	72	3	He	0.050	ug/l	251.11
Cu	63	72	1	No Gas	0.148	ug/l	4840.75
Cu	63	72	3	He	0.196	ug/l	2302.39
Cu	65	72	1	No Gas	0.144	ug/l	2327.79
Zn	66	72	1	No Gas	0.117	ug/l	1723.08
Zn	66	72	3	He	0.126	ug/l	454.45
As	75	72	1	No Gas	0.640	ug/l	11972.09
As	75	72	3	He	0.062	ug/l	235.00
Se	78	72	2	H2	0.016	ug/l	41.67
Br	79	72	1	No Gas	129.897	ug/l	18378.62
Br	79	72	2	H2	121.646	ug/l	11904.65
Se	82	72	1	No Gas	0.026	ug/l	593.27
Kr	84	72	1	No Gas		ug/l	20420.62
Sr	88	72	1	No Gas	0.013	ug/l	2318.93
Sr	88	72	3	He	0.018	ug/l	481.12
Mo	95	115	1	No Gas	0.013	ug/l	410.01
Mo	95	115	3	He	0.020	ug/l	173.34
Mo	98	115	1	No Gas	0.011	ug/l	631.13
Ag	107	115	1	No Gas	-0.070	ug/l	132.72
Ag	109	115	1	No Gas	-0.069	ug/l	138.72
Cd	111	115	1	No Gas	0.005	ug/l	52.41

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.001	ug/l	16.67
Cd	114	115	1	No Gas	0.013	ug/l	79.25
Cd	114	115	3	He	0.000	ug/l	37.75
Sn	118	115	1	No Gas	0.288	ug/l	10619.67
Sn	118	115	3	He	0.315	ug/l	3091.47
Sb	121	115	1	No Gas	0.011	ug/l	1048.15
Sb	121	115	3	He	0.012	ug/l	289.70
Sb	123	115	1	No Gas	0.010	ug/l	805.77
Sb	123	115	3	He	0.013	ug/l	227.36
Ba	135	115	1	No Gas	0.042	ug/l	672.02
Ba	137	115	1	No Gas	0.052	ug/l	1191.03
La	139	115	3	He	0.001	ug/l	84.45
Ce	140	115	3	He	0.002	ug/l	170.00
Hg	201	209	1	No Gas	0.065	ug/l	505.24
Hg	202	209	1	No Gas	0.069	ug/l	1250.48
Hg	202	209	3	He	0.082	ug/l	604.89
Tl	203	209	3	He	0.131	ug/l	3369.79
Tl	205	209	1	No Gas	0.095	ug/l	15804.00
Tl	205	209	3	He	0.137	ug/l	8303.93
[Pb]	206	209	1	No Gas	0.069	ug/l	3520.49
[Pb]	207	209	1	No Gas	0.064	ug/l	2967.02
Pb	208	209	1	No Gas	0.069	ug/l	13870.71
Th	232	209	3	He	0.020	ug/l	1223.22
U	238	209	1	No Gas	0.000	ug/l	310.27

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3658891.95	102.1
Sc	45	2	H2	3277086.01	97.6
Sc	45	3	He	417914.38	97.2
Ge	72	1	No Gas	1499646.83	99.3
Ge	72	2	H2	1285432.62	96.7
Ge	72	3	He	302564.51	95.8
In	115	1	No Gas	17179624.17	101.2
In	115	3	He	4036216.21	95.8
Tb	159	1	No Gas	21929987.13	101.6
Tb	159	3	He	8359008.40	98.9
Ho	165	1	No Gas	21783138.20	100.6
Ho	165	3	He	8319081.60	98.3
Lu	175	1	No Gas	21924019.29	99.8
Lu	175	3	He	6891136.57	97.4
Bi	209	1	No Gas	15931155.70	96.9
Bi	209	3	He	6465974.05	97.6

# ICPMS207-B Analytical Data

**Sample Name** MB-162695  
**File Name** 031ARef.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 14:40:03  
**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	1.030	ug/l	5905.52
Be	9	45	1	No Gas	0.013	ug/l	33.99
B	11	45	1	No Gas	-0.392	ug/l	1678.77
Na	23	45	3	He	14.043	ug/l	34506.24
Mg	24	45	3	He	0.840	ug/l	928.19
Al	27	45	1	No Gas	0.432	ug/l	23588.78
Si	28	45	2	H2	12.149	ug/l	34759.71
K	39	72	3	He	6.175	ug/l	65290.41
Ca	40	72	2	H2	5.958	ug/l	156538.53
Ti	47	72	1	No Gas	0.306	ug/l	628.98
V	51	72	1	No Gas	-0.401	ug/l	-8650.31
V	51	72	3	He	0.286	ug/l	6166.88
Cr	52	72	1	No Gas	0.353	ug/l	28391.37
Cr	52	72	3	He	0.048	ug/l	813.36
Mn	55	72	1	No Gas	0.262	ug/l	14318.66
Mn	55	72	3	He	0.081	ug/l	627.22
Fe	56	72	2	H2	0.502	ug/l	39843.93
Fe	56	72	3	He	0.929	ug/l	14060.93
Co	59	72	1	No Gas	0.100	ug/l	3164.08
Ni	60	72	1	No Gas	0.025	ug/l	459.10
Ni	60	72	3	He	0.020	ug/l	166.67
Cu	63	72	1	No Gas	0.116	ug/l	4317.71
Cu	63	72	3	He	0.172	ug/l	2074.07
Cu	65	72	1	No Gas	0.128	ug/l	2201.73
Zn	66	72	1	No Gas	0.328	ug/l	2857.76
Zn	66	72	3	He	0.348	ug/l	764.47
As	75	72	1	No Gas	0.410	ug/l	10512.41
As	75	72	3	He	0.065	ug/l	231.40
Se	78	72	2	H2	0.006	ug/l	40.33
Br	79	72	1	No Gas	122.205	ug/l	17965.59
Br	79	72	2	H2	101.882	ug/l	12933.53
Se	82	72	1	No Gas	0.248	ug/l	690.61
Kr	84	72	1	No Gas		ug/l	20230.72
Sr	88	72	1	No Gas	0.005	ug/l	1856.45
Sr	88	72	3	He	0.013	ug/l	423.34
Mo	95	115	1	No Gas	0.008	ug/l	320.00
Mo	95	115	3	He	0.014	ug/l	136.67
Mo	98	115	1	No Gas	0.007	ug/l	508.90
Ag	107	115	1	No Gas	-0.070	ug/l	140.06
Ag	109	115	1	No Gas	-0.070	ug/l	121.38
Cd	111	115	1	No Gas	0.004	ug/l	48.97

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.001	ug/l	16.89
Cd	114	115	1	No Gas	0.014	ug/l	94.09
Cd	114	115	3	He	-0.003	ug/l	22.66
Sn	118	115	1	No Gas	0.299	ug/l	10559.75
Sn	118	115	3	He	0.357	ug/l	3263.73
Sb	121	115	1	No Gas	0.009	ug/l	938.13
Sb	121	115	3	He	0.009	ug/l	249.70
Sb	123	115	1	No Gas	0.009	ug/l	747.76
Sb	123	115	3	He	0.009	ug/l	183.69
Ba	135	115	1	No Gas	-0.001	ug/l	345.99
Ba	137	115	1	No Gas	0.012	ug/l	658.71
La	139	115	3	He	0.018	ug/l	712.24
Ce	140	115	3	He	0.017	ug/l	743.36
Hg	201	209	1	No Gas	0.052	ug/l	449.25
Hg	202	209	1	No Gas	0.055	ug/l	1110.83
Hg	202	209	3	He	0.078	ug/l	562.23
Tl	203	209	3	He	0.111	ug/l	2968.86
Tl	205	209	1	No Gas	0.072	ug/l	14186.67
Tl	205	209	3	He	0.109	ug/l	7072.73
[Pb]	206	209	1	No Gas	0.047	ug/l	2951.46
[Pb]	207	209	1	No Gas	0.051	ug/l	2700.29
Pb	208	209	1	No Gas	0.048	ug/l	11776.54
Th	232	209	3	He	0.034	ug/l	1783.51
U	238	209	1	No Gas	0.015	ug/l	1914.43

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3603718.85	100.5
Sc	45	2	H2	4168295.77	124.1
Sc	45	3	He	400571.00	93.1
Ge	72	1	No Gas	1495670.01	99.0
Ge	72	2	H2	1596834.96	120.1
Ge	72	3	He	294037.60	93.1
In	115	1	No Gas	16595186.39	97.8
In	115	3	He	3902824.70	92.6
Tb	159	1	No Gas	21625124.36	100.2
Tb	159	3	He	7904637.38	93.5
Ho	165	1	No Gas	21266336.63	98.3
Ho	165	3	He	8033283.31	94.9
Lu	175	1	No Gas	21444976.72	97.6
Lu	175	3	He	6784993.61	95.9
Bi	209	1	No Gas	16125127.11	98.1
Bi	209	3	He	6183418.62	93.3

# ICPMS207-B Analytical Data

**Sample Name** MB-162708  
**File Name** 032ARef.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 14:46:13  
**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	0.943	ug/l	5682.69
Be	9	45	1	No Gas	0.010	ug/l	30.99
B	11	45	1	No Gas	-0.624	ug/l	1522.69
Na	23	45	3	He	29.665	ug/l	49360.70
Mg	24	45	3	He	1.084	ug/l	1084.56
Al	27	45	1	No Gas	0.918	ug/l	27695.88
Si	28	45	2	H2	15.723	ug/l	35145.44
K	39	72	3	He	5.013	ug/l	65135.15
Ca	40	72	2	H2	7.889	ug/l	150705.17
Ti	47	72	1	No Gas	0.308	ug/l	617.30
V	51	72	1	No Gas	-0.304	ug/l	-6277.92
V	51	72	3	He	0.279	ug/l	6172.43
Cr	52	72	1	No Gas	0.325	ug/l	27194.69
Cr	52	72	3	He	0.044	ug/l	794.47
Mn	55	72	1	No Gas	0.270	ug/l	14281.94
Mn	55	72	3	He	0.087	ug/l	660.22
Fe	56	72	2	H2	0.891	ug/l	42697.99
Fe	56	72	3	He	1.062	ug/l	15012.77
Co	59	72	1	No Gas	0.101	ug/l	3144.11
Ni	60	72	1	No Gas	0.027	ug/l	465.75
Ni	60	72	3	He	0.031	ug/l	197.78
Cu	63	72	1	No Gas	0.130	ug/l	4451.81
Cu	63	72	3	He	0.174	ug/l	2103.40
Cu	65	72	1	No Gas	0.126	ug/l	2145.03
Zn	66	72	1	No Gas	0.258	ug/l	2431.83
Zn	66	72	3	He	0.296	ug/l	694.47
As	75	72	1	No Gas	0.121	ug/l	8461.32
As	75	72	3	He	0.061	ug/l	228.00
Se	78	72	2	H2	0.011	ug/l	37.45
Br	79	72	1	No Gas	120.562	ug/l	17515.89
Br	79	72	2	H2	114.442	ug/l	11498.50
Se	82	72	1	No Gas	0.063	ug/l	602.21
Kr	84	72	1	No Gas		ug/l	14468.61
Sr	88	72	1	No Gas	0.021	ug/l	2781.45
Sr	88	72	3	He	0.026	ug/l	537.79
Mo	95	115	1	No Gas	0.007	ug/l	310.01
Mo	95	115	3	He	0.015	ug/l	146.67
Mo	98	115	1	No Gas	0.006	ug/l	483.00
Ag	107	115	1	No Gas	-0.070	ug/l	129.39
Ag	109	115	1	No Gas	-0.069	ug/l	148.72
Cd	111	115	1	No Gas	0.007	ug/l	67.90



# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.001	ug/l	15.78
Cd	114	115	1	No Gas	0.015	ug/l	110.90
Cd	114	115	3	He	-0.001	ug/l	30.51
Sn	118	115	1	No Gas	0.286	ug/l	10173.54
Sn	118	115	3	He	0.311	ug/l	3059.24
Sb	121	115	1	No Gas	0.008	ug/l	913.79
Sb	121	115	3	He	0.008	ug/l	252.70
Sb	123	115	1	No Gas	0.006	ug/l	664.75
Sb	123	115	3	He	0.010	ug/l	197.69
Ba	135	115	1	No Gas	0.016	ug/l	469.08
Ba	137	115	1	No Gas	0.013	ug/l	658.71
La	139	115	3	He	0.000	ug/l	62.22
Ce	140	115	3	He	0.001	ug/l	157.78
Hg	201	209	1	No Gas	0.051	ug/l	431.92
Hg	202	209	1	No Gas	0.055	ug/l	1085.50
Hg	202	209	3	He	0.066	ug/l	523.57
Tl	203	209	3	He	0.106	ug/l	2994.21
Tl	205	209	1	No Gas	0.068	ug/l	13568.21
Tl	205	209	3	He	0.102	ug/l	7095.41
[Pb]	206	209	1	No Gas	0.282	ug/l	9237.70
[Pb]	207	209	1	No Gas	0.267	ug/l	7702.29
Pb	208	209	1	No Gas	0.275	ug/l	35694.36
Th	232	209	3	He	0.012	ug/l	845.04
U	238	209	1	No Gas	0.000	ug/l	300.61

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3603219.17	100.5
Sc	45	2	H2	3175193.99	94.5
Sc	45	3	He	417588.15	97.1
Ge	72	1	No Gas	1466796.08	97.1
Ge	72	2	H2	1272821.39	95.8
Ge	72	3	He	296004.11	93.7
In	115	1	No Gas	16504358.19	97.2
In	115	3	He	4025533.60	95.6
Tb	159	1	No Gas	21490342.92	99.5
Tb	159	3	He	8193510.10	96.9
Ho	165	1	No Gas	21238173.88	98.1
Ho	165	3	He	8326554.60	98.4
Lu	175	1	No Gas	21137555.77	96.2
Lu	175	3	He	6877117.19	97.2
Bi	209	1	No Gas	15705529.45	95.5
Bi	209	3	He	6406605.69	96.7

# ICPMS207-B Analytical Data

**Sample Name** LCS4-162587  
**File Name** 033LCS4.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 14:52:23  
**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	99.500	ug/l	235086.69
Be	9	45	1	No Gas	51.785	ug/l	59924.23
B	11	45	1	No Gas	106.787	ug/l	70430.23
Na	23	45	3	He	5216.538	ug/l	4350807.89
Mg	24	45	3	He	5334.699	ug/l	2406443.66
Al	27	45	1	No Gas	508.213	ug/l	4122840.53
Si	28	45	2	H2	1029.677	ug/l	1966378.05
K	39	72	3	He	5167.039	ug/l	3295792.87
Ca	40	72	2	H2	5156.952	ug/l	48299430.65
Ti	47	72	1	No Gas	96.148	ug/l	164088.10
V	51	72	1	No Gas	101.714	ug/l	2256722.62
V	51	72	3	He	100.969	ug/l	609970.92
Cr	52	72	1	No Gas	103.151	ug/l	2265096.45
Cr	52	72	3	He	102.038	ug/l	692273.86
Mn	55	72	1	No Gas	491.760	ug/l	16200393.69
Mn	55	72	3	He	528.076	ug/l	2582553.49
Fe	56	72	2	H2	512.701	ug/l	12027018.37
Fe	56	72	3	He	519.977	ug/l	3266440.26
Co	59	72	1	No Gas	100.866	ug/l	2761653.84
Ni	60	72	1	No Gas	101.034	ug/l	626787.64
Ni	60	72	3	He	102.384	ug/l	267408.06
Cu	63	72	1	No Gas	101.339	ug/l	1627440.45
Cu	63	72	3	He	106.866	ug/l	730758.46
Cu	65	72	1	No Gas	102.705	ug/l	805725.64
Zn	66	72	1	No Gas	98.869	ug/l	520399.97
Zn	66	72	3	He	98.277	ug/l	145501.02
As	75	72	1	No Gas	96.900	ug/l	617064.03
As	75	72	3	He	97.920	ug/l	120910.74
Se	78	72	2	H2	98.916	ug/l	80779.39
Br	79	72	1	No Gas	103.731	ug/l	16656.62
Br	79	72	2	H2	117.704	ug/l	11571.71
Se	82	72	1	No Gas	100.527	ug/l	42338.25
Kr	84	72	1	No Gas		ug/l	57129.50
Sr	88	72	1	No Gas	103.578	ug/l	6308958.24
Sr	88	72	3	He	100.969	ug/l	868230.09
Mo	95	115	1	No Gas	98.875	ug/l	1319169.95
Mo	95	115	3	He	95.950	ug/l	485434.39
Mo	98	115	1	No Gas	99.200	ug/l	2222641.30
Ag	107	115	1	No Gas	9.474	ug/l	346000.05
Ag	109	115	1	No Gas	9.498	ug/l	337875.53
Cd	111	115	1	No Gas	48.194	ug/l	390507.58

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	48.622	ug/l	127292.60
Cd	114	115	1	No Gas	48.929	ug/l	891275.34
Cd	114	115	3	He	48.785	ug/l	312572.12
Sn	118	115	1	No Gas	100.905	ug/l	2456080.77
Sn	118	115	3	He	99.627	ug/l	682739.99
Sb	121	115	1	No Gas	98.427	ug/l	3662295.87
Sb	121	115	3	He	96.671	ug/l	958624.10
Sb	123	115	1	No Gas	99.686	ug/l	2837663.23
Sb	123	115	3	He	97.037	ug/l	759561.32
Ba	135	115	1	No Gas	97.660	ug/l	700783.78
Ba	137	115	1	No Gas	99.646	ug/l	1220582.38
La	139	115	3	He	102.978	ug/l	3842815.60
Ce	140	115	3	He	102.605	ug/l	4072401.71
Hg	201	209	1	No Gas	0.051	ug/l	436.59
Hg	202	209	1	No Gas	0.057	ug/l	1101.83
Hg	202	209	3	He	0.072	ug/l	532.90
Tl	203	209	3	He	96.473	ug/l	1279263.49
Tl	205	209	1	No Gas	94.470	ug/l	7451965.10
Tl	205	209	3	He	98.696	ug/l	3076443.57
[Pb]	206	209	1	No Gas	101.096	ug/l	2748580.31
[Pb]	207	209	1	No Gas	101.105	ug/l	2384920.83
Pb	208	209	1	No Gas	101.051	ug/l	10814629.52
Th	232	209	3	He	102.803	ug/l	4486690.87
U	238	209	1	No Gas	100.958	ug/l	10526025.03

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3450912.67	96.3
Sc	45	2	H2	3194690.86	95.1
Sc	45	3	He	406838.53	94.6
Ge	72	1	No Gas	1464989.90	97.0
Ge	72	2	H2	1266343.44	95.3
Ge	72	3	He	297161.08	94.1
In	115	1	No Gas	16444511.76	96.9
In	115	3	He	3998343.17	94.9
Tb	159	1	No Gas	21271272.82	98.5
Tb	159	3	He	8082867.79	95.6
Ho	165	1	No Gas	21024762.15	97.1
Ho	165	3	He	8114218.62	95.9
Lu	175	1	No Gas	21086921.60	96.0
Lu	175	3	He	6789376.17	96.0
Bi	209	1	No Gas	15762859.91	95.9
Bi	209	3	He	6161676.39	93.0

# ICPMS207-B Analytical Data

**Sample Name** LCS4-162611  
**File Name** 034LCS4.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 14:58:14  
**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	100.340	ug/l	237090.99
Be	9	45	1	No Gas	50.916	ug/l	58896.09
B	11	45	1	No Gas	104.227	ug/l	68759.58
Na	23	45	3	He	5195.031	ug/l	4345067.96
Mg	24	45	3	He	5216.671	ug/l	2357702.94
Al	27	45	1	No Gas	481.555	ug/l	3908609.25
Si	28	45	2	H2	996.601	ug/l	1884071.30
K	39	72	3	He	4900.684	ug/l	3237741.97
Ca	40	72	2	H2	4943.456	ug/l	47804371.44
Ti	47	72	1	No Gas	93.303	ug/l	158942.58
V	51	72	1	No Gas	98.984	ug/l	2192580.19
V	51	72	3	He	97.016	ug/l	606065.96
Cr	52	72	1	No Gas	100.917	ug/l	2213635.23
Cr	52	72	3	He	98.599	ug/l	691984.10
Mn	55	72	1	No Gas	496.551	ug/l	16332673.20
Mn	55	72	3	He	505.831	ug/l	2558175.51
Fe	56	72	2	H2	495.126	ug/l	11986355.62
Fe	56	72	3	He	493.159	ug/l	3202669.09
Co	59	72	1	No Gas	100.960	ug/l	2758998.64
Ni	60	72	1	No Gas	101.162	ug/l	626711.32
Ni	60	72	3	He	100.345	ug/l	271094.96
Cu	63	72	1	No Gas	104.597	ug/l	1676320.91
Cu	63	72	3	He	103.995	ug/l	735699.61
Cu	65	72	1	No Gas	101.165	ug/l	792417.95
Zn	66	72	1	No Gas	102.346	ug/l	537841.56
Zn	66	72	3	He	101.584	ug/l	155573.58
As	75	72	1	No Gas	95.828	ug/l	609332.83
As	75	72	3	He	95.225	ug/l	121659.60
Se	78	72	2	H2	96.027	ug/l	80921.89
Br	79	72	1	No Gas	115.054	ug/l	17202.93
Br	79	72	2	H2	114.674	ug/l	11811.48
Se	82	72	1	No Gas	98.668	ug/l	41492.22
Kr	84	72	1	No Gas		ug/l	56144.50
Sr	88	72	1	No Gas	101.803	ug/l	6193352.10
Sr	88	72	3	He	97.133	ug/l	863651.05
Mo	95	115	1	No Gas	95.229	ug/l	1262331.98
Mo	95	115	3	He	95.888	ug/l	476335.60
Mo	98	115	1	No Gas	96.653	ug/l	2152224.43
Ag	107	115	1	No Gas	9.560	ug/l	346987.60
Ag	109	115	1	No Gas	9.684	ug/l	342346.93
Cd	111	115	1	No Gas	48.776	ug/l	392807.65

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	49.400	ug/l	127038.08
Cd	114	115	1	No Gas	49.421	ug/l	894737.72
Cd	114	115	3	He	48.938	ug/l	308068.65
Sn	118	115	1	No Gas	97.452	ug/l	2357835.95
Sn	118	115	3	He	96.117	ug/l	646707.73
Sb	121	115	1	No Gas	97.966	ug/l	3622322.29
Sb	121	115	3	He	93.623	ug/l	911456.97
Sb	123	115	1	No Gas	100.899	ug/l	2854740.63
Sb	123	115	3	He	95.131	ug/l	731063.67
Ba	135	115	1	No Gas	98.370	ug/l	701464.87
Ba	137	115	1	No Gas	99.323	ug/l	1209179.34
La	139	115	3	He	101.786	ug/l	3728096.85
Ce	140	115	3	He	100.621	ug/l	3921211.09
Hg	201	209	1	No Gas	0.054	ug/l	448.92
Hg	202	209	1	No Gas	0.060	ug/l	1140.49
Hg	202	209	3	He	0.079	ug/l	570.57
Tl	203	209	3	He	93.961	ug/l	1266155.89
Tl	205	209	1	No Gas	94.150	ug/l	7418564.54
Tl	205	209	3	He	97.562	ug/l	3092864.53
[Pb]	206	209	1	No Gas	102.044	ug/l	2771480.50
[Pb]	207	209	1	No Gas	101.744	ug/l	2397336.87
Pb	208	209	1	No Gas	100.488	ug/l	10742920.62
Th	232	209	3	He	99.483	ug/l	4414512.87
U	238	209	1	No Gas	98.646	ug/l	10273414.65

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3444903.87	96.1
Sc	45	2	H2	3162121.09	94.2
Sc	45	3	He	407921.33	94.9
Ge	72	1	No Gas	1462345.97	96.8
Ge	72	2	H2	1307268.38	98.4
Ge	72	3	He	307470.86	97.3
In	115	1	No Gas	16342981.76	96.3
In	115	3	He	3927235.10	93.2
Tb	159	1	No Gas	21536275.52	99.8
Tb	159	3	He	8041538.81	95.1
Ho	165	1	No Gas	21473792.41	99.2
Ho	165	3	He	8084527.16	95.5
Lu	175	1	No Gas	21715093.71	98.9
Lu	175	3	He	6689440.66	94.5
Bi	209	1	No Gas	15744068.08	95.7
Bi	209	3	He	6265780.20	94.6

# ICPMS207-B Analytical Data

**Sample Name** LCS4-162627  
**File Name** 035LCS4.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 15:04:04  
**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	100.388	ug/l	249890.85
Be	9	45	1	No Gas	50.015	ug/l	60973.39
B	11	45	1	No Gas	105.482	ug/l	73305.75
Na	23	45	3	He	5324.564	ug/l	4528548.75
Mg	24	45	3	He	5297.485	ug/l	2435547.54
Al	27	45	1	No Gas	506.005	ug/l	4332414.00
Si	28	45	2	H2	1044.877	ug/l	1959140.95
K	39	72	3	He	5183.204	ug/l	3385418.18
Ca	40	72	2	H2	5183.527	ug/l	48978668.61
Ti	47	72	1	No Gas	92.900	ug/l	164618.01
V	51	72	1	No Gas	102.372	ug/l	2359610.69
V	51	72	3	He	101.728	ug/l	629106.07
Cr	52	72	1	No Gas	104.597	ug/l	2385104.72
Cr	52	72	3	He	102.950	ug/l	715325.66
Mn	55	72	1	No Gas	495.237	ug/l	16944323.25
Mn	55	72	3	He	528.441	ug/l	2647877.90
Fe	56	72	2	H2	532.151	ug/l	12595704.11
Fe	56	72	3	He	527.595	ug/l	3395017.45
Co	59	72	1	No Gas	102.172	ug/l	2905399.28
Ni	60	72	1	No Gas	99.965	ug/l	644568.25
Ni	60	72	3	He	105.600	ug/l	282484.06
Cu	63	72	1	No Gas	103.450	ug/l	1724903.09
Cu	63	72	3	He	108.203	ug/l	758100.74
Cu	65	72	1	No Gas	101.204	ug/l	824620.05
Zn	66	72	1	No Gas	98.426	ug/l	538192.68
Zn	66	72	3	He	99.158	ug/l	150424.86
As	75	72	1	No Gas	95.764	ug/l	633393.92
As	75	72	3	He	98.384	ug/l	124489.09
Se	78	72	2	H2	101.340	ug/l	83511.33
Br	79	72	1	No Gas	101.363	ug/l	17176.20
Br	79	72	2	H2	112.029	ug/l	11445.19
Se	82	72	1	No Gas	99.858	ug/l	43682.75
Kr	84	72	1	No Gas		ug/l	59768.02
Sr	88	72	1	No Gas	102.179	ug/l	6467770.67
Sr	88	72	3	He	102.688	ug/l	904799.83
Mo	95	115	1	No Gas	97.807	ug/l	1312705.87
Mo	95	115	3	He	96.983	ug/l	485090.94
Mo	98	115	1	No Gas	97.162	ug/l	2189803.40
Ag	107	115	1	No Gas	9.659	ug/l	354997.93
Ag	109	115	1	No Gas	9.651	ug/l	345594.60
Cd	111	115	1	No Gas	49.309	ug/l	402242.84

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	50.409	ug/l	130497.85
Cd	114	115	1	No Gas	50.005	ug/l	917034.88
Cd	114	115	3	He	49.971	ug/l	316641.52
Sn	118	115	1	No Gas	98.018	ug/l	2403071.84
Sn	118	115	3	He	99.064	ug/l	671509.26
Sb	121	115	1	No Gas	96.769	ug/l	3624236.15
Sb	121	115	3	He	96.363	ug/l	945424.91
Sb	123	115	1	No Gas	100.320	ug/l	2876218.84
Sb	123	115	3	He	97.351	ug/l	753953.37
Ba	135	115	1	No Gas	98.857	ug/l	714108.45
Ba	137	115	1	No Gas	100.961	ug/l	1244973.39
La	139	115	3	He	103.987	ug/l	3837808.93
Ce	140	115	3	He	101.850	ug/l	4002350.98
Hg	201	209	1	No Gas	0.050	ug/l	433.59
Hg	202	209	1	No Gas	0.054	ug/l	1090.49
Hg	202	209	3	He	0.071	ug/l	537.90
Tl	203	209	3	He	96.832	ug/l	1306486.53
Tl	205	209	1	No Gas	95.649	ug/l	7630378.57
Tl	205	209	3	He	100.615	ug/l	3192225.63
[Pb]	206	209	1	No Gas	102.647	ug/l	2823541.99
[Pb]	207	209	1	No Gas	101.611	ug/l	2424314.51
Pb	208	209	1	No Gas	101.616	ug/l	10999989.12
Th	232	209	3	He	101.034	ug/l	4485205.81
U	238	209	1	No Gas	98.777	ug/l	10416760.22

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3639119.98	101.5
Sc	45	2	H2	3135409.93	93.4
Sc	45	3	He	414776.95	96.5
Ge	72	1	No Gas	1521394.06	100.8
Ge	72	2	H2	1278008.16	96.2
Ge	72	3	He	304432.57	96.4
In	115	1	No Gas	16567305.08	97.6
In	115	3	He	3954675.58	93.9
Tb	159	1	No Gas	21685952.69	100.4
Tb	159	3	He	8183283.31	96.8
Ho	165	1	No Gas	21504313.97	99.4
Ho	165	3	He	8325623.25	98.3
Lu	175	1	No Gas	21838990.51	99.4
Lu	175	3	He	6960809.73	98.4
Bi	209	1	No Gas	15948269.89	97.0
Bi	209	3	He	6273168.55	94.7

# ICPMS207-B Analytical Data

**Sample Name** LCS4-162695  
**File Name** 036LCS4.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 15:09:54  
**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	98.595	ug/l	238418.98
Be	9	45	1	No Gas	50.735	ug/l	60057.33
B	11	45	1	No Gas	106.829	ug/l	72078.81
Na	23	45	3	He	5331.168	ug/l	4519288.09
Mg	24	45	3	He	5317.674	ug/l	2437164.85
Al	27	45	1	No Gas	505.429	ug/l	4193464.97
Si	28	45	2	H2	1001.535	ug/l	1904363.75
K	39	72	3	He	5117.535	ug/l	3340489.01
Ca	40	72	2	H2	5110.368	ug/l	48498468.84
Ti	47	72	1	No Gas	96.061	ug/l	162937.99
V	51	72	1	No Gas	99.319	ug/l	2191191.07
V	51	72	3	He	101.779	ug/l	629147.65
Cr	52	72	1	No Gas	101.983	ug/l	2228417.10
Cr	52	72	3	He	102.878	ug/l	714430.60
Mn	55	72	1	No Gas	497.051	ug/l	16285423.43
Mn	55	72	3	He	511.375	ug/l	2559058.04
Fe	56	72	2	H2	506.291	ug/l	12029258.31
Fe	56	72	3	He	514.576	ug/l	3306812.87
Co	59	72	1	No Gas	105.581	ug/l	2872574.01
Ni	60	72	1	No Gas	103.481	ug/l	638343.14
Ni	60	72	3	He	104.720	ug/l	279822.31
Cu	63	72	1	No Gas	104.494	ug/l	1668157.87
Cu	63	72	3	He	107.543	ug/l	752523.15
Cu	65	72	1	No Gas	105.768	ug/l	824869.38
Zn	66	72	1	No Gas	102.355	ug/l	535607.03
Zn	66	72	3	He	99.664	ug/l	150964.93
As	75	72	1	No Gas	98.771	ug/l	624954.80
As	75	72	3	He	97.950	ug/l	123733.87
Se	78	72	2	H2	99.143	ug/l	81993.63
Br	79	72	1	No Gas	85.873	ug/l	15654.12
Br	79	72	2	H2	108.904	ug/l	11355.32
Se	82	72	1	No Gas	103.079	ug/l	43129.55
Kr	84	72	1	No Gas		ug/l	59236.94
Sr	88	72	1	No Gas	106.481	ug/l	6446686.17
Sr	88	72	3	He	100.276	ug/l	882133.50
Mo	95	115	1	No Gas	96.555	ug/l	1282796.67
Mo	95	115	3	He	97.989	ug/l	479767.94
Mo	98	115	1	No Gas	99.198	ug/l	2213824.15
Ag	107	115	1	No Gas	9.360	ug/l	340530.14
Ag	109	115	1	No Gas	9.472	ug/l	335638.36
Cd	111	115	1	No Gas	49.753	ug/l	401564.89



# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	50.017	ug/l	126725.64
Cd	114	115	1	No Gas	50.223	ug/l	911338.50
Cd	114	115	3	He	50.152	ug/l	311121.46
Sn	118	115	1	No Gas	98.869	ug/l	2397383.11
Sn	118	115	3	He	99.181	ug/l	657941.67
Sb	121	115	1	No Gas	97.196	ug/l	3602004.30
Sb	121	115	3	He	96.543	ug/l	926624.97
Sb	123	115	1	No Gas	99.433	ug/l	2819793.05
Sb	123	115	3	He	98.396	ug/l	745197.26
Ba	135	115	1	No Gas	97.234	ug/l	694956.34
Ba	137	115	1	No Gas	99.777	ug/l	1217442.72
La	139	115	3	He	104.315	ug/l	3766126.82
Ce	140	115	3	He	103.513	ug/l	3977474.24
Hg	201	209	1	No Gas	0.040	ug/l	383.60
Hg	202	209	1	No Gas	0.047	ug/l	1007.84
Hg	202	209	3	He	0.066	ug/l	507.24
Tl	203	209	3	He	97.459	ug/l	1305333.46
Tl	205	209	1	No Gas	95.057	ug/l	7593982.04
Tl	205	209	3	He	101.296	ug/l	3189475.82
[Pb]	206	209	1	No Gas	103.078	ug/l	2838663.40
[Pb]	207	209	1	No Gas	101.254	ug/l	2418951.47
Pb	208	209	1	No Gas	101.844	ug/l	11040233.39
Th	232	209	3	He	101.116	ug/l	4459143.22
U	238	209	1	No Gas	99.962	ug/l	10557882.49

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3525155.74	98.3
Sc	45	2	H2	3177857.59	94.6
Sc	45	3	He	413498.35	96.2
Ge	72	1	No Gas	1456618.48	96.5
Ge	72	2	H2	1282425.47	96.5
Ge	72	3	He	304003.02	96.2
In	115	1	No Gas	16378964.94	96.5
In	115	3	He	3870386.07	91.9
Tb	159	1	No Gas	21224305.43	98.3
Tb	159	3	He	8074016.70	95.5
Ho	165	1	No Gas	21227911.12	98.1
Ho	165	3	He	8137978.37	96.1
Lu	175	1	No Gas	21488541.53	97.8
Lu	175	3	He	6713683.24	94.9
Bi	209	1	No Gas	15969976.51	97.1
Bi	209	3	He	6225525.22	94.0

# ICPMS207-B Analytical Data

**Sample Name** LCS4-162708  
**File Name** 037LCS4.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 15:15:44  
**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	98.209	ug/l	235488.67
Be	9	45	1	No Gas	51.400	ug/l	60316.87
B	11	45	1	No Gas	105.770	ug/l	70783.48
Na	23	45	3	He	5239.693	ug/l	4336013.30
Mg	24	45	3	He	5310.619	ug/l	2376542.91
Al	27	45	1	No Gas	500.453	ug/l	4126826.57
Si	28	45	2	H2	1008.150	ug/l	1887871.46
K	39	72	3	He	5092.886	ug/l	3249356.20
Ca	40	72	2	H2	5026.223	ug/l	47595039.20
Ti	47	72	1	No Gas	93.191	ug/l	161312.31
V	51	72	1	No Gas	97.803	ug/l	2201890.47
V	51	72	3	He	100.936	ug/l	609952.86
Cr	52	72	1	No Gas	99.926	ug/l	2227173.37
Cr	52	72	3	He	100.795	ug/l	684116.89
Mn	55	72	1	No Gas	491.741	ug/l	16429454.33
Mn	55	72	3	He	505.302	ug/l	2472997.13
Fe	56	72	2	H2	500.744	ug/l	11871577.30
Fe	56	72	3	He	509.217	ug/l	3201087.04
Co	59	72	1	No Gas	101.389	ug/l	2814874.49
Ni	60	72	1	No Gas	100.495	ug/l	632371.44
Ni	60	72	3	He	103.690	ug/l	270884.89
Cu	63	72	1	No Gas	102.207	ug/l	1664087.05
Cu	63	72	3	He	106.384	ug/l	727679.55
Cu	65	72	1	No Gas	100.518	ug/l	799920.63
Zn	66	72	1	No Gas	97.502	ug/l	520604.36
Zn	66	72	3	He	98.110	ug/l	145317.50
As	75	72	1	No Gas	95.822	ug/l	618904.47
As	75	72	3	He	96.518	ug/l	119180.82
Se	78	72	2	H2	97.832	ug/l	80753.45
Br	79	72	1	No Gas	88.783	ug/l	16127.04
Br	79	72	2	H2	113.188	ug/l	11511.79
Se	82	72	1	No Gas	99.480	ug/l	42494.76
Kr	84	72	1	No Gas		ug/l	56250.95
Sr	88	72	1	No Gas	102.134	ug/l	6312618.36
Sr	88	72	3	He	101.186	ug/l	869823.17
Mo	95	115	1	No Gas	95.722	ug/l	1266352.81
Mo	95	115	3	He	94.197	ug/l	472567.83
Mo	98	115	1	No Gas	97.607	ug/l	2168943.47
Ag	107	115	1	No Gas	9.669	ug/l	350185.62
Ag	109	115	1	No Gas	9.734	ug/l	343390.95
Cd	111	115	1	No Gas	48.940	ug/l	393357.88

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	49.027	ug/l	127300.74
Cd	114	115	1	No Gas	49.412	ug/l	892822.89
Cd	114	115	3	He	48.943	ug/l	310952.90
Sn	118	115	1	No Gas	98.216	ug/l	2371713.12
Sn	118	115	3	He	96.702	ug/l	656807.59
Sb	121	115	1	No Gas	96.883	ug/l	3575024.14
Sb	121	115	3	He	93.497	ug/l	919016.15
Sb	123	115	1	No Gas	99.829	ug/l	2819420.91
Sb	123	115	3	He	94.713	ug/l	734825.08
Ba	135	115	1	No Gas	96.392	ug/l	686149.43
Ba	137	115	1	No Gas	99.134	ug/l	1204530.55
La	139	115	3	He	101.689	ug/l	3760321.96
Ce	140	115	3	He	101.349	ug/l	3987754.84
Hg	201	209	1	No Gas	0.044	ug/l	386.93
Hg	202	209	1	No Gas	0.048	ug/l	976.18
Hg	202	209	3	He	0.059	ug/l	472.25
Tl	203	209	3	He	95.939	ug/l	1271447.24
Tl	205	209	1	No Gas	96.215	ug/l	7382827.18
Tl	205	209	3	He	100.740	ug/l	3139551.52
[Pb]	206	209	1	No Gas	104.903	ug/l	2773948.33
[Pb]	207	209	1	No Gas	103.825	ug/l	2382292.62
Pb	208	209	1	No Gas	103.557	ug/l	10782157.40
Th	232	209	3	He	101.563	ug/l	4431804.04
U	238	209	1	No Gas	102.178	ug/l	10366679.49

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3496762.71	97.5
Sc	45	2	H2	3130757.13	93.2
Sc	45	3	He	403655.09	93.9
Ge	72	1	No Gas	1485538.50	98.4
Ge	72	2	H2	1279983.82	96.3
Ge	72	3	He	297191.27	94.1
In	115	1	No Gas	16310191.01	96.1
In	115	3	He	3963299.18	94.1
Tb	159	1	No Gas	21380901.81	99.0
Tb	159	3	He	8166519.67	96.6
Ho	165	1	No Gas	21048609.74	97.2
Ho	165	3	He	8165871.94	96.5
Lu	175	1	No Gas	21197504.26	96.5
Lu	175	3	He	6767683.44	95.7
Bi	209	1	No Gas	15338022.54	93.3
Bi	209	3	He	6161203.09	93.0

# ICPMS207-B Analytical Data

**Sample Name** CCV  
**File Name** 038\_CCV.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 15:21:35  
**Sample Type** CCV  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	633.097	ug/l	1620217.68
Be	9	45	1	No Gas	53.427	ug/l	67821.74
B	11	45	1	No Gas	52.947	ug/l	39343.63
Na	23	45	3	He	12464.926	ug/l	11040051.36
Mg	24	45	3	He	12674.034	ug/l	6087983.72
Al	27	45	1	No Gas	50.054	ug/l	464584.88
Si	28	45	2	H2	211.605	ug/l	426915.92
K	39	72	3	He	12271.407	ug/l	8253929.74
Ca	40	72	2	H2	12367.213	ug/l	122443278.96
Ti	47	72	1	No Gas	50.592	ug/l	92887.74
V	51	72	1	No Gas	53.064	ug/l	1267196.03
V	51	72	3	He	52.416	ug/l	339722.19
Cr	52	72	1	No Gas	52.015	ug/l	1239767.67
Cr	52	72	3	He	51.924	ug/l	375714.33
Mn	55	72	1	No Gas	51.731	ug/l	1837416.59
Mn	55	72	3	He	52.694	ug/l	274905.69
Fe	56	72	2	H2	1305.405	ug/l	32359874.36
Fe	56	72	3	He	1279.517	ug/l	8554260.83
Co	59	72	1	No Gas	52.935	ug/l	1558055.44
Ni	60	72	1	No Gas	51.372	ug/l	342928.54
Ni	60	72	3	He	53.108	ug/l	147883.58
Cu	63	72	1	No Gas	52.408	ug/l	905945.32
Cu	63	72	3	He	54.966	ug/l	400988.88
Cu	65	72	1	No Gas	53.012	ug/l	447699.23
Zn	66	72	1	No Gas	56.705	ug/l	321423.12
Zn	66	72	3	He	56.481	ug/l	89233.20
As	75	72	1	No Gas	50.904	ug/l	352417.20
As	75	72	3	He	52.286	ug/l	68894.54
Se	78	72	2	H2	53.032	ug/l	45824.84
Br	79	72	1	No Gas	-38.974	ug/l	10156.82
Br	79	72	2	H2	-14.992	ug/l	6505.25
Se	82	72	1	No Gas	52.490	ug/l	24063.48
Kr	84	72	1	No Gas		ug/l	39005.19
Sr	88	72	1	No Gas	53.048	ug/l	3476417.80
Sr	88	72	3	He	51.657	ug/l	473827.65
Mo	95	115	1	No Gas	50.868	ug/l	715266.69
Mo	95	115	3	He	51.722	ug/l	268559.27
Mo	98	115	1	No Gas	50.734	ug/l	1198275.14
Ag	107	115	1	No Gas	20.468	ug/l	784635.80
Ag	109	115	1	No Gas	20.428	ug/l	762779.91
Cd	111	115	1	No Gas	51.758	ug/l	442052.48

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	52.520	ug/l	141056.38
Cd	114	115	1	No Gas	52.857	ug/l	1014837.77
Cd	114	115	3	He	52.440	ug/l	344527.76
Sn	118	115	1	No Gas	51.996	ug/l	1335503.22
Sn	118	115	3	He	50.525	ug/l	355406.27
Sb	121	115	1	No Gas	52.275	ug/l	2048920.63
Sb	121	115	3	He	51.123	ug/l	519860.36
Sb	123	115	1	No Gas	52.050	ug/l	1561859.85
Sb	123	115	3	He	51.237	ug/l	411241.92
Ba	135	115	1	No Gas	53.805	ug/l	407086.00
Ba	137	115	1	No Gas	54.836	ug/l	708092.65
La	139	115	3	He	48.849	ug/l	1868609.30
Ce	140	115	3	He	48.103	ug/l	1958192.65
Hg	201	209	1	No Gas	0.964	ug/l	5300.66
Hg	202	209	1	No Gas	0.964	ug/l	12011.33
Hg	202	209	3	He	0.962	ug/l	4786.57
Tl	203	209	3	He	49.243	ug/l	675776.33
Tl	205	209	1	No Gas	49.626	ug/l	4096282.48
Tl	205	209	3	He	51.172	ug/l	1650945.80
[Pb]	206	209	1	No Gas	51.817	ug/l	1473823.97
[Pb]	207	209	1	No Gas	51.154	ug/l	1261911.69
Pb	208	209	1	No Gas	52.354	ug/l	5860619.19
Th	232	209	3	He	54.182	ug/l	2444846.34
U	238	209	1	No Gas	52.163	ug/l	5685647.68

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3785057.20	105.6
Sc	45	2	H2	3341789.56	99.5
Sc	45	3	He	433500.90	100.8
Ge	72	1	No Gas	1575906.07	104.4
Ge	72	2	H2	1339716.89	100.8
Ge	72	3	He	316657.59	100.2
In	115	1	No Gas	17333659.01	102.1
In	115	3	He	4099750.90	97.3
Tb	159	1	No Gas	22488640.14	104.2
Tb	159	3	He	8295842.11	98.2
Ho	165	1	No Gas	22356675.05	103.3
Ho	165	3	He	8413044.52	99.4
Lu	175	1	No Gas	22510470.72	102.5
Lu	175	3	He	7059482.72	99.8
Bi	209	1	No Gas	16484255.61	100.3
Bi	209	3	He	6370568.78	96.1

# ICPMS207-B Analytical Data

**Sample Name** CCB  
**File Name** 039\_CCB.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 15:27:31  
**Sample Type** CCB  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	0.928	ug/l	6046.30
Be	9	45	1	No Gas	0.020	ug/l	45.66
B	11	45	1	No Gas	0.240	ug/l	2248.41
Na	23	45	3	He	3.947	ug/l	27890.31
Mg	24	45	3	He	0.889	ug/l	1011.37
Al	27	45	1	No Gas	0.241	ug/l	23480.75
Si	28	45	2	H2	0.010	ug/l	5694.05
K	39	72	3	He	7.027	ug/l	68561.54
Ca	40	72	2	H2	0.353	ug/l	83128.47
Ti	47	72	1	No Gas	0.018	ug/l	133.47
V	51	72	1	No Gas	-0.223	ug/l	-4730.71
V	51	72	3	He	-0.073	ug/l	4202.85
Cr	52	72	1	No Gas	-0.055	ug/l	20257.17
Cr	52	72	3	He	0.008	ug/l	564.46
Mn	55	72	1	No Gas	0.034	ug/l	6967.85
Mn	55	72	3	He	0.034	ug/l	416.92
Fe	56	72	2	H2	0.245	ug/l	28598.18
Fe	56	72	3	He	0.269	ug/l	10384.14
Co	59	72	1	No Gas	0.010	ug/l	685.33
Ni	60	72	1	No Gas	0.027	ug/l	492.37
Ni	60	72	3	He	0.032	ug/l	205.56
Cu	63	72	1	No Gas	-0.014	ug/l	2304.45
Cu	63	72	3	He	-0.005	ug/l	917.51
Cu	65	72	1	No Gas	-0.017	ug/l	1087.14
Zn	66	72	1	No Gas	0.039	ug/l	1373.90
Zn	66	72	3	He	0.142	ug/l	482.23
As	75	72	1	No Gas	0.122	ug/l	9101.48
As	75	72	3	He	0.005	ug/l	164.47
Se	78	72	2	H2	0.023	ug/l	49.11
Br	79	72	1	No Gas	-49.578	ug/l	9520.99
Br	79	72	2	H2	-31.414	ug/l	5726.46
Se	82	72	1	No Gas	-0.005	ug/l	608.35
Kr	84	72	1	No Gas		ug/l	16749.92
Sr	88	72	1	No Gas	-0.003	ug/l	1427.25
Sr	88	72	3	He	0.001	ug/l	330.01
Mo	95	115	1	No Gas	0.023	ug/l	545.57
Mo	95	115	3	He	0.029	ug/l	224.45
Mo	98	115	1	No Gas	0.022	ug/l	870.66
Ag	107	115	1	No Gas	0.000	ug/l	2800.07
Ag	109	115	1	No Gas	-0.001	ug/l	2647.99
Cd	111	115	1	No Gas	0.004	ug/l	45.39

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.005	ug/l	26.67
Cd	114	115	1	No Gas	0.006	ug/l	-67.67
Cd	114	115	3	He	0.003	ug/l	61.26
Sn	118	115	1	No Gas	0.023	ug/l	3919.45
Sn	118	115	3	He	0.012	ug/l	1035.60
Sb	121	115	1	No Gas	0.074	ug/l	3504.80
Sb	121	115	3	He	0.053	ug/l	726.42
Sb	123	115	1	No Gas	0.075	ug/l	2733.21
Sb	123	115	3	He	0.060	ug/l	621.41
Ba	135	115	1	No Gas	0.007	ug/l	415.85
Ba	137	115	1	No Gas	0.010	ug/l	652.06
La	139	115	3	He	0.002	ug/l	123.33
Ce	140	115	3	He	0.002	ug/l	187.78
Hg	201	209	1	No Gas	0.001	ug/l	191.30
Hg	202	209	1	No Gas	0.002	ug/l	506.58
Hg	202	209	3	He	-0.002	ug/l	205.96
Tl	203	209	3	He	1.037	ug/l	16425.36
Tl	205	209	1	No Gas	0.737	ug/l	69924.62
Tl	205	209	3	He	1.045	ug/l	39084.70
[Pb]	206	209	1	No Gas	0.043	ug/l	2955.90
[Pb]	207	209	1	No Gas	0.041	ug/l	2552.49
Pb	208	209	1	No Gas	0.043	ug/l	11700.98
Th	232	209	3	He	0.022	ug/l	1327.27
U	238	209	1	No Gas	0.003	ug/l	656.89

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3853999.91	107.5
Sc	45	2	H2	3355039.50	99.9
Sc	45	3	He	424041.37	98.6
Ge	72	1	No Gas	1568498.61	103.9
Ge	72	2	H2	1323636.77	99.6
Ge	72	3	He	305745.66	96.8
In	115	1	No Gas	17161958.49	101.1
In	115	3	He	4179143.99	99.2
Tb	159	1	No Gas	22660594.17	105.0
Tb	159	3	He	8335811.14	98.6
Ho	165	1	No Gas	22254572.54	102.8
Ho	165	3	He	8347657.26	98.6
Lu	175	1	No Gas	22424672.01	102.1
Lu	175	3	He	7013677.60	99.1
Bi	209	1	No Gas	16712679.94	101.6
Bi	209	3	He	6654916.28	100.4

# ICPMS207-B Analytical Data

**Sample Name** Rinse  
**File Name** 040BLKV.d  
**Data Path Name** D:\Agilent\ICPMH1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 15:33:42  
**Sample Type** BlkVrfy  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	0.561	ug/l	4976.82
Be	9	45	1	No Gas	0.011	ug/l	33.32
B	11	45	1	No Gas	-0.236	ug/l	1865.53
Na	23	45	3	He	2.042	ug/l	25341.34
Mg	24	45	3	He	0.608	ug/l	848.35
Al	27	45	1	No Gas	-0.624	ug/l	15334.62
Si	28	45	2	H2	-0.067	ug/l	5505.91
K	39	72	3	He	11.429	ug/l	68143.02
Ca	40	72	2	H2	-0.035	ug/l	77839.06
Ti	47	72	1	No Gas	0.021	ug/l	135.14
V	51	72	1	No Gas	-0.226	ug/l	-4697.01
V	51	72	3	He	-0.051	ug/l	4146.16
Cr	52	72	1	No Gas	-0.054	ug/l	19737.52
Cr	52	72	3	He	0.009	ug/l	546.68
Mn	55	72	1	No Gas	0.015	ug/l	6135.83
Mn	55	72	3	He	0.024	ug/l	350.27
Fe	56	72	2	H2	-0.057	ug/l	20810.67
Fe	56	72	3	He	0.057	ug/l	8606.20
Co	59	72	1	No Gas	0.007	ug/l	592.17
Ni	60	72	1	No Gas	0.022	ug/l	452.44
Ni	60	72	3	He	0.020	ug/l	166.67
Cu	63	72	1	No Gas	-0.046	ug/l	1711.46
Cu	63	72	3	He	-0.034	ug/l	682.55
Cu	65	72	1	No Gas	-0.051	ug/l	785.67
Zn	66	72	1	No Gas	0.006	ug/l	1154.33
Zn	66	72	3	He	0.050	ug/l	325.56
As	75	72	1	No Gas	0.072	ug/l	8509.91
As	75	72	3	He	0.009	ug/l	162.33
Se	78	72	2	H2	0.015	ug/l	41.00
Br	79	72	1	No Gas	-43.567	ug/l	9590.88
Br	79	72	2	H2	-29.888	ug/l	5683.19
Se	82	72	1	No Gas	-0.343	ug/l	449.00
Kr	84	72	1	No Gas		ug/l	16223.68
Sr	88	72	1	No Gas	-0.005	ug/l	1240.94
Sr	88	72	3	He	0.004	ug/l	340.01
Mo	95	115	1	No Gas	-0.001	ug/l	217.78
Mo	95	115	3	He	0.005	ug/l	95.56
Mo	98	115	1	No Gas	0.004	ug/l	465.57
Ag	107	115	1	No Gas	-0.004	ug/l	2682.00
Ag	109	115	1	No Gas	-0.004	ug/l	2580.61
Cd	111	115	1	No Gas	0.003	ug/l	35.57



# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.003	ug/l	22.33
Cd	114	115	1	No Gas	0.004	ug/l	-95.52
Cd	114	115	3	He	0.001	ug/l	44.11
Sn	118	115	1	No Gas	-0.011	ug/l	3107.52
Sn	118	115	3	He	-0.003	ug/l	888.92
Sb	121	115	1	No Gas	0.025	ug/l	1616.59
Sb	121	115	3	He	0.024	ug/l	407.72
Sb	123	115	1	No Gas	0.025	ug/l	1274.86
Sb	123	115	3	He	0.026	ug/l	322.04
Ba	135	115	1	No Gas	-0.020	ug/l	216.24
Ba	137	115	1	No Gas	-0.009	ug/l	412.52
La	139	115	3	He	0.001	ug/l	85.55
Ce	140	115	3	He	0.001	ug/l	143.33
Hg	201	209	1	No Gas	-0.006	ug/l	154.97
Hg	202	209	1	No Gas	-0.008	ug/l	391.26
Hg	202	209	3	He	-0.010	ug/l	162.97
Tl	203	209	3	He	0.487	ug/l	8276.56
Tl	205	209	1	No Gas	0.264	ug/l	30784.92
Tl	205	209	3	He	0.481	ug/l	19447.28
[Pb]	206	209	1	No Gas	0.034	ug/l	2688.07
[Pb]	207	209	1	No Gas	0.030	ug/l	2290.21
Pb	208	209	1	No Gas	0.032	ug/l	10481.67
Th	232	209	3	He	0.008	ug/l	650.28
U	238	209	1	No Gas	0.001	ug/l	463.25

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3768004.95	105.1
Sc	45	2	H2	3332844.89	99.2
Sc	45	3	He	409963.78	95.3
Ge	72	1	No Gas	1525344.03	101.0
Ge	72	2	H2	1299571.66	97.8
Ge	72	3	He	292648.27	92.6
In	115	1	No Gas	17404783.77	102.5
In	115	3	He	3995967.23	94.9
Tb	159	1	No Gas	22603652.44	104.7
Tb	159	3	He	8118073.21	96.0
Ho	165	1	No Gas	22397932.98	103.5
Ho	165	3	He	8200612.46	96.9
Lu	175	1	No Gas	22170337.68	101.0
Lu	175	3	He	6791836.29	96.0
Bi	209	1	No Gas	16719066.11	101.7
Bi	209	3	He	6442203.03	97.2

# ICPMS207-B Analytical Data

**Sample Name** B21122077-001A  
**File Name** 041SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 15:39:53  
**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	0.213	ug/l	4914.77
Be	9	45	1	No Gas	0.007	ug/l	33.99
B	11	45	1	No Gas	24.227	ug/l	22889.23
Na	23	45	3	He	39056.051	ug/l	35865490.02
Mg	24	45	3	He	16665.471	ug/l	8311576.02
Al	27	45	1	No Gas	1.852	ug/l	44721.32
Si	28	45	2	H2	21058.989	ug/l	42830971.40
K	39	72	3	He	2764.261	ug/l	1913482.54
Ca	40	72	2	H2	19404.488	ug/l	185317042.18
Ti	47	72	1	No Gas	1.256	ug/l	2602.87
V	51	72	1	No Gas	11.458	ug/l	296018.37
V	51	72	3	He	10.257	ug/l	70459.88
Cr	52	72	1	No Gas	1.379	ug/l	58290.06
Cr	52	72	3	He	1.676	ug/l	12661.05
Mn	55	72	1	No Gas	0.090	ug/l	9713.97
Mn	55	72	3	He	0.151	ug/l	1043.16
Fe	56	72	2	H2	2.389	ug/l	79292.27
Fe	56	72	3	He	2.218	ug/l	23816.50
Co	59	72	1	No Gas	0.017	ug/l	964.79
Ni	60	72	1	No Gas	0.171	ug/l	1576.96
Ni	60	72	3	He	0.109	ug/l	428.90
Cu	63	72	1	No Gas	0.444	ug/l	11043.97
Cu	63	72	3	He	0.055	ug/l	1384.46
Cu	65	72	1	No Gas	0.084	ug/l	2105.67
Zn	66	72	1	No Gas	4.555	ug/l	29069.43
Zn	66	72	3	He	5.231	ug/l	8525.87
As	75	72	1	No Gas	0.149	ug/l	10066.93
As	75	72	3	He	0.090	ug/l	282.20
Se	78	72	2	H2	0.077	ug/l	92.55
Br	79	72	1	No Gas	6029.465	ug/l	367342.56
Br	79	72	2	H2	5598.934	ug/l	240726.64
Se	82	72	1	No Gas	0.552	ug/l	932.76
Kr	84	72	1	No Gas		ug/l	65438.18
Sr	88	72	1	No Gas	110.662	ug/l	7839840.99
Sr	88	72	3	He	114.645	ug/l	1052792.52
Mo	95	115	1	No Gas	0.243	ug/l	3761.63
Mo	95	115	3	He	0.256	ug/l	1387.85
Mo	98	115	1	No Gas	0.237	ug/l	6176.44
Ag	107	115	1	No Gas	-0.068	ug/l	224.09
Ag	109	115	1	No Gas	-0.067	ug/l	226.76
Cd	111	115	1	No Gas	0.012	ug/l	122.03

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.008	ug/l	34.22
Cd	114	115	1	No Gas	0.022	ug/l	253.41
Cd	114	115	3	He	0.007	ug/l	86.93
Sn	118	115	1	No Gas	-0.067	ug/l	1713.38
Sn	118	115	3	He	-0.070	ug/l	438.90
Sb	121	115	1	No Gas	0.015	ug/l	1274.19
Sb	121	115	3	He	0.013	ug/l	306.70
Sb	123	115	1	No Gas	0.015	ug/l	986.47
Sb	123	115	3	He	0.016	ug/l	248.70
Ba	135	115	1	No Gas	7.289	ug/l	57357.04
Ba	137	115	1	No Gas	7.429	ug/l	99717.06
La	139	115	3	He	0.002	ug/l	140.00
Ce	140	115	3	He	0.005	ug/l	322.23
Hg	201	209	1	No Gas	-0.012	ug/l	123.98
Hg	202	209	1	No Gas	-0.012	ug/l	344.27
Hg	202	209	3	He	-0.011	ug/l	155.30
Tl	203	209	3	He	0.504	ug/l	8443.40
Tl	205	209	1	No Gas	0.266	ug/l	31085.00
Tl	205	209	3	He	0.507	ug/l	20093.82
[Pb]	206	209	1	No Gas	0.034	ug/l	2701.40
[Pb]	207	209	1	No Gas	0.032	ug/l	2358.00
Pb	208	209	1	No Gas	0.034	ug/l	10749.55
Th	232	209	3	He	0.002	ug/l	402.84
U	238	209	1	No Gas	0.027	ug/l	3336.10

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4527178.21	126.3
Sc	45	2	H2	3410723.59	101.6
Sc	45	3	He	450013.93	104.6
Ge	72	1	No Gas	1705521.68	112.9
Ge	72	2	H2	1295145.53	97.4
Ge	72	3	He	317079.79	100.4
In	115	1	No Gas	17963546.53	105.8
In	115	3	He	4064904.89	96.5
Tb	159	1	No Gas	22820058.21	105.7
Tb	159	3	He	8109381.07	95.9
Ho	165	1	No Gas	22697780.52	104.9
Ho	165	3	He	8137705.44	96.1
Lu	175	1	No Gas	23104841.11	105.2
Lu	175	3	He	6881630.24	97.3
Bi	209	1	No Gas	16869624.39	102.6
Bi	209	3	He	6376249.47	96.2

# ICPMS207-B Analytical Data

**Sample Name** B21122077-001ADIL  
**File Name** 042ARef.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 15:46:01  
**Sample Type** AIRRef  
**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	1.214	ug/l	4241.63
Be	9	45	1	No Gas	0.052	ug/l	33.32
B	11	45	1	No Gas	25.247	ug/l	5684.03
Na	23	45	3	He	37280.496	ug/l	6365552.82
Mg	24	45	3	He	16651.163	ug/l	1539942.04
Al	27	45	1	No Gas	1.125	ug/l	23259.38
Si	28	45	2	H2	18652.306	ug/l	7380346.55
K	39	72	3	He	2460.331	ug/l	377643.93
Ca	40	72	2	H2	17240.571	ug/l	33252750.54
Ti	47	72	1	No Gas	1.280	ug/l	568.92
V	51	72	1	No Gas	9.984	ug/l	47904.16
V	51	72	3	He	10.173	ug/l	17049.91
Cr	52	72	1	No Gas	1.065	ug/l	26514.83
Cr	52	72	3	He	1.650	ug/l	2788.06
Mn	55	72	1	No Gas	0.250	ug/l	7533.66
Mn	55	72	3	He	0.324	ug/l	565.90
Fe	56	72	2	H2	3.860	ug/l	40805.26
Fe	56	72	3	He	3.843	ug/l	13490.35
Co	59	72	1	No Gas	0.036	ug/l	605.48
Ni	60	72	1	No Gas	0.302	ug/l	718.60
Ni	60	72	3	He	0.151	ug/l	200.00
Cu	63	72	1	No Gas	1.072	ug/l	6220.50
Cu	63	72	3	He	0.818	ug/l	2081.07
Cu	65	72	1	No Gas	0.711	ug/l	2428.52
Zn	66	72	1	No Gas	6.326	ug/l	8268.08
Zn	66	72	3	He	6.794	ug/l	2312.42
As	75	72	1	No Gas	0.528	ug/l	8983.63
As	75	72	3	He	0.046	ug/l	168.47
Se	78	72	2	H2	0.078	ug/l	41.89
Br	79	72	1	No Gas	7214.114	ug/l	90337.85
Br	79	72	2	H2	5612.007	ug/l	54106.98
Se	82	72	1	No Gas	0.754	ug/l	682.08
Kr	84	72	1	No Gas		ug/l	25355.47
Sr	88	72	1	No Gas	110.970	ug/l	1448995.42
Sr	88	72	3	He	110.716	ug/l	194528.50
Mo	95	115	1	No Gas	0.262	ug/l	964.48
Mo	95	115	3	He	0.284	ug/l	371.12
Mo	98	115	1	No Gas	0.245	ug/l	1533.09
Ag	107	115	1	No Gas	-0.347	ug/l	162.73
Ag	109	115	1	No Gas	-0.347	ug/l	139.39
Cd	111	115	1	No Gas	0.040	ug/l	82.25

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.025	ug/l	27.67
Cd	114	115	1	No Gas	0.093	ug/l	181.76
Cd	114	115	3	He	0.010	ug/l	54.83
Sn	118	115	1	No Gas	-0.038	ug/l	3200.70
Sn	118	115	3	He	-0.039	ug/l	891.15
Sb	121	115	1	No Gas	0.057	ug/l	1085.49
Sb	121	115	3	He	0.047	ug/l	274.03
Sb	123	115	1	No Gas	0.060	ug/l	879.78
Sb	123	115	3	He	0.057	ug/l	218.69
Ba	135	115	1	No Gas	7.526	ug/l	11798.33
Ba	137	115	1	No Gas	7.429	ug/l	19804.81
La	139	115	3	He	0.040	ug/l	361.12
Ce	140	115	3	He	0.072	ug/l	701.14
Hg	201	209	1	No Gas	-0.047	ug/l	132.97
Hg	202	209	1	No Gas	-0.055	ug/l	341.94
Hg	202	209	3	He	-0.069	ug/l	145.97
Tl	203	209	3	He	0.839	ug/l	3954.85
Tl	205	209	1	No Gas	0.418	ug/l	15400.51
Tl	205	209	3	He	0.794	ug/l	9176.86
[Pb]	206	209	1	No Gas	0.149	ug/l	2529.15
[Pb]	207	209	1	No Gas	0.146	ug/l	2220.20
Pb	208	209	1	No Gas	0.157	ug/l	10191.61
Th	232	209	3	He	0.014	ug/l	432.85
U	238	209	1	No Gas	0.029	ug/l	951.51

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3841103.20	107.2
Sc	45	2	H2	3314431.24	98.7
Sc	45	3	He	417108.93	97.0
Ge	72	1	No Gas	1568715.77	103.9
Ge	72	2	H2	1302243.83	98.0
Ge	72	3	He	302964.38	95.9
In	115	1	No Gas	17432209.71	102.7
In	115	3	He	4159116.12	98.7
Tb	159	1	No Gas	22315346.23	103.4
Tb	159	3	He	8200023.28	97.0
Ho	165	1	No Gas	22209276.00	102.6
Ho	165	3	He	8187745.06	96.7
Lu	175	1	No Gas	22176614.17	101.0
Lu	175	3	He	6904544.93	97.6
Bi	209	1	No Gas	16412874.88	99.8
Bi	209	3	He	6579883.80	99.3

# ICPMS207-B Analytical Data

**Sample Name** B21122077-001AMS  
**File Name** 043MS.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 15:52:09  
**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	2456.466	ug/l	5660376.19
Be	9	45	1	No Gas	50.528	ug/l	57751.60
B	11	45	1	No Gas	73.891	ug/l	48728.75
Na	23	45	3	He	85572.019	ug/l	69575875.63
Mg	24	45	3	He	66146.697	ug/l	29223230.13
Al	27	45	1	No Gas	59.654	ug/l	495224.20
Si	28	45	2	H2	19159.597	ug/l	34327067.37
K	39	72	3	He	52953.899	ug/l	32237773.41
Ca	40	72	2	H2	66101.606	ug/l	587781580.87
Ti	47	72	1	No Gas	51.881	ug/l	84425.13
V	51	72	1	No Gas	61.441	ug/l	1299498.51
V	51	72	3	He	61.147	ug/l	360324.68
Cr	52	72	1	No Gas	52.171	ug/l	1101924.22
Cr	52	72	3	He	52.360	ug/l	345054.42
Mn	55	72	1	No Gas	48.256	ug/l	1520127.75
Mn	55	72	3	He	50.473	ug/l	239859.14
Fe	56	72	2	H2	5114.139	ug/l	113890575.73
Fe	56	72	3	He	5135.478	ug/l	31245831.60
Co	59	72	1	No Gas	49.689	ug/l	1296963.53
Ni	60	72	1	No Gas	48.759	ug/l	288586.39
Ni	60	72	3	He	50.142	ug/l	127169.77
Cu	63	72	1	No Gas	50.420	ug/l	772479.86
Cu	63	72	3	He	51.994	ug/l	345569.57
Cu	65	72	1	No Gas	49.739	ug/l	372494.39
Zn	66	72	1	No Gas	54.956	ug/l	276245.61
Zn	66	72	3	He	55.820	ug/l	80329.76
As	75	72	1	No Gas	50.319	ug/l	309021.40
As	75	72	3	He	51.699	ug/l	62042.63
Se	78	72	2	H2	52.009	ug/l	40399.05
Br	79	72	1	No Gas	7017.096	ug/l	349342.21
Br	79	72	2	H2	5568.131	ug/l	223004.96
Se	82	72	1	No Gas	53.159	ug/l	21609.38
Kr	84	72	1	No Gas		ug/l	78313.26
Sr	88	72	1	No Gas	170.130	ug/l	9882593.82
Sr	88	72	3	He	166.811	ug/l	1392942.72
Mo	95	115	1	No Gas	48.947	ug/l	622287.20
Mo	95	115	3	He	48.736	ug/l	231554.87
Mo	98	115	1	No Gas	48.161	ug/l	1028911.59
Ag	107	115	1	No Gas	20.084	ug/l	696430.50
Ag	109	115	1	No Gas	20.004	ug/l	676084.31
Cd	111	115	1	No Gas	49.944	ug/l	385869.34

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	49.975	ug/l	122817.85
Cd	114	115	1	No Gas	50.201	ug/l	872421.83
Cd	114	115	3	He	49.706	ug/l	298786.33
Sn	118	115	1	No Gas	50.385	ug/l	1171543.01
Sn	118	115	3	He	48.764	ug/l	313866.00
Sb	121	115	1	No Gas	50.751	ug/l	1802776.70
Sb	121	115	3	He	49.149	ug/l	457233.68
Sb	123	115	1	No Gas	50.000	ug/l	1358927.85
Sb	123	115	3	He	49.162	ug/l	361007.46
Ba	135	115	1	No Gas	59.399	ug/l	406958.01
Ba	137	115	1	No Gas	60.528	ug/l	707811.00
La	139	115	3	He	50.059	ug/l	1752033.97
Ce	140	115	3	He	49.812	ug/l	1855487.75
Hg	201	209	1	No Gas	1.001	ug/l	4849.92
Hg	202	209	1	No Gas	0.988	ug/l	10866.25
Hg	202	209	3	He	0.998	ug/l	4373.85
Tl	203	209	3	He	48.921	ug/l	591610.91
Tl	205	209	1	No Gas	49.118	ug/l	3575500.09
Tl	205	209	3	He	50.302	ug/l	1430343.51
[Pb]	206	209	1	No Gas	49.485	ug/l	1241134.84
[Pb]	207	209	1	No Gas	49.454	ug/l	1076275.40
Pb	208	209	1	No Gas	50.629	ug/l	4999369.70
Th	232	209	3	He	52.839	ug/l	2101425.11
U	238	209	1	No Gas	52.149	ug/l	5015455.24

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3505750.59	97.8
Sc	45	2	H2	3095830.28	92.2
Sc	45	3	He	410651.71	95.5
Ge	72	1	No Gas	1439746.70	95.3
Ge	72	2	H2	1240262.89	93.3
Ge	72	3	He	297013.78	94.0
In	115	1	No Gas	16201725.83	95.5
In	115	3	He	3863827.24	91.7
Tb	159	1	No Gas	21627349.50	100.2
Tb	159	3	He	7975215.35	94.4
Ho	165	1	No Gas	21219982.78	98.0
Ho	165	3	He	8005397.98	94.6
Lu	175	1	No Gas	21444231.39	97.6
Lu	175	3	He	6680593.95	94.4
Bi	209	1	No Gas	15011777.66	91.3
Bi	209	3	He	5782921.25	87.3

# ICPMS207-B Analytical Data

**Sample Name** B21122077-001AMSD  
**File Name** 044MSD.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 15:58:08  
**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	2449.389	ug/l	6148775.08
Be	9	45	1	No Gas	51.098	ug/l	63645.67
B	11	45	1	No Gas	73.689	ug/l	53009.38
Na	23	45	3	He	87870.098	ug/l	72132234.48
Mg	24	45	3	He	67799.118	ug/l	30237796.23
Al	27	45	1	No Gas	52.504	ug/l	477668.77
Si	28	45	2	H2	20294.409	ug/l	35463516.92
K	39	72	3	He	54622.799	ug/l	33267382.00
Ca	40	72	2	H2	70754.255	ug/l	612669321.07
Ti	47	72	1	No Gas	54.476	ug/l	91685.50
V	51	72	1	No Gas	62.244	ug/l	1363600.35
V	51	72	3	He	62.860	ug/l	370432.24
Cr	52	72	1	No Gas	53.970	ug/l	1179625.13
Cr	52	72	3	He	53.216	ug/l	350884.32
Mn	55	72	1	No Gas	52.074	ug/l	1697440.76
Mn	55	72	3	He	51.132	ug/l	243073.61
Fe	56	72	2	H2	5394.163	ug/l	116980987.70
Fe	56	72	3	He	5161.674	ug/l	31408113.05
Co	59	72	1	No Gas	53.502	ug/l	1444951.05
Ni	60	72	1	No Gas	51.217	ug/l	313701.17
Ni	60	72	3	He	51.083	ug/l	129600.52
Cu	63	72	1	No Gas	52.168	ug/l	827412.64
Cu	63	72	3	He	52.778	ug/l	350862.70
Cu	65	72	1	No Gas	51.131	ug/l	396137.68
Zn	66	72	1	No Gas	56.984	ug/l	296368.04
Zn	66	72	3	He	56.852	ug/l	81835.83
As	75	72	1	No Gas	51.676	ug/l	328287.18
As	75	72	3	He	52.040	ug/l	62464.32
Se	78	72	2	H2	53.894	ug/l	40779.57
Br	79	72	1	No Gas	7239.890	ug/l	372408.10
Br	79	72	2	H2	5806.711	ug/l	226304.21
Se	82	72	1	No Gas	53.854	ug/l	22634.99
Kr	84	72	1	No Gas		ug/l	81079.28
Sr	88	72	1	No Gas	166.519	ug/l	10006068.12
Sr	88	72	3	He	169.239	ug/l	1413147.17
Mo	95	115	1	No Gas	49.231	ug/l	638561.27
Mo	95	115	3	He	50.006	ug/l	233906.42
Mo	98	115	1	No Gas	49.129	ug/l	1070515.96
Ag	107	115	1	No Gas	19.920	ug/l	704610.62
Ag	109	115	1	No Gas	20.089	ug/l	692178.41
Cd	111	115	1	No Gas	49.567	ug/l	390543.17



# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	50.363	ug/l	121855.74
Cd	114	115	1	No Gas	49.506	ug/l	876901.57
Cd	114	115	3	He	50.378	ug/l	298156.21
Sn	118	115	1	No Gas	49.979	ug/l	1184625.34
Sn	118	115	3	He	49.319	ug/l	312541.96
Sb	121	115	1	No Gas	49.395	ug/l	1787234.32
Sb	121	115	3	He	50.438	ug/l	462004.19
Sb	123	115	1	No Gas	49.507	ug/l	1370813.08
Sb	123	115	3	He	50.302	ug/l	363710.93
Ba	135	115	1	No Gas	59.236	ug/l	413432.43
Ba	137	115	1	No Gas	60.083	ug/l	715860.89
La	139	115	3	He	51.608	ug/l	1778497.87
Ce	140	115	3	He	50.951	ug/l	1868843.46
Hg	201	209	1	No Gas	1.009	ug/l	4795.90
Hg	202	209	1	No Gas	1.020	ug/l	10981.65
Hg	202	209	3	He	1.003	ug/l	4423.52
Tl	203	209	3	He	48.963	ug/l	595669.08
Tl	205	209	1	No Gas	50.193	ug/l	3585309.63
Tl	205	209	3	He	50.027	ug/l	1430888.79
[Pb]	206	209	1	No Gas	50.840	ug/l	1251300.81
[Pb]	207	209	1	No Gas	50.174	ug/l	1071350.37
Pb	208	209	1	No Gas	51.194	ug/l	4960382.22
Th	232	209	3	He	53.563	ug/l	2142343.54
U	238	209	1	No Gas	51.888	ug/l	4895423.59

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3819832.18	106.6
Sc	45	2	H2	3026358.12	90.1
Sc	45	3	He	414504.57	96.4
Ge	72	1	No Gas	1488934.18	98.6
Ge	72	2	H2	1210177.80	91.1
Ge	72	3	He	297091.98	94.0
In	115	1	No Gas	16469174.12	97.0
In	115	3	He	3803364.71	90.3
Tb	159	1	No Gas	21060469.10	97.5
Tb	159	3	He	7820866.48	92.5
Ho	165	1	No Gas	21045525.41	97.2
Ho	165	3	He	7877416.77	93.1
Lu	175	1	No Gas	21176302.85	96.4
Lu	175	3	He	6615727.06	93.5
Bi	209	1	No Gas	14693654.12	89.4
Bi	209	3	He	5816506.74	87.8

# ICPMS207-B Analytical Data

**Sample Name** Rinse  
**File Name** 045BLKV.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 16:04:06  
**Sample Type** BlkVrfy  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	4.890	ug/l	17603.23
Be	9	45	1	No Gas	0.025	ug/l	56.66
B	11	45	1	No Gas	0.419	ug/l	2556.58
Na	23	45	3	He	10.886	ug/l	35056.33
Mg	24	45	3	He	3.325	ug/l	2229.09
Al	27	45	1	No Gas	-0.592	ug/l	17173.33
Si	28	45	2	H2	0.992	ug/l	7850.56
K	39	72	3	He	14.391	ug/l	74582.54
Ca	40	72	2	H2	1.587	ug/l	93778.30
Ti	47	72	1	No Gas	0.107	ug/l	293.64
V	51	72	1	No Gas	-0.243	ug/l	-5213.83
V	51	72	3	He	0.422	ug/l	7383.01
Cr	52	72	1	No Gas	0.162	ug/l	25108.28
Cr	52	72	3	He	0.013	ug/l	612.24
Mn	55	72	1	No Gas	0.025	ug/l	6585.11
Mn	55	72	3	He	0.015	ug/l	328.27
Fe	56	72	2	H2	0.054	ug/l	23579.25
Fe	56	72	3	He	0.129	ug/l	9654.57
Co	59	72	1	No Gas	0.003	ug/l	479.06
Ni	60	72	1	No Gas	0.023	ug/l	469.08
Ni	60	72	3	He	0.014	ug/l	160.00
Cu	63	72	1	No Gas	-0.045	ug/l	1749.48
Cu	63	72	3	He	-0.037	ug/l	705.21
Cu	65	72	1	No Gas	-0.047	ug/l	831.02
Zn	66	72	1	No Gas	-0.033	ug/l	961.17
Zn	66	72	3	He	-0.004	ug/l	264.45
As	75	72	1	No Gas	0.427	ug/l	11043.43
As	75	72	3	He	0.023	ug/l	191.20
Se	78	72	2	H2	0.026	ug/l	51.11
Br	79	72	1	No Gas	202.582	ug/l	22979.54
Br	79	72	2	H2	144.363	ug/l	13046.77
Se	82	72	1	No Gas	0.151	ug/l	675.28
Kr	84	72	1	No Gas		ug/l	16759.87
Sr	88	72	1	No Gas	-0.003	ug/l	1400.64
Sr	88	72	3	He	0.002	ug/l	346.67
Mo	95	115	1	No Gas	0.044	ug/l	851.14
Mo	95	115	3	He	0.050	ug/l	334.45
Mo	98	115	1	No Gas	0.040	ug/l	1321.18
Ag	107	115	1	No Gas	-0.002	ug/l	2731.37
Ag	109	115	1	No Gas	-0.003	ug/l	2627.31
Cd	111	115	1	No Gas	-0.002	ug/l	-5.32

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.003	ug/l	20.78
Cd	114	115	1	No Gas	0.002	ug/l	-133.00
Cd	114	115	3	He	0.000	ug/l	43.80
Sn	118	115	1	No Gas	0.041	ug/l	4428.58
Sn	118	115	3	He	0.032	ug/l	1167.83
Sb	121	115	1	No Gas	0.116	ug/l	5178.17
Sb	121	115	3	He	0.082	ug/l	1011.14
Sb	123	115	1	No Gas	0.115	ug/l	3980.64
Sb	123	115	3	He	0.085	ug/l	816.77
Ba	135	115	1	No Gas	-0.013	ug/l	272.80
Ba	137	115	1	No Gas	-0.004	ug/l	472.41
La	139	115	3	He	0.002	ug/l	111.11
Ce	140	115	3	He	0.001	ug/l	156.67
Hg	201	209	1	No Gas	-0.011	ug/l	123.64
Hg	202	209	1	No Gas	-0.011	ug/l	335.27
Hg	202	209	3	He	-0.014	ug/l	144.97
Tl	203	209	3	He	0.362	ug/l	6641.66
Tl	205	209	1	No Gas	0.250	ug/l	28580.28
Tl	205	209	3	He	0.365	ug/l	15896.50
[Pb]	206	209	1	No Gas	0.024	ug/l	2305.77
[Pb]	207	209	1	No Gas	0.020	ug/l	1956.83
Pb	208	209	1	No Gas	0.022	ug/l	8902.32
Th	232	209	3	He	0.018	ug/l	1117.17
U	238	209	1	No Gas	0.002	ug/l	513.57

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4142768.76	115.6
Sc	45	2	H2	3436419.74	102.3
Sc	45	3	He	438680.18	102.0
Ge	72	1	No Gas	1556358.57	103.1
Ge	72	2	H2	1305079.19	98.2
Ge	72	3	He	311081.95	98.5
In	115	1	No Gas	17379568.85	102.4
In	115	3	He	4134160.31	98.1
Tb	159	1	No Gas	21524631.79	99.7
Tb	159	3	He	8201080.79	97.0
Ho	165	1	No Gas	21388658.32	98.8
Ho	165	3	He	8197409.72	96.8
Lu	175	1	No Gas	21626818.14	98.5
Lu	175	3	He	6798801.27	96.1
Bi	209	1	No Gas	16066775.16	97.7
Bi	209	3	He	6521183.17	98.4

# ICPMS207-B Analytical Data

**Sample Name** B21122088-001A  
**File Name** 046SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 16:10:17  
**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	1.554	ug/l	9593.54
Be	9	45	1	No Gas	0.008	ug/l	38.32
B	11	45	1	No Gas	49.784	ug/l	47317.38
Na	23	45	3	He	36894.985	ug/l	35369321.14
Mg	24	45	3	He	11898.271	ug/l	6194884.98
Al	27	45	1	No Gas	3.215	ug/l	63009.24
Si	28	45	2	H2	23260.798	ug/l	51035818.15
K	39	72	3	He	2168.565	ug/l	1567623.26
Ca	40	72	2	H2	11804.414	ug/l	122423968.82
Ti	47	72	1	No Gas	1.617	ug/l	3388.82
V	51	72	1	No Gas	19.221	ug/l	507487.84
V	51	72	3	He	16.397	ug/l	113539.54
Cr	52	72	1	No Gas	2.183	ug/l	80406.26
Cr	52	72	3	He	2.283	ug/l	17640.61
Mn	55	72	1	No Gas	1.375	ug/l	60223.39
Mn	55	72	3	He	1.411	ug/l	7883.20
Fe	56	72	2	H2	7.084	ug/l	207689.57
Fe	56	72	3	He	6.826	ug/l	56511.92
Co	59	72	1	No Gas	0.026	ug/l	1287.52
Ni	60	72	1	No Gas	0.371	ug/l	3080.91
Ni	60	72	3	He	0.319	ug/l	1047.82
Cu	63	72	1	No Gas	1.208	ug/l	25841.84
Cu	63	72	3	He	0.883	ug/l	7680.48
Cu	65	72	1	No Gas	0.848	ug/l	9263.34
Zn	66	72	1	No Gas	22.995	ug/l	144806.80
Zn	66	72	3	He	23.157	ug/l	38072.87
As	75	72	1	No Gas	0.090	ug/l	9852.18
As	75	72	3	He	0.039	ug/l	222.80
Se	78	72	2	H2	0.171	ug/l	185.44
Br	79	72	1	No Gas	3426.581	ug/l	219301.58
Br	79	72	2	H2	2801.528	ug/l	134347.54
Se	82	72	1	No Gas	0.611	ug/l	983.70
Kr	84	72	1	No Gas		ug/l	50597.95
Sr	88	72	1	No Gas	74.287	ug/l	5380076.29
Sr	88	72	3	He	75.540	ug/l	717667.00
Mo	95	115	1	No Gas	0.158	ug/l	2553.58
Mo	95	115	3	He	0.161	ug/l	934.48
Mo	98	115	1	No Gas	0.151	ug/l	4123.47
Ag	107	115	1	No Gas	-0.065	ug/l	335.47
Ag	109	115	1	No Gas	-0.065	ug/l	331.47
Cd	111	115	1	No Gas	0.008	ug/l	85.66

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.005	ug/l	28.00
Cd	114	115	1	No Gas	0.019	ug/l	204.01
Cd	114	115	3	He	0.004	ug/l	72.07
Sn	118	115	1	No Gas	-0.002	ug/l	3476.89
Sn	118	115	3	He	0.001	ug/l	964.48
Sb	121	115	1	No Gas	0.919	ug/l	38370.83
Sb	121	115	3	He	0.945	ug/l	10060.60
Sb	123	115	1	No Gas	0.920	ug/l	29422.89
Sb	123	115	3	He	0.954	ug/l	8001.75
Ba	135	115	1	No Gas	4.843	ug/l	38710.34
Ba	137	115	1	No Gas	4.917	ug/l	66994.50
La	139	115	3	He	0.004	ug/l	198.89
Ce	140	115	3	He	0.007	ug/l	400.01
Hg	201	209	1	No Gas	-0.012	ug/l	117.31
Hg	202	209	1	No Gas	-0.014	ug/l	304.94
Hg	202	209	3	He	-0.016	ug/l	132.31
Tl	203	209	3	He	0.384	ug/l	6867.86
Tl	205	209	1	No Gas	0.224	ug/l	26520.49
Tl	205	209	3	He	0.391	ug/l	16532.86
[Pb]	206	209	1	No Gas	0.082	ug/l	3975.06
[Pb]	207	209	1	No Gas	0.068	ug/l	3133.73
Pb	208	209	1	No Gas	0.078	ug/l	15191.30
Th	232	209	3	He	0.003	ug/l	437.52
U	238	209	1	No Gas	0.015	ug/l	1988.09

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4819799.07	134.5
Sc	45	2	H2	3677903.20	109.5
Sc	45	3	He	469757.23	109.2
Ge	72	1	No Gas	1740462.92	115.3
Ge	72	2	H2	1402897.38	105.6
Ge	72	3	He	328054.51	103.8
In	115	1	No Gas	18149142.69	106.9
In	115	3	He	4218479.72	100.1
Tb	159	1	No Gas	23151154.92	107.2
Tb	159	3	He	8428624.16	99.7
Ho	165	1	No Gas	22976644.79	106.2
Ho	165	3	He	8462265.40	100.0
Lu	175	1	No Gas	22828945.02	103.9
Lu	175	3	He	7203757.30	101.8
Bi	209	1	No Gas	16236366.86	98.7
Bi	209	3	He	6443809.14	97.2

# ICPMS207-B Analytical Data

**Sample Name** B21122088-001B  
**File Name** 047SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 16:16:26  
**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	4.302	ug/l	13962.65
Be	9	45	1	No Gas	0.013	ug/l	34.32
B	11	45	1	No Gas	60.423	ug/l	42785.89
Na	23	45	3	He	39451.110	ug/l	30034160.39
Mg	24	45	3	He	12976.536	ug/l	5361388.40
Al	27	45	1	No Gas	105.299	ug/l	915016.57
Si	28	45	2	H2	22766.431	ug/l	42455834.69
K	39	72	3	He	2211.548	ug/l	1353374.75
Ca	40	72	2	H2	11905.146	ug/l	106916430.16
Ti	47	72	1	No Gas	8.899	ug/l	15796.10
V	51	72	1	No Gas	19.235	ug/l	442095.37
V	51	72	3	He	19.069	ug/l	111060.70
Cr	52	72	1	No Gas	5.611	ug/l	147189.33
Cr	52	72	3	He	5.280	ug/l	33899.10
Mn	55	72	1	No Gas	4.157	ug/l	147229.94
Mn	55	72	3	He	4.261	ug/l	19693.87
Fe	56	72	2	H2	186.778	ug/l	4217818.61
Fe	56	72	3	He	190.105	ug/l	1120280.63
Co	59	72	1	No Gas	0.178	ug/l	5433.61
Ni	60	72	1	No Gas	1.205	ug/l	8039.63
Ni	60	72	3	He	1.239	ug/l	3133.69
Cu	63	72	1	No Gas	2.322	ug/l	40965.62
Cu	63	72	3	He	2.180	ug/l	14779.83
Cu	65	72	1	No Gas	1.950	ug/l	16996.72
Zn	66	72	1	No Gas	76.368	ug/l	416220.28
Zn	66	72	3	He	85.794	ug/l	118707.27
As	75	72	1	No Gas	0.497	ug/l	11234.67
As	75	72	3	He	0.256	ug/l	438.67
Se	78	72	2	H2	0.212	ug/l	192.78
Br	79	72	1	No Gas	1004.210	ug/l	64312.04
Br	79	72	2	H2	884.311	ug/l	41173.56
Se	82	72	1	No Gas	0.290	ug/l	717.82
Kr	84	72	1	No Gas		ug/l	46322.29
Sr	88	72	1	No Gas	76.901	ug/l	4848787.81
Sr	88	72	3	He	80.467	ug/l	646713.32
Mo	95	115	1	No Gas	0.356	ug/l	4929.78
Mo	95	115	3	He	0.419	ug/l	1993.49
Mo	98	115	1	No Gas	0.352	ug/l	8170.94
Ag	107	115	1	No Gas	0.023	ug/l	3469.82
Ag	109	115	1	No Gas	0.022	ug/l	3335.07
Cd	111	115	1	No Gas	0.007	ug/l	65.98

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.004	ug/l	21.56
Cd	114	115	1	No Gas	0.013	ug/l	75.81
Cd	114	115	3	He	-0.001	ug/l	31.09
Sn	118	115	1	No Gas	0.681	ug/l	19618.16
Sn	118	115	3	He	0.766	ug/l	5576.69
Sb	121	115	1	No Gas	1.426	ug/l	53264.23
Sb	121	115	3	He	1.530	ug/l	13888.24
Sb	123	115	1	No Gas	1.429	ug/l	40873.48
Sb	123	115	3	He	1.537	ug/l	11002.40
Ba	135	115	1	No Gas	7.264	ug/l	52057.08
Ba	137	115	1	No Gas	7.544	ug/l	92197.64
La	139	115	3	He	0.051	ug/l	1777.90
Ce	140	115	3	He	0.104	ug/l	3832.78
Hg	201	209	1	No Gas	0.024	ug/l	284.28
Hg	202	209	1	No Gas	0.035	ug/l	822.53
Hg	202	209	3	He	0.050	ug/l	401.26
Tl	203	209	3	He	0.197	ug/l	3808.75
Tl	205	209	1	No Gas	0.108	ug/l	16004.40
Tl	205	209	3	He	0.202	ug/l	9270.29
[Pb]	206	209	1	No Gas	0.484	ug/l	14107.54
[Pb]	207	209	1	No Gas	0.463	ug/l	11798.63
Pb	208	209	1	No Gas	0.473	ug/l	54417.90
Th	232	209	3	He	0.071	ug/l	3147.65
U	238	209	1	No Gas	0.019	ug/l	2149.08

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3624989.86	101.1
Sc	45	2	H2	3125021.13	93.0
Sc	45	3	He	375299.72	87.3
Ge	72	1	No Gas	1515314.63	100.3
Ge	72	2	H2	1215212.89	91.4
Ge	72	3	He	278394.79	88.1
In	115	1	No Gas	16322421.48	96.2
In	115	3	He	3653892.64	86.7
Tb	159	1	No Gas	20942110.96	97.0
Tb	159	3	He	7402766.46	87.6
Ho	165	1	No Gas	20880518.12	96.5
Ho	165	3	He	7388000.08	87.3
Lu	175	1	No Gas	21034042.88	95.8
Lu	175	3	He	6176818.37	87.3
Bi	209	1	No Gas	15051595.16	91.5
Bi	209	3	He	5774096.01	87.1

# ICPMS207-B Analytical Data

**Sample Name** B21122088-001BDIL  
**File Name** 048SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 16:22:33  
**Sample Type** Sample  
**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	9.888	ug/l	8552.51
Be	9	45	1	No Gas	0.005	ug/l	21.00
B	11	45	1	No Gas	54.577	ug/l	9659.66
Na	23	45	3	He	38557.301	ug/l	6486346.64
Mg	24	45	3	He	12352.333	ug/l	1125591.50
Al	27	45	1	No Gas	101.773	ug/l	199850.03
Si	28	45	2	H2	22474.373	ug/l	8871895.81
K	39	72	3	He	2072.396	ug/l	321426.66
Ca	40	72	2	H2	12076.932	ug/l	22687243.11
Ti	47	72	1	No Gas	9.101	ug/l	3363.93
V	51	72	1	No Gas	20.110	ug/l	94576.67
V	51	72	3	He	19.098	ug/l	27394.47
Cr	52	72	1	No Gas	5.898	ug/l	48187.17
Cr	52	72	3	He	5.318	ug/l	7700.94
Mn	55	72	1	No Gas	4.500	ug/l	36863.12
Mn	55	72	3	He	4.280	ug/l	4420.79
Fe	56	72	2	H2	188.476	ug/l	905043.40
Fe	56	72	3	He	184.575	ug/l	239498.95
Co	59	72	1	No Gas	0.225	ug/l	1683.43
Ni	60	72	1	No Gas	1.331	ug/l	2049.42
Ni	60	72	3	He	1.340	ug/l	815.58
Cu	63	72	1	No Gas	2.477	ug/l	10859.07
Cu	63	72	3	He	2.322	ug/l	4090.09
Cu	65	72	1	No Gas	2.161	ug/l	4776.70
Zn	66	72	1	No Gas	87.805	ug/l	98242.99
Zn	66	72	3	He	89.600	ug/l	26717.80
As	75	72	1	No Gas	-0.162	ug/l	7900.18
As	75	72	3	He	0.195	ug/l	201.67
Se	78	72	2	H2	0.229	ug/l	65.67
Br	79	72	1	No Gas	1192.959	ug/l	24702.14
Br	79	72	2	H2	995.608	ug/l	14914.86
Se	82	72	1	No Gas	-1.015	ug/l	514.34
Kr	84	72	1	No Gas		ug/l	22879.49
Sr	88	72	1	No Gas	81.031	ug/l	1040604.90
Sr	88	72	3	He	79.226	ug/l	136470.91
Mo	95	115	1	No Gas	0.339	ug/l	1200.06
Mo	95	115	3	He	0.394	ug/l	475.57
Mo	98	115	1	No Gas	0.359	ug/l	2104.77
Ag	107	115	1	No Gas	-0.267	ug/l	789.01
Ag	109	115	1	No Gas	-0.265	ug/l	765.66
Cd	111	115	1	No Gas	0.019	ug/l	47.44



# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.012	ug/l	20.00
Cd	114	115	1	No Gas	0.074	ug/l	111.96
Cd	114	115	3	He	0.002	ug/l	42.24
Sn	118	115	1	No Gas	0.597	ug/l	6561.88
Sn	118	115	3	He	0.630	ug/l	1797.90
Sb	121	115	1	No Gas	1.469	ug/l	12391.02
Sb	121	115	3	He	1.502	ug/l	3195.02
Sb	123	115	1	No Gas	1.455	ug/l	9423.77
Sb	123	115	3	He	1.519	ug/l	2535.49
Ba	135	115	1	No Gas	7.187	ug/l	11452.04
Ba	137	115	1	No Gas	7.334	ug/l	19841.58
La	139	115	3	He	0.047	ug/l	403.34
Ce	140	115	3	He	0.098	ug/l	896.70
Hg	201	209	1	No Gas	0.019	ug/l	205.29
Hg	202	209	1	No Gas	0.033	ug/l	558.23
Hg	202	209	3	He	0.059	ug/l	268.95
Tl	203	209	3	He	0.631	ug/l	3334.43
Tl	205	209	1	No Gas	0.290	ug/l	13420.40
Tl	205	209	3	He	0.601	ug/l	7821.44
[Pb]	206	209	1	No Gas	0.601	ug/l	5133.25
[Pb]	207	209	1	No Gas	0.573	ug/l	4354.07
Pb	208	209	1	No Gas	0.585	ug/l	19892.54
Th	232	209	3	He	0.029	ug/l	571.58
U	238	209	1	No Gas	0.021	ug/l	796.87

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3752205.01	104.7
Sc	45	2	H2	3308545.36	98.5
Sc	45	3	He	410918.96	95.6
Ge	72	1	No Gas	1541360.17	102.1
Ge	72	2	H2	1267587.56	95.4
Ge	72	3	He	296805.48	94.0
In	115	1	No Gas	17668578.51	104.1
In	115	3	He	4057723.13	96.3
Tb	159	1	No Gas	22002960.93	101.9
Tb	159	3	He	8293162.24	98.1
Ho	165	1	No Gas	22122516.32	102.2
Ho	165	3	He	8358052.03	98.7
Lu	175	1	No Gas	22537097.76	102.6
Lu	175	3	He	7047939.93	99.6
Bi	209	1	No Gas	16551600.20	100.7
Bi	209	3	He	6521470.67	98.4

# ICPMS207-B Analytical Data

**Sample Name** B21122088-001BPDS1  
**File Name** 049ARef.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 16:28:42  
**Sample Type** AIRRef  
**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	2165.101	ug/l	4922227.57
Be	9	45	1	No Gas	48.897	ug/l	55151.76
B	11	45	1	No Gas	103.702	ug/l	66852.83
Na	23	45	3	He	81419.904	ug/l	63902131.27
Mg	24	45	3	He	59767.322	ug/l	25482857.23
Al	27	45	1	No Gas	152.744	ug/l	1222266.66
Si	28	45	2	H2	22104.027	ug/l	38395484.31
K	39	72	3	He	48697.790	ug/l	29216708.45
Ca	40	72	2	H2	57657.897	ug/l	499187176.26
Ti	47	72	1	No Gas	58.102	ug/l	95785.39
V	51	72	1	No Gas	64.797	ug/l	1388887.03
V	51	72	3	He	67.694	ug/l	392625.52
Cr	52	72	1	No Gas	54.487	ug/l	1165569.94
Cr	52	72	3	He	54.219	ug/l	352120.79
Mn	55	72	1	No Gas	51.375	ug/l	1639587.60
Mn	55	72	3	He	52.709	ug/l	246817.36
Fe	56	72	2	H2	5054.307	ug/l	109517169.15
Fe	56	72	3	He	5055.367	ug/l	30307251.18
Co	59	72	1	No Gas	48.351	ug/l	1278229.50
Ni	60	72	1	No Gas	48.066	ug/l	288267.28
Ni	60	72	3	He	50.048	ug/l	125082.34
Cu	63	72	1	No Gas	50.493	ug/l	784198.65
Cu	63	72	3	He	52.527	ug/l	344004.15
Cu	65	72	1	No Gas	49.297	ug/l	374183.47
Zn	66	72	1	No Gas	125.040	ug/l	635521.16
Zn	66	72	3	He	126.740	ug/l	179394.54
As	75	72	1	No Gas	47.812	ug/l	297949.96
As	75	72	3	He	48.526	ug/l	57392.92
Se	78	72	2	H2	49.231	ug/l	37213.84
Br	79	72	1	No Gas	1160.403	ug/l	68001.11
Br	79	72	2	H2	893.033	ug/l	40226.12
Se	82	72	1	No Gas	48.118	ug/l	19879.84
Kr	84	72	1	No Gas		ug/l	62431.03
Sr	88	72	1	No Gas	125.726	ug/l	7397879.85
Sr	88	72	3	He	124.188	ug/l	1022029.40
Mo	95	115	1	No Gas	48.876	ug/l	595442.43
Mo	95	115	3	He	49.500	ug/l	225277.74
Mo	98	115	1	No Gas	48.911	ug/l	1000950.14
Ag	107	115	1	No Gas	19.859	ug/l	659777.03
Ag	109	115	1	No Gas	19.808	ug/l	641091.73
Cd	111	115	1	No Gas	47.881	ug/l	354345.39

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	48.837	ug/l	114965.34
Cd	114	115	1	No Gas	48.522	ug/l	807265.09
Cd	114	115	3	He	48.348	ug/l	278410.52
Sn	118	115	1	No Gas	50.552	ug/l	1125211.13
Sn	118	115	3	He	49.682	ug/l	306331.90
Sb	121	115	1	No Gas	49.600	ug/l	1685555.19
Sb	121	115	3	He	48.981	ug/l	436546.16
Sb	123	115	1	No Gas	49.928	ug/l	1298366.54
Sb	123	115	3	He	49.416	ug/l	347643.76
Ba	135	115	1	No Gas	60.333	ug/l	395481.75
Ba	137	115	1	No Gas	61.910	ug/l	692785.26
La	139	115	3	He	50.810	ug/l	1703734.07
Ce	140	115	3	He	50.129	ug/l	1789046.85
Hg	201	209	1	No Gas	0.983	ug/l	4644.22
Hg	202	209	1	No Gas	1.001	ug/l	10698.81
Hg	202	209	3	He	0.990	ug/l	4318.84
Tl	203	209	3	He	48.101	ug/l	578380.96
Tl	205	209	1	No Gas	47.166	ug/l	3343544.74
Tl	205	209	3	He	49.342	ug/l	1395078.24
[Pb]	206	209	1	No Gas	49.021	ug/l	1197261.07
[Pb]	207	209	1	No Gas	48.162	ug/l	1020238.60
Pb	208	209	1	No Gas	49.915	ug/l	4798193.84
Th	232	209	3	He	52.029	ug/l	2057049.77
U	238	209	1	No Gas	51.599	ug/l	4830262.66

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3463094.63	96.6
Sc	45	2	H2	3000457.66	89.3
Sc	45	3	He	396280.13	92.2
Ge	72	1	No Gas	1457102.02	96.5
Ge	72	2	H2	1207053.64	90.8
Ge	72	3	He	292666.21	92.6
In	115	1	No Gas	15469307.61	91.1
In	115	3	He	3700457.75	87.8
Tb	159	1	No Gas	20420066.64	94.6
Tb	159	3	He	7770694.28	91.9
Ho	165	1	No Gas	20654066.26	95.4
Ho	165	3	He	7931028.72	93.7
Lu	175	1	No Gas	20583928.41	93.7
Lu	175	3	He	6589895.92	93.1
Bi	209	1	No Gas	14579765.75	88.7
Bi	209	3	He	5750485.47	86.8

# ICPMS207-B Analytical Data

**Sample Name** B21122088-001BMS4  
**File Name** 050MS4.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 16:35:02  
**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	101.784	ug/l	282955.81
Be	9	45	1	No Gas	49.291	ug/l	67104.00
B	11	45	1	No Gas	160.351	ug/l	123371.86
Na	23	45	3	He	42786.299	ug/l	34986005.59
Mg	24	45	3	He	17133.117	ug/l	7607479.97
Al	27	45	1	No Gas	601.867	ug/l	5742919.43
Si	28	45	2	H2	23955.435	ug/l	45773515.68
K	39	72	3	He	7520.534	ug/l	4545319.17
Ca	40	72	2	H2	16484.406	ug/l	156873361.17
Ti	47	72	1	No Gas	109.015	ug/l	194816.90
V	51	72	1	No Gas	121.170	ug/l	2815256.57
V	51	72	3	He	126.405	ug/l	727207.31
Cr	52	72	1	No Gas	107.793	ug/l	2477907.61
Cr	52	72	3	He	111.403	ug/l	720947.37
Mn	55	72	1	No Gas	508.967	ug/l	17559643.25
Mn	55	72	3	He	549.678	ug/l	2564538.86
Fe	56	72	2	H2	669.770	ug/l	15973684.48
Fe	56	72	3	He	717.851	ug/l	4297534.88
Co	59	72	1	No Gas	103.015	ug/l	2953265.76
Ni	60	72	1	No Gas	104.457	ug/l	678977.12
Ni	60	72	3	He	108.523	ug/l	270333.24
Cu	63	72	1	No Gas	110.548	ug/l	1858475.91
Cu	63	72	3	He	112.878	ug/l	736304.65
Cu	65	72	1	No Gas	105.876	ug/l	869836.51
Zn	66	72	1	No Gas	183.335	ug/l	1009719.50
Zn	66	72	3	He	185.684	ug/l	261993.55
As	75	72	1	No Gas	98.537	ug/l	657027.17
As	75	72	3	He	103.071	ug/l	121446.86
Se	78	72	2	H2	97.843	ug/l	81275.44
Br	79	72	1	No Gas	1042.790	ug/l	67145.55
Br	79	72	2	H2	856.447	ug/l	42481.35
Se	82	72	1	No Gas	99.593	ug/l	43921.65
Kr	84	72	1	No Gas		ug/l	91135.69
Sr	88	72	1	No Gas	182.971	ug/l	11674415.84
Sr	88	72	3	He	199.335	ug/l	1636780.36
Mo	95	115	1	No Gas	101.116	ug/l	1348825.38
Mo	95	115	3	He	100.206	ug/l	491043.19
Mo	98	115	1	No Gas	102.954	ug/l	2306935.30
Ag	107	115	1	No Gas	9.529	ug/l	348042.52
Ag	109	115	1	No Gas	9.567	ug/l	340405.80
Cd	111	115	1	No Gas	48.883	ug/l	396178.93

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	51.016	ug/l	129318.14
Cd	114	115	1	No Gas	49.221	ug/l	896839.31
Cd	114	115	3	He	51.028	ug/l	316322.18
Sn	118	115	1	No Gas	102.686	ug/l	2499835.65
Sn	118	115	3	He	102.921	ug/l	681819.45
Sb	121	115	1	No Gas	101.188	ug/l	3765419.73
Sb	121	115	3	He	101.348	ug/l	971775.91
Sb	123	115	1	No Gas	102.989	ug/l	2932871.11
Sb	123	115	3	He	100.995	ug/l	764494.70
Ba	135	115	1	No Gas	104.858	ug/l	752532.99
Ba	137	115	1	No Gas	106.837	ug/l	1309063.65
La	139	115	3	He	104.675	ug/l	3777946.20
Ce	140	115	3	He	104.074	ug/l	3997266.78
Hg	201	209	1	No Gas	0.044	ug/l	386.93
Hg	202	209	1	No Gas	0.054	ug/l	1049.83
Hg	202	209	3	He	0.068	ug/l	480.58
Tl	203	209	3	He	99.224	ug/l	1227486.69
Tl	205	209	1	No Gas	94.839	ug/l	7292623.29
Tl	205	209	3	He	102.739	ug/l	2987290.12
[Pb]	206	209	1	No Gas	102.459	ug/l	2715422.95
[Pb]	207	209	1	No Gas	102.761	ug/l	2362909.63
Pb	208	209	1	No Gas	101.958	ug/l	10636686.94
Th	232	209	3	He	109.065	ug/l	4440879.42
U	238	209	1	No Gas	102.565	ug/l	10424191.65

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4053389.83	113.1
Sc	45	2	H2	3204057.76	95.4
Sc	45	3	He	400957.68	93.2
Ge	72	1	No Gas	1534404.49	101.6
Ge	72	2	H2	1288094.26	96.9
Ge	72	3	He	283666.04	89.8
In	115	1	No Gas	16447068.09	96.9
In	115	3	He	3869391.72	91.8
Tb	159	1	No Gas	21269384.26	98.5
Tb	159	3	He	7733954.10	91.5
Ho	165	1	No Gas	21169819.07	97.8
Ho	165	3	He	7789225.10	92.0
Lu	175	1	No Gas	21193880.84	96.5
Lu	175	3	He	6466882.59	91.4
Bi	209	1	No Gas	15364296.18	93.4
Bi	209	3	He	5751973.29	86.8

# ICPMS207-B Analytical Data

**Sample Name** B21122088-001BMSD4  
**File Name** 051MSD4.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 16:40:52  
**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	103.106	ug/l	276866.45
Be	9	45	1	No Gas	51.444	ug/l	67506.24
B	11	45	1	No Gas	165.328	ug/l	122743.61
Na	23	45	3	He	41569.829	ug/l	36556920.57
Mg	24	45	3	He	17274.985	ug/l	8250670.54
Al	27	45	1	No Gas	609.216	ug/l	5605520.96
Si	28	45	2	H2	23620.651	ug/l	45301047.38
K	39	72	3	He	7335.737	ug/l	4826508.26
Ca	40	72	2	H2	16708.680	ug/l	157369086.88
Ti	47	72	1	No Gas	110.603	ug/l	194668.15
V	51	72	1	No Gas	122.009	ug/l	2802866.08
V	51	72	3	He	121.342	ug/l	758845.99
Cr	52	72	1	No Gas	110.332	ug/l	2509204.37
Cr	52	72	3	He	107.752	ug/l	757895.01
Mn	55	72	1	No Gas	505.357	ug/l	17235022.06
Mn	55	72	3	He	531.641	ug/l	2696552.27
Fe	56	72	2	H2	670.761	ug/l	15821941.28
Fe	56	72	3	He	672.862	ug/l	4381385.08
Co	59	72	1	No Gas	101.588	ug/l	2879211.99
Ni	60	72	1	No Gas	102.624	ug/l	659065.44
Ni	60	72	3	He	105.482	ug/l	285614.47
Cu	63	72	1	No Gas	108.384	ug/l	1801475.55
Cu	63	72	3	He	109.137	ug/l	773759.56
Cu	65	72	1	No Gas	104.886	ug/l	851320.60
Zn	66	72	1	No Gas	180.640	ug/l	983323.29
Zn	66	72	3	He	178.439	ug/l	273732.21
As	75	72	1	No Gas	97.956	ug/l	644428.32
As	75	72	3	He	95.787	ug/l	122670.17
Se	78	72	2	H2	99.370	ug/l	81643.67
Br	79	72	1	No Gas	1086.175	ug/l	68666.44
Br	79	72	2	H2	904.709	ug/l	44009.84
Se	82	72	1	No Gas	100.109	ug/l	43610.65
Kr	84	72	1	No Gas		ug/l	89027.21
Sr	88	72	1	No Gas	181.948	ug/l	11469021.94
Sr	88	72	3	He	174.386	ug/l	1555822.08
Mo	95	115	1	No Gas	103.726	ug/l	1335504.35
Mo	95	115	3	He	97.052	ug/l	473641.47
Mo	98	115	1	No Gas	103.604	ug/l	2244715.00
Ag	107	115	1	No Gas	9.763	ug/l	345941.95
Ag	109	115	1	No Gas	9.723	ug/l	335448.17
Cd	111	115	1	No Gas	50.057	ug/l	392993.99

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	48.187	ug/l	121674.32
Cd	114	115	1	No Gas	50.403	ug/l	889285.92
Cd	114	115	3	He	48.455	ug/l	299353.30
Sn	118	115	1	No Gas	103.655	ug/l	2447077.47
Sn	118	115	3	He	100.256	ug/l	662340.15
Sb	121	115	1	No Gas	101.423	ug/l	3658346.94
Sb	121	115	3	He	98.625	ug/l	942956.79
Sb	123	115	1	No Gas	103.679	ug/l	2861673.51
Sb	123	115	3	He	101.254	ug/l	764156.49
Ba	135	115	1	No Gas	106.934	ug/l	743368.24
Ba	137	115	1	No Gas	108.133	ug/l	1283999.61
La	139	115	3	He	107.507	ug/l	3867244.42
Ce	140	115	3	He	107.684	ug/l	4123732.72
Hg	201	209	1	No Gas	0.041	ug/l	363.93
Hg	202	209	1	No Gas	0.058	ug/l	1065.50
Hg	202	209	3	He	0.061	ug/l	482.25
Tl	203	209	3	He	95.257	ug/l	1266830.47
Tl	205	209	1	No Gas	97.025	ug/l	7296166.97
Tl	205	209	3	He	99.495	ug/l	3110721.38
[Pb]	206	209	1	No Gas	103.946	ug/l	2700233.71
[Pb]	207	209	1	No Gas	103.773	ug/l	2339630.16
Pb	208	209	1	No Gas	103.978	ug/l	10626957.26
Th	232	209	3	He	103.730	ug/l	4540335.78
U	238	209	1	No Gas	106.070	ug/l	10554948.33

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3948166.81	110.1
Sc	45	2	H2	3215577.47	95.7
Sc	45	3	He	431171.80	100.3
Ge	72	1	No Gas	1528298.65	101.2
Ge	72	2	H2	1274245.40	95.9
Ge	72	3	He	308078.49	97.5
In	115	1	No Gas	16260241.31	95.8
In	115	3	He	3854613.41	91.5
Tb	159	1	No Gas	21019504.39	97.4
Tb	159	3	He	8191752.51	96.9
Ho	165	1	No Gas	21241479.48	98.1
Ho	165	3	He	8209193.18	97.0
Lu	175	1	No Gas	21069351.32	95.9
Lu	175	3	He	6784570.11	95.9
Bi	209	1	No Gas	15381518.50	93.5
Bi	209	3	He	6179868.21	93.3

# ICPMS207-B Analytical Data

**Sample Name** CCV  
**File Name** 052\_CCV.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 16:46:43  
**Sample Type** CCV  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	630.377	ug/l	1786805.22
Be	9	45	1	No Gas	53.055	ug/l	74501.95
B	11	45	1	No Gas	52.504	ug/l	43182.29
Na	23	45	3	He	13063.157	ug/l	11784512.74
Mg	24	45	3	He	12919.902	ug/l	6321181.14
Al	27	45	1	No Gas	50.573	ug/l	519014.50
Si	28	45	2	H2	222.004	ug/l	453120.39
K	39	72	3	He	12725.532	ug/l	8565261.26
Ca	40	72	2	H2	12811.491	ug/l	126362251.13
Ti	47	72	1	No Gas	52.608	ug/l	97529.05
V	51	72	1	No Gas	53.927	ug/l	1299998.60
V	51	72	3	He	53.886	ug/l	349466.82
Cr	52	72	1	No Gas	55.485	ug/l	1333625.63
Cr	52	72	3	He	52.907	ug/l	383244.39
Mn	55	72	1	No Gas	54.095	ug/l	1941094.19
Mn	55	72	3	He	53.072	ug/l	277191.47
Fe	56	72	2	H2	1334.755	ug/l	32968259.60
Fe	56	72	3	He	1316.450	ug/l	8809522.86
Co	59	72	1	No Gas	55.766	ug/l	1658750.08
Ni	60	72	1	No Gas	54.620	ug/l	368312.05
Ni	60	72	3	He	54.008	ug/l	150534.94
Cu	63	72	1	No Gas	54.896	ug/l	958454.45
Cu	63	72	3	He	55.556	ug/l	405730.07
Cu	65	72	1	No Gas	54.363	ug/l	463829.95
Zn	66	72	1	No Gas	55.710	ug/l	319033.08
Zn	66	72	3	He	54.804	ug/l	86679.43
As	75	72	1	No Gas	51.679	ug/l	361290.72
As	75	72	3	He	52.265	ug/l	68929.17
Se	78	72	2	H2	52.486	ug/l	45200.51
Br	79	72	1	No Gas	61.307	ug/l	15757.39
Br	79	72	2	H2	64.233	ug/l	9897.10
Se	82	72	1	No Gas	52.631	ug/l	24369.16
Kr	84	72	1	No Gas		ug/l	40012.70
Sr	88	72	1	No Gas	52.488	ug/l	3474474.50
Sr	88	72	3	He	51.774	ug/l	475376.91
Mo	95	115	1	No Gas	50.940	ug/l	719241.43
Mo	95	115	3	He	50.723	ug/l	261858.70
Mo	98	115	1	No Gas	50.205	ug/l	1190842.55
Ag	107	115	1	No Gas	20.163	ug/l	776371.66
Ag	109	115	1	No Gas	20.404	ug/l	765260.03
Cd	111	115	1	No Gas	50.982	ug/l	437360.86



# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	52.252	ug/l	139532.13
Cd	114	115	1	No Gas	51.694	ug/l	997035.13
Cd	114	115	3	He	52.416	ug/l	342393.22
Sn	118	115	1	No Gas	51.637	ug/l	1332215.04
Sn	118	115	3	He	51.150	ug/l	357760.69
Sb	121	115	1	No Gas	51.538	ug/l	2030111.81
Sb	121	115	3	He	51.324	ug/l	518896.25
Sb	123	115	1	No Gas	50.738	ug/l	1529470.45
Sb	123	115	3	He	51.176	ug/l	408426.14
Ba	135	115	1	No Gas	52.717	ug/l	400576.65
Ba	137	115	1	No Gas	54.379	ug/l	705387.22
La	139	115	3	He	48.569	ug/l	1847523.41
Ce	140	115	3	He	48.941	ug/l	1981489.29
Hg	201	209	1	No Gas	0.933	ug/l	5107.63
Hg	202	209	1	No Gas	0.925	ug/l	11481.64
Hg	202	209	3	He	0.921	ug/l	4553.87
Tl	203	209	3	He	49.080	ug/l	667715.28
Tl	205	209	1	No Gas	48.251	ug/l	3961507.34
Tl	205	209	3	He	51.076	ug/l	1634101.81
[Pb]	206	209	1	No Gas	50.233	ug/l	1420911.98
[Pb]	207	209	1	No Gas	49.259	ug/l	1208869.37
Pb	208	209	1	No Gas	50.823	ug/l	5658925.98
Th	232	209	3	He	53.152	ug/l	2378096.23
U	238	209	1	No Gas	51.619	ug/l	5596403.49

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4180155.99	116.6
Sc	45	2	H2	3383399.24	100.7
Sc	45	3	He	441549.88	102.7
Ge	72	1	No Gas	1590578.99	105.3
Ge	72	2	H2	1335057.44	100.4
Ge	72	3	He	316920.42	100.3
In	115	1	No Gas	17411263.18	102.6
In	115	3	He	4076078.02	96.8
Tb	159	1	No Gas	22311248.17	103.3
Tb	159	3	He	8257734.11	97.7
Ho	165	1	No Gas	22058452.47	101.9
Ho	165	3	He	8431867.72	99.6
Lu	175	1	No Gas	22228145.90	101.2
Lu	175	3	He	6999666.24	98.9
Bi	209	1	No Gas	16388253.89	99.7
Bi	209	3	He	6316838.81	95.3

# ICPMS207-B Analytical Data

**Sample Name** CCB  
**File Name** 053\_CCB.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 16:52:41  
**Sample Type** CCB  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	2.325	ug/l	10727.41
Be	9	45	1	No Gas	0.014	ug/l	42.32
B	11	45	1	No Gas	0.647	ug/l	2814.06
Na	23	45	3	He	9.221	ug/l	33745.50
Mg	24	45	3	He	2.373	ug/l	1776.59
Al	27	45	1	No Gas	0.134	ug/l	24939.83
Si	28	45	2	H2	1.696	ug/l	9379.38
K	39	72	3	He	9.022	ug/l	70963.72
Ca	40	72	2	H2	0.433	ug/l	85009.96
Ti	47	72	1	No Gas	0.043	ug/l	183.52
V	51	72	1	No Gas	-0.318	ug/l	-7210.30
V	51	72	3	He	0.440	ug/l	7484.17
Cr	52	72	1	No Gas	0.149	ug/l	25458.32
Cr	52	72	3	He	0.008	ug/l	577.79
Mn	55	72	1	No Gas	0.036	ug/l	7187.51
Mn	55	72	3	He	0.041	ug/l	458.92
Fe	56	72	2	H2	-0.088	ug/l	20733.80
Fe	56	72	3	He	0.036	ug/l	9030.21
Co	59	72	1	No Gas	0.010	ug/l	695.31
Ni	60	72	1	No Gas	0.039	ug/l	585.52
Ni	60	72	3	He	0.023	ug/l	184.45
Cu	63	72	1	No Gas	-0.015	ug/l	2321.79
Cu	63	72	3	He	-0.006	ug/l	922.51
Cu	65	72	1	No Gas	-0.015	ug/l	1133.17
Zn	66	72	1	No Gas	0.018	ug/l	1273.85
Zn	66	72	3	He	0.016	ug/l	295.56
As	75	72	1	No Gas	0.348	ug/l	10779.48
As	75	72	3	He	0.021	ug/l	187.40
Se	78	72	2	H2	0.019	ug/l	46.33
Br	79	72	1	No Gas	41.512	ug/l	14728.35
Br	79	72	2	H2	46.707	ug/l	9188.07
Se	82	72	1	No Gas	-0.066	ug/l	595.54
Kr	84	72	1	No Gas		ug/l	18175.53
Sr	88	72	1	No Gas	-0.004	ug/l	1364.04
Sr	88	72	3	He	0.001	ug/l	334.45
Mo	95	115	1	No Gas	0.016	ug/l	451.12
Mo	95	115	3	He	0.025	ug/l	206.67
Mo	98	115	1	No Gas	0.016	ug/l	765.58
Ag	107	115	1	No Gas	-0.006	ug/l	2643.98
Ag	109	115	1	No Gas	-0.004	ug/l	2609.96
Cd	111	115	1	No Gas	0.006	ug/l	69.69

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.002	ug/l	20.33
Cd	114	115	1	No Gas	0.002	ug/l	-143.30
Cd	114	115	3	He	0.000	ug/l	44.80
Sn	118	115	1	No Gas	0.020	ug/l	3959.39
Sn	118	115	3	He	0.018	ug/l	1085.61
Sb	121	115	1	No Gas	0.070	ug/l	3432.77
Sb	121	115	3	He	0.055	ug/l	746.10
Sb	123	115	1	No Gas	0.069	ug/l	2637.51
Sb	123	115	3	He	0.058	ug/l	604.41
Ba	135	115	1	No Gas	-0.009	ug/l	309.39
Ba	137	115	1	No Gas	-0.001	ug/l	522.31
La	139	115	3	He	0.001	ug/l	105.56
Ce	140	115	3	He	0.002	ug/l	172.22
Hg	201	209	1	No Gas	-0.002	ug/l	176.63
Hg	202	209	1	No Gas	0.000	ug/l	475.91
Hg	202	209	3	He	-0.004	ug/l	193.30
Tl	203	209	3	He	1.010	ug/l	15851.77
Tl	205	209	1	No Gas	0.654	ug/l	62955.96
Tl	205	209	3	He	1.012	ug/l	37518.89
[Pb]	206	209	1	No Gas	0.029	ug/l	2535.81
[Pb]	207	209	1	No Gas	0.032	ug/l	2320.22
Pb	208	209	1	No Gas	0.031	ug/l	10292.74
Th	232	209	3	He	0.020	ug/l	1252.57
U	238	209	1	No Gas	0.001	ug/l	491.25

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4268231.93	119.1
Sc	45	2	H2	3469547.99	103.3
Sc	45	3	He	440954.03	102.5
Ge	72	1	No Gas	1596374.53	105.7
Ge	72	2	H2	1341786.26	101.0
Ge	72	3	He	310582.93	98.3
In	115	1	No Gas	17660439.23	104.0
In	115	3	He	4192092.01	99.5
Tb	159	1	No Gas	22086669.64	102.3
Tb	159	3	He	8395533.99	99.3
Ho	165	1	No Gas	21871972.87	101.1
Ho	165	3	He	8344647.37	98.6
Lu	175	1	No Gas	22128015.57	100.8
Lu	175	3	He	6947930.76	98.2
Bi	209	1	No Gas	16610666.26	101.0
Bi	209	3	He	6574913.14	99.2

# ICPMS207-B Analytical Data

**Sample Name** Rinse  
**File Name** 054BLKV.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 16:58:51  
**Sample Type** BlkVrfy  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	1.542	ug/l	8298.27
Be	9	45	1	No Gas	0.010	ug/l	35.99
B	11	45	1	No Gas	-0.134	ug/l	2149.02
Na	23	45	3	He	5.384	ug/l	29875.19
Mg	24	45	3	He	1.202	ug/l	1187.69
Al	27	45	1	No Gas	-0.679	ug/l	16475.86
Si	28	45	2	H2	1.198	ug/l	8361.70
K	39	72	3	He	9.085	ug/l	70222.67
Ca	40	72	2	H2	-0.033	ug/l	79791.16
Ti	47	72	1	No Gas	0.018	ug/l	136.81
V	51	72	1	No Gas	-0.182	ug/l	-3874.60
V	51	72	3	He	0.399	ug/l	7148.44
Cr	52	72	1	No Gas	0.128	ug/l	24975.12
Cr	52	72	3	He	0.004	ug/l	540.01
Mn	55	72	1	No Gas	0.022	ug/l	6684.96
Mn	55	72	3	He	0.026	ug/l	377.26
Fe	56	72	2	H2	-0.292	ug/l	15532.17
Fe	56	72	3	He	-0.137	ug/l	7806.61
Co	59	72	1	No Gas	0.006	ug/l	592.17
Ni	60	72	1	No Gas	0.023	ug/l	479.06
Ni	60	72	3	He	0.022	ug/l	180.00
Cu	63	72	1	No Gas	-0.053	ug/l	1664.10
Cu	63	72	3	He	-0.037	ug/l	691.54
Cu	65	72	1	No Gas	-0.056	ug/l	780.34
Zn	66	72	1	No Gas	-0.035	ug/l	971.10
Zn	66	72	3	He	0.022	ug/l	301.12
As	75	72	1	No Gas	0.413	ug/l	11267.35
As	75	72	3	He	0.011	ug/l	172.80
Se	78	72	2	H2	0.007	ug/l	35.56
Br	79	72	1	No Gas	99.727	ug/l	17942.34
Br	79	72	2	H2	79.042	ug/l	10509.65
Se	82	72	1	No Gas	-0.147	ug/l	560.22
Kr	84	72	1	No Gas		ug/l	16866.48
Sr	88	72	1	No Gas	-0.007	ug/l	1191.03
Sr	88	72	3	He	-0.001	ug/l	312.23
Mo	95	115	1	No Gas	-0.001	ug/l	220.00
Mo	95	115	3	He	0.001	ug/l	75.55
Mo	98	115	1	No Gas	0.006	ug/l	522.92
Ag	107	115	1	No Gas	-0.005	ug/l	2696.68
Ag	109	115	1	No Gas	-0.003	ug/l	2673.33
Cd	111	115	1	No Gas	0.008	ug/l	86.04

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.001	ug/l	16.78
Cd	114	115	1	No Gas	0.004	ug/l	-100.49
Cd	114	115	3	He	-0.001	ug/l	34.88
Sn	118	115	1	No Gas	-0.003	ug/l	3380.39
Sn	118	115	3	He	-0.002	ug/l	922.26
Sb	121	115	1	No Gas	0.023	ug/l	1587.92
Sb	121	115	3	He	0.023	ug/l	406.38
Sb	123	115	1	No Gas	0.023	ug/l	1219.85
Sb	123	115	3	He	0.024	ug/l	320.04
Ba	135	115	1	No Gas	-0.014	ug/l	266.14
Ba	137	115	1	No Gas	-0.007	ug/l	445.79
La	139	115	3	He	0.000	ug/l	58.89
Ce	140	115	3	He	0.001	ug/l	134.44
Hg	201	209	1	No Gas	-0.009	ug/l	137.31
Hg	202	209	1	No Gas	-0.009	ug/l	376.93
Hg	202	209	3	He	-0.010	ug/l	163.97
Tl	203	209	3	He	0.527	ug/l	9066.05
Tl	205	209	1	No Gas	0.292	ug/l	33334.58
Tl	205	209	3	He	0.548	ug/l	22198.67
[Pb]	206	209	1	No Gas	0.018	ug/l	2255.76
[Pb]	207	209	1	No Gas	0.016	ug/l	1952.38
Pb	208	209	1	No Gas	0.019	ug/l	8981.24
Th	232	209	3	He	0.007	ug/l	625.60
U	238	209	1	No Gas	0.000	ug/l	295.94

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4181465.17	116.6
Sc	45	2	H2	3474466.54	103.5
Sc	45	3	He	434795.21	101.1
Ge	72	1	No Gas	1597640.31	105.8
Ge	72	2	H2	1332397.43	100.2
Ge	72	3	He	307130.27	97.2
In	115	1	No Gas	17771514.48	104.7
In	115	3	He	4119740.18	97.8
Tb	159	1	No Gas	22220949.54	102.9
Tb	159	3	He	8329393.58	98.5
Ho	165	1	No Gas	21859350.45	101.0
Ho	165	3	He	8368133.88	98.8
Lu	175	1	No Gas	21825684.08	99.4
Lu	175	3	He	6943588.97	98.1
Bi	209	1	No Gas	16799123.63	102.2
Bi	209	3	He	6602437.40	99.6

# ICPMS207-B Analytical Data

**Sample Name** B21122090-001A  
**File Name** 055SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 17:05:01  
**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	0.088	ug/l	5035.53
Be	9	45	1	No Gas	-0.001	ug/l	24.33
B	11	45	1	No Gas	70.671	ug/l	69027.42
Na	23	45	3	He	46773.553	ug/l	45976952.09
Mg	24	45	3	He	12857.633	ug/l	6866323.78
Al	27	45	1	No Gas	0.090	ug/l	28894.74
Si	28	45	2	H2	8223.039	ug/l	18268960.33
K	39	72	3	He	5532.899	ug/l	3869394.91
Ca	40	72	2	H2	12808.661	ug/l	134502788.05
Ti	47	72	1	No Gas	0.468	ug/l	1082.80
V	51	72	1	No Gas	0.152	ug/l	4645.97
V	51	72	3	He	-0.229	ug/l	3455.98
Cr	52	72	1	No Gas	-0.196	ug/l	19234.50
Cr	52	72	3	He	0.032	ug/l	782.25
Mn	55	72	1	No Gas	71.332	ug/l	2855683.08
Mn	55	72	3	He	69.896	ug/l	375502.92
Fe	56	72	2	H2	47.119	ug/l	1262533.58
Fe	56	72	3	He	46.262	ug/l	327468.48
Co	59	72	1	No Gas	0.042	ug/l	1853.12
Ni	60	72	1	No Gas	0.419	ug/l	3516.80
Ni	60	72	3	He	0.358	ug/l	1154.50
Cu	63	72	1	No Gas	0.553	ug/l	13623.14
Cu	63	72	3	He	0.075	ug/l	1578.44
Cu	65	72	1	No Gas	0.100	ug/l	2346.47
Zn	66	72	1	No Gas	1.705	ug/l	12165.42
Zn	66	72	3	He	1.877	ug/l	3330.40
As	75	72	1	No Gas	0.279	ug/l	11497.77
As	75	72	3	He	0.107	ug/l	313.80
Se	78	72	2	H2	0.051	ug/l	78.33
Br	79	72	1	No Gas	5386.795	ug/l	344100.31
Br	79	72	2	H2	5071.153	ug/l	240180.00
Se	82	72	1	No Gas	0.125	ug/l	758.62
Kr	84	72	1	No Gas		ug/l	51566.40
Sr	88	72	1	No Gas	75.155	ug/l	5554895.56
Sr	88	72	3	He	76.259	ug/l	720213.49
Mo	95	115	1	No Gas	14.438	ug/l	211557.50
Mo	95	115	3	He	14.507	ug/l	78688.20
Mo	98	115	1	No Gas	14.481	ug/l	356443.32
Ag	107	115	1	No Gas	-0.070	ug/l	129.39
Ag	109	115	1	No Gas	-0.070	ug/l	116.04
Cd	111	115	1	No Gas	0.010	ug/l	106.18

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.007	ug/l	35.44
Cd	114	115	1	No Gas	0.019	ug/l	205.62
Cd	114	115	3	He	0.005	ug/l	76.21
Sn	118	115	1	No Gas	-0.008	ug/l	3297.20
Sn	118	115	3	He	-0.013	ug/l	881.15
Sb	121	115	1	No Gas	0.025	ug/l	1683.94
Sb	121	115	3	He	0.023	ug/l	424.38
Sb	123	115	1	No Gas	0.024	ug/l	1296.19
Sb	123	115	3	He	0.024	ug/l	333.04
Ba	135	115	1	No Gas	2.402	ug/l	19288.62
Ba	137	115	1	No Gas	2.500	ug/l	34154.21
La	139	115	3	He	0.000	ug/l	56.67
Ce	140	115	3	He	0.001	ug/l	141.11
Hg	201	209	1	No Gas	-0.010	ug/l	125.98
Hg	202	209	1	No Gas	0.006	ug/l	540.24
Hg	202	209	3	He	0.002	ug/l	215.29
Tl	203	209	3	He	0.557	ug/l	9033.36
Tl	205	209	1	No Gas	0.326	ug/l	34495.45
Tl	205	209	3	He	0.562	ug/l	21566.05
[Pb]	206	209	1	No Gas	0.035	ug/l	2632.50
[Pb]	207	209	1	No Gas	0.034	ug/l	2301.33
Pb	208	209	1	No Gas	0.035	ug/l	10356.09
Th	232	209	3	He	0.002	ug/l	366.82
U	238	209	1	No Gas	0.002	ug/l	490.58

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	5034571.45	140.4
Sc	45	2	H2	3724247.53	110.9
Sc	45	3	He	481818.62	112.0
Ge	72	1	No Gas	1776478.30	117.6
Ge	72	2	H2	1421288.40	106.9
Ge	72	3	He	326090.90	103.2
In	115	1	No Gas	18054681.78	106.4
In	115	3	He	4279125.01	101.6
Tb	159	1	No Gas	22906626.86	106.1
Tb	159	3	He	8370491.76	99.0
Ho	165	1	No Gas	22792910.02	105.3
Ho	165	3	He	8432068.23	99.6
Lu	175	1	No Gas	22494895.98	102.4
Lu	175	3	He	7130752.48	100.8
Bi	209	1	No Gas	16145504.77	98.2
Bi	209	3	He	6284022.80	94.8

# ICPMS207-B Analytical Data

**Sample Name** B21122090-001B  
**File Name** 056SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 17:11:09  
**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	2.200	ug/l	9572.85
Be	9	45	1	No Gas	0.010	ug/l	34.32
B	11	45	1	No Gas	80.006	ug/l	60895.90
Na	23	45	3	He	46687.181	ug/l	38654621.37
Mg	24	45	3	He	12808.301	ug/l	5760179.17
Al	27	45	1	No Gas	2.980	ug/l	49334.65
Si	28	45	2	H2	7269.764	ug/l	13809451.96
K	39	72	3	He	5306.931	ug/l	3321858.21
Ca	40	72	2	H2	12284.698	ug/l	110660097.03
Ti	47	72	1	No Gas	0.907	ug/l	1685.13
V	51	72	1	No Gas	-0.766	ug/l	-16870.60
V	51	72	3	He	1.214	ug/l	11580.16
Cr	52	72	1	No Gas	1.403	ug/l	52022.14
Cr	52	72	3	He	0.663	ug/l	4901.96
Mn	55	72	1	No Gas	69.730	ug/l	2363607.27
Mn	55	72	3	He	68.765	ug/l	330382.99
Fe	56	72	2	H2	132.389	ug/l	3005268.19
Fe	56	72	3	He	129.819	ug/l	806766.39
Co	59	72	1	No Gas	0.170	ug/l	5164.05
Ni	60	72	1	No Gas	0.892	ug/l	5986.03
Ni	60	72	3	He	0.841	ug/l	2270.19
Cu	63	72	1	No Gas	0.869	ug/l	16736.31
Cu	63	72	3	He	0.404	ug/l	3615.06
Cu	65	72	1	No Gas	0.375	ug/l	4198.97
Zn	66	72	1	No Gas	5.019	ug/l	28175.40
Zn	66	72	3	He	5.225	ug/l	7833.27
As	75	72	1	No Gas	0.415	ug/l	10590.76
As	75	72	3	He	0.266	ug/l	473.27
Se	78	72	2	H2	0.070	ug/l	81.89
Br	79	72	1	No Gas	1435.145	ug/l	86181.67
Br	79	72	2	H2	1183.435	ug/l	53075.14
Se	82	72	1	No Gas	0.266	ug/l	701.82
Kr	84	72	1	No Gas		ug/l	47517.14
Sr	88	72	1	No Gas	80.672	ug/l	5047905.99
Sr	88	72	3	He	77.844	ug/l	657455.93
Mo	95	115	1	No Gas	16.516	ug/l	216449.89
Mo	95	115	3	He	16.152	ug/l	80362.10
Mo	98	115	1	No Gas	16.483	ug/l	362912.96
Ag	107	115	1	No Gas	-0.071	ug/l	114.05
Ag	109	115	1	No Gas	-0.070	ug/l	120.72
Cd	111	115	1	No Gas	0.007	ug/l	72.53



# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.007	ug/l	30.78
Cd	114	115	1	No Gas	0.002	ug/l	-118.67
Cd	114	115	3	He	-0.017	ug/l	-68.74
Sn	118	115	1	No Gas	6.388	ug/l	155615.46
Sn	118	115	3	He	6.160	ug/l	42279.95
Sb	121	115	1	No Gas	0.040	ug/l	2062.69
Sb	121	115	3	He	0.041	ug/l	561.74
Sb	123	115	1	No Gas	0.042	ug/l	1646.60
Sb	123	115	3	He	0.044	ug/l	454.05
Ba	135	115	1	No Gas	2.815	ug/l	20167.99
Ba	137	115	1	No Gas	2.969	ug/l	36195.53
La	139	115	3	He	0.003	ug/l	147.78
Ce	140	115	3	He	0.011	ug/l	512.24
Hg	201	209	1	No Gas	0.016	ug/l	242.29
Hg	202	209	1	No Gas	0.049	ug/l	953.51
Hg	202	209	3	He	0.056	ug/l	448.59
Tl	203	209	3	He	0.202	ug/l	4075.60
Tl	205	209	1	No Gas	0.108	ug/l	15709.77
Tl	205	209	3	He	0.200	ug/l	9676.73
[Pb]	206	209	1	No Gas	0.088	ug/l	3771.67
[Pb]	207	209	1	No Gas	0.079	ug/l	3107.05
Pb	208	209	1	No Gas	0.085	ug/l	14530.97
Th	232	209	3	He	0.055	ug/l	2620.65
U	238	209	1	No Gas	0.004	ug/l	676.79

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3939609.08	109.9
Sc	45	2	H2	3184111.36	94.8
Sc	45	3	He	405773.31	94.4
Ge	72	1	No Gas	1504249.17	99.6
Ge	72	2	H2	1219179.92	91.7
Ge	72	3	He	291610.53	92.3
In	115	1	No Gas	16146066.79	95.1
In	115	3	He	3925584.38	93.2
Tb	159	1	No Gas	20654439.96	95.7
Tb	159	3	He	8004400.89	94.7
Ho	165	1	No Gas	20284790.74	93.7
Ho	165	3	He	7975698.39	94.2
Lu	175	1	No Gas	20357312.22	92.7
Lu	175	3	He	6728411.30	95.1
Bi	209	1	No Gas	14807957.79	90.1
Bi	209	3	He	6043548.51	91.2

# ICPMS207-B Analytical Data

**Sample Name** B21122090-001BDIL  
**File Name** 057SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 17:17:18  
**Sample Type** Sample  
**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	4.782	ug/l	6544.04
Be	9	45	1	No Gas	0.026	ug/l	28.66
B	11	45	1	No Gas	75.540	ug/l	13823.90
Na	23	45	3	He	48660.374	ug/l	8457431.96
Mg	24	45	3	He	13222.894	ug/l	1245963.63
Al	27	45	1	No Gas	1.710	ug/l	26079.55
Si	28	45	2	H2	7449.299	ug/l	3022982.45
K	39	72	3	He	5330.990	ug/l	751275.72
Ca	40	72	2	H2	12609.950	ug/l	24398326.63
Ti	47	72	1	No Gas	0.955	ug/l	457.13
V	51	72	1	No Gas	-0.368	ug/l	-1359.76
V	51	72	3	He	2.731	ug/l	8027.78
Cr	52	72	1	No Gas	1.781	ug/l	30357.79
Cr	52	72	3	He	0.820	ug/l	1655.66
Mn	55	72	1	No Gas	69.811	ug/l	506578.92
Mn	55	72	3	He	68.950	ug/l	69708.29
Fe	56	72	2	H2	130.275	ug/l	651173.84
Fe	56	72	3	He	129.708	ug/l	176047.52
Co	59	72	1	No Gas	0.185	ug/l	1503.77
Ni	60	72	1	No Gas	1.070	ug/l	1769.94
Ni	60	72	3	He	1.110	ug/l	717.80
Cu	63	72	1	No Gas	1.474	ug/l	7731.16
Cu	63	72	3	He	1.098	ug/l	2495.39
Cu	65	72	1	No Gas	1.010	ug/l	2978.17
Zn	66	72	1	No Gas	7.855	ug/l	10162.74
Zn	66	72	3	He	7.987	ug/l	2699.16
As	75	72	1	No Gas	-0.110	ug/l	8279.09
As	75	72	3	He	0.298	ug/l	233.93
Se	78	72	2	H2	0.056	ug/l	38.33
Br	79	72	1	No Gas	1458.821	ug/l	28481.50
Br	79	72	2	H2	1269.532	ug/l	17669.09
Se	82	72	1	No Gas	-0.767	ug/l	556.21
Kr	84	72	1	No Gas		ug/l	22982.69
Sr	88	72	1	No Gas	80.455	ug/l	1069653.13
Sr	88	72	3	He	78.235	ug/l	138891.46
Mo	95	115	1	No Gas	15.960	ug/l	45552.37
Mo	95	115	3	He	15.775	ug/l	16467.31
Mo	98	115	1	No Gas	15.713	ug/l	75351.84
Ag	107	115	1	No Gas	-0.356	ug/l	94.04
Ag	109	115	1	No Gas	-0.354	ug/l	90.71
Cd	111	115	1	No Gas	0.017	ug/l	44.05

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.005	ug/l	16.78
Cd	114	115	1	No Gas	0.054	ug/l	32.21
Cd	114	115	3	He	-0.026	ug/l	6.20
Sn	118	115	1	No Gas	6.398	ug/l	36531.54
Sn	118	115	3	He	6.395	ug/l	9914.65
Sb	121	115	1	No Gas	0.062	ug/l	1134.49
Sb	121	115	3	He	0.068	ug/l	311.37
Sb	123	115	1	No Gas	0.063	ug/l	900.79
Sb	123	115	3	He	0.075	ug/l	245.36
Ba	135	115	1	No Gas	2.949	ug/l	4874.53
Ba	137	115	1	No Gas	2.996	ug/l	8345.99
La	139	115	3	He	0.006	ug/l	93.33
Ce	140	115	3	He	0.014	ug/l	215.56
Hg	201	209	1	No Gas	0.024	ug/l	209.63
Hg	202	209	1	No Gas	0.045	ug/l	585.56
Hg	202	209	3	He	0.045	ug/l	255.28
Tl	203	209	3	He	0.725	ug/l	3601.28
Tl	205	209	1	No Gas	0.333	ug/l	14105.71
Tl	205	209	3	He	0.691	ug/l	8420.71
[Pb]	206	209	1	No Gas	0.233	ug/l	3031.48
[Pb]	207	209	1	No Gas	0.207	ug/l	2540.26
Pb	208	209	1	No Gas	0.232	ug/l	11951.09
Th	232	209	3	He	0.029	ug/l	574.25
U	238	209	1	No Gas	-0.001	ug/l	309.94

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4123578.65	115.0
Sc	45	2	H2	3395763.65	101.1
Sc	45	3	He	424943.94	98.8
Ge	72	1	No Gas	1595675.63	105.7
Ge	72	2	H2	1305802.10	98.2
Ge	72	3	He	305997.69	96.9
In	115	1	No Gas	17513600.91	103.2
In	115	3	He	4105916.10	97.5
Tb	159	1	No Gas	22146495.30	102.6
Tb	159	3	He	8206035.12	97.1
Ho	165	1	No Gas	22182344.27	102.5
Ho	165	3	He	8340408.97	98.5
Lu	175	1	No Gas	22584558.56	102.8
Lu	175	3	He	6977810.48	98.6
Bi	209	1	No Gas	16536686.58	100.6
Bi	209	3	He	6526982.30	98.5

# ICPMS207-B Analytical Data

**Sample Name** B21122090-001BPDS1  
**File Name** 058ARef.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 17:23:26  
**Sample Type** AIRRef  
**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	2395.047	ug/l	5687947.21
Be	9	45	1	No Gas	50.397	ug/l	59440.55
B	11	45	1	No Gas	131.238	ug/l	87859.73
Na	23	45	3	He	96472.091	ug/l	76667062.19
Mg	24	45	3	He	63549.098	ug/l	27435642.34
Al	27	45	1	No Gas	51.104	ug/l	440759.64
Si	28	45	2	H2	9647.815	ug/l	13125965.25
K	39	72	3	He	56222.958	ug/l	32863657.29
Ca	40	72	2	H2	72558.498	ug/l	529737238.58
Ti	47	72	1	No Gas	53.665	ug/l	89048.88
V	51	72	1	No Gas	50.791	ug/l	1095655.05
V	51	72	3	He	52.732	ug/l	298961.21
Cr	52	72	1	No Gas	52.037	ug/l	1120952.80
Cr	52	72	3	He	51.172	ug/l	323869.04
Mn	55	72	1	No Gas	113.978	ug/l	3656283.05
Mn	55	72	3	He	117.731	ug/l	536904.41
Fe	56	72	2	H2	6191.295	ug/l	112545284.65
Fe	56	72	3	He	5252.552	ug/l	30683771.65
Co	59	72	1	No Gas	49.280	ug/l	1311305.78
Ni	60	72	1	No Gas	49.031	ug/l	296094.70
Ni	60	72	3	He	50.698	ug/l	123474.81
Cu	63	72	1	No Gas	49.670	ug/l	776493.27
Cu	63	72	3	He	52.538	ug/l	335233.93
Cu	65	72	1	No Gas	49.007	ug/l	374220.43
Zn	66	72	1	No Gas	52.453	ug/l	268837.23
Zn	66	72	3	He	53.763	ug/l	74279.32
As	75	72	1	No Gas	46.811	ug/l	293846.47
As	75	72	3	He	50.143	ug/l	57773.85
Se	78	72	2	H2	57.777	ug/l	36889.61
Br	79	72	1	No Gas	1519.580	ug/l	86077.95
Br	79	72	2	H2	1384.991	ug/l	50114.22
Se	82	72	1	No Gas	48.014	ug/l	19947.71
Kr	84	72	1	No Gas		ug/l	65067.43
Sr	88	72	1	No Gas	127.941	ug/l	7579186.51
Sr	88	72	3	He	129.188	ug/l	1035605.80
Mo	95	115	1	No Gas	67.101	ug/l	811079.29
Mo	95	115	3	He	65.262	ug/l	301471.66
Mo	98	115	1	No Gas	69.238	ug/l	1405565.45
Ag	107	115	1	No Gas	19.892	ug/l	655776.17
Ag	109	115	1	No Gas	20.090	ug/l	645056.07
Cd	111	115	1	No Gas	48.783	ug/l	358160.05

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	48.098	ug/l	114941.42
Cd	114	115	1	No Gas	49.103	ug/l	810440.73
Cd	114	115	3	He	47.956	ug/l	280350.21
Sn	118	115	1	No Gas	57.588	ug/l	1272057.79
Sn	118	115	3	He	54.724	ug/l	342496.41
Sb	121	115	1	No Gas	48.981	ug/l	1650949.44
Sb	121	115	3	He	47.221	ug/l	427255.18
Sb	123	115	1	No Gas	48.709	ug/l	1256603.01
Sb	123	115	3	He	47.223	ug/l	337285.16
Ba	135	115	1	No Gas	55.857	ug/l	363222.41
Ba	137	115	1	No Gas	56.094	ug/l	622765.19
La	139	115	3	He	48.858	ug/l	1663067.56
Ce	140	115	3	He	49.365	ug/l	1788491.35
Hg	201	209	1	No Gas	0.996	ug/l	4615.55
Hg	202	209	1	No Gas	1.023	ug/l	10724.49
Hg	202	209	3	He	1.002	ug/l	4339.51
Tl	203	209	3	He	48.106	ug/l	574644.22
Tl	205	209	1	No Gas	48.716	ug/l	3389382.83
Tl	205	209	3	He	48.951	ug/l	1374817.48
[Pb]	206	209	1	No Gas	49.169	ug/l	1178401.29
[Pb]	207	209	1	No Gas	48.775	ug/l	1014270.66
Pb	208	209	1	No Gas	50.031	ug/l	4720143.28
Th	232	209	3	He	52.500	ug/l	2062200.04
U	238	209	1	No Gas	52.866	ug/l	4855491.07

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3616014.68	100.9
Sc	45	2	H2	2787355.73	83.0
Sc	45	3	He	401250.92	93.3
Ge	72	1	No Gas	1466545.81	97.1
Ge	72	2	H2	1129999.65	85.0
Ge	72	3	He	285192.52	90.3
In	115	1	No Gas	15360544.95	90.5
In	115	3	He	3757026.36	89.2
Tb	159	1	No Gas	20226854.06	93.7
Tb	159	3	He	7713126.60	91.3
Ho	165	1	No Gas	19641999.02	90.7
Ho	165	3	He	7788783.82	92.0
Lu	175	1	No Gas	19998238.58	91.1
Lu	175	3	He	6462939.90	91.3
Bi	209	1	No Gas	14303245.08	87.0
Bi	209	3	He	5712639.66	86.2

# ICPMS207-B Analytical Data

**Sample Name** B21122090-001BMS4  
**File Name** 059MS4.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 17:29:23  
**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	106.552	ug/l	305855.54
Be	9	45	1	No Gas	52.322	ug/l	73619.22
B	11	45	1	No Gas	191.263	ug/l	151682.61
Na	23	45	3	He	53736.777	ug/l	48944121.49
Mg	24	45	3	He	18291.155	ug/l	9049910.83
Al	27	45	1	No Gas	517.459	ug/l	5108229.85
Si	28	45	2	H2	8826.318	ug/l	17271051.19
K	39	72	3	He	10845.575	ug/l	7143829.62
Ca	40	72	2	H2	17696.171	ug/l	169153525.90
Ti	47	72	1	No Gas	103.291	ug/l	189269.24
V	51	72	1	No Gas	107.383	ug/l	2561859.90
V	51	72	3	He	105.558	ug/l	664646.48
Cr	52	72	1	No Gas	107.044	ug/l	2525923.12
Cr	52	72	3	He	103.320	ug/l	731024.85
Mn	55	72	1	No Gas	580.289	ug/l	20537442.31
Mn	55	72	3	He	600.953	ug/l	3065359.22
Fe	56	72	2	H2	629.478	ug/l	15080818.52
Fe	56	72	3	He	650.968	ug/l	4262374.25
Co	59	72	1	No Gas	103.523	ug/l	3043841.59
Ni	60	72	1	No Gas	103.156	ug/l	687663.07
Ni	60	72	3	He	102.823	ug/l	279999.37
Cu	63	72	1	No Gas	104.466	ug/l	1801507.18
Cu	63	72	3	He	105.383	ug/l	751398.77
Cu	65	72	1	No Gas	101.104	ug/l	851997.04
Zn	66	72	1	No Gas	106.453	ug/l	601908.49
Zn	66	72	3	He	104.006	ug/l	160552.71
As	75	72	1	No Gas	95.380	ug/l	652462.11
As	75	72	3	He	95.521	ug/l	123006.63
Se	78	72	2	H2	96.282	ug/l	80336.99
Br	79	72	1	No Gas	1114.349	ug/l	72748.04
Br	79	72	2	H2	931.394	ug/l	45801.27
Se	82	72	1	No Gas	96.557	ug/l	43691.31
Kr	84	72	1	No Gas		ug/l	89914.07
Sr	88	72	1	No Gas	177.114	ug/l	11589756.72
Sr	88	72	3	He	179.247	ug/l	1608028.33
Mo	95	115	1	No Gas	117.896	ug/l	1564782.74
Mo	95	115	3	He	110.512	ug/l	551691.06
Mo	98	115	1	No Gas	116.760	ug/l	2603679.49
Ag	107	115	1	No Gas	9.466	ug/l	344091.87
Ag	109	115	1	No Gas	9.453	ug/l	334738.92
Cd	111	115	1	No Gas	47.992	ug/l	387060.53

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	46.591	ug/l	120313.62
Cd	114	115	1	No Gas	48.314	ug/l	876002.81
Cd	114	115	3	He	47.026	ug/l	297131.72
Sn	118	115	1	No Gas	104.736	ug/l	2537564.86
Sn	118	115	3	He	102.278	ug/l	691059.23
Sb	121	115	1	No Gas	96.245	ug/l	3564162.60
Sb	121	115	3	He	93.888	ug/l	918216.79
Sb	123	115	1	No Gas	98.405	ug/l	2788825.62
Sb	123	115	3	He	96.063	ug/l	741575.82
Ba	135	115	1	No Gas	99.313	ug/l	709340.28
Ba	137	115	1	No Gas	100.113	ug/l	1220795.33
La	139	115	3	He	103.611	ug/l	3811050.05
Ce	140	115	3	He	100.706	ug/l	3943661.89
Hg	201	209	1	No Gas	0.037	ug/l	341.27
Hg	202	209	1	No Gas	0.069	ug/l	1167.15
Hg	202	209	3	He	0.068	ug/l	511.57
Tl	203	209	3	He	92.654	ug/l	1229206.14
Tl	205	209	1	No Gas	93.657	ug/l	6927793.02
Tl	205	209	3	He	96.394	ug/l	3006539.28
[Pb]	206	209	1	No Gas	99.928	ug/l	2547676.73
[Pb]	207	209	1	No Gas	100.689	ug/l	2227084.88
Pb	208	209	1	No Gas	100.091	ug/l	10044930.77
Th	232	209	3	He	101.043	ug/l	4412654.42
U	238	209	1	No Gas	99.539	ug/l	9732181.49

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4190408.82	116.9
Sc	45	2	H2	3280962.27	97.7
Sc	45	3	He	446367.36	103.8
Ge	72	1	No Gas	1573013.21	104.2
Ge	72	2	H2	1293815.73	97.3
Ge	72	3	He	309779.84	98.1
In	115	1	No Gas	16368766.07	96.4
In	115	3	He	3944044.69	93.6
Tb	159	1	No Gas	21090079.96	97.7
Tb	159	3	He	8224739.29	97.3
Ho	165	1	No Gas	21167026.70	97.8
Ho	165	3	He	8369578.81	98.9
Lu	175	1	No Gas	20853852.49	95.0
Lu	175	3	He	6874168.46	97.2
Bi	209	1	No Gas	14779857.37	89.9
Bi	209	3	He	6165438.31	93.0

# ICPMS207-B Analytical Data

**Sample Name** B21122090-001BMSD4  
**File Name** 060MSD4.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 17:35:13  
**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	108.313	ug/l	307787.21
Be	9	45	1	No Gas	52.937	ug/l	73736.61
B	11	45	1	No Gas	195.906	ug/l	153693.58
Na	23	45	3	He	52395.213	ug/l	45143432.66
Mg	24	45	3	He	17990.566	ug/l	8420100.54
Al	27	45	1	No Gas	533.375	ug/l	5209146.80
Si	28	45	2	H2	8576.466	ug/l	16633434.99
K	39	72	3	He	10630.045	ug/l	6715622.19
Ca	40	72	2	H2	17578.524	ug/l	167775571.33
Ti	47	72	1	No Gas	102.032	ug/l	186200.37
V	51	72	1	No Gas	108.837	ug/l	2583654.81
V	51	72	3	He	103.366	ug/l	623943.48
Cr	52	72	1	No Gas	107.833	ug/l	2532535.85
Cr	52	72	3	He	102.913	ug/l	698032.72
Mn	55	72	1	No Gas	571.341	ug/l	20130420.51
Mn	55	72	3	He	595.428	ug/l	2911444.91
Fe	56	72	2	H2	629.614	ug/l	15063844.25
Fe	56	72	3	He	654.094	ug/l	4105349.11
Co	59	72	1	No Gas	103.630	ug/l	3033797.04
Ni	60	72	1	No Gas	101.359	ug/l	672861.55
Ni	60	72	3	He	101.944	ug/l	266150.78
Cu	63	72	1	No Gas	104.312	ug/l	1791450.39
Cu	63	72	3	He	105.176	ug/l	718878.08
Cu	65	72	1	No Gas	101.244	ug/l	849742.42
Zn	66	72	1	No Gas	101.199	ug/l	569908.76
Zn	66	72	3	He	101.073	ug/l	149578.82
As	75	72	1	No Gas	95.665	ug/l	651646.59
As	75	72	3	He	98.665	ug/l	121796.04
Se	78	72	2	H2	94.740	ug/l	78942.76
Br	79	72	1	No Gas	1253.771	ug/l	79988.27
Br	79	72	2	H2	1003.435	ug/l	48741.81
Se	82	72	1	No Gas	97.343	ug/l	43861.91
Kr	84	72	1	No Gas		ug/l	91353.45
Sr	88	72	1	No Gas	176.419	ug/l	11499136.19
Sr	88	72	3	He	191.246	ug/l	1644430.37
Mo	95	115	1	No Gas	114.934	ug/l	1542083.74
Mo	95	115	3	He	111.618	ug/l	560374.44
Mo	98	115	1	No Gas	113.331	ug/l	2554497.81
Ag	107	115	1	No Gas	9.171	ug/l	336991.00
Ag	109	115	1	No Gas	9.225	ug/l	330212.93
Cd	111	115	1	No Gas	46.836	ug/l	381732.38



# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	48.098	ug/l	124918.63
Cd	114	115	1	No Gas	47.259	ug/l	865975.02
Cd	114	115	3	He	47.810	ug/l	303755.99
Sn	118	115	1	No Gas	103.440	ug/l	2532918.26
Sn	118	115	3	He	102.357	ug/l	695305.92
Sb	121	115	1	No Gas	95.640	ug/l	3579514.09
Sb	121	115	3	He	91.519	ug/l	899789.35
Sb	123	115	1	No Gas	97.593	ug/l	2794820.05
Sb	123	115	3	He	92.172	ug/l	715319.88
Ba	135	115	1	No Gas	97.273	ug/l	702102.94
Ba	137	115	1	No Gas	98.408	ug/l	1212608.13
La	139	115	3	He	98.099	ug/l	3629220.57
Ce	140	115	3	He	97.639	ug/l	3844514.87
Hg	201	209	1	No Gas	0.033	ug/l	326.61
Hg	202	209	1	No Gas	0.066	ug/l	1142.16
Hg	202	209	3	He	0.076	ug/l	526.57
Tl	203	209	3	He	93.738	ug/l	1189607.62
Tl	205	209	1	No Gas	92.993	ug/l	6949543.78
Tl	205	209	3	He	96.637	ug/l	2883952.10
[Pb]	206	209	1	No Gas	100.430	ug/l	2586369.74
[Pb]	207	209	1	No Gas	99.726	ug/l	2228429.53
Pb	208	209	1	No Gas	99.982	ug/l	10137153.46
Th	232	209	3	He	102.280	ug/l	4272223.84
U	238	209	1	No Gas	99.402	ug/l	9819954.35

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4147221.60	115.7
Sc	45	2	H2	3251887.26	96.8
Sc	45	3	He	422263.89	98.2
Ge	72	1	No Gas	1566737.22	103.8
Ge	72	2	H2	1292092.58	97.2
Ge	72	3	He	296977.37	94.0
In	115	1	No Gas	16539932.61	97.4
In	115	3	He	3964072.27	94.1
Tb	159	1	No Gas	20611234.05	95.5
Tb	159	3	He	7907643.46	93.6
Ho	165	1	No Gas	20554472.50	95.0
Ho	165	3	He	7995645.16	94.4
Lu	175	1	No Gas	20526632.79	93.5
Lu	175	3	He	6676480.31	94.4
Bi	209	1	No Gas	14935323.61	90.8
Bi	209	3	He	5899054.28	89.0

# ICPMS207-B Analytical Data

**Sample Name** Rinse  
**File Name** 061BLKV.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 17:41:04  
**Sample Type** BlkVrfy  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	1.581	ug/l	8889.51
Be	9	45	1	No Gas	0.017	ug/l	48.32
B	11	45	1	No Gas	1.429	ug/l	3557.86
Na	23	45	3	He	15.183	ug/l	40118.89
Mg	24	45	3	He	2.341	ug/l	1806.53
Al	27	45	1	No Gas	-0.575	ug/l	18488.19
Si	28	45	2	H2	1.731	ug/l	9779.80
K	39	72	3	He	8.733	ug/l	72184.09
Ca	40	72	2	H2	0.612	ug/l	89722.47
Ti	47	72	1	No Gas	0.025	ug/l	156.83
V	51	72	1	No Gas	-0.190	ug/l	-4257.75
V	51	72	3	He	0.553	ug/l	8357.97
Cr	52	72	1	No Gas	0.136	ug/l	26454.78
Cr	52	72	3	He	0.009	ug/l	596.68
Mn	55	72	1	No Gas	0.789	ug/l	36038.27
Mn	55	72	3	He	0.057	ug/l	551.23
Fe	56	72	2	H2	-0.214	ug/l	18186.21
Fe	56	72	3	He	-0.066	ug/l	8526.05
Co	59	72	1	No Gas	0.016	ug/l	918.21
Ni	60	72	1	No Gas	0.057	ug/l	745.22
Ni	60	72	3	He	0.023	ug/l	190.01
Cu	63	72	1	No Gas	-0.038	ug/l	2020.96
Cu	63	72	3	He	-0.025	ug/l	801.87
Cu	65	72	1	No Gas	-0.038	ug/l	979.09
Zn	66	72	1	No Gas	0.042	ug/l	1486.65
Zn	66	72	3	He	0.037	ug/l	334.45
As	75	72	1	No Gas	0.065	ug/l	9307.17
As	75	72	3	He	0.032	ug/l	205.80
Se	78	72	2	H2	0.016	ug/l	45.22
Br	79	72	1	No Gas	76.855	ug/l	17532.64
Br	79	72	2	H2	68.352	ug/l	10466.41
Se	82	72	1	No Gas	-0.282	ug/l	523.81
Kr	84	72	1	No Gas		ug/l	17126.24
Sr	88	72	1	No Gas	-0.001	ug/l	1670.12
Sr	88	72	3	He	0.004	ug/l	374.45
Mo	95	115	1	No Gas	0.011	ug/l	394.45
Mo	95	115	3	He	0.016	ug/l	160.00
Mo	98	115	1	No Gas	0.007	ug/l	568.90
Ag	107	115	1	No Gas	-0.007	ug/l	2665.99
Ag	109	115	1	No Gas	-0.007	ug/l	2577.94
Cd	111	115	1	No Gas	0.000	ug/l	15.33

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.002	ug/l	21.11
Cd	114	115	1	No Gas	-0.001	ug/l	-200.66
Cd	114	115	3	He	0.001	ug/l	48.99
Sn	118	115	1	No Gas	0.100	ug/l	6166.74
Sn	118	115	3	He	0.046	ug/l	1308.96
Sb	121	115	1	No Gas	0.067	ug/l	3406.43
Sb	121	115	3	He	0.049	ug/l	695.09
Sb	123	115	1	No Gas	0.066	ug/l	2590.83
Sb	123	115	3	He	0.052	ug/l	565.74
Ba	135	115	1	No Gas	-0.006	ug/l	336.01
Ba	137	115	1	No Gas	-0.008	ug/l	442.46
La	139	115	3	He	0.002	ug/l	128.89
Ce	140	115	3	He	0.002	ug/l	201.11
Hg	201	209	1	No Gas	0.001	ug/l	198.63
Hg	202	209	1	No Gas	0.000	ug/l	491.58
Hg	202	209	3	He	-0.004	ug/l	194.29
Tl	203	209	3	He	1.206	ug/l	18593.77
Tl	205	209	1	No Gas	0.866	ug/l	82877.64
Tl	205	209	3	He	1.209	ug/l	43977.41
[Pb]	206	209	1	No Gas	0.029	ug/l	2609.16
[Pb]	207	209	1	No Gas	0.026	ug/l	2234.65
Pb	208	209	1	No Gas	0.029	ug/l	10341.64
Th	232	209	3	He	0.016	ug/l	1040.46
U	238	209	1	No Gas	0.002	ug/l	534.90

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4419368.30	123.3
Sc	45	2	H2	3589261.21	106.9
Sc	45	3	He	452269.84	105.2
Ge	72	1	No Gas	1678507.68	111.2
Ge	72	2	H2	1387045.33	104.4
Ge	72	3	He	316735.49	100.3
In	115	1	No Gas	18088127.22	106.6
In	115	3	He	4273757.04	101.4
Tb	159	1	No Gas	22660280.94	105.0
Tb	159	3	He	8407208.27	99.5
Ho	165	1	No Gas	22669460.54	104.7
Ho	165	3	He	8480767.45	100.2
Lu	175	1	No Gas	22593359.65	102.9
Lu	175	3	He	7054953.56	99.7
Bi	209	1	No Gas	17122645.01	104.1
Bi	209	3	He	6564862.05	99.1

# ICPMS207-B Analytical Data

**Sample Name** B21122105-001A  
**File Name** 062SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 17:47:15  
**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	2.349	ug/l	13431.99
Be	9	45	1	No Gas	-0.001	ug/l	25.66
B	11	45	1	No Gas	38.826	ug/l	41280.78
Na	23	45	3	He	46981.690	ug/l	45718550.98
Mg	24	45	3	He	9767.683	ug/l	5164135.51
Al	27	45	1	No Gas	5.321	ug/l	95590.72
Si	28	45	2	H2	18763.768	ug/l	41435100.75
K	39	72	3	He	3443.109	ug/l	2429627.18
Ca	40	72	2	H2	12981.828	ug/l	138634084.20
Ti	47	72	1	No Gas	1.323	ug/l	2961.63
V	51	72	1	No Gas	10.798	ug/l	302727.69
V	51	72	3	He	9.330	ug/l	66231.50
Cr	52	72	1	No Gas	1.637	ug/l	70214.56
Cr	52	72	3	He	1.801	ug/l	13924.43
Mn	55	72	1	No Gas	11.334	ug/l	476926.98
Mn	55	72	3	He	11.338	ug/l	61021.51
Fe	56	72	2	H2	4.474	ug/l	144148.89
Fe	56	72	3	He	4.626	ug/l	40975.42
Co	59	72	1	No Gas	0.034	ug/l	1620.22
Ni	60	72	1	No Gas	0.672	ug/l	5619.95
Ni	60	72	3	He	0.611	ug/l	1874.58
Cu	63	72	1	No Gas	0.822	ug/l	19598.32
Cu	63	72	3	He	0.384	ug/l	3888.41
Cu	65	72	1	No Gas	0.372	ug/l	5127.63
Zn	66	72	1	No Gas	1.115	ug/l	8738.72
Zn	66	72	3	He	1.326	ug/l	2431.33
As	75	72	1	No Gas	1.413	ug/l	20943.30
As	75	72	3	He	1.320	ug/l	1952.02
Se	78	72	2	H2	0.098	ug/l	123.00
Br	79	72	1	No Gas	5991.395	ug/l	396426.30
Br	79	72	2	H2	5584.554	ug/l	268033.64
Se	82	72	1	No Gas	0.347	ug/l	904.23
Kr	84	72	1	No Gas		ug/l	70782.38
Sr	88	72	1	No Gas	109.405	ug/l	8394697.91
Sr	88	72	3	He	116.071	ug/l	1094099.00
Mo	95	115	1	No Gas	4.912	ug/l	72662.75
Mo	95	115	3	He	4.979	ug/l	26786.23
Mo	98	115	1	No Gas	4.842	ug/l	120320.37
Ag	107	115	1	No Gas	-0.070	ug/l	158.06
Ag	109	115	1	No Gas	-0.069	ug/l	148.73
Cd	111	115	1	No Gas	0.008	ug/l	90.82

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.005	ug/l	27.78
Cd	114	115	1	No Gas	0.019	ug/l	206.94
Cd	114	115	3	He	0.004	ug/l	68.42
Sn	118	115	1	No Gas	0.043	ug/l	4688.15
Sn	118	115	3	He	0.063	ug/l	1424.62
Sb	121	115	1	No Gas	0.481	ug/l	20435.81
Sb	121	115	3	He	0.485	ug/l	5274.18
Sb	123	115	1	No Gas	0.477	ug/l	15562.15
Sb	123	115	3	He	0.489	ug/l	4187.71
Ba	135	115	1	No Gas	20.876	ug/l	165927.86
Ba	137	115	1	No Gas	21.074	ug/l	285884.05
La	139	115	3	He	0.004	ug/l	225.56
Ce	140	115	3	He	0.011	ug/l	556.68
Hg	201	209	1	No Gas	0.007	ug/l	218.29
Hg	202	209	1	No Gas	0.275	ug/l	3702.45
Hg	202	209	3	He	0.233	ug/l	1305.47
Tl	203	209	3	He	0.671	ug/l	10641.19
Tl	205	209	1	No Gas	0.457	ug/l	45369.67
Tl	205	209	3	He	0.660	ug/l	24849.68
[Pb]	206	209	1	No Gas	0.036	ug/l	2658.07
[Pb]	207	209	1	No Gas	0.028	ug/l	2173.53
Pb	208	209	1	No Gas	0.034	ug/l	10321.66
Th	232	209	3	He	0.004	ug/l	468.20
U	238	209	1	No Gas	0.309	ug/l	33427.54

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	5308103.36	148.1
Sc	45	2	H2	3703211.12	110.3
Sc	45	3	He	476932.51	110.9
Ge	72	1	No Gas	1846047.39	122.3
Ge	72	2	H2	1444922.17	108.7
Ge	72	3	He	325489.35	103.0
In	115	1	No Gas	18186351.77	107.1
In	115	3	He	4238095.91	100.6
Tb	159	1	No Gas	22829038.23	105.7
Tb	159	3	He	8287150.09	98.0
Ho	165	1	No Gas	22689939.77	104.8
Ho	165	3	He	8489605.24	100.3
Lu	175	1	No Gas	22685074.07	103.3
Lu	175	3	He	7029440.13	99.4
Bi	209	1	No Gas	16191874.42	98.5
Bi	209	3	He	6326467.38	95.5

# ICPMS207-B Analytical Data

**Sample Name** B21122105-001B  
**File Name** 063SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 17:53:23  
**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	4.544	ug/l	15837.28
Be	9	45	1	No Gas	0.008	ug/l	30.99
B	11	45	1	No Gas	44.106	ug/l	34552.83
Na	23	45	3	He	50134.133	ug/l	38660579.15
Mg	24	45	3	He	10310.379	ug/l	4319041.04
Al	27	45	1	No Gas	9.078	ug/l	105859.79
Si	28	45	2	H2	23061.892	ug/l	34387476.20
K	39	72	3	He	3495.941	ug/l	2064697.57
Ca	40	72	2	H2	15604.184	ug/l	118451812.64
Ti	47	72	1	No Gas	1.985	ug/l	3557.36
V	51	72	1	No Gas	11.669	ug/l	265197.35
V	51	72	3	He	11.716	ug/l	68648.09
Cr	52	72	1	No Gas	2.616	ug/l	78794.51
Cr	52	72	3	He	1.975	ug/l	12736.68
Mn	55	72	1	No Gas	11.696	ug/l	399389.67
Mn	55	72	3	He	12.124	ug/l	54664.11
Fe	56	72	2	H2	8.924	ug/l	186887.42
Fe	56	72	3	He	7.883	ug/l	53088.92
Co	59	72	1	No Gas	0.127	ug/l	3946.06
Ni	60	72	1	No Gas	0.726	ug/l	4904.45
Ni	60	72	3	He	0.682	ug/l	1742.34
Cu	63	72	1	No Gas	1.107	ug/l	20570.06
Cu	63	72	3	He	0.678	ug/l	5105.21
Cu	65	72	1	No Gas	0.629	ug/l	6219.83
Zn	66	72	1	No Gas	1.171	ug/l	7387.87
Zn	66	72	3	He	1.310	ug/l	2015.71
As	75	72	1	No Gas	1.943	ug/l	20383.34
As	75	72	3	He	1.565	ug/l	1913.02
Se	78	72	2	H2	0.147	ug/l	120.00
Br	79	72	1	No Gas	1706.006	ug/l	99811.55
Br	79	72	2	H2	1690.366	ug/l	61592.13
Se	82	72	1	No Gas	0.278	ug/l	705.01
Kr	84	72	1	No Gas		ug/l	63012.33
Sr	88	72	1	No Gas	119.495	ug/l	7444717.01
Sr	88	72	3	He	122.583	ug/l	968591.82
Mo	95	115	1	No Gas	5.300	ug/l	69304.89
Mo	95	115	3	He	5.656	ug/l	25886.80
Mo	98	115	1	No Gas	5.223	ug/l	114746.73
Ag	107	115	1	No Gas	-0.070	ug/l	140.72
Ag	109	115	1	No Gas	-0.070	ug/l	112.04
Cd	111	115	1	No Gas	0.006	ug/l	61.20

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.003	ug/l	19.00
Cd	114	115	1	No Gas	0.013	ug/l	71.50
Cd	114	115	3	He	-0.001	ug/l	30.72
Sn	118	115	1	No Gas	0.382	ug/l	12211.14
Sn	118	115	3	He	0.458	ug/l	3648.28
Sb	121	115	1	No Gas	0.510	ug/l	19131.53
Sb	121	115	3	He	0.531	ug/l	4893.01
Sb	123	115	1	No Gas	0.510	ug/l	14682.11
Sb	123	115	3	He	0.550	ug/l	3986.64
Ba	135	115	1	No Gas	21.555	ug/l	151490.70
Ba	137	115	1	No Gas	22.250	ug/l	266877.56
La	139	115	3	He	0.005	ug/l	223.34
Ce	140	115	3	He	0.012	ug/l	521.12
Hg	201	209	1	No Gas	0.038	ug/l	349.94
Hg	202	209	1	No Gas	0.429	ug/l	5052.62
Hg	202	209	3	He	0.358	ug/l	1730.77
Tl	203	209	3	He	0.250	ug/l	4486.56
Tl	205	209	1	No Gas	0.165	ug/l	20146.88
Tl	205	209	3	He	0.254	ug/l	10824.75
[Pb]	206	209	1	No Gas	0.048	ug/l	2751.41
[Pb]	207	209	1	No Gas	0.046	ug/l	2380.23
Pb	208	209	1	No Gas	0.049	ug/l	10949.62
Th	232	209	3	He	0.056	ug/l	2571.96
U	238	209	1	No Gas	0.327	ug/l	32427.31

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3949166.17	110.2
Sc	45	2	H2	2515807.89	74.9
Sc	45	3	He	380482.01	88.5
Ge	72	1	No Gas	1497387.06	99.2
Ge	72	2	H2	1032754.69	77.7
Ge	72	3	He	273604.07	86.6
In	115	1	No Gas	16078742.47	94.7
In	115	3	He	3622416.08	86.0
Tb	159	1	No Gas	20779536.31	96.2
Tb	159	3	He	7518920.01	89.0
Ho	165	1	No Gas	20553186.42	95.0
Ho	165	3	He	7566301.87	89.4
Lu	175	1	No Gas	20547737.85	93.6
Lu	175	3	He	6347754.82	89.7
Bi	209	1	No Gas	14857656.80	90.4
Bi	209	3	He	5786497.07	87.3

# ICPMS207-B Analytical Data

**Sample Name** B21122168-001A  
**File Name** 064SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 17:59:32  
**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	0.978	ug/l	7688.37
Be	9	45	1	No Gas	0.000	ug/l	25.66
B	11	45	1	No Gas	217.369	ug/l	196900.62
Na	23	45	3	He	103386.462	ug/l	96748710.78
Mg	24	45	3	He	9612.434	ug/l	4888005.11
Al	27	45	1	No Gas	0.704	ug/l	34464.26
Si	28	45	2	H2	32570.536	ug/l	70577881.53
K	39	72	3	He	3751.992	ug/l	2584265.13
Ca	40	72	2	H2	5905.098	ug/l	60935064.58
Ti	47	72	1	No Gas	2.273	ug/l	4738.90
V	51	72	1	No Gas	49.569	ug/l	1313349.88
V	51	72	3	He	46.031	ug/l	300552.76
Cr	52	72	1	No Gas	3.590	ug/l	117294.22
Cr	52	72	3	He	3.803	ug/l	28166.96
Mn	55	72	1	No Gas	0.030	ug/l	7616.89
Mn	55	72	3	He	0.088	ug/l	718.21
Fe	56	72	2	H2	0.299	ug/l	31550.70
Fe	56	72	3	He	0.340	ug/l	11290.79
Co	59	72	1	No Gas	0.018	ug/l	1021.34
Ni	60	72	1	No Gas	0.215	ug/l	1942.96
Ni	60	72	3	He	0.169	ug/l	597.80
Cu	63	72	1	No Gas	1.309	ug/l	27873.65
Cu	63	72	3	He	0.283	ug/l	3062.38
Cu	65	72	1	No Gas	0.305	ug/l	4224.32
Zn	66	72	1	No Gas	0.688	ug/l	5599.58
Zn	66	72	3	He	0.838	ug/l	1604.54
As	75	72	1	No Gas	0.413	ug/l	12312.45
As	75	72	3	He	0.178	ug/l	399.67
Se	78	72	2	H2	0.334	ug/l	331.78
Br	79	72	1	No Gas	6274.523	ug/l	392061.85
Br	79	72	2	H2	5175.026	ug/l	240508.57
Se	82	72	1	No Gas	0.628	ug/l	995.96
Kr	84	72	1	No Gas		ug/l	40449.75
Sr	88	72	1	No Gas	52.421	ug/l	3813578.08
Sr	88	72	3	He	52.631	ug/l	485374.75
Mo	95	115	1	No Gas	0.535	ug/l	7873.32
Mo	95	115	3	He	0.522	ug/l	2805.85
Mo	98	115	1	No Gas	0.532	ug/l	13154.03
Ag	107	115	1	No Gas	-0.069	ug/l	202.75
Ag	109	115	1	No Gas	-0.068	ug/l	184.74
Cd	111	115	1	No Gas	0.009	ug/l	91.37



# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.004	ug/l	25.67
Cd	114	115	1	No Gas	0.018	ug/l	173.64
Cd	114	115	3	He	0.003	ug/l	60.62
Sn	118	115	1	No Gas	-0.013	ug/l	3084.24
Sn	118	115	3	He	-0.024	ug/l	771.14
Sb	121	115	1	No Gas	0.282	ug/l	11875.52
Sb	121	115	3	He	0.286	ug/l	3106.32
Sb	123	115	1	No Gas	0.282	ug/l	9135.22
Sb	123	115	3	He	0.285	ug/l	2428.79
Ba	135	115	1	No Gas	4.908	ug/l	38109.76
Ba	137	115	1	No Gas	5.037	ug/l	66663.34
La	139	115	3	He	0.001	ug/l	97.78
Ce	140	115	3	He	0.002	ug/l	170.00
Hg	201	209	1	No Gas	0.003	ug/l	196.63
Hg	202	209	1	No Gas	0.001	ug/l	482.25
Hg	202	209	3	He	0.006	ug/l	223.62
Tl	203	209	3	He	0.338	ug/l	5881.67
Tl	205	209	1	No Gas	0.179	ug/l	22700.87
Tl	205	209	3	He	0.338	ug/l	14007.64
[Pb]	206	209	1	No Gas	0.059	ug/l	3301.54
[Pb]	207	209	1	No Gas	0.056	ug/l	2824.77
Pb	208	209	1	No Gas	0.060	ug/l	13125.98
Th	232	209	3	He	0.000	ug/l	296.12
U	238	209	1	No Gas	0.015	ug/l	1873.10

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4799489.48	133.9
Sc	45	2	H2	3639733.68	108.4
Sc	45	3	He	458818.64	106.7
Ge	72	1	No Gas	1748101.39	115.8
Ge	72	2	H2	1395612.32	105.0
Ge	72	3	He	318353.45	100.8
In	115	1	No Gas	17647596.65	104.0
In	115	3	He	4134654.85	98.1
Tb	159	1	No Gas	22330891.98	103.4
Tb	159	3	He	8285193.86	98.0
Ho	165	1	No Gas	22273560.28	102.9
Ho	165	3	He	8282406.54	97.8
Lu	175	1	No Gas	22272504.43	101.4
Lu	175	3	He	6922466.28	97.8
Bi	209	1	No Gas	16107340.13	98.0
Bi	209	3	He	6089881.65	91.9

# ICPMS207-B Analytical Data

**Sample Name** B21122168-001ADIL  
**File Name** 065ARef.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 18:05:40  
**Sample Type** AIRRef  
**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	4.081	ug/l	5999.60
Be	9	45	1	No Gas	0.024	ug/l	27.66
B	11	45	1	No Gas	236.621	ug/l	37612.59
Na	23	45	3	He	103055.232	ug/l	17592846.96
Mg	24	45	3	He	9561.739	ug/l	886665.88
Al	27	45	1	No Gas	-1.178	ug/l	20015.77
Si	28	45	2	H2	30950.422	ug/l	12367897.79
K	39	72	3	He	3476.005	ug/l	504987.67
Ca	40	72	2	H2	5929.506	ug/l	11529484.49
Ti	47	72	1	No Gas	2.480	ug/l	1011.06
V	51	72	1	No Gas	48.956	ug/l	234182.42
V	51	72	3	He	46.752	ug/l	61506.81
Cr	52	72	1	No Gas	4.139	ug/l	41052.33
Cr	52	72	3	He	4.026	ug/l	6046.84
Mn	55	72	1	No Gas	0.203	ug/l	7240.78
Mn	55	72	3	He	0.254	ug/l	493.91
Fe	56	72	2	H2	-0.421	ug/l	20276.08
Fe	56	72	3	He	0.013	ug/l	8554.45
Co	59	72	1	No Gas	0.024	ug/l	538.95
Ni	60	72	1	No Gas	0.294	ug/l	711.94
Ni	60	72	3	He	0.268	ug/l	261.11
Cu	63	72	1	No Gas	1.306	ug/l	7061.89
Cu	63	72	3	He	0.329	ug/l	1394.46
Cu	65	72	1	No Gas	0.296	ug/l	1740.81
Zn	66	72	1	No Gas	3.204	ug/l	4780.44
Zn	66	72	3	He	3.823	ug/l	1410.08
As	75	72	1	No Gas	0.203	ug/l	8579.52
As	75	72	3	He	0.218	ug/l	210.60
Se	78	72	2	H2	0.371	ug/l	91.44
Br	79	72	1	No Gas	12455.219	ug/l	147774.03
Br	79	72	2	H2	10355.644	ug/l	94308.08
Se	82	72	1	No Gas	0.153	ug/l	630.48
Kr	84	72	1	No Gas		ug/l	20810.42
Sr	88	72	1	No Gas	55.104	ug/l	724275.79
Sr	88	72	3	He	52.806	ug/l	92531.74
Mo	95	115	1	No Gas	0.549	ug/l	1733.45
Mo	95	115	3	He	0.503	ug/l	590.01
Mo	98	115	1	No Gas	0.513	ug/l	2736.95
Ag	107	115	1	No Gas	-0.355	ug/l	100.71
Ag	109	115	1	No Gas	-0.351	ug/l	109.38
Cd	111	115	1	No Gas	0.023	ug/l	52.30

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.006	ug/l	17.11
Cd	114	115	1	No Gas	0.073	ug/l	102.82
Cd	114	115	3	He	-0.002	ug/l	37.28
Sn	118	115	1	No Gas	0.044	ug/l	3533.45
Sn	118	115	3	He	0.012	ug/l	944.48
Sb	121	115	1	No Gas	0.333	ug/l	3184.68
Sb	121	115	3	He	0.358	ug/l	897.46
Sb	123	115	1	No Gas	0.338	ug/l	2492.48
Sb	123	115	3	He	0.337	ug/l	661.75
Ba	135	115	1	No Gas	4.963	ug/l	7723.56
Ba	137	115	1	No Gas	4.928	ug/l	12997.02
La	139	115	3	He	0.002	ug/l	65.55
Ce	140	115	3	He	0.005	ug/l	147.78
Hg	201	209	1	No Gas	-0.033	ug/l	144.97
Hg	202	209	1	No Gas	-0.049	ug/l	349.60
Hg	202	209	3	He	-0.059	ug/l	149.64
Tl	203	209	3	He	0.376	ug/l	2546.60
Tl	205	209	1	No Gas	0.131	ug/l	10492.15
Tl	205	209	3	He	0.399	ug/l	6304.69
[Pb]	206	209	1	No Gas	2.338	ug/l	14634.79
[Pb]	207	209	1	No Gas	2.187	ug/l	12005.46
Pb	208	209	1	No Gas	2.271	ug/l	56189.72
Th	232	209	3	He	0.001	ug/l	302.13
U	238	209	1	No Gas	0.012	ug/l	571.23

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4018273.35	112.1
Sc	45	2	H2	3347648.23	99.7
Sc	45	3	He	418151.55	97.2
Ge	72	1	No Gas	1576780.05	104.4
Ge	72	2	H2	1307617.68	98.4
Ge	72	3	He	301606.18	95.5
In	115	1	No Gas	17005830.26	100.2
In	115	3	He	4077919.81	96.8
Tb	159	1	No Gas	21552871.07	99.8
Tb	159	3	He	8104840.39	95.9
Ho	165	1	No Gas	21391861.11	98.8
Ho	165	3	He	8161280.52	96.4
Lu	175	1	No Gas	21990973.53	100.1
Lu	175	3	He	6757142.32	95.5
Bi	209	1	No Gas	16100672.21	97.9
Bi	209	3	He	6336324.04	95.6

# ICPMS207-B Analytical Data

**Sample Name** CCV  
**File Name** 066\_CCV.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 18:11:49  
**Sample Type** CCV  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	658.483	ug/l	1741092.83
Be	9	45	1	No Gas	55.265	ug/l	72388.91
B	11	45	1	No Gas	56.541	ug/l	43215.52
Na	23	45	3	He	13087.108	ug/l	11341647.33
Mg	24	45	3	He	12936.658	ug/l	6080328.46
Al	27	45	1	No Gas	51.443	ug/l	492014.94
Si	28	45	2	H2	215.569	ug/l	430832.93
K	39	72	3	He	12904.058	ug/l	8271868.49
Ca	40	72	2	H2	12507.111	ug/l	120369582.01
Ti	47	72	1	No Gas	54.925	ug/l	97179.83
V	51	72	1	No Gas	55.107	ug/l	1267989.86
V	51	72	3	He	53.812	ug/l	332418.95
Cr	52	72	1	No Gas	55.305	ug/l	1268900.23
Cr	52	72	3	He	52.860	ug/l	364738.13
Mn	55	72	1	No Gas	53.809	ug/l	1842969.89
Mn	55	72	3	He	53.159	ug/l	264479.22
Fe	56	72	2	H2	1311.414	ug/l	31583984.12
Fe	56	72	3	He	1298.720	ug/l	8278306.24
Co	59	72	1	No Gas	55.808	ug/l	1584164.76
Ni	60	72	1	No Gas	54.542	ug/l	351115.54
Ni	60	72	3	He	54.209	ug/l	143928.72
Cu	63	72	1	No Gas	54.184	ug/l	902939.03
Cu	63	72	3	He	55.838	ug/l	388468.85
Cu	65	72	1	No Gas	54.571	ug/l	444399.91
Zn	66	72	1	No Gas	54.514	ug/l	298094.80
Zn	66	72	3	He	54.212	ug/l	81682.86
As	75	72	1	No Gas	51.556	ug/l	344054.48
As	75	72	3	He	52.536	ug/l	66000.65
Se	78	72	2	H2	52.220	ug/l	43851.17
Br	79	72	1	No Gas	131.058	ug/l	18695.09
Br	79	72	2	H2	101.602	ug/l	11225.46
Se	82	72	1	No Gas	52.952	ug/l	23397.83
Kr	84	72	1	No Gas		ug/l	37337.40
Sr	88	72	1	No Gas	53.862	ug/l	3402666.32
Sr	88	72	3	He	52.448	ug/l	458703.64
Mo	95	115	1	No Gas	49.308	ug/l	671334.24
Mo	95	115	3	He	51.394	ug/l	256001.91
Mo	98	115	1	No Gas	49.124	ug/l	1123602.32
Ag	107	115	1	No Gas	20.016	ug/l	743136.04
Ag	109	115	1	No Gas	19.974	ug/l	722392.26
Cd	111	115	1	No Gas	50.513	ug/l	417795.28

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	52.154	ug/l	134380.13
Cd	114	115	1	No Gas	51.692	ug/l	961199.54
Cd	114	115	3	He	51.960	ug/l	327507.12
Sn	118	115	1	No Gas	51.415	ug/l	1279129.20
Sn	118	115	3	He	51.165	ug/l	345260.51
Sb	121	115	1	No Gas	52.379	ug/l	1989477.77
Sb	121	115	3	He	50.957	ug/l	497081.94
Sb	123	115	1	No Gas	53.144	ug/l	1544579.82
Sb	123	115	3	He	50.864	ug/l	391650.70
Ba	135	115	1	No Gas	54.372	ug/l	398405.91
Ba	137	115	1	No Gas	54.277	ug/l	678888.03
La	139	115	3	He	48.094	ug/l	1765103.64
Ce	140	115	3	He	48.036	ug/l	1876380.15
Hg	201	209	1	No Gas	0.925	ug/l	4910.92
Hg	202	209	1	No Gas	0.928	ug/l	11165.76
Hg	202	209	3	He	0.910	ug/l	4380.51
Tl	203	209	3	He	49.120	ug/l	650548.61
Tl	205	209	1	No Gas	50.661	ug/l	4031287.44
Tl	205	209	3	He	51.603	ug/l	1606818.96
[Pb]	206	209	1	No Gas	50.771	ug/l	1391979.69
[Pb]	207	209	1	No Gas	50.742	ug/l	1206933.14
Pb	208	209	1	No Gas	52.007	ug/l	5612516.15
Th	232	209	3	He	52.757	ug/l	2296693.56
U	238	209	1	No Gas	52.536	ug/l	5520634.56

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3900153.57	108.8
Sc	45	2	H2	3308116.17	98.5
Sc	45	3	He	424048.51	98.6
Ge	72	1	No Gas	1518767.18	100.6
Ge	72	2	H2	1302482.89	98.0
Ge	72	3	He	301904.96	95.6
In	115	1	No Gas	16785536.74	98.9
In	115	3	He	3932368.02	93.3
Tb	159	1	No Gas	21766464.24	100.8
Tb	159	3	He	7928828.81	93.8
Ho	165	1	No Gas	21529186.76	99.5
Ho	165	3	He	8022936.77	94.8
Lu	175	1	No Gas	21788692.30	99.2
Lu	175	3	He	6703191.13	94.7
Bi	209	1	No Gas	15885027.13	96.6
Bi	209	3	He	6150940.58	92.8

# ICPMS207-B Analytical Data

**Sample Name** CCB  
**File Name** 067\_CCB.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 18:17:47  
**Sample Type** CCB  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	1.476	ug/l	7808.49
Be	9	45	1	No Gas	0.012	ug/l	36.99
B	11	45	1	No Gas	1.610	ug/l	3377.08
Na	23	45	3	He	12.174	ug/l	35080.78
Mg	24	45	3	He	1.527	ug/l	1314.13
Al	27	45	1	No Gas	0.171	ug/l	23895.94
Si	28	45	2	H2	1.095	ug/l	7726.44
K	39	72	3	He	10.024	ug/l	69466.73
Ca	40	72	2	H2	0.135	ug/l	78611.24
Ti	47	72	1	No Gas	0.026	ug/l	146.81
V	51	72	1	No Gas	0.123	ug/l	3270.99
V	51	72	3	He	0.520	ug/l	7743.19
Cr	52	72	1	No Gas	0.158	ug/l	25011.76
Cr	52	72	3	He	0.011	ug/l	582.24
Mn	55	72	1	No Gas	0.027	ug/l	6671.65
Mn	55	72	3	He	0.024	ug/l	360.93
Fe	56	72	2	H2	-0.176	ug/l	17771.99
Fe	56	72	3	He	-0.043	ug/l	8253.99
Co	59	72	1	No Gas	0.004	ug/l	502.35
Ni	60	72	1	No Gas	0.029	ug/l	502.35
Ni	60	72	3	He	0.029	ug/l	195.56
Cu	63	72	1	No Gas	-0.028	ug/l	2040.96
Cu	63	72	3	He	-0.010	ug/l	869.19
Cu	65	72	1	No Gas	-0.029	ug/l	982.43
Zn	66	72	1	No Gas	-0.016	ug/l	1054.23
Zn	66	72	3	He	-0.001	ug/l	261.11
As	75	72	1	No Gas	-0.175	ug/l	7031.15
As	75	72	3	He	0.018	ug/l	178.27
Se	78	72	2	H2	0.011	ug/l	37.56
Br	79	72	1	No Gas	72.795	ug/l	16027.15
Br	79	72	2	H2	57.606	ug/l	9254.59
Se	82	72	1	No Gas	-0.647	ug/l	323.02
Kr	84	72	1	No Gas		ug/l	11112.27
Sr	88	72	1	No Gas	-0.006	ug/l	1227.63
Sr	88	72	3	He	-0.004	ug/l	285.56
Mo	95	115	1	No Gas	0.011	ug/l	380.01
Mo	95	115	3	He	0.015	ug/l	150.00
Mo	98	115	1	No Gas	0.011	ug/l	629.53
Ag	107	115	1	No Gas	-0.005	ug/l	2609.29
Ag	109	115	1	No Gas	-0.003	ug/l	2593.95
Cd	111	115	1	No Gas	0.001	ug/l	20.90

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.001	ug/l	17.67
Cd	114	115	1	No Gas	0.003	ug/l	-109.36
Cd	114	115	3	He	-0.001	ug/l	34.95
Sn	118	115	1	No Gas	0.020	ug/l	3852.91
Sn	118	115	3	He	0.022	ug/l	1080.05
Sb	121	115	1	No Gas	0.047	ug/l	2465.80
Sb	121	115	3	He	0.031	ug/l	491.06
Sb	123	115	1	No Gas	0.046	ug/l	1871.32
Sb	123	115	3	He	0.030	ug/l	360.71
Ba	135	115	1	No Gas	-0.004	ug/l	336.01
Ba	137	115	1	No Gas	0.000	ug/l	528.96
La	139	115	3	He	0.000	ug/l	66.67
Ce	140	115	3	He	0.001	ug/l	126.67
Hg	201	209	1	No Gas	-0.009	ug/l	135.31
Hg	202	209	1	No Gas	-0.009	ug/l	376.60
Hg	202	209	3	He	-0.015	ug/l	135.64
Tl	203	209	3	He	0.438	ug/l	7653.28
Tl	205	209	1	No Gas	0.306	ug/l	34196.94
Tl	205	209	3	He	0.424	ug/l	17732.23
[Pb]	206	209	1	No Gas	0.021	ug/l	2333.55
[Pb]	207	209	1	No Gas	0.020	ug/l	2021.28
Pb	208	209	1	No Gas	0.021	ug/l	9231.32
Th	232	209	3	He	0.014	ug/l	950.42
U	238	209	1	No Gas	0.000	ug/l	349.60

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4026957.62	112.3
Sc	45	2	H2	3298129.30	98.2
Sc	45	3	He	425113.19	98.9
Ge	72	1	No Gas	1555890.69	103.0
Ge	72	2	H2	1285552.81	96.7
Ge	72	3	He	301224.62	95.4
In	115	1	No Gas	17189409.65	101.3
In	115	3	He	4086955.08	97.0
Tb	159	1	No Gas	22017127.81	102.0
Tb	159	3	He	8069706.45	95.5
Ho	165	1	No Gas	21708211.82	100.3
Ho	165	3	He	8185096.27	96.7
Lu	175	1	No Gas	21642512.58	98.5
Lu	175	3	He	6930897.48	98.0
Bi	209	1	No Gas	16681556.59	101.5
Bi	209	3	He	6483481.06	97.8

# ICPMS207-B Analytical Data

**Sample Name** B21122168-001AMS  
**File Name** 068MS.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 18:23:59  
**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	2425.283	ug/l	6643726.88
Be	9	45	1	No Gas	49.082	ug/l	66689.20
B	11	45	1	No Gas	259.198	ug/l	197748.87
Na	23	45	3	He	144131.154	ug/l	121480584.86
Mg	24	45	3	He	60096.242	ug/l	27522883.48
Al	27	45	1	No Gas	48.413	ug/l	482245.53
Si	28	45	2	H2	31151.723	ug/l	60413119.86
K	39	72	3	He	53127.182	ug/l	32825874.79
Ca	40	72	2	H2	55509.221	ug/l	503083125.40
Ti	47	72	1	No Gas	53.881	ug/l	93983.27
V	51	72	1	No Gas	96.563	ug/l	2190693.82
V	51	72	3	He	94.531	ug/l	562854.22
Cr	52	72	1	No Gas	54.131	ug/l	1225723.19
Cr	52	72	3	He	51.651	ug/l	345463.54
Mn	55	72	1	No Gas	48.551	ug/l	1639805.22
Mn	55	72	3	He	48.095	ug/l	231965.84
Fe	56	72	2	H2	4948.189	ug/l	112326074.62
Fe	56	72	3	He	4972.079	ug/l	30702963.96
Co	59	72	1	No Gas	50.026	ug/l	1399491.72
Ni	60	72	1	No Gas	48.643	ug/l	308752.11
Ni	60	72	3	He	47.824	ug/l	123124.20
Cu	63	72	1	No Gas	49.873	ug/l	819292.94
Cu	63	72	3	He	49.917	ug/l	336761.54
Cu	65	72	1	No Gas	48.024	ug/l	385532.52
Zn	66	72	1	No Gas	50.131	ug/l	270298.79
Zn	66	72	3	He	48.942	ug/l	71519.95
As	75	72	1	No Gas	48.000	ug/l	316511.07
As	75	72	3	He	49.036	ug/l	59733.11
Se	78	72	2	H2	48.939	ug/l	38751.24
Br	79	72	1	No Gas	7379.509	ug/l	393034.17
Br	79	72	2	H2	5818.622	ug/l	237229.21
Se	82	72	1	No Gas	49.391	ug/l	21568.26
Kr	84	72	1	No Gas		ug/l	54918.77
Sr	88	72	1	No Gas	104.154	ug/l	6482944.64
Sr	88	72	3	He	100.299	ug/l	850072.27
Mo	95	115	1	No Gas	47.791	ug/l	618087.59
Mo	95	115	3	He	46.008	ug/l	221405.08
Mo	98	115	1	No Gas	47.268	ug/l	1026955.63
Ag	107	115	1	No Gas	18.872	ug/l	665737.81
Ag	109	115	1	No Gas	18.911	ug/l	649782.11
Cd	111	115	1	No Gas	46.651	ug/l	366448.84



# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	45.985	ug/l	114466.78
Cd	114	115	1	No Gas	46.873	ug/l	827654.88
Cd	114	115	3	He	46.010	ug/l	280155.64
Sn	118	115	1	No Gas	47.687	ug/l	1127007.42
Sn	118	115	3	He	45.446	ug/l	296378.31
Sb	121	115	1	No Gas	48.237	ug/l	1740274.43
Sb	121	115	3	He	46.270	ug/l	436070.23
Sb	123	115	1	No Gas	47.004	ug/l	1297588.94
Sb	123	115	3	He	46.337	ug/l	344698.91
Ba	135	115	1	No Gas	54.073	ug/l	376299.40
Ba	137	115	1	No Gas	54.210	ug/l	644104.76
La	139	115	3	He	47.200	ug/l	1673323.66
Ce	140	115	3	He	46.711	ug/l	1762562.63
Hg	201	209	1	No Gas	0.917	ug/l	4466.19
Hg	202	209	1	No Gas	0.934	ug/l	10307.58
Hg	202	209	3	He	0.922	ug/l	4067.14
Tl	203	209	3	He	45.662	ug/l	553861.20
Tl	205	209	1	No Gas	45.905	ug/l	3348809.11
Tl	205	209	3	He	46.736	ug/l	1333009.02
[Pb]	206	209	1	No Gas	46.531	ug/l	1169173.29
[Pb]	207	209	1	No Gas	46.303	ug/l	1009657.86
Pb	208	209	1	No Gas	47.725	ug/l	4720719.55
Th	232	209	3	He	50.355	ug/l	2008360.44
U	238	209	1	No Gas	49.918	ug/l	4806655.88

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4168290.30	116.3
Sc	45	2	H2	3350591.08	99.8
Sc	45	3	He	425655.43	99.0
Ge	72	1	No Gas	1542221.61	102.1
Ge	72	2	H2	1264314.90	95.1
Ge	72	3	He	301517.53	95.4
In	115	1	No Gas	16426539.58	96.8
In	115	3	He	3913046.91	92.9
Tb	159	1	No Gas	21137235.24	97.9
Tb	159	3	He	7939461.26	93.9
Ho	165	1	No Gas	21089362.37	97.4
Ho	165	3	He	7937161.26	93.8
Lu	175	1	No Gas	21356637.35	97.2
Lu	175	3	He	6662281.63	94.2
Bi	209	1	No Gas	15005209.20	91.3
Bi	209	3	He	5800022.52	87.5

# ICPMS207-B Analytical Data

**Sample Name** B21122168-001AMSD  
**File Name** 069MSD.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 18:29:59  
**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	2411.438	ug/l	6829940.82
Be	9	45	1	No Gas	49.987	ug/l	70291.52
B	11	45	1	No Gas	266.176	ug/l	210117.60
Na	23	45	3	He	146495.305	ug/l	125050528.13
Mg	24	45	3	He	60314.930	ug/l	27974411.27
Al	27	45	1	No Gas	66.775	ug/l	679576.87
Si	28	45	2	H2	31864.662	ug/l	60831263.77
K	39	72	3	He	56004.791	ug/l	34200698.66
Ca	40	72	2	H2	56788.234	ug/l	513790235.47
Ti	47	72	1	No Gas	57.760	ug/l	101535.69
V	51	72	1	No Gas	102.767	ug/l	2348709.19
V	51	72	3	He	99.160	ug/l	583326.88
Cr	52	72	1	No Gas	56.879	ug/l	1296512.97
Cr	52	72	3	He	54.466	ug/l	360041.31
Mn	55	72	1	No Gas	50.905	ug/l	1732098.79
Mn	55	72	3	He	50.092	ug/l	238788.17
Fe	56	72	2	H2	5096.820	ug/l	115486549.98
Fe	56	72	3	He	5148.604	ug/l	31422817.13
Co	59	72	1	No Gas	51.317	ug/l	1446600.04
Ni	60	72	1	No Gas	49.719	ug/l	317880.07
Ni	60	72	3	He	50.260	ug/l	127866.37
Cu	63	72	1	No Gas	51.962	ug/l	860299.82
Cu	63	72	3	He	52.077	ug/l	347177.22
Cu	65	72	1	No Gas	49.892	ug/l	403731.15
Zn	66	72	1	No Gas	51.304	ug/l	278687.23
Zn	66	72	3	He	51.445	ug/l	74278.04
As	75	72	1	No Gas	48.785	ug/l	324059.82
As	75	72	3	He	51.231	ug/l	61669.90
Se	78	72	2	H2	50.127	ug/l	39620.93
Br	79	72	1	No Gas	7479.578	ug/l	401332.03
Br	79	72	2	H2	5758.304	ug/l	234428.84
Se	82	72	1	No Gas	50.061	ug/l	22026.07
Kr	84	72	1	No Gas		ug/l	53065.26
Sr	88	72	1	No Gas	102.794	ug/l	6449192.09
Sr	88	72	3	He	103.364	ug/l	865872.70
Mo	95	115	1	No Gas	48.738	ug/l	627554.50
Mo	95	115	3	He	47.840	ug/l	227099.95
Mo	98	115	1	No Gas	48.400	ug/l	1047035.96
Ag	107	115	1	No Gas	19.292	ug/l	677701.55
Ag	109	115	1	No Gas	19.399	ug/l	663754.49
Cd	111	115	1	No Gas	47.736	ug/l	373462.00

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	48.005	ug/l	117868.43
Cd	114	115	1	No Gas	47.691	ug/l	839006.05
Cd	114	115	3	He	47.952	ug/l	288004.23
Sn	118	115	1	No Gas	48.426	ug/l	1139878.58
Sn	118	115	3	He	47.822	ug/l	307587.69
Sb	121	115	1	No Gas	48.861	ug/l	1755092.75
Sb	121	115	3	He	48.224	ug/l	448307.61
Sb	123	115	1	No Gas	48.342	ug/l	1329329.54
Sb	123	115	3	He	48.302	ug/l	354433.86
Ba	135	115	1	No Gas	55.638	ug/l	385751.39
Ba	137	115	1	No Gas	56.265	ug/l	665924.61
La	139	115	3	He	49.885	ug/l	1744719.68
Ce	140	115	3	He	48.952	ug/l	1822129.94
Hg	201	209	1	No Gas	0.962	ug/l	4544.87
Hg	202	209	1	No Gas	0.970	ug/l	10378.62
Hg	202	209	3	He	0.936	ug/l	4086.81
Tl	203	209	3	He	47.055	ug/l	565151.90
Tl	205	209	1	No Gas	48.399	ug/l	3427979.33
Tl	205	209	3	He	48.231	ug/l	1362099.22
[Pb]	206	209	1	No Gas	49.069	ug/l	1197320.40
[Pb]	207	209	1	No Gas	48.185	ug/l	1020137.36
Pb	208	209	1	No Gas	49.844	ug/l	4787739.16
Th	232	209	3	He	51.718	ug/l	2042476.84
U	238	209	1	No Gas	50.949	ug/l	4764031.62

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4319926.25	120.5
Sc	45	2	H2	3297863.57	98.2
Sc	45	3	He	431064.58	100.2
Ge	72	1	No Gas	1553180.07	102.9
Ge	72	2	H2	1261976.40	94.9
Ge	72	3	He	297920.52	94.3
In	115	1	No Gas	16361003.46	96.4
In	115	3	He	3859832.55	91.6
Tb	159	1	No Gas	20861725.16	96.6
Tb	159	3	He	7780953.08	92.1
Ho	165	1	No Gas	20732503.23	95.8
Ho	165	3	He	7810584.89	92.3
Lu	175	1	No Gas	20883927.15	95.1
Lu	175	3	He	6620834.61	93.6
Bi	209	1	No Gas	14567268.36	88.6
Bi	209	3	He	5742708.37	86.7

# ICPMS207-B Analytical Data

**Sample Name** Rinse  
**File Name** 070BLKV.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 18:35:56  
**Sample Type** BlkVrfy  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	5.829	ug/l	21243.29
Be	9	45	1	No Gas	0.018	ug/l	49.32
B	11	45	1	No Gas	4.804	ug/l	6237.13
Na	23	45	3	He	24.370	ug/l	46685.42
Mg	24	45	3	He	3.745	ug/l	2412.08
Al	27	45	1	No Gas	-0.678	ug/l	17145.51
Si	28	45	2	H2	1.969	ug/l	9884.58
K	39	72	3	He	19.821	ug/l	76663.00
Ca	40	72	2	H2	1.057	ug/l	88171.30
Ti	47	72	1	No Gas	0.165	ug/l	423.77
V	51	72	1	No Gas	-0.253	ug/l	-5813.52
V	51	72	3	He	0.943	ug/l	10450.43
Cr	52	72	1	No Gas	0.257	ug/l	29047.82
Cr	52	72	3	He	0.010	ug/l	580.02
Mn	55	72	1	No Gas	0.034	ug/l	7353.97
Mn	55	72	3	He	0.021	ug/l	349.94
Fe	56	72	2	H2	-0.176	ug/l	17939.00
Fe	56	72	3	He	-0.015	ug/l	8542.76
Co	59	72	1	No Gas	0.004	ug/l	548.92
Ni	60	72	1	No Gas	0.026	ug/l	518.98
Ni	60	72	3	He	0.022	ug/l	178.89
Cu	63	72	1	No Gas	-0.047	ug/l	1837.52
Cu	63	72	3	He	-0.041	ug/l	658.88
Cu	65	72	1	No Gas	-0.045	ug/l	906.39
Zn	66	72	1	No Gas	-0.037	ug/l	994.17
Zn	66	72	3	He	-0.034	ug/l	214.45
As	75	72	1	No Gas	0.084	ug/l	9308.62
As	75	72	3	He	0.041	ug/l	209.87
Se	78	72	2	H2	0.023	ug/l	48.33
Br	79	72	1	No Gas	141.273	ug/l	20963.65
Br	79	72	2	H2	117.043	ug/l	11831.45
Se	82	72	1	No Gas	-0.225	ug/l	541.41
Kr	84	72	1	No Gas		ug/l	14368.67
Sr	88	72	1	No Gas	-0.006	ug/l	1250.91
Sr	88	72	3	He	0.002	ug/l	340.00
Mo	95	115	1	No Gas	0.034	ug/l	713.36
Mo	95	115	3	He	0.038	ug/l	271.12
Mo	98	115	1	No Gas	0.037	ug/l	1250.07
Ag	107	115	1	No Gas	-0.007	ug/l	2593.95
Ag	109	115	1	No Gas	-0.005	ug/l	2564.60
Cd	111	115	1	No Gas	-0.003	ug/l	-15.54

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.001	ug/l	17.33
Cd	114	115	1	No Gas	-0.001	ug/l	-205.97
Cd	114	115	3	He	-0.001	ug/l	37.64
Sn	118	115	1	No Gas	0.041	ug/l	4481.86
Sn	118	115	3	He	0.039	ug/l	1218.95
Sb	121	115	1	No Gas	0.095	ug/l	4424.83
Sb	121	115	3	He	0.072	ug/l	917.79
Sb	123	115	1	No Gas	0.095	ug/l	3390.09
Sb	123	115	3	He	0.072	ug/l	708.76
Ba	135	115	1	No Gas	-0.015	ug/l	256.16
Ba	137	115	1	No Gas	-0.003	ug/l	499.02
La	139	115	3	He	0.001	ug/l	92.22
Ce	140	115	3	He	0.001	ug/l	147.78
Hg	201	209	1	No Gas	-0.011	ug/l	122.64
Hg	202	209	1	No Gas	-0.014	ug/l	303.95
Hg	202	209	3	He	-0.016	ug/l	131.64
Tl	203	209	3	He	0.282	ug/l	5455.32
Tl	205	209	1	No Gas	0.187	ug/l	23429.53
Tl	205	209	3	He	0.286	ug/l	13103.03
[Pb]	206	209	1	No Gas	0.021	ug/l	2249.09
[Pb]	207	209	1	No Gas	0.020	ug/l	1950.16
Pb	208	209	1	No Gas	0.020	ug/l	8798.97
Th	232	209	3	He	0.018	ug/l	1124.50
U	238	209	1	No Gas	0.000	ug/l	358.27

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4349059.34	121.3
Sc	45	2	H2	3447891.62	102.7
Sc	45	3	He	434600.90	101.1
Ge	72	1	No Gas	1655304.41	109.6
Ge	72	2	H2	1297310.21	97.6
Ge	72	3	He	305110.28	96.6
In	115	1	No Gas	17550559.36	103.4
In	115	3	He	4143237.52	98.3
Tb	159	1	No Gas	21802563.04	101.0
Tb	159	3	He	8130709.75	96.2
Ho	165	1	No Gas	21565932.25	99.6
Ho	165	3	He	8144793.15	96.2
Lu	175	1	No Gas	21689756.49	98.8
Lu	175	3	He	6747399.72	95.4
Bi	209	1	No Gas	16123790.41	98.1
Bi	209	3	He	6439937.51	97.2

# ICPMS207-B Analytical Data

**Sample Name** B21122168-001B  
**File Name** 071SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 18:42:07  
**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	8.801	ug/l	27806.49
Be	9	45	1	No Gas	0.156	ug/l	232.96
B	11	45	1	No Gas	226.848	ug/l	172821.48
Na	23	45	3	He	111836.660	ug/l	83319473.20
Mg	24	45	3	He	11416.060	ug/l	4629333.53
Al	27	45	1	No Gas	5286.813	ug/l	50080190.37
Si	28	45	2	H2	19828.179	ug/l	47239768.49
K	39	72	3	He	4156.730	ug/l	2375632.76
Ca	40	72	2	H2	5950.728	ug/l	64715917.39
Ti	47	72	1	No Gas	314.383	ug/l	558197.44
V	51	72	1	No Gas	67.158	ug/l	1551039.45
V	51	72	3	He	68.022	ug/l	367527.21
Cr	52	72	1	No Gas	30.483	ug/l	711548.43
Cr	52	72	3	He	31.473	ug/l	190622.41
Mn	55	72	1	No Gas	221.391	ug/l	7595418.47
Mn	55	72	3	He	246.587	ug/l	1074898.50
Fe	56	72	2	H2	4041.730	ug/l	110132065.69
Fe	56	72	3	He	5616.045	ug/l	31355164.89
Co	59	72	1	No Gas	4.118	ug/l	117728.55
Ni	60	72	1	No Gas	12.530	ug/l	81223.55
Ni	60	72	3	He	14.414	ug/l	33594.26
Cu	63	72	1	No Gas	12.019	ug/l	203124.15
Cu	63	72	3	He	12.863	ug/l	79075.46
Cu	65	72	1	No Gas	10.940	ug/l	90420.39
Zn	66	72	1	No Gas	9.232	ug/l	51618.56
Zn	66	72	3	He	10.471	ug/l	13996.76
As	75	72	1	No Gas	0.534	ug/l	11569.56
As	75	72	3	He	0.638	ug/l	839.34
Se	78	72	2	H2	0.354	ug/l	371.67
Br	79	72	1	No Gas	1506.370	ug/l	91139.82
Br	79	72	2	H2	1038.680	ug/l	57600.40
Se	82	72	1	No Gas	0.053	ug/l	620.34
Kr	84	72	1	No Gas		ug/l	40549.89
Sr	88	72	1	No Gas	66.560	ug/l	4222590.24
Sr	88	72	3	He	72.858	ug/l	558853.13
Mo	95	115	1	No Gas	1.134	ug/l	14665.35
Mo	95	115	3	He	1.246	ug/l	5482.19
Mo	98	115	1	No Gas	1.110	ug/l	24129.98
Ag	107	115	1	No Gas	0.018	ug/l	3168.96
Ag	109	115	1	No Gas	0.008	ug/l	2739.37
Cd	111	115	1	No Gas	0.207	ug/l	1613.78

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.173	ug/l	400.34
Cd	114	115	1	No Gas	0.122	ug/l	1967.40
Cd	114	115	3	He	0.166	ug/l	949.34
Sn	118	115	1	No Gas	0.622	ug/l	17526.58
Sn	118	115	3	He	0.722	ug/l	5017.59
Sb	121	115	1	No Gas	0.501	ug/l	18420.52
Sb	121	115	3	He	0.554	ug/l	4874.34
Sb	123	115	1	No Gas	0.506	ug/l	14253.30
Sb	123	115	3	He	0.547	ug/l	3779.56
Ba	135	115	1	No Gas	16.205	ug/l	111521.71
Ba	137	115	1	No Gas	16.497	ug/l	193752.72
La	139	115	3	He	1.425	ug/l	45673.66
Ce	140	115	3	He	5.207	ug/l	177436.59
Hg	201	209	1	No Gas	0.052	ug/l	410.59
Hg	202	209	1	No Gas	0.067	ug/l	1136.16
Hg	202	209	3	He	0.089	ug/l	519.24
Tl	203	209	3	He	0.274	ug/l	4363.14
Tl	205	209	1	No Gas	0.142	ug/l	18041.67
Tl	205	209	3	He	0.278	ug/l	10512.39
[Pb]	206	209	1	No Gas	1.371	ug/l	36171.23
[Pb]	207	209	1	No Gas	1.326	ug/l	30429.17
Pb	208	209	1	No Gas	1.364	ug/l	141717.72
Th	232	209	3	He	0.447	ug/l	16836.21
U	238	209	1	No Gas	0.091	ug/l	9109.68

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4037280.07	112.6
Sc	45	2	H2	4327186.53	128.8
Sc	45	3	He	372639.85	86.7
Ge	72	1	No Gas	1525873.71	101.0
Ge	72	2	H2	1565625.78	117.8
Ge	72	3	He	267589.47	84.7
In	115	1	No Gas	15735829.53	92.7
In	115	3	He	3513614.98	83.4
Tb	159	1	No Gas	20286804.84	94.0
Tb	159	3	He	6964562.76	82.4
Ho	165	1	No Gas	20050844.51	92.6
Ho	165	3	He	6954699.51	82.2
Lu	175	1	No Gas	20105647.23	91.5
Lu	175	3	He	5893360.50	83.3
Bi	209	1	No Gas	14669979.73	89.2
Bi	209	3	He	5338373.16	80.6

# ICPMS207-B Analytical Data

**Sample Name** B21122168-001BDIL  
**File Name** 072SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 18:48:13  
**Sample Type** Sample  
**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	20.644	ug/l	15014.09
Be	9	45	1	No Gas	0.169	ug/l	66.66
B	11	45	1	No Gas	238.211	ug/l	37876.65
Na	23	45	3	He	103388.684	ug/l	17941069.73
Mg	24	45	3	He	10486.968	ug/l	988219.18
Al	27	45	1	No Gas	5503.227	ug/l	10403182.83
Si	28	45	2	H2	28500.668	ug/l	11492274.15
K	39	72	3	He	3634.458	ug/l	525649.68
Ca	40	72	2	H2	7388.372	ug/l	14122054.89
Ti	47	72	1	No Gas	313.707	ug/l	115048.24
V	51	72	1	No Gas	65.401	ug/l	311557.46
V	51	72	3	He	64.408	ug/l	83073.18
Cr	52	72	1	No Gas	30.728	ug/l	165347.40
Cr	52	72	3	He	28.532	ug/l	39819.31
Mn	55	72	1	No Gas	231.736	ug/l	1645248.81
Mn	55	72	3	He	226.637	ug/l	225526.32
Fe	56	72	2	H2	5119.701	ug/l	24384901.34
Fe	56	72	3	He	5154.518	ug/l	6572646.89
Co	59	72	1	No Gas	4.418	ug/l	26374.89
Ni	60	72	1	No Gas	13.194	ug/l	17908.86
Ni	60	72	3	He	13.478	ug/l	7269.63
Cu	63	72	1	No Gas	12.712	ug/l	46337.65
Cu	63	72	3	He	12.240	ug/l	17925.37
Cu	65	72	1	No Gas	11.512	ug/l	20624.80
Zn	66	72	1	No Gas	12.270	ug/l	15002.79
Zn	66	72	3	He	12.351	ug/l	3972.79
As	75	72	1	No Gas	0.202	ug/l	8557.37
As	75	72	3	He	0.603	ug/l	307.40
Se	78	72	2	H2	0.458	ug/l	104.33
Br	79	72	1	No Gas	1812.975	ug/l	31948.63
Br	79	72	2	H2	1423.762	ug/l	18701.65
Se	82	72	1	No Gas	-1.911	ug/l	446.48
Kr	84	72	1	No Gas		ug/l	19108.11
Sr	88	72	1	No Gas	69.143	ug/l	906684.39
Sr	88	72	3	He	66.724	ug/l	116951.96
Mo	95	115	1	No Gas	1.084	ug/l	3253.72
Mo	95	115	3	He	1.116	ug/l	1212.29
Mo	98	115	1	No Gas	1.073	ug/l	5408.34
Ag	107	115	1	No Gas	-0.272	ug/l	734.32
Ag	109	115	1	No Gas	-0.275	ug/l	673.62
Cd	111	115	1	No Gas	0.214	ug/l	377.33



# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.147	ug/l	91.67
Cd	114	115	1	No Gas	0.182	ug/l	519.03
Cd	114	115	3	He	0.143	ug/l	224.86
Sn	118	115	1	No Gas	0.594	ug/l	6382.16
Sn	118	115	3	He	0.601	ug/l	1750.12
Sb	121	115	1	No Gas	0.543	ug/l	4865.00
Sb	121	115	3	He	0.546	ug/l	1266.19
Sb	123	115	1	No Gas	0.525	ug/l	3647.51
Sb	123	115	3	He	0.553	ug/l	997.47
Ba	135	115	1	No Gas	16.413	ug/l	25052.91
Ba	137	115	1	No Gas	16.650	ug/l	43284.99
La	139	115	3	He	1.264	ug/l	9586.70
Ce	140	115	3	He	4.643	ug/l	37388.01
Hg	201	209	1	No Gas	0.048	ug/l	227.96
Hg	202	209	1	No Gas	0.062	ug/l	606.56
Hg	202	209	3	He	0.054	ug/l	257.95
Tl	203	209	3	He	0.677	ug/l	3377.12
Tl	205	209	1	No Gas	0.326	ug/l	13519.39
Tl	205	209	3	He	0.637	ug/l	7859.48
[Pb]	206	209	1	No Gas	1.473	ug/l	9761.40
[Pb]	207	209	1	No Gas	1.404	ug/l	8177.01
Pb	208	209	1	No Gas	1.468	ug/l	38377.49
Th	232	209	3	He	0.355	ug/l	3494.55
U	238	209	1	No Gas	0.087	ug/l	2156.75

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4021176.61	112.2
Sc	45	2	H2	3378582.98	100.6
Sc	45	3	He	424894.70	98.8
Ge	72	1	No Gas	1575127.87	104.3
Ge	72	2	H2	1286837.48	96.8
Ge	72	3	He	301874.96	95.6
In	115	1	No Gas	17242091.44	101.6
In	115	3	He	4041645.99	95.9
Tb	159	1	No Gas	22026327.01	102.0
Tb	159	3	He	8128315.95	96.2
Ho	165	1	No Gas	21697420.40	100.2
Ho	165	3	He	8178763.16	96.6
Lu	175	1	No Gas	22079385.07	100.5
Lu	175	3	He	6919794.45	97.8
Bi	209	1	No Gas	15990071.89	97.2
Bi	209	3	He	6359021.39	96.0

# ICPMS207-B Analytical Data

**Sample Name** B21122168-001BPDS1  
**File Name** 073ARef.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 18:54:19  
**Sample Type** AIRRef  
**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	2370.732	ug/l	5778418.65
Be	9	45	1	No Gas	48.641	ug/l	58798.04
B	11	45	1	No Gas	271.938	ug/l	184570.97
Na	23	45	3	He	147606.424	ug/l	116991130.48
Mg	24	45	3	He	60728.331	ug/l	26156225.51
Al	27	45	1	No Gas	5143.987	ug/l	43440044.35
Si	28	45	2	H2	31882.901	ug/l	55488473.44
K	39	72	3	He	54058.694	ug/l	31556196.47
Ca	40	72	2	H2	56069.381	ug/l	475612866.11
Ti	47	72	1	No Gas	359.189	ug/l	589499.82
V	51	72	1	No Gas	115.267	ug/l	2460584.77
V	51	72	3	He	112.463	ug/l	631825.12
Cr	52	72	1	No Gas	79.764	ug/l	1690391.62
Cr	52	72	3	He	78.111	ug/l	493414.20
Mn	55	72	1	No Gas	263.612	ug/l	8359368.87
Mn	55	72	3	He	268.941	ug/l	1224522.54
Fe	56	72	2	H2	9892.179	ug/l	210141559.16
Fe	56	72	3	He	10030.857	ug/l	58520457.15
Co	59	72	1	No Gas	54.076	ug/l	1424620.81
Ni	60	72	1	No Gas	59.526	ug/l	355547.07
Ni	60	72	3	He	61.318	ug/l	149103.41
Cu	63	72	1	No Gas	61.149	ug/l	945612.08
Cu	63	72	3	He	62.307	ug/l	396902.65
Cu	65	72	1	No Gas	59.237	ug/l	447645.96
Zn	66	72	1	No Gas	57.353	ug/l	290969.29
Zn	66	72	3	He	56.947	ug/l	78570.83
As	75	72	1	No Gas	46.997	ug/l	291883.91
As	75	72	3	He	49.656	ug/l	57143.90
Se	78	72	2	H2	49.139	ug/l	36424.06
Br	79	72	1	No Gas	1687.006	ug/l	93341.90
Br	79	72	2	H2	1338.078	ug/l	55930.27
Se	82	72	1	No Gas	48.147	ug/l	19806.92
Kr	84	72	1	No Gas		ug/l	53973.77
Sr	88	72	1	No Gas	116.216	ug/l	6812338.88
Sr	88	72	3	He	115.473	ug/l	924576.17
Mo	95	115	1	No Gas	50.300	ug/l	608044.73
Mo	95	115	3	He	49.402	ug/l	223632.00
Mo	98	115	1	No Gas	49.424	ug/l	1003619.73
Ag	107	115	1	No Gas	19.666	ug/l	648341.28
Ag	109	115	1	No Gas	19.757	ug/l	634469.14
Cd	111	115	1	No Gas	48.017	ug/l	352579.41

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	47.829	ug/l	111989.86
Cd	114	115	1	No Gas	48.270	ug/l	796813.49
Cd	114	115	3	He	48.047	ug/l	275154.53
Sn	118	115	1	No Gas	51.164	ug/l	1130256.29
Sn	118	115	3	He	49.599	ug/l	304243.32
Sb	121	115	1	No Gas	49.573	ug/l	1671490.28
Sb	121	115	3	He	47.499	ug/l	420970.10
Sb	123	115	1	No Gas	48.382	ug/l	1248496.68
Sb	123	115	3	He	47.568	ug/l	332829.66
Ba	135	115	1	No Gas	68.304	ug/l	444161.46
Ba	137	115	1	No Gas	69.993	ug/l	777067.40
La	139	115	3	He	50.800	ug/l	1692820.24
Ce	140	115	3	He	53.764	ug/l	1908464.45
Hg	201	209	1	No Gas	1.023	ug/l	4616.21
Hg	202	209	1	No Gas	1.052	ug/l	10742.16
Hg	202	209	3	He	1.029	ug/l	4356.51
Tl	203	209	3	He	47.577	ug/l	556226.74
Tl	205	209	1	No Gas	49.038	ug/l	3325757.34
Tl	205	209	3	He	48.503	ug/l	1333258.85
[Pb]	206	209	1	No Gas	50.427	ug/l	1178211.13
[Pb]	207	209	1	No Gas	49.948	ug/l	1012456.81
Pb	208	209	1	No Gas	51.482	ug/l	4734393.73
Th	232	209	3	He	52.395	ug/l	2013968.42
U	238	209	1	No Gas	52.059	ug/l	4661822.15

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3708087.93	103.4
Sc	45	2	H2	3007671.94	89.6
Sc	45	3	He	400271.20	93.1
Ge	72	1	No Gas	1451231.26	96.1
Ge	72	2	H2	1183531.50	89.0
Ge	72	3	He	284780.48	90.1
In	115	1	No Gas	15348693.16	90.4
In	115	3	He	3681524.53	87.4
Tb	159	1	No Gas	20059656.66	92.9
Tb	159	3	He	7529957.87	89.1
Ho	165	1	No Gas	19775656.42	91.4
Ho	165	3	He	7606291.96	89.9
Lu	175	1	No Gas	19655484.79	89.5
Lu	175	3	He	6458614.32	91.3
Bi	209	1	No Gas	13941899.48	84.8
Bi	209	3	He	5589363.42	84.4

# ICPMS207-B Analytical Data

**Sample Name** B21122168-001BMS4  
**File Name** 074MS4.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 19:00:18  
**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	106.945	ug/l	304341.02
Be	9	45	1	No Gas	50.577	ug/l	70575.34
B	11	45	1	No Gas	332.512	ug/l	259600.43
Na	23	45	3	He	102694.535	ug/l	88104753.13
Mg	24	45	3	He	15285.415	ug/l	7125048.53
Al	27	45	1	No Gas	7652.603	ug/l	74662729.44
Si	28	45	2	H2	35424.464	ug/l	70006186.20
K	39	72	3	He	8887.302	ug/l	5610366.51
Ca	40	72	2	H2	12479.708	ug/l	116344177.58
Ti	47	72	1	No Gas	427.465	ug/l	777107.81
V	51	72	1	No Gas	167.067	ug/l	3950367.52
V	51	72	3	He	164.616	ug/l	988830.33
Cr	52	72	1	No Gas	137.554	ug/l	3213065.26
Cr	52	72	3	He	132.019	ug/l	893294.67
Mn	55	72	1	No Gas	734.031	ug/l	25770686.58
Mn	55	72	3	He	751.678	ug/l	3667429.39
Fe	56	72	2	H2	5856.611	ug/l	136649649.84
Fe	56	72	3	He	5721.927	ug/l	35775938.84
Co	59	72	1	No Gas	108.219	ug/l	3157971.27
Ni	60	72	1	No Gas	114.928	ug/l	760037.08
Ni	60	72	3	He	118.000	ug/l	307452.00
Cu	63	72	1	No Gas	118.289	ug/l	2023909.81
Cu	63	72	3	He	117.622	ug/l	802297.96
Cu	65	72	1	No Gas	111.923	ug/l	935889.70
Zn	66	72	1	No Gas	107.301	ug/l	601998.60
Zn	66	72	3	He	109.344	ug/l	161489.29
As	75	72	1	No Gas	94.822	ug/l	643747.49
As	75	72	3	He	100.437	ug/l	123764.00
Se	78	72	2	H2	97.394	ug/l	79245.91
Br	79	72	1	No Gas	1447.800	ug/l	90164.37
Br	79	72	2	H2	1176.991	ug/l	54661.17
Se	82	72	1	No Gas	96.033	ug/l	43130.05
Kr	84	72	1	No Gas		ug/l	80450.88
Sr	88	72	1	No Gas	165.261	ug/l	10731441.04
Sr	88	72	3	He	180.715	ug/l	1551464.39
Mo	95	115	1	No Gas	99.940	ug/l	1299776.90
Mo	95	115	3	He	95.140	ug/l	467470.14
Mo	98	115	1	No Gas	100.414	ug/l	2192731.50
Ag	107	115	1	No Gas	9.347	ug/l	332601.04
Ag	109	115	1	No Gas	9.430	ug/l	326885.39
Cd	111	115	1	No Gas	48.694	ug/l	384470.58

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	49.153	ug/l	124930.46
Cd	114	115	1	No Gas	49.088	ug/l	871304.99
Cd	114	115	3	He	48.733	ug/l	303236.72
Sn	118	115	1	No Gas	99.047	ug/l	2349867.05
Sn	118	115	3	He	94.919	ug/l	631781.66
Sb	121	115	1	No Gas	91.289	ug/l	3308412.06
Sb	121	115	3	He	88.163	ug/l	849226.40
Sb	123	115	1	No Gas	93.518	ug/l	2593523.60
Sb	123	115	3	He	88.977	ug/l	676472.68
Ba	135	115	1	No Gas	113.506	ug/l	793424.13
Ba	137	115	1	No Gas	115.382	ug/l	1377091.16
La	139	115	3	He	101.803	ug/l	3688922.03
Ce	140	115	3	He	104.096	ug/l	4015041.71
Hg	201	209	1	No Gas	0.067	ug/l	476.91
Hg	202	209	1	No Gas	0.091	ug/l	1378.46
Hg	202	209	3	He	0.095	ug/l	593.56
Tl	203	209	3	He	95.748	ug/l	1184633.64
Tl	205	209	1	No Gas	97.159	ug/l	7058707.67
Tl	205	209	3	He	100.557	ug/l	2925696.30
[Pb]	206	209	1	No Gas	105.806	ug/l	2649270.91
[Pb]	207	209	1	No Gas	103.692	ug/l	2252756.68
Pb	208	209	1	No Gas	104.056	ug/l	10257142.24
Th	232	209	3	He	102.768	ug/l	4185976.71
U	238	209	1	No Gas	101.792	ug/l	9775624.71

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4159296.10	116.0
Sc	45	2	H2	3315909.49	98.7
Sc	45	3	He	420509.56	97.8
Ge	72	1	No Gas	1561295.39	103.4
Ge	72	2	H2	1261803.54	94.9
Ge	72	3	He	296441.95	93.8
In	115	1	No Gas	16025955.54	94.4
In	115	3	He	3882934.80	92.2
Tb	159	1	No Gas	20395548.79	94.5
Tb	159	3	He	7910283.60	93.6
Ho	165	1	No Gas	20313024.18	93.8
Ho	165	3	He	7926662.11	93.6
Lu	175	1	No Gas	20401798.79	92.9
Lu	175	3	He	6625868.87	93.6
Bi	209	1	No Gas	14519504.39	88.3
Bi	209	3	He	5751195.60	86.8

# ICPMS207-B Analytical Data

**Sample Name** B21122168-001BMSD4  
**File Name** 075MSD4.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 19:06:08  
**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	106.160	ug/l	292188.88
Be	9	45	1	No Gas	50.953	ug/l	68677.94
B	11	45	1	No Gas	331.877	ug/l	250676.32
Na	23	45	3	He	103783.696	ug/l	88055819.24
Mg	24	45	3	He	15384.460	ug/l	7092739.65
Al	27	45	1	No Gas	7238.778	ug/l	68270252.32
Si	28	45	2	H2	34565.019	ug/l	65187775.61
K	39	72	3	He	8915.629	ug/l	5539968.25
Ca	40	72	2	H2	12289.039	ug/l	114112752.07
Ti	47	72	1	No Gas	413.167	ug/l	741468.79
V	51	72	1	No Gas	163.362	ug/l	3814587.90
V	51	72	3	He	165.044	ug/l	975776.98
Cr	52	72	1	No Gas	136.048	ug/l	3137504.50
Cr	52	72	3	He	131.539	ug/l	875807.04
Mn	55	72	1	No Gas	723.847	ug/l	25079126.35
Mn	55	72	3	He	755.181	ug/l	3625311.28
Fe	56	72	2	H2	5572.830	ug/l	129525327.43
Fe	56	72	3	He	5757.191	ug/l	35418285.37
Co	59	72	1	No Gas	108.296	ug/l	3118580.99
Ni	60	72	1	No Gas	113.691	ug/l	742223.50
Ni	60	72	3	He	116.184	ug/l	297796.00
Cu	63	72	1	No Gas	115.331	ug/l	1947898.45
Cu	63	72	3	He	117.081	ug/l	785626.92
Cu	65	72	1	No Gas	112.217	ug/l	926107.83
Zn	66	72	1	No Gas	110.507	ug/l	612031.28
Zn	66	72	3	He	109.280	ug/l	158762.17
As	75	72	1	No Gas	95.056	ug/l	637154.69
As	75	72	3	He	100.202	ug/l	121432.21
Se	78	72	2	H2	97.922	ug/l	79366.93
Br	79	72	1	No Gas	1504.819	ug/l	92039.25
Br	79	72	2	H2	1231.457	ug/l	56662.13
Se	82	72	1	No Gas	98.490	ug/l	43654.59
Kr	84	72	1	No Gas		ug/l	80674.86
Sr	88	72	1	No Gas	167.343	ug/l	10728350.87
Sr	88	72	3	He	178.650	ug/l	1508391.52
Mo	95	115	1	No Gas	100.401	ug/l	1282586.16
Mo	95	115	3	He	95.764	ug/l	474744.28
Mo	98	115	1	No Gas	100.032	ug/l	2146639.59
Ag	107	115	1	No Gas	9.555	ug/l	334234.50
Ag	109	115	1	No Gas	9.657	ug/l	329010.64
Cd	111	115	1	No Gas	49.680	ug/l	385566.56

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	49.489	ug/l	126921.70
Cd	114	115	1	No Gas	49.901	ug/l	870637.01
Cd	114	115	3	He	49.332	ug/l	309464.80
Sn	118	115	1	No Gas	97.737	ug/l	2278812.33
Sn	118	115	3	He	94.940	ug/l	636845.68
Sb	121	115	1	No Gas	91.611	ug/l	3264222.98
Sb	121	115	3	He	88.602	ug/l	860041.10
Sb	123	115	1	No Gas	94.375	ug/l	2573428.72
Sb	123	115	3	He	89.813	ug/l	688115.37
Ba	135	115	1	No Gas	114.974	ug/l	790109.43
Ba	137	115	1	No Gas	118.164	ug/l	1386388.18
La	139	115	3	He	102.891	ug/l	3757467.90
Ce	140	115	3	He	105.311	ug/l	4093675.46
Hg	201	209	1	No Gas	0.077	ug/l	523.57
Hg	202	209	1	No Gas	0.092	ug/l	1392.46
Hg	202	209	3	He	0.106	ug/l	654.55
Tl	203	209	3	He	94.597	ug/l	1190472.19
Tl	205	209	1	No Gas	95.744	ug/l	6942755.66
Tl	205	209	3	He	98.300	ug/l	2908866.36
[Pb]	206	209	1	No Gas	104.053	ug/l	2600680.10
[Pb]	207	209	1	No Gas	103.197	ug/l	2238250.70
Pb	208	209	1	No Gas	103.755	ug/l	10211126.38
Th	232	209	3	He	104.576	ug/l	4331887.24
U	238	209	1	No Gas	102.135	ug/l	9792410.44

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4016084.91	112.0
Sc	45	2	H2	3164376.05	94.2
Sc	45	3	He	415929.34	96.7
Ge	72	1	No Gas	1541561.64	102.1
Ge	72	2	H2	1256917.14	94.6
Ge	72	3	He	291647.28	92.3
In	115	1	No Gas	15749385.42	92.8
In	115	3	He	3913870.43	92.9
Tb	159	1	No Gas	20550891.42	95.2
Tb	159	3	He	8023669.63	94.9
Ho	165	1	No Gas	20273233.98	93.7
Ho	165	3	He	8053832.25	95.1
Lu	175	1	No Gas	20165403.44	91.8
Lu	175	3	He	6662412.02	94.2
Bi	209	1	No Gas	14491902.00	88.1
Bi	209	3	He	5848883.23	88.3

# ICPMS207-B Analytical Data

**Sample Name** Rinse  
**File Name** 076BLKV.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 19:11:59  
**Sample Type** BlkVrfy  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	3.137	ug/l	12787.16
Be	9	45	1	No Gas	0.012	ug/l	39.32
B	11	45	1	No Gas	4.513	ug/l	5760.08
Na	23	45	3	He	28.233	ug/l	50407.36
Mg	24	45	3	He	3.440	ug/l	2279.00
Al	27	45	1	No Gas	-0.570	ug/l	17518.16
Si	28	45	2	H2	146.967	ug/l	306138.68
K	39	72	3	He	5.179	ug/l	68522.54
Ca	40	72	2	H2	0.657	ug/l	86745.29
Ti	47	72	1	No Gas	0.071	ug/l	241.91
V	51	72	1	No Gas	-0.270	ug/l	-6198.78
V	51	72	3	He	0.810	ug/l	9812.19
Cr	52	72	1	No Gas	0.115	ug/l	25484.90
Cr	52	72	3	He	-0.003	ug/l	497.79
Mn	55	72	1	No Gas	0.054	ug/l	8062.92
Mn	55	72	3	He	0.066	ug/l	588.90
Fe	56	72	2	H2	-0.130	ug/l	19581.06
Fe	56	72	3	He	-0.080	ug/l	8274.01
Co	59	72	1	No Gas	0.010	ug/l	735.23
Ni	60	72	1	No Gas	0.034	ug/l	575.54
Ni	60	72	3	He	0.030	ug/l	203.34
Cu	63	72	1	No Gas	-0.036	ug/l	2024.29
Cu	63	72	3	He	-0.019	ug/l	830.53
Cu	65	72	1	No Gas	-0.031	ug/l	1023.12
Zn	66	72	1	No Gas	0.003	ug/l	1230.47
Zn	66	72	3	He	0.034	ug/l	323.34
As	75	72	1	No Gas	0.085	ug/l	9316.23
As	75	72	3	He	0.027	ug/l	195.67
Se	78	72	2	H2	0.020	ug/l	46.78
Br	79	72	1	No Gas	81.125	ug/l	17479.27
Br	79	72	2	H2	87.678	ug/l	10909.17
Se	82	72	1	No Gas	-0.243	ug/l	534.08
Kr	84	72	1	No Gas		ug/l	13795.97
Sr	88	72	1	No Gas	-0.004	ug/l	1390.65
Sr	88	72	3	He	0.004	ug/l	367.78
Mo	95	115	1	No Gas	0.006	ug/l	316.67
Mo	95	115	3	He	0.013	ug/l	143.33
Mo	98	115	1	No Gas	0.007	ug/l	550.15
Ag	107	115	1	No Gas	-0.005	ug/l	2708.69
Ag	109	115	1	No Gas	-0.006	ug/l	2559.93
Cd	111	115	1	No Gas	0.010	ug/l	105.78



# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.002	ug/l	20.78
Cd	114	115	1	No Gas	0.006	ug/l	-57.47
Cd	114	115	3	He	0.000	ug/l	42.09
Sn	118	115	1	No Gas	0.010	ug/l	3723.13
Sn	118	115	3	He	0.005	ug/l	984.49
Sb	121	115	1	No Gas	0.095	ug/l	4491.17
Sb	121	115	3	He	0.071	ug/l	915.46
Sb	123	115	1	No Gas	0.096	ug/l	3484.45
Sb	123	115	3	He	0.077	ug/l	755.10
Ba	135	115	1	No Gas	-0.016	ug/l	256.16
Ba	137	115	1	No Gas	-0.011	ug/l	395.89
La	139	115	3	He	0.001	ug/l	103.33
Ce	140	115	3	He	0.002	ug/l	183.34
Hg	201	209	1	No Gas	0.003	ug/l	201.63
Hg	202	209	1	No Gas	-0.001	ug/l	469.58
Hg	202	209	3	He	-0.002	ug/l	204.96
Tl	203	209	3	He	1.063	ug/l	16582.30
Tl	205	209	1	No Gas	0.801	ug/l	74208.70
Tl	205	209	3	He	1.084	ug/l	39882.06
[Pb]	206	209	1	No Gas	0.038	ug/l	2784.76
[Pb]	207	209	1	No Gas	0.037	ug/l	2422.46
Pb	208	209	1	No Gas	0.040	ug/l	11170.81
Th	232	209	3	He	0.015	ug/l	997.11
U	238	209	1	No Gas	0.002	ug/l	506.91

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4173767.68	116.4
Sc	45	2	H2	3427052.70	102.0
Sc	45	3	He	437174.45	101.7
Ge	72	1	No Gas	1650460.72	109.3
Ge	72	2	H2	1335260.59	100.5
Ge	72	3	He	310895.70	98.4
In	115	1	No Gas	17780550.29	104.8
In	115	3	He	4170629.21	99.0
Tb	159	1	No Gas	22329340.85	103.4
Tb	159	3	He	8334801.28	98.6
Ho	165	1	No Gas	21923272.71	101.3
Ho	165	3	He	8400771.52	99.2
Lu	175	1	No Gas	21869850.12	99.6
Lu	175	3	He	6920478.67	97.8
Bi	209	1	No Gas	16485119.07	100.3
Bi	209	3	He	6569359.31	99.1

# ICPMS207-B Analytical Data

**Sample Name** B21122168-006A  
**File Name** 077SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 19:18:09  
**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	1.918	ug/l	10748.79
Be	9	45	1	No Gas	-0.001	ug/l	23.00
B	11	45	1	No Gas	67.930	ug/l	63387.69
Na	23	45	3	He	41260.344	ug/l	39923945.52
Mg	24	45	3	He	10939.184	ug/l	5749041.60
Al	27	45	1	No Gas	3.377	ug/l	64579.27
Si	28	45	2	H2	28559.410	ug/l	63312992.40
K	39	72	3	He	2307.340	ug/l	1674726.75
Ca	40	72	2	H2	10654.415	ug/l	110499320.43
Ti	47	72	1	No Gas	2.482	ug/l	5097.70
V	51	72	1	No Gas	0.809	ug/l	21671.81
V	51	72	3	He	0.553	ug/l	8711.50
Cr	52	72	1	No Gas	-0.192	ug/l	18781.48
Cr	52	72	3	He	0.024	ug/l	736.69
Mn	55	72	1	No Gas	517.663	ug/l	20095567.71
Mn	55	72	3	He	542.516	ug/l	2950700.39
Fe	56	72	2	H2	372.986	ug/l	9691449.54
Fe	56	72	3	He	386.218	ug/l	2699966.98
Co	59	72	1	No Gas	0.530	ug/l	17525.93
Ni	60	72	1	No Gas	1.023	ug/l	7826.66
Ni	60	72	3	He	1.015	ug/l	3073.68
Cu	63	72	1	No Gas	0.801	ug/l	17926.17
Cu	63	72	3	He	0.373	ug/l	3858.74
Cu	65	72	1	No Gas	0.384	ug/l	4906.81
Zn	66	72	1	No Gas	1.225	ug/l	8852.18
Zn	66	72	3	He	1.255	ug/l	2350.20
As	75	72	1	No Gas	0.541	ug/l	13130.00
As	75	72	3	He	0.775	ug/l	1233.03
Se	78	72	2	H2	0.016	ug/l	45.55
Br	79	72	1	No Gas	3717.746	ug/l	234658.15
Br	79	72	2	H2	3391.440	ug/l	160915.87
Se	82	72	1	No Gas	-0.154	ug/l	602.74
Kr	84	72	1	No Gas		ug/l	45314.83
Sr	88	72	1	No Gas	69.251	ug/l	4975710.43
Sr	88	72	3	He	69.089	ug/l	660900.62
Mo	95	115	1	No Gas	0.437	ug/l	6692.72
Mo	95	115	3	He	0.418	ug/l	2339.10
Mo	98	115	1	No Gas	0.432	ug/l	11096.10
Ag	107	115	1	No Gas	-0.069	ug/l	174.07
Ag	109	115	1	No Gas	-0.069	ug/l	157.40
Cd	111	115	1	No Gas	0.005	ug/l	63.19

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.003	ug/l	22.22
Cd	114	115	1	No Gas	0.017	ug/l	149.02
Cd	114	115	3	He	0.002	ug/l	55.28
Sn	118	115	1	No Gas	-0.056	ug/l	2049.43
Sn	118	115	3	He	-0.061	ug/l	524.46
Sb	121	115	1	No Gas	0.066	ug/l	3368.74
Sb	121	115	3	He	0.068	ug/l	902.45
Sb	123	115	1	No Gas	0.067	ug/l	2636.85
Sb	123	115	3	He	0.068	ug/l	699.09
Ba	135	115	1	No Gas	3.532	ug/l	28449.34
Ba	137	115	1	No Gas	3.599	ug/l	49359.56
La	139	115	3	He	0.005	ug/l	251.12
Ce	140	115	3	He	0.019	ug/l	896.70
Hg	201	209	1	No Gas	0.009	ug/l	233.96
Hg	202	209	1	No Gas	0.368	ug/l	4885.26
Hg	202	209	3	He	0.330	ug/l	1783.10
Tl	203	209	3	He	0.642	ug/l	10343.50
Tl	205	209	1	No Gas	0.428	ug/l	43768.64
Tl	205	209	3	He	0.641	ug/l	24462.19
[Pb]	206	209	1	No Gas	0.054	ug/l	3239.31
[Pb]	207	209	1	No Gas	0.060	ug/l	2984.81
Pb	208	209	1	No Gas	0.059	ug/l	13339.41
Th	232	209	3	He	0.004	ug/l	496.21
U	238	209	1	No Gas	0.014	ug/l	1876.76

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4801026.40	133.9
Sc	45	2	H2	3716236.20	110.6
Sc	45	3	He	474204.30	110.3
Ge	72	1	No Gas	1727355.76	114.4
Ge	72	2	H2	1403184.46	105.6
Ge	72	3	He	330230.87	104.5
In	115	1	No Gas	18212324.42	107.3
In	115	3	He	4275079.93	101.5
Tb	159	1	No Gas	22682353.85	105.1
Tb	159	3	He	8528475.15	100.9
Ho	165	1	No Gas	22235521.20	102.7
Ho	165	3	He	8508211.56	100.5
Lu	175	1	No Gas	22531663.79	102.6
Lu	175	3	He	7115714.89	100.6
Bi	209	1	No Gas	16499426.82	100.3
Bi	209	3	He	6383899.92	96.3

# ICPMS207-B Analytical Data

**Sample Name** B21122168-006B  
**File Name** 078SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 19:24:15  
**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	4.395	ug/l	15004.07
Be	9	45	1	No Gas	0.014	ug/l	37.99
B	11	45	1	No Gas	76.917	ug/l	57040.84
Na	23	45	3	He	41848.462	ug/l	32748577.29
Mg	24	45	3	He	10875.845	ug/l	4624062.83
Al	27	45	1	No Gas	13.432	ug/l	141898.19
Si	28	45	2	H2	17040.541	ug/l	37941994.26
K	39	72	3	He	2220.274	ug/l	1344605.31
Ca	40	72	2	H2	8801.874	ug/l	87391027.12
Ti	47	72	1	No Gas	3.753	ug/l	6624.86
V	51	72	1	No Gas	0.722	ug/l	16792.49
V	51	72	3	He	2.499	ug/l	18066.73
Cr	52	72	1	No Gas	0.835	ug/l	39074.51
Cr	52	72	3	He	0.133	ug/l	1290.06
Mn	55	72	1	No Gas	507.463	ug/l	17066189.94
Mn	55	72	3	He	549.515	ug/l	2488905.55
Fe	56	72	2	H2	402.178	ug/l	10043410.03
Fe	56	72	3	He	480.119	ug/l	2793642.37
Co	59	72	1	No Gas	0.625	ug/l	17855.58
Ni	60	72	1	No Gas	1.105	ug/l	7297.42
Ni	60	72	3	He	1.066	ug/l	2685.82
Cu	63	72	1	No Gas	1.416	ug/l	25604.71
Cu	63	72	3	He	1.092	ug/l	7761.51
Cu	65	72	1	No Gas	1.041	ug/l	9504.26
Zn	66	72	1	No Gas	0.724	ug/l	4977.21
Zn	66	72	3	He	0.784	ug/l	1313.40
As	75	72	1	No Gas	0.049	ug/l	8200.76
As	75	72	3	He	0.712	ug/l	955.88
Se	78	72	2	H2	0.027	ug/l	54.00
Br	79	72	1	No Gas	860.336	ug/l	56020.48
Br	79	72	2	H2	602.648	ug/l	33445.71
Se	82	72	1	No Gas	-0.207	ug/l	495.55
Kr	84	72	1	No Gas		ug/l	38985.38
Sr	88	72	1	No Gas	71.631	ug/l	4455373.27
Sr	88	72	3	He	72.030	ug/l	574316.03
Mo	95	115	1	No Gas	0.509	ug/l	6746.07
Mo	95	115	3	He	0.547	ug/l	2663.60
Mo	98	115	1	No Gas	0.503	ug/l	11189.19
Ag	107	115	1	No Gas	-0.063	ug/l	386.83
Ag	109	115	1	No Gas	-0.063	ug/l	352.81
Cd	111	115	1	No Gas	0.007	ug/l	65.84

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.001	ug/l	16.22
Cd	114	115	1	No Gas	0.013	ug/l	64.81
Cd	114	115	3	He	0.000	ug/l	35.44
Sn	118	115	1	No Gas	0.229	ug/l	8449.19
Sn	118	115	3	He	0.273	ug/l	2609.15
Sb	121	115	1	No Gas	0.048	ug/l	2304.75
Sb	121	115	3	He	0.048	ug/l	601.41
Sb	123	115	1	No Gas	0.049	ug/l	1816.30
Sb	123	115	3	He	0.051	ug/l	488.39
Ba	135	115	1	No Gas	3.928	ug/l	27452.73
Ba	137	115	1	No Gas	4.057	ug/l	48307.71
La	139	115	3	He	0.013	ug/l	515.57
Ce	140	115	3	He	0.061	ug/l	2363.56
Hg	201	209	1	No Gas	0.024	ug/l	281.61
Hg	202	209	1	No Gas	0.247	ug/l	3097.08
Hg	202	209	3	He	0.214	ug/l	1124.83
Tl	203	209	3	He	0.235	ug/l	4360.47
Tl	205	209	1	No Gas	0.127	ug/l	17156.10
Tl	205	209	3	He	0.236	ug/l	10440.29
[Pb]	206	209	1	No Gas	0.074	ug/l	3417.13
[Pb]	207	209	1	No Gas	0.065	ug/l	2813.65
Pb	208	209	1	No Gas	0.072	ug/l	13277.14
Th	232	209	3	He	0.038	ug/l	1846.21
U	238	209	1	No Gas	0.014	ug/l	1680.77

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3834727.57	107.0
Sc	45	2	H2	3884548.44	115.7
Sc	45	3	He	384356.96	89.4
Ge	72	1	No Gas	1495346.27	99.0
Ge	72	2	H2	1374562.23	103.4
Ge	72	3	He	275382.00	87.2
In	115	1	No Gas	15833989.57	93.3
In	115	3	He	3755575.29	89.1
Tb	159	1	No Gas	20763347.62	96.2
Tb	159	3	He	7600432.45	89.9
Ho	165	1	No Gas	20676580.64	95.5
Ho	165	3	He	7573726.79	89.5
Lu	175	1	No Gas	21079603.24	96.0
Lu	175	3	He	6345270.26	89.7
Bi	209	1	No Gas	14850241.51	90.3
Bi	209	3	He	5854192.07	88.3

# ICPMS207-B Analytical Data

**Sample Name** B21122180-001A  
**File Name** 079SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 19:30:21  
**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	4.518	ug/l	18431.24
Be	9	45	1	No Gas	0.000	ug/l	24.66
B	11	45	1	No Gas	194.729	ug/l	169886.98
Na	23	45	3	He	102593.602	ug/l	97447002.99
Mg	24	45	3	He	33476.172	ug/l	17276907.88
Al	27	45	1	No Gas	0.174	ug/l	27389.71
Si	28	45	2	H2	37639.647	ug/l	82125374.92
K	39	72	3	He	4006.155	ug/l	2763885.76
Ca	40	72	2	H2	24358.892	ug/l	247212465.42
Ti	47	72	1	No Gas	2.469	ug/l	4910.78
V	51	72	1	No Gas	20.787	ug/l	526775.79
V	51	72	3	He	18.489	ug/l	124076.65
Cr	52	72	1	No Gas	0.894	ug/l	45163.06
Cr	52	72	3	He	0.665	ug/l	5379.90
Mn	55	72	1	No Gas	179.704	ug/l	6757142.35
Mn	55	72	3	He	173.253	ug/l	911542.17
Fe	56	72	2	H2	110.042	ug/l	2817996.80
Fe	56	72	3	He	106.985	ug/l	730016.18
Co	59	72	1	No Gas	1.206	ug/l	38073.95
Ni	60	72	1	No Gas	4.084	ug/l	29237.96
Ni	60	72	3	He	4.016	ug/l	11400.04
Cu	63	72	1	No Gas	2.079	ug/l	40727.61
Cu	63	72	3	He	1.017	ug/l	8461.09
Cu	65	72	1	No Gas	1.068	ug/l	10860.41
Zn	66	72	1	No Gas	1.938	ug/l	12840.73
Zn	66	72	3	He	1.896	ug/l	3291.50
As	75	72	1	No Gas	0.627	ug/l	13308.28
As	75	72	3	He	0.814	ug/l	1245.10
Se	78	72	2	H2	0.173	ug/l	183.89
Br	79	72	1	No Gas	3660.824	ug/l	224042.34
Br	79	72	2	H2	2875.364	ug/l	134803.64
Se	82	72	1	No Gas	-0.054	ug/l	628.21
Kr	84	72	1	No Gas		ug/l	78587.10
Sr	88	72	1	No Gas	155.037	ug/l	10775063.69
Sr	88	72	3	He	162.864	ug/l	1506736.14
Mo	95	115	1	No Gas	2.600	ug/l	37811.10
Mo	95	115	3	He	2.562	ug/l	13579.85
Mo	98	115	1	No Gas	2.538	ug/l	62012.75
Ag	107	115	1	No Gas	-0.069	ug/l	185.41
Ag	109	115	1	No Gas	-0.069	ug/l	174.74
Cd	111	115	1	No Gas	0.005	ug/l	58.74

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.007	ug/l	33.56
Cd	114	115	1	No Gas	0.017	ug/l	148.33
Cd	114	115	3	He	0.005	ug/l	75.31
Sn	118	115	1	No Gas	-0.050	ug/l	2155.90
Sn	118	115	3	He	-0.067	ug/l	470.01
Sb	121	115	1	No Gas	0.360	ug/l	15155.31
Sb	121	115	3	He	0.364	ug/l	3938.95
Sb	123	115	1	No Gas	0.355	ug/l	11469.82
Sb	123	115	3	He	0.367	ug/l	3118.33
Ba	135	115	1	No Gas	13.666	ug/l	106616.74
Ba	137	115	1	No Gas	13.976	ug/l	186037.40
La	139	115	3	He	0.004	ug/l	214.45
Ce	140	115	3	He	0.010	ug/l	500.01
Hg	201	209	1	No Gas	0.023	ug/l	297.61
Hg	202	209	1	No Gas	0.461	ug/l	5836.12
Hg	202	209	3	He	0.404	ug/l	2079.75
Tl	203	209	3	He	0.329	ug/l	5884.34
Tl	205	209	1	No Gas	0.189	ug/l	23459.77
Tl	205	209	3	He	0.329	ug/l	13987.60
[Pb]	206	209	1	No Gas	0.061	ug/l	3346.00
[Pb]	207	209	1	No Gas	0.057	ug/l	2840.33
Pb	208	209	1	No Gas	0.062	ug/l	13243.81
Th	232	209	3	He	0.002	ug/l	378.16
U	238	209	1	No Gas	0.134	ug/l	14505.03

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4610187.82	128.6
Sc	45	2	H2	3659312.39	109.0
Sc	45	3	He	465682.90	108.3
Ge	72	1	No Gas	1670583.56	110.6
Ge	72	2	H2	1374098.97	103.4
Ge	72	3	He	319495.00	101.1
In	115	1	No Gas	17840757.09	105.1
In	115	3	He	4164826.22	98.9
Tb	159	1	No Gas	22708047.04	105.2
Tb	159	3	He	8344320.38	98.7
Ho	165	1	No Gas	22464654.91	103.8
Ho	165	3	He	8372869.76	98.9
Lu	175	1	No Gas	22570955.78	102.8
Lu	175	3	He	7137953.48	100.9
Bi	209	1	No Gas	16046829.13	97.6
Bi	209	3	He	6212557.57	93.8

# ICPMS207-B Analytical Data

**Sample Name** CCV  
**File Name** 080\_CCV.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 19:36:28  
**Sample Type** CCV  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	657.626	ug/l	1807390.29
Be	9	45	1	No Gas	53.748	ug/l	73176.74
B	11	45	1	No Gas	56.253	ug/l	44700.04
Na	23	45	3	He	13214.596	ug/l	11557837.61
Mg	24	45	3	He	13156.585	ug/l	6240686.39
Al	27	45	1	No Gas	51.158	ug/l	508691.15
Si	28	45	2	H2	231.714	ug/l	453618.23
K	39	72	3	He	12980.737	ug/l	8338148.69
Ca	40	72	2	H2	12663.708	ug/l	120006549.82
Ti	47	72	1	No Gas	54.920	ug/l	96965.38
V	51	72	1	No Gas	56.872	ug/l	1306199.49
V	51	72	3	He	55.189	ug/l	341529.77
Cr	52	72	1	No Gas	55.481	ug/l	1270157.53
Cr	52	72	3	He	53.444	ug/l	369530.88
Mn	55	72	1	No Gas	55.608	ug/l	1899801.11
Mn	55	72	3	He	53.666	ug/l	267550.80
Fe	56	72	2	H2	1315.126	ug/l	31217540.40
Fe	56	72	3	He	1320.789	ug/l	8436706.52
Co	59	72	1	No Gas	55.640	ug/l	1575939.31
Ni	60	72	1	No Gas	54.036	ug/l	347064.55
Ni	60	72	3	He	54.279	ug/l	144418.48
Cu	63	72	1	No Gas	54.697	ug/l	909605.38
Cu	63	72	3	He	55.907	ug/l	389735.20
Cu	65	72	1	No Gas	54.092	ug/l	439524.15
Zn	66	72	1	No Gas	54.605	ug/l	297858.03
Zn	66	72	3	He	55.156	ug/l	83269.41
As	75	72	1	No Gas	51.315	ug/l	341720.82
As	75	72	3	He	52.823	ug/l	66499.76
Se	78	72	2	H2	53.072	ug/l	43919.21
Br	79	72	1	No Gas	110.905	ug/l	17605.88
Br	79	72	2	H2	87.739	ug/l	10486.37
Se	82	72	1	No Gas	53.228	ug/l	23464.73
Kr	84	72	1	No Gas		ug/l	35176.55
Sr	88	72	1	No Gas	53.187	ug/l	3353272.16
Sr	88	72	3	He	52.840	ug/l	463120.50
Mo	95	115	1	No Gas	49.746	ug/l	683598.38
Mo	95	115	3	He	49.609	ug/l	255832.96
Mo	98	115	1	No Gas	49.494	ug/l	1142609.18
Ag	107	115	1	No Gas	19.880	ug/l	744921.94
Ag	109	115	1	No Gas	19.864	ug/l	725124.69
Cd	111	115	1	No Gas	50.555	ug/l	422026.89



# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	50.776	ug/l	135460.90
Cd	114	115	1	No Gas	51.585	ug/l	968127.95
Cd	114	115	3	He	50.759	ug/l	331278.14
Sn	118	115	1	No Gas	51.399	ug/l	1290588.66
Sn	118	115	3	He	49.570	ug/l	346302.43
Sb	121	115	1	No Gas	51.793	ug/l	1985478.50
Sb	121	115	3	He	49.832	ug/l	503325.86
Sb	123	115	1	No Gas	53.052	ug/l	1556349.54
Sb	123	115	3	He	49.895	ug/l	397725.09
Ba	135	115	1	No Gas	53.834	ug/l	398123.48
Ba	137	115	1	No Gas	54.264	ug/l	685025.41
La	139	115	3	He	47.680	ug/l	1811750.60
Ce	140	115	3	He	47.169	ug/l	1908126.57
Hg	201	209	1	No Gas	0.921	ug/l	4847.25
Hg	202	209	1	No Gas	0.946	ug/l	11267.82
Hg	202	209	3	He	0.918	ug/l	4450.52
Tl	203	209	3	He	48.943	ug/l	653166.75
Tl	205	209	1	No Gas	50.444	ug/l	3977462.99
Tl	205	209	3	He	50.145	ug/l	1573375.26
[Pb]	206	209	1	No Gas	50.842	ug/l	1381079.89
[Pb]	207	209	1	No Gas	50.733	ug/l	1195665.59
Pb	208	209	1	No Gas	51.853	ug/l	5544563.63
Th	232	209	3	He	53.478	ug/l	2346836.58
U	238	209	1	No Gas	52.546	ug/l	5471130.59

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4053680.87	113.1
Sc	45	2	H2	3244025.87	96.6
Sc	45	3	He	428008.76	99.5
Ge	72	1	No Gas	1515345.55	100.4
Ge	72	2	H2	1282968.72	96.5
Ge	72	3	He	302533.15	95.8
In	115	1	No Gas	16940828.27	99.8
In	115	3	He	4074258.23	96.7
Tb	159	1	No Gas	21939523.12	101.6
Tb	159	3	He	8054557.03	95.3
Ho	165	1	No Gas	21522639.17	99.4
Ho	165	3	He	8156897.70	96.4
Lu	175	1	No Gas	21518984.47	98.0
Lu	175	3	He	6859106.37	96.9
Bi	209	1	No Gas	15739932.68	95.7
Bi	209	3	He	6195405.52	93.5

# ICPMS207-B Analytical Data

**Sample Name** CCB  
**File Name** 081\_CCB.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 19:42:27  
**Sample Type** CCB  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	2.226	ug/l	9753.04
Be	9	45	1	No Gas	0.006	ug/l	29.66
B	11	45	1	No Gas	3.166	ug/l	4497.82
Na	23	45	3	He	27.064	ug/l	47879.20
Mg	24	45	3	He	3.410	ug/l	2195.82
Al	27	45	1	No Gas	0.829	ug/l	29964.41
Si	28	45	2	H2	11.418	ug/l	28450.82
K	39	72	3	He	13.703	ug/l	71490.76
Ca	40	72	2	H2	0.943	ug/l	86193.11
Ti	47	72	1	No Gas	0.041	ug/l	176.84
V	51	72	1	No Gas	-0.600	ug/l	-13816.81
V	51	72	3	He	0.956	ug/l	10348.13
Cr	52	72	1	No Gas	0.224	ug/l	26934.58
Cr	52	72	3	He	0.009	ug/l	562.24
Mn	55	72	1	No Gas	0.053	ug/l	7683.48
Mn	55	72	3	He	0.059	ug/l	533.24
Fe	56	72	2	H2	0.023	ug/l	22464.80
Fe	56	72	3	He	0.160	ug/l	9505.97
Co	59	72	1	No Gas	0.010	ug/l	701.96
Ni	60	72	1	No Gas	0.032	ug/l	532.29
Ni	60	72	3	He	0.043	ug/l	231.11
Cu	63	72	1	No Gas	-0.012	ug/l	2350.47
Cu	63	72	3	He	-0.001	ug/l	923.18
Cu	65	72	1	No Gas	-0.023	ug/l	1045.80
Zn	66	72	1	No Gas	-0.016	ug/l	1064.11
Zn	66	72	3	He	-0.005	ug/l	254.45
As	75	72	1	No Gas	0.442	ug/l	11318.08
As	75	72	3	He	0.032	ug/l	195.40
Se	78	72	2	H2	0.014	ug/l	39.89
Br	79	72	1	No Gas	37.849	ug/l	14355.34
Br	79	72	2	H2	48.136	ug/l	8851.87
Se	82	72	1	No Gas	-0.011	ug/l	612.48
Kr	84	72	1	No Gas		ug/l	16436.74
Sr	88	72	1	No Gas	-0.002	ug/l	1470.50
Sr	88	72	3	He	0.004	ug/l	351.12
Mo	95	115	1	No Gas	0.009	ug/l	346.67
Mo	95	115	3	He	0.009	ug/l	115.55
Mo	98	115	1	No Gas	0.011	ug/l	634.46
Ag	107	115	1	No Gas	-0.006	ug/l	2596.62
Ag	109	115	1	No Gas	-0.006	ug/l	2498.57
Cd	111	115	1	No Gas	0.000	ug/l	14.67

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.001	ug/l	16.44
Cd	114	115	1	No Gas	0.001	ug/l	-158.73
Cd	114	115	3	He	-0.001	ug/l	33.30
Sn	118	115	1	No Gas	0.018	ug/l	3839.57
Sn	118	115	3	He	0.017	ug/l	1046.71
Sb	121	115	1	No Gas	0.055	ug/l	2789.89
Sb	121	115	3	He	0.041	ug/l	584.07
Sb	123	115	1	No Gas	0.054	ug/l	2154.39
Sb	123	115	3	He	0.042	ug/l	461.39
Ba	135	115	1	No Gas	-0.004	ug/l	342.66
Ba	137	115	1	No Gas	0.003	ug/l	568.89
La	139	115	3	He	0.001	ug/l	105.56
Ce	140	115	3	He	0.002	ug/l	175.56
Hg	201	209	1	No Gas	-0.010	ug/l	131.31
Hg	202	209	1	No Gas	-0.009	ug/l	360.27
Hg	202	209	3	He	-0.011	ug/l	153.64
Tl	203	209	3	He	0.387	ug/l	6880.55
Tl	205	209	1	No Gas	0.262	ug/l	29832.97
Tl	205	209	3	He	0.389	ug/l	16429.37
[Pb]	206	209	1	No Gas	0.026	ug/l	2413.57
[Pb]	207	209	1	No Gas	0.028	ug/l	2175.75
Pb	208	209	1	No Gas	0.027	ug/l	9696.99
Th	232	209	3	He	0.016	ug/l	1035.79
U	238	209	1	No Gas	0.001	ug/l	456.58

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3987331.41	111.2
Sc	45	2	H2	3345032.23	99.6
Sc	45	3	He	424007.78	98.6
Ge	72	1	No Gas	1577559.10	104.5
Ge	72	2	H2	1284343.73	96.6
Ge	72	3	He	299919.31	94.9
In	115	1	No Gas	17410424.71	102.6
In	115	3	He	4091323.25	97.1
Tb	159	1	No Gas	21730044.07	100.6
Tb	159	3	He	8188396.75	96.9
Ho	165	1	No Gas	21618162.82	99.9
Ho	165	3	He	8264907.95	97.6
Lu	175	1	No Gas	21683696.89	98.7
Lu	175	3	He	6990347.23	98.8
Bi	209	1	No Gas	16326763.14	99.3
Bi	209	3	He	6422159.99	96.9

# ICPMS207-B Analytical Data

**Sample Name** B21122180-001B  
**File Name** 082SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 19:48:38  
**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	6.640	ug/l	20180.15
Be	9	45	1	No Gas	0.013	ug/l	35.99
B	11	45	1	No Gas	209.272	ug/l	146831.43
Na	23	45	3	He	95382.295	ug/l	80452264.91
Mg	24	45	3	He	31508.129	ug/l	14433344.10
Al	27	45	1	No Gas	293.208	ug/l	2577456.10
Si	28	45	2	H2	35287.226	ug/l	64523311.84
K	39	72	3	He	3657.714	ug/l	2291146.48
Ca	40	72	2	H2	23744.551	ug/l	206483219.28
Ti	47	72	1	No Gas	29.004	ug/l	49360.47
V	51	72	1	No Gas	23.398	ug/l	517399.87
V	51	72	3	He	21.472	ug/l	129831.31
Cr	52	72	1	No Gas	2.336	ug/l	70656.03
Cr	52	72	3	He	1.465	ug/l	10179.13
Mn	55	72	1	No Gas	150.946	ug/l	4955983.26
Mn	55	72	3	He	144.006	ug/l	687128.00
Fe	56	72	2	H2	435.319	ug/l	9496107.23
Fe	56	72	3	He	425.599	ug/l	2608775.58
Co	59	72	1	No Gas	1.485	ug/l	40836.09
Ni	60	72	1	No Gas	5.068	ug/l	31594.87
Ni	60	72	3	He	4.829	ug/l	12406.42
Cu	63	72	1	No Gas	2.825	ug/l	47471.30
Cu	63	72	3	He	1.743	ug/l	12509.17
Cu	65	72	1	No Gas	1.807	ug/l	15253.46
Zn	66	72	1	No Gas	3.094	ug/l	17266.08
Zn	66	72	3	He	2.938	ug/l	4479.61
As	75	72	1	No Gas	0.542	ug/l	11079.36
As	75	72	3	He	0.847	ug/l	1167.42
Se	78	72	2	H2	0.209	ug/l	184.78
Br	79	72	1	No Gas	1642.678	ug/l	94088.12
Br	79	72	2	H2	1340.193	ug/l	57205.89
Se	82	72	1	No Gas	-0.073	ug/l	542.34
Kr	84	72	1	No Gas		ug/l	72575.05
Sr	88	72	1	No Gas	152.065	ug/l	9227735.60
Sr	88	72	3	He	145.568	ug/l	1220606.65
Mo	95	115	1	No Gas	2.645	ug/l	33982.61
Mo	95	115	3	He	2.464	ug/l	12474.40
Mo	98	115	1	No Gas	2.612	ug/l	56368.98
Ag	107	115	1	No Gas	-0.035	ug/l	1329.27
Ag	109	115	1	No Gas	-0.037	ug/l	1223.21
Cd	111	115	1	No Gas	0.015	ug/l	126.87

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.008	ug/l	33.78
Cd	114	115	1	No Gas	0.017	ug/l	131.54
Cd	114	115	3	He	0.004	ug/l	68.41
Sn	118	115	1	No Gas	0.350	ug/l	11212.27
Sn	118	115	3	He	0.361	ug/l	3359.31
Sb	121	115	1	No Gas	0.313	ug/l	11726.72
Sb	121	115	3	He	0.298	ug/l	3106.33
Sb	123	115	1	No Gas	0.317	ug/l	9111.20
Sb	123	115	3	He	0.299	ug/l	2450.80
Ba	135	115	1	No Gas	14.637	ug/l	100859.52
Ba	137	115	1	No Gas	14.945	ug/l	175738.28
La	139	115	3	He	0.082	ug/l	3101.47
Ce	140	115	3	He	0.212	ug/l	8478.20
Hg	201	209	1	No Gas	0.054	ug/l	422.92
Hg	202	209	1	No Gas	0.668	ug/l	7566.97
Hg	202	209	3	He	0.522	ug/l	2561.07
Tl	203	209	3	He	0.250	ug/l	4715.41
Tl	205	209	1	No Gas	0.137	ug/l	17795.94
Tl	205	209	3	He	0.243	ug/l	11014.38
[Pb]	206	209	1	No Gas	0.436	ug/l	12572.66
[Pb]	207	209	1	No Gas	0.434	ug/l	10912.31
Pb	208	209	1	No Gas	0.438	ug/l	49792.10
Th	232	209	3	He	0.045	ug/l	2236.43
U	238	209	1	No Gas	0.148	ug/l	14698.99

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3717233.99	103.7
Sc	45	2	H2	3067123.16	91.3
Sc	45	3	He	416436.13	96.8
Ge	72	1	No Gas	1459093.59	96.6
Ge	72	2	H2	1177302.08	88.6
Ge	72	3	He	290555.14	92.0
In	115	1	No Gas	15747973.04	92.8
In	115	3	He	3988517.14	94.7
Tb	159	1	No Gas	20298339.08	94.0
Tb	159	3	He	8113230.24	96.0
Ho	165	1	No Gas	20304141.34	93.8
Ho	165	3	He	8264570.69	97.6
Lu	175	1	No Gas	20468584.11	93.2
Lu	175	3	He	6917163.17	97.8
Bi	209	1	No Gas	14728879.50	89.6
Bi	209	3	He	6086246.59	91.9

# ICPMS207-B Analytical Data

**Sample Name** B21122188-001A  
**File Name** 083SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 19:54:45  
**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	0.237	ug/l	5218.33
Be	9	45	1	No Gas	-0.003	ug/l	20.67
B	11	45	1	No Gas	71.506	ug/l	65732.43
Na	23	45	3	He	37831.070	ug/l	36517298.90
Mg	24	45	3	He	9144.143	ug/l	4793687.28
Al	27	45	1	No Gas	1.130	ug/l	38773.83
Si	28	45	2	H2	23534.034	ug/l	52423260.10
K	39	72	3	He	1998.804	ug/l	1439485.90
Ca	40	72	2	H2	7676.346	ug/l	80897261.08
Ti	47	72	1	No Gas	1.468	ug/l	3060.09
V	51	72	1	No Gas	24.228	ug/l	633881.11
V	51	72	3	He	20.974	ug/l	142751.68
Cr	52	72	1	No Gas	3.010	ug/l	100925.57
Cr	52	72	3	He	3.288	ug/l	24976.95
Mn	55	72	1	No Gas	0.239	ug/l	15620.68
Mn	55	72	3	He	0.293	ug/l	1832.42
Fe	56	72	2	H2	3.006	ug/l	103588.19
Fe	56	72	3	He	3.265	ug/l	31641.64
Co	59	72	1	No Gas	0.013	ug/l	868.31
Ni	60	72	1	No Gas	0.154	ug/l	1470.49
Ni	60	72	3	He	0.119	ug/l	470.01
Cu	63	72	1	No Gas	0.636	ug/l	14812.12
Cu	63	72	3	He	0.272	ug/l	3044.38
Cu	65	72	1	No Gas	0.272	ug/l	3872.08
Zn	66	72	1	No Gas	6.707	ug/l	42779.42
Zn	66	72	3	He	6.756	ug/l	11226.59
As	75	72	1	No Gas	-0.151	ug/l	7979.82
As	75	72	3	He	0.014	ug/l	187.27
Se	78	72	2	H2	0.148	ug/l	167.22
Br	79	72	1	No Gas	4699.219	ug/l	293267.96
Br	79	72	2	H2	4483.184	ug/l	213902.20
Se	82	72	1	No Gas	0.080	ug/l	715.55
Kr	84	72	1	No Gas		ug/l	39529.03
Sr	88	72	1	No Gas	55.561	ug/l	3989412.79
Sr	88	72	3	He	54.234	ug/l	511522.87
Mo	95	115	1	No Gas	0.572	ug/l	8633.75
Mo	95	115	3	He	0.566	ug/l	3163.70
Mo	98	115	1	No Gas	0.571	ug/l	14465.79
Ag	107	115	1	No Gas	-0.069	ug/l	185.41
Ag	109	115	1	No Gas	-0.068	ug/l	185.41
Cd	111	115	1	No Gas	0.006	ug/l	66.89

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.003	ug/l	22.89
Cd	114	115	1	No Gas	0.017	ug/l	152.64
Cd	114	115	3	He	0.002	ug/l	53.41
Sn	118	115	1	No Gas	-0.054	ug/l	2066.07
Sn	118	115	3	He	-0.063	ug/l	515.57
Sb	121	115	1	No Gas	0.016	ug/l	1298.53
Sb	121	115	3	He	0.014	ug/l	336.37
Sb	123	115	1	No Gas	0.015	ug/l	1018.47
Sb	123	115	3	He	0.015	ug/l	260.70
Ba	135	115	1	No Gas	1.907	ug/l	15434.69
Ba	137	115	1	No Gas	1.892	ug/l	26042.75
La	139	115	3	He	0.001	ug/l	84.44
Ce	140	115	3	He	0.000	ug/l	128.89
Hg	201	209	1	No Gas	-0.005	ug/l	158.64
Hg	202	209	1	No Gas	0.003	ug/l	525.57
Hg	202	209	3	He	0.001	ug/l	214.29
Tl	203	209	3	He	0.256	ug/l	5095.69
Tl	205	209	1	No Gas	0.141	ug/l	20555.67
Tl	205	209	3	He	0.251	ug/l	11996.87
[Pb]	206	209	1	No Gas	0.058	ug/l	3392.68
[Pb]	207	209	1	No Gas	0.054	ug/l	2888.11
Pb	208	209	1	No Gas	0.057	ug/l	13270.44
Th	232	209	3	He	0.001	ug/l	328.81
U	238	209	1	No Gas	0.005	ug/l	923.85

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4738022.83	132.2
Sc	45	2	H2	3733532.66	111.2
Sc	45	3	He	473076.93	110.0
Ge	72	1	No Gas	1725398.26	114.3
Ge	72	2	H2	1425910.46	107.3
Ge	72	3	He	325567.99	103.1
In	115	1	No Gas	18095637.11	106.6
In	115	3	He	4311090.04	102.3
Tb	159	1	No Gas	23131299.44	107.1
Tb	159	3	He	8453101.66	100.0
Ho	165	1	No Gas	22969323.72	106.1
Ho	165	3	He	8487550.48	100.3
Lu	175	1	No Gas	22877623.69	104.2
Lu	175	3	He	7190829.48	101.6
Bi	209	1	No Gas	16758907.77	101.9
Bi	209	3	He	6445423.78	97.3

# ICPMS207-B Analytical Data

**Sample Name** B21122188-001B  
**File Name** 084SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 20:00:54  
**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	2.439	ug/l	9360.64
Be	9	45	1	No Gas	0.005	ug/l	24.33
B	11	45	1	No Gas	84.057	ug/l	58562.49
Na	23	45	3	He	37263.704	ug/l	30354801.49
Mg	24	45	3	He	8915.384	ug/l	3944142.44
Al	27	45	1	No Gas	3.391	ug/l	48698.95
Si	28	45	2	H2	23768.553	ug/l	43761586.63
K	39	72	3	He	1914.987	ug/l	1215936.27
Ca	40	72	2	H2	7645.359	ug/l	68010469.74
Ti	47	72	1	No Gas	2.041	ug/l	3592.40
V	51	72	1	No Gas	24.196	ug/l	540015.26
V	51	72	3	He	22.895	ug/l	136755.25
Cr	52	72	1	No Gas	4.465	ug/l	117906.78
Cr	52	72	3	He	3.497	ug/l	23354.13
Mn	55	72	1	No Gas	1.007	ug/l	38737.90
Mn	55	72	3	He	0.789	ug/l	3954.75
Fe	56	72	2	H2	24.582	ug/l	567582.28
Fe	56	72	3	He	24.551	ug/l	156529.82
Co	59	72	1	No Gas	0.108	ug/l	3347.10
Ni	60	72	1	No Gas	0.275	ug/l	2009.49
Ni	60	72	3	He	0.231	ug/l	695.58
Cu	63	72	1	No Gas	0.646	ug/l	12790.76
Cu	63	72	3	He	0.235	ug/l	2439.05
Cu	65	72	1	No Gas	0.241	ug/l	3054.22
Zn	66	72	1	No Gas	6.750	ug/l	36720.96
Zn	66	72	3	He	6.980	ug/l	10199.17
As	75	72	1	No Gas	0.290	ug/l	9594.32
As	75	72	3	He	0.210	ug/l	398.40
Se	78	72	2	H2	0.184	ug/l	169.11
Br	79	72	1	No Gas	1219.450	ug/l	73403.58
Br	79	72	2	H2	988.241	ug/l	44813.88
Se	82	72	1	No Gas	-0.034	ug/l	562.21
Kr	84	72	1	No Gas		ug/l	37364.18
Sr	88	72	1	No Gas	58.294	ug/l	3570822.69
Sr	88	72	3	He	56.452	ug/l	468646.94
Mo	95	115	1	No Gas	0.743	ug/l	10038.03
Mo	95	115	3	He	0.785	ug/l	3854.98
Mo	98	115	1	No Gas	0.715	ug/l	16231.53
Ag	107	115	1	No Gas	-0.069	ug/l	170.07
Ag	109	115	1	No Gas	-0.069	ug/l	158.73
Cd	111	115	1	No Gas	0.004	ug/l	48.80



# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.000	ug/l	12.00
Cd	114	115	1	No Gas	0.012	ug/l	60.04
Cd	114	115	3	He	-0.002	ug/l	23.66
Sn	118	115	1	No Gas	0.234	ug/l	8805.34
Sn	118	115	3	He	0.300	ug/l	2819.19
Sb	121	115	1	No Gas	0.035	ug/l	1876.65
Sb	121	115	3	He	0.038	ug/l	524.06
Sb	123	115	1	No Gas	0.035	ug/l	1474.56
Sb	123	115	3	He	0.039	ug/l	404.05
Ba	135	115	1	No Gas	1.978	ug/l	14405.59
Ba	137	115	1	No Gas	1.998	ug/l	24752.96
La	139	115	3	He	0.001	ug/l	91.11
Ce	140	115	3	He	0.003	ug/l	224.45
Hg	201	209	1	No Gas	0.012	ug/l	226.29
Hg	202	209	1	No Gas	0.033	ug/l	798.87
Hg	202	209	3	He	0.040	ug/l	376.93
Tl	203	209	3	He	0.106	ug/l	2827.44
Tl	205	209	1	No Gas	0.052	ug/l	11859.99
Tl	205	209	3	He	0.110	ug/l	6953.28
[Pb]	206	209	1	No Gas	0.058	ug/l	3060.37
[Pb]	207	209	1	No Gas	0.052	ug/l	2565.82
Pb	208	209	1	No Gas	0.057	ug/l	12009.98
Th	232	209	3	He	0.026	ug/l	1403.31
U	238	209	1	No Gas	0.006	ug/l	861.86

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3613611.18	100.8
Sc	45	2	H2	3088071.03	91.9
Sc	45	3	He	399140.64	92.8
Ge	72	1	No Gas	1471970.63	97.5
Ge	72	2	H2	1203577.98	90.6
Ge	72	3	He	286596.81	90.7
In	115	1	No Gas	16300866.58	96.0
In	115	3	He	3810601.82	90.5
Tb	159	1	No Gas	20573575.56	95.3
Tb	159	3	He	8024671.73	94.9
Ho	165	1	No Gas	20485643.67	94.6
Ho	165	3	He	8046038.05	95.0
Lu	175	1	No Gas	20420226.38	93.0
Lu	175	3	He	6717862.11	94.9
Bi	209	1	No Gas	15146467.46	92.1
Bi	209	3	He	6049795.52	91.3

# ICPMS207-B Analytical Data

**Sample Name** B21122190-001A  
**File Name** 085SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 20:07:03  
**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	2.303	ug/l	12022.26
Be	9	45	1	No Gas	0.006	ug/l	34.32
B	11	45	1	No Gas	83.488	ug/l	77451.18
Na	23	45	3	He	54288.391	ug/l	51757858.12
Mg	24	45	3	He	27124.857	ug/l	14047367.09
Al	27	45	1	No Gas	1.965	ug/l	48780.49
Si	28	45	2	H2	37896.532	ug/l	83643750.91
K	39	72	3	He	2772.268	ug/l	1955914.93
Ca	40	72	2	H2	13443.244	ug/l	139809112.52
Ti	47	72	1	No Gas	3.723	ug/l	7384.32
V	51	72	1	No Gas	1.525	ug/l	39323.92
V	51	72	3	He	1.038	ug/l	11694.69
Cr	52	72	1	No Gas	0.078	ug/l	25008.33
Cr	52	72	3	He	0.214	ug/l	2117.94
Mn	55	72	1	No Gas	1698.613	ug/l	64124478.53
Mn	55	72	3	He	1797.542	ug/l	9566612.69
Fe	56	72	2	H2	1915.094	ug/l	49855605.52
Fe	56	72	3	He	1980.874	ug/l	13516446.60
Co	59	72	1	No Gas	0.630	ug/l	20187.30
Ni	60	72	1	No Gas	0.865	ug/l	6491.93
Ni	60	72	3	He	0.783	ug/l	2352.43
Cu	63	72	1	No Gas	0.989	ug/l	20882.63
Cu	63	72	3	He	0.423	ug/l	4149.43
Cu	65	72	1	No Gas	0.470	ug/l	5535.95
Zn	66	72	1	No Gas	0.760	ug/l	5807.17
Zn	66	72	3	He	0.771	ug/l	1522.31
As	75	72	1	No Gas	0.258	ug/l	10703.17
As	75	72	3	He	0.056	ug/l	242.47
Se	78	72	2	H2	0.012	ug/l	41.67
Br	79	72	1	No Gas	2640.144	ug/l	165976.42
Br	79	72	2	H2	2021.217	ug/l	99345.83
Se	82	72	1	No Gas	-0.027	ug/l	644.88
Kr	84	72	1	No Gas		ug/l	60413.35
Sr	88	72	1	No Gas	99.955	ug/l	6979969.20
Sr	88	72	3	He	98.071	ug/l	918238.38
Mo	95	115	1	No Gas	0.111	ug/l	1865.69
Mo	95	115	3	He	0.106	ug/l	657.80
Mo	98	115	1	No Gas	0.095	ug/l	2734.72
Ag	107	115	1	No Gas	-0.070	ug/l	138.06
Ag	109	115	1	No Gas	-0.070	ug/l	136.72
Cd	111	115	1	No Gas	0.009	ug/l	94.22

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.001	ug/l	18.22
Cd	114	115	1	No Gas	0.016	ug/l	144.79
Cd	114	115	3	He	0.000	ug/l	42.54
Sn	118	115	1	No Gas	-0.037	ug/l	2545.20
Sn	118	115	3	He	-0.042	ug/l	675.58
Sb	121	115	1	No Gas	0.062	ug/l	3226.03
Sb	121	115	3	He	0.062	ug/l	847.45
Sb	123	115	1	No Gas	0.061	ug/l	2462.47
Sb	123	115	3	He	0.062	ug/l	660.75
Ba	135	115	1	No Gas	18.612	ug/l	147522.71
Ba	137	115	1	No Gas	18.921	ug/l	255966.99
La	139	115	3	He	0.014	ug/l	604.46
Ce	140	115	3	He	0.055	ug/l	2463.57
Hg	201	209	1	No Gas	-0.002	ug/l	168.30
Hg	202	209	1	No Gas	0.015	ug/l	645.22
Hg	202	209	3	He	0.009	ug/l	245.95
Tl	203	209	3	He	0.137	ug/l	3336.43
Tl	205	209	1	No Gas	0.064	ug/l	13595.13
Tl	205	209	3	He	0.134	ug/l	7921.54
[Pb]	206	209	1	No Gas	0.056	ug/l	3253.75
[Pb]	207	209	1	No Gas	0.060	ug/l	2954.80
Pb	208	209	1	No Gas	0.060	ug/l	13251.58
Th	232	209	3	He	0.002	ug/l	395.50
U	238	209	1	No Gas	0.002	ug/l	538.24

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4810956.65	134.2
Sc	45	2	H2	3700874.39	110.2
Sc	45	3	He	467292.94	108.7
Ge	72	1	No Gas	1678880.20	111.2
Ge	72	2	H2	1407691.61	105.9
Ge	72	3	He	323275.25	102.3
In	115	1	No Gas	18138580.63	106.9
In	115	3	He	4342958.13	103.1
Tb	159	1	No Gas	22937092.12	106.2
Tb	159	3	He	8505214.29	100.6
Ho	165	1	No Gas	22436492.79	103.7
Ho	165	3	He	8526826.01	100.7
Lu	175	1	No Gas	22523656.20	102.6
Lu	175	3	He	7009441.64	99.1
Bi	209	1	No Gas	16286306.10	99.0
Bi	209	3	He	6234020.82	94.1

# ICPMS207-B Analytical Data

**Sample Name** B21122190-001B  
**File Name** 086SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 20:13:11  
**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	4.148	ug/l	14312.48
Be	9	45	1	No Gas	0.015	ug/l	39.32
B	11	45	1	No Gas	96.854	ug/l	71040.69
Na	23	45	3	He	54236.568	ug/l	43956372.68
Mg	24	45	3	He	26654.751	ug/l	11734149.09
Al	27	45	1	No Gas	22.799	ug/l	225294.63
Si	28	45	2	H2	27618.789	ug/l	51597339.75
K	39	72	3	He	2692.719	ug/l	1658509.89
Ca	40	72	2	H2	13337.866	ug/l	116122927.17
Ti	47	72	1	No Gas	6.070	ug/l	10430.90
V	51	72	1	No Gas	4.303	ug/l	95835.38
V	51	72	3	He	3.407	ug/l	23669.07
Cr	52	72	1	No Gas	1.255	ug/l	47399.14
Cr	52	72	3	He	0.414	ug/l	3135.91
Mn	55	72	1	No Gas	1733.705	ug/l	57080966.62
Mn	55	72	3	He	1839.366	ug/l	8539088.32
Fe	56	72	2	H2	2175.002	ug/l	47413243.24
Fe	56	72	3	He	2245.078	ug/l	13360922.22
Co	59	72	1	No Gas	0.476	ug/l	13386.26
Ni	60	72	1	No Gas	0.795	ug/l	5227.23
Ni	60	72	3	He	0.670	ug/l	1772.34
Cu	63	72	1	No Gas	2.013	ug/l	34618.18
Cu	63	72	3	He	1.441	ug/l	10216.53
Cu	65	72	1	No Gas	1.411	ug/l	12198.68
Zn	66	72	1	No Gas	0.884	ug/l	5712.62
Zn	66	72	3	He	0.858	ug/l	1448.97
As	75	72	1	No Gas	0.471	ug/l	10686.24
As	75	72	3	He	0.210	ug/l	392.07
Se	78	72	2	H2	0.044	ug/l	59.22
Br	79	72	1	No Gas	1414.503	ug/l	82835.19
Br	79	72	2	H2	1140.289	ug/l	49663.36
Se	82	72	1	No Gas	0.133	ug/l	627.68
Kr	84	72	1	No Gas		ug/l	54805.28
Sr	88	72	1	No Gas	103.212	ug/l	6286003.62
Sr	88	72	3	He	101.128	ug/l	825565.72
Mo	95	115	1	No Gas	0.138	ug/l	1971.26
Mo	95	115	3	He	0.129	ug/l	694.47
Mo	98	115	1	No Gas	0.129	ug/l	3114.94
Ag	107	115	1	No Gas	-0.063	ug/l	363.49
Ag	109	115	1	No Gas	-0.062	ug/l	388.16
Cd	111	115	1	No Gas	0.006	ug/l	60.58

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.000	ug/l	13.89
Cd	114	115	1	No Gas	0.011	ug/l	40.87
Cd	114	115	3	He	-0.002	ug/l	25.06
Sn	118	115	1	No Gas	0.249	ug/l	8898.51
Sn	118	115	3	He	0.281	ug/l	2725.84
Sb	121	115	1	No Gas	0.055	ug/l	2545.82
Sb	121	115	3	He	0.058	ug/l	715.42
Sb	123	115	1	No Gas	0.055	ug/l	1974.67
Sb	123	115	3	He	0.059	ug/l	559.07
Ba	135	115	1	No Gas	19.689	ug/l	136141.06
Ba	137	115	1	No Gas	20.119	ug/l	237418.76
La	139	115	3	He	0.033	ug/l	1242.29
Ce	140	115	3	He	0.130	ug/l	5046.50
Hg	201	209	1	No Gas	0.016	ug/l	236.29
Hg	202	209	1	No Gas	0.047	ug/l	921.18
Hg	202	209	3	He	0.053	ug/l	423.59
Tl	203	209	3	He	0.092	ug/l	2561.28
Tl	205	209	1	No Gas	0.044	ug/l	10793.41
Tl	205	209	3	He	0.090	ug/l	6131.88
[Pb]	206	209	1	No Gas	0.094	ug/l	3837.25
[Pb]	207	209	1	No Gas	0.092	ug/l	3334.88
Pb	208	209	1	No Gas	0.093	ug/l	15136.79
Th	232	209	3	He	0.020	ug/l	1089.15
U	238	209	1	No Gas	0.004	ug/l	693.88

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3819920.67	106.6
Sc	45	2	H2	3134217.74	93.3
Sc	45	3	He	397230.41	92.4
Ge	72	1	No Gas	1463832.94	96.9
Ge	72	2	H2	1178479.75	88.7
Ge	72	3	He	281920.95	89.2
In	115	1	No Gas	15818698.58	93.2
In	115	3	He	3846205.62	91.3
Tb	159	1	No Gas	20627899.88	95.5
Tb	159	3	He	7852708.06	92.9
Ho	165	1	No Gas	20483537.61	94.6
Ho	165	3	He	8016563.31	94.7
Lu	175	1	No Gas	20354643.09	92.7
Lu	175	3	He	6705618.56	94.8
Bi	209	1	No Gas	14536062.29	88.4
Bi	209	3	He	5860912.49	88.5

# ICPMS207-B Analytical Data

**Sample Name** B21122198-001A  
**File Name** 087SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 20:19:19  
**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	-0.286	ug/l	3513.16
Be	9	45	1	No Gas	-0.003	ug/l	20.33
B	11	45	1	No Gas	60.137	ug/l	55165.40
Na	23	45	3	He	165505.434	ug/l	155639346.57
Mg	24	45	3	He	47060.246	ug/l	24049603.91
Al	27	45	1	No Gas	0.178	ug/l	27932.91
Si	28	45	2	H2	31879.669	ug/l	68719156.75
K	39	72	3	He	2341.927	ug/l	1614317.49
Ca	40	72	2	H2	28496.376	ug/l	283960970.97
Ti	47	72	1	No Gas	2.172	ug/l	4345.05
V	51	72	1	No Gas	22.612	ug/l	574144.42
V	51	72	3	He	20.155	ug/l	132405.55
Cr	52	72	1	No Gas	2.252	ug/l	79068.42
Cr	52	72	3	He	2.431	ug/l	17937.65
Mn	55	72	1	No Gas	1.246	ug/l	53057.30
Mn	55	72	3	He	1.327	ug/l	7108.96
Fe	56	72	2	H2	10.259	ug/l	278920.37
Fe	56	72	3	He	10.355	ug/l	77419.29
Co	59	72	1	No Gas	0.085	ug/l	3094.21
Ni	60	72	1	No Gas	0.765	ug/l	5763.07
Ni	60	72	3	He	0.601	ug/l	1781.23
Cu	63	72	1	No Gas	2.048	ug/l	40256.01
Cu	63	72	3	He	0.315	ug/l	3247.05
Cu	65	72	1	No Gas	0.393	ug/l	4833.42
Zn	66	72	1	No Gas	10.487	ug/l	64213.08
Zn	66	72	3	He	10.763	ug/l	17073.38
As	75	72	1	No Gas	0.533	ug/l	12679.92
As	75	72	3	He	0.142	ug/l	347.07
Se	78	72	2	H2	0.245	ug/l	243.23
Br	79	72	1	No Gas	18358.063	ug/l	1073561.38
Br	79	72	2	H2	15000.086	ug/l	660144.93
Se	82	72	1	No Gas	1.486	ug/l	1362.93
Kr	84	72	1	No Gas		ug/l	122890.01
Sr	88	72	1	No Gas	253.838	ug/l	17679959.29
Sr	88	72	3	He	274.510	ug/l	2494237.88
Mo	95	115	1	No Gas	0.341	ug/l	5040.91
Mo	95	115	3	He	0.326	ug/l	1771.23
Mo	98	115	1	No Gas	0.336	ug/l	8331.66
Ag	107	115	1	No Gas	-0.069	ug/l	199.41
Ag	109	115	1	No Gas	-0.068	ug/l	191.41
Cd	111	115	1	No Gas	0.008	ug/l	84.47

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.006	ug/l	29.67
Cd	114	115	1	No Gas	0.018	ug/l	164.44
Cd	114	115	3	He	0.004	ug/l	66.69
Sn	118	115	1	No Gas	0.029	ug/l	4132.43
Sn	118	115	3	He	0.021	ug/l	1085.60
Sb	121	115	1	No Gas	0.375	ug/l	15408.61
Sb	121	115	3	He	0.373	ug/l	3983.97
Sb	123	115	1	No Gas	0.378	ug/l	11908.89
Sb	123	115	3	He	0.376	ug/l	3153.01
Ba	135	115	1	No Gas	11.395	ug/l	86866.55
Ba	137	115	1	No Gas	11.618	ug/l	151130.87
La	139	115	3	He	0.002	ug/l	115.56
Ce	140	115	3	He	0.005	ug/l	315.56
Hg	201	209	1	No Gas	-0.004	ug/l	154.97
Hg	202	209	1	No Gas	-0.006	ug/l	384.60
Hg	202	209	3	He	-0.004	ug/l	175.30
Tl	203	209	3	He	0.081	ug/l	2485.23
Tl	205	209	1	No Gas	0.025	ug/l	10100.71
Tl	205	209	3	He	0.081	ug/l	6016.45
[Pb]	206	209	1	No Gas	0.244	ug/l	8213.68
[Pb]	207	209	1	No Gas	0.251	ug/l	7326.50
Pb	208	209	1	No Gas	0.253	ug/l	33298.75
Th	232	209	3	He	0.000	ug/l	277.45
U	238	209	1	No Gas	0.011	ug/l	1491.12

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4698586.38	131.1
Sc	45	2	H2	3614616.59	107.6
Sc	45	3	He	461136.03	107.2
Ge	72	1	No Gas	1674437.73	110.9
Ge	72	2	H2	1349674.39	101.5
Ge	72	3	He	313782.70	99.3
In	115	1	No Gas	17413079.91	102.6
In	115	3	He	4116315.41	97.7
Tb	159	1	No Gas	22669934.34	105.0
Tb	159	3	He	8184428.31	96.8
Ho	165	1	No Gas	22312135.93	103.1
Ho	165	3	He	8239807.75	97.3
Lu	175	1	No Gas	22579636.76	102.8
Lu	175	3	He	6935402.19	98.0
Bi	209	1	No Gas	15686148.38	95.4
Bi	209	3	He	6012524.51	90.7

# ICPMS207-B Analytical Data

**Sample Name** B21122198-001B  
**File Name** 088SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 20:25:29  
**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	1.164	ug/l	6417.94
Be	9	45	1	No Gas	0.000	ug/l	19.33
B	11	45	1	No Gas	69.344	ug/l	50008.21
Na	23	45	3	He	159069.931	ug/l	129323556.96
Mg	24	45	3	He	44421.760	ug/l	19628354.21
Al	27	45	1	No Gas	61.587	ug/l	556524.16
Si	28	45	2	H2	24056.332	ug/l	43883765.50
K	39	72	3	He	2170.134	ug/l	1351873.86
Ca	40	72	2	H2	27835.290	ug/l	236302716.06
Ti	47	72	1	No Gas	6.502	ug/l	11167.18
V	51	72	1	No Gas	21.652	ug/l	480461.25
V	51	72	3	He	21.930	ug/l	129361.25
Cr	52	72	1	No Gas	18.864	ug/l	430449.04
Cr	52	72	3	He	17.520	ug/l	113495.23
Mn	55	72	1	No Gas	2.609	ug/l	91235.32
Mn	55	72	3	He	2.431	ug/l	11535.22
Fe	56	72	2	H2	173.426	ug/l	3705613.58
Fe	56	72	3	He	165.163	ug/l	992722.33
Co	59	72	1	No Gas	0.297	ug/l	8488.98
Ni	60	72	1	No Gas	0.973	ug/l	6322.19
Ni	60	72	3	He	0.805	ug/l	2110.17
Cu	63	72	1	No Gas	2.427	ug/l	41242.65
Cu	63	72	3	He	0.753	ug/l	5769.99
Cu	65	72	1	No Gas	0.838	ug/l	7714.49
Zn	66	72	1	No Gas	54.479	ug/l	287046.17
Zn	66	72	3	He	57.172	ug/l	80628.27
As	75	72	1	No Gas	0.836	ug/l	12919.25
As	75	72	3	He	0.357	ug/l	565.20
Se	78	72	2	H2	0.268	ug/l	223.78
Br	79	72	1	No Gas	3757.696	ug/l	201094.41
Br	79	72	2	H2	3164.031	ug/l	123516.71
Se	82	72	1	No Gas	0.394	ug/l	738.08
Kr	84	72	1	No Gas		ug/l	107948.32
Sr	88	72	1	No Gas	249.822	ug/l	15212282.18
Sr	88	72	3	He	265.634	ug/l	2174149.31
Mo	95	115	1	No Gas	0.974	ug/l	12441.03
Mo	95	115	3	He	0.987	ug/l	4758.60
Mo	98	115	1	No Gas	0.960	ug/l	20595.86
Ag	107	115	1	No Gas	-0.059	ug/l	489.54
Ag	109	115	1	No Gas	-0.058	ug/l	508.22
Cd	111	115	1	No Gas	0.009	ug/l	85.04



# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.004	ug/l	22.44
Cd	114	115	1	No Gas	0.017	ug/l	126.73
Cd	114	115	3	He	0.002	ug/l	48.16
Sn	118	115	1	No Gas	0.276	ug/l	9334.62
Sn	118	115	3	He	0.319	ug/l	2903.65
Sb	121	115	1	No Gas	0.142	ug/l	5553.32
Sb	121	115	3	He	0.141	ug/l	1470.56
Sb	123	115	1	No Gas	0.150	ug/l	4479.50
Sb	123	115	3	He	0.148	ug/l	1201.17
Ba	135	115	1	No Gas	11.136	ug/l	75581.42
Ba	137	115	1	No Gas	11.255	ug/l	130337.21
La	139	115	3	He	0.026	ug/l	943.37
Ce	140	115	3	He	0.065	ug/l	2510.24
Hg	201	209	1	No Gas	0.014	ug/l	224.96
Hg	202	209	1	No Gas	0.022	ug/l	640.56
Hg	202	209	3	He	0.028	ug/l	298.28
Tl	203	209	3	He	0.075	ug/l	2250.43
Tl	205	209	1	No Gas	0.028	ug/l	9364.55
Tl	205	209	3	He	0.068	ug/l	5267.83
[Pb]	206	209	1	No Gas	1.191	ug/l	30645.19
[Pb]	207	209	1	No Gas	1.137	ug/l	25475.54
Pb	208	209	1	No Gas	1.164	ug/l	118017.65
Th	232	209	3	He	0.022	ug/l	1117.83
U	238	209	1	No Gas	0.014	ug/l	1610.78

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3713015.21	103.6
Sc	45	2	H2	3058648.60	91.1
Sc	45	3	He	398709.24	92.7
Ge	72	1	No Gas	1463465.77	96.9
Ge	72	2	H2	1149463.25	86.5
Ge	72	3	He	282642.27	89.5
In	115	1	No Gas	15496110.19	91.3
In	115	3	He	3755554.84	89.1
Tb	159	1	No Gas	19926214.89	92.3
Tb	159	3	He	7591112.20	89.8
Ho	165	1	No Gas	19850212.43	91.7
Ho	165	3	He	7716766.29	91.2
Lu	175	1	No Gas	20128908.41	91.7
Lu	175	3	He	6484909.68	91.7
Bi	209	1	No Gas	14212740.56	86.4
Bi	209	3	He	5617479.49	84.8

# ICPMS207-B Analytical Data

**Sample Name** B21122204-001A  
**File Name** 089SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 20:31:37  
**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	0.375	ug/l	5253.03
Be	9	45	1	No Gas	-0.002	ug/l	20.67
B	11	45	1	No Gas	191.485	ug/l	159286.95
Na	23	45	3	He	76861.703	ug/l	75535903.32
Mg	24	45	3	He	29917.165	ug/l	15967849.92
Al	27	45	1	No Gas	7.022	ug/l	96716.26
Si	28	45	2	H2	18800.850	ug/l	40035404.91
K	39	72	3	He	2841.759	ug/l	2080266.64
Ca	40	72	2	H2	33571.154	ug/l	346789440.56
Ti	47	72	1	No Gas	1.246	ug/l	2452.69
V	51	72	1	No Gas	9.617	ug/l	236398.84
V	51	72	3	He	7.644	ug/l	56881.66
Cr	52	72	1	No Gas	0.454	ug/l	33244.97
Cr	52	72	3	He	0.573	ug/l	4944.19
Mn	55	72	1	No Gas	206.763	ug/l	7538435.93
Mn	55	72	3	He	186.077	ug/l	1028174.32
Fe	56	72	2	H2	21.480	ug/l	579631.09
Fe	56	72	3	He	20.906	ug/l	157438.53
Co	59	72	1	No Gas	1.204	ug/l	36873.36
Ni	60	72	1	No Gas	7.830	ug/l	54079.53
Ni	60	72	3	He	7.171	ug/l	21265.47
Cu	63	72	1	No Gas	5.142	ug/l	93863.54
Cu	63	72	3	He	4.067	ug/l	32408.23
Cu	65	72	1	No Gas	4.291	ug/l	38507.43
Zn	66	72	1	No Gas	12.626	ug/l	74585.21
Zn	66	72	3	He	11.927	ug/l	20187.36
As	75	72	1	No Gas	1.060	ug/l	15895.44
As	75	72	3	He	0.349	ug/l	659.80
Se	78	72	2	H2	1.527	ug/l	1408.51
Br	79	72	1	No Gas	29752.771	ug/l	1675137.97
Br	79	72	2	H2	25655.853	ug/l	1165783.39
Se	82	72	1	No Gas	3.549	ug/l	2270.11
Kr	84	72	1	No Gas		ug/l	123085.24
Sr	88	72	1	No Gas	255.966	ug/l	17275001.28
Sr	88	72	3	He	253.130	ug/l	2458895.31
Mo	95	115	1	No Gas	0.450	ug/l	6375.90
Mo	95	115	3	He	0.402	ug/l	2303.53
Mo	98	115	1	No Gas	0.449	ug/l	10676.55
Ag	107	115	1	No Gas	-0.069	ug/l	174.74
Ag	109	115	1	No Gas	-0.068	ug/l	173.40
Cd	111	115	1	No Gas	0.084	ug/l	709.78

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.077	ug/l	235.00
Cd	114	115	1	No Gas	0.095	ug/l	1608.27
Cd	114	115	3	He	0.074	ug/l	560.76
Sn	118	115	1	No Gas	-0.045	ug/l	2169.21
Sn	118	115	3	He	-0.057	ug/l	573.35
Sb	121	115	1	No Gas	0.194	ug/l	8018.09
Sb	121	115	3	He	0.170	ug/l	2034.02
Sb	123	115	1	No Gas	0.193	ug/l	6147.97
Sb	123	115	3	He	0.178	ug/l	1661.94
Ba	135	115	1	No Gas	42.943	ug/l	316303.22
Ba	137	115	1	No Gas	43.892	ug/l	552217.29
La	139	115	3	He	0.004	ug/l	236.67
Ce	140	115	3	He	0.009	ug/l	497.79
Hg	201	209	1	No Gas	-0.001	ug/l	165.97
Hg	202	209	1	No Gas	0.000	ug/l	430.59
Hg	202	209	3	He	-0.003	ug/l	190.96
Tl	203	209	3	He	0.070	ug/l	2491.24
Tl	205	209	1	No Gas	0.037	ug/l	10570.04
Tl	205	209	3	He	0.074	ug/l	6161.24
[Pb]	206	209	1	No Gas	0.230	ug/l	7525.49
[Pb]	207	209	1	No Gas	0.224	ug/l	6459.39
Pb	208	209	1	No Gas	0.233	ug/l	29996.82
Th	232	209	3	He	0.000	ug/l	311.46
U	238	209	1	No Gas	0.050	ug/l	5294.02

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4399444.50	122.7
Sc	45	2	H2	3576876.34	106.5
Sc	45	3	He	482365.67	112.2
Ge	72	1	No Gas	1625367.11	107.6
Ge	72	2	H2	1399816.30	105.3
Ge	72	3	He	335826.73	106.3
In	115	1	No Gas	16940320.02	99.8
In	115	3	He	4389375.63	104.2
Tb	159	1	No Gas	21708331.31	100.5
Tb	159	3	He	8652763.81	102.4
Ho	165	1	No Gas	21566642.34	99.6
Ho	165	3	He	8596531.64	101.5
Lu	175	1	No Gas	21494224.30	97.9
Lu	175	3	He	7225775.99	102.1
Bi	209	1	No Gas	15149788.98	92.1
Bi	209	3	He	6389436.91	96.4

# ICPMS207-B Analytical Data

**Sample Name** B21122204-001B  
**File Name** 090SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 20:37:45  
**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	1.738	ug/l	8264.91
Be	9	45	1	No Gas	0.009	ug/l	32.32
B	11	45	1	No Gas	201.297	ug/l	148581.11
Na	23	45	3	He	79484.775	ug/l	65642195.13
Mg	24	45	3	He	31073.575	ug/l	13940801.98
Al	27	45	1	No Gas	231.449	ug/l	2141990.42
Si	28	45	2	H2	18159.356	ug/l	34064581.71
K	39	72	3	He	2949.539	ug/l	1819140.39
Ca	40	72	2	H2	34316.109	ug/l	301242288.35
Ti	47	72	1	No Gas	19.378	ug/l	33161.00
V	51	72	1	No Gas	13.915	ug/l	309534.19
V	51	72	3	He	11.493	ug/l	69992.14
Cr	52	72	1	No Gas	3.424	ug/l	94747.03
Cr	52	72	3	He	2.579	ug/l	17142.06
Mn	55	72	1	No Gas	197.384	ug/l	6510287.30
Mn	55	72	3	He	200.289	ug/l	933977.74
Fe	56	72	2	H2	790.565	ug/l	17395032.96
Fe	56	72	3	He	808.500	ug/l	4836654.35
Co	59	72	1	No Gas	1.488	ug/l	41123.05
Ni	60	72	1	No Gas	9.042	ug/l	56420.28
Ni	60	72	3	He	9.168	ug/l	22922.46
Cu	63	72	1	No Gas	7.056	ug/l	115579.53
Cu	63	72	3	He	6.546	ug/l	43492.57
Cu	65	72	1	No Gas	6.301	ug/l	50560.05
Zn	66	72	1	No Gas	24.795	ug/l	131456.51
Zn	66	72	3	He	24.952	ug/l	35395.11
As	75	72	1	No Gas	0.919	ug/l	13500.97
As	75	72	3	He	0.794	ug/l	1079.89
Se	78	72	2	H2	1.567	ug/l	1226.61
Br	79	72	1	No Gas	2650.095	ug/l	145436.88
Br	79	72	2	H2	2054.904	ug/l	85180.46
Se	82	72	1	No Gas	1.701	ug/l	1282.38
Kr	84	72	1	No Gas		ug/l	111957.34
Sr	88	72	1	No Gas	251.204	ug/l	15314803.91
Sr	88	72	3	He	266.655	ug/l	2186186.08
Mo	95	115	1	No Gas	0.457	ug/l	6065.76
Mo	95	115	3	He	0.451	ug/l	2269.08
Mo	98	115	1	No Gas	0.441	ug/l	9834.36
Ag	107	115	1	No Gas	-0.063	ug/l	365.49
Ag	109	115	1	No Gas	-0.064	ug/l	324.80
Cd	111	115	1	No Gas	0.136	ug/l	1067.62

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.131	ug/l	344.45
Cd	114	115	1	No Gas	0.138	ug/l	2252.23
Cd	114	115	3	He	0.122	ug/l	793.61
Sn	118	115	1	No Gas	0.364	ug/l	11585.15
Sn	118	115	3	He	0.378	ug/l	3369.31
Sb	121	115	1	No Gas	0.251	ug/l	9540.86
Sb	121	115	3	He	0.252	ug/l	2571.50
Sb	123	115	1	No Gas	0.260	ug/l	7569.13
Sb	123	115	3	He	0.255	ug/l	2038.69
Ba	135	115	1	No Gas	42.971	ug/l	296438.19
Ba	137	115	1	No Gas	43.094	ug/l	507359.09
La	139	115	3	He	0.148	ug/l	5358.85
Ce	140	115	3	He	0.324	ug/l	12525.70
Hg	201	209	1	No Gas	0.030	ug/l	300.94
Hg	202	209	1	No Gas	0.035	ug/l	783.54
Hg	202	209	3	He	0.047	ug/l	395.26
Tl	203	209	3	He	0.065	ug/l	2220.42
Tl	205	209	1	No Gas	0.029	ug/l	9594.70
Tl	205	209	3	He	0.061	ug/l	5258.49
[Pb]	206	209	1	No Gas	5.999	ug/l	150739.18
[Pb]	207	209	1	No Gas	5.908	ug/l	128804.70
Pb	208	209	1	No Gas	6.016	ug/l	594900.37
Th	232	209	3	He	0.024	ug/l	1264.57
U	238	209	1	No Gas	0.055	ug/l	5568.75

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	3905384.39	108.9
Sc	45	2	H2	3146663.93	93.7
Sc	45	3	He	404937.19	94.2
Ge	72	1	No Gas	1465684.80	97.1
Ge	72	2	H2	1188688.72	89.4
Ge	72	3	He	283179.15	89.6
In	115	1	No Gas	15800193.04	93.1
In	115	3	He	3856358.30	91.5
Tb	159	1	No Gas	20379564.06	94.4
Tb	159	3	He	7834807.03	92.7
Ho	165	1	No Gas	20284088.58	93.7
Ho	165	3	He	7849980.85	92.7
Lu	175	1	No Gas	20372413.57	92.8
Lu	175	3	He	6582018.71	93.0
Bi	209	1	No Gas	14428750.54	87.7
Bi	209	3	He	5835425.49	88.1

# ICPMS207-B Analytical Data

**Sample Name** B21122211-001A  
**File Name** 091SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 20:43:51  
**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	9.490	ug/l	32654.87
Be	9	45	1	No Gas	-0.006	ug/l	14.00
B	11	45	1	No Gas	48.146	ug/l	42209.67
Na	23	45	3	He	394741.266	ug/l	350789199.22
Mg	24	45	3	He	251857.480	ug/l	121622115.57
Al	27	45	1	No Gas	-1.041	ug/l	13714.14
Si	28	45	2	H2	26350.367	ug/l	52430163.19
K	39	72	3	He	7823.489	ug/l	4904169.86
Ca	40	72	2	H2	159684.166	ug/l	1427945748.78
Ti	47	72	1	No Gas	1.879	ug/l	3520.65
V	51	72	1	No Gas	11.416	ug/l	270949.17
V	51	72	3	He	10.295	ug/l	65503.83
Cr	52	72	1	No Gas	9.731	ug/l	247682.31
Cr	52	72	3	He	9.400	ug/l	63517.50
Mn	55	72	1	No Gas	4.308	ug/l	157241.90
Mn	55	72	3	He	4.248	ug/l	20782.15
Fe	56	72	2	H2	29.195	ug/l	674466.41
Fe	56	72	3	He	28.091	ug/l	182377.50
Co	59	72	1	No Gas	0.997	ug/l	29527.90
Ni	60	72	1	No Gas	97.752	ug/l	647629.50
Ni	60	72	3	He	98.223	ug/l	253660.01
Cu	63	72	1	No Gas	5.185	ug/l	91289.13
Cu	63	72	3	He	0.712	ug/l	5718.64
Cu	65	72	1	No Gas	1.404	ug/l	12974.99
Zn	66	72	1	No Gas	1.544	ug/l	9808.34
Zn	66	72	3	He	0.735	ug/l	1331.18
As	75	72	1	No Gas	2.308	ug/l	23755.24
As	75	72	3	He	1.155	ug/l	1561.12
Se	78	72	2	H2	4.399	ug/l	3461.86
Br	79	72	1	No Gas	73259.130	ug/l	3965829.67
Br	79	72	2	H2	61611.570	ug/l	2414721.19
Se	82	72	1	No Gas	9.531	ug/l	4838.74
Kr	84	72	1	No Gas		ug/l	837506.75
Sr	88	72	1	No Gas	2053.774	ug/l	133505542.35
Sr	88	72	3	He	2173.775	ug/l	18489800.42
Mo	95	115	1	No Gas	1.060	ug/l	14018.04
Mo	95	115	3	He	1.038	ug/l	4977.57
Mo	98	115	1	No Gas	1.028	ug/l	22826.66
Ag	107	115	1	No Gas	-0.066	ug/l	262.11
Ag	109	115	1	No Gas	-0.067	ug/l	204.08
Cd	111	115	1	No Gas	0.024	ug/l	200.97

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.019	ug/l	60.33
Cd	114	115	1	No Gas	0.031	ug/l	382.54
Cd	114	115	3	He	0.018	ug/l	142.96
Sn	118	115	1	No Gas	-0.052	ug/l	1889.71
Sn	118	115	3	He	-0.056	ug/l	491.12
Sb	121	115	1	No Gas	0.119	ug/l	4911.69
Sb	121	115	3	He	0.120	ug/l	1269.19
Sb	123	115	1	No Gas	0.131	ug/l	4129.02
Sb	123	115	3	He	0.122	ug/l	1008.14
Ba	135	115	1	No Gas	71.123	ug/l	498530.88
Ba	137	115	1	No Gas	71.600	ug/l	856785.64
La	139	115	3	He	0.001	ug/l	68.89
Ce	140	115	3	He	0.001	ug/l	133.33
Hg	201	209	1	No Gas	0.002	ug/l	165.63
Hg	202	209	1	No Gas	0.030	ug/l	705.21
Hg	202	209	3	He	0.017	ug/l	241.29
Tl	203	209	3	He	0.021	ug/l	1523.37
Tl	205	209	1	No Gas	-0.005	ug/l	6914.12
Tl	205	209	3	He	0.024	ug/l	3784.73
[Pb]	206	209	1	No Gas	0.034	ug/l	2256.87
[Pb]	207	209	1	No Gas	0.036	ug/l	2027.95
Pb	208	209	1	No Gas	0.039	ug/l	9343.61
Th	232	209	3	He	-0.001	ug/l	224.09
U	238	209	1	No Gas	0.075	ug/l	7231.56

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4436097.92	123.8
Sc	45	2	H2	3337845.14	99.4
Sc	45	3	He	435778.19	101.3
Ge	72	1	No Gas	1563566.33	103.5
Ge	72	2	H2	1211210.49	91.1
Ge	72	3	He	293773.04	93.0
In	115	1	No Gas	16060266.15	94.6
In	115	3	He	3738459.68	88.7
Tb	159	1	No Gas	20697042.56	95.9
Tb	159	3	He	7577378.31	89.7
Ho	165	1	No Gas	20651013.62	95.4
Ho	165	3	He	7654365.03	90.4
Lu	175	1	No Gas	20613393.29	93.9
Lu	175	3	He	6492925.40	91.8
Bi	209	1	No Gas	13955526.07	84.9
Bi	209	3	He	5323064.00	80.3

# ICPMS207-B Analytical Data

**Sample Name** CCV  
**File Name** 092\_CCV.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 20:49:59  
**Sample Type** CCV  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	713.587	ug/l	2311185.55
Be	9	45	1	No Gas	57.493	ug/l	92262.64
B	11	45	1	No Gas	60.019	ug/l	56034.13
Na	23	45	3	He	13818.638	ug/l	13047808.42
Mg	24	45	3	He	13705.049	ug/l	7021765.30
Al	27	45	1	No Gas	56.960	ug/l	664624.60
Si	28	45	2	H2	234.471	ug/l	497809.67
K	39	72	3	He	13614.143	ug/l	9230434.58
Ca	40	72	2	H2	13249.517	ug/l	131731487.68
Ti	47	72	1	No Gas	58.414	ug/l	114098.56
V	51	72	1	No Gas	62.260	ug/l	1580554.37
V	51	72	3	He	56.629	ug/l	369903.07
Cr	52	72	1	No Gas	60.699	ug/l	1535284.94
Cr	52	72	3	He	53.971	ug/l	394038.89
Mn	55	72	1	No Gas	56.132	ug/l	2120015.78
Mn	55	72	3	He	54.349	ug/l	286100.27
Fe	56	72	2	H2	1335.294	ug/l	33230185.26
Fe	56	72	3	He	1349.096	ug/l	9100743.76
Co	59	72	1	No Gas	55.451	ug/l	1737057.91
Ni	60	72	1	No Gas	56.061	ug/l	398178.37
Ni	60	72	3	He	54.016	ug/l	151750.73
Cu	63	72	1	No Gas	55.665	ug/l	1023304.20
Cu	63	72	3	He	55.535	ug/l	408803.95
Cu	65	72	1	No Gas	55.021	ug/l	494416.64
Zn	66	72	1	No Gas	56.387	ug/l	340095.51
Zn	66	72	3	He	53.856	ug/l	85860.93
As	75	72	1	No Gas	50.687	ug/l	373373.43
As	75	72	3	He	52.328	ug/l	69560.91
Se	78	72	2	H2	51.880	ug/l	45009.65
Br	79	72	1	No Gas	784.633	ug/l	58308.14
Br	79	72	2	H2	514.884	ug/l	29544.99
Se	82	72	1	No Gas	51.733	ug/l	25245.90
Kr	84	72	1	No Gas		ug/l	40339.63
Sr	88	72	1	No Gas	52.264	ug/l	3644603.39
Sr	88	72	3	He	52.536	ug/l	486212.11
Mo	95	115	1	No Gas	50.958	ug/l	705157.13
Mo	95	115	3	He	50.025	ug/l	261105.50
Mo	98	115	1	No Gas	51.049	ug/l	1186588.00
Ag	107	115	1	No Gas	20.374	ug/l	768725.53
Ag	109	115	1	No Gas	20.487	ug/l	752943.04
Cd	111	115	1	No Gas	50.734	ug/l	426471.14



# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	50.756	ug/l	137016.80
Cd	114	115	1	No Gas	51.175	ug/l	967109.90
Cd	114	115	3	He	50.284	ug/l	332048.59
Sn	118	115	1	No Gas	51.472	ug/l	1301366.42
Sn	118	115	3	He	49.859	ug/l	352537.23
Sb	121	115	1	No Gas	51.474	ug/l	1986907.85
Sb	121	115	3	He	49.626	ug/l	507213.75
Sb	123	115	1	No Gas	51.563	ug/l	1523169.31
Sb	123	115	3	He	49.622	ug/l	400340.22
Ba	135	115	1	No Gas	52.358	ug/l	389883.64
Ba	137	115	1	No Gas	53.621	ug/l	681619.01
La	139	115	3	He	47.316	ug/l	1819148.58
Ce	140	115	3	He	47.117	ug/l	1928455.13
Hg	201	209	1	No Gas	0.915	ug/l	4630.21
Hg	202	209	1	No Gas	0.925	ug/l	10601.75
Hg	202	209	3	He	0.894	ug/l	4317.51
Tl	203	209	3	He	47.984	ug/l	637168.11
Tl	205	209	1	No Gas	50.584	ug/l	3835762.89
Tl	205	209	3	He	50.666	ug/l	1581780.08
[Pb]	206	209	1	No Gas	51.056	ug/l	1334125.32
[Pb]	207	209	1	No Gas	50.816	ug/l	1152005.27
Pb	208	209	1	No Gas	52.253	ug/l	5374918.81
Th	232	209	3	He	52.504	ug/l	2292568.06
U	238	209	1	No Gas	52.026	ug/l	5210570.30

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4778060.20	133.3
Sc	45	2	H2	3518344.71	104.8
Sc	45	3	He	462124.32	107.5
Ge	72	1	No Gas	1676110.93	111.0
Ge	72	2	H2	1345171.92	101.2
Ge	72	3	He	319465.71	101.1
In	115	1	No Gas	17058545.26	100.5
In	115	3	He	4120285.52	97.8
Tb	159	1	No Gas	21542559.72	99.8
Tb	159	3	He	8068370.43	95.5
Ho	165	1	No Gas	21191236.53	97.9
Ho	165	3	He	8020632.96	94.7
Lu	175	1	No Gas	21175284.96	96.4
Lu	175	3	He	6810279.00	96.3
Bi	209	1	No Gas	15143228.88	92.1
Bi	209	3	He	6165742.60	93.1

# ICPMS207-B Analytical Data

**Sample Name** CCB  
**File Name** 093\_CCB.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 20:55:56  
**Sample Type** CCB  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	0.732	ug/l	7069.82
Be	9	45	1	No Gas	0.004	ug/l	32.66
B	11	45	1	No Gas	2.374	ug/l	4829.39
Na	23	45	3	He	53.779	ug/l	77000.30
Mg	24	45	3	He	9.839	ug/l	5659.86
Al	27	45	1	No Gas	0.465	ug/l	32587.87
Si	28	45	2	H2	11.577	ug/l	26205.18
K	39	72	3	He	20.610	ug/l	79883.21
Ca	40	72	2	H2	4.283	ug/l	109024.89
Ti	47	72	1	No Gas	0.033	ug/l	176.84
V	51	72	1	No Gas	0.042	ug/l	2004.78
V	51	72	3	He	1.775	ug/l	16155.69
Cr	52	72	1	No Gas	0.558	ug/l	37880.43
Cr	52	72	3	He	0.081	ug/l	1114.32
Mn	55	72	1	No Gas	0.061	ug/l	8672.09
Mn	55	72	3	He	0.053	ug/l	531.24
Fe	56	72	2	H2	0.153	ug/l	23684.55
Fe	56	72	3	He	0.224	ug/l	10437.57
Co	59	72	1	No Gas	0.006	ug/l	625.44
Ni	60	72	1	No Gas	0.039	ug/l	632.09
Ni	60	72	3	He	0.026	ug/l	197.78
Cu	63	72	1	No Gas	0.000	ug/l	2784.06
Cu	63	72	3	He	0.005	ug/l	1016.50
Cu	65	72	1	No Gas	-0.006	ug/l	1299.25
Zn	66	72	1	No Gas	-0.031	ug/l	1073.88
Zn	66	72	3	He	0.016	ug/l	300.01
As	75	72	1	No Gas	0.400	ug/l	12054.02
As	75	72	3	He	0.070	ug/l	255.07
Se	78	72	2	H2	0.024	ug/l	44.33
Br	79	72	1	No Gas	232.997	ug/l	27194.96
Br	79	72	2	H2	231.191	ug/l	15234.50
Se	82	72	1	No Gas	-0.056	ug/l	644.35
Kr	84	72	1	No Gas		ug/l	18491.90
Sr	88	72	1	No Gas	0.022	ug/l	3340.46
Sr	88	72	3	He	0.018	ug/l	500.01
Mo	95	115	1	No Gas	0.010	ug/l	364.45
Mo	95	115	3	He	0.011	ug/l	127.78
Mo	98	115	1	No Gas	0.008	ug/l	559.18
Ag	107	115	1	No Gas	-0.001	ug/l	2817.42
Ag	109	115	1	No Gas	-0.002	ug/l	2669.33
Cd	111	115	1	No Gas	0.001	ug/l	21.42

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.000	ug/l	14.78
Cd	114	115	1	No Gas	0.000	ug/l	-179.62
Cd	114	115	3	He	-0.001	ug/l	32.70
Sn	118	115	1	No Gas	0.024	ug/l	4039.25
Sn	118	115	3	He	0.005	ug/l	982.26
Sb	121	115	1	No Gas	0.051	ug/l	2645.18
Sb	121	115	3	He	0.033	ug/l	513.06
Sb	123	115	1	No Gas	0.049	ug/l	2010.01
Sb	123	115	3	He	0.034	ug/l	401.71
Ba	135	115	1	No Gas	-0.012	ug/l	279.45
Ba	137	115	1	No Gas	0.003	ug/l	565.56
La	139	115	3	He	0.001	ug/l	84.45
Ce	140	115	3	He	0.001	ug/l	132.22
Hg	201	209	1	No Gas	-0.010	ug/l	124.98
Hg	202	209	1	No Gas	-0.010	ug/l	339.94
Hg	202	209	3	He	-0.016	ug/l	126.98
Tl	203	209	3	He	0.321	ug/l	5852.98
Tl	205	209	1	No Gas	0.227	ug/l	26112.70
Tl	205	209	3	He	0.326	ug/l	14067.07
[Pb]	206	209	1	No Gas	0.025	ug/l	2293.55
[Pb]	207	209	1	No Gas	0.021	ug/l	1930.15
Pb	208	209	1	No Gas	0.024	ug/l	8985.70
Th	232	209	3	He	0.015	ug/l	961.09
U	238	209	1	No Gas	0.000	ug/l	340.94

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4920322.71	137.3
Sc	45	2	H2	3162073.42	94.1
Sc	45	3	He	459988.78	107.0
Ge	72	1	No Gas	1719225.25	113.9
Ge	72	2	H2	1209795.29	91.0
Ge	72	3	He	315952.60	100.0
In	115	1	No Gas	17498565.65	103.1
In	115	3	He	4153337.33	98.6
Tb	159	1	No Gas	21895353.54	101.4
Tb	159	3	He	8137970.19	96.3
Ho	165	1	No Gas	21459624.49	99.1
Ho	165	3	He	8159313.82	96.4
Lu	175	1	No Gas	21233990.95	96.7
Lu	175	3	He	6784904.04	95.9
Bi	209	1	No Gas	15770283.67	95.9
Bi	209	3	He	6288790.52	94.9

# ICPMS207-B Analytical Data

**Sample Name** B21122211-001B  
**File Name** 094SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 21:02:07  
**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	12.250	ug/l	38477.10
Be	9	45	1	No Gas	0.004	ug/l	27.33
B	11	45	1	No Gas	55.124	ug/l	45010.37
Na	23	45	3	He	419498.598	ug/l	341296663.80
Mg	24	45	3	He	267278.833	ug/l	118168637.44
Al	27	45	1	No Gas	6.042	ug/l	82160.64
Si	28	45	2	H2	21385.580	ug/l	38931832.50
K	39	72	3	He	7976.384	ug/l	4659043.20
Ca	40	72	2	H2	162399.314	ug/l	1348198070.58
Ti	47	72	1	No Gas	2.013	ug/l	3539.00
V	51	72	1	No Gas	12.463	ug/l	278798.01
V	51	72	3	He	12.188	ug/l	71510.48
Cr	52	72	1	No Gas	16.486	ug/l	380916.04
Cr	52	72	3	He	14.676	ug/l	92169.03
Mn	55	72	1	No Gas	4.920	ug/l	168215.00
Mn	55	72	3	He	4.611	ug/l	21008.42
Fe	56	72	2	H2	156.453	ug/l	3271904.34
Fe	56	72	3	He	149.392	ug/l	870484.98
Co	59	72	1	No Gas	1.227	ug/l	34132.21
Ni	60	72	1	No Gas	98.823	ug/l	616537.76
Ni	60	72	3	He	97.694	ug/l	235165.13
Cu	63	72	1	No Gas	4.906	ug/l	81442.76
Cu	63	72	3	He	0.524	ug/l	4147.76
Cu	65	72	1	No Gas	1.269	ug/l	11154.75
Zn	66	72	1	No Gas	1.256	ug/l	7720.96
Zn	66	72	3	He	0.391	ug/l	772.25
As	75	72	1	No Gas	2.015	ug/l	20411.12
As	75	72	3	He	1.546	ug/l	1899.22
Se	78	72	2	H2	4.501	ug/l	3288.37
Br	79	72	1	No Gas	12758.477	ug/l	659975.66
Br	79	72	2	H2	10598.661	ug/l	390622.45
Se	82	72	1	No Gas	5.478	ug/l	2866.08
Kr	84	72	1	No Gas		ug/l	793028.30
Sr	88	72	1	No Gas	2029.388	ug/l	124234082.53
Sr	88	72	3	He	2181.261	ug/l	17291500.44
Mo	95	115	1	No Gas	1.141	ug/l	13782.26
Mo	95	115	3	He	1.090	ug/l	5046.48
Mo	98	115	1	No Gas	1.125	ug/l	22858.25
Ag	107	115	1	No Gas	-0.066	ug/l	248.77
Ag	109	115	1	No Gas	-0.067	ug/l	182.74
Cd	111	115	1	No Gas	0.011	ug/l	87.67

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.003	ug/l	19.33
Cd	114	115	1	No Gas	0.015	ug/l	98.64
Cd	114	115	3	He	0.001	ug/l	42.63
Sn	118	115	1	No Gas	0.272	ug/l	8788.71
Sn	118	115	3	He	0.263	ug/l	2445.78
Sb	121	115	1	No Gas	0.149	ug/l	5504.30
Sb	121	115	3	He	0.142	ug/l	1428.22
Sb	123	115	1	No Gas	0.201	ug/l	5556.33
Sb	123	115	3	He	0.152	ug/l	1184.50
Ba	135	115	1	No Gas	72.626	ug/l	465824.53
Ba	137	115	1	No Gas	74.013	ug/l	810382.34
La	139	115	3	He	0.004	ug/l	191.11
Ce	140	115	3	He	0.009	ug/l	398.90
Hg	201	209	1	No Gas	0.018	ug/l	216.96
Hg	202	209	1	No Gas	0.064	ug/l	956.85
Hg	202	209	3	He	0.058	ug/l	390.26
Tl	203	209	3	He	0.165	ug/l	3066.25
Tl	205	209	1	No Gas	0.099	ug/l	12898.83
Tl	205	209	3	He	0.163	ug/l	7308.28
[Pb]	206	209	1	No Gas	0.060	ug/l	2616.94
[Pb]	207	209	1	No Gas	0.059	ug/l	2294.66
Pb	208	209	1	No Gas	0.061	ug/l	10425.00
Th	232	209	3	He	0.035	ug/l	1526.04
U	238	209	1	No Gas	0.078	ug/l	6789.41

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4200940.03	117.2
Sc	45	2	H2	3053443.97	90.9
Sc	45	3	He	398945.86	92.8
Ge	72	1	No Gas	1476693.40	97.8
Ge	72	2	H2	1124485.92	84.6
Ge	72	3	He	273788.67	86.7
In	115	1	No Gas	14744511.91	86.9
In	115	3	He	3610193.23	85.7
Tb	159	1	No Gas	19112134.17	88.5
Tb	159	3	He	7290231.38	86.3
Ho	165	1	No Gas	18710269.61	86.4
Ho	165	3	He	7312547.13	86.4
Lu	175	1	No Gas	18956358.82	86.3
Lu	175	3	He	6142287.12	86.8
Bi	209	1	No Gas	12736517.52	77.5
Bi	209	3	He	5157901.22	77.8

# ICPMS207-B Analytical Data

**Sample Name** B22010002-001A  
**File Name** 095SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 21:08:15  
**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	0.106	ug/l	5439.16
Be	9	45	1	No Gas	-0.004	ug/l	21.00
B	11	45	1	No Gas	93.449	ug/l	96436.38
Na	23	45	3	He	54113.992	ug/l	54465668.08
Mg	24	45	3	He	23314.964	ug/l	12747315.90
Al	27	45	1	No Gas	1.084	ug/l	43362.96
Si	28	45	2	H2	21455.760	ug/l	49541719.88
K	39	72	3	He	3007.181	ug/l	2176195.85
Ca	40	72	2	H2	23400.236	ug/l	247032350.31
Ti	47	72	1	No Gas	1.515	ug/l	3298.71
V	51	72	1	No Gas	15.572	ug/l	425952.04
V	51	72	3	He	12.709	ug/l	90321.82
Cr	52	72	1	No Gas	0.653	ug/l	42256.95
Cr	52	72	3	He	0.702	ug/l	5883.43
Mn	55	72	1	No Gas	93.689	ug/l	3804830.33
Mn	55	72	3	He	88.728	ug/l	485923.92
Fe	56	72	2	H2	43.336	ug/l	1169613.74
Fe	56	72	3	He	43.119	ug/l	311777.25
Co	59	72	1	No Gas	0.289	ug/l	10210.05
Ni	60	72	1	No Gas	2.897	ug/l	22479.45
Ni	60	72	3	He	2.741	ug/l	8140.10
Cu	63	72	1	No Gas	5.676	ug/l	114931.40
Cu	63	72	3	He	5.245	ug/l	41116.87
Cu	65	72	1	No Gas	5.205	ug/l	51603.31
Zn	66	72	1	No Gas	10.057	ug/l	66374.39
Zn	66	72	3	He	10.148	ug/l	17072.28
As	75	72	1	No Gas	0.531	ug/l	13617.42
As	75	72	3	He	0.012	ug/l	188.00
Se	78	72	2	H2	0.497	ug/l	489.12
Br	79	72	1	No Gas	21398.064	ug/l	1346824.39
Br	79	72	2	H2	19562.384	ug/l	909740.24
Se	82	72	1	No Gas	2.206	ug/l	1836.04
Kr	84	72	1	No Gas		ug/l	88702.41
Sr	88	72	1	No Gas	153.790	ug/l	11534634.88
Sr	88	72	3	He	167.430	ug/l	1611749.09
Mo	95	115	1	No Gas	0.213	ug/l	3417.10
Mo	95	115	3	He	0.219	ug/l	1273.40
Mo	98	115	1	No Gas	0.210	ug/l	5652.19
Ag	107	115	1	No Gas	-0.070	ug/l	166.07
Ag	109	115	1	No Gas	-0.069	ug/l	160.73
Cd	111	115	1	No Gas	0.022	ug/l	213.29

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.018	ug/l	64.44
Cd	114	115	1	No Gas	0.032	ug/l	461.25
Cd	114	115	3	He	0.015	ug/l	147.44
Sn	118	115	1	No Gas	-0.060	ug/l	1952.95
Sn	118	115	3	He	-0.065	ug/l	502.23
Sb	121	115	1	No Gas	0.016	ug/l	1325.87
Sb	121	115	3	He	0.014	ug/l	328.70
Sb	123	115	1	No Gas	0.017	ug/l	1076.15
Sb	123	115	3	He	0.017	ug/l	274.36
Ba	135	115	1	No Gas	10.038	ug/l	81023.82
Ba	137	115	1	No Gas	10.112	ug/l	139214.73
La	139	115	3	He	0.001	ug/l	96.67
Ce	140	115	3	He	0.002	ug/l	175.56
Hg	201	209	1	No Gas	-0.008	ug/l	136.64
Hg	202	209	1	No Gas	-0.011	ug/l	326.27
Hg	202	209	3	He	-0.013	ug/l	139.64
Tl	203	209	3	He	0.143	ug/l	3369.78
Tl	205	209	1	No Gas	0.065	ug/l	13372.71
Tl	205	209	3	He	0.143	ug/l	8069.69
[Pb]	206	209	1	No Gas	0.249	ug/l	8450.51
[Pb]	207	209	1	No Gas	0.252	ug/l	7446.59
Pb	208	209	1	No Gas	0.251	ug/l	33487.68
Th	232	209	3	He	0.000	ug/l	285.45
U	238	209	1	No Gas	0.023	ug/l	2696.08

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	5370069.58	149.8
Sc	45	2	H2	3873539.79	115.3
Sc	45	3	He	493319.38	114.7
Ge	72	1	No Gas	1802989.51	119.4
Ge	72	2	H2	1429059.98	107.5
Ge	72	3	He	332436.99	105.2
In	115	1	No Gas	18424570.86	108.5
In	115	3	He	4326719.76	102.7
Tb	159	1	No Gas	22797671.87	105.6
Tb	159	3	He	8400321.49	99.4
Ho	165	1	No Gas	22717123.82	105.0
Ho	165	3	He	8483480.68	100.2
Lu	175	1	No Gas	22406083.63	102.0
Lu	175	3	He	7058953.24	99.8
Bi	209	1	No Gas	15879488.72	96.6
Bi	209	3	He	6147787.55	92.8

# ICPMS207-B Analytical Data

**Sample Name** B22010002-001B  
**File Name** 096SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 21:14:22  
**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	1.716	ug/l	9216.52
Be	9	45	1	No Gas	0.000	ug/l	22.66
B	11	45	1	No Gas	101.461	ug/l	85288.11
Na	23	45	3	He	55727.557	ug/l	47481877.07
Mg	24	45	3	He	23722.239	ug/l	10975268.70
Al	27	45	1	No Gas	13.125	ug/l	159139.96
Si	28	45	2	H2	21626.786	ug/l	42379857.64
K	39	72	3	He	3086.308	ug/l	1911834.35
Ca	40	72	2	H2	23828.726	ug/l	213183607.77
Ti	47	72	1	No Gas	2.465	ug/l	4667.12
V	51	72	1	No Gas	17.429	ug/l	420378.73
V	51	72	3	He	16.048	ug/l	96604.57
Cr	52	72	1	No Gas	2.496	ug/l	80872.17
Cr	52	72	3	He	1.278	ug/l	8786.00
Mn	55	72	1	No Gas	102.704	ug/l	3680154.08
Mn	55	72	3	He	102.085	ug/l	479022.37
Fe	56	72	2	H2	155.765	ug/l	3508260.85
Fe	56	72	3	He	155.101	ug/l	939709.05
Co	59	72	1	No Gas	0.460	ug/l	14075.55
Ni	60	72	1	No Gas	2.943	ug/l	20147.34
Ni	60	72	3	He	2.924	ug/l	7427.48
Cu	63	72	1	No Gas	2.028	ug/l	37894.22
Cu	63	72	3	He	1.594	ug/l	11318.11
Cu	65	72	1	No Gas	1.513	ug/l	14127.19
Zn	66	72	1	No Gas	8.133	ug/l	47549.93
Zn	66	72	3	He	8.794	ug/l	12714.47
As	75	72	1	No Gas	1.178	ug/l	16429.65
As	75	72	3	He	0.268	ug/l	464.33
Se	78	72	2	H2	0.545	ug/l	452.23
Br	79	72	1	No Gas	2638.641	ug/l	157210.70
Br	79	72	2	H2	2162.972	ug/l	91011.51
Se	82	72	1	No Gas	0.480	ug/l	839.43
Kr	84	72	1	No Gas		ug/l	82501.25
Sr	88	72	1	No Gas	157.622	ug/l	10429494.61
Sr	88	72	3	He	175.803	ug/l	1450933.47
Mo	95	115	1	No Gas	0.255	ug/l	3577.13
Mo	95	115	3	He	0.270	ug/l	1333.40
Mo	98	115	1	No Gas	0.255	ug/l	6006.02
Ag	107	115	1	No Gas	-0.069	ug/l	174.07
Ag	109	115	1	No Gas	-0.068	ug/l	182.74
Cd	111	115	1	No Gas	0.020	ug/l	176.30



# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.015	ug/l	48.22
Cd	114	115	1	No Gas	0.027	ug/l	323.90
Cd	114	115	3	He	0.012	ug/l	109.98
Sn	118	115	1	No Gas	0.319	ug/l	10852.73
Sn	118	115	3	He	0.386	ug/l	3280.40
Sb	121	115	1	No Gas	0.027	ug/l	1586.25
Sb	121	115	3	He	0.029	ug/l	420.05
Sb	123	115	1	No Gas	0.032	ug/l	1393.55
Sb	123	115	3	He	0.031	ug/l	334.04
Ba	135	115	1	No Gas	10.361	ug/l	73975.44
Ba	137	115	1	No Gas	10.374	ug/l	126390.33
La	139	115	3	He	0.005	ug/l	228.89
Ce	140	115	3	He	0.014	ug/l	593.35
Hg	201	209	1	No Gas	0.010	ug/l	202.96
Hg	202	209	1	No Gas	0.016	ug/l	571.23
Hg	202	209	3	He	0.024	ug/l	280.28
Tl	203	209	3	He	0.086	ug/l	2354.49
Tl	205	209	1	No Gas	0.035	ug/l	9751.48
Tl	205	209	3	He	0.076	ug/l	5409.28
[Pb]	206	209	1	No Gas	0.180	ug/l	5789.08
[Pb]	207	209	1	No Gas	0.176	ug/l	4980.96
Pb	208	209	1	No Gas	0.181	ug/l	22955.70
Th	232	209	3	He	0.017	ug/l	923.74
U	238	209	1	No Gas	0.026	ug/l	2706.75

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4383593.92	122.3
Sc	45	2	H2	3287338.61	97.9
Sc	45	3	He	418385.88	97.3
Ge	72	1	No Gas	1590579.43	105.3
Ge	72	2	H2	1211192.50	91.1
Ge	72	3	He	285179.69	90.3
In	115	1	No Gas	16291644.91	96.0
In	115	3	He	3706199.90	88.0
Tb	159	1	No Gas	20414244.78	94.6
Tb	159	3	He	7607478.41	90.0
Ho	165	1	No Gas	20338046.71	94.0
Ho	165	3	He	7555826.70	89.3
Lu	175	1	No Gas	20366850.51	92.7
Lu	175	3	He	6277071.54	88.7
Bi	209	1	No Gas	14035958.01	85.4
Bi	209	3	He	5587740.42	84.3

# ICPMS207-B Analytical Data

**Sample Name** B22010002-002A  
**File Name** 097SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 21:20:30  
**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	0.005	ug/l	4998.17
Be	9	45	1	No Gas	-0.008	ug/l	14.00
B	11	45	1	No Gas	74.793	ug/l	76640.84
Na	23	45	3	He	50819.461	ug/l	50086136.48
Mg	24	45	3	He	21653.422	ug/l	11592465.89
Al	27	45	1	No Gas	-0.183	ug/l	27013.48
Si	28	45	2	H2	21623.219	ug/l	48854926.18
K	39	72	3	He	2930.648	ug/l	2092819.67
Ca	40	72	2	H2	21623.822	ug/l	226095252.29
Ti	47	72	1	No Gas	1.463	ug/l	3116.82
V	51	72	1	No Gas	16.432	ug/l	439612.09
V	51	72	3	He	13.650	ug/l	95271.44
Cr	52	72	1	No Gas	0.696	ug/l	42467.16
Cr	52	72	3	He	0.780	ug/l	6379.19
Mn	55	72	1	No Gas	29.574	ug/l	1179174.17
Mn	55	72	3	He	27.992	ug/l	151306.14
Fe	56	72	2	H2	10.003	ug/l	285785.60
Fe	56	72	3	He	10.203	ug/l	79810.51
Co	59	72	1	No Gas	0.083	ug/l	3194.03
Ni	60	72	1	No Gas	1.331	ug/l	10296.57
Ni	60	72	3	He	1.180	ug/l	3527.12
Cu	63	72	1	No Gas	2.019	ug/l	41826.37
Cu	63	72	3	He	1.506	ug/l	12363.75
Cu	65	72	1	No Gas	1.522	ug/l	15736.78
Zn	66	72	1	No Gas	3.168	ug/l	21330.37
Zn	66	72	3	He	3.134	ug/l	5395.47
As	75	72	1	No Gas	0.457	ug/l	12760.21
As	75	72	3	He	0.005	ug/l	176.60
Se	78	72	2	H2	0.423	ug/l	417.12
Br	79	72	1	No Gas	16840.215	ug/l	1038999.24
Br	79	72	2	H2	15975.208	ug/l	736875.94
Se	82	72	1	No Gas	1.860	ug/l	1622.18
Kr	84	72	1	No Gas		ug/l	86620.48
Sr	88	72	1	No Gas	144.279	ug/l	10582681.47
Sr	88	72	3	He	156.227	ug/l	1482579.35
Mo	95	115	1	No Gas	0.207	ug/l	3230.38
Mo	95	115	3	He	0.191	ug/l	1097.83
Mo	98	115	1	No Gas	0.195	ug/l	5141.09
Ag	107	115	1	No Gas	-0.069	ug/l	176.74
Ag	109	115	1	No Gas	-0.069	ug/l	146.06
Cd	111	115	1	No Gas	0.015	ug/l	148.61

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.008	ug/l	36.55
Cd	114	115	1	No Gas	0.022	ug/l	264.79
Cd	114	115	3	He	0.007	ug/l	89.81
Sn	118	115	1	No Gas	-0.068	ug/l	1690.08
Sn	118	115	3	He	-0.072	ug/l	443.34
Sb	121	115	1	No Gas	0.009	ug/l	1030.81
Sb	121	115	3	He	0.009	ug/l	274.70
Sb	123	115	1	No Gas	0.009	ug/l	813.11
Sb	123	115	3	He	0.010	ug/l	211.35
Ba	135	115	1	No Gas	8.133	ug/l	63909.47
Ba	137	115	1	No Gas	8.340	ug/l	111763.84
La	139	115	3	He	0.001	ug/l	77.78
Ce	140	115	3	He	0.001	ug/l	131.11
Hg	201	209	1	No Gas	-0.008	ug/l	138.64
Hg	202	209	1	No Gas	-0.010	ug/l	346.60
Hg	202	209	3	He	-0.007	ug/l	166.64
Tl	203	209	3	He	0.084	ug/l	2566.62
Tl	205	209	1	No Gas	0.026	ug/l	10585.59
Tl	205	209	3	He	0.079	ug/l	6050.48
[Pb]	206	209	1	No Gas	0.071	ug/l	3678.31
[Pb]	207	209	1	No Gas	0.071	ug/l	3227.08
Pb	208	209	1	No Gas	0.073	ug/l	14643.24
Th	232	209	3	He	-0.001	ug/l	258.77
U	238	209	1	No Gas	0.024	ug/l	2932.41

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	5292392.02	147.6
Sc	45	2	H2	3785831.00	112.7
Sc	45	3	He	483073.09	112.3
Ge	72	1	No Gas	1763111.00	116.8
Ge	72	2	H2	1414890.12	106.5
Ge	72	3	He	327758.64	103.8
In	115	1	No Gas	17911399.11	105.5
In	115	3	He	4234760.40	100.5
Tb	159	1	No Gas	22762136.96	105.4
Tb	159	3	He	8307977.58	98.3
Ho	165	1	No Gas	22575072.82	104.3
Ho	165	3	He	8399840.17	99.2
Lu	175	1	No Gas	22653348.17	103.2
Lu	175	3	He	7191587.06	101.6
Bi	209	1	No Gas	16289569.78	99.1
Bi	209	3	He	6102832.31	92.1

# ICPMS207-B Analytical Data

**Sample Name** B22010002-002B  
**File Name** 098SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 21:26:39  
**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	1.514	ug/l	8462.43
Be	9	45	1	No Gas	-0.002	ug/l	19.67
B	11	45	1	No Gas	87.798	ug/l	72801.12
Na	23	45	3	He	51564.118	ug/l	44368959.89
Mg	24	45	3	He	22090.044	ug/l	10322953.11
Al	27	45	1	No Gas	2.197	ug/l	46007.72
Si	28	45	2	H2	22718.684	ug/l	42855170.75
K	39	72	3	He	3035.600	ug/l	1945453.15
Ca	40	72	2	H2	22062.146	ug/l	199542088.40
Ti	47	72	1	No Gas	1.946	ug/l	3670.84
V	51	72	1	No Gas	16.108	ug/l	384564.72
V	51	72	3	He	16.414	ug/l	102023.02
Cr	52	72	1	No Gas	2.326	ug/l	76076.30
Cr	52	72	3	He	1.202	ug/l	8573.65
Mn	55	72	1	No Gas	30.009	ug/l	1068751.28
Mn	55	72	3	He	29.157	ug/l	141604.76
Fe	56	72	2	H2	49.131	ug/l	1133344.00
Fe	56	72	3	He	49.003	ug/l	312729.69
Co	59	72	1	No Gas	0.175	ug/l	5540.08
Ni	60	72	1	No Gas	1.481	ug/l	10196.76
Ni	60	72	3	He	1.356	ug/l	3623.80
Cu	63	72	1	No Gas	1.206	ug/l	23336.67
Cu	63	72	3	He	0.700	ug/l	5650.63
Cu	65	72	1	No Gas	0.725	ug/l	7348.81
Zn	66	72	1	No Gas	2.485	ug/l	15196.76
Zn	66	72	3	He	2.368	ug/l	3724.94
As	75	72	1	No Gas	0.727	ug/l	13231.96
As	75	72	3	He	0.234	ug/l	438.67
Se	78	72	2	H2	0.443	ug/l	376.67
Br	79	72	1	No Gas	2115.258	ug/l	127237.07
Br	79	72	2	H2	1715.759	ug/l	74349.30
Se	82	72	1	No Gas	0.471	ug/l	827.82
Kr	84	72	1	No Gas		ug/l	76253.11
Sr	88	72	1	No Gas	150.367	ug/l	9852800.80
Sr	88	72	3	He	152.302	ug/l	1299035.24
Mo	95	115	1	No Gas	0.225	ug/l	3114.81
Mo	95	115	3	He	0.237	ug/l	1213.40
Mo	98	115	1	No Gas	0.220	ug/l	5107.90
Ag	107	115	1	No Gas	-0.069	ug/l	154.73
Ag	109	115	1	No Gas	-0.068	ug/l	165.40
Cd	111	115	1	No Gas	0.023	ug/l	195.30

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.017	ug/l	56.00
Cd	114	115	1	No Gas	0.033	ug/l	412.15
Cd	114	115	3	He	0.018	ug/l	147.62
Sn	118	115	1	No Gas	0.252	ug/l	9038.32
Sn	118	115	3	He	0.291	ug/l	2771.40
Sb	121	115	1	No Gas	0.020	ug/l	1295.53
Sb	121	115	3	He	0.019	ug/l	345.04
Sb	123	115	1	No Gas	0.023	ug/l	1117.16
Sb	123	115	3	He	0.023	ug/l	285.03
Ba	135	115	1	No Gas	8.634	ug/l	60267.15
Ba	137	115	1	No Gas	8.708	ug/l	103708.61
La	139	115	3	He	0.002	ug/l	112.22
Ce	140	115	3	He	0.004	ug/l	252.23
Hg	201	209	1	No Gas	0.007	ug/l	192.30
Hg	202	209	1	No Gas	0.018	ug/l	604.56
Hg	202	209	3	He	0.022	ug/l	283.61
Tl	203	209	3	He	0.055	ug/l	2060.99
Tl	205	209	1	No Gas	0.016	ug/l	8625.11
Tl	205	209	3	He	0.049	ug/l	4844.16
[Pb]	206	209	1	No Gas	0.044	ug/l	2559.16
[Pb]	207	209	1	No Gas	0.042	ug/l	2214.64
Pb	208	209	1	No Gas	0.046	ug/l	10327.22
Th	232	209	3	He	0.010	ug/l	678.96
U	238	209	1	No Gas	0.026	ug/l	2739.08

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4305745.60	120.1
Sc	45	2	H2	3164921.00	94.2
Sc	45	3	He	421714.83	98.1
Ge	72	1	No Gas	1575158.33	104.3
Ge	72	2	H2	1224626.55	92.1
Ge	72	3	He	294496.82	93.2
In	115	1	No Gas	15916603.03	93.8
In	115	3	He	3822222.81	90.7
Tb	159	1	No Gas	20443315.10	94.7
Tb	159	3	He	7696148.12	91.1
Ho	165	1	No Gas	20006028.86	92.4
Ho	165	3	He	7763635.39	91.7
Lu	175	1	No Gas	20395842.62	92.9
Lu	175	3	He	6600274.05	93.3
Bi	209	1	No Gas	14353791.01	87.3
Bi	209	3	He	5765431.14	87.0

# ICPMS207-B Analytical Data

**Sample Name** B22010096-001A  
**File Name** 099SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 21:32:47  
**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	-0.179	ug/l	4267.65
Be	9	45	1	No Gas	-0.009	ug/l	10.67
B	11	45	1	No Gas	59.512	ug/l	60536.80
Na	23	45	3	He	39094.521	ug/l	38743419.14
Mg	24	45	3	He	11834.079	ug/l	6370169.77
Al	27	45	1	No Gas	0.534	ug/l	35285.14
Si	28	45	2	H2	25068.160	ug/l	57615174.74
K	39	72	3	He	2227.264	ug/l	1620032.94
Ca	40	72	2	H2	9981.233	ug/l	105617998.44
Ti	47	72	1	No Gas	1.677	ug/l	3674.18
V	51	72	1	No Gas	24.091	ug/l	665564.26
V	51	72	3	He	20.700	ug/l	143052.29
Cr	52	72	1	No Gas	1.866	ug/l	75580.71
Cr	52	72	3	He	1.947	ug/l	15232.39
Mn	55	72	1	No Gas	0.257	ug/l	17255.92
Mn	55	72	3	He	0.306	ug/l	1931.74
Fe	56	72	2	H2	0.387	ug/l	34665.69
Fe	56	72	3	He	0.533	ug/l	13070.64
Co	59	72	1	No Gas	0.034	ug/l	1620.22
Ni	60	72	1	No Gas	1.762	ug/l	13965.74
Ni	60	72	3	He	1.775	ug/l	5284.31
Cu	63	72	1	No Gas	0.575	ug/l	14416.25
Cu	63	72	3	He	0.186	ug/l	2442.39
Cu	65	72	1	No Gas	0.205	ug/l	3428.46
Zn	66	72	1	No Gas	5.482	ug/l	37167.97
Zn	66	72	3	He	5.646	ug/l	9569.85
As	75	72	1	No Gas	0.171	ug/l	10937.13
As	75	72	3	He	-0.002	ug/l	167.80
Se	78	72	2	H2	0.134	ug/l	155.11
Br	79	72	1	No Gas	5261.868	ug/l	344853.66
Br	79	72	2	H2	5079.192	ug/l	242274.38
Se	82	72	1	No Gas	0.371	ug/l	905.56
Kr	84	72	1	No Gas		ug/l	47236.56
Sr	88	72	1	No Gas	61.900	ug/l	4693621.11
Sr	88	72	3	He	63.452	ug/l	607398.18
Mo	95	115	1	No Gas	0.174	ug/l	2812.52
Mo	95	115	3	He	0.177	ug/l	1040.05
Mo	98	115	1	No Gas	0.166	ug/l	4529.29
Ag	107	115	1	No Gas	-0.069	ug/l	194.75
Ag	109	115	1	No Gas	-0.067	ug/l	228.09
Cd	111	115	1	No Gas	0.010	ug/l	100.61

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.005	ug/l	27.44
Cd	114	115	1	No Gas	0.019	ug/l	190.36
Cd	114	115	3	He	0.002	ug/l	58.11
Sn	118	115	1	No Gas	-0.056	ug/l	2042.78
Sn	118	115	3	He	-0.067	ug/l	490.01
Sb	121	115	1	No Gas	-0.001	ug/l	620.41
Sb	121	115	3	He	-0.002	ug/l	165.69
Sb	123	115	1	No Gas	-0.001	ug/l	513.73
Sb	123	115	3	He	0.001	ug/l	136.01
Ba	135	115	1	No Gas	2.987	ug/l	24176.48
Ba	137	115	1	No Gas	3.129	ug/l	43108.16
La	139	115	3	He	0.001	ug/l	88.89
Ce	140	115	3	He	0.001	ug/l	137.78
Hg	201	209	1	No Gas	-0.008	ug/l	140.30
Hg	202	209	1	No Gas	-0.010	ug/l	359.93
Hg	202	209	3	He	-0.011	ug/l	153.97
Tl	203	209	3	He	0.050	ug/l	2191.73
Tl	205	209	1	No Gas	0.000	ug/l	8616.27
Tl	205	209	3	He	0.044	ug/l	5137.73
[Pb]	206	209	1	No Gas	0.043	ug/l	2924.79
[Pb]	207	209	1	No Gas	0.040	ug/l	2512.48
Pb	208	209	1	No Gas	0.044	ug/l	11628.75
Th	232	209	3	He	-0.001	ug/l	229.43
U	238	209	1	No Gas	0.007	ug/l	1062.83

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	5201229.39	145.1
Sc	45	2	H2	3852312.54	114.7
Sc	45	3	He	485693.86	112.9
Ge	72	1	No Gas	1822502.05	120.7
Ge	72	2	H2	1431531.92	107.7
Ge	72	3	He	330456.81	104.6
In	115	1	No Gas	18267566.76	107.6
In	115	3	He	4317006.47	102.5
Tb	159	1	No Gas	22983338.15	106.5
Tb	159	3	He	8394627.56	99.3
Ho	165	1	No Gas	22810722.84	105.4
Ho	165	3	He	8501814.22	100.4
Lu	175	1	No Gas	22895626.70	104.3
Lu	175	3	He	7151125.61	101.1
Bi	209	1	No Gas	16549125.51	100.6
Bi	209	3	He	6289661.19	94.9

# ICPMS207-B Analytical Data

**Sample Name** B22010096-001ADIL  
**File Name** 100ARef.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 21:38:54  
**Sample Type** AIRRef  
**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	-0.142	ug/l	4160.91
Be	9	45	1	No Gas	-0.050	ug/l	8.67
B	11	45	1	No Gas	69.071	ug/l	14049.53
Na	23	45	3	He	38566.717	ug/l	6975267.74
Mg	24	45	3	He	11946.923	ug/l	1170518.98
Al	27	45	1	No Gas	-1.522	ug/l	21741.49
Si	28	45	2	H2	25005.319	ug/l	10455984.32
K	39	72	3	He	2112.538	ug/l	340052.69
Ca	40	72	2	H2	9597.466	ug/l	19193275.31
Ti	47	72	1	No Gas	1.966	ug/l	865.90
V	51	72	1	No Gas	25.601	ug/l	129113.76
V	51	72	3	He	25.176	ug/l	36125.35
Cr	52	72	1	No Gas	3.366	ug/l	39381.30
Cr	52	72	3	He	2.072	ug/l	3441.54
Mn	55	72	1	No Gas	0.530	ug/l	10050.21
Mn	55	72	3	He	0.516	ug/l	773.20
Fe	56	72	2	H2	0.568	ug/l	25847.07
Fe	56	72	3	He	1.385	ug/l	10561.13
Co	59	72	1	No Gas	0.055	ug/l	761.85
Ni	60	72	1	No Gas	2.005	ug/l	3154.10
Ni	60	72	3	He	1.964	ug/l	1188.95
Cu	63	72	1	No Gas	0.645	ug/l	5028.90
Cu	63	72	3	He	0.222	ug/l	1277.14
Cu	65	72	1	No Gas	0.206	ug/l	1670.77
Zn	66	72	1	No Gas	8.933	ug/l	11843.69
Zn	66	72	3	He	8.798	ug/l	2975.88
As	75	72	1	No Gas	0.525	ug/l	9474.72
As	75	72	3	He	0.166	ug/l	202.53
Se	78	72	2	H2	0.105	ug/l	48.33
Br	79	72	1	No Gas	5868.975	ug/l	80078.15
Br	79	72	2	H2	4707.415	ug/l	48140.85
Se	82	72	1	No Gas	-0.979	ug/l	557.01
Kr	84	72	1	No Gas		ug/l	19914.32
Sr	88	72	1	No Gas	65.525	ug/l	905583.50
Sr	88	72	3	He	63.368	ug/l	113770.29
Mo	95	115	1	No Gas	0.143	ug/l	631.13
Mo	95	115	3	He	0.166	ug/l	245.56
Mo	98	115	1	No Gas	0.143	ug/l	1051.16
Ag	107	115	1	No Gas	-0.354	ug/l	113.38
Ag	109	115	1	No Gas	-0.351	ug/l	109.38
Cd	111	115	1	No Gas	0.111	ug/l	205.12



# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.077	ug/l	55.78
Cd	114	115	1	No Gas	0.148	ug/l	393.37
Cd	114	115	3	He	0.074	ug/l	139.86
Sn	118	115	1	No Gas	-0.101	ug/l	2874.61
Sn	118	115	3	He	-0.115	ug/l	778.92
Sb	121	115	1	No Gas	-0.010	ug/l	562.07
Sb	121	115	3	He	-0.015	ug/l	145.02
Sb	123	115	1	No Gas	-0.013	ug/l	439.05
Sb	123	115	3	He	-0.003	ug/l	121.01
Ba	135	115	1	No Gas	3.159	ug/l	5174.05
Ba	137	115	1	No Gas	3.110	ug/l	8605.63
La	139	115	3	He	0.000	ug/l	46.67
Ce	140	115	3	He	0.005	ug/l	146.67
Hg	201	209	1	No Gas	-0.073	ug/l	102.65
Hg	202	209	1	No Gas	-0.076	ug/l	284.28
Hg	202	209	3	He	-0.076	ug/l	131.97
Tl	203	209	3	He	-0.080	ug/l	1287.92
Tl	205	209	1	No Gas	-0.177	ug/l	5442.30
Tl	205	209	3	He	-0.107	ug/l	3030.90
[Pb]	206	209	1	No Gas	0.114	ug/l	2255.76
[Pb]	207	209	1	No Gas	0.106	ug/l	1954.60
Pb	208	209	1	No Gas	0.114	ug/l	8922.34
Th	232	209	3	He	-0.004	ug/l	257.44
U	238	209	1	No Gas	0.003	ug/l	369.60

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4510916.62	125.8
Sc	45	2	H2	3503282.73	104.3
Sc	45	3	He	441941.96	102.8
Ge	72	1	No Gas	1658426.05	109.8
Ge	72	2	H2	1348975.23	101.5
Ge	72	3	He	309192.53	97.9
In	115	1	No Gas	17434866.71	102.7
In	115	3	He	4142176.17	98.3
Tb	159	1	No Gas	21485405.90	99.5
Tb	159	3	He	8109166.38	95.9
Ho	165	1	No Gas	21374995.28	98.8
Ho	165	3	He	8062581.67	95.2
Lu	175	1	No Gas	21664451.19	98.6
Lu	175	3	He	6838228.04	96.6
Bi	209	1	No Gas	15868112.07	96.5
Bi	209	3	He	6258823.15	94.5

# ICPMS207-B Analytical Data

**Sample Name** B22010096-001AMS  
**File Name** 101MS.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 21:45:03  
**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	2628.417	ug/l	7788838.27
Be	9	45	1	No Gas	51.723	ug/l	76077.88
B	11	45	1	No Gas	110.305	ug/l	92497.75
Na	23	45	3	He	87812.151	ug/l	77490010.51
Mg	24	45	3	He	62908.010	ug/l	30157354.82
Al	27	45	1	No Gas	52.090	ug/l	560209.30
Si	28	45	2	H2	25426.769	ug/l	49558646.32
K	39	72	3	He	56459.561	ug/l	35107462.53
Ca	40	72	2	H2	62387.109	ug/l	570643516.75
Ti	47	72	1	No Gas	57.373	ug/l	105201.24
V	51	72	1	No Gas	75.030	ug/l	1790364.41
V	51	72	3	He	72.855	ug/l	437652.07
Cr	52	72	1	No Gas	55.056	ug/l	1309669.25
Cr	52	72	3	He	53.150	ug/l	357815.18
Mn	55	72	1	No Gas	52.267	ug/l	1854277.59
Mn	55	72	3	He	50.345	ug/l	244406.11
Fe	56	72	2	H2	5150.975	ug/l	118005324.50
Fe	56	72	3	He	5137.192	ug/l	31927500.96
Co	59	72	1	No Gas	51.520	ug/l	1515603.75
Ni	60	72	1	No Gas	51.743	ug/l	345126.09
Ni	60	72	3	He	51.165	ug/l	132551.62
Cu	63	72	1	No Gas	51.007	ug/l	881057.00
Cu	63	72	3	He	51.122	ug/l	347088.32
Cu	65	72	1	No Gas	49.842	ug/l	420765.89
Zn	66	72	1	No Gas	55.640	ug/l	315266.49
Zn	66	72	3	He	54.491	ug/l	80109.87
As	75	72	1	No Gas	48.421	ug/l	335668.19
As	75	72	3	He	49.873	ug/l	61141.49
Se	78	72	2	H2	49.734	ug/l	39745.37
Br	79	72	1	No Gas	4848.327	ug/l	275841.76
Br	79	72	2	H2	4069.977	ug/l	169520.88
Se	82	72	1	No Gas	48.659	ug/l	22354.32
Kr	84	72	1	No Gas		ug/l	61725.93
Sr	88	72	1	No Gas	110.436	ug/l	7227422.16
Sr	88	72	3	He	114.082	ug/l	973113.00
Mo	95	115	1	No Gas	48.698	ug/l	627873.24
Mo	95	115	3	He	47.007	ug/l	224459.02
Mo	98	115	1	No Gas	48.570	ug/l	1052096.24
Ag	107	115	1	No Gas	19.551	ug/l	687587.77
Ag	109	115	1	No Gas	19.680	ug/l	674296.75
Cd	111	115	1	No Gas	47.857	ug/l	375010.89

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	47.565	ug/l	117469.35
Cd	114	115	1	No Gas	47.828	ug/l	842638.78
Cd	114	115	3	He	47.635	ug/l	287767.97
Sn	118	115	1	No Gas	48.322	ug/l	1139535.76
Sn	118	115	3	He	47.288	ug/l	305945.19
Sb	121	115	1	No Gas	48.930	ug/l	1761506.83
Sb	121	115	3	He	47.456	ug/l	443741.97
Sb	123	115	1	No Gas	47.536	ug/l	1309335.36
Sb	123	115	3	He	47.686	ug/l	351981.61
Ba	135	115	1	No Gas	53.735	ug/l	373014.51
Ba	137	115	1	No Gas	54.002	ug/l	639941.81
La	139	115	3	He	49.330	ug/l	1735562.18
Ce	140	115	3	He	49.074	ug/l	1837139.49
Hg	201	209	1	No Gas	0.929	ug/l	4478.52
Hg	202	209	1	No Gas	0.934	ug/l	10194.18
Hg	202	209	3	He	0.907	ug/l	4040.81
Tl	203	209	3	He	45.579	ug/l	558013.72
Tl	205	209	1	No Gas	47.824	ug/l	3452083.87
Tl	205	209	3	He	46.658	ug/l	1343054.91
[Pb]	206	209	1	No Gas	47.651	ug/l	1184551.09
[Pb]	207	209	1	No Gas	47.415	ug/l	1022558.16
Pb	208	209	1	No Gas	48.963	ug/l	4790769.84
Th	232	209	3	He	50.554	ug/l	2034865.19
U	238	209	1	No Gas	49.376	ug/l	4703276.06

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4516172.66	126.0
Sc	45	2	H2	3369495.35	100.3
Sc	45	3	He	445689.11	103.6
Ge	72	1	No Gas	1620303.60	107.3
Ge	72	2	H2	1276010.06	96.0
Ge	72	3	He	303400.36	96.0
In	115	1	No Gas	16386799.55	96.5
In	115	3	He	3883136.94	92.2
Tb	159	1	No Gas	21344826.37	98.9
Tb	159	3	He	7945998.16	94.0
Ho	165	1	No Gas	21257035.87	98.2
Ho	165	3	He	7915175.47	93.5
Lu	175	1	No Gas	21475444.48	97.8
Lu	175	3	He	6720257.00	95.0
Bi	209	1	No Gas	14840077.31	90.3
Bi	209	3	He	5853397.43	88.3

# ICPMS207-B Analytical Data

**Sample Name** B22010096-001AMSD  
**File Name** 102MSD.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 21:51:02  
**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	2574.034	ug/l	7874564.73
Be	9	45	1	No Gas	50.361	ug/l	76438.48
B	11	45	1	No Gas	109.446	ug/l	94717.83
Na	23	45	3	He	88681.616	ug/l	78663131.05
Mg	24	45	3	He	62978.154	ug/l	30349383.89
Al	27	45	1	No Gas	53.692	ug/l	594641.93
Si	28	45	2	H2	24134.041	ug/l	49101340.74
K	39	72	3	He	55937.927	ug/l	35132082.53
Ca	40	72	2	H2	62725.433	ug/l	578098498.13
Ti	47	72	1	No Gas	58.693	ug/l	108370.48
V	51	72	1	No Gas	79.691	ug/l	1913046.30
V	51	72	3	He	73.496	ug/l	445950.93
Cr	52	72	1	No Gas	56.417	ug/l	1350835.84
Cr	52	72	3	He	53.105	ug/l	361149.32
Mn	55	72	1	No Gas	52.125	ug/l	1863084.44
Mn	55	72	3	He	51.111	ug/l	250618.30
Fe	56	72	2	H2	5229.132	ug/l	120693156.40
Fe	56	72	3	He	5219.641	ug/l	32768220.82
Co	59	72	1	No Gas	52.249	ug/l	1547675.84
Ni	60	72	1	No Gas	52.908	ug/l	355272.41
Ni	60	72	3	He	51.579	ug/l	134978.62
Cu	63	72	1	No Gas	51.578	ug/l	896872.30
Cu	63	72	3	He	51.801	ug/l	355199.45
Cu	65	72	1	No Gas	50.789	ug/l	431587.03
Zn	66	72	1	No Gas	55.877	ug/l	318695.45
Zn	66	72	3	He	54.835	ug/l	81426.83
As	75	72	1	No Gas	48.690	ug/l	339688.24
As	75	72	3	He	50.312	ug/l	62295.12
Se	78	72	2	H2	50.498	ug/l	40659.20
Br	79	72	1	No Gas	4548.249	ug/l	261289.98
Br	79	72	2	H2	3670.689	ug/l	154717.00
Se	82	72	1	No Gas	50.027	ug/l	23111.09
Kr	84	72	1	No Gas		ug/l	63393.17
Sr	88	72	1	No Gas	113.594	ug/l	7486199.10
Sr	88	72	3	He	113.420	ug/l	977165.85
Mo	95	115	1	No Gas	49.664	ug/l	641829.71
Mo	95	115	3	He	45.975	ug/l	224953.17
Mo	98	115	1	No Gas	49.148	ug/l	1067574.24
Ag	107	115	1	No Gas	19.779	ug/l	697576.17
Ag	109	115	1	No Gas	19.787	ug/l	679664.75
Cd	111	115	1	No Gas	48.399	ug/l	380261.84

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	46.936	ug/l	118787.16
Cd	114	115	1	No Gas	48.568	ug/l	858265.37
Cd	114	115	3	He	47.013	ug/l	291042.42
Sn	118	115	1	No Gas	48.789	ug/l	1154273.85
Sn	118	115	3	He	46.830	ug/l	310492.42
Sb	121	115	1	No Gas	49.183	ug/l	1775461.99
Sb	121	115	3	He	46.870	ug/l	449101.03
Sb	123	115	1	No Gas	48.424	ug/l	1337549.61
Sb	123	115	3	He	47.131	ug/l	356452.24
Ba	135	115	1	No Gas	53.700	ug/l	374147.92
Ba	137	115	1	No Gas	54.950	ug/l	653366.83
La	139	115	3	He	48.181	ug/l	1736771.52
Ce	140	115	3	He	47.397	ug/l	1818489.76
Hg	201	209	1	No Gas	0.951	ug/l	4529.54
Hg	202	209	1	No Gas	0.952	ug/l	10264.89
Hg	202	209	3	He	0.943	ug/l	4130.15
Tl	203	209	3	He	47.024	ug/l	566836.32
Tl	205	209	1	No Gas	48.077	ug/l	3431026.65
Tl	205	209	3	He	48.054	ug/l	1361952.85
[Pb]	206	209	1	No Gas	48.080	ug/l	1182339.16
[Pb]	207	209	1	No Gas	47.938	ug/l	1022734.66
Pb	208	209	1	No Gas	49.139	ug/l	4756397.70
Th	232	209	3	He	51.026	ug/l	2022336.47
U	238	209	1	No Gas	50.238	ug/l	4734255.70

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4655297.86	129.9
Sc	45	2	H2	3515054.36	104.7
Sc	45	3	He	447873.64	104.1
Ge	72	1	No Gas	1632089.03	108.1
Ge	72	2	H2	1285531.86	96.7
Ge	72	3	He	306457.59	97.0
In	115	1	No Gas	16445698.71	96.9
In	115	3	He	3978545.63	94.4
Tb	159	1	No Gas	21384208.25	99.0
Tb	159	3	He	7842854.82	92.8
Ho	165	1	No Gas	20885014.69	96.5
Ho	165	3	He	7848752.80	92.7
Lu	175	1	No Gas	20684908.14	94.2
Lu	175	3	He	6600779.14	93.3
Bi	209	1	No Gas	14678333.25	89.3
Bi	209	3	He	5763072.64	87.0

# ICPMS207-B Analytical Data

**Sample Name** Rinse  
**File Name** 103BLKV.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 21:57:01  
**Sample Type** BlkVrfy  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	3.837	ug/l	16814.02
Be	9	45	1	No Gas	0.012	ug/l	44.32
B	11	45	1	No Gas	2.210	ug/l	4519.17
Na	23	45	3	He	59.170	ug/l	79455.21
Mg	24	45	3	He	9.336	ug/l	5230.55
Al	27	45	1	No Gas	0.317	ug/l	29724.85
Si	28	45	2	H2	5.119	ug/l	16116.50
K	39	72	3	He	27.848	ug/l	81904.02
Ca	40	72	2	H2	3.965	ug/l	115711.34
Ti	47	72	1	No Gas	0.109	ug/l	322.00
V	51	72	1	No Gas	1.763	ug/l	44967.14
V	51	72	3	He	1.792	ug/l	15693.99
Cr	52	72	1	No Gas	0.561	ug/l	37216.77
Cr	52	72	3	He	0.015	ug/l	614.46
Mn	55	72	1	No Gas	0.062	ug/l	8535.56
Mn	55	72	3	He	0.037	ug/l	429.26
Fe	56	72	2	H2	0.016	ug/l	22487.77
Fe	56	72	3	He	0.202	ug/l	9950.06
Co	59	72	1	No Gas	0.004	ug/l	542.27
Ni	60	72	1	No Gas	0.041	ug/l	635.42
Ni	60	72	3	He	0.030	ug/l	200.00
Cu	63	72	1	No Gas	-0.029	ug/l	2202.39
Cu	63	72	3	He	-0.024	ug/l	783.87
Cu	65	72	1	No Gas	-0.039	ug/l	979.76
Zn	66	72	1	No Gas	-0.031	ug/l	1047.12
Zn	66	72	3	He	-0.015	ug/l	243.34
As	75	72	1	No Gas	0.073	ug/l	9413.75
As	75	72	3	He	0.069	ug/l	246.00
Se	78	72	2	H2	0.024	ug/l	48.89
Br	79	72	1	No Gas	226.912	ug/l	26351.81
Br	79	72	2	H2	198.178	ug/l	15157.92
Se	82	72	1	No Gas	-0.509	ug/l	416.47
Kr	84	72	1	No Gas		ug/l	15697.44
Sr	88	72	1	No Gas	0.020	ug/l	3107.54
Sr	88	72	3	He	0.017	ug/l	476.68
Mo	95	115	1	No Gas	0.034	ug/l	698.91
Mo	95	115	3	He	0.036	ug/l	258.89
Mo	98	115	1	No Gas	0.032	ug/l	1131.30
Ag	107	115	1	No Gas	-0.005	ug/l	2611.30
Ag	109	115	1	No Gas	-0.002	ug/l	2634.64
Cd	111	115	1	No Gas	-0.002	ug/l	-5.81

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.001	ug/l	17.67
Cd	114	115	1	No Gas	-0.001	ug/l	-195.69
Cd	114	115	3	He	0.000	ug/l	39.35
Sn	118	115	1	No Gas	0.046	ug/l	4531.76
Sn	118	115	3	He	0.025	ug/l	1118.94
Sb	121	115	1	No Gas	0.103	ug/l	4654.25
Sb	121	115	3	He	0.072	ug/l	908.46
Sb	123	115	1	No Gas	0.104	ug/l	3611.50
Sb	123	115	3	He	0.076	ug/l	741.76
Ba	135	115	1	No Gas	-0.015	ug/l	256.17
Ba	137	115	1	No Gas	-0.004	ug/l	472.41
La	139	115	3	He	0.001	ug/l	72.22
Ce	140	115	3	He	0.001	ug/l	134.44
Hg	201	209	1	No Gas	-0.015	ug/l	99.65
Hg	202	209	1	No Gas	-0.016	ug/l	266.95
Hg	202	209	3	He	-0.021	ug/l	105.65
Tl	203	209	3	He	0.247	ug/l	4791.46
Tl	205	209	1	No Gas	0.144	ug/l	19465.07
Tl	205	209	3	He	0.244	ug/l	11316.69
[Pb]	206	209	1	No Gas	0.013	ug/l	1983.50
[Pb]	207	209	1	No Gas	0.012	ug/l	1721.24
Pb	208	209	1	No Gas	0.015	ug/l	7981.00
Th	232	209	3	He	0.017	ug/l	1055.80
U	238	209	1	No Gas	0.001	ug/l	401.93

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4754012.52	132.6
Sc	45	2	H2	3405464.46	101.4
Sc	45	3	He	445447.21	103.6
Ge	72	1	No Gas	1686476.10	111.7
Ge	72	2	H2	1297050.00	97.6
Ge	72	3	He	305516.16	96.7
In	115	1	No Gas	17265097.18	101.7
In	115	3	He	4127780.44	98.0
Tb	159	1	No Gas	21451649.85	99.4
Tb	159	3	He	8009005.49	94.8
Ho	165	1	No Gas	21076780.20	97.4
Ho	165	3	He	8067437.88	95.3
Lu	175	1	No Gas	21169922.51	96.4
Lu	175	3	He	6685831.90	94.5
Bi	209	1	No Gas	15772367.63	95.9
Bi	209	3	He	6208888.78	93.7

# ICPMS207-B Analytical Data

**Sample Name** B22010096-001B  
**File Name** 104SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 22:03:10  
**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	4.691	ug/l	19210.48
Be	9	45	1	No Gas	0.005	ug/l	31.66
B	11	45	1	No Gas	67.412	ug/l	61194.51
Na	23	45	3	He	39739.009	ug/l	34794029.20
Mg	24	45	3	He	11882.783	ug/l	5650840.19
Al	27	45	1	No Gas	2.556	ug/l	53805.52
Si	28	45	2	H2	24489.427	ug/l	48614878.17
K	39	72	3	He	2210.924	ug/l	1431089.34
Ca	40	72	2	H2	10089.654	ug/l	90563716.36
Ti	47	72	1	No Gas	2.563	ug/l	4942.50
V	51	72	1	No Gas	25.317	ug/l	622700.74
V	51	72	3	He	24.432	ug/l	149401.76
Cr	52	72	1	No Gas	4.077	ug/l	120590.67
Cr	52	72	3	He	2.542	ug/l	17546.09
Mn	55	72	1	No Gas	0.732	ug/l	32658.22
Mn	55	72	3	He	0.452	ug/l	2424.05
Fe	56	72	2	H2	4.534	ug/l	122566.61
Fe	56	72	3	He	4.702	ug/l	37480.38
Co	59	72	1	No Gas	0.116	ug/l	3912.78
Ni	60	72	1	No Gas	2.293	ug/l	16087.09
Ni	60	72	3	He	2.236	ug/l	5892.34
Cu	63	72	1	No Gas	0.647	ug/l	14121.82
Cu	63	72	3	He	0.206	ug/l	2304.06
Cu	65	72	1	No Gas	0.247	ug/l	3421.12
Zn	66	72	1	No Gas	4.233	ug/l	25814.11
Zn	66	72	3	He	4.189	ug/l	6381.44
As	75	72	1	No Gas	0.141	ug/l	9528.80
As	75	72	3	He	0.258	ug/l	467.40
Se	78	72	2	H2	0.180	ug/l	167.89
Br	79	72	1	No Gas	1034.961	ug/l	70545.19
Br	79	72	2	H2	872.898	ug/l	40709.72
Se	82	72	1	No Gas	-0.014	ug/l	629.54
Kr	84	72	1	No Gas		ug/l	41961.20
Sr	88	72	1	No Gas	62.504	ug/l	4217373.95
Sr	88	72	3	He	65.323	ug/l	556203.60
Mo	95	115	1	No Gas	0.272	ug/l	3724.95
Mo	95	115	3	He	0.273	ug/l	1400.08
Mo	98	115	1	No Gas	0.263	ug/l	6051.94
Ag	107	115	1	No Gas	-0.068	ug/l	184.74
Ag	109	115	1	No Gas	-0.068	ug/l	172.07
Cd	111	115	1	No Gas	0.005	ug/l	56.03



# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.002	ug/l	17.22
Cd	114	115	1	No Gas	0.014	ug/l	81.50
Cd	114	115	3	He	0.000	ug/l	36.91
Sn	118	115	1	No Gas	0.298	ug/l	10143.59
Sn	118	115	3	He	0.307	ug/l	2904.76
Sb	121	115	1	No Gas	0.045	ug/l	2192.73
Sb	121	115	3	He	0.043	ug/l	574.74
Sb	123	115	1	No Gas	0.049	ug/l	1813.64
Sb	123	115	3	He	0.046	ug/l	463.39
Ba	135	115	1	No Gas	3.147	ug/l	22246.99
Ba	137	115	1	No Gas	3.191	ug/l	38420.05
La	139	115	3	He	0.002	ug/l	108.89
Ce	140	115	3	He	0.002	ug/l	187.78
Hg	201	209	1	No Gas	-0.001	ug/l	154.30
Hg	202	209	1	No Gas	0.006	ug/l	482.58
Hg	202	209	3	He	0.009	ug/l	228.29
Tl	203	209	3	He	0.152	ug/l	3327.76
Tl	205	209	1	No Gas	0.076	ug/l	12994.50
Tl	205	209	3	He	0.155	ug/l	8061.02
[Pb]	206	209	1	No Gas	0.051	ug/l	2749.19
[Pb]	207	209	1	No Gas	0.050	ug/l	2389.13
Pb	208	209	1	No Gas	0.051	ug/l	10829.57
Th	232	209	3	He	0.046	ug/l	2187.07
U	238	209	1	No Gas	0.009	ug/l	1098.50

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4668593.20	130.2
Sc	45	2	H2	3328907.41	99.1
Sc	45	3	He	429081.08	99.8
Ge	72	1	No Gas	1622136.21	107.4
Ge	72	2	H2	1214805.83	91.4
Ge	72	3	He	294003.91	93.1
In	115	1	No Gas	15964088.57	94.1
In	115	3	He	3856829.29	91.6
Tb	159	1	No Gas	20002769.15	92.6
Tb	159	3	He	7763608.80	91.9
Ho	165	1	No Gas	19774717.77	91.4
Ho	165	3	He	7882923.22	93.1
Lu	175	1	No Gas	19950321.08	90.8
Lu	175	3	He	6551389.59	92.6
Bi	209	1	No Gas	14400002.42	87.6
Bi	209	3	He	5868199.29	88.6

# ICPMS207-B Analytical Data

**Sample Name** CCV  
**File Name** 105\_CCV.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 22:09:19  
**Sample Type** CCV  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	666.955	ug/l	2169758.21
Be	9	45	1	No Gas	55.151	ug/l	88874.46
B	11	45	1	No Gas	56.130	ug/l	52794.53
Na	23	45	3	He	13254.719	ug/l	12432388.57
Mg	24	45	3	He	13393.363	ug/l	6813079.74
Al	27	45	1	No Gas	55.740	ug/l	653687.86
Si	28	45	2	H2	227.376	ug/l	493652.17
K	39	72	3	He	13573.400	ug/l	9103163.82
Ca	40	72	2	H2	13105.139	ug/l	130608877.61
Ti	47	72	1	No Gas	58.282	ug/l	116750.52
V	51	72	1	No Gas	60.678	ug/l	1580780.92
V	51	72	3	He	56.162	ug/l	362914.47
Cr	52	72	1	No Gas	58.952	ug/l	1529828.38
Cr	52	72	3	He	53.716	ug/l	387931.89
Mn	55	72	1	No Gas	55.406	ug/l	2148507.08
Mn	55	72	3	He	53.862	ug/l	280453.07
Fe	56	72	2	H2	1341.696	ug/l	33482662.73
Fe	56	72	3	He	1314.037	ug/l	8766703.06
Co	59	72	1	No Gas	56.316	ug/l	1809775.41
Ni	60	72	1	No Gas	55.044	ug/l	401111.79
Ni	60	72	3	He	54.246	ug/l	150732.92
Cu	63	72	1	No Gas	54.447	ug/l	1027297.30
Cu	63	72	3	He	55.170	ug/l	401701.67
Cu	65	72	1	No Gas	53.908	ug/l	497024.33
Zn	66	72	1	No Gas	54.483	ug/l	337225.55
Zn	66	72	3	He	53.375	ug/l	84157.90
As	75	72	1	No Gas	49.978	ug/l	377900.41
As	75	72	3	He	52.018	ug/l	68386.36
Se	78	72	2	H2	51.591	ug/l	44886.80
Br	79	72	1	No Gas	136.263	ug/l	21473.31
Br	79	72	2	H2	130.334	ug/l	12876.90
Se	82	72	1	No Gas	50.122	ug/l	25112.95
Kr	84	72	1	No Gas		ug/l	41563.90
Sr	88	72	1	No Gas	51.328	ug/l	3672453.00
Sr	88	72	3	He	51.813	ug/l	474227.01
Mo	95	115	1	No Gas	51.982	ug/l	732382.46
Mo	95	115	3	He	49.526	ug/l	261056.56
Mo	98	115	1	No Gas	50.279	ug/l	1190199.20
Ag	107	115	1	No Gas	20.320	ug/l	780732.02
Ag	109	115	1	No Gas	20.363	ug/l	762143.53
Cd	111	115	1	No Gas	50.379	ug/l	431258.89

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	49.700	ug/l	135518.27
Cd	114	115	1	No Gas	50.560	ug/l	973110.42
Cd	114	115	3	He	49.690	ug/l	331440.34
Sn	118	115	1	No Gas	51.504	ug/l	1326239.94
Sn	118	115	3	He	49.162	ug/l	351154.43
Sb	121	115	1	No Gas	50.966	ug/l	2003490.84
Sb	121	115	3	He	49.235	ug/l	508294.37
Sb	123	115	1	No Gas	52.172	ug/l	1569503.96
Sb	123	115	3	He	49.402	ug/l	402597.14
Ba	135	115	1	No Gas	52.705	ug/l	399707.60
Ba	137	115	1	No Gas	54.038	ug/l	699610.93
La	139	115	3	He	47.417	ug/l	1841870.46
Ce	140	115	3	He	46.630	ug/l	1927766.53
Hg	201	209	1	No Gas	0.926	ug/l	4794.24
Hg	202	209	1	No Gas	0.931	ug/l	10923.28
Hg	202	209	3	He	0.879	ug/l	4229.16
Tl	203	209	3	He	47.598	ug/l	628920.66
Tl	205	209	1	No Gas	48.854	ug/l	3792509.84
Tl	205	209	3	He	49.360	ug/l	1533320.45
[Pb]	206	209	1	No Gas	51.250	ug/l	1370555.94
[Pb]	207	209	1	No Gas	50.342	ug/l	1167864.99
Pb	208	209	1	No Gas	51.721	ug/l	5444142.90
Th	232	209	3	He	52.507	ug/l	2281219.12
U	238	209	1	No Gas	51.593	ug/l	5288495.96

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4797984.05	133.8
Sc	45	2	H2	3596298.27	107.1
Sc	45	3	He	458964.18	106.7
Ge	72	1	No Gas	1718927.49	113.8
Ge	72	2	H2	1348809.58	101.5
Ge	72	3	He	315972.77	100.0
In	115	1	No Gas	17375455.80	102.4
In	115	3	He	4161929.36	98.8
Tb	159	1	No Gas	21864324.18	101.3
Tb	159	3	He	8031407.27	95.0
Ho	165	1	No Gas	21618746.53	99.9
Ho	165	3	He	8156456.59	96.3
Lu	175	1	No Gas	21657862.31	98.6
Lu	175	3	He	6859587.05	97.0
Bi	209	1	No Gas	15497101.04	94.2
Bi	209	3	He	6133416.68	92.6

# ICPMS207-B Analytical Data

**Sample Name** CCB  
**File Name** 106\_CCB.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 22:15:16  
**Sample Type** CCB  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	2.303	ug/l	11850.03
Be	9	45	1	No Gas	0.009	ug/l	39.32
B	11	45	1	No Gas	1.147	ug/l	3569.19
Na	23	45	3	He	48.668	ug/l	71130.57
Mg	24	45	3	He	5.708	ug/l	3500.15
Al	27	45	1	No Gas	0.312	ug/l	29714.18
Si	28	45	2	H2	5.578	ug/l	17856.48
K	39	72	3	He	20.766	ug/l	78399.64
Ca	40	72	2	H2	2.440	ug/l	105044.99
Ti	47	72	1	No Gas	0.067	ug/l	240.24
V	51	72	1	No Gas	-0.215	ug/l	-4968.14
V	51	72	3	He	1.689	ug/l	15264.60
Cr	52	72	1	No Gas	0.491	ug/l	35542.69
Cr	52	72	3	He	0.018	ug/l	642.24
Mn	55	72	1	No Gas	0.038	ug/l	7660.16
Mn	55	72	3	He	0.026	ug/l	379.27
Fe	56	72	2	H2	-0.041	ug/l	21911.66
Fe	56	72	3	He	0.140	ug/l	9677.96
Co	59	72	1	No Gas	0.004	ug/l	562.23
Ni	60	72	1	No Gas	0.019	ug/l	475.73
Ni	60	72	3	He	0.023	ug/l	184.45
Cu	63	72	1	No Gas	0.005	ug/l	2825.42
Cu	63	72	3	He	0.009	ug/l	1025.16
Cu	65	72	1	No Gas	-0.007	ug/l	1270.57
Zn	66	72	1	No Gas	-0.036	ug/l	1020.56
Zn	66	72	3	He	-0.004	ug/l	263.34
As	75	72	1	No Gas	0.207	ug/l	10416.72
As	75	72	3	He	0.059	ug/l	236.20
Se	78	72	2	H2	0.015	ug/l	42.55
Br	79	72	1	No Gas	87.245	ug/l	18258.76
Br	79	72	2	H2	83.082	ug/l	10779.33
Se	82	72	1	No Gas	-0.400	ug/l	469.94
Kr	84	72	1	No Gas		ug/l	17552.61
Sr	88	72	1	No Gas	0.010	ug/l	2418.76
Sr	88	72	3	He	0.015	ug/l	461.12
Mo	95	115	1	No Gas	0.014	ug/l	422.23
Mo	95	115	3	He	0.013	ug/l	141.11
Mo	98	115	1	No Gas	0.013	ug/l	697.80
Ag	107	115	1	No Gas	-0.006	ug/l	2637.31
Ag	109	115	1	No Gas	-0.005	ug/l	2579.94
Cd	111	115	1	No Gas	-0.008	ug/l	-56.70

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.001	ug/l	17.22
Cd	114	115	1	No Gas	-0.003	ug/l	-233.02
Cd	114	115	3	He	-0.001	ug/l	36.97
Sn	118	115	1	No Gas	0.017	ug/l	3859.55
Sn	118	115	3	He	0.000	ug/l	947.82
Sb	121	115	1	No Gas	0.056	ug/l	2862.25
Sb	121	115	3	He	0.038	ug/l	573.07
Sb	123	115	1	No Gas	0.054	ug/l	2173.39
Sb	123	115	3	He	0.038	ug/l	438.05
Ba	135	115	1	No Gas	-0.007	ug/l	322.70
Ba	137	115	1	No Gas	0.006	ug/l	612.14
La	139	115	3	He	0.001	ug/l	97.78
Ce	140	115	3	He	0.001	ug/l	152.22
Hg	201	209	1	No Gas	-0.011	ug/l	122.98
Hg	202	209	1	No Gas	-0.011	ug/l	331.94
Hg	202	209	3	He	-0.012	ug/l	145.30
Tl	203	209	3	He	0.539	ug/l	8773.08
Tl	205	209	1	No Gas	0.356	ug/l	36336.03
Tl	205	209	3	He	0.548	ug/l	21064.43
[Pb]	206	209	1	No Gas	0.022	ug/l	2214.65
[Pb]	207	209	1	No Gas	0.018	ug/l	1871.26
Pb	208	209	1	No Gas	0.021	ug/l	8694.51
Th	232	209	3	He	0.017	ug/l	1032.46
U	238	209	1	No Gas	0.011	ug/l	1456.74

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4741748.34	132.3
Sc	45	2	H2	3558312.74	105.9
Sc	45	3	He	453180.07	105.4
Ge	72	1	No Gas	1689944.34	111.9
Ge	72	2	H2	1344569.03	101.2
Ge	72	3	He	309570.60	98.0
In	115	1	No Gas	17603818.65	103.7
In	115	3	He	4175356.12	99.1
Tb	159	1	No Gas	21503726.10	99.6
Tb	159	3	He	7996114.27	94.6
Ho	165	1	No Gas	21242284.25	98.1
Ho	165	3	He	8111545.74	95.8
Lu	175	1	No Gas	21170058.90	96.4
Lu	175	3	He	6835311.69	96.6
Bi	209	1	No Gas	15832970.15	96.3
Bi	209	3	He	6268536.06	94.6

# ICPMS207-B Analytical Data

**Sample Name** B22010096-001BDIL  
**File Name** 107SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 22:21:28  
**Sample Type** Sample  
**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	11.066	ug/l	11543.02
Be	9	45	1	No Gas	-0.008	ug/l	22.33
B	11	45	1	No Gas	64.168	ug/l	13885.30
Na	23	45	3	He	39216.647	ug/l	7029600.80
Mg	24	45	3	He	12101.528	ug/l	1175749.47
Al	27	45	1	No Gas	1.337	ug/l	29175.29
Si	28	45	2	H2	23928.335	ug/l	10048278.41
K	39	72	3	He	2189.257	ug/l	346113.81
Ca	40	72	2	H2	9994.476	ug/l	19403262.58
Ti	47	72	1	No Gas	2.599	ug/l	1097.81
V	51	72	1	No Gas	26.994	ug/l	134652.53
V	51	72	3	He	30.977	ug/l	42881.03
Cr	52	72	1	No Gas	6.231	ug/l	52907.48
Cr	52	72	3	He	2.644	ug/l	4199.51
Mn	55	72	1	No Gas	1.061	ug/l	13865.73
Mn	55	72	3	He	0.592	ug/l	842.86
Fe	56	72	2	H2	5.139	ug/l	47204.64
Fe	56	72	3	He	8.425	ug/l	19434.19
Co	59	72	1	No Gas	0.118	ug/l	1137.79
Ni	60	72	1	No Gas	2.489	ug/l	3789.65
Ni	60	72	3	He	2.378	ug/l	1398.97
Cu	63	72	1	No Gas	0.810	ug/l	5565.29
Cu	63	72	3	He	0.407	ug/l	1523.11
Cu	65	72	1	No Gas	0.370	ug/l	1941.58
Zn	66	72	1	No Gas	5.698	ug/l	7904.92
Zn	66	72	3	He	5.820	ug/l	2036.82
As	75	72	1	No Gas	1.000	ug/l	10040.32
As	75	72	3	He	0.453	ug/l	273.13
Se	78	72	2	H2	0.188	ug/l	60.67
Br	79	72	1	No Gas	1152.281	ug/l	25825.19
Br	79	72	2	H2	973.400	ug/l	15207.84
Se	82	72	1	No Gas	-0.378	ug/l	605.94
Kr	84	72	1	No Gas		ug/l	22359.66
Sr	88	72	1	No Gas	66.106	ug/l	903494.15
Sr	88	72	3	He	64.708	ug/l	114851.67
Mo	95	115	1	No Gas	0.233	ug/l	883.37
Mo	95	115	3	He	0.316	ug/l	391.13
Mo	98	115	1	No Gas	0.232	ug/l	1471.34
Ag	107	115	1	No Gas	-0.353	ug/l	121.38
Ag	109	115	1	No Gas	-0.346	ug/l	146.06
Cd	111	115	1	No Gas	0.027	ug/l	60.63

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.000	ug/l	13.44
Cd	114	115	1	No Gas	0.064	ug/l	69.53
Cd	114	115	3	He	-0.014	ug/l	22.17
Sn	118	115	1	No Gas	1.711	ug/l	12184.56
Sn	118	115	3	He	1.663	ug/l	3215.94
Sb	121	115	1	No Gas	0.094	ug/l	1376.54
Sb	121	115	3	He	0.102	ug/l	376.04
Sb	123	115	1	No Gas	0.090	ug/l	1057.48
Sb	123	115	3	He	0.084	ug/l	256.36
Ba	135	115	1	No Gas	3.162	ug/l	5164.07
Ba	137	115	1	No Gas	3.214	ug/l	8851.93
La	139	115	3	He	0.003	ug/l	73.34
Ce	140	115	3	He	0.010	ug/l	181.12
Hg	201	209	1	No Gas	-0.057	ug/l	115.31
Hg	202	209	1	No Gas	-0.043	ug/l	350.27
Hg	202	209	3	He	-0.047	ug/l	156.64
Tl	203	209	3	He	0.871	ug/l	3798.75
Tl	205	209	1	No Gas	0.418	ug/l	14463.96
Tl	205	209	3	He	0.904	ug/l	9307.02
[Pb]	206	209	1	No Gas	0.123	ug/l	2243.54
[Pb]	207	209	1	No Gas	0.152	ug/l	2116.85
Pb	208	209	1	No Gas	0.144	ug/l	9296.90
Th	232	209	3	He	0.064	ug/l	843.03
U	238	209	1	No Gas	0.006	ug/l	422.92

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4735726.85	132.1
Sc	45	2	H2	3516512.27	104.7
Sc	45	3	He	439515.65	102.2
Ge	72	1	No Gas	1640738.05	108.7
Ge	72	2	H2	1308374.63	98.4
Ge	72	3	He	305991.22	96.9
In	115	1	No Gas	17390076.00	102.5
In	115	3	He	4044013.09	96.0
Tb	159	1	No Gas	21338839.97	98.8
Tb	159	3	He	8003995.49	94.7
Ho	165	1	No Gas	20977982.66	96.9
Ho	165	3	He	8003246.72	94.5
Lu	175	1	No Gas	20989844.94	95.6
Lu	175	3	He	6779894.29	95.8
Bi	209	1	No Gas	15434788.14	93.9
Bi	209	3	He	6169005.60	93.1

# ICPMS207-B Analytical Data

**Sample Name** B22010096-001BPDS1  
**File Name** 108ARef.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 22:27:37  
**Sample Type** AIRRef  
**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	2654.637	ug/l	7710190.82
Be	9	45	1	No Gas	52.537	ug/l	75704.08
B	11	45	1	No Gas	122.922	ug/l	100649.25
Na	23	45	3	He	92185.491	ug/l	78198616.06
Mg	24	45	3	He	65196.848	ug/l	30047873.99
Al	27	45	1	No Gas	54.398	ug/l	572038.51
Si	28	45	2	H2	24864.850	ug/l	46257238.49
K	39	72	3	He	56440.742	ug/l	34183671.43
Ca	40	72	2	H2	62347.217	ug/l	542464952.51
Ti	47	72	1	No Gas	60.224	ug/l	107065.17
V	51	72	1	No Gas	78.437	ug/l	1813259.95
V	51	72	3	He	75.558	ug/l	441945.87
Cr	52	72	1	No Gas	59.200	ug/l	1364338.76
Cr	52	72	3	He	53.867	ug/l	353241.49
Mn	55	72	1	No Gas	52.837	ug/l	1817690.56
Mn	55	72	3	He	50.863	ug/l	240503.44
Fe	56	72	2	H2	5245.824	ug/l	114324668.14
Fe	56	72	3	He	5165.574	ug/l	31269318.01
Co	59	72	1	No Gas	53.480	ug/l	1524617.46
Ni	60	72	1	No Gas	53.424	ug/l	345289.13
Ni	60	72	3	He	51.386	ug/l	129672.68
Cu	63	72	1	No Gas	51.324	ug/l	859460.21
Cu	63	72	3	He	51.768	ug/l	342350.20
Cu	65	72	1	No Gas	50.841	ug/l	415957.68
Zn	66	72	1	No Gas	57.655	ug/l	316705.36
Zn	66	72	3	He	55.991	ug/l	80172.35
As	75	72	1	No Gas	47.629	ug/l	319929.43
As	75	72	3	He	48.959	ug/l	58466.82
Se	78	72	2	H2	48.488	ug/l	36860.28
Br	79	72	1	No Gas	1094.802	ug/l	69859.90
Br	79	72	2	H2	874.002	ug/l	39709.08
Se	82	72	1	No Gas	47.257	ug/l	21048.36
Kr	84	72	1	No Gas		ug/l	60179.07
Sr	88	72	1	No Gas	111.553	ug/l	7079524.68
Sr	88	72	3	He	113.318	ug/l	941555.50
Mo	95	115	1	No Gas	51.292	ug/l	622379.73
Mo	95	115	3	He	49.621	ug/l	221524.58
Mo	98	115	1	No Gas	50.097	ug/l	1021121.74
Ag	107	115	1	No Gas	20.025	ug/l	662610.10
Ag	109	115	1	No Gas	19.940	ug/l	642780.18
Cd	111	115	1	No Gas	47.845	ug/l	352655.51



# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	48.334	ug/l	111620.52
Cd	114	115	1	No Gas	48.053	ug/l	796282.64
Cd	114	115	3	He	48.559	ug/l	274327.32
Sn	118	115	1	No Gas	50.259	ug/l	1114354.37
Sn	118	115	3	He	49.578	ug/l	299898.85
Sb	121	115	1	No Gas	47.981	ug/l	1623985.97
Sb	121	115	3	He	47.831	ug/l	418168.29
Sb	123	115	1	No Gas	47.131	ug/l	1220885.71
Sb	123	115	3	He	47.961	ug/l	331013.11
Ba	135	115	1	No Gas	54.213	ug/l	354006.08
Ba	137	115	1	No Gas	54.888	ug/l	611802.93
La	139	115	3	He	51.370	ug/l	1689781.55
Ce	140	115	3	He	50.371	ug/l	1763490.43
Hg	201	209	1	No Gas	0.953	ug/l	4263.50
Hg	202	209	1	No Gas	0.968	ug/l	9811.64
Hg	202	209	3	He	0.942	ug/l	3976.80
Tl	203	209	3	He	47.829	ug/l	555883.40
Tl	205	209	1	No Gas	49.027	ug/l	3288650.30
Tl	205	209	3	He	48.877	ug/l	1335634.40
[Pb]	206	209	1	No Gas	49.326	ug/l	1139919.82
[Pb]	207	209	1	No Gas	48.658	ug/l	975774.00
Pb	208	209	1	No Gas	50.182	ug/l	4565285.45
Th	232	209	3	He	52.802	ug/l	2017910.49
U	238	209	1	No Gas	51.072	ug/l	4523558.89

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4426072.86	123.5
Sc	45	2	H2	3215216.41	95.7
Sc	45	3	He	428333.27	99.6
Ge	72	1	No Gas	1572374.29	104.1
Ge	72	2	H2	1213880.68	91.3
Ge	72	3	He	295507.01	93.5
In	115	1	No Gas	15406485.01	90.8
In	115	3	He	3631502.36	86.2
Tb	159	1	No Gas	19539617.68	90.5
Tb	159	3	He	7563302.46	89.5
Ho	165	1	No Gas	19278458.20	89.1
Ho	165	3	He	7482324.30	88.4
Lu	175	1	No Gas	19314630.83	87.9
Lu	175	3	He	6303635.81	89.1
Bi	209	1	No Gas	13792453.57	83.9
Bi	209	3	He	5556995.25	83.9

# ICPMS207-B Analytical Data

**Sample Name** B22010096-001BMS4  
**File Name** 109MS4.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 22:33:35  
**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	112.190	ug/l	363739.09
Be	9	45	1	No Gas	53.626	ug/l	85246.29
B	11	45	1	No Gas	181.002	ug/l	162276.72
Na	23	45	3	He	44989.060	ug/l	39302078.86
Mg	24	45	3	He	17757.037	ug/l	8421015.42
Al	27	45	1	No Gas	548.547	ug/l	6119150.32
Si	28	45	2	H2	25691.410	ug/l	53019037.06
K	39	72	3	He	7875.595	ug/l	5022162.81
Ca	40	72	2	H2	15362.889	ug/l	145391825.04
Ti	47	72	1	No Gas	110.177	ug/l	210794.29
V	51	72	1	No Gas	130.018	ug/l	3236514.52
V	51	72	3	He	132.806	ug/l	804998.45
Cr	52	72	1	No Gas	115.816	ug/l	2850641.34
Cr	52	72	3	He	109.585	ug/l	747764.30
Mn	55	72	1	No Gas	540.283	ug/l	19960097.19
Mn	55	72	3	He	550.444	ug/l	2709471.79
Fe	56	72	2	H2	535.862	ug/l	12710425.08
Fe	56	72	3	He	549.603	ug/l	3473249.11
Co	59	72	1	No Gas	109.159	ug/l	3351501.69
Ni	60	72	1	No Gas	108.646	ug/l	756212.49
Ni	60	72	3	He	109.402	ug/l	287318.43
Cu	63	72	1	No Gas	108.114	ug/l	1946760.85
Cu	63	72	3	He	110.286	ug/l	758573.75
Cu	65	72	1	No Gas	104.949	ug/l	923348.38
Zn	66	72	1	No Gas	102.607	ug/l	605780.22
Zn	66	72	3	He	104.799	ug/l	156113.05
As	75	72	1	No Gas	94.123	ug/l	672483.14
As	75	72	3	He	101.162	ug/l	125796.01
Se	78	72	2	H2	97.530	ug/l	80546.47
Br	79	72	1	No Gas	902.969	ug/l	63974.40
Br	79	72	2	H2	785.288	ug/l	39305.62
Se	82	72	1	No Gas	95.599	ug/l	45186.60
Kr	84	72	1	No Gas		ug/l	88983.32
Sr	88	72	1	No Gas	159.383	ug/l	10892737.51
Sr	88	72	3	He	175.408	ug/l	1519382.57
Mo	95	115	1	No Gas	101.316	ug/l	1333778.72
Mo	95	115	3	He	98.327	ug/l	467214.40
Mo	98	115	1	No Gas	100.453	ug/l	2221064.57
Ag	107	115	1	No Gas	9.343	ug/l	336700.19
Ag	109	115	1	No Gas	9.353	ug/l	328409.97
Cd	111	115	1	No Gas	48.594	ug/l	388575.90

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	50.475	ug/l	124076.17
Cd	114	115	1	No Gas	48.958	ug/l	880047.91
Cd	114	115	3	He	49.553	ug/l	297760.36
Sn	118	115	1	No Gas	98.408	ug/l	2364425.87
Sn	118	115	3	He	99.551	ug/l	639245.79
Sb	121	115	1	No Gas	96.148	ug/l	3530980.49
Sb	121	115	3	He	96.316	ug/l	894190.67
Sb	123	115	1	No Gas	99.990	ug/l	2809721.33
Sb	123	115	3	He	97.385	ug/l	713410.13
Ba	135	115	1	No Gas	100.049	ug/l	708345.17
Ba	137	115	1	No Gas	101.589	ug/l	1228011.12
La	139	115	3	He	103.947	ug/l	3631687.62
Ce	140	115	3	He	103.700	ug/l	3854082.93
Hg	201	209	1	No Gas	0.014	ug/l	231.96
Hg	202	209	1	No Gas	0.021	ug/l	657.22
Hg	202	209	3	He	0.027	ug/l	295.28
Tl	203	209	3	He	98.108	ug/l	1185392.33
Tl	205	209	1	No Gas	94.518	ug/l	6981660.31
Tl	205	209	3	He	102.849	ug/l	2922111.02
[Pb]	206	209	1	No Gas	102.324	ug/l	2605197.36
[Pb]	207	209	1	No Gas	100.111	ug/l	2211281.30
Pb	208	209	1	No Gas	101.160	ug/l	10139161.53
Th	232	209	3	He	106.626	ug/l	4239969.06
U	238	209	1	No Gas	99.290	ug/l	9695392.10

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4734873.03	132.1
Sc	45	2	H2	3461775.17	103.1
Sc	45	3	He	430692.71	100.2
Ge	72	1	No Gas	1642713.04	108.8
Ge	72	2	H2	1280843.23	96.4
Ge	72	3	He	299468.80	94.8
In	115	1	No Gas	16228599.97	95.6
In	115	3	He	3763066.16	89.3
Tb	159	1	No Gas	20576544.99	95.3
Tb	159	3	He	7598722.78	89.9
Ho	165	1	No Gas	20188635.42	93.3
Ho	165	3	He	7707214.29	91.0
Lu	175	1	No Gas	20443816.22	93.1
Lu	175	3	He	6371671.65	90.1
Bi	209	1	No Gas	14759720.36	89.8
Bi	209	3	He	5623709.67	84.9

# ICPMS207-B Analytical Data

**Sample Name** B22010096-001BMSD4  
**File Name** 110MSD4.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 22:39:25  
**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	105.901	ug/l	340925.75
Be	9	45	1	No Gas	50.860	ug/l	80163.78
B	11	45	1	No Gas	170.250	ug/l	151601.95
Na	23	45	3	He	43571.874	ug/l	39459614.69
Mg	24	45	3	He	17131.810	ug/l	8426108.83
Al	27	45	1	No Gas	533.326	ug/l	5890796.71
Si	28	45	2	H2	26558.085	ug/l	51070984.88
K	39	72	3	He	7739.819	ug/l	5005690.48
Ca	40	72	2	H2	15127.368	ug/l	139681012.76
Ti	47	72	1	No Gas	109.951	ug/l	210755.88
V	51	72	1	No Gas	134.283	ug/l	3344978.16
V	51	72	3	He	130.684	ug/l	803430.81
Cr	52	72	1	No Gas	113.571	ug/l	2800451.04
Cr	52	72	3	He	105.978	ug/l	732923.67
Mn	55	72	1	No Gas	532.351	ug/l	19703502.05
Mn	55	72	3	He	533.427	ug/l	2660604.58
Fe	56	72	2	H2	531.979	ug/l	12316344.24
Fe	56	72	3	He	541.836	ug/l	3470114.53
Co	59	72	1	No Gas	108.068	ug/l	3320813.74
Ni	60	72	1	No Gas	106.602	ug/l	742745.00
Ni	60	72	3	He	105.488	ug/l	280884.42
Cu	63	72	1	No Gas	107.206	ug/l	1932833.61
Cu	63	72	3	He	106.424	ug/l	741896.52
Cu	65	72	1	No Gas	101.953	ug/l	898157.19
Zn	66	72	1	No Gas	100.318	ug/l	593072.09
Zn	66	72	3	He	99.659	ug/l	150424.29
As	75	72	1	No Gas	92.578	ug/l	662407.91
As	75	72	3	He	95.367	ug/l	120047.46
Se	78	72	2	H2	97.971	ug/l	78979.85
Br	79	72	1	No Gas	942.676	ug/l	66353.29
Br	79	72	2	H2	845.502	ug/l	40783.12
Se	82	72	1	No Gas	93.785	ug/l	44377.31
Kr	84	72	1	No Gas		ug/l	86175.71
Sr	88	72	1	No Gas	159.575	ug/l	10915209.96
Sr	88	72	3	He	170.782	ug/l	1497564.84
Mo	95	115	1	No Gas	100.051	ug/l	1336686.13
Mo	95	115	3	He	92.876	ug/l	468856.08
Mo	98	115	1	No Gas	98.715	ug/l	2215513.34
Ag	107	115	1	No Gas	9.181	ug/l	335880.14
Ag	109	115	1	No Gas	9.269	ug/l	330318.73
Cd	111	115	1	No Gas	46.829	ug/l	380078.01

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	46.559	ug/l	121622.93
Cd	114	115	1	No Gas	47.135	ug/l	860086.29
Cd	114	115	3	He	47.329	ug/l	302444.53
Sn	118	115	1	No Gas	98.400	ug/l	2399945.41
Sn	118	115	3	He	97.307	ug/l	664949.63
Sb	121	115	1	No Gas	95.926	ug/l	3574515.30
Sb	121	115	3	He	93.737	ug/l	926784.50
Sb	123	115	1	No Gas	97.154	ug/l	2769968.46
Sb	123	115	3	He	94.297	ug/l	735936.10
Ba	135	115	1	No Gas	97.349	ug/l	699609.83
Ba	137	115	1	No Gas	100.605	ug/l	1234717.48
La	139	115	3	He	101.063	ug/l	3759064.25
Ce	140	115	3	He	101.289	ug/l	4009525.08
Hg	201	209	1	No Gas	0.016	ug/l	245.29
Hg	202	209	1	No Gas	0.021	ug/l	658.89
Hg	202	209	3	He	0.028	ug/l	313.94
Tl	203	209	3	He	93.696	ug/l	1193302.31
Tl	205	209	1	No Gas	91.839	ug/l	6845977.82
Tl	205	209	3	He	98.681	ug/l	2954108.80
[Pb]	206	209	1	No Gas	98.757	ug/l	2536688.85
[Pb]	207	209	1	No Gas	96.758	ug/l	2155856.22
Pb	208	209	1	No Gas	98.392	ug/l	9945278.81
Th	232	209	3	He	101.157	ug/l	4239482.74
U	238	209	1	No Gas	97.817	ug/l	9632880.94

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4695411.18	131.0
Sc	45	2	H2	3226511.30	96.1
Sc	45	3	He	443853.16	103.2
Ge	72	1	No Gas	1647323.86	109.1
Ge	72	2	H2	1250260.21	94.1
Ge	72	3	He	302905.98	95.9
In	115	1	No Gas	16479513.39	97.1
In	115	3	He	3987118.52	94.6
Tb	159	1	No Gas	21087165.38	97.7
Tb	159	3	He	7919651.77	93.7
Ho	165	1	No Gas	20613723.62	95.2
Ho	165	3	He	7974381.81	94.2
Lu	175	1	No Gas	20515194.68	93.4
Lu	175	3	He	6748768.22	95.4
Bi	209	1	No Gas	14906948.75	90.7
Bi	209	3	He	5918336.56	89.3

# ICPMS207-B Analytical Data

**Sample Name** Rinse  
**File Name** 111BLKV.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 22:45:16  
**Sample Type** BlkVrfy  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	2.056	ug/l	11316.08
Be	9	45	1	No Gas	0.016	ug/l	51.99
B	11	45	1	No Gas	1.434	ug/l	3912.08
Na	23	45	3	He	47.765	ug/l	71413.07
Mg	24	45	3	He	6.711	ug/l	4069.16
Al	27	45	1	No Gas	-0.611	ug/l	19893.34
Si	28	45	2	H2	10.927	ug/l	30111.02
K	39	72	3	He	16.558	ug/l	76689.71
Ca	40	72	2	H2	2.598	ug/l	110844.48
Ti	47	72	1	No Gas	0.053	ug/l	216.89
V	51	72	1	No Gas	-0.279	ug/l	-6580.82
V	51	72	3	He	1.553	ug/l	14611.75
Cr	52	72	1	No Gas	0.415	ug/l	34248.72
Cr	52	72	3	He	0.002	ug/l	540.01
Mn	55	72	1	No Gas	0.084	ug/l	9590.81
Mn	55	72	3	He	0.061	ug/l	567.90
Fe	56	72	2	H2	-0.151	ug/l	19963.63
Fe	56	72	3	He	0.006	ug/l	8928.38
Co	59	72	1	No Gas	0.014	ug/l	891.60
Ni	60	72	1	No Gas	0.031	ug/l	572.21
Ni	60	72	3	He	0.026	ug/l	195.56
Cu	63	72	1	No Gas	-0.017	ug/l	2473.87
Cu	63	72	3	He	-0.013	ug/l	880.18
Cu	65	72	1	No Gas	-0.023	ug/l	1139.17
Zn	66	72	1	No Gas	-0.018	ug/l	1153.73
Zn	66	72	3	He	0.008	ug/l	285.56
As	75	72	1	No Gas	0.237	ug/l	10804.09
As	75	72	3	He	0.062	ug/l	243.07
Se	78	72	2	H2	0.016	ug/l	45.00
Br	79	72	1	No Gas	84.414	ug/l	18435.28
Br	79	72	2	H2	81.933	ug/l	11138.95
Se	82	72	1	No Gas	0.016	ug/l	681.95
Kr	84	72	1	No Gas		ug/l	18631.69
Sr	88	72	1	No Gas	0.012	ug/l	2621.71
Sr	88	72	3	He	0.014	ug/l	462.23
Mo	95	115	1	No Gas	0.006	ug/l	313.34
Mo	95	115	3	He	0.009	ug/l	118.89
Mo	98	115	1	No Gas	0.004	ug/l	487.79
Ag	107	115	1	No Gas	-0.005	ug/l	2728.70
Ag	109	115	1	No Gas	-0.002	ug/l	2740.04
Cd	111	115	1	No Gas	0.011	ug/l	109.12

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.002	ug/l	20.89
Cd	114	115	1	No Gas	0.007	ug/l	-39.07
Cd	114	115	3	He	0.001	ug/l	45.02
Sn	118	115	1	No Gas	0.008	ug/l	3726.44
Sn	118	115	3	He	-0.003	ug/l	933.37
Sb	121	115	1	No Gas	0.080	ug/l	3920.28
Sb	121	115	3	He	0.058	ug/l	778.43
Sb	123	115	1	No Gas	0.080	ug/l	3037.97
Sb	123	115	3	He	0.059	ug/l	610.08
Ba	135	115	1	No Gas	-0.013	ug/l	279.45
Ba	137	115	1	No Gas	-0.011	ug/l	402.54
La	139	115	3	He	0.002	ug/l	127.78
Ce	140	115	3	He	0.002	ug/l	177.78
Hg	201	209	1	No Gas	-0.004	ug/l	159.64
Hg	202	209	1	No Gas	-0.007	ug/l	385.26
Hg	202	209	3	He	-0.011	ug/l	158.30
Tl	203	209	3	He	0.998	ug/l	15475.85
Tl	205	209	1	No Gas	0.760	ug/l	70346.41
Tl	205	209	3	He	0.997	ug/l	36523.16
[Pb]	206	209	1	No Gas	0.031	ug/l	2532.48
[Pb]	207	209	1	No Gas	0.032	ug/l	2274.66
Pb	208	209	1	No Gas	0.033	ug/l	10286.08
Th	232	209	3	He	0.017	ug/l	1072.48
U	238	209	1	No Gas	0.002	ug/l	564.90

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4851550.51	135.3
Sc	45	2	H2	3668747.41	109.2
Sc	45	3	He	460339.37	107.0
Ge	72	1	No Gas	1721528.40	114.0
Ge	72	2	H2	1397379.82	105.1
Ge	72	3	He	313808.11	99.3
In	115	1	No Gas	17987328.35	106.0
In	115	3	He	4196853.08	99.6
Tb	159	1	No Gas	22579416.54	104.6
Tb	159	3	He	8190257.52	96.9
Ho	165	1	No Gas	22133118.80	102.3
Ho	165	3	He	8237608.36	97.3
Lu	175	1	No Gas	22114357.33	100.7
Lu	175	3	He	6859179.67	96.9
Bi	209	1	No Gas	16257093.31	98.9
Bi	209	3	He	6489990.16	97.9

# ICPMS207-B Analytical Data

**Sample Name** B22010120-001A  
**File Name** 112SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 22:51:26  
**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	2.145	ug/l	13083.56
Be	9	45	1	No Gas	0.001	ug/l	31.32
B	11	45	1	No Gas	110.805	ug/l	115862.78
Na	23	45	3	He	82269.117	ug/l	80073757.14
Mg	24	45	3	He	26369.832	ug/l	13944739.00
Al	27	45	1	No Gas	1.464	ug/l	49013.69
Si	28	45	2	H2	31938.159	ug/l	71743042.90
K	39	72	3	He	3242.426	ug/l	2252370.56
Ca	40	72	2	H2	24704.343	ug/l	251189363.85
Ti	47	72	1	No Gas	2.270	ug/l	4827.33
V	51	72	1	No Gas	36.464	ug/l	986445.30
V	51	72	3	He	32.358	ug/l	213707.79
Cr	52	72	1	No Gas	1.103	ug/l	53801.36
Cr	52	72	3	He	1.128	ug/l	8767.09
Mn	55	72	1	No Gas	23.678	ug/l	956978.41
Mn	55	72	3	He	22.717	ug/l	119876.39
Fe	56	72	2	H2	33.368	ug/l	872491.78
Fe	56	72	3	He	33.453	ug/l	234733.09
Co	59	72	1	No Gas	0.894	ug/l	30254.67
Ni	60	72	1	No Gas	1.347	ug/l	10542.89
Ni	60	72	3	He	1.239	ug/l	3608.24
Cu	63	72	1	No Gas	1.183	ug/l	25997.51
Cu	63	72	3	He	0.334	ug/l	3448.72
Cu	65	72	1	No Gas	0.398	ug/l	5203.02
Zn	66	72	1	No Gas	8.329	ug/l	54627.79
Zn	66	72	3	He	8.664	ug/l	14063.51
As	75	72	1	No Gas	6.488	ug/l	59130.68
As	75	72	3	He	6.621	ug/l	8955.84
Se	78	72	2	H2	0.764	ug/l	707.68
Br	79	72	1	No Gas	7901.702	ug/l	500555.75
Br	79	72	2	H2	6459.217	ug/l	294232.11
Se	82	72	1	No Gas	1.180	ug/l	1296.40
Kr	84	72	1	No Gas		ug/l	64248.27
Sr	88	72	1	No Gas	97.610	ug/l	7251092.74
Sr	88	72	3	He	101.057	ug/l	936043.15
Mo	95	115	1	No Gas	7.617	ug/l	111617.55
Mo	95	115	3	He	7.657	ug/l	40210.87
Mo	98	115	1	No Gas	7.541	ug/l	185597.48
Ag	107	115	1	No Gas	-0.066	ug/l	303.46
Ag	109	115	1	No Gas	-0.065	ug/l	313.46
Cd	111	115	1	No Gas	0.011	ug/l	115.55



# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.009	ug/l	37.34
Cd	114	115	1	No Gas	0.022	ug/l	251.66
Cd	114	115	3	He	0.006	ug/l	79.61
Sn	118	115	1	No Gas	0.074	ug/l	5486.86
Sn	118	115	3	He	0.090	ug/l	1582.32
Sb	121	115	1	No Gas	0.686	ug/l	28629.17
Sb	121	115	3	He	0.701	ug/l	7373.34
Sb	123	115	1	No Gas	0.677	ug/l	21674.14
Sb	123	115	3	He	0.711	ug/l	5887.83
Ba	135	115	1	No Gas	3.141	ug/l	25082.72
Ba	137	115	1	No Gas	3.178	ug/l	43211.40
La	139	115	3	He	0.006	ug/l	273.34
Ce	140	115	3	He	0.004	ug/l	272.23
Hg	201	209	1	No Gas	0.180	ug/l	1053.84
Hg	202	209	1	No Gas	4.039	ug/l	45226.27
Hg	202	209	3	He	3.447	ug/l	15610.66
Tl	203	209	3	He	0.579	ug/l	8885.86
Tl	205	209	1	No Gas	0.354	ug/l	34836.87
Tl	205	209	3	He	0.561	ug/l	20507.95
[Pb]	206	209	1	No Gas	0.071	ug/l	3447.14
[Pb]	207	209	1	No Gas	0.068	ug/l	2939.24
Pb	208	209	1	No Gas	0.072	ug/l	13646.19
Th	232	209	3	He	0.004	ug/l	443.52
U	238	209	1	No Gas	0.324	ug/l	33026.24

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	5470283.22	152.6
Sc	45	2	H2	3765189.66	112.1
Sc	45	3	He	477157.19	111.0
Ge	72	1	No Gas	1786580.25	118.3
Ge	72	2	H2	1376356.38	103.6
Ge	72	3	He	319818.89	101.2
In	115	1	No Gas	18038253.91	106.3
In	115	3	He	4139712.02	98.3
Tb	159	1	No Gas	22246282.58	103.0
Tb	159	3	He	8142892.82	96.3
Ho	165	1	No Gas	21974722.28	101.5
Ho	165	3	He	8103920.15	95.7
Lu	175	1	No Gas	21703174.29	98.8
Lu	175	3	He	6900447.49	97.5
Bi	209	1	No Gas	15281306.82	92.9
Bi	209	3	He	5983461.54	90.3

# ICPMS207-B Analytical Data

**Sample Name** B22010120-001B  
**File Name** 113SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 22:57:33  
**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	4.498	ug/l	17353.56
Be	9	45	1	No Gas	0.004	ug/l	29.32
B	11	45	1	No Gas	127.949	ug/l	106202.98
Na	23	45	3	He	85246.677	ug/l	70409897.28
Mg	24	45	3	He	27116.074	ug/l	12166010.17
Al	27	45	1	No Gas	16.752	ug/l	195090.54
Si	28	45	2	H2	28831.024	ug/l	59414525.78
K	39	72	3	He	3320.641	ug/l	2016446.27
Ca	40	72	2	H2	22781.675	ug/l	213517076.22
Ti	47	72	1	No Gas	4.042	ug/l	7476.15
V	51	72	1	No Gas	37.552	ug/l	891854.53
V	51	72	3	He	36.610	ug/l	210940.69
Cr	52	72	1	No Gas	3.098	ug/l	93719.62
Cr	52	72	3	He	1.796	ug/l	11944.90
Mn	55	72	1	No Gas	23.196	ug/l	823472.21
Mn	55	72	3	He	23.523	ug/l	108619.17
Fe	56	72	2	H2	56.617	ug/l	1350497.45
Fe	56	72	3	He	61.317	ug/l	369914.89
Co	59	72	1	No Gas	0.960	ug/l	28534.51
Ni	60	72	1	No Gas	1.542	ug/l	10556.25
Ni	60	72	3	He	1.477	ug/l	3734.95
Cu	63	72	1	No Gas	1.648	ug/l	30814.85
Cu	63	72	3	He	0.808	ug/l	6070.05
Cu	65	72	1	No Gas	0.849	ug/l	8351.76
Zn	66	72	1	No Gas	12.620	ug/l	72117.70
Zn	66	72	3	He	13.290	ug/l	18743.22
As	75	72	1	No Gas	6.690	ug/l	53294.47
As	75	72	3	He	6.955	ug/l	8225.35
Se	78	72	2	H2	0.759	ug/l	649.02
Br	79	72	1	No Gas	2663.456	ug/l	156267.46
Br	79	72	2	H2	2075.221	ug/l	91801.53
Se	82	72	1	No Gas	0.941	ug/l	1031.97
Kr	84	72	1	No Gas		ug/l	57830.97
Sr	88	72	1	No Gas	99.902	ug/l	6514775.77
Sr	88	72	3	He	104.151	ug/l	844018.61
Mo	95	115	1	No Gas	8.245	ug/l	105663.60
Mo	95	115	3	He	8.355	ug/l	38163.20
Mo	98	115	1	No Gas	8.069	ug/l	173706.16
Ag	107	115	1	No Gas	-0.050	ug/l	813.68
Ag	109	115	1	No Gas	-0.049	ug/l	803.01
Cd	111	115	1	No Gas	0.006	ug/l	63.10

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.006	ug/l	26.00
Cd	114	115	1	No Gas	0.015	ug/l	107.13
Cd	114	115	3	He	0.001	ug/l	40.55
Sn	118	115	1	No Gas	0.463	ug/l	13869.44
Sn	118	115	3	He	0.535	ug/l	4119.53
Sb	121	115	1	No Gas	0.738	ug/l	26900.27
Sb	121	115	3	He	0.789	ug/l	7194.56
Sb	123	115	1	No Gas	0.747	ug/l	20867.18
Sb	123	115	3	He	0.773	ug/l	5557.66
Ba	135	115	1	No Gas	3.401	ug/l	23733.20
Ba	137	115	1	No Gas	3.438	ug/l	40859.05
La	139	115	3	He	0.010	ug/l	380.01
Ce	140	115	3	He	0.022	ug/l	887.81
Hg	201	209	1	No Gas	0.260	ug/l	1359.80
Hg	202	209	1	No Gas	5.212	ug/l	54700.64
Hg	202	209	3	He	4.411	ug/l	18638.27
Tl	203	209	3	He	0.258	ug/l	4447.87
Tl	205	209	1	No Gas	0.128	ug/l	16684.40
Tl	205	209	3	He	0.239	ug/l	10079.87
[Pb]	206	209	1	No Gas	0.174	ug/l	5787.96
[Pb]	207	209	1	No Gas	0.168	ug/l	4923.17
Pb	208	209	1	No Gas	0.174	ug/l	22804.45
Th	232	209	3	He	0.045	ug/l	2045.66
U	238	209	1	No Gas	0.322	ug/l	30839.72

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4357787.87	121.6
Sc	45	2	H2	3500796.11	104.2
Sc	45	3	He	406730.01	94.6
Ge	72	1	No Gas	1568081.32	103.8
Ge	72	2	H2	1278019.32	96.2
Ge	72	3	He	280444.03	88.8
In	115	1	No Gas	15771829.39	92.9
In	115	3	He	3603210.68	85.5
Tb	159	1	No Gas	20096515.81	93.1
Tb	159	3	He	7399243.46	87.5
Ho	165	1	No Gas	19760273.95	91.3
Ho	165	3	He	7477797.12	88.3
Lu	175	1	No Gas	19885924.39	90.5
Lu	175	3	He	6310299.30	89.2
Bi	209	1	No Gas	14347712.43	87.3
Bi	209	3	He	5610894.24	84.7

# ICPMS207-B Analytical Data

**Sample Name** B22010134-001A  
**File Name** 114SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 23:03:42  
**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	0.133	ug/l	5436.49
Be	9	45	1	No Gas	-0.006	ug/l	16.33
B	11	45	1	No Gas	76.549	ug/l	78151.30
Na	23	45	3	He	47103.103	ug/l	47375701.52
Mg	24	45	3	He	13073.828	ug/l	7142011.58
Al	27	45	1	No Gas	0.965	ug/l	41124.19
Si	28	45	2	H2	9843.900	ug/l	22494420.58
K	39	72	3	He	4557.028	ug/l	3250048.32
Ca	40	72	2	H2	12825.498	ug/l	136635775.96
Ti	47	72	1	No Gas	0.770	ug/l	1738.53
V	51	72	1	No Gas	0.200	ug/l	6059.53
V	51	72	3	He	0.066	ug/l	5482.17
Cr	52	72	1	No Gas	-0.173	ug/l	20210.53
Cr	52	72	3	He	0.018	ug/l	686.69
Mn	55	72	1	No Gas	87.902	ug/l	3585869.99
Mn	55	72	3	He	82.414	ug/l	449696.76
Fe	56	72	2	H2	54.320	ug/l	1472674.63
Fe	56	72	3	He	53.824	ug/l	385412.41
Co	59	72	1	No Gas	0.051	ug/l	2175.86
Ni	60	72	1	No Gas	0.533	ug/l	4451.87
Ni	60	72	3	He	0.452	ug/l	1444.53
Cu	63	72	1	No Gas	0.900	ug/l	20775.12
Cu	63	72	3	He	0.431	ug/l	4312.11
Cu	65	72	1	No Gas	0.448	ug/l	5763.46
Zn	66	72	1	No Gas	2.516	ug/l	17666.67
Zn	66	72	3	He	2.507	ug/l	4419.58
As	75	72	1	No Gas	0.225	ug/l	11317.60
As	75	72	3	He	0.109	ug/l	321.40
Se	78	72	2	H2	0.064	ug/l	91.11
Br	79	72	1	No Gas	3783.915	ug/l	250583.03
Br	79	72	2	H2	3351.942	ug/l	163665.87
Se	82	72	1	No Gas	-0.014	ug/l	701.54
Kr	84	72	1	No Gas		ug/l	53806.53
Sr	88	72	1	No Gas	78.560	ug/l	5918312.64
Sr	88	72	3	He	78.289	ug/l	751053.95
Mo	95	115	1	No Gas	11.793	ug/l	173843.10
Mo	95	115	3	He	11.489	ug/l	63119.83
Mo	98	115	1	No Gas	11.635	ug/l	288115.27
Ag	107	115	1	No Gas	-0.070	ug/l	161.40
Ag	109	115	1	No Gas	-0.070	ug/l	137.39
Cd	111	115	1	No Gas	0.021	ug/l	203.08

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.021	ug/l	74.45
Cd	114	115	1	No Gas	0.032	ug/l	460.55
Cd	114	115	3	He	0.018	ug/l	170.96
Sn	118	115	1	No Gas	-0.033	ug/l	2638.36
Sn	118	115	3	He	-0.042	ug/l	672.24
Sb	121	115	1	No Gas	0.028	ug/l	1833.64
Sb	121	115	3	He	0.029	ug/l	491.39
Sb	123	115	1	No Gas	0.027	ug/l	1397.55
Sb	123	115	3	He	0.029	ug/l	380.04
Ba	135	115	1	No Gas	2.284	ug/l	18465.69
Ba	137	115	1	No Gas	2.288	ug/l	31486.62
La	139	115	3	He	0.001	ug/l	94.44
Ce	140	115	3	He	0.002	ug/l	193.34
Hg	201	209	1	No Gas	-0.010	ug/l	125.98
Hg	202	209	1	No Gas	0.009	ug/l	567.23
Hg	202	209	3	He	0.011	ug/l	253.62
Tl	203	209	3	He	0.291	ug/l	5432.64
Tl	205	209	1	No Gas	0.160	ug/l	21195.87
Tl	205	209	3	He	0.291	ug/l	12933.45
[Pb]	206	209	1	No Gas	0.053	ug/l	3131.50
[Pb]	207	209	1	No Gas	0.055	ug/l	2804.76
Pb	208	209	1	No Gas	0.055	ug/l	12604.64
Th	232	209	3	He	0.000	ug/l	304.80
U	238	209	1	No Gas	0.002	ug/l	485.24

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	5275061.37	147.2
Sc	45	2	H2	3829116.51	114.0
Sc	45	3	He	492906.07	114.6
Ge	72	1	No Gas	1810897.96	119.9
Ge	72	2	H2	1441807.95	108.5
Ge	72	3	He	331207.52	104.8
In	115	1	No Gas	18152599.01	106.9
In	115	3	He	4332878.02	102.9
Tb	159	1	No Gas	22477372.62	104.1
Tb	159	3	He	8424488.98	99.7
Ho	165	1	No Gas	22645250.50	104.6
Ho	165	3	He	8377228.50	99.0
Lu	175	1	No Gas	22508290.62	102.5
Lu	175	3	He	7096954.57	100.3
Bi	209	1	No Gas	16165824.38	98.3
Bi	209	3	He	6267310.33	94.6

# ICPMS207-B Analytical Data

**Sample Name** B22010134-001B  
**File Name** 115SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 23:09:49  
**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	2.218	ug/l	10758.80
Be	9	45	1	No Gas	-0.002	ug/l	19.67
B	11	45	1	No Gas	91.080	ug/l	77186.62
Na	23	45	3	He	47150.220	ug/l	41020373.83
Mg	24	45	3	He	13123.491	ug/l	6201961.71
Al	27	45	1	No Gas	2.738	ug/l	52649.70
Si	28	45	2	H2	9763.163	ug/l	19385457.24
K	39	72	3	He	4287.928	ug/l	2755608.47
Ca	40	72	2	H2	13348.475	ug/l	121052728.46
Ti	47	72	1	No Gas	1.129	ug/l	2192.38
V	51	72	1	No Gas	3.052	ug/l	74005.73
V	51	72	3	He	2.578	ug/l	20039.20
Cr	52	72	1	No Gas	1.317	ug/l	53053.49
Cr	52	72	3	He	0.118	ug/l	1297.85
Mn	55	72	1	No Gas	97.169	ug/l	3486924.05
Mn	55	72	3	He	93.594	ug/l	459547.37
Fe	56	72	2	H2	136.556	ug/l	3120226.05
Fe	56	72	3	He	129.107	ug/l	820149.15
Co	59	72	1	No Gas	0.164	ug/l	5297.15
Ni	60	72	1	No Gas	0.562	ug/l	4115.76
Ni	60	72	3	He	0.457	ug/l	1314.51
Cu	63	72	1	No Gas	0.680	ug/l	14436.95
Cu	63	72	3	He	0.173	ug/l	2114.07
Cu	65	72	1	No Gas	0.190	ug/l	2876.11
Zn	66	72	1	No Gas	0.758	ug/l	5503.45
Zn	66	72	3	He	0.754	ug/l	1377.85
As	75	72	1	No Gas	0.309	ug/l	10503.91
As	75	72	3	He	0.343	ug/l	578.87
Se	78	72	2	H2	0.099	ug/l	105.89
Br	79	72	1	No Gas	1214.070	ug/l	79185.49
Br	79	72	2	H2	1039.570	ug/l	47730.57
Se	82	72	1	No Gas	-0.056	ug/l	597.67
Kr	84	72	1	No Gas		ug/l	49085.95
Sr	88	72	1	No Gas	79.336	ug/l	5257763.51
Sr	88	72	3	He	80.794	ug/l	697516.18
Mo	95	115	1	No Gas	12.151	ug/l	159102.10
Mo	95	115	3	He	11.794	ug/l	58514.71
Mo	98	115	1	No Gas	12.017	ug/l	264277.00
Ag	107	115	1	No Gas	-0.071	ug/l	83.36
Ag	109	115	1	No Gas	-0.070	ug/l	106.71
Cd	111	115	1	No Gas	0.004	ug/l	45.30

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.004	ug/l	23.44
Cd	114	115	1	No Gas	0.013	ug/l	73.02
Cd	114	115	3	He	0.002	ug/l	49.65
Sn	118	115	1	No Gas	0.258	ug/l	9287.99
Sn	118	115	3	He	0.283	ug/l	2782.51
Sb	121	115	1	No Gas	0.036	ug/l	1909.32
Sb	121	115	3	He	0.036	ug/l	519.06
Sb	123	115	1	No Gas	0.039	ug/l	1566.58
Sb	123	115	3	He	0.041	ug/l	431.38
Ba	135	115	1	No Gas	2.362	ug/l	16960.09
Ba	137	115	1	No Gas	2.445	ug/l	29856.24
La	139	115	3	He	0.002	ug/l	123.34
Ce	140	115	3	He	0.008	ug/l	412.23
Hg	201	209	1	No Gas	0.003	ug/l	177.63
Hg	202	209	1	No Gas	0.037	ug/l	805.86
Hg	202	209	3	He	0.035	ug/l	342.60
Tl	203	209	3	He	0.129	ug/l	3027.57
Tl	205	209	1	No Gas	0.059	ug/l	11871.17
Tl	205	209	3	He	0.120	ug/l	7037.36
[Pb]	206	209	1	No Gas	0.031	ug/l	2262.43
[Pb]	207	209	1	No Gas	0.036	ug/l	2116.85
Pb	208	209	1	No Gas	0.034	ug/l	9264.66
Th	232	209	3	He	0.021	ug/l	1151.85
U	238	209	1	No Gas	0.001	ug/l	403.59

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4406452.57	122.9
Sc	45	2	H2	3331461.97	99.2
Sc	45	3	He	426403.71	99.2
Ge	72	1	No Gas	1593672.88	105.5
Ge	72	2	H2	1227262.37	92.3
Ge	72	3	He	298068.42	94.4
In	115	1	No Gas	16130782.24	95.0
In	115	3	He	3913245.72	92.9
Tb	159	1	No Gas	20473106.76	94.8
Tb	159	3	He	7734431.19	91.5
Ho	165	1	No Gas	20291164.62	93.7
Ho	165	3	He	7829351.78	92.5
Lu	175	1	No Gas	20335622.20	92.6
Lu	175	3	He	6683086.65	94.5
Bi	209	1	No Gas	14530589.98	88.4
Bi	209	3	He	5861842.30	88.5

# ICPMS207-B Analytical Data

**Sample Name** B22010141-001A  
**File Name** 116SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 23:15:56  
**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	0.388	ug/l	6605.43
Be	9	45	1	No Gas	-0.008	ug/l	14.33
B	11	45	1	No Gas	29.014	ug/l	32597.00
Na	23	45	3	He	41004.945	ug/l	40822898.00
Mg	24	45	3	He	17443.186	ug/l	9432918.89
Al	27	45	1	No Gas	2.387	ug/l	61046.85
Si	28	45	2	H2	20117.238	ug/l	46212392.56
K	39	72	3	He	2943.789	ug/l	2100500.85
Ca	40	72	2	H2	18341.716	ug/l	197050009.73
Ti	47	72	1	No Gas	1.355	ug/l	2995.01
V	51	72	1	No Gas	12.324	ug/l	341349.08
V	51	72	3	He	10.597	ug/l	75033.34
Cr	52	72	1	No Gas	1.633	ug/l	69362.58
Cr	52	72	3	He	1.697	ug/l	13233.77
Mn	55	72	1	No Gas	0.110	ug/l	11228.72
Mn	55	72	3	He	0.151	ug/l	1078.49
Fe	56	72	2	H2	0.217	ug/l	30672.85
Fe	56	72	3	He	0.311	ug/l	11424.28
Co	59	72	1	No Gas	0.028	ug/l	1400.63
Ni	60	72	1	No Gas	0.568	ug/l	4758.02
Ni	60	72	3	He	0.496	ug/l	1556.76
Cu	63	72	1	No Gas	0.614	ug/l	15221.37
Cu	63	72	3	He	0.211	ug/l	2609.38
Cu	65	72	1	No Gas	0.250	ug/l	3880.75
Zn	66	72	1	No Gas	5.180	ug/l	35246.52
Zn	66	72	3	He	5.230	ug/l	8807.14
As	75	72	1	No Gas	0.427	ug/l	12966.09
As	75	72	3	He	0.179	ug/l	413.47
Se	78	72	2	H2	0.063	ug/l	90.89
Br	79	72	1	No Gas	6659.219	ug/l	433487.86
Br	79	72	2	H2	5959.907	ug/l	287440.67
Se	82	72	1	No Gas	0.293	ug/l	866.36
Kr	84	72	1	No Gas		ug/l	69626.00
Sr	88	72	1	No Gas	110.607	ug/l	8398365.46
Sr	88	72	3	He	112.776	ug/l	1069830.56
Mo	95	115	1	No Gas	0.405	ug/l	6166.92
Mo	95	115	3	He	0.394	ug/l	2210.18
Mo	98	115	1	No Gas	0.389	ug/l	9935.87
Ag	107	115	1	No Gas	-0.061	ug/l	508.88
Ag	109	115	1	No Gas	-0.062	ug/l	441.52
Cd	111	115	1	No Gas	0.003	ug/l	45.37



# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.002	ug/l	19.67
Cd	114	115	1	No Gas	0.014	ug/l	90.48
Cd	114	115	3	He	0.001	ug/l	48.35
Sn	118	115	1	No Gas	-0.055	ug/l	2042.77
Sn	118	115	3	He	-0.067	ug/l	481.12
Sb	121	115	1	No Gas	0.008	ug/l	981.47
Sb	121	115	3	He	0.007	ug/l	260.36
Sb	123	115	1	No Gas	0.008	ug/l	773.10
Sb	123	115	3	He	0.010	ug/l	210.69
Ba	135	115	1	No Gas	6.872	ug/l	54471.80
Ba	137	115	1	No Gas	6.921	ug/l	93577.11
La	139	115	3	He	0.002	ug/l	132.22
Ce	140	115	3	He	0.003	ug/l	231.12
Hg	201	209	1	No Gas	-0.010	ug/l	126.64
Hg	202	209	1	No Gas	-0.010	ug/l	352.60
Hg	202	209	3	He	-0.009	ug/l	160.97
Tl	203	209	3	He	0.148	ug/l	3523.89
Tl	205	209	1	No Gas	0.067	ug/l	13935.49
Tl	205	209	3	He	0.145	ug/l	8355.97
[Pb]	206	209	1	No Gas	0.040	ug/l	2803.65
[Pb]	207	209	1	No Gas	0.034	ug/l	2321.33
Pb	208	209	1	No Gas	0.038	ug/l	10835.13
Th	232	209	3	He	0.000	ug/l	274.78
U	238	209	1	No Gas	0.029	ug/l	3463.11

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	5490732.01	153.2
Sc	45	2	H2	3852946.05	114.7
Sc	45	3	He	487944.50	113.5
Ge	72	1	No Gas	1824971.33	120.9
Ge	72	2	H2	1454167.84	109.4
Ge	72	3	He	327551.73	103.7
In	115	1	No Gas	18058695.53	106.4
In	115	3	He	4284028.07	101.7
Tb	159	1	No Gas	22515273.86	104.3
Tb	159	3	He	8381442.40	99.2
Ho	165	1	No Gas	22674501.20	104.8
Ho	165	3	He	8352441.31	98.7
Lu	175	1	No Gas	22916298.62	104.3
Lu	175	3	He	7057332.08	99.7
Bi	209	1	No Gas	16314847.25	99.2
Bi	209	3	He	6303279.57	95.1

# ICPMS207-B Analytical Data

**Sample Name** B22010141-001B  
**File Name** 117SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 23:22:05  
**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	2.203	ug/l	11050.46
Be	9	45	1	No Gas	0.002	ug/l	26.66
B	11	45	1	No Gas	33.039	ug/l	30440.27
Na	23	45	3	He	40414.558	ug/l	34908193.92
Mg	24	45	3	He	17285.146	ug/l	8109666.08
Al	27	45	1	No Gas	700.957	ug/l	7494020.58
Si	28	45	2	H2	21634.910	ug/l	42533838.22
K	39	72	3	He	2918.628	ug/l	1851407.28
Ca	40	72	2	H2	19882.448	ug/l	178102187.58
Ti	47	72	1	No Gas	55.294	ug/l	101441.20
V	51	72	1	No Gas	15.373	ug/l	367220.51
V	51	72	3	He	14.597	ug/l	90174.76
Cr	52	72	1	No Gas	4.387	ug/l	124284.20
Cr	52	72	3	He	3.036	ug/l	20660.11
Mn	55	72	1	No Gas	8.101	ug/l	292571.04
Mn	55	72	3	He	7.689	ug/l	37084.43
Fe	56	72	2	H2	532.934	ug/l	11967162.57
Fe	56	72	3	He	543.223	ug/l	3344265.24
Co	59	72	1	No Gas	0.352	ug/l	10746.12
Ni	60	72	1	No Gas	1.297	ug/l	8965.06
Ni	60	72	3	He	1.220	ug/l	3235.94
Cu	63	72	1	No Gas	2.011	ug/l	37204.12
Cu	63	72	3	He	1.636	ug/l	11852.09
Cu	65	72	1	No Gas	1.627	ug/l	14943.00
Zn	66	72	1	No Gas	118.451	ug/l	670079.44
Zn	66	72	3	He	121.565	ug/l	176276.60
As	75	72	1	No Gas	0.985	ug/l	14966.68
As	75	72	3	He	0.441	ug/l	683.07
Se	78	72	2	H2	0.079	ug/l	89.00
Br	79	72	1	No Gas	1585.056	ug/l	98364.07
Br	79	72	2	H2	1352.562	ug/l	59396.98
Se	82	72	1	No Gas	0.113	ug/l	667.01
Kr	84	72	1	No Gas		ug/l	65060.38
Sr	88	72	1	No Gas	117.557	ug/l	7699117.74
Sr	88	72	3	He	119.677	ug/l	1008923.55
Mo	95	115	1	No Gas	0.542	ug/l	7211.85
Mo	95	115	3	He	0.505	ug/l	2565.80
Mo	98	115	1	No Gas	0.513	ug/l	11473.72
Ag	107	115	1	No Gas	-0.049	ug/l	852.37
Ag	109	115	1	No Gas	-0.050	ug/l	786.34
Cd	111	115	1	No Gas	0.015	ug/l	128.85

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.000	ug/l	14.11
Cd	114	115	1	No Gas	0.005	ug/l	-80.10
Cd	114	115	3	He	-0.002	ug/l	23.82
Sn	118	115	1	No Gas	0.497	ug/l	14808.47
Sn	118	115	3	He	0.517	ug/l	4344.03
Sb	121	115	1	No Gas	0.027	ug/l	1549.24
Sb	121	115	3	He	0.029	ug/l	443.39
Sb	123	115	1	No Gas	0.028	ug/l	1255.52
Sb	123	115	3	He	0.029	ug/l	338.37
Ba	135	115	1	No Gas	8.060	ug/l	56375.09
Ba	137	115	1	No Gas	8.244	ug/l	98357.00
La	139	115	3	He	0.128	ug/l	4708.61
Ce	140	115	3	He	0.304	ug/l	11889.59
Hg	201	209	1	No Gas	0.004	ug/l	178.63
Hg	202	209	1	No Gas	0.014	ug/l	560.57
Hg	202	209	3	He	0.018	ug/l	266.62
Tl	203	209	3	He	0.090	ug/l	2521.93
Tl	205	209	1	No Gas	0.049	ug/l	11105.90
Tl	205	209	3	He	0.092	ug/l	6155.23
[Pb]	206	209	1	No Gas	0.089	ug/l	3704.98
[Pb]	207	209	1	No Gas	0.084	ug/l	3150.39
Pb	208	209	1	No Gas	0.089	ug/l	14627.69
Th	232	209	3	He	0.029	ug/l	1459.34
U	238	209	1	No Gas	0.033	ug/l	3444.77

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4544395.03	126.8
Sc	45	2	H2	3298578.94	98.2
Sc	45	3	He	423325.98	98.4
Ge	72	1	No Gas	1574533.29	104.3
Ge	72	2	H2	1212483.42	91.2
Ge	72	3	He	291141.11	92.2
In	115	1	No Gas	15940324.23	93.9
In	115	3	He	3903665.20	92.7
Tb	159	1	No Gas	20258463.37	93.8
Tb	159	3	He	7789756.31	92.2
Ho	165	1	No Gas	20057281.79	92.7
Ho	165	3	He	7930876.17	93.7
Lu	175	1	No Gas	20425933.55	93.0
Lu	175	3	He	6546102.85	92.5
Bi	209	1	No Gas	14484063.04	88.1
Bi	209	3	He	5816396.77	87.8

# ICPMS207-B Analytical Data

**Sample Name** CCV  
**File Name** 118\_CCV.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 23:28:12  
**Sample Type** CCV  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	675.594	ug/l	2165237.90
Be	9	45	1	No Gas	54.353	ug/l	86274.86
B	11	45	1	No Gas	55.098	ug/l	51073.96
Na	23	45	3	He	13406.582	ug/l	12432017.59
Mg	24	45	3	He	13445.155	ug/l	6762344.08
Al	27	45	1	No Gas	53.647	ug/l	620852.32
Si	28	45	2	H2	233.450	ug/l	486937.13
K	39	72	3	He	13488.818	ug/l	9039590.07
Ca	40	72	2	H2	13203.172	ug/l	130260337.41
Ti	47	72	1	No Gas	56.788	ug/l	111103.93
V	51	72	1	No Gas	60.355	ug/l	1535755.58
V	51	72	3	He	55.525	ug/l	358507.76
Cr	52	72	1	No Gas	58.805	ug/l	1490757.58
Cr	52	72	3	He	53.546	ug/l	386274.75
Mn	55	72	1	No Gas	54.677	ug/l	2070761.36
Mn	55	72	3	He	53.619	ug/l	278916.88
Fe	56	72	2	H2	1344.154	ug/l	33208250.00
Fe	56	72	3	He	1308.177	ug/l	8719536.42
Co	59	72	1	No Gas	55.104	ug/l	1730137.27
Ni	60	72	1	No Gas	54.180	ug/l	385732.68
Ni	60	72	3	He	54.843	ug/l	152241.58
Cu	63	72	1	No Gas	54.667	ug/l	1007590.66
Cu	63	72	3	He	55.755	ug/l	405567.55
Cu	65	72	1	No Gas	54.337	ug/l	489382.45
Zn	66	72	1	No Gas	54.317	ug/l	328494.51
Zn	66	72	3	He	53.320	ug/l	84002.33
As	75	72	1	No Gas	50.549	ug/l	373375.93
As	75	72	3	He	52.121	ug/l	68466.75
Se	78	72	2	H2	52.210	ug/l	44973.34
Br	79	72	1	No Gas	134.404	ug/l	20880.35
Br	79	72	2	H2	120.011	ug/l	12300.87
Se	82	72	1	No Gas	51.495	ug/l	25192.45
Kr	84	72	1	No Gas		ug/l	40299.53
Sr	88	72	1	No Gas	52.361	ug/l	3659660.59
Sr	88	72	3	He	52.127	ug/l	476674.22
Mo	95	115	1	No Gas	51.157	ug/l	721359.89
Mo	95	115	3	He	51.057	ug/l	260699.93
Mo	98	115	1	No Gas	50.529	ug/l	1196928.61
Ag	107	115	1	No Gas	20.207	ug/l	776949.01
Ag	109	115	1	No Gas	20.356	ug/l	762444.52
Cd	111	115	1	No Gas	50.717	ug/l	434498.49

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	51.591	ug/l	136260.83
Cd	114	115	1	No Gas	51.218	ug/l	986548.09
Cd	114	115	3	He	51.459	ug/l	332477.24
Sn	118	115	1	No Gas	51.684	ug/l	1331992.17
Sn	118	115	3	He	51.131	ug/l	353668.08
Sb	121	115	1	No Gas	51.557	ug/l	2028434.07
Sb	121	115	3	He	50.941	ug/l	509415.36
Sb	123	115	1	No Gas	51.900	ug/l	1562791.20
Sb	123	115	3	He	50.654	ug/l	399820.35
Ba	135	115	1	No Gas	53.980	ug/l	409770.48
Ba	137	115	1	No Gas	54.048	ug/l	700336.92
La	139	115	3	He	49.284	ug/l	1854228.69
Ce	140	115	3	He	49.159	ug/l	1968002.00
Hg	201	209	1	No Gas	0.908	ug/l	4853.25
Hg	202	209	1	No Gas	0.918	ug/l	11124.40
Hg	202	209	3	He	0.882	ug/l	4304.84
Tl	203	209	3	He	47.003	ug/l	629949.53
Tl	205	209	1	No Gas	48.636	ug/l	3895784.73
Tl	205	209	3	He	49.311	ug/l	1553873.76
[Pb]	206	209	1	No Gas	50.057	ug/l	1381396.00
[Pb]	207	209	1	No Gas	49.426	ug/l	1183416.24
Pb	208	209	1	No Gas	51.218	ug/l	5563739.15
Th	232	209	3	He	52.468	ug/l	2312023.55
U	238	209	1	No Gas	52.128	ug/l	5513696.24

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4727270.32	131.9
Sc	45	2	H2	3456897.51	102.9
Sc	45	3	He	453813.77	105.5
Ge	72	1	No Gas	1680328.20	111.3
Ge	72	2	H2	1335282.76	100.5
Ge	72	3	He	315693.76	99.9
In	115	1	No Gas	17385545.48	102.4
In	115	3	He	4031463.16	95.7
Tb	159	1	No Gas	22144770.86	102.6
Tb	159	3	He	8041022.09	95.1
Ho	165	1	No Gas	21830091.61	100.9
Ho	165	3	He	8108479.39	95.8
Lu	175	1	No Gas	21647161.61	98.6
Lu	175	3	He	6796406.27	96.1
Bi	209	1	No Gas	15989166.92	97.2
Bi	209	3	He	6221230.75	93.9

# ICPMS207-B Analytical Data

**Sample Name** CCB  
**File Name** 119\_CCB.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 23:34:09  
**Sample Type** CCB  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	1.056	ug/l	7786.45
Be	9	45	1	No Gas	0.005	ug/l	31.99
B	11	45	1	No Gas	0.861	ug/l	3289.02
Na	23	45	3	He	42.103	ug/l	64562.23
Mg	24	45	3	He	4.235	ug/l	2738.17
Al	27	45	1	No Gas	0.401	ug/l	30438.91
Si	28	45	2	H2	3.431	ug/l	13177.45
K	39	72	3	He	17.781	ug/l	76247.47
Ca	40	72	2	H2	2.043	ug/l	99603.61
Ti	47	72	1	No Gas	0.029	ug/l	166.83
V	51	72	1	No Gas	-0.228	ug/l	-5295.72
V	51	72	3	He	1.500	ug/l	14045.64
Cr	52	72	1	No Gas	0.376	ug/l	32591.61
Cr	52	72	3	He	0.017	ug/l	633.35
Mn	55	72	1	No Gas	0.032	ug/l	7443.80
Mn	55	72	3	He	0.025	ug/l	372.93
Fe	56	72	2	H2	-0.073	ug/l	20807.35
Fe	56	72	3	He	0.102	ug/l	9409.15
Co	59	72	1	No Gas	0.007	ug/l	658.71
Ni	60	72	1	No Gas	0.025	ug/l	522.31
Ni	60	72	3	He	0.015	ug/l	162.23
Cu	63	72	1	No Gas	0.006	ug/l	2849.43
Cu	63	72	3	He	0.002	ug/l	975.51
Cu	65	72	1	No Gas	-0.015	ug/l	1191.86
Zn	66	72	1	No Gas	-0.018	ug/l	1126.92
Zn	66	72	3	He	-0.001	ug/l	267.78
As	75	72	1	No Gas	0.488	ug/l	12472.73
As	75	72	3	He	0.050	ug/l	223.87
Se	78	72	2	H2	0.015	ug/l	42.11
Br	79	72	1	No Gas	68.850	ug/l	17146.21
Br	79	72	2	H2	62.789	ug/l	9753.97
Se	82	72	1	No Gas	-0.170	ug/l	578.48
Kr	84	72	1	No Gas		ug/l	17702.54
Sr	88	72	1	No Gas	0.003	ug/l	1919.67
Sr	88	72	3	He	0.006	ug/l	376.67
Mo	95	115	1	No Gas	0.010	ug/l	371.12
Mo	95	115	3	He	0.012	ug/l	135.56
Mo	98	115	1	No Gas	0.008	ug/l	557.79
Ag	107	115	1	No Gas	-0.005	ug/l	2670.66
Ag	109	115	1	No Gas	-0.004	ug/l	2616.64
Cd	111	115	1	No Gas	0.000	ug/l	18.65

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.002	ug/l	19.22
Cd	114	115	1	No Gas	-0.001	ug/l	-189.11
Cd	114	115	3	He	-0.001	ug/l	35.87
Sn	118	115	1	No Gas	0.019	ug/l	3909.50
Sn	118	115	3	He	0.006	ug/l	980.04
Sb	121	115	1	No Gas	0.048	ug/l	2542.15
Sb	121	115	3	He	0.032	ug/l	506.06
Sb	123	115	1	No Gas	0.047	ug/l	1959.00
Sb	123	115	3	He	0.033	ug/l	395.04
Ba	135	115	1	No Gas	-0.005	ug/l	336.01
Ba	137	115	1	No Gas	-0.002	ug/l	505.67
La	139	115	3	He	0.001	ug/l	94.44
Ce	140	115	3	He	0.002	ug/l	171.11
Hg	201	209	1	No Gas	-0.012	ug/l	119.98
Hg	202	209	1	No Gas	-0.012	ug/l	322.27
Hg	202	209	3	He	-0.016	ug/l	129.64
Tl	203	209	3	He	0.496	ug/l	8299.26
Tl	205	209	1	No Gas	0.321	ug/l	34291.01
Tl	205	209	3	He	0.487	ug/l	19395.18
[Pb]	206	209	1	No Gas	0.021	ug/l	2245.76
[Pb]	207	209	1	No Gas	0.020	ug/l	1967.94
Pb	208	209	1	No Gas	0.022	ug/l	8992.36
Th	232	209	3	He	0.014	ug/l	941.75
U	238	209	1	No Gas	0.001	ug/l	418.26

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4701761.54	131.2
Sc	45	2	H2	3526485.51	105.0
Sc	45	3	He	449684.62	104.6
Ge	72	1	No Gas	1687829.19	111.8
Ge	72	2	H2	1323694.94	99.6
Ge	72	3	He	308787.62	97.7
In	115	1	No Gas	17560199.46	103.5
In	115	3	He	4130487.80	98.0
Tb	159	1	No Gas	22331777.45	103.4
Tb	159	3	He	8067431.89	95.4
Ho	165	1	No Gas	21860005.49	101.0
Ho	165	3	He	8007549.04	94.6
Lu	175	1	No Gas	21781350.17	99.2
Lu	175	3	He	6775927.15	95.8
Bi	209	1	No Gas	16155777.11	98.3
Bi	209	3	He	6352732.12	95.9

# ICPMS207-B Analytical Data

**Sample Name** B22010141-001BDIL  
**File Name** 120SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 23:40:19  
**Sample Type** Sample  
**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	6.104	ug/l	8080.07
Be	9	45	1	No Gas	0.014	ug/l	28.32
B	11	45	1	No Gas	34.168	ug/l	8286.95
Na	23	45	3	He	41610.348	ug/l	7304098.02
Mg	24	45	3	He	17985.763	ug/l	1711041.71
Al	27	45	1	No Gas	754.164	ug/l	1642918.39
Si	28	45	2	H2	21825.344	ug/l	8974492.34
K	39	72	3	He	2958.193	ug/l	428175.33
Ca	40	72	2	H2	19241.411	ug/l	37461084.76
Ti	47	72	1	No Gas	55.116	ug/l	21437.27
V	51	72	1	No Gas	23.688	ug/l	119464.69
V	51	72	3	He	22.558	ug/l	31242.00
Cr	52	72	1	No Gas	7.204	ug/l	58420.70
Cr	52	72	3	He	4.012	ug/l	5874.54
Mn	55	72	1	No Gas	8.760	ug/l	71583.03
Mn	55	72	3	He	8.267	ug/l	8237.33
Fe	56	72	2	H2	546.720	ug/l	2681174.70
Fe	56	72	3	He	562.455	ug/l	706067.04
Co	59	72	1	No Gas	0.358	ug/l	2641.69
Ni	60	72	1	No Gas	2.006	ug/l	3157.49
Ni	60	72	3	He	2.105	ug/l	1204.50
Cu	63	72	1	No Gas	53.024	ug/l	195728.78
Cu	63	72	3	He	57.045	ug/l	78009.51
Cu	65	72	1	No Gas	51.916	ug/l	93638.48
Zn	66	72	1	No Gas	166.729	ug/l	200076.09
Zn	66	72	3	He	174.834	ug/l	51400.21
As	75	72	1	No Gas	2.908	ug/l	12962.20
As	75	72	3	He	0.660	ug/l	313.33
Se	78	72	2	H2	0.100	ug/l	46.11
Br	79	72	1	No Gas	1454.602	ug/l	29651.49
Br	79	72	2	H2	1230.094	ug/l	17462.60
Se	82	72	1	No Gas	1.673	ug/l	812.08
Kr	84	72	1	No Gas		ug/l	29614.84
Sr	88	72	1	No Gas	119.527	ug/l	1654050.82
Sr	88	72	3	He	123.073	ug/l	209869.15
Mo	95	115	1	No Gas	0.533	ug/l	1686.78
Mo	95	115	3	He	0.547	ug/l	626.68
Mo	98	115	1	No Gas	0.535	ug/l	2833.14
Ag	107	115	1	No Gas	-0.333	ug/l	263.44
Ag	109	115	1	No Gas	-0.334	ug/l	233.43
Cd	111	115	1	No Gas	0.054	ug/l	103.34



# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.016	ug/l	21.89
Cd	114	115	1	No Gas	0.086	ug/l	150.32
Cd	114	115	3	He	0.013	ug/l	56.87
Sn	118	115	1	No Gas	0.479	ug/l	5699.89
Sn	118	115	3	He	0.503	ug/l	1605.66
Sb	121	115	1	No Gas	0.092	ug/l	1331.86
Sb	121	115	3	He	0.083	ug/l	335.37
Sb	123	115	1	No Gas	0.089	ug/l	1028.14
Sb	123	115	3	He	0.093	ug/l	268.03
Ba	135	115	1	No Gas	8.091	ug/l	12334.39
Ba	137	115	1	No Gas	8.310	ug/l	21524.02
La	139	115	3	He	0.134	ug/l	1055.60
Ce	140	115	3	He	0.320	ug/l	2660.28
Hg	201	209	1	No Gas	-0.039	ug/l	134.31
Hg	202	209	1	No Gas	-0.024	ug/l	394.59
Hg	202	209	3	He	-0.024	ug/l	175.64
Tl	203	209	3	He	0.834	ug/l	3648.64
Tl	205	209	1	No Gas	0.386	ug/l	14111.20
Tl	205	209	3	He	0.832	ug/l	8729.03
[Pb]	206	209	1	No Gas	0.256	ug/l	2975.91
[Pb]	207	209	1	No Gas	0.239	ug/l	2541.37
Pb	208	209	1	No Gas	0.259	ug/l	11824.38
Th	232	209	3	He	0.069	ug/l	876.38
U	238	209	1	No Gas	0.030	ug/l	924.85

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4582079.45	127.8
Sc	45	2	H2	3443245.63	102.5
Sc	45	3	He	429057.40	99.8
Ge	72	1	No Gas	1664937.99	110.3
Ge	72	2	H2	1315035.71	98.9
Ge	72	3	He	294173.68	93.1
In	115	1	No Gas	16990798.71	100.1
In	115	3	He	4020819.39	95.4
Tb	159	1	No Gas	21391824.40	99.1
Tb	159	3	He	7912073.10	93.6
Ho	165	1	No Gas	20994951.08	97.0
Ho	165	3	He	7992490.59	94.4
Lu	175	1	No Gas	21200077.25	96.5
Lu	175	3	He	6641598.86	93.9
Bi	209	1	No Gas	15608688.96	94.9
Bi	209	3	He	6093237.63	92.0

# ICPMS207-B Analytical Data

**Sample Name** B22010141-001BPDS1  
**File Name** 121ARef.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 23:46:26  
**Sample Type** AIRRef  
**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	2722.848	ug/l	7748550.24
Be	9	45	1	No Gas	51.863	ug/l	73255.51
B	11	45	1	No Gas	86.562	ug/l	70230.17
Na	23	45	3	He	91681.882	ug/l	76387952.75
Mg	24	45	3	He	68843.194	ug/l	31155506.04
Al	27	45	1	No Gas	759.648	ug/l	7516580.03
Si	28	45	2	H2	21407.907	ug/l	38810253.87
K	39	72	3	He	57041.730	ug/l	33737641.44
Ca	40	72	2	H2	71044.827	ug/l	617439070.66
Ti	47	72	1	No Gas	114.575	ug/l	200945.20
V	51	72	1	No Gas	70.923	ug/l	1617817.38
V	51	72	3	He	66.989	ug/l	383072.41
Cr	52	72	1	No Gas	59.399	ug/l	1350404.73
Cr	52	72	3	He	53.824	ug/l	344641.63
Mn	55	72	1	No Gas	59.560	ug/l	2021917.04
Mn	55	72	3	He	57.962	ug/l	267571.26
Fe	56	72	2	H2	5630.248	ug/l	122545056.57
Fe	56	72	3	He	5771.742	ug/l	34114696.41
Co	59	72	1	No Gas	52.185	ug/l	1467986.63
Ni	60	72	1	No Gas	51.123	ug/l	326198.18
Ni	60	72	3	He	51.478	ug/l	126846.38
Cu	63	72	1	No Gas	51.536	ug/l	851786.52
Cu	63	72	3	He	52.754	ug/l	340614.19
Cu	65	72	1	No Gas	50.600	ug/l	408684.49
Zn	66	72	1	No Gas	166.799	ug/l	901745.85
Zn	66	72	3	He	168.260	ug/l	234724.59
As	75	72	1	No Gas	47.005	ug/l	312001.58
As	75	72	3	He	49.043	ug/l	57188.48
Se	78	72	2	H2	47.432	ug/l	36014.49
Br	79	72	1	No Gas	1558.223	ug/l	93003.29
Br	79	72	2	H2	1237.369	ug/l	53472.53
Se	82	72	1	No Gas	46.602	ug/l	20495.06
Kr	84	72	1	No Gas		ug/l	81149.50
Sr	88	72	1	No Gas	160.489	ug/l	10050859.58
Sr	88	72	3	He	173.134	ug/l	1404332.39
Mo	95	115	1	No Gas	50.242	ug/l	606947.04
Mo	95	115	3	He	48.405	ug/l	221147.85
Mo	98	115	1	No Gas	49.469	ug/l	1003937.90
Ag	107	115	1	No Gas	19.576	ug/l	644881.01
Ag	109	115	1	No Gas	19.585	ug/l	628555.26
Cd	111	115	1	No Gas	47.407	ug/l	347835.50

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	46.341	ug/l	109519.13
Cd	114	115	1	No Gas	47.468	ug/l	782973.84
Cd	114	115	3	He	46.217	ug/l	267181.10
Sn	118	115	1	No Gas	49.593	ug/l	1094782.35
Sn	118	115	3	He	47.701	ug/l	295347.04
Sb	121	115	1	No Gas	48.090	ug/l	1620587.55
Sb	121	115	3	He	45.686	ug/l	408831.79
Sb	123	115	1	No Gas	47.271	ug/l	1218982.55
Sb	123	115	3	He	45.549	ug/l	321746.39
Ba	135	115	1	No Gas	59.007	ug/l	383507.72
Ba	137	115	1	No Gas	59.521	ug/l	660476.58
La	139	115	3	He	48.814	ug/l	1643505.62
Ce	140	115	3	He	48.202	ug/l	1727650.18
Hg	201	209	1	No Gas	0.928	ug/l	4193.82
Hg	202	209	1	No Gas	0.946	ug/l	9683.57
Hg	202	209	3	He	0.915	ug/l	3810.78
Tl	203	209	3	He	46.705	ug/l	534652.64
Tl	205	209	1	No Gas	48.439	ug/l	3278909.26
Tl	205	209	3	He	47.716	ug/l	1284329.90
[Pb]	206	209	1	No Gas	47.467	ug/l	1107121.55
[Pb]	207	209	1	No Gas	47.347	ug/l	957880.63
Pb	208	209	1	No Gas	49.057	ug/l	4503471.81
Th	232	209	3	He	51.501	ug/l	1938290.81
U	238	209	1	No Gas	50.775	ug/l	4538246.16

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4331437.71	120.8
Sc	45	2	H2	3132344.41	93.3
Sc	45	3	He	420709.81	97.8
Ge	72	1	No Gas	1550703.61	102.7
Ge	72	2	H2	1212224.32	91.2
Ge	72	3	He	288548.97	91.3
In	115	1	No Gas	15339280.91	90.4
In	115	3	He	3715524.04	88.2
Tb	159	1	No Gas	19481438.05	90.2
Tb	159	3	He	7496040.67	88.7
Ho	165	1	No Gas	19259115.10	89.0
Ho	165	3	He	7488962.55	88.5
Lu	175	1	No Gas	19254281.52	87.7
Lu	175	3	He	6314918.08	89.3
Bi	209	1	No Gas	13918374.45	84.6
Bi	209	3	He	5472503.48	82.6

# ICPMS207-B Analytical Data

**Sample Name** B22010141-001BMS4  
**File Name** 122MS4.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 23:52:24  
**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	114.772	ug/l	372679.66
Be	9	45	1	No Gas	53.460	ug/l	85154.31
B	11	45	1	No Gas	146.507	ug/l	132070.42
Na	23	45	3	He	45125.764	ug/l	41416406.05
Mg	24	45	3	He	22555.267	ug/l	11244894.87
Al	27	45	1	No Gas	1418.750	ug/l	15799369.62
Si	28	45	2	H2	22164.816	ug/l	46139109.58
K	39	72	3	He	8268.609	ug/l	5571837.28
Ca	40	72	2	H2	24444.440	ug/l	231467692.87
Ti	47	72	1	No Gas	167.337	ug/l	322658.92
V	51	72	1	No Gas	124.527	ug/l	3123170.46
V	51	72	3	He	116.802	ug/l	749703.12
Cr	52	72	1	No Gas	116.782	ug/l	2896686.00
Cr	52	72	3	He	105.946	ug/l	764659.49
Mn	55	72	1	No Gas	535.376	ug/l	19941248.44
Mn	55	72	3	He	541.506	ug/l	2817737.63
Fe	56	72	2	H2	1081.944	ug/l	25666024.08
Fe	56	72	3	He	1079.028	ug/l	7201819.28
Co	59	72	1	No Gas	107.511	ug/l	3327364.16
Ni	60	72	1	No Gas	105.949	ug/l	743167.57
Ni	60	72	3	He	102.544	ug/l	284872.23
Cu	63	72	1	No Gas	106.978	ug/l	1941046.77
Cu	63	72	3	He	105.247	ug/l	765393.01
Cu	65	72	1	No Gas	102.898	ug/l	912479.40
Zn	66	72	1	No Gas	218.019	ug/l	1295910.73
Zn	66	72	3	He	214.911	ug/l	338039.04
As	75	72	1	No Gas	93.793	ug/l	675450.36
As	75	72	3	He	96.943	ug/l	127302.55
Se	78	72	2	H2	96.305	ug/l	79615.22
Br	79	72	1	No Gas	1095.466	ug/l	75483.18
Br	79	72	2	H2	912.914	ug/l	44620.15
Se	82	72	1	No Gas	93.033	ug/l	44334.38
Kr	84	72	1	No Gas		ug/l	109055.07
Sr	88	72	1	No Gas	208.994	ug/l	14396485.94
Sr	88	72	3	He	227.559	ug/l	2080975.20
Mo	95	115	1	No Gas	103.392	ug/l	1353399.04
Mo	95	115	3	He	97.049	ug/l	475560.23
Mo	98	115	1	No Gas	100.720	ug/l	2215418.93
Ag	107	115	1	No Gas	9.597	ug/l	344083.79
Ag	109	115	1	No Gas	9.530	ug/l	332811.78
Cd	111	115	1	No Gas	47.869	ug/l	380776.39

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	47.450	ug/l	120301.21
Cd	114	115	1	No Gas	48.247	ug/l	862819.80
Cd	114	115	3	He	46.366	ug/l	287595.07
Sn	118	115	1	No Gas	99.041	ug/l	2367387.79
Sn	118	115	3	He	94.341	ug/l	625821.82
Sb	121	115	1	No Gas	96.812	ug/l	3536326.44
Sb	121	115	3	He	90.880	ug/l	872398.22
Sb	123	115	1	No Gas	99.260	ug/l	2774450.12
Sb	123	115	3	He	92.734	ug/l	702803.48
Ba	135	115	1	No Gas	104.407	ug/l	735373.68
Ba	137	115	1	No Gas	105.830	ug/l	1272644.52
La	139	115	3	He	101.656	ug/l	3672071.78
Ce	140	115	3	He	98.918	ug/l	3803064.18
Hg	201	209	1	No Gas	0.013	ug/l	222.96
Hg	202	209	1	No Gas	0.023	ug/l	654.89
Hg	202	209	3	He	0.021	ug/l	285.95
Tl	203	209	3	He	91.950	ug/l	1168430.59
Tl	205	209	1	No Gas	95.142	ug/l	6858141.42
Tl	205	209	3	He	97.130	ug/l	2901304.18
[Pb]	206	209	1	No Gas	100.776	ug/l	2504082.79
[Pb]	207	209	1	No Gas	101.691	ug/l	2191890.44
Pb	208	209	1	No Gas	101.430	ug/l	9920002.66
Th	232	209	3	He	101.798	ug/l	4257155.97
U	238	209	1	No Gas	100.498	ug/l	9574900.62

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4741596.46	132.3
Sc	45	2	H2	3491674.42	104.0
Sc	45	3	He	449799.60	104.6
Ge	72	1	No Gas	1656065.55	109.7
Ge	72	2	H2	1281881.53	96.4
Ge	72	3	He	315968.26	100.0
In	115	1	No Gas	16145169.77	95.1
In	115	3	He	3870737.87	91.9
Tb	159	1	No Gas	20562064.67	95.2
Tb	159	3	He	7750185.07	91.7
Ho	165	1	No Gas	20531477.00	94.9
Ho	165	3	He	7785869.97	92.0
Lu	175	1	No Gas	20472022.97	93.2
Lu	175	3	He	6498578.77	91.8
Bi	209	1	No Gas	14403282.62	87.6
Bi	209	3	He	5905047.78	89.1

# ICPMS207-B Analytical Data

**Sample Name** B22010141-001BMSD4  
**File Name** 123MSD4.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-06 23:58:14  
**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	115.060	ug/l	365150.89
Be	9	45	1	No Gas	54.660	ug/l	85078.14
B	11	45	1	No Gas	147.557	ug/l	130017.06
Na	23	45	3	He	45621.533	ug/l	43212193.80
Mg	24	45	3	He	22662.139	ug/l	11656812.20
Al	27	45	1	No Gas	1338.373	ug/l	14577757.84
Si	28	45	2	H2	21842.152	ug/l	44670417.14
K	39	72	3	He	8678.430	ug/l	5687610.19
Ca	40	72	2	H2	24285.867	ug/l	229650040.29
Ti	47	72	1	No Gas	166.218	ug/l	318561.35
V	51	72	1	No Gas	125.439	ug/l	3129201.23
V	51	72	3	He	122.971	ug/l	767794.16
Cr	52	72	1	No Gas	114.375	ug/l	2820880.58
Cr	52	72	3	He	109.675	ug/l	770294.67
Mn	55	72	1	No Gas	541.968	ug/l	20063225.94
Mn	55	72	3	He	555.168	ug/l	2811240.80
Fe	56	72	2	H2	1030.502	ug/l	24410053.78
Fe	56	72	3	He	1080.726	ug/l	7018608.57
Co	59	72	1	No Gas	107.050	ug/l	3292408.91
Ni	60	72	1	No Gas	105.701	ug/l	736981.75
Ni	60	72	3	He	105.974	ug/l	286476.42
Cu	63	72	1	No Gas	109.583	ug/l	1975942.33
Cu	63	72	3	He	108.225	ug/l	765898.64
Cu	65	72	1	No Gas	103.855	ug/l	915350.86
Zn	66	72	1	No Gas	219.044	ug/l	1294138.63
Zn	66	72	3	He	217.667	ug/l	333229.15
As	75	72	1	No Gas	94.129	ug/l	673630.37
As	75	72	3	He	95.587	ug/l	122180.57
Se	78	72	2	H2	96.073	ug/l	79286.89
Br	79	72	1	No Gas	1353.215	ug/l	89655.35
Br	79	72	2	H2	1141.418	ug/l	53980.05
Se	82	72	1	No Gas	94.391	ug/l	44700.65
Kr	84	72	1	No Gas		ug/l	109794.59
Sr	88	72	1	No Gas	210.037	ug/l	14380091.85
Sr	88	72	3	He	221.025	ug/l	1967849.43
Mo	95	115	1	No Gas	100.765	ug/l	1334157.06
Mo	95	115	3	He	93.951	ug/l	463230.40
Mo	98	115	1	No Gas	100.783	ug/l	2240468.61
Ag	107	115	1	No Gas	9.487	ug/l	343744.90
Ag	109	115	1	No Gas	9.464	ug/l	334029.35
Cd	111	115	1	No Gas	47.554	ug/l	382323.06

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	46.419	ug/l	118413.84
Cd	114	115	1	No Gas	47.931	ug/l	866333.54
Cd	114	115	3	He	46.850	ug/l	292360.11
Sn	118	115	1	No Gas	100.174	ug/l	2419644.50
Sn	118	115	3	He	96.573	ug/l	644466.79
Sb	121	115	1	No Gas	97.299	ug/l	3591401.16
Sb	121	115	3	He	93.968	ug/l	907416.77
Sb	123	115	1	No Gas	100.320	ug/l	2834217.01
Sb	123	115	3	He	95.925	ug/l	731201.99
Ba	135	115	1	No Gas	103.639	ug/l	737979.33
Ba	137	115	1	No Gas	105.173	ug/l	1278061.67
La	139	115	3	He	104.792	ug/l	3807349.49
Ce	140	115	3	He	103.205	ug/l	3991493.93
Hg	201	209	1	No Gas	0.011	ug/l	208.63
Hg	202	209	1	No Gas	0.023	ug/l	650.22
Hg	202	209	3	He	0.026	ug/l	313.28
Tl	203	209	3	He	94.132	ug/l	1222549.19
Tl	205	209	1	No Gas	97.215	ug/l	6967819.06
Tl	205	209	3	He	100.062	ug/l	3055436.60
[Pb]	206	209	1	No Gas	102.675	ug/l	2536540.59
[Pb]	207	209	1	No Gas	103.720	ug/l	2222923.35
Pb	208	209	1	No Gas	103.026	ug/l	10018519.80
Th	232	209	3	He	102.432	ug/l	4378506.39
U	238	209	1	No Gas	101.216	ug/l	9589136.60

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4635317.14	129.3
Sc	45	2	H2	3429368.84	102.1
Sc	45	3	He	464163.61	107.9
Ge	72	1	No Gas	1645479.17	109.0
Ge	72	2	H2	1280168.76	96.3
Ge	72	3	He	307517.53	97.3
In	115	1	No Gas	16318535.57	96.1
In	115	3	He	3893521.98	92.4
Tb	159	1	No Gas	20451260.33	94.7
Tb	159	3	He	7935604.34	93.9
Ho	165	1	No Gas	20303604.97	93.8
Ho	165	3	He	7995468.62	94.4
Lu	175	1	No Gas	20464183.67	93.2
Lu	175	3	He	6757085.34	95.5
Bi	209	1	No Gas	14322144.63	87.1
Bi	209	3	He	6036210.88	91.1

# ICPMS207-B Analytical Data

**Sample Name** Rinse  
**File Name** 124BLKV.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-07 00:04:04  
**Sample Type** BkVrfy  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	1.588	ug/l	10202.19
Be	9	45	1	No Gas	0.021	ug/l	61.99
B	11	45	1	No Gas	0.995	ug/l	3665.93
Na	23	45	3	He	48.321	ug/l	72349.51
Mg	24	45	3	He	6.540	ug/l	4005.93
Al	27	45	1	No Gas	-0.529	ug/l	21725.93
Si	28	45	2	H2	5.872	ug/l	19088.53
K	39	72	3	He	18.522	ug/l	77507.38
Ca	40	72	2	H2	2.721	ug/l	111380.86
Ti	47	72	1	No Gas	0.052	ug/l	221.89
V	51	72	1	No Gas	0.738	ug/l	20378.44
V	51	72	3	He	1.749	ug/l	15754.03
Cr	52	72	1	No Gas	0.390	ug/l	34732.30
Cr	52	72	3	He	0.008	ug/l	577.79
Mn	55	72	1	No Gas	0.065	ug/l	9138.07
Mn	55	72	3	He	0.059	ug/l	555.23
Fe	56	72	2	H2	-0.146	ug/l	19950.27
Fe	56	72	3	He	0.042	ug/l	9108.67
Co	59	72	1	No Gas	0.012	ug/l	841.69
Ni	60	72	1	No Gas	0.030	ug/l	585.52
Ni	60	72	3	He	0.035	ug/l	218.89
Cu	63	72	1	No Gas	-0.027	ug/l	2347.80
Cu	63	72	3	He	-0.020	ug/l	822.86
Cu	65	72	1	No Gas	-0.034	ug/l	1079.81
Zn	66	72	1	No Gas	-0.010	ug/l	1240.14
Zn	66	72	3	He	0.018	ug/l	300.00
As	75	72	1	No Gas	-0.157	ug/l	8181.34
As	75	72	3	He	0.064	ug/l	244.33
Se	78	72	2	H2	0.016	ug/l	44.78
Br	79	72	1	No Gas	68.224	ug/l	18035.45
Br	79	72	2	H2	72.883	ug/l	10676.09
Se	82	72	1	No Gas	-0.829	ug/l	278.35
Kr	84	72	1	No Gas		ug/l	10945.78
Sr	88	72	1	No Gas	0.009	ug/l	2458.68
Sr	88	72	3	He	0.014	ug/l	455.57
Mo	95	115	1	No Gas	0.005	ug/l	308.90
Mo	95	115	3	He	0.009	ug/l	123.33
Mo	98	115	1	No Gas	0.006	ug/l	520.15
Ag	107	115	1	No Gas	-0.007	ug/l	2633.98
Ag	109	115	1	No Gas	-0.005	ug/l	2635.31
Cd	111	115	1	No Gas	-0.003	ug/l	-7.85



# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.003	ug/l	21.33
Cd	114	115	1	No Gas	0.002	ug/l	-141.85
Cd	114	115	3	He	0.001	ug/l	50.23
Sn	118	115	1	No Gas	0.001	ug/l	3536.77
Sn	118	115	3	He	0.002	ug/l	971.15
Sb	121	115	1	No Gas	0.073	ug/l	3634.51
Sb	121	115	3	He	0.049	ug/l	689.42
Sb	123	115	1	No Gas	0.072	ug/l	2785.23
Sb	123	115	3	He	0.051	ug/l	550.07
Ba	135	115	1	No Gas	-0.010	ug/l	302.74
Ba	137	115	1	No Gas	-0.002	ug/l	518.98
La	139	115	3	He	0.002	ug/l	148.89
Ce	140	115	3	He	0.003	ug/l	242.23
Hg	201	209	1	No Gas	-0.010	ug/l	129.31
Hg	202	209	1	No Gas	-0.008	ug/l	366.94
Hg	202	209	3	He	-0.014	ug/l	140.30
Tl	203	209	3	He	0.966	ug/l	14730.03
Tl	205	209	1	No Gas	0.717	ug/l	65970.96
Tl	205	209	3	He	0.970	ug/l	34960.39
[Pb]	206	209	1	No Gas	0.030	ug/l	2499.14
[Pb]	207	209	1	No Gas	0.029	ug/l	2180.20
Pb	208	209	1	No Gas	0.031	ug/l	9970.43
Th	232	209	3	He	0.016	ug/l	1017.12
U	238	209	1	No Gas	0.003	ug/l	620.23

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	5061674.18	141.2
Sc	45	2	H2	3685314.96	109.7
Sc	45	3	He	462999.17	107.7
Ge	72	1	No Gas	1777393.96	117.7
Ge	72	2	H2	1387943.56	104.4
Ge	72	3	He	311872.72	98.7
In	115	1	No Gas	18028468.28	106.2
In	115	3	He	4203950.19	99.8
Tb	159	1	No Gas	22217016.23	102.9
Tb	159	3	He	8187553.62	96.9
Ho	165	1	No Gas	22225984.16	102.7
Ho	165	3	He	8171707.56	96.5
Lu	175	1	No Gas	22046192.50	100.4
Lu	175	3	He	6933593.82	98.0
Bi	209	1	No Gas	16132708.38	98.1
Bi	209	3	He	6361041.66	96.0

# ICPMS207-B Analytical Data

**Sample Name** B22010142-001A  
**File Name** 125SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-07 00:10:13  
**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	2.683	ug/l	15606.95
Be	9	45	1	No Gas	-0.001	ug/l	27.66
B	11	45	1	No Gas	40.427	ug/l	45725.33
Na	23	45	3	He	46794.913	ug/l	45895238.76
Mg	24	45	3	He	10085.931	ug/l	5373263.72
Al	27	45	1	No Gas	4.165	ug/l	86634.88
Si	28	45	2	H2	19181.661	ug/l	43822322.59
K	39	72	3	He	3418.185	ug/l	2399176.53
Ca	40	72	2	H2	13653.733	ug/l	143939953.22
Ti	47	72	1	No Gas	1.449	ug/l	3188.57
V	51	72	1	No Gas	11.516	ug/l	318169.13
V	51	72	3	He	9.958	ug/l	69942.73
Cr	52	72	1	No Gas	1.851	ug/l	75082.33
Cr	52	72	3	He	1.819	ug/l	13972.23
Mn	55	72	1	No Gas	3.554	ug/l	152127.70
Mn	55	72	3	He	3.503	ug/l	18925.70
Fe	56	72	2	H2	6.515	ug/l	196213.20
Fe	56	72	3	He	6.893	ug/l	56203.37
Co	59	72	1	No Gas	0.028	ug/l	1397.30
Ni	60	72	1	No Gas	0.578	ug/l	4824.59
Ni	60	72	3	He	0.481	ug/l	1494.53
Cu	63	72	1	No Gas	0.744	ug/l	17780.61
Cu	63	72	3	He	0.280	ug/l	3088.38
Cu	65	72	1	No Gas	0.299	ug/l	4344.40
Zn	66	72	1	No Gas	1.171	ug/l	8979.25
Zn	66	72	3	He	1.313	ug/l	2396.88
As	75	72	1	No Gas	1.033	ug/l	17657.99
As	75	72	3	He	1.379	ug/l	2019.37
Se	78	72	2	H2	0.098	ug/l	122.00
Br	79	72	1	No Gas	4656.702	ug/l	306575.97
Br	79	72	2	H2	4115.608	ug/l	197084.78
Se	82	72	1	No Gas	-0.185	ug/l	618.07
Kr	84	72	1	No Gas		ug/l	63837.48
Sr	88	72	1	No Gas	114.278	ug/l	8652218.08
Sr	88	72	3	He	116.422	ug/l	1090903.07
Mo	95	115	1	No Gas	4.610	ug/l	67667.01
Mo	95	115	3	He	4.519	ug/l	24130.38
Mo	98	115	1	No Gas	4.519	ug/l	111421.55
Ag	107	115	1	No Gas	-0.069	ug/l	184.74
Ag	109	115	1	No Gas	-0.069	ug/l	148.06
Cd	111	115	1	No Gas	0.006	ug/l	72.20

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.004	ug/l	26.22
Cd	114	115	1	No Gas	0.016	ug/l	143.24
Cd	114	115	3	He	0.002	ug/l	55.43
Sn	118	115	1	No Gas	0.016	ug/l	3939.42
Sn	118	115	3	He	0.007	ug/l	1008.93
Sb	121	115	1	No Gas	0.416	ug/l	17634.12
Sb	121	115	3	He	0.417	ug/l	4521.52
Sb	123	115	1	No Gas	0.417	ug/l	13549.20
Sb	123	115	3	He	0.421	ug/l	3590.82
Ba	135	115	1	No Gas	20.607	ug/l	162466.51
Ba	137	115	1	No Gas	20.624	ug/l	277551.06
La	139	115	3	He	0.002	ug/l	134.45
Ce	140	115	3	He	0.002	ug/l	207.78
Hg	201	209	1	No Gas	-0.002	ug/l	167.30
Hg	202	209	1	No Gas	0.270	ug/l	3542.43
Hg	202	209	3	He	0.222	ug/l	1224.81
Tl	203	209	3	He	0.551	ug/l	8787.76
Tl	205	209	1	No Gas	0.317	ug/l	33038.23
Tl	205	209	3	He	0.557	ug/l	21024.94
[Pb]	206	209	1	No Gas	0.031	ug/l	2462.47
[Pb]	207	209	1	No Gas	0.033	ug/l	2212.42
Pb	208	209	1	No Gas	0.034	ug/l	10024.89
Th	232	209	3	He	0.003	ug/l	414.18
U	238	209	1	No Gas	0.292	ug/l	30716.44

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	5664258.92	158.0
Sc	45	2	H2	3832434.14	114.1
Sc	45	3	He	480671.32	111.8
Ge	72	1	No Gas	1820278.15	120.5
Ge	72	2	H2	1427115.12	107.4
Ge	72	3	He	323675.28	102.5
In	115	1	No Gas	18040891.98	106.3
In	115	3	He	4205685.39	99.8
Tb	159	1	No Gas	22375994.58	103.6
Tb	159	3	He	8217168.65	97.2
Ho	165	1	No Gas	22127383.48	102.2
Ho	165	3	He	8222493.77	97.1
Lu	175	1	No Gas	21914601.12	99.8
Lu	175	3	He	6932795.63	98.0
Bi	209	1	No Gas	15767169.55	95.9
Bi	209	3	He	6174931.38	93.2

# ICPMS207-B Analytical Data

**Sample Name** B22010142-001B  
**File Name** 126SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-07 00:16:22  
**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	4.776	ug/l	19298.68
Be	9	45	1	No Gas	0.007	ug/l	35.32
B	11	45	1	No Gas	46.874	ug/l	42908.24
Na	23	45	3	He	46617.570	ug/l	40766581.33
Mg	24	45	3	He	10038.610	ug/l	4767345.64
Al	27	45	1	No Gas	222.670	ug/l	2440102.83
Si	28	45	2	H2	19014.448	ug/l	38602505.45
K	39	72	3	He	3385.580	ug/l	2157140.17
Ca	40	72	2	H2	14327.449	ug/l	129445819.60
Ti	47	72	1	No Gas	16.911	ug/l	31313.87
V	51	72	1	No Gas	14.381	ug/l	346424.49
V	51	72	3	He	13.554	ug/l	84817.18
Cr	52	72	1	No Gas	3.710	ug/l	109261.33
Cr	52	72	3	He	2.233	ug/l	15459.34
Mn	55	72	1	No Gas	12.532	ug/l	452827.57
Mn	55	72	3	He	11.684	ug/l	56743.13
Fe	56	72	2	H2	172.997	ug/l	3932118.60
Fe	56	72	3	He	166.488	ug/l	1039875.21
Co	59	72	1	No Gas	0.203	ug/l	6425.39
Ni	60	72	1	No Gas	0.965	ug/l	6804.77
Ni	60	72	3	He	0.856	ug/l	2325.76
Cu	63	72	1	No Gas	1.353	ug/l	26057.68
Cu	63	72	3	He	0.841	ug/l	6592.17
Cu	65	72	1	No Gas	0.831	ug/l	8297.03
Zn	66	72	1	No Gas	7.296	ug/l	42684.32
Zn	66	72	3	He	7.054	ug/l	10562.78
As	75	72	1	No Gas	1.267	ug/l	16998.27
As	75	72	3	He	1.588	ug/l	2088.38
Se	78	72	2	H2	0.120	ug/l	121.33
Br	79	72	1	No Gas	1270.322	ug/l	81881.86
Br	79	72	2	H2	1063.901	ug/l	48508.41
Se	82	72	1	No Gas	-0.296	ug/l	488.61
Kr	84	72	1	No Gas		ug/l	59855.36
Sr	88	72	1	No Gas	118.923	ug/l	7847636.28
Sr	88	72	3	He	118.398	ug/l	1007184.93
Mo	95	115	1	No Gas	4.859	ug/l	64164.66
Mo	95	115	3	He	4.747	ug/l	23612.85
Mo	98	115	1	No Gas	4.775	ug/l	105938.19
Ag	107	115	1	No Gas	-0.068	ug/l	210.09
Ag	109	115	1	No Gas	-0.068	ug/l	190.74
Cd	111	115	1	No Gas	0.010	ug/l	89.68

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.004	ug/l	24.44
Cd	114	115	1	No Gas	0.013	ug/l	64.96
Cd	114	115	3	He	0.000	ug/l	38.54
Sn	118	115	1	No Gas	0.353	ug/l	11651.75
Sn	118	115	3	He	0.386	ug/l	3478.23
Sb	121	115	1	No Gas	0.456	ug/l	17344.39
Sb	121	115	3	He	0.456	ug/l	4591.88
Sb	123	115	1	No Gas	0.465	ug/l	13551.21
Sb	123	115	3	He	0.453	ug/l	3593.83
Ba	135	115	1	No Gas	22.159	ug/l	157238.82
Ba	137	115	1	No Gas	22.392	ug/l	271105.55
La	139	115	3	He	0.103	ug/l	3811.66
Ce	140	115	3	He	0.224	ug/l	8830.64
Hg	201	209	1	No Gas	0.020	ug/l	253.29
Hg	202	209	1	No Gas	0.408	ug/l	4639.89
Hg	202	209	3	He	0.327	ug/l	1632.11
Tl	203	209	3	He	0.227	ug/l	4287.76
Tl	205	209	1	No Gas	0.129	ug/l	16666.51
Tl	205	209	3	He	0.228	ug/l	10292.78
[Pb]	206	209	1	No Gas	0.084	ug/l	3523.82
[Pb]	207	209	1	No Gas	0.082	ug/l	3062.60
Pb	208	209	1	No Gas	0.083	ug/l	13861.77
Th	232	209	3	He	0.074	ug/l	3365.12
U	238	209	1	No Gas	0.330	ug/l	31412.98

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4624615.21	129.0
Sc	45	2	H2	3403107.38	101.3
Sc	45	3	He	428576.31	99.7
Ge	72	1	No Gas	1586475.00	105.1
Ge	72	2	H2	1222737.76	92.0
Ge	72	3	He	293736.88	93.0
In	115	1	No Gas	16232365.34	95.6
In	115	3	He	3916707.46	93.0
Tb	159	1	No Gas	20220342.55	93.7
Tb	159	3	He	7807204.12	92.4
Ho	165	1	No Gas	19909164.50	92.0
Ho	165	3	He	7897556.50	93.3
Lu	175	1	No Gas	20100389.05	91.5
Lu	175	3	He	6558476.74	92.7
Bi	209	1	No Gas	14261268.63	86.7
Bi	209	3	He	5893162.22	88.9

# ICPMS207-B Analytical Data

**Sample Name** B22010143-001A  
**File Name** 127SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-07 00:22:29  
**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	6.795	ug/l	30073.92
Be	9	45	1	No Gas	-0.005	ug/l	18.67
B	11	45	1	No Gas	108.738	ug/l	112951.61
Na	23	45	3	He	115780.148	ug/l	113658421.64
Mg	24	45	3	He	26989.748	ug/l	14397434.77
Al	27	45	1	No Gas	1.846	ug/l	53536.95
Si	28	45	2	H2	25148.789	ug/l	56451455.28
K	39	72	3	He	8569.935	ug/l	5850888.66
Ca	40	72	2	H2	27298.885	ug/l	284898351.65
Ti	47	72	1	No Gas	1.995	ug/l	4298.30
V	51	72	1	No Gas	19.295	ug/l	527139.00
V	51	72	3	He	16.285	ug/l	110131.69
Cr	52	72	1	No Gas	1.465	ug/l	63955.41
Cr	52	72	3	He	1.520	ug/l	11647.99
Mn	55	72	1	No Gas	1.441	ug/l	64961.33
Mn	55	72	3	He	1.455	ug/l	7929.56
Fe	56	72	2	H2	0.960	ug/l	49199.82
Fe	56	72	3	He	1.140	ug/l	16768.12
Co	59	72	1	No Gas	0.058	ug/l	2395.46
Ni	60	72	1	No Gas	0.487	ug/l	4079.17
Ni	60	72	3	He	0.364	ug/l	1150.06
Cu	63	72	1	No Gas	2.075	ug/l	43817.55
Cu	63	72	3	He	0.886	ug/l	7521.77
Cu	65	72	1	No Gas	0.918	ug/l	10263.74
Zn	66	72	1	No Gas	0.609	ug/l	5260.05
Zn	66	72	3	He	0.618	ug/l	1264.51
As	75	72	1	No Gas	2.995	ug/l	32646.95
As	75	72	3	He	3.367	ug/l	4642.98
Se	78	72	2	H2	0.671	ug/l	642.01
Br	79	72	1	No Gas	9353.477	ug/l	595438.98
Br	79	72	2	H2	8211.873	ug/l	381808.09
Se	82	72	1	No Gas	0.935	ug/l	1183.28
Kr	84	72	1	No Gas		ug/l	134858.71
Sr	88	72	1	No Gas	262.761	ug/l	19685182.02
Sr	88	72	3	He	293.076	ug/l	2717822.84
Mo	95	115	1	No Gas	9.839	ug/l	141192.90
Mo	95	115	3	He	9.422	ug/l	50525.66
Mo	98	115	1	No Gas	9.616	ug/l	231839.81
Ag	107	115	1	No Gas	-0.070	ug/l	164.73
Ag	109	115	1	No Gas	-0.069	ug/l	160.73
Cd	111	115	1	No Gas	0.007	ug/l	78.78

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.006	ug/l	31.11
Cd	114	115	1	No Gas	0.017	ug/l	149.53
Cd	114	115	3	He	0.003	ug/l	62.73
Sn	118	115	1	No Gas	0.182	ug/l	8186.15
Sn	118	115	3	He	0.170	ug/l	2191.29
Sb	121	115	1	No Gas	0.192	ug/l	8313.96
Sb	121	115	3	He	0.180	ug/l	2071.03
Sb	123	115	1	No Gas	0.193	ug/l	6421.11
Sb	123	115	3	He	0.187	ug/l	1672.27
Ba	135	115	1	No Gas	30.463	ug/l	235107.74
Ba	137	115	1	No Gas	30.591	ug/l	403014.61
La	139	115	3	He	0.001	ug/l	106.67
Ce	140	115	3	He	0.002	ug/l	207.78
Hg	201	209	1	No Gas	0.072	ug/l	541.57
Hg	202	209	1	No Gas	1.659	ug/l	19495.66
Hg	202	209	3	He	1.429	ug/l	6653.34
Tl	203	209	3	He	0.241	ug/l	4587.97
Tl	205	209	1	No Gas	0.114	ug/l	17139.59
Tl	205	209	3	He	0.232	ug/l	10681.22
[Pb]	206	209	1	No Gas	0.046	ug/l	2873.66
[Pb]	207	209	1	No Gas	0.042	ug/l	2445.80
Pb	208	209	1	No Gas	0.044	ug/l	11106.31
Th	232	209	3	He	0.003	ug/l	411.51
U	238	209	1	No Gas	0.452	ug/l	47602.33

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	5431049.03	151.5
Sc	45	2	H2	3763704.52	112.1
Sc	45	3	He	481387.09	111.9
Ge	72	1	No Gas	1800936.62	119.3
Ge	72	2	H2	1412608.59	106.3
Ge	72	3	He	320282.63	101.4
In	115	1	No Gas	17671018.02	104.1
In	115	3	He	4228559.03	100.4
Tb	159	1	No Gas	22294761.89	103.3
Tb	159	3	He	8267873.41	97.8
Ho	165	1	No Gas	21794324.39	100.7
Ho	165	3	He	8274114.76	97.7
Lu	175	1	No Gas	21952282.55	100.0
Lu	175	3	He	6998305.98	98.9
Bi	209	1	No Gas	15822208.14	96.2
Bi	209	3	He	6046777.62	91.3

# ICPMS207-B Analytical Data

**Sample Name** B22010143-001B  
**File Name** 128SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-07 00:28:37  
**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	8.746	ug/l	29659.60
Be	9	45	1	No Gas	-0.001	ug/l	21.33
B	11	45	1	No Gas	128.415	ug/l	105879.06
Na	23	45	3	He	118610.154	ug/l	102071305.15
Mg	24	45	3	He	27255.634	ug/l	12744718.91
Al	27	45	1	No Gas	77.626	ug/l	811068.24
Si	28	45	2	H2	24588.814	ug/l	48449322.95
K	39	72	3	He	8485.600	ug/l	5271188.22
Ca	40	72	2	H2	26944.760	ug/l	240991201.04
Ti	47	72	1	No Gas	7.430	ug/l	13751.99
V	51	72	1	No Gas	22.615	ug/l	540686.52
V	51	72	3	He	18.917	ug/l	115662.31
Cr	52	72	1	No Gas	2.966	ug/l	91241.53
Cr	52	72	3	He	1.763	ug/l	12209.56
Mn	55	72	1	No Gas	3.511	ug/l	130395.46
Mn	55	72	3	He	3.285	ug/l	15992.81
Fe	56	72	2	H2	50.601	ug/l	1153450.28
Fe	56	72	3	He	50.093	ug/l	316118.75
Co	59	72	1	No Gas	0.175	ug/l	5553.41
Ni	60	72	1	No Gas	0.649	ug/l	4654.85
Ni	60	72	3	He	0.412	ug/l	1170.05
Cu	63	72	1	No Gas	2.584	ug/l	47190.80
Cu	63	72	3	He	1.352	ug/l	9960.73
Cu	65	72	1	No Gas	1.376	ug/l	12854.82
Zn	66	72	1	No Gas	2.116	ug/l	13132.13
Zn	66	72	3	He	2.111	ug/l	3314.84
As	75	72	1	No Gas	3.477	ug/l	31896.76
As	75	72	3	He	3.553	ug/l	4449.25
Se	78	72	2	H2	0.708	ug/l	578.90
Br	79	72	1	No Gas	1969.427	ug/l	119477.53
Br	79	72	2	H2	1605.011	ug/l	69197.93
Se	82	72	1	No Gas	0.427	ug/l	805.54
Kr	84	72	1	No Gas		ug/l	118597.01
Sr	88	72	1	No Gas	266.693	ug/l	17508646.70
Sr	88	72	3	He	290.163	ug/l	2448126.84
Mo	95	115	1	No Gas	10.250	ug/l	130956.65
Mo	95	115	3	He	9.763	ug/l	47107.24
Mo	98	115	1	No Gas	10.038	ug/l	215418.30
Ag	107	115	1	No Gas	-0.064	ug/l	325.47
Ag	109	115	1	No Gas	-0.064	ug/l	324.80
Cd	111	115	1	No Gas	0.007	ug/l	70.80



# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.004	ug/l	22.56
Cd	114	115	1	No Gas	0.012	ug/l	52.71
Cd	114	115	3	He	0.000	ug/l	38.89
Sn	118	115	1	No Gas	0.515	ug/l	15034.99
Sn	118	115	3	He	0.525	ug/l	4284.02
Sb	121	115	1	No Gas	0.219	ug/l	8383.01
Sb	121	115	3	He	0.212	ug/l	2159.05
Sb	123	115	1	No Gas	0.228	ug/l	6679.92
Sb	123	115	3	He	0.220	ug/l	1752.62
Ba	135	115	1	No Gas	31.952	ug/l	219545.78
Ba	137	115	1	No Gas	32.060	ug/l	376011.87
La	139	115	3	He	0.030	ug/l	1115.61
Ce	140	115	3	He	0.066	ug/l	2589.14
Hg	201	209	1	No Gas	0.116	ug/l	685.55
Hg	202	209	1	No Gas	2.271	ug/l	23702.96
Hg	202	209	3	He	1.782	ug/l	7861.41
Tl	203	209	3	He	0.119	ug/l	2853.46
Tl	205	209	1	No Gas	0.051	ug/l	10981.40
Tl	205	209	3	He	0.108	ug/l	6568.27
[Pb]	206	209	1	No Gas	0.083	ug/l	3481.59
[Pb]	207	209	1	No Gas	0.079	ug/l	2965.91
Pb	208	209	1	No Gas	0.081	ug/l	13556.11
Th	232	209	3	He	0.033	ug/l	1608.75
U	238	209	1	No Gas	0.499	ug/l	46966.56

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4324360.14	120.6
Sc	45	2	H2	3304648.74	98.4
Sc	45	3	He	421912.65	98.1
Ge	72	1	No Gas	1578078.95	104.5
Ge	72	2	H2	1210795.41	91.1
Ge	72	3	He	291371.08	92.2
In	115	1	No Gas	15733961.44	92.7
In	115	3	He	3805072.66	90.3
Tb	159	1	No Gas	20196733.94	93.5
Tb	159	3	He	7671217.25	90.8
Ho	165	1	No Gas	20042837.34	92.6
Ho	165	3	He	7653763.08	90.4
Lu	175	1	No Gas	19974087.55	91.0
Lu	175	3	He	6453278.62	91.2
Bi	209	1	No Gas	14134774.84	86.0
Bi	209	3	He	5763774.36	87.0

# ICPMS207-B Analytical Data

**Sample Name** B22010145-001A  
**File Name** 129SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-07 00:34:47  
**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	-0.377	ug/l	3639.90
Be	9	45	1	No Gas	-0.003	ug/l	21.67
B	11	45	1	No Gas	46.470	ug/l	48746.73
Na	23	45	3	He	42001.082	ug/l	42102267.15
Mg	24	45	3	He	19811.808	ug/l	10786314.42
Al	27	45	1	No Gas	-0.806	ug/l	19308.05
Si	28	45	2	H2	19801.811	ug/l	45695694.89
K	39	72	3	He	1473.856	ug/l	1089400.45
Ca	40	72	2	H2	17822.654	ug/l	194173449.95
Ti	47	72	1	No Gas	1.421	ug/l	3111.81
V	51	72	1	No Gas	0.601	ug/l	17175.36
V	51	72	3	He	0.251	ug/l	6663.76
Cr	52	72	1	No Gas	-0.161	ug/l	20533.60
Cr	52	72	3	He	0.000	ug/l	545.57
Mn	55	72	1	No Gas	397.321	ug/l	16177153.71
Mn	55	72	3	He	413.900	ug/l	2239340.83
Fe	56	72	2	H2	108.568	ug/l	2985428.81
Fe	56	72	3	He	109.918	ug/l	771131.03
Co	59	72	1	No Gas	0.185	ug/l	6708.27
Ni	60	72	1	No Gas	0.333	ug/l	2917.85
Ni	60	72	3	He	0.248	ug/l	843.36
Cu	63	72	1	No Gas	0.761	ug/l	18002.98
Cu	63	72	3	He	0.316	ug/l	3411.39
Cu	65	72	1	No Gas	0.356	ug/l	4867.44
Zn	66	72	1	No Gas	5.841	ug/l	39246.29
Zn	66	72	3	He	5.901	ug/l	9933.42
As	75	72	1	No Gas	-0.033	ug/l	9264.11
As	75	72	3	He	0.111	ug/l	320.67
Se	78	72	2	H2	-0.001	ug/l	31.78
Br	79	72	1	No Gas	3986.594	ug/l	263047.32
Br	79	72	2	H2	3408.253	ug/l	170082.85
Se	82	72	1	No Gas	-0.005	ug/l	706.74
Kr	84	72	1	No Gas		ug/l	78336.28
Sr	88	72	1	No Gas	141.780	ug/l	10677371.36
Sr	88	72	3	He	154.162	ug/l	1467268.45
Mo	95	115	1	No Gas	6.196	ug/l	91591.33
Mo	95	115	3	He	6.175	ug/l	33426.72
Mo	98	115	1	No Gas	6.130	ug/l	152235.90
Ag	107	115	1	No Gas	-0.070	ug/l	130.05
Ag	109	115	1	No Gas	-0.069	ug/l	142.72
Cd	111	115	1	No Gas	0.006	ug/l	67.78

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.003	ug/l	23.11
Cd	114	115	1	No Gas	0.015	ug/l	120.28
Cd	114	115	3	He	0.002	ug/l	55.66
Sn	118	115	1	No Gas	-0.054	ug/l	2079.38
Sn	118	115	3	He	-0.063	ug/l	506.68
Sb	121	115	1	No Gas	0.011	ug/l	1104.82
Sb	121	115	3	He	0.010	ug/l	283.03
Sb	123	115	1	No Gas	0.010	ug/l	868.78
Sb	123	115	3	He	0.011	ug/l	222.02
Ba	135	115	1	No Gas	2.335	ug/l	18898.80
Ba	137	115	1	No Gas	2.373	ug/l	32696.91
La	139	115	3	He	0.001	ug/l	77.78
Ce	140	115	3	He	0.003	ug/l	233.34
Hg	201	209	1	No Gas	-0.011	ug/l	125.98
Hg	202	209	1	No Gas	0.051	ug/l	1065.17
Hg	202	209	3	He	0.040	ug/l	393.93
Tl	203	209	3	He	0.154	ug/l	3586.60
Tl	205	209	1	No Gas	0.063	ug/l	13550.60
Tl	205	209	3	He	0.157	ug/l	8713.02
[Pb]	206	209	1	No Gas	0.038	ug/l	2741.41
[Pb]	207	209	1	No Gas	0.035	ug/l	2325.78
Pb	208	209	1	No Gas	0.036	ug/l	10583.92
Th	232	209	3	He	0.000	ug/l	282.78
U	238	209	1	No Gas	0.006	ug/l	932.52

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	5301588.57	147.9
Sc	45	2	H2	3867538.09	115.2
Sc	45	3	He	491212.28	114.2
Ge	72	1	No Gas	1810354.84	119.9
Ge	72	2	H2	1474806.14	111.0
Ge	72	3	He	328615.15	104.0
In	115	1	No Gas	18201669.83	107.2
In	115	3	He	4265114.10	101.2
Tb	159	1	No Gas	23118198.01	107.1
Tb	159	3	He	8387883.84	99.2
Ho	165	1	No Gas	22534809.02	104.1
Ho	165	3	He	8386242.82	99.1
Lu	175	1	No Gas	22811375.15	103.9
Lu	175	3	He	7136128.79	100.9
Bi	209	1	No Gas	16248274.50	98.8
Bi	209	3	He	6289449.77	94.9

# ICPMS207-B Analytical Data

**Sample Name** B22010145-001B  
**File Name** 130SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-07 00:40:54  
**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	1.168	ug/l	7772.45
Be	9	45	1	No Gas	0.000	ug/l	24.00
B	11	45	1	No Gas	53.538	ug/l	47215.57
Na	23	45	3	He	42314.067	ug/l	37190371.67
Mg	24	45	3	He	19560.945	ug/l	9336659.32
Al	27	45	1	No Gas	1.452	ug/l	40118.52
Si	28	45	2	H2	18531.278	ug/l	37333270.78
K	39	72	3	He	1483.721	ug/l	979767.86
Ca	40	72	2	H2	18865.581	ug/l	172673242.16
Ti	47	72	1	No Gas	1.971	ug/l	3745.93
V	51	72	1	No Gas	1.450	ug/l	35139.35
V	51	72	3	He	2.815	ug/l	21150.14
Cr	52	72	1	No Gas	1.364	ug/l	53975.61
Cr	52	72	3	He	0.251	ug/l	2171.28
Mn	55	72	1	No Gas	414.268	ug/l	14784418.32
Mn	55	72	3	He	422.354	ug/l	2042492.48
Fe	56	72	2	H2	146.721	ug/l	3382661.71
Fe	56	72	3	He	143.744	ug/l	898779.61
Co	59	72	1	No Gas	0.290	ug/l	8995.02
Ni	60	72	1	No Gas	0.481	ug/l	3556.73
Ni	60	72	3	He	0.323	ug/l	950.04
Cu	63	72	1	No Gas	0.740	ug/l	15433.71
Cu	63	72	3	He	0.251	ug/l	2607.71
Cu	65	72	1	No Gas	0.303	ug/l	3822.71
Zn	66	72	1	No Gas	24.670	ug/l	141630.15
Zn	66	72	3	He	25.195	ug/l	37067.04
As	75	72	1	No Gas	-0.032	ug/l	8092.90
As	75	72	3	He	0.322	ug/l	545.13
Se	78	72	2	H2	0.018	ug/l	41.89
Br	79	72	1	No Gas	1069.172	ug/l	70936.43
Br	79	72	2	H2	840.686	ug/l	40222.63
Se	82	72	1	No Gas	-0.276	ug/l	495.81
Kr	84	72	1	No Gas		ug/l	72711.53
Sr	88	72	1	No Gas	146.900	ug/l	9701206.59
Sr	88	72	3	He	154.985	ug/l	1318200.82
Mo	95	115	1	No Gas	6.809	ug/l	89523.16
Mo	95	115	3	He	6.578	ug/l	32327.67
Mo	98	115	1	No Gas	6.804	ug/l	150263.07
Ag	107	115	1	No Gas	-0.070	ug/l	126.05
Ag	109	115	1	No Gas	-0.070	ug/l	122.72
Cd	111	115	1	No Gas	0.007	ug/l	66.19

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.003	ug/l	21.11
Cd	114	115	1	No Gas	0.016	ug/l	120.30
Cd	114	115	3	He	0.000	ug/l	37.34
Sn	118	115	1	No Gas	0.348	ug/l	11472.02
Sn	118	115	3	He	0.373	ug/l	3353.75
Sb	121	115	1	No Gas	0.020	ug/l	1311.20
Sb	121	115	3	He	0.020	ug/l	354.71
Sb	123	115	1	No Gas	0.025	ug/l	1191.51
Sb	123	115	3	He	0.021	ug/l	280.37
Ba	135	115	1	No Gas	2.329	ug/l	16780.21
Ba	137	115	1	No Gas	2.446	ug/l	29966.19
La	139	115	3	He	0.003	ug/l	138.89
Ce	140	115	3	He	0.005	ug/l	286.67
Hg	201	209	1	No Gas	0.002	ug/l	171.63
Hg	202	209	1	No Gas	0.105	ug/l	1513.12
Hg	202	209	3	He	0.089	ug/l	583.90
Tl	203	209	3	He	0.083	ug/l	2478.56
Tl	205	209	1	No Gas	0.038	ug/l	10211.86
Tl	205	209	3	He	0.080	ug/l	5880.33
[Pb]	206	209	1	No Gas	0.031	ug/l	2250.21
[Pb]	207	209	1	No Gas	0.027	ug/l	1904.59
Pb	208	209	1	No Gas	0.030	ug/l	8735.62
Th	232	209	3	He	0.013	ug/l	815.69
U	238	209	1	No Gas	0.006	ug/l	863.86

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4489367.32	125.2
Sc	45	2	H2	3379475.38	100.6
Sc	45	3	He	430733.05	100.2
Ge	72	1	No Gas	1587354.81	105.1
Ge	72	2	H2	1238973.96	93.2
Ge	72	3	He	293683.49	93.0
In	115	1	No Gas	16174373.69	95.3
In	115	3	He	3873357.07	91.9
Tb	159	1	No Gas	20226196.11	93.7
Tb	159	3	He	7744387.71	91.6
Ho	165	1	No Gas	20421650.93	94.4
Ho	165	3	He	7904539.78	93.4
Lu	175	1	No Gas	20513864.39	93.4
Lu	175	3	He	6529175.41	92.3
Bi	209	1	No Gas	14347654.28	87.3
Bi	209	3	He	5906231.21	89.1

# ICPMS207-B Analytical Data

**Sample Name** CCV  
**File Name** 131\_CCV.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-07 00:47:01  
**Sample Type** CCV  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	686.338	ug/l	2236888.52
Be	9	45	1	No Gas	56.679	ug/l	91417.35
B	11	45	1	No Gas	57.750	ug/l	54327.00
Na	23	45	3	He	14164.524	ug/l	12854813.70
Mg	24	45	3	He	14130.264	ug/l	6951168.57
Al	27	45	1	No Gas	55.578	ug/l	652616.40
Si	28	45	2	H2	236.078	ug/l	502122.08
K	39	72	3	He	14210.776	ug/l	9247646.95
Ca	40	72	2	H2	13258.409	ug/l	132019796.82
Ti	47	72	1	No Gas	57.579	ug/l	116307.59
V	51	72	1	No Gas	59.151	ug/l	1553775.08
V	51	72	3	He	57.717	ug/l	361883.34
Cr	52	72	1	No Gas	58.426	ug/l	1528889.66
Cr	52	72	3	He	55.383	ug/l	388388.49
Mn	55	72	1	No Gas	55.746	ug/l	2179918.94
Mn	55	72	3	He	55.514	ug/l	280606.95
Fe	56	72	2	H2	1319.046	ug/l	32893433.11
Fe	56	72	3	He	1384.314	ug/l	8962895.91
Co	59	72	1	No Gas	56.446	ug/l	1829239.43
Ni	60	72	1	No Gas	55.040	ug/l	404472.88
Ni	60	72	3	He	56.774	ug/l	153125.13
Cu	63	72	1	No Gas	54.034	ug/l	1028025.83
Cu	63	72	3	He	57.609	ug/l	407025.37
Cu	65	72	1	No Gas	54.247	ug/l	504321.31
Zn	66	72	1	No Gas	54.147	ug/l	337944.15
Zn	66	72	3	He	55.497	ug/l	84886.33
As	75	72	1	No Gas	49.124	ug/l	374674.71
As	75	72	3	He	53.654	ug/l	68446.83
Se	78	72	2	H2	51.666	ug/l	44915.04
Br	79	72	1	No Gas	106.334	ug/l	19864.23
Br	79	72	2	H2	95.295	ug/l	11341.98
Se	82	72	1	No Gas	49.294	ug/l	24913.50
Kr	84	72	1	No Gas		ug/l	37190.79
Sr	88	72	1	No Gas	50.371	ug/l	3631767.24
Sr	88	72	3	He	53.573	ug/l	475763.16
Mo	95	115	1	No Gas	51.417	ug/l	725859.69
Mo	95	115	3	He	52.184	ug/l	260956.99
Mo	98	115	1	No Gas	51.195	ug/l	1213937.91
Ag	107	115	1	No Gas	20.301	ug/l	781492.23
Ag	109	115	1	No Gas	20.194	ug/l	757298.60
Cd	111	115	1	No Gas	50.464	ug/l	432816.40

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	52.452	ug/l	135700.81
Cd	114	115	1	No Gas	50.984	ug/l	983043.95
Cd	114	115	3	He	52.388	ug/l	331494.86
Sn	118	115	1	No Gas	51.197	ug/l	1320710.04
Sn	118	115	3	He	51.910	ug/l	351773.39
Sb	121	115	1	No Gas	51.440	ug/l	2025613.80
Sb	121	115	3	He	51.691	ug/l	506313.22
Sb	123	115	1	No Gas	51.293	ug/l	1545549.19
Sb	123	115	3	He	51.375	ug/l	397180.45
Ba	135	115	1	No Gas	52.959	ug/l	402274.21
Ba	137	115	1	No Gas	54.190	ug/l	702781.99
La	139	115	3	He	50.806	ug/l	1872074.82
Ce	140	115	3	He	50.369	ug/l	1976017.47
Hg	201	209	1	No Gas	0.908	ug/l	4839.58
Hg	202	209	1	No Gas	0.913	ug/l	11025.67
Hg	202	209	3	He	0.926	ug/l	4350.18
Tl	203	209	3	He	49.255	ug/l	636819.47
Tl	205	209	1	No Gas	49.431	ug/l	3947965.60
Tl	205	209	3	He	51.532	ug/l	1566812.80
[Pb]	206	209	1	No Gas	50.382	ug/l	1386517.74
[Pb]	207	209	1	No Gas	49.575	ug/l	1183664.14
Pb	208	209	1	No Gas	51.286	ug/l	5555651.63
Th	232	209	3	He	54.064	ug/l	2297889.43
U	238	209	1	No Gas	51.580	ug/l	5440769.50

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4802506.46	134.0
Sc	45	2	H2	3528890.27	105.1
Sc	45	3	He	445034.64	103.5
Ge	72	1	No Gas	1733325.48	114.8
Ge	72	2	H2	1347716.82	101.4
Ge	72	3	He	307372.73	97.3
In	115	1	No Gas	17408221.63	102.6
In	115	3	He	3957896.96	94.0
Tb	159	1	No Gas	22336675.06	103.5
Tb	159	3	He	7924932.05	93.8
Ho	165	1	No Gas	22090306.61	102.1
Ho	165	3	He	7839385.36	92.6
Lu	175	1	No Gas	22253403.24	101.3
Lu	175	3	He	6645451.94	93.9
Bi	209	1	No Gas	15946659.28	97.0
Bi	209	3	He	6009937.65	90.7

# ICPMS207-B Analytical Data

**Sample Name** CCB  
**File Name** 132\_CCB.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-07 00:52:59  
**Sample Type** CCB  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	1.004	ug/l	7592.95
Be	9	45	1	No Gas	0.008	ug/l	37.66
B	11	45	1	No Gas	0.698	ug/l	3134.93
Na	23	45	3	He	40.841	ug/l	63071.56
Mg	24	45	3	He	4.356	ug/l	2784.76
Al	27	45	1	No Gas	0.424	ug/l	30582.70
Si	28	45	2	H2	6.313	ug/l	19344.27
K	39	72	3	He	17.970	ug/l	77032.81
Ca	40	72	2	H2	2.121	ug/l	99994.07
Ti	47	72	1	No Gas	0.041	ug/l	186.86
V	51	72	1	No Gas	-0.514	ug/l	-12411.11
V	51	72	3	He	1.549	ug/l	14472.74
Cr	52	72	1	No Gas	0.455	ug/l	34355.29
Cr	52	72	3	He	0.013	ug/l	610.02
Mn	55	72	1	No Gas	0.042	ug/l	7756.72
Mn	55	72	3	He	0.039	ug/l	451.25
Fe	56	72	2	H2	-0.103	ug/l	20005.94
Fe	56	72	3	He	0.076	ug/l	9315.68
Co	59	72	1	No Gas	0.002	ug/l	479.06
Ni	60	72	1	No Gas	0.028	ug/l	535.62
Ni	60	72	3	He	0.024	ug/l	187.78
Cu	63	72	1	No Gas	0.011	ug/l	2912.80
Cu	63	72	3	He	0.000	ug/l	964.84
Cu	65	72	1	No Gas	-0.014	ug/l	1191.86
Zn	66	72	1	No Gas	-0.001	ug/l	1223.42
Zn	66	72	3	He	0.020	ug/l	303.34
As	75	72	1	No Gas	0.124	ug/l	9765.64
As	75	72	3	He	0.054	ug/l	231.33
Se	78	72	2	H2	0.018	ug/l	44.67
Br	79	72	1	No Gas	41.157	ug/l	15434.30
Br	79	72	2	H2	48.905	ug/l	9128.09
Se	82	72	1	No Gas	-0.455	ug/l	439.01
Kr	84	72	1	No Gas		ug/l	13722.66
Sr	88	72	1	No Gas	0.007	ug/l	2225.77
Sr	88	72	3	He	0.011	ug/l	432.23
Mo	95	115	1	No Gas	0.009	ug/l	353.34
Mo	95	115	3	He	0.013	ug/l	143.33
Mo	98	115	1	No Gas	0.010	ug/l	618.91
Ag	107	115	1	No Gas	-0.005	ug/l	2649.32
Ag	109	115	1	No Gas	-0.004	ug/l	2609.30
Cd	111	115	1	No Gas	-0.003	ug/l	-10.63



# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.001	ug/l	17.00
Cd	114	115	1	No Gas	0.003	ug/l	-117.72
Cd	114	115	3	He	-0.002	ug/l	29.77
Sn	118	115	1	No Gas	0.009	ug/l	3653.24
Sn	118	115	3	He	0.005	ug/l	975.59
Sb	121	115	1	No Gas	0.048	ug/l	2544.15
Sb	121	115	3	He	0.029	ug/l	473.39
Sb	123	115	1	No Gas	0.048	ug/l	1978.34
Sb	123	115	3	He	0.033	ug/l	393.71
Ba	135	115	1	No Gas	-0.010	ug/l	299.41
Ba	137	115	1	No Gas	0.004	ug/l	592.18
La	139	115	3	He	0.001	ug/l	95.56
Ce	140	115	3	He	0.001	ug/l	138.89
Hg	201	209	1	No Gas	-0.014	ug/l	106.65
Hg	202	209	1	No Gas	-0.013	ug/l	316.61
Hg	202	209	3	He	-0.015	ug/l	132.31
Tl	203	209	3	He	0.514	ug/l	8506.80
Tl	205	209	1	No Gas	0.327	ug/l	34525.54
Tl	205	209	3	He	0.519	ug/l	20314.25
[Pb]	206	209	1	No Gas	0.018	ug/l	2152.41
[Pb]	207	209	1	No Gas	0.015	ug/l	1817.92
Pb	208	209	1	No Gas	0.018	ug/l	8462.23
Th	232	209	3	He	0.016	ug/l	1033.12
U	238	209	1	No Gas	0.001	ug/l	441.59

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4684759.82	130.7
Sc	45	2	H2	3544858.36	105.5
Sc	45	3	He	447304.06	104.0
Ge	72	1	No Gas	1676156.16	111.0
Ge	72	2	H2	1319617.93	99.3
Ge	72	3	He	311420.05	98.6
In	115	1	No Gas	17607737.66	103.7
In	115	3	He	4148211.66	98.5
Tb	159	1	No Gas	21718705.86	100.6
Tb	159	3	He	8165040.27	96.6
Ho	165	1	No Gas	21530046.37	99.5
Ho	165	3	He	8149472.83	96.3
Lu	175	1	No Gas	21547528.02	98.1
Lu	175	3	He	6847848.55	96.8
Bi	209	1	No Gas	16015731.19	97.4
Bi	209	3	He	6324954.14	95.5

# ICPMS207-B Analytical Data

**Sample Name** B22010148-001A  
**File Name** 133SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-07 00:59:08  
**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	1.146	ug/l	9315.27
Be	9	45	1	No Gas	-0.002	ug/l	23.99
B	11	45	1	No Gas	85.787	ug/l	89703.00
Na	23	45	3	He	103578.910	ug/l	100190501.84
Mg	24	45	3	He	39711.766	ug/l	20871460.53
Al	27	45	1	No Gas	2.557	ug/l	62582.10
Si	28	45	2	H2	24515.964	ug/l	53705246.86
K	39	72	3	He	3604.030	ug/l	2524754.73
Ca	40	72	2	H2	44503.838	ug/l	450764815.60
Ti	47	72	1	No Gas	1.774	ug/l	3824.37
V	51	72	1	No Gas	17.912	ug/l	488555.53
V	51	72	3	He	14.850	ug/l	101877.06
Cr	52	72	1	No Gas	0.411	ug/l	35659.24
Cr	52	72	3	He	0.490	ug/l	4155.06
Mn	55	72	1	No Gas	5.274	ug/l	219677.43
Mn	55	72	3	He	5.025	ug/l	27024.66
Fe	56	72	2	H2	16.719	ug/l	447366.95
Fe	56	72	3	He	16.466	ug/l	121522.31
Co	59	72	1	No Gas	0.145	ug/l	5347.08
Ni	60	72	1	No Gas	0.663	ug/l	5410.31
Ni	60	72	3	He	0.447	ug/l	1396.74
Cu	63	72	1	No Gas	4.905	ug/l	99402.36
Cu	63	72	3	He	3.890	ug/l	29937.50
Cu	65	72	1	No Gas	3.928	ug/l	39173.34
Zn	66	72	1	No Gas	2.742	ug/l	19022.75
Zn	66	72	3	He	2.609	ug/l	4481.83
As	75	72	1	No Gas	1.693	ug/l	22513.54
As	75	72	3	He	1.770	ug/l	2545.04
Se	78	72	2	H2	0.384	ug/l	370.23
Br	79	72	1	No Gas	14064.744	ug/l	885984.04
Br	79	72	2	H2	11993.210	ug/l	538275.58
Se	82	72	1	No Gas	1.063	ug/l	1247.55
Kr	84	72	1	No Gas		ug/l	141553.44
Sr	88	72	1	No Gas	278.448	ug/l	20813912.71
Sr	88	72	3	He	303.747	ug/l	2845101.97
Mo	95	115	1	No Gas	4.361	ug/l	62543.89
Mo	95	115	3	He	4.342	ug/l	22747.00
Mo	98	115	1	No Gas	4.293	ug/l	103428.68
Ag	107	115	1	No Gas	-0.065	ug/l	333.47
Ag	109	115	1	No Gas	-0.064	ug/l	333.47
Cd	111	115	1	No Gas	0.010	ug/l	97.16

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.007	ug/l	32.89
Cd	114	115	1	No Gas	0.018	ug/l	168.12
Cd	114	115	3	He	0.003	ug/l	62.67
Sn	118	115	1	No Gas	0.017	ug/l	3862.88
Sn	118	115	3	He	0.016	ug/l	1053.39
Sb	121	115	1	No Gas	0.061	ug/l	3080.32
Sb	121	115	3	He	0.059	ug/l	779.10
Sb	123	115	1	No Gas	0.062	ug/l	2422.46
Sb	123	115	3	He	0.060	ug/l	612.41
Ba	135	115	1	No Gas	9.852	ug/l	76106.06
Ba	137	115	1	No Gas	9.979	ug/l	131499.06
La	139	115	3	He	0.001	ug/l	85.56
Ce	140	115	3	He	0.001	ug/l	142.22
Hg	201	209	1	No Gas	0.142	ug/l	859.52
Hg	202	209	1	No Gas	3.114	ug/l	34659.65
Hg	202	209	3	He	2.643	ug/l	11770.84
Tl	203	209	3	He	0.311	ug/l	5329.88
Tl	205	209	1	No Gas	0.144	ug/l	18665.16
Tl	205	209	3	He	0.288	ug/l	11992.87
[Pb]	206	209	1	No Gas	0.050	ug/l	2867.00
[Pb]	207	209	1	No Gas	0.043	ug/l	2361.34
Pb	208	209	1	No Gas	0.047	ug/l	10948.50
Th	232	209	3	He	0.002	ug/l	344.15
U	238	209	1	No Gas	0.194	ug/l	19715.21

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	5428392.62	151.4
Sc	45	2	H2	3675144.22	109.4
Sc	45	3	He	474235.53	110.3
Ge	72	1	No Gas	1798652.69	119.1
Ge	72	2	H2	1371646.25	103.2
Ge	72	3	He	323506.76	102.4
In	115	1	No Gas	17627438.02	103.9
In	115	3	He	4124864.07	97.9
Tb	159	1	No Gas	22109079.76	102.4
Tb	159	3	He	8084108.40	95.6
Ho	165	1	No Gas	21671237.56	100.1
Ho	165	3	He	8205420.65	96.9
Lu	175	1	No Gas	21603740.90	98.4
Lu	175	3	He	6910613.75	97.7
Bi	209	1	No Gas	15149763.98	92.1
Bi	209	3	He	5864014.90	88.5

# ICPMS207-B Analytical Data

**Sample Name** B22010148-001B  
**File Name** 134SMPL.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-07 01:05:16  
**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	2.943	ug/l	13376.60
Be	9	45	1	No Gas	0.002	ug/l	26.66
B	11	45	1	No Gas	99.054	ug/l	86732.46
Na	23	45	3	He	105270.380	ug/l	91575361.97
Mg	24	45	3	He	40693.382	ug/l	19234220.18
Al	27	45	1	No Gas	65.349	ug/l	723912.28
Si	28	45	2	H2	23800.544	ug/l	47445554.80
K	39	72	3	He	3815.080	ug/l	2375523.11
Ca	40	72	2	H2	45214.553	ug/l	404568510.93
Ti	47	72	1	No Gas	7.221	ug/l	13369.58
V	51	72	1	No Gas	18.876	ug/l	451999.43
V	51	72	3	He	18.163	ug/l	109910.41
Cr	52	72	1	No Gas	2.670	ug/l	84341.25
Cr	52	72	3	He	1.447	ug/l	9991.22
Mn	55	72	1	No Gas	7.150	ug/l	259575.23
Mn	55	72	3	He	6.654	ug/l	31781.49
Fe	56	72	2	H2	190.635	ug/l	4291898.67
Fe	56	72	3	He	186.029	ug/l	1137916.54
Co	59	72	1	No Gas	0.281	ug/l	8688.68
Ni	60	72	1	No Gas	1.288	ug/l	8931.77
Ni	60	72	3	He	0.913	ug/l	2424.66
Cu	63	72	1	No Gas	2.688	ug/l	49003.52
Cu	63	72	3	He	1.647	ug/l	11795.73
Cu	65	72	1	No Gas	1.664	ug/l	15291.49
Zn	66	72	1	No Gas	7.178	ug/l	41799.63
Zn	66	72	3	He	7.072	ug/l	10381.52
As	75	72	1	No Gas	2.531	ug/l	25467.23
As	75	72	3	He	2.098	ug/l	2656.26
Se	78	72	2	H2	0.389	ug/l	330.67
Br	79	72	1	No Gas	3411.020	ug/l	198083.11
Br	79	72	2	H2	2877.665	ug/l	118980.71
Se	82	72	1	No Gas	0.114	ug/l	670.21
Kr	84	72	1	No Gas		ug/l	131227.68
Sr	88	72	1	No Gas	290.973	ug/l	19108619.92
Sr	88	72	3	He	318.768	ug/l	2657620.74
Mo	95	115	1	No Gas	4.858	ug/l	62698.92
Mo	95	115	3	He	4.736	ug/l	22941.81
Mo	98	115	1	No Gas	4.782	ug/l	103678.73
Ag	107	115	1	No Gas	-0.049	ug/l	875.71
Ag	109	115	1	No Gas	-0.047	ug/l	907.73
Cd	111	115	1	No Gas	0.008	ug/l	79.00

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.005	ug/l	25.11
Cd	114	115	1	No Gas	0.015	ug/l	99.79
Cd	114	115	3	He	0.001	ug/l	46.06
Sn	118	115	1	No Gas	0.491	ug/l	14618.61
Sn	118	115	3	He	0.497	ug/l	4112.85
Sb	121	115	1	No Gas	0.084	ug/l	3594.16
Sb	121	115	3	He	0.083	ug/l	943.46
Sb	123	115	1	No Gas	0.090	ug/l	2948.28
Sb	123	115	3	He	0.084	ug/l	739.76
Ba	135	115	1	No Gas	10.435	ug/l	72537.85
Ba	137	115	1	No Gas	10.581	ug/l	125477.38
La	139	115	3	He	0.026	ug/l	976.71
Ce	140	115	3	He	0.057	ug/l	2251.31
Hg	201	209	1	No Gas	0.204	ug/l	1082.16
Hg	202	209	1	No Gas	4.072	ug/l	42051.93
Hg	202	209	3	He	3.385	ug/l	14343.52
Tl	203	209	3	He	0.137	ug/l	2988.21
Tl	205	209	1	No Gas	0.055	ug/l	11172.68
Tl	205	209	3	He	0.116	ug/l	6604.29
[Pb]	206	209	1	No Gas	0.083	ug/l	3473.80
[Pb]	207	209	1	No Gas	0.082	ug/l	3027.03
Pb	208	209	1	No Gas	0.085	ug/l	13820.68
Th	232	209	3	He	0.029	ug/l	1397.31
U	238	209	1	No Gas	0.207	ug/l	19597.41

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4562971.41	127.3
Sc	45	2	H2	3343022.51	99.5
Sc	45	3	He	426474.80	99.2
Ge	72	1	No Gas	1578814.12	104.6
Ge	72	2	H2	1211585.60	91.2
Ge	72	3	He	287973.23	91.2
In	115	1	No Gas	15862938.81	93.5
In	115	3	He	3813883.99	90.5
Tb	159	1	No Gas	20098959.92	93.1
Tb	159	3	He	7605331.21	90.0
Ho	165	1	No Gas	19894830.79	91.9
Ho	165	3	He	7628759.12	90.1
Lu	175	1	No Gas	19812774.37	90.2
Lu	175	3	He	6424474.25	90.8
Bi	209	1	No Gas	14089053.41	85.7
Bi	209	3	He	5598772.10	84.5

# ICPMS207-B Analytical Data

**Sample Name** CCV  
**File Name** 135\_CCV.d  
**Data Path Name** D:\Agilent\ICPMH1\DATA\220106DoD.b  
**Acq Time** 2022-01-07 01:11:23  
**Sample Type** CCV  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	690.114	ug/l	2300610.84
Be	9	45	1	No Gas	56.393	ug/l	93141.66
B	11	45	1	No Gas	57.483	ug/l	55353.92
Na	23	45	3	He	13400.088	ug/l	12685432.73
Mg	24	45	3	He	13487.589	ug/l	6924738.31
Al	27	45	1	No Gas	56.154	ug/l	674728.11
Si	28	45	2	H2	229.700	ug/l	497216.94
K	39	72	3	He	13750.195	ug/l	9238691.39
Ca	40	72	2	H2	13348.779	ug/l	132173213.56
Ti	47	72	1	No Gas	58.395	ug/l	118260.72
V	51	72	1	No Gas	60.429	ug/l	1593294.45
V	51	72	3	He	56.623	ug/l	366482.98
Cr	52	72	1	No Gas	58.616	ug/l	1539122.71
Cr	52	72	3	He	54.568	ug/l	394807.90
Mn	55	72	1	No Gas	57.518	ug/l	2254466.57
Mn	55	72	3	He	53.838	ug/l	280826.20
Fe	56	72	2	H2	1337.191	ug/l	33146656.74
Fe	56	72	3	He	1336.504	ug/l	8933457.41
Co	59	72	1	No Gas	57.994	ug/l	1884147.42
Ni	60	72	1	No Gas	56.131	ug/l	413554.86
Ni	60	72	3	He	54.903	ug/l	152840.61
Cu	63	72	1	No Gas	55.143	ug/l	1052058.92
Cu	63	72	3	He	55.817	ug/l	407098.53
Cu	65	72	1	No Gas	54.189	ug/l	505189.49
Zn	66	72	1	No Gas	53.848	ug/l	336988.55
Zn	66	72	3	He	52.477	ug/l	82902.02
As	75	72	1	No Gas	49.330	ug/l	377301.98
As	75	72	3	He	51.800	ug/l	68227.81
Se	78	72	2	H2	52.057	ug/l	44995.52
Br	79	72	1	No Gas	147.351	ug/l	22389.53
Br	79	72	2	H2	139.925	ug/l	13209.87
Se	82	72	1	No Gas	49.826	ug/l	25253.16
Kr	84	72	1	No Gas		ug/l	36517.15
Sr	88	72	1	No Gas	51.474	ug/l	3724009.60
Sr	88	72	3	He	52.176	ug/l	478444.99
Mo	95	115	1	No Gas	51.293	ug/l	726207.06
Mo	95	115	3	He	50.159	ug/l	257146.45
Mo	98	115	1	No Gas	50.954	ug/l	1211894.75
Ag	107	115	1	No Gas	20.222	ug/l	780578.65
Ag	109	115	1	No Gas	20.186	ug/l	759058.37
Cd	111	115	1	No Gas	49.783	ug/l	428120.41

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	51.159	ug/l	135671.08
Cd	114	115	1	No Gas	50.294	ug/l	972404.98
Cd	114	115	3	He	51.066	ug/l	331254.18
Sn	118	115	1	No Gas	50.833	ug/l	1314964.79
Sn	118	115	3	He	50.669	ug/l	351904.06
Sb	121	115	1	No Gas	50.228	ug/l	1983734.16
Sb	121	115	3	He	50.107	ug/l	503068.90
Sb	123	115	1	No Gas	50.579	ug/l	1528684.36
Sb	123	115	3	He	50.100	ug/l	397043.29
Ba	135	115	1	No Gas	52.526	ug/l	400195.82
Ba	137	115	1	No Gas	53.701	ug/l	698427.10
La	139	115	3	He	49.475	ug/l	1868786.97
Ce	140	115	3	He	48.545	ug/l	1951467.97
Hg	201	209	1	No Gas	0.914	ug/l	4755.90
Hg	202	209	1	No Gas	0.930	ug/l	10961.64
Hg	202	209	3	He	0.891	ug/l	4265.83
Tl	203	209	3	He	48.018	ug/l	631790.66
Tl	205	209	1	No Gas	49.589	ug/l	3865457.13
Tl	205	209	3	He	50.537	ug/l	1563222.16
[Pb]	206	209	1	No Gas	51.071	ug/l	1371317.09
[Pb]	207	209	1	No Gas	50.581	ug/l	1178565.95
Pb	208	209	1	No Gas	52.151	ug/l	5512486.19
Th	232	209	3	He	52.366	ug/l	2265762.86
U	238	209	1	No Gas	52.015	ug/l	5354125.04

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4917773.64	137.2
Sc	45	2	H2	3586617.94	106.8
Sc	45	3	He	463341.68	107.7
Ge	72	1	No Gas	1738951.35	115.2
Ge	72	2	H2	1339957.40	100.8
Ge	72	3	He	316533.33	100.2
In	115	1	No Gas	17452412.23	102.8
In	115	3	He	4047133.66	96.1
Tb	159	1	No Gas	22173120.67	102.7
Tb	159	3	He	8191871.69	96.9
Ho	165	1	No Gas	21905704.31	101.2
Ho	165	3	He	8084816.14	95.5
Lu	175	1	No Gas	21999814.66	100.2
Lu	175	3	He	6814490.50	96.3
Bi	209	1	No Gas	15561539.31	94.6
Bi	209	3	He	6108851.02	92.2

# ICPMS207-B Analytical Data

**Sample Name** CCB  
**File Name** 136\_CCB.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-07 01:17:21  
**Sample Type** CCB  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	0.904	ug/l	7685.04
Be	9	45	1	No Gas	0.006	ug/l	35.66
B	11	45	1	No Gas	0.863	ug/l	3463.80
Na	23	45	3	He	43.965	ug/l	67152.27
Mg	24	45	3	He	4.649	ug/l	2984.39
Al	27	45	1	No Gas	0.522	ug/l	33438.72
Si	28	45	2	H2	5.026	ug/l	17135.18
K	39	72	3	He	20.686	ug/l	78719.14
Ca	40	72	2	H2	2.310	ug/l	103693.93
Ti	47	72	1	No Gas	0.038	ug/l	183.52
V	51	72	1	No Gas	-0.596	ug/l	-14374.25
V	51	72	3	He	1.559	ug/l	14521.65
Cr	52	72	1	No Gas	0.514	ug/l	36205.98
Cr	52	72	3	He	0.007	ug/l	566.68
Mn	55	72	1	No Gas	0.029	ug/l	7357.29
Mn	55	72	3	He	0.022	ug/l	359.93
Fe	56	72	2	H2	-0.127	ug/l	19774.84
Fe	56	72	3	He	0.044	ug/l	9093.65
Co	59	72	1	No Gas	0.006	ug/l	622.12
Ni	60	72	1	No Gas	0.033	ug/l	582.19
Ni	60	72	3	He	0.012	ug/l	156.67
Cu	63	72	1	No Gas	0.004	ug/l	2812.74
Cu	63	72	3	He	0.000	ug/l	968.17
Cu	65	72	1	No Gas	-0.012	ug/l	1224.55
Zn	66	72	1	No Gas	-0.018	ug/l	1136.92
Zn	66	72	3	He	0.012	ug/l	290.01
As	75	72	1	No Gas	-0.030	ug/l	8689.37
As	75	72	3	He	0.051	ug/l	226.67
Se	78	72	2	H2	0.014	ug/l	41.78
Br	79	72	1	No Gas	63.795	ug/l	16919.71
Br	79	72	2	H2	57.479	ug/l	9654.12
Se	82	72	1	No Gas	-0.473	ug/l	433.55
Kr	84	72	1	No Gas		ug/l	12127.70
Sr	88	72	1	No Gas	0.008	ug/l	2298.97
Sr	88	72	3	He	0.013	ug/l	447.79
Mo	95	115	1	No Gas	0.007	ug/l	332.23
Mo	95	115	3	He	0.009	ug/l	120.00
Mo	98	115	1	No Gas	0.007	ug/l	554.46
Ag	107	115	1	No Gas	-0.004	ug/l	2698.01
Ag	109	115	1	No Gas	-0.005	ug/l	2577.94
Cd	111	115	1	No Gas	0.001	ug/l	26.06



# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.000	ug/l	14.33
Cd	114	115	1	No Gas	0.001	ug/l	-153.82
Cd	114	115	3	He	-0.001	ug/l	31.94
Sn	118	115	1	No Gas	0.041	ug/l	4486.86
Sn	118	115	3	He	0.016	ug/l	1060.05
Sb	121	115	1	No Gas	0.045	ug/l	2449.79
Sb	121	115	3	He	0.028	ug/l	469.05
Sb	123	115	1	No Gas	0.044	ug/l	1861.98
Sb	123	115	3	He	0.031	ug/l	379.04
Ba	135	115	1	No Gas	-0.005	ug/l	336.01
Ba	137	115	1	No Gas	0.004	ug/l	582.20
La	139	115	3	He	0.001	ug/l	100.00
Ce	140	115	3	He	0.001	ug/l	144.44
Hg	201	209	1	No Gas	-0.015	ug/l	103.31
Hg	202	209	1	No Gas	-0.013	ug/l	312.94
Hg	202	209	3	He	-0.018	ug/l	117.98
Tl	203	209	3	He	0.463	ug/l	7725.34
Tl	205	209	1	No Gas	0.307	ug/l	32664.50
Tl	205	209	3	He	0.460	ug/l	18250.45
[Pb]	206	209	1	No Gas	0.018	ug/l	2126.85
[Pb]	207	209	1	No Gas	0.011	ug/l	1732.35
Pb	208	209	1	No Gas	0.014	ug/l	8036.56
Th	232	209	3	He	0.016	ug/l	985.10
U	238	209	1	No Gas	0.001	ug/l	445.59

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4949601.13	138.1
Sc	45	2	H2	3622273.74	107.9
Sc	45	3	He	455643.04	106.0
Ge	72	1	No Gas	1695011.43	112.2
Ge	72	2	H2	1342973.07	101.0
Ge	72	3	He	311056.40	98.5
In	115	1	No Gas	17591277.22	103.6
In	115	3	He	4153018.32	98.6
Tb	159	1	No Gas	21657744.06	100.3
Tb	159	3	He	8137715.55	96.3
Ho	165	1	No Gas	21741233.80	100.4
Ho	165	3	He	8297497.21	98.0
Lu	175	1	No Gas	21830613.60	99.4
Lu	175	3	He	6872767.32	97.1
Bi	209	1	No Gas	15952737.55	97.0
Bi	209	3	He	6257563.53	94.4

# ICPMS207-B Analytical Data

**Sample Name** Cal Blk  
**File Name** 137CALB.d  
**Data Path Name** D:\Agilent\ICPMH1\DATA\220106DoD.b  
**Acq Time** 2022-01-07 01:23:31  
**Sample Type** CalBlk  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	6952.38
Be	9	45	1	No Gas	0.000	ug/l	23.33
B	11	45	1	No Gas	0.000	ug/l	2885.44
Na	23	45	3	He	0.000	ug/l	61411.12
Mg	24	45	3	He	0.000	ug/l	2119.29
Al	27	45	1	No Gas	0.000	ug/l	32831.72
Si	28	45	2	H2	0.000	ug/l	11854.13
K	39	72	3	He	0.000	ug/l	78371.94
Ca	40	72	2	H2	0.000	ug/l	92913.42
Ti	47	72	1	No Gas	0.000	ug/l	161.83
V	51	72	1	No Gas	0.000	ug/l	19912.68
V	51	72	3	He	0.000	ug/l	15093.33
Cr	52	72	1	No Gas	0.000	ug/l	36479.64
Cr	52	72	3	He	0.000	ug/l	595.57
Mn	55	72	1	No Gas	0.000	ug/l	7290.73
Mn	55	72	3	He	0.000	ug/l	365.27
Fe	56	72	2	H2	0.000	ug/l	90765.24
Fe	56	72	3	He	0.000	ug/l	8736.42
Co	59	72	1	No Gas	0.000	ug/l	442.47
Ni	60	72	1	No Gas	0.000	ug/l	552.25
Ni	60	72	3	He	0.000	ug/l	161.11
Cu	63	72	1	No Gas	0.000	ug/l	2702.67
Cu	63	72	3	He	0.000	ug/l	909.51
Cu	65	72	1	No Gas	0.000	ug/l	1107.15
Zn	66	72	1	No Gas	0.000	ug/l	1073.71
Zn	66	72	3	He	0.000	ug/l	262.23
As	75	72	1	No Gas	0.000	ug/l	8480.61
As	75	72	3	He	0.000	ug/l	237.60
Se	78	72	2	H2	0.000	ug/l	32.67
Br	79	72	1	No Gas	0.000	ug/l	17162.86
Br	79	72	2	H2	0.000	ug/l	9803.92
Se	82	72	1	No Gas	0.000	ug/l	328.09
Kr	84	72	1	No Gas		ug/l	11641.65
Sr	88	72	1	No Gas	0.000	ug/l	1796.57
Sr	88	72	3	He	0.000	ug/l	350.01
Mo	95	115	1	No Gas	0.000	ug/l	144.45
Mo	95	115	3	He	0.000	ug/l	61.11
Mo	98	115	1	No Gas	0.000	ug/l	244.45
Ag	107	115	1	No Gas	0.000	ug/l	2592.62
Ag	109	115	1	No Gas	0.000	ug/l	2672.00
Cd	111	115	1	No Gas	0.000	ug/l	-53.54

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.000	ug/l	14.78
Cd	114	115	1	No Gas	0.000	ug/l	-251.45
Cd	114	115	3	He	0.000	ug/l	30.71
Sn	118	115	1	No Gas	0.000	ug/l	3373.73
Sn	118	115	3	He	0.000	ug/l	866.70
Sb	121	115	1	No Gas	0.000	ug/l	963.13
Sb	121	115	3	He	0.000	ug/l	241.70
Sb	123	115	1	No Gas	0.000	ug/l	772.77
Sb	123	115	3	He	0.000	ug/l	187.35
Ba	135	115	1	No Gas	0.000	ug/l	322.70
Ba	137	115	1	No Gas	0.000	ug/l	512.33
La	139	115	3	He	0.000	ug/l	65.56
Ce	140	115	3	He	0.000	ug/l	116.67
Hg	201	209	1	No Gas	0.000	ug/l	75.99
Hg	202	209	1	No Gas	0.000	ug/l	245.62
Hg	202	209	3	He	0.000	ug/l	106.65
Tl	203	209	3	He	0.000	ug/l	3861.45
Tl	205	209	1	No Gas	0.000	ug/l	15237.01
Tl	205	209	3	He	0.000	ug/l	9297.64
[Pb]	206	209	1	No Gas	0.000	ug/l	1905.71
[Pb]	207	209	1	No Gas	0.000	ug/l	1655.67
Pb	208	209	1	No Gas	0.000	ug/l	7428.64
Th	232	209	3	He	0.000	ug/l	479.54
U	238	209	1	No Gas	0.000	ug/l	529.20

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4854396.90	100.0
Sc	45	2	H2	3494249.54	100.0
Sc	45	3	He	454155.02	100.0
Ge	72	1	No Gas	1704052.20	100.0
Ge	72	2	H2	1353110.38	100.0
Ge	72	3	He	309374.49	100.0
In	115	1	No Gas	17641341.81	100.0
In	115	3	He	4151049.07	100.0
Tb	159	1	No Gas	21607548.66	100.0
Tb	159	3	He	8136944.31	100.0
Ho	165	1	No Gas	21522583.91	100.0
Ho	165	3	He	8213005.84	100.0
Lu	175	1	No Gas	21247962.01	100.0
Lu	175	3	He	6857077.98	100.0
Bi	209	1	No Gas	15971819.82	100.0
Bi	209	3	He	6341522.86	100.0

# ICPMS207-B Analytical Data

**Sample Name** 0.025 ppb STD  
**File Name** 138CAL.S.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-07 01:29:49  
**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	0.291	ug/l	8114.77
Be	9	45	1	No Gas	0.029	ug/l	75.99
B	11	45	1	No Gas	-0.337	ug/l	2536.57
Na	23	45	3	He	3.593	ug/l	64563.27
Mg	24	45	3	He	7.678	ug/l	6345.46
Al	27	45	1	No Gas	-0.648	ug/l	24474.58
Si	28	45	2	H2	0.149	ug/l	12254.61
K	39	72	3	He	4.276	ug/l	82076.08
Ca	40	72	2	H2	8.555	ug/l	184535.84
Ti	47	72	1	No Gas	0.053	ug/l	283.62
V	51	72	1	No Gas	1.676	ug/l	70332.29
V	51	72	3	He	0.176	ug/l	16402.50
Cr	52	72	1	No Gas	0.074	ug/l	38547.66
Cr	52	72	3	He	0.032	ug/l	843.36
Mn	55	72	1	No Gas	0.036	ug/l	8755.28
Mn	55	72	3	He	0.029	ug/l	526.90
Fe	56	72	2	H2	-2.098	ug/l	35861.32
Fe	56	72	3	He	0.708	ug/l	13743.63
Co	59	72	1	No Gas	0.033	ug/l	1547.01
Ni	60	72	1	No Gas	0.039	ug/l	851.67
Ni	60	72	3	He	0.044	ug/l	290.00
Cu	63	72	1	No Gas	0.012	ug/l	2928.14
Cu	63	72	3	He	0.013	ug/l	1009.17
Cu	65	72	1	No Gas	0.025	ug/l	1343.28
Zn	66	72	1	No Gas	0.150	ug/l	2001.66
Zn	66	72	3	He	0.122	ug/l	455.57
As	75	72	1	No Gas	-0.136	ug/l	7517.12
As	75	72	3	He	0.037	ug/l	286.80
Se	78	72	2	H2	0.024	ug/l	52.66
Br	79	72	1	No Gas	-12.425	ug/l	16709.79
Br	79	72	2	H2	15.509	ug/l	10063.57
Se	82	72	1	No Gas	0.050	ug/l	350.09
Kr	84	72	1	No Gas		ug/l	11505.13
Sr	88	72	1	No Gas	0.032	ug/l	3899.47
Sr	88	72	3	He	0.035	ug/l	668.91
Mo	95	115	1	No Gas	0.026	ug/l	518.90
Mo	95	115	3	He	0.025	ug/l	184.45
Mo	98	115	1	No Gas	0.027	ug/l	905.59
Ag	107	115	1	No Gas	0.023	ug/l	3456.48
Ag	109	115	1	No Gas	0.018	ug/l	3330.40
Cd	111	115	1	No Gas	0.032	ug/l	225.73

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.028	ug/l	88.00
Cd	114	115	1	No Gas	0.030	ug/l	331.23
Cd	114	115	3	He	0.030	ug/l	223.20
Sn	118	115	1	No Gas	0.088	ug/l	5573.39
Sn	118	115	3	He	0.092	ug/l	1470.09
Sb	121	115	1	No Gas	0.023	ug/l	1831.31
Sb	121	115	3	He	0.024	ug/l	464.05
Sb	123	115	1	No Gas	0.022	ug/l	1408.88
Sb	123	115	3	He	0.023	ug/l	357.04
Ba	135	115	1	No Gas	0.022	ug/l	485.71
Ba	137	115	1	No Gas	0.015	ug/l	698.64
La	139	115	3	He	0.027	ug/l	1093.38
Ce	140	115	3	He	0.026	ug/l	1148.94
Hg	201	209	1	No Gas	0.001	ug/l	78.65
Hg	202	209	1	No Gas	0.001	ug/l	256.62
Hg	202	209	3	He	0.000	ug/l	105.98
Tl	203	209	3	He	-0.061	ug/l	2956.19
Tl	205	209	1	No Gas	-0.043	ug/l	11888.87
Tl	205	209	3	He	-0.065	ug/l	7063.39
[Pb]	206	209	1	No Gas	0.026	ug/l	2626.95
[Pb]	207	209	1	No Gas	0.026	ug/l	2270.21
Pb	208	209	1	No Gas	0.027	ug/l	10354.97
Th	232	209	3	He	0.018	ug/l	1279.91
U	238	209	1	No Gas	0.025	ug/l	3194.09

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4857021.76	100.1
Sc	45	2	H2	3513501.19	100.6
Sc	45	3	He	450309.80	99.2
Ge	72	1	No Gas	1703048.35	99.9
Ge	72	2	H2	1326092.50	98.0
Ge	72	3	He	311203.00	100.6
In	115	1	No Gas	17498851.31	99.2
In	115	3	He	4065265.36	97.9
Tb	159	1	No Gas	21835253.86	101.1
Tb	159	3	He	8024838.62	98.6
Ho	165	1	No Gas	21529384.04	100.0
Ho	165	3	He	8125801.66	98.9
Lu	175	1	No Gas	21346080.74	100.5
Lu	175	3	He	6907062.03	100.7
Bi	209	1	No Gas	15973547.14	100.0
Bi	209	3	He	6200342.35	97.8

# ICPMS207-B Analytical Data

**Sample Name** 0.05 ppb STD  
**File Name** 139CAL.S.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-07 01:36:08  
**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	0.588	ug/l	9658.96
Be	9	45	1	No Gas	0.053	ug/l	124.97
B	11	45	1	No Gas	-0.697	ug/l	2242.40
Na	23	45	3	He	12.254	ug/l	73079.80
Mg	24	45	3	He	15.022	ug/l	10353.07
Al	27	45	1	No Gas	-0.477	ug/l	27715.86
Si	28	45	2	H2	-0.096	ug/l	11868.81
K	39	72	3	He	14.729	ug/l	87780.70
Ca	40	72	2	H2	16.143	ug/l	266235.36
Ti	47	72	1	No Gas	0.361	ug/l	995.35
V	51	72	1	No Gas	0.988	ug/l	50090.74
V	51	72	3	He	0.357	ug/l	17222.32
Cr	52	72	1	No Gas	0.138	ug/l	40665.68
Cr	52	72	3	He	0.066	ug/l	1077.82
Mn	55	72	1	No Gas	0.068	ug/l	10136.72
Mn	55	72	3	He	0.059	ug/l	671.22
Fe	56	72	2	H2	-1.276	ug/l	57191.53
Fe	56	72	3	He	1.530	ug/l	19023.10
Co	59	72	1	No Gas	0.071	ug/l	2867.94
Ni	60	72	1	No Gas	0.072	ug/l	1107.86
Ni	60	72	3	He	0.069	ug/l	352.23
Cu	63	72	1	No Gas	0.046	ug/l	3619.90
Cu	63	72	3	He	0.063	ug/l	1355.46
Cu	65	72	1	No Gas	0.061	ug/l	1692.78
Zn	66	72	1	No Gas	0.129	ug/l	1885.19
Zn	66	72	3	He	0.107	ug/l	420.01
As	75	72	1	No Gas	0.199	ug/l	9952.92
As	75	72	3	He	0.074	ug/l	326.47
Se	78	72	2	H2	0.059	ug/l	82.11
Br	79	72	1	No Gas	-34.032	ug/l	16057.12
Br	79	72	2	H2	-1.317	ug/l	9524.26
Se	82	72	1	No Gas	0.274	ug/l	453.14
Kr	84	72	1	No Gas		ug/l	11638.30
Sr	88	72	1	No Gas	0.063	ug/l	6052.65
Sr	88	72	3	He	0.067	ug/l	943.37
Mo	95	115	1	No Gas	0.060	ug/l	1021.19
Mo	95	115	3	He	0.048	ug/l	301.11
Mo	98	115	1	No Gas	0.051	ug/l	1494.05
Ag	107	115	1	No Gas	0.034	ug/l	3852.74
Ag	109	115	1	No Gas	0.036	ug/l	3968.82
Cd	111	115	1	No Gas	0.063	ug/l	494.83

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.058	ug/l	166.45
Cd	114	115	1	No Gas	0.055	ug/l	812.29
Cd	114	115	3	He	0.058	ug/l	404.23
Sn	118	115	1	No Gas	0.129	ug/l	6561.88
Sn	118	115	3	He	0.115	ug/l	1637.89
Sb	121	115	1	No Gas	0.048	ug/l	2767.89
Sb	121	115	3	He	0.051	ug/l	734.43
Sb	123	115	1	No Gas	0.046	ug/l	2114.71
Sb	123	115	3	He	0.049	ug/l	563.07
Ba	135	115	1	No Gas	0.054	ug/l	731.91
Ba	137	115	1	No Gas	0.048	ug/l	1137.80
La	139	115	3	He	0.054	ug/l	2116.84
Ce	140	115	3	He	0.057	ug/l	2414.67
Hg	201	209	1	No Gas	0.002	ug/l	84.32
Hg	202	209	1	No Gas	-0.001	ug/l	230.29
Hg	202	209	3	He	-0.003	ug/l	91.98
Tl	203	209	3	He	-0.073	ug/l	2836.11
Tl	205	209	1	No Gas	-0.036	ug/l	12286.98
Tl	205	209	3	He	-0.079	ug/l	6698.38
[Pb]	206	209	1	No Gas	0.056	ug/l	3392.68
[Pb]	207	209	1	No Gas	0.054	ug/l	2900.34
Pb	208	209	1	No Gas	0.056	ug/l	13328.25
Th	232	209	3	He	0.039	ug/l	2266.45
U	238	209	1	No Gas	0.055	ug/l	6213.24

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	5045608.60	103.9
Sc	45	2	H2	3560853.72	101.9
Sc	45	3	He	448350.34	98.7
Ge	72	1	No Gas	1714707.07	100.6
Ge	72	2	H2	1320707.08	97.6
Ge	72	3	He	303638.23	98.1
In	115	1	No Gas	17422881.15	98.8
In	115	3	He	4087843.62	98.5
Tb	159	1	No Gas	21613002.45	100.0
Tb	159	3	He	7985307.00	98.1
Ho	165	1	No Gas	21343456.04	99.2
Ho	165	3	He	8013561.35	97.6
Lu	175	1	No Gas	21317200.82	100.3
Lu	175	3	He	6775145.06	98.8
Bi	209	1	No Gas	15782855.73	98.8
Bi	209	3	He	6272077.99	98.9

# ICPMS207-B Analytical Data

**Sample Name** 0.10 ppb STD  
**File Name** 140CAL5.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-07 01:42:26  
**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	1.396	ug/l	12563.58
Be	9	45	1	No Gas	0.115	ug/l	233.62
B	11	45	1	No Gas	-0.633	ug/l	2236.40
Na	23	45	3	He	30.348	ug/l	90617.97
Mg	24	45	3	He	31.850	ug/l	19424.10
Al	27	45	1	No Gas	-1.810	ug/l	9489.73
Si	28	45	2	H2	0.156	ug/l	12195.21
K	39	72	3	He	29.435	ug/l	99077.46
Ca	40	72	2	H2	30.837	ug/l	427112.16
Ti	47	72	1	No Gas	0.123	ug/l	450.46
V	51	72	1	No Gas	1.830	ug/l	76136.70
V	51	72	3	He	0.472	ug/l	18083.36
Cr	52	72	1	No Gas	0.220	ug/l	43341.44
Cr	52	72	3	He	0.130	ug/l	1561.21
Mn	55	72	1	No Gas	0.127	ug/l	12620.43
Mn	55	72	3	He	0.114	ug/l	970.17
Fe	56	72	2	H2	0.296	ug/l	98543.80
Fe	56	72	3	He	3.129	ug/l	30086.09
Co	59	72	1	No Gas	0.132	ug/l	4987.64
Ni	60	72	1	No Gas	0.118	ug/l	1470.50
Ni	60	72	3	He	0.129	ug/l	525.57
Cu	63	72	1	No Gas	0.095	ug/l	4631.93
Cu	63	72	3	He	0.111	ug/l	1715.43
Cu	65	72	1	No Gas	0.110	ug/l	2179.71
Zn	66	72	1	No Gas	0.156	ug/l	2068.19
Zn	66	72	3	He	0.118	ug/l	440.01
As	75	72	1	No Gas	0.073	ug/l	9114.27
As	75	72	3	He	0.147	ug/l	421.53
Se	78	72	2	H2	0.114	ug/l	128.78
Br	79	72	1	No Gas	-19.163	ug/l	16719.90
Br	79	72	2	H2	1.008	ug/l	9620.82
Se	82	72	1	No Gas	0.068	ug/l	364.48
Kr	84	72	1	No Gas		ug/l	13076.72
Sr	88	72	1	No Gas	0.131	ug/l	10669.50
Sr	88	72	3	He	0.124	ug/l	1460.09
Mo	95	115	1	No Gas	0.114	ug/l	1815.68
Mo	95	115	3	He	0.113	ug/l	637.80
Mo	98	115	1	No Gas	0.111	ug/l	2971.44
Ag	107	115	1	No Gas	0.057	ug/l	4774.06
Ag	109	115	1	No Gas	0.056	ug/l	4716.02
Cd	111	115	1	No Gas	0.118	ug/l	976.22



# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.116	ug/l	321.45
Cd	114	115	1	No Gas	0.118	ug/l	2033.34
Cd	114	115	3	He	0.117	ug/l	792.09
Sn	118	115	1	No Gas	0.167	ug/l	7580.40
Sn	118	115	3	He	0.171	ug/l	2026.82
Sb	121	115	1	No Gas	0.103	ug/l	4894.68
Sb	121	115	3	He	0.105	ug/l	1259.85
Sb	123	115	1	No Gas	0.105	ug/l	3855.92
Sb	123	115	3	He	0.104	ug/l	990.14
Ba	135	115	1	No Gas	0.114	ug/l	1201.01
Ba	137	115	1	No Gas	0.101	ug/l	1846.47
La	139	115	3	He	0.117	ug/l	4558.55
Ce	140	115	3	He	0.110	ug/l	4573.01
Hg	201	209	1	No Gas	0.002	ug/l	86.65
Hg	202	209	1	No Gas	0.001	ug/l	257.62
Hg	202	209	3	He	-0.001	ug/l	102.98
Tl	203	209	3	He	-0.023	ug/l	3509.88
Tl	205	209	1	No Gas	0.017	ug/l	16650.55
Tl	205	209	3	He	-0.026	ug/l	8353.97
[Pb]	206	209	1	No Gas	0.110	ug/l	4943.17
[Pb]	207	209	1	No Gas	0.114	ug/l	4370.74
Pb	208	209	1	No Gas	0.111	ug/l	19571.25
Th	232	209	3	He	0.087	ug/l	4482.57
U	238	209	1	No Gas	0.109	ug/l	12063.15

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4873877.94	100.4
Sc	45	2	H2	3491177.18	99.9
Sc	45	3	He	444115.05	97.8
Ge	72	1	No Gas	1728878.99	101.5
Ge	72	2	H2	1324951.82	97.9
Ge	72	3	He	305028.38	98.6
In	115	1	No Gas	17526820.08	99.4
In	115	3	He	4106800.59	98.9
Tb	159	1	No Gas	21509030.77	99.5
Tb	159	3	He	8051908.87	99.0
Ho	165	1	No Gas	21264183.02	98.8
Ho	165	3	He	8139214.50	99.1
Lu	175	1	No Gas	21375305.59	100.6
Lu	175	3	He	6833552.22	99.7
Bi	209	1	No Gas	16013356.38	100.3
Bi	209	3	He	6266008.50	98.8

# ICPMS207-B Analytical Data

**Sample Name** 0.5 ppb STD  
**File Name** 141CAL.S.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-07 01:48:44  
**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	6.711	ug/l	34455.01
Be	9	45	1	No Gas	0.550	ug/l	1044.16
B	11	45	1	No Gas	-0.379	ug/l	2549.24
Na	23	45	3	He	136.465	ug/l	199409.53
Mg	24	45	3	He	146.757	ug/l	82816.84
Al	27	45	1	No Gas	-1.319	ug/l	16151.06
Si	28	45	2	H2	1.267	ug/l	15397.29
K	39	72	3	He	133.492	ug/l	176514.61
Ca	40	72	2	H2	145.996	ug/l	1697558.96
Ti	47	72	1	No Gas	0.540	ug/l	1433.18
V	51	72	1	No Gas	1.164	ug/l	55954.11
V	51	72	3	He	0.793	ug/l	20306.30
Cr	52	72	1	No Gas	0.589	ug/l	54419.51
Cr	52	72	3	He	0.543	ug/l	4656.32
Mn	55	72	1	No Gas	0.556	ug/l	30514.47
Mn	55	72	3	He	0.556	ug/l	3354.38
Fe	56	72	2	H2	11.520	ug/l	395713.24
Fe	56	72	3	He	14.364	ug/l	107462.81
Co	59	72	1	No Gas	0.569	ug/l	20184.05
Ni	60	72	1	No Gas	0.569	ug/l	4990.96
Ni	60	72	3	He	0.574	ug/l	1791.23
Cu	63	72	1	No Gas	0.553	ug/l	13798.06
Cu	63	72	3	He	0.597	ug/l	5310.91
Cu	65	72	1	No Gas	0.565	ug/l	6606.16
Zn	66	72	1	No Gas	0.649	ug/l	5205.82
Zn	66	72	3	He	0.688	ug/l	1316.73
As	75	72	1	No Gas	0.502	ug/l	12320.14
As	75	72	3	He	0.565	ug/l	956.14
Se	78	72	2	H2	0.556	ug/l	510.23
Br	79	72	1	No Gas	-45.776	ug/l	15880.56
Br	79	72	2	H2	-14.403	ug/l	9241.30
Se	82	72	1	No Gas	0.529	ug/l	575.81
Kr	84	72	1	No Gas		ug/l	11621.67
Sr	88	72	1	No Gas	0.577	ug/l	41100.47
Sr	88	72	3	He	0.573	ug/l	5498.86
Mo	95	115	1	No Gas	0.496	ug/l	7465.34
Mo	95	115	3	He	0.522	ug/l	2735.84
Mo	98	115	1	No Gas	0.485	ug/l	12291.55
Ag	107	115	1	No Gas	0.219	ug/l	11193.58
Ag	109	115	1	No Gas	0.221	ug/l	10970.66
Cd	111	115	1	No Gas	0.522	ug/l	4535.03

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.538	ug/l	1450.41
Cd	114	115	1	No Gas	0.533	ug/l	10157.72
Cd	114	115	3	He	0.538	ug/l	3539.67
Sn	118	115	1	No Gas	0.570	ug/l	17942.55
Sn	118	115	3	He	0.563	ug/l	4741.94
Sb	121	115	1	No Gas	0.504	ug/l	20488.22
Sb	121	115	3	He	0.504	ug/l	5193.15
Sb	123	115	1	No Gas	0.499	ug/l	15655.59
Sb	123	115	3	He	0.508	ug/l	4130.69
Ba	135	115	1	No Gas	0.542	ug/l	4538.42
Ba	137	115	1	No Gas	0.538	ug/l	7666.92
La	139	115	3	He	0.514	ug/l	19842.02
Ce	140	115	3	He	0.515	ug/l	21048.23
Hg	201	209	1	No Gas	0.009	ug/l	117.64
Hg	202	209	1	No Gas	0.009	ug/l	341.94
Hg	202	209	3	He	0.007	ug/l	135.31
Tl	203	209	3	He	0.351	ug/l	8576.21
Tl	205	209	1	No Gas	0.418	ug/l	47390.61
Tl	205	209	3	He	0.350	ug/l	20317.58
[Pb]	206	209	1	No Gas	0.535	ug/l	16391.24
[Pb]	207	209	1	No Gas	0.521	ug/l	13845.03
Pb	208	209	1	No Gas	0.525	ug/l	63491.19
Th	232	209	3	He	0.439	ug/l	20686.59
U	238	209	1	No Gas	0.515	ug/l	54156.35

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4965793.13	102.3
Sc	45	2	H2	3667691.58	105.0
Sc	45	3	He	448458.21	98.7
Ge	72	1	No Gas	1741659.32	102.2
Ge	72	2	H2	1334973.51	98.7
Ge	72	3	He	305791.33	98.8
In	115	1	No Gas	17704275.92	100.4
In	115	3	He	4131910.06	99.5
Tb	159	1	No Gas	21719003.45	100.5
Tb	159	3	He	8099257.88	99.5
Ho	165	1	No Gas	21483598.47	99.8
Ho	165	3	He	8054033.02	98.1
Lu	175	1	No Gas	21727998.49	102.3
Lu	175	3	He	6799575.12	99.2
Bi	209	1	No Gas	15750271.12	98.6
Bi	209	3	He	6288012.72	99.2

# ICPMS207-B Analytical Data

**Sample Name** 1 ppb STD  
**File Name** 142CAL.S.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-07 01:55:01  
**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	14.890	ug/l	67085.45
Be	9	45	1	No Gas	1.219	ug/l	2258.72
B	11	45	1	No Gas	0.091	ug/l	3018.19
Na	23	45	3	He	297.615	ug/l	366105.94
Mg	24	45	3	He	323.669	ug/l	181522.61
Al	27	45	1	No Gas	-0.584	ug/l	25595.27
Si	28	45	2	H2	4.024	ug/l	21107.33
K	39	72	3	He	297.808	ug/l	300512.63
Ca	40	72	2	H2	317.467	ug/l	3502262.03
Ti	47	72	1	No Gas	1.149	ug/l	2801.43
V	51	72	1	No Gas	3.049	ug/l	111444.73
V	51	72	3	He	1.512	ug/l	25368.52
Cr	52	72	1	No Gas	1.392	ug/l	76102.59
Cr	52	72	3	He	1.233	ug/l	9887.80
Mn	55	72	1	No Gas	1.314	ug/l	60664.68
Mn	55	72	3	He	1.211	ug/l	6926.25
Fe	56	72	2	H2	29.767	ug/l	857804.39
Fe	56	72	3	He	31.819	ug/l	229074.60
Co	59	72	1	No Gas	1.309	ug/l	44859.98
Ni	60	72	1	No Gas	1.334	ug/l	10692.76
Ni	60	72	3	He	1.292	ug/l	3859.42
Cu	63	72	1	No Gas	1.287	ug/l	27822.96
Cu	63	72	3	He	1.317	ug/l	10708.77
Cu	65	72	1	No Gas	1.275	ug/l	13203.95
Zn	66	72	1	No Gas	1.387	ug/l	9649.15
Zn	66	72	3	He	1.474	ug/l	2543.57
As	75	72	1	No Gas	1.411	ug/l	18488.69
As	75	72	3	He	1.251	ug/l	1844.21
Se	78	72	2	H2	1.231	ug/l	1065.38
Br	79	72	1	No Gas	-23.262	ug/l	16330.21
Br	79	72	2	H2	1.476	ug/l	9487.65
Se	82	72	1	No Gas	1.585	ug/l	1033.14
Kr	84	72	1	No Gas		ug/l	14305.42
Sr	88	72	1	No Gas	1.337	ug/l	90882.58
Sr	88	72	3	He	1.227	ug/l	11452.40
Mo	95	115	1	No Gas	1.141	ug/l	16772.16
Mo	95	115	3	He	1.157	ug/l	5846.79
Mo	98	115	1	No Gas	1.105	ug/l	27341.84
Ag	107	115	1	No Gas	0.496	ug/l	21742.66
Ag	109	115	1	No Gas	0.509	ug/l	21426.07
Cd	111	115	1	No Gas	1.169	ug/l	10090.48

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	1.215	ug/l	3179.13
Cd	114	115	1	No Gas	1.192	ug/l	22740.95
Cd	114	115	3	He	1.213	ug/l	7753.28
Sn	118	115	1	No Gas	1.281	ug/l	35637.63
Sn	118	115	3	He	1.254	ug/l	9270.87
Sb	121	115	1	No Gas	1.146	ug/l	44742.12
Sb	121	115	3	He	1.166	ug/l	11418.76
Sb	123	115	1	No Gas	1.138	ug/l	34243.89
Sb	123	115	3	He	1.174	ug/l	9078.17
Ba	135	115	1	No Gas	1.248	ug/l	9900.59
Ba	137	115	1	No Gas	1.243	ug/l	16823.43
La	139	115	3	He	1.184	ug/l	44536.80
Ce	140	115	3	He	1.175	ug/l	46752.84
Hg	201	209	1	No Gas	0.020	ug/l	177.63
Hg	202	209	1	No Gas	0.020	ug/l	475.91
Hg	202	209	3	He	0.018	ug/l	182.30
Tl	203	209	3	He	0.957	ug/l	16643.71
Tl	205	209	1	No Gas	1.037	ug/l	96569.81
Tl	205	209	3	He	0.977	ug/l	39960.24
[Pb]	206	209	1	No Gas	1.164	ug/l	33854.07
[Pb]	207	209	1	No Gas	1.167	ug/l	29316.72
Pb	208	209	1	No Gas	1.171	ug/l	134103.32
Th	232	209	3	He	1.039	ug/l	47952.27
U	238	209	1	No Gas	1.150	ug/l	121620.08

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4915850.82	101.3
Sc	45	2	H2	3547603.75	101.5
Sc	45	3	He	451942.31	99.5
Ge	72	1	No Gas	1703081.04	99.9
Ge	72	2	H2	1304962.20	96.4
Ge	72	3	He	307925.05	99.5
In	115	1	No Gas	17477666.06	99.1
In	115	3	He	4032519.84	97.1
Tb	159	1	No Gas	21561263.63	99.8
Tb	159	3	He	8067734.22	99.1
Ho	165	1	No Gas	21257004.59	98.8
Ho	165	3	He	8093782.25	98.5
Lu	175	1	No Gas	21414605.94	100.8
Lu	175	3	He	6726187.41	98.1
Bi	209	1	No Gas	15934061.81	99.8
Bi	209	3	He	6244824.24	98.5

# ICPMS207-B Analytical Data

**Sample Name** 10 ppb STD  
**File Name** 143CAL.S.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-07 02:01:18  
**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	123.364	ug/l	512761.88
Be	9	45	1	No Gas	10.244	ug/l	19126.60
B	11	45	1	No Gas	8.805	ug/l	12394.74
Na	23	45	3	He	2693.086	ug/l	2844064.57
Mg	24	45	3	He	2770.739	ug/l	1550666.04
Al	27	45	1	No Gas	8.498	ug/l	146699.67
Si	28	45	2	H2	39.170	ug/l	101874.50
K	39	72	3	He	2684.846	ug/l	2122681.06
Ca	40	72	2	H2	2578.546	ug/l	28919799.20
Ti	47	72	1	No Gas	10.111	ug/l	23788.16
V	51	72	1	No Gas	11.242	ug/l	363874.92
V	51	72	3	He	10.142	ug/l	86046.08
Cr	52	72	1	No Gas	10.867	ug/l	351610.53
Cr	52	72	3	He	10.258	ug/l	79358.25
Mn	55	72	1	No Gas	10.911	ug/l	458000.01
Mn	55	72	3	He	10.241	ug/l	56908.98
Fe	56	72	2	H2	266.744	ug/l	7253653.66
Fe	56	72	3	He	281.561	ug/l	1994972.99
Co	59	72	1	No Gas	10.820	ug/l	373854.24
Ni	60	72	1	No Gas	10.957	ug/l	85251.91
Ni	60	72	3	He	10.652	ug/l	31234.43
Cu	63	72	1	No Gas	10.871	ug/l	218617.82
Cu	63	72	3	He	10.994	ug/l	84246.61
Cu	65	72	1	No Gas	10.982	ug/l	107053.32
Zn	66	72	1	No Gas	10.809	ug/l	69083.52
Zn	66	72	3	He	10.587	ug/l	16975.49
As	75	72	1	No Gas	10.200	ug/l	82302.57
As	75	72	3	He	10.386	ug/l	13839.41
Se	78	72	2	H2	10.437	ug/l	9149.32
Br	79	72	1	No Gas	-14.113	ug/l	16943.04
Br	79	72	2	H2	4.707	ug/l	9977.01
Se	82	72	1	No Gas	11.252	ug/l	5422.20
Kr	84	72	1	No Gas		ug/l	18365.28
Sr	88	72	1	No Gas	11.143	ug/l	756305.99
Sr	88	72	3	He	10.388	ug/l	96115.87
Mo	95	115	1	No Gas	9.820	ug/l	142598.93
Mo	95	115	3	He	10.088	ug/l	51135.73
Mo	98	115	1	No Gas	9.679	ug/l	236618.29
Ag	107	115	1	No Gas	4.161	ug/l	162767.66
Ag	109	115	1	No Gas	4.230	ug/l	158202.25
Cd	111	115	1	No Gas	10.104	ug/l	87254.01

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	10.377	ug/l	27364.69
Cd	114	115	1	No Gas	10.290	ug/l	197409.00
Cd	114	115	3	He	10.411	ug/l	67111.28
Sn	118	115	1	No Gas	10.253	ug/l	260747.19
Sn	118	115	3	He	10.081	ug/l	69409.12
Sb	121	115	1	No Gas	9.906	ug/l	377953.67
Sb	121	115	3	He	10.023	ug/l	97515.03
Sb	123	115	1	No Gas	9.882	ug/l	290130.62
Sb	123	115	3	He	10.004	ug/l	76916.64
Ba	135	115	1	No Gas	10.545	ug/l	80950.33
Ba	137	115	1	No Gas	10.651	ug/l	139730.26
La	139	115	3	He	10.073	ug/l	383062.29
Ce	140	115	3	He	10.006	ug/l	401961.72
Hg	201	209	1	No Gas	0.204	ug/l	1071.50
Hg	202	209	1	No Gas	0.198	ug/l	2440.74
Hg	202	209	3	He	0.200	ug/l	969.84
Tl	203	209	3	He	9.752	ug/l	133775.77
Tl	205	209	1	No Gas	10.177	ug/l	792024.67
Tl	205	209	3	He	9.954	ug/l	320840.67
[Pb]	206	209	1	No Gas	10.206	ug/l	274559.94
[Pb]	207	209	1	No Gas	10.092	ug/l	234583.86
Pb	208	209	1	No Gas	10.298	ug/l	1091736.09
Th	232	209	3	He	9.328	ug/l	424009.97
U	238	209	1	No Gas	10.174	ug/l	1043460.71

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4993345.00	102.9
Sc	45	2	H2	3601680.01	103.1
Sc	45	3	He	455687.43	100.3
Ge	72	1	No Gas	1732622.08	101.7
Ge	72	2	H2	1356709.14	100.3
Ge	72	3	He	313535.19	101.3
In	115	1	No Gas	17398637.87	98.6
In	115	3	He	4081475.83	98.3
Tb	159	1	No Gas	21647910.48	100.2
Tb	159	3	He	8034047.72	98.7
Ho	165	1	No Gas	21531616.69	100.0
Ho	165	3	He	8083539.87	98.4
Lu	175	1	No Gas	21345094.76	100.5
Lu	175	3	He	6759146.30	98.6
Bi	209	1	No Gas	15513044.40	97.1
Bi	209	3	He	6203368.67	97.8

# ICPMS207-B Analytical Data

**Sample Name** 50 ppb STD  
**File Name** 144CAL.S.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-07 02:07:34  
**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	610.853	ug/l	2519140.51
Be	9	45	1	No Gas	52.652	ug/l	98524.34
B	11	45	1	No Gas	50.698	ug/l	57418.48
Na	23	45	3	He	12516.088	ug/l	13195830.50
Mg	24	45	3	He	12475.221	ug/l	7082841.74
Al	27	45	1	No Gas	51.614	ug/l	721982.80
Si	28	45	2	H2	210.144	ug/l	488700.09
K	39	72	3	He	12265.058	ug/l	9335134.38
Ca	40	72	2	H2	12033.992	ug/l	131046083.13
Ti	47	72	1	No Gas	51.889	ug/l	121120.58
V	51	72	1	No Gas	51.747	ug/l	1601643.22
V	51	72	3	He	50.441	ug/l	364135.72
Cr	52	72	1	No Gas	53.973	ug/l	1596077.00
Cr	52	72	3	He	51.036	ug/l	389209.51
Mn	55	72	1	No Gas	55.245	ug/l	2284060.90
Mn	55	72	3	He	50.288	ug/l	275724.56
Fe	56	72	2	H2	1259.547	ug/l	33026271.36
Fe	56	72	3	He	1256.564	ug/l	8800311.15
Co	59	72	1	No Gas	54.285	ug/l	1869175.00
Ni	60	72	1	No Gas	54.258	ug/l	419027.92
Ni	60	72	3	He	51.628	ug/l	149543.05
Cu	63	72	1	No Gas	53.303	ug/l	1058469.33
Cu	63	72	3	He	53.678	ug/l	404416.68
Cu	65	72	1	No Gas	53.531	ug/l	516198.31
Zn	66	72	1	No Gas	54.615	ug/l	343734.56
Zn	66	72	3	He	52.828	ug/l	82957.64
As	75	72	1	No Gas	51.837	ug/l	382285.75
As	75	72	3	He	51.814	ug/l	67523.38
Se	78	72	2	H2	52.513	ug/l	44713.85
Br	79	72	1	No Gas	-63.698	ug/l	15104.67
Br	79	72	2	H2	-37.512	ug/l	8485.70
Se	82	72	1	No Gas	55.665	ug/l	25454.68
Kr	84	72	1	No Gas		ug/l	35566.57
Sr	88	72	1	No Gas	55.214	ug/l	3732097.05
Sr	88	72	3	He	50.969	ug/l	466358.54
Mo	95	115	1	No Gas	50.448	ug/l	727836.00
Mo	95	115	3	He	52.344	ug/l	255845.14
Mo	98	115	1	No Gas	49.313	ug/l	1197691.19
Ag	107	115	1	No Gas	20.197	ug/l	775821.21
Ag	109	115	1	No Gas	20.571	ug/l	754876.03
Cd	111	115	1	No Gas	50.046	ug/l	429947.35



# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	52.256	ug/l	132945.14
Cd	114	115	1	No Gas	50.773	ug/l	969496.38
Cd	114	115	3	He	52.085	ug/l	323910.99
Sn	118	115	1	No Gas	51.875	ug/l	1298314.98
Sn	118	115	3	He	51.690	ug/l	340034.10
Sb	121	115	1	No Gas	51.569	ug/l	1952536.74
Sb	121	115	3	He	52.152	ug/l	488733.62
Sb	123	115	1	No Gas	51.095	ug/l	1488550.87
Sb	123	115	3	He	52.320	ug/l	387459.82
Ba	135	115	1	No Gas	51.116	ug/l	388983.09
Ba	137	115	1	No Gas	52.619	ug/l	684421.54
La	139	115	3	He	48.117	ug/l	1765857.27
Ce	140	115	3	He	48.867	ug/l	1893854.78
Hg	201	209	1	No Gas	0.951	ug/l	4592.87
Hg	202	209	1	No Gas	0.955	ug/l	10555.72
Hg	202	209	3	He	0.950	ug/l	4072.14
Tl	203	209	3	He	48.631	ug/l	631101.12
Tl	205	209	1	No Gas	50.767	ug/l	3790455.50
Tl	205	209	3	He	50.089	ug/l	1527292.05
[Pb]	206	209	1	No Gas	51.038	ug/l	1330092.89
[Pb]	207	209	1	No Gas	50.592	ug/l	1138871.54
Pb	208	209	1	No Gas	51.764	ug/l	5316499.32
Th	232	209	3	He	50.922	ug/l	2238300.21
U	238	209	1	No Gas	51.869	ug/l	5178177.90

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	5010302.34	103.2
Sc	45	2	H2	3572162.28	102.2
Sc	45	3	He	462731.02	101.9
Ge	72	1	No Gas	1727601.12	101.4
Ge	72	2	H2	1321335.12	97.7
Ge	72	3	He	310953.84	100.5
In	115	1	No Gas	17301763.38	98.1
In	115	3	He	3938960.38	94.9
Tb	159	1	No Gas	21251370.00	98.4
Tb	159	3	He	7836715.60	96.3
Ho	165	1	No Gas	21479835.54	99.8
Ho	165	3	He	7940596.57	96.7
Lu	175	1	No Gas	21478922.96	101.1
Lu	175	3	He	6643594.66	96.9
Bi	209	1	No Gas	15109141.38	94.6
Bi	209	3	He	6004071.01	94.7

# ICPMS207-B Analytical Data

**Sample Name** 100 ppb STD  
**File Name** 145CAL.S.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-07 02:13:39  
**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	1270.610	ug/l	5364623.68
Be	9	45	1	No Gas	99.948	ug/l	191692.35
B	11	45	1	No Gas	97.650	ug/l	110567.63
Na	23	45	3	He	25013.059	ug/l	26066910.17
Mg	24	45	3	He	25470.407	ug/l	14325704.79
Al	27	45	1	No Gas	107.754	ug/l	1507638.14
Si	28	45	2	H2	395.015	ug/l	893712.67
K	39	72	3	He	24813.696	ug/l	18623174.58
Ca	40	72	2	H2	25079.406	ug/l	270150277.43
Ti	47	72	1	No Gas	99.043	ug/l	231280.15
V	51	72	1	No Gas	100.107	ug/l	3082553.77
V	51	72	3	He	98.309	ug/l	688512.51
Cr	52	72	1	No Gas	102.148	ug/l	2990651.01
Cr	52	72	3	He	99.328	ug/l	749479.37
Mn	55	72	1	No Gas	103.095	ug/l	4260517.20
Mn	55	72	3	He	99.357	ug/l	539033.10
Fe	56	72	2	H2	2591.074	ug/l	67123608.74
Fe	56	72	3	He	2630.466	ug/l	18229358.72
Co	59	72	1	No Gas	105.082	ug/l	3622127.63
Ni	60	72	1	No Gas	104.966	ug/l	810923.86
Ni	60	72	3	He	100.537	ug/l	288160.96
Cu	63	72	1	No Gas	106.430	ug/l	2113230.35
Cu	63	72	3	He	102.694	ug/l	765250.11
Cu	65	72	1	No Gas	101.675	ug/l	980464.66
Zn	66	72	1	No Gas	101.929	ug/l	641171.09
Zn	66	72	3	He	101.317	ug/l	157295.73
As	75	72	1	No Gas	99.515	ug/l	726970.34
As	75	72	3	He	101.329	ug/l	130516.23
Se	78	72	2	H2	101.237	ug/l	85253.88
Br	79	72	1	No Gas	5.042	ug/l	17612.56
Br	79	72	2	H2	21.040	ug/l	10076.90
Se	82	72	1	No Gas	105.943	ug/l	48198.50
Kr	84	72	1	No Gas		ug/l	56121.15
Sr	88	72	1	No Gas	103.191	ug/l	6984688.82
Sr	88	72	3	He	99.108	ug/l	897489.15
Mo	95	115	1	No Gas	99.792	ug/l	1422851.56
Mo	95	115	3	He	98.818	ug/l	478930.81
Mo	98	115	1	No Gas	100.375	ug/l	2409260.40
Ag	107	115	1	No Gas	39.884	ug/l	1512166.31
Ag	109	115	1	No Gas	39.690	ug/l	1437325.90
Cd	111	115	1	No Gas	96.675	ug/l	821184.83

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	100.379	ug/l	253238.10
Cd	114	115	1	No Gas	101.506	ug/l	1916950.30
Cd	114	115	3	He	100.062	ug/l	617104.84
Sn	118	115	1	No Gas	99.034	ug/l	2447469.27
Sn	118	115	3	He	99.144	ug/l	646128.65
Sb	121	115	1	No Gas	99.223	ug/l	3712791.84
Sb	121	115	3	He	98.920	ug/l	919206.80
Sb	123	115	1	No Gas	99.463	ug/l	2863631.24
Sb	123	115	3	He	98.838	ug/l	725786.19
Ba	135	115	1	No Gas	102.061	ug/l	767441.59
Ba	137	115	1	No Gas	103.535	ug/l	1330750.80
La	139	115	3	He	100.932	ug/l	3673773.00
Ce	140	115	3	He	100.564	ug/l	3865212.16
Hg	201	209	1	No Gas	2.024	ug/l	9416.76
Hg	202	209	1	No Gas	2.023	ug/l	21466.88
Hg	202	209	3	He	2.025	ug/l	8305.92
Tl	203	209	3	He	99.011	ug/l	1241467.41
Tl	205	209	1	No Gas	102.023	ug/l	7387466.55
Tl	205	209	3	He	103.229	ug/l	3041278.19
[Pb]	206	209	1	No Gas	103.844	ug/l	2627923.07
[Pb]	207	209	1	No Gas	102.959	ug/l	2250677.47
Pb	208	209	1	No Gas	103.188	ug/l	10291928.34
Th	232	209	3	He	101.162	ug/l	4308160.75
U	238	209	1	No Gas	102.299	ug/l	9924370.80

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	5134974.82	105.8
Sc	45	2	H2	3515994.57	100.6
Sc	45	3	He	458463.11	100.9
Ge	72	1	No Gas	1729902.51	101.5
Ge	72	2	H2	1307474.62	96.6
Ge	72	3	He	307891.06	99.5
In	115	1	No Gas	17107794.94	97.0
In	115	3	He	3906520.67	94.1
Tb	159	1	No Gas	21319227.02	98.7
Tb	159	3	He	7842862.90	96.4
Ho	165	1	No Gas	21185611.95	98.4
Ho	165	3	He	7884263.73	96.0
Lu	175	1	No Gas	21023037.30	98.9
Lu	175	3	He	6570378.01	95.8
Bi	209	1	No Gas	14680559.03	91.9
Bi	209	3	He	5818417.15	91.8

# ICPMS207-B Analytical Data

**Sample Name** 1000 ppb STD  
**File Name** 146CAL.S.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-07 02:19:29  
**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	2493.301	ug/l	10472106.18
Be	9	45	1	No Gas	999.870	ug/l	1910968.60
B	11	45	1	No Gas	1000.213	ug/l	1099790.45
Na	23	45	3	He	49979.525	ug/l	51745257.01
Mg	24	45	3	He	49757.027	ug/l	27835353.96
Al	27	45	1	No Gas	999.162	ug/l	13638340.35
Si	28	45	2	H2	0.970	ug/l	14349.30
K	39	72	3	He	50142.383	ug/l	37261464.72
Ca	40	72	2	H2	50072.478	ug/l	522914549.46
Ti	47	72	1	No Gas	4.156	ug/l	9786.50
V	51	72	1	No Gas	999.887	ug/l	30374809.80
V	51	72	3	He	1000.145	ug/l	6813040.80
Cr	52	72	1	No Gas	999.577	ug/l	28722657.09
Cr	52	72	3	He	1000.013	ug/l	7482508.01
Mn	55	72	1	No Gas	999.419	ug/l	40923806.36
Mn	55	72	3	He	1000.047	ug/l	5380629.99
Fe	56	72	2	H2	6012.329	ug/l	150910231.58
Fe	56	72	3	He	5995.247	ug/l	41223777.74
Co	59	72	1	No Gas	999.269	ug/l	34178159.98
Ni	60	72	1	No Gas	999.281	ug/l	7656471.99
Ni	60	72	3	He	999.858	ug/l	2842480.72
Cu	63	72	1	No Gas	999.183	ug/l	19664080.18
Cu	63	72	3	He	999.536	ug/l	7383829.15
Cu	65	72	1	No Gas	999.646	ug/l	9556847.44
Zn	66	72	1	No Gas	999.568	ug/l	6231136.19
Zn	66	72	3	He	999.720	ug/l	1537833.43
As	75	72	1	No Gas	999.954	ug/l	7170777.49
As	75	72	3	He	999.772	ug/l	1275844.06
Se	78	72	2	H2	999.746	ug/l	816119.81
Br	79	72	1	No Gas	47.419	ug/l	18981.49
Br	79	72	2	H2	402.243	ug/l	20377.41
Se	82	72	1	No Gas	999.109	ug/l	448218.75
Kr	84	72	1	No Gas		ug/l	432450.81
Sr	88	72	1	No Gas	999.408	ug/l	67083656.91
Sr	88	72	3	He	1000.037	ug/l	8984061.74
Mo	95	115	1	No Gas	0.130	ug/l	1930.15
Mo	95	115	3	He	0.136	ug/l	703.36
Mo	98	115	1	No Gas	0.134	ug/l	3329.24
Ag	107	115	1	No Gas	304.231	ug/l	11098154.42
Ag	109	115	1	No Gas	423.360	ug/l	14803431.53
Cd	111	115	1	No Gas	1000.329	ug/l	8209732.06

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	999.845	ug/l	2470105.19
Cd	114	115	1	No Gas	999.808	ug/l	18235284.37
Cd	114	115	3	He	999.885	ug/l	6038448.21
Sn	118	115	1	No Gas	0.213	ug/l	8246.11
Sn	118	115	3	He	0.224	ug/l	2224.63
Sb	121	115	1	No Gas	0.219	ug/l	8815.98
Sb	121	115	3	He	0.202	ug/l	2062.36
Sb	123	115	1	No Gas	0.236	ug/l	7287.29
Sb	123	115	3	He	0.201	ug/l	1619.93
Ba	135	115	1	No Gas	999.732	ug/l	7259891.18
Ba	137	115	1	No Gas	999.509	ug/l	12405554.32
La	139	115	3	He	0.025	ug/l	941.15
Ce	140	115	3	He	0.037	ug/l	1482.31
Hg	201	209	1	No Gas	0.011	ug/l	116.65
Hg	202	209	1	No Gas	0.010	ug/l	320.94
Hg	202	209	3	He	0.006	ug/l	119.64
Tl	203	209	3	He	1000.170	ug/l	12078414.67
Tl	205	209	1	No Gas	999.758	ug/l	70077747.29
Tl	205	209	3	He	999.673	ug/l	28368316.67
[Pb]	206	209	1	No Gas	999.561	ug/l	24514491.86
[Pb]	207	209	1	No Gas	999.673	ug/l	21178110.52
Pb	208	209	1	No Gas	999.590	ug/l	96623133.83
Th	232	209	3	He	999.844	ug/l	41113108.30
U	238	209	1	No Gas	999.675	ug/l	94034316.02

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	5123672.06	105.5
Sc	45	2	H2	3579567.16	102.4
Sc	45	3	He	456032.67	100.4
Ge	72	1	No Gas	1716207.02	100.7
Ge	72	2	H2	1267648.79	93.7
Ge	72	3	He	305537.21	98.8
In	115	1	No Gas	16528280.00	93.7
In	115	3	He	3825212.87	92.2
Tb	159	1	No Gas	20595687.88	95.3
Tb	159	3	He	7638771.31	93.9
Ho	165	1	No Gas	20319555.92	94.4
Ho	165	3	He	7614776.38	92.7
Lu	175	1	No Gas	20488871.69	96.4
Lu	175	3	He	6524646.24	95.2
Bi	209	1	No Gas	14235667.47	89.1
Bi	209	3	He	5618105.16	88.6

# ICPMS207-B Analytical Data

**Sample Name** 100 ppb Br STD  
**File Name** 147CAL.S.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-07 02:25:09  
**Sample Type** CalStd  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	6.161	ug/l	30238.84
Be	9	45	1	No Gas	0.231	ug/l	425.26
B	11	45	1	No Gas	11.313	ug/l	14067.56
Na	23	45	3	He	39.297	ug/l	96275.08
Mg	24	45	3	He	4.923	ug/l	4594.93
Al	27	45	1	No Gas	0.354	ug/l	35905.51
Si	28	45	2	H2	9.685	ug/l	32538.43
K	39	72	3	He	10.748	ug/l	82619.03
Ca	40	72	2	H2	47.680	ug/l	574632.48
Ti	47	72	1	No Gas	0.207	ug/l	612.30
V	51	72	1	No Gas	2.999	ug/l	105193.33
V	51	72	3	He	1.497	ug/l	24270.01
Cr	52	72	1	No Gas	1.385	ug/l	73030.35
Cr	52	72	3	He	0.196	ug/l	1989.04
Mn	55	72	1	No Gas	0.294	ug/l	18508.38
Mn	55	72	3	He	0.138	ug/l	1065.49
Fe	56	72	2	H2	0.744	ug/l	103721.53
Fe	56	72	3	He	3.444	ug/l	31254.55
Co	59	72	1	No Gas	0.070	ug/l	2701.57
Ni	60	72	1	No Gas	0.116	ug/l	1377.34
Ni	60	72	3	He	0.102	ug/l	435.56
Cu	63	72	1	No Gas	0.149	ug/l	5395.17
Cu	63	72	3	He	0.153	ug/l	1964.74
Cu	65	72	1	No Gas	0.168	ug/l	2595.28
Zn	66	72	1	No Gas	0.859	ug/l	6147.35
Zn	66	72	3	He	0.859	ug/l	1528.98
As	75	72	1	No Gas	-0.144	ug/l	7135.96
As	75	72	3	He	0.347	ug/l	655.87
Se	78	72	2	H2	0.296	ug/l	267.34
Br	79	72	1	No Gas	100.000	ug/l	19924.24
Br	79	72	2	H2	100.000	ug/l	11754.82
Se	82	72	1	No Gas	0.565	ug/l	558.08
Kr	84	72	1	No Gas		ug/l	12613.83
Sr	88	72	1	No Gas	0.106	ug/l	8515.65
Sr	88	72	3	He	0.105	ug/l	1243.40
Mo	95	115	1	No Gas	0.015	ug/l	348.90
Mo	95	115	3	He	0.015	ug/l	133.33
Mo	98	115	1	No Gas	0.017	ug/l	637.80
Ag	107	115	1	No Gas	0.218	ug/l	10575.66
Ag	109	115	1	No Gas	0.226	ug/l	10572.96
Cd	111	115	1	No Gas	0.051	ug/l	376.47

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.032	ug/l	95.56
Cd	114	115	1	No Gas	0.049	ug/l	675.75
Cd	114	115	3	He	0.029	ug/l	211.44
Sn	118	115	1	No Gas	1.422	ug/l	37822.29
Sn	118	115	3	He	1.376	ug/l	9835.70
Sb	121	115	1	No Gas	0.075	ug/l	3700.53
Sb	121	115	3	He	0.067	ug/l	860.11
Sb	123	115	1	No Gas	0.077	ug/l	2916.93
Sb	123	115	3	He	0.069	ug/l	684.75
Ba	135	115	1	No Gas	0.167	ug/l	1547.03
Ba	137	115	1	No Gas	0.171	ug/l	2655.00
La	139	115	3	He	0.008	ug/l	350.01
Ce	140	115	3	He	0.017	ug/l	767.80
Hg	201	209	1	No Gas	0.006	ug/l	98.65
Hg	202	209	1	No Gas	0.011	ug/l	353.60
Hg	202	209	3	He	0.003	ug/l	111.98
Tl	203	209	3	He	0.324	ug/l	7825.45
Tl	205	209	1	No Gas	0.367	ug/l	41497.76
Tl	205	209	3	He	0.334	ug/l	18888.26
[Pb]	206	209	1	No Gas	0.097	ug/l	4307.40
[Pb]	207	209	1	No Gas	0.102	ug/l	3836.14
Pb	208	209	1	No Gas	0.098	ug/l	17017.66
Th	232	209	3	He	0.164	ug/l	7662.66
U	238	209	1	No Gas	0.029	ug/l	3367.10

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4659175.05	96.0
Sc	45	2	H2	3409170.38	97.6
Sc	45	3	He	429181.27	94.5
Ge	72	1	No Gas	1639714.94	96.2
Ge	72	2	H2	1245270.99	92.0
Ge	72	3	He	295662.57	95.6
In	115	1	No Gas	16856436.82	95.6
In	115	3	He	3932484.34	94.7
Tb	159	1	No Gas	20860118.55	96.5
Tb	159	3	He	7674111.91	94.3
Ho	165	1	No Gas	20535641.59	95.4
Ho	165	3	He	7685605.80	93.6
Lu	175	1	No Gas	20348751.16	95.8
Lu	175	3	He	6460593.80	94.2
Bi	209	1	No Gas	15041713.34	94.2
Bi	209	3	He	5998745.33	94.6

# ICPMS207-B Analytical Data

**Sample Name** Rinse  
**File Name** 148BLKV.d  
**Data Path Name** D:\Agilent\ICPMH1\DATA\220106DoD.b  
**Acq Time** 2022-01-07 02:31:25  
**Sample Type** BlkVrfy  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	1.662	ug/l	14750.41
Be	9	45	1	No Gas	0.067	ug/l	157.64
B	11	45	1	No Gas	3.784	ug/l	7416.14
Na	23	45	3	He	3.905	ug/l	66829.90
Mg	24	45	3	He	0.133	ug/l	2242.39
Al	27	45	1	No Gas	-0.899	ug/l	23050.09
Si	28	45	2	H2	-1.173	ug/l	9697.05
K	39	72	3	He	0.569	ug/l	79158.16
Ca	40	72	2	H2	0.353	ug/l	99855.30
Ti	47	72	1	No Gas	0.020	ug/l	216.89
V	51	72	1	No Gas	0.428	ug/l	34437.70
V	51	72	3	He	-0.132	ug/l	14249.17
Cr	52	72	1	No Gas	0.006	ug/l	38394.50
Cr	52	72	3	He	0.012	ug/l	691.13
Mn	55	72	1	No Gas	0.013	ug/l	8179.40
Mn	55	72	3	He	-0.002	ug/l	357.26
Fe	56	72	2	H2	-2.788	ug/l	18689.03
Fe	56	72	3	He	0.042	ug/l	9065.26
Co	59	72	1	No Gas	0.027	ug/l	1407.28
Ni	60	72	1	No Gas	0.015	ug/l	698.63
Ni	60	72	3	He	0.024	ug/l	232.23
Cu	63	72	1	No Gas	-0.010	ug/l	2637.30
Cu	63	72	3	He	-0.006	ug/l	867.19
Cu	65	72	1	No Gas	0.006	ug/l	1223.88
Zn	66	72	1	No Gas	0.016	ug/l	1230.05
Zn	66	72	3	He	0.024	ug/l	300.01
As	75	72	1	No Gas	-0.001	ug/l	8914.23
As	75	72	3	He	0.023	ug/l	268.53
Se	78	72	2	H2	0.051	ug/l	79.22
Br	79	72	1	No Gas	-74.931	ug/l	15194.57
Br	79	72	2	H2	-69.305	ug/l	7983.08
Se	82	72	1	No Gas	0.581	ug/l	614.87
Kr	84	72	1	No Gas		ug/l	13309.83
Sr	88	72	1	No Gas	0.006	ug/l	2279.00
Sr	88	72	3	He	0.006	ug/l	403.34
Mo	95	115	1	No Gas	0.001	ug/l	167.78
Mo	95	115	3	He	0.002	ug/l	71.11
Mo	98	115	1	No Gas	0.002	ug/l	305.56
Ag	107	115	1	No Gas	0.006	ug/l	2874.12
Ag	109	115	1	No Gas	0.003	ug/l	2798.07
Cd	111	115	1	No Gas	0.022	ug/l	139.57



# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.012	ug/l	46.44
Cd	114	115	1	No Gas	0.021	ug/l	156.43
Cd	114	115	3	He	0.013	ug/l	113.72
Sn	118	115	1	No Gas	0.008	ug/l	3600.00
Sn	118	115	3	He	0.014	ug/l	973.37
Sb	121	115	1	No Gas	0.005	ug/l	1153.50
Sb	121	115	3	He	0.006	ug/l	307.37
Sb	123	115	1	No Gas	0.005	ug/l	925.13
Sb	123	115	3	He	0.008	ug/l	248.36
Ba	135	115	1	No Gas	-0.002	ug/l	312.72
Ba	137	115	1	No Gas	0.003	ug/l	562.23
La	139	115	3	He	0.000	ug/l	83.33
Ce	140	115	3	He	0.001	ug/l	142.22
Hg	201	209	1	No Gas	0.001	ug/l	77.98
Hg	202	209	1	No Gas	-0.001	ug/l	232.63
Hg	202	209	3	He	-0.003	ug/l	93.98
Tl	203	209	3	He	0.178	ug/l	6285.34
Tl	205	209	1	No Gas	0.149	ug/l	26490.73
Tl	205	209	3	He	0.171	ug/l	14766.75
[Pb]	206	209	1	No Gas	0.026	ug/l	2580.27
[Pb]	207	209	1	No Gas	0.026	ug/l	2231.31
Pb	208	209	1	No Gas	0.028	ug/l	10322.75
Th	232	209	3	He	0.008	ug/l	840.37
U	238	209	1	No Gas	0.008	ug/l	1344.05

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	5276092.43	108.7
Sc	45	2	H2	3657806.83	104.7
Sc	45	3	He	463778.55	102.1
Ge	72	1	No Gas	1786565.46	104.8
Ge	72	2	H2	1394799.42	103.1
Ge	72	3	He	310762.19	100.4
In	115	1	No Gas	17816369.80	101.0
In	115	3	He	4180342.87	100.7
Tb	159	1	No Gas	21572492.15	99.8
Tb	159	3	He	8205049.14	100.8
Ho	165	1	No Gas	21221742.04	98.6
Ho	165	3	He	8155637.75	99.3
Lu	175	1	No Gas	20874204.09	98.2
Lu	175	3	He	6840069.05	99.8
Bi	209	1	No Gas	15746069.63	98.6
Bi	209	3	He	6339037.65	100.0

# ICPMS207-B Analytical Data

**Sample Name** QCS  
**File Name** 149\_QC1.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-07 02:37:36  
**Sample Type** QC1  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	53.311	ug/l	237003.13
Be	9	45	1	No Gas	26.490	ug/l	51898.23
B	11	45	1	No Gas	56.396	ug/l	66516.22
Na	23	45	3	He	2794.480	ug/l	2912809.54
Mg	24	45	3	He	2819.978	ug/l	1559001.48
Al	27	45	1	No Gas	275.165	ug/l	3877315.29
Si	28	45	2	H2	546.598	ug/l	1298993.11
K	39	72	3	He	2731.966	ug/l	2117829.76
Ca	40	72	2	H2	2739.360	ug/l	31124219.79
Ti	47	72	1	No Gas	51.896	ug/l	125125.39
V	51	72	1	No Gas	55.927	ug/l	1785927.59
V	51	72	3	He	52.020	ug/l	371752.37
Cr	52	72	1	No Gas	56.783	ug/l	1732319.40
Cr	52	72	3	He	53.513	ug/l	404284.81
Mn	55	72	1	No Gas	276.544	ug/l	11777995.77
Mn	55	72	3	He	276.617	ug/l	1500371.31
Fe	56	72	2	H2	260.907	ug/l	7186201.21
Fe	56	72	3	He	274.956	ug/l	1915018.82
Co	59	72	1	No Gas	56.135	ug/l	1996829.19
Ni	60	72	1	No Gas	54.747	ug/l	436656.59
Ni	60	72	3	He	54.050	ug/l	155031.10
Cu	63	72	1	No Gas	55.450	ug/l	1137277.09
Cu	63	72	3	He	56.772	ug/l	423500.74
Cu	65	72	1	No Gas	55.522	ug/l	552994.70
Zn	66	72	1	No Gas	55.709	ug/l	362207.80
Zn	66	72	3	He	56.437	ug/l	87797.09
As	75	72	1	No Gas	51.167	ug/l	390043.27
As	75	72	3	He	55.203	ug/l	71223.38
Se	78	72	2	H2	52.408	ug/l	46366.77
Br	79	72	1	No Gas	-25.710	ug/l	17029.65
Br	79	72	2	H2	16.387	ug/l	10449.77
Se	82	72	1	No Gas	55.823	ug/l	26369.37
Kr	84	72	1	No Gas		ug/l	38981.97
Sr	88	72	1	No Gas	54.234	ug/l	3788365.89
Sr	88	72	3	He	54.146	ug/l	490497.68
Mo	95	115	1	No Gas	49.862	ug/l	726906.55
Mo	95	115	3	He	54.202	ug/l	260444.20
Mo	98	115	1	No Gas	49.470	ug/l	1214202.58
Ag	107	115	1	No Gas	26.094	ug/l	1012075.34
Ag	109	115	1	No Gas	26.545	ug/l	983464.95
Cd	111	115	1	No Gas	25.392	ug/l	220398.55

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	27.871	ug/l	69725.13
Cd	114	115	1	No Gas	25.441	ug/l	490786.73
Cd	114	115	3	He	27.172	ug/l	166198.95
Sn	118	115	1	No Gas	52.339	ug/l	1323447.69
Sn	118	115	3	He	53.097	ug/l	343409.47
Sb	121	115	1	No Gas	52.917	ug/l	2023952.49
Sb	121	115	3	He	53.314	ug/l	491256.61
Sb	123	115	1	No Gas	52.141	ug/l	1534256.48
Sb	123	115	3	He	52.948	ug/l	385591.89
Ba	135	115	1	No Gas	52.610	ug/l	404291.64
Ba	137	115	1	No Gas	52.923	ug/l	695195.13
La	139	115	3	He	54.763	ug/l	1976120.16
Ce	140	115	3	He	55.650	ug/l	2121071.74
Hg	201	209	1	No Gas	1.035	ug/l	5109.63
Hg	202	209	1	No Gas	1.024	ug/l	11564.35
Hg	202	209	3	He	1.081	ug/l	4533.87
Tl	203	209	3	He	49.104	ug/l	625238.58
Tl	205	209	1	No Gas	50.651	ug/l	3871354.81
Tl	205	209	3	He	50.357	ug/l	1506236.71
[Pb]	206	209	1	No Gas	50.912	ug/l	1358363.81
[Pb]	207	209	1	No Gas	50.333	ug/l	1159984.31
Pb	208	209	1	No Gas	51.732	ug/l	5438971.45
Th	232	209	3	He	52.727	ug/l	2273941.42
U	238	209	1	No Gas	53.997	ug/l	5518644.96

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	5244574.84	108.0
Sc	45	2	H2	3703428.99	106.0
Sc	45	3	He	450873.63	99.3
Ge	72	1	No Gas	1785490.89	104.8
Ge	72	2	H2	1374045.43	101.5
Ge	72	3	He	308704.55	99.8
In	115	1	No Gas	17492568.43	99.2
In	115	3	He	3879556.59	93.5
Tb	159	1	No Gas	21259949.83	98.4
Tb	159	3	He	7565791.62	93.0
Ho	165	1	No Gas	20787290.31	96.6
Ho	165	3	He	7538039.13	91.8
Lu	175	1	No Gas	21051516.82	99.1
Lu	175	3	He	6286447.73	91.7
Bi	209	1	No Gas	15464416.66	96.8
Bi	209	3	He	5897845.49	93.0

# ICPMS207-B Analytical Data

**Sample Name** ICSA  
**File Name** 150ICSA.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-07 02:43:32  
**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	1.670	ug/l	13186.35
Be	9	45	1	No Gas	0.046	ug/l	103.98
B	11	45	1	No Gas	2.294	ug/l	5111.59
Na	23	45	3	He	113149.036	ug/l	108902073.93
Mg	24	45	3	He	45637.045	ug/l	23754197.22
Al	27	45	1	No Gas	44418.887	ug/l	556272178.38
Si	28	45	2	H2	0.352	ug/l	12034.36
K	39	72	3	He	45742.826	ug/l	31474958.14
Ca	40	72	2	H2	136525.738	ug/l	1349334700.50
Ti	47	72	1	No Gas	894.782	ug/l	1995757.82
V	51	72	1	No Gas	-0.693	ug/l	-780.78
V	51	72	3	He	-1.344	ug/l	5343.22
Cr	52	72	1	No Gas	1.067	ug/l	64854.14
Cr	52	72	3	He	1.011	ug/l	7547.55
Mn	55	72	1	No Gas	0.171	ug/l	13832.46
Mn	55	72	3	He	0.197	ug/l	1314.46
Fe	56	72	2	H2	114904.181	ug/l	2728750414.29
Fe	56	72	3	He	114649.946	ug/l	729689884.18
Co	59	72	1	No Gas	0.409	ug/l	13889.12
Ni	60	72	1	No Gas	0.915	ug/l	7287.40
Ni	60	72	3	He	0.229	ug/l	750.03
Cu	63	72	1	No Gas	1.438	ug/l	29875.12
Cu	63	72	3	He	0.048	ug/l	1158.82
Cu	65	72	1	No Gas	0.542	ug/l	6066.37
Zn	66	72	1	No Gas	0.757	ug/l	5578.85
Zn	66	72	3	He	0.350	ug/l	737.80
As	75	72	1	No Gas	0.106	ug/l	8927.77
As	75	72	3	He	0.132	ug/l	373.00
Se	78	72	2	H2	0.188	ug/l	173.89
Br	79	72	1	No Gas	44.419	ug/l	18172.05
Br	79	72	2	H2	-21.300	ug/l	8132.86
Se	82	72	1	No Gas	0.210	ug/l	409.94
Kr	84	72	1	No Gas		ug/l	13646.07
Sr	88	72	1	No Gas	1.456	ug/l	95861.46
Sr	88	72	3	He	1.386	ug/l	11850.50
Mo	95	115	1	No Gas	927.070	ug/l	12216361.90
Mo	95	115	3	He	939.597	ug/l	4237622.06
Mo	98	115	1	No Gas	902.997	ug/l	20033539.01
Ag	107	115	1	No Gas	0.018	ug/l	2958.17
Ag	109	115	1	No Gas	0.018	ug/l	2986.85
Cd	111	115	1	No Gas	0.083	ug/l	599.42

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.315	ug/l	752.24
Cd	114	115	1	No Gas	0.099	ug/l	1504.68
Cd	114	115	3	He	1.422	ug/l	8092.34
Sn	118	115	1	No Gas	0.112	ug/l	5580.06
Sn	118	115	3	He	0.121	ug/l	1492.31
Sb	121	115	1	No Gas	0.063	ug/l	3050.11
Sb	121	115	3	He	0.048	ug/l	625.08
Sb	123	115	1	No Gas	0.058	ug/l	2241.74
Sb	123	115	3	He	0.048	ug/l	490.39
Ba	135	115	1	No Gas	0.077	ug/l	821.73
Ba	137	115	1	No Gas	0.083	ug/l	1450.54
La	139	115	3	He	0.012	ug/l	468.90
Ce	140	115	3	He	0.004	ug/l	260.00
Hg	201	209	1	No Gas	0.004	ug/l	83.98
Hg	202	209	1	No Gas	0.005	ug/l	262.62
Hg	202	209	3	He	0.002	ug/l	98.65
Tl	203	209	3	He	0.183	ug/l	5377.92
Tl	205	209	1	No Gas	0.162	ug/l	24096.14
Tl	205	209	3	He	0.187	ug/l	12949.49
[Pb]	206	209	1	No Gas	0.040	ug/l	2595.83
[Pb]	207	209	1	No Gas	0.040	ug/l	2261.32
Pb	208	209	1	No Gas	0.042	ug/l	10355.00
Th	232	209	3	He	0.029	ug/l	1550.72
U	238	209	1	No Gas	0.046	ug/l	4633.97

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4706739.35	97.0
Sc	45	2	H2	3326666.17	95.2
Sc	45	3	He	424385.01	93.4
Ge	72	1	No Gas	1653155.26	97.0
Ge	72	2	H2	1199984.95	88.7
Ge	72	3	He	282886.78	91.4
In	115	1	No Gas	15805181.62	89.6
In	115	3	He	3635891.85	87.6
Tb	159	1	No Gas	20303542.20	94.0
Tb	159	3	He	7474950.89	91.9
Ho	165	1	No Gas	19999410.58	92.9
Ho	165	3	He	7576696.69	92.3
Lu	175	1	No Gas	20316215.92	95.6
Lu	175	3	He	6354605.63	92.7
Bi	209	1	No Gas	13809260.80	86.5
Bi	209	3	He	5369760.69	84.7

# ICPMS207-B Analytical Data

**Sample Name** ICSAB  
**File Name** 151ICSB.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-07 02:49:43  
**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	1.488	ug/l	11906.12
Be	9	45	1	No Gas	0.032	ug/l	75.99
B	11	45	1	No Gas	1.150	ug/l	3774.66
Na	23	45	3	He	115600.985	ug/l	106233883.97
Mg	24	45	3	He	46295.486	ug/l	23006123.76
Al	27	45	1	No Gas	44505.860	ug/l	531521032.08
Si	28	45	2	H2	0.355	ug/l	11604.52
K	39	72	3	He	45639.690	ug/l	30836179.26
Ca	40	72	2	H2	138421.614	ug/l	1339778664.80
Ti	47	72	1	No Gas	897.348	ug/l	1925348.33
V	51	72	1	No Gas	23.082	ug/l	667991.33
V	51	72	3	He	21.327	ug/l	145396.48
Cr	52	72	1	No Gas	23.435	ug/l	657315.32
Cr	52	72	3	He	23.550	ug/l	160779.26
Mn	55	72	1	No Gas	23.041	ug/l	880657.59
Mn	55	72	3	He	22.860	ug/l	112173.90
Fe	56	72	2	H2	115272.834	ug/l	2680790028.93
Fe	56	72	3	He	116685.676	ug/l	729814148.44
Co	59	72	1	No Gas	23.476	ug/l	744277.38
Ni	60	72	1	No Gas	23.728	ug/l	168933.40
Ni	60	72	3	He	23.026	ug/l	59687.86
Cu	63	72	1	No Gas	23.674	ug/l	434072.99
Cu	63	72	3	He	23.169	ug/l	156458.33
Cu	65	72	1	No Gas	22.583	ug/l	201077.49
Zn	66	72	1	No Gas	11.683	ug/l	68480.56
Zn	66	72	3	He	11.967	ug/l	16978.84
As	75	72	1	No Gas	11.418	ug/l	83685.29
As	75	72	3	He	12.019	ug/l	14159.98
Se	78	72	2	H2	11.942	ug/l	9065.60
Br	79	72	1	No Gas	52.103	ug/l	17739.04
Br	79	72	2	H2	-20.162	ug/l	7993.09
Se	82	72	1	No Gas	12.161	ug/l	5360.14
Kr	84	72	1	No Gas		ug/l	13459.63
Sr	88	72	1	No Gas	1.521	ug/l	96300.13
Sr	88	72	3	He	1.449	ug/l	12155.19
Mo	95	115	1	No Gas	941.010	ug/l	12249147.60
Mo	95	115	3	He	937.780	ug/l	4223435.87
Mo	98	115	1	No Gas	904.312	ug/l	19821011.31
Ag	107	115	1	No Gas	5.474	ug/l	191472.94
Ag	109	115	1	No Gas	5.627	ug/l	188098.64
Cd	111	115	1	No Gas	10.850	ug/l	84093.56

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	11.395	ug/l	26727.81
Cd	114	115	1	No Gas	11.124	ug/l	191546.77
Cd	114	115	3	He	11.350	ug/l	65074.99
Sn	118	115	1	No Gas	0.101	ug/l	5263.92
Sn	118	115	3	He	0.114	ug/l	1447.86
Sb	121	115	1	No Gas	0.031	ug/l	1900.66
Sb	121	115	3	He	0.035	ug/l	515.73
Sb	123	115	1	No Gas	0.029	ug/l	1455.56
Sb	123	115	3	He	0.033	ug/l	386.71
Ba	135	115	1	No Gas	0.064	ug/l	728.58
Ba	137	115	1	No Gas	0.087	ug/l	1473.83
La	139	115	3	He	0.011	ug/l	435.57
Ce	140	115	3	He	0.003	ug/l	224.45
Hg	201	209	1	No Gas	0.001	ug/l	68.32
Hg	202	209	1	No Gas	0.002	ug/l	225.62
Hg	202	209	3	He	0.000	ug/l	86.31
Tl	203	209	3	He	0.054	ug/l	3747.37
Tl	205	209	1	No Gas	0.033	ug/l	15154.52
Tl	205	209	3	He	0.054	ug/l	8978.64
[Pb]	206	209	1	No Gas	0.033	ug/l	2391.35
[Pb]	207	209	1	No Gas	0.032	ug/l	2052.40
Pb	208	209	1	No Gas	0.034	ug/l	9445.82
Th	232	209	3	He	0.013	ug/l	879.72
U	238	209	1	No Gas	0.007	ug/l	1093.50

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4486615.95	92.4
Sc	45	2	H2	3208588.03	91.8
Sc	45	3	He	405426.88	89.3
Ge	72	1	No Gas	1590818.05	93.4
Ge	72	2	H2	1175200.12	86.9
Ge	72	3	He	278085.24	89.9
In	115	1	No Gas	15617073.32	88.5
In	115	3	He	3631565.41	87.5
Tb	159	1	No Gas	20297187.30	93.9
Tb	159	3	He	7283654.70	89.5
Ho	165	1	No Gas	20310412.61	94.4
Ho	165	3	He	7224981.60	88.0
Lu	175	1	No Gas	20223909.03	95.2
Lu	175	3	He	6122386.34	89.3
Bi	209	1	No Gas	13611079.21	85.2
Bi	209	3	He	5167470.48	81.5

# ICPMS207-B Analytical Data

**Sample Name** Rinse  
**File Name** 152BLKV.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-07 02:55:51  
**Sample Type** BlkVrfy  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	1.341	ug/l	13325.21
Be	9	45	1	No Gas	0.081	ug/l	183.04
B	11	45	1	No Gas	0.516	ug/l	3708.62
Na	23	45	3	He	33.721	ug/l	96464.88
Mg	24	45	3	He	0.675	ug/l	2505.25
Al	27	45	1	No Gas	-0.065	ug/l	34661.49
Si	28	45	2	H2	-1.564	ug/l	8613.29
K	39	72	3	He	6.036	ug/l	82206.76
Ca	40	72	2	H2	2.885	ug/l	127218.98
Ti	47	72	1	No Gas	0.055	ug/l	296.97
V	51	72	1	No Gas	-0.618	ug/l	1278.07
V	51	72	3	He	-1.493	ug/l	4777.47
Cr	52	72	1	No Gas	-0.394	ug/l	26064.92
Cr	52	72	3	He	-0.014	ug/l	487.79
Mn	55	72	1	No Gas	-0.031	ug/l	6245.63
Mn	55	72	3	He	-0.023	ug/l	239.96
Fe	56	72	2	H2	0.528	ug/l	108754.55
Fe	56	72	3	He	2.886	ug/l	28573.16
Co	59	72	1	No Gas	0.008	ug/l	721.92
Ni	60	72	1	No Gas	0.001	ug/l	575.54
Ni	60	72	3	He	0.009	ug/l	185.56
Cu	63	72	1	No Gas	0.060	ug/l	3997.49
Cu	63	72	3	He	0.026	ug/l	1097.16
Cu	65	72	1	No Gas	0.051	ug/l	1644.75
Zn	66	72	1	No Gas	-0.017	ug/l	1001.16
Zn	66	72	3	He	0.002	ug/l	262.22
As	75	72	1	No Gas	-0.180	ug/l	7418.85
As	75	72	3	He	-0.056	ug/l	163.40
Se	78	72	2	H2	0.011	ug/l	42.67
Br	79	72	1	No Gas	-99.522	ug/l	14082.27
Br	79	72	2	H2	-82.412	ug/l	7477.14
Se	82	72	1	No Gas	0.382	ug/l	515.01
Kr	84	72	1	No Gas		ug/l	13313.08
Sr	88	72	1	No Gas	0.002	ug/l	1959.59
Sr	88	72	3	He	0.005	ug/l	390.01
Mo	95	115	1	No Gas	0.208	ug/l	3213.73
Mo	95	115	3	He	0.208	ug/l	1134.50
Mo	98	115	1	No Gas	0.210	ug/l	5461.10
Ag	107	115	1	No Gas	0.004	ug/l	2749.37
Ag	109	115	1	No Gas	-0.001	ug/l	2658.65
Cd	111	115	1	No Gas	0.011	ug/l	39.32



# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.007	ug/l	33.00
Cd	114	115	1	No Gas	0.010	ug/l	-47.25
Cd	114	115	3	He	0.007	ug/l	78.74
Sn	118	115	1	No Gas	-0.002	ug/l	3323.81
Sn	118	115	3	He	-0.011	ug/l	795.58
Sb	121	115	1	No Gas	-0.001	ug/l	928.46
Sb	121	115	3	He	-0.002	ug/l	226.02
Sb	123	115	1	No Gas	-0.002	ug/l	709.09
Sb	123	115	3	He	-0.001	ug/l	183.02
Ba	135	115	1	No Gas	-0.005	ug/l	282.78
Ba	137	115	1	No Gas	0.003	ug/l	558.91
La	139	115	3	He	0.000	ug/l	78.89
Ce	140	115	3	He	0.001	ug/l	142.23
Hg	201	209	1	No Gas	0.000	ug/l	73.32
Hg	202	209	1	No Gas	0.000	ug/l	242.29
Hg	202	209	3	He	-0.005	ug/l	83.98
Tl	203	209	3	He	-0.011	ug/l	3674.65
Tl	205	209	1	No Gas	-0.005	ug/l	14757.28
Tl	205	209	3	He	-0.016	ug/l	8669.63
[Pb]	206	209	1	No Gas	0.011	ug/l	2211.31
[Pb]	207	209	1	No Gas	0.012	ug/l	1925.71
Pb	208	209	1	No Gas	0.013	ug/l	8775.64
Th	232	209	3	He	0.001	ug/l	505.55
U	238	209	1	No Gas	0.003	ug/l	795.86

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	5259002.24	108.3
Sc	45	2	H2	3585480.32	102.6
Sc	45	3	He	455787.58	100.4
Ge	72	1	No Gas	1759956.67	103.3
Ge	72	2	H2	1376034.79	101.7
Ge	72	3	He	306742.71	99.1
In	115	1	No Gas	17686899.83	100.3
In	115	3	He	4159150.06	100.2
Tb	159	1	No Gas	21696405.43	100.4
Tb	159	3	He	8001259.62	98.3
Ho	165	1	No Gas	21503099.01	99.9
Ho	165	3	He	8064459.85	98.2
Lu	175	1	No Gas	21506239.86	101.2
Lu	175	3	He	6756238.14	98.5
Bi	209	1	No Gas	15925168.53	99.7
Bi	209	3	He	6268324.75	98.8

# ICPMS207-B Analytical Data

**Sample Name** Rinse  
**File Name** 153BLKV.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-07 03:02:01  
**Sample Type** BlkVrfy  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	1.370	ug/l	13466.04
Be	9	45	1	No Gas	0.020	ug/l	64.99
B	11	45	1	No Gas	0.150	ug/l	3301.69
Na	23	45	3	He	23.446	ug/l	85381.68
Mg	24	45	3	He	-0.190	ug/l	2009.49
Al	27	45	1	No Gas	-0.475	ug/l	28986.05
Si	28	45	2	H2	-1.905	ug/l	8041.40
K	39	72	3	He	3.101	ug/l	79994.81
Ca	40	72	2	H2	1.439	ug/l	110411.49
Ti	47	72	1	No Gas	0.033	ug/l	245.25
V	51	72	1	No Gas	-0.781	ug/l	-3817.34
V	51	72	3	He	-1.479	ug/l	4864.16
Cr	52	72	1	No Gas	-0.381	ug/l	26544.68
Cr	52	72	3	He	-0.011	ug/l	506.68
Mn	55	72	1	No Gas	-0.039	ug/l	5896.16
Mn	55	72	3	He	-0.025	ug/l	226.62
Fe	56	72	2	H2	-0.972	ug/l	67616.00
Fe	56	72	3	He	1.614	ug/l	19789.94
Co	59	72	1	No Gas	0.005	ug/l	648.73
Ni	60	72	1	No Gas	-0.004	ug/l	542.27
Ni	60	72	3	He	0.007	ug/l	180.00
Cu	63	72	1	No Gas	0.013	ug/l	3064.89
Cu	63	72	3	He	0.019	ug/l	1046.16
Cu	65	72	1	No Gas	0.031	ug/l	1449.32
Zn	66	72	1	No Gas	-0.008	ug/l	1061.06
Zn	66	72	3	He	-0.015	ug/l	236.67
As	75	72	1	No Gas	-0.147	ug/l	7698.88
As	75	72	3	He	-0.055	ug/l	165.13
Se	78	72	2	H2	0.002	ug/l	34.78
Br	79	72	1	No Gas	-111.020	ug/l	13696.01
Br	79	72	2	H2	-83.471	ug/l	7420.55
Se	82	72	1	No Gas	0.213	ug/l	437.94
Kr	84	72	1	No Gas		ug/l	13363.03
Sr	88	72	1	No Gas	-0.005	ug/l	1520.40
Sr	88	72	3	He	0.006	ug/l	405.56
Mo	95	115	1	No Gas	0.057	ug/l	985.60
Mo	95	115	3	He	0.075	ug/l	440.01
Mo	98	115	1	No Gas	0.054	ug/l	1584.55
Ag	107	115	1	No Gas	0.002	ug/l	2704.68
Ag	109	115	1	No Gas	0.001	ug/l	2715.36
Cd	111	115	1	No Gas	0.011	ug/l	39.19

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.006	ug/l	29.33
Cd	114	115	1	No Gas	0.010	ug/l	-50.28
Cd	114	115	3	He	0.005	ug/l	59.65
Sn	118	115	1	No Gas	-0.009	ug/l	3177.40
Sn	118	115	3	He	0.003	ug/l	868.92
Sb	121	115	1	No Gas	-0.008	ug/l	652.08
Sb	121	115	3	He	-0.007	ug/l	171.02
Sb	123	115	1	No Gas	-0.008	ug/l	551.07
Sb	123	115	3	He	-0.004	ug/l	151.35
Ba	135	115	1	No Gas	-0.007	ug/l	272.80
Ba	137	115	1	No Gas	-0.007	ug/l	422.50
La	139	115	3	He	0.000	ug/l	70.00
Ce	140	115	3	He	0.000	ug/l	121.11
Hg	201	209	1	No Gas	0.000	ug/l	72.32
Hg	202	209	1	No Gas	-0.002	ug/l	217.63
Hg	202	209	3	He	-0.005	ug/l	84.32
Tl	203	209	3	He	-0.078	ug/l	2726.04
Tl	205	209	1	No Gas	-0.051	ug/l	10952.49
Tl	205	209	3	He	-0.088	ug/l	6328.72
[Pb]	206	209	1	No Gas	0.011	ug/l	2171.30
[Pb]	207	209	1	No Gas	0.008	ug/l	1799.02
Pb	208	209	1	No Gas	0.010	ug/l	8367.75
Th	232	209	3	He	-0.001	ug/l	423.51
U	238	209	1	No Gas	0.001	ug/l	609.56

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	5272455.59	108.6
Sc	45	2	H2	3679272.50	105.3
Sc	45	3	He	453248.76	99.8
Ge	72	1	No Gas	1765054.22	103.6
Ge	72	2	H2	1370439.29	101.3
Ge	72	3	He	306708.96	99.1
In	115	1	No Gas	17787026.30	100.8
In	115	3	He	4076323.65	98.2
Tb	159	1	No Gas	21563535.90	99.8
Tb	159	3	He	7914753.07	97.3
Ho	165	1	No Gas	20978637.48	97.5
Ho	165	3	He	7868418.61	95.8
Lu	175	1	No Gas	21218264.39	99.9
Lu	175	3	He	6697000.09	97.7
Bi	209	1	No Gas	15634705.32	97.9
Bi	209	3	He	6184661.35	97.5

# ICPMS207-B Analytical Data

**Sample Name** CCV  
**File Name** 154\_CCV.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-07 03:08:10  
**Sample Type** CCV  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	586.817	ug/l	2415119.18
Be	9	45	1	No Gas	51.279	ug/l	95755.44
B	11	45	1	No Gas	50.698	ug/l	57310.27
Na	23	45	3	He	12404.712	ug/l	12606891.48
Mg	24	45	3	He	12520.913	ug/l	6853220.82
Al	27	45	1	No Gas	51.504	ug/l	719015.68
Si	28	45	2	H2	213.841	ug/l	487666.63
K	39	72	3	He	12427.374	ug/l	9248729.65
Ca	40	72	2	H2	12229.335	ug/l	132858184.34
Ti	47	72	1	No Gas	53.399	ug/l	122033.46
V	51	72	1	No Gas	53.588	ug/l	1623037.36
V	51	72	3	He	50.333	ug/l	355174.99
Cr	52	72	1	No Gas	55.070	ug/l	1593650.74
Cr	52	72	3	He	51.416	ug/l	383259.79
Mn	55	72	1	No Gas	55.747	ug/l	2256714.23
Mn	55	72	3	He	51.442	ug/l	275794.30
Fe	56	72	2	H2	1251.698	ug/l	32733569.29
Fe	56	72	3	He	1294.668	ug/l	8859358.42
Co	59	72	1	No Gas	55.337	ug/l	1865677.26
Ni	60	72	1	No Gas	55.111	ug/l	416701.02
Ni	60	72	3	He	52.434	ug/l	148403.83
Cu	63	72	1	No Gas	54.309	ug/l	1055931.06
Cu	63	72	3	He	54.104	ug/l	398447.23
Cu	65	72	1	No Gas	54.321	ug/l	512817.91
Zn	66	72	1	No Gas	55.357	ug/l	341078.89
Zn	66	72	3	He	54.092	ug/l	83022.36
As	75	72	1	No Gas	51.946	ug/l	375075.45
As	75	72	3	He	52.677	ug/l	67089.47
Se	78	72	2	H2	52.753	ug/l	44792.25
Br	79	72	1	No Gas	-76.562	ug/l	14335.36
Br	79	72	2	H2	-52.465	ug/l	8029.70
Se	82	72	1	No Gas	55.201	ug/l	24713.83
Kr	84	72	1	No Gas		ug/l	35066.38
Sr	88	72	1	No Gas	54.569	ug/l	3611727.55
Sr	88	72	3	He	51.679	ug/l	462133.69
Mo	95	115	1	No Gas	50.631	ug/l	713441.48
Mo	95	115	3	He	51.904	ug/l	251026.71
Mo	98	115	1	No Gas	50.093	ug/l	1188271.89
Ag	107	115	1	No Gas	20.272	ug/l	760776.45
Ag	109	115	1	No Gas	20.691	ug/l	741717.54
Cd	111	115	1	No Gas	49.905	ug/l	418915.15

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	51.816	ug/l	130446.68
Cd	114	115	1	No Gas	51.116	ug/l	953702.56
Cd	114	115	3	He	51.925	ug/l	319653.55
Sn	118	115	1	No Gas	52.225	ug/l	1277213.13
Sn	118	115	3	He	52.176	ug/l	339698.67
Sb	121	115	1	No Gas	53.426	ug/l	1976024.22
Sb	121	115	3	He	52.797	ug/l	489710.19
Sb	123	115	1	No Gas	53.127	ug/l	1511833.22
Sb	123	115	3	He	52.701	ug/l	386210.37
Ba	135	115	1	No Gas	52.848	ug/l	392894.40
Ba	137	115	1	No Gas	54.171	ug/l	688287.98
La	139	115	3	He	48.702	ug/l	1768493.18
Ce	140	115	3	He	49.208	ug/l	1887040.77
Hg	201	209	1	No Gas	0.956	ug/l	4570.21
Hg	202	209	1	No Gas	0.945	ug/l	10343.59
Hg	202	209	3	He	0.990	ug/l	4093.81
Tl	203	209	3	He	49.539	ug/l	620763.76
Tl	205	209	1	No Gas	51.316	ug/l	3795060.74
Tl	205	209	3	He	51.186	ug/l	1507544.87
[Pb]	206	209	1	No Gas	50.537	ug/l	1304659.54
[Pb]	207	209	1	No Gas	50.162	ug/l	1118653.75
Pb	208	209	1	No Gas	51.648	ug/l	5255332.72
Th	232	209	3	He	51.970	ug/l	2206089.74
U	238	209	1	No Gas	51.238	ug/l	5068177.45

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	4998202.63	103.0
Sc	45	2	H2	3502996.62	100.3
Sc	45	3	He	446367.04	98.3
Ge	72	1	No Gas	1691328.75	99.3
Ge	72	2	H2	1317706.24	97.4
Ge	72	3	He	304458.35	98.4
In	115	1	No Gas	16910722.71	95.9
In	115	3	He	3905473.05	94.1
Tb	159	1	No Gas	21132659.42	97.8
Tb	159	3	He	7514888.01	92.4
Ho	165	1	No Gas	20736802.74	96.3
Ho	165	3	He	7665835.46	93.3
Lu	175	1	No Gas	20953494.22	98.6
Lu	175	3	He	6458573.61	94.2
Bi	209	1	No Gas	14967144.02	93.7
Bi	209	3	He	5807233.29	91.6

# ICPMS207-B Analytical Data

**Sample Name** CCB  
**File Name** 155\_CCB.d  
**Data Path Name** D:\Agilent\ICPMH\1\DATA\220106DoD.b  
**Acq Time** 2022-01-07 03:14:08  
**Sample Type** CCB  
**Total Dilution** 1.0000  
**Comment** ICPMS-200.8-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	1.305	ug/l	12875.30
Be	9	45	1	No Gas	0.028	ug/l	78.98
B	11	45	1	No Gas	0.287	ug/l	3377.74
Na	23	45	3	He	13.653	ug/l	74354.97
Mg	24	45	3	He	0.083	ug/l	2135.92
Al	27	45	1	No Gas	0.649	ug/l	43733.01
Si	28	45	2	H2	-1.327	ug/l	8893.52
K	39	72	3	He	7.106	ug/l	81545.32
Ca	40	72	2	H2	26.891	ug/l	383291.24
Ti	47	72	1	No Gas	0.032	ug/l	241.91
V	51	72	1	No Gas	-0.960	ug/l	-9588.88
V	51	72	3	He	-1.304	ug/l	5957.91
Cr	52	72	1	No Gas	-0.307	ug/l	28671.13
Cr	52	72	3	He	0.002	ug/l	593.35
Mn	55	72	1	No Gas	-0.029	ug/l	6342.16
Mn	55	72	3	He	-0.020	ug/l	250.95
Fe	56	72	2	H2	-1.100	ug/l	62098.11
Fe	56	72	3	He	1.502	ug/l	18695.70
Co	59	72	1	No Gas	0.012	ug/l	864.98
Ni	60	72	1	No Gas	0.005	ug/l	612.14
Ni	60	72	3	He	0.007	ug/l	177.78
Cu	63	72	1	No Gas	0.028	ug/l	3359.07
Cu	63	72	3	He	0.038	ug/l	1159.82
Cu	65	72	1	No Gas	0.046	ug/l	1590.73
Zn	66	72	1	No Gas	-0.007	ug/l	1064.33
Zn	66	72	3	He	-0.011	ug/l	238.89
As	75	72	1	No Gas	0.149	ug/l	9865.65
As	75	72	3	He	-0.032	ug/l	190.87
Se	78	72	2	H2	0.017	ug/l	46.22
Br	79	72	1	No Gas	-132.972	ug/l	12860.22
Br	79	72	2	H2	-86.535	ug/l	7077.73
Se	82	72	1	No Gas	0.403	ug/l	523.41
Kr	84	72	1	No Gas		ug/l	14974.76
Sr	88	72	1	No Gas	-0.002	ug/l	1713.38
Sr	88	72	3	He	0.004	ug/l	376.67
Mo	95	115	1	No Gas	0.041	ug/l	752.25
Mo	95	115	3	He	0.048	ug/l	295.56
Mo	98	115	1	No Gas	0.035	ug/l	1097.83
Ag	107	115	1	No Gas	0.005	ug/l	2775.39
Ag	109	115	1	No Gas	0.001	ug/l	2715.36
Cd	111	115	1	No Gas	0.009	ug/l	28.96

# ICPMS207-B Analytical Data

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	CPS
Cd	111	115	3	He	0.005	ug/l	28.33
Cd	114	115	1	No Gas	0.011	ug/l	-46.32
Cd	114	115	3	He	0.007	ug/l	73.01
Sn	118	115	1	No Gas	0.017	ug/l	3799.65
Sn	118	115	3	He	0.011	ug/l	913.37
Sb	121	115	1	No Gas	0.038	ug/l	2440.13
Sb	121	115	3	He	0.029	ug/l	511.73
Sb	123	115	1	No Gas	0.039	ug/l	1931.66
Sb	123	115	3	He	0.029	ug/l	401.72
Ba	135	115	1	No Gas	0.002	ug/l	339.33
Ba	137	115	1	No Gas	0.009	ug/l	635.42
La	139	115	3	He	0.001	ug/l	96.67
Ce	140	115	3	He	0.001	ug/l	147.78
Hg	201	209	1	No Gas	0.003	ug/l	86.98
Hg	202	209	1	No Gas	0.001	ug/l	245.29
Hg	202	209	3	He	0.000	ug/l	102.31
Tl	203	209	3	He	0.180	ug/l	6110.53
Tl	205	209	1	No Gas	0.145	ug/l	25875.45
Tl	205	209	3	He	0.180	ug/l	14575.81
[Pb]	206	209	1	No Gas	0.020	ug/l	2391.35
[Pb]	207	209	1	No Gas	0.015	ug/l	1955.71
Pb	208	209	1	No Gas	0.019	ug/l	9207.97
Th	232	209	3	He	0.012	ug/l	984.43
U	238	209	1	No Gas	0.003	ug/l	770.87

Name	Mass	Tune Step	Tune Mode	CPS	ISTD Recovery %
Sc	45	1	No Gas	5147865.29	106.0
Sc	45	2	H2	3500918.83	100.2
Sc	45	3	He	447597.01	98.6
Ge	72	1	No Gas	1762301.04	103.4
Ge	72	2	H2	1326567.18	98.0
Ge	72	3	He	301331.56	97.4
In	115	1	No Gas	17635495.84	100.0
In	115	3	He	4007742.02	96.5
Tb	159	1	No Gas	21403938.60	99.1
Tb	159	3	He	7763083.90	95.4
Ho	165	1	No Gas	21169416.59	98.4
Ho	165	3	He	7743006.17	94.3
Lu	175	1	No Gas	21175581.71	99.7
Lu	175	3	He	6510862.98	95.0
Bi	209	1	No Gas	15516399.07	97.1
Bi	209	3	He	6136941.77	96.8

# 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

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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) HNO<sub>3</sub>  
 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.

### 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 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: ME211202 EL200.2MS  
Standard Name: EL-200.2MS  
Date Prepared: 12/2/2021  
Date Expires: 12/2/2022  
Department: ME  
Vendor: Inorganic Ventures  
Lot Number: P2-MEB685870  
Balance ID:  
Comments: Opened 8/11/2021; Expires 8/11/2022

Type: Primary  
BY: Amanda E. McDani  
Status: Open

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Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Multi Analyte Custom Grade Solution	14398	500	mL	12/2/

**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) HNO <sub>3</sub>	
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:	Cadmium, Beryllium,
	10 µg/mL ea:	Silver

**ID #: 14398**

Opened: \_\_\_\_\_

Multi Analyte Custom Grade Solution

**Expires: 3/8/2025**

Rec'd: 10/18/2021

 Energv 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,  $X_{\text{CRM/RM}}$ , 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

$u_{\text{bb}}$  = bottle to bottle homogeneity standard uncertainty

$u_{\text{Its}}$  = long term stability standard uncertainty (storage)

$u_{\text{TS}}$  = 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

$u_{\text{bb}}$  = bottle to bottle homogeneity standard uncertainty

$u_{\text{Its}}$  = long term stability standard uncertainty (storage)

$u_{\text{TS}}$  = 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

# Spike LOG

Standard ID: ME211229 AUDIGSPK

Standard Name: AUDIGSPK

Date Prepared: 12/29/2021

Date Expires: 10/25/2022

Department: ME

Vendor:

Lot Number:

Balance ID:

Comments:

---

Type: Secondary

BY: Amanda E. McDani

Status: Empty/Disposed

Final Volume: 50 mL

Stock Source

**Base Units**

**Amount Added**

ME211202A	U Stock	ug/mL	5 mL
ME 211025 Th Sec	Th Seondary 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
ME211229A AU 2n	Au 2nd source Stock	ug/mL	15 mL
ME211025A	Te Stock	ug/mL	15 mL

Analvtes

**CAS**

Conc: **ug/mL**

# 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% HNO<sub>3</sub> (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<sub>i</sub>) including uncertainty established during characterization of the material (u<sub>char</sub>), the between bottle variation (u<sub>bb</sub>), short-term stability (u<sub>sts</sub>) and long-term stability (u<sub>lts</sub>) 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) HNO<sub>3</sub>**

% abundance of stable isotopes : <sup>238</sup>U : 99.82% ; <sup>235</sup>U : 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	<b>0.0252</b>	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 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](http://www.SCPSCIENCE.com)). / *SVP vous référer à la Fiche Signalétique applicable pour de l'information sur ce produit (Disponible à [www.SCPSCIENCE.com](http://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 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.*

**CORPORATE HEADQUARTERS**  
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H9X 4B6 Canada  
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**USA**  
3<sup>rd</sup> Party Distribution Center  
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**FRANCE**  
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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: 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  $\mu\text{m}$ .

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](http://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

# 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

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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% HNO<sub>3</sub> (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<sub>i</sub>) including uncertainty established during characterization of the material (u<sub>char</sub>), the between bottle variation (u<sub>bb</sub>), short-term stability (u<sub>sts</sub>) and long-term stability (u<sub>lts</sub>) 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) HNO<sub>3</sub>**  
 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	<b>0.0102</b>	Sn	<0.0010
Al	<b>0.0148</b>	Ga	<b>0.0526</b>	Ni	<b>0.0064</b>	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	<b>0.0235</b>	Ti	<0.0012
Bi	<0.0010	In	<0.0010	Pt	<0.0010	Tl	<0.0011
Ca	<b>0.0375</b>	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	<b>0.0121</b>	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	<b>0.0035</b>	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](http://www.SCPSCIENCE.com)). / *SVP vous référer à la Fiche Signalétique applicable pour de l'information sur ce produit (Disponible à [www.SCPSCIENCE.com](http://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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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% HNO<sub>3</sub> (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) HNO<sub>3</sub>**

**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

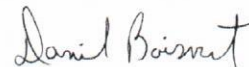
Trace Metal Impurities as tested by ICP-MS:

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	<b>0.0106</b>	Ga	<0.0010	Ni	<0.0010	Sr	<0.0025
As	<0.0010	Gd	<b>0.0889</b>	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	<b>0.0031</b>	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	<b>0.0169</b>	Ir	<0.0010	Rb	<0.0010	Tm	<0.0010
Cd	<0.0010	K	<0.0024	Re	<0.0010	U	<0.0010
Ce	<b>0.0272</b>	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	<b>0.0020</b>
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	<b>0.0156</b>	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](http://www.SCPSCIENCE.com)). / *SVP vous référer à la Fiche Signalétique applicable pour de l'information sur ce produit (Disponible à [www.SCPSCIENCE.com](http://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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N.Y. 12919-4816  
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Fax: +1 (800) 253-5549

**FRANCE**  
12 Ave. de Québec, Bat. IRIS  
91140, Villebon-sur-Yvette  
Phone: +33 (0) 1 69 18 71 17  
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: 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	<b>0.3851</b>	Fe	<0.0090	Nd	<0.0010	Sn	<0.0010
Al	<b>0.0062</b>	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	<b>0.0434</b>	Th	<0.0010
Be	<0.0010	Ho	<0.0010	Pr	<0.0010	Ti	<0.0012
Bi	<0.0010	In	<0.0010	Pt	<b>0.0048</b>	Tl	<0.0011
Ca	<0.0135	Ir	<0.0010	Rb	<0.0010	Tm	<0.0010
Cd	<0.0010	K	<b>0.0362</b>	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	<b>0.0029</b>	Mg	<0.0010	Sb	<0.0010	Yb	<0.0010
Cu	<b>0.0023</b>	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	<b>0.0070</b>	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](http://www.SCPSCIENCE.com)). / *SVP vous référer à la Fiche Signalétique applicable pour de l'information sur ce produit (Disponible à [www.SCPSCIENCE.com](http://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.*

**CORPORATE HEADQUARTERS**  
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348 Route 11, Champlain,  
N.Y. 12919-4816  
Phone: +1 (800) 361-6820  
Fax: +1 (800) 253-5549

**FRANCE**  
12 Ave. de Québec, Bat. IRIS  
91140, Villebon-sur-Yvette  
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: 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

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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**

Analtes

**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% HNO<sub>3</sub> (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) HNO<sub>3</sub>**

**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	<b>0.0449</b>	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	<b>0.0184</b>	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	<b>0.0028</b>	Ti	<0.0012
Bi	<0.0010	In	<b>0.0020</b>	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](http://www.SCPSCIENCE.com)). / SVP vous référer à la Fiche Signalétique applicable pour de l'information sur ce produit (Disponible à [www.SCPSCIENCE.com](http://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  
Phone: +49 (0) 8342-89560-61  
Fax: +49 (0) 8342-89560-69

# Energy Laboratories Inc

# Standard LOG

Standard ID: ME211207 2008TS  
Standard Name: 200.8 Tune Solution  
Date Prepared: 12/7/2021  
Date Expires: 12/7/2022  
Department: ME  
Vendor: Inorganic Ventures  
Lot Number: R2-MEB691898  
Balance ID:  
Comments: Opened 12/7/2021; Expired 12/7/2022

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

---

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Multi Analyte Custom Grade Solution	13795	125	mL	12/7/

**Final Volume:** 125 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: 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

$u_{\text{bb}}$  = bottle to bottle homogeneity standard uncertainty

$u_{\text{ITS}}$  = long term stability standard uncertainty (storage)

$u_{\text{TS}}$  = 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

$u_{\text{bb}}$  = bottle to bottle homogeneity standard uncertainty

$u_{\text{ITS}}$  = long term stability standard uncertainty (storage)

$u_{\text{TS}}$  = 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  $4^\circ - 30^\circ \text{C}$  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  $4^\circ - 24^\circ \text{C}$  to minimize the effects of transpiration. Use at  $20^\circ \pm 4^\circ \text{C}$  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](http://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 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



# Energy Laboratories Inc

# Standard LOG

Standard ID: ME220106 1000 PPB STANDARD  
 Standard Name: 1000 PPB Standard  
 Date Prepared: 1/6/2022  
 Date Expires: 11/18/2022  
 Department:  
 Vendor:  
 Lot Number:  
 Balance ID:  
 Comments: Made fresh daily

Type:  
 BY: Stacy R. Hendricks  
 Status: Open

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Nitric Acid, 69.0-70.0%,0000282671	14178	0.5	mL	4/11/
Hydrochloric Acid Instra Analyzed 000	14028	0.25	mL	3/29/
Milli-Q H2O	391	48.25	mL	6/1/2

**Final Volume:** 50 mL

<u>Stock Source</u>	<b>Base Units</b>	<b>Amount Added</b>
ME211208 MSCAL MSCAL 2B	ug/mL	0.5 mL
ME211118 MSCAL EL-MSCAL-5A	ug/mL	0.5 mL
ME211229A AU 2n Au 2nd source Stock	ug/mL	0.01 mL

Analvtes **CAS** Conc: **ug/mL**

# 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  
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inorganicventures.com

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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: 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](http://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) HNO<sub>3</sub>

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:

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

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

$k$  = 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 ( $\mu\text{g/mL}$ )

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](http://inorganicventures.com); [info@inorganicventures.com](mailto: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	<b>0.3851</b>	Fe	<0.0090	Nd	<0.0010	Sn	<0.0010
Al	<b>0.0062</b>	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	<b>0.0434</b>	Th	<0.0010
Be	<0.0010	Ho	<0.0010	Pr	<0.0010	Ti	<0.0012
Bi	<0.0010	In	<0.0010	Pt	<b>0.0048</b>	Tl	<0.0011
Ca	<0.0135	Ir	<0.0010	Rb	<0.0010	Tm	<0.0010
Cd	<0.0010	K	<b>0.0362</b>	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	<b>0.0029</b>	Mg	<0.0010	Sb	<0.0010	Yb	<0.0010
Cu	<b>0.0023</b>	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	<b>0.0070</b>	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](http://www.SCPSCIENCE.com)). / *SVP vous référer à la Fiche Signalétique applicable pour de l'information sur ce produit (Disponible à [www.SCPSCIENCE.com](http://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.*

**CORPORATE HEADQUARTERS**  
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Marktoberdorf  
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Fax: +49 (0) 8342-89560-69

# Energy Laboratories Inc

# Standard LOG

Standard ID: ME220106 100 PPB STANDARD  
 Standard Name: 100 ppb Standard  
 Date Prepared: 1/6/2022  
 Date Expires: 1/7/2022  
 Department: ME  
 Vendor: Inorganic Ventures  
 Lot Number:  
 Balance ID:  
 Comments: Made Fresh Daily

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

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Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Hydrochloric Acid, 36.5-38.0% 000027	13784	0.25	mL	12/15
Nitric Acid, 69.0-70.0%,0000277202	13781	0.5	mL	1/14/
Milli-Q H2O	391	48.335	mL	6/1/2

**Final Volume:** 50 mL

<u>Stock Source</u>	<b>Base Units</b>	<b>Amount Added</b>
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
ME210903A CE, L Ce, La Primary	ug/mL	0.05 mL

Analvtes **CAS** Conc: **ug/mL**

# 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

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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) HNO<sub>3</sub>  
 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

$u_{\text{bb}}$  = bottle to bottle homogeneity standard uncertainty

$u_{\text{Its}}$  = long term stability standard uncertainty (storage)

$u_{\text{ts}}$  = 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

$u_{\text{bb}}$  = bottle to bottle homogeneity standard uncertainty

$u_{\text{Its}}$  = long term stability standard uncertainty (storage)

$u_{\text{ts}}$  = 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](http://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) HNO<sub>3</sub>

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](http://inorganicventures.com); [info@inorganicventures.com](mailto: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% HNO<sub>3</sub> (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) HNO<sub>3</sub>**

Trace Metal Impurities as tested by ICP-MS:

Element	Conc. (ppm)	Element	Conc. (ppm)	Element	Conc. (ppm)	Element	Conc. (ppm)
Ag	<0.0010	Fe	<b>0.0322</b>	Nd	<0.0010	Sn	<0.0010
Al	<b>0.0042</b>	Ga	<0.0010	Ni	<b>0.0039</b>	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	<b>0.0117</b>
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	<b>0.0112</b>	Lu	<0.0010	S	*	Y	<0.0010
Cs	<0.0010	Mg	<0.0010	Sb	<0.0010	Yb	<0.0010
Cu	<b>0.0060</b>	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	<b>0.0092</b>	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](http://www.SCPSCIENCE.com)). / *SVP vous référer à la Fiche Signalétique applicable pour de l'information sur ce produit (Disponible à [www.SCPSCIENCE.com](http://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	<b>0.3851</b>	Fe	<0.0090	Nd	<0.0010	Sn	<0.0010
Al	<b>0.0062</b>	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	<b>0.0434</b>	Th	<0.0010
Be	<0.0010	Ho	<0.0010	Pr	<0.0010	Ti	<0.0012
Bi	<0.0010	In	<0.0010	Pt	<b>0.0048</b>	Tl	<0.0011
Ca	<0.0135	Ir	<0.0010	Rb	<0.0010	Tm	<0.0010
Cd	<0.0010	K	<b>0.0362</b>	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	<b>0.0029</b>	Mg	<0.0010	Sb	<0.0010	Yb	<0.0010
Cu	<b>0.0023</b>	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	<b>0.0070</b>	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](http://www.SCPSCIENCE.com)). / *SVP vous référer à la Fiche Signalétique applicable pour de l'information sur ce produit (Disponible à [www.SCPSCIENCE.com](http://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:

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# Energy Laboratories Inc

# Standard LOG

Standard ID: ME210903A CE, LA PRIMARY  
 Standard Name: Ce, La Primary      Type: Secondary  
 Date Prepared: 9/3/2021      BY: Parker A. Pearsall  
 Date Expires: 1/7/2022  
 Department: ME      Status: Expired  
 Vendor: Inorganic Ventures  
 Lot Number: M2-CE657768/M2-  
 Balance ID:  
 Comments: Used to make standards and spiking solutions

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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

<u>Stock Source</u>	<b>Base Units</b>	<b>Amount Added</b>
ME210107-CE Ce Primary Stock	ug/mL	5 mL
ME210107 Primary La Primary Stock	ug/mL	5 mL
<u>Analvtes</u>	<b>CAS</b>	Conc: <b>ug/mL</b>

# Energy Laboratories Inc

# Standard LOG

Standard ID: ME210107-CE  
Standard Name: Ce Primary Stock  
Date Prepared: 1/7/2021  
Date Expires: 1/7/2022  
Department: ME  
Vendor: Inorganic Ventures  
Lot Number: P2-CE682808  
Balance ID:  
Comments: Opened 01/07/2021; Expires 01/07/2022

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

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Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Cerium Single Analyte Custom Grade	13450	125	mL	1/7/2022

**Final Volume:** 125 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: Single Analyte Custom Grade Solution  
 Catalog Number: CGCE1  
 Lot Number: P2-CE682808  
 Matrix: 7% (v/v) HNO<sub>3</sub>  
 Value / Analyte(s): 1 000 µg/mL ea:  
 Cerium  
 Starting Material: CeO<sub>2</sub>  
 Starting Material Lot#: 2980  
 Starting Material Purity: 99.9959%

**ID #: 13450**

Opened: \_\_\_\_\_

Cerium Single Analyte Custom Grade Solution

**Expires: 8/24/2023**

Rec'd: 1/7/2021

Energy Laboratories Inc 1120 So. 27th Street  
 Billings MT 59107

### 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 1002 ± 4 µg/mL  
**Density:** 1.042 g/mL (measured at 20 ± 4 °C)

#### Assay Information:

<b>Assay Method #1</b>	<b>1002 ± 6 µg/mL</b> ICP Assay NIST SRM 3110 Lot Number: 090504
<b>Assay Method #2</b>	<b>1002 ± 3 µg/mL</b> EDTA NIST SRM 928 Lot Number: 928
<b>Assay Method #3</b>	<b>1004 ± 5 µg/mL</b> 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 ( $\mu\text{g/mL}$ )

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  $\mu\text{m}$ .

M Ag < 0.000202	M Eu < 0.001212	M Na < 0.025867	M Se < 0.029505	M Zn < 0.095790
M Al 0.007883	M Fe 0.003548	M Nb < 0.000202	O Si < 0.385450	M Zr < 0.054564
M As < 0.002222	O Ga < 0.023720	M Nd 0.006369	M Sm < 0.007679	
M Au < 0.001008	M Gd 0.016818	M Ni < 0.002829	M Sn < 0.000606	
M B < 0.012327	M Ge < 0.004850	M Os < 0.000201	M Sr < 0.002425	
M Ba 0.001211	M Hf < 0.000606	i P <	M Ta < 0.000404	
M Be < 0.000404	M Hg < 0.000201	M Pb 0.000924	i Tb <	
M Bi < 0.000202	M Ho 0.000046	M Pd < 0.000202	M Te < 0.000606	
O Ca 0.015839	M In < 0.000202	M Pr < 0.277268	M Th < 0.000404	
M Cd < 0.000202	M Ir < 0.004437	M Pt < 0.000404	M Ti < 0.009296	
s Ce <	O K < 0.017790	M Rb < 0.000808	M Tl < 0.000202	
M Co < 0.000202	O La < 0.023720	M Re < 0.000202	M Tm < 0.001212	
M Cr < 0.000606	M Li < 0.000202	M Rh < 0.000202	M U < 0.000202	
M Cs < 0.001616	M Lu 0.000681	M Ru < 0.000201	M V < 0.003637	
M Cu < 0.005658	M Mg 0.002542	i S <	M W < 0.000808	
M Dy 0.002334	M Mn 0.000092	M Sb < 0.000202	M Y < 0.012125	
M Er < 0.004445	M Mo < 0.001414	M Sc < 0.000404	M Yb 0.002311	

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](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 140.12 +4 6 to 8,9,10 for some compounds  $Ce(OH)_y(H_2O)_{x+4-y}$

**Chemical Compatibility** -Soluble in HCl, and HNO<sub>3</sub>. Avoid HF, H<sub>3</sub>PO<sub>4</sub>, H<sub>2</sub>SO<sub>4</sub> and neutral to basic media. Stable with most metals and inorganic anions forming an insoluble carbonate, oxide, oxalate, and fluoride and sparingly soluble sulfates (La - Eu exhibit low sulfate solubility). Avoid mixing with elements/solutions containing moderate amounts of fluoride.

**Stability** - 2-100 ppb levels stable for months in 1% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5 % HNO<sub>3</sub> / LDPE container.

**Ce Containing Samples (Preparation and Solution)** -Metal (Soluble in acids); Oxide ( dissolved by heating in H<sub>2</sub>O / HNO<sub>3</sub>); Ores (Carbonate fusion in PtO followed by HCl dissolution); Organic Matrices (dry ash and dissolve in 1:1 H<sub>2</sub>O/ HCl or HNO<sub>3</sub> ).

**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 140 amu	1 ppt	n/a	124Sn16O, 124Te16O
ICP-OES 413.765 nm	0.05 / 0.0058 µg/mL	1	a Ce 413.747 line may effect Bkg. Corr.
ICP-OES 418.660 nm	0.05 / 0.003 µg/mL	1	Zr
ICP-OES 453.975 nm	0.06 / 0.0063 µg/mL	1	

## 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](http://inorganicventures.com); [info@inorganicventures.com](mailto:info@inorganicventures.com)



**11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY**

**11.1 Certification Issue Date**

August 24, 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**

- **August 24, 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  
Manager, Quality Control



**Certifying Officer:**

Paul Gaines  
CEO, Senior Technical Director



# Energy Laboratories Inc

# Standard LOG

Standard ID: ME210107 PRIMARY LANTHANUM STOCK  
Standard Name: La Primary Stock  
Date Prepared: 1/7/2021  
Date Expires: 1/7/2022  
Department: ME  
Vendor: Inorganic Ventures  
Lot Number: M2-LA655478  
Balance ID:  
Comments: Opened 01/07/2021; Expires 01/07/2022

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

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Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Lanthanum Single Analyte Custom Gr	11342	125	mL	1/7/2022

**Final Volume:** 125 mL

Stock Source

**Base Units**

**Amount Added**

Analyses

**CAS**

Conc: **ug/mL**

**1.0 ACCREDITATION / REGISTRATION**

INORGANIC VENTURES is accredited to ISO Guide 34, "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: CGLA1  
Lot Number: M2-LA655478  
Matrix: 2% (v/v) HNO<sub>3</sub>  
Value / Analyte(s): 1 000 µg/mL ea:  
Lanthanum  
Starting Material: La<sub>2</sub>O<sub>3</sub>  
Starting Material Lot#: C09PQ7  
Starting Material Purity: 99.9907%

**3.0 CERTIFIED VALUES AND UNCERTAINTIES**

Certified Value: 999 ± 5 µg/mL  
Density: 1.011 g/mL (measured at 20 ± 4 °C)

**Assay Information:**

**Assay Method #1**      997 ± 3 µg/mL  
EDTA NIST SRM 928 Lot Number: 928

**Assay Method #2**      1001 ± 3 µg/mL  
ICP Assay NIST SRM 3127a Lot Number: 890402

- 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/IRM. 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 #: 11342

Opened: \_\_\_\_\_

Lanthanum Single Analyte Custom Grade Soln

Expires: 2/27/2019

Rec'd: 3/22/2019

Energy Laboratories Inc 1120 So. 27th Street

Billings MT 59107

## Characterization of CRM/RM by Two Methods

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

$$X_{CRM/RM} = (w_a) [X_a] + (w_b) [X_b]$$

$X_a$  = mean of Assay Method A with standard uncertainty  $u_{char a}$

$X_b$  = mean of Assay Method B with standard uncertainty  $u_{char b}$

$w_a$  and  $w_b$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_a = (1/u_{char a}^2) / [(1/u_{char a}^2) + (1/u_{char b}^2)]$$

$$w_b = (1/u_{char b}^2) / [(1/u_{char a}^2) + (1/u_{char b}^2)]$$

$$CRM/RM \text{ Expanded Uncertainty } (E) = U_{CRM/RM} = k [u^2_{char a+b} + u^2_{bb} + u^2_{ts} + u^2_{ls}]^{1/2}$$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char a+b} = [(w_a)^2 (u_{char a}^2) + (w_b)^2 (u_{char b}^2)]^{1/2}$  where  $u_{char a}$  and  $u_{char b}$  are the square root of the sum of the squares of errors from characterization which include assay measurement, density, NIST SRM uncertainty, weighing, and volume

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

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

$u_{ls}$  = 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  $\mu\text{m}$ .

M Ag < 0.000101 M	Eu < 0.000101 O	Na 0.032973 M	Se < 0.002014 M	Zn < 0.008054
M Al 0.000786 M	Fe 0.000409 M	Nb < 0.000101 O	Si 0.048140 M	Zr < 0.000403
M As < 0.000101 M	Ga < 0.000101 M	Nd 0.000205 M	Sm < 0.000101	
M Au < 0.000302 M	Gd < 0.000302 M	Ni < 0.001510 M	Sn < 0.000101	
O B < 0.004112 M	Ge < 0.000604 M	Os < 0.000101 M	Sr 0.002368	
O Ba < 0.000411 M	HF < 0.000302 n	P < M	Ta < 0.000101	
O Be < 0.000062 M	Hg < 0.000101 M	Pb 0.000743 M	Tb < 0.000101	
M Bi 0.000108 M	Ho < 0.000805 M	Pd < 0.000101 M	Te < 0.001007	
O Cd 0.005462 M	In < 0.000101 M	Pr < 0.001510 M	Th < 0.000101	
M Cd < 0.000101 M	Ir < 0.000101 M	Pt < 0.000101 O	Ti < 0.000617	
M Co 0.001722 M	K 0.024736 M	Rb < 0.003020 M	Tl < 0.000101	
M Ce < 0.000201 s	La < M	Ru < 0.000101 M	Tm < 0.000101	
M Cr < 0.001007 M	Li < 0.000604 M	Rh < 0.000101 M	U < 0.000101	
M Cs < 0.000805 M	Lu < 0.000101 M	Ru < 0.000101 M	V < 0.000302	
M Cu < 0.002014 O	Mg 0.000165 I	S < 0.000001 M	W < 0.000101	
M Dy < 0.000101 O	Mn 0.000220 M	Sb < 0.000101 M	Y < 0.000101	
M Er < 0.000302 M	Mo < 0.000101 O	Sc < 0.000103 O	Yb < 0.001028	

## 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](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 138.91 +3 6 to 8, 9, 10 for some compounds La(OH)<sub>3</sub>(H<sub>2</sub>O)<sub>x</sub>+3-y

**Chemical Compatibility** -Soluble in HCl, and HNO<sub>3</sub>. Avoid HF, H<sub>3</sub>PO<sub>4</sub>, H<sub>2</sub>SO<sub>4</sub> and neutral to basic media. Stable with most metals and inorganic anions forming an insoluble carbonate, oxide, oxalate, and fluoride and sparingly soluble sulfates (La - Eu exhibit low sulfate solubility). Avoid mixing with elements / solutions containing moderate amounts of fluoride.

**Stability** - 2-100 ppb levels stable for months in 1% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5 % HNO<sub>3</sub> / LDPE container.

**La Containing Samples (Preparation and Solution)** -Metal (Soluble in acids); Oxide (Dissolved by heating in H<sub>2</sub>O / HNO<sub>3</sub>); Ores (Carbonate fusion in PtO followed by HCl dissolution); Organic Matrices (Dry ash and dissolve in 1:1 H<sub>2</sub>O / HCl or HNO<sub>3</sub>).

**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 139 amu	1 ppt	n/a	<u>123Sb16O</u> , <u>123Te16O</u>
ICP-OES 333.749 nm	0.01 / 0.001 µg/mL	1	
ICP-OES 408.672 nm	0.01 / 0.001 µg/mL	1	Th
ICP-OES 412.323 nm	0.01 / 0.001 µg/mL	1	Ce, 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 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

### 10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

### 10.3 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "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: 800.669.6769, 540.585.2630, Fax: 540.585.3812, [inorganicventures.com](http://inorganicventures.com), [info@inorganicventures.com](mailto:info@inorganicventures.com)

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

February 27, 2017

- 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 27, 2021

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: \_\_\_\_\_

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Donna Senn  
Product Documentation Technician



Certificate Approved By:

Michael Booth  
Supervisor, Quality Control



Certifying Officer:

Paul Gaines  
CEO, Senior Technical Director



# Energy Laboratories Inc

# Standard LOG

Standard ID: ME220106 CCV STANDARD  
 Standard Name: 100 ppb Standard  
 Date Prepared: 1/6/2022  
 Date Expires: 1/7/2022  
 Department: ME  
 Vendor: Inorganic Ventures  
 Lot Number:  
 Balance ID:  
 Comments: Made Fresh Daily

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

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Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Hydrochloric Acid, 36.5-38.0% 000027	13784	0.25	mL	12/15
Nitric Acid, 69.0-70.0%,0000277202	13781	0.5	mL	1/14/
Milli-Q H2O	391	48.335	mL	6/1/2

**Final Volume:** 100 mL

<u>Stock Source</u>	<b>Base Units</b>	<b>Amount Added</b>
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
ME210903A CE, L Ce, La Primary	ug/mL	0.05 mL

Analvtes **CAS** Conc: **ug/mL**

# 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

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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) HNO<sub>3</sub>  
 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

$u_{\text{bb}}$  = bottle to bottle homogeneity standard uncertainty

$u_{\text{Its}}$  = long term stability standard uncertainty (storage)

$u_{\text{ts}}$  = 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

$u_{\text{bb}}$  = bottle to bottle homogeneity standard uncertainty

$u_{\text{Its}}$  = long term stability standard uncertainty (storage)

$u_{\text{ts}}$  = 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](http://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

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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) HNO<sub>3</sub>  
 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 (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 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](http://inorganicventures.com); [info@inorganicventures.com](mailto: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% HNO<sub>3</sub> (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<sub>i</sub>) including uncertainty established during characterization of the material (u<sub>char</sub>), the between bottle variation (u<sub>bb</sub>), short-term stability (u<sub>sts</sub>) and long-term stability (u<sub>lts</sub>) 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) HNO<sub>3</sub>**

Trace Metal Impurities as tested by ICP-MS:

Element	Conc. (ppm)	Element	Conc. (ppm)	Element	Conc. (ppm)	Element	Conc. (ppm)
Ag	<0.0010	Fe	<b>0.0322</b>	Nd	<0.0010	Sn	<0.0010
Al	<b>0.0042</b>	Ga	<0.0010	Ni	<b>0.0039</b>	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	<b>0.0117</b>
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	<b>0.0112</b>	Lu	<0.0010	S	*	Y	<0.0010
Cs	<0.0010	Mg	<0.0010	Sb	<0.0010	Yb	<0.0010
Cu	<b>0.0060</b>	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	<b>0.0092</b>	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](http://www.SCPSCIENCE.com)). / *SVP vous référer à la Fiche Signalétique applicable pour de l'information sur ce produit (Disponible à [www.SCPSCIENCE.com](http://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

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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	<b>0.3851</b>	Fe	<0.0090	Nd	<0.0010	Sn	<0.0010
Al	<b>0.0062</b>	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	<b>0.0434</b>	Th	<0.0010
Be	<0.0010	Ho	<0.0010	Pr	<0.0010	Ti	<0.0012
Bi	<0.0010	In	<0.0010	Pt	<b>0.0048</b>	Tl	<0.0011
Ca	<0.0135	Ir	<0.0010	Rb	<0.0010	Tm	<0.0010
Cd	<0.0010	K	<b>0.0362</b>	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	<b>0.0029</b>	Mg	<0.0010	Sb	<0.0010	Yb	<0.0010
Cu	<b>0.0023</b>	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	<b>0.0070</b>	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](http://www.SCPSCIENCE.com)). / *SVP vous référer à la Fiche Signalétique applicable pour de l'information sur ce produit (Disponible à [www.SCPSCIENCE.com](http://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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# Energy Laboratories Inc

# Standard LOG

Standard ID: ME210903A CE, LA PRIMARY  
Standard Name: Ce, La Primary  
Date Prepared: 9/3/2021  
Date Expires: 1/7/2022  
Department: ME  
Vendor: Inorganic Ventures  
Lot Number: M2-CE657768/M2-  
Balance ID:  
Type: Secondary  
BY: Parker A. Pearsall  
Status: Expired  
Comments: Used to make standards and spiking solutions

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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**

ME210107-CE Ce Primary Stock  
ME210107 Primary La Primary Stock

**Base Units**

ug/mL  
ug/mL

**Amount Added**

5 mL  
5 mL

**Analtes**

**CAS**

Conc: ug/mL

# Energy Laboratories Inc

# Standard LOG

Standard ID: ME210107-CE  
Standard Name: Ce Primary Stock  
Date Prepared: 1/7/2021  
Date Expires: 1/7/2022  
Department: ME  
Vendor: Inorganic Ventures  
Lot Number: P2-CE682808  
Balance ID:  
Comments: Opened 01/07/2021; Expires 01/07/2022

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

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Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Cerium Single Analyte Custom Grade	13450	125	mL	1/7/2022

**Final Volume:** 125 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: Single Analyte Custom Grade Solution  
Catalog Number: CGCE1  
Lot Number: P2-CE682808  
Matrix: 7% (v/v) HNO<sub>3</sub>  
Value / Analyte(s): 1 000 µg/mL ea:  
Cerium  
Starting Material: CeO<sub>2</sub>  
Starting Material Lot#: 2980  
Starting Material Purity: 99.9959%

**ID #: 13450**

Opened: \_\_\_\_\_

Cerium Single Analyte Custom Grade Solution

**Expires: 8/24/2023**

Rec'd: 1/7/2021

Energy Laboratories Inc 1120 So. 27th Street  
Billings MT 59107

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

**Certified Value:** 1002 ± 4 µg/mL  
**Density:** 1.042 g/mL (measured at 20 ± 4 °C)

### Assay Information:

<b>Assay Method #1</b>	<b>1002 ± 6 µg/mL</b> ICP Assay NIST SRM 3110 Lot Number: 090504
<b>Assay Method #2</b>	<b>1002 ± 3 µg/mL</b> EDTA NIST SRM 928 Lot Number: 928
<b>Assay Method #3</b>	<b>1004 ± 5 µg/mL</b> 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 ( $\mu\text{g/mL}$ )

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  $\mu\text{m}$ .

M Ag < 0.000202	M Eu < 0.001212	M Na < 0.025867	M Se < 0.029505	M Zn < 0.095790
M Al 0.007883	M Fe 0.003548	M Nb < 0.000202	O Si < 0.385450	M Zr < 0.054564
M As < 0.002222	O Ga < 0.023720	M Nd 0.006369	M Sm < 0.007679	
M Au < 0.001008	M Gd 0.016818	M Ni < 0.002829	M Sn < 0.000606	
M B < 0.012327	M Ge < 0.004850	M Os < 0.000201	M Sr < 0.002425	
M Ba 0.001211	M Hf < 0.000606	i P <	M Ta < 0.000404	
M Be < 0.000404	M Hg < 0.000201	M Pb 0.000924	i Tb <	
M Bi < 0.000202	M Ho 0.000046	M Pd < 0.000202	M Te < 0.000606	
O Ca 0.015839	M In < 0.000202	M Pr < 0.277268	M Th < 0.000404	
M Cd < 0.000202	M Ir < 0.004437	M Pt < 0.000404	M Ti < 0.009296	
s Ce <	O K < 0.017790	M Rb < 0.000808	M Tl < 0.000202	
M Co < 0.000202	O La < 0.023720	M Re < 0.000202	M Tm < 0.001212	
M Cr < 0.000606	M Li < 0.000202	M Rh < 0.000202	M U < 0.000202	
M Cs < 0.001616	M Lu 0.000681	M Ru < 0.000201	M V < 0.003637	
M Cu < 0.005658	M Mg 0.002542	i S <	M W < 0.000808	
M Dy 0.002334	M Mn 0.000092	M Sb < 0.000202	M Y < 0.012125	
M Er < 0.004445	M Mo < 0.001414	M Sc < 0.000404	M Yb 0.002311	

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](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 140.12 +4 6 to 8,9,10 for some compounds  $Ce(OH)_y(H_2O)_{x+4-y}$

**Chemical Compatibility** -Soluble in HCl, and HNO<sub>3</sub>. Avoid HF, H<sub>3</sub>PO<sub>4</sub>, H<sub>2</sub>SO<sub>4</sub> and neutral to basic media. Stable with most metals and inorganic anions forming an insoluble carbonate, oxide, oxalate, and fluoride and sparingly soluble sulfates (La - Eu exhibit low sulfate solubility). Avoid mixing with elements/solutions containing moderate amounts of fluoride.

**Stability** - 2-100 ppb levels stable for months in 1% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5 % HNO<sub>3</sub> / LDPE container.

**Ce Containing Samples (Preparation and Solution)** -Metal (Soluble in acids); Oxide ( dissolved by heating in H<sub>2</sub>O / HNO<sub>3</sub>); Ores (Carbonate fusion in PtO followed by HCl dissolution); Organic Matrices (dry ash and dissolve in 1:1 H<sub>2</sub>O/ HCl or HNO<sub>3</sub> ).

**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 140 amu	1 ppt	n/a	124Sn16O, 124Te16O
ICP-OES 413.765 nm	0.05 / 0.0058 µg/mL	1	a Ce 413.747 line may effect Bkg. Corr.
ICP-OES 418.660 nm	0.05 / 0.003 µg/mL	1	Zr
ICP-OES 453.975 nm	0.06 / 0.0063 µg/mL	1	

## 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](http://inorganicventures.com); [info@inorganicventures.com](mailto:info@inorganicventures.com)

**11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY**

**11.1 Certification Issue Date**

August 24, 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**

- **August 24, 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  
Manager, Quality Control



**Certifying Officer:**

Paul Gaines  
CEO, Senior Technical Director



# Energy Laboratories Inc

# Standard LOG

Standard ID: ME210107 PRIMARY LANTHANUM STOCK  
Standard Name: La Primary Stock  
Date Prepared: 1/7/2021  
Date Expires: 1/7/2022  
Department: ME  
Vendor: Inorganic Ventures  
Lot Number: M2-LA655478  
Balance ID:  
Comments: Opened 01/07/2021; Expires 01/07/2022

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

---

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Lanthanum Single Analyte Custom Gr	11342	125	mL	1/7/2022

**Final Volume:** 125 mL

Stock Source

**Base Units**

**Amount Added**

Analtes

**CAS**

Conc: **ug/mL**

**1.0 ACCREDITATION / REGISTRATION**

INORGANIC VENTURES is accredited to ISO Guide 34, "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: CGLA1  
Lot Number: M2-LA655478  
Matrix: 2% (v/v) HNO<sub>3</sub>  
Value / Analyte(s): 1 000 µg/mL ea:  
Lanthanum  
Starting Material: La<sub>2</sub>O<sub>3</sub>  
Starting Material Lot#: C09PQ7  
Starting Material Purity: 99.9907%

**3.0 CERTIFIED VALUES AND UNCERTAINTIES**

Certified Value: 999 ± 5 µg/mL  
Density: 1.011 g/mL (measured at 20 ± 4 °C)

**Assay Information:**

**Assay Method #1**      997 ± 3 µg/mL  
EDTA NIST SRM 928 Lot Number: 928

**Assay Method #2**      1001 ± 3 µg/mL  
ICP Assay NIST SRM 3127a Lot Number: 890402

- 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/IRM. 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 #: 11342

Opened: \_\_\_\_\_

Lanthanum Single Analyte Custom Grade Soln

Expires: 2/27/2019

Rec'd: 3/22/2019

Energy Laboratories Inc 1120 So. 27th Street

Billings MT 59107



## Characterization of CRM/RM by Two Methods

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

$$X_{CRM/RM} = (w_a) [X_a] + (w_b) [X_b]$$

$X_a$  = mean of Assay Method A with standard uncertainty  $u_{char a}$

$X_b$  = mean of Assay Method B with standard uncertainty  $u_{char b}$

$w_a$  and  $w_b$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_a = (1/u_{char a}^2) / [(1/u_{char a}^2) + (1/u_{char b}^2)]$$

$$w_b = (1/u_{char b}^2) / [(1/u_{char a}^2) + (1/u_{char b}^2)]$$

$$CRM/RM \text{ Expanded Uncertainty } (E) = U_{CRM/RM} = k [u^2_{char a+b} + u^2_{bb} + u^2_{ts} + u^2_{ls}]^{1/2}$$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char a+b} = [(w_a)^2 (u_{char a})^2 + (w_b)^2 (u_{char b})^2]^{1/2}$  where  $u_{char a}$  and  $u_{char b}$  are the square root of the sum of the squares of errors from characterization which include assmunt measurement, density, NIST SRM uncertainty, weighing, and volume

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

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

$u_{ls}$  = 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:

$$X_{CRM/RM} = \text{mean of Assay Method A with standard uncertainty } u_{char a}$$

$$CRM/RM \text{ Expanded Uncertainty } (E) = U_{CRM/RM} = k [u^2_{char a} + u^2_{bb} + u^2_{ts} + u^2_{ls}]^{1/2}$$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char a}$  = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

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

$u_{ls}$  = 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 < 0.000101 M	Eu < 0.000101 O	Na 0.032973 M	Se < 0.002014 M	Zn < 0.008054
M Al 0.000786 M	Fe 0.000409 M	Nb < 0.000101 O	Si 0.048140 M	Zr < 0.000403
M As < 0.000101 M	Ga < 0.000101 M	Nd 0.000205 M	Sm < 0.000101	
M Au < 0.000302 M	Gd < 0.000302 M	Ni < 0.001510 M	Sn < 0.000101	
O B < 0.004112 M	Ge < 0.000604 M	Os < 0.000101 M	Sr 0.002368	
O Ba < 0.000411 M	HF < 0.000302 n	P < M	Ta < 0.000101	
O Be < 0.000062 M	Hg < 0.000101 M	Pb 0.000743 M	Tb < 0.000101	
M Bi 0.000108 M	Ho < 0.000805 M	Pd < 0.000101 M	Te < 0.001007	
O Cd 0.005462 M	In < 0.000101 M	Pr < 0.001510 M	Th < 0.000101	
M Cd < 0.000101 M	Ir < 0.000101 M	Pt < 0.000101 O	Ti < 0.000617	
M Co 0.001722 M	K 0.024736 M	Rb < 0.003020 M	Tl < 0.000101	
M Ce < 0.000201 M	La < M	Ru < 0.000101 M	Tm < 0.000101	
M Cr < 0.001007 M	Li < 0.000604 M	Rh < 0.000101 M	U < 0.000101	
M Cs < 0.000805 M	Lu < 0.000101 M	Ru < 0.000101 M	V < 0.000302	
M Cu < 0.002014 O	Mg 0.000165 I	S < 0.000001 M	W < 0.000101	
M Dy < 0.000101 O	Mn 0.000220 M	Sb < 0.000101 M	Y < 0.000101	
M Er < 0.000302 M	Mo < 0.000101 O	Sc < 0.000103 O	Yb < 0.001028	

## 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](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 138.91 +3 6 to 8, 9, 10 for some compounds  $\text{La}(\text{OH})_y(\text{H}_2\text{O})_{x+3-y}$

**Chemical Compatibility** -Soluble in HCl, and HNO<sub>3</sub>. Avoid HF, H<sub>3</sub>PO<sub>4</sub>, H<sub>2</sub>SO<sub>4</sub> and neutral to basic media. Stable with most metals and inorganic anions forming an insoluble carbonate, oxide, oxalate, and fluoride and sparingly soluble sulfates (La - Eu exhibit low sulfate solubility). Avoid mixing with elements / solutions containing moderate amounts of fluoride.

**Stability** - 2-100 ppb levels stable for months in 1% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5 % HNO<sub>3</sub> / LDPE container.

**La Containing Samples (Preparation and Solution)** -Metal (Soluble in acids); Oxide (Dissolved by heating in H<sub>2</sub>O / HNO<sub>3</sub>); Ores (Carbonate fusion in PtO followed by HCl dissolution); Organic Matrices (Dry ash and dissolve in 1:1 H<sub>2</sub>O / HCl or HNO<sub>3</sub>).

**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 139 amu	1 ppt	n/a	<u>123Sb16O</u> , <u>123Te16O</u>
ICP-OES 333.749 nm	0.01 / 0.001 µg/mL	1	
ICP-OES 408.672 nm	0.01 / 0.001 µg/mL	1	Th
ICP-OES 412.323 nm	0.01 / 0.001 µg/mL	1	Ce, 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 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

### 10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

### 10.3 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "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: 800.669.6769, 540.585.2630, Fax: 540.585.3812; [inorganicventures.com](http://inorganicventures.com); [info@inorganicventures.com](mailto:info@inorganicventures.com)

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

February 27, 2017

- 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 27, 2021

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: \_\_\_\_\_

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Donna Senn  
Product Documentation Technician



Certificate Approved By:

Michael Booth  
Supervisor, Quality Control



Certifying Officer:

Paul Gaines  
CEO, Senior Technical Director



# Energy Laboratories Inc

# Standard LOG

Standard ID: ME220106 10 PPB STANDARD  
Standard Name: 10 ppb Standard  
Date Prepared: 1/6/2022  
Date Expires: 1/7/2022  
Department: ME  
Vendor: Inorganic Ventures  
Lot Number:  
Balance ID:  
Comments: Made fresh daily

Type: Secondary  
BY: Stacy R. Hendricks  
Status: Expired

---

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Nitric Acid, 69.0-70.0%,0000282671	14178	0.5	mL	4/11/
Milli-Q H2O	391	43.5	mL	6/1/2
Hydrochloric Acid Instra Analyzed 000	14028	0.25	mL	3/29/

**Final Volume:** 50 mL

Stock Source  
ME220106 100 PP 100 ppb Standard

**Base Units**  
ug/mL

**Amount Added**  
5 mL

Analtes

**CAS**

Conc: **ug/mL**

# Energy Laboratories Inc

# Standard LOG

Standard ID: ME220106 1 PPB STANDARD  
Standard Name: 1 PPB STANDARD  
Date Prepared: 1/6/2022  
Date Expires: 1/7/2022  
Department: ME  
Vendor:  
Lot Number:  
Balance ID:  
Comments: Made fresh daily

Type:  
BY: Stacy R. Hendricks  
Status: Expired

---

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Hydrochloric Acid Instra Analyzed 000	14028		mL	3/29/
Nitric Acid, 69.0-70.0%,0000277202	13781		mL	1/14/
Milli-Q H2O	391		mL	6/1/2

**Final Volume:** 50 mL

Stock Source  
ME220106 10 PPB 10 ppb Standard

**Base Units**  
ug/mL

**Amount Added**  
5 mL

Analtes

**CAS**

Conc: **ug/mL**

# Energy Laboratories Inc

# Standard LOG

Standard ID: ME220106 0.5 PPB STANDARD  
Standard Name: 0.5 ppb Standard  
Date Prepared: 1/6/2022  
Date Expires: 1/7/2022  
Department: ME  
Vendor: Inorganic Ventures  
Lot Number:  
Balance ID:  
Comments: Made fresh daily

Type: Secondary  
BY: Stacy R. Hendricks  
Status: Expired

---

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Nitric Acid, 69.0-70.0%,0000282671	14178	0.5	mL	4/11/
Milli-Q H2O	391	46	mL	6/1/2
Hydrochloric Acid Instra Analyzed 000	14028	0.25	mL	3/29/

**Final Volume:** 50 mL

**Stock Source**  
ME220106 10 PPB 10 ppb Standard

**Base Units**  
ug/mL

**Amount Added**  
2.5 mL

**Analtes**

**CAS**

**Conc:** ug/mL

# Energy Laboratories Inc

# Standard LOG

Standard ID: ME220106 0.1 PPB STANDARD  
 Standard Name: 0.1 ppb Standard  
 Date Prepared: 1/6/2022  
 Date Expires: 1/7/2022  
 Department: ME  
 Vendor: Inorganic Ventures  
 Lot Number:  
 Balance ID:  
 Comments: Made fresh daily

Type: Secondary  
 BY: Stacy R. Hendricks  
 Status: Expired

---

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Hydrochloric Acid Instra Analyzed 000	14028	0.25	mL	3/29/
Nitric Acid, 69.0-70.0%,0000282671	14178	0.5	mL	4/11/
Milli-Q H2O	391	48	mL	6/1/2

**Final Volume:** 50 mL

Stock Source  
ME220106 1 PPB 1 PPB STANDARD

**Base Units**  
ug/mL

**Amount Added**  
5 mL

Analvtes

**CAS**

Conc: **ug/mL**

# Energy Laboratories Inc

# Standard LOG

Standard ID: ME210106 0.05 PPB STANDARD  
Standard Name: 0.05 ppb Standard  
Date Prepared: 1/6/2022  
Date Expires: 1/7/2022  
Department: ME  
Vendor: Inorganic Ventures  
Lot Number:  
Balance ID:  
Comments: Made fresh daily

Type: Secondary  
BY: Stacy R. Hendricks  
Status: Expired

---

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Nitric Acid, 69.0-70.0%,0000282671	14178	0.5	mL	4/11/
Milli-Q H2O	391	48	mL	6/1/2
Hydrochloric Acid Instra Analyzed 000	14028	0.5	mL	3/29/

**Final Volume:** 50 mL

**Stock Source**  
ME220106 0.5 PP 0.5 ppb Standard

**Base Units**  
ug/mL

**Amount Added**  
5 mL

**Analvtes**

**CAS**

**Conc:** ug/mL



# Energy Laboratories Inc

# Standard LOG

Standard ID: ME220106 0.025 PPB STANDARD  
 Standard Name: 0.025 ppb Standard  
 Date Prepared: 1/12/2022  
 Date Expires: 1/7/2022  
 Department: ME  
 Vendor: Inorganic Ventures  
 Lot Number:  
 Balance ID:  
 Comments: Made fresh daily

Type: Secondary  
 BY: Stacy R. Hendricks  
 Status: Expired

---

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Nitric Acid, 69.0-70.0%,0000282671	14178	0.5	mL	4/11/
Milli-Q H2O	391	48	mL	6/1/2
Hydrochloric Acid Instra Analyzed 000	14028	0.5	mL	3/29/

**Final Volume:** 50 mL

**Stock Source**  
ME220106 0.5 PP 0.5 ppb Standard

**Base Units**  
ug/mL

**Amount Added**  
2.5 mL

**Analtes**

**CAS**

Conc: **ug/mL**

# 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>	<b>Base Units</b>	<b>Amount Added</b>
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% HNO<sub>3</sub> (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<sub>char</sub>), the between bottle variation (u<sub>bb</sub>), short-term stability (u<sub>sts</sub>) and long-term stability (u<sub>lts</sub>) 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) HNO<sub>3</sub>**

**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 : <sup>238</sup>U : 99.79% ; <sup>235</sup>U : 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	<b>0.0073</b>	Ga	<0.0010	Ni	<b>0.0038</b>	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	<b>0.0020</b>
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	<b>0.0340</b>	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	<b>0.0049</b>
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		

**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](http://www.SCPSCIENCE.com)). / *SVP vous référer à la Fiche Signalétique applicable pour de l'information sur ce produit (Disponible à [www.SCPSCIENCE.com](http://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.*

**CORPORATE HEADQUARTERS**  
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Baie D'Urfé (Montréal), Quebec,  
H9X 4B6 Canada  
Phone: +1 (800) 361-6820  
Fax: +1 (800) 253-5549

**USA**  
3<sup>rd</sup> Party Distribution Center  
348 Route 11, Champlain,  
N.Y. 12919-4816  
Phone: +1 (800) 361-6820  
Fax: +1 (800) 253-5549

**FRANCE**  
12 Ave. de Québec, Bat. IRIS  
348 Route 11, Champlain,  
N.Y. 12919-4816  
Villebon sur Yvette, France  
Phone: +33 (0) 1 69 16 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

# 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) HNO<sub>3</sub>  
 Value / Analyte(s): 1 000 µg/mL ea:  
 Thorium  
 Starting Material: TH(NO<sub>3</sub>)<sub>4</sub>·4H<sub>2</sub>O  
 Starting Material Lot#: 2250  
 Starting Material Purity: 99.9905%

**ID #: 14318**  
 Opened:  
 Thorium Single Analyte Custom Grade Solution  
**Expires: 7/4/2025**  
 Rec'd: 9/24/2021  
 Eneray Laboratories Inc 1120 So. 27th Street  
 Billings MT 59107

## 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.

### 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  $\mu\text{m}$ .

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](http://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:

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

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

$k$  = 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	0.001159	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](http://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 HNO<sub>3</sub>. 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% HNO<sub>3</sub> / LDPE container, stable in 10% HNO<sub>3</sub> packaged in borosilicate glass. 1-100 ppm levels stable in 7% HNO<sub>3</sub> packaged in borosilicate glass. 1000-10,000 ppm solutions are chemically stable for years in 5-10% HNO<sub>3</sub> / LDPE container.

**Hg Containing Samples (Preparation and Solution)** - Metal (soluble in HNO<sub>3</sub>); Oxide (Soluble in HNO<sub>3</sub>); 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](http://inorganicventures.com); [info@inorganicventures.com](mailto: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

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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) HNO<sub>3</sub>  
 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.

### 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

$u_{\text{bb}}$  = bottle to bottle homogeneity standard uncertainty

$u_{\text{ITS}}$  = long term stability standard uncertainty (storage)

$u_{\text{TS}}$  = 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

$u_{\text{bb}}$  = bottle to bottle homogeneity standard uncertainty

$u_{\text{ITS}}$  = long term stability standard uncertainty (storage)

$u_{\text{TS}}$  = 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

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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**

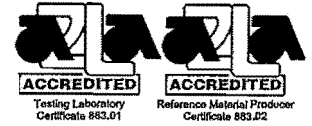
Analvtes

**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) HNO<sub>3</sub>

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

$u_{\text{bb}}$  = bottle to bottle homogeneity standard uncertainty

$u_{\text{its}}$  = long term stability standard uncertainty (storage)

$u_{\text{ts}}$  = 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:

$$X_{\text{CRM/RM}} = (\bar{X}_a) (u_{\text{char } a})$$

$\bar{X}_a$  = 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

$u_{\text{bb}}$  = bottle to bottle homogeneity standard uncertainty

$u_{\text{its}}$  = long term stability standard uncertainty (storage)

$u_{\text{ts}}$  = 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  $20 \pm 4$ ° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

## 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

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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

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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% HNO<sub>3</sub> (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<sub>i</sub>) including uncertainty established during characterization of the material (u<sub>char</sub>), the between bottle variation (u<sub>bb</sub>), short-term stability (u<sub>sts</sub>) and long-term stability (u<sub>lts</sub>) 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  
 Energry 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) HNO<sub>3</sub>**

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	<b>0.0164</b>	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 (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 présupmant 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](http://www.SCPSCIENCE.com)). / *SVP vous référer à la Fiche Signalétique applicable pour de l'information sur ce produit (Disponible à [www.SCPSCIENCE.com](http://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: +33 (0) 1 60 92 05 67

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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% HNO<sub>3</sub> (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) HNO<sub>3</sub>**

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	<b>0.0102</b>	Sn	<0.0010
Al	<b>0.0148</b>	Ga	<b>0.0526</b>	Ni	<b>0.0064</b>	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	<b>0.0235</b>	Ti	<0.0012
Bi	<0.0010	In	<0.0010	Pt	<0.0010	Tl	<0.0011
Ca	<b>0.0375</b>	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	<b>0.0121</b>	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	<b>0.0035</b>	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 (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](http://www.SCPSCIENCE.com)). / *SVP vous référer à la Fiche Signalétique applicable pour de l'information sur ce produit (Disponible à [www.SCPSCIENCE.com](http://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: 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) HNO<sub>3</sub>  
 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](http://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](http://inorganicventures.com); [Info@inorganicventures.com](mailto: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**

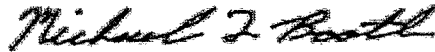
- Sealed TCT Bag Open Date: \_\_\_\_\_

- 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: ME211006 SS1  
 Standard Name: SS1 ICPMS Spiking Solution  
 Date Prepared: 10/6/2021  
 Date Expires: 1/5/2022  
 Department: ME  
 Vendor: Inorganic Ventures  
 Lot Number:  
 Balance ID:  
 Comments:

Type: Tertiary  
 BY: Jason P. Van Clea  
 Status: Expired

---

Chemical / Solvent Used	BottleNo	Amt	Units	Exp
Nitric Acid, 69.0-70.0%,0000277202	13781	0.8	mL	1/14/
Hydrochloric Acid, 36.5-38.0% 000027	13784	2	mL	12/15
Milli-Q H2O	391	28.8	mL	6/1/2

**Final Volume:** 40 mL

**Stock Source**

ME210812 HgPrim Primary Hg Stock 2 PPM  
 ME210726 MSCAL MSCAL 2B  
 ME210511 MSCAL MSCAL 3C

**Base Units**

ug/mL  
 ug/mL  
 ug/mL

**Amount Added**

2 mL  
 2 mL  
 2 mL

**Analvtes**

**CAS**

Conc: **ug/mL**

# Energy Laboratories Inc

# Spike LOG

Standard ID: ME210812 HGPRIMARY  
Standard Name: Primary Hg Stock 2 PPM  
Date Prepared: 8/12/2021  
Date Expires: 1/5/2022  
Department: ME  
Vendor: Inorganic Ventures  
Lot Number:  
Balance ID:  
Comments: Made with different HG stock than QCS

Type: Primary  
BY: Parker A. Pearsall  
Status: Expired

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
Nitric Acid Instra Analyzed 0000267725	13706	0.5	mL	8/11/2025
Hydrochloric Acid, 36.5-38.0% 000027130	13503	0.25	mL	9/15/2025

**Final Volume:**  
25 mL

**Stock Source**

ME210105HG HG Stock  
ME210105AU Au 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: ME210105AU  
Standard Name: Au Secondary Stock  
Date Prepared: 1/4/2021  
Date Expires: 1/4/2022  
Department: ME  
Vendor: Inorganic Ventures  
Lot Number: R2-AU695955  
Balance ID:  
Comments: Opened 1/4/2021; Expires 1/4/2021

Type: Secondary  
BY: Ron Hunt  
Status: Empty/Disposed

---

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
Gold Single Analyte Custom Grade Soluti	13396	500	mL	1/4/2021

**Final Volume:**  
500 mL

**Stock Source**

**Base Units**

**Amount Added**

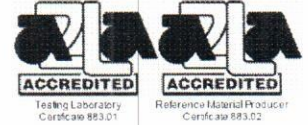
**Analytes**

**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: Single Analyte Custom Grade Solution  
 Catalog Number: CGAU1  
 Lot Number: R2-AU695955  
 Matrix: 10% (v/v) HCl  
 Value / Analyte(s): 1 000 µg/mL ea:  
 Gold  
 Starting Material: H[AuCl<sub>4</sub>]  
 Starting Material Lot#: 2340  
 Starting Material Purity: 99.9983%

**ID #: 13396**  
 Opened: \_\_\_\_\_  
 Gold Single Analyte Custom Grade Solution  
**Expires: 9/1/2024**  
 Rec'd: 1/4/2021  
 Energy Laboratories Inc 1120 So. 27th Street  
 Billings MT 59107

**3.0 CERTIFIED VALUES AND UNCERTAINTIES**

**Certified Value:** 1001 ± 5 µg/mL  
**Density:** 1.022 g/mL (measured at 20 ± 4 °C)

**Assay Information:**

**Assay Method #1**      **1002 ± 4 µg/mL**  
 ICP Assay NIST SRM 3121 Lot Number: 991806

**Assay Method #2**      **1001 ± 5 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:

$$X_{CRM/RM} = \sum(w_j) (X_j)$$

$X_j$  = 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	0.029000	M Eu	<	0.000210	O Na	0.003300	M Se	<	0.014000	M Zn	0.000370	
M Al	<	0.001900	M Fe	0.002100	M Nb	<	0.000110	O Si	0.003300	M Zr	<	0.001700
M As	<	0.005700	M Ga	<	0.001100	M Nd	<	0.000110	M Sm	<	0.000110	
s Au	<		M Gd	<	0.000110	M Ni	<	0.002500	M Sn	<	0.001600	
M B	<	0.005000	M Ge	<	0.004300	M Os	<	0.000110	M Sr	<	0.000810	
M Ba	<	0.001300	M Hf	<	0.000310	O P	<	0.052000	M Ta	<	0.000110	
M Be	<	0.000610	M Hg	<	0.001200	M Pb	<	0.001900	M Tb	<	0.000110	
M Bi	<	0.002700	M Ho	<	0.000110	M Pd	0.003600	M Te	<	0.002600		
O Ca	0.001400	M In	0.000071	M Pr	<	0.000110	M Th	<	0.004100			
M Cd	<	0.000410	M Ir	<	0.000210	M Pt	0.008800	M Ti	<	0.003100		
M Ce	<	0.000210	O K	<	0.011000	M Rb	<	0.001500	M Tl	<	0.000110	
M Co	<	0.000210	M La	<	0.000110	M Re	<	0.000110	M Tm	<	0.000110	
O Cr	<	0.005200	O Li	0.000063	M Rh	<	0.001500	M U	<	0.000110		
M Cs	<	0.000810	M Lu	<	0.000110	M Ru	<	0.001700	O V	<	0.002700	
O Cu	0.001000	O Mg	0.000230	O S	<	0.052000	M W	<	0.003900			
M Dy	<	0.000110	O Mn	<	0.002100	M Sb	0.003200	M Y	<	0.000110		
M Er	<	0.000110	M Mo	<	0.001400	O Sc	<	0.001400	M Yb	<	0.000110	

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](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 196.97 +3 6 Au(Cl)63

**Chemical Compatibility** - Stable in HCl, and HNO<sub>3</sub>, 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% HNO<sub>3</sub> / LDPE container. 100 ppb is stable for #2 days maximum in 1% HNO<sub>3</sub> / 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 / HNO<sub>3</sub>).

**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](http://inorganicventures.com); [info@inorganicventures.com](mailto:info@inorganicventures.com)

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

**11.1 Certification Issue Date**

September 01, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/WM 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/WM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **September 01, 2024**

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

- The lot expiration date reflects the period of time that the stability of a CRM/WM can be supported by long term stability studies conducted on properly stored and handled CRM/WMs. 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/WM 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/WM 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: ME210105HG  
Standard Name: HG Stock  
Date Prepared: 1/4/2021  
Date Expires: 1/5/2022  
Department: ME  
Vendor: Inorganic Ventures  
Lot Number: R2-HG696409  
Balance ID:  
Comments:

Type: Primary  
BY: Ron Hunt  
Status: Expired

---

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
Mercury Single Analyte Custom Grade Sol	13412	125	mL	9/15/2024

**Final Volume:**  
125 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: Single Analyte Custom Grade Solution  
Catalog Number: CGHG1  
Lot Number: R2-HG696409  
Matrix: 5% (v/v) HNO<sub>3</sub>  
Value / Analyte(s): 1 000 µg/mL ea:  
Mercury  
Starting Material: Hg metal  
Starting Material Lot#: 1959  
Starting Material Purity: 99.9994%

**ID #: 13412**  
Opened:  
Mercury Single Analyte Custom Grade Solution  
**Expires: 9/15/2024**  
Rec'd: 1/4/2021  
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:

<b>Assay Method #1</b>	<b>1004 ± 8 µg/mL</b> ICP Assay NIST SRM 3133 Lot Number: 160921
<b>Assay Method #2</b>	<b>1003 ± 3 µg/mL</b> EDTA NIST SRM 928 Lot Number: 928
<b>Assay Method #3</b>	<b>1001 ± 3 µg/mL</b> 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:

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

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

$k$  = 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  $A$ .

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

$k$  = 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 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 (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](http://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 HNO<sub>3</sub>. 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% HNO<sub>3</sub> / LDPE container, stable in 10% HNO<sub>3</sub> packaged in borosilicate glass. 1-100 ppm levels stable in 7% HNO<sub>3</sub> packaged in borosilicate glass. 1000-10,000 ppm solutions are chemically stable for years in 5-10% HNO<sub>3</sub> / LDPE container.

**Hg Containing Samples (Preparation and Solution)** - Metal (soluble in HNO<sub>3</sub>); Oxide (Soluble in HNO<sub>3</sub>); 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](http://inorganicventures.com); [info@inorganicventures.com](mailto: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: ME210726 MSCAL2B  
Standard Name: MSCAL 2B  
Date Prepared: 7/26/2021  
Date Expires: 7/26/2022  
Department: ME  
Vendor: Inorganic Ventures  
Lot Number: S2-MEB702845  
Balance ID:  
Comments: Opened 7/26/2021; Expires 7/26/2022

Type: Primary  
BY: Alyssa A. espinoza  
Status: Open

---

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
Multi Analyte Custom Grade Solution	13652		mL	7/26/2022

**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-3C  
Lot Number: S2-MEB702844  
Matrix: 3% (v/v) HNO<sub>3</sub>  
tr. HF  
Value / Analyte(s): 400 µg/mL ea:  
Silicon,  
100 µg/mL ea:  
Tin, Titanium,  
Molybdenum, Antimony

ID #: 13651

Opened: \_\_\_\_\_

Multi Analyte Custom Grade Solution

Expires: 3/8/2025

Rec'd: 3/18/2021

Energx 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	400.1 ± 3.0 µg/mL	Tin, Sn	100.0 ± 0.6 µg/mL
Titanium, Ti	100.0 ± 0.7 µg/mL		

Density: 1.015 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

$u_{\text{bb}}$  = bottle to bottle homogeneity standard uncertainty

$u_{\text{Its}}$  = long term stability standard uncertainty (storage)

$u_{\text{ts}}$  = 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:

$$X_{\text{CRM/RM}} = (\bar{X}_a) (u_{\text{char } a})$$

$\bar{X}_a$  = 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

$u_{\text{bb}}$  = bottle to bottle homogeneity standard uncertainty

$u_{\text{Its}}$  = long term stability standard uncertainty (storage)

$u_{\text{ts}}$  = 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](http://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: 800 659 6799; 540 585 3030, Fax: 540 585 3012; inorganicventures.com; info@inorganicventures.com

**11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY**

**11.1 Certification Issue Date**

March 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: ME210511 MSCAL 3C  
Standard Name: MSCAL 3C  
Date Prepared: 5/11/2021  
Date Expires: 5/11/2022  
Department: ME  
Vendor: Inorganic Ventures  
Lot Number: P2-MEB682620  
Balance ID:  
Comments: Opened 5/11/21; expires 5/11/22

Type: Primary  
BY: Alyssa A. espinoza  
Status: Open

---

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
Multi Analyte Custom Grade Solution	13651	250	mL	5/11/2022

**Final Volume:**  
250 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-3C  
Lot Number: S2-MEB702844  
Matrix: 3% (v/v) HNO<sub>3</sub>  
tr. HF  
Value / Analyte(s): 400 µg/mL ea:  
Silicon,  
100 µg/mL ea:  
Tin, Titanium,  
Molybdenum, Antimony

ID #: 13651  
Opened: \_\_\_\_\_  
Multi Analyte Custom Grade Solution  
Expires: 3/8/2025  
Rec'd: 3/18/2021  
Eneray 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	400.1 ± 3.0 µg/mL	Tin, Sn	100.0 ± 0.6 µg/mL
Titanium, Ti	100.0 ± 0.7 µg/mL		

Density: 1.015 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

$u_{\text{bb}}$  = bottle to bottle homogeneity standard uncertainty

$u_{\text{Its}}$  = long term stability standard uncertainty (storage)

$u_{\text{ts}}$  = 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:

$$X_{\text{CRM/RM}} = (\bar{X}_a) (u_{\text{char } a})$$

$\bar{X}_a$  = 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

$u_{\text{bb}}$  = bottle to bottle homogeneity standard uncertainty

$u_{\text{Its}}$  = long term stability standard uncertainty (storage)

$u_{\text{ts}}$  = 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](http://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**

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

# Spike LOG

Standard ID: ME211117A INTERNAL STANDARD  
 Standard Name Internal Standards 2 mg/L  
 Date Prepared 11/17/2021  
 Date Expires: 1/4/2022  
 Department ME  
 Vendor:  
 Lot Number:  
 Balance ID:  
 Comments:

Type: Solution  
 BY: Stacy R. Hendricks  
 Status: Expired

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
Hydrochloric Acid, 36.5-38.0% 000028182	13910	10	mL	3/29/2026
Nitric Acid, 69.0-70.0%,0000282671	14178	20	mL	4/11/2026

**Final Volume:**  
1000 mL

**Stock Source**

ME210105AU Au Secondary Stock  
 ME210420 Ge Sec Ge Secondary Standard  
 ME210208 Sc Sec Sc Secondary Stock  
 ME210208 Bi Seco Bismuth Secondary Stock  
 ME210208 In Seco In Secondary Stock  
 ME210212-TB TB Terbium primary source  
 ME210212-HO HO Holmium primary source  
 ME210212-LU LU Lutetium primary source

**Base Units**

ug/mL  
 ug/mL  
 ug/mL  
 ug/mL  
 ug/mL  
 ug/mL  
 ug/mL  
 ug/mL

**Amount Added**

0.2 mL  
 2 mL  
 2 mL  
 2 mL  
 2 mL  
 2 mL  
 2 mL  
 2 mL

**Analytes**

**CAS**

Conc: ug/mL



# Energy Laboratories Inc

# Standard LOG

Standard ID: ME210105AU  
Standard Name: Au Secondary Stock  
Date Prepared: 1/4/2021  
Date Expires: 1/4/2022  
Department: ME  
Vendor: Inorganic Ventures  
Lot Number: R2-AU695955  
Balance ID:  
Comments: Opened 1/4/2021; Expires 1/4/2021

Type: Secondary  
BY: Ron Hunt  
Status: Empty/Disposed

---

Chemical / Solvent Used	BottleNo	Amt	Units	Expires
Gold Single Analyte Custom Grade Soluti	13396	500	mL	1/4/2021

**Final Volume:**  
500 mL

**Stock Source**

**Base Units**

**Amount Added**

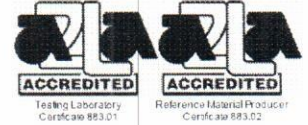
**Analytes**

**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: Single Analyte Custom Grade Solution  
 Catalog Number: CGAU1  
 Lot Number: R2-AU695955  
 Matrix: 10% (v/v) HCl  
 Value / Analyte(s): 1 000 µg/mL ea:  
 Gold  
 Starting Material: H[AuCl<sub>4</sub>]  
 Starting Material Lot#: 2340  
 Starting Material Purity: 99.9983%

**ID #: 13396**  
 Opened: \_\_\_\_\_  
 Gold Single Analyte Custom Grade Solution  
**Expires: 9/1/2024**  
 Rec'd: 1/4/2021  
 Energy Laboratories Inc 1120 So. 27th Street  
 Billings MT 59107

**3.0 CERTIFIED VALUES AND UNCERTAINTIES**

**Certified Value:** 1001 ± 5 µg/mL  
**Density:** 1.022 g/mL (measured at 20 ± 4 °C)

**Assay Information:**

**Assay Method #1**      **1002 ± 4 µg/mL**  
 ICP Assay NIST SRM 3121 Lot Number: 991806

**Assay Method #2**      **1001 ± 5 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	0.029000	M Eu	<	0.000210	O Na	0.003300	M Se	<	0.014000	M Zn	0.000370	
M Al	<	0.001900	M Fe	0.002100	M Nb	<	0.000110	O Si	0.003300	M Zr	<	0.001700
M As	<	0.005700	M Ga	<	0.001100	M Nd	<	0.000110	M Sm	<	0.000110	
s Au	<		M Gd	<	0.000110	M Ni	<	0.002500	M Sn	<	0.001600	
M B	<	0.005000	M Ge	<	0.004300	M Os	<	0.000110	M Sr	<	0.000810	
M Ba	<	0.001300	M Hf	<	0.000310	O P	<	0.052000	M Ta	<	0.000110	
M Be	<	0.000610	M Hg	<	0.001200	M Pb	<	0.001900	M Tb	<	0.000110	
M Bi	<	0.002700	M Ho	<	0.000110	M Pd	0.003600	M Te	<	0.002600		
O Ca	0.001400	M In		0.000071	M Pr	<	0.000110	M Th	<	0.004100		
M Cd	<	0.000410	M Ir	<	0.000210	M Pt	0.008800	M Ti	<	0.003100		
M Ce	<	0.000210	O K	<	0.011000	M Rb	<	0.001500	M Tl	<	0.000110	
M Co	<	0.000210	M La	<	0.000110	M Re	<	0.000110	M Tm	<	0.000110	
O Cr	<	0.005200	O Li		0.000063	M Rh	<	0.001500	M U	<	0.000110	
M Cs	<	0.000810	M Lu	<	0.000110	M Ru	<	0.001700	O V	<	0.002700	
O Cu	0.001000	O Mg		0.000230	O S	<	0.052000	M W	<	0.003900		
M Dy	<	0.000110	O Mn	<	0.002100	M Sb	0.003200	M Y	<	0.000110		
M Er	<	0.000110	M Mo	<	0.001400	O Sc	<	0.001400	M Yb	<	0.000110	

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](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 196.97 +3 6 Au(Cl)63

**Chemical Compatibility** - Stable in HCl, and HNO<sub>3</sub>, 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% HNO<sub>3</sub> / LDPE container. 100 ppb is stable for #2 days maximum in 1% HNO<sub>3</sub> / 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 / HNO<sub>3</sub>).

**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](http://inorganicventures.com); [info@inorganicventures.com](mailto:info@inorganicventures.com)

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

**11.1 Certification Issue Date**

September 01, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/WM 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/WM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **September 01, 2024**

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

- The lot expiration date reflects the period of time that the stability of a CRM/WM can be supported by long term stability studies conducted on properly stored and handled CRM/WMs. 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/WM 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/WM 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: ME210420 GE SECONDARY STOCK  
Standard Name: Ge Secondary Standard  
Date Prepared: 4/20/2021  
Date Expires: 4/20/2022  
Department: ME  
Vendor: SCP Science  
Lot Number: S201204009  
Balance ID:  
Comments: Opened 4/20/2021; Expires 4/20/2022

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

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Chemical / Solvent Used	BottleNo	Amt	Units	Expires
ICP/ICPMS Standard Germanium	13639	125	mL	4/20/2022

**Final Volume:**  
125 mL

**Stock Source**

**Base Units**

**Amount Added**

**Analytes**

**CAS**

Conc: **ug/mL**



# Ge

**1.0 DESCRIPTION:** *PlasmaCAL ICP/ICPMS Standard - Germanium 1000 µg/ml*  
 Catalogue Number: 140-050-320/-321/-325  
 Starting Material: Ammonium Hexafluorogermanate(IV) 99.99+%  
 Lot Number: **S201204009**  
 Matrix: H<sub>2</sub>O / tr. F<sup>-</sup>

Expiration Date (End of month): **December 2022** (or 15 months after bottle is opened, whichever comes first)

**2.0 CERTIFIED VALUES AND ASSOCIATED UNCERTAINTY:**

Certified Concentration: **1002 µg/ml +/- 3 µg/ml**  
**1002 µg/g +/- 3 µg/g**

Method of analysis: Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP-AES)

Traceability: NIST Standard Reference Material 3120a Lot: **151115**

**Note:** The uncertainty of the certified value has been calculated from applicable uncertainty contributors (u<sub>i</sub>) including uncertainty established during characterization of the material (u<sub>char</sub>), the between bottle variation (u<sub>bb</sub>), short-term stability (u<sub>sts</sub>) and long-term stability (u<sub>lts</sub>) 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 coverage factor (k) of 2 to provide a 95% confidence interval.

**ID #: 13639**

Opened: \_\_\_\_\_

ICP/ICPMS Standard Germanium

**Expires: 12/31/2022**

Rec'd: 3/16/2021

Energiv Laboratories Inc 1120 So. 27th Street  
 Billings MT 59107

**3.0 REFERENCE VALUES:**

Density: **1.000 g/ml @ 22.7 °C**

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	<0.0010	Ga	<0.0010	Ni	<0.0010	Sr	<0.0025
As	<b>0.0097</b>	Gd	<0.0010	Os	<0.0010	Ta	<0.0010
Au	<0.0010	Ge	N/A	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	<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	<0.0010	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	<0.0025	Si	*		
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 16, 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 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](http://www.SCPSCIENCE.com)). / *SVP vous référer à la Fiche Signalétique applicable pour de l'information sur ce produit (Disponible à [www.SCPSCIENCE.com](http://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 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 Marktobderdorfer Straße 14, 87616  
Marktobderdorf  
Phone: +49 (0) 8342-89560-61  
Fax: +49 (0) 8342-89560-69



# Energy Laboratories Inc

# Spike LOG

Standard ID: ME210208 SC SECOND STOCK  
Standard Name: Sc Secondary Stock  
Date Prepared: 2/8/2021  
Date Expires: 2/8/2022  
Department: ME  
Vendor: SCP Science  
Lot Number: S200813011  
Balance ID:  
Comments: Opened 2/08/2021; Expires 2/08/2022

Type: Primary  
BY: Parker A. Pearsall  
Status: Open

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Chemical / Solvent Used	BottleNo	Amt	Units	Expires
PlasmaCal Standard Scandium	13520	125	mL	8/31/2022

**Final Volume:**  
125 mL

**Stock Source**

**Base Units**

**Amount Added**

**Analytes**

**CAS**

Conc: **ug/mL**

# Sc

**1.0 DESCRIPTION:** *PlasmaCAL ICP/ICPMS Standard - Scandium 1000 µg/ml*  
 Catalogue Number: 140-051-210/-211/-215  
 Starting Material: Scandium(III) Oxide 99.99+%  
 Lot Number: **S200813011**  
 Matrix: 4% HNO<sub>3</sub> (See Section 3 for actual matrix)  
 Expiration Date (End of month): **August 2022** (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**  
**978 µg/g +/- 5 µg/g**  
 Method of analysis: Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP-AES)  
 Traceability: NIST Standard Reference Material 3148a Lot: **100701**

**Note:** The uncertainty of the certified value has been calculated from applicable uncertainty contributors (u<sub>i</sub>) including uncertainty established during characterization of the material (u<sub>char</sub>), the between bottle variation (u<sub>bb</sub>), short-term stability (u<sub>sts</sub>) and long-term stability (u<sub>lts</sub>) 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: **1.022 g/ml @ 22.5 °C**  
 Actual Matrix: **4.0% (v/v) HNO<sub>3</sub>**

**ID #: 13520**  
 Opened: \_\_\_\_\_  
 PlasmaCal Standard Scandium  
**Expires: 8/31/2022**  
 Rec'd: 1/26/2021  
 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	<0.0244	Fe	<0.0102	Nd	<0.0319	Sn	<0.1535
Al	<0.0280	Ga	<0.0260	Ni	<0.0139	Sr	<0.0004
As	<0.0105	Gd	<0.0137	Os	*	Ta	<0.0635
Au	<0.0085	Ge	<0.0548	P	<0.0104	Tb	<0.0146
B	<0.0507	Hf	<0.0339	Pb	<0.0492	Te	<0.4025
Ba	<0.0005	Hg	*	Pd	<0.0282	Th	<0.0471
Be	<0.0022	Ho	<0.0065	Pr	<0.1370	Ti	<0.0013
Bi	<0.0156	In	<0.0105	Pt	<0.2665	Tl	<0.5600
Ca	<b>0.0742</b>	Ir	<0.0243	Rb	*	Tm	<0.0105
Cd	<0.0048	K	<0.0128	Re	<0.0076	U	<0.2490
Ce	<0.0393	La	<0.0173	Rh	<0.0163	V	<0.0049
Co	<0.0224	Li	<0.0028	Ru	<0.0304	W	<0.0443
Cr	<0.0063	Lu	<0.0021	S	<0.0515	Y	<0.0033
Cs	*	Mg	<0.0009	Sb	<0.0197	Yb	<0.0057
Cu	<0.0200	Mn	<0.0089	Sc	N/A	Zn	<0.0045
Dy	<0.0214	Mo	<0.0229	Se	<0.1245	Zr	<b>0.1015</b>
Er	<0.0349	Na	<0.0191	Si	<0.0091		
Eu	<0.0017	Nb	<0.0112	Sm	<0.1105		

\*: Not tested

**4.0 APPROVAL AND DATE OF CERTIFICATION:**  
 Certification Approval: Daniel Boisvert, Chemist  
 Certification Date: August 20, 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 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 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](http://www.SCPSCIENCE.com)). / *SVP vous référer à la Fiche Signalétique applicable pour de l'information sur ce produit (Disponible à [www.SCPSCIENCE.com](http://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.*

**CORPORATE HEADQUARTERS**  
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**GERMANY**  
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Marktoberdorf  
Phone: +49 (0) 8342-89560-61  
Fax: +49 (0) 8342-89560-69

# Energy Laboratories Inc

# Spike LOG

Standard ID: ME210208 BI SECONDARY STOCK  
Standard Name: Bismuth Secondary Stock  
Date Prepared: 2/8/2021  
Date Expires: 2/8/2022  
Department: ME  
Vendor: Inorganic Ventures  
Lot Number: P2-BI687736  
Balance ID:  
Comments: Opened 02/08/2021; Expires 02/08/2022

Type: Primary  
BY: Parker A. Pearsall  
Status: Open

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Chemical / Solvent Used	BottleNo	Amt	Units	Expires
Bismuth Single Analyte Custom Grade Sol	13448	125	mL	1/11/2024

**Final Volume:**  
125 mL

**Stock Source**

**Base Units**

**Amount Added**

**Analytes**

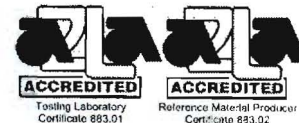
**CAS**

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: Single Analyte Custom Grade Solution  
 Catalog Number: CGBI1  
 Lot Number: P2-BI687736  
 Matrix: 5% (v/v) HNO3  
 Value / Analyte(s): 1 000 µg/mL ea:  
 Bismuth  
 Starting Material: Bi METAL  
 Starting Material Lot#: 1874  
 Starting Material Purity: 99.9997%

**ID #: 13448**  
 Opened: \_\_\_\_\_  
 Bismuth Single Analyte Custom Grade Solution  
**Expires: 1/11/2024**  
 Rec'd: 1/7/2021  
 Energy Laboratories Inc 1120 So. 27th Street  
 Billings MT 59107

**3.0 CERTIFIED VALUES AND UNCERTAINTIES**

**Certified Value:** 1002 ± 6 µg/mL  
**Density:** 1.026 g/mL (measured at 20 ± 4 °C)

**Assay Information:**

**Assay Method #1**      **1002 ± 4 µg/mL**  
 ICP Assay NIST SRM 3106 Lot Number: 180815

**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.

### 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	0.000158	M	Eu <	0.000430	O Na	0.000456	M	Se <	0.003000	M	Zn <	0.012000	
O Al <	0.014000	O	Fe	0.000096	M	Nb <	0.000430	O	Si	0.001852	M	Zr <	0.000860
M As <	0.000430	M	Ga <	0.000430	M	Nd <	0.000430	M	Sm <	0.000430			
M Au <	0.000430	M	Gd <	0.000430	M	Ni	0.000174	M	Sn <	0.003000			
O B	0.000349	M	Ge <	0.000860	M	Os <	0.200000	M	Sr <	0.000430			
M Ba <	0.000430	M	Hf <	0.000430	O	P <	0.059000	M	Ta <	0.000860			
O Be <	0.001200	M	Hg <	0.000860	O	Pb <	0.024000	M	Tb <	0.000430			
s Bi <		M	Ho <	0.000430	M	Pd <	0.000430	M	Te <	0.016000			
O Ca	0.000349	M	In <	0.000430	M	Pr <	0.000430	M	Th <	0.000430			
M Cd <	0.000430	M	Ir <	0.000430	M	Pt <	0.000430	M	Ti <	0.001300			
M Ce <	0.000430	O	K	0.000295	M	Rb <	0.000430	M	Tl <	0.000430			
M Co <	0.000430	M	La <	0.000430	M	Re <	0.000430	M	Tm <	0.000430			
O Cr <	0.002000	O	Li <	0.000120	M	Rh <	0.000430	M	U <	0.000430			
M Cs <	0.005200	M	Lu <	0.000430	M	Ru <	0.007700	M	V <	0.001800			
M Cu <	0.002600	O	Mg	0.000029	O	S <	0.059000	M	W <	0.000860			
M Dy <	0.000430	M	Mn <	0.000860	M	Sb <	0.014000	M	Y <	0.000430			
M Er <	0.000430	M	Mo <	0.000860	O	Sc <	0.000590	M	Yb <	0.000430			

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](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 208.98 +3 6 Bi(O)(H<sub>2</sub>O)<sub>x</sub>1+

**Chemical Compatibility** -Stable in HCl, HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub> and HF. Avoid basic media forming insoluble hydroxide. Stable with most metals and inorganic anions in acidic media. Many salts that are insoluble in water are soluble in HCl, HNO<sub>3</sub> and HF. The major problem with Bi<sup>3+</sup> is its tendency to hydrolyze at higher concentrations or in dilute acid. Nitric acid solutions should be 5% to hold the Bi in solution in the 100 to 10000 µg/mL concentration range.

**Stability** - 2-100 ppb levels stable for months in 1% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 5 - 7% HNO<sub>3</sub> / LDPE container.

**Bi Containing Samples (Preparation and Solution)** -Metal (soluble in HNO<sub>3</sub>); Oxides ( Soluble in HNO<sub>3</sub>); Alloys ( Dissolve in conc. 4:1 HCl /HNO<sub>3</sub>. Heating may be required.); Organic based (dry ash at 450EC and dissolve ash in HNO<sub>3</sub> or acid digestion with conc. hot sulfuric acid adding hydrogen peroxide dropwise and carefully until clear.)

**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 209 amu	2 ppt	N/A	193Ir16O
ICP-OES 222.825 nm	0.1/0.02 µg/mL	1	Cr, Hf, Ce, Os
ICP-OES 223.061 nm	0.04/0.005 µg/mL	1	Th, Ir, Ti Cu
ICP-OES 306.772 nm	0.08/0.01 µg/mL	1	Th, U, Zr, Hf, Fe

## 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](http://inorganicventures.com); [info@inorganicventures.com](mailto:info@inorganicventures.com)

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

### 11.1 Certification Issue Date

January 11, 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 11, 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





# Energy Laboratories Inc

# Spike LOG

Standard ID: ME210208 IN SECONDARY STOCK  
Standard Name: In Secondary Stock  
Date Prepared: 2/8/2021  
Date Expires: 2/8/2022  
Department: ME  
Vendor: SCP Science  
Lot Number: S200212023  
Balance ID:  
Comments: Opened 02/08/2021; Expires 02/08/2022

Type: Primary  
BY: Parker A. Pearsall  
Status: Open

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Chemical / Solvent Used	BottleNo	Amt	Units	Expires
Indium ICP ICPMS Standard	12886	125	mL	2/27/2022

**Final Volume:**  
125 mL

**Stock Source**

**Base Units**

**Amount Added**

**Analytes**

**CAS**

Conc: **ug/mL**

# In

**1.0 DESCRIPTION:** *PlasmaCAL ICP/ICPMS Standard - Indium 1000 µg/ml*  
 Catalogue Number: 140-051-490/-491/-495  
 Starting Material: In Metal 99.99+%  
 Lot Number: **S200212023**  
 Matrix: 4% HNO<sub>3</sub> (See Section 3 for actual matrix)  
 Expiration Date (End of month): **February 2022** (or 15 months after bottle is opened, whichever comes first)

**2.0 CERTIFIED VALUES AND ASSOCIATED UNCERTAINTY:**  
 Certified Concentration: **997 µg/ml +/- 4 µg/ml**  
**977 µg/g +/- 4 µg/g**  
 Method of analysis: Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP-AES)  
 Traceability: NIST Standard Reference Material 3124a Lot: **110516**

**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 @ 22.6 °C**  
 Actual Matrix: **4.0% (v/v) HNO<sub>3</sub>**

**ID #: 12886**  
 Opened: \_\_\_\_\_  
 Indium ICP ICPMS Standard  
**Expires: 2/27/2022**  
 Rec'd: 7/27/2020  
 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	<b>0.0079</b>
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	<0.0026	Tb	<0.0010
B	<0.0015	Hf	<0.0010	Pb	<b>0.0013</b>	Te	<0.0010
Ba	<b>0.0063</b>	Hg	<0.0010	Pd	<0.0010	Th	<0.0010
Be	<0.0010	Ho	<0.0010	Pr	<0.0010	Ti	<0.0012
Bi	<0.0010	In	N/A	Pt	<0.0010	Tl	<0.0011
Ca	<b>0.0336</b>	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	<0.5000	Y	<0.0010
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	<b>0.0035</b>	Si	<0.1000		
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: February 19, 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 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](http://www.SCPSCIENCE.com)). / *SVP vous référer à la Fiche Signalétique applicable pour de l'information sur ce produit (Disponible à [www.SCPSCIENCE.com](http://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.*

### CORPORATE

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H9X 4B6 Canada  
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Marktberdorf  
Phone: +49 (0) 8342-69560-61  
Fax: +49 (0) 8342-69560-69

# Energy Laboratories Inc

# Spike LOG

Standard ID: ME210212-TB  
Standard Name: TB Terbium primary source  
Date Prepared: 2/12/2021  
Date Expires: 2/12/2022  
Department: ME  
Vendor: Inorganic Ventures  
Lot Number: R2-TB695079AA  
Balance ID:  
Comments: Opened 2/12/2021; Expires 2/12/2022

Type: Primary  
BY: Alyssa A. Olson  
Status: Open

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Chemical / Solvent Used	BottleNo	Amt	Units	Expires
Terbium Single Analyte Atomic Absorption	13445	125	mL	2/12/2022

**Final Volume:**  
125 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: Single Analyte Atomic Absorption Solution  
Catalog Number: AATB1  
Lot Number: R2-TB695079AA  
Matrix: 5% (v/v) HNO<sub>3</sub>  
Value / Analyte(s): 1 000 µg/mL ea:  
Terbium

**ID #: 13445**  
Opened:  
Terbium Single Analyte Atomic Absorption So  
**Expires: 8/19/2024**  
Rec'd: 1/7/2021  
Enerav Laboratories Inc 1120 So. 27th Street  
Billings MT 59107

**3.0 CERTIFIED VALUES AND UNCERTAINTIES**

**Certified Value:** 1000 ± 10 µg/mL  
**Density:** 1.026 g/mL (measured at 20 ± 4 °C)

**4.0 TRACEABILITY TO NIST**

The concentration of this solution standard has been verified by Inductively Coupled Plasma Spectroscopy (ICP) and is traceable to NIST SRM 3157a.

**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](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 158.93 +3 6 to 9 or 10 for some compounds  $Tb(OH)_x(H_2O)_y+3-x$

**Chemical Compatibility** -Soluble in HCl, H<sub>2</sub>SO<sub>4</sub> and HNO<sub>3</sub>. Avoid HF, H<sub>3</sub>PO<sub>4</sub> 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% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2 - 5% HNO<sub>3</sub> / LDPE container.

**Tb Containing Samples (Preparation and Solution)** -Metal (Soluble in acids); Oxide (Dissolve by heating in H<sub>2</sub>O/ HNO<sub>3</sub>); Ores (Carbonate fusion in PtO followed by HCl dissolution); Organic Matrices (dry ash and dissolve in 1:1 H<sub>2</sub>O / HCl or HNO<sub>3</sub> ).

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

<u>Technique/Line</u>	<u>Estimated D.L.</u>	<u>Order</u>	<u>Interferences (underlined indicates severe)</u>
ICP-MS 159 amu	1 ppt	N/A	
ICP-OES 350.917 nm	0.02 / 0.002 µg/mL	1	V, Th, Ce, Zr
ICP-OES 367.635 nm	0.06 / 0.006 µg/mL	1	Ta, Ce, Co, 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

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

**11.1 Certification Issue Date**

August 19, 2020

- The certification is valid within the measurement uncertainty specified provided the CRMWRM 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 CRMWRM is damaged, contaminated, or otherwise modified.

**11.2 Lot Expiration Date**

- **August 19, 2024**

- The date after which this CRMWRM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRMWRM can be supported by long term stability studies conducted on properly stored and handled CRMWRMs. 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 CRMWRM 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 CRMWRM 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: ME210212-HO  
Standard Name: HO Holmium primary source  
Date Prepared: 2/12/2021  
Date Expires: 2/12/2022  
Department: ME  
Vendor: Inorganic Ventures  
Lot Number: R2-HO691014  
Balance ID:  
Comments: Opened 2/12/2021; Expires 2/12/2022

Type: Primary  
BY: Alyssa A. Olson  
Status: Open

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Chemical / Solvent Used	BottleNo	Amt	Units	Expires
Holmium Single Analyte Custom Grade S	13443	125	mL	2/12/2022

**Final Volume:**  
mL

**Stock Source**

**Base Units**

**Amount Added**

**Analytes**

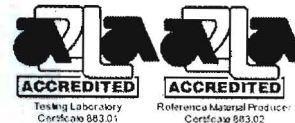
**CAS**

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: Single Analyte Custom Grade Solution  
 Catalog Number: CGHO1  
 Lot Number: R2-HO691014  
 Matrix: 5% (v/v) HNO3  
 Value / Analyte(s): 1 000 µg/mL ea:  
 Holmium  
 Starting Material: Holmium Oxide  
 Starting Material Lot#: 1890  
 Starting Material Purity: 99.9947%

**ID #: 13443**  
 Opened: \_\_\_\_\_  
 Holmium Single Analyte Custom Grade Solution  
**Expires: 4/1/2024**  
 Rec'd: 1/7/2021  
 Energy Laboratories Inc 1120 So. 27th Street  
 Billings MT 59107

**3.0 CERTIFIED VALUES AND UNCERTAINTIES**

**Certified Value:** 999 ± 3 µg/mL  
**Density:** 1.026 g/mL (measured at 20 ± 4 °C)

**Assay Information:**

<b>Assay Method #1</b>	<b>996 ± 6 µg/mL</b> ICP Assay NIST SRM 3123a Lot Number: 090408
<b>Assay Method #2</b>	<b>998 ± 3 µg/mL</b> EDTA NIST SRM 928 Lot Number: 928
<b>Assay Method #3</b>	<b>1000 ± 3 µg/mL</b> 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	<	0.010000	M	Eu	0.000377	M	Na	<	0.036000	M	Se	<	0.004400	M	Zn	<	0.071000
M	Al	<	0.020000	M	Fe	0.002965	M	Nb	<	0.001200	i	Si	<		M	Zr	<	0.000400
M	As	<	0.011000	M	Ga	<	0.001600	M	Nd	0.000183	M	Sm		0.000700				
M	Au	<	0.006400	M	Gd	0.000404	M	Ni	<	0.004800	M	Sn	<	0.002400				
M	B	<	0.091000	M	Ge	<	0.004000	M	Os	<	0.000400	M	Sr	<	0.002400			
M	Ba	<	0.002400	M	Hf	<	0.003200	i	P	<		i	Ta	<				
M	Be	<	0.003200	M	Hg	<	0.005600	M	Pb	<	0.057000	M	Tb		0.000431			
M	Bi	<	0.005600	s	Ho	<		M	Pd	<	0.004400	M	Te	<	0.008000			
M	Ca	<	0.028000	M	In	<	0.001600	M	Pr	0.000204	M	Th	<	0.001200				
M	Cd	<	0.000800	M	Ir	<	0.001600	M	Pt	<	0.000400	M	Ti	<	0.000800			
M	Ce	<	0.004800	O	K	0.002965	M	Rb	<	0.002400	M	Tl	<	0.001600				
M	Co	<	0.001600	M	La	0.000350	M	Re	<	0.000400	M	Tm		0.000323				
M	Cr	<	0.005600	O	Li	<	0.001200	M	Rh	<	0.001600	M	U	<	0.000400			
M	Cs		0.000485	M	Lu	0.037737	M	Ru	<	0.000400	M	V	<	0.029000				
M	Cu	<	0.005600	O	Mg	<	0.003300	n	S	<		M	W	<	0.011000			
M	Dy		0.009434	M	Mn	<	0.001200	M	Sb	<	0.002000	M	Y		0.003504			
M	Er		0.001671	M	Mo	<	0.011000	M	Sc	<	0.001200	M	Yb		0.006199			

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](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 164.93 +3 6 to 9 or 10 for some compounds  $\text{Ho}(\text{OH})_x(\text{H}_2\text{O})_{y+3-x}$

**Chemical Compatibility** - Soluble in HCl, H<sub>2</sub>SO<sub>4</sub> and HNO<sub>3</sub>. Avoid HF, H<sub>3</sub>PO<sub>4</sub> 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% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO<sub>3</sub> / LDPE container.

**Ho Containing Samples (Preparation and Solution)** - Meta I (Soluble in acids); Oxide (Dissolved by heating in H<sub>2</sub>O / HNO<sub>3</sub>); Ores (Carbonate fusion in PtO followed by HCl dissolution); Organic Matrices (Dry ash and dissolve in 1:1 H<sub>2</sub>O / HCl or HNO<sub>3</sub>).

**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 165 amu	1 ppt	n/a	149 Sm 16O
ICP-OES 339.898 nm	0.02 / 0.002 µg/mL	1	Ce, Re
ICP-OES 345.600 nm	0.006 / 0.0001 µg/mL	1	U, Ti

## 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](http://inorganicventures.com); [info@inorganicventures.com](mailto:info@inorganicventures.com)

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

**11.1 Certification Issue Date**

April 01, 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 01, 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



# Energy Laboratories Inc

# Spike LOG

Standard ID: ME210212-LU  
Standard Name: LU Lutetium primary source  
Date Prepared: 2/12/2021  
Date Expires: 2/12/2022  
Department: ME  
Vendor: Inorganic Ventures  
Lot Number: R2-LU689867RAA  
Balance ID:  
Comments: Opened 2/12/2021; Expires 2/12/2022

Type: Primary  
BY: Alyssa A. Olson  
Status: Open

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Chemical / Solvent Used	BottleNo	Amt	Units	Expires
Lutetium Single Analyte Atomic Absorptio	13444	125	mL	3/1/2024

**Final Volume:**  
125 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: Single Analyte Atomic Absorption Solution  
Catalog Number: AALU1  
Lot Number: R2-LU689867RAA  
Matrix: 2% (v/v) HNO<sub>3</sub>  
Value / Analyte(s): 1 000 µg/mL ea:  
Lutetium

**ID #: 13444**

Opened: \_\_\_\_\_

Lutetium Single Analyte Custom Grade Solution

**Expires: 3/1/2024**

Rec'd: 1/7/2021

Energy Laboratories Inc 1120 So. 27th Street  
Billings MT 59107**3.0 CERTIFIED VALUES AND UNCERTAINTIES**

**Certified Value:** 1000 ± 10 µg/mL  
**Density:** 1.011 g/mL (measured at 20 ± 4 °C)

**4.0 TRACEABILITY TO NIST**

The concentration of this solution standard has been verified by Inductively Coupled Plasma Spectroscopy (ICP) and is traceable to NIST SRM 3130a.

**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](http://www.inorganicventures.com/TCT)

**Atomic Weight; Valence; Coordination Number; Chemical Form in Solution** - 174.97 +3 6 to 9 or 10 for some compounds  $\text{Lu}(\text{OH})_x(\text{H}_2\text{O})_{y+3-x}$

**Chemical Compatibility** -Soluble in HCl, H<sub>2</sub>SO<sub>4</sub> and HNO<sub>3</sub>. Avoid HF, H<sub>3</sub>PO<sub>4</sub> 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% HNO<sub>3</sub> / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO<sub>3</sub> / LDPE container.

**Lu Containing Samples (Preparation and Solution)** -Metal (Soluble in acids); Oxide (Dissolved by heating in H<sub>2</sub>O/ HNO<sub>3</sub>); Ores ( Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Dry ash and dissolve in 1:1 H<sub>2</sub>O / HCl or HNO<sub>3</sub> ).

**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 175 amu	1 ppt	n/a	159 Tb16O
ICP-OES 261.542 nm	0.001 / 0.0003 µg/mL	1	Th, Mo, V, W
ICP-OES 291.139 nm	0.006 / 0.0006 µg/mL	1	Cr, 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

## 11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY



**11.1 Certification Issue Date**

March 01, 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**

- **March 01, 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.

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