Apex Laboratories, LLC
6700 SW Sandburg St. Tigard, Oregon 97223
503.718.2323

Level IV Data Package for

Anchor QEA, LLC

Gasco PreRD_DG 2019 - 2b. Depos. Surface Grabs

Apex Laboratories Work Order #:

A0B0406

APEX LABORATORIES, LLC
6700 SW Sandburg St. Tigard, OR 97223 phone 503-718-2323

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APEX LABORATORIES, LLC
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Analytical Case Narrative

APEX LABORATORIES, LLC
6700 SW Sandburg St Tigard, OR 97223 phone 503-718-2323

Analytical Case Narrative

Client: Anchor QEA, LLC Date: 04/06/2020
Project: Gasco PreRD_DG 2019 - 2b. Depos. Surface Grabs
Apex Work Order Number: A0B0406

This data package contains data associated with analysis of samples for the above referenced Apex work order numbers. The data package Table of Contents, along with the PDF bookmarks, allow for ease of navigation and location of items within the data deliverable.

The Sample Receipt Documentation section of this package contains sample receipt information, including sample temperature and condition of receipt documented on Cooler Receipt Form(s). Apex analyzed the samples by the methods indicated on the Chain of Custody. Any additional analyses requested are indicated on the Apex Work Order.

If any anomalies were encountered during analysis that could potentially impact data quality, sample results are qualified and/or a separate Case Narrative is included in the Analytical Report. Please refer to the Notes and Definition section of the Analytical Report(s) for Qualifier explanations, Conventions, and the Blank Policy.

Data represented in this package are in compliance with the referenced method(s), both technically and for completeness, for all conditions other than those stated above and/or noted by qualification of the reported data. The signature below verifies that the Laboratory Director or his designee has authorized release of this data package.

Estella Rieben,
Quality Systems Manager
Apex Laboratories, LLC

APEX LABORATORIES, LLC
6700 SW Sandburg St. Tigard OR 97223 phone 503-718-2323

Analytical Report

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Tuesday, March 24, 2020

Ryan Barth
Anchor QEA, LLC
6720 SW Macadam Ave. Suite 125
Portland, OR 97219

RE: A0B0406 - Gasco PreRD_DG 2019 - 2b. Depos. Surface Grabs - [none]

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A0B0406, which was received by the laboratory on 9/25/2019 at 10:36:00AM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: dthomas@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information

(See Cooler Receipt Form for details)

Cooler #1	2.3 degC	Cooler #2	2.4 degC

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.
All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.

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Darwin Thomas, Business Development Director

Apex Laboratories, LLC

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503-718-2323
EPA ID: OR01039

Anchor QEA, LLC	Project: **Gasco PreRD DG 2019 - 2b. Depos. Surface Grabs**	
6720 SW Macadam Ave. Suite 125	Project Number: **[none]**	**Report ID:**
Portland, OR 97219	Project Manager: **Ryan Barth**	**A0B0406 - 03 24 20 1510**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PDI-103SG-00-01-190924	A0B0406-01	Sediment	09/24/19 14:30	09/25/19 10:36
PDI-104SG-00-01-190924	A0B0406-02	Sediment	09/24/19 14:45	09/25/19 10:36
PDI-105SG-00-0.99-190924	A0B0406-03	Sediment	09/24/19 14:00	09/25/19 10:36
PDI-106SG-00-01-190924	A0B0406-04	Sediment	09/24/19 15:05	09/25/19 10:36

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6720 SW Macadam Ave. Suite 125	Project Number: **[none]**	**Report ID:**
Portland, OR 97219	Project Manager: **Ryan Barth**	**A0B0406 - 03 24 20 1510**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020A (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
PDI-103SG-00-01-190924 (A0B0406-01)				**Matrix: Sediment**				
Batch: 0020669								
Arsenic	**5.16**	0.529	1.06	mg/kg dry	5	02/24/20 12:19	EPA 6020A	
Cadmium	**0.206**	0.106	0.212	mg/kg dry	5	02/24/20 12:19	EPA 6020A	**J**
Copper	**48.1**	0.529	1.06	mg/kg dry	5	02/24/20 12:19	EPA 6020A	
Lead	**10.1**	0.106	0.212	mg/kg dry	5	02/24/20 12:19	EPA 6020A	
Mercury	**0.0602**	0.0423	0.0847	mg/kg dry	5	02/24/20 12:19	EPA 6020A	**H-08, J**
Zinc	**106**	2.12	4.23	mg/kg dry	5	02/24/20 12:19	EPA 6020A	
PDI-104SG-00-01-190924 (A0B0406-02)				**Matrix: Sediment**				
Batch: 0020669								
Arsenic	**5.86**	0.593	1.19	mg/kg dry	5	02/24/20 12:24	EPA 6020A	
Cadmium	**0.255**	0.119	0.237	mg/kg dry	5	02/24/20 12:24	EPA 6020A	
Copper	**51.8**	0.593	1.19	mg/kg dry	5	02/24/20 12:24	EPA 6020A	
Lead	**11.8**	0.119	0.237	mg/kg dry	5	02/24/20 12:24	EPA 6020A	
Mercury	**0.119**	0.0475	0.0950	mg/kg dry	5	02/24/20 12:24	EPA 6020A	**H-08**
Zinc	**124**	2.37	4.75	mg/kg dry	5	02/24/20 12:24	EPA 6020A	
PDI-105SG-00-0.99-190924 (A0B0406-03)				**Matrix: Sediment**				
Batch: 0020669								
Arsenic	**4.50**	0.519	1.04	mg/kg dry	5	02/24/20 12:29	EPA 6020A	
Cadmium	**0.191**	0.104	0.208	mg/kg dry	5	02/24/20 12:29	EPA 6020A	**J**
Copper	**39.8**	0.519	1.04	mg/kg dry	5	02/24/20 12:29	EPA 6020A	
Lead	**9.02**	0.104	0.208	mg/kg dry	5	02/24/20 12:29	EPA 6020A	
Mercury	**0.0498**	0.0415	0.0831	mg/kg dry	5	02/24/20 12:29	EPA 6020A	**H-08, J**
Zinc	**92.3**	2.08	4.15	mg/kg dry	5	02/24/20 12:29	EPA 6020A	
PDI-106SG-00-01-190924 (A0B0406-04)				**Matrix: Sediment**				
Batch: 0020669								
Arsenic	**6.00**	0.602	1.20	mg/kg dry	5	02/24/20 12:34	EPA 6020A	
Cadmium	**0.267**	0.120	0.241	mg/kg dry	5	02/24/20 12:34	EPA 6020A	
Copper	**53.3**	0.602	1.20	mg/kg dry	5	02/24/20 12:34	EPA 6020A	
Lead	**11.4**	0.120	0.241	mg/kg dry	5	02/24/20 12:34	EPA 6020A	
Mercury	**0.0690**	0.0482	0.0963	mg/kg dry	5	02/24/20 12:34	EPA 6020A	**H-08, J**
Zinc	**126**	2.41	4.82	mg/kg dry	5	02/24/20 12:34	EPA 6020A	

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Darwin Thomas, Business Development Director

Apex Laboratories, LLC

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503-718-2323
EPA ID: OR01039

Anchor QEA, LLC	Project: **Gasco PreRD DG 2019 - 2b. Depos. Surface Grabs**	
6720 SW Macadam Ave. Suite 125	Project Number: **[none]**	**Report ID:**
Portland, OR 97219	Project Manager: **Ryan Barth**	**A0B0406 - 03 24 20 1510**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020A (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0020669 - EPA 3051A							**Sediment**					
Blank (0020669-BLK1)			Prepared: 02/21/20 12:17 Analyzed: 02/24/20 12:10									
EPA 6020A												
Arsenic	ND	0.240	0.481	mg/kg wet	5	---	---	---	---	---	---	
Cadmium	ND	0.0481	0.0962	mg/kg wet	5	---	---	---	---	---	---	
Copper	ND	0.240	0.481	mg/kg wet	5	---	---	---	---	---	---	
Lead	ND	0.0481	0.0962	mg/kg wet	5	---	---	---	---	---	---	
Mercury	ND	0.0192	0.0385	mg/kg wet	5	---	---	---	---	---	---	
Zinc	ND	0.962	1.92	mg/kg wet	5	---	---	---	---	---	---	
LCS (0020669-BS1)			Prepared: 02/21/20 12:17 Analyzed: 02/24/20 12:15									
EPA 6020A												
Arsenic	24.2	0.250	0.500	mg/kg wet	5	25.0	---	97	80-120%	---	---	
Cadmium	25.0	0.0500	0.100	mg/kg wet	5	25.0	---	100	80-120%	---	---	
Copper	27.1	0.250	0.500	mg/kg wet	5	25.0	---	108	80-120%	---	---	
Lead	25.4	0.0500	0.100	mg/kg wet	5	25.0	---	102	80-120%	---	---	
Mercury	0.490	0.0200	0.0400	mg/kg wet	5	0.500	---	98	80-120%	---	---	
Zinc	25.6	1.00	2.00	mg/kg wet	5	25.0	---	102	80-120%	---	---	
Duplicate (0020669-DUP1)			Prepared: 02/21/20 12:17 Analyzed: 02/24/20 12:38									
QC Source Sample: PDI-106SG-00-01-190924 (A0B0406-04)												
EPA 6020A												
Arsenic	**5.75**	0.608	1.22	mg/kg dry	5	---	6.00	---	---	4	40%	
Cadmium	**0.250**	0.122	0.243	mg/kg dry	5	---	0.267	---	---	7	40%	
Copper	**50.6**	0.608	1.22	mg/kg dry	5	---	53.3	---	---	5	40%	
Lead	**12.7**	0.122	0.243	mg/kg dry	5	---	11.4	---	---	11	40%	
Mercury	**0.0706**	0.0486	0.0973	mg/kg dry	5	---	0.0690	---	---	2	40%	J
Zinc	**121**	2.43	4.86	mg/kg dry	5	---	126	---	---	4	40%	
Matrix Spike (0020669-MS1)			Prepared: 02/21/20 12:17 Analyzed: 02/24/20 12:43									
QC Source Sample: PDI-106SG-00-01-190924 (A0B0406-04)												
EPA 6020A												
Arsenic	64.5	0.596	1.19	mg/kg dry	5	59.6	6.00	98	75-125%	---	---	
Cadmium	60.7	0.119	0.238	mg/kg dry	5	59.6	0.267	101	75-125%	---	---	
Copper	118	0.596	1.19	mg/kg dry	5	59.6	53.3	108	75-125%	---	---	

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6720 SW Macadam Ave. Suite 125	Project Number: **[none]**	**Report ID:**
Portland, OR 97219	Project Manager: **Ryan Barth**	**A0B0406 - 03 24 20 1510**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020A (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0020669 - EPA 3051A							**Sediment**					
Matrix Spike (0020669-MS1)			Prepared: 02/21/20 12:17		Analyzed: 02/24/20 12:43							
QC Source Sample: PDI-106SG-00-01-190924 (A0B0406-04)												
Lead	68.5	0.119	0.238	mg/kg dry	5	59.6	11.4	96	75-125%	---	---	
Mercury	1.13	0.0477	0.0954	mg/kg dry	5	1.19	0.0690	89	75-125%	---	---	
Zinc	186	2.38	4.77	mg/kg dry	5	59.6	126	100	75-125%	---	---	

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Portland, OR 97219	Project Manager: **Ryan Barth**	**A0B0406 - 03 24 20 1510**

SAMPLE PREPARATION INFORMATION

Total Metals by EPA 6020A (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0020669							
A0B0406-01	Sediment	EPA 6020A	09/24/19 14:30	02/21/20 12:17	0.496g/50mL	0.5g/50mL	1.01
A0B0406-02	Sediment	EPA 6020A	09/24/19 14:45	02/21/20 12:17	0.504g/50mL	0.5g/50mL	0.99
A0B0406-03	Sediment	EPA 6020A	09/24/19 14:00	02/21/20 12:17	0.485g/50mL	0.5g/50mL	1.03
A0B0406-04	Sediment	EPA 6020A	09/24/19 15:05	02/21/20 12:17	0.504g/50mL	0.5g/50mL	0.99

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Portland, OR 97219	Project Manager: **Ryan Barth**	**A0B0406 - 03 24 20 1510**

QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

Apex Laboratories

H-08	Sample hold time extended by freezing at -18 degrees C. Total time at 4 degrees C was less than the standard hold time.
J	Estimated Result. Result detected below the lowest point of the calibration curve, but above the specified MDL.

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REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET Analyte DETECTED at or above the detection or reporting limit.

ND Analyte NOT DETECTED at or above the detection or reporting limit.

NR Result Not Reported

RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).
If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as " dry", " wet", or " " (blank) designation.

" dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.

" wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.

" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) may not be included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

" *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to ½ the Reporting Limit (RL).
-For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.
For further details, please request a copy of this document.

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REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks (Cont.):

Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

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Portland, OR 97219	Project Manager: **Ryan Barth**	**A0B0406 - 03 24 20 1510**

LABORATORY ACCREDITATION INFORMATION

TNI Certification ID: OR100062 (Primary Accreditation) - EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.
Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

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6720 SW Macadam Ave. Suite 125	Project Number: **[none]**	**Report ID:**
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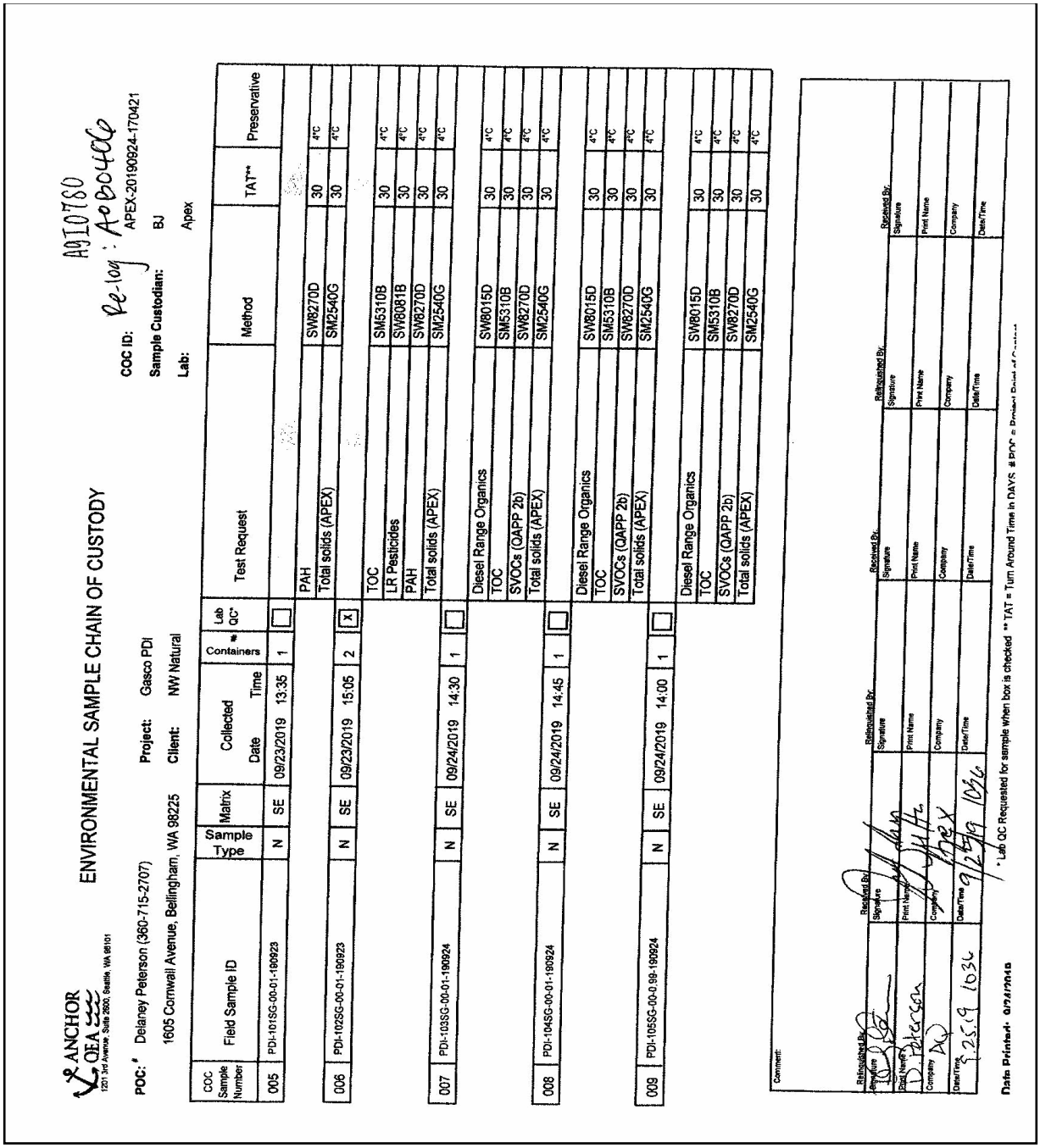


ENVIRONMENTAL SAMPLE CHAIN OF CUSTODY

ANCHOR QEA
1201 3rd Avenue, Suite 2600, Seattle, WA 98101

POC: * Delaney Peterson (360-715-2707) Project: Gasco PDI
1605 Cornwall Avenue, Bellingham, WA 98225 Client: NW Natural

COC ID: APEX-20190924-170421 (Re-log : A0B0406)
Sample Custodian: BJ
Lab: Apex

COC Sample Number	Field Sample ID	Sample Type	Matrix	Collected Date	Collected Time	# Containers	Lab QC*	Test Request	Method	TAT**	Preservative
005	PDI-101SG-00-01-190923	N	SE	09/23/2019	13:35	1	☐	PAH	SW8270D	30	4°C
								Total solids (APEX)	SM2540G	30	4°C
006	PDI-102SG-00-01-190923	N	SE	09/23/2019	15:05	2	☒	TOC	SM5310B	30	4°C
								LR Pesticides	SW8081B	30	4°C
								PAH	SW8270D	30	4°C
								Total solids (APEX)	SM2540G	30	4°C
007	PDI-103SG-00-01-190924	N	SE	09/24/2019	14:30	1	☐	Diesel Range Organics	SW8015D	30	4°C
								TOC	SM5310B	30	4°C
								SVOCs (QAPP 2b)	SW8270D	30	4°C
								Total solids (APEX)	SM2540G	30	4°C
008	PDI-104SG-00-01-190924	N	SE	09/24/2019	14:45	1	☐	Diesel Range Organics	SW8015D	30	4°C
								TOC	SM5310B	30	4°C
								SVOCs (QAPP 2b)	SW8270D	30	4°C
								Total solids (APEX)	SM2540G	30	4°C
009	PDI-105SG-00-0.99-190924	N	SE	09/24/2019	14:00	1	☐	Diesel Range Organics	SW8015D	30	4°C
								TOC	SM5310B	30	4°C
								SVOCs (QAPP 2b)	SW8270D	30	4°C
								Total solids (APEX)	SM2540G	30	4°C

Comment:

Relinquished By: Signature / Print Name / Company / Date/Time — Received By: Signature / Print Name / Company / Date/Time — Relinquished By: Signature / Print Name / Company / Date/Time — Received By: Signature / Print Name / Company / Date/Time

* Lab QC Requested for sample when box is checked ** TAT = Turn Around Time in DAYS. # POC = Project Point of Contact

Date Printed: 07/21/2015

Apex Laboratories

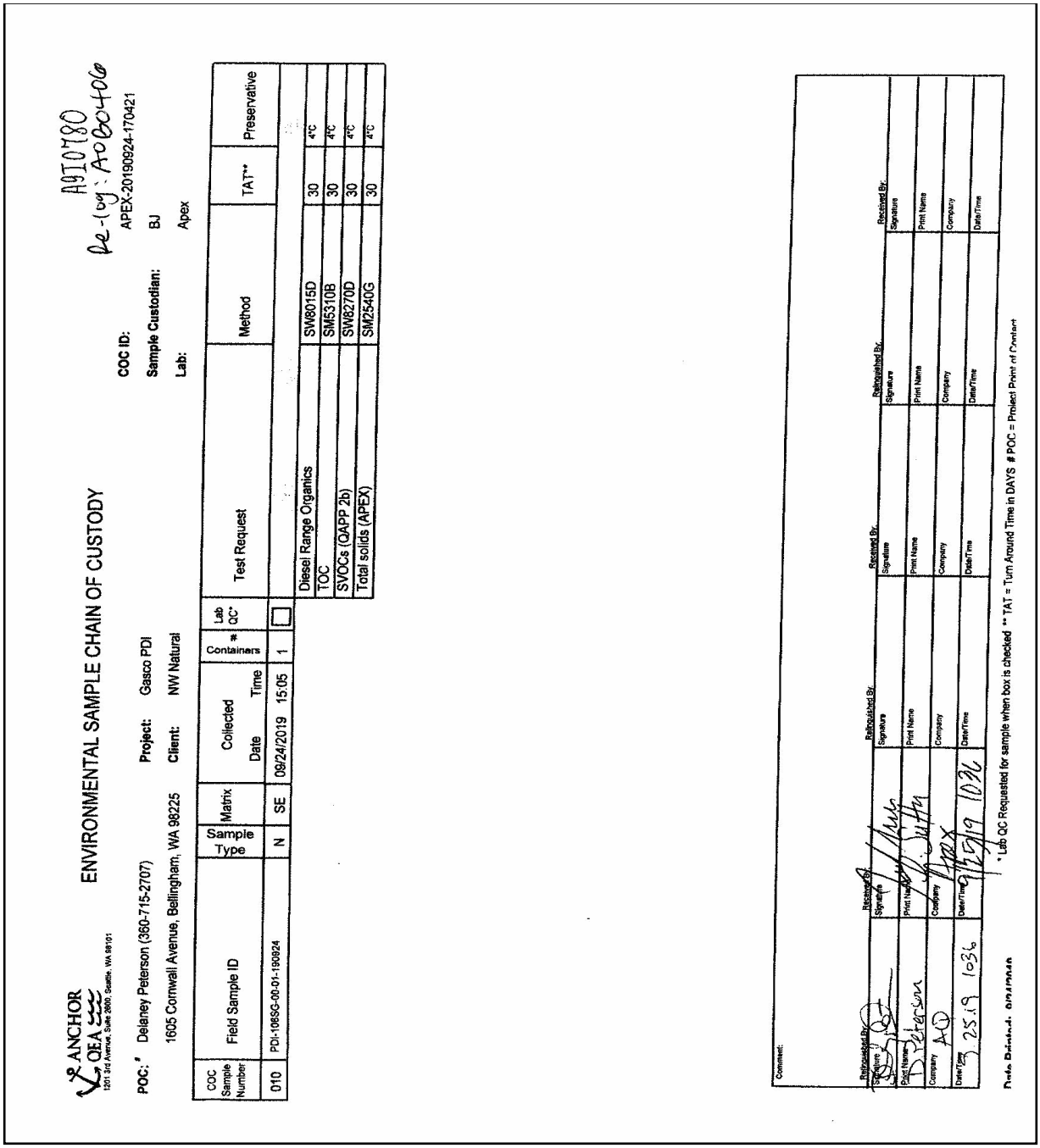
The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Anchor QEA, LLC	Project: **Gasco PreRD DG 2019 - 2b. Depos. Surface Grabs**	
6720 SW Macadam Ave. Suite 125	Project Number: **[none]**	**Report ID:**
Portland, OR 97219	Project Manager: **Ryan Barth**	**A0B0406 - 03 24 20 1510**



ENVIRONMENTAL SAMPLE CHAIN OF CUSTODY

ANCHOR QEA LLC, 1201 3rd Avenue, Suite 2600, Seattle, WA 98101

COC ID: APEX-20190924-170421
Sample Custodian: BJ
Lab: Apex

POC: Delaney Peterson (360-715-2707)
1605 Cornwall Avenue, Bellingham, WA 98225
Project: Gasco PDI
Client: NW Natural

COC Sample Number	Field Sample ID	Sample Type	Matrix	Collected Date	Collected Time	# Containers	Lab QC*	Test Request	Method	TAT**	Preservative
010	PDI-1065G-00-01-190924	N	SE	09/24/2019	15:05	1	☐	Diesel Range Organics	SW8015D	30	4°C
								TOC	SM5310B	30	4°C
								SVOCs (QAPP 2b)	SW8270D	30	4°C
								Total solids (APEX)	SM2540G	30	4°C

Comment:

Relinquished By: Signature / Print Name / Company / Date/Time
Received By: Signature / Print Name / Company / Date/Time

* Lab QC Requested for sample when box is checked ** TAT = Turn Around Time in DAYS # POC = Project Point of Contact

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Anchor QEA, LLC	Project: **Gasco PreRD DG 2019 - 2b. Depos. Surface Grabs**	
6720 SW Macadam Ave. Suite 125	Project Number: **[none]**	**Report ID:**
Portland, OR 97219	Project Manager: **Ryan Barth**	**A0B0406 - 03 24 20 1510**

APEX LABS COOLER RECEIPT FORM Rel vg: A0B0406

Client: Anchor Element WO#: A9 I0780

Project/Project #: Gasco PDI

Delivery Info:

Date/time received: 9/25/19@ 1036 By: JS

Delivered by: Apex X Client ESS FedEx UPS Swift Senvoy SDS Other

Cooler Inspection Date/time inspected: 9/25/19@ 1128 By: JS

Chain of Custody included? Yes X No Custody seals? Yes No X

Signed/dated by client? Yes X No

Signed/dated by Apex? Yes X No

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	2.3	2.4					
Received on ice? (Y/N)	Y	Y					
Temp. blanks? (Y/N)	N	N					
Ice type: (Gel/Real/Other)	real	real					
Condition:	good	good					

Cooler out of temp? (Y/N) Possible reason why:

If some coolers are in temp and some out, were green dots applied to out of temperature samples? Yes/No/NA

Out of temperature samples form initiated? Yes/No/NA

Samples Inspection: Date/time inspected: 9/25/19 @ 1210 By: (SP)

All samples intact? Yes X No Comments:

Bottle labels/COCs agree? Yes X No Comments:

COC/container discrepancies form initiated? Yes No NA X

Containers/volumes received appropriate for analysis? Yes X No Comments:

Do VOA vials have visible headspace? Yes No NA X

Comments

Water samples: pH checked: Yes No NA X pH appropriate? Yes No NA X

Comments:

Additional information:

Labeled by: (SP) Witness: (MM) Cooler Inspected by: (SP) See Project Contact Form: Y

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

APEX LABORATORIES, LLC
6700 SW Sandburg St. Tigard OR 97223 phone 503-718-2323

Sample Receipt Documentation
(Work orders, Chain of Custody & Cooler Receipt Forms)

A0B0406

Apex Laboratories

Client: Anchor QEA, LLC
Project: Gasco PreRD_DG 2019 - 2b. Depos. Surface Grab

Project Manager: Darwin Thomas
Project Number: [none]

Report To:
Anchor QEA, LLC
Ryan Barth
6720 SW Macadam Ave. Suite 125
Portland, OR 97219
Phone: (503) 670-1108
Fax: na

Invoice To:
Anchor QEA, LLC Seattle
Accounts Payable
1201 3rd Avenue, Suite 2600
Seattle, WA 98101
Phone :(206) 287-9130
Fax: (206) 287-9131

Date Due: 02/27/20 17:00 (106 day TAT)

Received By: Jennifer Sutton
Date Received: 09/25/19 10:36

Logged In By: Cameron L O'Brien
Date Logged In: 02/14/20 17:03

Cooler #1 received at 2.3°C

Custody Seals	No	Containers Intact	Yes	COC/Labels Agree	Yes	PH Confirmed	No	Received On Ice	Yes
Temperature OK	Yes								

Cooler #2 received at 2.4°C

Custody Seals	No	Containers Intact	Yes	COC/Labels Agree	Yes	PH Confirmed	No	Received On Ice	Yes
Temperature OK	Yes								

Analysis	Due	TAT	Expires	Comments
A0B0406-01 PDI-103SG-00-01-190924 [Sediment] Sampled 09/24/19 14:30 (GMT-08:00) Pacific Time (US & Canada) 1 Containers				**Copy/Re-log from A9I0780-01**
Dry Weight				
Dry Weight	02/21/20 17:00	5	03/22/20 14:30	use data from original -- A9I0780-01
Metals				
Metals, Select 1	02/26/20 17:00	10	03/22/20 14:30	6020A: As,Cd,Cu,Pb,Hg,Zn
Project Mgmt				
Data Package	03/25/20 17:00	10	01/01/20 14:30	
Sample Control				
Archive Samples - Frozen	11/04/19 17:00	28	09/25/19 14:30	
A0B0406-02 PDI-104SG-00-01-190924 [Sediment] Sampled 09/24/19 14:45 (GMT-08:00) Pacific Time (US & Canada) 1 Containers				**Copy/Re-log from A9I0780-02**
Dry Weight				
Dry Weight	02/21/20 17:00	5	03/22/20 14:45	use data from original -- A9I0780-02
Metals				
Metals, Select 1	02/26/20 17:00	10	03/22/20 14:45	6020A: As,Cd,Cu,Pb,Hg,Zn
Sample Control				
Archive Samples - Frozen	11/04/19 17:00	28	09/25/19 14:45	

A0B0406

Apex Laboratories

Client:	**Anchor QEA, LLC**	**Project Manager:**	**Darwin Thomas**
Project:	**Gasco PreRD_DG 2019 - 2b. Depos. Surface Grab**	**Project Number:**	**[none]**

Analysis	Due	TAT	Expires	Comments
Analysis	**Due**	**TAT**	**Expires**	**Comments**

A0B0406-03 PDI-105SG-00-0.99-190924 [Sediment] Sampled 09/24/19 14:00 (GMT-08:00) Pacific Time (US & Canada) 1 Containers — **Copy/Re-log from A9I0780-03**

Analysis	Due	TAT	Expires	Comments
Dry Weight				
Dry Weight	02/21/20 17:00	5	03/22/20 14:00	use data from original -- A9I0780-03
Metals				
Metals, Select 1	02/26/20 17:00	10	03/22/20 14:00	6020A: As,Cd,Cu,Pb,Hg,Zn
Sample Control				
Archive Samples - Frozen	11/04/19 17:00	28	09/25/19 14:00	

A0B0406-04 PDI-106SG-00-01-190924 [Sediment] Sampled 09/24/19 15:05 (GMT-08:00) Pacific Time (US & Canada) 1 Containers — **Copy/Re-log from A9I0780-04**

Analysis	Due	TAT	Expires	Comments
Dry Weight				
Dry Weight	02/21/20 17:00	5	03/22/20 15:05	use data from original -- A9I0780-04
Metals				
Metals, Select 1	02/26/20 17:00	10	03/22/20 15:05	6020A: As,Cd,Cu,Pb,Hg,Zn
Sample Control				
Archive Samples - Frozen	11/04/19 17:00	28	09/25/19 15:05	

Analysis groups included in this work order

Metals, Select 1

As (Arsenic) - 6020 - Total	Cd (Cadmium) - 6020 - Total	Cu (Copper) - 6020 - Total	Hg (Mercury) - 6020 - Total
Pb (Lead) - 6020 - Total	Zn (Zinc) - 6020 - Total		

ANCHOR QEA
1201 3rd Avenue, Suite 2600, Seattle, WA 98101

ENVIRONMENTAL SAMPLE CHAIN OF CUSTODY

A9I0780
Re-log : A0B0406

COC ID: APEX-20190924-170421

POC: * Delaney Peterson (360-715-2707)
1605 Cornwall Avenue, Bellingham, WA 98225

Project: Gasco PDI
Client: NW Natural

Sample Custodian: BJ
Lab: Apex

COC Sample Number	Field Sample ID	Sample Type	Matrix	Collected Date	Collected Time	Containers #	Lab QC*	Test Request	Method	TAT**	Preservative
005	PDI-101SG-00-01-190923	N	SE	09/23/2019	13:35	1	☐				
								PAH	SW8270D	30	4°C
								Total solids (APEX)	SM2540G	30	4°C
006	PDI-102SG-00-01-190923	N	SE	09/23/2019	15:05	2	X				
								TOC	SM5310B	30	4°C
								LR Pesticides	SW8081B	30	4°C
								PAH	SW8270D	30	4°C
								Total solids (APEX)	SM2540G	30	4°C
007	PDI-103SG-00-01-190924	N	SE	09/24/2019	14:30	1	☐				
								Diesel Range Organics	SW8015D	30	4°C
								TOC	SM5310B	30	4°C
								SVOCs (QAPP 2b)	SW8270D	30	4°C
								Total solids (APEX)	SM2540G	30	4°C
008	PDI-104SG-00-01-190924	N	SE	09/24/2019	14:45	1	☐				
								Diesel Range Organics	SW8015D	30	4°C
								TOC	SM5310B	30	4°C
								SVOCs (QAPP 2b)	SW8270D	30	4°C
								Total solids (APEX)	SM2540G	30	4°C
009	PDI-105SG-00-0.99-190924	N	SE	09/24/2019	14:00	1	☐				
								Diesel Range Organics	SW8015D	30	4°C
								TOC	SM5310B	30	4°C
								SVOCs (QAPP 2b)	SW8270D	30	4°C
								Total solids (APEX)	SM2540G	30	4°C

Comment:

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature	Signature	Signature	Signature	Signature	Signature
Print Name: D. Peterson	Print Name:	Print Name	Print Name	Print Name	Print Name
Company: AQ	Company: APEX	Company	Company	Company	Company
Date/Time: 9.25.19 1036	Date/Time: 9/25/19 1036	Date/Time	Date/Time	Date/Time	Date/Time

Date Printed: 9/24/2019

* Lab QC Requested for sample when box is checked ** TAT = Turn Around Time in DAYS # POC = Project Point of Contact

ANCHOR QEA
1201 3rd Avenue, Suite 2600, Seattle, WA 98101

ENVIRONMENTAL SAMPLE CHAIN OF CUSTODY

A9I0780
Re-log: A0B04060

POC: # Delaney Peterson (360-715-2707)
1605 Cornwall Avenue, Bellingham, WA 98225

Project: Gasco PDI
Client: NW Natural

COC ID: APEX-20190924-170421
Sample Custodian: BJ
Lab: Apex

COC Sample Number	Field Sample ID	Sample Type	Matrix	Collected Date	Collected Time	Containers #	Lab QC*	Test Request	Method	TAT**	Preservative
010	PDI-106SG-00-01-190924	N	SE	09/24/2019	15:05	1	☐	Diesel Range Organics	SW8015D	30	4°C
								TOC	SM5310B	30	4°C
								SVOCs (QAPP 2b)	SW8270D	30	4°C
								Total solids (APEX)	SM2540G	30	4°C

Comment:

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature	Signature	Signature	Signature	Signature	Signature
Print Name: D Peterson	Print Name: J. Sutton	Print Name	Print Name	Print Name	Print Name
Company: AQ	Company: Apex	Company	Company	Company	Company
Date/Time: 9.25.19 1036	Date/Time: 9/25/19 1036	Date/Time	Date/Time	Date/Time	Date/Time

Date Printed: 9/24/2019

* Lab QC Requested for sample when box is checked ** TAT = Turn Around Time in DAYS # POC = Project Point of Contact

APEX LABS COOLER RECEIPT FORM

Relog: AOB0406

Client: Anchor Element WO#: A9I0780

Project/Project #: Gasco PDI

Delivery Info:

Date/time received: 9/25/19@1036 By: JS

Delivered by: Apex X Client ___ ESS ___ FedEx ___ UPS ___ Swift ___ Senvoy ___ SDS ___ Other ___

Cooler Inspection Date/time inspected: 9/25/19@1128 By: JS

Chain of Custody included? Yes X No ___ Custody seals? Yes ___ No X

Signed/dated by client? Yes X No ___

Signed/dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	2.3	2.4					
Received on ice? (Y/N)	Y	Y					
Temp. blanks? (Y/N)	N	N					
Ice type: (Gel/Real/Other)	real	real					
Condition:	good	good					

Cooler out of temp? (Y/N) Possible reason why: ___

If some coolers are in temp and some out, were green dots applied to out of temperature samples? Yes/No/NA

Out of temperature samples form initiated? Yes/No/NA

Samples Inspection: Date/time inspected: 9/25/19 @1216 By: (JS)

All samples intact? Yes X No ___ Comments: ___

Bottle labels/COCs agree? Yes X No ___ Comments: ___

COC/container discrepancies form initiated? Yes ___ No ___ NA X

Containers/volumes received appropriate for analysis? Yes X No ___ Comments: ___

Do VOA vials have visible headspace? Yes ___ No ___ NA X

Comments ___

Water samples: pH checked: Yes ___ No ___ NA X pH appropriate? Yes ___ No ___ NA X

Comments: ___

Additional information: ___

Labeled by: (RR) Witness: (N) Cooler Inspected by: (JS) See Project Contact Form: Y

APEX LABORATORIES, LLC
6700 SW Sandburg St. Tigard OR 97223 phone 503-718-2323

CLP-Like Forms

Apex Laboratories

SDG: Gasco PreRD_DG 2019

CLASS: METALS

METHOD: EPA 6020A

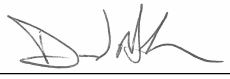
ANALYSES DATA PACKAGE COVER PAGE

EPA 6020A

Laboratory: Apex Laboratories
Client: Anchor QEA, LLC
SDG: Gasco PreRD_DG 2019
Project: Gasco PreRD_DG 2019 - 2b. Depos. Surface Grabs

Client Sample Id:	Lab Sample Id:	Matrix
PDI-103SG-00-01-190924	A0B0406-01	Sediment
PDI-104SG-00-01-190924	A0B0406-02	Sediment
PDI-105SG-00-0.99-190924	A0B0406-03	Sediment
PDI-106SG-00-01-190924	A0B0406-04	Sediment

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in computer-readable data submitted on diskette has been autorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures.

Signature: 
Name: David G. Jack

Forms Created: 3/26/2020 10:59AM
Title: Technical Manager

METHOD DETECTION AND REPORTING LIMITS

EPA 6020A

Laboratory: Apex Laboratories **SDG:** Gasco_PreRD_DG 2019

Client: Anchor QEA, LLC **Project:** Gasco_PreRD_DG 2019 - 2b. Depos. Surfa

Batch Matrix: Sediment

Analyte	MDL	MRL	Units
Arsenic	0.250	0.500	mg/kg
Cadmium	0.0500	0.100	mg/kg
Copper	0.500	1.00	mg/kg
Lead	0.0500	0.100	mg/kg
Mercury	0.0200	0.0400	mg/kg
Zinc	1.00	2.00	mg/kg

Note: MDLs are listed only if the corresponding analyte was evalutated to the MDL in this report .

INORGANIC ANALYSIS DATA SHEET

EPA 6020A

PDI-103SG-00-01-190924

Laboratory: Apex Laboratories
SDG: Gasco_PreRD_DG 2019
Client: Anchor QEA, LLC
Project: Gasco_PreRD_DG 2019 - 2b. Depos. Surface Grabs
Matrix: Sediment
Laboratory ID: A0B0406-01
File ID: 0B24036-024
Sampled: 09/24/19 14:30
Prepared: 02/21/20 12:17
Analyzed: 02/24/20 12:19
Solids: 47.63
Preparation: EPA 3051A
Initial/Final: 0.496 g / 50 mL
Batch: 0020669
Sequence: 0B24036
Instrument: ICPMS6

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	Q	Method
7440-38-2	Arsenic	5.16	5		EPA 6020A
7440-43-9	Cadmium	0.206	5	J	EPA 6020A
7440-50-8	Copper	48.1	5		EPA 6020A
7439-92-1	Lead	10.1	5		EPA 6020A
7439-97-6	Mercury	0.0602	5	J	EPA 6020A
7440-66-6	Zinc	106	5		EPA 6020A

INORGANIC ANALYSIS DATA SHEET

EPA 6020A

PDI-104SG-00-01-190924

Laboratory: Apex Laboratories
SDG: Gasco_PreRD_DG 2019
Client: Anchor QEA, LLC
Project: Gasco_PreRD_DG 2019 - 2b. Depos. Surface Grabs
Matrix: Sediment
Laboratory ID: A0B0406-02
File ID: 0B24036-025
Sampled: 09/24/19 14:45
Prepared: 02/21/20 12:17
Analyzed: 02/24/20 12:24
Solids: 41.79
Preparation: EPA 3051A
Initial/Final: 0.504 g / 50 mL
Batch: 0020669
Sequence: 0B24036
Instrument: ICPMS6

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	Q	Method
7440-38-2	Arsenic	5.86	5		EPA 6020A
7440-43-9	Cadmium	0.255	5		EPA 6020A
7440-50-8	Copper	51.8	5		EPA 6020A
7439-92-1	Lead	11.8	5		EPA 6020A
7439-97-6	Mercury	0.119	5		EPA 6020A
7440-66-6	Zinc	124	5		EPA 6020A

INORGANIC ANALYSIS DATA SHEET

EPA 6020A

PDI-105SG-00-0.99-190924

Laboratory: Apex Laboratories
SDG: Gasco_PreRD_DG 2019
Client: Anchor QEA, LLC
Project: Gasco_PreRD_DG 2019 - 2b. Depos. Surface Grabs
Matrix: Sediment
Laboratory ID: A0B0406-03
File ID: 0B24036-026
Sampled: 09/24/19 14:00
Prepared: 02/21/20 12:17
Analyzed: 02/24/20 12:29
Solids: 49.64
Preparation: EPA 3051A
Initial/Final: 0.485 g / 50 mL
Batch: 0020669
Sequence: 0B24036
Instrument: ICPMS6

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	Q	Method
7440-38-2	Arsenic	4.50	5		EPA 6020A
7440-43-9	Cadmium	0.191	5	J	EPA 6020A
7440-50-8	Copper	39.8	5		EPA 6020A
7439-92-1	Lead	9.02	5		EPA 6020A
7439-97-6	Mercury	0.0498	5	J	EPA 6020A
7440-66-6	Zinc	92.3	5		EPA 6020A

INORGANIC ANALYSIS DATA SHEET

EPA 6020A

PDI-106SG-00-01-190924

Laboratory: Apex Laboratories
SDG: Gasco_PreRD_DG 2019
Client: Anchor QEA, LLC
Project: Gasco_PreRD_DG 2019 - 2b. Depos. Surface Grabs
Matrix: Sediment
Laboratory ID: A0B0406-04
File ID: 0B24036-027
Sampled: 09/24/19 15:05
Prepared: 02/21/20 12:17
Analyzed: 02/24/20 12:34
Solids: 41.19
Preparation: EPA 3051A
Initial/Final: 0.504 g / 50 mL
Batch: 0020669
Sequence: 0B24036
Instrument: ICPMS6

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	Q	Method
7440-38-2	Arsenic	6.00	5		EPA 6020A
7440-43-9	Cadmium	0.267	5		EPA 6020A
7440-50-8	Copper	53.3	5		EPA 6020A
7439-92-1	Lead	11.4	5		EPA 6020A
7439-97-6	Mercury	0.0690	5	J	EPA 6020A
7440-66-6	Zinc	126	5		EPA 6020A

PREPARATION BATCH SUMMARY

EPA 6020A

Laboratory: Apex Laboratories
SDG: Gasco_PreRD_DG 2019
Client: Anchor QEA, LLC
Project: Gasco_PreRD_DG 2019 - 2b. Depos. Surface Grabs
Batch: 0020669 Batch Matrix: Sediment Preparation: EPA 3051A

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	0020669-BLK1	0B24036-022	02/21/20 12:17	
LCS	0020669-BS1	0B24036-023	02/21/20 12:17	
PDI-106SG-00-01-190924 (Dup)	0020669-DUP1	0B24036-028	02/21/20 12:17	
PDI-106SG-00-01-190924 (MS)	0020669-MS1	0B24036-029	02/21/20 12:17	
PDI-103SG-00-01-190924	A0B0406-01	0B24036-024	02/21/20 12:17	
PDI-104SG-00-01-190924	A0B0406-02	0B24036-025	02/21/20 12:17	
PDI-105SG-00-0.99-190924	A0B0406-03	0B24036-026	02/21/20 12:17	
PDI-106SG-00-01-190924	A0B0406-04	0B24036-027	02/21/20 12:17	

Note: Client samples are listed only if they are included in this report.
Duplicates and Matrix Spike/Duplicates QC Samples are only listed if sourced from a sample included in this report.

METHOD BLANK DATA SHEET

EPA 6020A

Laboratory:	Apex Laboratories			SDG:	Gasco_PreRD_DG 2019
Client:	Anchor QEA, LLC			Project:	Gasco_PreRD_DG 2019 - 2b. Depos. Surface Grabs
Matrix:	Sediment	Laboratory ID:	0020669-BLK1	File ID:	0B24036-022
Prepared:	02/21/20 12:17	Preparation:	EPA 3051A	Initial/Final:	0.52 g / 50 mL
Analyzed:	02/24/20 12:10	Instrument:	ICPMS6		
Batch:	0020669	Sequence:	0B24036	Calibration:	UNASSIGNED

CAS NO.	COMPOUND	CONC. (mg/kg wet)	Q
7440-38-2	Arsenic	0.240	U
7440-43-9	Cadmium	0.0481	U
7440-50-8	Copper	0.240	U
7439-92-1	Lead	0.0481	U
7439-97-6	Mercury	0.0192	U
7440-66-6	Zinc	0.962	U

LCS / LCS DUPLICATE RECOVERY

EPA 6020A

Laboratory:	Apex Laboratories	SDG:	Gasco_PreRD_DG 2019
Client:	Anchor QEA, LLC	Project:	Gasco_PreRD_DG 2019 - 2b. Depos. Surface Grabs
Matrix:	Sediment		
Batch:	0020669	Laboratory ID:	0020669-BS1
Preparation:	EPA 3051A	Initial/Final:	0.5 g / 50 mL

COMPOUND	SPIKE ADDED (mg/kg wet)	LCS CONCENTRATION (mg/kg wet)	LCS % REC. (*=Out)	QC LIMITS REC.
Arsenic	25.0	24.2	97	80 - 120
Cadmium	25.0	25.0	100	80 - 120
Copper	25.0	27.1	108	80 - 120
Lead	25.0	25.4	102	80 - 120
Mercury	0.500	0.490	98	80 - 120
Zinc	25.0	25.6	102	80 - 120

* = Values outside of QC limits

DUPLICATES

EPA 6020A

PDI-106SG-00-01-190924

Laboratory: Apex Laboratories
Client: Anchor QEA, LLC
Matrix: Sediment
Batch: 0020669
Preparation: EPA 3051A
Source Sample Name: PDI-106SG-00-01-190924

SDG: Gasco_PreRD_DG 2019
Project: Gasco_PreRD_DG 2019 - 2b. Depos. Surfac
Laboratory ID: 0020669-DUP1
Lab Source ID: A0B0406-04
Initial/Final: 0.499 g / 50 mL
% Solids: 41.19

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/kg dry)	C	DUPLICATE CONCENTRATION (mg/kg dry)	C	RPD %	Q	METHOD
Arsenic	40	6.00		5.75		4		EPA 6020A
Cadmium	40	0.267		0.250		7		EPA 6020A
Copper	40	53.3		50.6		5		EPA 6020A
Lead	40	11.4		12.7		11		EPA 6020A
Mercury	40	0.0690		0.0706		2		EPA 6020A
Zinc	40	126		121		4		EPA 6020A

* Values outside of QC limits

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 6020A

PDI-106SG-00-01-190924

Laboratory:	Apex Laboratories	SDG:	Gasco_PreRD_DG 2019
Client:	Anchor QEA, LLC	Project:	Gasco_PreRD_DG 2019 - 2b. Depos. Surface Grabs
Matrix:	Sediment		
Batch:	0020669	Laboratory ID:	0020669-MS1
Preparation:	EPA 3051A	Initial/Final:	0.509 g / 50 mL

Source Sample Name: PDI-106SG-00-01-190924

COMPOUND	SPIKE ADDED (mg/kg dry)	SAMPLE CONCENTRATION (mg/kg dry)	MS CONCENTRATION (mg/kg dry)	MS % REC. (*=Out)	QC LIMITS REC.
Arsenic	59.6	6.00	64.5	98	75 - 125
Cadmium	59.6	0.267	60.7	101	75 - 125
Copper	59.6	53.3	118	108	75 - 125
Lead	59.6	11.4	68.5	96	75 - 125
Mercury	1.19	0.0690	1.13	89	75 - 125
Zinc	59.6	126	186	100	75 - 125

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 6020A

Laboratory:	Apex Laboratories	SDG:	Gasco_PreRD_DG 2019
Client:	Anchor QEA, LLC	Project:	Gasco_PreRD_DG 2019 - 2b. Depos. Surface Grabs
Sequence:	0B24036	Instrument:	ICPMS6
Matrix:	Sediment	Calibration:	UNASSIGNED

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Initial Cal Check	0B24036-ICV1	0B24036-015	02/24/20 11:34
Initial Cal Blank	0B24036-ICB1	0B24036-016	02/24/20 11:38
Instrument RL Check	0B24036-CRL1	0B24036-017	02/24/20 11:46
Instrument RL Check	0B24036-CRL2	0B24036-018	02/24/20 11:50
Instrument RL Check	0B24036-CRL3	0B24036-019	02/24/20 11:55
Blank	0020669-BLK1	0B24036-022	02/24/20 12:10
LCS	0020669-BS1	0B24036-023	02/24/20 12:15
PDI-103SG-00-01-190924	A0B0406-01	0B24036-024	02/24/20 12:19
PDI-104SG-00-01-190924	A0B0406-02	0B24036-025	02/24/20 12:24
PDI-105SG-00-0.99-190924	A0B0406-03	0B24036-026	02/24/20 12:29
PDI-106SG-00-01-190924	A0B0406-04	0B24036-027	02/24/20 12:34
PDI-106SG-00-01-190924 (Dup)	0020669-DUP1	0B24036-028	02/24/20 12:38
PDI-106SG-00-01-190924 (MS)	0020669-MS1	0B24036-029	02/24/20 12:43
Calibration Check	0B24036-CCV1	0B24036-032	02/24/20 12:57
Calibration Blank	0B24036-CCB1	0B24036-033	02/24/20 13:01
Calibration Check	0B24036-CCV2	0B24036-044	02/24/20 13:53
Calibration Blank	0B24036-CCB2	0B24036-045	02/24/20 13:58
Calibration Check	0B24036-CCV3	0B24036-056	02/24/20 14:50
Calibration Blank	0B24036-CCB3	0B24036-057	02/24/20 14:55
Calibration Check	0B24036-CCV4	0B24036-068	02/24/20 15:47
Calibration Blank	0B24036-CCB4	0B24036-069	02/24/20 15:51
Instrument RL Check	0B24036-CRL4	0B24036-070	02/24/20 15:56
Instrument RL Check	0B24036-CRL5	0B24036-071	02/24/20 16:01
Instrument RL Check	0B24036-CRL6	0B24036-072	02/24/20 16:06
Calibration Check	0B24036-CCV5	0B24036-083	02/24/20 16:57
Calibration Blank	0B24036-CCB5	0B24036-084	02/24/20 17:02
Calibration Check	0B24036-CCV6	0B24036-095	02/24/20 17:53
Calibration Blank	0B24036-CCB6	0B24036-096	02/24/20 17:58
Calibration Check	0B24036-CCV7	0B24036-107	02/24/20 18:50
Calibration Blank	0B24036-CCB7	0B24036-108	02/24/20 18:54
Calibration Check	0B24036-CCV8	0B24036-117	02/24/20 19:36
Calibration Blank	0B24036-CCB8	0B24036-118	02/24/20 19:41
Instrument RL Check	0B24036-CRL7	0B24036-119	02/24/20 19:46

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 6020A

Laboratory:	Apex Laboratories	SDG:	Gasco_PreRD_DG 2019
Client:	Anchor QEA, LLC	Project:	Gasco_PreRD_DG 2019 - 2b. Depos. Surface Grabs
Sequence:	0B24036	Instrument:	ICPMS6
Matrix:	Sediment	Calibration:	UNASSIGNED

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Instrument RL Check	0B24036-CRL8	0B24036-120	02/24/20 19:50
Instrument RL Check	0B24036-CRL9	0B24036-121	02/24/20 19:55
Instrument RL Check	0B24036-CRLA	0B24036-122	02/24/20 20:00

Note: Client samples are listed only if they are included in this report.
Duplicates and Matrix Spike/Duplicates QC Samples are only listed if sourced from a sample included in this report.

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 6020A

Laboratory: Apex Laboratories
SDG: Gasco_PreRD_DG 2019
Client: Anchor QEA, LLC
Project: Gasco_PreRD_DG 2019 - 2b. Depos. Surface Grabs
Instrument ID: ICPMS6
Calibration: UNASSIGNED
Control Limt: +/- 10.00%
Sequence: 0B24036

Lab Sample ID	Analyte	True	Found	%R	Units	Method
0B24036-ICV1	Arsenic	100	99.4	99	ug/L	EPA 6020A
	Cadmium	100	101	101	ug/L	EPA 6020A
	Copper	100	107	107	ug/L	EPA 6020A
	Lead	100	103	103	ug/L	EPA 6020A
	Mercury	800	814	102	ng/L	EPA 6020A
	Zinc	100	105	105	ug/L	EPA 6020A
0B24036-CCV1	Arsenic	100	99.1	99	ug/L	EPA 6020A
	Cadmium	100	99.5	99	ug/L	EPA 6020A
	Copper	100	107	107	ug/L	EPA 6020A
	Lead	100	101	101	ug/L	EPA 6020A
	Mercury	800	792	99	ng/L	EPA 6020A
	Zinc	100	103	103	ug/L	EPA 6020A
0B24036-CCV2	Arsenic	100	96.3	96	ug/L	EPA 6020A
	Cadmium	100	101	101	ug/L	EPA 6020A
	Copper	100	107	107	ug/L	EPA 6020A
	Lead	100	110	110	ug/L	EPA 6020A
	Mercury	800	874	109	ng/L	EPA 6020A
	Zinc	100	106	106	ug/L	EPA 6020A
0B24036-CCV3	Arsenic	100	97.6	98	ug/L	EPA 6020A
	Cadmium	100	101	101	ug/L	EPA 6020A
	Copper	100	109	109	ug/L	EPA 6020A
	Lead	100	109	109	ug/L	EPA 6020A
	Mercury	800	860	107	ng/L	EPA 6020A
	Zinc	100	107	107	ug/L	EPA 6020A
0B24036-CCV4	Arsenic	100	97.3	97	ug/L	EPA 6020A
	Cadmium	100	101	101	ug/L	EPA 6020A
	Copper	100	107	107	ug/L	EPA 6020A
	Lead	100	108	108	ug/L	EPA 6020A
	Mercury	800	834	104	ng/L	EPA 6020A
	Zinc	100	106	106	ug/L	EPA 6020A
0B24036-CCV5	Arsenic	100	99.2	99	ug/L	EPA 6020A
	Cadmium	100	101	101	ug/L	EPA 6020A
	Copper	100	105	105	ug/L	EPA 6020A
	Lead	100	99.1	99	ug/L	EPA 6020A
	Mercury	800	759	95	ng/L	EPA 6020A
	Zinc	100	104	104	ug/L	EPA 6020A
0B24036-CCV6	Arsenic	100	96.5	97	ug/L	EPA 6020A
	Cadmium	100	99.6	100	ug/L	EPA 6020A
	Copper	100	102	102	ug/L	EPA 6020A
	Lead	100	104	104	ug/L	EPA 6020A
	Mercury	800	782	98	ng/L	EPA 6020A
	Zinc	100	102	102	ug/L	EPA 6020A
0B24036-CCV7	Arsenic	100	97.3	97	ug/L	EPA 6020A
	Cadmium	100	101	101	ug/L	EPA 6020A
	Copper	100	104	104	ug/L	EPA 6020A
	Lead	100	104	104	ug/L	EPA 6020A

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 6020A

Laboratory: Apex Laboratories
SDG: Gasco_PreRD_DG 2019
Client: Anchor QEA, LLC
Project: Gasco_PreRD_DG 2019 - 2b. Depos. Surface Grabs
Instrument ID: ICPMS6
Calibration: UNASSIGNED
Control Limt: +/- 10.00%
Sequence: 0B24036

Lab Sample ID	Analyte	True	Found	%R	Units	Method
0B24036-CCV7	Mercury	800	810	101	ng/L	EPA 6020A
	Zinc	100	104	104	ug/L	EPA 6020A
0B24036-CCV8	Arsenic	100	98.9	99	ug/L	EPA 6020A
	Cadmium	100	102	102	ug/L	EPA 6020A
	Copper	100	105	105	ug/L	EPA 6020A
	Lead	100	101	101	ug/L	EPA 6020A
	Mercury	800	754	94	ng/L	EPA 6020A
	Zinc	100	104	104	ug/L	EPA 6020A

* Values outside of QC limits

INSTRUMENT BLANKS
EPA 6020A

Laboratory: Apex Laboratories
SDG: Gasco_PreRD_DG 2019
Client: Anchor QEA, LLC
Instrument ID: ICPMS6
Project: Gasco_PreRD_DG 2019 - 2b. Depos. Surface Grabs
Sequence: 0B24036
Calibration: UNASSIGNED

Lab Sample ID	Analyte	Found	RL	Units	C	Method
0B24036-ICB1	Mercury	ND	40.0 (Inst)	ng/L		EPA 6020A
	Copper	ND	1.00 (Inst)	ug/L		EPA 6020A
	Cadmium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Arsenic	ND	0.500 (Inst)	ug/L		EPA 6020A
	Lead	ND	0.100 (Inst)	ug/L		EPA 6020A
	Zinc	ND	2.00 (Inst)	ug/L		EPA 6020A
0B24036-CCB1	Copper	ND	1.00 (Inst)	ug/L		EPA 6020A
	Mercury	ND	40.0 (Inst)	ng/L		EPA 6020A
	Zinc	ND	2.00 (Inst)	ug/L		EPA 6020A
	Cadmium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Arsenic	ND	0.500 (Inst)	ug/L		EPA 6020A
	Lead	ND	0.100 (Inst)	ug/L		EPA 6020A
0B24036-CCB2	Zinc	ND	2.00 (Inst)	ug/L		EPA 6020A
	Copper	ND	1.00 (Inst)	ug/L		EPA 6020A
	Cadmium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Arsenic	ND	0.500 (Inst)	ug/L		EPA 6020A
	Mercury	ND	40.0 (Inst)	ng/L		EPA 6020A
	Lead	ND	0.100 (Inst)	ug/L		EPA 6020A
0B24036-CCB3	Zinc	ND	2.00 (Inst)	ug/L		EPA 6020A
	Copper	ND	1.00 (Inst)	ug/L		EPA 6020A
	Cadmium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Arsenic	ND	0.500 (Inst)	ug/L		EPA 6020A
	Lead	ND	0.100 (Inst)	ug/L		EPA 6020A
	Mercury	ND	40.0 (Inst)	ng/L		EPA 6020A
0B24036-CCB4	Lead	ND	0.100 (Inst)	ug/L		EPA 6020A
	Cadmium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Copper	ND	1.00 (Inst)	ug/L		EPA 6020A
	Mercury	ND	40.0 (Inst)	ng/L		EPA 6020A
	Arsenic	ND	0.500 (Inst)	ug/L		EPA 6020A
	Zinc	ND	2.00 (Inst)	ug/L		EPA 6020A
0B24036-CCB5	Mercury	ND	40.0 (Inst)	ng/L		EPA 6020A
	Zinc	ND	2.00 (Inst)	ug/L		EPA 6020A
	Copper	ND	1.00 (Inst)	ug/L		EPA 6020A

INSTRUMENT BLANKS
EPA 6020A

Laboratory: Apex Laboratories
SDG: Gasco_PreRD_DG 2019
Client: Anchor QEA, LLC
Instrument ID: ICPMS6
Project: Gasco_PreRD_DG 2019 - 2b. Depos. Surface Grabs
Sequence: 0B24036
Calibration: UNASSIGNED

Lab Sample ID	Analyte	Found	RL	Units	C	Method
0B24036-CCB5	Cadmium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Arsenic	ND	0.500 (Inst)	ug/L		EPA 6020A
	Lead	ND	0.100 (Inst)	ug/L		EPA 6020A
0B24036-CCB6	Mercury	ND	40.0 (Inst)	ng/L		EPA 6020A
	Zinc	ND	2.00 (Inst)	ug/L		EPA 6020A
	Copper	ND	1.00 (Inst)	ug/L		EPA 6020A
	Cadmium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Arsenic	ND	0.500 (Inst)	ug/L		EPA 6020A
	Lead	ND	0.100 (Inst)	ug/L		EPA 6020A
0B24036-CCB7	Mercury	ND	40.0 (Inst)	ng/L		EPA 6020A
	Lead	ND	0.100 (Inst)	ug/L		EPA 6020A
	Zinc	ND	2.00 (Inst)	ug/L		EPA 6020A
	Copper	ND	1.00 (Inst)	ug/L		EPA 6020A
	Arsenic	ND	0.500 (Inst)	ug/L		EPA 6020A
	Cadmium	ND	0.100 (Inst)	ug/L		EPA 6020A
0B24036-CCB8	Mercury	ND	40.0 (Inst)	ng/L		EPA 6020A
	Zinc	ND	2.00 (Inst)	ug/L		EPA 6020A
	Copper	ND	1.00 (Inst)	ug/L		EPA 6020A
	Cadmium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Arsenic	ND	0.500 (Inst)	ug/L		EPA 6020A
	Lead	ND	0.100 (Inst)	ug/L		EPA 6020A

(Inst) indicates on-Instrument Result and Reporting Level. Used for non-digested Instrument Blanks.

CRDL STANDARD

EPA 6020A

Laboratory: Apex Laboratories
SDG: Gasco_PreRD_DG 2019
Client: Anchor QEA, LLC
Project: Gasco_PreRD_DG 2019 - 2b. Depos. Surface Grabs
Instrument ID: ICPMS6
Calibration: UNASSIGNED
Sequence: 0B24036

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
0B24036-CRL1	Arsenic	0.180	0.180	100	ug/L	70 - 130
	Cadmium	0.180	0.182	101	ug/L	70 - 130
	Lead	0.180	0.169	94	ug/L	70 - 130
	Zinc	0.180	0.154	85	ug/L	70 - 130
0B24036-CRL2	Arsenic	0.900	0.892	99	ug/L	70 - 130
	Cadmium	0.900	0.891	99	ug/L	70 - 130
	Copper	0.900	0.968	108	ug/L	70 - 130
	Lead	0.900	0.811	90	ug/L	70 - 130
	Mercury	36.0	39.3	109	ng/L	70 - 130
	Zinc	0.900	0.857	95	ug/L	70 - 130
0B24036-CRL3	Arsenic	1.80	1.78	99	ug/L	70 - 130
	Cadmium	1.80	1.81	100	ug/L	70 - 130
	Copper	1.80	1.84	102	ug/L	70 - 130
	Lead	1.80	1.65	91	ug/L	70 - 130
	Mercury	72.0	72.7	101	ng/L	70 - 130
	Zinc	1.80	1.83	102	ug/L	70 - 130
0B24036-CRL4	Arsenic	0.180	0.186	103	ug/L	70 - 130
	Cadmium	0.180	0.181	101	ug/L	70 - 130
	Copper	0.180	0.199	111	ug/L	70 - 130
	Lead	0.180	0.179	99	ug/L	70 - 130
	Zinc	0.180	0.136	75	ug/L	70 - 130
0B24036-CRL5	Arsenic	0.900	0.884	98	ug/L	70 - 130
	Cadmium	0.900	0.957	106	ug/L	70 - 130
	Copper	0.900	0.945	105	ug/L	70 - 130
	Lead	0.900	0.865	96	ug/L	70 - 130
	Mercury	36.0	38.1	106	ng/L	70 - 130
	Zinc	0.900	0.878	98	ug/L	70 - 130
0B24036-CRL6	Arsenic	1.80	1.72	95	ug/L	70 - 130

CRDL STANDARD

EPA 6020A

Laboratory: Apex Laboratories
SDG: Gasco_PreRD_DG 2019
Client: Anchor QEA, LLC
Project: Gasco_PreRD_DG 2019 - 2b. Depos. Surface Grabs
Instrument ID: ICPMS6
Calibration: UNASSIGNED
Sequence: 0B24036

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
0B24036-CRL6	Cadmium	1.80	1.80	100	ug/L	70 - 130
	Copper	1.80	1.87	104	ug/L	70 - 130
	Lead	1.80	1.72	96	ug/L	70 - 130
	Mercury	72.0	78.1	108	ng/L	70 - 130
	Zinc	1.80	1.84	102	ug/L	70 - 130
0B24036-CRL7	Arsenic	0.180	0.182	101	ug/L	70 - 130
	Cadmium	0.180	0.186	103	ug/L	70 - 130
	Copper	0.180	0.180	100	ug/L	70 - 130
	Lead	0.180	0.163	91	ug/L	70 - 130
	Zinc	0.180	0.129	72	ug/L	70 - 130
0B24036-CRL8	Arsenic	0.900	0.877	97	ug/L	70 - 130
	Cadmium	0.900	0.902	100	ug/L	70 - 130
	Copper	0.900	0.898	100	ug/L	70 - 130
	Lead	0.900	0.802	89	ug/L	70 - 130
	Mercury	36.0	35.1	98	ng/L	70 - 130
	Zinc	0.900	0.846	94	ug/L	70 - 130
0B24036-CRL9	Arsenic	1.80	1.74	96	ug/L	70 - 130
	Cadmium	1.80	1.75	97	ug/L	70 - 130
	Copper	1.80	1.76	98	ug/L	70 - 130
	Lead	1.80	1.58	88	ug/L	70 - 130
	Mercury	72.0	68.5	95	ng/L	70 - 130
	Zinc	1.80	1.70	94	ug/L	70 - 130
0B24036-CRLA	Arsenic	3.60	3.56	99	ug/L	70 - 130
	Cadmium	3.60	3.58	99	ug/L	70 - 130
	Copper	3.60	3.62	101	ug/L	70 - 130
	Lead	3.60	3.18	88	ug/L	70 - 130
	Mercury	144	143	100	ng/L	70 - 130
	Zinc	3.60	3.57	99	ug/L	70 - 130

* Values outside of QC limits

HOLDING TIME SUMMARY

EPA 6020A

Laboratory: Apex Laboratories

SDG: Gasco_PreRD_DG 2019

Client: Anchor QEA, LLC

Project: Gasco_PreRD_DG 2019 - 2b. Depos. Surface Grabs

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
PDI-103SG-00-01-190924	09/24/19 14:30	09/25/19 10:36	02/21/20 12:17	149.91	56.00	02/24/20 12:19	152.91	56.00	*
PDI-103SG-00-01-190924	09/24/19 14:30	09/25/19 10:36	02/21/20 12:17	149.91	180.00	02/24/20 12:19	152.91	180.00	
PDI-104SG-00-01-190924	09/24/19 14:45	09/25/19 10:36	02/21/20 12:17	149.90	56.00	02/24/20 12:24	152.90	56.00	*
PDI-104SG-00-01-190924	09/24/19 14:45	09/25/19 10:36	02/21/20 12:17	149.90	180.00	02/24/20 12:24	152.90	180.00	
PDI-105SG-00-0.99-190924	09/24/19 14:00	09/25/19 10:36	02/21/20 12:17	149.93	56.00	02/24/20 12:29	152.94	56.00	*
PDI-105SG-00-0.99-190924	09/24/19 14:00	09/25/19 10:36	02/21/20 12:17	149.93	180.00	02/24/20 12:29	152.94	180.00	
PDI-106SG-00-01-190924	09/24/19 15:05	09/25/19 10:36	02/21/20 12:17	149.88	56.00	02/24/20 12:34	152.90	56.00	*
PDI-106SG-00-01-190924	09/24/19 15:05	09/25/19 10:36	02/21/20 12:17	149.88	180.00	02/24/20 12:34	152.90	180.00	

Raw Data

APEX LABORATORIES, LLC
6700 SW Sandburg St. Tigard OR 97223 phone 503-718-2323

Total Metals by EPA 6020A (ICPMS)
Benchsheet Data and Analysis (Including Calibration)

Batch 0020669
Sequence 0B24036

APEX LABORATORIES

As (Arsenic) - 6020 - Total
Cd (Cadmium) - 6020 - Total
Cu (Copper) - 6020 - Total
Hg (Mercury) - 6020 - Total
Pb (Lead) - 6020 - Total
Zn (Zinc) - 6020 - Total

PREPARATION BENCH SHEET

0020669

Apex Laboratories
BATCH #: 0020669 (Sediment)
Prep Method: EPA 3051A

Lab Number	Due	Prepared	Initial (g)	Final (mL)	Client	ClientID / Sample	Extraction Comments
0020669-BLK1	--	02/21/20 12:17	0.52	50	QC Sample		
0020669-BS1	--	02/21/20 12:17	0.5	50	QC Sample		
Spike 1: 2500 uL of A20B046 Spike 2: 250 uL of A20B233							
A0B0406-01	02/26/20	02/21/20 12:17	~~0.5~~ 498	50	Anchor QEA, LLC	PDI-103SG-00-01-190924	6020A As,Cd,Cu,Pb,Hg,Zn
☐ As (Arsenic) - 6020 - Total ☐ Cd (Cadmium) - 6020 - Total ☐ Cu (Copper) - 6020 - Total ☐ Hg (Mercury) - 6020 - Total ☐ Pb (Lead) - 6020 - Total ☐ Zn (Zinc) - 6020 - Total							
A0B0406-02	02/26/20	02/21/20 12:17	~~0.5~~ 504	50	Anchor QEA, LLC	PDI-104SG-00-01-190924	6020A As,Cd,Cu,Pb,Hg,Zn
☐ As (Arsenic) - 6020 - Total ☐ Cd (Cadmium) - 6020 - Total ☐ Cu (Copper) - 6020 - Total ☐ Hg (Mercury) - 6020 - Total ☐ Pb (Lead) - 6020 - Total ☐ Zn (Zinc) - 6020 - Total							
A0B0406-03	02/26/20	02/21/20 12:17	~~0.5~~ 485	50	Anchor QEA, LLC	PDI-105SG-00-0.99-190924	6020A As,Cd,Cu,Pb,Hg,Zn
☐ As (Arsenic) - 6020 - Total ☐ Cd (Cadmium) - 6020 - Total ☐ Cu (Copper) - 6020 - Total ☐ Hg (Mercury) - 6020 - Total ☐ Pb (Lead) - 6020 - Total ☐ Zn (Zinc) - 6020 - Total							
A0B0406-04	02/26/20	02/21/20 12:17	~~0.5~~ 504	50	Anchor QEA, LLC	PDI-106SG-00-01-190924	6020A As,Cd,Cu,Pb,Hg,Zn
☐ As (Arsenic) - 6020 - Total ☐ Cd (Cadmium) - 6020 - Total ☐ Cu (Copper) - 6020 - Total ☐ Hg (Mercury) - 6020 - Total ☐ Pb (Lead) - 6020 - Total ☐ Zn (Zinc) - 6020 - Total							
0020669-DUP1	--	02/21/20 12:17	~~0.5~~ 499	50	QC Sample		
Source: A0B0406-04							
0020669-MS1	--	02/21/20 12:17	~~0.5~~ 509	50	QC Sample		
Source: A0B0406-04 Spike 1: 2500 uL of A20B046 Spike 2: 250 uL of A20B233							

Standards/Reagents

Reagent(s)

Std ID	Exp. Date	Description
A13L213	11/30/23	Metals Prep Balance 2
A17E426	05/31/20	Mars-4 Microwave
A19L077	12/05/21	Conc. HCl - Omnitrace
A19L079	07/10/20	30% hydrogen peroxide
A20B167	02/10/22	Conc. HNO3 - Omnitrace

Analyte Spike(s)

Std ID	Exp. Date	Description
A20B046	02/29/20	**Combo Spike** A+B+C
A20B233	02/17/21	Hg Spiking Standard

MJG 2/21/20

A) A20B036 1250 µL
B) A20A398 625 µL
C) A20A399 625 µL

Digestion time and temperature achieved?
Initials: MJG Yes

MJG 2/21/20
Prepared By: Date

James S. Johnson 02/25/20
Reviewed By: Date

Batch #: 20669

If observed weight loss < 0.2g Digestion is within control limits

If observed weight loss > 0.2g Enter data in to electronic VWW. Acceptance limit 1.0% sample loss.

Date: 2/21/2020 Prepared by: MJG

#	Mars Tube ID	Sample ID	Pre-digestion Vessel + Sample Wt. (g)	Post-digestion Vessel + Sample Wt. (g)	Sample Wt. Loss (%)* *Formula only used if sample loss >0.2g*
1	S39	0020669-BLK1	186.22	186.17	n/a
2	S106	0020669-BS1	185.07	185.05	n/a
3	S84	A0B0406-01	187.04	187.00	n/a
4	S55	A0B0406-02	186.21	186.12	n/a
5	S34	A0B0406-03	185.50	185.41	n/a
6	S23	A0B0406-04	185.53	185.43	n/a
7	S12	0020669-DUP1	186.96	186.84	n/a
8	~~S105~~ S11	0020669-MS1	184.14	184.04	n/a
9					n/a
10					n/a
11					n/a
12					n/a
13					n/a
14					n/a
15					n/a
16					n/a
17					n/a
18					n/a
19					n/a
20					n/a
21					n/a
22					n/a
23					n/a
24					n/a
25					n/a

MJG 2/21/20

*Example Calculation: (Pre(g) – Post(g))/(Post(g) – 159.32g) This represents the mean weight of the empty digestion vessels. By factoring in the mean digestion vessel weight, we observe weight loss from only the sample, rather than as a percentage of the sample+vessel weight.

ELEMENT SEQUENCE LOG

Apex Laboratories

Sequence: **0B24036** Instrument: **ICPMS6**

Date: **02/24/20 09:44** Calibration: **UNASSIGNED**

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
1	0B24036-CAL1	Water	QC	QC			A20A220	A20B178
2	0B24036-CAL2	Water	QC	QC			A20A220	A20B179
3	0B24036-CAL3	Water	QC	QC			A20A220	A20B180
4	0B24036-CAL4	Water	QC	QC			A20A220	A20B181
5	0B24036-CAL5	Water	QC	QC			A20A220	A20A194
6	0B24036-CAL6	Water	QC	QC			A20A220	A20B183
7	0B24036-CAL7	Water	QC	QC			A20A220	A20A196
8	0B24036-CAL8	Water	QC	QC			A20A220	A20A197
9	0B24036-CAL9	Water	QC	QC			A20A220	A20A198
10	0B24036-ICV1	Water	QC	QC			A20A220	A20B035
11	0B24036-ICB1	Water	QC	QC			A20A220	
12	0B24036-CRL1	Water	QC	QC			A20A220	A20B178
13	0B24036-CRL2	Water	QC	QC			A20A220	A20B179
14	0B24036-CRL3	Water	QC	QC			A20A220	A20B180
15	0B24036-IFA1	Water	QC	QC			A20A220	A20B289
16	0B24036-IFB1	Water	QC	QC			A20A220	A20B290
17	0020669-BLK1	Sediment	QC	QC		0020669	A20A220	
18	0020669-BS1	Sediment	QC	QC		0020669	A20A220	
19	A0B0406-01	Sediment	As (Arsenic) - 6020 - Total	Anchor QEA, LLC	02/26/20	0020669	A20A220	
20	"	Sediment	Cd (Cadmium) - 6020 - Total	"	02/26/20	0020669	A20A220	
21	"	Sediment	Cu (Copper) - 6020 - Total	"	02/26/20	0020669	A20A220	
22	"	Sediment	Hg (Mercury) - 6020 - Total	"	02/26/20	0020669	A20A220	
23	"	Sediment	Pb (Lead) - 6020 - Total	"	02/26/20	0020669	A20A220	
24	"	Sediment	Zn (Zinc) - 6020 - Total	"	02/26/20	0020669	A20A220	
25	A0B0406-02	Sediment	As (Arsenic) - 6020 - Total	Anchor QEA, LLC	02/26/20	0020669	A20A220	
26	"	Sediment	Cd (Cadmium) - 6020 - Total	"	02/26/20	0020669	A20A220	
27	"	Sediment	Cu (Copper) - 6020 - Total	"	02/26/20	0020669	A20A220	
28	"	Sediment	Hg (Mercury) - 6020 - Total	"	02/26/20	0020669	A20A220	
29	"	Sediment	Pb (Lead) - 6020 - Total	"	02/26/20	0020669	A20A220	
30	"	Sediment	Zn (Zinc) - 6020 - Total	"	02/26/20	0020669	A20A220	
31	A0B0406-03	Sediment	As (Arsenic) - 6020 - Total	Anchor QEA, LLC	02/26/20	0020669	A20A220	
32	"	Sediment	Cd (Cadmium) - 6020 - Total	"	02/26/20	0020669	A20A220	
33	"	Sediment	Cu (Copper) - 6020 - Total	"	02/26/20	0020669	A20A220	
34	"	Sediment	Hg (Mercury) - 6020 - Total	"	02/26/20	0020669	A20A220	
35	"	Sediment	Pb (Lead) - 6020 - Total	"	02/26/20	0020669	A20A220	
36	"	Sediment	Zn (Zinc) - 6020 - Total	"	02/26/20	0020669	A20A220	
37	A0B0406-04	Sediment	As (Arsenic) - 6020 - Total	Anchor QEA, LLC	02/26/20	0020669	A20A220	
38	"	Sediment	Cd (Cadmium) - 6020 - Total	"	02/26/20	0020669	A20A220	
39	"	Sediment	Cu (Copper) - 6020 - Total	"	02/26/20	0020669	A20A220	
40	"	Sediment	Hg (Mercury) - 6020 - Total	"	02/26/20	0020669	A20A220	
41	"	Sediment	Pb (Lead) - 6020 - Total	"	02/26/20	0020669	A20A220	
42	"	Sediment	Zn (Zinc) - 6020 - Total	"	02/26/20	0020669	A20A220	
43	0020669-DUP1	Sediment	QC	QC		0020669	A20A220	
44	0020669-MS1	Sediment	QC	QC		0020669	A20A220	
45	0020705-BLK1	Solid	QC	QC		0020705	A20A220	
46	0020705-BS1	Solid	QC	QC		0020705	A20A220	
47	0B24036-CCV1	Water	QC	QC			A20A220	A20B273
48	0B24036-CCB1	Water	QC	QC			A20A220	
49	A0B0552-01	Solid	Ag (Silver) - 6020 - Total		02/26/20	0020705	A20A220	
50	"	Solid	As (Arsenic) - 6020 - Total	"	02/26/20	0020705	A20A220	
51	"	Solid	Ba (Barium) - 6020 - Total	"	02/26/20	0020705	A20A220	

Sequence: **0B24036** Instrument: **ICPMS6**

Date: **02/24/20 09:44** Calibration: **UNASSIGNED**

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
52	"	Solid	Cd (Cadmium) - 6020 - Total	"	02/26/20	0020705	A20A220	
53	"	Solid	Cr (Chromium) - 6020 - Total	"	02/26/20	0020705	A20A220	
54	"	Solid	Hg (Mercury) - 6020 - Total	"	02/26/20	0020705	A20A220	
55	"	Solid	Pb (Lead) - 6020 - Total	"	02/26/20	0020705	A20A220	
56	"	Solid	Se (Selenium) - 6020 - Total	"	02/26/20	0020705	A20A220	
57	0020705-DUP1	Solid	QC	QC		0020705	A20A220	
58	0020705-MS1	Solid	QC	QC		0020705	A20A220	
59	0020654-BLK1	Soil	QC	QC		0020654	A20A220	
60	0020654-BLK2	Soil	QC	QC		0020654	A20A220	
61	0020654-BS1	Soil	QC	QC		0020654	A20A220	
62	A0B0405-03	Soil	Zn (Zinc) - 6020 - Total		02/28/20	0020654	A20A220	
63	"	Soil	Pb (Lead) - 6020 - Total	"	02/28/20	0020654	A20A220	
64	"	Soil	Cu (Copper) - 6020 - Total	"	02/28/20	0020654	A20A220	
65	"	Soil	Cr (Chromium) - 6020 - Total	"	02/28/20	0020654	A20A220	
66	"	Soil	Cd (Cadmium) - 6020 - Total	"	02/28/20	0020654	A20A220	
67	"	Soil	As (Arsenic) - 6020 - Total	"	02/28/20	0020654	A20A220	
68	0B24036-CCV2	Water	QC	QC			A20A220	A20B273
69	0B24036-CCB2	Water	QC	QC			A20A220	
70	A0B0405-06	Soil	As (Arsenic) - 6020 - Total		02/26/20	0020654	A20A220	
71	"	Soil	Cd (Cadmium) - 6020 - Total	"	02/26/20	0020654	A20A220	
72	"	Soil	Cr (Chromium) - 6020 - Total	"	02/26/20	0020654	A20A220	
73	"	Soil	Cu (Copper) - 6020 - Total	"	02/26/20	0020654	A20A220	
74	"	Soil	Pb (Lead) - 6020 - Total	"	02/26/20	0020654	A20A220	
75	"	Soil	Zn (Zinc) - 6020 - Total	"	02/26/20	0020654	A20A220	
76	A0B0405-09	Soil	As (Arsenic) - 6020 - Total		02/26/20	0020654	A20A220	
77	"	Soil	Cd (Cadmium) - 6020 - Total	"	02/26/20	0020654	A20A220	
78	"	Soil	Cr (Chromium) - 6020 - Total	"	02/26/20	0020654	A20A220	
79	"	Soil	Cu (Copper) - 6020 - Total	"	02/26/20	0020654	A20A220	
80	"	Soil	Pb (Lead) - 6020 - Total	"	02/26/20	0020654	A20A220	
81	"	Soil	Zn (Zinc) - 6020 - Total	"	02/26/20	0020654	A20A220	
82	A0B0405-12	Soil	As (Arsenic) - 6020 - Total		02/28/20	0020654	A20A220	
83	"	Soil	Cd (Cadmium) - 6020 - Total	"	02/28/20	0020654	A20A220	
84	"	Soil	Cr (Chromium) - 6020 - Total	"	02/28/20	0020654	A20A220	
85	"	Soil	Cu (Copper) - 6020 - Total	"	02/28/20	0020654	A20A220	
86	"	Soil	Pb (Lead) - 6020 - Total	"	02/28/20	0020654	A20A220	
87	"	Soil	Zn (Zinc) - 6020 - Total	"	02/28/20	0020654	A20A220	
88	0020654-DUP1	Soil	QC	QC		0020654	A20A220	
89	0020654-MS1	Soil	QC	QC		0020654	A20A220	
90	A0B0405-15	Soil	As (Arsenic) - 6020 - Total		02/26/20	0020654	A20A220	
91	"	Soil	Cd (Cadmium) - 6020 - Total	"	02/26/20	0020654	A20A220	
92	"	Soil	Cr (Chromium) - 6020 - Total	"	02/26/20	0020654	A20A220	
93	"	Soil	Cu (Copper) - 6020 - Total	"	02/26/20	0020654	A20A220	
94	"	Soil	Pb (Lead) - 6020 - Total	"	02/26/20	0020654	A20A220	
95	"	Soil	Zn (Zinc) - 6020 - Total	"	02/26/20	0020654	A20A220	
96	A0B0405-18	Soil	As (Arsenic) - 6020 - Total		02/26/20	0020654	A20A220	
97	"	Soil	Cd (Cadmium) - 6020 - Total	"	02/26/20	0020654	A20A220	
98	"	Soil	Cr (Chromium) - 6020 - Total	"	02/26/20	0020654	A20A220	
99	"	Soil	Cu (Copper) - 6020 - Total	"	02/26/20	0020654	A20A220	
100	"	Soil	Pb (Lead) - 6020 - Total	"	02/26/20	0020654	A20A220	
101	"	Soil	Zn (Zinc) - 6020 - Total	"	02/26/20	0020654	A20A220	
102	A0B0405-21	Soil	As (Arsenic) - 6020 - Total		02/28/20	0020654	A20A220	
103	"	Soil	Cd (Cadmium) - 6020 - Total	"	02/28/20	0020654	A20A220	
104	"	Soil	Cr (Chromium) - 6020 - Total	"	02/28/20	0020654	A20A220	
105	"	Soil	Cu (Copper) - 6020 - Total	"	02/28/20	0020654	A20A220	
106	"	Soil	Pb (Lead) - 6020 - Total	"	02/28/20	0020654	A20A220	

Sequence: **0B24036** Instrument: **ICPMS6**

Date: **02/24/20 09:44** Calibration: **UNASSIGNED**

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
107	"	Soil	Zn (Zinc) - 6020 - Total	"	02/28/20	0020654	A20A220	
108	A0B0405-24	Soil	As (Arsenic) - 6020 - Total		02/26/20	0020654	A20A220	
109	"	Soil	Cd (Cadmium) - 6020 - Total	"	02/26/20	0020654	A20A220	
110	"	Soil	Cr (Chromium) - 6020 - Total	"	02/26/20	0020654	A20A220	
111	"	Soil	Cu (Copper) - 6020 - Total	"	02/26/20	0020654	A20A220	
112	"	Soil	Pb (Lead) - 6020 - Total	"	02/26/20	0020654	A20A220	
113	"	Soil	Zn (Zinc) - 6020 - Total	"	02/26/20	0020654	A20A220	
114	A0B0405-27	Soil	As (Arsenic) - 6020 - Total		02/26/20	0020654	A20A220	
115	"	Soil	Cd (Cadmium) - 6020 - Total	"	02/26/20	0020654	A20A220	
116	"	Soil	Cr (Chromium) - 6020 - Total	"	02/26/20	0020654	A20A220	
117	"	Soil	Cu (Copper) - 6020 - Total	"	02/26/20	0020654	A20A220	
118	"	Soil	Pb (Lead) - 6020 - Total	"	02/26/20	0020654	A20A220	
119	"	Soil	Zn (Zinc) - 6020 - Total	"	02/26/20	0020654	A20A220	
120	0B24036-CCV3	Water	QC	QC			A20A220	A20B273
121	0B24036-CCB3	Water	QC	QC			A20A220	
122	A0B0405-30	Soil	As (Arsenic) - 6020 - Total		02/28/20	0020654	A20A220	
123	"	Soil	Cd (Cadmium) - 6020 - Total	"	02/28/20	0020654	A20A220	
124	"	Soil	Cr (Chromium) - 6020 - Total	"	02/28/20	0020654	A20A220	
125	"	Soil	Cu (Copper) - 6020 - Total	"	02/28/20	0020654	A20A220	
126	"	Soil	Pb (Lead) - 6020 - Total	"	02/28/20	0020654	A20A220	
127	"	Soil	Zn (Zinc) - 6020 - Total	"	02/28/20	0020654	A20A220	
128	A0B0405-33	Soil	As (Arsenic) - 6020 - Total		02/26/20	0020654	A20A220	
129	"	Soil	Cd (Cadmium) - 6020 - Total	"	02/26/20	0020654	A20A220	
130	"	Soil	Cr (Chromium) - 6020 - Total	"	02/26/20	0020654	A20A220	
131	"	Soil	Cu (Copper) - 6020 - Total	"	02/26/20	0020654	A20A220	
132	"	Soil	Pb (Lead) - 6020 - Total	"	02/26/20	0020654	A20A220	
133	"	Soil	Zn (Zinc) - 6020 - Total	"	02/26/20	0020654	A20A220	
134	A0B0405-36	Soil	As (Arsenic) - 6020 - Total		02/26/20	0020654	A20A220	
135	"	Soil	Cd (Cadmium) - 6020 - Total	"	02/26/20	0020654	A20A220	
136	"	Soil	Cr (Chromium) - 6020 - Total	"	02/26/20	0020654	A20A220	
137	"	Soil	Cu (Copper) - 6020 - Total	"	02/26/20	0020654	A20A220	
138	"	Soil	Pb (Lead) - 6020 - Total	"	02/26/20	0020654	A20A220	
139	"	Soil	Zn (Zinc) - 6020 - Total	"	02/26/20	0020654	A20A220	
140	A0B0405-39	Soil	As (Arsenic) - 6020 - Total		02/28/20	0020654	A20A220	
141	"	Soil	Cd (Cadmium) - 6020 - Total	"	02/28/20	0020654	A20A220	
142	"	Soil	Cr (Chromium) - 6020 - Total	"	02/28/20	0020654	A20A220	
143	"	Soil	Cu (Copper) - 6020 - Total	"	02/28/20	0020654	A20A220	
144	"	Soil	Pb (Lead) - 6020 - Total	"	02/28/20	0020654	A20A220	
145	"	Soil	Zn (Zinc) - 6020 - Total	"	02/28/20	0020654	A20A220	
146	A0B0405-42	Soil	As (Arsenic) - 6020 - Total		02/26/20	0020654	A20A220	
147	"	Soil	Cd (Cadmium) - 6020 - Total	"	02/26/20	0020654	A20A220	
148	"	Soil	Cr (Chromium) - 6020 - Total	"	02/26/20	0020654	A20A220	
149	"	Soil	Cu (Copper) - 6020 - Total	"	02/26/20	0020654	A20A220	
150	"	Soil	Pb (Lead) - 6020 - Total	"	02/26/20	0020654	A20A220	
151	"	Soil	Zn (Zinc) - 6020 - Total	"	02/26/20	0020654	A20A220	
152	A0B0405-45	Soil	As (Arsenic) - 6020 - Total		02/26/20	0020654	A20A220	
153	"	Soil	Cd (Cadmium) - 6020 - Total	"	02/26/20	0020654	A20A220	
154	"	Soil	Cr (Chromium) - 6020 - Total	"	02/26/20	0020654	A20A220	
155	"	Soil	Cu (Copper) - 6020 - Total	"	02/26/20	0020654	A20A220	
156	"	Soil	Pb (Lead) - 6020 - Total	"	02/26/20	0020654	A20A220	
157	"	Soil	Zn (Zinc) - 6020 - Total	"	02/26/20	0020654	A20A220	
158	A0B0405-48	Soil	As (Arsenic) - 6020 - Total		02/28/20	0020654	A20A220	
159	"	Soil	Cd (Cadmium) - 6020 - Total	"	02/28/20	0020654	A20A220	
160	"	Soil	Cr (Chromium) - 6020 - Total	"	02/28/20	0020654	A20A220	
161	"	Soil	Cu (Copper) - 6020 - Total	"	02/28/20	0020654	A20A220	

Sequence: **0B24036** Instrument: **ICPMS6**

Date: **02/24/20 09:44** Calibration: **UNASSIGNED**

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
162	"	Soil	Pb (Lead) - 6020 - Total	"	02/28/20	0020654	A20A220	
163	"	Soil	Zn (Zinc) - 6020 - Total	"	02/28/20	0020654	A20A220	
164	A0B0405-51	Soil	As (Arsenic) - 6020 - Total		02/26/20	0020654	A20A220	
165	"	Soil	Cd (Cadmium) - 6020 - Total	"	02/26/20	0020654	A20A220	
166	"	Soil	Cr (Chromium) - 6020 - Total	"	02/26/20	0020654	A20A220	
167	"	Soil	Cu (Copper) - 6020 - Total	"	02/26/20	0020654	A20A220	
168	"	Soil	Pb (Lead) - 6020 - Total	"	02/26/20	0020654	A20A220	
169	"	Soil	Zn (Zinc) - 6020 - Total	"	02/26/20	0020654	A20A220	
170	A0B0405-54	Soil	As (Arsenic) - 6020 - Total		02/26/20	0020654	A20A220	
171	"	Soil	Cd (Cadmium) - 6020 - Total	"	02/26/20	0020654	A20A220	
172	"	Soil	Cr (Chromium) - 6020 - Total	"	02/26/20	0020654	A20A220	
173	"	Soil	Cu (Copper) - 6020 - Total	"	02/26/20	0020654	A20A220	
174	"	Soil	Pb (Lead) - 6020 - Total	"	02/26/20	0020654	A20A220	
175	"	Soil	Zn (Zinc) - 6020 - Total	"	02/26/20	0020654	A20A220	
176	A0B0405-57	Soil	As (Arsenic) - 6020 - Total		02/28/20	0020654	A20A220	
177	"	Soil	Cd (Cadmium) - 6020 - Total	"	02/28/20	0020654	A20A220	
178	"	Soil	Cr (Chromium) - 6020 - Total	"	02/28/20	0020654	A20A220	
179	"	Soil	Cu (Copper) - 6020 - Total	"	02/28/20	0020654	A20A220	
180	"	Soil	Pb (Lead) - 6020 - Total	"	02/28/20	0020654	A20A220	
181	"	Soil	Zn (Zinc) - 6020 - Total	"	02/28/20	0020654	A20A220	
182	0B24036-CCV4	Water	QC	QC			A20A220	A20B273
183	0B24036-CCB4	Water	QC	QC			A20A220	
184	0B24036-CRL4	Water	QC	QC			A20A220	A20B178
185	0B24036-CRL5	Water	QC	QC			A20A220	A20B179
186	0B24036-CRL6	Water	QC	QC			A20A220	A20B180
187	A0B0405-60	Soil	As (Arsenic) - 6020 - Total		02/28/20	0020654	A20A220	
188	"	Soil	Cd (Cadmium) - 6020 - Total	"	02/28/20	0020654	A20A220	
189	"	Soil	Cr (Chromium) - 6020 - Total	"	02/28/20	0020654	A20A220	
190	"	Soil	Cu (Copper) - 6020 - Total	"	02/28/20	0020654	A20A220	
191	"	Soil	Pb (Lead) - 6020 - Total	"	02/28/20	0020654	A20A220	
192	"	Soil	Zn (Zinc) - 6020 - Total	"	02/28/20	0020654	A20A220	
193	0020654-BLK3	Soil	QC	QC		0020654	A20A220	
194	0020628-BLK1	Water	QC	QC		0020628	A20A220	
195	0020628-BS1	Water	QC	QC		0020628	A20A220	
196	A0B0382-01	Water	Zn (Zinc) - 200.8 - Dissolved		02/27/20	0020628	A20A220	
197	A0B0382-02	Water	Zn (Zinc) - 200.8 - Dissolved		02/27/20	0020628	A20A220	
198	A0B0382-03	Water	Zn (Zinc) - 200.8 - Dissolved		02/27/20	0020628	A20A220	
199	A0B0382-04	Water	Zn (Zinc) - 200.8 - Dissolved		02/27/20	0020628	A20A220	
200	0020628-DUP1	Water	QC	QC		0020628	A20A220	
201	0020628-MS1	Water	QC	QC		0020628	A20A220	
202	0B24036-CCV5	Water	QC	QC			A20A220	A20B273
203	0B24036-CCB5	Water	QC	QC			A20A220	
204	0020670-BLK1	Water	QC	QC		0020670	A20A220	
205	0020670-BS1	Water	QC	QC		0020670	A20A220	
206	A0B0423-01	Water	Zn (Zinc) - 200.8 - Dissolved		02/28/20	0020670	A20A220	
207	0020670-DUP1	Water	QC	QC		0020670	A20A220	
208	0020670-MS1	Water	QC	QC		0020670	A20A220	
209	0020586-BLK3	Water	QC	QC		0020586	A20A220	
210	0020586-BS3	Water	QC	QC		0020586	A20A220	
211	A0B0287-01RE2	Water	Ca (Calcium) - 200.8 - Total		02/24/20	0020586	A20A220	
212	"	Water	Mg (Magnesium) - 200.8 - Total	"	02/24/20	0020586	A20A220	
213	A0B0319-01RE2	Water	Ca (Calcium) - 200.8 - Total		02/25/20	0020586	A20A220	
214	"	Water	Mg (Magnesium) - 200.8 - Total	"	02/25/20	0020586	A20A220	
215	A0B0350-01RE2	Water	Ag (Silver) - 6020 - Total	(QC Source)		0020586	A20A220	
216	"	Water	Ag (Silver) - 200.8 - Total	"	02/26/20	0020586	A20A220	

Sequence: **0B24036** Instrument: **ICPMS6**

Date: **02/24/20 09:44** Calibration: **UNASSIGNED**

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
217	"	Water	V (Vanadium) - 200.8 - Total	"	02/26/20	0020586	A20A220	
218	0B24036-CCV6	Water	QC	QC			A20A220	A20B273
219	0B24036-CCB6	Water	QC	QC			A20A220	
220	0020586-DUP3	Water	QC	QC		0020586	A20A220	
221	0020586-MS5	Water	QC	QC		0020586	A20A220	
222	A0B0463-01RE2	Water	Ag (Silver) - 200.8 - Total	(QC Source)		0020570	A20A220	
223	"	Water	Ag (Silver) - 6020 - Total	(QC Source)		0020570	A20A220	
224	0020570-MS5	Water	QC	QC		0020570	A20A220	
225	0020678-BLK1	Solid	QC	QC		0020678	A20A220	
226	0020678-BS1	Solid	QC	QC		0020678	A20A220	
227	A0B0441-01	Solid	Ag (Silver) - 6020 - Total		02/28/20	0020678	A20A220	
228	"	Solid	Al (Aluminum) - 6020 - Total	"	02/28/20	0020678	A20A220	
229	"	Solid	As (Arsenic) - 6020 - Total	"	02/28/20	0020678	A20A220	
230	"	Solid	Ba (Barium) - 6020 - Total	"	02/28/20	0020678	A20A220	
231	"	Solid	Be (Beryllium) - 6020 - Total	"	02/28/20	0020678	A20A220	
232	"	Solid	Cd (Cadmium) - 6020 - Total	"	02/28/20	0020678	A20A220	
233	"	Solid	Co (Cobalt) - 6020 - Total	"	02/28/20	0020678	A20A220	
234	"	Solid	Cr (Chromium) - 6020 - Total	"	02/28/20	0020678	A20A220	
235	"	Solid	Cu (Copper) - 6020 - Total	"	02/28/20	0020678	A20A220	
236	"	Solid	Hg (Mercury) - 6020 - Total	"	02/28/20	0020678	A20A220	
237	"	Solid	Mn (Manganese) - 6020 - Total	"	02/28/20	0020678	A20A220	
238	"	Solid	Mo (Molybdenum) - 6020 - Total	"	02/28/20	0020678	A20A220	
239	"	Solid	Ni (Nickel) - 6020 - Total	"	02/28/20	0020678	A20A220	
240	"	Solid	Pb (Lead) - 6020 - Total	"	02/28/20	0020678	A20A220	
241	"	Solid	Sb (Antimony) - 6020 - Total	"	02/28/20	0020678	A20A220	
242	"	Solid	Se (Selenium) - 6020 - Total	"	02/28/20	0020678	A20A220	
243	"	Solid	Tl (Thallium) - 6020 - Total	"	02/28/20	0020678	A20A220	
244	"	Solid	V (Vanadium) - 6020 - Total	"	02/28/20	0020678	A20A220	
245	"	Solid	Zn (Zinc) - 6020 - Total	"	02/28/20	0020678	A20A220	
246	A0B0441-02	Solid	Ag (Silver) - 6020 - Total		02/28/20	0020678	A20A220	
247	"	Solid	Al (Aluminum) - 6020 - Total	"	02/28/20	0020678	A20A220	
248	"	Solid	As (Arsenic) - 6020 - Total	"	02/28/20	0020678	A20A220	
249	"	Solid	Ba (Barium) - 6020 - Total	"	02/28/20	0020678	A20A220	
250	"	Solid	Be (Beryllium) - 6020 - Total	"	02/28/20	0020678	A20A220	
251	"	Solid	Cd (Cadmium) - 6020 - Total	"	02/28/20	0020678	A20A220	
252	"	Solid	Co (Cobalt) - 6020 - Total	"	02/28/20	0020678	A20A220	
253	"	Solid	Cr (Chromium) - 6020 - Total	"	02/28/20	0020678	A20A220	
254	"	Solid	Cu (Copper) - 6020 - Total	"	02/28/20	0020678	A20A220	
255	"	Solid	Hg (Mercury) - 6020 - Total	"	02/28/20	0020678	A20A220	
256	"	Solid	Mn (Manganese) - 6020 - Total	"	02/28/20	0020678	A20A220	
257	"	Solid	Mo (Molybdenum) - 6020 - Total	"	02/28/20	0020678	A20A220	
258	"	Solid	Ni (Nickel) - 6020 - Total	"	02/28/20	0020678	A20A220	
259	"	Solid	Pb (Lead) - 6020 - Total	"	02/28/20	0020678	A20A220	
260	"	Solid	Sb (Antimony) - 6020 - Total	"	02/28/20	0020678	A20A220	
261	"	Solid	Se (Selenium) - 6020 - Total	"	02/28/20	0020678	A20A220	
262	"	Solid	Tl (Thallium) - 6020 - Total	"	02/28/20	0020678	A20A220	
263	"	Solid	V (Vanadium) - 6020 - Total	"	02/28/20	0020678	A20A220	
264	"	Solid	Zn (Zinc) - 6020 - Total	"	02/28/20	0020678	A20A220	
265	A0B0441-03	Solid	Ag (Silver) - 6020 - Total		02/28/20	0020678	A20A220	
266	"	Solid	Al (Aluminum) - 6020 - Total	"	02/28/20	0020678	A20A220	
267	"	Solid	As (Arsenic) - 6020 - Total	"	02/28/20	0020678	A20A220	
268	"	Solid	Ba (Barium) - 6020 - Total	"	02/28/20	0020678	A20A220	
269	"	Solid	Be (Beryllium) - 6020 - Total	"	02/28/20	0020678	A20A220	
270	"	Solid	Cd (Cadmium) - 6020 - Total	"	02/28/20	0020678	A20A220	
271	"	Solid	Co (Cobalt) - 6020 - Total	"	02/28/20	0020678	A20A220	

Sequence: **0B24036** Instrument: **ICPMS6**

Date: **02/24/20 09:44** Calibration: **UNASSIGNED**

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
272	"	Solid	Cr (Chromium) - 6020 - Total	"	02/28/20	0020678	A20A220	
273	"	Solid	Cu (Copper) - 6020 - Total	"	02/28/20	0020678	A20A220	
274	"	Solid	Hg (Mercury) - 6020 - Total	"	02/28/20	0020678	A20A220	
275	"	Solid	Mn (Manganese) - 6020 - Total	"	02/28/20	0020678	A20A220	
276	"	Solid	Mo (Molybdenum) - 6020 - Total	"	02/28/20	0020678	A20A220	
277	"	Solid	Ni (Nickel) - 6020 - Total	"	02/28/20	0020678	A20A220	
278	"	Solid	Pb (Lead) - 6020 - Total	"	02/28/20	0020678	A20A220	
279	"	Solid	Sb (Antimony) - 6020 - Total	"	02/28/20	0020678	A20A220	
280	"	Solid	Se (Selenium) - 6020 - Total	"	02/28/20	0020678	A20A220	
281	"	Solid	Tl (Thallium) - 6020 - Total	"	02/28/20	0020678	A20A220	
282	"	Solid	V (Vanadium) - 6020 - Total	"	02/28/20	0020678	A20A220	
283	"	Solid	Zn (Zinc) - 6020 - Total	"	02/28/20	0020678	A20A220	
284	A0B0441-04	Solid	Ag (Silver) - 6020 - Total		02/28/20	0020678	A20A220	
285	"	Solid	Al (Aluminum) - 6020 - Total	"	02/28/20	0020678	A20A220	
286	"	Solid	As (Arsenic) - 6020 - Total	"	02/28/20	0020678	A20A220	
287	"	Solid	Ba (Barium) - 6020 - Total	"	02/28/20	0020678	A20A220	
288	"	Solid	Be (Beryllium) - 6020 - Total	"	02/28/20	0020678	A20A220	
289	"	Solid	Cd (Cadmium) - 6020 - Total	"	02/28/20	0020678	A20A220	
290	"	Solid	Co (Cobalt) - 6020 - Total	"	02/28/20	0020678	A20A220	
291	"	Solid	Cr (Chromium) - 6020 - Total	"	02/28/20	0020678	A20A220	
292	"	Solid	Cu (Copper) - 6020 - Total	"	02/28/20	0020678	A20A220	
293	"	Solid	Hg (Mercury) - 6020 - Total	"	02/28/20	0020678	A20A220	
294	"	Solid	K (Potassium) - 6020 - Total	(QC Source)		0020678	A20A220	
295	"	Solid	Mn (Manganese) - 6020 - Total	"	02/28/20	0020678	A20A220	
296	"	Solid	Mo (Molybdenum) - 6020 - Total	"	02/28/20	0020678	A20A220	
297	"	Solid	Ni (Nickel) - 6020 - Total	"	02/28/20	0020678	A20A220	
298	"	Solid	Pb (Lead) - 6020 - Total	"	02/28/20	0020678	A20A220	
299	"	Solid	Sb (Antimony) - 6020 - Total	"	02/28/20	0020678	A20A220	
300	"	Solid	Se (Selenium) - 6020 - Total	"	02/28/20	0020678	A20A220	
301	"	Solid	Tl (Thallium) - 6020 - Total	"	02/28/20	0020678	A20A220	
302	"	Solid	V (Vanadium) - 6020 - Total	"	02/28/20	0020678	A20A220	
303	"	Solid	Zn (Zinc) - 6020 - Total	"	02/28/20	0020678	A20A220	
304	0B24036-CCV7	Water	QC	QC			A20A220	A20B273
305	0B24036-CCB7	Water	QC	QC			A20A220	
306	0020678-DUP1	Solid	QC	QC		0020678	A20A220	
307	0020678-MS1	Solid	QC	QC		0020678	A20A220	
308	A0B0441-05	Solid	Ag (Silver) - 6020 - Total		02/28/20	0020678	A20A220	
309	"	Solid	Al (Aluminum) - 6020 - Total	"	02/28/20	0020678	A20A220	
310	"	Solid	As (Arsenic) - 6020 - Total	"	02/28/20	0020678	A20A220	
311	"	Solid	Ba (Barium) - 6020 - Total	"	02/28/20	0020678	A20A220	
312	"	Solid	Be (Beryllium) - 6020 - Total	"	02/28/20	0020678	A20A220	
313	"	Solid	Cd (Cadmium) - 6020 - Total	"	02/28/20	0020678	A20A220	
314	"	Solid	Co (Cobalt) - 6020 - Total	"	02/28/20	0020678	A20A220	
315	"	Solid	Cr (Chromium) - 6020 - Total	"	02/28/20	0020678	A20A220	
316	"	Solid	Cu (Copper) - 6020 - Total	"	02/28/20	0020678	A20A220	
317	"	Solid	Hg (Mercury) - 6020 - Total	"	02/28/20	0020678	A20A220	
318	"	Solid	Mn (Manganese) - 6020 - Total	"	02/28/20	0020678	A20A220	
319	"	Solid	Mo (Molybdenum) - 6020 - Total	"	02/28/20	0020678	A20A220	
320	"	Solid	Ni (Nickel) - 6020 - Total	"	02/28/20	0020678	A20A220	
321	"	Solid	Pb (Lead) - 6020 - Total	"	02/28/20	0020678	A20A220	
322	"	Solid	Sb (Antimony) - 6020 - Total	"	02/28/20	0020678	A20A220	
323	"	Solid	Se (Selenium) - 6020 - Total	"	02/28/20	0020678	A20A220	
324	"	Solid	Tl (Thallium) - 6020 - Total	"	02/28/20	0020678	A20A220	
325	"	Solid	V (Vanadium) - 6020 - Total	"	02/28/20	0020678	A20A220	
326	"	Solid	Zn (Zinc) - 6020 - Total	"	02/28/20	0020678	A20A220	

Sequence: **0B24036** Instrument: **ICPMS6**

Date: **02/24/20 09:44** Calibration: **UNASSIGNED**

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
327	A0B0441-06	Solid	Ag (Silver) - 6020 - Total		02/28/20	0020678	A20A220	
328	"	Solid	Al (Aluminum) - 6020 - Total	"	02/28/20	0020678	A20A220	
329	"	Solid	As (Arsenic) - 6020 - Total	"	02/28/20	0020678	A20A220	
330	"	Solid	Ba (Barium) - 6020 - Total	"	02/28/20	0020678	A20A220	
331	"	Solid	Be (Beryllium) - 6020 - Total	"	02/28/20	0020678	A20A220	
332	"	Solid	Cd (Cadmium) - 6020 - Total	"	02/28/20	0020678	A20A220	
333	"	Solid	Co (Cobalt) - 6020 - Total	"	02/28/20	0020678	A20A220	
334	"	Solid	Cr (Chromium) - 6020 - Total	"	02/28/20	0020678	A20A220	
335	"	Solid	Cu (Copper) - 6020 - Total	"	02/28/20	0020678	A20A220	
336	"	Solid	Hg (Mercury) - 6020 - Total	"	02/28/20	0020678	A20A220	
337	"	Solid	Mn (Manganese) - 6020 - Total	"	02/28/20	0020678	A20A220	
338	"	Solid	Mo (Molybdenum) - 6020 - Total	"	02/28/20	0020678	A20A220	
339	"	Solid	Ni (Nickel) - 6020 - Total	"	02/28/20	0020678	A20A220	
340	"	Solid	Pb (Lead) - 6020 - Total	"	02/28/20	0020678	A20A220	
341	"	Solid	Sb (Antimony) - 6020 - Total	"	02/28/20	0020678	A20A220	
342	"	Solid	Se (Selenium) - 6020 - Total	"	02/28/20	0020678	A20A220	
343	"	Solid	Tl (Thallium) - 6020 - Total	"	02/28/20	0020678	A20A220	
344	"	Solid	V (Vanadium) - 6020 - Total	"	02/28/20	0020678	A20A220	
345	"	Solid	Zn (Zinc) - 6020 - Total	"	02/28/20	0020678	A20A220	
346	A0B0511-01	Solid	As (Arsenic) - 6020 - Total		03/03/20	0020678	A20A220	
347	"	Solid	Cd (Cadmium) - 6020 - Total	"	03/03/20	0020678	A20A220	
348	"	Solid	Cu (Copper) - 6020 - Total	"	03/03/20	0020678	A20A220	
349	"	Solid	Hg (Mercury) - 6020 - Total	"	03/03/20	0020678	A20A220	
350	"	Solid	K (Potassium) - 6020 - Total	"	03/03/20	0020678	A20A220	
351	"	Solid	Mo (Molybdenum) - 6020 - Total	"	03/03/20	0020678	A20A220	
352	"	Solid	Ni (Nickel) - 6020 - Total	"	03/03/20	0020678	A20A220	
353	"	Solid	Pb (Lead) - 6020 - Total	"	03/03/20	0020678	A20A220	
354	"	Solid	Se (Selenium) - 6020 - Total	"	03/03/20	0020678	A20A220	
355	"	Solid	Zn (Zinc) - 6020 - Total	"	03/03/20	0020678	A20A220	
356	0020570-DUP3	Water	QC	QC		0020570	A20A220	
357	A0B0357-18RE2	Water	Se (Selenium) - 6020 - Total		02/24/20	0020586	A20A220	
358	A0B0483-04RE2	Water	Ag (Silver) - 200.8 - Total		02/24/20	0020612	A20A220	
359	0B24036-CCV8	Water	QC	QC			A20A220	A20B273
360	0B24036-CCB8	Water	QC	QC			A20A220	
361	0B24036-CRL7	Water	QC	QC			A20A220	A20B178
362	0B24036-CRL8	Water	QC	QC			A20A220	A20B179
363	0B24036-CRL9	Water	QC	QC			A20A220	A20B180
364	0B24036-CRLA	Water	QC	QC			A20A220	A20B181

Data Entered By: ICA 2/25/20 Comments:

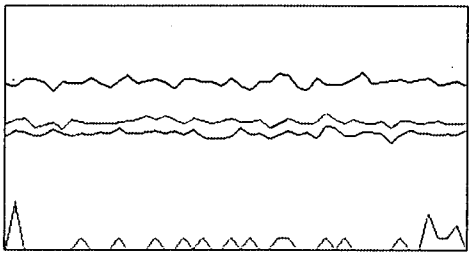
Data Reviewed By: 02/25/20

Standard Tune Check Report ICPMS6

Operator Name	ICPMS Analyst
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\0B24036.b
Acq. Date-Time	02/24/2020 10:02:05
Report Comment	0B24036 General Multi-Mode Tune Report Std ID A20A067
Instrument Name	ICPMS6 JP17412047

[No Gas]

Sensitivity



Sampling Period [sec]	0.413
Integration Time [sec]	0.1

Mass	Range	Count	Resp [cps/ug/l]	Resp (Required) [cps/ug/l]	Resp (Flag)
7	5000	2400	24001.01	5000.00	
89	20000	10550	105504.79	10000.00	
205	10000	6942	69417.93	10000.00	
102	20	0			

Mass	Resp Ratio	Resp Ratio (Required)	Resp Ratio (Flag)
7	0.23	0.20 - 1.00	
89	1.00	1.00 - 1.00	
205	0.66	0.50 - 1.50	
102		-	

Mass	RSD%	RSD% (Required)	RSD% (Flag)
7	2.929	5.000	
89	2.393	5.000	
205	2.447	5.000	
102	176.828		

Mass	Background	Background (Required)	Background (Flag)
7			
89			
205			
102			

Oxide/Doubly Charged Ratio

Oxide	156 / 140 1.585 % ✓
Doubly Charged	69 / 138 2.879 % ✓

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas	0.96 L/min	Makeup Gas	0.00 L/min
RF Power	1550 W	Option Gas	---	Auxiliary Gas	0.90 L/min

Standard Tune Check Report ICPMS6

RF Matching	1.80 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	9.5 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.1 V	Omega Lens	7.8 V	Deflect	12.6 V
Extract 2	-170.0 V	Cell Entrance	-40 V	Plate Bias	-28 V
Omega Bias	-110 V	Cell Exit	-60 V		

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	4.8 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	---	OctP RF	145 V		

QP Parameters

Mass Gain	129	Axis Gain	0.9993	QP Bias	-3.2 V
Mass Offset	126	Axis Offset	0.04		

Hardware Settings

Torch

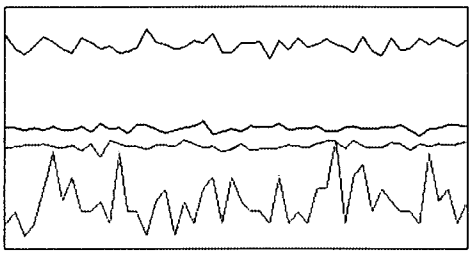
Torch H	-0.5 mm	Torch V	0.9 mm

EM

Discriminator	4.8 mV	Analog HV	2135 V	Pulse HV	1130 V

[He]

Sensitivity



Sampling Period [sec]	0.412
Integration Time [sec]	0.1

Mass	Range	Count	Resp [cps/ug/l]	Resp (Required) [cps/ug/l]	Resp (Flag)
59	2000	1692	16923.30	1000.00	
89	5000	2128	21284.57	2000.00	
205	10000	4996	49955.29	1000.00	
75	20	4			

Mass	Resp Ratio	Resp Ratio (Required)	Resp Ratio (Flag)
59		-	
89		-	
205		-	
75		-	

Mass	RSD%	RSD% (Required)	RSD% (Flag)
59	3.163	5.000	
89	3.232	5.000	
205	2.404	5.000	
75	50.557		

Standard Tune Check Report ICPMS6

Mass	Background	Background (Required)	Background (Flag)
59			
89			
205			
75			

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas	0.96 L/min	Makeup Gas	0.00 L/min
RF Power	1550 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.80 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	9.5 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.1 V	Omega Lens	7.8 V	Deflect	2.0 V
Extract 2	-170.0 V	Cell Entrance	-40 V	Plate Bias	-50 V
Omega Bias	-110 V	Cell Exit	-60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	3.5 mL/min	OctP Bias	-18.0 V		
H2 Flow	---	OctP RF	145 V		

QP Parameters

Mass Gain	129	Axis Gain	0.9993	QP Bias	-13.0 V
Mass Offset	126	Axis Offset	0.04		

Hardware Settings

Torch

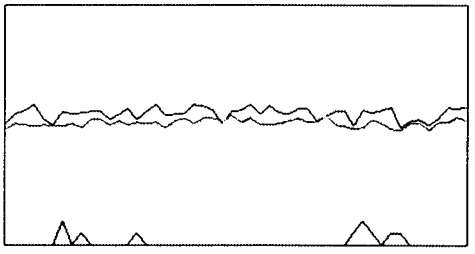
Torch H	-0.5 mm	Torch V	0.9 mm

EM

Discriminator	4.8 mV	Analog HV	2135 V	Pulse HV	1130 V

[HEHe]

Sensitivity



Sampling Period [sec]	0.306
Integration Time [sec]	0.1

Mass	Range	Count	Resp [cps/ug/l]	Resp (Required) [cps/ug/l]	Resp (Flag)
59	2000	1101	11012.20	1000.00	
89	5000	2551	25508.53	2000.00	
78	20	0			

Mass	Resp Ratio	Resp Ratio (Required)	Resp Ratio (Flag)
59		-	
89		-	

Standard Tune Check Report ICPMS6

Mass	Resp Ratio	Resp Ratio (Required)	Resp Ratio (Flag)
78		-	

Mass	RSD%	RSD% (Required)	RSD% (Flag)
59	4.635	5.000	
89	3.013	5.000	
78	247.436		

Mass	Background	Background (Required)	Background (Flag)
59			
89			
78			

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas	0.96 L/min	Makeup Gas	0.00 L/min
RF Power	1550 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.80 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	9.5 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.1 V	Omega Lens	7.8 V	Deflect	-80.0 V
Extract 2	-170.0 V	Cell Entrance	-130 V	Plate Bias	-150 V
Omega Bias	-110 V	Cell Exit	-150 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discrimination	3.9 V
He Flow	9.5 mL/min	OctP Bias	-100.0 V		
H2 Flow	---	OctP RF	145 V		

QP Parameters

Mass Gain	129	Axis Gain	0.9993	QP Bias	-96.1 V
Mass Offset	126	Axis Offset	0.04		

Hardware Settings

Torch

Torch H	-0.5 mm	Torch V	0.9 mm		

EM

Discriminator	4.8 mV	Analog HV	2135 V	Pulse HV	1130 V

EPA Tune Check Report ICPMS6

Operator Name	ICPMS Analyst
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\0B24036.b
Acq. Date-Time	02/24/2020 10:15:39
Report Comment	0B24036 EPA Multi-Mode Tune Report Std ID A20A067
Instrument Name	ICPMS6 JP17412047

[No Gas]

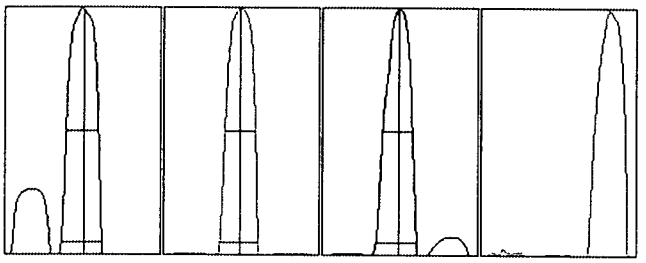
Sensitivity

Mass	Conc. [ug/l]	Count	CPS	Resp (Req) [cps/ug/l]	RSD%	Resp (Flag)	RSD% (Req)	RSD% (Flag)
7	1.00	1483	14825.49	5000.00	0.866		5.000	
89	1.00	6039	60385.62	10000.00	1.260		5.000	
205	1.00	3622	36219.46	10000.00	1.544		5.000	
102		0	1.70		73.823			

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	1464	1481	1478	1496	1494
89	5931	5997	6061	6076	6128
205	3554	3579	3624	3682	3671
102	0	0	0	0	0

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Ht	Axis	Axis (Req)	Axis (Flag)	W-50%	W-5%	W-X% (Req)	W-5% (Flag)
7	2421.70	7.05	6.90 - 7.10		0.63	0.779	0.900	
89	10375.27	89.00	88.90 - 89.10		0.60	0.736	0.900	
205	6627.79	205.00	204.90 - 205.10		0.58	0.780	0.900	
102	0.00	101.90	-		0.35	0.350		

Integration Time [sec]	0.1
Acquisition Time [sec]	135.3
Y Axis	Linear

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas	0.96 L/min	Makeup Gas	0.00 L/min
RF Power	1550 W	Option Gas	---	Auxiliary Gas	0.90 L/min

EPA Tune Check Report ICPMS6

RF Matching	1.80 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	9.5 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.1 V	Omega Lens	7.8 V	Deflect	12.6 V
Extract 2	-170.0 V	Cell Entrance	-40 V	Plate Bias	-28 V
Omega Bias	-110 V	Cell Exit	-60 V		

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	4.8 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	---	OctP RF	145 V		

QP Parameters

Mass Gain	129	Axis Gain	0.9993	QP Bias	-3.2 V
Mass Offset	126	Axis Offset	0.04		

Hardware Settings

Torch

Torch H	-0.5 mm	Torch V	0.9 mm		

EM

Discriminator	4.8 mV	Analog HV	2135 V	Pulse HV	1130 V

[He]

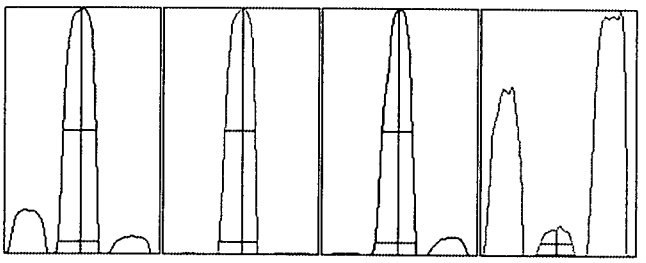
Sensitivity

Mass	Conc. [ug/l]	Count	CPS	Resp (Req) [cps/ug/l]	RSD%	Resp (Flag)	RSD% (Req)	RSD% (Flag)
59	1.00	1064	10636.00	1000.00	0.896		5.000	
89	1.00	1295	12954.32	2000.00	1.412		5.000	
205	1.00	2799	27989.64	1000.00	0.904		5.000	
75		2	22.90		20.851			

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
59	1051	1076	1063	1059	1069
89	1266	1300	1298	1295	1317
205	2764	2788	2829	2816	2799
75	2	3	2	2	2

Integration Time [sec] 0.1

Resolution/Axis



EPA Tune Check Report ICPMS6

Mass	Peak Ht	Axis	Axis (Req)	Axis (Flag)	W-50%	W-5%	W-X% (Req)	W-5% (Flag)
59	1721.86	59.00	58.90 - 59.10		0.64	0.780	0.900	
89	2235.01	89.05	88.90 - 89.10		0.60	0.734	0.900	
205	5012.26	205.00	204.90 - 205.10		0.59	0.782	0.900	
75	3.70	75.00	-		0.62	0.738		

Integration Time [sec]	0.1
Acquisition Time [sec]	134.8
Y Axis	Linear

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas	0.96 L/min	Makeup Gas	0.00 L/min
RF Power	1550 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.80 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	9.5 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.1 V	Omega Lens	7.8 V	Deflect	2.0 V
Extract 2	-170.0 V	Cell Entrance	-40 V	Plate Bias	-50 V
Omega Bias	-110 V	Cell Exit	-60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	3.5 mL/min	OctP Bias	-18.0 V		
H2 Flow	---	OctP RF	145 V		

QP Parameters

Mass Gain	129	Axis Gain	0.9993	QP Bias	-13.0 V
Mass Offset	126	Axis Offset	0.04		

Hardware Settings

Torch

Torch H	-0.5 mm	Torch V	0.9 mm

EM

Discriminator	4.8 mV	Analog HV	2135 V	Pulse HV	1130 V

[HEHe]

Sensitivity

Mass	Conc. [ug/l]	Count	CPS	Resp (Req) [cps/ug/l]	RSD%	Resp (Flag)	RSD% (Req)	RSD% (Flag)
59	1.00	675	6745.49	1000.00	1.371		5.000	
89	1.00	1477	14769.30	2000.00	1.334		5.000	
78		0	1.10		148.686			

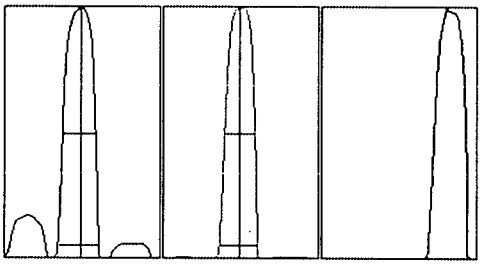
Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
59	680	675	666	687	665
89	1497	1499	1459	1468	1461

EPA Tune Check Report ICPMS6

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
78	0	0	0	0	0

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Ht	Axis	Axis (Req)	Axis (Flag)	W-50%	W-5%	W-X% (Req)	W-5% (Flag)
59	1085.18	59.00	58.90 - 59.10		0.65	0.786	0.900	
89	2539.82	89.00	88.90 - 89.10		0.60	0.737	0.900	
78			-					

Integration Time [sec] 0.1
Acquisition Time [sec] 100.35
Y Axis Linear

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas	0.96 L/min	Makeup Gas	0.00 L/min
RF Power	1550 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.80 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	9.5 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.1 V	Omega Lens	7.8 V	Deflect	-80.0 V
Extract 2	-170.0 V	Cell Entrance	-130 V	Plate Bias	-150 V
Omega Bias	-110 V	Cell Exit	-150 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discrimination	3.9 V
He Flow	9.5 mL/min	OctP Bias	-100.0 V		
H2 Flow	---	OctP RF	145 V		

QP Parameters

Mass Gain	129	Axis Gain	0.9993	QP Bias	-96.1 V
Mass Offset	126	Axis Offset	0.04		

Hardware Settings

Torch

Torch H	-0.5 mm	Torch V	0.9 mm		

EM

Discriminator	4.8 mV	Analog HV	2135 V	Pulse HV	1130 V

Sample Report ICPMS6

Sample Name	rinse	**Sample Type**	Rinse
File Name	001RINS.d	**Vial #**	1
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	1.0000
Acq Time	02/24/2020 10:26:07	**Sample QC Pass/Fail**	Pass
Comment	rinse - stabilize I.S.	**ISTD Ref FileName**	---

QC Analyte Table

Name	Mass	ISTD	Tune	Units	Raw Conc.	Conc RSD	CPS	CPS RSD	LDR	QC Flag

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	851287	1.6	0		70	120	
Sc	45	He	354408	0.8	0		70	120	
Ge	74	No Gas	1569694	1.7	0		70	120	
Ge	74	He	286142	0.5	0		70	120	
Ge	74	HEHe	258910	1.3	0		70	120	
Rh	103	No Gas	1500963	0.8	0		70	120	
Rh	103	He	787457	1.1	0		70	120	
Tb	159	No Gas	2672814	0.8	0		70	120	
Tb	159	He	1652740	0.7	0		70	120	
Bi	209	No Gas	1399541	1.1	0		70	120	

Sample Report ICPMS6

Sample Name	rinse	**Sample Type**	Rinse
File Name	002RINS.d	**Vial #**	1
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	1.0000
Acq Time	02/24/2020 10:30:50	**Sample QC Pass/Fail**	Pass
Comment	rinse - stabilize I.S.	**ISTD Ref FileName**	---

QC Analyte Table

Name	Mass	ISTD	Tune	Units	Raw Conc.	Conc RSD	CPS	CPS RSD	LDR	QC Flag

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	881403	0.5	0		70	120	
Sc	45	He	363008	0.5	0		70	120	
Ge	74	No Gas	1612458	0.8	0		70	120	
Ge	74	He	292253	0.3	0		70	120	
Ge	74	HEHe	261545	1.5	0		70	120	
Rh	103	No Gas	1546474	1.1	0		70	120	
Rh	103	He	800528	1.2	0		70	120	
Tb	159	No Gas	2746776	0.9	0		70	120	
Tb	159	He	1630804	1.3	0		70	120	
Bi	209	No Gas	1451347	0.8	0		70	120	

Sample Report ICPMS6

Sample Name	rinse	**Sample Type**	Rinse
File Name	003RINS.d	**Vial #**	1101
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	1.0000
Acq Time	02/24/2020 10:36:39	**Sample QC Pass/Fail**	Pass
Comment	rinse - stabilize I.S.	**ISTD Ref FileName**	---

QC Analyte Table

Name	Mass	ISTD	Tune	Units	Raw Conc.	Conc RSD	CPS	CPS RSD	LDR	QC Flag

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	916061	1.5	0		70	120	
Sc	45	He	364330	1.2	0		70	120	
Ge	74	No Gas	1658896	1.4	0		70	120	
Ge	74	He	293472	1.0	0		70	120	
Ge	74	HEHe	262084	0.4	0		70	120	
Rh	103	No Gas	1584829	1.2	0		70	120	
Rh	103	He	799597	0.6	0		70	120	
Tb	159	No Gas	2805784	1.0	0		70	120	
Tb	159	He	1626664	0.7	0		70	120	
Bi	209	No Gas	1436618	0.8	0		70	120	

Calibration Blank Report ICPMS6

Sample Name	**0B24036-CAL0**	**Sample Type**	CalBlk
File Name	004CALB.d	**Vial #**	1101
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	1.0000
Acq Time	02/24/2020 10:41:22	**Sample QC Pass/Fail**	Fail
Comment	Cal Blank	**ISTD Ref File**	004CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune Mode	CPS	CPS RSD
Be	9	6	No Gas	58	16.6
Na	23	45	He	7992	4.5
Mg	24	45	He	1599	3.8
Al	27	45	He	163	9.8
K	39	45	He	38638	1.8
Ca	44	45	He	1228	1.3
Ti	47	45	He	1	173.2
V	51	74	He	2035	3.0
Cr	52	74	He	646	9.9
Mn	55	74	He	266	15.2
Fe	56	74	He	17093	0.1
Co	59	74	He	164	13.0
Ni	60	74	He	838	12.3
Cu	65	74	He	397	10.2
Cu	65	74	No Gas	1099	6.8
Zn	66	74	He	322	5.9
As	75	74	He	58	7.5
Se	78	74	HEHe	2	21.8
Mo	95	103	He	20	16.7
[Cd]	106	103	No Gas	18	21.7
[Cd]	108	103	No Gas	14	58.1
Ag	109	103	No Gas	37	15.7
Cd	111	103	He	2	86.6
Cd	111	103	No Gas	17	58.2
Sb	123	103	No Gas	298	5.3
Ba	138	159	He	193	3.0
W	186	159	No Gas	50	52.9
Hg	201	159	No Gas	7	12.4
Tl	205	159	No Gas	180	5.6
Pb	208	159	No Gas	936	7.9

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD
Li	6	No Gas	904523	1.0
Ge	74	No Gas	1553898	1.0
Rh	103	No Gas	1470917	0.9
Tb	159	No Gas	2565675	0.9
Bi	209	No Gas	1338204	1.2
Sc	45	He	364445	0.4
Ge	74	He	295212	1.2
Rh	103	He	810272	0.8
Tb	159	He	1592519	0.7
Ge	74	HEHe	261187	1.1

Not used 02/25/20 JSJ

Calibration Blank Report ICPMS6

Sample Name	**0B24036-CAL0**	**Sample Type**	CalBlk
File Name	005CALB.d	**Vial #**	1101
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	1.0000
Acq Time	02/24/2020 10:46:20	**Sample QC Pass/Fail**	Fail
Comment	Cal Blank	**ISTD Ref File**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune Mode	CPS	CPS RSD
Be	9	6	No Gas	58	20.3
Na	23	45	He	7590	2.1
Mg	24	45	He	1553	7.5
Al	27	45	He	178	14.1
K	39	45	He	37634	2.0
Ca	44	45	He	1398	7.0
Ti	47	45	He	7	100.0
V	51	74	He	2045	5.1
Cr	52	74	He	592	16.0
Mn	55	74	He	301	8.4
Fe	56	74	He	16344	2.4
Co	59	74	He	152	14.2
Ni	60	74	He	709	12.9
Cu	65	74	He	396	4.0
Cu	65	74	No Gas	1069	6.7
Zn	66	74	He	267	3.3
As	75	74	He	61	8.1
Se	78	74	HEHe	1	45.8
Mo	95	103	He	18	39.0
[Cd]	106	103	No Gas	12	63.0
[Cd]	108	103	No Gas	9	57.3
Ag	109	103	No Gas	43	20.3
Cd	111	103	He	4	114.6
Cd	111	103	No Gas	9	197.1
Sb	123	103	No Gas	269	11.7
Ba	138	159	He	163	3.5
W	186	159	No Gas	27	21.7
Hg	201	159	No Gas	7	38.4
Tl	205	159	No Gas	197	18.3
Pb	208	159	No Gas	937	6.8

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD
Li	6	No Gas	902319	0.6
Ge	74	No Gas	1669073	0.9
Rh	103	No Gas	1588022	0.8
Tb	159	No Gas	2769500	2.3
Bi	209	No Gas	1455457	0.5
Sc	45	He	362739	0.8
Ge	74	He	294264	0.7
Rh	103	He	800671	1.0
Tb	159	He	1549761	1.4
Ge	74	HEHe	257781	0.7

Calibration Standard Report ICPMS6

Sample Name	**0B24036-CAL1**	**Sample Type**	CalStd
File Name	006CALS.d	**Vial #**	2101
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	1.0000
Acq Time	02/24/2020 10:51:14	**Sample QC Pass/Fail**	Fail
Comment	A20B178 - KT 02/24	**ISTD Ref File**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune	Raw Conc.	Units	CPS	CPS RSD	Rep	Int. sec	QC Flag
Be	9	6	No Gas	0.195	ug/l	1367	3.8	3	0.3000	
Na	23	45	He	9.403	ug/l	27267	0.7	3	0.2001	
Mg	24	45	He	9.429	ug/l	12233	0.5	3	0.2001	
Al	27	45	He	9.673	ug/l	5590	0.7	3	0.2001	
K	39	45	He	9.364	ug/l	48942	0.4	3	0.2001	
Ca	44	45	He	7.475	ug/l	1858	5.1	3	0.2001	
Ti	47	45	He	0.197	ug/l	76	6.7	3	0.3000	
V	51	74	He	0.188	ug/l	3861	4.2	3	0.3000	
Cr	52	74	He	0.183	ug/l	2655	3.2	3	0.3000	
Mn	55	74	He	0.186	ug/l	1769	5.1	3	0.3000	
Fe	56	74	He	9.619	ug/l	113795	1.0	3	0.3000	
Co	59	74	He	0.188	ug/l	3263	4.0	3	0.3000	
Ni	60	74	He	0.16	ug/l	1351	8.9	3	0.3000	
Cu	65	74	He	0.182	ug/l	1337	2.6	3	0.3000	
Cu	65	74	No Gas	0.177	ug/l	3487	4.0	3	0.3000	
Zn	66	74	He	0.171	ug/l	597	2.0	3	0.3000	
As	75	74	He	0.181	ug/l	326	3.0	3	2.0001	
Se	78	74	HEHe	0.184	ug/l	44	5.2	3	3.0000	
Mo	95	103	He	0.182	ug/l	1257	3.7	3	0.3000	
[Cd]	106	103	No Gas	0.204	ug/l	172	19.1	3	0.3000	RSD Warning
[Cd]	108	103	No Gas	0.215	ug/l	133	6.6	3	0.3000	
Ag	109	103	No Gas	0.168	ug/l	6805	1.5	3	0.3000	
Cd	111	103	He	0.186	ug/l	687	13.4	3	0.3000	
Cd	111	103	No Gas	0.171	ug/l	1552	12.8	3	0.3000	
Sb	123	103	No Gas	0.174	ug/l	4549	2.2	3	0.3000	
Ba	138	159	He	0.188	ug/l	5045	3.4	3	0.3000	
W	186	159	No Gas	0	ug/l	30	33.3	3	0.0999	RSD Warning
Hg	201	159	No Gas	7.417	ng/l	36	16.7	3	2.0001	RSD Warning
Tl	205	159	No Gas	0.165	ug/l	12288	2.8	3	0.3000	
Pb	208	159	No Gas	0.167	ug/l	17505	1.7	3	0.3000	

QC ISTD Table

Name	Mass	Tune	CPS	CPS RSD	Rep	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	907566	0.4	3	902319.09	100.58	70	120	
Sc	45	He	365128	0.4	3	362738.6	100.66	70	120	
Ge	74	No Gas	1662213	0.7	3	1669072.63	99.59	70	120	
Ge	74	He	295564	0.8	3	294264.1	100.44	70	120	
Ge	74	HEHe	260397	0.3	3	257780.75	101.01	70	120	
Rh	103	No Gas	1586938	2.2	3	1588021.85	99.93	70	120	
Rh	103	He	804472	0.3	3	800670.94	100.47	70	120	
Tb	159	No Gas	2779822	0.8	3	2769499.89	100.37	70	120	
Tb	159	He	1571996	1.9	3	1549761.4	101.43	70	120	
Bi	209	No Gas	1459729	0.8	3	1455457.42	100.29	70	120	

Calibration Standard Report ICPMS6

Sample Name	**0B24036-CAL2**	**Sample Type**	CalStd
File Name	007CALS.d	**Vial #**	2102
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	1.0000
Acq Time	02/24/2020 10:56:08	**Sample QC Pass/Fail**	Fail
Comment	A20B179 - KT 02/24	**ISTD Ref File**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune	Raw Conc.	Units	CPS	CPS RSD	Rep	Int. sec	QC Flag
Be	9	6	No Gas	0.933	ug/l	6562	2.2	3	0.3000	
Na	23	45	He	47.34	ug/l	105127	0.5	3	0.2001	
Mg	24	45	He	48.227	ug/l	55436	0.9	3	0.2001	
Al	27	45	He	47.161	ug/l	26229	0.3	3	0.2001	
K	39	45	He	47.427	ug/l	92753	2.3	3	0.2001	
Ca	44	45	He	45.554	ug/l	4102	2.6	3	0.2001	
Ti	47	45	He	0.902	ug/l	318	14.3	3	0.3000	
V	51	74	He	0.913	ug/l	10790	3.1	3	0.3000	
Cr	52	74	He	0.937	ug/l	11134	1.1	3	0.3000	
Mn	55	74	He	0.91	ug/l	7454	2.2	3	0.3000	
Fe	56	74	He	47.951	ug/l	500208	0.7	3	0.3000	
Co	59	74	He	0.947	ug/l	15737	2.3	3	0.3000	
Ni	60	74	He	0.939	ug/l	4439	2.1	3	0.3000	
Cu	65	74	He	0.999	ug/l	5519	2.5	3	0.3000	
Cu	65	74	No Gas	0.899	ug/l	13554	1.3	3	0.3000	
Zn	66	74	He	0.937	ug/l	2065	5.5	3	0.3000	
As	75	74	He	0.957	ug/l	1458	2.4	3	2.0001	
Se	78	74	HEHe	0.984	ug/l	232	3.8	3	3.0000	
Mo	95	103	He	0.898	ug/l	6129	1.3	3	0.3000	
[Cd]	106	103	No Gas	0.911	ug/l	747	5.4	3	0.3000	
[Cd]	108	103	No Gas	0.985	ug/l	592	2.3	3	0.3000	
Ag	109	103	No Gas	0.822	ug/l	33959	0.7	3	0.3000	
Cd	111	103	He	0.928	ug/l	3414	0.2	3	0.3000	
Cd	111	103	No Gas	0.845	ug/l	7816	2.1	3	0.3000	
Sb	123	103	No Gas	0.846	ug/l	21558	1.8	3	0.3000	
Ba	138	159	He	0.931	ug/l	23990	1.0	3	0.3000	
W	186	159	No Gas	0.001	ug/l	43	48.0	3	0.0999	RSD Warning
Hg	201	159	No Gas	37.226	ng/l	154	2.7	3	2.0001	
Tl	205	159	No Gas	0.825	ug/l	62041	1.0	3	0.3000	
Pb	208	159	No Gas	0.833	ug/l	85109	1.3	3	0.3000	

QC ISTD Table

Name	Mass	Tune	CPS	CPS RSD	Rep	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	944710	4.7	3	902319.09	104.7	70	120	
Sc	45	He	360602	0.7	3	362738.6	99.41	70	120	
Ge	74	No Gas	1685951	3.4	3	1669072.63	101.01	70	120	
Ge	74	He	294601	0.6	3	294264.1	100.11	70	120	
Ge	74	HEHe	259888	1.1	3	257780.75	100.82	70	120	
Rh	103	No Gas	1625202	3.4	3	1588021.85	102.34	70	120	
Rh	103	He	804278	1.4	3	800670.94	100.45	70	120	
Tb	159	No Gas	2842023	3.4	3	2769499.89	102.62	70	120	
Tb	159	He	1546795	1.1	3	1549761.4	99.81	70	120	
Bi	209	No Gas	1493690	2.7	3	1455457.42	102.63	70	120	

Calibration Standard Report ICPMS6

Sample Name	**0B24036-CAL3**	**Sample Type**	CalStd
File Name	008CALS.d	**Vial #**	2103
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	1.0000
Acq Time	02/24/2020 11:01:01	**Sample QC Pass/Fail**	Fail
Comment	A20B180 - KT 02/24	**ISTD Ref File**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune	Raw Conc.	Units	CPS	CPS RSD	Rep	Int. sec	QC Flag
Be	9	6	No Gas	1.825	ug/l	13431	0.1	3	0.3000	
Na	23	45	He	90.787	ug/l	215283	1.1	3	0.2001	
Mg	24	45	He	92.701	ug/l	116253	1.3	3	0.2001	
Al	27	45	He	95.083	ug/l	58274	1.1	3	0.2001	
K	39	45	He	94.325	ug/l	163053	1.3	3	0.2001	
Ca	44	45	He	92.092	ug/l	7602	1.6	3	0.2001	
Ti	47	45	He	1.754	ug/l	677	6.8	3	0.3000	
V	51	74	He	1.8	ug/l	20725	0.4	3	0.3000	
Cr	52	74	He	1.828	ug/l	22746	1.7	3	0.3000	
Mn	55	74	He	1.8	ug/l	15541	1.2	3	0.3000	
Fe	56	74	He	94.188	ug/l	1039527	0.5	3	0.3000	
Co	59	74	He	1.823	ug/l	32422	1.3	3	0.3000	
Ni	60	74	He	1.901	ug/l	8886	1.7	3	0.3000	
Cu	65	74	He	1.961	ug/l	11245	1.7	3	0.3000	
Cu	65	74	No Gas	1.825	ug/l	27775	1.3	3	0.3000	
Zn	66	74	He	1.911	ug/l	4231	1.6	3	0.3000	
As	75	74	He	1.828	ug/l	2934	0.7	3	2.0001	
Se	78	74	HEHe	1.896	ug/l	464	4.6	3	3.0000	
Mo	95	103	He	1.772	ug/l	12623	2.2	3	0.3000	
[Cd]	106	103	No Gas	1.813	ug/l	1525	4.7	3	0.3000	
[Cd]	108	103	No Gas	1.761	ug/l	1091	2.3	3	0.3000	
Ag	109	103	No Gas	1.618	ug/l	69225	1.2	3	0.3000	
Cd	111	103	He	1.789	ug/l	6877	1.4	3	0.3000	
Cd	111	103	No Gas	1.651	ug/l	15819	1.6	3	0.3000	
Sb	123	103	No Gas	1.655	ug/l	43452	1.1	3	0.3000	
Ba	138	159	He	1.891	ug/l	50511	0.7	3	0.3000	
W	186	159	No Gas	0.001	ug/l	50	20.0	3	0.0999	RSD Warning
Hg	201	159	No Gas	71.756	ng/l	289	0.7	3	2.0001	
Tl	205	159	No Gas	1.594	ug/l	119585	1.3	3	0.3000	
Pb	208	159	No Gas	1.632	ug/l	165844	1.0	3	0.3000	

QC ISTD Table

Name	Mass	Tune	CPS	CPS RSD	Rep	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	992225	1.1	3	902319.09	109.96	70	120	
Sc	45	He	398731	0.3	3	362738.6	109.92	70	120	
Ge	74	No Gas	1772900	1.4	3	1669072.63	106.22	70	120	
Ge	74	He	316774	0.6	3	294264.1	107.65	70	120	
Ge	74	HEHe	270555	0.3	3	257780.75	104.96	70	120	
Rh	103	No Gas	1683148	0.6	3	1588021.85	105.99	70	120	
Rh	103	He	840686	0.7	3	800670.94	105	70	120	
Tb	159	No Gas	2838032	0.6	3	2769499.89	102.47	70	120	
Tb	159	He	1609882	0.8	3	1549761.4	103.88	70	120	
Bi	209	No Gas	1476124	1.3	3	1455457.42	101.42	70	120	

Calibration Standard Report ICPMS6

Sample Name	**0B24036-CAL4**	**Sample Type**	CalStd
File Name	009CALS.d	**Vial #**	2104
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	1.0000
Acq Time	02/24/2020 11:05:54	**Sample QC Pass/Fail**	Fail
Comment	A20B181 - KT 02/24	**ISTD Ref File**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune	Raw Conc.	Units	CPS	CPS RSD	Rep	Int. sec	QC Flag
Be	9	6	No Gas	3.659	ug/l	25976	1.1	3	0.3000	
Na	23	45	He	184.555	ug/l	406422	0.4	3	0.2001	
Mg	24	45	He	187.231	ug/l	220791	0.7	3	0.2001	
Al	27	45	He	186.605	ug/l	108174	1.2	3	0.2001	
K	39	45	He	184.032	ug/l	264120	1.3	3	0.2001	
Ca	44	45	He	181.638	ug/l	12791	3.9	3	0.2001	
Ti	47	45	He	3.431	ug/l	1247	1.5	3	0.3000	
V	51	74	He	3.63	ug/l	37715	1.5	3	0.3000	
Cr	52	74	He	3.707	ug/l	43348	1.6	3	0.3000	
Mn	55	74	He	3.637	ug/l	29605	0.9	3	0.3000	
Fe	56	74	He	190.257	ug/l	1984560	2.0	3	0.3000	
Co	59	74	He	3.695	ug/l	62469	1.2	3	0.3000	
Ni	60	74	He	3.894	ug/l	16584	2.1	3	0.3000	
Cu	65	74	He	3.94	ug/l	21127	1.6	3	0.3000	
Cu	65	74	No Gas	3.672	ug/l	52679	0.8	3	0.3000	
Zn	66	74	He	3.756	ug/l	7664	4.5	3	0.3000	
As	75	74	He	3.717	ug/l	5622	1.3	3	2.0001	
Se	78	74	HEHe	3.868	ug/l	911	3.4	3	3.0000	
Mo	95	103	He	3.64	ug/l	25240	1.6	3	0.3000	
[Cd]	106	103	No Gas	3.673	ug/l	2943	2.7	3	0.3000	
[Cd]	108	103	No Gas	3.671	ug/l	2166	1.5	3	0.3000	
Ag	109	103	No Gas	3.339	ug/l	136619	1.4	3	0.3000	
Cd	111	103	He	3.628	ug/l	13577	1.6	3	0.3000	
Cd	111	103	No Gas	3.464	ug/l	31743	1.6	3	0.3000	
Sb	123	103	No Gas	3.434	ug/l	85948	1.4	3	0.3000	
Ba	138	159	He	3.712	ug/l	98087	0.6	3	0.3000	
W	186	159	No Gas	0.001	ug/l	73	39.4	3	0.0999	RSD Warning
Hg	201	159	No Gas	148.018	ng/l	587	3.4	3	2.0001	
Tl	205	159	No Gas	3.299	ug/l	246638	0.8	3	0.3000	
Pb	208	159	No Gas	3.334	ug/l	336867	0.2	3	0.3000	

QC ISTD Table

Name	Mass	Tune	CPS	CPS RSD	Rep	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	959543	1.1	3	902319.09	106.34	70	120	
Sc	45	He	377754	0.8	3	362738.6	104.14	70	120	
Ge	74	No Gas	1706427	2.1	3	1669072.63	102.24	70	120	
Ge	74	He	301978	1.8	3	294264.1	102.62	70	120	
Ge	74	HEHe	260658	1.5	3	257780.75	101.12	70	120	
Rh	103	No Gas	1610064	1.8	3	1588021.85	101.39	70	120	
Rh	103	He	818960	0.4	3	800670.94	102.28	70	120	
Tb	159	No Gas	2830864	1.2	3	2769499.89	102.22	70	120	
Tb	159	He	1595040	1.1	3	1549761.4	102.92	70	120	
Bi	209	No Gas	1490514	1.2	3	1455457.42	102.41	70	120	

Calibration Standard Report ICPMS6

Sample Name	**0B24036-CAL5**	**Sample Type**	CalStd
File Name	010CALS.d	**Vial #**	2105
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	1.0000
Acq Time	02/24/2020 11:10:45	**Sample QC Pass/Fail**	Fail
Comment	A20A194 - KT 02/24	**ISTD Ref File**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune	Raw Conc.	Units	CPS	CPS RSD	Rep	Int. sec	QC Flag
Be	9	6	No Gas	12.161	ug/l	87754	0.5	3	0.3000	
Na	23	45	He	466.211	ug/l	994590	0.6	3	0.2001	
Mg	24	45	He	474.901	ug/l	546523	1.0	3	0.2001	
Al	27	45	He	474.691	ug/l	269441	1.0	3	0.2001	
K	39	45	He	468.797	ug/l	600062	0.6	3	0.2001	
Ca	44	45	He	464.761	ug/l	29853	1.1	3	0.2001	
Ti	47	45	He	23.057	ug/l	8175	3.5	3	0.3000	
V	51	74	He	22.941	ug/l	227643	1.0	3	0.3000	
Cr	52	74	He	23.081	ug/l	267224	0.1	3	0.3000	
Mn	55	74	He	22.988	ug/l	185875	0.7	3	0.3000	
Fe	56	74	He	469.07	ug/l	4877595	1.9	3	0.3000	
Co	59	74	He	23.317	ug/l	394144	0.7	3	0.3000	
Ni	60	74	He	24.314	ug/l	99933	1.3	3	0.3000	
Cu	65	74	He	24.878	ug/l	131496	1.6	3	0.3000	
Cu	65	74	No Gas	25.004	ug/l	355382	1.1	3	0.3000	
Zn	66	74	He	24.518	ug/l	48599	1.1	3	0.3000	
As	75	74	He	23.458	ug/l	35232	0.6	3	2.0001	
Se	78	74	HEHe	11.361	ug/l	2702	0.5	3	3.0000	
Mo	95	103	He	11.375	ug/l	78596	1.2	3	0.3000	
[Cd]	106	103	No Gas	24.153	ug/l	19672	2.8	3	0.3000	
[Cd]	108	103	No Gas	24.721	ug/l	14833	0.7	3	0.3000	
Ag	109	103	No Gas	11.002	ug/l	459374	0.7	3	0.3000	
Cd	111	103	He	22.884	ug/l	85360	0.1	3	0.3000	
Cd	111	103	No Gas	23.254	ug/l	217462	0.9	3	0.3000	
Sb	123	103	No Gas	11.512	ug/l	293408	1.0	3	0.3000	
Ba	138	159	He	23.694	ug/l	617296	0.5	3	0.3000	
W	186	159	No Gas	0.003	ug/l	117	30.1	3	0.0999	RSD Warning
Hg	201	159	No Gas	510.128	ng/l	2025	1.1	3	2.0001	
Tl	205	159	No Gas	11.058	ug/l	834231	1.2	3	0.3000	
Pb	208	159	No Gas	22.712	ug/l	2310642	1.7	3	0.3000	

QC ISTD Table

Name	Mass	Tune	CPS	CPS RSD	Rep	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	977127	2.0	3	902319.09	108.29	70	120	
Sc	45	He	370278	0.2	3	362738.6	102.08	70	120	
Ge	74	No Gas	1721303	2.2	3	1669072.63	103.13	70	120	
Ge	74	He	302577	0.6	3	294264.1	102.83	70	120	
Ge	74	HEHe	263306	0.9	3	257780.75	102.14	70	120	
Rh	103	No Gas	1644223	2.5	3	1588021.85	103.54	70	120	
Rh	103	He	816487	0.5	3	800670.94	101.98	70	120	
Tb	159	No Gas	2859179	2.3	3	2769499.89	103.24	70	120	
Tb	159	He	1574739	1.0	3	1549761.4	101.61	70	120	
Bi	209	No Gas	1496832	1.5	3	1455457.42	102.84	70	120	

Calibration Standard Report ICPMS6

Sample Name	**0B24036-CAL6**	**Sample Type**	CalStd
File Name	011CALS.d	**Vial #**	2106
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	1.0000
Acq Time	02/24/2020 11:15:37	**Sample QC Pass/Fail**	Pass
Comment	A20B183	**ISTD Ref File**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune	Raw Conc.	Units	CPS	CPS RSD	Rep	Int. sec	QC Flag
Be	9	6	No Gas	50.72	ug/l	360837	0.8	3	0.3000	
Na	23	45	He	2524.319	ug/l	5208987	1.1	3	0.2001	
Mg	24	45	He	2610.332	ug/l	2917135	1.3	3	0.2001	
Al	27	45	He	2615.893	ug/l	1444305	0.7	3	0.2001	
K	39	45	He	2557.376	ug/l	3019721	1.1	3	0.2001	
Ca	44	45	He	2621.053	ug/l	157445	1.1	3	0.2001	
Ti	47	45	He	50.488	ug/l	17413	1.8	3	0.3000	
V	51	74	He	50.678	ug/l	485468	1.2	3	0.3000	
Cr	52	74	He	51.251	ug/l	575002	0.9	3	0.3000	
Mn	55	74	He	50.793	ug/l	398135	0.3	3	0.3000	
Fe	56	74	He	2587.025	ug/l	26030284	0.4	3	0.3000	
Co	59	74	He	51.219	ug/l	839864	0.4	3	0.3000	
Ni	60	74	He	53.618	ug/l	212958	0.2	3	0.3000	
Cu	65	74	He	54.196	ug/l	277482	0.3	3	0.3000	
Cu	65	74	No Gas	49.598	ug/l	698652	1.6	3	0.3000	
Zn	66	74	He	52.687	ug/l	101029	0.8	3	0.3000	
As	75	74	He	51.245	ug/l	74602	1.1	3	2.0001	
Se	78	74	HEHe	51.576	ug/l	12033	0.7	3	3.0000	
Mo	95	103	He	51.299	ug/l	344853	0.1	3	0.3000	
[Cd]	106	103	No Gas	48.617	ug/l	39089	0.6	3	0.3000	
[Cd]	108	103	No Gas	50.582	ug/l	29954	0.6	3	0.3000	
Ag	109	103	No Gas	50.375	ug/l	2076770	2.7	3	0.3000	
Cd	111	103	He	50.275	ug/l	182480	0.2	3	0.3000	
Cd	111	103	No Gas	46.601	ug/l	430256	0.8	3	0.3000	
Sb	123	103	No Gas	46.982	ug/l	1181431	0.9	3	0.3000	
Ba	138	159	He	52.17	ug/l	1349321	0.6	3	0.3000	
W	186	159	No Gas	0.01	ug/l	360	11.1	3	0.0999	
Hg	201	159	No Gas	2016.686	ng/l	8051	1.4	3	2.0001	
Tl	205	159	No Gas	51.007	ug/l	3880050	0.1	3	0.3000	
Pb	208	159	No Gas	48.419	ug/l	4967765	0.5	3	0.3000	

QC ISTD Table

Name	Mass	Tune	CPS	CPS RSD	Rep	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	963945	2.6	3	902319.09	106.83	70	120	
Sc	45	He	360698	3.8	3	362738.6	99.44	70	120	
Ge	74	No Gas	1707904	1.2	3	1669072.63	102.33	70	120	
Ge	74	He	293812	3.6	3	294264.1	99.85	70	120	
Ge	74	HEHe	258380	1.2	3	257780.75	100.23	70	120	
Rh	103	No Gas	1622597	1.6	3	1588021.85	102.18	70	120	
Rh	103	He	795197	3.7	3	800670.94	99.32	70	120	
Tb	159	No Gas	2882749	1.8	3	2769499.89	104.09	70	120	
Tb	159	He	1565206	4.1	3	1549761.4	101	70	120	
Bi	209	No Gas	1494955	0.4	3	1455457.42	102.71	70	120	

Calibration Standard Report ICPMS6

Sample Name	**0B24036-CAL7**	**Sample Type**	CalStd
File Name	012CALS.d	**Vial #**	2107
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	1.0000
Acq Time	02/24/2020 11:20:23	**Sample QC Pass/Fail**	Pass
Comment	A20A196	**ISTD Ref File**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune	Raw Conc.	Units	CPS	CPS RSD	Rep	Int. sec	QC Flag
Be	9	6	No Gas	99.421	ug/l	676864	1.9	3	0.3000	
Na	23	45	He	3979.572	ug/l	8055371	1.9	3	0.2001	
Mg	24	45	He	4081.105	ug/l	4474979	0.9	3	0.2001	
Al	27	45	He	4090.68	ug/l	2217080	2.0	3	0.2001	
K	39	45	He	3966.162	ug/l	4577131	3.4	3	0.2001	
Ca	44	45	He	4037.207	ug/l	237276	1.7	3	0.2001	
Ti	47	45	He	196.745	ug/l	66600	2.6	3	0.3000	
V	51	74	He	203.252	ug/l	1888621	4.1	3	0.3000	
Cr	52	74	He	204.404	ug/l	2229298	1.8	3	0.3000	
Mn	55	74	He	200.809	ug/l	1530434	2.6	3	0.3000	
Fe	56	74	He	4071.559	ug/l	39844987	1.8	3	0.3000	
Co	59	74	He	201.9	ug/l	3220501	2.0	3	0.3000	
Ni	60	74	He	210.16	ug/l	810068	1.2	3	0.3000	
Cu	65	74	He	212.881	ug/l	1059202	1.5	3	0.3000	
Cu	65	74	No Gas	209.474	ug/l	2874498	1.5	3	0.3000	
Zn	66	74	He	210.473	ug/l	391823	1.3	3	0.3000	
As	75	74	He	201.349	ug/l	285021	2.1	3	2.0001	
Se	78	74	HEHe	99.064	ug/l	23186	0.7	3	3.0000	
Mo	95	103	He	99.212	ug/l	653107	1.3	3	0.3000	
[Cd]	106	103	No Gas	195.307	ug/l	151401	1.7	3	0.3000	
[Cd]	108	103	No Gas	197.844	ug/l	112958	1.3	3	0.3000	
Ag	109	103	No Gas	99.726	ug/l	3963995	2.1	3	0.3000	
Cd	111	103	He	199.524	ug/l	709177	1.6	3	0.3000	
Cd	111	103	No Gas	204.57	ug/l	1821269	0.6	3	0.3000	
Sb	123	103	No Gas	101.367	ug/l	2457654	0.9	3	0.3000	
Ba	138	159	He	198.205	ug/l	5101457	1.8	3	0.3000	
W	186	159	No Gas	0.022	ug/l	721	5.6	3	0.0999	
Hg	201	159	No Gas	3980.493	ng/l	15665	0.8	3	2.0001	
Tl	205	159	No Gas	99.406	ug/l	7455893	0.7	3	0.3000	
Pb	208	159	No Gas	204.989	ug/l	20734166	0.3	3	0.3000	

QC ISTD Table

Name	Mass	Tune	CPS	CPS RSD	Rep	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	922379	2.9	3	902319.09	102.22	70	120	
Sc	45	He	353757	1.8	3	362738.6	97.52	70	120	
Ge	74	No Gas	1665804	1.8	3	1669072.63	99.8	70	120	
Ge	74	He	285605	1.9	3	294264.1	97.06	70	120	
Ge	74	HEHe	259201	0.6	3	257780.75	100.55	70	120	
Rh	103	No Gas	1564603	1.4	3	1588021.85	98.53	70	120	
Rh	103	He	778009	1.4	3	800670.94	97.17	70	120	
Tb	159	No Gas	2842113	0.9	3	2769499.89	102.62	70	120	
Tb	159	He	1556019	0.0	3	1549761.4	100.4	70	120	
Bi	209	No Gas	1496479	0.8	3	1455457.42	102.82	70	120	

Calibration Standard Report ICPMS6

Sample Name	**0B24036-CAL8**	**Sample Type**	CalStd
File Name	013CALS.d	**Vial #**	2108
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	1.0000
Acq Time	02/24/2020 11:25:00	**Sample QC Pass/Fail**	Fail
Comment	A20A197	**ISTD Ref File**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune	Raw Conc.	Units	CPS	CPS RSD	Rep	Int. sec	QC Flag
Be	9	6	No Gas	0.015	ug/l	153	26.1	3	0.3000	RSD Warning
Na	23	45	He	9949.77	ug/l	18700742	1.0	3	0.2001	
Mg	24	45	He	10011.101	ug/l	10198021	0.6	3	0.2001	
Al	27	45	He	10090.337	ug/l	5080624	1.1	3	0.2001	
K	39	45	He	9817.028	ug/l	10474021	1.0	3	0.2001	
Ca	44	45	He	10083.46	ug/l	548728	1.0	3	0.2001	
Ti	47	45	He	491.466	ug/l	154541	0.1	3	0.3000	
V	51	74	He	498.514	ug/l	4292163	0.6	3	0.3000	
Cr	52	74	He	498.896	ug/l	5045572	1.6	3	0.3000	
Mn	55	74	He	497.801	ug/l	3518024	0.9	3	0.3000	
Fe	56	74	He	10180.218	ug/l	92362104	1.0	3	0.3000	
Co	59	74	He	498.984	ug/l	7380840	0.9	3	0.3000	
Ni	60	74	He	519.955	ug/l	1857770	0.5	3	0.3000	
Cu	65	74	He	528.586	ug/l	2438662	1.1	3	0.3000	
Cu	65	74	No Gas	503.358	ug/l	6602655	2.7	3	0.3000	
Zn	66	74	He	518.951	ug/l	895615	0.7	3	0.3000	
As	75	74	He	499.197	ug/l	655213	0.3	3	2.0001	
Se	78	74	HEHe	0.047	ug/l	12	6.0	3	3.0000	
Mo	95	103	He	0.078	ug/l	496	4.9	3	0.3000	
[Cd]	106	103	No Gas	491.355	ug/l	364523	1.4	3	0.3000	
[Cd]	108	103	No Gas	493.512	ug/l	269704	2.3	3	0.3000	
Ag	109	103	No Gas	0.013	ug/l	529	11.8	3	0.3000	
Cd	111	103	He	503.489	ug/l	1675225	1.2	3	0.3000	
Cd	111	103	No Gas	503.539	ug/l	4291313	1.8	3	0.3000	
Sb	123	103	No Gas	0.056	ug/l	1546	1.6	3	0.3000	
Ba	138	159	He	484.509	ug/l	12139609	0.1	3	0.3000	
W	186	159	No Gas	100	ug/l	3115091	0.9	3	0.0999	
Hg	201	159	No Gas	125.862	ng/l	496	4.5	3	2.0001	
Tl	205	159	No Gas	0.135	ug/l	10225	4.9	3	0.3000	
Pb	208	159	No Gas	498.057	ug/l	49773753	0.4	3	0.3000	

QC ISTD Table

Name	Mass	Tune	CPS	CPS RSD	Rep	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	871013	2.3	3	902319.09	96.53	70	120	
Sc	45	He	328697	1.4	3	362738.6	90.62	70	120	
Ge	74	No Gas	1592582	2.7	3	1669072.63	95.42	70	120	
Ge	74	He	264871	0.9	3	294264.1	90.01	70	120	
Ge	74	HEHe	246340	0.4	3	257780.75	95.56	70	120	
Rh	103	No Gas	1498184	3.5	3	1588021.85	94.34	70	120	
Rh	103	He	728349	0.5	3	800670.94	90.97	70	120	
Tb	159	No Gas	2808681	1.8	3	2769499.89	101.41	70	120	
Tb	159	He	1514790	0.4	3	1549761.4	97.74	70	120	
Bi	209	No Gas	1455137	0.4	3	1455457.42	99.98	70	120	

Calibration Standard Report ICPMS6

Sample Name	**0B24036-CAL9**	**Sample Type**	CalStd
File Name	014CALS.d	**Vial #**	2109
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	1.0000
Acq Time	02/24/2020 11:29:35	**Sample QC Pass/Fail**	Fail
Comment	A20A198	**ISTD Ref File**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune	Raw Conc.	Units	CPS	CPS RSD	Rep	Int. sec	QC Flag
Be	9	6	No Gas	0.007	ug/l	100	15.3	3	0.3000	RSD Warning
Na	23	45	He	50009.915	ug/l	97425110	0.8	3	0.2001	
Mg	24	45	He	49985.142	ug/l	52789228	0.4	3	0.2001	
Al	27	45	He	49968.251	ug/l	26086307	1.2	3	0.2001	
K	39	45	He	50035.858	ug/l	55208479	2.2	3	0.2001	
Ca	44	45	He	49973.751	ug/l	2814504	0.9	3	0.2001	
Ti	47	45	He	2501.933	ug/l	815755	1.5	3	0.3000	
V	51	74	He	-0.011	ug/l	1763	5.3	3	0.3000	
Cr	52	74	He	999.547	ug/l	10220332	1.2	3	0.3000	
Mn	55	74	He	2500.335	ug/l	17867446	2.2	3	0.3000	
Fe	56	74	He	49953.281	ug/l	458249220	2.0	3	0.3000	
Co	59	74	He	0.191	ug/l	2998	1.7	3	0.3000	
Ni	60	74	He	987.722	ug/l	3568101	1.8	3	0.3000	
Cu	65	74	He	982.822	ug/l	4585121	2.2	3	0.3000	
Cu	65	74	No Gas	996.346	ug/l	12561388	0.3	3	0.3000	
Zn	66	74	He	2495.282	ug/l	4352982	0.2	3	0.3000	
As	75	74	He	0.082	ug/l	164	10.9	3	2.0001	
Se	78	74	HEHe	0.092	ug/l	20	17.4	3	3.0000	RSD Warning
Mo	95	103	He	0.106	ug/l	636	4.9	3	0.3000	
[Cd]	106	103	No Gas	1005.247	ug/l	698178	0.6	3	0.3000	
[Cd]	108	103	No Gas	1003.551	ug/l	513381	0.8	3	0.3000	
Ag	109	103	No Gas	0.018	ug/l	673	3.5	3	0.3000	
Cd	111	103	He	998.279	ug/l	3161643	0.3	3	0.3000	
Cd	111	103	No Gas	997.422	ug/l	7957775	2.1	3	0.3000	
Sb	123	103	No Gas	0.029	ug/l	859	12.8	3	0.3000	
Ba	138	159	He	2503.169	ug/l	60137440	1.5	3	0.3000	
W	186	159	No Gas	0.346	ug/l	10378	3.0	3	0.0999	
Hg	201	159	No Gas	19.575	ng/l	80	10.1	3	2.0001	
Tl	205	159	No Gas	0.037	ug/l	2855	3.6	3	0.3000	
Pb	208	159	No Gas	0.116	ug/l	12090	1.0	3	0.3000	

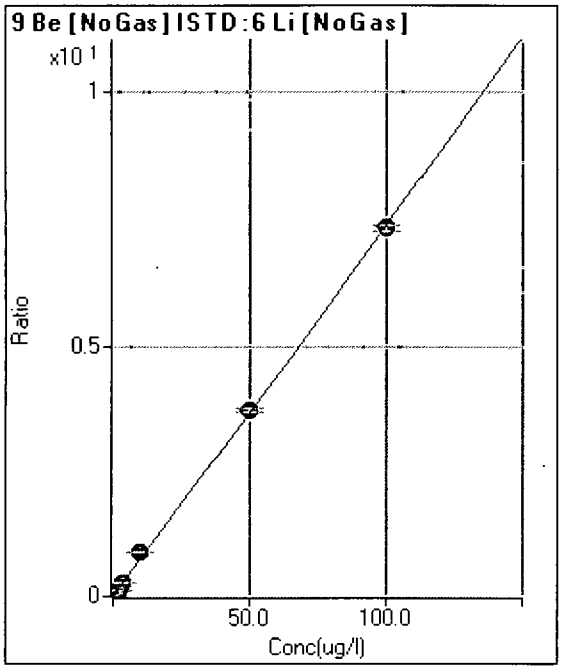
QC ISTD Table

Name	Mass	Tune	CPS	CPS RSD	Rep	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	848330	0.1	3	902319.09	94.02	70	120	
Sc	45	He	340783	0.8	3	362738.6	93.95	70	120	
Ge	74	No Gas	1530848	0.8	3	1669072.63	91.72	70	120	
Ge	74	He	267843	2.1	3	294264.1	91.02	70	120	
Ge	74	HEHe	233878	1.0	3	257780.75	90.73	70	120	
Rh	103	No Gas	1401934	0.5	3	1588021.85	88.28	70	120	
Rh	103	He	693303	0.9	3	800670.94	86.59	70	120	
Tb	159	No Gas	2701492	0.8	3	2769499.89	97.54	70	120	
Tb	159	He	1452443	0.6	3	1549761.4	93.72	70	120	
Bi	209	No Gas	1353982	1.2	3	1455457.42	93.03	70	120	

Calibration for 015_ICV.d

Batch Folder: D:\Agilent\ICPMH\1\DATA\0B24036.b\
Analysis File: 0B24036.batch.bin
DA Date-Time: 02/24/2020 13:57:10
Calibration Title:
Calibration Method: External Calibration
VIS Interpolation Fit:

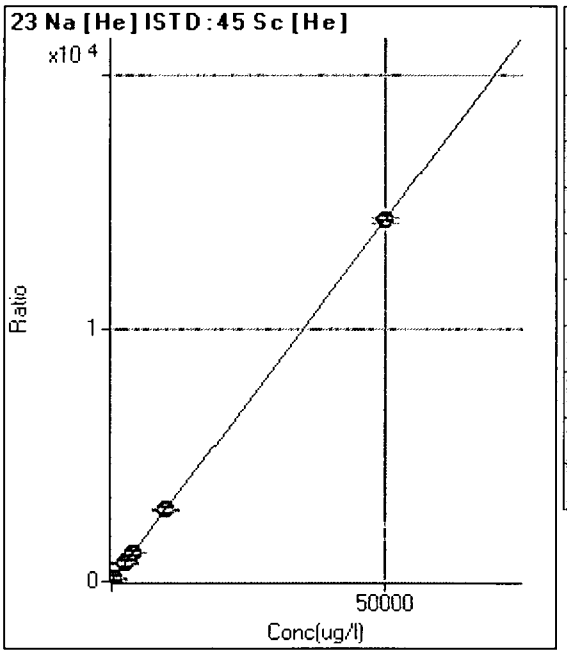
Level	Standard Data File	Sample Name	Acq. Date-Time
1	005CALB.d	0B24036-CAL0	02/24/2020 10:46:20
2	006CALS.d	0B24036-CAL1	02/24/2020 10:51:14
3	007CALS.d	0B24036-CAL2	02/24/2020 10:56:08
4	008CALS.d	0B24036-CAL3	02/24/2020 11:01:01
5	009CALS.d	0B24036-CAL4	02/24/2020 11:05:54
6	010CALS.d	0B24036-CAL5	02/24/2020 11:10:45
7	011CALS.d	0B24036-CAL6	02/24/2020 11:15:37
8	012CALS.d	0B24036-CAL7	02/24/2020 11:20:23
9	013CALS.d	0B24036-CAL8	02/24/2020 11:25:00
10	014CALS.d	0B24036-CAL9	02/24/2020 11:29:35



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	58	0.001	P	20.5
2	☐	0.180	0.195	1367	0.015	P	3.7
3	☐	0.900	0.933	6562	0.070	P	2.6
4	☐	1.800	1.825	13431	0.135	P	1.0
5	☐	3.600	3.659	25976	0.271	P	0.5
6	☐	10.000	12.161	87754	0.898	P	2.4
7	☐	50.000	50.720	360837	3.745	P	2.4
8	☐	100.000	99.421	676864	7.340	P	1.5
9	☐			153	0.002	P	25.2
10	☐			100	0.001	P	15.2

y = 0.0738 * x + 6.4052E-004
R = 0.9998
DL = 0.00534
BEC = 0.008677

Weight: <None>
Min Conc: <None>

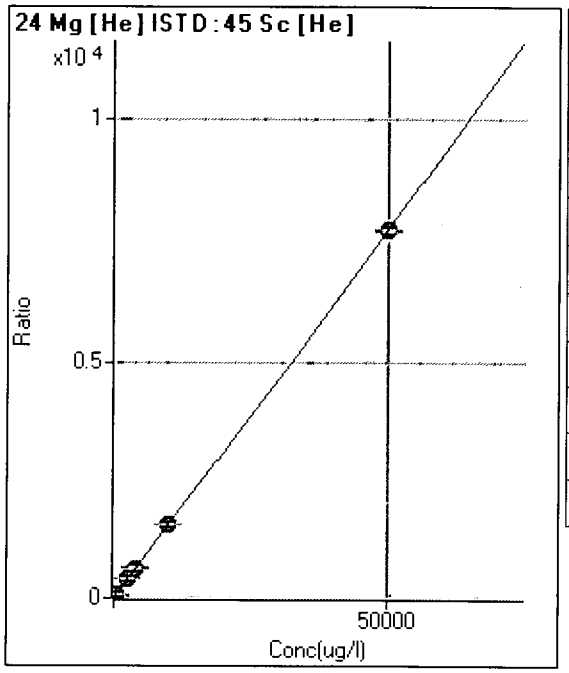


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	7590	1.046	P	1.5
2	☐			27267	3.734	P	0.7
3	☐	45.000	47.340	105127	14.577	P	1.2
4	☐	90.000	90.787	215283	26.996	P	1.0
5	☐	180.000	184.555	406422	53.798	P	1.2
6	☐	400.000	466.211	994590	134.304	P	0.8
7	☐	2500.000	2524.319	5208987	722.579	A	2.8
8	☐	4000.000	3979.572	8055371	1,138.537	A	0.4
9	☐	10000.000	9949.770	18700742	2,845.014	A	1.6
10	☐	50000.000	50009.915	97425110	14,295.504	A	1.6

y = 0.2858 * x + 1.0462
R = 1.0000
DL = 0.1681
BEC = 3.66

Weight: <None>
Min Conc: <None>

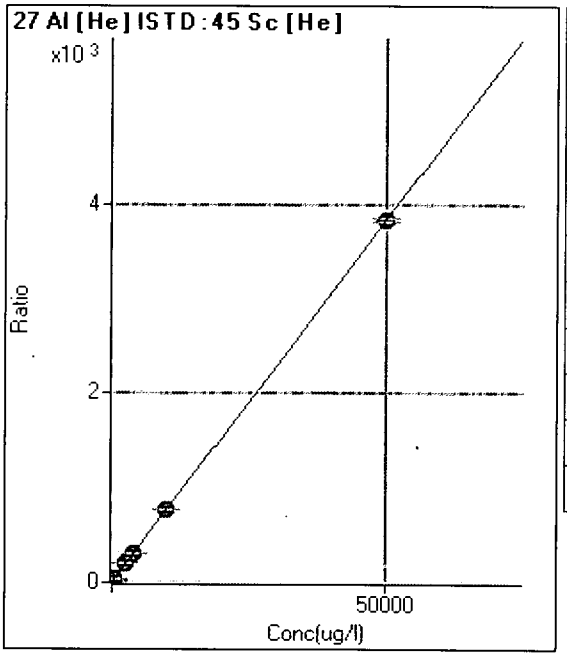
Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1553	0.214	P	8.1
2	☐			12233	1.675	P	0.9
3	☐	45.000	48.227	55436	7.687	P	1.2
4	☐	90.000	92.701	116253	14.578	P	1.5
5	☐	180.000	187.231	220791	29.226	P	1.1
6	☐	400.000	474.901	546523	73.800	P	1.2
7	☐	2500.000	2610.332	2917135	404.686	A	3.2
8	☐	4000.000	4081.105	4474979	632.583	A	1.3
9	☐	10000.000	10011.101	10198021	1,551.439	A	1.2
10	☐	50000.000	49985.142	52789228	7,745.436	A	0.4

y = 0.1550 * x + 0.2141
R = 1.0000
DL = 0.3342
BEC = 1.382

Weight: <None>
Min Conc: <None>

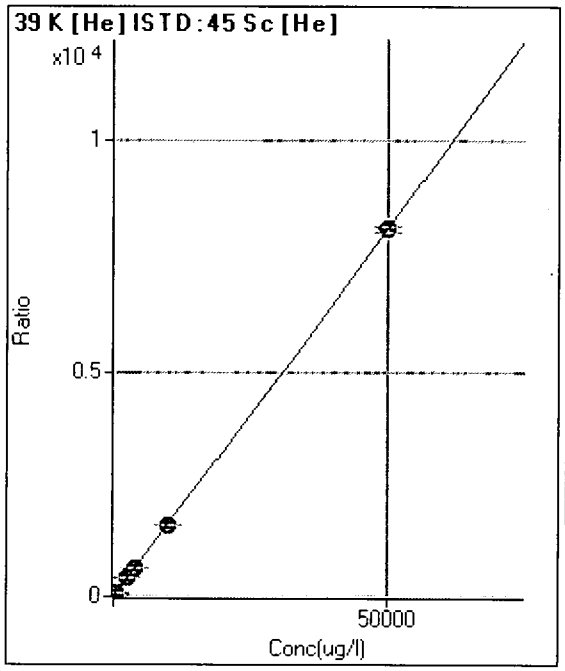


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	178	0.025	P	15.0
2	☐			5590	0.766	P	1.1
3	☐	45.000	47.161	26229	3.637	P	0.5
4	☐	90.000	95.083	58274	7.308	P	1.2
5	☐	180.000	186.605	108174	14.318	P	0.4
6	☐	400.000	474.691	269441	36.384	P	1.2
7	☐	2500.000	2615.893	1444305	200.392	A	3.7
8	☐	4000.000	4090.680	2217080	313.355	A	0.2
9	☐	10000.000	10090.337	5080624	772.907	A	1.3
10	☐	50000.000	49968.251	26086307	3,827.405	A	1.0

y = 0.0766 * x + 0.0246
R = 1.0000
DL = 0.1442
BEC = 0.321

Weight: <None>
Min Conc: <None>

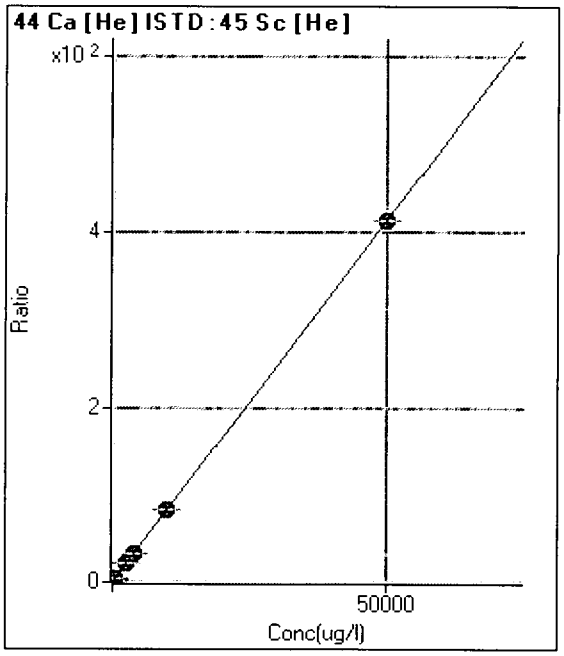
Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	37634	5.187	P	1.1
2	☐			48942	6.702	P	0.4
3	☐	45.000	47.427	92753	12.860	P	1.6
4	☐	90.000	94.325	163053	20.447	P	1.4
5	☐	180.000	184.032	264120	34.959	P	1.1
6	☐	400.000	468.797	600062	81.028	P	0.4
7	☐	2500.000	2557.376	3019721	418.915	A	3.1
8	☐	4000.000	3966.162	4577131	646.826	A	1.7
9	☐	10000.000	9817.028	10474021	1,593.368	A	0.9
10	☐	50000.000	50035.858	55208479	8,099.899	A	1.7

y = 0.1618 * x + 5.1872
R = 1.0000
DL = 1.099
BEC = 32.06

Weight: <None>
Min Conc: <None>

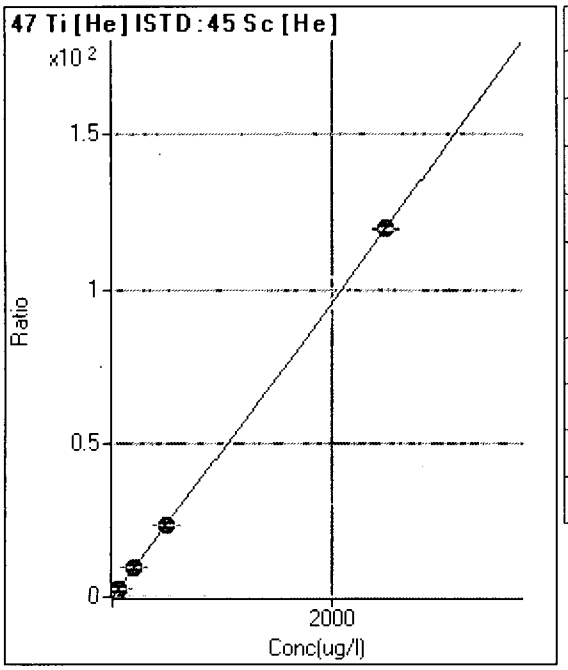


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1398	0.193	P	6.3
2	☐			1858	0.254	P	4.6
3	☐	45.000	45.554	4102	0.569	P	3.3
4	☐	90.000	92.092	7602	0.953	P	1.3
5	☐	180.000	181.638	12791	1.693	P	3.1
6	☐	400.000	464.761	29853	4.031	P	1.3
7	☐	2500.000	2621.053	157445	21.841	P	2.9
8	☐	4000.000	4037.207	237276	33.537	P	0.7
9	☐	10000.000	10083.460	548728	83.476	P	1.0
10	☐	50000.000	49973.751	2814504	412.945	A	0.1

y = 0.0083 * x + 0.1926
R = 1.0000
DL = 4.376
BEC = 23.32

Weight: <None>
Min Conc: <None>

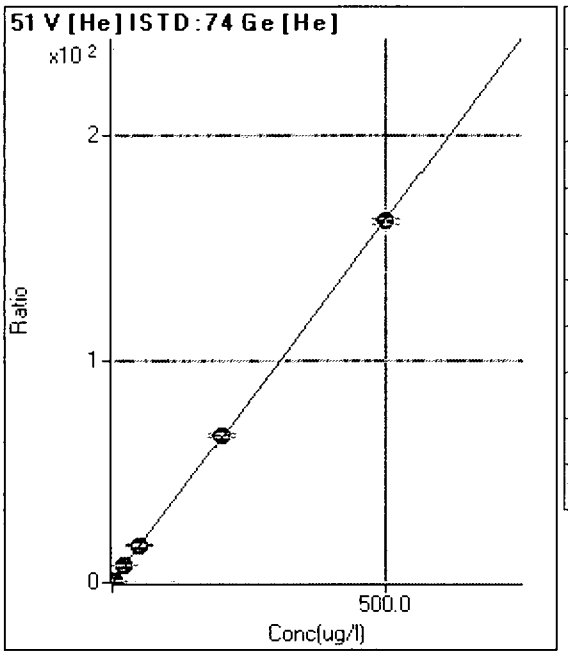
Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	7	0.001	P	99.6
2	☐			76	0.010	P	7.1
3	☐			318	0.044	P	13.9
4	☐	1.800	1.754	677	0.085	P	6.5
5	☐	3.600	3.431	1247	0.165	P	1.7
6	☐	20.000	23.057	8175	1.104	P	3.6
7	☐	50.000	50.488	17413	2.416	P	4.2
8	☐	200.000	196.745	66600	9.412	P	1.0
9	☐	500.000	491.466	154541	23.511	P	1.3
10	☐	2500.000	2501.933	815755	119.684	P	0.9

y = 0.0478 * x + 9.2076E-004
R = 1.0000
DL = 0.05752
BEC = 0.01925

Weight: <None>
Min Conc: <None>

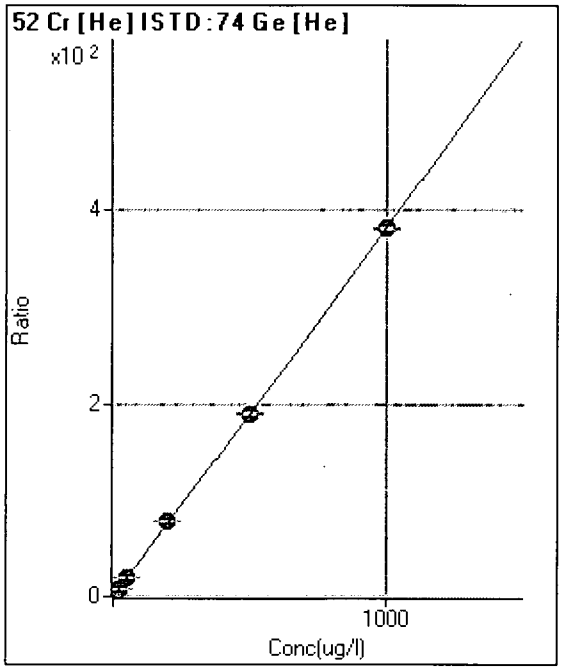


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2045	0.069	P	4.9
2	☐	0.180	0.188	3861	0.131	P	3.6
3	☐	0.900	0.913	10790	0.366	P	3.2
4	☐	1.800	1.800	20725	0.654	P	0.2
5	☐	3.600	3.630	37715	1.249	P	1.6
6	☐	20.000	22.941	227643	7.524	P	1.6
7	☐	50.000	50.678	485468	16.537	P	3.7
8	☐	200.000	203.252	1888621	66.116	A	2.8
9	☐	500.000	498.514	4292163	162.061	A	1.4
10	☐			1763	0.066	P	7.4

y = 0.3249 * x + 0.0695
R = 1.0000
DL = 0.03119
BEC = 0.2138

Weight: <None>
Min Conc: <None>

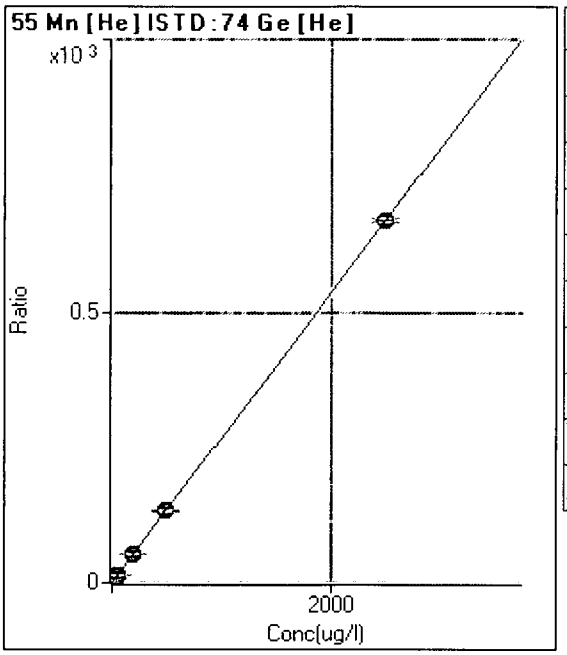
Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	592	0.020	P	15.8
2	☐	0.180	0.183	2655	0.090	P	2.8
3	☐	0.900	0.937	11134	0.378	P	1.7
4	☐	1.800	1.828	22746	0.718	P	1.2
5	☐	3.600	3.707	43348	1.436	P	0.7
6	☐	20.000	23.081	267224	8.832	P	0.7
7	☐	50.000	51.251	575002	19.586	P	3.5
8	☐	200.000	204.404	2229298	78.057	A	0.4
9	☐	500.000	498.896	5045572	190.487	A	0.9
10	☐	1000.000	999.547	10220332	381.623	A	0.9

y = 0.3818 * x + 0.0201
R = 1.0000
DL = 0.02493
BEC = 0.05271

Weight: <None>
Min Conc: <None>

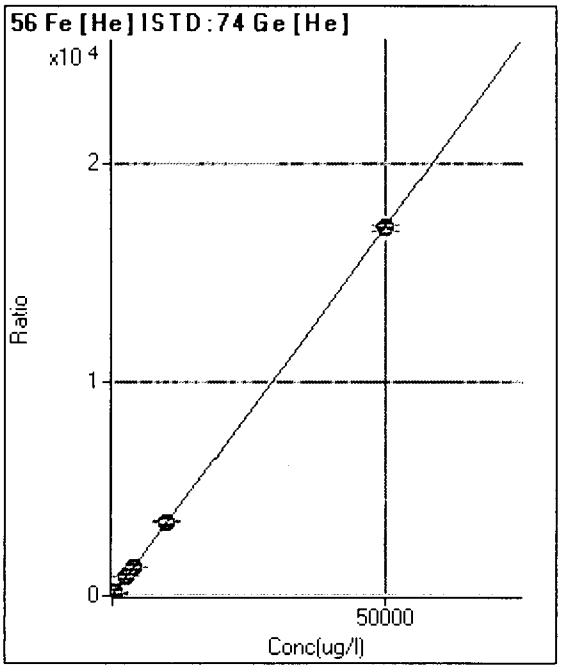


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	301	0.010	P	8.6
2	☐	0.180	0.186	1769	0.060	P	5.7
3	☐	0.900	0.910	7454	0.253	P	1.9
4	☐	1.800	1.800	15541	0.491	P	0.8
5	☐	3.600	3.637	29605	0.981	P	1.6
6	☐	20.000	22.988	185875	6.143	P	1.2
7	☐	50.000	50.793	398135	13.562	P	3.4
8	☐	200.000	200.809	1530434	53.585	A	1.7
9	☐	500.000	497.801	3518024	132.822	A	0.6
10	☐	2500.000	2500.335	17867446	667.092	A	1.0

y = 0.2668 * x + 0.0102
R = 1.0000
DL = 0.009936
BEC = 0.03836

Weight: <None>
Min Conc: <None>

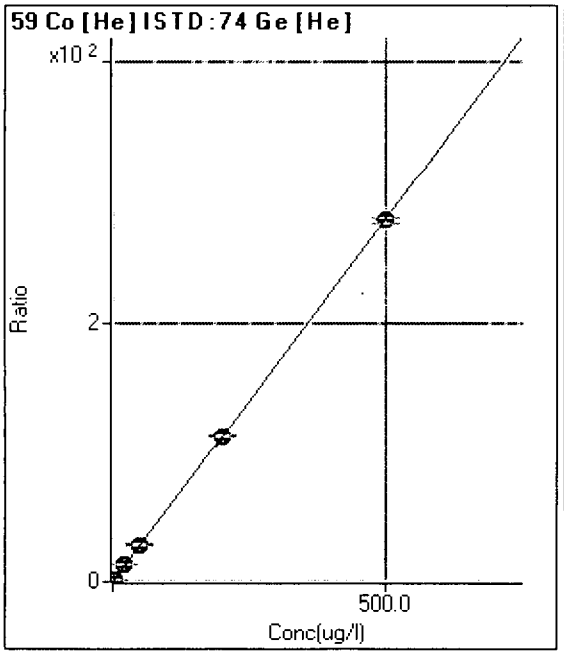
Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	16344	0.555	P	2.4
2	☐	9.000	9.619	113795	3.850	P	0.3
3	☐	45.000	47.951	500208	16.979	P	0.5
4	☐	90.000	94.188	1039527	32.816	P	0.4
5	☐	180.000	190.257	1984560	65.721	A	1.4
6	☐	400.000	469.070	4877595	161.219	A	2.5
7	☐	2500.000	2587.025	26030284	886.649	A	3.3
8	☐	4000.000	4071.559	39844987	1,395.124	A	0.3
9	☐	10000.000	10180.218	92362104	3,487.429	A	1.8
10	☐	50000.000	49953.281	458249220	17,110.287	A	1.5

y = 0.3425 * x + 0.5554
R = 1.0000
DL = 0.1164
BEC = 1.622

Weight: <None>
Min Conc: <None>

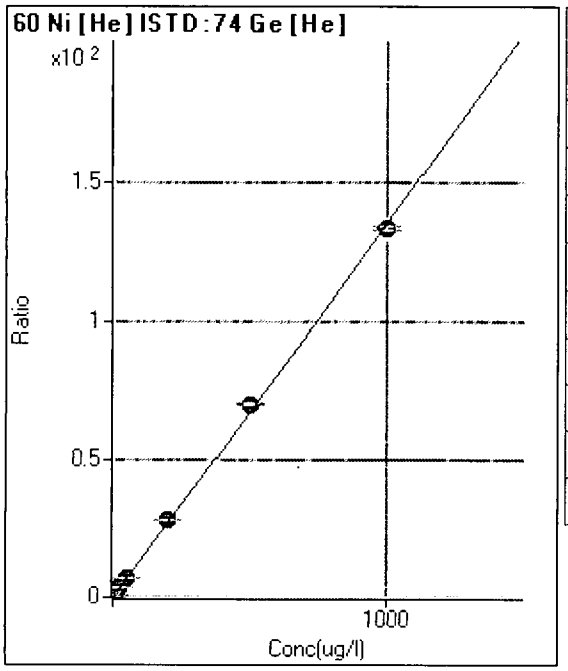


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	152	0.005	P	14.9
2	☐	0.180	0.188	3263	0.110	P	3.3
3	☐	0.900	0.947	15737	0.534	P	2.2
4	☐	1.800	1.823	32422	1.024	P	0.9
5	☐	3.600	3.695	62469	2.069	P	1.1
6	☐	20.000	23.317	394144	13.027	P	1.3
7	☐	50.000	51.219	839864	28.609	P	3.6
8	☐	200.000	201.900	3220501	112.761	A	0.4
9	☐	500.000	498.984	7380840	278.673	A	1.2
10	☐			2998	0.112	P	3.3

y = 0.5585 * x + 0.0052
R = 1.0000
DL = 0.00413
BEC = 0.009269

Weight: <None>
Min Conc: <None>

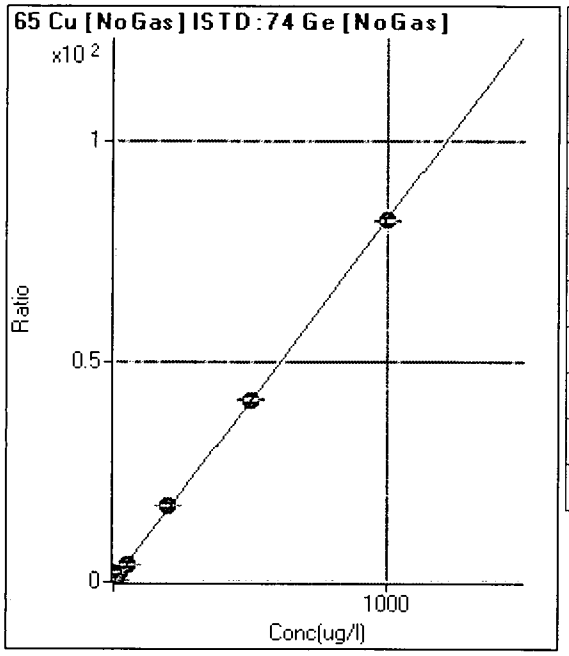
Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	709	0.024	P	13.5
2	☐	0.180	0.160	1351	0.046	P	8.2
3	☐	0.900	0.939	4439	0.151	P	2.7
4	☐	1.800	1.901	8886	0.281	P	1.1
5	☐	3.600	3.894	16584	0.549	P	1.5
6	☐	20.000	24.314	99933	3.303	P	2.0
7	☐	50.000	53.618	212958	7.255	P	3.9
8	☐	200.000	210.160	810068	28.366	P	0.7
9	☐	500.000	519.955	1857770	70.144	A	1.2
10	☐	1000.000	987.722	3568101	133.226	A	1.0

y = 0.1349 * x + 0.0241
R = 0.9997
DL = 0.07246
BEC = 0.1787

Weight: <None>
Min Conc: <None>

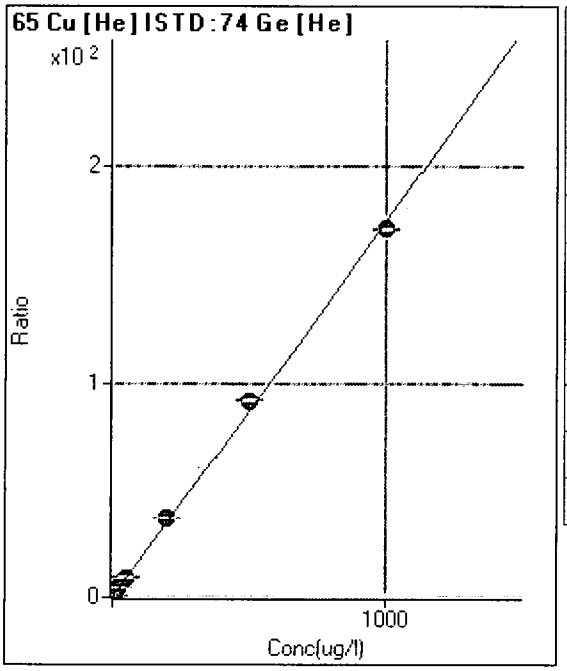


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1069	0.006	P	6.8
2	☐	0.180	0.177	3487	0.021	P	3.3
3	☐	0.900	0.899	13554	0.080	P	4.3
4	☐	1.800	1.825	27775	0.157	P	1.2
5	☐	3.600	3.672	52679	0.309	P	1.3
6	☐	20.000	25.004	355382	2.066	P	3.2
7	☐	50.000	49.598	698652	4.091	P	1.6
8	☐	200.000	209.474	2874498	17.257	A	0.9
9	☐	500.000	503.358	6602655	41.459	A	0.6
10	☐	1000.000	996.346	12561388	82.057	A	0.5

y = 0.0824 * x + 0.0064
R = 0.9999
DL = 0.01582
BEC = 0.07777

Weight: <None>
Min Conc: <None>

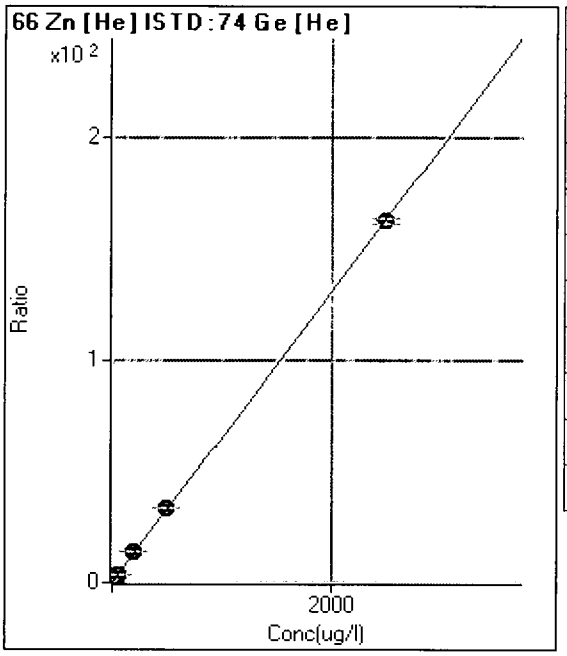
Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	396	0.013	P	4.2
2	☐	0.180	0.182	1337	0.045	P	1.9
3	☐	0.900	0.999	5519	0.187	P	3.2
4	☐	1.800	1.961	11245	0.355	P	1.4
5	☐	3.600	3.940	21127	0.700	P	0.2
6	☐	20.000	24.878	131496	4.346	P	2.3
7	☐	50.000	54.196	277482	9.452	P	3.6
8	☐	200.000	212.881	1059202	37.089	P	1.0
9	☐	500.000	528.586	2438662	92.073	A	1.1
10	☐	1000.000	982.822	4585121	171.183	A	0.3

y = 0.1742 * x + 0.0134
R = 0.9994
DL = 0.009731
BEC = 0.07719

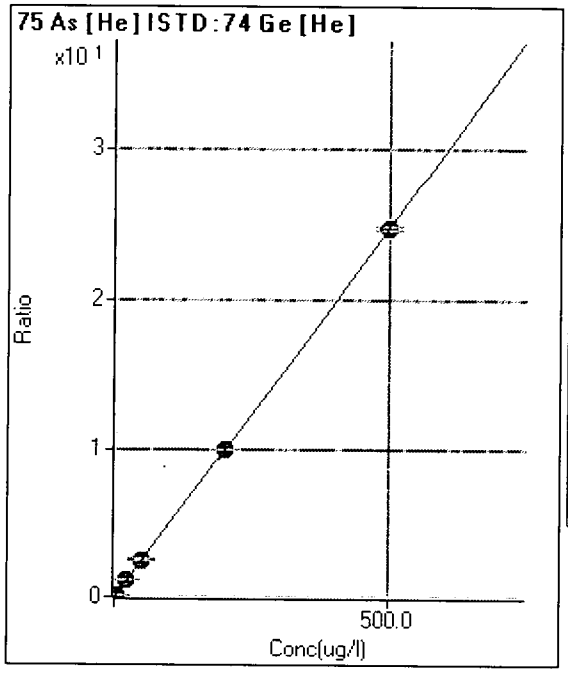
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	267	0.009	P	3.5
2	☐			597	0.020	P	1.3
3	☐	0.900	0.937	2065	0.070	P	6.2
4	☐	1.800	1.911	4231	0.134	P	1.7
5	☐	3.600	3.756	7664	0.254	P	2.8
6	☐	20.000	24.518	48599	1.606	P	1.5
7	☐	50.000	52.687	101029	3.441	P	3.4
8	☐	200.000	210.473	391823	13.720	P	0.6
9	☐	500.000	518.951	895615	33.815	P	1.3
10	☐	2500.000	2495.282	4352982	162.561	A	1.9

y = 0.0651 * x + 0.0091
R = 1.0000
DL = 0.0148
BEC = 0.1391

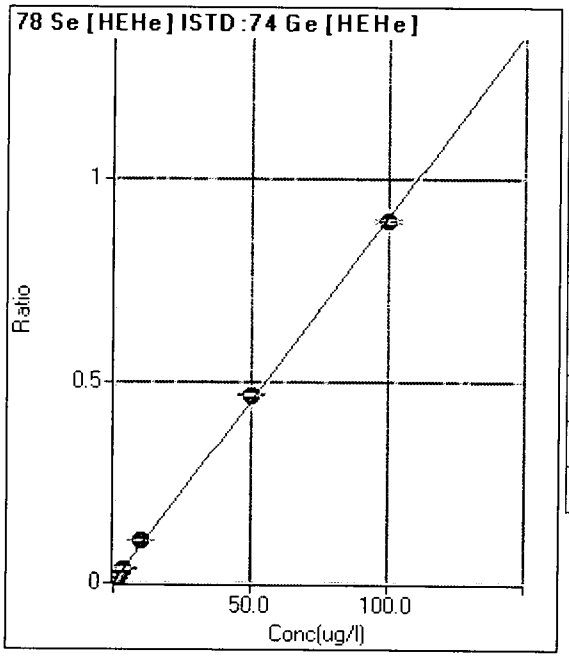
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	61	0.002	P	8.0
2	☐	0.180	0.181	326	0.011	P	3.1
3	☐	0.900	0.957	1458	0.049	P	1.8
4	☐	1.800	1.828	2934	0.093	P	0.4
5	☐	3.600	3.717	5622	0.186	P	2.9
6	☐	20.000	23.458	35232	1.164	P	1.2
7	☐	50.000	51.245	74602	2.541	P	3.8
8	☐	200.000	201.349	285021	9.979	P	0.4
9	☐	500.000	499.197	655213	24.738	P	1.0
10	☐			164	0.006	P	10.5

y = 0.0496 * x + 0.0021
R = 1.0000
DL = 0.009925
BEC = 0.0416

Weight: <None>
Min Conc: <None>

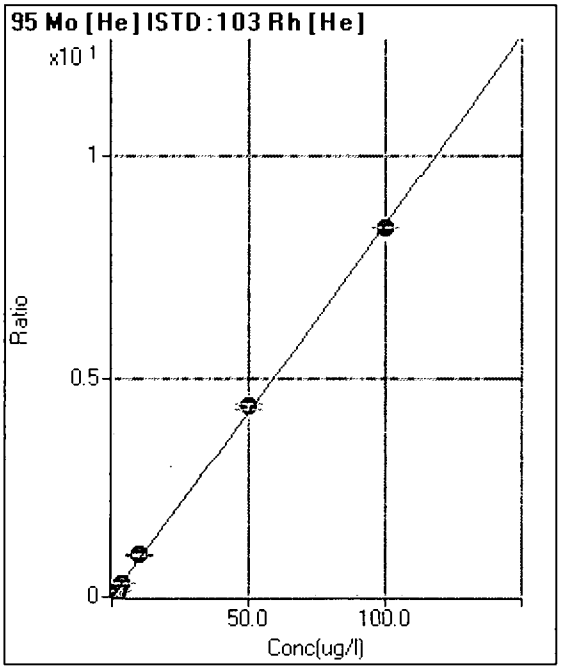


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1	0.000	P	45.2
2	☐	0.180	0.184	44	0.002	P	5.2
3	☐	0.900	0.984	232	0.009	P	2.7
4	☐	1.800	1.896	464	0.017	P	4.6
5	☐	3.600	3.868	911	0.035	P	4.3
6	☐	10.000	11.361	2702	0.103	P	0.6
7	☐	50.000	51.576	12033	0.466	P	1.4
8	☐	100.000	99.064	23186	0.895	P	1.2
9	☐			12	0.000	P	5.8
10	☐			20	0.001	P	18.5

y = 0.0090 * x + 4.3134E-005
R = 0.9998
DL = 0.00648
BEC = 0.004777

Weight: <None>
Min Conc: <None>

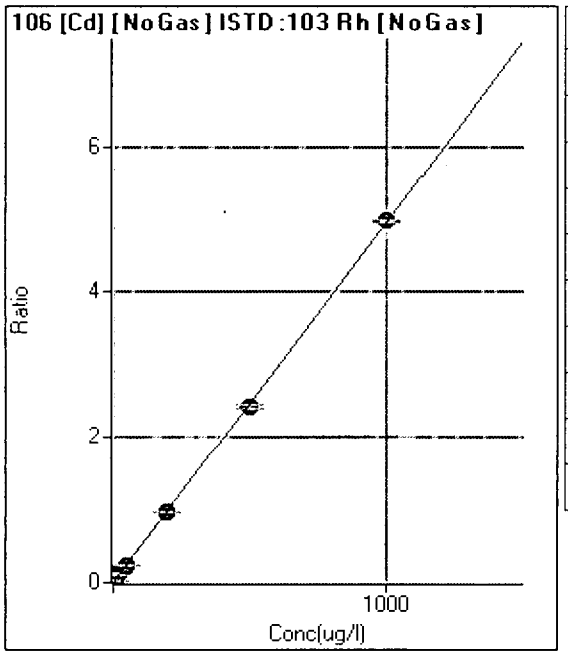
Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	18	0.000	P	39.3
2	☐	0.180	0.182	1257	0.016	P	3.9
3	☐	0.900	0.898	6129	0.076	P	2.1
4	☐	1.800	1.772	12623	0.150	P	2.8
5	☐	3.600	3.640	25240	0.308	P	1.2
6	☐	10.000	11.375	78596	0.963	P	1.7
7	☐	50.000	51.299	344853	4.341	P	3.7
8	☐	100.000	99.212	653107	8.395	P	0.1
9	☐			496	0.007	P	5.1
10	☐			636	0.009	P	5.8

y = 0.0846 * x + 2.2211E-004
R = 0.9998
DL = 0.003094
BEC = 0.002625

Weight: <None>
Min Conc: <None>

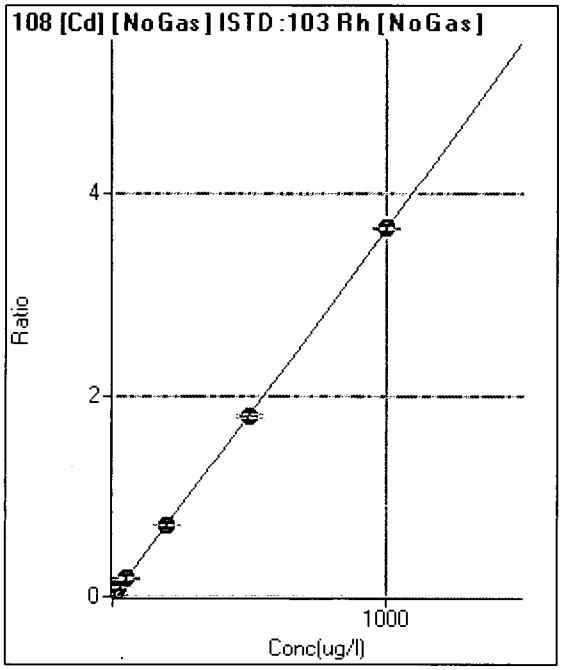


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	12	0.000	P	63.0
2	☐	0.180	0.204	172	0.001	P	21.4
3	☐	0.900	0.911	747	0.005	P	2.2
4	☐	1.800	1.813	1525	0.009	P	4.3
5	☐	3.600	3.673	2943	0.018	P	1.0
6	☐	20.000	24.153	19672	0.120	P	4.8
7	☐	50.000	48.617	39089	0.241	P	1.0
8	☐	200.000	195.307	151401	0.968	P	0.5
9	☐	500.000	491.355	364523	2.434	P	2.1
10	☐	1000.000	1005.247	698178	4.980	P	0.5

y = 0.0050 * x + 7.6986E-005
R = 0.9999
DL = 0.02939
BEC = 0.01554

Weight: <None>
Min Conc: <None>

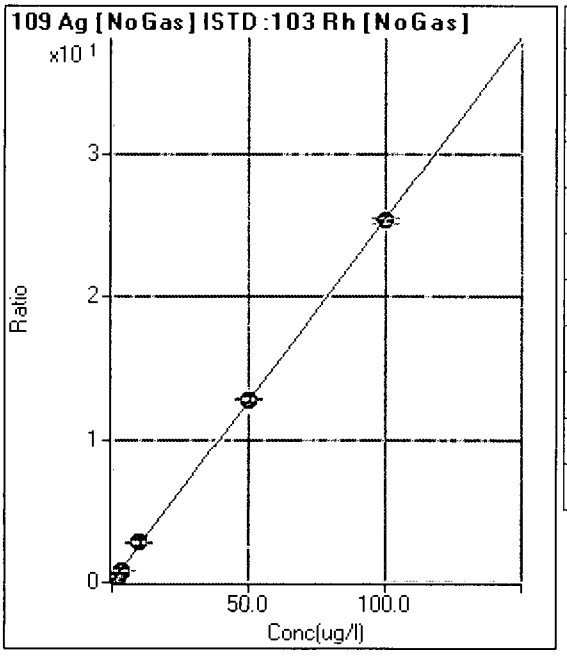
Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	9	0.000	P	57.1
2	☐	0.180	0.215	133	0.001	P	8.6
3	☐	0.900	0.985	592	0.004	P	5.4
4	☐	1.800	1.761	1091	0.006	P	2.2
5	☐	3.600	3.671	2166	0.013	P	0.9
6	☐	20.000	24.721	14833	0.090	P	3.3
7	☐	50.000	50.582	29954	0.185	P	1.1
8	☐	200.000	197.844	112958	0.722	P	0.4
9	☐	500.000	493.512	269704	1.801	P	1.9
10	☐	1000.000	1003.551	513381	3.662	P	0.3

y = 0.0036 * x + 5.5848E-005
R = 1.0000
DL = 0.02624
BEC = 0.01531

Weight: <None>
Min Conc: <None>

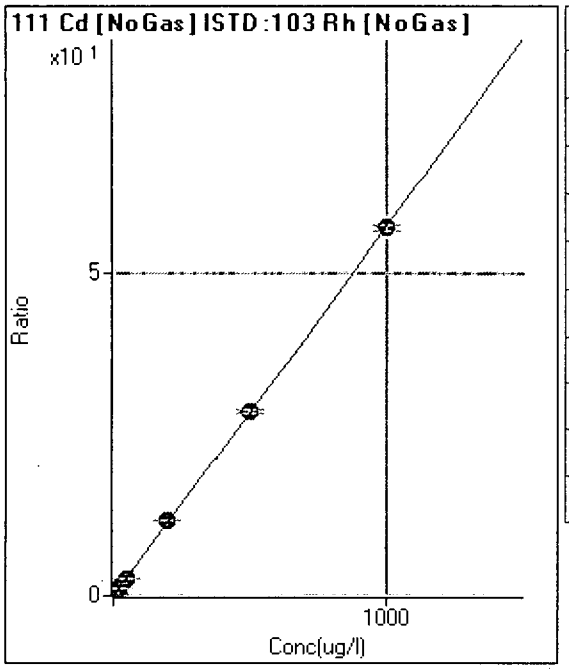


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	43	0.000	P	21.1
2	☐	0.180	0.168	6805	0.043	P	2.2
3	☐	0.900	0.822	33959	0.209	P	3.0
4	☐	1.800	1.618	69225	0.411	P	1.0
5	☐	3.600	3.339	136619	0.849	P	0.5
6	☐	10.000	11.002	459374	2.795	P	3.3
7	☐	50.000	50.375	2076770	12.798	A	1.5
8	☐	100.000	99.726	3963995	25.336	A	1.6
9	☐			529	0.004	P	9.2
10	☐			673	0.005	P	3.2

y = 0.2541 * x + 2.7316E-004
R = 0.9999
DL = 0.0006817
BEC = 0.001075

Weight: <None>
Min Conc: <None>

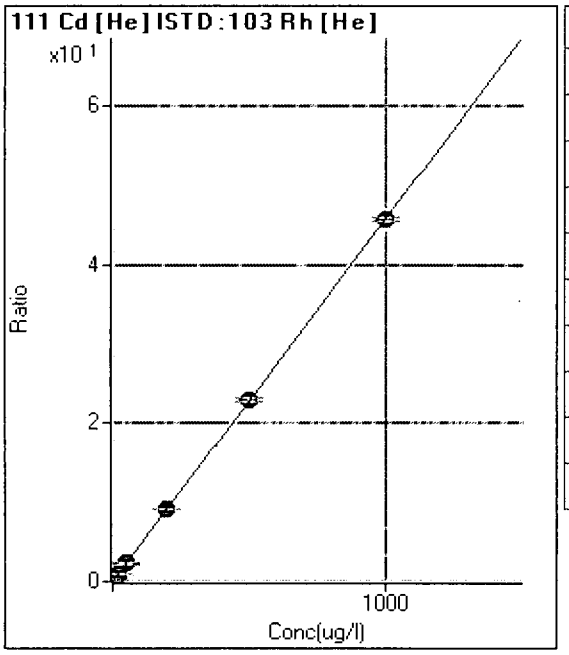
Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	9	0.000	P	197.2
2	☐	0.180	0.171	1552	0.010	P	12.3
3	☐	0.900	0.845	7816	0.048	P	2.8
4	☐	1.800	1.651	15819	0.094	P	1.2
5	☐	3.600	3.464	31743	0.197	P	0.4
6	☐	20.000	23.254	217462	1.323	P	3.5
7	☐	50.000	46.601	430256	2.652	P	1.0
8	☐	200.000	204.570	1821269	11.641	A	0.8
9	☐	500.000	503.539	4291313	28.655	A	1.7
10	☐	1000.000	997.422	7957775	56.760	A	1.6

y = 0.0569 * x + 5.5006E-005
R = 1.0000
DL = 0.005719
BEC = 0.0009666

Weight: <None>
Min Conc: <None>

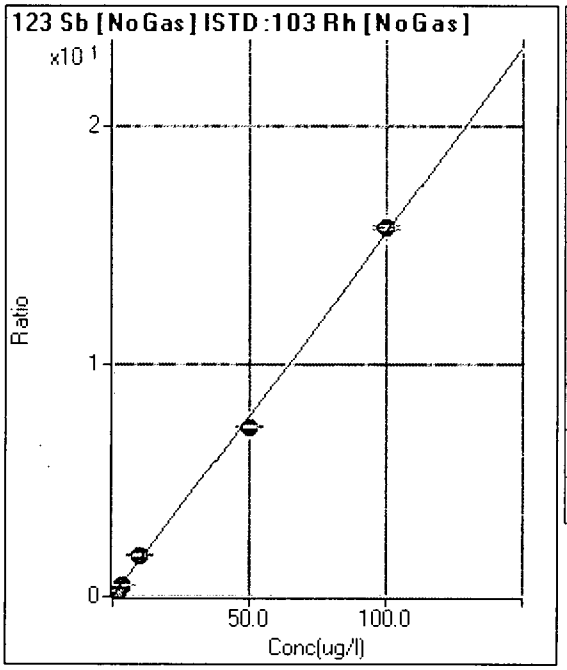


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	4	0.000	P	114.3
2	☐	0.180	0.186	687	0.009	P	13.5
3	☐	0.900	0.928	3414	0.042	P	1.4
4	☐	1.800	1.789	6877	0.082	P	1.1
5	☐	3.600	3.628	13577	0.166	P	1.6
6	☐	20.000	22.884	85360	1.045	P	0.5
7	☐	50.000	50.275	182480	2.297	P	3.6
8	☐	200.000	199.524	709177	9.115	P	0.5
9	☐	500.000	503.489	1675225	23.001	A	1.6
10	☐	1000.000	998.279	3161643	45.605	A	1.1

y = 0.0457 * x + 5.5679E-005
R = 1.0000
DL = 0.00418
BEC = 0.001219

Weight: <None>
Min Conc: <None>

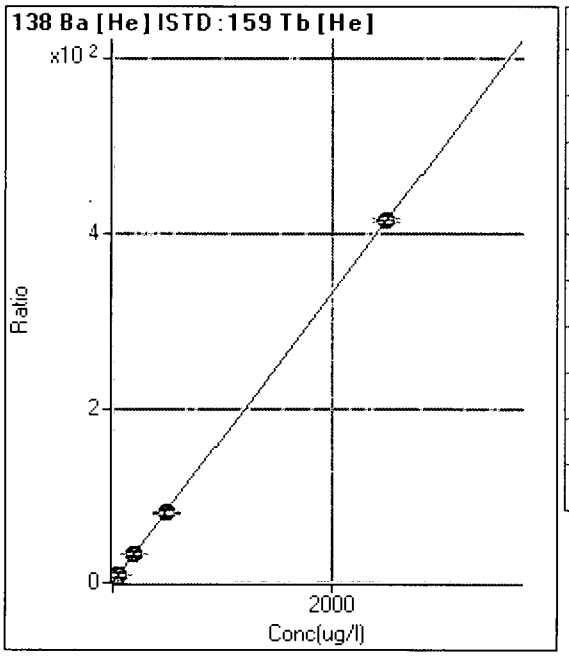
Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	269	0.002	P	11.0
2	☐	0.180	0.174	4549	0.029	P	4.3
3	☐	0.900	0.846	21558	0.133	P	4.8
4	☐	1.800	1.655	43452	0.258	P	1.6
5	☐	3.600	3.434	85948	0.534	P	0.4
6	☐	10.000	11.512	293408	1.786	P	3.6
7	☐	50.000	46.982	1181431	7.282	P	0.9
8	☐	100.000	101.367	2457654	15.709	A	1.0
9	☐			1546	0.010	P	5.1
10	☐			859	0.006	P	12.5

y = 0.1550 * x + 0.0017
R = 0.9993
DL = 0.003605
BEC = 0.01092

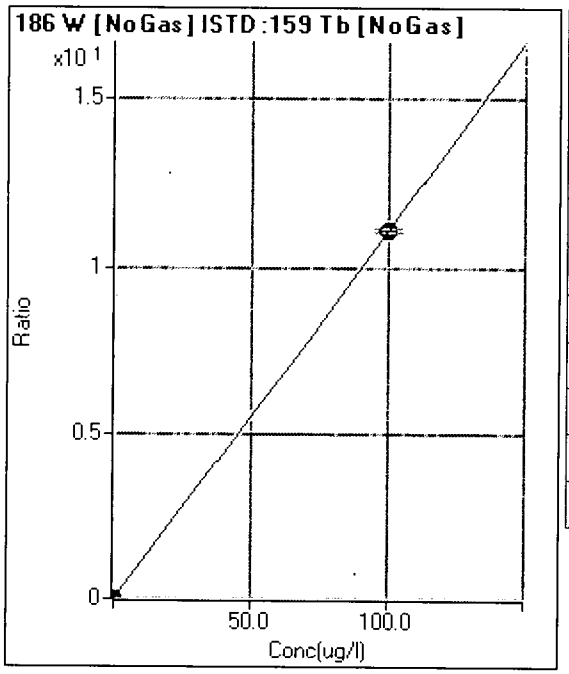
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	163	0.001	P	2.5
2	☐	0.180	0.188	5045	0.032	P	1.6
3	☐	0.900	0.931	23990	0.155	P	1.7
4	☐	1.800	1.891	50511	0.314	P	1.1
5	☐	3.600	3.712	98087	0.615	P	1.6
6	☐	20.000	23.694	617296	3.920	P	0.6
7	☐	50.000	52.170	1349321	8.630	A	4.0
8	☐	200.000	198.205	5101457	32.785	A	1.8
9	☐	500.000	484.509	12139609	80.141	A	0.4
10	☐	2500.000	2503.169	60137440	414.038	A	1.2

y = 0.1654 * x + 0.0011
R = 1.0000
DL = 0.0004843
BEC = 0.006371

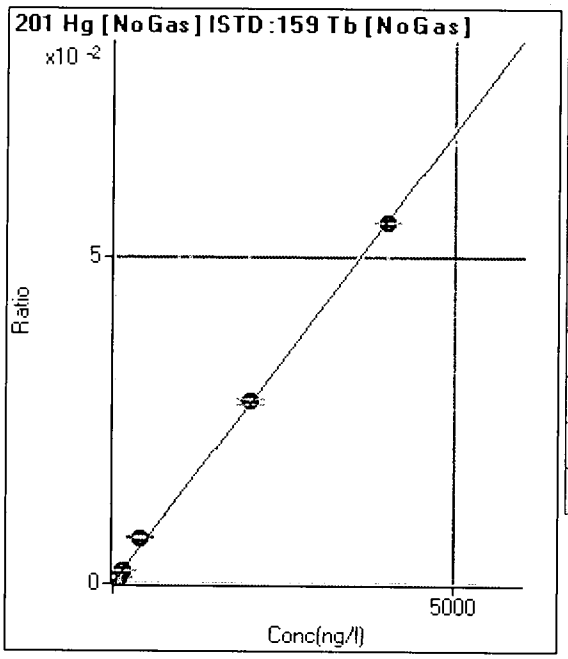
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	27	0.000	P	22.6
2	☐			30	0.000	P	32.7
3	☐			43	0.000	P	49.9
4	☐			50	0.000	P	19.4
5	☐			73	0.000	P	39.8
6	☐			117	0.000	P	30.5
7	☐			360	0.001	P	12.9
8	☐			721	0.003	P	6.1
9	☐	100.000	100.000	3115091	11.092	A	0.9
10	☐			10378	0.038	P	3.7

y = 0.1109 * x + 9.6548E-005
R = 1.0000
DL = 0.0005892
BEC = 0.0008704

Weight: <None>
Min Conc: <None>

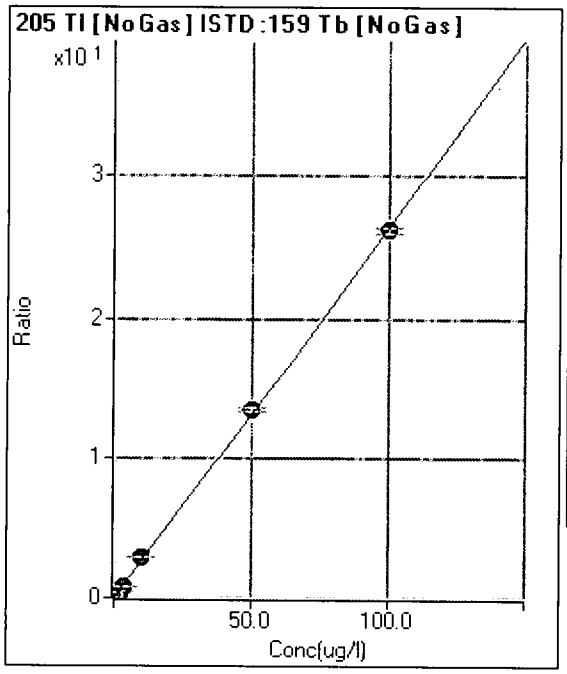


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	7	0.000	P	37.1
2	☐			36	0.000	P	17.6
3	☐	36.000	37.226	154	0.001	P	3.8
4	☐	72.000	71.756	289	0.001	P	1.0
5	☐	144.000	148.018	587	0.002	P	2.3
6	☐	400.000	510.128	2025	0.007	P	2.8
7	☐	2000.000	2016.686	8051	0.028	P	2.9
8	☐	4000.000	3980.493	15665	0.055	P	0.2
9	☐			496	0.002	P	6.1
10	☐			80	0.000	P	9.8

y = 1.3840E-005 * x + 2.5767E-005
R = 0.9996
DL = 2.07
BEC = 1.862

Weight: <None>
Min Conc: <None>

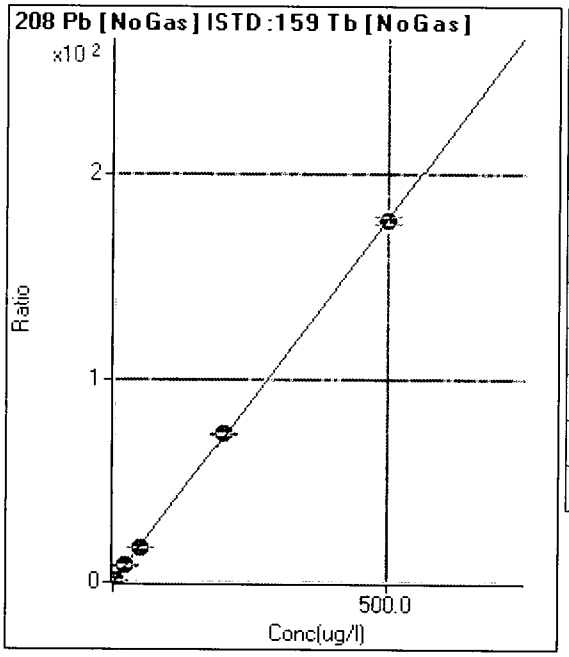
Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	197	0.001	P	20.8
2	☐	0.180	0.165	12288	0.044	P	3.5
3	☐	0.900	0.825	62041	0.218	P	2.4
4	☐	1.800	1.594	119585	0.421	P	1.3
5	☐	3.600	3.299	246638	0.871	P	0.7
6	☐	10.000	11.058	834231	2.919	P	3.4
7	☐	50.000	51.007	3880050	13.463	A	1.9
8	☐	100.000	99.406	7455893	26.236	A	1.6
9	☐			10225	0.036	P	3.6
10	☐			2855	0.011	P	2.9

y = 0.2639 * x + 7.1239E-004
R = 0.9999
DL = 0.001683
BEC = 0.002699

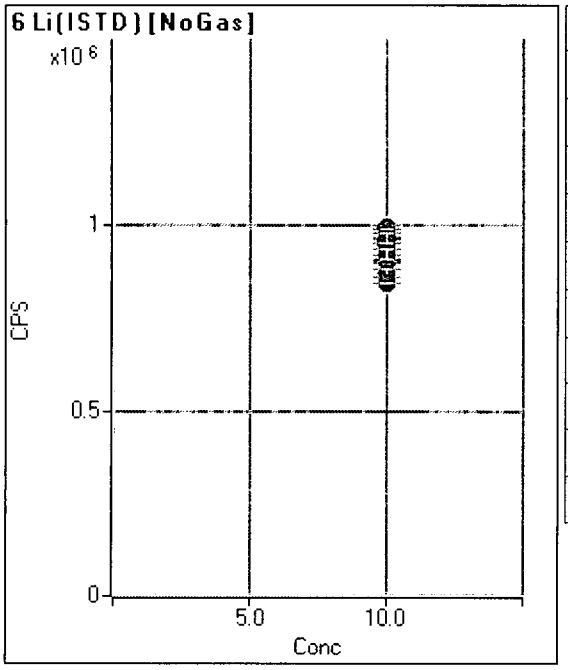
Weight: <None>
Min Conc: <None>



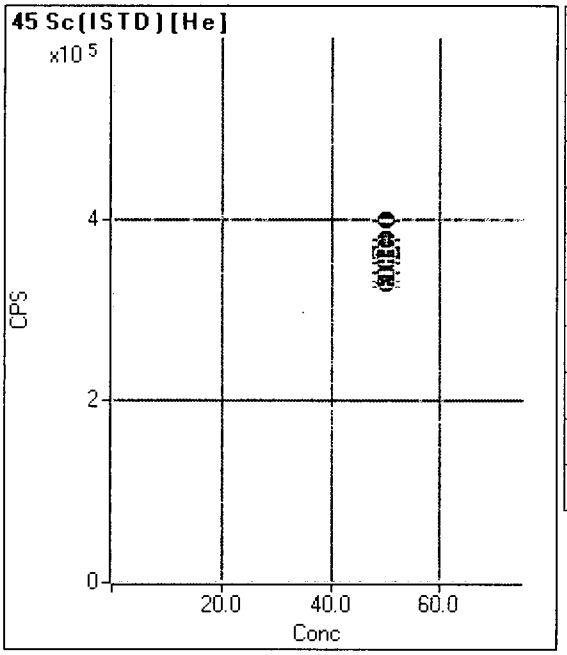
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	937	0.003	P	4.8
2	☐	0.180	0.167	17505	0.063	P	2.4
3	☐	0.900	0.833	85109	0.300	P	4.4
4	☐	1.800	1.632	165844	0.584	P	1.0
5	☐	3.600	3.334	336867	1.190	P	1.1
6	☐	20.000	22.712	2310642	8.087	P	4.0
7	☐	50.000	48.419	4967765	17.236	A	1.4
8	☐	200.000	204.989	20734166	72.958	A	1.1
9	☐	500.000	498.057	49773753	177.260	A	2.2
10	☐			12090	0.045	P	1.7

y = 0.3559 * x + 0.0034
R = 0.9999
DL = 0.001362
BEC = 0.009498

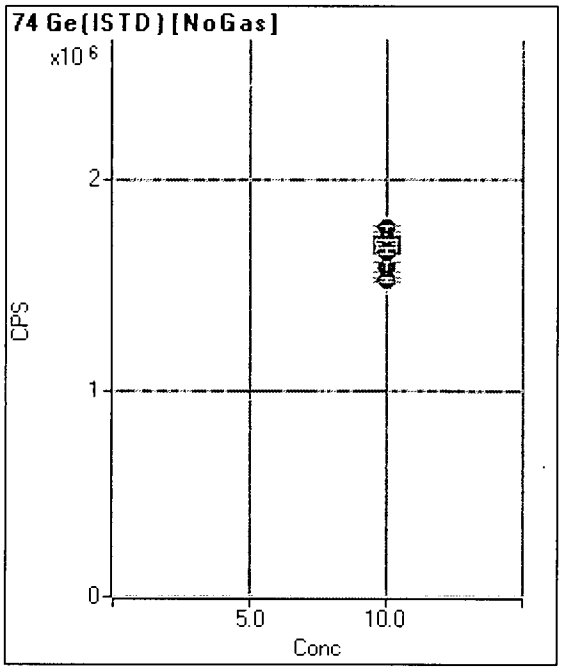
Weight: <None>
Min Conc: <None>



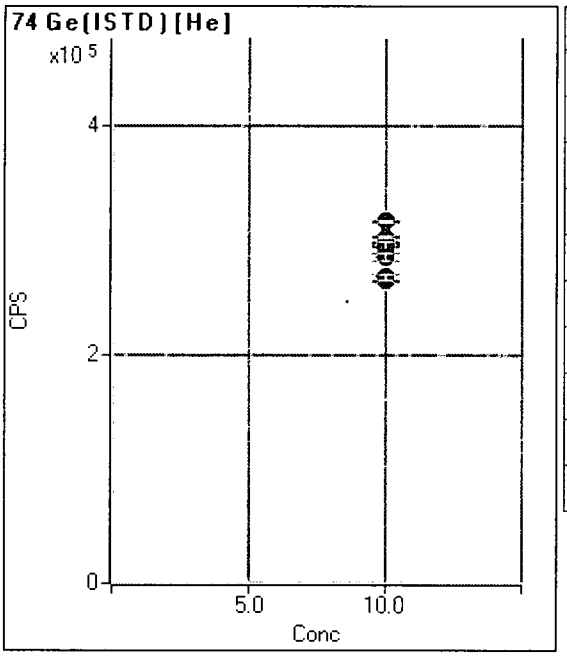
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	10.000		902319		P	0.6
2	☐	10.000		907566		P	0.4
3	☐	10.000		944710		M	4.7
4	☐	10.000		992225		A	1.1
5	☐	10.000		959543		A	1.1
6	☐	10.000		977127		A	2.0
7	☐	10.000		963945		A	2.6
8	☐	10.000		922379		M	2.9
9	☐	10.000		871013		P	2.3
10	☐	10.000		848330		P	0.1



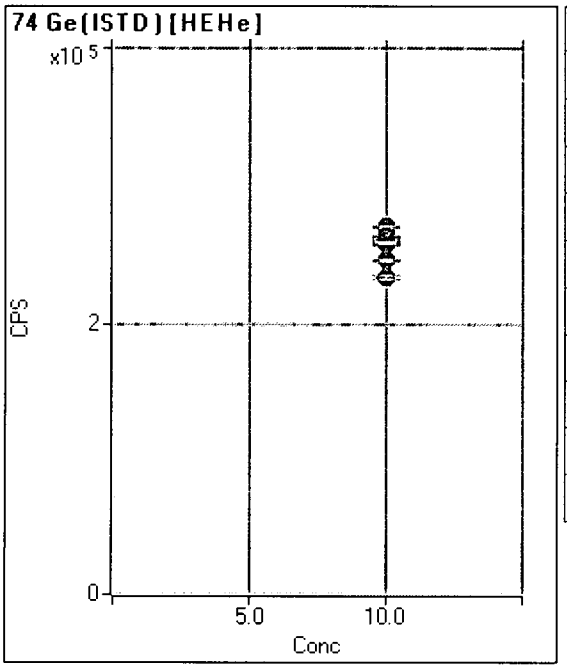
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	50.000		362739		P	0.8
2	☐	50.000		365128		P	0.4
3	☐	50.000		360602		P	0.7
4	☐	50.000		398731		P	0.3
5	☐	50.000		377754		P	0.8
6	☐	50.000		370278		P	0.2
7	☐	50.000		360698		P	3.8
8	☐	50.000		353757		P	1.8
9	☐	50.000		328697		P	1.4
10	☐	50.000		340783		P	0.8



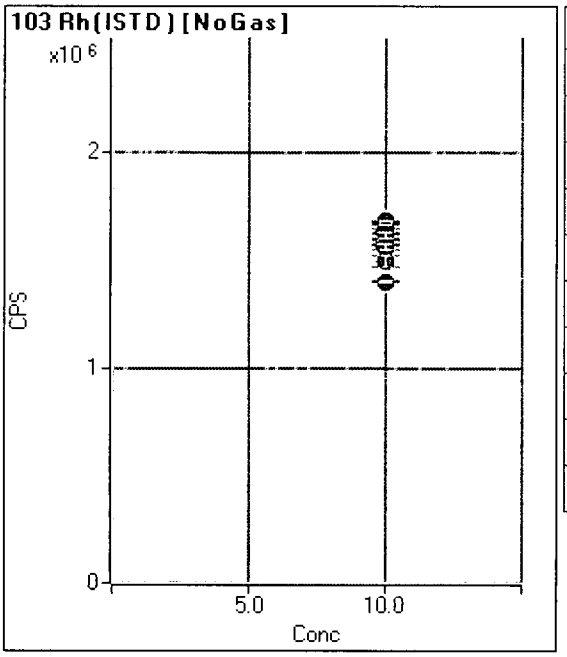
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	10.000		1669073		A	0.9
2	☐	10.000		1662213		A	0.7
3	☐	10.000		1685951		A	3.4
4	☐	10.000		1772900		A	1.4
5	☐	10.000		1706427		A	2.1
6	☐	10.000		1721303		A	2.2
7	☐	10.000		1707904		A	1.2
8	☐	10.000		1665804		A	1.8
9	☐	10.000		1592582		A	2.7
10	☐	10.000		1530848		A	0.8



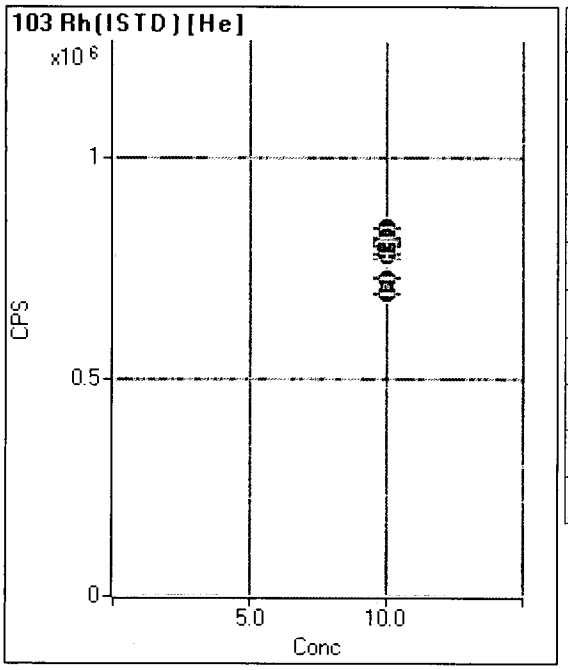
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	10.000		294264		P	0.7
2	☐	10.000		295564		P	0.8
3	☐	10.000		294601		P	0.6
4	☐	10.000		316774		P	0.6
5	☐	10.000		301978		P	1.8
6	☐	10.000		302577		P	0.6
7	☐	10.000		293812		P	3.6
8	☐	10.000		285605		P	1.9
9	☐	10.000		264871		P	0.9
10	☐	10.000		267843		P	2.1



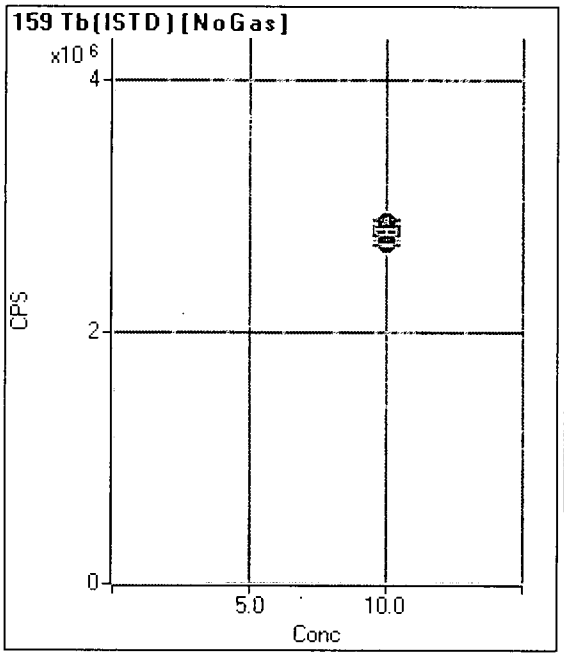
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	10.000		257781		P	0.7
2	☐	10.000		260397		P	0.3
3	☐	10.000		259888		P	1.1
4	☐	10.000		270555		P	0.3
5	☐	10.000		260658		P	1.5
6	☐	10.000		263306		P	0.9
7	☐	10.000		258380		P	1.2
8	☐	10.000		259201		P	0.6
9	☐	10.000		246340		P	0.4
10	☐	10.000		233878		P	1.0



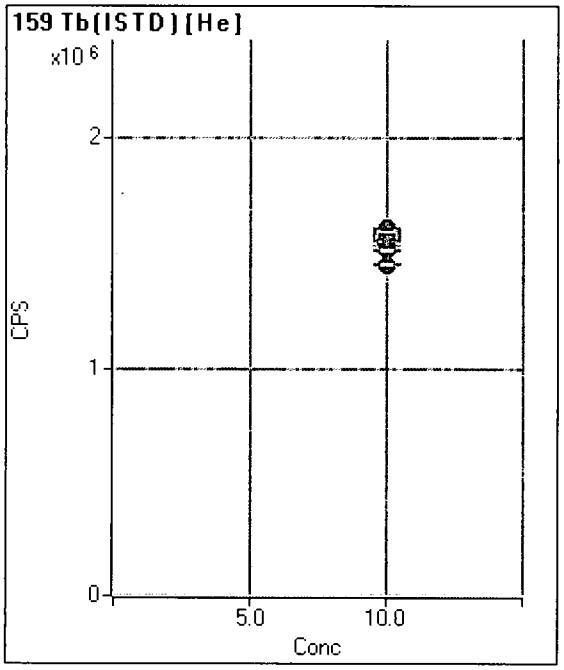
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	10.000		1588022		A	0.8
2	☐	10.000		1586938		A	2.2
3	☐	10.000		1625202		A	3.4
4	☐	10.000		1683148		A	0.6
5	☐	10.000		1610064		A	1.8
6	☐	10.000		1644223		A	2.5
7	☐	10.000		1622597		A	1.6
8	☐	10.000		1564603		A	1.4
9	☐	10.000		1498184		A	3.5
10	☐	10.000		1401934		A	0.5



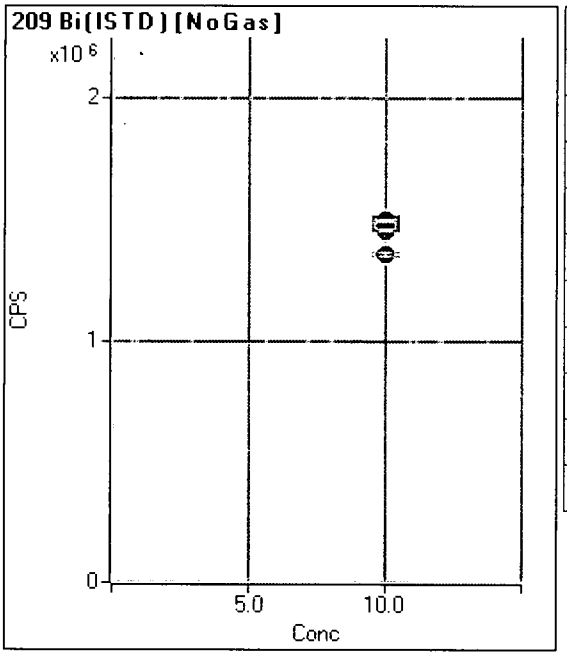
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	10.000		800671		P	1.0
2	☐	10.000		804472		P	0.3
3	☐	10.000		804278		P	1.4
4	☐	10.000		840686		P	0.7
5	☐	10.000		818960		P	0.4
6	☐	10.000		816487		P	0.5
7	☐	10.000		795197		P	3.7
8	☐	10.000		778009		P	1.4
9	☐	10.000		728349		P	0.5
10	☐	10.000		693303		P	0.9



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	10.000		2769500		A	2.3
2	☐	10.000		2779822		A	0.8
3	☐	10.000		2842023		A	3.4
4	☐	10.000		2838032		A	0.6
5	☐	10.000		2830864		A	1.2
6	☐	10.000		2859179		A	2.3
7	☐	10.000		2882749		A	1.8
8	☐	10.000		2842113		A	0.9
9	☐	10.000		2808681		A	1.8
10	☐	10.000		2701492		A	0.8



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	10.000		1549761		A	1.4
2	☐	10.000		1571996		A	1.9
3	☐	10.000		1546795		A	1.1
4	☐	10.000		1609882		A	0.8
5	☐	10.000		1595040		A	1.1
6	☐	10.000		1574739		A	1.0
7	☐	10.000		1565206		A	4.1
8	☐	10.000		1556019		A	0.0
9	☐	10.000		1514790		A	0.4
10	☐	10.000		1452443		A	0.6



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	10.000		1455457		A	0.5
2	☐	10.000		1459729		A	0.8
3	☐	10.000		1493690		A	2.7
4	☐	10.000		1476124		A	1.3
5	☐	10.000		1490514		A	1.2
6	☐	10.000		1496832		A	1.5
7	☐	10.000		1494955		A	0.4
8	☐	10.000		1496479		A	0.8
9	☐	10.000		1455137		A	0.4
10	☐	10.000		1353982		M	1.2

P/A Factor Tuning Report

========== Current Sample ==========
Sample Name: 0B24036-ICV1
Data File: 015_ICV.d
Acquired: 02/24/2020 11:34:25

========= Detector Parameters and P/A Factors =========
Discriminator: 4.8 mV
AnalogHV: 2135 V
PulseHV: 1130 V

Acquired: 02/21/2020 12:20:10

Mass[u]	Element	P/A Factor
6	Li	0.091122
9	Be	0.105523
23	Na	0.106467
24	Mg	0.111825
27	Al	0.116550
39	K	0.120595
44	Ca	0.121721
45	Sc	0.118785
47	Ti	0.119858
51	V	0.123796
52	Cr	0.127535
55	Mn	0.129859
56	Fe	0.134633
59	Co	0.135228
60	Ni	0.133317
65	Cu	0.136978
66	Zn	0.136115
74	Ge	0.134600
75	As	0.132429
95	Mo	0.136399
103	Rh	0.138511
106	[Cd]	0.136627
107	Ag	0.144155
108	[Cd]	0.137379
109	Ag	0.144336
111	Cd	0.142944
123	Sb	0.148638
138	Ba	0.148460
159	Tb	0.144277
186	W	0.146710
205	Tl	0.162880
206	[Pb]	0.158783
207	[Pb]	0.159345
208	Pb	0.160281
209	Bi	0.153340

7	[Li]	Signal too low
78	Se	Signal too low
201	Hg	Signal too low

=== Independent Detector Parameters and P/A Factors ===

Tune Mode Name: No Gas
Discriminator: 4.8 mV
AnalogHV: 2135 V
PulseHV: 1130 V

Acquired: 02/20/2020 11:41:31

Mass[u]	Element	P/A Factor
6	Li	0.099296
9	Be	0.108039
65	Cu	0.139451
74	Ge	0.137965
103	Rh	0.140962
106	[Cd]	0.142268
108	[Cd]	0.147490
109	Ag	0.149650
111	Cd	0.144119
123	Sb	0.143828
159	Tb	0.144841
186	W	0.145585
205	Tl	0.156446
206	[Pb]	0.155737
207	[Pb]	0.157379
208	Pb	0.156941
209	Bi	0.151545
7	[Li]	Signal too low
201	Hg	Signal too low

Tune Mode Name: He
Discriminator: 4.8 mV
AnalogHV: 2135 V
PulseHV: 1130 V

Acquired: 02/24/2020 11:30:29

Mass[u]	Element	P/A Factor
23	Na	0.110030
24	Mg	0.113773
27	Al	0.115501
39	K	0.119789
44	Ca	0.118674
47	Ti	0.119583
51	V	0.121893
52	Cr	0.125085

55	Mn	0.124498
56	Fe	0.126319
59	Co	0.129563
60	Ni	0.129094
65	Cu	0.131011
66	Zn	0.130018
75	As	0.129240
95	Mo	0.128355
103	Rh	0.131477
111	Cd	0.134265
138	Ba	0.134830
159	Tb	0.133699
45	Sc	Signal too low
74	Ge	Signal too low

Tune Mode Name: HEHe
Discriminator: 4.8 mV
AnalogHV: 2135 V
PulseHV: 1130 V

Acquired: 02/03/2020 15:16:26

Mass[u]	Element	P/A Factor
74	Ge	0.142758
78	Se	Signal too low

Created: 02/25/2020 08:49:34

Initial Calibration Verification (ICV) Report ICPMS6

Sample Name	**0B24036-ICV1**	**Sample Type**	ICV
File Name	015_ICV.d	**Vial #**	1102
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	1.0000
Acq Time	02/24/2020 11:34:25	**Sample QC Pass/Fail**	Pass
Comment	A20B035 - KT 02/24	**ISTD Ref File**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpValue	% Rec	%QC Low	%QC High	QC Flag
Be	9	6	No Gas	40.081	ug/l	3.6	268605	40	100.2	90	110	
Na	23	45	He	3991.350	ug/l	1.0	8410221	4000	99.78	90	110	
Mg	24	45	He	4273.231	ug/l	1.7	4878028	4000	106.83	90	110	
Al	27	45	He	4158.698	ug/l	1.5	2346195	4000	103.97	90	110	
K	39	45	He	4093.868	ug/l	1.0	4916266	4000	102.35	90	110	
Ca	44	45	He	4267.852	ug/l	1.2	261036	4000	106.7	90	110	
Ti	47	45	He	100.550	ug/l	1.7	35430	100	100.55	90	110	
V	51	74	He	99.550	ug/l	0.4	964401	100	99.55	90	110	
Cr	52	74	He	100.501	ug/l	0.8	1141935	100	100.5	90	110	
Mn	55	74	He	103.957	ug/l	0.2	825368	100	103.96	90	110	
Fe	56	74	He	4161.786	ug/l	1.6	42419624	4000	104.04	90	110	
Co	59	74	He	104.009	ug/l	1.3	1727966	100	104.01	90	110	
Ni	60	74	He	106.361	ug/l	0.6	427396	100	106.36	90	110	
Cu	65	74	He	106.576	ug/l	1.1	552541	100	106.58	90	110	
Cu	65	74	No Gas	109.937	ug/l	1.2	1498147	100	109.94	90	110	
Zn	66	74	He	105.027	ug/l	0.3	203803	100	105.03	90	110	
As	75	74	He	99.385	ug/l	0.5	146566	100	99.38	90	110	
Se	78	74	HEHe	42.186	ug/l	0.5	9759	40	105.46	90	110	
Mo	95	103	He	40.441	ug/l	0.5	267494	40	101.1	90	110	
Ag	109	103	No Gas	37.695	ug/l	0.5	1506816	40	94.24	90	110	
Cd	111	103	He	101.020	ug/l	0.3	360768	100	101.02	90	110	
Cd	111	103	No Gas	92.904	ug/l	0.3	831864	100	92.9	90	110	
Sb	123	103	No Gas	36.198	ug/l	0.4	882833	40	90.5	90	110	
Ba	138	159	He	106.035	ug/l	1.6	2734204	100	106.04	90	110	
Hg	201	159	No Gas	813.508	ng/l	2.0	3151	800	101.69	90	110	
Tl	205	159	No Gas	41.315	ug/l	2.0	3045166	40	103.29	90	110	
Pb	208	159	No Gas	102.843	ug/l	1.0	10222756	100	102.84	90	110	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	908371	3.5	902319.09	100.67	70	120	
Ge	74	No Gas	1653639	0.8	1669072.63	99.08	70	120	
Rh	103	No Gas	1573440	0.7	1588021.85	99.08	70	120	
Tb	159	No Gas	2793115	2.1	2769499.89	100.85	70	120	
Bi	209	No Gas	1452144	0.2	1455457.42	99.77	70	120	
Sc	45	He	368263	0.7	362738.6	101.52	70	120	
Ge	74	He	297478	1.0	294264.1	101.09	70	120	
Rh	103	He	781708	0.8	800670.94	97.63	70	120	
Tb	159	He	1559064	1.3	1549761.4	100.6	70	120	
Ge	74	HEHe	256168	1.0	257780.75	99.37	70	120	

Initial Calibration Blank (ICB) Report ICPMS6

Sample Name	**0B24036-ICB1**	**Sample Type**	ICB
File Name	016_ICB.d	**Vial #**	1101
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	1.0000
Acq Time	02/24/2020 11:38:57	**Sample QC Pass/Fail**	Pass
Comment	ICB	**ISTD Ref File**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune Mode	Conc.	Units	Conc. RSD	CPS	Limit	QC Flag
Be	9	6	No Gas	0.005	ug/l	74.9	93	0.09	
Na	23	45	He	1.309	ug/l	3.1	10067	45	
Mg	24	45	He	0.385	ug/l	2.3	1941	45	
Al	27	45	He	0.594	ug/l	7.5	496	22.5	
K	39	45	He	4.862	ug/l	8.1	42347	45	
Ca	44	45	He	3.351	ug/l	43.4	1561	45	
Ti	47	45	He	0.026	ug/l	112.3	16	1.8	
V	51	74	He	-0.076	ug/l	N/A	1289	0.45	
Cr	52	74	He	0.026	ug/l	10.8	872	0.45	
Mn	55	74	He	0.024	ug/l	3.9	478	0.45	
Fe	56	74	He	0.508	ug/l	3.3	21072	22.5	
Co	59	74	He	0.005	ug/l	42.9	223	0.09	
Ni	60	74	He	-0.036	ug/l	N/A	554	0.45	
Cu	65	74	He	0.120	ug/l	20.5	992	0.45	
Cu	65	74	No Gas	0.180	ug/l	2.8	3457	0.45	
Zn	66	74	He	0.002	ug/l	761.0	266	1.8	
As	75	74	He	0.020	ug/l	43.2	89	0.45	
Se	78	74	HEHe	0.013	ug/l	33.1	4	0.45	
Mo	95	103	He	0.022	ug/l	19.0	163	0.45	
Ag	109	103	No Gas	0.004	ug/l	21.6	184	0.09	
Cd	111	103	He	0.014	ug/l	53.7	53	0.09	
Cd	111	103	No Gas	0.020	ug/l	11.1	186	0.09	
Sb	123	103	No Gas	0.116	ug/l	4.3	3103	0.45	
Ba	138	159	He	0.021	ug/l	10.3	714	0.45	
Hg	201	159	No Gas	11.351	ng/l	11.8	51	36	
Tl	205	159	No Gas	0.026	ug/l	11.0	2076	0.09	
Pb	208	159	No Gas	0.017	ug/l	7.6	2589	0.09	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	897362	1.9	902319.09	99.45	70	120	
Ge	74	No Gas	1626526	0.6	1669072.63	97.45	70	120	
Rh	103	No Gas	1578227	0.9	1588021.85	99.38	70	120	
Tb	159	No Gas	2789443	0.4	2769499.89	100.72	70	120	
Bi	209	No Gas	1478106	0.8	1455457.42	101.56	70	120	
Sc	45	He	354414	1.0	362738.6	97.7	70	120	
Ge	74	He	288963	1.7	294264.1	98.2	70	120	
Rh	103	He	769266	1.2	800670.94	96.08	70	120	
Tb	159	He	1554627	2.5	1549761.4	100.31	70	120	
Ge	74	HEHe	250910	0.8	257780.75	97.33	70	120	

CRL Verification ICPMS6

Sample Name	**0B24036-CRL1**	**Sample Type**	CRL1
File Name	017CRL.d	**Vial #**	2101
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	1.0000
Acq Time	02/24/2020 11:46:09	**Sample QC Pass/Fail**	Fail
Comment	A20B178 - KT 02/24	**ISTD Ref File**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD (	CPS	% Rec	%QC Low	%QC High	Flag
Be	9	6	No Gas	0.175	ug/l	0.3	1267	97.22	70	130	
Na	23	45	He	10.337	ug/l	2.2	28798	114.86	70	130	
Mg	24	45	He	9.822	ug/l	3.5	12496	109.13	70	130	
Al	27	45	He	10.287	ug/l	2.5	5848	114.3	70	130	
K	39	45	He	14.364	ug/l	4.9	54063	159.6	70	130	CRL1 Failed
Ca	44	45	He	14.289	ug/l	15.3	2236	158.77	70	130	CRL1 Failed
Ti	47	45	He	0.171	ug/l	3.3	66	95	70	130	
V	51	74	He	0.106	ug/l	8.0	3034	58.89	70	130	CRL1 Failed
Cr	52	74	He	0.197	ug/l	3.0	2777	109.44	70	130	
Mn	55	74	He	0.202	ug/l	5.7	1875	112.22	70	130	
Fe	56	74	He	9.669	ug/l	0.9	112859	107.43	70	130	
Co	59	74	He	0.177	ug/l	4.5	3039	98.33	70	130	
Ni	60	74	He	0.126	ug/l	10.5	1200	70	70	130	
Cu	65	74	He	0.240	ug/l	4.1	1611	133.33	70	130	CRL1 Failed
Cu	65	74	No Gas	0.253	ug/l	4.3	4567	140.56	70	130	CRL1 Failed
Zn	66	74	He	0.154	ug/l	9.9	557	85.56	70	130	
As	75	74	He	0.180	ug/l	2.7	320	100	70	130	
Se	78	74	HEHe	0.204	ug/l	12.8	47	113.33	70	130	
Mo	95	103	He	0.197	ug/l	6.9	1306	109.44	70	130	
Ag	109	103	No Gas	0.165	ug/l	5.2	6701	91.67	70	130	
Cd	111	103	He	0.182	ug/l	8.7	648	101.11	70	130	
Cd	111	103	No Gas	0.173	ug/l	2.7	1572	96.11	70	130	
Sb	123	103	No Gas	0.188	ug/l	1.0	4883	104.44	70	130	
Ba	138	159	He	0.198	ug/l	4.3	5269	110	70	130	
Hg	201	159	No Gas	13.271	ng/l	7.8	59	184.32	70	130	CRL1 Failed
Tl	205	159	No Gas	0.171	ug/l	0.5	12855	95	70	130	
Pb	208	159	No Gas	0.169	ug/l	2.2	17801	93.89	70	130	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	934782	1.2	902319.09	103.6	70	120	
Ge	74	No Gas	1677742	1.7	1669072.63	100.52	70	120	
Rh	103	No Gas	1587128	1.2	1588021.85	99.94	70	120	
Tb	159	No Gas	2800699	0.4	2769499.89	101.13	70	120	
Bi	209	No Gas	1459924	2.0	1455457.42	100.31	70	120	
Sc	45	He	359890	0.0	362738.6	99.21	70	120	
Ge	74	He	291843	0.8	294264.1	99.18	70	120	
Rh	103	He	773406	1.0	800670.94	96.59	70	120	
Tb	159	He	1560945	1.9	1549761.4	100.72	70	120	
Ge	74	HEHe	250489	1.5	257780.75	97.17	70	120	

CRL Verification ICPMS6

Sample Name	**0B24036-CRL2**	**Sample Type**	CRL2
File Name	018_CRL.d	**Vial #**	2102
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	1.0000
Acq Time	02/24/2020 11:50:52	**Sample QC Pass/Fail**	Pass
Comment	A20B179 - KT 02/24	**ISTD Ref File**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	% Rec	%QC Low	%QC High	Flag
Be	9	6	No Gas	0.886	ug/l	0.9	6152	98.44	70	130	
Na	23	45	He	45.348	ug/l	1.5	104976	100.77	70	130	
Mg	24	45	He	46.178	ug/l	1.8	55227	102.62	70	130	
Al	27	45	He	46.819	ug/l	1.9	27059	104.04	70	130	
K	39	45	He	49.133	ug/l	1.5	98441	109.18	70	130	
Ca	44	45	He	51.584	ug/l	3.3	4637	114.63	70	130	
Ti	47	45	He	0.898	ug/l	14.8	329	99.78	70	130	
V	51	74	He	0.806	ug/l	2.5	9966	89.56	70	130	
Cr	52	74	He	0.896	ug/l	1.2	10890	99.56	70	130	
Mn	55	74	He	0.918	ug/l	3.8	7677	102	70	130	
Fe	56	74	He	46.021	ug/l	0.7	490726	102.27	70	130	
Co	59	74	He	0.875	ug/l	1.8	14859	97.22	70	130	
Ni	60	74	He	0.860	ug/l	2.3	4213	95.56	70	130	
Cu	65	74	He	0.968	ug/l	0.8	5474	107.56	70	130	
Cu	65	74	No Gas	0.955	ug/l	2.6	14164	106.11	70	130	
Zn	66	74	He	0.857	ug/l	2.6	1952	95.22	70	130	
As	75	74	He	0.892	ug/l	2.9	1392	99.11	70	130	
Se	78	74	HEHe	0.991	ug/l	3.4	225	110.11	70	130	
Mo	95	103	He	0.880	ug/l	2.6	5962	97.78	70	130	
Ag	109	103	No Gas	0.799	ug/l	1.6	32567	88.78	70	130	
Cd	111	103	He	0.891	ug/l	6.0	3253	99	70	130	
Cd	111	103	No Gas	0.849	ug/l	4.0	7738	94.33	70	130	
Sb	123	103	No Gas	0.854	ug/l	2.1	21474	94.89	70	130	
Ba	138	159	He	0.920	ug/l	2.1	24158	102.22	70	130	
Hg	201	159	No Gas	39.273	ng/l	8.2	163	109.09	70	130	
Tl	205	159	No Gas	0.796	ug/l	3.1	60327	88.44	70	130	
Pb	208	159	No Gas	0.811	ug/l	3.1	83623	90.11	70	130	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	931534	4.2	902319.09	103.24	70	120	
Ge	74	No Gas	1665790	1.2	1669072.63	99.8	70	120	
Rh	103	No Gas	1601623	2.4	1588021.85	100.86	70	120	
Tb	159	No Gas	2863926	3.0	2769499.89	103.41	70	120	
Bi	209	No Gas	1466209	3.6	1455457.42	100.74	70	120	
Sc	45	He	374720	0.6	362738.6	103.3	70	120	
Ge	74	He	300725	0.4	294264.1	102.2	70	120	
Rh	103	He	798300	1.1	800670.94	99.7	70	120	
Tb	159	He	1577091	0.6	1549761.4	101.76	70	120	
Ge	74	HEHe	250279	0.3	257780.75	97.09	70	120	

CRL Verification ICPMS6

Sample Name	**0B24036-CRL3**	**Sample Type**	CRL3
File Name	019CRL_.d	**Vial #**	2103
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	1.0000
Acq Time	02/24/2020 11:55:35	**Sample QC Pass/Fail**	Pass
Comment	A20B180 - KT 02/24	**ISTD Ref File**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	% Rec	%QC Low	%QC High	Flag
Be	9	6	No Gas	1.766	ug/l	0.4	12215	98.11	70	130	
Na	23	45	He	91.732	ug/l	1.6	200900	101.92	70	130	
Mg	24	45	He	93.205	ug/l	0.7	107990	103.56	70	130	
Al	27	45	He	94.966	ug/l	0.3	53778	105.52	70	130	
K	39	45	He	96.800	ug/l	0.4	153607	107.56	70	130	
Ca	44	45	He	95.272	ug/l	3.8	7217	105.86	70	130	
Ti	47	45	He	1.676	ug/l	11.9	598	93.11	70	130	
V	51	74	He	1.650	ug/l	1.4	18084	91.67	70	130	
Cr	52	74	He	1.748	ug/l	3.2	20532	97.11	70	130	
Mn	55	74	He	1.807	ug/l	1.4	14705	100.39	70	130	
Fe	56	74	He	92.252	ug/l	1.4	960302	102.5	70	130	
Co	59	74	He	1.751	ug/l	0.8	29359	97.28	70	130	
Ni	60	74	He	1.763	ug/l	2.3	7821	97.94	70	130	
Cu	65	74	He	1.842	ug/l	1.1	9985	102.33	70	130	
Cu	65	74	No Gas	1.816	ug/l	0.4	25841	100.89	70	130	
Zn	66	74	He	1.828	ug/l	4.4	3827	101.56	70	130	
As	75	74	He	1.776	ug/l	0.9	2691	98.67	70	130	
Se	78	74	HEHe	1.839	ug/l	5.2	425	102.17	70	130	
Mo	95	103	He	1.825	ug/l	1.3	12059	101.39	70	130	
Ag	109	103	No Gas	1.631	ug/l	0.3	65049	90.61	70	130	
Cd	111	103	He	1.808	ug/l	4.2	6447	100.44	70	130	
Cd	111	103	No Gas	1.742	ug/l	0.6	15563	96.78	70	130	
Sb	123	103	No Gas	1.715	ug/l	1.0	41978	95.28	70	130	
Ba	138	159	He	1.852	ug/l	1.6	47822	102.89	70	130	
Hg	201	159	No Gas	72.738	ng/l	3.5	292	101.02	70	130	
Tl	205	159	No Gas	1.623	ug/l	1.1	121279	90.17	70	130	
Pb	208	159	No Gas	1.646	ug/l	1.3	166558	91.44	70	130	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	932172	0.6	902319.09	103.31	70	120	
Ge	74	No Gas	1657465	1.6	1669072.63	99.3	70	120	
Rh	103	No Gas	1569309	1.5	1588021.85	98.82	70	120	
Tb	159	No Gas	2827462	1.2	2769499.89	102.09	70	120	
Bi	209	No Gas	1480334	0.3	1455457.42	101.71	70	120	
Sc	45	He	368411	0.3	362738.6	101.56	70	120	
Ge	74	He	298692	1.3	294264.1	101.5	70	120	
Rh	103	He	779962	0.8	800670.94	97.41	70	120	
Tb	159	He	1555973	1.5	1549761.4	100.4	70	120	
Ge	74	HEHe	255203	0.2	257780.75	99	70	120	

Interference Check Solution A (ICS-A) Report ICPMS6

Sample Name	**0B24036-IFA1**	**Sample Type**	ICSA
File Name	020ICSA.d	**Vial #**	2110
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	1.0000
Acq Time	02/24/2020 12:00:18	**Sample QC Pass/Fail**	Fail
Comment	A20B289	**ISTD Ref File**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune Mode	Conc.	Units	Conc. RSD	CPS	ExpValue	QC Flag
Be	9	6	No Gas	0.007	ug/l	39.4	87	0.18	
Na	23	45	He	253206.840	ug/l	0.0	454920660	250000	
Mg	24	45	He	100686.359	ug/l	0.6	98066155	100000	
Al	27	45	He	101584.806	ug/l	1.3	48907947	100000	
K	39	45	He	102816.027	ug/l	2.0	104583795	100000	
Ca	44	45	He	304030.340	ug/l	0.9	15784618	300000	
Ti	47	45	He	2031.047	ug/l	0.3	610696	2000	
V	51	74	He	0.121	ug/l	7.1	2627	0.9	
Cr	52	74	He	1.292	ug/l	0.8	12411	0.9	
Mn	55	74	He	0.928	ug/l	3.6	6230	0.9	
Fe	56	74	He	254022.848	ug/l	1.2	2104182689	250000	
Co	59	74	He	0.698	ug/l	1.8	9556	0.18	ICSA Warning
Ni	60	74	He	0.297	ug/l	7.7	1551	0.9	
Cu	65	74	He	0.529	ug/l	8.2	2552	0.9	
Cu	65	74	No Gas	4.095	ug/l	0.8	47246	0.9	ICSA Warning
Zn	66	74	He	0.975	ug/l	3.8	1756	3.6	
As	75	74	He	0.221	ug/l	4.0	315	0.9	
Se	78	74	HEHe	0.047	ug/l	38.5	10	0.9	
Mo	95	103	He	2157.129	ug/l	0.2	10847790	2000	
Cd	111	103	He	1.978	ug/l	2.0	5376	0.18	ICSA Warning
Cd	111	103	No Gas	0.439	ug/l	14.6	2866	0.18	ICSA Warning
Sb	123	103	No Gas	0.207	ug/l	3.5	3867	0.9	
Ba	138	159	He	0.543	ug/l	3.2	11421	0.9	
W	186	159	No Gas	61.243	ug/l	0.7	1564434	100	ICSA Warning
Hg	201	159	No Gas	64.233	ng/l	2.6	211	72	
Tl	205	159	No Gas	0.010	ug/l	8.7	790	0.18	
Pb	208	159	No Gas	0.155	ug/l	2.3	13445	0.18	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	741019	0.4	902319.09	82.12	70	120	
Ge	74	No Gas	1375068	0.7	1669072.63	82.39	70	120	
Rh	103	No Gas	1144926	0.5	1588021.85	72.1	70	120	
Tb	159	No Gas	2302903	1.2	2769499.89	83.15	70	120	
Bi	209	No Gas	1122509	0.6	1455457.42	77.12	70	120	
Sc	45	He	314277	0.5	362738.6	86.64	70	120	
Ge	74	He	241848	1.4	294264.1	82.19	70	120	
Rh	103	He	594346	1.3	800670.94	74.23	70	120	
Tb	159	He	1256514	1.3	1549761.4	81.08	70	120	
Ge	74	HEHe	209153	1.0	257780.75	81.14	70	120	

Interference Check Solution AB (ICS-AB) Report ICPMS6

Sample Name	**0B24036-IFB1**	**Sample Type**	ICSB
File Name	021ICSB.d	**Vial #**	2111
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	1.0000
Acq Time	02/24/2020 12:05:06	**Sample QC Pass/Fail**	Fail
Comment	A20B290	**ISTD Ref File**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune Mode	Conc.	Units	Conc. RSD	CPS	ExpValue	Flag
Be	9	6	No Gas	0.007	ug/l	24.4	81	0.18	
Na	23	45	He	253493.189	ug/l	0.6	437253892	250000	
Mg	24	45	He	100963.544	ug/l	1.0	94409383	100000	
Al	27	45	He	101752.189	ug/l	1.4	47033554	100000	
K	39	45	He	102408.096	ug/l	2.0	100010985	100000	
Ca	44	45	He	303726.752	ug/l	1.0	15139699	300000	
Ti	47	45	He	2010.727	ug/l	0.7	580451	2000	
V	51	74	He	207.554	ug/l	1.8	1618514	200	
Cr	52	74	He	201.639	ug/l	2.0	1845886	200	
Mn	55	74	He	208.578	ug/l	2.3	1334225	200	
Fe	56	74	He	248985.724	ug/l	1.6	2044439952	250000	
Co	59	74	He	195.009	ug/l	1.1	2611097	200	
Ni	60	74	He	192.279	ug/l	1.1	622216	200	
Cu	65	74	He	190.739	ug/l	0.3	796747	200	
Cu	65	74	No Gas	198.069	ug/l	1.1	2198427	200	
Zn	66	74	He	94.390	ug/l	0.7	147632	100	
As	75	74	He	102.846	ug/l	0.6	122229	100	
Se	78	74	HEHe	105.137	ug/l	0.7	19966	100	
Mo	95	103	He	2114.858	ug/l	1.8	10598784	2000	
Ag	109	103	No Gas	49.328	ug/l	5.7	1417498	50	
Cd	111	103	He	101.419	ug/l	1.3	274444	100	
Cd	111	103	No Gas	99.946	ug/l	0.6	643123	100	
Sb	123	103	No Gas	0.202	ug/l	3.7	3722	0.9	
Ba	138	159	He	0.936	ug/l	1.0	19920	100	ICSB Warning
W	186	159	No Gas	61.844	ug/l	0.8	1584958	100	
Hg	201	159	No Gas	2035.951	ng/l	0.6	6516	2000	
Tl	205	159	No Gas	0.006	ug/l	12.0	510	0.18	
Pb	208	159	No Gas	0.154	ug/l	1.8	13466	0.18	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	719946	1.0	902319.09	79.79	70	120	
Ge	74	No Gas	1347282	0.9	1669072.63	80.72	70	120	
Rh	103	No Gas	1130774	0.9	1588021.85	71.21	70	120	
Tb	159	No Gas	2310406	0.8	2769499.89	83.42	70	120	
Bi	209	No Gas	1143793	1.1	1455457.42	78.59	70	120	
Sc	45	He	301731	0.1	362738.6	83.18	70	120	
Ge	74	He	239752	1.0	294264.1	81.48	70	120	
Rh	103	He	592379	1.0	800670.94	73.99	70	120	
Tb	159	He	1277602	0.3	1549761.4	82.44	70	120	
Ge	74	HEHe	210309	0.5	257780.75	81.58	70	120	

Sample Report ICPMS6

Sample Name	**0020669-BLK1**	**Sample Type**	Sample
File Name	022SMPL.d	**Vial #**	3110
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	5.0000
Acq Time	02/24/2020 12:10:33	**Sample QC Pass/Fail**	Pass
Comment	0020669 SED As Cd Cu Hg Pb Zn	**ISTD Ref FileName**	005CALB.d

QC Analyte Table

Name	Mass	iSTD	Tune	Units	Raw Conc.	Conc RSD	CPS	CPS RSD	LDR	QC Flag
Be	9	6	No Gas	ug/l	-0.001	N/A	47	32.7	100	
Na	23	45	He	ug/l	19.661	2.7	41664	2.5	50000	
Mg	24	45	He	ug/l	2.569	8.1	3827	6.0	50000	
Al	27	45	He	ug/l	6.284	1.1	3162	1.3	50000	
K	39	45	He	ug/l	6.512	10.1	39007	2.2	50000	
Ca	44	45	He	ug/l	14.485	18.8	1951	6.5	50000	
Ti	47	45	He	ug/l	0.155	28.4	52	25.8	2500	
V	51	74	He	ug/l	-0.029	N/A	1561	4.8	500	
Cr	52	74	He	ug/l	0.019	25.7	710	6.5	1000	
Mn	55	74	He	ug/l	-0.007	N/A	214	17.2	2500	
Fe	56	74	He	ug/l	7.417	5.1	80615	4.5	50000	
Co	59	74	He	ug/l	0.015	4.4	353	2.5	500	
Ni	60	74	He	ug/l	-0.071	N/A	378	14.6	1000	
Cu	65	74	He	ug/l	0.181	4.2	1170	2.7	1000	
Cu	65	74	No Gas	ug/l	0.374	3.8	5575	2.9	1000	
Zn	66	74	He	ug/l	-0.008	N/A	222	13.6	2500	
As	75	74	He	ug/l	0.006	99.5	61	12.6	500	
Se	78	74	HEHe	ug/l	0.01	79.1	3	52.8	100	
Mo	95	103	He	ug/l	0.431	1.9	2693	1.5	100	
Ag	109	103	No Gas	ug/l	0.002	13.7	123	8.1	100	
Cd	111	103	He	ug/l	0.002	117.7	12	78.7	1000	
Cd	111	103	No Gas	ug/l	0.007	37.2	62	31.3	1000	
Sb	123	103	No Gas	ug/l	0.011	9.9	490	6.2	100	
Ba	138	159	He	ug/l	0.009	9.4	398	5.1	2500	
W	186	159	No Gas	ug/l	0.057	5.3	1825	3.6	40	
Hg	201	159	No Gas	ng/l	13.659	7.2	61	5.8	4000	
Tl	205	159	No Gas	ug/l	0.006	20.1	626	13.6	100	
Pb	208	159	No Gas	ug/l	0.008	11.8	1746	4.4	500	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	789419	0.2	902319.09	87.49	70	120	
Sc	45	He	312513	0.8	362738.6	86.15	70	120	
Ge	74	No Gas	1497062	0.9	1669072.63	89.69	70	120	
Ge	74	He	260361	0.3	294264.1	88.48	70	120	
Ge	74	HEHe	243984	1.3	257780.75	94.65	70	120	
Rh	103	No Gas	1457215	1.5	1588021.85	91.76	70	120	
Rh	103	He	734762	0.6	800670.94	91.77	70	120	
Tb	159	No Gas	2832914	1.8	2769499.89	102.29	70	120	
Tb	159	He	1546243	0.8	1549761.4	99.77	70	120	
Bi	209	No Gas	1533902	1.2	1455457.42	105.39	70	120	

Sample Report ICPMS6

Sample Name	**0020669-BS1**	**Sample Type**	Sample
File Name	023SMPL.d	**Vial #**	3111
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	5.0000
Acq Time	02/24/2020 12:15:18	**Sample QC Pass/Fail**	Pass
Comment	0020669 SED As Cd Cu Hg Pb Zn	**ISTD Ref FileName**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune	Units	Raw Conc.	Conc RSD	CPS	CPS RSD	LDR	QC Flag
Be	9	6	No Gas	ug/l	23.446	0.8	139003	0.5	100	
Na	23	45	He	ug/l	2552.076	1.9	4702116	1.4	50000	
Mg	24	45	He	ug/l	2597.429	0.9	2592106	0.7	50000	
Al	27	45	He	ug/l	2544.443	1.8	1254671	1.5	50000	
K	39	45	He	ug/l	2537.861	1.4	2676211	1.0	50000	
Ca	44	45	He	ug/l	2573.562	1.0	138073	1.5	50000	
Ti	47	45	He	ug/l	50.402	1.9	15526	2.0	2500	
V	51	74	He	ug/l	49.852	0.4	432078	1.1	500	
Cr	52	74	He	ug/l	50.154	0.5	509052	0.4	1000	
Mn	55	74	He	ug/l	50.991	0.4	361564	0.4	2500	
Fe	56	74	He	ug/l	2557.603	1.7	23278362	1.1	50000	
Co	59	74	He	ug/l	51.425	0.5	762854	0.2	500	
Ni	60	74	He	ug/l	52.841	0.8	189887	0.2	1000	
Cu	65	74	He	ug/l	54.108	0.6	250620	0.5	1000	
Cu	65	74	No Gas	ug/l	49.079	1.1	609545	0.5	1000	
Zn	66	74	He	ug/l	51.159	1.2	88746	0.5	2500	
As	75	74	He	ug/l	48.47	0.3	63842	0.7	500	
Se	78	74	HEHe	ug/l	22.713	1.1	5098	1.0	100	
Mo	95	103	He	ug/l	24.859	0.7	156333	1.4	100	
Ag	109	103	No Gas	ug/l	22.806	1.9	857178	0.7	100	
Cd	111	103	He	ug/l	50.092	0.7	170066	0.8	1000	
Cd	111	103	No Gas	ug/l	48.328	1.4	406881	0.7	1000	
Sb	123	103	No Gas	ug/l	23.723	1.6	544089	0.6	100	
Ba	138	159	He	ug/l	49.618	0.6	1272662	0.6	2500	
W	186	159	No Gas	ug/l	0.034	15.5	1091	15.1	40	
Hg	201	159	No Gas	ng/l	980.961	0.5	3881	0.4	4000	
Tl	205	159	No Gas	ug/l	25.093	1.1	1889690	0.4	100	
Pb	208	159	No Gas	ug/l	50.874	1.4	5166920	1.4	500	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	802840	0.6	902319.09	88.98	70	120	
Sc	45	He	321858	0.6	362738.6	88.73	70	120	
Ge	74	No Gas	1505834	0.9	1669072.63	90.22	70	120	
Ge	74	He	265580	0.7	294264.1	90.25	70	120	
Ge	74	HEHe	248500	0.1	257780.75	96.4	70	120	
Rh	103	No Gas	1479608	1.3	1588021.85	93.17	70	120	
Rh	103	He	743149	0.7	800670.94	92.82	70	120	
Tb	159	No Gas	2853272	1.0	2769499.89	103.02	70	120	
Tb	159	He	1550513	0.8	1549761.4	100.05	70	120	
Bi	209	No Gas	1526917	0.9	1455457.42	104.91	70	120	

Sample Report ICPMS6

Sample Name	**A0B0406-01**	**Sample Type**	Sample
File Name	024SMPL.d	**Vial #**	3112
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	5.0000
Acq Time	02/24/2020 12:19:58	**Sample QC Pass/Fail**	Fail
Comment	0020669 SED As Cd Cu Hg Pb Zn	**ISTD Ref FileName**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune	Units	Raw Conc.	Conc RSD	CPS	CPS RSD	LDR	QC Flag
Be	9	6	No Gas	ug/l	0.679	1.8	4480	0.7	100	
Na	23	45	He	ug/l	588.821	1.9	1438595	1.9	50000	
Mg	24	45	He	ug/l	5256.708	1.0	6921475	1.7	50000	
Al	27	45	He	ug/l	28450.166	1.5	18512498	1.9	50000	
K	39	45	He	ug/l	1329.104	0.6	1870671	1.2	50000	
Ca	44	45	He	ug/l	6290.749	0.2	443048	1.8	50000	
Ti	47	45	He	ug/l	2259.602	0.1	918309	1.8	2500	>LDR
V	51	74	He	ug/l	109.112	0.2	1076267	1.2	500	
Cr	52	74	He	ug/l	36.453	0.5	422225	0.9	1000	
Mn	55	74	He	ug/l	574.655	0.5	4644980	0.8	2500	
Fe	56	74	He	ug/l	41405.312	1.0	429635198	0.3	50000	
Co	59	74	He	ug/l	18.323	0.4	310162	1.2	500	
Ni	60	74	He	ug/l	28.037	0.9	115271	0.7	1000	
Cu	65	74	He	ug/l	45.419	0.4	240050	1.0	1000	
Cu	65	74	No Gas	ug/l	43.658	1.1	605878	1.0	1000	
Zn	66	74	He	ug/l	100.198	0.7	198013	0.6	2500	
As	75	74	He	ug/l	4.88	0.8	7388	0.9	500	
Se	78	74	HEHe	ug/l	0.62	2.6	152	3.7	100	
Mo	95	103	He	ug/l	0.574	4.5	3892	3.0	100	
Ag	109	103	No Gas	ug/l	0.087	2.4	3523	1.6	100	
Cd	111	103	He	ug/l	0.194	7.7	713	8.7	1000	
Cd	111	103	No Gas	ug/l	1.064	1.9	9539	0.7	1000	
Sb	123	103	No Gas	ug/l	0.321	0.4	8099	1.1	100	
Ba	138	159	He	ug/l	152.162	2.2	4152531	2.0	2500	
W	186	159	No Gas	ug/l	0.131	6.5	4379	7.0	40	
Hg	201	159	No Gas	ng/l	56.884	6.6	244	7.3	4000	
Tl	205	159	No Gas	ug/l	0.15	0.6	12074	2.1	100	
Pb	208	159	No Gas	ug/l	9.532	1.8	1019885	0.3	500	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	882392	1.2	902319.09	97.79	70	120	
Sc	45	He	424779	1.7	362738.6	117.1	70	120	
Ge	74	No Gas	1682381	1.8	1669072.63	100.8	70	120	
Ge	74	He	302961	1.3	294264.1	102.96	70	120	
Ge	74	HEHe	269964	1.5	257780.75	104.73	70	120	
Rh	103	No Gas	1574951	1.3	1588021.85	99.18	70	120	
Rh	103	He	797574	1.8	800670.94	99.61	70	120	
Tb	159	No Gas	3003968	1.8	2769499.89	108.47	70	120	
Tb	159	He	1649935	0.8	1549761.4	106.46	70	120	
Bi	209	No Gas	1516092	1.4	1455457.42	104.17	70	120	

Sample Report ICPMS6

Sample Name	**A0B0406-02**	**Sample Type**	Sample
File Name	025SMPL.d	**Vial #**	3113
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	5.0000
Acq Time	02/24/2020 12:24:39	**Sample QC Pass/Fail**	Pass
Comment	0020669 SED As Cd Cu Hg Pb Zn	**ISTD Ref FileName**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune	Units	Raw Conc.	Conc RSD	CPS	CPS RSD	LDR	QC Flag
Be	9	6	No Gas	ug/l	0.644	2.9	4593	3.8	100	
Na	23	45	He	ug/l	537.814	1.9	1338955	1.9	50000	
Mg	24	45	He	ug/l	5268.676	1.3	7064740	1.6	50000	
Al	27	45	He	ug/l	28799.203	2.3	19082268	1.6	50000	
K	39	45	He	ug/l	1293.363	1.7	1854960	1.2	50000	
Ca	44	45	He	ug/l	5739.786	2.0	411786	1.9	50000	
Ti	47	45	He	ug/l	2184.528	1.8	904016	1.3	2500	
V	51	74	He	ug/l	108.498	2.8	1084293	0.9	500	
Cr	52	74	He	ug/l	37.771	3.2	443215	1.7	1000	
Mn	55	74	He	ug/l	588.652	2.3	4821112	0.2	2500	
Fe	56	74	He	ug/l	39631.155	2.5	416677047	0.4	50000	
Co	59	74	He	ug/l	18.442	2.6	316286	0.8	500	
Ni	60	74	He	ug/l	28.806	2.6	119983	0.8	1000	
Cu	65	74	He	ug/l	43.643	3.0	233704	0.8	1000	
Cu	65	74	No Gas	ug/l	42.379	0.7	621022	0.8	1000	
Zn	66	74	He	ug/l	104.429	2.7	209095	1.3	2500	
As	75	74	He	ug/l	4.94	4.0	7575	1.8	500	
Se	78	74	HEHe	ug/l	0.685	4.3	173	3.8	100	
Mo	95	103	He	ug/l	0.483	2.5	3333	3.2	100	
Ag	109	103	No Gas	ug/l	0.091	2.7	3872	3.3	100	
Cd	111	103	He	ug/l	0.215	9.8	799	7.6	1000	
Cd	111	103	No Gas	ug/l	1.015	2.3	9541	3.1	1000	
Sb	123	103	No Gas	ug/l	0.267	2.1	7101	2.1	100	
Ba	138	159	He	ug/l	153.264	3.0	4200941	0.8	2500	
W	186	159	No Gas	ug/l	0.117	4.1	4005	4.0	40	
Hg	201	159	No Gas	ng/l	99.931	0.6	432	1.6	4000	
Tl	205	159	No Gas	ug/l	0.117	2.4	9689	2.3	100	
Pb	208	159	No Gas	ug/l	9.954	0.8	1087622	0.6	500	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	953730	1.5	902319.09	105.7	70	120	
Sc	45	He	432575	1.1	362738.6	119.25	70	120	
Ge	74	No Gas	1776176	0.1	1669072.63	106.42	70	120	
Ge	74	He	307060	2.2	294264.1	104.35	70	120	
Ge	74	HEHe	277652	0.6	257780.75	107.71	70	120	
Rh	103	No Gas	1650308	0.9	1588021.85	103.92	70	120	
Rh	103	He	811396	2.3	800670.94	101.34	70	120	
Tb	159	No Gas	3067357	1.2	2769499.89	110.75	70	120	
Tb	159	He	1657806	2.3	1549761.4	106.97	70	120	
Bi	209	No Gas	1508127	0.4	1455457.42	103.62	70	120	

Sample Report ICPMS6

Sample Name	**A0B0406-03**	**Sample Type**	Sample
File Name	026SMPL.d	**Vial #**	3114
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	5.0000
Acq Time	02/24/2020 12:29:19	**Sample QC Pass/Fail**	Pass
Comment	0020669 SED As Cd Cu Hg Pb Zn	**ISTD Ref FileName**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune	Units	Raw Conc.	Conc RSD	CPS	CPS RSD	LDR	QC Flag
Be	9	6	No Gas	ug/l	0.588	3.9	4223	3.9	100	
Na	23	45	He	ug/l	559.147	1.5	1419055	0.8	50000	
Mg	24	45	He	ug/l	4821.565	0.1	6592930	1.2	50000	
Al	27	45	He	ug/l	26073.144	0.4	17618397	0.9	50000	
K	39	45	He	ug/l	1214.725	0.8	1779343	0.5	50000	
Ca	44	45	He	ug/l	5797.119	1.1	424076	0.7	50000	
Ti	47	45	He	ug/l	2163.173	0.6	912865	0.7	2500	
V	51	74	He	ug/l	99.475	2.4	1018951	1.1	500	
Cr	52	74	He	ug/l	35.745	1.9	429907	0.5	1000	
Mn	55	74	He	ug/l	559.933	2.0	4699859	1.6	2500	
Fe	56	74	He	ug/l	37777.615	2.3	407029838	0.9	50000	
Co	59	74	He	ug/l	16.855	1.4	296277	0.0	500	
Ni	60	74	He	ug/l	25.102	1.1	107251	0.6	1000	
Cu	65	74	He	ug/l	38.354	1.3	210555	0.3	1000	
Cu	65	74	No Gas	ug/l	38.908	3.0	571909	0.4	1000	
Zn	66	74	He	ug/l	88.874	1.1	182419	0.3	2500	
As	75	74	He	ug/l	4.334	2.0	6821	0.8	500	
Se	78	74	HEHe	ug/l	0.566	4.5	142	4.1	100	
Mo	95	103	He	ug/l	0.469	3.2	3288	3.6	100	
Ag	109	103	No Gas	ug/l	0.079	3.4	3400	2.3	100	
Cd	111	103	He	ug/l	0.184	3.3	697	3.6	1000	
Cd	111	103	No Gas	ug/l	0.979	1.8	9329	2.7	1000	
Sb	123	103	No Gas	ug/l	0.27	4.4	7270	4.4	100	
Ba	138	159	He	ug/l	141.262	0.6	3904653	1.4	2500	
W	186	159	No Gas	ug/l	0.113	7.6	3858	7.9	40	
Hg	201	159	No Gas	ng/l	47.939	2.4	210	1.7	4000	
Tl	205	159	No Gas	ug/l	0.102	2.7	8471	2.4	100	
Pb	208	159	No Gas	ug/l	8.682	1.7	943916	1.1	500	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	958360	1.2	902319.09	106.21	70	120	
Sc	45	He	441106	1.2	362738.6	121.6	70	120	Recovery Failed
Ge	74	No Gas	1782277	2.7	1669072.63	106.78	70	120	
Ge	74	He	314618	1.4	294264.1	106.92	70	120	
Ge	74	HEHe	275402	0.3	257780.75	106.84	70	120	
Rh	103	No Gas	1672677	1.2	1588021.85	105.33	70	120	
Rh	103	He	824564	0.4	800670.94	102.98	70	120	
Tb	159	No Gas	3051740	0.6	2769499.89	110.19	70	120	
Tb	159	He	1671000	0.8	1549761.4	107.82	70	120	
Bi	209	No Gas	1496973	1.4	1455457.42	102.85	70	120	

-016
RT 2/25/20

Sample Report ICPMS6

Sample Name	**A0B0406-04**	**Sample Type**	Sample
File Name	027SMPL.d	**Vial #**	3115
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	5.0000
Acq Time	02/24/2020 12:34:00	**Sample QC Pass/Fail**	Pass
Comment	0020669 SED As Cd Cu Hg Pb Zn	**ISTD Ref FileName**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune	Units	Raw Conc.	Conc RSD	CPS	CPS RSD	LDR	QC Flag
Be	9	6	No Gas	ug/l	0.646	2.3	4733	0.4	100	
Na	23	45	He	ug/l	588.74	0.9	1518943	1.3	50000	
Mg	24	45	He	ug/l	5347.511	1.6	7434955	2.0	50000	
Al	27	45	He	ug/l	31159.273	0.7	21409564	0.9	50000	
K	39	45	He	ug/l	1498.134	0.4	2220636	0.8	50000	
Ca	44	45	He	ug/l	5861.002	0.7	435969	1.1	50000	
Ti	47	45	He	ug/l	2228.56	0.6	956291	0.6	2500	
V	51	74	He	ug/l	110.091	0.6	1128211	0.3	500	
Cr	52	74	He	ug/l	39.661	0.9	477234	1.0	1000	
Mn	55	74	He	ug/l	601.178	0.8	5049127	1.5	2500	
Fe	56	74	He	ug/l	39684.615	0.4	427879225	1.2	50000	
Co	59	74	He	ug/l	18.309	0.1	322025	0.9	500	
Ni	60	74	He	ug/l	28.056	0.4	119850	0.4	1000	
Cu	65	74	He	ug/l	44.275	1.6	243123	0.7	1000	
Cu	65	74	No Gas	ug/l	42.721	2.5	635725	0.6	1000	
Zn	66	74	He	ug/l	104.715	0.7	214999	0.2	2500	
As	75	74	He	ug/l	4.982	0.6	7836	1.1	500	
Se	78	74	HEHe	ug/l	0.698	6.4	177	5.6	100	
Mo	95	103	He	ug/l	0.443	2.7	3092	3.6	100	
Ag	109	103	No Gas	ug/l	0.086	1.7	3732	3.0	100	
Cd	111	103	He	ug/l	0.222	3.3	836	2.6	1000	
Cd	111	103	No Gas	ug/l	1.041	2.3	9996	0.7	1000	
Sb	123	103	No Gas	ug/l	0.257	3.1	7007	2.1	100	
Ba	138	159	He	ug/l	154.688	0.3	4262295	0.9	2500	
W	186	159	No Gas	ug/l	0.098	7.9	3354	9.5	40	
Hg	201	159	No Gas	ng/l	57.295	0.3	251	1.6	4000	
Tl	205	159	No Gas	ug/l	0.119	2.5	9801	1.8	100	
Pb	208	159	No Gas	ug/l	9.485	2.6	1034212	0.8	500	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	978900	1.8	902319.09	108.49	70	120	
Sc	45	He	448513	0.4	362738.6	123.65	70	120	Recovery Failed
Ge	74	No Gas	1804287	1.9	1669072.63	108.1	70	120	
Ge	74	He	314770	0.9	294264.1	106.97	70	120	
Ge	74	HEHe	278536	1.1	257780.75	108.05	70	120	
Rh	103	No Gas	1686715	2.1	1588021.85	106.21	70	120	
Rh	103	He	820284	0.9	800670.94	102.45	70	120	
Tb	159	No Gas	3061563	1.9	2769499.89	110.55	70	120	
Tb	159	He	1665810	1.1	1549761.4	107.49	70	120	
Bi	209	No Gas	1492622	0.4	1455457.42	102.55	70	120	

- OK EY 2/25/20

Sample Report ICPMS6

Sample Name	**0020669-DUP1**	**Sample Type**	Sample
File Name	028SMPL.d	**Vial #**	3201
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	5.0000
Acq Time	02/24/2020 12:38:40	**Sample QC Pass/Fail**	Pass
Comment	0020669 SED As Cd Cu Hg Pb Zn	**ISTD Ref FileName**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune	Units	Raw Conc.	Conc RSD	CPS	CPS RSD	LDR	QC Flag
Be	9	6	No Gas	ug/l	0.651	0.8	4653	2.0	100	
Na	23	45	He	ug/l	539.787	2.4	1380519	1.6	50000	
Mg	24	45	He	ug/l	5193.192	2.5	7152754	0.5	50000	
Al	27	45	He	ug/l	28928.541	2.1	19692266	0.4	50000	
K	39	45	He	ug/l	1356.582	1.0	1996914	1.8	50000	
Ca	44	45	He	ug/l	5557.91	1.2	409720	1.0	50000	
Ti	47	45	He	ug/l	2132.582	1.1	906749	1.2	2500	
V	51	74	He	ug/l	105.174	0.8	1072530	1.1	500	
Cr	52	74	He	ug/l	38.128	0.6	456509	0.9	1000	
Mn	55	74	He	ug/l	569.094	0.2	4755424	0.4	2500	
Fe	56	74	He	ug/l	37799.207	0.7	405479905	0.3	50000	
Co	59	74	He	ug/l	17.438	0.8	305161	1.1	500	
Ni	60	74	He	ug/l	27.18	0.7	115549	1.0	1000	
Cu	65	74	He	ug/l	41.631	0.2	227493	0.5	1000	
Cu	65	74	No Gas	ug/l	41.1	0.5	601390	0.1	1000	
Zn	66	74	He	ug/l	99.657	0.5	203602	0.7	2500	
As	75	74	He	ug/l	4.728	0.6	7402	0.7	500	
Se	78	74	HEHe	ug/l	0.634	5.8	159	4.9	100	
Mo	95	103	He	ug/l	0.432	1.9	3008	2.5	100	
Ag	109	103	No Gas	ug/l	0.085	1.8	3624	2.5	100	
Cd	111	103	He	ug/l	0.206	4.3	773	4.0	1000	
Cd	111	103	No Gas	ug/l	0.971	3.3	9141	2.3	1000	
Sb	123	103	No Gas	ug/l	0.281	3.4	7483	3.7	100	
Ba	138	159	He	ug/l	149.678	0.7	4092055	0.3	2500	
W	186	159	No Gas	ug/l	0.102	6.1	3444	6.4	40	
Hg	201	159	No Gas	ng/l	58.089	4.4	250	5.2	4000	
Tl	205	159	No Gas	ug/l	0.111	1.2	9041	2.0	100	
Pb	208	159	No Gas	ug/l	10.438	0.7	1119149	0.6	500	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	955516	2.2	902319.09	105.9	70	120	
Sc	45	He	444483	2.2	362738.6	122.54	70	120	Recovery Failed
Ge	74	No Gas	1773469	0.5	1669072.63	106.25	70	120	
Ge	74	He	313181	0.4	294264.1	106.43	70	120	
Ge	74	HEHe	275903	1.1	257780.75	107.03	70	120	
Rh	103	No Gas	1652911	1.0	1588021.85	104.09	70	120	
Rh	103	He	818094	0.8	800670.94	102.18	70	120	
Tb	159	No Gas	3010109	0.9	2769499.89	108.69	70	120	
Tb	159	He	1652815	0.4	1549761.4	106.65	70	120	
Bi	209	No Gas	1488563	1.2	1455457.42	102.27	70	120	

-OK 7/25/20

Sample Report ICPMS6

Sample Name	**0020669-MS1**	**Sample Type**	Sample
File Name	029SMPL.d	**Vial #**	3202
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	5.0000
Acq Time	02/24/2020 12:43:21	**Sample QC Pass/Fail**	Pass
Comment	0020669 SED As Cd Cu Hg Pb Zn	**ISTD Ref FileName**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune	Units	Raw Conc.	Conc RSD	CPS	CPS RSD	LDR	QC Flag
Be	9	6	No Gas	ug/l	23.777	1.2	168137	0.5	100	
Na	23	45	He	ug/l	2709.773	4.7	6594382	0.4	50000	
Mg	24	45	He	ug/l	7533.625	6.4	9921289	1.4	50000	
Al	27	45	He	ug/l	30651.115	4.0	19967206	1.8	50000	
K	39	45	He	ug/l	3438.902	5.5	4773101	0.3	50000	
Ca	44	45	He	ug/l	7852.062	4.9	553007	0.2	50000	
Ti	47	45	He	ug/l	2078.44	5.7	845088	0.8	2500	
V	51	74	He	ug/l	162.497	5.5	1576397	1.1	500	
Cr	52	74	He	ug/l	89.866	5.7	1023403	0.5	1000	
Mn	55	74	He	ug/l	649.837	6.1	5168394	1.5	2500	
Fe	56	74	He	ug/l	42323.735	5.2	432261971	0.8	50000	
Co	59	74	He	ug/l	71.502	5.9	1190521	0.6	500	
Ni	60	74	He	ug/l	81.745	5.3	329405	0.3	1000	
Cu	65	74	He	ug/l	98.876	6.0	513725	0.7	1000	
Cu	65	74	No Gas	ug/l	98.54	2.2	1438086	0.8	1000	
Zn	66	74	He	ug/l	155.721	5.3	302733	0.3	2500	
As	75	74	He	ug/l	54.089	6.4	79945	0.8	500	
Se	78	74	HEHe	ug/l	23.086	0.7	5676	1.0	100	
Mo	95	103	He	ug/l	25.14	6.2	167412	1.3	100	
Ag	109	103	No Gas	ug/l	22.297	1.6	925720	1.4	100	
Cd	111	103	He	ug/l	50.889	5.4	183001	0.6	1000	
Cd	111	103	No Gas	ug/l	47.27	1.6	439590	1.3	1000	
Sb	123	103	No Gas	ug/l	19.291	1.0	488768	0.6	100	
Ba	138	159	He	ug/l	201.755	5.8	5385379	0.4	2500	
W	186	159	No Gas	ug/l	0.121	2.6	4068	3.6	40	
Hg	201	159	No Gas	ng/l	948.906	2.2	3957	3.0	4000	
Tl	205	159	No Gas	ug/l	23.534	1.2	1868051	1.9	100	
Pb	208	159	No Gas	ug/l	57.436	0.8	6147702	1.0	500	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	957692	1.4	902319.09	106.14	70	120	
Sc	45	He	425778	5.0	362738.6	117.38	70	120	
Ge	74	No Gas	1771295	2.3	1669072.63	106.12	70	120	
Ge	74	He	298724	5.4	294264.1	101.52	70	120	
Ge	74	HEHe	272222	0.8	257780.75	105.6	70	120	
Rh	103	No Gas	1634204	0.4	1588021.85	102.91	70	120	
Rh	103	He	788537	4.9	800670.94	98.48	70	120	
Tb	159	No Gas	3007084	1.0	2769499.89	108.58	70	120	
Tb	159	He	1616941	5.2	1549761.4	104.33	70	120	
Bi	209	No Gas	1465575	1.3	1455457.42	100.7	70	120	

Continuing Calibration Verification (CCV) Report ICPMS6

Sample Name	**0B24036-CCV1**	**Sample Type**	CCV
File Name	032_CCV.d	**Vial #**	1102
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	1.0000
Acq Time	02/24/2020 12:57:18	**Sample QC Pass/Fail**	Pass
Comment	A20B273 - KT 02/24	**ISTD Ref FileName**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	Conc. RSD	CPS	ExpValue	% Rec	Low	High	Flag
Be	9	6	No Gas	39.487	ug/l	1.4	280002	40	98.72	90	110	
Na	23	45	He	3973.019	ug/l	0.7	8793192	4000	99.33	90	110	
Mg	24	45	He	4169.444	ug/l	0.5	4999471	4000	104.24	90	110	
Al	27	45	He	4119.326	ug/l	0.8	2441031	4000	102.98	90	110	
K	39	45	He	4069.288	ug/l	1.5	5133056	4000	101.73	90	110	
Ca	44	45	He	4191.977	ug/l	0.5	269333	4000	104.8	90	110	
Ti	47	45	He	98.776	ug/l	1.4	36561	100	98.78	90	110	
V	51	74	He	99.029	ug/l	0.2	1020794	100	99.03	90	110	
Cr	52	74	He	103.457	ug/l	1.2	1250884	100	103.46	90	110	
Mn	55	74	He	101.557	ug/l	1.1	857980	100	101.56	90	110	
Fe	56	74	He	4172.063	ug/l	0.2	45250603	4000	104.3	90	110	
Co	59	74	He	105.983	ug/l	0.6	1873707	100	105.98	90	110	
Ni	60	74	He	107.208	ug/l	1.0	458402	100	107.21	90	110	
Cu	65	74	He	106.547	ug/l	0.8	587799	100	106.55	90	110	
Cu	65	74	No Gas	108.895	ug/l	1.0	1625120	100	108.89	90	110	
Zn	66	74	He	103.456	ug/l	0.9	213617	100	103.46	90	110	
As	75	74	He	99.082	ug/l	0.7	155477	100	99.08	90	110	
Se	78	74	HEHe	41.594	ug/l	1.0	10186	40	103.98	90	110	
Mo	95	103	He	40.308	ug/l	1.1	283997	40	100.77	90	110	
Ag	109	103	No Gas	38.076	ug/l	2.5	1637626	40	95.19	90	110	
Cd	111	103	He	99.480	ug/l	0.6	378425	100	99.48	90	110	
Cd	111	103	No Gas	92.339	ug/l	0.9	889618	100	92.34	90	110	
Sb	123	103	No Gas	36.064	ug/l	2.4	946351	40	90.16	90	110	
Ba	138	159	He	104.677	ug/l	1.5	2889963	100	104.68	90	110	
Hg	201	159	No Gas	791.718	ng/l	0.8	3312	800	98.96	90	110	
Tl	205	159	No Gas	40.233	ug/l	1.1	3202120	40	100.58	90	110	
Pb	208	159	No Gas	101.206	ug/l	1.1	10862230	100	101.21	90	110	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	960437	1.0	902319.09	106.44	70	120	
Ge	74	No Gas	1811160	2.5	1669072.63	108.51	70	120	
Rh	103	No Gas	1693046	0.6	1588021.85	106.61	70	120	
Tb	159	No Gas	3015459	0.6	2769499.89	108.88	70	120	
Bi	209	No Gas	1538416	1.1	1455457.42	105.7	70	120	
Sc	45	He	386797	0.4	362738.6	106.63	70	120	
Ge	74	He	316538	0.2	294264.1	107.57	70	120	
Rh	103	He	832699	0.9	800670.94	104	70	120	
Tb	159	He	1669217	1.5	1549761.4	107.71	70	120	
Ge	74	HEHe	271208	1.9	257780.75	105.21	70	120	

Continuing Calibration Blank (CCB) Report ICPMS6

Sample Name	**0B24036-CCB1**	**Sample Type**	CCB
File Name	033_CCB.d	**Vial #**	1101
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	1.0000
Acq Time	02/24/2020 13:01:50	**Sample QC Pass/Fail**	Pass
Comment	CCB	**ISTD Ref File**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune Mode	Conc.	Units	Conc. RSD	CPS	Limit	QC Flag
Be	9	6	No Gas	0.003	ug/l	55.4	87	0.09	
Na	23	45	He	2.750	ug/l	3.5	12955	45	
Mg	24	45	He	0.458	ug/l	34.2	2014	45	
Al	27	45	He	0.904	ug/l	15.8	665	22.5	
K	39	45	He	1.118	ug/l	43.3	37965	45	
Ca	44	45	He	-1.333	ug/l	N/A	1284	45	
Ti	47	45	He	0.043	ug/l	9.5	21	1.8	
V	51	74	He	-0.085	ug/l	N/A	1236	0.45	
Cr	52	74	He	0.004	ug/l	114.5	639	0.45	
Mn	55	74	He	0.008	ug/l	9.6	360	0.45	
Fe	56	74	He	1.350	ug/l	8.0	29958	22.5	
Co	59	74	He	0.004	ug/l	22.7	223	0.09	
Ni	60	74	He	-0.081	ug/l	N/A	389	0.45	
Cu	65	74	He	0.020	ug/l	8.1	497	0.45	
Cu	65	74	No Gas	0.059	ug/l	7.2	2027	0.45	
Zn	66	74	He	-0.067	ug/l	N/A	138	1.8	
As	75	74	He	0.003	ug/l	72.8	66	0.45	
Se	78	74	HEHe	0.008	ug/l	19.9	3	0.45	
Mo	95	103	He	0.036	ug/l	19.8	261	0.45	
Ag	109	103	No Gas	0.004	ug/l	15.3	198	0.09	
Cd	111	103	He	0.007	ug/l	8.3	29	0.09	
Cd	111	103	No Gas	0.009	ug/l	29.2	99	0.09	
Sb	123	103	No Gas	0.104	ug/l	4.0	3007	0.45	
Ba	138	159	He	0.011	ug/l	23.2	460	0.45	
Hg	201	159	No Gas	9.204	ng/l	13.5	46	36	
Tl	205	159	No Gas	0.028	ug/l	3.6	2473	0.09	
Pb	208	159	No Gas	0.012	ug/l	3.3	2306	0.09	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	966041	1.1	902319.09	107.06	70	120	
Ge	74	No Gas	1797759	0.3	1669072.63	107.71	70	120	
Rh	103	No Gas	1693866	1.8	1588021.85	106.67	70	120	
Tb	159	No Gas	3005207	0.7	2769499.89	108.51	70	120	
Bi	209	No Gas	1539502	0.1	1455457.42	105.77	70	120	
Sc	45	He	353590	2.6	362738.6	97.48	70	120	
Ge	74	He	294112	2.6	294264.1	99.95	70	120	
Rh	103	He	807964	0.8	800670.94	100.91	70	120	
Tb	159	He	1628495	0.9	1549761.4	105.08	70	120	
Ge	74	HEHe	272564	0.5	257780.75	105.73	70	120	

Continuing Calibration Verification (CCV) Report ICPMS6

Sample Name	**0B24036-CCV2**	**Sample Type**	CCV
File Name	044_CCV.d	**Vial #**	1102
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	1.0000
Acq Time	02/24/2020 13:53:46	**Sample QC Pass/Fail**	Fail
Comment	A20B273 - KT 02/24 (Pb rounds in LIMS)	**ISTD Ref FileName**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	Conc. RSD	CPS	ExpValue	% Rec	Low	High	Flag
Be	9	6	No Gas	39.863	ug/l	7.8	197260	40	99.66	90	110	
Na	23	45	He	3999.970	ug/l	1.7	5845396	4000	100	90	110	
Mg	24	45	He	4227.650	ug/l	0.4	3347490	4000	105.69	90	110	
Al	27	45	He	4019.400	ug/l	0.9	1572815	4000	100.48	90	110	
K	39	45	He	3934.537	ug/l	1.1	3277810	4000	98.36	90	110	
Ca	44	45	He	4092.468	ug/l	0.8	173643	4000	102.31	90	110	
Ti	47	45	He	99.021	ug/l	0.9	24202	100	99.02	90	110	
V	51	74	He	93.809	ug/l	1.0	685880	100	93.81	90	110	
Cr	52	74	He	96.359	ug/l	0.8	826307	100	96.36	90	110	
Mn	55	74	He	98.270	ug/l	0.3	588807	100	98.27	90	110	
Fe	56	74	He	4081.208	ug/l	0.1	31393646	4000	102.03	90	110	
Co	59	74	He	103.457	ug/l	1.9	1297175	100	103.46	90	110	
Ni	60	74	He	104.951	ug/l	0.7	318274	100	104.95	90	110	
Cu	65	74	He	107.018	ug/l	0.6	418717	100	107.02	90	110	
Cu	65	74	No Gas	100.062	ug/l	8.8	1011410	100	100.06	90	110	
Zn	66	74	He	105.946	ug/l	0.8	155141	100	105.95	90	110	
As	75	74	He	96.342	ug/l	0.3	107219	100	96.34	90	110	
Se	78	74	HEHe	41.435	ug/l	0.9	8043	40	103.59	90	110	
Mo	95	103	He	39.168	ug/l	0.6	217219	40	97.92	90	110	
Ag	109	103	No Gas	36.507	ug/l	7.8	1140705	40	91.27	90	110	
Cd	111	103	He	100.858	ug/l	1.0	301982	100	100.86	90	110	
Cd	111	103	No Gas	104.090	ug/l	7.6	728575	100	104.09	90	110	
Sb	123	103	No Gas	41.805	ug/l	9.0	796334	40	104.51	90	110	
Ba	138	159	He	96.080	ug/l	0.8	2339572	100	96.08	90	110	
Hg	201	159	No Gas	874.182	ng/l	3.7	3308	800	109.27	90	110	
Tl	205	159	No Gas	43.415	ug/l	4.6	3125868	40	108.54	90	110	
Pb	208	159	No Gas	110.395	ug/l	5.9	10713304	100	110.4	90	110	> +/- 10%

-Pb rounds in LIMS
KT 2/25/20

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	672827	7.6	902319.09	74.57	70	120	
Ge	74	No Gas	1233021	9.1	1669072.63	73.87	70	120	
Rh	103	No Gas	1235420	8.6	1588021.85	77.8	70	120	
Tb	159	No Gas	2732305	5.4	2769499.89	98.66	70	120	
Bi	209	No Gas	1550024	6.3	1455457.42	106.5	70	120	
Sc	45	He	255417	1.1	362738.6	70.41	70	120	
Ge	74	He	224492	0.1	294264.1	76.29	70	120	
Rh	103	He	655417	0.6	800670.94	81.86	70	120	
Tb	159	He	1472107	0.7	1549761.4	94.99	70	120	
Ge	74	HEHe	214949	1.4	257780.75	83.38	70	120	

Continuing Calibration Blank (CCB) Report ICPMS6

Sample Name	**0B24036-CCB2**	**Sample Type**	CCB
File Name	045_CCB.d	**Vial #**	1101
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	1.0000
Acq Time	02/24/2020 13:58:26	**Sample QC Pass/Fail**	Pass
Comment	CCB (45 He Q-06)	**ISTD Ref File**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune Mode	Conc.	Units	Conc. RSD	CPS	Limit	QC Flag
Be	9	6	No Gas	0.003	ug/l	13.1	58	0.09	
Na	23	45	He	9.256	ug/l	2.0	18461	45	
Mg	24	45	He	0.270	ug/l	2.5	1279	45	
Al	27	45	He	0.423	ug/l	3.8	285	22.5	
K	39	45	He	-2.110	ug/l	N/A	24232	45	
Ca	44	45	He	-8.198	ug/l	N/A	625	45	
Ti	47	45	He	0.079	ug/l	79.3	23	1.8	
V	51	74	He	-0.089	ug/l	N/A	900	0.45	
Cr	52	74	He	0.000	ug/l	N/A	444	0.45	
Mn	55	74	He	0.015	ug/l	30.1	318	0.45	
Fe	56	74	He	0.581	ug/l	4.7	16779	22.5	
Co	59	74	He	0.004	ug/l	42.6	159	0.09	
Ni	60	74	He	-0.076	ug/l	N/A	309	0.45	
Cu	65	74	He	0.003	ug/l	311.5	309	0.45	
Cu	65	74	No Gas	0.172	ug/l	3.6	2445	0.45	
Zn	66	74	He	-0.077	ug/l	N/A	90	1.8	
As	75	74	He	0.005	ug/l	79.5	51	0.45	
Se	78	74	HEHe	0.009	ug/l	51.8	3	0.45	
Mo	95	103	He	0.026	ug/l	4.4	161	0.45	
Ag	109	103	No Gas	0.003	ug/l	19.5	132	0.09	
Cd	111	103	He	0.004	ug/l	18.6	14	0.09	
Cd	111	103	No Gas	0.007	ug/l	91.1	52	0.09	
Sb	123	103	No Gas	0.127	ug/l	1.8	2584	0.45	
Ba	138	159	He	0.007	ug/l	38.4	321	0.45	
Hg	201	159	No Gas	10.420	ng/l	22.0	46	36	
Tl	205	159	No Gas	0.024	ug/l	2.1	1898	0.09	
Pb	208	159	No Gas	0.012	ug/l	12.6	2038	0.09	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	657532	0.4	902319.09	72.87	70	120	
Ge	74	No Gas	1188039	0.5	1669072.63	71.18	70	120	
Rh	103	No Gas	1208854	0.3	1588021.85	76.12	70	120	
Tb	159	No Gas	2708094	1.3	2769499.89	97.78	70	120	
Bi	209	No Gas	1512290	0.5	1455457.42	103.9	70	120	
Sc	45	He	250035	1.3	362738.6	68.93	70	120	Recovery Failed
Ge	74	He	222463	0.3	294264.1	75.6	70	120	
Rh	103	He	655977	0.7	800670.94	81.93	70	120	
Tb	159	He	1453251	0.7	1549761.4	93.77	70	120	
Ge	74	HEHe	212200	1.9	257780.75	82.32	70	120	

OK for 200.8 JG 02/25/20

Continuing Calibration Verification (CCV) Report ICPMS6

Sample Name	**0B24036-CCV3**	**Sample Type**	CCV
File Name	056_CCV.d	**Vial #**	1102
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	1.0000
Acq Time	02/24/2020 14:50:42	**Sample QC Pass/Fail**	Pass
Comment	A20B273 - KT 02/24	**ISTD Ref FileName**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	Conc. RSD	CPS	ExpValue	% Rec	Low	High	Flag
Be	9	6	No Gas	39.499	ug/l	0.8	197686	40	98.75	90	110	
Na	23	45	He	4093.190	ug/l	1.9	6075649	4000	102.33	90	110	
Mg	24	45	He	4323.291	ug/l	1.8	3476791	4000	108.08	90	110	
Al	27	45	He	4103.943	ug/l	1.2	1631194	4000	102.6	90	110	
K	39	45	He	3955.853	ug/l	1.5	3347405	4000	98.9	90	110	
Ca	44	45	He	4174.233	ug/l	1.1	179888	4000	104.36	90	110	
Ti	47	45	He	98.951	ug/l	1.5	24566	100	98.95	90	110	
V	51	74	He	95.697	ug/l	0.9	694705	100	95.7	90	110	
Cr	52	74	He	98.875	ug/l	0.9	841886	100	98.88	90	110	
Mn	55	74	He	101.191	ug/l	0.7	602019	100	101.19	90	110	
Fe	56	74	He	4203.635	ug/l	0.4	32107410	4000	105.09	90	110	
Co	59	74	He	105.891	ug/l	1.8	1318296	100	105.89	90	110	
Ni	60	74	He	107.620	ug/l	0.6	324055	100	107.62	90	110	
Cu	65	74	He	108.846	ug/l	0.5	422865	100	108.85	90	110	
Cu	65	74	No Gas	101.973	ug/l	0.1	1008489	100	101.97	90	110	
Zn	66	74	He	106.934	ug/l	1.8	155471	100	106.93	90	110	
As	75	74	He	97.619	ug/l	0.6	107872	100	97.62	90	110	
Se	78	74	HEHe	41.370	ug/l	0.7	7984	40	103.42	90	110	
Mo	95	103	He	39.571	ug/l	0.8	217158	40	98.93	90	110	
Ag	109	103	No Gas	37.369	ug/l	1.2	1133104	40	93.42	90	110	
Cd	111	103	He	100.886	ug/l	0.4	298921	100	100.89	90	110	
Cd	111	103	No Gas	107.036	ug/l	0.7	726993	100	107.04	90	110	
Sb	123	103	No Gas	42.788	ug/l	0.8	791531	40	106.97	90	110	
Ba	138	159	He	95.785	ug/l	0.7	2301612	100	95.78	90	110	
Hg	201	159	No Gas	859.813	ng/l	2.8	3232	800	107.48	90	110	
Tl	205	159	No Gas	43.885	ug/l	1.0	3138891	40	109.71	90	110	
Pb	208	159	No Gas	108.849	ug/l	0.3	10499587	100	108.85	90	110	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	677868	1.2	902319.09	75.13	70	120	
Ge	74	No Gas	1200008	0.6	1669072.63	71.9	70	120	
Rh	103	No Gas	1193569	0.7	1588021.85	75.16	70	120	
Tb	159	No Gas	2710060	0.7	2769499.89	97.85	70	120	
Bi	209	No Gas	1489978	2.0	1455457.42	102.37	70	120	
Sc	45	He	259456	1.2	362738.6	71.53	70	120	
Ge	74	He	222913	0.8	294264.1	75.75	70	120	
Rh	103	He	648591	1.3	800670.94	81.01	70	120	
Tb	159	He	1452671	0.8	1549761.4	93.74	70	120	
Ge	74	HEHe	213715	0.4	257780.75	82.91	70	120	

Continuing Calibration Blank (CCB) Report ICPMS6

Sample Name	**0B24036-CCB3**	**Sample Type**	CCB
File Name	057_CCB.d	**Vial #**	1101
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	1.0000
Acq Time	02/24/2020 14:55:21	**Sample QC Pass/Fail**	Pass
Comment	CCB	**ISTD Ref File**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune Mode	Conc.	Units	Conc. RSD	CPS	Limit	QC Flag
Be	9	6	No Gas	0.004	ug/l	33.1	64	0.09	
Na	23	45	He	4.422	ug/l	9.4	11659	45	
Mg	24	45	He	0.290	ug/l	33.4	1308	45	
Al	27	45	He	0.785	ug/l	22.0	426	22.5	
K	39	45	He	0.922	ug/l	195.0	26930	45	
Ca	44	45	He	-6.040	ug/l	N/A	718	45	
Ti	47	45	He	0.090	ug/l	48.6	27	1.8	
V	51	74	He	-0.085	ug/l	N/A	899	0.45	
Cr	52	74	He	0.001	ug/l	254.6	442	0.45	
Mn	55	74	He	0.061	ug/l	15.1	572	0.45	
Fe	56	74	He	1.332	ug/l	13.0	21779	22.5	
Co	59	74	He	0.004	ug/l	73.2	164	0.09	
Ni	60	74	He	-0.084	ug/l	N/A	274	0.45	
Cu	65	74	He	0.016	ug/l	16.8	350	0.45	
Cu	65	74	No Gas	0.064	ug/l	11.2	1432	0.45	
Zn	66	74	He	-0.067	ug/l	N/A	101	1.8	
As	75	74	He	0.003	ug/l	78.7	48	0.45	
Se	78	74	HEHe	0.004	ug/l	79.8	2	0.45	
Mo	95	103	He	0.026	ug/l	10.4	150	0.45	
Ag	109	103	No Gas	0.003	ug/l	14.4	147	0.09	
Cd	111	103	He	0.003	ug/l	52.4	12	0.09	
Cd	111	103	No Gas	0.004	ug/l	24.2	37	0.09	
Sb	123	103	No Gas	0.127	ug/l	6.8	2720	0.45	
Ba	138	159	He	0.008	ug/l	25.3	343	0.45	
Hg	201	159	No Gas	8.950	ng/l	2.7	41	36	
Tl	205	159	No Gas	0.019	ug/l	2.4	1551	0.09	
Pb	208	159	No Gas	0.011	ug/l	15.5	2026	0.09	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	690463	0.5	902319.09	76.52	70	120	
Ge	74	No Gas	1222659	0.5	1669072.63	73.25	70	120	
Rh	103	No Gas	1273628	5.1	1588021.85	80.2	70	120	
Tb	159	No Gas	2739656	1.1	2769499.89	98.92	70	120	
Bi	209	No Gas	1511522	0.8	1455457.42	103.85	70	120	
Sc	45	He	252813	5.5	362738.6	69.7	70	120	Recovery Failed
Ge	74	He	215741	5.3	294264.1	73.32	70	120	
Rh	103	He	630564	5.3	800670.94	78.75	70	120	
Tb	159	He	1410744	5.9	1549761.4	91.03	70	120	
Ge	74	HEHe	212495	1.1	257780.75	82.43	70	120	

rounds to 70%
OK Hg 02/25/20
R+2/27/20

Continuing Calibration Verification (CCV) Report ICPMS6

Sample Name	**0B24036-CCV4**	**Sample Type**	CCV
File Name	068_CCV.d	**Vial #**	1102
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	1.0000
Acq Time	02/24/2020 15:47:14	**Sample QC Pass/Fail**	Pass
Comment	A20B273 - KT 02/24	**ISTD Ref FileName**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	Conc. RSD	CPS	ExpValue	% Rec	Low	High	Flag
Be	9	6	No Gas	39.135	ug/l	4.2	198564	40	97.84	90	110	
Na	23	45	He	4067.112	ug/l	1.0	6106773	4000	101.68	90	110	
Mg	24	45	He	4291.788	ug/l	0.5	3491367	4000	107.29	90	110	
Al	27	45	He	4105.266	ug/l	1.3	1650491	4000	102.63	90	110	
K	39	45	He	4057.589	ug/l	1.6	3472461	4000	101.44	90	110	
Ca	44	45	He	4119.385	ug/l	0.9	179581	4000	102.98	90	110	
Ti	47	45	He	98.170	ug/l	1.7	24651	100	98.17	90	110	
V	51	74	He	95.637	ug/l	0.6	693090	100	95.64	90	110	
Cr	52	74	He	98.370	ug/l	0.8	836152	100	98.37	90	110	
Mn	55	74	He	101.018	ug/l	0.4	599973	100	101.02	90	110	
Fe	56	74	He	4197.069	ug/l	0.9	32001211	4000	104.93	90	110	
Co	59	74	He	106.400	ug/l	1.1	1322336	100	106.4	90	110	
Ni	60	74	He	105.817	ug/l	0.4	318094	100	105.82	90	110	
Cu	65	74	He	107.279	ug/l	0.8	416070	100	107.28	90	110	
Cu	65	74	No Gas	95.802	ug/l	7.1	1000868	100	95.8	90	110	
Zn	66	74	He	106.140	ug/l	1.0	154071	100	106.14	90	110	
As	75	74	He	97.295	ug/l	0.1	107333	100	97.3	90	110	
Se	78	74	HEHe	41.431	ug/l	13.7	7761	40	103.58	90	110	
Mo	95	103	He	39.266	ug/l	0.2	213170	40	98.16	90	110	
Ag	109	103	No Gas	36.091	ug/l	7.7	1125691	40	90.23	90	110	
Cd	111	103	He	100.551	ug/l	0.5	294723	100	100.55	90	110	
Cd	111	103	No Gas	103.173	ug/l	8.3	720610	100	103.17	90	110	
Sb	123	103	No Gas	41.105	ug/l	8.8	781794	40	102.76	90	110	
Ba	138	159	He	97.103	ug/l	1.2	2315993	100	97.1	90	110	
Hg	201	159	No Gas	833.573	ng/l	2.4	3149	800	104.2	90	110	
Tl	205	159	No Gas	43.282	ug/l	1.3	3110870	40	108.2	90	110	
Pb	208	159	No Gas	108.024	ug/l	1.8	10469833	100	108.02	90	110	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	687572	2.1	902319.09	76.2	70	120	
Ge	74	No Gas	1271165	6.2	1669072.63	76.16	70	120	
Rh	103	No Gas	1231780	6.5	1588021.85	77.57	70	120	
Tb	159	No Gas	2723045	0.6	2769499.89	98.32	70	120	
Bi	209	No Gas	1510065	2.2	1455457.42	103.75	70	120	
Sc	45	He	262419	0.2	362738.6	72.34	70	120	
Ge	74	He	222533	1.0	294264.1	75.62	70	120	
Rh	103	He	641589	0.5	800670.94	80.13	70	120	
Tb	159	He	1441973	0.9	1549761.4	93.04	70	120	
Ge	74	HEHe	210369	15.3	257780.75	81.61	70	120	

Continuing Calibration Blank (CCB) Report ICPMS6

Sample Name	**0B24036-CCB4**	**Sample Type**	CCB
File Name	069_CCB.d	**Vial #**	1101
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	1.0000
Acq Time	02/24/2020 15:51:52	**Sample QC Pass/Fail**	Pass
Comment	CCB	**ISTD Ref File**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune Mode	Conc.	Units	Conc. RSD	CPS	Limit	QC Flag
Be	9	6	No Gas	0.005	ug/l	75.2	69	0.09	
Na	23	45	He	2.682	ug/l	9.6	9310	45	
Mg	24	45	He	0.592	ug/l	29.9	1571	45	
Al	27	45	He	1.328	ug/l	10.0	648	22.5	
K	39	45	He	0.934	ug/l	143.1	27416	45	
Ca	44	45	He	-5.195	ug/l	N/A	768	45	
Ti	47	45	He	0.111	ug/l	46.2	32	1.8	
V	51	74	He	-0.101	ug/l	N/A	809	0.45	
Cr	52	74	He	0.006	ug/l	162.6	497	0.45	
Mn	55	74	He	0.056	ug/l	14.5	553	0.45	
Fe	56	74	He	1.923	ug/l	6.6	26810	22.5	
Co	59	74	He	0.002	ug/l	95.9	138	0.09	
Ni	60	74	He	-0.092	ug/l	N/A	260	0.45	
Cu	65	74	He	0.012	ug/l	25.8	343	0.45	
Cu	65	74	No Gas	0.042	ug/l	20.6	1226	0.45	
Zn	66	74	He	-0.057	ug/l	N/A	119	1.8	
As	75	74	He	0.003	ug/l	94.4	49	0.45	
Se	78	74	HEHe	0.010	ug/l	42.3	3	0.45	
Mo	95	103	He	0.025	ug/l	6.9	148	0.45	
Ag	109	103	No Gas	0.003	ug/l	33.1	124	0.09	
Cd	111	103	He	0.004	ug/l	30.4	16	0.09	
Cd	111	103	No Gas	0.006	ug/l	38.7	52	0.09	
Sb	123	103	No Gas	0.137	ug/l	4.5	2818	0.45	
Ba	138	159	He	0.010	ug/l	9.5	380	0.45	
Hg	201	159	No Gas	7.589	ng/l	9.2	35	36	
Tl	205	159	No Gas	0.017	ug/l	4.5	1375	0.09	
Pb	208	159	No Gas	0.012	ug/l	5.3	2102	0.09	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	692744	0.7	902319.09	76.77	70	120	
Ge	74	No Gas	1245458	4.0	1669072.63	74.62	70	120	
Rh	103	No Gas	1226695	1.0	1588021.85	77.25	70	120	
Tb	159	No Gas	2701759	0.8	2769499.89	97.55	70	120	
Bi	209	No Gas	1509152	1.3	1455457.42	103.69	70	120	
Sc	45	He	257078	4.3	362738.6	70.87	70	120	
Ge	74	He	220996	3.8	294264.1	75.1	70	120	
Rh	103	He	632496	3.9	800670.94	79	70	120	
Tb	159	He	1408131	3.9	1549761.4	90.86	70	120	
Ge	74	HEHe	212744	0.5	257780.75	82.53	70	120	

CRL Verification ICPMS6

Sample Name	**0B24036-CRL4**	**Sample Type**	CRL1
File Name	070CRL.d	**Vial #**	2101
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	1.0000
Acq Time	02/24/2020 15:56:37	**Sample QC Pass/Fail**	Fail
Comment	A20B178 -KT 02/24	**ISTD Ref File**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	% Rec	%QC Low	%QC High	Flag
Be	9	6	No Gas	0.180	ug/l	3.0	960	100	70	130	
Na	23	45	He	12.628	ug/l	15.7	24293	140.31	70	130	CRL1 Failed
Mg	24	45	He	9.711	ug/l	4.1	8973	107.9	70	130	
Al	27	45	He	10.593	ug/l	6.1	4364	117.7	70	130	
K	39	45	He	9.189	ug/l	2.4	34850	102.1	70	130	
Ca	44	45	He	5.652	ug/l	20.5	1249	62.8	70	130	CRL1 Failed
Ti	47	45	He	0.292	ug/l	29.2	78	162.22	70	130	CRL1 Failed
V	51	74	He	0.075	ug/l	8.6	2084	41.67	70	130	CRL1 Failed
Cr	52	74	He	0.180	ug/l	3.3	1978	100	70	130	
Mn	55	74	He	0.227	ug/l	1.7	1573	126.11	70	130	
Fe	56	74	He	10.749	ug/l	1.3	94171	119.43	70	130	
Co	59	74	He	0.176	ug/l	2.4	2304	97.78	70	130	
Ni	60	74	He	0.090	ug/l	11.1	806	50	70	130	CRL1 Failed
Cu	65	74	He	0.199	ug/l	7.9	1070	110.56	70	130	
Cu	65	74	No Gas	0.203	ug/l	3.6	2805	112.78	70	130	
Zn	66	74	He	0.136	ug/l	8.6	398	75.56	70	130	
As	75	74	He	0.186	ug/l	3.3	250	103.33	70	130	
Se	78	74	HEHe	0.187	ug/l	7.8	36	103.89	70	130	
Mo	95	103	He	0.176	ug/l	14.5	972	97.78	70	130	
Ag	109	103	No Gas	0.180	ug/l	1.9	5585	100	70	130	
Cd	111	103	He	0.181	ug/l	3.6	536	100.56	70	130	
Cd	111	103	No Gas	0.199	ug/l	3.1	1381	110.56	70	130	
Sb	123	103	No Gas	0.239	ug/l	1.7	4701	132.78	70	130	CRL1 Failed
Ba	138	159	He	0.181	ug/l	2.0	4407	100.56	70	130	
Hg	201	159	No Gas	9.517	ng/l	16.3	43	132.18	70	130	CRL1 Failed
Tl	205	159	No Gas	0.169	ug/l	1.2	12308	93.89	70	130	
Pb	208	159	No Gas	0.179	ug/l	0.5	18231	99.44	70	130	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	688498	0.6	902319.09	76.3	70	120	
Ge	74	No Gas	1213478	0.3	1669072.63	72.7	70	120	
Rh	103	No Gas	1215990	0.6	1588021.85	76.57	70	120	
Tb	159	No Gas	2717528	1.1	2769499.89	98.12	70	120	
Bi	209	No Gas	1495761	0.3	1455457.42	102.77	70	120	
Sc	45	He	261105	1.1	362738.6	71.98	70	120	
Ge	74	He	222276	1.1	294264.1	75.54	70	120	
Rh	103	He	642809	1.3	800670.94	80.28	70	120	
Tb	159	He	1424701	1.6	1549761.4	91.93	70	120	
Ge	74	HEHe	205767	1.1	257780.75	79.82	70	120	

CRL Verification ICPMS6

Sample Name	**0B24036-CRL5**	**Sample Type**	CRL2
File Name	071_CRL.d	**Vial #**	2102
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	1.0000
Acq Time	02/24/2020 16:01:21	**Sample QC Pass/Fail**	Pass
Comment	A20B179 - KT 02/24	**ISTD Ref File**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	% Rec	%QC Low	%QC High	Flag
Be	9	6	No Gas	0.853	ug/l	4.7	4344	94.78	70	130	
Na	23	45	He	48.300	ug/l	2.1	76654	107.33	70	130	
Mg	24	45	He	47.340	ug/l	0.9	38968	105.2	70	130	
Al	27	45	He	47.029	ug/l	1.2	18720	104.51	70	130	
K	39	45	He	45.326	ug/l	2.6	64620	100.72	70	130	
Ca	44	45	He	44.786	ug/l	3.7	2904	99.52	70	130	
Ti	47	45	He	1.079	ug/l	10.4	271	119.89	70	130	
V	51	74	He	0.731	ug/l	1.7	6816	81.22	70	130	
Cr	52	74	He	0.876	ug/l	1.1	7870	97.33	70	130	
Mn	55	74	He	0.943	ug/l	5.2	5810	104.78	70	130	
Fe	56	74	He	47.323	ug/l	0.8	372056	105.16	70	130	
Co	59	74	He	0.897	ug/l	2.0	11229	99.67	70	130	
Ni	60	74	He	0.817	ug/l	3.2	2980	90.78	70	130	
Cu	65	74	He	0.945	ug/l	1.1	3953	105	70	130	
Cu	65	74	No Gas	0.892	ug/l	3.6	9850	99.11	70	130	
Zn	66	74	He	0.878	ug/l	8.5	1470	97.56	70	130	
As	75	74	He	0.884	ug/l	1.3	1018	98.22	70	130	
Se	78	74	HEHe	0.932	ug/l	4.4	173	103.56	70	130	
Mo	95	103	He	0.896	ug/l	2.2	4835	99.56	70	130	
Ag	109	103	No Gas	0.868	ug/l	3.5	27430	96.44	70	130	
Cd	111	103	He	0.957	ug/l	1.0	2786	106.33	70	130	
Cd	111	103	No Gas	0.940	ug/l	4.9	6657	104.44	70	130	
Sb	123	103	No Gas	0.989	ug/l	4.7	19254	109.89	70	130	
Ba	138	159	He	0.847	ug/l	2.3	20205	94.11	70	130	
Hg	201	159	No Gas	38.087	ng/l	6.6	149	105.8	70	130	
Tl	205	159	No Gas	0.848	ug/l	3.4	60354	94.22	70	130	
Pb	208	159	No Gas	0.865	ug/l	2.7	83667	96.11	70	130	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	682693	0.2	902319.09	75.66	70	120	
Ge	74	No Gas	1234408	4.0	1669072.63	73.96	70	120	
Rh	103	No Gas	1243832	3.8	1588021.85	78.33	70	120	
Tb	159	No Gas	2689123	1.4	2769499.89	97.1	70	120	
Bi	209	No Gas	1488088	0.4	1455457.42	102.24	70	120	
Sc	45	He	258091	0.8	362738.6	71.15	70	120	
Ge	74	He	221942	0.6	294264.1	75.42	70	120	
Rh	103	He	636142	0.9	800670.94	79.45	70	120	
Tb	159	He	1431262	0.9	1549761.4	92.35	70	120	
Ge	74	HEHe	204448	0.9	257780.75	79.31	70	120	

CRL Verification ICPMS6

Sample Name	**0B24036-CRL6**	**Sample Type**	CRL3
File Name	072CRL_.d	**Vial #**	2103
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	1.0000
Acq Time	02/24/2020 16:06:05	**Sample QC Pass/Fail**	Pass
Comment	A20B180 - KT 02/24	**ISTD Ref File**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	% Rec	%QC Low	%QC High	Flag
Be	9	6	No Gas	1.750	ug/l	2.0	8767	97.22	70	130	
Na	23	45	He	92.021	ug/l	1.3	140572	102.25	70	130	
Mg	24	45	He	91.801	ug/l	2.0	74210	102	70	130	
Al	27	45	He	92.804	ug/l	1.7	36662	103.12	70	130	
K	39	45	He	89.285	ug/l	3.1	100896	99.21	70	130	
Ca	44	45	He	87.060	ug/l	3.1	4687	96.73	70	130	
Ti	47	45	He	1.879	ug/l	6.5	467	104.39	70	130	
V	51	74	He	1.587	ug/l	0.9	12854	88.17	70	130	
Cr	52	74	He	1.701	ug/l	2.0	14705	94.5	70	130	
Mn	55	74	He	1.755	ug/l	1.0	10510	97.5	70	130	
Fe	56	74	He	90.944	ug/l	0.5	696339	101.05	70	130	
Co	59	74	He	1.744	ug/l	0.2	21501	96.89	70	130	
Ni	60	74	He	1.764	ug/l	3.7	5753	98	70	130	
Cu	65	74	He	1.866	ug/l	1.5	7433	103.67	70	130	
Cu	65	74	No Gas	1.739	ug/l	5.6	18404	96.61	70	130	
Zn	66	74	He	1.839	ug/l	4.7	2830	102.17	70	130	
As	75	74	He	1.716	ug/l	1.8	1913	95.33	70	130	
Se	78	74	HEHe	1.802	ug/l	2.2	332	100.11	70	130	
Mo	95	103	He	1.740	ug/l	1.7	9412	96.67	70	130	
Ag	109	103	No Gas	1.758	ug/l	1.2	53636	97.67	70	130	
Cd	111	103	He	1.801	ug/l	0.9	5256	100.06	70	130	
Cd	111	103	No Gas	1.908	ug/l	2.0	13042	106	70	130	
Sb	123	103	No Gas	1.947	ug/l	1.6	36417	108.17	70	130	
Ba	138	159	He	1.635	ug/l	1.9	38650	90.83	70	130	
Hg	201	159	No Gas	78.112	ng/l	4.5	297	108.49	70	130	
Tl	205	159	No Gas	1.669	ug/l	1.3	118554	92.72	70	130	
Pb	208	159	No Gas	1.719	ug/l	1.5	165320	95.5	70	130	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	675238	0.7	902319.09	74.83	70	120	
Ge	74	No Gas	1232428	5.9	1669072.63	73.84	70	120	
Rh	103	No Gas	1200619	1.1	1588021.85	75.6	70	120	
Tb	159	No Gas	2686934	1.0	2769499.89	97.02	70	120	
Bi	209	No Gas	1501992	0.6	1455457.42	103.2	70	120	
Sc	45	He	257024	1.4	362738.6	70.86	70	120	
Ge	74	He	219634	0.7	294264.1	74.64	70	120	
Rh	103	He	638339	0.9	800670.94	79.73	70	120	
Tb	159	He	1423338	0.1	1549761.4	91.84	70	120	
Ge	74	HEHe	203392	0.2	257780.75	78.9	70	120	

Continuing Calibration Verification (CCV) Report ICPMS6

Sample Name	**0B24036-CCV5**	**Sample Type**	CCV
File Name	083_CCV.d	**Vial #**	1102
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	1.0000
Acq Time	02/24/2020 16:57:46	**Sample QC Pass/Fail**	Fail
Comment	A20B273 - KT 02/24	**ISTD Ref FileName**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	Conc. RSD	CPS	ExpValue	% Rec	Low	High	Flag
Be	9	6	No Gas	37.780	ug/l	4.4	256138	40	94.45	90	110	
Na	23	45	He	4092.729	ug/l	2.6	8297489	4000	102.32	90	110	
Mg	24	45	He	4331.505	ug/l	1.7	4758411	4000	108.29	90	110	
Al	27	45	He	4260.617	ug/l	1.2	2313311	4000	106.52	90	110	
K	39	45	He	4145.151	ug/l	1.9	4789646	4000	103.63	90	110	
Ca	44	45	He	4233.094	ug/l	2.0	249147	4000	105.83	90	110	
Ti	47	45	He	99.119	ug/l	1.8	33610	100	99.12	90	110	
V	51	74	He	99.015	ug/l	1.7	922251	100	99.02	90	110	
Cr	52	74	He	99.758	ug/l	2.0	1089812	100	99.76	90	110	
Mn	55	74	He	103.948	ug/l	1.8	793490	100	103.95	90	110	
Fe	56	74	He	4314.023	ug/l	2.5	42273998	4000	107.85	90	110	
Co	59	74	He	107.568	ug/l	2.0	1718308	100	107.57	90	110	
Ni	60	74	He	105.680	ug/l	1.8	408310	100	105.68	90	110	
Cu	65	74	He	105.336	ug/l	1.8	525100	100	105.34	90	110	
Cu	65	74	No Gas	104.511	ug/l	1.8	1476381	100	104.51	90	110	
Zn	66	74	He	103.542	ug/l	1.9	193177	100	103.54	90	110	
As	75	74	He	99.236	ug/l	1.0	140714	100	99.24	90	110	
Se	78	74	HEHe	41.052	ug/l	0.8	9170	40	102.63	90	110	
Mo	95	103	He	40.530	ug/l	1.7	259096	40	101.32	90	110	
Ag	109	103	No Gas	36.941	ug/l	3.1	1532189	40	92.35	90	110	
Cd	111	103	He	101.050	ug/l	0.9	348816	100	101.05	90	110	
Cd	111	103	No Gas	88.196	ug/l	3.2	819381	100	88.2	90	110	> +/- 10%
Sb	123	103	No Gas	34.683	ug/l	3.4	877613	40	86.71	90	110	> +/- 10%
Ba	138	159	He	105.403	ug/l	1.6	2774191	100	105.4	90	110	
Hg	201	159	No Gas	759.334	ng/l	2.7	3140	800	94.92	90	110	
Tl	205	159	No Gas	40.384	ug/l	1.3	3176921	40	100.96	90	110	
Pb	208	159	No Gas	99.123	ug/l	2.3	10512142	100	99.12	90	110	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	919234	4.0	902319.09	101.87	70	120	
Ge	74	No Gas	1714420	1.6	1669072.63	102.72	70	120	
Rh	103	No Gas	1633630	3.3	1588021.85	102.87	70	120	
Tb	159	No Gas	2980388	2.0	2769499.89	107.61	70	120	
Bi	209	No Gas	1545085	0.9	1455457.42	106.16	70	120	
Sc	45	He	354474	2.6	362738.6	97.72	70	120	
Ge	74	He	286062	1.6	294264.1	97.21	70	120	
Rh	103	He	755651	1.8	800670.94	94.38	70	120	
Tb	159	He	1591532	2.4	1549761.4	102.7	70	120	
Ge	74	HEHe	247339	0.2	257780.75	95.95	70	120	

Continuing Calibration Blank (CCB) Report ICPMS6

Sample Name	**0B24036-CCB5**	**Sample Type**	CCB
File Name	084_CCB.d	**Vial #**	1101
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	1.0000
Acq Time	02/24/2020 17:02:19	**Sample QC Pass/Fail**	Pass
Comment	CCB	**ISTD Ref File**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune Mode	Conc.	Units	Conc. RSD	CPS	Limit	QC Flag
Be	9	6	No Gas	0.004	ug/l	39.9	82	0.09	
Na	23	45	He	1.349	ug/l	12.3	10024	45	
Mg	24	45	He	0.409	ug/l	32.4	1943	45	
Al	27	45	He	0.605	ug/l	8.3	496	22.5	
K	39	45	He	3.851	ug/l	7.2	40681	45	
Ca	44	45	He	3.687	ug/l	43.5	1561	45	
Ti	47	45	He	0.047	ug/l	94.6	22	1.8	
V	51	74	He	-0.066	ug/l	N/A	1363	0.45	
Cr	52	74	He	0.001	ug/l	72.4	587	0.45	
Mn	55	74	He	0.005	ug/l	57.8	326	0.45	
Fe	56	74	He	0.551	ug/l	15.0	21137	22.5	
Co	59	74	He	0.004	ug/l	45.1	209	0.09	
Ni	60	74	He	-0.098	ug/l	N/A	311	0.45	
Cu	65	74	He	0.007	ug/l	113.4	417	0.45	
Cu	65	74	No Gas	0.064	ug/l	18.3	1946	0.45	
Zn	66	74	He	-0.049	ug/l	N/A	167	1.8	
As	75	74	He	0.010	ug/l	48.6	72	0.45	
Se	78	74	HEHe	0.004	ug/l	95.9	2	0.45	
Mo	95	103	He	0.025	ug/l	9.1	179	0.45	
Ag	109	103	No Gas	0.003	ug/l	20.5	168	0.09	
Cd	111	103	He	0.003	ug/l	33.0	16	0.09	
Cd	111	103	No Gas	0.004	ug/l	55.3	49	0.09	
Sb	123	103	No Gas	0.123	ug/l	3.8	3306	0.45	
Ba	138	159	He	0.008	ug/l	19.2	388	0.45	
Hg	201	159	No Gas	7.854	ng/l	8.5	39	36	
Tl	205	159	No Gas	0.015	ug/l	7.7	1360	0.09	
Pb	208	159	No Gas	0.011	ug/l	3.7	2152	0.09	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	872962	3.3	902319.09	96.75	70	120	
Ge	74	No Gas	1670017	1.5	1669072.63	100.06	70	120	
Rh	103	No Gas	1588028	0.7	1588021.85	100	70	120	
Tb	159	No Gas	2897333	2.4	2769499.89	104.62	70	120	
Bi	209	No Gas	1520485	1.2	1455457.42	104.47	70	120	
Sc	45	He	350093	1.3	362738.6	96.51	70	120	
Ge	74	He	283983	0.3	294264.1	96.51	70	120	
Rh	103	He	754236	0.6	800670.94	94.2	70	120	
Tb	159	He	1583632	2.0	1549761.4	102.19	70	120	
Ge	74	HEHe	239837	2.1	257780.75	93.04	70	120	

Continuing Calibration Verification (CCV) Report ICPMS6

Sample Name	**0B24036-CCV6**	**Sample Type**	CCV
File Name	095_CCV.d	**Vial #**	1102
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	1.0000
Acq Time	02/24/2020 17:53:45	**Sample QC Pass/Fail**	Pass
Comment	A20B273 - KT 02/24	**ISTD Ref FileName**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	Conc. RSD	CPS	ExpValue	% Rec	Low	High	Flag
Be	9	6	No Gas	39.618	ug/l	1.1	247980	40	99.04	90	110	
Na	23	45	He	4037.172	ug/l	1.3	7793710	4000	100.93	90	110	
Mg	24	45	He	4311.284	ug/l	0.8	4509286	4000	107.78	90	110	
Al	27	45	He	4278.291	ug/l	1.0	2211432	4000	106.96	90	110	
K	39	45	He	4124.102	ug/l	0.6	4537423	4000	103.1	90	110	
Ca	44	45	He	4213.155	ug/l	1.3	236133	4000	105.33	90	110	
Ti	47	45	He	98.286	ug/l	0.9	31735	100	98.29	90	110	
V	51	74	He	95.986	ug/l	0.5	866781	100	95.99	90	110	
Cr	52	74	He	96.898	ug/l	0.7	1026326	100	96.9	90	110	
Mn	55	74	He	100.858	ug/l	0.2	746396	100	100.86	90	110	
Fe	56	74	He	4160.347	ug/l	2.0	39523780	4000	104.01	90	110	
Co	59	74	He	104.064	ug/l	0.8	1611565	100	104.06	90	110	
Ni	60	74	He	102.478	ug/l	0.5	383871	100	102.48	90	110	
Cu	65	74	He	102.334	ug/l	0.3	494547	100	102.33	90	110	
Cu	65	74	No Gas	104.764	ug/l	2.3	1407035	100	104.76	90	110	
Zn	66	74	He	102.127	ug/l	0.5	184717	100	102.13	90	110	
As	75	74	He	96.539	ug/l	0.3	132697	100	96.54	90	110	
Se	78	74	HEHe	41.190	ug/l	0.7	8814	40	102.98	90	110	
Mo	95	103	He	39.912	ug/l	0.9	246653	40	99.78	90	110	
Ag	109	103	No Gas	37.968	ug/l	1.3	1480146	40	94.92	90	110	
Cd	111	103	He	99.560	ug/l	0.7	332187	100	99.56	90	110	
Cd	111	103	No Gas	90.986	ug/l	1.5	794502	100	90.99	90	110	
Sb	123	103	No Gas	36.193	ug/l	2.2	860829	40	90.48	90	110	
Ba	138	159	He	103.810	ug/l	1.2	2671235	100	103.81	90	110	
Hg	201	159	No Gas	781.598	ng/l	1.6	3096	800	97.7	90	110	
Tl	205	159	No Gas	42.261	ug/l	0.8	3184083	40	105.65	90	110	
Pb	208	159	No Gas	104.419	ug/l	1.2	10609197	100	104.42	90	110	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	847708	0.2	902319.09	93.95	70	120	
Ge	74	No Gas	1629874	0.9	1669072.63	97.65	70	120	
Rh	103	No Gas	1534434	0.2	1588021.85	96.63	70	120	
Tb	159	No Gas	2854715	1.0	2769499.89	103.08	70	120	
Bi	209	No Gas	1517308	0.6	1455457.42	104.25	70	120	
Sc	45	He	337407	0.7	362738.6	93.02	70	120	
Ge	74	He	277276	0.7	294264.1	94.23	70	120	
Rh	103	He	730359	0.6	800670.94	91.22	70	120	
Tb	159	He	1555673	0.6	1549761.4	100.38	70	120	
Ge	74	HEHe	236946	0.3	257780.75	91.92	70	120	

Continuing Calibration Blank (CCB) Report ICPMS6

Sample Name	**0B24036-CCB6**	**Sample Type**	CCB
File Name	096_CCB.d	**Vial #**	1101
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	1.0000
Acq Time	02/24/2020 17:58:18	**Sample QC Pass/Fail**	Pass
Comment	CCB	**ISTD Ref File**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune Mode	Conc.	Units	Conc. RSD	CPS	Limit	QC Flag
Be	9	6	No Gas	0.004	ug/l	63.4	82	0.09	
Na	23	45	He	2.458	ug/l	4.4	11692	45	
Mg	24	45	He	0.729	ug/l	5.8	2187	45	
Al	27	45	He	0.749	ug/l	14.6	548	22.5	
K	39	45	He	4.187	ug/l	9.2	39219	45	
Ca	44	45	He	6.341	ug/l	31.0	1638	45	
Ti	47	45	He	0.036	ug/l	65.5	18	1.8	
V	51	74	He	-0.060	ug/l	N/A	1360	0.45	
Cr	52	74	He	0.009	ug/l	53.5	639	0.45	
Mn	55	74	He	0.012	ug/l	22.1	367	0.45	
Fe	56	74	He	0.687	ug/l	3.7	21562	22.5	
Co	59	74	He	0.007	ug/l	9.3	253	0.09	
Ni	60	74	He	-0.092	ug/l	N/A	319	0.45	
Cu	65	74	He	0.011	ug/l	34.2	418	0.45	
Cu	65	74	No Gas	0.065	ug/l	4.8	1891	0.45	
Zn	66	74	He	-0.071	ug/l	N/A	121	1.8	
As	75	74	He	0.018	ug/l	19.4	80	0.45	
Se	78	74	HEHe	0.012	ug/l	29.7	4	0.45	
Mo	95	103	He	0.030	ug/l	16.8	204	0.45	
Ag	109	103	No Gas	0.006	ug/l	1.4	268	0.09	
Cd	111	103	He	0.007	ug/l	41.3	29	0.09	
Cd	111	103	No Gas	0.012	ug/l	27.8	117	0.09	
Sb	123	103	No Gas	0.124	ug/l	5.2	3298	0.45	
Ba	138	159	He	0.018	ug/l	11.3	618	0.45	
Hg	201	159	No Gas	7.747	ng/l	9.3	38	36	
Tl	205	159	No Gas	0.017	ug/l	8.6	1459	0.09	
Pb	208	159	No Gas	0.017	ug/l	7.5	2681	0.09	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	856177	0.4	902319.09	94.89	70	120	
Ge	74	No Gas	1607258	1.4	1669072.63	96.3	70	120	
Rh	103	No Gas	1579597	1.8	1588021.85	99.47	70	120	
Tb	159	No Gas	2869202	0.5	2769499.89	103.6	70	120	
Bi	209	No Gas	1530994	0.6	1455457.42	105.19	70	120	
Sc	45	He	334361	0.8	362738.6	92.18	70	120	
Ge	74	He	272645	0.8	294264.1	92.65	70	120	
Rh	103	He	735590	0.2	800670.94	91.87	70	120	
Tb	159	He	1551243	0.5	1549761.4	100.1	70	120	
Ge	74	HEHe	235021	0.9	257780.75	91.17	70	120	

Continuing Calibration Verification (CCV) Report ICPMS6

Sample Name	**0B24036-CCV7**	**Sample Type**	CCV
File Name	107_CCV.d	**Vial #**	1102
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	1.0000
Acq Time	02/24/2020 18:50:00	**Sample QC Pass/Fail**	Fail
Comment	A20B273 - KT 02/24	**ISTD Ref FileName**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	Conc. RSD	CPS	ExpValue	% Rec	Low	High	Flag
Be	9	6	No Gas	39.526	ug/l	1.0	217794	40	98.82	90	110	
Na	23	45	He	4007.632	ug/l	0.8	6803360	4000	100.19	90	110	
Mg	24	45	He	4250.038	ug/l	1.1	3908942	4000	106.25	90	110	
Al	27	45	He	4193.954	ug/l	0.9	1906304	4000	104.85	90	110	
K	39	45	He	4074.127	ug/l	0.9	3941679	4000	101.85	90	110	
Ca	44	45	He	4197.426	ug/l	0.2	206853	4000	104.94	90	110	
Ti	47	45	He	97.896	ug/l	1.6	27793	100	97.9	90	110	
V	51	74	He	95.846	ug/l	0.4	764618	100	95.85	90	110	
Cr	52	74	He	98.139	ug/l	0.9	918253	100	98.14	90	110	
Mn	55	74	He	102.168	ug/l	0.8	667935	100	102.17	90	110	
Fe	56	74	He	4194.980	ug/l	0.7	35209093	4000	104.87	90	110	
Co	59	74	He	104.571	ug/l	0.8	1430620	100	104.57	90	110	
Ni	60	74	He	102.947	ug/l	0.6	340669	100	102.95	90	110	
Cu	65	74	He	103.860	ug/l	0.3	443416	100	103.86	90	110	
Cu	65	74	No Gas	94.509	ug/l	1.3	1116413	100	94.51	90	110	
Zn	66	74	He	104.144	ug/l	0.4	166407	100	104.14	90	110	
As	75	74	He	97.260	ug/l	0.6	118107	100	97.26	90	110	
Se	78	74	HEHe	41.122	ug/l	1.8	8118	40	102.8	90	110	
Mo	95	103	He	39.533	ug/l	0.5	225421	40	98.83	90	110	
Ag	109	103	No Gas	33.945	ug/l	1.4	1189825	40	84.86	90	110	> +/- 10%
Cd	111	103	He	101.039	ug/l	0.8	311058	100	101.04	90	110	
Cd	111	103	No Gas	95.587	ug/l	2.0	750418	100	95.59	90	110	
Sb	123	103	No Gas	38.096	ug/l	2.5	814566	40	95.24	90	110	
Ba	138	159	He	101.509	ug/l	0.4	2484187	100	101.51	90	110	
Hg	201	159	No Gas	810.396	ng/l	3.7	3145	800	101.3	90	110	
Tl	205	159	No Gas	42.119	ug/l	2.6	3110355	40	105.3	90	110	
Pb	208	159	No Gas	104.430	ug/l	1.9	10400315	100	104.43	90	110	

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QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	746308	1.1	902319.09	82.71	70	120	
Ge	74	No Gas	1433356	0.9	1669072.63	85.88	70	120	
Rh	103	No Gas	1379870	1.7	1588021.85	86.89	70	120	
Tb	159	No Gas	2798693	1.8	2769499.89	101.05	70	120	
Bi	209	No Gas	1482473	2.1	1455457.42	101.86	70	120	
Sc	45	He	296685	0.3	362738.6	81.79	70	120	
Ge	74	He	244956	0.5	294264.1	83.24	70	120	
Rh	103	He	673873	0.5	800670.94	84.16	70	120	
Tb	159	He	1479463	0.1	1549761.4	95.46	70	120	
Ge	74	HEHe	218620	1.1	257780.75	84.81	70	120	

Continuing Calibration Blank (CCB) Report ICPMS6

Sample Name	**0B24036-CCB7**	**Sample Type**	CCB
File Name	108_CCB.d	**Vial #**	1101
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	1.0000
Acq Time	02/24/2020 18:54:36	**Sample QC Pass/Fail**	Pass
Comment	CCB	**ISTD Ref File**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune Mode	Conc.	Units	Conc. RSD	CPS	Limit	QC Flag
Be	9	6	No Gas	0.006	ug/l	80.4	81	0.09	
Na	23	45	He	4.467	ug/l	2.2	13857	45	
Mg	24	45	He	0.239	ug/l	17.0	1498	45	
Al	27	45	He	0.762	ug/l	3.6	495	22.5	
K	39	45	He	1.647	ug/l	29.8	32534	45	
Ca	44	45	He	0.737	ug/l	328.1	1184	45	
Ti	47	45	He	0.055	ug/l	31.2	21	1.8	
V	51	74	He	-0.089	ug/l	N/A	1011	0.45	
Cr	52	74	He	0.107	ug/l	6.8	1523	0.45	
Mn	55	74	He	0.086	ug/l	2.9	829	0.45	
Fe	56	74	He	1.869	ug/l	4.5	29815	22.5	
Co	59	74	He	0.010	ug/l	10.2	263	0.09	
Ni	60	74	He	-0.091	ug/l	N/A	293	0.45	
Cu	65	74	He	0.019	ug/l	56.9	419	0.45	
Cu	65	74	No Gas	0.134	ug/l	12.7	2541	0.45	
Zn	66	74	He	-0.067	ug/l	N/A	118	1.8	
As	75	74	He	0.010	ug/l	102.4	64	0.45	
Se	78	74	HEHe	0.011	ug/l	44.5	3	0.45	
Mo	95	103	He	0.058	ug/l	13.3	353	0.45	
Ag	109	103	No Gas	0.005	ug/l	5.8	233	0.09	
Cd	111	103	He	0.011	ug/l	14.5	38	0.09	
Cd	111	103	No Gas	0.013	ug/l	7.6	116	0.09	
Sb	123	103	No Gas	0.129	ug/l	8.2	3096	0.45	
Ba	138	159	He	0.015	ug/l	6.4	531	0.45	
Hg	201	159	No Gas	7.820	ng/l	8.2	38	36	
Tl	205	159	No Gas	0.019	ug/l	1.7	1637	0.09	
Pb	208	159	No Gas	0.018	ug/l	9.2	2735	0.09	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	764509	4.5	902319.09	84.73	70	120	
Ge	74	No Gas	1463702	5.3	1669072.63	87.7	70	120	
Rh	103	No Gas	1433231	6.4	1588021.85	90.25	70	120	
Tb	159	No Gas	2824308	3.5	2769499.89	101.98	70	120	
Bi	209	No Gas	1524386	5.3	1455457.42	104.74	70	120	
Sc	45	He	298279	1.0	362738.6	82.23	70	120	
Ge	74	He	249362	1.5	294264.1	84.74	70	120	
Rh	103	He	690023	0.7	800670.94	86.18	70	120	
Tb	159	He	1511625	0.6	1549761.4	97.54	70	120	
Ge	74	HEHe	216355	1.2	257780.75	83.93	70	120	

Continuing Calibration Verification (CCV) Report ICPMS6

Sample Name	**0B24036-CCV8**	**Sample Type**	CCV
File Name	117_CCV.d	**Vial #**	1102
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	1.0000
Acq Time	02/24/2020 19:36:44	**Sample QC Pass/Fail**	Fail
Comment	A20B273 - KT 02/24	**ISTD Ref FileName**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	Conc. RSD	CPS	ExpValue	% Rec	Low	High	Flag
Be	9	6	No Gas	38.311	ug/l	5.2	240095	40	95.78	90	110	
Na	23	45	He	4168.064	ug/l	1.9	7625345	4000	104.2	90	110	
Mg	24	45	He	4378.971	ug/l	3.4	4339778	4000	109.47	90	110	
Al	27	45	He	4265.104	ug/l	3.0	2089049	4000	106.63	90	110	
K	39	45	He	4178.977	ug/l	2.4	4356362	4000	104.47	90	110	
Ca	44	45	He	4260.394	ug/l	1.9	226255	4000	106.51	90	110	
Ti	47	45	He	100.746	ug/l	2.3	30825	100	100.75	90	110	
V	51	74	He	98.215	ug/l	0.4	844242	100	98.22	90	110	
Cr	52	74	He	99.496	ug/l	0.7	1003171	100	99.5	90	110	
Mn	55	74	He	102.444	ug/l	0.7	721705	100	102.44	90	110	
Fe	56	74	He	4300.033	ug/l	1.2	38890558	4000	107.5	90	110	
Co	59	74	He	107.333	ug/l	0.8	1582340	100	107.33	90	110	
Ni	60	74	He	104.444	ug/l	0.9	372418	100	104.44	90	110	
Cu	65	74	He	105.178	ug/l	0.7	483861	100	105.18	90	110	
Cu	65	74	No Gas	95.109	ug/l	7.0	1266484	100	95.11	90	110	
Zn	66	74	He	104.184	ug/l	0.7	179384	100	104.18	90	110	
As	75	74	He	98.867	ug/l	0.3	129368	100	98.87	90	110	
Se	78	74	HEHe	40.518	ug/l	1.0	8621	40	101.3	90	110	
Mo	95	103	He	40.562	ug/l	1.3	242851	40	101.4	90	110	
Ag	109	103	No Gas	37.051	ug/l	3.8	1452341	40	92.63	90	110	
Cd	111	103	He	101.629	ug/l	1.7	328503	100	101.63	90	110	
Cd	111	103	No Gas	90.232	ug/l	3.7	792268	100	90.23	90	110	
Sb	123	103	No Gas	35.831	ug/l	3.1	857049	40	89.58	90	110	> +/- 10%
Ba	138	159	He	104.039	ug/l	1.9	2638813	100	104.04	90	110	
Hg	201	159	No Gas	753.982	ng/l	2.7	3122	800	94.25	90	110	
Tl	205	159	No Gas	40.375	ug/l	4.2	3178872	40	100.94	90	110	
Pb	208	159	No Gas	100.579	ug/l	3.9	10679888	100	100.58	90	110	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	850458	5.8	902319.09	94.25	70	120	
Ge	74	No Gas	1616323	3.2	1669072.63	96.84	70	120	
Rh	103	No Gas	1544400	3.9	1588021.85	97.25	70	120	
Tb	159	No Gas	2986616	4.3	2769499.89	107.84	70	120	
Bi	209	No Gas	1564882	2.9	1455457.42	107.52	70	120	
Sc	45	He	319805	1.5	362738.6	88.16	70	120	
Ge	74	He	263953	0.1	294264.1	89.7	70	120	
Rh	103	He	707608	0.8	800670.94	88.38	70	120	
Tb	159	He	1533550	1.1	1549761.4	98.95	70	120	
Ge	74	HEHe	235620	1.0	257780.75	91.4	70	120	

Continuing Calibration Blank (CCB) Report ICPMS6

Sample Name	**0B24036-CCB8**	**Sample Type**	CCB
File Name	118_CCB.d	**Vial #**	1101
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	1.0000
Acq Time	02/24/2020 19:41:18	**Sample QC Pass/Fail**	Pass
Comment	CCB	**ISTD Ref File**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune Mode	Conc.	Units	Conc. RSD	CPS	Limit	QC Flag
Be	9	6	No Gas	0.006	ug/l	83.1	88	0.09	
Na	23	45	He	2.821	ug/l	1.0	11681	45	
Mg	24	45	He	0.504	ug/l	24.2	1843	45	
Al	27	45	He	0.872	ug/l	6.9	576	22.5	
K	39	45	He	2.262	ug/l	42.3	35020	45	
Ca	44	45	He	3.135	ug/l	87.0	1378	45	
Ti	47	45	He	0.021	ug/l	79.3	12	1.8	
V	51	74	He	-0.080	ug/l	N/A	1129	0.45	
Cr	52	74	He	0.044	ug/l	9.5	959	0.45	
Mn	55	74	He	0.091	ug/l	9.1	896	0.45	
Fe	56	74	He	1.346	ug/l	1.2	26338	22.5	
Co	59	74	He	0.012	ug/l	15.7	307	0.09	
Ni	60	74	He	-0.097	ug/l	N/A	284	0.45	
Cu	65	74	He	0.006	ug/l	179.6	373	0.45	
Cu	65	74	No Gas	0.075	ug/l	5.2	1965	0.45	
Zn	66	74	He	-0.066	ug/l	N/A	123	1.8	
As	75	74	He	0.014	ug/l	26.1	72	0.45	
Se	78	74	HEHe	0.012	ug/l	42.9	3	0.45	
Mo	95	103	He	0.035	ug/l	8.6	228	0.45	
Ag	109	103	No Gas	0.005	ug/l	16.0	239	0.09	
Cd	111	103	He	0.008	ug/l	22.0	30	0.09	
Cd	111	103	No Gas	0.012	ug/l	36.4	112	0.09	
Sb	123	103	No Gas	0.165	ug/l	6.5	4145	0.45	
Ba	138	159	He	0.016	ug/l	3.2	578	0.45	
Hg	201	159	No Gas	7.429	ng/l	12.7	37	36	
Tl	205	159	No Gas	0.015	ug/l	4.7	1372	0.09	
Pb	208	159	No Gas	0.016	ug/l	13.9	2589	0.09	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	809147	2.6	902319.09	89.67	70	120	
Ge	74	No Gas	1560863	3.7	1669072.63	93.52	70	120	
Rh	103	No Gas	1520108	6.1	1588021.85	95.72	70	120	
Tb	159	No Gas	2862810	4.9	2769499.89	103.37	70	120	
Bi	209	No Gas	1535241	5.1	1455457.42	105.48	70	120	
Sc	45	He	315294	0.4	362738.6	86.92	70	120	
Ge	74	He	259107	0.8	294264.1	88.05	70	120	
Rh	103	He	706442	0.2	800670.94	88.23	70	120	
Tb	159	He	1540444	0.3	1549761.4	99.4	70	120	
Ge	74	HEHe	226534	0.3	257780.75	87.88	70	120	

CRL Verification ICPMS6

Sample Name	0B24036-CRL7	**Sample Type**	CRL1
File Name	119CRL.d	**Vial #**	2101
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	1.0000
Acq Time	02/24/2020 19:46:00	**Sample QC Pass/Fail**	Fail
Comment	A20B178 -KT 02/24	**ISTD Ref File**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	% Rec	%QC Low	%QC High	Flag
Be	9	6	No Gas	0.171	ug/l	4.3	1075	95	70	130	
Na	23	45	He	11.006	ug/l	1.0	26488	122.29	70	130	
Mg	24	45	He	9.213	ug/l	3.4	10374	102.37	70	130	
Al	27	45	He	9.638	ug/l	3.2	4820	107.09	70	130	
K	39	45	He	11.096	ug/l	3.2	44116	123.29	70	130	
Ca	44	45	He	12.242	ug/l	12.5	1856	136.02	70	130	CRL1 Failed
Ti	47	45	He	0.187	ug/l	11.9	62	103.89	70	130	
V	51	74	He	0.084	ug/l	6.0	2509	46.67	70	130	CRL1 Failed
Cr	52	74	He	0.190	ug/l	4.2	2401	105.56	70	130	
Mn	55	74	He	0.250	ug/l	3.7	1994	138.89	70	130	CRL1 Failed
Fe	56	74	He	10.058	ug/l	0.2	103586	111.76	70	130	
Co	59	74	He	0.170	ug/l	1.0	2590	94.44	70	130	
Ni	60	74	He	0.076	ug/l	14.4	889	42.22	70	130	CRL1 Failed
Cu	65	74	He	0.180	ug/l	2.5	1161	100	70	130	
Cu	65	74	No Gas	0.194	ug/l	9.6	3498	107.78	70	130	
Zn	66	74	He	0.129	ug/l	11.2	452	71.67	70	130	
As	75	74	He	0.182	ug/l	1.8	287	101.11	70	130	
Se	78	74	HEHe	0.202	ug/l	8.8	42	112.22	70	130	
Mo	95	103	He	0.199	ug/l	6.7	1201	110.56	70	130	
Ag	109	103	No Gas	0.152	ug/l	4.8	5949	84.44	70	130	
Cd	111	103	He	0.186	ug/l	4.1	603	103.33	70	130	
Cd	111	103	No Gas	0.168	ug/l	6.1	1471	93.33	70	130	
Sb	123	103	No Gas	0.225	ug/l	3.9	5589	125	70	130	
Ba	138	159	He	0.179	ug/l	5.5	4732	99.44	70	130	
Hg	201	159	No Gas	9.495	ng/l	1.2	45	131.88	70	130	CRL1 Failed
Tl	205	159	No Gas	0.160	ug/l	4.2	12229	88.89	70	130	
Pb	208	159	No Gas	0.163	ug/l	4.5	17502	90.56	70	130	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	810071	1.8	902319.09	89.78	70	120	
Ge	74	No Gas	1565285	2.0	1669072.63	93.78	70	120	
Rh	103	No Gas	1528532	4.0	1588021.85	96.25	70	120	
Tb	159	No Gas	2852561	3.2	2769499.89	103	70	120	
Bi	209	No Gas	1530473	2.2	1455457.42	105.15	70	120	
Sc	45	He	315920	0.5	362738.6	87.09	70	120	
Ge	74	He	258923	1.0	294264.1	87.99	70	120	
Rh	103	He	704979	0.7	800670.94	88.05	70	120	
Tb	159	He	1539934	1.5	1549761.4	99.37	70	120	
Ge	74	HEHe	226994	0.7	257780.75	88.06	70	120	

CRL Verification ICPMS6

Sample Name	**0B24036-CRL8**	**Sample Type**	CRL2
File Name	120_CRL.d	**Vial #**	2102
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	1.0000
Acq Time	02/24/2020 19:50:44	**Sample QC Pass/Fail**	Pass
Comment	A20B179 - KT 02/24	**ISTD Ref File**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	% Rec	%QC Low	%QC High	Flag
Be	9	6	No Gas	0.873	ug/l	3.7	5261	97	70	130	
Na	23	45	He	46.967	ug/l	0.9	90271	104.37	70	130	
Mg	24	45	He	45.769	ug/l	0.3	45577	101.71	70	130	
Al	27	45	He	47.229	ug/l	1.8	22722	104.95	70	130	
K	39	45	He	47.685	ug/l	1.7	80484	105.97	70	130	
Ca	44	45	He	44.395	ug/l	3.2	3489	98.66	70	130	
Ti	47	45	He	0.975	ug/l	2.0	297	108.33	70	130	
V	51	74	He	0.773	ug/l	2.1	8260	85.89	70	130	
Cr	52	74	He	0.895	ug/l	0.8	9321	99.44	70	130	
Mn	55	74	He	0.950	ug/l	1.7	6793	105.56	70	130	
Fe	56	74	He	46.504	ug/l	0.7	424797	103.34	70	130	
Co	59	74	He	0.857	ug/l	0.8	12469	95.22	70	130	
Ni	60	74	He	0.795	ug/l	5.1	3383	88.33	70	130	
Cu	65	74	He	0.898	ug/l	1.9	4377	99.78	70	130	
Cu	65	74	No Gas	0.845	ug/l	0.8	11777	93.89	70	130	
Zn	66	74	He	0.846	ug/l	1.9	1655	94	70	130	
As	75	74	He	0.877	ug/l	2.2	1173	97.44	70	130	
Se	78	74	HEHe	0.952	ug/l	1.4	195	105.78	70	130	
Mo	95	103	He	0.895	ug/l	0.6	5322	99.44	70	130	
Ag	109	103	No Gas	0.771	ug/l	1.0	29469	85.67	70	130	
Cd	111	103	He	0.902	ug/l	5.9	2891	100.22	70	130	
Cd	111	103	No Gas	0.813	ug/l	2.7	6966	90.33	70	130	
Sb	123	103	No Gas	0.885	ug/l	1.2	20868	98.33	70	130	
Ba	138	159	He	0.851	ug/l	1.8	21912	94.56	70	130	
Hg	201	159	No Gas	35.128	ng/l	6.3	144	97.58	70	130	
Tl	205	159	No Gas	0.796	ug/l	2.1	59316	88.44	70	130	
Pb	208	159	No Gas	0.802	ug/l	1.0	81295	89.11	70	130	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	807877	0.3	902319.09	89.53	70	120	
Ge	74	No Gas	1550487	0.4	1669072.63	92.9	70	120	
Rh	103	No Gas	1502995	0.6	1588021.85	94.65	70	120	
Tb	159	No Gas	2815675	1.2	2769499.89	101.67	70	120	
Bi	209	No Gas	1526217	0.6	1455457.42	104.86	70	120	
Sc	45	He	311915	0.5	362738.6	85.99	70	120	
Ge	74	He	257712	0.5	294264.1	87.58	70	120	
Rh	103	He	700946	0.4	800670.94	87.54	70	120	
Tb	159	He	1544412	1.6	1549761.4	99.65	70	120	
Ge	74	HEHe	225862	0.9	257780.75	87.62	70	120	

CRL Verification ICPMS6

Sample Name	**0B24036-CRL9**	**Sample Type**	CRL3
File Name	121CRL_.d	**Vial #**	2103
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	1.0000
Acq Time	02/24/2020 19:55:27	**Sample QC Pass/Fail**	Pass
Comment	A20B180 - KT 02/24	**ISTD Ref File**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	% Rec	%QC Low	%QC High	Flag
Be	9	6	No Gas	1.749	ug/l	0.8	10455	97.17	70	130	
Na	23	45	He	90.330	ug/l	0.2	169176	100.37	70	130	
Mg	24	45	He	91.146	ug/l	0.9	90285	101.27	70	130	
Al	27	45	He	91.245	ug/l	1.2	44167	101.38	70	130	
K	39	45	He	90.647	ug/l	1.5	125007	100.72	70	130	
Ca	44	45	He	91.200	ug/l	4.6	5957	101.33	70	130	
Ti	47	45	He	1.596	ug/l	4.5	487	88.67	70	130	
V	51	74	He	1.580	ug/l	0.8	15139	87.78	70	130	
Cr	52	74	He	1.729	ug/l	0.7	17668	96.06	70	130	
Mn	55	74	He	1.783	ug/l	2.2	12620	99.06	70	130	
Fe	56	74	He	89.469	ug/l	0.6	810164	99.41	70	130	
Co	59	74	He	1.713	ug/l	2.7	24982	95.17	70	130	
Ni	60	74	He	1.683	ug/l	0.8	6519	93.5	70	130	
Cu	65	74	He	1.757	ug/l	1.8	8295	97.61	70	130	
Cu	65	74	No Gas	1.646	ug/l	1.2	21847	91.44	70	130	
Zn	66	74	He	1.696	ug/l	2.2	3105	94.22	70	130	
As	75	74	He	1.736	ug/l	1.1	2288	96.44	70	130	
Se	78	74	HEHe	1.839	ug/l	2.1	377	102.17	70	130	
Mo	95	103	He	1.776	ug/l	2.2	10583	98.67	70	130	
Ag	109	103	No Gas	1.556	ug/l	2.8	59132	86.44	70	130	
Cd	111	103	He	1.753	ug/l	0.9	5639	97.39	70	130	
Cd	111	103	No Gas	1.659	ug/l	3.5	14114	92.17	70	130	
Sb	123	103	No Gas	1.700	ug/l	1.2	39629	94.44	70	130	
Ba	138	159	He	1.683	ug/l	1.0	42706	93.5	70	130	
Hg	201	159	No Gas	68.520	ng/l	5.2	277	95.17	70	130	
Tl	205	159	No Gas	1.547	ug/l	1.8	116226	85.94	70	130	
Pb	208	159	No Gas	1.581	ug/l	1.5	160883	87.83	70	130	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	805884	0.2	902319.09	89.31	70	120	
Ge	74	No Gas	1538979	0.7	1669072.63	92.21	70	120	
Rh	103	No Gas	1494955	1.3	1588021.85	94.14	70	120	
Tb	159	No Gas	2841923	0.2	2769499.89	102.62	70	120	
Bi	209	No Gas	1515891	0.3	1455457.42	104.15	70	120	
Sc	45	He	314860	0.4	362738.6	86.8	70	120	
Ge	74	He	259672	0.3	294264.1	88.24	70	120	
Rh	103	He	703455	0.4	800670.94	87.86	70	120	
Tb	159	He	1528590	1.9	1549761.4	98.63	70	120	
Ge	74	HEHe	226428	0.5	257780.75	87.84	70	120	

CRL Verification ICPMS6

Sample Name	0B24036-CRLA	**Sample Type**	CRL4
File Name	122CRL4.d	**Vial #**	2104
Data Path Name	D:\Agilent\ICPMH\1\DATA\0B24036.b	**Total Dilution**	1.0000
Acq Time	02/24/2020 20:00:09	**Sample QC Pass/Fail**	Pass
Comment	A20B181 -KT 02/24	**ISTD Ref File**	005CALB.d

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	% Rec	%QC Low	%QC High	Flag
Be	9	6	No Gas	3.519	ug/l	3.0	21252	97.75	70	130	
Na	23	45	He	181.877	ug/l	0.9	335704	101.04	70	130	
Mg	24	45	He	185.700	ug/l	1.1	183502	103.17	70	130	
Al	27	45	He	185.851	ug/l	0.7	90270	103.25	70	130	
K	39	45	He	183.654	ug/l	1.6	220904	102.03	70	130	
Ca	44	45	He	181.178	ug/l	0.7	10692	100.65	70	130	
Ti	47	45	He	3.515	ug/l	3.5	1070	97.64	70	130	
V	51	74	He	3.315	ug/l	0.3	29827	92.08	70	130	
Cr	52	74	He	3.521	ug/l	1.7	35487	97.81	70	130	
Mn	55	74	He	3.576	ug/l	0.8	25083	99.33	70	130	
Fe	56	74	He	191.768	ug/l	1.1	1722942	106.54	70	130	
Co	59	74	He	3.447	ug/l	2.1	50208	95.75	70	130	
Ni	60	74	He	3.464	ug/l	0.7	12778	96.22	70	130	
Cu	65	74	He	3.618	ug/l	2.2	16740	100.5	70	130	
Cu	65	74	No Gas	3.298	ug/l	1.8	43325	91.61	70	130	
Zn	66	74	He	3.571	ug/l	1.0	6288	99.19	70	130	
As	75	74	He	3.560	ug/l	1.1	4643	98.89	70	130	
Se	78	74	HEHe	3.670	ug/l	0.7	757	101.94	70	130	
Mo	95	103	He	3.585	ug/l	2.8	21556	99.58	70	130	
Ag	109	103	No Gas	3.098	ug/l	2.5	118719	86.06	70	130	
Cd	111	103	He	3.578	ug/l	1.7	11612	99.39	70	130	
Cd	111	103	No Gas	3.276	ug/l	3.2	28116	91	70	130	
Sb	123	103	No Gas	3.350	ug/l	3.0	78531	93.06	70	130	
Ba	138	159	He	3.459	ug/l	1.5	86530	96.08	70	130	
Hg	201	159	No Gas	143.305	ng/l	5.1	572	99.52	70	130	
Tl	205	159	No Gas	3.158	ug/l	1.8	237664	87.72	70	130	
Pb	208	159	No Gas	3.177	ug/l	2.7	323096	88.25	70	130	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	816348	2.3	902319.09	90.47	70	120	
Ge	74	No Gas	1558618	2.1	1669072.63	93.38	70	120	
Rh	103	No Gas	1508756	2.9	1588021.85	95.01	70	120	
Tb	159	No Gas	2850225	2.6	2769499.89	102.91	70	120	
Bi	209	No Gas	1515115	2.1	1455457.42	104.1	70	120	
Sc	45	He	316530	1.2	362738.6	87.26	70	120	
Ge	74	He	260127	0.9	294264.1	88.4	70	120	
Rh	103	He	710320	2.0	800670.94	88.72	70	120	
Tb	159	He	1509792	1.5	1549761.4	97.42	70	120	
Ge	74	HEHe	227981	0.6	257780.75	88.44	70	120	

APEX LABORATORIES, LLC
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Metals IFA/IFB Metals Internal Standards Recovery Summary

A20B289 IFA
A20B290 IFB
A0B0406 (I.S Tables)

Analytical Standard Record

A20B289

Description:	ICSA working std	Expires:	08/05/2020
Standard Type:	Calibration Standard	Prepared:	02/24/2020
Solvent:	3.5% HNO3 + 0.4% HCl	Prepared By:	Kevin Taucher
Final Volume (mls):	50	Department:	Metals
Vials:	1	Last Edit:	03/26/2020 16:04 by arf
Comments:	HNO3 and HCl amounts were reversed. Corrected 03/02/20 - jpb		

Analyte	Parent	CAS Number	Concentration	Units
Aluminum	A19K163	7429-90-5	100	ug/mL
Calcium	A19K163	7440-70-2	300	ug/mL
Carbon	A19K163	7440-44-0	200	ug/mL
Chlorine	A19K163	7782-50-5	2000	ug/mL
Iron	A19K163	7439-89-6	250	ug/mL
Magnesium	A19K163	7439-95-4	100	ug/mL
Molybdenum	A19K163	7439-98-7	2	ug/mL
Phosphorus	A19K163	7723-14-0	100	ug/mL
Potassium	A19K163	7440-09-7	100	ug/mL
Sodium	A19K163	7440-23-5	250	ug/mL
Sulfur	A19K163	7704-34-9	100	ug/mL
Titanium	A19K163	7440-32-6	2	ug/mL
Tungsten	A20B084	7440-33-7	0.1	ug/mL

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit		(mls)
A19K163	6020A ICS Interferents A	11/11/2019	LGC	1021679-1	10/30/2020	03/26/2020 16:04	by arf	5
A20A077	Conc. HNO3 - Omnitrace	01/06/2020	Omni Trace	59283	07/04/2020	01/14/2020 17:08	by jsj	1.75
A20A078	Conc. HCl - Omnitrace	01/06/2020	Omni Trace	59213	01/14/2022	03/25/2020 15:34	by jsj	0.2
A20B084	1 W 10 ppm	02/10/2020	Dilution		08/05/2020	02/13/2020 17:14	by jsj	0.5

Analytical Standard Record

A20B290

Description:	ICSA+B working std	Expires:	03/30/2020
Standard Type:	Calibration Standard	Prepared:	02/24/2020
Solvent:	3.5% HNO3 + 0.4% HCl	Prepared By:	Kevin Taucher
Final Volume (mls):	50	Department:	Metals
Vials:	1	Last Edit:	03/26/2020 16:04 by arf

Analyte	Parent	CAS Number	Concentration	Units
Mercury	A19J028	7439-97-6	0.002	ug/mL
Aluminum	A19K163	7429-90-5	100	ug/mL
Calcium	A19K163	7440-70-2	300	ug/mL
Carbon	A19K163	7440-44-0	200	ug/mL
Chlorine	A19K163	7782-50-5	2000	ug/mL
Iron	A19K163	7439-89-6	250	ug/mL
Magnesium	A19K163	7439-95-4	100	ug/mL
Molybdenum	A19K163	7439-98-7	2	ug/mL
Phosphorus	A19K163	7723-14-0	100	ug/mL
Potassium	A19K163	7440-09-7	100	ug/mL
Sodium	A19K163	7440-23-5	250	ug/mL
Sulfur	A19K163	7704-34-9	100	ug/mL
Titanium	A19K163	7440-32-6	2	ug/mL
Arsenic	A19K267	7440-38-2	0.1	ug/mL
Cadmium	A19K267	7440-43-9	0.1	ug/mL
Chromium	A19K267	7440-47-3	0.2	ug/mL
Cobalt	A19K267	7440-48-4	0.2	ug/mL
Copper	A19K267	7440-50-8	0.2	ug/mL
Manganese	A19K267	7439-96-5	0.2	ug/mL
Nickel	A19K267	7440-02-0	0.2	ug/mL
Selenium	A19K267	7782-49-2	0.1	ug/mL
Silver	A19K267	7440-22-4	0.05	ug/mL
Vanadium	A19K267	7440-62-2	0.2	ug/mL
Zinc	A19K267	7440-66-6	0.1	ug/mL
Tungsten	A20B084	7440-33-7	0.1	ug/mL

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit		(mls)
A19J028	Hg Stock 1.00ppm Std Primary	10/02/2019	n/a	n/a	03/30/2020	10/23/2019 17:40	by jsj	0.1
A19K163	6020A ICS Interferents A	11/11/2019	LGC	1021679-1	10/30/2020	03/26/2020 16:04	by arf	5
A19K267	6020A & CLP-M ICS Analytes B	11/19/2019	LGC	1004999-3	11/11/2020	12/02/2019 15:04	by jsj	0.5
A20A077	Conc. HNO3 - Omnitrace	01/06/2020	Omni Trace	59283	07/04/2020	01/14/2020 17:08	by jsj	1.75
A20A078	Conc. HCl - Omnitrace	01/06/2020	Omni Trace	59213	01/14/2022	03/25/2020 15:34	by jsj	0.2
A20B084	1 W 10 ppm	02/10/2020	Dilution		08/05/2020	02/13/2020 17:14	by jsj	0.5

		6 Li (ISTD) [No Gas]	45 Sc (ISTD) [He]	74 Ge (ISTD) [No Gas]	74 Ge (ISTD) [He]	74 Ge (ISTD) [HEHe]	103 Rh (ISTD) [No Gas]	103 Rh (ISTD) [He]	159 Tb (ISTD) [No Gas]	159 Tb (ISTD) [He]	209 Bi (ISTD) [No Gas]
Acq. Date-Time	Sample Name	QC Measured Value	QC Measured Value	QC Measured Value	QC Measured Value	QC Measured Value	QC Measured Value	QC Measured Value	QC Measured Value	QC Measured Value	QC Measured Value
02/24/2020 10:26	rinse										
02/24/2020 10:30	rinse										
02/24/2020 10:36	rinse										
02/24/2020 10:41	0B24036-CAL0	100	100	100	100	100	100	100	100	100	100
02/24/2020 10:46	0B24036-CAL0	100	100	100	100	100	100	100	100	100	100
02/24/2020 10:51	0B24036-CAL1	100.5814429	100.6587085	99.58998593	100.4417823	101.0148922	99.93175661	100.4747951	100.3727157	101.4347368	100.2934654
02/24/2020 10:56	0B24036-CAL2	104.6979512	99.4109082	101.0112682	100.1145898	100.8173018	102.3412927	100.4504576	102.6186461	99.8086129	102.6268518
02/24/2020 11:01	0B24036-CAL3	109.9639094	109.9224971	106.220647	107.6496363	104.9556234	105.9902572	104.9976673	102.4745341	103.879329	101.4199442
02/24/2020 11:05	0B24036-CAL4	106.3418227	104.1395834	102.2380045	102.6213731	101.1162031	101.3880243	102.2842551	102.2157141	102.9216783	102.408635
02/24/2020 11:10	0B24036-CAL5	108.2906791	102.078517	103.1292888	102.8250541	102.1433253	103.5390443	101.9752967	103.2380934	101.6116973	102.8427038
02/24/2020 11:15	0B24036-CAL6	106.8297292	99.43732759	102.3265341	99.84647804	100.2324896	102.1772337	99.31639125	104.0891645	100.9965969	102.7137753
02/24/2020 11:20	0B24036-CAL7	102.2231843	97.52402692	99.8041679	97.05750945	100.5511363	98.52525182	97.1696625	102.6218983	100.4037751	102.8184548
02/24/2020 11:25	0B24036-CAL8	96.53051153	90.61551478	95.4171551	90.01127785	95.56200511	94.3427695	90.96729388	101.4147346	97.74346168	99.97800714
02/24/2020 11:29	0B24036-CAL9	94.01658673	93.94733925	91.71844968	91.02145431	90.72755703	88.2817744	86.59029852	97.54441093	93.72041659	93.02791835
02/24/2020 11:34	0B24036-ICV1	100.6707095	101.5230904	99.07531186	101.092317	99.37449429	99.08175403	97.6315905	100.8526985	100.6002522	99.77236847
02/24/2020 11:38	0B24036-ICB1	99.45060751	97.70498092	97.4508527	98.19855248	97.33455404	99.38320223	96.07771121	100.720092	100.3139685	101.5560993
02/24/2020 11:46	0B24036-CRL1	103.5977088	99.2146576	100.5194044	99.17714733	97.17129257	99.94368214	96.59474383	101.1265095	100.7216051	100.3069106
02/24/2020 11:50	0B24036-CRL2	103.2377682	103.3030407	99.80335148	102.1955323	97.08995859	100.8565031	99.70391707	103.4095167	101.7634859	100.7386869
02/24/2020 11:55	0B24036-CRL3	103.3084479	101.563711	99.30453716	101.5045713	99.00011542	98.82160879	97.4135288	102.0928706	100.4008333	101.7092086
02/24/2020 12:00	0B24036-IFA1	82.12379533	86.64003212	82.38516303	82.187416	81.13588672	72.09764951	74.2309453	83.15228831	81.07789823	77.1241443
02/24/2020 12:05	0B24036-IFB1	79.78841269	83.18141386	80.72042241	81.47516013	81.58427809	71.20644284	73.98529466	83.42322893	82.43862296	78.58652785
02/24/2020 12:10	0020669-BLK1	87.48776662	86.15373243	89.6942294	88.47873616	94.64785747	91.7629024	91.76833956	102.2897434	99.77296333	105.3896863
02/24/2020 12:15	0020669-BS1	88.97517983	88.7301038	90.21981847	90.25242404	96.3997144	93.17303287	92.8158223	103.0248278	100.0484752	104.9097573
02/24/2020 12:19	A0B0406-01	97.79156395	117.1033275	100.7973438	102.9556058	104.726201	99.1769196	99.61323104	108.4660853	106.4637825	104.1659982
02/24/2020 12:24	A0B0406-02	105.6976589	119.2525749	106.4169634	104.3484951	107.7085326	103.9222659	101.3395528	110.7549011	106.9717024	103.6187748
02/24/2020 12:29	A0B0406-03	106.2107224	121.6044825	106.7824941	106.916747	106.8358362	105.3308645	102.9841681	110.1910056	107.8230778	102.8524327
02/24/2020 12:34	A0B0406-04	108.4871554	123.6464525	108.1011685	106.9686811	108.0513471	106.214875	102.4495839	110.5457052	107.4881774	102.553477
02/24/2020 12:38	0020669-DUP1	105.8955508	122.5353475	106.25473	106.4286515	107.0301447	104.0861862	102.1760837	108.68783	106.6496176	102.2746013
02/24/2020 12:43	0020669-MS1	106.1367179	117.37885	106.1244868	101.5157699	105.6023345	102.9081808	98.48451725	108.5785831	104.3348537	100.6951189
02/24/2020 12:47	0020705-BLK1	105.7093916	104.3839384	105.4341292	104.5301426	104.6082791	107.0133854	103.8787998	105.8259388	105.7300025	102.9402962
02/24/2020 12:52	0020705-BS1	107.0543134	108.4015616	106.8647765	107.1567978	108.3815295	106.5807795	106.2093648	108.6545908	109.346491	105.6624105
02/24/2020 12:57	0B24036-CCV1	106.4409225	106.6325062	108.5129241	107.5694906	105.2087442	106.613494	104.0001589	108.880988	107.7080119	105.6998296
02/24/2020 13:01	0B24036-CCB1	107.0619863	97.47793496	107.7100479	99.94839216	105.7346704	106.6651459	100.9108074	108.5108298	105.0803855	105.7744199
02/24/2020 13:06	A0B0552-01	94.27499199	92.79024154	98.02703753	94.49875469	98.0683223	100.092335	97.32568789	107.9420524	104.516292	110.8682776
02/24/2020 13:11	0020705-DUP1	93.81889206	92.80927269	98.36585182	95.01646763	98.23167688	98.73726213	97.50670691	107.8813879	103.9424391	108.5714075
02/24/2020 13:15	0020705-MS1	95.09180799	92.1898597	96.4333829	93.75361339	97.20022542	98.5235539	96.8013543	107.833158	102.2185626	106.9139267
02/24/2020 13:20	need dilution	68.74237608	65.62640577	64.60358955	67.76107132	73.70709316	65.91383012	69.33961423	90.34639078	85.01813745	92.79110803
02/24/2020 13:25	need dilution	67.36123828	66.78148274	63.60566094	68.13820873	74.9275489	64.79637425	69.30193458	88.09662527	83.4723182	91.74787037
02/24/2020 13:30	need dilution	66.68623242	66.48509575	62.5061965	68.60558593	75.75483331	63.98648469	69.87072713	87.91602058	82.79716869	88.95728582
02/24/2020 13:34	0020654-BLK1	66.24384088	64.571592	66.31938207	71.26732755	81.19365803	72.82059066	79.30684825	94.86463577	93.95153625	101.9349972
02/24/2020 13:39	0020654-BLK2	68.64482966	62.9403319	68.37314629	68.99626333	78.68321977	74.92558058	77.36397436	97.15879618	91.66712095	107.980268
02/24/2020 13:44	0020654-BS1	69.63024751	66.65433241	68.46588442	73.03261254	81.73885389	73.79799072	80.06128677	95.82355595	94.16458432	102.3762227
02/24/2020 13:49	A0B0405-03	70.88248597	75.45716002	69.39242808	73.17132127	82.09565969	73.05276714	77.95324807	98.21894607	95.3533258	103.7491977
02/24/2020 13:53	0B24036-CCV2	74.56644476	70.41338373	73.87463186	76.28935368	83.38456636	77.79617248	81.85845077	98.65697269	94.98924782	106.49737
02/24/2020 13:58	0B24036-CCB2	72.87139288	68.92980389	71.17961313	75.59970335	82.31807609	76.12326477	81.92843874	97.78277514	93.77258182	103.9047726
02/24/2020 14:03	A0B0405-06	78.99991151	82.83079774	81.01107284	79.09444045	86.50267477	81.59231062	83.34808436	105.337704	97.17168936	107.4997488
02/24/2020 14:08	A0B0405-09	83.20558042	90.77090032	85.53592605	85.15012988	89.60565145	88.4301038	87.54776135	106.096267	102.5321468	106.9013511
02/24/2020 14:13	A0B0405-12	84.35752251	92.77096503	88.00254029	84.85639714	90.07425768	89.97236344	87.47740536	106.2890717	99.54876667	106.2763741
02/24/2020 14:17	0020654-DUP1	83.56703571	91.17016212	86.84314517	84.05914166	88.4100812	89.3454787	86.59425853	105.5036609	100.3426667	106.1027346
02/24/2020 14:22	0020654-MS1	80.00069273	90.4204055	81.90477091	82.53576407	88.84696021	80.53808353	85.1967048	103.2661006	97.94299519	103.5875411
02/24/2020 14:27	A0B0405-15	82.69336547	90.85444901	86.02814569	82.07275483	86.97634085	87.88068336	84.28394032	103.5216671	98.03422127	106.8076163
02/24/2020 14:31	A0B0405-18	78.89069405	87.36493246	82.15941851	79.37139461	85.75359893	80.05408641	82.59682235	101.1485916	97.34474675	104.1145106
02/24/2020 14:36	A0B0405-21	77.50676418	82.24402993	79.36455252	77.57779038	83.50140855	77.64604335	81.31419556	100.1527112	94.93506916	103.631872
02/24/2020 14:41	A0B0405-24	75.54273206	81.20864613	74.94779426	77.00541452	82.64777745	74.64922565	81.29545211	99.35115012	95.16644563	101.6014716
02/24/2020 14:45	A0B0405-27	75.11011386	82.28595268	75.42770667	76.67525193	82.5890583	74.91624087	80.95498349	98.60874268	96.09081502	103.088713
02/24/2020 14:50	0B24036-CCV3	75.12510005	71.52709666	71.89667859	75.75275974	82.90563353	75.16075471	81.00596698	97.85378411	93.73516811	102.3718106
02/24/2020 14:55	0B24036-CCB3	76.52092667	69.69574205	73.25377611	73.31542312	82.43250149	80.20215469	78.75442988	98.9224176	91.0297538	103.8519986
02/24/2020 15:00	A0B0405-30	77.8636287	84.48571767	80.92170844	77.91331211	83.16577966	80.34409123	81.74830273	104.5073181	96.923161	104.5428467
02/24/2020 15:04	A0B0405-33	78.52177725	88.18674557	80.8993621	78.92330166	83.58231063	81.64831678	81.71172258	102.6454898	98.50464293	103.9954147
02/24/2020 15:09	A0B0405-36	76.57756813	86.30524834	75.09728167	76.89088589	82.4393471	75.9736879	80.83215442	102.5377588	97.2882686	102.8550028
02/24/2020 15:14	A0B0405-39	75.74026603	79.84140811	76.76150063	76.42952255	83.28070161	76.12042896	80.5307343	100.9170841	96.329344	104.4957355
02/24/2020 15:18	A0B0405-42	77.59827172	82.61532577	79.57866743	77.72970947	82.62197904	79.92413459	81.60275855	102.1197156	95.36328475	105.1610134
02/24/2020 15:23	A0B0405-45	78.90981071	86.34702682	79.68851166	78.80990126	83.0902995	81.61746477	81.71643488	102.9182565	96.20286065	104.4228826
02/24/2020 15:28	A0B0405-48	76.73947612	83.73547677	78.06486372	77.28800988	82.24295928	76.23699368	80.61939619	100.1614273	96.19287267	102.1993491
02/24/2020 15:33	A0B0405-51	77.60194005	83.93173012	77.62997392	77.13984705	81.97368911	78.62820574	80.26140268	101.6235783	96.46956063	103.8933744
02/24/2020 15:37	A0B0405-54	77.14104692	85.11221382	75.41734723	75.90932658	81.15250161	75.57190607	78.96398289	101.317807	95.4632453	101.9001158
02/24/2020 15:42	A0B0405-57	74.82276281	76.21133764	71.36295107	74.55951643	80.31468499	74.38724269	78.62928026	100.0025563	94.60266487	102.0122622
02/24/2020 15:47	0B24036-CCV4	76.20057991	72.34377568	76.15997978	75.62354701	81.60760282	77.56697265	80.13144376	98.32261376	93.04483216	103.7519417
02/24/2020 15:51	0B24036-CCB4	76.77373451	70.87132783	74.61975481	75.10130752	82.52897107	77.24675057	78.99571669	97.55405599	90.86116269	103.6891616
02/24/2020 15:56	0B24036-CRL4	76.3031157	71.98151113	72.7036984	75.53618671	79.82246826	76.57259465	80.28384969	98.1234127	91.9303505	102.7691555
02/24/2020 16:01	0B24036-CRL5	75.65981001	71.15062997	73.95770394	75.42265604	79.31078537	78.32589357	79.45105939	97.09777867	92.35372083	102.2419444
02/24/2020 16:06	0B24036-CRL6	74.83365696	70.85660464	73.8390658	74.63832546	78.90100044	75.60470473	79.72556833	97.01875333	91.84239244	103.1972139
02/24/2020 16:10	A0B0405-60	75.33722125	79.84957744	73.71389649	74.92376746	79.55866656	74.71310827	78.34525097	99.85344947	96.83221388	107.5098949
02/24/2020 16:15	0020654-BLK3	73.94849005	66.14264989	70.31827894	69.23647612	78.34350343	74.41616903	73.90285921	96.25275378	86.34412457	104.6100726
02/24/2020 16:20	0020628-BLK1	73.7340877	69.29177346	69.55976791	72.5449463	76.90400755	74.38389513	77.95735004	95.33985575	91.63732152	101.3995854
02/24/2020 16:25	0020628-BS1	75.57669714	72.02875727	73.2022483	75.03728453	79.59678552	78.04745135	79.89839005	98.67800909	94.09383429	103.1174447
02/24/2020 16:29	A0B0382-01	76.43252742	88.21239214	75.81145929	89.19286451	89.01222597	75.29683701	87.21330976	98.73646959	98.98363731	105.5247275
02/24/2020 16:34	A0B0382-02	90.48243784	91.63765488	93.20354143	90.85149021	90.50614666	93.56959857	88.98294561	103.7498044	101.4151538	105.6716165
02/24/2020 16:39	A0B0382-03	90.44035184	92.31901055	94.56368216	91.06079312	92.75011817	94.67569145	89.06097766	102.7435797	99.77416438	104.1055464
02/24/2020 16:43	A0B0382-04	91.95730782	92.06096798	92.59809764	91.87119326	88.92630541	93.00485949	88.93482472	101.6714603	99.87630935	103.6602209
02/24/2020 16:48	0020628-DUP1	93.72096551	92.93098109	96.37142654	92.48842338	91.94770114	97.05336906	89.81122303	104.0219868	100.3085139	105.6974656
02/24/2020 16:53	0020628-MS1	97.19445072	94.76012198	98.7101506	94.30542949	94.82780238	98.69614473	91.12963023	107.9319424	101.6511129	106.1668677
02/24/2020 16:57	0B24036-CCV5	101.8746594	97.72154381	102.7169341	97.21255271	95.949364	102.8720064	94.37722737	107.6146631	102.6952848	106.1580425
02/24/2020 17:02	0B24036-CCB5	96.74648723	96.51374476	100.0565931	96.5062031	93.03921914	100.0003835	94.20046936	104.6157513	102.1855209	104.4678376
02/24/2020 17:07	0020670-BLK1	94.5858229	96.33596568	98.52157363	95.20850374	93.92258998	100.6399817	93.83874898	104.4258491	103.155797	103.5943495
02/24/2020 17:11	0020670-BS1	100.670974	98.70637514	101.5272972	96.71792221	94.92798053	102.6964461	94.81235202	108.8372852	104.466896	107.5431752
02/24/2020 17:16	A0B0423-01	97.41081357	95.9848855	98.84331337	94.49504827	93.21465893	100.0690303	92.97638556	105.8319819	105.077345	106.4098877
02/24/2020 17:21	0020670-DUP1	96.68800423	94.83466786	98.67105883	93.6607535	93.47256931	100.8763973	91.73463949	106.9257188	103.0599611	106.0467636
02/24/2020 17:25	0020670-MS1	97.38064501	97.91883097	99.77590869	96.78098801	95.30445291	99.50048106	94.28546974	107.1268932	103.3301866	105.1956841
02/24/2020 17:30	0020586-BLK3	98.49981968	96.96496501	99.64977837	95.33057436	93.39314006	101.0417766	94.12336819	105.7443532	102.1806021	106.0818536
02/24/2020 17:35	0020586-BS3	97.86120155	97.12277378	97.17962743	96.6809305	93.72526726	98.94248097	93.77061529	104.4788471	102.0489844	102.0340817
02/24/2020 17:39	A0B0287-01RE2	94.96953897	95.7316462	98.39079701	94.10570527	96.82651637	97.41425326	90.66052033	104.2663965	100.3773852	103.7906083
02/24/2020 17:44	A0B0319-01RE2	97.67519048	96.89982627	99.22248361	94.51389189	92.94971802	98.43848559	89.62497757	105.9249589	101.5808492	104.524224
02/24/2020 17:49	A0B0350-01RE2	94.81493697	98.04259686	96.77409825	95.55042902	93.70839892	95.98981337	91.65620277	106.4450388	104.5600688	101.9699491
02/24/2020 17:53	0B24036-CCV6	93.94771419	93.01647976	97.65146011	94.226753	91.91783467	96.6255265	91.21840786	103.0768967	100.3814215	104.2495875
02/24/2020 17:58	0B24036-CCB6	94.8862473	92.17689076	96.29647334	92.65307819	91.17099588	99.4694733	91.8716425	103.5999956	100.0956182	105.1899198
02/24/2020 18:03	0020586-DUP3	93.14547803	95.22186496	93.90962315	93.87970307	92.31995934	94.19272706	90.28610268	102.9811312	102.1443206	101.0728016
02/24/2020 18:07	0020586-MS5	95.3109847	96.74153782	97.08001423	94.07329108	94.6835493	96.08858133	91.60113812	104.1320473	103.1450874	100.5628915
02/24/2020 18:12	A0B0463-01RE2	88.95430806	84.91590533	91.16929363	84.61285514	83.69703991	88.80183609	81.87629789	99.98000915	94.90894406	96.05839861
02/24/2020 18:17	0020570-MS5	79.6988893	75.95931042	82.04826896	77.23811365	81.26553436	75.75017901	75.62128717	96.87127002	89.92453228	97.85112757
02/24/2020 18:21	0020678-BLK1	76.79313489	74.21497808	79.55387462	78.95246594	85.12688418	86.75687431	82.98328615	99.61369006	96.8221876	108.2538615
02/24/2020 18:26	0020678-BS1	77.25112586	76.25447247	78.14641899	79.8492522	83.34411467	81.44456664	83.10120017	102.6526988	97.98424046	107.6778027
02/24/2020 18:31	A0B0441-01	77.93923869	78.41349279	82.17283833	82.15852812	84.11363424	82.45595932	82.21004673	100.2439456	97.62638193	116.1844139
02/24/2020 18:35	A0B0441-02	79.72833749	79.89603422	83.45957662	82.25064605	83.55250106	85.60908994	84.00459959	101.0747927	99.08980699	107.8056879
02/24/2020 18:40	A0B0441-03	80.39463394	81.48546439	83.33244335	83.49842993	84.68971035	86.229484	85.06591366	101.4225217	99.65714228	108.2260693
02/24/2020 18:45	A0B0441-04	79.79622737	81.30683254	82.69744442	82.24510001	83.69920195	82.39380673	82.38622855	98.23231033	94.79105387	102.194208
02/24/2020 18:50	0B24036-CCV7	82.70994238	81.79024125	85.87739451	83.24364519	84.8084301	86.89240939	84.16349799	101.0541063	95.46392304	101.8561317
02/24/2020 18:54	0B24036-CCB7	84.72717593	82.22971383	87.69553228	84.74079803	83.92982688	90.25259825	86.18061378	101.9789762	97.53921905	104.7358738
02/24/2020 18:59	0020678-DUP1	80.94672947	83.02891378	84.61947602	84.17505454	84.79015488	82.47191313	82.80161809	96.37048334	93.9030333	99.75218192
02/24/2020 19:04	0020678-MS1	86.04780077	85.049842	91.13929733	85.80628648	86.68377052	87.84639059	83.52737067	101.1446423	93.72909276	103.848697
02/24/2020 19:08	A0B0441-05	86.47535388	85.30610735	92.77092834	88.22552258	86.98950837	90.53053628	84.52542945	97.62529894	95.15359161	100.1462988
02/24/2020 19:13	A0B0441-06	85.48039321	83.48382447	87.44224492	84.79593671	86.92570221	87.83880443	85.16797556	100.0011622	96.93243984	104.5613978
02/24/2020 19:18	A0B0511-01	85.15269022	85.02415408	87.48280497	85.0807387	86.79423778	91.49973096	87.12313997	104.9398873	99.35473465	141.7926379
02/24/2020 19:22	0020570-DUP3	85.54051385	87.8339139	89.18250991	86.09316484	87.47161574	87.7750192	84.14221126	99.87297394	96.30576402	98.87039247
02/24/2020 19:27	A0B0357-18RE2	88.36279188	92.38320554	92.26066315	88.15703762	90.09262729	91.2752521	87.70417059	102.4810423	98.44793506	101.8367813
02/24/2020 19:32	A0B0483-04RE2	88.64818612	87.20431634	90.84411925	88.03995459	89.63153132	93.55100646	87.77340877	104.1617998	101.5880602	106.7136048
02/24/2020 19:36	0B24036-CCV8	94.25248074	88.16390359	96.83955595	89.69925542	91.40338846	97.25306383	88.37683228	107.8395482	98.95392371	107.518233
02/24/2020 19:41	0B24036-CCB8	89.67411144	86.92046088	93.51679522	88.05269597	87.87856363	95.72336889	88.23126061	103.3691878	99.39881068	105.4817167
02/24/2020 19:46	0B24036-CRL7	89.77650981	87.09313803	93.78170261	87.99010481	88.0570551	96.25386599	88.04851388	102.9991476	99.36588368	105.1540633
02/24/2020 19:50	0B24036-CRL8	89.53340697	85.9890491	92.89511247	87.57853008	87.61773733	94.64571033	87.54483381	101.6672772	99.65481332	104.8616393
02/24/2020 19:55	0B24036-CRL9	89.31255346	86.80092852	92.20561841	88.24458709	87.83743177	94.13943854	87.85815978	102.6150428	98.63388885	104.1522046

02/24/2020 20:00	0B24036-CRLA	90.47221159	87.2611865	93.38229998	88.39915912	88.43971749	95.00851642	88.71564021	102.9147725	97.42094235	104.0989098
02/24/2020 20:04	Final rinse	87.50727339	86.73567032	90.17182835	88.37841019	86.2352201	93.01714773	88.09669972	100.9873962	98.91529088	101.6896138
02/24/2020 20:09	Final rinse	85.23567786	78.32665339	86.57800073	81.11761056	84.10085335	90.09887471	82.85584719	101.1991472	94.66246117	104.0778223

APEX LABORATORIES, LLC
6700 SW Sandburg St. Tigard OR 97223 phone 503-718-2323

Balance Checksheets

Metals February 2020

Balance Challenge Log

Metals Prep Balance 2
Sartorius LC 620 P
40020073

Weight ID	weight (g) =/<1g >1g	acceptance range (g) ± 0.02g ± 2%	
03-J68049-19	0.100g	0.080	0.120
03-J68814-10	10g	9.800	10.200
15477 (100g + 500g)	600g	588.000	612.000

If other than as listed above, the weight and tracking ID of the mass used to challenge the balance must be recorded.

Month: March
Year: 2020

Alternate Weight/ID used:

Date Range:

Day/Time	Initials	Weight 1	Observed	Weight 2	Observed	Weight 3	Observed
1 1700	up		0.0		9.9		599.9
2 0912	MJG		0.102		10.001		599.980
3 0742	MJG	599.980	~~0.099~~	MJG 3/3/20	9.999		0.099
4 0745	MJG		599.980		10.000		0.101
5 0751	MJG		599.980		9.998		0.100
6 0745	MJG		599.985		10.000		0.102
7							
8							
9 823	MJG		599.980		10.000		0.100
10 900	CRL		599.980		10.001		0.101
11 750	MJG		599.980		10.000		0.099
12 810	MJG		599.975		9.999		0.101
13 840	CRL		599.980		9.999		0.097
14							
15							
16 936	MJG	600.000g	599.975	10.000g	9.998	0.100g	0.099
17 712	MJG		599.975		10.002		0.102
18 755	CRL		599.975		10.000		0.101
19 815	MJG		599.975		9.999		0.100
20 815	CRL		599.975		10.000		0.101
21							
22							
23 820	CRL		599.980		10.001		0.102
24 745	CRL		599.980		10.002		0.102
25 806	MJG		599.980		10.002		0.103
26 757	MJG		599.975		9.999		0.100
27 736	MJG		599.980		10.001		0.102
28							
29							
30 755	MJG		599.985		10.000		0.100
31 853	MJG		599.980		10.000		0.102

Observed