

Test Group Summary Report

C02A Metals in Water – Full Range

March 2026 PT Round

Issued: May 8, 2026

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1.0 The Proficiency Testing Report

The Proficiency Testing Report consists of two parts.

- *PTC Proficiency Testing Report*: This report contains participant-specific data and other confidential information. This report is emailed to participants at the end of the PT round.
- *Test Group Summary Report*: A Test Group Summary Report is created for each quantified test group at the end of the PT round. These reports contain more detailed information on the round than is found in the participant-specific PTC Proficiency Testing Report. These reports do not contain any confidential information and are made available on the PTC web site.

2.0 Definitions

The participant-specific PTC Proficiency Testing Report contains some terms that new participants may not be familiar with.

<i>Code</i> :	The registration code that is unique to each analyte that a participant is registered for.
<i>App</i> :	If a participant is accredited by CALA, this three-digit number is the appendix number that the accredited method is assigned to.
<i>N</i> :	The number of participants results that were used to calculate the summary statistics. This excludes qualified data (e.g., <) and any results that were flagged as outliers.
<i>Assigned</i> :	The Assigned Value is the robust mean of the reported results, outliers excluded. This is often referred to as the “target” value.
<i>±u</i> :	The uncertainty of the assigned value.
<i>Reported</i> :	The result reported by the participant.
<i>s</i> :	The Standard Deviation of Proficiency Assessment (SDPA). This value is used to determine the acceptance limits for the PT evaluation.
<i>z-Score</i> :	A value assigned to each reported result that is a measure of the degree to which it deviates from the Assigned Value.
<i>Score</i> :	The composite score of the four results reported for each analyte. It is normalized to a score out of 100.
<i>Bias</i> :	A flag assigned if bias is detected using the re-scaled z-score procedure.

3.0 Scoring System

Participant performance is evaluated for each proficiency testing sample by a quantitative method that is consistent with ISO/IEC 17043 - *Conformity assessment- General requirements for the competence of proficiency testing providers*, the *International Harmonized Protocol for Proficiency Testing of (Chemical) Analytical Laboratories* (2006), and ISO 13528:2015 *Statistical methods for use in proficiency testing by interlaboratory comparisons*.

The following is a brief description of the evaluation procedure used by PTC. The detailed evaluation procedure is described in PROC09 - *PT Evaluation Procedure*, which is available on the PTC website (www.PTCCanada.org).

3.1 HOMOGENEITY AND STABILITY ASSESSMENT

Homogeneity and stability are assessed using participant data. Regression analysis is performed on reported result against order of sample production (Homogeneity) and reported result against date of analysis (Stability). If the slope is significantly different than zero for either then the Standard Deviation of Proficiency Assessment (s) is increased to minimize the impact.

3.2 THE Z SCORE

A "z-score" is calculated for each reported result as follows:

$$z - Score = \frac{(x - \bar{X})}{SDPA} \quad \text{where: } \begin{array}{l} x = \text{participant result;} \\ \bar{X} = \text{the Assigned Value;} \\ SDPA = \text{the Standard Deviation for Proficiency Assessment.} \end{array}$$

The assigned value \bar{X} is generally estimated from the inter-laboratory Robust mean after outliers due to obvious gross errors (e.g., reported in wrong units) have been removed.

The Standard Deviation for Proficiency Assessment, s, is determined as follows:

- The inter-laboratory Robust standard deviation ($Stdev_{rob}$) is calculated using reported results, obvious outliers removed;
- The regression equation standard deviation ($Stdev_{reg}$) is estimated from regression equations derived from previous studies (see PROC11- *PT Regression Equations* for details);
- The SDPA is the higher of $Stdev_{rob}$ and $Stdev_{reg}$;
- When a laboratory reports its detection limit, s will be estimated using a pooled variance procedure that uses both the inter-laboratory data and the reported detection limit.

3.2 COMPOSITE (PT) SCORE

Since each PT round involves four or two separate samples of distinct concentration for each test, it is necessary to calculate a composite PT score for each test to determine overall performance. The composite score is calculated by first averaging the absolute z-scores for the four results and then calculating a final score as $100 + (-15 \times \text{avg } |z|)$.

Acceptable PT Scores equal or exceed 70.

3.3 IDENTIFYING BIAS

The proficiency testing report provides flags for bias. These are determined using the re-scaled z-score procedure.

$$RSZ = \frac{\sum z}{\sqrt{N}} \quad \text{where } \begin{array}{l} z = \text{the z- score} \\ N = \text{the number of samples} \end{array}$$

Flags are assigned for each test group/parameter combination as follows:

$$RSZ \geq -2 \text{ and } \leq 2 \text{ no flag assigned}$$

RSZ > 2	H (High)
RSZ > 3	VH (Very High)
RSZ < -2	L (LOW)
RSZ < -3	VL (Very Low)

3.4 DEVIATIONS FROM EVALUATION PROCEDURE

Other than changes to the Standard Deviation of Proficiency Assessment due to homogeneity or stability flags, any deviation from the published evaluation procedure is described on the cover page(s) of the final *PTC Proficiency Testing Report*.

4.0 PT Round Specific Data Summary

The following pages provide more detailed information about the PT round indicated in the cover page of this report than is found in the participant-specific PTC Proficiency Testing Report. The graphical representations and the statistical summaries are based upon the data after outliers have been removed.

4.1 SUMMARY STATISTICS

In addition to some of the statistics found in the customer reports, this table includes additional summary statistics such as Median, different measures of dispersion, the number of outliers removed, the number of results in the Questionable range ($|z|$ between 2 and 3) and the Unacceptable range ($z > 3$), and whether a data set was flagged for Homogeneity or Stability. This section also includes sorted scatter plots of the data for each sample.

4.2 z - SCORE PLOTS

The z-scores for each sample are ranked in increasing order and plotted. When the data is normally distributed, the plot should show a slight sigmoidal curve, with an equal number of points above zero as below. Each bar in these plots is colour-coded to indicate the analytical method used by the participant.

4.3 KERNEL DENSITY PLOTS

Kernel density plots are generated for each data set. These plots are a graphical way to represent the overall data distribution and are used to visualize possible deviations from normality and unimodality.

4.4 STABILITY AND HOMOGENEITY PLOTS

Plots of reported result against analysis date, and reported result against order of bottling are displayed, along with the regression line. These regression analyses are used to determine if the SDPA should be adjusted due to homogeneity or stability.

4.5 BOX-AND-WHISKER PLOTS

Box-and-Whisker plots are another way to display the distribution of the data. The box denotes the first and third quartile and the whiskers are the 5th and 95th percentile.

4.6 HISTORIC COMPARISON PLOT

The Historic Comparison Plot is a plot of robust mean against robust standard deviation for the previous ten PT rounds as well as the current PT round. This plot can be used to identify possible changes in the sample formulation.

Aluminum

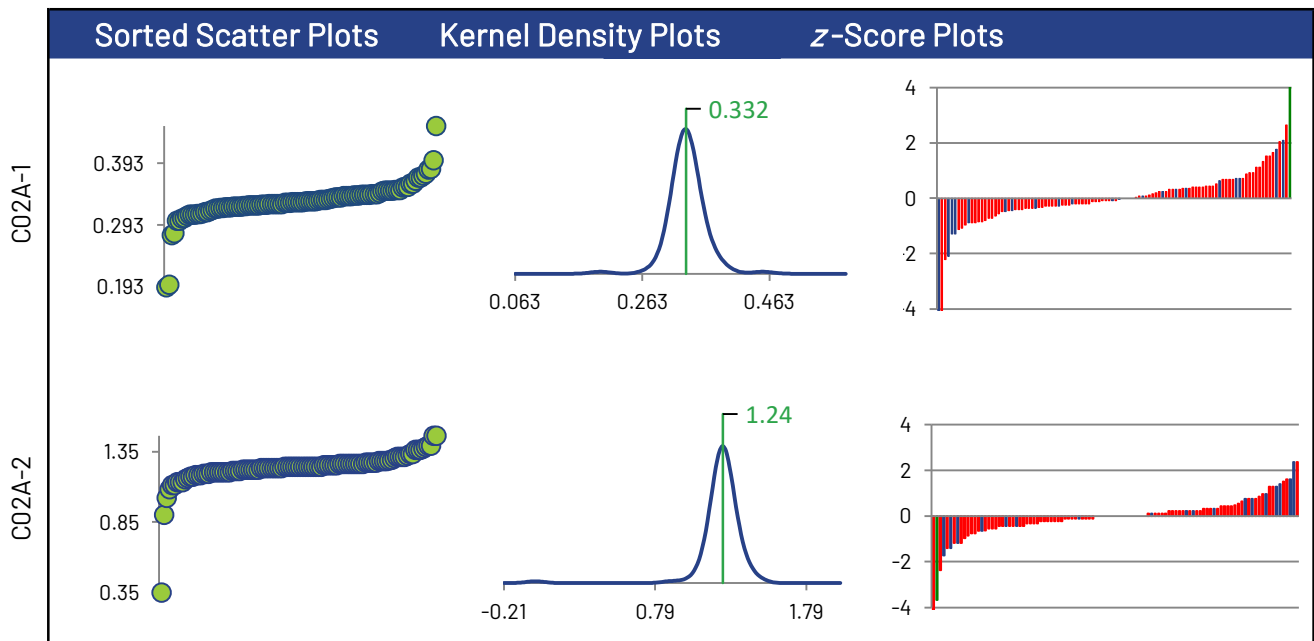
Summary Statistics

Statistic	C02A-1	C02A-2	C02A-3	C02A-4
No. of results used for summary statistics	106	106	102	106
Median mg/L	0.330	1.24	0.0426	0.524
Robust Mean mg/L	0.332	1.24	0.0425	0.523
Uncertainty of the Assigned Value mg/L	0.00211	0.00667	0.000329	0.00260
Robust Standard Deviation mg/L	0.0174	0.0549	0.00266	0.0214
Regression Standard Deviation mg/L	0.0249	0.0930	0.00319	0.0392
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.0249	0.0930	0.00319	0.0392
Flagged Outliers	0	0	1	0
$ z > 3.0$	3	2	3	1
$2 < z < 3$	5	3	6	0
Failure Rate %*	2.8			

Methods Used

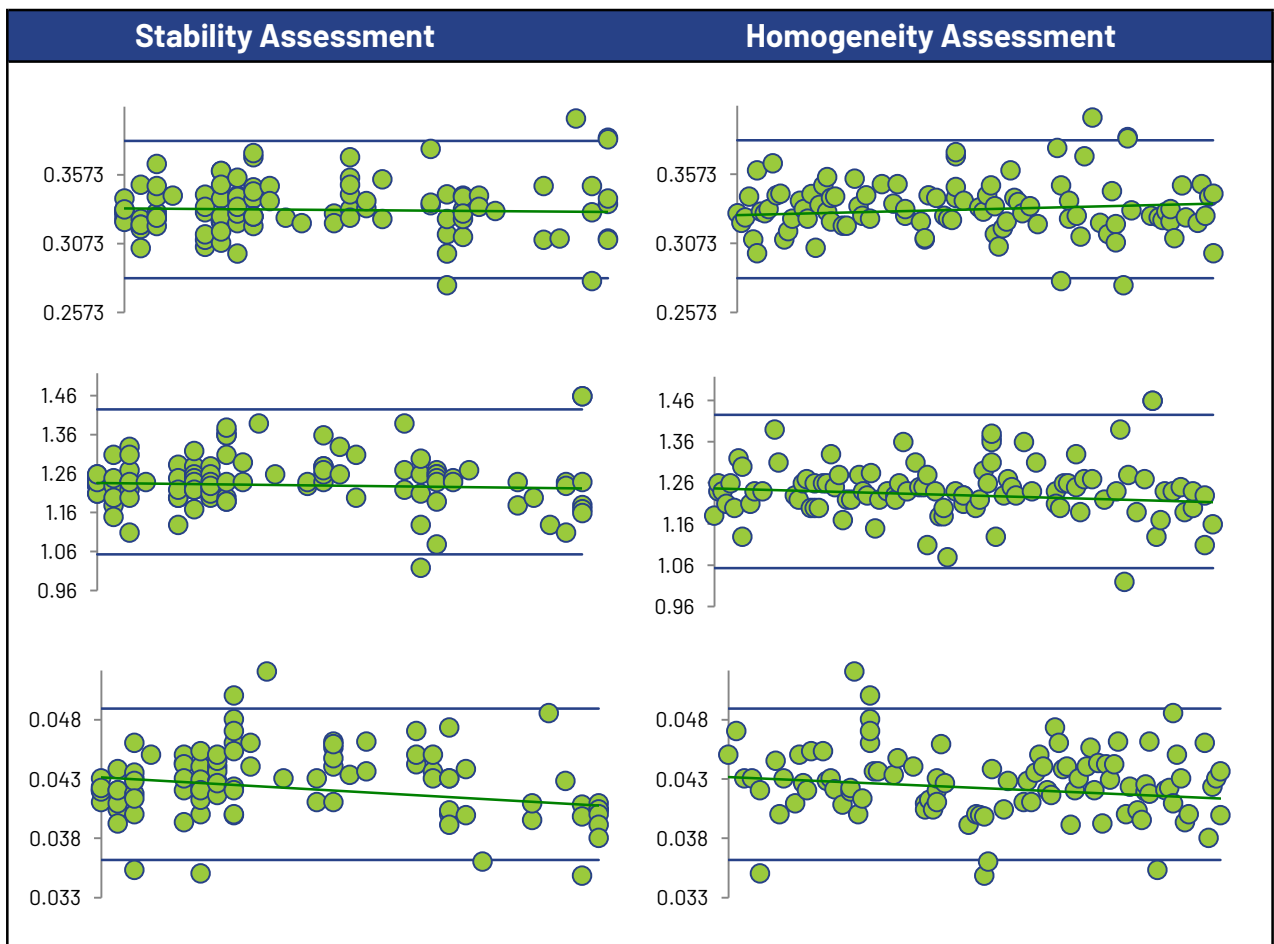
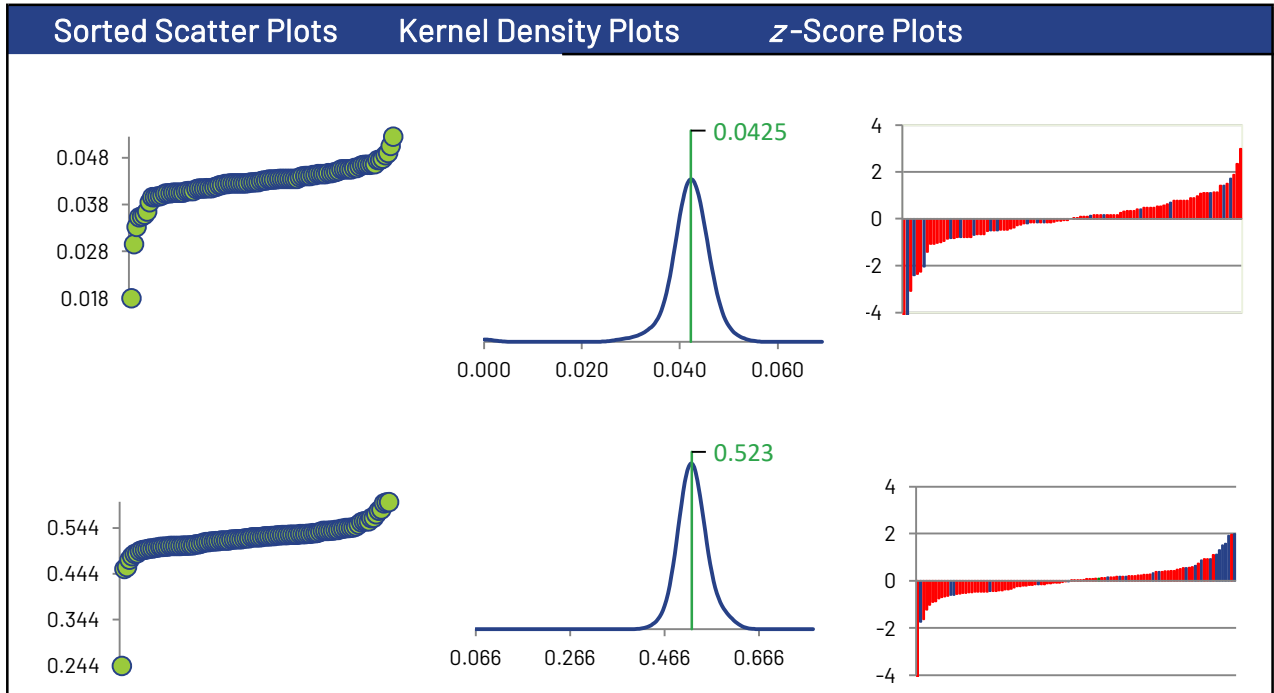
Method	C02A-1	C02A-2	C02A-3	C02A-4
ICP/OES (Blue)	21	21	18	21
ICP/MS (Red)	84	84	84	84
AA GRAPHITE (Green)	1	1	0	1

All summary stats, except the failure rate, and the plots below are based on the data excluding any flagged outliers

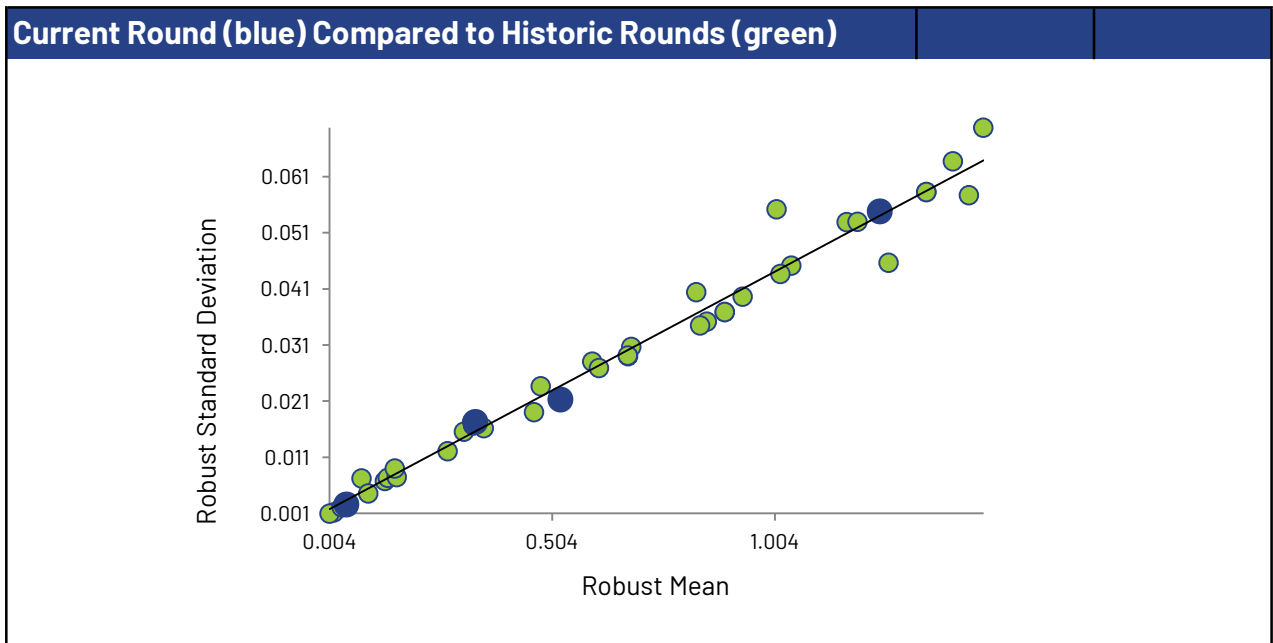
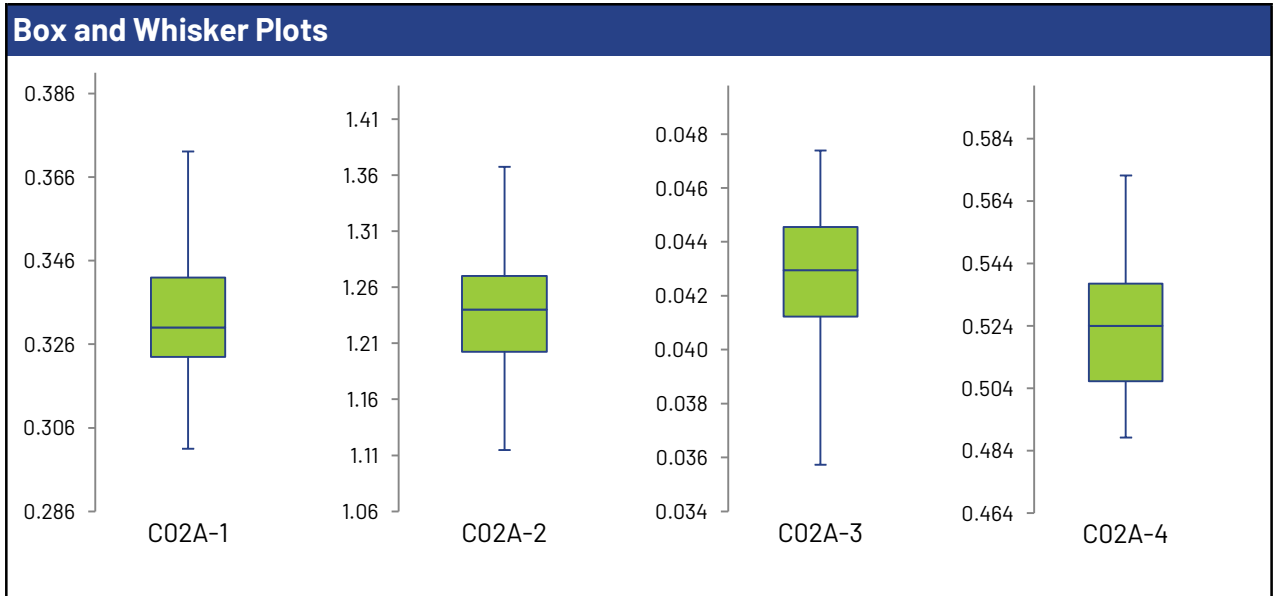
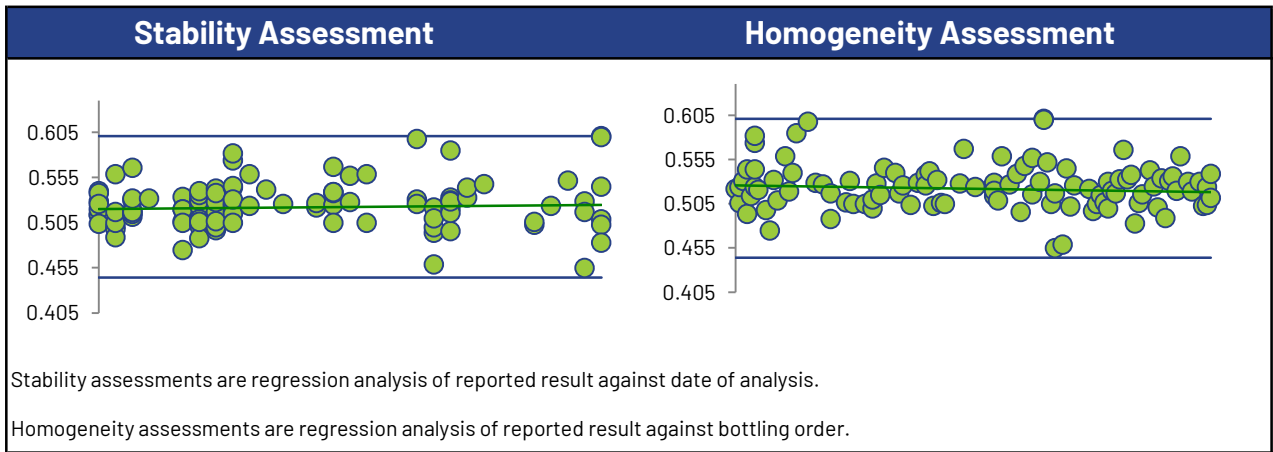


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Aluminum



Aluminum



Antimony

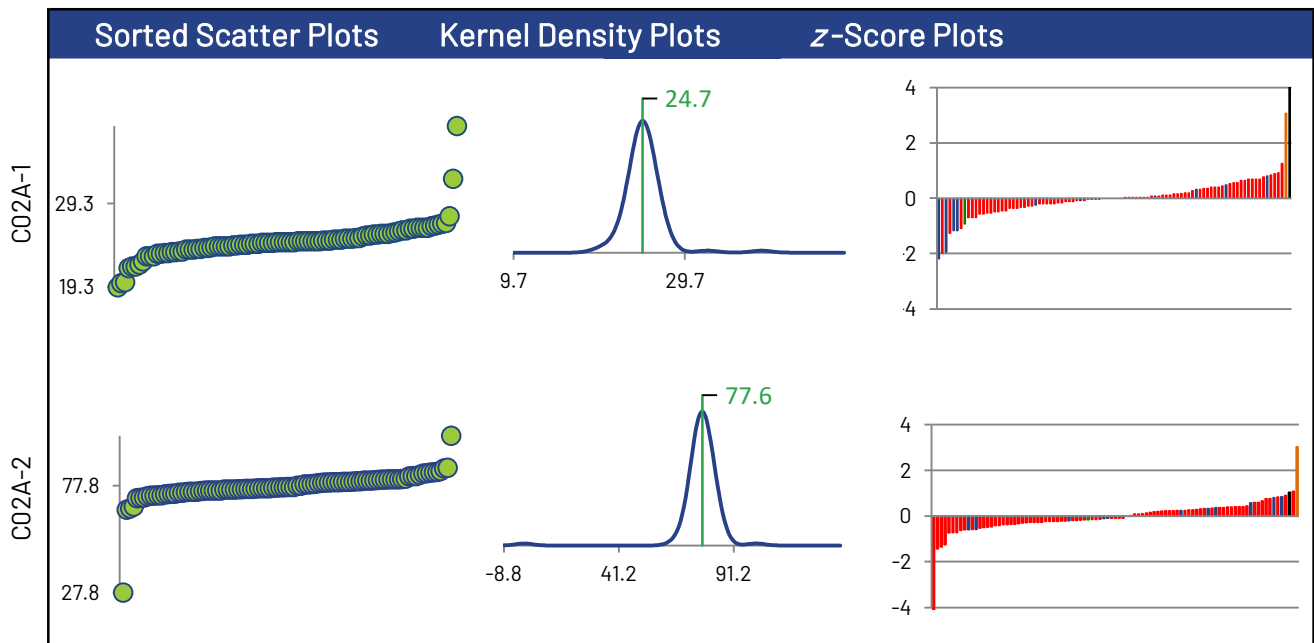
Summary Statistics

Statistic	C02A-1	C02A-2	C02A-3	C02A-4
No. of results used for summary statistics	95	95	95	95
Median mg/L	24.7	77.0	20.0	54.1
Robust Mean mg/L	24.7	77.6	20.0	54.0
Uncertainty of the Assigned Value mg/L	0.164	0.478	0.137	0.349
Robust Standard Deviation mg/L	1.28	3.73	1.07	2.72
Regression Standard Deviation mg/L	2.47	7.76	2.00	5.40
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	2.47	7.76	2.00	5.40
Flagged Outliers	1	1	1	1
$ z > 3.0$	2	2	2	3
$2 < z < 3$	1	0	3	1
Failure Rate %*	4.2			

Methods Used

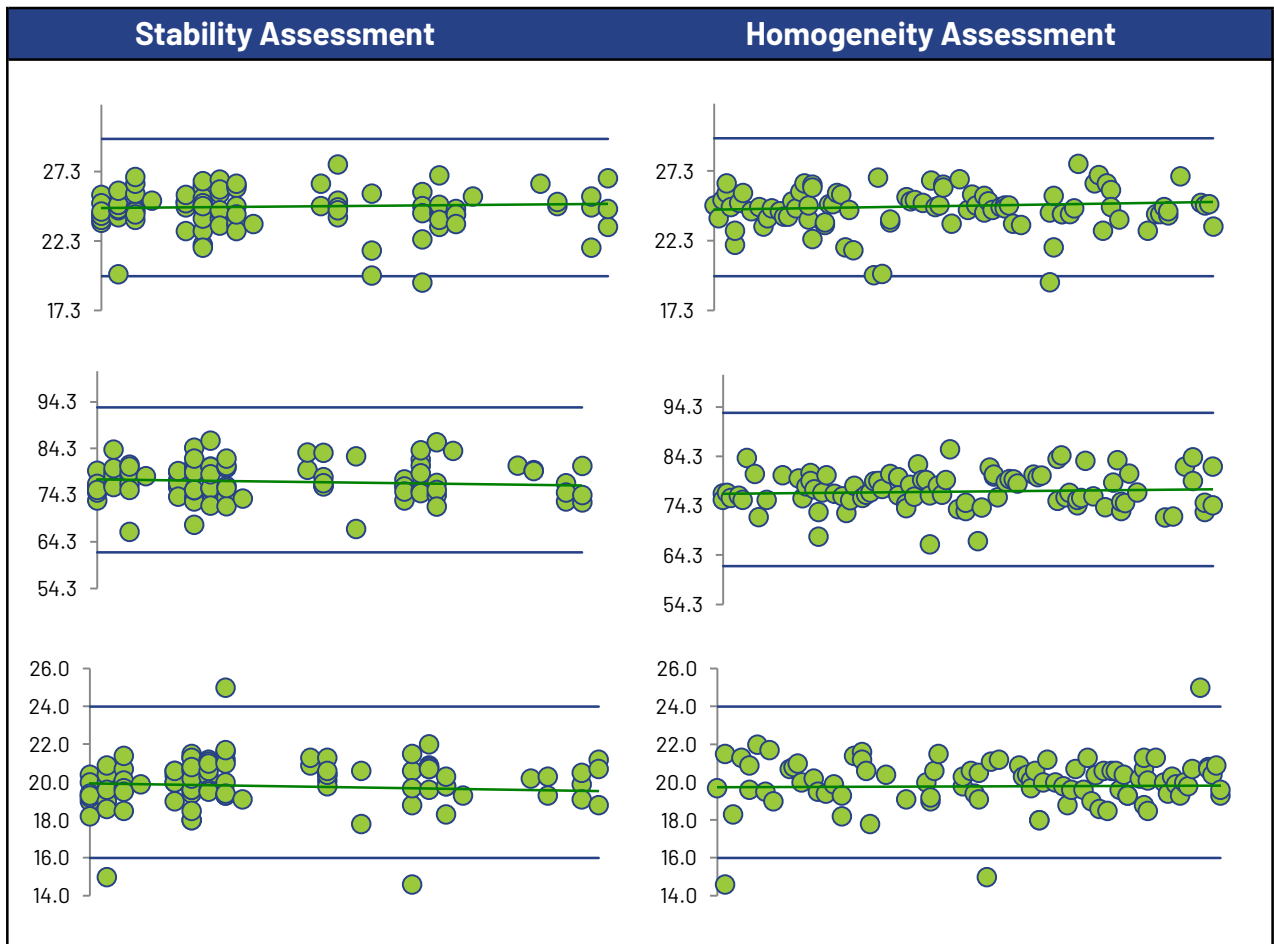
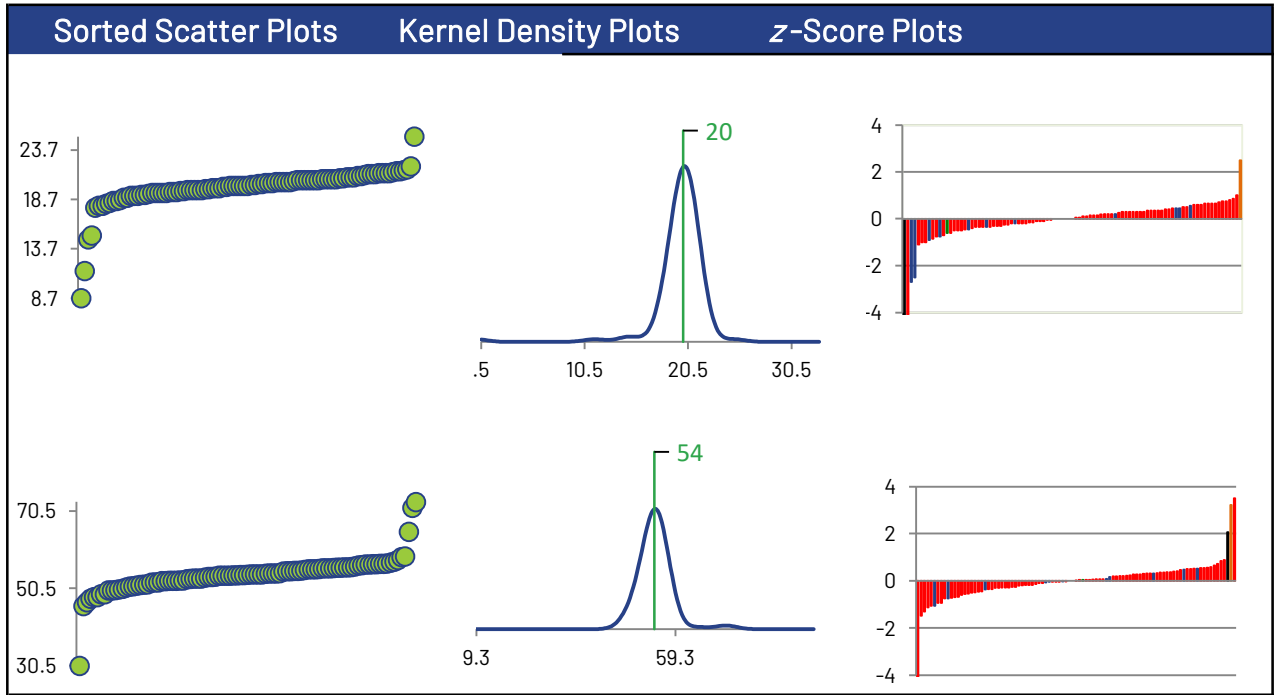
Method	C02A-1	C02A-2	C02A-3	C02A-4
ICP/OES (Blue)	11	11	11	11
ICP/MS (Red)	81	81	81	81
HYDRIDE AA (Green)	1	1	1	1
AA GRAPHITE (Orange)	1	1	1	1
HYDRIDE ICP (Black)	1	1	1	1

All summary stats, except the failure rate, and the plots below are based on the data excluding any flagged outliers

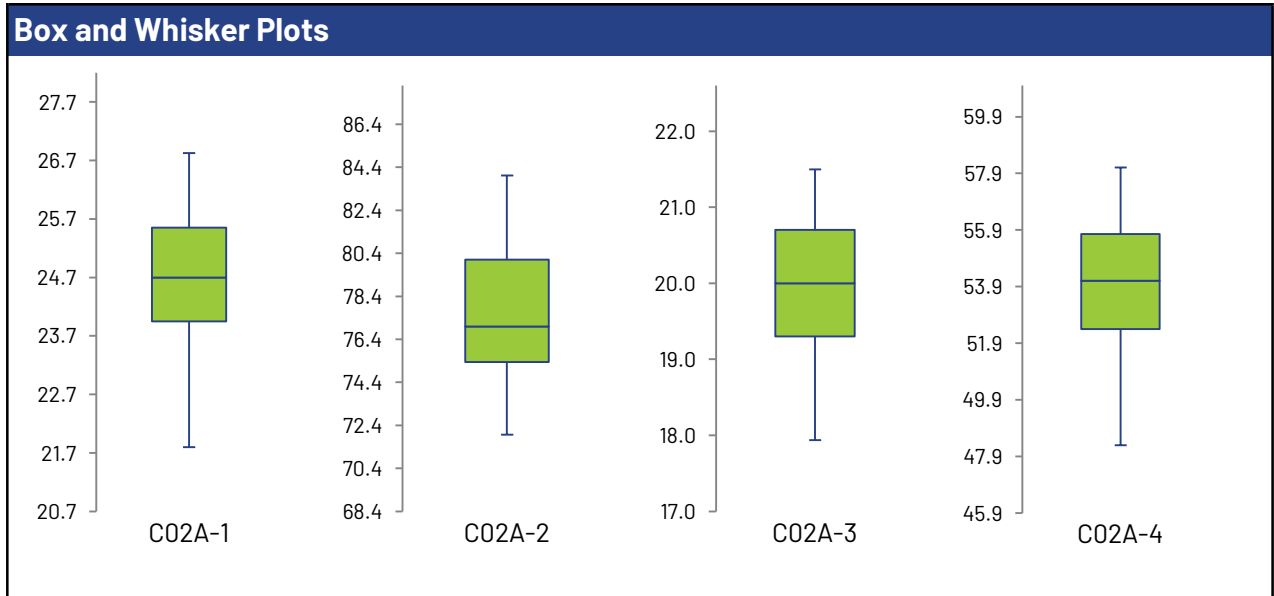
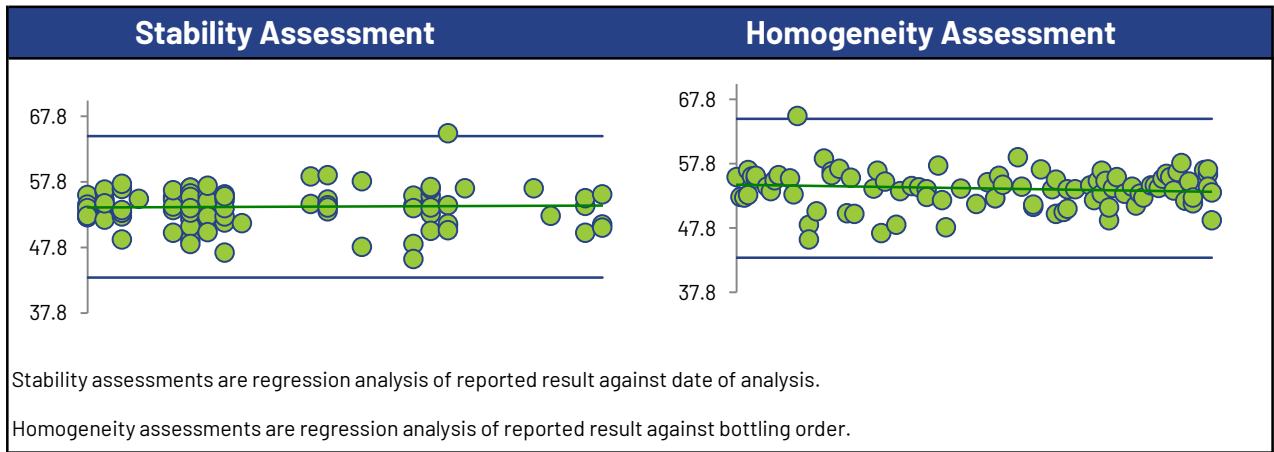


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Antimony



Antimony



Arsenic

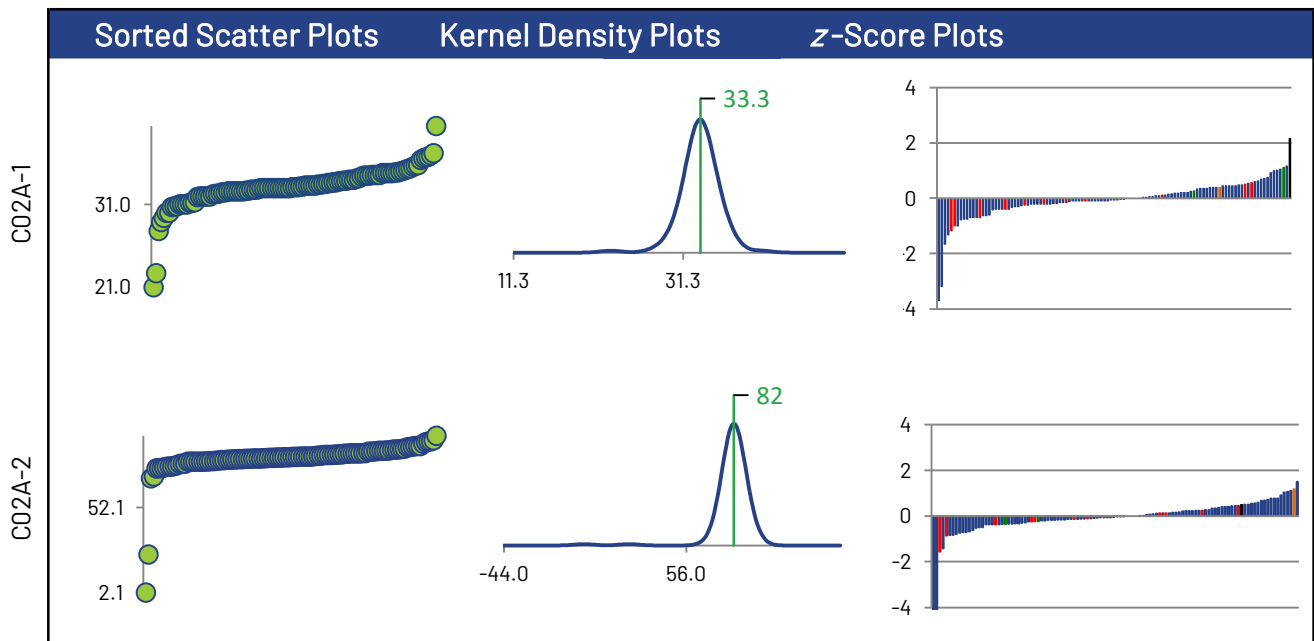
Summary Statistics

Statistic	C02A-1	C02A-2	C02A-3	C02A-4
No. of results used for summary statistics	111	112	107	112
Median mg/L	33.1	81.8	3.30	68.1
Robust Mean mg/L	33.3	82.0	3.30	67.9
Uncertainty of the Assigned Value mg/L	0.192	0.449	0.0361	0.361
Robust Standard Deviation mg/L	1.62	3.80	0.299	3.06
Regression Standard Deviation mg/L	3.33	8.20	0.330	6.79
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	3.33	8.20	0.330	6.79
Flagged Outliers	1	1	2	1
$ z > 3.0$	2	2	8	1
$2 < z < 3$	1	0	2	1
Failure Rate %*	5.3			

Methods Used

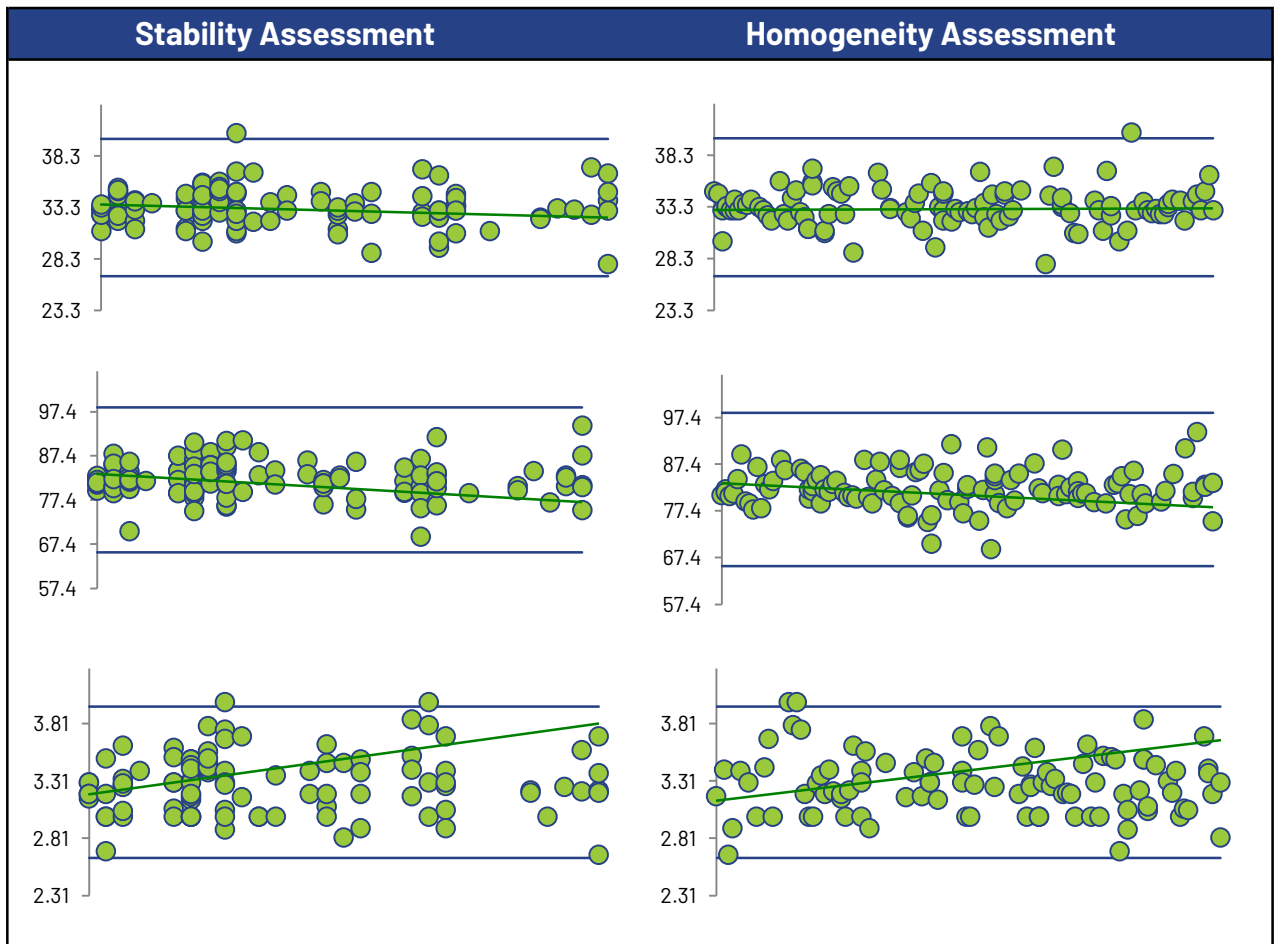
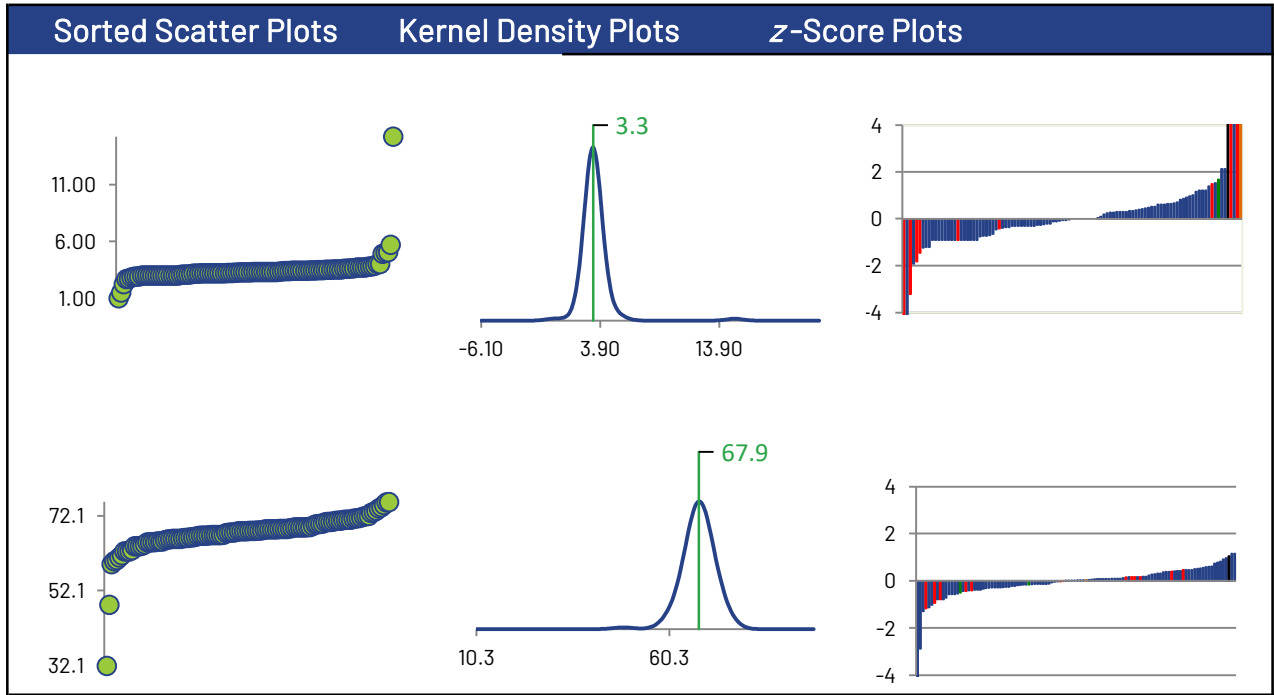
Method	C02A-1	C02A-2	C02A-3	C02A-4
ICP/MS (Blue)	95	95	94	95
ICP/OES (Red)	12	13	9	13
HYDRIDE AA (Green)	2	2	2	2
HYDRIDE ICP (Orange)	1	1	1	1
AA GRAPHITE (Black)	1	1	1	1

All summary stats, except the failure rate, and the plots below are based on the data excluding any flagged outliers

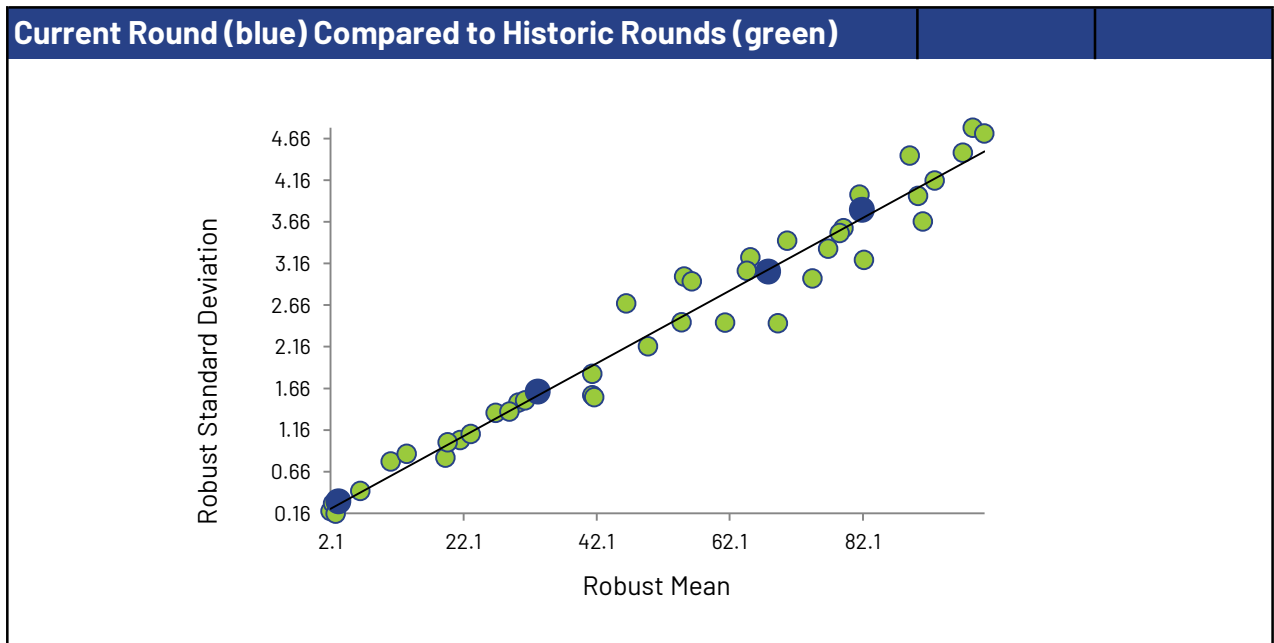
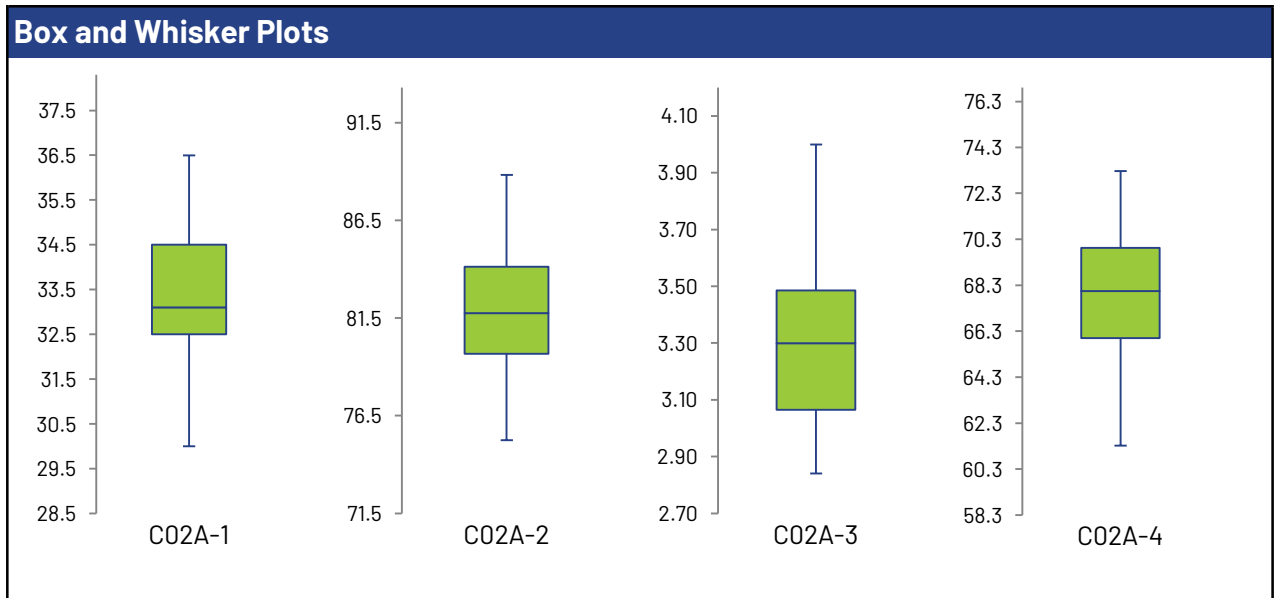
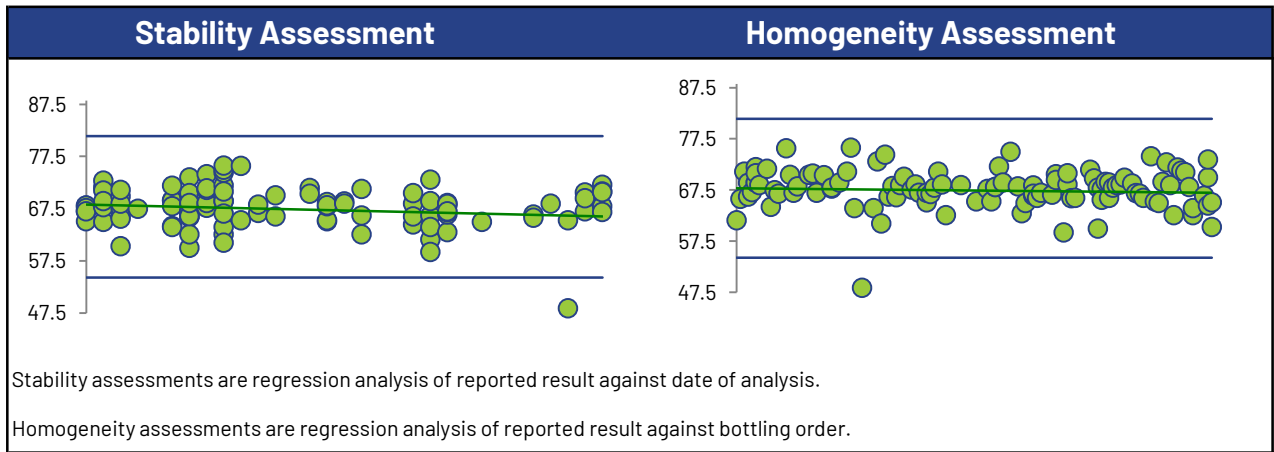


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Arsenic



Arsenic



Barium

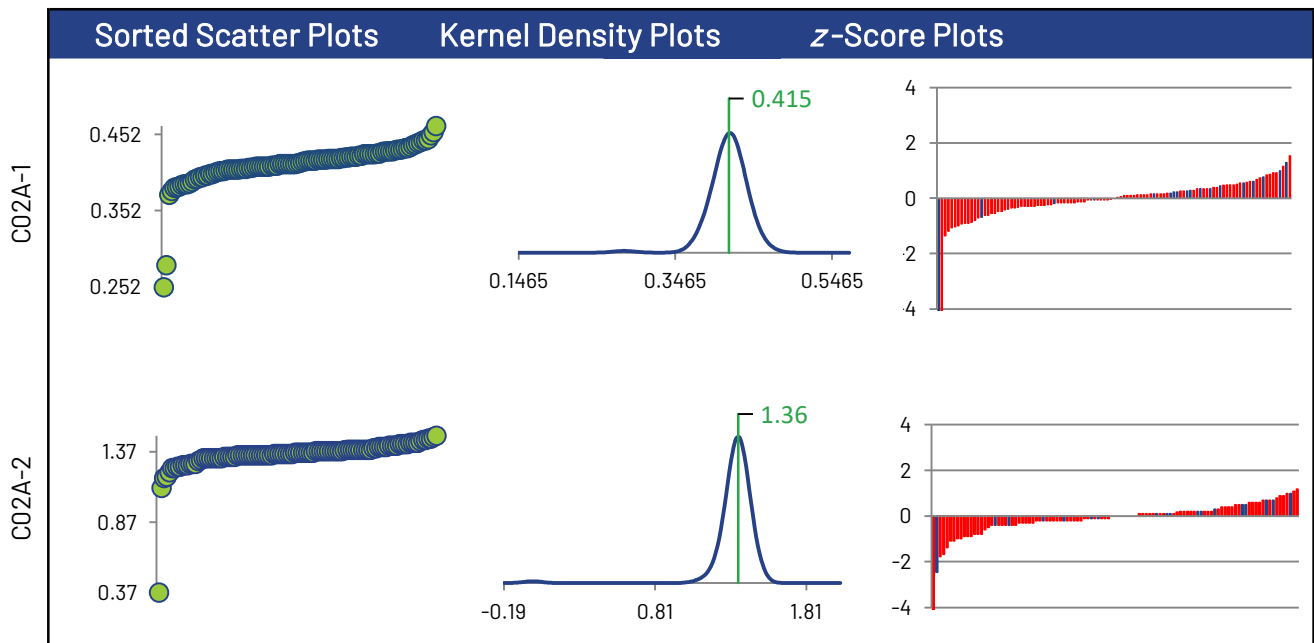
Summary Statistics

Statistic	C02A-1	C02A-2	C02A-3	C02A-4
No. of results used for summary statistics	107	107	103	108
Median mg/L	0.415	1.36	0.0244	0.982
Robust Mean mg/L	0.415	1.36	0.0245	0.978
Uncertainty of the Assigned Value mg/L	0.00202	0.00631	0.000140	0.00470
Robust Standard Deviation mg/L	0.0167	0.0522	0.00114	0.0391
Regression Standard Deviation mg/L	0.0311	0.102	0.00184	0.0734
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.0311	0.102	0.00184	0.0734
Flagged Outliers	0	1	1	0
$ z > 3.0$	2	1	1	3
$2 < z < 3$	0	1	1	0
Failure Rate %*	2.8			

Methods Used

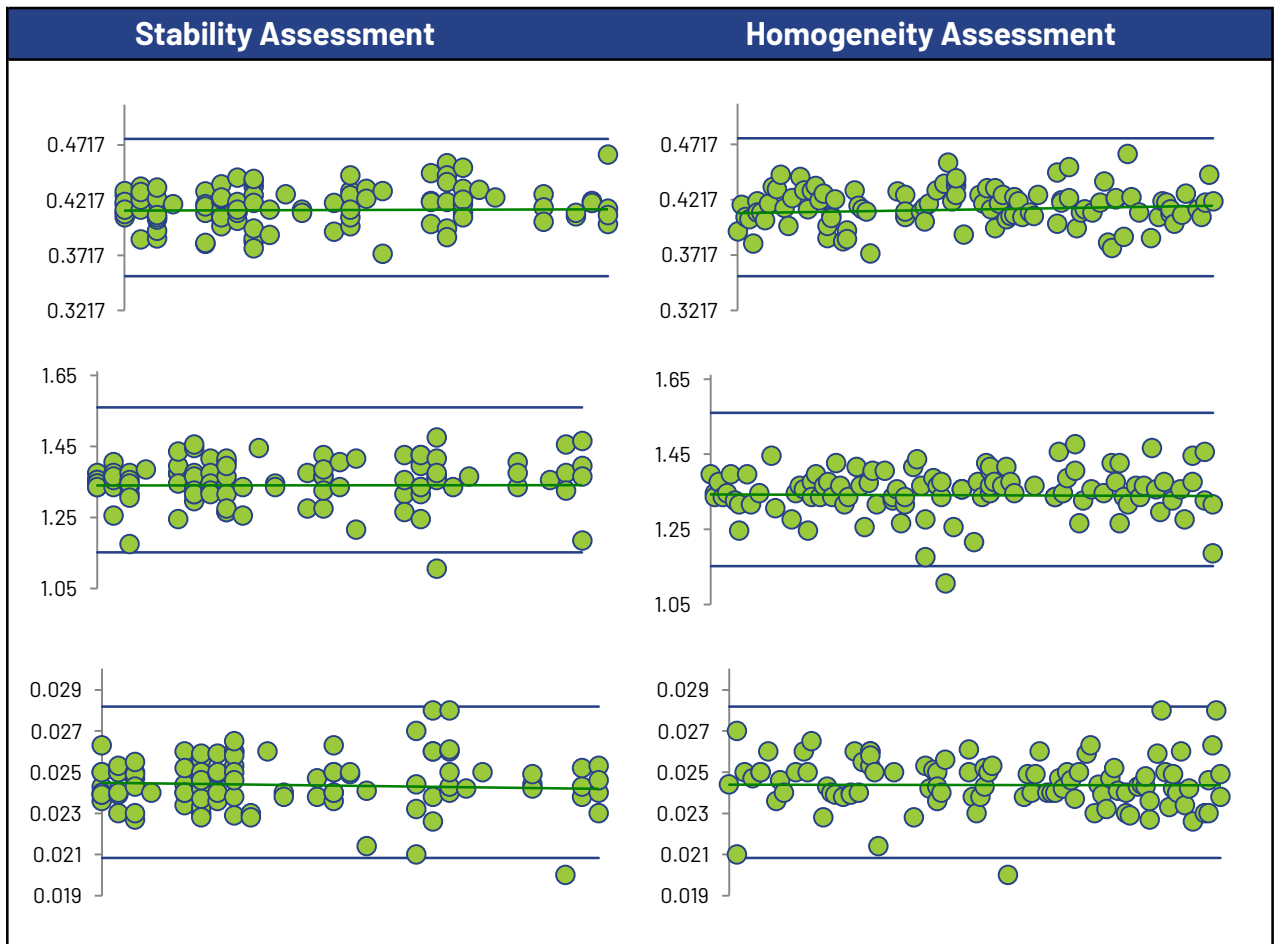
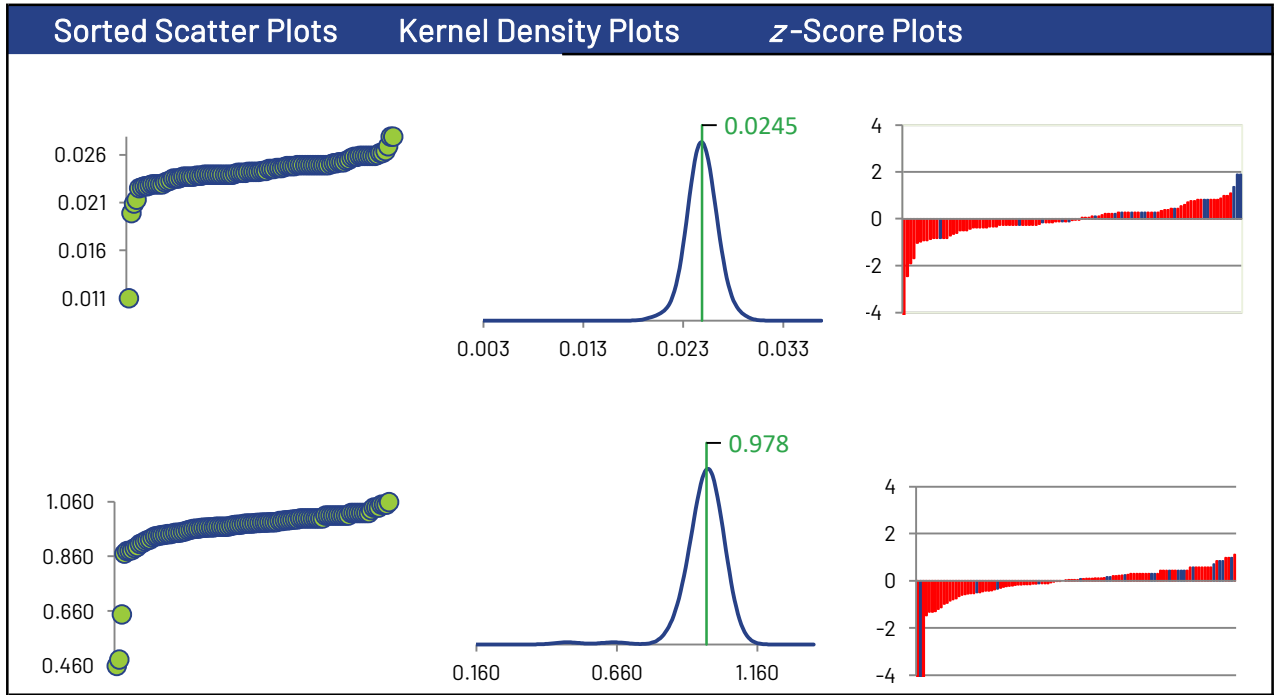
Method	C02A-1	C02A-2	C02A-3	C02A-4
ICP/OES (Blue)	19	20	18	20
ICP/MS (Red)	88	87	85	88

All summary stats, except the failure rate, and the plots below are based on the data excluding any flagged outliers

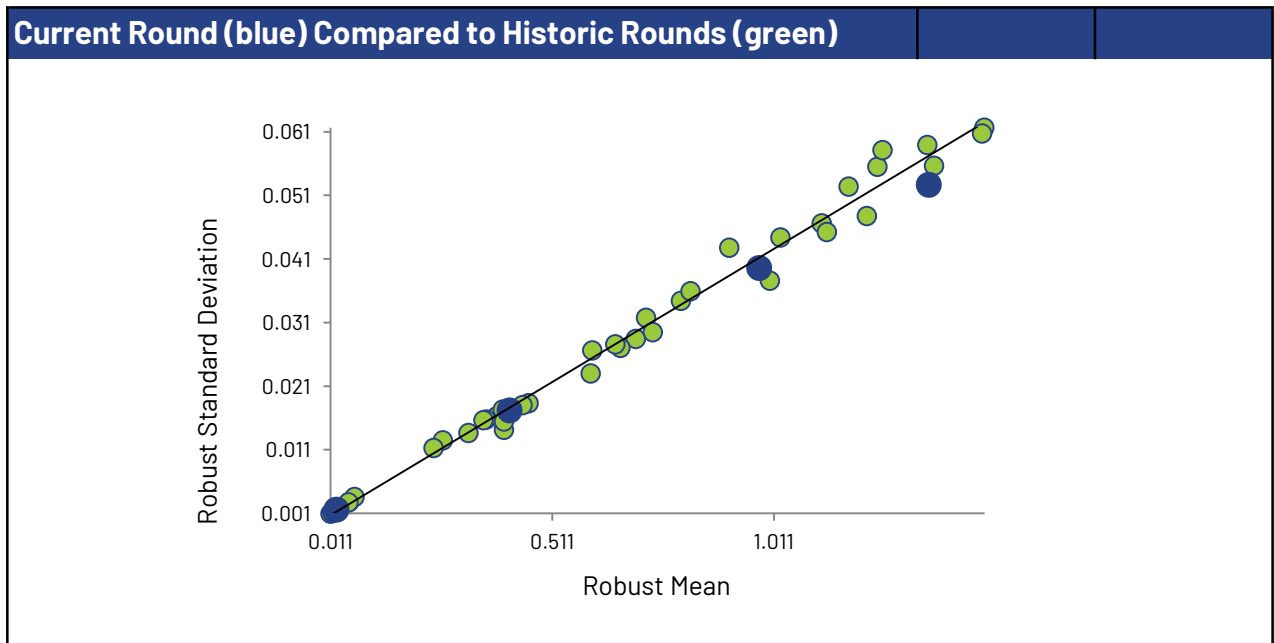
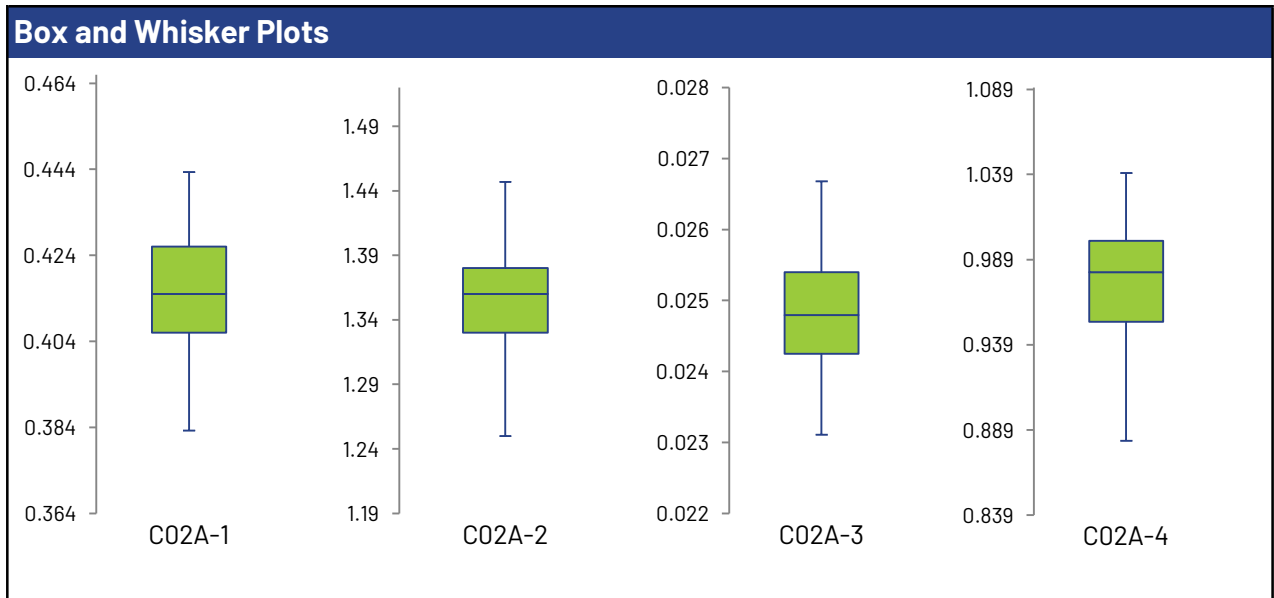
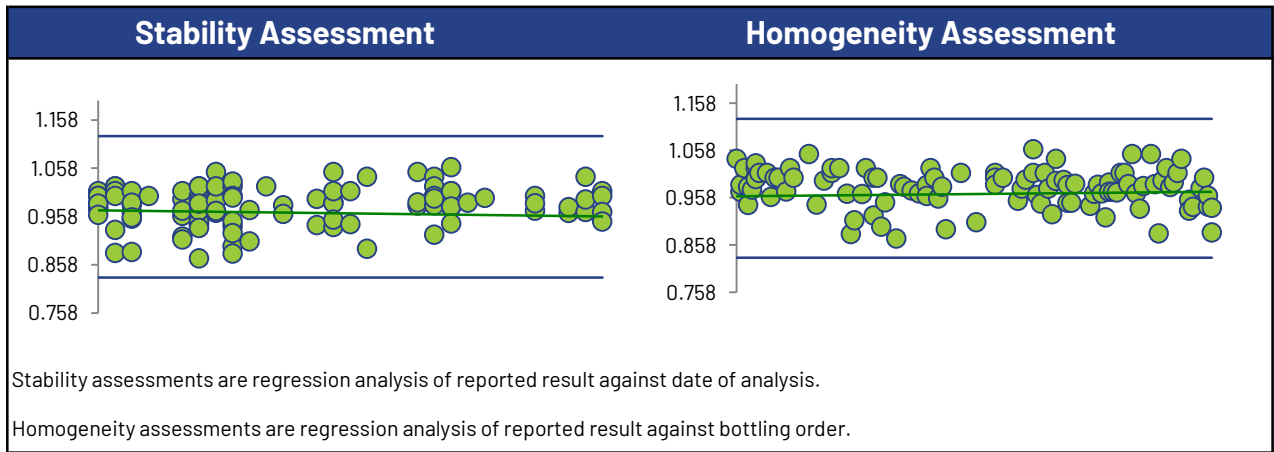


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Barium



Barium



Beryllium

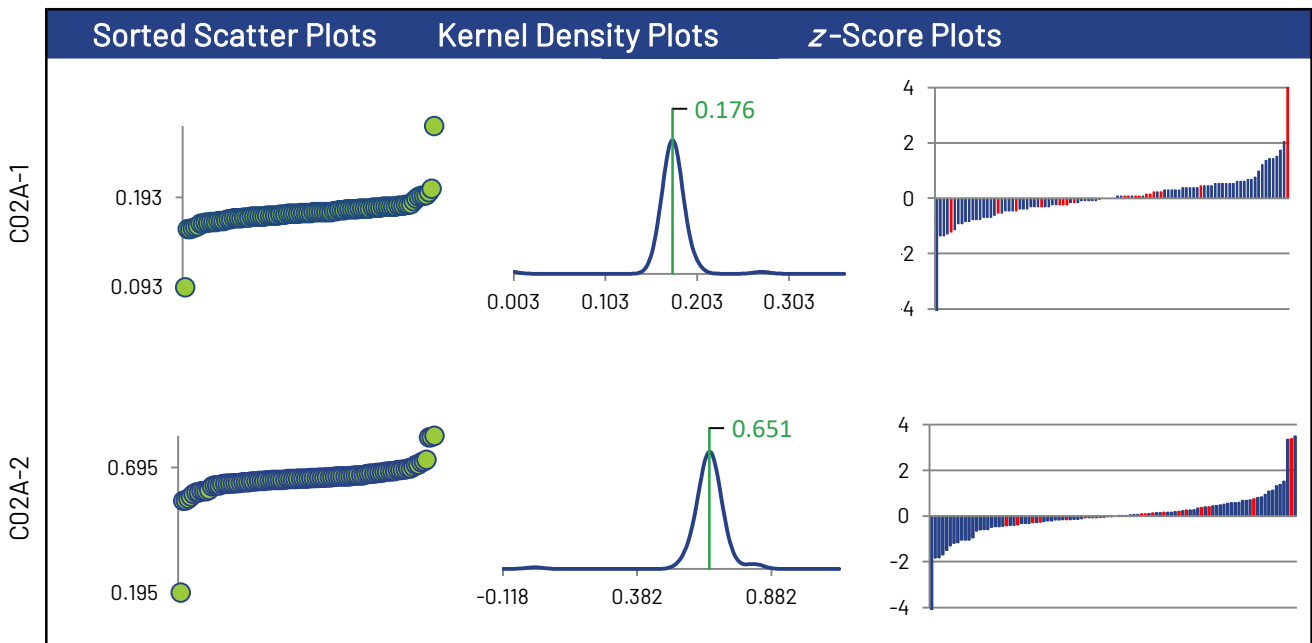
Summary Statistics

Statistic	C02A-1	C02A-2	C02A-3	C02A-4
No. of results used for summary statistics	98	98	98	98
Median mg/L	0.176	0.651	0.0399	0.319
Robust Mean mg/L	0.176	0.651	0.0400	0.320
Uncertainty of the Assigned Value mg/L	0.00103	0.00361	0.000260	0.00176
Robust Standard Deviation mg/L	0.00813	0.0286	0.00206	0.0139
Regression Standard Deviation mg/L	0.0132	0.0489	0.00300	0.0240
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.0132	0.0489	0.00300	0.0240
Flagged Outliers	0	0	0	0
$ z > 3.0$	2	4	3	2
$2 < z < 3$	1	0	3	1
Failure Rate %*	3.1			

Methods Used

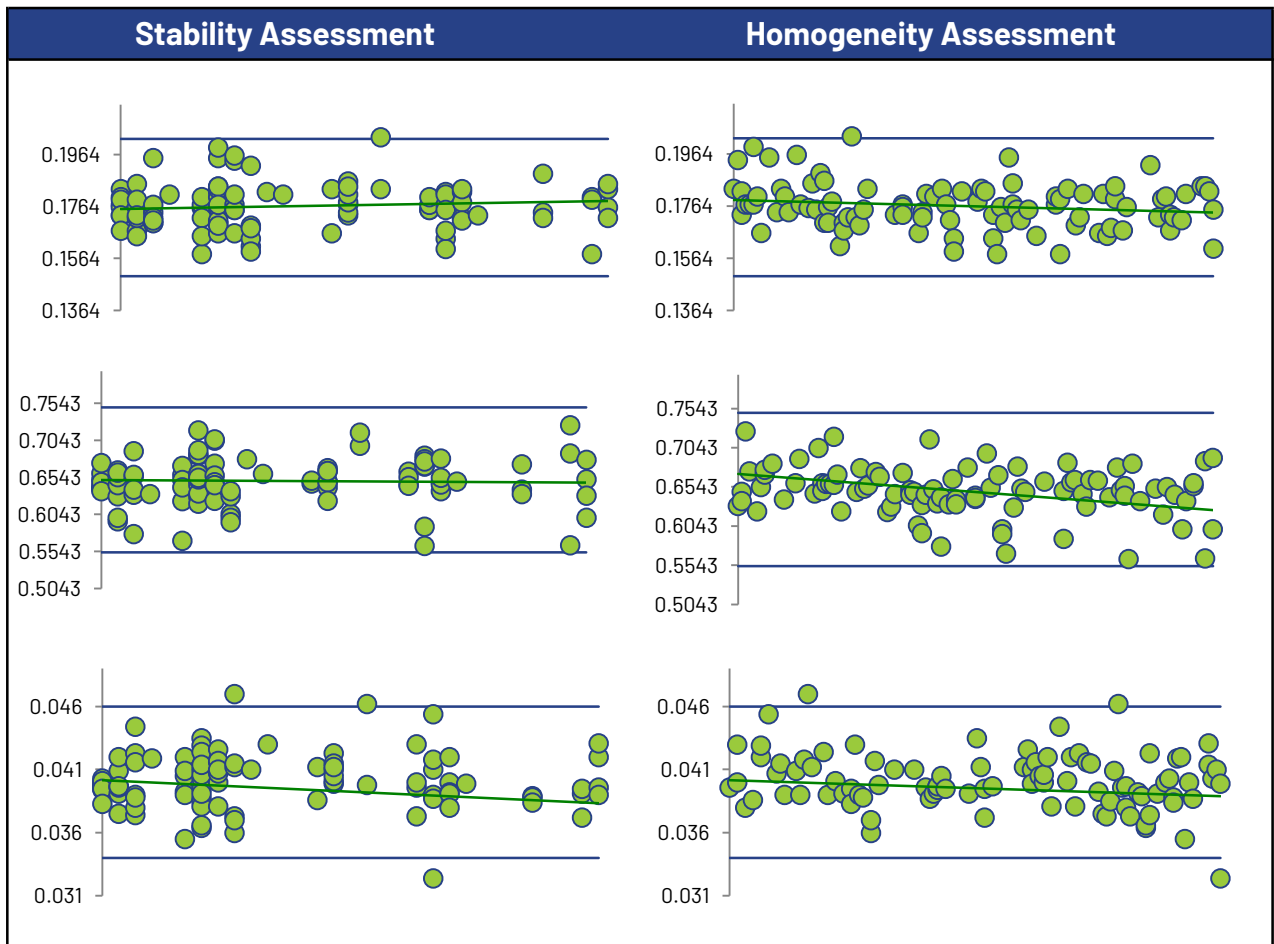
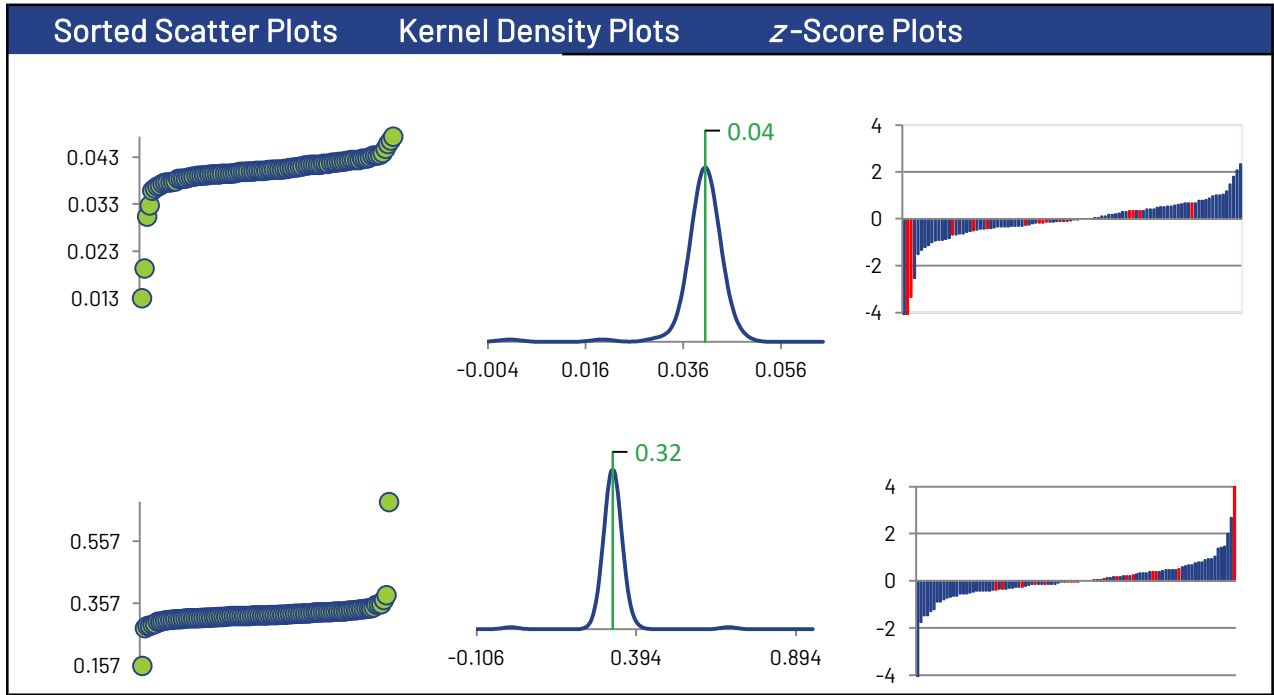
Method	C02A-1	C02A-2	C02A-3	C02A-4
ICP/MS (Blue)	80	80	80	80
ICP/OES (Red)	18	18	18	18

All summary stats, except the failure rate, and the plots below are based on the data excluding any flagged outliers

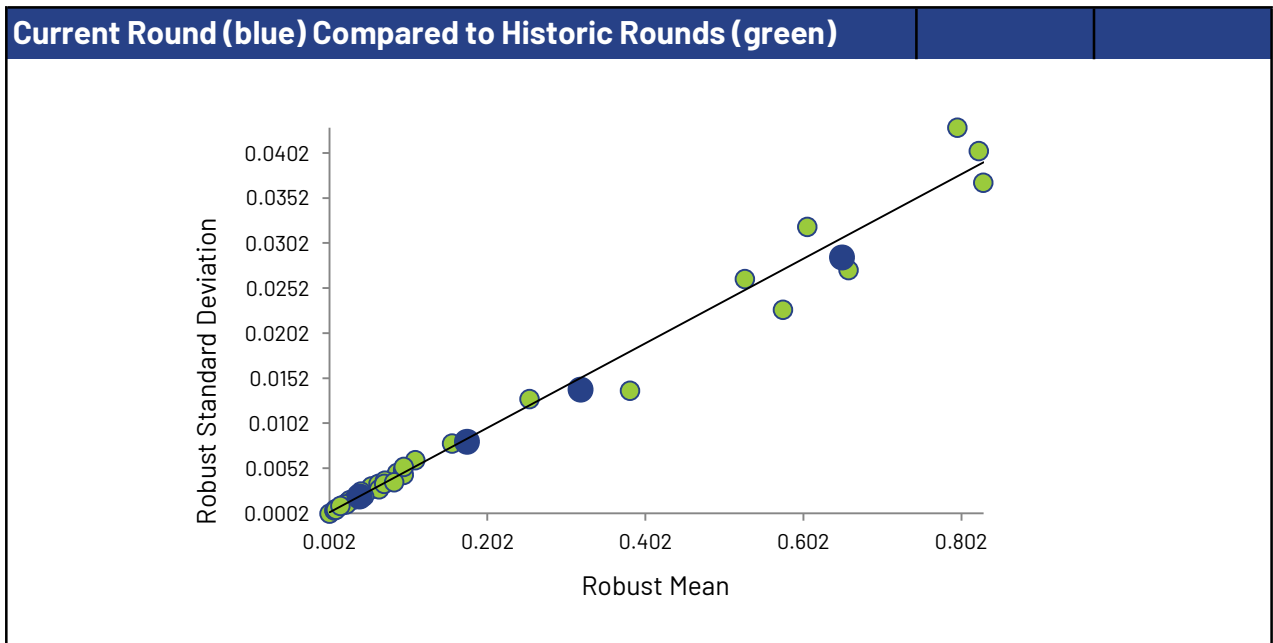
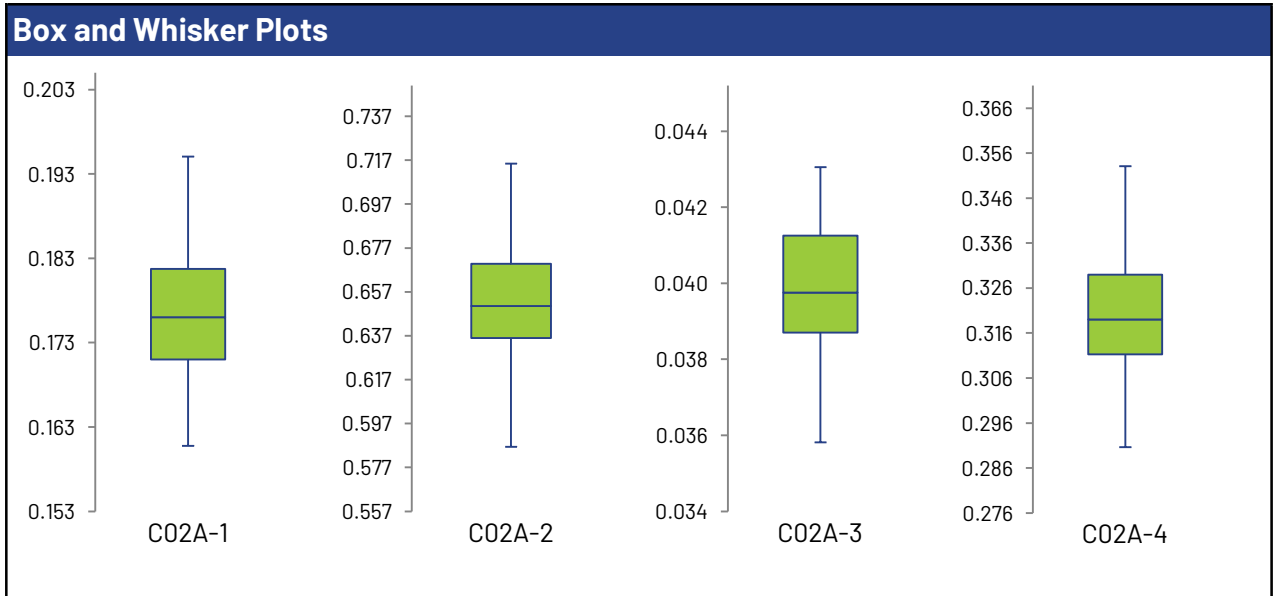
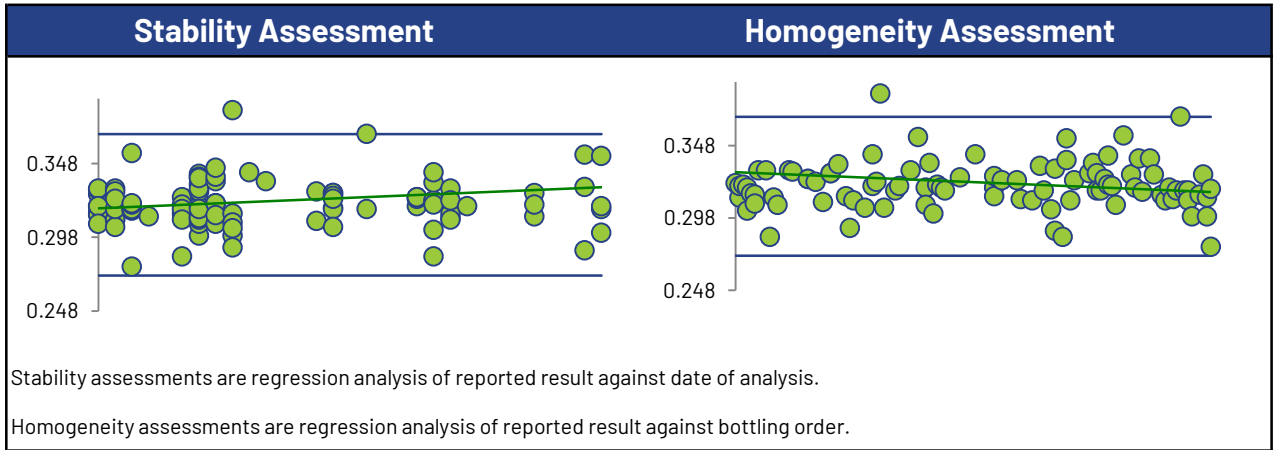


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Beryllium



Beryllium



Bismuth

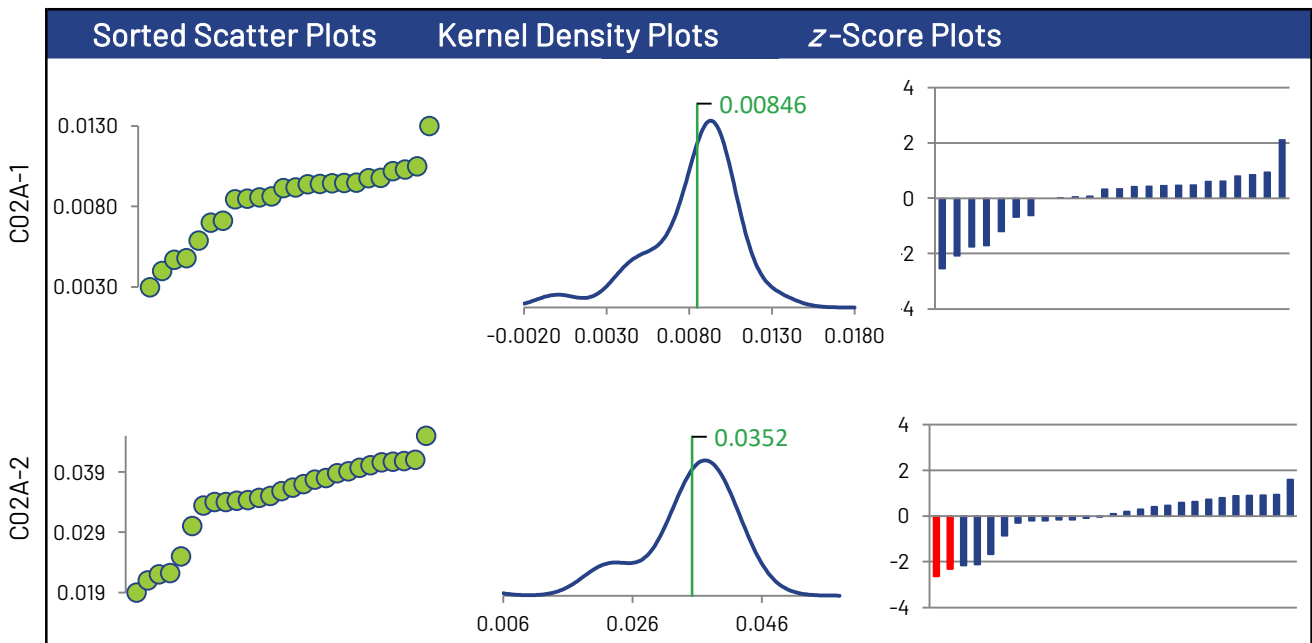
Summary Statistics

Statistic	C02A-1	C02A-2	C02A-3	C02A-4
No. of results used for summary statistics	24	27	27	27
Median mg/L	0.00918	0.0358	0.0932	0.386
Robust Mean mg/L	0.00846	0.0352	0.0924	0.383
Uncertainty of the Assigned Value mg/L	0.000546	0.00148	0.00181	0.00637
Robust Standard Deviation mg/L	0.00214	0.00615	0.00754	0.0265
Regression Standard Deviation mg/L				
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.00214	0.00615	0.00754	0.0265
Flagged Outliers	0	0	0	0
$ z > 3.0$	0	0	2	1
$2 < z < 3$	3	4	1	2
Failure Rate %*	3.7			

Methods Used

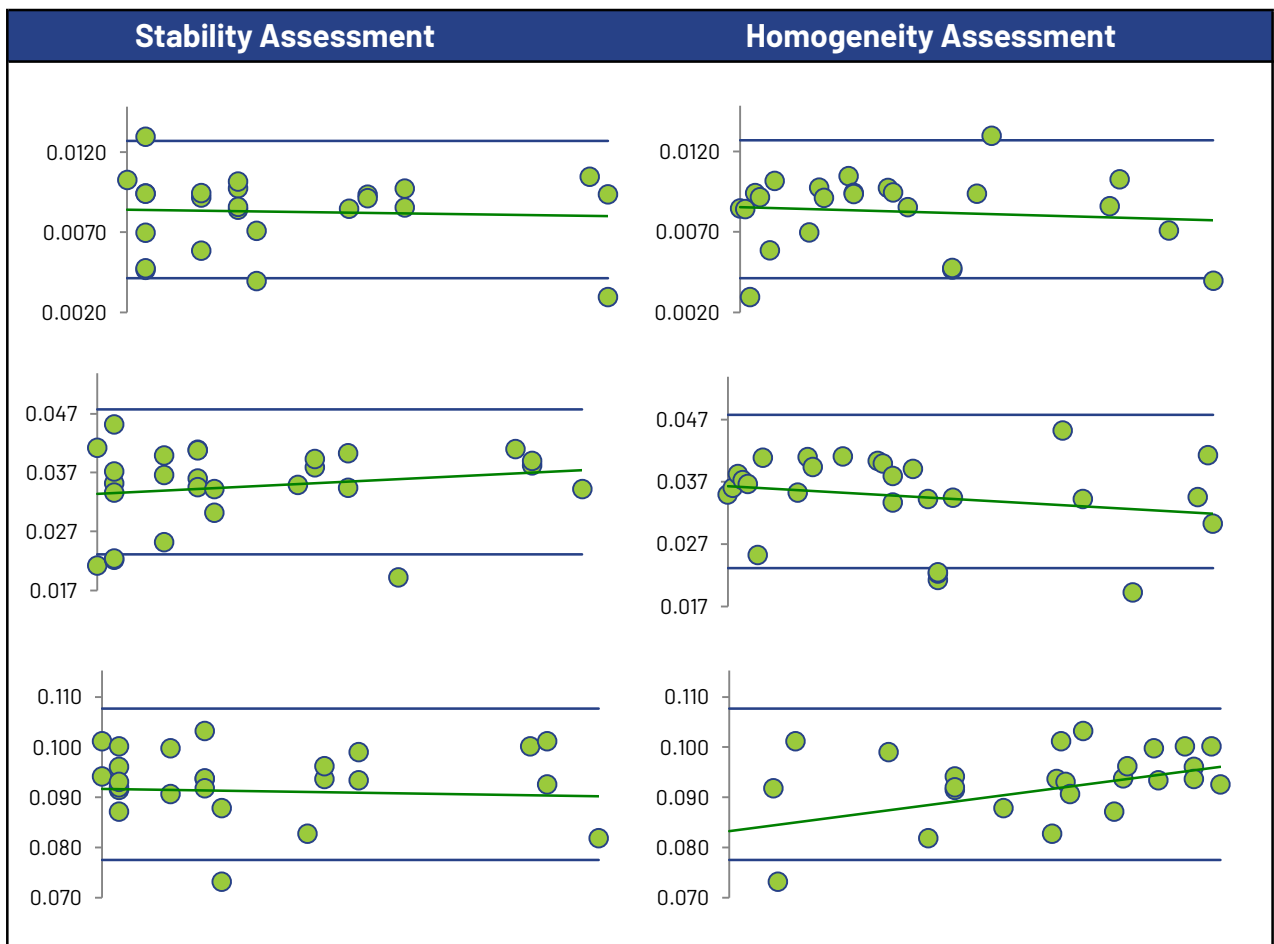
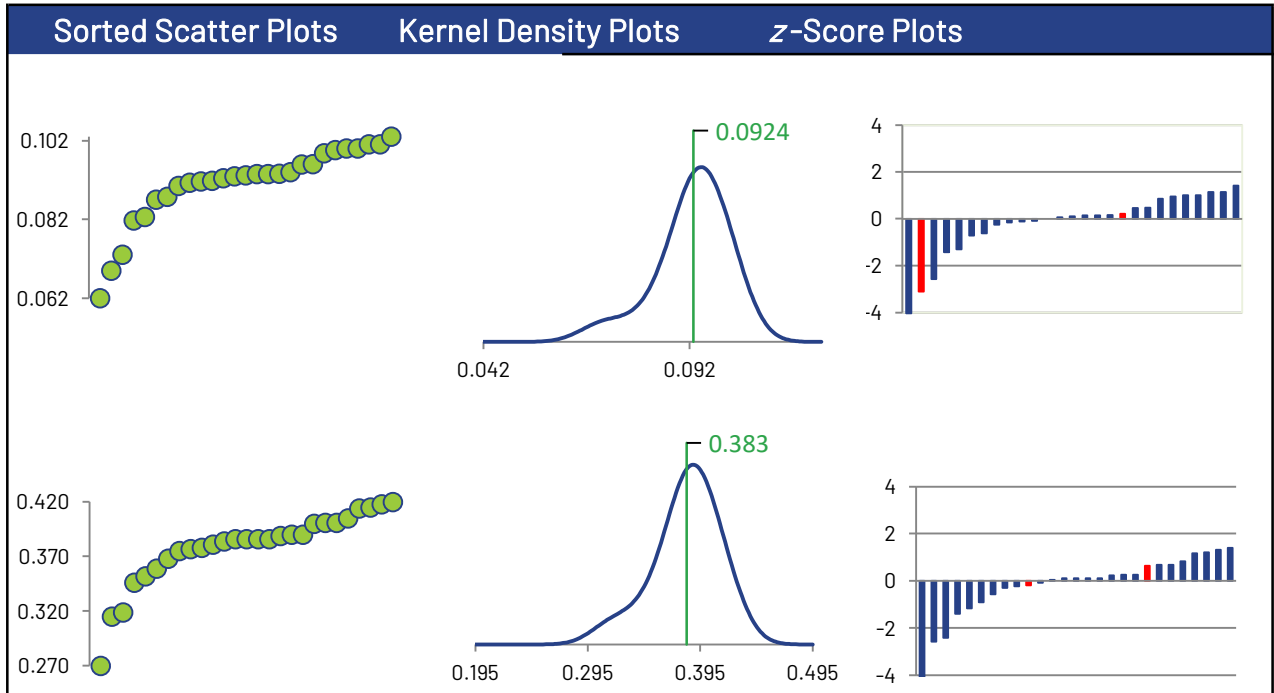
Method	C02A-1	C02A-2	C02A-3	C02A-4
ICP/MS (Blue)	24	25	25	25
ICP/OES (Red)	0	2	2	2

All summary stats, except the failure rate, and the plots below are based on the data excluding any flagged outliers

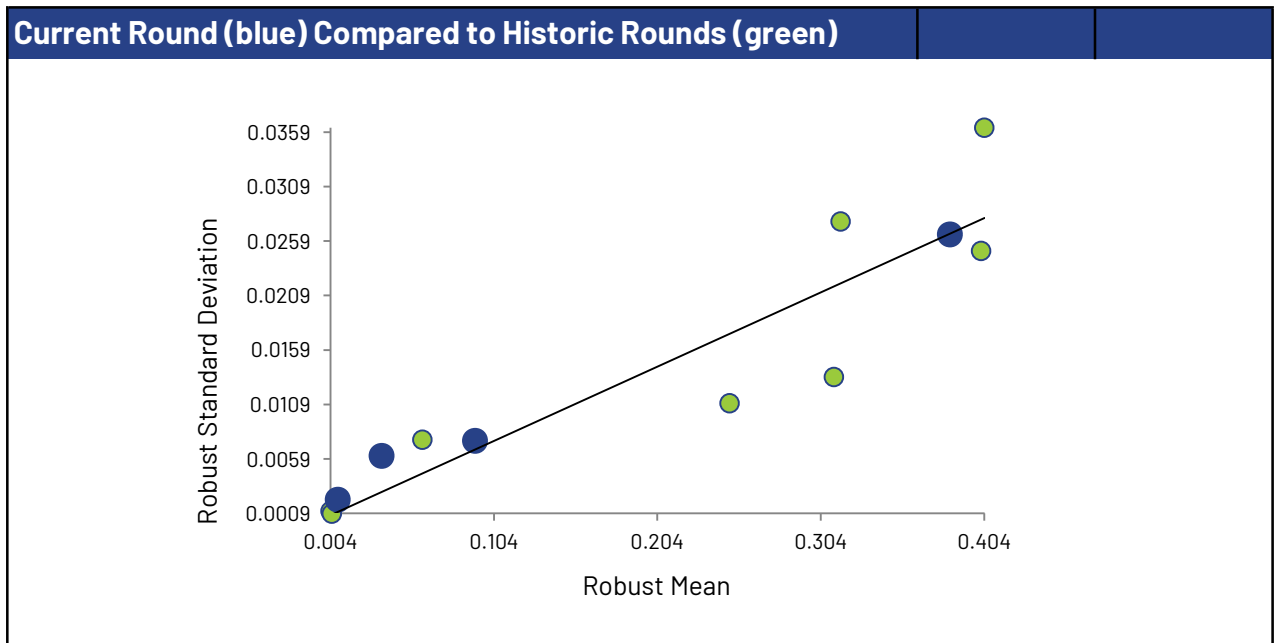
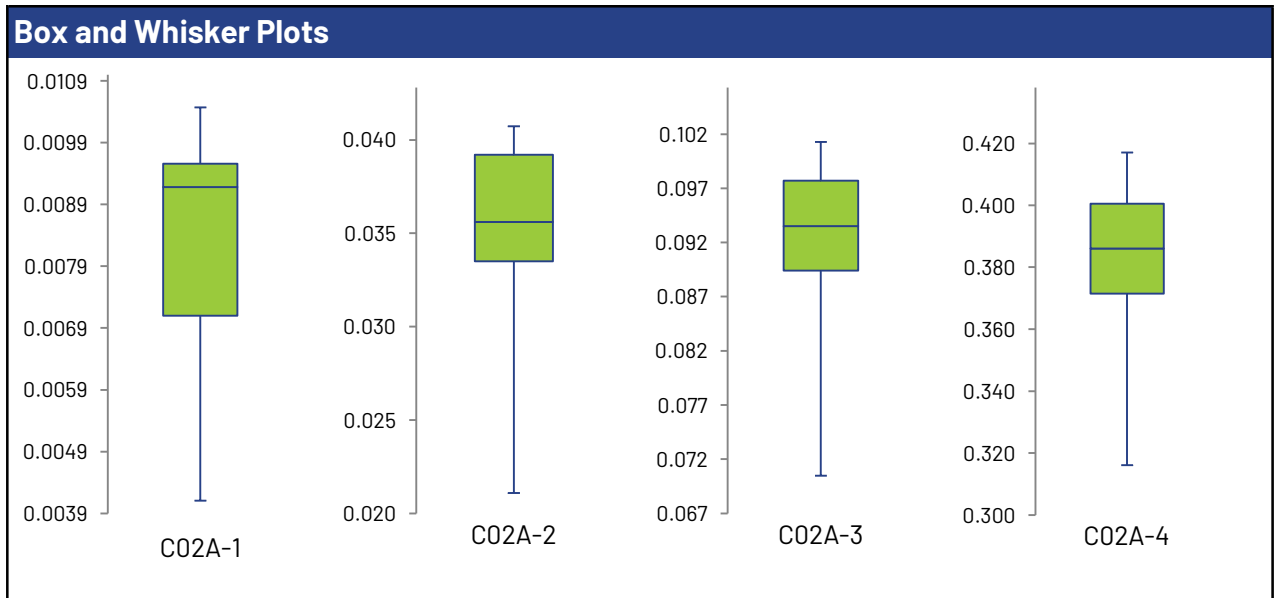
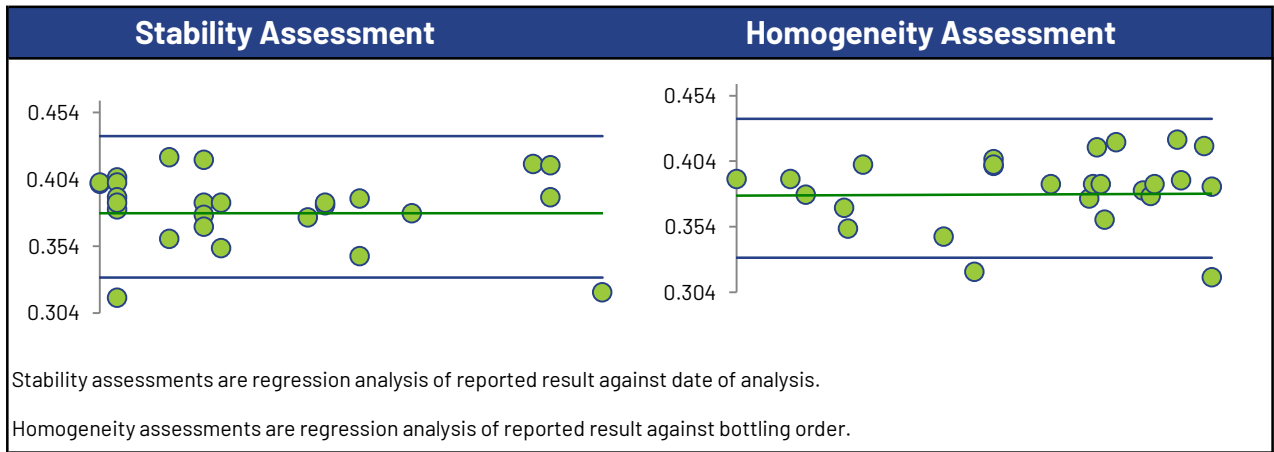


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Bismuth



Bismuth



Boron

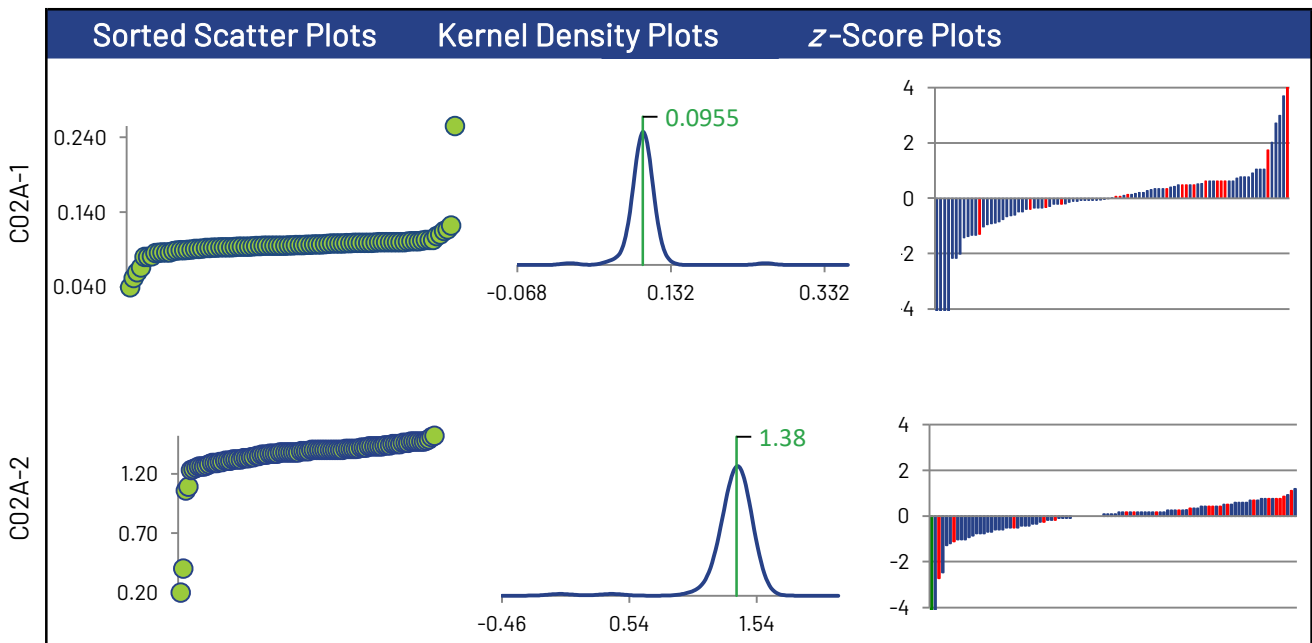
Summary Statistics

Statistic	C02A-1	C02A-2	C02A-3	C02A-4
No. of results used for summary statistics	91	98	89	99
Median mg/L	0.0956	1.39	0.0555	0.653
Robust Mean mg/L	0.0955	1.38	0.0558	0.652
Uncertainty of the Assigned Value mg/L	0.000777	0.00912	0.000766	0.00428
Robust Standard Deviation mg/L	0.00593	0.0722	0.00578	0.0341
Regression Standard Deviation mg/L	0.00716	0.104	0.00418	0.0489
Stability Flag		Stability		
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.00716	0.118	0.00578	0.0489
Flagged Outliers	1	1	2	0
$ z > 3.0$	6	2	8	3
$2 < z < 3$	6	2	5	4
Failure Rate %*	9.1			

Methods Used

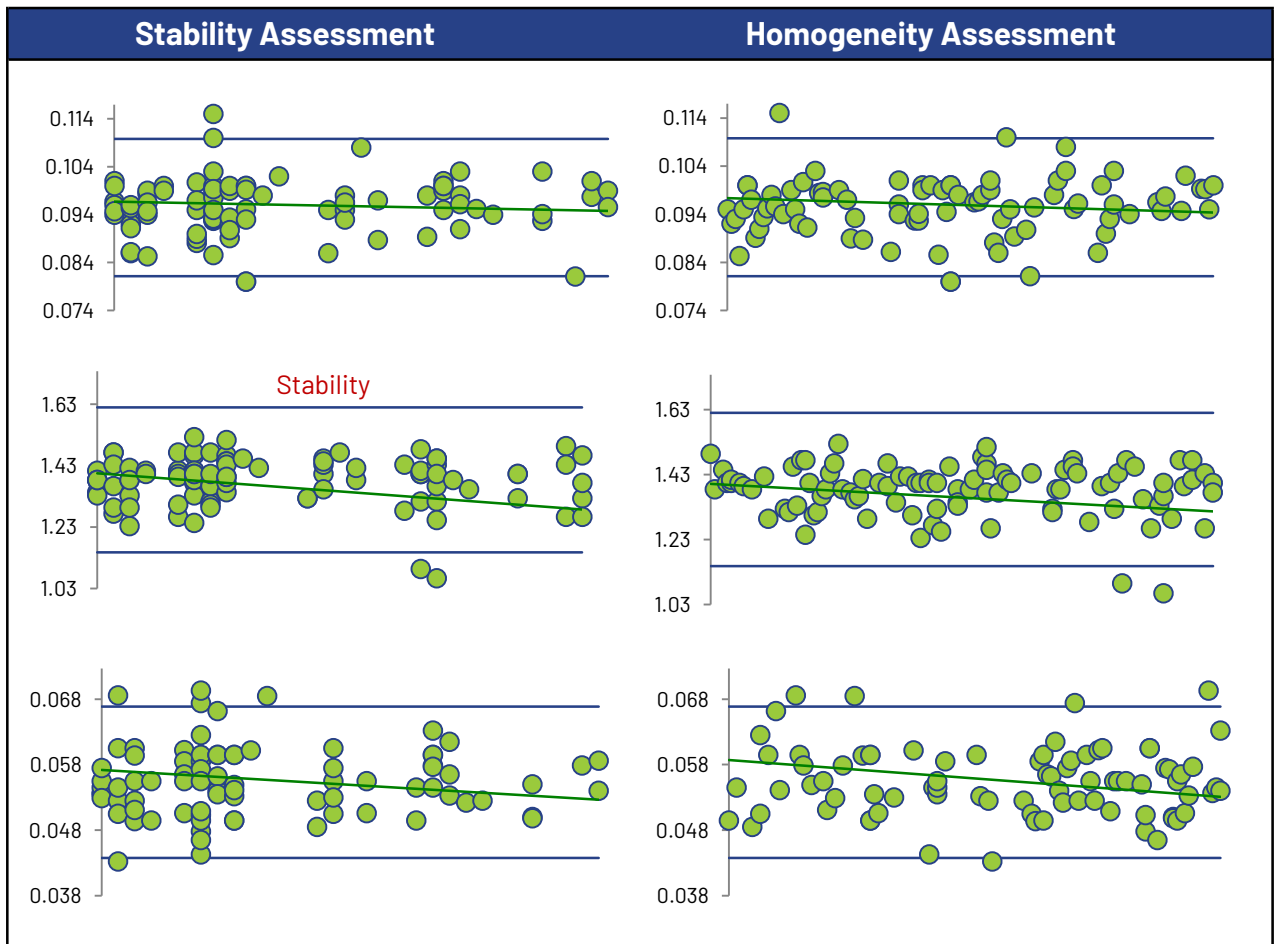
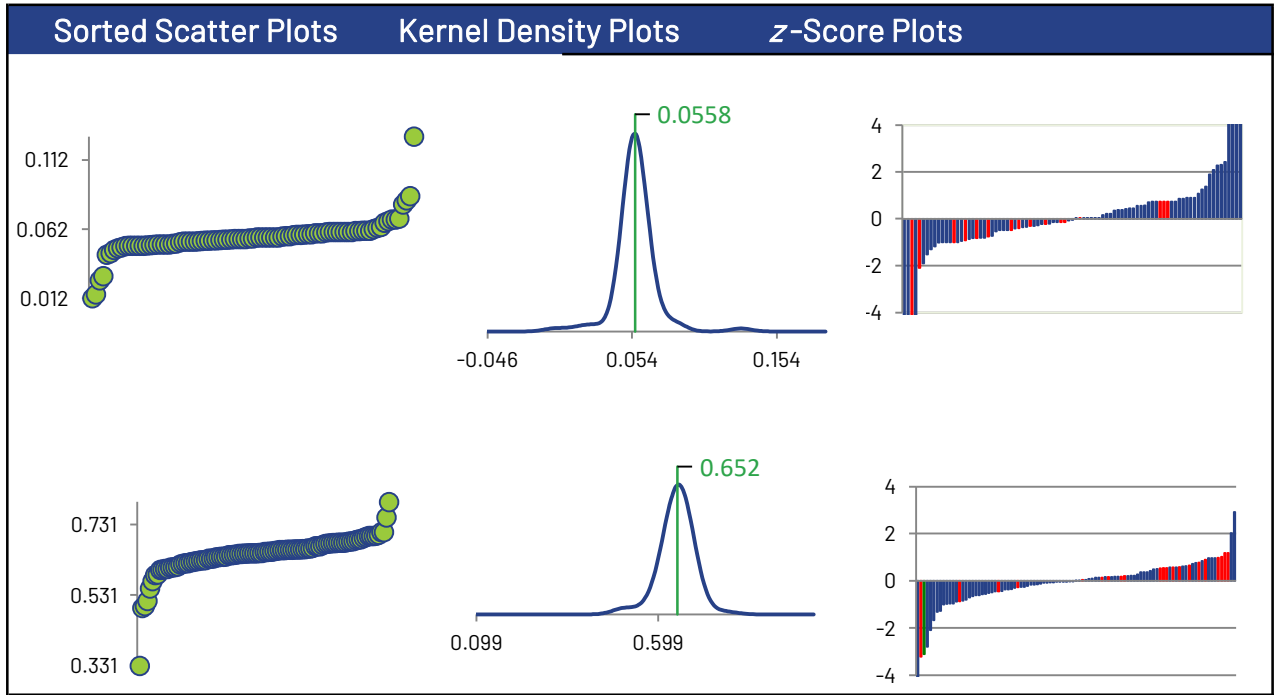
Method	C02A-1	C02A-2	C02A-3	C02A-4
ICP/MS (Blue)	74	76	73	77
ICP/OES (Red)	17	21	16	21
COLORIMETRIC (Green)	0	1	0	1

All summary stats, except the failure rate, and the plots below are based on the data excluding any flagged outliers

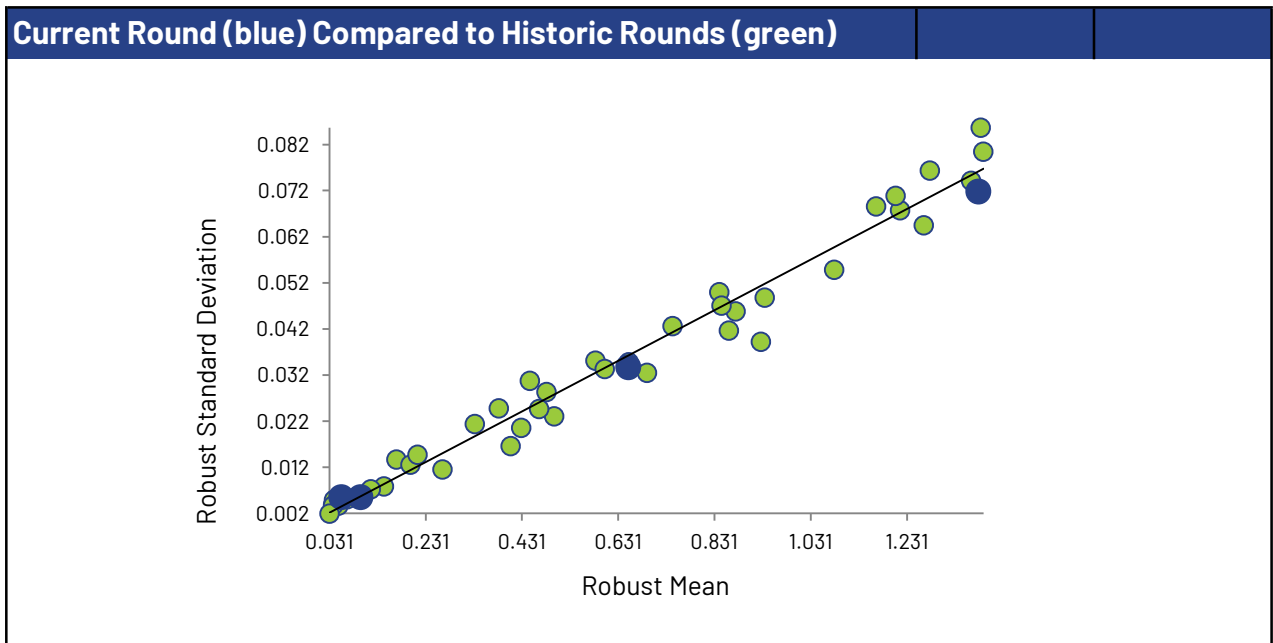
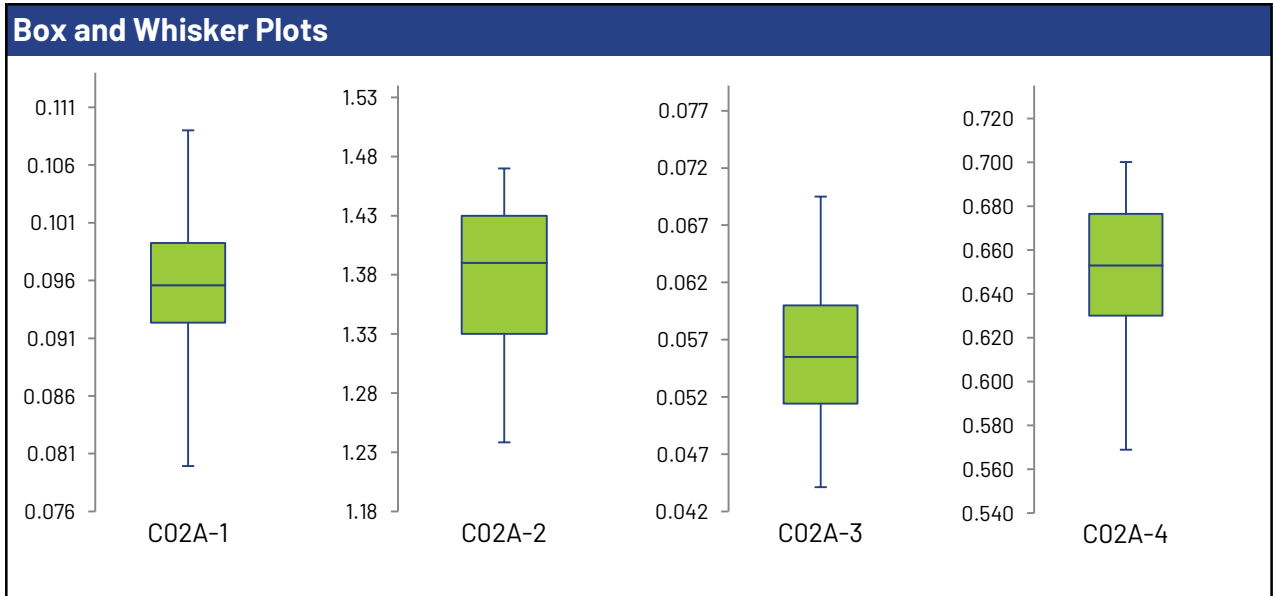
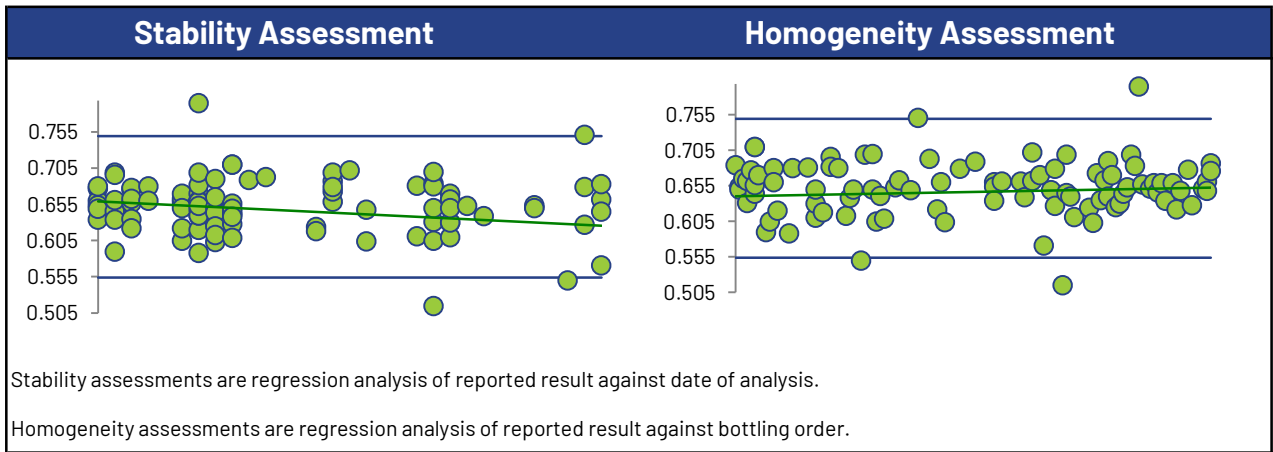


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Boron



Boron



Cadmium

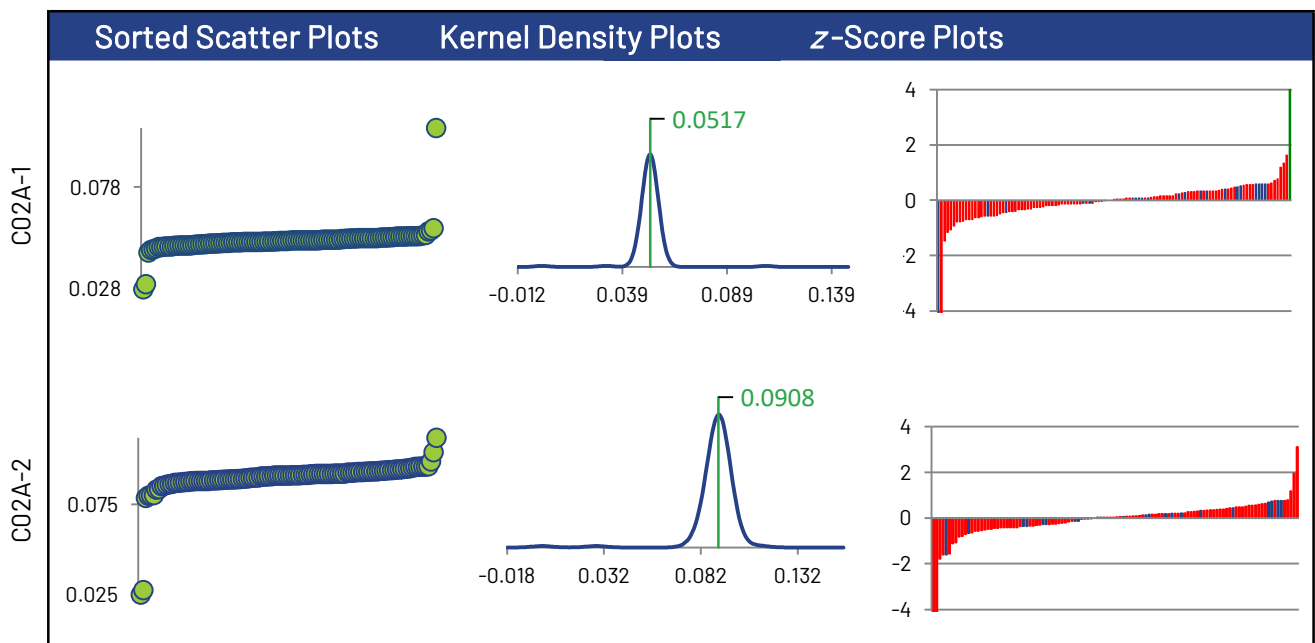
Summary Statistics

Statistic	C02A-1	C02A-2	C02A-3	C02A-4
No. of results used for summary statistics	115	114	115	114
Median mg/L	0.0518	0.0911	0.0294	0.0520
Robust Mean mg/L	0.0517	0.0908	0.0295	0.0519
Uncertainty of the Assigned Value mg/L	0.000219	0.000399	0.000142	0.000239
Robust Standard Deviation mg/L	0.00188	0.00341	0.00122	0.00204
Regression Standard Deviation mg/L	0.00387	0.00681	0.00221	0.00390
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.00387	0.00681	0.00221	0.00390
Flagged Outliers	1	2	1	2
$ z > 3.0$	3	3	3	1
$2 < z < 3$	0	0	1	1
Failure Rate %*	4.3			

Methods Used

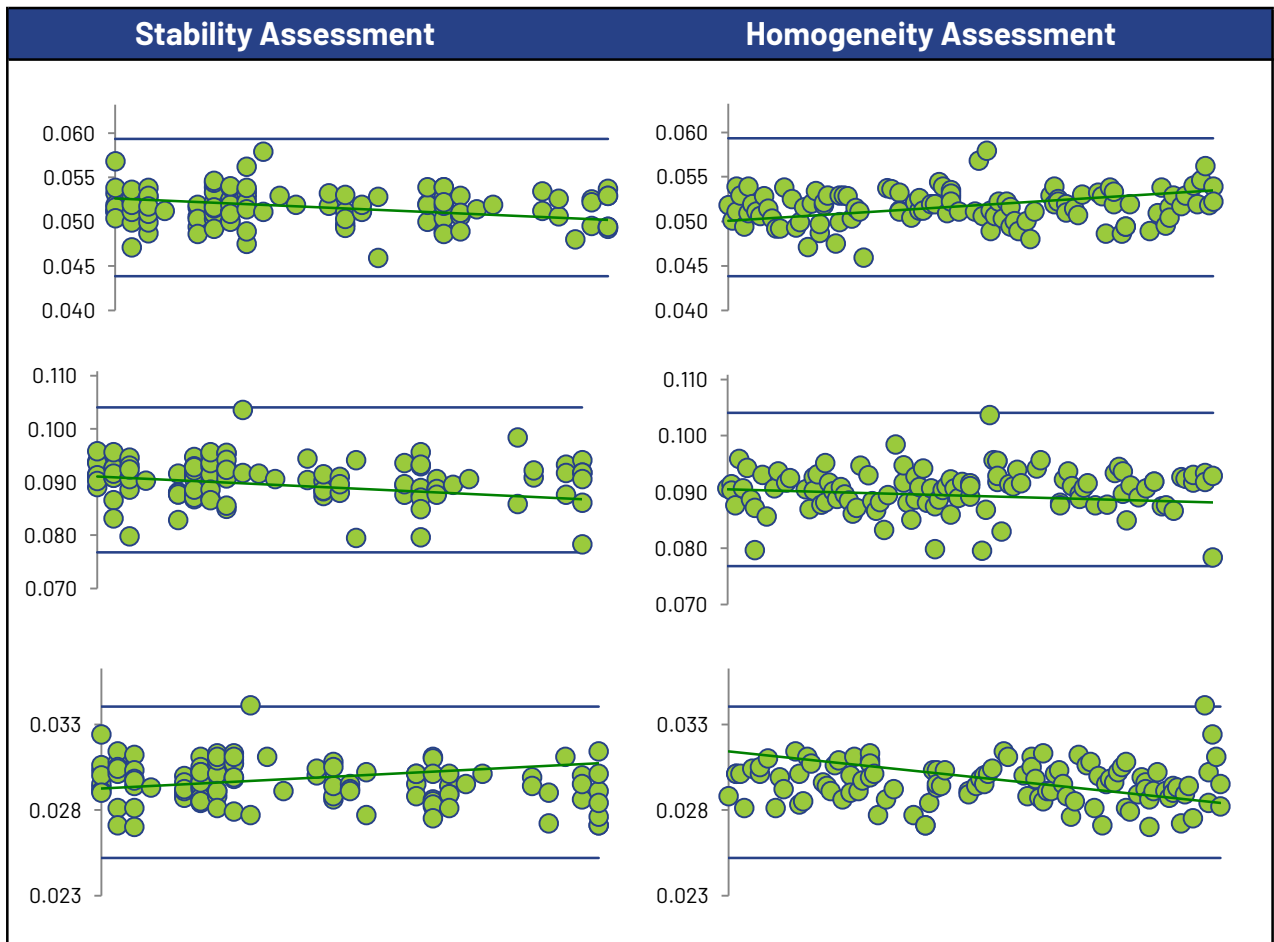
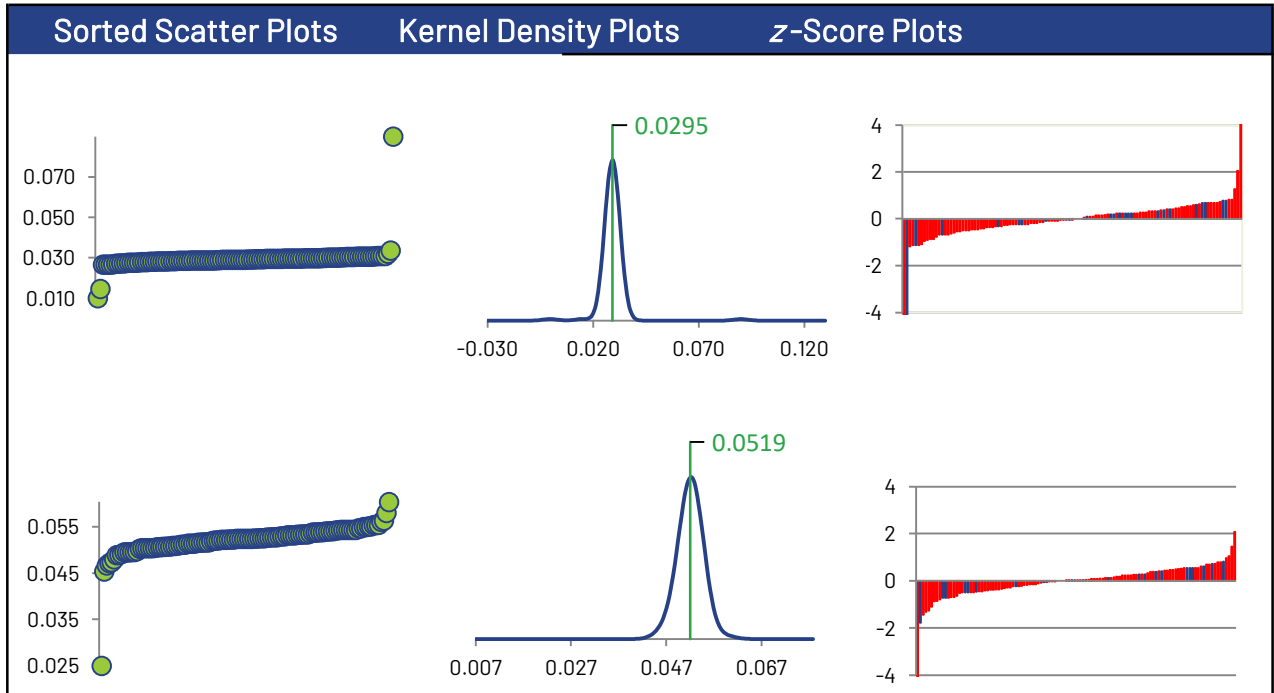
Method	C02A-1	C02A-2	C02A-3	C02A-4
ICP/OES (Blue)	23	23	23	23
ICP/MS (Red)	91	91	92	91
AA GRAPHITE (Green)	1	0	0	0

All summary stats, except the failure rate, and the plots below are based on the data excluding any flagged outliers

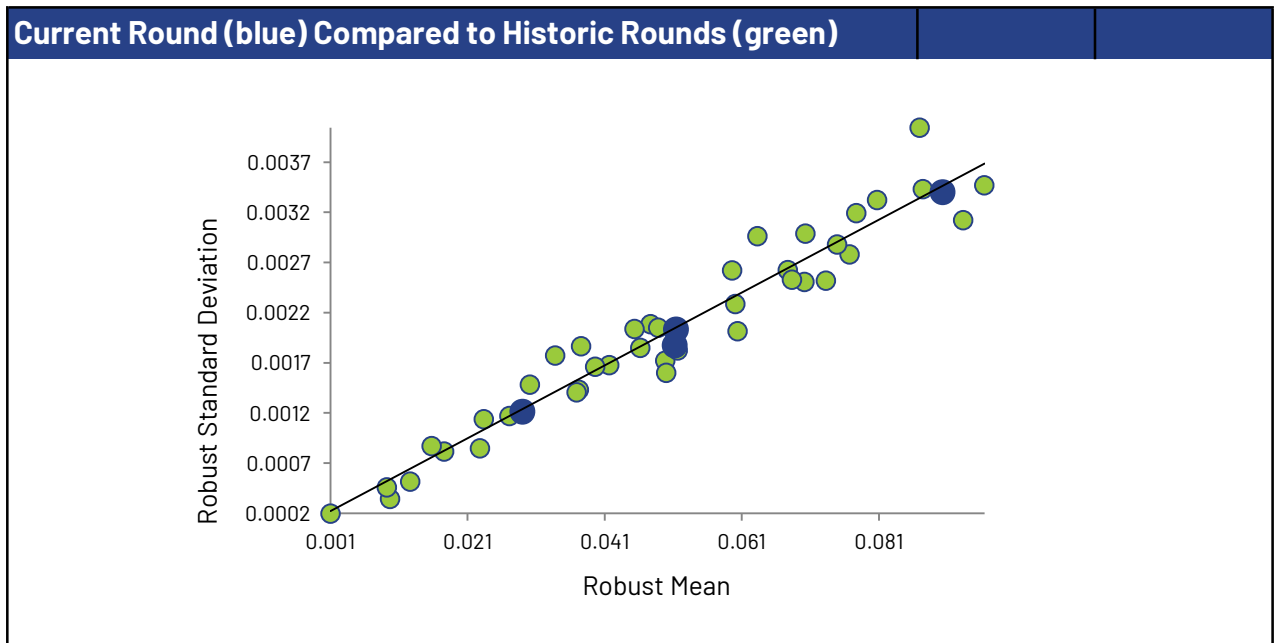
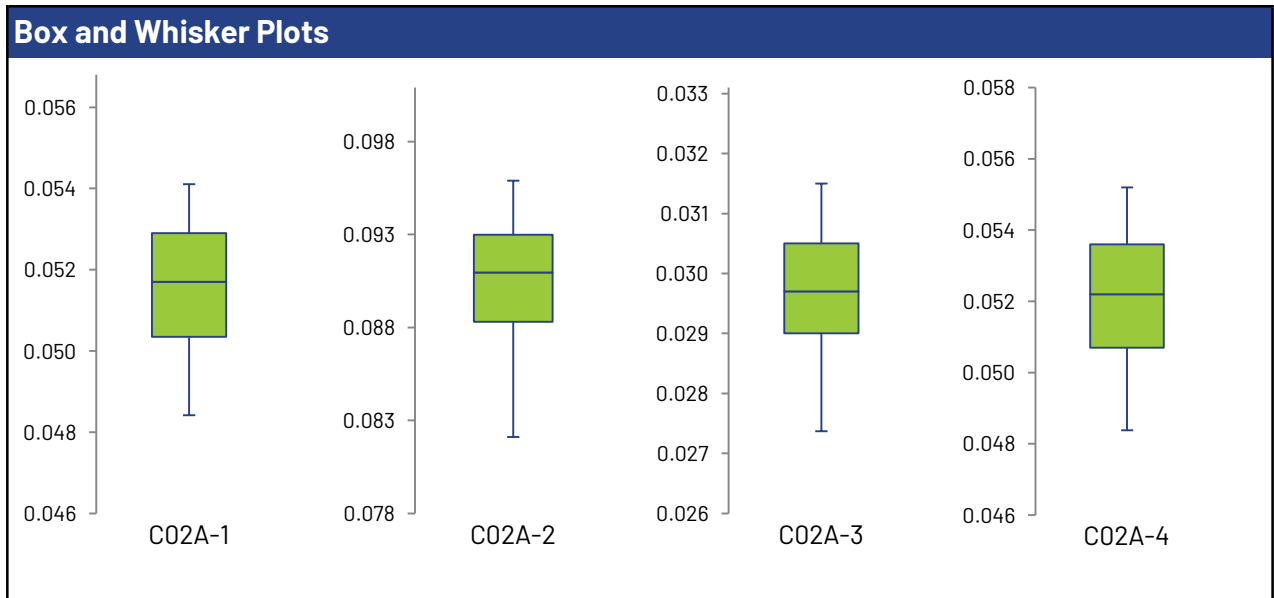
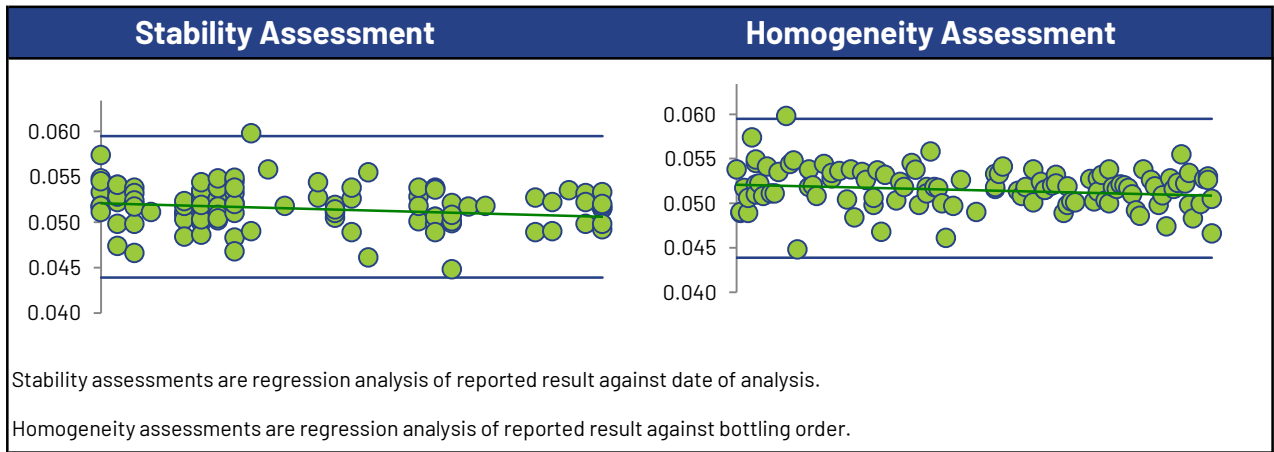


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Cadmium



Cadmium



Chromium

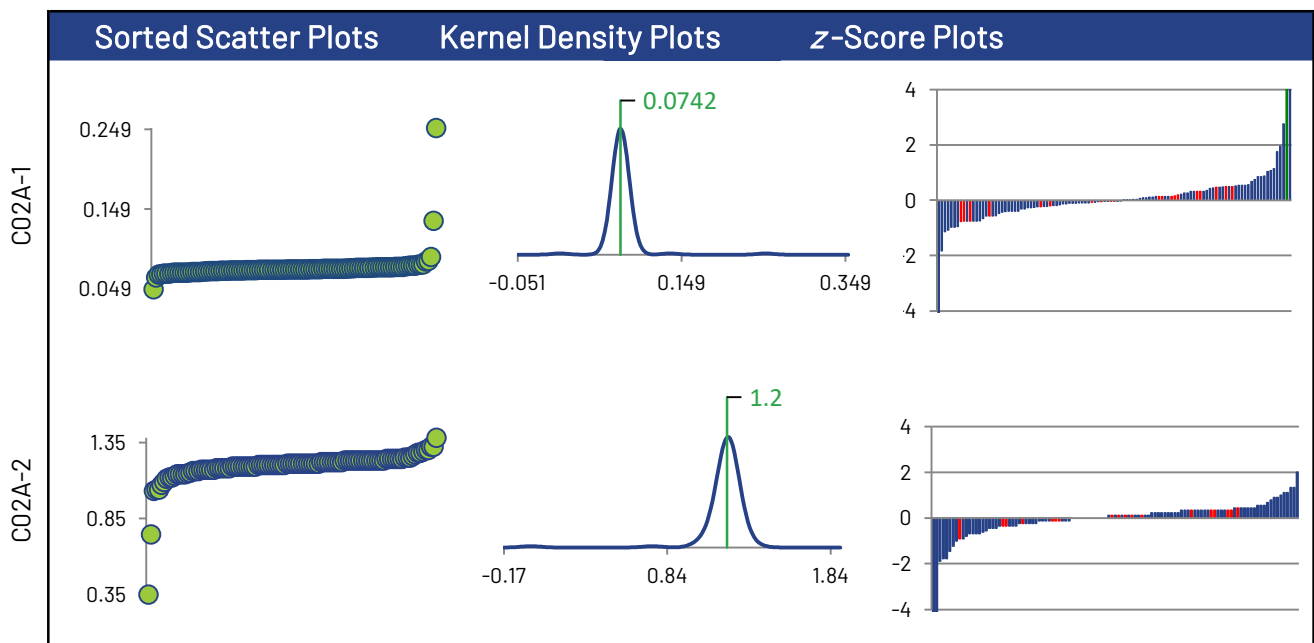
Summary Statistics

Statistic	C02A-1	C02A-2	C02A-3	C02A-4
No. of results used for summary statistics	111	111	110	112
Median mg/L	0.0740	1.21	0.0250	0.641
Robust Mean mg/L	0.0742	1.20	0.0251	0.639
Uncertainty of the Assigned Value mg/L	0.000358	0.00504	0.000151	0.00309
Robust Standard Deviation mg/L	0.00302	0.0425	0.00127	0.0262
Regression Standard Deviation mg/L	0.00557	0.0902	0.00189	0.0479
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.00557	0.0902	0.00189	0.0479
Flagged Outliers	1	1	2	0
$ z > 3.0$	3	2	4	4
$2 < z < 3$	1	0	7	0
Failure Rate %*	5.4			

Methods Used

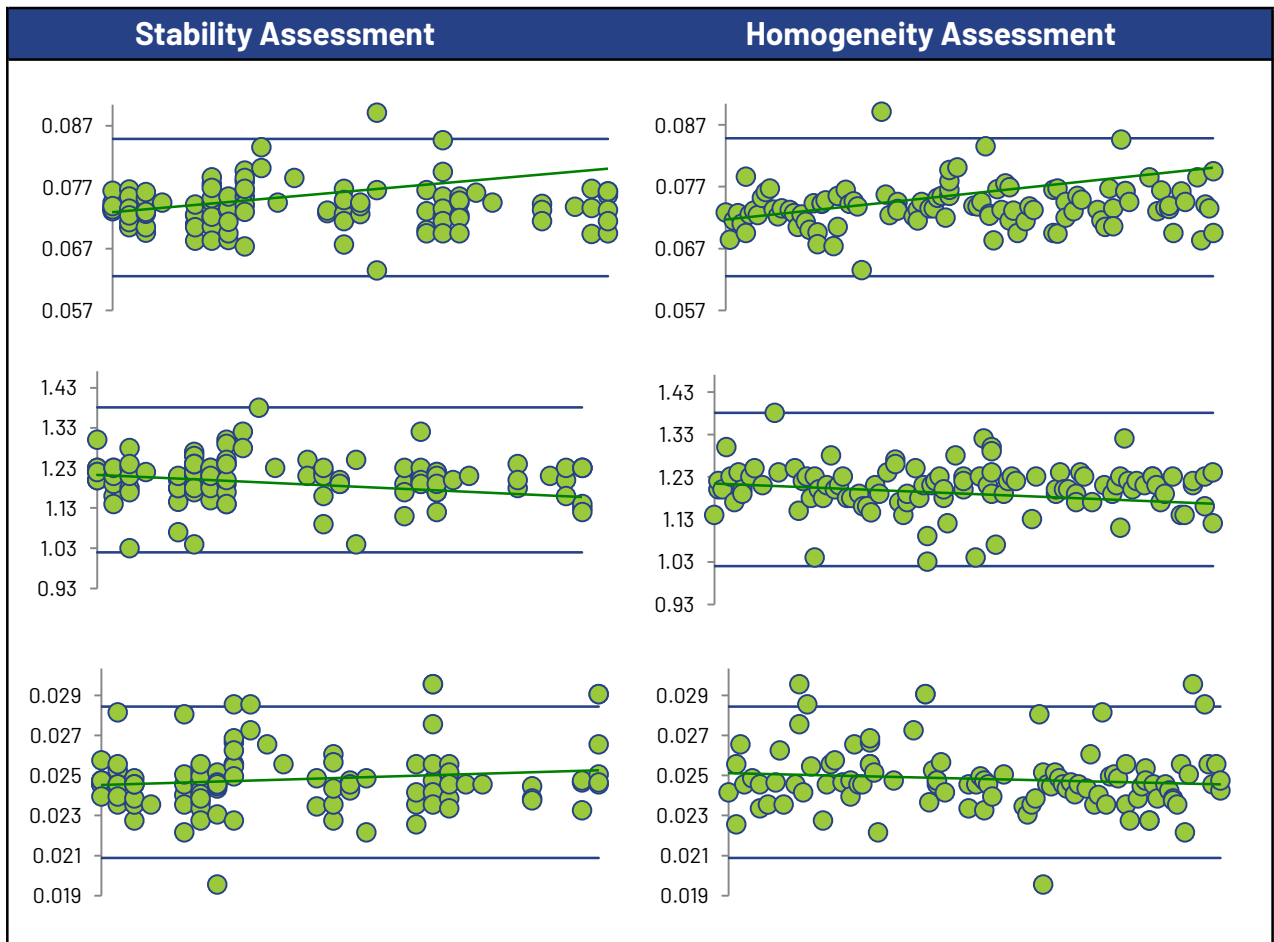
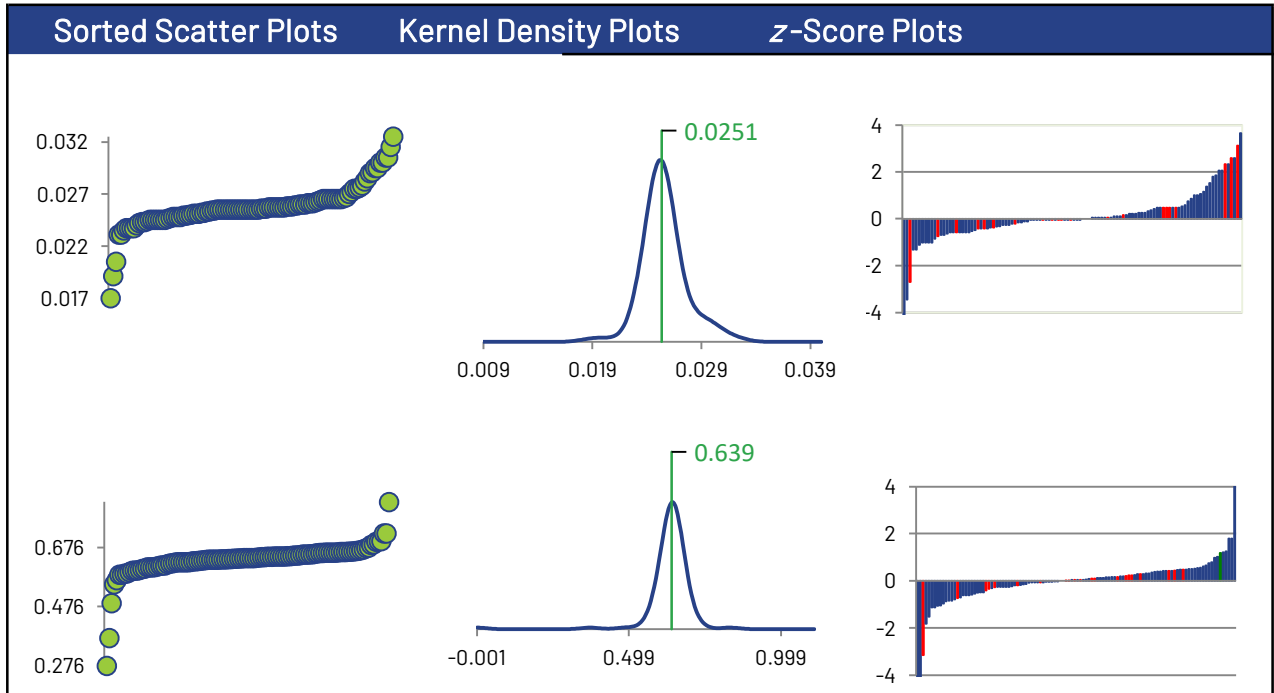
Method	C02A-1	C02A-2	C02A-3	C02A-4
ICP/MS (Blue)	90	89	89	90
ICP/OES (Red)	20	21	21	21
AA FLAME (Green)	1	1	0	1

All summary stats, except the failure rate, and the plots below are based on the data excluding any flagged outliers

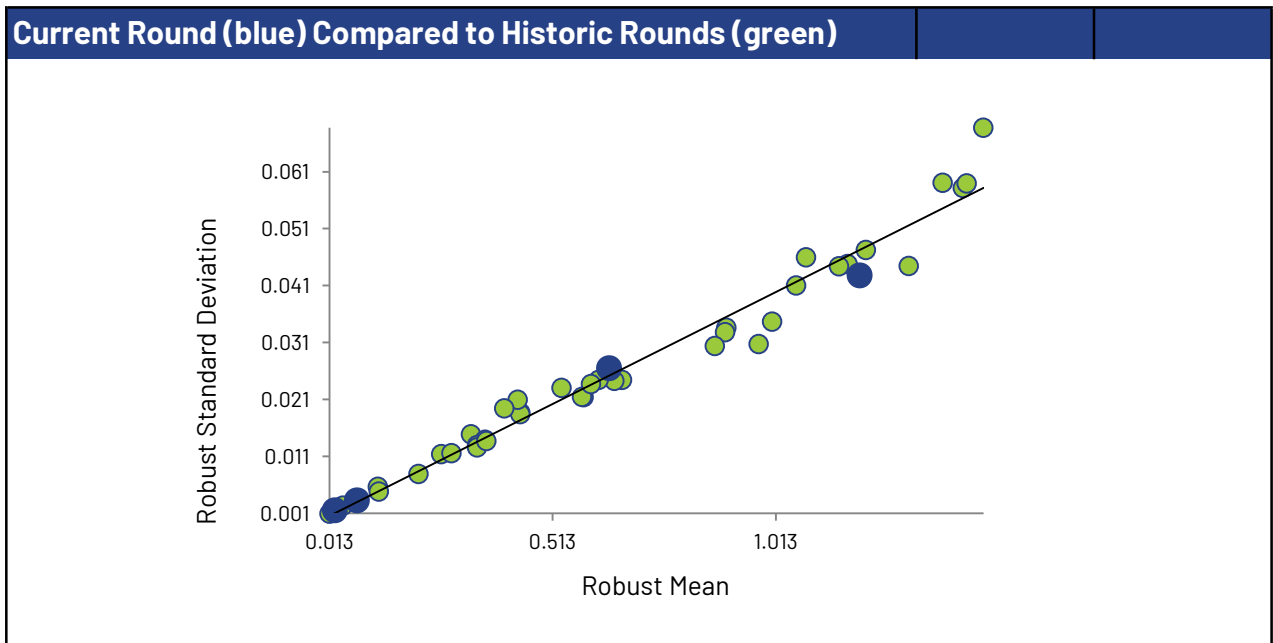
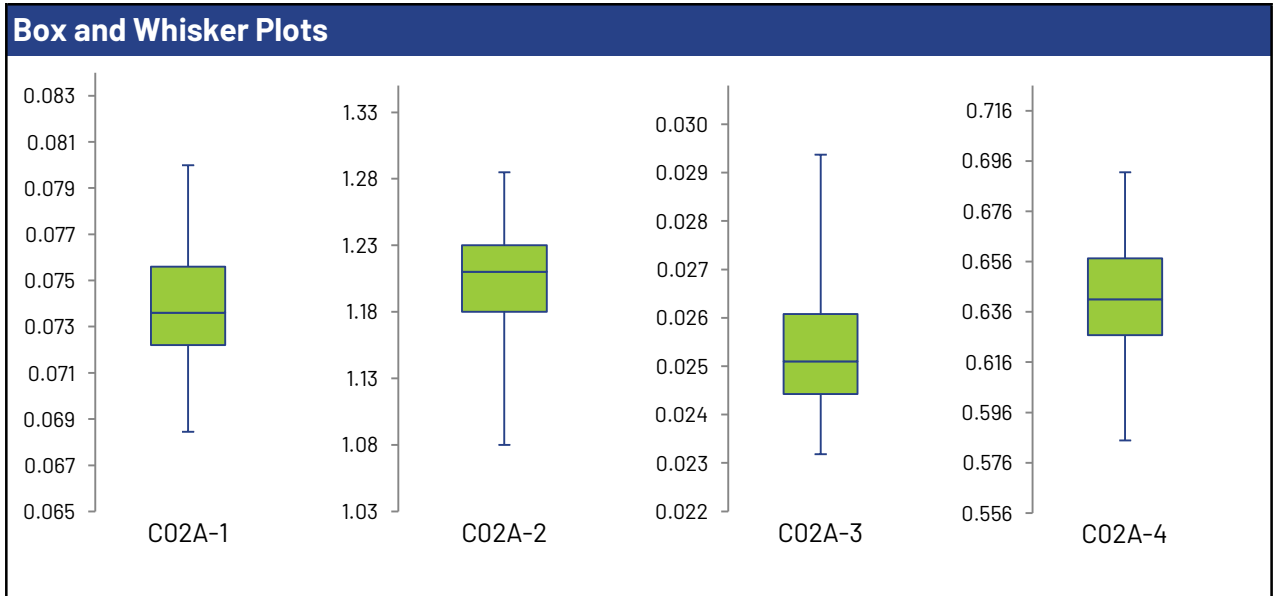
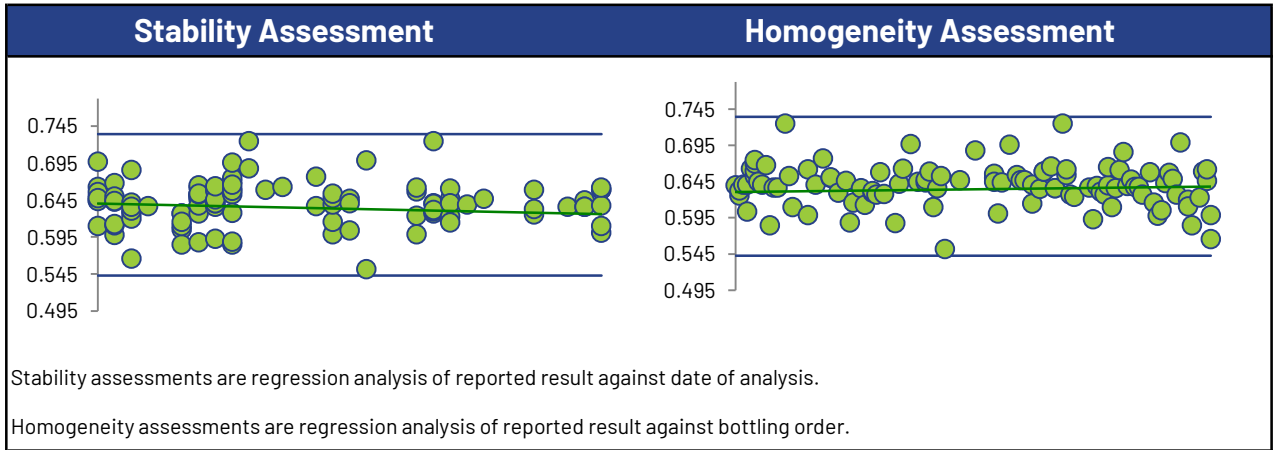


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Chromium



Chromium



Cobalt

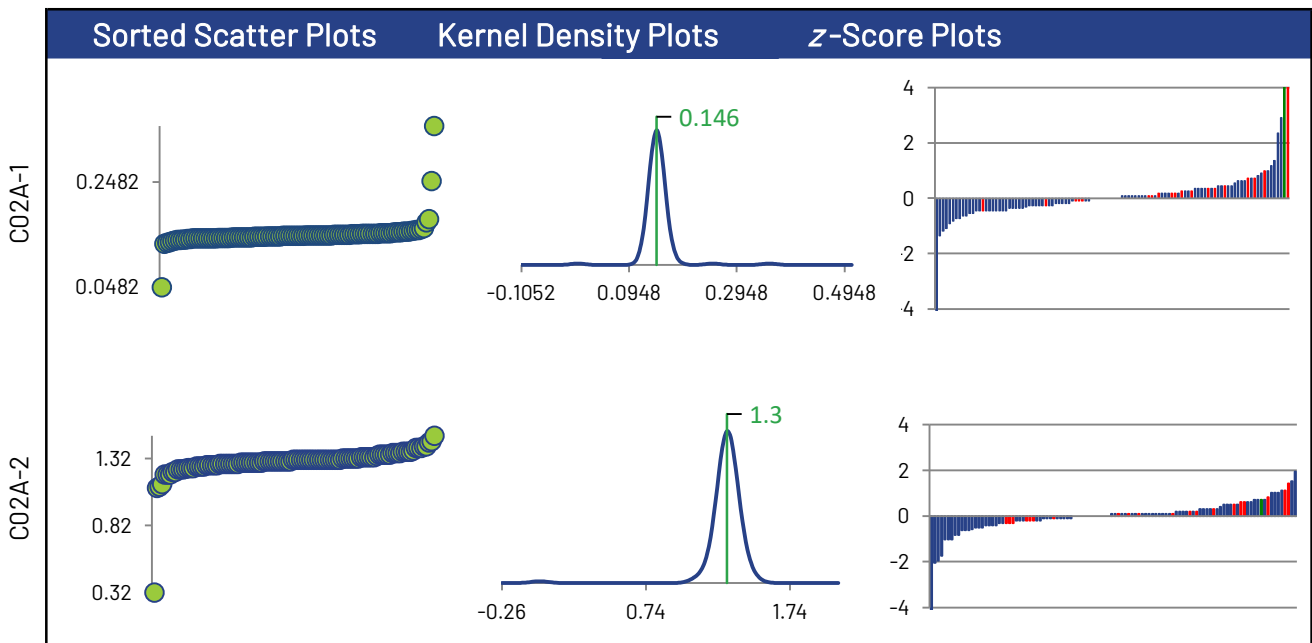
Summary Statistics

Statistic	C02A-1	C02A-2	C02A-3	C02A-4
No. of results used for summary statistics	107	108	107	108
Median mg/L	0.146	1.31	0.0440	0.622
Robust Mean mg/L	0.146	1.30	0.0442	0.621
Uncertainty of the Assigned Value mg/L	0.000672	0.00561	0.000245	0.00302
Robust Standard Deviation mg/L	0.00556	0.0466	0.00203	0.0251
Regression Standard Deviation mg/L	0.0110	0.0978	0.00331	0.0466
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.0110	0.0978	0.00331	0.0466
Flagged Outliers	0	0	1	0
$ z > 3.0$	3	1	3	2
$2 < z < 3$	2	1	2	1
Failure Rate %*	2.8			

Methods Used

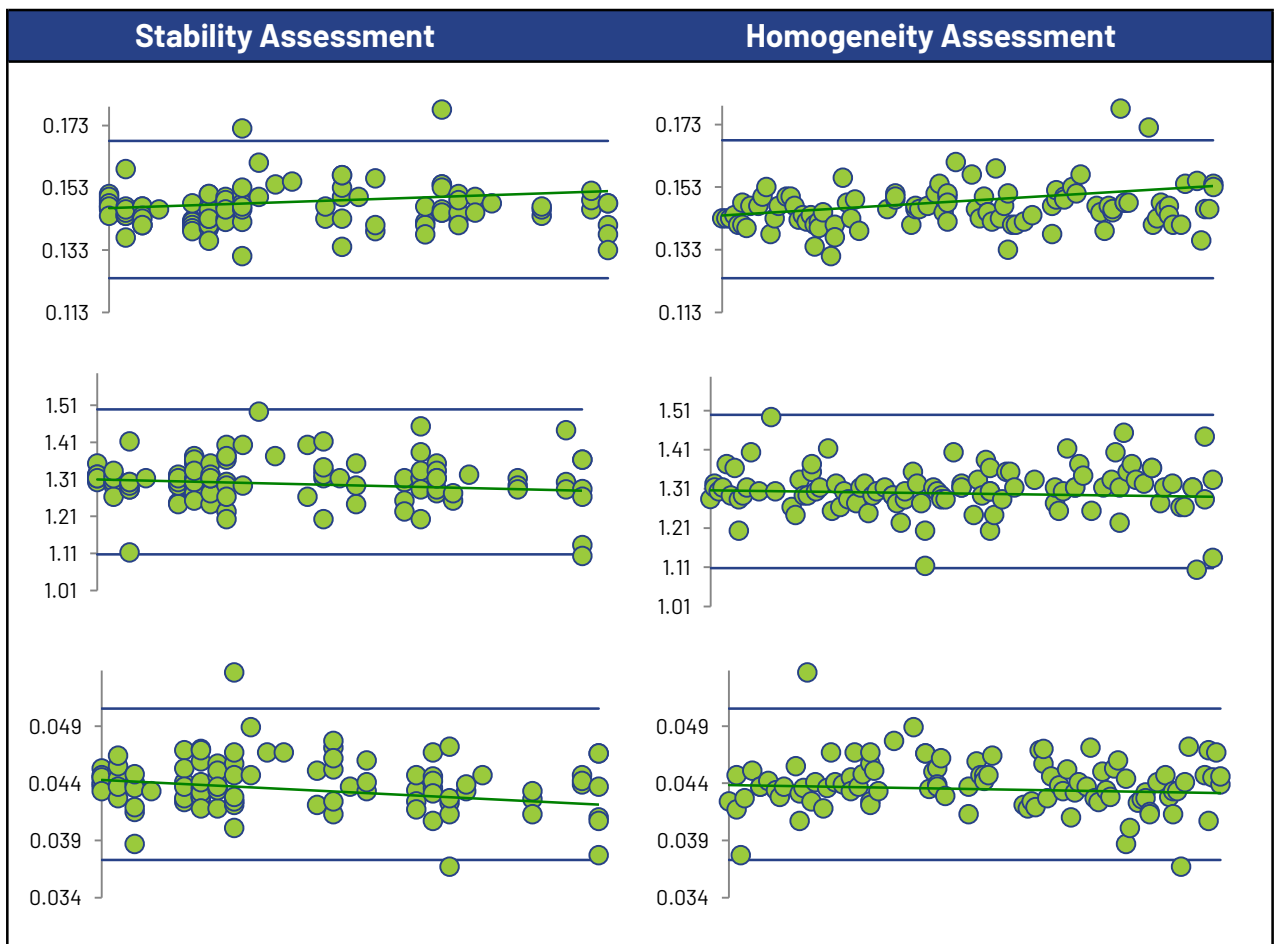
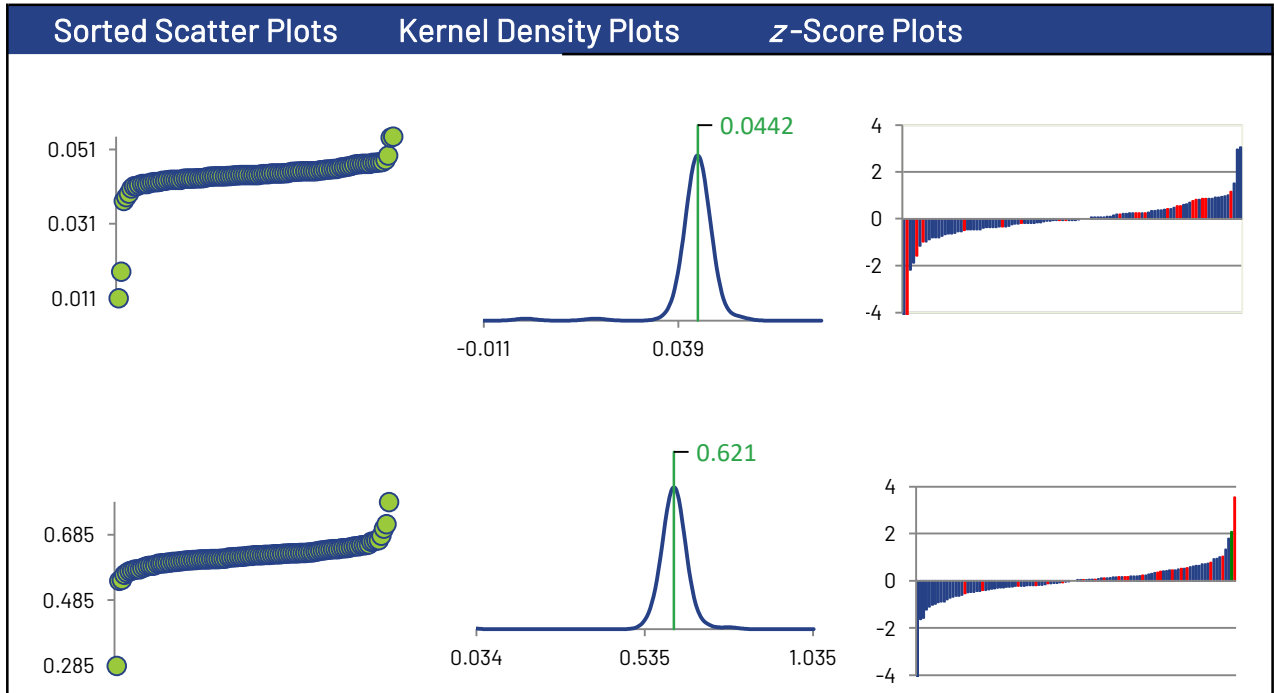
Method	C02A-1	C02A-2	C02A-3	C02A-4
ICP/MS (Blue)	85	86	86	86
ICP/OES (Red)	21	21	21	21
AA FLAME (Green)	1	1	0	1

All summary stats, except the failure rate, and the plots below are based on the data excluding any flagged outliers

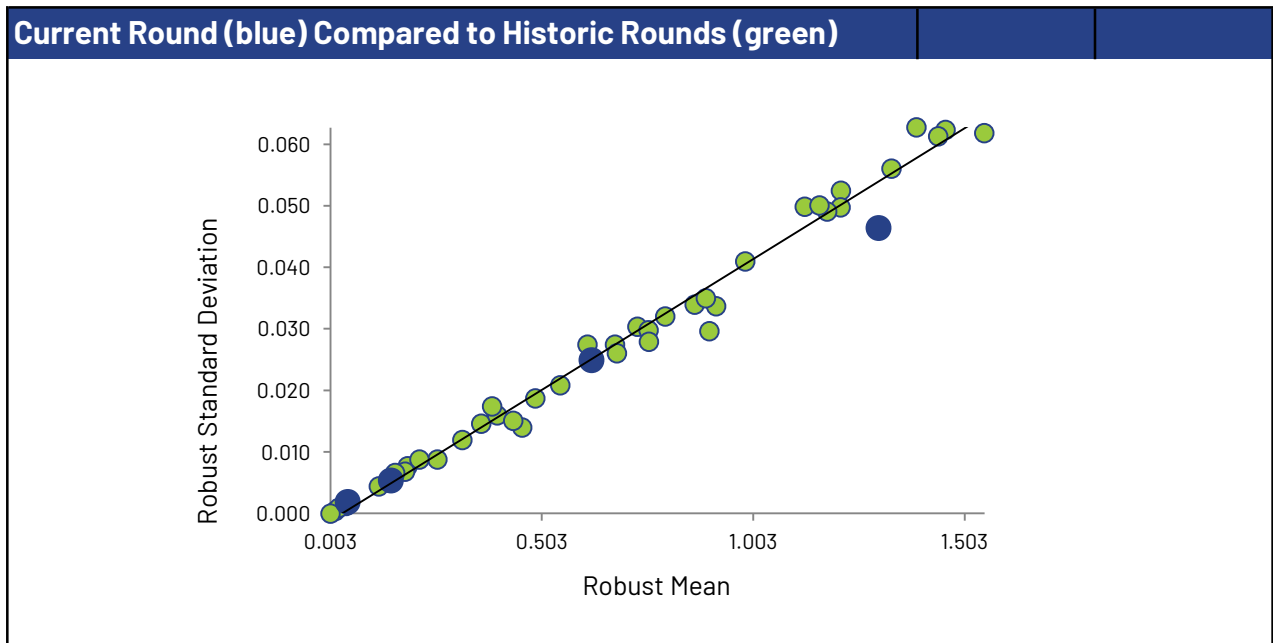
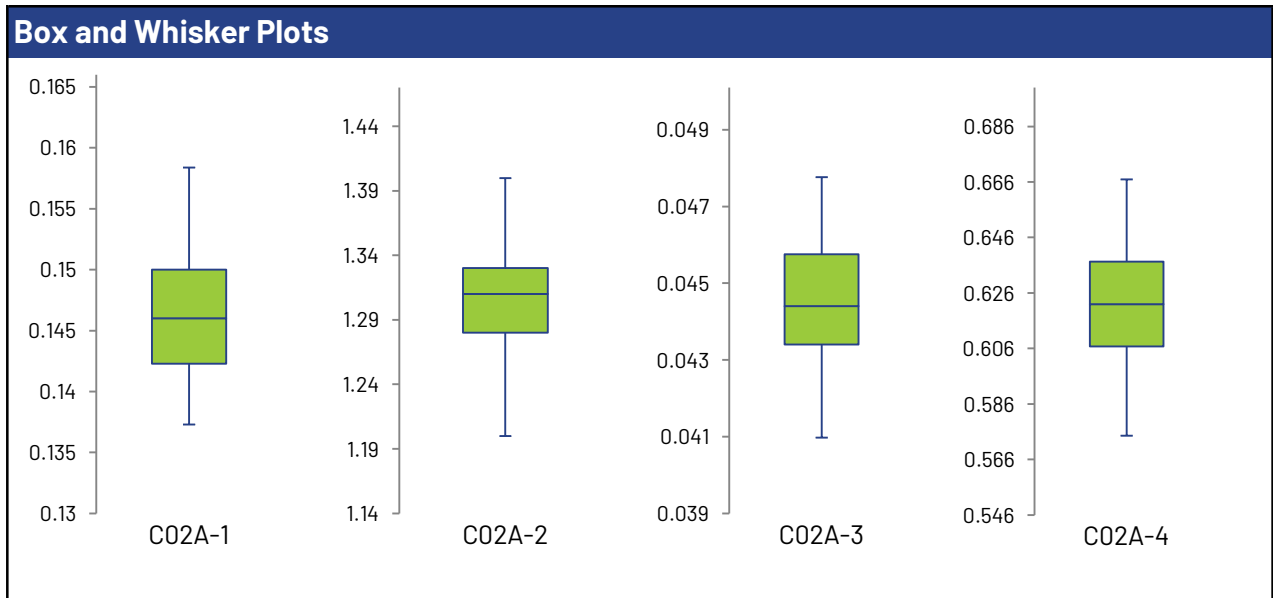
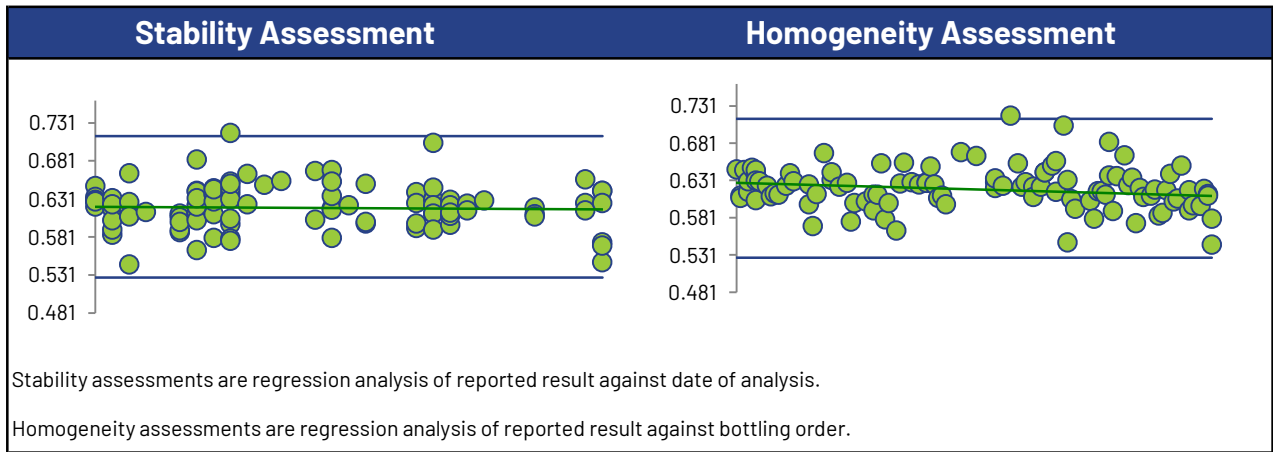


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Cobalt



Cobalt



Copper

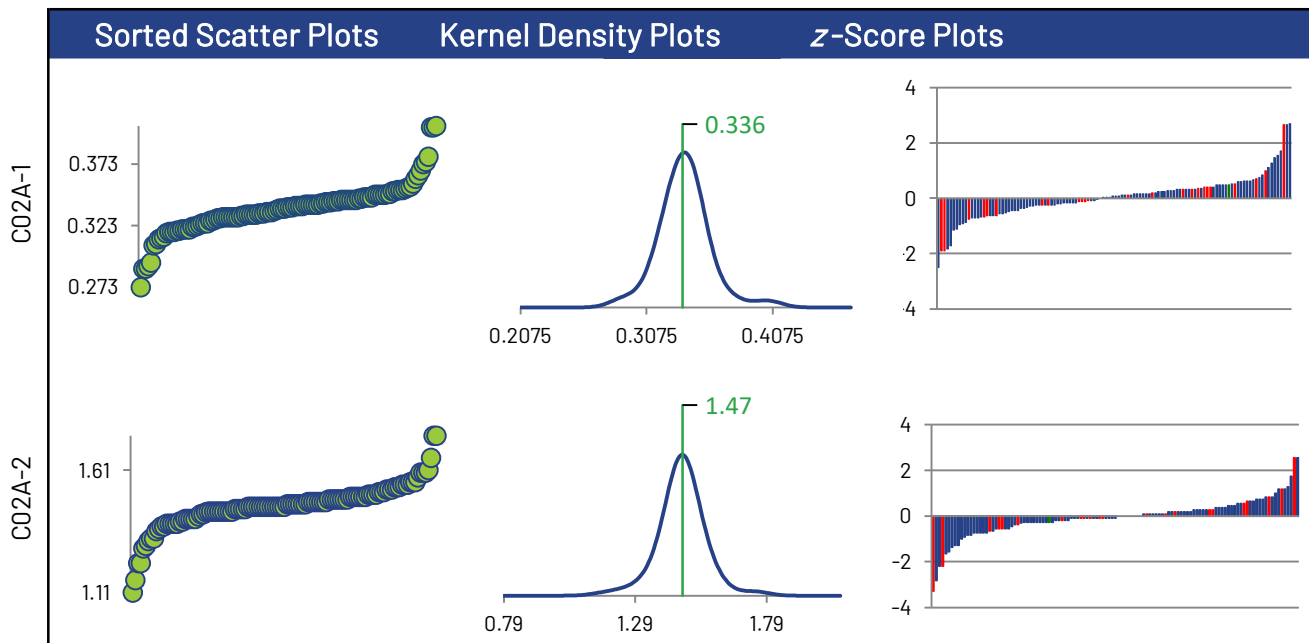
Summary Statistics

Statistic	C02A-1	C02A-2	C02A-3	C02A-4
No. of results used for summary statistics	116	117	115	118
Median mg/L	0.338	1.46	0.0160	0.758
Robust Mean mg/L	0.336	1.47	0.0161	0.758
Uncertainty of the Assigned Value mg/L	0.00168	0.00730	0.000111	0.00400
Robust Standard Deviation mg/L	0.0145	0.0632	0.000949	0.0348
Regression Standard Deviation mg/L	0.0252	0.110	0.00121	0.0568
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.0252	0.110	0.00121	0.0568
Flagged Outliers	2	1	2	0
$ z > 3.0$	0	1	6	1
$2 < z < 3$	4	5	1	3
Failure Rate %*	6.8			

Methods Used

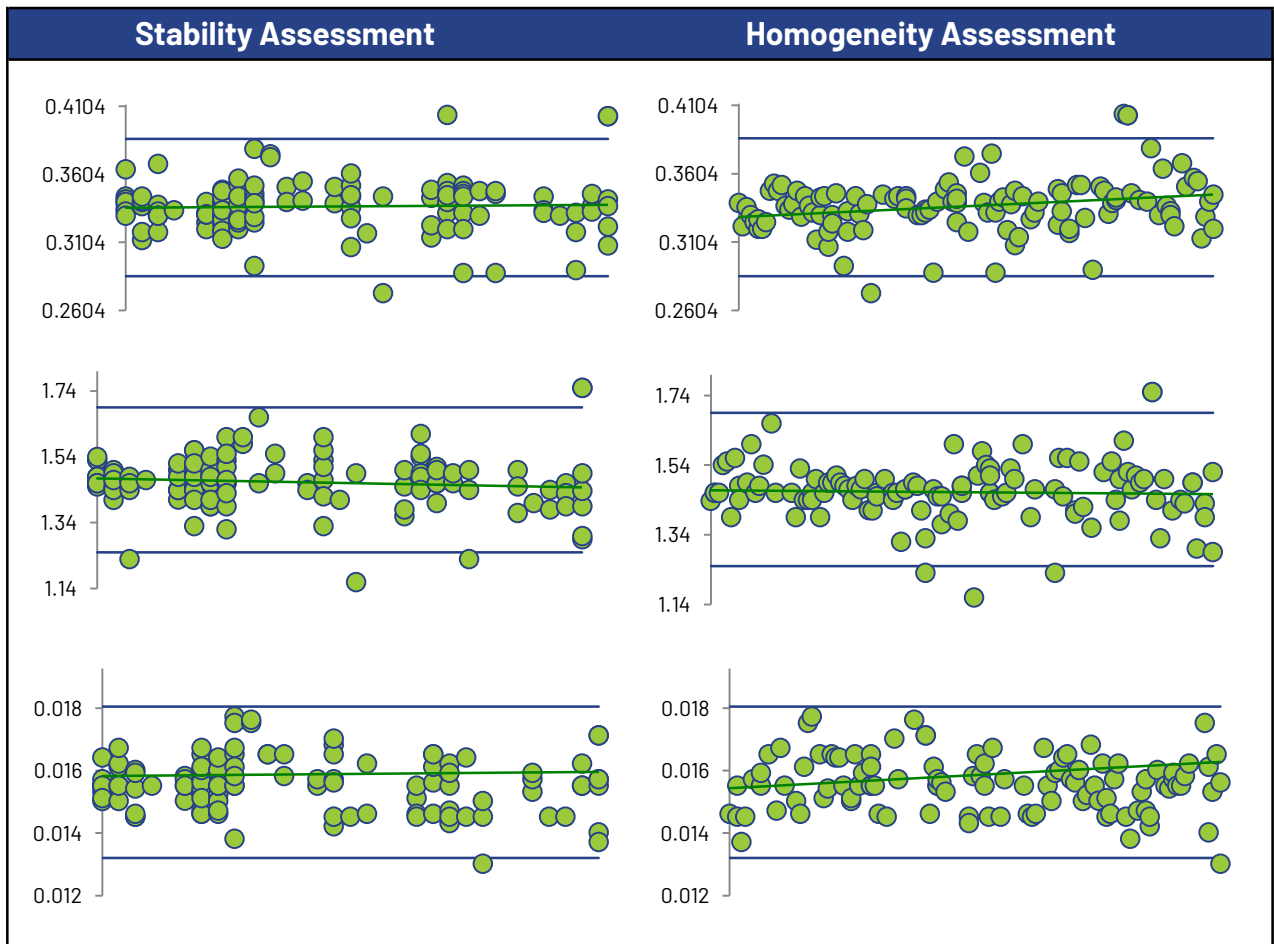
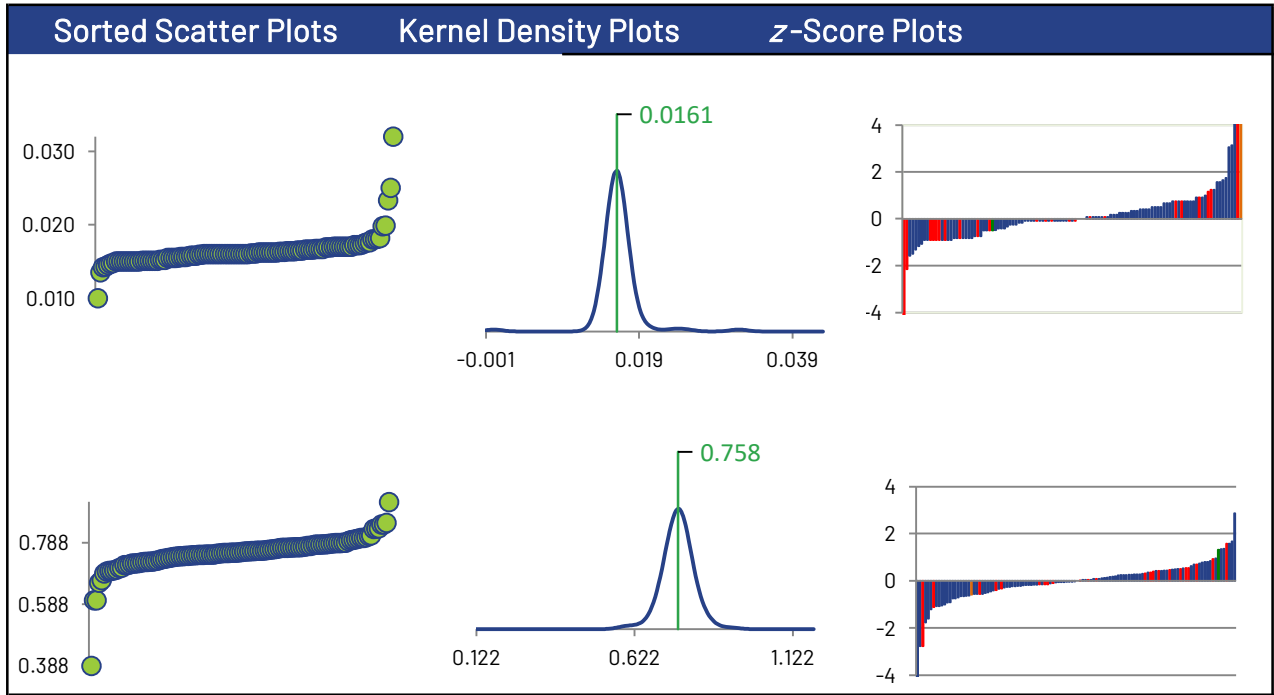
Method	C02A-1	C02A-2	C02A-3	C02A-4
ICP/MS (Blue)	91	91	90	92
ICP/OES (Red)	24	24	23	24
AA GRAPHITE (Green)	1	1	1	1
AA FLAME (Orange)	0	1	1	1

All summary stats, except the failure rate, and the plots below are based on the data excluding any flagged outliers

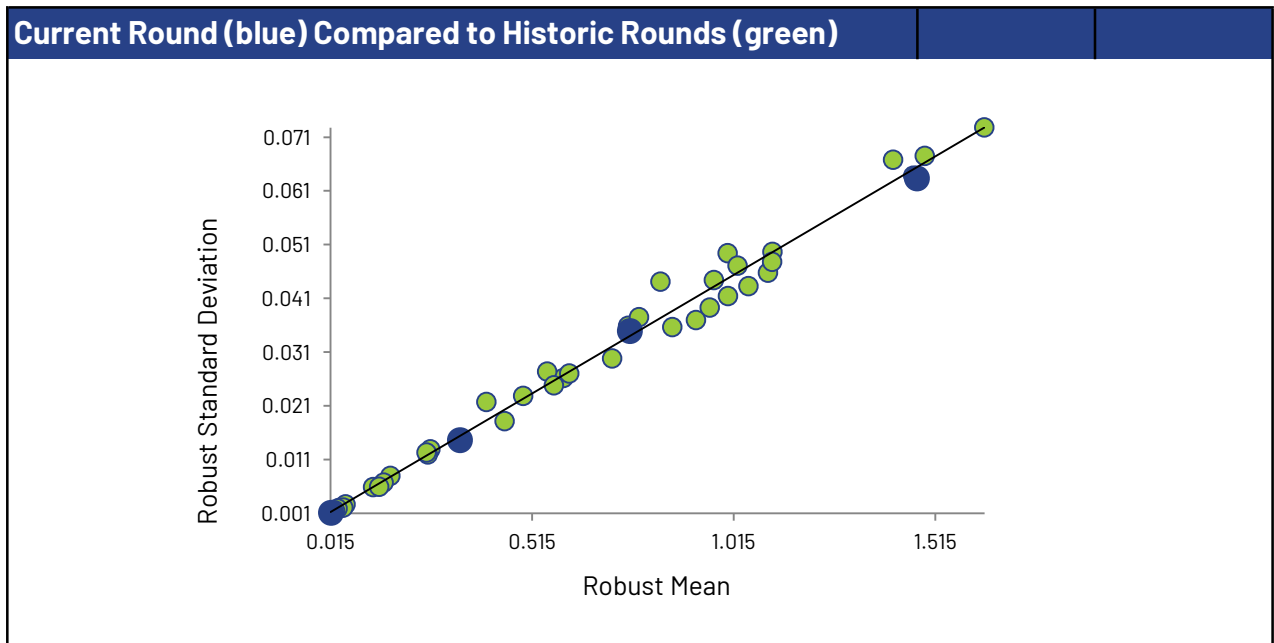
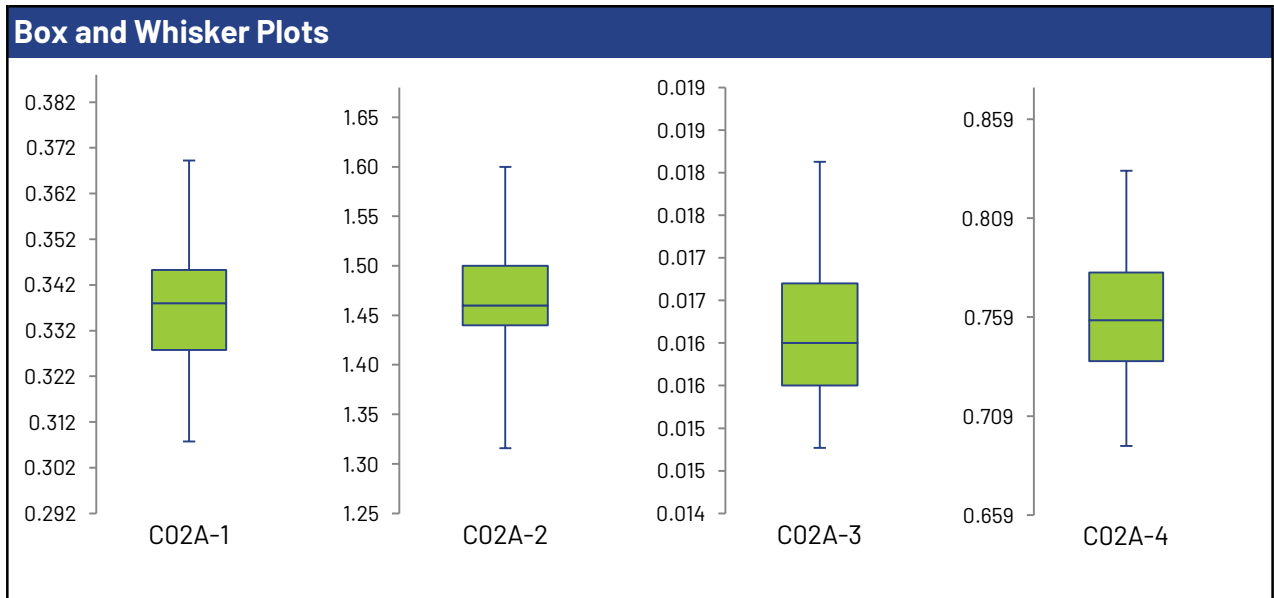
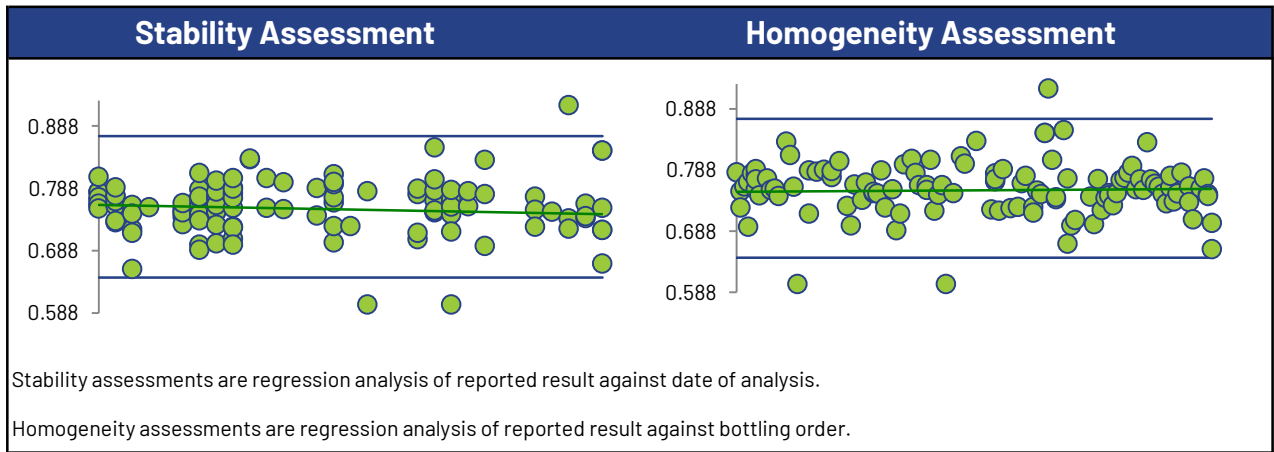


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Copper



Copper



Iron

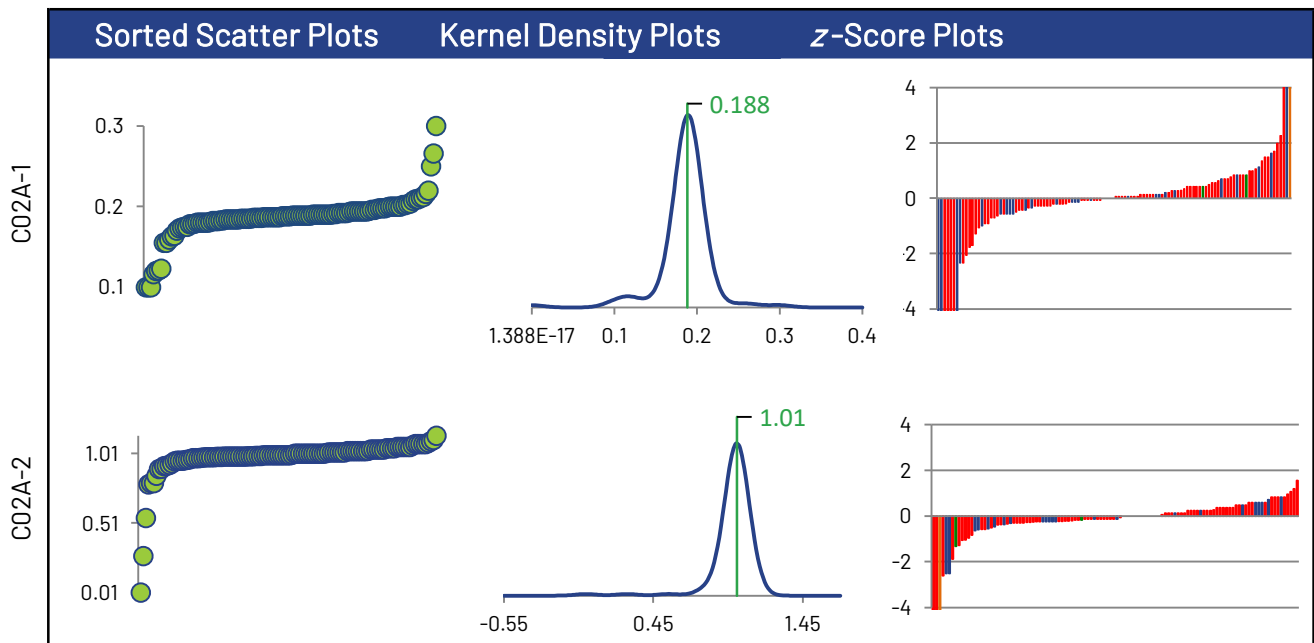
Summary Statistics

Statistic	C02A-1	C02A-2	C02A-3	C02A-4
No. of results used for summary statistics	114	114	95	114
Median mg/L	0.189	1.00	0.0283	0.706
Robust Mean mg/L	0.188	1.01	0.0286	0.703
Uncertainty of the Assigned Value mg/L	0.00129	0.00482	0.000369	0.00400
Robust Standard Deviation mg/L	0.0110	0.0412	0.00288	0.0342
Regression Standard Deviation mg/L	0.0141	0.0755	0.00214	0.0527
Stability Flag		Stability		
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.0141	0.0841	0.00288	0.0527
Flagged Outliers	0	0	1	0
$ z > 3.0$	10	3	6	6
$2 < z < 3$	4	3	3	0
Failure Rate %*	7.9			

Methods Used

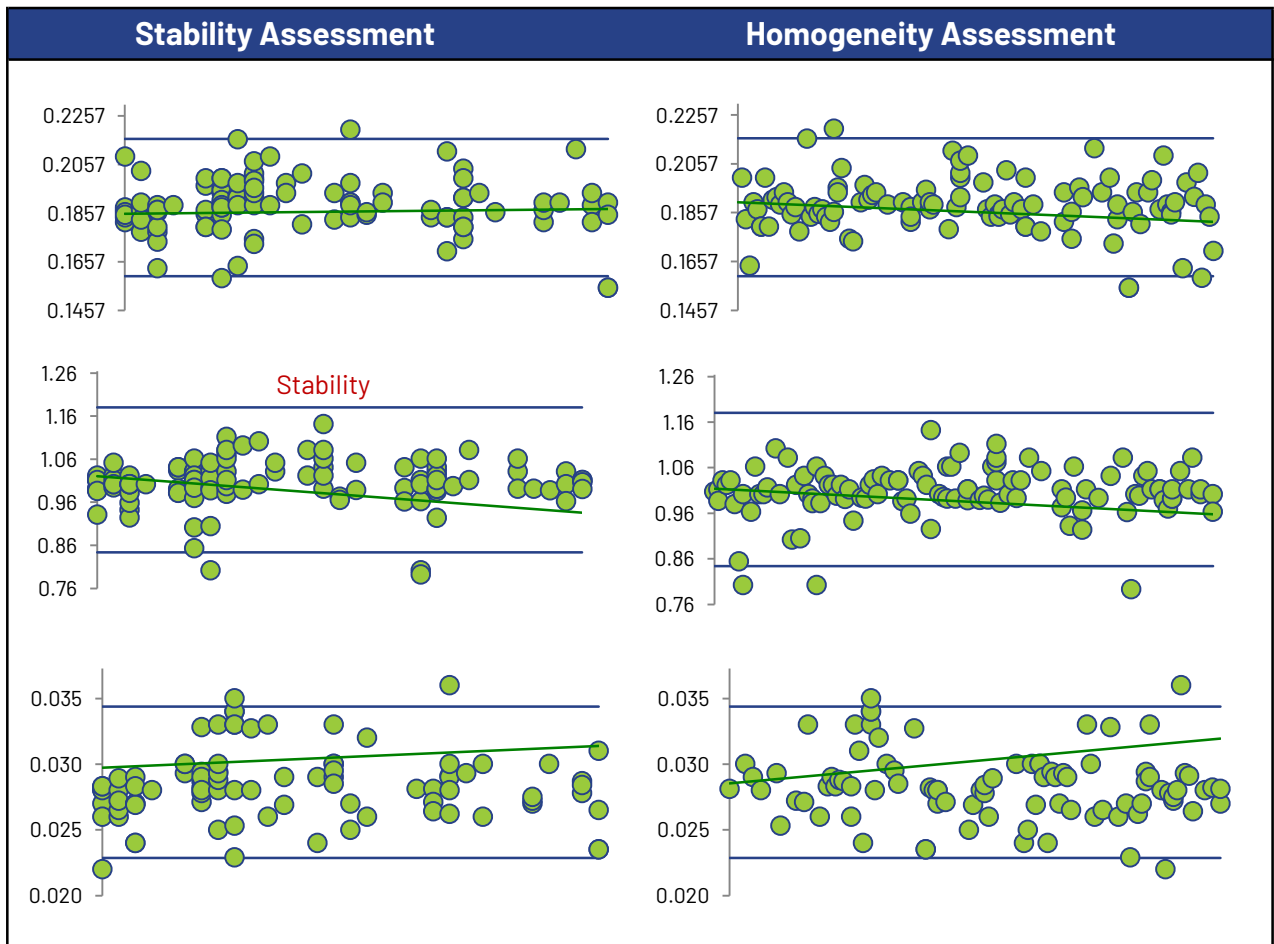
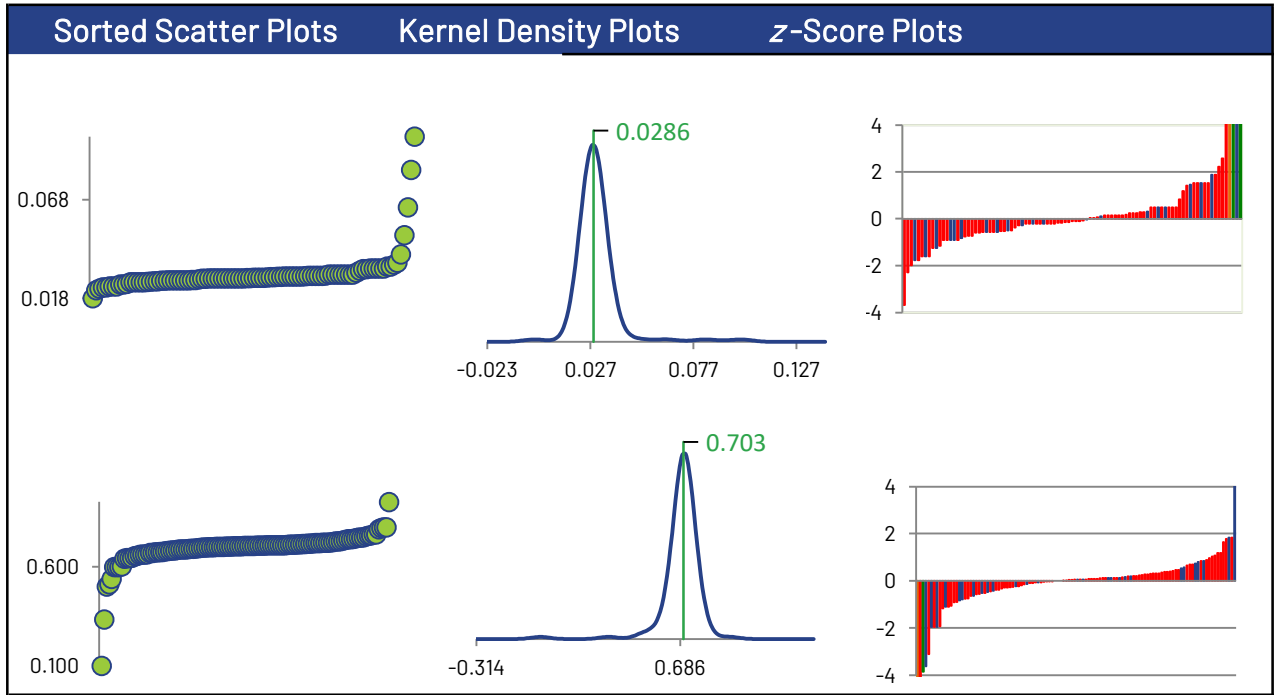
Method	C02A-1	C02A-2	C02A-3	C02A-4
ICP/OES (Blue)	27	27	21	27
ICP/MS (Red)	84	84	71	84
AA FLAME (Green)	2	2	2	2
COLORIMETRIC (Orange)	1	1	1	1

All summary stats, except the failure rate, and the plots below are based on the data excluding any flagged outliers

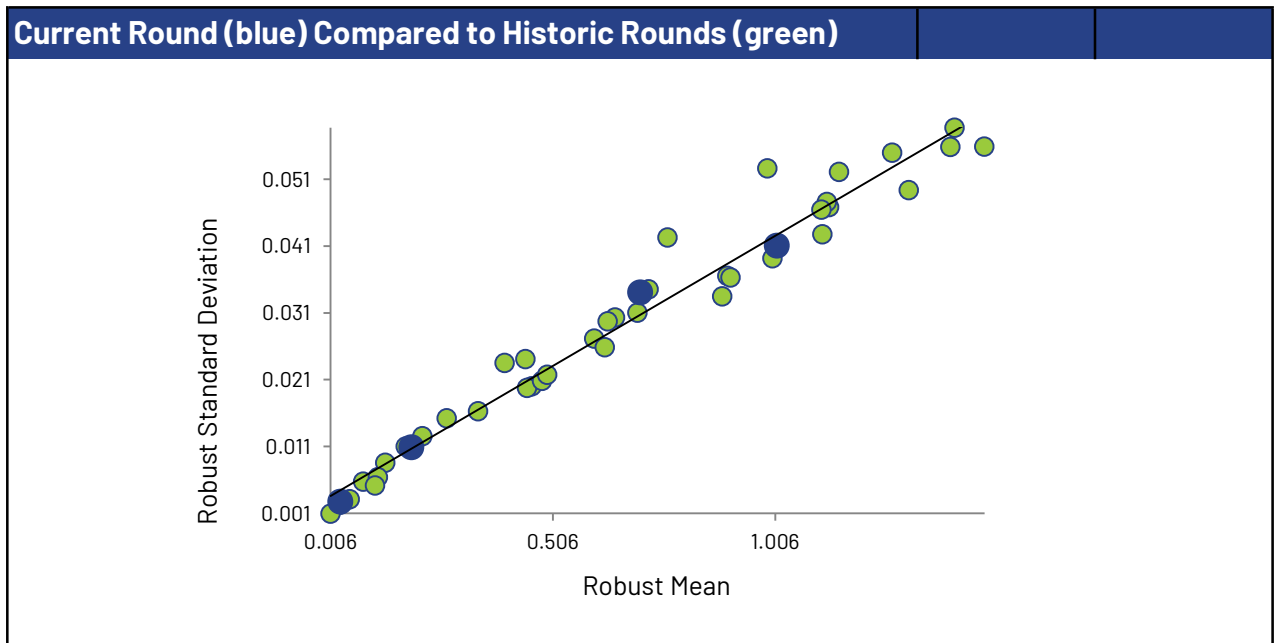
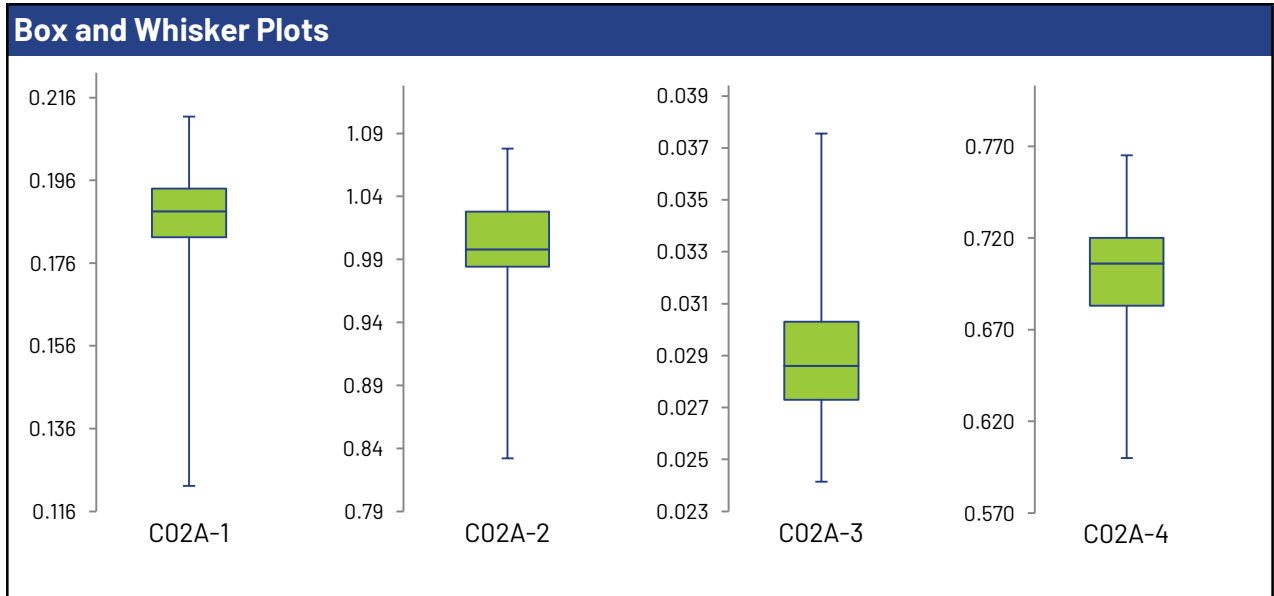
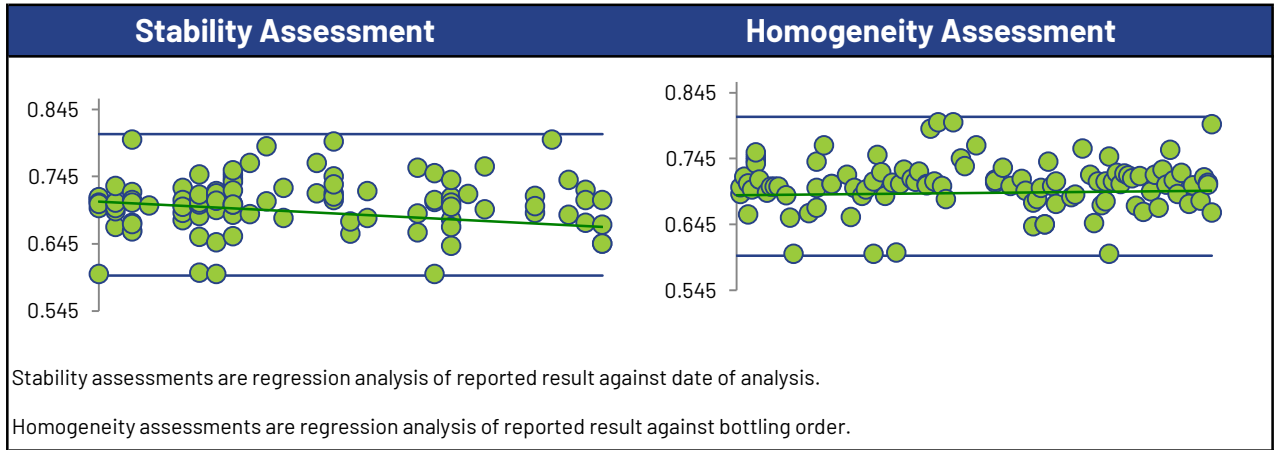


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Iron



Iron



Lead

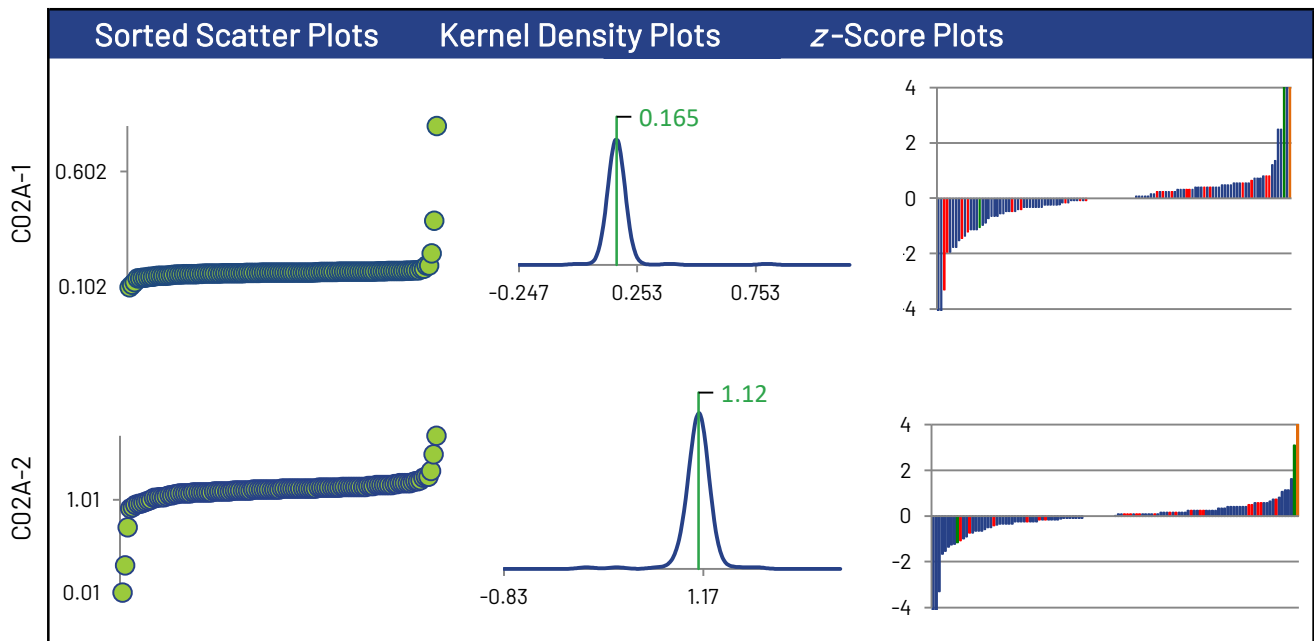
Summary Statistics

Statistic	C02A-1	C02A-2	C02A-3	C02A-4
No. of results used for summary statistics	120	121	113	121
Median mg/L	0.165	1.12	0.0141	0.466
Robust Mean mg/L	0.165	1.12	0.0142	0.464
Uncertainty of the Assigned Value mg/L	0.000867	0.00633	0.000109	0.00267
Robust Standard Deviation mg/L	0.00760	0.0557	0.000930	0.0235
Regression Standard Deviation mg/L	0.0124	0.0840	0.00106	0.0348
Stability Flag		Stability		
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.0124	0.123	0.00106	0.0348
Flagged Outliers	0	0	3	0
$ z > 3.0$	6	5	10	4
$2 < z < 3$	2	0	5	4
Failure Rate %*	11.6			

Methods Used

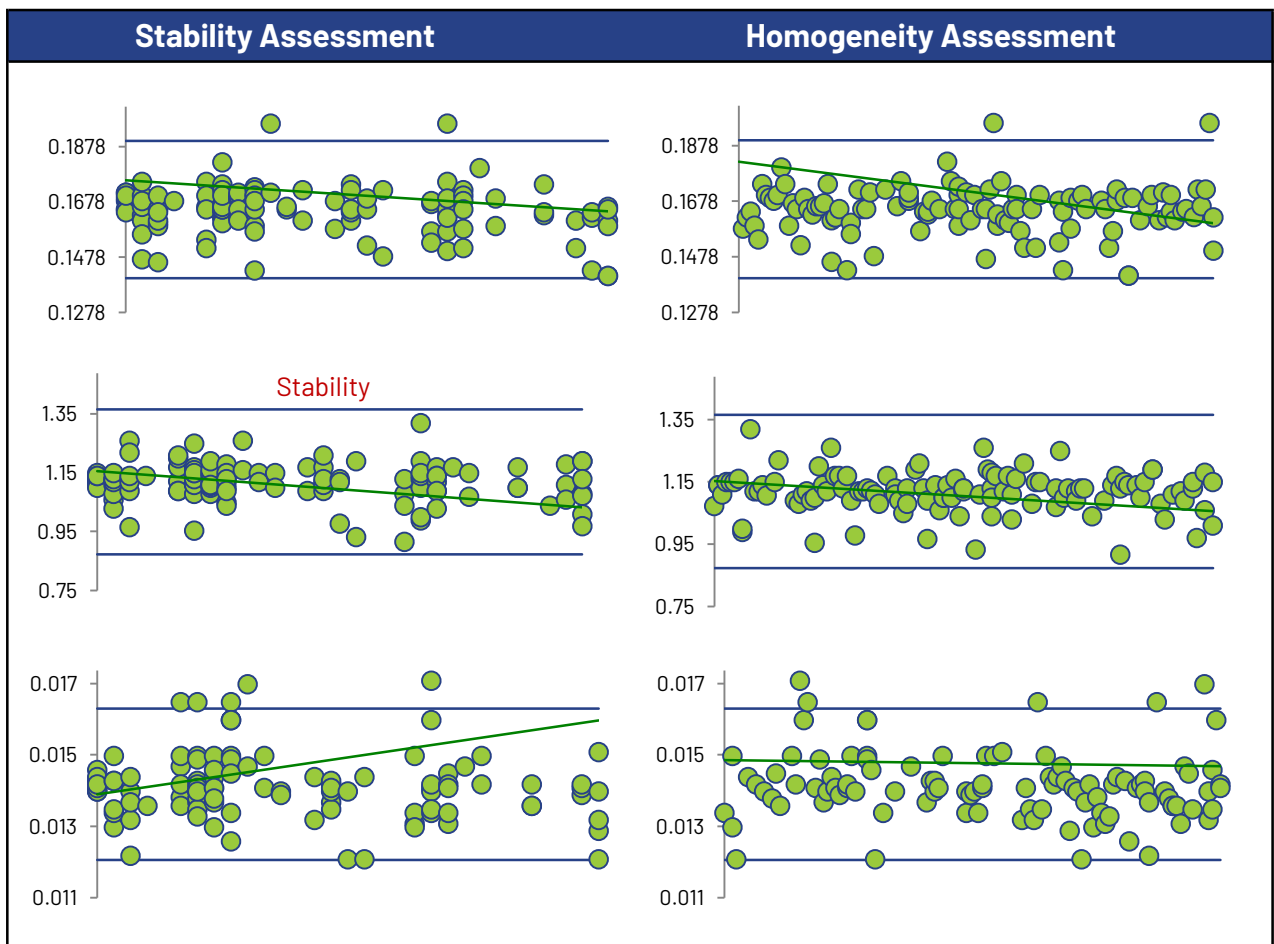
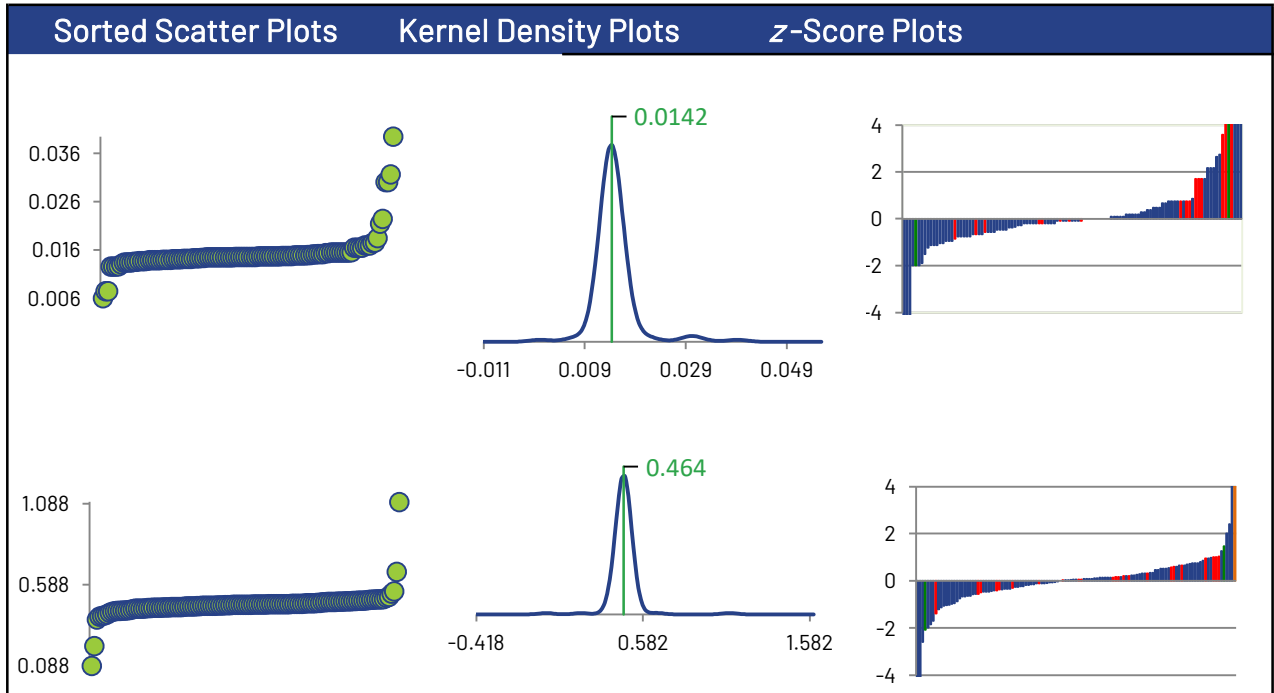
Method	C02A-1	C02A-2	C02A-3	C02A-4
ICP/MS (Blue)	95	95	93	95
ICP/OES (Red)	22	23	18	23
AA GRAPHITE (Green)	2	2	2	2
AA FLAME (Orange)	1	1	0	1

All summary stats, except the failure rate, and the plots below are based on the data excluding any flagged outliers

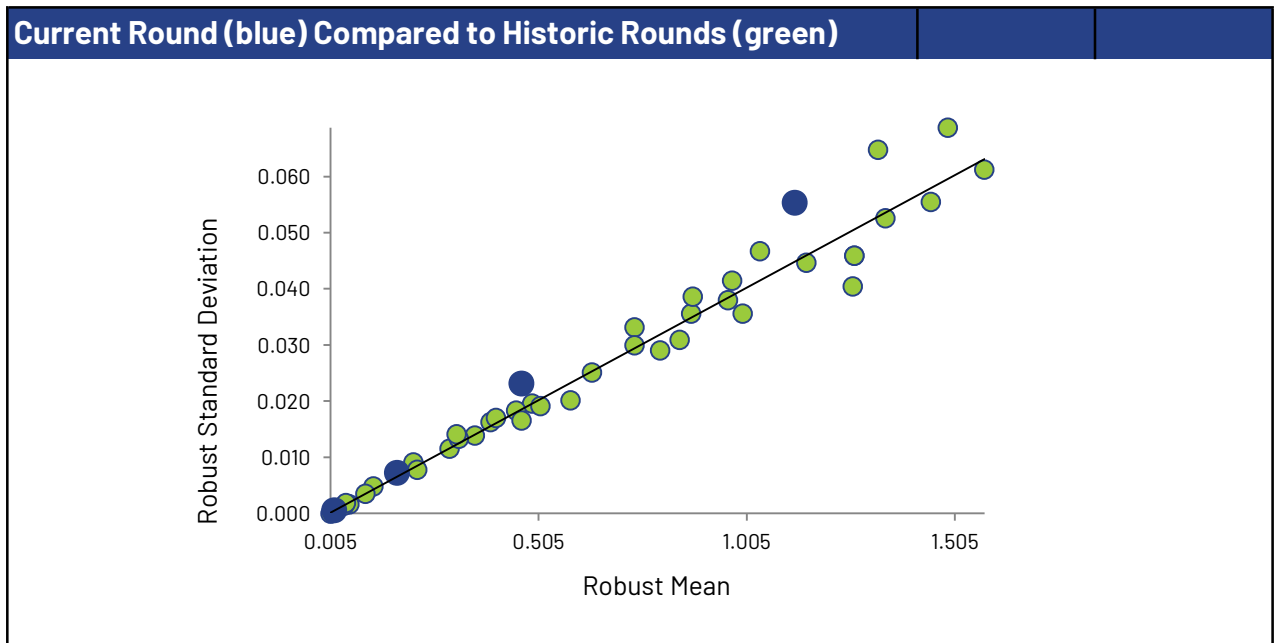
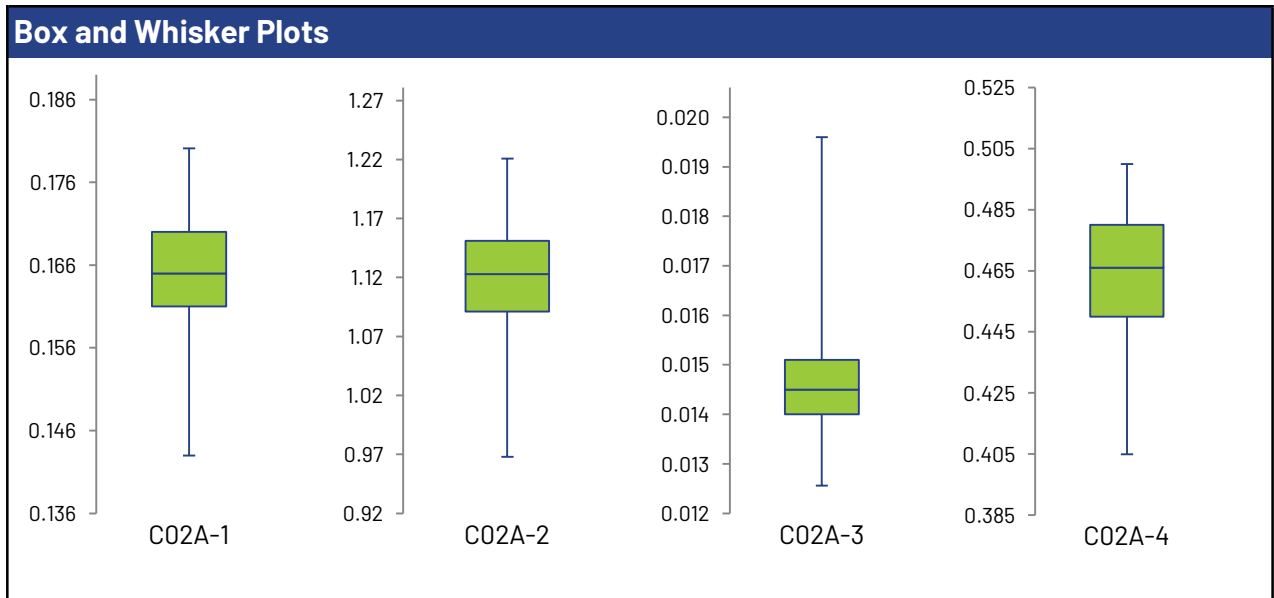
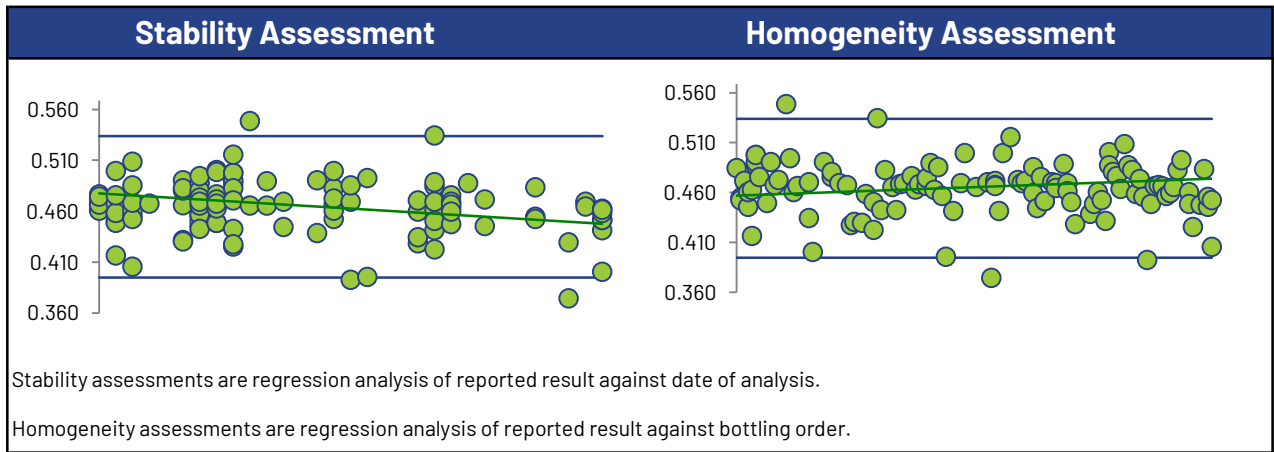


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Lead



Lead



Lithium

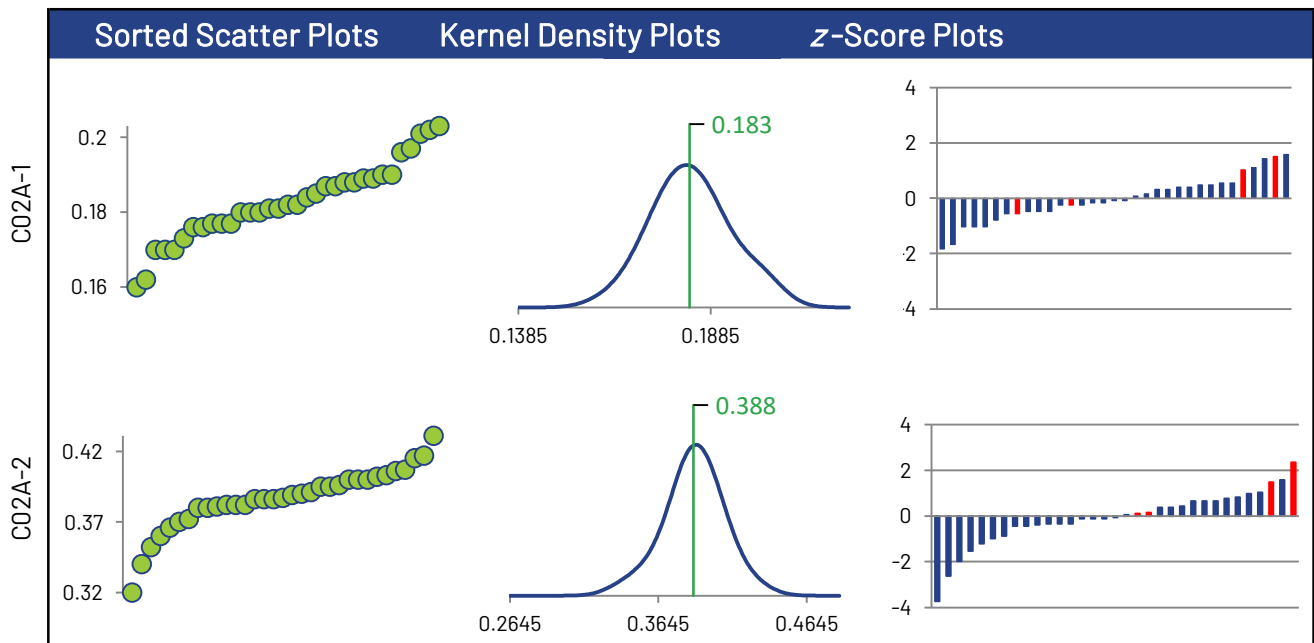
Summary Statistics

Statistic	C02A-1	C02A-2	C02A-3	C02A-4
No. of results used for summary statistics	33	33	30	33
Median mg/L	0.182	0.387	0.00848	0.360
Robust Mean mg/L	0.183	0.388	0.00837	0.360
Uncertainty of the Assigned Value mg/L	0.00226	0.00398	0.000134	0.00472
Robust Standard Deviation mg/L	0.0104	0.0183	0.000589	0.0217
Regression Standard Deviation mg/L				
Stability Flag				
Homogeneity Flag	Homogeneity			
Standard Deviation Used (SDPA) mg/L	0.0126	0.0183	0.000589	0.0217
Flagged Outliers	0	0	0	0
$ z > 3.0$	0	1	1	0
$2 < z < 3$	0	2	0	3
Failure Rate %*	3.0			

Methods Used

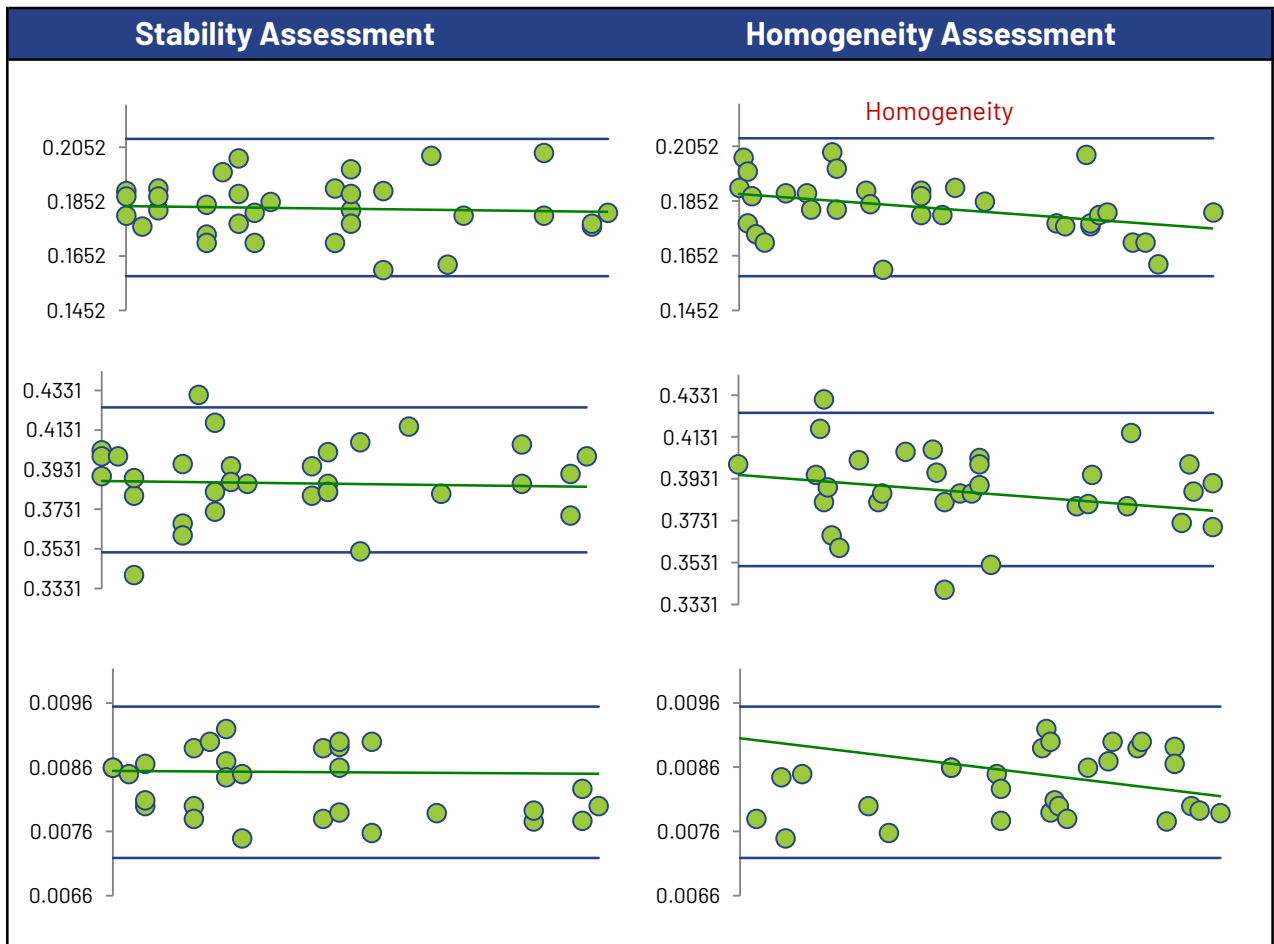
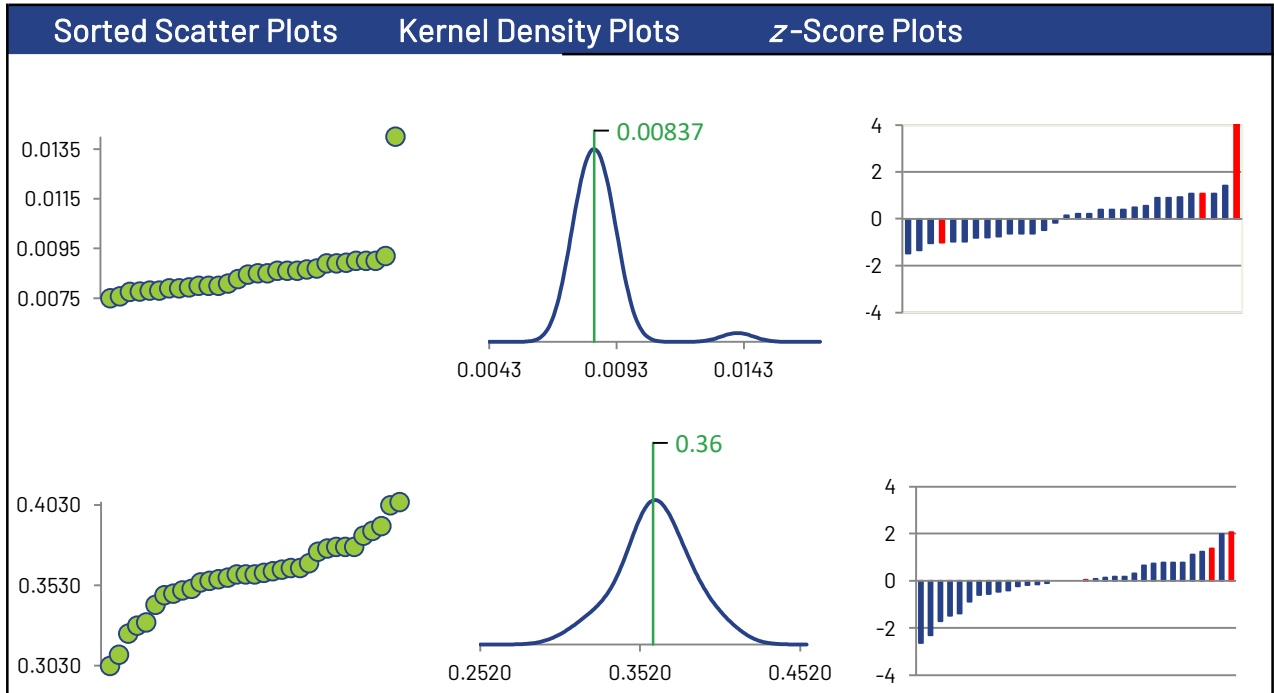
Method	C02A-1	C02A-2	C02A-3	C02A-4
ICP/MS (Blue)	29	29	27	29
ICP/OES (Red)	4	4	3	4

All summary stats, except the failure rate, and the plots below are based on the data excluding any flagged outliers

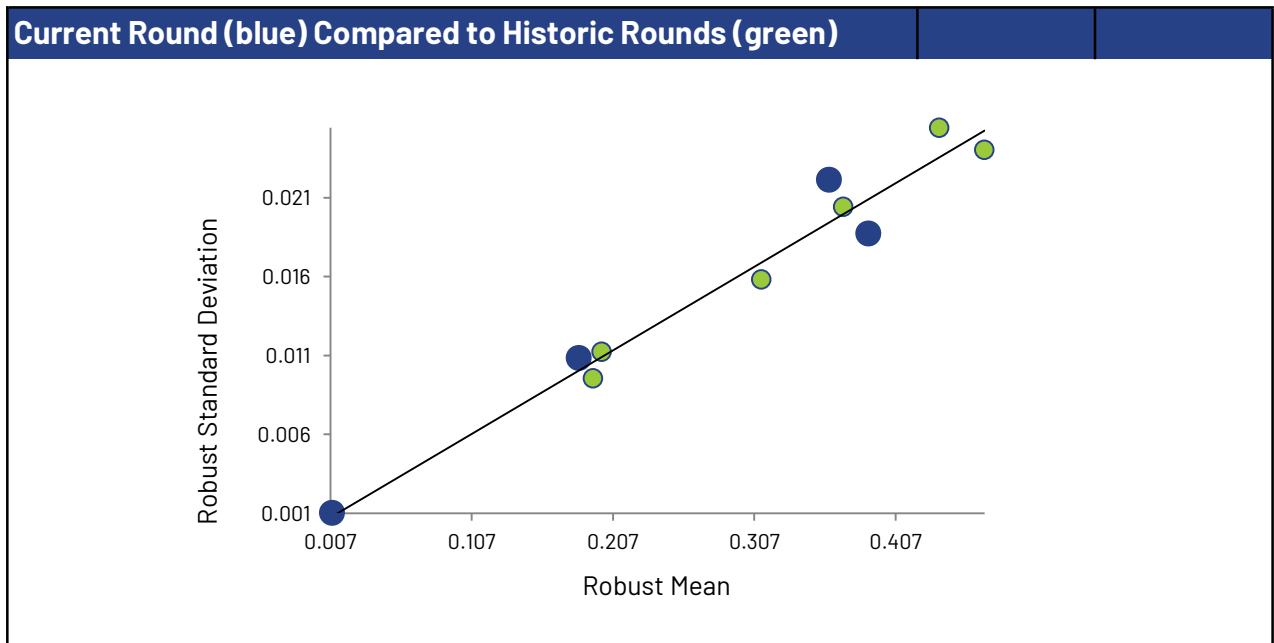
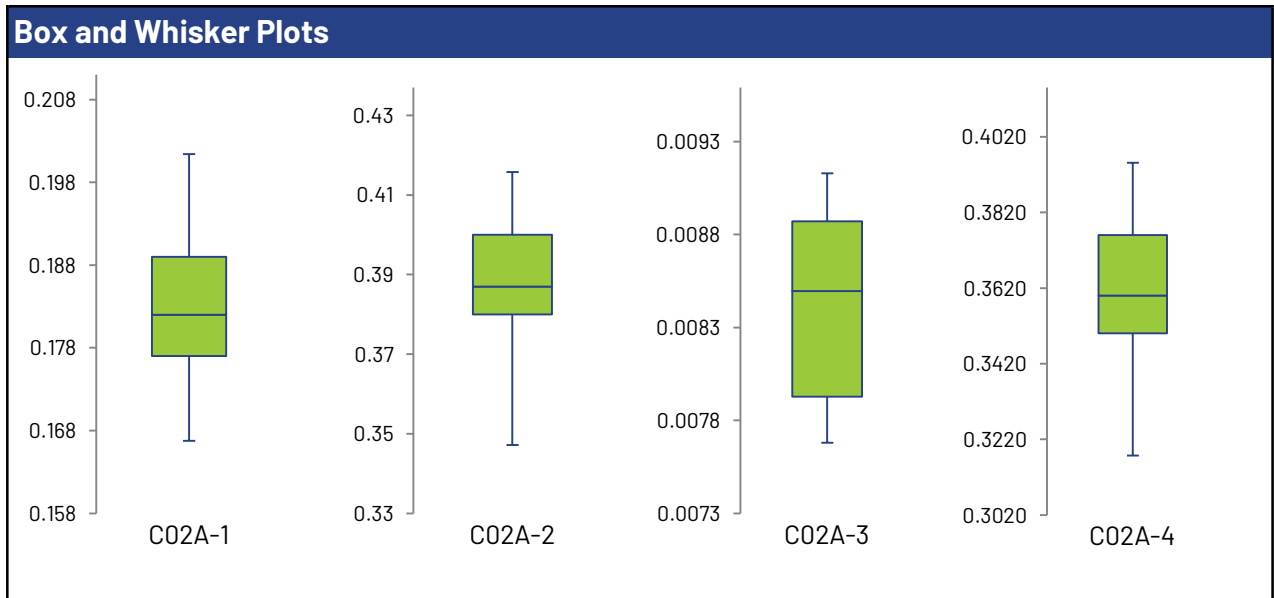
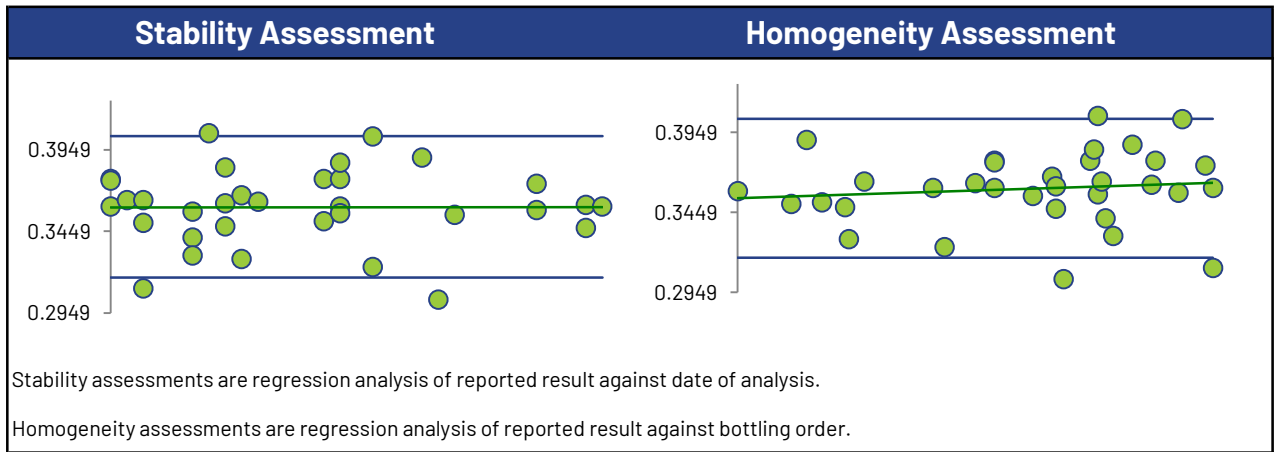


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Lithium



Lithium



Manganese

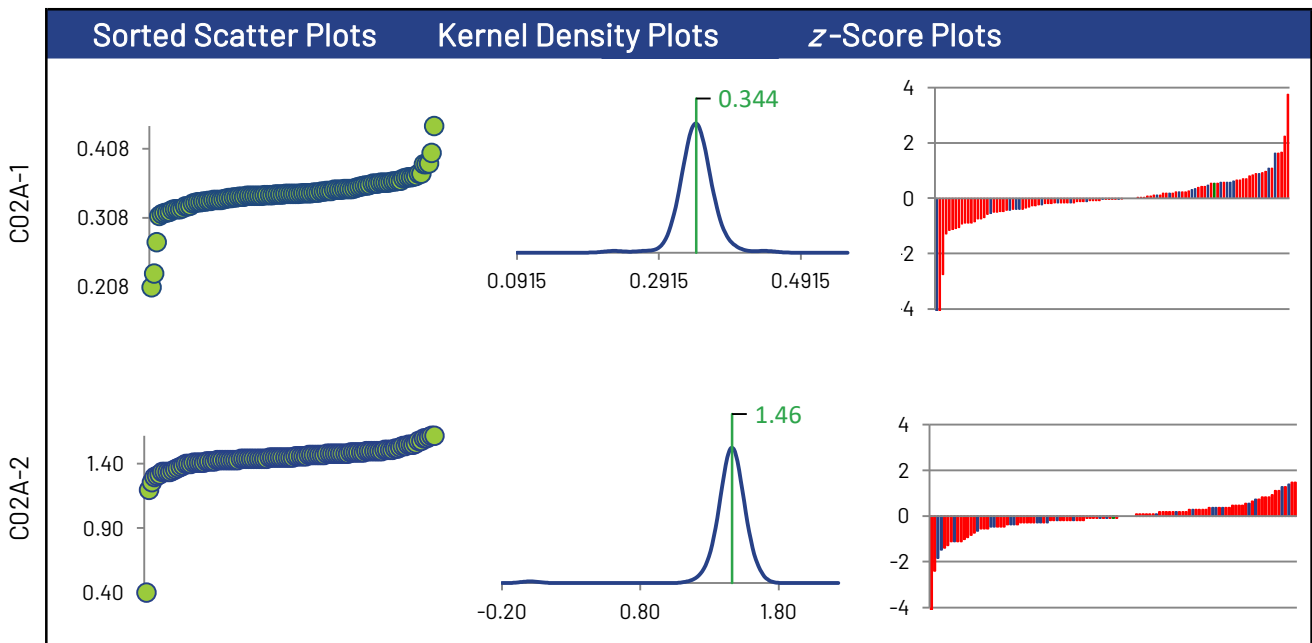
Summary Statistics

Statistic	C02A-1	C02A-2	C02A-3	C02A-4
No. of results used for summary statistics	111	111	110	111
Median mg/L	0.343	1.45	0.0465	0.937
Robust Mean mg/L	0.344	1.46	0.0466	0.939
Uncertainty of the Assigned Value mg/L	0.00186	0.00702	0.000274	0.00420
Robust Standard Deviation mg/L	0.0157	0.0592	0.00230	0.0354
Regression Standard Deviation mg/L	0.0258	0.109	0.00350	0.0704
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.0258	0.109	0.00350	0.0704
Flagged Outliers	0	1	1	0
$ z > 3.0$	3	1	6	2
$2 < z < 3$	2	1	1	2
Failure Rate %*	4.5			

Methods Used

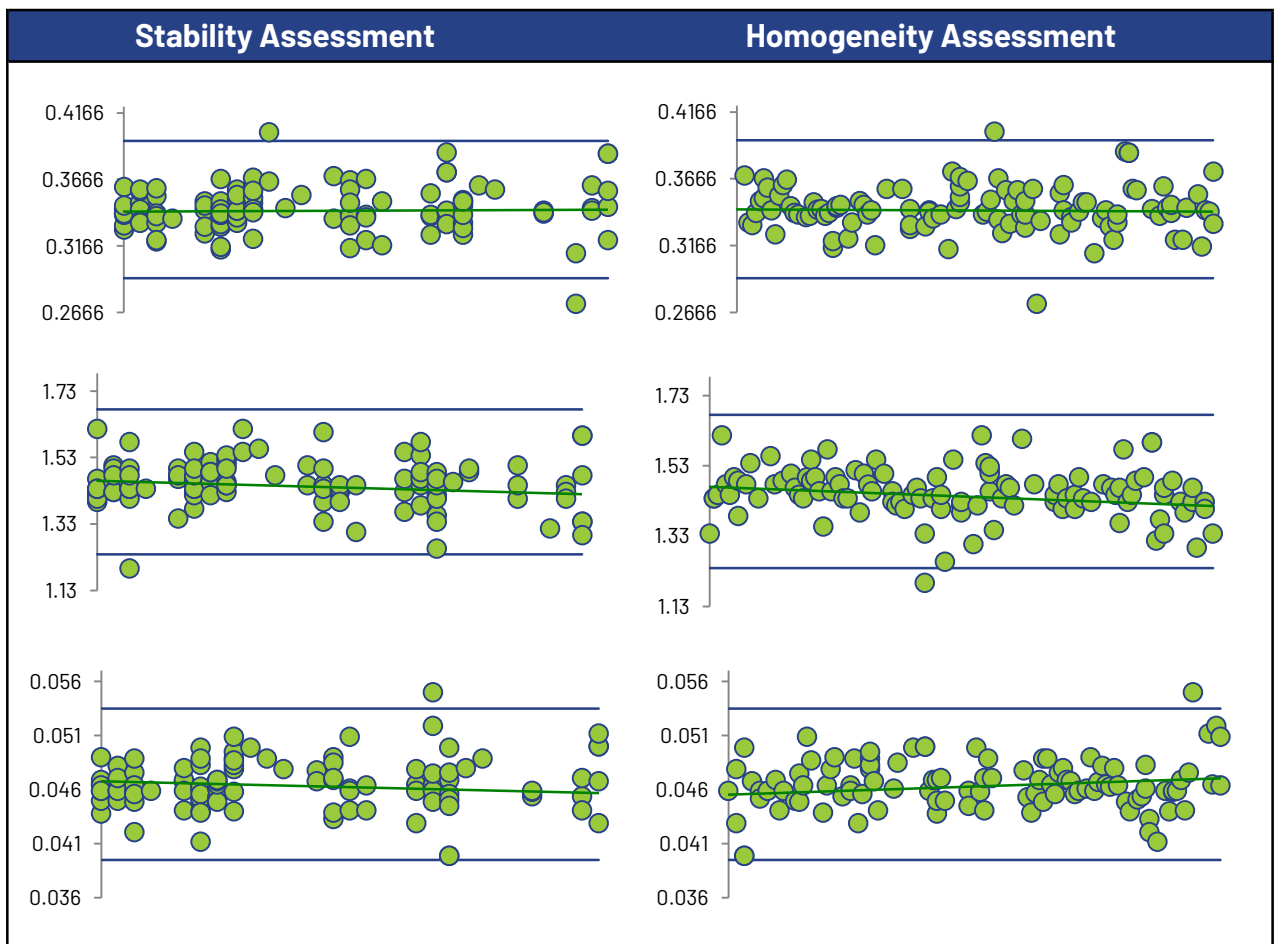
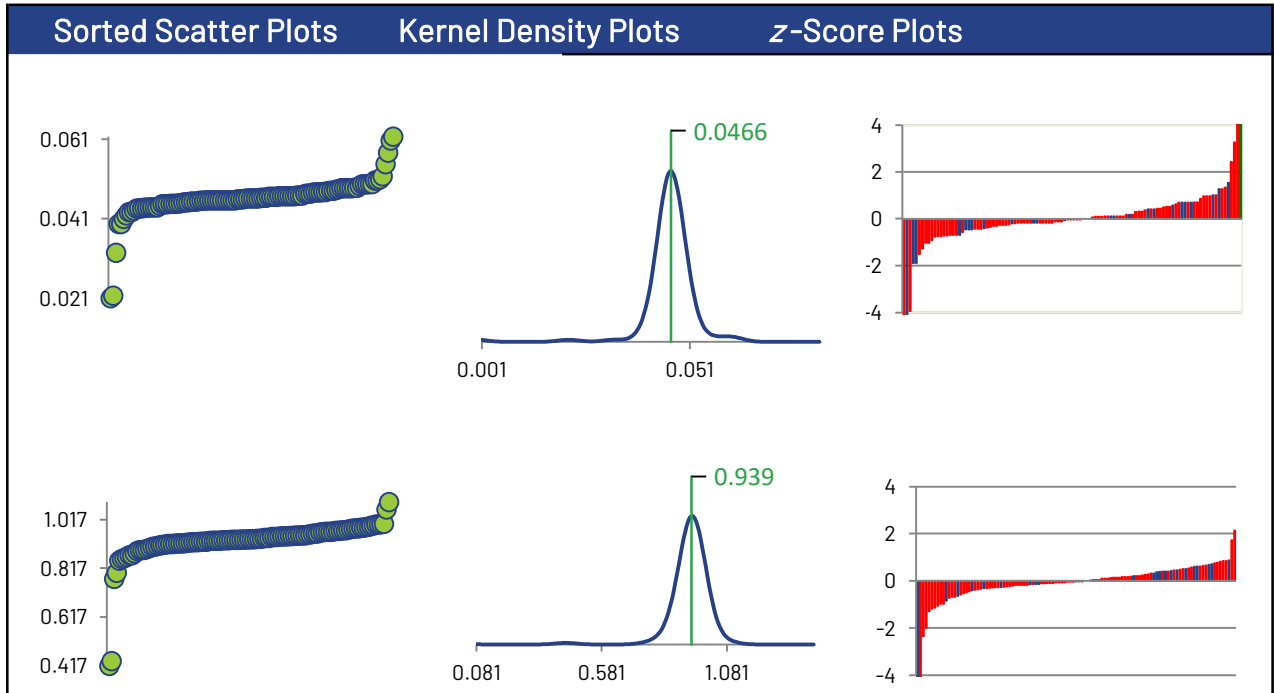
Method	C02A-1	C02A-2	C02A-3	C02A-4
ICP/OES (Blue)	25	26	25	25
ICP/MS (Red)	85	84	84	85
AA GRAPHITE (Green)	1	1	1	1

All summary stats, except the failure rate, and the plots below are based on the data excluding any flagged outliers

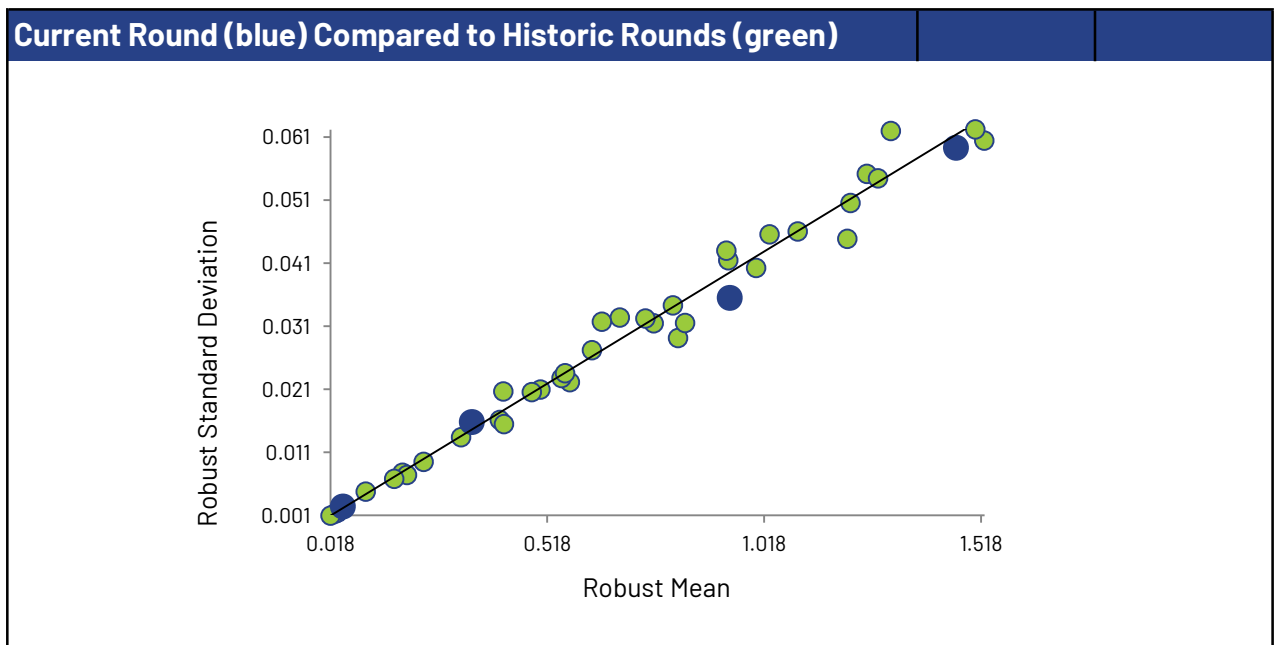
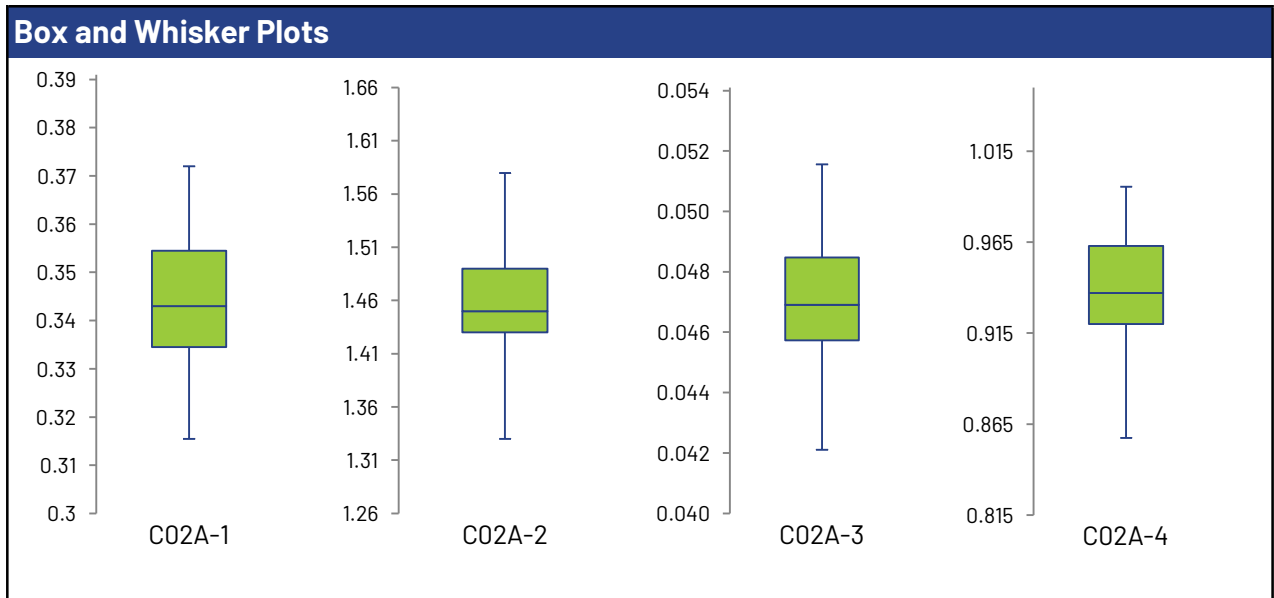
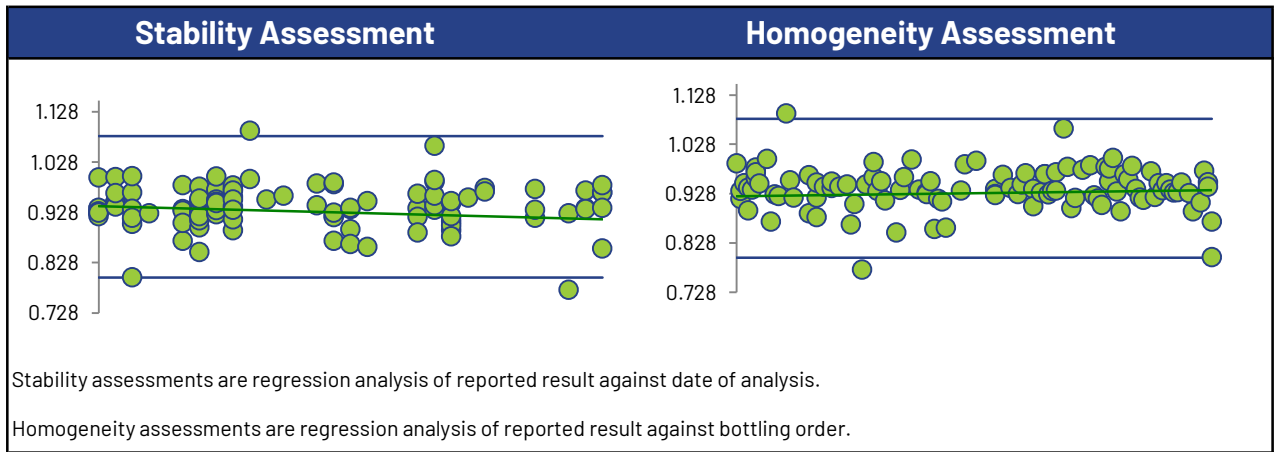


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Manganese



Manganese



Molybdenum

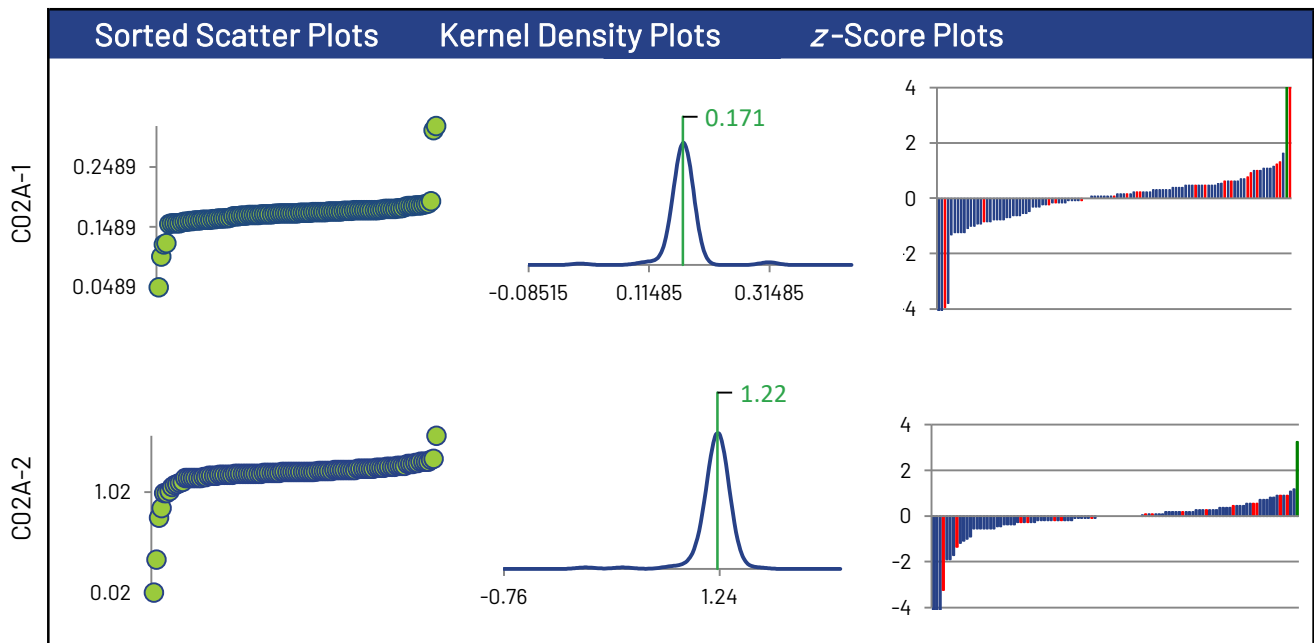
Summary Statistics

Statistic	C02A-1	C02A-2	C02A-3	C02A-4
No. of results used for summary statistics	109	109	107	109
Median mg/L	0.172	1.22	0.0164	0.906
Robust Mean mg/L	0.171	1.22	0.0168	0.905
Uncertainty of the Assigned Value mg/L	0.00116	0.00642	0.000199	0.00467
Robust Standard Deviation mg/L	0.00965	0.0536	0.00165	0.0390
Regression Standard Deviation mg/L	0.0129	0.0914	0.00126	0.0678
Stability Flag		Stability		
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.0129	0.111	0.00165	0.0678
Flagged Outliers	0	0	1	0
$ z > 3.0$	6	5	11	5
$2 < z < 3$	0	0	1	0
Failure Rate %*	6.4			

Methods Used

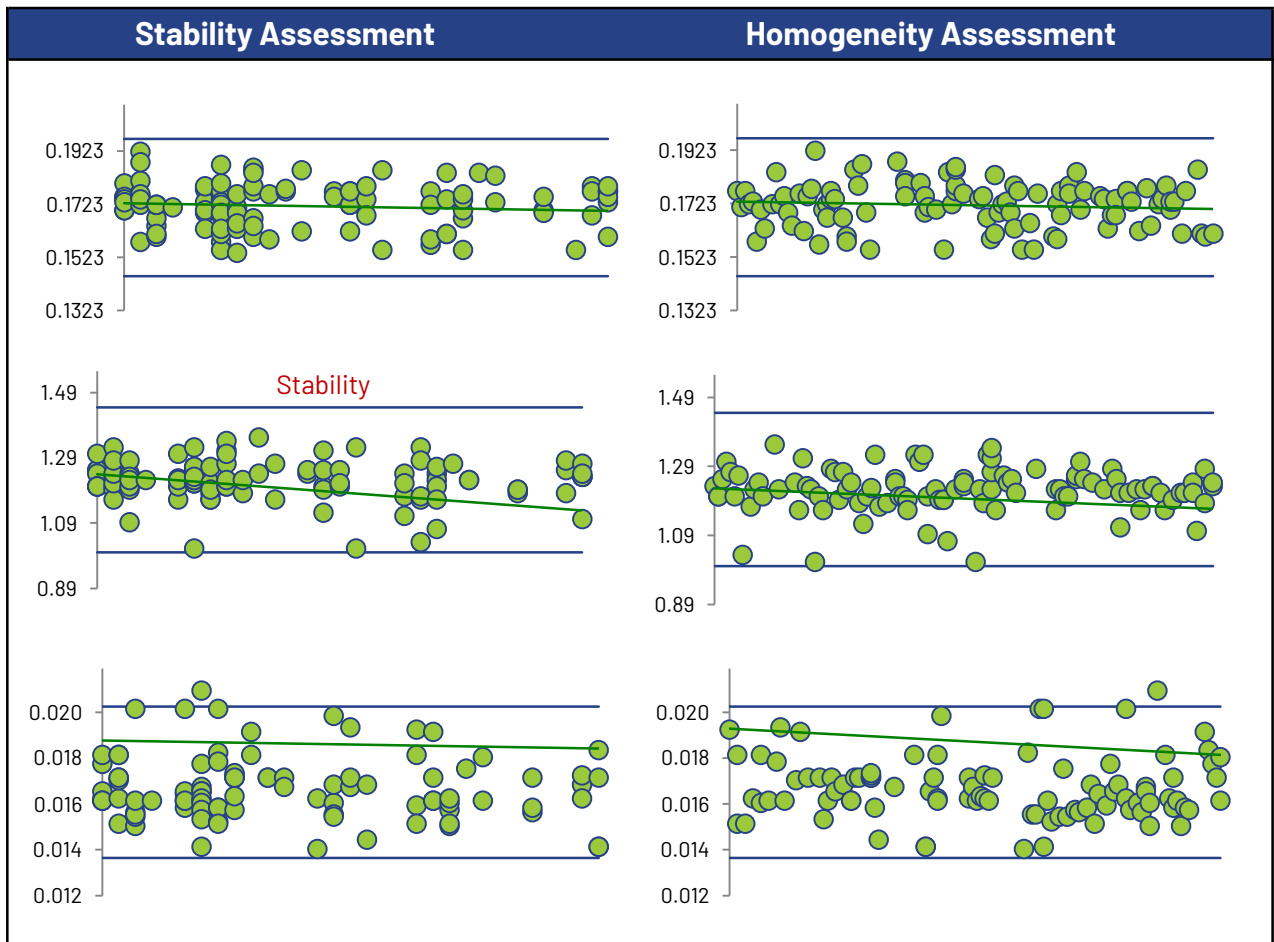
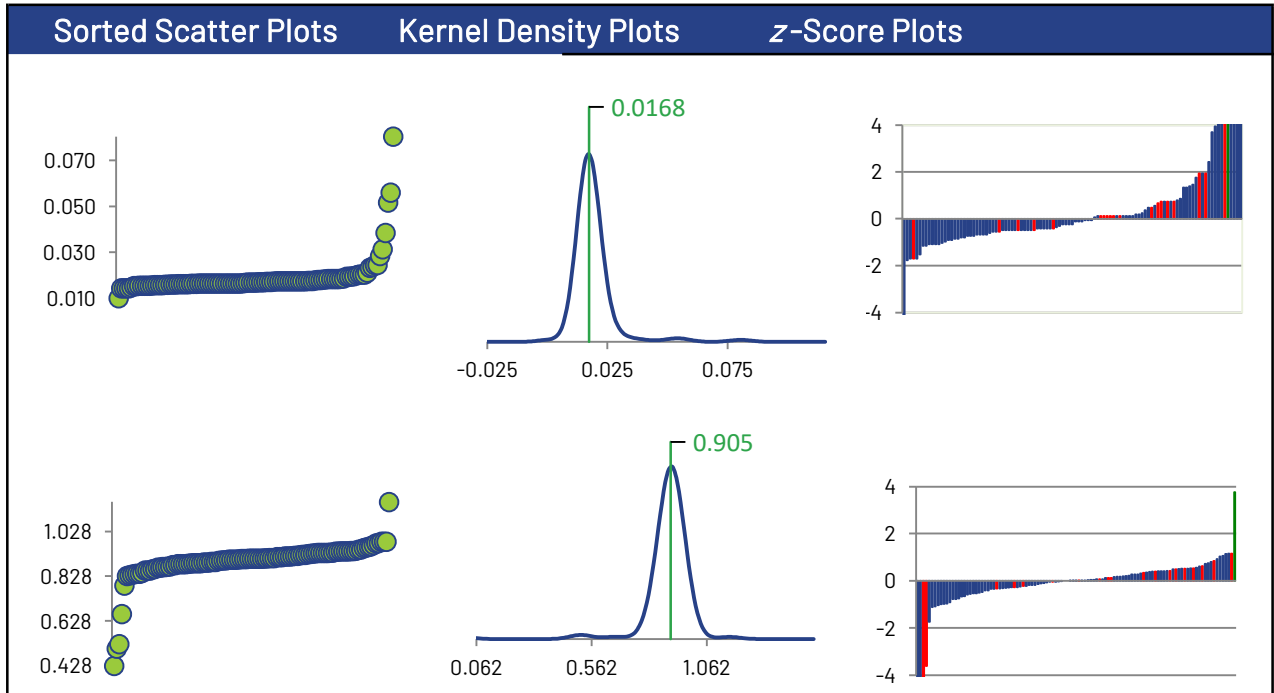
Method	C02A-1	C02A-2	C02A-3	C02A-4
ICP/MS (Blue)	89	89	87	89
ICP/OES (Red)	19	19	19	19
AA GRAPHITE (Green)	1	1	1	1

All summary stats, except the failure rate, and the plots below are based on the data excluding any flagged outliers

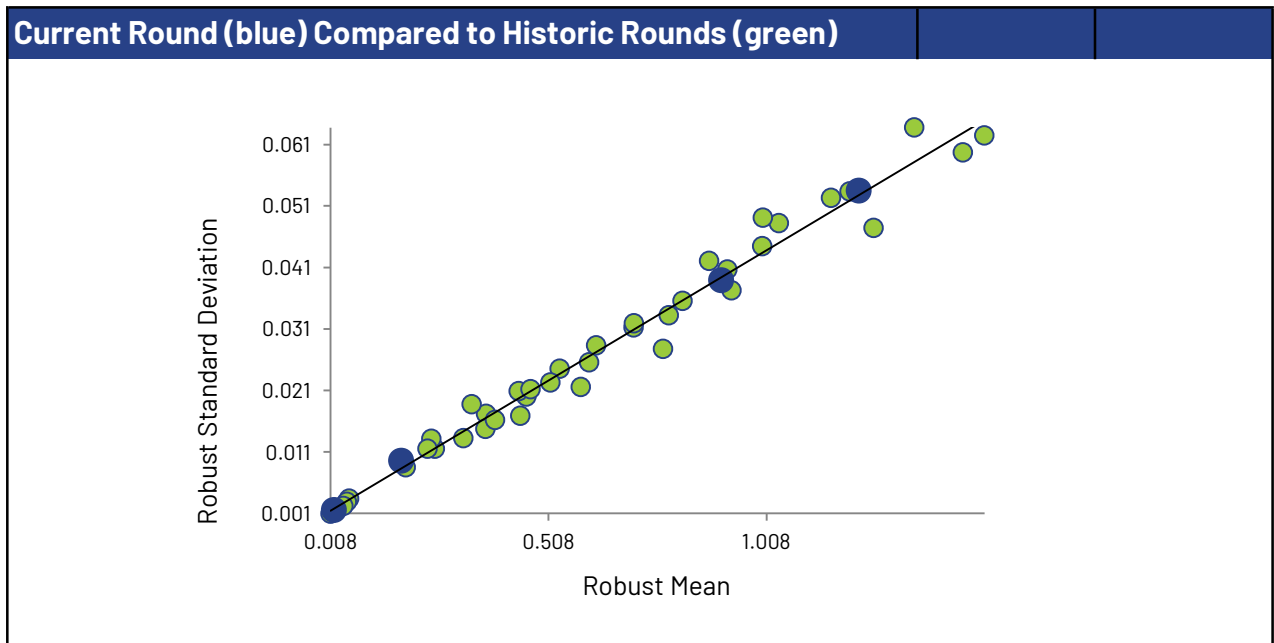
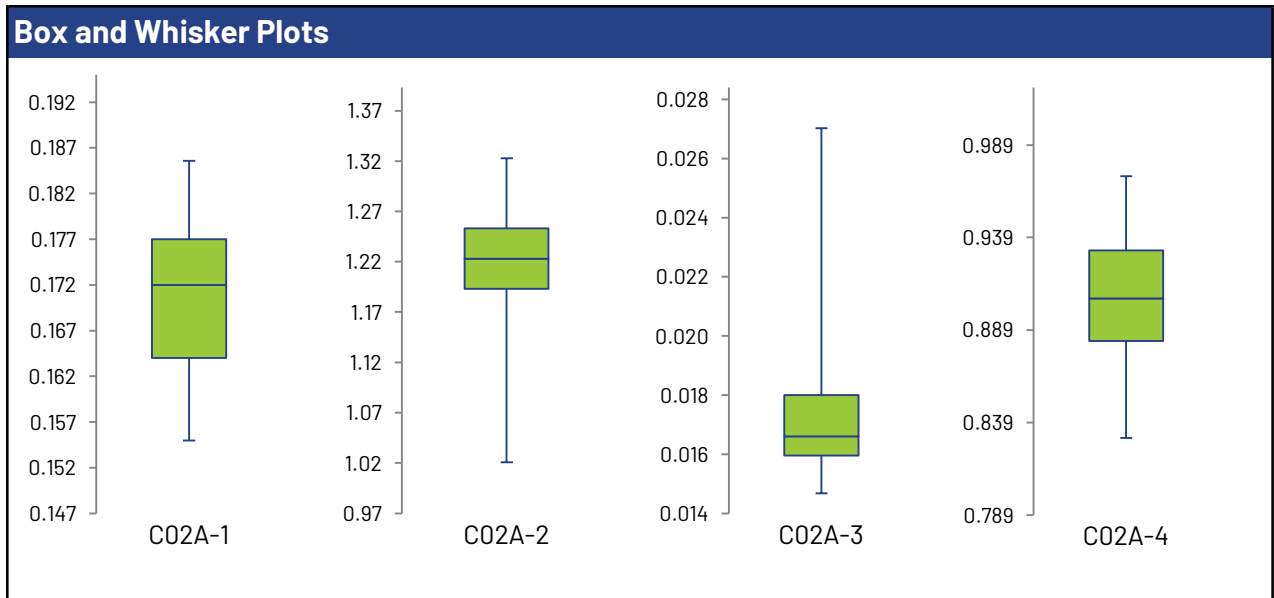
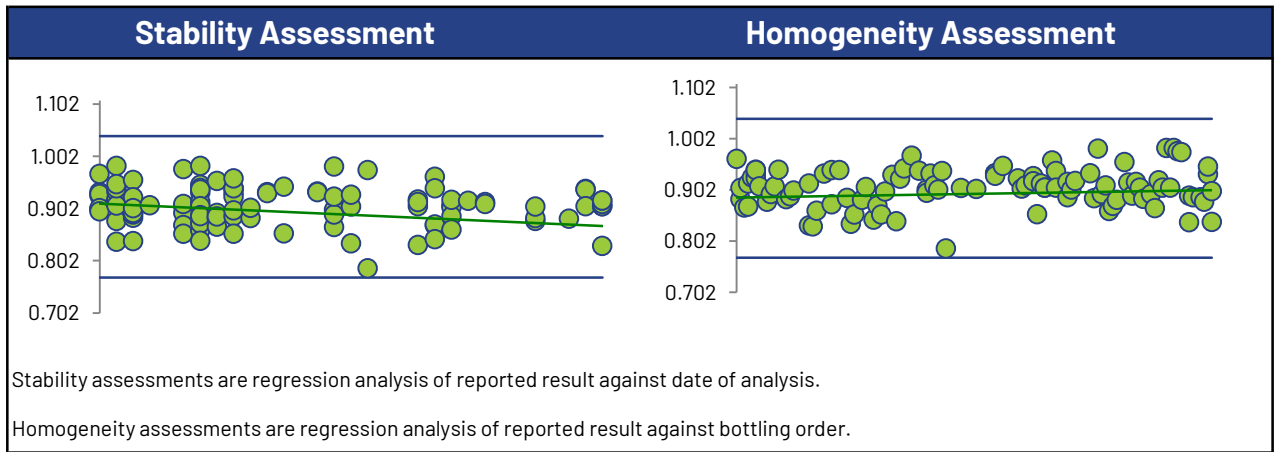


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Molybdenum



Molybdenum



Nickel

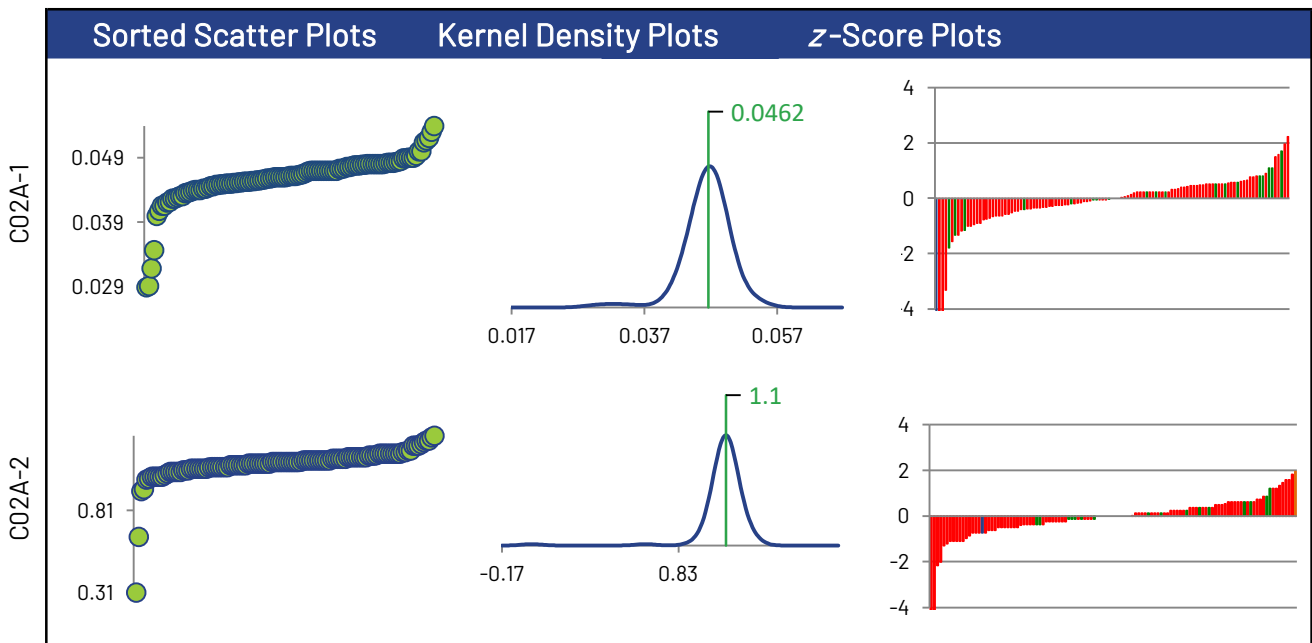
Summary Statistics

Statistic	C02A-1	C02A-2	C02A-3	C02A-4
No. of results used for summary statistics	113	115	114	115
Median mg/L	0.0462	1.10	0.0228	0.694
Robust Mean mg/L	0.0462	1.10	0.0227	0.694
Uncertainty of the Assigned Value mg/L	0.000274	0.00600	0.000145	0.00381
Robust Standard Deviation mg/L	0.00233	0.0515	0.00124	0.0327
Regression Standard Deviation mg/L	0.00346	0.0824	0.00170	0.0521
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.00346	0.0824	0.00170	0.0521
Flagged Outliers	3	1	2	0
$ z > 3.0$	4	2	7	2
$2 < z < 3$	1	1	1	1
Failure Rate %*	7.8			

Methods Used

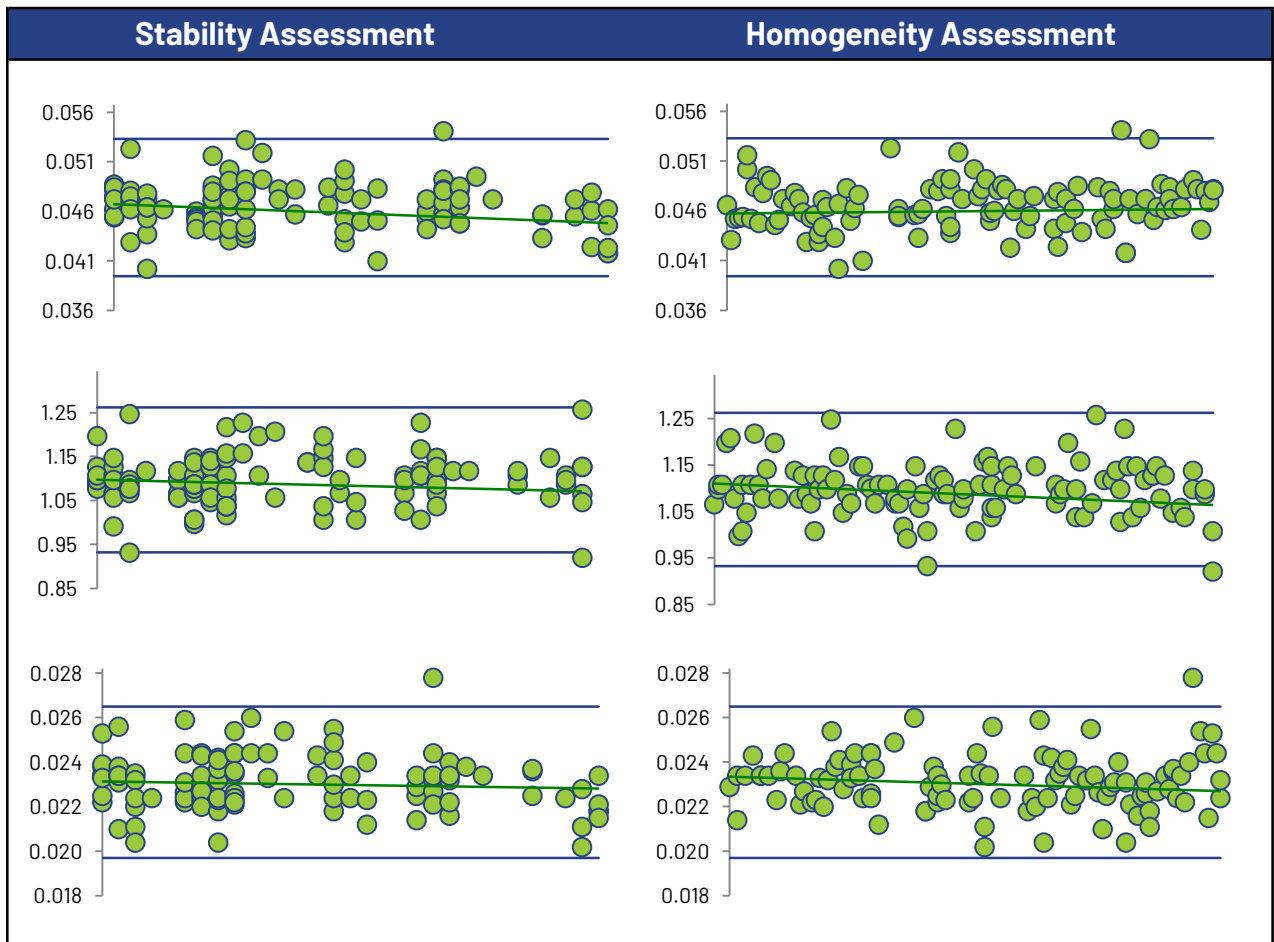
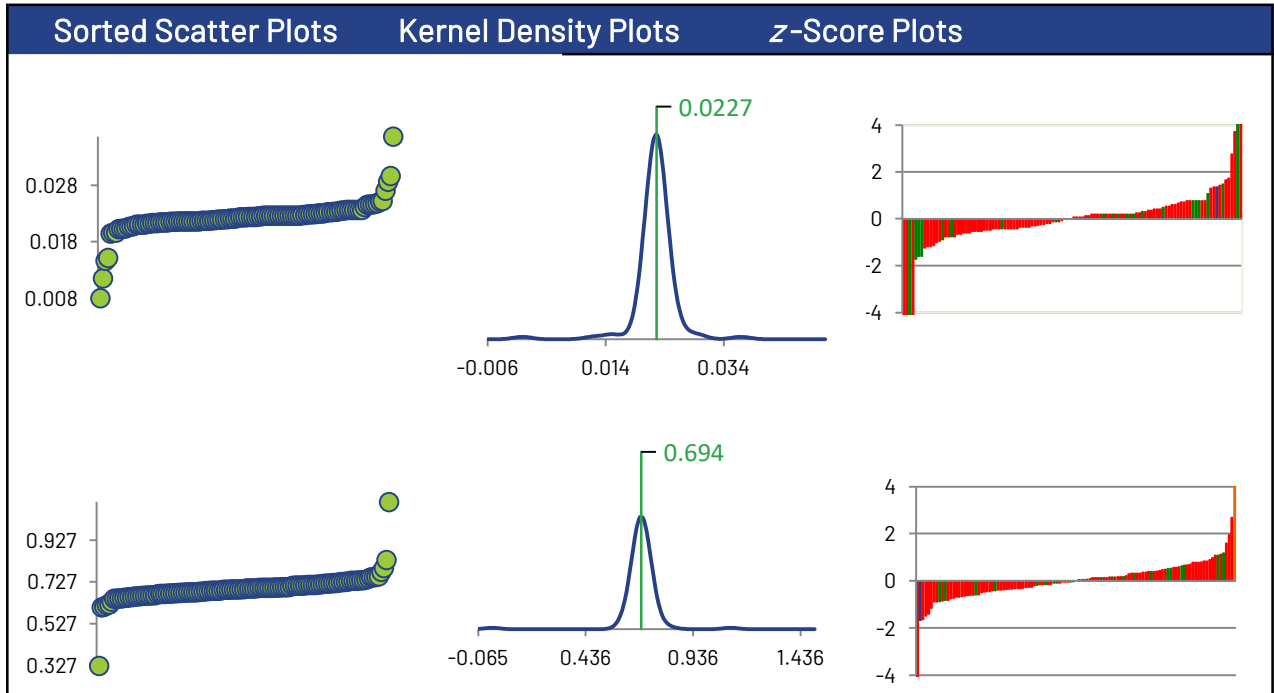
Method	C02A-1	C02A-2	C02A-3	C02A-4
AA GRAPHITE (Blue)	1	1	1	1
ICP/MS (Red)	92	92	92	92
ICP/OES (Green)	20	21	21	21
COLORIMETRIC (Orange)	0	1	0	1

All summary stats, except the failure rate, and the plots below are based on the data excluding any flagged outliers

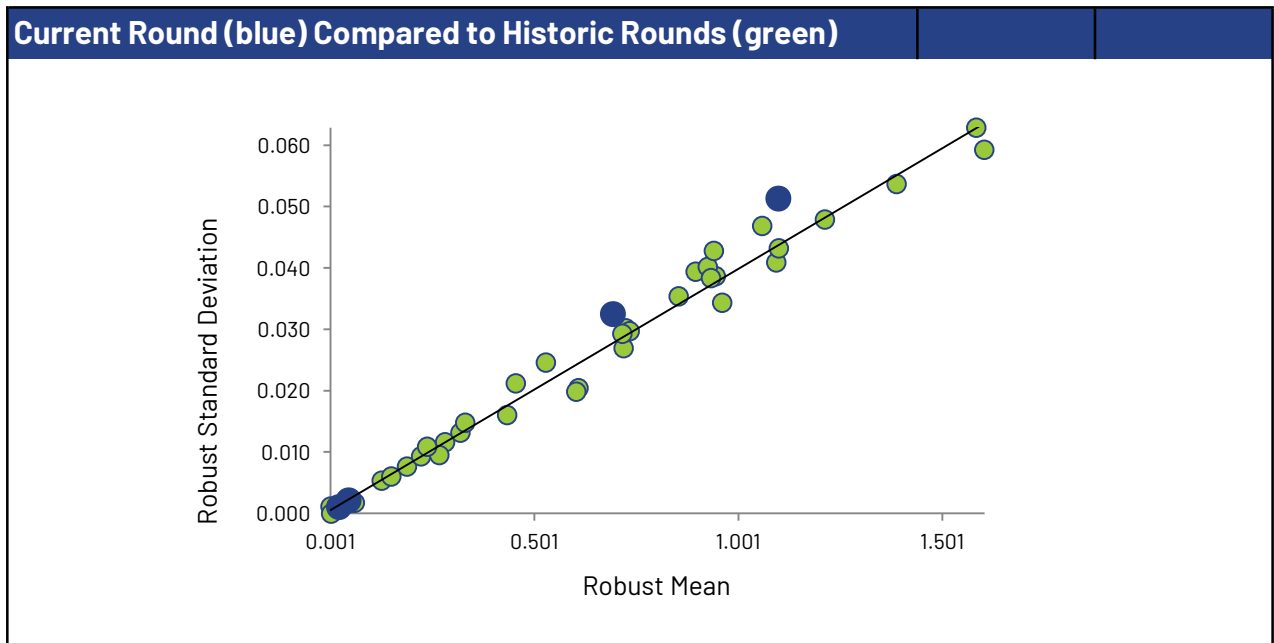
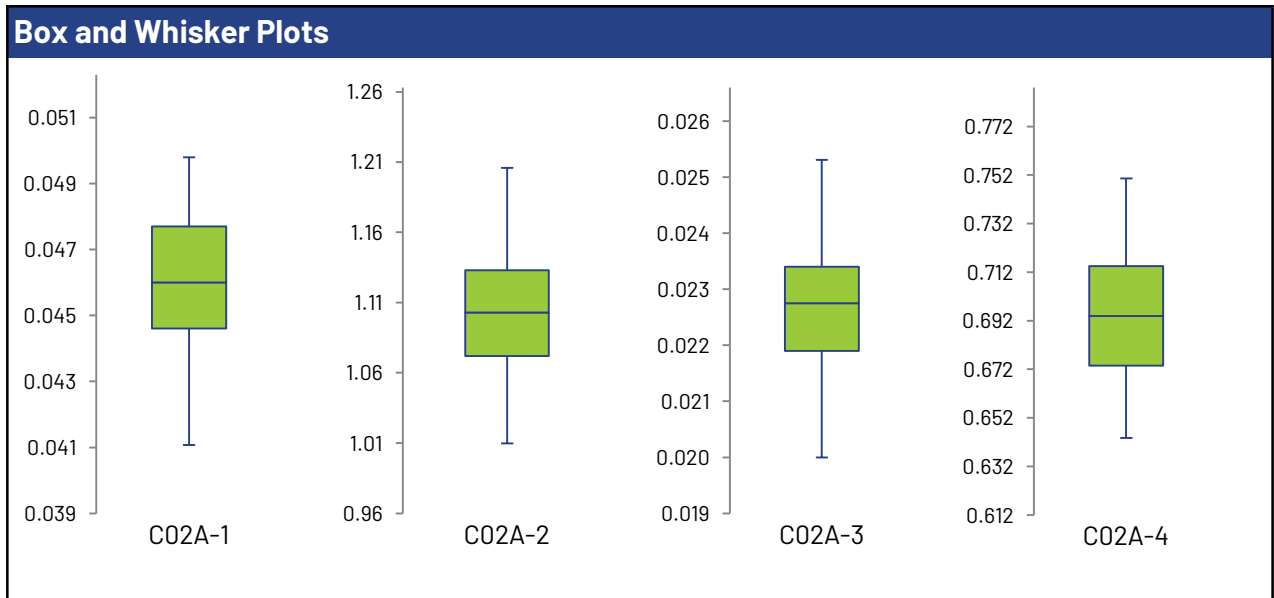
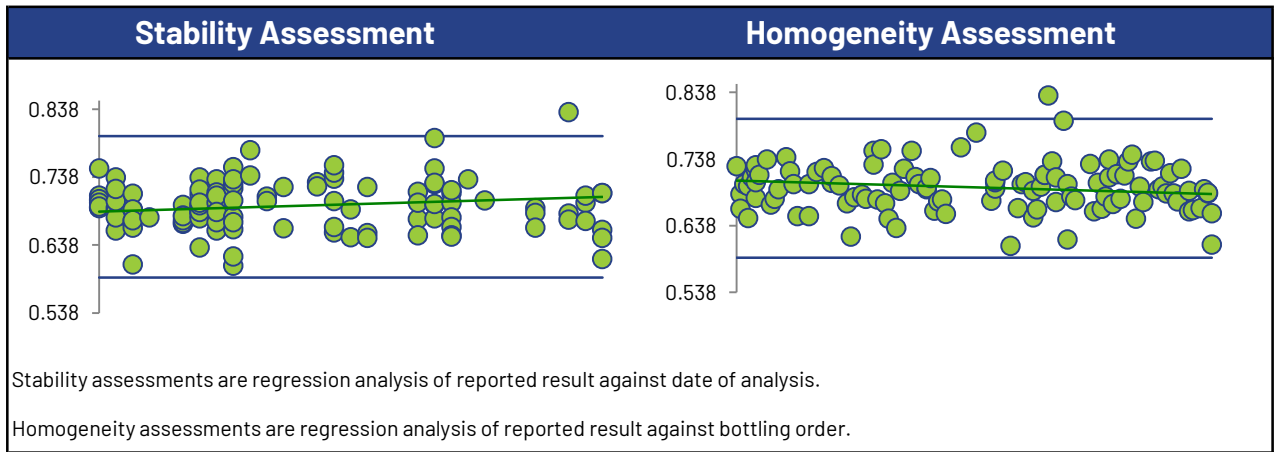


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Nickel



Nickel



Selenium

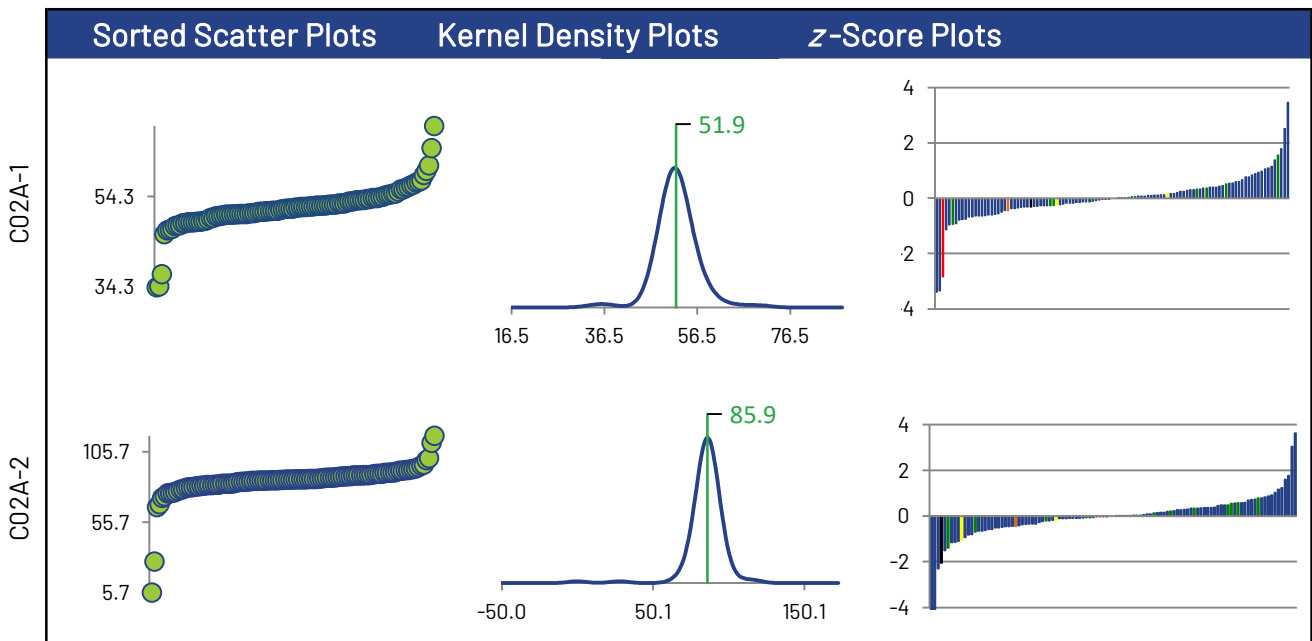
Summary Statistics

Statistic	C02A-1	C02A-2	C02A-3	C02A-4
No. of results used for summary statistics	109	109	98	109
Median mg/L	51.9	85.9	5.18	68.9
Robust Mean mg/L	51.9	85.9	5.23	69.2
Uncertainty of the Assigned Value mg/L	0.351	0.608	0.0538	0.465
Robust Standard Deviation mg/L	2.93	5.08	0.426	3.88
Regression Standard Deviation mg/L	5.19	8.59	0.523	6.92
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	5.19	8.59	0.523	6.92
Flagged Outliers	2	2	3	2
$ z > 3.0$	3	4	5	3
$2 < z < 3$	2	2	5	1
Failure Rate %*	1.8			

Methods Used

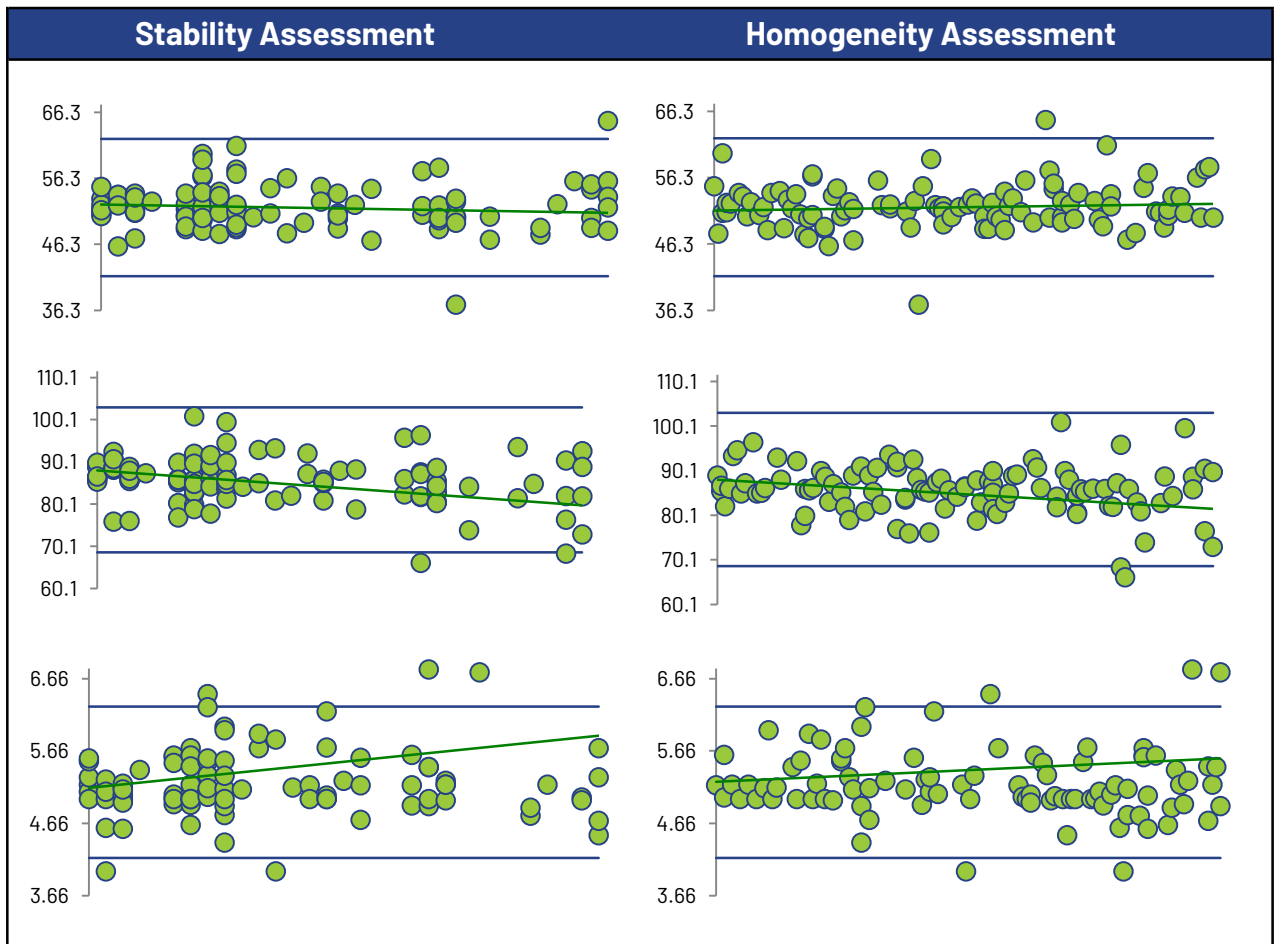
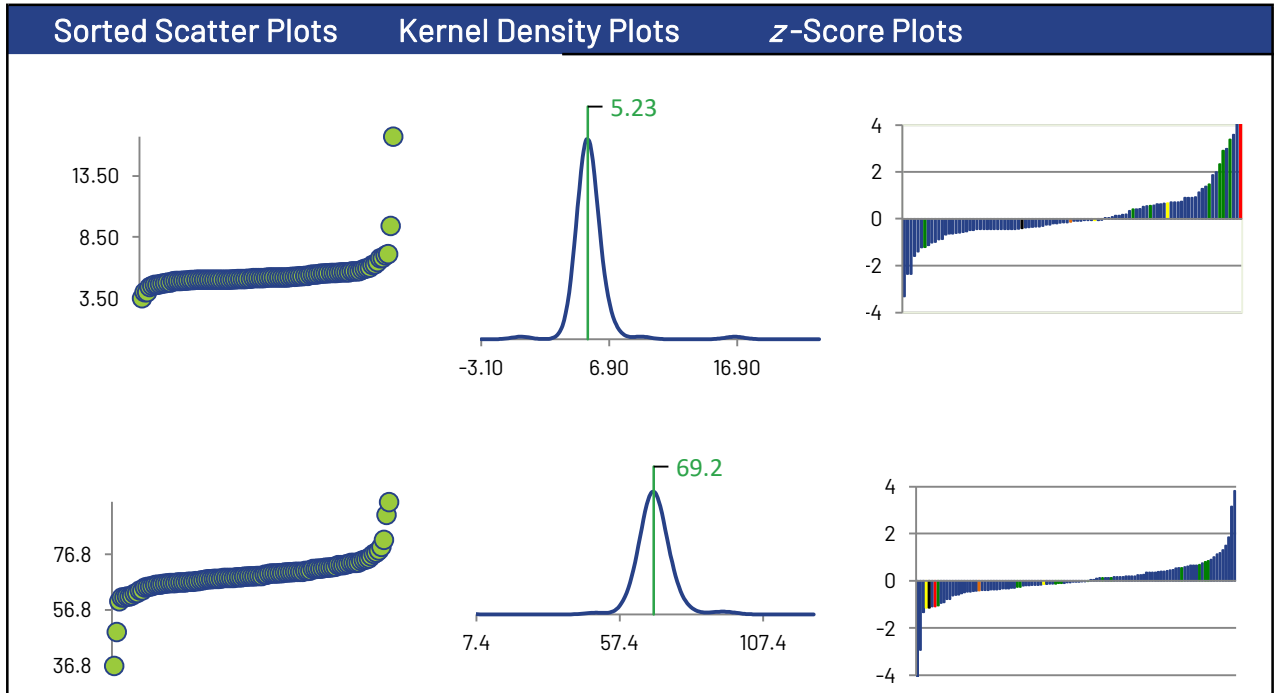
Method	C02A-1	C02A-2	C02A-3	C02A-4
ICP/MS (Blue)	91	91	86	91
HYDRIDE ICP (Red)	1	1	1	1
ICP/OES (Green)	13	13	7	13
ATOMIC FLUORESCENCE SPECTROMETER (Orange)	1	1	1	1
ATOMIC FLUORESCENCE SPECTROPHOTOMETRY (Black)	1	1	1	1
HYDRIDE AA (Yellow)	2	2	2	2

All summary stats, except the failure rate, and the plots below are based on the data excluding any flagged outliers

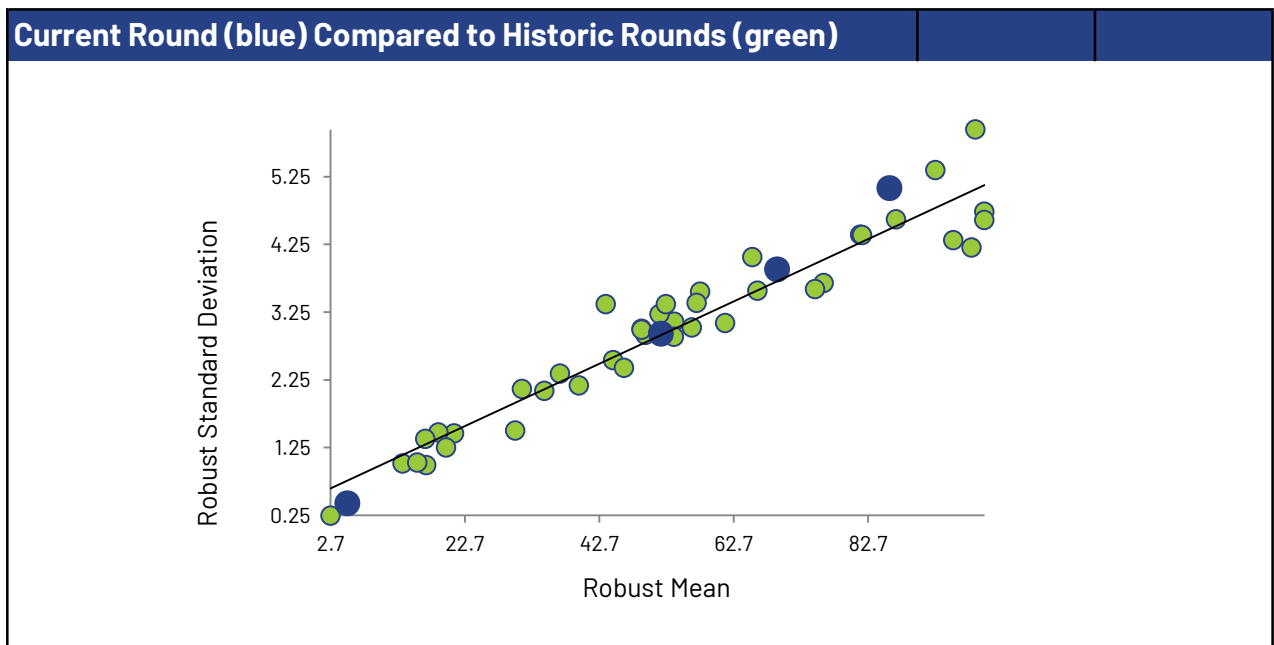
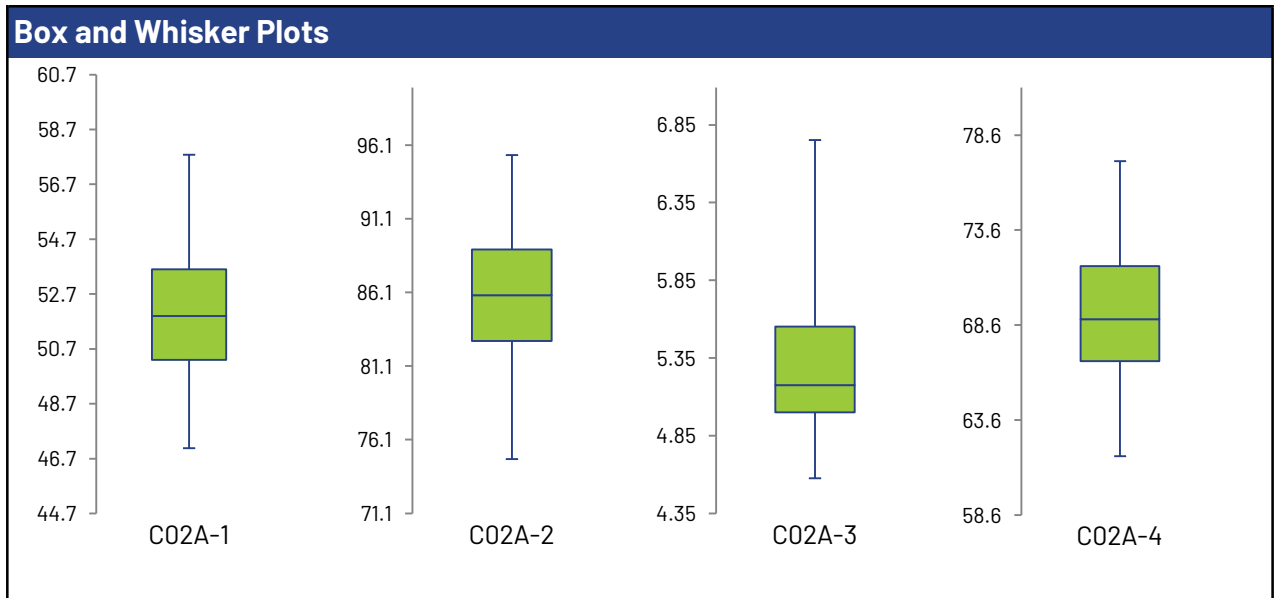
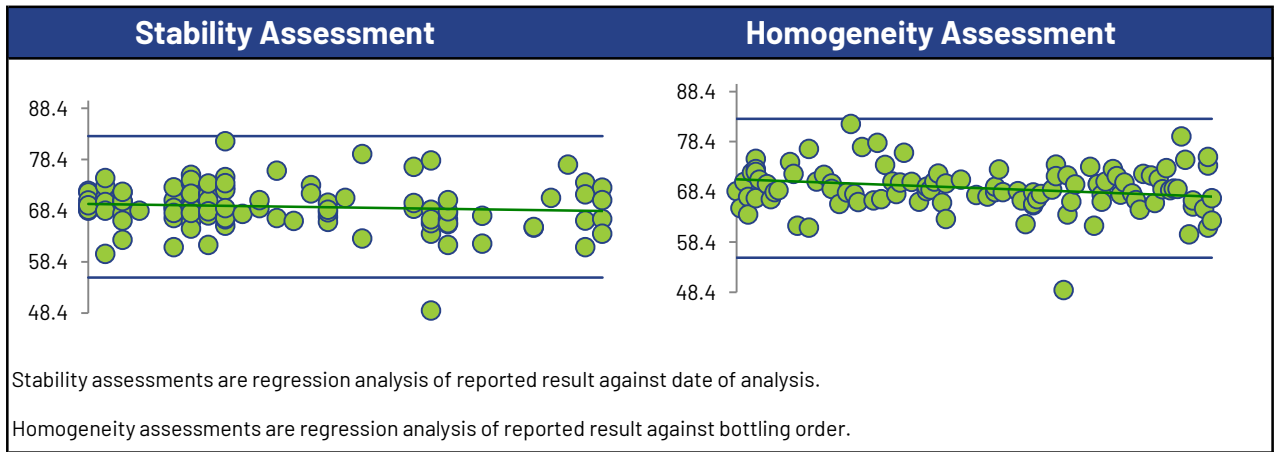


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Selenium



Selenium



Silver

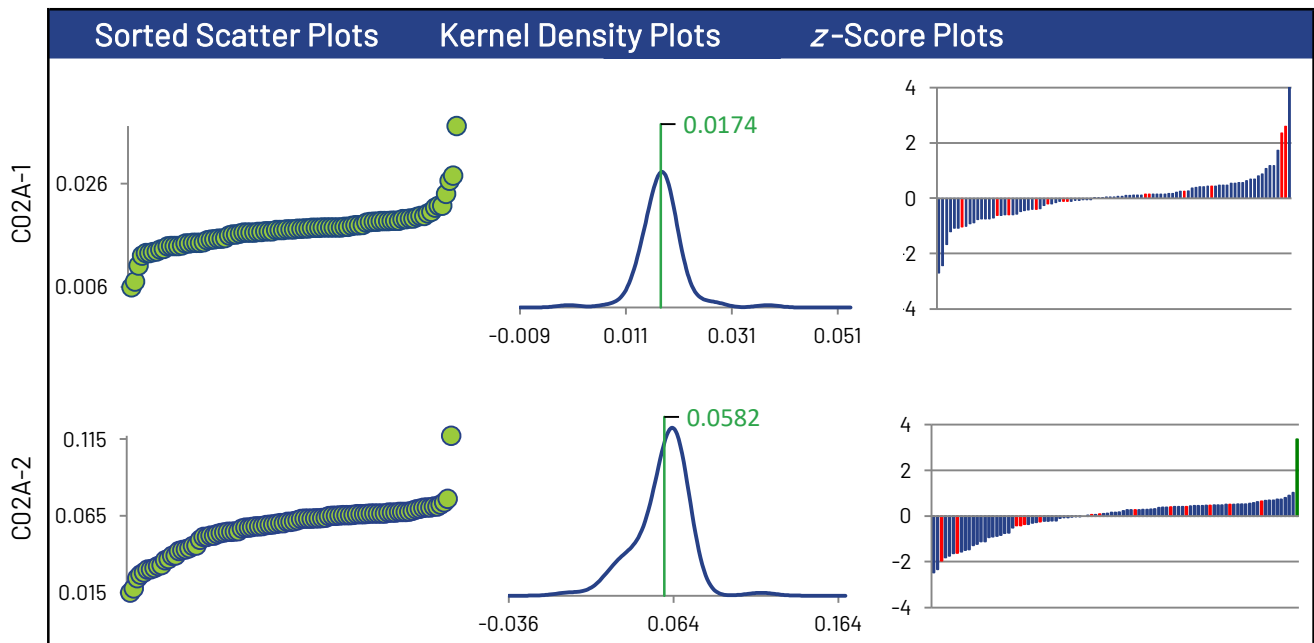
Summary Statistics

Statistic	C02A-1	C02A-2	C02A-3	C02A-4
No. of results used for summary statistics	91	93	92	93
Median mg/L	0.0176	0.0610	0.0249	0.0375
Robust Mean mg/L	0.0174	0.0582	0.0252	0.0375
Uncertainty of the Assigned Value mg/L	0.000333	0.00153	0.000388	0.000297
Robust Standard Deviation mg/L	0.00254	0.0118	0.00298	0.00229
Regression Standard Deviation mg/L	0.00130	0.00437	0.00189	0.00281
Stability Flag		Stability		
Homogeneity Flag	Homogeneity			
Standard Deviation Used (SDPA) mg/L	0.00407	0.0175	0.00298	0.00281
Flagged Outliers	1	0	0	0
$ z > 3.0$	1	1	5	4
$2 < z < 3$	4	2	2	2
Failure Rate %*	5.4			

Methods Used

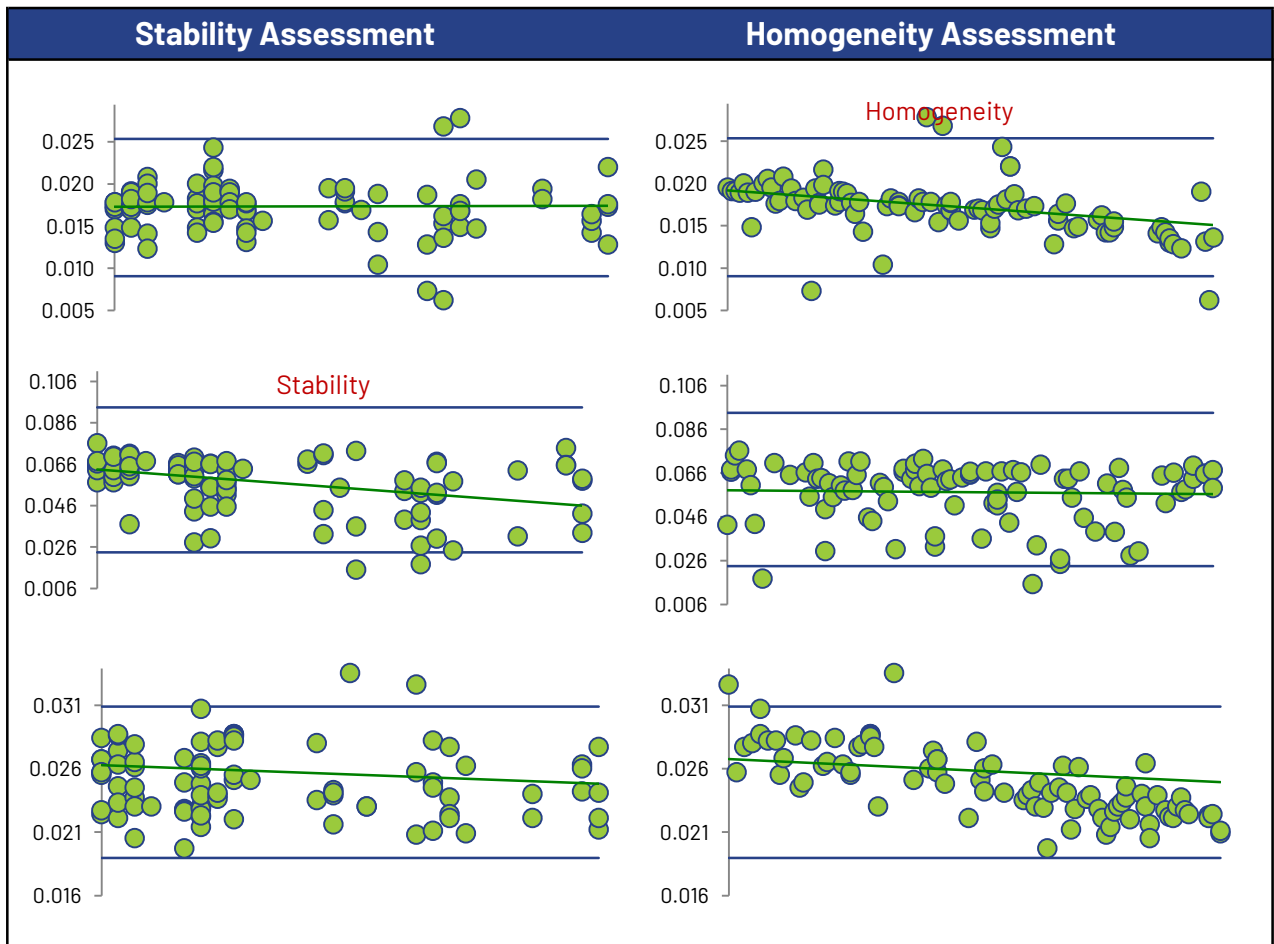
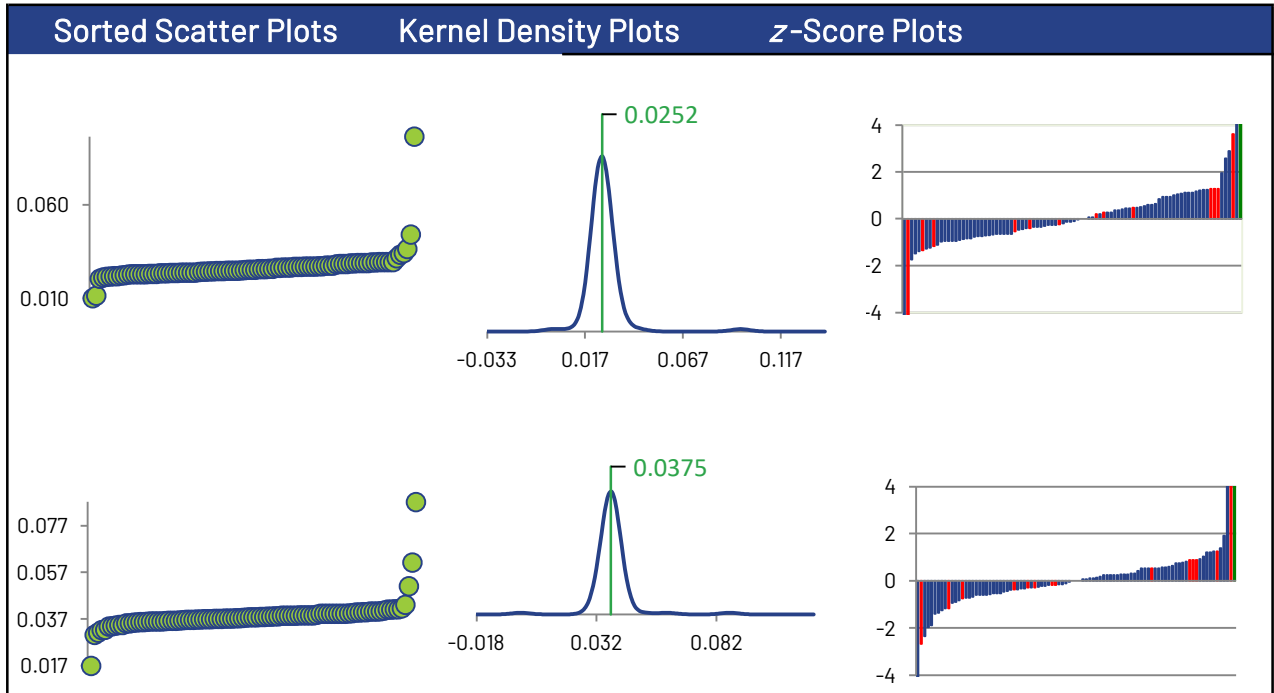
Method	C02A-1	C02A-2	C02A-3	C02A-4
ICP/MS (Blue)	78	78	78	78
ICP/OES (Red)	13	14	13	14
AA FLAME (Green)	0	1	1	1

All summary stats, except the failure rate, and the plots below are based on the data excluding any flagged outliers

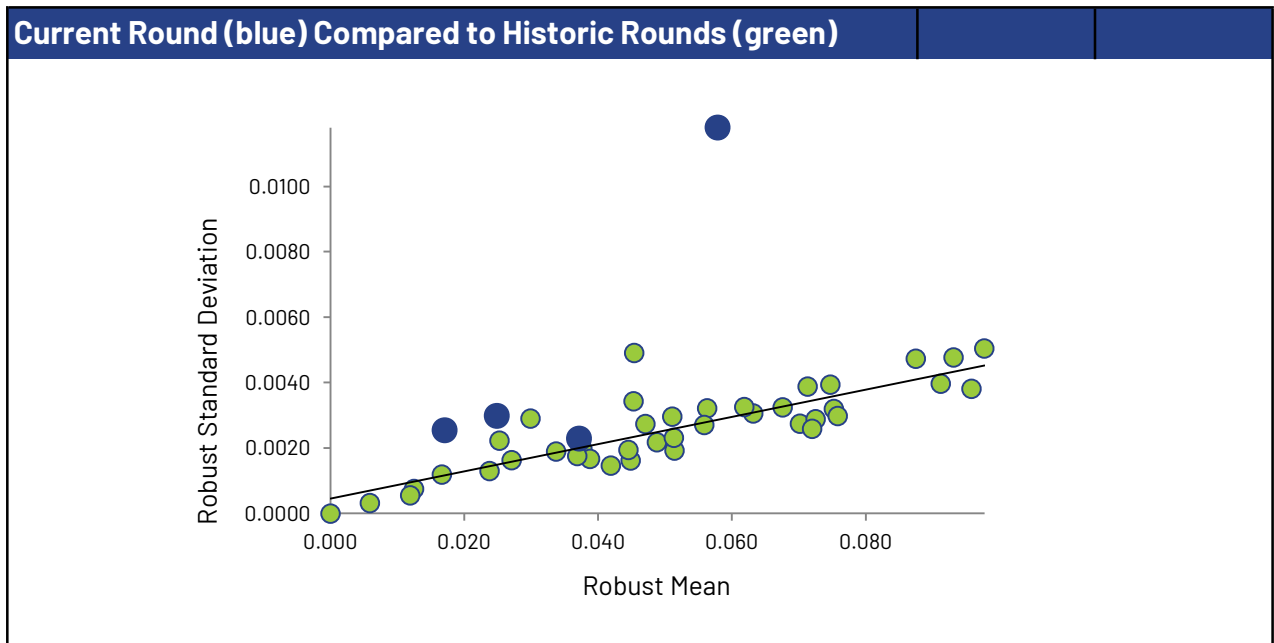
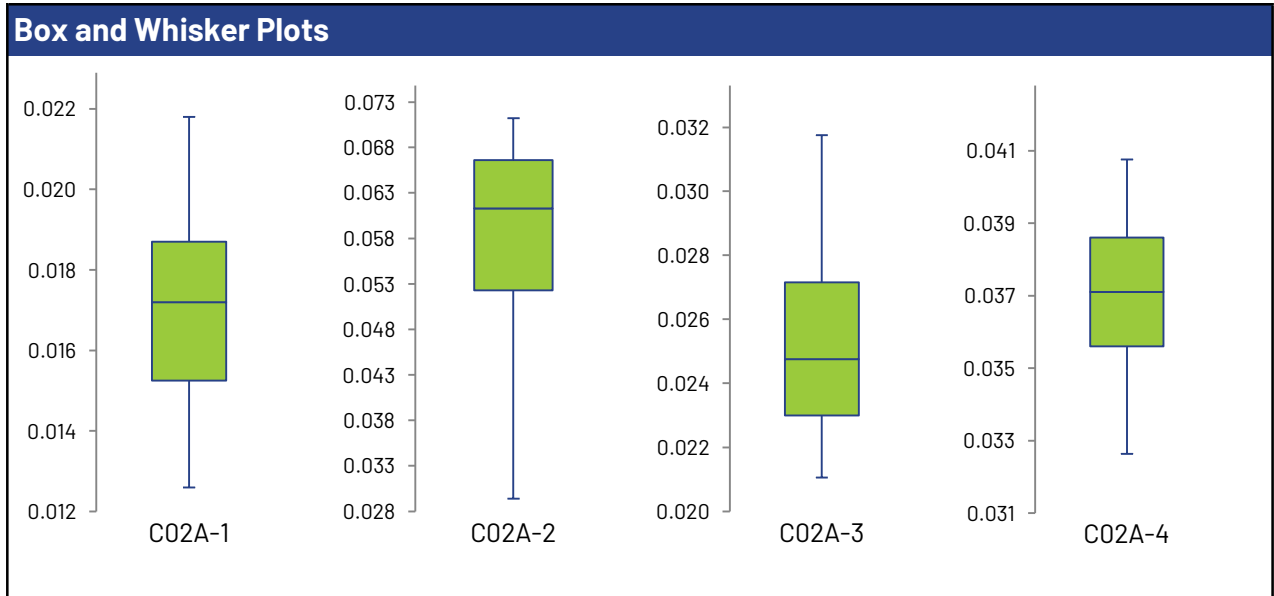
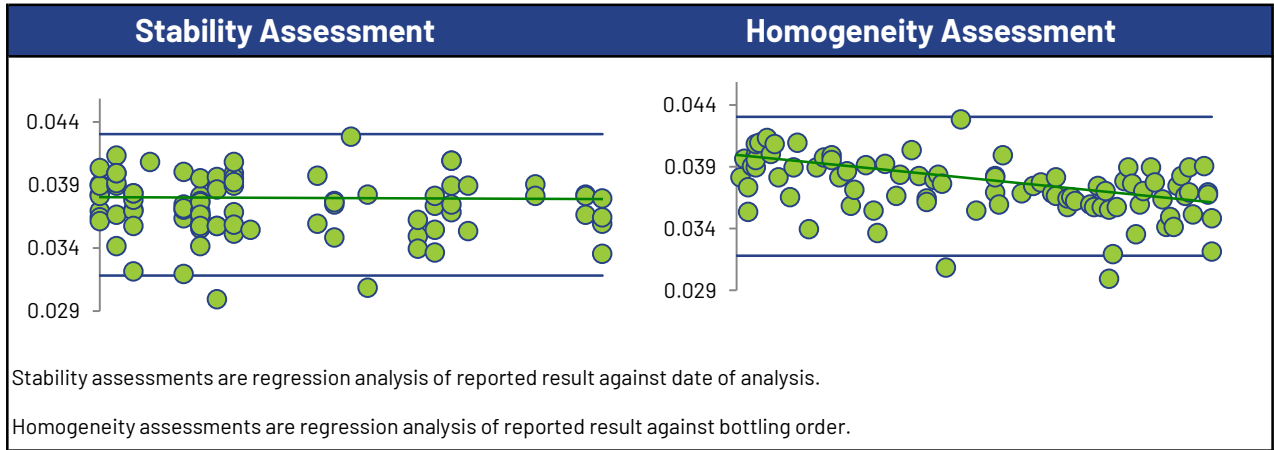


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Silver



Silver



Strontium

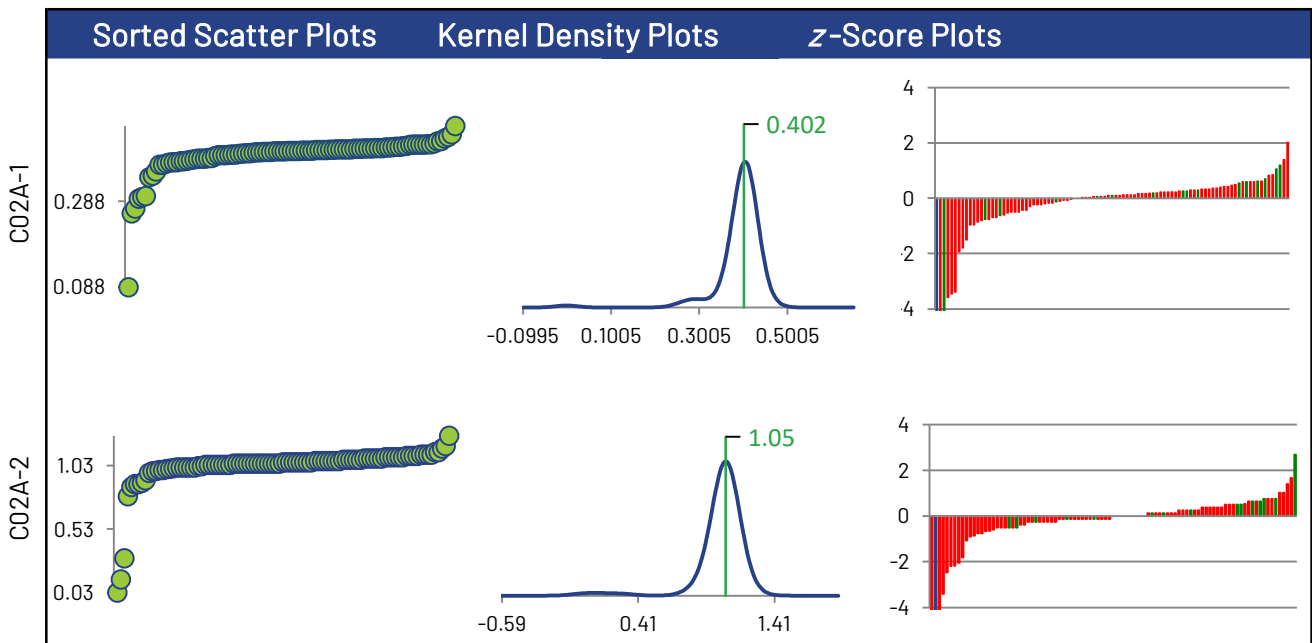
Summary Statistics

Statistic	C02A-1	C02A-2	C02A-3	C02A-4
No. of results used for summary statistics	95	95	94	95
Median mg/L	0.405	1.05	0.0260	0.967
Robust Mean mg/L	0.402	1.05	0.0257	0.963
Uncertainty of the Assigned Value mg/L	0.00224	0.00593	0.000197	0.00499
Robust Standard Deviation mg/L	0.0175	0.0462	0.00153	0.0389
Regression Standard Deviation mg/L	0.0301	0.0785	0.00193	0.0723
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.0301	0.0785	0.00193	0.0723
Flagged Outliers	0	0	1	0
$ z > 3.0$	6	4	5	4
$2 < z < 3$	1	5	5	4
Failure Rate %*	7.4			

Methods Used

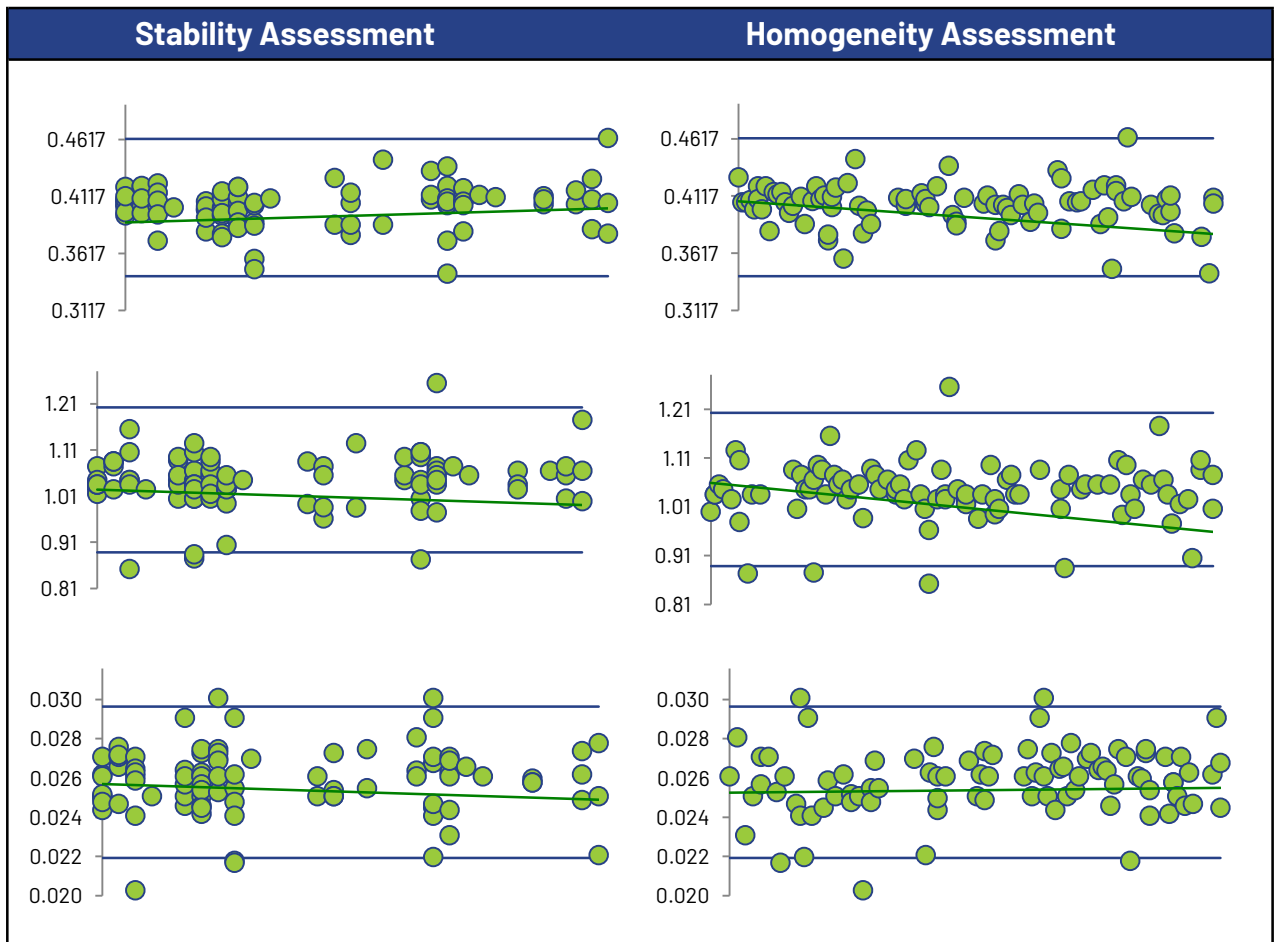
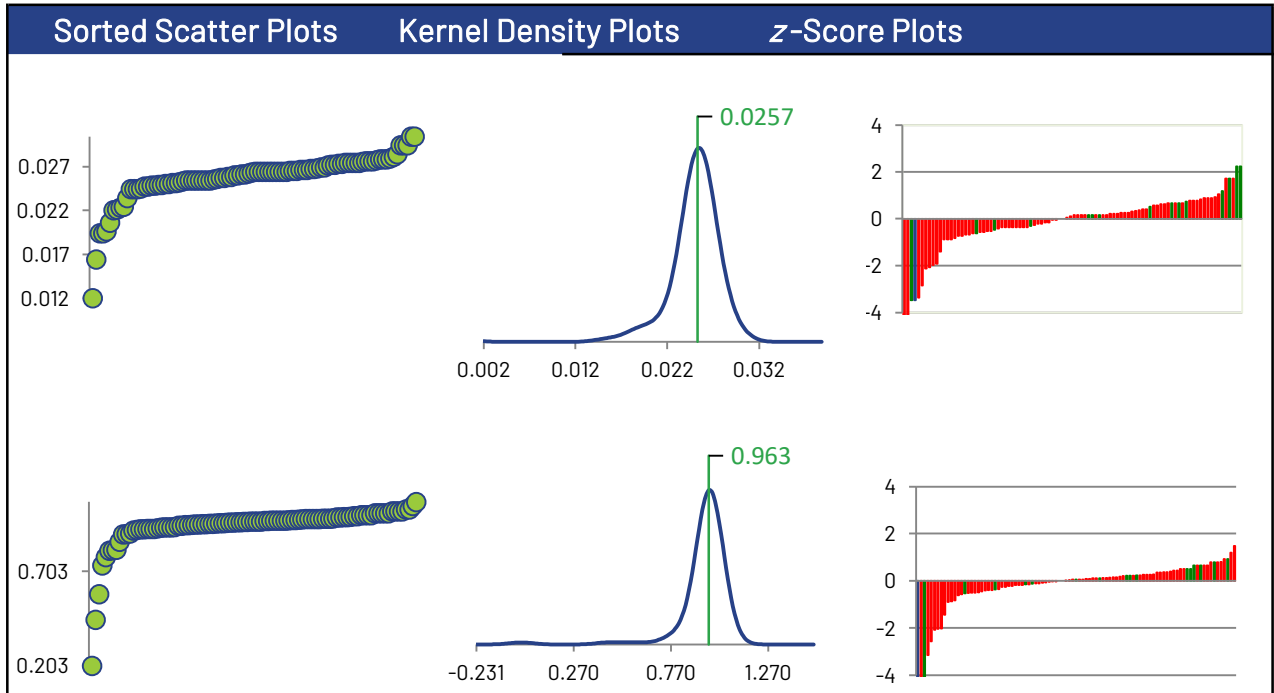
Method	C02A-1	C02A-2	C02A-3	C02A-4
AA FLAME (Blue)	1	1	1	1
ICP/MS (Red)	78	78	77	78
ICP/OES (Green)	16	16	16	16

All summary stats, except the failure rate, and the plots below are based on the data excluding any flagged outliers

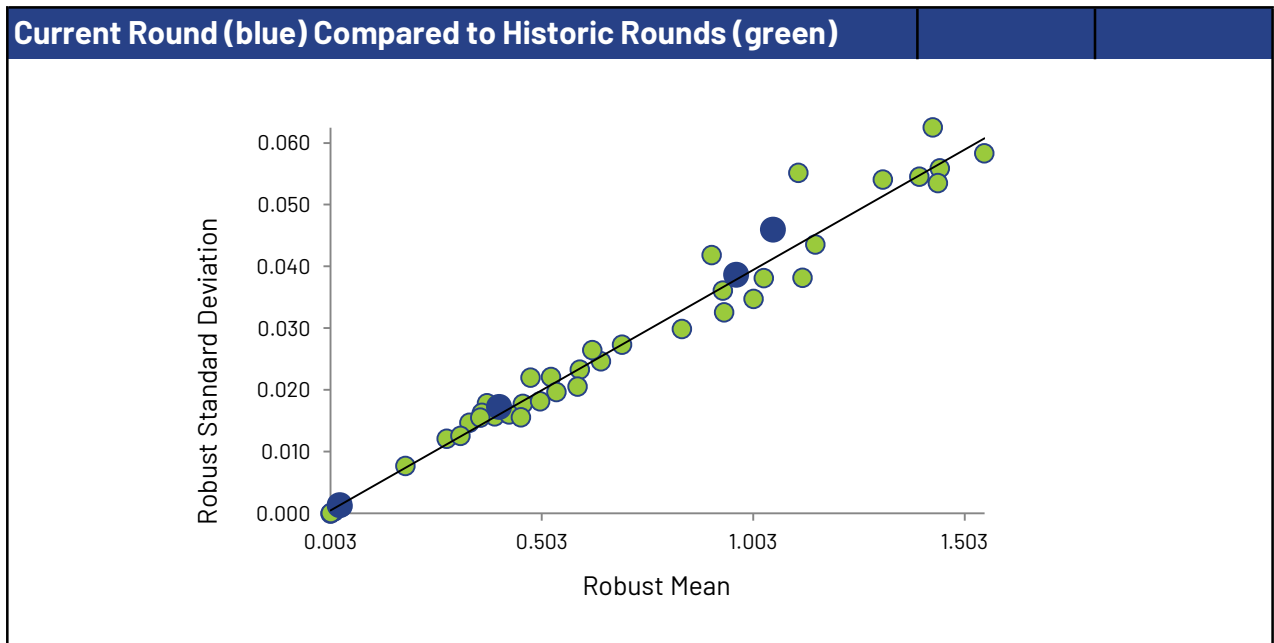
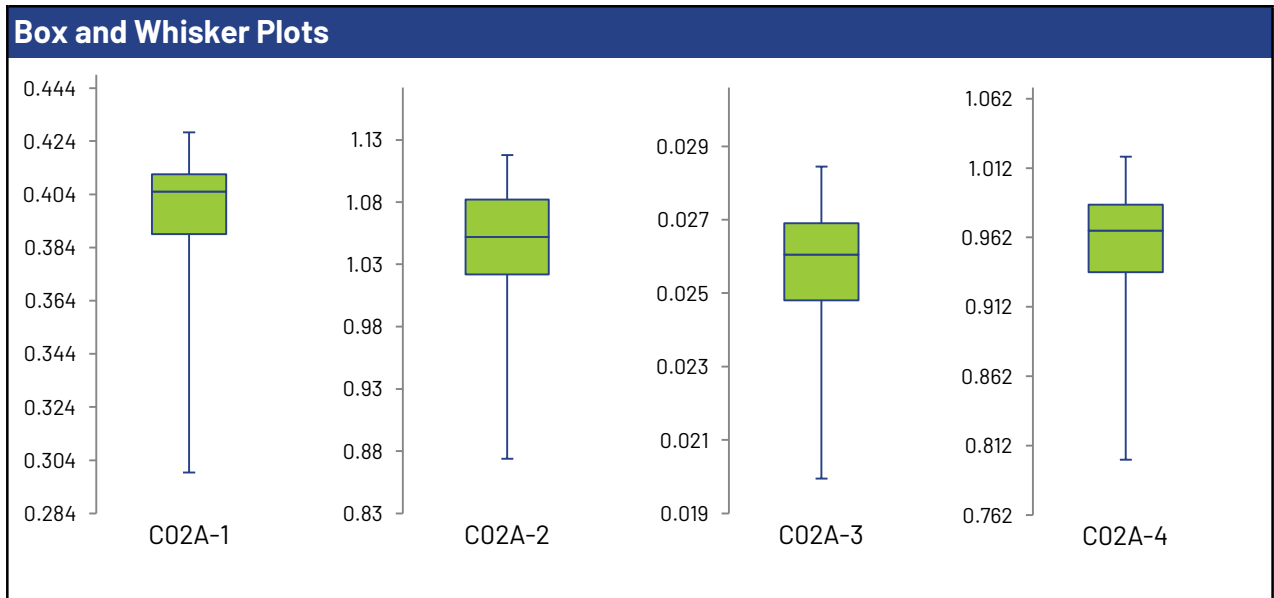
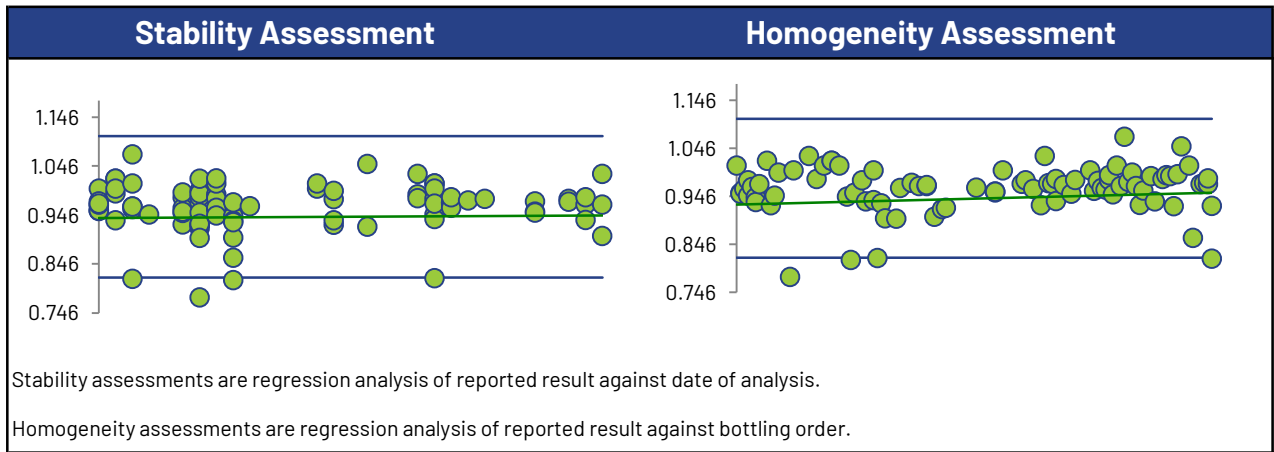


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Strontium



Strontium



Thallium

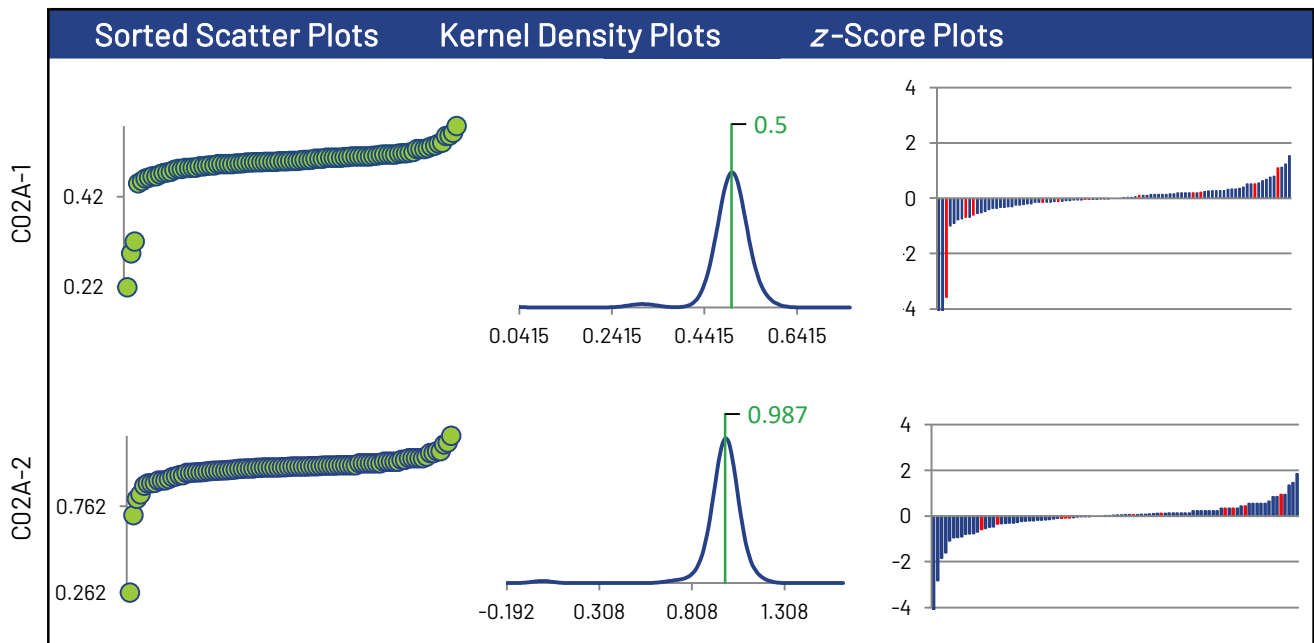
Summary Statistics

Statistic	C02A-1	C02A-2	C02A-3	C02A-4
No. of results used for summary statistics	92	92	91	92
Median mg/L	0.500	0.991	0.0247	0.598
Robust Mean mg/L	0.500	0.987	0.0248	0.595
Uncertainty of the Assigned Value mg/L	0.00255	0.00556	0.000195	0.00297
Robust Standard Deviation mg/L	0.0196	0.0427	0.00149	0.0228
Regression Standard Deviation mg/L	0.0500	0.0987	0.00248	0.0595
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.0500	0.0987	0.00248	0.0595
Flagged Outliers	0	0	0	0
$ z > 3.0$	3	1	2	3
$2 < z < 3$	0	1	2	2
Failure Rate %*	3.3			

Methods Used

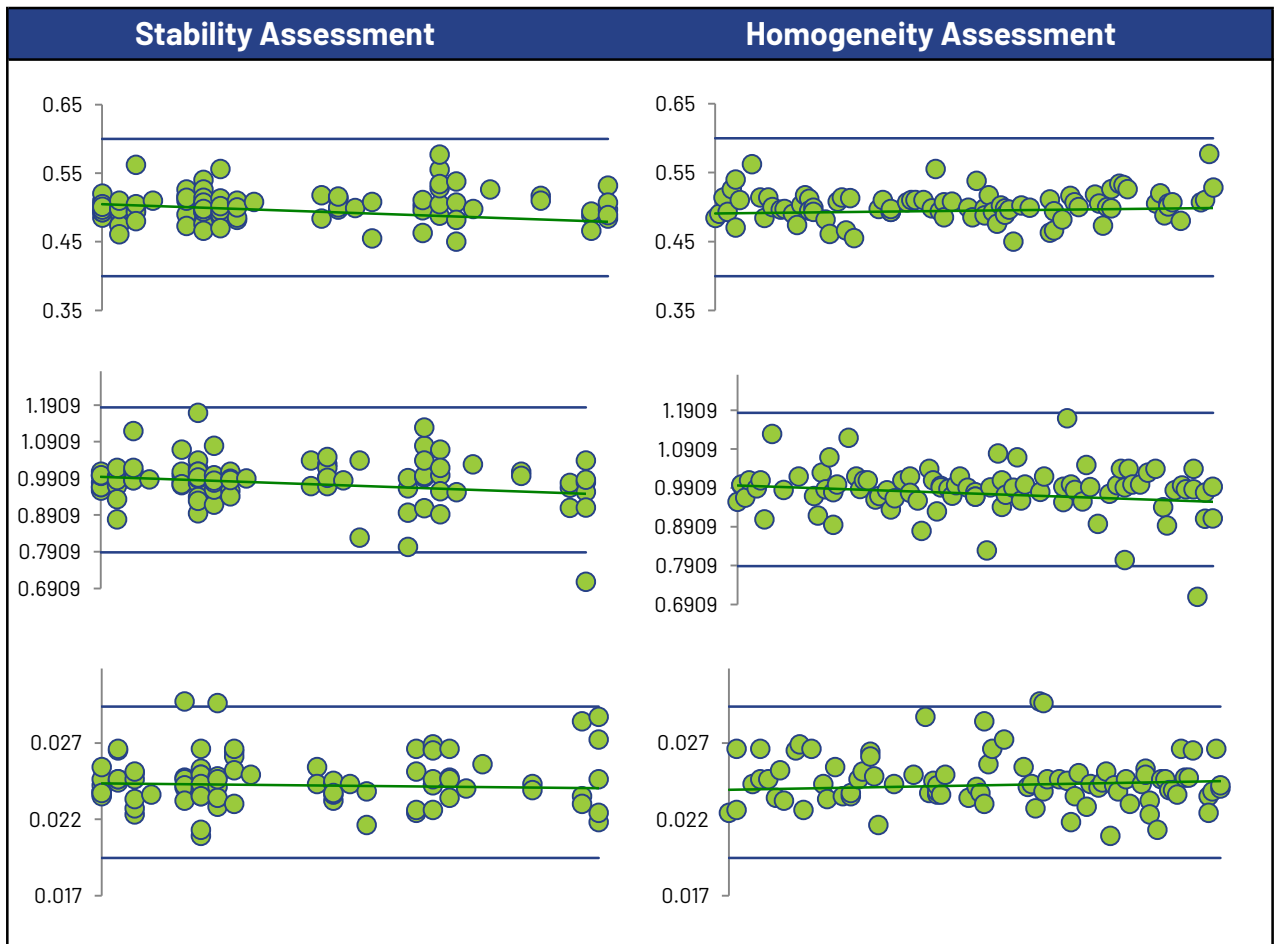
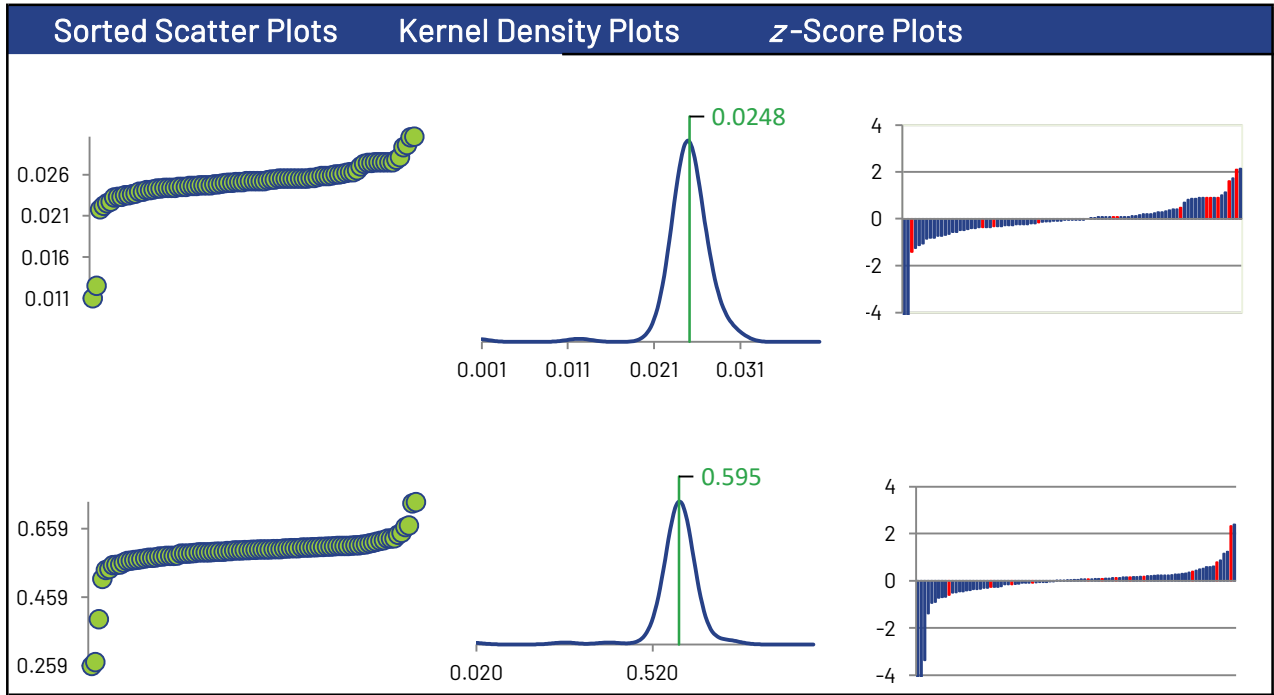
Method	C02A-1	C02A-2	C02A-3	C02A-4
ICP/MS (Blue)	80	80	79	80
ICP/OES (Red)	12	12	12	12

All summary stats, except the failure rate, and the plots below are based on the data excluding any flagged outliers

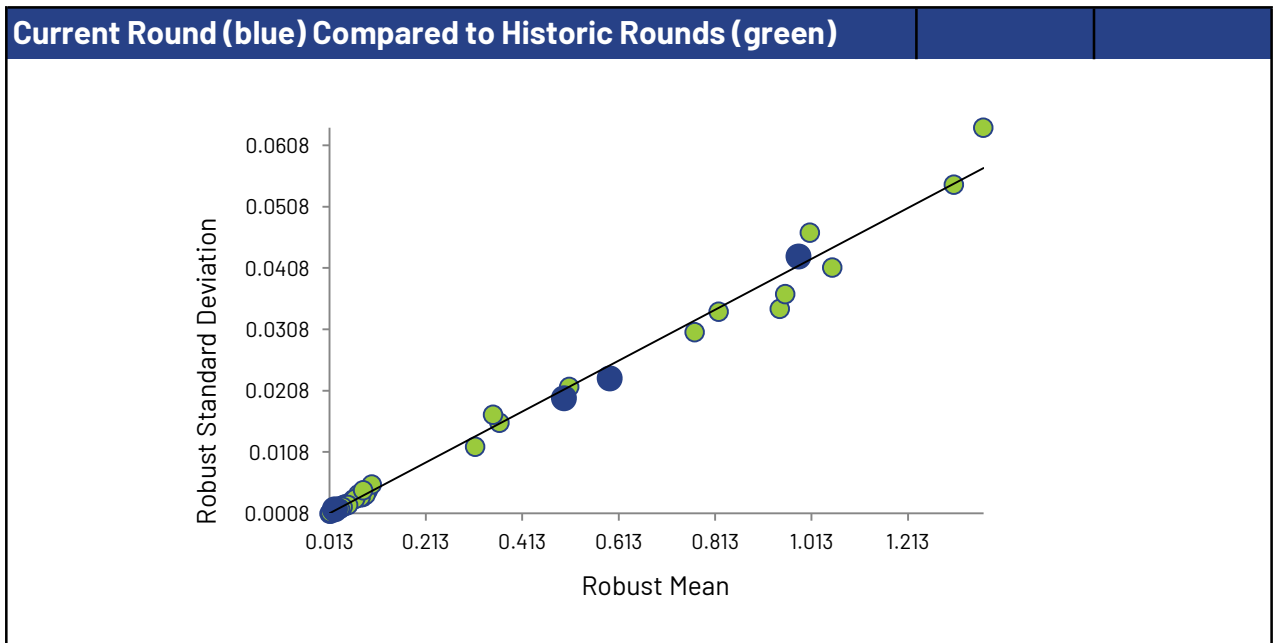
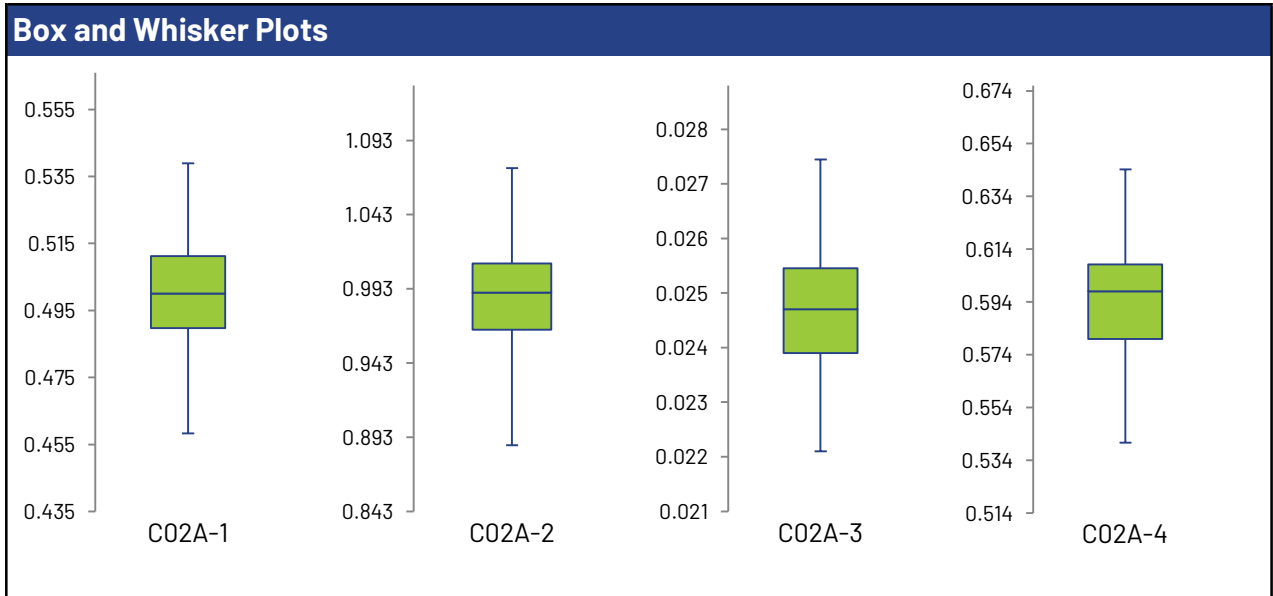
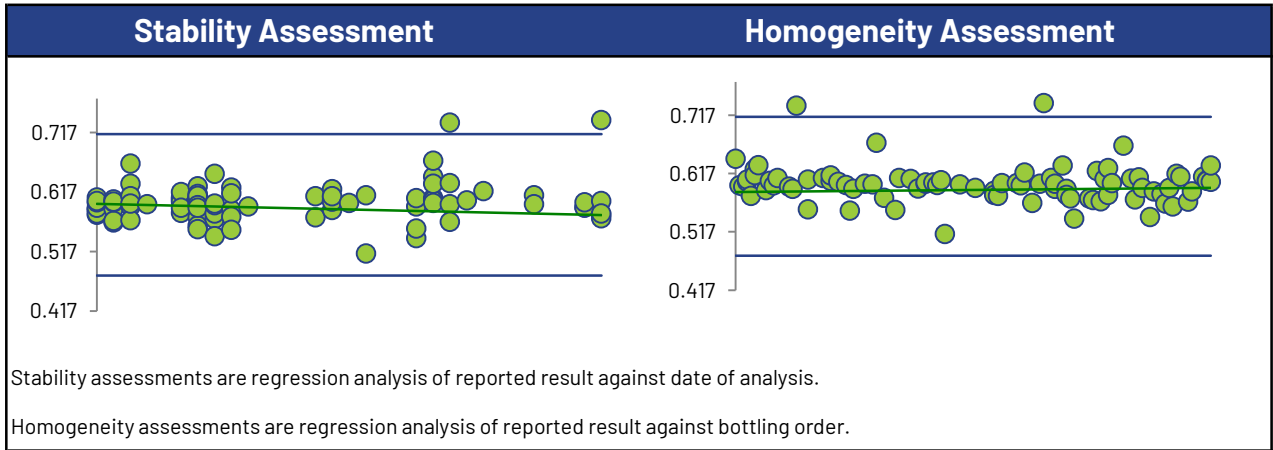


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Thallium



Thallium



Tin

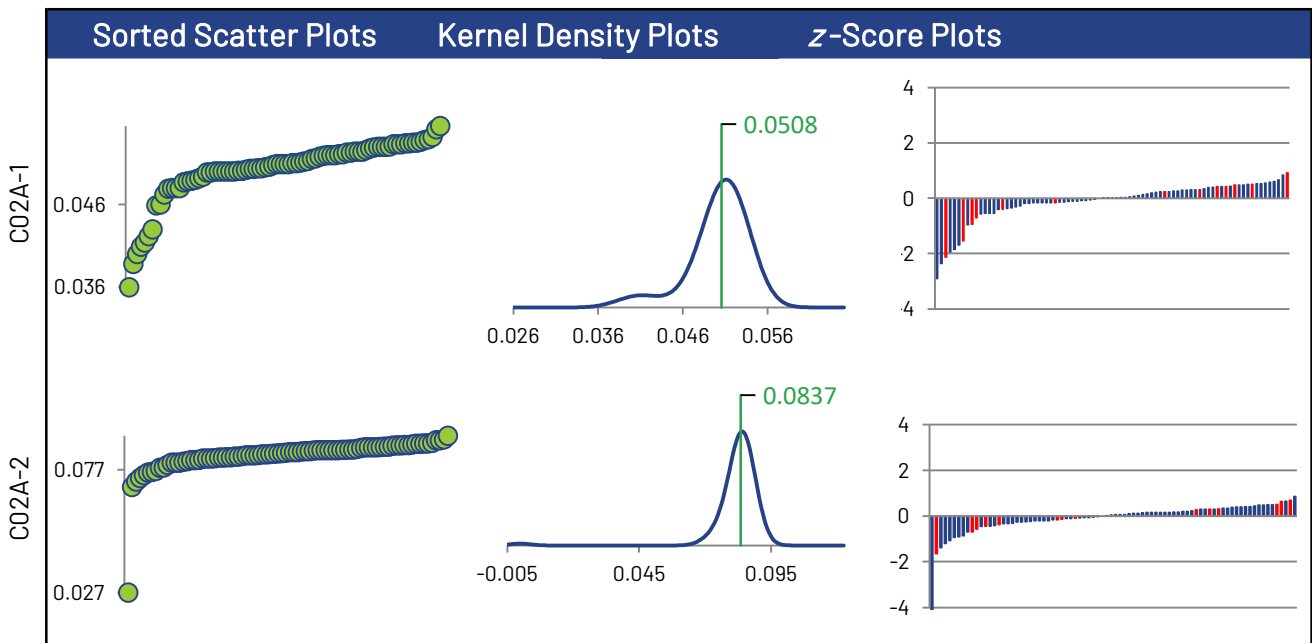
Summary Statistics

Statistic	C02A-1	C02A-2	C02A-3	C02A-4
No. of results used for summary statistics	81	82	79	82
Median mg/L	0.0509	0.0841	0.0267	0.0680
Robust Mean mg/L	0.0508	0.0837	0.0266	0.0674
Uncertainty of the Assigned Value mg/L	0.000328	0.000475	0.000222	0.000415
Robust Standard Deviation mg/L	0.00236	0.00344	0.00158	0.00301
Regression Standard Deviation mg/L	0.00508	0.00837	0.00266	0.00674
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.00508	0.00837	0.00266	0.00674
Flagged Outliers	0	0	0	0
$ z > 3.0$	0	1	1	1
$2 < z < 3$	3	0	1	0
Failure Rate %*	1.2			

Methods Used

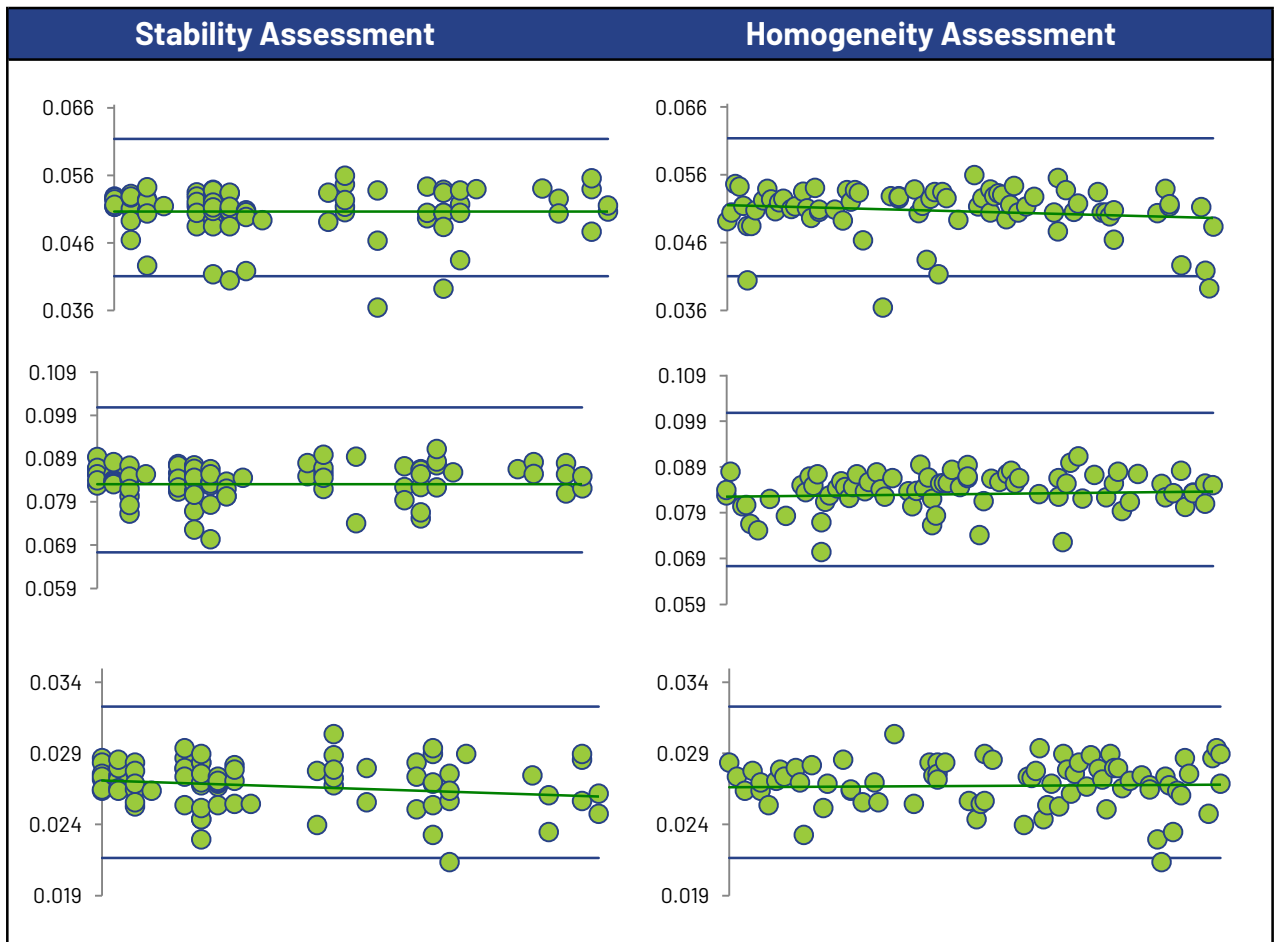
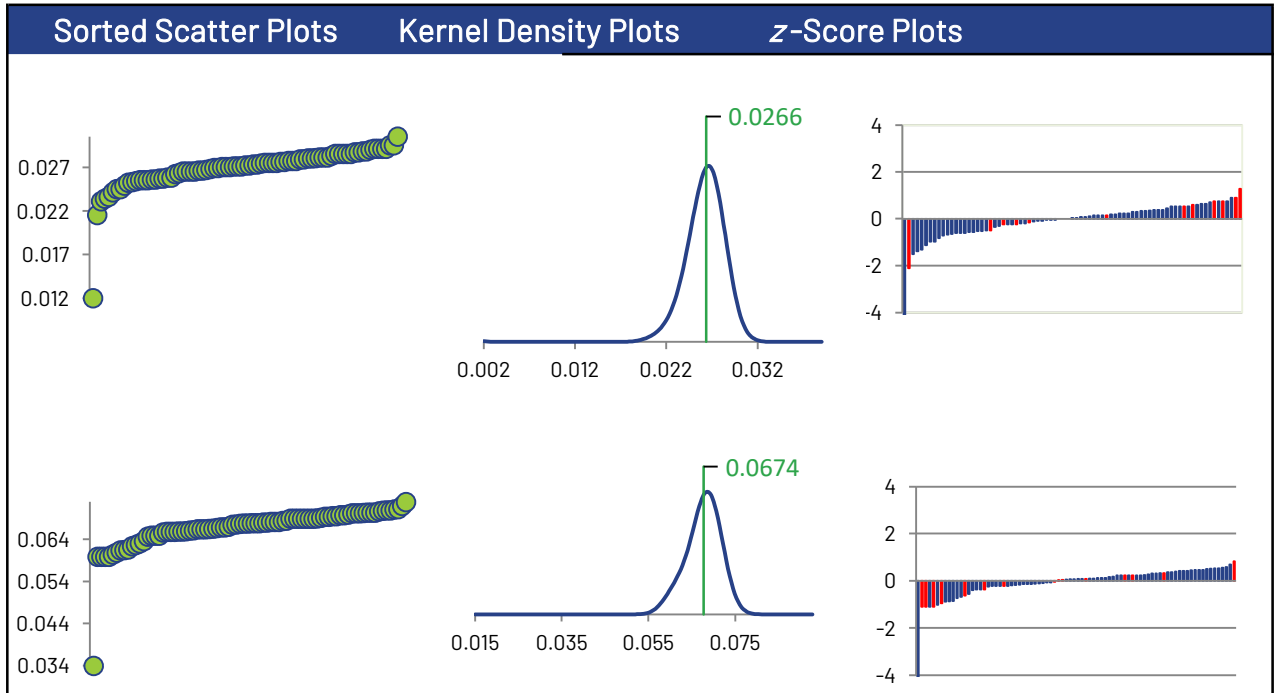
Method	C02A-1	C02A-2	C02A-3	C02A-4
ICP/MS (Blue)	67	67	67	67
ICP/OES (Red)	14	15	12	15

All summary stats, except the failure rate, and the plots below are based on the data excluding any flagged outliers

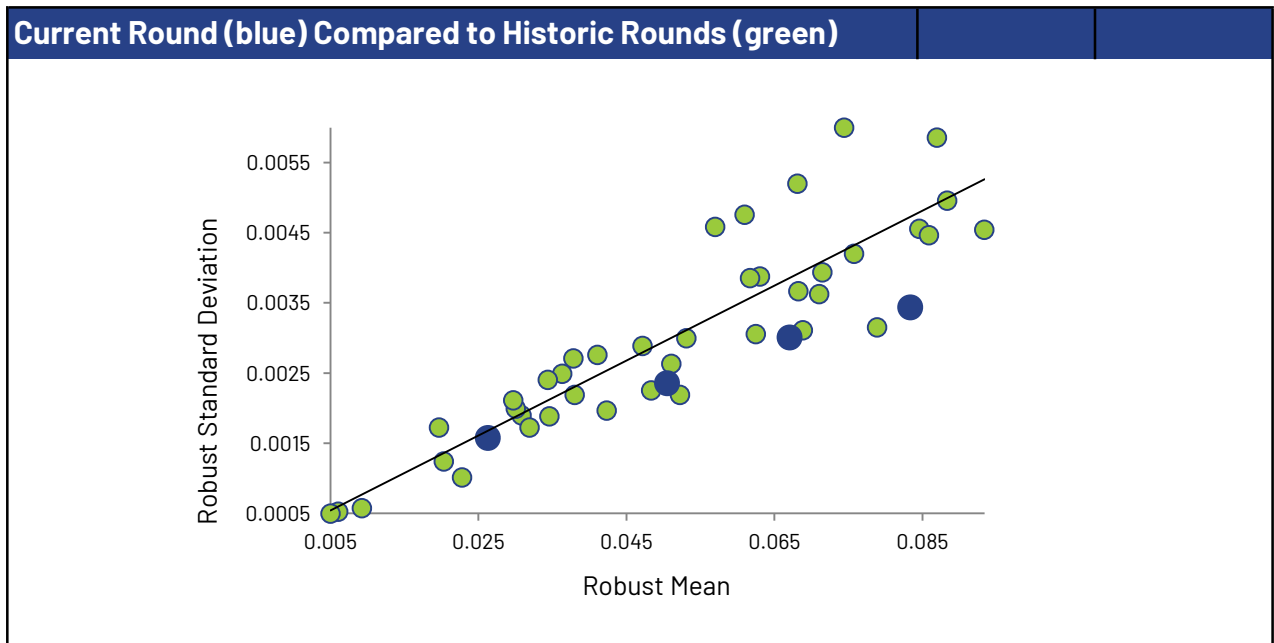
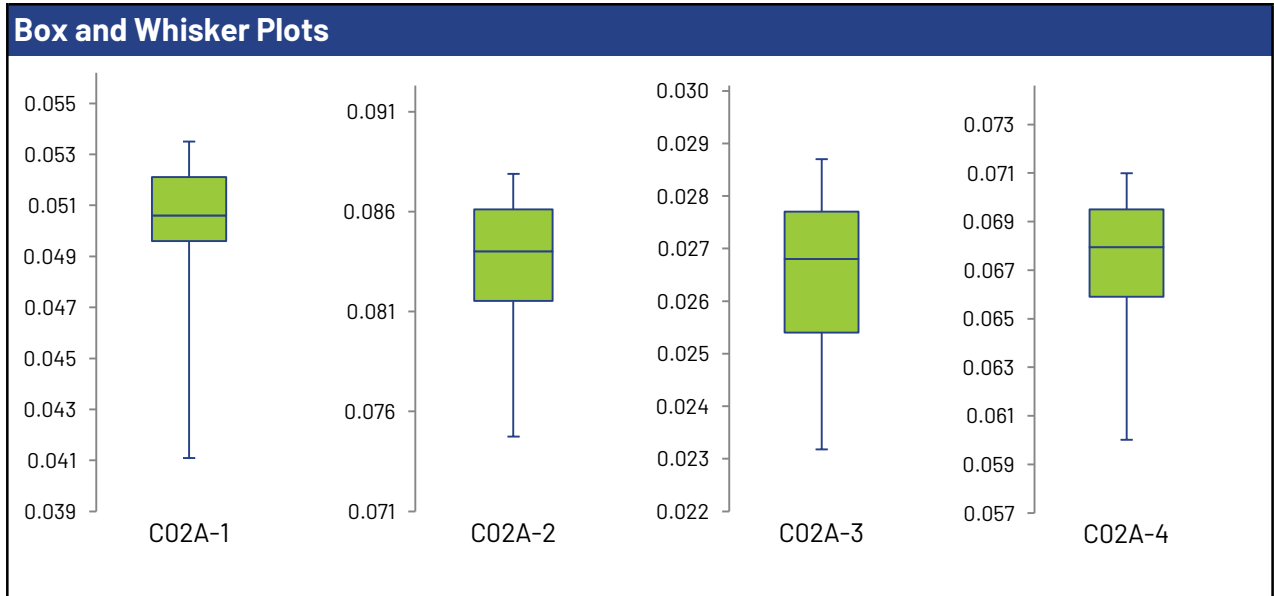
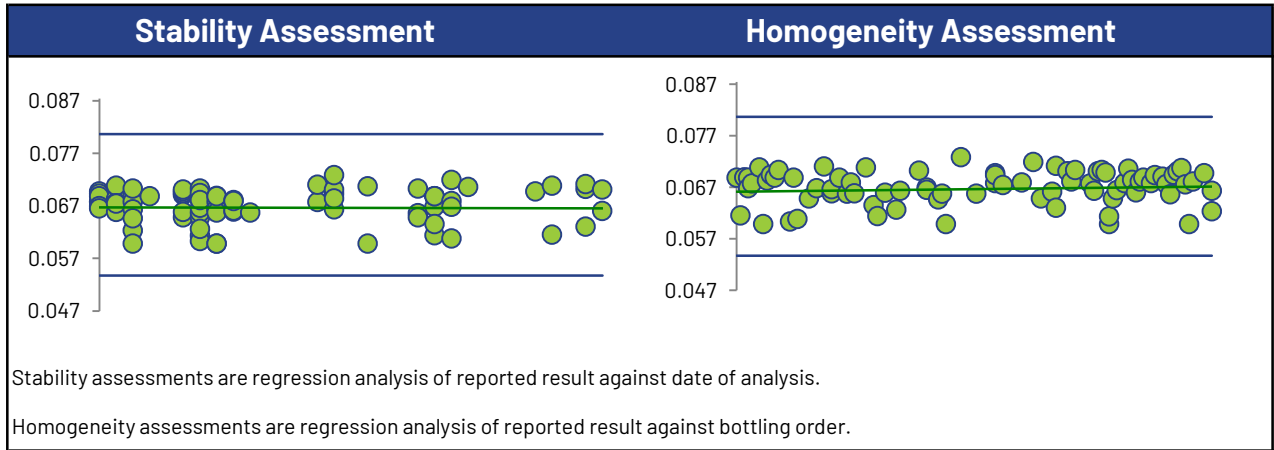


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Tin



Tin



Titanium

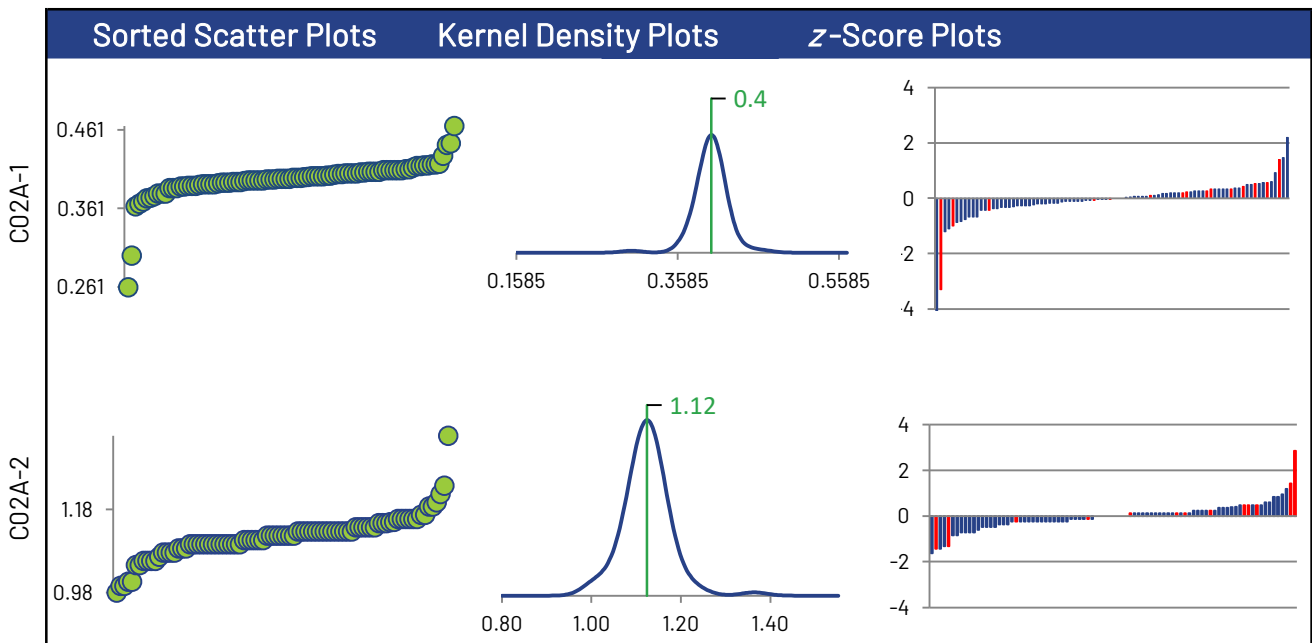
Summary Statistics

Statistic	C02A-1	C02A-2	C02A-3	C02A-4
No. of results used for summary statistics	88	87	71	88
Median mg/L	0.400	1.12	0.00200	0.695
Robust Mean mg/L	0.400	1.12	0.00213	0.693
Uncertainty of the Assigned Value mg/L	0.00165	0.00515	0.0000516	0.00326
Robust Standard Deviation mg/L	0.0124	0.0384	0.000348	0.0245
Regression Standard Deviation mg/L	0.0300	0.0838	0.000160	0.0520
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.0300	0.0838	0.000348	0.0520
Flagged Outliers	0	1	1	0
$ z > 3.0$	2	0	10	1
$2 < z < 3$	1	1	3	0
Failure Rate %*	4.5			

Methods Used

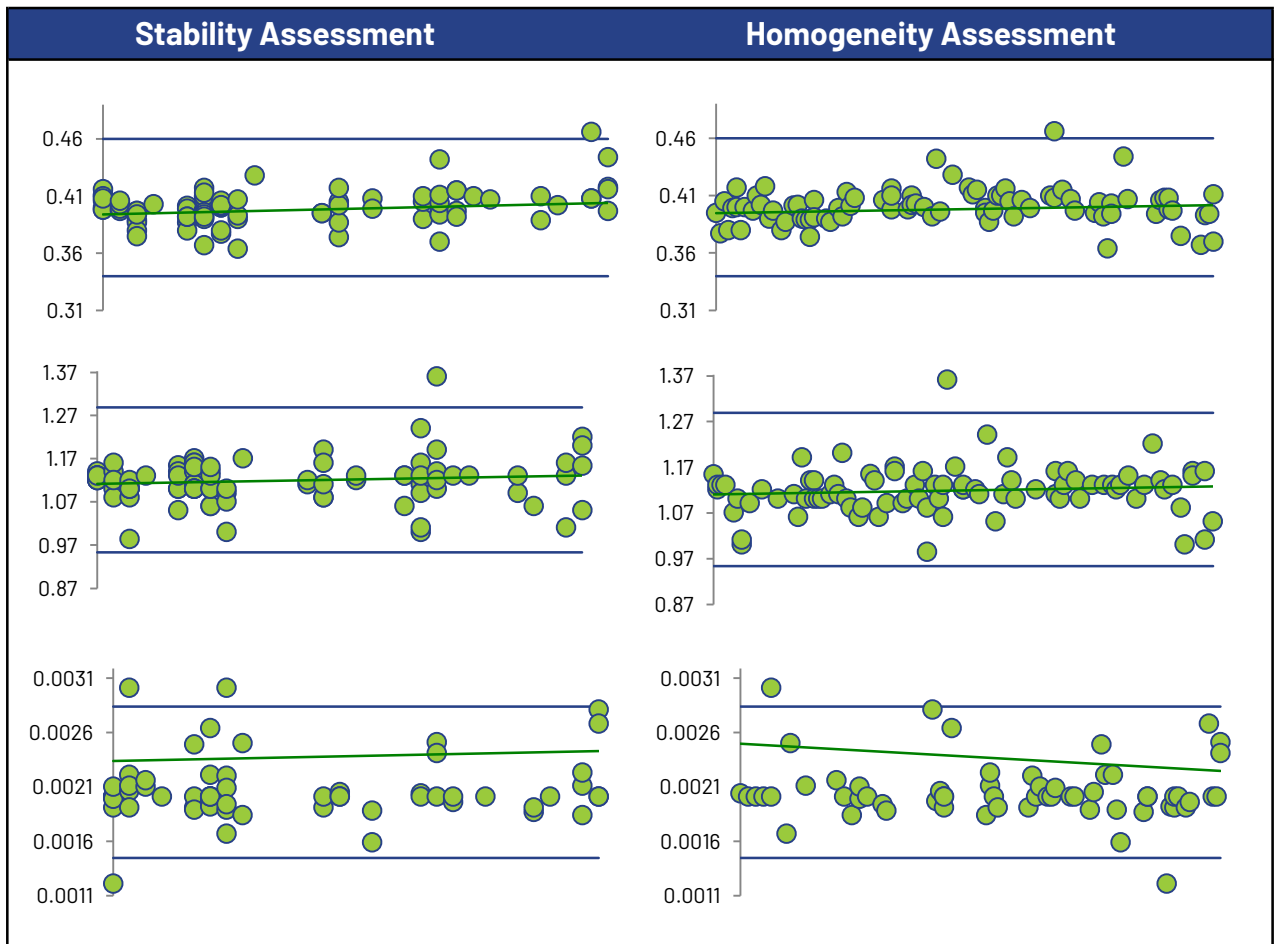
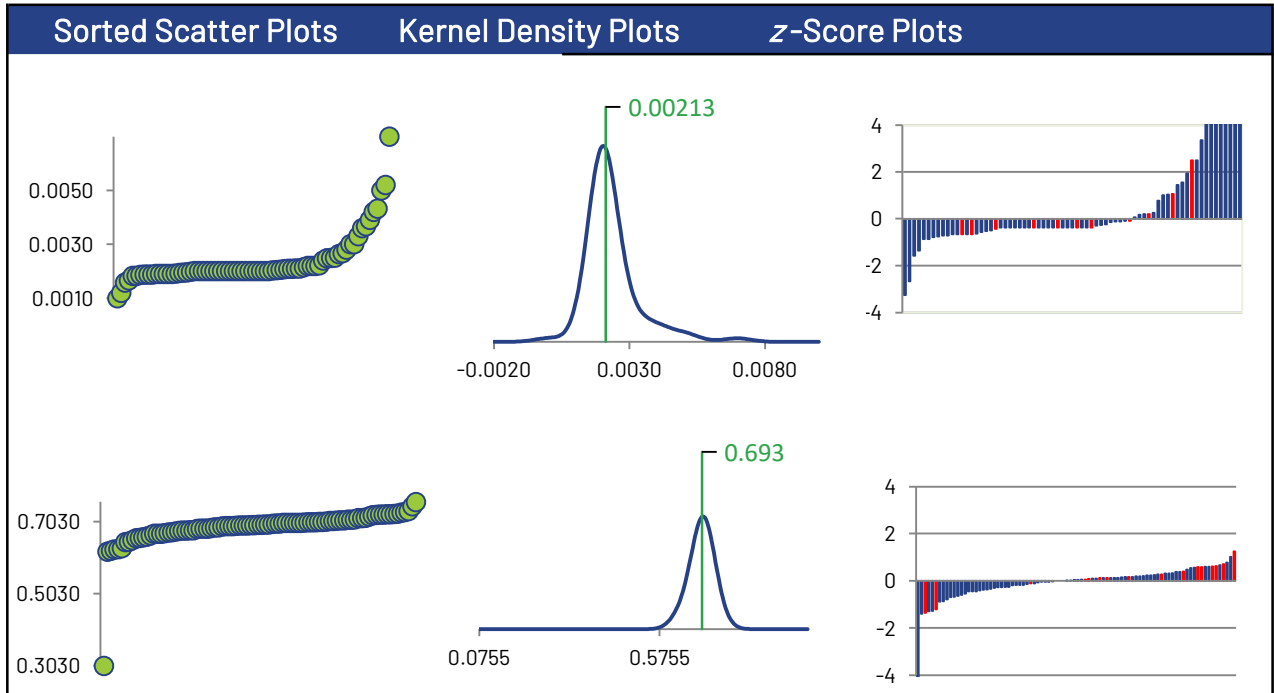
Method	C02A-1	C02A-2	C02A-3	C02A-4
ICP/MS (Blue)	72	71	60	72
ICP/OES (Red)	16	16	11	16

All summary stats, except the failure rate, and the plots below are based on the data excluding any flagged outliers

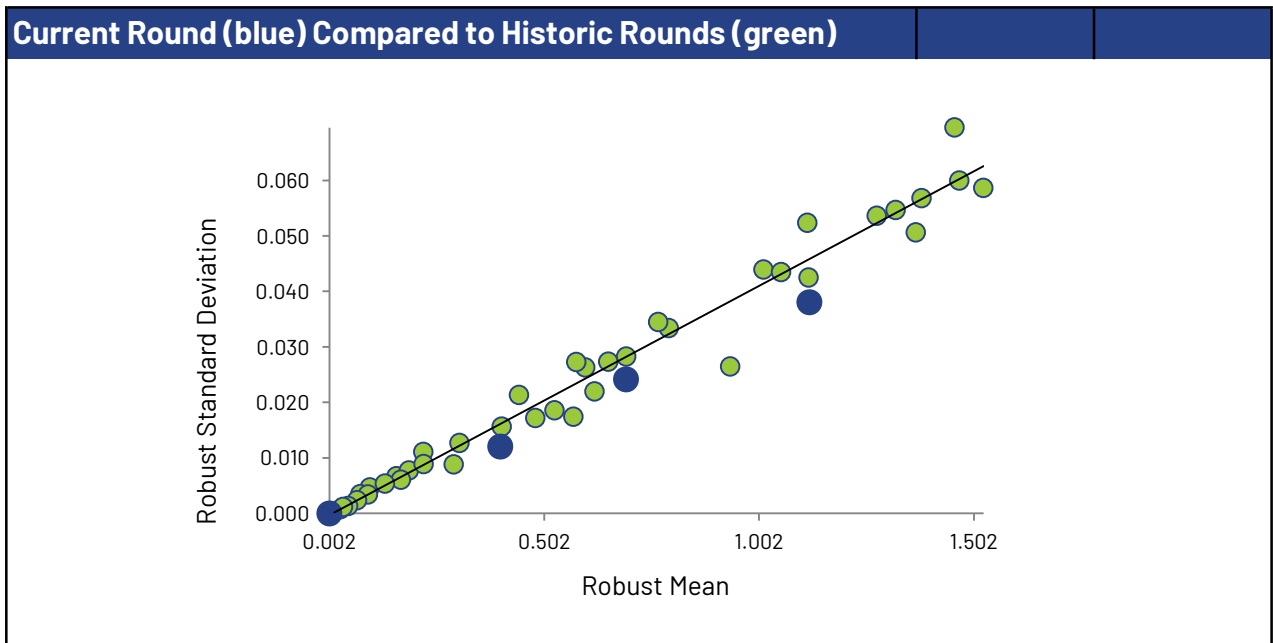
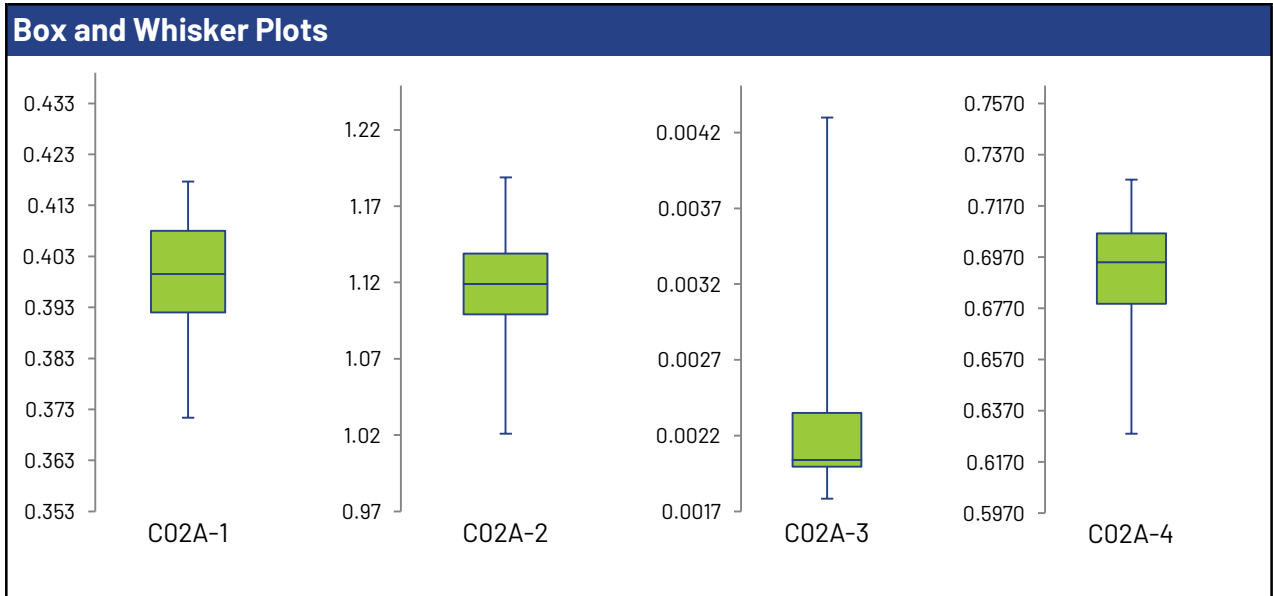
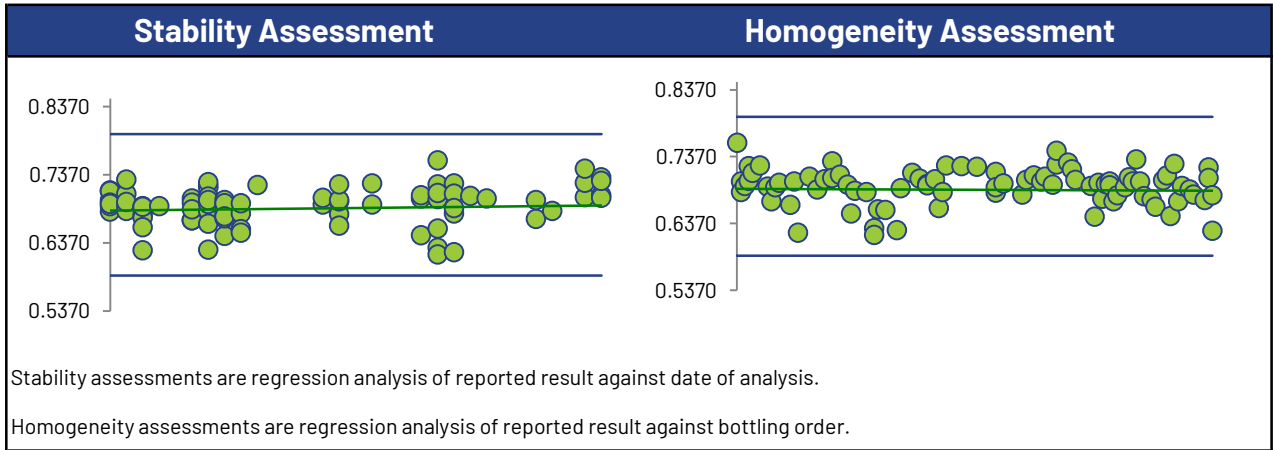


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Titanium



Titanium



Uranium

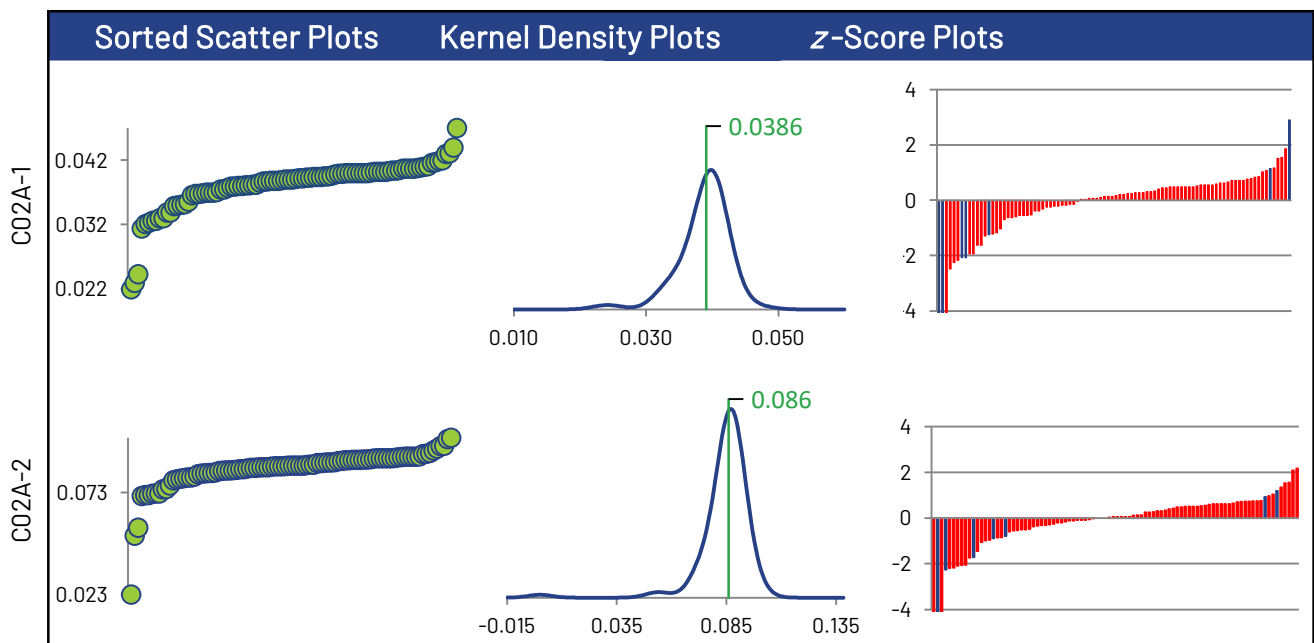
Summary Statistics

Statistic	C02A-1	C02A-2	C02A-3	C02A-4
No. of results used for summary statistics	92	92	89	92
Median mg/L	0.0391	0.0863	0.00852	0.0730
Robust Mean mg/L	0.0386	0.0860	0.00851	0.0725
Uncertainty of the Assigned Value mg/L	0.000327	0.000688	0.0000656	0.000502
Robust Standard Deviation mg/L	0.00251	0.00528	0.000495	0.00385
Regression Standard Deviation mg/L	0.00290	0.00645	0.000638	0.00543
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.00290	0.00645	0.000638	0.00543
Flagged Outliers	0	0	0	0
$ z > 3.0$	3	3	7	4
$2 < z < 3$	6	8	4	4
Failure Rate %*	8.7			

Methods Used

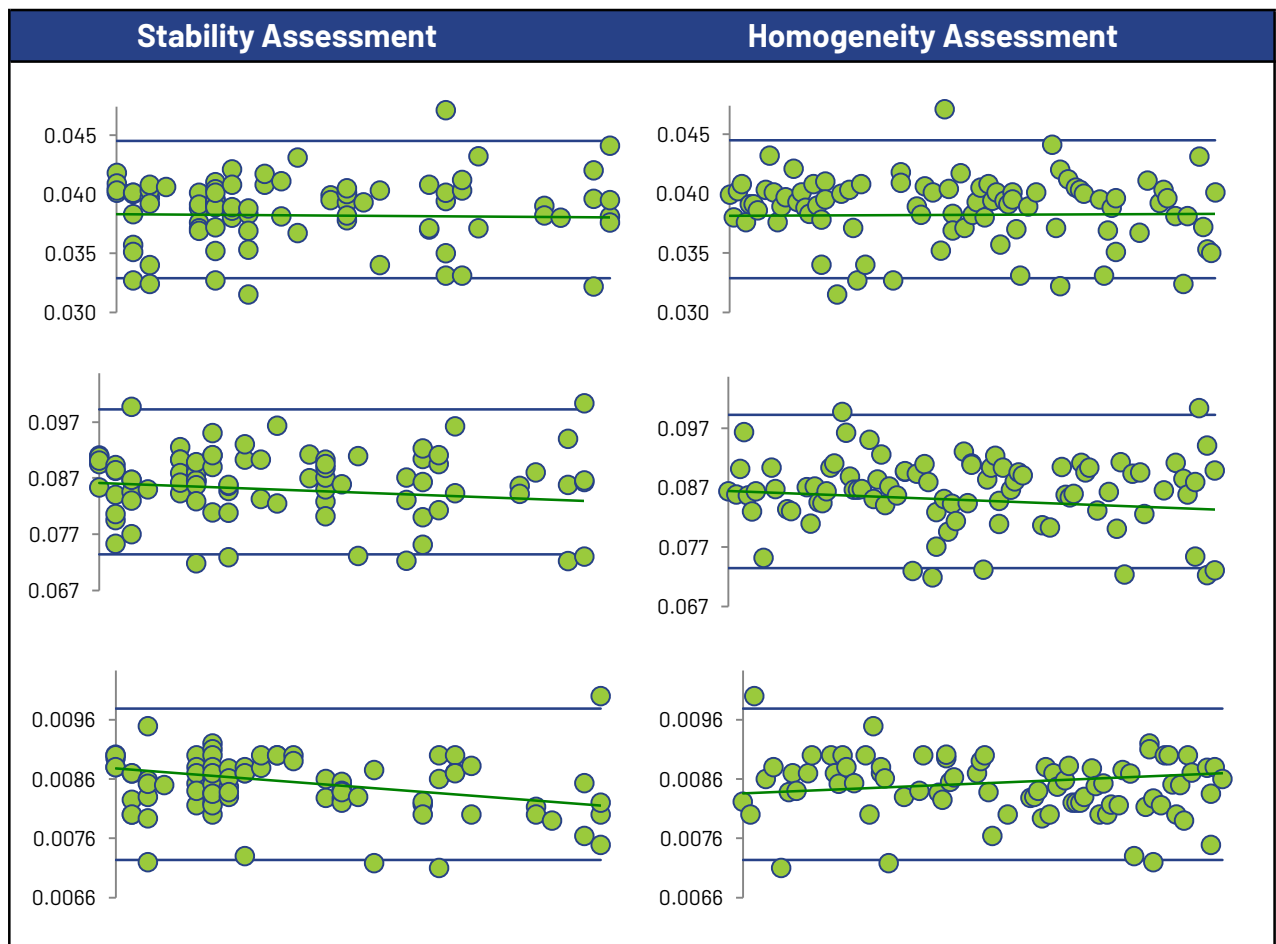
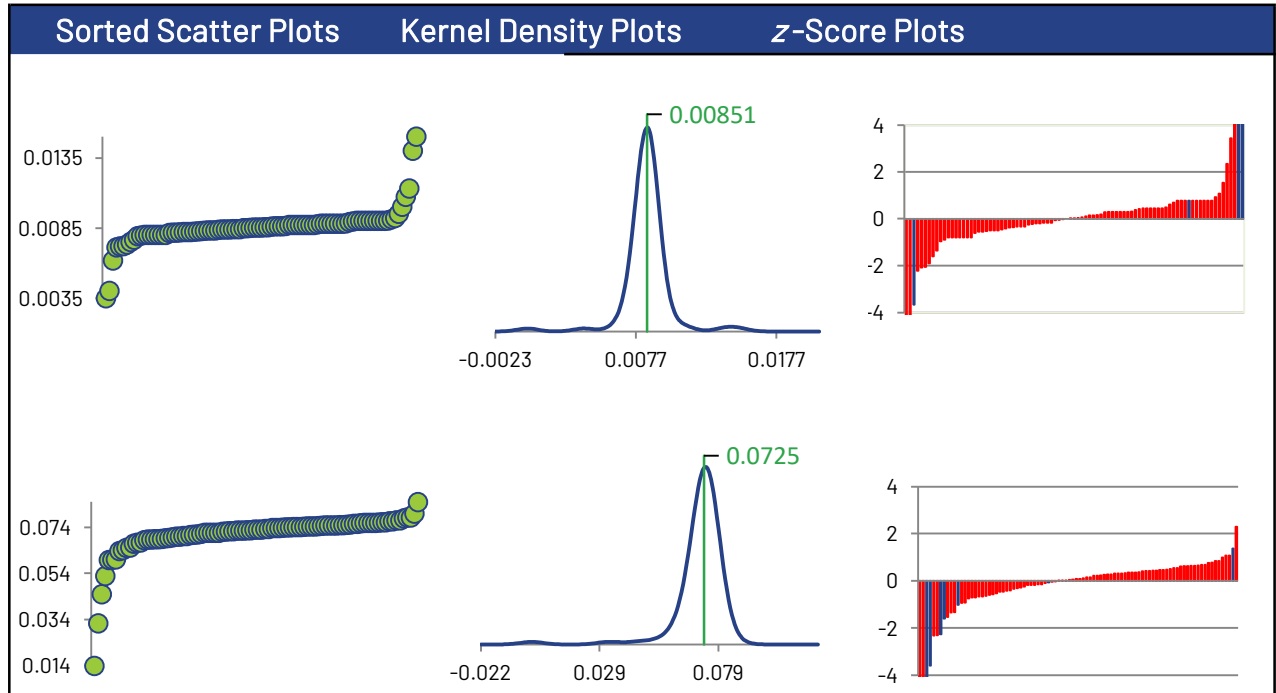
Method	C02A-1	C02A-2	C02A-3	C02A-4
ICP/OES (Blue)	7	7	4	7
ICP/MS (Red)	85	85	85	85

All summary stats, except the failure rate, and the plots below are based on the data excluding any flagged outliers

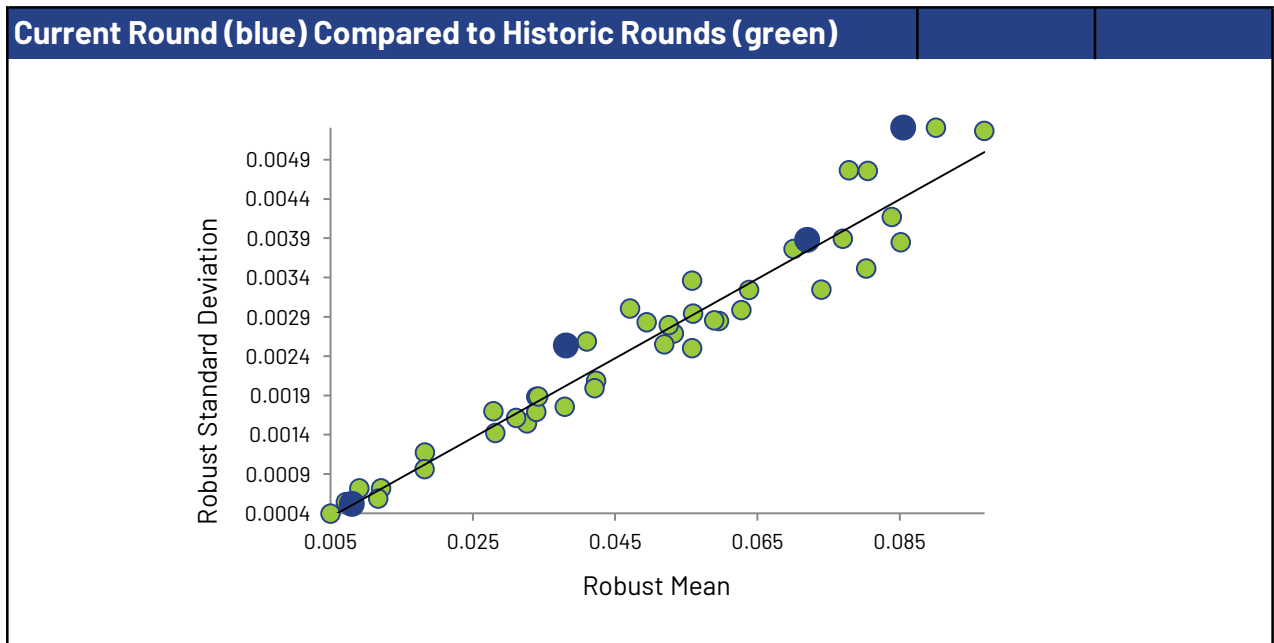
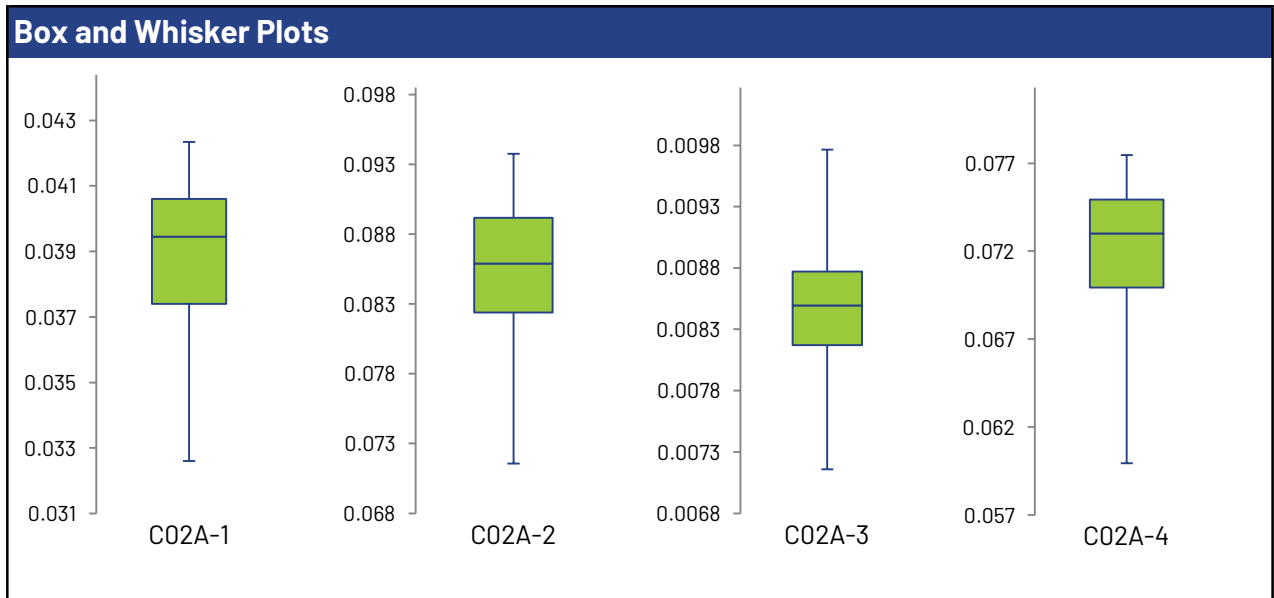
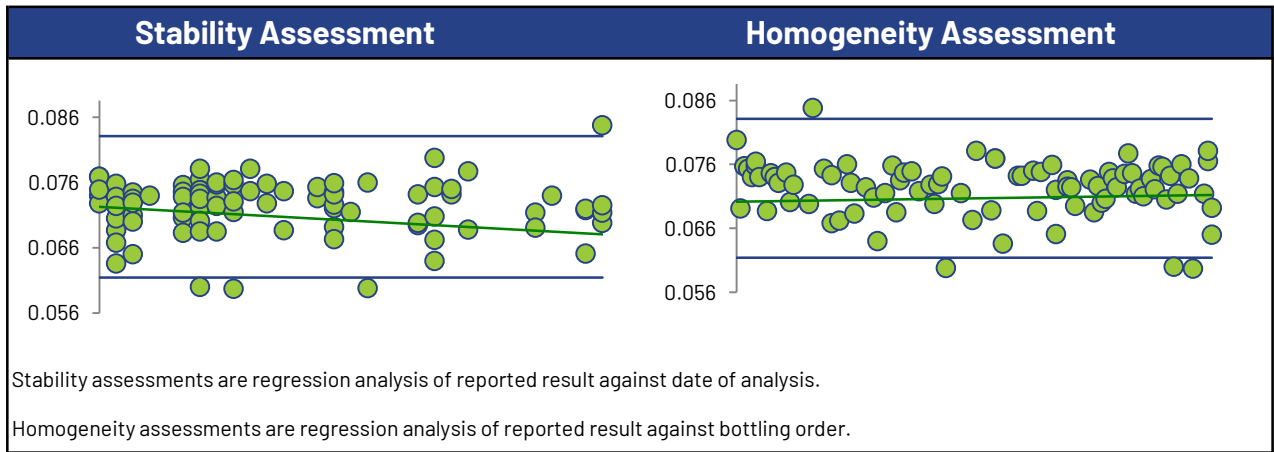


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Uranium



Uranium



Vanadium

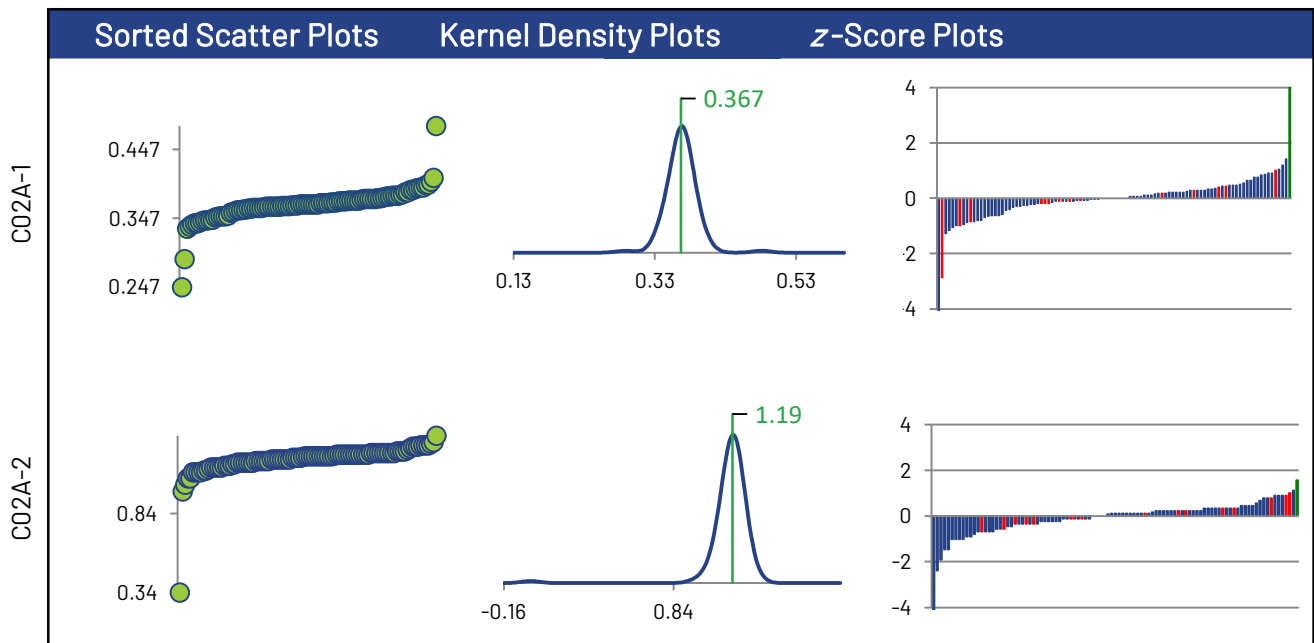
Summary Statistics

Statistic	C02A-1	C02A-2	C02A-3	C02A-4
No. of results used for summary statistics	100	99	99	100
Median mg/L	0.367	1.20	0.0455	0.595
Robust Mean mg/L	0.367	1.19	0.0455	0.592
Uncertainty of the Assigned Value mg/L	0.00190	0.00618	0.000241	0.00311
Robust Standard Deviation mg/L	0.0152	0.0492	0.00192	0.0249
Regression Standard Deviation mg/L	0.0275	0.0891	0.00341	0.0444
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.0275	0.0891	0.00341	0.0444
Flagged Outliers	0	1	1	0
$ z > 3.0$	2	1	1	1
$2 < z < 3$	1	1	2	1
Failure Rate %*	4.0			

Methods Used

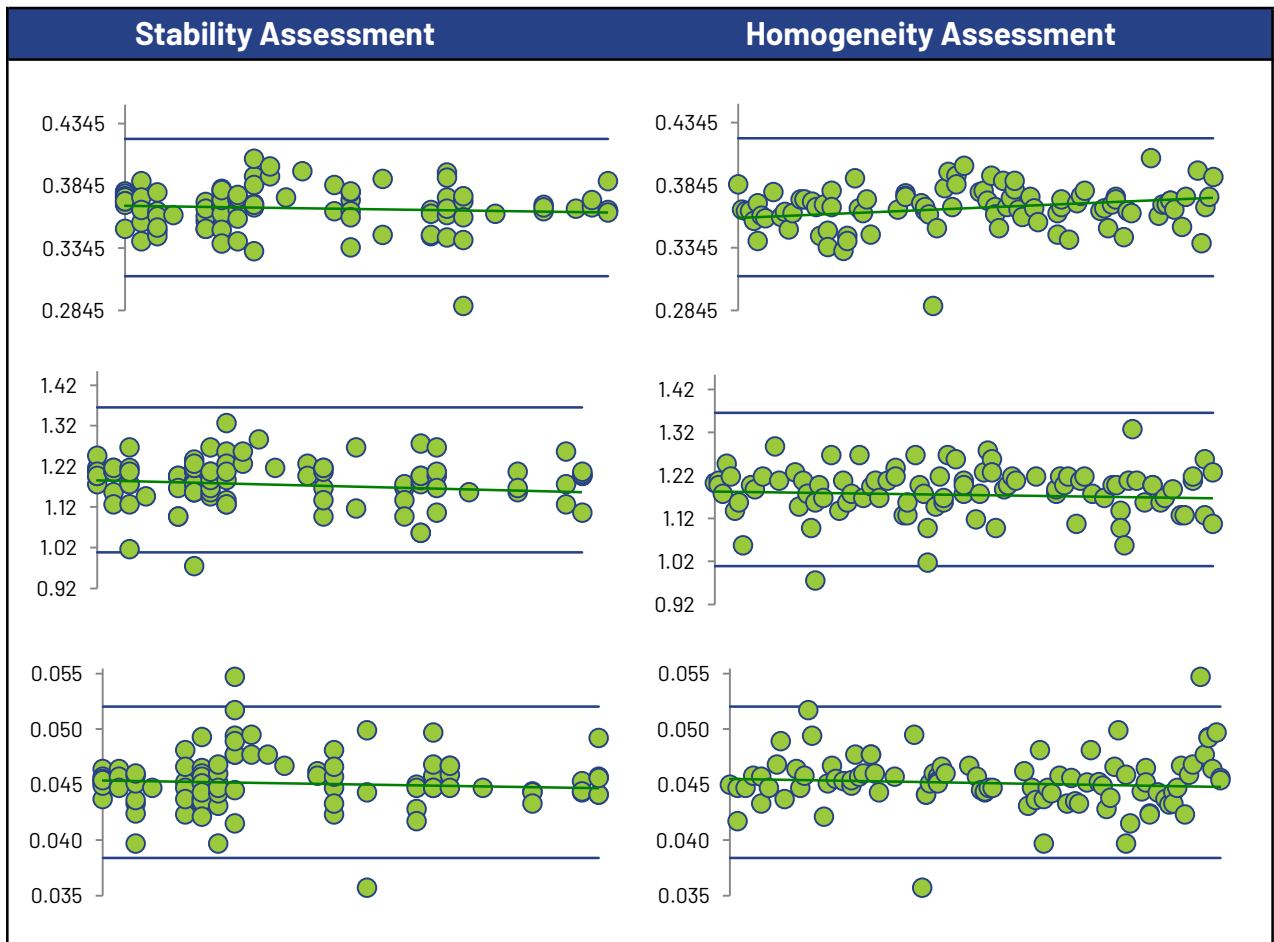
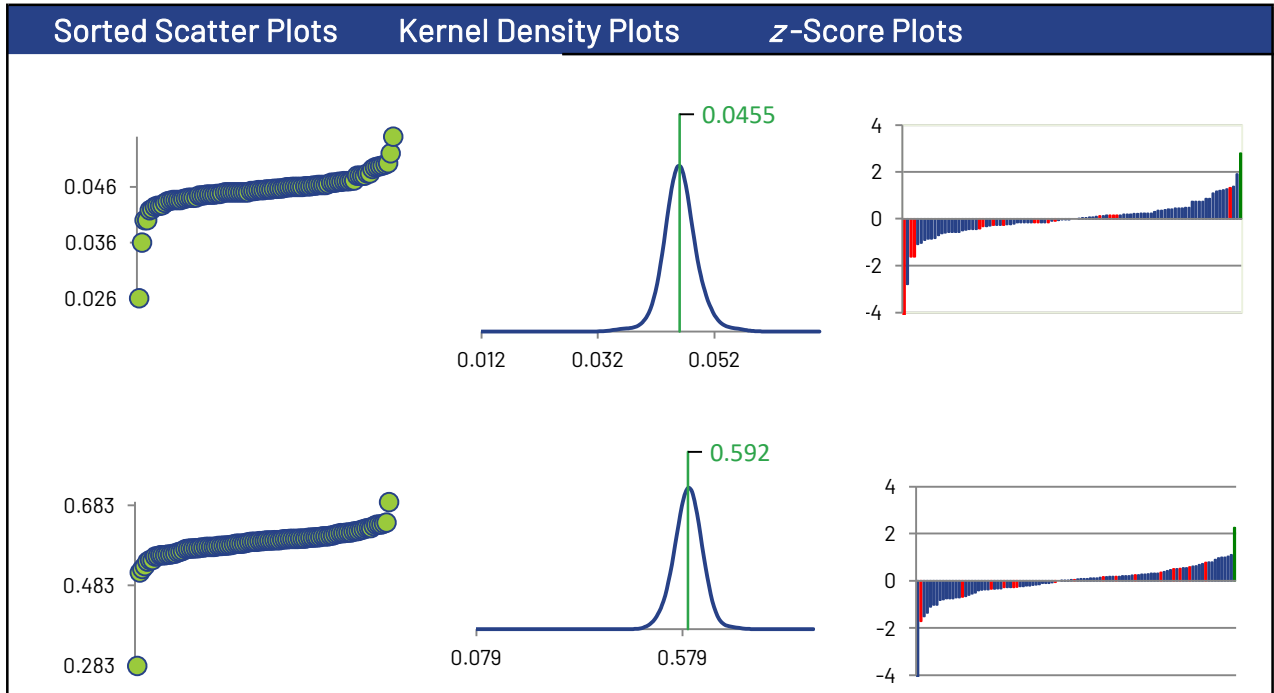
Method	C02A-1	C02A-2	C02A-3	C02A-4
ICP/MS (Blue)	83	82	82	83
ICP/OES (Red)	16	16	16	16
AA GRAPHITE (Green)	1	1	1	1

All summary stats, except the failure rate, and the plots below are based on the data excluding any flagged outliers

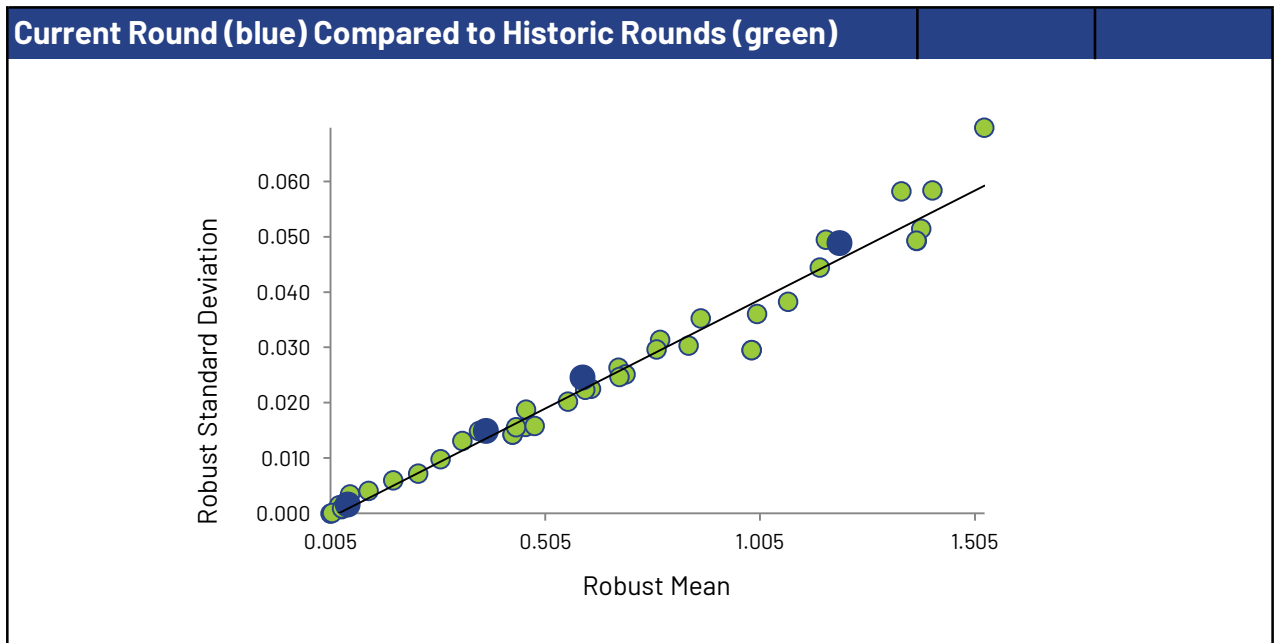
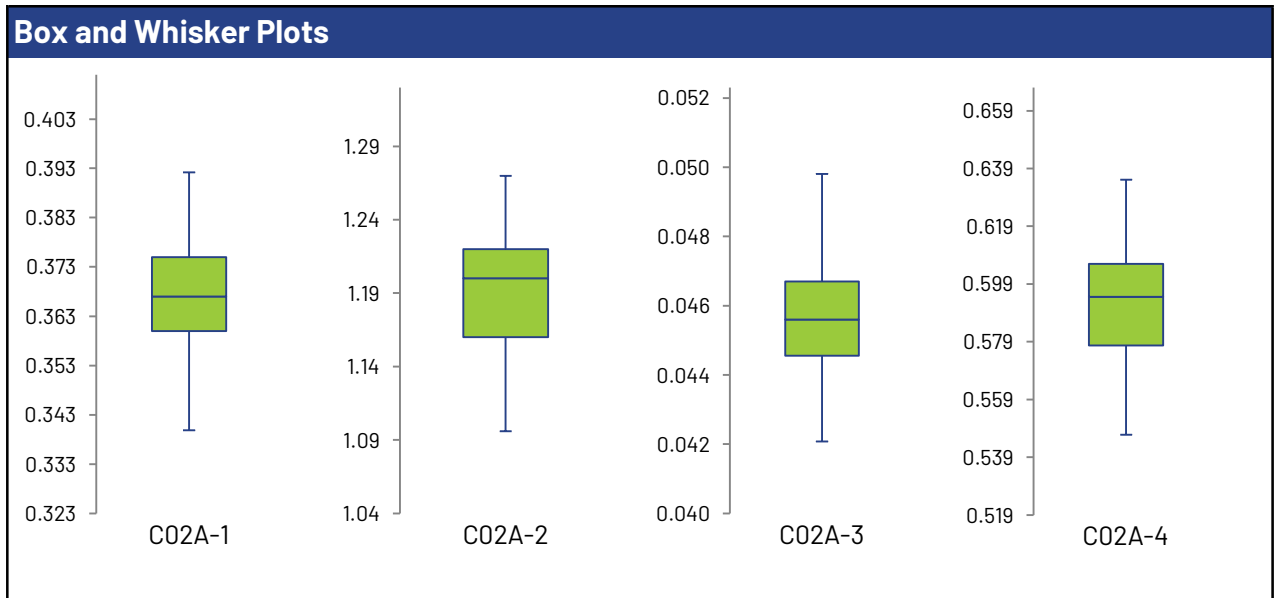
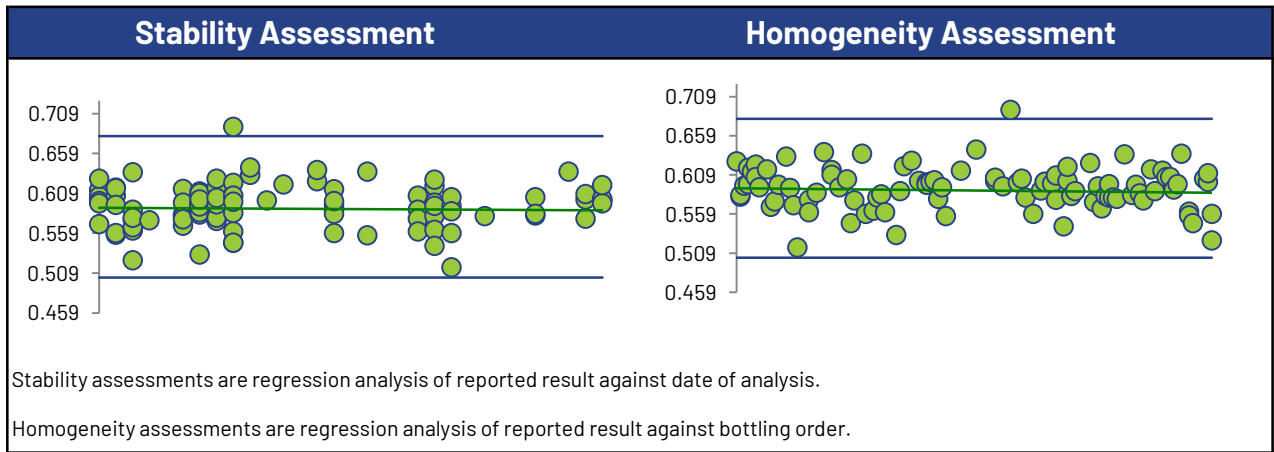


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Vanadium



Vanadium



Zinc

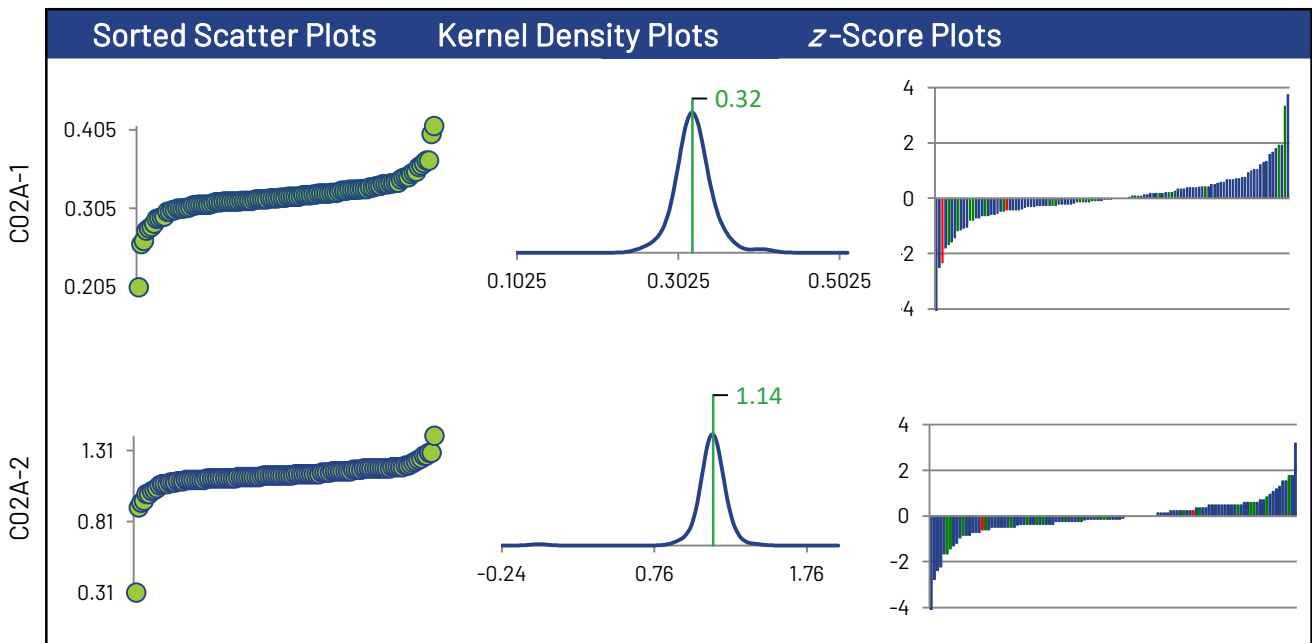
Summary Statistics

Statistic	C02A-1	C02A-2	C02A-3	C02A-4
No. of results used for summary statistics	116	115	111	116
Median mg/L	0.320	1.13	0.0173	0.901
Robust Mean mg/L	0.320	1.14	0.0175	0.901
Uncertainty of the Assigned Value mg/L	0.00180	0.00569	0.000192	0.00467
Robust Standard Deviation mg/L	0.0155	0.0488	0.00162	0.0402
Regression Standard Deviation mg/L	0.0240	0.0852	0.00131	0.0675
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.0240	0.0852	0.00162	0.0675
Flagged Outliers	0	1	1	0
$ z > 3.0$	3	2	7	4
$2 < z < 3$	2	3	5	1
Failure Rate %*	6.9			

Methods Used

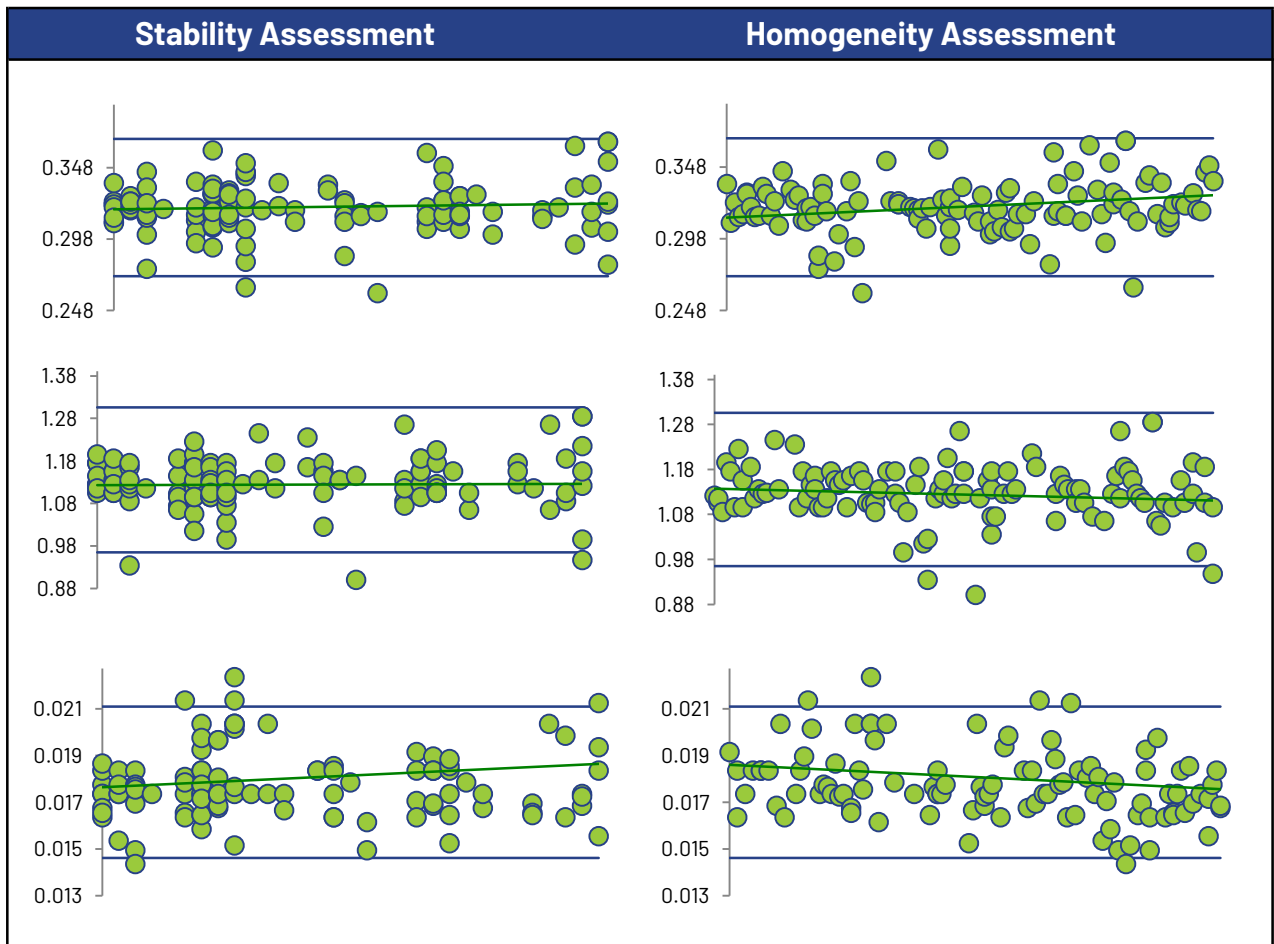
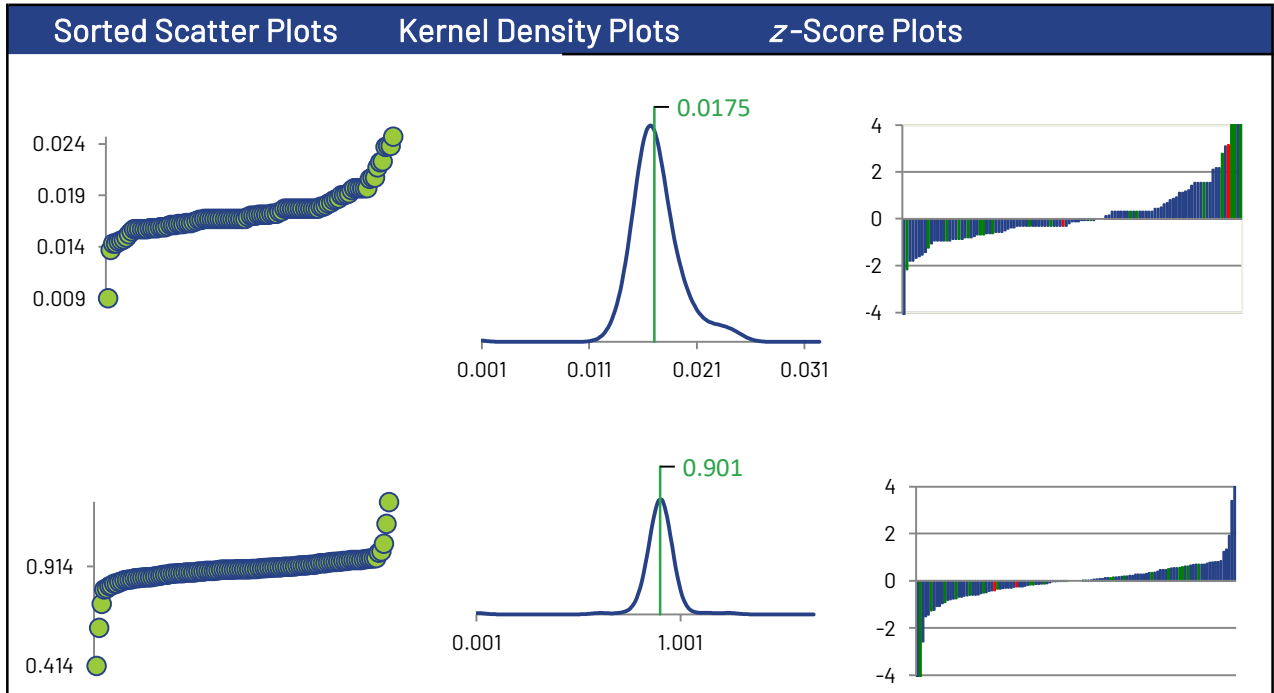
Method	C02A-1	C02A-2	C02A-3	C02A-4
ICP/MS (Blue)	92	91	91	92
AA FLAME (Red)	2	2	2	2
ICP/OES (Green)	22	22	18	22

All summary stats, except the failure rate, and the plots below are based on the data excluding any flagged outliers



* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Zinc



Zinc

