

Test Group Summary Report

C02C Metals in Water – Total Range

October 2025 PT Round

Issued: November 28, 2025

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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.PTCanada.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

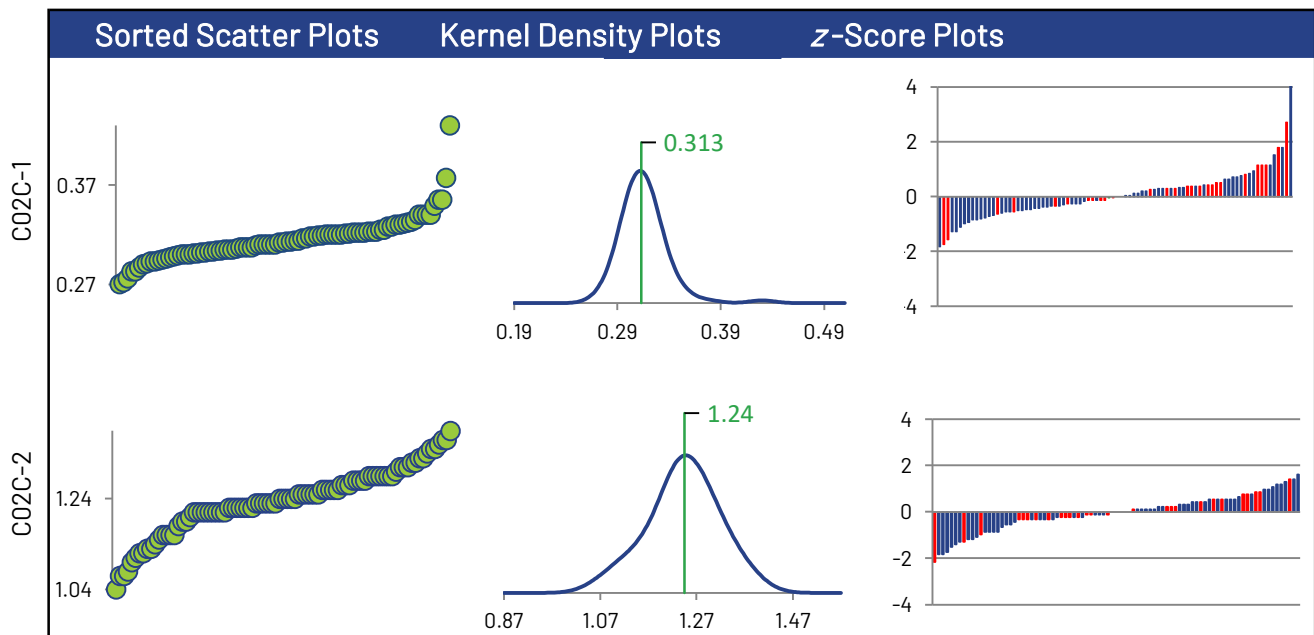
Summary Statistics

Statistic	C02C-1	C02C-2	C02C-3	C02C-4
No. of results used for summary statistics	86	87	87	87
Median mg/L	0.313	1.24	1.05	0.804
Robust Mean mg/L	0.313	1.24	1.05	0.811
Uncertainty of the Assigned Value mg/L	0.00229	0.00943	0.00840	0.00627
Robust Standard Deviation mg/L	0.0170	0.0704	0.0627	0.0468
Regression Standard Deviation mg/L	0.0235	0.0929	0.0785	0.0608
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.0235	0.0929	0.0785	0.0608
Flagged Outliers	2	1	1	1
$ z > 3.0$	1	0	0	1
$2 < z < 3$	1	1	4	1
Failure Rate %*	2.3			

Methods Used

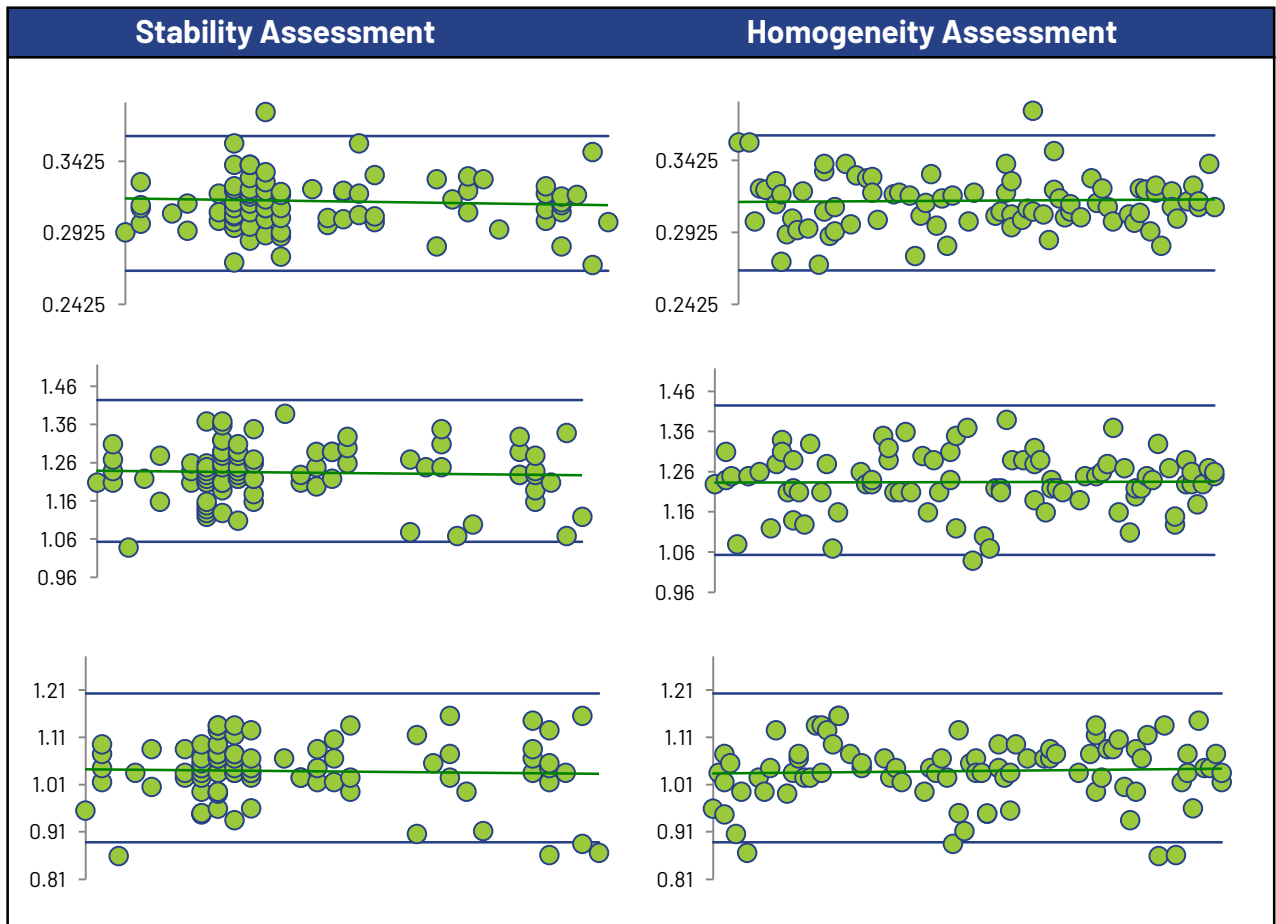
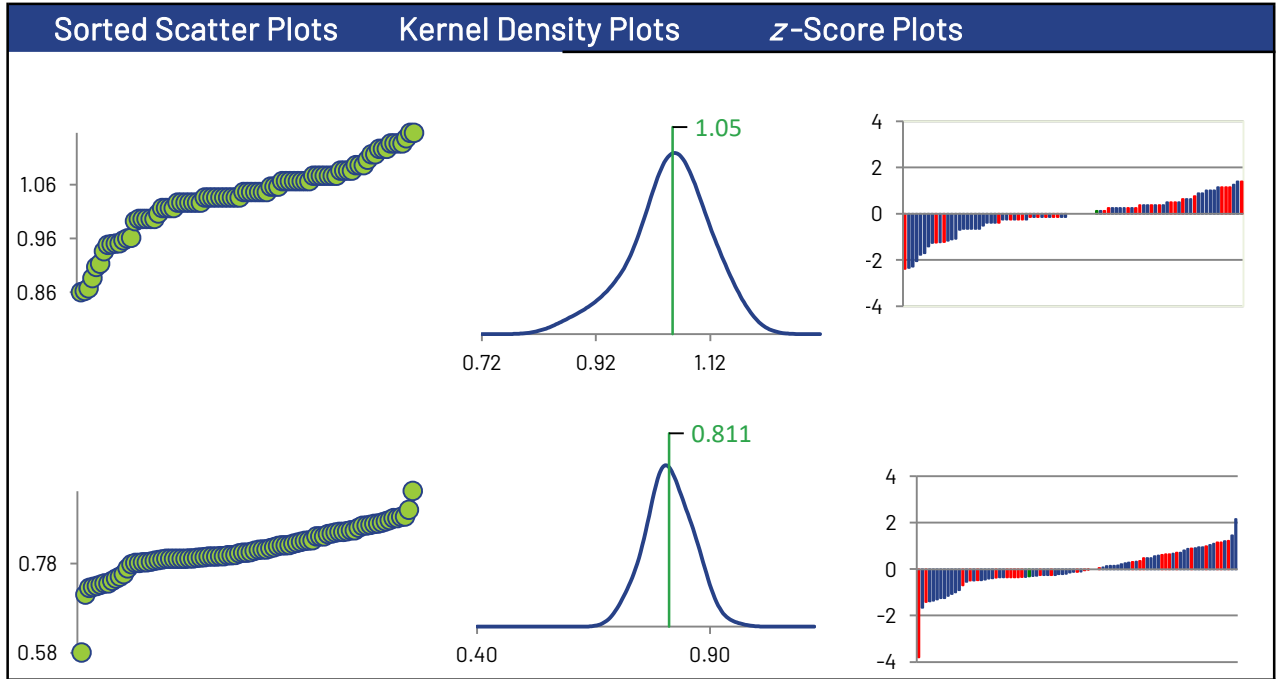
Method	C02C-1	C02C-2	C02C-3	C02C-4
ICP/MS (Blue)	57	57	57	57
ICP/OES (Red)	28	29	29	29
AA FLAME (Green)	1	1	1	1

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

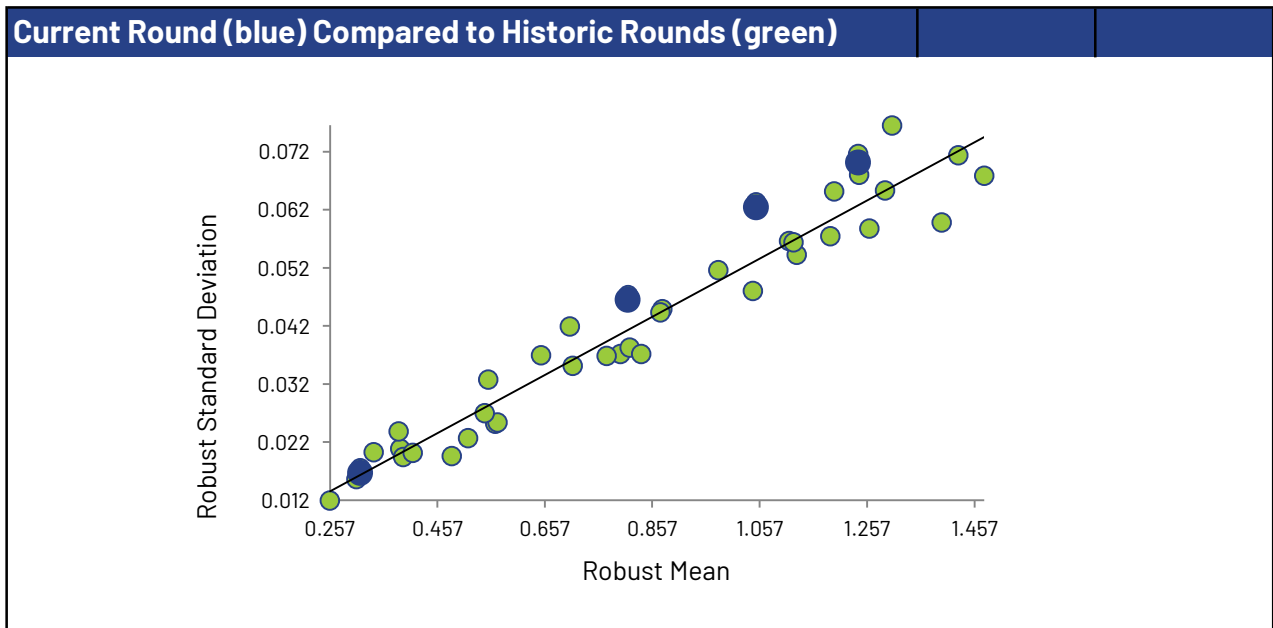
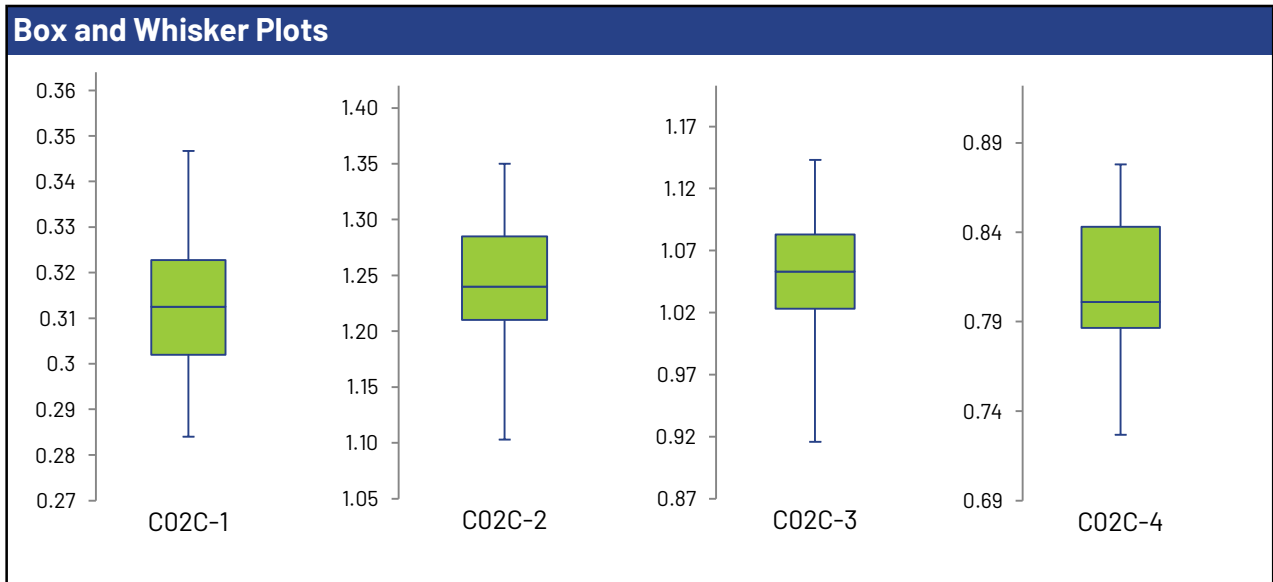
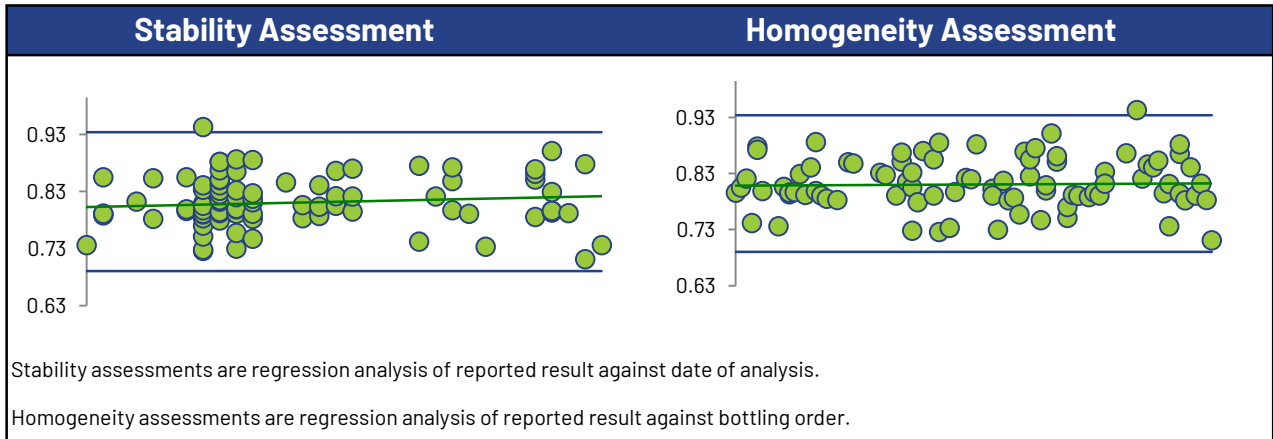


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Aluminum



Aluminum



Antimony

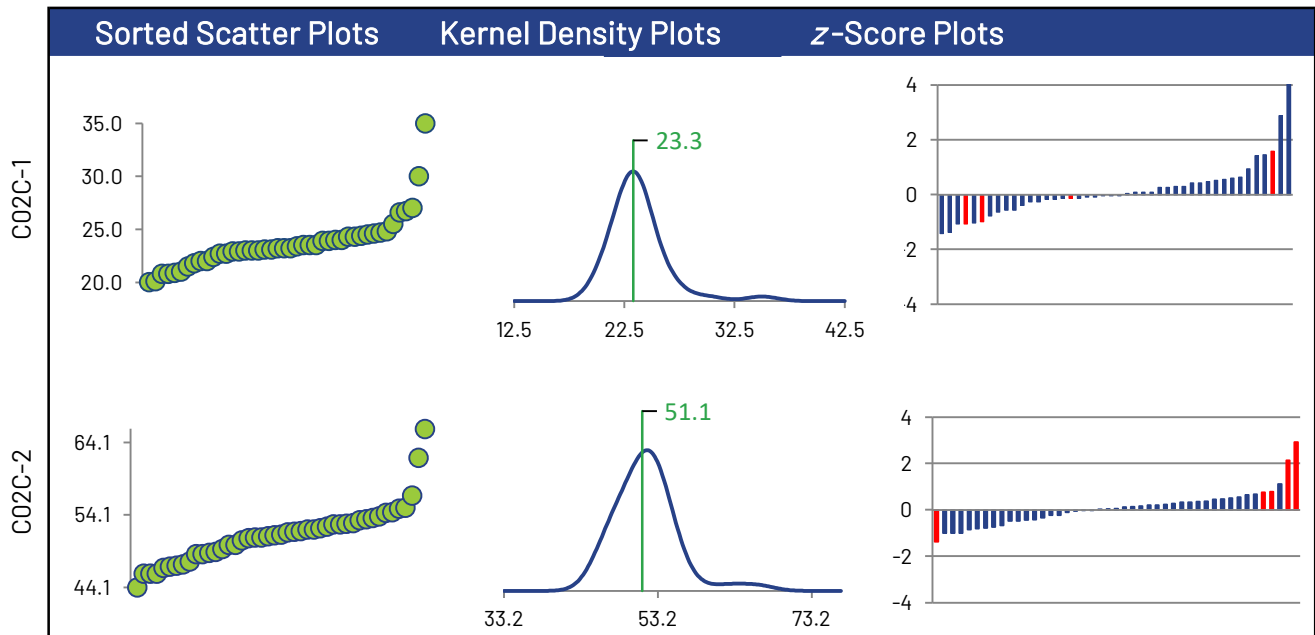
Summary Statistics

Statistic	C02C-1	C02C-2	C02C-3	C02C-4
No. of results used for summary statistics	44	45	45	45
Median mg/L	23.2	51.4	91.1	42.0
Robust Mean mg/L	23.3	51.1	91.1	42.3
Uncertainty of the Assigned Value mg/L	0.324	0.617	1.00	0.518
Robust Standard Deviation mg/L	1.72	3.31	5.38	2.78
Regression Standard Deviation mg/L	2.33	5.11	9.11	4.23
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	2.33	5.11	9.11	4.23
Flagged Outliers	0	0	0	0
z >3.0	1	0	0	0
2< z <3	1	2	0	2
Failure Rate %*	2.2			

Methods Used

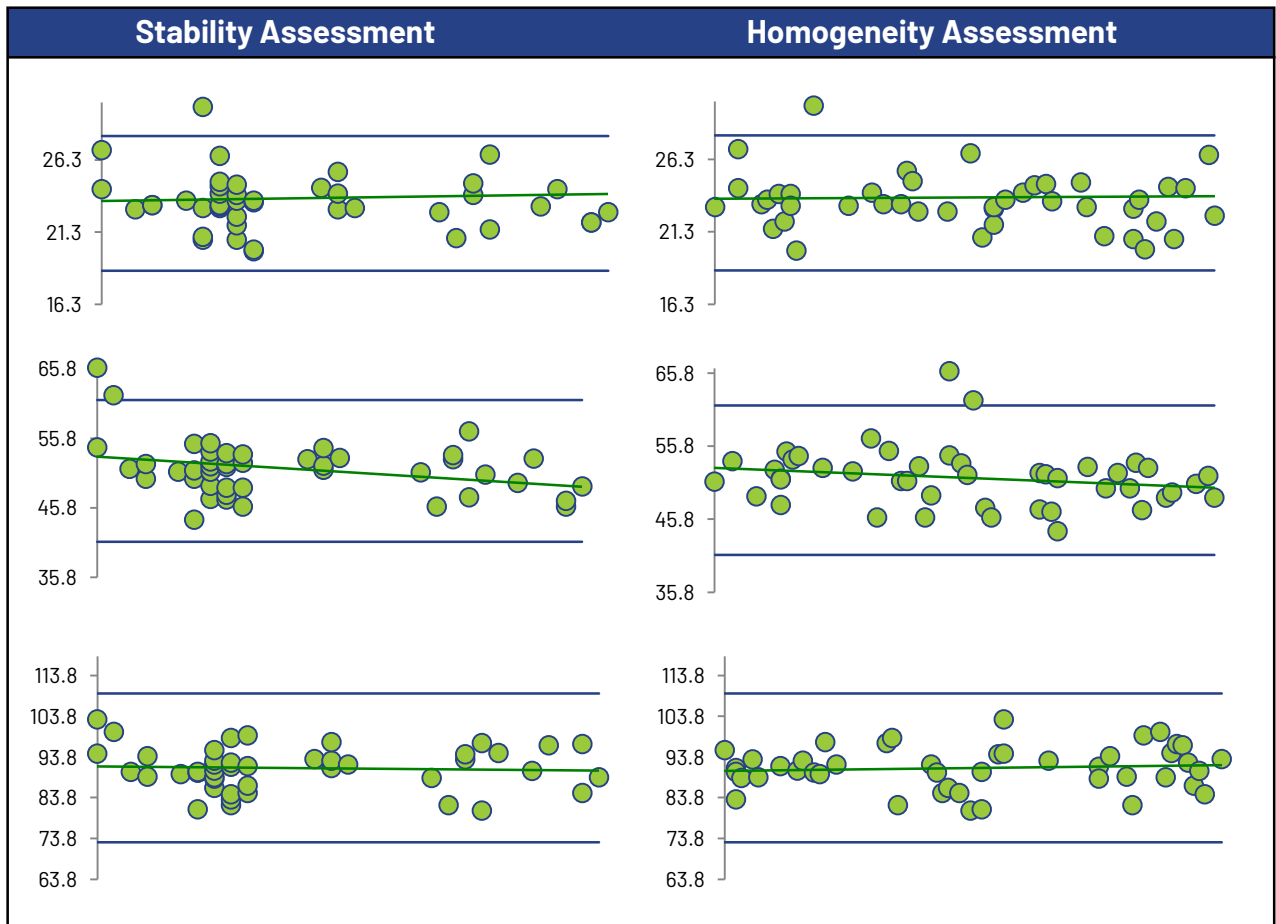
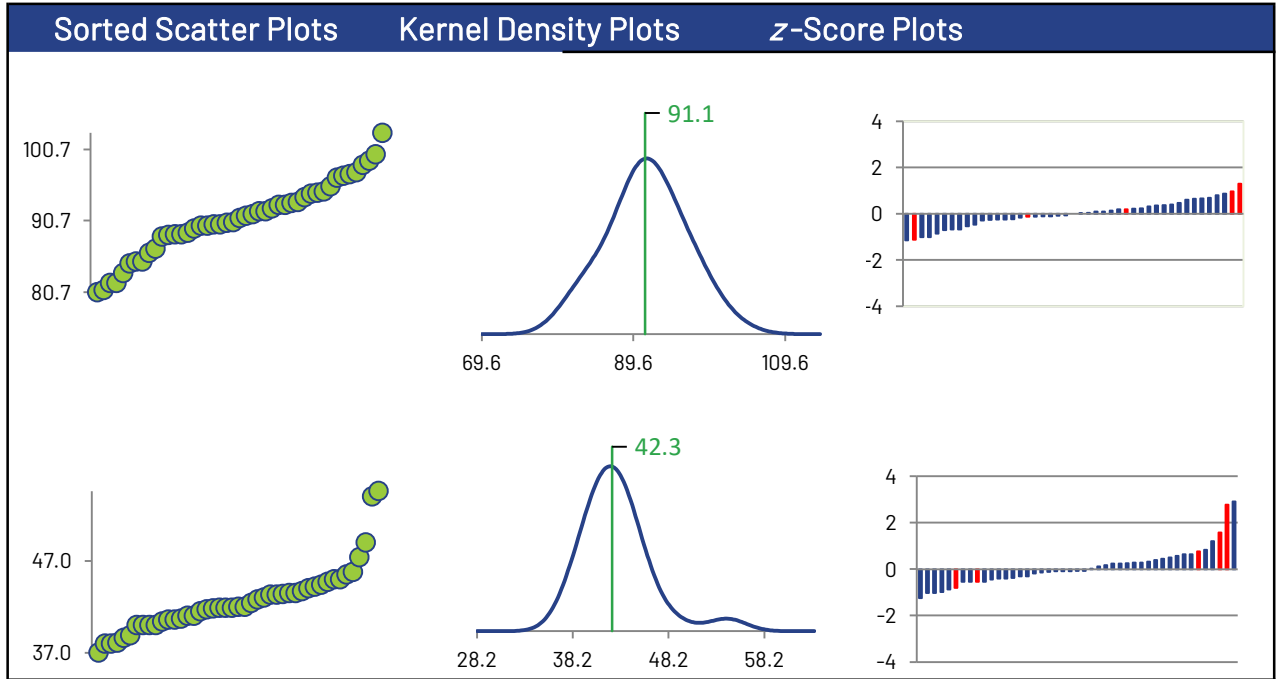
Method	C02C-1	C02C-2	C02C-3	C02C-4
ICP/MS (Blue)	40	40	40	40
ICP/OES (Red)	4	5	5	5

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

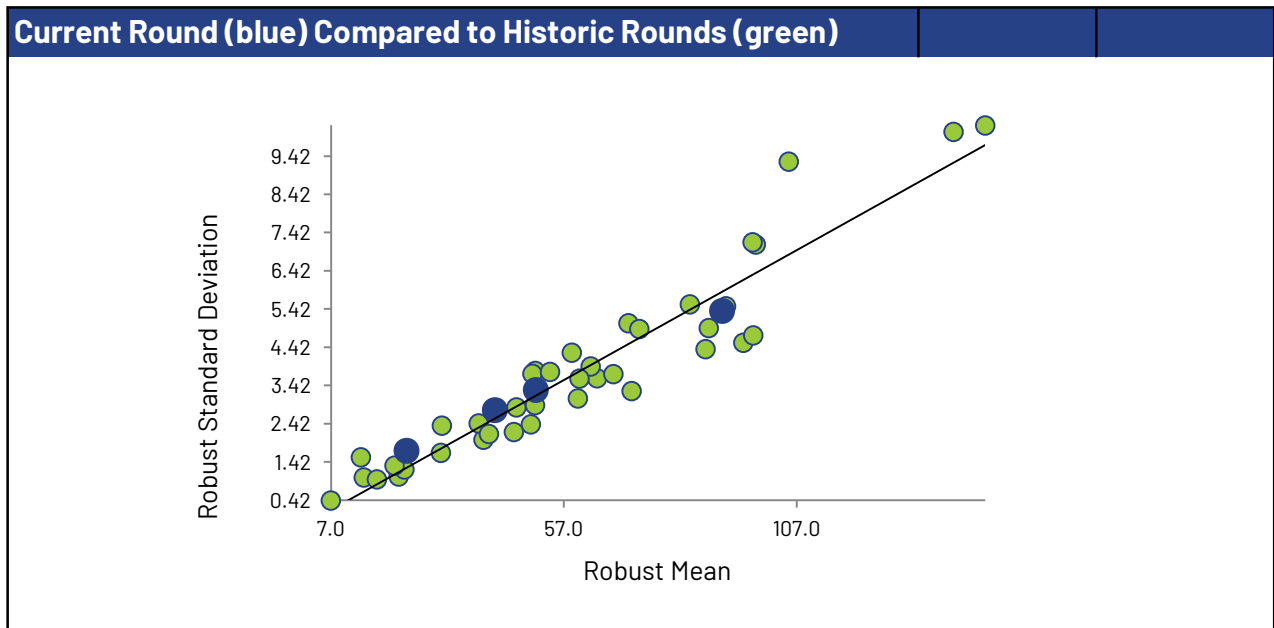
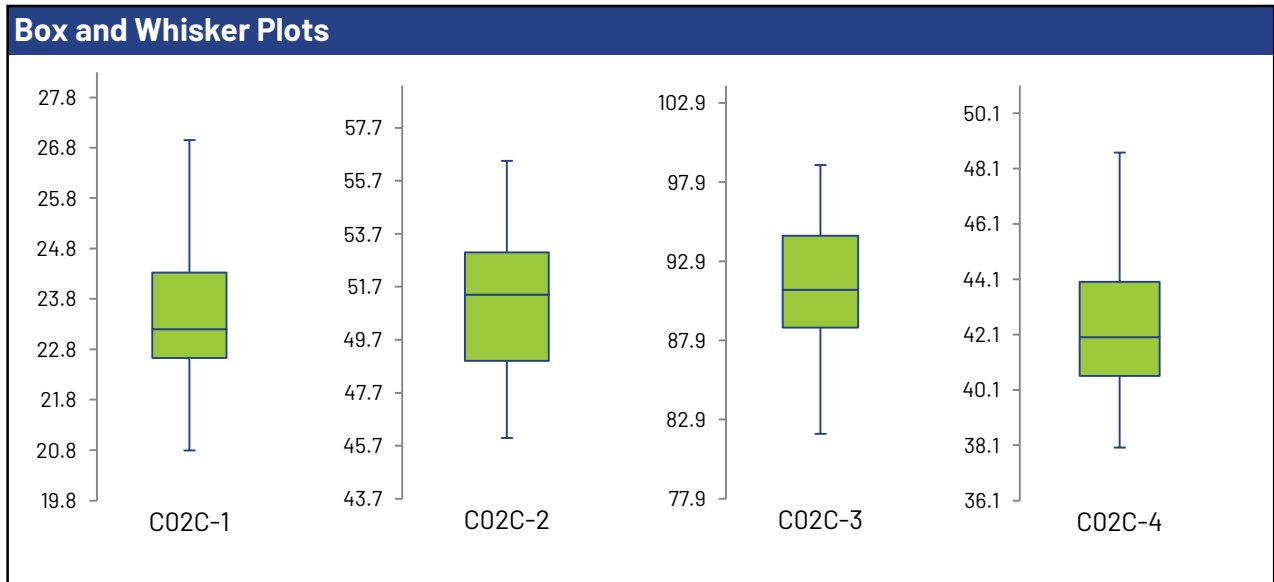
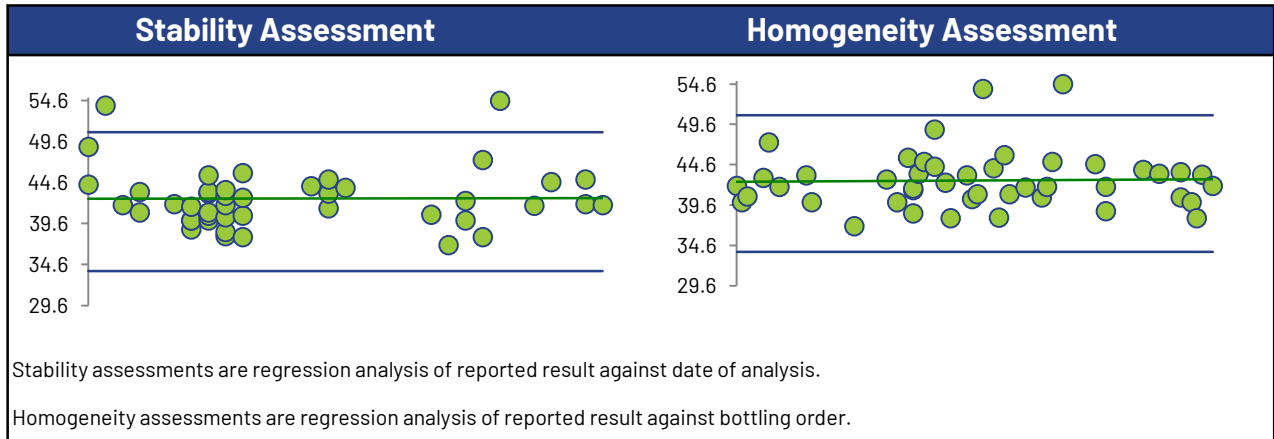


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Antimony



Antimony



Arsenic

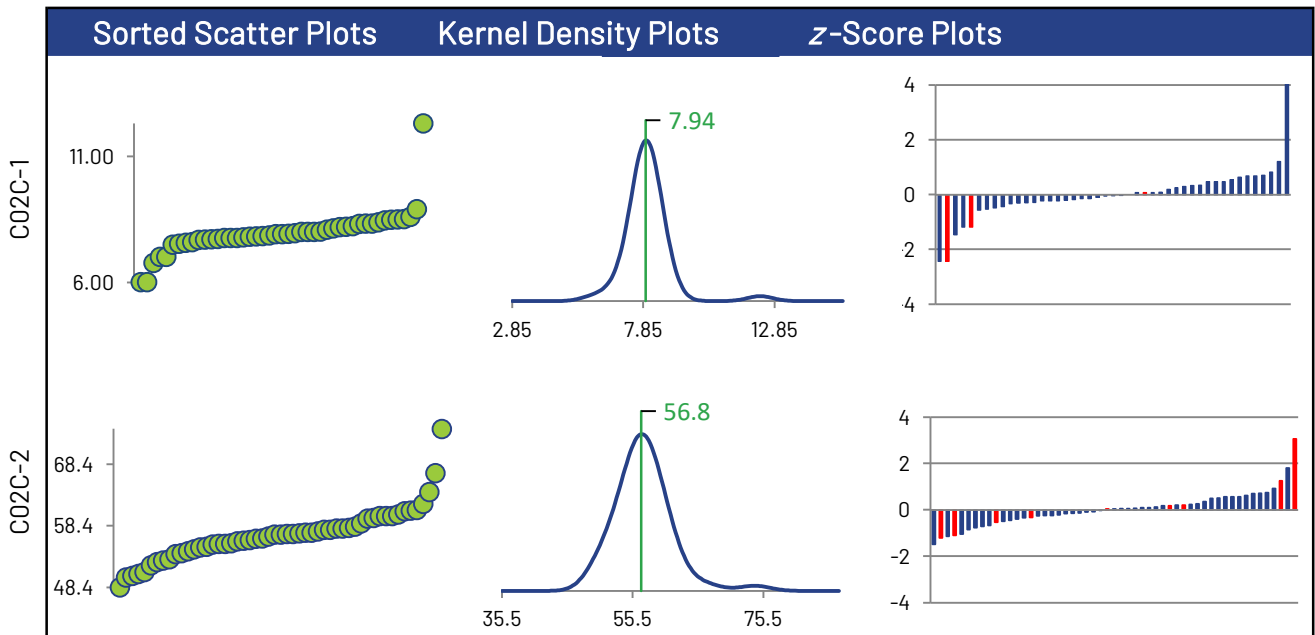
Summary Statistics

Statistic	C02C-1	C02C-2	C02C-3	C02C-4
No. of results used for summary statistics	45	53	53	53
Median mg/L	7.91	57.0	80.2	45.0
Robust Mean mg/L	7.94	56.8	80.4	44.8
Uncertainty of the Assigned Value mg/L	0.0816	0.592	0.766	0.500
Robust Standard Deviation mg/L	0.438	3.45	4.46	2.91
Regression Standard Deviation mg/L	0.794	5.68	8.04	4.48
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.794	5.68	8.04	4.48
Flagged Outliers	1	0	0	0
$ z > 3.0$	1	1	0	1
$2 < z < 3$	2	0	1	0
Failure Rate %*	1.9			

Methods Used

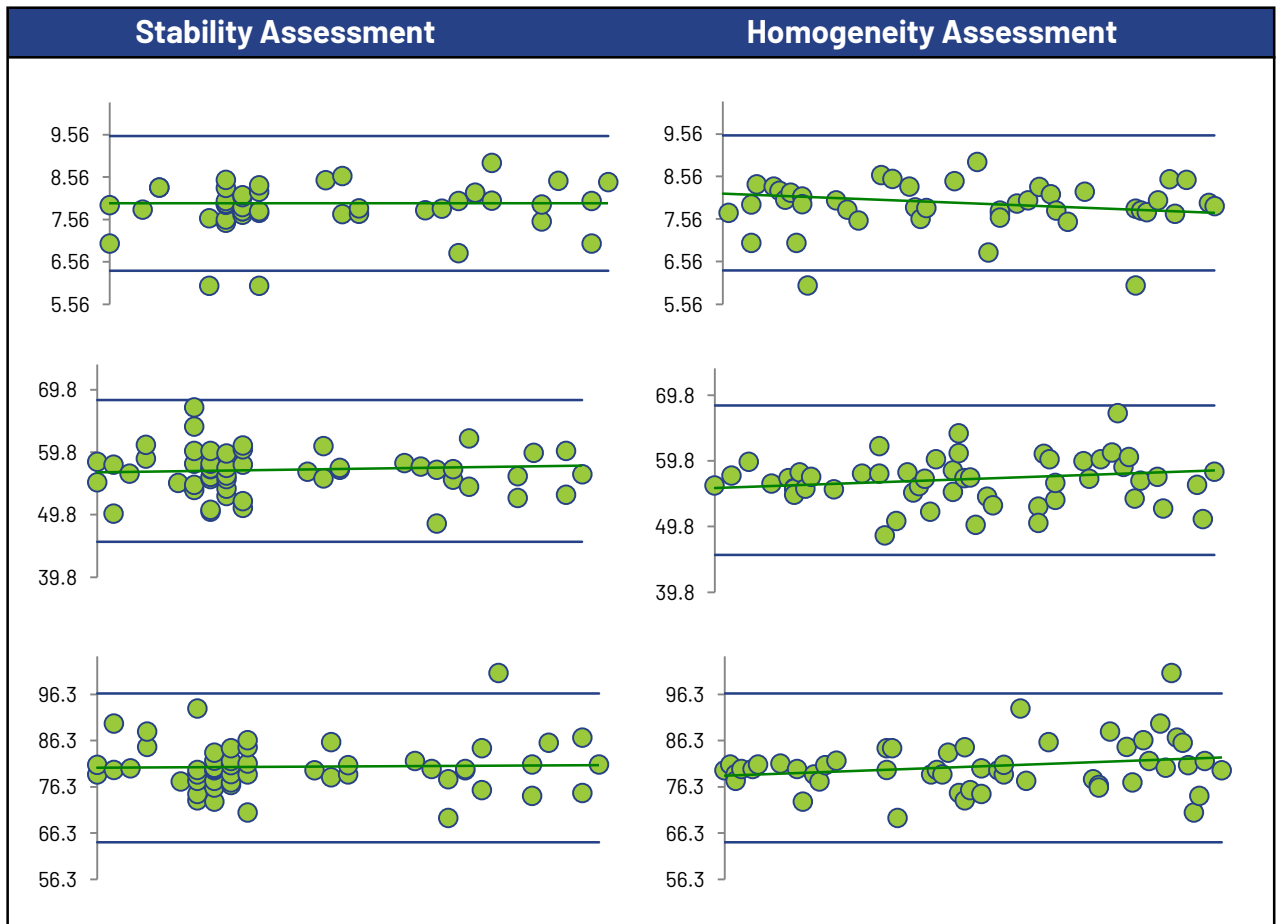
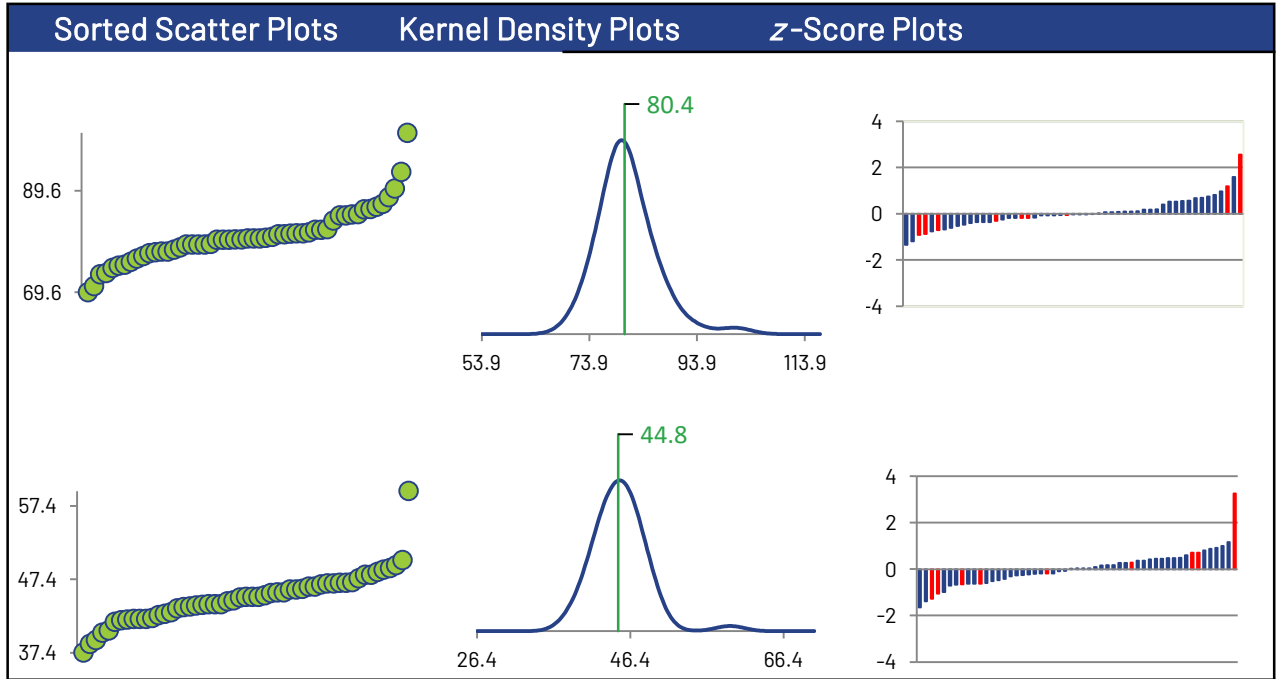
Method	C02C-1	C02C-2	C02C-3	C02C-4
ICP/MS (Blue)	42	44	44	44
ICP/OES (Red)	3	9	9	9

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

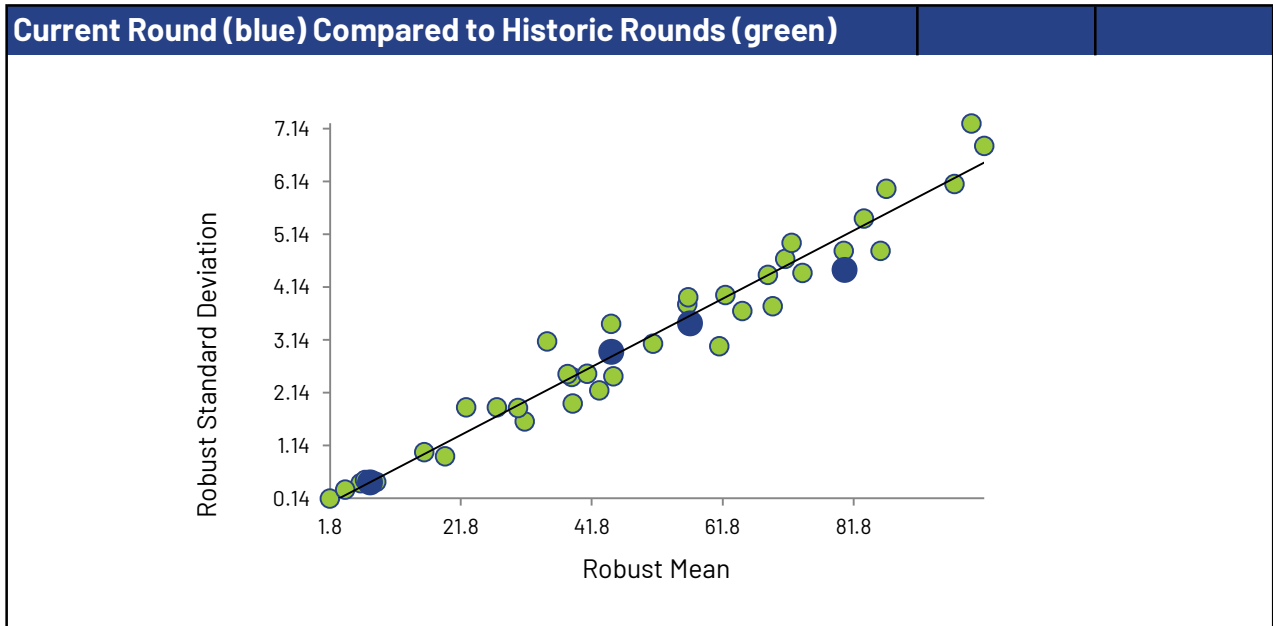
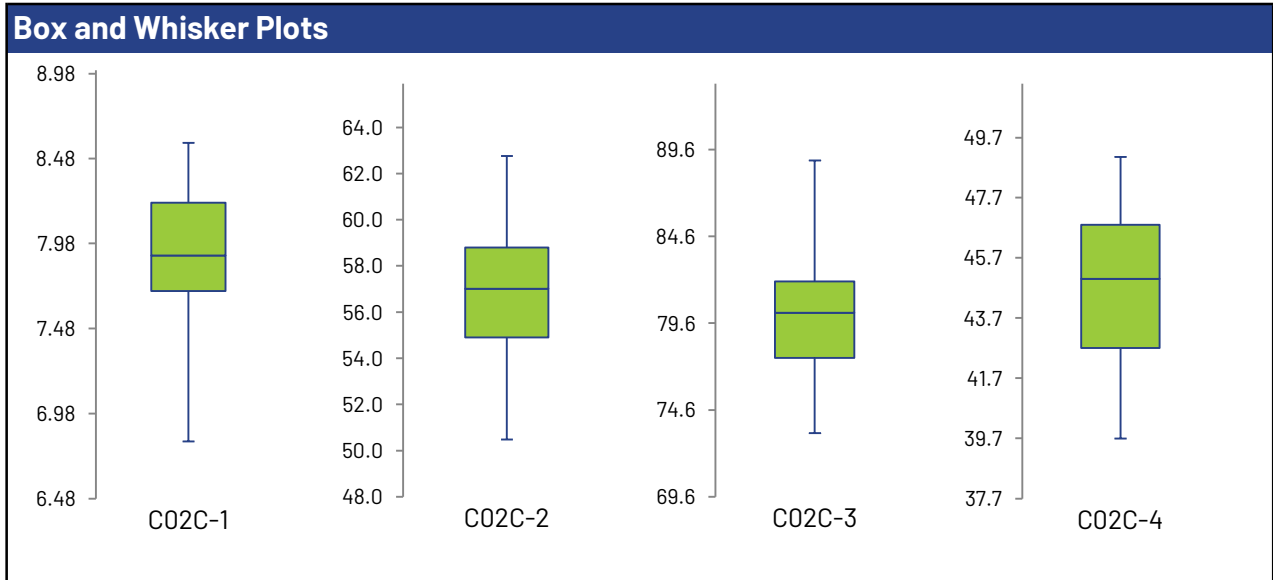
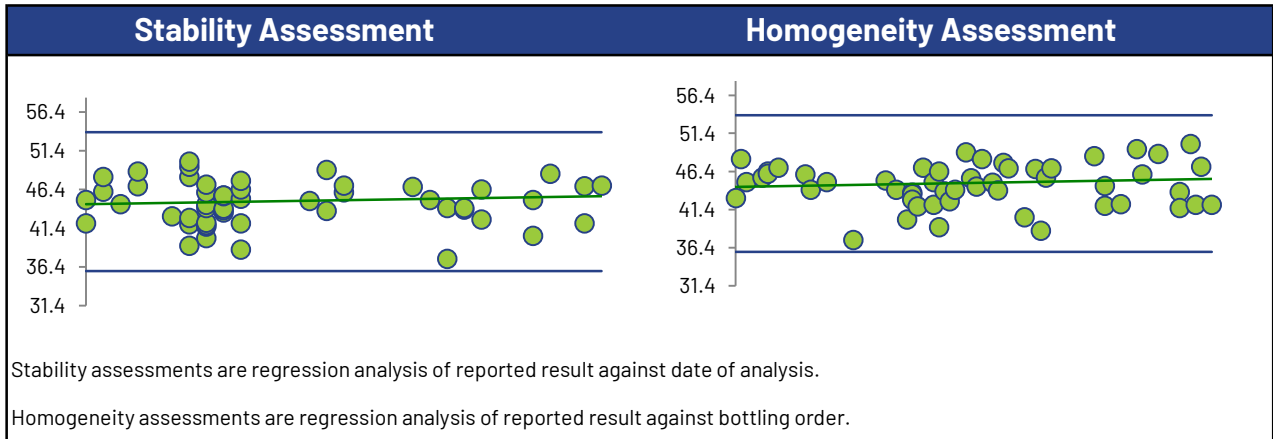


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Arsenic



Arsenic



Barium

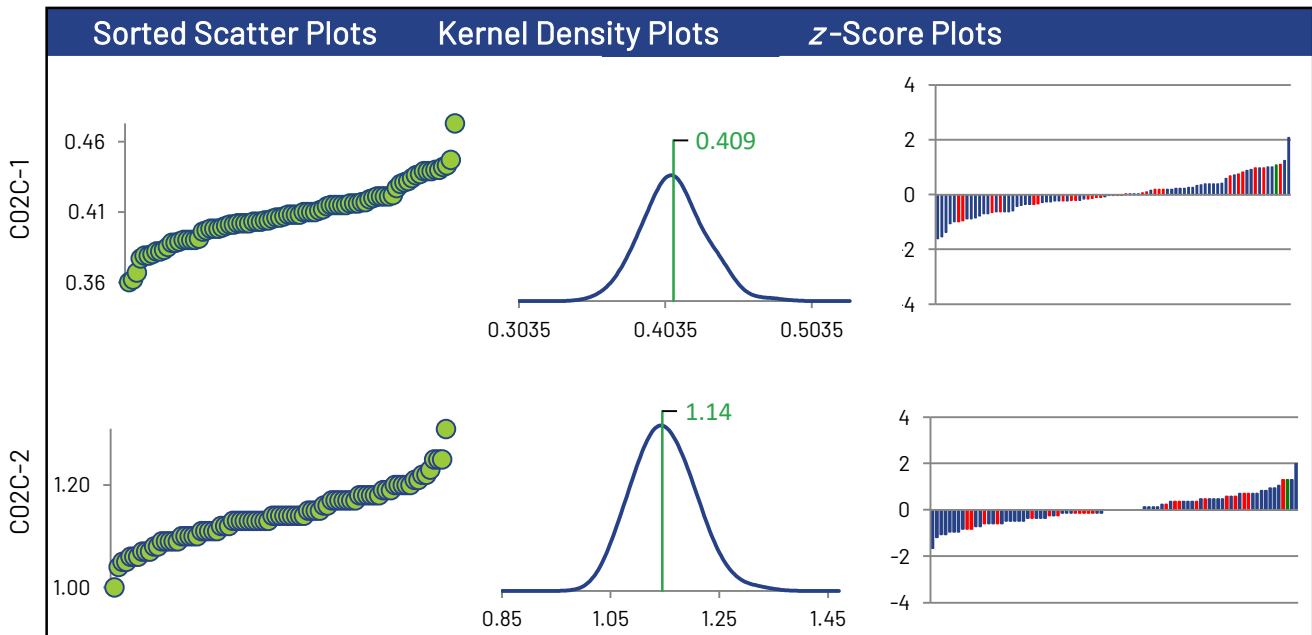
Summary Statistics

Statistic	C02C-1	C02C-2	C02C-3	C02C-4
No. of results used for summary statistics	85	85	85	85
Median mg/L	0.408	1.14	1.21	0.534
Robust Mean mg/L	0.409	1.14	1.22	0.534
Uncertainty of the Assigned Value mg/L	0.00277	0.00738	0.00776	0.00371
Robust Standard Deviation mg/L	0.0204	0.0544	0.0572	0.0274
Regression Standard Deviation mg/L	0.0306	0.0855	0.0914	0.0400
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.0306	0.0855	0.0914	0.0400
Flagged Outliers	1	1	1	1
$ z > 3.0$	0	0	0	0
$2 < z < 3$	1	0	0	0
Failure Rate %*	1.2			

Methods Used

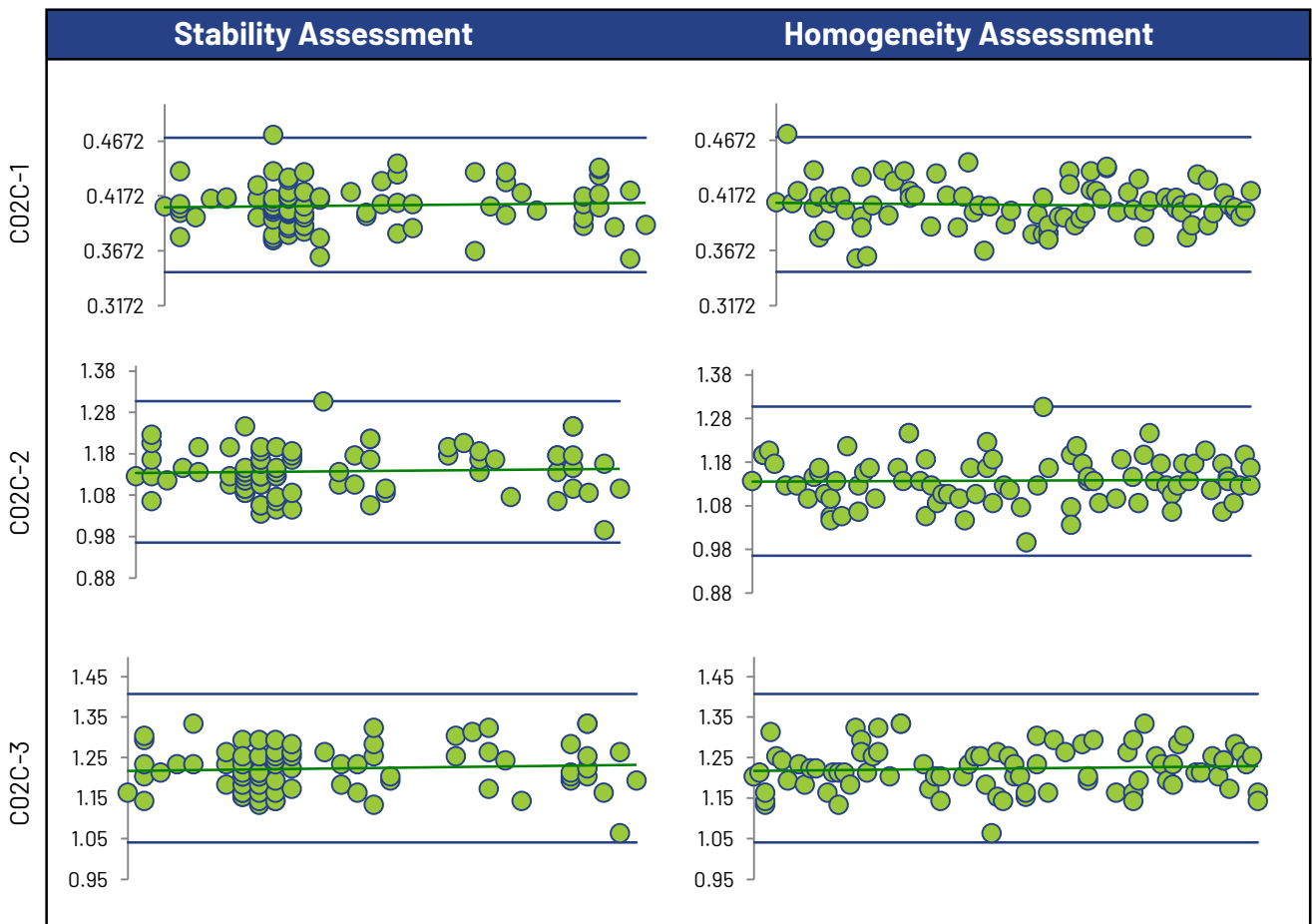
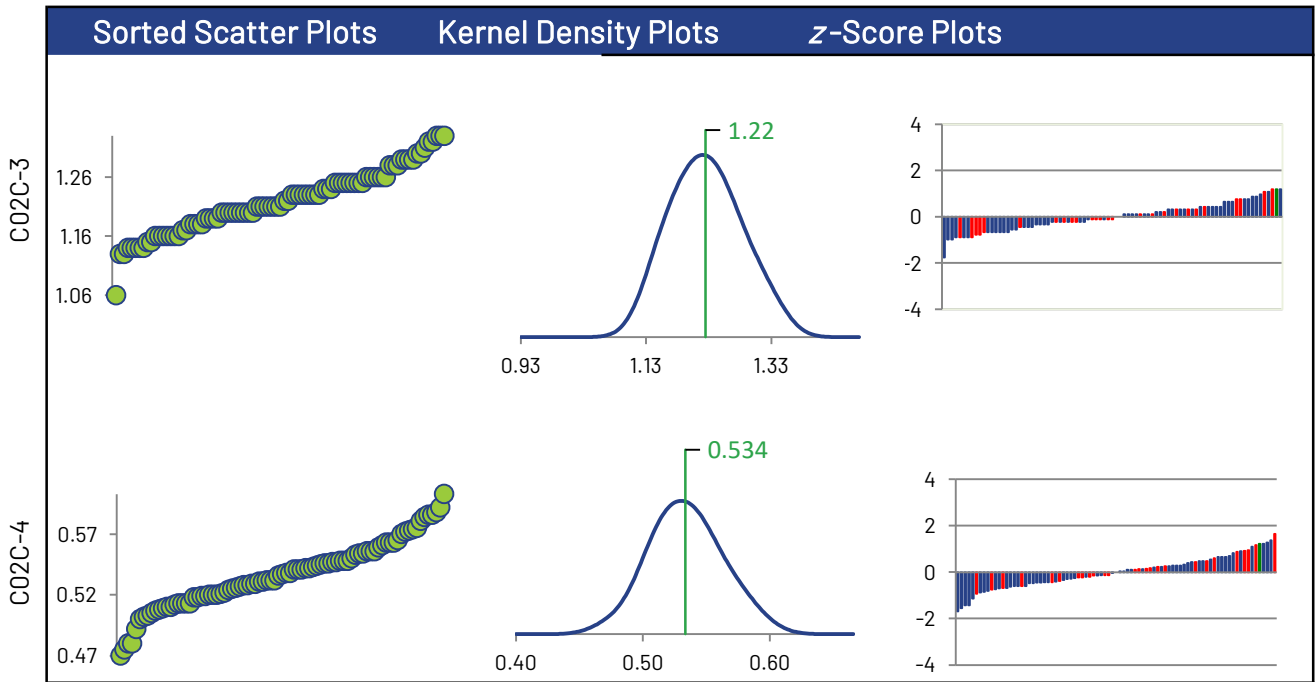
Method	C02C-1	C02C-2	C02C-3	C02C-4
ICP/MS (Blue)	58	58	58	58
ICP/OES (Red)	26	26	26	26
AA FLAME (Green)	1	1	1	1

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

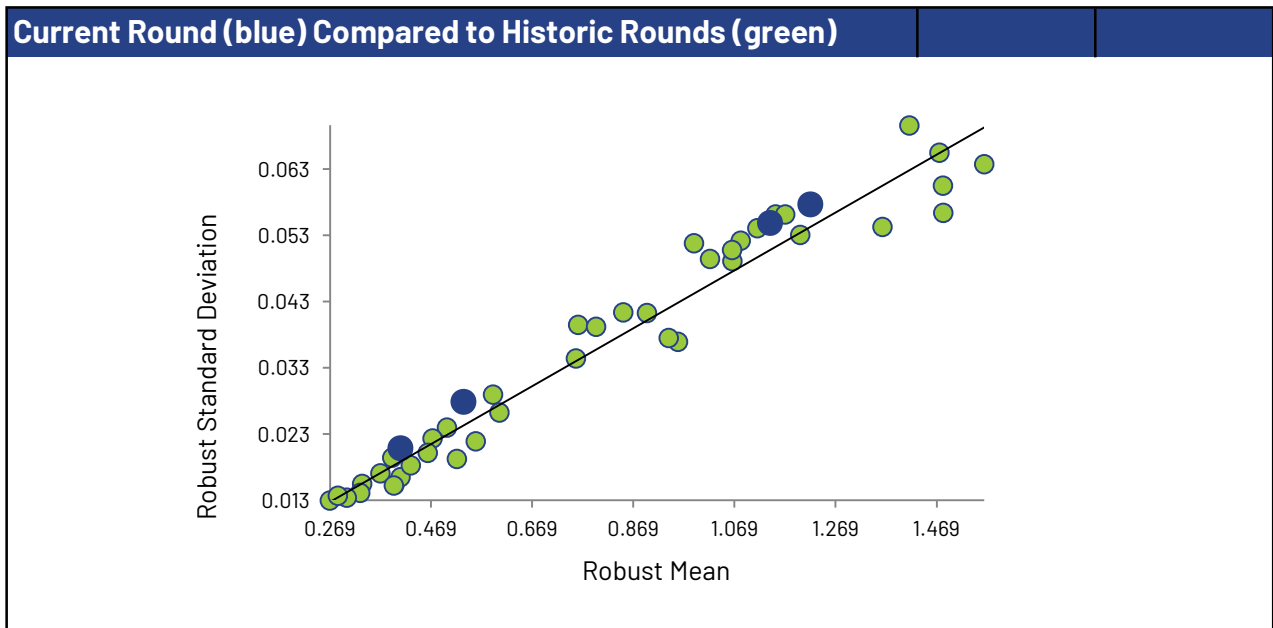
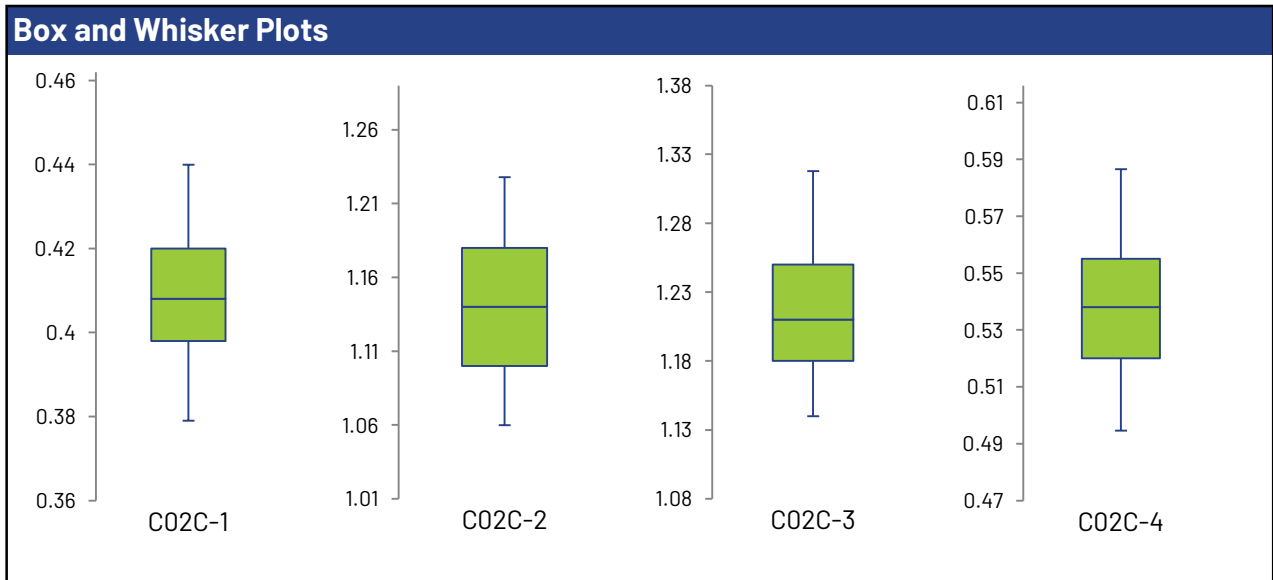
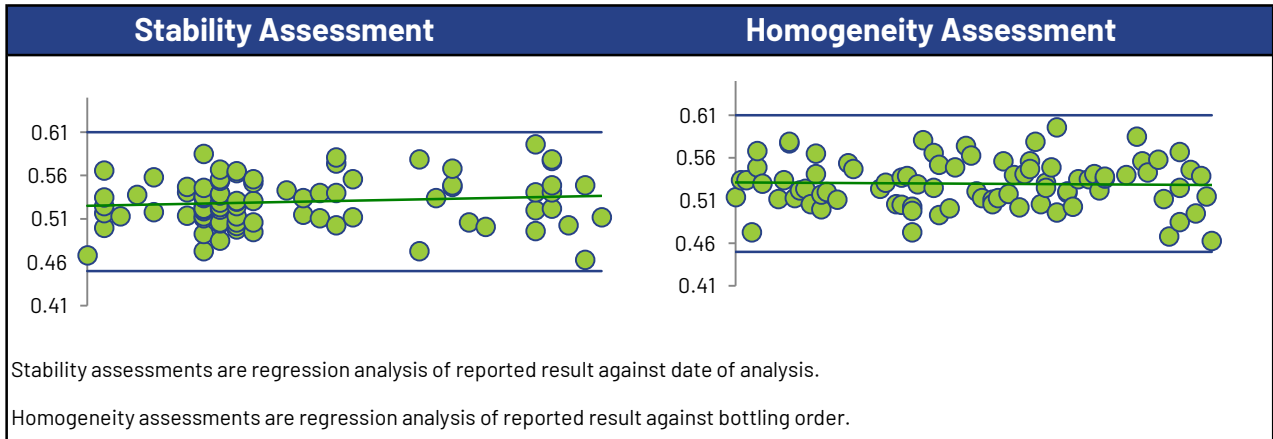


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Barium



Barium



Beryllium

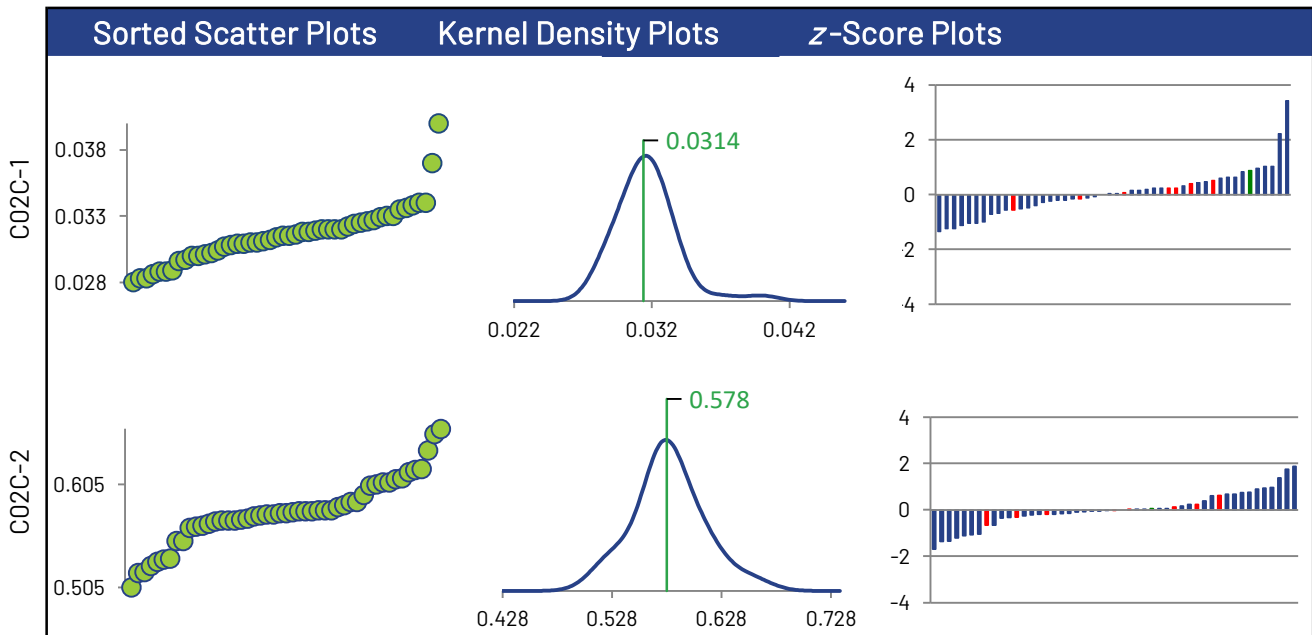
Summary Statistics

Statistic	C02C-1	C02C-2	C02C-3	C02C-4
No. of results used for summary statistics	48	49	49	49
Median mg/L	0.0315	0.577	0.863	0.162
Robust Mean mg/L	0.0314	0.578	0.865	0.162
Uncertainty of the Assigned Value mg/L	0.000336	0.00536	0.00752	0.00155
Robust Standard Deviation mg/L	0.00186	0.0300	0.0421	0.00866
Regression Standard Deviation mg/L	0.00235	0.0434	0.0648	0.0121
Stability Flag	Stability			
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.00251	0.0434	0.0648	0.0121
Flagged Outliers	1	1	1	1
$ z > 3.0$	1	0	0	0
$2 < z < 3$	1	0	1	1
Failure Rate %*	4.0			

Methods Used

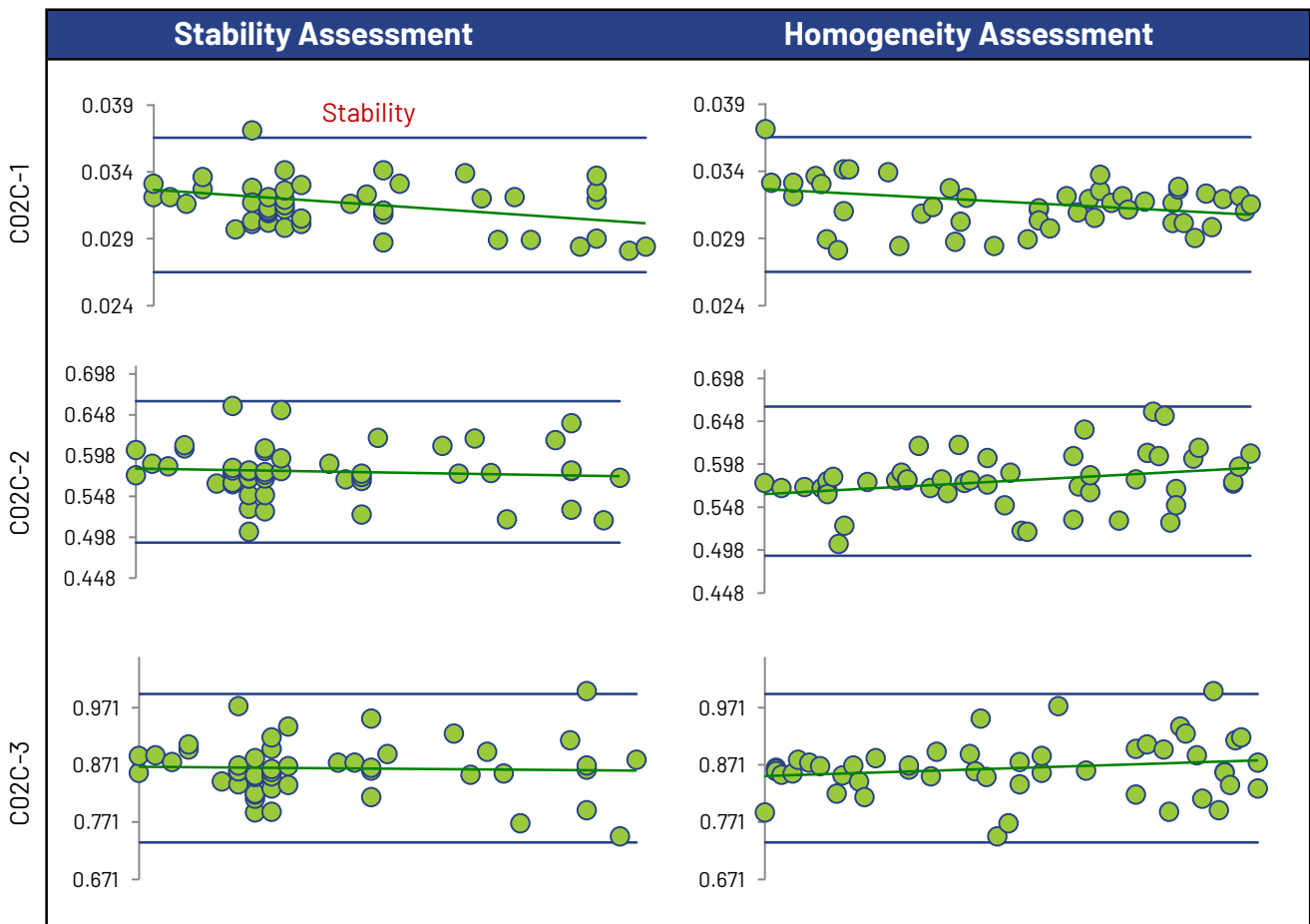
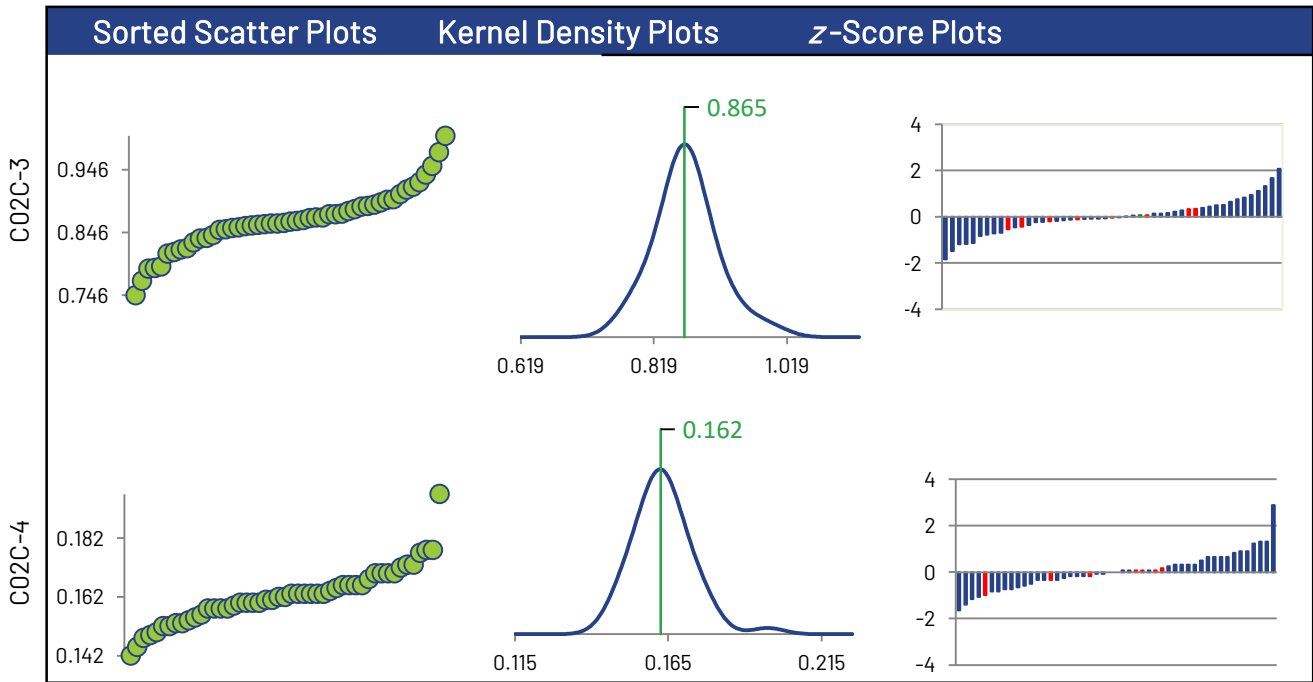
Method	C02C-1	C02C-2	C02C-3	C02C-4
ICP/MS (Blue)	40	40	40	40
ICP/OES (Red)	7	8	8	8
AA FLAME (Green)	1	1	1	1

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

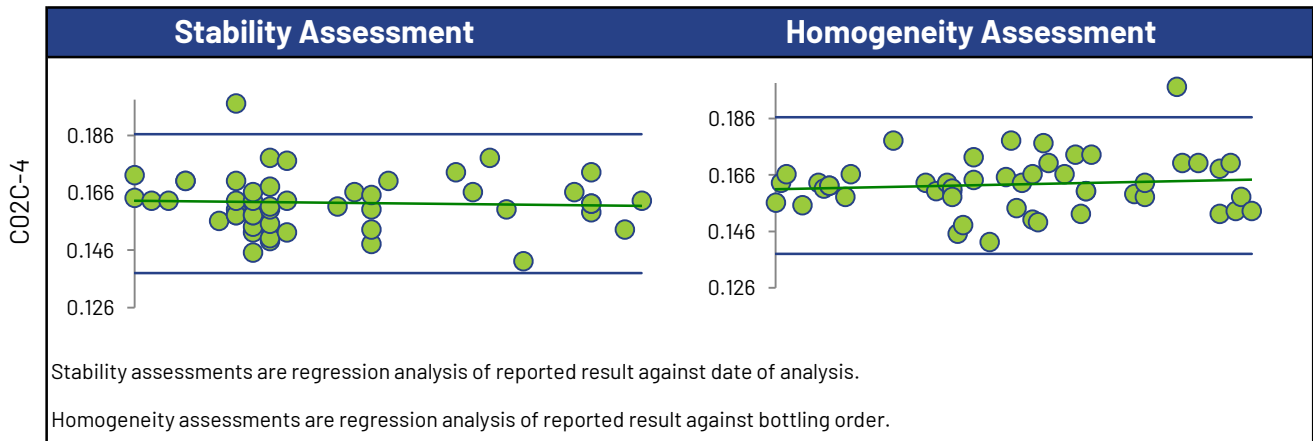


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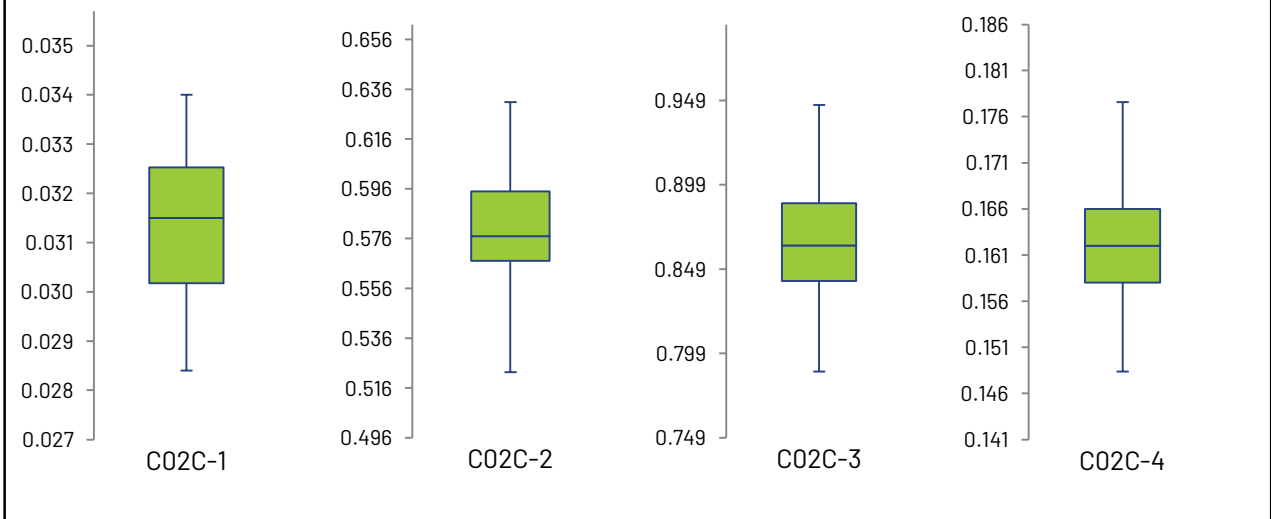
Beryllium



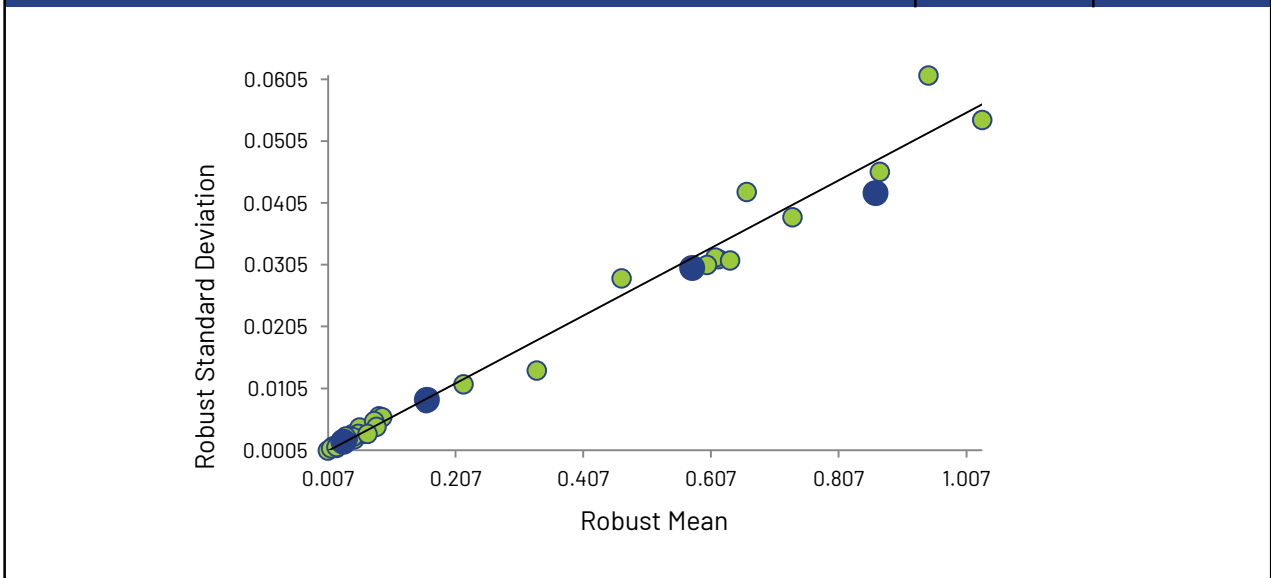
Beryllium



Box and Whisker Plots



Current Round (blue) Compared to Historic Rounds (green)



Bismuth

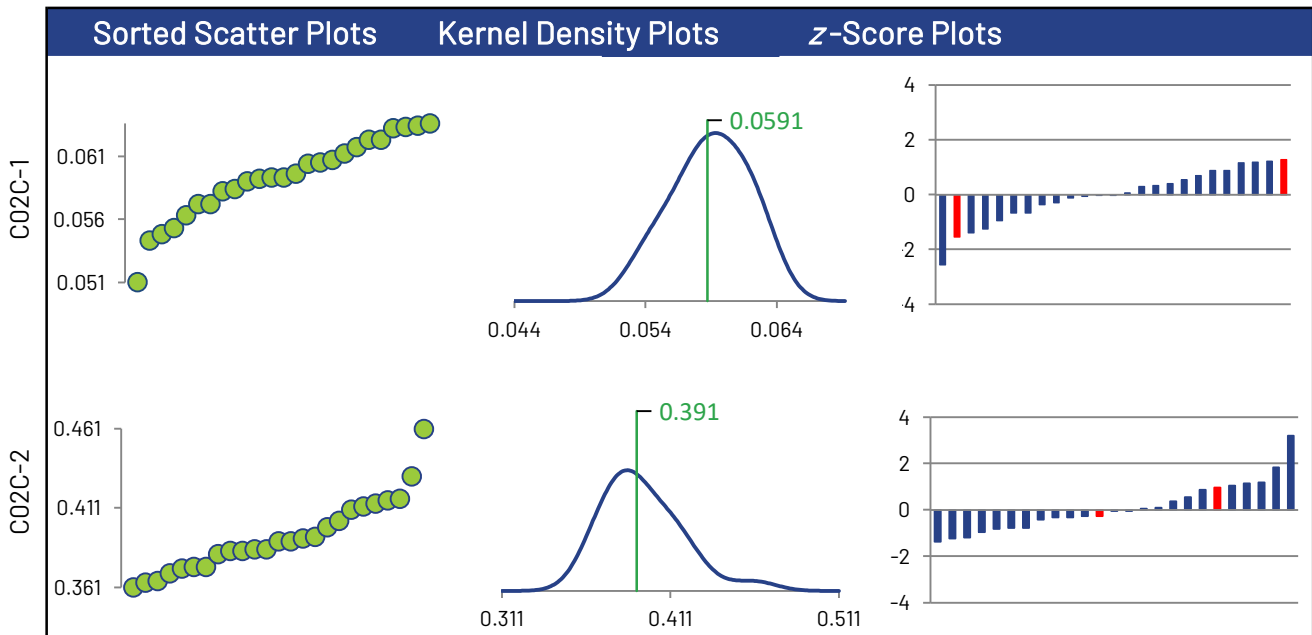
Summary Statistics

Statistic	C02C-1	C02C-2	C02C-3	C02C-4
No. of results used for summary statistics	25	25	25	25
Median mg/L	0.0590	0.390	0.453	0.145
Robust Mean mg/L	0.0591	0.391	0.448	0.147
Uncertainty of the Assigned Value mg/L	0.000820	0.00548	0.00628	0.00202
Robust Standard Deviation mg/L	0.00328	0.0219	0.0251	0.00806
Regression Standard Deviation mg/L				
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.00328	0.0219	0.0251	0.00806
Flagged Outliers	0	0	0	0
$ z > 3.0$	0	1	0	1
$2 < z < 3$	1	0	0	0
Failure Rate %*	4.0			

Methods Used

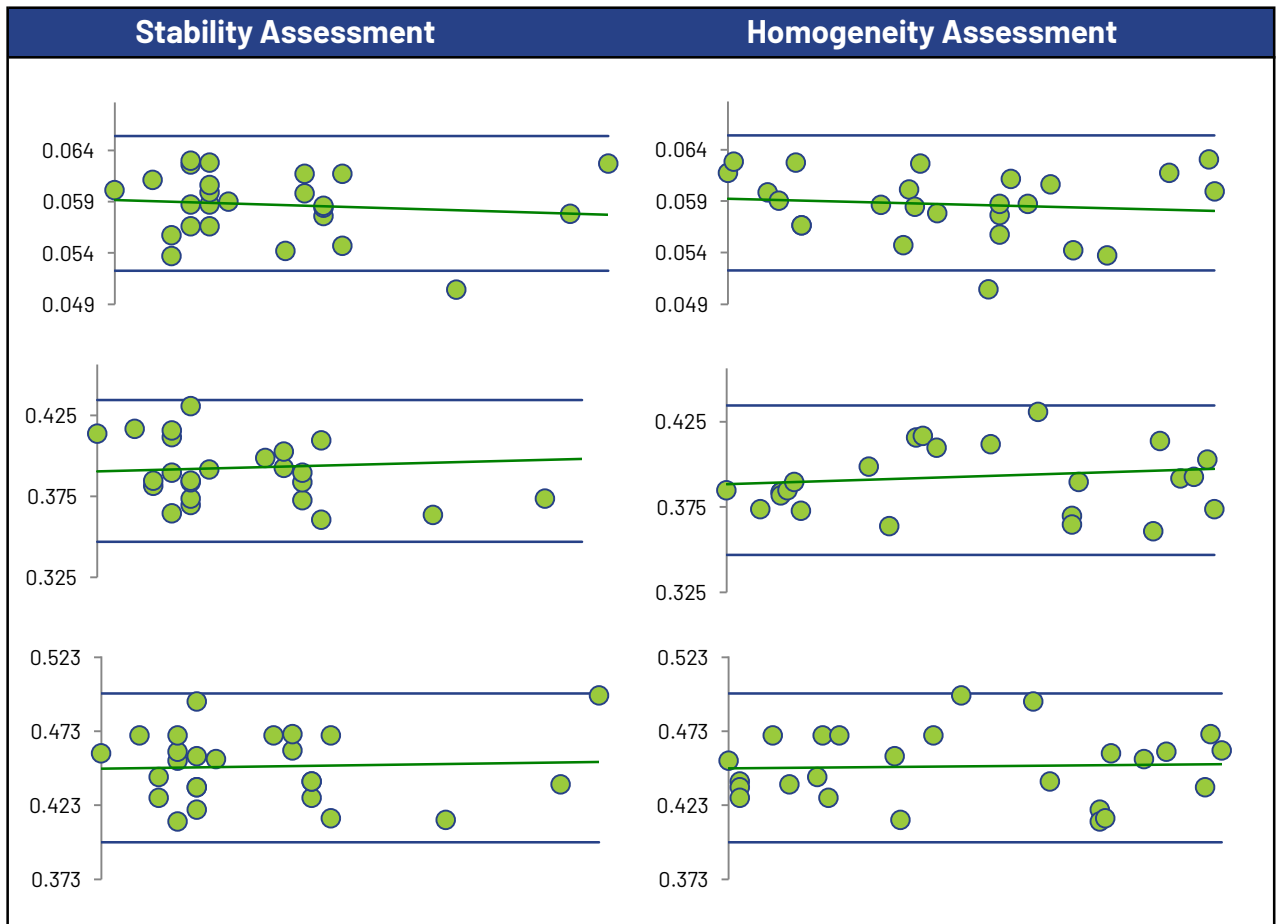
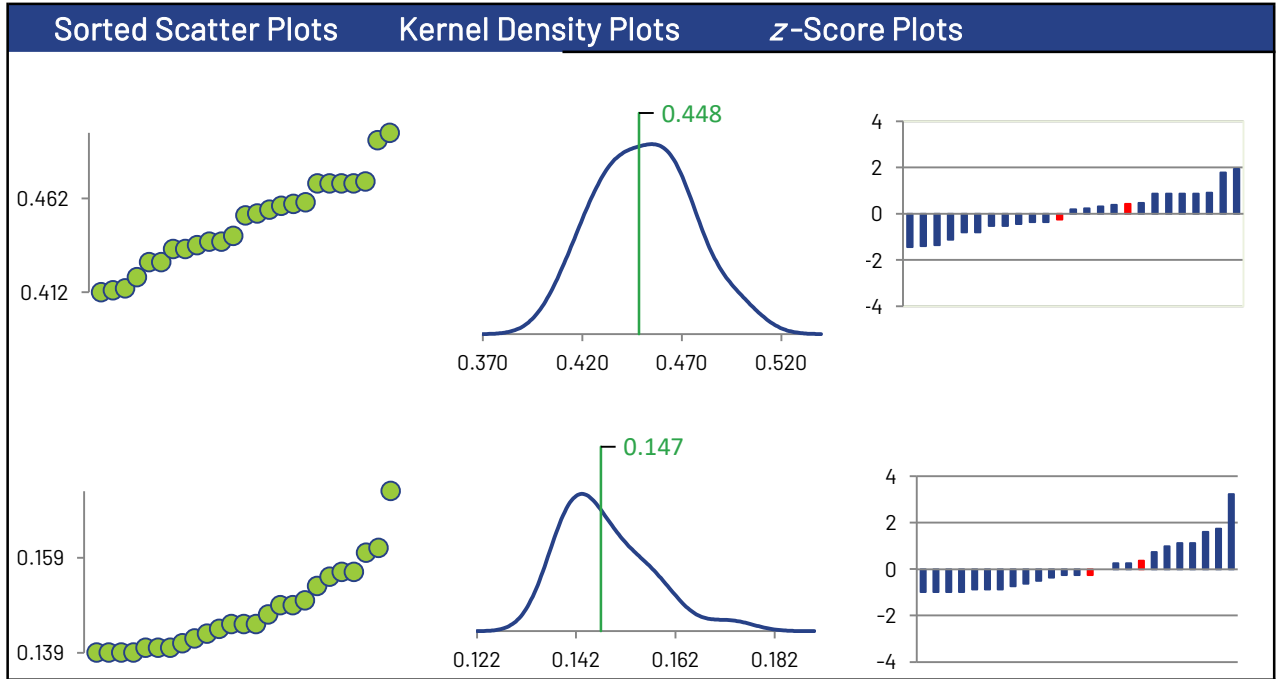
Method	C02C-1	C02C-2	C02C-3	C02C-4
ICP/MS (Blue)	23	23	23	23
ICP/OES (Red)	2	2	2	2

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

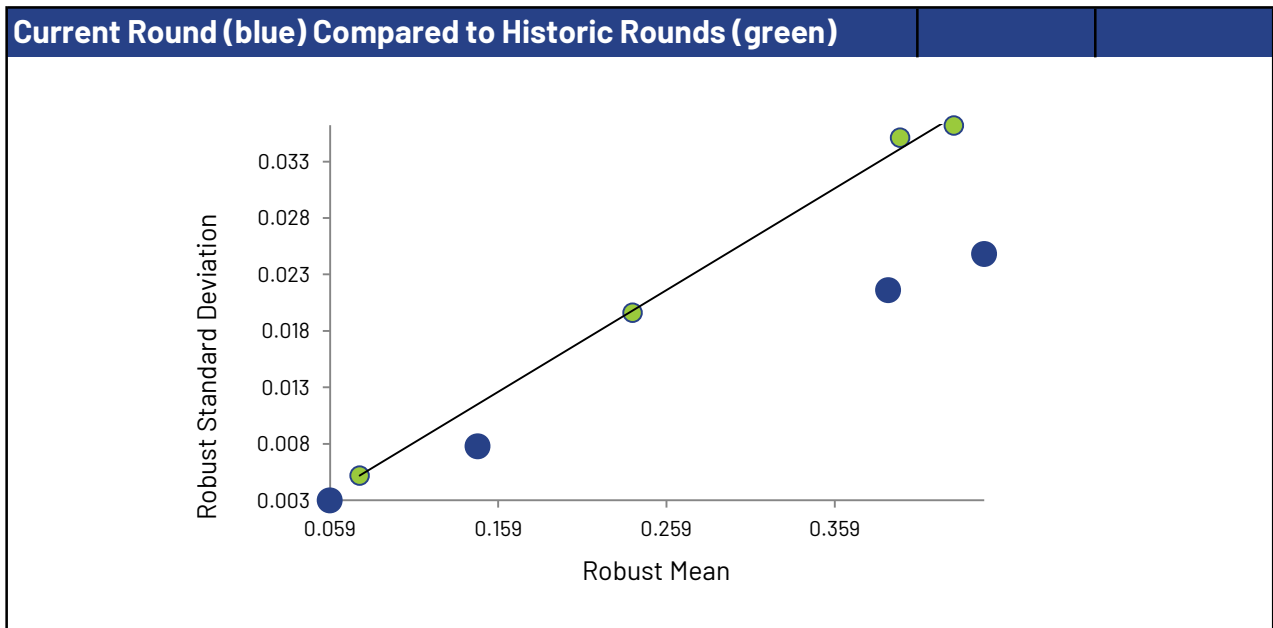
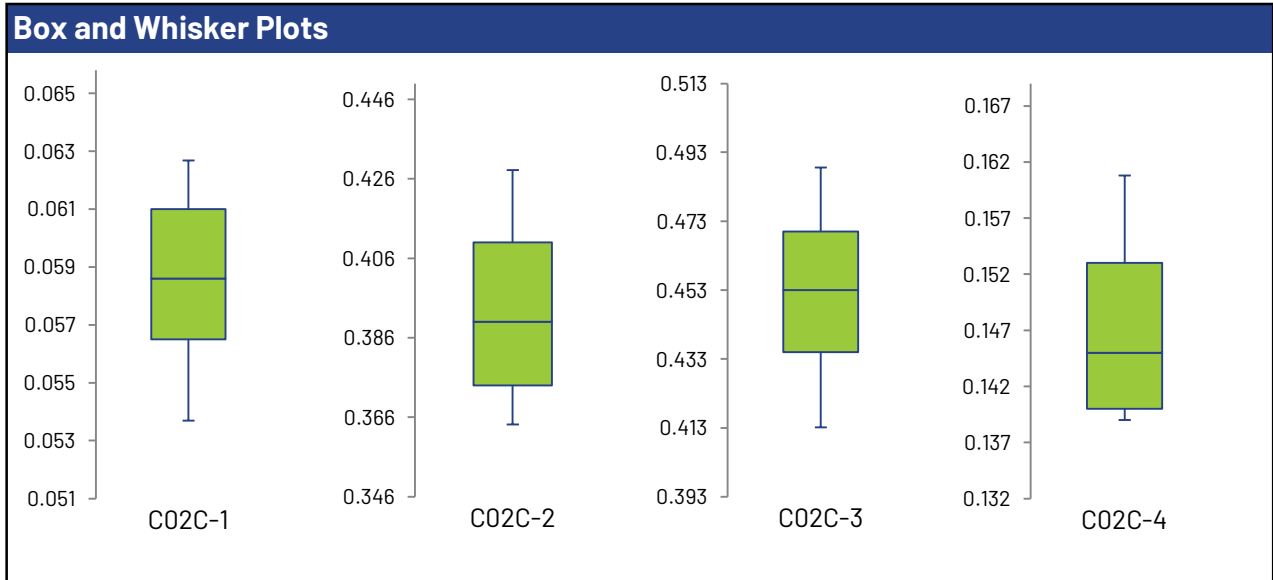
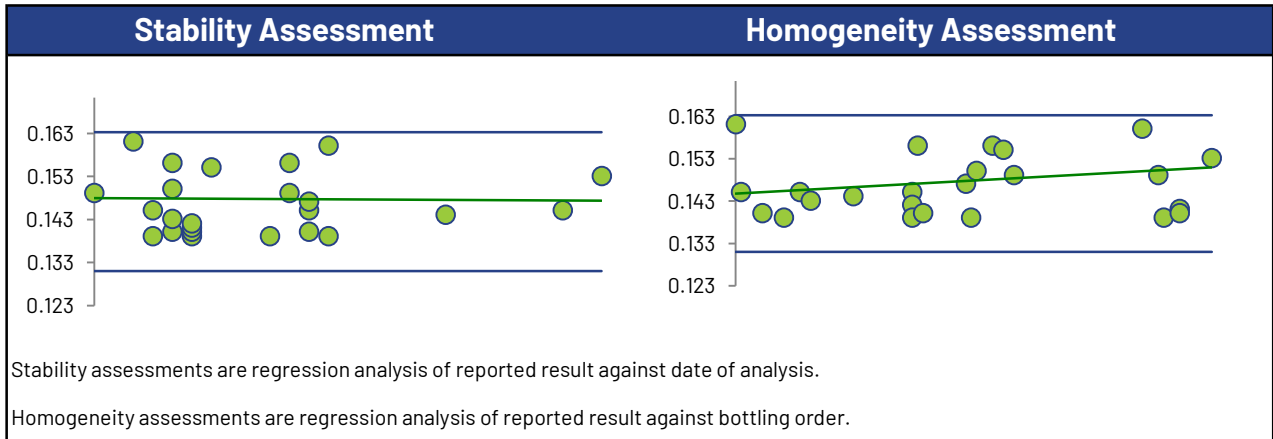


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Bismuth



Bismuth



Boron

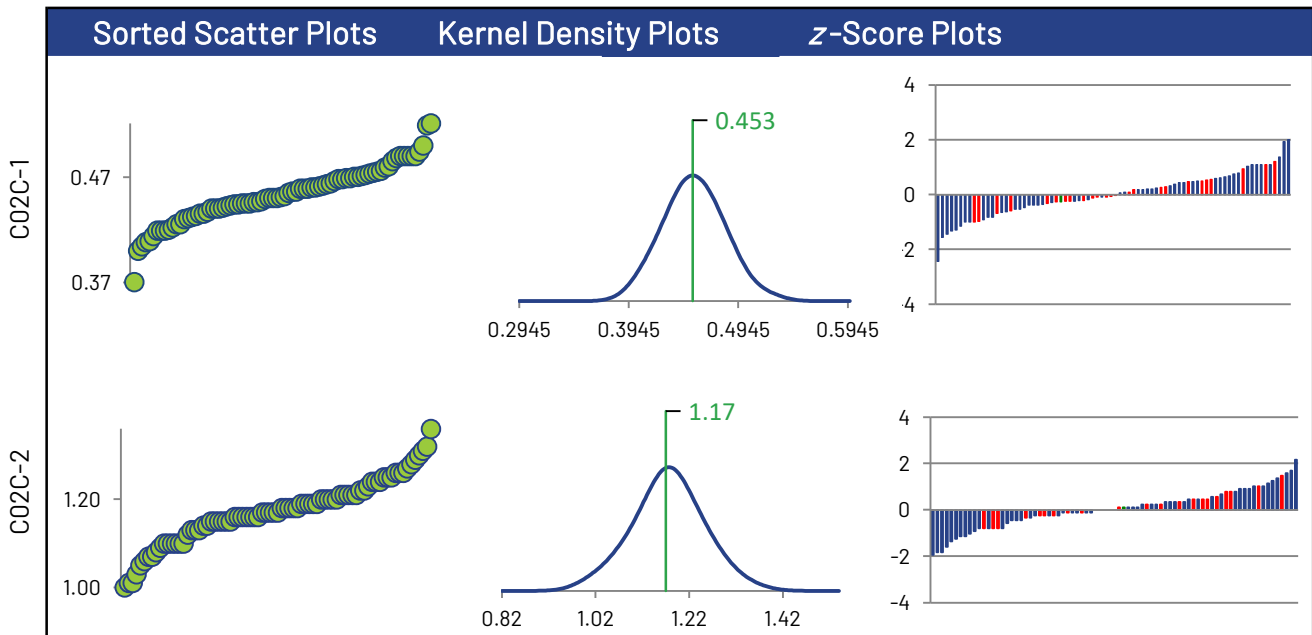
Summary Statistics

Statistic	C02C-1	C02C-2	C02C-3	C02C-4
No. of results used for summary statistics	78	79	79	79
Median mg/L	0.452	1.17	1.12	0.855
Robust Mean mg/L	0.453	1.17	1.13	0.857
Uncertainty of the Assigned Value mg/L	0.00376	0.00989	0.00906	0.00748
Robust Standard Deviation mg/L	0.0266	0.0703	0.0644	0.0532
Regression Standard Deviation mg/L	0.0340	0.0881	0.0846	0.0642
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.0340	0.0881	0.0846	0.0642
Flagged Outliers	1	1	1	1
$ z > 3.0$	0	0	0	0
$2 < z < 3$	1	1	1	3
Failure Rate %*	1.3			

Methods Used

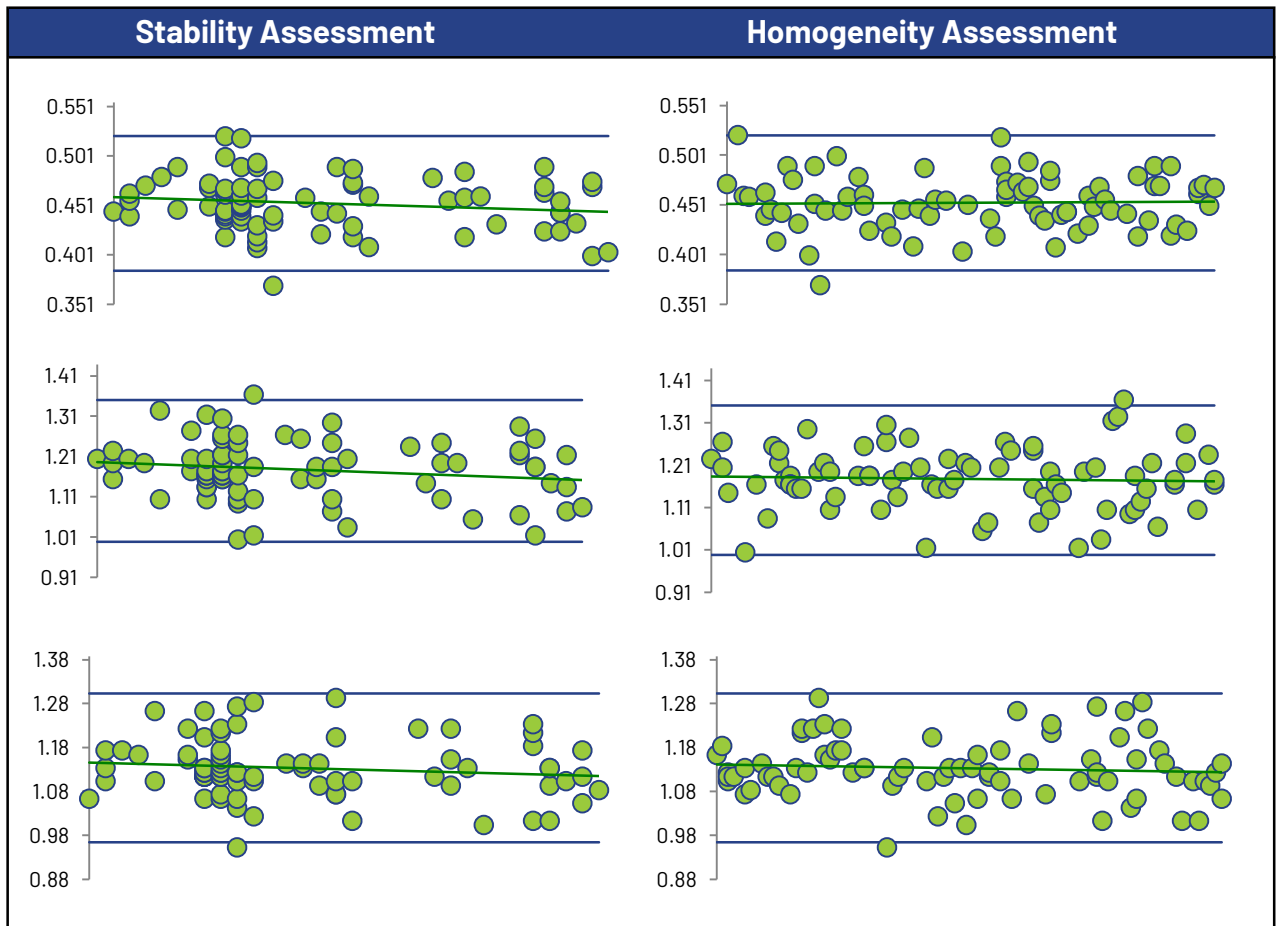
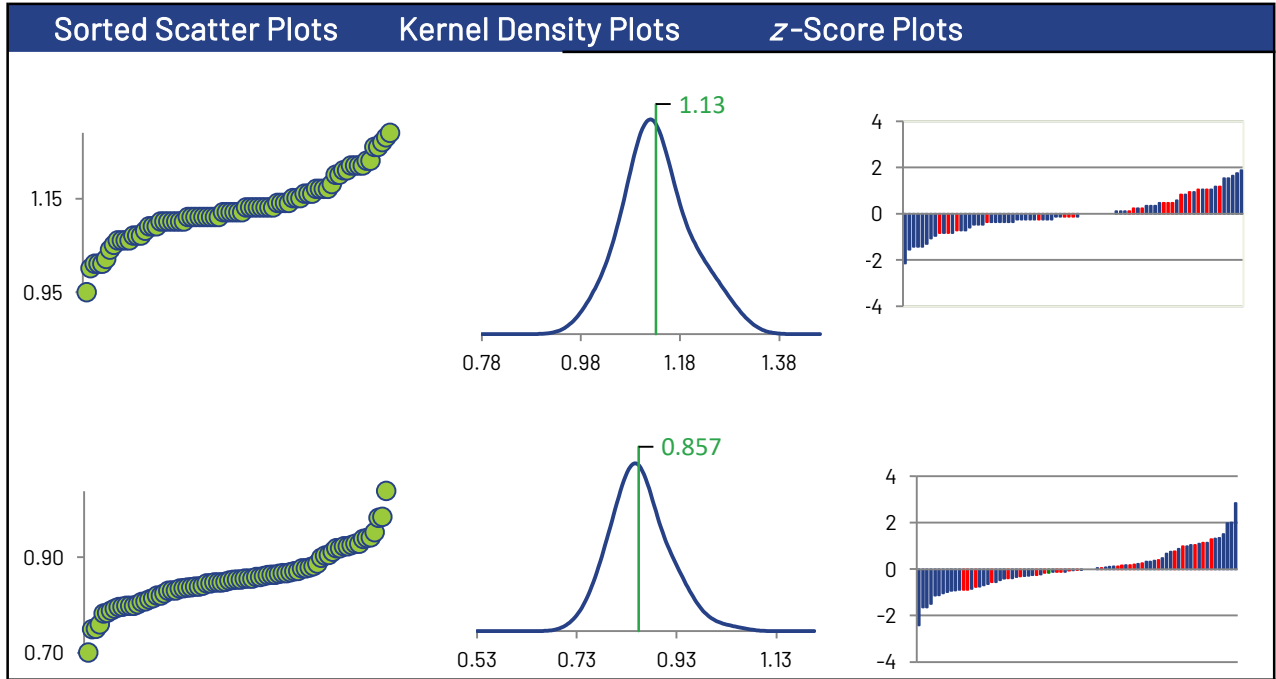
Method	C02C-1	C02C-2	C02C-3	C02C-4
ICP/MS (Blue)	52	53	53	53
ICP/OES (Red)	25	25	25	25
AA FLAME (Green)	1	1	1	1

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

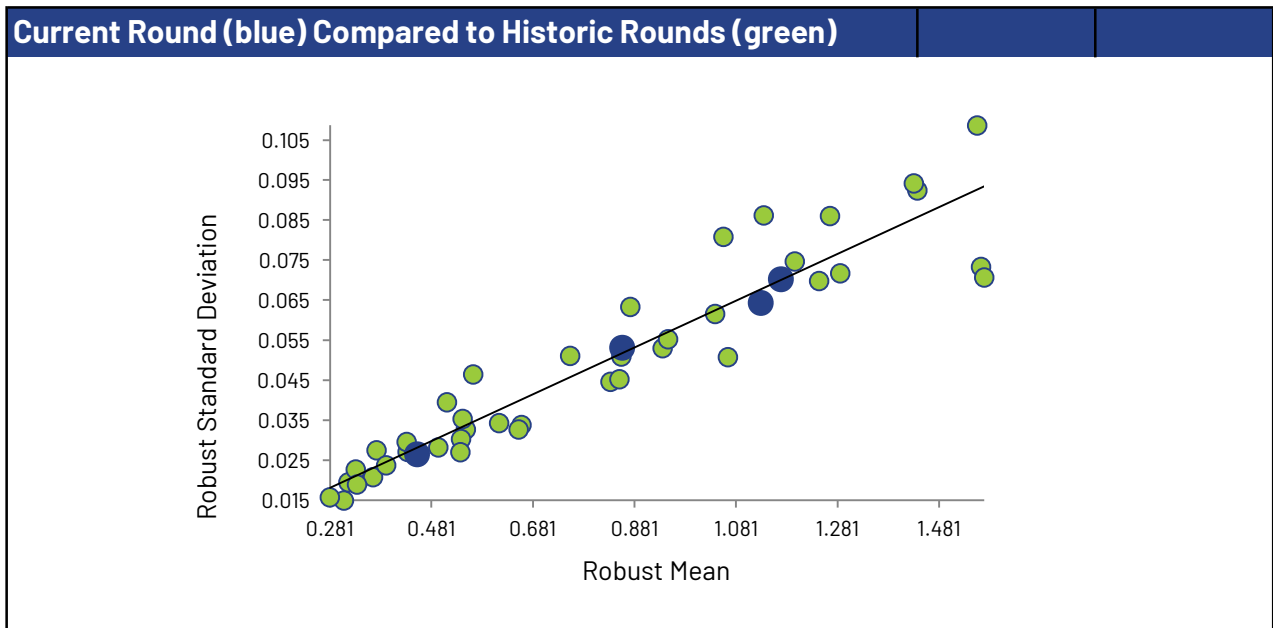
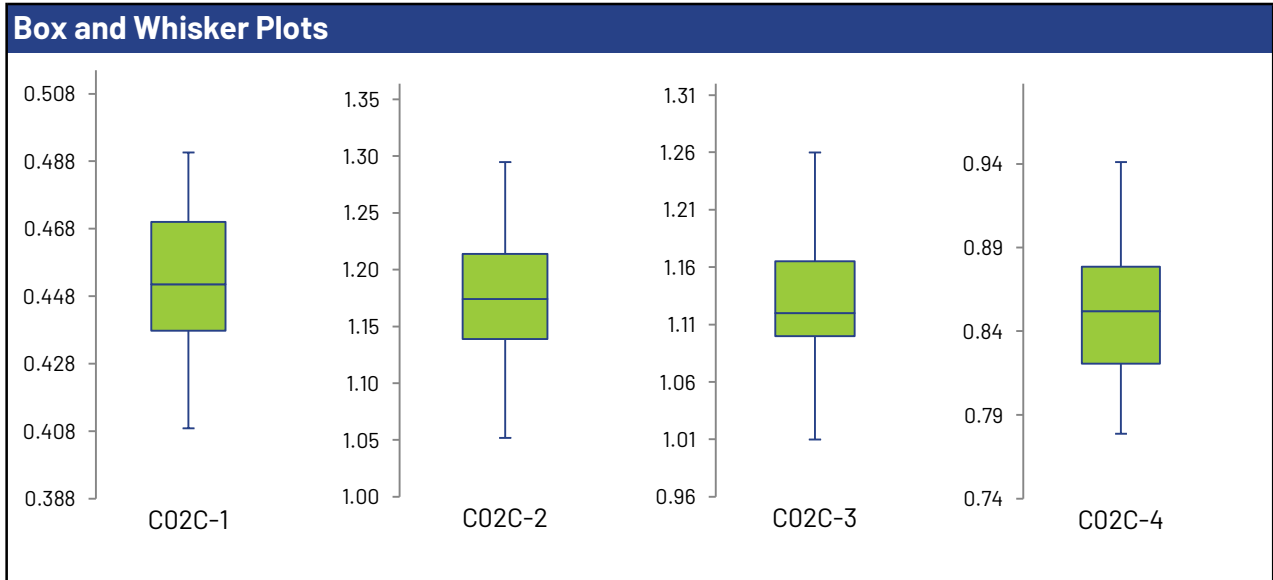
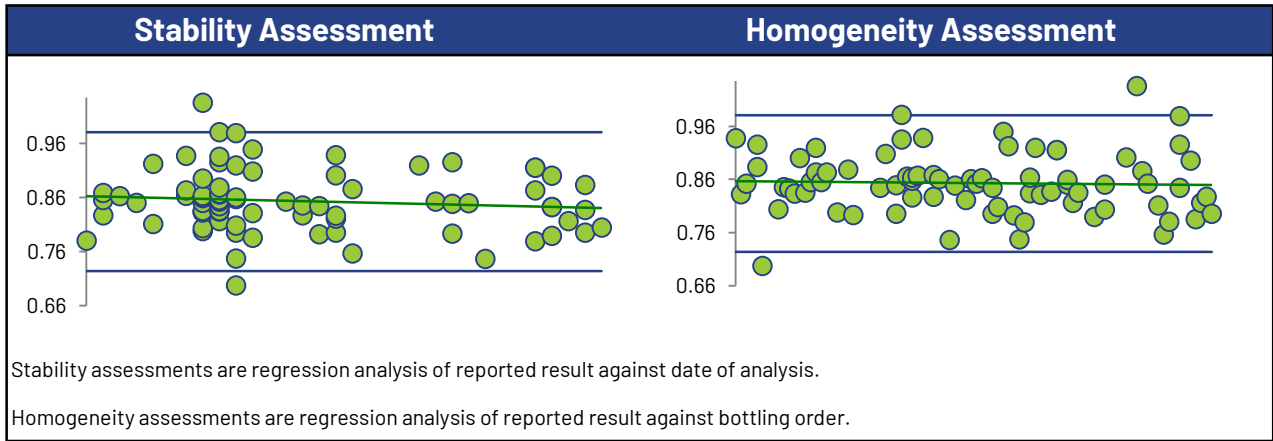


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Boron



Boron



Cadmium

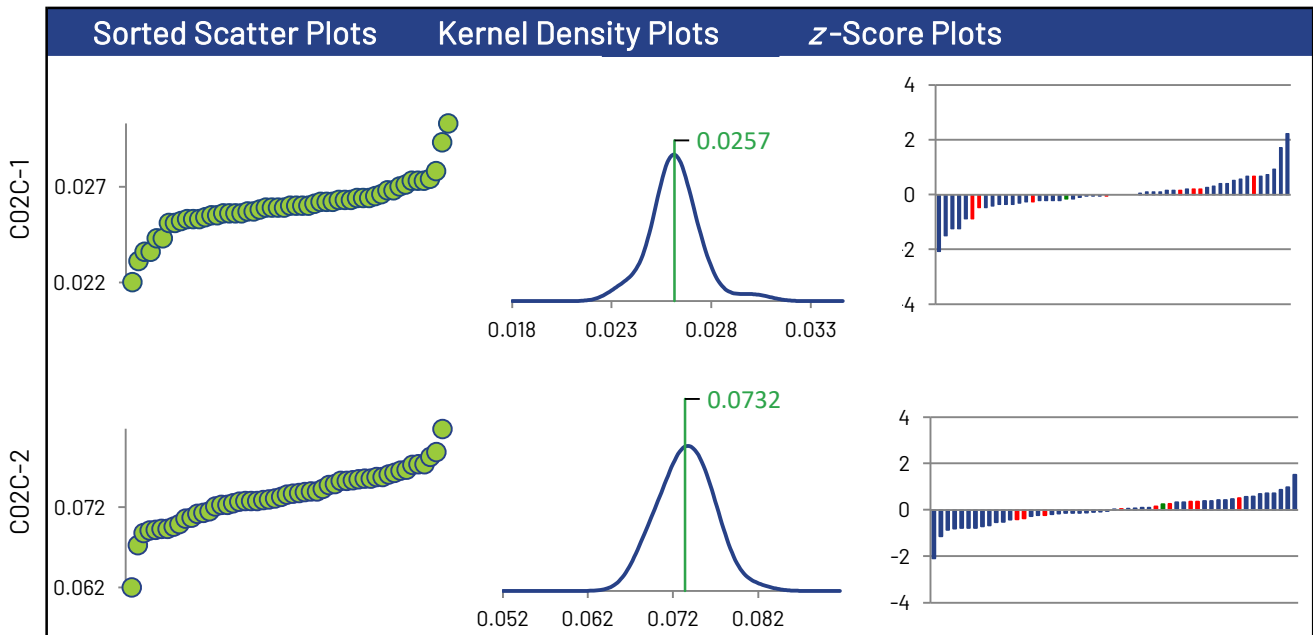
Summary Statistics

Statistic	C02C-1	C02C-2	C02C-3	C02C-4
No. of results used for summary statistics	53	53	53	53
Median mg/L	0.0257	0.0733	0.0810	0.0443
Robust Mean mg/L	0.0257	0.0732	0.0806	0.0442
Uncertainty of the Assigned Value mg/L	0.000160	0.000532	0.000505	0.000330
Robust Standard Deviation mg/L	0.000932	0.00310	0.00294	0.00192
Regression Standard Deviation mg/L	0.00193	0.00549	0.00604	0.00331
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.00193	0.00549	0.00604	0.00331
Flagged Outliers	1	1	1	1
$ z > 3.0$	0	0	0	0
$2 < z < 3$	2	1	0	2
Failure Rate %*	3.6			

Methods Used

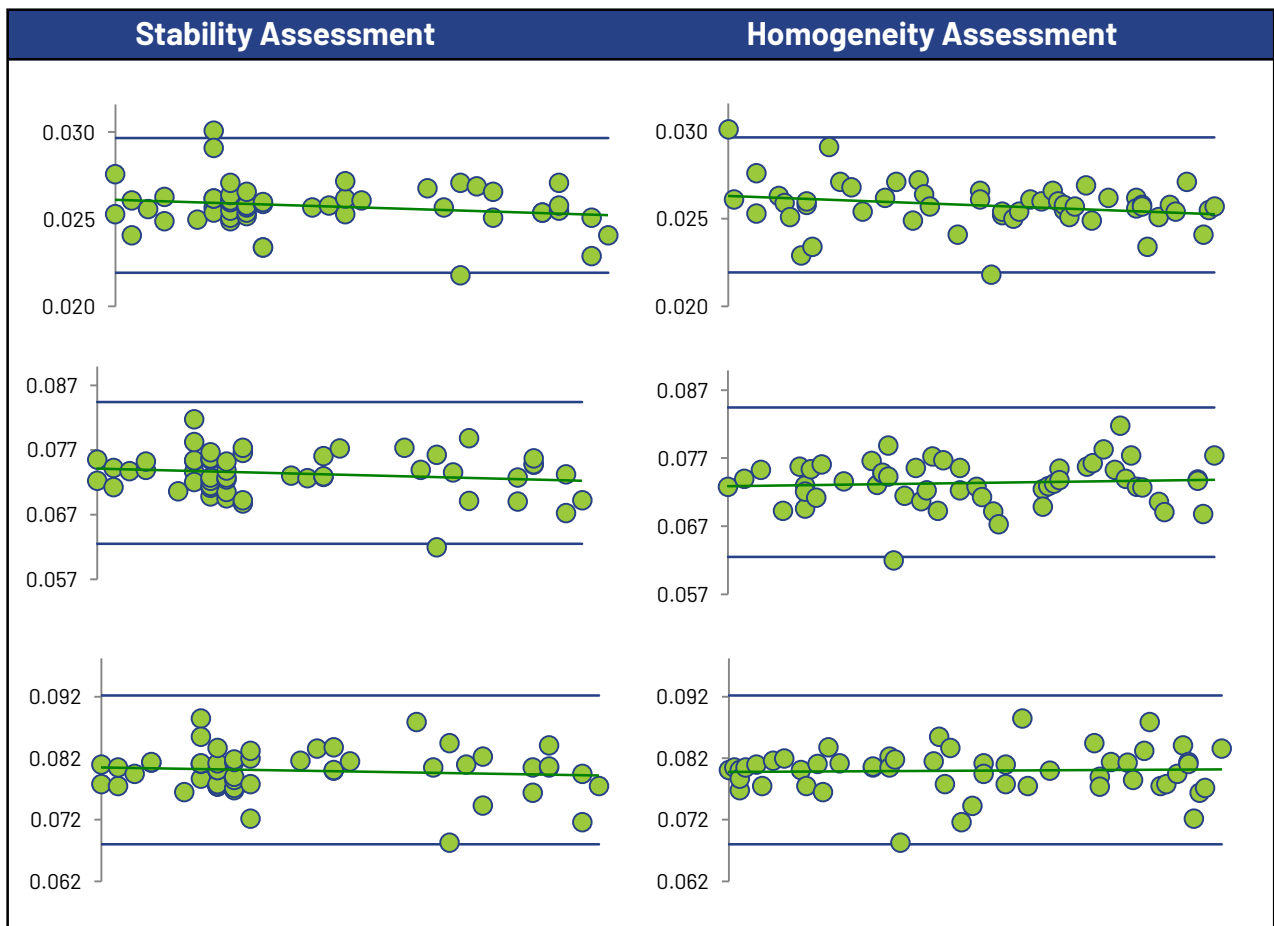
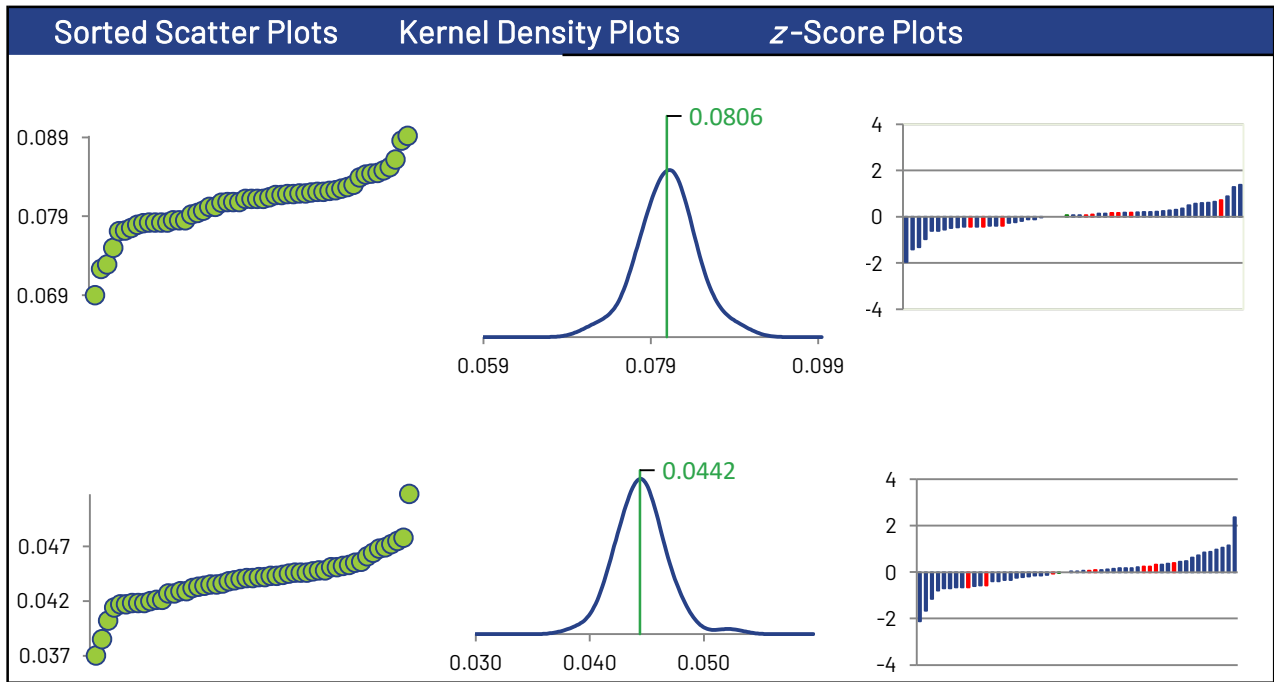
Method	C02C-1	C02C-2	C02C-3	C02C-4
ICP/MS (Blue)	43	43	43	43
ICP/OES (Red)	9	9	9	9
AA FLAME (Green)	1	1	1	1

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

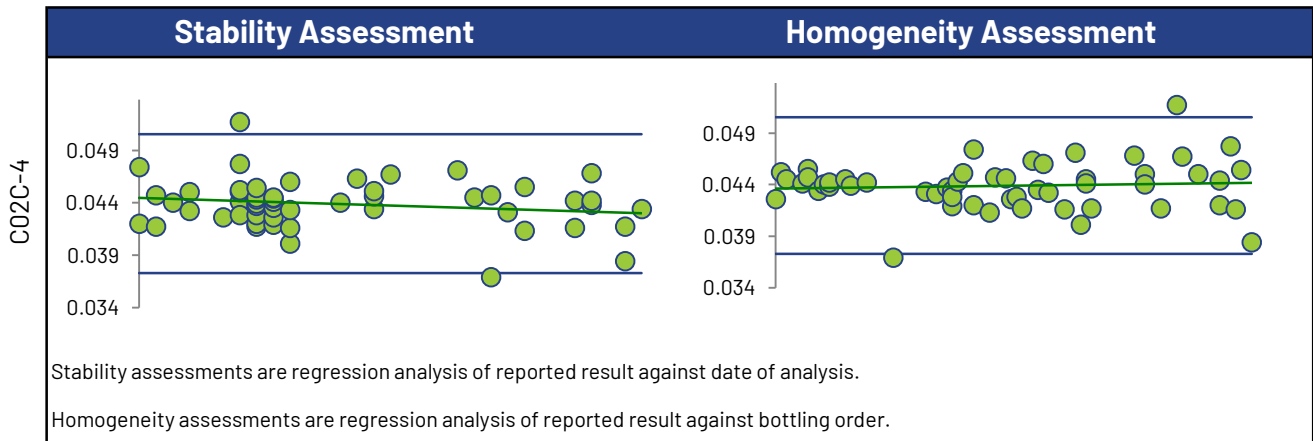


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

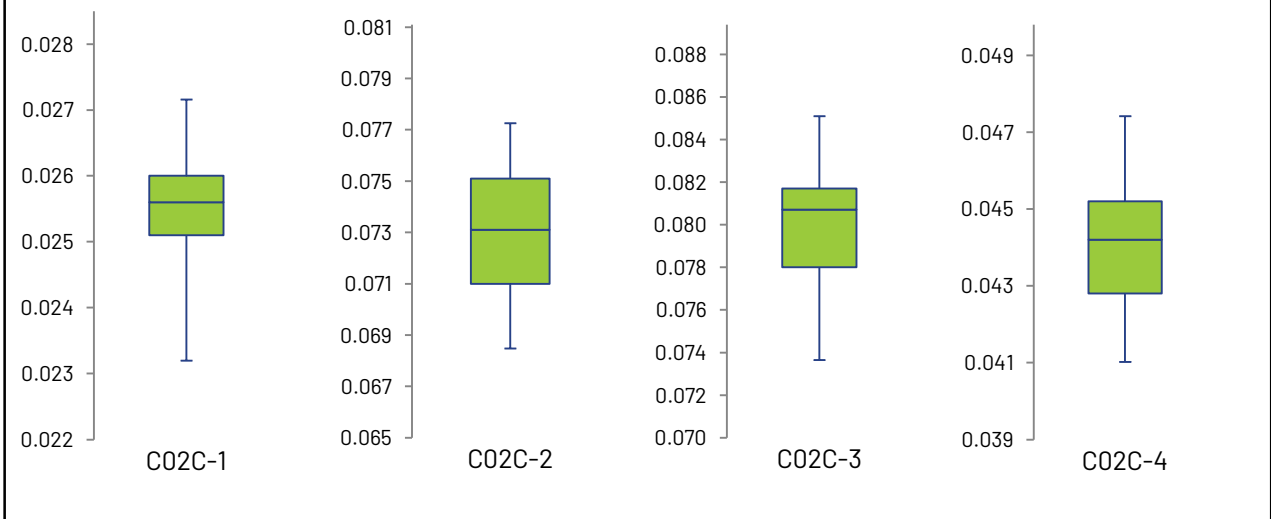
Cadmium



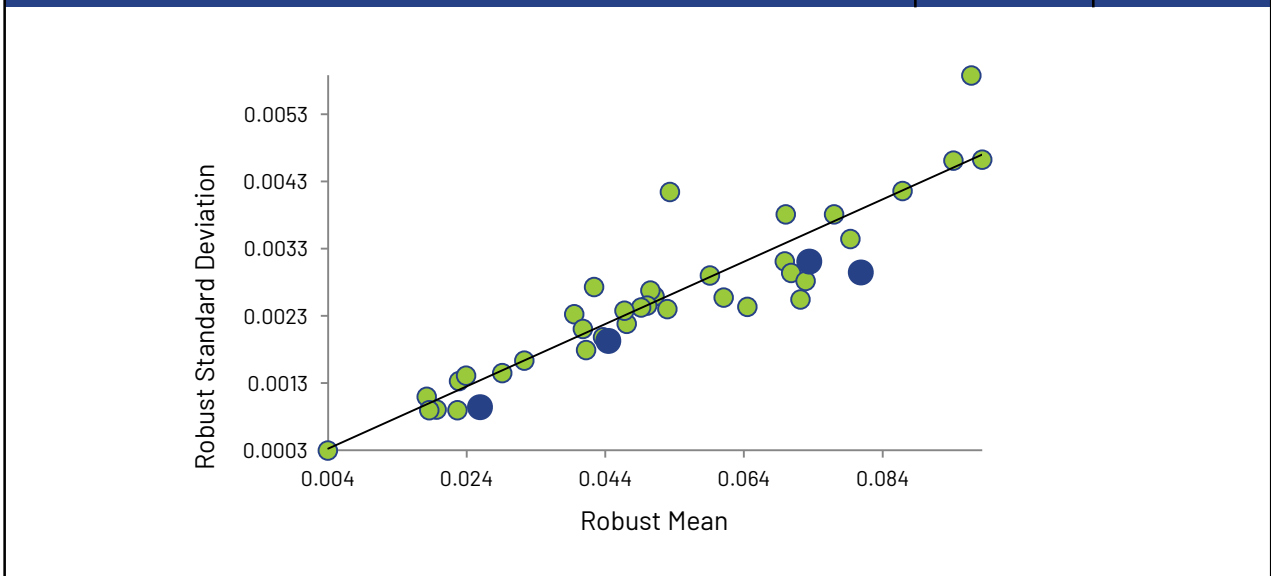
Cadmium



Box and Whisker Plots



Current Round (blue) Compared to Historic Rounds (green)



Chromium

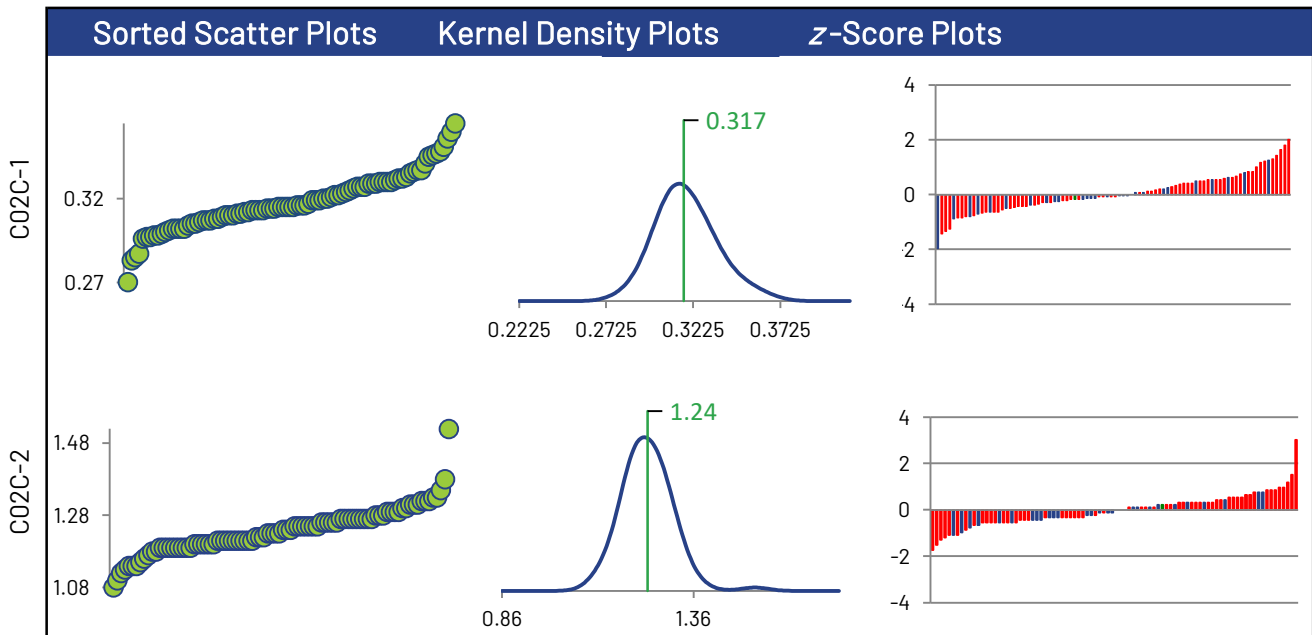
Summary Statistics

Statistic	C02C-1	C02C-2	C02C-3	C02C-4
No. of results used for summary statistics	88	88	88	88
Median mg/L	0.315	1.24	1.22	0.620
Robust Mean mg/L	0.317	1.24	1.22	0.622
Uncertainty of the Assigned Value mg/L	0.00209	0.00772	0.00742	0.00380
Robust Standard Deviation mg/L	0.0157	0.0579	0.0557	0.0285
Regression Standard Deviation mg/L	0.0238	0.0927	0.0918	0.0466
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.0238	0.0927	0.0918	0.0466
Flagged Outliers	1	1	1	1
$ z > 3.0$	0	1	0	0
$2 < z < 3$	1	0	0	1
Failure Rate %*	1.1			

Methods Used

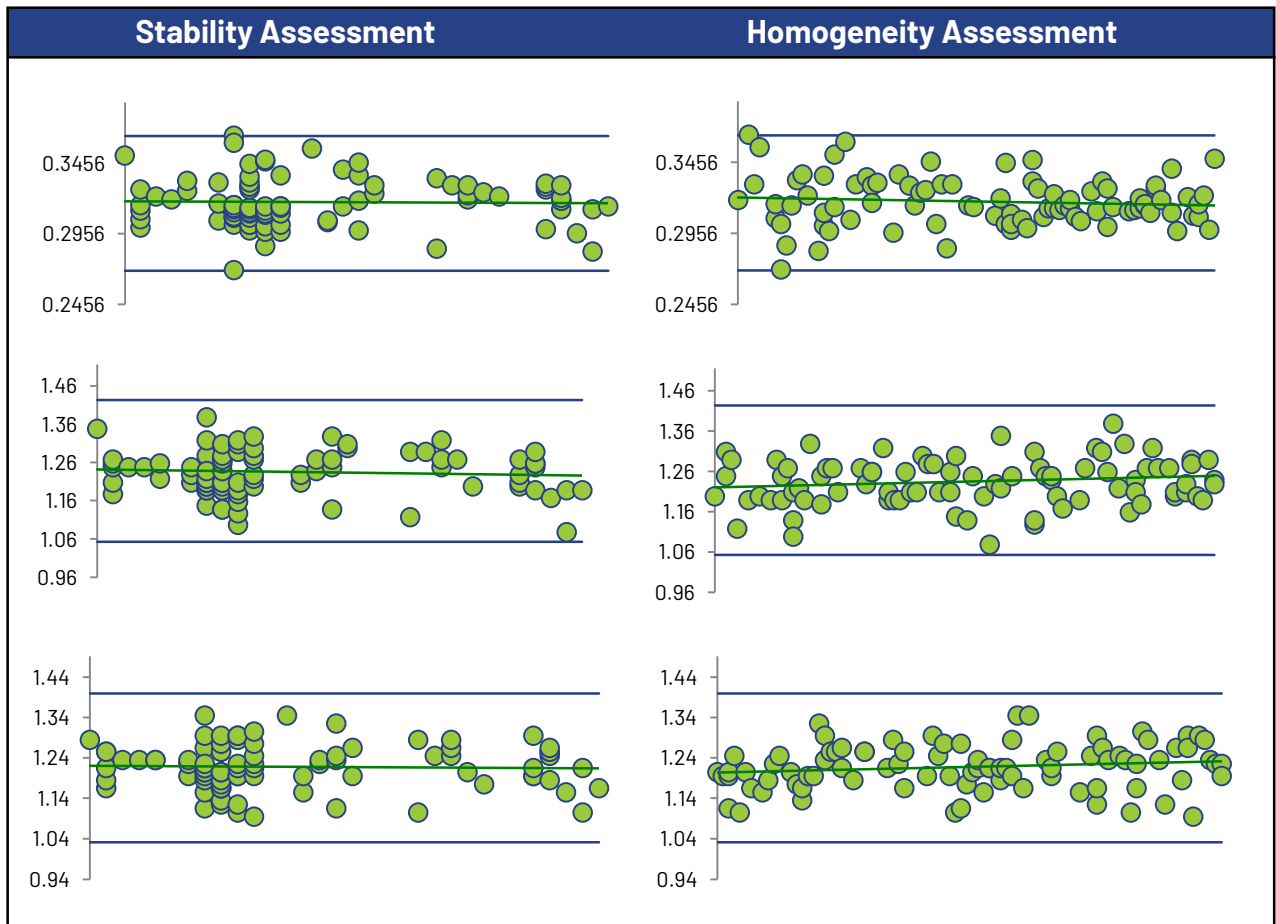
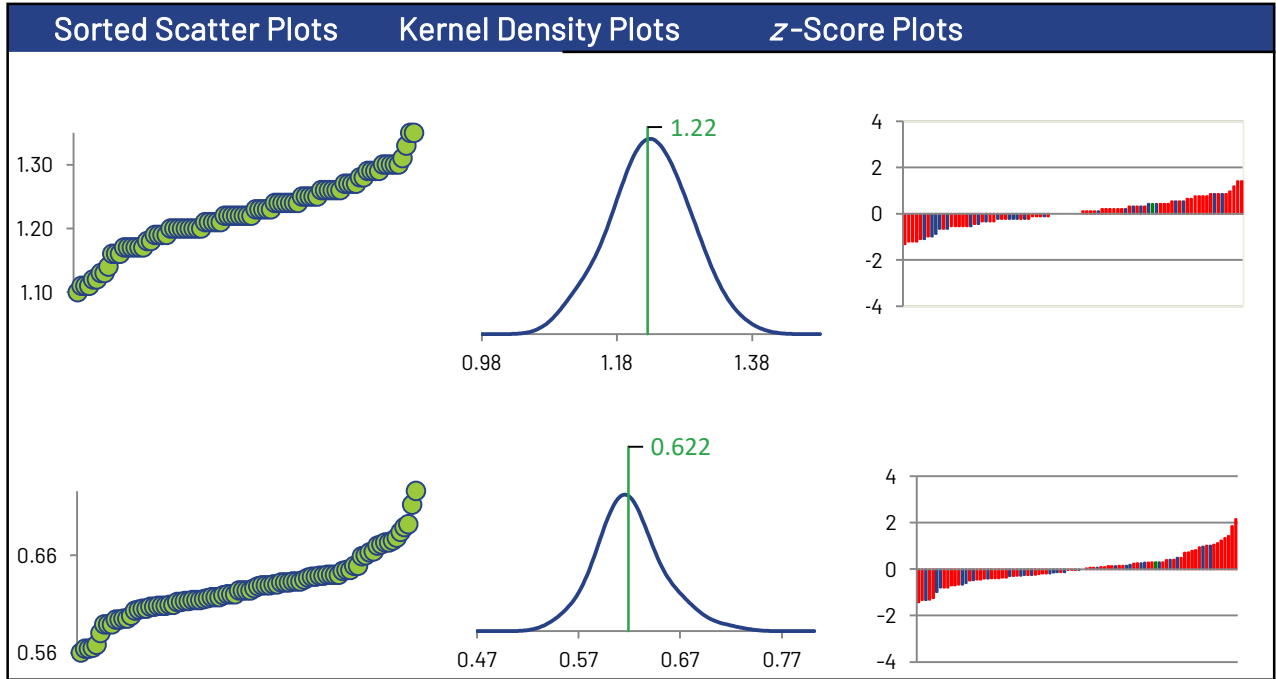
Method	C02C-1	C02C-2	C02C-3	C02C-4
ICP/OES (Blue)	28	28	28	28
ICP/MS (Red)	59	59	59	59
AA FLAME (Green)	1	1	1	1

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

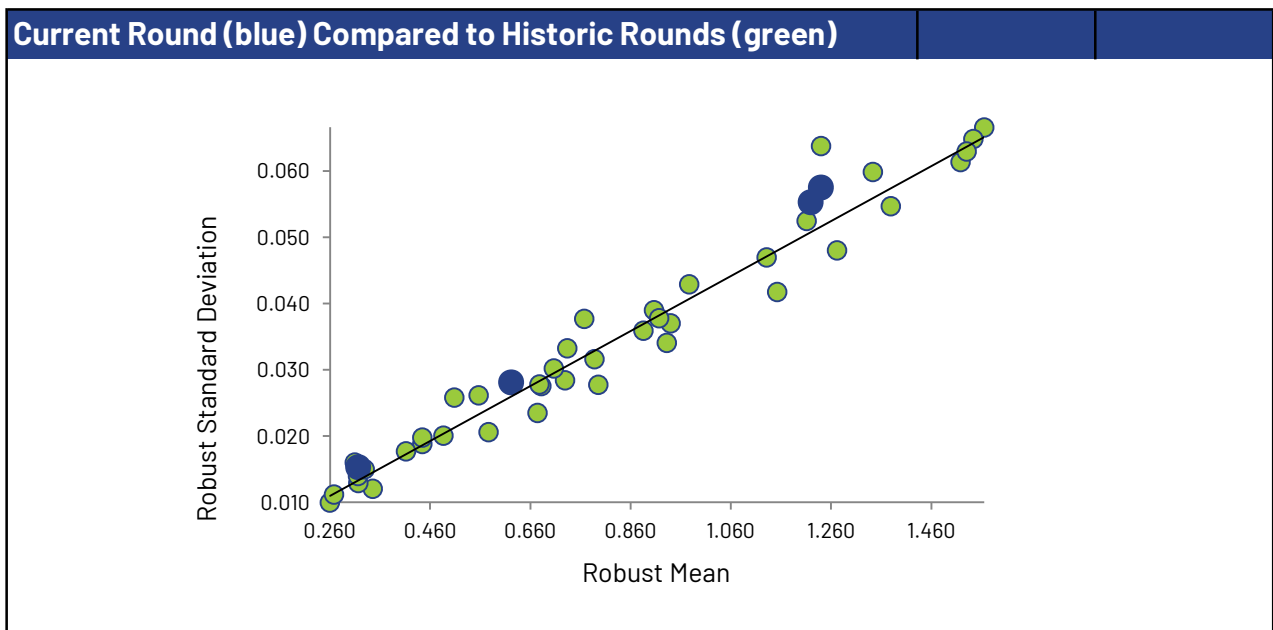
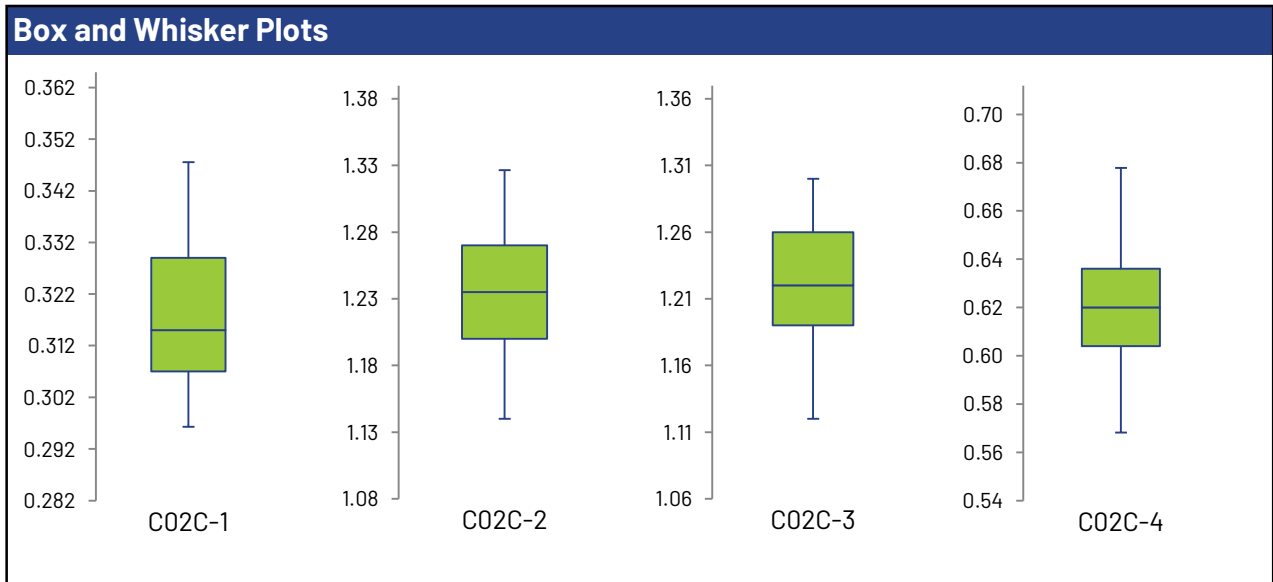
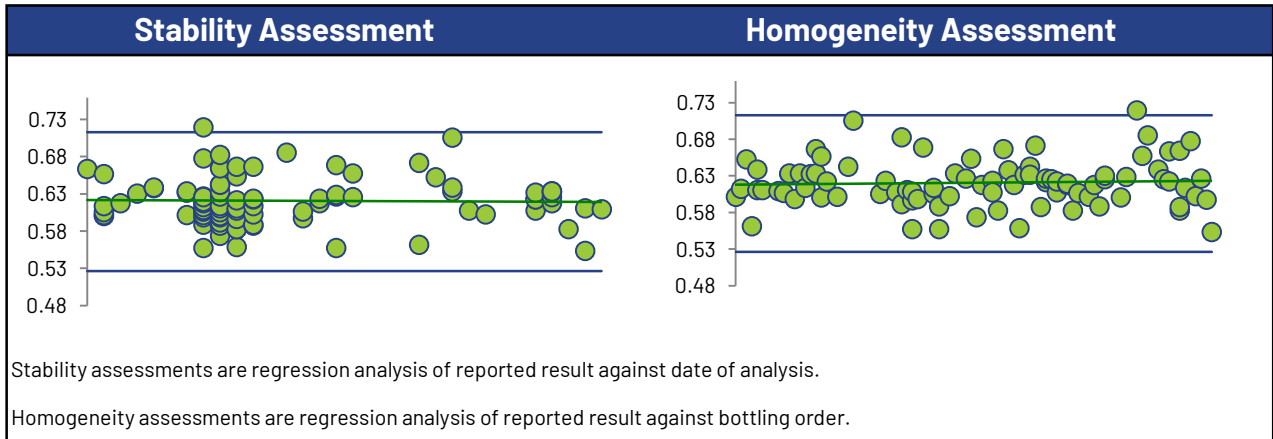


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Chromium



Chromium



Cobalt

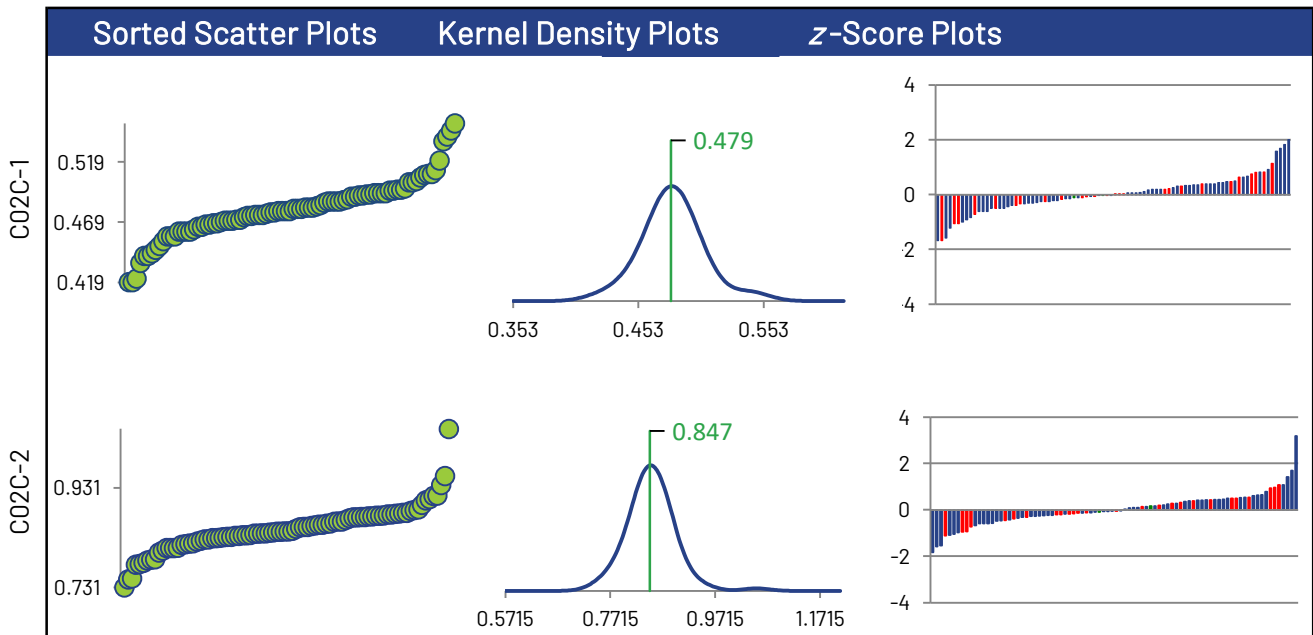
Summary Statistics

Statistic	C02C-1	C02C-2	C02C-3	C02C-4
No. of results used for summary statistics	86	86	86	86
Median mg/L	0.479	0.844	1.31	0.762
Robust Mean mg/L	0.479	0.847	1.31	0.759
Uncertainty of the Assigned Value mg/L	0.00276	0.00487	0.00677	0.00406
Robust Standard Deviation mg/L	0.0205	0.0361	0.0502	0.0301
Regression Standard Deviation mg/L	0.0360	0.0636	0.0979	0.0570
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.0360	0.0636	0.0979	0.0570
Flagged Outliers	1	1	1	1
$ z > 3.0$	0	1	0	0
$2 < z < 3$	0	0	1	0
Failure Rate %*	2.3			

Methods Used

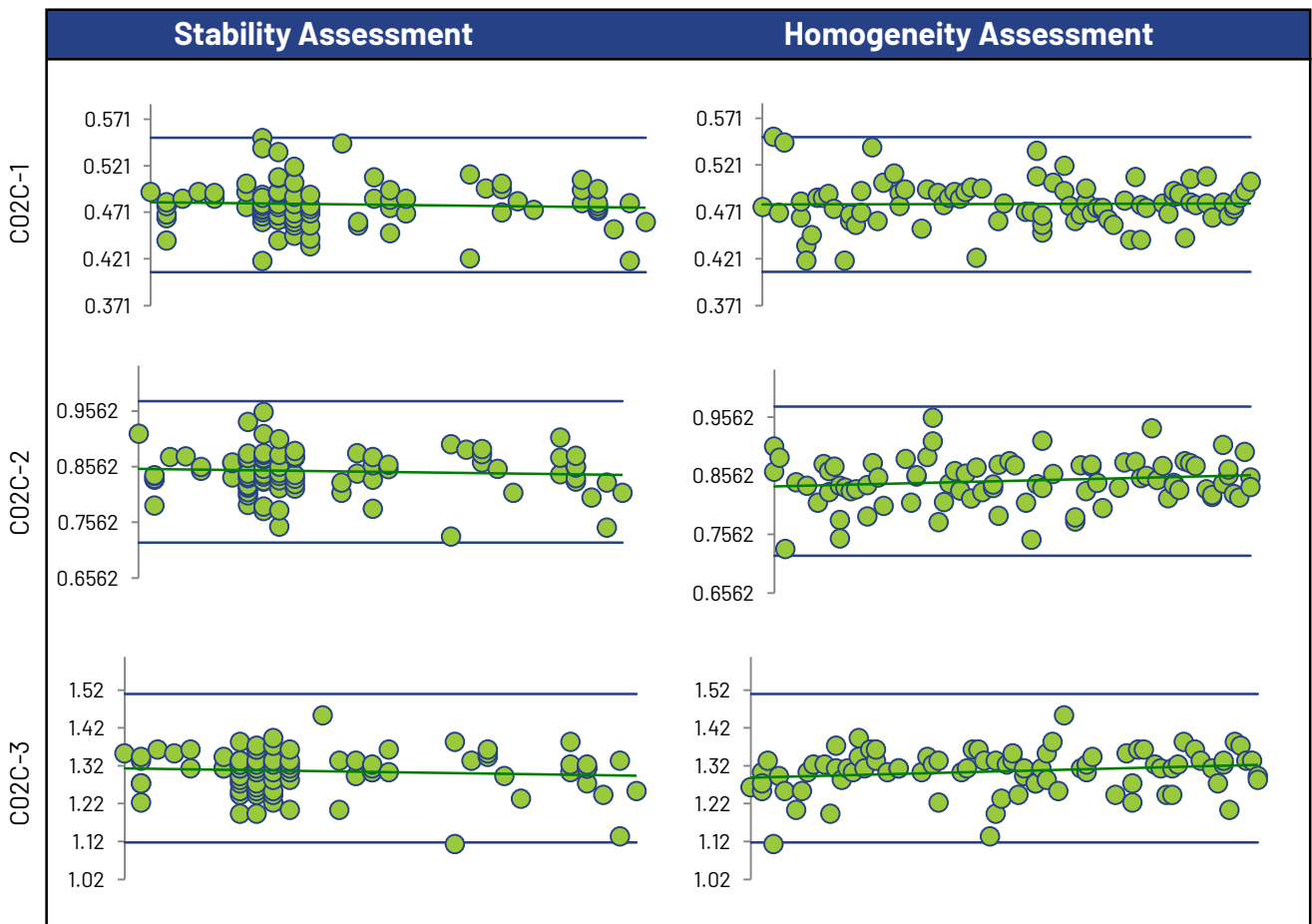
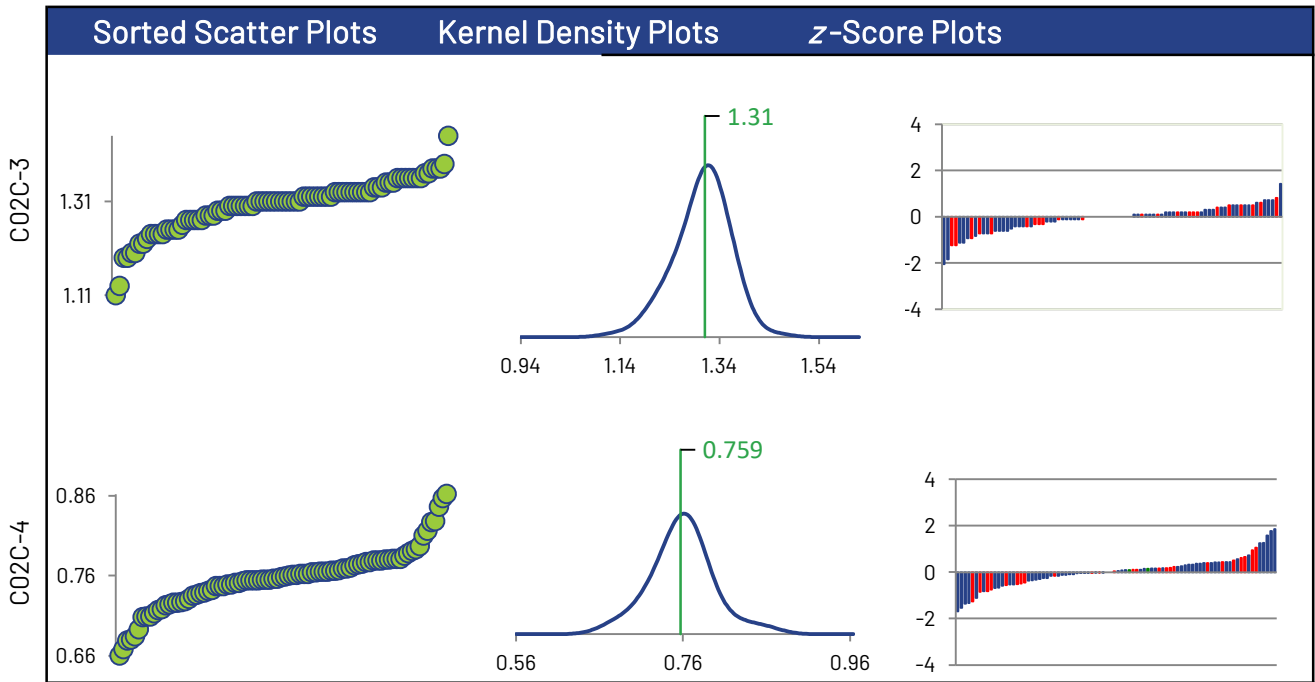
Method	C02C-1	C02C-2	C02C-3	C02C-4
ICP/MS (Blue)	58	58	58	58
ICP/OES (Red)	26	26	26	26
AA FLAME (Green)	2	2	2	2

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

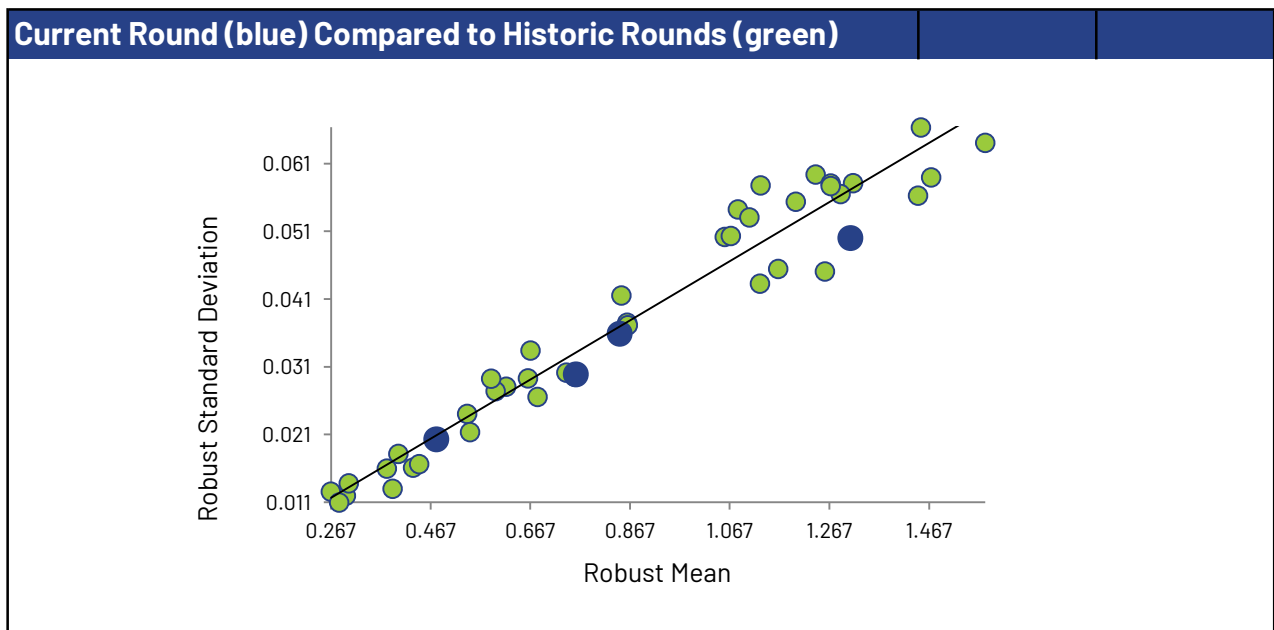
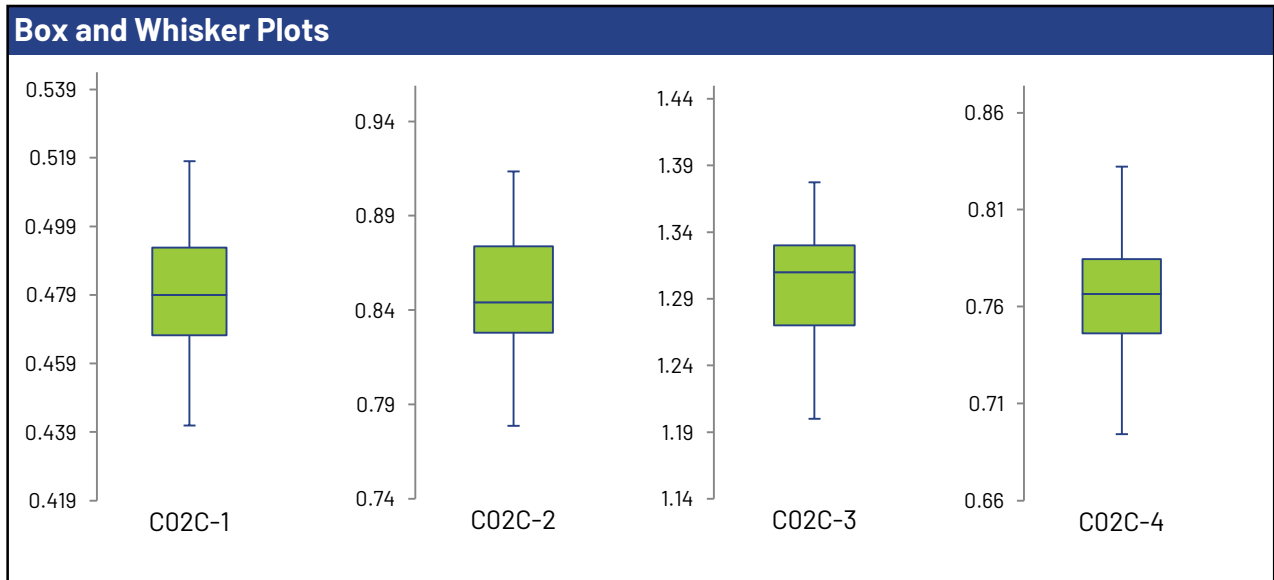
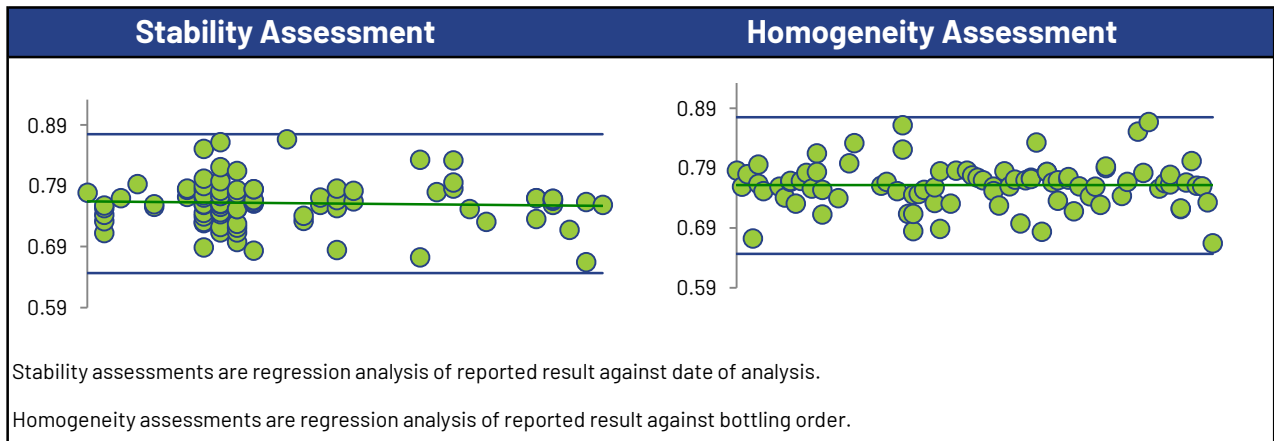


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Cobalt



Cobalt



Copper

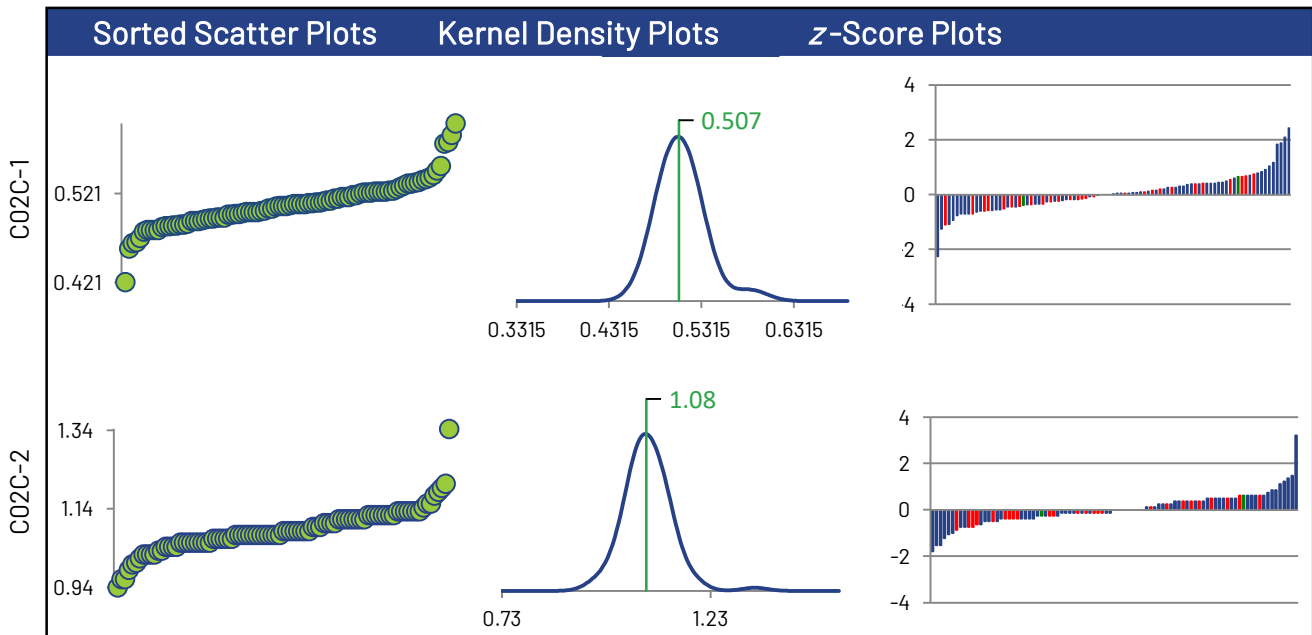
Summary Statistics

Statistic	C02C-1	C02C-2	C02C-3	C02C-4
No. of results used for summary statistics	91	91	91	91
Median mg/L	0.508	1.08	1.41	0.813
Robust Mean mg/L	0.507	1.08	1.41	0.813
Uncertainty of the Assigned Value mg/L	0.00288	0.00599	0.00811	0.00451
Robust Standard Deviation mg/L	0.0220	0.0457	0.0619	0.0344
Regression Standard Deviation mg/L	0.0381	0.0811	0.105	0.0610
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.0381	0.0811	0.105	0.0610
Flagged Outliers	1	1	1	1
$ z > 3.0$	0	1	0	0
$2 < z < 3$	3	0	1	1
Failure Rate %*	2.2			

Methods Used

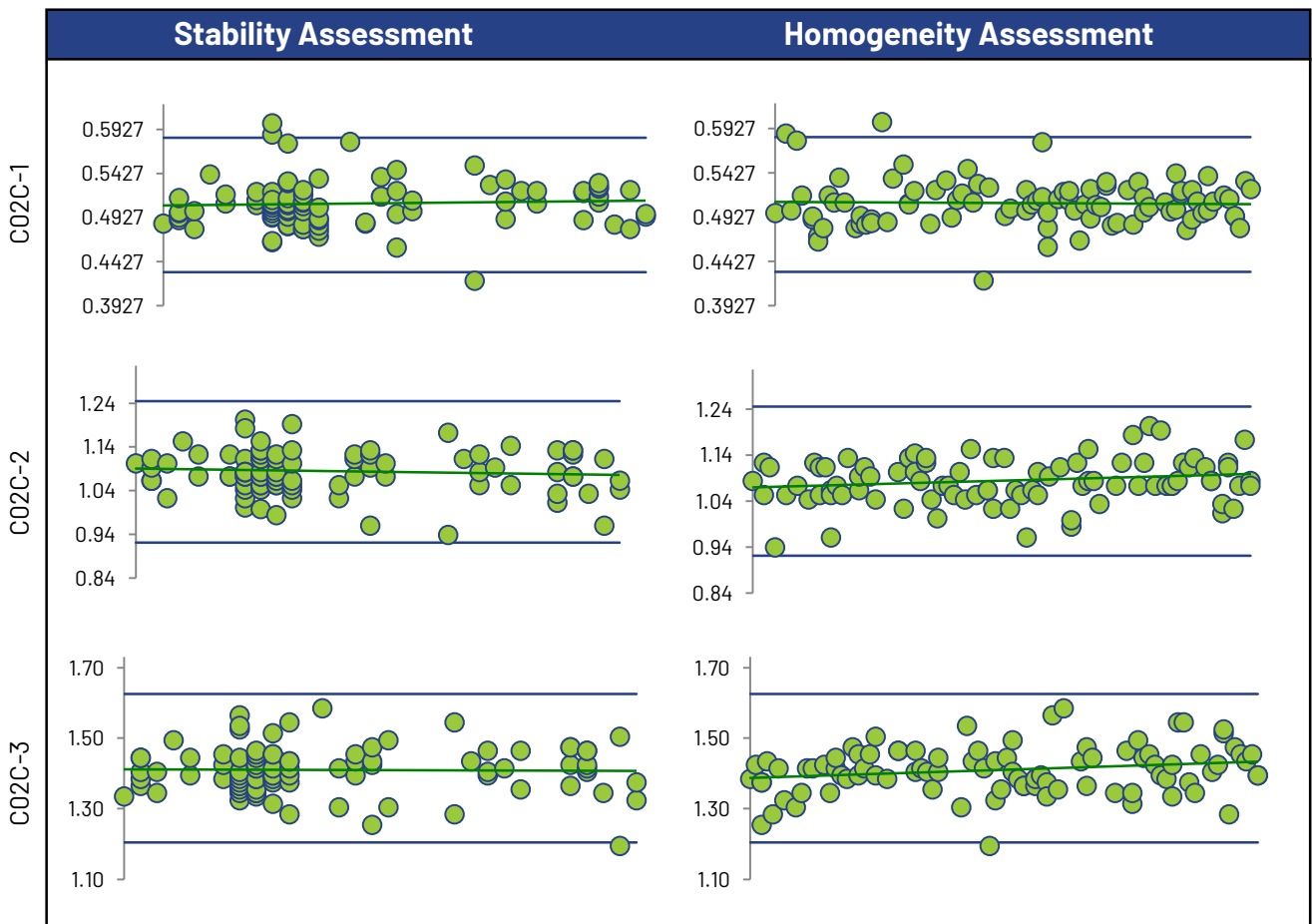
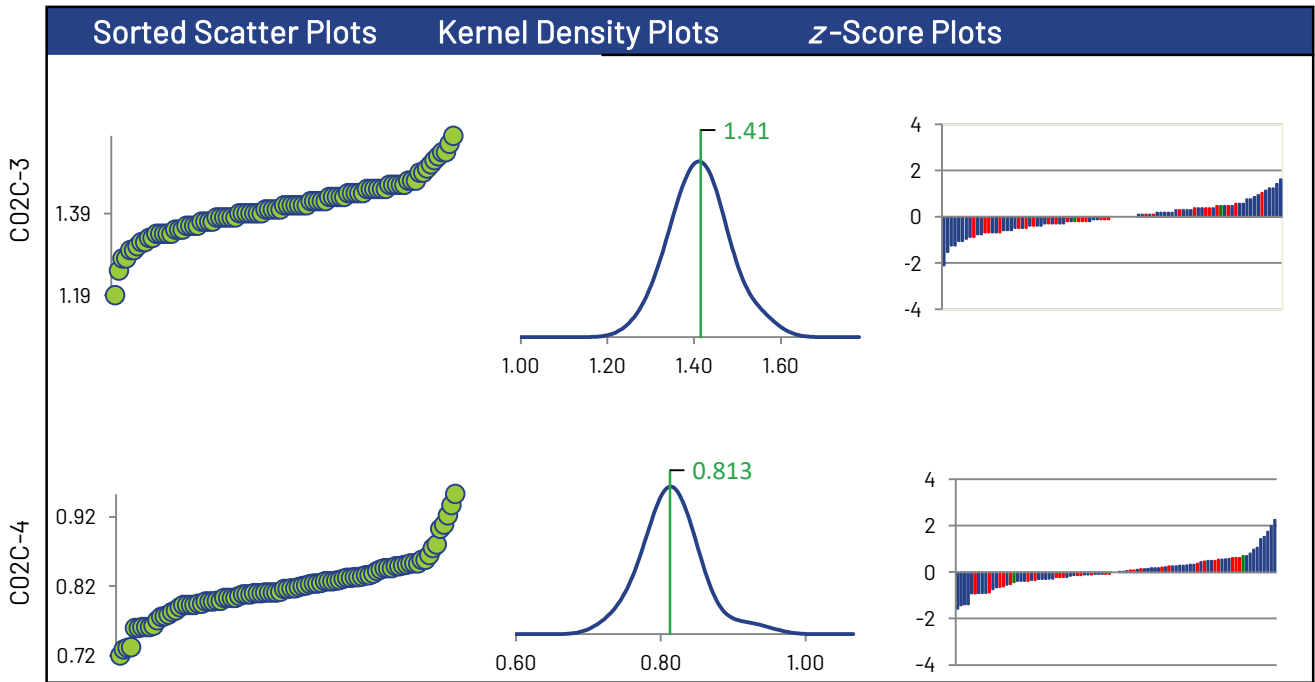
Method	C02C-1	C02C-2	C02C-3	C02C-4
ICP/MS (Blue)	61	61	61	61
ICP/OES (Red)	28	28	28	28
AA FLAME (Green)	2	2	2	2

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

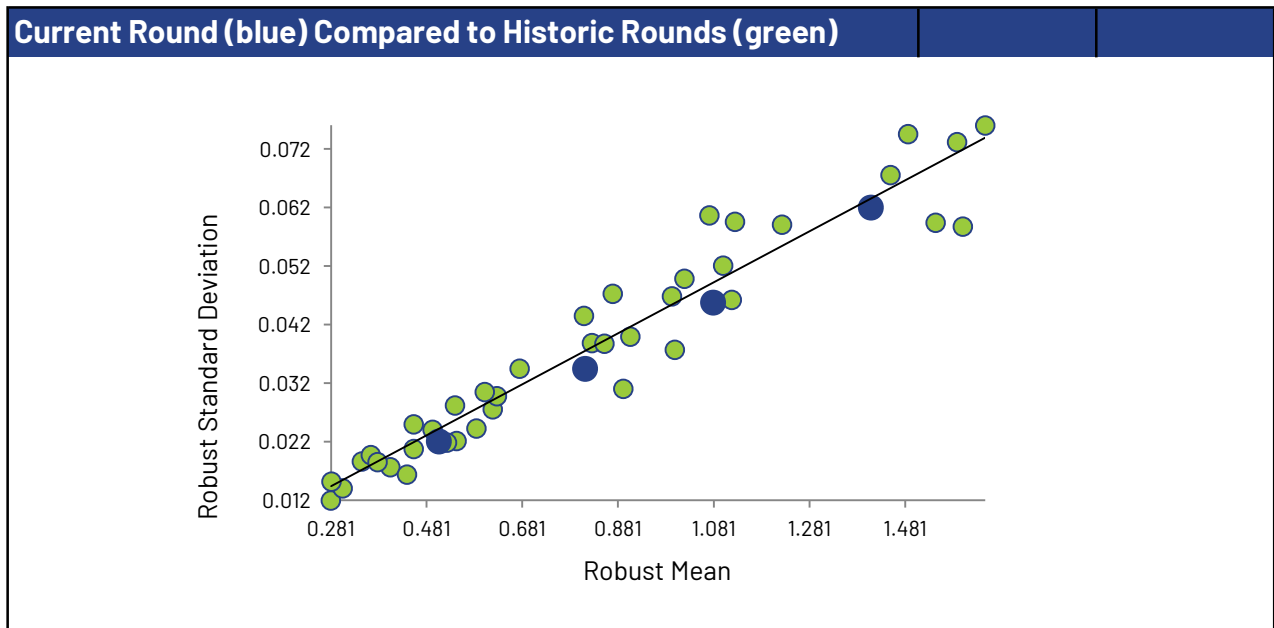
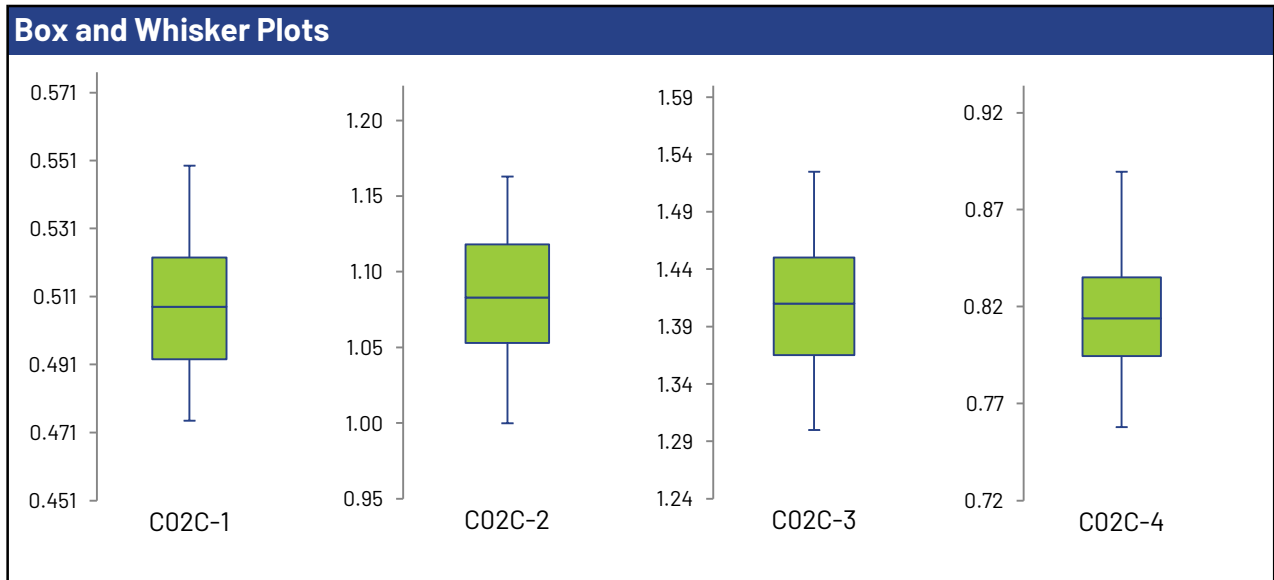
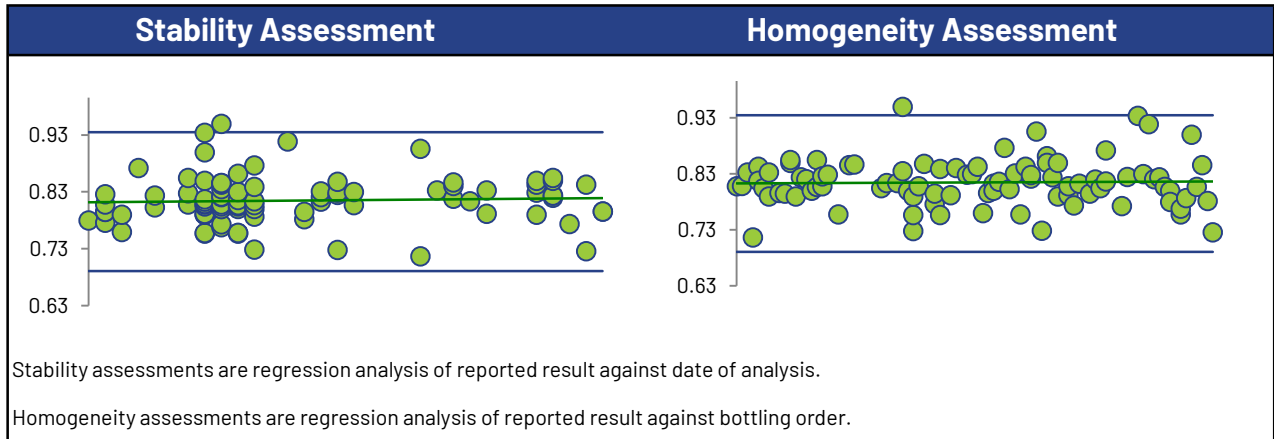


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Copper



Copper



Iron

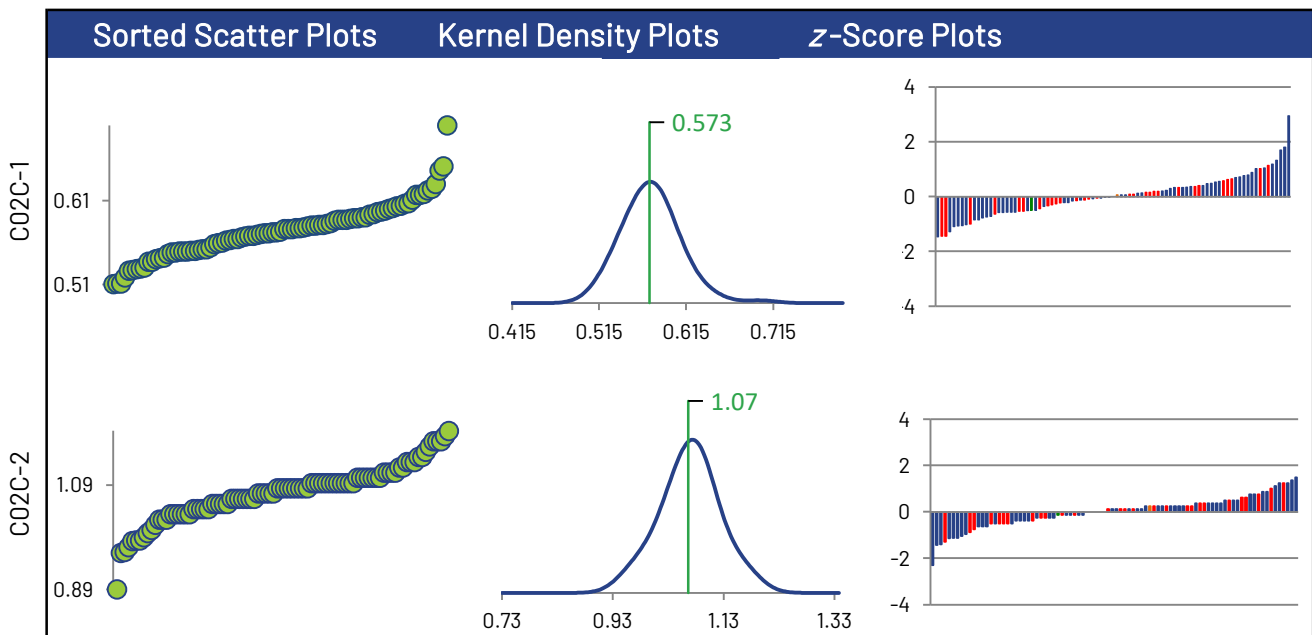
Summary Statistics

Statistic	C02C-1	C02C-2	C02C-3	C02C-4
No. of results used for summary statistics	87	88	88	88
Median mg/L	0.573	1.08	1.41	0.743
Robust Mean mg/L	0.573	1.07	1.40	0.741
Uncertainty of the Assigned Value mg/L	0.00410	0.00653	0.00907	0.00508
Robust Standard Deviation mg/L	0.0306	0.0490	0.0681	0.0381
Regression Standard Deviation mg/L	0.0430	0.0804	0.105	0.0556
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.0430	0.0804	0.105	0.0556
Flagged Outliers	1	0	0	0
$ z > 3.0$	0	0	1	0
$2 < z < 3$	1	1	0	0
Failure Rate %*	1.1			

Methods Used

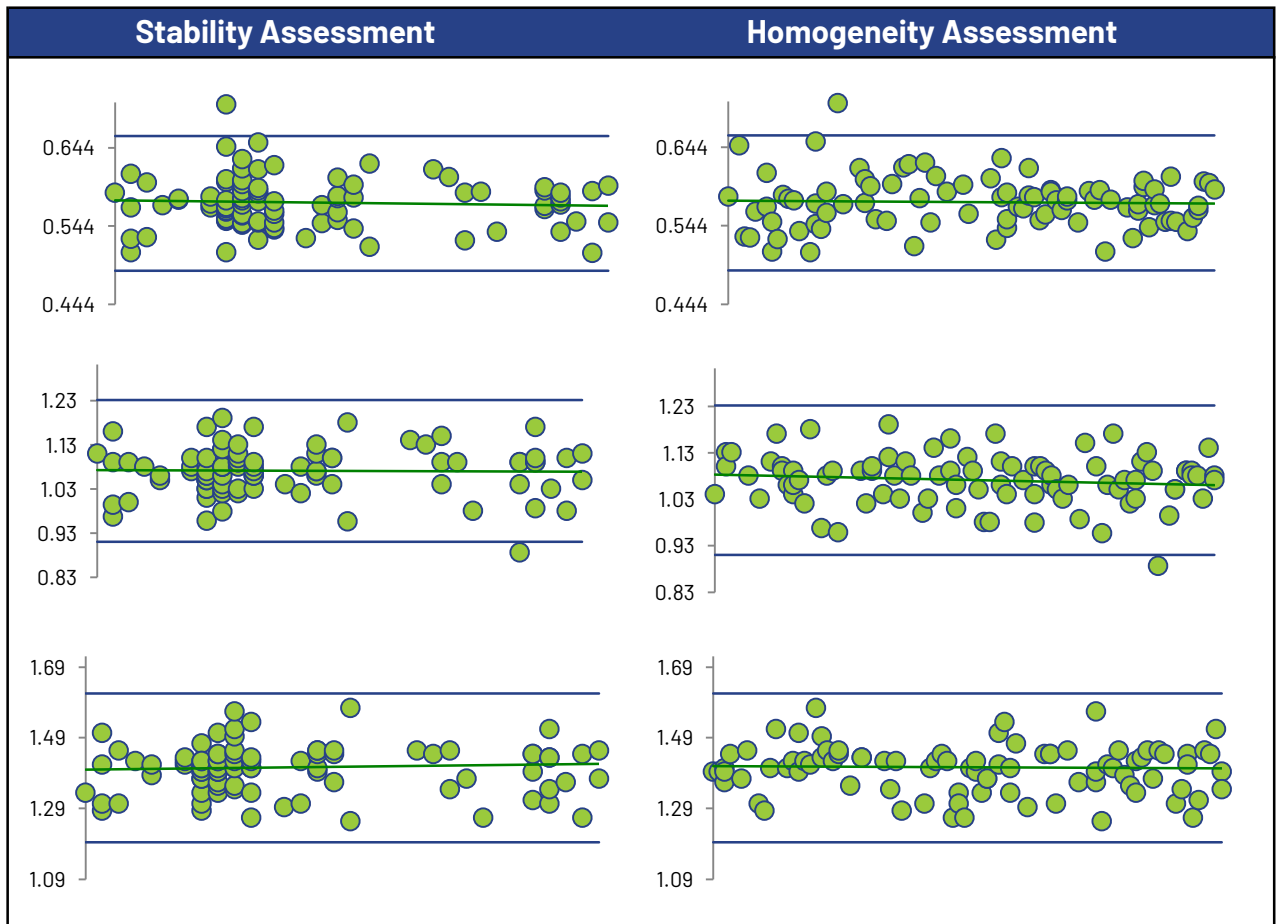
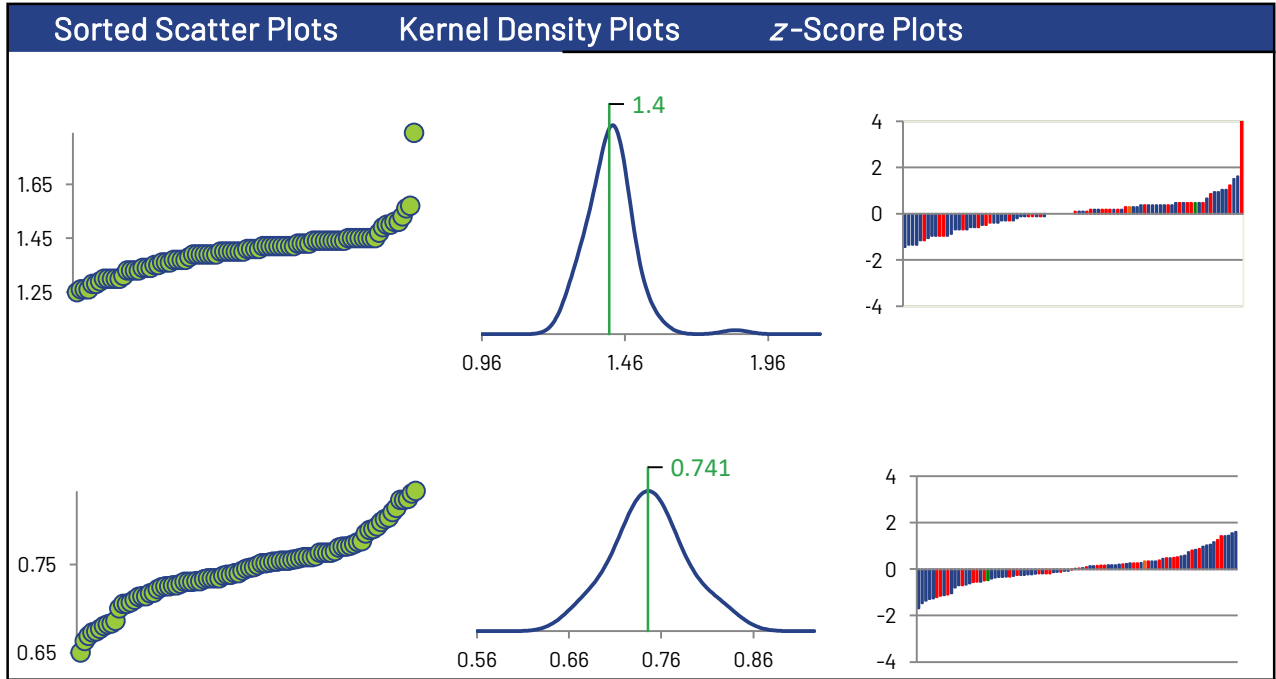
Method	C02C-1	C02C-2	C02C-3	C02C-4
ICP/MS (Blue)	55	55	55	55
ICP/OES (Red)	30	31	31	31
COLORIMETRIC (Green)	1	1	1	1
AA FLAME (Orange)	1	1	1	1

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

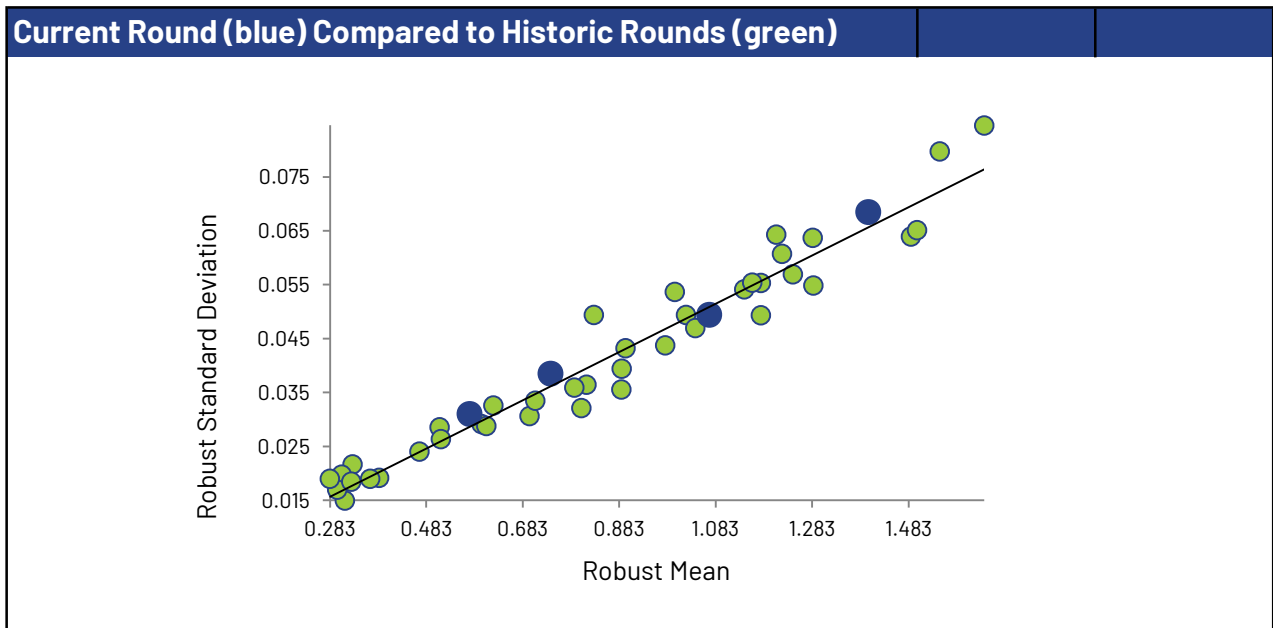
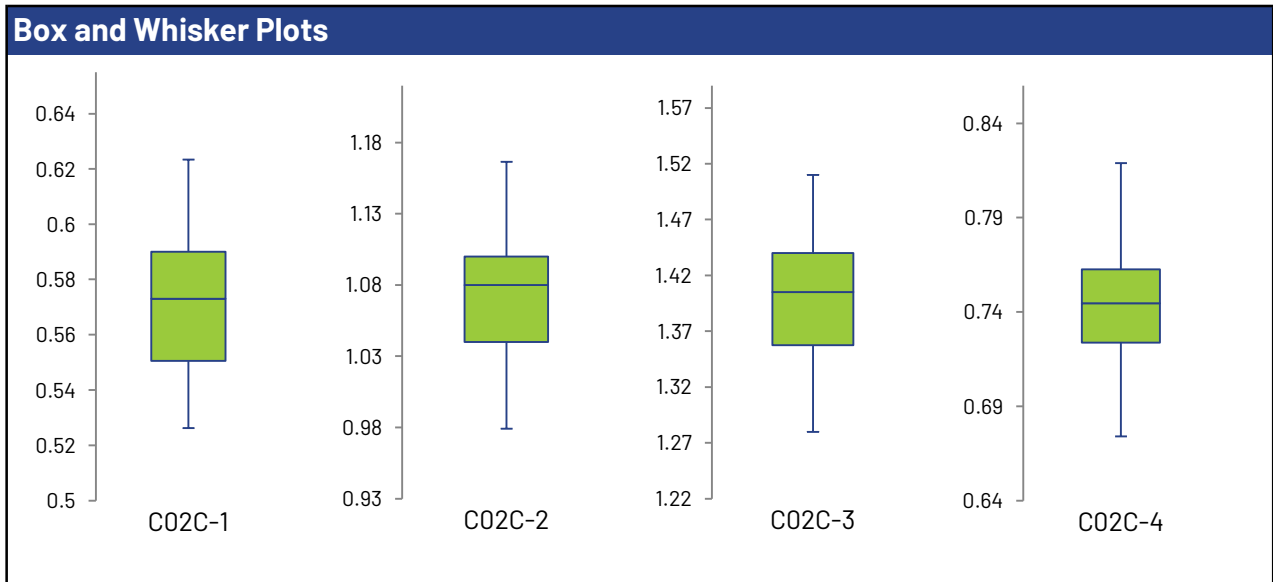
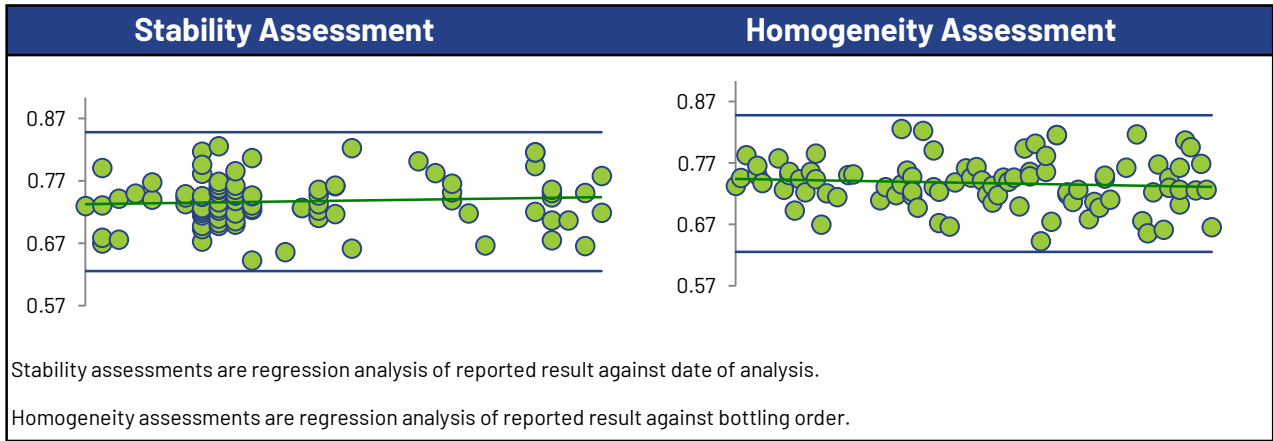


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Iron



Iron



Lead

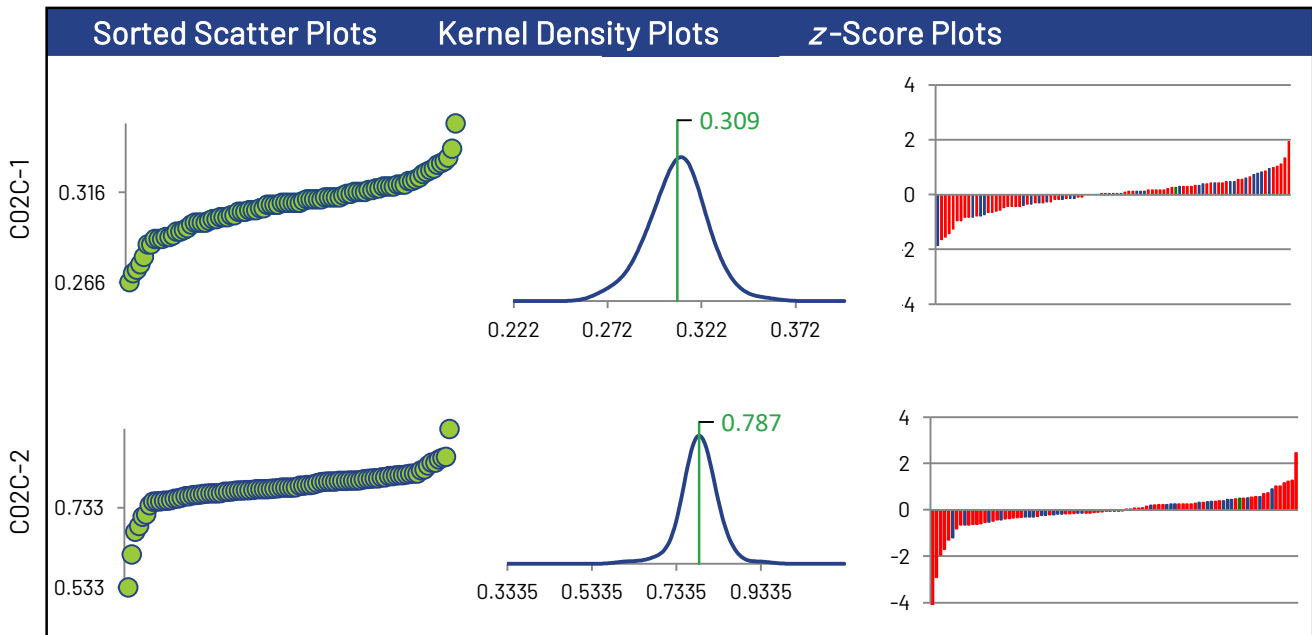
Summary Statistics

Statistic	C02C-1	C02C-2	C02C-3	C02C-4
No. of results used for summary statistics	91	91	91	91
Median mg/L	0.310	0.784	1.21	0.492
Robust Mean mg/L	0.309	0.787	1.22	0.490
Uncertainty of the Assigned Value mg/L	0.00177	0.00384	0.00444	0.00269
Robust Standard Deviation mg/L	0.0135	0.0293	0.0339	0.0205
Regression Standard Deviation mg/L	0.0232	0.0590	0.0911	0.0368
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.0232	0.0590	0.0911	0.0368
Flagged Outliers	1	1	1	1
$ z > 3.0$	0	1	2	0
$2 < z < 3$	0	2	2	0
Failure Rate %*	3.3			

Methods Used

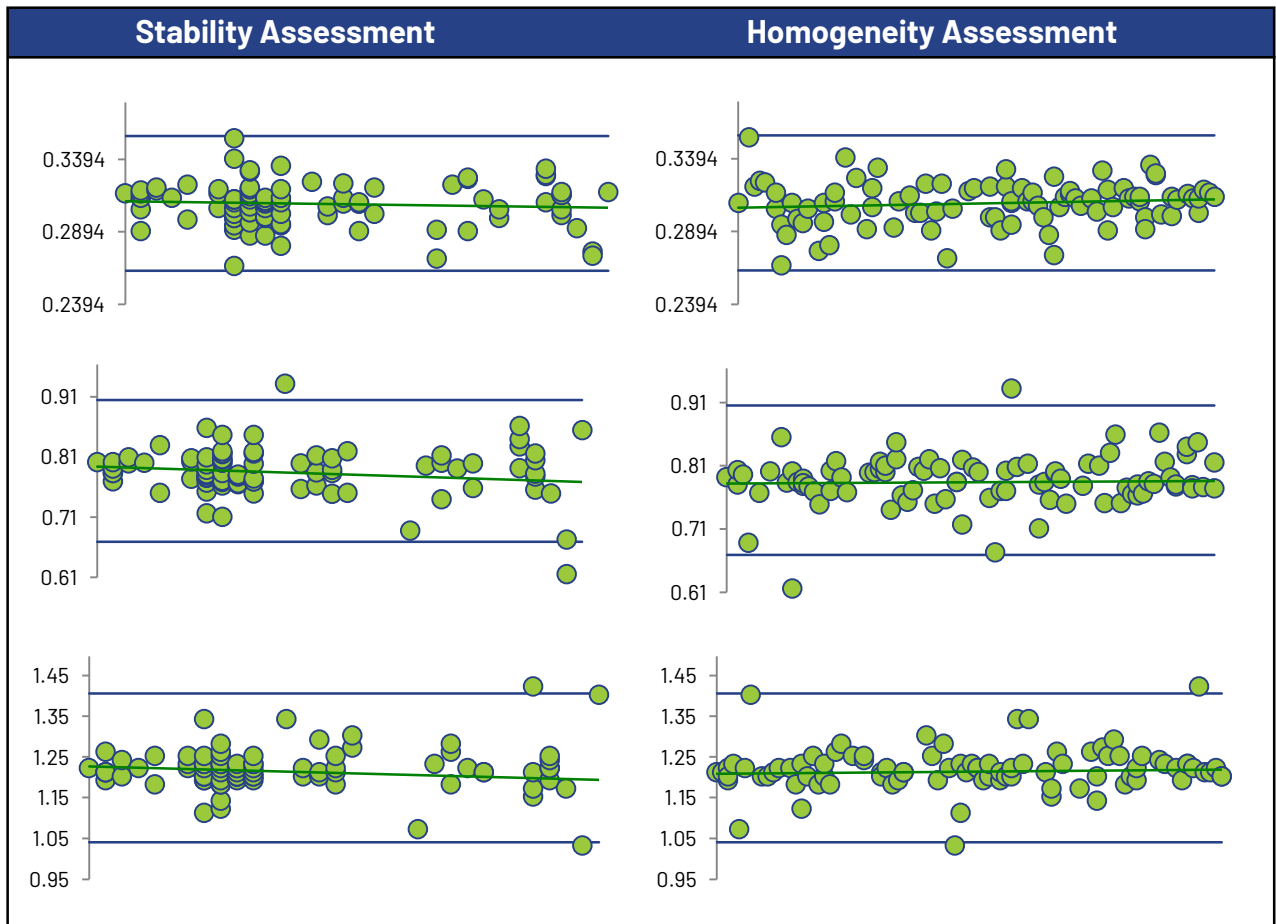
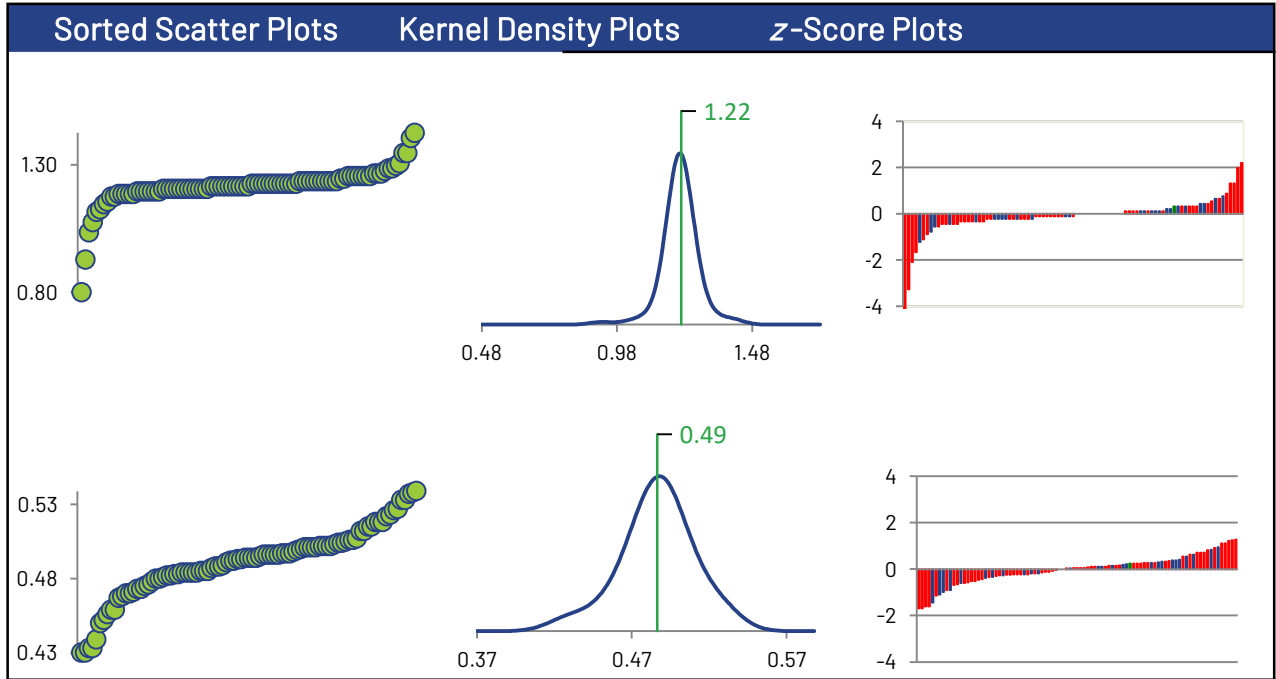
Method	C02C-1	C02C-2	C02C-3	C02C-4
ICP/OES (Blue)	29	29	29	29
ICP/MS (Red)	61	61	61	61
AA FLAME (Green)	1	1	1	1

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

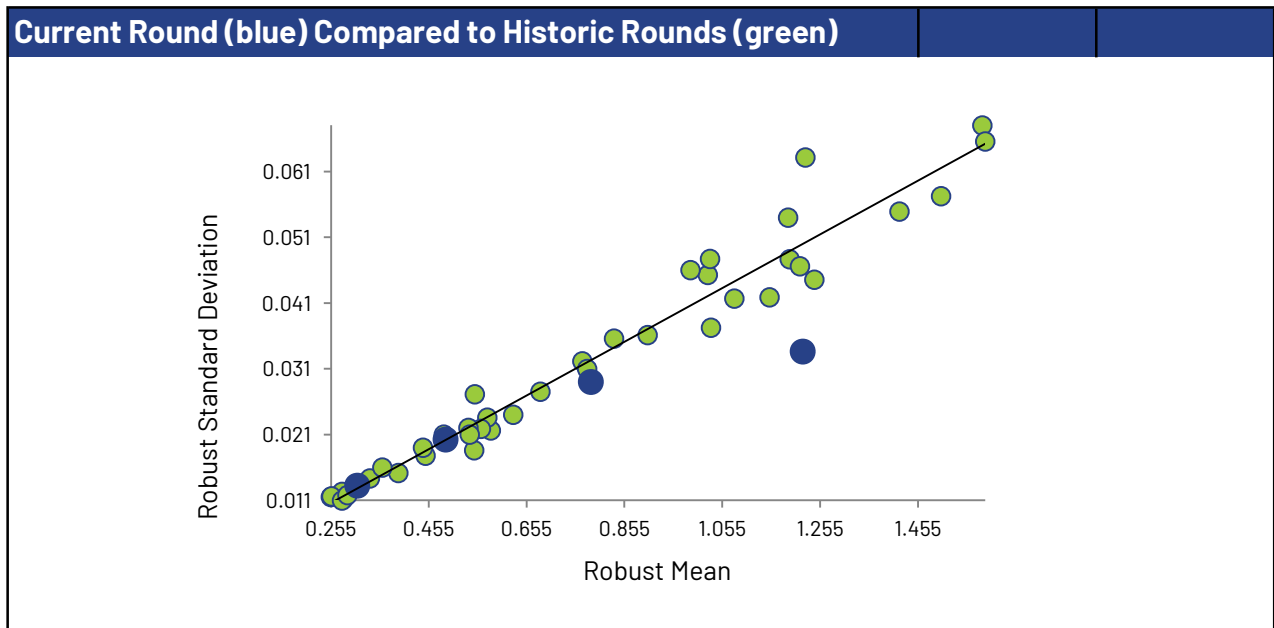
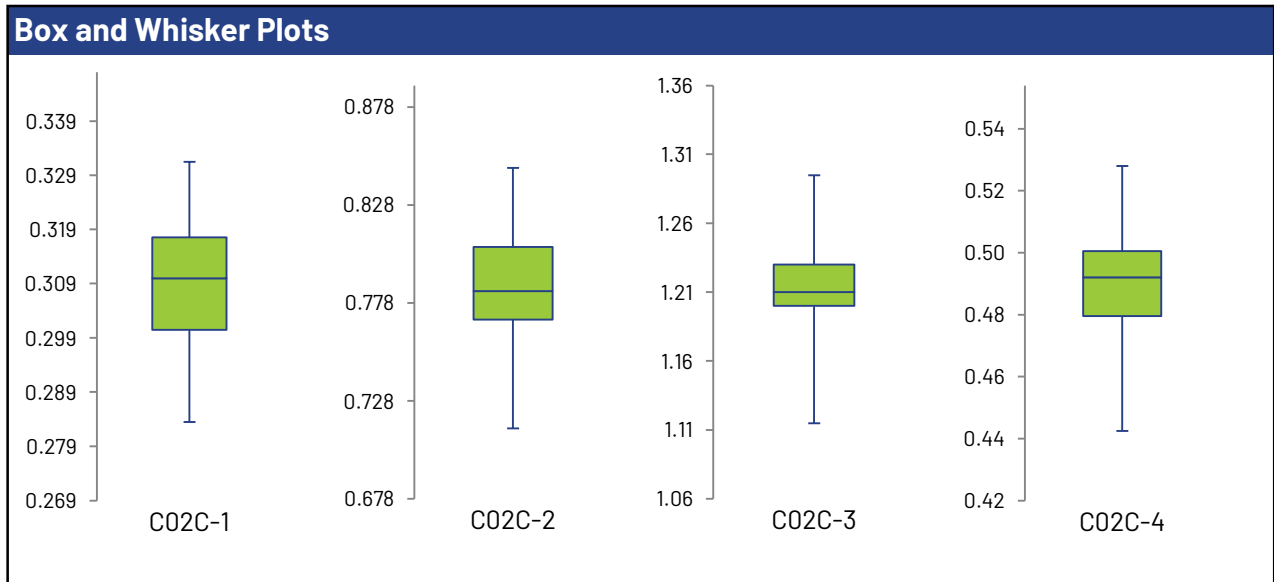
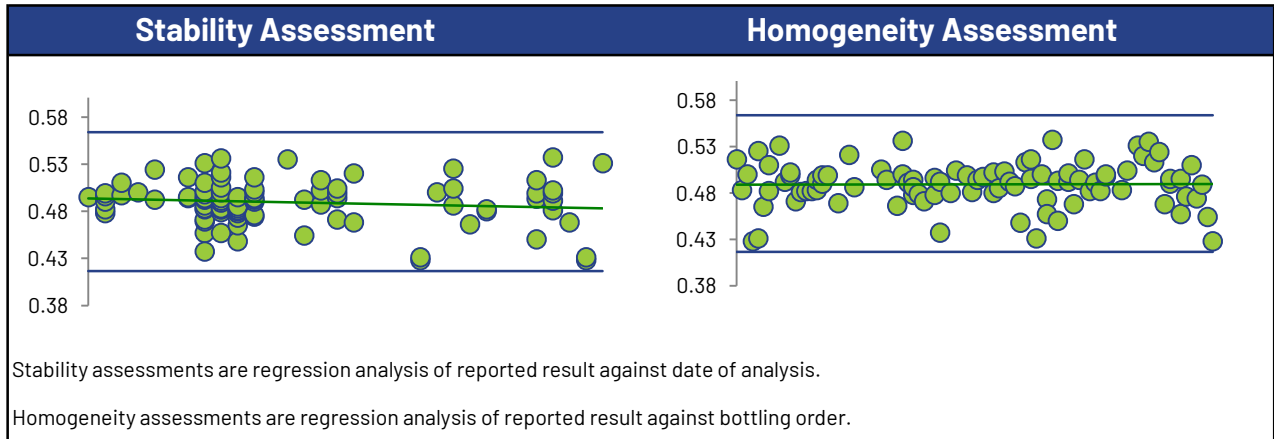


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Lead



Lead



Lithium

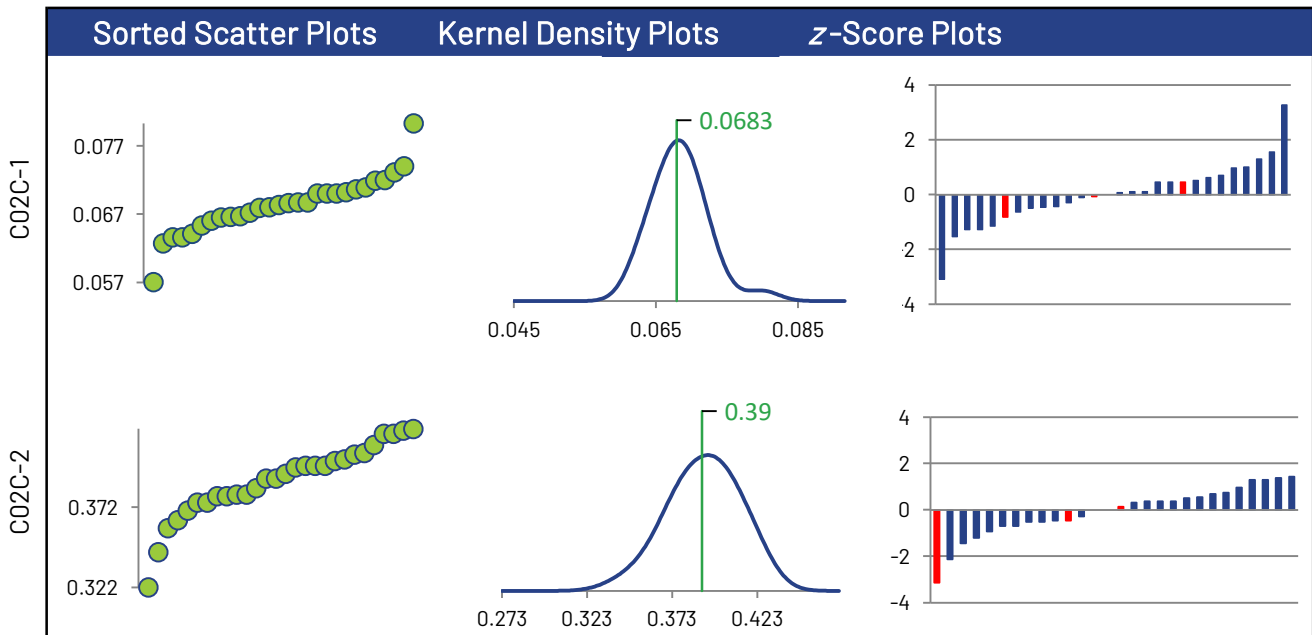
Summary Statistics

Statistic	C02C-1	C02C-2	C02C-3	C02C-4
No. of results used for summary statistics	28	28	28	28
Median mg/L	0.0685	0.392	0.392	0.287
Robust Mean mg/L	0.0683	0.390	0.394	0.285
Uncertainty of the Assigned Value mg/L	0.000865	0.00513	0.00435	0.00352
Robust Standard Deviation mg/L	0.00366	0.0217	0.0184	0.0149
Regression Standard Deviation mg/L				
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.00366	0.0217	0.0184	0.0149
Flagged Outliers	0	0	0	0
$ z > 3.0$	2	1	1	0
$2 < z < 3$	0	1	1	3
Failure Rate %*	7.1			

Methods Used

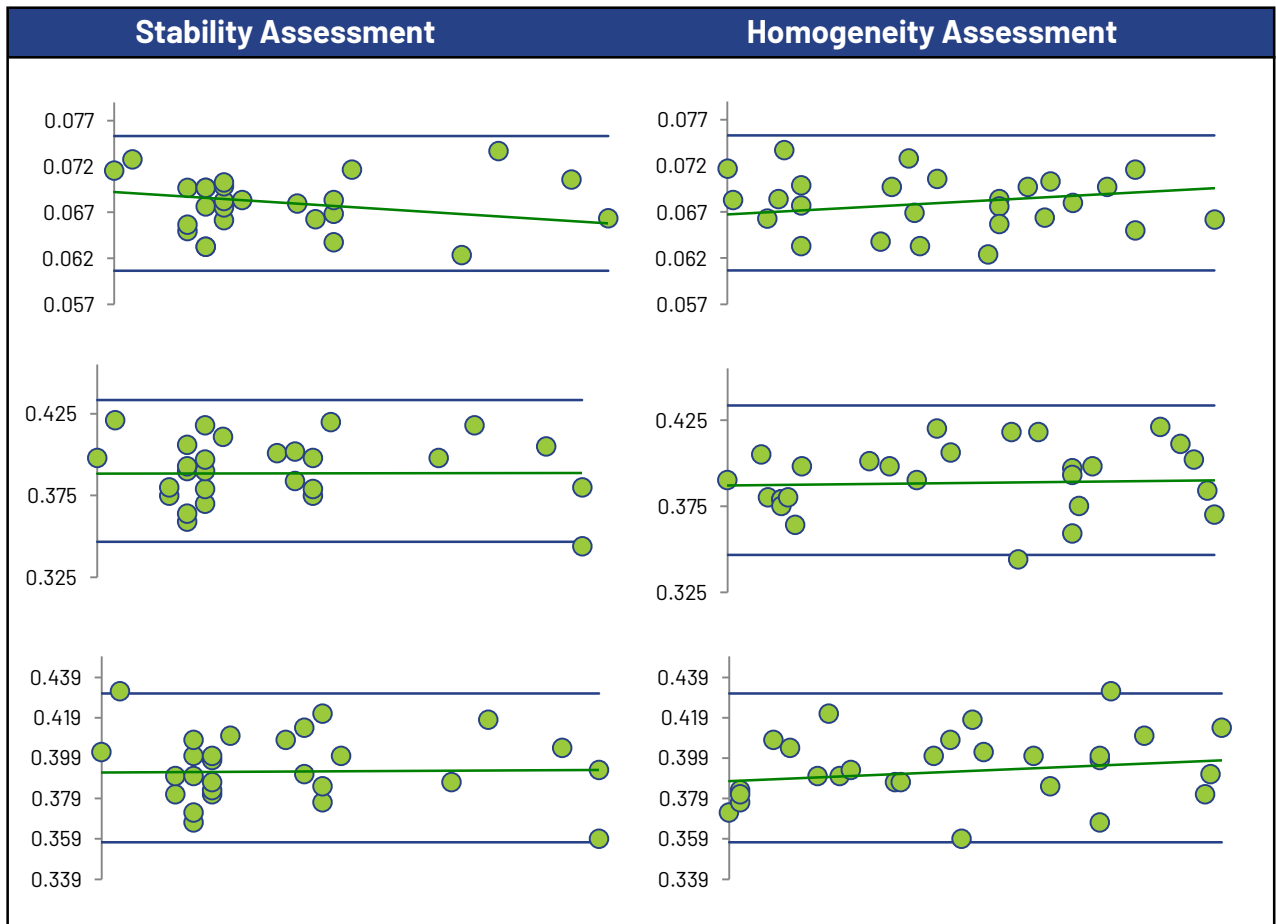
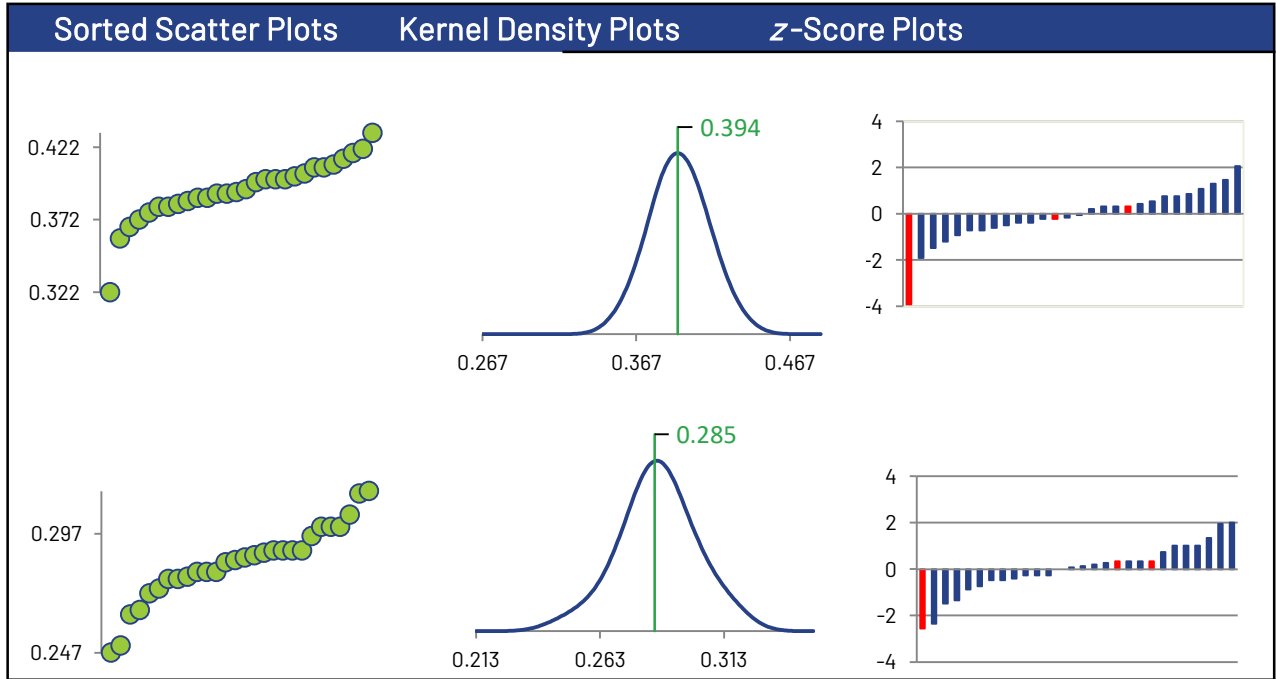
Method	C02C-1	C02C-2	C02C-3	C02C-4
ICP/MS (Blue)	25	25	25	25
ICP/OES (Red)	3	3	3	3

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

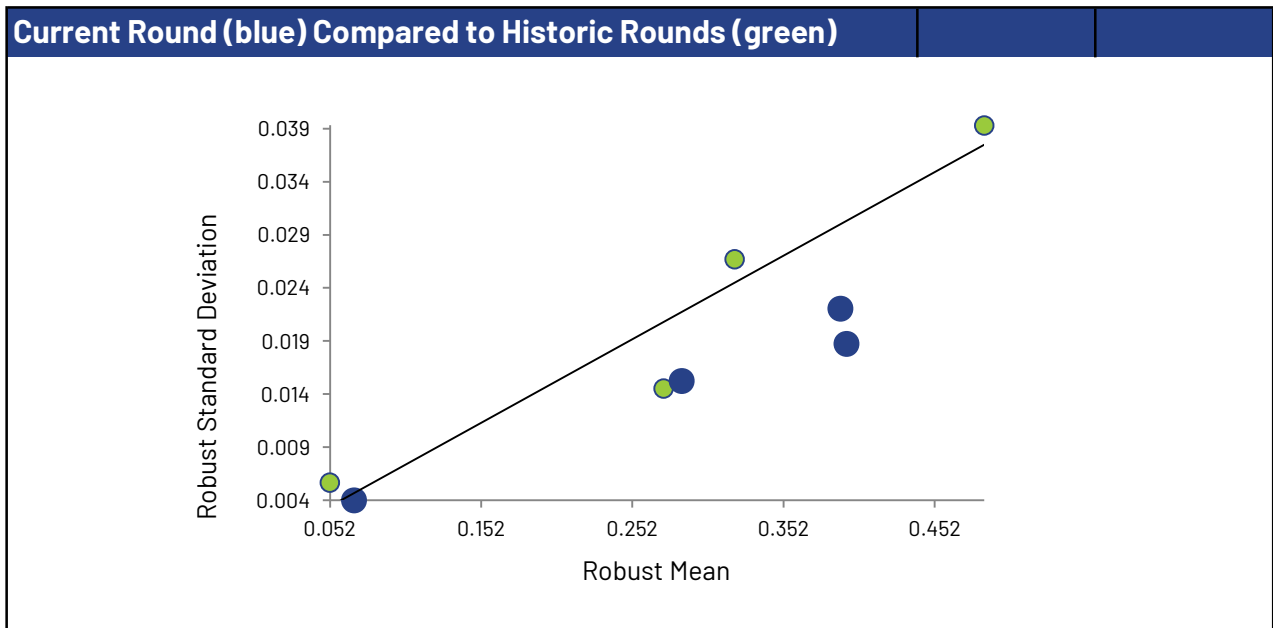
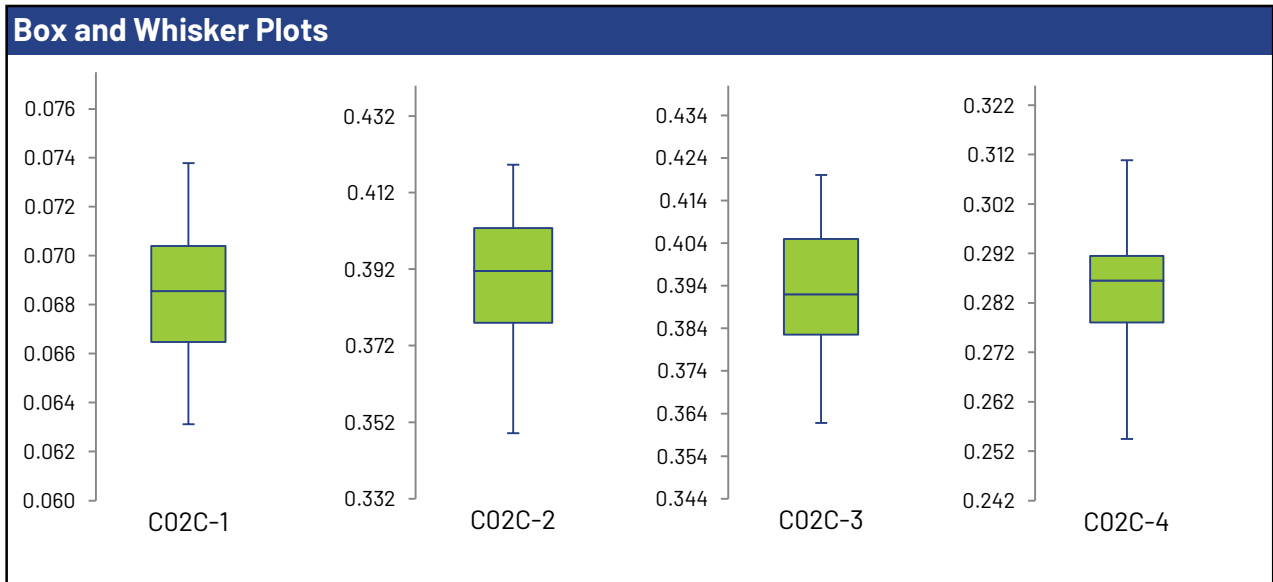
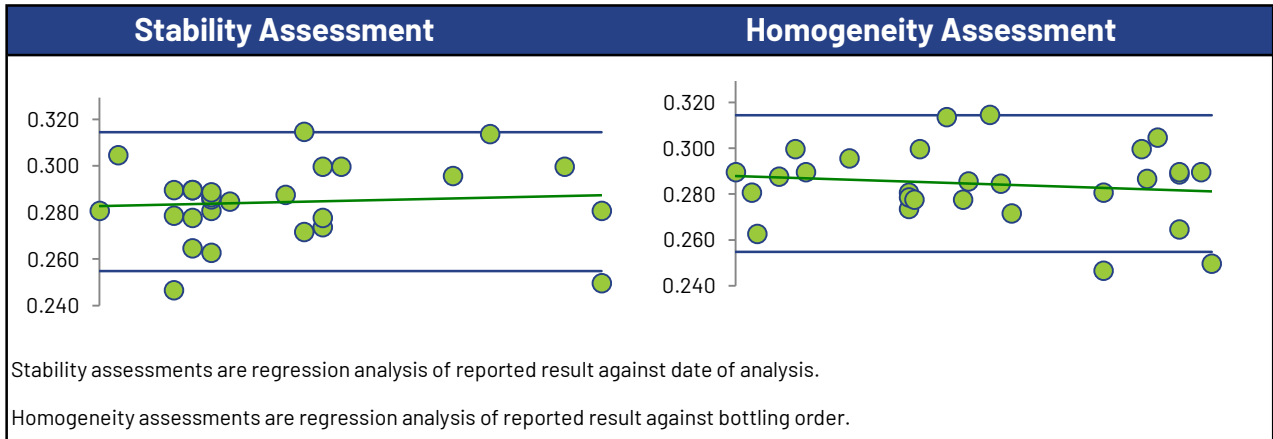


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Lithium



Lithium



Manganese

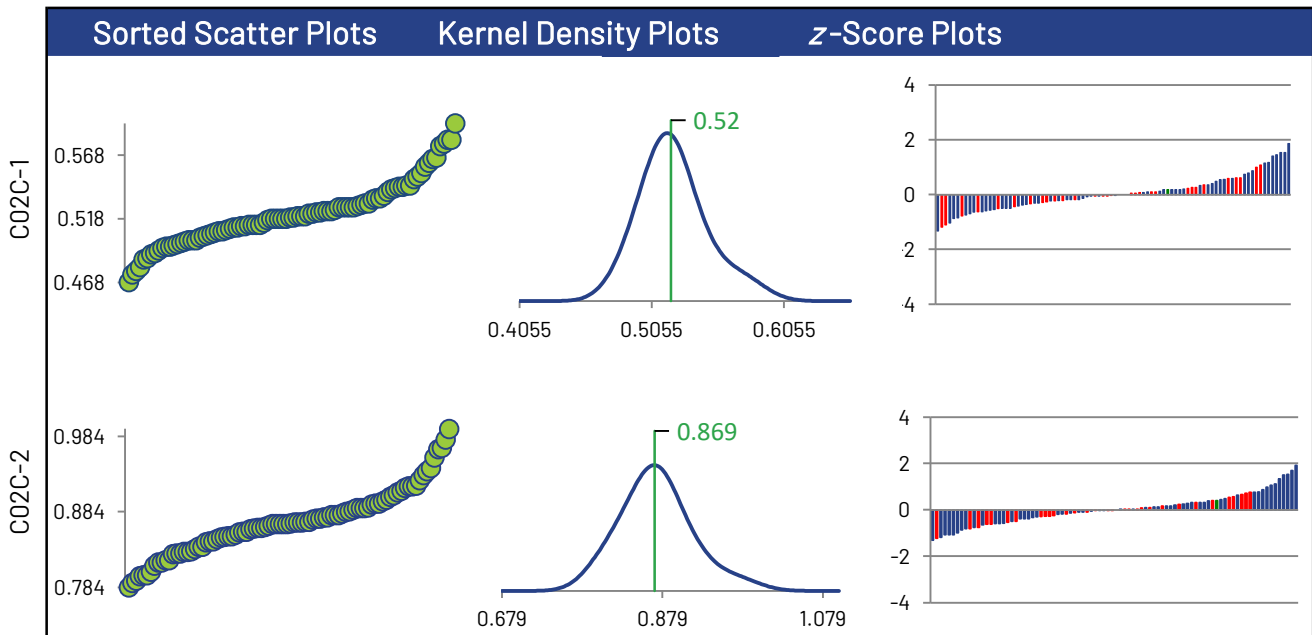
Summary Statistics

Statistic	C02C-1	C02C-2	C02C-3	C02C-4
No. of results used for summary statistics	88	88	88	88
Median mg/L	0.519	0.869	1.25	0.460
Robust Mean mg/L	0.520	0.869	1.25	0.460
Uncertainty of the Assigned Value mg/L	0.00301	0.00540	0.00706	0.00277
Robust Standard Deviation mg/L	0.0226	0.0405	0.0530	0.0208
Regression Standard Deviation mg/L	0.0390	0.0652	0.0935	0.0345
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.0390	0.0652	0.0935	0.0345
Flagged Outliers	1	1	1	1
z >3.0	0	0	0	0
2< z <3	0	0	0	0
Failure Rate %*	1.1			

Methods Used

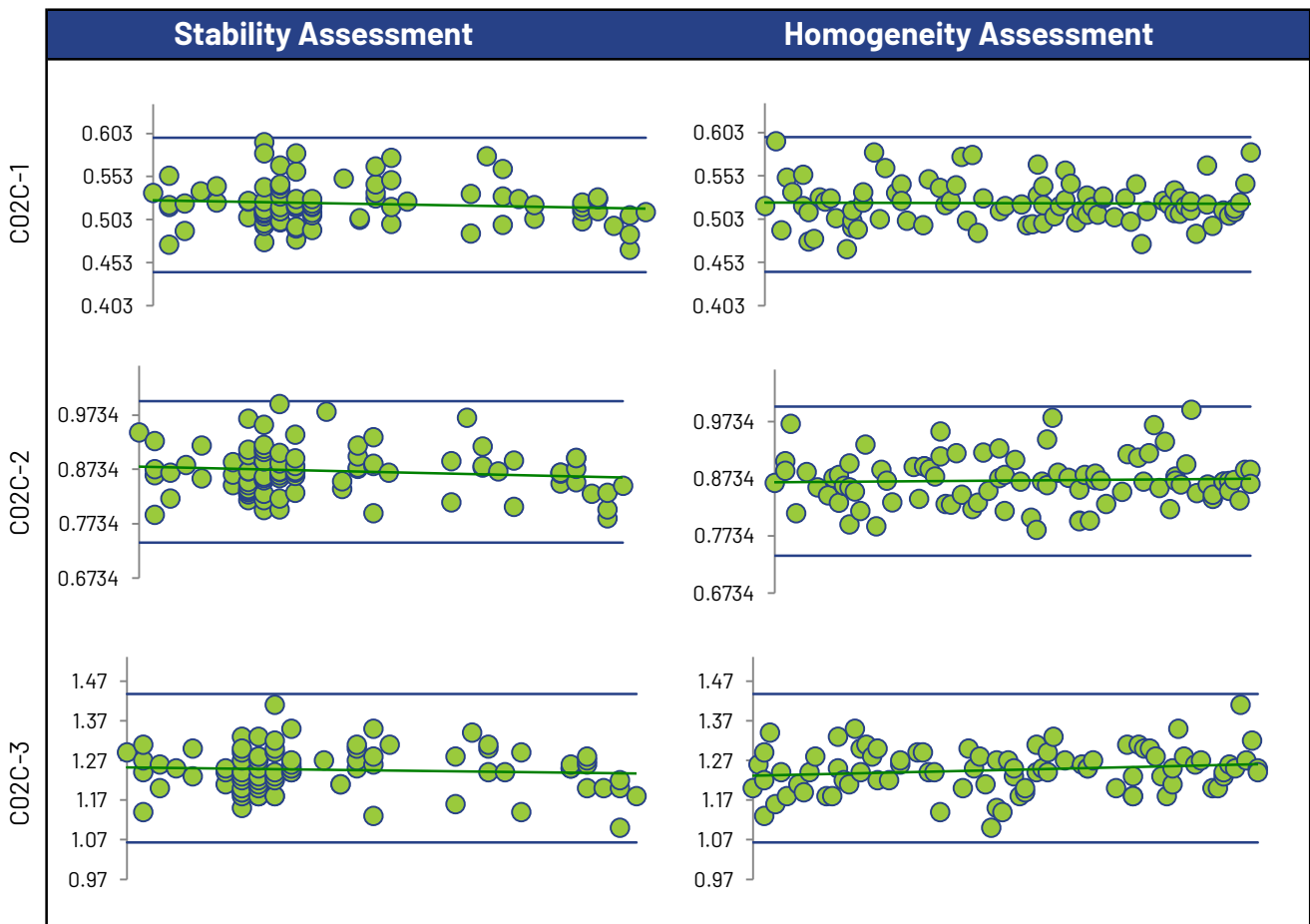
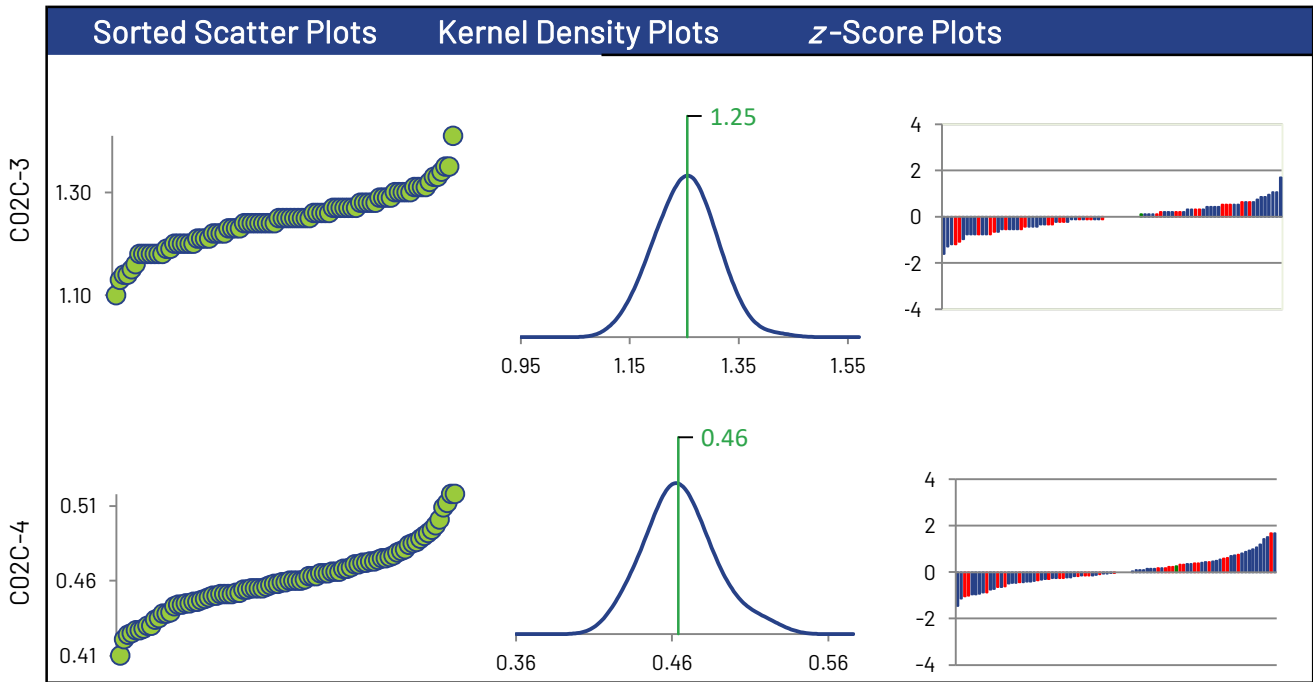
Method	C02C-1	C02C-2	C02C-3	C02C-4
ICP/MS (Blue)	56	56	56	56
ICP/OES (Red)	31	31	31	31
AA FLAME (Green)	1	1	1	1

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

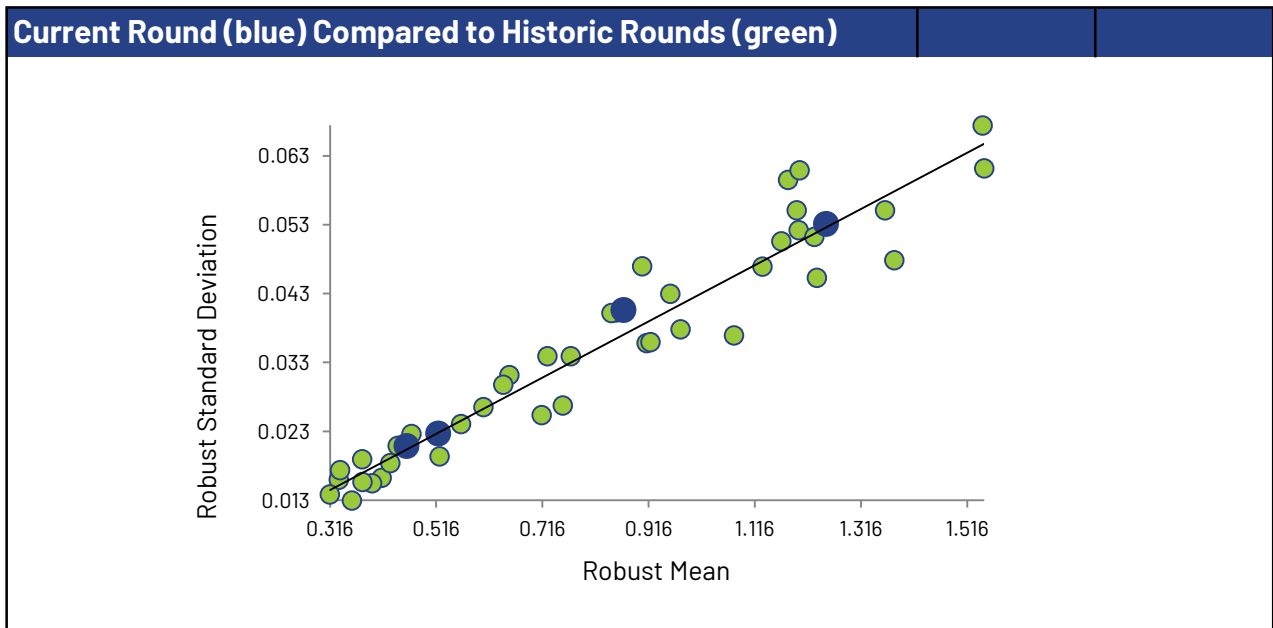
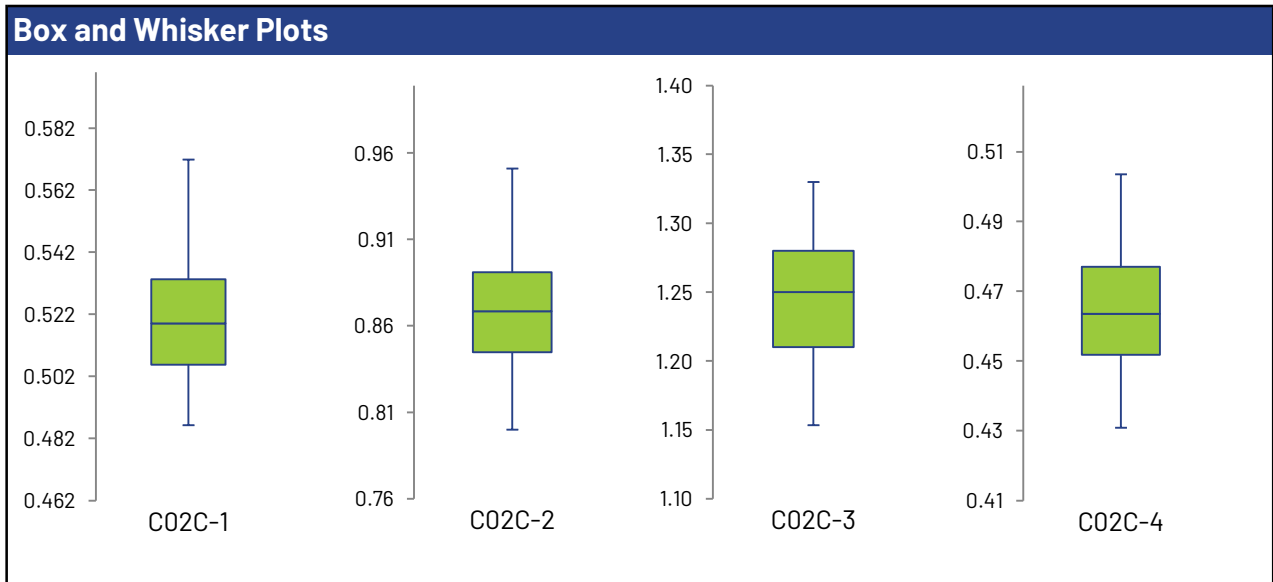
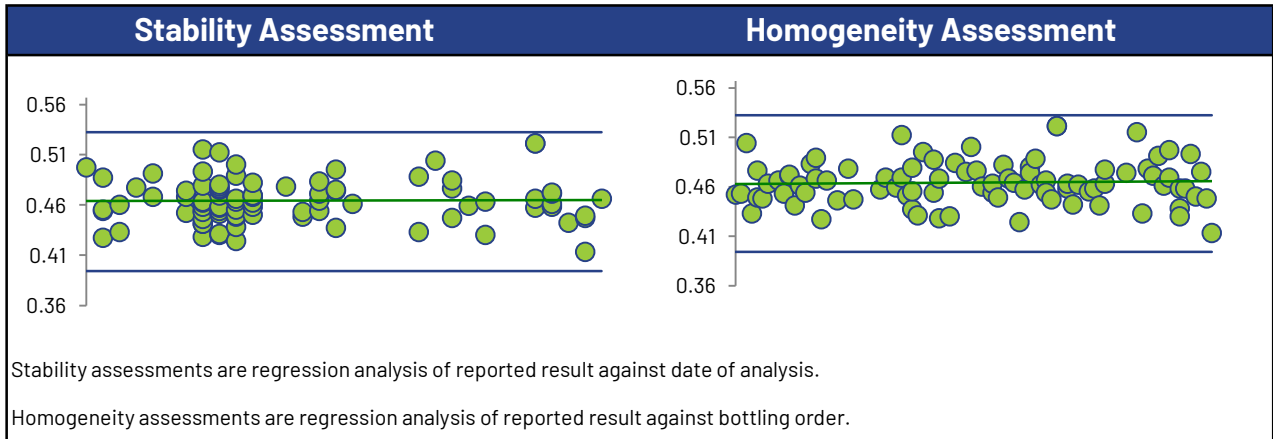


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Manganese



Manganese



Molybdenum

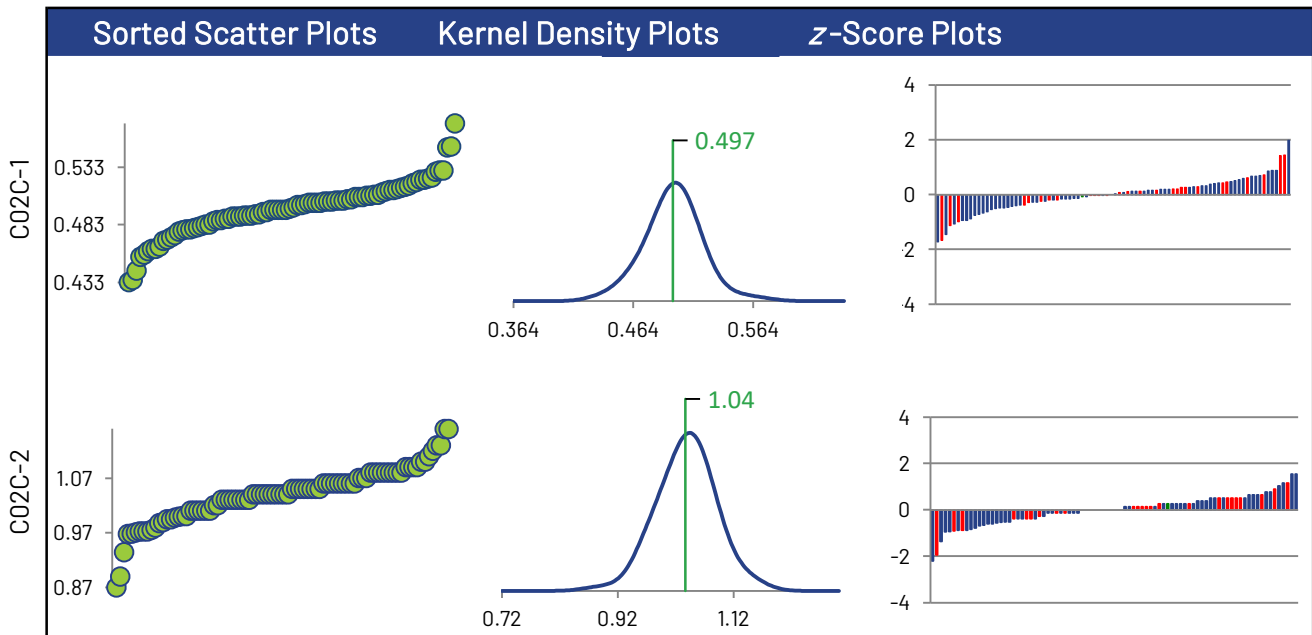
Summary Statistics

Statistic	C02C-1	C02C-2	C02C-3	C02C-4
No. of results used for summary statistics	86	86	86	86
Median mg/L	0.498	1.04	1.23	0.609
Robust Mean mg/L	0.497	1.04	1.23	0.606
Uncertainty of the Assigned Value mg/L	0.00274	0.00624	0.00744	0.00353
Robust Standard Deviation mg/L	0.0203	0.0463	0.0552	0.0262
Regression Standard Deviation mg/L	0.0373	0.0780	0.0920	0.0455
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.0373	0.0780	0.0920	0.0455
Flagged Outliers	1	1	1	1
$ z > 3.0$	0	0	0	0
$2 < z < 3$	0	1	2	1
Failure Rate %*	1.1			

Methods Used

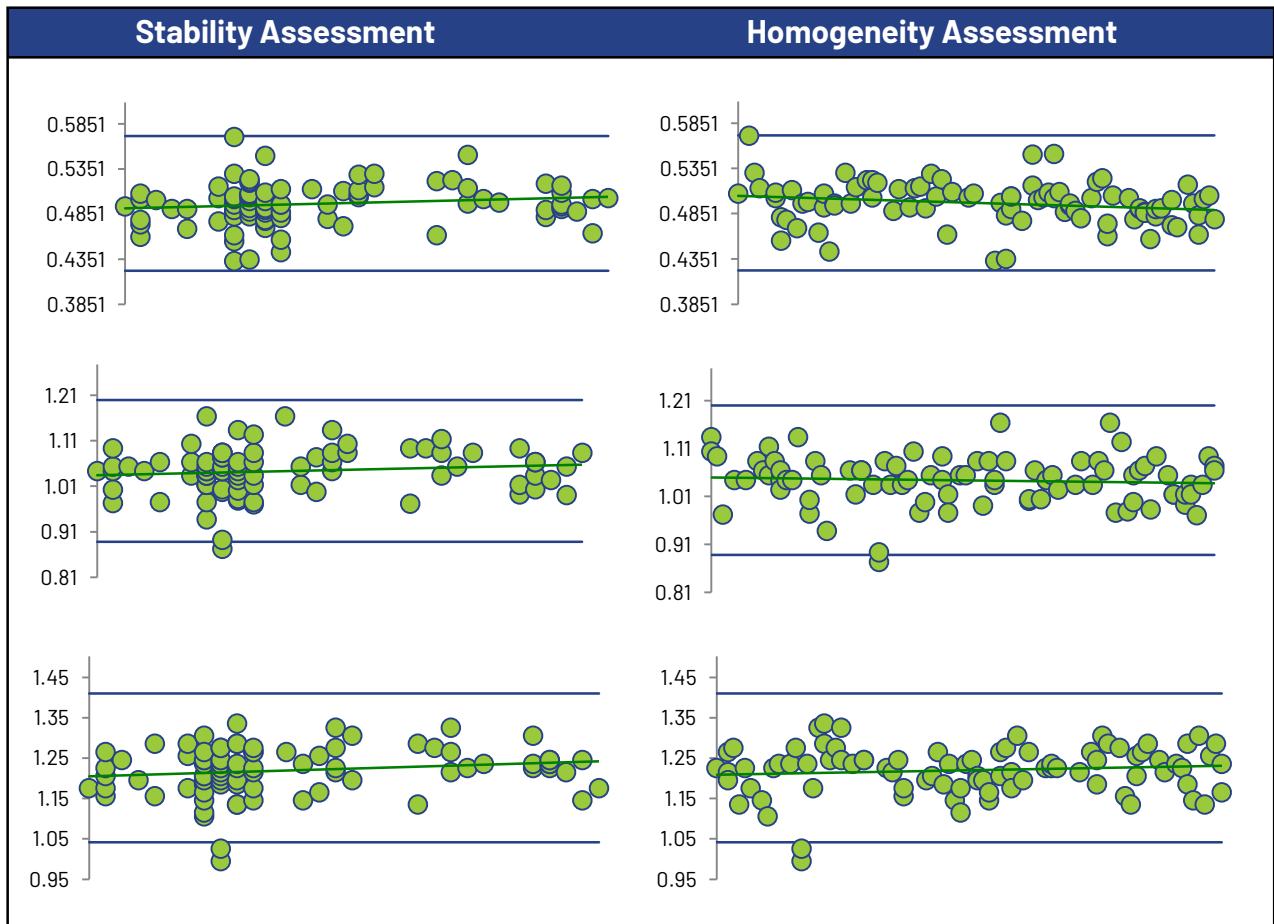
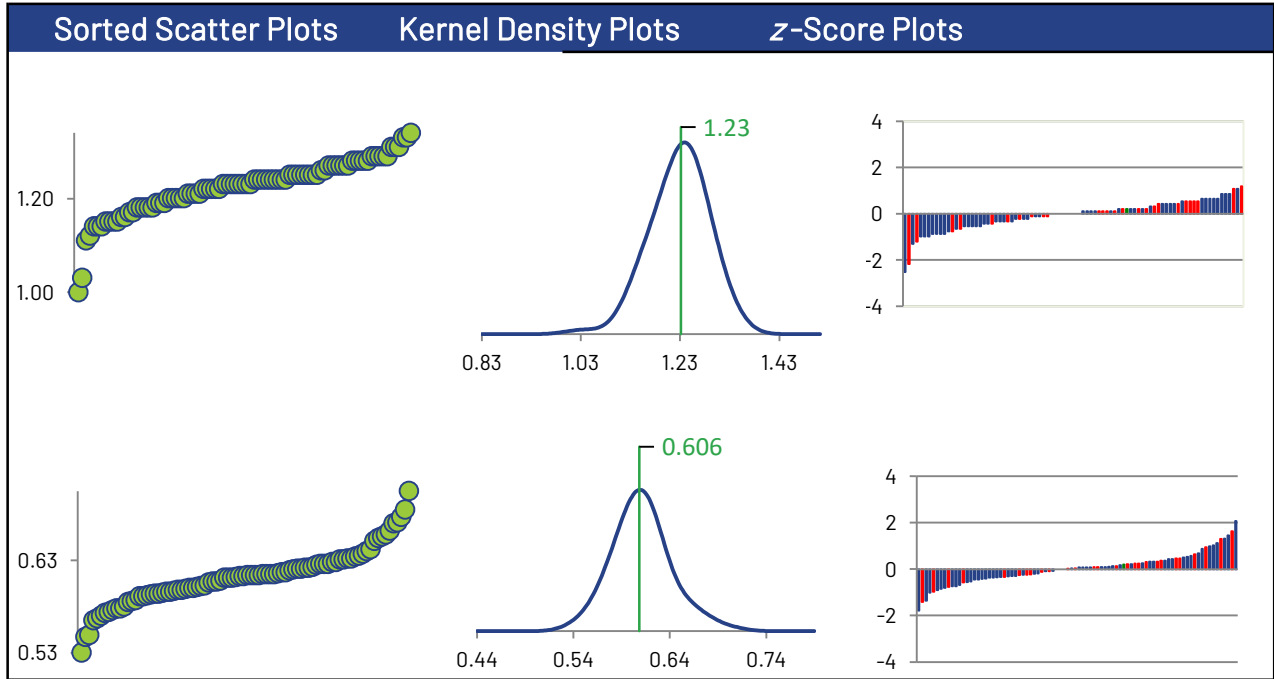
Method	C02C-1	C02C-2	C02C-3	C02C-4
ICP/MS (Blue)	58	58	58	58
ICP/OES (Red)	27	27	27	27
AA FLAME (Green)	1	1	1	1

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

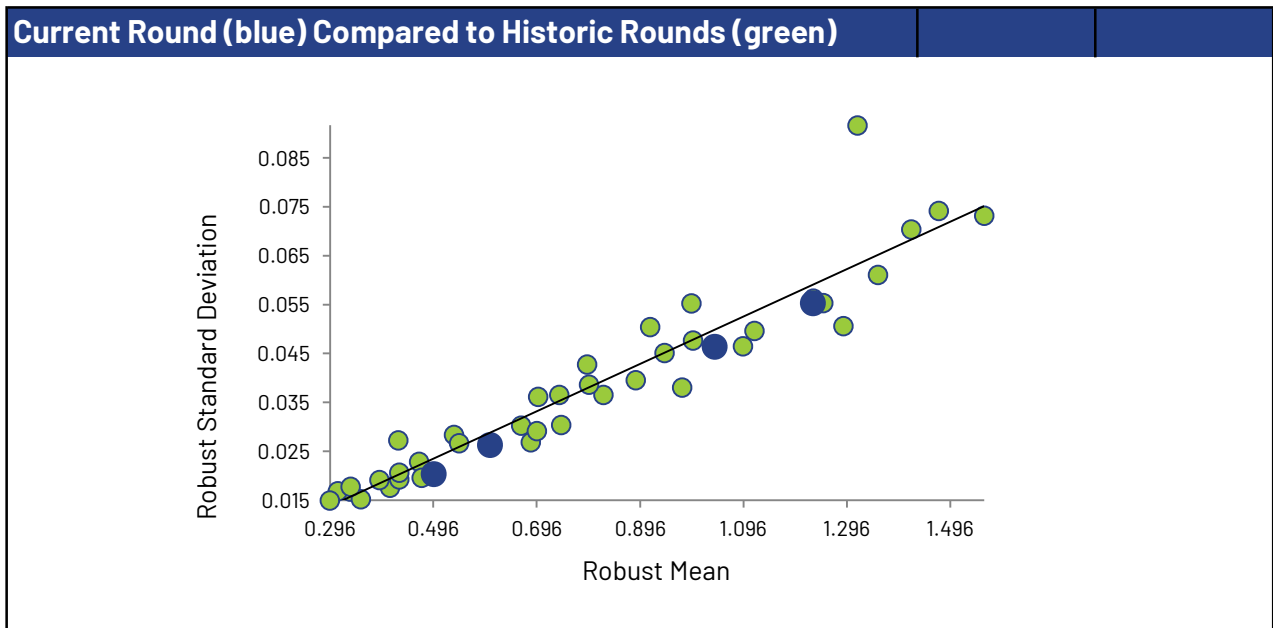
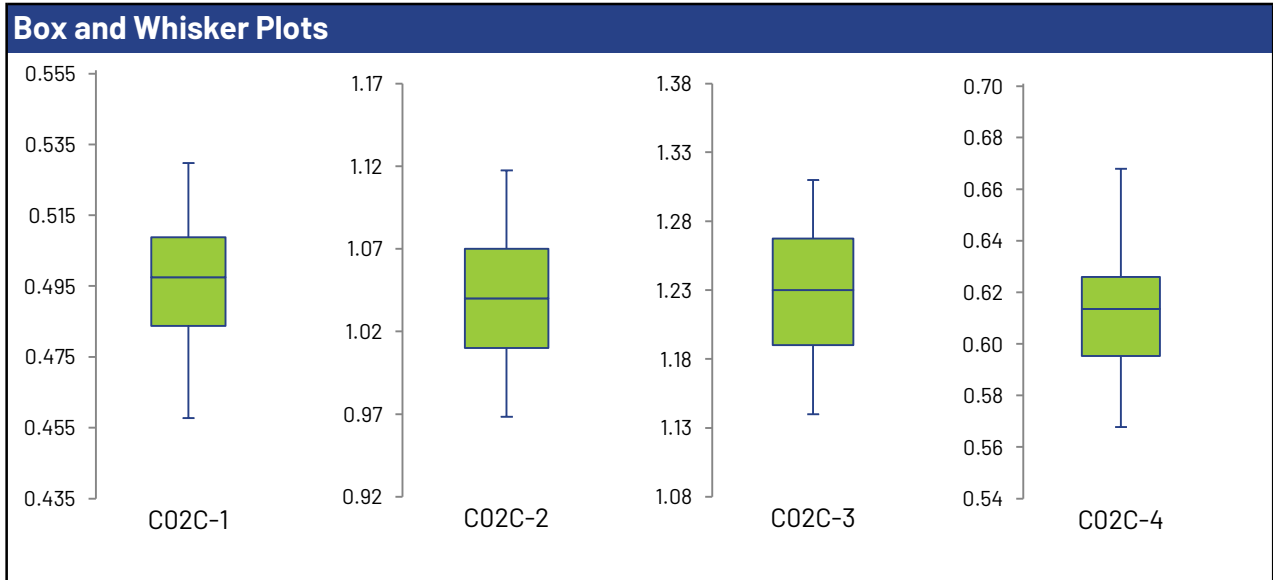
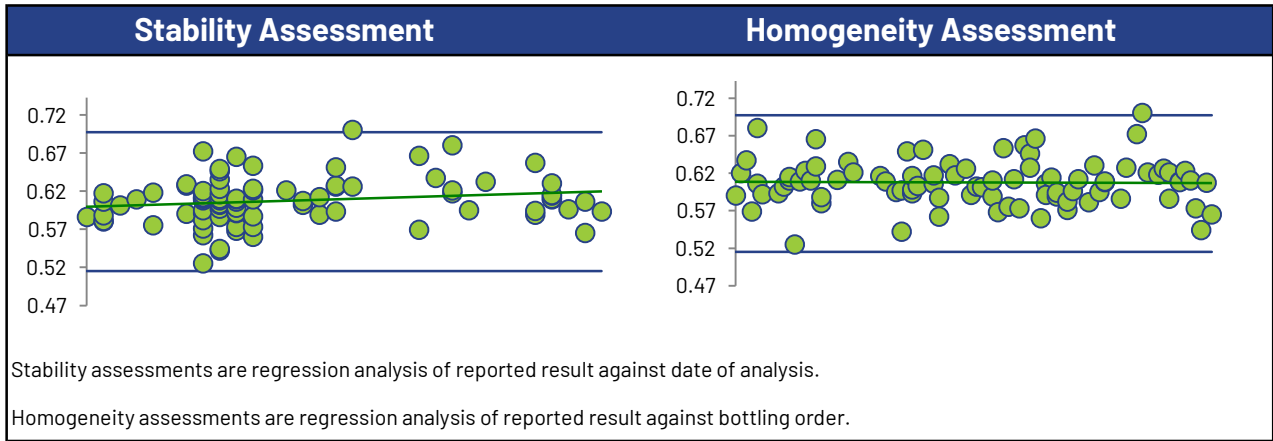


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Molybdenum



Molybdenum



Nickel

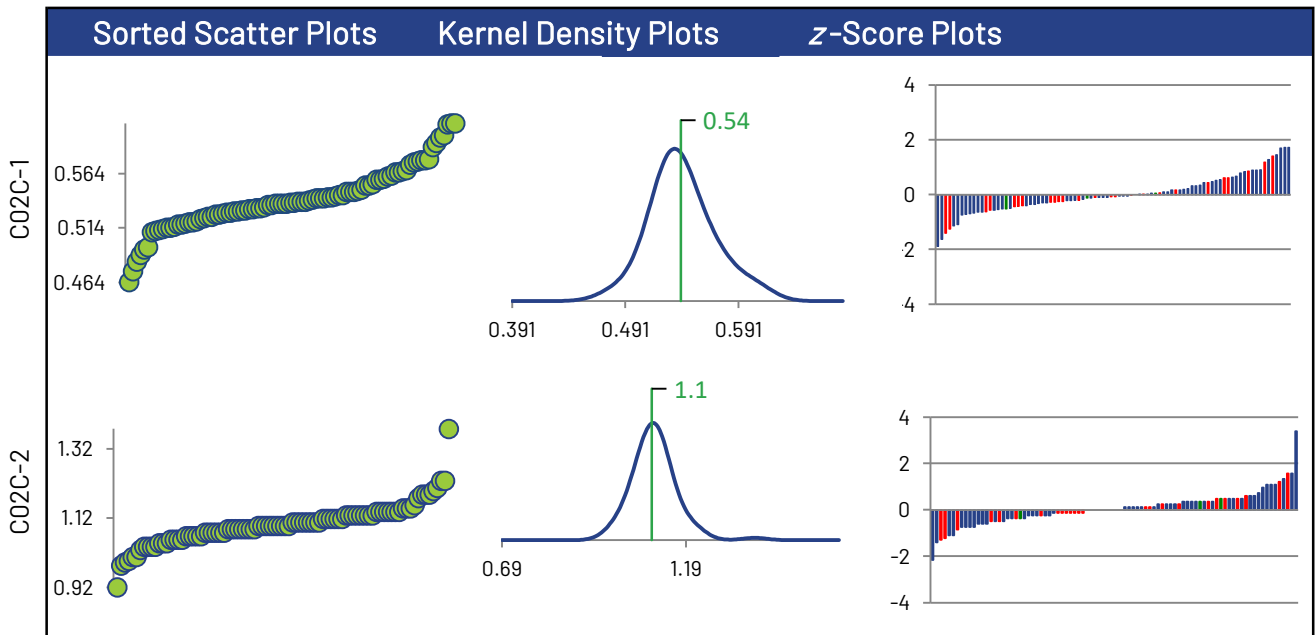
Summary Statistics

Statistic	C02C-1	C02C-2	C02C-3	C02C-4
No. of results used for summary statistics	88	88	88	88
Median mg/L	0.537	1.10	1.50	0.725
Robust Mean mg/L	0.540	1.10	1.49	0.726
Uncertainty of the Assigned Value mg/L	0.00332	0.00622	0.00901	0.00424
Robust Standard Deviation mg/L	0.0249	0.0467	0.0676	0.0318
Regression Standard Deviation mg/L	0.0405	0.0827	0.112	0.0544
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.0405	0.0827	0.112	0.0544
Flagged Outliers	1	1	1	1
$ z > 3.0$	0	1	0	0
$2 < z < 3$	0	1	1	1
Failure Rate %*	3.4			

Methods Used

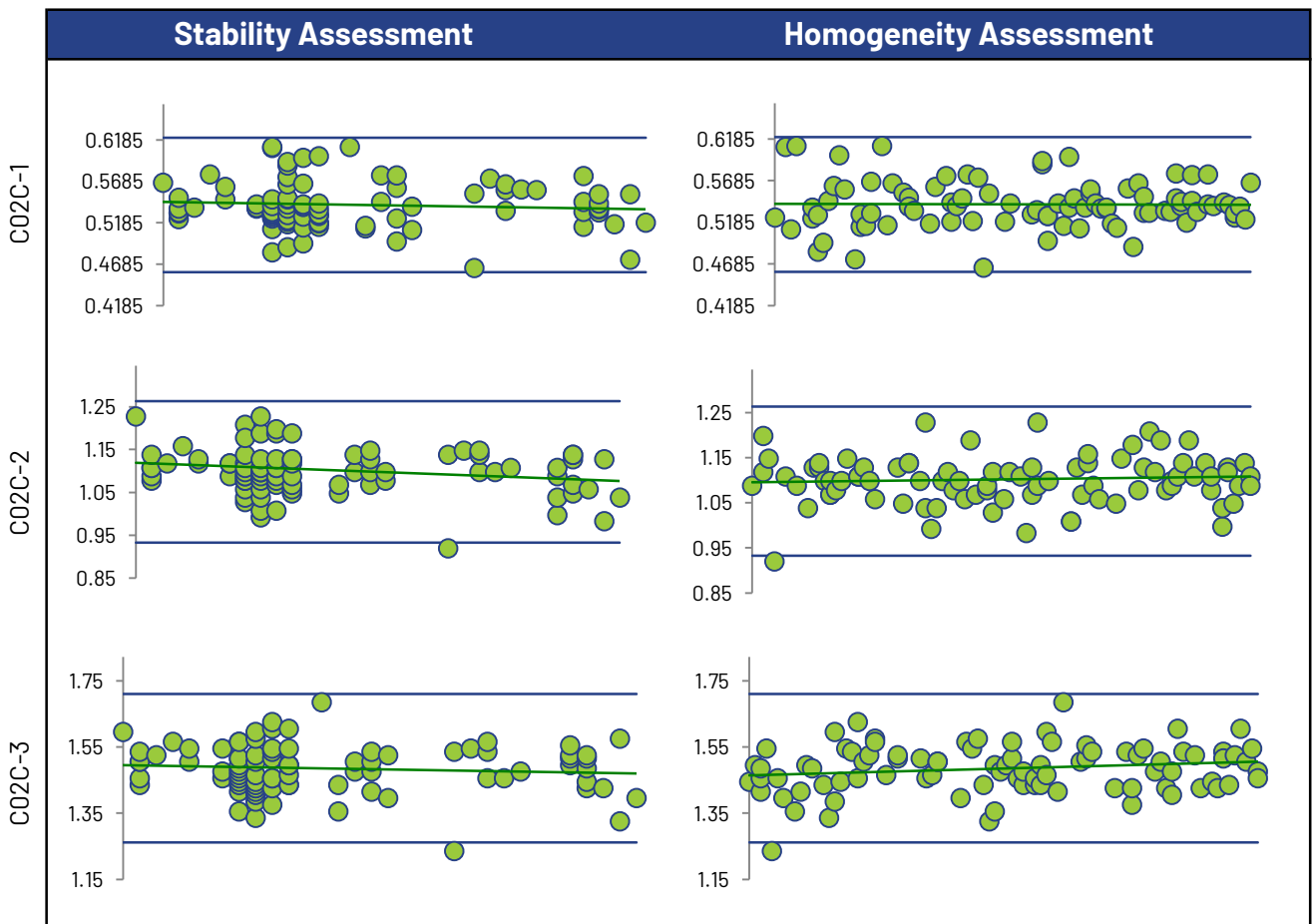
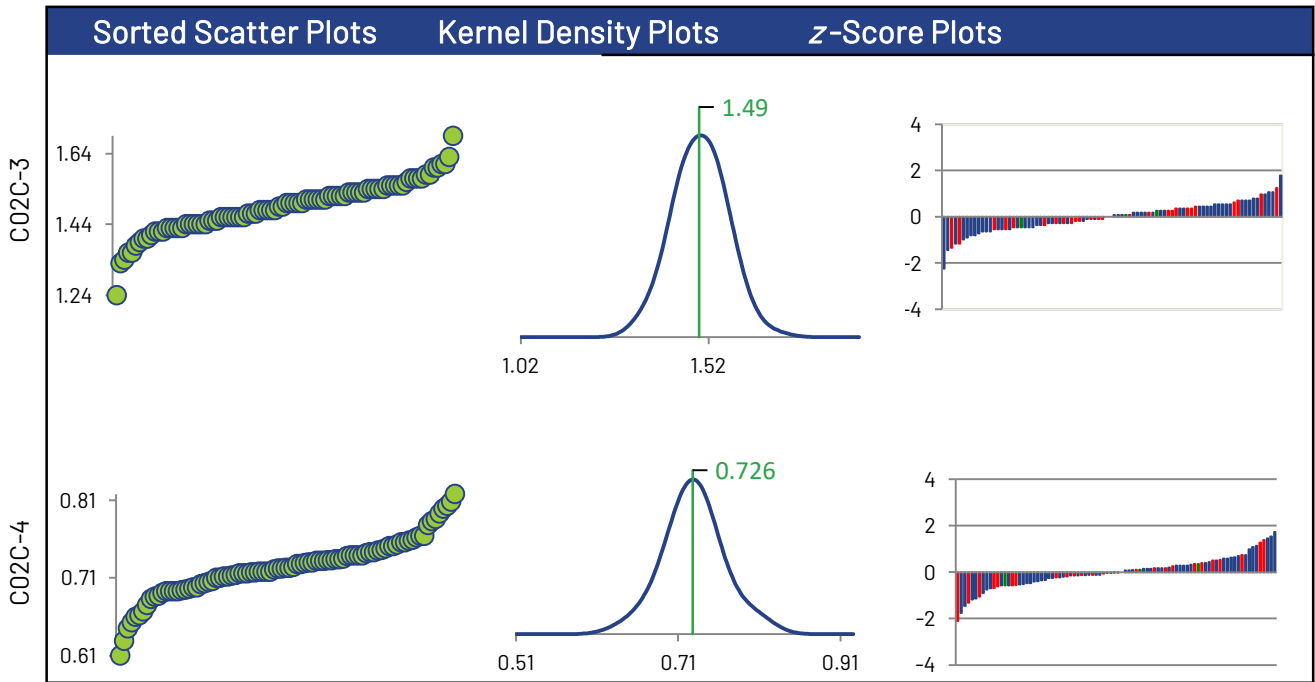
Method	C02C-1	C02C-2	C02C-3	C02C-4
ICP/MS (Blue)	59	59	59	59
ICP/OES (Red)	26	26	26	26
AA FLAME (Green)	3	3	3	3

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

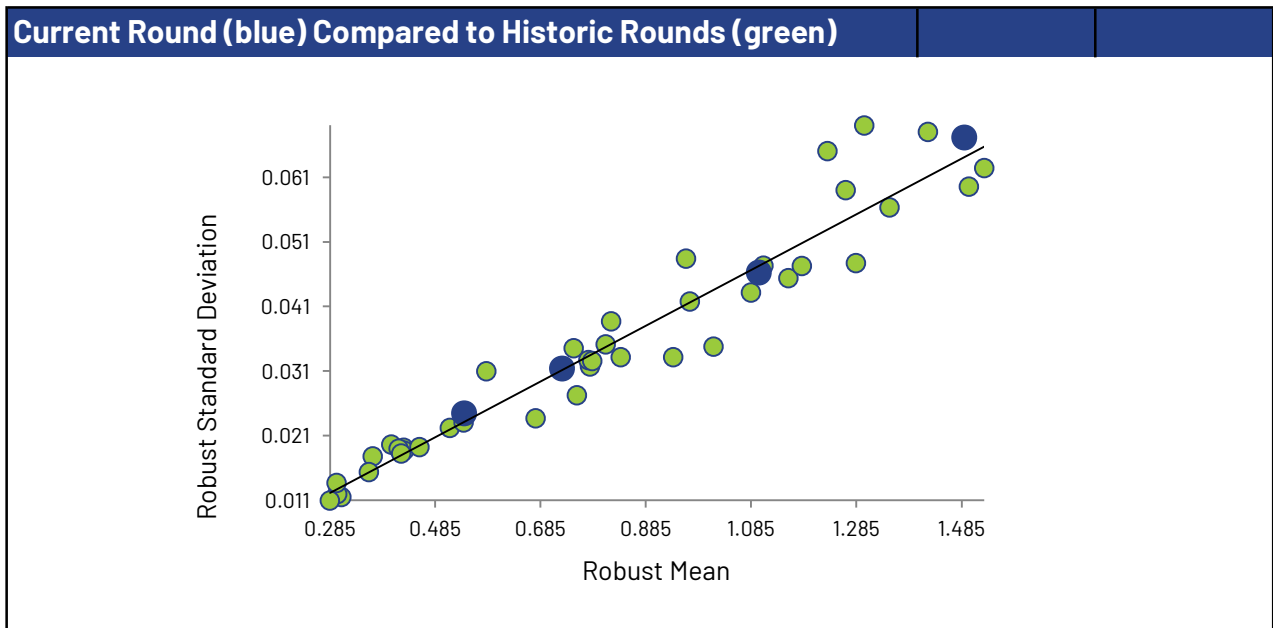
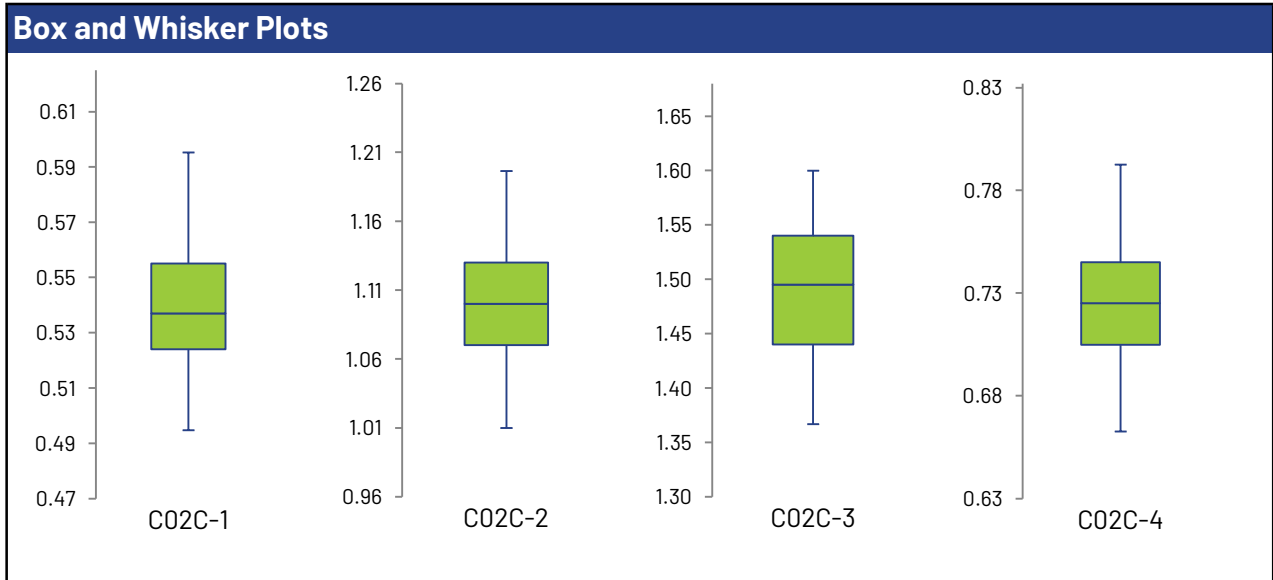
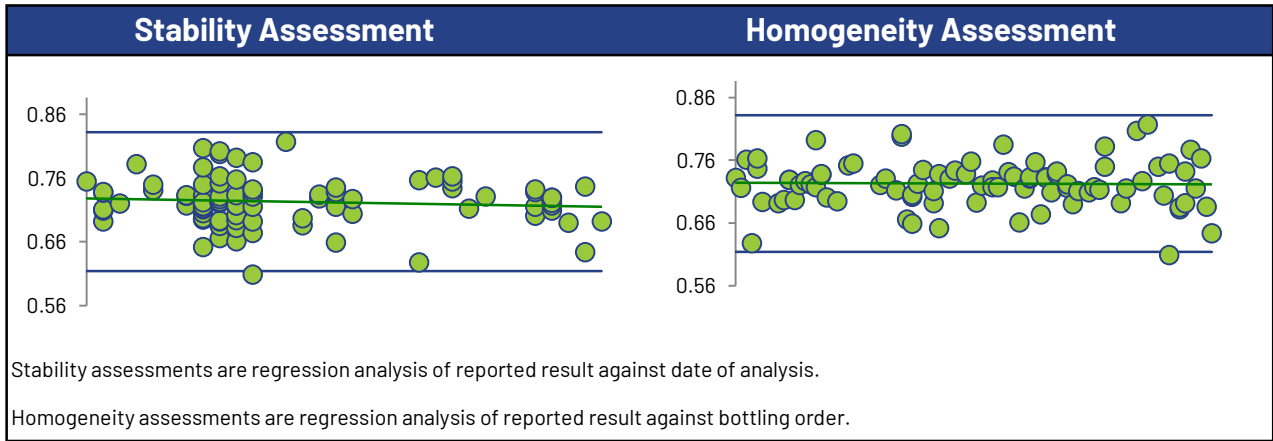


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Nickel



Nickel



Selenium

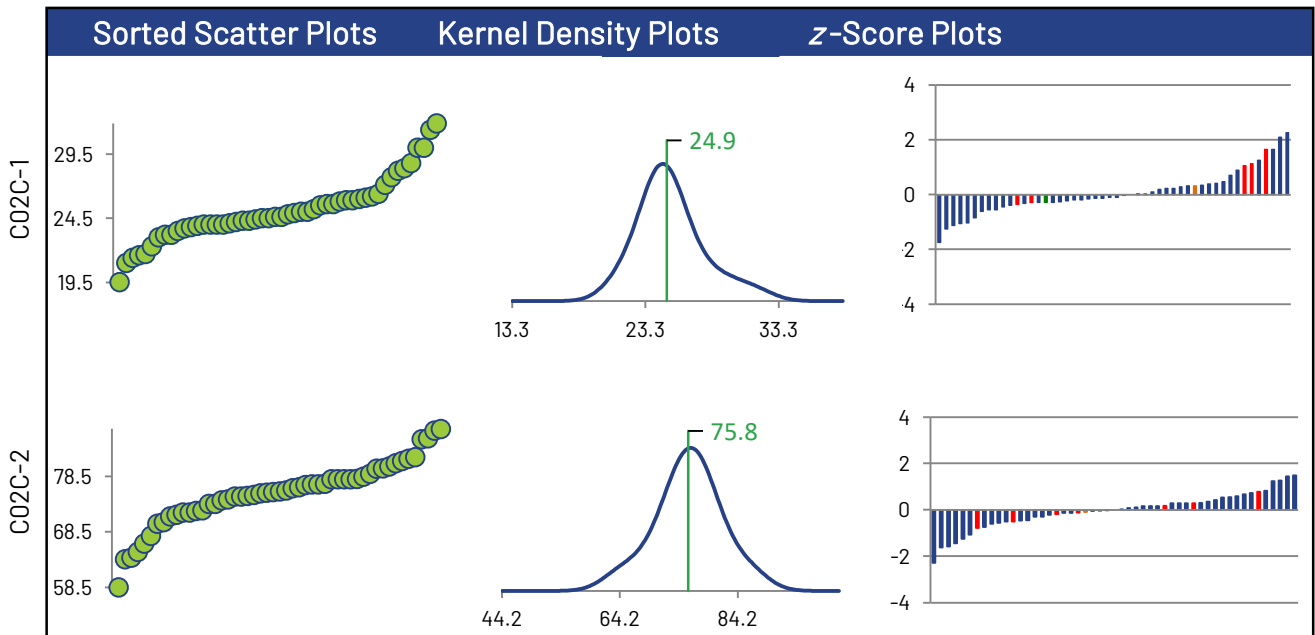
Summary Statistics

Statistic	C02C-1	C02C-2	C02C-3	C02C-4
No. of results used for summary statistics	50	51	51	49
Median mg/L	24.6	75.8	71.6	22.1
Robust Mean mg/L	24.9	75.8	71.4	22.1
Uncertainty of the Assigned Value mg/L	0.380	0.872	0.903	0.302
Robust Standard Deviation mg/L	2.15	4.98	5.16	1.69
Regression Standard Deviation mg/L	2.49	7.58	7.14	2.21
Stability Flag	Stability			Stability
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	3.10	7.58	7.14	2.68
Flagged Outliers	1	1	1	1
$ z > 3.0$	0	0	0	0
$2 < z < 3$	2	1	3	1
Failure Rate %*	1.9			

Methods Used

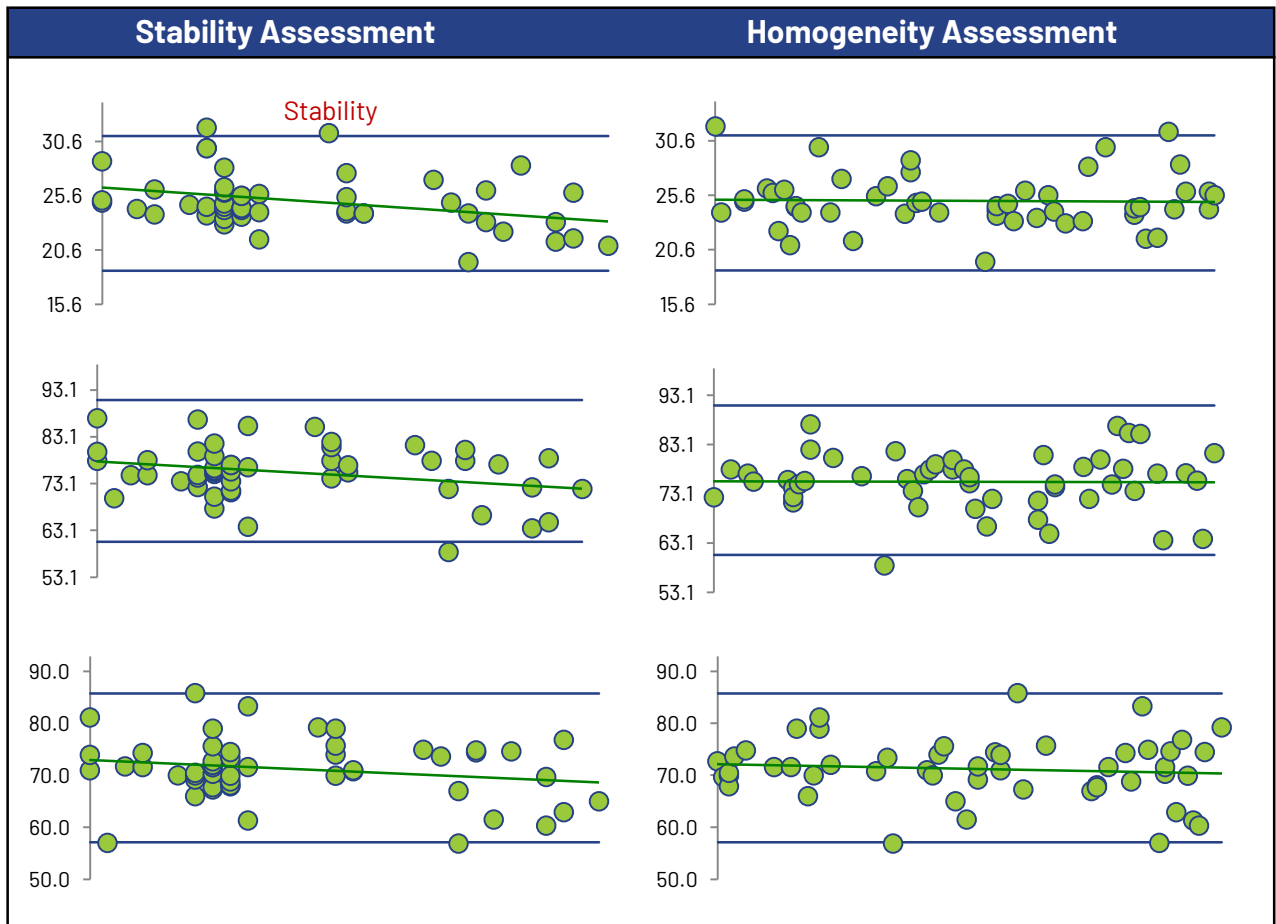
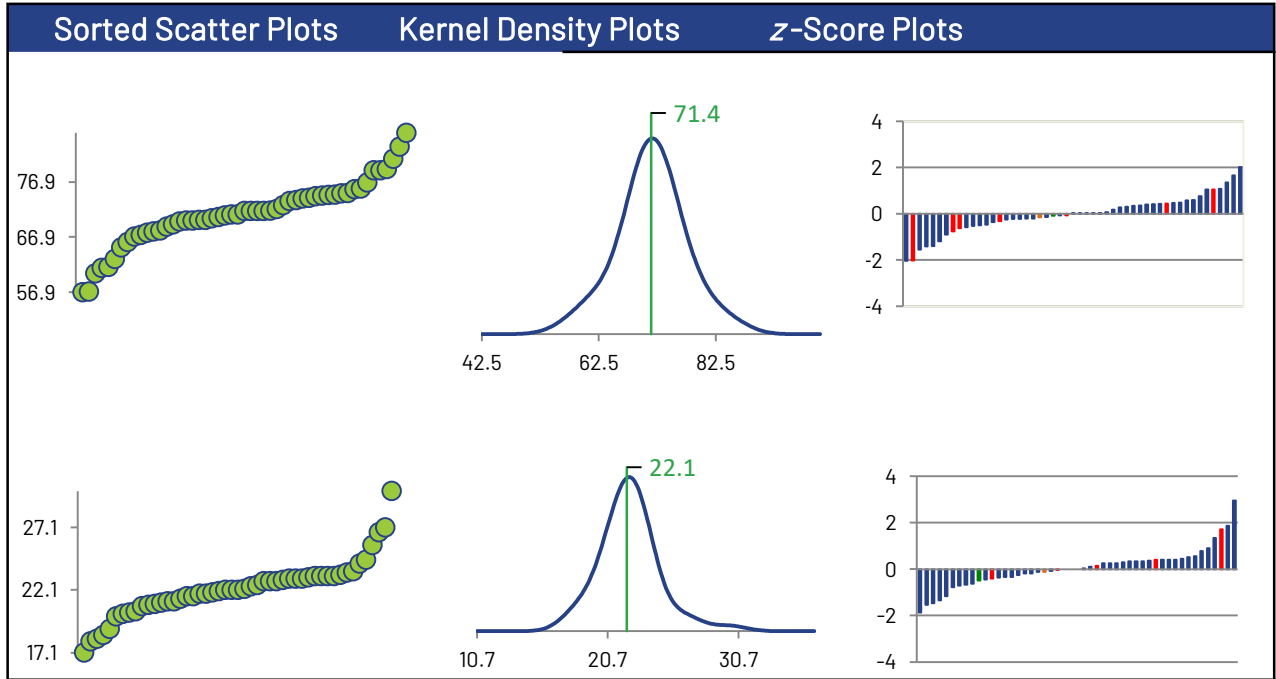
Method	C02C-1	C02C-2	C02C-3	C02C-4
ICP/MS (Blue)	42	42	42	42
ICP/OES (Red)	6	7	7	5
ATOMIC FLUORESCENCE SPECTROMETER (Green)	1	1	1	1
ATOMIC FLUORESCENCE SPECTROPHOTOMETRY (Orange)	1	1	1	1

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

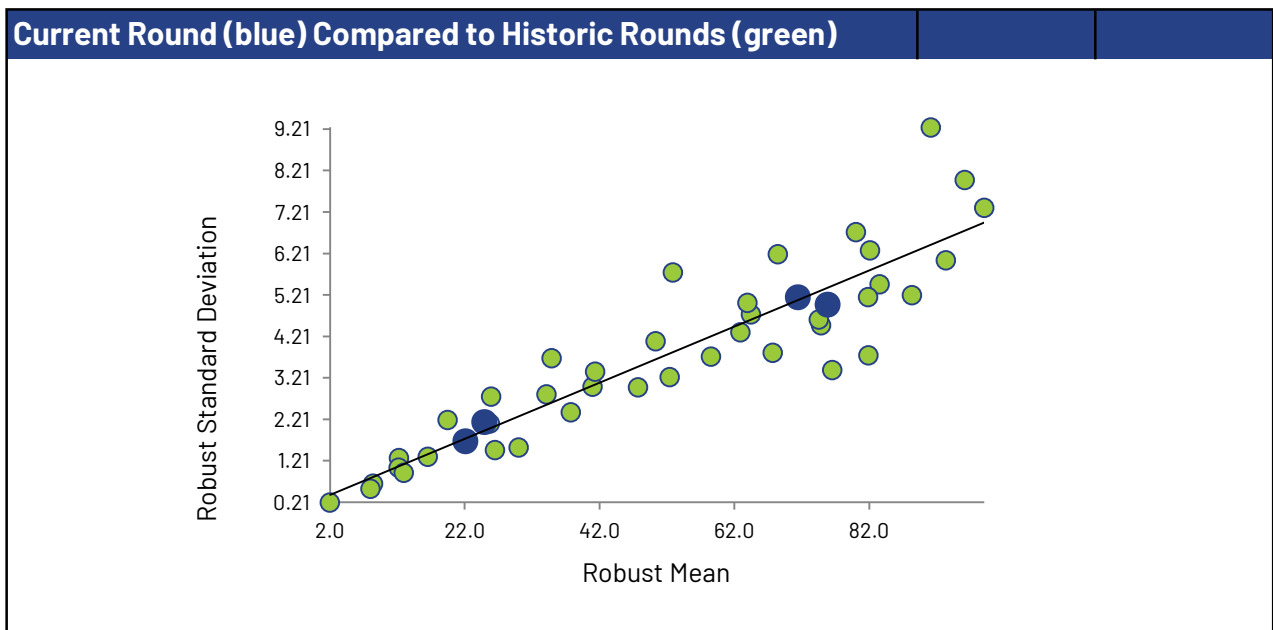
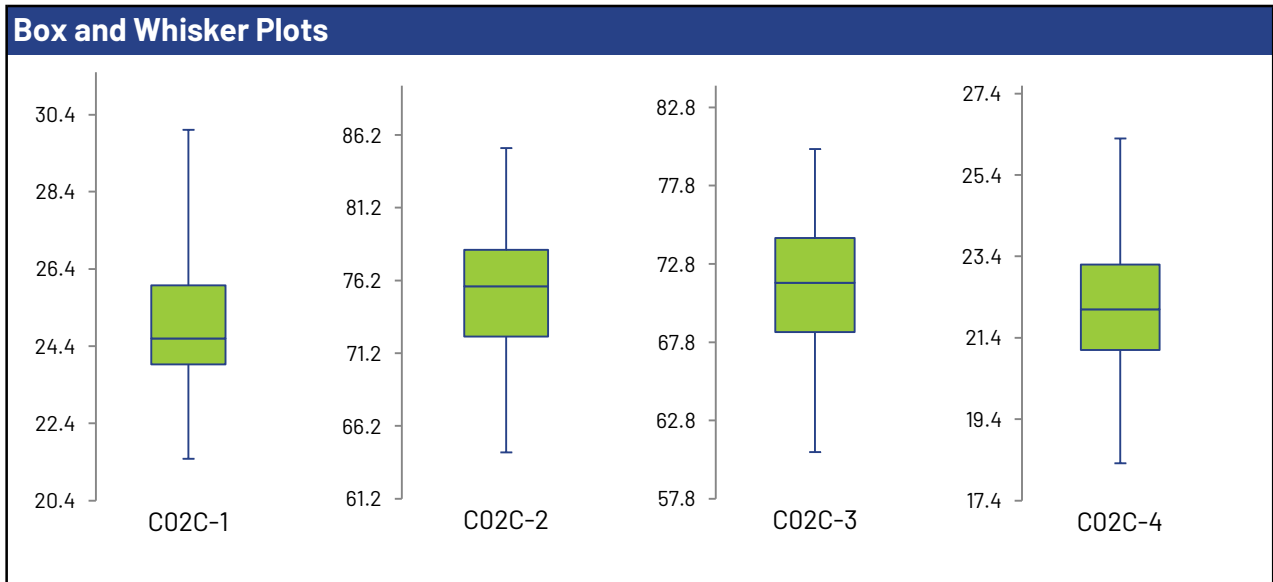
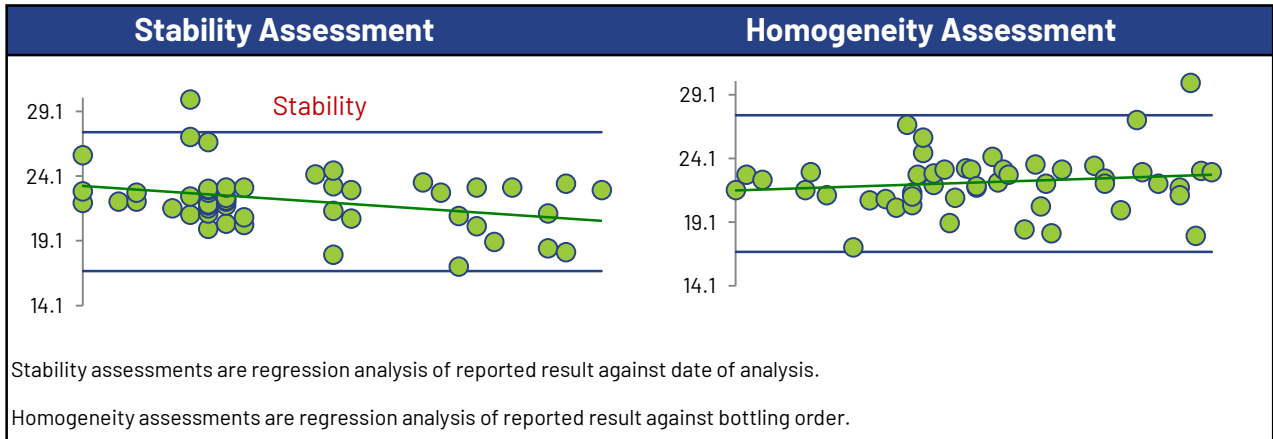


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Selenium



Selenium



Silver

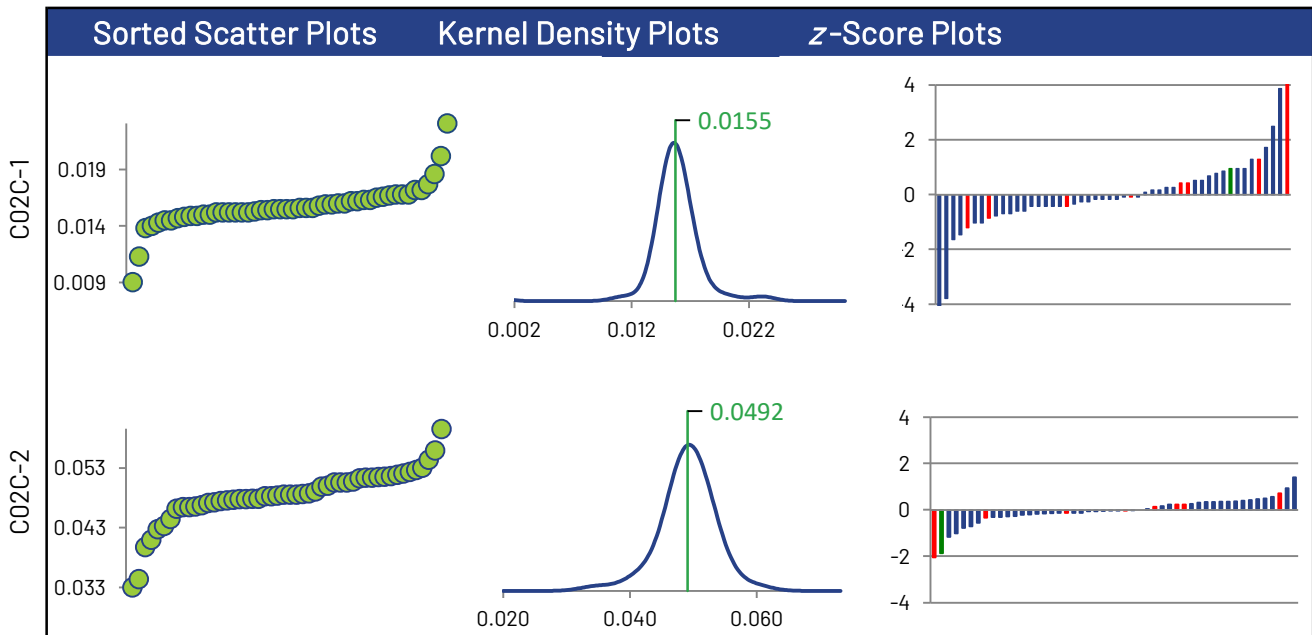
Summary Statistics

Statistic	C02C-1	C02C-2	C02C-3	C02C-4
No. of results used for summary statistics	50	50	51	50
Median mg/L	0.0153	0.0490	0.0600	0.0454
Robust Mean mg/L	0.0155	0.0492	0.0603	0.0452
Uncertainty of the Assigned Value mg/L	0.000189	0.000567	0.00187	0.000580
Robust Standard Deviation mg/L	0.00107	0.00321	0.0107	0.00328
Regression Standard Deviation mg/L	0.00116	0.00369	0.00452	0.00339
Stability Flag		Stability	Stability	Stability
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.00116	0.00774	0.0197	0.00833
Flagged Outliers	1	1	1	1
$ z > 3.0$	4	0	0	0
$2 < z < 3$	1	1	0	0
Failure Rate %*	3.8			

Methods Used

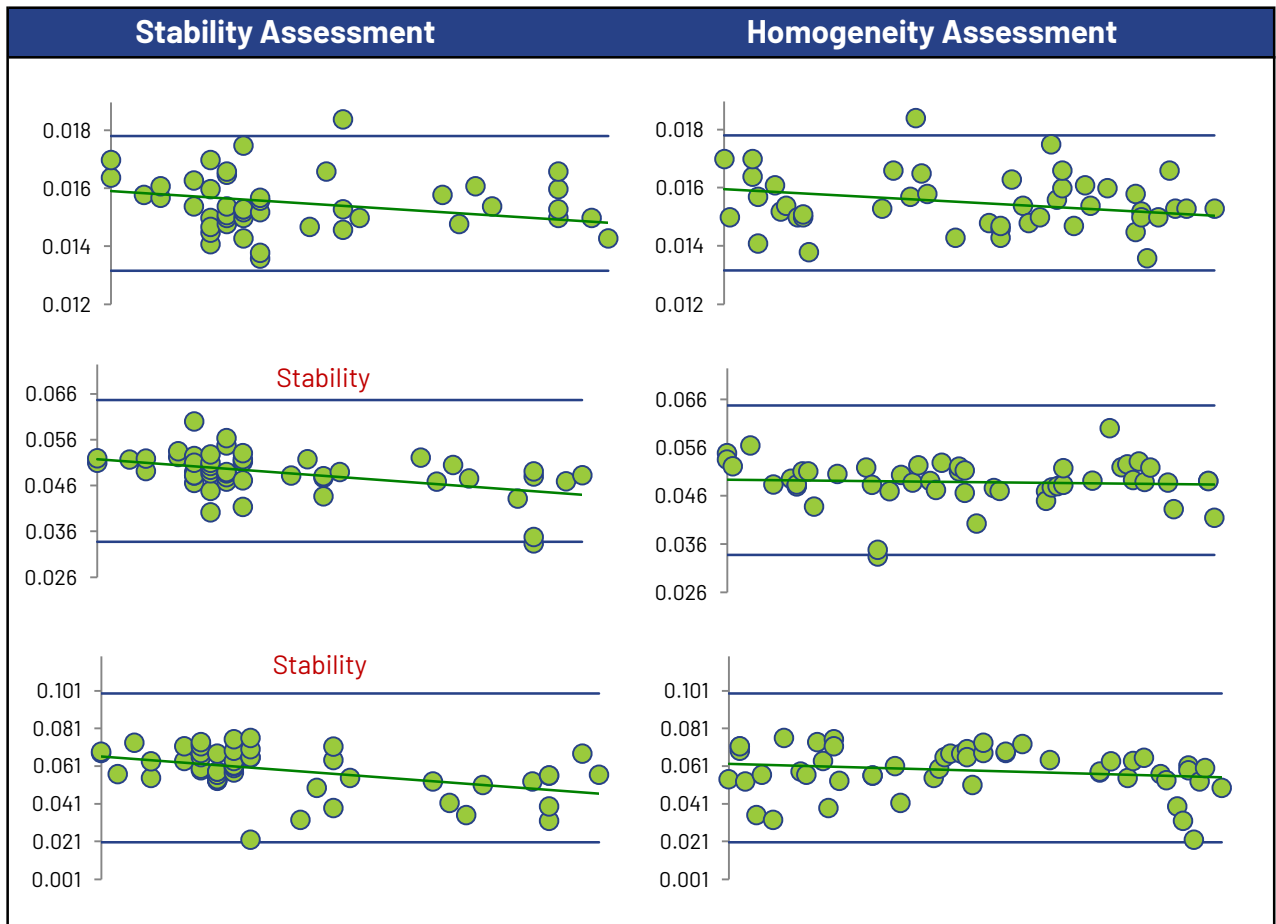
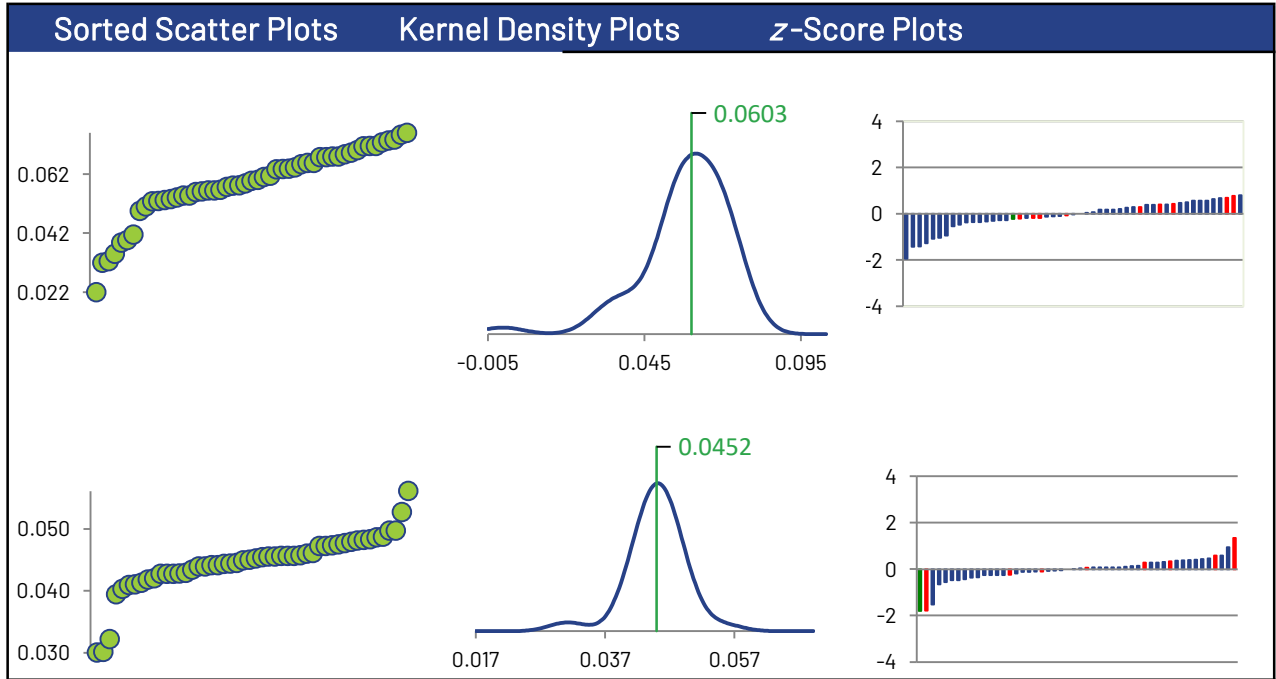
Method	C02C-1	C02C-2	C02C-3	C02C-4
ICP/MS (Blue)	41	41	41	41
ICP/OES (Red)	8	8	9	8
AA FLAME (Green)	1	1	1	1

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

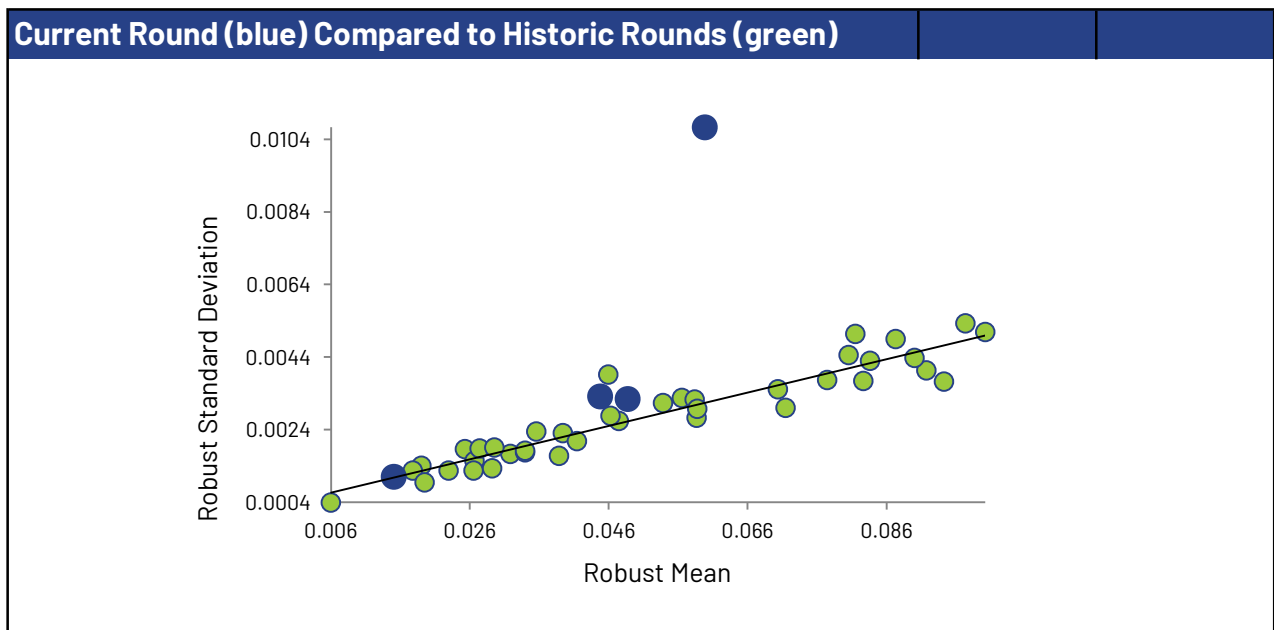
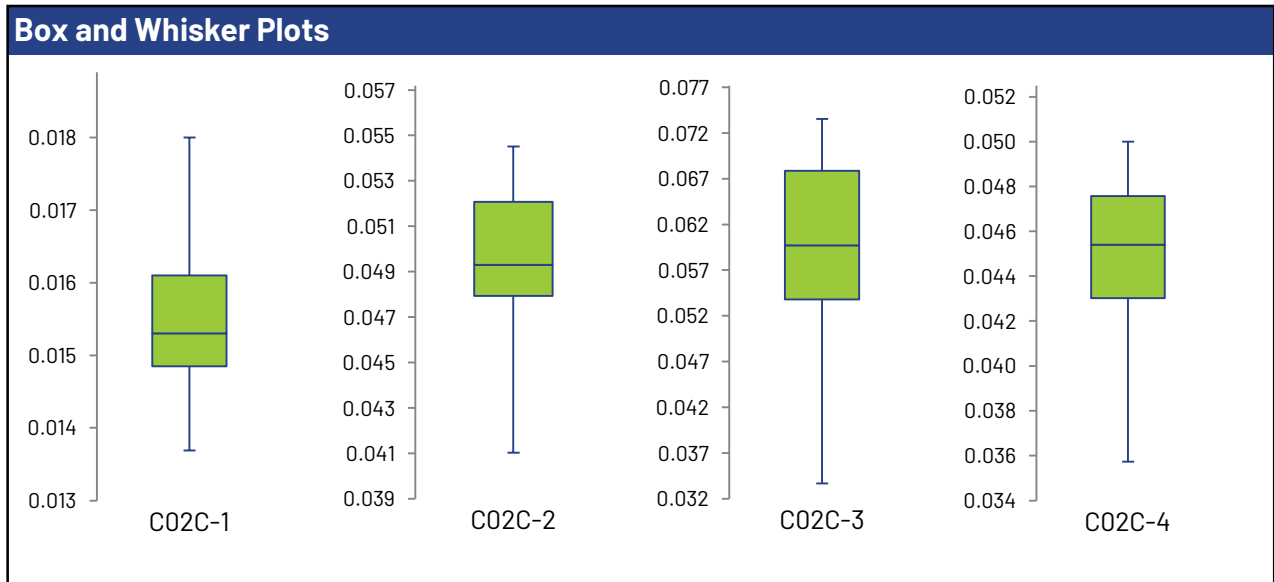
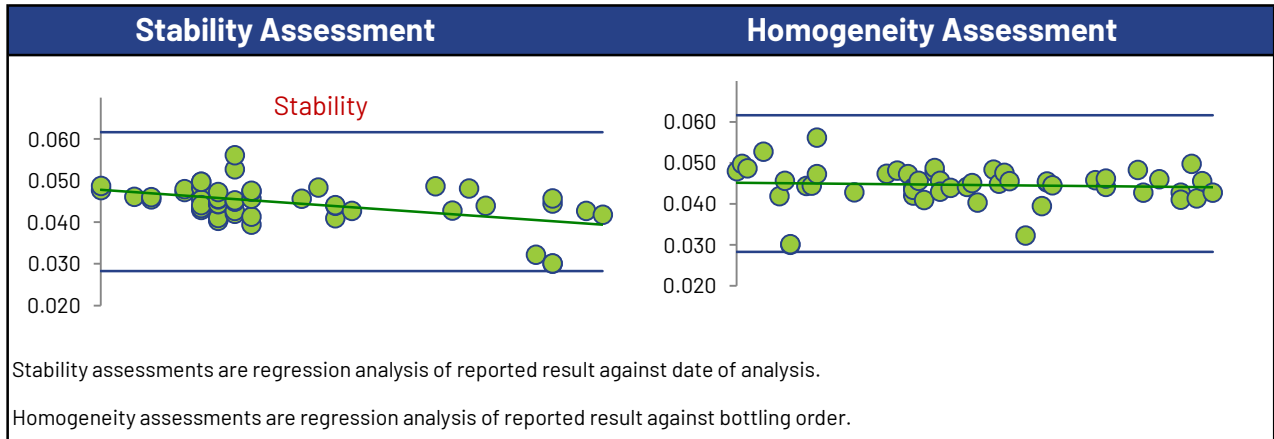


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Silver



Silver



Strontium

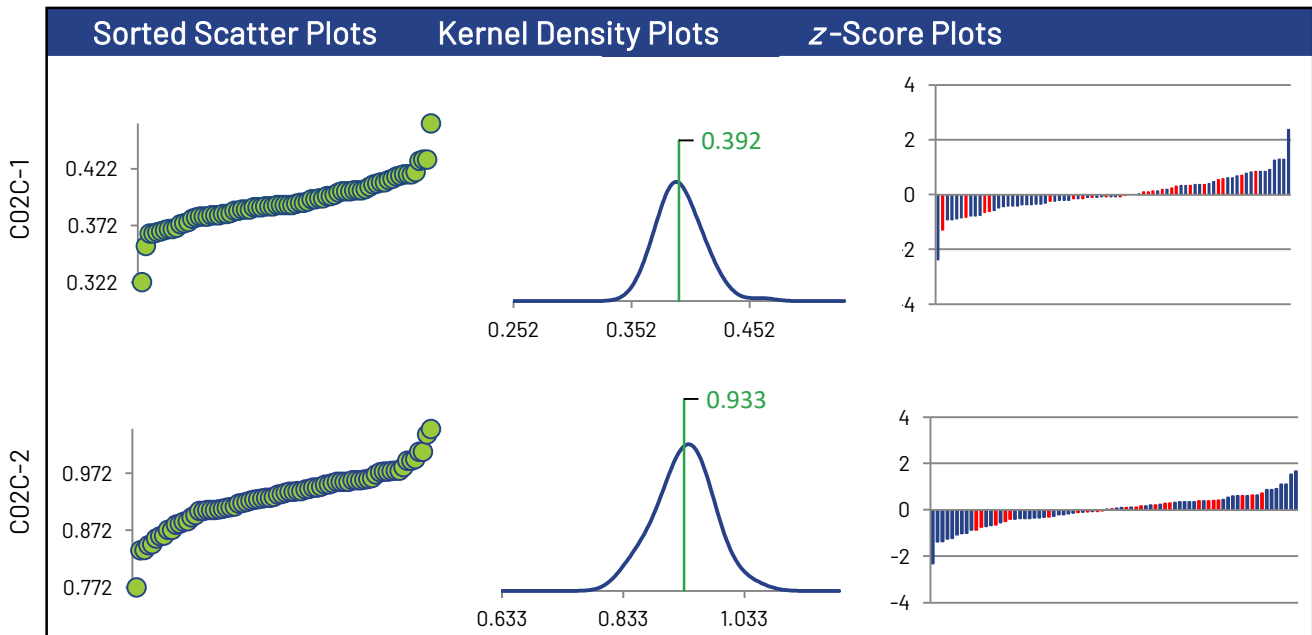
Summary Statistics

Statistic	C02C-1	C02C-2	C02C-3	C02C-4
No. of results used for summary statistics	76	76	76	76
Median mg/L	0.390	0.937	1.44	0.742
Robust Mean mg/L	0.392	0.933	1.43	0.740
Uncertainty of the Assigned Value mg/L	0.00258	0.00634	0.00936	0.00516
Robust Standard Deviation mg/L	0.0180	0.0442	0.0653	0.0360
Regression Standard Deviation mg/L	0.0294	0.0700	0.107	0.0555
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.0294	0.0700	0.107	0.0555
Flagged Outliers	0	0	0	0
z >3.0	0	0	0	0
2< z <3	2	1	0	1
Failure Rate %*	1.3			

Methods Used

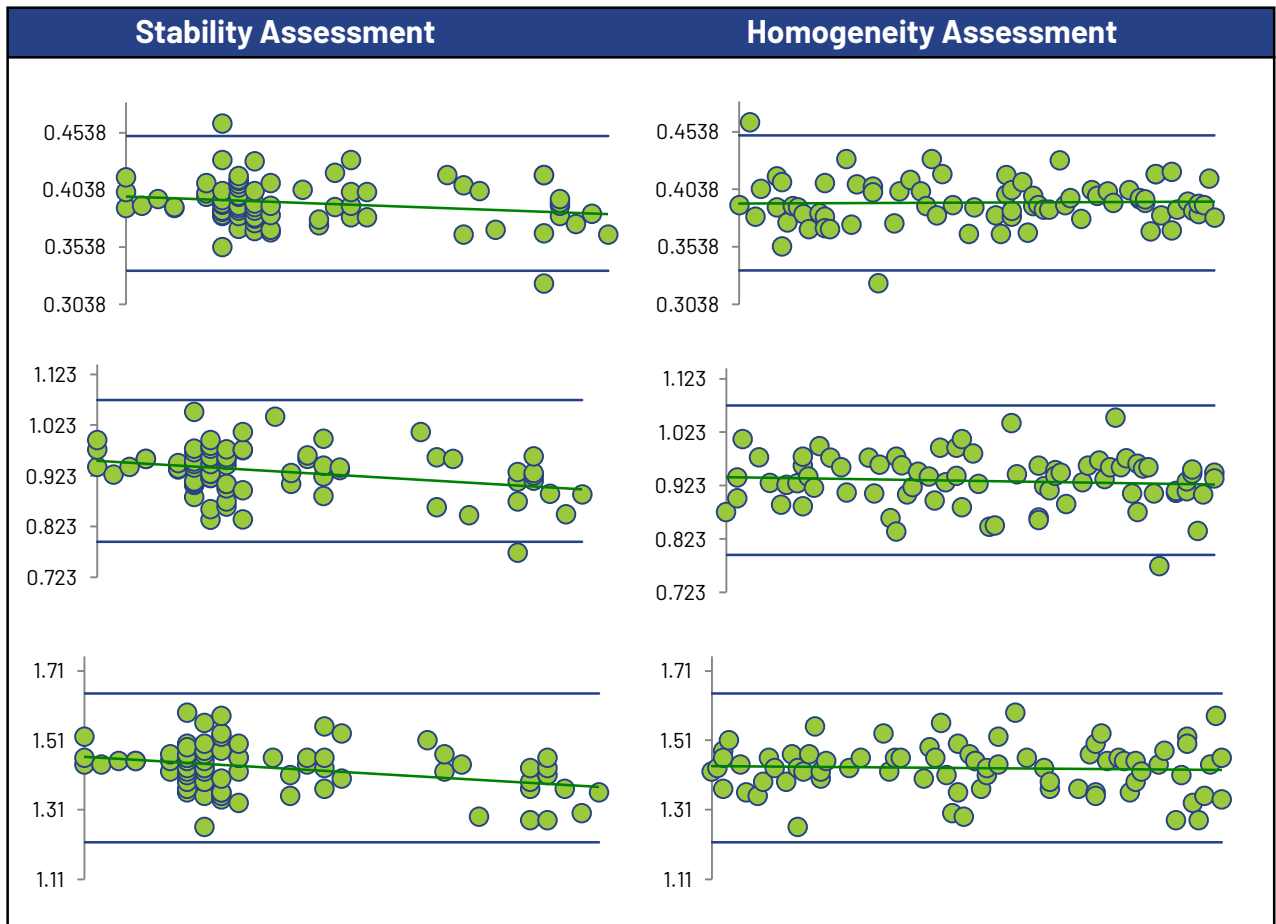
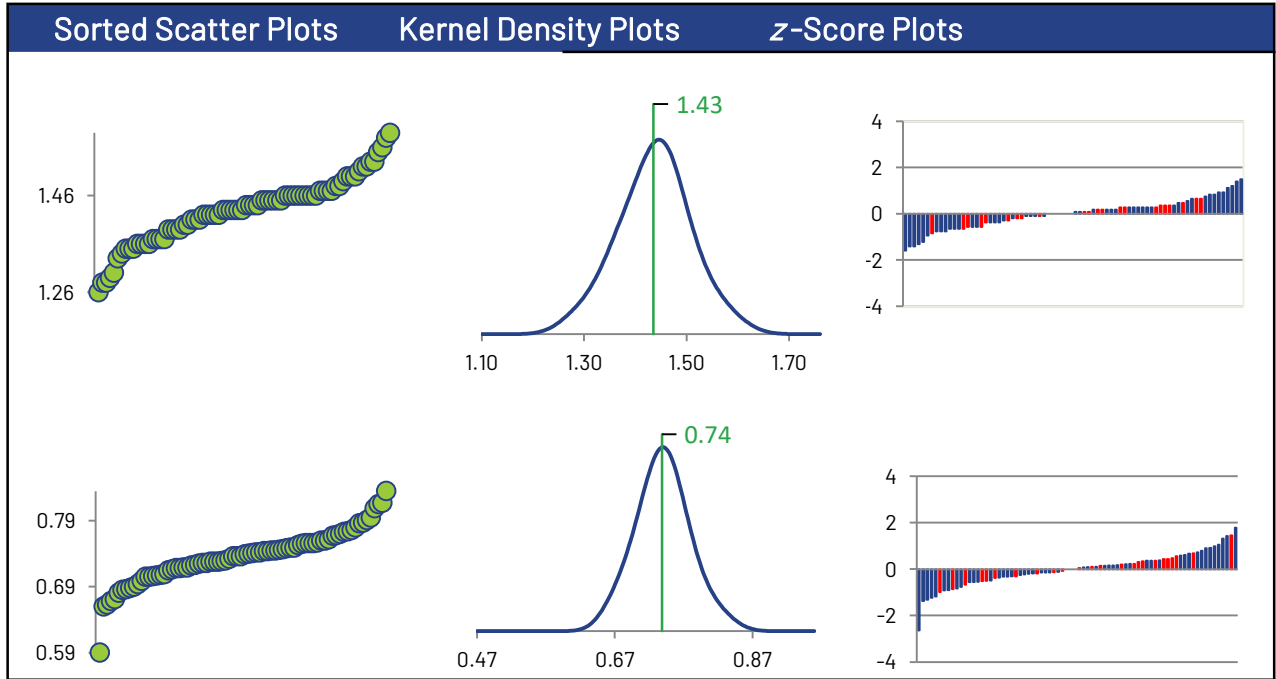
Method	C02C-1	C02C-2	C02C-3	C02C-4
ICP/MS (Blue)	52	52	52	52
ICP/OES (Red)	24	24	24	24

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

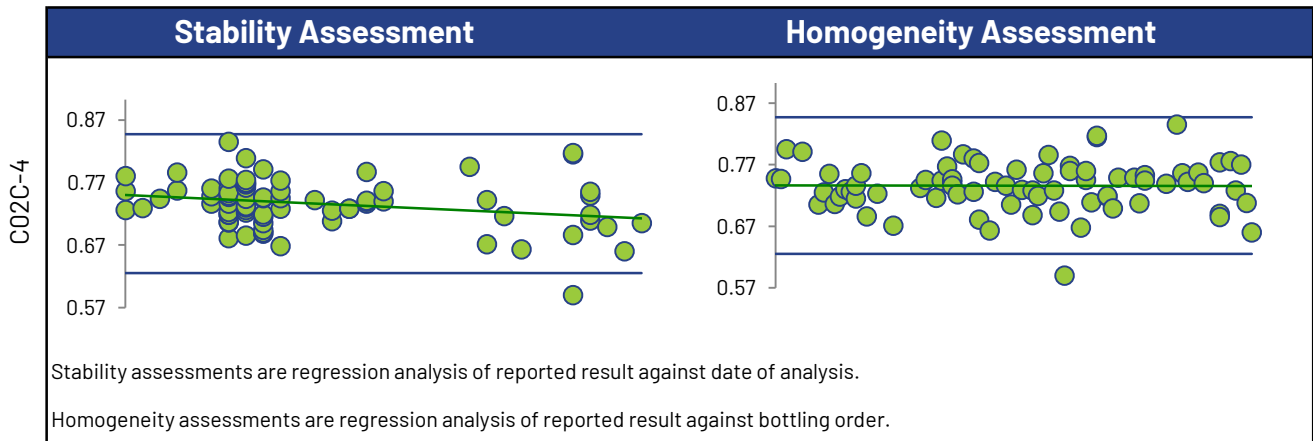


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

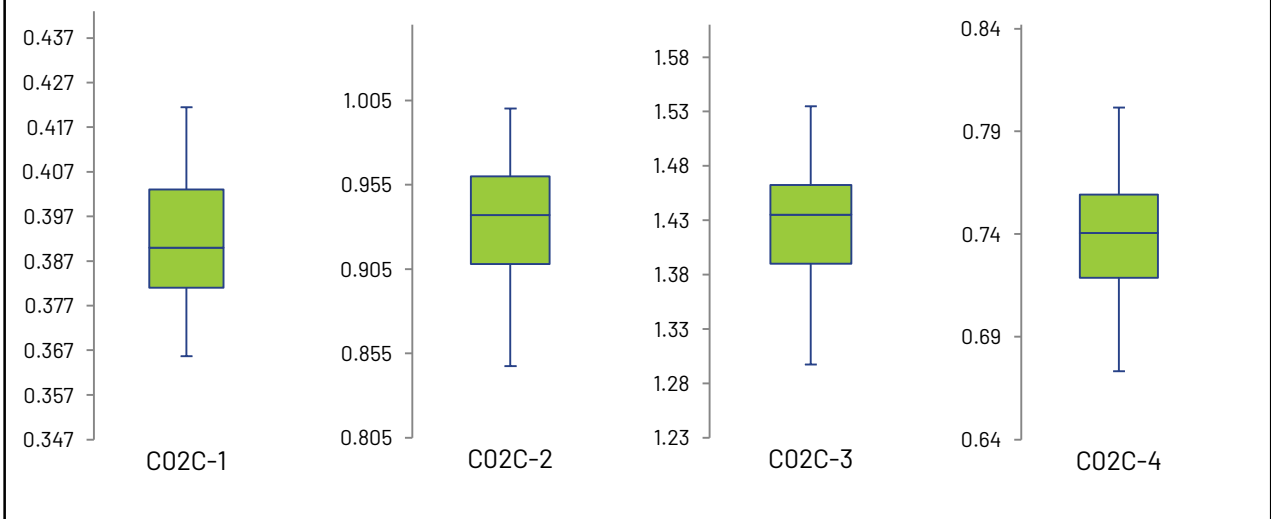
Strontium



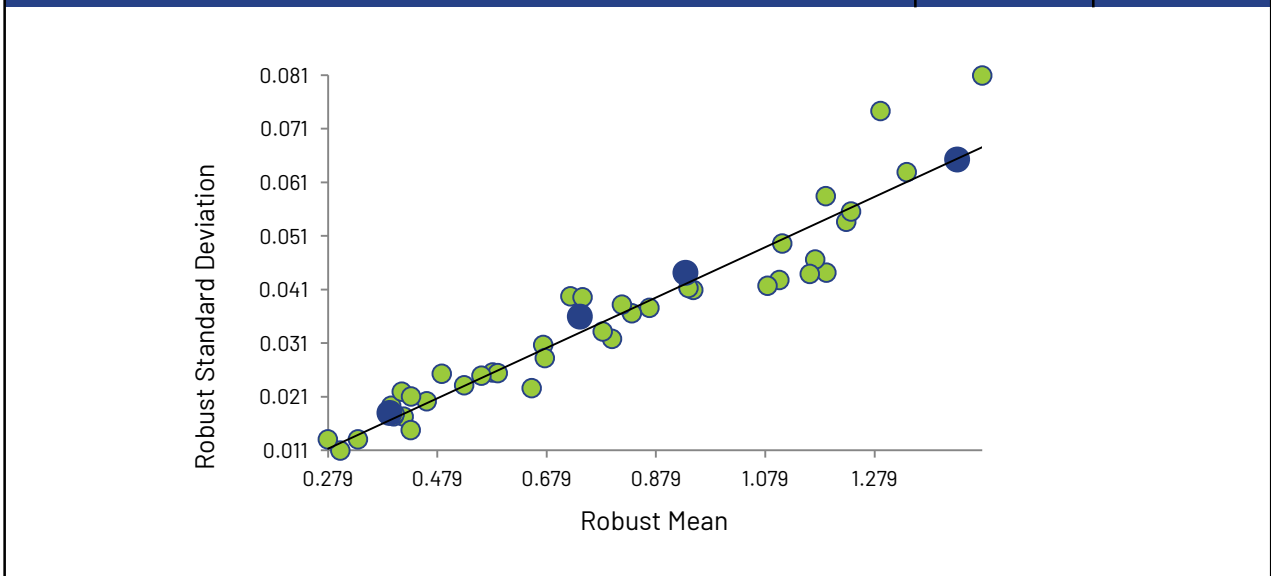
Strontium



Box and Whisker Plots



Current Round (blue) Compared to Historic Rounds (green)



Thallium

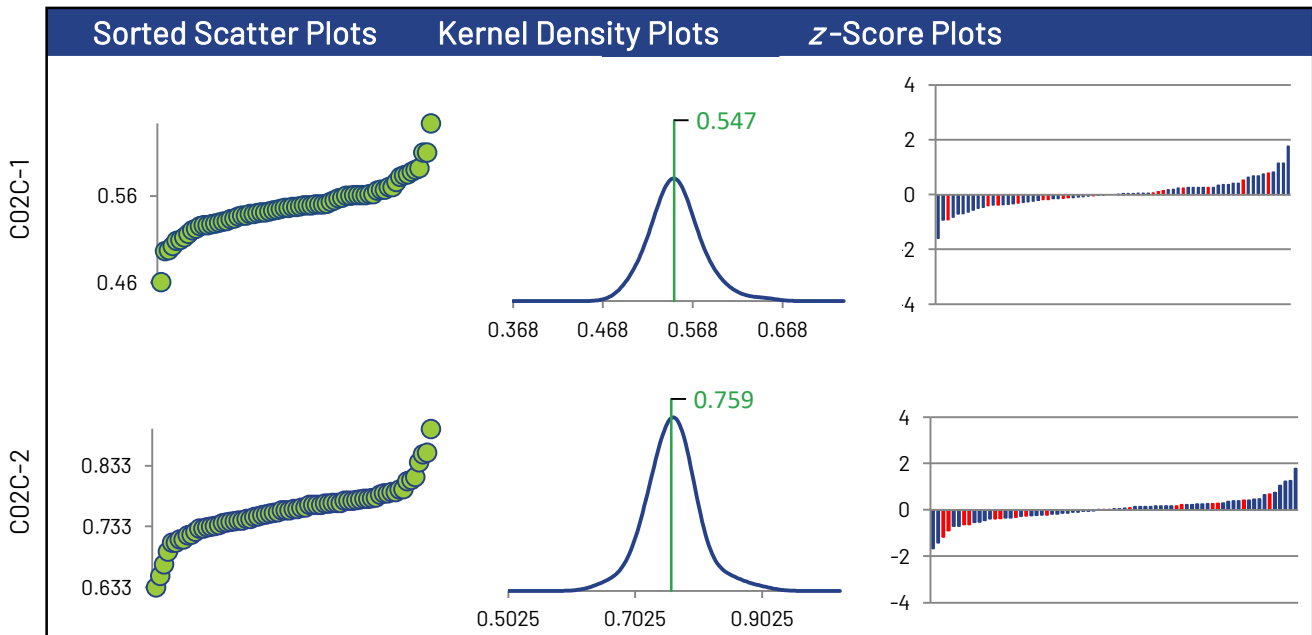
Summary Statistics

Statistic	C02C-1	C02C-2	C02C-3	C02C-4
No. of results used for summary statistics	71	71	71	71
Median mg/L	0.547	0.762	1.29	0.759
Robust Mean mg/L	0.547	0.759	1.29	0.759
Uncertainty of the Assigned Value mg/L	0.00363	0.00484	0.00837	0.00564
Robust Standard Deviation mg/L	0.0245	0.0326	0.0564	0.0380
Regression Standard Deviation mg/L	0.0547	0.0759	0.129	0.0759
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.0547	0.0759	0.129	0.0759
Flagged Outliers	1	1	1	1
$ z > 3.0$	0	0	0	0
$2 < z < 3$	0	0	0	0
Failure Rate %*	1.4			

Methods Used

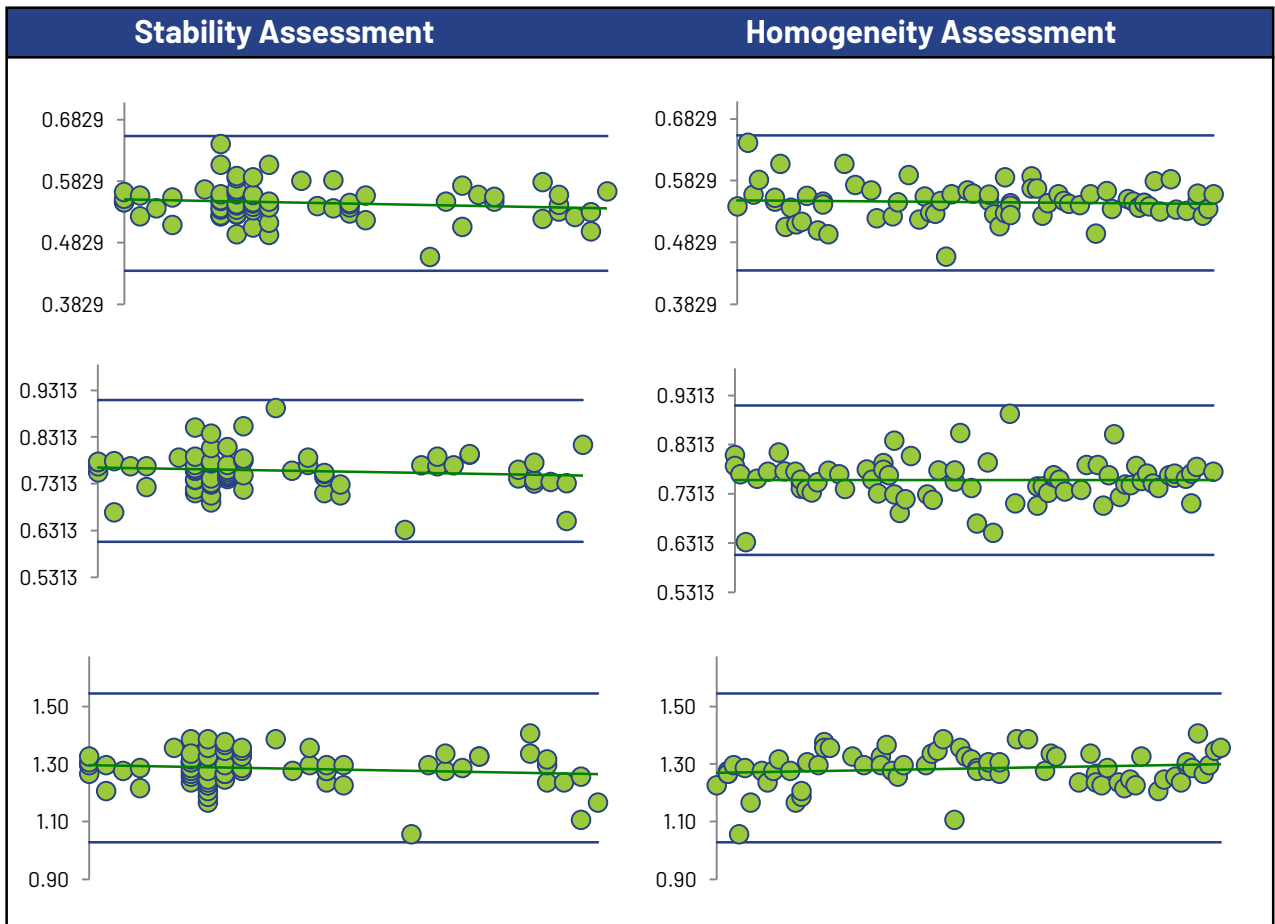
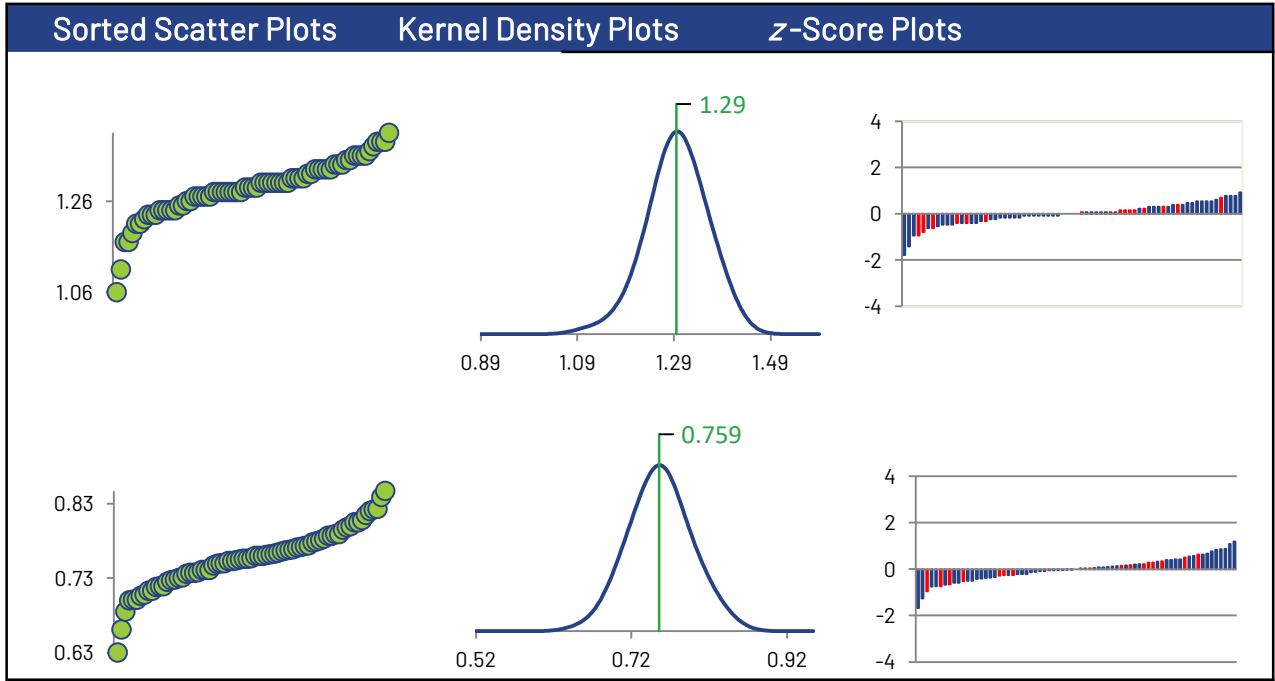
Method	C02C-1	C02C-2	C02C-3	C02C-4
ICP/MS (Blue)	54	54	54	54
ICP/OES (Red)	17	17	17	17

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

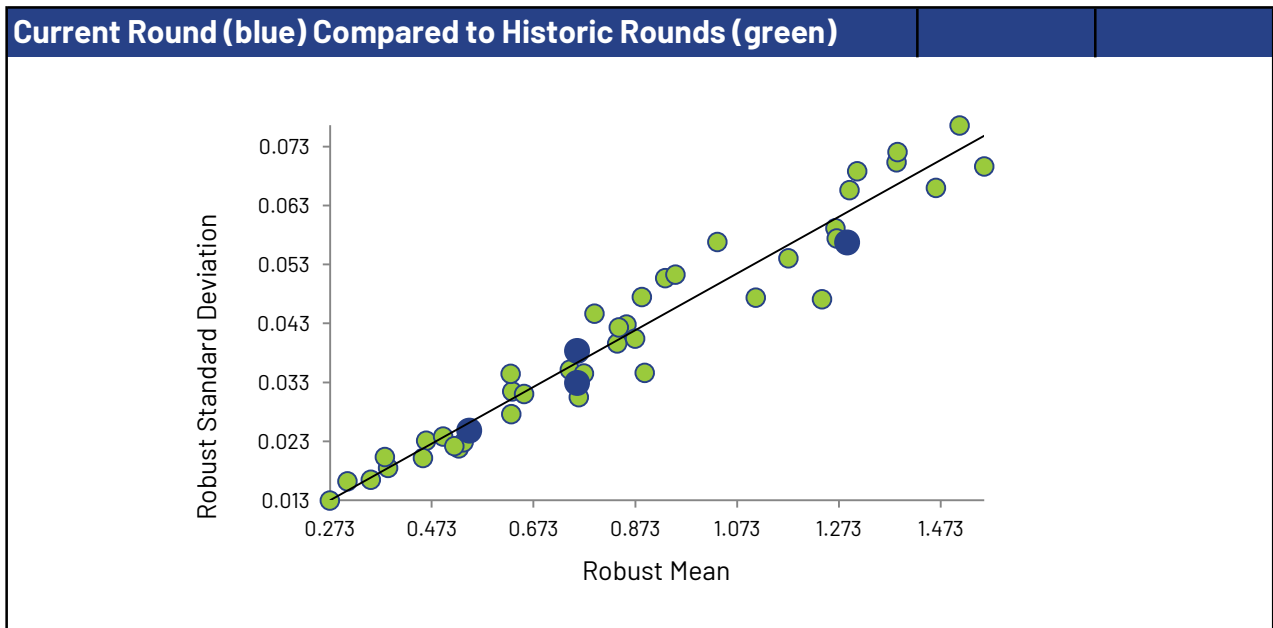
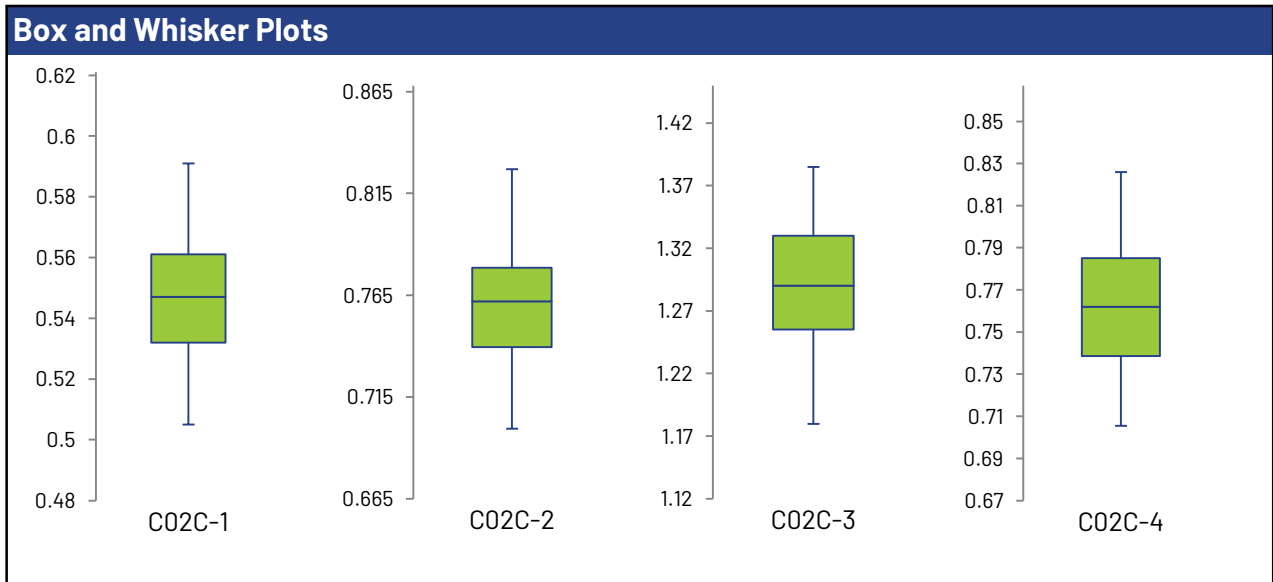
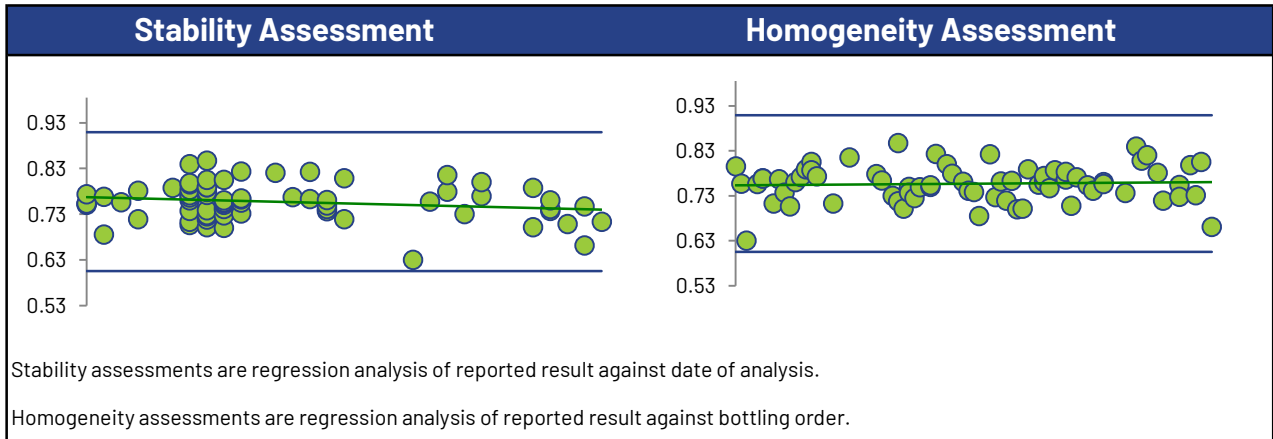


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Thallium



Thallium



Tin

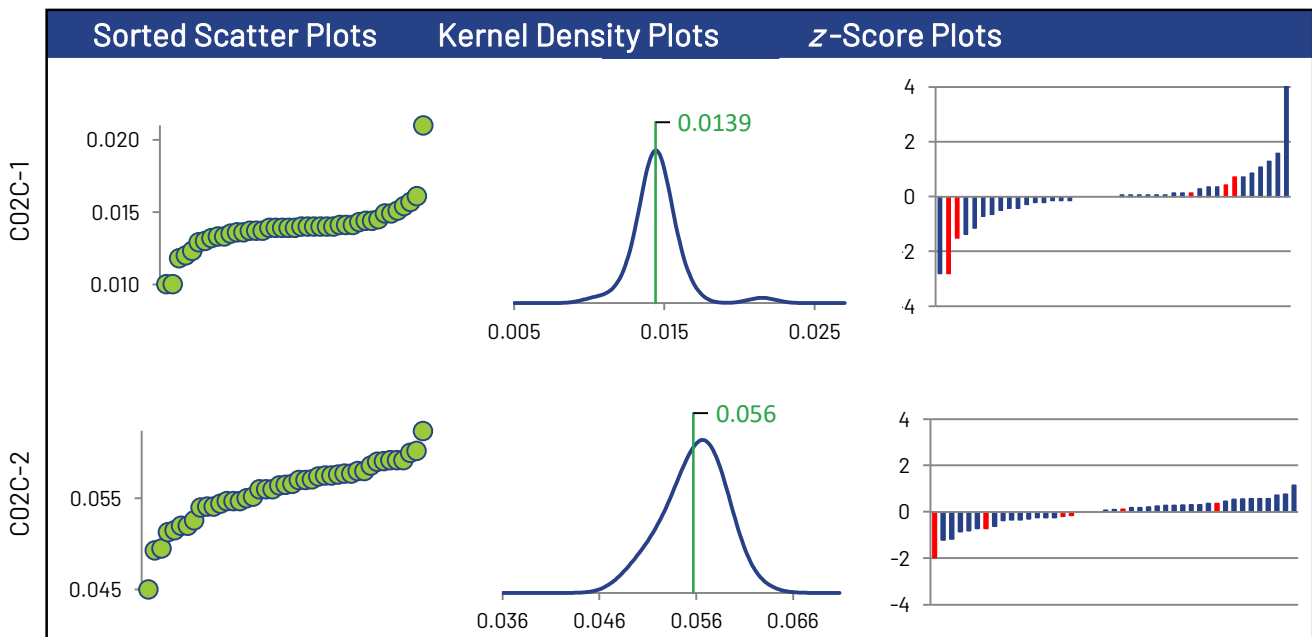
Summary Statistics

Statistic	C02C-1	C02C-2	C02C-3	C02C-4
No. of results used for summary statistics	41	43	44	44
Median mg/L	0.0139	0.0565	0.0727	0.0535
Robust Mean mg/L	0.0139	0.0560	0.0726	0.0535
Uncertainty of the Assigned Value mg/L	0.000169	0.000581	0.000609	0.000522
Robust Standard Deviation mg/L	0.000866	0.00305	0.00323	0.00277
Regression Standard Deviation mg/L	0.00139	0.00560	0.00726	0.00535
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.00139	0.00560	0.00726	0.00535
Flagged Outliers	1	1	1	1
$ z > 3.0$	1	0	0	0
$2 < z < 3$	2	0	0	0
Failure Rate %*	2.1			

Methods Used

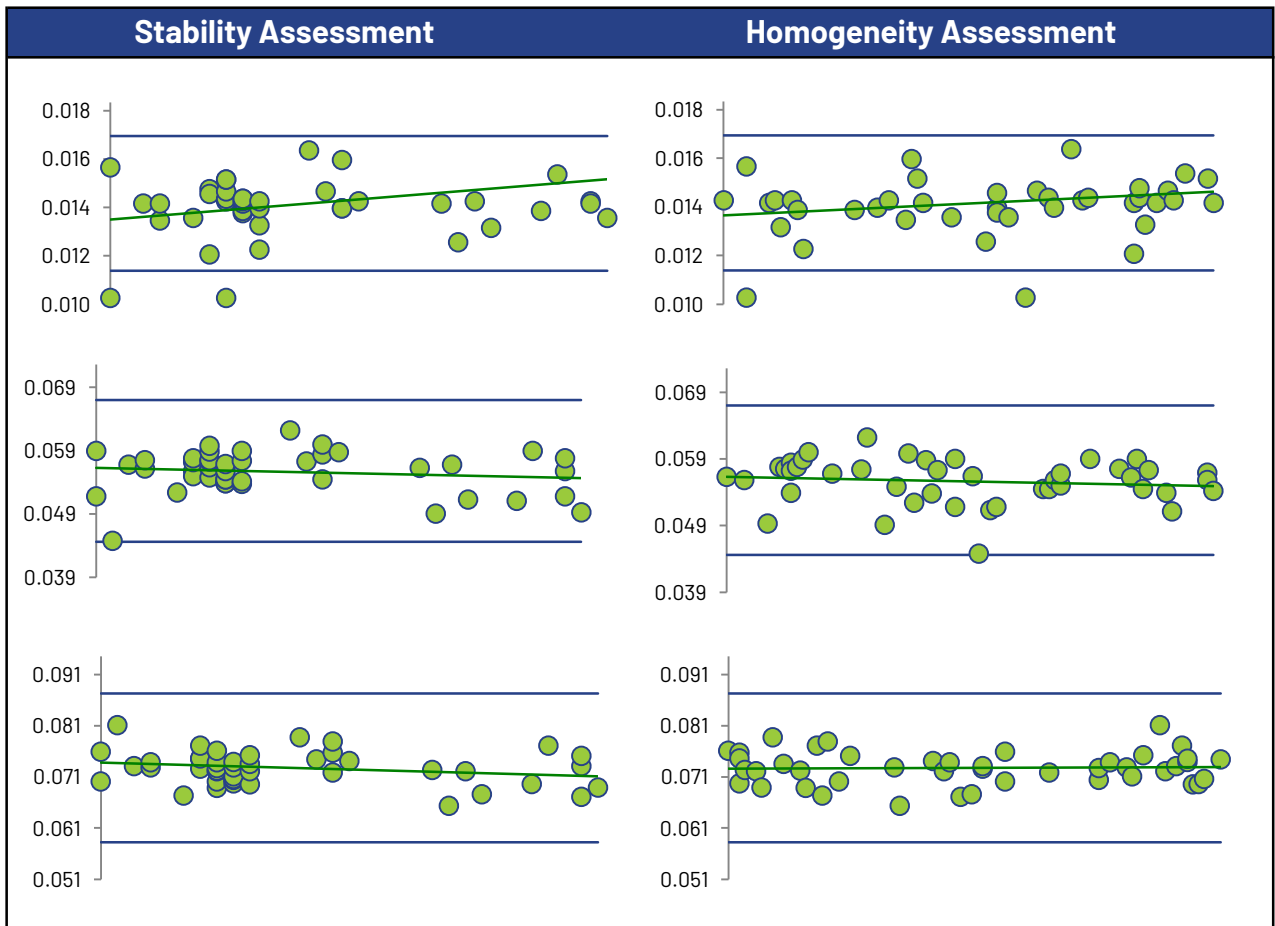
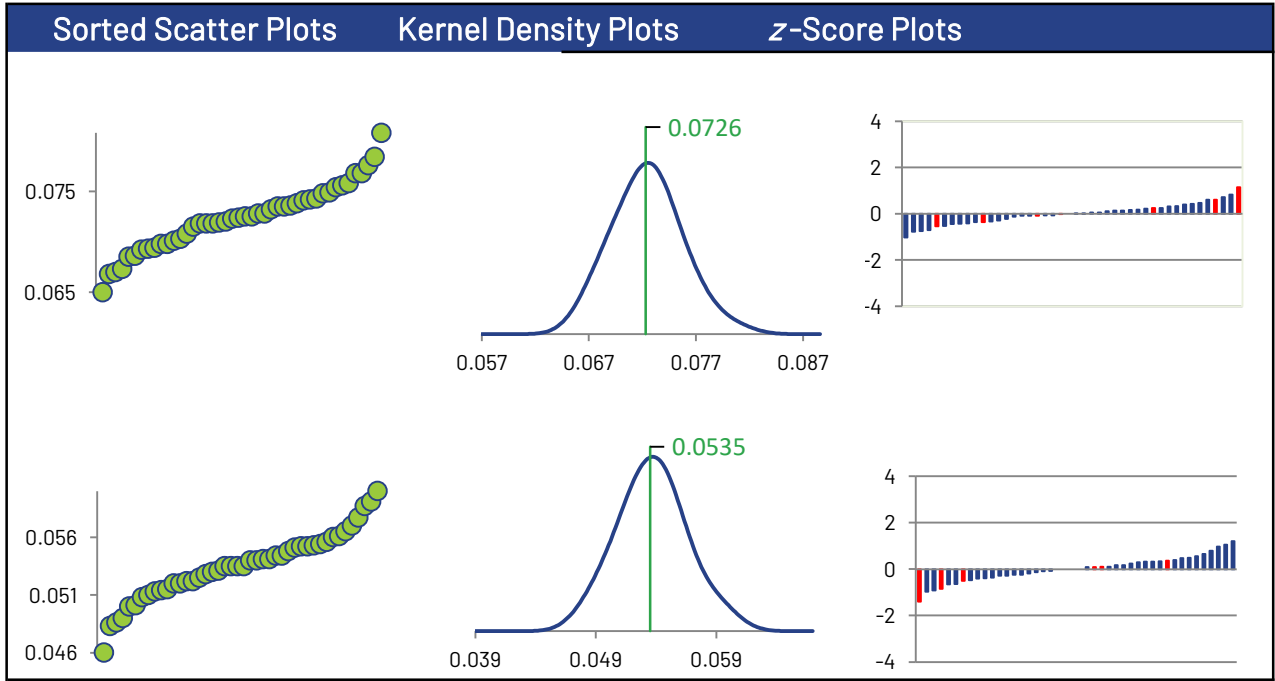
Method	C02C-1	C02C-2	C02C-3	C02C-4
ICP/MS (Blue)	36	36	37	37
ICP/OES (Red)	5	7	7	7

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

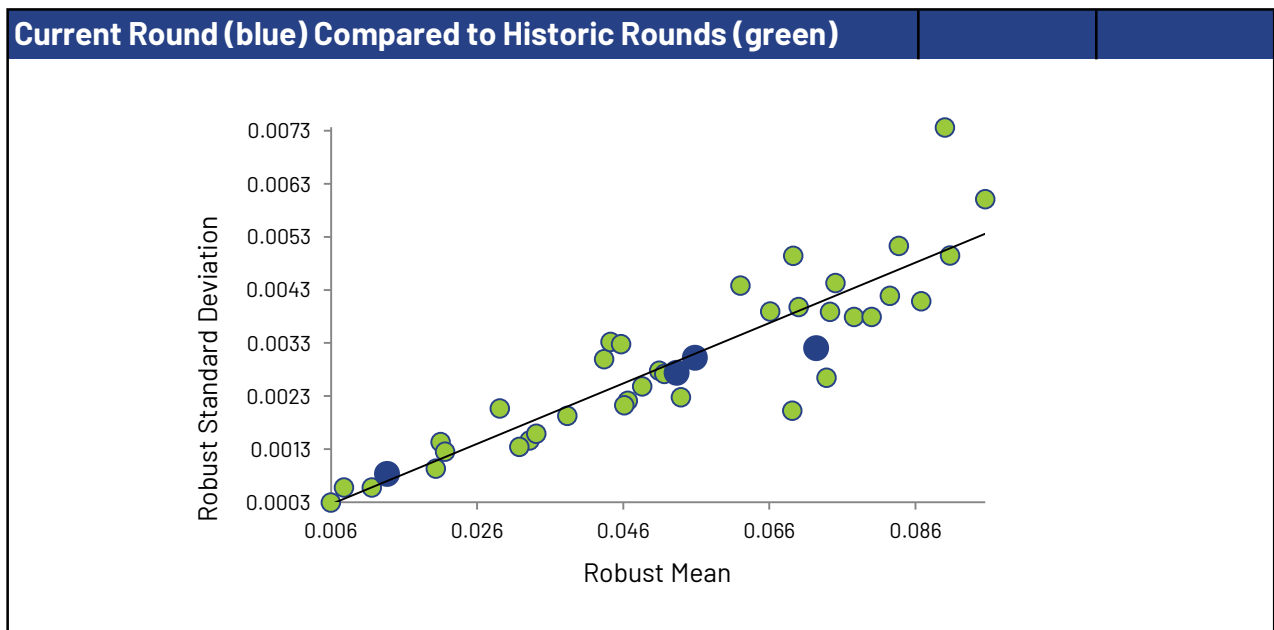
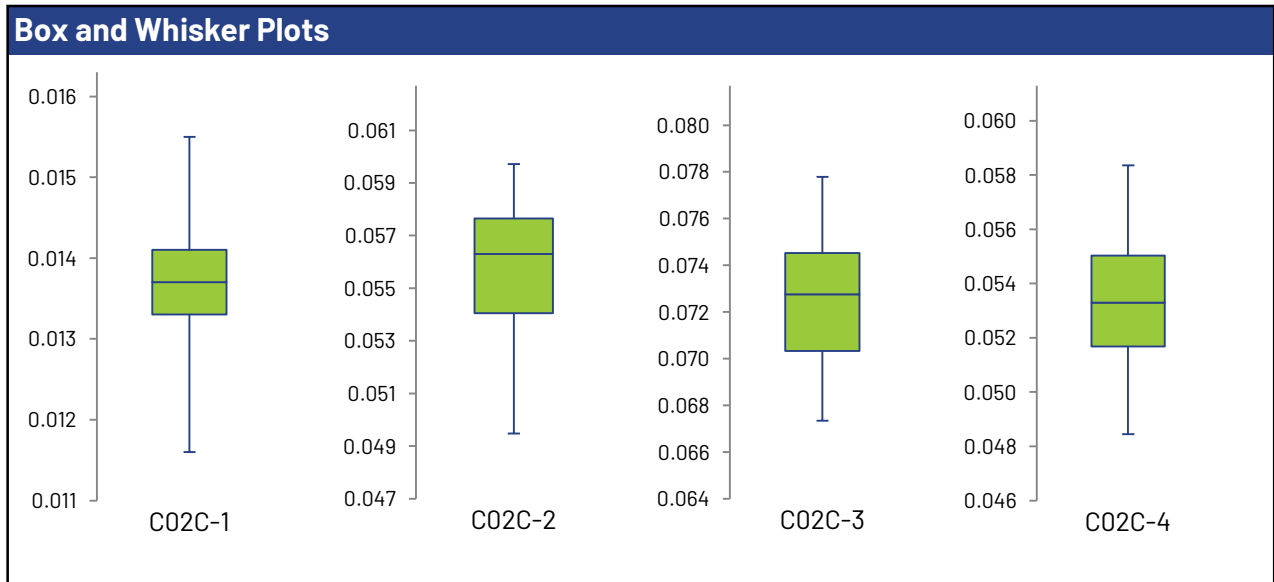
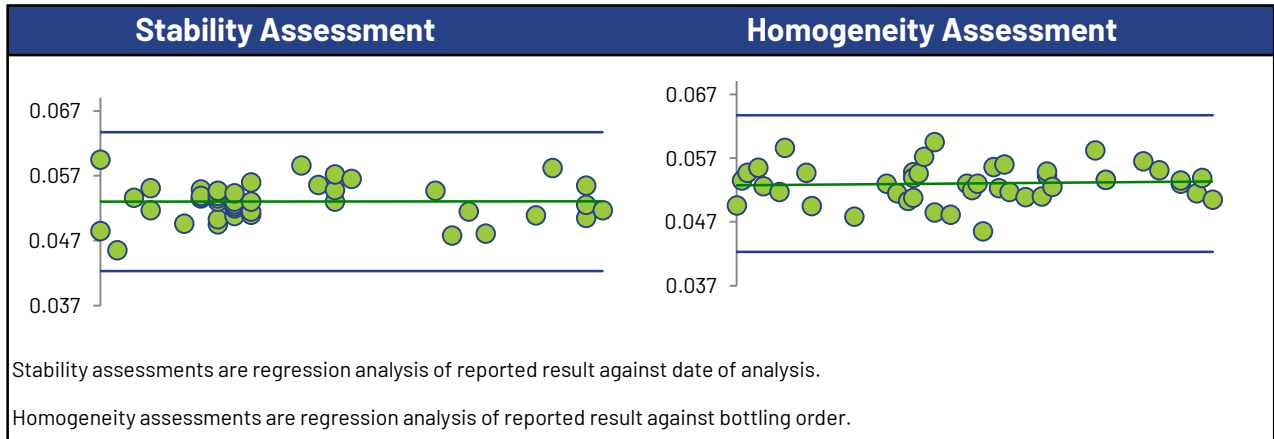


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Tin



Tin



Titanium

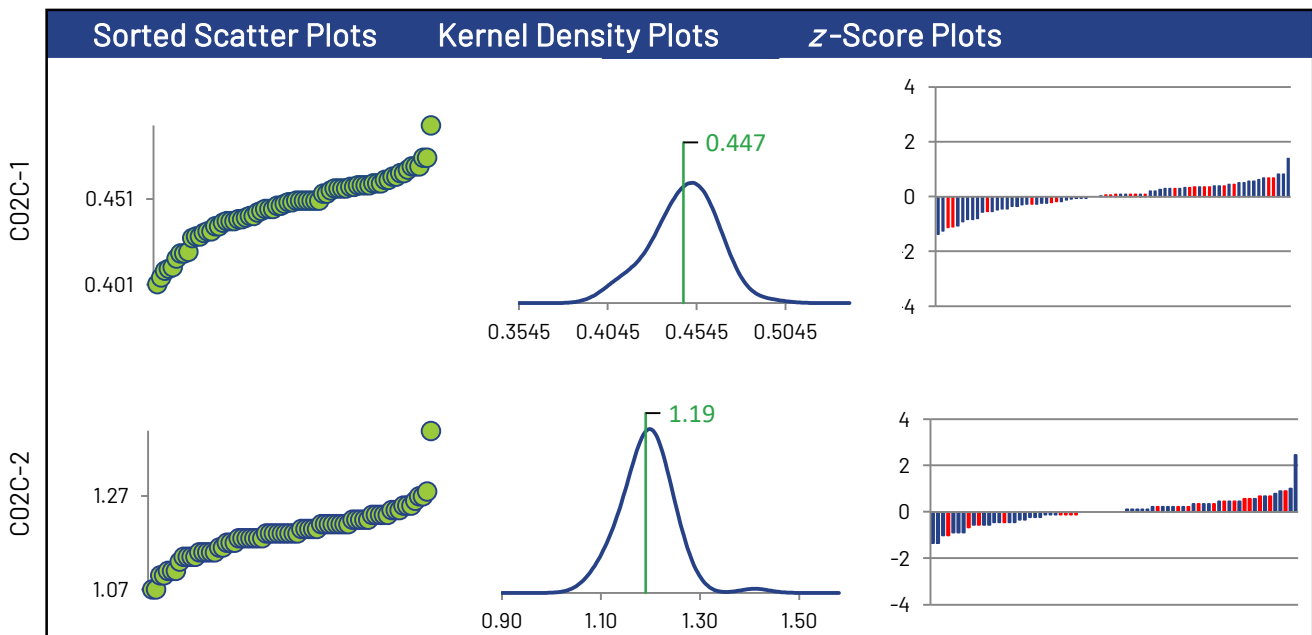
Summary Statistics

Statistic	C02C-1	C02C-2	C02C-3	C02C-4
No. of results used for summary statistics	72	72	72	72
Median mg/L	0.450	1.19	1.23	0.816
Robust Mean mg/L	0.447	1.19	1.23	0.816
Uncertainty of the Assigned Value mg/L	0.00252	0.00675	0.00672	0.00504
Robust Standard Deviation mg/L	0.0171	0.0458	0.0456	0.0342
Regression Standard Deviation mg/L	0.0336	0.0894	0.0922	0.0612
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.0336	0.0894	0.0922	0.0612
Flagged Outliers	1	1	1	1
$ z > 3.0$	0	0	0	0
$2 < z < 3$	0	1	0	0
Failure Rate %*	1.4			

Methods Used

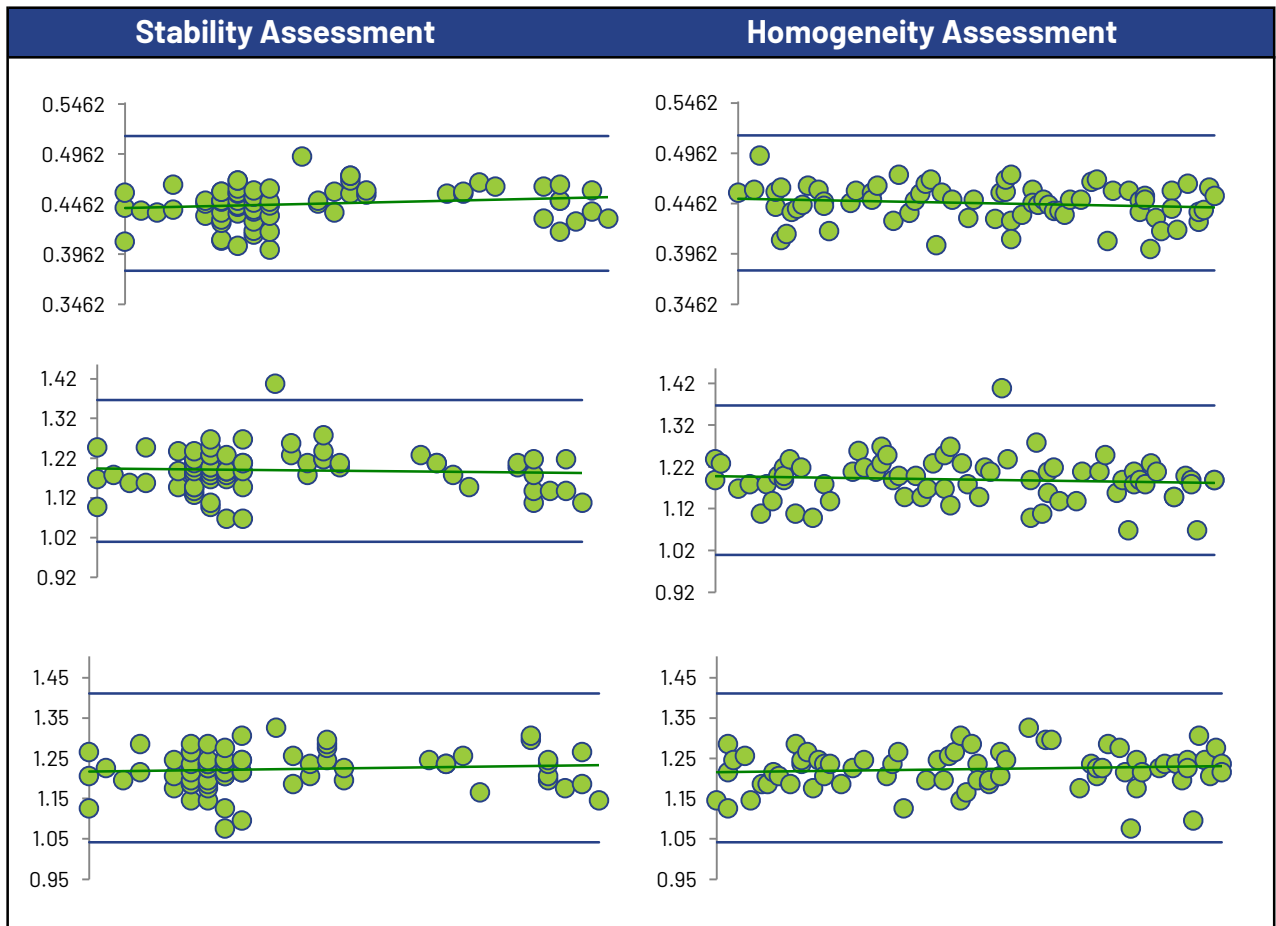
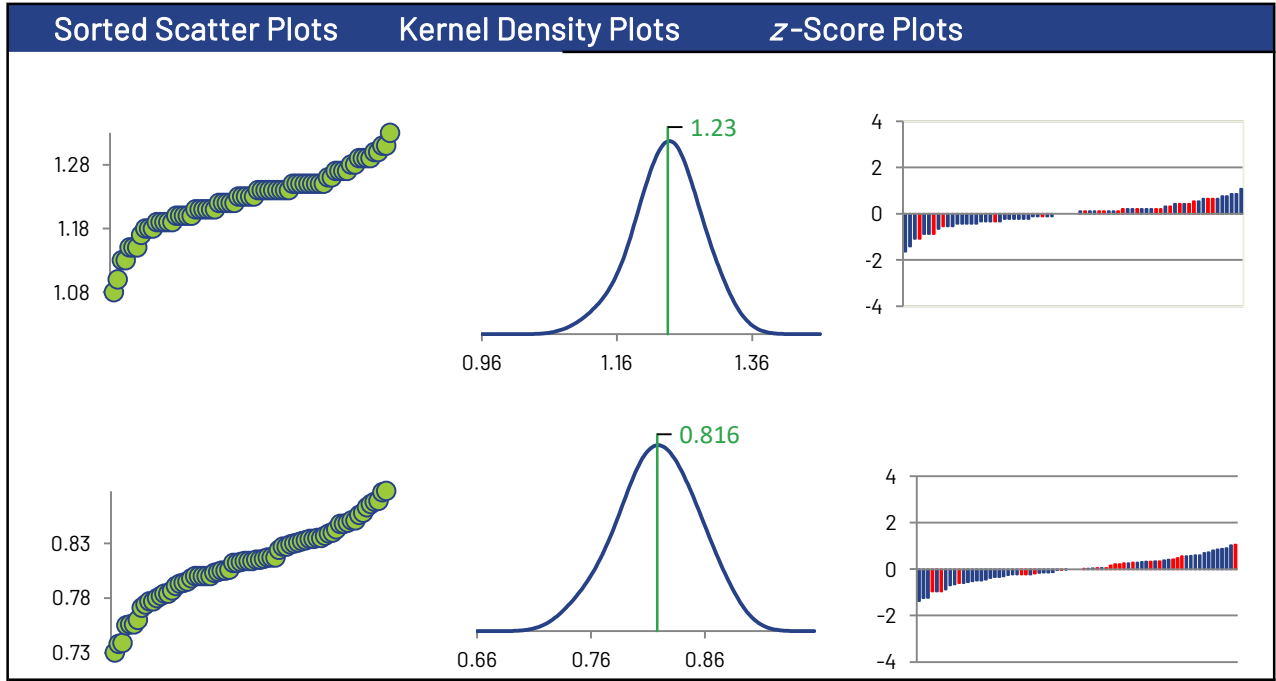
Method	C02C-1	C02C-2	C02C-3	C02C-4
ICP/MS (Blue)	50	50	50	50
ICP/OES (Red)	22	22	22	22

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.

Titanium



Uranium

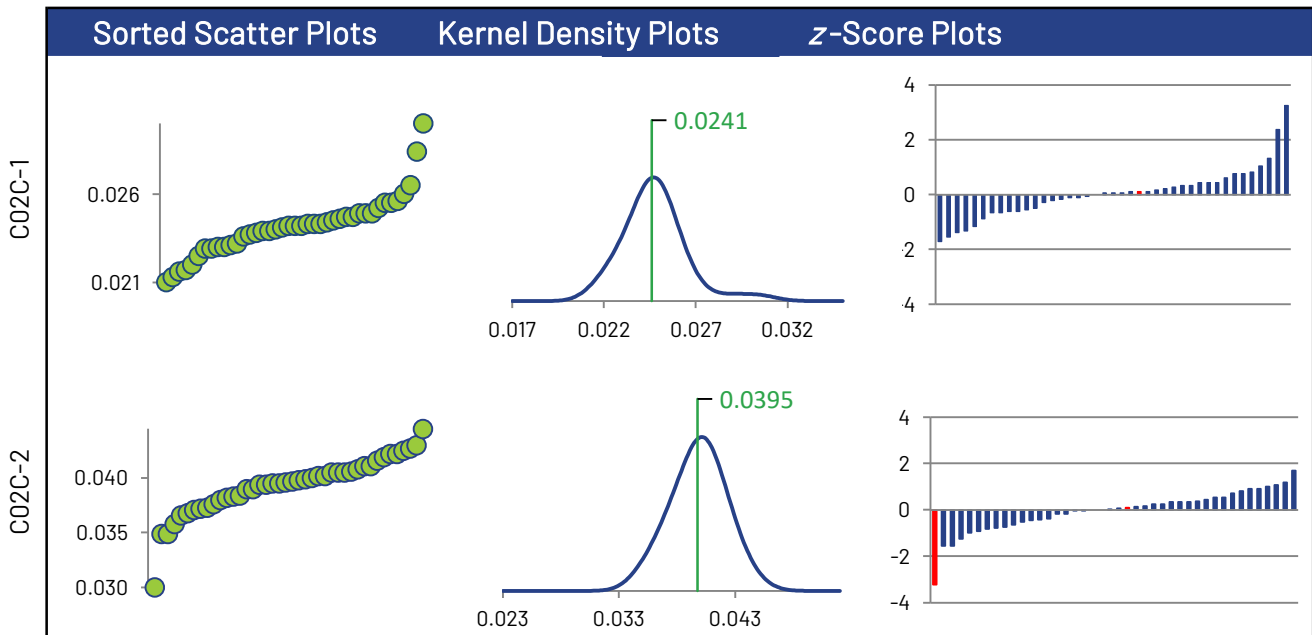
Summary Statistics

Statistic	C02C-1	C02C-2	C02C-3	C02C-4
No. of results used for summary statistics	41	42	42	42
Median mg/L	0.0242	0.0397	0.0762	0.0518
Robust Mean mg/L	0.0241	0.0395	0.0757	0.0514
Uncertainty of the Assigned Value mg/L	0.000267	0.000447	0.000851	0.000621
Robust Standard Deviation mg/L	0.00137	0.00232	0.00441	0.00322
Regression Standard Deviation mg/L	0.00181	0.00296	0.00567	0.00385
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.00181	0.00296	0.00567	0.00385
Flagged Outliers	1	1	1	1
$ z > 3.0$	1	1	0	0
$2 < z < 3$	1	0	0	1
Failure Rate %*	4.5			

Methods Used

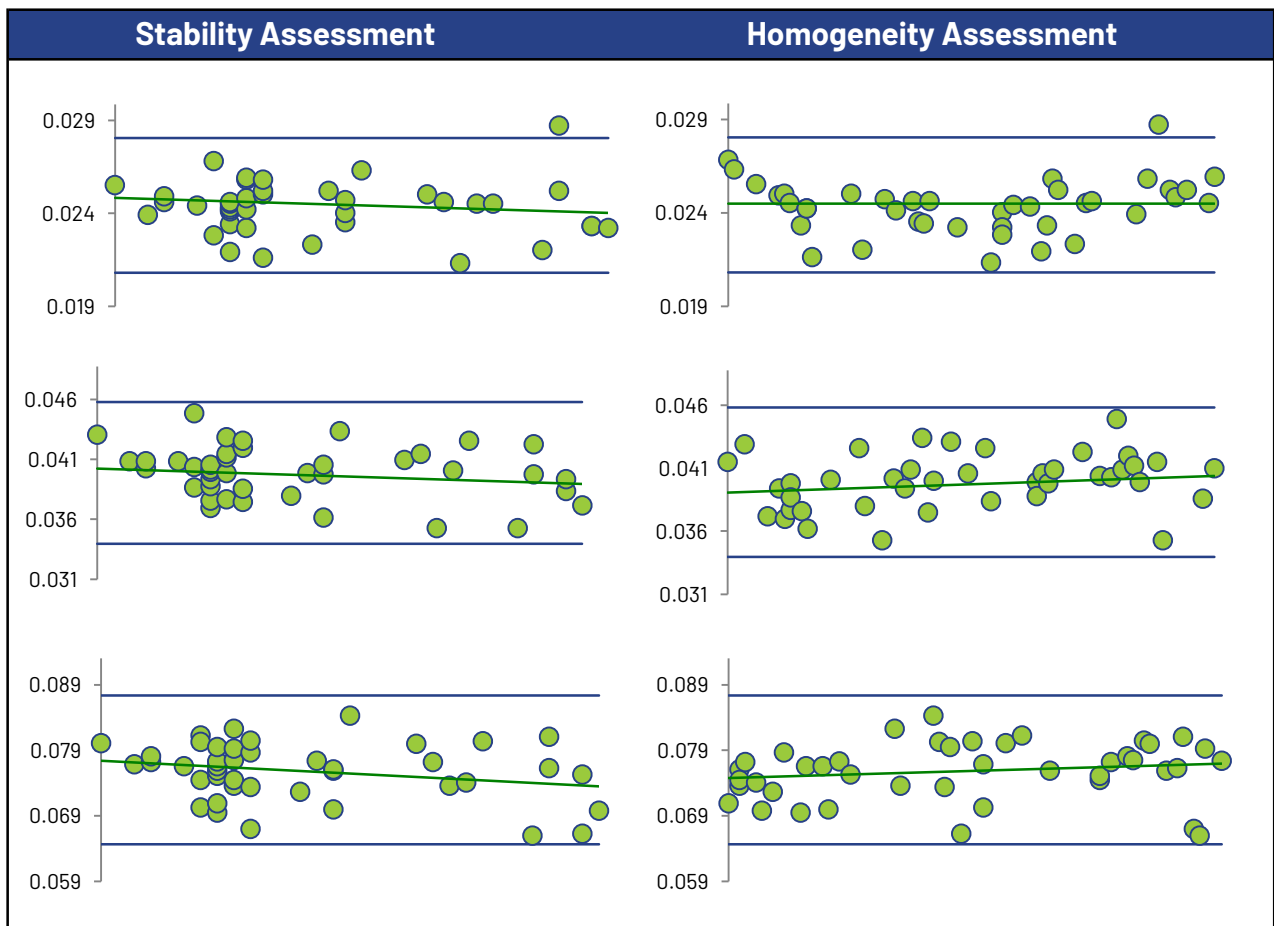
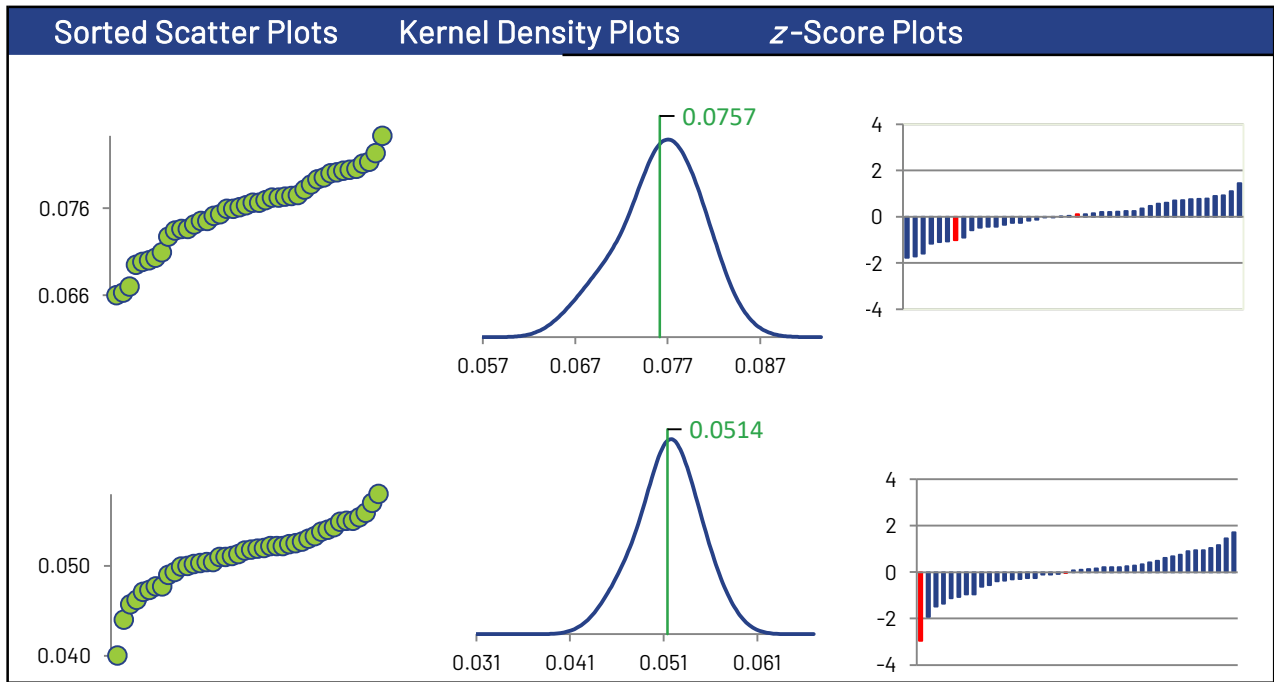
Method	C02C-1	C02C-2	C02C-3	C02C-4
ICP/MS (Blue)	40	40	40	40
ICP/OES (Red)	1	2	2	2

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

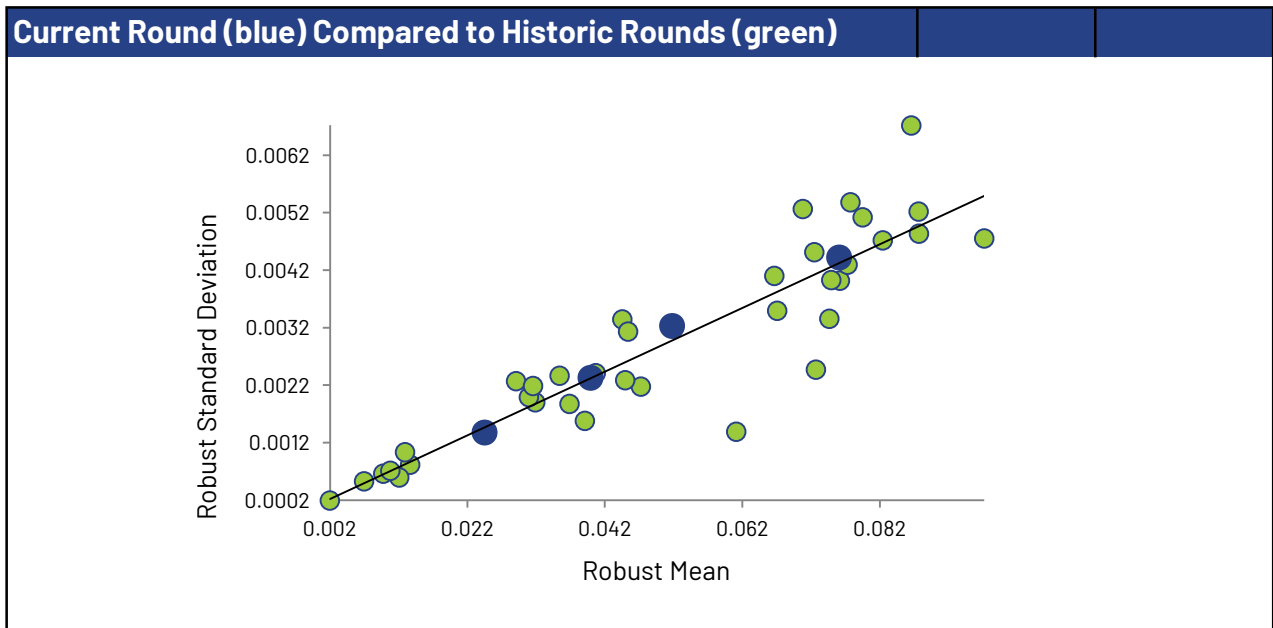
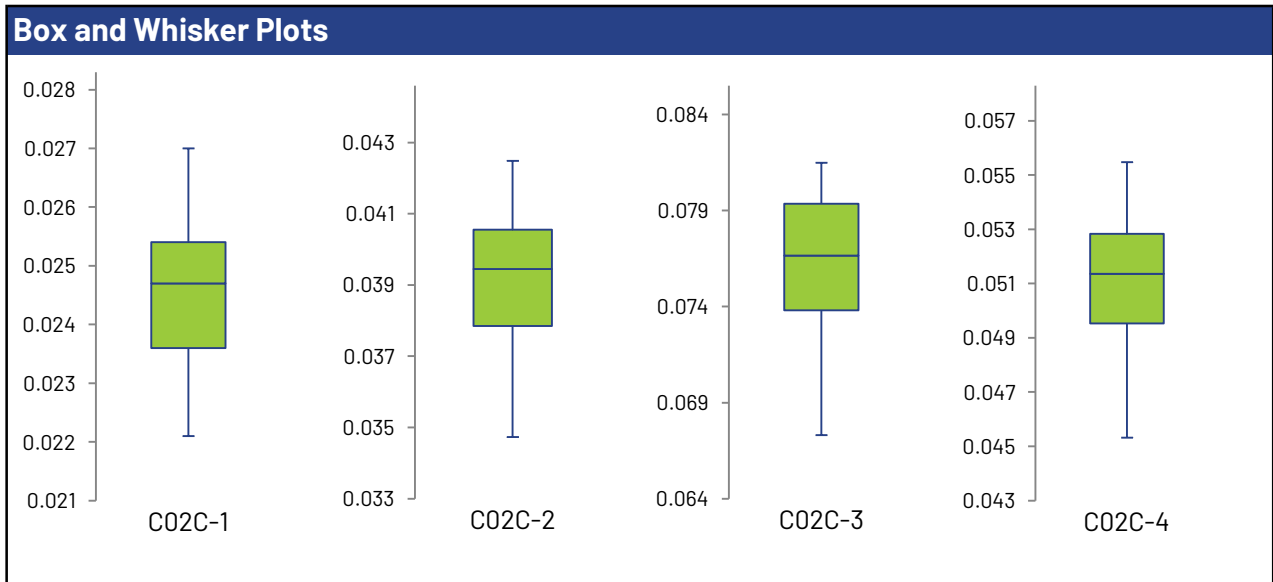
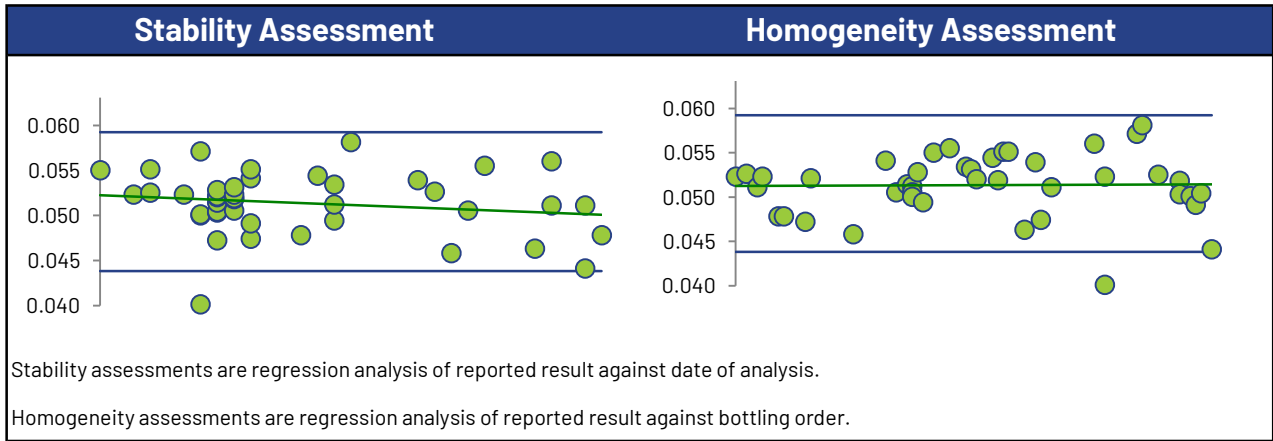


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

Uranium



Uranium



Vanadium

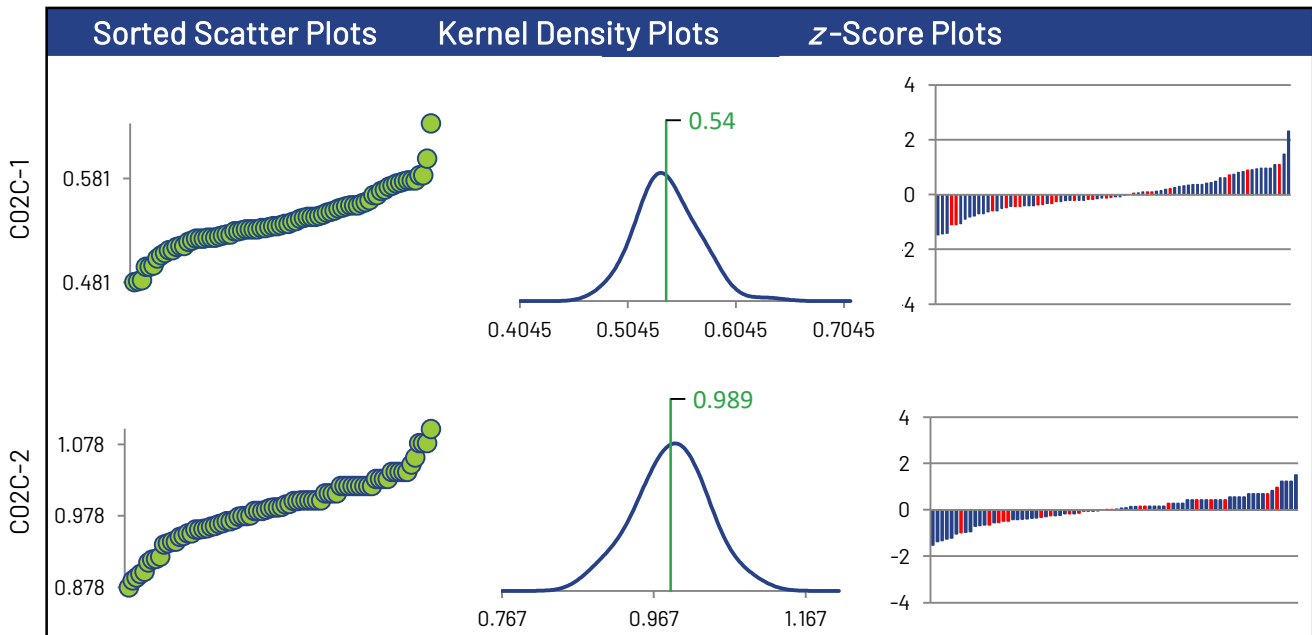
Summary Statistics

Statistic	C02C-1	C02C-2	C02C-3	C02C-4
No. of results used for summary statistics	78	78	78	78
Median mg/L	0.537	0.991	1.33	0.397
Robust Mean mg/L	0.540	0.989	1.34	0.397
Uncertainty of the Assigned Value mg/L	0.00381	0.00633	0.00953	0.00283
Robust Standard Deviation mg/L	0.0269	0.0447	0.0673	0.0200
Regression Standard Deviation mg/L	0.0405	0.0742	0.100	0.0298
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.0405	0.0742	0.100	0.0298
Flagged Outliers	1	1	1	1
$ z > 3.0$	0	0	0	0
$2 < z < 3$	1	0	0	0
Failure Rate %*	1.3			

Methods Used

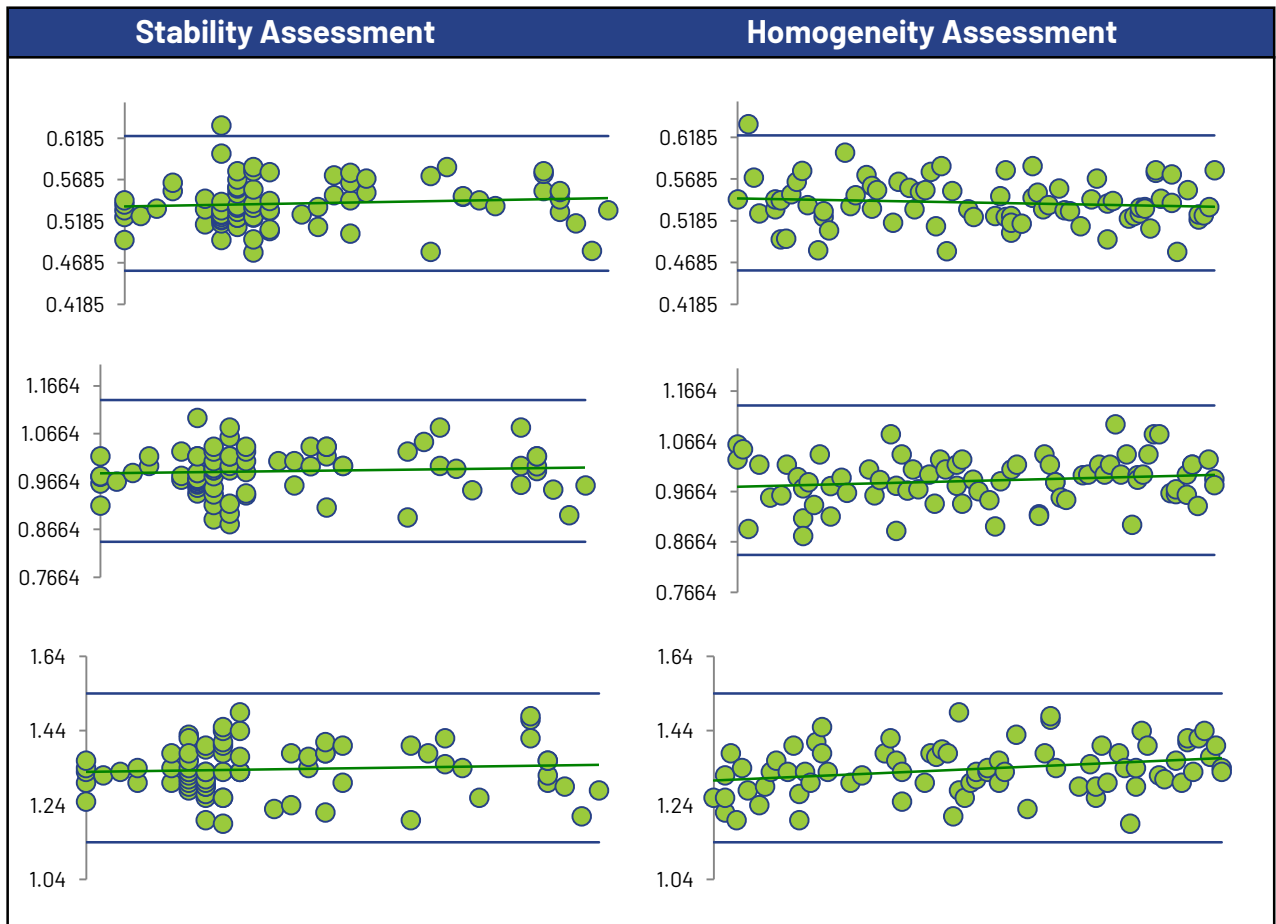
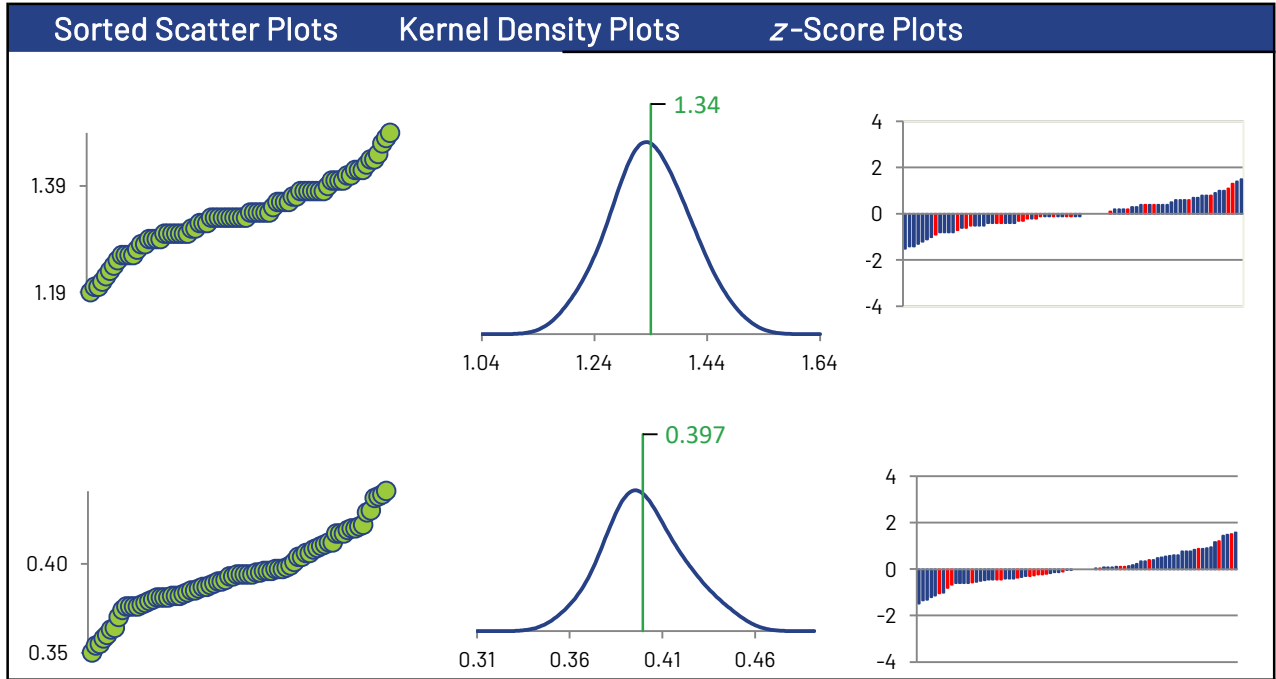
Method	C02C-1	C02C-2	C02C-3	C02C-4
ICP/MS (Blue)	55	55	55	55
ICP/OES (Red)	23	23	23	23

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

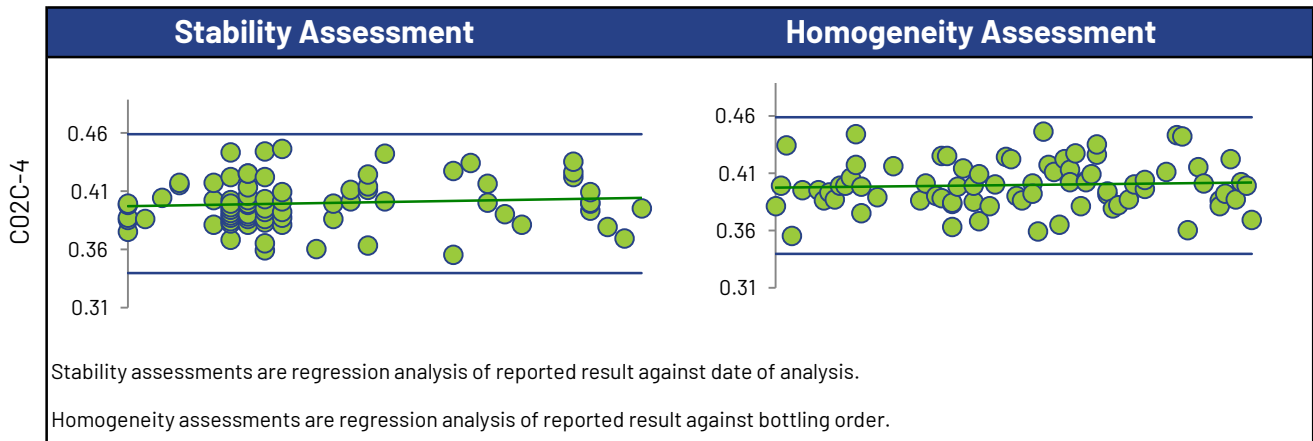


* Displayed failure rate does not account for the RDL modified z-Scores or inaccurately reported non-detects.

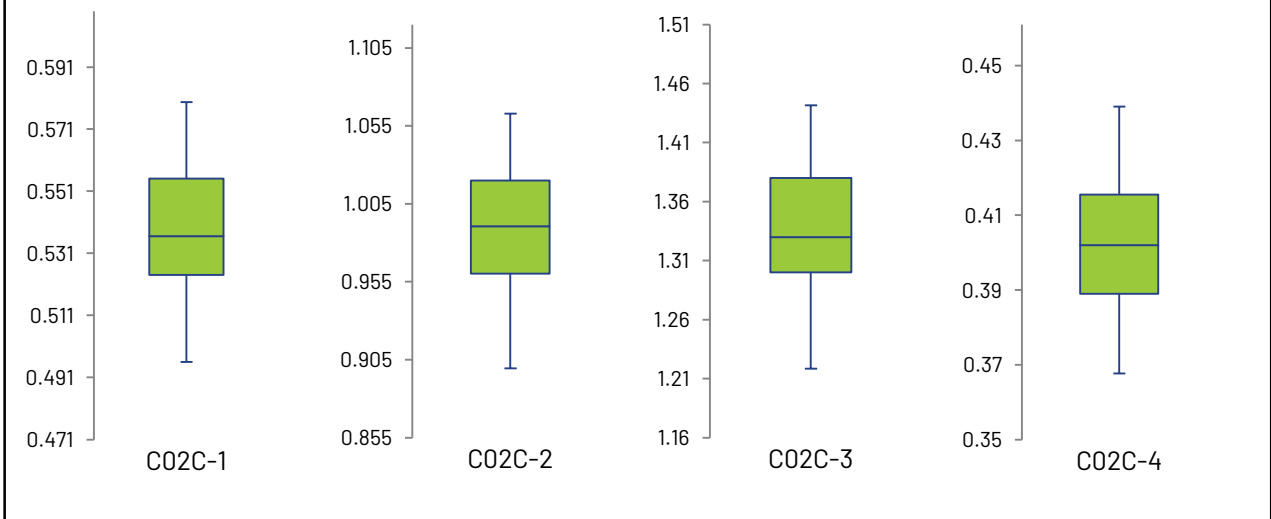
Vanadium



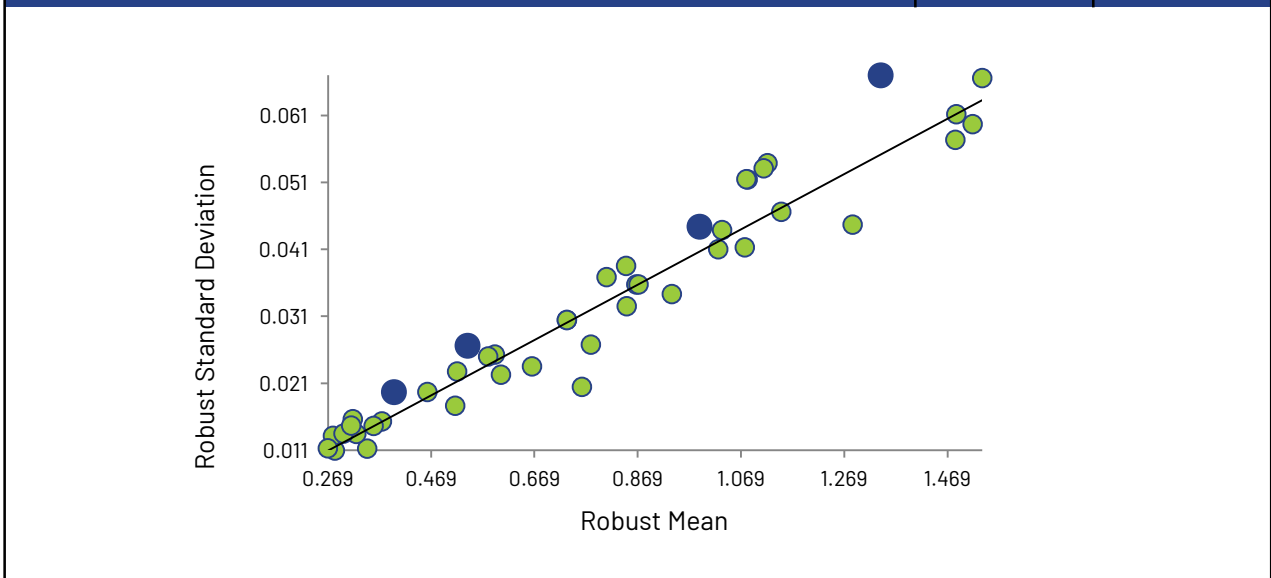
Vanadium



Box and Whisker Plots



Current Round (blue) Compared to Historic Rounds (green)



Zinc

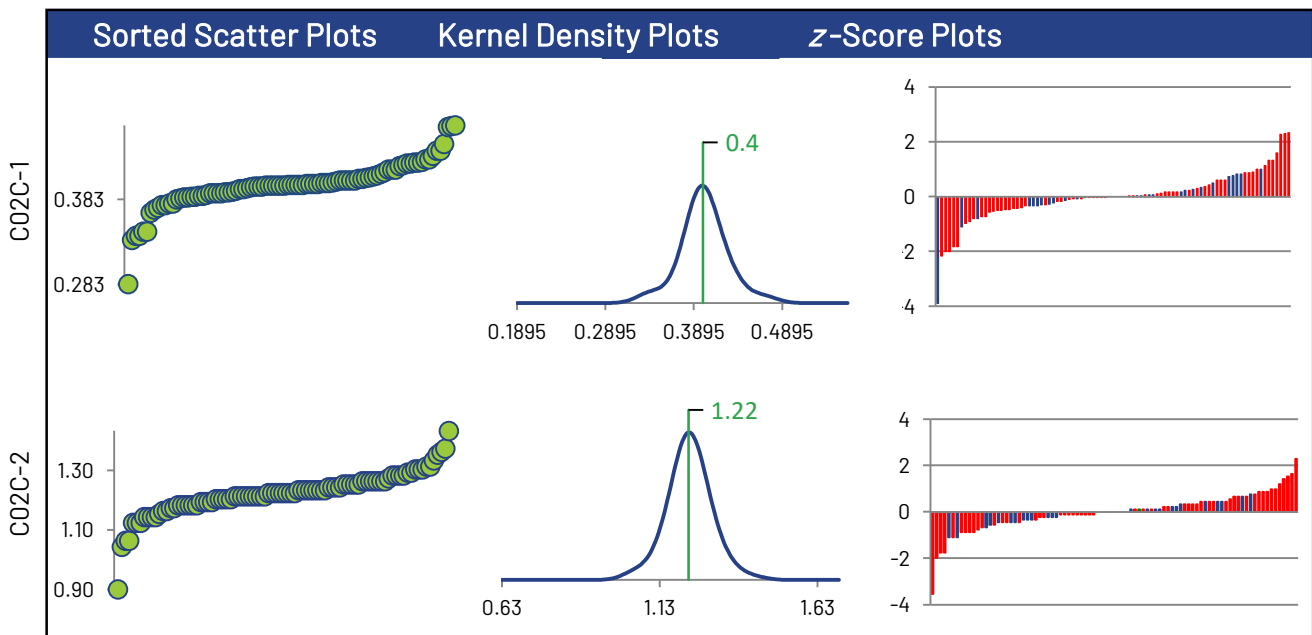
Summary Statistics

Statistic	C02C-1	C02C-2	C02C-3	C02C-4
No. of results used for summary statistics	89	89	89	89
Median mg/L	0.400	1.22	1.03	0.839
Robust Mean mg/L	0.400	1.22	1.03	0.838
Uncertainty of the Assigned Value mg/L	0.00262	0.00765	0.00665	0.00510
Robust Standard Deviation mg/L	0.0198	0.0577	0.0502	0.0385
Regression Standard Deviation mg/L	0.0300	0.0916	0.0771	0.0629
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) mg/L	0.0300	0.0916	0.0771	0.0629
Flagged Outliers	1	1	1	1
$ z > 3.0$	1	1	1	0
$2 < z < 3$	4	1	1	1
Failure Rate %*	2.2			

Methods Used

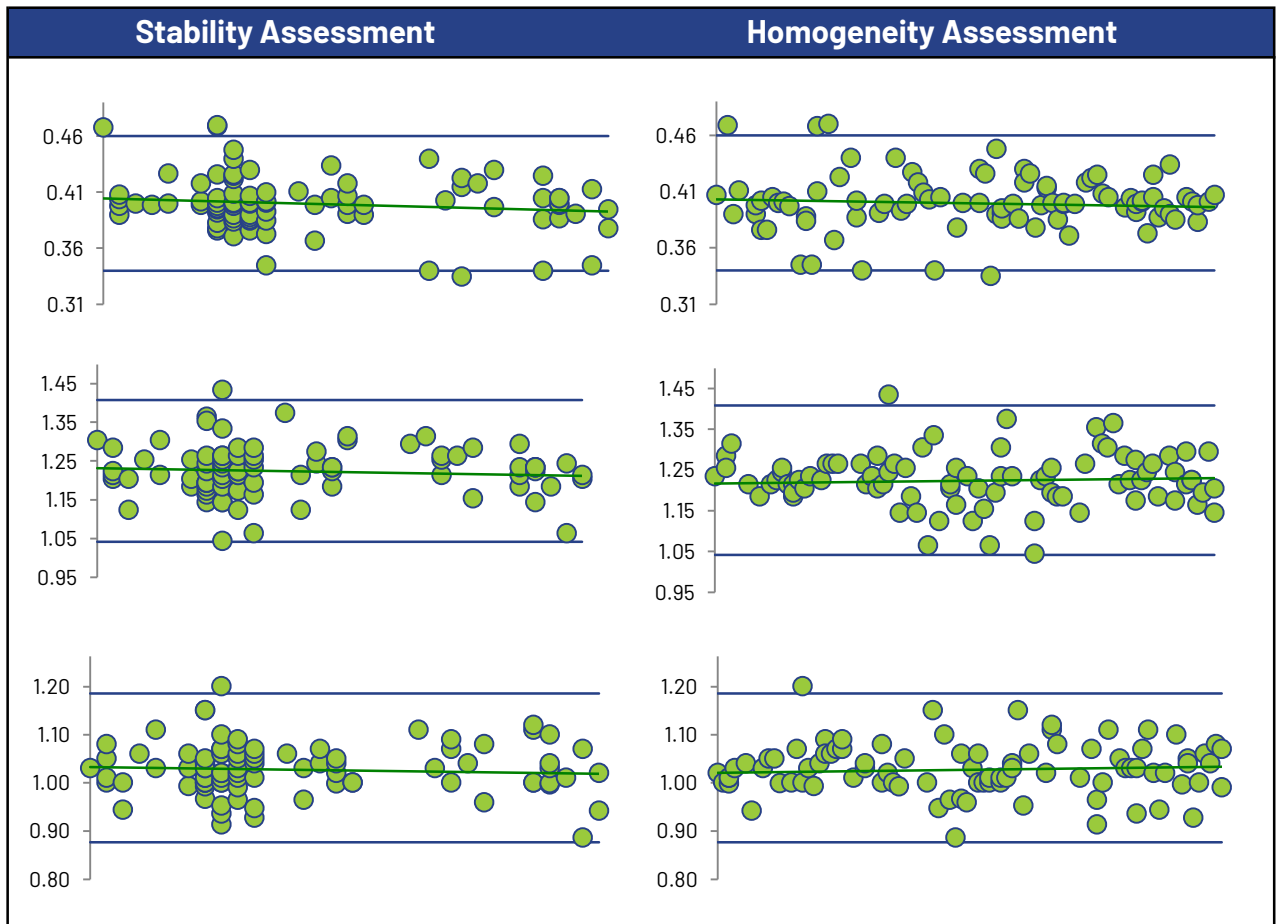
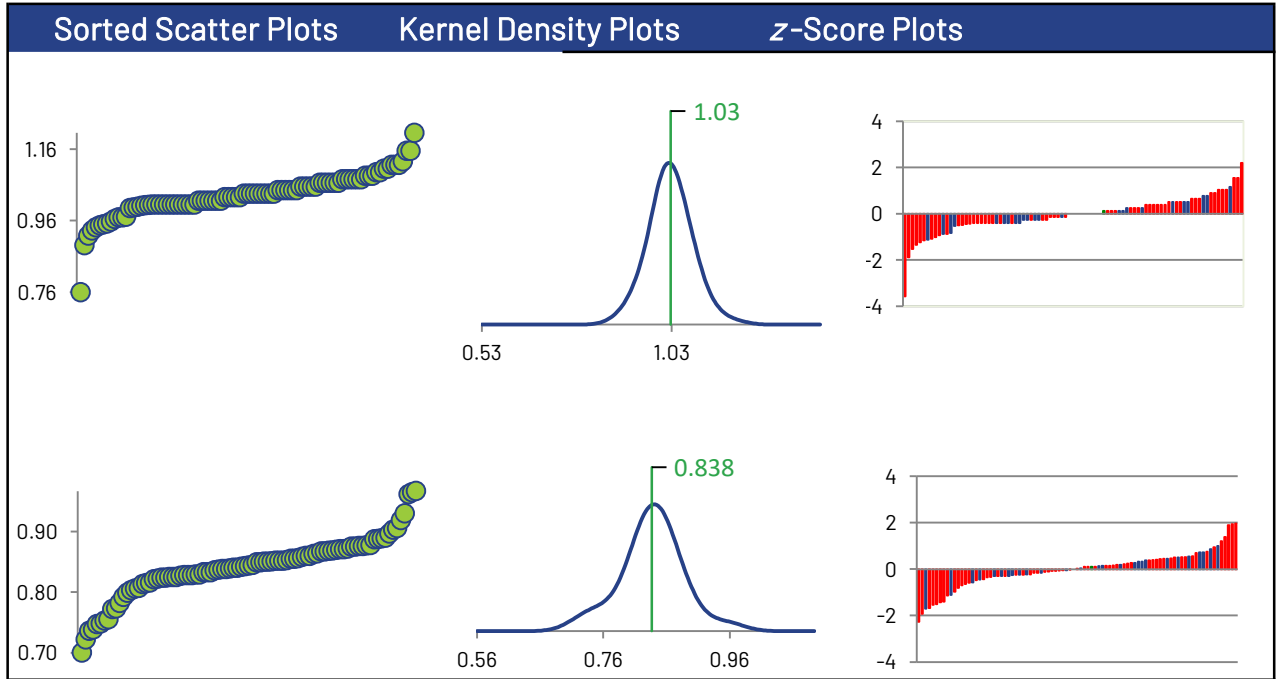
Method	C02C-1	C02C-2	C02C-3	C02C-4
ICP/OES (Blue)	28	28	28	28
ICP/MS (Red)	60	60	60	60
AA FLAME (Green)	1	1	1	1

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.

Zinc



Zinc

