

Test Group Summary Report

C73 Residual Solvents in Oil

October 2023

Issued: November 27, 2023

Table of Contents

1.0	The Proficiency Testing Report	1
2.0	Definitions	1
3.0	Scoring System	1
3.1	Homogeneity and Stability Assessment	2
3.2	The z score	2
3.2	Composite (PT) Score	2
3.3	Identifying Bias	2
3.4	Deviations from Evaluation Procedure	3
4.0	PT Round Specific Data Summary	3
4.1	Summary statistics	3
4.2	z - Score Plots	3
4.3	kernel density plots	3
4.4	stability and homogeneity Plots	3
4.5	Box-and-Whisker Plots	3
4.6	Historic Comparison Plot	3
	Annex A Summary by Analyte	4

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:

$$z - Score = \frac{(x - \bar{X})}{SDPA} \quad \text{where: } x = \text{participant result};$$

\bar{X} = the Assigned Value;
SDPA = the Standard Deviation for Proficiency Assessment.

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.

$$RSZ = \frac{\sum z}{\sqrt{N}} \quad \text{where } z = \text{the z- score}$$

$N = \text{the number of samples}$

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

$RSZ \geq -2$ and ≤ 2	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.

1-BUTANOL (N-BUTANOL)

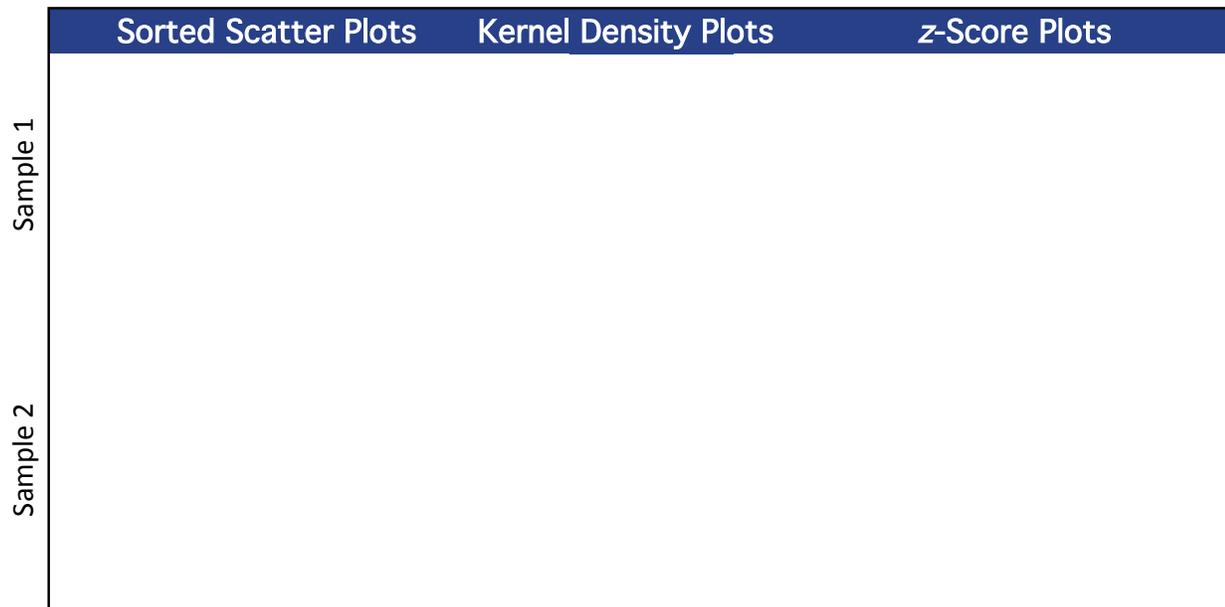
Summary Statistics

Statistic	Not Spiked		Excludxed	
	C73-1	C73-2	C73-3	C73-4
N	0	0	0	0
Median $\mu\text{g/g}$				
Robust Mean $\mu\text{g/g}$				
U $\mu\text{g/g}$				
Robust Standard Deviation $\mu\text{g/g}$				
Regression Standard Deviation $\mu\text{g/g}$				
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) $\mu\text{g/g}$				
Outliers	0	2	0	0
$ z > 3.0$	0	0	0	0
$2 < z < 3$	0	0	0	0

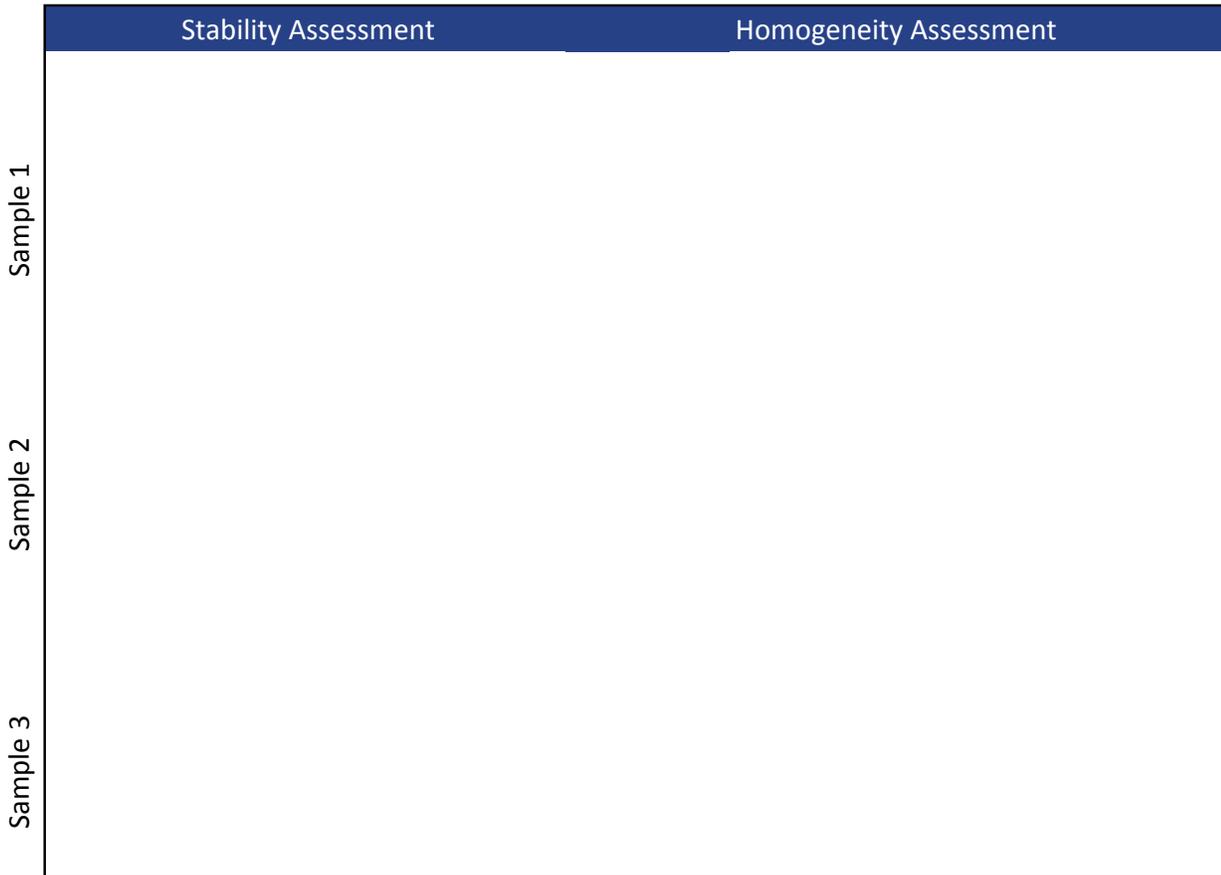
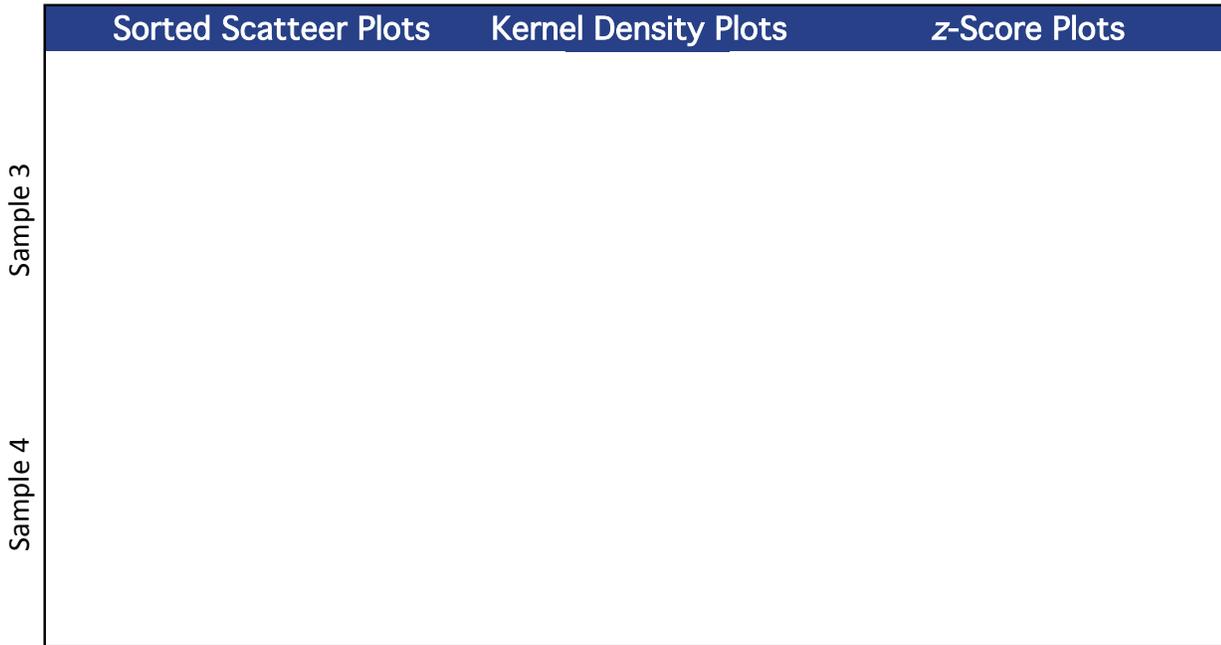
Methods Used

Method	C73-1	C73-2	C73-3	C73-4

All summary stats and the plots below are based on the data excluding any flagged outliers

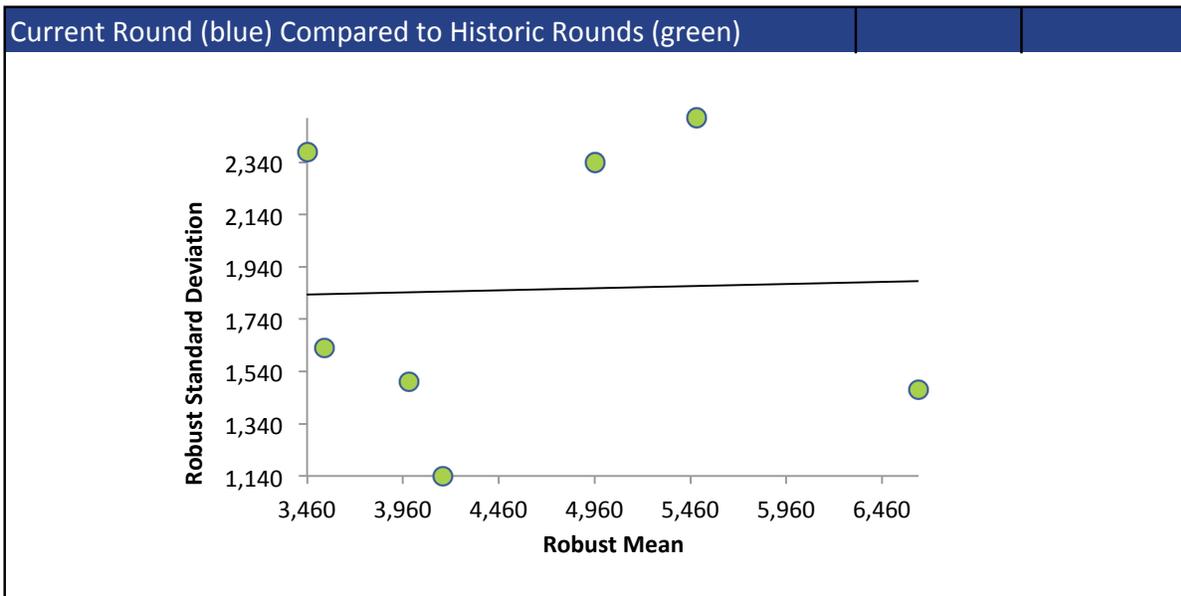


1-BUTANOL (N-BUTANOL)



1-BUTANOL (N-BUTANOL)

	Stability Assessment	Homogeneity Assessment
Sample 4		
	Stability assessments are regression analysis of reported result against date of analysis. Homogeneity assessments are regression analysis of reported result against bottling order.	



1-PENTANOL

Summary Statistics

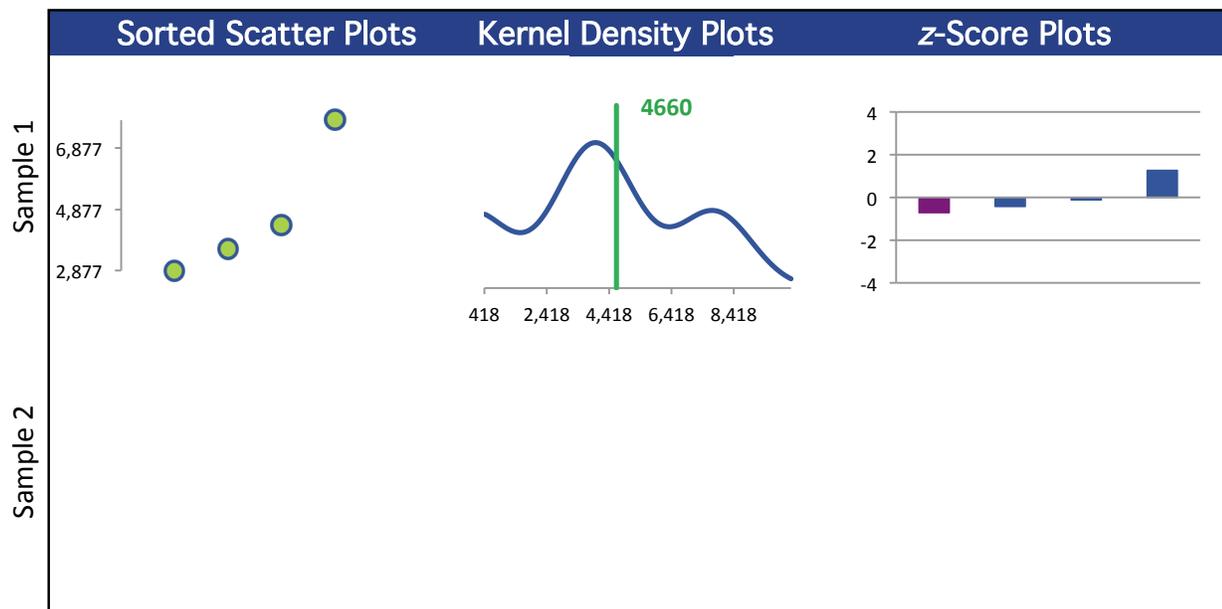
Not Spiked

Statistic	C73-1	C73-2	C73-3	C73-4
N	4	0	0	0
Median $\mu\text{g/g}$	3980			
Robust Mean $\mu\text{g/g}$	4660			
U $\mu\text{g/g}$	1540			
Robust Standard Deviation $\mu\text{g/g}$	2470			
Regression Standard Deviation $\mu\text{g/g}$				
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) $\mu\text{g/g}$	2470			
Outliers	0	0	0	0
$ z > 3.0$	0	0	0	0
$2 < z < 3$	0	0	0	0

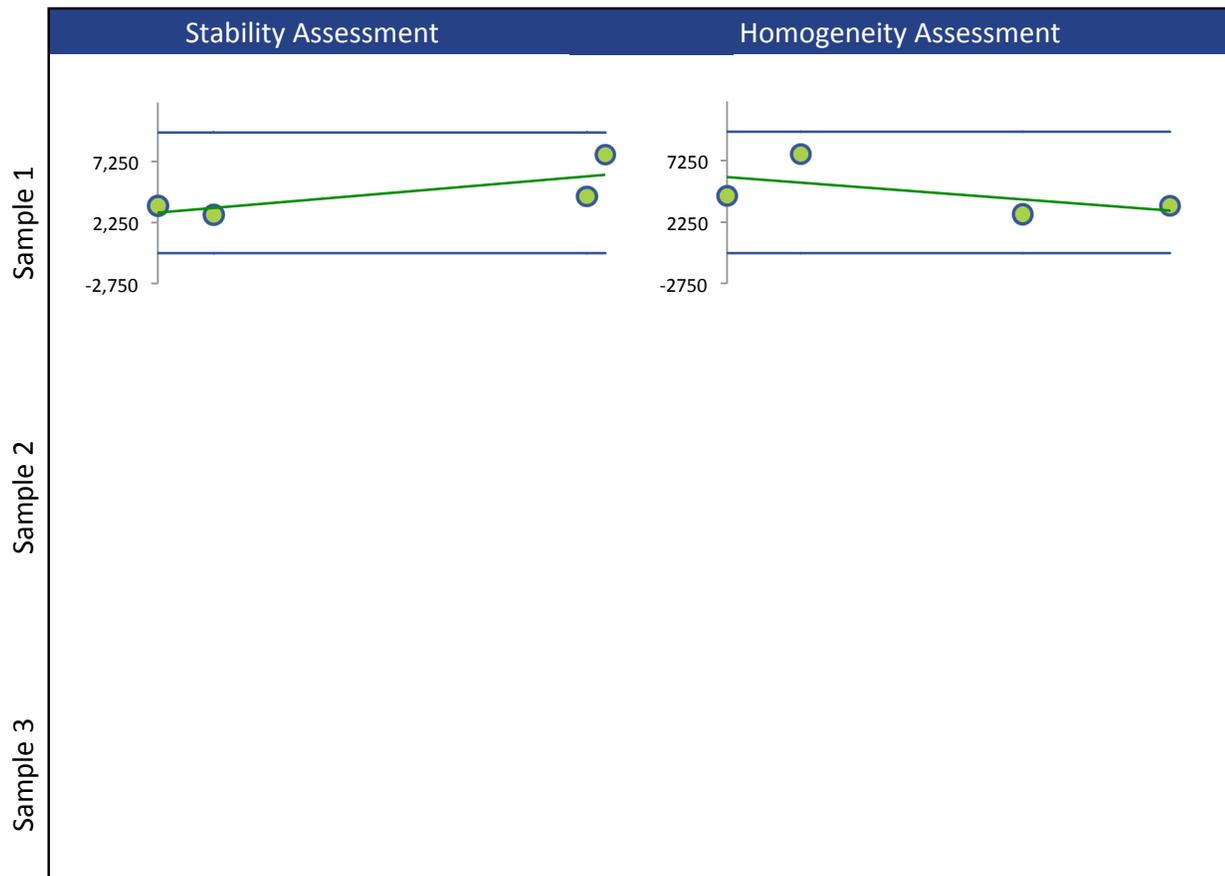
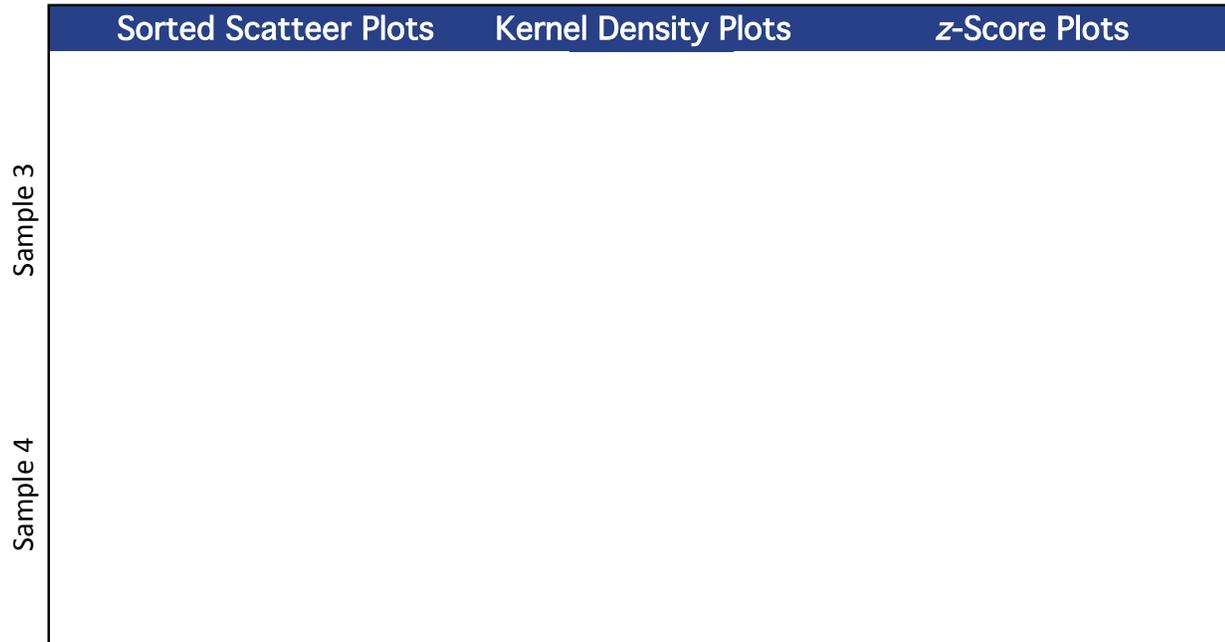
Methods Used

Method	C73-1	C73-2	C73-3	C73-4
GC/MS1 (Blue)	4	0	0	0

All summary stats and the plots below are based on the data excluding any flagged outliers

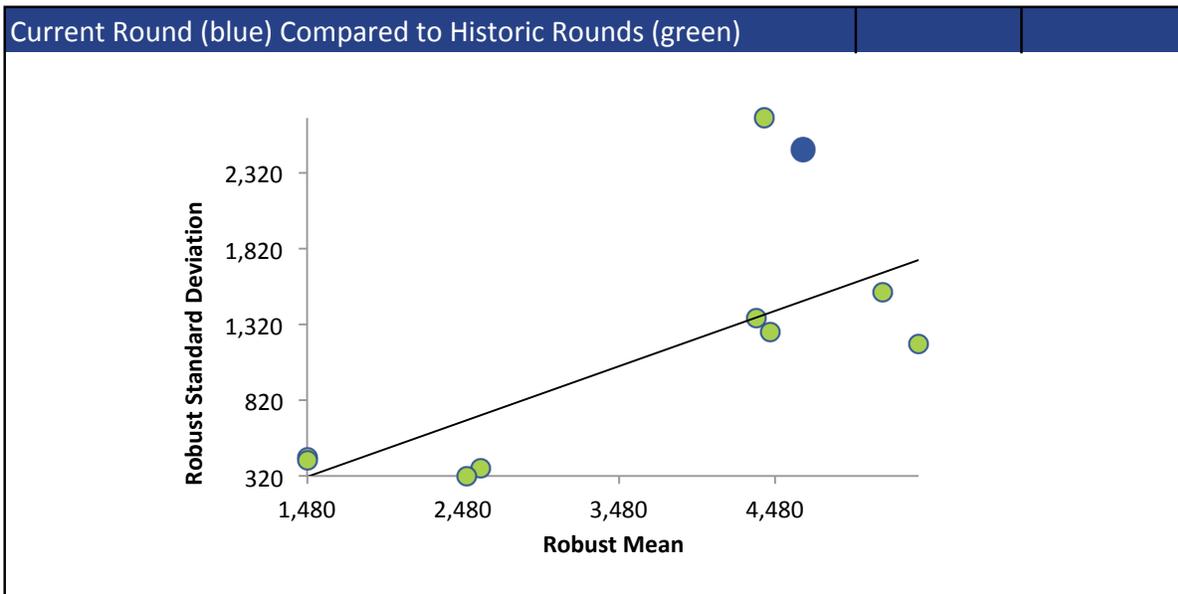


1-PENTANOL



1-PENTANOL

	Stability Assessment	Homogeneity Assessment
Sample 4	<p>Stability assessments are regression analysis of reported result against date of analysis.</p> <p>Homogeneity assessments are regression analysis of reported result against bottling order.</p>	



1-PROPANOL (PROPANOL)

Summary Statistics

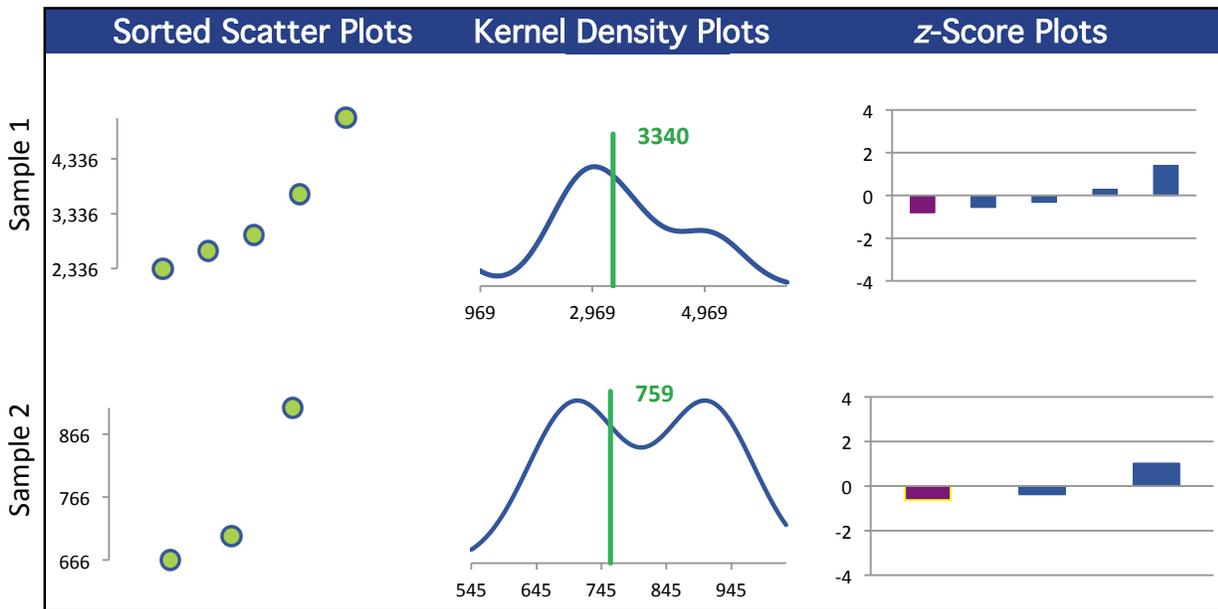
Excluded

Statistic	C73-1	C73-2	C73-3	C73-4
N	5	3	0	0
Median $\mu\text{g/g}$	2940	704		
Robust Mean $\mu\text{g/g}$	3340	759		
U $\mu\text{g/g}$	693	107		
Robust Standard Deviation $\mu\text{g/g}$	1240	148		
Regression Standard Deviation $\mu\text{g/g}$				
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) $\mu\text{g/g}$	1240	148		
Outliers	0	0	0	0
$ z > 3.0$	0	0	0	0
$2 < z < 3$	0	0	0	0

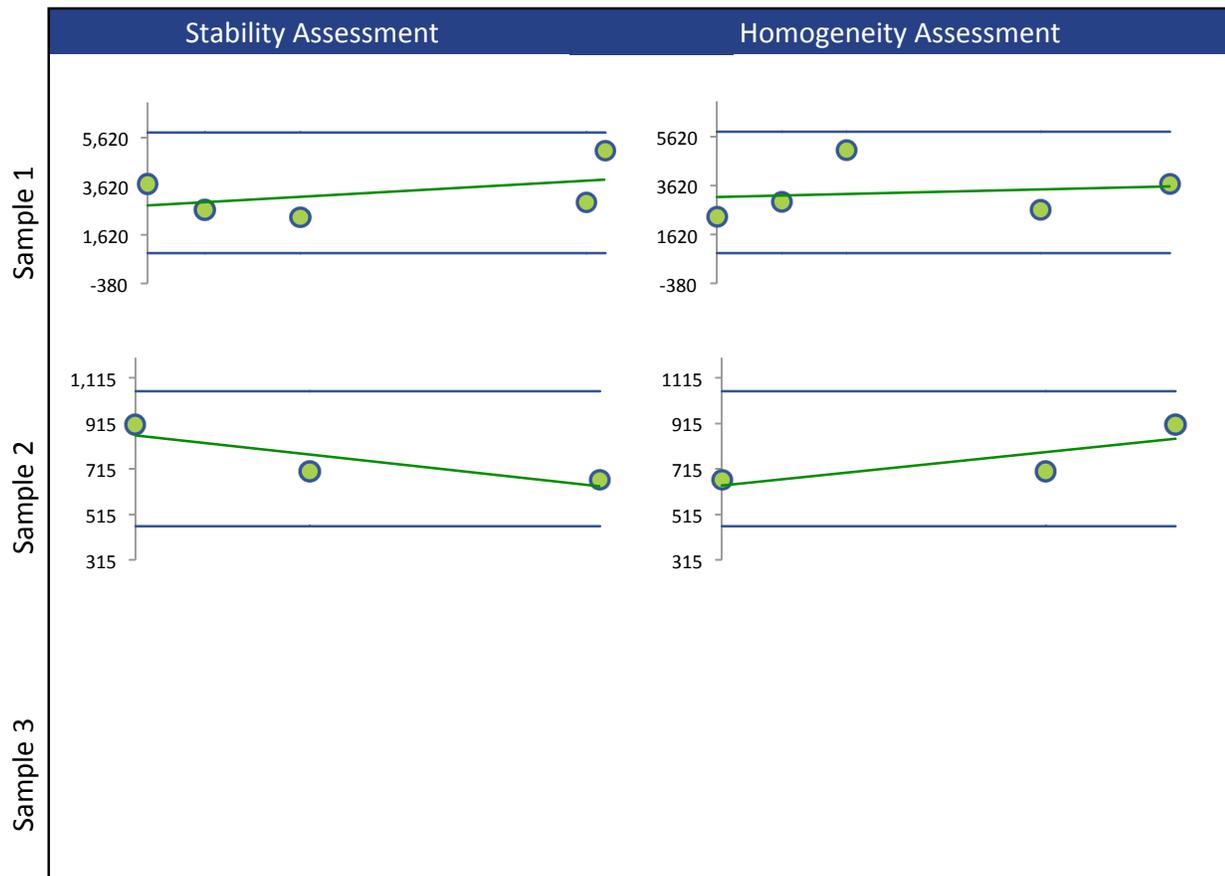
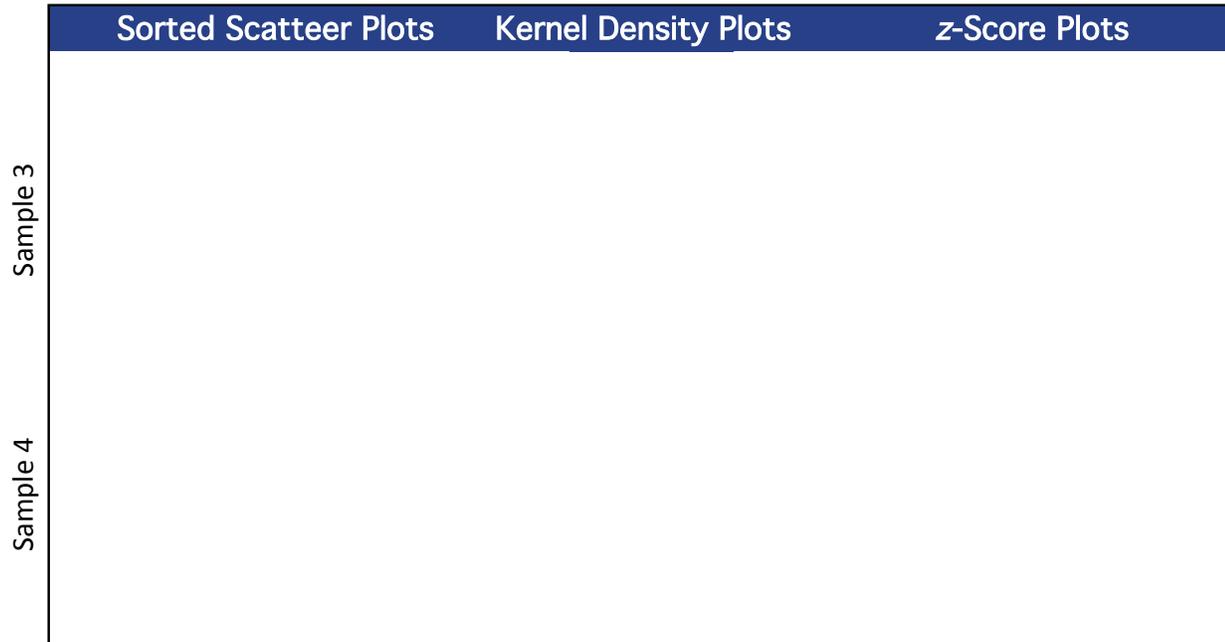
Methods Used

Method	C73-1	C73-2	C73-3	C73-4
GC/FID-1 (Blue)	1	1	0	0
GC/MS1 (Red)	4	2	0	0

All summary stats and the plots below are based on the data excluding any flagged outliers

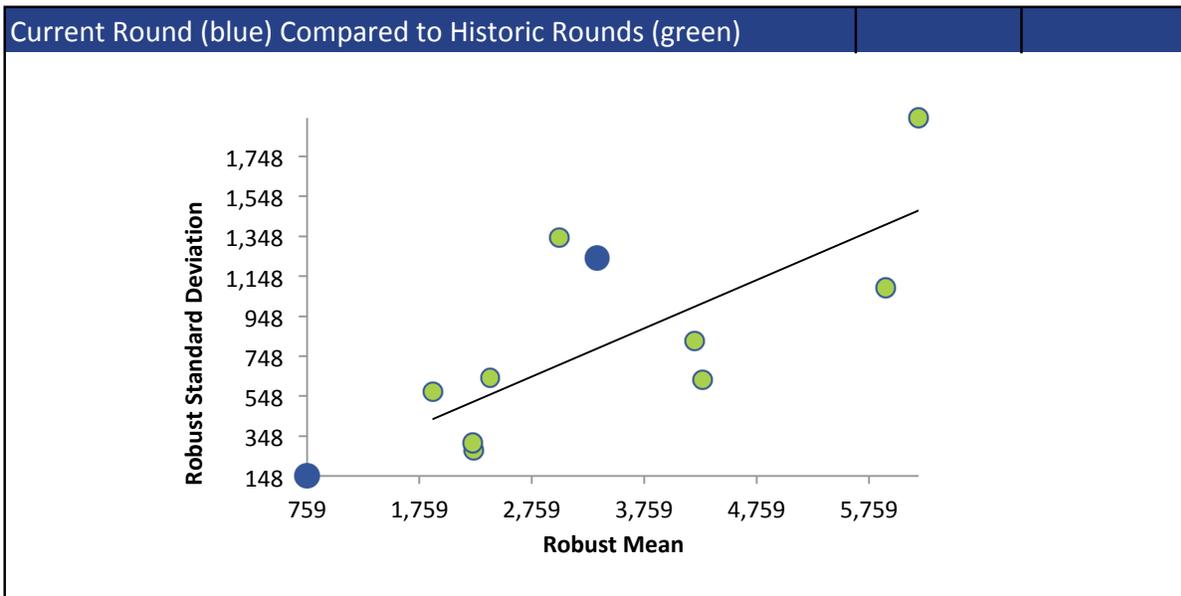
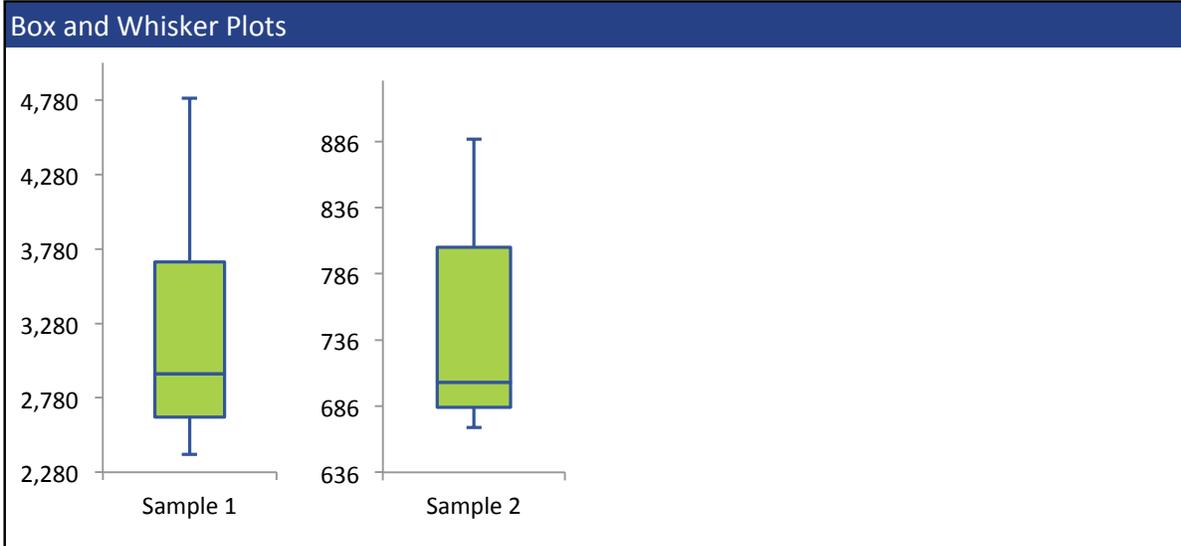


1-PROPANOL (PROPANOL)



1-PROPANOL (PROPANOL)

	Stability Assessment	Homogeneity Assessment
Sample 4	<p>Stability assessments are regression analysis of reported result against date of analysis.</p> <p>Homogeneity assessments are regression analysis of reported result against bottling order.</p>	



2-BUTANOL

Summary Statistics

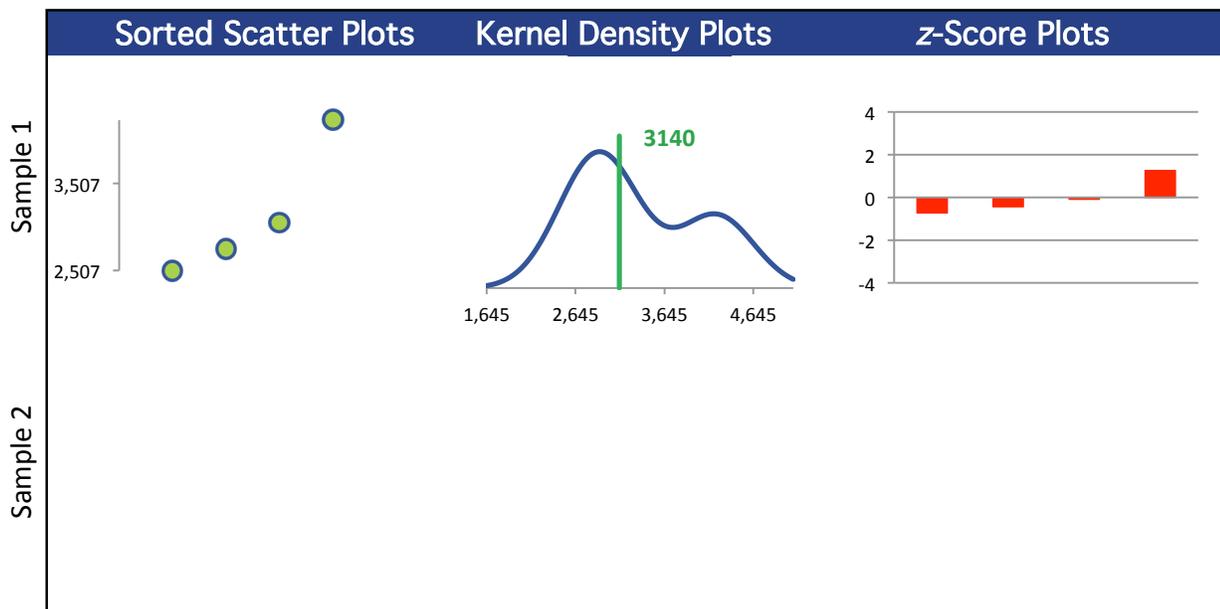
Not Spiked

Statistic	C73-1	C73-2	C73-3	C73-4
N	4	0	0	0
Median $\mu\text{g/g}$	2910			
Robust Mean $\mu\text{g/g}$	3140			
U $\mu\text{g/g}$	540			
Robust Standard Deviation $\mu\text{g/g}$	864			
Regression Standard Deviation $\mu\text{g/g}$				
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) $\mu\text{g/g}$	864			
Outliers	0	0	0	0
$ z > 3.0$	0	0	0	0
$2 < z < 3$	0	0	0	0

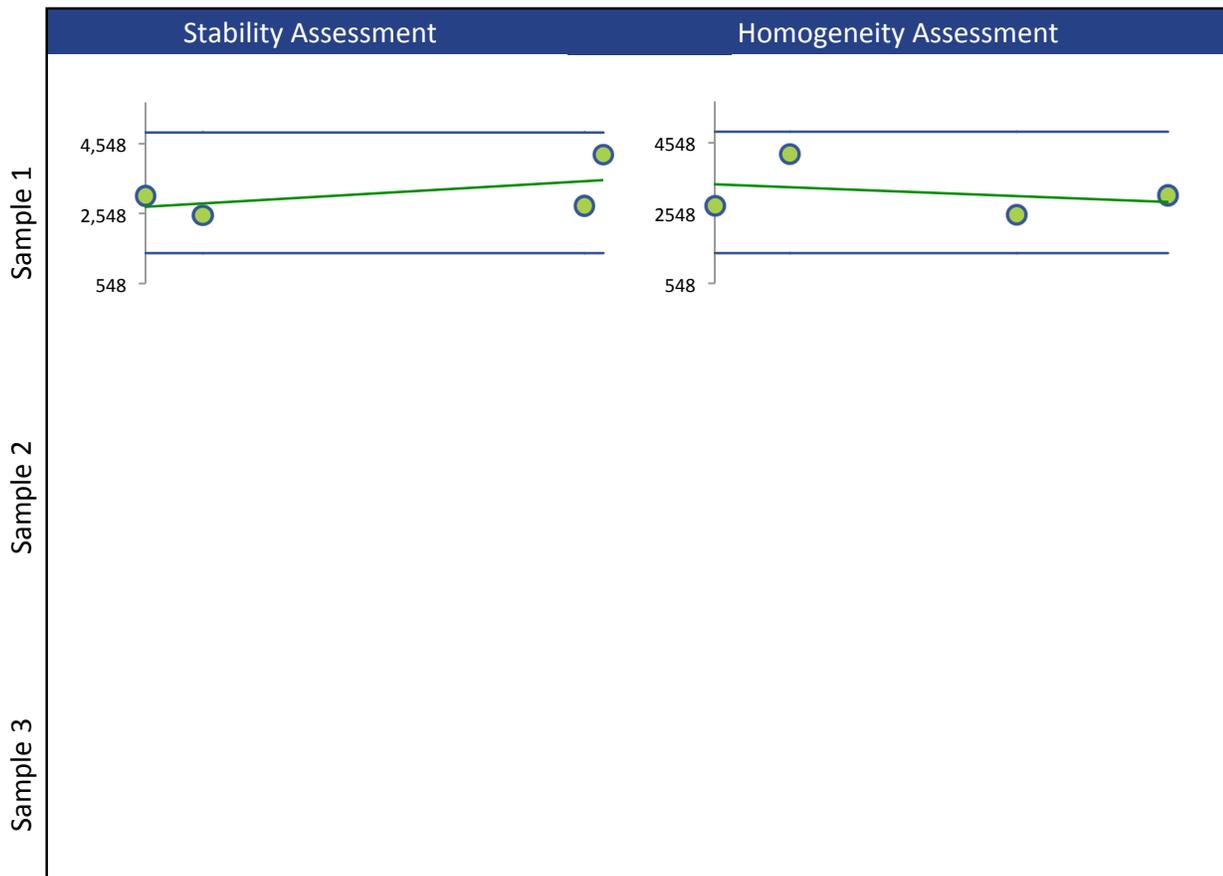
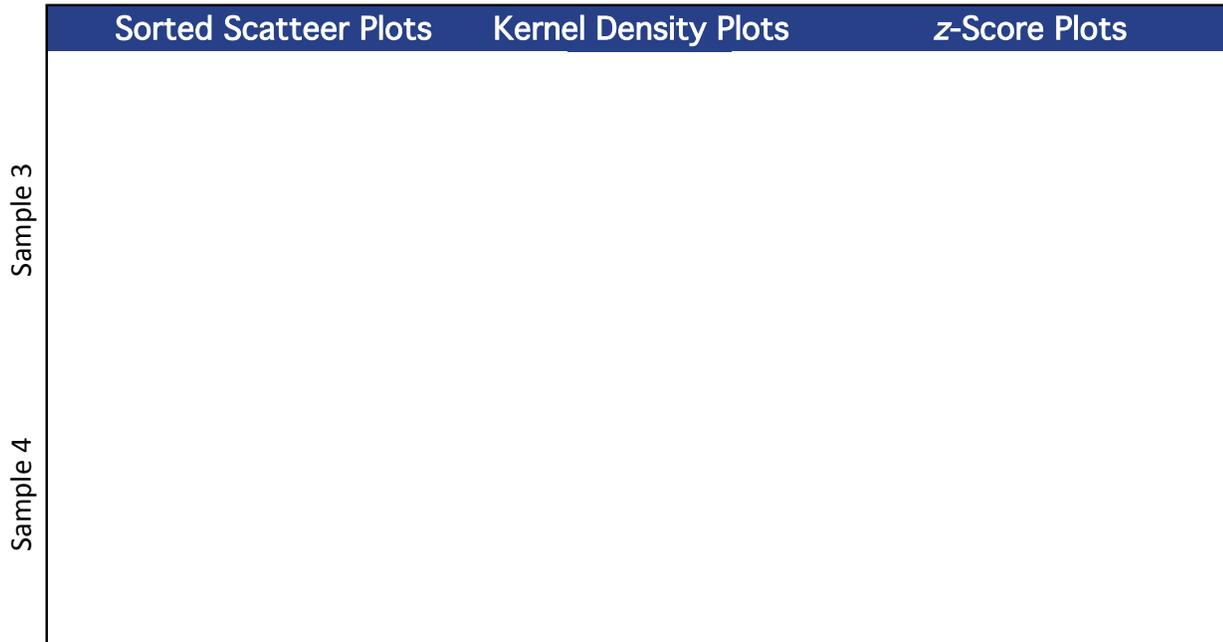
Methods Used

Method	C73-1	C73-2	C73-3	C73-4
GC/MS1 (Blue)	4	0	0	0

All summary stats and the plots below are based on the data excluding any flagged outliers

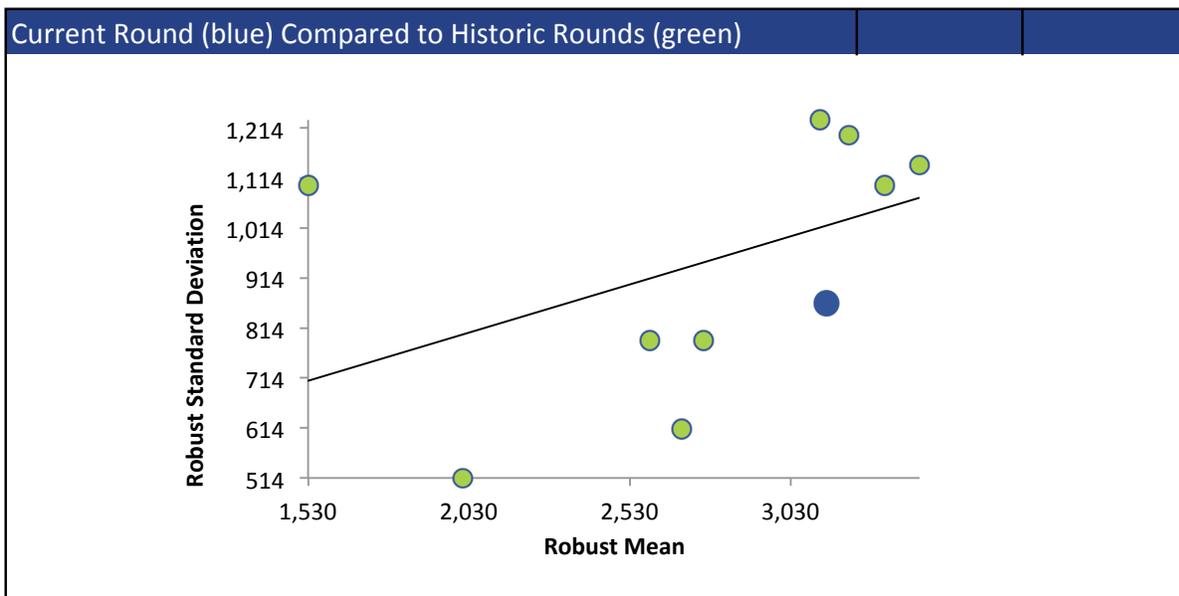


2-BUTANOL



2-BUTANOL

	Stability Assessment	Homogeneity Assessment
Sample 4		
	<p>Stability assessments are regression analysis of reported result against date of analysis.</p> <p>Homogeneity assessments are regression analysis of reported result against bottling order.</p>	



2-BUTANONE (METHYL ETHYL KETONE, MEK)

Summary Statistics

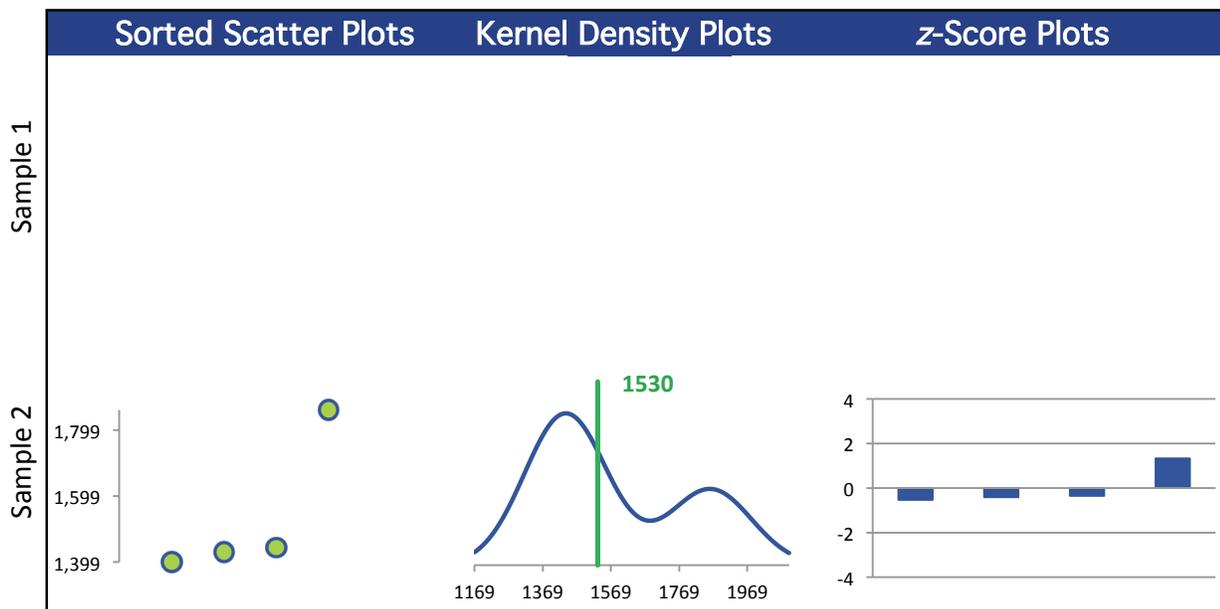
Not Spiked

Statistic	C73-1	C73-2	C73-3	C73-4
N	0	4	0	0
Median $\mu\text{g/g}$		1440		
Robust Mean $\mu\text{g/g}$		1530		
U $\mu\text{g/g}$		155		
Robust Standard Deviation $\mu\text{g/g}$		248		
Regression Standard Deviation $\mu\text{g/g}$				
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) $\mu\text{g/g}$		248		
Outliers	0	0	0	0
$ z > 3.0$	0	0	0	0
$2 < z < 3$	0	0	0	0

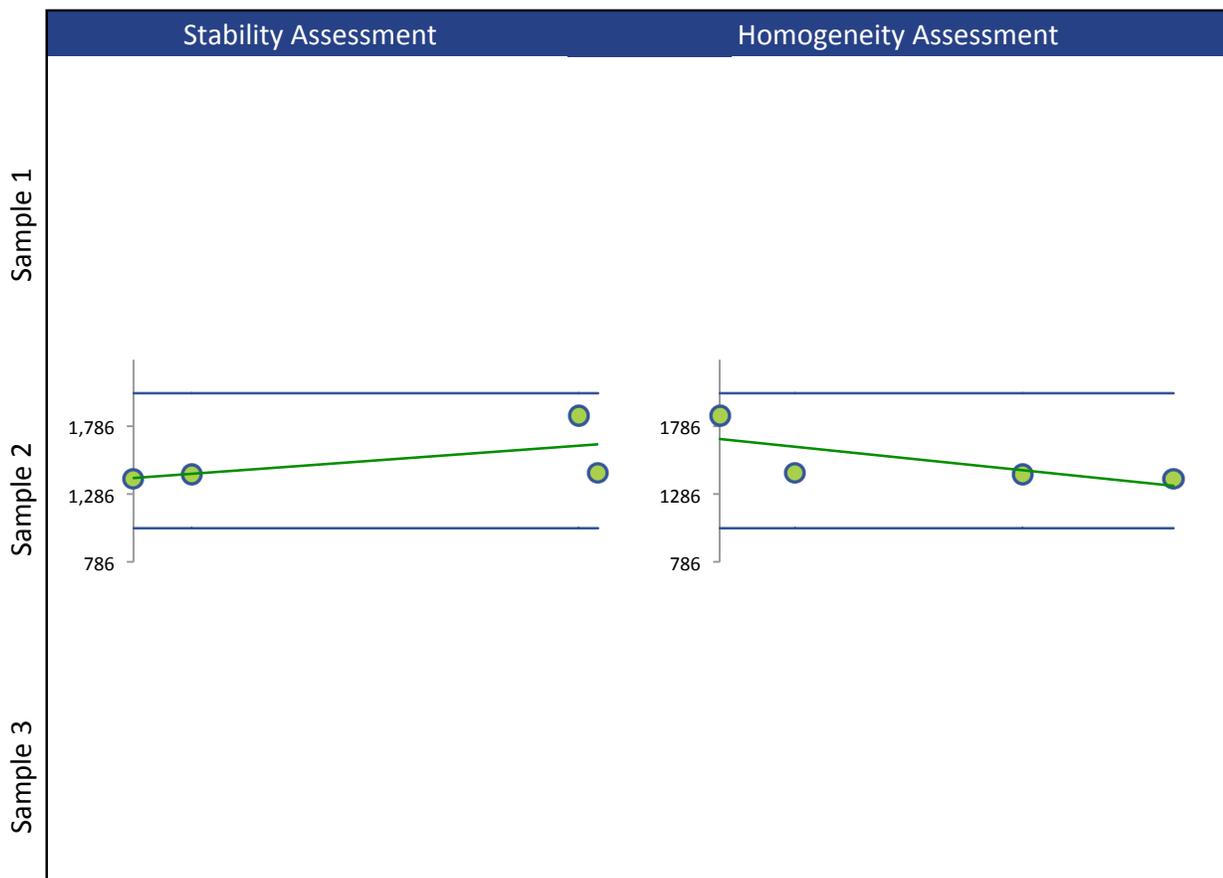
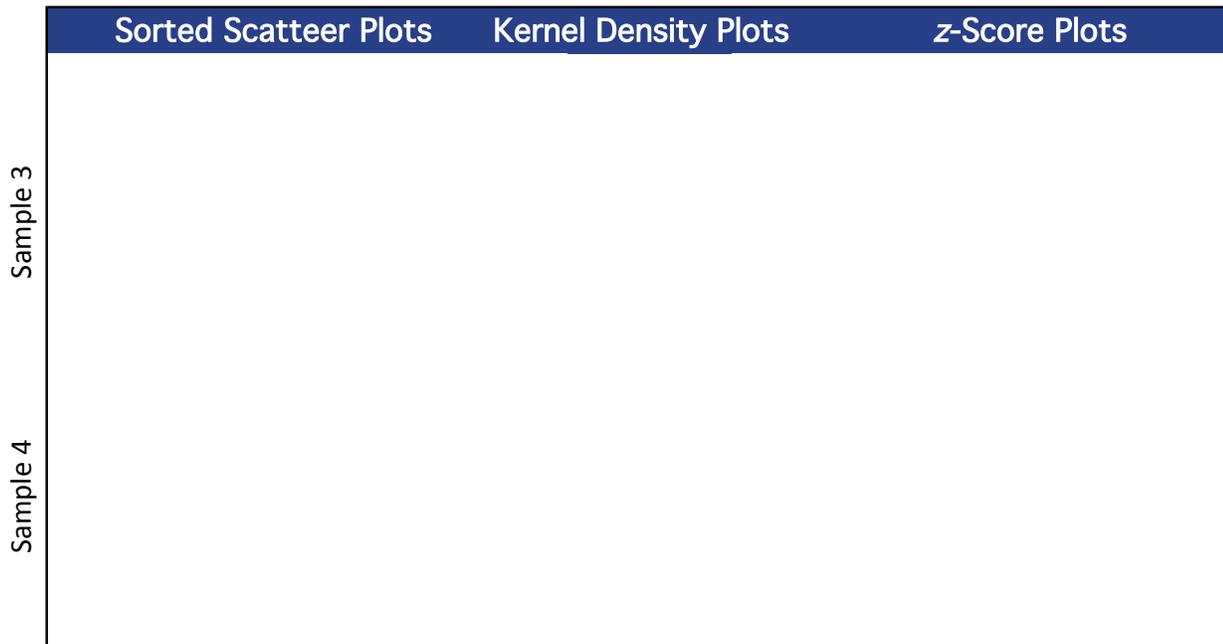
Methods Used

Method	C73-1	C73-2	C73-3	C73-4
GC/MS1 (Blue)	0	4	0	0

All summary stats and the plots below are based on the data excluding any flagged outliers

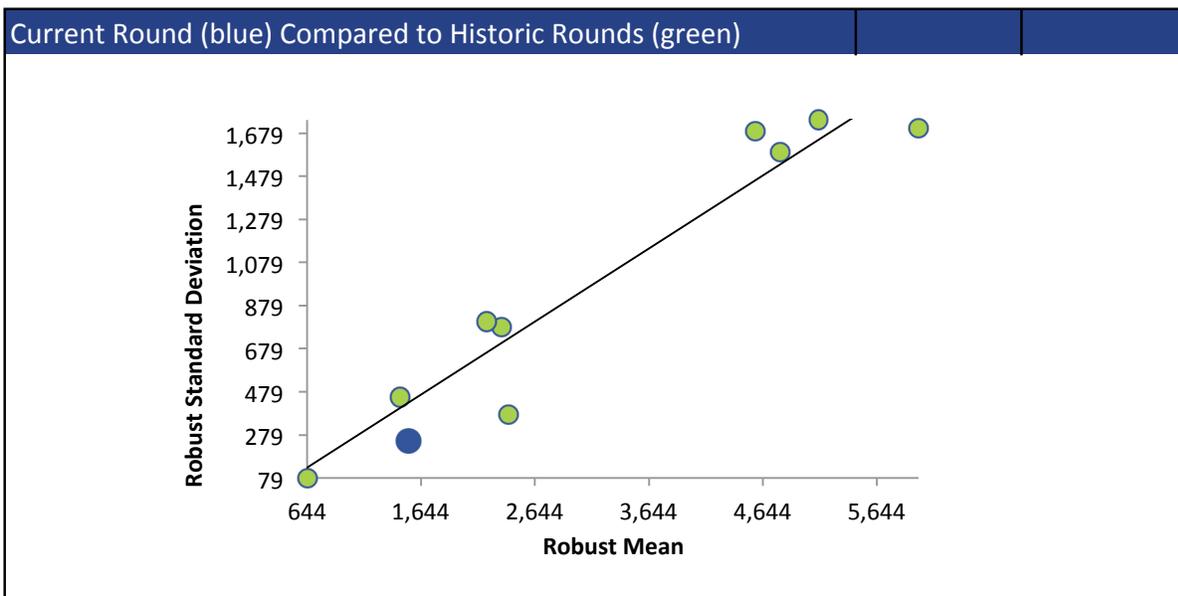
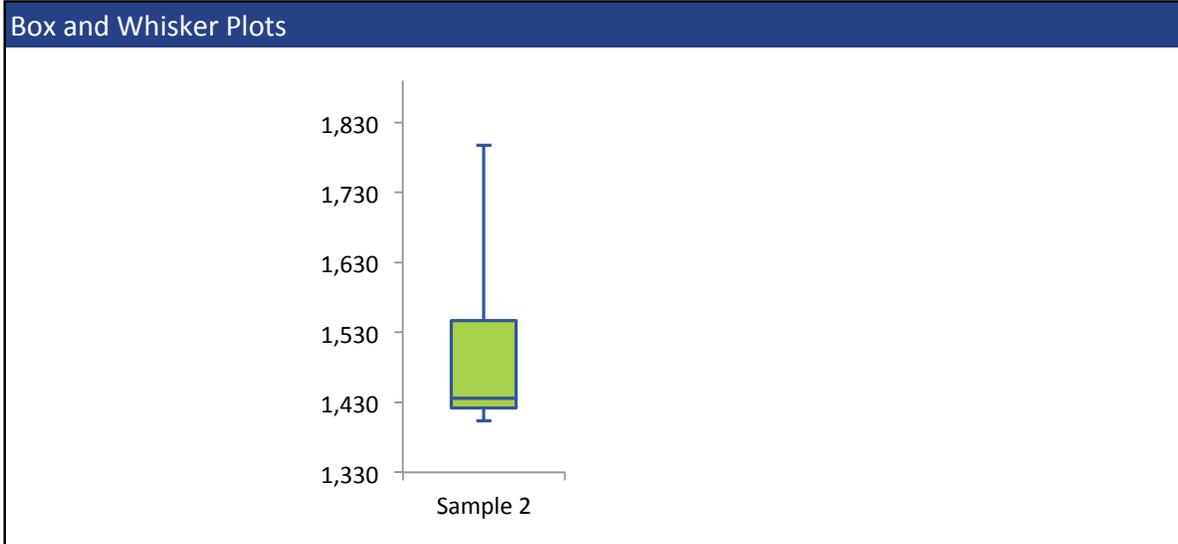


2-BUTANONE (METHYL ETHYL KETONE, MEK)



2-BUTANONE (METHYL ETHYL KETONE, MEK)

	Stability Assessment	Homogeneity Assessment
Sample 4		
	<p>Stability assessments are regression analysis of reported result against date of analysis.</p> <p>Homogeneity assessments are regression analysis of reported result against bottling order.</p>	



2-PROPANOL (ISOPROPYL ALCOHOL)

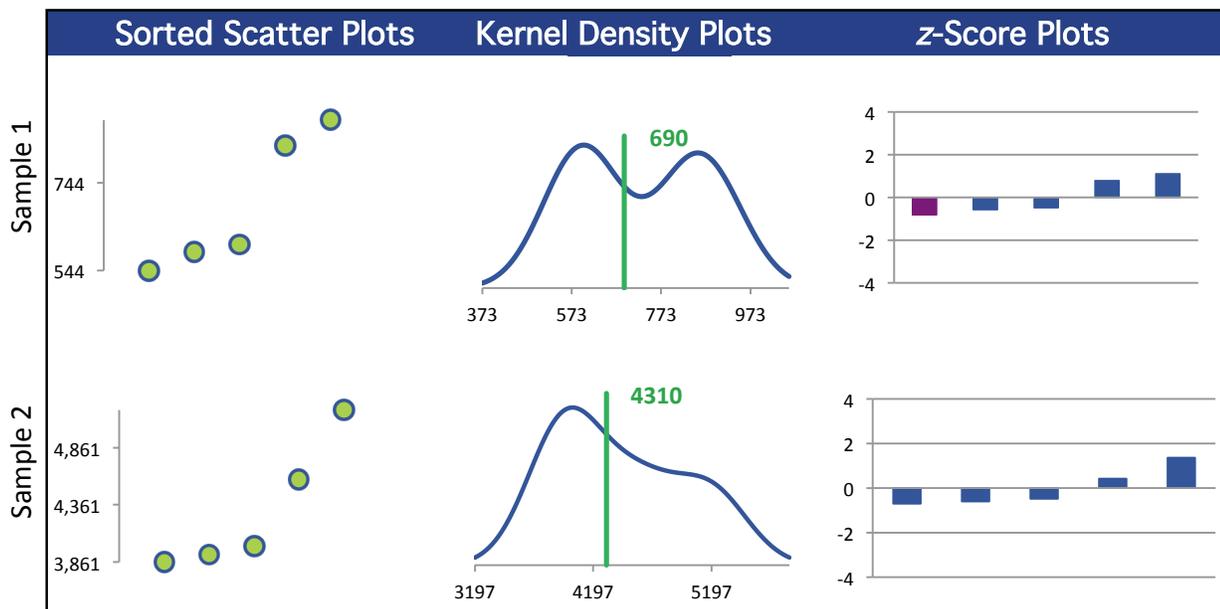
Summary Statistics

Statistic	C73-1	C73-2	C73-3	C73-4
N	5	5	0	0
Median $\mu\text{g/g}$	604	4000		
Robust Mean $\mu\text{g/g}$	690	4310		
U $\mu\text{g/g}$	98.9	361		
Robust Standard Deviation $\mu\text{g/g}$	177	645		
Regression Standard Deviation $\mu\text{g/g}$				
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) $\mu\text{g/g}$	177	645		
Outliers	0	0	0	0
$ z > 3.0$	0	0	0	0
$2 < z < 3$	0	0	0	0

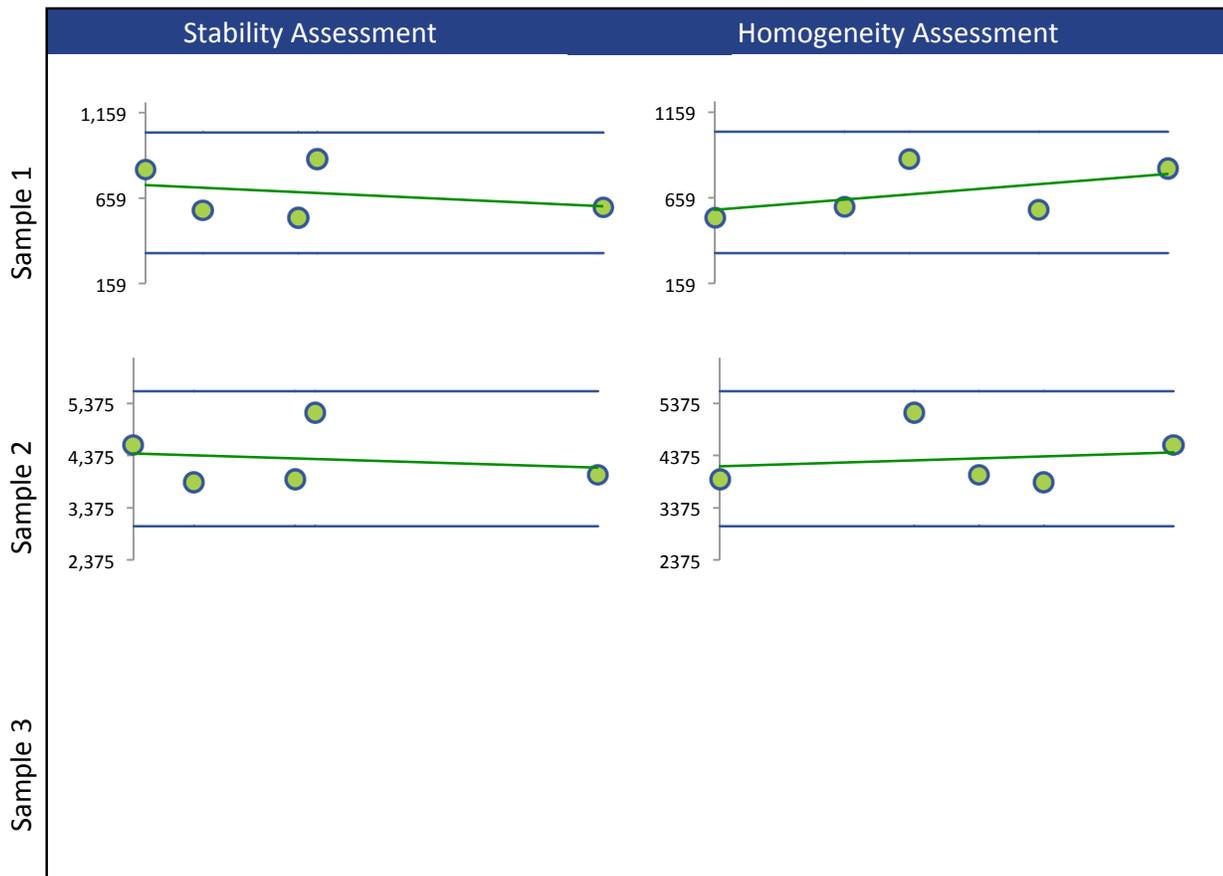
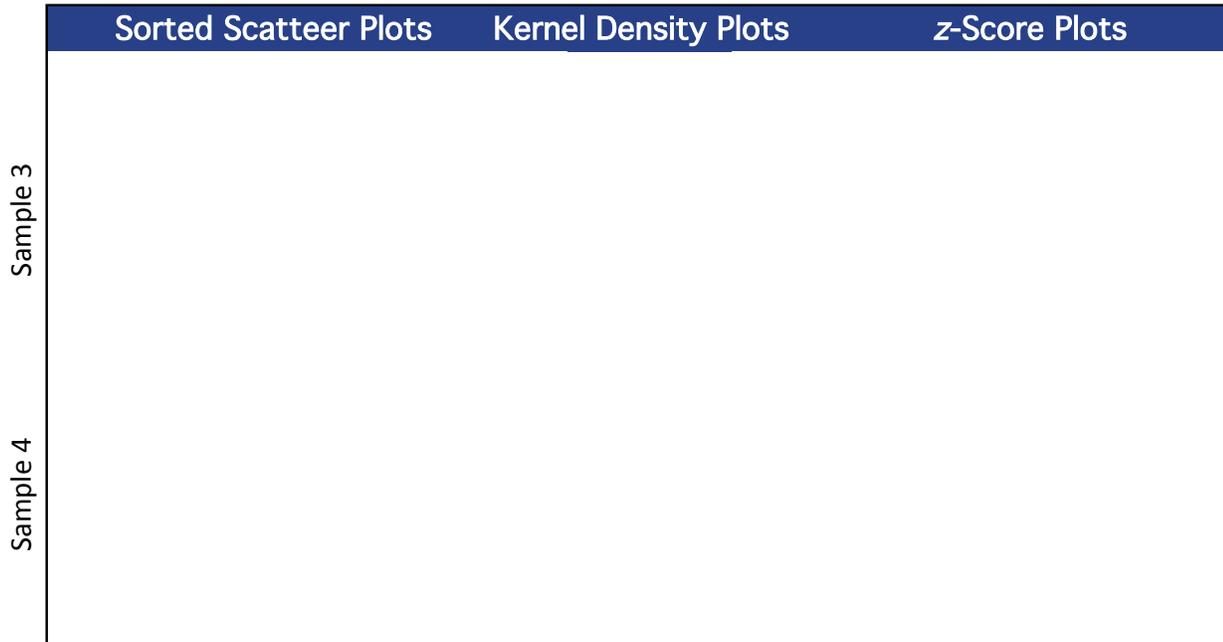
Methods Used

Method	C73-1	C73-2	C73-3	C73-4
GC/FID-1 (Blue)	2	2	0	0
GC/MS1 (Red)	3	3	0	0

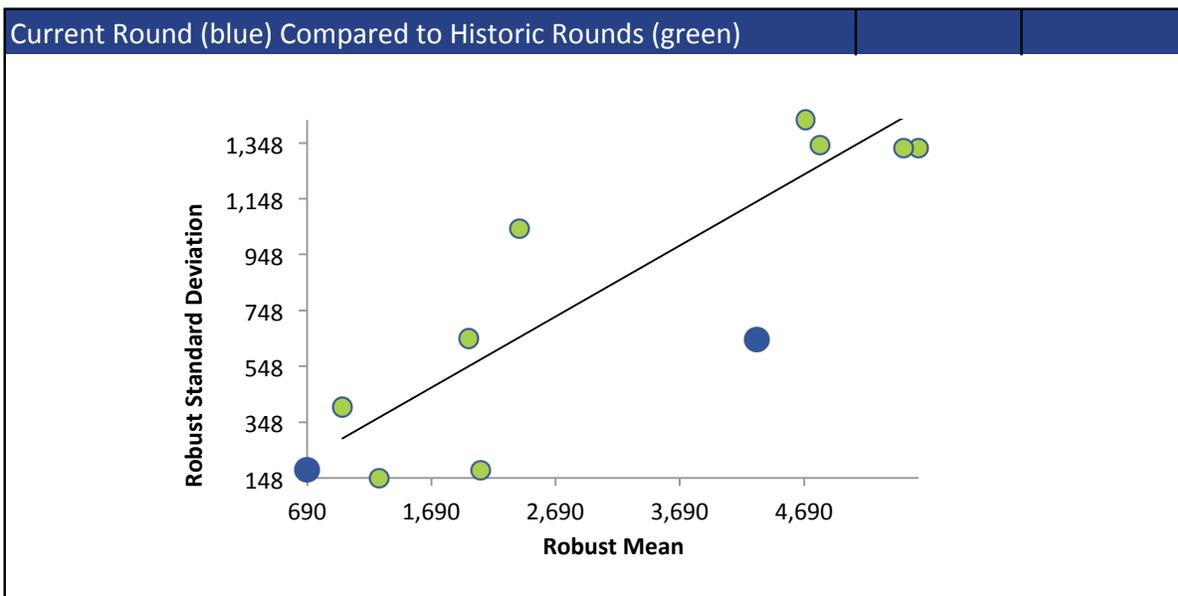
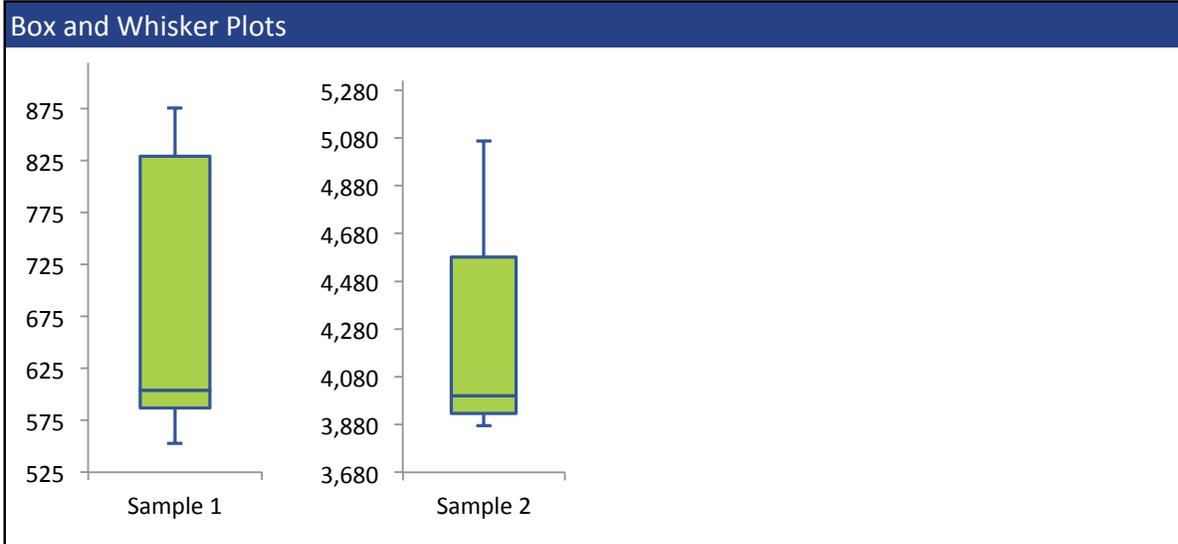
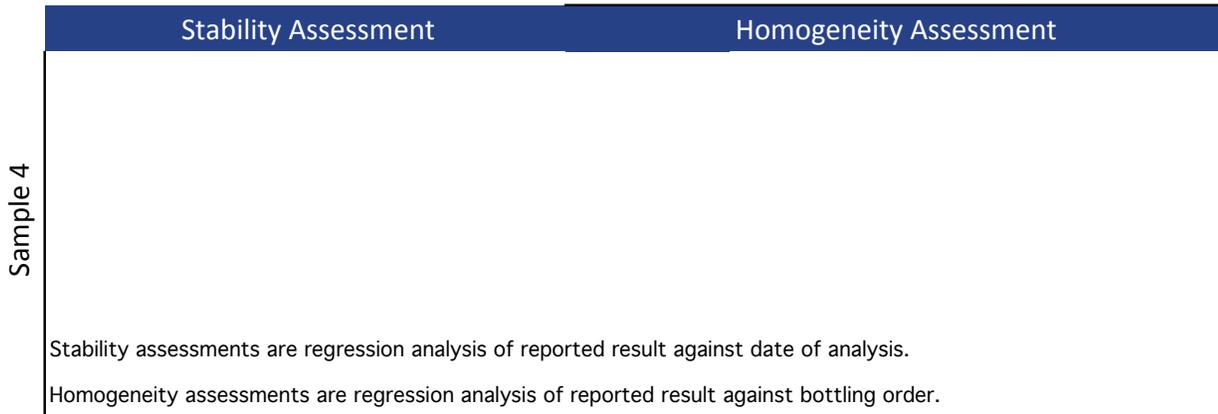
All summary stats and the plots below are based on the data excluding any flagged outliers



2-PROPANOL (ISOPROPYL ALCOHOL)



2-PROPANOL (ISOPROPYL ALCOHOL)



3-METHYL-1-BUTANOL

Summary Statistics

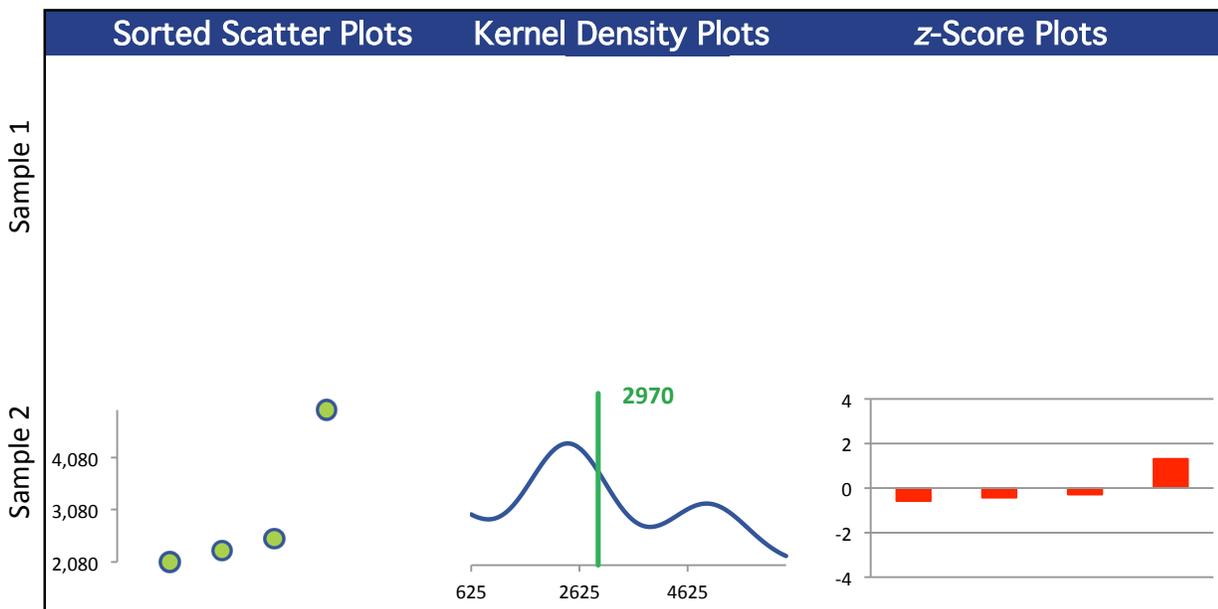
Not Spiked

Statistic	C73-1	C73-2	C73-3	C73-4
N	0	4	0	0
Median $\mu\text{g/g}$		2410		
Robust Mean $\mu\text{g/g}$		2970		
U $\mu\text{g/g}$		963		
Robust Standard Deviation $\mu\text{g/g}$		1540		
Regression Standard Deviation $\mu\text{g/g}$				
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) $\mu\text{g/g}$		1540		
Outliers	0	0	0	0
$ z > 3.0$	0	0	0	0
$2 < z < 3$	0	0	0	0

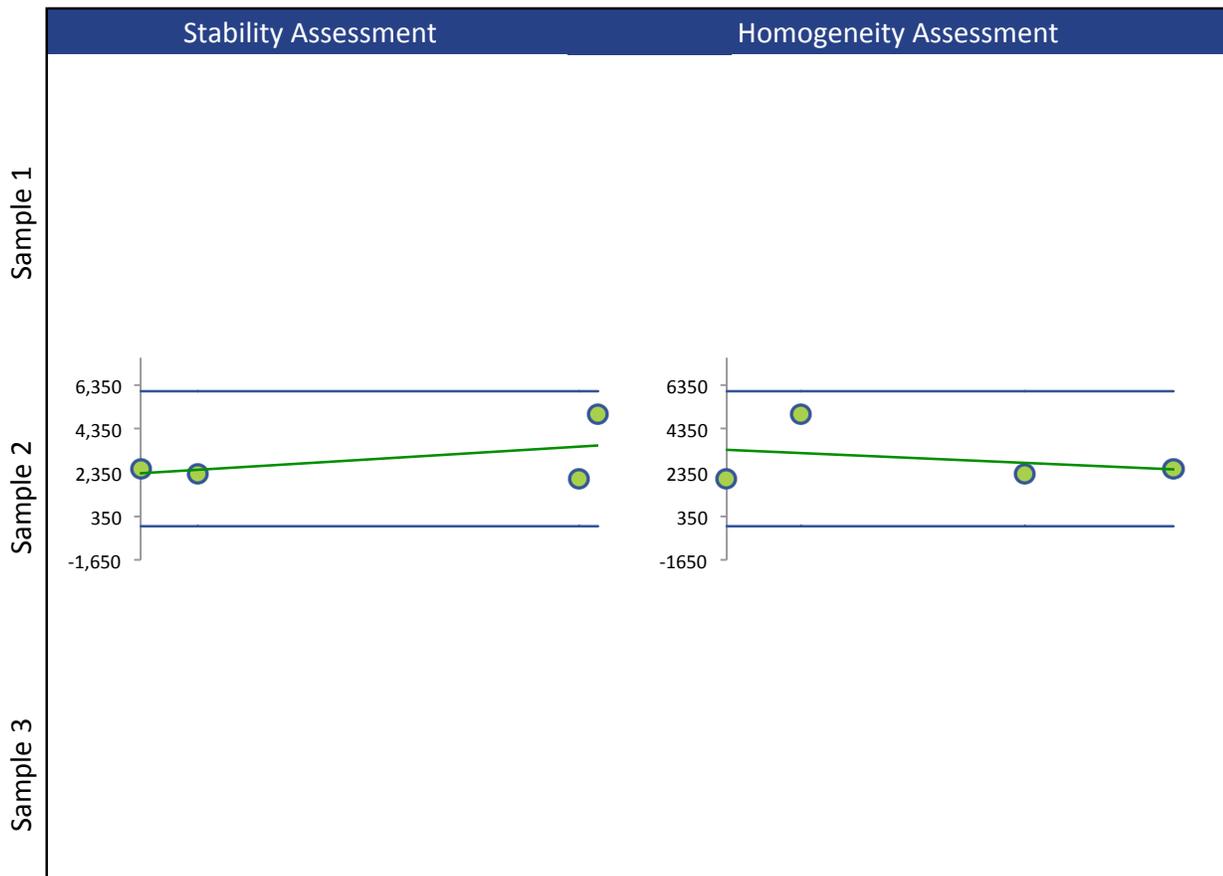
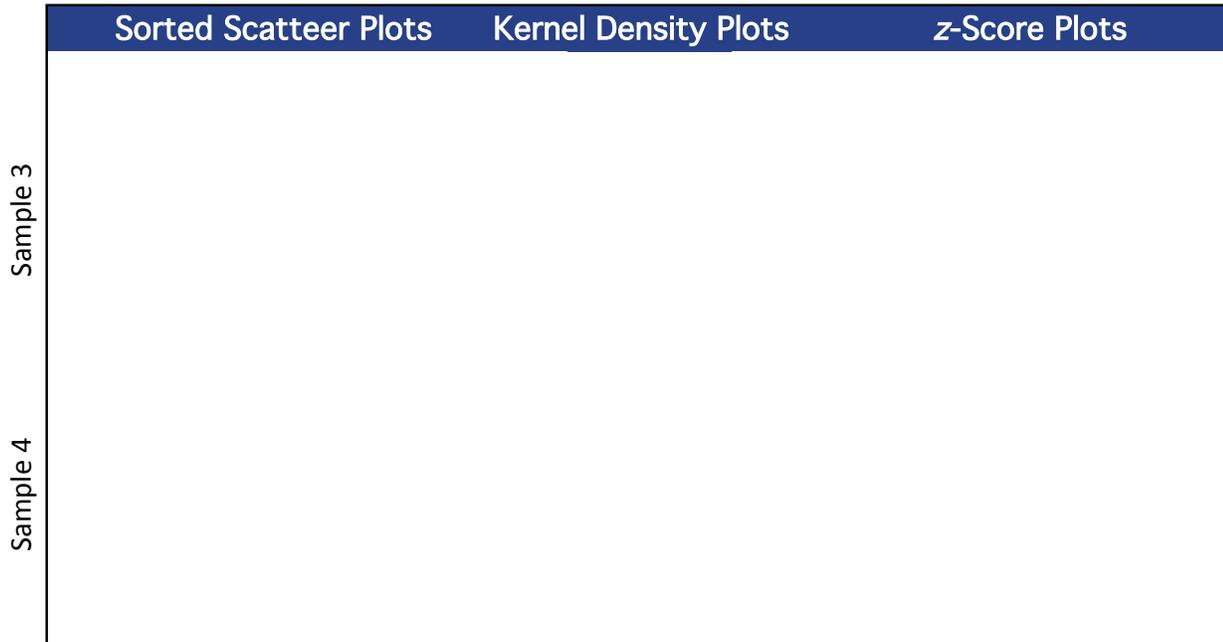
Methods Used

Method	C73-1	C73-2	C73-3	C73-4
GC/MS1 (Blue)	0	4	0	0

All summary stats and the plots below are based on the data excluding any flagged outliers

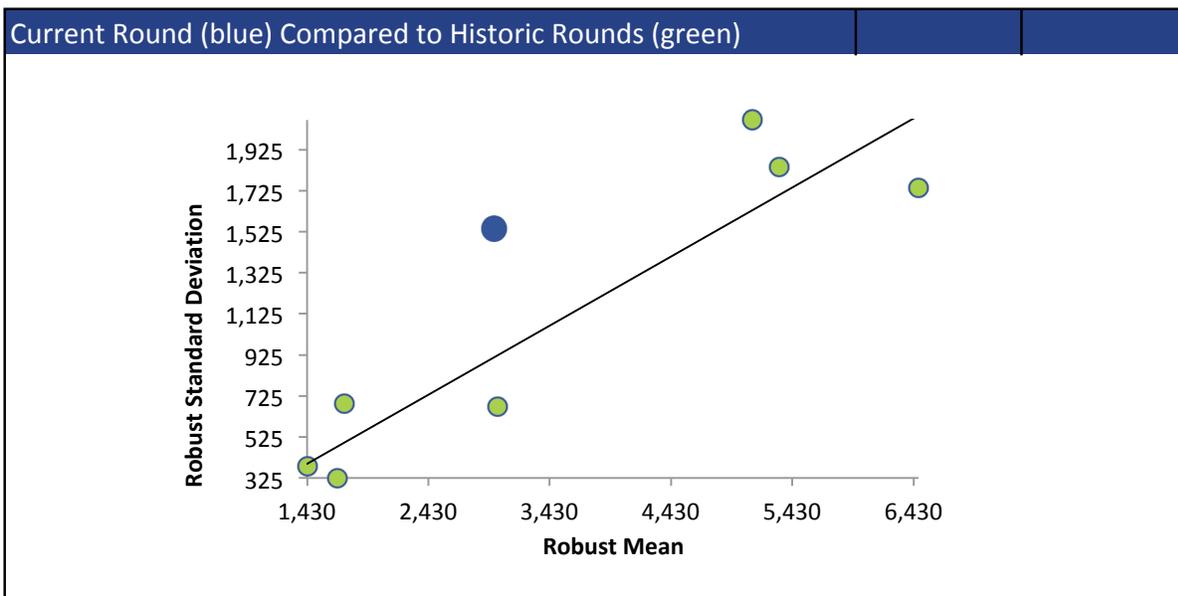
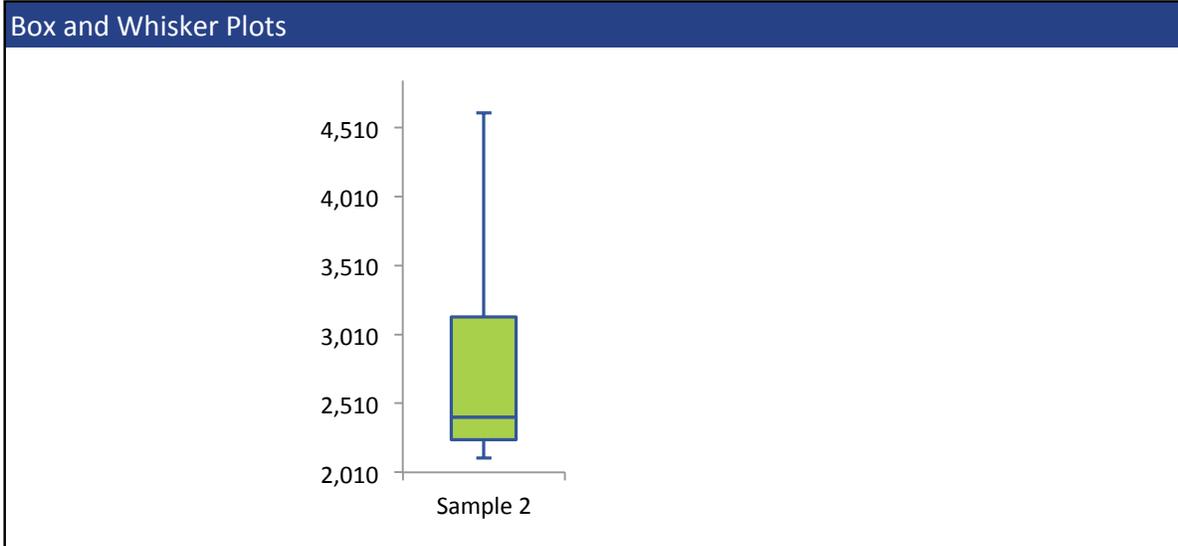


3-METHYL-1-BUTANOL



3-METHYL-1-BUTANOL

	Stability Assessment	Homogeneity Assessment
Sample 4		
	<p>Stability assessments are regression analysis of reported result against date of analysis.</p> <p>Homogeneity assessments are regression analysis of reported result against bottling order.</p>	



ACETONE (2-PROPANONE)

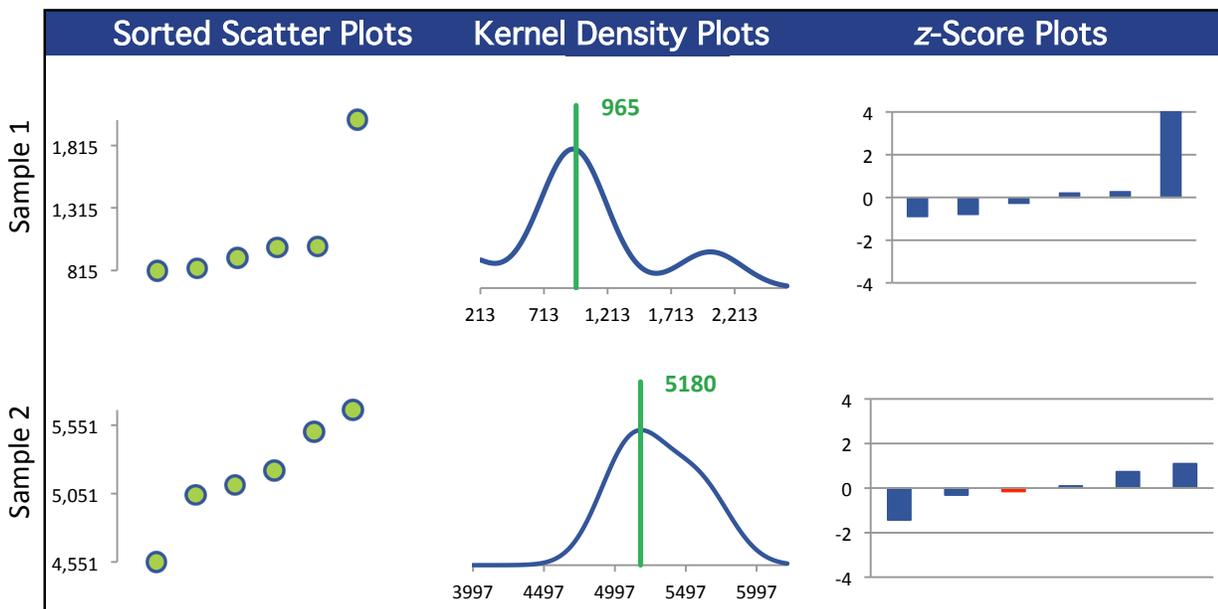
Summary Statistics

Statistic	C73-1	C73-2	C73-3	C73-4
N	6	6	0	0
Median $\mu\text{g/g}$	959	5170		
Robust Mean $\mu\text{g/g}$	965	5180		
U $\mu\text{g/g}$	84.7	225		
Robust Standard Deviation $\mu\text{g/g}$	166	440		
Regression Standard Deviation $\mu\text{g/g}$				
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) $\mu\text{g/g}$	166	440		
Outliers	0	0	0	0
$ z > 3.0$	1	0	0	0
$2 < z < 3$	0	0	0	0

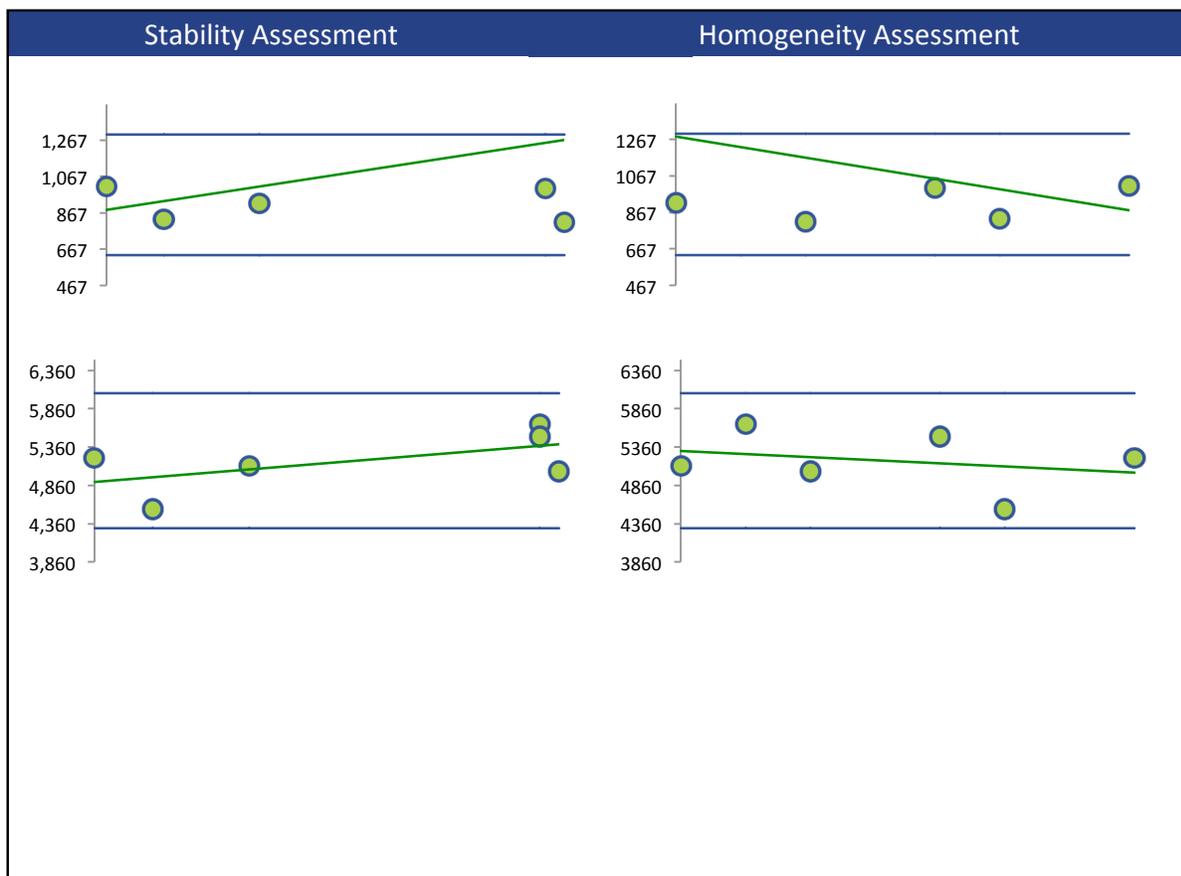
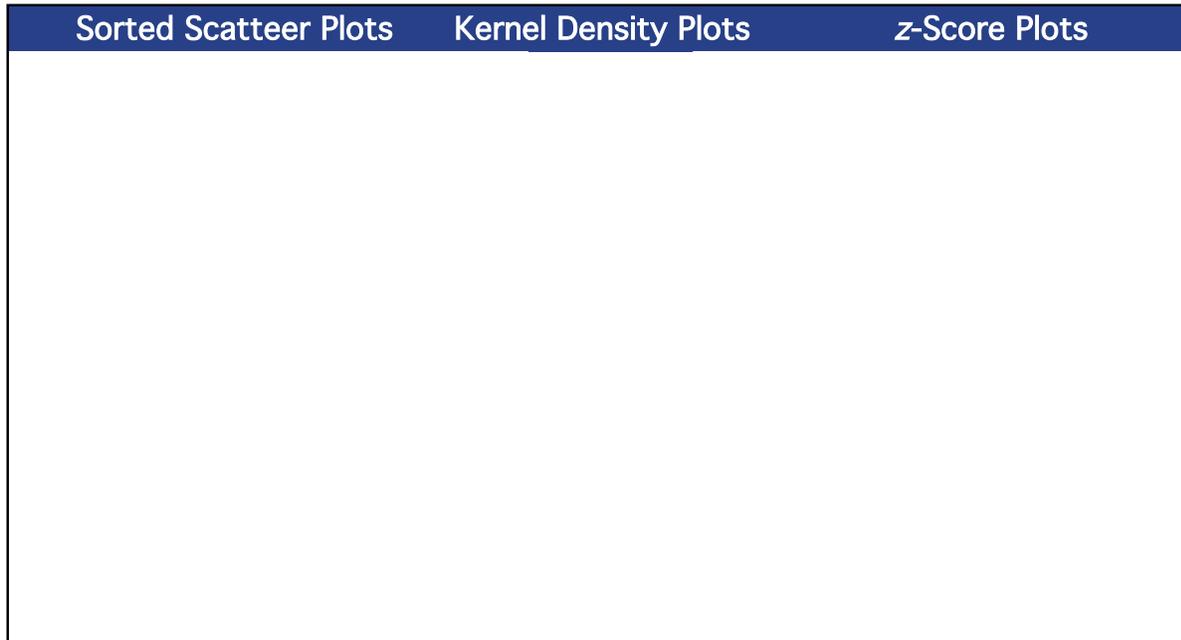
Methods Used

Method	C73-1	C73-2	C73-3	C73-4
GC/MS1 (Blue)	5	5	0	0
GC/FID-1 (Red)	1	1	0	0

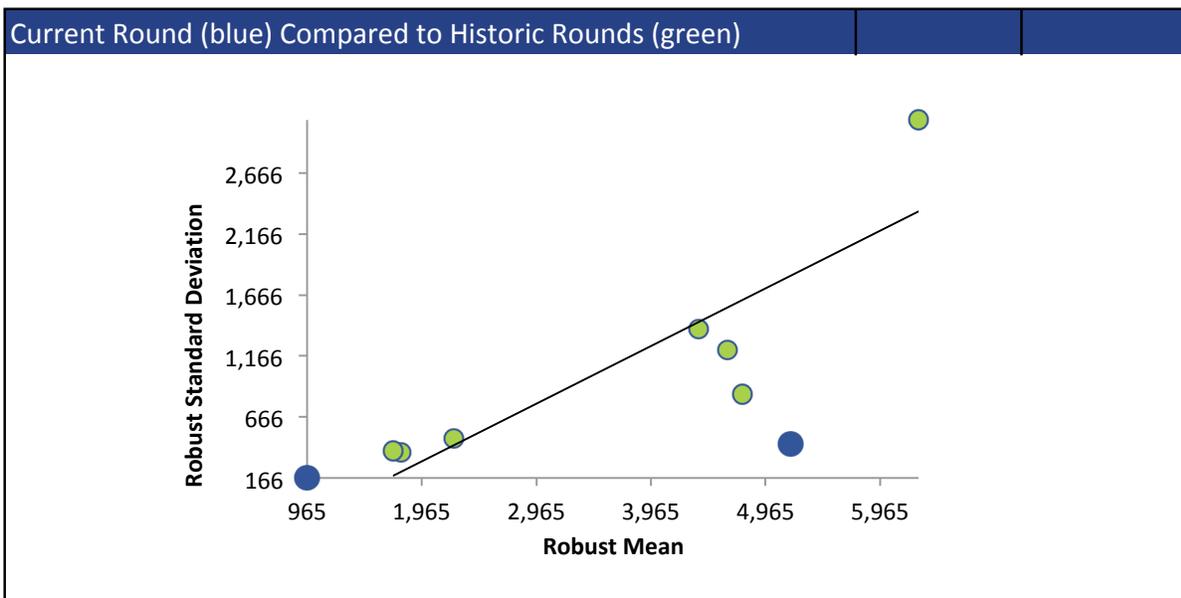
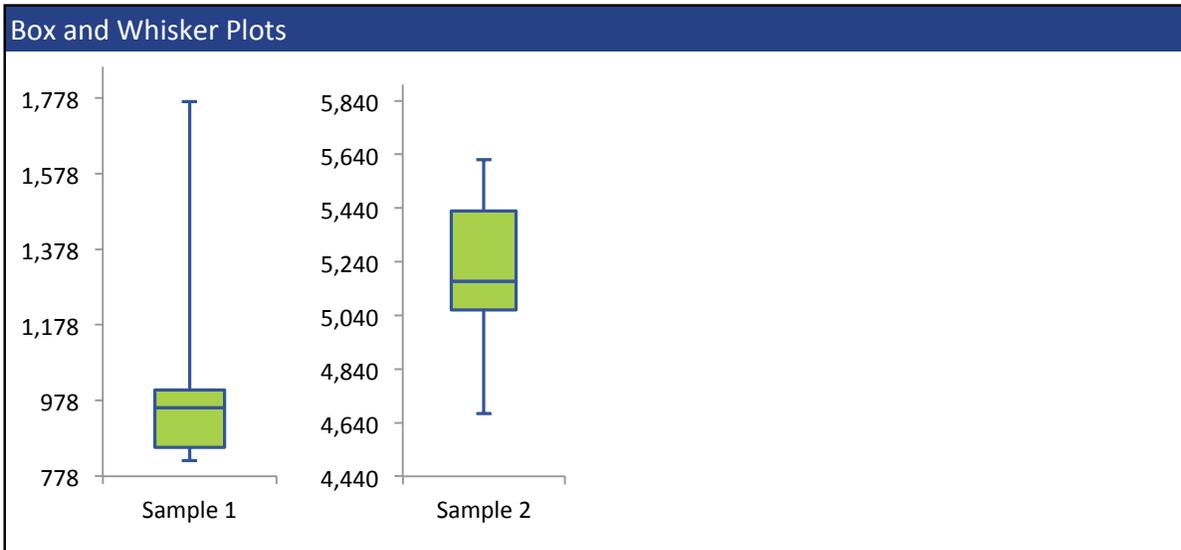
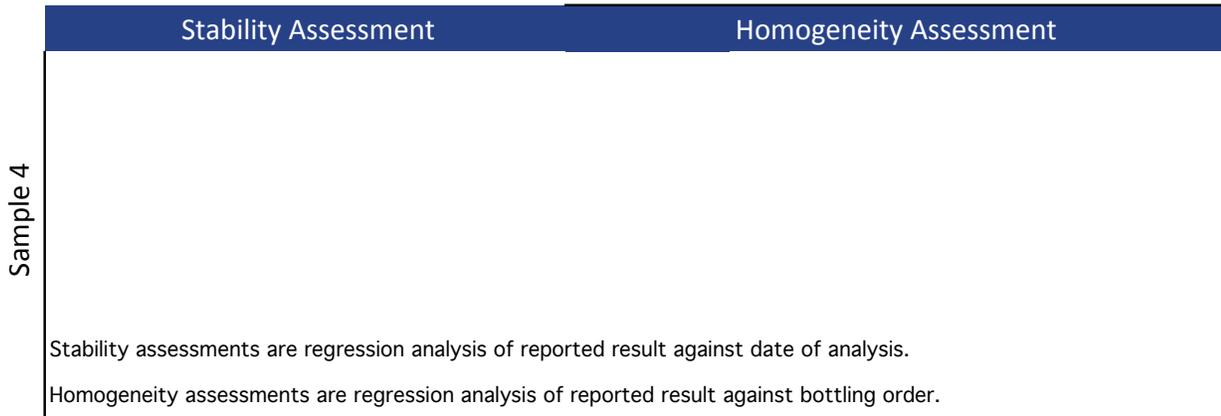
All summary stats and the plots below are based on the data excluding any flagged outliers



ACETONE (2-PROPANONE)



ACETONE (2-PROPANONE)



ANISOLE

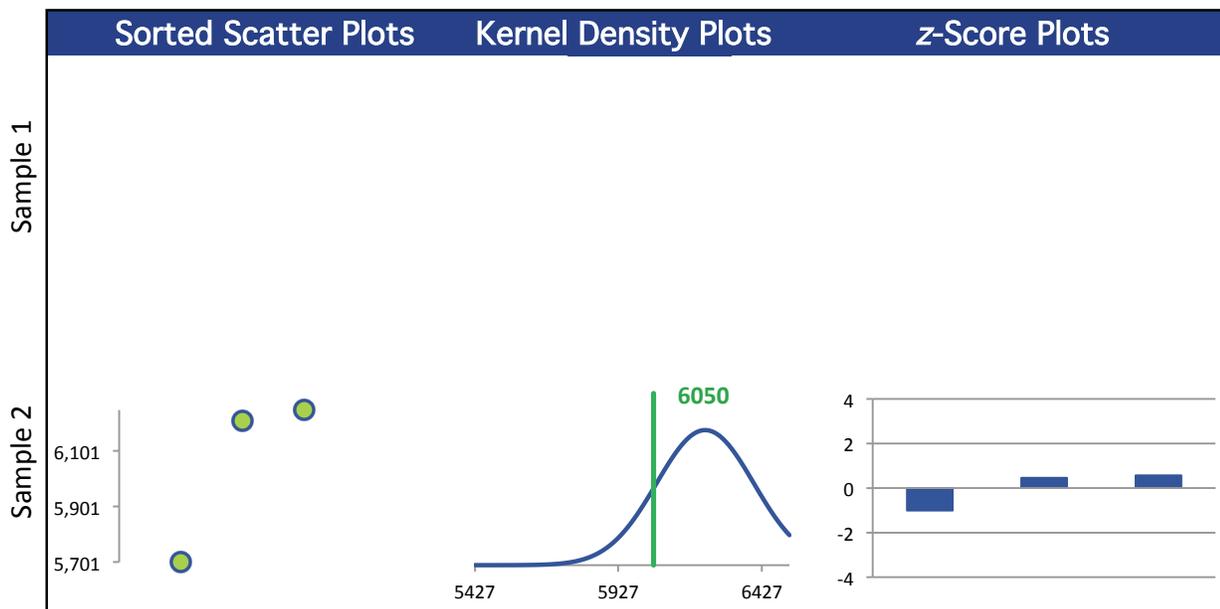
Summary Statistics

Statistic	Not Spiked		Excluded	
	C73-1	C73-2	C73-3	C73-4
N	0	3	0	0
Median $\mu\text{g/g}$		6210		
Robust Mean $\mu\text{g/g}$		6050		
U $\mu\text{g/g}$		250		
Robust Standard Deviation $\mu\text{g/g}$		347		
Regression Standard Deviation $\mu\text{g/g}$				
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) $\mu\text{g/g}$		347		
Outliers	0	0	0	0
$ z > 3.0$	0	0	0	0
$2 < z < 3$	0	0	0	0

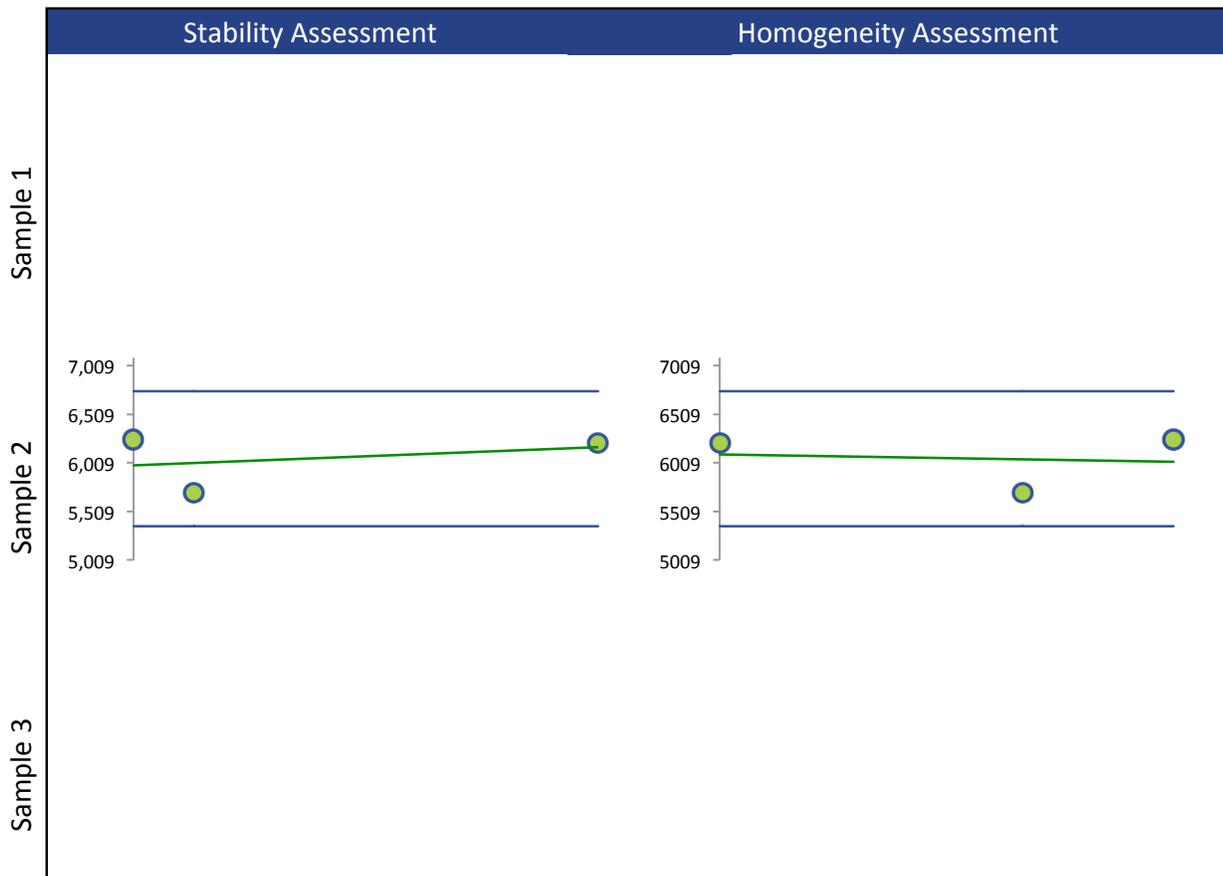
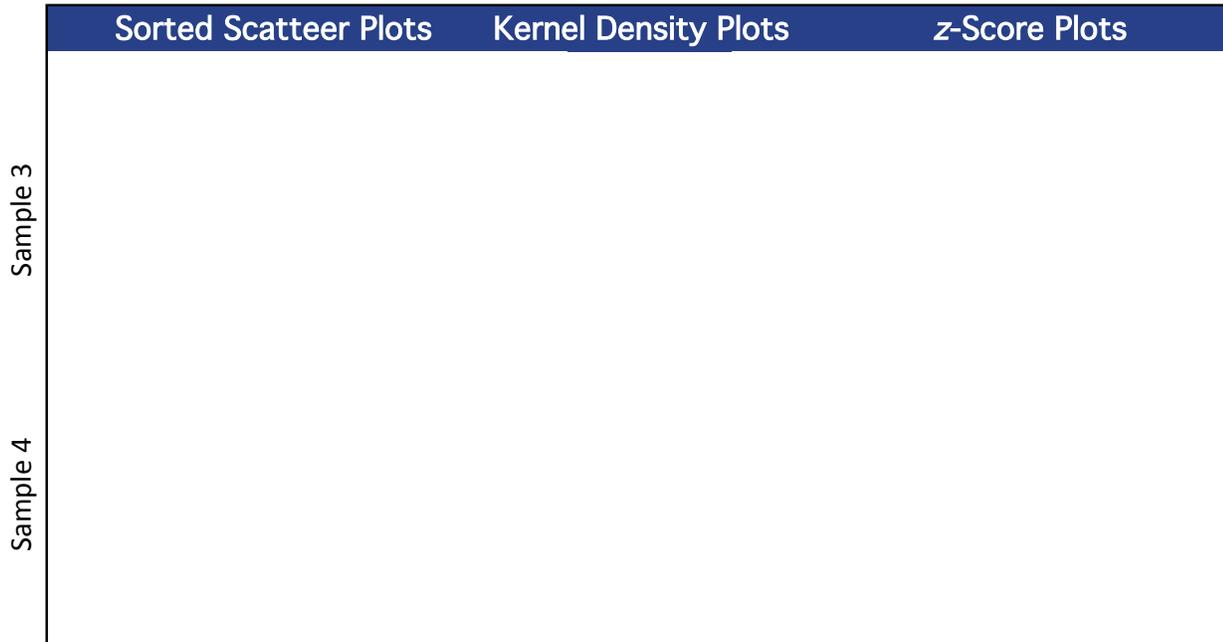
Methods Used

Method	C73-1	C73-2	C73-3	C73-4
GC/MS1 (Blue)	0	3	0	0

All summary stats and the plots below are based on the data excluding any flagged outliers

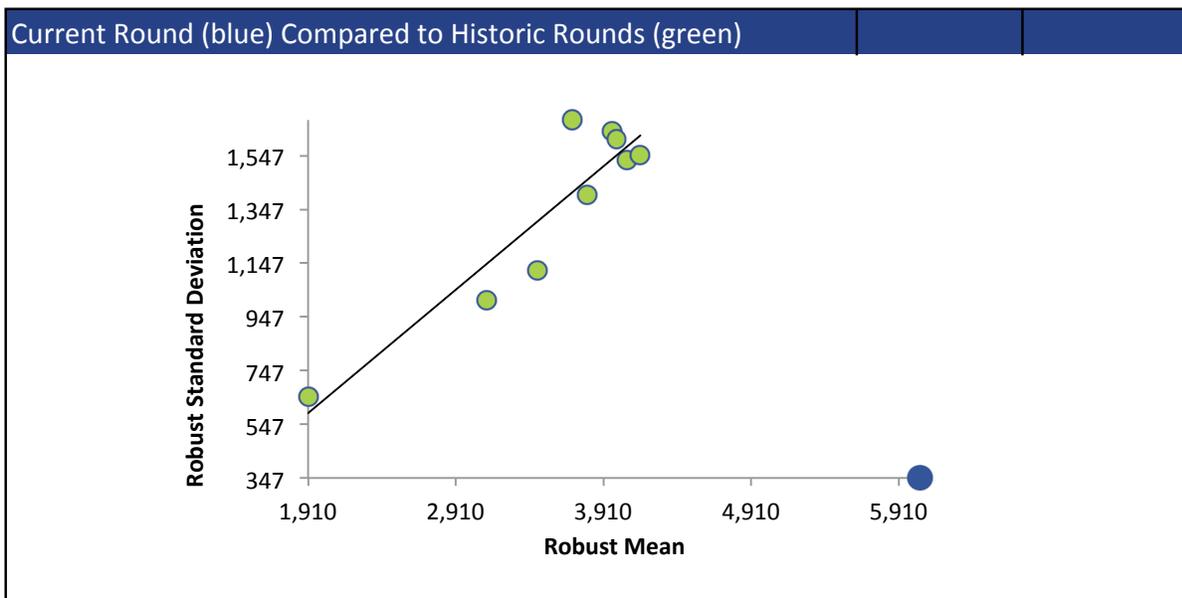
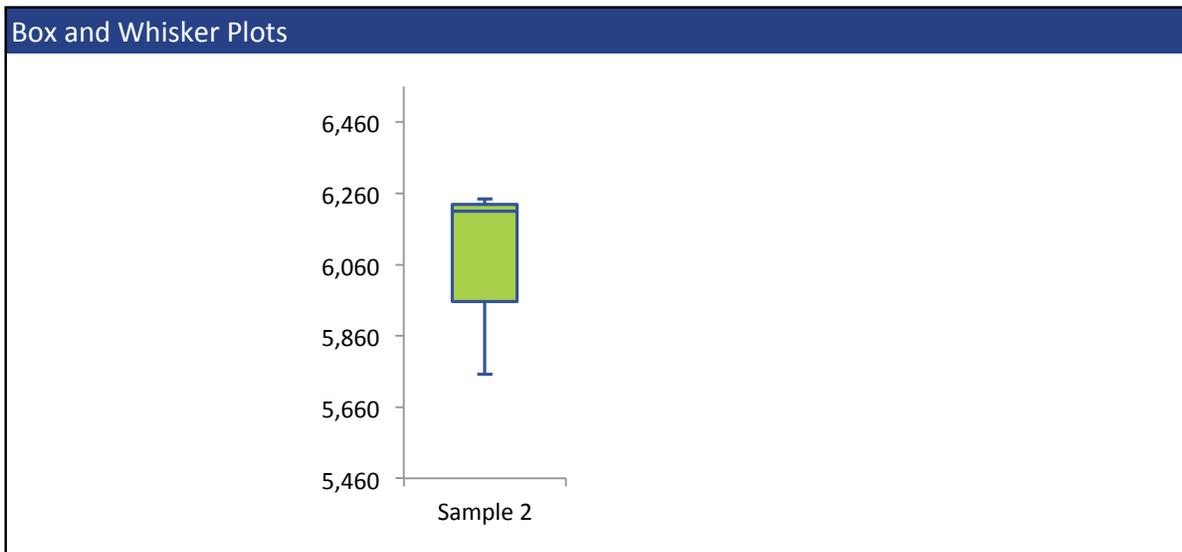


ANISOLE



ANISOLE

	Stability Assessment	Homogeneity Assessment
Sample 4	<p>Stability assessments are regression analysis of reported result against date of analysis.</p> <p>Homogeneity assessments are regression analysis of reported result against bottling order.</p>	



BUTANE

Summary Statistics

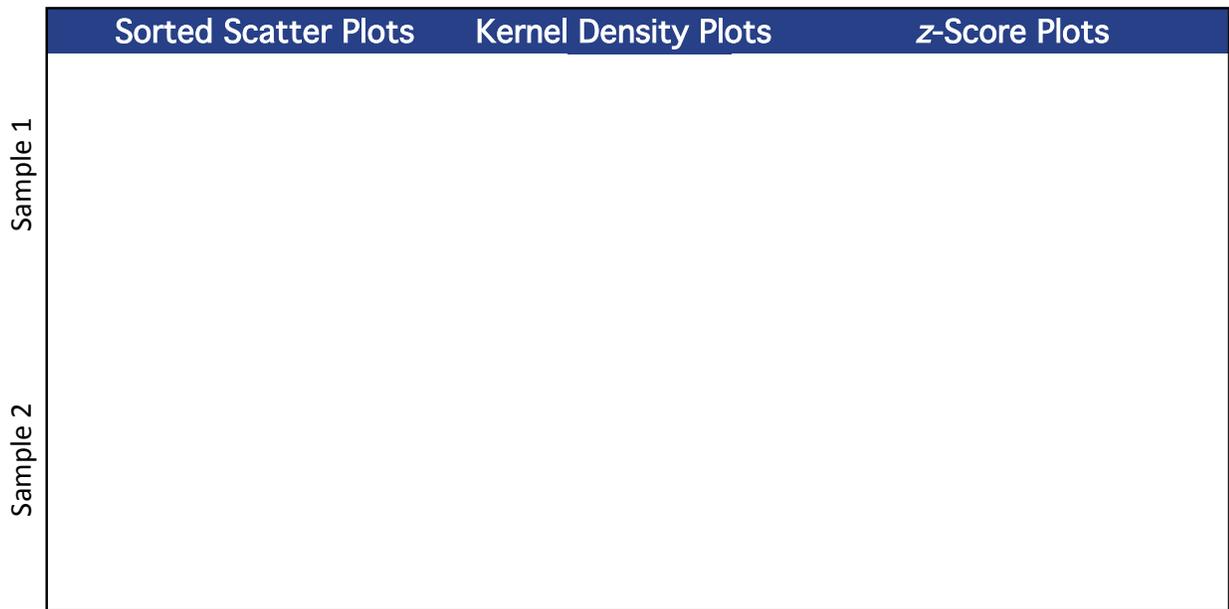
Not Spiked Excluded

Statistic	C73-1	C73-2	C73-3	C73-4
N	0	0	0	0
Median $\mu\text{g/g}$				
Robust Mean $\mu\text{g/g}$				
U $\mu\text{g/g}$				
Robust Standard Deviation $\mu\text{g/g}$				
Regression Standard Deviation $\mu\text{g/g}$				
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) $\mu\text{g/g}$				
Outliers	0	2	0	0
$ z > 3.0$	0	0	0	0
$2 < z < 3$	0	0	0	0

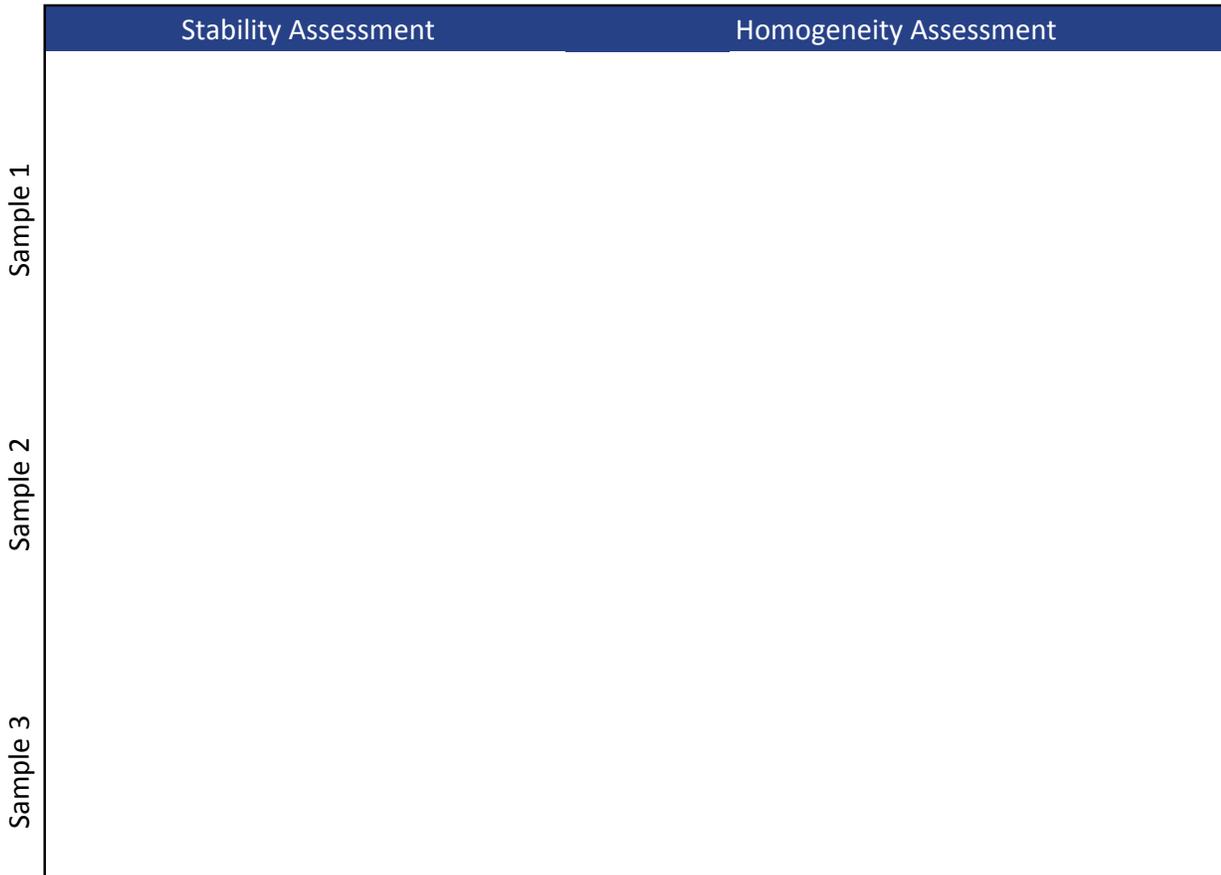
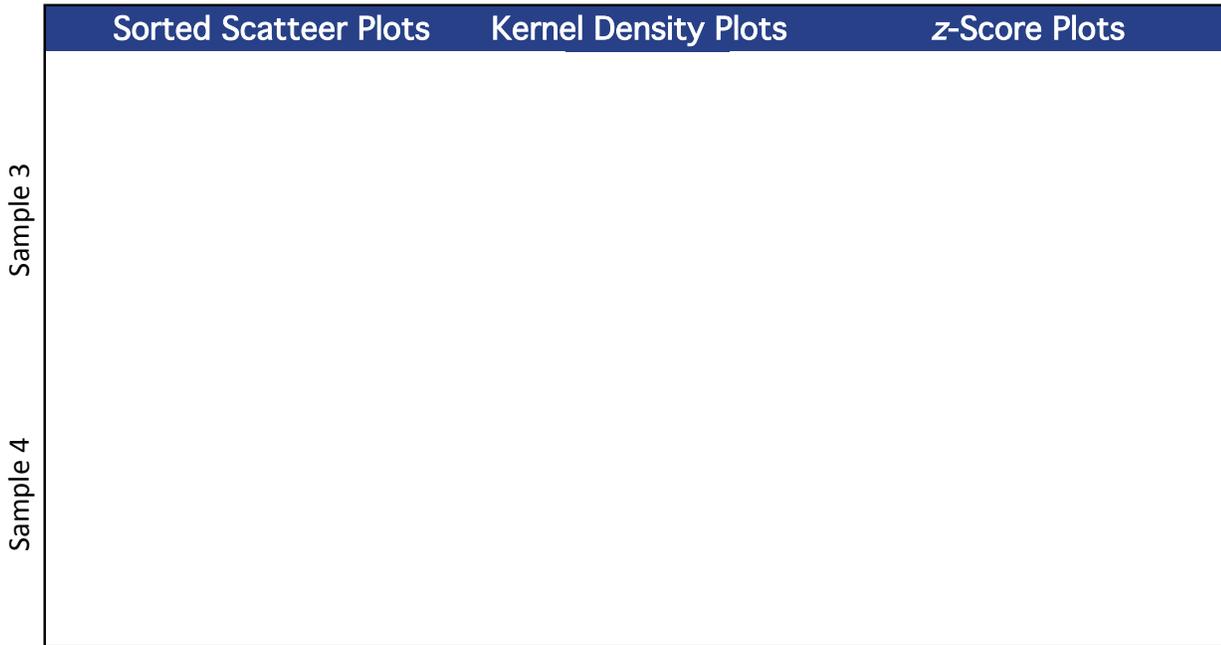
Methods Used

Method	C73-1	C73-2	C73-3	C73-4

All summary stats and the plots below are based on the data excluding any flagged outliers

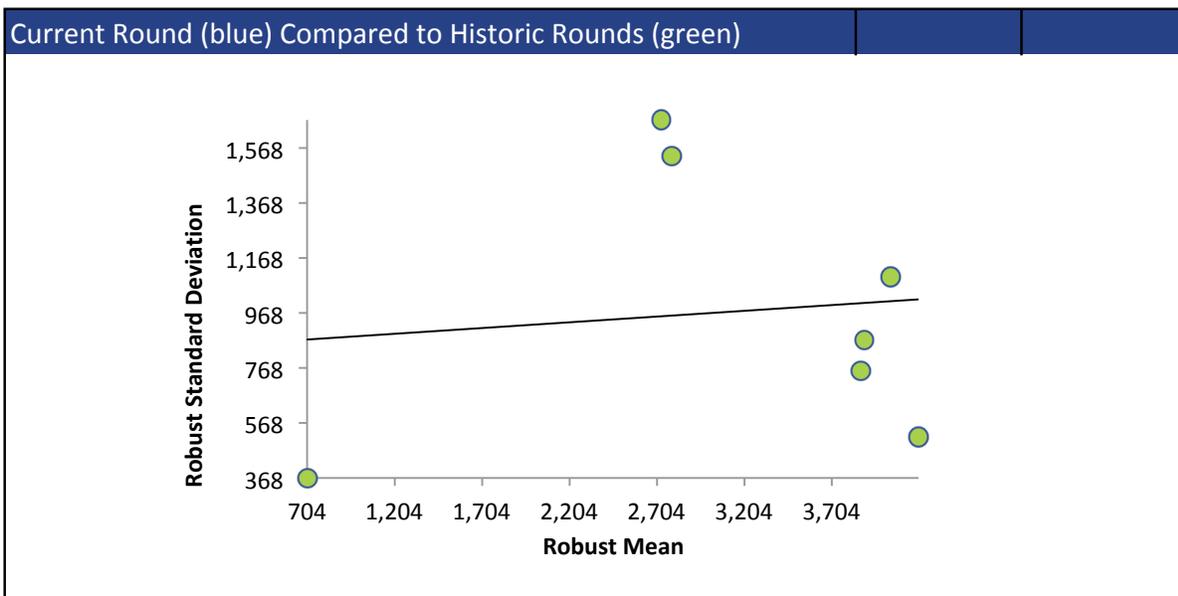
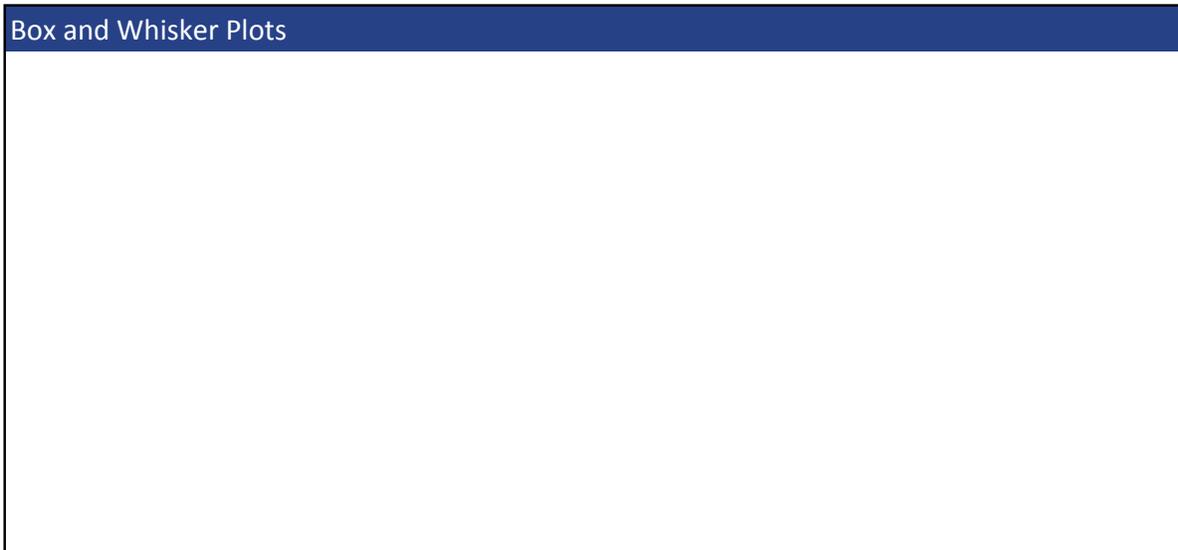


BUTANE



BUTANE

	Stability Assessment	Homogeneity Assessment
Sample 4	<p>Stability assessments are regression analysis of reported result against date of analysis.</p> <p>Homogeneity assessments are regression analysis of reported result against bottling order.</p>	



BUTYL ACETATE

Summary Statistics

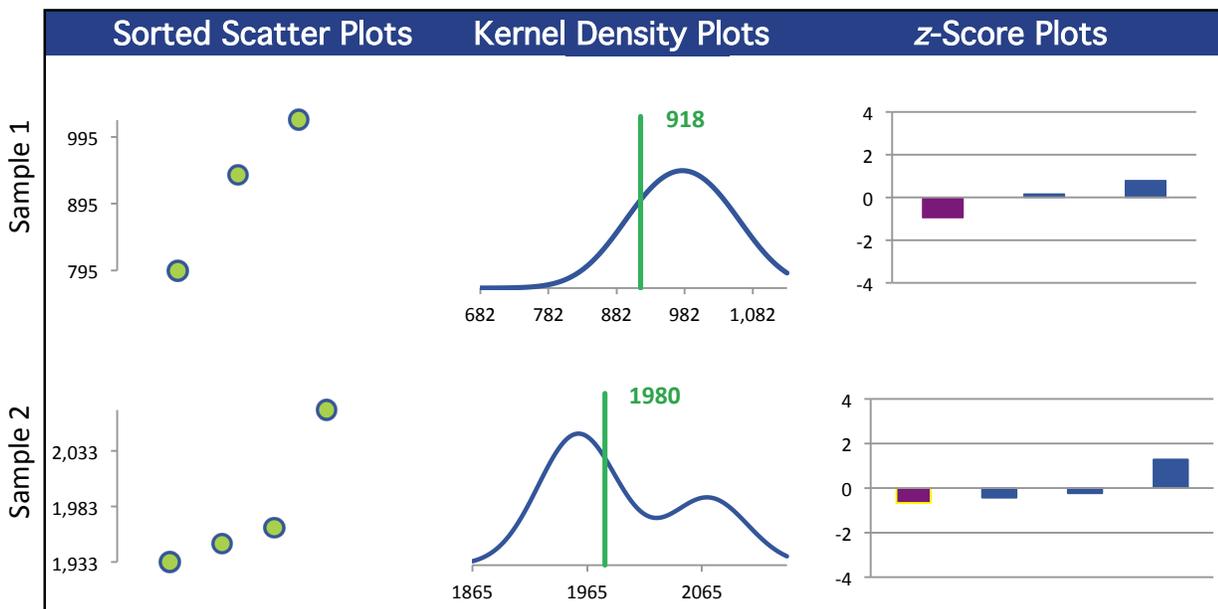
Excluded

Statistic	C73-1	C73-2	C73-3	C73-4
N	3	4	0	0
Median $\mu\text{g/g}$	938	1960		
Robust Mean $\mu\text{g/g}$	918	1980		
U $\mu\text{g/g}$	93.1	43.9		
Robust Standard Deviation $\mu\text{g/g}$	129	70.2		
Regression Standard Deviation $\mu\text{g/g}$				
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) $\mu\text{g/g}$	129	70.2		
Outliers	0	0	0	0
$ z > 3.0$	0	0	0	0
$2 < z < 3$	0	0	0	0

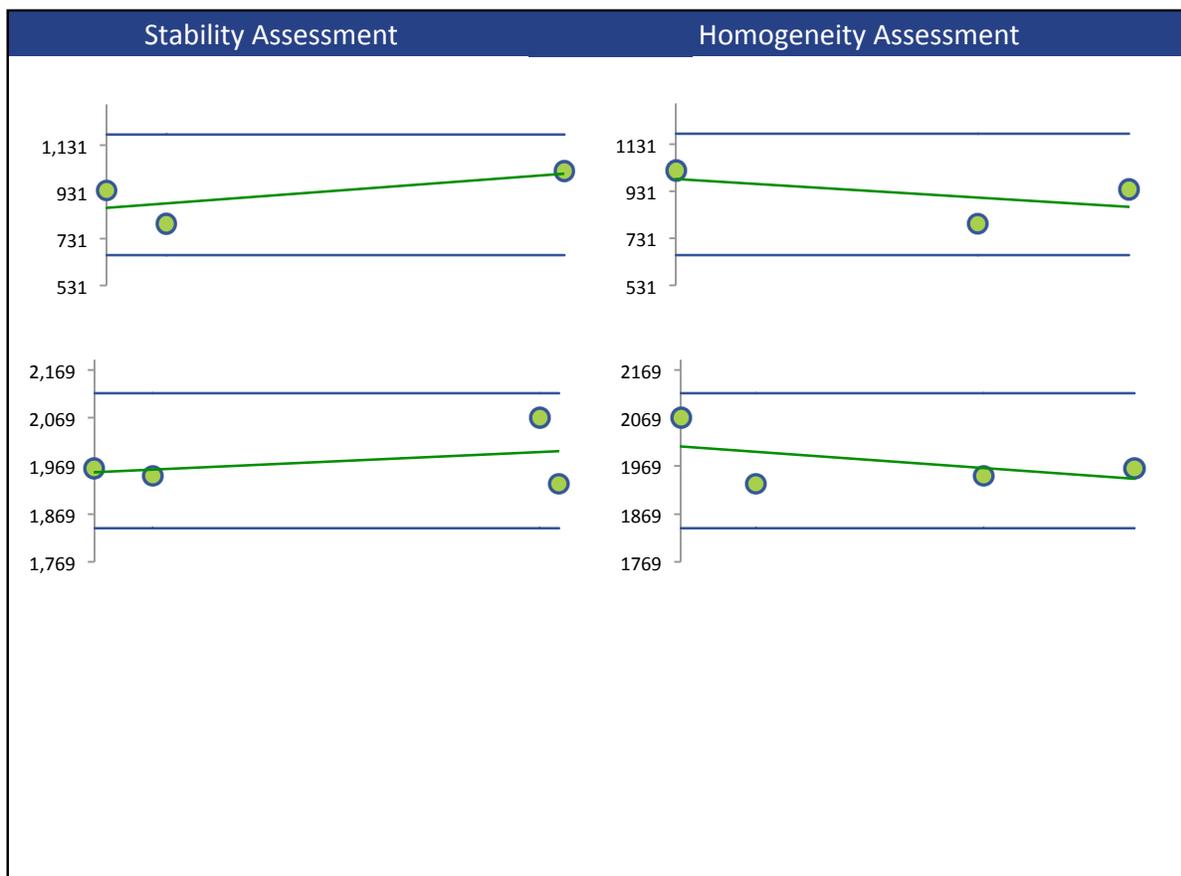
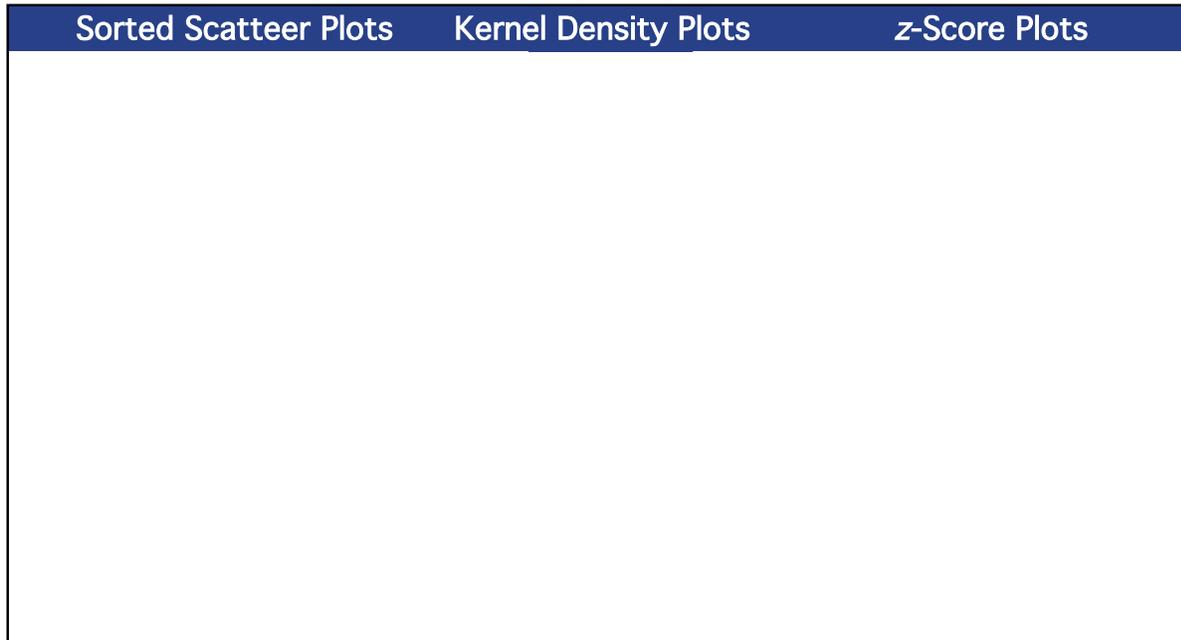
Methods Used

Method	C73-1	C73-2	C73-3	C73-4
GC/MS1 (Blue)	3	4	0	0

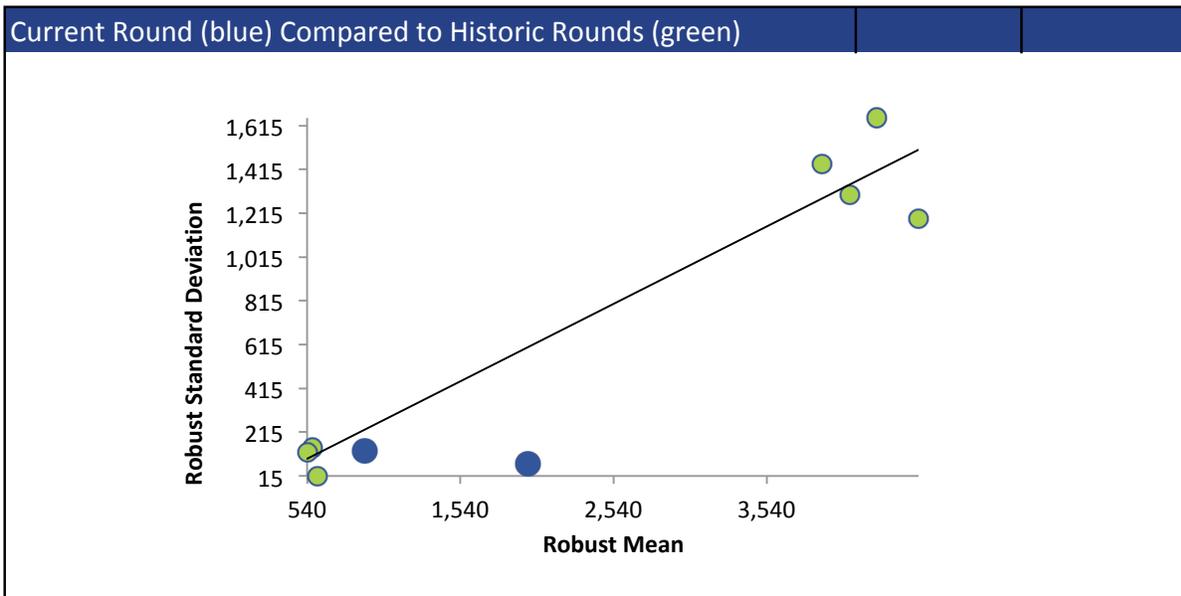
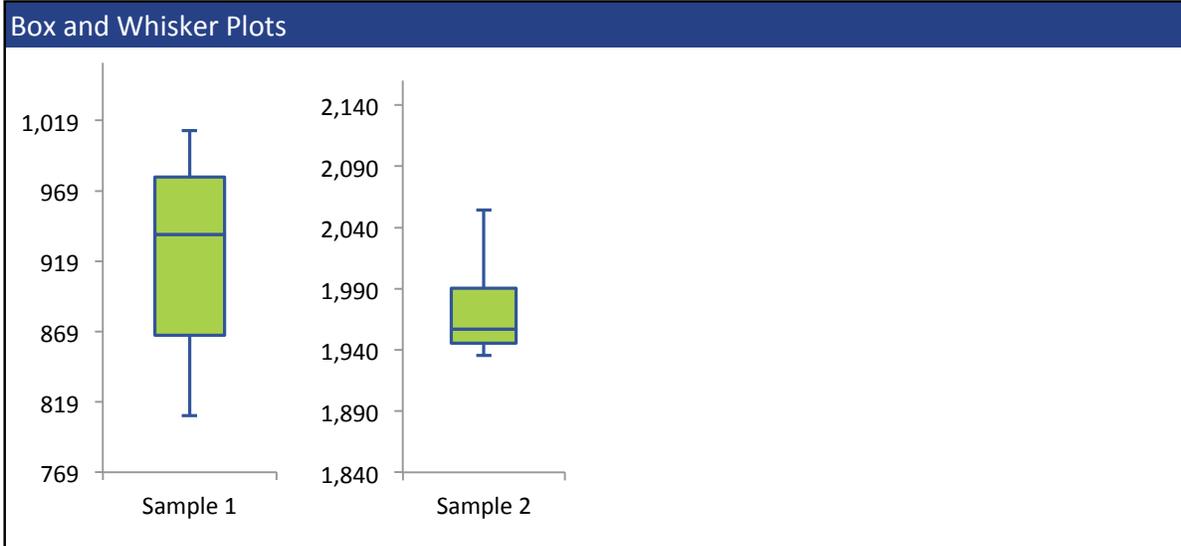
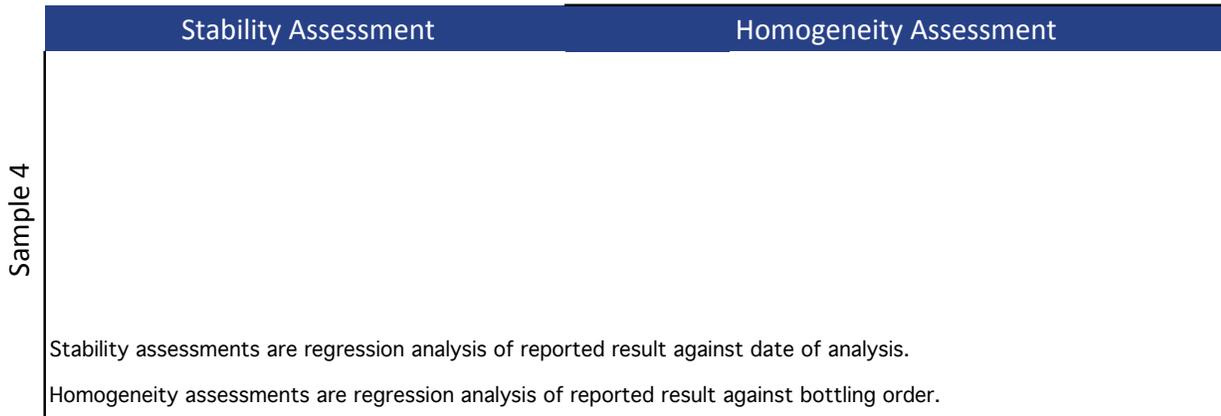
All summary stats and the plots below are based on the data excluding any flagged outliers



BUTYL ACETATE



BUTYL ACETATE



DIMETHYL SULFOXIDE

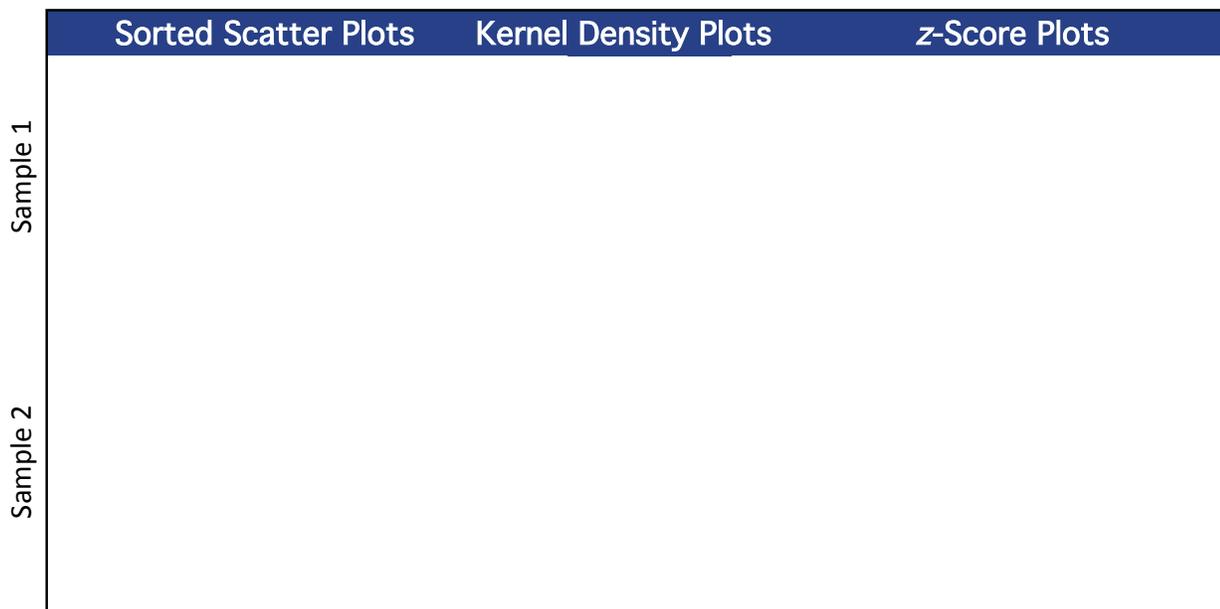
Summary Statistics

Statistic	Excluded		Excluded	
	C73-1	C73-2	C73-3	C73-4
N	0	0	0	0
Median $\mu\text{g/g}$				
Robust Mean $\mu\text{g/g}$				
U $\mu\text{g/g}$				
Robust Standard Deviation $\mu\text{g/g}$				
Regression Standard Deviation $\mu\text{g/g}$				
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) $\mu\text{g/g}$				
Outliers	0	0	0	0
$ z > 3.0$	0	0	0	0
$2 < z < 3$	0	0	0	0

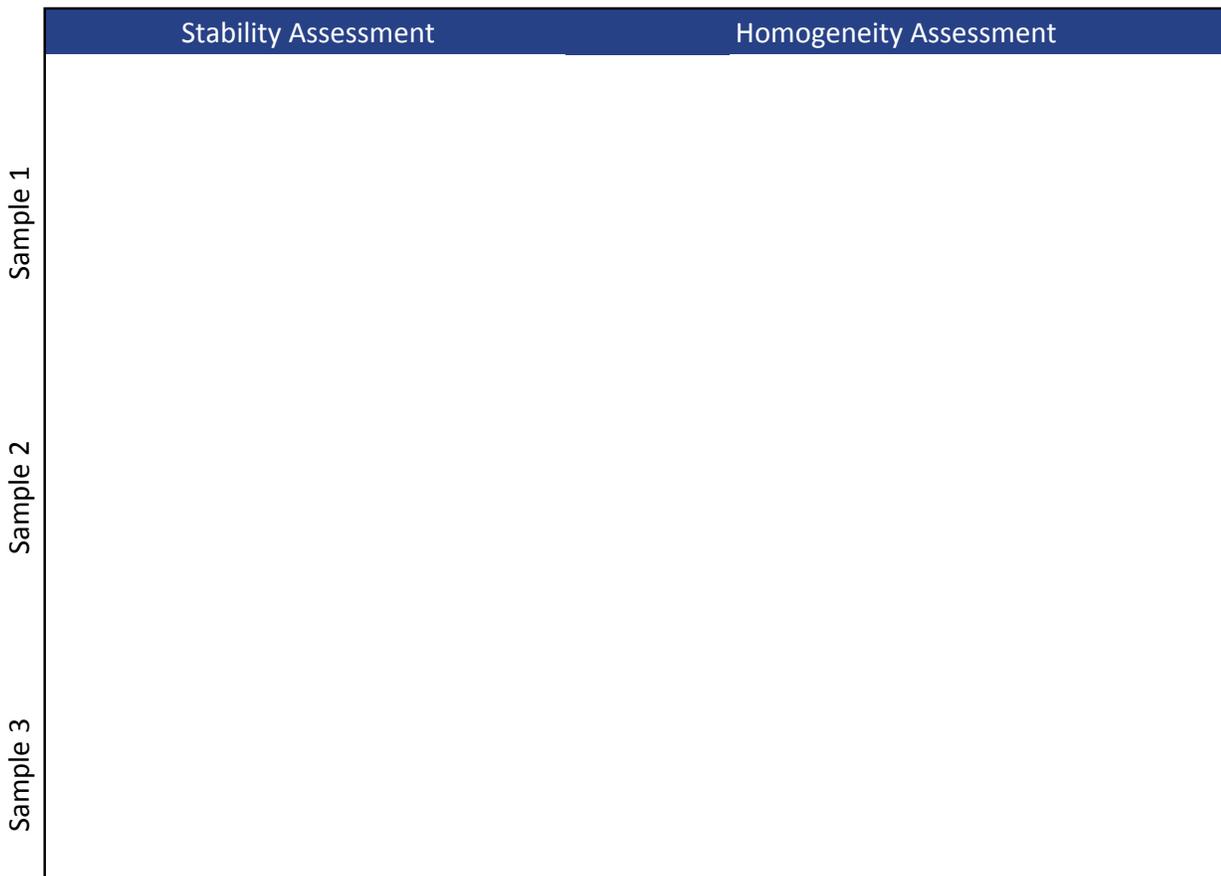
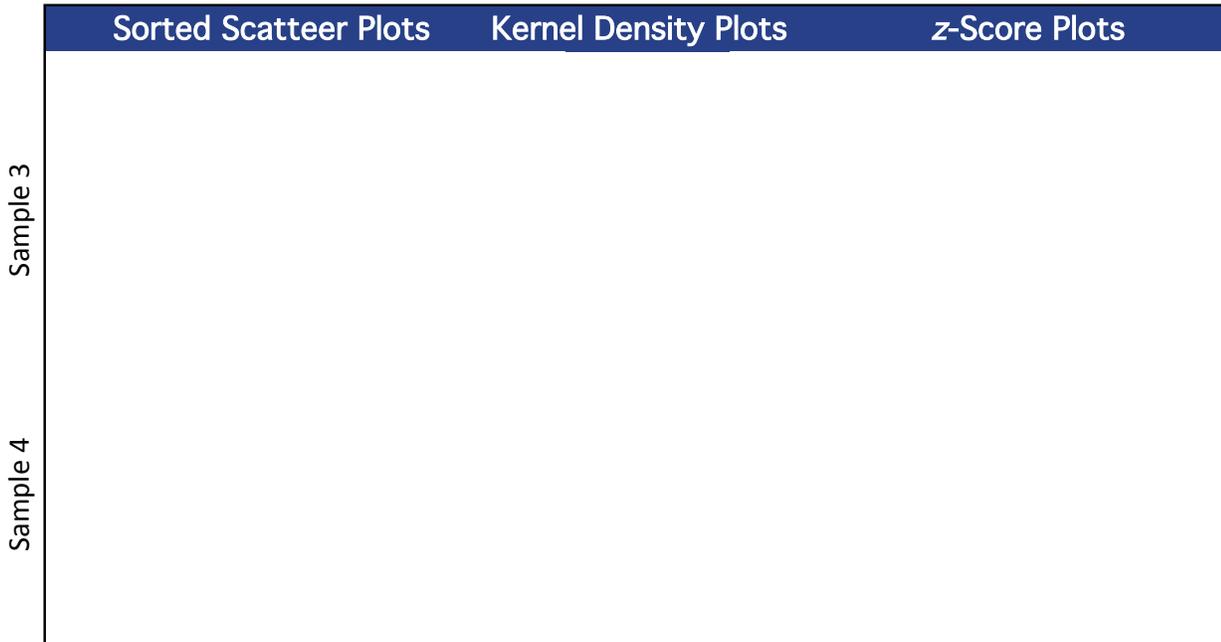
Methods Used

Method	C73-1	C73-2	C73-3	C73-4

All summary stats and the plots below are based on the data excluding any flagged outliers



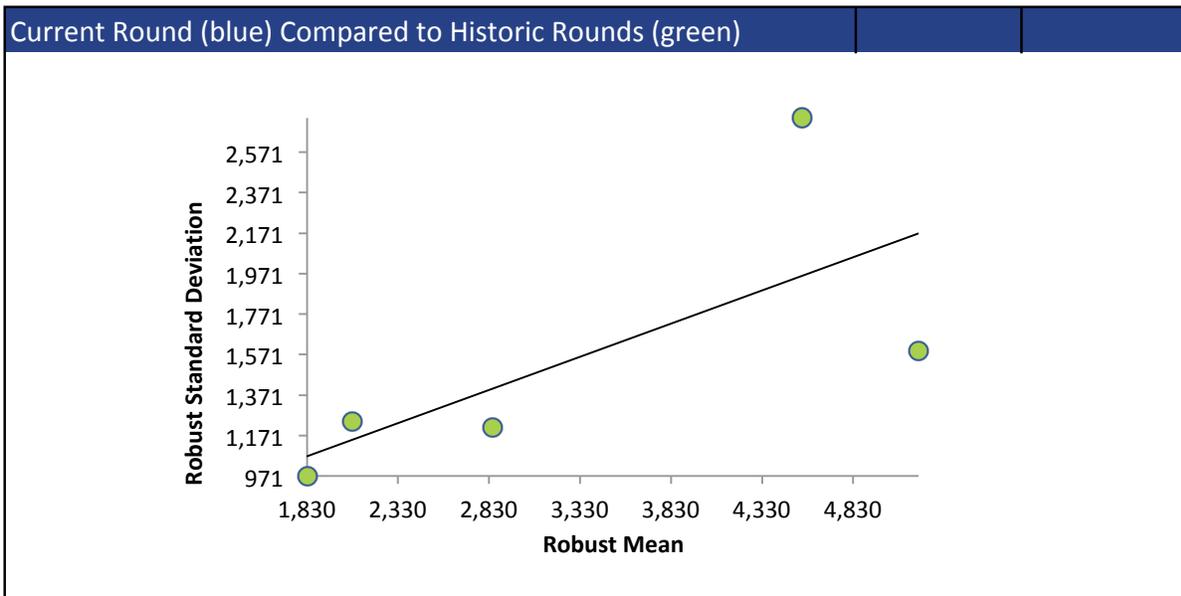
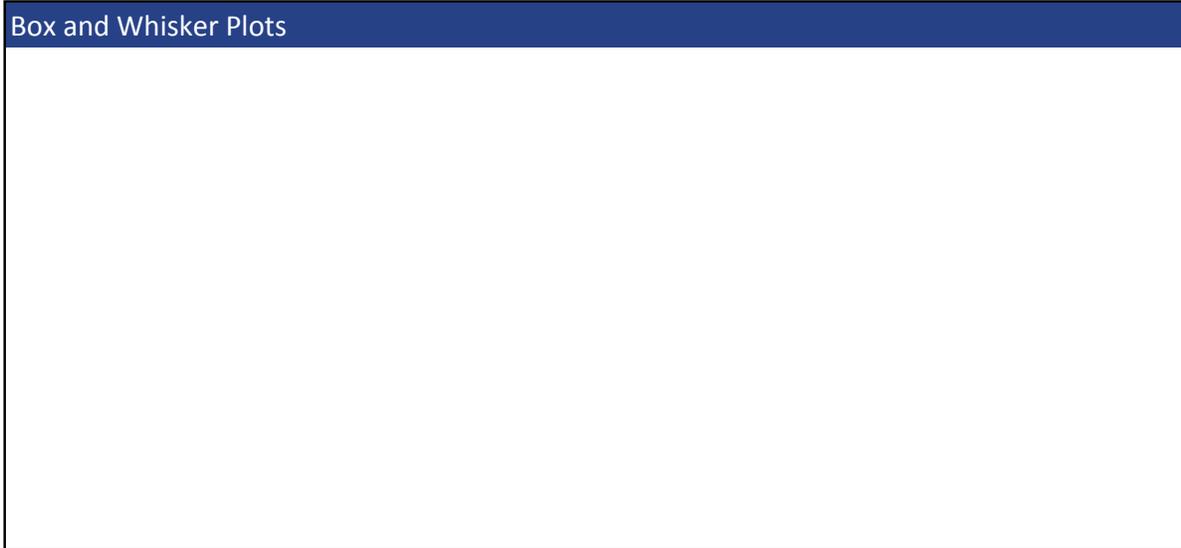
DIMETHYL SULFOXIDE



DIMETHYL SULFOXIDE

	Stability Assessment	Homogeneity Assessment
Sample 4		

Stability assessments are regression analysis of reported result against date of analysis.
Homogeneity assessments are regression analysis of reported result against bottling order.



ETHANOL

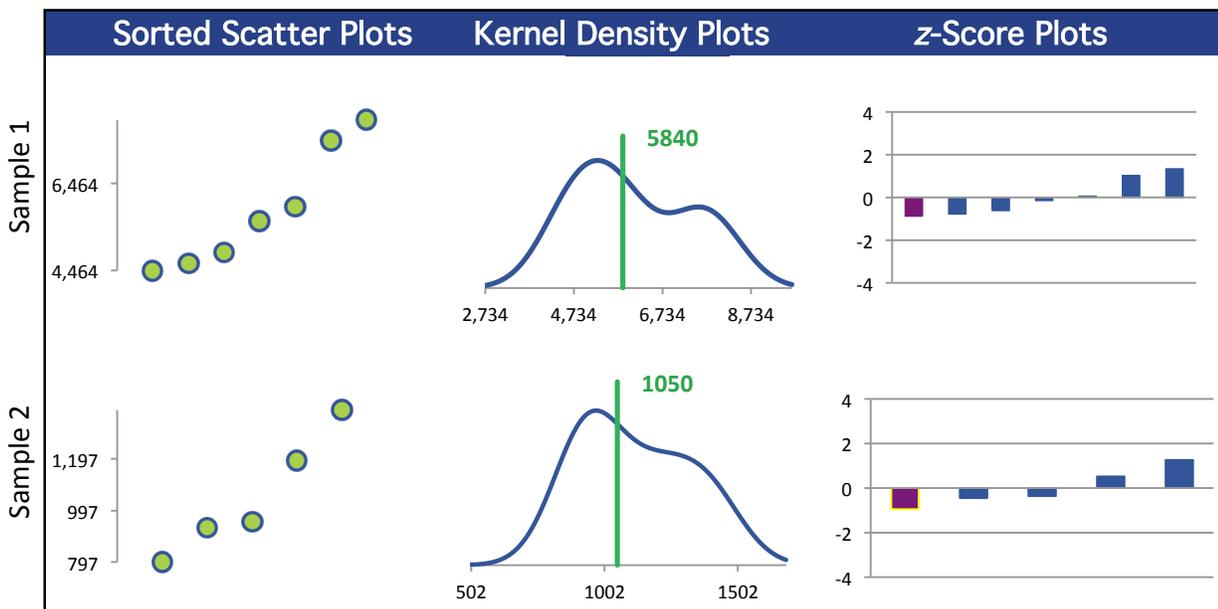
Summary Statistics

Statistic	C73-1	C73-2	C73-3	C73-4
N	7	5	0	0
Median $\mu\text{g/g}$	5600	953		
Robust Mean $\mu\text{g/g}$	5840	1050		
U $\mu\text{g/g}$	737	149		
Robust Standard Deviation $\mu\text{g/g}$	1560	267		
Regression Standard Deviation $\mu\text{g/g}$				
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) $\mu\text{g/g}$	1560	267		
Outliers	0	0	0	0
$ z > 3.0$	0	0	0	0
$2 < z < 3$	0	0	0	0

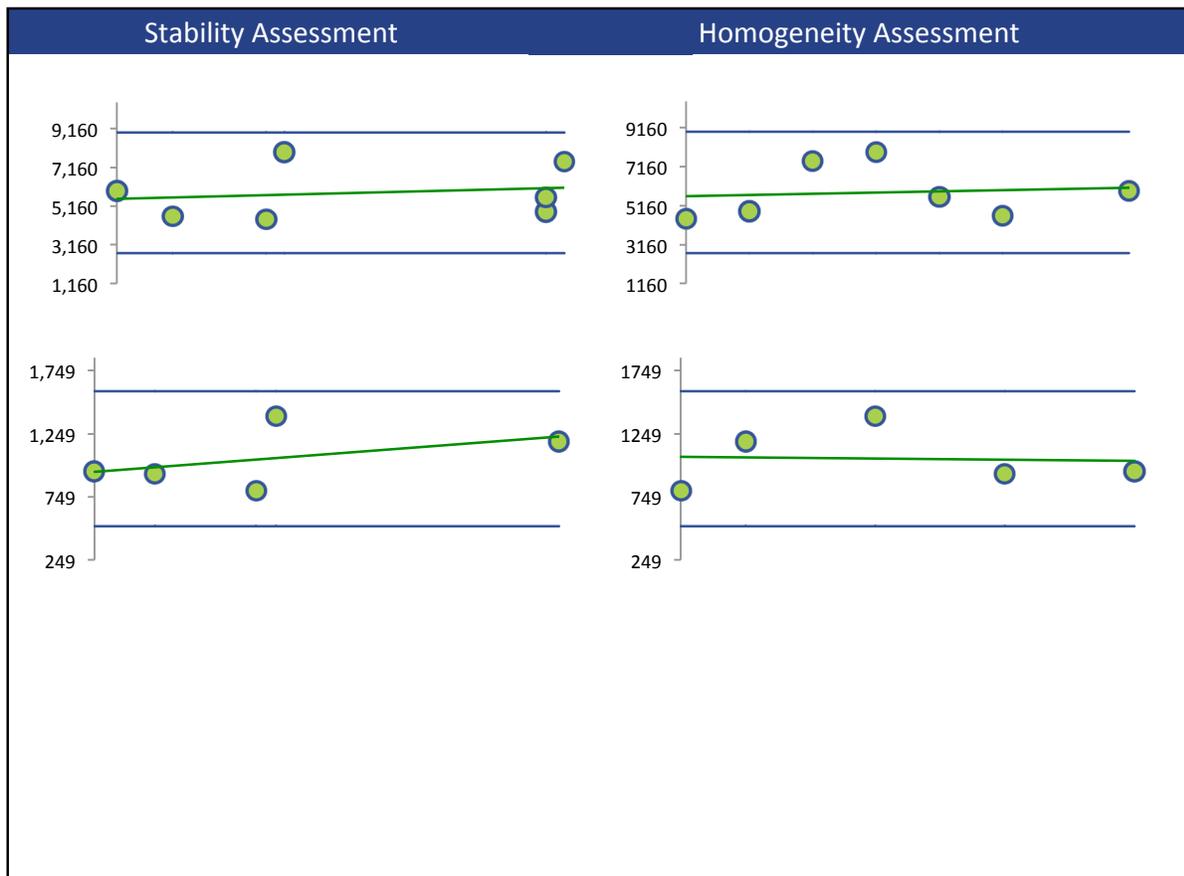
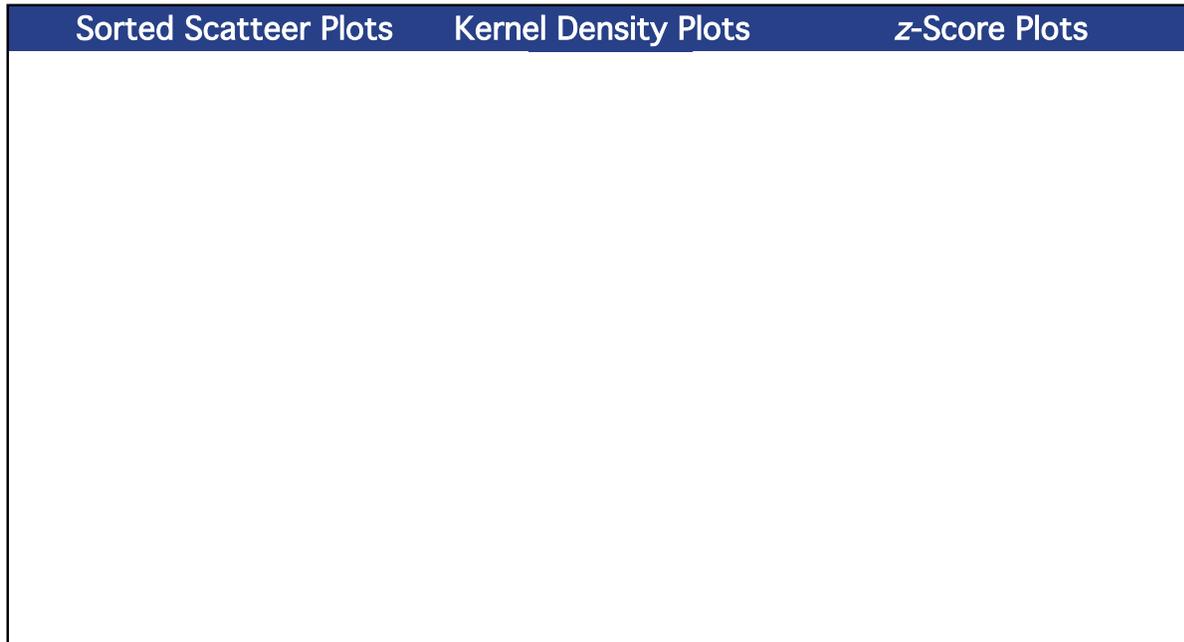
Methods Used

Method	C73-1	C73-2	C73-3	C73-4
GC/FID-1 (Blue)	2	2	0	0
GC/MS1 (Red)	5	3	0	0

All summary stats and the plots below are based on the data excluding any flagged outliers

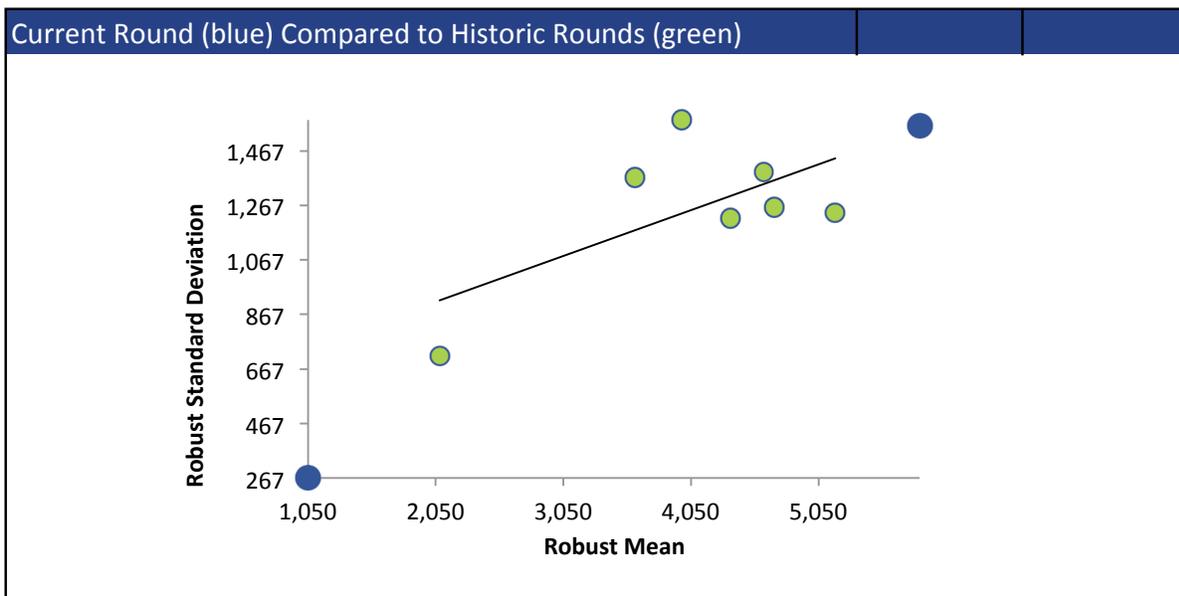
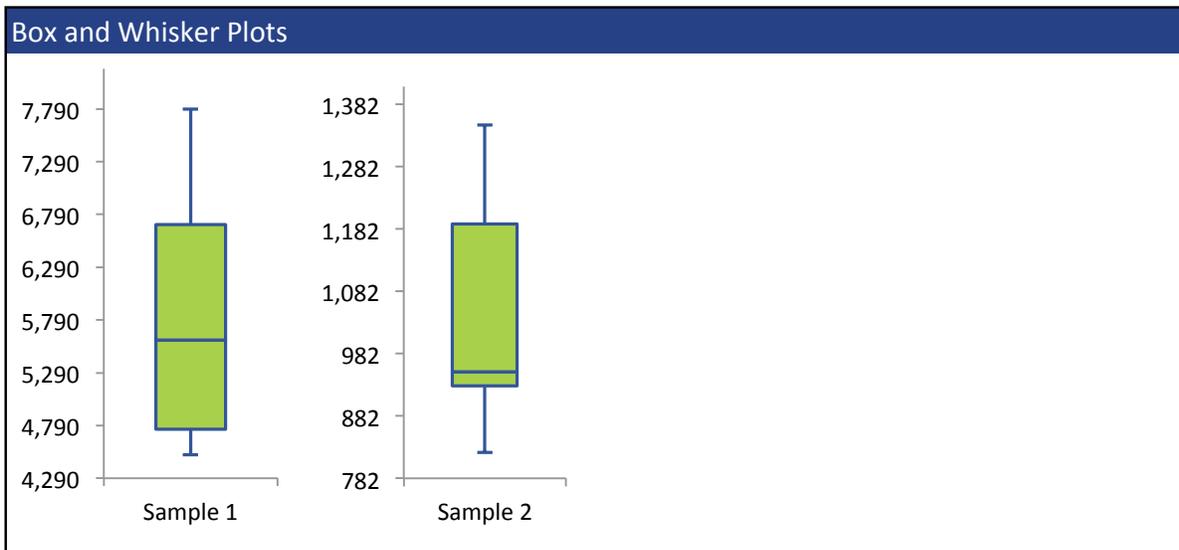


ETHANOL



ETHANOL

	Stability Assessment	Homogeneity Assessment
Sample 4	<p>Stability assessments are regression analysis of reported result against date of analysis.</p> <p>Homogeneity assessments are regression analysis of reported result against bottling order.</p>	



ETHYL ACETATE

Summary Statistics

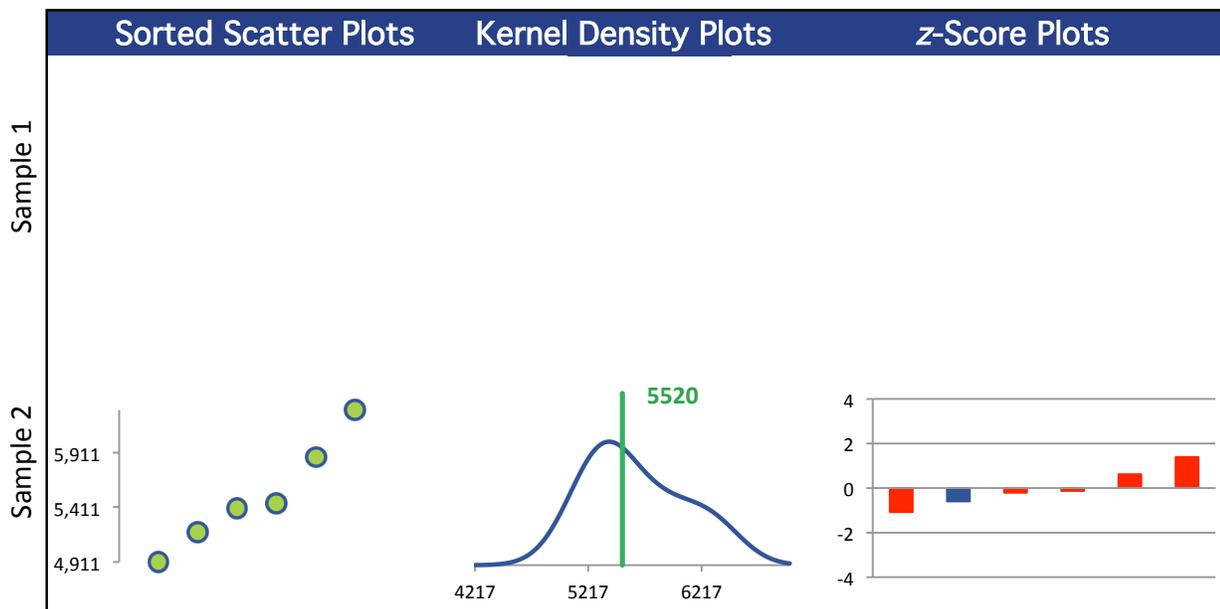
Excluded

Statistic	C73-1	C73-2	C73-3	C73-4
N	0	6	0	0
Median $\mu\text{g/g}$		5420		
Robust Mean $\mu\text{g/g}$		5520		
U $\mu\text{g/g}$		287		
Robust Standard Deviation $\mu\text{g/g}$		563		
Regression Standard Deviation $\mu\text{g/g}$				
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) $\mu\text{g/g}$		563		
Outliers	2	0	0	0
$ z > 3.0$	0	0	0	0
$2 < z < 3$	0	0	0	0

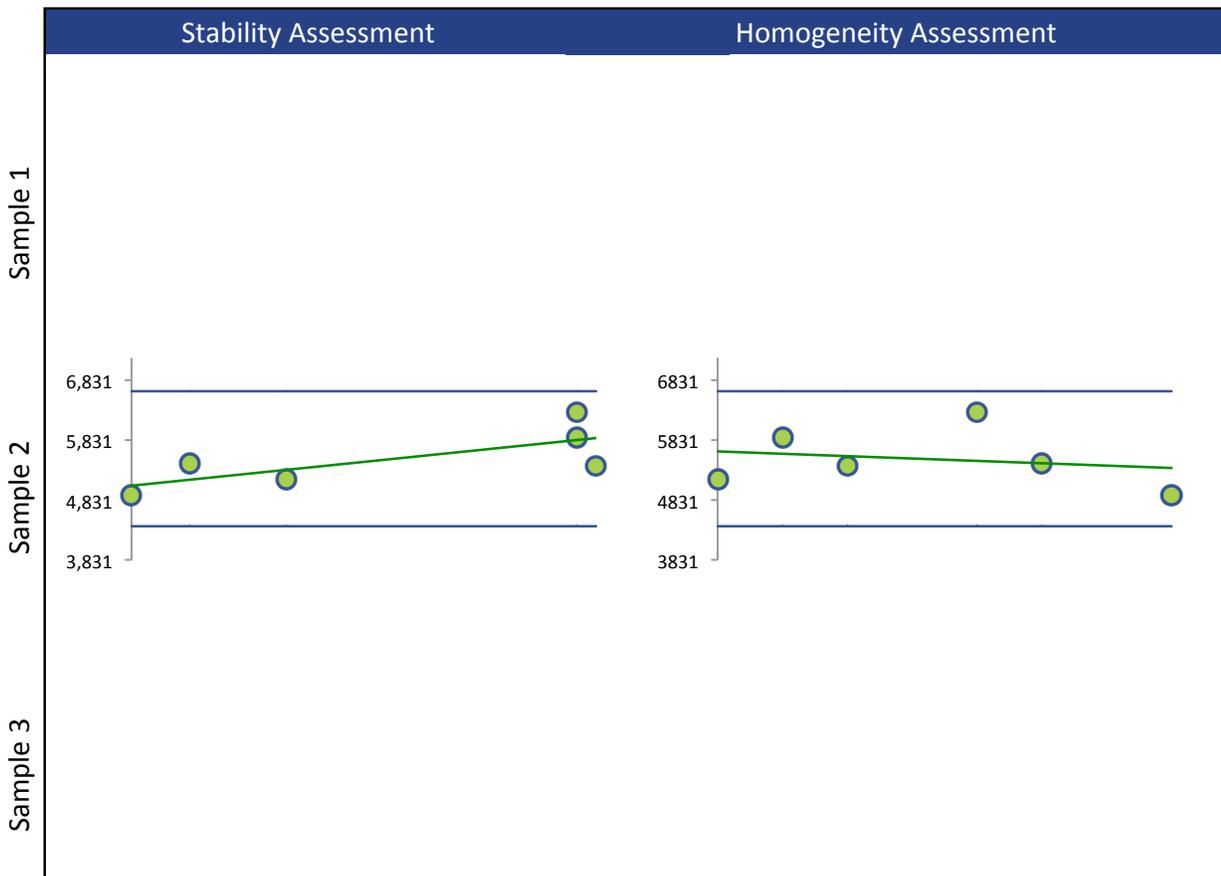
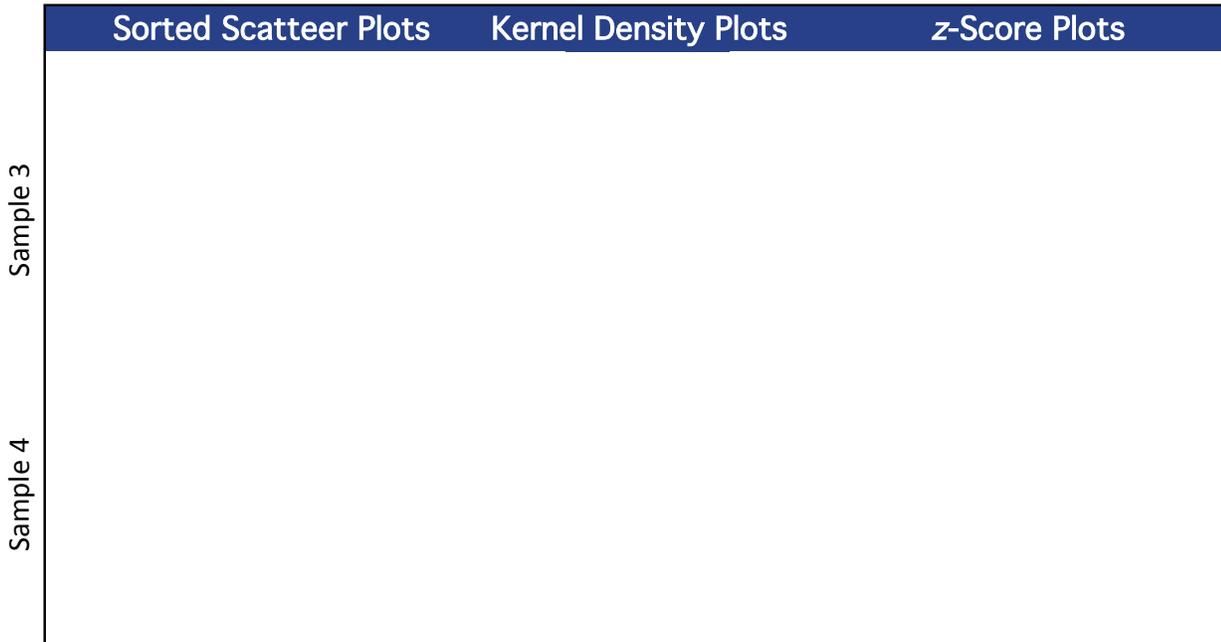
Methods Used

Method	C73-1	C73-2	C73-3	C73-4
GC/MS1 (Blue)	0	5	0	0
GC/FID-1 (Red)	0	1	0	0

All summary stats and the plots below are based on the data excluding any flagged outliers

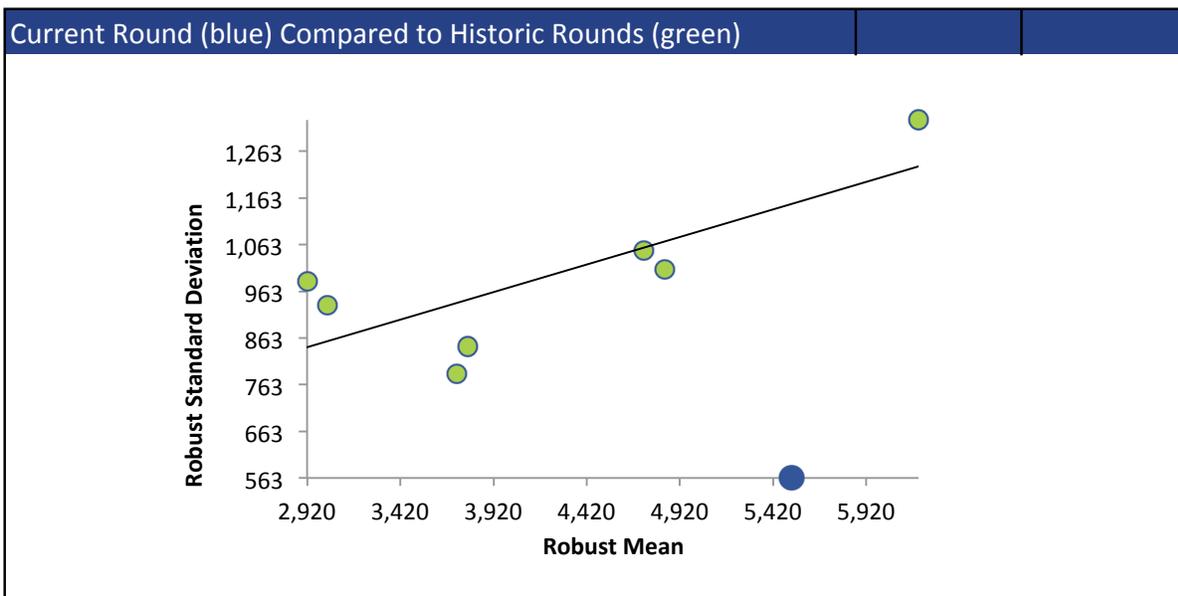
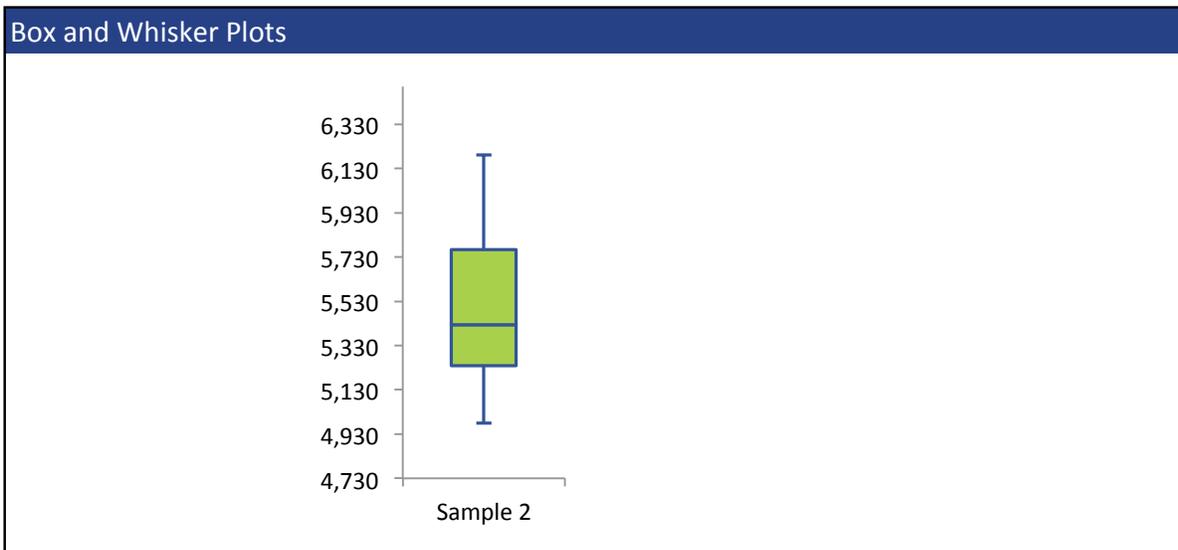


ETHYL ACETATE



ETHYL ACETATE

	Stability Assessment	Homogeneity Assessment
Sample 4		
	<p>Stability assessments are regression analysis of reported result against date of analysis.</p> <p>Homogeneity assessments are regression analysis of reported result against bottling order.</p>	



ETHYL ETHER

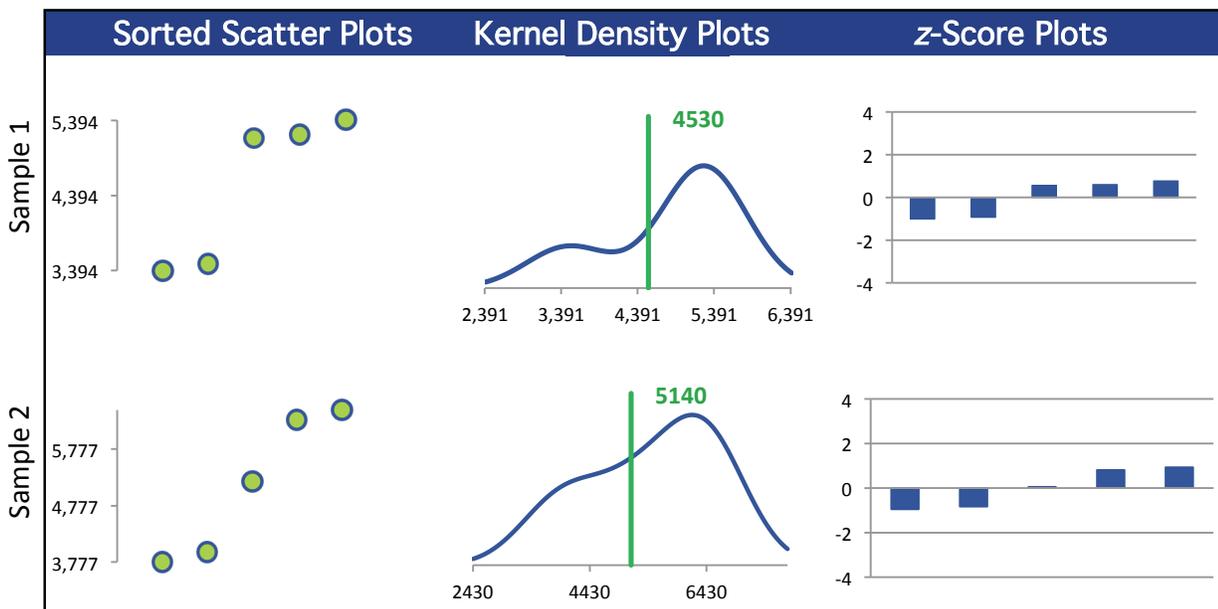
Summary Statistics

Statistic	C73-1	C73-2	C73-3	C73-4
N	5	5	0	0
Median $\mu\text{g/g}$	5160	5210		
Robust Mean $\mu\text{g/g}$	4530	5140		
U $\mu\text{g/g}$	632	799		
Robust Standard Deviation $\mu\text{g/g}$	1130	1430		
Regression Standard Deviation $\mu\text{g/g}$				
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) $\mu\text{g/g}$	1130	1430		
Outliers	0	0	0	0
$ z > 3.0$	0	0	0	0
$2 < z < 3$	0	0	0	0

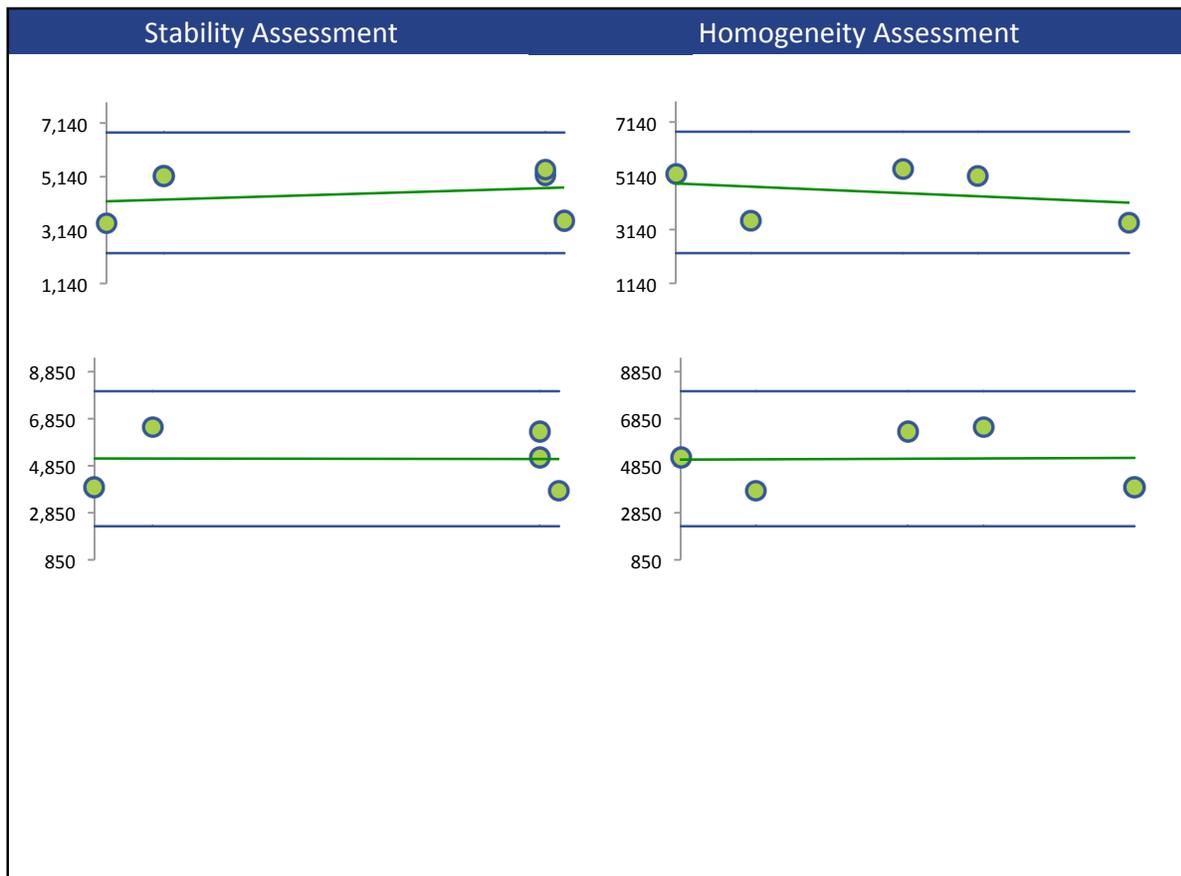
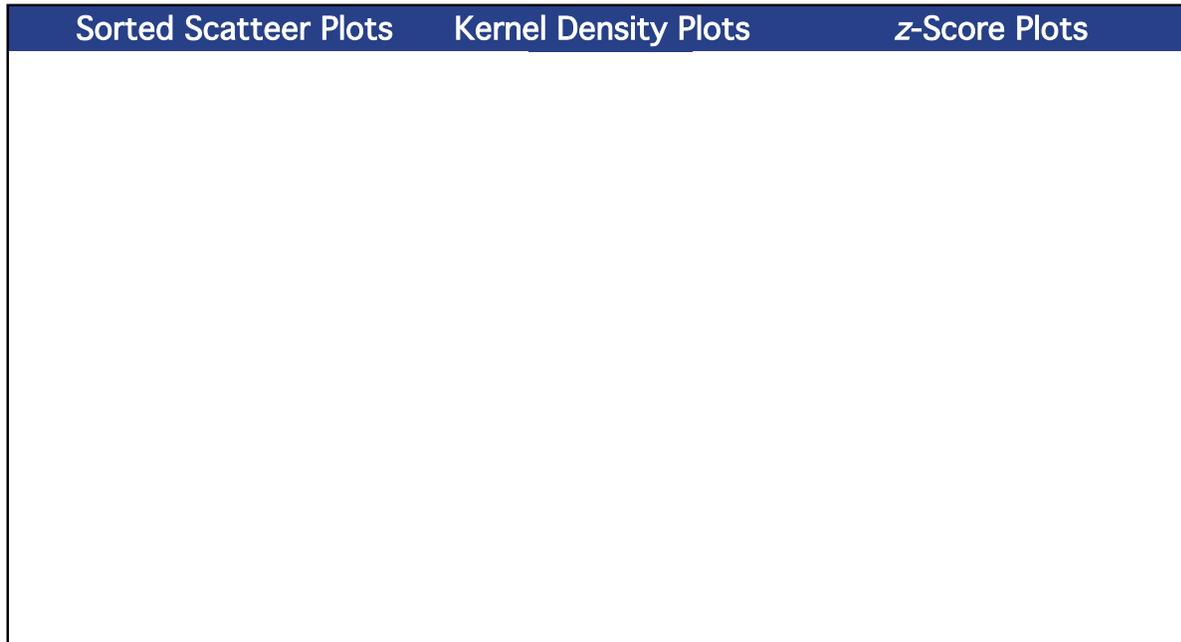
Methods Used

Method	C73-1	C73-2	C73-3	C73-4
GC/MS1 (Blue)	5	5	0	0

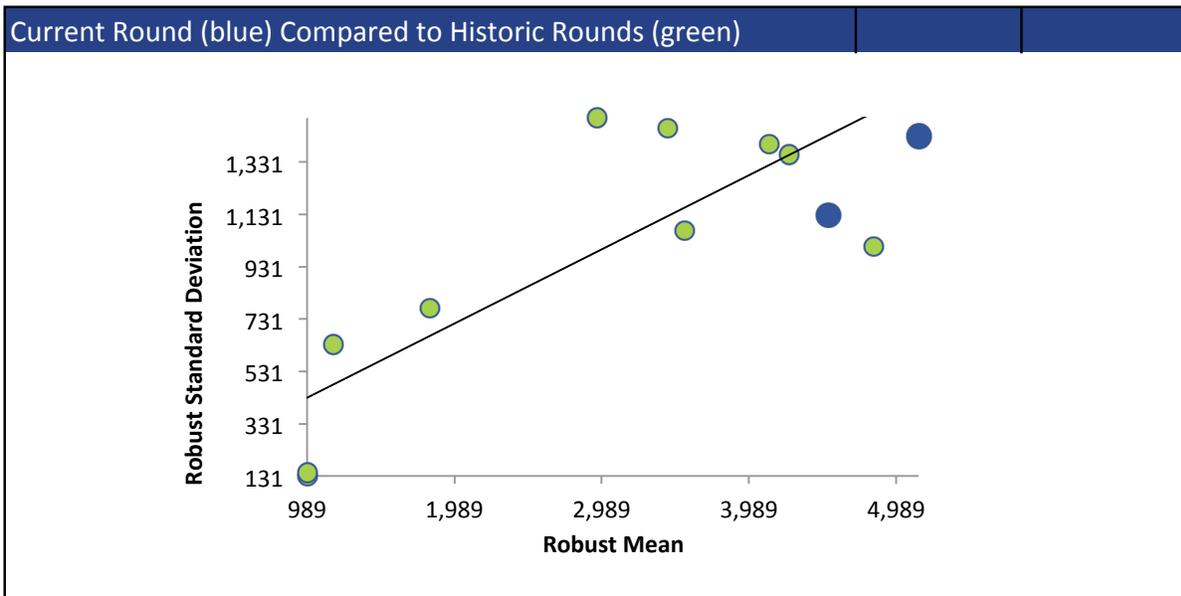
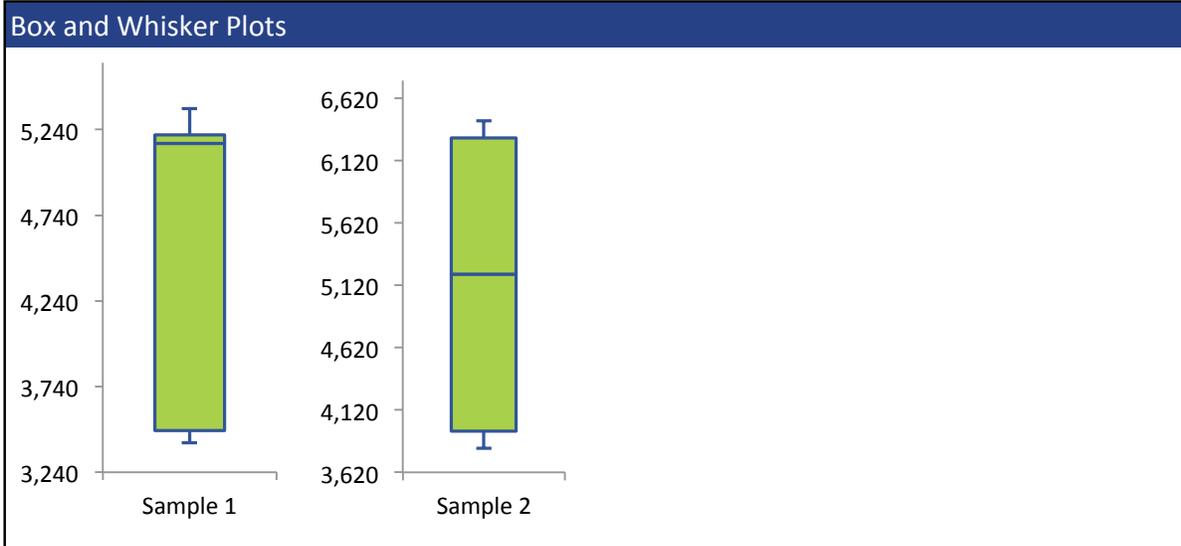
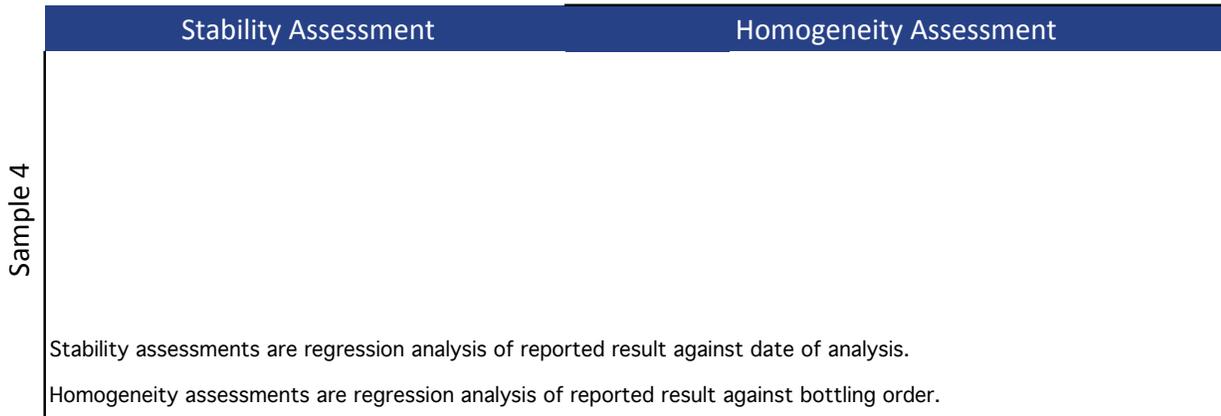
All summary stats and the plots below are based on the data excluding any flagged outliers



ETHYL ETHER



ETHYL ETHER



HEPTANE

Summary Statistics

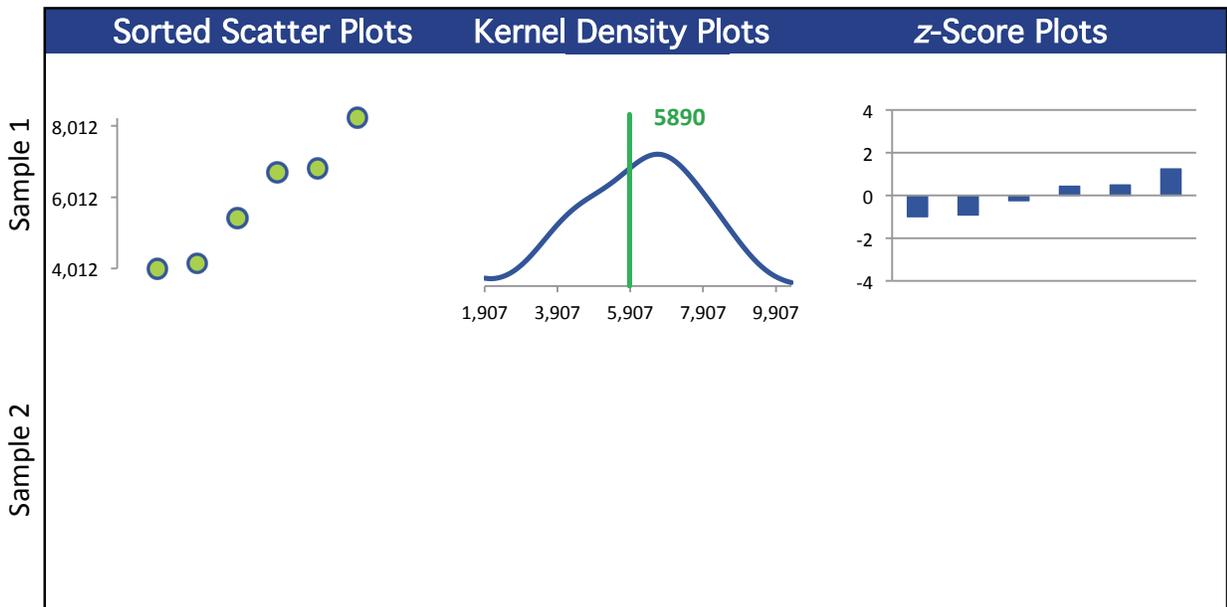
Not Spiked

Statistic	C73-1	C73-2	C73-3	C73-4
N	6	0	0	0
Median $\mu\text{g/g}$	6060			
Robust Mean $\mu\text{g/g}$	5890			
U $\mu\text{g/g}$	959			
Robust Standard Deviation $\mu\text{g/g}$	1880			
Regression Standard Deviation $\mu\text{g/g}$				
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) $\mu\text{g/g}$	1880			
Outliers	0	0	0	0
$ z > 3.0$	0	0	0	0
$2 < z < 3$	0	0	0	0

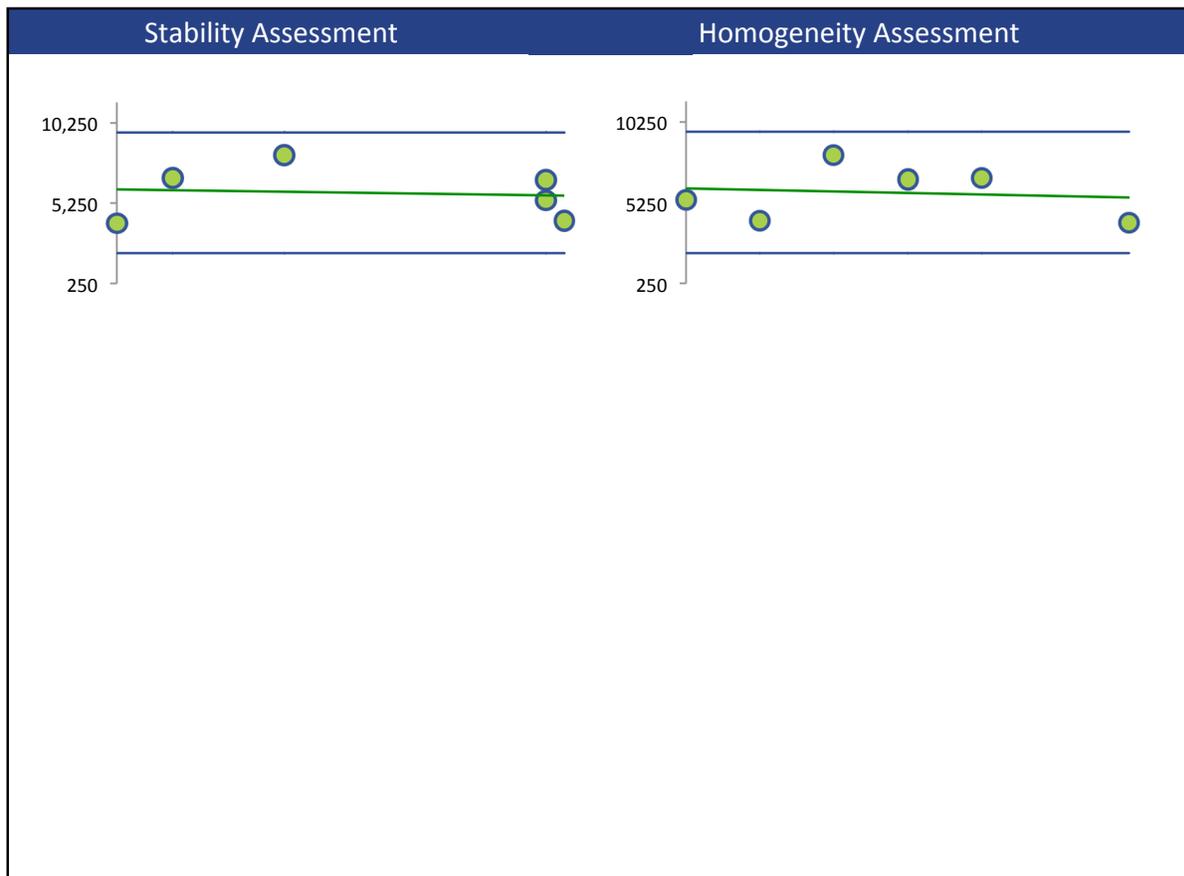
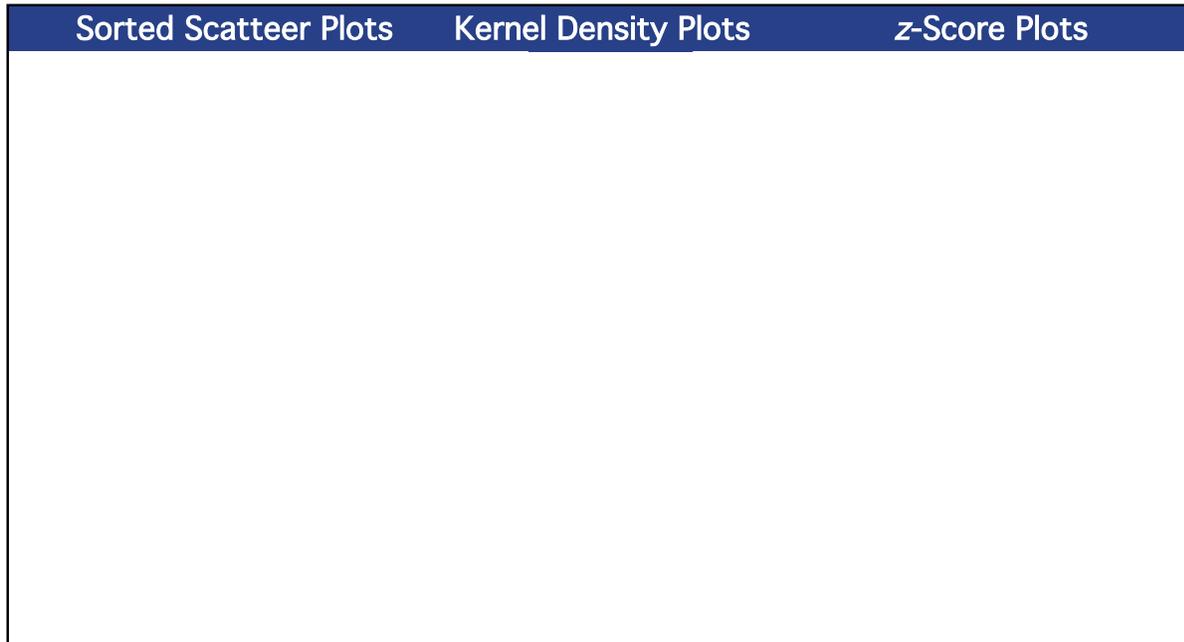
Methods Used

Method	C73-1	C73-2	C73-3	C73-4
GC/MS1 (Blue)	5	0	0	0
GC/FID-1 (Red)	1	0	0	0

All summary stats and the plots below are based on the data excluding any flagged outliers

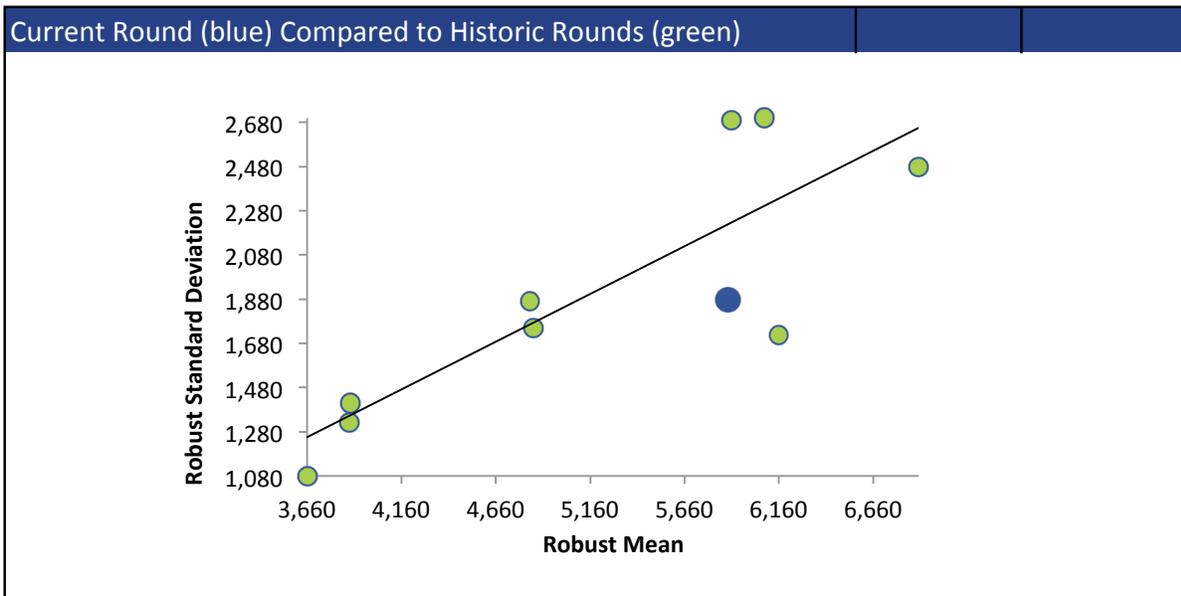


HEPTANE



HEPTANE

	Stability Assessment	Homogeneity Assessment
Sample 4		
	<p>Stability assessments are regression analysis of reported result against date of analysis.</p> <p>Homogeneity assessments are regression analysis of reported result against bottling order.</p>	



ISOBUTANOL (2-METHYL-1-PROPANOL)

Summary Statistics

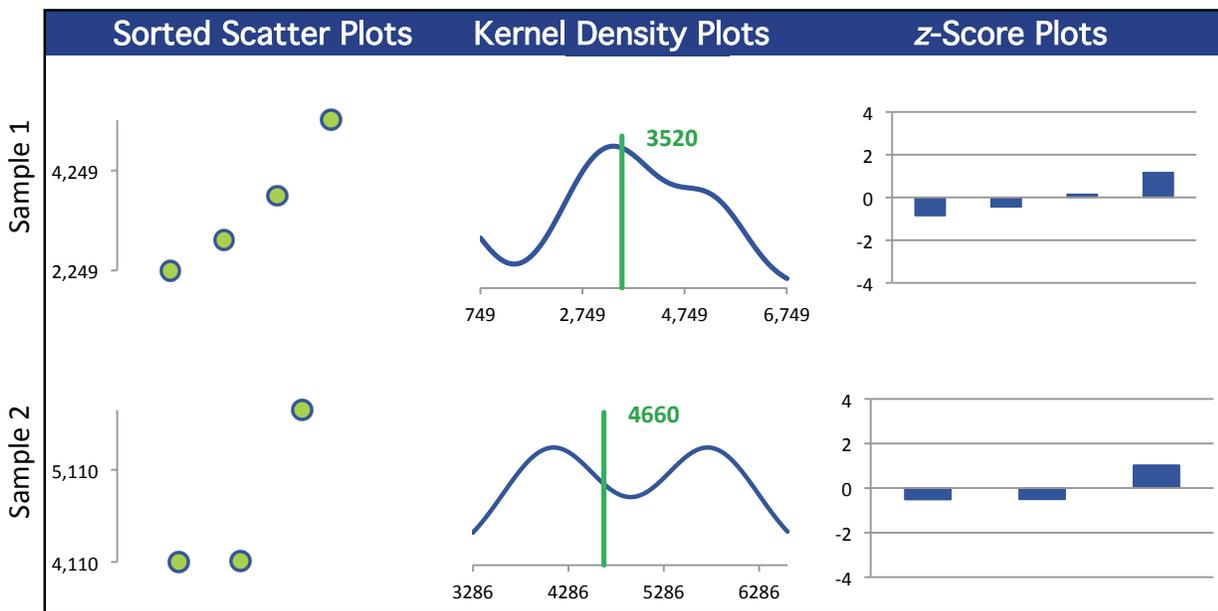
Excluded

Statistic	C73-1	C73-2	C73-3	C73-4
N	4	3	0	0
Median $\mu\text{g/g}$	3300	4120		
Robust Mean $\mu\text{g/g}$	3520	4660		
U $\mu\text{g/g}$	925	779		
Robust Standard Deviation $\mu\text{g/g}$	1480	1080		
Regression Standard Deviation $\mu\text{g/g}$				
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) $\mu\text{g/g}$	1480	1080		
Outliers	0	0	0	0
$ z > 3.0$	0	0	0	0
$2 < z < 3$	0	0	0	0

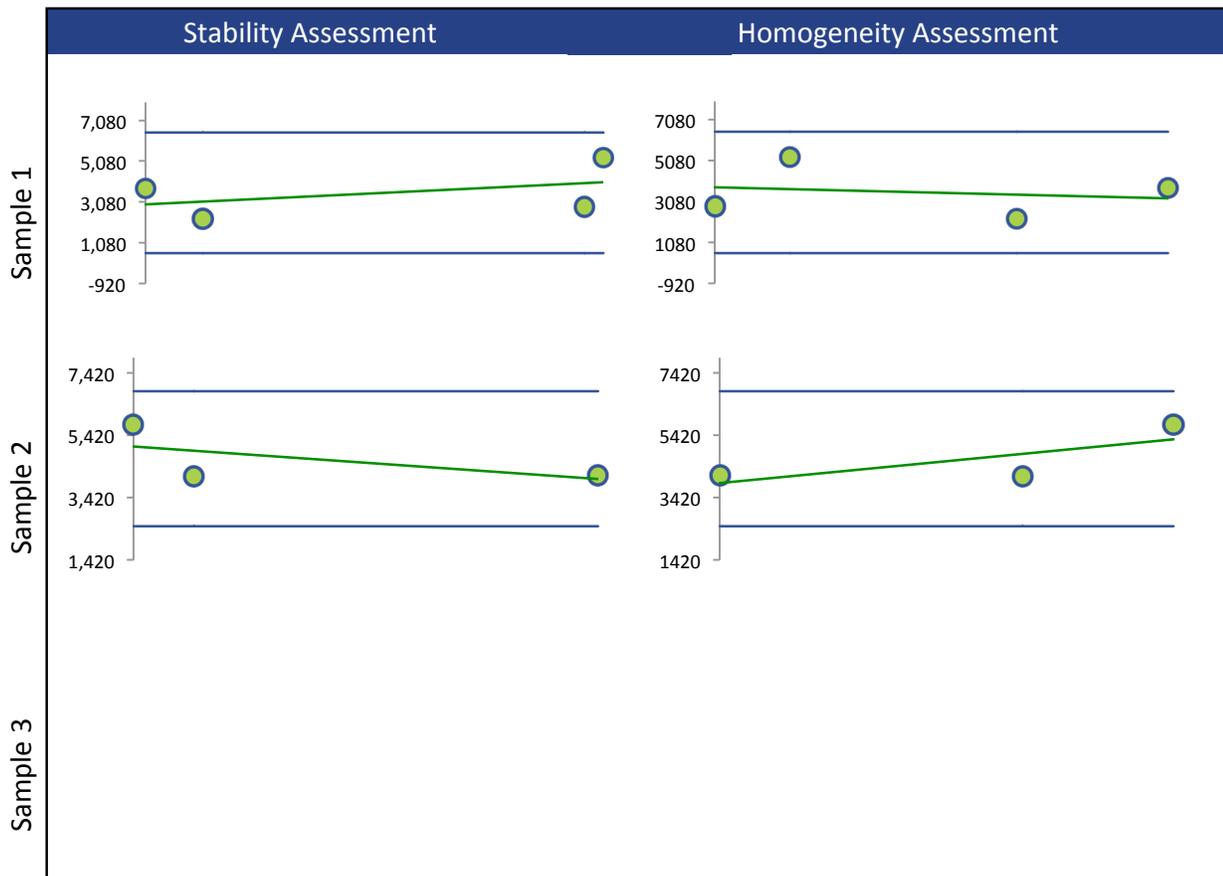
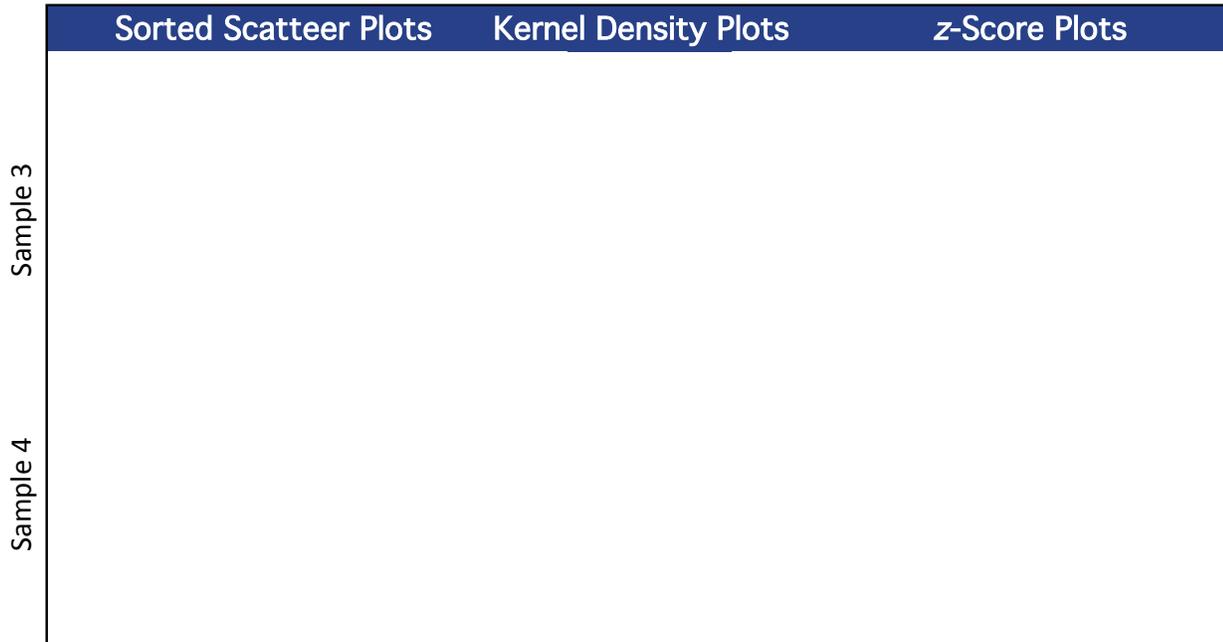
Methods Used

Method	C73-1	C73-2	C73-3	C73-4
GC/MS1 (Blue)	4	3	0	0

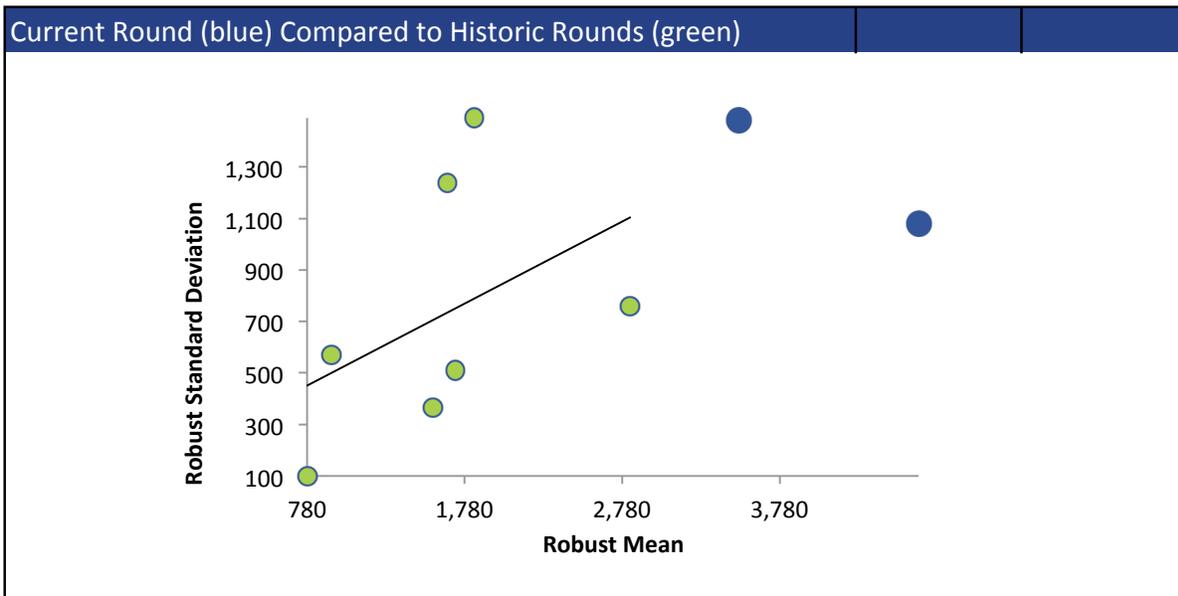
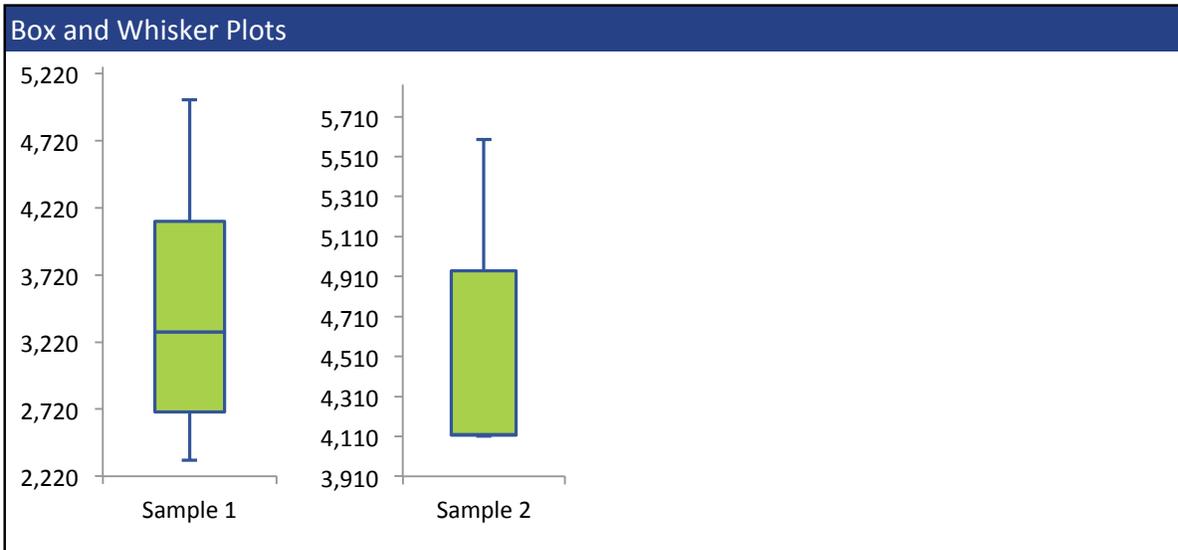
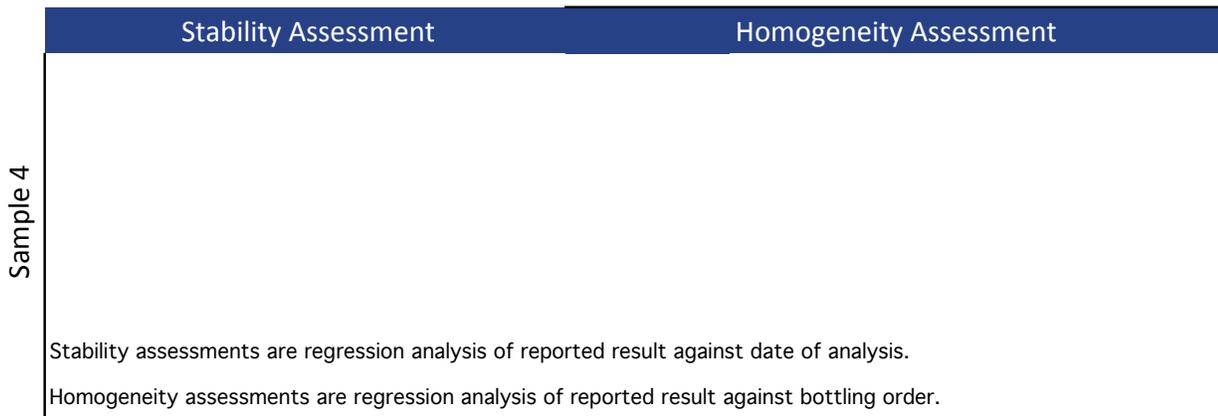
All summary stats and the plots below are based on the data excluding any flagged outliers



ISOBUTANOL (2-METHYL-1-PROPANOL)



ISOBUTANOL (2-METHYL-1-PROPANOL)



ISOBUTYL ACETATE

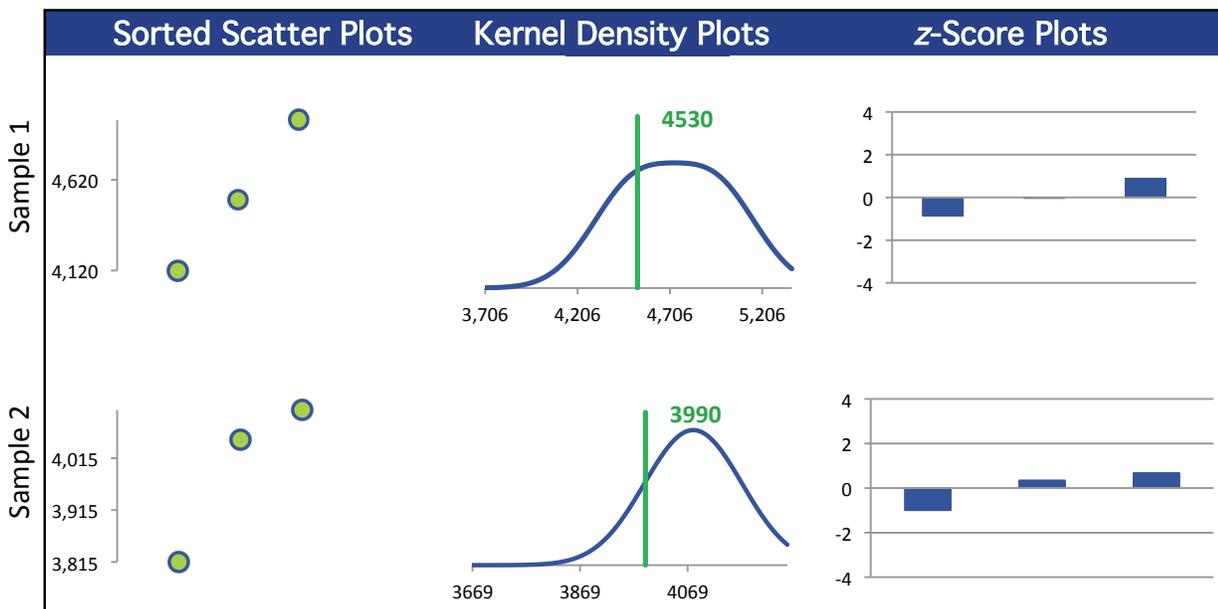
Summary Statistics

Statistic	Excluded		Excluded	
	C73-1	C73-2	C73-3	C73-4
N	3	3	0	0
Median $\mu\text{g/g}$	4510	4050		
Robust Mean $\mu\text{g/g}$	4530	3990		
U $\mu\text{g/g}$	340	127		
Robust Standard Deviation $\mu\text{g/g}$	471	176		
Regression Standard Deviation $\mu\text{g/g}$				
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) $\mu\text{g/g}$	471	176		
Outliers	0	0	0	0
$ z > 3.0$	0	0	0	0
$2 < z < 3$	0	0	0	0

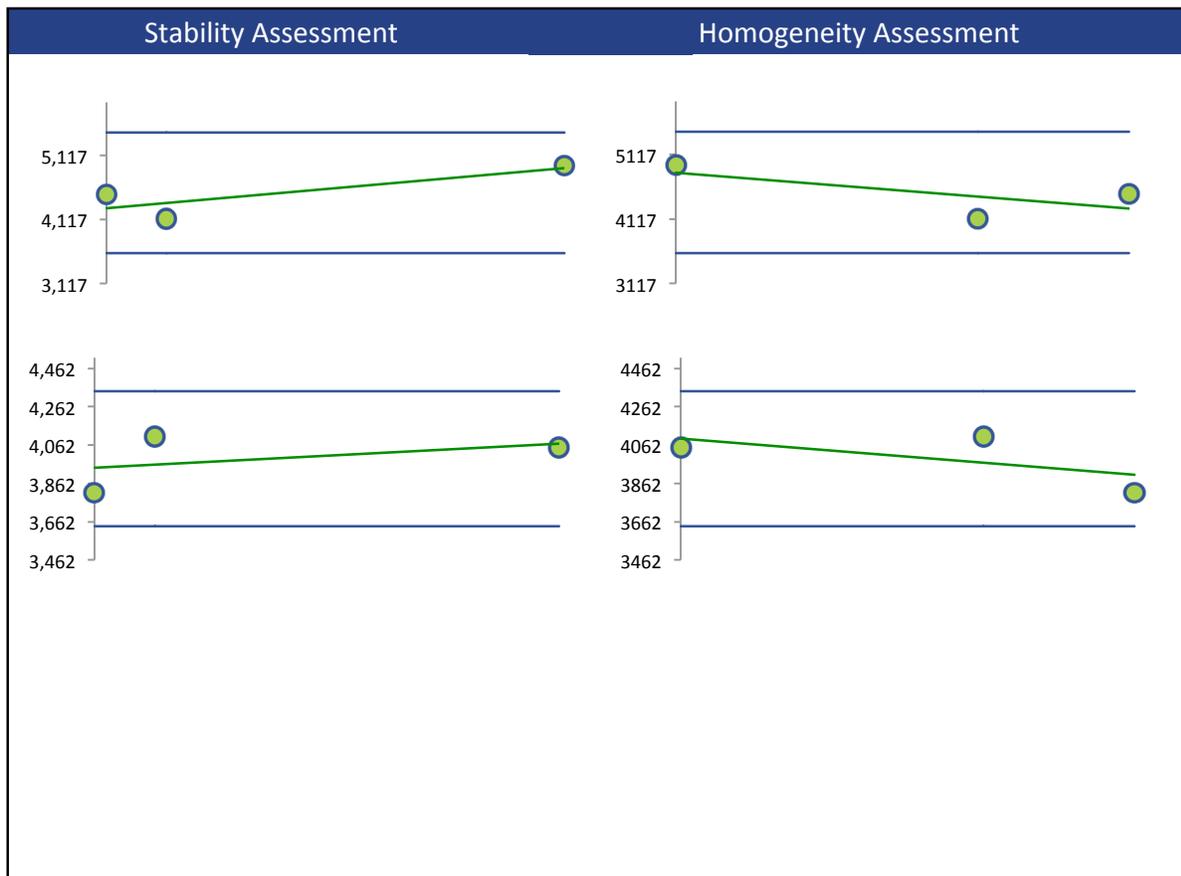
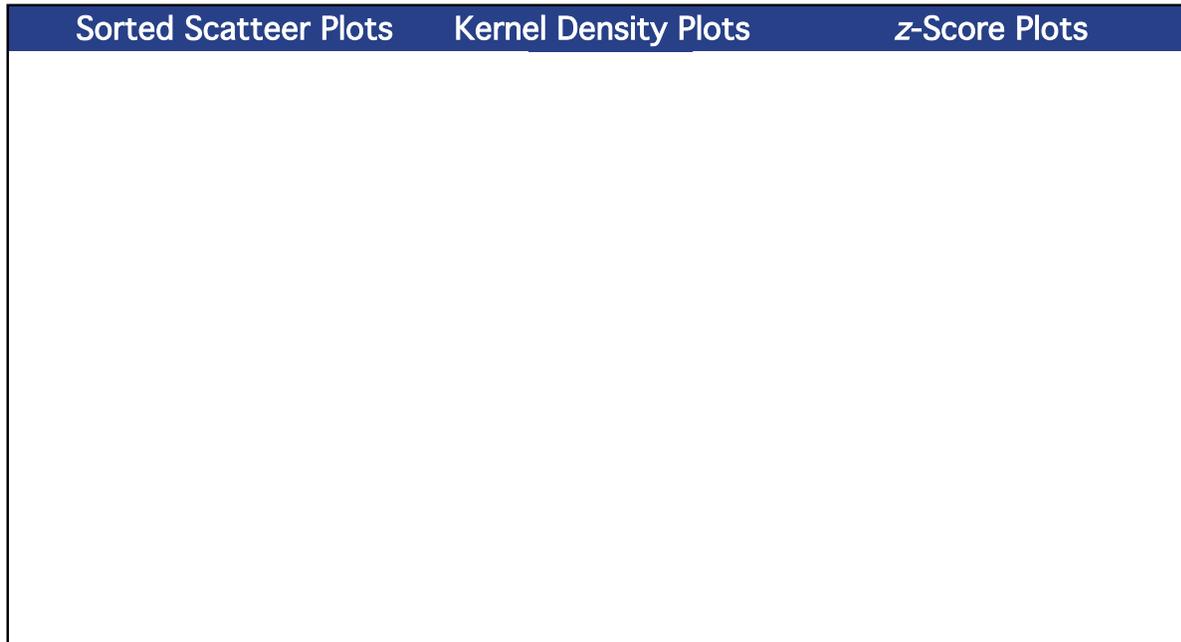
Methods Used

Method	C73-1	C73-2	C73-3	C73-4
GC/MS1 (Blue)	3	3	0	0

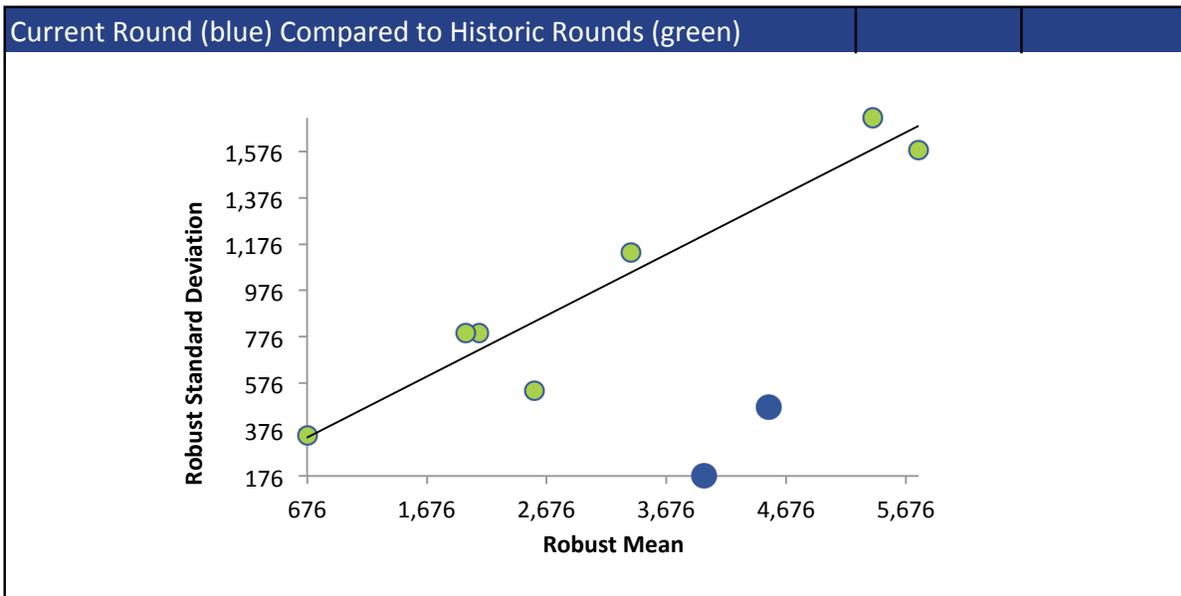
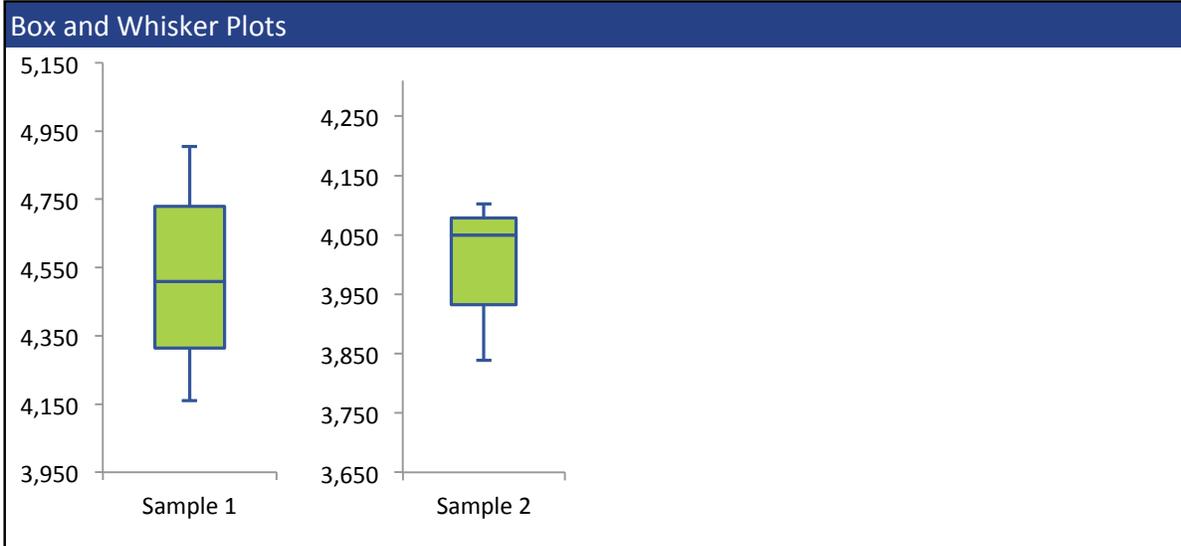
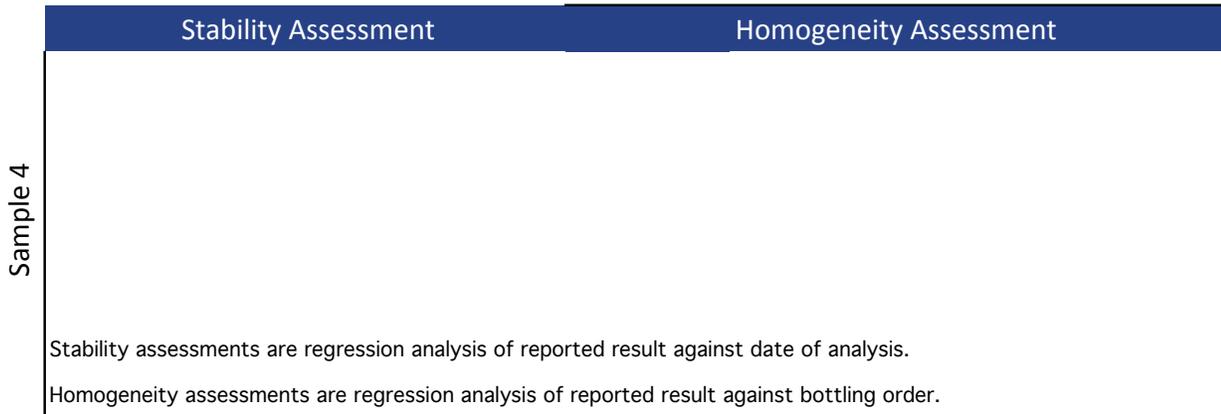
All summary stats and the plots below are based on the data excluding any flagged outliers



ISOBUTYL ACETATE



ISOBUTYL ACETATE



ISOPROPYL ACETATE

Summary Statistics

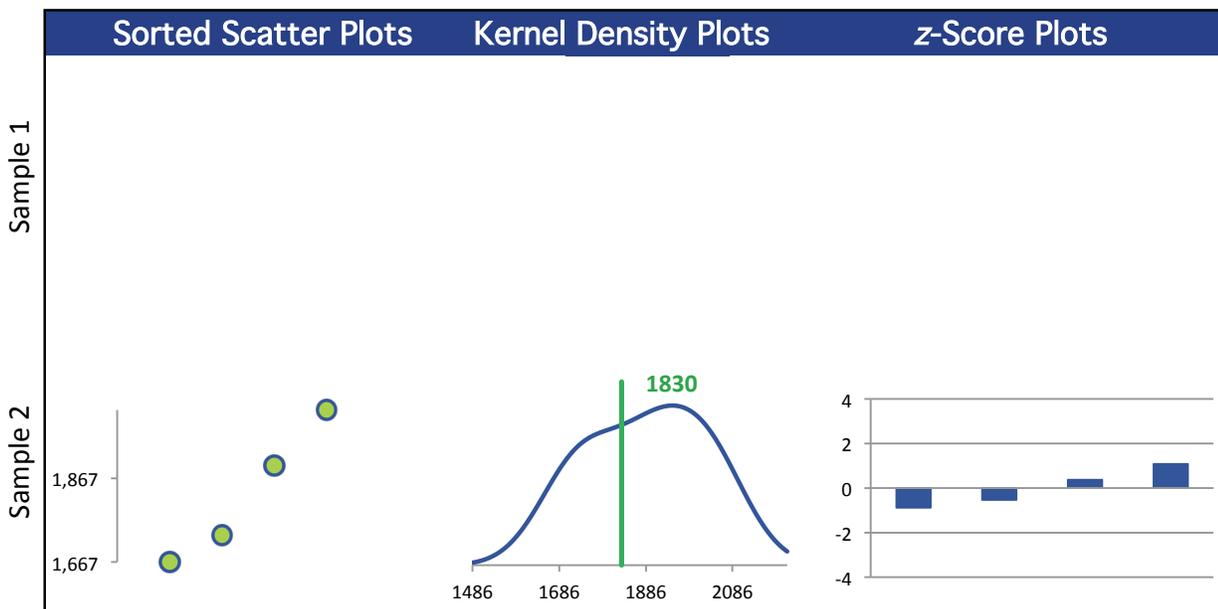
Not Spiked

Statistic	C73-1	C73-2	C73-3	C73-4
N	0	4	0	0
Median $\mu\text{g/g}$		1810		
Robust Mean $\mu\text{g/g}$		1830		
U $\mu\text{g/g}$		116		
Robust Standard Deviation $\mu\text{g/g}$		186		
Regression Standard Deviation $\mu\text{g/g}$				
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) $\mu\text{g/g}$		186		
Outliers	0	0	0	0
$ z > 3.0$	0	0	0	0
$2 < z < 3$	0	0	0	0

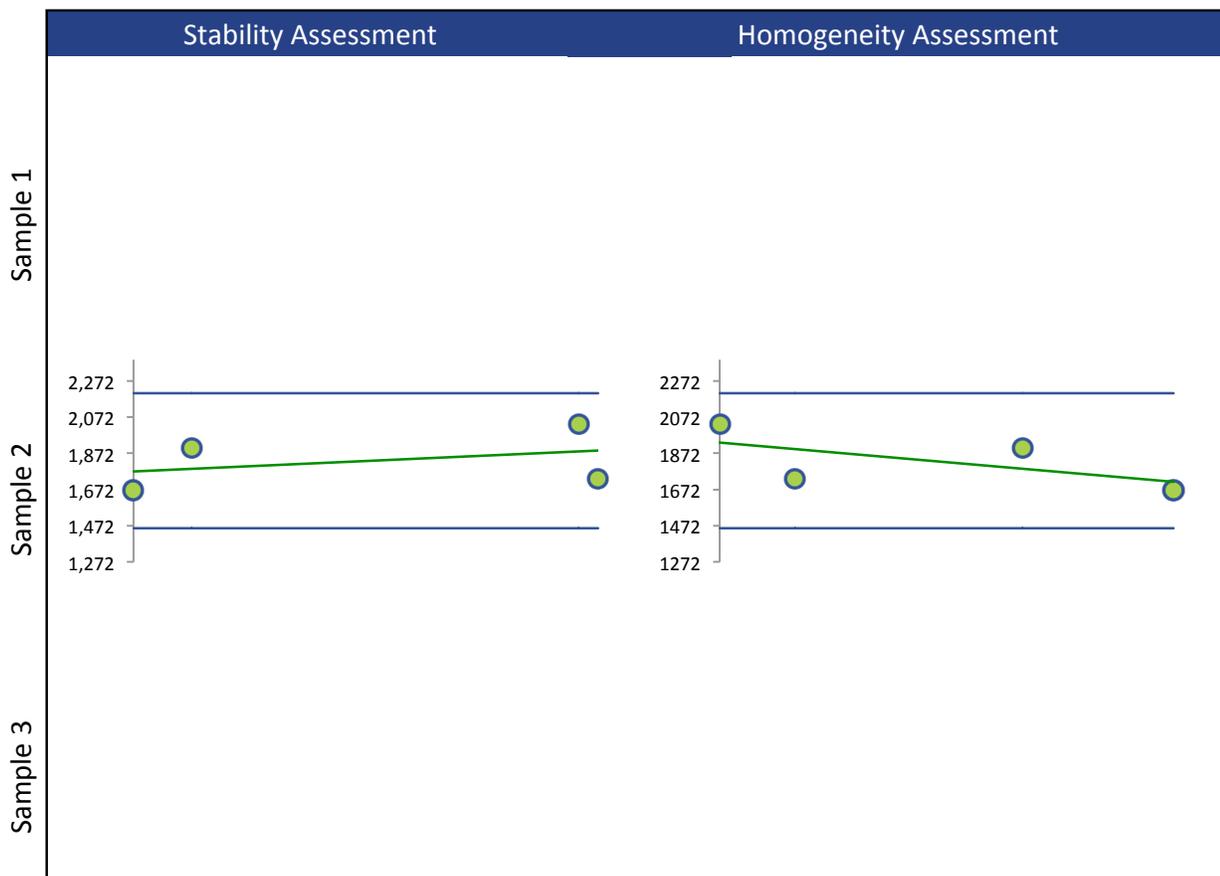
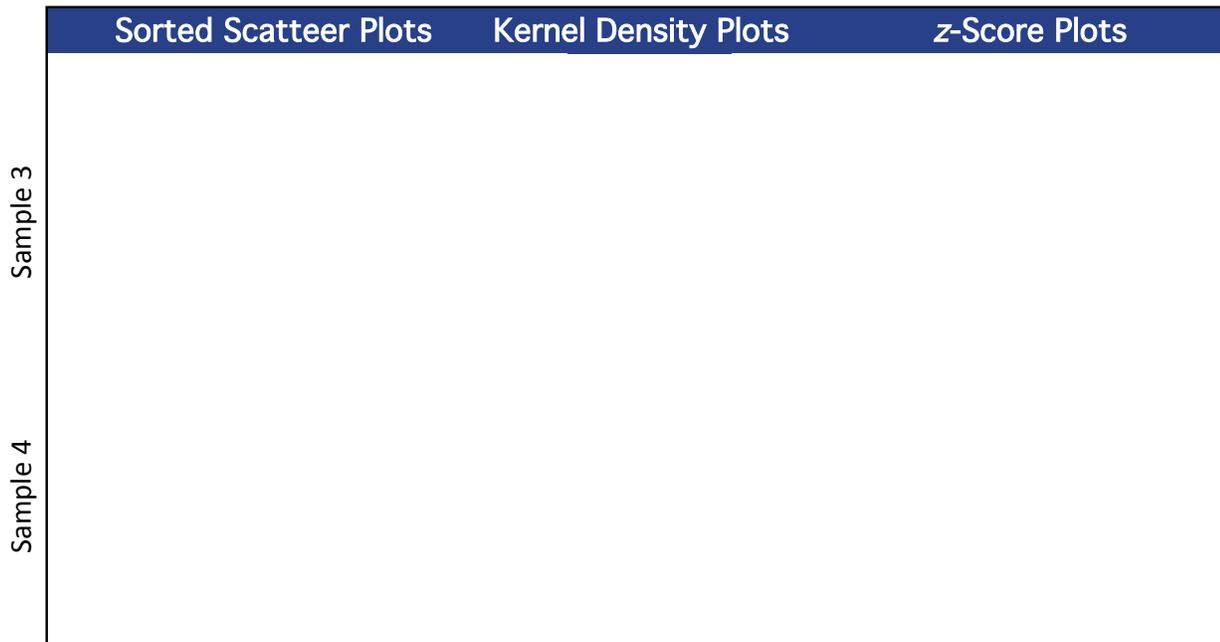
Methods Used

Method	C73-1	C73-2	C73-3	C73-4
GC/MS1 (Blue)	0	4	0	0

All summary stats and the plots below are based on the data excluding any flagged outliers

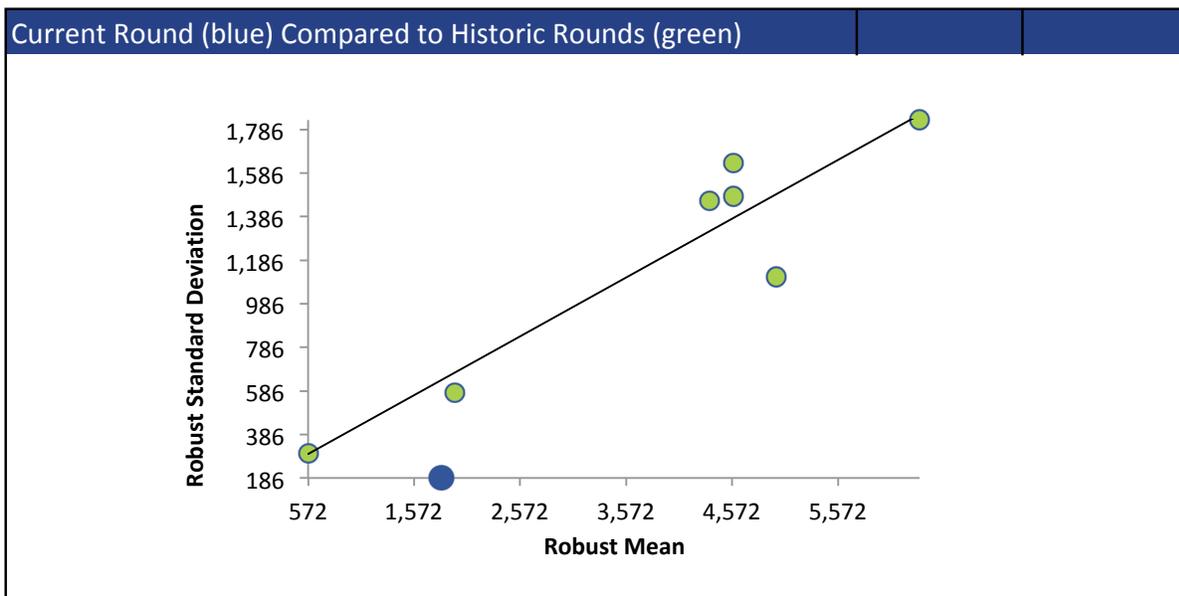
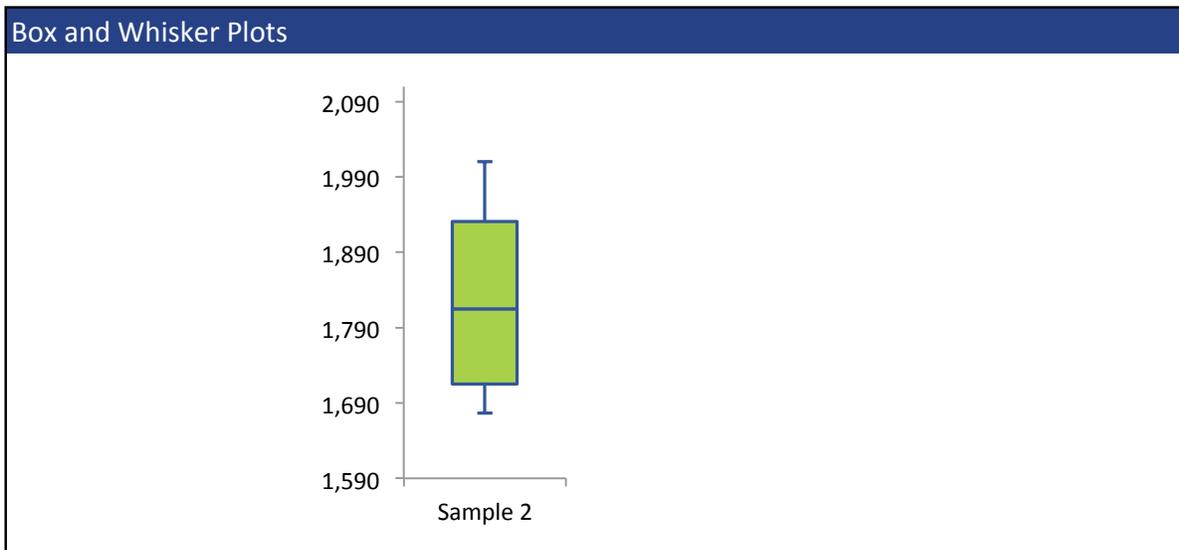


ISOPROPYL ACETATE



ISOPROPYL ACETATE

	Stability Assessment	Homogeneity Assessment
Sample 4	<p>Stability assessments are regression analysis of reported result against date of analysis.</p> <p>Homogeneity assessments are regression analysis of reported result against bottling order.</p>	



METHYL ACETATE

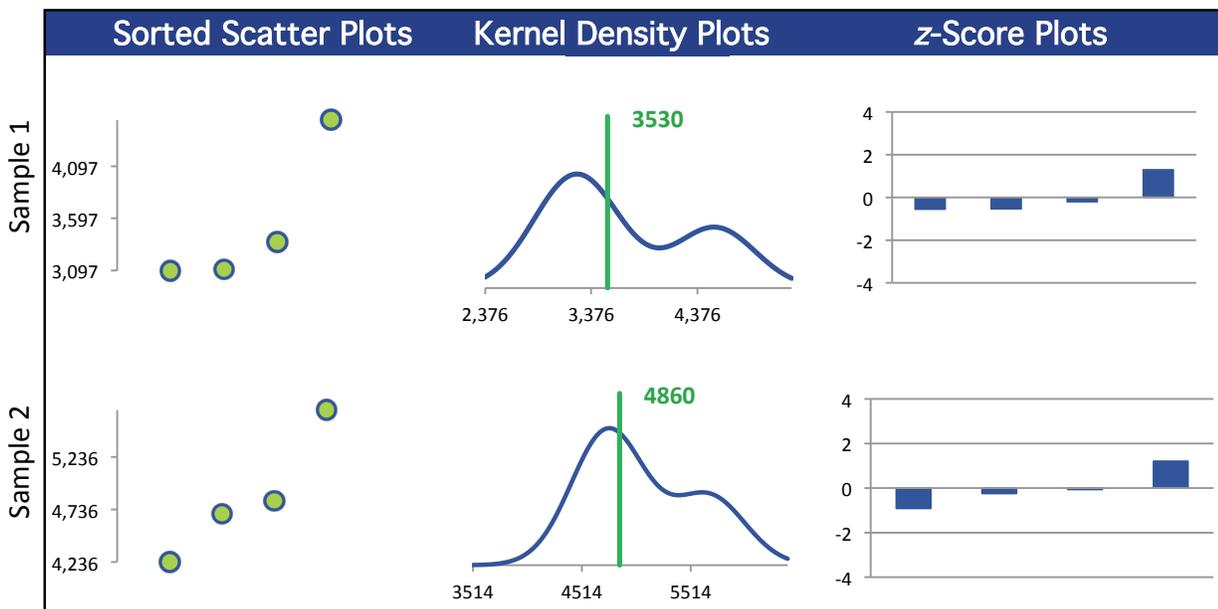
Summary Statistics

Statistic	C73-1	C73-2	C73-3	C73-4
N	4	4	0	0
Median $\mu\text{g/g}$	3240	4750		
Robust Mean $\mu\text{g/g}$	3530	4860		
U $\mu\text{g/g}$	486	428		
Robust Standard Deviation $\mu\text{g/g}$	778	684		
Regression Standard Deviation $\mu\text{g/g}$				
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) $\mu\text{g/g}$	778	684		
Outliers	0	0	0	0
$ z > 3.0$	0	0	0	0
$2 < z < 3$	0	0	0	0

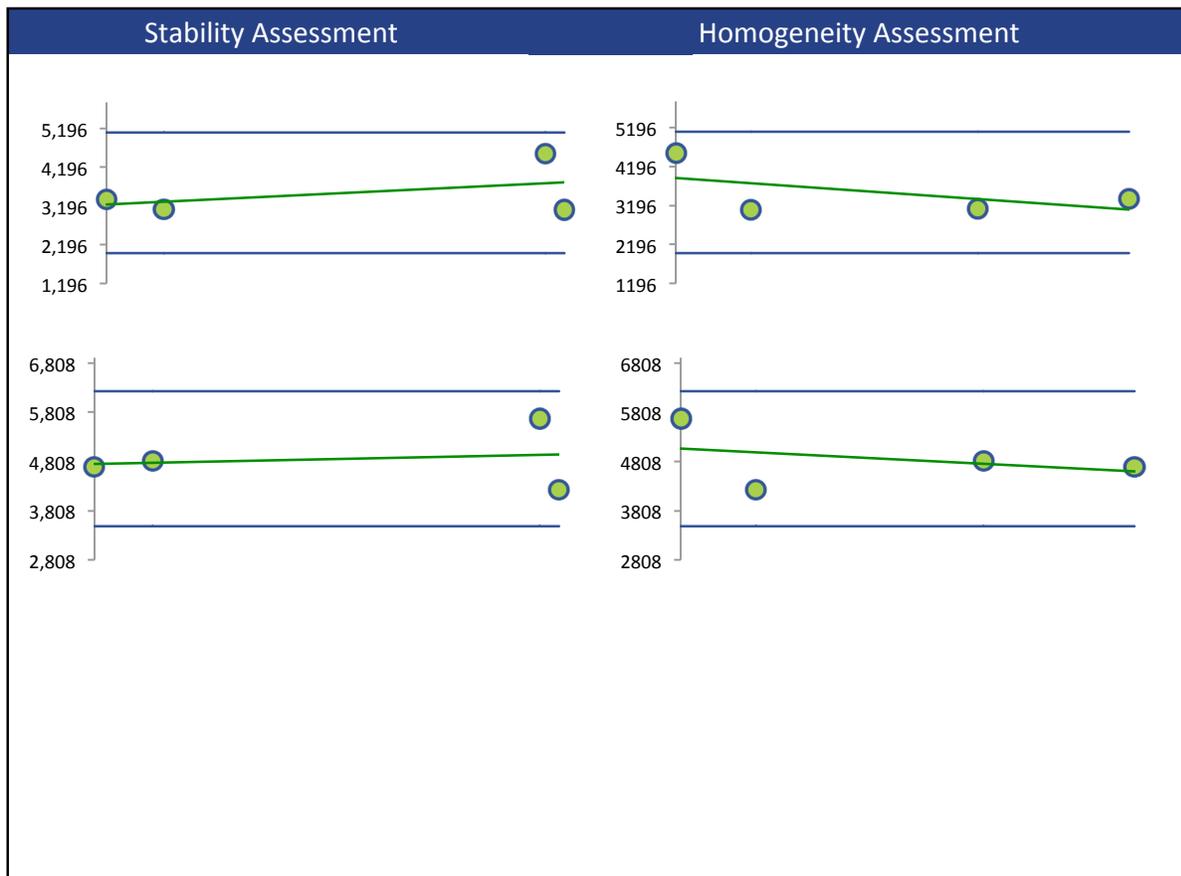
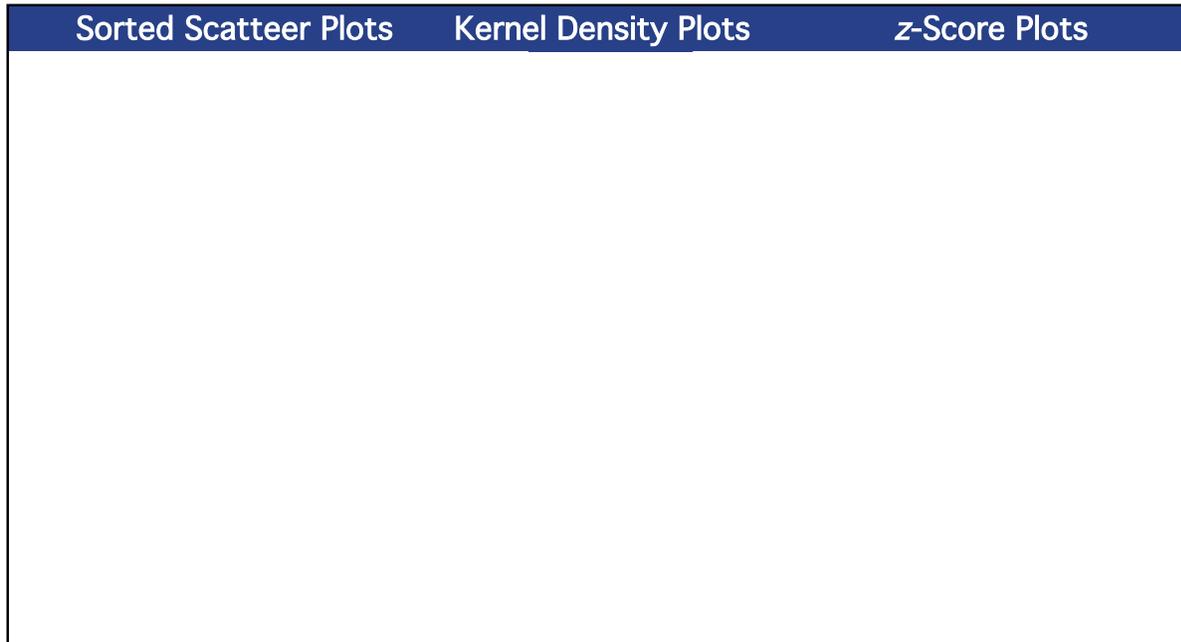
Methods Used

Method	C73-1	C73-2	C73-3	C73-4
GC/MS1 (Blue)	4	4	0	0

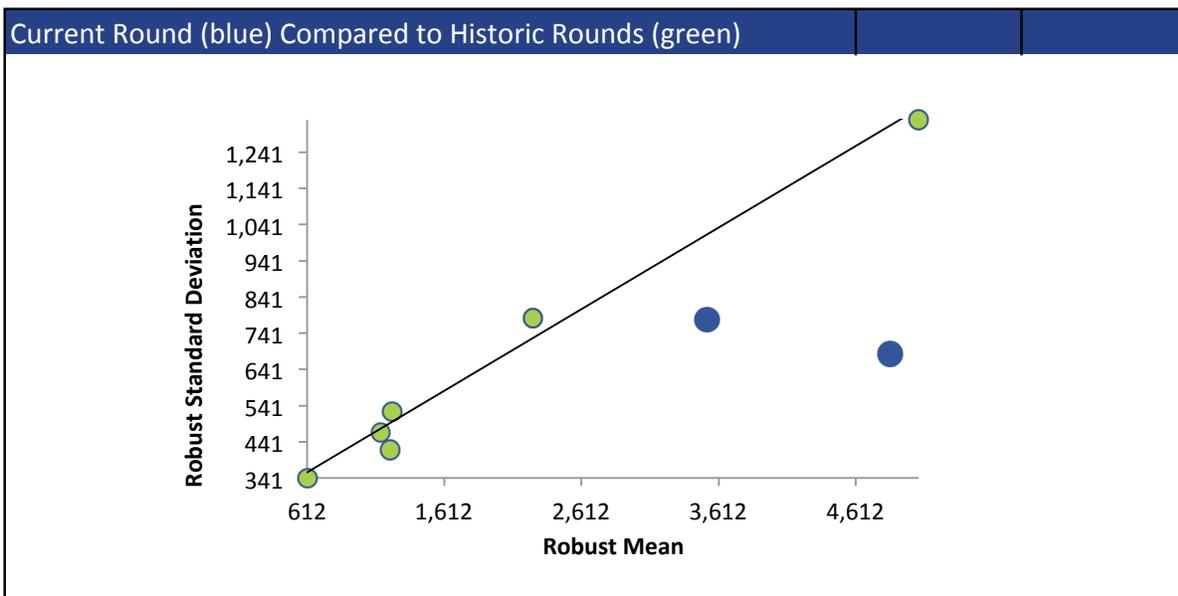
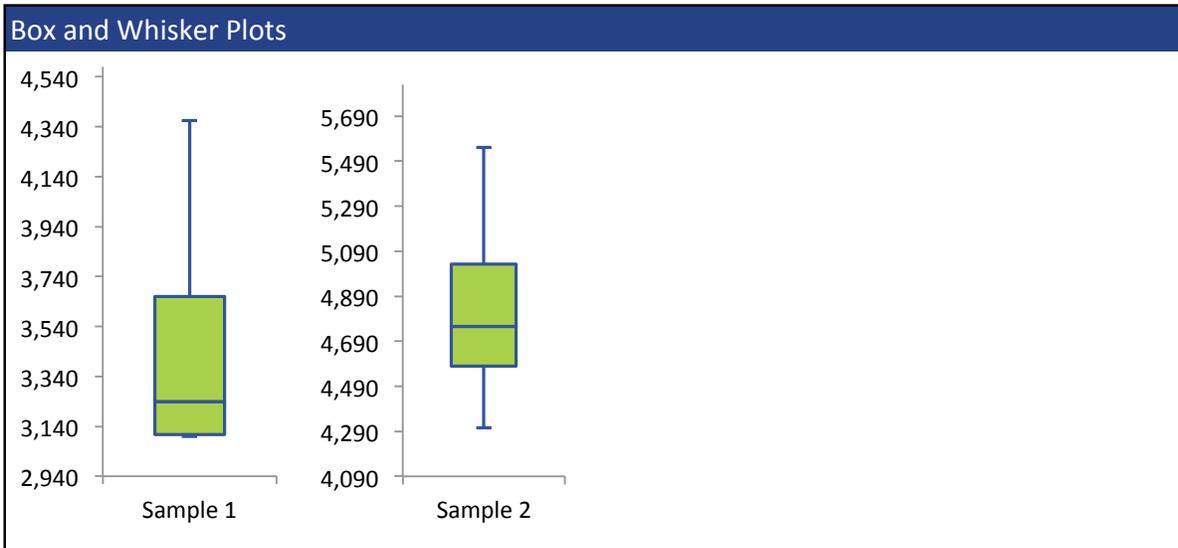
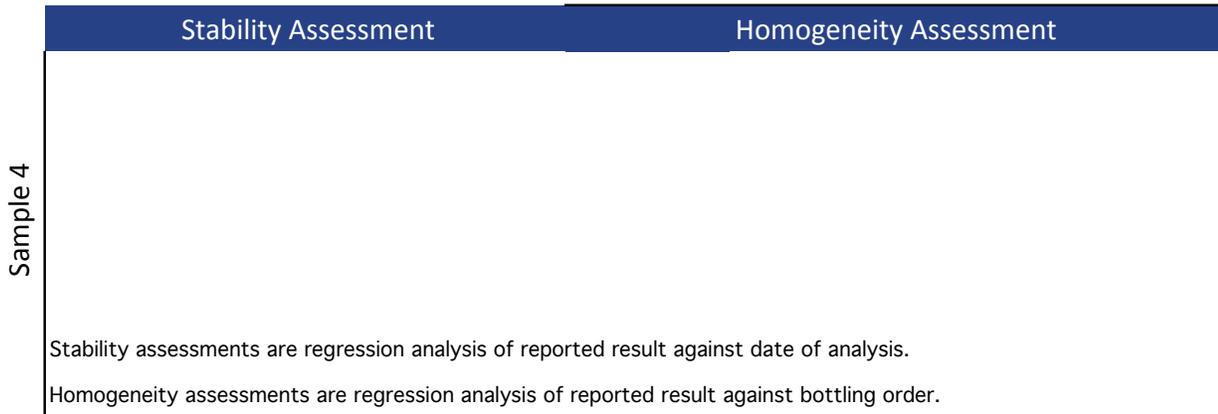
All summary stats and the plots below are based on the data excluding any flagged outliers



METHYL ACETATE



METHYL ACETATE



PENTANE

Summary Statistics

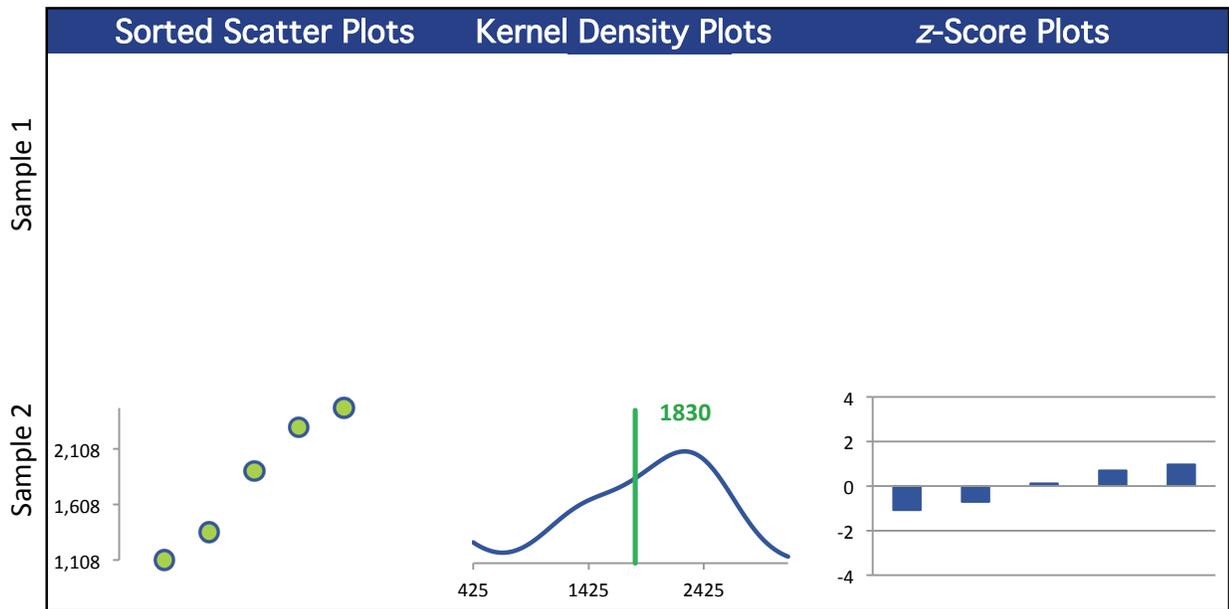
Not Spiked

Statistic	C73-1	C73-2	C73-3	C73-4
N	0	5	0	0
Median $\mu\text{g/g}$		1910		
Robust Mean $\mu\text{g/g}$		1830		
U $\mu\text{g/g}$		373		
Robust Standard Deviation $\mu\text{g/g}$		667		
Regression Standard Deviation $\mu\text{g/g}$				
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) $\mu\text{g/g}$		667		
Outliers	0	0	0	0
$ z > 3.0$	0	0	0	0
$2 < z < 3$	0	0	0	0

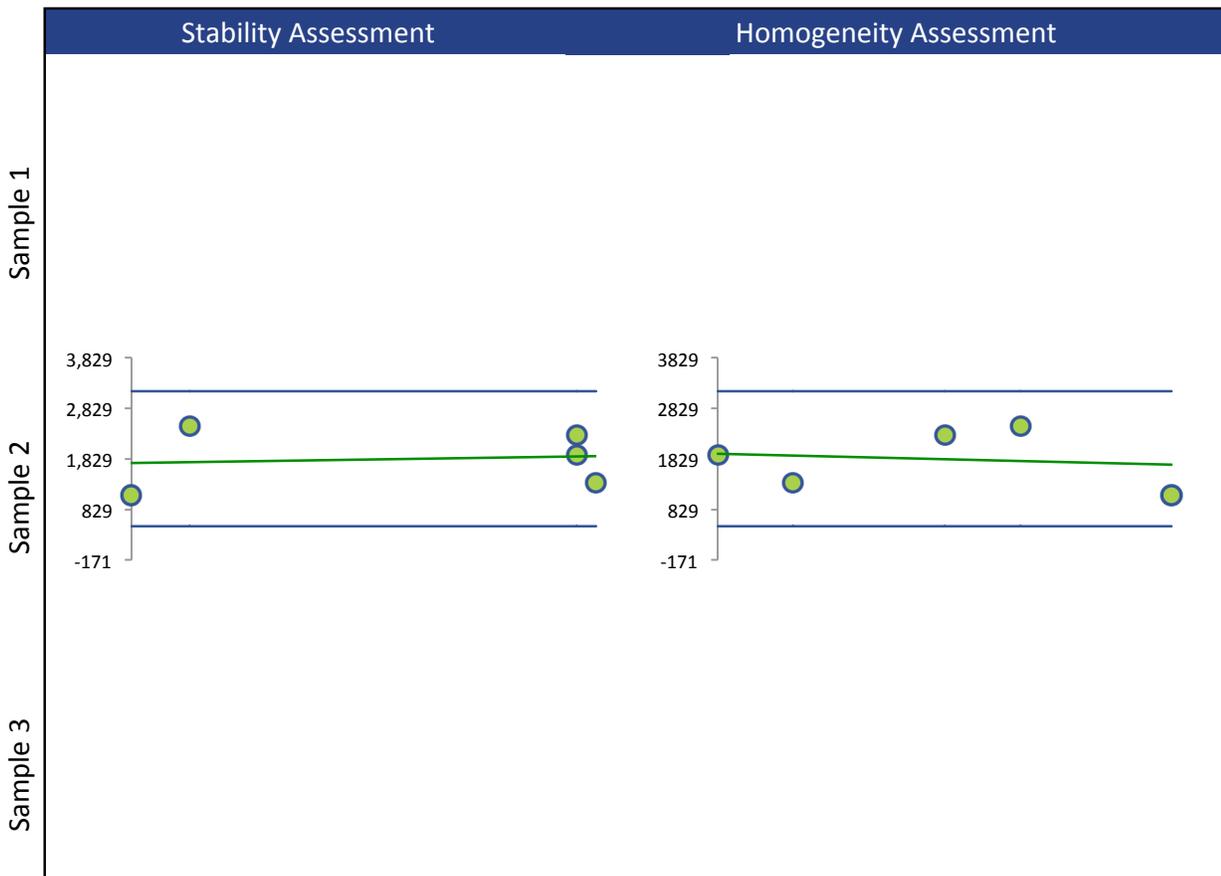
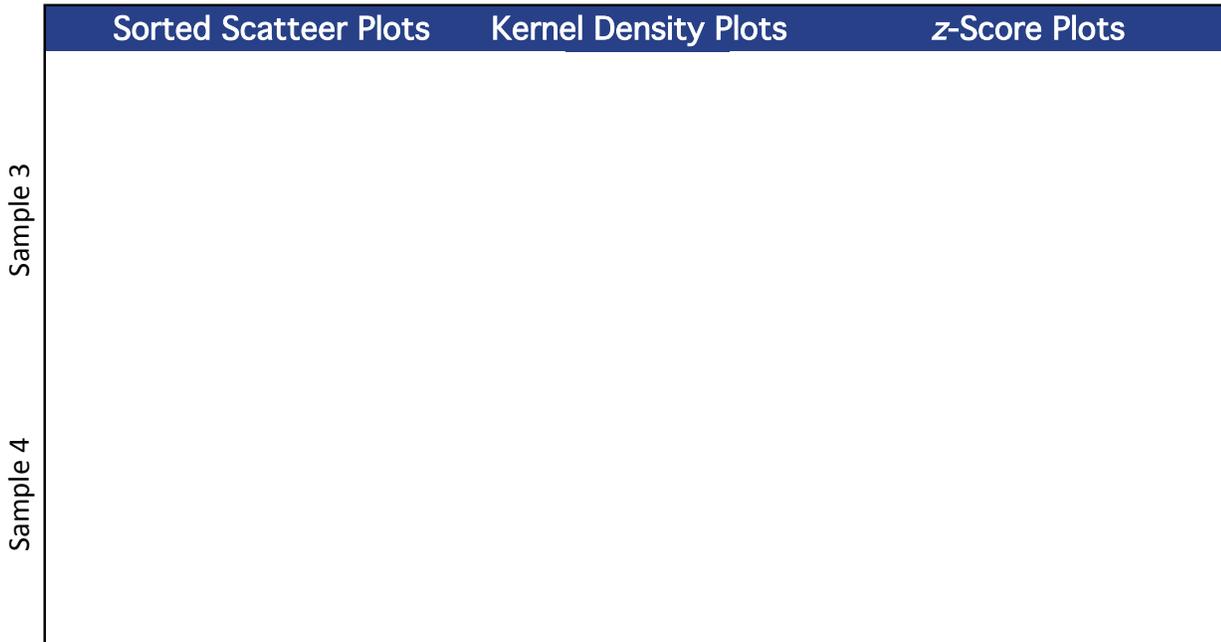
Methods Used

Method	C73-1	C73-2	C73-3	C73-4
GC/MS1 (Blue)	0	5	0	0

All summary stats and the plots below are based on the data excluding any flagged outliers

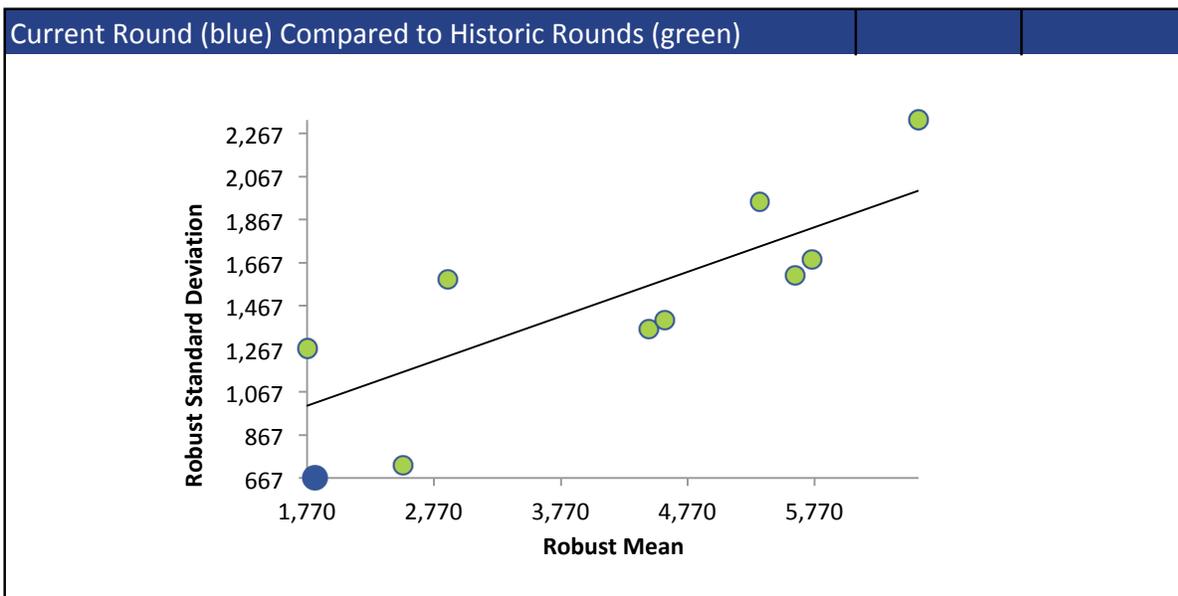
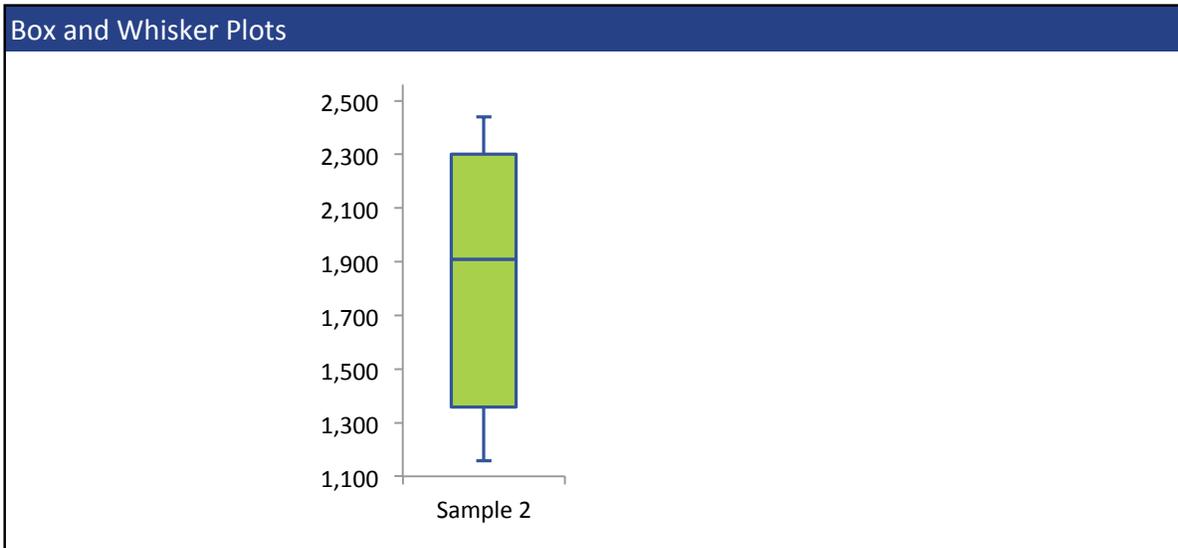


PENTANE



PENTANE

	Stability Assessment	Homogeneity Assessment
Sample 4	<p>Stability assessments are regression analysis of reported result against date of analysis.</p> <p>Homogeneity assessments are regression analysis of reported result against bottling order.</p>	



PROPANE

Summary Statistics

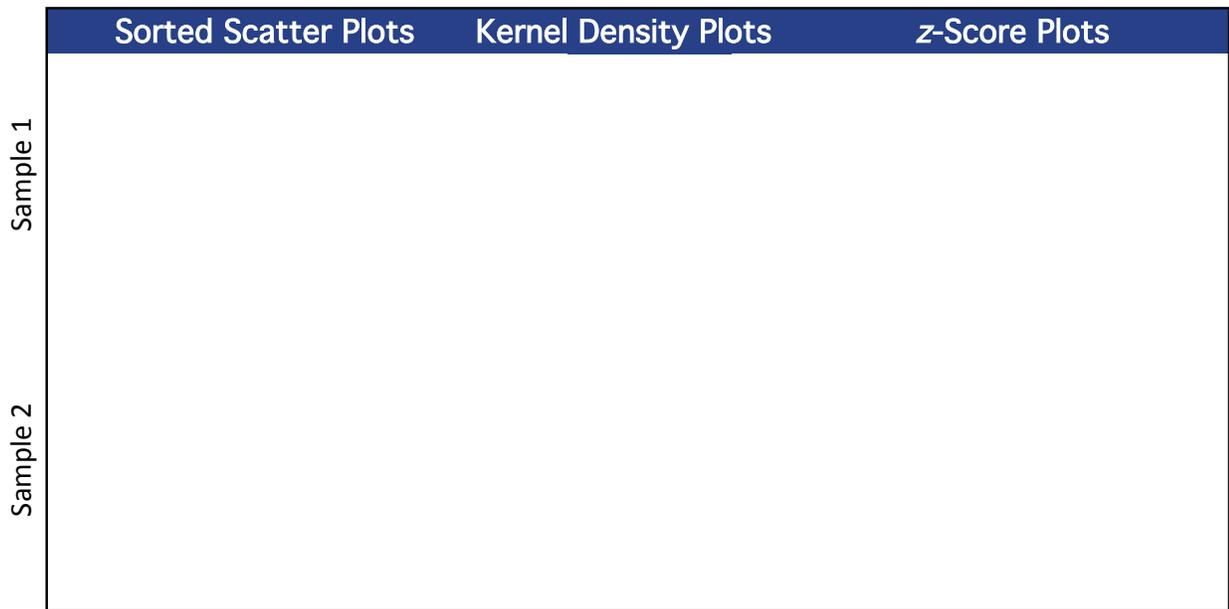
Excluded Excluded

Statistic	C73-1	C73-2	C73-3	C73-4
N	0	0	0	0
Median $\mu\text{g/g}$				
Robust Mean $\mu\text{g/g}$				
U $\mu\text{g/g}$				
Robust Standard Deviation $\mu\text{g/g}$				
Regression Standard Deviation $\mu\text{g/g}$				
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) $\mu\text{g/g}$				
Outliers	2	0	0	0
$ z > 3.0$	0	0	0	0
$2 < z < 3$	0	0	0	0

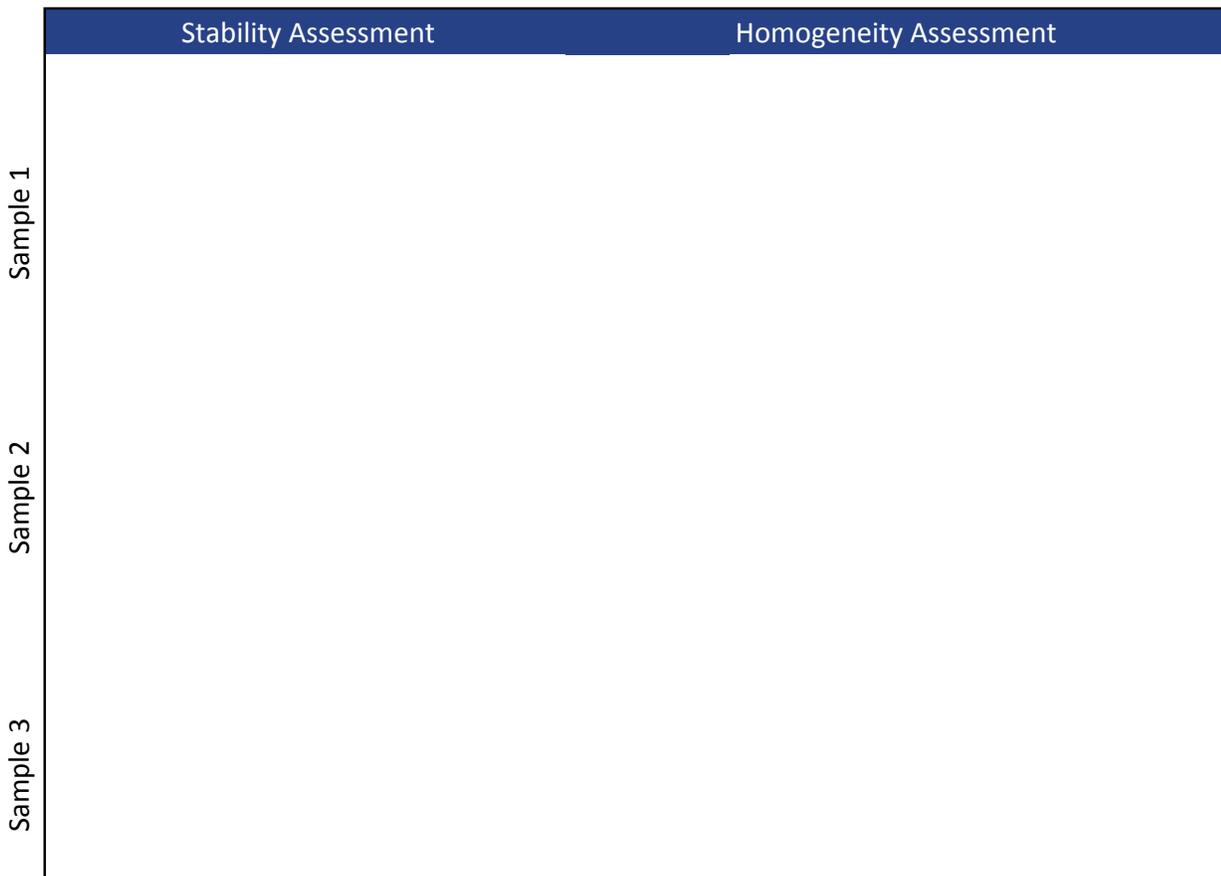
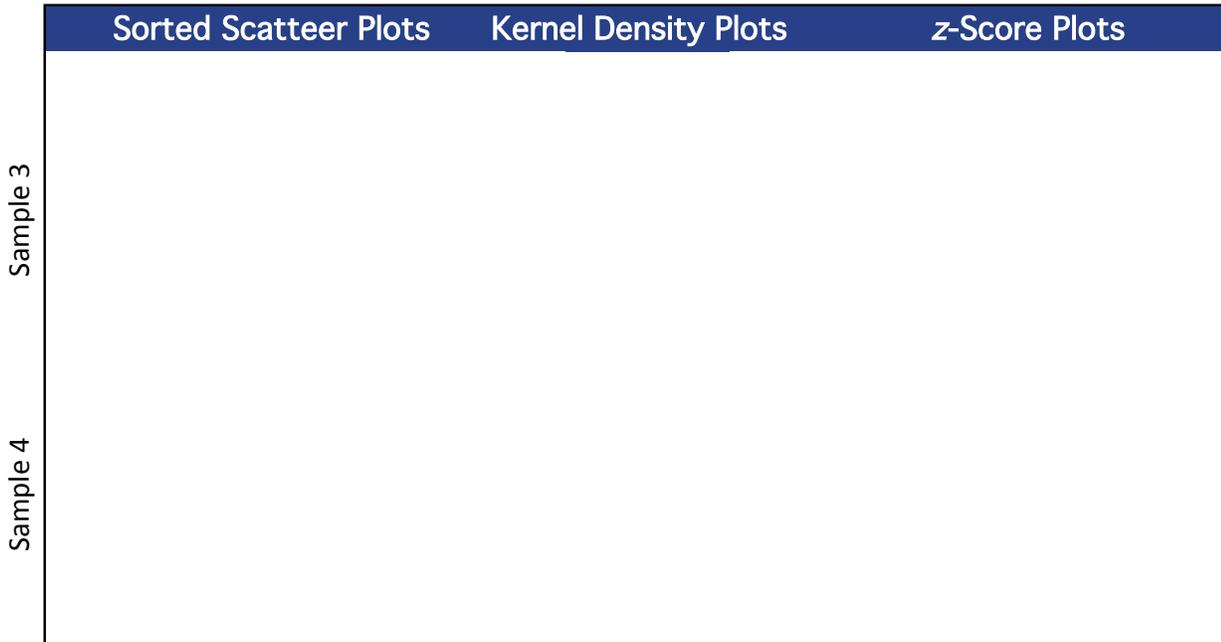
Methods Used

Method	C73-1	C73-2	C73-3	C73-4

All summary stats and the plots below are based on the data excluding any flagged outliers

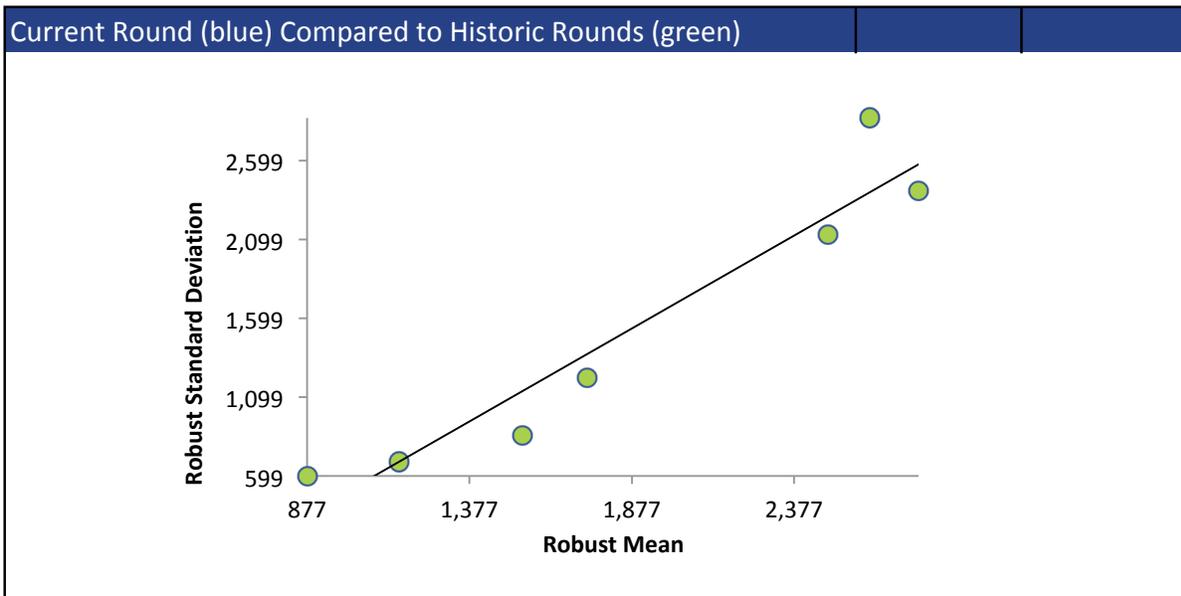


PROPANE



PROPANE

	Stability Assessment	Homogeneity Assessment
Sample 4	Stability assessments are regression analysis of reported result against date of analysis. Homogeneity assessments are regression analysis of reported result against bottling order.	



PROPYL ACETATE

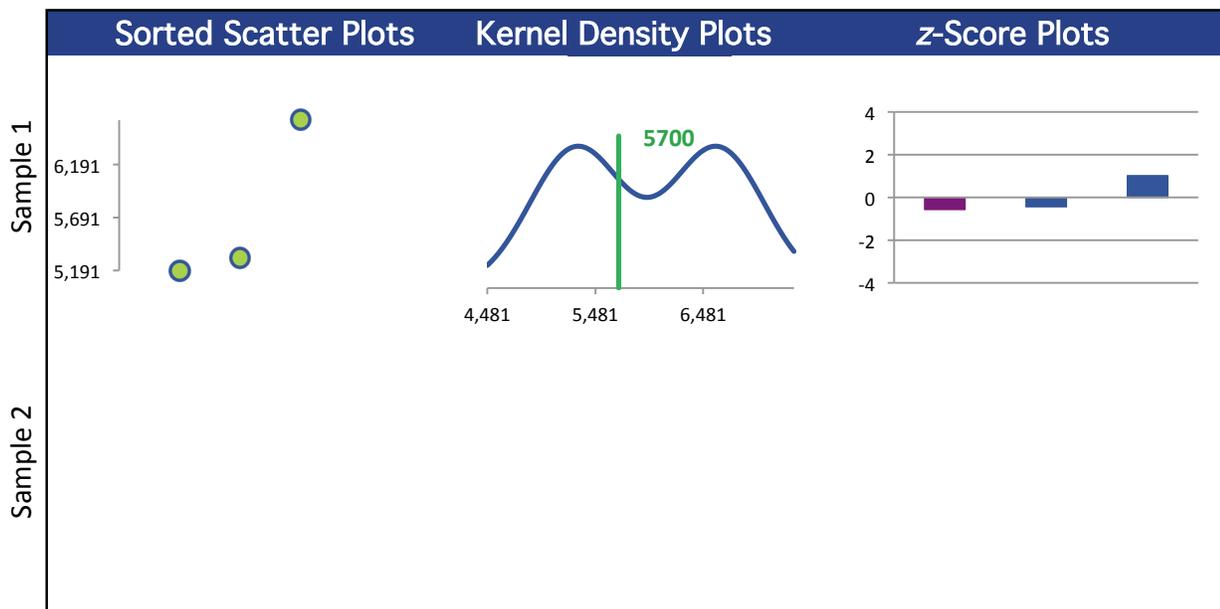
Summary Statistics

Statistic	Excluded		Excluded	
	C73-1	C73-2	C73-3	C73-4
N	3	0	0	0
Median $\mu\text{g/g}$	5310			
Robust Mean $\mu\text{g/g}$	5700			
U $\mu\text{g/g}$	644			
Robust Standard Deviation $\mu\text{g/g}$	893			
Regression Standard Deviation $\mu\text{g/g}$				
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) $\mu\text{g/g}$	893			
Outliers	0	0	0	0
$ z > 3.0$	0	0	0	0
$2 < z < 3$	0	0	0	0

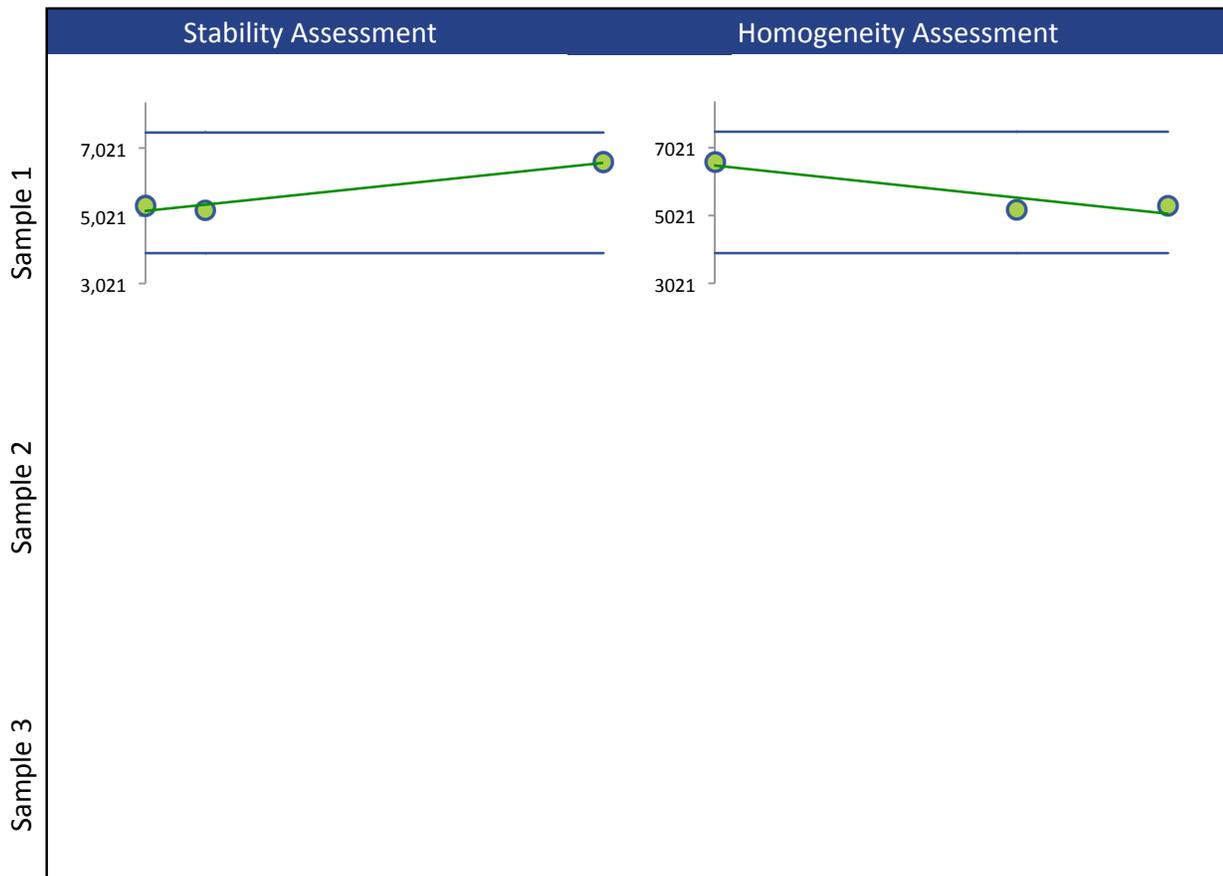
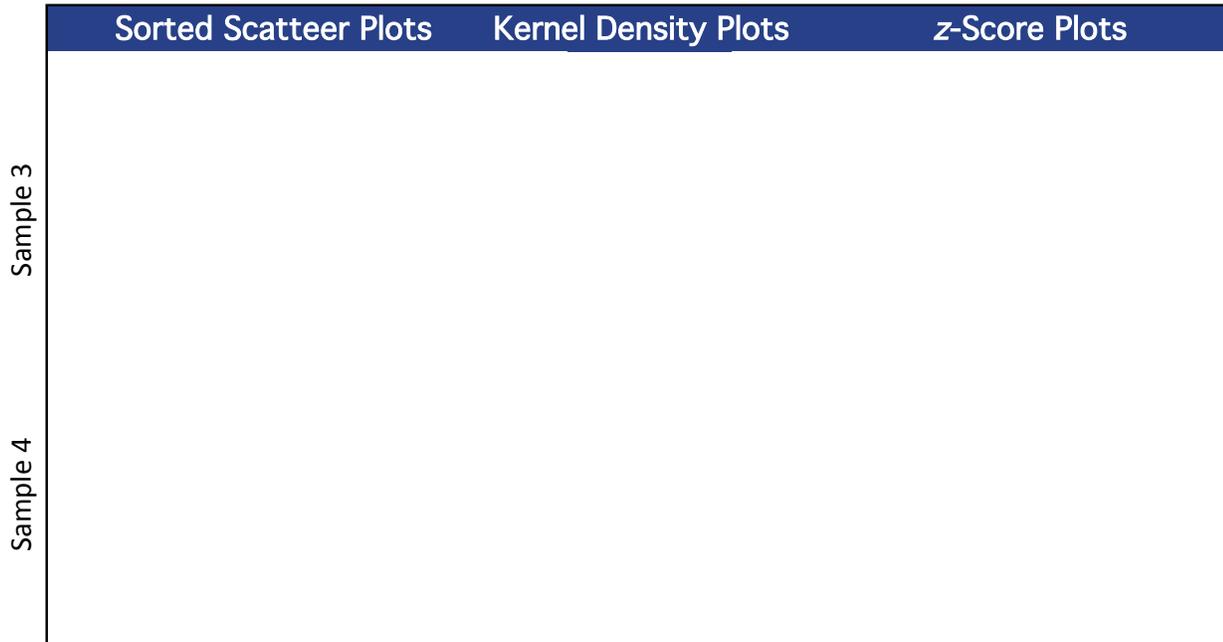
Methods Used

Method	C73-1	C73-2	C73-3	C73-4
GC/MS1 (Blue)	3	0	0	0

All summary stats and the plots below are based on the data excluding any flagged outliers

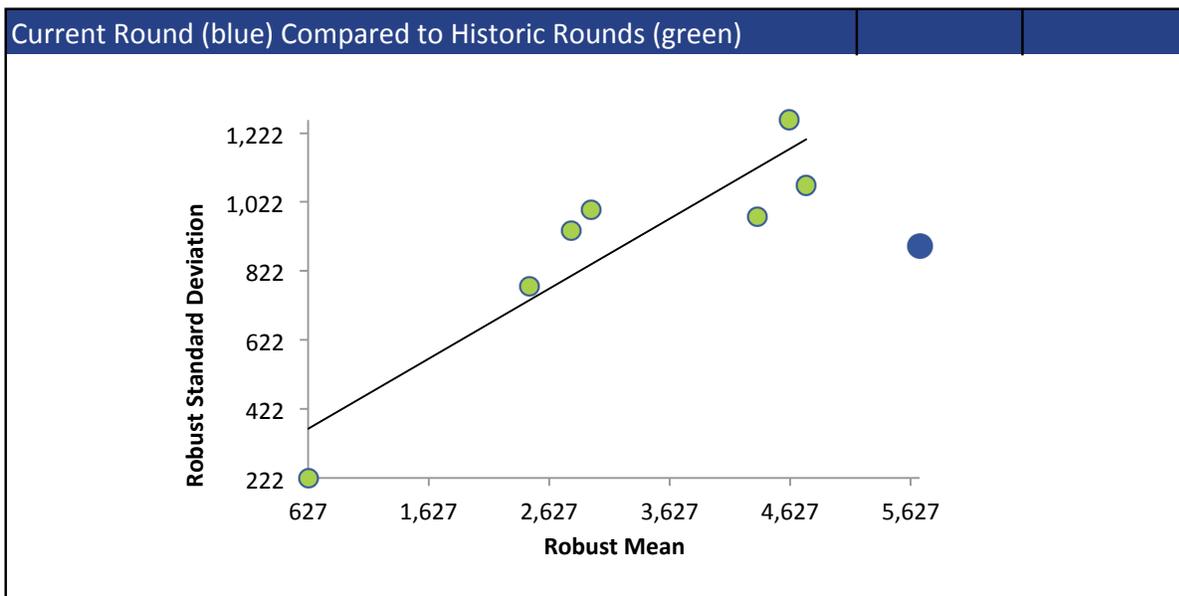


PROPYL ACETATE



PROPYL ACETATE

	Stability Assessment	Homogeneity Assessment
Sample 4	<p>Stability assessments are regression analysis of reported result against date of analysis.</p> <p>Homogeneity assessments are regression analysis of reported result against bottling order.</p>	



TRIETHYLAMINE

Summary Statistics

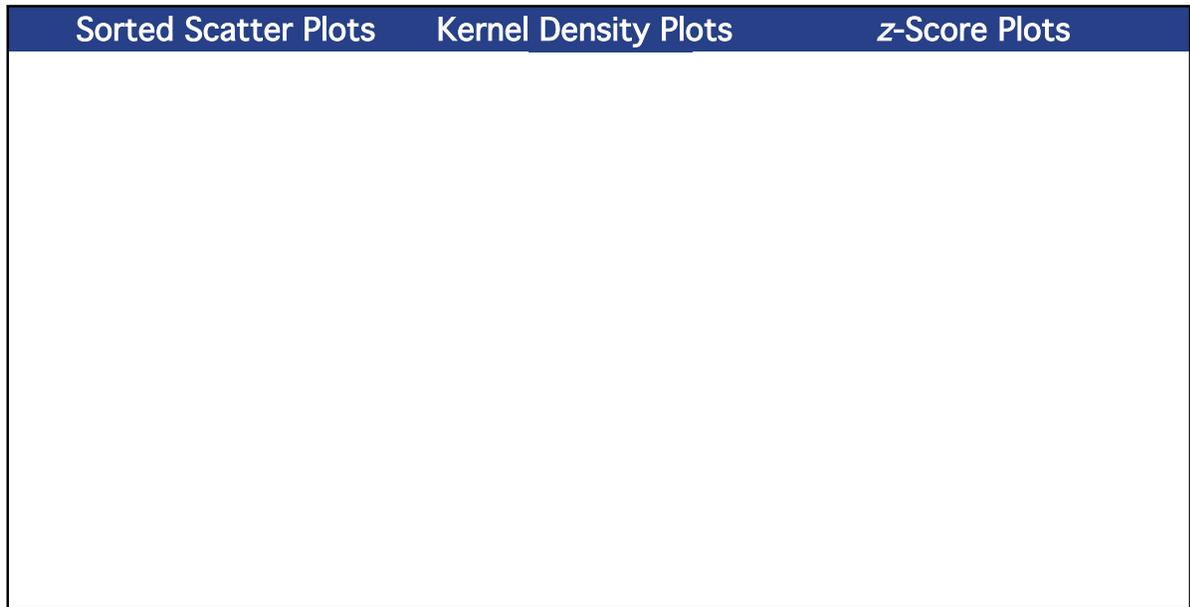
Excluded **Excluded**

Statistic	C73-1	C73-2	C73-3	C73-4
N	0	0	0	0
Median $\mu\text{g/g}$				
Robust Mean $\mu\text{g/g}$				
U $\mu\text{g/g}$				
Robust Standard Deviation $\mu\text{g/g}$				
Regression Standard Deviation $\mu\text{g/g}$				
Stability Flag				
Homogeneity Flag				
Standard Deviation Used (SDPA) $\mu\text{g/g}$				
Outliers	0	0	0	0
$ z > 3.0$	0	0	0	0
$2 < z < 3$	0	0	0	0

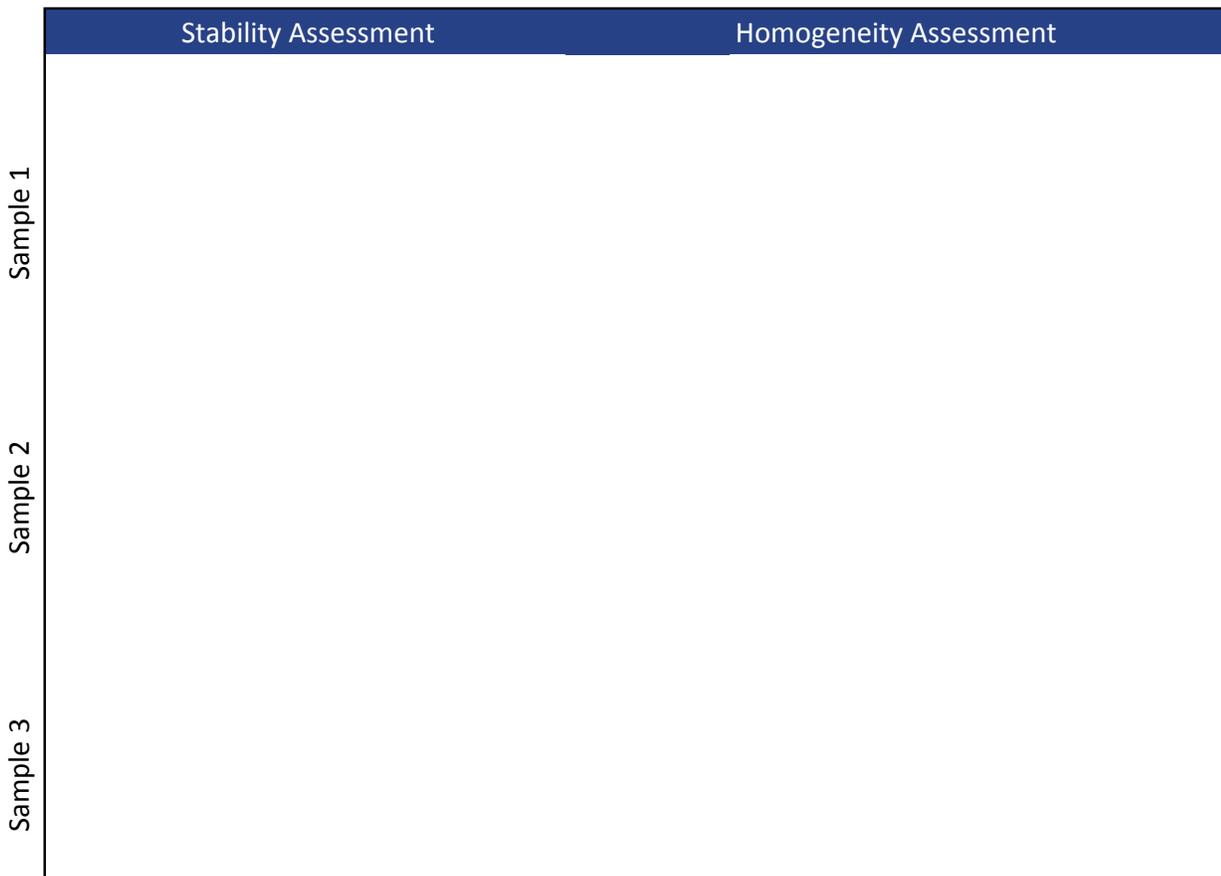
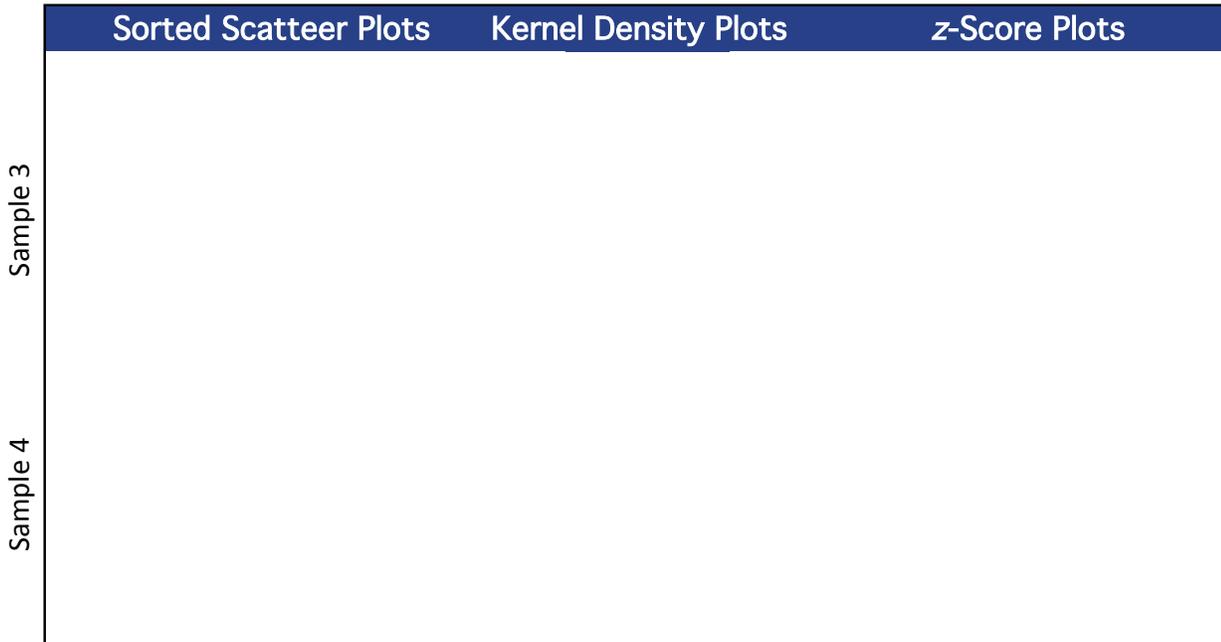
Methods Used

Method	C73-1	C73-2	C73-3	C73-4

All summary stats and the plots below are based on the data excluding any flagged outliers



TRIETHYLAMINE



TRIETHYLAMINE

	Stability Assessment	Homogeneity Assessment
Sample 4		

Stability assessments are regression analysis of reported result against date of analysis.
Homogeneity assessments are regression analysis of reported result against bottling order.

