Results of Proficiency Test
Fuel Oil
January 2013

April 2013

CONTENTS

Appendices:

1   INTRODUCTION

Since 1994 the Institute for Interlaboratory Studies organizes a proficiency test for Fuel Oil every year. In the annual proficiency testing program of 2012/2013, it was decided to continue the round robin for the analysis of Fuel Oil. In this interlaboratory study 209 laboratories in 79 different countries have participated. See appendix 3 for the number of participants per country. In this report, the results of the 2013 interlaboratory study on Fuel Oil are presented and discussed.

2   SET-UP

The Institute for Interlaboratory Studies (iis) in Spijkenisse, the Netherlands, was the organiser of this proficiency test. Sample analyses for fit-for-use and homogeneity testing were subcontracted to an accredited laboratory. It was decided to use one sample of Fuel Oil (labelled #13001), and/or one sample (labelled #13002) specifically for metals. Participants were requested to report rounded and unrounded results. The unrounded results were preferably used for statistical evaluation.

2.1   ACCREDITATION

The Institute for Interlaboratory Studies in Spijkenisse, the Netherlands, is accredited in agreement with ISO/IEC 17043:2010 (R007), since January 2000, by the Dutch Accreditation Council (Raad voor Accreditatie). This ensures strict adherence to protocols for sample preparation and statistical evaluation and 100% confidentially of participant's data. Feedback from the participants on the reported data is encouraged and customer's satisfaction is measured on regular basis by sending out questionnaires.

2.2   PROTOCOL

The protocol followed in the organisation was the one as described for proficiency testing in the report 'iis Interlaboratory Studies: Protocol for the Organisation, Statistics and Evaluation' of January 2010 (iis-protocol, version 3.2). This protocol can be downloaded via the FAQ page of the iis website http://www.iisnl.com.

2.3   CONFIDENTIALITY STATEMENT

All data presented in this report must be regarded as confidential and for use by the participating companies only. Disclosure of the information in this report is only allowed by means of the entire report. Use of the contents of this report for third parties is only allowed by written permission of the Institute for Interlaboratory Studies. Disclosure of the identity of one or more of the participating companies will be done only after receipt of a written agreement of the companies involved.

2.4 SAMPLES

In this proficiency test two different samples were prepared, a regular Fuel Oil and a Fuel Oil positive on metals.

From 400 litre Fuel Oil, purchased from a supplier in the United Kingdom, 357 amber glass bottles of 1L were filled after heating to 60°C and homogenisation.

The homogeneity of the subsamples #13001 was checked by determination of density @15°C in accordance with ISO12185:96 on 16 stratified randomly selected samples. The lowest density test result was 1000.4 kg/m^3 and the highest density test result was 1000.6 kg/m^3.

The repeatability of the density test results was calculated and compared with 0.3 times the corresponding target reproducibility in agreement with the procedure of ISO 13528, Annex B2 in the next table:

	Density @15°C in kg/m^3
r (Observed)	0.2
Reference method	ISO12185:96
0.3 * R (ref. method)	0.5

Table 1: repeatabilities of test results of subsamples #13001

The calculated repeatability for Density was in agreement with 0.3 times the corresponding target reproducibility of the respective reference method. Therefore, homogeneity of the subsamples of #13001 was assumed.

For sample #13002, 150 plastic PE bottles of 100 ml (for approx. 80%) were filled and labelled #13002. The homogeneity of the subsamples was checked by determination of Aluminium in accordance with IP501:05 on 7 stratified randomly selected samples.

	Aluminium in mg/kg
Sample #13002-1	18
Sample #13002-2	17
Sample #13002-3	17
Sample #13002-4	17
Sample #13002-5	17
Sample #13002-6	17
Sample #13002-7	17

Table 2: measured Aluminum for homogeneity of subsamples #13002.

From the test results of table 2, the repeatability was calculated and compared with 0.3 times the corresponding reproducibilities in agreement with the procedure of ISO 13528, Annex B2 in the next table:

	Aluminium in mg/kg
r (Observed)	1.1
Reference method	IP501:05
0.3 * R (ref. method)	1.7

Table 3: repeatability of Aluminium results of subsamples #13002

The calculated repeatability for Aluminium is in agreement with 0.3 times the corresponding target reproducibility of IP501:05. Therefore, homogeneity of the subsamples of #13002 was assumed.

Depending on the registration of the participant one bottle of 1L, labelled #13001 and/or one bottle of 100ml, labelled #13002 were sent to each of the participating laboratories on January 16, 2013.

2.5 STABILITY OF THE SAMPLES

The stability of Fuel Oil, packed in the amber glass and plastic bottles was checked. The material has been found sufficiently stable for the period of the proficiency test.

2.6 ANALYSES

The participants were asked to determine on sample #13001: Acid Number, API gravity, Ash Content, Asphaltenes, Calculated Carbon Aromaticity Index, Conradson Carbon Residue, Density @15°C, Flash Point PMcc, Heat of Combustion (Gross and Net), Kinematic Viscosity (@ 50°C and 100°C), Viscosity Stabinger (@ 50ºC and 100ºC), Micro Carbon Residue, Pour Point (Lower, Upper and Automated), Sediments by Extraction, Total Sediment (Potential and Accelerated), Total Sulphur, Nitrogen, Water by Distillation, Water and Sediment, Distillation (IBP, 5%-50% and FBP) and Total Carbon, Hydrogen and Nitrogen (CHN-analyzer).

On sample #13002 was requested to analyze: Aluminium, Silicon, Sum Aluminium and Silicon, Nickel, Potassium, Sodium and Vanadium content.
To get comparable results a detailed report form, on which the units were prescribed as well as some of the required standards and a letter of instructions were prepared and made available for download on the iis website www.iisnl.com.
A SDS and a form to confirm receipt of the samples were added to the sample package

3 RESULTS

During four weeks after sample despatch, the results of the individual laboratories were received. The original data are tabulated per sample in the appendix 1 of this report. The laboratories are represented by their code numbers.

Directly after deadline, a reminder fax was sent to those laboratories that did not report results at that moment. Shortly after the deadline, the available results were screened for suspect data. A result was called suspect in case the Huber Elimination Rule (a robust outlier test) found it to be an outlier. The laboratories that produced these suspect data were asked to check the results. Additional or corrected results are used for the data analysis and the original results are placed under 'Remarks' in the result tables in appendix 1.

3.1 STATISTICS

Statistical calculations were performed as described in the report 'iis Interlaboratory Studies: Protocol for the Organisation, Statistics and Evaluation' of January 2010 (iis-protocol, version 3.2).

For the statistical evaluation the *unrounded* (when available) figures were used instead of the rounded results. Results reported as '<…' or '>…' were not used in the statistical evaluation.

First the normality of the distribution of the various data sets per determination was checked by means of the Lilliefors-test. After removal of outliers this check was repeated. In case a data set does not have a normal distribution, the (results of the) statistical evaluation should be used with due care.

In accordance to ISO 5725 (1986 and 1994) the original results per determination were submitted subsequently to Dixon and Grubbs outlier tests. Outliers are marked by D(0.01) for the Dixon test and by G(0.01) or DG(0.01) for the Grubbs test. Stragglers are marked by D(0.05) for the Dixon test and by G(0.05) or DG(0.05) for the Grubbs test. Both outliers and stragglers were not included in the calculations of the averages and the standard deviations.

For each assigned value, the uncertainty was determined in accordance with ISO13528. Subsequently the calculated uncertainty was evaluated against the respective requirement based on the target reproducibility in accordance with ISO13528. When the uncertainty passed the evaluation, no remarks are made in the report. However, when the uncertainty failed the evaluation it is mentioned in the report and it will have consequences for the evaluation of the test results.

Finally, the reproducibilities were calculated from the standard deviations by multiplying these with a factor of 2.8.

3.2 GRAPHICS

In order to visualise the data against the reproducibilities from literature, Gauss plots were made, using the sorted data for one determination (see appendix 1). On the Y-axis the reported analysis results are plotted. The corresponding laboratory numbers are under the X-axis.
The straight horizontal line presents the consensus value (a trimmed mean). The four striped lines, parallel to the consensus value line, are the +3s, +2s, -2s and -3s target reproducibility limits of the selected standard. Outliers and other data, which were excluded from the calculations, are represented as a cross. Accepted data are represented as a triangle. Furthermore, Kernel Density Graphs were made. This is a method for producing a smooth density approximation to a set of data that avoids some problems associated with histograms (see appendix 4, nr.13-14).

3.3 Z-SCORES

To evaluate the performance of the participating laboratories the z-scores were calculated. As it was decided to evaluate the performance of the participants in this proficiency test (PT) against the literature requirements, e.g. ASTM reproducibilities, the z-scores were calculated using a target standard deviation. This results in an evaluation independent of the spread of this interlaboratory study. The target standard deviation was calculated from the literature reproducibility by division with 2.8.

When a laboratory did use a test method with a reproducibility that is significantly different from the reproducibility of the reference test method used in this report, it is strongly advised to recalculate the z-score, while using the reproducibility of the actual test method used, this in order to evaluate the fit-for-useness of the reported test result.
The z-scores were calculated according to:

$$z_{(target)} = (\text{result - average of PT}) / \text{target standard deviation}$$

The $z_{(target)}$ scores are listed in the tables in appendices 1 and 2.
Absolute values for z<2 are very common and absolute values for z>3 are very rare. The usual interpretation of z-scores is as follows:

$\lvert z \rvert < 1$	good
$1 < \lvert z \rvert < 2$	satisfactory
$2 < \lvert z \rvert < 3$	questionable
$3 < \lvert z \rvert$	unsatisfactory

4   EVALUATION

In this interlaboratory study the laboratories in Iran, Jordan, Nigeria, Pakistan, Saudi Arabia and Senegal received the samples late or not at all due to problems with customs clearance. For sample #13001, in total, twenty participants did not report any test results and fifty-two laboratories reported the test results after the final reporting date. For sample #13002, in total twenty-five participants did not report any test results and twenty-eight participants reported the test results after the final reporting date.

Not all laboratories were able to report all analyses requested. Finally, 189 participants reported in total 3261 numerical results. Observed were 98 statistically outlying results, which is 3.2%. In proficiency studies, outlier percentages of 3% - 7.5% are quite normal.

4.1   EVALUATION PER SAMPLE AND PER TEST

In this section, the results are discussed per sample and per test. The methods, which are used by the various laboratories, are taken into account for explaining the observed differences where possible and applicable. These methods are also in the tables together with the reported data. The abbreviations, used in these tables, are listed in appendix 5. Due to the lack of precision data in the relevant test methods for the determination of Potassium (#13002), the z-scores and the calculated reproducibilities were compared with the estimated reproducibility calculated using the Horwitz equation.

Not all original data sets proved to have a normal distribution. Not normal distributions were found for the following determinations: Acid Number, API Gravity, Ash, Asphaltenes, CCAI, CCR, Density, Flash Point, Heat of Combustion (Gross and Net), Pour Point (Lower, Upper, Automated), Sediment by Extraction, Total Sediment (Potential), Water by Distillation, Water by Sediment, Total Aluminium+Silicon, Potassium, Sodium and Vanadium.

Sample #13001

Acid Number: This determination was not problematic. Two statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in full agreement with the requirements of ASTM D664A:11a.

API Gravity: This determination was not problematic. Five statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in good agreement with the requirements of ASTM D1298:12b.

Ash: This determination was very problematic. Two statistical outliers and one false negative test results were observed. The acceptable oven range for the ash determination is $775 \pm 25\ ^{\circ}C$. Three test results were excluded because the reported ash temperature was outside this range. The calculated reproducibility, after rejection of the five suspected test results is not in agreement with requirements of ISO6245:01.

<u>Asphaltenes:</u>	This determination was problematic for a number of laboratories. Six statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of IP143:04. Two laboratories reported according to ASTM D3279 which is not equivalent to IP143:04.
<u>Calculated Carbon:</u> <u>Aromaticity Index</u>	This determination was not problematic. Two statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in good agreement with the requirements of ISO8217:12. Four test results were excluded from statistical evaluation as these results probably contained some calculation errors.
<u>CCR:</u>	This determination was not problematic. Two statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in full agreement with the requirements of ASTM D189:10. Remarkably several laboratories reported to have used ASTM D4530, ASTM D524 or ASTM D6615, methods that are not equivalent to D189:10.
<u>Density @ 15°C:</u>	This determination was problematic. A large number of results had to be corrected as these were reported in another unit than requested (kg/L instead of kg/m^3) and six statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the requirements of ISO12185:96.
<u>Flash Point PMcc:</u>	This determination was problematic. Three statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the requirements of ISO2719:02. One laboratory reported to have used IP523, a method that is not equivalent to ISO2719:02.
<u>HOC Gross:</u>	This determination of the Gross Heat of Combustion was problematic for a number of laboratories. Five statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ASTM D240:09. Four laboratories reported to have used ASTM D4809, a method that is not applicable for Fuel Oil.
<u>HOC Net:</u>	This determination of the Net Heat of Combustion was problematic for a number of laboratories.Three statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in full agreement with the requirements of ASTM D240:09. Four laboratories reported according to ASTM D4809 which is not applicable for Fuel Oil.

Kin. Visc. @ 50°C: This determination was not problematic. Four statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ISO3104:94.

Kin. Visc. @100°C: This determination was problematic. Seven statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the requirements of ISO3104:94.

MCRT: This determination was problematic. Four statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the requirements of ISO10370:93.

Vis Stab.@ 50°C :   The test method ASTM D7042 is intended for Newtonian flow behaviour
Vis Stab.@ 100°C   liquids only (see §1.2 in ASTM D7042) and therefore it may not be suitable for Fuel Oil. And the precision data mentioned in D7042 may not be applicable for Fuel Oil. Therefore no significant conclusions were drawn. The mean values of the Stabinger Viscosity (50°C and 100°C) do not differ significantly from the mean values of the Kinematic Viscosity determinations.

Pour Point Lower: This determination was problematic. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers not in agreement with the requirements of ISO3016:94. One other test result was excluded as the reported result for lower PP is higher then the result for upper PP. Rounding to 3 degrees acc. ISO3016:94 may partly explain the large spread.

Pour Point Upper: This determination was problematic. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is not in agreement with ISO3016:94. One other test result was excluded as the reported result for upper PP is smaller then the result for lower PP. Rounding to 3 degrees acc. ASTM D97 may partly explain the large spread.

Pour Point: This determination was problematic. No statistical outliers were observed.
Automated   However, the calculated reproducibility is not in agreement with ASTM D5950:12a. Eleven results were excluded prior to the statistical analysis, as the reported test method was a manual method. The large spread may (partly) be explained by possible problems with the detector sensitivity.

Sediment by: This determination was not problematic. Four statistical outliers were
Extraction   observed. However, the calculated reproducibility after rejection of the statistical outliers is in good agreement with the requirements of ASTM D473:07. One laboratory reported according to IP375 which is not equivalent to ASTM D473:07.

Total sediment):   This determination was not problematic. One statistical outlier was
(Potential)   observed. However, the calculated reproducibility after rejection of the.
statistical outlier is in good agreement with IP390:11. (IP390:11 is
technically identical to ISO10307-2:09). One laboratory reported according
to ASTM D4870 which is not equivalent to IP390:11.

Total sediment: This determination was problematic for a number of laboratories. Six
(Accelerated)   statistical outliers were observed. However, the calculated reproducibility
after rejection of the statistical outliers is in good agreement with IP390:11.
(IP390:11 is technically identical to ISO10307-2:09). One laboratory
reported according to IP375 which is not equivalent to IP390:11.

Total Sulphur: This determination was problematic. One statistical outlier was observed.
The calculated reproducibility after rejection of the statistical outlier is not in
agreement with the requirements of ASTM D4294:10.
When the data of the ASTM D4294 and IP336/ISO8754 were evaluated
separately, the calculated reproducibility for ASTM D4294 data alone is
nearly the same. The calculated reproducibility of the IP336/ISO8754 data
is somewhat large in comparison with the precision of all data.
The expected bias (0.02%-0.03%) between the ASTM D4294 data and the
IP336/ISO8754 data is too small to be observed.

Water by distillation: This determination was not problematic. One statistical outlier was
observed and the calculated reproducibility after rejection of the statistical
outlier is in agreement with the requirements of ASTM D95:10. Four
laboratories reported according to EN1428 which is not equivalent to ASTM
D95:10.

Water and sediment: This determination was not problematic. One statistical outlier was
by centrifuge method observed. The calculated reproducibility after rejection of the statistical
outlier is in agreement with the requirements of ASTM D1796:11.

Nitrogen: This determination was problematic. No statistical outliers were observed.
The calculated reproducibility is not in agreement with the requirements of
ASTM D5762:12. In total twelve laboratories were excluded from statistical
evaluation as the reported test method is not suitable for Fuel Oil and/or
as Toluene was used as solvent instead of Xylene.

Distillation: This determination may be problematic. In total six statistical outliers were
observed. The calculated reproducibility after rejection of the statistical
outliers is in agreement for IBP, 5% - 30% recovered with the
requirements of ASTM D1160:06. The calculated reproducibility is not in
agreement for 40% - 50% recovered and FBP with the requirements of
ASTM D1160:06.

CHN-Analyzer: This determination was not problematic for Carbon and Hydrogen. In total four statistical outliers were observed for Carbon and Hydrogen.The calculated reproducibilies for Carbon and Hydrogen after rejection of the statistical outliers are both in agreement with the requirements of ASTM D5291:10.
No statistical outliers were observed for the Nitrogen determination. However, the calculated reproducibility for Nitrogen is not at all in agreement with the requirements of ASTM D5291:10.

Sample #13002:

Aluminium: This determination was very problematic. One statistical outlier and one false negative test result were observed. The test results of three laboratories were excluded from the statistical evaluation as the reported test methods were not equivalent to IP501:05.
The calculated reproducibility after the rejection of the suspect test results is not at all in agreement with IP501:05.

Silicon: This determination was very problematic. Six statistical outliers were observed. The test results of three laboratories were excluded from the statistical evaluation as the reported test methods were not equivalent to IP501:05. The calculated reproducibility after the rejection of the suspect test results is not at all in agreement with IP501:05.

Total Al/Si: This determination was very problematic. No statistical outliers were observed. However, the calculated reproducibility is not at all in agreement with the estimated reproducibility of IP501:05. One test result was excluded from statistical evaluation as the reported test method was not equivalent to IP501:05.

Nickel: This determination was not problematic. One statistical outlier was observed. The test results of three laboratories were excluded from the statistical evaluation as the reported test methods were not equivalent to IP501:05. The calculated reproducibility after rejection of the suspect test results is in good agreement with the requirements of IP501:05.

Potassium: The concentration was below or near the detection limit. Therefore no significant conclusions were drawn. Four statistical outliers were observed, two of these outliers may be false positive test results.

Sodium: This determination was very problematic. Three statistical outliers were observed. The test results of three laboratories were excluded from the statistical evaluation as the reported test methods were not equivalent to IP501:05. The calculated reproducibility after the rejection of the suspect test results is not at all in agreement with IP501:05.

Vanadium: This determination was not problematic. Two statistical outliers were observed. One test result was excluded from statistical evaluation as the reported test method was not equivalent to IP501:05.
The calculated reproducibility after rejection of the suspect test results is in good agreement with the requirements of IP501:05.

Finally it should be noted that proper attention for homogenisation is crucial for a material such as Fuel Oil. Due to the nature of the material it is very susceptible to problems when not handled correctly. Practically all methods for the determination of metals in Fuel Oil have similar statements regarding homogenization. Recommended is the use of a quality control fuel oil with known amounts of metals like Al, Ni, Si and V. This control standard may be of use to detect deviations in metals with respect to the preparation steps.

4.2 PERFORMANCE EVALUATION FOR THE GROUP OF LABORATORIES

A comparison has been made between the reproducibility as declared by the relevant standard and the reproducibility as found for the group of participating laboratories that participated. The average results of the evaluated parameters, calculated reproducibilities and reproducibilities, derived from literature standards (in casu ASTM, EN, ISO and IP standards) are compared in the next table.

Parameters	Unit	n	average	2.8 * sd	R (lit)
Acid Number	mg KOH/g	78	0.27	0.16	0.18
API gravity		83	9.78	0.25	0.50
Ash	%M/M	136	0.024	0.015	0.005
Asphaltenes	%M/M	86	8.19	1.77	1.64
Calc. Carbon Aromaticity Index		64	859.3	1.57	2.30
Conradson Carbon Residue	%M/M	58	15.61	2.29	2.46
Density @ 15°C	kg/m^3	159	1000.9	1.8	1.5
Flash Point PMcc	°C	160	91.1	7.9	6.0
Heat of Combustion Gross	MJ/kg	85	42.68	0.44	0.40
Heat of Combustion Net	MJ/kg	65	40.84	0.39	0.40
Kinematic Viscosity @50°C	mm^2/s	145	489.3	26.5	36.2
Kinematic Viscosity @100°C	mm^2/s	123	39.18	2.39	1.89
Micro Carbon Residue	%M/M	109	15.51	0.99	0.87
Nitrogen	µg/g	31	4143	1363	1102
Stabinger Viscosity @50ºC	mm^2/s	19	492.1	34.6	unknown
Stabinger Viscosity @100ºC	mm^2/s	19	38.93	2.62	unknown
Pour Point Lower	°C	73	-1.7	9.5	6.6
Pour Point Upper	°C	116	1.0	8.7	6.6
Pour Point (automated)	°C	22	-3.2	8.6	6.1
Sediment by Extraction	%M/M	108	0.021	0.026	0.038
Total Sediment (Potential)	%M/M	82	0.018	0.020	0.040
Total Sediment (Accelerated)	%M/M	62	0.018	0.017	0.039
Total Sulphur	%M/M	171	0.80	0.08	0.06

Water by Distillation	%V/V	133	0.08	0.15	0.20
Water by Sediment	%V/V	43	0.07	0.09	0.11
Distillation @ 760 mm Hg					
IBP	°C	35	187.4	40.5	49.4
5% recovered	°C	35	246.7	22.9	23.5
10% recovered	°C	35	284.0	21.5	21.6
20% recovered	°C	35	363.7	20.5	20.8
30% recovered	°C	35	426.4	19.0	20.0
40% recovered	°C	36	493.3	24.2	18.3
50% recovered	°C	9	531.7	25.6	11.9
FBP	°C	29	519.4	38.8	26.9
CHN analyzer					
Total Carbon	%M/M	32	87.8	1.7	2.5
Total Hydrogen	%M/M	27	10.2	0.5	0.7
Total Nitrogen	%M/M	28	0.50	0.2	0.1

Table 4: summary of test results on Fuel Oil sample #13001

*results between brackets should be used with care, because the average found was below the application range

Parameters	Unit	n	average	2.8 * sd	R (lit)
Aluminium	mg/kg	92	14.82	7.72	5.00
Silicon	mg/kg	88	13.72	7.56	4.56
Total Aluminium+Silicon	mg/kg	89	28.99	16.41	6.76
Nickel as Ni	mg/kg	87	16.61	4.51	7.89
Potassium as K	mg/kg	20	0.83	0.82	(0.38)
Sodium as Na	mg/kg	85	14.93	9.10	4.72
Vanadium as V	mg/kg	96	15.73	5.61	8.78

Table 5: summary of test results on Fuel Oil sample #13002

Result between brackets is near of below the detection limit.

Without further statistical calculations it can be concluded that for a number tests there is a good compliance of the group of participating laboratories with the relevant standards. The problematic tests have been discussed in paragraph 4.1.

4.3   COMPARISON OF THE PROFICIENCY TEST OF JANUARY 2013 WITH PREVIOUS PTS

	January 2013	January 2012	February 2011	January 2010
Number of reporting labs	188	75	113	75
Number of results reported	3261	1195	1267	1081
Statistical outliers	98	74	60	61
Percentage outliers	3.2%	6.2%	4.7%	5.9%

Table 6: comparison with previous proficiency tests

In proficiency tests, outlier percentages of 3% - 7.5% are quite normal.
The performance of the determinations of the proficiency tests was compared against the requirements of the respective standards. The conclusions are given the following table:

Determination	January 2013	February 2012	February 2011	January 2010
Acid Number	+/-	+	++	+
API Gravity	++	--	n.e.	n.e.
Ash	--	--	--	--
Asphaltenes	+/-	--	--	-
Calc. Carb. Aromaticity Index	++	+/-	--	n.e.
Conradson Carbon Residue	+/-	-	--	++
Density @ 15 °C	-	-	--	+
Flash Point PMcc	-	--	--	--
Heat of Combustion Gross	+/-	--	++	-
Heat of Combustion Net	+/-	+/-	+/-	--
Kinematic Viscosity @ 50 °C	+	+	+	++
Kinematic Viscosity @ 100 °C	-	++	+	--
Micro Carbon Residue	-	--	--	+/-
Nitrogen	-	--	-	--
Pour Point Lower	-	--	--	-
Pour Point Upper	-	--	--	--
Pour Point (automated)	-	-	--	++
Sediments by Extraction	+	++	++	++
Total Sediment (Accelerated)	++	++	++	++
Total Sediment (Potential)	++	++	++	++
Total Sulphur	-	--	-	--
Water by Distillation	+	++	++	++
Water by Sediment	+/-	n.e.	n.e.	n.e.
Total Carbon	+	++	+/-	+/-
Total Hydrogen	+	+	+/-	--
Total Nitrogen	-	++	++	++
Aluminium as Al	--	++	--	++
Silicon as Si	--	++	+	++
Total Aluminium/Silicon	--	+/-	n.e.	n.e.
Nickel as Ni	++	++	++	--
Potassium as K	(--)	(--)	--	(--)
Sodium as Na	--	--	-	++
Vanadium as V	++	++	(++)	++

Table 7: comparison determinations against the standard
results between brackets should used with care, because the average was below the application range

The performance of the determinations against the requirements of the respective standards is listed in the above table. The following performance categories were used:

   ++:   group performed much better than the standard
   + :   group performed better than the standard
   +/-:   group performance equals the standard
   - :   group performed worse than the standard
   -- :   group performed much worse than the standard
   n.e.:   not evaluated

APPENDIX 1

Determination of Acid Number on sample #13001; results in mg KOH/g

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
52	D664	0.24		-0.40	913		-----		-----
62		-----		-----	922		-----		-----
90		-----		-----	962		-----		-----
92		-----		-----	963	D664	0.26		-0.09
120	D664	0.505	G(0.05)	3.75	971	D664	0.078		-2.95
131	D664	0.273		0.11	974		-----		-----
132	D664	0.27		0.07	982		-----		-----
140		-----		-----	994	D664	0.301		0.55
154		-----		-----	995	D664	0.2527		-0.21
158		-----		-----	996		-----		-----
159		-----		-----	1011	D664	0.156		-1.72
168		-----		-----	1022		-----		-----
169		-----		-----	1038		-----		-----
171	D664	0.41		2.26	1047	INH-04049	0.247		-0.29
175		-----		-----	1059		-----		-----
193		-----		-----	1062		-----		-----
194		-----		-----	1065	D664	0.247		-0.29
195		-----		-----	1080		-----		-----
212	D664	0.29		0.38	1082		-----		-----
221		-----		-----	1095		-----		-----
224		-----		-----	1108	D664	0.340		1.16
225		-----		-----	1109	D664	0.25		-0.25
228		-----		-----	1121		-----		-----
230		-----		-----	1126		-----		-----
237	D664	0.26		-0.09	1134		-----		-----
238		-----		-----	1140		-----		-----
252		-----		-----	1161	D664	0.126		-2.19
253		-----		-----	1167		-----		-----
254		-----		-----	1177		-----		-----
273		-----		-----	1191		-----		-----
311	D664	0.29		0.38	1215		-----		-----
313		-----		-----	1229		-----		-----
323	D664	0.30		0.54	1231		-----		-----
331	D664	0.23		-0.56	1233	D664	0.31		0.69
333	D664	0.24		-0.40	1254		-----		-----
334		-----		-----	1259	D664	0.273		0.11
336		-----		-----	1266		-----		-----
337		-----		-----	1269		-----		-----
340	D664	0.231		-0.55	1271	D664	0.1539		-1.76
343	D664	0.344		1.23	1275		-----		-----
349		-----		-----	1337		-----		-----
353		-----		-----	1348		-----		-----
360	D664	0.232		-0.53	1356	D664	0.18		-1.35
369	D664	0.279		0.21	1358		-----		-----
370		-----		-----	1381		-----		-----
371		-----		-----	1395		-----		-----
372	D664	0.28		0.22	1396		-----		-----
375		-----		-----	1402		-----		-----
391	D664	0.254		-0.19	1403		-----		-----
398	D664	0.269		0.05	1419		-----		-----
399		-----		-----	1428		-----		-----
440		-----		-----	1431		-----		-----
444		-----		-----	1455	D664	0.27		0.07
445	D664	0.289		0.36	1459		-----		-----
447	D664	0.24		-0.40	1460		-----		-----
463	D664	0.277		0.18	1483		-----		-----
494	D664	0.25		-0.25	1501	D664	0.273		0.11
495		-----		-----	1510		-----		-----
507	D664	0.256		-0.15	1520	D664	0.258		-0.12
511		-----		-----	1551	IP139	0	ex	-4.17
528		-----		-----	1552	D664	0.336		1.10
529		-----		-----	1553	D664	0.343		1.21
541	D664	<0.1		-----	1558		-----		-----
551		-----		-----	1559		-----		-----
557		-----		-----	1564	D664	0.31		0.69
562		-----		-----	1569	D664	0.245		-0.33
575		-----		-----	1577	D664	0.38		1.79
603	D664	0.26		-0.09	1585	D664	0.220		-0.72
604		-----		-----	1586	D664	0.31		0.69
605	D664	0.272		0.10	1590	D664	<0.10	C	-----
607		-----		-----	1613		-----		-----
608		-----		-----	1616		-----		-----
631		-----		-----	1622		-----		-----

657	D664	0.25		-0.25	1631		-----		-----
663		-----		-----	1635		-----		-----
671		-----		-----	1636		-----		-----
704	D664	0.230		-0.56	1643		-----		-----
705		-----		-----	1648		-----		-----
732		-----		-----	1654		-----		-----
750	D664	0.37		1.63	1669	D664	0.782	G(0.01)	8.10
753	D664	0.329		0.99	1677		-----		-----
781	D664	0.278		0.19	1710	D664	0.368		1.60
784	D664	0.275		0.14	1712		-----		-----
785		-----		-----	1720	D664	0.27	C	0.07
791		-----		-----	1724	D664	0.388		1.92
823	D664	0.25		-0.25	1728		-----		-----
840	D664	0.260		-0.09	1740	D664	0.28		0.22
851		-----		-----	1807		-----		-----
855	D664	0.26		-0.09	1810		-----		-----
858	D664	0.26		-0.09	1811		-----		-----
859	D664	0.27		0.07	1832		-----		-----
862	D664	0.26		-0.09	1833	D664	0.405		2.18
863	D664	0.23		-0.56	1842		-----		-----
864	D664	0.231		-0.55	1849		-----		-----
865	D664	0.228		-0.59	1854	D664	0.32		0.85
867	D664	0.239		-0.42	1862	D664	0.270		0.07
873		-----		-----	1906		-----		-----
874		-----		-----	1915		-----		-----
875	D664	0.24		-0.40	1936		-----		-----
886	D664	0.254		-0.19	1937		-----		-----
887	D664	0.212		-0.84	1938		-----		-----
902	D664	0.2215		-0.69	1949	D664	0.240		-0.40
904		-----		-----	1950	D664	0.278		0.19
912		-----		-----	1951		-----		-----
					2129	D664	0.11		-2.44

normality	not OK
n	78
outliers	2
mean (n)	0.266
st.dev. (n)	0.0586
R(calc.)	0.164
R(D664:11a)	0.178

ex = excluded, zero is not a real value

Lab 1590 first reported : 0.001

Lab 1720 first reported :0.60
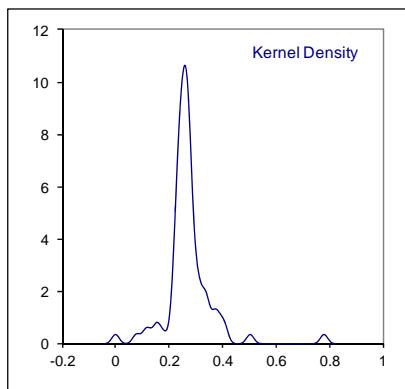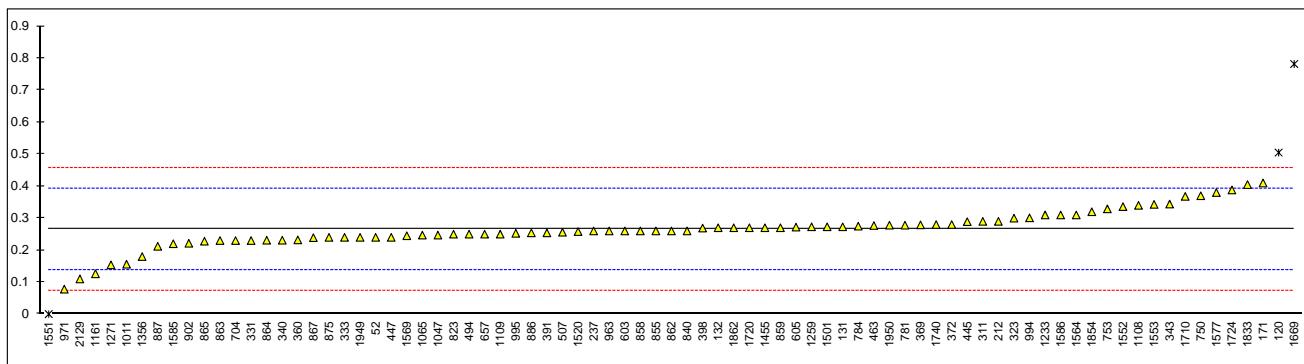
Determination of API Gravity on sample #13001;

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
52	D4052	9.7		-0.46	913		-----		-----
62		9.7	C	-0.46	922		-----		-----
90		-----		-----	962		-----		-----
92	D1298	9.8		0.10	963		9.8		0.10
120	D4052	9.8		0.10	971		9.79		0.04
131	D4052	9.79		0.04	974		-----		-----
132	D4052	9.80		0.10	982		-----		-----
140	D4052	10.0		1.22	994		9.703		-0.44
154	D4052	9.4331	C,G(0.05)	-1.96	995	D1250Conv.	9.67		-0.63
158	D1298	9.7		-0.46	996		-----		-----
159	D4052	9.8		0.10	1011		-----		-----
168	D287	9.4	G(0.05)	-2.14	1022		-----		-----
169	D1298	9.8		0.10	1038		-----		-----
171	D287	9.6		-1.02	1047		-----		-----
175	D4052	9.8		0.10	1059		9.39	C,G(0.05)	-2.20
193		-----		-----	1062		-----		-----
194	D4052	9.69		-0.52	1065		-----		-----
195		-----		-----	1080		-----		-----
212		-----		-----	1082		-----		-----
221		-----		-----	1095		-----		-----
224	D1298	9.80		0.10	1108		-----		-----
225	Calc.	9.84		0.32	1109	D287	10.40	G(0.01)	3.46
228	Conversion	10.02	C	1.33	1121		9.61	C	-0.96
230		-----		-----	1126		-----		-----
237		9.85		0.38	1134	Calc.	9.84		0.32
238		-----		-----	1140		-----		-----
252		-----		-----	1161	D287	9.86		0.44
253		9.91		0.72	1167		-----		-----
254		-----		-----	1177		-----		-----
273		-----		-----	1191		-----		-----
311		-----		-----	1215	D1298	9.8		0.10
313		-----		-----	1229		-----		-----
323		-----		-----	1231	D1298	9.9		0.66
331		-----		-----	1233		-----		-----
333		-----		-----	1254		9.84		0.32
334		-----		-----	1259		9.68		-0.57
336		-----		-----	1266		-----		-----
337		-----		-----	1269		-----		-----
340	D4052	9.74		-0.24	1271		-----		-----
343		-----		-----	1275		-----		-----
349		-----		-----	1337		-----		-----
353		-----		-----	1348		-----		-----
360	ISO12185	10.00		1.22	1356		-----		-----
369	ISO12185	9.774		-0.05	1358		-----		-----
370		-----		-----	1381		-----		-----
371		9.816		0.19	1395		-----		-----
372	D4052	9.84		0.32	1396		-----		-----
375		-----		-----	1402		-----		-----
391		9.82		0.21	1403		-----		-----
398		-----		-----	1419		-----		-----
399	D287	9.7		-0.46	1428		-----		-----
440		-----		-----	1431		-----		-----
444		-----		-----	1455	Calc.	9.9		0.66
445		-----		-----	1459		-----		-----
447		10.30	G(0.01)	2.90	1460		-----		-----
463	Calc.	9.86		0.44	1483		-----		-----
494		9.72		-0.35	1501	Calc.	9.73		-0.29
495		9.80		0.10	1510		-----		-----
507	ISO12185	9.82		0.21	1520		-----		-----
511	D4052	9.82		0.21	1551		-----		-----
528		-----		-----	1552		-----		-----
529	D1298	9.72		-0.35	1553	Conversion	9.657		-0.70
541	D5002	9.8		0.10	1558		-----		-----
551		-----		-----	1559		-----		-----
557		-----		-----	1564		-----		-----
562	D1298	9.7		-0.46	1569		-----		-----
575		-----		-----	1577		-----		-----
603	D4052	9.74		-0.24	1585		9.76		-0.12
604	D4052	9.75		-0.18	1586		9.83	C	0.27
605	D4052	9.73		-0.29	1590		-----		-----
607		-----		-----	1613	D4052	9.77		-0.07
608		-----		-----	1616		-----		-----
631	D1298	9.51		-1.52	1622	D4052	9.8		0.10
657		9.8		0.10	1631		-----		-----

663	D4052	9.79		0.04	1635		-----		-----
671	D287	10.0		1.22	1636		-----		-----
704	D1250	9.81		0.16	1643		-----		-----
705	D1250	9.742		-0.23	1648		-----		-----
732		-----		-----	1654		-----		-----
750		-----		-----	1669		-----		-----
753	D1250	9.693		-0.50	1677		-----		-----
781	D1250	9.756		-0.15	1710		-----		-----
784	D1250	9.76		-0.12	1712		-----		-----
785		-----		-----	1720		-----		-----
791		-----		-----	1724		9.825		0.24
823		9.74		-0.24	1728	D287	9.8304		0.27
840	ISO12185	9.79		0.04	1740		-----		-----
851		-----		-----	1807		-----		-----
855	D287	9.79		0.04	1810		-----		-----
858	D1298	9.79		0.04	1811		-----		-----
859		9.83		0.27	1832		-----		-----
862	D287	9.79		0.04	1833		-----		-----
863	ISO12185	9.83		0.27	1842		-----		-----
864		9.83		0.27	1849		-----		-----
865	D1298	9.81		0.16	1854		9.8		0.10
867	D1298	9.83		0.27	1862		9.86		0.44
873		-----		-----	1906		-----		-----
874		-----		-----	1915	D4052	9.58	C	-1.13
875		9.76		-0.12	1936		-----		-----
886		-----		-----	1937		-----		-----
887		-----		-----	1938		-----		-----
902	D4052	9.63		-0.85	1949	D1250	9.74		-0.24
904		-----		-----	1950		9.81		0.16
912		-----		-----	1951		-----		-----
					2129		9.71		-0.40

normality	not OK
n	83
outliers	5
mean (n)	9.782
st.dev. (n)	0.0879
R(calc.)	0.246
R(D1298:12b)	0.500

Lab 62 first reported   : 11.6   Lab 1059 first reported   : 27.90   Lab 1915 first reported   : 9.40

Lab 154 first reported : 9.5   Lab 1121 first reported   :9.46

Lab 228 first reported :10.44   Lab 1586 first reported   :1.0007
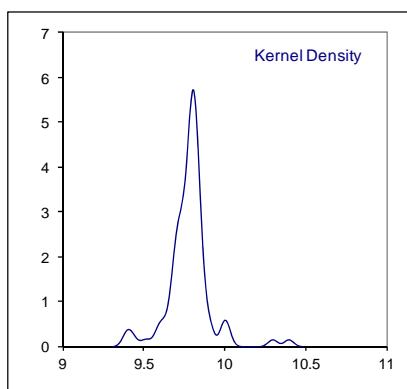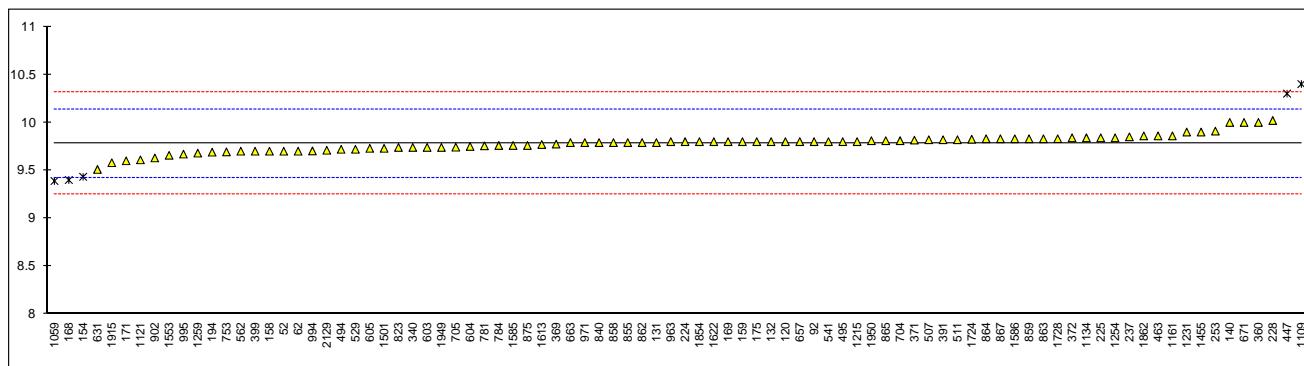
Determination of Ash on sample #13001; results in %M/M

lab	method	value	mark	ash temp	z(targ)	lab	method	value	mark	ash temp	z(targ)
52	D482	0.023		750	-0.74	913		-----		-----	-----
62	D482	0.028		-----	2.06	922		-----		-----	-----
90		-----		-----	-----	962		-----		-----	-----
92	D482	0.0208		775	-1.98	963	D482	0.031		800	3.74
120		-----		775	-----	971	D445	0.0143		750	-5.62
131	D482	0.0277		776	1.89	974		-----		-----	-----
132	ISO6245	0.0214		775	-1.64	982		-----		-----	-----
140	D482	0.033	ex	725	4.86	994	D482	0.028		775	2.06
154	D482	0.02377		-----	-0.31	995	D482	0.02345		750	-0.49
158		-----		-----	-----	996	D482	0.027		775	1.50
159	D482	0.023		-----	-0.74	1011	D482	0.0251		750	0.43
168	D482	0.02165		774.9	-1.50	1022	ISO6245	0.0268		775	1.38
169	D482	0.0290		775	2.62	1038	D482	0.030		775	3.18
171	D482	0.0083		774	-8.98	1047	ISO6245	0.035		800	5.98
175	D482	0.023		775	-0.74	1059	ISO6245	0.025		775	0.38
193	D482	0.0259		-----	0.88	1062		-----		-----	-----
194	ISO6245	0.0172		775	-3.99	1065	D482	0.0249		-----	0.32
195		-----		-----	-----	1080		-----		-----	-----
212	ISO6245	0.027	C	775	1.50	1082		-----		-----	-----
221		-----		-----	-----	1095		-----		-----	-----
224		-----		-----	-----	1108	ISO6245	0.032		775	4.30
225	D482	0.023		-----	-0.74	1109	D482	0.0240		800	-0.18
228	D482	0.023		-----	-0.74	1121	IP4	0.023		775	-0.74
230	ISO6245	0.0233		779	-0.58	1126		-----		-----	-----
237	D482	0.0281		750.0	2.11	1134	IP4	0.025005		775.0	0.38
238		-----		-----	-----	1140		-----		-----	-----
252	D482	0.02935		775	2.81	1161	ISO6245	0.02		-----	-2.42
253		-----		-----	-----	1167	ISO6245	0.0258		-----	0.82
254	D482	0.030		750	3.18	1177		-----		-----	-----
273		-----		-----	-----	1191	ISO6245	0.0282		775	2.17
311	ISO6245	0.024		775	-0.18	1215	D482	0.02255		780	-1.00
313		-----		-----	-----	1229	ISO6245	0.0204		-----	-2.20
323	ISO6245	<0.01	fn?	750	<-7.97	1231	D482	0.0248		-----	0.26
331	ISO6245	0.0249		775	0.32	1233	ISO6245	0.0265		-----	1.22
333		-----		-----	-----	1254	D482	0.0267		775	1.33
334		-----		-----	-----	1259	ISO6245	0.037		-----	7.10
336		-----		-----	-----	1266	ISO6245	0.014		776	-5.78
337		-----		-----	-----	1269		-----		-----	-----
340	ISO6245	0.0254		775	0.60	1271	ISO6245	0.01		775	-8.02
343	ISO6245	0.0129		775	-6.40	1275	IP4	0.0183		775	-3.38
349		-----		-----	-----	1337		-----		-----	-----
353	IP4	0.0341		-----	5.47	1348	D482	0.0245		775	0.10
360	ISO6245	0.027		800	1.50	1356	ISO6245	0.0324	ex	550	4.52
369	ISO6245	0.0199		790	-2.48	1358		-----		-----	-----
370	ISO6245	0.0214		775	-1.64	1381	ISO6245	0.0250		790	0.38
371	ISO6245	0.0266		-----	1.27	1395	ISO6245	0.026		-----	0.94
372	ISO6245	0.0232		780	-0.63	1396	IP4	0.011		775	-7.46
375		-----		-----	-----	1402	ISO6245	0.004	G(0.05)	775	-11.38
391	ISO6245	0.026		775	0.94	1403		-----		-----	-----
398	ISO6245	0.020		-----	-2.42	1419		-----		-----	-----
399	ISO6245	0.026		775	0.94	1428	ISO6245	0.022		775	-1.30
440		-----		-----	-----	1431	D482	0.035		-----	5.98
444	D482	0.0080		750	-9.14	1455	ISO6245	0.021		775	-1.86
445	IP4	0.0187		775	-3.15	1459		-----		-----	-----
447	IP4	0.0200		775	-2.42	1460		-----		-----	-----
463	ISO6245	0.0221		-----	-1.25	1483		-----		-----	-----
494		-----		-----	-----	1501	ISO6245	0.0224		775	-1.08
495	ISO6245	0.029		750	2.62	1510		-----		-----	-----
507	ISO6245	0.0260		775	0.94	1520	ISO6245	0.0246		775	0.15
511	D482	0.02241		775	-1.07	1551	IP550	0.0282		775	2.17
528		-----		-----	-----	1552		-----		-----	-----
529		-----		-----	-----	1553		-----		-----	-----
541	D482	0.028		-----	2.06	1558		-----		-----	-----
551		-----		-----	-----	1559		-----		-----	-----
557		-----		-----	-----	1564	D482	0.023		775	-0.74
562	D482	0.0315		-----	4.02	1569	ISO6245	0.0260		772	0.94
575		-----		-----	-----	1577	ISO6245	0.03		775	3.18
603	D482	0.019		775	-2.98	1585	ISO6245	0.0217		775	-1.47
604		-----		-----	-----	1586	D482	0.0189		800	-3.04
605	D482	0.0270		775	1.50	1590	D482	0.0297		775	3.01
607	D482	0.0292		775	2.73	1613	D482	0.0332		775	4.97
608		-----		-----	-----	1616		-----		-----	-----
631	D482	0.0248		750	0.26	1622	D482	0.010		775	-8.02
657	ISO6245	0.021		-----	-1.86	1631		-----		-----	-----

663	D482	0.0237	775	-0.35	1635	ISO6245	0.003	G(0.05)	-----	-11.94
671	D482	0.01276	-----	-6.48	1636	ISO6245	0.028		800	2.06
704	ISO6245	0.0212	775	-1.75	1643	D482	0.0270		775	1.50
705	D482	0.0253	775	0.54	1648	ISO6245	0.0235		-----	-0.46
732	D482	0.0303	750.0	3.34	1654	ISO6245	0.0224		770	-1.08
750	D482	0.023	-----	-0.74	1669	ISO6245	0.020		-----	-2.42
753	D482	0.0171	775	-4.05	1677		-----		-----	-----
781	ISO6245	0.028	775	2.06	1710	ISO6245	0.021		775.0	-1.86
784	D482	0.0283	775	2.22	1712	ISO6245	0.027		-----	1.50
785		-----	-----	-----	1720		-----		-----	-----
791		-----	-----	-----	1724	ISO6245	0.023		-----	-0.74
823	ISO6245	0.026	750	0.94	1728	D482	0.0280		775	2.06
840	D482	0.0304	775	3.40	1740	ISO6245	0.025		775	0.38
851	ISO6245	0.02251	775	-1.02	1807	D482	0.0229		-----	-0.80
855	D482	0.0268	775	1.38	1810		-----		-----	-----
858	D482	0.0272	775	1.61	1811	ISO6245	0.024		-----	-0.18
859	ISO6245	0.0273	775	1.66	1832	ISO6245	0.0250		-----	0.38
862	ISO6245	0.0257	775	0.77	1833	ISO6245	0.013		-----	-6.34
863	ISO6245	0.024	775	-0.18	1842		-----		-----	-----
864	D482	0.0272	775	1.61	1849	ISO6245	0.0260		-----	0.94
865	D482	0.0274	775	1.72	1854	ISO6245	0.025		800	0.38
867	D482	0.0262	775	1.05	1862	ISO6245	0.0325		775	4.58
873	ISO6245	0.025	-----	0.38	1906		-----		-----	-----
874		-----	-----	-----	1915	D482	0.024		-----	-0.18
875	D482	0.025	775	0.38	1936		-----		-----	-----
886		-----	-----	-----	1937		-----		-----	-----
887		-----	-----	-----	1938		-----		-----	-----
902	D482	0.033	775	4.86	1949	ISO6245	0.0278		775	1.94
904		-----	-----	-----	1950	ISO6245	0.0356	ex	**725**	6.31
912		-----	-----	-----	1951	ISO6245	0.023		775	-0.74
					2129	ISO6245	0.0217		-----	-1.47

normality	not OK
n	136
outliers	2
mean (n)	0.0243
st.dev. (n)	0.00520
R(calc.)	0.0145
R(ISO6245:01)	0.0050

Acceptabable oven range: 775 ± 25 ºC

Lab 212 first reported　　: 0.053　　　　　　　　　　　　　lab 323: fn=false negative test result?

Lab 140, lab 1356 and 1950 are excluded, see § 4.1

Kernel Density
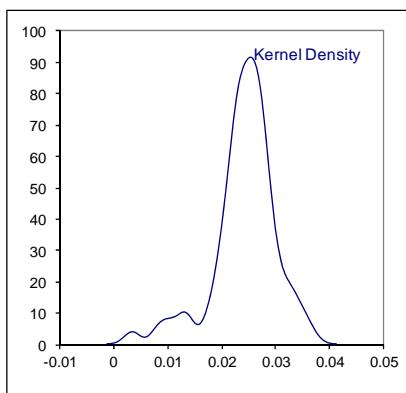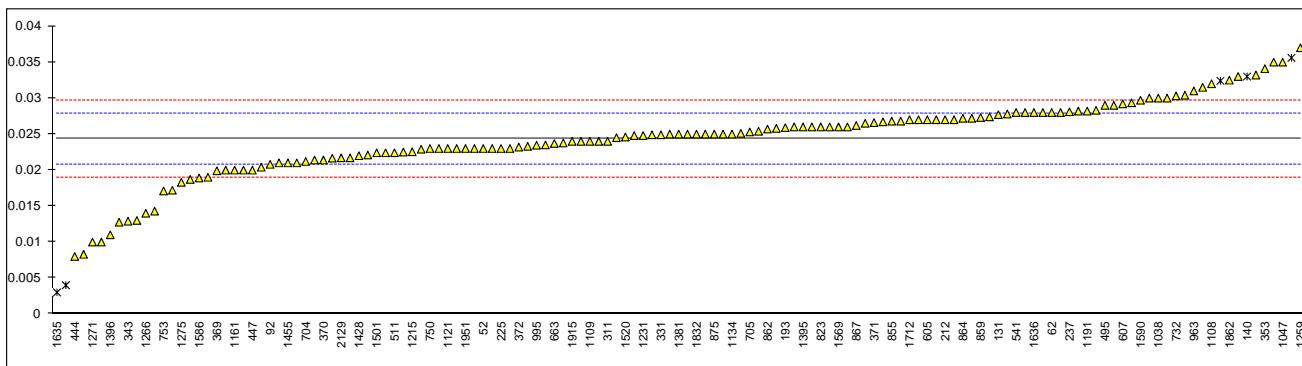
Determination of Asphaltenes on sample #13001; results in %M/M

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
52		-----		-----	913		-----		-----
62	IP143	8.47		0.48	922		-----		-----
90		-----		-----	962		-----		-----
92		-----		-----	963	IP143	9.2		1.73
120	D3279	9.0		1.38	971	IP143	7.6		-1.01
131	IP143	8.1287		-0.11	974		-----		-----
132	IP143	7.98		-0.36	982		-----		-----
140		-----		-----	994	D6560	8.00		-0.33
154	D6560	7.8768		-0.54	995	IP143	8.00389		-0.32
158		-----		-----	996		-----		-----
159	D3279	8.0		-0.33	1011	IP143	15.05	G(0.01)	11.73
168		-----		-----	1022	IP143	7.03		-1.98
169		-----		-----	1038		-----		-----
171	IP143	7.68		-0.87	1047	D3279	7.86		-0.56
175		-----		-----	1059	IP143	9.74		2.65
193		-----		-----	1062		-----		-----
194	IP143	8.69		0.85	1065		-----		-----
195		-----		-----	1080		-----		-----
212		-----		-----	1082	DIN51595	8.14		-0.09
221		-----		-----	1095		-----		-----
224		-----		-----	1108	IP143	8.65		0.79
225		-----		-----	1109		-----		-----
228		-----		-----	1121	IP143	8.0		-0.33
230	IP143	6.956	C	-2.11	1126		-----		-----
237	D6560	8.28		0.15	1134	IP143	9.8278		2.80
238		-----		-----	1140		-----		-----
252		-----		-----	1161		-----		-----
253		-----		-----	1167		-----		-----
254		-----		-----	1177		-----		-----
273		-----		-----	1191	DIN51595	5.97	DG(0.05)	-3.80
311	IP143	8.0		-0.33	1215		-----		-----
313		-----		-----	1229		-----		-----
323	IP143	8.2		0.02	1231	IP143	5.84	C,DG(0.05)	-4.02
331		-----		-----	1233		-----		-----
333		-----		-----	1254		-----		-----
334		-----		-----	1259	IP143	8.60		0.70
336		-----		-----	1266		-----		-----
337		-----		-----	1269		-----		-----
340	IP143	8.02		-0.29	1271	IP143	8.90	C	1.21
343	IP143	7.22		-1.66	1275		-----		-----
349		-----		-----	1337		-----		-----
353		-----		-----	1348	IP143	8.6		0.70
360	IP143	8.22		0.05	1356	IP143	9.1		1.55
369		-----		-----	1358		-----		-----
370	IP143	7.07		-1.91	1381		-----		-----
371	IP143	8.20		0.02	1395		-----		-----
372	IP143	7.49		-1.20	1396		-----		-----
375		-----		-----	1402	IP143	7.8		-0.67
391	IP143	7.2		-1.69	1403		-----		-----
398	IP143	8.277		0.15	1419		-----		-----
399		-----		-----	1428		-----		-----
440		-----		-----	1431	D6560	9.67		2.53
444	IP143	8.05		-0.24	1455	IP143	7.6		-1.01
445	IP143	7.60		-1.01	1459		-----		-----
447	IP143	7.63		-0.96	1460		-----		-----
463	IP143	7.08		-1.90	1483		-----		-----
494		-----		-----	1501	IP143	9.32	C	1.93
495	IP143	5.627	DG(0.05)	-4.38	1510		-----		-----
507	IP143	8.48		0.50	1520	IP143	8.10		-0.15
511	D6560	8.111		-0.14	1551		-----		-----
528		-----		-----	1552		-----		-----
529		-----		-----	1553		-----		-----
541	IP143	7.9		-0.50	1558		-----		-----
551		-----		-----	1559		-----		-----
557		-----		-----	1564	IP143	9.1		1.55
562		-----		-----	1569	IP143	8.27		0.14
575		-----		-----	1577		-----		-----
603		-----		-----	1585	IP143	8.40		0.36
604		-----		-----	1586	IP143	8.537		0.59
605	IP143	8.7		0.87	1590	IP143	8.55		0.61
607	IP143	8.31		0.20	1613	D6560	0.195	G(0.01)	-13.67
608		-----		-----	1616		-----		-----
631	IP143	8.24		0.08	1622	IP143	8.53		0.58
657	IP143	9.2		1.73	1631		-----		-----

663	IP143	8.00		-0.33	1635	D6560	7.50		-1.18
671		-----		-----	1636		-----		-----
704	IP143	7.71		-0.82	1643	D6560	7.59		-1.03
705	IP143	7.71		-0.82	1648		-----		-----
732		-----		-----	1654		-----		-----
750		-----		-----	1669	IP143	7.86		-0.56
753		-----		-----	1677		-----		-----
781	IP143	7.90		-0.50	1710	IP143	7.9		-0.50
784	IP143	8.05		-0.24	1712		-----		-----
785		-----		-----	1720		-----		-----
791		-----		-----	1724		-----		-----
823		-----		-----	1728	D6560	9.227		1.77
840	IP143	8.56		0.63	1740	IP143	8.56		0.63
851		-----		-----	1807		-----		-----
855	IP143	7.48		-1.21	1810		-----		-----
858	IP143	7.67		-0.89	1811		-----		-----
859	IP143	7.92		-0.46	1832		-----		-----
862	IP143	7.85		-0.58	1833	IP143	8.74		0.94
863	IP143	7.6		-1.01	1842	IP143	8.4		0.36
864	IP143	7.76		-0.74	1849		-----		-----
865	IP143	7.70		-0.84	1854	IP143	9.4		2.07
867		-----		-----	1862	IP143	8.00		-0.33
873	IP143	8.0		-0.33	1906		-----		-----
874	IP143	8.4		0.36	1915	IP143	8.071		-0.20
875		-----		-----	1936		-----		-----
886		-----		-----	1937		-----		-----
887		-----		-----	1938		-----		-----
902		-----		-----	1949	IP143	9.63		2.46
904		-----		-----	1950	IP143	8.04		-0.26
912		-----		-----	1951	IP143	6.164	DG(0.05)	-3.46
					2129	IP143	7.75		-0.75

normality	not OK
n	86
outliers	6
mean (n)	8.190
st.dev. (n)	0.6338
R(calc.)	1.775
R(IP143:04)	1.638

Lab 230 first reported   : 6.19   Lab 1271 first reported :10.51

Lab 1231 first reported :3.24   Lab 1501 first reported :12.09

Kernel Density
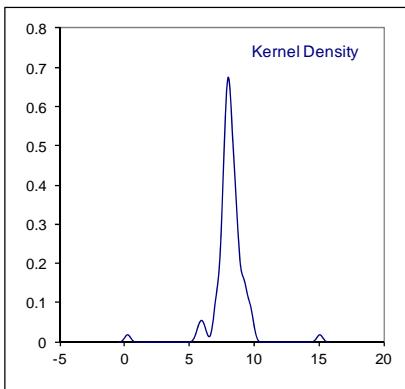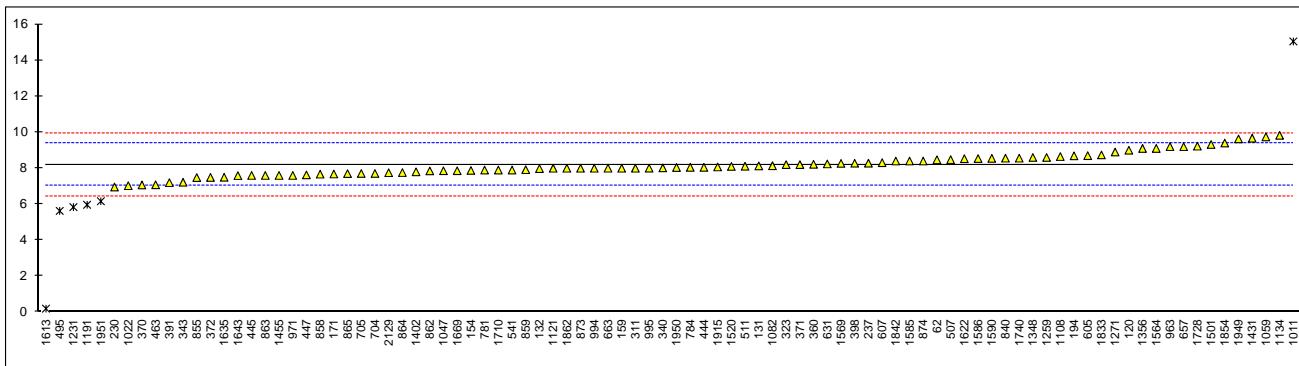
Determination of Calculated Carbon Aromaticity Index on sample #13001;

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
52	ISO8217	860		0.81	913		-----		-----
62		-----		-----	922		-----		-----
90		-----		-----	962		-----		-----
92		-----		-----	963	ISO8217	859.2		-0.16
120		859		-0.40	971		859.763		0.52
131		-----		-----	974		-----		-----
132	ISO8217	859		-0.40	982		-----		-----
140		-----		-----	994		-----		-----
154		-----		-----	995		-----		-----
158		-----		-----	996		-----		-----
159		860	C	0.81	1011		-----		-----
168		-----		-----	1022		-----		-----
169		-----		-----	1038		-----		-----
171	ISO8217	860.6	C	1.54	1047		-----		-----
175		-----		-----	1059		-----		-----
193		-----		-----	1062		-----		-----
194	ISO8217	860		0.81	1065		859.2		-0.16
195		-----		-----	1080		-----		-----
212		848.9	ex	-12.70	1082		-----		-----
221		-----		-----	1095		-----		-----
224		-----		-----	1108	ISO8217	859		-0.40
225		-----		-----	1109		-----		-----
228		-----		-----	1121	ISO8217	860	C	0.81
230	ISO8217	859.0		-0.40	1126		-----		-----
237		860	ex	0.81	1134	ISO8217	859.2		-0.16
238		-----		-----	1140		-----		-----
252		-----		-----	1161		-----		-----
253		-----		-----	1167		-----		-----
254	ISO8217	860		0.81	1177		-----		-----
273		-----		-----	1191		-----		-----
311		859		-0.40	1215		-----		-----
313		-----		-----	1229		-----		-----
323		859		-0.40	1231		-----		-----
331		835	G(0.01)	-29.62	1233		-----		-----
333		-----		-----	1254		-----		-----
334		-----		-----	1259		860.16		1.01
336		859		-0.40	1266		-----		-----
337		-----		-----	1269		-----		-----
340	ISO8217	860		0.81	1271		-----		-----
343	ISO8217	859.3		-0.04	1275		-----		-----
349		-----		-----	1337		-----		-----
353		-----		-----	1348		859.97		0.78
360	ISO8217	858		-1.62	1356		-----		-----
369		-----		-----	1358		-----		-----
370		-----		-----	1381		-----		-----
371		-----		-----	1395		-----		-----
372	ISO8217	859		-0.40	1396		-----		-----
375		-----		-----	1402		-----		-----
391		859.3		-0.04	1403		-----		-----
398	ISO8217	859		-0.40	1419	ISO8217	858		-1.62
399		-----		-----	1428		-----		-----
440		-----		-----	1431		-----		-----
444		-----		-----	1455	calc.	859		-0.40
445		-----		-----	1459		-----		-----
447		852	ex	-8.93	1460		-----		-----
463	calc.	858.8		-0.65	1483		-----		-----
494	ISO8217	860		0.81	1501	calc.	859.8		0.57
495		-----		-----	1510		-----		-----
507		859		-0.40	1520		858.8		-0.65
511		-----		-----	1551		-----		-----
528		-----		-----	1552		-----		-----
529		-----		-----	1553		-----		-----
541		-----		-----	1558		-----		-----
551		-----		-----	1559		-----		-----
557		-----		-----	1564		-----		-----
562		-----		-----	1569		-----		-----
575		-----		-----	1577		-----		-----
603		-----		-----	1585		860		0.81
604		-----		-----	1586		860		0.81
605		-----		-----	1590		-----		-----
607		-----		-----	1613		-----		-----
608		-----		-----	1616		-----		-----
631	ISO8217	862	G(0.01)	3.25	1622		-----		-----
657	ISO8217	859.3		-0.04	1631		-----		-----

663	calc.	859		-0.40	1635		-----		-----
671		-----		-----	1636		-----		-----
704	ISO8217	859		-0.40	1643		-----		-----
705	ISO8217	860		0.81	1648	calc.	859.8	C	0.57
732		-----		-----	1654		-----		-----
750		-----		-----	1669	ISO8517	858		-1.62
753	ISO8217	860.0		0.81	1677		-----		-----
781	ISO8217	859.6		0.33	1710		-----		-----
784	ISO8217	859.5		0.20	1712		-----		-----
785		-----		-----	1720		-----		-----
791		-----		-----	1724		859.2	C	-0.16
823		859		-0.40	1728		-----		-----
840	ISO8217	859.12		-0.26	1740	ISO8217	859		-0.40
851	ISO8217	858.79		-0.66	1807		-----		-----
855		859.1		-0.28	1810		-----		-----
858	ISO8217	859.0		-0.40	1811		-----		-----
859		895.1	ex	43.54	1832		-----		-----
862	ISO8217	859.0		-0.40	1833		859.98		0.79
863	ISO8217	859		-0.40	1842		-----		-----
864	ISO8217	859.1		-0.28	1849		-----		-----
865	ISO8217	859.0		-0.40	1854		859		-0.40
867	ISO8217	858.7		-0.77	1862	ISO8217	859		-0.40
873	ISO8217	860		0.81	1906		-----		-----
874	ISO8217	859		-0.40	1915		-----		-----
875		-----		-----	1936		-----		-----
886		-----		-----	1937		-----		-----
887		-----		-----	1938		-----		-----
902	ISO8217	860		0.81	1949	ISO8217	860		0.81
904		-----		-----	1950		859		-0.40
912		-----		-----	1951		-----		-----
					2129		860		0.81

normality	not OK
n	64
outliers	2
mean (n)	859.33
st.dev. (n)	0.562
R(calc.)	1.57
R(ISO8217:12)	2.30

ex = excluded, see §4.1 calculation error

Lab 159 first reported : 829   Lab 1121 first reported :862   Lab 1724 first reported :9864.6

Lab 171 first reported :15.02   Lab 1648 first reported :862

Kernel Density
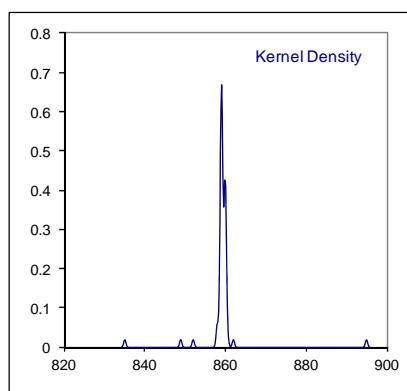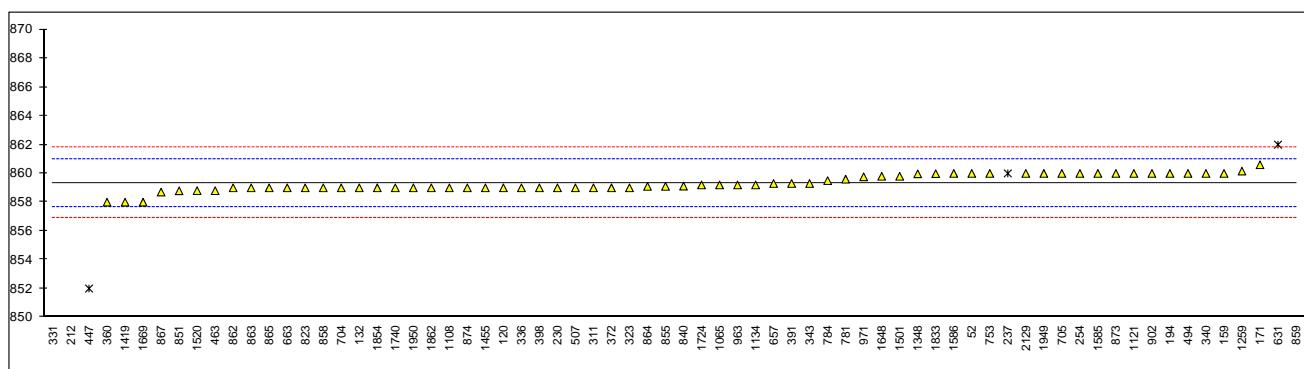
Determination of Conradson Carbon Residue on sample #13001; results in %M/M

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
52		-----		-----	913		-----		-----
62		-----		-----	922		-----		-----
90		-----		-----	962		-----		-----
92		-----		-----	963	D189	15.4		-0.24
120		-----		-----	971	D189	16.16		0.62
131		-----		-----	974		-----		-----
132		-----		-----	982		-----		-----
140		-----		-----	994	D189	16.0		0.44
154		-----		-----	995	D189	15.7417		0.14
158		-----		-----	996	D189	15.78		0.19
159		-----		-----	1011		-----		-----
168		-----		-----	1022		-----		-----
169		-----		-----	1038		-----		-----
171	D189	15.02		-0.68	1047		-----		-----
175		-----		-----	1059		-----		-----
193		-----		-----	1062		-----		-----
194		-----		-----	1065		-----		-----
195		-----		-----	1080		-----		-----
212	D189	15.83		0.25	1082		-----		-----
221		-----		-----	1095		-----		-----
224		-----		-----	1108		-----		-----
225	D189	15.83		0.25	1109		-----		-----
228	D189	16.16		0.62	1121		-----		-----
230	D189	15.88		0.30	1126		-----		-----
237	D189	15.7213		0.12	1134	IP13	14.863		-0.86
238		-----		-----	1140		-----		-----
252	D189	15.61		-0.01	1161		-----		-----
253		-----		-----	1167		-----		-----
254	D189	15.70		0.10	1177		-----		-----
273	D4530	15.9		0.33	1191		-----		-----
311		-----		-----	1215		-----		-----
313		-----		-----	1229		-----		-----
323		-----		-----	1231		-----		-----
331		-----		-----	1233		-----		-----
333	D189	15.4		-0.24	1254	D189	15.957		0.39
334		-----		-----	1259	D189	15.95		0.38
336		-----		-----	1266		-----		-----
337		-----		-----	1269		-----		-----
340		-----		-----	1271	D189	17.16		1.76
343		-----		-----	1275		-----		-----
349		-----		-----	1337		-----		-----
353	IP13	16.0706		0.52	1348		-----		-----
360	D189	14.3		-1.50	1356		-----		-----
369		-----		-----	1358		-----		-----
370	D189	15.83		0.25	1381		-----		-----
371	D189	16.25		0.72	1395		-----		-----
372	D189	14.7		-1.04	1396		-----		-----
375		-----		-----	1402	D189	15.9		0.33
391		-----		-----	1403		-----		-----
398	D189	16.01		0.45	1419		-----		-----
399		-----		-----	1428		-----		-----
440		-----		-----	1431	D524	14.64		-1.11
444	D189	11.01	CG(0.01)	-5.25	1455		-----		-----
445		-----		-----	1459		-----		-----
447		-----		-----	1460		-----		-----
463		-----		-----	1483		-----		-----
494		-----		-----	1501		-----		-----
495		-----		-----	1510		-----		-----
507	D189	16.81		1.36	1520		-----		-----
511	D189	13.291	C	-2.65	1551		-----		-----
528		-----		-----	1552		-----		-----
529		-----		-----	1553		-----		-----
541	D189	13.33		-2.60	1558		-----		-----
551		-----		-----	1559		-----		-----
557		-----		-----	1564		-----		-----
562	D189	15.9895		0.43	1569		-----		-----
575		-----		-----	1577		-----		-----
603		-----		-----	1585		-----		-----
604		-----		-----	1586	D189	15.23		-0.44
605		-----		-----	1590		-----		-----
607		-----		-----	1613	D189	15.551		-0.07
608		-----		-----	1616		-----		-----
631		-----		-----	1622	D189	16.34		0.83
657		-----		-----	1631		-----		-----

663		-----		-----	1635		-----		-----
671		-----		-----	1636		-----		-----
704	D189	15.54		-0.09	1643	D189	16.7		1.24
705	D189	15.43		-0.21	1648	D189	13.819	C	-2.05
732		-----		-----	1654		-----		-----
750	D189	11.22	G(0.01)	-5.01	1669		-----		-----
753	D189	17.697		2.37	1677		-----		-----
781	D189	16.23		0.70	1710		-----		-----
784		-----		-----	1712	ISO6615	15.82		0.23
785		-----		-----	1720		-----		-----
791		-----		-----	1724		-----		-----
823	D189	14.29		-1.51	1728	D189	14.98		-0.72
840	D189	16.72		1.26	1740	D189	16.31		0.79
851		-----		-----	1807		-----		-----
855		-----		-----	1810		-----		-----
858	D189	15.33		-0.32	1811		-----		-----
859	D189	15.32		-0.34	1832	D6615	15.790		0.20
862	D189	14.953		-0.75	1833	D189	15.5		-0.13
863	D189	15.43		-0.21	1842		-----		-----
864		-----		-----	1849		-----		-----
865	D189	15.60		-0.02	1854		-----		-----
867	D189	15.43		-0.21	1862	D189	16.02		0.46
873		-----		-----	1906		-----		-----
874		-----		-----	1915	D189	16.41		0.91
875		-----		-----	1936		-----		-----
886		-----		-----	1937		-----		-----
887		-----		-----	1938		-----		-----
902		-----		-----	1949	D189	16.09		0.54
904		-----		-----	1950	D189	15.44		-0.20
912		-----		-----	1951		-----		-----
					2129	D189	14.499		-1.27

normality	not OK
n	58
outliers	2
mean (n)	15.615
st.dev. (n)	0.8169
R(calc.)	2.287
R(D189:10)	2.457

Lab 444 first reported   : 21.530   Lab 1648 first reported :11.022

Lab 511 first reported   : 12.542

Kernel Density
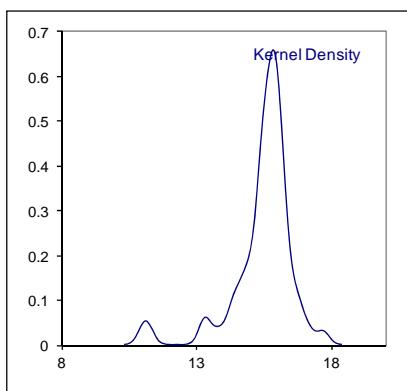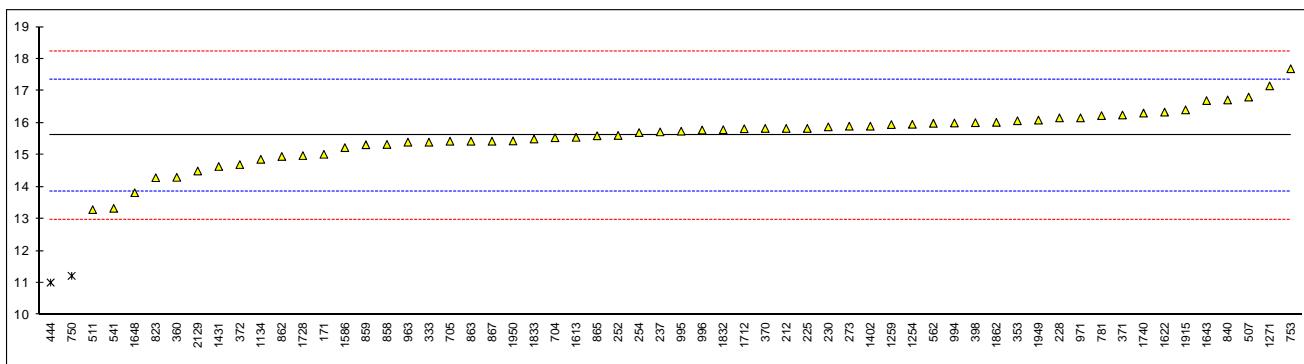
Determination of Density @ 15 °C on sample #13001; results in kg/m^3

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
52	D4052	1001.3		0.79	913		-----		-----
62	D4052	1001.5	C	1.17	922		-----		-----
90		-----		-----	962		-----		-----
92	D1298	1000.8	C	-0.14	963	D4052	1000.7		-0.33
120	ISO12185	1000.8		-0.14	971	IP365	1000.9	C	0.05
131	ISO12185	1001.2		0.61	974		-----		-----
132	D4052	1000.83		-0.08	982		-----		-----
140	D4052	999.4		-2.75	994	ISO12185	1001.5		1.17
154		-----		-----	995	D4052	1001.77		1.67
158	D4052	1001.5		1.17	996	D1298	1001.4		0.98
159	D4052	1000.9	C	0.05	1011	D4052	1001.25		0.70
168		-----		-----	1022	ISO12185	1001.42		1.02
169		-----		-----	1038	D4052	1000.7		-0.33
171	D1298	1002.2		2.47	1047	ISO12185	1000.99		0.21
175	D4052	1000.8		-0.14	1059	ISO12185	1003.3	G(0.05)	4.53
193	D4052	1002.3		2.66	1062	D4052	1001.4		0.98
194	ISO12185	1001.55	C	1.26	1065	D1298	1000.1		-1.45
195		-----		-----	1080	ISO12185	1002.0		2.10
212	ISO12185	999.7		-2.19	1082	ISO12185	1001.0		0.23
221		-----		-----	1095		-----		-----
224	D1298	1000.8		-0.14	1108	D1298	1001.2		0.61
225	D4052	1000.5	C	-0.70	1109	D4052	996.3	G(0.01)	-8.54
228	D1298	999.3		-2.94	1121	IP365	1001.8	C	1.73
230	ISO3675	1000.7		-0.33	1126	in house	1033.2	G(0.01)	60.34
237	D4052	1000.1		-1.45	1134	ISO12185	1000.5	C	-0.70
238		-----		-----	1140		-----		-----
252		-----		-----	1161	ISO3675	1001.0		0.23
253	D4052	1000	C	-1.63	1167	ISO12185	1000.6		-0.51
254	D1298	1000.8		-0.14	1177		-----		-----
273		-----		-----	1191	ISO12185	1002.3		2.66
311	ISO12185	1000.4		-0.89	1215	D1298	1000.8		-0.14
313	ISO12185	1000.5		-0.70	1229	ISO12185	1000.5		-0.70
323	ISO12185	1001.0		0.23	1231	D1298	1000.1		-1.45
331	ISO12185	976.8	G(0.01)	-44.94	1233	ISO12185	1000.5		-0.70
333		-----		-----	1254	ISO12185	1000.5	C	-0.70
334	D4052	1000.8		-0.14	1259	ISO3675	1001.6		1.35
336	ISO12185	1000.7		-0.33	1266	ISO3675	1001.3		0.79
337	ISO12185	1002.0		2.10	1269		-----		-----
340	ISO12185	1001.25		0.70	1271	ISO12185	1003.7	C,G(0.05)	5.27
343	ISO12185	1000.75		-0.23	1275	IP365	1001.2		0.61
349		-----		-----	1337		-----		-----
353	IP365	1000.2	C	-1.26	1348	D4052	1000.7		-0.33
360	ISO12185	999.4		-2.75	1356	ISO12185	1000.6		-0.51
369	ISO12185	1001.1		0.42	1358		-----		-----
370	ISO12185	1000.7		-0.33	1381	ISO12185	1000.89		0.03
371	ISO12185	1000.7		-0.33	1395	ISO12185	1000.6		-0.51
372	ISO12185	1000.5		-0.70	1396		-----		-----
375	D1298	999.5		-2.57	1402	ISO12185	1001.2		0.61
391	ISO12185	1000.7		-0.33	1403		-----		-----
398	ISO12185	1000.8		-0.14	1419	ISO12185	1001.7		1.54
399	ISO12185	1000.4		-0.89	1428	ISO12185	1001.2		0.61
440	D4052	1000.5		-0.70	1431	D4052	1000.26		-1.15
444	D4052	1001.0	C	0.23	1455	ISO12185	1000.6		-0.51
445	IP365	1001.9		1.91	1459	ISO12185	1001.2		0.61
447	IP365	997.25	G(0.01)	-6.77	1460		-----		-----
463	ISO12185	1000.40		-0.89	1483		-----		-----
494	ISO12185	1001.4		0.98	1501	ISO12185	1001.3		0.79
495	ISO12185	1000.8		-0.14	1510		-----		-----
507	ISO12185	1000.6		-0.51	1520	ISO12185	1000.68		-0.36
511	D4052	1000.8		-0.14	1551		-----		-----
528		-----		-----	1552	D1298	1001.60		1.35
529	D5002	1002.1		2.29	1553	D1298	1001.80		1.73
541	D5002	1000		-1.63	1558		-----		-----
551		-----		-----	1559		-----		-----
557		-----		-----	1564	D4052	1000.5		-0.70
562	D1298	1001.5	C	1.17	1569	ISO12185	1001.3		0.79
575		-----		-----	1577	EN3838	1000.2		-1.26
603	D1298	1001.6		1.35	1585	ISO12185	1001.1		0.42
604	D4052	1000.9		0.05	1586	ISO12185	1000.6	C	-0.51
605	D1298	1001.4		0.98	1590	D4052	1000.73	C	-0.27
607	D1298	1001.3		0.79	1613	D4052	1000.7		-0.33
608		-----		-----	1616		-----		-----
631	D1298	1002.9		3.78	1622	D4052	1000.7	C	-0.33
657	ISO12185	1000.7		-0.33	1631		-----		-----

663	D4052	1000.9	C	0.05
671	D1298	999.4		-2.75
704	ISO12185	1000.7		-0.33
705	D1298	1001.2		0.61
732	D4052	1000.1		-1.45
750	D4052	1001.8		1.73
753	ISO12185	1001.55		1.26
781	ISO12185	1001.1		0.42
784	ISO12185	1001.1		0.42
785	ISO12185	1001.4		0.98
791	ISO12185	1001.7		1.54
823	ISO12185	1001.2		0.61
840	ISO12185	1000.90		0.05
851	ISO12185	1000.4		-0.89
855	ISO12185	1000.6		-0.51
858	ISO12185	1000.6		-0.51
859	ISO12185	1000.6		-0.51
862	ISO12185	1000.6		-0.51
863	ISO12185	1000.6		-0.51
864	ISO12185	1000.6		-0.51
865	D1298	1000.7		-0.33
867	D1298	1000.6		-0.51
873	D1298	1001.2		0.61
874	D1298	1000.8		-0.14
875	D1298	1001.1		0.42
886		-----		-----
887		-----		-----
902	D4052	1001.6		1.35
904	D1298	1001.1		0.42
912		-----		-----

1635		-----		-----
1636	ISO3675	999.95		-1.73
1643	D4052	1001.9		1.91
1648	ISO3675	1000.62		-0.48
1654	ISO12185	1000.08	C	-1.48
1669	ISO12185	999.4	C	-2.75
1677		-----		-----
1710	ISO12185	999.2		-3.13
1712	ISO12185	1000.7		-0.33
1720	ISO12185	999.8		-2.01
1724	ISO12185	1000.6	C	-0.51
1728	D4052	1000.60		-0.51
1740	ISO3675	1000.6		-0.51
1807	D1298	1000.2		-1.26
1810	ISO12185	1000.7		-0.33
1811	ISO12185	1000.6		-0.51
1832	ISO12185	1000.7		-0.33
1833	ISO12185	1001.6		1.35
1842		-----		-----
1849	ISO12185	1000.5	C	-0.70
1854	ISO12185	1000.5		-0.70
1862	ISO12185	1000.4		-0.89
1906		-----		-----
1915	D4052	1002.4	C	2.85
1936	ISO12185	1000.6	C	-0.51
1937	ISO12185	1000.7		-0.33
1938	ISO12185	1000.7	C	-0.33
1949	ISO12185	1001.2		0.61
1950	ISO12185	1000.7		-0.33
1951	ISO12185	1001.3		0.79
2129	ISO12185	1001.4		0.98

normality	not OK	
n	159	
outliers	6	
mean (n)	1000.88	
st.dev. (n)	0.6333	
R(calc.)	1.77	
R(ISO12185:96)	1.50	

First reported results: Lab 62: 988.0, Lab 92:1.0008, Lab 159:970.4, Lab 194:1.00155, Lab 225 :1.0005, Lab 253:1.0000,Lab 353:1.0002, Lab 444:1024.0, Lab 1121:1.003.8, Lab 1254:1.0005, Lab 1271: 999, Lab 1586 :1.0006, Lab 1590 :1.00073, Lab 1622 :1.0007, Lab 1654 :998.80, Lab 1724: 1.0006, Lab 1849: 997.791, Lab 1915 :1.0024,Lab 1938 :1.0007

Probably unit errors: Lab 562 reported:1.0015, Lab 663 reported: 1.0009, lab 971 reported: 1.0009, Lab 1134 reported:1.0005, Lab 1669 reported: 9.994, Lab 1936 reported: 1.0006
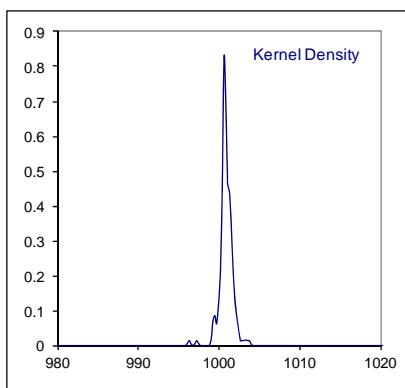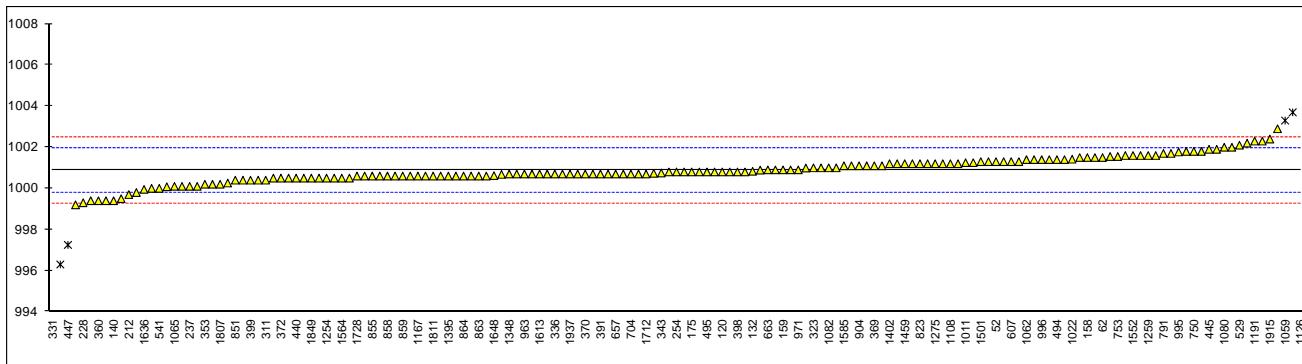
Determination of Flash Point PMcc on sample #13001; results in °C

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
52	D93	92.0		0.41	913		-----		-----
62	D93	89.5		-0.76	922		-----		-----
90	D93	>110		-----	962		-----		-----
92	D93	92.5		0.64	963	D93	91.0		-0.06
120	D93	91.0		-0.06	971	D93	86.0		-2.39
131	ISO2719	90.0		-0.52	974		-----		-----
132	ISO2719	90		-0.52	982		-----		-----
140	D93	86.5		-2.16	994	D93	90.0		-0.52
154	D93	90		-0.52	995	D93	90		-0.52
158	D93	88		-1.46	996	D93	89.5		-0.76
159	D93	90.6		-0.24	1011	D93	96.5		2.51
168	D93	91.67		0.26	1022		-----		-----
169	D93	84.4		-3.14	1038		-----		-----
171	D93	90.0		-0.52	1047	ISO2719	91.5		0.18
175	D93	90		-0.52	1059	ISO2719	89.0		-0.99
193	D93	93.9		1.30	1062	D93	86.0		-2.39
194	ISO2719	91.11		0.00	1065	D93	87		-1.92
195		-----		-----	1080		-----		-----
212	ISO2719	90.0		-0.52	1082		-----		-----
221		-----		-----	1095		-----		-----
224	D93	88.06		-1.43	1108	ISO2719	85.0		-2.86
225	D93	91.0		-0.06	1109	D93	93.0		0.88
228	D93	95.0		1.81	1121	IP34	89		-0.99
230	ISO2719	90.0		-0.52	1126		-----		-----
237	D93	94.0		1.34	1134		-----		-----
238		-----		-----	1140		-----		-----
252		-----		-----	1161	ISO2719	82.0	C	-4.26
253	D93	86	C	-2.39	1167	ISO2719	88.5		-1.22
254	D93	89.5		-0.76	1177		-----		-----
273	D93	89		-0.99	1191	ISO2719	93		0.88
311	ISO2719	91.0		-0.06	1215	D93	93.0		0.88
313	ISO2719	98.0		3.21	1229	ISO2719	90.5		-0.29
323	ISO2719	91.0		-0.06	1231	D93	94.0		1.34
331	ISO2719	92.0		0.41	1233	ISO2719	92.5		0.64
333	ISO2719	92.0		0.41	1254	D93	91.7		0.27
334	D93	91.0		-0.06	1259	ISO2719	95.0		1.81
336	ISO2719	93.0		0.88	1266	ISO2719	92.0		0.41
337		-----		-----	1269	D93	96		2.28
340	ISO2719	90.0		-0.52	1271	ISO2719	91.7		0.27
343	ISO2719	90.5		-0.29	1275		-----		-----
349	D93	86		-2.39	1337	ISO2719	89.95		-0.55
353	IP34	94.0		1.34	1348	D93	94		1.34
360	ISO2719	91.0		-0.06	1356	ISO2719	94.6	C	1.62
369	ISO2719	90.5		-0.29	1358		-----		-----
370	ISO2719	91.0		-0.06	1381	ISO2719	92.50		0.64
371	ISO2719	90.6		-0.24	1395	ISO2719	94.0		1.34
372	ISO2719	89.0		-0.99	1396		-----		-----
375		-----		-----	1402		-----		-----
391	ISO2719	92.0		0.41	1403		-----		-----
398	ISO2719	93.0		0.88	1419		-----		-----
399	ISO2719	92.0		0.41	1428	ISO2719	91.5		0.18
440	D93	91.3		0.08	1431	D93	94		1.34
444	D93	93.2		0.97	1455	ISO2719	90.5		-0.29
445	IP34	92.0		0.41	1459	ISO2719	85.0		-2.86
447	D93	93.5		1.11	1460		-----		-----
463	ISO2719	92.5		0.64	1483		-----		-----
494	ISO2719	90.0		-0.52	1501	D7094	131.1	C,G(0.01)	18.66
495	ISO2719	91.0		-0.06	1510		-----		-----
507	ISO2719	89.0		-0.99	1520	ISO2719	91.0		-0.06
511	D93	86.1		-2.34	1551	IP523	99.9		4.10
528		-----		-----	1552	D93	92.50		0.64
529	D93	92.97		0.86	1553	D93	93.00		0.88
541	D93	92.0		0.41	1558	ISO3679	98.65		3.51
551		-----		-----	1559		-----		-----
557		-----		-----	1564	D93	89		-0.99
562	D93	89.895		-0.57	1569		-----		-----
575		-----		-----	1577	D93	98		3.21
603	D93	89.5		-0.76	1585	ISO2719	89.0		-0.99
604	D93	89.0		-0.99	1586	ISO2719	88.0		-1.46
605	D93	88.0		-1.46	1590	D93	89.5		-0.76
607	D93	90.0		-0.52	1613	D93	97.5		2.98
608		-----		-----	1616		-----		-----
631	D93	91.0		-0.06	1622		-----		-----
657	ISO2719	88	C	-1.46	1631	ISO2719	92		0.41

663	D93	99.2		3.77	1635	ISO2719	73.0	G(0.01)	-8.46
671	D93	87.0		-1.92	1636	ISO2719	88.7		-1.13
704	ISO2719	89.0		-0.99	1643	D93	93.2		0.97
705	D93	88.0		-1.46	1648	ISO2719	96.5		2.51
732	D93	91.0		-0.06	1654	ISO2719	94.5		1.58
750	D93	78.0	G(0.01)	-6.12	1669	ISO2719	94.0		1.34
753	D93	90.5		-0.29	1677		-----		-----
781	ISO2719	91.0		-0.06	1710	ISO2719	87.0		-1.92
784	ISO2719	92.0		0.41	1712	ISO2719	93.5		1.11
785	ISO2719	91.0		-0.06	1720		-----		-----
791	ISO2719	89		-0.99	1724	ISO2719	90		-0.52
823	ISO2719	91.0		-0.06	1728	D93	92.0		0.41
840	D93	90.7		-0.20	1740	ISO2719	95.0		1.81
851	ISO2719	94.0		1.34	1807	D93	94.0		1.34
855	D93	91.5		0.18	1810	ISO2719	93		0.88
858	ISO2719	92.0		0.41	1811	ISO2719	91		-0.06
859	ISO2719	92.0		0.41	1832	ISO2719	92.0		0.41
862	ISO2719	88.5		-1.22	1833	ISO2719	91		-0.06
863	ISO2719	90.0		-0.52	1842	D93	89		-0.99
864	D93	92.0		0.41	1849	ISO2719	89.5		-0.76
865	D93	89.0		-0.99	1854	ISO2719	95		1.81
867	D93	91.0		-0.06	1862	ISO2719	91.0		-0.06
873	ISO2719	92.0		0.41	1906		-----		-----
874	ISO2719	92.0		0.41	1915	D93	88		-1.46
875	D93	92.0		0.41	1936		-----		-----
886	D93	90.5		-0.29	1937		-----		-----
887	D93	90.5		-0.29	1938		-----		-----
902	D93	91.0		-0.06	1949	ISO2719	94.0		1.34
904	D93	91.0		-0.06	1950	ISO2719	89.0		-0.99
912		-----		-----	1951	ISO2719	94.0		1.34
					2129	ISO2719	88.0		-1.46
							Only		

normality	not OK
n	160
outliers	3
mean (n)	91.12
st.dev. (n)	2.829
R(calc.)	7.92
R(ISO2719:02)	6.00

Lab 253 first reported : 80.0   Lab 1356 first reported :108

Lab 657 first reported : 74.0   Lab 1501 first reported :101.1

Lab 1161 first reported : 0.82
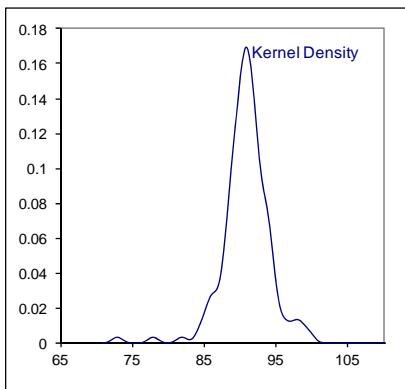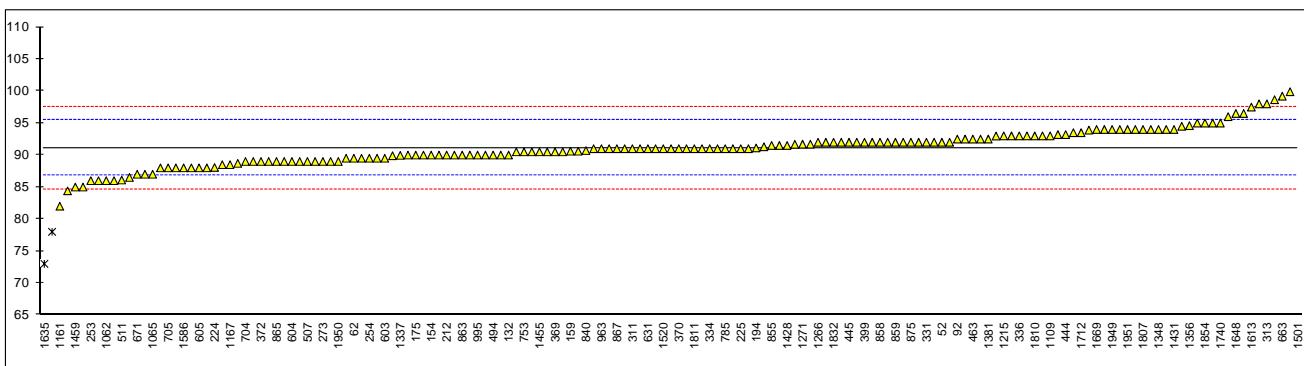
Determination of Heat of Combustion Gross on sample #13001; results in MJ/kg

lab	method	value	mark	z(targ)	lab	method	value	Mark	z(targ)
52	D240	42.634		-0.34	913		-----		-----
62		-----		-----	922		-----		-----
90		-----		-----	962		-----		-----
92	D240	42.395		-2.01	963	D240	42.092	G(0.05)	-4.14
120		-----		-----	971	D240	42.77		0.61
131	D240	42.843		1.12	974		-----		-----
132	D240	42.5611		-0.85	982		-----		-----
140		-----		-----	994	D4868	42.799		0.81
154		-----		-----	995	D4868	42.79		0.75
158		-----		-----	996	D4868	42.795	C	0.79
159	D240	42.696		0.09	1011	D240	40.42	G(0.01)	-15.84
168		-----		-----	1022	D240	43.04		2.50
169		-----		-----	1038		-----		-----
171	D240	42.380		-2.12	1047	INH-04062	42.435		-1.73
175	D240	42.844		1.13	1059	DIN51900Mod.	42.618		-0.45
193		-----		-----	1062		-----		-----
194	D240	42.5878		-0.66	1065		-----		-----
195		-----		-----	1080		-----		-----
212		-----		-----	1082	D240	42.586		-0.68
221		-----		-----	1095		-----		-----
224		-----		-----	1108		-----		-----
225	D4868	42.79		0.75	1109		-----		-----
228		-----		-----	1121		-----		-----
230	D4868	42.807		0.87	1126		-----		-----
237	D4868	42.793		0.77	1134	D240	42.650		-0.23
238		-----		-----	1140		-----		-----
252		-----		-----	1161	D240	42.582	C	-0.71
253		-----		-----	1167	DIN51900	42.36	C	-2.26
254		-----		-----	1177	DIN51900	42.213		-3.29
273		-----		-----	1191		-----		-----
311	D240	42.755		0.51	1215		-----		-----
313		-----		-----	1229		-----		-----
323		-----		-----	1231		-----		-----
331		-----		-----	1233		-----		-----
333	D240	42.675		-0.05	1254		-----		-----
334		-----		-----	1259	D4868	42.81		0.89
336		-----		-----	1266	UNE51123	43.4399	G(0.01)	5.30
337		-----		-----	1269	DIN51900	42.686		0.02
340	D240	45.5269	G(0.01)	19.91	1271	D4868	42.833		1.05
343	D240	42.46		-1.56	1275		-----		-----
349		-----		-----	1337		-----		-----
353		-----		-----	1348	D4868	42.81		0.89
360	D240	42.792		0.76	1356		-----		-----
369	D4868	42.8		0.82	1358		-----		-----
370		-----		-----	1381	D240	42.5840		-0.69
371		-----		-----	1395	D4868	42.84		1.10
372	D4868	42.814		0.92	1396		-----		-----
375		-----		-----	1402		-----		-----
391		-----		-----	1403	D240	42.6		-0.58
398	D240	42.712		0.20	1419		-----		-----
399		-----		-----	1428	D240	42.65	C	-0.23
440		-----		-----	1431	D4809	42.588		-0.66
444		-----		-----	1455		-----		-----
445	D240	42.634		-0.34	1459		-----		-----
447		-----		-----	1460		-----		-----
463		-----		-----	1483		-----		-----
494		-----		-----	1501		-----		-----
495		-----		-----	1510		-----		-----
507	D4868	42.782		0.69	1520		-----		-----
511	D4868	42.842	C	1.11	1551		-----		-----
528		-----		-----	1552	D240	42.54002		-1.00
529		-----		-----	1553		-----		-----
541	D4888	42.77		0.61	1558		-----		-----
551		-----		-----	1559	D240	42.524	C	-1.11
557		-----		-----	1564	ISO8217	43.107		2.97
562		-----		-----	1569	D240	42.5585		-0.87
575		-----		-----	1577		-----		-----
603		-----		-----	1585		-----		-----
604		-----		-----	1586	D240	42.758		0.53
605		-----		-----	1590		-----		-----
607	D240	42.55		-0.93	1613	D240	42.642		-0.29
608		-----		-----	1616		-----		-----
631	D240	42.6674		-0.11	1622	D240	42.52		-1.14
657	D240	42.36		-2.26	1631		-----		-----

Lab	Method	Value		z-score		Lab	Method	Value	z-score
663		-----		-----		1635	D240	42.576	-0.75
671	D240	42.6		-0.58		1636	D4868	42.833	1.05
704		-----		-----		1643	D240	42.7014	0.13
705	D4868	42.80		0.82		1648		-----	-----
732	D4868	42.816		0.93		1654		-----	-----
750		-----		-----		1669		-----	-----
753	D4868	42.804		0.85		1677		-----	-----
781	D4868	42.81		0.89		1710	D4809	42.534	-1.04
784	D4868	42.81		0.89		1712	INH-04062	42.56	-0.86
785		-----		-----		1720		-----	-----
791		-----		-----		1724		-----	-----
823	D240	42.642		-0.29		1728	D4868	42.83098	1.04
840	D240	42.622		-0.43		1740	D240	42.770	0.61
851	D4868	42.801		0.83		1807	D240	42.538	-1.01
855	D4868	42.82		0.96		1810	D240	42.63	-0.37
858	D4868	42.81		0.89		1811	D240	42.42	-1.84
859	ISO8217	43.82	G(0.01)	7.96		1832		-----	-----
862		-----		-----		1833		-----	-----
863	D240	42.700		0.12		1842		-----	-----
864		-----		-----		1849		-----	-----
865	INH-384	42.691		0.06		1854	D240	42.645	-0.26
867	D4868	42.82		0.96		1862	D4868	42.77	0.61
873	D4868	43.02		2.36		1906	D4809	42.562	-0.85
874		-----		-----		1915	D4809	42.4696	-1.49
875		-----		-----		1936		-----	-----
886	D240	42.601		-0.57		1937		-----	-----
887		-----		-----		1938		-----	-----
902		-----		-----		1949		-----	-----
904		-----		-----		1950	D240	42.7184	0.25
912		-----		-----		1951		-----	-----
						2129	D240	42.6740	-0.06

normality	not OK
n	85
outliers	5
mean (n)	42.683
st.dev. (n)	0.1568
R(calc.)	0.439
R(D240:09)	0.400

Lab 511 first reported : 48.866　　　　　Lab 1167 first reported :42.360

Lab 996 first reported : 51.447　　　　　Lab 1428 :first reported as net heat of combustion

Lab 1161 first reported : 43.738　　　　　Lab 1559 first reported : 10156 cal/g

Kernel Density
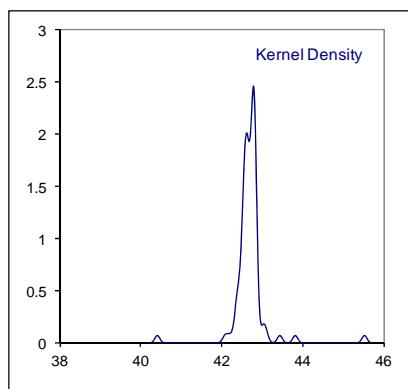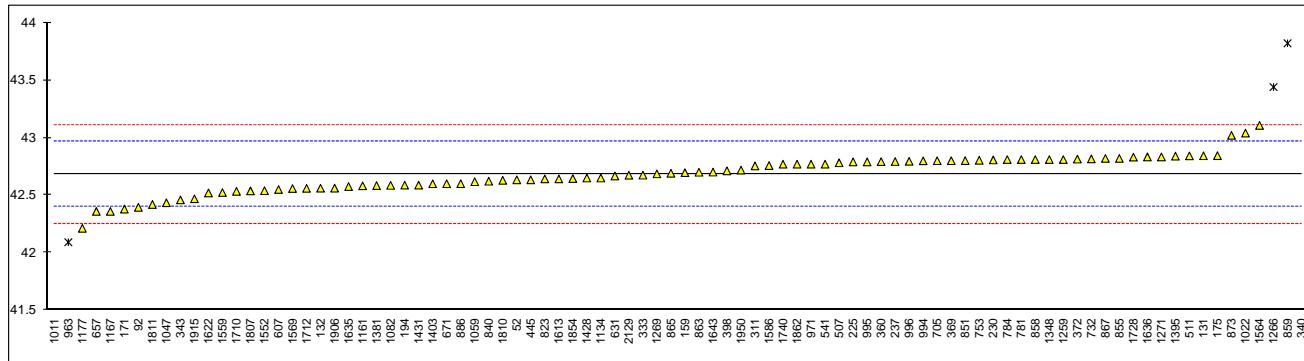
Determination of Heat of Combustion Net on sample #13001; results in MJ/kg

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
52		-----		-----	913		-----		-----
62		-----		-----	922		-----		-----
90		-----		-----	962		-----		-----
92		-----		-----	963		-----		-----
120		-----		-----	971	D240	40.47		-0.09
131		-----		-----	974		-----		-----
132		-----		-----	982		-----		-----
140		-----		-----	994	D4868	40.501		0.13
154		-----		-----	995	D4868	40.498		0.10
158		-----		-----	996	D4868	40.496	C	0.09
159		-----		-----	1011	D240	40.38		-0.72
168		-----		-----	1022	D240	40.74		1.80
169		-----		-----	1038		-----		-----
171		-----		-----	1047	INH-04062	40.256	C	-1.59
175		-----		-----	1059	DIN51900Mod.	40.230		-1.77
193		-----		-----	1062		-----		-----
194		-----		-----	1065		-----		-----
195		-----		-----	1080		-----		-----
212		-----		-----	1082	D240	40.1438		-2.37
221		-----		-----	1095		-----		-----
224		-----		-----	1108		-----		-----
225	D4868	40.49		0.05	1109		-----		-----
228		-----		-----	1121		-----		-----
230	D4868	40.505		0.15	1126		-----		-----
237	D4868	40.489		0.04	1134	D240	40.485		0.01
238		-----		-----	1140		-----		-----
252		-----		-----	1161	D240	40.830		2.43
253		-----		-----	1167		-----		-----
254		-----		-----	1177	DIN51900	40.133		-2.45
273		-----		-----	1191		-----		-----
311	D240	40.550		0.47	1215		-----		-----
313		-----		-----	1229		-----		-----
323		-----		-----	1231		-----		-----
331		-----		-----	1233		-----		-----
333		-----		-----	1254		-----		-----
334		-----		-----	1259	D4868	40.52		0.26
336		-----		-----	1266	UNE51123	41.3206	G(0.01)	5.86
337		-----		-----	1269		-----		-----
340		-----		-----	1271	D4868	40.525		0.29
343	D240	40.34		-1.00	1275		-----		-----
349		-----		-----	1337		-----		-----
353		-----		-----	1348	D4868	40.50		0.12
360	D240	40.442		-0.29	1356		-----		-----
369	D4868	40.5		0.12	1358		-----		-----
370		-----		-----	1381		-----		-----
371		-----		-----	1395	D4868	40.54		0.40
372	D4868	40.512		0.20	1396		-----		-----
375		-----		-----	1402		-----		-----
391		-----		-----	1403		-----	W	-----
398	D240	40.486		0.02	1419		-----		-----
399		-----		-----	1428		-----	C	-----
440		-----		-----	1431	D4809	40.424		-0.41
444		-----		-----	1455		-----		-----
445	D240	40.427		-0.39	1459		-----		-----
447		-----		-----	1460		-----		-----
463		-----		-----	1483		-----		-----
494		-----		-----	1501		-----		-----
495		-----		-----	1510		-----		-----
507	D4868	40.484		0.01	1520		-----		-----
511	D4868	40.534		0.36	1551		-----		-----
528		-----		-----	1552		-----		-----
529		-----		-----	1553		-----		-----
541	D4868	40.46		-0.16	1558		-----		-----
551		-----		-----	1559		-----		-----
557		-----		-----	1564	ISO8217	40.809		2.28
562		-----		-----	1569	D240	40.4115		-0.50
575		-----		-----	1577		-----		-----
603		-----		-----	1585		-----		-----
604		-----		-----	1586		-----		-----
605		-----		-----	1590		-----		-----
607		-----		-----	1613	D240	40.307		-1.23
608		-----		-----	1616		-----		-----
631		-----		-----	1622	D240	40.62		0.96
657	D240	40.25		-1.63	1631		-----		-----

Lab	Method	Value	Flag	z-score
663		-----		-----
671		-----		-----
704		-----		-----
705	D4868	40.50		0.12
732	D4868	40.512		0.20
750		-----		-----
753	D4868	40.505		0.15
781	D4868	40.51		0.19
784	D4868	40.51		0.19
785		-----		-----
791		-----		-----
823		-----		-----
840	D4868	40.485		0.01
851	D4868	40.498		0.10
855	D4868	40.52		0.26
858	D4868	40.50		0.12
859	ISO8217	40.80		2.22
862		-----		-----
863	D240	40.51		0.19
864		-----		-----
865	INH-384	40.424		-0.41
867	D4868	40.52		0.26
873	D4868	40.71		1.59
874		-----		-----
875		-----		-----
886		-----		-----
887		-----		-----
902		-----		-----
904		-----		-----
912		-----		-----

Lab	Method	Value	Flag	z-score
1635		-----		-----
1636	D4868	40.528		0.31
1643	D240	40.5794		0.67
1648		-----		-----
1654		-----		-----
1669	ISO8517	40.775		2.04
1677		-----		-----
1710	D4809	40.344		-0.97
1712	INH-04062	40.34		-1.00
1720		-----		-----
1724	D240	41.9788	G(0.01)	10.47
1728	D4868	40.52854		0.32
1740	D240	40.584		0.71
1807	D240	40.269		-1.50
1810	D240	40.47		-0.09
1811	D240	40.24		-1.70
1832		-----		-----
1833	D240	42.772	C,G(0.01)	16.02
1842		-----		-----
1849		-----		-----
1854	D240	40.502		0.13
1862	D4868	40.47		-0.09
1906	D4809	40.440		-0.30
1915	D4809	40.5818		0.69
1936		-----		-----
1937		-----		-----
1938		-----		-----
1949		-----		-----
1950	D240	40.4725		-0.07
1951		-----		-----
2129	D240	40.4820		-0.01

	All	Only ASTM D4668	Only ASTM D240
normality	not OK	OK	OK
n	65	28	24
outliers	3	1	2
mean (n)	40.483	40.502	40.458
st.dev. (n)	0.1392	0.0236	0.1563
R(calc.)	0.390	0.07	0.438
R(D240:09)	0.400	0.40	0.400

Lab 996 first reported   : 46.315

Lab 1047 first reported : 40.086

Lab 1403 result withdrawn, first reported : 41.4

Lab 1428 first reported:42.65, see heat of combustion gross

Lab 1833 first reported :42.234

Kernel Density
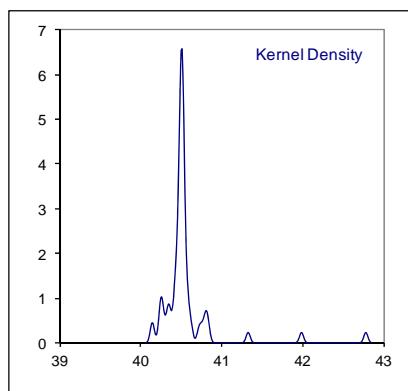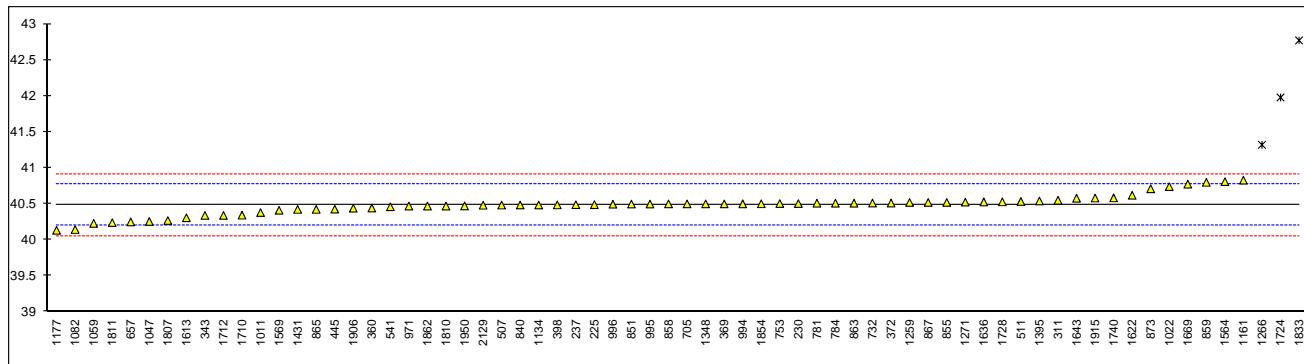
Determination of Kinematic Viscosity @ 50°C on sample #13001; results in mm^2/s

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
52	D445	467.4		-1.69	913		-----		-----
62	D445	490.7		0.11	922		-----		-----
90		-----		-----	962		-----		-----
92	D445	480.46		-0.68	963	D445	482.0		-0.56
120	D445	476.8		-0.96	971	D445	492.2		0.23
131	ISO3104	491.1		0.14	974		-----		-----
132	ISO3104	481.5445		-0.60	982		-----		-----
140	D445	538.5	G(0.01)	3.81	994	D445	481.3		-0.62
154	D445	490.5		0.10	995	D445	488.627		-0.05
158	D445	497.79		0.66	996	D445	485.30		-0.31
159	D445	470.95		-1.42	1011	D445	477.75		-0.89
168	D445	475.13		-1.09	1022	ISO3104	488.62		-0.05
169	D445	536.05	G(0.01)	3.62	1038		-----		-----
171	D445	491.85		0.20	1047	ISO3104	510.0		1.60
175	D445	485.8		-0.27	1059	ISO3104	502.335		1.01
193	D445	489.9719		0.05	1062		-----		-----
194	ISO3104	505.46		1.25	1065	D445	479.6		-0.75
195		-----		-----	1080		-----		-----
212	ISO3104	502.8		1.05	1082	ISO3104	488.1		-0.09
221		-----		-----	1095		-----		-----
224		-----		-----	1108	ISO3104	510.0		1.60
225	D445	489.8		0.04	1109	D445	490.55		0.10
228	D445	479.99		-0.72	1121	IP71	499.68		0.81
230	ISO3104	492.12		0.22	1126	D445	491.24		0.15
237	D445	492.7		0.27	1134	ISO3104	476.73097		-0.97
238		-----		-----	1140		-----		-----
252		-----		-----	1161	ISO3104	500.4		0.86
253	D445	495.9		0.51	1167		-----		-----
254	D445	480.0		-0.72	1177		-----		-----
273	D445	497.1		0.61	1191	ISO3104	488.66		-0.05
311	D445	478.1		-0.86	1215		-----		-----
313	ISO3104	474.5		-1.14	1229	ISO3104	493.37		0.32
323	ISO3104	491.6		0.18	1231	D445	474.8		-1.12
331	ISO3104	485.64		-0.28	1233	ISO3104	497.1		0.61
333	ISO3104	485.0		-0.33	1254	ISO3104	494.25		0.39
334	D445	494.4		0.40	1259	ISO3104	481.1		-0.63
336	ISO3104	485.8		-0.27	1266	ISO3104	489.85		0.04
337	ISO3104	506.9		1.36	1269		-----		-----
340	ISO3104	493.77		0.35	1271	ISO3104	491.585		0.18
343	ISO3104	486.6		-0.21	1275		-----		-----
349		-----		-----	1337		-----		-----
353		-----		-----	1348	D445	465	C	-1.88
360	ISO3104	490.49		0.09	1356	ISO3104	502.7		1.04
369	ISO3104	475.46		-1.07	1358		-----		-----
370	ISO3104	488.55		-0.06	1381	ISO3104	501.65		0.96
371	ISO3104	491.3		0.16	1395		-----		-----
372	ISO3104	499.5		0.79	1396		-----		-----
375		-----		-----	1402		-----		-----
391	ISO3104	480.8		-0.65	1403		-----		-----
398	ISO3104	489.3		0.00	1419		-----		-----
399	ISO3104	496.7		0.57	1428	ISO3104	485.2		-0.31
440		-----		-----	1431		-----		-----
444	ISO3104	553.44	C,G(0.01)	4.96	1455	ISO3104	475.6		-1.06
445	IP71	500.7		0.88	1459		-----		-----
447	D445	505.60		1.26	1460		-----		-----
463	D445	488.65		-0.05	1483		-----		-----
494	ISO3104	478.0		-0.87	1501		-----		-----
495	ISO3104	498.83		0.74	1510		-----		-----
507	ISO3104	492.48		0.25	1520	ISO3104	501.21		0.92
511	D445	502.485		1.02	1551		-----		-----
528		-----		-----	1552	D445	490.862		0.12
529		-----		-----	1553	D445	490.58		0.10
541	D445	502.8		1.05	1558	ISO3104	497.5		0.64
551		-----		-----	1559		-----		-----
557		-----		-----	1564	D445	502.3		1.01
562	D445	490.953		0.13	1569	ISO3104	502.85		1.05
575		-----		-----	1577	D445	497.92		0.67
603	D445	484.41		-0.38	1585	ISO3104	481.67		-0.59
604	D445	487.87		-0.11	1586	ISO3104	476.674		-0.97
605	D445	484.60		-0.36	1590	ISO3104	481.45		-0.60
607	D445	487.7		-0.12	1613	D445	475.3		-1.08
608		-----		-----	1616		-----		-----
631	D445	478.15		-0.86	1622	D445	489.8		0.04
657	ISO3104	477.6		-0.90	1631		-----		-----

663	D445	487.80		-0.11	1635	ISO3104	471.8		-1.35
671	D445	482.24		-0.54	1636	ISO3104	486.50		-0.21
704	ISO3104	479.00		-0.79	1643	D445	506.32		1.32
705	D445	487.30		-0.15	1648	D445	478.72		-0.82
732	D445	484.1	C	-0.40	1654		-----		-----
750	D445	495.6		0.49	1669	ISO3104	475.9		-1.03
753	D445	484.25		-0.39	1677		-----		-----
781	ISO3104	490.29		0.08	1710	ISO3104	486.4		-0.22
784	ISO3104	491.5		0.17	1712	ISO3104	508.5		1.49
785	ISO3104	486.345		-0.23	1720		-----		-----
791	ISO3104	486.6		-0.21	1724	ISO3104	479.84		-0.73
823	ISO3104	501.5	C	0.95	1728	D445	596.68	C,G(0.01)	8.31
840	D445	498.06		0.68	1740	ISO3104	489.2		-0.01
851	ISO3104	489.18		-0.01	1807		-----		-----
855	D445	486.19		-0.24	1810		-----		-----
858	D445	487.84		-0.11	1811		-----		-----
859	ISO3104	482.47		-0.53	1832	ISO3104	499.380		0.78
862	ISO3104	487.26		-0.16	1833	ISO3104	489.8		0.04
863	ISO3104	488.2		-0.08	1842	IP71	478.4		-0.84
864	D445	486.30		-0.23	1849		-----		-----
865	D445	490.42		0.09	1854	ISO3104	487.5		-0.14
867	D445	503.10		1.07	1862	ISO3104	499.94		0.83
873	ISO3104	482.0		-0.56	1906		-----		-----
874	ISO3104	481.8		-0.58	1915	D445	504.15		1.15
875	D445	491.2		0.15	1936		-----		-----
886	D445	492.6		0.26	1937		-----		-----
887	D445	497.7		0.65	1938		-----		-----
902	D445	478.936		-0.80	1949	ISO3104	486.85		-0.19
904	D445	478.1		-0.86	1950	ISO3104	514.39		1.94
912		-----		-----	1951	ISO3104	498.31		0.70
					2129	ISO3104	489.7		0.03

normality	OK
n	145
outliers	4
mean (n)	489.269
st.dev. (n)	9.4582
R(calc.)	26.483
R(ISO3104:94)	36.206

Lab 444 first reported : 4613.9   Lab 1348 first reported :455

Lab 732 first reported : 39.39   Lab 1728 first reported :446.80

Lab 823 first reported : 529.9

Kernel Density
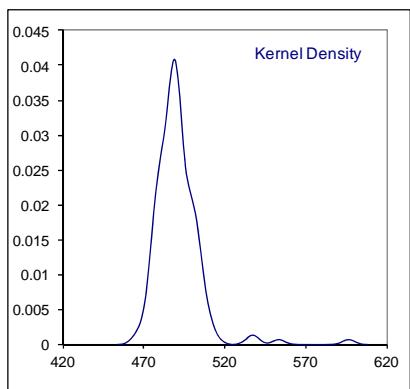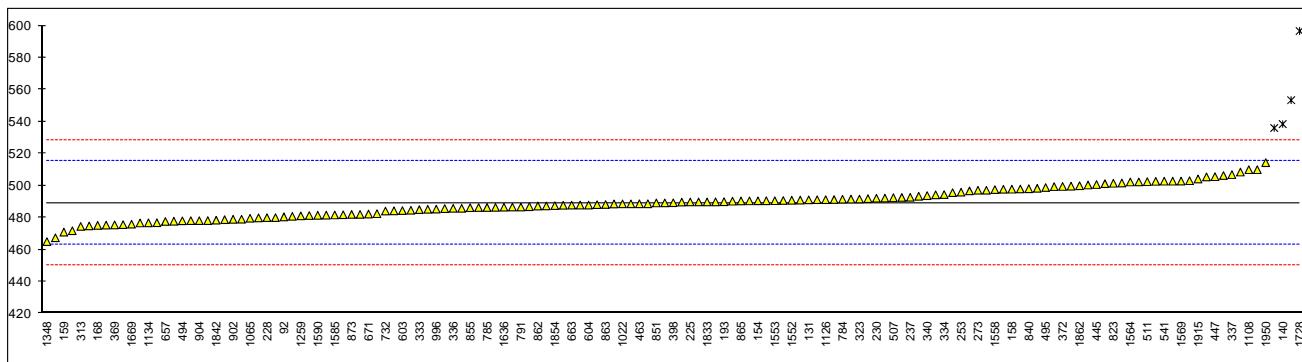
Determination of Kinematic Viscosity @ 100°C on sample #13001; results in mm^2/s

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
52		-----		-----	913		-----		-----
62		-----		-----	922		-----		-----
90	D445	36.59784		-3.84	962		-----		-----
92		-----		-----	963	D445	38.95		-0.35
120		-----		-----	971	D445	37.54		-2.44
131	ISO3104	39.52		0.50	974		-----		-----
132		-----		-----	982		-----		-----
140	D445	39.40		0.32	994	D445	39.36		0.26
154		-----		-----	995	D445	39.447		0.39
158		-----		-----	996	D445	39.261		0.12
159		-----		-----	1011	D445	38.320		-1.28
168		-----		-----	1022	ISO3104	38.542		-0.95
169	D445	42.157	DG(0.05)	4.41	1038		-----		-----
171	D445	40.53		2.00	1047	ISO3104	38.56		-0.92
175		-----		-----	1059	ISO3104	38.37		-1.21
193		-----		-----	1062	D445	40.1		1.36
194		-----		-----	1065	D445	40.29		1.64
195		-----		-----	1080		-----		-----
212		-----		-----	1082	ISO3104	39.68		0.74
221		-----		-----	1095		-----		-----
224		-----		-----	1108	ISO3104	40.52		1.98
225	D445	39.51		0.48	1109	D445	38.398		-1.17
228		-----		-----	1121		-----		-----
230	ISO3104	40.124		1.40	1126		-----		-----
237	D445	38.88		-0.45	1134	ISO3104	35.6333	G(0.05)	-5.27
238		-----		-----	1140		-----		-----
252		-----		-----	1161	ISO3104	39.29		0.16
253	D445	38.2	C	-1.46	1167	ISO3104	39.692		0.75
254		-----		-----	1177		-----		-----
273	D445	41.48		3.41	1191	ISO3104	39.446		0.39
311	D445	38.87		-0.46	1215		-----		-----
313		-----		-----	1229		-----		-----
323	ISO3104	39.16		-0.03	1231	D445	38.81		-0.55
331		-----		-----	1233		-----		-----
333	ISO3104	38.61		-0.85	1254	ISO3104	38.780		-0.60
334		-----		-----	1259	ISO3104	38.58		-0.90
336	ISO3104	37.74		-2.14	1266		-----		-----
337		-----		-----	1269		-----		-----
340	ISO3104	38.537		-0.96	1271	ISO3104	38.385		-1.18
343	ISO3104	39.97		1.17	1275		-----		-----
349		-----		-----	1337		-----		-----
353	IP71	40.465		1.90	1348	D445	40.97		2.65
360	ISO3104	39.289		0.16	1356		-----		-----
369	ISO3104	38.570		-0.91	1358		-----		-----
370		-----		-----	1381	ISO3104	38.955		-0.34
371	ISO3104	39.13		-0.08	1395		-----		-----
372	ISO3104	40.69		2.24	1396		-----		-----
375		-----		-----	1402	IP71	41.59		3.57
391	ISO3104	39.52		0.50	1403		-----		-----
398	ISO3104	38.38		-1.19	1419	ISO3104	38.82		-0.54
399	ISO3104	39.80		0.91	1428	ISO3104	38.58		-0.90
440	D445	38.40		-1.16	1431		-----		-----
444	ISO3104	49.24	C,G(0.01)	14.92	1455	ISO3104	38.96		-0.33
445	IP71	39.03		-0.23	1459		-----		-----
447	D445	54.635	G(0.01)	22.92	1460		-----		-----
463	D445	39.253		0.10	1483		-----		-----
494	ISO3104	38.83		-0.52	1501		-----		-----
495	ISO3104	38.35		-1.24	1510		-----		-----
507	ISO3104	38.652		-0.79	1520	ISO3104	40.078		1.33
511	D445	39.276		0.14	1551	IP71	38.472		-1.06
528		-----		-----	1552	D445	38.504		-1.01
529		-----		-----	1553	D445	38.057		-1.67
541	D445	39.44		0.38	1558		-----		-----
551		-----		-----	1559		-----		-----
557		-----		-----	1564	D445	38.54		-0.95
562	D445	39.4822		0.44	1569		-----		-----
575		-----		-----	1577	D445	45.45	G(0.01)	9.30
603	D445	39.18		0.00	1585	ISO3104	38.993		-0.28
604		-----		-----	1586	ISO3104	38.645		-0.80
605	D445	40.454		1.89	1590	ISO3104	39.110		-0.11
607		-----		-----	1613	D445	37.80		-2.05
608		-----		-----	1616		-----		-----
631		-----		-----	1622	D445	38.59		-0.88
657	ISO3104	39.21		0.04	1631	ISO3104	38.55		-0.94

663	D445	40.014		1.23	1635	ISO3104	38.90		-0.42
671	D445	38.68		-0.75	1636	ISO3104	39.416		0.35
704	ISO3104	39.631		0.66	1643	D445	39.326		0.21
705		-----		-----	1648	D445	37.924	C	-1.87
732	D445	39.39	C	0.31	1654	ISO3104	37.01		-3.22
750	D445	40.63		2.15	1669	ISO3104	37.55		-2.42
753	D445	39.152		-0.05	1677		-----		-----
781	ISO3104	39.44		0.38	1710	ISO3104	38.43		-1.12
784	ISO3104	39.28		0.14	1712	ISO3104	40.19		1.49
785	ISO3104	39.466		0.42	1720		-----		-----
791		-----		-----	1724	ISO3104	38.492		-1.03
823	ISO3104	39.86		1.00	1728	D445	45.167	C,G(0.01)	8.88
840	D445	40.358		1.74	1740	ISO3104	39.03		-0.23
851		-----		-----	1807	D445	39.21		0.04
855	D445	39.627		0.66	1810		-----		-----
858	D445	39.699		0.77	1811	ISO3104	38.28		-1.34
859	ISO3104	39.302		0.18	1832		-----		-----
862	ISO3104	39.730		0.81	1833	ISO3104	38.58		-0.90
863	ISO3104	39.63		0.66	1842	IP71	40.61		2.12
864	D445	39.557		0.55	1849	ISO3104	39.369		0.28
865	D445	39.600		0.62	1854	ISO3104	37.93		-1.86
867	D445	38.165		-1.51	1862	ISO3104	39.49		0.45
873	ISO3104	39.41		0.34	1906		-----		-----
874	ISO3104	39.12		-0.09	1915	D445	41.030		2.74
875	D445	39.48		0.44	1936	ISO3104	39.73		0.81
886	D445	38.98		-0.30	1937	ISO3104	39.30		0.17
887	D445	38.56		-0.92	1938	ISO3104	39.051		-0.20
902	D445	39.799		0.91	1949	ISO3104	38.505		-1.006
904	D445	39.1		-0.12	1950	ISO3104	39.352		0.25
912		-----		-----	1951	ISO3104	41.12		2.87
					2129	ISO3104	42.27	DG(0.05)	4.58

|	
normality	OK
n	123
outliers	7
mean (n)	39.183
st.dev. (n)	0.8523
R(calc.)	2.386
R(ISO3104:94)	1.887

Lab 253 first reported : 33.6   Lab 1648 first reported :39.924

Lab 444 first reported : 389.25   Lab 1728 first reported :42.750

Lab 732 first reported : 484.1

Kernel Density
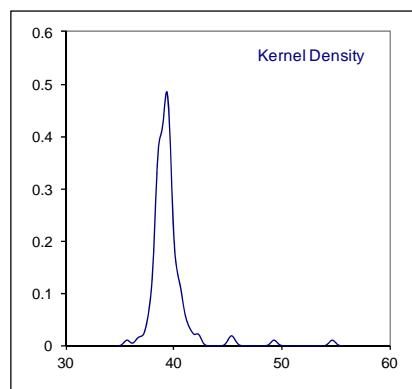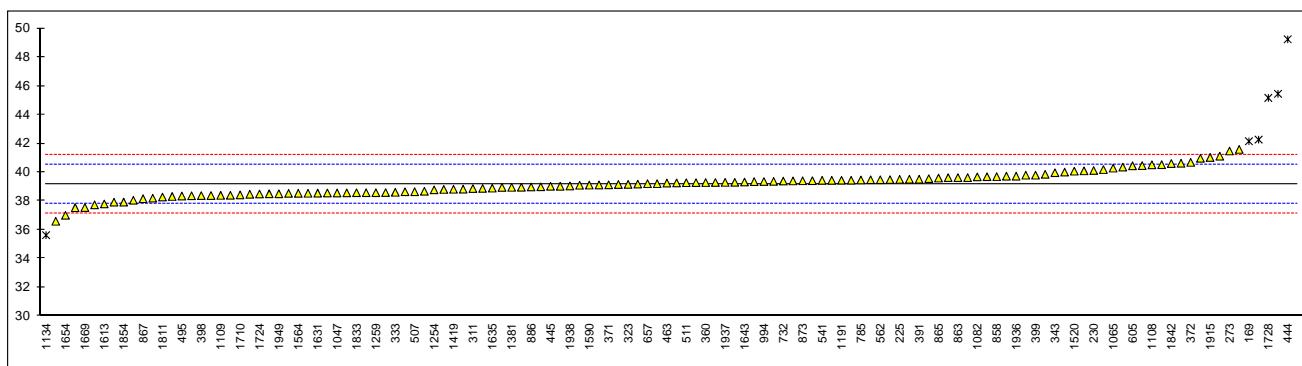
Determination of Micro Carbon Residue Test on sample #13001; results in %M/M

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
52	D4530	15.6		0.29	913		-----		-----
62	D4530	16.28	C	2.49	922		-----		-----
90		-----		-----	962		-----		-----
92		-----		-----	963	D4530	15.38		-0.42
120	D4530	15.2		-1.00	971	D4530	16.42		2.94
131	ISO10370	15.839		1.06	974		-----		-----
132	ISO10370	15.51		0.00	982		-----		-----
140	D4530	15.5		-0.03	994		-----		-----
154	D4530	15.3367		-0.56	995		-----		-----
158	D4530	15.42		-0.29	996		-----		-----
159	D4530	15.5		-0.03	1011	D4530	15.3		-0.68
168	D4530	15.64		0.42	1022	ISO10370	15.86		1.13
169		-----		-----	1038		-----		-----
171	D4530	14.941		-1.84	1047	ISO10370	15.92		1.33
175	D4530	15.4		-0.35	1059	ISO10370	15.38		-0.42
193	D4530	15.21		-0.97	1062	D4530	15.25		-0.84
194	ISO10370	15.15		-1.16	1065		-----		-----
195		-----		-----	1080		-----		-----
212	ISO10370	15.86		1.13	1082	ISO10370	16.14		2.04
221		-----		-----	1095		-----		-----
224		-----		-----	1108	ISO10370	15.77		0.84
225		-----		-----	1109	D4530	15.98		1.52
228		-----		-----	1121	IP398	15.3		-0.68
230	ISO10370	15.537		0.09	1126		-----		-----
237	D4530	15.2		-1.00	1134		-----		-----
238		-----		-----	1140		-----		-----
252	D4530	15.30		-0.68	1161		-----		-----
253		-----		-----	1167	ISO10370	15.46		-0.16
254		-----		-----	1177		-----		-----
273		-----		-----	1191	ISO10370	16.03		1.68
311	ISO10370	15.34		-0.55	1215	D4530	15.25		-0.84
313		-----		-----	1229	ISO10370	14.57		-3.04
323	ISO10370	15.3		-0.68	1231	D4530	15.81		0.97
331	ISO10370	15.55		0.13	1233	ISO10370	15.75		0.78
333		-----		-----	1254	ISO10370	15.428		-0.26
334		-----		-----	1259	ISO10370	16.18		2.17
336		-----		-----	1266		-----		-----
337		-----		-----	1269		-----		-----
340	ISO10370	15.666		0.51	1271	ISO10370	15.26		-0.81
343	ISO10370	15.89		1.23	1275		-----		-----
349		-----		-----	1337		-----		-----
353		-----		-----	1348		-----		-----
360	ISO10370	15.1	C	-1.32	1356	ISO10370	15.09		-1.36
369	ISO10370	16.188		2.19	1358		-----		-----
370	ISO10370	15.37		-0.45	1381	ISO10370	15.460		-0.16
371		-----		-----	1395		-----		-----
372	ISO10370	15.40	C	-0.35	1396	IP398	15.5599		0.16
375		-----		-----	1402	ISO10370	15.13		-1.23
391	ISO10370	16.17		2.13	1403		-----		-----
398		-----		-----	1419	ISO10370	15.79		0.91
399	ISO10370	17.10	G(0.01)	5.14	1428	ISO10370	15.36		-0.48
440		-----		-----	1431		-----		-----
444		-----		-----	1455	ISO10370	16.1		1.91
445	IP398	16.17		2.13	1459		-----		-----
447	IP398	15.320		-0.61	1460		-----		-----
463	ISO10370	15.524		0.05	1483		-----		-----
494	ISO10370	15.66		0.49	1501	ISO10370	15.844		1.08
495		-----		-----	1510		-----		-----
507	ISO10370	15.350		-0.52	1520	ISO10370	15.81		0.97
511		-----		-----	1551	IP398	15.43		-0.26
528		-----		-----	1552		-----		-----
529		-----		-----	1553		-----		-----
541		-----		-----	1558		-----		-----
551		-----		-----	1559		-----		-----
557		-----		-----	1564	D4530	15.84		1.07
562		-----		-----	1569	ISO10370	15.545		0.11
575		-----		-----	1577	D4530	17.69	G(0.01)	7.05
603		-----		-----	1585	ISO10370	15.38		-0.42
604		-----		-----	1586	ISO10370	15.746		0.76
605	D4530	15.57		0.20	1590	D4530	15.44		-0.22
607		-----		-----	1613	D4530	14.595		-2.96
608		-----		-----	1616		-----		-----
631	D4530	15.38		-0.42	1622	D4530	15.75		0.78
657	ISO10370	15.4		-0.35	1631	ISO10370	15.6		0.29

663	D4530	15.22		-0.94	1635	ISO10370	15.43	-0.26
671	D4530	15.26813		-0.78	1636	ISO10370	15.015	-1.60
704	ISO10370	15.528		0.06	1643		-----	-----
705		-----		-----	1648		-----	-----
732		-----		-----	1654	ISO10370	16.260	2.43
750		-----		-----	1669	ISO10370	15.90	1.26
753	ISO10370	15.444		-0.21	1677		-----	-----
781	ISO10370	15.62		0.36	1710	ISO10370	15.34	-0.55
784		-----		-----	1712	ISO10370	15.73	0.71
785		-----		-----	1720	ISO10370	9.65	C,G(0.01)	-18.94
791		-----		-----	1724	ISO10370	15.42	-0.29
823	ISO10370	14.86		-2.10	1728	D4530	14.68	-2.68
840		-----		-----	1740	ISO10370	15.91	1.29
851	ISO10370	15.331		-0.58	1807	D4530	15.45	-0.19
855	D4530	15.51		0.00	1810	ISO10370	19.54	G(0.01)	13.03
858		-----		-----	1811		-----	-----
859		-----		-----	1832		-----	-----
862	ISO10370	15.386		-0.40	1833	ISO10370	15.3	-0.68
863	ISO10370	15.43		-0.26	1842		-----	-----
864	D4530	15.32		-0.61	1849		-----	-----
865	D4530	15.40		-0.35	1854	ISO10370	15.7	0.62
867		-----		-----	1862	ISO10370	15.94	1.39
873	ISO10370	15.6		0.29	1906		-----	-----
874	ISO10370	15.33		-0.58	1915		-----	-----
875	D4530	15.5		-0.03	1936		-----	-----
886	D4530	14.96		-1.78	1937		-----	-----
887		-----		-----	1938		-----	-----
902	D4530	15.50		-0.03	1949	ISO10370	15.57	0.20
904	ISO10370	15.2		-1.00	1950	ISO10370	15.34	-0.55
912		-----		-----	1951	ISO10370	15.686	0.57
					2129	ISO10370	14.779	-2.36

normality	OK
n	109
outliers	4
mean (n)	15.510
st.dev. (n)	0.3525
R(calc.)	0.987
R(ISO10370:93)	0.866

Lab 62 first reported: 16.82   Lab 372 first reported : 14.4

Lab 360 first reported : 14.5   Lab 1720 first reported : 0.03
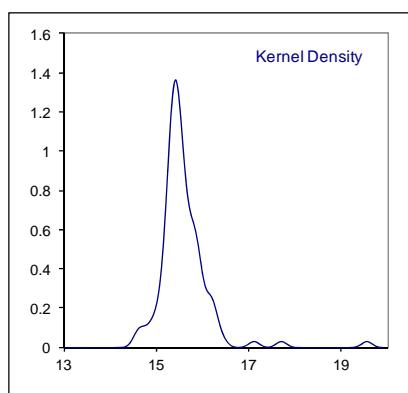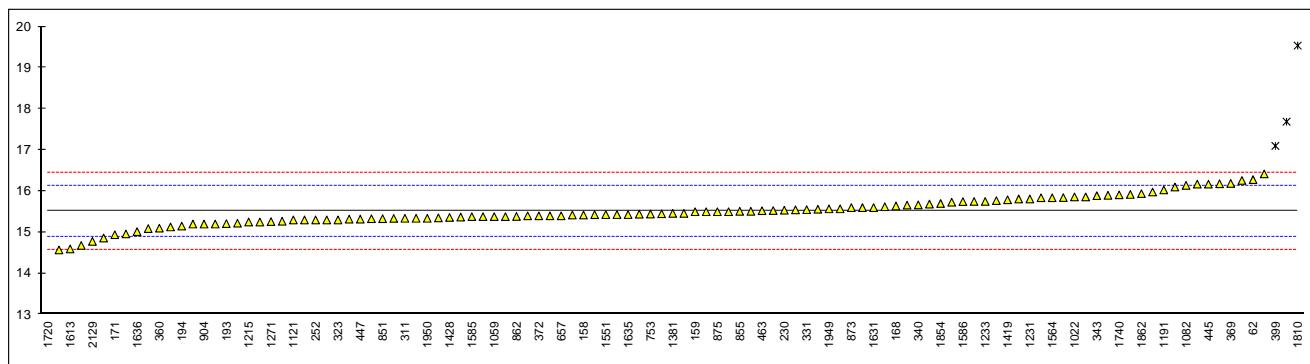
Determination of Viscosity Stabinger @ 50°C on sample #13001; results in mm^2/s

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
52		-----		-----	913		-----		-----
62		-----		-----	922		-----		-----
90		-----		-----	962		-----		-----
92		-----		-----	963	D7042	484.7		-----
120		-----		-----	971	D7042	494.4		-----
131		-----		-----	974		-----		-----
132		-----		-----	982		-----		-----
140		-----		-----	994		-----		-----
154		-----		-----	995		-----		-----
158		-----		-----	996		-----		-----
159		-----		-----	1011		-----		-----
168		-----		-----	1022		-----		-----
169		-----		-----	1038		-----		-----
171	D7042	487.94		-----	1047		-----		-----
175		-----		-----	1059		-----		-----
193		-----		-----	1062		-----		-----
194		-----		-----	1065		-----		-----
195		-----		-----	1080	D7042	478.8		-----
212		-----		-----	1082		-----		-----
221		-----		-----	1095		-----		-----
224		-----		-----	1108	D7042	515.7		-----
225		-----		-----	1109		-----		-----
228		-----		-----	1121		-----		-----
230		-----		-----	1126		-----		-----
237		-----		-----	1134		-----		-----
238		-----		-----	1140		-----		-----
252		-----		-----	1161		-----		-----
253		-----		-----	1167		-----		-----
254		-----		-----	1177		-----		-----
273		-----		-----	1191		-----		-----
311		-----		-----	1215		-----		-----
313		-----		-----	1229		-----		-----
323		-----		-----	1231		-----		-----
331		-----		-----	1233		-----		-----
333		-----		-----	1254		-----		-----
334		-----		-----	1259		-----		-----
336		-----		-----	1266		-----		-----
337		-----		-----	1269		-----		-----
340		-----		-----	1271	D7042	493.04		-----
343		-----		-----	1275		-----		-----
349		-----		-----	1337		-----		-----
353		-----		-----	1348		-----		-----
360	D7042	503.56		-----	1356		-----		-----
369		-----		-----	1358		-----		-----
370		-----		-----	1381	D7042	499.25		-----
371		-----		-----	1395		-----		-----
372		-----		-----	1396		-----		-----
375		-----		-----	1402		-----		-----
391	D7042	476.7		-----	1403		-----		-----
398		-----		-----	1419		-----		-----
399		-----		-----	1428		-----		-----
440		-----		-----	1431	D7042	476.5		-----
444		-----		-----	1455		-----		-----
445		-----		-----	1459	D7042	495.1	C	-----
447		-----		-----	1460		-----		-----
463		-----		-----	1483		-----		-----
494	D7042	494.8		-----	1501	D7042	483.69		-----
495		-----		-----	1510		-----		-----
507		-----		-----	1520		-----		-----
511		-----		-----	1551		-----		-----
528		-----		-----	1552		-----		-----
529		-----		-----	1553		-----		-----
541	D7042	470.7		-----	1558		-----		-----
551		-----		-----	1559		-----		-----
557		-----		-----	1564		-----		-----
562		-----		-----	1569		-----		-----
575		-----		-----	1577		-----		-----
603		-----		-----	1585		-----		-----
604		-----		-----	1586		-----		-----
605		-----		-----	1590		-----		-----
607		-----		-----	1613		-----		-----
608		-----		-----	1616		-----		-----
631		-----		-----	1622		-----		-----
657		-----		-----	1631		-----		-----

663		-----	-----	1635		-----	-----
671		-----	-----	1636		-----	-----
704		-----	-----	1643		-----	-----
705		-----	-----	1648		-----	-----
732		-----	-----	1654		-----	-----
750		-----	-----	1669		-----	-----
753		-----	-----	1677		-----	-----
781	D7042	511.3	-----	1710	D7042	489.1	-----
784		-----	-----	1712		-----	-----
785		-----	-----	1720	D7042	495.7	-----
791		-----	-----	1724		-----	-----
823		-----	-----	1728		-----	-----
840		-----	-----	1740		-----	-----
851		-----	-----	1807		-----	-----
855		-----	-----	1810		-----	-----
858		-----	-----	1811		-----	-----
859		-----	-----	1832		-----	-----
862		-----	-----	1833		-----	-----
863		-----	-----	1842		-----	-----
864		-----	-----	1849		-----	-----
865		-----	-----	1854	D7042	488.0	-----
867		-----	-----	1862		-----	-----
873		-----	-----	1906		-----	-----
874		-----	-----	1915	D7042	510.07	-----
875		-----	-----	1936		-----	-----
886		-----	-----	1937		-----	-----
887		-----	-----	1938		-----	-----
902		-----	-----	1949		-----	-----
904		-----	-----	1950		-----	-----
912		-----	-----	1951		-----	-----
				2129		-----	-----

normality	OK
n	19
outliers	0
mean (n)	492.055
st.dev. (n)	12.3611
R(calc.)	34.611
R(D7042:12)	(unknown)

Lab 1459 first reported : 38.55
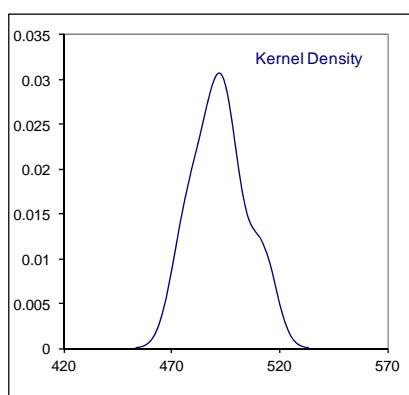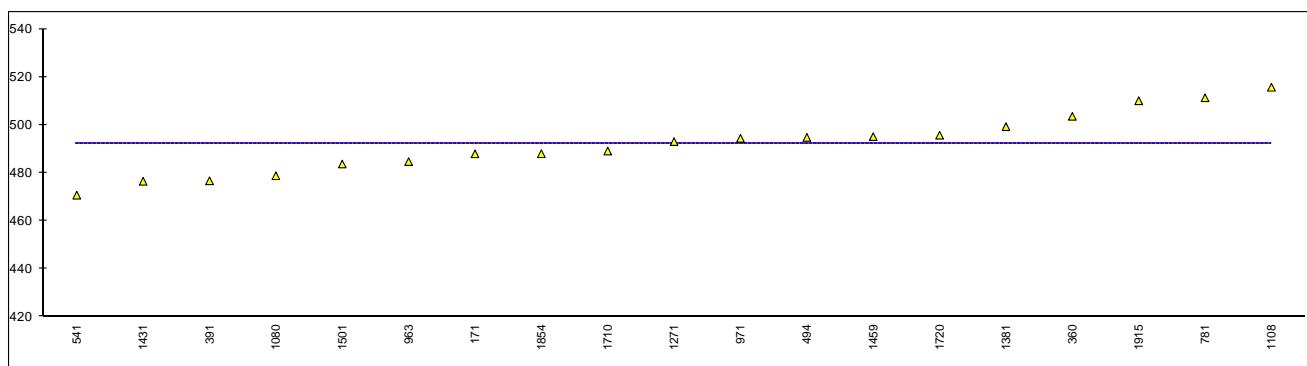
Determination of Viscosity Stabinger @ 100°C on sample #13001; results in mm^2/s

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
52		-----		-----	913		-----		-----
62		-----		-----	922		-----		-----
90		-----		-----	962		-----		-----
92		-----		-----	963	D7042	39.60		-----
120		-----		-----	971	D7042	38.05		-----
131		-----		-----	974		-----		-----
132		-----		-----	982		-----		-----
140		-----		-----	994		-----		-----
154		-----		-----	995		-----		-----
158		-----		-----	996		-----		-----
159		-----		-----	1011		-----		-----
168		-----		-----	1022		-----		-----
169		-----		-----	1038		-----		-----
171	D7042	38.80		-----	1047		-----		-----
175		-----		-----	1059		-----		-----
193		-----		-----	1062		-----		-----
194		-----		-----	1065		-----		-----
195		-----		-----	1080	D7042	38.79		-----
212		-----		-----	1082		-----		-----
221		-----		-----	1095		-----		-----
224		-----		-----	1108	D7042	39.38		-----
225		-----		-----	1109		-----		-----
228		-----		-----	1121		-----		-----
230		-----		-----	1126		-----		-----
237		-----		-----	1134		-----		-----
238		-----		-----	1140		-----		-----
252		-----		-----	1161		-----		-----
253		-----		-----	1167		-----		-----
254		-----		-----	1177		-----		-----
273		-----		-----	1191		-----		-----
311		-----		-----	1215		-----		-----
313		-----		-----	1229		-----		-----
323		-----		-----	1231		-----		-----
331		-----		-----	1233		-----		-----
333		-----		-----	1254		-----		-----
334		-----		-----	1259		-----		-----
336		-----		-----	1266		-----		-----
337		-----		-----	1269		-----		-----
340		-----		-----	1271	D7042	37.581		-----
343		-----		-----	1275		-----		-----
349		-----		-----	1337		-----		-----
353		-----		-----	1348		-----		-----
360	D7042	39.713		-----	1356		-----		-----
369		-----		-----	1358		-----		-----
370		-----		-----	1381	D7042	40.328		-----
371		-----		-----	1395		-----		-----
372		-----		-----	1396		-----		-----
375		-----		-----	1402		-----		-----
391	D7042	38.68		-----	1403		-----		-----
398		-----		-----	1419		-----		-----
399		-----		-----	1428		-----		-----
440		-----		-----	1431		-----		-----
444		-----		-----	1455		-----		-----
445		-----		-----	1459	D7042	38.55	C	-----
447		-----		-----	1460		-----		-----
463		-----		-----	1483		-----		-----
494	D7042	39.26		-----	1501	D7042	39.029		-----
495		-----		-----	1510		-----		-----
507		-----		-----	1520		-----		-----
511		-----		-----	1551		-----		-----
528		-----		-----	1552		-----		-----
529		-----		-----	1553		-----		-----
541	D7042	37.59		-----	1558		-----		-----
551		-----		-----	1559		-----		-----
557		-----		-----	1564		-----		-----
562		-----		-----	1569		-----		-----
575		-----		-----	1577		-----		-----
603		-----		-----	1585		-----		-----
604		-----		-----	1586		-----		-----
605		-----		-----	1590		-----		-----
607		-----		-----	1613		-----		-----
608		-----		-----	1616		-----		-----
631		-----		-----	1622		-----		-----
657		-----		-----	1631		-----		-----

663		-----	-----	1635		-----	-----
671		-----	-----	1636		-----	-----
704		-----	-----	1643		-----	-----
705		-----	-----	1648		-----	-----
732		-----	-----	1654		-----	-----
750		-----	-----	1669		-----	-----
753		-----	-----	1677		-----	-----
781	D7042	39.475	-----	1710	D7042	38.33	-----
784		-----	-----	1712		-----	-----
785		-----	-----	1720	D7042	38.70	-----
791		-----	-----	1724		-----	-----
823		-----	-----	1728		-----	-----
840		-----	-----	1740		-----	-----
851		-----	-----	1807		-----	-----
855		-----	-----	1810	D7042	38.14	-----
858		-----	-----	1811		-----	-----
859		-----	-----	1832		-----	-----
862		-----	-----	1833		-----	-----
863		-----	-----	1842		-----	-----
864		-----	-----	1849		-----	-----
865		-----	-----	1854	D7042	38.25	-----
867		-----	-----	1862		-----	-----
873		-----	-----	1906		-----	-----
874		-----	-----	1915	D7042	41.367	-----
875		-----	-----	1936		-----	-----
886		-----	-----	1937		-----	-----
887		-----	-----	1938		-----	-----
902		-----	-----	1949		-----	-----
904		-----	-----	1950		-----	-----
912		-----	-----	1951		-----	-----
				2129		-----	-----

normality	OK
n	19
outliers	0
mean (n)	38.927
st.dev. (n)	0.9341
R(calc.)	2.616
R(D7042:12)	(unknown)

Lab 1459 first reported : 495.1
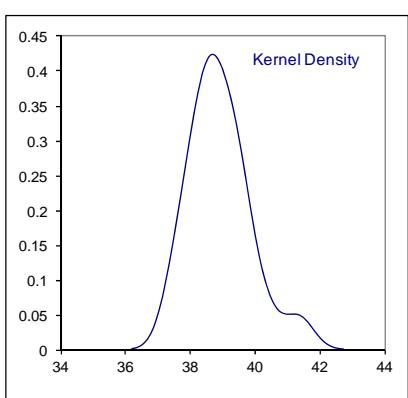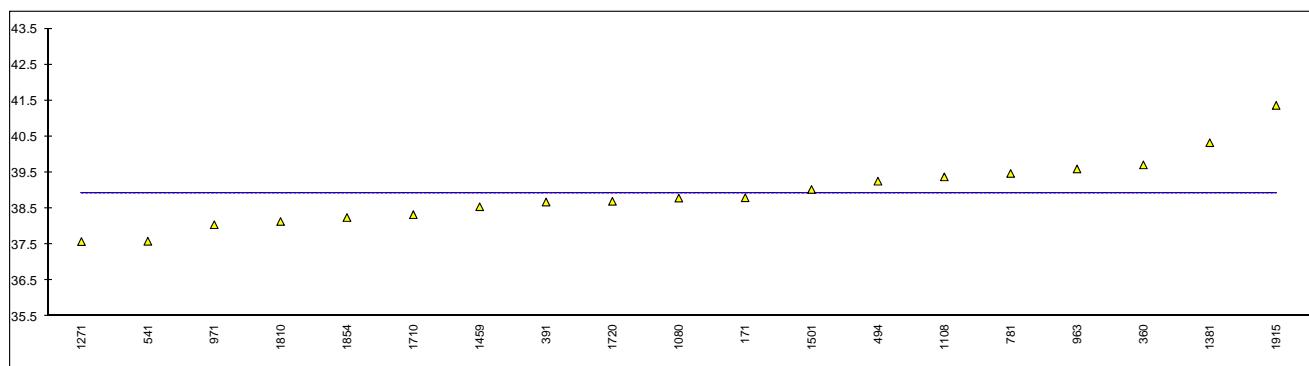
Determination of Pour Point (Lower) on sample #13001; results in ^{o}C

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
52		-----		-----	913		-----		-----
62	D97	0		0.70	922		-----		-----
90		-----		-----	962		-----		-----
92	D97	3		1.98	963		-----		-----
120		-----		-----	971		-----		-----
131	ISO3016	-12	G(0.05)	-4.39	974		-----		-----
132	ISO3016	-6		-1.85	982		-----		-----
140	D97	0		0.70	994	D97	0		0.70
154		-----		-----	995	D97	-3		-0.57
158		-----		-----	996	D97	0		0.70
159		-----		-----	1011		-----		-----
168	D97	0		0.70	1022		-----		-----
169		-----		-----	1038		-----		-----
171		-----		-----	1047		-----		-----
175		-----		-----	1059		-----		-----
193		-----		-----	1062		-----		-----
194		-----		-----	1065		-----		-----
195		-----		-----	1080		-----		-----
212	ISO3016	-3		-0.57	1082		-----		-----
221		-----		-----	1095		-----		-----
224		-----		-----	1108		-----		-----
225		-----		-----	1109		-----		-----
228		-----		-----	1121	IP15	0		0.70
230	ISO3016	-6		-1.85	1126		-----		-----
237		-----		-----	1134	ISO3016	3		1.98
238		-----		-----	1140		-----		-----
252		-----		-----	1161	ISO3016	3		1.98
253		-----		-----	1167	ISO3016	0		0.70
254		-----		-----	1177		-----		-----
273		-----		-----	1191		-----		-----
311		-----		-----	1215		-----		-----
313		-----		-----	1229		-----		-----
323	ISO3016	3		1.98	1231		-----		-----
331		-----		-----	1233		-----		-----
333		-----		-----	1254	D97	1.5		1.34
334		-----		-----	1259	ISO3016	-3		-0.57
336		-----		-----	1266		-----		-----
337		-----		-----	1269		-----		-----
340	ISO3016	-3	ex	-0.57	1271	ISO3016	-3		-0.57
343		-----		-----	1275		-----		-----
349		-----		-----	1337		-----		-----
353	IP15	3		1.98	1348	D97	0		0.70
360	ISO3016	-3		-0.57	1356		-----		-----
369	ISO3016	-3		-0.57	1358		-----		-----
370	ISO3016	0		0.70	1381	ISO3016	0.6		0.96
371		-----		-----	1395		-----		-----
372	ISO3016	-3		-0.57	1396		-----		-----
375		-----		-----	1402		-----		-----
391		-----		-----	1403		-----		-----
398	ISO3016	-3		-0.57	1419		-----		-----
399	ISO3016	-6		-1.85	1428	ISO3016	-6		-1.85
440		-----		-----	1431		-----		-----
444		-----		-----	1455	ISO3016	-9		-3.12
445		-----		-----	1459		-----		-----
447		-----		-----	1460		-----		-----
463		-----		-----	1483		-----		-----
494		-----		-----	1501	ISO3016	3		1.98
495	ISO3016	9	G(0.05)	4.53	1510		-----		-----
507		-----		-----	1520		-----		-----
511		-----		-----	1551		-----		-----
528		-----		-----	1552		-----		-----
529		-----		-----	1553		-----		-----
541	D97	-6		-1.85	1558		-----		-----
551		-----		-----	1559		-----		-----
557		-----		-----	1564		-----		-----
562	D97	0		0.70	1569		-----		-----
575		-----		-----	1577		-----		-----
603	D97	0		0.70	1585	ISO3016	3		1.98
604	D97	0		0.70	1586		-----		-----
605	D97	0		0.70	1590		-----		-----
607	ISO3016	0		0.70	1613	D97	-9		-3.12
608		-----		-----	1616		-----		-----
631	D97	0		0.70	1622	D97	0		0.70
657	ISO3016	-9		-3.12	1631		-----		-----

663		-----	-----	1635		-----		-----
671	D97	0	0.70	1636		-----		-----
704		-----	-----	1643		-----		-----
705		-----	-----	1648		-----		-----
732	D97	-3	-0.57	1654		-----		-----
750	D97	3	1.98	1669		-----		-----
753	D97	0	0.70	1677		-----		-----
781	ISO3016	3	1.98	1710	ISO3016	-3		-0.57
784	D97	0	0.70	1712	ISO3016	0		0.70
785		-----	-----	1720		-----		-----
791		-----	-----	1724	ISO3016	-6		-1.85
823	ISO3016	0	0.70	1728	D97	-3		-0.57
840	D97	0	0.70	1740	ISO3016	-3		-0.57
851		-----	-----	1807		-----		-----
855	D97	-6	-1.85	1810		-----		-----
858		-----	-----	1811		-----		-----
859		-----	-----	1832	ISO3016	0		0.70
862	ISO3016	-6	-1.85	1833	ISO3016	-6		-1.85
863	ISO3016	-6	-1.85	1842	D5853	0		0.70
864	D97	-9	-3.12	1849		-----		-----
865	D97	-6	-1.85	1854	ISO3016	-3		-0.57
867	D97	-6	-1.85	1862	ISO3016	3		1.98
873	ISO3016	-3	-0.57	1906		-----		-----
874	D97	-3	-0.57	1915	D97	0	C	0.70
875	D97	3	1.98	1936		-----		-----
886		-----	-----	1937		-----		-----
887		-----	-----	1938		-----		-----
902		-----	-----	1949	ISO3016	0		0.70
904	ISO3016	0	0.70	1950	ISO3016	3		1.98
912		-----	-----	1951		-----		-----
				2129	ISO3016	-6		-1.85

normality	not OK
n	73
outliers	2
mean (n)	-1.66
st.dev. (n)	3.410
R(calc.)	9.55
R(ISO3016:94)	6.59

ex = excluded, see §4.1 lower PP > lower PP

Lab 1915 first reported : 6

Kernel Density
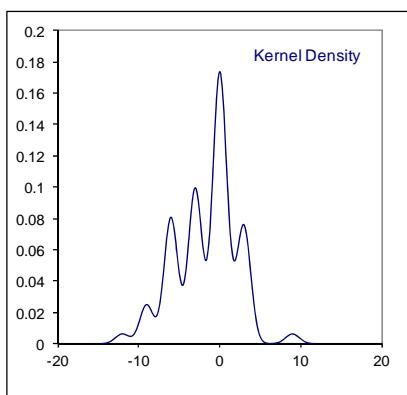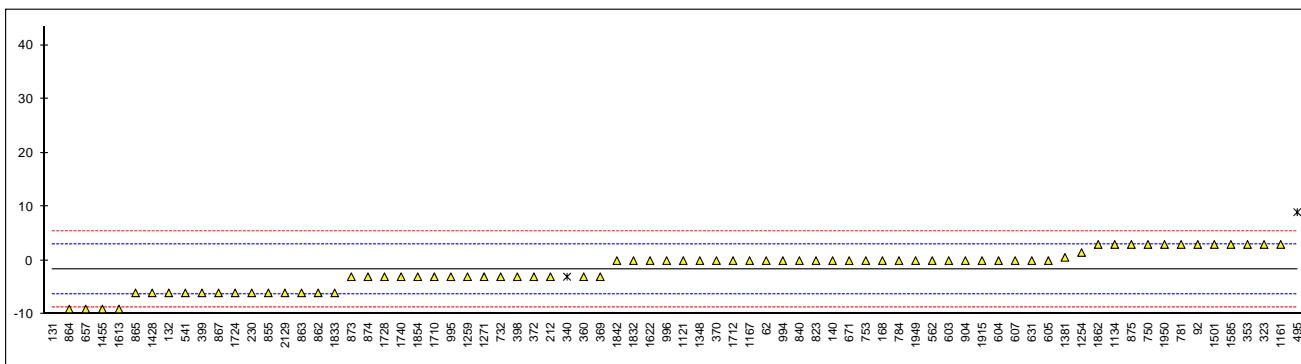
Determination of Pour Point (Upper) on sample #13001; results in ^{o}C

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
52	D97	0		-0.45	913		-----		-----
62	D97	0		-0.45	922		-----		-----
90	D97	3	C	0.83	962		-----		-----
92	D97	6		2.10	963	D97	3		0.83
120	D97	3		0.83	971	D97	-3		-1.72
131	ISO3016	-9	G(0.05)	-4.27	974		-----		-----
132	ISO3016	-6		-3.00	982		-----		-----
140	D97	3		0.83	994	D97	3		0.83
154	D97	0		-0.45	995	D97	0		-0.45
158		-----		-----	996	D97	3		0.83
159	D97	6		2.10	1011	D97	3		0.83
168	D97	3		0.83	1022		-----		-----
169		-----		-----	1038	D97	0		-0.45
171	D97	0		-0.45	1047	ISO3016	-3		-1.72
175	D97	0		-0.45	1059		-----		-----
193		-----		-----	1062		-----		-----
194	ISO3016	0		-0.45	1065		-----		-----
195		-----		-----	1080		-----		-----
212	ISO3016	-3		-1.72	1082		-----		-----
221		-----		-----	1095		-----		-----
224		-----		-----	1108		-----		-----
225	D97	3	C	0.83	1109		-----		-----
228	D97	3		0.83	1121	IP15	3		0.83
230	ISO3016	-3		-1.72	1126		-----		-----
237	D97	3		0.83	1134	ISO3016	3		0.83
238		-----		-----	1140		-----		-----
252	D97	0		-0.45	1161	ISO3016	6		2.10
253	D97	0		-0.45	1167	ISO3016	3		0.83
254	D97	-3		-1.72	1177		-----		-----
273	D97	7		2.53	1191		-----		-----
311		-----		-----	1215		-----		-----
313		-----		-----	1229		-----		-----
323	ISO3016	3		0.83	1231		-----		-----
331		-----		-----	1233	ISO3016	-3		-1.72
333	ISO3016	-6		-3.00	1254	D97	4.5		1.46
334		-----		-----	1259	ISO3016	0		-0.45
336		-----		-----	1266		-----		-----
337		-----		-----	1269		-----		-----
340	ISO3016	-6	ex	-3.00	1271	ISO3016	0		-0.45
343		-----		-----	1275		-----		-----
349		-----		-----	1337		-----		-----
353		-----		-----	1348	D97	3		0.83
360	ISO3016	0		-0.45	1356	ISO3016	0		-0.45
369	ISO3016	0		-0.45	1358		-----		-----
370	ISO3016	3		0.83	1381	ISO3016	3.6		1.08
371	ISO3016	3		0.83	1395		-----		-----
372	ISO3016	0		-0.45	1396		-----		-----
375		-----		-----	1402	IP15	0		-0.45
391	ISO3016	-3		-1.72	1403		-----		-----
398	ISO3016	0		-0.45	1419		-----		-----
399	ISO3016	0		-0.45	1428	ISO3016	-3		-1.72
440		-----		-----	1431	D97	0		-0.45
444		-----		-----	1455	ISO3016	-6		-3.00
445	IP15	6		2.10	1459		-----		-----
447	IP15	-3		-1.72	1460		-----		-----
463		-----		-----	1483		-----		-----
494		-----		-----	1501	ISO3016	6		2.10
495		-----		-----	1510		-----		-----
507	ISO3016	3		0.83	1520	ISO3016	3		0.83
511		-----		-----	1551		-----		-----
528		-----		-----	1552		-----		-----
529		-----		-----	1553		-----		-----
541	D97	-3		-1.72	1558		-----		-----
551		-----		-----	1559		-----		-----
557		-----		-----	1564		-----		-----
562	D97	3		0.83	1569		-----		-----
575		-----		-----	1577		-----		-----
603	D97	6		2.10	1585	ISO3016	6		2.10
604	D97	6		2.10	1586	ISO3016	0		-0.45
605	D97	6		2.10	1590	ISO3016	0		-0.45
607	ISO3016	3		0.83	1613	D97	-6		-3.00
608		-----		-----	1616		-----		-----
631	D97	3		0.83	1622	D97	3		0.83
657	ISO3016	-3	C	-1.72	1631	ISO3016	-6		-3.00

663	D97	0	-0.45	1635	ISO3016	3	0.83
671	D97	0	-0.45	1636	ISO3016	3	0.83
704	ISO3016	3	0.83	1643	D97	0	-0.45
705	D97	3	0.83	1648		-----	-----
732	D97	0	-0.45	1654		-----	-----
750		-----	-----	1669		-----	-----
753	D97	3	0.83	1677		-----	-----
781	ISO3016	6	2.10	1710		-----	-----
784	D97	3	0.83	1712	ISO3016	3	0.83
785		-----	-----	1720	ISO3016	6	2.10
791		-----	-----	1724	ISO3016	-3	-1.72
823	ISO3016	3	0.83	1728	D97	0	-0.45
840	D97	3	0.83	1740	ISO3016	0	-0.45
851	ISO3016	0	-0.45	1807	D97	-3	-1.72
855	D97	0	-0.45	1810		-----	-----
858	D97	0	-0.45	1811		-----	-----
859	ISO3016	0	-0.45	1832	ISO3016	3	0.83
862	ISO3016	-3	-1.72	1833	ISO3016	-3	-1.72
863	ISO3016	-3	-1.72	1842	D5853	3	0.83
864	D97	-3	-1.72	1849	ISO3016	2	0.40
865	D97	-3	-1.72	1854	ISO3016	0	-0.45
867	D97	-3	-1.72	1862	ISO3016	3	0.83
873	ISO3016	0	-0.45	1906		-----	-----
874	D97	0	-0.45	1915		-----	-----
875	D97	6	2.10	1936		-----	-----
886		-----	-----	1937		-----	-----
887		-----	-----	1938		-----	-----
902	D97	0	-0.45	1949	ISO3016	3	0.83
904	ISO3016	3	0.83	1950	ISO3016	6	2.10
912		-----	-----	1951		-----	-----
				2129	ISO3016	0	-0.45

normality	not OK
n	116
outliers	1
mean (n)	1.05
st.dev. (n)	3.119
R(calc.)	8.73
R(ISO3016:94)	6.59

ex = excluded, see §4.1 higher PP < lower PP

Lab 90 first reported : 12

Lab 225 first reported :9

Lab 657 first reported :9
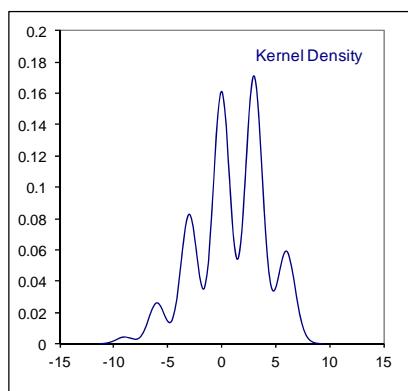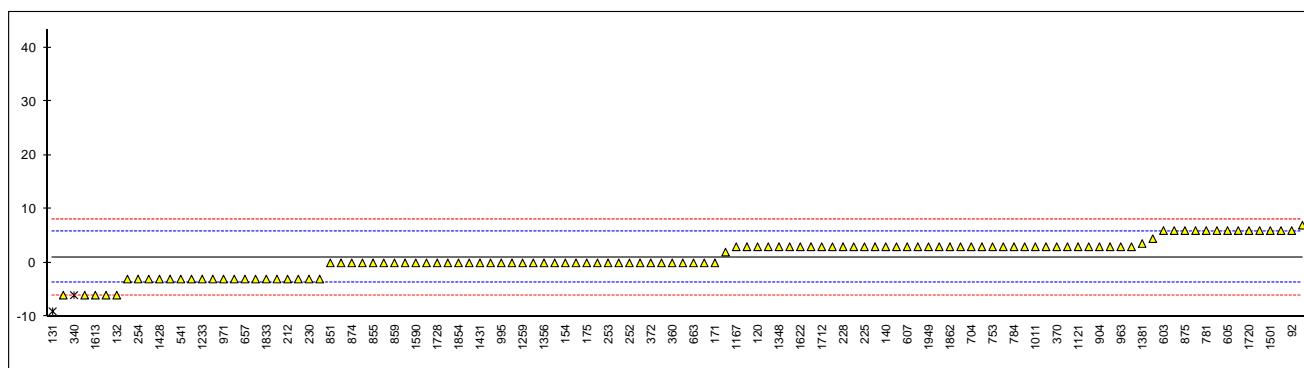
Determination of Pour Point (Automated) on sample #13001; results in ^{o}C

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
52		-----		-----	913		-----		-----
62		-----		-----	922		-----		-----
90		-----		-----	962		-----		-----
92		-----		-----	963		-----		-----
120		0		1.48	971		-----		-----
131		-----		-----	974		-----		-----
132		-----		-----	982		-----		-----
140		-----		-----	994		-----		-----
154		-----		-----	995		-----		-----
158		-----		-----	996		-----		-----
159		-----		-----	1011		-----		-----
168		-----		-----	1022		-----		-----
169		-----		-----	1038		-----		-----
171		-----		-----	1047		-----		-----
175		-----		-----	1059	ISO3016	-6	ex, see §4.1	-1.27
193		-----		-----	1062	D97	-6.0	ex, see §4.1	-1.27
194		-----		-----	1065	D5950	-6		-1.27
195		-----		-----	1080	D5950	0		1.48
212		-----		-----	1082		-----		-----
221		-----		-----	1095		-----		-----
224		-----		-----	1108	D5950	-9		-2.65
225		-----		-----	1109		-----		-----
228		-----		-----	1121		-----		-----
230		-----		-----	1126		-----		-----
237		-----		-----	1134		-----		-----
238		-----		-----	1140		-----		-----
252		-----		-----	1161		-2	C	0.56
253		-----		-----	1167	D6749	0		1.48
254		-----		-----	1177		-----		-----
273		-----		-----	1191		-----		-----
311	D5950	0	C	1.48	1215	D5950	0		1.48
313		-----		-----	1229		-----		-----
323		-----		-----	1231	D5950	-6		-1.27
331	ISO3016	6	ex, see §4.1	4.24	1233		-----		-----
333		-----		-----	1254		-----		-----
334		-----		-----	1259		-----		-----
336	D97	-6	ex, see §4.1	-1.27	1266		-----		-----
337		-----		-----	1269		-----		-----
340		-----		-----	1271		-----		-----
343	D97	-6	ex, see §4.1	-1.27	1275		-----		-----
349		-----		-----	1337		-----		-----
353		-----		-----	1348		-----		-----
360		-----		-----	1356		-----		-----
369		-----		-----	1358		-----		-----
370		-----		-----	1381		-----		-----
371		-----		-----	1395		-----		-----
372	D5950	-3		0.10	1396		-----		-----
375		-----		-----	1402		-----		-----
391		-----		-----	1403		-----		-----
398		-----		-----	1419		-----		-----
399		-----		-----	1428	D6749	0		1.48
440		-----		-----	1431		-----		-----
444		-----		-----	1455		3		2.86
445		-----		-----	1459	ISO3016	-6	ex, see §4.1	-1.27
447		-----		-----	1460		-----		-----
463	D6892	-6		-1.27	1483		-----		-----
494	ISO3016	-6	ex see §4.1,	-1.27	1501		-----		-----
495		-----		-----	1510		-----		-----
507		-----		-----	1520		-----		-----
511		-----		-----	1551		-----		-----
528		-----		-----	1552	D97	-6.0	ex, see §4.1	-1.27
529		-----		-----	1553	D97	-6.0	ex, see §4.1	-1.27
541		-----		-----	1558		-----		-----
551		-----		-----	1559		-----		-----
557		-----		-----	1564	D5950	-6		-1.27
562		-----		-----	1569	D5950	-6.0		-1.27
575		-----		-----	1577		-----		-----
603		-----		-----	1585		-----		-----
604		-----		-----	1586		-3		0.10
605		-----		-----	1590		-----		-----
607		-----		-----	1613		-----		-----
608		-----		-----	1616		-----		-----
631		-----		-----	1622		-----		-----
657	D5950	-6		-1.27	1631		-----		-----

Lab	Method	Value	Note	z-score
663		-----		-----
671		-----		-----
704		-----		-----
705		-----		-----
732		-----		-----
750		-----		-----
753		-----		-----
781		-----		-----
784		-----		-----
785		-----		-----
791		-----		-----
823		-----		-----
840		-----		-----
851		-----		-----
855		-----		-----
858		-----		-----
859		-----		-----
862		-----		-----
863		-----		-----
864		-6		-1.27
865		-----		-----
867		-----		-----
873		-----		-----
874		-----		-----
875		-----		-----
886	D5950	-3		0.10
887		-----		-----
902		-----		-----
904		-----		-----
912		-----		-----

Lab	Method	Value	Note	z-score
1635		-----		-----
1636		-----		-----
1643		-----		-----
1648		-----		-----
1654	ISO3016	-6.0	ex, see §4.1	-1.27
1669	D97	-6	ex, see §4.1	-1.27
1677		-----		-----
1710		-3		0.10
1712		-----		-----
1720		-----		-----
1724		-----		-----
1728		-----		-----
1740		-----		-----
1807		-----		-----
1810		-----		-----
1811		-----		-----
1832		-----		-----
1833		-6		-1.27
1842		-----		-----
1849		-----		-----
1854		-----		-----
1862		-----		-----
1906		-----		-----
1915		-----		-----
1936		-----		-----
1937		-----		-----
1938		-----		-----
1949		-----		-----
1950		-----		-----
1951		-3.0		0.10
2129		-----		-----

normality	not OK
n	22
outliers	0
mean (n)	-3.23
st.dev. (n)	3.070
R(calc.)	8.59
R(D5950:12a)	6.10

ex = excluded, see §4.1

Lab 311 first reported　: -9

Lab 1161 first reported : 2

Kernel Density
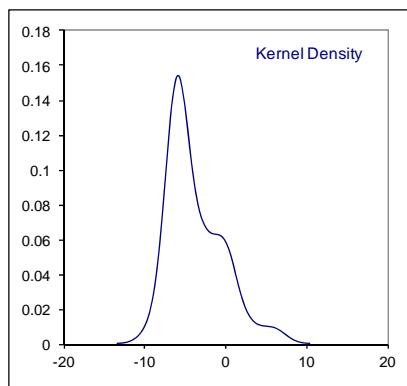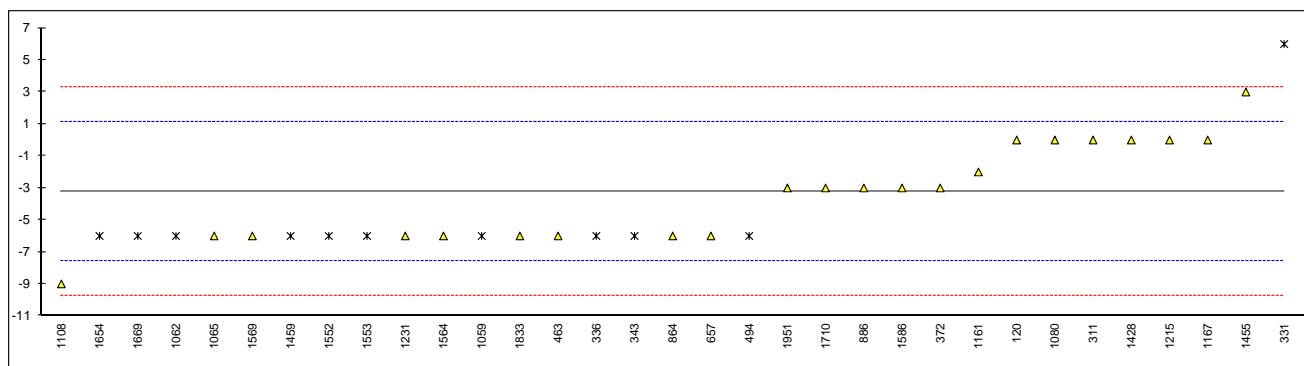
Determination of Sediment by Extraction on sample #13001; results in %M/M

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
52	D473	0.01		-0.81	913		-----		-----
62	D473	0.053		2.33	922		-----		-----
90	D473	0.028925		0.57	962		-----		-----
92	D473	0.019		-0.15	963	D473	0.04		1.38
120	D473	0.08	G(0.01)	4.30	971	D473	0.03		0.65
131	D473	0.009		-0.88	974		-----		-----
132	D473	0.0138		-0.53	982		-----		-----
140	D473	0.036		1.09	994	D473	0.017		-0.30
154	D473	0.0245		0.25	995	D473	0.023639		0.18
158	D473	0.02		-0.08	996	D473	0.021		-0.01
159	D473	0.02		-0.08	1011		-----		-----
168	D473	0.0335		0.90	1022		-----		-----
169		-----		-----	1038		-----		-----
171	D473	0.018		-0.23	1047	ISO3735	0.034		0.94
175	D473	0.02		-0.08	1059	ISO3735	0.01		-0.81
193		-----		-----	1062		-----		-----
194	D473	0.024		0.21	1065		-----		-----
195		-----		-----	1080		-----		-----
212	D473	<0.01		-----	1082		-----		-----
221		-----		-----	1095		-----		-----
224		-----		-----	1108		-----		-----
225	D473	0.033		0.87	1109	D473	0.016		-0.37
228	D473	0.0289		0.57	1121	IP53	0.021		-0.01
230	D473	0.013		-0.59	1126		-----		-----
237	D473	0.018		-0.23	1134	IP53	0.0449		1.74
238		-----		-----	1140		-----		-----
252	D473	0.0195		-0.12	1161	ISO3735	0.02		-0.08
253		-----		-----	1167		-----		-----
254	D473	0.02		-0.08	1177		-----		-----
273	D473	0.02		-0.08	1191		-----		-----
311	D473	0.01		-0.81	1215		-----		-----
313		-----		-----	1229		-----		-----
323		-----		-----	1231		-----		-----
331		-----		-----	1233		-----		-----
333		-----		-----	1254	D473	0.0252		0.30
334		-----		-----	1259		-----		-----
336		-----		-----	1266		-----		-----
337		-----		-----	1269		-----		-----
340	D473	0.017		-0.30	1271		-----		-----
343	D473	0.02		-0.08	1275		-----		-----
349		-----		-----	1337		-----		-----
353		-----		-----	1348	D473	0.001		-1.47
360	D473	0.011		-0.74	1356	D473	0.012		-0.66
369	D473	0.013		-0.59	1358		-----		-----
370	D473	0.019		-0.15	1381	ISO3735	0.0148		-0.46
371	D473	0.024		0.21	1395		-----		-----
372	D473	0.01		-0.81	1396	IP375	0.013		-0.59
375	D473	0.003		-1.32	1402	D473	0.03		0.65
391		-----		-----	1403		-----		-----
398	D473	0.021		-0.01	1419		-----		-----
399		-----		-----	1428	D473	0.019		-0.15
440		-----		-----	1431		-----		-----
444		-----		-----	1455	D473	0.02		-0.08
445	IP53	0.01		-0.81	1459		-----		-----
447	D473	0.137	G(0.01)	8.45	1460		-----		-----
463	D473	0.0123		-0.64	1483		-----		-----
494	D473	0.030		0.65	1501	D473	0.031		0.72
495	D473	0.041		1.45	1510		-----		-----
507	D473	0.041		1.45	1520	D473	0.021		-0.01
511	D473	0.02412		0.22	1551		-----		-----
528		-----		-----	1552		-----		-----
529		-----		-----	1553		-----		-----
541	D473	0.03		0.65	1558		-----		-----
551		-----		-----	1559		-----		-----
557		-----		-----	1564		-----		-----
562	D473	0.0278		0.49	1569		-----		-----
575		-----		-----	1577		-----		-----
603	D473	0.0316		0.77	1585	D473	0.016		-0.37
604		-----		-----	1586	D473	0.0199		-0.09
605	D473	0.028		0.50	1590	D473	0.023		0.14
607	D473	0.0292		0.59	1613	D473	0.0319		0.79
608		-----		-----	1616		-----		-----
631		-----		-----	1622	D473	0.029		0.58
657	D473	0.008		-0.96	1631		-----		-----

663	D473	0.007		-1.03	1635		-----		-----
671	D473	0.04296		1.59	1636		-----		-----
704	D473	0.023		0.14	1643	D473	0.0119		-0.67
705	D473	0.030		0.65	1648		-----		-----
732	D473	0.025		0.28	1654		-----		-----
750	D473	0.112	G(0.01)	6.63	1669	D473	0.03		0.65
753	D473	0.019		-0.15	1677		-----		-----
781	D473	0.016		-0.37	1710		-----		-----
784	D473	0.015		-0.45	1712	ISO3735	0.01		-0.81
785	D473	0.019		-0.15	1720		-----		-----
791		-----		-----	1724	D473	0.02		-0.08
823	D473	0.0049		-1.18	1728	D473	0.014		-0.52
840	D473	0.032		0.79	1740	D473	0.017		-0.30
851		-----		-----	1807	D473	0.07	G(0.01)	3.57
855	D473	0.013		-0.59	1810		-----		-----
858	D473	0.016		-0.37	1811		-----		-----
859	D473	0.011		-0.74	1832	INH-6370	0.0252		0.30
862	D473	0.016		-0.37	1833	D473	0.011		-0.74
863	D473	0.02		-0.08	1842	D473	0.037		1.16
864	D473	0.012		-0.66	1849		-----		-----
865	D473	0.015		-0.45	1854	D473	0.018		-0.23
867	D473	0.020		-0.08	1862	D473	0.018		-0.23
873	D473	0.02		-0.08	1906		-----		-----
874	D473	0.02		-0.08	1915	D473	0.028		0.50
875	D473	0.02		-0.08	1936		-----		-----
886	D473	0.02		-0.08	1937		-----		-----
887		-----		-----	1938		-----		-----
902	D473	0.0118		-0.68	1949	D473	0.016		-0.37
904		-----		-----	1950	D473	0.013		-0.59
912		-----		-----	1951		-----		-----
					2129	D473	0.034		0.94

normality	not OK	
n	108	
outliers	4	
mean (n)	0.0211	
st.dev. (n)	0.00944	
R(calc.)	0.0264	
R(D473:07)	0.0384	
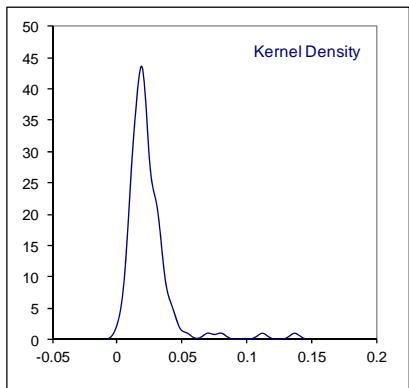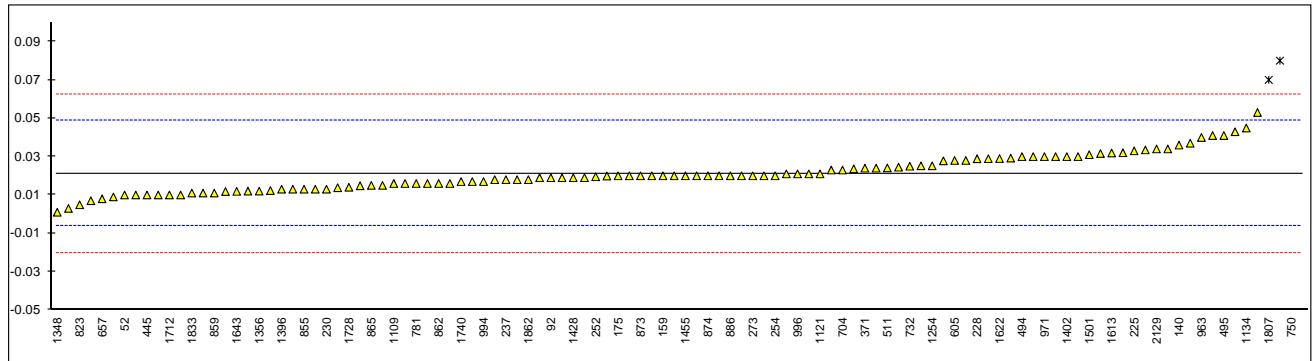
Determination of Total Sediment (Potential) of sample #13001; results in %M/M

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
52		-----		-----	913		-----		-----
62		-----		-----	922		-----		-----
90		-----		-----	962		-----		-----
92		-----		-----	963	IP390	0.03		0.82
120	IP390	0.01		-0.58	971	IP390	0.03		0.82
131	IP390	0.0197		0.10	974		-----		-----
132	ISO10307	0.007		-0.80	982		-----		-----
140		-----		-----	994	IP390	0.019		0.05
154		-----		-----	995	IP390	0.01295		-0.38
158		-----		-----	996		-----		-----
159		-----		-----	1011	ISO10307	0.06	G(0.01)	2.94
168		-----		-----	1022		-----		-----
169		-----		-----	1038		-----		-----
171	IP390	0.006		-0.87	1047		-----		-----
175		-----		-----	1059		-----		-----
193		-----		-----	1062		-----		-----
194		-----		-----	1065	IP390	0.004		-1.01
195		-----		-----	1080		-----		-----
212		-----		-----	1082		-----		-----
221		-----		-----	1095		-----		-----
224		-----		-----	1108	ISO10307	0.016		-0.16
225		-----		-----	1109		-----		-----
228		-----		-----	1121	IP390	0.02	C	0.12
230	ISO10307	0.018		-0.02	1126		-----		-----
237		-----		-----	1134	IP390	0.0185		0.01
238		-----		-----	1140		-----		-----
252		-----		-----	1161	ISO10307	0.02		0.12
253		-----		-----	1167	IP390	0.02		0.12
254		-----		-----	1177		-----		-----
273	IP390	0.02		0.12	1191	IP390	0.018		-0.02
311	IP390	0.01		-0.58	1215		-----		-----
313		-----		-----	1229	IP390	0.007		-0.80
323		-----		-----	1231	D4870	0.019		0.05
331		-----		-----	1233	IP390	0.023		0.33
333	IP390	0.03		0.82	1254	IP390	0.021		0.19
334		-----		-----	1259		-----		-----
336		-----		-----	1266		-----		-----
337		-----		-----	1269		-----		-----
340	IP390	0.011		-0.51	1271		-----		-----
343	ISO10307	<0.01		-----	1275		-----		-----
349		-----		-----	1337		-----		-----
353		-----		-----	1348		-----		-----
360	IP390	0.010		-0.58	1356	IP390	0.027		0.61
369	IP390	0.010		-0.58	1358		-----		-----
370	IP390	0.015		-0.23	1381		-----		-----
371	IP390	0.018		-0.02	1395		-----		-----
372	IP390	0.02		0.12	1396		-----		-----
375		-----		-----	1402	IP390	0.02		0.12
391	IP390	0.01		-0.58	1403		-----		-----
398	IP390	0.0165		-0.13	1419		-----		-----
399		-----		-----	1428	IP390	0.022		0.26
440		-----		-----	1431	IP390	0.030		0.82
444		-----		-----	1455	IP390	0.02		0.12
445	IP390	<0.01		-----	1459		-----		-----
447	IP390	0.018		-0.02	1460		-----		-----
463	ISO10307	0.0239		0.39	1483		-----		-----
494	IP390	0.007		-0.80	1501	IP390	0.013		-0.37
495		-----		-----	1510		-----		-----
507	IP390	0.011		-0.51	1520	IP390	0.014		-0.30
511		-----		-----	1551		-----		-----
528		-----		-----	1552		-----		-----
529		-----		-----	1553		-----		-----
541		-----		-----	1558		-----		-----
551		-----		-----	1559		-----		-----
557		-----		-----	1564	ISO10307	0.03		0.82
562		-----		-----	1569		-----		-----
575		-----		-----	1577		-----		-----
603	IP390	0.0251		0.48	1585	IP390	0.022		0.26
604		-----		-----	1586	IP390	0.026		0.54
605	IP390	0.022		0.26	1590	IP390	0.009		-0.65
607	IP390	0.0379		1.38	1613		-----		-----
608		-----		-----	1616		-----		-----
631		-----		-----	1622		-----		-----
657	IP390	0.02		0.12	1631		-----		-----
663		-----		-----	1635	IP390	0.02		0.12

Lab	Method	Value	Flag	z	Lab	Method	Value	z
671		-----		-----	1636		-----	-----
704	IP390	0.025		0.47	1643		-----	-----
705	IP390	0.010		-0.58	1648	IP390	0.023	0.33
732		-----		-----	1654	IP390	0.01	-0.58
750		-----		-----	1669	IP390	0.01	-0.58
753	IP390	0.021		0.19	1677		-----	-----
781	IP390	0.0165		-0.13	1710		-----	-----
784		-----		-----	1712		-----	-----
785	IP390	0.021		0.19	1720		-----	-----
791		-----		-----	1724		-----	-----
823	IP390	0.035	C	1.18	1728		-----	-----
840	ISO10307	0.019		0.05	1740	IP390	0.019	0.05
851	ISO10307	0.028		0.68	1807		-----	-----
855	IP390	0.016		-0.16	1810	IP390	0.01	-0.58
858	IP390	0.021		0.19	1811		-----	-----
859	IP390	0.028		0.68	1832		-----	-----
862	IP390	0.021		0.19	1833		-----	-----
863	IP390	0.013		-0.37	1842		-----	-----
864	IP390	0.015		-0.23	1849		-----	-----
865	IP390	0.018		-0.02	1854	IP390	0.017	-0.09
867	IP390	0.013		-0.37	1862	IP390	0.017	-0.09
873	IP390	0.01		-0.58	1906		-----	-----
874	IP390	0.02		0.12	1915		-----	-----
875	IP390	0.018		-0.02	1936		-----	-----
886		-----		-----	1937		-----	-----
887		-----		-----	1938		-----	-----
902	IP390	0.019		0.05	1949	IP390	0.0098	-0.60
904	IP390	0.02		0.12	1950	IP390	0.018	-0.02
912		-----		-----	1951		-----	-----
					2129	IP390	0.031	0.89

normality	not OK
n	82
outliers	1
mean (n)	0.0183
st.dev. (n)	0.00701
R(calc.)	0.0196
R(IP390:11)	0.0398

Lab 823 first reported : 0.05

Lab 1121 first reported : 0.05

Lab 1551 first reported : IP375 filtration time exceeds 25 mins

Kernel Density
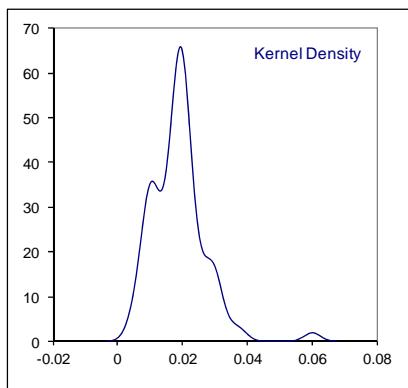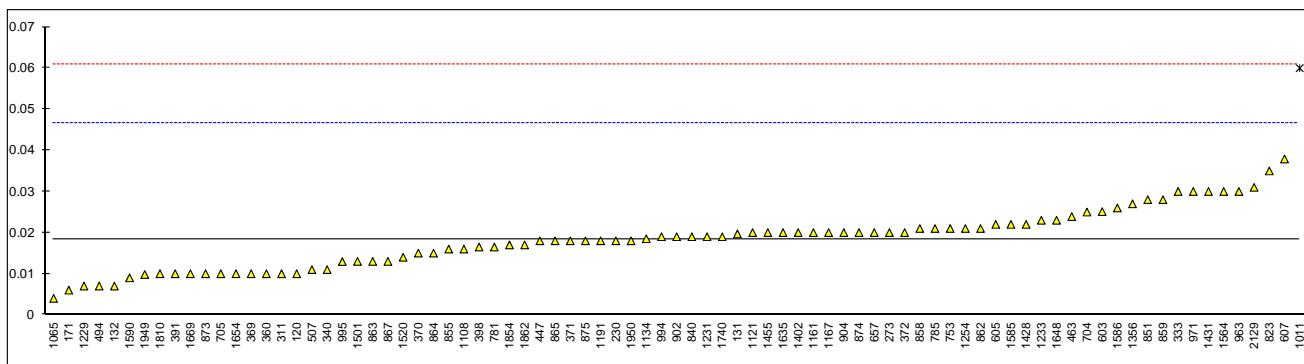
Determination of Total Sediment (Accelerated) of sample #13001; results in %M/M

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
52		-----		-----	913		-----		-----
62		-----		-----	922		-----		-----
90		-----		-----	962		-----		-----
92		-----		-----	963	IP390	0.03		0.87
120		-----		-----	971	IP390	0.03		0.87
131	IP390	0.0199		0.15	974		-----		-----
132	ISO10307	<0.01		-----	982		-----		-----
140		-----		-----	994	IP390	0.018		0.01
154	IP390	0.01		-0.56	995	IP390	0.01147		-0.45
158		-----		-----	996		-----		-----
159		-----		-----	1011	ISO10307	0.05	DG(0.01)	2.29
168		-----		-----	1022		-----		-----
169		-----		-----	1038		-----		-----
171	IP390	0.008		-0.70	1047		-----		-----
175		-----		-----	1059		-----		-----
193		-----		-----	1062	IP390	<0.01		-----
194		-----		-----	1065		-----		-----
195		-----		-----	1080		-----		-----
212		-----		-----	1082		-----		-----
221		-----		-----	1095		-----		-----
224		-----		-----	1108		-----		-----
225		-----		-----	1109		-----		-----
228		-----		-----	1121		-----		-----
230	ISO10307	0.012		-0.42	1126		-----		-----
237		-----		-----	1134	IP390	0.021		0.22
238		-----		-----	1140		-----		-----
252		-----		-----	1161	ISO10307	0.02		0.15
253		-----		-----	1167		-----		-----
254		-----		-----	1177		-----		-----
273		-----		-----	1191		-----		-----
311	IP390	0.01		-0.56	1215		-----		-----
313		-----		-----	1229		-----		-----
323		-----		-----	1231		-----		-----
331	ISO10307	0.07	G(0.01)	3.72	1233		-----		-----
333		-----		-----	1254		-----		-----
334		-----		-----	1259		-----		-----
336		-----		-----	1266		-----		-----
337		-----		-----	1269		-----		-----
340	IP390	0.015		-0.20	1271		-----		-----
343	ISO10307	0.08	G(0.01)	4.43	1275		-----		-----
349		-----		-----	1337		-----		-----
353		-----		-----	1348		-----		-----
360	IP390	0.013		-0.35	1356	IP390	0.027		0.65
369	IP390	0.021		0.22	1358		-----		-----
370	IP390	0.017		-0.06	1381		-----		-----
371	IP390	0.013		-0.35	1395		-----		-----
372	IP390	0.015		-0.20	1396	IP375	0.013		-0.35
375		-----		-----	1402	IP390	0.02		0.15
391		-----		-----	1403		-----		-----
398	IP390	0.0169		-0.07	1419		-----		-----
399		-----		-----	1428		-----		-----
440		-----		-----	1431		-----		-----
444		-----		-----	1455	IP390	0.02		0.15
445	IP390	0.01		-0.56	1459		-----		-----
447		-----		-----	1460		-----		-----
463	ISO10307	0.0231		0.37	1483		-----		-----
494	IP390	0.011		-0.49	1501	IP390	0.010		-0.56
495		-----		-----	1510		-----		-----
507	IP390	0.011		-0.49	1520	IP390	0.012		-0.42
511		-----		-----	1551		-----		-----
528		-----		-----	1552		-----		-----
529		-----		-----	1553		-----		-----
541		-----		-----	1558		-----		-----
551		-----		-----	1559		-----		-----
557		-----		-----	1564	ISO10307	0.05	DG(0.01)	2.29
562		-----		-----	1569		-----		-----
575		-----		-----	1577		-----		-----
603		-----		-----	1585	IP390	0.016		-0.13
604		-----		-----	1586	IP390	0.012		-0.42
605	IP390	0.047	G(0.01)	2.08	1590		-----		-----
607		-----		-----	1613		-----		-----
608		-----		-----	1616		-----		-----
631		-----		-----	1622		-----		-----
657	IP390	0.02		0.15	1631	ISO10307	0.02		0.15

663		-----		-----	1635	IP390	0.02	0.15
671		-----		-----	1636		-----	-----
704	IP390	0.023		0.37	1643		-----	-----
705	IP390	0.015		-0.20	1648		-----	-----
732		-----		-----	1654		-----	-----
750		-----		-----	1669	IP390	0.01	-0.56
753	IP390	0.028		0.72	1677		-----	-----
781	IP390	0.0224		0.32	1710		-----	-----
784		-----		-----	1712		-----	-----
785	IP390	0.015		-0.20	1720		-----	-----
791		-----		-----	1724	IP390	0.016	-0.13
823	IP390	0.05	G(0.01)	2.29	1728		-----	-----
840	ISO10307	0.019		0.08	1740	IP390	0.020	0.15
851		-----		-----	1807	IP390/D4870	0.04	1.58
855	IP390	0.018		0.01	1810		-----	-----
858	IP390	0.019		0.08	1811		-----	-----
859	IP390	0.026		0.58	1832		-----	-----
862	IP390	0.010		-0.56	1833	IP390	<0.01	-----
863	IP390	0.014		-0.27	1842		-----	-----
864	IP390	0.023		0.37	1849	IP390	0.0203	0.17
865	IP390	0.017		-0.06	1854	IP390	0.015	-0.20
867	IP390	0.014		-0.27	1862	IP390	0.017	-0.06
873	IP390	0.01		-0.56	1906		-----	-----
874	IP390	0.02		0.15	1915		-----	-----
875	IP390	0.021		0.22	1936		-----	-----
886		-----		-----	1937		-----	-----
887		-----		-----	1938		-----	-----
902	IP390	0.026		0.58	1949	IP390	0.0115	-0.45
904	IP390	0.02		0.15	1950	IP390	0.023	0.37
912		-----		-----	1951		-----	-----
					2129	IP390	0.027	0.65

normality	OK
n	62
outliers	6
mean (n)	0.0178
st.dev. (n)	0.00622
R(calc.)	0.0174
R(IP390:11)	0.0393

Kernel Density
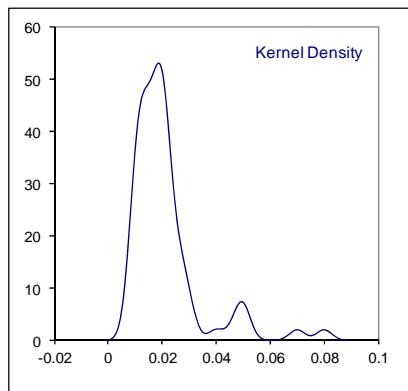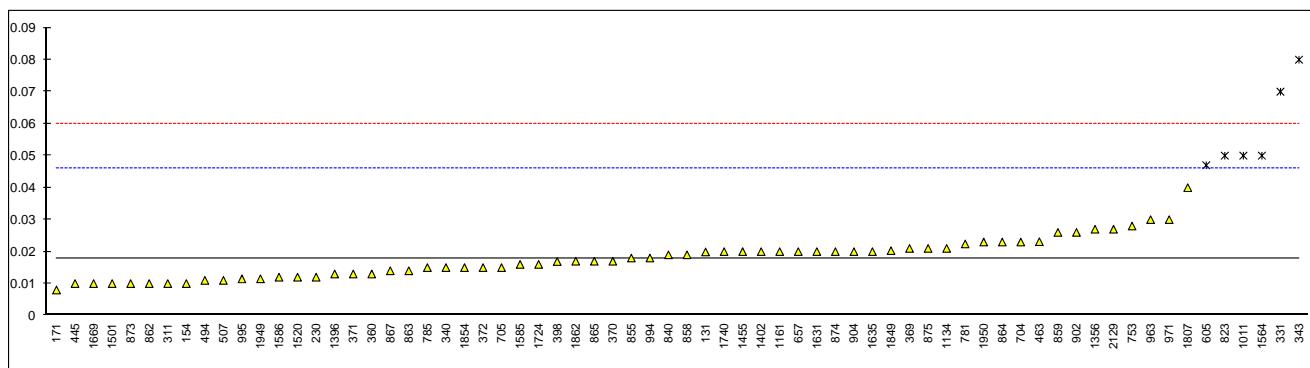
Determination of Total Sulphur on sample #13001; results in %M/M

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
52	D4294	0.826		1.25	913		-----		-----
62	D4294	0.826		1.25	922		-----		-----
90	D4294	0.8289		1.38	962		-----		-----
92	D4294	0.8392		1.84	963	D4294	0.742		-2.49
120	D4294	0.849		2.28	971	D4294	0.797		-0.04
131	D4294	0.8284		1.36	974		-----		-----
132	D4294	0.8258		1.24	982		-----		-----
140	D4294	0.8221		1.08	994	D4294	0.7859		-0.53
154	D4294	0.8261		1.26	995	D4294	0.804		0.27
158	D4294	0.806		0.36	996	D4294	0.805		0.32
159	D4294	0.835		1.65	1011	D4294	0.726		-3.20
168	D4294	0.8198		0.98	1022	D4294	0.809		0.50
169	D4294	0.84052		1.90	1038	D4294	0.860		2.77
171	D4294	0.8148		0.75	1047	ISO8754	0.783		-0.66
175	D4294	0.804		0.27	1059	ISO14596	0.77		-1.24
193	D4294	0.822955		1.12	1062	D4294	0.82		0.99
194	D4294	0.8251		1.21	1065	IP336	0.78		-0.80
195		-----		-----	1080	D4294	0.829		1.39
212	ISO8754	0.81		0.54	1082	ISO8754	0.773		-1.11
221		-----		-----	1095		-----		-----
224		-----		-----	1108	D4294	0.797		-0.04
225	D4294	0.875		3.44	1109		-----		-----
228	D4294	0.768		-1.33	1121	IP336	0.84772		2.22
230	ISO8754	0.811		0.59	1126	in house	0.738		-2.67
237	D4294	0.8080		0.45	1134	IP336	0.77		-1.24
238		-----		-----	1140		-----		-----
252		-----		-----	1161	ISO8754	0.715		-3.69
253		-----		-----	1167	ISO8754	0.810		0.54
254		-----		-----	1177	DIN51900	0.810		0.54
273	D4294	0.75		-2.13	1191	ISO8754	0.776		-0.97
311	D4294	0.833		1.57	1215	D4294	0.777		-0.93
313	D4294	0.82		0.99	1229	ISO8754	0.788		-0.44
323	D4294	0.79		-0.35	1231	D2622	0.827		1.30
331	ISO8754	0.7921		-0.26	1233	D4294	0.777		-0.93
333	D2622	0.800		0.09	1254	D4294	0.7922		-0.25
334	D4294	0.8032		0.24	1259	ISO8754	0.79		-0.35
336	D4294	0.801		0.14	1266	ISO8754	0.869		3.17
337	D2622	0.798		0.01	1269	ISO14596	0.80		0.09
340		-----		-----	1271	D4294	0.774		-1.06
343	IP336	0.81		0.54	1275	IP336	0.782		-0.71
349		-----		-----	1337	ISO8754	0.777		-0.93
353		-----		-----	1348	D4294	0.811		0.59
360	D4294	0.803		0.23	1356	ISO8754	0.77	C	-1.24
369	D2622	0.789		-0.40	1358		-----		-----
370	D4294	0.80		0.09	1381	ISO8754	0.817		0.85
371	D4294	0.823		1.12	1395	D4294	0.77		-1.24
372	D4294	0.7978		0.00	1396	IP336	0.7711		-1.19
375	D4294	0.79		-0.35	1402	D4294	0.820		0.99
391	D4294	0.777		-0.93	1403	ISO10304	0.81		0.54
398	D4294	0.794		-0.17	1419	ISO8754	0.761		-1.64
399	D4294	0.857		2.64	1428	ISO8754	0.77		-1.24
440		-----		-----	1431	D4294	0.76		-1.69
444	IP336	0.720		-3.47	1455	D2622	0.768		-1.33
445	IP336	0.81	C	0.54	1459	ISO8754	0.812		0.63
447	IP336	0.826		1.25	1460		-----		-----
463	D4294	0.820		0.99	1483		-----		-----
494	D4294	0.79		-0.35	1501	D4294	0.8205		1.01
495	D4294	0.804		0.27	1510		-----		-----
507	D4294	0.8268		1.29	1520	D4294	0.8257		1.24
511	D4294	0.81078		0.58	1551	IP336	0.784		-0.62
528		-----		-----	1552		-----		-----
529		-----		-----	1553		-----		-----
541	D4294	0.838		1.79	1558		-----		-----
551		-----		-----	1559	D4294	0.8117		0.62
557		-----		-----	1564	D4294	0.8		0.09
562	D4294	0.7842		-0.61	1569	ISO8754	0.802		0.18
575		-----		-----	1577	D3120	0.73	C	-3.03
603	D4294	0.813		0.67	1585	D4294	0.8206		1.01
604	D4294	0.817		0.85	1586	D4294	0.8612		2.82
605	D4294	0.795		-0.13	1590	D4294	0.7979		0.00
607	D4294	0.795		-0.13	1613	D4294	0.805		0.32
608		-----		-----	1616		-----		-----
631	D4294	0.8396		1.86	1622	D4294	0.877		3.53
657	D4294	0.764		-1.51	1631	ISO8754	0.78		-0.80

663	D4294	0.781		-0.75	1635	D4294	0.770		-1.24
671	D4294	0.81		0.54	1636	D4294	0.7668		-1.38
704	D4294	0.8020		0.18	1643	D1552	0.8192		0.95
705	D4294	0.789		-0.40	1648	D4294	0.796		-0.08
732	D4294	0.794		-0.17	1654	ISO8754	0.764		-1.51
750	D4294	0.810		0.54	1669	D4294	0.833		1.57
753	D4294	0.7798		-0.81	1677		-----		-----
781	D4294	0.7815		-0.73	1710	D4294	0.78		-0.80
784	D4294	0.779		-0.84	1712	ISO8754	0.77		-1.24
785	D4294	0.778		-0.89	1720	D4294	0.770		-1.24
791	D4294	0.774		-1.06	1724	D4294	0.785		-0.57
823	D4294	0.802		0.18	1728	D4294	0.777		-0.93
840	D4294	0.8208		1.02	1740	D4294	0.80		0.09
851	D4294	0.7786		-0.86	1807	D4294	0.82		0.99
855	D4294	0.770		-1.24	1810	D4294	0.847		2.19
858	D4294	0.776		-0.97	1811	D4294	0.814		0.72
859	D4294	0.772		-1.15	1832	ISO8754	0.774		-1.06
862	D2622	0.775		-1.02	1833	D4294	0.81		0.54
863	D4294	0.786		-0.53	1842	in house	0.786		-0.53
864	D4294	0.772		-1.15	1849	D4294	0.81		0.54
865	D4294	0.7769		-0.93	1854	D4294	0.83		1.43
867	D4294	0.775		-1.02	1862	D4294	0.7882		-0.43
873	D4294	0.791		-0.31	1906	D5623	0.99	G(0.01)	8.56
874	D4294	0.804		0.27	1915	D4294	0.753		-2.00
875	D4294	0.782		-0.71	1936		-----		-----
886	D4294	0.755		-1.91	1937	ISO8754	0.7934	C	-0.20
887		-----		-----	1938	D4294	0.794	C	-0.17
902	D4294	0.794		-0.17	1949	D4294	0.7661		-1.42
904	D4294	0.80		0.09	1950	D4294	0.7871		-0.48
912		-----		-----	1951	D4294	0.79	C	-0.35
					2129	D4294	0.784		-0.62

			Only ASTM D4292 data	Only IP336/ISO8754 data
normality	OK		OK	OK
n	171		123	33
outliers	1		0	0
mean (n)	0.798		0.802	0.788
st.dev. (n)	0.0282		0.0269	0.0303
R(calc.)	0.079		0.075	0.085
R(D4294:10)	0.063		0.063	0.062

Lab 445 first reported : 0.637   Lab 1937 first reported : 7934

Lab 1356 first reported : 2.51   Lab 1938 first reported : 7940

Lab 1577 first reported : 0.47   Lab 1577 first reported : 0.678
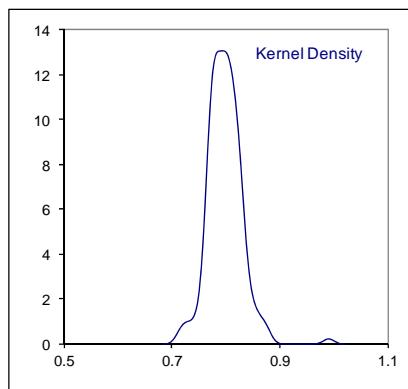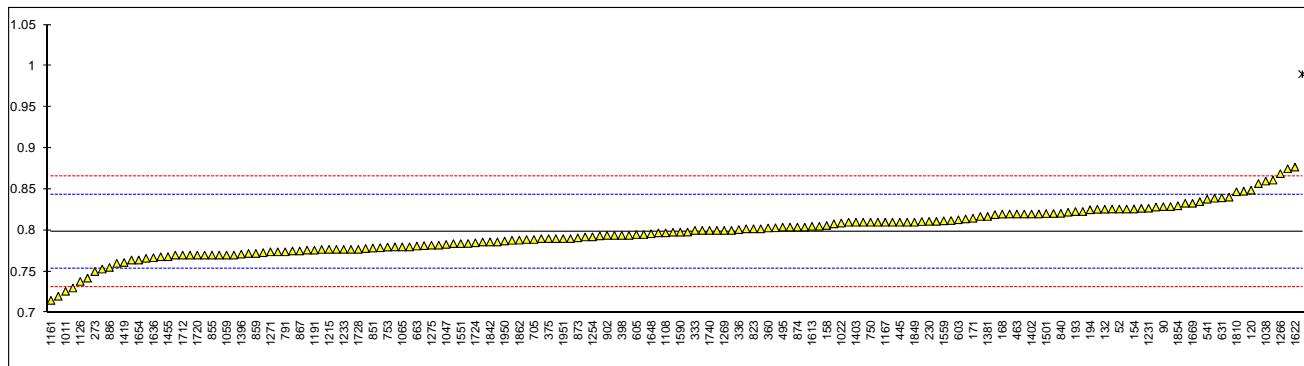
Determination of Water by distillation on sample #13001; results in %V/V

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
52	D95	0.05		-0.46	913		-----		-----
62	D95	0.4	G(0.01)	4.44	922		-----		-----
90		-----		-----	962		-----		-----
92	D95	0.05		-0.46	963	D95	0.20		1.64
120	D95	0.05		-0.46	971	D95	0.10		0.24
131	D95	0.05		-0.46	974		-----		-----
132	D95	0.10		0.24	982		-----		-----
140	D95	0.05		-0.46	994	D95	0.05		-0.46
154	D95	0.125		0.59	995	D95	0.035		-0.67
158	D95	0.10		0.24	996	D95	0.05		-0.46
159	D95	0.05		-0.46	1011	D95	0.15		0.94
168	D95	0.1		0.24	1022	D95	0.095		0.17
169		-----		-----	1038		-----		-----
171	D95	0.10		0.24	1047	INH-04523	0.09		0.10
175	D95	0.10		0.24	1059	ISO3733	0.15	C	0.94
193	D95	0		-1.16	1062		-----		-----
194	D95	0.10		0.24	1065		-----		-----
195		-----		-----	1080		-----		-----
212	ISO3733	<0.1		-----	1082		-----		-----
221		-----		-----	1095		-----		-----
224		-----		-----	1108	D95	0.10		0.24
225	D95	0.050		-0.46	1109	D95	<0.05		-----
228		-----		-----	1121	IP74	<0.05		-----
230	ISO3733	0.05		-0.46	1126	D95	0.06		-0.32
237	D95	0.10		0.24	1134	IP74	0.10		0.24
238		-----		-----	1140		-----		-----
252	D95	0.10		0.24	1161	EN1428	0.18		1.36
253	D95	0.10	C	0.24	1167	EN1428	<0.1		-----
254	D95	0.05		-0.46	1177		-----		-----
273	D95	0.15		0.94	1191		-----		-----
311	D95	<0.05		-----	1215	D95	0.05		-0.46
313	D95	<0.05		-----	1229		-----		-----
323	D95	<0.05		-----	1231		-----		-----
331	ISO3733	0.10		0.24	1233	D95	0.10		0.24
333	D95	0.00		-1.16	1254	D95	0.215		1.85
334		-----		-----	1259	ISO3733	0.0		-1.16
336		-----		-----	1266	UNE51027	0.2		1.64
337	D95	0.10		0.24	1269		-----		-----
340	D95	0.025		-0.81	1271	D95	0		-1.16
343	D95	<0.1		-----	1275	IP74	0.10		0.24
349	D95	0.2		1.64	1337		-----		-----
353		-----		-----	1348	D95	0.05		-0.46
360	D95	0.05		-0.46	1356	D95	0.05		-0.46
369	D95	0.10		0.24	1358		-----		-----
370	D95	0.05		-0.46	1381	ISO3733	0.050		-0.46
371	D95	0.20		1.64	1395	D95	<0.05		-----
372	D95	0.05		-0.46	1396	IP74	0.125		0.59
375	D95	0.03		-0.74	1402	D95	0.10		0.24
391	D95	0.10		0.24	1403		-----		-----
398	D95	0.10		0.24	1419		-----		-----
399	D95	0.10		0.24	1428	D95	0.10		0.24
440	IP74	0.10		0.24	1431	D95	0.20		1.64
444	D95	<0.05		-----	1455	D95	0.1		0.24
445	IP74	0.05		-0.46	1459	in house	0.21		1.78
447	D95	0.05		-0.46	1460		-----		-----
463	D95	<0.1		-----	1483		-----		-----
494	D95	0.05		-0.46	1501	D95	0.050		-0.46
495	D95	0.05		-0.46	1510		-----		-----
507	D95	0.10		0.24	1520	D95	0.05		-0.46
511	D95	<0.05		-----	1551	IP74	0.1		0.24
528		-----		-----	1552	D95	0.10		0.24
529		-----		-----	1553	D95	0.10		0.24
541	D95	0.2		1.64	1558	ISO3733	0.20		1.64
551		-----		-----	1559		-----		-----
557		-----		-----	1564	D95	0.05		-0.46
562	D95	0.05		-0.46	1569	D95	<0.1		-----
575		-----		-----	1577		-----		-----
603	D95	0.05		-0.46	1585		-----		-----
604		-----		-----	1586	D95	<0.10		-----
605	D95	0.05		-0.46	1590	D95	0.05		-0.46
607	D95	0.05		-0.46	1613	D95	0.20		1.64
608		-----		-----	1616		-----		-----
631	D95	0.10		0.24	1622	D95	0.10		0.24
657	D95	<0.05		-----	1631	EN1428	0.05		-0.46

663	D95	0.05	-0.46	1635	D95	0	-1.16
671	D95	0.20	1.64	1636	D95	0.05	-0.46
704	D95	0.05	-0.46	1643	D95	0.05	-0.46
705	D95	0.05	-0.46	1648	D95	0.10	0.24
732	INH-2477	0.06	-0.32	1654	D95	0.18	1.36
750	D95	<0.05	-----	1669	D95	0.10	0.24
753	D95	0.05	-0.46	1677		-----	-----
781	D95	0.05	-0.46	1710	D95	0.0	-1.16
784	D95	0.05	-0.46	1712	D95	0.00	-1.16
785	D95	0.05	-0.46	1720		-----	-----
791	D95	0.05	-0.46	1724	D95	0.05	-0.46
823	D95	0.05	-0.46	1728	D95	0.01989	-0.89
840	D95	0.10	0.24	1740	D95	0.10	0.24
851	D95	0.1	0.24	1807	D95	0.0	-1.16
855	D95	<0.05	-----	1810		-----	-----
858	D95	<0.05	-----	1811		-----	-----
859	D95	<0.05	-----	1832	INH-3477	0.02	-0.88
862	D95	<0.05	-----	1833	D95	0.05	-0.46
863	D95	0.05	-0.46	1842	D95	0.05	-0.46
864	D95	<0.05	-----	1849	D95	<0.1	-----
865	ISO3733	0.04	-0.60	1854	D95	0.15	0.94
867	D95	0.050	-0.46	1862	D95	0.15	0.94
873	D95	0.10	0.24	1906		-----	-----
874	D95	0.10	0.24	1915	D95	0.05	-0.46
875	D95	0.05	-0.46	1936	D95	<0.1	-----
886	D95	0.05	-0.46	1937	EN1428	<0.1	-----
887	D95	0.20	1.64	1938	D95	0.1	0.24
902	D95	0.05	-0.46	1949	D95	0.200	1.64
904	D95	0.05	-0.46	1950	D95	0.10	0.24
912		-----	-----	1951	D95	0.05	-0.46
				2129	D95	0.05	-0.46

normality	not OK
n	133
outliers	1
mean (n)	0.083
st.dev. (n)	0.0532
R(calc.)	0.149
R(D95:10)	0.200

Lab 253 first reported : 0.30

Lab 1059 first reported : 0.752
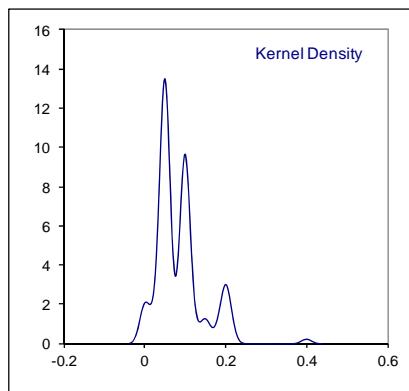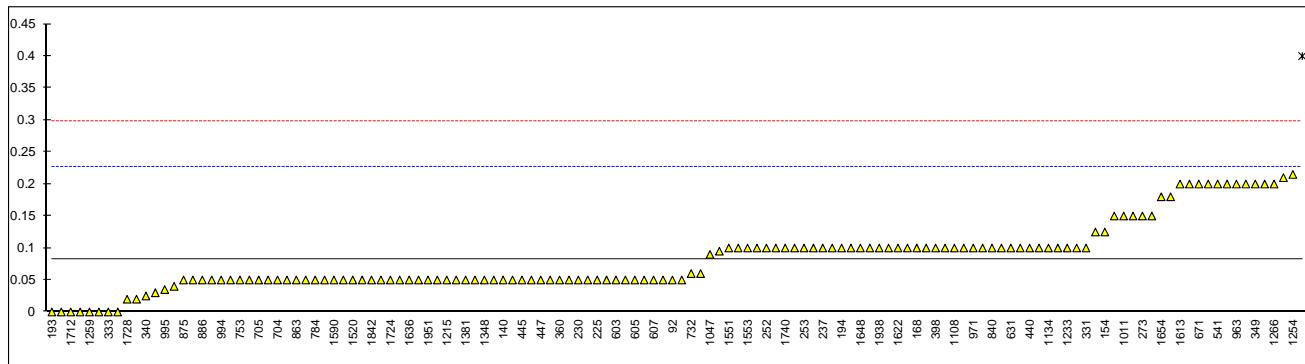
Determination of Water and sediment by centrifuge method on sample #13001; results in %V/V

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
52		-----		-----	913		-----		-----
62		-----		-----	922		-----		-----
90		-----		-----	962		-----		-----
92		-----		-----	963	D1796	0.10		0.82
120	D1796	0.10		0.82	971		-----		-----
131		0.050		-0.51	974		-----		-----
132	D1796	0.10		0.82	982		-----		-----
140		-----		-----	994		-----		-----
154		-----		-----	995	calc.	0.05857		-0.28
158		-----		-----	996		-----		-----
159	D1796	0.05		-0.51	1011	D1796	0.05		-0.51
168		-----		-----	1022		-----		-----
169	D1796	0.100		0.82	1038		-----		-----
171	D1796	0.05		-0.51	1047		-----		-----
175	D1796	0.05		-0.51	1059	ISO3734	0.10		0.82
193		0.05		-0.51	1062		-----		-----
194	D1796	0.05		-0.51	1065		-----		-----
195		-----		-----	1080		-----		-----
212		-----		-----	1082		-----		-----
221		-----		-----	1095		-----		-----
224		-----		-----	1108	D1796	0.10		0.82
225		-----		-----	1109	D1796	0.05		-0.51
228		-----		-----	1121		-----		-----
230		-----		-----	1126		-----		-----
237		-----		-----	1134	calc.	0.0551		-0.37
238		-----		-----	1140		-----		-----
252		-----		-----	1161		-----		-----
253		-----		-----	1167		-----		-----
254		-----		-----	1177		-----		-----
273		-----		-----	1191		-----		-----
311		-----		-----	1215	D1796	0.05		-0.51
313		-----		-----	1229		-----		-----
323		-----		-----	1231		-----		-----
331		-----		-----	1233		-----		-----
333		-----		-----	1254		-----		-----
334		-----		-----	1259		-----		-----
336		-----		-----	1266	UNE51082	0.1		0.82
337		-----		-----	1269		-----		-----
340		-----		-----	1271		-----		-----
343	D1796	<0.1		-----	1275		-----		-----
349		-----		-----	1337		-----		-----
353		-----		-----	1348	D1796	0.05		-0.51
360		-----		-----	1356		-----		-----
369		-----		-----	1358		-----		-----
370		-----		-----	1381		-----		-----
371		-----		-----	1395		-----		-----
372		-----		-----	1396		-----		-----
375		-----		-----	1402		-----		-----
391		-----		-----	1403		-----		-----
398		-----		-----	1419		-----		-----
399		-----		-----	1428		0.10		0.82
440		-----		-----	1431		-----		-----
444		-----		-----	1455		-----		-----
445		-----		-----	1459		-----		-----
447		-----		-----	1460		-----		-----
463	D1796	0.0		-1.84	1483		-----		-----
494	D95/D473	0.08		0.29	1501		-----		-----
495		-----		-----	1510		-----		-----
507	D1796	0.05		-0.51	1520		-----		-----
511	D1796	0.00		-1.84	1551		-----		-----
528		-----		-----	1552		-----		-----
529	D4007	0.05		-0.51	1553		-----		-----
541		-----		-----	1558		-----		-----
551		-----		-----	1559		-----		-----
557		-----		-----	1564		-----		-----
562	D1796	0.125		1.49	1569		-----		-----
575		-----		-----	1577		-----		-----
603		-----		-----	1585		-----		-----
604		-----		-----	1586	D1796	0.10		0.82
605		-----		-----	1590		-----		-----
607		-----		-----	1613	D1796	0.05		-0.51
608		-----		-----	1616		-----		-----
631	D1796	0.05		-0.51	1622		-----		-----
657	D1796	<0.05		-----	1631		-----		-----
663	D1796	0.05		-0.51	1635		-----		-----

671	D1796	0.05		-0.51	1636		-----		-----
704		-----		-----	1643		-----		-----
705		-----		-----	1648		-----		-----
732		-----		-----	1654		-----		-----
750		-----		-----	1669		-----		-----
753	Calc.	0.069		0.00	1677		-----		-----
781		0.064		-0.14	1710		-----		-----
784		-----		-----	1712		-----		-----
785		-----		-----	1720		-----		-----
791		-----		-----	1724		-----		-----
823		0.05		-0.51	1728	D95/D473	0.034		-0.94
840		-----		-----	1740	D1796	0.10		0.82
851		-----		-----	1807		-----		-----
855		-----		-----	1810		-----		-----
858		-----		-----	1811		-----		-----
859		-----		-----	1832		-----		-----
862	D1796	0.05		-0.51	1833		-----		-----
863	D1796	0.075		0.16	1842		-----		-----
864		-----		-----	1849		-----		-----
865		-----		-----	1854		-----		-----
867		-----		-----	1862	Calc.	0.17		2.69
873		-----		-----	1906		-----		-----
874		-----		-----	1915	D1796	0.05		-0.51
875		-----		-----	1936		-----		-----
886	D1796	0.10		0.82	1937		-----		-----
887		-----		-----	1938		-----		-----
902		-----		-----	1949	D1796	0.250	G(0.01)	4.82
904		-----		-----	1950	Calc.	0.11		1.09
912		-----		-----	1951		-----		-----
					2129		0.08		0.29

normality	not OK
n	43
outliers	1
mean (n)	0.069
st.dev. (n)	0.0323
R(calc.)	0.090
R(D1796:11)	0.105
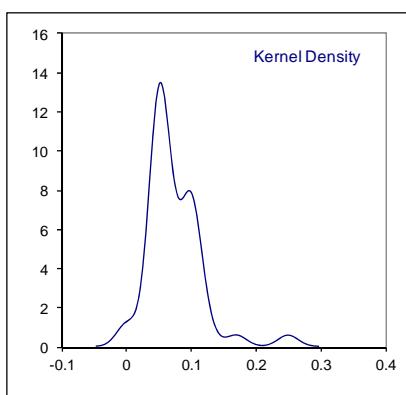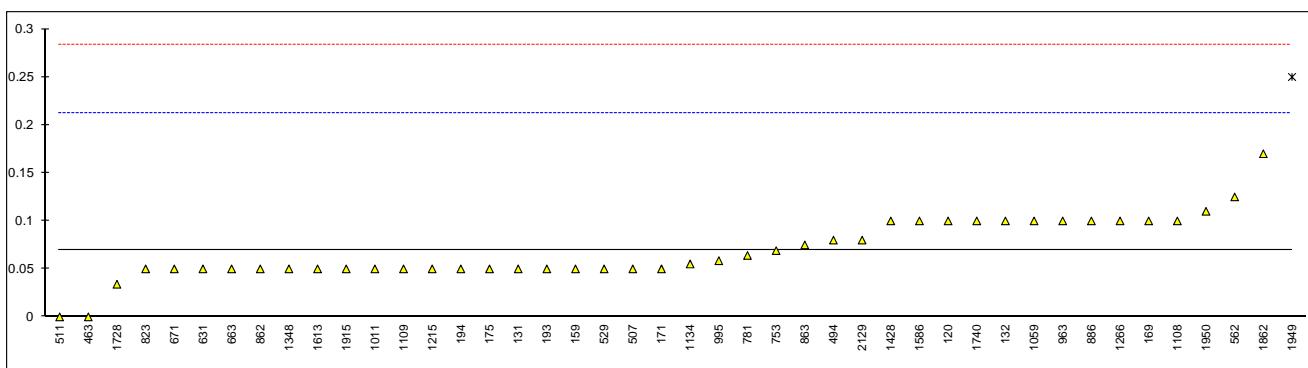
Determination of Nitrogen on sample #13001; results in µg/g

lab	method	value	mark	z(targ)	Solvent	Dilution ratio	Remarks
52	D5762	4783		1.63	-----		
62		-----		-----	-----		
90		-----		-----	-----		
92		-----		-----	-----		
120	D5762	3560		-1.48	Xylene	10	
131	D5762	3696		-1.14	-----		
132		-----		-----	-----		
140	D5762	4805		1.68	Xylene	0.50 g/50 ml	
154		-----		-----	-----		
158	D5762	4583		1.12	-----		
159		-----		-----	-----		
168		-----		-----	-----		
169		-----		-----	-----		
171	D5762	4697.12		1.41	Xylene	0.31/ 10	
175		-----		-----	-----		
193		-----		-----	-----		
194		-----		-----	-----		
195		-----		-----	-----		
212		-----		-----	-----		
221		-----		-----	-----		
224		-----		-----	-----		
225		-----		-----	-----		
228		-----		-----	-----		
230		-----		-----	-----		
237		-----		-----	-----		
238		-----		-----	-----		
252		-----		-----	-----		
253		-----		-----	-----		
254		-----		-----	-----		
273		-----		-----	-----		
311	D5762	4525		0.97	Xylene	1:100	
313		-----		-----	-----		
323	D5762	4532		0.99	Xylene	1:100	
331		-----		-----	-----		
333	D5762	4356		0.54	-----		
334		-----		-----	-----		
336		-----		-----	-----		
337		-----		-----	-----		
340		-----		-----	-----		
343		-----		-----	-----		
349		-----		-----	-----		
353		-----		-----	-----		
360		-----		-----	-----		
369	D3228	3660		-1.23	-----		
370		-----		-----	-----		
371		-----		-----	-----		
372	D5762	4300		0.40	Xylene	1:70	
375		-----		-----	-----		
391		-----		-----	-----		
398		-----		-----	-----		
399		-----		-----	-----		
440		-----		-----	-----		
444		-----		-----	-----		
445	D5762	4520		0.96	Xylene	1.0294 g/100 ml	
447		-----		-----	-----		
463	D5762	4301		0.40	Xylene		
494	D5762	5164	ex	2.59	Toluene	60	result excluded, solvent is not suitable
495		-----		-----	-----		
507		-----		-----	-----		
511		-----		-----	-----		
528		-----		-----	-----		
529		-----		-----	-----		
541		-----		-----	-----		
551		-----		-----	-----		
557		-----		-----	-----		
562		-----		-----	-----		
575		-----		-----	-----		
603		-----		-----	-----		
604		-----		-----	-----		
605		-----		-----	-----		
607		-----		-----	-----		
608		-----		-----	-----		
631		-----		-----	-----		
657	D5762	3707		-1.11	Xylene	1:50	

663	D5762	3100		-2.65	Mix-Xylene	1:49.0572	
671		-----		-----	-----		
704	D5762	4759		1.57	Xylene	0.0125	
705		-----		-----	-----		
732		-----		-----	-----		
750		-----		-----	-----		
753		-----		-----	-----		
781	D3228	3915.7		-0.58	-----		
784		-----		-----	-----		
785		-----		-----	-----		
791		-----		-----	-----		
823	D5762	3673		-1.19	Xylene	100	
840		-----		-----	-----		
851		-----		-----	-----		
855		-----		-----	-----		
858		-----		-----	-----		
859		-----		-----	-----		
862	D4629	3410	ex	-1.86	Toluene	10%	result excluded, method is not suitable
863		-----		-----	-----		
864		-----		-----	-----		
865		-----		-----	-----		
867		-----		-----	-----		
873	D3228	4000		-0.36	-----		
874		-----		-----	-----		
875	D5762	4114		-0.07	Xylene		
886		-----		-----	-----		
887		-----		-----	-----		
902		-----		-----	-----		
904		-----		-----	-----		
912		-----		-----	-----		
913		-----		-----	-----		
922		-----		-----	-----		
962		-----		-----	-----		
963	D5762	3766		-0.96	Toluene	1:8	
971	D5762	3767		-0.96	Xylene	26.81	
974		-----		-----	-----		
982		-----		-----	-----		
994		-----		-----	-----		
995		-----		-----	-----		
996		-----		-----	-----		
1011		-----		-----	-----		
1022		-----		-----	-----		
1038	D5762	3300		-2.14	Xylene	0.2022:10	
1047	D4629	3342	ex	-2.04	Xylene	1:30	result excluded, method is not suitable
1059		-----		-----	-----		
1062	D5762	3906		-0.60	Xylene		
1065		-----		-----	-----		
1080	D5762	4190		0.12	Xylene		
1082		-----		-----	-----		
1095		-----		-----	-----		
1108	D4629	3003	ex	-2.90	Toluene		result excluded, method is not suitable
1109	D4629	3696	ex	-1.14	Toluene	0.2181 g/100 ml	result excluded, method is not suitable
1121		-----		-----	-----		
1126		-----		-----	-----		
1134	D5762	4306.6		0.42	-----	1:10	
1140		-----		-----	-----		
1161		-----		-----	-----		
1167		-----		-----	-----		
1177		-----		-----	-----		
1191		-----		-----	-----		
1215		-----		-----	-----		
1229		-----		-----	-----		
1231		-----		-----	-----		
1233		-----		-----	-----		
1254		-----		-----	-----		
1259		-----		-----	-----		
1266		-----		-----	-----		
1269		-----		-----	-----		
1271	D3228	4520		0.96	-----		
1275		-----		-----	-----		
1337		-----		-----	-----		
1348		-----		-----	-----		
1356		-----		-----	-----		
1358		-----		-----	-----		
1381		-----		-----	-----		
1395		-----		-----	-----		
1396		-----		-----	-----		
1402		-----		-----	Xylene		
1403		-----		-----	-----		

1419	D5762	3613		-1.35	Xylene	70	
1428		-----		-----	-----		
1431		-----		-----	-----		
1455		-----		-----	-----		
1459		-----		-----	-----		
1460		-----		-----	-----		
1483		-----		-----	-----		
1501		-----		-----	-----		
1510		-----		-----	-----		
1520	D5762	3927.9		-0.55	Xylene	1:30	
1551		-----		-----	-----		
1552		-----		-----	-----		
1553		-----		-----	-----		
1558		-----		-----	-----		
1559		-----		-----	-----		
1564		-----		-----	-----		
1569	D4629	4219.2	ex	0.19	Xylene	1 g: 25 ml	result excluded, method is not suitable
1577	D4629	4800	ex	1.67	Toluene	198.6 mg/ 25 ml	result excluded, method is not suitable
1585		-----		-----	-----		
1586		-----		-----	-----		
1590		-----		-----	-----		
1613		-----		-----	-----		
1616		-----		-----	-----		
1622		-----		-----	-----		
1631		-----		-----	-----		
1635	D5762	4009.56	ex	-0.34	Toluene	1:24	result excluded, solvent is not suitable
1636		-----		-----	-----		
1643		-----		-----	-----		
1648		-----		-----	-----		
1654		-----		-----	-----		
1669		-----		-----	-----		
1677		-----		-----	-----		
1710	D5762	3846	ex	-0.75	Toluene	20	result excluded, solvent is not suitable
1712		-----		-----	-----		
1720		-----		-----	-----		
1724		-----		-----	-----		
1728		-----		-----	-----		
1740		-----		-----	-----		
1807		-----		-----	-----		
1810		-----		-----	-----		
1811		-----		-----	-----		
1832		-----		-----	-----		
1833	D5762	4107	ex	-0.09	Toluene	1/5	result excluded, solvent is not suitable
1842	in house	4500		0.91	-----		
1849		-----		-----	-----		
1854		-----		-----	-----		
1862		-----		-----	-----		
1906		-----		-----	-----		
1915	D3228	5050		2.30	-----		
1936		-----		-----	-----		
1937		-----		-----	-----		
1938		-----		-----	-----		
1949		-----		-----	-----		
1950		-----		-----	-----		
1951	D5762	4133	ex	-0.025	Toluene	1/10	result excluded, solvent is not suitable
2129		-----		-----	-----		

normality	OK
n	31
outliers	0
mean (n)	4143.01
st.dev. (n)	486.682
R(calc.)	1362.71
R(D5762:12)	1102.04
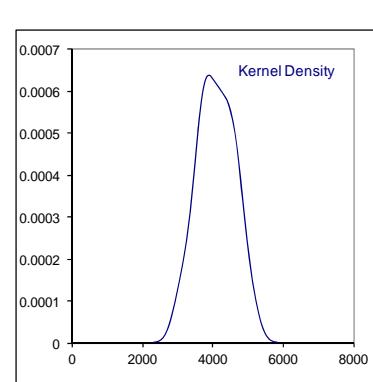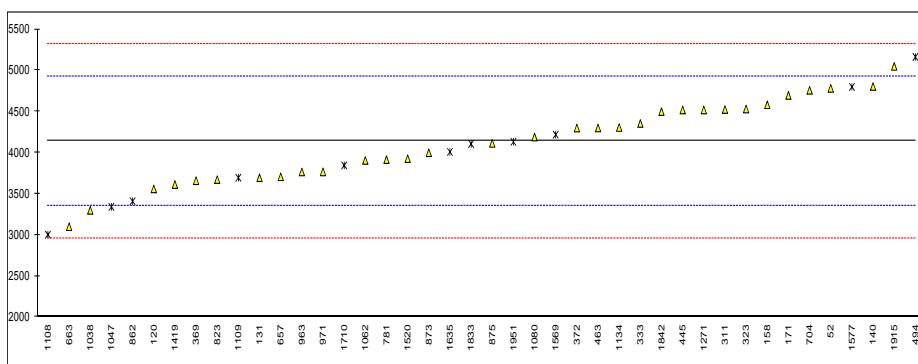
Distillation according to ASTM D1160 on sample #13001, results in °C

lab	method	IBP	5%	10%	20%	30%	40%	50%	FBP
52		-----	-----	-----	-----	-----	-----	-----	-----
62		-----	-----	-----	-----	-----	-----	-----	-----
90		-----	-----	-----	-----	-----	-----	-----	-----
92		-----	-----	-----	-----	-----	-----	-----	-----
120		-----	-----	-----	-----	-----	-----	-----	-----
131	D1160	157.4	252.7	285.3	368.1	431.1	498.1	539.8	539.8
132		-----	-----	-----	-----	-----	-----	-----	-----
140		-----	-----	-----	-----	-----	-----	-----	-----
154		-----	-----	-----	-----	-----	-----	-----	-----
158		-----	-----	-----	-----	-----	-----	-----	-----
159		-----	-----	-----	-----	-----	-----	-----	-----
168		-----	-----	-----	-----	-----	-----	-----	-----
169		-----	-----	-----	-----	-----	-----	-----	-----
171	D1160	**243.8**	**281.4**	**324.3**	**389.7**	**448.9**	497.2	529.4	529.4
175		-----	-----	-----	-----	-----	-----	-----	-----
193		-----	-----	-----	-----	-----	-----	-----	-----
194		-----	-----	-----	-----	-----	-----	-----	-----
195		-----	-----	-----	-----	-----	-----	-----	-----
212		-----	-----	-----	-----	-----	-----	-----	-----
221		-----	-----	-----	-----	-----	-----	-----	-----
224		-----	-----	-----	-----	-----	-----	-----	-----
225		-----	-----	-----	-----	-----	-----	-----	-----
228		-----	-----	-----	-----	-----	-----	-----	-----
230		-----	-----	-----	-----	-----	-----	-----	-----
237		-----	-----	-----	-----	-----	-----	-----	-----
238		-----	-----	-----	-----	-----	-----	-----	-----
252		-----	-----	-----	-----	-----	-----	-----	-----
253		-----	-----	-----	-----	-----	-----	-----	-----
254		-----	-----	-----	-----	-----	-----	-----	-----
273		-----	-----	-----	-----	-----	-----	-----	-----
311	D1160	190.7	249.4	286.5	363.7	428.2	497.3	-----	513.9
313		-----	-----	-----	-----	-----	-----	-----	-----
323	D1160	192.5	243.6	280.0	359.9	420.1	485.9	-----	-----
331		-----	-----	-----	-----	-----	-----	-----	-----
333		-----	-----	-----	-----	-----	-----	-----	-----
334		-----	-----	-----	-----	-----	-----	-----	-----
336		-----	-----	-----	-----	-----	-----	-----	-----
337		-----	-----	-----	-----	-----	-----	-----	-----
340		-----	-----	-----	-----	-----	-----	-----	-----
343		-----	-----	-----	-----	-----	-----	-----	-----
349		-----	-----	-----	-----	-----	-----	-----	-----
353		-----	-----	-----	-----	-----	-----	-----	-----
360	D1160	198	258	296	377	441	506	-----	520
369		-----	-----	-----	-----	-----	-----	-----	-----
370		-----	-----	-----	-----	-----	-----	-----	-----
371	D1160	179	242	282	358	429	493	-----	527
372	D1160	188	248	287	365	425	493	-----	525
375		-----	-----	-----	-----	-----	-----	-----	-----
391		-----	-----	-----	-----	-----	-----	-----	-----
398		-----	-----	-----	-----	-----	-----	-----	-----
399		-----	-----	-----	-----	-----	-----	-----	-----
440		-----	-----	-----	-----	-----	-----	-----	-----
444		-----	-----	-----	-----	-----	-----	-----	-----
445	D1160	204	247	283	363	425	484	-----	508
447		-----	-----	-----	-----	-----	-----	-----	-----
463	D1160	183	238	269	357	418	489	514	514
494	D1160	187.0	254.2	295.7	373.3	434.4	499.1	-----	512.5
495		-----	-----	-----	-----	-----	-----	-----	-----
507		-----	-----	-----	-----	-----	-----	-----	-----
511		-----	-----	-----	-----	-----	-----	-----	-----
528		-----	-----	-----	-----	-----	-----	-----	-----
529		-----	-----	-----	-----	-----	-----	-----	-----
541		-----	-----	-----	-----	-----	-----	-----	-----
551		-----	-----	-----	-----	-----	-----	-----	-----
557		-----	-----	-----	-----	-----	-----	-----	-----
562		-----	-----	-----	-----	-----	-----	-----	-----
575		-----	-----	-----	-----	-----	-----	-----	-----
603		-----	-----	-----	-----	-----	-----	-----	-----
604		-----	-----	-----	-----	-----	-----	-----	-----
605		-----	-----	-----	-----	-----	-----	-----	-----
607		-----	-----	-----	-----	-----	-----	-----	-----
608		-----	-----	-----	-----	-----	-----	-----	-----
631		-----	-----	-----	-----	-----	-----	-----	-----
657	D1160	190.7	249.8	289.6	367.0	429.0	491.2	-----	510.6
663		-----	-----	-----	-----	-----	-----	-----	-----

671		-----	-----	-----	-----	-----	-----	-----	-----
704	D1160	194	250	288	368	429	491	536	536
705		-----	-----	-----	-----	-----	-----	-----	-----
732		-----	-----	-----	-----	-----	-----	-----	-----
750		-----	-----	-----	-----	-----	-----	-----	-----
753	D1160	182	238	279	362	422	486	-----	508
781	D1160	182	240	282	365	426	495	-----	532
784	D1160	182	244	282	363	429	496	-----	522
785		-----	-----	-----	-----	-----	-----	-----	-----
791		-----	-----	-----	-----	-----	-----	-----	-----
823		-----	-----	-----	-----	-----	-----	-----	-----
840		-----	-----	-----	-----	-----	-----	-----	-----
851		-----	-----	-----	-----	-----	-----	-----	-----
855		-----	-----	-----	-----	-----	-----	-----	-----
858		-----	-----	-----	-----	-----	-----	-----	-----
859		-----	-----	-----	-----	-----	-----	-----	-----
862	D1160	176.0	251.0	285.0	364.0	428.0	494.5	-----	-----
863		-----	-----	-----	-----	-----	-----	-----	-----
864		-----	-----	-----	-----	-----	-----	-----	-----
865		-----	-----	-----	-----	-----	-----	-----	-----
867		-----	-----	-----	-----	-----	-----	-----	-----
873	D1160	192	245	281	360	425	492	-----	538
874	D1160	182	243	278	357	421	488	-----	517
875		-----	-----	-----	-----	-----	-----	-----	-----
886		-----	-----	-----	-----	-----	-----	-----	-----
887		-----	-----	-----	-----	-----	-----	-----	-----
902	D1160	188.4	253.1	292.6	370.2	432.5	501.7	-----	538.3
904	D1160	185.0	248.5	289.0	369.0	432.0	500.0	-----	530.0
912		-----	-----	-----	-----	-----	-----	-----	-----
913		-----	-----	-----	-----	-----	-----	-----	-----
922		-----	-----	-----	-----	-----	-----	-----	-----
962		-----	-----	-----	-----	-----	-----	-----	-----
963	D1160	174.1	235.4	273.1	353.4	416.4	474.4	-----	497.6
971		-----	-----	-----	-----	-----	-----	-----	-----
974		-----	-----	-----	-----	-----	-----	-----	-----
982		-----	-----	-----	-----	-----	-----	-----	-----
994	D1160	192	253	273	357	427	500	-----	520
995		-----	-----	-----	-----	-----	-----	-----	-----
996		-----	-----	-----	-----	-----	-----	-----	-----
1011		-----	-----	-----	-----	-----	-----	-----	-----
1022		-----	-----	-----	-----	-----	-----	-----	-----
1038		-----	-----	-----	-----	-----	-----	-----	-----
1047		-----	-----	-----	-----	-----	-----	-----	-----
1059		-----	-----	-----	-----	-----	-----	-----	-----
1062		-----	-----	-----	-----	-----	-----	-----	-----
1065	D1160	224	253	290	372	424	515	-----	-----
1080		-----	-----	-----	-----	-----	-----	-----	-----
1082		-----	-----	-----	-----	-----	-----	-----	-----
1095		-----	-----	-----	-----	-----	-----	-----	-----
1108		-----	-----	-----	-----	-----	-----	-----	-----
1109		-----	-----	-----	-----	-----	-----	-----	-----
1121		-----	-----	-----	-----	-----	-----	-----	-----
1126	D7500	156.7	228.1	273.8	349.0	409.2	474.6	539.6	-----
1134		-----	-----	-----	-----	-----	-----	-----	-----
1140		-----	-----	-----	-----	-----	-----	-----	-----
1161		-----	-----	-----	-----	-----	-----	-----	-----
1167		-----	-----	-----	-----	-----	-----	-----	-----
1177		-----	-----	-----	-----	-----	-----	-----	-----
1191		-----	-----	-----	-----	-----	-----	-----	-----
1215		-----	-----	-----	-----	-----	-----	-----	-----
1229		-----	-----	-----	-----	-----	-----	-----	-----
1231		-----	-----	-----	-----	-----	-----	-----	-----
1233		-----	-----	-----	-----	-----	-----	-----	-----
1254		-----	-----	-----	-----	-----	-----	-----	-----
1259		-----	-----	-----	-----	-----	-----	-----	-----
1266		-----	-----	-----	-----	-----	-----	-----	-----
1269		-----	-----	-----	-----	-----	-----	-----	-----
1271		-----	-----	-----	-----	-----	-----	-----	-----
1275		-----	-----	-----	-----	-----	-----	-----	-----
1337		-----	-----	-----	-----	-----	-----	-----	-----
1348		-----	-----	-----	-----	-----	-----	-----	-----
1356		-----	-----	-----	-----	-----	-----	-----	-----
1358		-----	-----	-----	-----	-----	-----	-----	-----
1381		-----	-----	-----	-----	-----	-----	-----	-----
1395		-----	-----	-----	-----	-----	-----	-----	-----
1396		-----	-----	-----	-----	-----	-----	-----	-----
1402	D1160	204	262	296	368	429	498	-----	532
1403		-----	-----	-----	-----	-----	-----	-----	-----
1419		-----	-----	-----	-----	-----	-----	-----	-----

1428		-----	-----	-----	-----	-----	-----	-----	-----
1431		-----	-----	-----	-----	-----	-----	-----	-----
1455	D1160	195.0	246.3	284.1	356.6	423.4	491.5	-----	513.9
1459		-----	-----	-----	-----	-----	-----	-----	-----
1460		-----	-----	-----	-----	-----	-----	-----	-----
1483		-----	-----	-----	-----	-----	-----	-----	-----
1501	D1160	195	256	290	370	429	498	544	-----
1510		-----	-----	-----	-----	-----	-----	-----	-----
1520		-----	-----	-----	-----	-----	-----	-----	-----
1551		-----	-----	-----	-----	-----	-----	-----	-----
1552		-----	-----	-----	-----	-----	-----	-----	-----
1553		-----	-----	-----	-----	-----	-----	-----	-----
1558		-----	-----	-----	-----	-----	-----	-----	-----
1559		-----	-----	-----	-----	-----	-----	-----	-----
1564		-----	-----	-----	-----	-----	-----	-----	-----
1569		-----	-----	-----	-----	-----	-----	-----	-----
1577		-----	-----	-----	-----	-----	-----	-----	-----
1585	D1160	165	228	264	346	416	480	-----	493
1586		-----	-----	-----	-----	-----	-----	-----	-----
1590		-----	-----	-----	-----	-----	-----	-----	-----
1613	D1160	203.3	250.4	290.8	372.6	429.9	488.3	-----	488.3
1616		-----	-----	-----	-----	-----	-----	-----	-----
1622		-----	-----	-----	-----	-----	-----	-----	-----
1631		-----	-----	-----	-----	-----	-----	-----	-----
1635		-----	-----	-----	-----	-----	-----	-----	-----
1636		-----	-----	-----	-----	-----	-----	-----	-----
1643		-----	-----	-----	-----	-----	-----	-----	-----
1648		-----	-----	-----	-----	-----	-----	-----	-----
1654		-----	-----	-----	-----	-----	-----	-----	-----
1669		-----	-----	-----	-----	-----	-----	-----	-----
1677		-----	-----	-----	-----	-----	-----	-----	-----
1710	D1160	209.5	256.0	287.0	360.0	423.0	491.5	-----	537.5
1712	D1160	206	255	290	366	430	497	-----	508
1720		-----	-----	-----	-----	-----	-----	-----	-----
1724		-----	-----	-----	-----	-----	-----	-----	-----
1728		-----	-----	-----	-----	-----	-----	-----	-----
1740		-----	-----	-----	-----	-----	-----	-----	-----
1807		-----	-----	-----	-----	-----	-----	-----	-----
1810		-----	-----	-----	-----	-----	-----	-----	-----
1811		-----	-----	-----	-----	-----	-----	-----	-----
1832		-----	-----	-----	-----	-----	-----	-----	-----
1833	D1160	190.8	241.1	284.3	362.8	420.3	487.7	527.7	-----
1842		-----	-----	-----	-----	-----	-----	-----	-----
1849		-----	-----	-----	-----	-----	-----	-----	-----
1854		-----	-----	-----	-----	-----	-----	-----	-----
1862	D1160	170	239	286	372	435	503	-----	518
1906		-----	-----	-----	-----	-----	-----	-----	-----
1915		-----	-----	-----	-----	-----	-----	-----	-----
1936		-----	-----	-----	-----	-----	-----	-----	-----
1937		-----	-----	-----	-----	-----	-----	-----	-----
1938		-----	-----	-----	-----	-----	-----	-----	-----
1949	D1160	184	247	285	372	437	508	528	528
1950	D1160	164	234	272	352	415	481	-----	505
1951		-----	-----	-----	-----	-----	-----	-----	-----
2129	D1160	192	255	290	371	435	493	527	**356**
	normality	OK	OK	OK	OK	OK	OK	OK	OK
	n	35	35	35	35	35	36	9	29
	outliers	1	1	1	1	1	0	0	1
	mean (n)	187.40	246.70	283.99	363.73	426.41	493.31	531.72	519.41
	st.dev. (n)	14.450	8.184	7.680	7.338	6.779	8.637	9.139	13.864
	R(calc.)	40.46	22.92	21.50	20.55	18.98	24.18	25.59	38.82
	R(D1160:06)	49.45	23.53	21.56	20.81	19.99	18.32	11.89	26.89

**Test results underlined and bold are statistical outliers acc. to Grubbs/Dixon outlier test**

40% recovered

Kernel Density

50% recovered

Kernel Density

final boiling point

Kernel Density
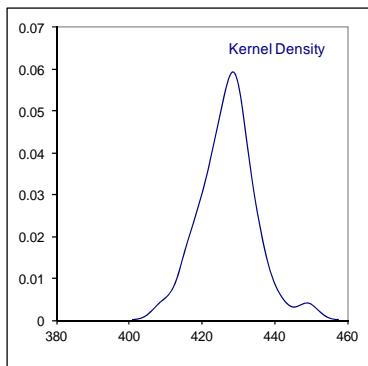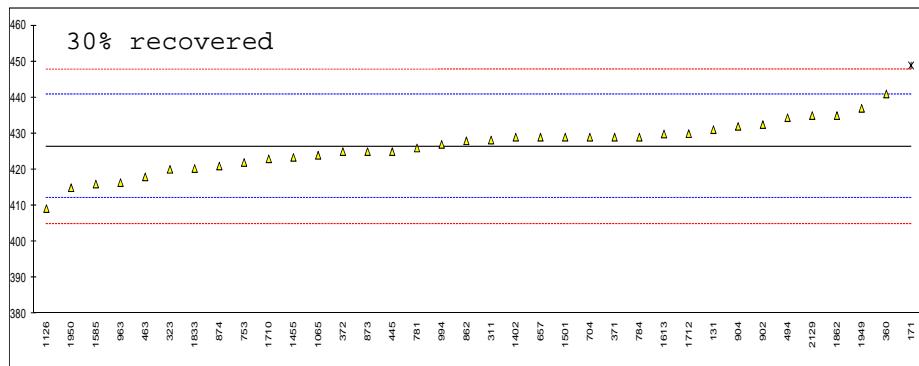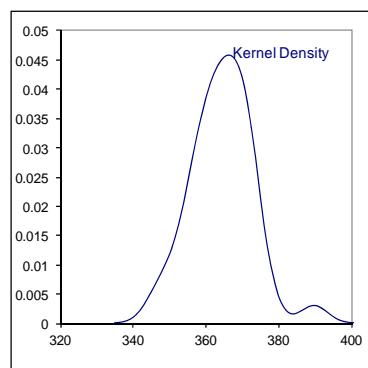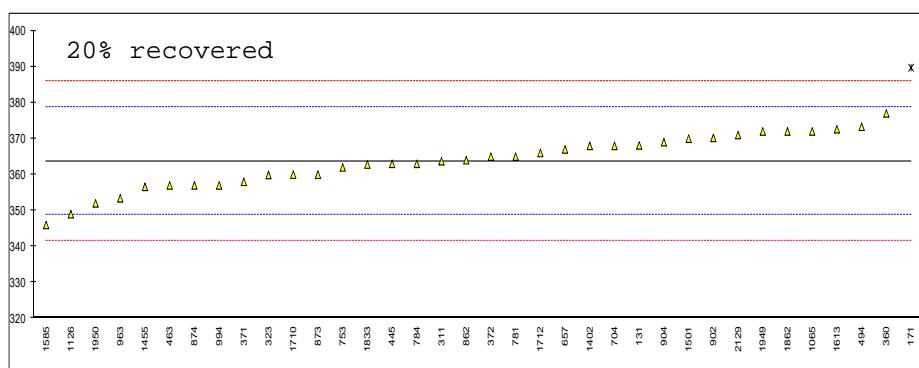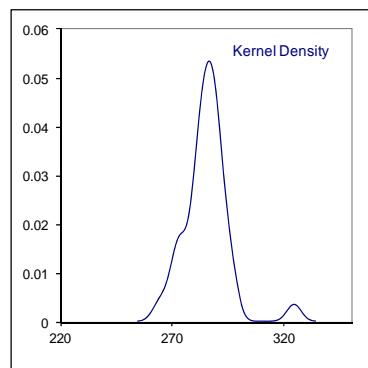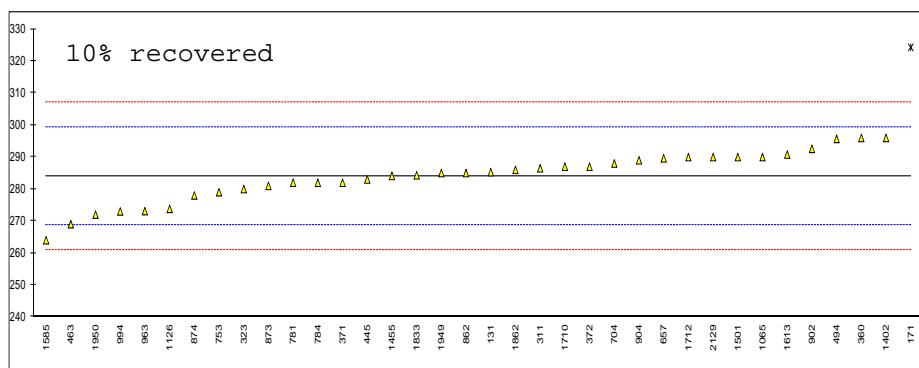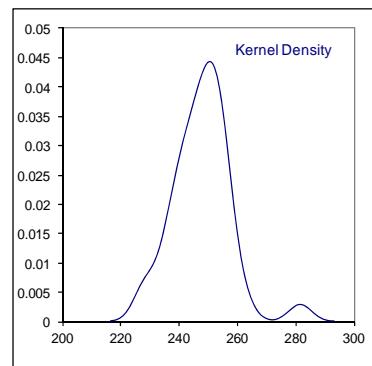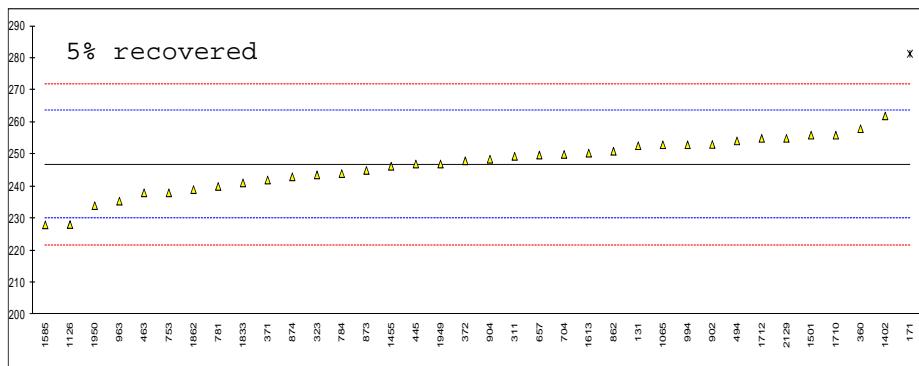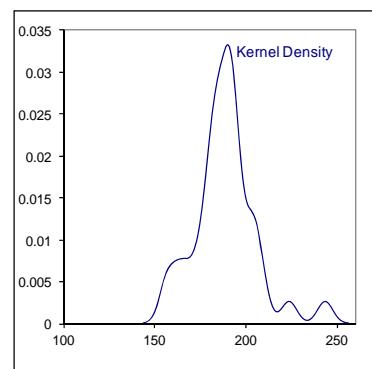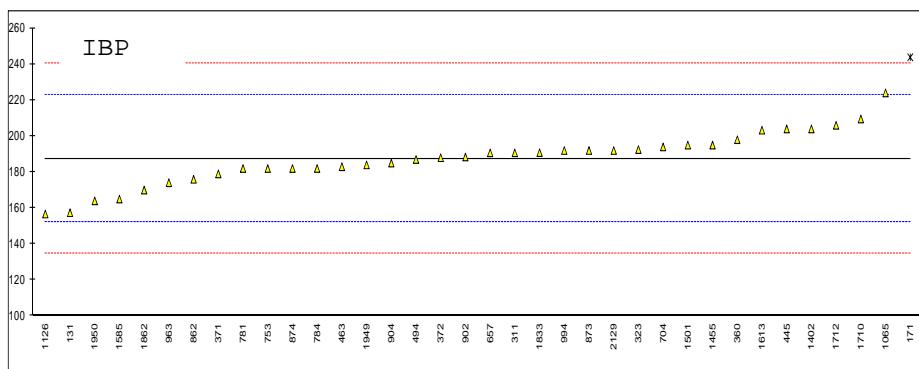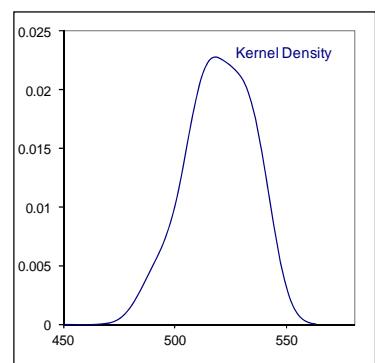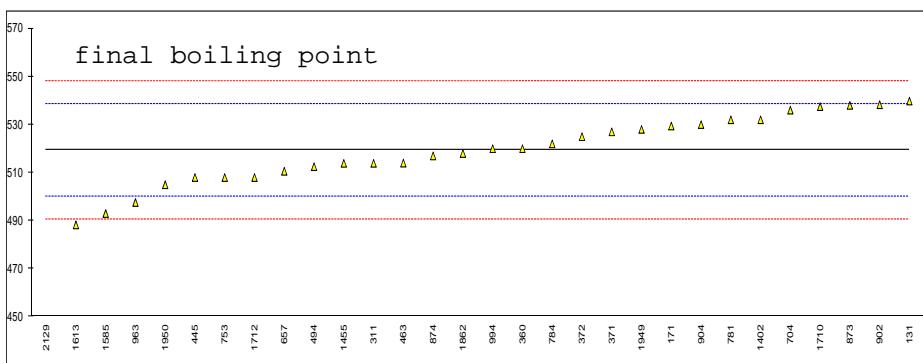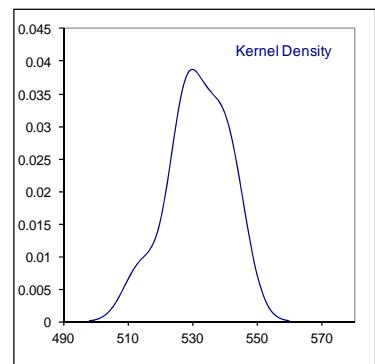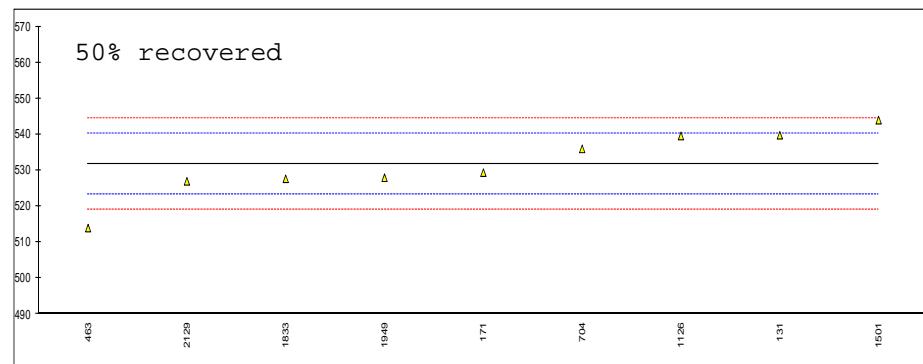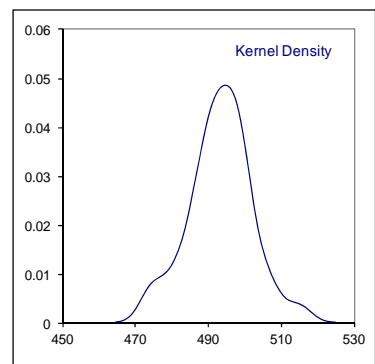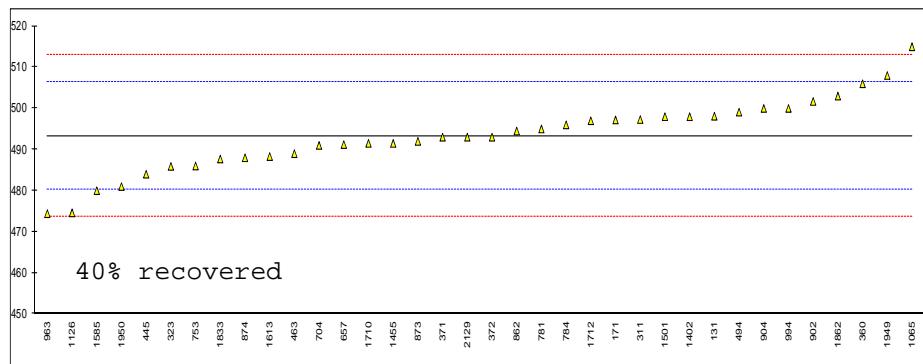
Determination of Total Carbon, Hydrogen and Nitrogen on sample #13001; results in %M/M

Lab	method	Tot.Carbon	mark	z(targ)	Tot.Hydrogen	mark	z(targ)	Tot.Nitrogen	mark	z(targ)	remarks
52		-----		-----	-----		-----	-----		-----	
62		-----		-----	-----		-----	-----		-----	
90		-----		-----	-----		-----	-----		-----	
92		-----		-----	-----		-----	-----		-----	
120		-----		-----	-----		-----	-----		-----	
131		-----		-----	-----		-----	-----		-----	
132		-----		-----	-----		-----	-----		-----	
140		-----		-----	-----		-----	-----		-----	
154		-----		-----	-----		-----	-----		-----	
158		-----		-----	-----		-----	-----		-----	
159		-----		-----	-----		-----	-----		-----	
168		-----		-----	-----		-----	-----		-----	
169		-----		-----	-----		-----	-----		-----	
171		-----		-----	-----		-----	-----		-----	
175		-----		-----	-----		-----	-----		-----	
193		-----		-----	-----		-----	-----		-----	
194		-----		-----	-----		-----	-----		-----	
195		-----		-----	-----		-----	-----		-----	
212		-----		-----	-----		-----	-----		-----	
221		-----		-----	-----		-----	-----		-----	
224		-----		-----	-----		-----	-----		-----	
225		-----		-----	-----		-----	-----		-----	
228		-----		-----	-----		-----	-----		-----	
230		-----		-----	-----		-----	-----		-----	
237		-----		-----	-----		-----	-----		-----	
238		-----		-----	-----		-----	-----		-----	
252		-----		-----	-----		-----	-----		-----	
253		-----		-----	-----		-----	-----		-----	
254		-----		-----	-----		-----	-----		-----	
273		-----		-----	-----		-----	-----		-----	
311	D5291	87.6		-0.23	10.4		0.70	<0.75		-----	
313		-----		-----	-----		-----	-----		-----	
323		-----		-----	-----		-----	-----		-----	
331		-----		-----	-----		-----	-----		-----	
333		-----		-----	-----		-----	-----		-----	
334		-----		-----	-----		-----	-----		-----	
336		-----		-----	-----		-----	-----		-----	
337		-----		-----	-----		-----	-----		-----	
340		-----		-----	-----		-----	-----		-----	
343	D5291	87		-0.91	10.0		-0.82	0.4		-2.80	
349		-----		-----	-----		-----	-----		-----	
353		-----		-----	-----		-----	-----		-----	
360		-----		-----	-----		-----	-----		-----	
369		-----		-----	-----		-----	-----		-----	
370		-----		-----	-----		-----	-----		-----	
371		-----		-----	-----		-----	-----		-----	
372		-----		-----	-----		-----	-----		-----	
375		-----		-----	-----		-----	-----		-----	
391	D5291	87.50		-0.34	10.33		0.43	0.34		-4.41	
398		-----		-----	-----		-----	-----		-----	
399		-----		-----	-----		-----	-----		-----	
440		-----		-----	-----		-----	-----		-----	
444		-----		-----	-----		-----	-----		-----	
445	D5291	87.86		0.07	10.37		0.58	0.40		-2.80	
447	D5291	87.6		-0.23	10.02		-0.74	0.70		5.28	
463		-----		-----	-----		-----	-----		-----	
494		-----		-----	-----		-----	-----		-----	
495		-----		-----	-----		-----	-----		-----	
507		-----		-----	-----		-----	-----		-----	
511		-----		-----	-----		-----	-----		-----	
528		-----		-----	-----		-----	-----		-----	
529		-----		-----	-----		-----	-----		-----	
541		-----		-----	-----		-----	-----		-----	
551		-----		-----	-----		-----	-----		-----	
557		-----		-----	-----		-----	-----		-----	
562		-----		-----	-----		-----	-----		-----	
575		-----		-----	-----		-----	-----		-----	
603		-----		-----	-----		-----	-----		-----	
604		-----		-----	-----		-----	-----		-----	
605		-----		-----	-----		-----	-----		-----	
607		-----		-----	-----		-----	-----		-----	
608		-----		-----	-----		-----	-----		-----	
631		-----		-----	-----		-----	-----		-----	
657	D5291	91.59	G(0.01)	4.32	10.33		0.43	0.57		1.78	

663		-----	-----	-----		-----	-----	-----
671		-----	-----	-----		-----	-----	-----
704		-----	-----	-----		-----	-----	-----
705		-----	-----	-----		-----	-----	-----
732		-----	-----	-----		-----	-----	-----
750		-----	-----	-----		-----	-----	-----
753		-----	-----	-----		-----	-----	-----
781		-----	-----	-----		-----	-----	-----
784		-----	-----	-----		-----	-----	-----
785		-----	-----	-----		-----	-----	-----
791		-----	-----	-----		-----	-----	-----
823		-----	-----	-----		-----	-----	-----
840		-----	-----	-----		-----	-----	-----
851		-----	-----	-----		-----	-----	-----
855		-----	-----	-----		-----	-----	-----
858		-----	-----	-----		-----	-----	-----
859		-----	-----	-----		-----	-----	-----
862	D5291	87.83	0.03	11.02	G(0.01)	3.04	0.34	-4.41
863		-----	-----	-----		-----	-----	-----
864		-----	-----	-----		-----	-----	-----
865		-----	-----	-----		-----	-----	-----
867		-----	-----	-----		-----	-----	-----
873		-----	-----	-----		-----	-----	-----
874		-----	-----	-----		-----	-----	-----
875		-----	-----	-----		-----	-----	-----
886		-----	-----	-----		-----	-----	-----
887		-----	-----	-----		-----	-----	-----
902		-----	-----	-----		-----	-----	-----
904		-----	-----	-----		-----	-----	-----
912		-----	-----	-----		-----	-----	-----
913		-----	-----	-----		-----	-----	-----
922		-----	-----	-----		-----	-----	-----
962		-----	-----	-----		-----	-----	-----
963		-----	-----	-----		-----	-----	-----
971		-----	-----	-----		-----	-----	-----
974		-----	-----	-----		-----	-----	-----
982		-----	-----	-----		-----	-----	-----
994		-----	-----	-----		-----	-----	-----
995		-----	-----	-----		-----	-----	-----
996		-----	-----	-----		-----	-----	-----
1011	D5291	88.29	0.56	10.14		-0.29	0.53	0.70
1022	D5291	87.57	-0.26	10.18		-0.14	0.48	-0.64
1038		-----	-----	-----		-----	-----	-----
1047	in house	87.68	-0.14	10.75		2.02	0.48	-0.64
1059		-----	-----	-----		-----	-----	-----
1062	D5291	88.40	0.68	-----		-----	-----	-----
1065	D5291	87.7	-0.12	10.15		-0.25	0.51	0.16
1080	D5291	87.9	0.11	10.11		-0.40	-----	-----
1082		-----	-----	-----		-----	-----	-----
1095		-----	-----	-----		-----	-----	-----
1108		-----	-----	-----		-----	-----	-----
1109		-----	-----	-----		-----	-----	-----
1121		-----	-----	-----		-----	-----	-----
1126		-----	-----	-----		-----	-----	-----
1134	D5291	87.97	0.19	10.2		-0.06	0.57	1.78
1140		-----	-----	-----		-----	-----	-----
1161		-----	-----	-----		-----	-----	-----
1167		-----	-----	-----		-----	-----	-----
1177	D5291	87.78	-0.02	9.80		-1.57	0.512	0.22
1191	D5291	87.54	-0.30	10.15		-0.25	0.54	0.97
1215		-----	-----	-----		-----	-----	-----
1229		-----	-----	-----		-----	-----	-----
1231		-----	-----	-----		-----	-----	-----
1233		-----	-----	-----		-----	-----	-----
1254		-----	-----	-----		-----	-----	-----
1259		-----	-----	-----		-----	-----	-----
1266		-----	-----	-----		-----	-----	-----
1269		-----	-----	-----		-----	-----	-----
1271		-----	-----	-----		-----	-----	-----
1275	in house	86.537	-1.44	-----		-----	-----	-----
1337		-----	-----	-----		-----	-----	-----
1348		-----	-----	-----		-----	-----	-----
1356		-----	-----	-----		-----	-----	-----
1358		-----	-----	-----		-----	-----	-----
1381		-----	-----	-----		-----	-----	-----
1395	D5291	87.95	0.17	11.23	G(0.01)	3.84	0.65	3.94
1396		-----	-----	-----		-----	-----	-----
1402		-----	-----	-----		-----	-----	-----
1403		-----	-----	-----		-----	-----	-----

1419	D5291	88.42	0.71	10.31	0.36	0.51	0.16
1428		-----	-----	-----	-----	-----	-----
1431	D5291	87.8	0.00	10.2	-0.06	0.55	1.24
1455		-----	-----	-----	-----	-----	-----
1459		-----	-----	-----	-----	-----	-----
1460		-----	-----	-----	-----	-----	-----
1483		-----	-----	-----	-----	-----	-----
1501		-----	-----	-----	-----	-----	-----
1510		-----	-----	-----	-----	-----	-----
1520		-----	-----	-----	-----	-----	-----
1551		-----	-----	-----	-----	-----	-----
1552		-----	-----	-----	-----	-----	-----
1553		-----	-----	-----	-----	-----	-----
1558		-----	-----	-----	-----	-----	-----
1559		-----	-----	-----	-----	-----	-----
1564		-----	-----	-----	-----	-----	-----
1569	D5291	87.385	-0.48	10.135	-0.31	0.557	1.43
1577	D5291	88.04	0.27	10.24	0.09	0.44	-1.72
1585		-----	-----	-----	-----	-----	-----
1586		-----	-----	-----	-----	-----	-----
1590		-----	-----	-----	-----	-----	-----
1613		-----	-----	-----	-----	-----	-----
1616		-----	-----	-----	-----	-----	-----
1622		-----	-----	-----	-----	-----	-----
1631		-----	-----	-----	-----	-----	-----
1635		-----	-----	-----	-----	-----	-----
1636		-----	-----	-----	-----	-----	-----
1643	D5291	88.27	0.53	10.04	-0.67	0.47	-0.91
1648		-----	-----	-----	-----	-----	-----
1654		-----	-----	-----	-----	-----	-----
1669		-----	-----	-----	-----	-----	-----
1677		-----	-----	-----	-----	-----	-----
1710	D5291	88.46	0.75	10.29	0.28	0.44	-1.72
1712	D5291	86.2	-1.83	-----	-----	-----	-----
1720		-----	-----	-----	-----	-----	-----
1724		-----	-----	-----	-----	-----	-----
1728		-----	-----	-----	-----	-----	-----
1740	D5291	88.3	0.57	10.3	0.32	0.48	-0.64
1807	D5291	88.26	0.52	10.4	0.70	0.45	-1.45
1810	D5291	87.53	-0.31	10.25	0.13	0.54	0.97
1811		-----	-----	-----	-----	-----	-----
1832		-----	-----	-----	-----	-----	-----
1833		-----	-----	-----	-----	-----	-----
1842	in house	87.3	-0.57	10.3	0.32	0.5	-0.10
1849		-----	-----	-----	-----	-----	-----
1854	D5291	87.40	-0.46	10.10	-0.44	0.50	-0.10
1862		-----	-----	-----	-----	-----	-----
1906	D5291	87.810	0.01	9.999	-0.82	0.620	3.13
1915	D5291	89.35	1.77	8.90	G(0.01) -4.98	0.60	2.59
1936		-----	-----	-----	-----	-----	-----
1937		-----	-----	-----	-----	-----	-----
1938		-----	-----	-----	-----	-----	-----
1949		-----	-----	-----	-----	-----	-----
1950		-----	-----	-----	-----	-----	-----
1951		-----	-----	-----	-----	-----	-----
2129	D5291	88.41	0.69	10.33	0.43	0.43	-1.99
	normality	OK		OK		OK	
	n	32		27		28	
	outliers	1		3		0	
	mean (n)	87.80		10.22		0.504	
	st.dev. (n)	0.589		0.179		0.0848	
	R(calc.)	1.65		0.50		0.238	
	R(D5291:10)	2.45		0.74		0.104	
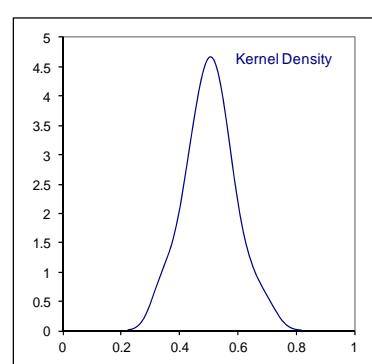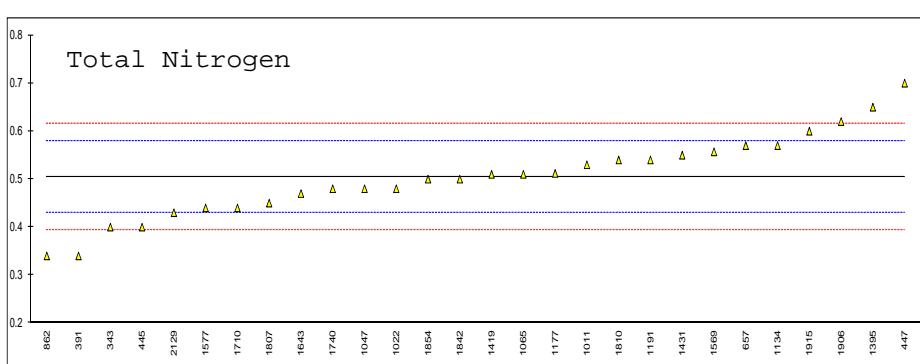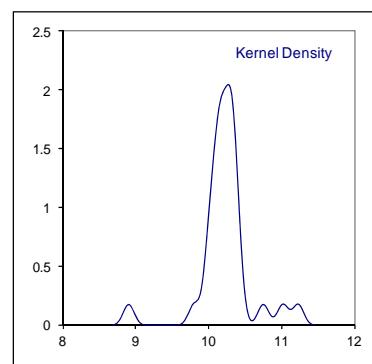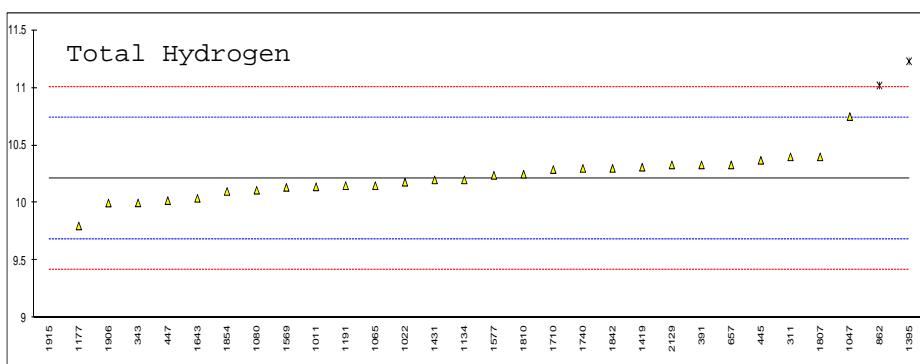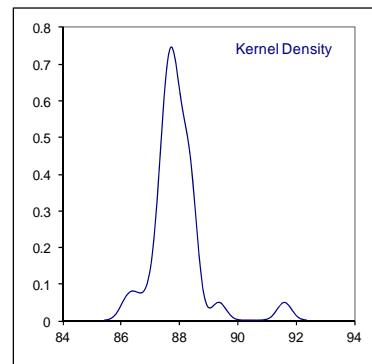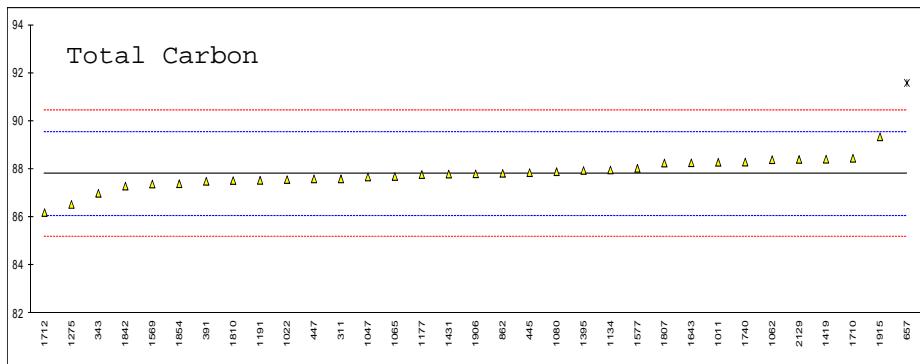
Determination of Aluminium on sample #13002; results in mg/kg

lab	method	value	mark	z(targ)	remarks
52	D5184	15		0.10	
92	D5184	15.4		0.32	
120	IP501	18		1.78	
131	IP501	14.31		-0.29	
132	IP470	15.1		0.16	
140	D5708B	16	ex	0.66	result excluded, see §4.1
154	D5184	15		0.10	
158		-----		-----	
159	D5184	16.0		0.66	
168	D5184	17.84		1.69	
169		-----		-----	
171		-----		-----	
175	D5184	15		0.10	
193		-----		-----	
194	IP470	17.5		1.50	
195		-----		-----	
212	IP470	10.94		-2.18	
225	IP470	37	G(0.01)	12.43	
230	IP470	17.0		1.22	
254	D5184	16.7		1.05	
273	IP470	9.1		-3.21	
311	IP501	17		1.22	
323	IP501	16		0.66	
331	IP501	14.4		-0.24	
333	IP501	17		1.22	
334	IP470	18		1.78	
340	IP501	17.1		1.28	
343	IP501	13		-1.02	
357	IP501	14.4		-0.24	
360	IP501	14		-0.46	
369	IP501	15.4		0.32	
370	IP470	12.6		-1.25	
371	IP470	22.2		4.13	
372	IP470	15		0.10	
391	IP501	15		0.10	
398	IP470	7.6		-4.05	
399	IP501	12		-1.58	
444		-----		-----	
445	IP501	14.9		0.04	
447		-----		-----	
463	IP470	10.5		-2.42	
494	IP501	13.2		-0.91	
495		-----		-----	
507	IP470	15		0.10	
541	IP470	15		0.10	
551		-----		-----	
557		-----		-----	
603		-----		-----	
605	IP501	11		-2.14	
607	IP501	11		-2.14	
608		-----		-----	
631	D5184	11.3		-1.97	
657	IP501	13.9		-0.52	
663	IP501	11.6		-1.81	
704	IP470	16.8		1.11	
705	IP470	15.39		0.32	
753		-----		-----	
781	IP501	16.25		0.80	
785		-----		-----	
791		-----		-----	
823	IP501	16.9		1.16	
840	IP501	12.5		-1.30	
851	IP501	13.54		-0.72	
855	IP470	16.4		0.88	
862	IP501	15.5		0.38	
863	IP501	15		0.10	
864	IP501	16.0		0.66	
865	IP501	16.4		0.88	
873	IP470	<5		<-5.51	false negative?
874		-----		-----	
875	IP470	16		0.66	
886	IP501	11		-2.14	
902	IP470	14.6		-0.13	
904	IP470	12		-1.58	

912		-----		-----	
922		-----		-----	
963	IP501	16.61		1.00	
971	IP501	11.78		-1.71	
994	IP501	15.07		0.14	
995	IP377	14.49		-0.19	
997		-----		-----	
1011	IP377	18		1.78	
1038		-----		-----	
1059	in house	11		-2.14	
1080		-----		-----	
1082		-----		-----	
1095		-----		-----	
1108	IP470	12.3		-1.41	
1109	IP470	14.2		-0.35	
1126	IP501	13.5		-0.74	
1134	IP501	19.31		2.51	
1140		-----		-----	
1161	IP501	22.310	C	4.20	first reported: 29.327
1191	ISO10478	15.65		0.46	
1229	ISO10478	16.98		1.21	
1231		-----		-----	
1233	IP501	14		-0.46	
1271	D5185	8.00	ex,C	-3.82	first reported: 4.65, result excluded, see §4.1
1348		-----		-----	
1372	D7111	6.5776	ex	-4.62	result excluded, see §4.1
1428	IP501	16		0.66	
1431	in house	13.9		-0.52	
1455	IP501	15.4		0.32	
1460		-----		-----	
1510		-----		-----	
1520	IP470	13.7		-0.63	
1551		-----		-----	
1553		-----		-----	
1564	IP501	13		-1.02	
1573	IP501	15.4		0.32	
1585	IP501	13.1		-0.97	
1586	IP501	13.14		-0.94	
1590	IP501	13.3		-0.85	
1613	D5184	17.13		1.29	
1616		-----		-----	
1643		-----		-----	
1648	ISO10478	21.7		3.85	
1669	IP501	16.2		0.77	
1677		-----		-----	
1712	ISO10478	12.4		-1.36	
1724	IP501	14.01		-0.46	
1740	IP501	17		1.22	
1833		-----		-----	
1842	IP501	21		3.46	
1854	IP501	17.5		1.50	
1862	IP470	15.5		0.38	
1915	IP501	7.6	C	-4.05	first reported: 3.975
1949	IP470	11.2		-2.03	
1950	IP470	13.3		-0.85	
1951	IP501	18.0		1.78	
2129	IP377	13.8		-0.57	

normality	OK
n	92
outliers	1
mean (n)	14.823
st.dev. (n)	2.7571
R(calc.)	7.7198
R(IP501:05)	4.995

Kernel Density
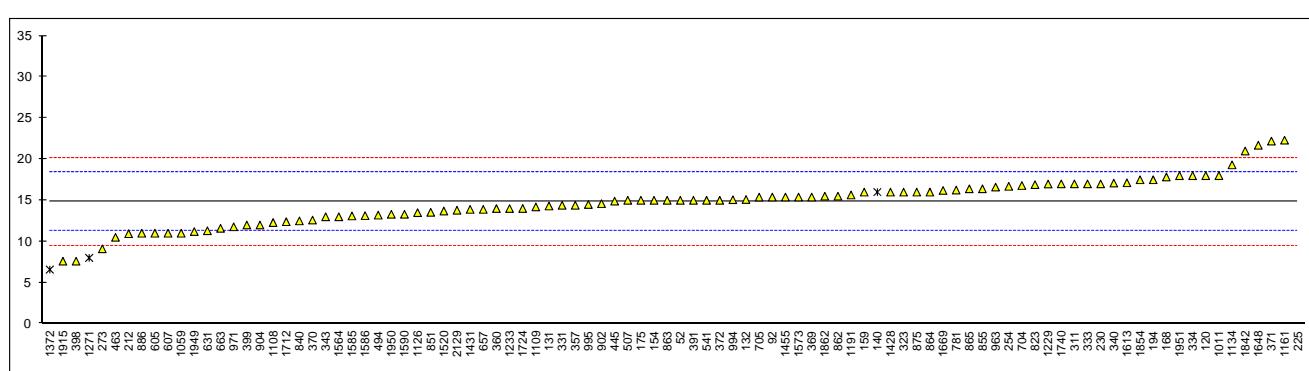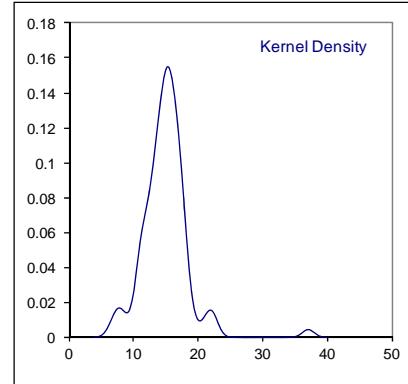
Determination of Silicon on sample #13002; results in mg/kg

lab	method	value	mark	z(targ)	Remarks
52	D5184	17		2.00	
92	D5184	5.1	G(0.05)	-5.30	
120	IP501	13		-0.46	
131	IP501	8.533		-3.20	
132	IP470	13.2		-0.33	
140	D5708B	16	ex	1.38	result excluded, see §4.1
154	D5184	18		2.61	
158		-----		-----	
159	D5184	25.7	G(0.05)	7.34	
168	D5184	15.00	C	0.77	first reported: 21.89
169		-----		-----	
171		-----		-----	
175	D5184	15		0.77	
193		-----		-----	
194	IP470	12.3		-0.89	
195		-----		-----	
212	IP470	10.82		-1.79	
225	IP470	<10	C	<-2.30	first reported: 2
230	IP470	11.5		-1.38	
254	D5184	23.5	G(0.05)	5.99	
273	IP470	29.1	G(0.01)	9.42	
311	IP501	15		0.77	
323	IP501	14		0.16	
331	IP501	9.6		-2.54	
333	IP501	30	G(0.01)	9.97	
334		-----		-----	
340	IP501	16.2		1.51	
343	IP501	15		0.77	
357	IP501	14.4		0.40	
360	IP501	13		-0.46	
369	IP501	13.3		-0.27	
370	IP470	14.3		0.34	
371	IP470	18.6		2.98	
372	IP470	14		0.16	
391	IP501	13		-0.46	
398	IP470	13.0		-0.46	
399	IP501	11		-1.68	
444		-----		-----	
445	IP501	6.1		-4.69	
447		-----		-----	
463	IP470	8.9		-2.97	
494	IP501	12.8		-0.58	
495		-----		-----	
507	IP470	14		0.16	
541	IP470	13		-0.46	
551		-----		-----	
557		-----		-----	
603		-----		-----	
605	IP501	9		-2.91	
607	IP501	9		-2.91	
608		-----		-----	
631	D5184	11.5		-1.38	
657	IP501	9.4		-2.67	
663	IP501	10.1		-2.24	
704	IP470	15.4		1.02	
705	IP470	13.77		0.02	
753		-----		-----	
781	IP501	15.8		1.26	
785		-----		-----	
791		-----		-----	
823	IP501	15.7		1.20	
840	IP501	16.1		1.45	
851	IP501	16.20		1.51	
855	IP470	14.8		0.65	
862	IP501	14.0		0.16	
863	IP501	14		0.16	
864	IP501	15.0		0.77	
865	IP501	15.6		1.14	
873	IP470	<10		<-2.30	
874		-----		-----	
875	IP470	15		0.77	
886	IP501	13		-0.46	
902	IP470	15.3		0.95	
904	IP470	15		0.77	

912		-----		-----	
922		-----		-----	
963	IP501	16.69		1.81	
971	IP501	9.67		-2.50	
994	IP501	14.55		0.49	
995	IP377	12.63		-0.68	
997		-----		-----	
1011	IP377	13		-0.46	
1038		-----		-----	
1059	in house	12		-1.07	
1080		-----		-----	
1082		-----		-----	
1095		-----		-----	
1108	IP470	12.0		-1.07	
1109	IP470	11.8		-1.19	
1126	IP501	13.5		-0.15	
1134	IP501	20.81		4.34	
1140		-----		-----	
1161	IP501	20.160	C	3.94	first reported: 48.901
1191	ISO10478	14.16		0.26	
1229	ISO10478	13.18		-0.35	
1231		-----		-----	
1233	IP501	15		0.77	
1271	D5185	8.30	C,ex	-3.34	first reported: 4.25, result excluded, see §4.1
1348		-----		-----	
1372	D7111	12.2533	ex	-0.91	result excluded, see §4.1
1428	IP501	15		0.77	
1431	in house	14.2		0.28	
1455	IP501	13.2		-0.33	
1460		-----		-----	
1510		-----		-----	
1520	IP470	14.0		0.16	
1551		-----		-----	
1553		-----		-----	
1564	IP501	9		-2.91	
1573	IP501	15.4		1.02	
1585	IP501	13.4		-0.21	
1586	IP501	11.89		-1.14	
1590	IP501	11.2		-1.56	
1613	D5184	15.94		1.35	
1616		-----		-----	
1643		-----		-----	
1648	ISO10478	16.4		1.63	
1669	IP501	16.9		1.94	
1677		-----		-----	
1712	ISO10478	12.8		-0.58	
1724	IP501	12.65		-0.67	
1740	IP501	15		0.77	
1833		-----		-----	
1842	IP501	14		0.16	
1854	IP501	14.4		0.40	
1862	IP470	21.8	G(0.01)	4.94	
1915	IP501	10	C	-2.30	first reported: 4.898
1949	IP470	12.6		-0.70	
1950	IP470	16.0		1.38	
1951	IP501	20.0		3.84	
2129	IP377	17.9		2.55	

normality	OK
n	85
outliers	6
mean (n)	13.744
st.dev. (n)	2.6885
R(calc.)	7.528
R(IP501:05)	4.563

Kernel Density
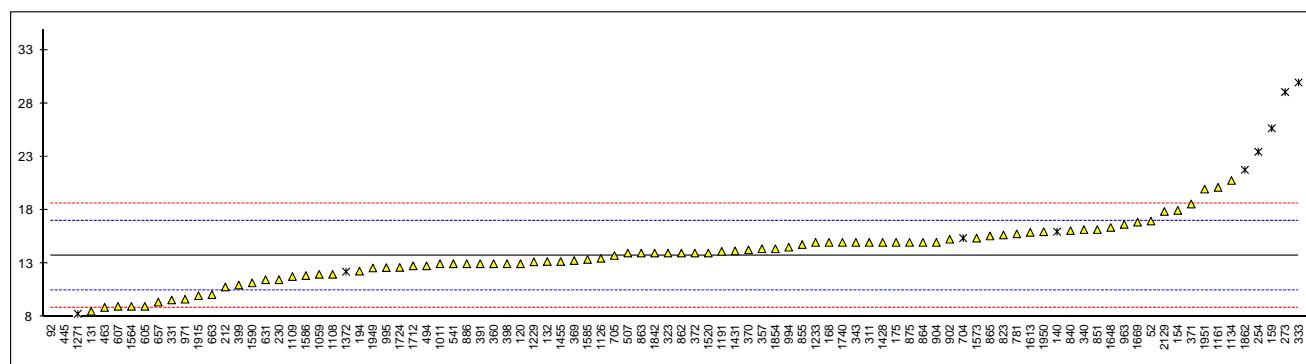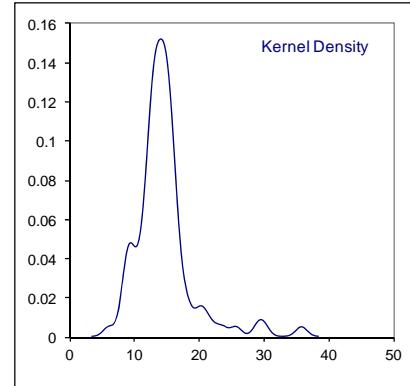
Determination of Total Aluminium + Silicon on sample #13002; results in mg/kg

lab	method	value	mark	z(targ)	Remarks
52	D5184	32		1.25	
92	D5184	20.5		-3.52	
120	IP501	31		0.83	
131	IP501	22.843		-2.54	
132	IP470	28.3		-0.28	
140	IP501	32		1.25	
154		-----		-----	
158		-----		-----	
159	D5184	42		5.39	
168	IP501	32.84	C	1.60	first reported: 39.73
169		-----		-----	
171		-----		-----	
175	IP501	30		0.42	
193		-----		-----	
194	IP470	29.8		0.34	
195		-----		-----	
212	IP470	21.76		-2.99	
225	IP470	39		4.15	
230	IP470	28.5		-0.20	
254	D5184	40.2		4.64	
273	IP470	38.2		3.81	
311	IP501	32		1.25	
323	IP501	30		0.42	
331	IP501	24.0		-2.07	
333	IP501	47		7.46	
334		-----		-----	
340		-----		-----	
343	IP501	28		-0.41	
357	IP501	28.8		-0.08	
360	IP501	27		-0.82	
369	IP501	28.7		-0.12	
370	IP470	26.9		-0.86	
371	IP470	40.8		4.89	
372	IP470	29		0.00	
391	IP501	28		-0.41	
398	IP470	20.6		-3.47	
399	IP501	23		-2.48	
444		-----		-----	
445	IP501	21.0		-3.31	
447		-----		-----	
463	IP470	19.4		-3.97	
494	IP501	26.0		-1.24	
495		-----		-----	
507	IP470	29		0.00	
541	IP470	28		-0.41	
551		-----		-----	
557		-----		-----	
603		-----		-----	
605	IP501	20		-3.72	
607	IP501	20		-3.72	
608		-----		-----	
631	D5184	22.8		-2.56	
657	IP501	23.3		-2.36	
663	IP501	21.8		-2.98	
704	IP470	32.2		1.33	
705	IP470	29.16		0.07	
753		-----		-----	
781	IP501	32.05		1.27	
785		-----		-----	
791		-----		-----	
823	IP501	32.6		1.50	
840	IP501	28.6		-0.16	
851	IP501	29.74		0.31	
855	IP470	31.2		0.92	
862	IP501	29.5		0.21	
863	IP501	29		0.00	
864	IP501	31.0		0.83	
865	IP501	32.0		1.25	
873	IP470	<15		<-5.79	false negative?
874		-----		-----	
875	IP470	31		0.83	
886	IP501	24		-2.07	
902	IP470	29.9		0.38	
904	IP470	27		-0.82	

912		-----		-----	
922		-----		-----	
963	IP501	33.3		1.79	
971	IP501	21.45		-3.12	
994	IP501	29.62		0.26	
995	IP377	27.12		-0.77	
997		-----		-----	
1011	IP377	31		0.83	
1038		-----		-----	
1059		-----		-----	
1080		-----		-----	
1082		-----		-----	
1095		-----		-----	
1108	IP470	24.3		-1.94	
1109	IP470	26.0		-1.24	
1126	IP501	27.0		-0.82	
1134	IP501Calc.	40.12		4.61	
1140		-----		-----	
1161	IP501	42.470	C	5.58	first reported: 78.228
1191	ISO10478	29.81		0.34	
1229	ISO10478	30.16		0.49	
1231		-----		-----	
1233	IP501	29		0.00	
1271	D5185	16.30	ex, C	-5.25	first reported: 8.90, result excluded, see §4.1
1348		-----		-----	
1372	IP501	18.83		-4.21	
1428	IP501	31		0.83	
1431	in house	28.1		-0.37	
1455	IP501	18.6		-4.30	
1460		-----		-----	
1510		-----		-----	
1520	IP470	27.7		-0.53	
1551		-----		-----	
1553		-----		-----	
1564	IP501	22		-2.89	
1573	IP501	30.8		0.75	
1585	IP501	26.5		-1.03	
1586	IP501	25.03		-1.64	
1590	IP501	24.5		-1.86	
1613	D5184	33.07		1.69	
1616		-----		-----	
1643		-----		-----	
1648	ISO10478	38.1		3.77	
1669	IP501	33.1		1.70	
1677		-----		-----	
1712		-----		-----	
1724	IP501	26.66		-0.96	
1740	IP501	32		1.25	
1833		-----		-----	
1842		-----		-----	
1854	IP501	31.9		1.21	
1862	IP470	37.3		3.44	
1915	IP501	17.6	C	-4.72	first reported: 8.873
1949	calculated	23.8		-2.15	
1950	IP470	29.3		0.13	
1951	IP501	38.0		3.73	
2129	IP501	31.7		1.12	

normality	not OK
n	89
outliers	0
mean (n)	28.988
st.dev. (n)	5.8618
R(calc.)	16.413
R(IP501:05)	6.761

Kernel Density
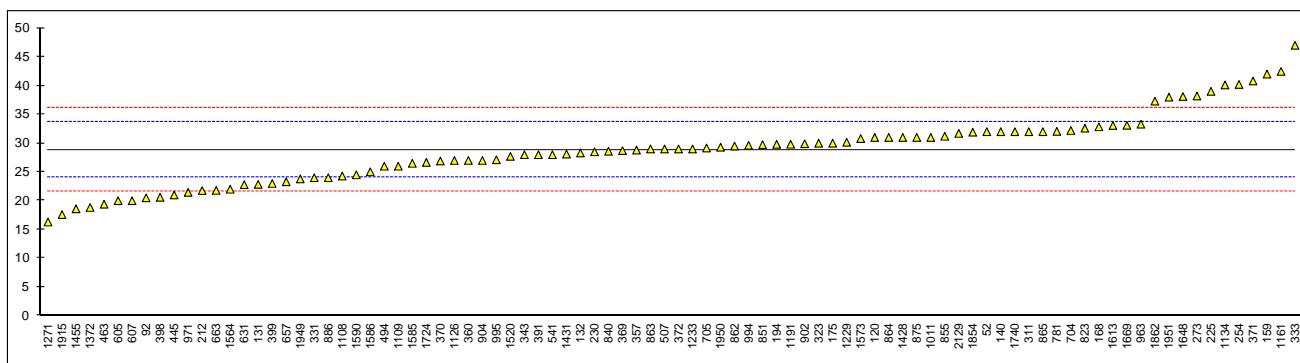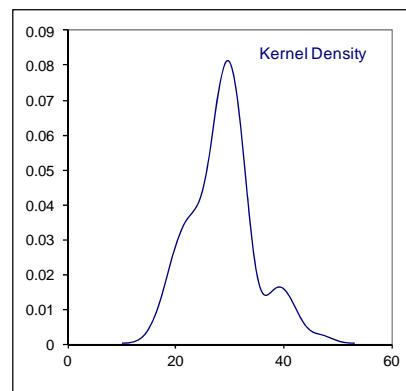
Determination of Nickel on sample #13002; results in mg/kg

lab	method	value	mark	z(targ)	remarks
52	IP470	18		0.49	
92		-----		-----	
120	IP501	15		-0.57	
131	IP501	15.39		-0.43	
132	IP470	17.4		0.28	
140	D5708B	17.2		0.21	
154		-----		-----	
158		-----		-----	
159	D5863	19.3		0.95	
168		-----		-----	
169		-----		-----	
171		-----		-----	
175	D5863	19		0.85	
193		-----		-----	
194		-----		-----	
195		-----		-----	
212		-----		-----	
225	IP470	19		0.85	
230	IP470	17.3		0.24	
254		-----		-----	
273	IP470	11.7		-1.74	
311	IP501	17		0.14	
323	IP501	17		0.14	
331	IP501	13.0		-1.28	
333	IP501	19		0.85	
334	IP470	16		-0.22	
340		-----		-----	
343	D5708	15		-0.57	
357	IP501	15.9		-0.25	
360	IP501	19		0.85	
369	IP501	17.0		0.14	
370	IP470	15.0	C	-0.57	first reported: 7.7
371	IP470	16.1		-0.18	
372	IP470	16		-0.22	
391	IP501	15		-0.57	
398	IP470	15.4	C	-0.43	first reported: 25.4
399	IP501	13		-1.28	
444		-----		-----	
445	IP501	16.8		0.07	
447		-----		-----	
463	IP470	18.7		0.74	
494	IP501	14.5		-0.75	
495		-----		-----	
507	IP470	18		0.49	
541	IP470	16		-0.22	
551		-----		-----	
557		-----		-----	
603		-----		-----	
605	IP501	16		-0.22	
607	IP501	16		-0.22	
608		-----		-----	
631		-----		-----	
657	IP501	14.2		-0.86	
663	IP501	16.7		0.03	
704	IP470	17.7		0.39	
705	IP470	17.68		0.38	
753		-----		-----	
781	IP501	16.85		0.08	
785	IP470	14.1		-0.89	
791	IP501	15		-0.57	
823	IP501	17.8		0.42	
840	IP501	14.7		-0.68	
851		-----		-----	
855	IP470	16.1		-0.18	
862	IP501	15.5		-0.40	
863	IP501	16		-0.22	
864	IP501	17.0		0.14	
865	IP501	18.0		0.49	
873	IP470	18		0.49	
874		-----		-----	
875	IP470	17		0.14	
886	IP501	14		-0.93	
902	IP470	17.9		0.46	
904	IP470	16		-0.22	

912		-----		-----	
922		-----		-----	
963	IP501	17.52		0.32	
971	IP501	14.74		-0.67	
994	IP501	15.0		-0.57	
995	D5863B	14.5		-0.75	
997	D5863B	14.97		-0.58	
1011		-----		-----	
1038		-----		-----	
1059	in house	17		0.14	
1080	D5708	17.3		0.24	
1082		-----		-----	
1095		-----		-----	
1108	D5863	18.1		0.53	
1109	IP470	19.4		0.99	
1126	in house	16.1		-0.18	
1134	IP501	17.49		0.31	
1140		-----		-----	
1161	IP501	15.78		-0.30	
1191	ISO10478	16.58		-0.01	
1229	in house	16.23		-0.14	
1231		-----		-----	
1233	IP501	18		0.49	
1271	D5185	15.1	ex	-0.54	result excluded, see §4.1
1348		-----		-----	
1372	D5708	18.6189		0.71	
1428	IP501	16		-0.22	
1431	in house	15.4		-0.43	
1455	IP501	18.3		0.60	
1460		-----		-----	
1510		-----		-----	
1520	IP470	18.1		0.53	
1551	IP593	15.40		-0.43	
1553	D5863	23.836	G(0.01)	2.56	
1564	IP501	20		1.20	
1573	IP501	18.5		0.67	
1585	IP501	18.4		0.63	
1586	IP501	16.33		-0.10	
1590	IP501	18.3		0.60	
1613	D5863	11.05	DG(0.05)	-1.98	
1616		-----		-----	
1643	D5185	16.52	ex	-0.03	result excluded, see §4.1
1648	IP501	16.9		0.10	
1669	D5185	18.1	ex	0.53	result excluded, see §4.1
1677		-----		-----	
1712		-----		-----	
1724	IP501	15.5		-0.40	
1740	IP501	16		-0.22	
1833		-----		-----	
1842	IP501	17		0.14	
1854	IP501	17.0		0.14	
1862	IP470	18.4		0.63	
1915	D5863	11.465	DG(0.05)	-1.83	
1949	IP470	17.6		0.35	
1950	IP470	18.3		0.60	
1951		-----		-----	
2129	IP470Mod	15.2		-0.50	

	normality	OK
	n	86
	outliers	3
	mean (n)	16.615
	st.dev. (n)	1.6124
	R(calc.)	4.515
	R(IP501:05)	7.888

Kernel Density
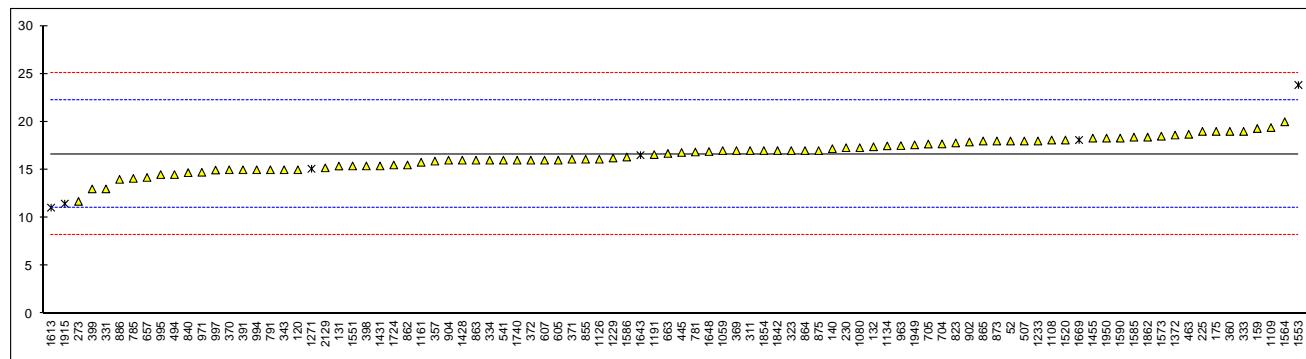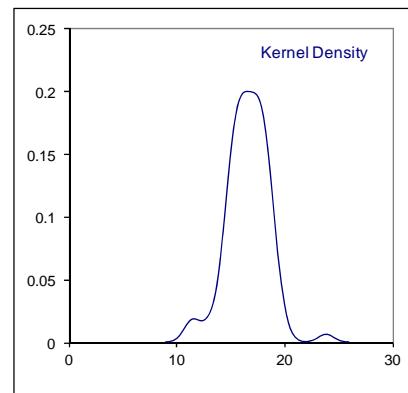
Determination of Potassium on sample #13002; results in mg/kg

lab	method	value	mark	z(targ)	Remarks
52	IP470	1		-----	
92		-----		-----	
120		-----		-----	
131		-----		-----	
132	IP470	n.d.	C	-----	first reported: 3.9
140	D5708B	1.0		-----	
154		-----		-----	
158		-----		-----	
159		-----		-----	
168		-----		-----	
169		-----		-----	
171		-----		-----	
175		-----		-----	
193		-----		-----	
194		-----		-----	
195		-----		-----	
212		-----		-----	
225		-----		-----	
230		-----		-----	
254		-----		-----	
273		-----		-----	
311		-----		-----	
323		-----		-----	
331	IP501	2.8	G(0.01)	-----	
333		-----		-----	
334		-----		-----	
340		-----		-----	
343	in house	<1		-----	
357		-----		-----	
360		-----		-----	
369		-----		-----	
370		-----		-----	
371		-----		-----	
372	IP470Mod.	1		-----	
391		-----		-----	
398		-----		-----	
399		-----		-----	
444		-----		-----	
445		-----		-----	
447		-----		-----	
463		-----		-----	
494	DIN51790/4	0.4		-----	
495		-----		-----	
507	IP470	1		-----	
541	INH-018	<1		-----	
551		-----		-----	
557		-----		-----	
603		-----		-----	
605	in house	1		-----	
607	in house	1		-----	
608		-----		-----	
631		-----		-----	
657	IP501Mod.	<1		-----	
663	IP501	0.7		-----	
704		-----		-----	
705		-----		-----	
753		-----		-----	
781		-----		-----	
785		-----		-----	
791		-----		-----	
823		5.8	G(0.01)	-----	false positive?
840		-----		-----	
851		-----		-----	
855	IP470	0.8		-----	
862		0.6		-----	
863		-----		-----	
864	IP501	0.8		-----	
865	IP501	0.7		-----	
873		-----		-----	
874		-----		-----	
875		-----		-----	
886		-----		-----	
902		-----		-----	
904		-----		-----	

912		-----		-----	
922		-----		-----	
963		-----		-----	
971	IP501	1.27		-----	
994		-----		-----	
995		-----		-----	
997		-----		-----	
1011		-----		-----	
1038		-----		-----	
1059	in house	<3		-----	
1080		-----		-----	
1082		-----		-----	
1095		-----		-----	
1108		-----		-----	
1109		-----		-----	
1126	IP501	<0.1		-----	
1134		-----		-----	
1140		-----		-----	
1161	IP501	6.250	C,G(0.01)	-----	false positive?, first reported: 2.517
1191		-----		-----	
1229		-----		-----	
1231		-----		-----	
1233		1.2		-----	
1271		-----		-----	
1348		-----		-----	
1372	D7111	n.d.		-----	
1428	IP501	1		-----	
1431	in house	0.78		-----	
1455		-----		-----	
1460		-----		-----	
1510		-----		-----	
1520		-----		-----	
1551		-----		-----	
1553		-----		-----	
1564		-----		-----	
1573		-----		-----	
1585	IP501	0.2		-----	
1586		-----		-----	
1590		-----		-----	
1613		-----		-----	
1616		-----		-----	
1643		-----		-----	
1648		-----		-----	
1669		-----		-----	
1677		-----		-----	
1712		-----		-----	
1724		-----		-----	
1740	IP501	1		-----	
1833		-----		-----	
1842	IP501Mod.	2	G(0.05)	-----	
1854		-----		-----	
1862		-----		-----	
1915		-----		-----	
1949	D5863-B	0.2		-----	
1950		-----		-----	
1951		-----		-----	
2129	IP470Mod	0.9		-----	

normality	not OK
n	20
outliers	4
mean (n)	0.827
st.dev. (n)	0.2935
R(calc.)	0.822
R(Horwitz)	(0.381)

Kernel Density

Determination of Sodium on sample #13002; results in mg/kg

lab	method	value	mark	z(targ)	Remarks
52	IP470	17		1.23	
92		-----		-----	
120		-----		-----	
131	IP501	13.40		-0.91	
132	IP470	15.4		0.28	
140	D5708B	10.3		-2.75	
154	D5184	10		-2.92	
158		-----		-----	
159	D5863	9.0		-3.52	
168	D5863B	12.15		-1.65	
169		-----		-----	
171		-----		-----	
175	D5863	8		-4.11	
193		-----		-----	
194	IP470	15.3		0.22	
195		-----		-----	
212	IP470	16.60		0.99	
225	IP470	1	G(0.05)	-8.27	
230	IP470	15.9		0.58	
254	IP464	12.6		-1.38	
273	IP470	20.1		3.07	
311	IP501	16		0.64	
323	IP501	16		0.64	
331	IP501	12.6		-1.38	
333	IP501	16		0.64	
334	IP470	17		1.23	
340		-----		-----	
343	IP501	14		-0.55	
357	IP501	17.4		1.47	
360	IP501	15		0.04	
369	IP501	15.2		0.16	
370	IP470	13.4		-0.91	
371	IP470	16.9		1.17	
372	IP470	14		-0.55	
391		-----		-----	
398	IP470	7.3		-4.53	
399	IP501	11		-2.33	
444		-----		-----	
445	IP501	19.1		2.48	
447		-----		-----	
463	IP470	14.7		-0.14	
494	IP501	13.4		-0.91	
495		-----		-----	
507	IP470	14		-0.55	
541	IP470	17		1.23	
551		-----		-----	
557		-----		-----	
603		-----		-----	
605	in house	15		0.04	
607	in house	15		0.04	
608		-----		-----	
631	D5863	9.02		-3.51	
657	IP501Mod.	13.5		-0.85	
663	IP501	14.2		-0.43	
704	IP470	17.0		1.23	
705	IP470	15.57		0.38	
753		-----		-----	
781	IP501	15.6		0.40	
785	IP470	14.2		-0.43	
791	IP501	10		-2.92	
823	IP501	39.7	G(0.01)	14.70	
840	IP501	14.4		-0.31	
851	IP501	18.96		2.39	
855	IP470	18.3		2.00	
862	IP501	16.9		1.17	
863	IP501	16		0.64	
864	IP501	16.6		0.99	
865	IP501	17.3		1.41	
873	IP470	17		1.23	
874		-----		-----	
875	IP470	16		0.64	
886		-----		-----	
902	IP470	14.0		-0.55	
904	IP470	13		-1.14	

912		-----		-----	
922		-----		-----	
963	IP501	18.76		2.27	
971	IP501	18.90		2.36	
994	IP501	10.8		-2.45	
995	D5863B	9.1		-3.46	
997	D5863B	8.87		-3.60	
1011		-----		-----	
1038		-----		-----	
1059		-----		-----	
1080		-----		-----	
1082		-----		-----	
1095		-----		-----	
1108	D5863	9.6		-3.16	
1109	IP470	20.2		3.13	
1126	in house	18.1		1.88	
1134	IP501	28.91	G(0.05)	8.30	
1140		-----		-----	
1161	IP501	12.110	C	-1.67	first reported: 29.251
1191	ISO10478	16.21		0.76	
1229	in house	19.75		2.86	
1231		-----		-----	
1233		17		1.23	
1271	D5185	8.90	ex	-3.58	result excluded, see §4.1
1348	in house	21		3.60	
1372	D7111	14.3757	ex	-0.33	result excluded, see §4.1
1428		-----	W	-----	result withdrawn, first reported:5
1431	in house	13.2		-1.03	
1455	IP501	18.2		1.94	
1460		-----		-----	
1510		-----		-----	
1520	IP470	16.0		0.64	
1551		-----		-----	
1553		-----		-----	
1564	IP501	11		-2.33	
1573		-----		-----	
1585	IP501	13.4		-0.91	
1586	IP501	16.63		1.01	
1590	IP501	18.2		1.94	
1613	D5863	8.16		-4.02	
1616		-----		-----	
1643	D5185	9.18		-3.41	
1648		-----		-----	
1669	IP501	15.9		0.58	
1677		-----		-----	
1712		-----		-----	
1724	IP501	13.63	C	-0.77	first reported: 28.55
1740		-----		-----	
1833		-----		-----	
1842	IP501	19		2.42	
1854	IP501	17.9		1.76	
1862	IP470	17.0		1.23	
1915	D5863	19.8	C	2.89	first reported: 4.06
1949	IP470	16.0		0.64	
1950	IP470	18.4		2.06	
1951	IP501	18.0		1.82	
2129	IP470Mod	15.6		0.40	

normality	not OK
n	85
outliers	3
mean (n)	14.928
st.dev. (n)	3.2492
R(calc.)	9.098
R(IP501:05)	4.718

Kernel Density

Determination of Vanadium on sample #13002; results in mg/kg

lab	method	value	mark	z(targ)	Remarks
52	IP470	17		0.41	
92	D5863	18.6		0.92	
120	IP501	15		-0.23	
131	IP501	15.89		0.05	
132	IP470	15.5		-0.07	
140	D5708B	14.6		-0.36	
154	D5863	18		0.73	
158		-----		-----	
159	D5863	18.3		0.82	
168	D5863B	17.74		0.64	
169		-----		-----	
171		-----		-----	
175	D5863	18		0.73	
193		-----		-----	
194	IP470	16.1		0.12	
195		-----		-----	
212	IP470	12.09		-1.16	
225	IP470	12		-1.19	
230	IP470	16.4		0.21	
254	D5863	13.2		-0.81	
273	IP470	38.3	G(0.01)	7.20	
311	IP501	16		0.09	
323	IP501	16		0.09	
331	IP501	12.8		-0.93	
333	IP501	16		0.09	
334	IP470	15		-0.23	
340		-----		-----	
343	D5708	14		-0.55	
357	IP501	14.4		-0.42	
360	IP501	17		0.41	
369	IP501	15.0		-0.23	
370	IP470	13.8		-0.62	
371	IP470	14.46		-0.40	
372	IP470	15		-0.23	
391	IP501	16		0.09	
398	IP470	18.0		0.73	
399	IP501	15		-0.23	
444		-----		-----	
445	IP501	15.3		-0.14	
447		-----		-----	
463	IP470	20.95		1.67	
494	IP501	15.2		-0.17	
495		-----		-----	
507	IP470	17		0.41	
541	IP470	17		0.41	
551		-----		-----	
557		-----		-----	
603		-----		-----	
605	in house	15		-0.23	
607	in house	15		-0.23	
608		-----		-----	
631	D5863	13.7		-0.65	
657	IP501Mod.	14.9		-0.26	
663	IP501	14.9		-0.26	
704	IP470	17.1		0.44	
705	IP470	17.15		0.45	
753		-----		-----	
781	IP501	15.8		0.02	
785	IP470	12.6		-1.00	
791		-----		-----	
823	IP501	15.6		-0.04	
840	IP501	14.5		-0.39	
851	IP501	15.64		-0.03	
855	IP470	18.2		0.79	
862	IP501	15.8		0.02	
863	IP501	16		0.09	
864	IP501	15.5		-0.07	
865	IP501	15.7		-0.01	
873	IP470	16		0.09	
874		-----		-----	
875	IP470	16		0.09	
886	IP501	14		-0.55	
902	IP470	14.0		-0.55	
904	IP470	12		-1.19	

912		-----		-----	
922		-----		-----	
963	IP501	15.967		0.08	
971	IP501	16.74		0.32	
994	IP501	13.42		-0.74	
995	D5863B	15.5		-0.07	
997		-----		-----	
1011		-----		-----	
1038		-----		-----	
1059	in house	16		0.09	
1080	D5708	15.6		-0.04	
1082		-----		-----	
1095		-----		-----	
1108	D5863	19.2		1.11	
1109	IP470	10.6		-1.64	
1126	IP501	15.0		-0.23	
1134	IP501	16.65		0.29	
1140		-----		-----	
1161	IP501	21.338		1.79	
1191	ISO10478	15.45		-0.09	
1229	in house	14.68		-0.33	
1231		-----		-----	
1233	IP501	18		0.73	
1271	D5185	13.15	ex	-0.82	result excluded, see §4.1
1348	in house	38.2	G(0.01)	7.17	
1372	D5708	16.9703		0.40	result excluded, see §4.1
1428	IP501	15		-0.23	
1431	in house	13.9		-0.58	
1455	IP501	17.1		0.44	
1460		-----		-----	
1510		-----		-----	
1520	IP470	17.1		0.44	
1551	IP593	13.81		-0.61	
1553	D5863	16.976		0.40	
1564	IP501	16		0.09	
1573	IP501	15.8		0.02	
1585	IP501	18.2		0.79	
1586	IP501	17.85		0.68	
1590	IP501	17.4		0.53	
1613	D5863	22.10		2.03	
1616		-----		-----	
1643	D5185	15.03		-0.22	
1648	IP501	10.8		-1.57	
1669	D5185	15.7		-0.01	
1677		-----		-----	
1712		-----		-----	
1724	IP501	14.30		-0.46	
1740	IP501	15		-0.23	
1833		-----		-----	
1842	IP501	15		-0.23	
1854	IP501	16.1		0.12	
1862	IP470	16.6		0.28	
1915	D5863	11.85		-1.24	
1949	IP470	14.7		-0.33	
1950	IP470	16.1		0.12	
1951		-----		-----	
2129	IP470Mod	18.9		1.01	

normality	not OK	
n	96	
outliers	2	
mean (n)	15.728	
st.dev. (n)	2.0036	
R(calc.)	5.610	
R(IP501:05)	8.776	

Kernel Density
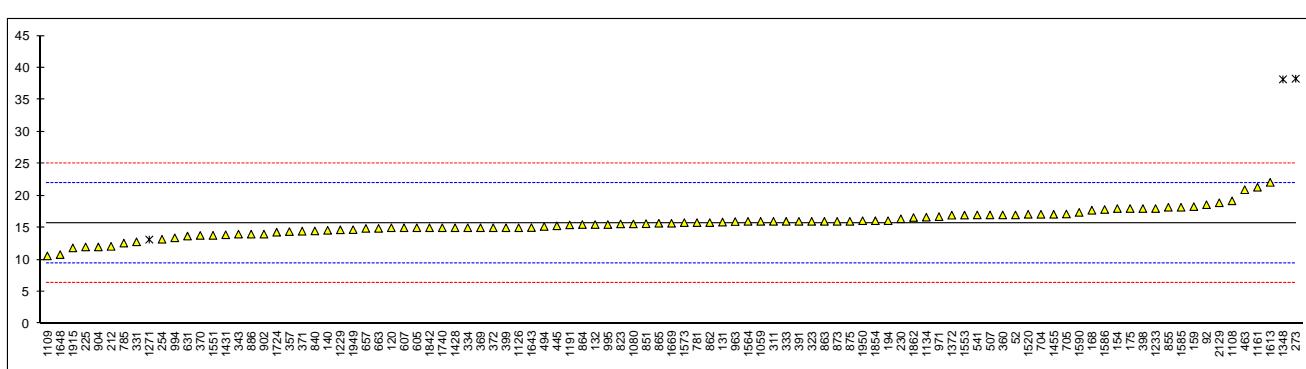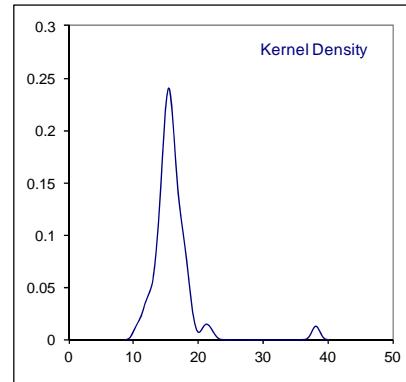
APPENDIX 2

Z-scores Distillation according to ASTM D1160 on sample #13001

lab	IBP	5%	10%	20%	30%	40%	50%	FBP
52	-----	-----	-----	-----	-----	-----	-----	-----
62	-----	-----	-----	-----	-----	-----	-----	-----
90	-----	-----	-----	-----	-----	-----	-----	-----
92	-----	-----	-----	-----	-----	-----	-----	-----
120	-----	-----	-----	-----	-----	-----	-----	-----
131	-1.70	0.71	0.17	0.59	0.66	0.73	1.90	2.12
132	-----	-----	-----	-----	-----	-----	-----	-----
140	-----	-----	-----	-----	-----	-----	-----	-----
154	-----	-----	-----	-----	-----	-----	-----	-----
158	-----	-----	-----	-----	-----	-----	-----	-----
159	-----	-----	-----	-----	-----	-----	-----	-----
168	-----	-----	-----	-----	-----	-----	-----	-----
169	-----	-----	-----	-----	-----	-----	-----	-----
171	**3.19**	**4.13**	**5.23**	**3.49**	**3.15**	0.60	-0.55	1.04
175	-----	-----	-----	-----	-----	-----	-----	-----
193	-----	-----	-----	-----	-----	-----	-----	-----
194	-----	-----	-----	-----	-----	-----	-----	-----
195	-----	-----	-----	-----	-----	-----	-----	-----
212	-----	-----	-----	-----	-----	-----	-----	-----
221	-----	-----	-----	-----	-----	-----	-----	-----
224	-----	-----	-----	-----	-----	-----	-----	-----
225	-----	-----	-----	-----	-----	-----	-----	-----
228	-----	-----	-----	-----	-----	-----	-----	-----
230	-----	-----	-----	-----	-----	-----	-----	-----
237	-----	-----	-----	-----	-----	-----	-----	-----
238	-----	-----	-----	-----	-----	-----	-----	-----
252	-----	-----	-----	-----	-----	-----	-----	-----
253	-----	-----	-----	-----	-----	-----	-----	-----
254	-----	-----	-----	-----	-----	-----	-----	-----
273	-----	-----	-----	-----	-----	-----	-----	-----
311	0.19	0.32	0.33	0.00	0.25	0.61	-----	-0.57
313	-----	-----	-----	-----	-----	-----	-----	-----
323	0.29	-0.37	-0.52	-0.52	-0.88	-1.13	-----	-----
331	-----	-----	-----	-----	-----	-----	-----	-----
333	-----	-----	-----	-----	-----	-----	-----	-----
334	-----	-----	-----	-----	-----	-----	-----	-----
336	-----	-----	-----	-----	-----	-----	-----	-----
337	-----	-----	-----	-----	-----	-----	-----	-----
340	-----	-----	-----	-----	-----	-----	-----	-----
343	-----	-----	-----	-----	-----	-----	-----	-----
349	-----	-----	-----	-----	-----	-----	-----	-----
353	-----	-----	-----	-----	-----	-----	-----	-----
360	0.60	1.34	1.56	1.79	2.04	1.94	-----	0.06
369	-----	-----	-----	-----	-----	-----	-----	-----
370	-----	-----	-----	-----	-----	-----	-----	-----
371	-0.48	-0.56	-0.26	-0.77	0.36	-0.05	-----	0.79
372	0.03	0.15	0.39	0.17	-0.20	-0.05	-----	0.58
375	-----	-----	-----	-----	-----	-----	-----	-----
391	-----	-----	-----	-----	-----	-----	-----	-----
398	-----	-----	-----	-----	-----	-----	-----	-----
399	-----	-----	-----	-----	-----	-----	-----	-----
440	-----	-----	-----	-----	-----	-----	-----	-----
444	-----	-----	-----	-----	-----	-----	-----	-----
445	0.94	0.04	-0.13	-0.10	-0.20	-1.42	-----	-1.19
447	-----	-----	-----	-----	-----	-----	-----	-----
463	-0.25	-1.04	-1.95	-0.91	-1.18	-0.66	-4.18	-0.56
494	-0.02	0.89	1.52	1.29	1.12	0.89	-----	-0.72
495	-----	-----	-----	-----	-----	-----	-----	-----
507	-----	-----	-----	-----	-----	-----	-----	-----
511	-----	-----	-----	-----	-----	-----	-----	-----
528	-----	-----	-----	-----	-----	-----	-----	-----
529	-----	-----	-----	-----	-----	-----	-----	-----
541	-----	-----	-----	-----	-----	-----	-----	-----
551	-----	-----	-----	-----	-----	-----	-----	-----
557	-----	-----	-----	-----	-----	-----	-----	-----
562	-----	-----	-----	-----	-----	-----	-----	-----
575	-----	-----	-----	-----	-----	-----	-----	-----
603	-----	-----	-----	-----	-----	-----	-----	-----
604	-----	-----	-----	-----	-----	-----	-----	-----
605	-----	-----	-----	-----	-----	-----	-----	-----
607	-----	-----	-----	-----	-----	-----	-----	-----

608	-----	-----	-----	-----	-----	-----	-----	-----
631	-----	-----	-----	-----	-----	-----	-----	-----
657	0.19	0.37	0.73	0.44	0.36	-0.32	-----	-0.92
663	-----	-----	-----	-----	-----	-----	-----	-----
671	-----	-----	-----	-----	-----	-----	-----	-----
704	0.37	0.39	0.52	0.57	0.36	-0.35	1.01	1.73
705	-----	-----	-----	-----	-----	-----	-----	-----
732	-----	-----	-----	-----	-----	-----	-----	-----
750	-----	-----	-----	-----	-----	-----	-----	-----
753	-0.31	-1.04	-0.65	-0.23	-0.62	-1.12	-----	-1.19
781	-0.31	-0.80	-0.26	0.17	-0.06	0.26	-----	1.31
784	-0.31	-0.32	-0.26	-0.10	0.36	0.41	-----	0.27
785	-----	-----	-----	-----	-----	-----	-----	-----
791	-----	-----	-----	-----	-----	-----	-----	-----
823	-----	-----	-----	-----	-----	-----	-----	-----
840	-----	-----	-----	-----	-----	-----	-----	-----
851	-----	-----	-----	-----	-----	-----	-----	-----
855	-----	-----	-----	-----	-----	-----	-----	-----
858	-----	-----	-----	-----	-----	-----	-----	-----
859	-----	-----	-----	-----	-----	-----	-----	-----
862	-0.65	0.51	0.13	0.04	0.22	0.18	-----	-----
863	-----	-----	-----	-----	-----	-----	-----	-----
864	-----	-----	-----	-----	-----	-----	-----	-----
865	-----	-----	-----	-----	-----	-----	-----	-----
867	-----	-----	-----	-----	-----	-----	-----	-----
873	0.26	-0.20	-0.39	-0.50	-0.20	-0.20	-----	1.94
874	-0.31	-0.44	-0.78	-0.91	-0.76	-0.81	-----	-0.25
875	-----	-----	-----	-----	-----	-----	-----	-----
886	-----	-----	-----	-----	-----	-----	-----	-----
887	-----	-----	-----	-----	-----	-----	-----	-----
902	0.06	0.76	1.12	0.87	0.85	1.28	-----	1.97
904	-0.14	0.21	0.65	0.71	0.78	1.02	-----	1.10
912	-----	-----	-----	-----	-----	-----	-----	-----
913	-----	-----	-----	-----	-----	-----	-----	-----
922	-----	-----	-----	-----	-----	-----	-----	-----
962	-----	-----	-----	-----	-----	-----	-----	-----
963	-0.75	-1.34	-1.41	-1.39	-1.40	-2.89	-----	-2.27
971	-----	-----	-----	-----	-----	-----	-----	-----
974	-----	-----	-----	-----	-----	-----	-----	-----
982	-----	-----	-----	-----	-----	-----	-----	-----
994	0.26	0.75	-1.43	-0.91	0.08	1.02	-----	0.06
995	-----	-----	-----	-----	-----	-----	-----	-----
996	-----	-----	-----	-----	-----	-----	-----	-----
1011	-----	-----	-----	-----	-----	-----	-----	-----
1022	-----	-----	-----	-----	-----	-----	-----	-----
1038	-----	-----	-----	-----	-----	-----	-----	-----
1047	-----	-----	-----	-----	-----	-----	-----	-----
1059	-----	-----	-----	-----	-----	-----	-----	-----
1062	-----	-----	-----	-----	-----	-----	-----	-----
1065	2.07	0.75	0.78	1.11	-0.34	3.32	-----	-----
1080	-----	-----	-----	-----	-----	-----	-----	-----
1082	-----	-----	-----	-----	-----	-----	-----	-----
1095	-----	-----	-----	-----	-----	-----	-----	-----
1108	-----	-----	-----	-----	-----	-----	-----	-----
1109	-----	-----	-----	-----	-----	-----	-----	-----
1121	-----	-----	-----	-----	-----	-----	-----	-----
1126	-1.74	-2.21	-1.32	-1.98	-2.41	-2.86	1.86	-----
1134	-----	-----	-----	-----	-----	-----	-----	-----
1140	-----	-----	-----	-----	-----	-----	-----	-----
1161	-----	-----	-----	-----	-----	-----	-----	-----
1167	-----	-----	-----	-----	-----	-----	-----	-----
1177	-----	-----	-----	-----	-----	-----	-----	-----
1191	-----	-----	-----	-----	-----	-----	-----	-----
1215	-----	-----	-----	-----	-----	-----	-----	-----
1229	-----	-----	-----	-----	-----	-----	-----	-----
1231	-----	-----	-----	-----	-----	-----	-----	-----
1233	-----	-----	-----	-----	-----	-----	-----	-----
1254	-----	-----	-----	-----	-----	-----	-----	-----
1259	-----	-----	-----	-----	-----	-----	-----	-----
1266	-----	-----	-----	-----	-----	-----	-----	-----
1269	-----	-----	-----	-----	-----	-----	-----	-----
1271	-----	-----	-----	-----	-----	-----	-----	-----
1275	-----	-----	-----	-----	-----	-----	-----	-----
1337	-----	-----	-----	-----	-----	-----	-----	-----
1348	-----	-----	-----	-----	-----	-----	-----	-----
1356	-----	-----	-----	-----	-----	-----	-----	-----
1358	-----	-----	-----	-----	-----	-----	-----	-----
1381	-----	-----	-----	-----	-----	-----	-----	-----
1395	-----	-----	-----	-----	-----	-----	-----	-----

1396	-----	-----	-----	-----	-----	-----	-----	-----
1402	0.94	1.82	1.56	0.57	0.36	0.72	-----	1.31
1403	-----	-----	-----	-----	-----	-----	-----	-----
1419	-----	-----	-----	-----	-----	-----	-----	-----
1428	-----	-----	-----	-----	-----	-----	-----	-----
1431	-----	-----	-----	-----	-----	-----	-----	-----
1455	0.43	-0.05	0.01	-0.96	-0.42	-0.28	-----	-0.57
1459	-----	-----	-----	-----	-----	-----	-----	-----
1460	-----	-----	-----	-----	-----	-----	-----	-----
1483	-----	-----	-----	-----	-----	-----	-----	-----
1501	0.43	1.11	0.78	0.84	0.36	0.72	2.89	-----
1510	-----	-----	-----	-----	-----	-----	-----	-----
1520	-----	-----	-----	-----	-----	-----	-----	-----
1551	-----	-----	-----	-----	-----	-----	-----	-----
1552	-----	-----	-----	-----	-----	-----	-----	-----
1553	-----	-----	-----	-----	-----	-----	-----	-----
1558	-----	-----	-----	-----	-----	-----	-----	-----
1559	-----	-----	-----	-----	-----	-----	-----	-----
1564	-----	-----	-----	-----	-----	-----	-----	-----
1569	-----	-----	-----	-----	-----	-----	-----	-----
1577	-----	-----	-----	-----	-----	-----	-----	-----
1585	-1.27	-2.23	-2.60	-2.39	-1.46	-2.03	-----	-2.75
1586	-----	-----	-----	-----	-----	-----	-----	-----
1590	-----	-----	-----	-----	-----	-----	-----	-----
1613	0.90	0.44	0.88	1.19	0.49	-0.77	-----	-3.24
1616	-----	-----	-----	-----	-----	-----	-----	-----
1622	-----	-----	-----	-----	-----	-----	-----	-----
1631	-----	-----	-----	-----	-----	-----	-----	-----
1635	-----	-----	-----	-----	-----	-----	-----	-----
1636	-----	-----	-----	-----	-----	-----	-----	-----
1643	-----	-----	-----	-----	-----	-----	-----	-----
1648	-----	-----	-----	-----	-----	-----	-----	-----
1654	-----	-----	-----	-----	-----	-----	-----	-----
1669	-----	-----	-----	-----	-----	-----	-----	-----
1677	-----	-----	-----	-----	-----	-----	-----	-----
1710	1.25	1.11	0.39	-0.50	-0.48	-0.28	-----	1.88
1712	1.05	0.99	0.78	0.31	0.50	0.56	-----	-1.19
1720	-----	-----	-----	-----	-----	-----	-----	-----
1724	-----	-----	-----	-----	-----	-----	-----	-----
1728	-----	-----	-----	-----	-----	-----	-----	-----
1740	-----	-----	-----	-----	-----	-----	-----	-----
1807	-----	-----	-----	-----	-----	-----	-----	-----
1810	-----	-----	-----	-----	-----	-----	-----	-----
1811	-----	-----	-----	-----	-----	-----	-----	-----
1832	-----	-----	-----	-----	-----	-----	-----	-----
1833	0.19	-0.67	0.04	-0.13	-0.86	-0.86	-0.95	-----
1842	-----	-----	-----	-----	-----	-----	-----	-----
1849	-----	-----	-----	-----	-----	-----	-----	-----
1854	-----	-----	-----	-----	-----	-----	-----	-----
1862	-0.99	-0.92	0.26	1.11	1.20	1.48	-----	-0.15
1906	-----	-----	-----	-----	-----	-----	-----	-----
1915	-----	-----	-----	-----	-----	-----	-----	-----
1936	-----	-----	-----	-----	-----	-----	-----	-----
1937	-----	-----	-----	-----	-----	-----	-----	-----
1938	-----	-----	-----	-----	-----	-----	-----	-----
1949	-0.19	0.04	0.13	1.11	1.48	2.25	-0.88	0.89
1950	-1.33	-1.51	-1.56	-1.58	-1.60	-1.88	-----	-1.50
1951	-----	-----	-----	-----	-----	-----	-----	-----
2129	0.26	0.99	0.78	0.98	1.20	-0.05	-1.11	**-17.01**

Z-scores underlined and bold belong to the statistical outliers acc. to Grubbs/Dixon outlier test

APPENDIX 3

Number of participants per country

1 lab in	ARGENTINA	
2 labs in	AUSTRALIA	
1 lab in	AZERBAIJAN	
1 lab in	BAHAMAS	
1 lab in	BELARUS REPUBLIC	
3 labs in	BELGIUM	
1 lab in	BOSNIA and HERZEGOVINA	
2 labs in	BRAZIL	
1 lab in	BULGARIA	
2 labs in	CAMEROON	
4 labs in	CANADA	
1 lab in	CHILE	
1 lab in	COLOMBIA	
1 lab in	CÔTE D'IVOIRE	
2 labs in	CROATIA	
3 labs in	CZECH REPUBLIC	
4 labs in	ESTONIA	
3 labs in	FINLAND	
7 labs in	FRANCE	
1 lab in	GEORGIA	
2 labs in	GERMANY	
6 labs in	GREECE	
1 lab in	GUAM	
1 lab in	HONG KONG	
2 labs in	HUNGARY	
2 labs in	INDIA	
1 lab in	INDONESIA	
1 lab in	IRAN	
1 lab in	IRELAND	
1 lab in	ISRAEL	
3 labs in	ITALY	
1 lab in	JORDAN	
1 lab in	KAZAKHSTAN	
2 labs in	KENYA	
1 lab in	KOREA	
4 labs in	LATVIA	
1 lab in	LEBANON	
2 labs in	LITHUANIA	
5 labs in	MALAYSIA	
1 lab in	MALTA	

2 labs in	MAURITIUS
1 lab in	MEXICO
1 lab in	MOROCCO
2 labs in	NIGERIA
1 lab in	NORTHERN IRELAND
8 labs in	P.R. of CHINA
1 lab in	PAKISTAN
1 lab in	PANAMA
1 lab in	PERU
1 lab in	PHILIPPINES
2 labs in	POLAND
2 labs in	PORTUGAL
1 lab in	REPUBLIC OF DJIBOUTI
1 lab in	REPUBLIC OF GUINEE
1 lab in	REPUBLIC OF MACEDONIA
1 lab in	ROMANIA
13 labs in	RUSSIA
4 labs in	SAUDI ARABIA
1 lab in	SENEGAL
1 lab in	SINGAPORE
1 lab in	SLOVAKIA
2 labs in	SLOVENIA
1 lab in	SOUTH AFRICA
1 lab in	SOUTH KOREA
9 labs in	SPAIN
1 lab in	SUDAN
3 labs in	SWEDEN
2 labs in	TAIWAN R.O.C.
3 labs in	THAILAND
4 labs in	THE NETHERLANDS
1 lab in	TOGO
14 labs in	TURKEY
1 lab in	TURKMENISTAN
3 labs in	U.A.E.
13 labs in	U.S.A.
2 labs in	UKRAINE
18 labs in	UNITED KINGDOM
1 lab in	VIETNAM

APPENDIX 4

Instrument used on sample #13002;

lab	instrument	lab	instrument
52	-----	863	ICP
92	AAS	864	ICP
120	ICP	865	ICP
131	ICP	873	AAS
132	AAS	874	-----
140	ICP	875	AAS
154	-----	886	-----
158	-----	902	-----
159	AAS	904	-----
168	-----	912	-----
169	-----	922	-----
171	-----	963	ICP
175	-----	971	-----
193	-----	994	ICP
194	AAS	995	AAS
195	-----	997	AAS
212	AAS	1011	AAS
225	AAS	1038	-----
230	AAS	1059	WD-XRF
254	-----	1080	-----
273	AAS	1082	-----
311	ICP	1095	-----
323	ICP	1108	AAS
331	ICP	1109	AAS
333	ICP	1126	ICP
334	AAS	1134	-----
340	ICP	1140	-----
343	ICP	1161	-----
357	ICP	1191	ICP
360	ICP	1229	AAS
369	ICP	1231	-----
370	AAS	1233	ICP
371	AAS	1271	ICP
372	AAS	1348	-----
391	ICP	1372	ICP
398	-----	1428	ICP
399	ICP	1431	ICP
444	-----	1455	ICP
445	ICP	1460	-----
447	-----	1510	-----
463	AAS	1520	AAS
494	-----	1551	-----
495	-----	1553	-----
507	AAS	1564	-----
541	-----	1573	ICP
551	-----	1585	-----
557	-----	1586	ICP
603	-----	1590	ICP
605	ICP	1613	-----
607	ICP	1616	-----
608	-----	1643	-----
631	-----	1648	ICP
657	ICP	1669	ICP
663	ICP	1677	-----
704	AAS	1712	ICP
705	AAS	1724	-----
753	-----	1740	ICP
781	-----	1833	-----
785	-----	1842	ICP
791	-----	1854	-----
823	ICP	1862	AAS
840	ICP	1915	-----
851	ICP	1949	-----
855	-----	1950	AAS
862	-----	1951	-----
		2129	-----

APPENDIX 5

Abbreviations:

C   = final result after checking of first reported suspect result
D(0.01)   = outlier in Dixon's outlier test
D(0.05)   = straggler in Dixon's outlier test
G(0.01)   = outlier in Grubbs' outlier test
G(0.05)   = straggler in Grubbs' outlier test
DG(0.01)   = outlier in Double Grubbs' outlier test
DG(0.05)   = straggler in Double Grubbs' outlier test
ex   = excluded from calculations
E   = error in calculations
n.a.   = not applicable

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