IFA-Proficiency Testing Scheme for Water Analysis

Round N162
Major Ions

Sample Dispatch: 16 May 2022

In accordance with the procedure: AVKPS.01 (02/2021)

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Report: 1st edition, created on 23 May 2022 by Ing. Uta Kachelmeier
153 pages

This report summarises the results of round N162 (major ions) within the IFA-Proficiency Testing Scheme for Water Analysis. The samples N162A and N162B were distributed to 47 participants on Monday, 16 May 2022. Each participant received two samples of 1000 mL, each filled into two 500 mL PET bottles.

Closing date for reporting results to the IFA-Tulln was Friday, 17 June 2022. 46 participants submitted results. To make the participants anonymous, each laboratory obtained a letter code by random.

Samples

The samples consisted of artificial ground water. For sample preparation, ultrapure water was spiked with solutions of salts and standards in order to simulate the ionic composition of natural Austrian ground water. The following substances were added to the samples: $CaCO_3$, $CaCl_2$, $Ca(NO_3)_2$, $MgSO_4$, $Mg(NO_3)_2$, NaCl, $NaHCO_3$, Na_2SO_4, KCl, $KHCO_3$, K_2SO_4, diethyl ethylphosphonate ($C_6H_{15}PO_3$, for total-P), potassium hydrogen phthalate (for DOC), sodium salicylate (for $KMnO_4$-Index) and certified standard solutions of $NaNO_2$, Na_2SiO_3, NH_4Cl, KH_2PO_4 and H_3BO_3. Both samples, N162A and N162B, contained free CO_2, which was used for dissolution of $CaCO_3$ and neutralisation of Na_2SiO_3. No other substances (e.g. preservatives) were added. The samples were stabilised by sterile filtration and low temperature.

Ammonium was not added to sample N162A and no phosphorus substances were added to sample N162B in order to check the analytical blank values.

Homogeneity, accuracy and stability tests at the IFA-Tulln

The samples were checked for homogeneity and accuracy at the IFA-Tulln before dispatch. The results of the measurements are listed in the result tables and the parameter oriented part of the report (”IFA result”).

To verify stability, the parameters DOC, NH_4^+, NO_2^-, o-PO_4^{3-} and $KMnO_4$-Index of samples N162A and N162B were determined in several samples four weeks after shipment. The results are listed in the result tables (”Stability test”) and the parameter oriented part of the report (“IFA result”). Stability tests for all other parameters will be carried out together with the accuracy tests of the following round (N163).

According to our experience, the samples remain stable up to 18 months for the parameters conductivity, total hardness, alkalinity, Ca^{2+}, Mg^{2+}, Na^+, K^+, NO_3^-, Cl^-, SO_4^{2-}, boron and HCO_3^-, when stored at 4°C in the dark. For the parameters NH_4^+, NO_2^-, o-PO_4^{3-}, total-P and DOC the samples remain stable several weeks, whereas the first changes normally are observed for NH_4^+.

Results

Data evaluation was based on target concentrations that were calculated from the weights of the substances and standards used to produce the samples. Their uncertainty intervals correspond to the expanded uncertainty (coverage factor k = 2) as described in the EURACHEM/CITAC Guide “Quantifying Uncertainty in Analytical Measurement, 3rd Edition (2012)”.

The target value of the electrical conductivity was set to the laboratory mean (conventional value). When calculated from more than 20 results with a standard deviation between the laboratories of about 1 %, the conventional value has a confidence interval that is smaller than the uncertainty of our estimate calculated from the target concentrations by Debye-Hückel´s theory: 2.4 % (p = 95 %). However, the calculated electrical conductivity was 435 µS/cm in sample N162A and 520 µS/cm in sample N162B.

For the pH no target values can be assigned. The results can be compared on the tables. In this kind of samples containing CO_2, the pH tends to increase slowly over time.

Total phosphorus after digestion had to be determined according to DIN EN ISO 6878. Diethyl ethylphosphonate ($C_6H_{15}PO_3$), which can be determined as phosphate only after oxidative digestion and potassium dihydrogen phosphate (KH_2PO_4) were used for preparation. The target values of total-P were calculated from the weights of the two substances. The results were given in mg/L o-PO_4^{3-}.

The concentrations of sodium salicylate, which was used as standard substance for the $KMnO_4$-Index, were 3.53 mg/L in sample N162A and 2.17 mg/L in sample N162B. Assuming complete oxidation to carbon dioxide, nitrate and water (considering nitrite), the theoretical values were 4.94 mg/L O_2 (N162A) and 3.06 mg/L O_2 (N162B). However, the laboratory mean values were taken as reference values in this report: 4.62 mg/L O_2 for N162A and 2.93 mg/L O_2 for N162B.

Recoveries for individual laboratory results and overall mean values are related to the target concentrations. The results were tested for outliers by application of the Hampel outlier test (level of significance 99 %).

In order to check the analytical blank values, target concentrations were set to <0.01 mg/L NH_4^+ in N162A and <0.009 mg/L o-PO_4^{3-} and <0.009 mg/L total-P (as PO_4^{3-}) in N162B, which meets the minimum quantifiable values defined by the Austrian ground and river water monitoring program and the quantification limits of the analytical methods applied in the IFA.

The recoveries of the target concentrations, calculated from outlier-corrected data mean values ranged between 97.9 % (alkalinity in sample N162B) and 102.0 % (nitrite in sample N162A).

The between laboratory CVs covered the range between 0.9 % (conductivity in sample N162B) and 13.5 % (ammonium in sample N162B).

All confidence intervals of the outlier-corrected laboratory mean values encompass the corresponding target values with their uncertainties. Thus, statistically, no difference could be detected between theoretical target concentrations and outlier corrected laboratory means.

z-scores

The most common approach is to form the z-score given by

$$z = \frac{x_i - X}{\sigma_{PT}}$$

z	z-score
x_i	result of laboratory
X	target value or mean value („consensus value“)
σ_{PT}	standard deviation for proficiency assessment

Thus, the z-score is the ratio of the estimated bias (difference between result and target value) and a standard deviation. The standard deviations for proficiency assessment were determined from the results of all interlaboratory comparisons that have been organised by the IFA-Tulln from 2011 to 2021. They represent average performance data of all former participating laboratories.

This approach was chosen, because standard deviations of the outlier-corrected measurements substantially vary between individual proficiency test rounds. Averaging standard deviations from proficiency testing rounds of several years can provide standard deviations for proficiency assessment on a broad data basis. It is therefore more suitable than a standard deviation taken directly from the interlaboratory comparison (EN ISO/IEC 17043:2010, B.3.1.3). Another advantage of previously determined standard deviations is that the participants can foresee which z-scores can be expected by their routine analysis methods before participation.

Calculation example:

A laboratory found 7.00 mg/L for the parameter DOC (recovery of 116 %). The target value for the DOC was 6.02 mg/L (100 %). The relative standard deviation for proficiency assessment is given in the table below (as well as in the annual program www.ifatest.eu) by 5.6 %, which is 0.34 mg/L DOC, when based on the target value.

$$z = \frac{x_i - X}{\sigma_{PT}} = \frac{7.00\ \text{mg/L} - 6.02\ \text{mg/L}}{0.34\ \text{mg/L}} \approx 2.9 \quad \textbf{or} \quad \frac{116\% - 100\%}{5.6\%} \approx 2.9$$

z z-score
x_i 7.00 mg/L equivalent to 116 % (value of the laboratory)
X 6.02 mg/L equivalent to 100 % (target value)
σ_{pt} 0.34 mg/L equivalent to 5.6 % (standard deviation for proficiency assessment, see table below)

In the case of recalculation, deviations in the last digits may occur due to the fact that rounded values are given in the report for clarity.

The following table lists the z-score criteria as relative standard deviation and their limits of applicability. Z-scores were only calculated, if the target values were higher than these limits.

Parameter	standard deviation for proficiency assessment	Lower limit
Alkalinity $K_{S4.3}$	2.0 %	0.2 mmol/L
Ammonium	12 %	0.01 mg/L
Boron	7.5 %	0.012 mg/L
Calcium	3.3 %	9 mg/L
Chloride	2.9 %	2 mg/L
el. Conductivity	1.2 %	50 µS/cm
DOC	5.6 %	1 mg/L
Hydrogen carbonate	2.4 %	20 mg/L
$KMnO_4$-Index	10 %	1 mg/L
Magnesium	3.7 %	1 mg/L
Nitrate	3.2 %	2 mg/L
Nitrite	5.6 %	0.01 mg/L
Orthophosphate	10 %	0.015 mg/L
Potassium	4.4 %	0.5 mg/L
Sodium	3.2 %	1 mg/L
Sulphate	3.1 %	3 mg/L
Total hardness	2.9 %	0.1 mmol/L
Total-P (as PO_4^{3-})	10 %	0.015 mg/L

Normally, a classification based on z-scores is made this way:

|z-Score|	Classification
≤2	satisfactory
2<|z|<3	questionable
≥3	unsatisfactory

The z-scores are listed in the parameter-oriented evaluation in the tables next to the recoveries. Additionally, each laboratory receives a sheet on which the obtained z-scores are summarized and graphically presented. The standard deviations for proficiency assessment are given in concentration units there.

An overview table of all z-scores can be found after the result tables in the parameter-oriented part.

Illustration of results

An explanation to the illustration of the results is given on the following page.

The **laboratory oriented part** contains the measurement results and reported uncertainties of each individual laboratory for all parameters together with the achieved recoveries in graphical and tabular form. This part of the report also lists tables with the results originally reported by the laboratories.

In the **parameter oriented part** the reported results and corresponding uncertainties are illustrated together with recoveries of the target values and the z-scores for each parameter and all laboratories. This information is presented in graphical and tabular form.

Results, which were identified as outliers by the Hampel test are marked with an asterisk (*). These values were not considered for the calculation of statistical parameters (mean values, standard deviations and confidence intervals). Moreover, the parameter oriented part contains the uncertainties of the target values. The uncertainty intervals correspond to the expanded uncertainty (coverage factor k = 2) as described in the EURACHEM / CITAC Guide “Quantifying Uncertainty in Analytical Measurement”, 3rd Edition (2012)”. The uncertainty interval of the reference concentration is illustrated in the graphs as a grey band around the 100 % recovery line.

Results, for which no recoveries could be calculated, are illustrated by one of the following symbols: **FN** (false negative), **FP** (false positive) or • - symbol.

- “FN”: A result is considered false negative when the “< result” reported is lower than the corresponding target value, or the measured value was given as "0" when the substance was added.
- “FP”: False positive results can only be obtained for compounds that were evaluated on the basis of a “< target value”. A result is termed FP if it does not include (strike) the “< target” with its measurement uncertainty.
- “•”: All other results for which no recoveries can be calculated are illustrated by this symbol

Tulln, 24 June 2022

EXPLANATION

Sample M106A

Parameter Copper

Target value ± U (k=2)	4,79 µg/l	±	0,13 µg/l	*Obtained from sample preperation, U=uncertainty*
IFA result ± U (k=2)	4,79 µg/l	±	0,38 µg/l	*Determined at IFA prior to shipment of samples*
Stability test ± U (k=2)	4,69 µg/l	±	0,38 µg/l	*Determined at IFA 3 weeks after sample dispatch*

Lab Code	Result	±	Unit	Recovery	z-Score
A	5,16	0,4128	µg/l	108%	0,90
B	4,22	0,42	µg/l	88%	-1,38
C	4,45	0,13	µg/l	93%	-0,83
D			µg/l		
E			µg/l		
F	4,10	0,08	µg/l	86%	-1,68
G			µg/l		
H			µg/l		
I	4,75	0,74	µg/l	99%	-0,10
J	<5		µg/l	•	
K	4,76		µg/l	99%	-0,07
L	<10		µg/l	•	
M	4,8	0,5	µg/l	100%	0,02
N	3,7	0,4	µg/l	77%	-2,65
O	4,47	0,447	µg/l	93%	-0,78
P	6,0		µg/l	125%	2,94
Q	4,17	0,2	µg/l	87%	-1,51
R	4,6	0,8	µg/l	96%	-0,46
S	4,44	0,67	µg/l	93%	-0,85
T			µg/l		
U	4,675	0,935	µg/l	98%	-0,28
V	5,0	0,50	µg/l	104%	0,51
W	3,54	0,3	µg/l	74%	-3,03
X	7,108 *	0,749	µg/l	148%	5,63
Y	<10		µg/l	•	
Z			µg/l		
AA	<3,0		µg/l	FN	
AB	3,775	0,107	µg/l	79%	-2,46
AC	<10,0		µg/l	•	

Recovery of target value in percent

z-Score of the laboratory

An asterik indicates a result detected as outlier by Hampel test

Interval expected to encompass target value as stated by participant

	All results	Outliers excl.	Unit
Mean ± CI(99%)	4,65 ± 0,57	4,51 ± 0,42	µg/l
Recov. ± CI(99%)	97,1 ± 12,0	94,1 ± 8,8	%
SD between labs	0,84	0,59	µg/l
RSD between labs	18,1	13,2	%
n for calculation	18	17	

Between laboratory standard deviation

Laboratory mean and recovery of target value with corresponding confidence intervals (p=99%)

Number of results used for calculation of statistic parameters

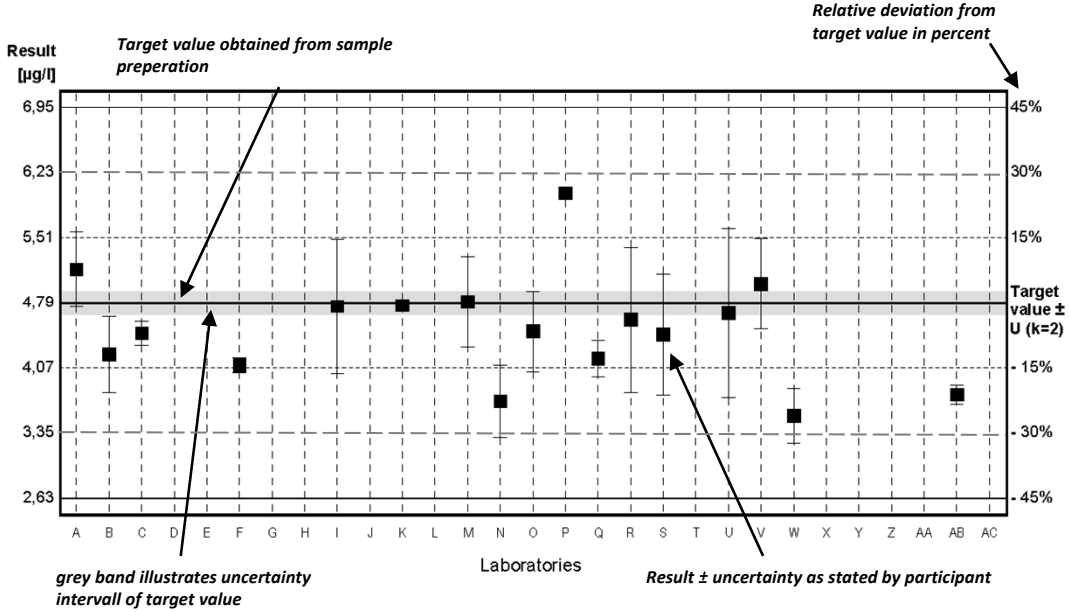


Diagram 1: Measurement results and their uncertainties

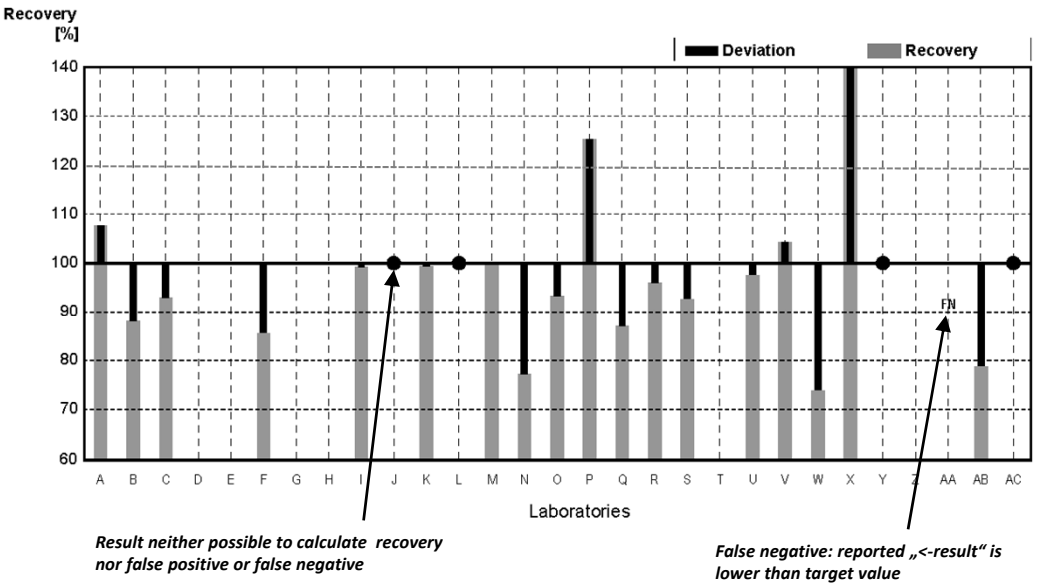


Diagram 2: Recoveries and deviations from target values

Illustration of Results
Tables and Parameter Oriented Part

Round N162
Major Ions

Sample Dispatch: 16 May 2022

Results Sample N162A

	pH	Cond.	total-Hardn.	$K_{S\ 4.3}$	HCO_3^-	Ca^{2+}	Mg^{2+}	Na^+	K^+	NO_3^-
Unit		µS/cm	mmol/L	mmol/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Target value		437	1.350	2.93	175.8	38.7	9.34	37.7	5.60	41.3
IFA result	6.50	440	1.43	2.88	173	41.8	9.5	38.0	5.8	40.4
Stability test										
A	6.23	440				47.2	10.2	38.6	5.18	41.3
B	6.44	440	1.38	2.89	173	39.1	9.71	37.4	5.69	39.2
C	6.64	432	1.37	2.90	174	39.6	9.38	38.1	5.68	41.0
D						41.2	9.08	29.4	6.59	
E	6.63	432.9	7.28	2.97	181.17	41.348	8.773	39.659	5.594	41.008
F	6.19	426	1.33	2.89	176	38.4	9.2	37.4	5.6	38.9
G	6.27	440	1.38	2.87		39.6	9.63	38.5	5.62	40.9
H	6.37	431	1.373	2.92		39.59	9.37	38.16	5.66	41.41
I	6.6	444	7.8	2.87	172	39.8	9.5	34.9	5.4	42.2
J										40.588
K	6.53	437	1.30	2.92	175	37.1	9.17	38.7	5.49	39.1
L	6.33	438	1.335	2.88	172.57	38.18	9.30	37.11	5.62	41.36
M	6.33		1.36	2.903	144.7	38.83	9.42	36.29	5.75	39.4
N	6.38	435	1.33	3.05	183.05	37.6	9.48	36.9	5.32	40.8
O	6.48	437	1.37	2.849	171	38.9	9.60	37.9	5.67	40.8
P	6.82	374.44		2.35						41.40
Q	6.5	442	1.326	2.928	8.2	37.7	9.4	37.6	5.4	42.2
R	6.41	434	1.32	2.89	173	38.3	8.74	37.4	5.49	41.7
S	6.23	432	1.40	2.87	172	39.6	9.29	36.8	5.72	41.4
T		439					9.10	37.4		
U	6.27	441		2.85	171					39.9
V	6.37	441	1.34	2.88	175.7	37.7	9.56	38.1	5.62	41.04
W	6.4	441	1.36	2.96	178	38.7	9.57	38.5	5.82	41.055
X	6.66	436	1.42	2.915	177.87	40.90	9.60	37.5	5.44	40.15
Y	6.60	403.6	1.37	2.904		40.57	8.76			40.2
Z	6.3	436	1.33	2.80	170.8	38.25	9.21	35.9	5.67	40.97
AA	6.55	445	1.35	2.79	170	38.3	9.48	37.5	5.90	41.0
AB	6.3	450	1.38	2.91	175.8	38.4	10.1	36.2	5.46	40.8
AC	6.2	438	1.350	2.85		36.3	8.8	36.1	5.2	
AD	6.34	434	1.31	2.86	175	37.4	9.16	35.5	5.50	40.9
AE	6.62	435	1.38	2.88	173	39.6	9.47	37.7	5.37	41.5
AF	6.3	437	1.35	2.85	171	38.8	9.33	37.2	5.62	42.3
AG	6.6	437	1.31	2.834	169.8	37.3	9.2	36.2	5.5	40.4
AH										40.31
AI		440	1.36	2.87	175	39.3	9.28	37.6	5.6	40.9
AJ	6.28	434	1.33	2.88	172.7	37.96	9.38	37.40	5.47	40.46
AK		440	7.20			36.9	8.81	31.1	4.93	40.5
AL		353.91	1.363	2.91	174.2	38.89	9.54	36.95	5.62	40.54
AM										>30
AN		436.4	1.28	2.894	176.6	36.6	8.93	35.13	5.39	40.85
AO				2.90	176			37.9	5.66	
AP	6.58	442	1.22	2.89	173.26	35.01	8.48	35.19	4.98	39.73
AQ	6.2	441	7.4	2.82	172	39.7	8.8	34.0	5.3	42.3
AR	6.46	434	1.39	2.88	176	40.0	9.6	39.4	6.0	42.6
AS	6.554	427								33.5
AT										
AU	6.25	433	7.4	2.921	178.2	37.4	9.4	36.9	5.2	42.5

Measurement Uncertainties Sample N162A

	pH ±	Cond. ±	total-Hardn. ±	$K_{S\ 4.3}$ ±	HCO_3^- ±	Ca^{2+} ±	Mg^{2+} ±	Na^+ ±	K^+ ±	NO_3^- ±
Unit		µS/cm	mmol/L	mmol/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Target value		2	0.014	0.03	1.7	0.6	0.11	0.3	0.04	0.8
IFA result	0.20	6	0.06	0.12	7	1.9	0.5	1.6	0.3	2.2
Stability test										
A										
B	0.30	13	0.11	0.12	7	2.0	0.58	1.5	0.46	2.4
C	0.15	19.4		0.20		6.2	1.0	3.3	0.5	5.8
D						8.2	1.82	5.9	1.32	
E	0.34	1.6	0.03	0.11	6.71	2.709	0.829	0.668	0.185	2.673
F	0.06	9.2	0.11	0.13	7.9	2.0	0.58	2.8	0.20	1.9
G	0.1	10	0.28	0.57		7.9	1.9	5.8	1.1	4.1
H	0.02	30	0.05	0.02		0.6	0.6	0.3	0.06	0.5
I	0.66	26.6	0.58	0.273	16.3	2.39	1.14	2.27	0.54	4.43
J										2.5
K	0.26	17	0.23	0.12	7	6.7	1.7	7	0.99	3.5
L	0.25	10	0.05	0.06	3.6	1.49	0.44	1.78	0.36	2.77
M	0.2		0.02	0.04	1.4	1.65	0.58	1.81	0.29	0.2
N	0.40	40	0.13	0.15	6.10	3.62	0.88	2.59	0.72	2.7
O	0.1	9	0.29	0.285	17	6.6	1.15	3.4	0.57	7.3
P										
Q	0.1	25	0.176			5.03	1.24	6.65	0.89	3.56
R	0.0641	0.345	0.00841	0.107	3.47	0.301	0.0921	0.752	0.872	0.308
S	0.22	11	0.14	0.13	8	2.5	0.73	3.0	0.46	2.8
T		11					0.50	3.7		
U	0.008	3.12		0.08	2.47					2.73
V	0.1	10	0.13	0.29	18	7.6	1.9	5.7	1.1	4.1
W	0.19	24.52	0.136	0.171	8.9	3.9	0.96	3.9	0.58	2.053
X	0.27	4	0.13	0.175	10.7	2.0	0.48	1.9	0.22	2.0
Y	0.05	0.275	0.06	0.06		0.82	1.53			0.482
Z	0.38	17.4		0.42	25.63	3.825	0.921	3.59	0.567	0.567
AA	0.66	45	0.3	0.3	17	8	2	8	1.2	6
AB	0.25	11	0.01	0.01	3.5	0.4	0.1	0.7	0.32	2.0
AC	0.032									
AD	0.032	13	0.11	0.14	8.4	1.7	0.75	2.5	0.40	1.3
AE	0.10	6.5	0.021	0.006	0.58	0.55	0.27	1.4	0.13	0.24
AF	0.3	18	0.1	0.2	7	4	1.2	6	0.8	3
AG	0.1	17	0.07	0.204	12.5	1.8	0.6	1.8	0.2	2.5
AH										4.03
AI		9	0.1	0.15	14	3.1	0.74	2.3	0.62	3.3
AJ										
AK		1.8	0.20			0.8	0.25	0.7	0.16	0.3
AL		17.70		0.15	8.71	2.33	0.57	2.22	0.34	4.05
AM										
AN		15.23	0.14	0.13	7.98	4.077	0.736	2.83	0.434	4.24
AO				0.02	1.1			1.7	0.33	
AP	0.1	4.51		0.29		3.5	0.85	3.5	0.49	3.9
AQ	0.2	40	0.7	0.2	17	4.0	0.9	3.4	0.5	4.2
AR	0.05	10	0.12	0.13	8	2.5	0.6	2.1	0.3	1.7
AS	0.28	37.2								0.603
AT										
AU	0.13	48				4.5	0.8	4.8	0.8	5.1

Results Sample N162A

	NO_2^-	NH_4^+	Cl^-	SO_4^{2-}	o-PO_4^{3-}	Boron	DOC	total-P (as PO_4^{3-})	$KMnO_4$-Index
Unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Target value	0.0404	<0.01	9.3	29.81	0.061	0.0707	4.72	0.107	4.62
IFA result	0.0400	<0.01	9.3	29.6	0.0630	0.066	4.71	0.127	4.60
Stability test	0.0402	<0.01			0.0623		4.71		4.82
A	0.056		9.29	29.7	0.051				
B	0.0433	<0.008	9.14	29.0	0.061	0.074	4.66	0.108	
C	0.0421	<0.01	9.88	29.7	0.059	0.068	4.714	0.096	4.80
D				33.0		0.0466			4.78
E	0.0215	0.0137	8.044	26.872	<0.05	0.0366	5.255	0.077	
F	0.0420	<0.01	9.2	30.0	0.070		4.32	0.083	4.43
G	0.0408	<0.02	9.2	29.1		0.0706			4.34
H	0.0360	<0.030	9.50	30.27			4.60		
I	0.0423	<0.04	9.7	30.6	0.060	0.066	4.64	0.114	
J	0.0390		8.672	28.437					
K	0.0398	0.0150	8.74	28.1	0.067	0.069	4.71	0.102	5.46
L	0.0412	<0.0050	9.43	29.65			4.83		4.57
M	0.0311	<0.04	9.08	29.25		0.0714	4.582	0.124	
N	0.0383	<0.01	10.1	29.6	0.051	0.0565	4.52	0.112	4.44
O	0.0400	<0.010	9.2	29.5		0.067	5.03	0.130	
P			13.94	27.61	0.000			0.0900	
Q	0.0450	0.0300	9.5	28.1	0.071	0.070	4.60	0.0300	4.60
R		<0.01	9.42	29.9	0.0597	0.0714	5.07	0.110	4.58
S	0.0404	<0.003	9.02	29.6	0.0696	0.0731	4.62	0.107	4.60
T									
U	0.0417	<0.005	9.23		0.0615			0.108	
V	0.0418	<0.010	9.18	29.31	0.0632	0.0709	4.83	0.1040	
W	0.0410	<0.01	9.142	29.373	0.0610	0.073	4.879	0.106	3.99
X	0.0400	<0.01	8.81	29.32	0.060	0.077	4.57	0.1088	
Y			9.39	30.0					5.69
Z	0.0430	<0.005	9.27	31.91	0.055	0.075	5.0	0.113	4.44
AA	0.0268	<0.01	8.88	29.0	<0.1	0.0648	4.58	0.110	4.30
AB	0.0440	<0.01	9.0	29.9	0.058		4.97	0.107	4.91
AC					<0.2	0.072			
AD	0.0405	<0.01	9.31	29.0	0.0657	0.0694	4.84	0.115	4.50
AE	0.0446	<0.010	9.55	30.2	0.0613	0.0725	4.36	0.114	4.56
AF	0.0410	<0.013	9.78	30.4	0.060		4.74	0.108	
AG	0.0400	<0.010	9.73	29.4	0.071	0.071	4.94	0.0995	n.a
AH			9.17	29.78					
AI	0.0420	<0.020	9.03	29.8	0.071		4.66	0.097	20.1
AJ	0.0365	<0.05	9.36	29.40	0.0529	0.0701	4.94		5.20
AK			9.30	29.6		0.095			
AL	0.0410	<0.02	9.59	29.45	0.0690	n.u.	n.u.	0.1032	n.u.
AM		<0.01			0.0511			0.1180	
AN	0.04145	0.00350	9.49	29.84	0.0181				
AO					0.066	0.070			
AP	0.0410	<0.009	9.06	28.96	0.060	0.0769	4.97	0.101	
AQ	0.0453	<0.01	8.74	30.8					4.51
AR	0.0399	<0.02	9.0	31.3	0.061		4.79	0.102	5.1
AS	0.00450	0.0150		68	0.95				
AT									
AU	0.0420	<0.005	8.9	29.6	0.061	0.065	5.1	0.104	4.30

Measurement Uncertainties Sample N162A

	NO_2^- ±	NH_4^+ ±	Cl^- ±	SO_4^{2-} ±	o-PO_4^{3-} ±	Boron ±	DOC ±	total-P (as PO_4^{3-}) ±	$KMnO_4$-Index ±
Unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Target value	0.0010		0.2	0.18	0.002	0.0011	0.05	0.002	0.16
IFA result	0.0020		0.4	0.8	0.0013	0.005	0.09	0.019	0.68
Stability test	0.0020				0.0013		0.09		0.72
A									
B	0.004		0.46	1.8	0.004	0.008	0.42	0.008	
C	0.006		1.4	2.4	0.02	0.002	0.56	0.0084	
D				2.5		0.0093			0.58
E	0.004	0.004	0.811	0.826	0.00	0.0028	0.035	0.018	
F	0.0062		0.73	1.8	0.0060		0.72	0.011	0.28
G	0.01		1.0	2.9		0.018			0.87
H	0.015	0.080	0.25	3.0			0.03		
I	0.00423		0.87	2.75	0.0060	0.0092	0.278	0.0114	
J	0.004		1.29	4.2					
K	0.004	0.001	0.78	2.5	0.006	0.01	0.42	0.004	0.49
L	0.003		0.44	1.48			0.84		0.97
M	0.001	0.003	0.1	0.1		0.001	0.05	0.013	
N	0.002	0.0009	0.5	2.6	0.004	0.0042	0.27	0.01	0.95
O	0.0060		0.9	4.7		0.006	0.55	0.040	
P									
Q	0.005	0.010	0.79	1.81	0.020	0.001	0.86	0.005	1.6
R			0.105	0.268	0.00288	0.00085	0.0354	0.00085	
S	0.0057		0.64	1.6	0.0096	0.0101	0.82	0.016	0.73
T									
U	0.0042	0	0.09		0.0072			0.014	
V	0.0077		9.2	2.9	0.0131	0.018	0.48	0.0216	
W	0.004		0.457	1.469	0.006	0.007	0.976	0.011	0.519
X	0.002		0.4	1.2	0.0024	0.01	0.37	0.0218	
Y			1.074	7.4					0.588
Z	0.0034		0.464	1.596	0.0066	0.009	0.40	0.017	0.71
AA	0.004		1.3	4.4		0.013	1.4	0.022	1
AB	0.0044		0.5	0.9	0.007		0.75	0.006	0.59
AC									
AD	0.0041		0.62	1.0	0.005	0.0086	0.77	0.0079	0.68
AE	0.001		0.050	0.12	0.002	0.003	0.028	0.005	0.020
AF	0.003		0.6	3	0.006		0.7	0.01	
AG	0.0048		0.98	2.8	0.010	0.007	0.94	0.0169	
AH			0.92	2.98					
AI	0.005		0.99	1.8	0.006		0.56	0.009	1.407
AJ									
AK			0.1	0.1		0.002			
AL	0.0041		0.96	2.95	0.0104			0.0155	
AM					0.0035			0.0043	
AN	0.0041	0.00073	0.902	3.402	0.0076				
AO					0.005	0.005			
AP	0.004		0.9	2.8	0.006	0.0077	0.5	0.010	
AQ	0.005		0.9	3.1					0.70
AR	0.0029		0.5	1.2	0.006		0.60	0.022	0.7
AS	0.00038	0.00540		3.74	0.134				
AT									
AU	0.007		0.9	2.4	0.007	0.008	0.6	0.008	0.7

Results Sample N162B

	pH	Cond.	total-Hardn.	$K_{S\ 4.3}$	HCO_3^-	Ca^{2+}	Mg^{2+}	Na^+	K^+	NO_3^-
Unit		µS/cm	mmol/L	mmol/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Target value		522	1.785	1.91	113.3	47.9	14.32	30.9	4.26	30.9
IFA result	6.33	525	1.90	1.86	111	52	14.4	30.7	4.40	30.3
Stability test										
A	6.04	525				58.0	16.4	31.5	3.90	30.7
B	6.35	524	1.83	1.89	112	48.7	14.9	30.8	4.32	29.5
C	6.18	519	1.84	1.87	111	50.1	14.3	30.7	4.21	31.3
D						51.0	13.9	24.2	5.16	
E	6.39	535.3	9.65	1.965	119.87	53.411	13.644	32.438	4.217	30.00
F	6.04	506	1.77	1.88	115	47.6	14.1	30.3	4.25	29.8
G	6.11	525	1.78	1.86		46.8	14.8	31.6	4.38	30.3
H	6.20	511	1.844	1.90		49.42	14.85	31.15	4.28	30.95
I	6.3	529	10.2	1.86	111	49.2	14.5	29.6	4.14	31.5
J										30.152
K	6.33	520	1.73	1.91	113	46.3	14.0	32.0	4.16	29.1
L	6.12	522	1.762	1.87	110.98	47.27	14.17	30.33	4.27	31.16
M	6.13		1.80	1.886	93.98	48.50	14.30	30.30	4.44	29.86
N	6.20	518	1.77	1.99	118.37	46.9	14.7	30.4	4.09	31.0
O	6.24	523	1.82	1.855	110	48.7	14.7	30.8	4.34	30.4
P	6.39	451.28		1.56						30.62
Q	6.3	527	1.759	1.905	5.3	46.8	14.4	30.8	4.10	31.9
R	6.24	518	1.75	1.88	111	47.6	13.6	30.1	4.12	31.2
S	5.98	522	1.80	1.83	109	49.0	14.1	30.7	4.31	30.6
T		524					14.0	29.6		
U	6.07	527		1.84	110					29.9
V	6.19	526	1.77	1.87	111.1	46.9	14.6	31.5	4.25	30.25
W	6.56	523	1.79	1.839	109	48.1	14.3	31.9	4.43	30.587
X	6.45	520	1.84	1.896	115.7	49.9	14.6	30.7	4.13	30.1
Y	6.33	478.5	1.85	1.876		50.94	14.08			30.4
Z	6.10	522	1.77	1.84	112	47.6	14.3	30.1	4.32	30.8
AA	6.30	529	1.82	1.82	112	48.3	14.8	31.3	4.60	30.8
AB	6.1	539	1.81	1.90	113.9	47.5	15.2	30.3	4.21	30.2
AC	6.0	520	1.795	1.86		45.2	8.5	30.3	5.2	
AD	6.13	518	1.75	1.86	113	46.8	14.0	28.9	4.12	30.2
AE	6.47	520	1.85	1.88	112	49.5	15.1	31.8	4.35	31.0
AF	6.1	522	1.80	1.84	109	48.2	14.4	30.7	4.23	31.5
AG	6.4	521	1.77	1.838	109.1	47.6	14.0	29.7	4.32	29.4
AH										30.88
AI		520	1.83	1.85	113	49.2	14.6	32.0	4.28	33.24
AJ	6.09	530	1.79	1.87	111.1	47.68	14.55	30.76	4.27	30.29
AK		523	9.58			46.7	13.2	25.7	3.89	30.6
AL		422.29	1.822	1.89	112.5	48.68	14.77	30.28	4.38	30.25
AM										>30
AN		523.4	1.70	1.909	116.5	45.57	13.67	28.87	4.09	30.38
AO				1.89	114			31.2	4.40	
AP	6.19	525	1.68	1.90	112.86	45.35	13.42	29.38	3.91	30.16
AQ	6.3	522	9.7	1.85	113	48.7	13.5	27.0	3.90	31.8
AR	6.33	519	1.84	1.850	113	49.2	14.8	31.7	4.56	30.7
AS	6.329	511								57.0
AT										
AU	6.05	515	9.9	1.894	115.5	46.8	14.3	30.5	3.95	28.5

Measurement Uncertainties Sample N162B

	pH ±	Cond. ±	total-Hardn.±	$K_{S\ 4.3}$ ±	HCO_3^- ±	Ca^{2+} ±	Mg^{2+} ±	Na^+ ±	K^+ ±	NO_3^- ±
Unit		µS/cm	mmol/L	mmol/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Target value		2	0.017	0.03	1.5	0.7	0.11	0.3	0.03	0.6
IFA result	0.20	7	0.07	0.08	4	2	0.8	1.4	0.25	1.6
Stability test										
A										
B	0.30	16	0.15	0.08	5	2.4	0.9	1.2	0.35	1.8
C	0.15	23.4		0.13		7.8	1.5	2.6	0.4	4.4
D						10.2	2.8	4.8	1.03	
E	0.29	0.20	0.07	0.145	8	3.393	0.717	0.548	0.167	1.578
F	0.06	11	0.14	0.08	5.2	2.5	0.89	2.3	0.15	1.4
G	0.1	10	0.36	0.37		9.4	3.0	6.3	0.85	3.0
H	0.02	30	0.05	0.02		0.6	0.6	0.3	0.06	0.5
I	0.63	31.7	0.77	0.177	10.5	2.95	1.74	1.92	0.414	3.31
J										1.8
K	0.25	21	0.31	0.08	4.5	8.3	2.5	5.8	0.75	2.6
L	0.24	11	0.07	0.04	2.3	1.84	0.67	1.46	0.27	2.09
M	0.2		0.02	0.03	1.2	2.06	0.88	1.51	0.22	0.2
N	0.38	48	0.17	0.10	3.05	4.41	1.35	2.12	0.56	2.1
O	0.10	10	0.38	0.186	11	8.3	1.8	2.8	0.43	5.5
P										
Q	0.1	29.8	0.234			6.24	1.9	5.45	0.68	2.69
R	0.0624	0.226	0.0134	0.0865	2.23	0.314	0.264	0.746	0.891	0.270
S	0.22	13	0.18	0.08	5	3.1	1.1	2.5	0.34	2.1
T		13					0.8	3.0		
U	0.008	3.73		0.05	1.59					2.05
V	0.1	10	0.18	0.19	11	9.4	2.9	6.3	0.90	3.0
W	0.19	29.08	0.179	0.106	5.45	4.8	1.4	3.2	0.44	1.529
X	0.26	5	0.17	0.114	6.9	2.5	0.7	1.5	0.17	1.5
Y	0.05	0.275	0.06	0.06		0.82	1.53			0.482
Z	0.37	20.9		0.276	16.8	4.76	1.43	3.01	0.432	1.23
AA	0.63	53	0.4	0.2	11	10	3	7	1	5
AB	0.25	13	0.02	0.01	2.3	0.5	0.2	0.6	0.25	1.5
AC										
AD	0.031	16	0.14	0.089	5.4	2.1	1.1	2.1	0.30	1.0
AE	0.10	7.8	0.021	0.006	0.58	0.65	0.44	0.93	0.11	0.14
AF	0.3	21	0.1	0.1	5	4	1.8	5	0.6	3
AG	0.1	21	0.09	0.142	8.7	2.3	0.9	1.5	0.20	1.8
AH										3.09
AI		10	0.1	0.10	9	3.9	1.2	1.9	0.47	2.7
AJ										
AK		1.8	0.41			1.5	0.4	0.8	0.10	0.3
AL		21.11		0.09	5.63	2.92	0.89	1.82	0.26	3.03
AM										
AN		18.27	0.19	0.086	5.27	5.076	1.1	2.327	0.33	3.15
AO				0.01	0.7			1.4	0.26	
AP	0.1	4.51		0.19		4.5	1.3	2.9	0.39	3.0
AQ	0.2	50	0.9	0.19	11	4.9	1.4	2.7	0.40	3.2
AR	0.05	11	0.16	0.082	5	3.1	0.8	1.7	0.19	1.2
AS	0.27	44.5								1.03
AT										
AU	0.12	57				5.6	1.3	4.0	0.6	3.4

Results Sample N162B

	NO_2^-	NH_4^+	Cl^-	SO_4^{2-}	o-PO_4^{3-}	Boron	DOC	total-P (as PO_4^{3-})	$KMnO_4$-Index
Unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Target value	0.0936	0.058	52.2	55.4	<0.009	0.1092	3.98	<0.009	2.93
IFA result	0.092	0.059	50.7	54.9	<0.009	0.100	3.92	<0.009	2.81
Stability test	0.092	0.058			<0.009		3.92		3.13
A	0.059	0.0220	52.1	55.8					
B	0.096	0.060	51.0	53.4	<0.006	0.118	3.93	<0.006	
C	0.0972	0.065	52.3	57.7	<0.01	0.107	4.014	<0.03	2.80
D				58		0.0788			3.07
E	0.0586	0.0102	52.362	53.125	<0.05	0.0564	4.29	<0.05	
F	0.095	0.0370	52	54	<0.01		3.81	<0.01	2.89
G	0.1385	0.0558	51.1	55.4		0.107			2.86
H	0.0817	0.0595	52.76	57.68			4.03		
I	0.096	0.069	54.1	56.0	<0.06	0.109	3.87	<0.06	
J	0.082		52.698	54.402					
K	0.091	0.077	49.9	53.0	<0.01	0.105	4.01	<0.05	2.84
L	0.0962	0.0575	52.46	55.23			3.91		2.99
M	0.085	0.0575	51.87	54.06		0.1149	3.88	0.0122	
N	0.0913	0.0513	52.3	54.2	<0.002	0.088	3.78	<0.01	2.74
O	0.099	0.063	51.4	54.6		0.106	4.19	<0.03	
P			66.94	56.40	0.000			0.000	
Q	0.100	0.070	51.9	52.9	<0.03	0.101	3.80	<0.005	3.20
R		0.0640	52.9	56.0	[0.004]	0.112	4.19	<0.0150	3.19
S	0.0901	0.0531	53.8	55.3	0.00889	0.107	4.39	<0.005	2.88
T									
U	0.0964	0.0699	57.5		<0.006			<0.006	
V	0.0946	0.0558	51.07	55.37	<0.015	0.108	4.20	<0.015	
W	0.092	0.063	51.420	54.567	<0.01	0.110	4.021	<0.01	2.75
X	0.095	0.056	51.7	55.1	<0.015	0.114	3.847	<0.03	
Y			54.8	59.0					3.78
Z	0.095	0.059	52.5	57.5	0.0090	0.117	4.20	<0.015	2.73
AA	0.0778	0.0575	51.0	52.0	<0.1	0.100	3.90	<0.031	2.80
AB	0.099	0.0480	52	57	<0.003		4.27	0.0060	2.92
AC					<0.2	0.071			
AD	0.0955	0.0575	53.0	55.6	<0.015	0.107	4.04	<0.015	2.86
AE	0.0971	0.0544	51.6	54.5	<0.015	0.114	3.62	<0.015	2.74
AF	0.095	0.059	53.0	56.2	<0.01		3.95	<0.013	
AG	0.0891	0.067	51.9	54.6	<0.010	0.112	4.15	<0.010	
AH			51.97	55.66					
AI	0.096	0.063	44.6	58	<0.003		3.95	<0.003	12.7
AJ	0.0884	0.0548	52.17	53.90	<0.01	0.1096	4.08		3.21
AK			51.4	55.1		0.115			
AL	0.0930	0.060	53.01	55.00	<0.0153	n.u.	n.u.	<0.0307	n.u
AM		0.0579			<0.019			<0.02	
AN	0.0920	0.063	51.66	55.38	<0.0200				
AO					<0.010	0.108			
AP	0.095	0.064	51.06	53.62	<0.0018	0.118	4.20	<0.0036	
AQ	0.101	0.054	54.9	58.4					3.04
AR	0.092	0.051	54	58	<0.01		3.87	<0.01	3.20
AS	0.0170	0.0400		28.5	0.0400				
AT									
AU	0.093	0.054	48.0	50.9	<0.003	0.101	4.34	<0.003	2.80

Measurement Uncertainties Sample N162B

	NO_2^- ±	NH_4^+ ±	Cl^- ±	SO_4^{2-} ±	o-PO_4^{3-} ±	Boron ±	DOC ±	total-P (as PO_4^{3-}) ±	$KMnO_4$-Index ±
Unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Target value	0.0008	0.004	0.8	0.3		0.0007	0.05		0.08
IFA result	0.005	0.002	1.9	1.3		0.008	0.09		0.42
Stability test	0.005	0.002					0.09		0.47
A									
B	0.008	0.006	2.6	3.2		0.012	0.35		
C	0.01	0.011	7.4	4.7			0.48		
D				4.5		0.0158			0.37
E	0.094	0.0136	0.185	0.749	0.0	0.0028	0.052	0.00	
F	0.0139	0.0027	4.1	3.3			0.64		0.18
G	0.035	0.014	5.1	5.5		0.027			0.57
H	0.015	0.080	0.25	3.0			0.03		
I	0.0096	0.0069	4.87	5.04		0.0153	0.232		
J	0.009		7.9	8.1					
K	0.008	0.007	4.5	4.8		0.02	0.36		0.26
L	0.007	0.009	2.47	2.76			0.68		0.63
M	0.001	0.004	0.8	0.8		0.01	0.04	0.0013	
N	0.004	0.004	2.8	4.7	0.0002	0.0066	0.23	0.001	0.59
O	0.014	0.010	5.1	8.7		0.010	0.46		
P									
Q	0.011	0.020	4.33	3.41		0.002	0.71		1.11
R		0.00072	0.719	0.539		0.00090	0.0345		
S	0.0128	0.0091	3.8	3.0	0.00123	0.015	0.77		0.46
T									
U	0.0096	0.0105	0.58		0			0	
V	0.0174	0.0090	5.1	5.5		0.027	0.42		
W	0.009	0.006	2.571	2.728		0.011	0.804		0.358
X	0.004	0.008	2.6	2.2		0.02	0.31		
Y			1.074	7.4					0.588
Z	0.0076	0.0059	2.62	2.87	0.0011	0.014	0.34		0.437
AA	0.012	0.02	8	8		0.02	1.2		1
AB	0.010	0.0029	3	2			0.64	0.0004	0.35
AC									
AD	0.01	0.004	3.6	1.8		0.013	0.65		0.43
AE	0.002	0.003	0.24	0.23		0.005	0.014		0.014
AF	0.007	0.007	4	4			0.6		
AG	0.0082	0.012	4.1	0.14		0.011	0.81		
AH			5.20	5.57					
AI	0.012	0.014	3.6	3.5			0.47		0.889
AJ									
AK			0.8	0.3		0.011			
AL	0.0093	0.009	5.30	5.50					
AM		0.0036							
AN	0.0091	0.0013	4.91	6.313	0.0076				
AO						0.008			
AP	0.009	0.006	5.1	5.3		0.012	0.4		
AQ	0.01	0.005	5.5	5.8					0.5
AR	0.007	0.007	3	3			0.48		0.43
AS	0.00145	0.144		1.57	0.00564				
AT									
AU	0.015	0.016	4.8	4.1		0.013	0.5		0.5

z- Scores Sample N162A

	Cond.	total-Hardn.	$K_{S\ 4.3}$	HCO_3^-	Ca^{2+}	Mg^{2+}	Na^+	K^+	NO_3^-
A	0.57				6.66	2.49	0.75	-1.70	0.00
B	0.57	0.77	-0.68	-0.66	0.31	1.07	-0.25	0.37	-1.59
C	-0.95	0.51	-0.51	-0.43	0.70	0.12	0.33	0.32	-0.23
D					1.96	-0.75	-6.88	4.02	
E	-0.78	151.47	0.68	1.27	2.07	-1.64	1.62	-0.02	-0.22
F	-2.10	-0.51	-0.68	0.05	-0.23	-0.41	-0.25	0.00	-1.82
G	0.57	0.77	-1.02		0.70	0.84	0.66	0.08	-0.30
H	-1.14	0.59	-0.17		0.70	0.09	0.38	0.24	0.08
I	1.33	164.75	-1.02	-0.90	0.86	0.46	-2.32	-0.81	0.68
J									-0.54
K	0.00	-1.28	-0.17	-0.19	-1.25	-0.49	0.83	-0.45	-1.66
L	0.19	-0.38	-0.85	-0.77	-0.41	-0.12	-0.49	0.08	0.05
M		0.26	-0.46	-7.37	0.10	0.23	-1.17	0.61	-1.44
N	-0.38	-0.51	2.05	1.72	-0.86	0.41	-0.66	-1.14	-0.38
O	0.00	0.51	-1.38	-1.14	0.16	0.75	0.17	0.28	-0.38
P	-11.93		-9.90						0.08
Q	0.95	-0.61	-0.03	-39.72	-0.78	0.17	-0.08	-0.81	0.68
R	-0.57	-0.77	-0.68	-0.66	-0.31	-1.74	-0.25	-0.45	0.30
S	-0.95	1.28	-1.02	-0.90	0.70	-0.14	-0.75	0.49	0.08
T	0.38					-0.69	-0.25		
U	0.76		-1.37	-1.14					-1.06
V	0.76	-0.26	-0.85	-0.02	-0.78	0.64	0.33	0.08	-0.20
W	0.76	0.26	0.51	0.52	0.00	0.67	0.66	0.89	-0.19
X	-0.19	1.79	-0.26	0.49	1.72	0.75	-0.17	-0.65	-0.87
Y	-6.37	0.51	-0.44		1.46	-1.68			-0.83
Z	-0.19	-0.51	-2.22	-1.19	-0.35	-0.38	-1.49	0.28	-0.25
AA	1.53	0.00	-2.39	-1.37	-0.31	0.41	-0.17	1.22	-0.23
AB	2.48	0.77	-0.34	0.00	-0.23	2.20	-1.24	-0.57	-0.38
AC	0.19	0.00	-1.37		-1.88	-1.56	-1.33	-1.62	
AD	-0.57	-1.02	-1.19	-0.19	-1.02	-0.52	-1.82	-0.41	-0.30
AE	-0.38	0.77	-0.85	-0.66	0.70	0.38	0.00	-0.93	0.15
AF	0.00	0.00	-1.37	-1.14	0.08	-0.03	-0.41	0.08	0.76
AG	0.00	-1.02	-1.64	-1.42	-1.10	-0.41	-1.24	-0.41	-0.68
AH									-0.75
AI	0.57	0.26	-1.02	-0.19	0.47	-0.17	-0.08	0.00	-0.30
AJ	-0.57	-0.51	-0.85	-0.73	-0.58	0.12	-0.25	-0.53	-0.64
AK	0.57	149.43			-1.41	-1.53	-5.47	-2.72	-0.61
AL	-15.84	0.33	-0.34	-0.38	0.15	0.58	-0.62	0.08	-0.58
AM									
AN	-0.11	-1.79	-0.61	0.19	-1.64	-1.19	-2.13	-0.85	-0.34
AO			-0.51	0.05			0.17	0.24	
AP	0.95	-3.32	-0.68	-0.60	-2.89	-2.49	-2.08	-2.52	-1.19
AQ	0.76	154.53	-1.88	-0.90	0.78	-1.56	-3.07	-1.22	0.76
AR	-0.57	1.02	-0.85	0.05	1.02	0.75	1.41	1.62	0.98
AS	-1.91								-5.90
AT									
AU	-0.76	154.53	-0.15	0.57	-1.02	0.17	-0.66	-1.62	0.91

z-Scores Sample N162A

	NO_2^-	NH_4^+	Cl^-	SO_4^{2-}	o-PO_4^{3-}	Boron	DOC	total-P (as PO_4^{3-})	$KMnO_4$-Index
A	6.90		-0.04	-0.12	-1.64				
B	1.28		-0.59	-0.88	0.00	0.62	-0.23	0.09	
C	0.75		2.15	-0.12	-0.33	-0.51	-0.02	-1.03	0.39
D				3.45		-4.55			0.35
E	-8.35		-4.66	-3.18		-6.43	2.02	-2.80	
F	0.71		-0.37	0.21	1.48		-1.51	-2.24	-0.41
G	0.18		-0.37	-0.77		-0.02			-0.61
H	-1.94		0.74	0.50			-0.45		
I	0.84		1.48	0.85	-0.16	-0.89	-0.30	0.65	
J	-0.62		-2.33	-1.49					
K	-0.27		-2.08	-1.85	0.98	-0.32	-0.04	-0.47	1.82
L	0.35		0.48	-0.17			0.42		-0.11
M	-4.11		-0.82	-0.61		0.13	-0.52	1.59	
N	-0.93		2.97	-0.23	-1.64	-2.68	-0.76	0.47	-0.39
O	-0.18		-0.37	-0.34		-0.70	1.17	2.15	
P			17.20	-2.38				-1.59	
Q	2.03		0.74	-1.85	1.64	-0.13	-0.45	-7.20	-0.04
R			0.44	0.10	-0.21	0.13	1.32	0.28	-0.09
S	0.00		-1.04	-0.23	1.41	0.45	-0.38	0.00	-0.04
T									
U	0.57		-0.26		0.08			0.09	
V	0.62		-0.44	-0.54	0.36	0.04	0.42	-0.28	
W	0.27		-0.59	-0.47	0.00	0.43	0.60	-0.09	-1.36
X	-0.18		-1.82	-0.53	-0.16	1.19	-0.57	0.17	
Y			0.33	0.21					2.32
Z	1.15		-0.11	2.27	-0.98	0.81	1.06	0.56	-0.39
AA	-6.01		-1.56	-0.88		-1.11	-0.53	0.28	-0.69
AB	1.59		-1.11	0.10	-0.49		0.95	0.00	0.63
AC						0.25			
AD	0.04		0.04	-0.88	0.77	-0.25	0.45	0.75	-0.26
AE	1.86		0.93	0.42	0.05	0.34	-1.36	0.65	-0.13
AF	0.27		1.78	0.64	-0.16		0.08	0.09	
AG	-0.18		1.59	-0.44	1.64	0.06	0.83	-0.70	
AH			-0.48	-0.03					
AI	0.71		-1.00	-0.01	1.64		-0.23	-0.93	33.51
AJ	-1.72		0.22	-0.44	-1.33	-0.11	0.83		1.26
AK			0.00	-0.23		4.58			
AL	0.27		1.08	-0.39	1.31			-0.36	
AM					-1.62			1.03	
AN	0.46		0.70	0.03	-7.03				
AO					0.82	-0.13			
AP	0.27		-0.89	-0.92	-0.16	1.17	0.95	-0.56	
AQ	2.17		-2.08	1.07					-0.24
AR	-0.22		-1.11	1.61	0.00		0.26	-0.47	1.04
AS	-15.87			41.33	145.74				
AT									
AU	0.71		-1.48	-0.23	0.00	-1.07	1.44	-0.28	-0.69

z-Scores Sample N162B

	Cond.	total-Hardn.	$K_{S\ 4.3}$	HCO_3^-	Ca^{2+}	Mg^{2+}	Na^+	K^+	NO_3^-
A	0.48				6.39	3.93	0.61	-1.92	-0.20
B	0.32	0.87	-0.52	-0.48	0.51	1.09	-0.10	0.32	-1.42
C	-0.48	1.06	-1.05	-0.85	1.39	-0.04	-0.20	-0.27	0.40
D					1.96	-0.79	-6.78	4.80	
E	2.12	151.94	1.44	2.42	3.49	-1.28	1.56	-0.23	-0.91
F	-2.55	-0.29	-0.79	0.63	-0.19	-0.42	-0.61	-0.05	-1.11
G	0.48	-0.10	-1.31		-0.70	0.91	0.71	0.64	-0.61
H	-1.76	1.14	-0.26		0.96	1.00	0.25	0.11	0.05
I	1.12	162.56	-1.31	-0.85	0.82	0.34	-1.31	-0.64	0.61
J									-0.76
K	-0.32	-1.06	0.00	-0.11	-1.01	-0.60	1.11	-0.53	-1.82
L	0.00	-0.44	-1.05	-0.85	-0.40	-0.28	-0.58	0.05	0.26
M		0.29	-0.63	-7.11	0.38	-0.04	-0.61	0.96	-1.05
N	-0.64	-0.29	2.09	1.86	-0.63	0.72	-0.51	-0.91	0.10
O	0.16	0.68	-1.44	-1.21	0.51	0.72	-0.10	0.43	-0.51
P	-11.29		-9.16						-0.28
Q	0.80	-0.50	-0.13	-39.72	-0.70	0.15	-0.10	-0.85	1.01
R	-0.64	-0.68	-0.79	-0.85	-0.19	-1.36	-0.81	-0.75	0.30
S	0.00	0.29	-2.09	-1.58	0.70	-0.42	-0.20	0.27	-0.30
T	0.32					-0.60	-1.31		
U	0.80		-1.83	-1.21					-1.01
V	0.64	-0.29	-1.05	-0.81	-0.63	0.53	0.61	-0.05	-0.66
W	0.16	0.10	-1.86	-1.58	0.13	-0.04	1.01	0.91	-0.32
X	-0.32	1.06	-0.37	0.88	1.27	0.53	-0.20	-0.69	-0.81
Y	-6.94	1.26	-0.89		1.92	-0.45			-0.51
Z	0.00	-0.29	-1.83	-0.48	-0.19	-0.04	-0.81	0.32	-0.10
AA	1.12	0.68	-2.36	-0.48	0.25	0.91	0.40	1.81	-0.10
AB	2.71	0.48	-0.26	0.22	-0.25	1.66	-0.61	-0.27	-0.71
AC	-0.32	0.19	-1.31		-1.71	-10.98	-0.61	5.01	
AD	-0.64	-0.68	-1.31	-0.11	-0.70	-0.60	-2.02	-0.75	-0.71
AE	-0.32	1.26	-0.79	-0.48	1.01	1.47	0.91	0.48	0.10
AF	0.00	0.29	-1.83	-1.58	0.19	0.15	-0.20	-0.16	0.61
AG	-0.16	-0.29	-1.88	-1.54	-0.19	-0.60	-1.21	0.32	-1.52
AH									-0.02
AI	-0.32	0.87	-1.57	-0.11	0.82	0.53	1.11	0.11	2.37
AJ	1.28	0.10	-1.05	-0.81	-0.14	0.43	-0.14	0.05	-0.62
AK	0.16	150.58			-0.76	-2.11	-5.26	-1.97	-0.30
AL	-15.92	0.71	-0.52	-0.29	0.49	0.85	-0.63	0.64	-0.66
AM									
AN	0.22	-1.64	-0.03	1.18	-1.47	-1.23	-2.05	-0.91	-0.53
AO			-0.52	0.26			0.30	0.75	
AP	0.48	-2.03	-0.26	-0.16	-1.61	-1.70	-1.54	-1.87	-0.75
AQ	0.00	152.90	-1.57	-0.11	0.51	-1.55	-3.94	-1.92	0.91
AR	-0.48	1.06	-1.57	-0.11	0.82	0.91	0.81	1.60	-0.20
AS	-1.76								26.40
AT									
AU	-1.12	156.77	-0.42	0.81	-0.70	-0.04	-0.40	-1.65	-2.43

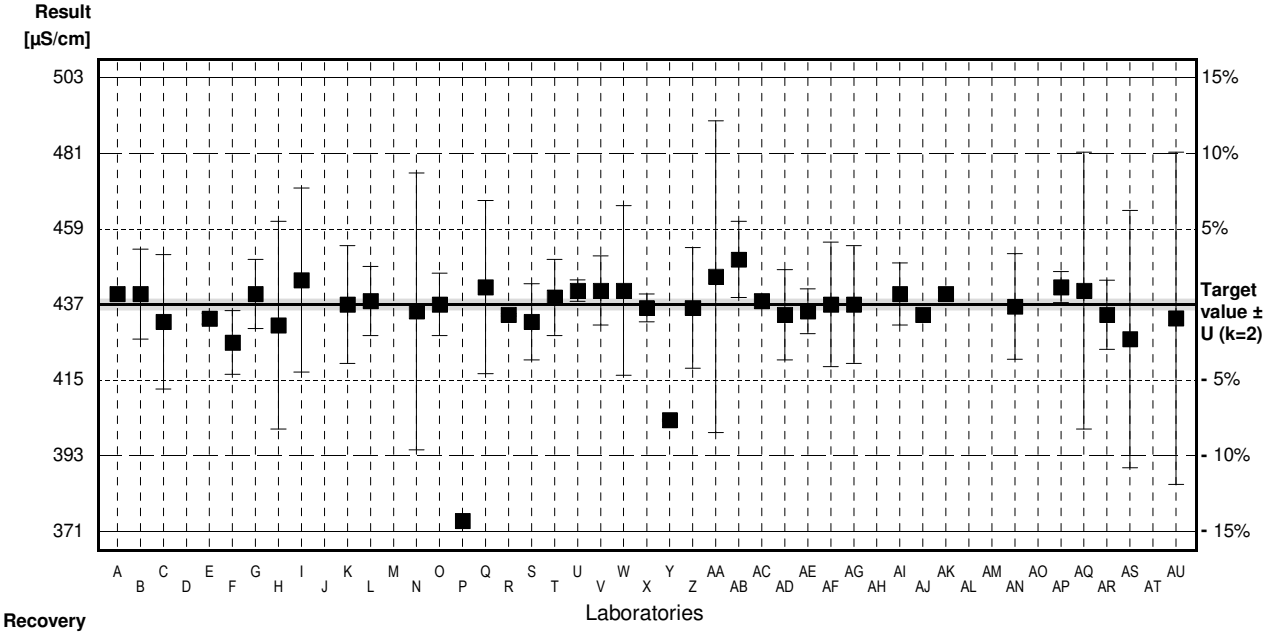
z-Scores Sample N162B

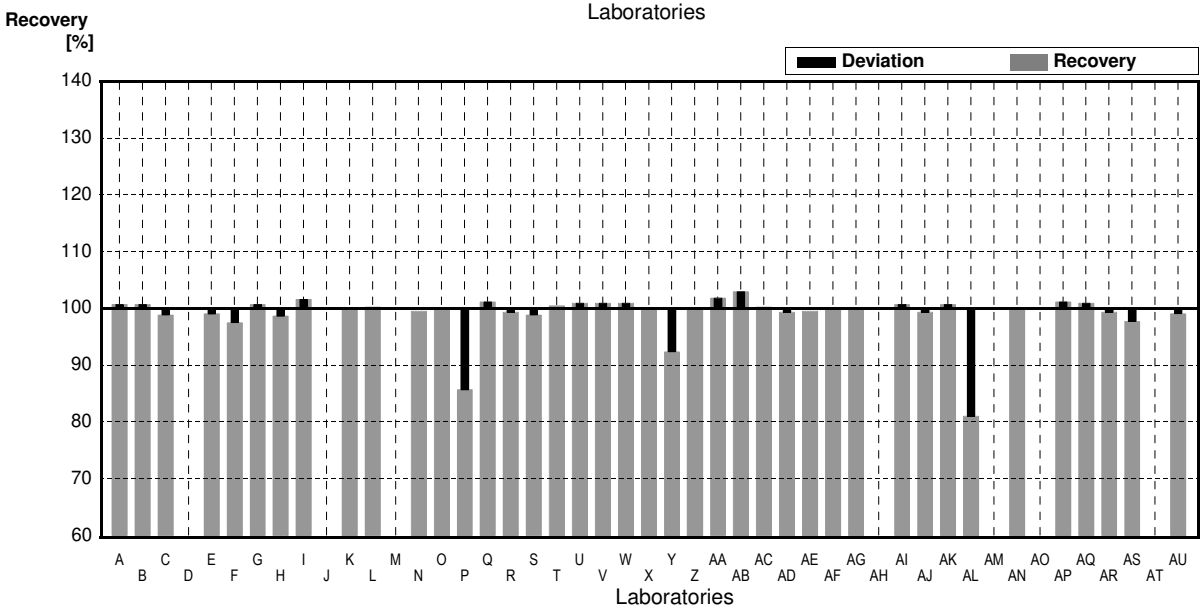
	NO_2^-	NH_4^+	Cl^-	SO_4^{2-}	o-PO_4^{3-}	Boron	DOC	total-P (as PO_4^{3-})	$KMnO_4$-Index
A	-6.60	-5.17	-0.07	0.23					
B	0.46	0.29	-0.79	-1.16		1.07	-0.22		
C	0.69	1.01	0.07	1.34		-0.27	0.15		-0.44
D				1.51		-3.71			0.48
E	-6.68	-6.87	0.11	-1.32		-6.45	1.39		
F	0.27	-3.02	-0.13	-0.82			-0.76		-0.14
G	8.57	-0.32	-0.73	0.00		-0.27			-0.24
H	-2.27	0.22	0.37	1.33			0.22		
I	0.46	1.58	1.26	0.35		-0.02	-0.49		
J	-2.21		0.33	-0.58					
K	-0.50	2.73	-1.52	-1.40		-0.51	0.13		-0.31
L	0.50	-0.07	0.17	-0.10			-0.31		0.20
M	-1.64	-0.07	-0.22	-0.78		0.70	-0.45		
N	-0.44	-0.96	0.07	-0.70		-2.59	-0.90		-0.65
O	1.03	0.72	-0.53	-0.47		-0.39	0.94		
P			9.74	0.58					
Q	1.22	1.72	-0.20	-1.46		-1.00	-0.81		0.92
R		0.86	0.46	0.35		0.34	0.94		0.89
S	-0.67	-0.70	1.06	-0.06		-0.27	1.84		-0.17
T									
U	0.53	1.71	3.50						
V	0.19	-0.32	-0.75	-0.02		-0.15	0.99		
W	-0.31	0.72	-0.52	-0.49		0.10	0.18		-0.61
X	0.27	-0.29	-0.33	-0.17		0.59	-0.60		
Y			1.72	2.10					2.90
Z	0.27	0.14	0.20	1.22		0.95	0.99		-0.68
AA	-3.01	-0.07	-0.79	-1.98		-1.12	-0.36		-0.44
AB	1.03	-1.44	-0.13	0.93			1.30		-0.03
AC						-4.66			
AD	0.36	-0.07	0.53	0.12		-0.27	0.27		-0.24
AE	0.67	-0.52	-0.40	-0.52		0.59	-1.62		-0.65
AF	0.27	0.14	0.53	0.47			-0.13		
AG	-0.86	1.29	-0.20	-0.47		0.34	0.76		
AH			-0.15	0.15					
AI	0.46	0.72	-5.02	1.51			-0.13		33.34
AJ	-0.99	-0.46	-0.02	-0.87		0.05	0.45		0.96
AK			-0.53	-0.17		0.71			
AL	-0.11	0.29	0.54	-0.23					
AM		-0.01							
AN	-0.31	0.72	-0.36	-0.01					
AO						-0.15			
AP	0.27	0.86	-0.75	-1.04		1.07	0.99		
AQ	1.41	-0.57	1.78	1.75					0.38
AR	-0.31	-1.01	1.19	1.51			-0.49		0.92
AS	-14.61	-2.59		-15.66					
AT									
AU	-0.11	-0.57	-2.77	-2.62		-1.00	1.62		-0.44

Sample N162A
Parameter Conductivity

Target value ± U (k=2)	437	µS/cm	±	2	µS/cm
IFA result ± U (k=2)	440	µS/cm	±	6	µS/cm
Stability test		µS/cm			

Lab Code	Result	±	Unit	Recovery	z-Score
A	440		µS/cm	101%	0.57
B	440	13	µS/cm	101%	0.57
C	432	19.4	µS/cm	99%	-0.95
D			µS/cm		
E	432.9	1.6	µS/cm	99%	-0.78
F	426	9.2	µS/cm	97%	-2.10
G	440	10	µS/cm	101%	0.57
H	431	30	µS/cm	99%	-1.14
I	444	26.6	µS/cm	102%	1.33
J			µS/cm		
K	437	17	µS/cm	100%	0.00
L	438	10	µS/cm	100%	0.19
M			µS/cm		
N	435	40	µS/cm	100%	-0.38
O	437	9	µS/cm	100%	0.00
P	374.44 *		µS/cm	86%	-11.93
Q	442	25	µS/cm	101%	0.95
R	434	0.345	µS/cm	99%	-0.57
S	432	11	µS/cm	99%	-0.95
T	439	11	µS/cm	100%	0.38
U	441	3.12	µS/cm	101%	0.76
V	441	10	µS/cm	101%	0.76
W	441	24.52	µS/cm	101%	0.76
X	436	4	µS/cm	100%	-0.19
Y	403.6 *	0.275	µS/cm	92%	-6.37
Z	436	17.4	µS/cm	100%	-0.19
AA	445	45	µS/cm	102%	1.53
AB	450	11	µS/cm	103%	2.48
AC	438		µS/cm	100%	0.19
AD	434	13	µS/cm	99%	-0.57
AE	435	6.5	µS/cm	100%	-0.38
AF	437	18	µS/cm	100%	0.00
AG	437	17	µS/cm	100%	0.00
AH			µS/cm		
AI	440	9	µS/cm	101%	0.57
AJ	434		µS/cm	99%	-0.57
AK	440	1.8	µS/cm	101%	0.57
AL	353.91 *	17.70	µS/cm	81%	-15.84
AM			µS/cm		
AN	436.4	15.23	µS/cm	100%	-0.11
AO			µS/cm		
AP	442	4.51	µS/cm	101%	0.95
AQ	441	40	µS/cm	101%	0.76
AR	434	10	µS/cm	99%	-0.57
AS	427	37.2	µS/cm	98%	-1.91
AT			µS/cm		
AU	433	48	µS/cm	99%	-0.76



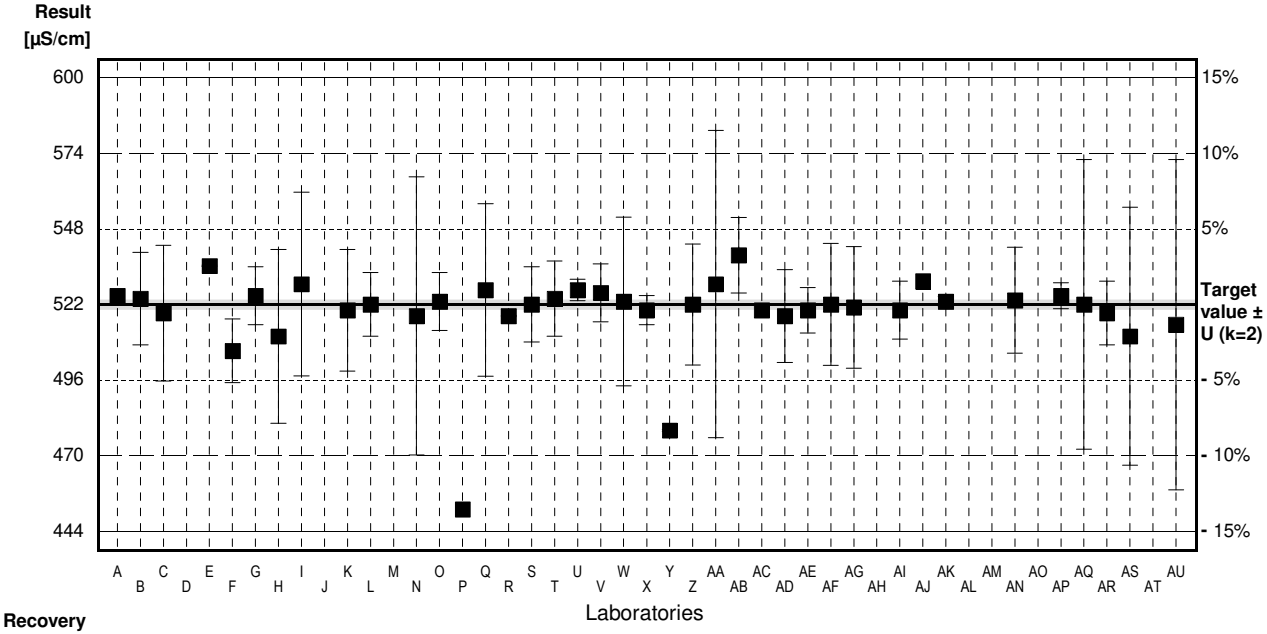


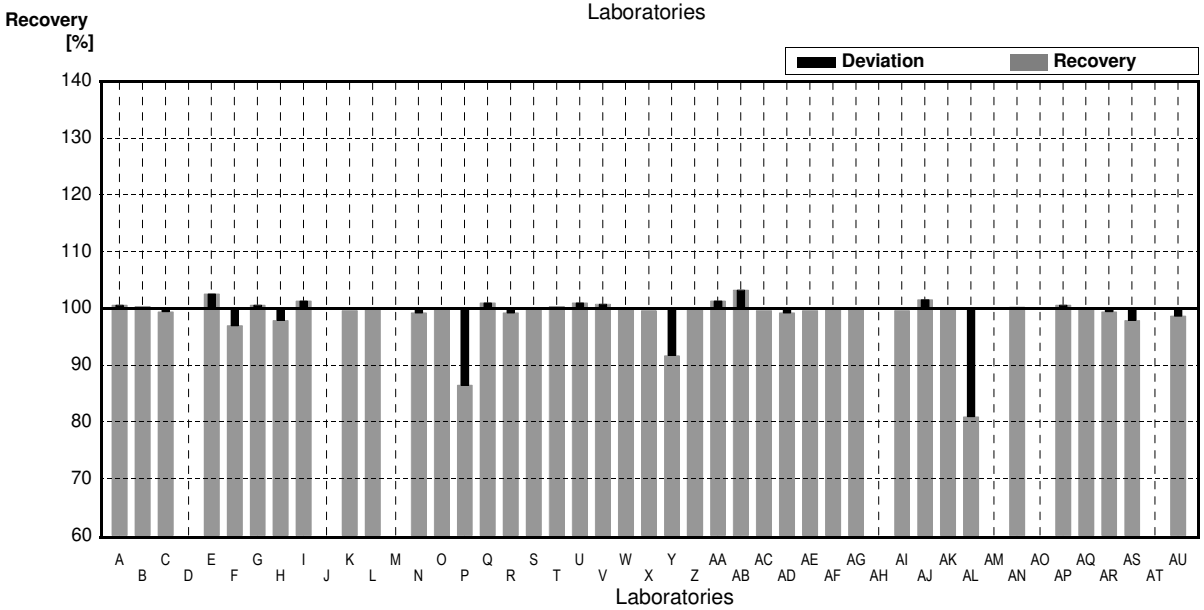
	All results	Outliers excl.	Unit
Mean ± CI(99%)	433 ± 8	437 ± 2	µS/cm
Recov. ± CI(99%)	99,0 ± 1,7	100,1 ± 0,5	%
SD between labs	18	5	µS/cm
RSD between labs	4,1	1,1	%
n for calculation	40	37	

Sample N162B
Parameter Conductivity

Target value ± U (k=2)	522	µS/cm	±	2	µS/cm
IFA result ± U (k=2)	525	µS/cm	±	7	µS/cm
Stability test		µS/cm			

Lab Code	Result		±	Unit	Recovery	z-Score
A	525			µS/cm	101%	0,48
B	524		16	µS/cm	100%	0,32
C	519		23,4	µS/cm	99%	-0,48
D				µS/cm		
E	535,3		0,20	µS/cm	103%	2,12
F	506	*	11	µS/cm	97%	-2,55
G	525		10	µS/cm	101%	0,48
H	511		30	µS/cm	98%	-1,76
I	529		31,7	µS/cm	101%	1,12
J				µS/cm		
K	520		21	µS/cm	100%	-0,32
L	522		11	µS/cm	100%	0,00
M				µS/cm		
N	518		48	µS/cm	99%	-0,64
O	523		10	µS/cm	100%	0,16
P	451,28	*		µS/cm	86%	-11,29
Q	527		29,8	µS/cm	101%	0,80
R	518		0,226	µS/cm	99%	-0,64
S	522		13	µS/cm	100%	0,00
T	524		13	µS/cm	100%	0,32
U	527		3,73	µS/cm	101%	0,80
V	526		10	µS/cm	101%	0,64
W	523		29,08	µS/cm	100%	0,16
X	520		5	µS/cm	100%	-0,32
Y	478,5	*	0,275	µS/cm	92%	-6,94
Z	522		20,9	µS/cm	100%	0,00
AA	529		53	µS/cm	101%	1,12
AB	539	*	13	µS/cm	103%	2,71
AC	520			µS/cm	100%	-0,32
AD	518		16	µS/cm	99%	-0,64
AE	520		7,8	µS/cm	100%	-0,32
AF	522		21	µS/cm	100%	0,00
AG	521		21	µS/cm	100%	-0,16
AH				µS/cm		
AI	520		10	µS/cm	100%	-0,32
AJ	530			µS/cm	102%	1,28
AK	523		1,8	µS/cm	100%	0,16
AL	422,29	*	21,11	µS/cm	81%	-15,92
AM				µS/cm		
AN	523,4		18,27	µS/cm	100%	0,22
AO				µS/cm		
AP	525		4,51	µS/cm	101%	0,48
AQ	522		50	µS/cm	100%	0,00
AR	519		11	µS/cm	99%	-0,48
AS	511		44,5	µS/cm	98%	-1,76
AT				µS/cm		
AU	515		57	µS/cm	99%	-1,12



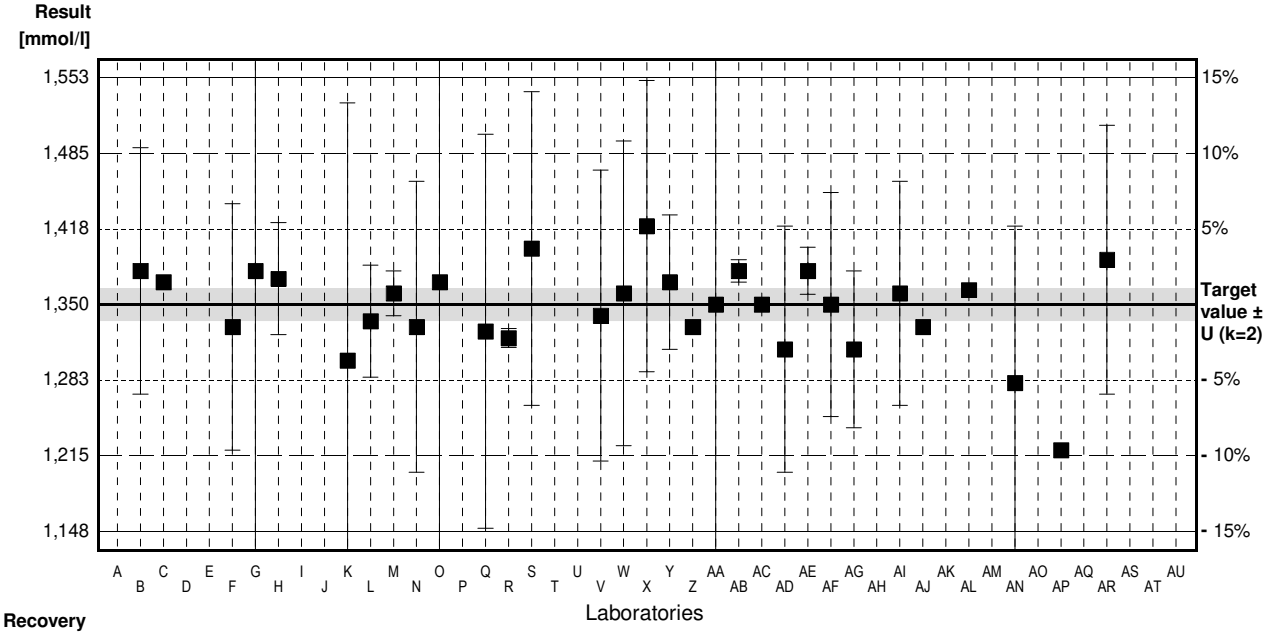


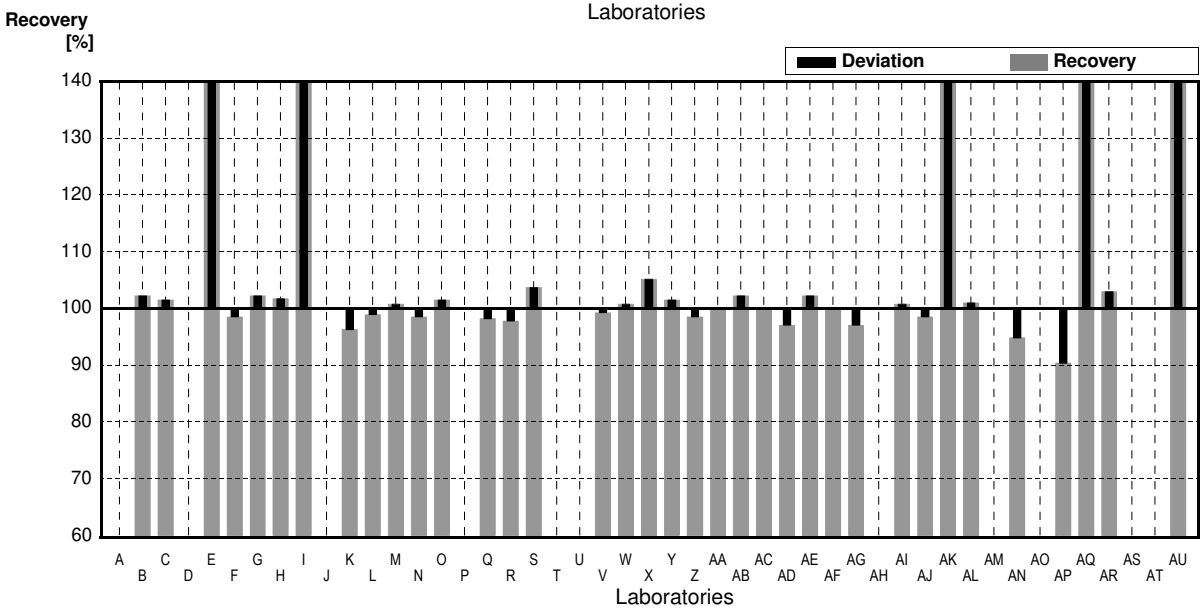
	All results	Outliers excl.	Unit
Mean ± CI(99%)	517 ± 9	522 ± 2	µS/cm
Recov. ± CI(99%)	99,0 ± 1,7	100,0 ± 0,4	%
SD between labs	21	5	µS/cm
RSD between labs	4,1	0,9	%
n for calculation	40	35	

Sample N162A
Parameter Total hardness

Target value ± U (k=2)	1,350	mmol/l	±	0,014	mmol/l
IFA result ± U (k=2)	1,43	mmol/l	±	0,06	mmol/l
Stability test		mmol/l			

Lab Code	Result		±	Unit	Recovery	z-Score
A				mmol/l		
B	1,38		0,11	mmol/l	102%	0,77
C	1,37			mmol/l	101%	0,51
D				mmol/l		
E	7,28	*	0,03	mmol/l	539%	151,47
F	1,33		0,11	mmol/l	99%	-0,51
G	1,38		0,28	mmol/l	102%	0,77
H	1,373		0,05	mmol/l	102%	0,59
I	7,8	*	0,58	mmol/l	578%	164,75
J				mmol/l		
K	1,30		0,23	mmol/l	96%	-1,28
L	1,335		0,05	mmol/l	99%	-0,38
M	1,36		0,02	mmol/l	101%	0,26
N	1,33		0,13	mmol/l	99%	-0,51
O	1,37		0,29	mmol/l	101%	0,51
P				mmol/l		
Q	1,326		0,176	mmol/l	98%	-0,61
R	1,32		0,00841	mmol/l	98%	-0,77
S	1,40		0,14	mmol/l	104%	1,28
T				mmol/l		
U				mmol/l		
V	1,34		0,13	mmol/l	99%	-0,26
W	1,36		0,136	mmol/l	101%	0,26
X	1,42		0,13	mmol/l	105%	1,79
Y	1,37		0,06	mmol/l	101%	0,51
Z	1,33			mmol/l	99%	-0,51
AA	1,35		0,3	mmol/l	100%	0,00
AB	1,38		0,01	mmol/l	102%	0,77
AC	1,350			mmol/l	100%	0,00
AD	1,31		0,11	mmol/l	97%	-1,02
AE	1,38		0,021	mmol/l	102%	0,77
AF	1,35		0,1	mmol/l	100%	0,00
AG	1,31		0,07	mmol/l	97%	-1,02
AH				mmol/l		
AI	1,36		0,1	mmol/l	101%	0,26
AJ	1,33			mmol/l	99%	-0,51
AK	7,20	*	0,20	mmol/l	533%	149,43
AL	1,363			mmol/l	101%	0,33
AM				mmol/l		
AN	1,28		0,14	mmol/l	95%	-1,79
AO				mmol/l		
AP	1,22	*		mmol/l	90%	-3,32
AQ	7,4	*	0,7	mmol/l	548%	154,53
AR	1,39		0,12	mmol/l	103%	1,02
AS				mmol/l		
AT				mmol/l		
AU	7,4	*		mmol/l	548%	154,53



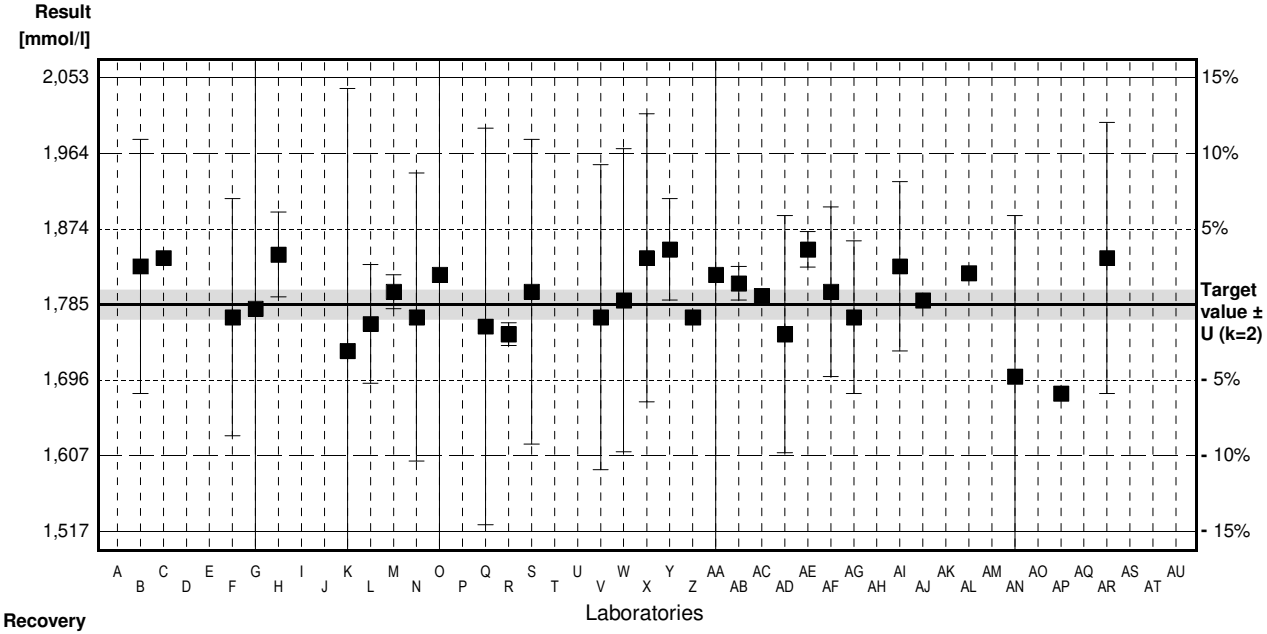


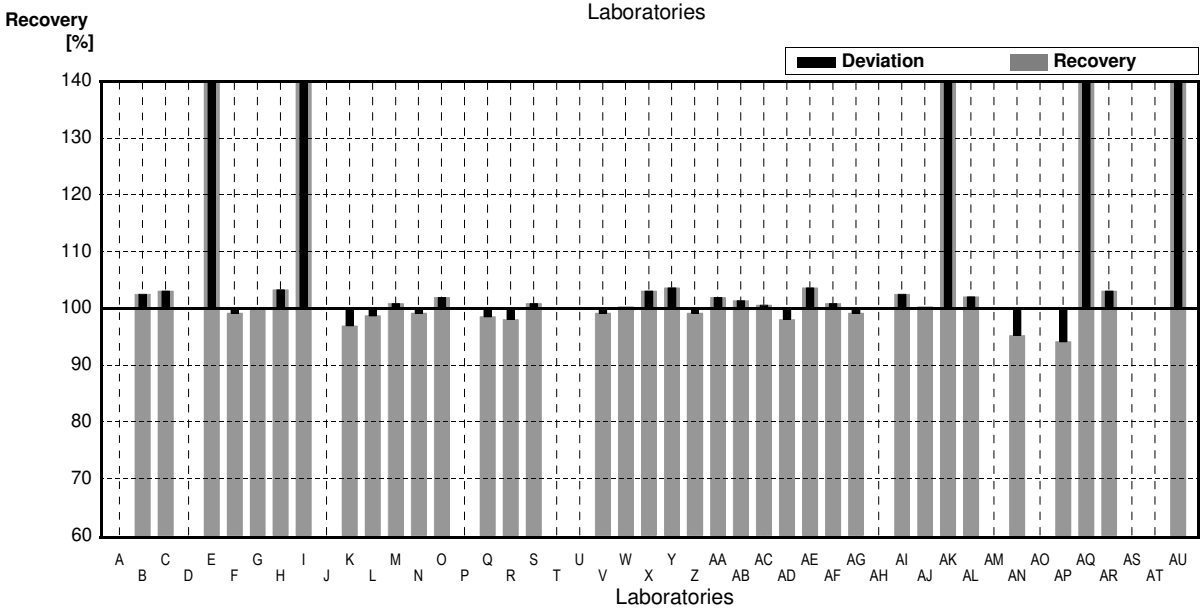
	All results	Outliers excl.	Unit
Mean ± CI(99%)	2,190 ± 0,969	1,352 ± 0,016	mmol/l
Recov. ± CI(99%)	162,2 ± 71,8	100,1 ± 1,2	%
SD between labs	2,130	0,031	mmol/l
RSD between labs	97,3	2,3	%
n for calculation	36	30	

Sample N162B
Parameter Total hardness

Target value	± U (k=2)	1,785	mmol/l	±	0,017	mmol/l
IFA result	± U (k=2)	1,90	mmol/l	±	0,07	mmol/l
Stability test			mmol/l			

Lab Code	Result		±	Unit	Recovery	z-Score
A				mmol/l		
B	1,83		0,15	mmol/l	103%	0,87
C	1,84			mmol/l	103%	1,06
D				mmol/l		
E	9,65	*	0,07	mmol/l	541%	151,94
F	1,77		0,14	mmol/l	99%	-0,29
G	1,78		0,36	mmol/l	100%	-0,10
H	1,844		0,05	mmol/l	103%	1,14
I	10,2	*	0,77	mmol/l	571%	162,56
J				mmol/l		
K	1,73		0,31	mmol/l	97%	-1,06
L	1,762		0,07	mmol/l	99%	-0,44
M	1,80		0,02	mmol/l	101%	0,29
N	1,77		0,17	mmol/l	99%	-0,29
O	1,82		0,38	mmol/l	102%	0,68
P				mmol/l		
Q	1,759		0,234	mmol/l	99%	-0,50
R	1,75		0,0134	mmol/l	98%	-0,68
S	1,80		0,18	mmol/l	101%	0,29
T				mmol/l		
U				mmol/l		
V	1,77		0,18	mmol/l	99%	-0,29
W	1,79		0,179	mmol/l	100%	0,10
X	1,84		0,17	mmol/l	103%	1,06
Y	1,85		0,06	mmol/l	104%	1,26
Z	1,77			mmol/l	99%	-0,29
AA	1,82		0,4	mmol/l	102%	0,68
AB	1,81		0,02	mmol/l	101%	0,48
AC	1,795			mmol/l	101%	0,19
AD	1,75		0,14	mmol/l	98%	-0,68
AE	1,85		0,021	mmol/l	104%	1,26
AF	1,80		0,1	mmol/l	101%	0,29
AG	1,77		0,09	mmol/l	99%	-0,29
AH				mmol/l		
AI	1,83		0,1	mmol/l	103%	0,87
AJ	1,79			mmol/l	100%	0,10
AK	9,58	*	0,41	mmol/l	537%	150,58
AL	1,822			mmol/l	102%	0,71
AM				mmol/l		
AN	1,70		0,19	mmol/l	95%	-1,64
AO				mmol/l		
AP	1,68			mmol/l	94%	-2,03
AQ	9,7	*	0,9	mmol/l	543%	152,90
AR	1,84		0,16	mmol/l	103%	1,06
AS				mmol/l		
AT				mmol/l		
AU	9,9	*		mmol/l	555%	156,77



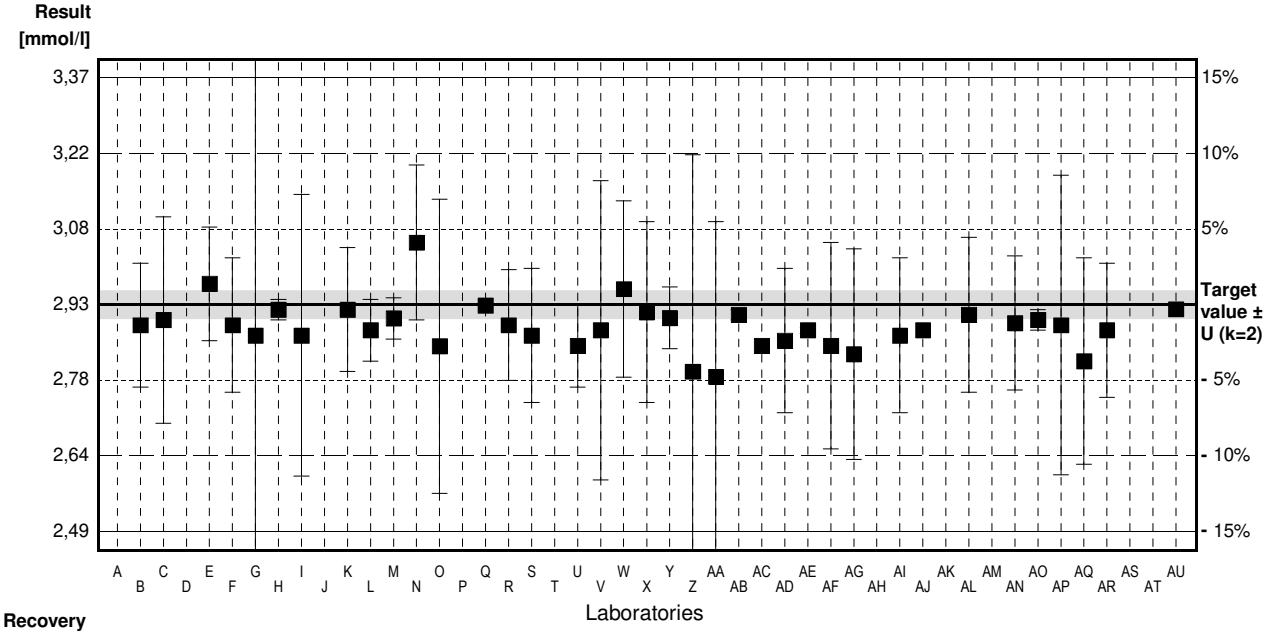


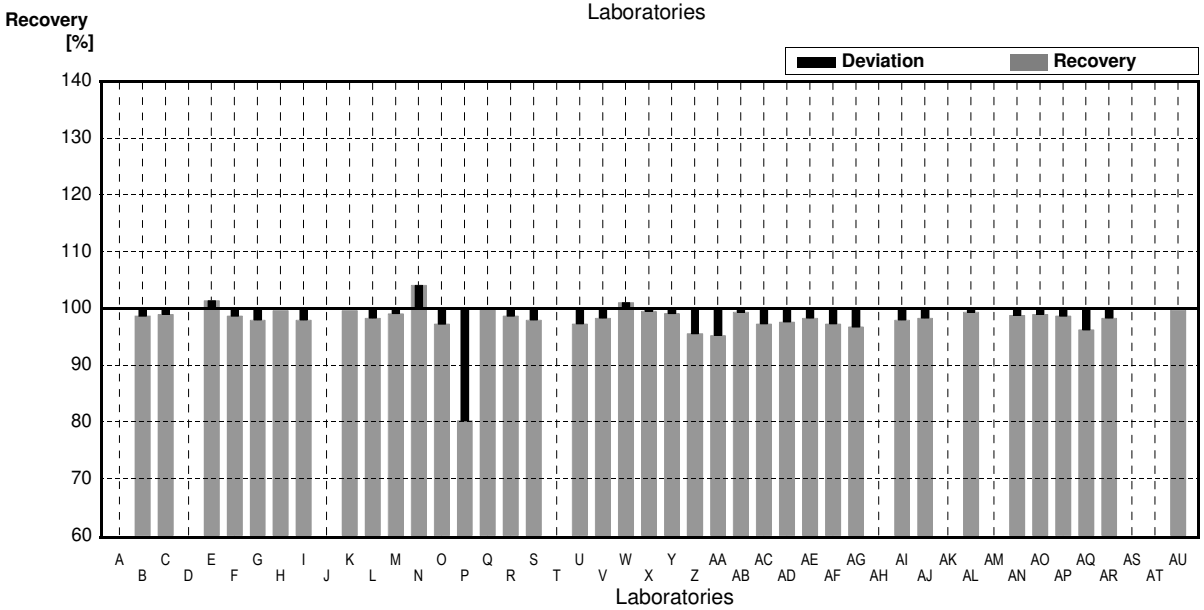
	All results	Outliers excl.	Unit
Mean ± CI(99%)	2,905 ± 1,280	1,791 ± 0,021	mmol/l
Recov. ± CI(99%)	162,7 ± 71,7	100,4 ± 1,2	%
SD between labs	2,813	0,043	mmol/l
RSD between labs	96,8	2,4	%
n for calculation	36	31	

Sample N162A
Parameter Alkalinity

Target value	± U (k=2)	2,93	mmol/l	±	0,03 mmol/l
IFA result	± U (k=2)	2,88	mmol/l	±	0,12 mmol/l
Stability test			mmol/l		

Lab Code	Result		±	Unit	Recovery	z-Score
A				mmol/l		
B	2,89		0,12	mmol/l	99%	-0,68
C	2,90		0,20	mmol/l	99%	-0,51
D				mmol/l		
E	2,97		0,11	mmol/l	101%	0,68
F	2,89		0,13	mmol/l	99%	-0,68
G	2,87		0,57	mmol/l	98%	-1,02
H	2,92		0,02	mmol/l	100%	-0,17
I	2,87		0,273	mmol/l	98%	-1,02
J				mmol/l		
K	2,92		0,12	mmol/l	100%	-0,17
L	2,88		0,06	mmol/l	98%	-0,85
M	2,903		0,04	mmol/l	99%	-0,46
N	3,05	*	0,15	mmol/l	104%	2,05
O	2,849		0,285	mmol/l	97%	-1,38
P	2,35	*		mmol/l	80%	-9,90
Q	2,928			mmol/l	100%	-0,03
R	2,89		0,107	mmol/l	99%	-0,68
S	2,87		0,13	mmol/l	98%	-1,02
T				mmol/l		
U	2,85		0,08	mmol/l	97%	-1,37
V	2,88		0,29	mmol/l	98%	-0,85
W	2,96		0,171	mmol/l	101%	0,51
X	2,915		0,175	mmol/l	99%	-0,26
Y	2,904		0,06	mmol/l	99%	-0,44
Z	2,80		0,42	mmol/l	96%	-2,22
AA	2,79		0,3	mmol/l	95%	-2,39
AB	2,91		0,01	mmol/l	99%	-0,34
AC	2,85			mmol/l	97%	-1,37
AD	2,86		0,14	mmol/l	98%	-1,19
AE	2,88		0,006	mmol/l	98%	-0,85
AF	2,85		0,2	mmol/l	97%	-1,37
AG	2,834		0,204	mmol/l	97%	-1,64
AH				mmol/l		
AI	2,87		0,15	mmol/l	98%	-1,02
AJ	2,88			mmol/l	98%	-0,85
AK				mmol/l		
AL	2,91		0,15	mmol/l	99%	-0,34
AM				mmol/l		
AN	2,894		0,13	mmol/l	99%	-0,61
AO	2,90		0,02	mmol/l	99%	-0,51
AP	2,89		0,29	mmol/l	99%	-0,68
AQ	2,82		0,2	mmol/l	96%	-1,88
AR	2,88		0,13	mmol/l	98%	-0,85
AS				mmol/l		
AT				mmol/l		
AU	2,921			mmol/l	100%	-0,15



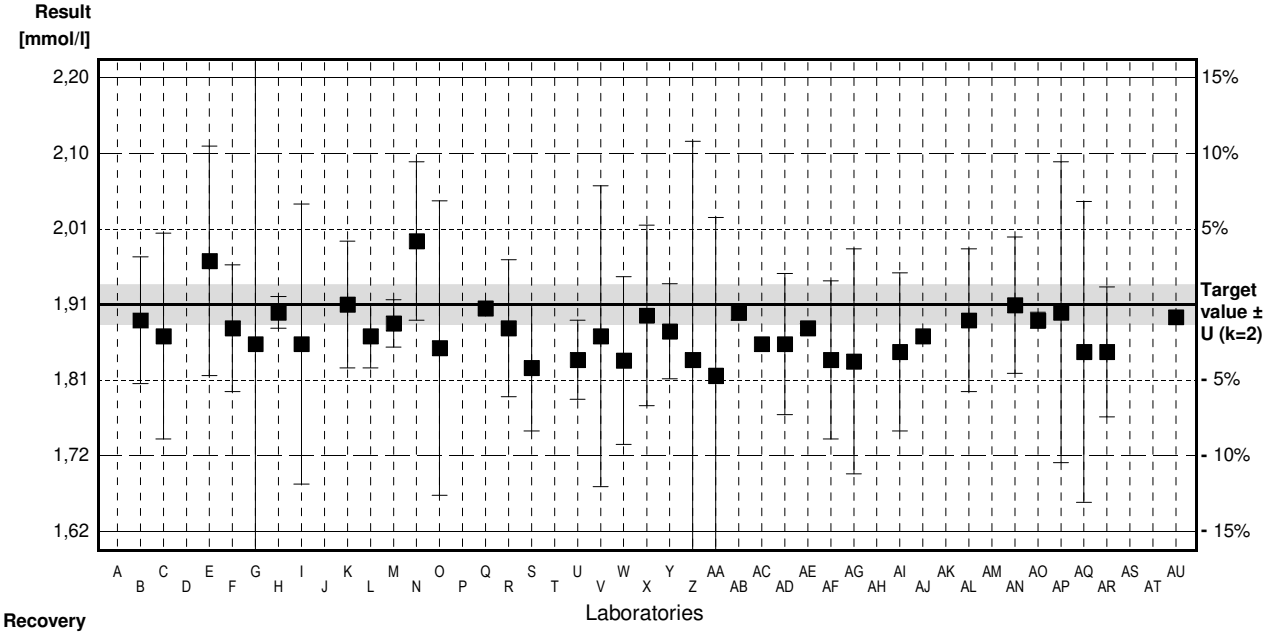


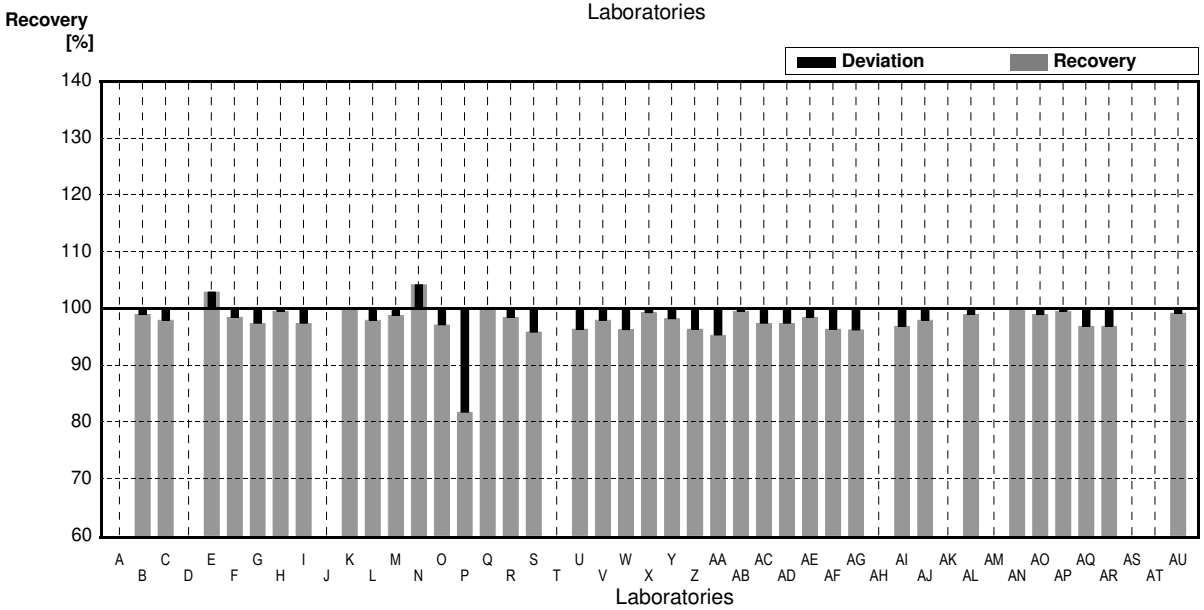
	All results	Outliers excl.	Unit
Mean ± CI(99%)	2,87 ± 0,04	2,88 ± 0,02	mmol/l
Recov. ± CI(99%)	98,1 ± 1,5	98,4 ± 0,6	%
SD between labs	0,10	0,04	mmol/l
RSD between labs	3,4	1,3	%
n for calculation	38	36	

Sample N162B
Parameter Alkalinity

Target value	± U (k=2)	1,91	mmol/l	±	0,03 mmol/l
IFA result	± U (k=2)	1,86	mmol/l	±	0,08 mmol/l
Stability test			mmol/l		

Lab Code	Result	±	Unit	Recovery	z-Score
A			mmol/l		
B	1,89	0,08	mmol/l	99%	-0,52
C	1,87	0,13	mmol/l	98%	-1,05
D			mmol/l		
E	1,965 *	0,145	mmol/l	103%	1,44
F	1,88	0,08	mmol/l	98%	-0,79
G	1,86	0,37	mmol/l	97%	-1,31
H	1,90	0,02	mmol/l	99%	-0,26
I	1,86	0,177	mmol/l	97%	-1,31
J			mmol/l		
K	1,91	0,08	mmol/l	100%	0,00
L	1,87	0,04	mmol/l	98%	-1,05
M	1,886	0,03	mmol/l	99%	-0,63
N	1,99 *	0,10	mmol/l	104%	2,09
O	1,855	0,186	mmol/l	97%	-1,44
P	1,56 *		mmol/l	82%	-9,16
Q	1,905		mmol/l	100%	-0,13
R	1,88	0,0865	mmol/l	98%	-0,79
S	1,83	0,08	mmol/l	96%	-2,09
T			mmol/l		
U	1,84	0,05	mmol/l	96%	-1,83
V	1,87	0,19	mmol/l	98%	-1,05
W	1,839	0,106	mmol/l	96%	-1,86
X	1,896	0,114	mmol/l	99%	-0,37
Y	1,876	0,06	mmol/l	98%	-0,89
Z	1,84	0,276	mmol/l	96%	-1,83
AA	1,82	0,2	mmol/l	95%	-2,36
AB	1,90	0,01	mmol/l	99%	-0,26
AC	1,86		mmol/l	97%	-1,31
AD	1,86	0,089	mmol/l	97%	-1,31
AE	1,88	0,006	mmol/l	98%	-0,79
AF	1,84	0,1	mmol/l	96%	-1,83
AG	1,838	0,142	mmol/l	96%	-1,88
AH			mmol/l		
AI	1,85	0,10	mmol/l	97%	-1,57
AJ	1,87		mmol/l	98%	-1,05
AK			mmol/l		
AL	1,89	0,09	mmol/l	99%	-0,52
AM			mmol/l		
AN	1,909	0,086	mmol/l	100%	-0,03
AO	1,89	0,01	mmol/l	99%	-0,52
AP	1,90	0,19	mmol/l	99%	-0,26
AQ	1,85	0,19	mmol/l	97%	-1,57
AR	1,850	0,082	mmol/l	97%	-1,57
AS			mmol/l		
AT			mmol/l		
AU	1,894		mmol/l	99%	-0,42



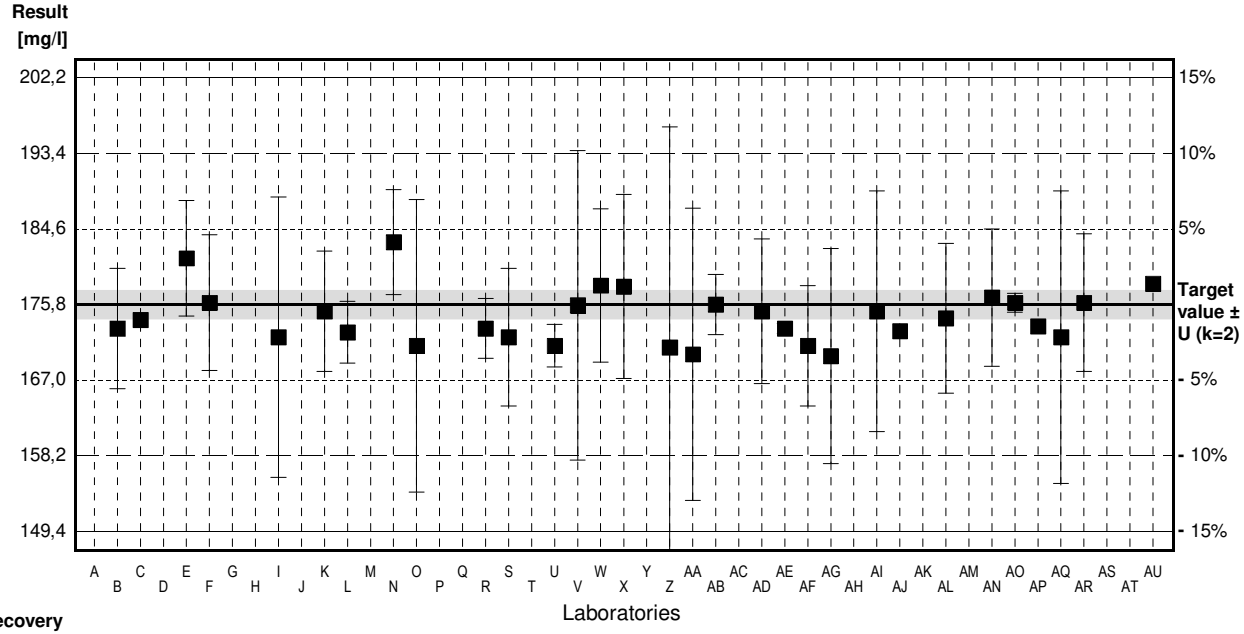


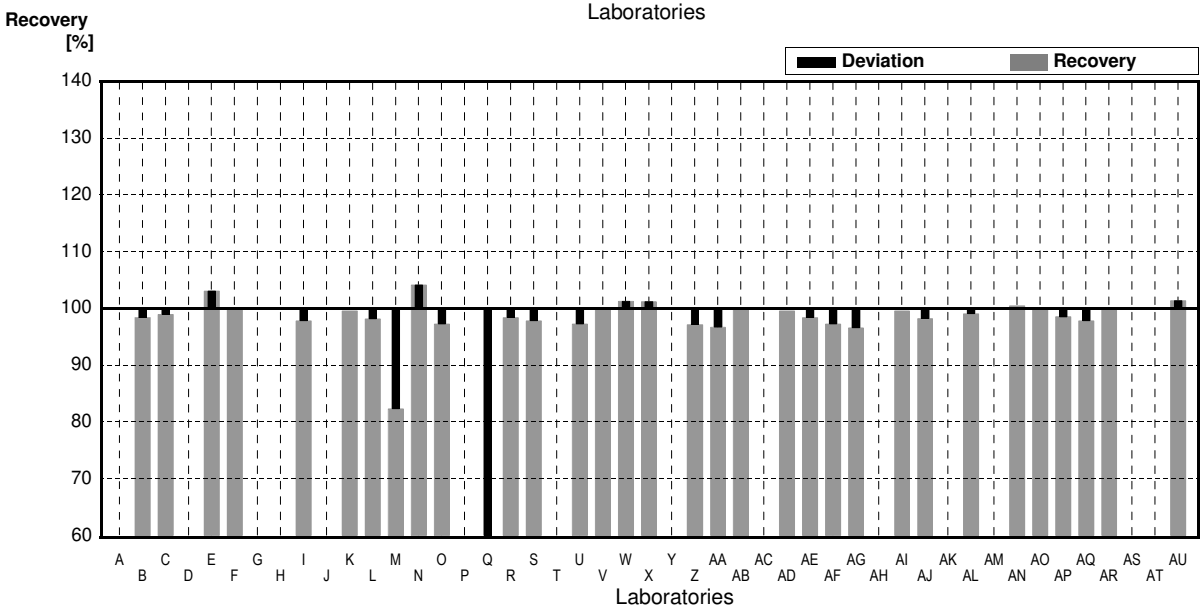
	All results	Outliers excl.	Unit
Mean ± CI(99%)	1,87 ± 0,03	1,87 ± 0,01	mmol/l
Recov. ± CI(99%)	97,8 ± 1,4	97,9 ± 0,6	%
SD between labs	0,06	0,02	mmol/l
RSD between labs	3,3	1,3	%
n for calculation	38	35	

Sample N162A
Parameter Hydrogen carbonate

Target value	± U (k=2)	175,8 mg/l	±	1,7 mg/l	
IFA result	± U (k=2)	173 mg/l	±	7 mg/l	
Stability test		mg/l			

Lab Code	Result	±	Unit	Recovery	z-Score
A			mg/l		
B	173	7	mg/l	98%	-0.66
C	174		mg/l	99%	-0.43
D			mg/l		
E	181.17	6.71	mg/l	103%	1.27
F	176	7.9	mg/l	100%	0.05
G			mg/l		
H			mg/l		
I	172	16.3	mg/l	98%	-0.90
J			mg/l		
K	175	7	mg/l	100%	-0.19
L	172.57	3.6	mg/l	98%	-0.77
M	144.7 *	1.4	mg/l	82%	-7.37
N	183.05	6.10	mg/l	104%	1.72
O	171	17	mg/l	97%	-1.14
P			mg/l		
Q	8.2 *		mg/l	5%	-39.72
R	173	3.47	mg/l	98%	-0.66
S	172	8	mg/l	98%	-0.90
T			mg/l		
U	171	2.47	mg/l	97%	-1.14
V	175.7	18	mg/l	100%	-0.02
W	178	8.9	mg/l	101%	0.52
X	177.87	10.7	mg/l	101%	0.49
Y			mg/l		
Z	170.8	25.63	mg/l	97%	-1.19
AA	170	17	mg/l	97%	-1.37
AB	175.8	3.5	mg/l	100%	0.00
AC			mg/l		
AD	175	8.4	mg/l	100%	-0.19
AE	173	0.58	mg/l	98%	-0.66
AF	171	7	mg/l	97%	-1.14
AG	169.8	12.5	mg/l	97%	-1.42
AH			mg/l		
AI	175	14	mg/l	100%	-0.19
AJ	172.7		mg/l	98%	-0.73
AK			mg/l		
AL	174.2	8.71	mg/l	99%	-0.38
AM			mg/l		
AN	176.6	7.98	mg/l	100%	0.19
AO	176	1.1	mg/l	100%	0.05
AP	173.26		mg/l	99%	-0.60
AQ	172	17	mg/l	98%	-0.90
AR	176	8	mg/l	100%	0.05
AS			mg/l		
AT			mg/l		
AU	178.2		mg/l	101%	0.57



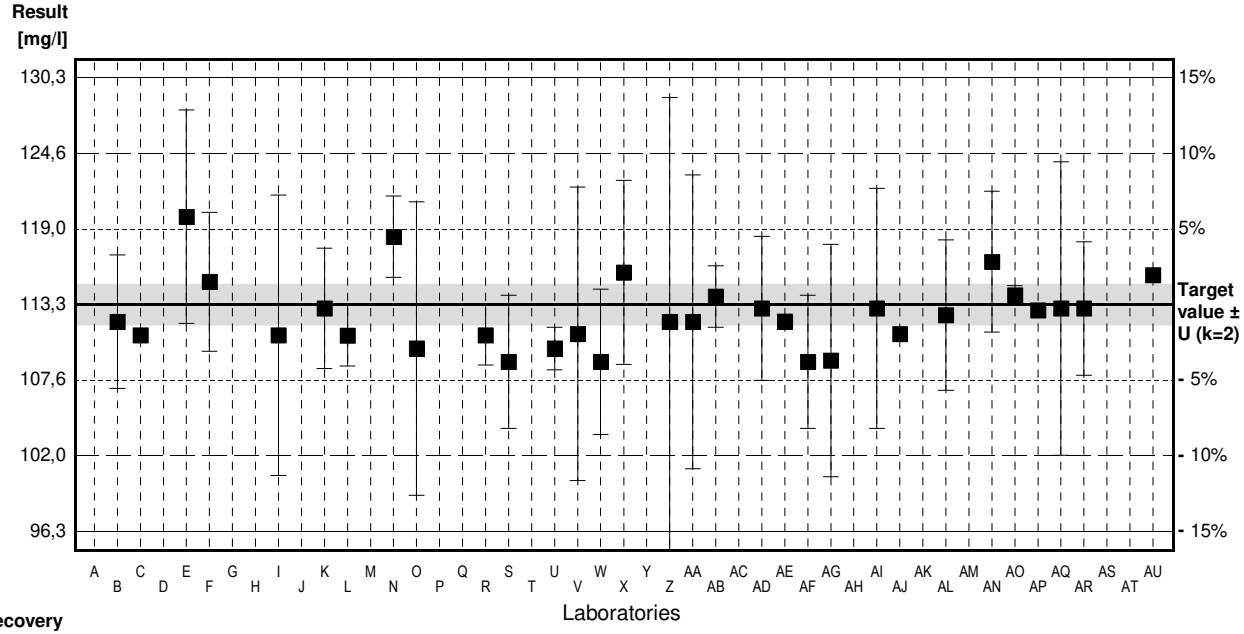


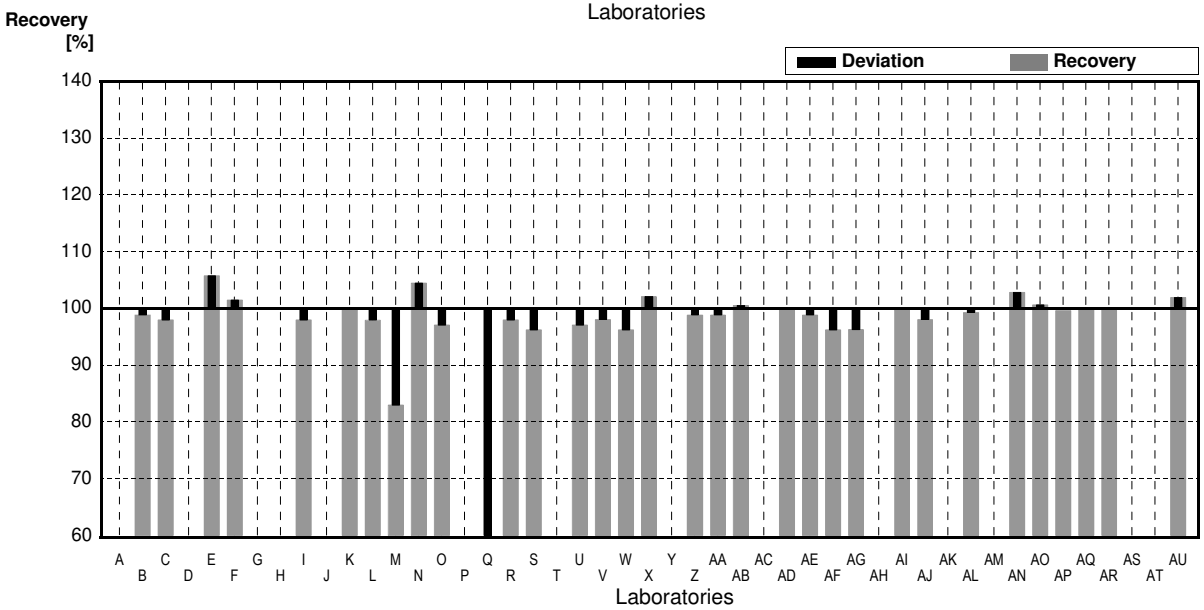
	All results	Outliers excl.	Unit
Mean ± CI(99%)	168,4 ± 14,0	174,3 ± 1,6	mg/l
Recov. ± CI(99%)	95,8 ± 8,0	99,2 ± 0,9	%
SD between labs	29,4	3,1	mg/l
RSD between labs	17,4	1,8	%
n for calculation	33	31	

Sample N162B
Parameter Hydrogen carbonate

Target value ± U (k=2)	113,3	mg/l	±	1,5	mg/l
IFA result ± U (k=2)	111	mg/l	±	4	mg/l
Stability test		mg/l			

Lab Code	Result	±	Unit	Recovery	z-Score
A			mg/l		
B	112	5	mg/l	99%	-0.48
C	111		mg/l	98%	-0.85
D			mg/l		
E	119.87 *	8	mg/l	106%	2.42
F	115	5.2	mg/l	102%	0.63
G			mg/l		
H			mg/l		
I	111	10.5	mg/l	98%	-0.85
J			mg/l		
K	113	4.5	mg/l	100%	-0.11
L	110.98	2.3	mg/l	98%	-0.85
M	93.98 *	1.2	mg/l	83%	-7.11
N	118.37 *	3.05	mg/l	104%	1.86
O	110	11	mg/l	97%	-1.21
P			mg/l		
Q	5.3 *		mg/l	5%	-39.72
R	111	2.23	mg/l	98%	-0.85
S	109	5	mg/l	96%	-1.58
T			mg/l		
U	110	1.59	mg/l	97%	-1.21
V	111.1	11	mg/l	98%	-0.81
W	109	5.45	mg/l	96%	-1.58
X	115.7	6.9	mg/l	102%	0.88
Y			mg/l		
Z	112	16.8	mg/l	99%	-0.48
AA	112	11	mg/l	99%	-0.48
AB	113.9	2.3	mg/l	101%	0.22
AC			mg/l		
AD	113	5.4	mg/l	100%	-0.11
AE	112	0.58	mg/l	99%	-0.48
AF	109	5	mg/l	96%	-1.58
AG	109.1	8.7	mg/l	96%	-1.54
AH			mg/l		
AI	113	9	mg/l	100%	-0.11
AJ	111.1		mg/l	98%	-0.81
AK			mg/l		
AL	112.5	5.63	mg/l	99%	-0.29
AM			mg/l		
AN	116.5	5.27	mg/l	103%	1.18
AO	114	0.7	mg/l	101%	0.26
AP	112.86		mg/l	100%	-0.16
AQ	113	11	mg/l	100%	-0.11
AR	113	5	mg/l	100%	-0.11
AS			mg/l		
AT			mg/l		
AU	115.5		mg/l	102%	0.81



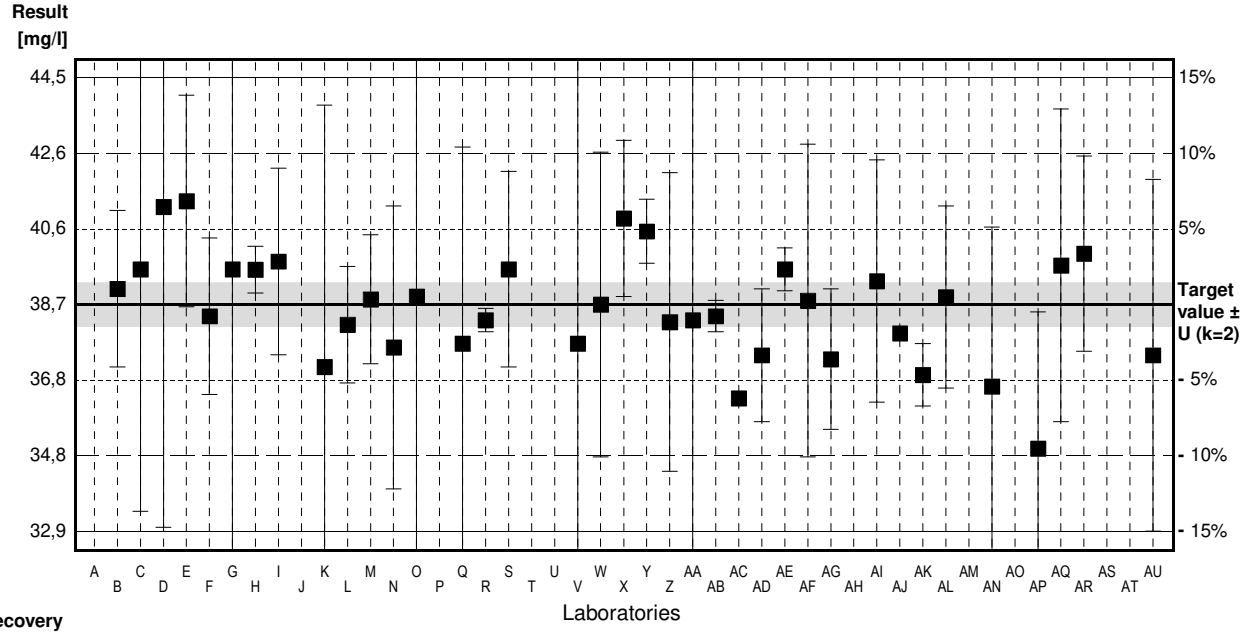


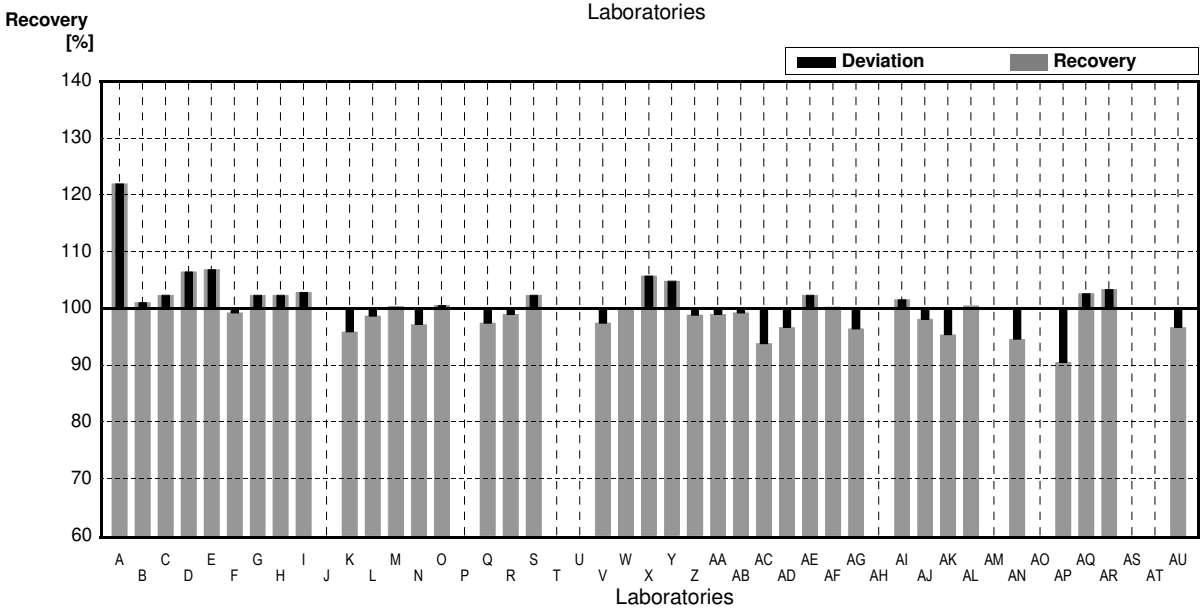
	All results	Outliers excl.	Unit
Mean ± CI(99%)	108,8 ± 9,1	112,1 ± 1,0	mg/l
Recov. ± CI(99%)	96,0 ± 8,0	99,0 ± 0,9	%
SD between labs	19,0	2,0	mg/l
RSD between labs	17,5	1,8	%
n for calculation	33	29	

Sample N162A
Parameter Calcium

Target value ± U (k=2)	38,7	mg/l	±	0,6	mg/l
IFA result ± U (k=2)	41,8	mg/l	±	1,9	mg/l
Stability test		mg/l			

Lab Code	Result	±	Unit	Recovery	z-Score
A	47,2 *		mg/l	122%	6,66
B	39,1	2,0	mg/l	101%	0,31
C	39,6	6,2	mg/l	102%	0,70
D	41,2	8,2	mg/l	106%	1,96
E	41,348	2,709	mg/l	107%	2,07
F	38,4	2,0	mg/l	99%	-0,23
G	39,6	7,9	mg/l	102%	0,70
H	39,59	0,6	mg/l	102%	0,70
I	39,8	2,39	mg/l	103%	0,86
J			mg/l		
K	37,1	6,7	mg/l	96%	-1,25
L	38,18	1,49	mg/l	99%	-0,41
M	38,83	1,65	mg/l	100%	0,10
N	37,6	3,62	mg/l	97%	-0,86
O	38,9	6,6	mg/l	101%	0,16
P			mg/l		
Q	37,7	5,03	mg/l	97%	-0,78
R	38,3	0,301	mg/l	99%	-0,31
S	39,6	2,5	mg/l	102%	0,70
T			mg/l		
U			mg/l		
V	37,7	7,6	mg/l	97%	-0,78
W	38,7	3,9	mg/l	100%	0,00
X	40,90	2,0	mg/l	106%	1,72
Y	40,57	0,82	mg/l	105%	1,46
Z	38,25	3,825	mg/l	99%	-0,35
AA	38,3	8	mg/l	99%	-0,31
AB	38,4	0,4	mg/l	99%	-0,23
AC	36,3		mg/l	94%	-1,88
AD	37,4	1,7	mg/l	97%	-1,02
AE	39,6	0,55	mg/l	102%	0,70
AF	38,8	4	mg/l	100%	0,08
AG	37,3	1,8	mg/l	96%	-1,10
AH			mg/l		
AI	39,3	3,1	mg/l	102%	0,47
AJ	37,96		mg/l	98%	-0,58
AK	36,9	0,8	mg/l	95%	-1,41
AL	38,89	2,33	mg/l	100%	0,15
AM			mg/l		
AN	36,6	4,077	mg/l	95%	-1,64
AO			mg/l		
AP	35,01	3,5	mg/l	90%	-2,89
AQ	39,7	4,0	mg/l	103%	0,78
AR	40,0	2,5	mg/l	103%	1,02
AS			mg/l		
AT			mg/l		
AU	37,4	4,5	mg/l	97%	-1,02



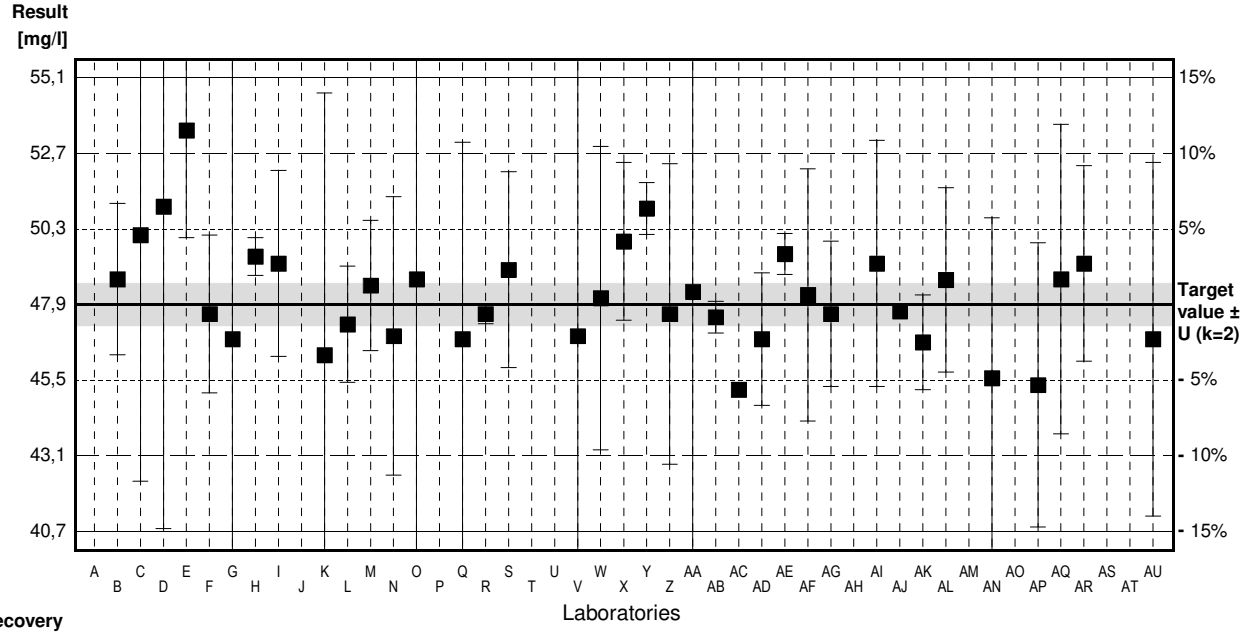


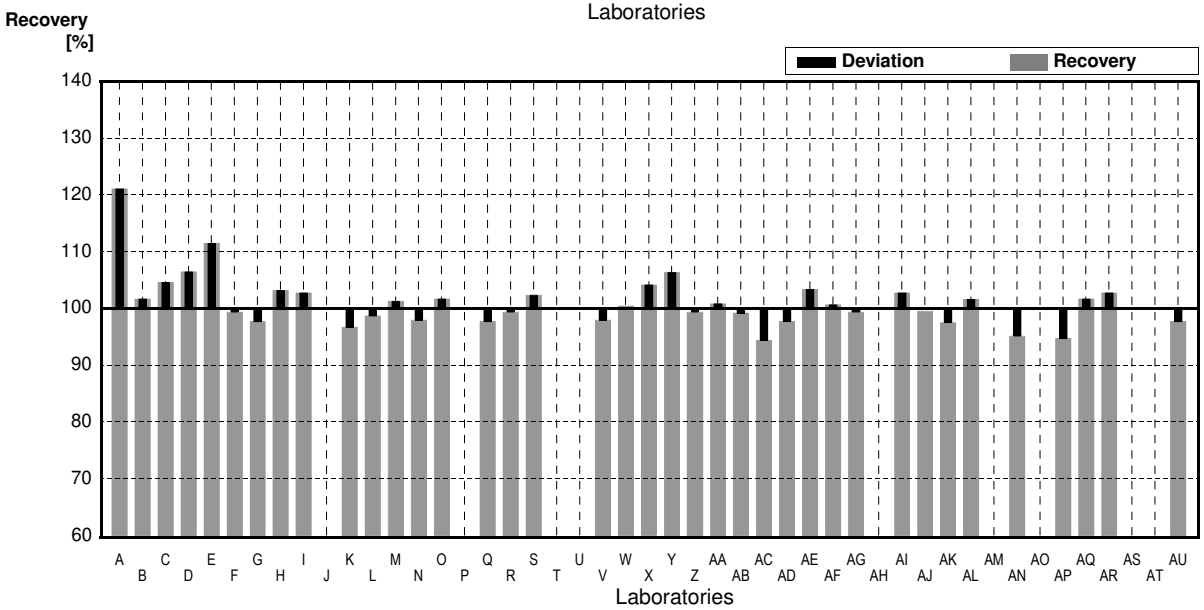
	All results	Outliers excl.	Unit
Mean ± CI(99%)	38,8 ± 0,9	38,6 ± 0,6	mg/l
Recov. ± CI(99%)	100,4 ± 2,2	99,8 ± 1,6	%
SD between labs	2,0	1,4	mg/l
RSD between labs	5,0	3,6	%
n for calculation	38	37	

Sample N162B
Parameter Calcium

Target value	± U (k=2)	47,9	mg/l	±	0,7 mg/l
IFA result	± U (k=2)	52	mg/l	±	2 mg/l
Stability test			mg/l		

Lab Code	Result	±	Unit	Recovery	z-Score
A	58,0 *		mg/l	121%	6,39
B	48,7	2,4	mg/l	102%	0,51
C	50,1	7,8	mg/l	105%	1,39
D	51,0	10,2	mg/l	106%	1,96
E	53,411 *	3,393	mg/l	112%	3,49
F	47,6	2,5	mg/l	99%	-0,19
G	46,8	9,4	mg/l	98%	-0,70
H	49,42	0,6	mg/l	103%	0,96
I	49,2	2,95	mg/l	103%	0,82
J			mg/l		
K	46,3	8,3	mg/l	97%	-1,01
L	47,27	1,84	mg/l	99%	-0,40
M	48,50	2,06	mg/l	101%	0,38
N	46,9	4,41	mg/l	98%	-0,63
O	48,7	8,3	mg/l	102%	0,51
P			mg/l		
Q	46,8	6,24	mg/l	98%	-0,70
R	47,6	0,314	mg/l	99%	-0,19
S	49,0	3,1	mg/l	102%	0,70
T			mg/l		
U			mg/l		
V	46,9	9,4	mg/l	98%	-0,63
W	48,1	4,8	mg/l	100%	0,13
X	49,9	2,5	mg/l	104%	1,27
Y	50,94	0,82	mg/l	106%	1,92
Z	47,6	4,76	mg/l	99%	-0,19
AA	48,3	10	mg/l	101%	0,25
AB	47,5	0,5	mg/l	99%	-0,25
AC	45,2		mg/l	94%	-1,71
AD	46,8	2,1	mg/l	98%	-0,70
AE	49,5	0,65	mg/l	103%	1,01
AF	48,2	4	mg/l	101%	0,19
AG	47,6	2,3	mg/l	99%	-0,19
AH			mg/l		
AI	49,2	3,9	mg/l	103%	0,82
AJ	47,68		mg/l	100%	-0,14
AK	46,7	1,5	mg/l	97%	-0,76
AL	48,68	2,92	mg/l	102%	0,49
AM			mg/l		
AN	45,57	5,076	mg/l	95%	-1,47
AO			mg/l		
AP	45,35	4,5	mg/l	95%	-1,61
AQ	48,7	4,9	mg/l	102%	0,51
AR	49,2	3,1	mg/l	103%	0,82
AS			mg/l		
AT			mg/l		
AU	46,8	5,6	mg/l	98%	-0,70



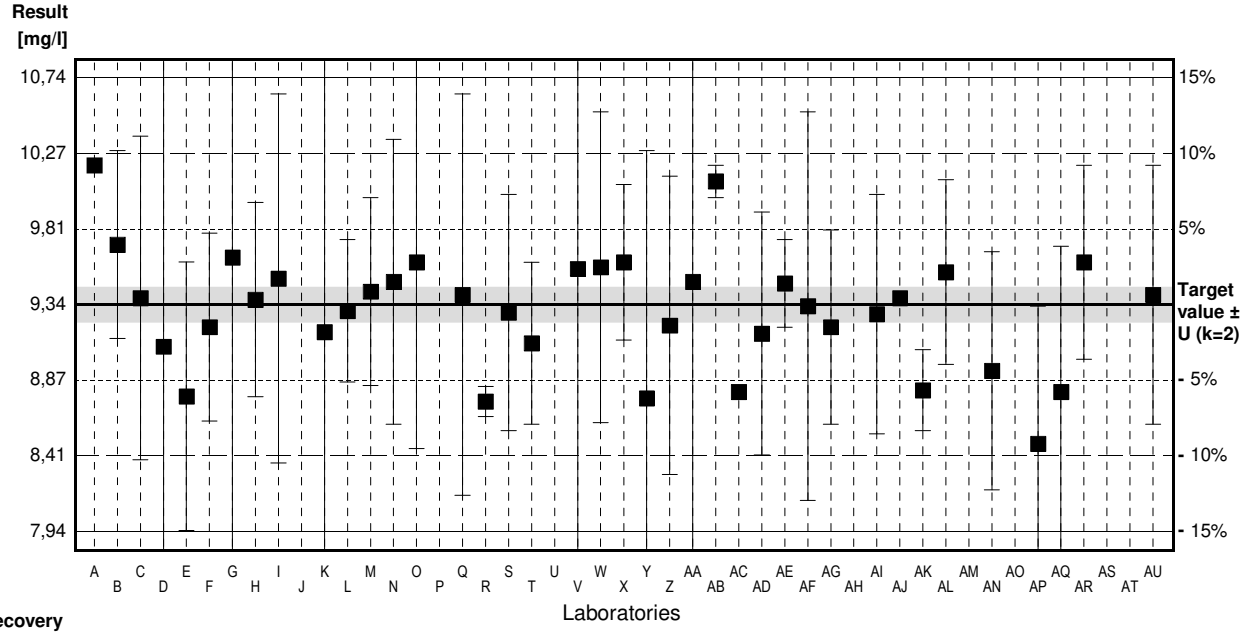


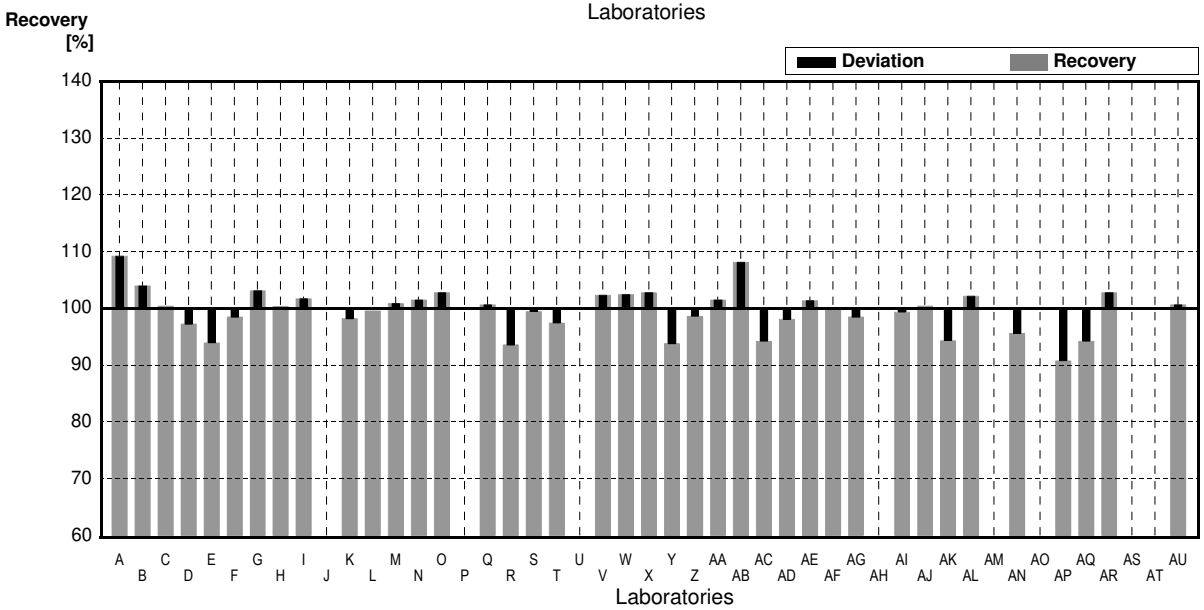
	All results	Outliers excl.	Unit
Mean ± CI(99%)	48,4 ± 1,0	48,0 ± 0,7	mg/l
Recov. ± CI(99%)	101,1 ± 2,1	100,2 ± 1,4	%
SD between labs	2,3	1,4	mg/l
RSD between labs	4,7	3,0	%
n for calculation	38	36	

Sample N162A
Parameter Magnesium

Target value ± U (k=2)	9,34	mg/l	±	0,11	mg/l
IFA result ± U (k=2)	9,5	mg/l	±	0,5	mg/l
Stability test		mg/l			

Lab Code	Result	±	Unit	Recovery	z-Score
A	10,2		mg/l	109%	2,49
B	9,71	0,58	mg/l	104%	1,07
C	9,38	1,0	mg/l	100%	0,12
D	9,08	1,82	mg/l	97%	-0,75
E	8,773	0,829	mg/l	94%	-1,64
F	9,2	0,58	mg/l	99%	-0,41
G	9,63	1,9	mg/l	103%	0,84
H	9,37	0,6	mg/l	100%	0,09
I	9,5	1,14	mg/l	102%	0,46
J			mg/l		
K	9,17	1,7	mg/l	98%	-0,49
L	9,30	0,44	mg/l	100%	-0,12
M	9,42	0,58	mg/l	101%	0,23
N	9,48	0,88	mg/l	101%	0,41
O	9,60	1,15	mg/l	103%	0,75
P			mg/l		
Q	9,4	1,24	mg/l	101%	0,17
R	8,74	0,0921	mg/l	94%	-1,74
S	9,29	0,73	mg/l	99%	-0,14
T	9,10	0,50	mg/l	97%	-0,69
U			mg/l		
V	9,56	1,9	mg/l	102%	0,64
W	9,57	0,96	mg/l	102%	0,67
X	9,60	0,48	mg/l	103%	0,75
Y	8,76	1,53	mg/l	94%	-1,68
Z	9,21	0,921	mg/l	99%	-0,38
AA	9,48	2	mg/l	101%	0,41
AB	10,1	0,1	mg/l	108%	2,20
AC	8,8		mg/l	94%	-1,56
AD	9,16	0,75	mg/l	98%	-0,52
AE	9,47	0,27	mg/l	101%	0,38
AF	9,33	1,2	mg/l	100%	-0,03
AG	9,2	0,6	mg/l	99%	-0,41
AH			mg/l		
AI	9,28	0,74	mg/l	99%	-0,17
AJ	9,38		mg/l	100%	0,12
AK	8,81	0,25	mg/l	94%	-1,53
AL	9,54	0,57	mg/l	102%	0,58
AM			mg/l		
AN	8,93	0,736	mg/l	96%	-1,19
AO			mg/l		
AP	8,48	0,85	mg/l	91%	-2,49
AQ	8,8	0,9	mg/l	94%	-1,56
AR	9,6	0,6	mg/l	103%	0,75
AS			mg/l		
AT			mg/l		
AU	9,4	0,8	mg/l	101%	0,17



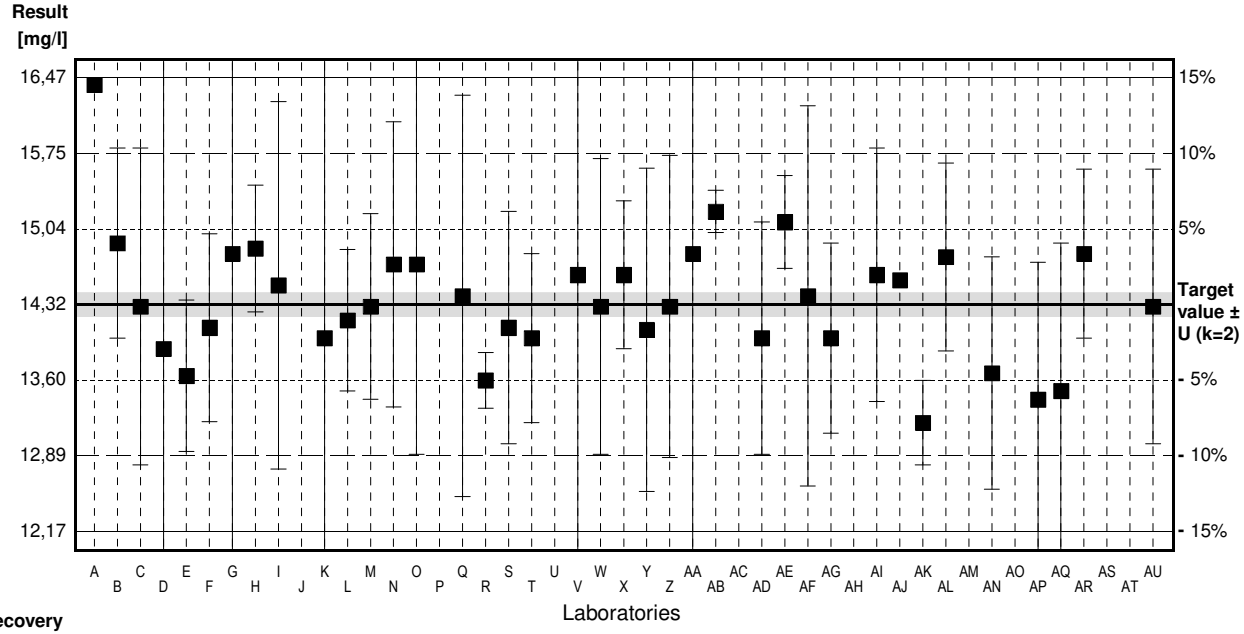


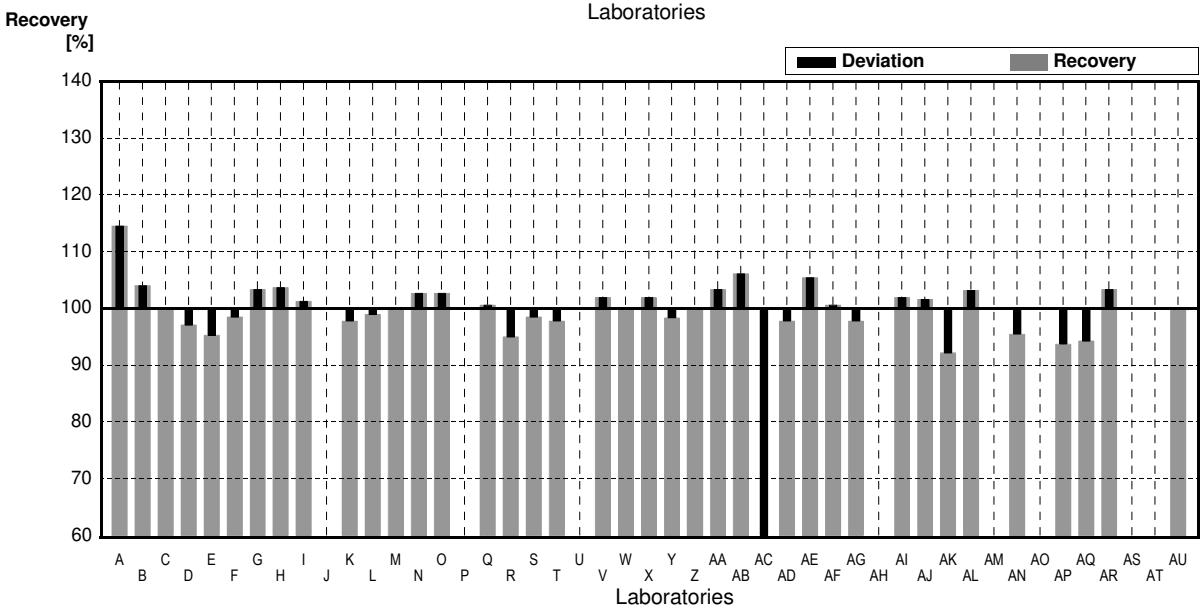
	All results	Outliers excl.	Unit
Mean ± CI(99%)	9,30 ± 0,16	9,30 ± 0,16	mg/l
Recov. ± CI(99%)	99,6 ± 1,7	99,6 ± 1,7	%
SD between labs	0,36	0,36	mg/l
RSD between labs	3,9	3,9	%
n for calculation	39	39	

Sample N162B
Parameter Magnesium

Target value ± U (k=2) 14,32 mg/l ± 0,11 mg/l
IFA result ± U (k=2) 14,4 mg/l ± 0,8 mg/l
Stability test mg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A	16,4 *		mg/l	115%	3,93
B	14,9	0,9	mg/l	104%	1,09
C	14,3	1,5	mg/l	100%	-0,04
D	13,9	2,8	mg/l	97%	-0,79
E	13,644	0,717	mg/l	95%	-1,28
F	14,1	0,89	mg/l	98%	-0,42
G	14,8	3,0	mg/l	103%	0,91
H	14,85	0,6	mg/l	104%	1,00
I	14,5	1,74	mg/l	101%	0,34
J			mg/l		
K	14,0	2,5	mg/l	98%	-0,60
L	14,17	0,67	mg/l	99%	-0,28
M	14,30	0,88	mg/l	100%	-0,04
N	14,7	1,35	mg/l	103%	0,72
O	14,7	1,8	mg/l	103%	0,72
P			mg/l		
Q	14,4	1,9	mg/l	101%	0,15
R	13,6	0,264	mg/l	95%	-1,36
S	14,1	1,1	mg/l	98%	-0,42
T	14,0	0,8	mg/l	98%	-0,60
U			mg/l		
V	14,6	2,9	mg/l	102%	0,53
W	14,3	1,4	mg/l	100%	-0,04
X	14,6	0,7	mg/l	102%	0,53
Y	14,08	1,53	mg/l	98%	-0,45
Z	14,3	1,43	mg/l	100%	-0,04
AA	14,8	3	mg/l	103%	0,91
AB	15,2	0,2	mg/l	106%	1,66
AC	8,5 *		mg/l	59%	-10,98
AD	14,0	1,1	mg/l	98%	-0,60
AE	15,1	0,44	mg/l	105%	1,47
AF	14,4	1,8	mg/l	101%	0,15
AG	14,0	0,9	mg/l	98%	-0,60
AH			mg/l		
AI	14,6	1,2	mg/l	102%	0,53
AJ	14,55		mg/l	102%	0,43
AK	13,2	0,4	mg/l	92%	-2,11
AL	14,77	0,89	mg/l	103%	0,85
AM			mg/l		
AN	13,67	1,1	mg/l	95%	-1,23
AO			mg/l		
AP	13,42	1,3	mg/l	94%	-1,70
AQ	13,5	1,4	mg/l	94%	-1,55
AR	14,8	0,8	mg/l	103%	0,91
AS			mg/l		
AT			mg/l		
AU	14,3	1,3	mg/l	100%	-0,04



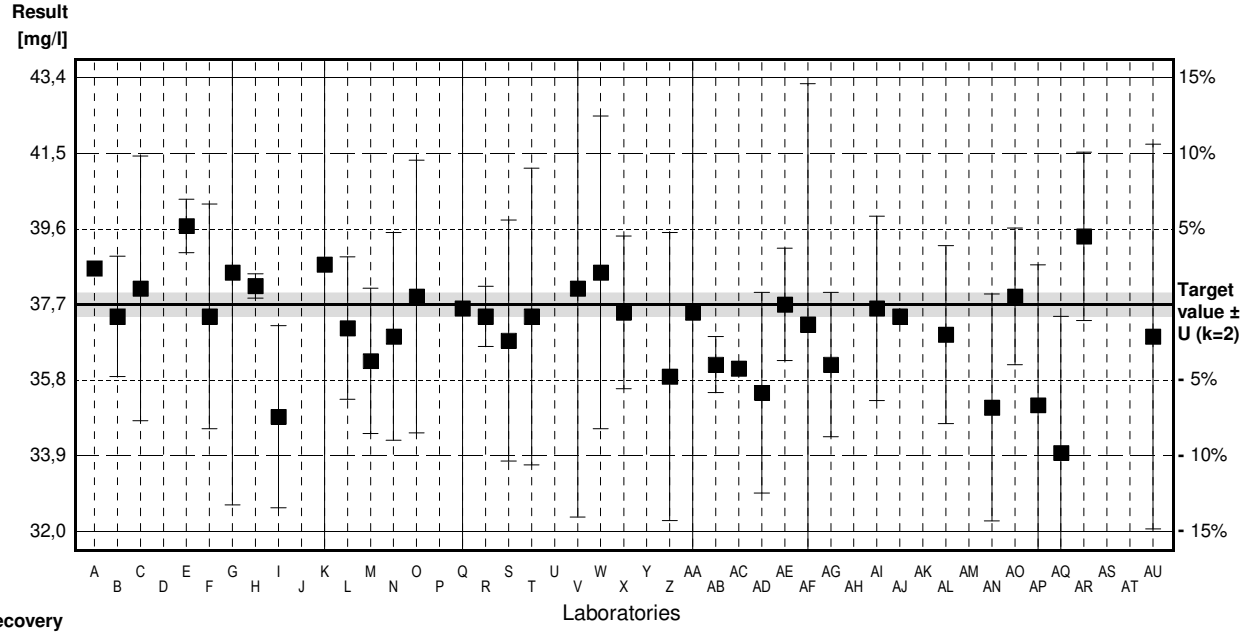


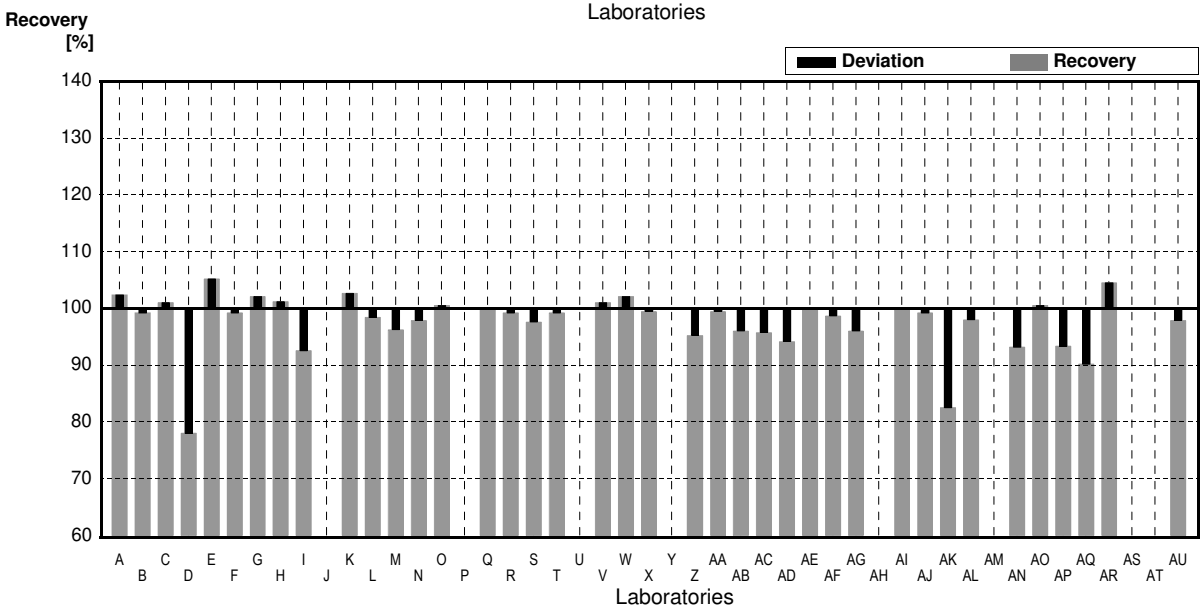
	All results	Outliers excl.	Unit
Mean ± CI(99%)	14,21 ± 0,48	14,30 ± 0,22	mg/l
Recov. ± CI(99%)	99,2 ± 3,3	99,9 ± 1,5	%
SD between labs	1,10	0,48	mg/l
RSD between labs	7,8	3,4	%
n for calculation	39	37	

Sample N162A
Parameter Sodium

Target value	± U (k=2)	37,7	mg/l	±	0,3 mg/l
IFA result	± U (k=2)	38,0	mg/l	±	1,6 mg/l
Stability test			mg/l		

Lab Code	Result	±	Unit	Recovery	z-Score
A	38,6		mg/l	102%	0,75
B	37,4	1,5	mg/l	99%	-0,25
C	38,1	3,3	mg/l	101%	0,33
D	29,4 *	5,9	mg/l	78%	-6,88
E	39,659	0,668	mg/l	105%	1,62
F	37,4	2,8	mg/l	99%	-0,25
G	38,5	5,8	mg/l	102%	0,66
H	38,16	0,3	mg/l	101%	0,38
I	34,9	2,27	mg/l	93%	-2,32
J			mg/l		
K	38,7	7	mg/l	103%	0,83
L	37,11	1,78	mg/l	98%	-0,49
M	36,29	1,81	mg/l	96%	-1,17
N	36,9	2,59	mg/l	98%	-0,66
O	37,9	3,4	mg/l	101%	0,17
P			mg/l		
Q	37,6	6,65	mg/l	100%	-0,08
R	37,4	0,752	mg/l	99%	-0,25
S	36,8	3,0	mg/l	98%	-0,75
T	37,4	3,7	mg/l	99%	-0,25
U			mg/l		
V	38,1	5,7	mg/l	101%	0,33
W	38,5	3,9	mg/l	102%	0,66
X	37,5	1,9	mg/l	99%	-0,17
Y			mg/l		
Z	35,9	3,59	mg/l	95%	-1,49
AA	37,5	8	mg/l	99%	-0,17
AB	36,2	0,7	mg/l	96%	-1,24
AC	36,1		mg/l	96%	-1,33
AD	35,5	2,5	mg/l	94%	-1,82
AE	37,7	1,4	mg/l	100%	0,00
AF	37,2	6	mg/l	99%	-0,41
AG	36,2	1,8	mg/l	96%	-1,24
AH			mg/l		
AI	37,6	2,3	mg/l	100%	-0,08
AJ	37,40		mg/l	99%	-0,25
AK	31,1 *	0,7	mg/l	82%	-5,47
AL	36,95	2,22	mg/l	98%	-0,62
AM			mg/l		
AN	35,13	2,83	mg/l	93%	-2,13
AO	37,9	1,7	mg/l	101%	0,17
AP	35,19	3,5	mg/l	93%	-2,08
AQ	34,0 *	3,4	mg/l	90%	-3,07
AR	39,4	2,1	mg/l	105%	1,41
AS			mg/l		
AT			mg/l		
AU	36,9	4,8	mg/l	98%	-0,66



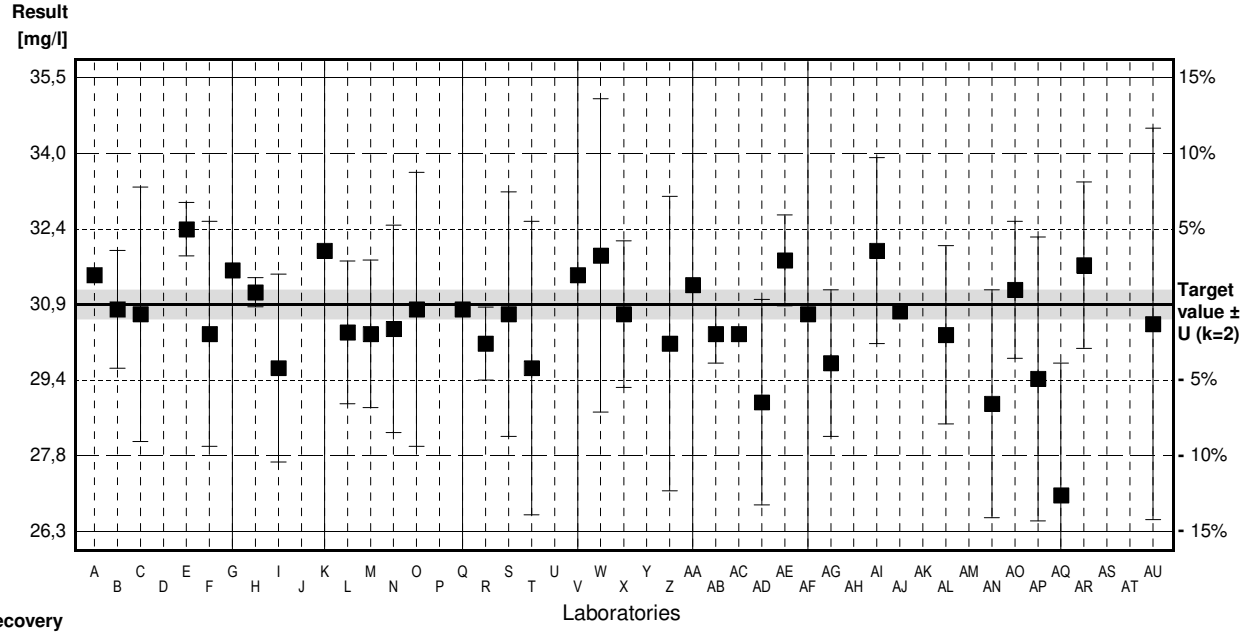


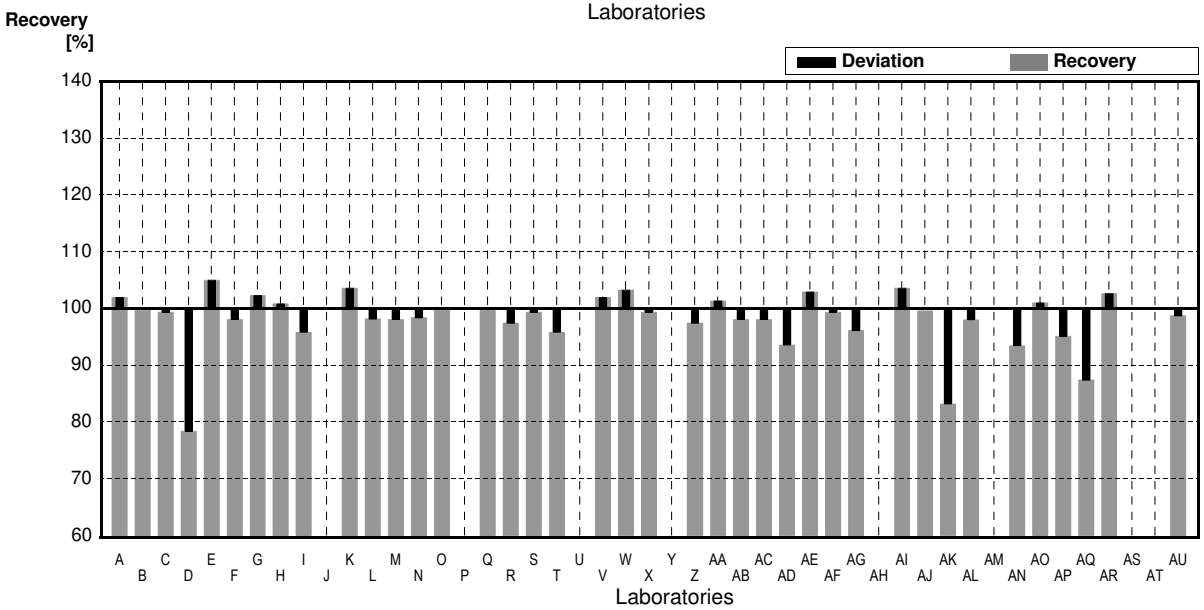
	All results	Outliers excl.	Unit
Mean ± CI(99%)	36,8 ± 0,9	37,3 ± 0,5	mg/l
Recov. ± CI(99%)	97,7 ± 2,3	98,9 ± 1,4	%
SD between labs	2,0	1,1	mg/l
RSD between labs	5,4	3,1	%
n for calculation	39	36	

Sample N162B
Parameter Sodium

Target value	± U (k=2)	30,9	mg/l	±	0,3 mg/l
IFA result	± U (k=2)	30,7	mg/l	±	1,4 mg/l
Stability test			mg/l		

Lab Code	Result	±	Unit	Recovery	z-Score
A	31,5		mg/l	102%	0,61
B	30,8	1,2	mg/l	100%	-0,10
C	30,7	2,6	mg/l	99%	-0,20
D	24,2 *	4,8	mg/l	78%	-6,78
E	32,438	0,548	mg/l	105%	1,56
F	30,3	2,3	mg/l	98%	-0,61
G	31,6	6,3	mg/l	102%	0,71
H	31,15	0,3	mg/l	101%	0,25
I	29,6	1,92	mg/l	96%	-1,31
J			mg/l		
K	32,0	5,8	mg/l	104%	1,11
L	30,33	1,46	mg/l	98%	-0,58
M	30,30	1,51	mg/l	98%	-0,61
N	30,4	2,12	mg/l	98%	-0,51
O	30,8	2,8	mg/l	100%	-0,10
P			mg/l		
Q	30,8	5,45	mg/l	100%	-0,10
R	30,1	0,746	mg/l	97%	-0,81
S	30,7	2,5	mg/l	99%	-0,20
T	29,6	3,0	mg/l	96%	-1,31
U			mg/l		
V	31,5	6,3	mg/l	102%	0,61
W	31,9	3,2	mg/l	103%	1,01
X	30,7	1,5	mg/l	99%	-0,20
Y			mg/l		
Z	30,1	3,01	mg/l	97%	-0,81
AA	31,3	7	mg/l	101%	0,40
AB	30,3	0,6	mg/l	98%	-0,61
AC	30,3		mg/l	98%	-0,61
AD	28,9	2,1	mg/l	94%	-2,02
AE	31,8	0,93	mg/l	103%	0,91
AF	30,7	5	mg/l	99%	-0,20
AG	29,7	1,5	mg/l	96%	-1,21
AH			mg/l		
AI	32,0	1,9	mg/l	104%	1,11
AJ	30,76		mg/l	100%	-0,14
AK	25,7 *	0,8	mg/l	83%	-5,26
AL	30,28	1,82	mg/l	98%	-0,63
AM			mg/l		
AN	28,87	2,327	mg/l	93%	-2,05
AO	31,2	1,4	mg/l	101%	0,30
AP	29,38	2,9	mg/l	95%	-1,54
AQ	27,0 *	2,7	mg/l	87%	-3,94
AR	31,7	1,7	mg/l	103%	0,81
AS			mg/l		
AT			mg/l		
AU	30,5	4,0	mg/l	99%	-0,40



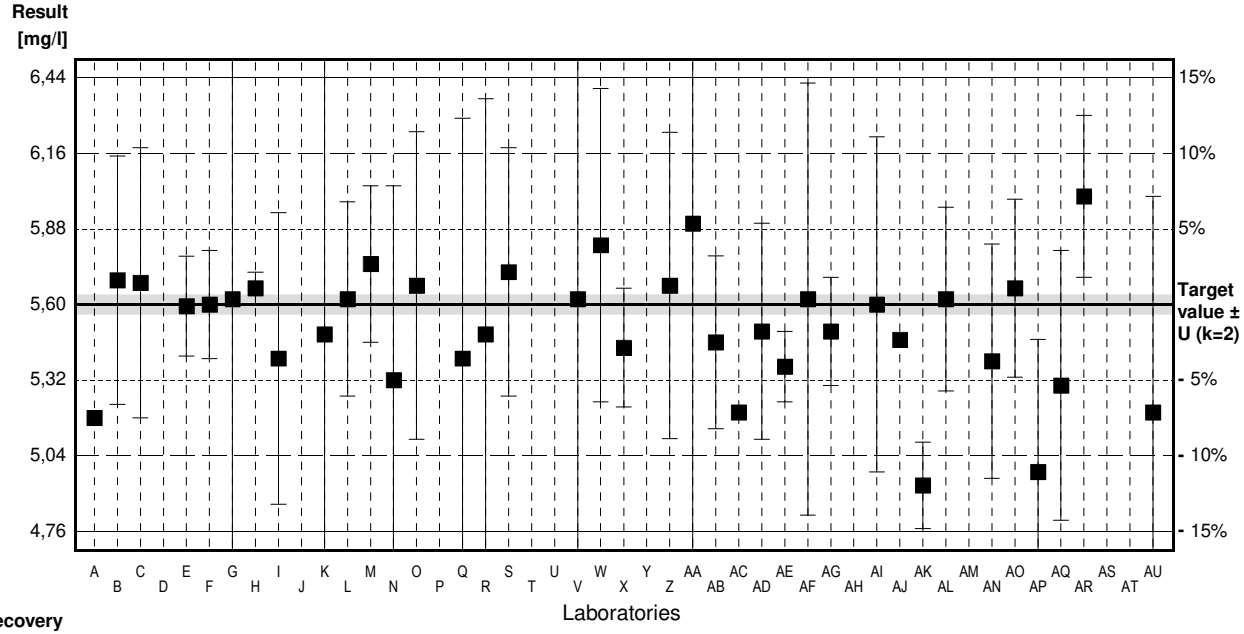


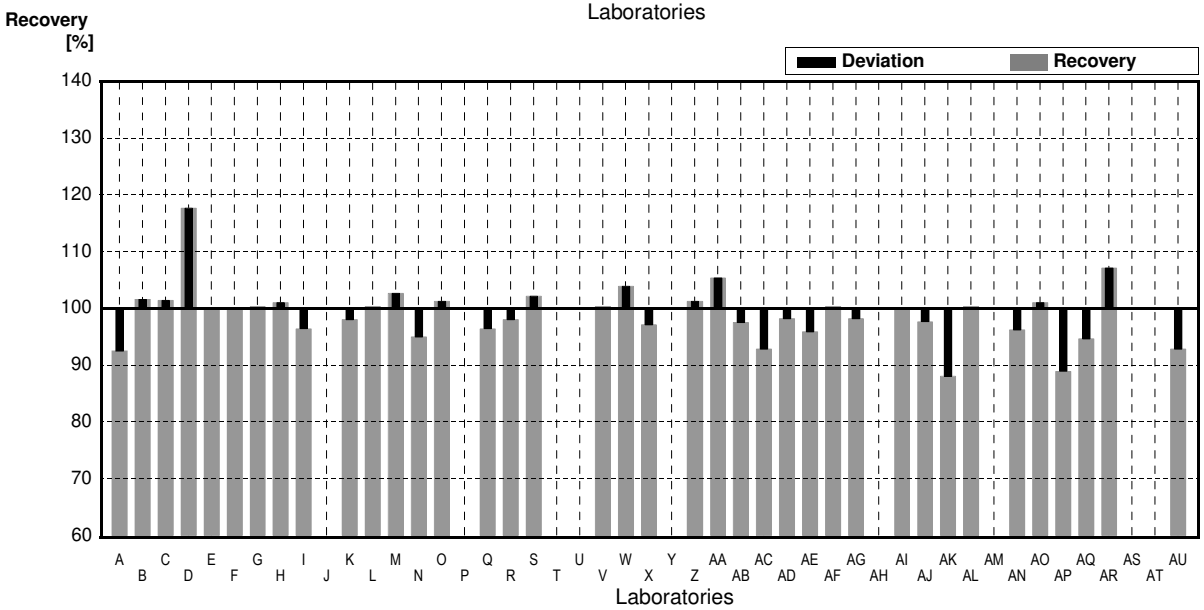
	All results	Outliers excl.	Unit
Mean ± CI(99%)	30,3 ± 0,7	30,7 ± 0,4	mg/l
Recov. ± CI(99%)	98,1 ± 2,3	99,3 ± 1,3	%
SD between labs	1,6	0,9	mg/l
RSD between labs	5,4	2,8	%
n for calculation	39	36	

Sample N162A
Parameter Potassium

Target value ± U (k=2)	5,60	mg/l	±	0,04	mg/l
IFA result ± U (k=2)	5,8	mg/l	±	0,3	mg/l
Stability test		mg/l			

Lab Code	Result		±	Unit	Recovery	z-Score
A	5,18			mg/l	93%	-1,70
B	5,69		0,46	mg/l	102%	0,37
C	5,68		0,5	mg/l	101%	0,32
D	6,59	*	1,32	mg/l	118%	4,02
E	5,594		0,185	mg/l	100%	-0,02
F	5,6		0,20	mg/l	100%	0,00
G	5,62		1,1	mg/l	100%	0,08
H	5,66		0,06	mg/l	101%	0,24
I	5,4		0,54	mg/l	96%	-0,81
J				mg/l		
K	5,49		0,99	mg/l	98%	-0,45
L	5,62		0,36	mg/l	100%	0,08
M	5,75		0,29	mg/l	103%	0,61
N	5,32		0,72	mg/l	95%	-1,14
O	5,67		0,57	mg/l	101%	0,28
P				mg/l		
Q	5,4		0,89	mg/l	96%	-0,81
R	5,49		0,872	mg/l	98%	-0,45
S	5,72		0,46	mg/l	102%	0,49
T				mg/l		
U				mg/l		
V	5,62		1,1	mg/l	100%	0,08
W	5,82		0,58	mg/l	104%	0,89
X	5,44		0,22	mg/l	97%	-0,65
Y				mg/l		
Z	5,67		0,567	mg/l	101%	0,28
AA	5,90		1,2	mg/l	105%	1,22
AB	5,46		0,32	mg/l	98%	-0,57
AC	5,2			mg/l	93%	-1,62
AD	5,50		0,40	mg/l	98%	-0,41
AE	5,37		0,13	mg/l	96%	-0,93
AF	5,62		0,8	mg/l	100%	0,08
AG	5,5		0,2	mg/l	98%	-0,41
AH				mg/l		
AI	5,6		0,62	mg/l	100%	0,00
AJ	5,47			mg/l	98%	-0,53
AK	4,93	*	0,16	mg/l	88%	-2,72
AL	5,62		0,34	mg/l	100%	0,08
AM				mg/l		
AN	5,39		0,434	mg/l	96%	-0,85
AO	5,66		0,33	mg/l	101%	0,24
AP	4,98	*	0,49	mg/l	89%	-2,52
AQ	5,3		0,5	mg/l	95%	-1,22
AR	6,0		0,3	mg/l	107%	1,62
AS				mg/l		
AT				mg/l		
AU	5,2		0,8	mg/l	93%	-1,62



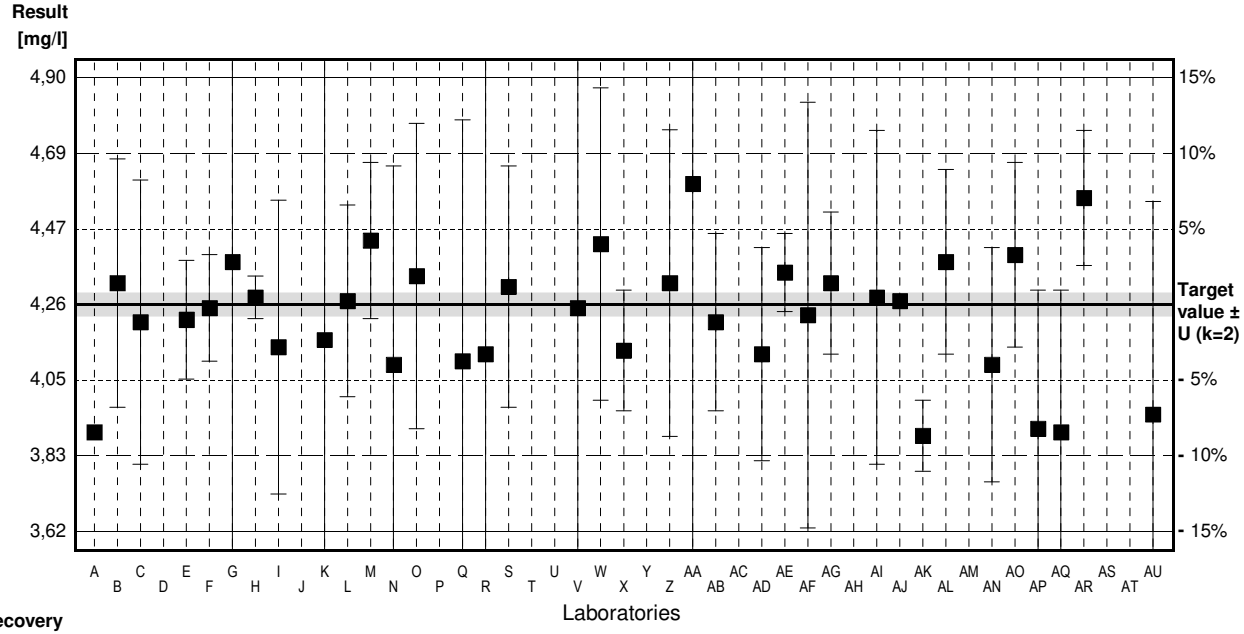


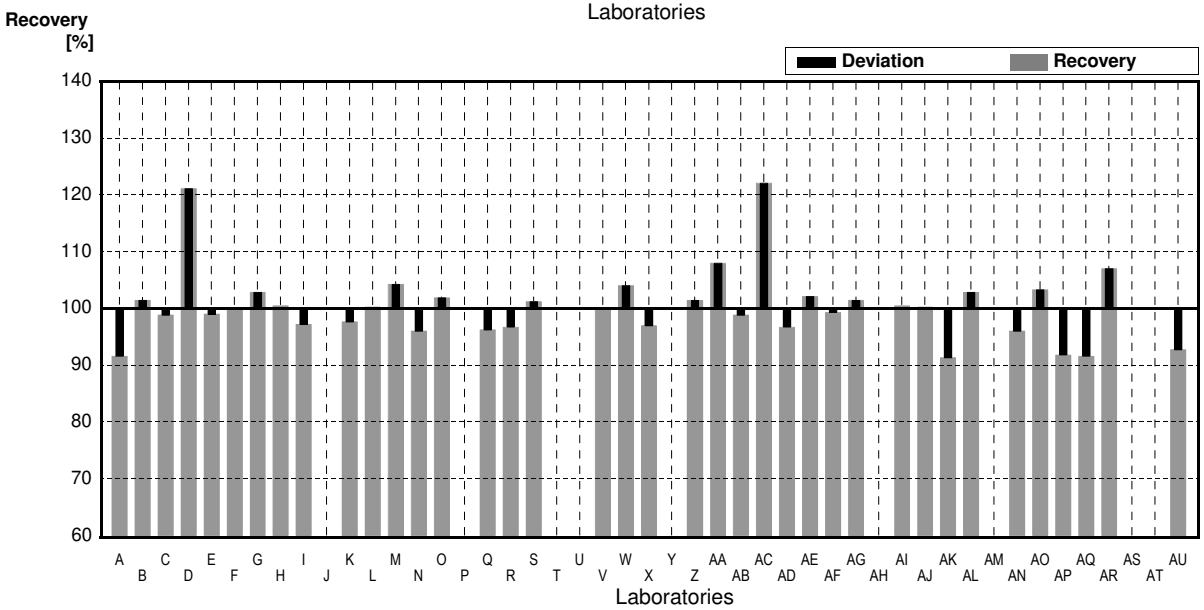
	All results	Outliers excl.	Unit
Mean ± CI(99%)	5,55 ± 0,13	5,55 ± 0,09	mg/l
Recov. ± CI(99%)	99,0 ± 2,2	99,1 ± 1,6	%
SD between labs	0,29	0,19	mg/l
RSD between labs	5,1	3,4	%
n for calculation	38	35	

Sample N162B
Parameter Potassium

Target value	± U (k=2)	4,26	mg/l	±	0,03 mg/l
IFA result	± U (k=2)	4,40	mg/l	±	0,25 mg/l
Stability test			mg/l		

Lab Code	Result		±	Unit	Recovery	z-Score
A	3,90			mg/l	92%	-1,92
B	4,32		0,35	mg/l	101%	0,32
C	4,21		0,4	mg/l	99%	-0,27
D	5,16	*	1,03	mg/l	121%	4,80
E	4,217		0,167	mg/l	99%	-0,23
F	4,25		0,15	mg/l	100%	-0,05
G	4,38		0,85	mg/l	103%	0,64
H	4,28		0,06	mg/l	100%	0,11
I	4,14		0,414	mg/l	97%	-0,64
J				mg/l		
K	4,16		0,75	mg/l	98%	-0,53
L	4,27		0,27	mg/l	100%	0,05
M	4,44		0,22	mg/l	104%	0,96
N	4,09		0,56	mg/l	96%	-0,91
O	4,34		0,43	mg/l	102%	0,43
P				mg/l		
Q	4,10		0,68	mg/l	96%	-0,85
R	4,12		0,891	mg/l	97%	-0,75
S	4,31		0,34	mg/l	101%	0,27
T				mg/l		
U				mg/l		
V	4,25		0,90	mg/l	100%	-0,05
W	4,43		0,44	mg/l	104%	0,91
X	4,13		0,17	mg/l	97%	-0,69
Y				mg/l		
Z	4,32		0,432	mg/l	101%	0,32
AA	4,60		1	mg/l	108%	1,81
AB	4,21		0,25	mg/l	99%	-0,27
AC	5,2	*		mg/l	122%	5,01
AD	4,12		0,30	mg/l	97%	-0,75
AE	4,35		0,11	mg/l	102%	0,48
AF	4,23		0,6	mg/l	99%	-0,16
AG	4,32		0,20	mg/l	101%	0,32
AH				mg/l		
AI	4,28		0,47	mg/l	100%	0,11
AJ	4,27			mg/l	100%	0,05
AK	3,89		0,10	mg/l	91%	-1,97
AL	4,38		0,26	mg/l	103%	0,64
AM				mg/l		
AN	4,09		0,33	mg/l	96%	-0,91
AO	4,40		0,26	mg/l	103%	0,75
AP	3,91		0,39	mg/l	92%	-1,87
AQ	3,90		0,40	mg/l	92%	-1,92
AR	4,56		0,19	mg/l	107%	1,60
AS				mg/l		
AT				mg/l		
AU	3,95		0,6	mg/l	93%	-1,65



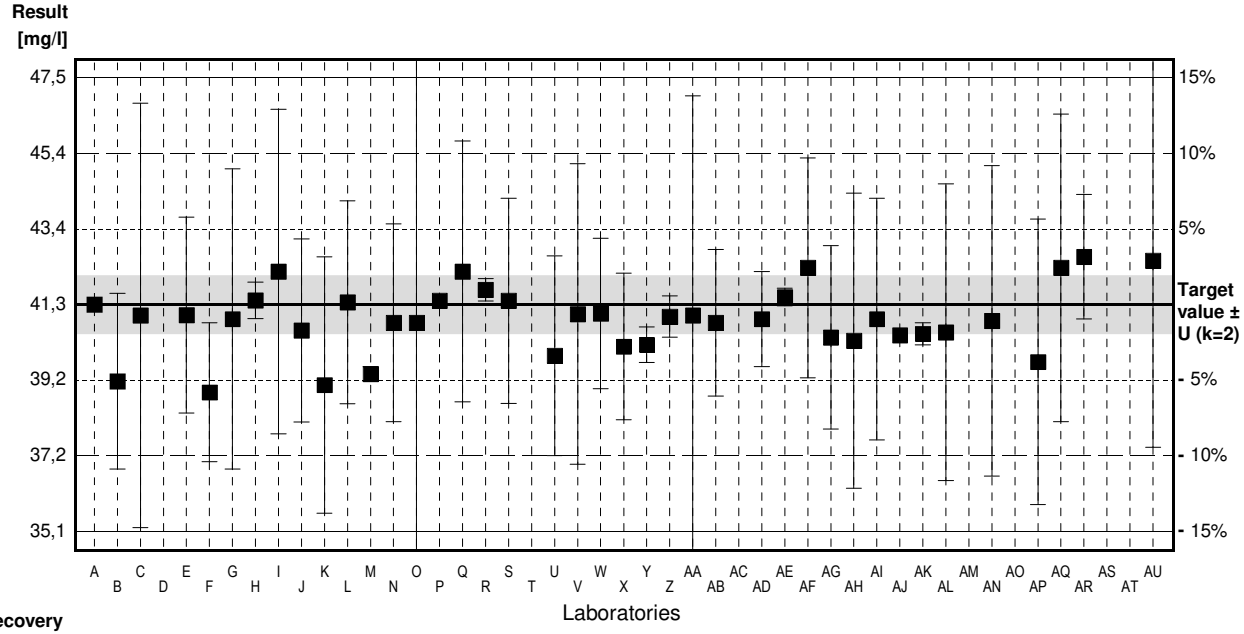


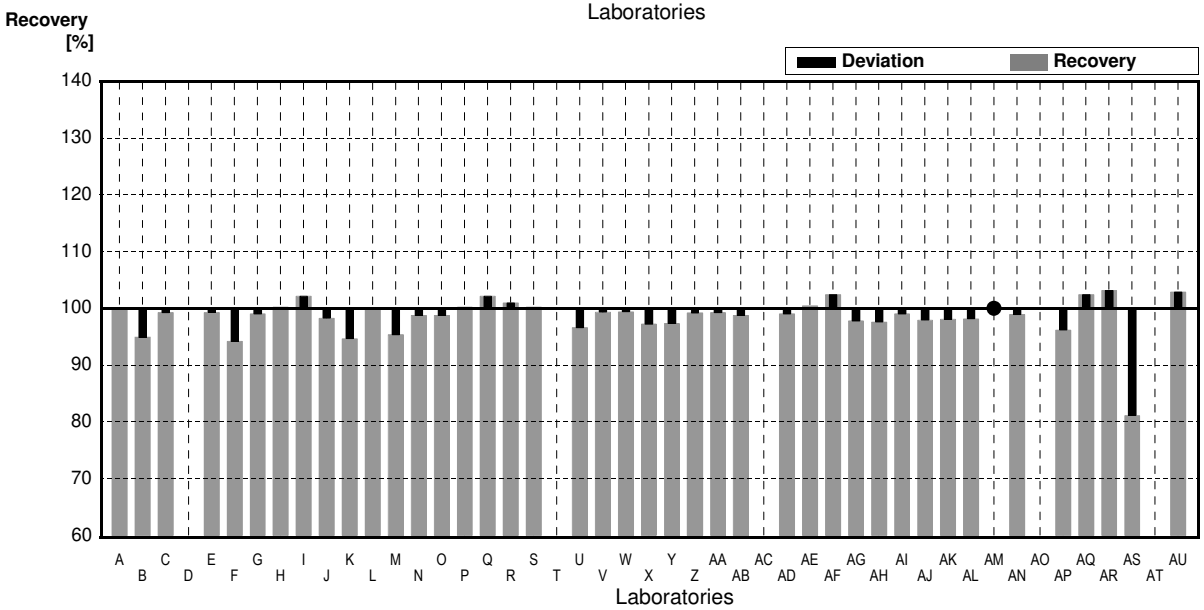
	All results	Outliers excl.	Unit
Mean ± CI(99%)	4,28 ± 0,12	4,23 ± 0,08	mg/l
Recov. ± CI(99%)	100,4 ± 2,9	99,2 ± 1,9	%
SD between labs	0,28	0,18	mg/l
RSD between labs	6,5	4,2	%
n for calculation	38	36	

Sample N162A
Parameter Nitrate

Target value ± U (k=2)	41,3	mg/l	±	0,8	mg/l
IFA result ± U (k=2)	40,4	mg/l	±	2,2	mg/l
Stability test		mg/l			

Lab Code	Result	±	Unit	Recovery	z-Score
A	41,3		mg/l	100%	0,00
B	39,2	2,4	mg/l	95%	-1,59
C	41,0	5,8	mg/l	99%	-0,23
D			mg/l		
E	41,008	2,673	mg/l	99%	-0,22
F	38,9	1,9	mg/l	94%	-1,82
G	40,9	4,1	mg/l	99%	-0,30
H	41,41	0,5	mg/l	100%	0,08
I	42,2	4,43	mg/l	102%	0,68
J	40,588	2,5	mg/l	98%	-0,54
K	39,1	3,5	mg/l	95%	-1,66
L	41,36	2,77	mg/l	100%	0,05
M	39,4	0,2	mg/l	95%	-1,44
N	40,8	2,7	mg/l	99%	-0,38
O	40,8	7,3	mg/l	99%	-0,38
P	41,40		mg/l	100%	0,08
Q	42,2	3,56	mg/l	102%	0,68
R	41,7	0,308	mg/l	101%	0,30
S	41,4	2,8	mg/l	100%	0,08
T			mg/l		
U	39,9	2,73	mg/l	97%	-1,06
V	41,04	4,1	mg/l	99%	-0,20
W	41,055	2,053	mg/l	99%	-0,19
X	40,15	2,0	mg/l	97%	-0,87
Y	40,2	0,482	mg/l	97%	-0,83
Z	40,97	0,567	mg/l	99%	-0,25
AA	41,0	6	mg/l	99%	-0,23
AB	40,8	2,0	mg/l	99%	-0,38
AC			mg/l		
AD	40,9	1,3	mg/l	99%	-0,30
AE	41,5	0,24	mg/l	100%	0,15
AF	42,3	3	mg/l	102%	0,76
AG	40,4	2,5	mg/l	98%	-0,68
AH	40,31	4,03	mg/l	98%	-0,75
AI	40,9	3,3	mg/l	99%	-0,30
AJ	40,46		mg/l	98%	-0,64
AK	40,5	0,3	mg/l	98%	-0,61
AL	40,54	4,05	mg/l	98%	-0,58
AM	>30		mg/l	•	
AN	40,85	4,24	mg/l	99%	-0,34
AO			mg/l		
AP	39,73	3,9	mg/l	96%	-1,19
AQ	42,3	4,2	mg/l	102%	0,76
AR	42,6	1,7	mg/l	103%	0,98
AS	33,5 *	0,603	mg/l	81%	-5,90
AT			mg/l		
AU	42,5	5,1	mg/l	103%	0,91



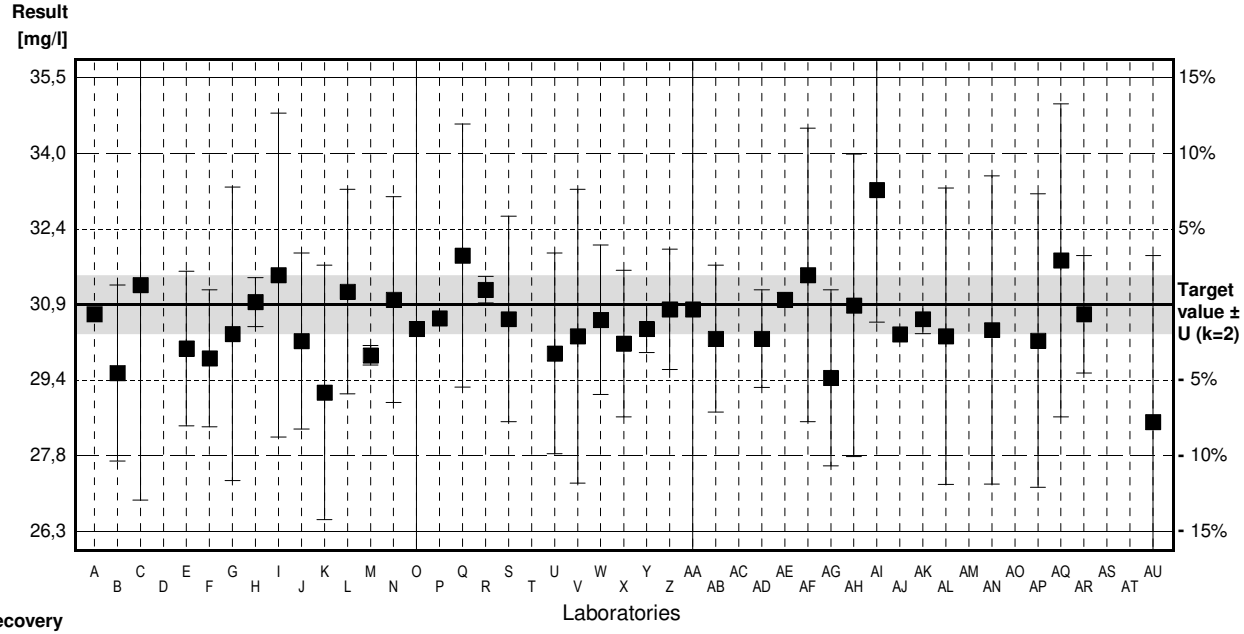


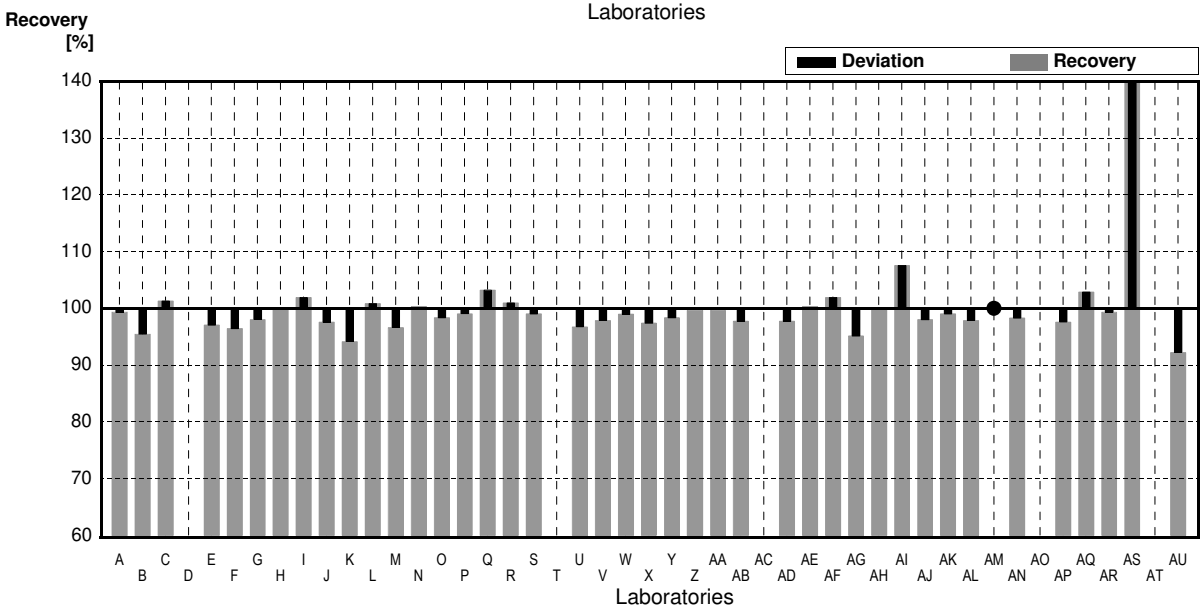
	All results	Outliers excl.	Unit
Mean ± CI(99%)	40,7 ± 0,6	40,9 ± 0,4	mg/l
Recov. ± CI(99%)	98,6 ± 1,5	99,0 ± 0,9	%
SD between labs	1,5	0,9	mg/l
RSD between labs	3,6	2,2	%
n for calculation	41	40	

Sample N162B
Parameter Nitrate

Target value ± U (k=2)	30,9	mg/l	±	0,6	mg/l
IFA result ± U (k=2)	30,3	mg/l	±	1,6	mg/l
Stability test		mg/l			

Lab Code	Result		±	Unit	Recovery	z-Score
A	30,7			mg/l	99%	-0,20
B	29,5		1,8	mg/l	95%	-1,42
C	31,3		4,4	mg/l	101%	0,40
D				mg/l		
E	30,00		1,578	mg/l	97%	-0,91
F	29,8		1,4	mg/l	96%	-1,11
G	30,3		3,0	mg/l	98%	-0,61
H	30,95		0,5	mg/l	100%	0,05
I	31,5		3,31	mg/l	102%	0,61
J	30,152		1,8	mg/l	98%	-0,76
K	29,1		2,6	mg/l	94%	-1,82
L	31,16		2,09	mg/l	101%	0,26
M	29,86		0,2	mg/l	97%	-1,05
N	31,0		2,1	mg/l	100%	0,10
O	30,4		5,5	mg/l	98%	-0,51
P	30,62			mg/l	99%	-0,28
Q	31,9		2,69	mg/l	103%	1,01
R	31,2		0,270	mg/l	101%	0,30
S	30,6		2,1	mg/l	99%	-0,30
T				mg/l		
U	29,9		2,05	mg/l	97%	-1,01
V	30,25		3,0	mg/l	98%	-0,66
W	30,587		1,529	mg/l	99%	-0,32
X	30,1		1,5	mg/l	97%	-0,81
Y	30,4		0,482	mg/l	98%	-0,51
Z	30,8		1,23	mg/l	100%	-0,10
AA	30,8		5	mg/l	100%	-0,10
AB	30,2		1,5	mg/l	98%	-0,71
AC				mg/l		
AD	30,2		1,0	mg/l	98%	-0,71
AE	31,0		0,14	mg/l	100%	0,10
AF	31,5		3	mg/l	102%	0,61
AG	29,4		1,8	mg/l	95%	-1,52
AH	30,88		3,09	mg/l	100%	-0,02
AI	33,24	*	2,7	mg/l	108%	2,37
AJ	30,29			mg/l	98%	-0,62
AK	30,6		0,3	mg/l	99%	-0,30
AL	30,25		3,03	mg/l	98%	-0,66
AM	>30			mg/l	•	
AN	30,38		3,15	mg/l	98%	-0,53
AO				mg/l		
AP	30,16		3,0	mg/l	98%	-0,75
AQ	31,8		3,2	mg/l	103%	0,91
AR	30,7		1,2	mg/l	99%	-0,20
AS	57,0	*	1,03	mg/l	184%	26,40
AT				mg/l		
AU	28,5	*	3,4	mg/l	92%	-2,43



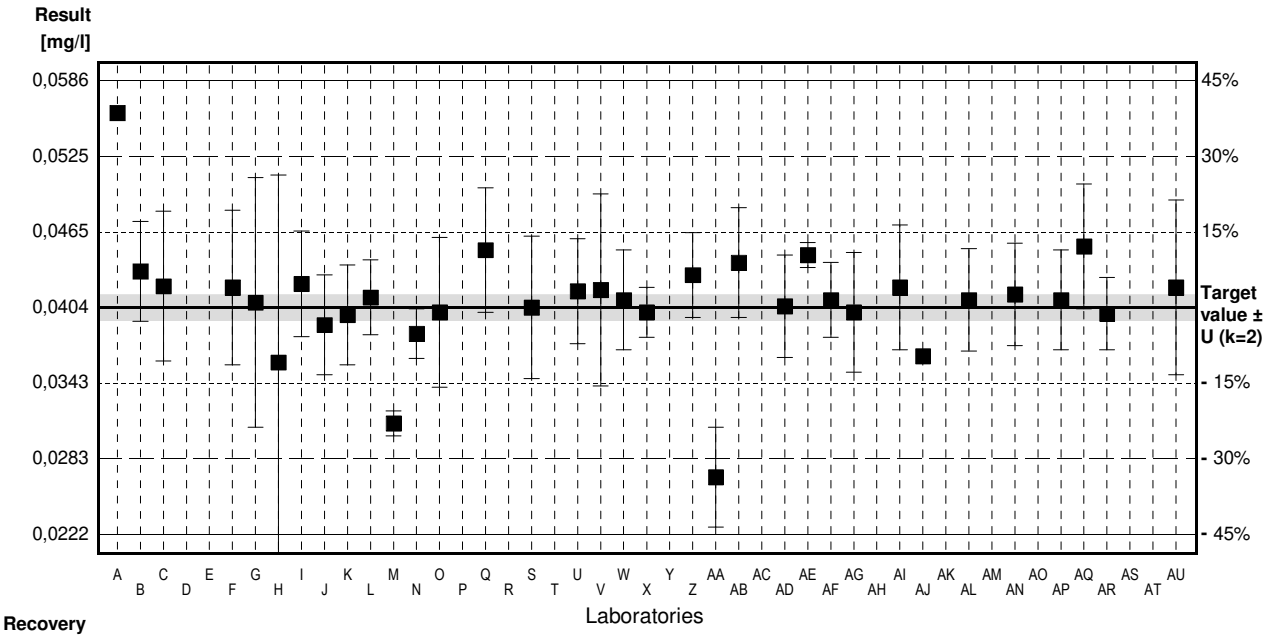


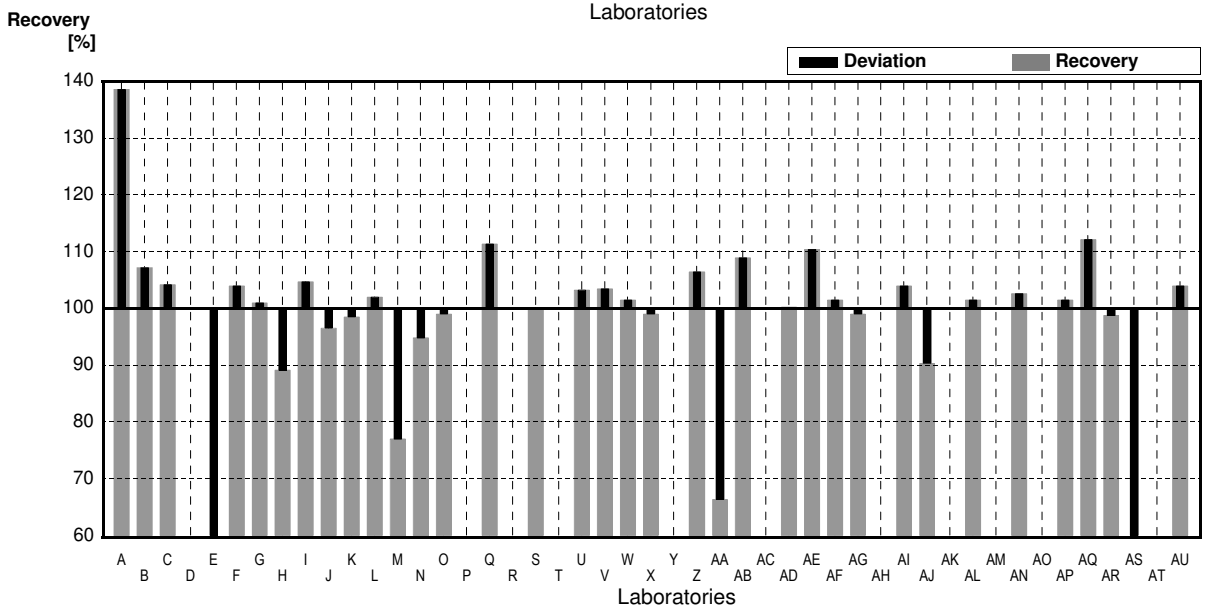
	All results	Outliers excl.	Unit
Mean ± CI(99%)	31,2 ± 1,8	30,5 ± 0,3	mg/l
Recov. ± CI(99%)	101,0 ± 5,7	98,8 ± 0,9	%
SD between labs	4,2	0,6	mg/l
RSD between labs	13,5	2,1	%
n for calculation	41	38	

Sample N162A
Parameter Nitrite

Target value	± U (k=2)	0,0404 mg/l	±	0,0010 mg/l
IFA result	± U (k=2)	0,0400 mg/l	±	0,0020 mg/l
Stability test	± U (k=2)	0,0402 mg/l	±	0,0020 mg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A	0,056 *		mg/l	139%	6,90
B	0,0433	0,004	mg/l	107%	1,28
C	0,0421	0,006	mg/l	104%	0,75
D			mg/l		
E	0,0215 *	0,004	mg/l	53%	-8,35
F	0,0420	0,0062	mg/l	104%	0,71
G	0,0408	0,01	mg/l	101%	0,18
H	0,0360	0,015	mg/l	89%	-1,94
I	0,0423	0,00423	mg/l	105%	0,84
J	0,0390	0,004	mg/l	97%	-0,62
K	0,0398	0,004	mg/l	99%	-0,27
L	0,0412	0,003	mg/l	102%	0,35
M	0,0311 *	0,001	mg/l	77%	-4,11
N	0,0383	0,002	mg/l	95%	-0,93
O	0,0400	0,0060	mg/l	99%	-0,18
P			mg/l		
Q	0,0450	0,005	mg/l	111%	2,03
R			mg/l		
S	0,0404	0,0057	mg/l	100%	0,00
T			mg/l		
U	0,0417	0,0042	mg/l	103%	0,57
V	0,0418	0,0077	mg/l	103%	0,62
W	0,0410	0,004	mg/l	101%	0,27
X	0,0400	0,002	mg/l	99%	-0,18
Y			mg/l		
Z	0,0430	0,0034	mg/l	106%	1,15
AA	0,0268 *	0,004	mg/l	66%	-6,01
AB	0,0440	0,0044	mg/l	109%	1,59
AC			mg/l		
AD	0,0405	0,0041	mg/l	100%	0,04
AE	0,0446	0,001	mg/l	110%	1,86
AF	0,0410	0,003	mg/l	101%	0,27
AG	0,0400	0,0048	mg/l	99%	-0,18
AH			mg/l		
AI	0,0420	0,005	mg/l	104%	0,71
AJ	0,0365		mg/l	90%	-1,72
AK			mg/l		
AL	0,0410	0,0041	mg/l	101%	0,27
AM			mg/l		
AN	0,04145	0,0041	mg/l	103%	0,46
AO			mg/l		
AP	0,0410	0,004	mg/l	101%	0,27
AQ	0,0453	0,005	mg/l	112%	2,17
AR	0,0399	0,0029	mg/l	99%	-0,22
AS	0,00450 *	0,00038	mg/l	11%	-15,87
AT			mg/l		
AU	0,0420	0,007	mg/l	104%	0,71



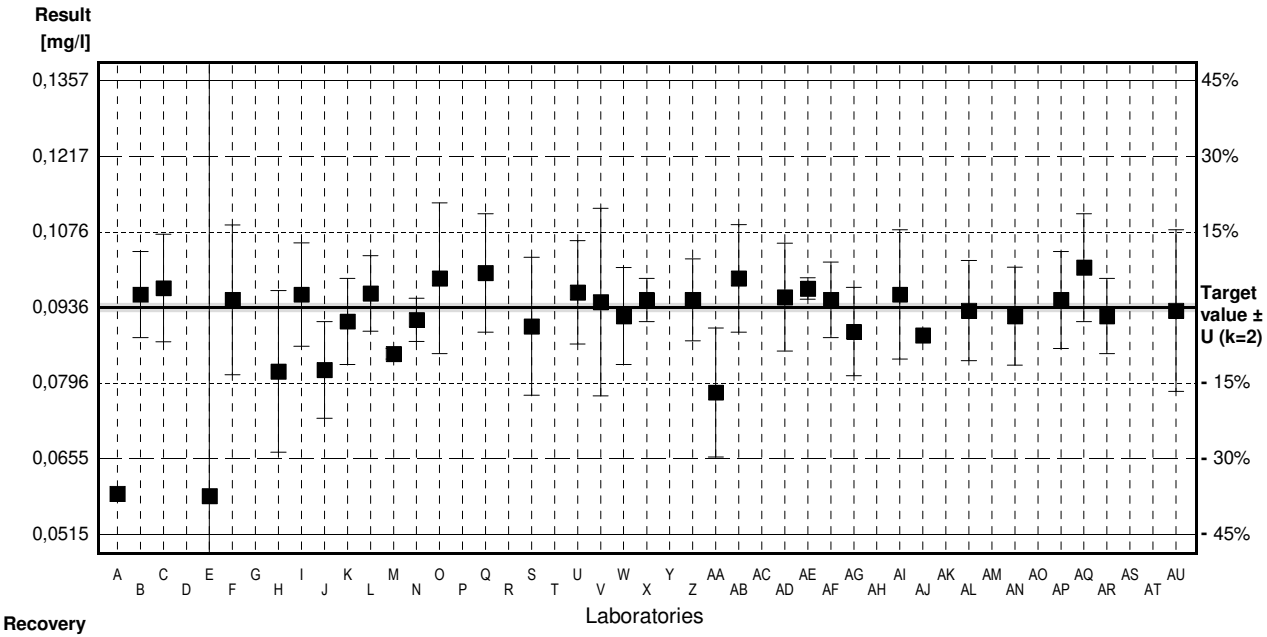


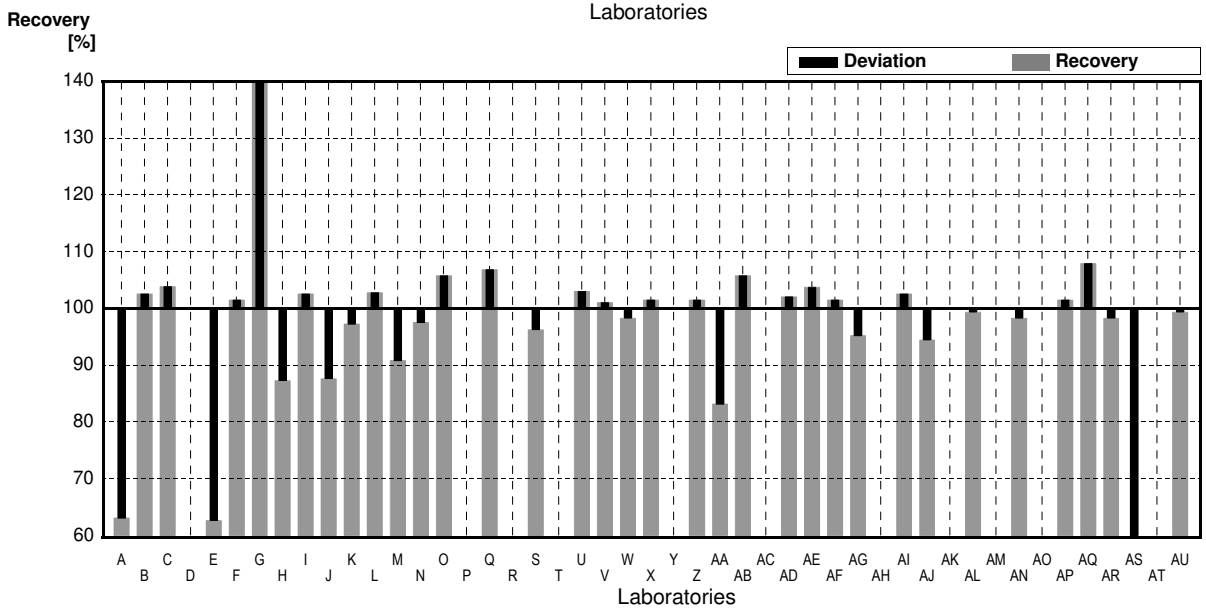
	All results	Outliers excl.	Unit
Mean ± CI(99%)	0,0394 ± 0,003	0,0412 ± 0,001	mg/l
Recov. ± CI(99%)	97,4 ± 9,1	102,0 ± 2,6	%
SD between labs	0,0081	0,0021	mg/l
RSD between labs	20,5	5,1	%
n for calculation	36	31	

Sample N162B
Parameter Nitrite

Target value	± U (k=2)	0,0936 mg/l	±	0,0008 mg/l
IFA result	± U (k=2)	0,092 mg/l	±	0,005 mg/l
Stability test	± U (k=2)	0,092 mg/l	±	0,005 mg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A	0,059 *		mg/l	63%	-6,60
B	0,096	0,008	mg/l	103%	0,46
C	0,0972	0,01	mg/l	104%	0,69
D			mg/l		
E	0,0586 *	0,094	mg/l	63%	-6,68
F	0,095	0,0139	mg/l	101%	0,27
G	0,1385 *	0,035	mg/l	148%	8,57
H	0,0817 *	0,015	mg/l	87%	-2,27
I	0,096	0,0096	mg/l	103%	0,46
J	0,082 *	0,009	mg/l	88%	-2,21
K	0,091	0,008	mg/l	97%	-0,50
L	0,0962	0,007	mg/l	103%	0,50
M	0,085	0,001	mg/l	91%	-1,64
N	0,0913	0,004	mg/l	98%	-0,44
O	0,099	0,014	mg/l	106%	1,03
P			mg/l		
Q	0,100	0,011	mg/l	107%	1,22
R			mg/l		
S	0,0901	0,0128	mg/l	96%	-0,67
T			mg/l		
U	0,0964	0,0096	mg/l	103%	0,53
V	0,0946	0,0174	mg/l	101%	0,19
W	0,092	0,009	mg/l	98%	-0,31
X	0,095	0,004	mg/l	101%	0,27
Y			mg/l		
Z	0,095	0,0076	mg/l	101%	0,27
AA	0,0778 *	0,012	mg/l	83%	-3,01
AB	0,099	0,010	mg/l	106%	1,03
AC			mg/l		
AD	0,0955	0,01	mg/l	102%	0,36
AE	0,0971	0,002	mg/l	104%	0,67
AF	0,095	0,007	mg/l	101%	0,27
AG	0,0891	0,0082	mg/l	95%	-0,86
AH			mg/l		
AI	0,096	0,012	mg/l	103%	0,46
AJ	0,0884		mg/l	94%	-0,99
AK			mg/l		
AL	0,0930	0,0093	mg/l	99%	-0,11
AM			mg/l		
AN	0,0920	0,0091	mg/l	98%	-0,31
AO			mg/l		
AP	0,095	0,009	mg/l	101%	0,27
AQ	0,101	0,01	mg/l	108%	1,41
AR	0,092	0,007	mg/l	98%	-0,31
AS	0,0170 *	0,00145	mg/l	18%	-14,61
AT			mg/l		
AU	0,093	0,015	mg/l	99%	-0,11



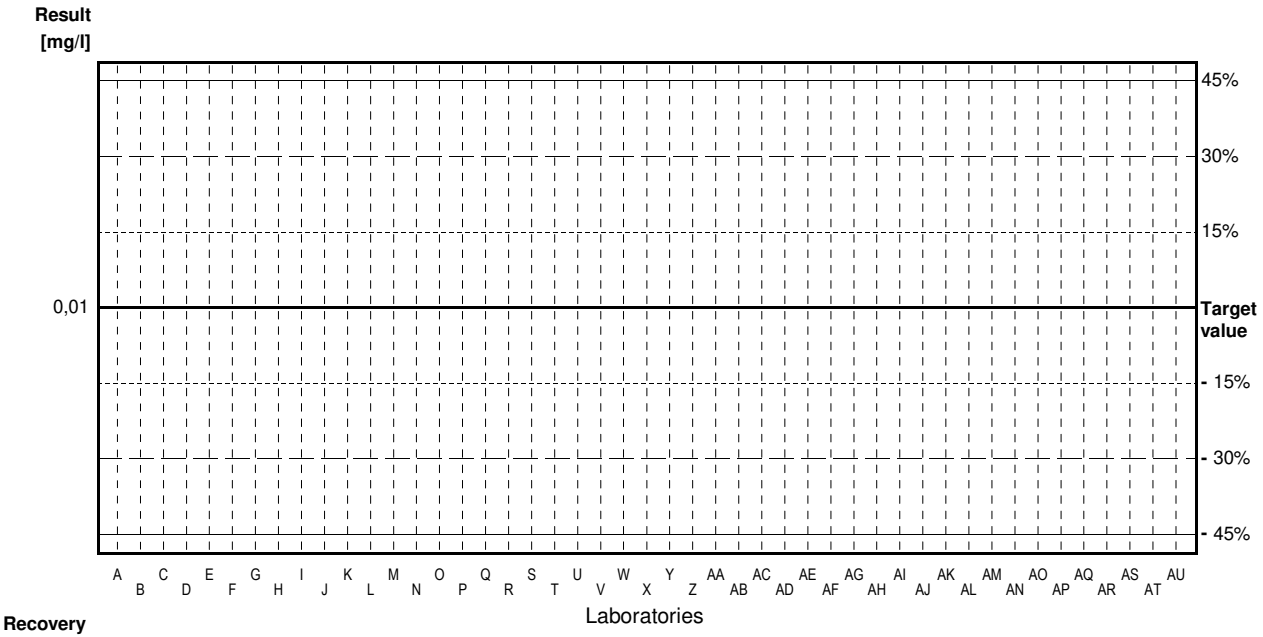


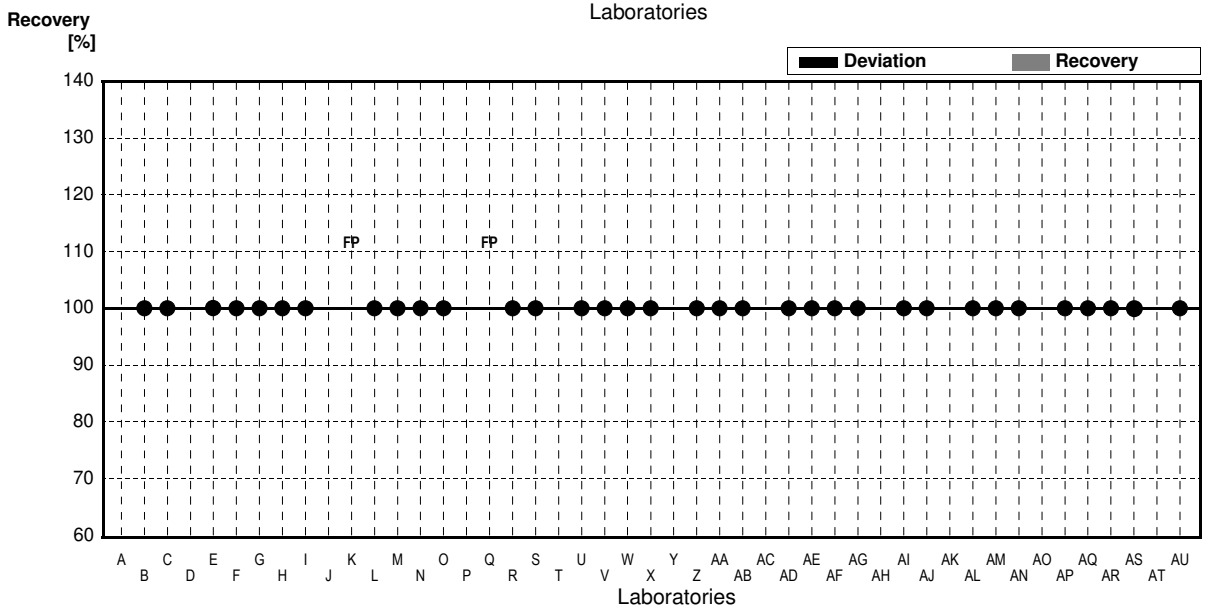
	All results	Outliers excl.	Unit
Mean ± CI(99%)	0,0903 ± 0,008	0,0943 ± 0,001	mg/l
Recov. ± CI(99%)	96,5 ± 8,5	100,8 ± 2,0	%
SD between labs	0,0176	0,0036	mg/l
RSD between labs	19,5	3,8	%
n for calculation	36	29	

Sample N162A
Parameter Ammonium

Target value	<0,01	mg/l
IFA result	<0,01	mg/l
Stability test	<0,01	mg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A			mg/l		
B	<0.008		mg/l	•	
C	<0.01		mg/l	•	
D			mg/l		
E	0.0137	0.004	mg/l	•	
F	<0.01		mg/l	•	
G	<0.02		mg/l	•	
H	<0.030	0.080	mg/l	•	
I	<0.04		mg/l	•	
J			mg/l		
K	0.0150	0.001	mg/l	FP	
L	<0.0050		mg/l	•	
M	<0.04	0.003	mg/l	•	
N	<0.01	0.0009	mg/l	•	
O	<0.010		mg/l	•	
P			mg/l		
Q	0.0300	0.010	mg/l	FP	
R	<0.01		mg/l	•	
S	<0.003		mg/l	•	
T			mg/l		
U	<0.005	0	mg/l	•	
V	<0.010		mg/l	•	
W	<0.01		mg/l	•	
X	<0.01		mg/l	•	
Y			mg/l		
Z	<0.005		mg/l	•	
AA	<0.01		mg/l	•	
AB	<0.01		mg/l	•	
AC			mg/l		
AD	<0.01		mg/l	•	
AE	<0.010		mg/l	•	
AF	<0.013		mg/l	•	
AG	<0.010		mg/l	•	
AH			mg/l		
AI	<0.020		mg/l	•	
AJ	<0.05		mg/l	•	
AK			mg/l		
AL	<0.02		mg/l	•	
AM	<0.01		mg/l	•	
AN	0.00350	0.00073	mg/l	•	
AO			mg/l		
AP	<0.009		mg/l	•	
AQ	<0.01		mg/l	•	
AR	<0.02		mg/l	•	
AS	0.0150	0.00540	mg/l	•	
AT			mg/l		
AU	<0.005		mg/l	•	



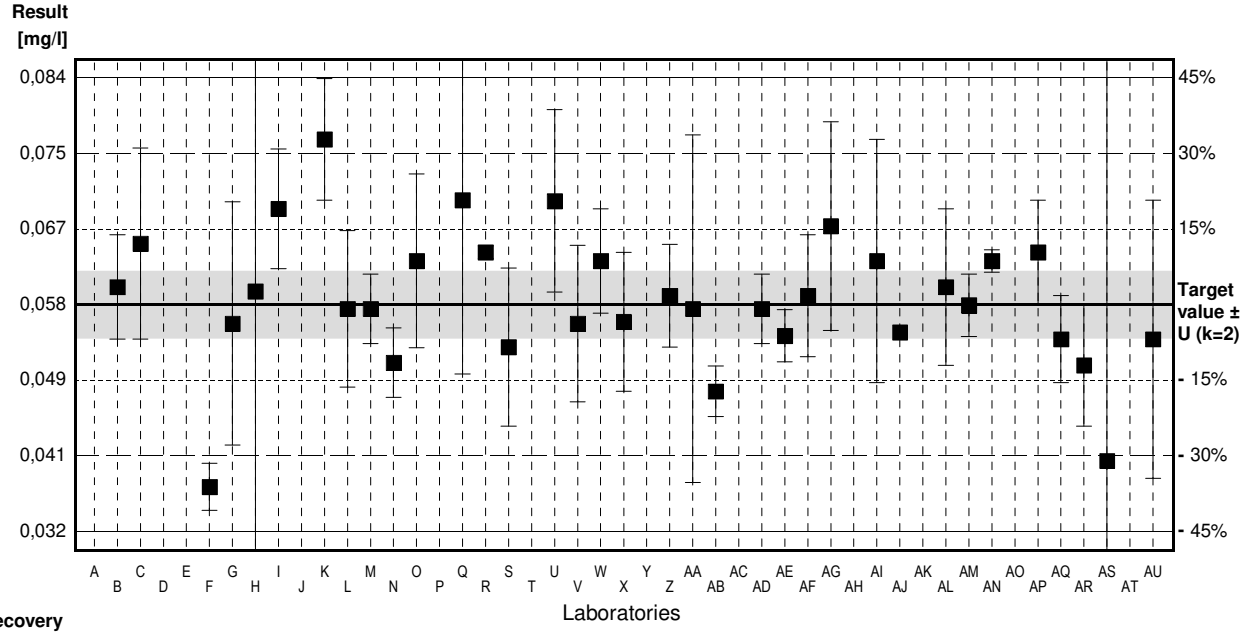


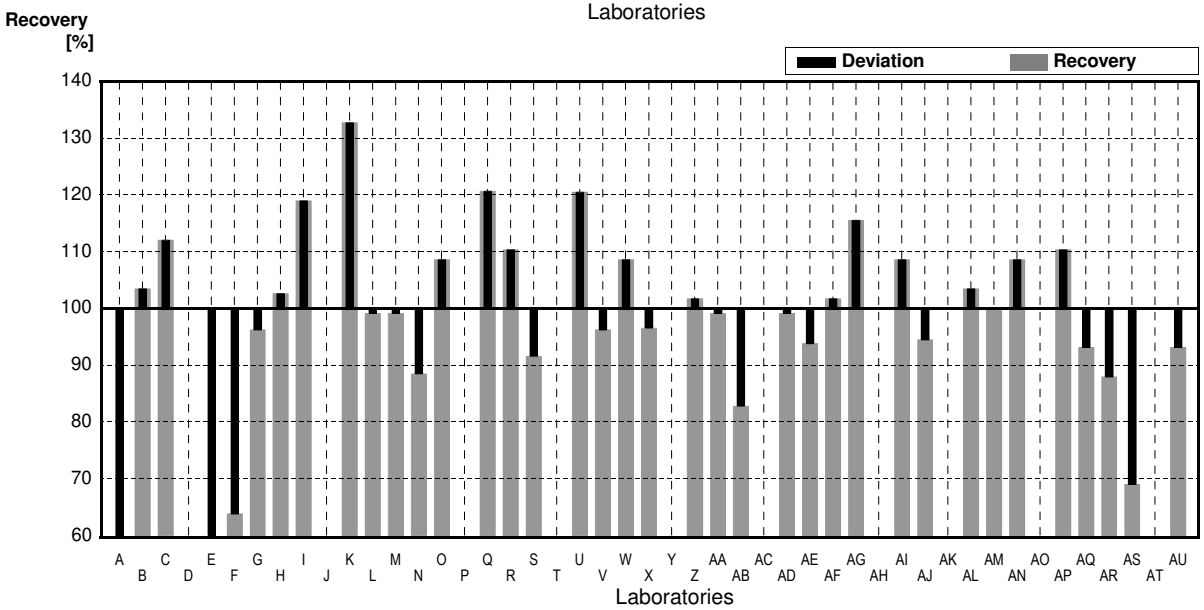
	All results	Outliers excl.	Unit
Mean ± CI(99%)			mg/l
Recov. ± CI(99%)			%
SD between labs			mg/l
RSD between labs			%
n for calculation			

Sample N162B
Parameter Ammonium

Target value	± U (k=2)	0,058 mg/l	±	0,004 mg/l
IFA result	± U (k=2)	0,059 mg/l	±	0,002 mg/l
Stability test	± U (k=2)	0,058 mg/l	±	0,002 mg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A	0.0220 *		mg/l	38%	-5.17
B	0.060	0.006	mg/l	103%	0.29
C	0.065	0.011	mg/l	112%	1.01
D			mg/l		
E	0.0102 *	0.0136	mg/l	18%	-6.87
F	0.0370	0.0027	mg/l	64%	-3.02
G	0.0558	0.014	mg/l	96%	-0.32
H	0.0595	0.080	mg/l	103%	0.22
I	0.069	0.0069	mg/l	119%	1.58
J			mg/l		
K	0.077	0.007	mg/l	133%	2.73
L	0.0575	0.009	mg/l	99%	-0.07
M	0.0575	0.004	mg/l	99%	-0.07
N	0.0513	0.004	mg/l	88%	-0.96
O	0.063	0.010	mg/l	109%	0.72
P			mg/l		
Q	0.070	0.020	mg/l	121%	1.72
R	0.0640	0.00072	mg/l	110%	0.86
S	0.0531	0.0091	mg/l	92%	-0.70
T			mg/l		
U	0.0699	0.0105	mg/l	121%	1.71
V	0.0558	0.0090	mg/l	96%	-0.32
W	0.063	0.006	mg/l	109%	0.72
X	0.056	0.008	mg/l	97%	-0.29
Y			mg/l		
Z	0.059	0.0059	mg/l	102%	0.14
AA	0.0575	0.02	mg/l	99%	-0.07
AB	0.0480	0.0029	mg/l	83%	-1.44
AC			mg/l		
AD	0.0575	0.004	mg/l	99%	-0.07
AE	0.0544	0.003	mg/l	94%	-0.52
AF	0.059	0.007	mg/l	102%	0.14
AG	0.067	0.012	mg/l	116%	1.29
AH			mg/l		
AI	0.063	0.014	mg/l	109%	0.72
AJ	0.0548		mg/l	94%	-0.46
AK			mg/l		
AL	0.060	0.009	mg/l	103%	0.29
AM	0.0579	0.0036	mg/l	100%	-0.01
AN	0.063	0.0013	mg/l	109%	0.72
AO			mg/l		
AP	0.064	0.006	mg/l	110%	0.86
AQ	0.054	0.005	mg/l	93%	-0.57
AR	0.051	0.007	mg/l	88%	-1.01
AS	0.0400	0.144	mg/l	69%	-2.59
AT			mg/l		
AU	0.054	0.016	mg/l	93%	-0.57



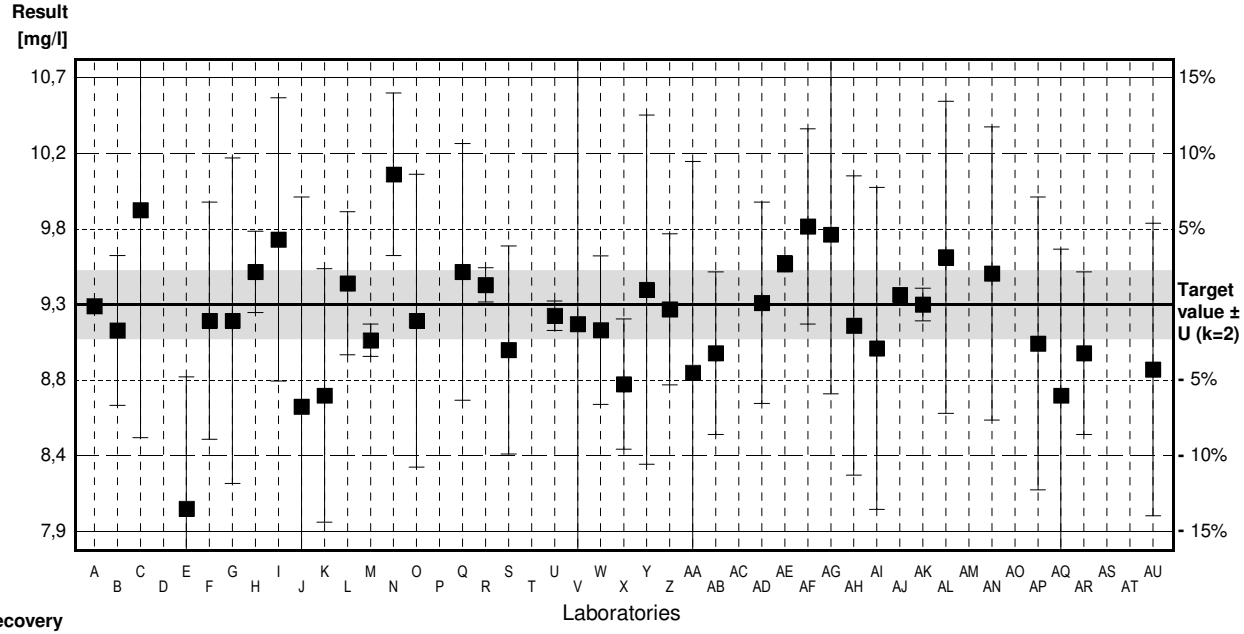


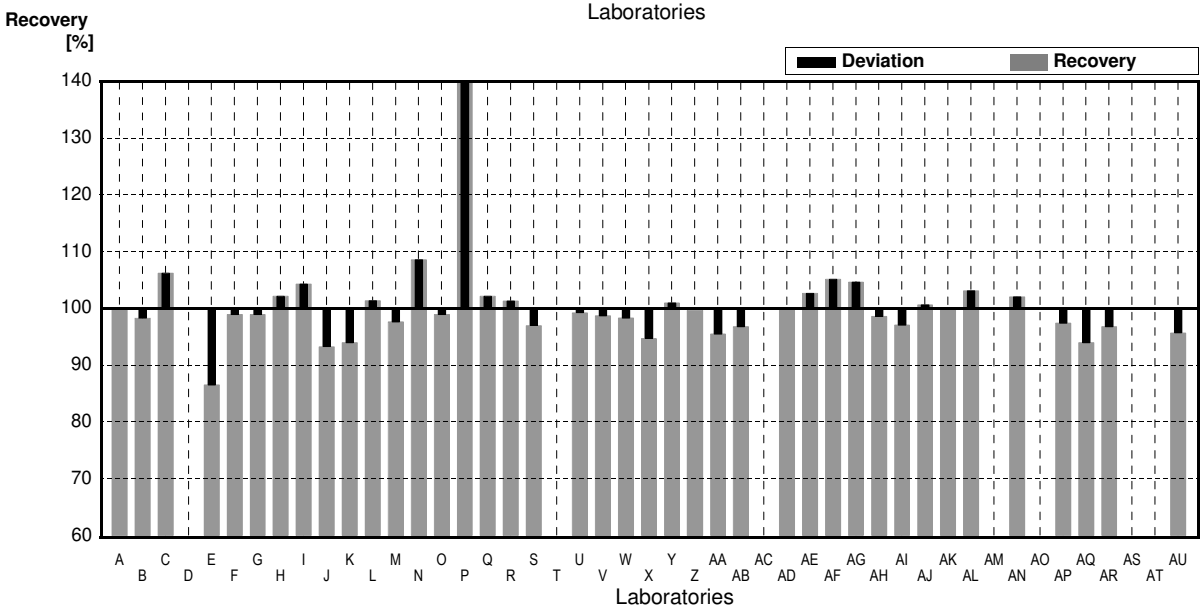
	All results	Outliers excl.	Unit
Mean ± CI(99%)	0,056 ± 0,006	0,059 ± 0,004	mg/l
Recov. ± CI(99%)	97,0 ± 9,6	100,9 ± 6,3	%
SD between labs	0,012	0,008	mg/l
RSD between labs	22,2	13,5	%
n for calculation	37	35	

Sample N162A
Parameter Chloride

Target value	± U (k=2)	9,3 mg/l	±	0,2 mg/l	
IFA result	± U (k=2)	9,3 mg/l	±	0,4 mg/l	
Stability test		mg/l			

Lab Code	Result	±	Unit	Recovery	z-Score
A	9,29		mg/l	100%	-0,04
B	9,14	0,46	mg/l	98%	-0,59
C	9,88	1,4	mg/l	106%	2,15
D			mg/l		
E	8,044 *	0,811	mg/l	86%	-4,66
F	9,2	0,73	mg/l	99%	-0,37
G	9,2	1,0	mg/l	99%	-0,37
H	9,50	0,25	mg/l	102%	0,74
I	9,7	0,87	mg/l	104%	1,48
J	8,672	1,29	mg/l	93%	-2,33
K	8,74	0,78	mg/l	94%	-2,08
L	9,43	0,44	mg/l	101%	0,48
M	9,08	0,1	mg/l	98%	-0,82
N	10,1	0,5	mg/l	109%	2,97
O	9,2	0,9	mg/l	99%	-0,37
P	13,94 *		mg/l	150%	17,20
Q	9,5	0,79	mg/l	102%	0,74
R	9,42	0,105	mg/l	101%	0,44
S	9,02	0,64	mg/l	97%	-1,04
T			mg/l		
U	9,23	0,09	mg/l	99%	-0,26
V	9,18	9,2	mg/l	99%	-0,44
W	9,142	0,457	mg/l	98%	-0,59
X	8,81	0,4	mg/l	95%	-1,82
Y	9,39	1,074	mg/l	101%	0,33
Z	9,27	0,464	mg/l	100%	-0,11
AA	8,88	1,3	mg/l	95%	-1,56
AB	9,0	0,5	mg/l	97%	-1,11
AC			mg/l		
AD	9,31	0,62	mg/l	100%	0,04
AE	9,55	0,050	mg/l	103%	0,93
AF	9,78	0,6	mg/l	105%	1,78
AG	9,73	0,98	mg/l	105%	1,59
AH	9,17	0,92	mg/l	99%	-0,48
AI	9,03	0,99	mg/l	97%	-1,00
AJ	9,36		mg/l	101%	0,22
AK	9,30	0,1	mg/l	100%	0,00
AL	9,59	0,96	mg/l	103%	1,08
AM			mg/l		
AN	9,49	0,902	mg/l	102%	0,70
AO			mg/l		
AP	9,06	0,9	mg/l	97%	-0,89
AQ	8,74	0,9	mg/l	94%	-2,08
AR	9,0	0,5	mg/l	97%	-1,11
AS			mg/l		
AT			mg/l		
AU	8,9	0,9	mg/l	96%	-1,48



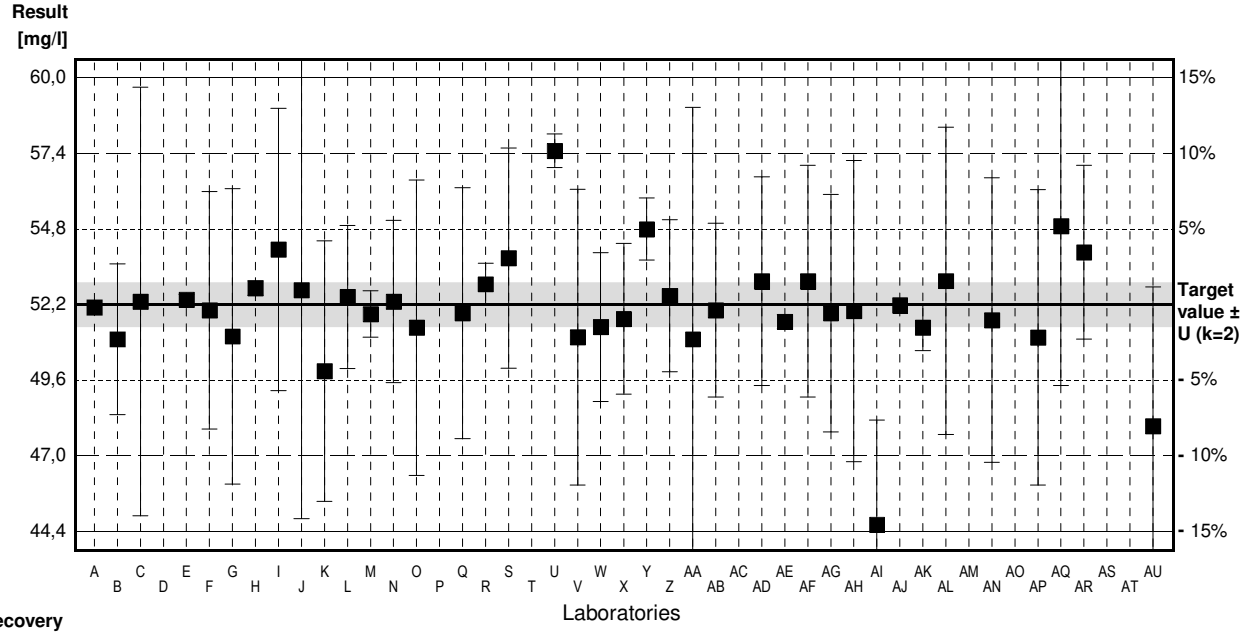


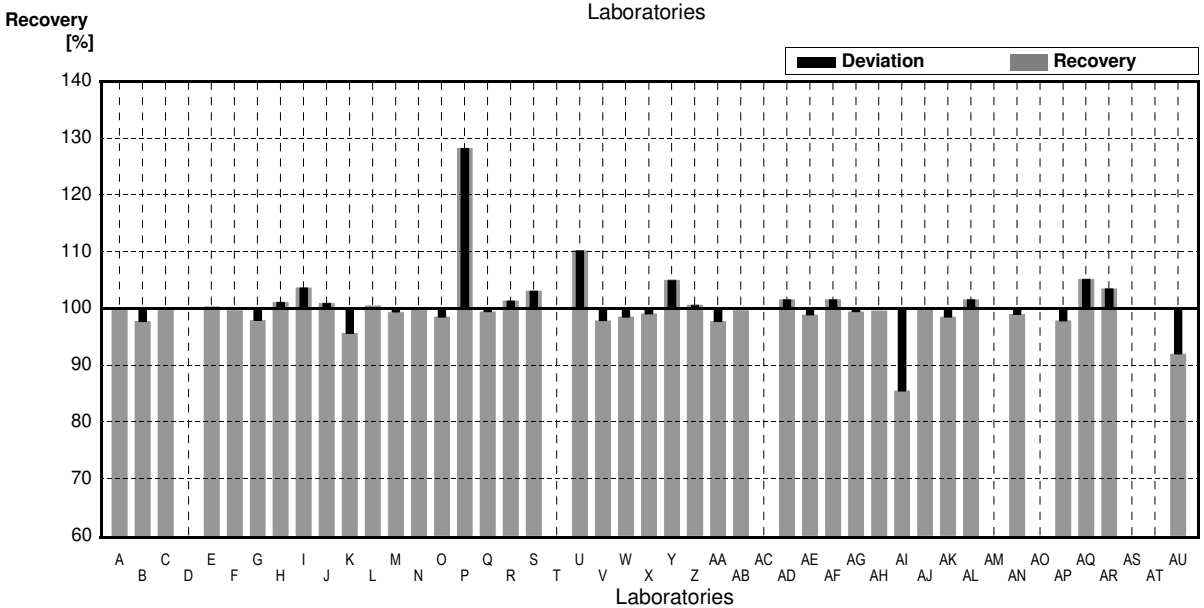
	All results	Outliers excl.	Unit
Mean ± CI(99%)	9,3 ± 0,4	9,3 ± 0,1	mg/l
Recov. ± CI(99%)	100,5 ± 3,8	99,6 ± 1,6	%
SD between labs	0,8	0,3	mg/l
RSD between labs	8,9	3,5	%
n for calculation	40	38	

Sample N162B
Parameter Chloride

Target value ± U (k=2)	52,2	mg/l	±	0,8	mg/l
IFA result ± U (k=2)	50,7	mg/l	±	1,9	mg/l
Stability test		mg/l			

Lab Code	Result		±	Unit	Recovery	z-Score
A	52,1			mg/l	100%	-0,07
B	51,0		2,6	mg/l	98%	-0,79
C	52,3		7,4	mg/l	100%	0,07
D				mg/l		
E	52,362		0,185	mg/l	100%	0,11
F	52		4,1	mg/l	100%	-0,13
G	51,1		5,1	mg/l	98%	-0,73
H	52,76		0,25	mg/l	101%	0,37
I	54,1		4,87	mg/l	104%	1,26
J	52,698		7,9	mg/l	101%	0,33
K	49,9		4,5	mg/l	96%	-1,52
L	52,46		2,47	mg/l	100%	0,17
M	51,87		0,8	mg/l	99%	-0,22
N	52,3		2,8	mg/l	100%	0,07
O	51,4		5,1	mg/l	98%	-0,53
P	66,94	*		mg/l	128%	9,74
Q	51,9		4,33	mg/l	99%	-0,20
R	52,9		0,719	mg/l	101%	0,46
S	53,8		3,8	mg/l	103%	1,06
T				mg/l		
U	57,5	*	0,58	mg/l	110%	3,50
V	51,07		5,1	mg/l	98%	-0,75
W	51,420		2,571	mg/l	99%	-0,52
X	51,7		2,6	mg/l	99%	-0,33
Y	54,8		1,074	mg/l	105%	1,72
Z	52,5		2,62	mg/l	101%	0,20
AA	51,0		8	mg/l	98%	-0,79
AB	52		3	mg/l	100%	-0,13
AC				mg/l		
AD	53,0		3,6	mg/l	102%	0,53
AE	51,6		0,24	mg/l	99%	-0,40
AF	53,0		4	mg/l	102%	0,53
AG	51,9		4,1	mg/l	99%	-0,20
AH	51,97		5,20	mg/l	100%	-0,15
AI	44,6	*	3,6	mg/l	85%	-5,02
AJ	52,17			mg/l	100%	-0,02
AK	51,4		0,8	mg/l	98%	-0,53
AL	53,01		5,30	mg/l	102%	0,54
AM				mg/l		
AN	51,66		4,91	mg/l	99%	-0,36
AO				mg/l		
AP	51,06		5,1	mg/l	98%	-0,75
AQ	54,9		5,5	mg/l	105%	1,78
AR	54		3	mg/l	103%	1,19
AS				mg/l		
AT				mg/l		
AU	48,0	*	4,8	mg/l	92%	-2,77



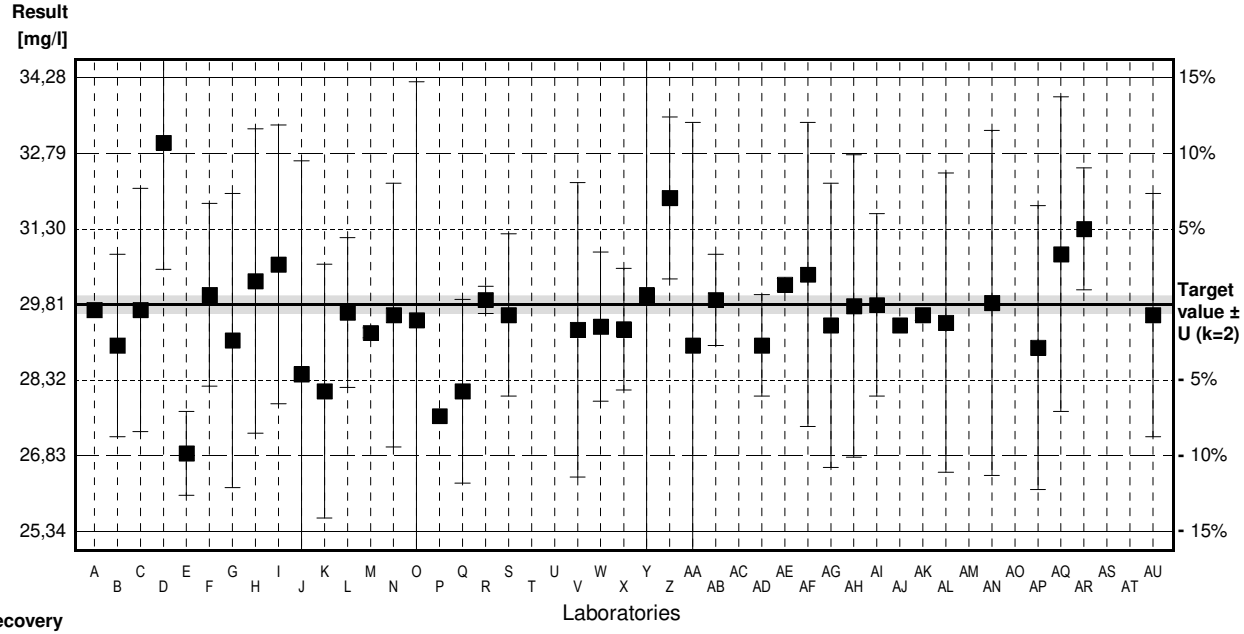


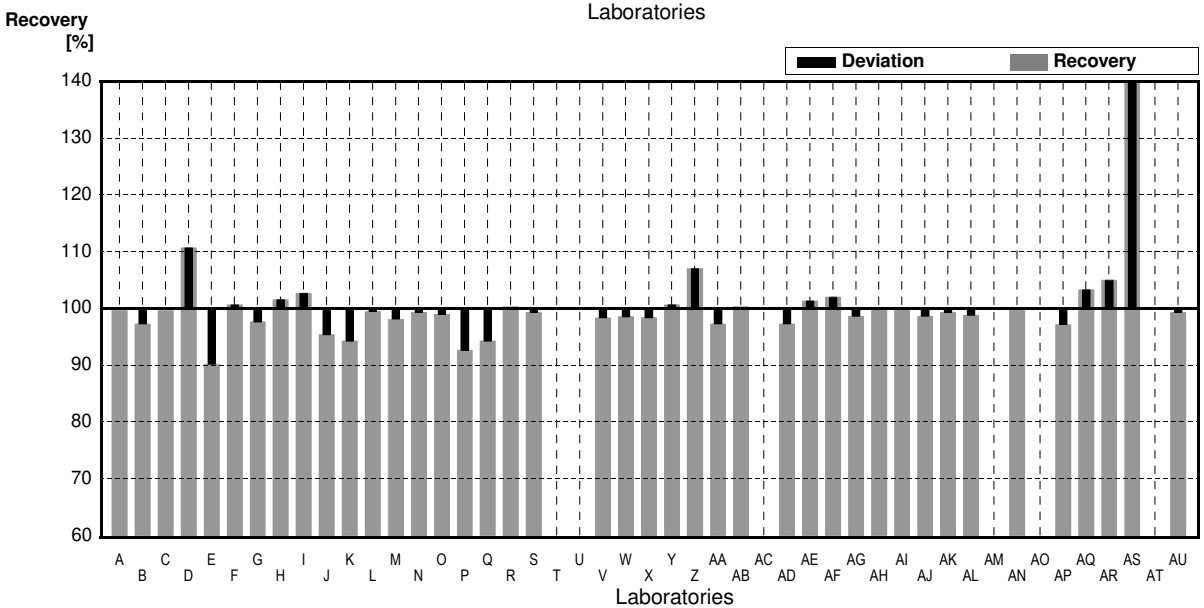
	All results	Outliers excl.	Unit
Mean ± CI(99%)	52,5 ± 1,3	52,3 ± 0,5	mg/l
Recov. ± CI(99%)	100,5 ± 2,5	100,1 ± 1,0	%
SD between labs	3,0	1,1	mg/l
RSD between labs	5,8	2,1	%
n for calculation	40	36	

Sample N162A
Parameter Sulphate

Target value	± U (k=2)	29,81	mg/l	±	0,18 mg/l
IFA result	± U (k=2)	29,6	mg/l	±	0,8 mg/l
Stability test			mg/l		

Lab Code	Result	±	Unit	Recovery	z-Score
A	29,7		mg/l	100%	-0,12
B	29,0	1,8	mg/l	97%	-0,88
C	29,7	2,4	mg/l	100%	-0,12
D	33,0 *	2,5	mg/l	111%	3,45
E	26,872 *	0,826	mg/l	90%	-3,18
F	30,0	1,8	mg/l	101%	0,21
G	29,1	2,9	mg/l	98%	-0,77
H	30,27	3,0	mg/l	102%	0,50
I	30,6	2,75	mg/l	103%	0,85
J	28,437	4,2	mg/l	95%	-1,49
K	28,1	2,5	mg/l	94%	-1,85
L	29,65	1,48	mg/l	99%	-0,17
M	29,25	0,1	mg/l	98%	-0,61
N	29,6	2,6	mg/l	99%	-0,23
O	29,5	4,7	mg/l	99%	-0,34
P	27,61 *		mg/l	93%	-2,38
Q	28,1	1,81	mg/l	94%	-1,85
R	29,9	0,268	mg/l	100%	0,10
S	29,6	1,6	mg/l	99%	-0,23
T			mg/l		
U			mg/l		
V	29,31	2,9	mg/l	98%	-0,54
W	29,373	1,469	mg/l	99%	-0,47
X	29,32	1,2	mg/l	98%	-0,53
Y	30,0	7,4	mg/l	101%	0,21
Z	31,91 *	1,596	mg/l	107%	2,27
AA	29,0	4,4	mg/l	97%	-0,88
AB	29,9	0,9	mg/l	100%	0,10
AC			mg/l		
AD	29,0	1,0	mg/l	97%	-0,88
AE	30,2	0,12	mg/l	101%	0,42
AF	30,4	3	mg/l	102%	0,64
AG	29,4	2,8	mg/l	99%	-0,44
AH	29,78	2,98	mg/l	100%	-0,03
AI	29,8	1,8	mg/l	100%	-0,01
AJ	29,40		mg/l	99%	-0,44
AK	29,6	0,1	mg/l	99%	-0,23
AL	29,45	2,95	mg/l	99%	-0,39
AM			mg/l		
AN	29,84	3,402	mg/l	100%	0,03
AO			mg/l		
AP	28,96	2,8	mg/l	97%	-0,92
AQ	30,8	3,1	mg/l	103%	1,07
AR	31,3	1,2	mg/l	105%	1,61
AS	68 *	3,74	mg/l	228%	41,33
AT			mg/l		
AU	29,6	2,4	mg/l	99%	-0,23



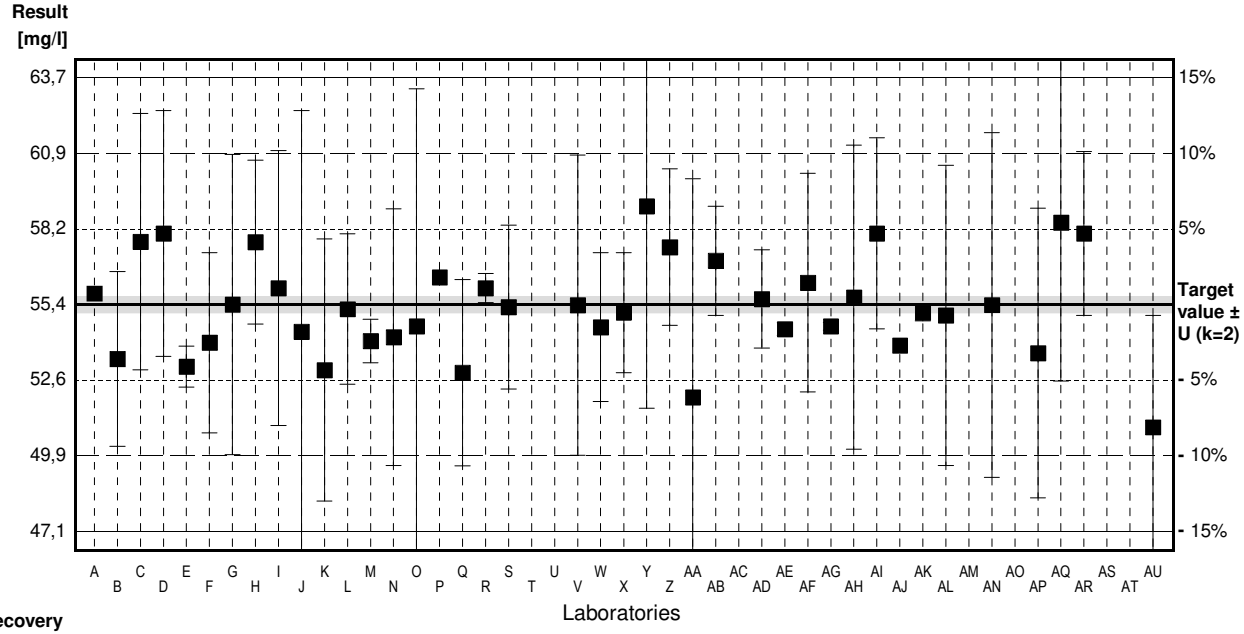


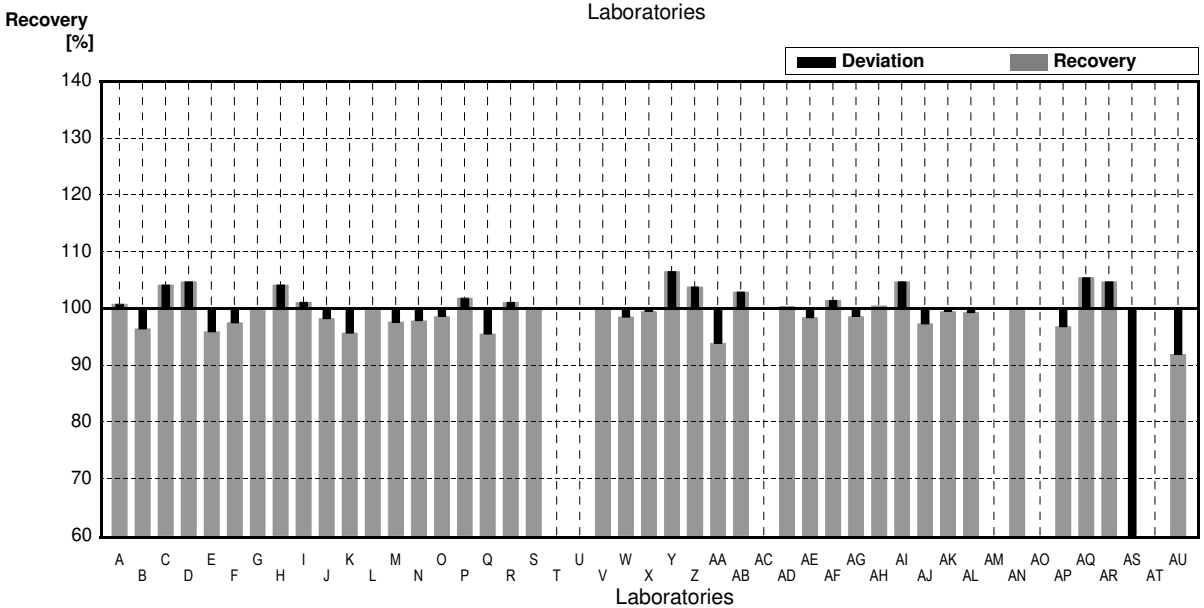
	All results	Outliers excl.	Unit
Mean ± CI(99%)	30,54 ± 2,57	29,58 ± 0,30	mg/l
Recov. ± CI(99%)	102,5 ± 8,6	99,2 ± 1,0	%
SD between labs	6,09	0,66	mg/l
RSD between labs	19,9	2,2	%
n for calculation	41	36	

Sample N162B
Parameter Sulphate

Target value	± U (k=2)	55,4	mg/l	±	0,3 mg/l
IFA result	± U (k=2)	54,9	mg/l	±	1,3 mg/l
Stability test			mg/l		

Lab Code	Result	±	Unit	Recovery	z-Score
A	55,8		mg/l	101%	0,23
B	53,4	3,2	mg/l	96%	-1,16
C	57,7	4,7	mg/l	104%	1,34
D	58	4,5	mg/l	105%	1,51
E	53,125	0,749	mg/l	96%	-1,32
F	54	3,3	mg/l	97%	-0,82
G	55,4	5,5	mg/l	100%	0,00
H	57,68	3,0	mg/l	104%	1,33
I	56,0	5,04	mg/l	101%	0,35
J	54,402	8,1	mg/l	98%	-0,58
K	53,0	4,8	mg/l	96%	-1,40
L	55,23	2,76	mg/l	100%	-0,10
M	54,06	0,8	mg/l	98%	-0,78
N	54,2	4,7	mg/l	98%	-0,70
O	54,6	8,7	mg/l	99%	-0,47
P	56,40		mg/l	102%	0,58
Q	52,9	3,41	mg/l	95%	-1,46
R	56,0	0,539	mg/l	101%	0,35
S	55,3	3,0	mg/l	100%	-0,06
T			mg/l		
U			mg/l		
V	55,37	5,5	mg/l	100%	-0,02
W	54,567	2,728	mg/l	98%	-0,49
X	55,1	2,2	mg/l	99%	-0,17
Y	59,0	7,4	mg/l	106%	2,10
Z	57,5	2,87	mg/l	104%	1,22
AA	52,0	8	mg/l	94%	-1,98
AB	57	2	mg/l	103%	0,93
AC			mg/l		
AD	55,6	1,8	mg/l	100%	0,12
AE	54,5	0,23	mg/l	98%	-0,52
AF	56,2	4	mg/l	101%	0,47
AG	54,6	0,14	mg/l	99%	-0,47
AH	55,66	5,57	mg/l	100%	0,15
AI	58	3,5	mg/l	105%	1,51
AJ	53,90		mg/l	97%	-0,87
AK	55,1	0,3	mg/l	99%	-0,17
AL	55,00	5,50	mg/l	99%	-0,23
AM			mg/l		
AN	55,38	6,313	mg/l	100%	-0,01
AO			mg/l		
AP	53,62	5,3	mg/l	97%	-1,04
AQ	58,4	5,8	mg/l	105%	1,75
AR	58	3	mg/l	105%	1,51
AS	28,5 *	1,57	mg/l	51%	-15,66
AT			mg/l		
AU	50,9	4,1	mg/l	92%	-2,62



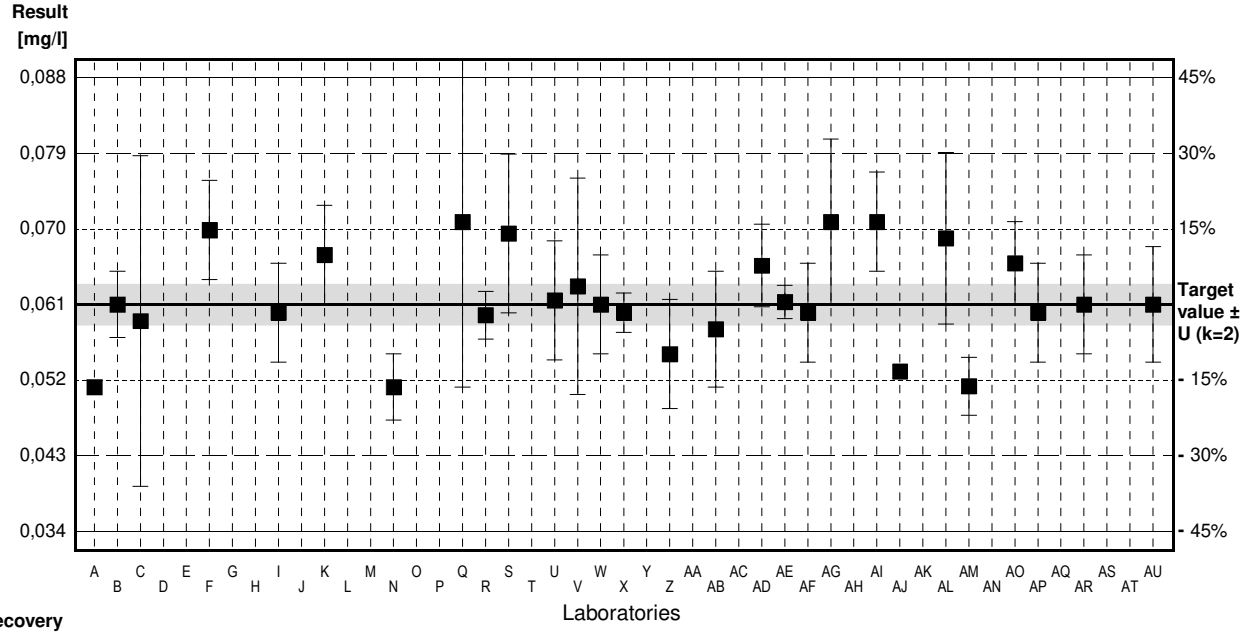


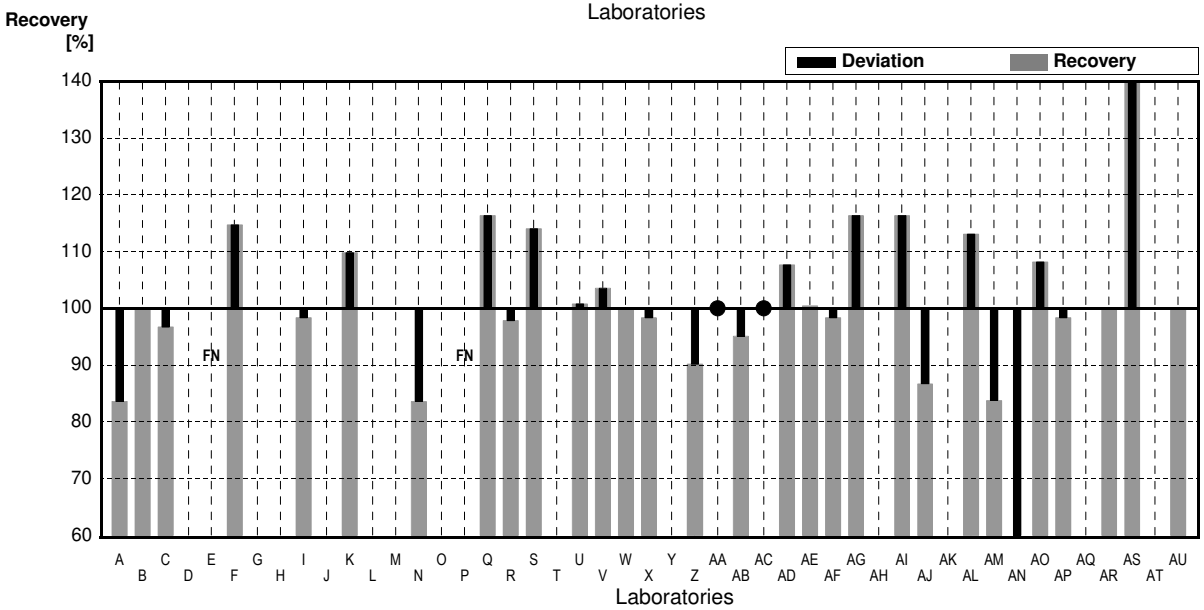
	All results	Outliers excl.	Unit
Mean ± CI(99%)	54,7 ± 1,9	55,3 ± 0,8	mg/l
Recov. ± CI(99%)	98,7 ± 3,5	99,8 ± 1,4	%
SD between labs	4,6	1,8	mg/l
RSD between labs	8,3	3,3	%
n for calculation	41	40	

Sample N162A
Parameter Orthophosphate

Target value	± U (k=2)	0,061	mg/l	±	0,002 mg/l
IFA result	± U (k=2)	0,0630	mg/l	±	0,0013 mg/l
Stability test	± U (k=2)	0,0623	mg/l	±	0,0013 mg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A	0,051		mg/l	84%	-1,64
B	0,061	0,004	mg/l	100%	0,00
C	0,059	0,02	mg/l	97%	-0,33
D			mg/l		
E	<0,05	0,00	mg/l	FN	
F	0,070	0,0060	mg/l	115%	1,48
G			mg/l		
H			mg/l		
I	0,060	0,0060	mg/l	98%	-0,16
J			mg/l		
K	0,067	0,006	mg/l	110%	0,98
L			mg/l		
M			mg/l		
N	0,051	0,004	mg/l	84%	-1,64
O			mg/l		
P	0,000		mg/l	FN	
Q	0,071	0,020	mg/l	116%	1,64
R	0,0597	0,00288	mg/l	98%	-0,21
S	0,0696	0,0096	mg/l	114%	1,41
T			mg/l		
U	0,0615	0,0072	mg/l	101%	0,08
V	0,0632	0,0131	mg/l	104%	0,36
W	0,0610	0,006	mg/l	100%	0,00
X	0,060	0,0024	mg/l	98%	-0,16
Y			mg/l		
Z	0,055	0,0066	mg/l	90%	-0,98
AA	<0,1		mg/l	•	
AB	0,058	0,007	mg/l	95%	-0,49
AC	<0,2		mg/l	•	
AD	0,0657	0,005	mg/l	108%	0,77
AE	0,0613	0,002	mg/l	100%	0,05
AF	0,060	0,006	mg/l	98%	-0,16
AG	0,071	0,010	mg/l	116%	1,64
AH			mg/l		
AI	0,071	0,006	mg/l	116%	1,64
AJ	0,0529		mg/l	87%	-1,33
AK			mg/l		
AL	0,0690	0,0104	mg/l	113%	1,31
AM	0,0511	0,0035	mg/l	84%	-1,62
AN	0,0181 *	0,0076	mg/l	30%	-7,03
AO	0,066	0,005	mg/l	108%	0,82
AP	0,060	0,006	mg/l	98%	-0,16
AQ			mg/l		
AR	0,061	0,006	mg/l	100%	0,00
AS	0,95 *	0,134	mg/l	1557%	145,74
AT			mg/l		
AU	0,061	0,007	mg/l	100%	0,00



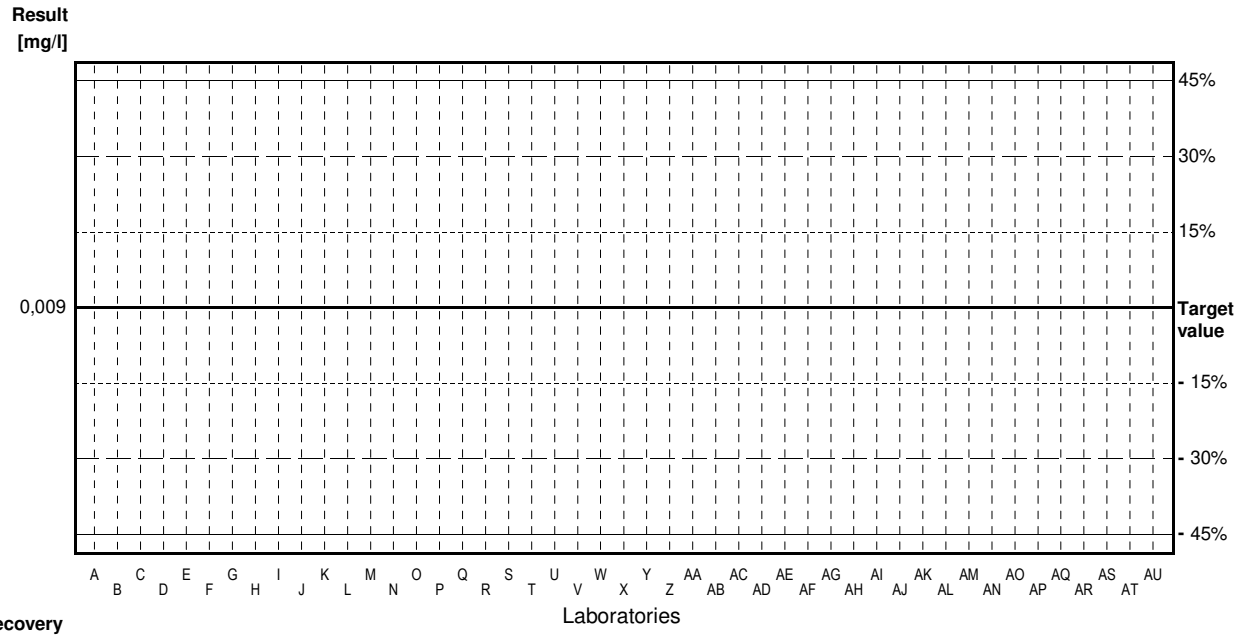


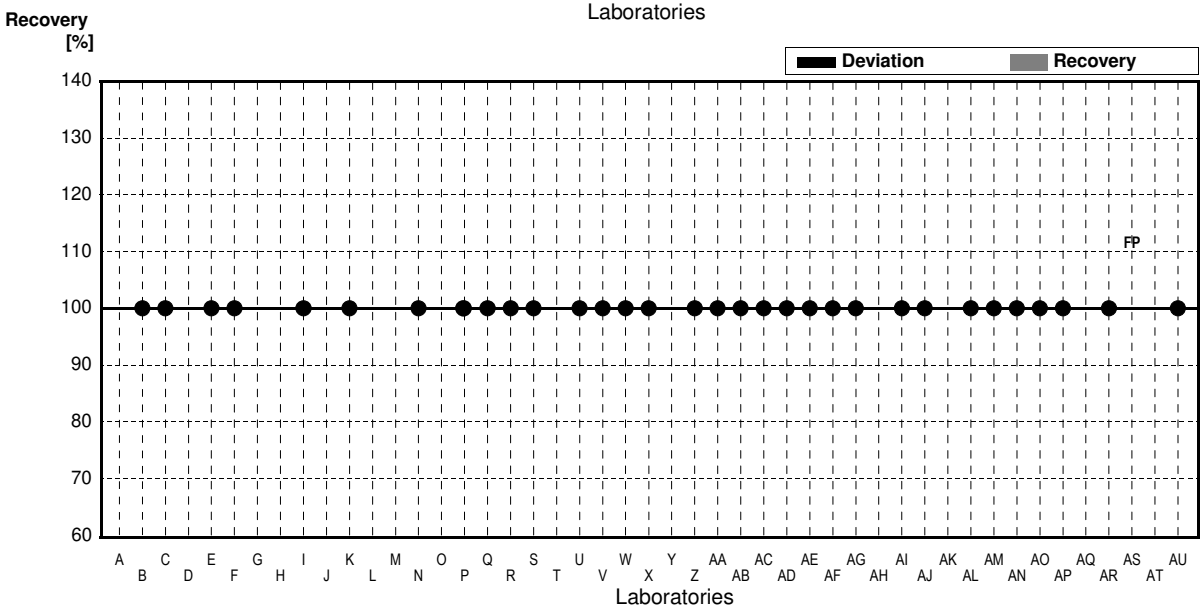
	All results	Outliers excl.	Unit
Mean ± CI(99%)	0,090 ± 0,082	0,062 ± 0,003	mg/l
Recov. ± CI(99%)	147,3 ± 134,4	101,2 ± 5,3	%
SD between labs	0,163	0,006	mg/l
RSD between labs	181,1	9,9	%
n for calculation	30	28	

Sample N162B
Parameter Orthophosphate

Target value	<0,009	mg/l
IFA result	<0,009	mg/l
Stability test	<0,009	mg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A			mg/l		
B	<0.006		mg/l	•	
C	<0.01		mg/l	•	
D			mg/l		
E	<0.05	0.0	mg/l	•	
F	<0.01		mg/l	•	
G			mg/l		
H			mg/l		
I	<0.06		mg/l	•	
J			mg/l		
K	<0.01		mg/l	•	
L			mg/l		
M			mg/l		
N	<0.002	0.0002	mg/l	•	
O			mg/l		
P	0.000		mg/l	•	
Q	<0.03		mg/l	•	
R	[0.004]		mg/l	•	
S	0.00889	0.00123	mg/l	•	
T			mg/l		
U	<0.006	0	mg/l	•	
V	<0.015		mg/l	•	
W	<0.01		mg/l	•	
X	<0.015		mg/l	•	
Y			mg/l		
Z	0.0090	0.0011	mg/l	•	
AA	<0.1		mg/l	•	
AB	<0.003		mg/l	•	
AC	<0.2		mg/l	•	
AD	<0.015		mg/l	•	
AE	<0.015		mg/l	•	
AF	<0.01		mg/l	•	
AG	<0.010		mg/l	•	
AH			mg/l		
AI	<0.003		mg/l	•	
AJ	<0.01		mg/l	•	
AK			mg/l		
AL	<0.0153		mg/l	•	
AM	<0.019		mg/l	•	
AN	<0.0200	0.0076	mg/l	•	
AO	<0.010		mg/l	•	
AP	<0.0018		mg/l	•	
AQ			mg/l		
AR	<0.01		mg/l	•	
AS	0.0400	0.00564	mg/l	FP	
AT			mg/l		
AU	<0.003		mg/l	•	



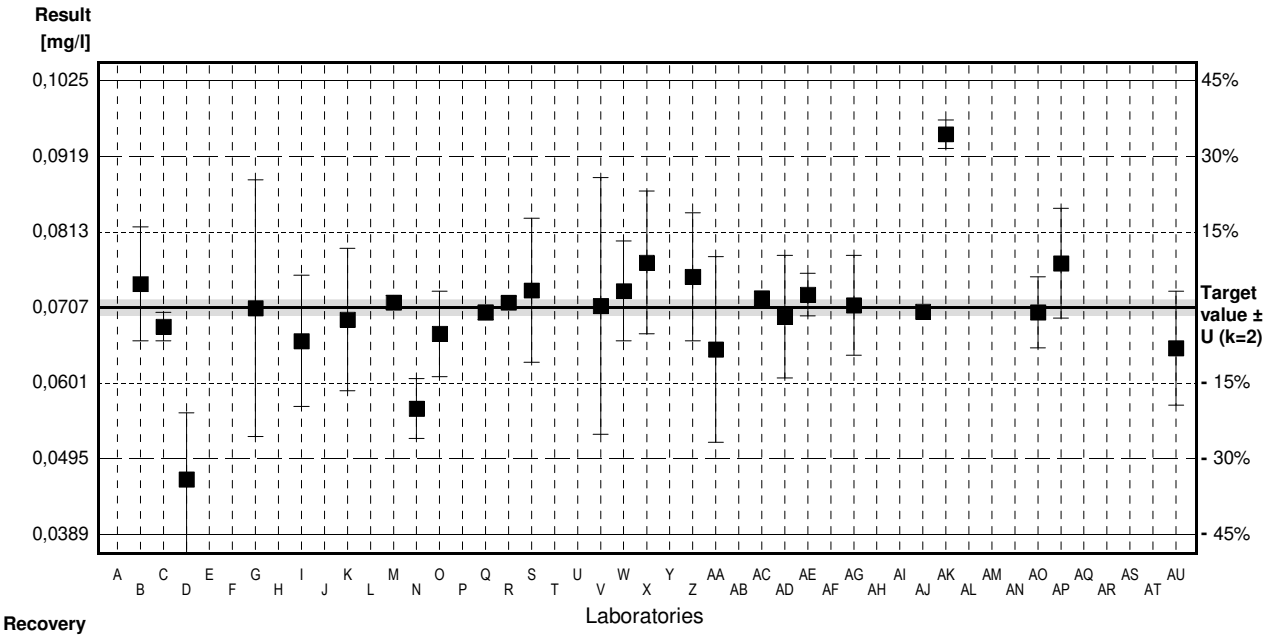


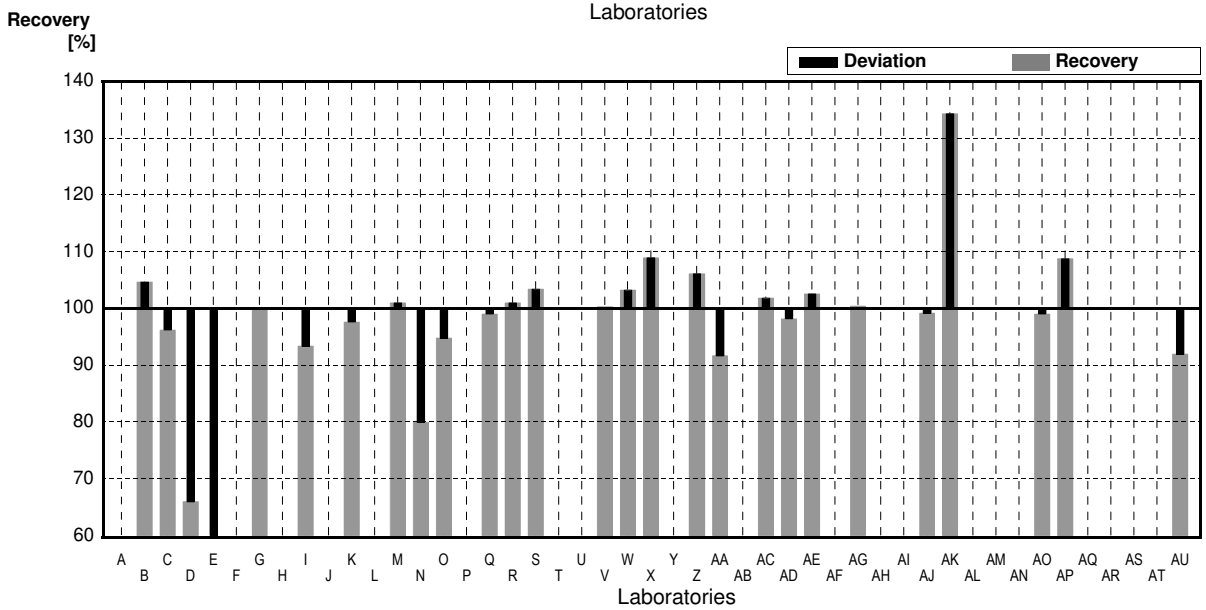
	All results	Outliers excl.	Unit
Mean ± CI(99%)			mg/l
Recov. ± CI(99%)			%
SD between labs			mg/l
RSD between labs			%
n for calculation			

Sample N162A
Parameter Boron

Target value ± U (k=2) 0,0707 mg/l ± 0,0011 mg/l
IFA result ± U (k=2) 0,066 mg/l ± 0,005 mg/l
Stability test mg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A			mg/l		
B	0,074	0,008	mg/l	105%	0,62
C	0,068	0,002	mg/l	96%	-0,51
D	0,0466 *	0,0093	mg/l	66%	-4,55
E	0,0366 *	0,0028	mg/l	52%	-6,43
F			mg/l		
G	0,0706	0,018	mg/l	100%	-0,02
H			mg/l		
I	0,066	0,0092	mg/l	93%	-0,89
J			mg/l		
K	0,069	0,01	mg/l	98%	-0,32
L			mg/l		
M	0,0714	0,001	mg/l	101%	0,13
N	0,0565 *	0,0042	mg/l	80%	-2,68
O	0,067	0,006	mg/l	95%	-0,70
P			mg/l		
Q	0,070	0,001	mg/l	99%	-0,13
R	0,0714	0,00085	mg/l	101%	0,13
S	0,0731	0,0101	mg/l	103%	0,45
T			mg/l		
U			mg/l		
V	0,0709	0,018	mg/l	100%	0,04
W	0,073	0,007	mg/l	103%	0,43
X	0,077	0,01	mg/l	109%	1,19
Y			mg/l		
Z	0,075	0,009	mg/l	106%	0,81
AA	0,0648	0,013	mg/l	92%	-1,11
AB			mg/l		
AC	0,072		mg/l	102%	0,25
AD	0,0694	0,0086	mg/l	98%	-0,25
AE	0,0725	0,003	mg/l	103%	0,34
AF			mg/l		
AG	0,071	0,007	mg/l	100%	0,06
AH			mg/l		
AI			mg/l		
AJ	0,0701		mg/l	99%	-0,11
AK	0,095 *	0,002	mg/l	134%	4,58
AL	n.u.		mg/l		
AM			mg/l		
AN			mg/l		
AO	0,070	0,005	mg/l	99%	-0,13
AP	0,0769	0,0077	mg/l	109%	1,17
AQ			mg/l		
AR			mg/l		
AS			mg/l		
AT			mg/l		
AU	0,065	0,008	mg/l	92%	-1,07



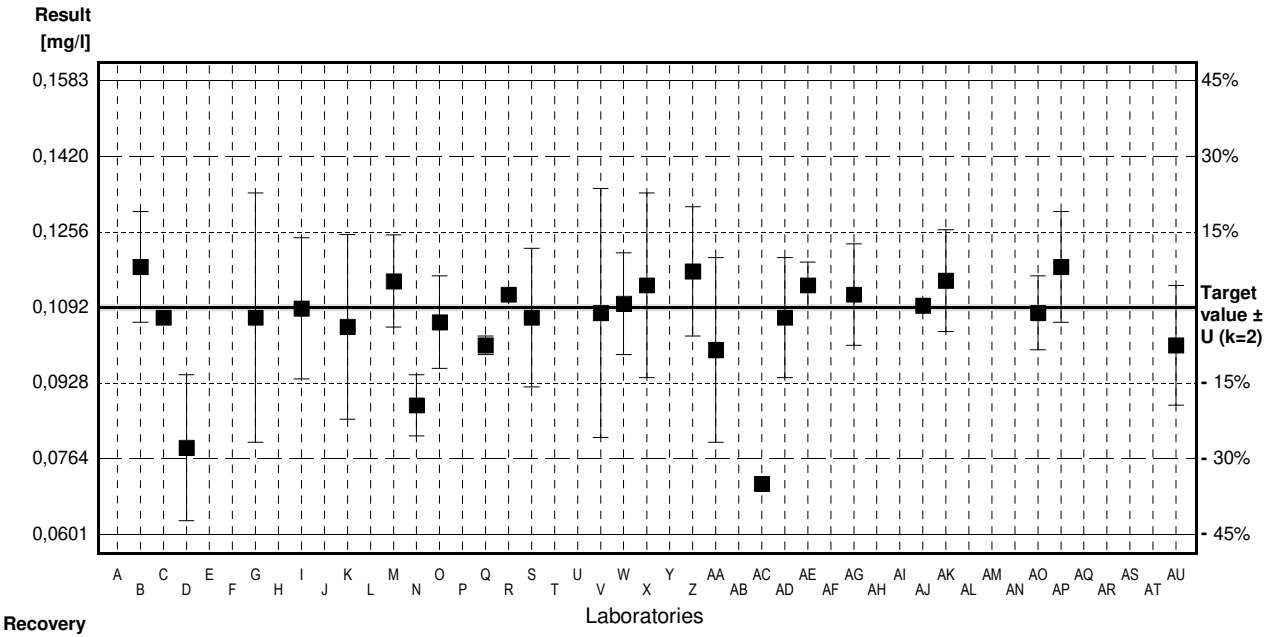


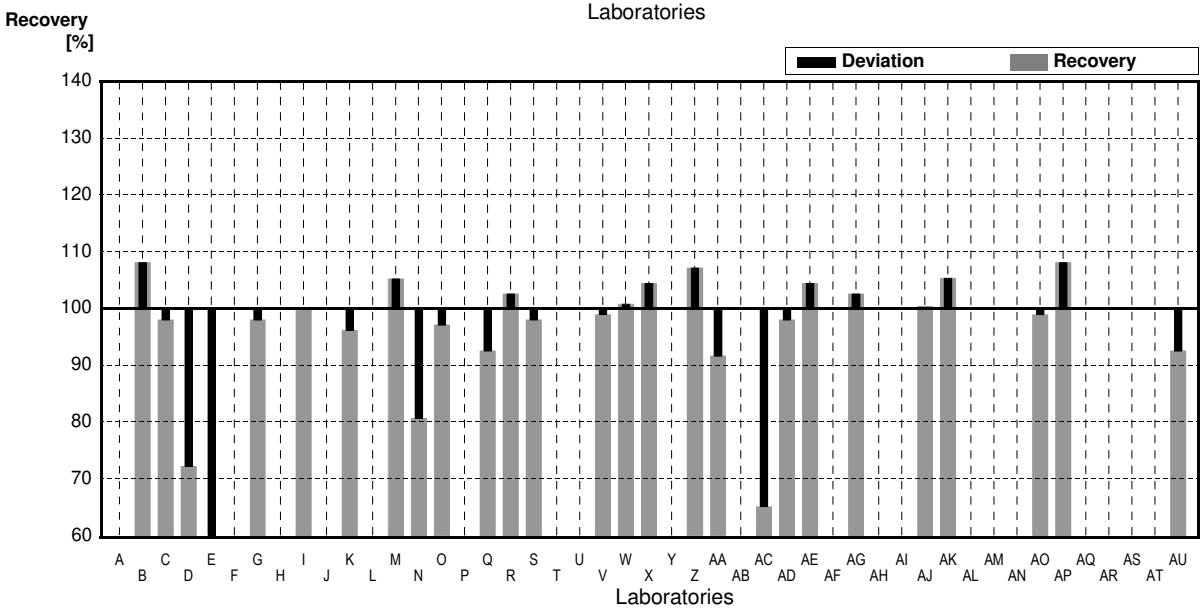
	All results	Outliers excl.	Unit
Mean ± CI(99%)	0,0690 ± 0,005	0,0708 ± 0,001	mg/l
Recov. ± CI(99%)	97,6 ± 7,7	100,1 ± 2,8	%
SD between labs	0,0102	0,0033	mg/l
RSD between labs	14,8	4,7	%
n for calculation	27	23	

Sample N162B
Parameter Boron

Target value ± U (k=2) 0,1092 mg/l ± 0,0007 mg/l
IFA result ± U (k=2) 0,100 mg/l ± 0,008 mg/l
Stability test mg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A			mg/l		
B	0,118	0,012	mg/l	108%	1,07
C	0,107		mg/l	98%	-0,27
D	0,0788 *	0,0158	mg/l	72%	-3,71
E	0,0564 *	0,0028	mg/l	52%	-6,45
F			mg/l		
G	0,107	0,027	mg/l	98%	-0,27
H			mg/l		
I	0,109	0,0153	mg/l	100%	-0,02
J			mg/l		
K	0,105	0,02	mg/l	96%	-0,51
L			mg/l		
M	0,1149	0,01	mg/l	105%	0,70
N	0,088	0,0066	mg/l	81%	-2,59
O	0,106	0,010	mg/l	97%	-0,39
P			mg/l		
Q	0,101	0,002	mg/l	92%	-1,00
R	0,112	0,00090	mg/l	103%	0,34
S	0,107	0,015	mg/l	98%	-0,27
T			mg/l		
U			mg/l		
V	0,108	0,027	mg/l	99%	-0,15
W	0,110	0,011	mg/l	101%	0,10
X	0,114	0,02	mg/l	104%	0,59
Y			mg/l		
Z	0,117	0,014	mg/l	107%	0,95
AA	0,100	0,02	mg/l	92%	-1,12
AB			mg/l		
AC	0,071 *		mg/l	65%	-4,66
AD	0,107	0,013	mg/l	98%	-0,27
AE	0,114	0,005	mg/l	104%	0,59
AF			mg/l		
AG	0,112	0,011	mg/l	103%	0,34
AH			mg/l		
AI			mg/l		
AJ	0,1096		mg/l	100%	0,05
AK	0,115	0,011	mg/l	105%	0,71
AL	n.u.		mg/l		
AM			mg/l		
AN			mg/l		
AO	0,108	0,008	mg/l	99%	-0,15
AP	0,118	0,012	mg/l	108%	1,07
AQ			mg/l		
AR			mg/l		
AS			mg/l		
AT			mg/l		
AU	0,101	0,013	mg/l	92%	-1,00



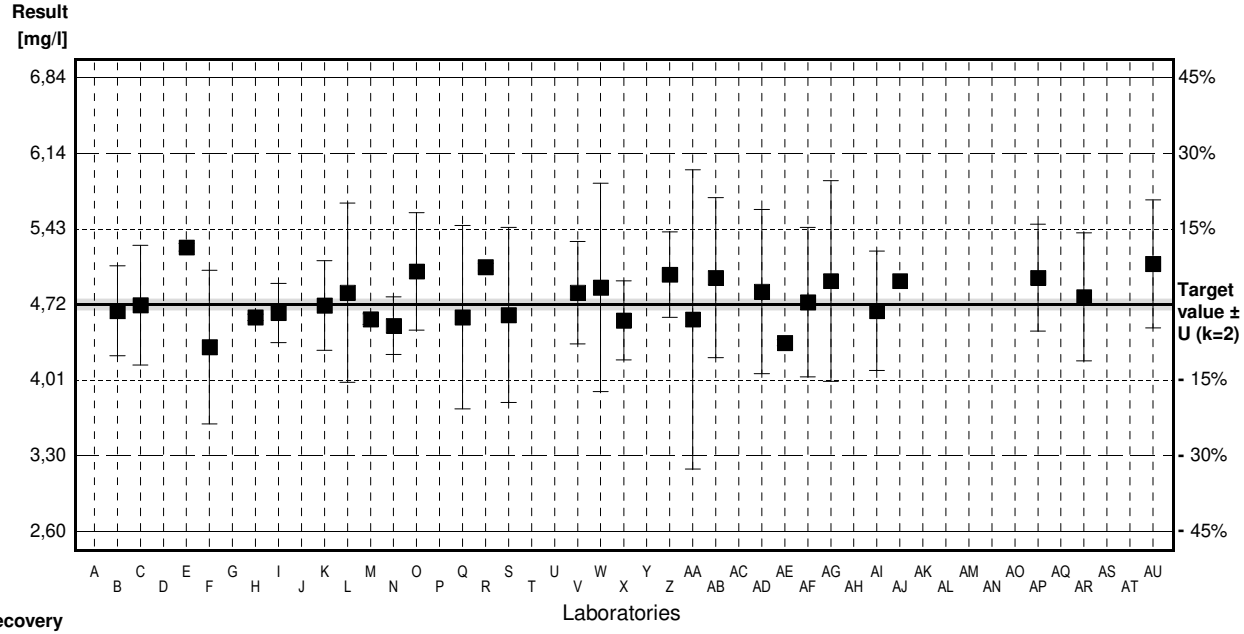


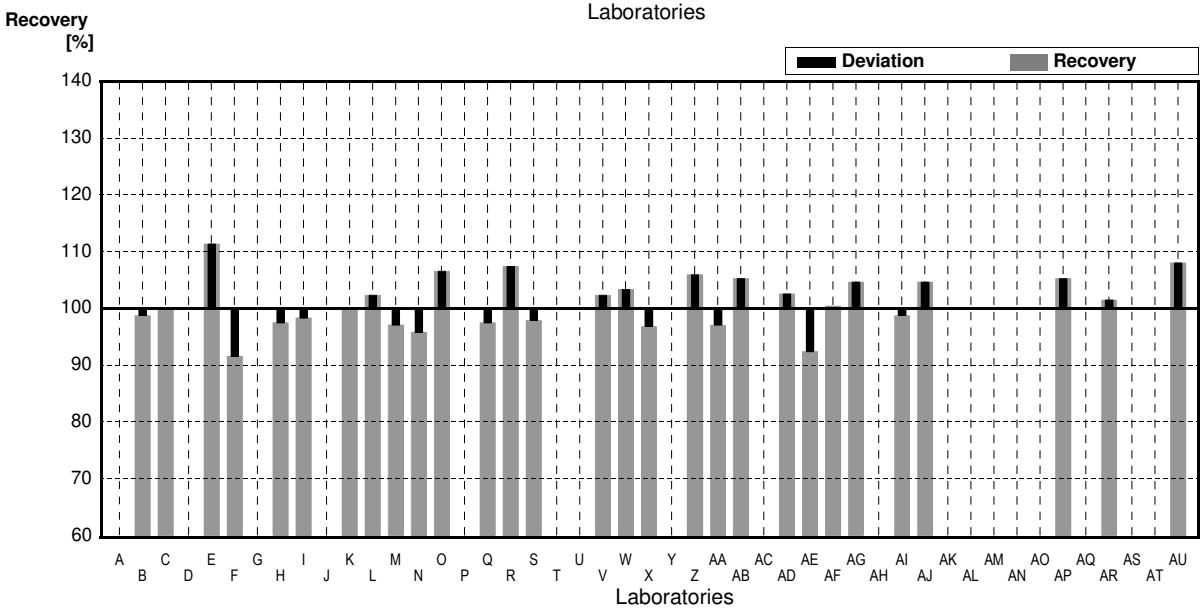
	All results	Outliers excl.	Unit
Mean ± CI(99%)	0,1042 ± 0,007	0,1087 ± 0,003	mg/l
Recov. ± CI(99%)	95,5 ± 7,2	99,5 ± 3,6	%
SD between labs	0,0146	0,0068	mg/l
RSD between labs	14,0	6,2	%
n for calculation	27	24	

Sample N162A
Parameter DOC

Target value	± U (k=2)	4,72 mg/l	±	0,05 mg/l	
IFA result	± U (k=2)	4,71 mg/l	±	0,09 mg/l	
Stability test	± U (k=2)	4,71 mg/l	±	0,09 mg/l	

Lab Code	Result	±	Unit	Recovery	z-Score
A			mg/l		
B	4,66	0,42	mg/l	99%	-0,23
C	4,714	0,56	mg/l	100%	-0,02
D			mg/l		
E	5,255	0,035	mg/l	111%	2,02
F	4,32	0,72	mg/l	92%	-1,51
G			mg/l		
H	4,60	0,03	mg/l	97%	-0,45
I	4,64	0,278	mg/l	98%	-0,30
J			mg/l		
K	4,71	0,42	mg/l	100%	-0,04
L	4,83	0,84	mg/l	102%	0,42
M	4,582	0,05	mg/l	97%	-0,52
N	4,52	0,27	mg/l	96%	-0,76
O	5,03	0,55	mg/l	107%	1,17
P			mg/l		
Q	4,60	0,86	mg/l	97%	-0,45
R	5,07	0,0354	mg/l	107%	1,32
S	4,62	0,82	mg/l	98%	-0,38
T			mg/l		
U			mg/l		
V	4,83	0,48	mg/l	102%	0,42
W	4,879	0,976	mg/l	103%	0,60
X	4,57	0,37	mg/l	97%	-0,57
Y			mg/l		
Z	5,0	0,40	mg/l	106%	1,06
AA	4,58	1,4	mg/l	97%	-0,53
AB	4,97	0,75	mg/l	105%	0,95
AC			mg/l		
AD	4,84	0,77	mg/l	103%	0,45
AE	4,36	0,028	mg/l	92%	-1,36
AF	4,74	0,7	mg/l	100%	0,08
AG	4,94	0,94	mg/l	105%	0,83
AH			mg/l		
AI	4,66	0,56	mg/l	99%	-0,23
AJ	4,94		mg/l	105%	0,83
AK			mg/l		
AL	n.u.		mg/l		
AM			mg/l		
AN			mg/l		
AO			mg/l		
AP	4,97	0,5	mg/l	105%	0,95
AQ			mg/l		
AR	4,79	0,60	mg/l	101%	0,26
AS			mg/l		
AT			mg/l		
AU	5,1	0,6	mg/l	108%	1,44



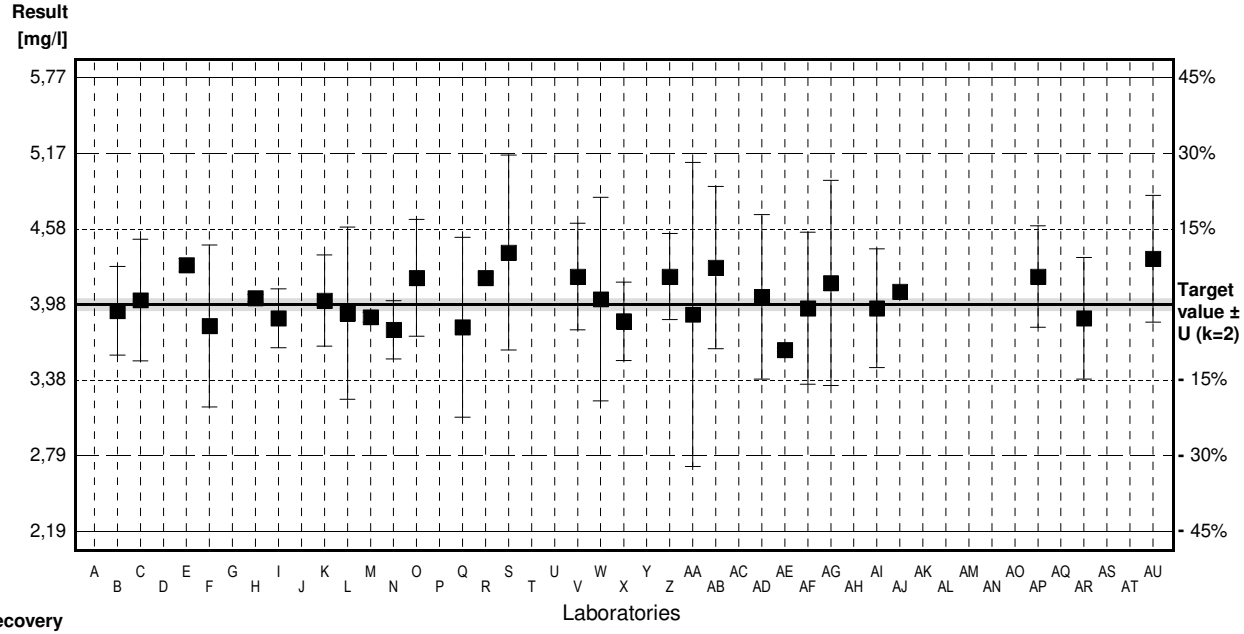


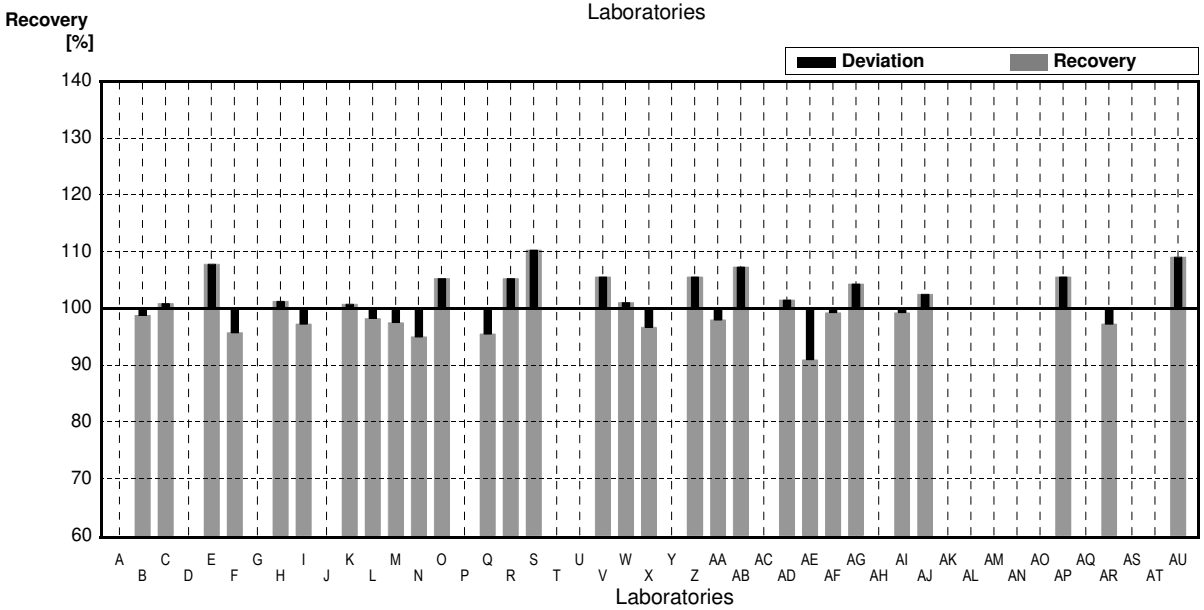
	All results	Outliers excl.	Unit
Mean ± CI(99%)	4,77 ± 0,11	4,77 ± 0,11	mg/l
Recov. ± CI(99%)	101,1 ± 2,4	101,1 ± 2,4	%
SD between labs	0,22	0,22	mg/l
RSD between labs	4,7	4,7	%
n for calculation	29	29	

Sample N162B
Parameter DOC

Target value	± U (k=2)	3,98 mg/l	±	0,05 mg/l	
IFA result	± U (k=2)	3,92 mg/l	±	0,09 mg/l	
Stability test	± U (k=2)	3,92 mg/l	±	0,09 mg/l	

Lab Code	Result	±	Unit	Recovery	z-Score
A			mg/l		
B	3,93	0,35	mg/l	99%	-0,22
C	4,014	0,48	mg/l	101%	0,15
D			mg/l		
E	4,29	0,052	mg/l	108%	1,39
F	3,81	0,64	mg/l	96%	-0,76
G			mg/l		
H	4,03	0,03	mg/l	101%	0,22
I	3,87	0,232	mg/l	97%	-0,49
J			mg/l		
K	4,01	0,36	mg/l	101%	0,13
L	3,91	0,68	mg/l	98%	-0,31
M	3,88	0,04	mg/l	97%	-0,45
N	3,78	0,23	mg/l	95%	-0,90
O	4,19	0,46	mg/l	105%	0,94
P			mg/l		
Q	3,80	0,71	mg/l	95%	-0,81
R	4,19	0,0345	mg/l	105%	0,94
S	4,39	0,77	mg/l	110%	1,84
T			mg/l		
U			mg/l		
V	4,20	0,42	mg/l	106%	0,99
W	4,021	0,804	mg/l	101%	0,18
X	3,847	0,31	mg/l	97%	-0,60
Y			mg/l		
Z	4,20	0,34	mg/l	106%	0,99
AA	3,90	1,2	mg/l	98%	-0,36
AB	4,27	0,64	mg/l	107%	1,30
AC			mg/l		
AD	4,04	0,65	mg/l	102%	0,27
AE	3,62	0,014	mg/l	91%	-1,62
AF	3,95	0,6	mg/l	99%	-0,13
AG	4,15	0,81	mg/l	104%	0,76
AH			mg/l		
AI	3,95	0,47	mg/l	99%	-0,13
AJ	4,08		mg/l	103%	0,45
AK			mg/l		
AL	n.u.		mg/l		
AM			mg/l		
AN			mg/l		
AO			mg/l		
AP	4,20	0,4	mg/l	106%	0,99
AQ			mg/l		
AR	3,87	0,48	mg/l	97%	-0,49
AS			mg/l		
AT			mg/l		
AU	4,34	0,5	mg/l	109%	1,62



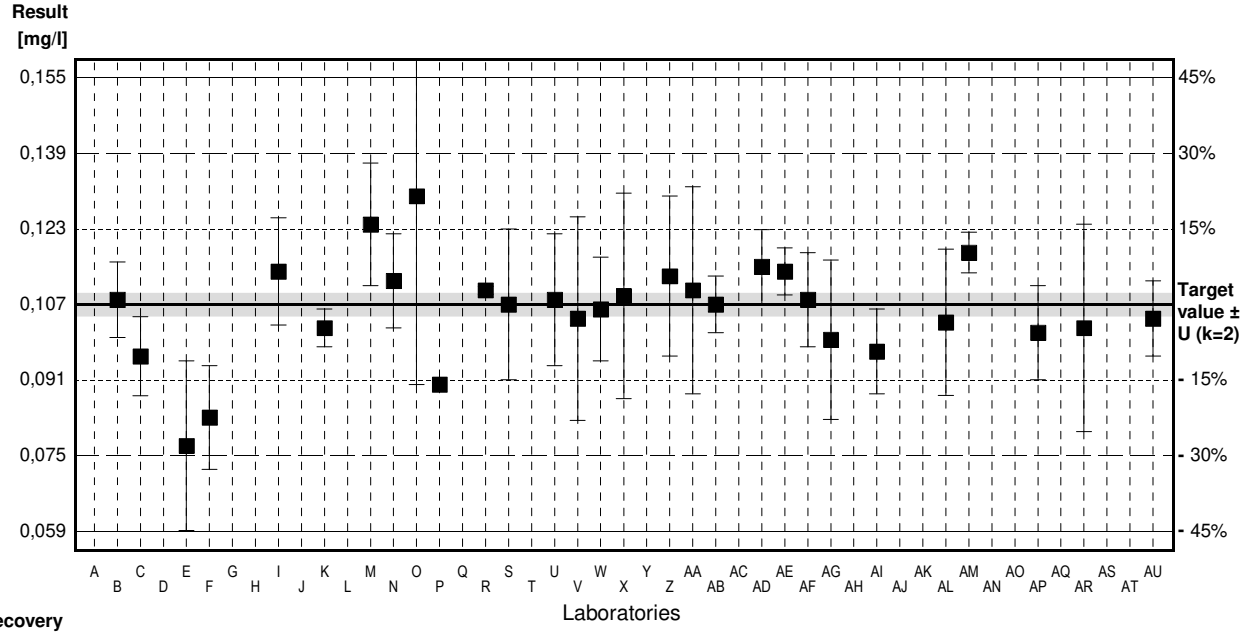


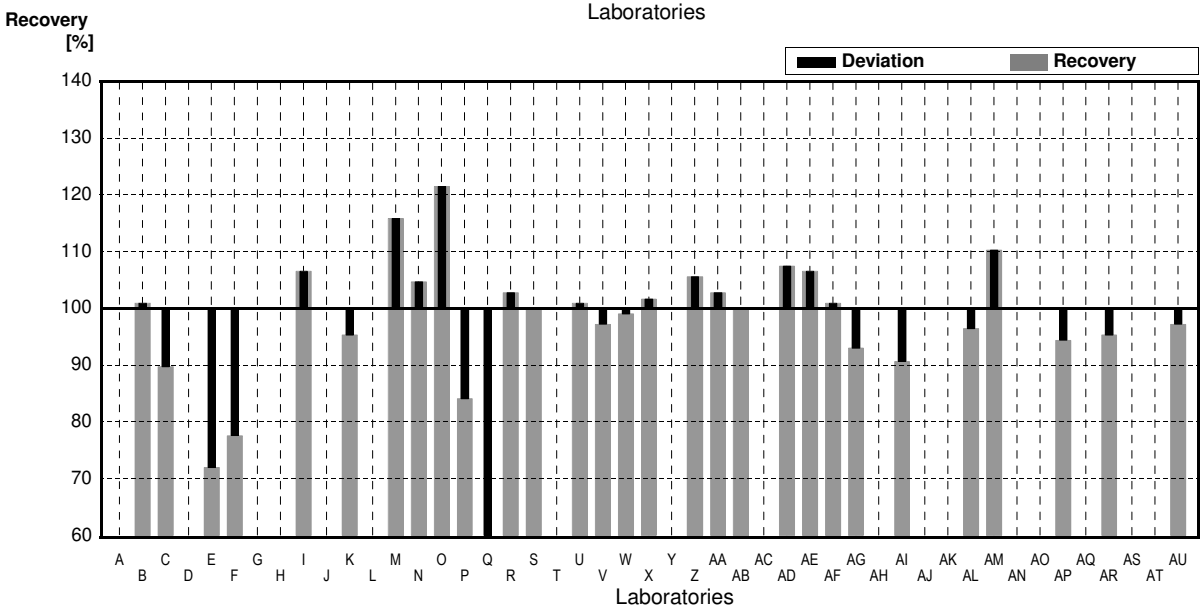
	All results	Outliers excl.	Unit
Mean ± CI(99%)	4,03 ± 0,10	4,03 ± 0,10	mg/l
Recov. ± CI(99%)	101,1 ± 2,4	101,1 ± 2,4	%
SD between labs	0,19	0,19	mg/l
RSD between labs	4,7	4,7	%
n for calculation	29	29	

Sample N162A
Parameter Total P (as PO4)

Target value	± U (k=2)	0,107	mg/l	±	0,002 mg/l
IFA result	± U (k=2)	0,127	mg/l	±	0,019 mg/l
Stability test			mg/l		

Lab Code	Result	±	Unit	Recovery	z-Score
A			mg/l		
B	0,108	0,008	mg/l	101%	0,09
C	0,096	0,0084	mg/l	90%	-1,03
D			mg/l		
E	0,077 *	0,018	mg/l	72%	-2,80
F	0,083	0,011	mg/l	78%	-2,24
G			mg/l		
H			mg/l		
I	0,114	0,0114	mg/l	107%	0,65
J			mg/l		
K	0,102	0,004	mg/l	95%	-0,47
L			mg/l		
M	0,124	0,013	mg/l	116%	1,59
N	0,112	0,01	mg/l	105%	0,47
O	0,130	0,040	mg/l	121%	2,15
P	0,0900		mg/l	84%	-1,59
Q	0,0300 *	0,005	mg/l	28%	-7,20
R	0,110	0,00085	mg/l	103%	0,28
S	0,107	0,016	mg/l	100%	0,00
T			mg/l		
U	0,108	0,014	mg/l	101%	0,09
V	0,1040	0,0216	mg/l	97%	-0,28
W	0,106	0,011	mg/l	99%	-0,09
X	0,1088	0,0218	mg/l	102%	0,17
Y			mg/l		
Z	0,113	0,017	mg/l	106%	0,56
AA	0,110	0,022	mg/l	103%	0,28
AB	0,107	0,006	mg/l	100%	0,00
AC			mg/l		
AD	0,115	0,0079	mg/l	107%	0,75
AE	0,114	0,005	mg/l	107%	0,65
AF	0,108	0,01	mg/l	101%	0,09
AG	0,0995	0,0169	mg/l	93%	-0,70
AH			mg/l		
AI	0,097	0,009	mg/l	91%	-0,93
AJ			mg/l		
AK			mg/l		
AL	0,1032	0,0155	mg/l	96%	-0,36
AM	0,1180	0,0043	mg/l	110%	1,03
AN			mg/l		
AO			mg/l		
AP	0,101	0,010	mg/l	94%	-0,56
AQ			mg/l		
AR	0,102	0,022	mg/l	95%	-0,47
AS			mg/l		
AT			mg/l		
AU	0,104	0,008	mg/l	97%	-0,28



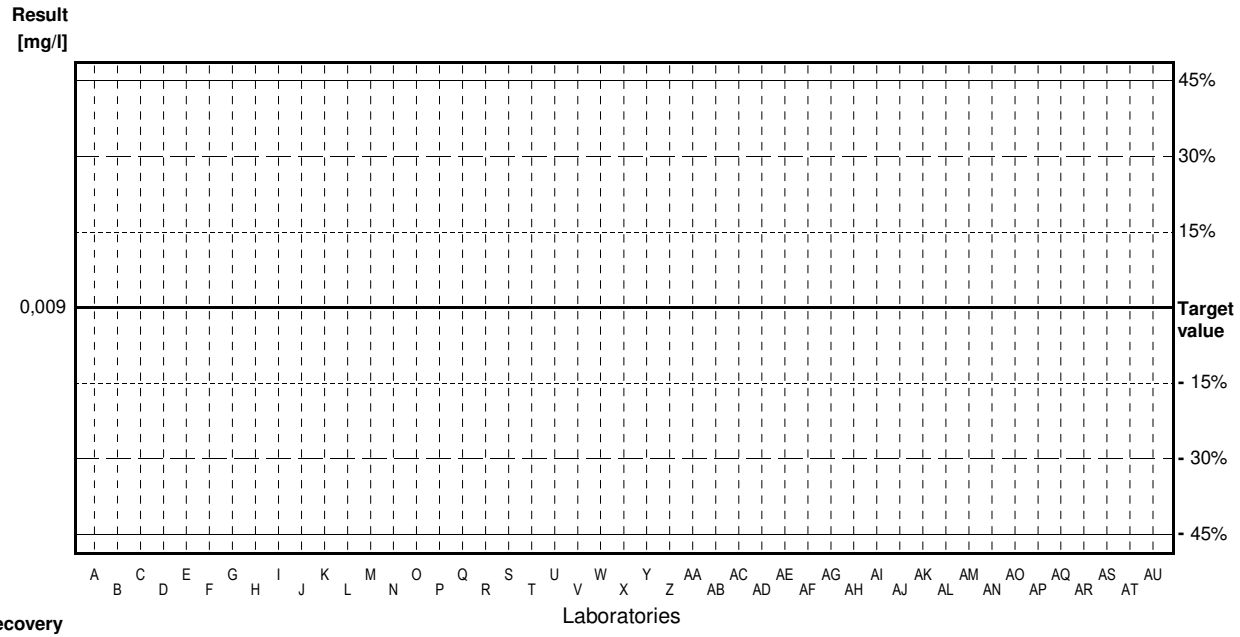


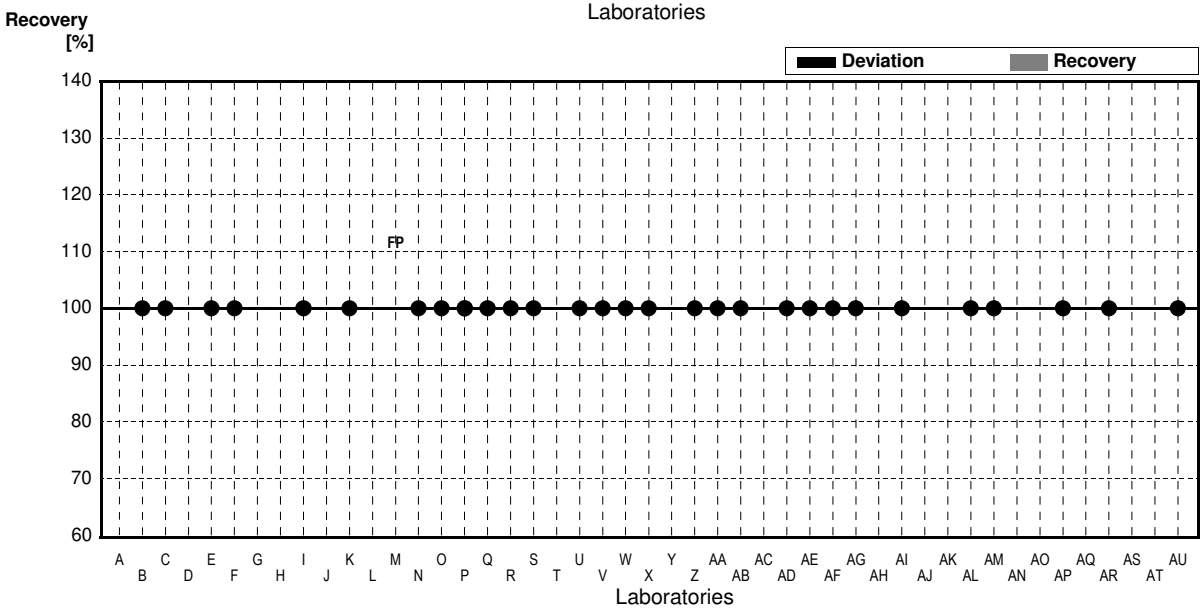
	All results	Outliers excl.	Unit
Mean ± CI(99%)	0,103 ± 0,009	0,107 ± 0,005	mg/l
Recov. ± CI(99%)	96,6 ± 8,2	99,9 ± 4,7	%
SD between labs	0,018	0,010	mg/l
RSD between labs	16,9	8,9	%
n for calculation	30	28	

Sample N162B
Parameter Total P (as PO4)

Target value	<0,009	mg/l
IFA result	<0,009	mg/l
Stability test		mg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A			mg/l		
B	<0.006		mg/l	•	
C	<0.03		mg/l	•	
D			mg/l		
E	<0.05	0.00	mg/l	•	
F	<0.01		mg/l	•	
G			mg/l		
H			mg/l		
I	<0.06		mg/l	•	
J			mg/l		
K	<0.05		mg/l	•	
L			mg/l		
M	0.0122	0.0013	mg/l	FP	
N	<0.01	0.001	mg/l	•	
O	<0.03		mg/l	•	
P	0.000		mg/l	•	
Q	<0.005		mg/l	•	
R	<0.0150		mg/l	•	
S	<0.005		mg/l	•	
T			mg/l		
U	<0.006	0	mg/l	•	
V	<0.015		mg/l	•	
W	<0.01		mg/l	•	
X	<0.03		mg/l	•	
Y			mg/l		
Z	<0.015		mg/l	•	
AA	<0.031		mg/l	•	
AB	0.0060	0.0004	mg/l	•	
AC			mg/l		
AD	<0.015		mg/l	•	
AE	<0.015		mg/l	•	
AF	<0.013		mg/l	•	
AG	<0.010		mg/l	•	
AH			mg/l		
AI	<0.003		mg/l	•	
AJ			mg/l		
AK			mg/l		
AL	<0.0307		mg/l	•	
AM	<0.02		mg/l	•	
AN			mg/l		
AO			mg/l		
AP	<0.0036		mg/l	•	
AQ			mg/l		
AR	<0.01		mg/l	•	
AS			mg/l		
AT			mg/l		
AU	<0.003		mg/l	•	



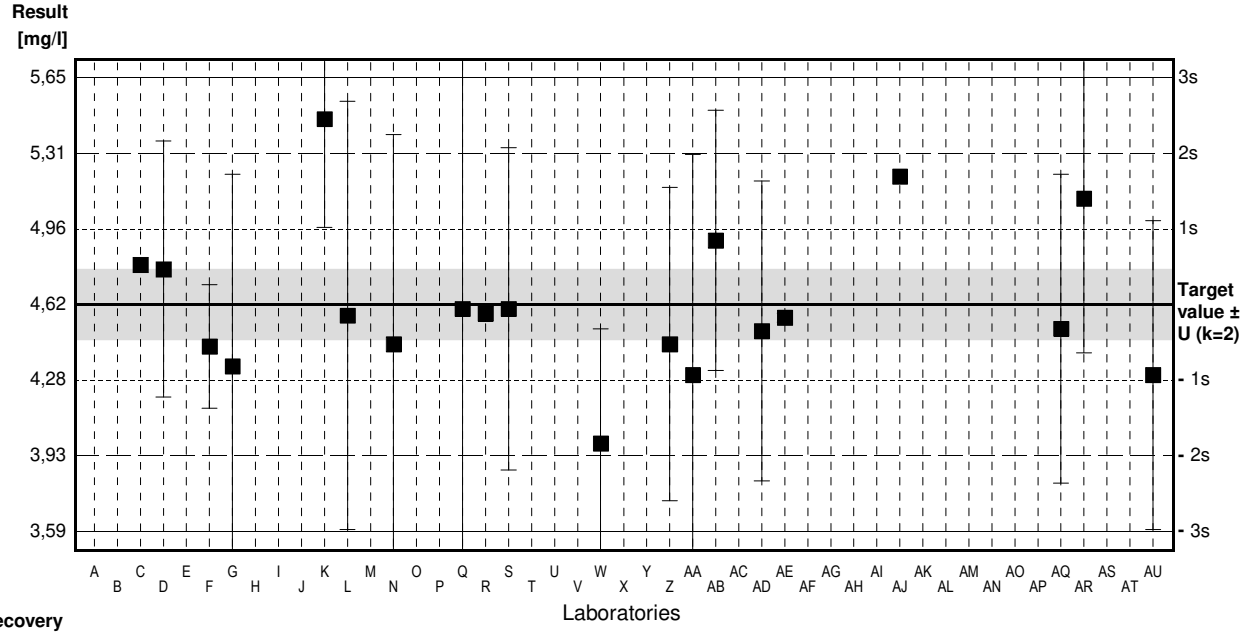


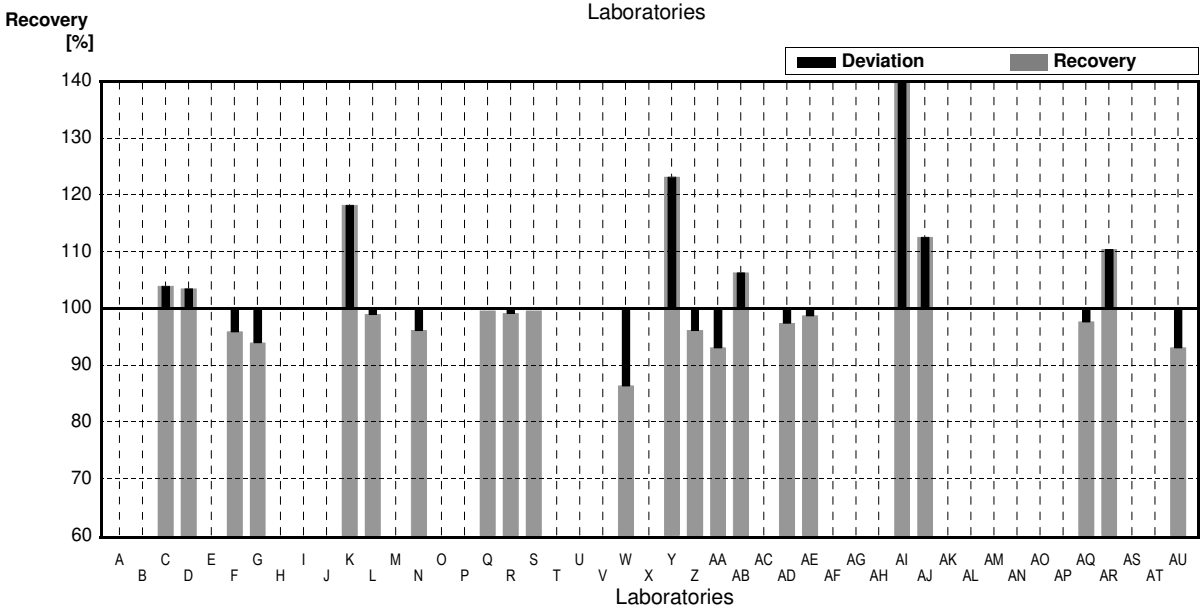
	All results	Outliers excl.	Unit
Mean ± CI(99%)			mg/l
Recov. ± CI(99%)			%
SD between labs			mg/l
RSD between labs			%
n for calculation			

Sample N162A
Parameter KMnO4-Index

Target value	± U (k=2)	4,62 mg/l	±	0,16 mg/l	
IFA result	± U (k=2)	4,60 mg/l	±	0,68 mg/l	
Stability test	± U (k=2)	4,82 mg/l	±	0,72 mg/l	

Lab Code	Result		±	Unit	Recovery	z-Score
A				mg/l		
B				mg/l		
C	4,80			mg/l	104%	0,39
D	4,78		0,58	mg/l	103%	0,35
E				mg/l		
F	4,43		0,28	mg/l	96%	-0,41
G	4,34		0,87	mg/l	94%	-0,61
H				mg/l		
I				mg/l		
J				mg/l		
K	5,46		0,49	mg/l	118%	1,82
L	4,57		0,97	mg/l	99%	-0,11
M				mg/l		
N	4,44		0,95	mg/l	96%	-0,39
O				mg/l		
P				mg/l		
Q	4,60		1,6	mg/l	100%	-0,04
R	4,58			mg/l	99%	-0,09
S	4,60		0,73	mg/l	100%	-0,04
T				mg/l		
U				mg/l		
V				mg/l		
W	3,99		0,519	mg/l	86%	-1,36
X				mg/l		
Y	5,69	*	0,588	mg/l	123%	2,32
Z	4,44		0,71	mg/l	96%	-0,39
AA	4,30		1	mg/l	93%	-0,69
AB	4,91		0,59	mg/l	106%	0,63
AC				mg/l		
AD	4,50		0,68	mg/l	97%	-0,26
AE	4,56		0,020	mg/l	99%	-0,13
AF				mg/l		
AG	n.a			mg/l		
AH				mg/l		
AI	20,1	*	1,407	mg/l	435%	33,51
AJ	5,20			mg/l	113%	1,26
AK				mg/l		
AL	n.u.			mg/l		
AM				mg/l		
AN				mg/l		
AO				mg/l		
AP				mg/l		
AQ	4,51		0,70	mg/l	98%	-0,24
AR	5,1		0,7	mg/l	110%	1,04
AS				mg/l		
AT				mg/l		
AU	4,30		0,7	mg/l	93%	-0,69



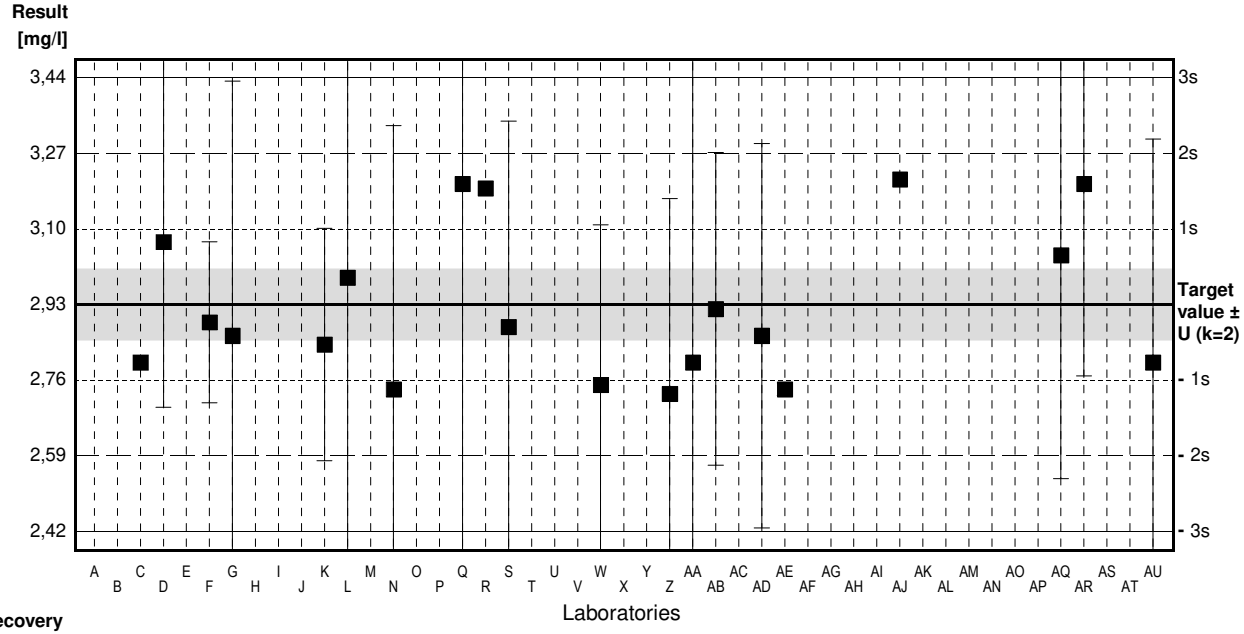


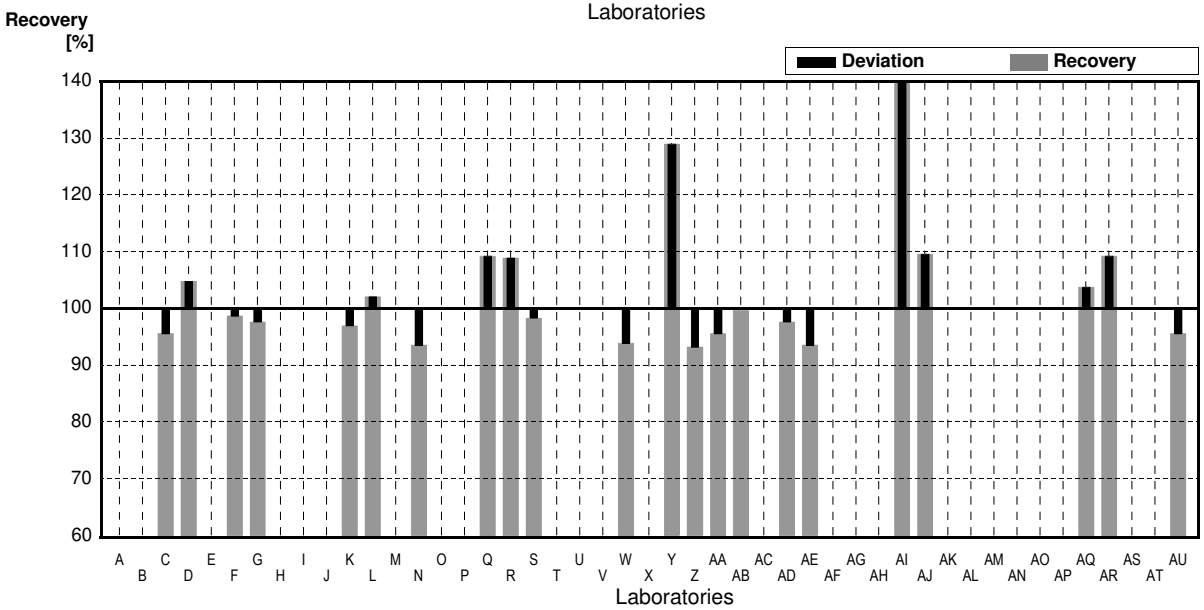
	All results	Outliers excl.	Unit
Mean ± CI(99%)	5,37 ± 2,00	4,62 ± 0,22	mg/l
Recov. ± CI(99%)	116,3 ± 43,3	100,0 ± 4,7	%
SD between labs	3,31	0,34	mg/l
RSD between labs	61,7	7,4	%
n for calculation	22	20	

Sample N162B
Parameter KMnO4-Index

Target value	± U (k=2)	2,93 mg/l	±	0,08 mg/l
IFA result	± U (k=2)	2,81 mg/l	±	0,42 mg/l
Stability test	± U (k=2)	3,13 mg/l	±	0,47 mg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A			mg/l		
B			mg/l		
C	2,80		mg/l	96%	-0,44
D	3,07	0,37	mg/l	105%	0,48
E			mg/l		
F	2,89	0,18	mg/l	99%	-0,14
G	2,86	0,57	mg/l	98%	-0,24
H			mg/l		
I			mg/l		
J			mg/l		
K	2,84	0,26	mg/l	97%	-0,31
L	2,99	0,63	mg/l	102%	0,20
M			mg/l		
N	2,74	0,59	mg/l	94%	-0,65
O			mg/l		
P			mg/l		
Q	3,20	1,11	mg/l	109%	0,92
R	3,19		mg/l	109%	0,89
S	2,88	0,46	mg/l	98%	-0,17
T			mg/l		
U			mg/l		
V			mg/l		
W	2,75	0,358	mg/l	94%	-0,61
X			mg/l		
Y	3,78 *	0,588	mg/l	129%	2,90
Z	2,73	0,437	mg/l	93%	-0,68
AA	2,80	1	mg/l	96%	-0,44
AB	2,92	0,35	mg/l	100%	-0,03
AC			mg/l		
AD	2,86	0,43	mg/l	98%	-0,24
AE	2,74	0,014	mg/l	94%	-0,65
AF			mg/l		
AG			mg/l		
AH			mg/l		
AI	12,7 *	0,889	mg/l	433%	33,34
AJ	3,21		mg/l	110%	0,96
AK			mg/l		
AL	n.u		mg/l		
AM			mg/l		
AN			mg/l		
AO			mg/l		
AP			mg/l		
AQ	3,04	0,5	mg/l	104%	0,38
AR	3,20	0,43	mg/l	109%	0,92
AS			mg/l		
AT			mg/l		
AU	2,80	0,5	mg/l	96%	-0,44





	All results	Outliers excl.	Unit
Mean ± CI(99%)	3,41 ± 1,26	2,93 ± 0,11	mg/l
Recov. ± CI(99%)	116,3 ± 43,0	99,8 ± 3,7	%
SD between labs	2,09	0,17	mg/l
RSD between labs	61,3	5,8	%
n for calculation	22	20	

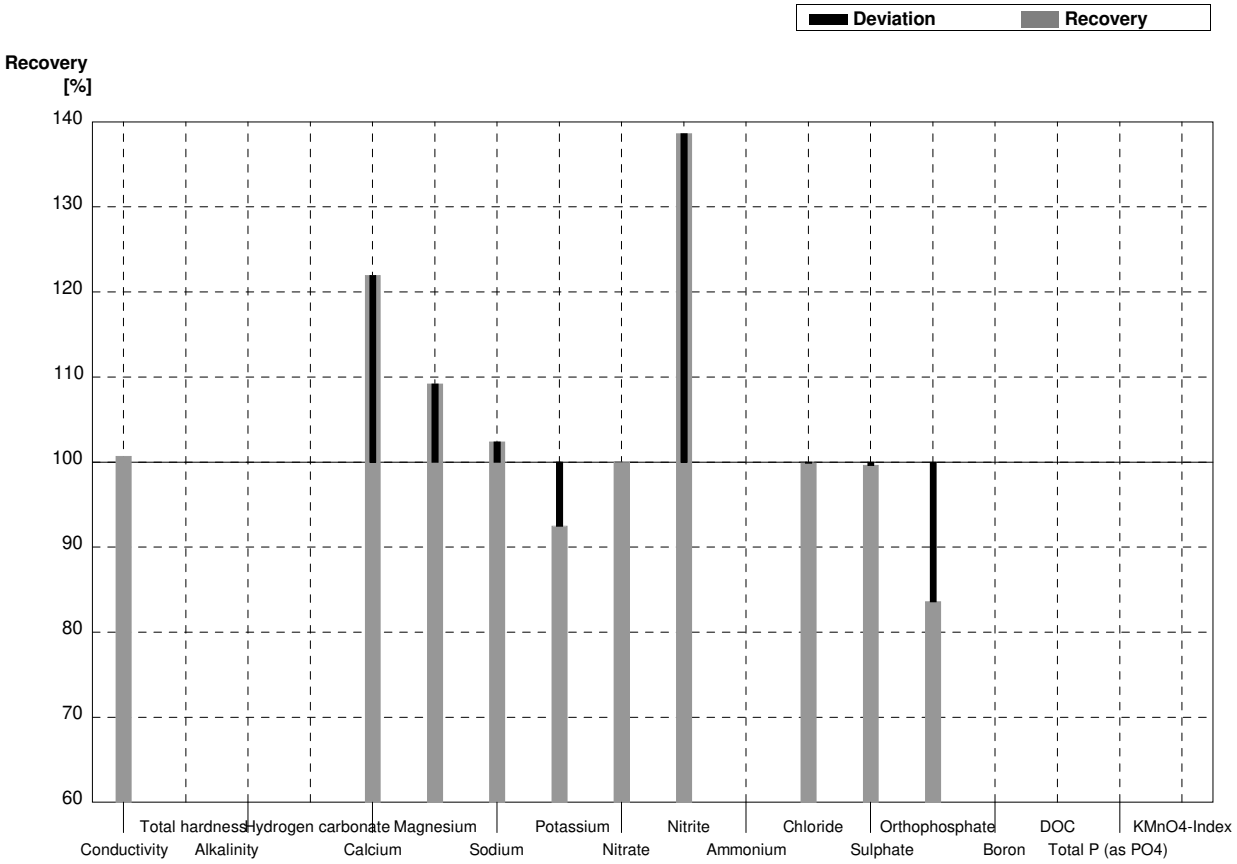
Illustration of Results
Laboratory Oriented Part

Round N162
Major Ions

Sample Dispatch: 16 May 2022

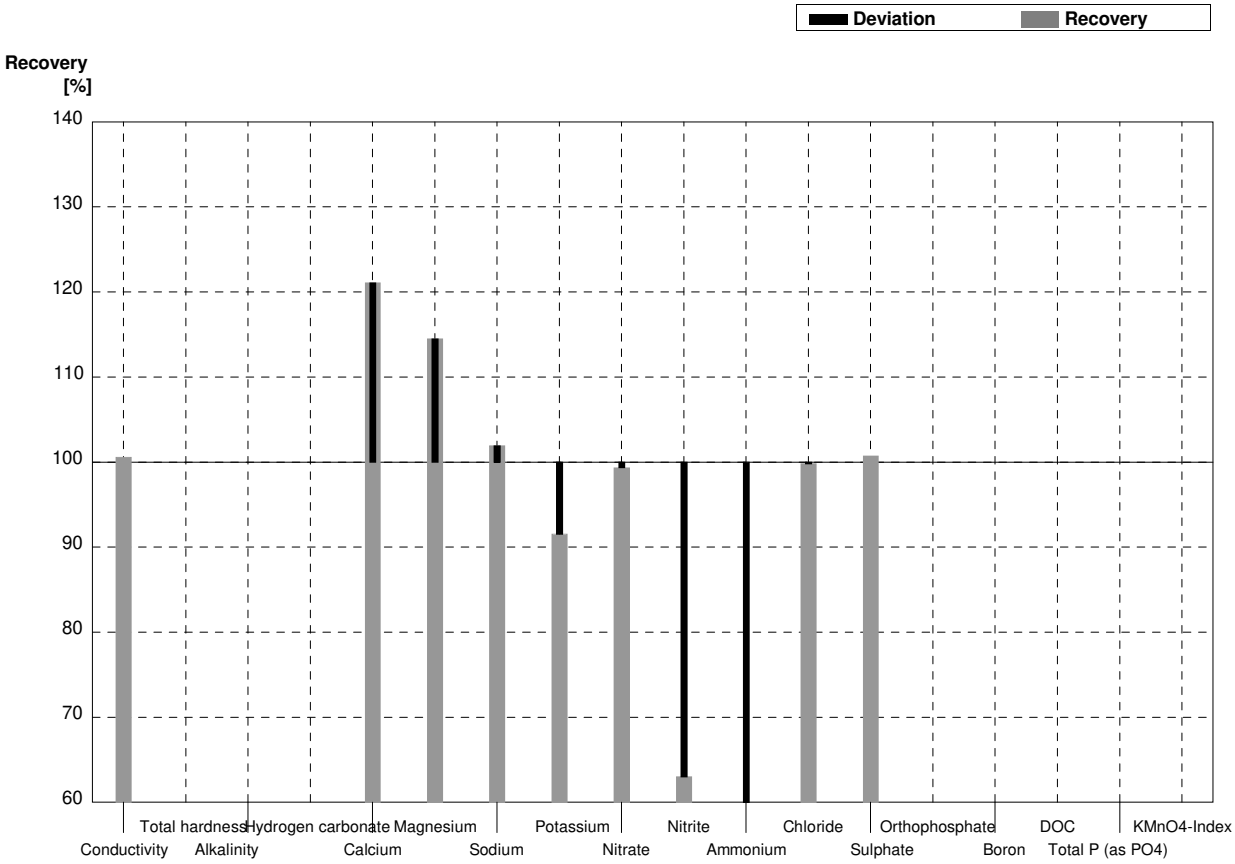
Sample N162A
Laboratory A

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2	440		µS/cm	101%
Total hardness	1,350	0,014			mmol/l	
Alkalinity	2,93	0,03			mmol/l	
Hydrogen carbonate	175,8	1,7			mg/l	
Calcium	38,7	0,6	47,2		mg/l	122%
Magnesium	9,34	0,11	10,2		mg/l	109%
Sodium	37,7	0,3	38,6		mg/l	102%
Potassium	5,60	0,04	5,18		mg/l	93%
Nitrate	41,3	0,8	41,3		mg/l	100%
Nitrite	0,0404	0,0010	0,056		mg/l	139%
Ammonium	<0,01				mg/l	
Chloride	9,3	0,2	9,29		mg/l	100%
Sulphate	29,81	0,18	29,7		mg/l	100%
Orthophosphate	0,061	0,002	0,051		mg/l	84%
Boron	0,0707	0,0011			mg/l	
DOC	4,72	0,05			mg/l	
Total P (as PO4)	0,107	0,002			mg/l	
KMnO4-Index	4,62	0,16			mg/l	



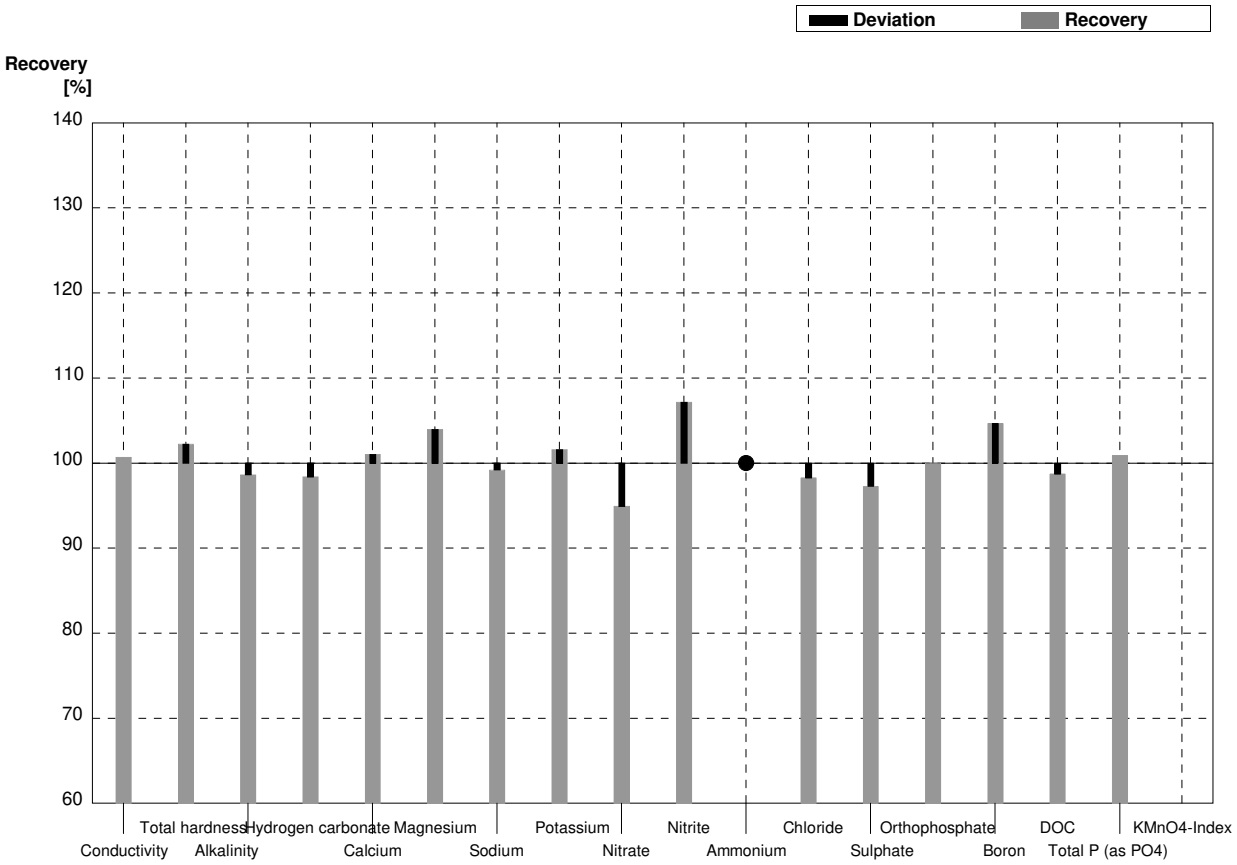
Sample N162B
Laboratory A

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2	525		µS/cm	101%
Total hardness	1,785	0,017			mmol/l	
Alkalinity	1,91	0,03			mmol/l	
Hydrogen carbonate	113,3	1,5			mg/l	
Calcium	47,9	0,7	58,0		mg/l	121%
Magnesium	14,32	0,11	16,4		mg/l	115%
Sodium	30,9	0,3	31,5		mg/l	102%
Potassium	4,26	0,03	3,90		mg/l	92%
Nitrate	30,9	0,6	30,7		mg/l	99%
Nitrite	0,0936	0,0008	0,059		mg/l	63%
Ammonium	0,058	0,004	0,0220		mg/l	38%
Chloride	52,2	0,8	52,1		mg/l	100%
Sulphate	55,4	0,3	55,8		mg/l	101%
Orthophosphate	<0,009				mg/l	
Boron	0,1092	0,0007			mg/l	
DOC	3,98	0,05			mg/l	
Total P (as PO4)	<0,009				mg/l	
KMnO4-Index	2,93	0,08			mg/l	



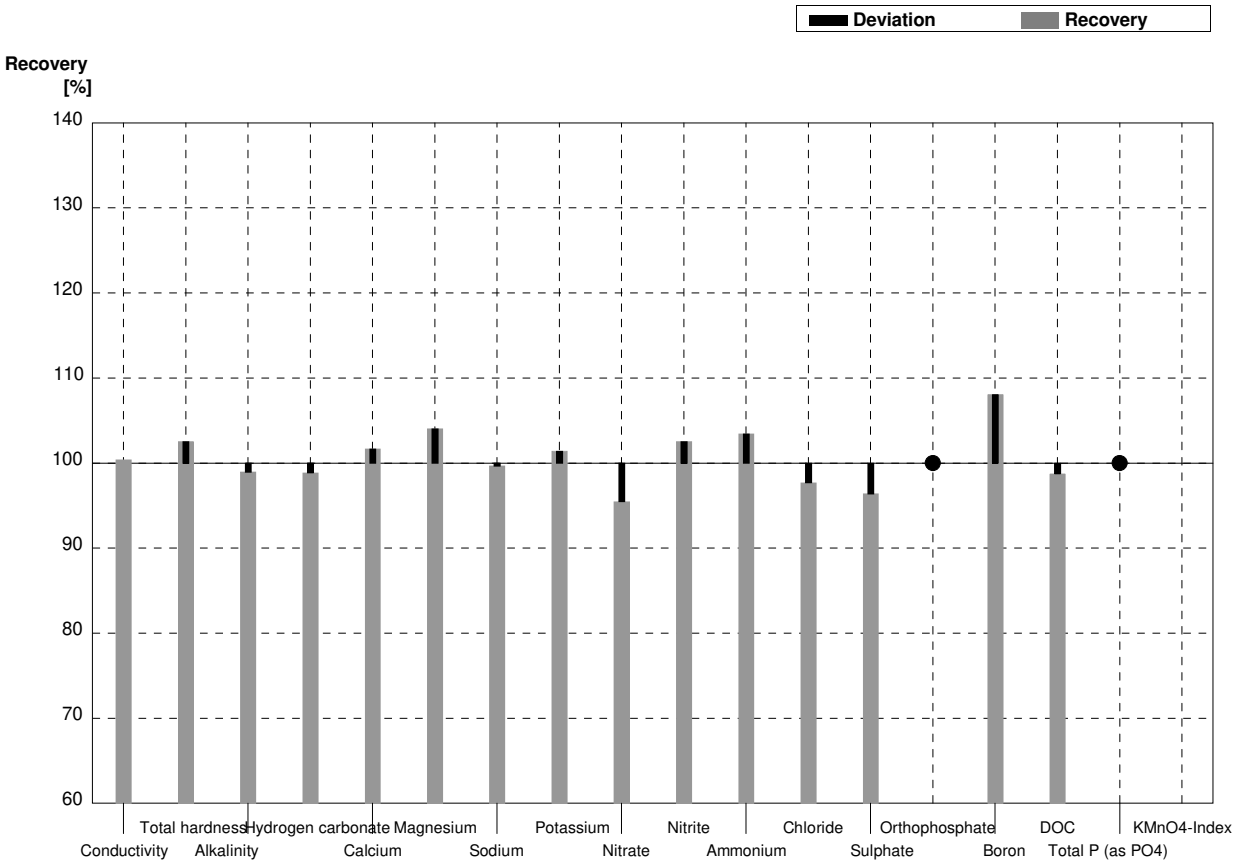
Sample N162A
Laboratory B

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2	440	13	µS/cm	101%
Total hardness	1,350	0,014	1,38	0,11	mmol/l	102%
Alkalinity	2,93	0,03	2,89	0,12	mmol/l	99%
Hydrogen carbonate	175,8	1,7	173	7	mg/l	98%
Calcium	38,7	0,6	39,1	2,0	mg/l	101%
Magnesium	9,34	0,11	9,71	0,58	mg/l	104%
Sodium	37,7	0,3	37,4	1,5	mg/l	99%
Potassium	5,60	0,04	5,69	0,46	mg/l	102%
Nitrate	41,3	0,8	39,2	2,4	mg/l	95%
Nitrite	0,0404	0,0010	0,0433	0,004	mg/l	107%
Ammonium	<0,01		<0,008		mg/l	•
Chloride	9,3	0,2	9,14	0,46	mg/l	98%
Sulphate	29,81	0,18	29,0	1,8	mg/l	97%
Orthophosphate	0,061	0,002	0,061	0,004	mg/l	100%
Boron	0,0707	0,0011	0,074	0,008	mg/l	105%
DOC	4,72	0,05	4,66	0,42	mg/l	99%
Total P (as PO4)	0,107	0,002	0,108	0,008	mg/l	101%
KMnO4-Index	4,62	0,16			mg/l	



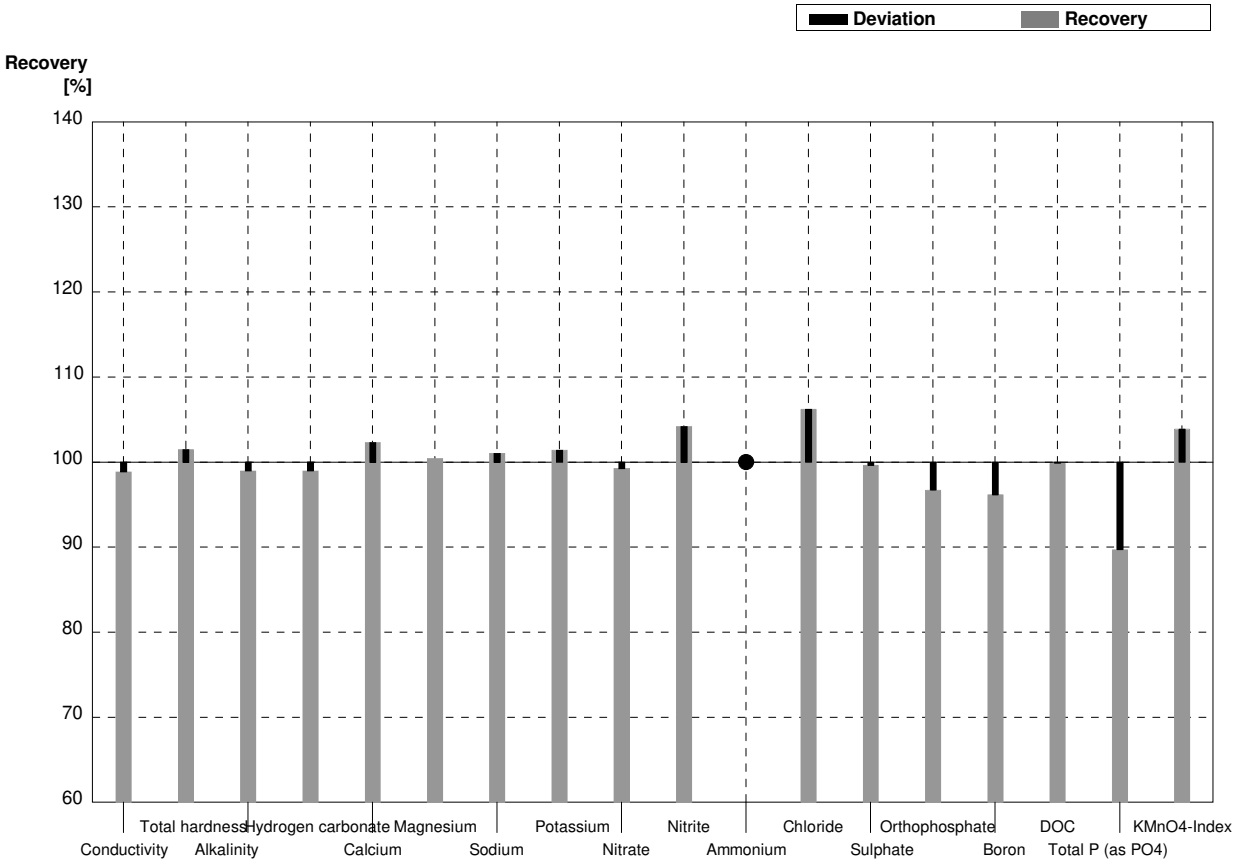
Sample N162B
Laboratory B

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2	524	16	µS/cm	100%
Total hardness	1,785	0,017	1,83	0,15	mmol/l	103%
Alkalinity	1,91	0,03	1,89	0,08	mmol/l	99%
Hydrogen carbonate	113,3	1,5	112	5	mg/l	99%
Calcium	47,9	0,7	48,7	2,4	mg/l	102%
Magnesium	14,32	0,11	14,9	0,9	mg/l	104%
Sodium	30,9	0,3	30,8	1,2	mg/l	100%
Potassium	4,26	0,03	4,32	0,35	mg/l	101%
Nitrate	30,9	0,6	29,5	1,8	mg/l	95%
Nitrite	0,0936	0,0008	0,096	0,008	mg/l	103%
Ammonium	0,058	0,004	0,060	0,006	mg/l	103%
Chloride	52,2	0,8	51,0	2,6	mg/l	98%
Sulphate	55,4	0,3	53,4	3,2	mg/l	96%
Orthophosphate	<0,009		<0,006		mg/l	•
Boron	0,1092	0,0007	0,118	0,012	mg/l	108%
DOC	3,98	0,05	3,93	0,35	mg/l	99%
Total P (as PO4)	<0,009		<0,006		mg/l	•
KMnO4-Index	2,93	0,08			mg/l	



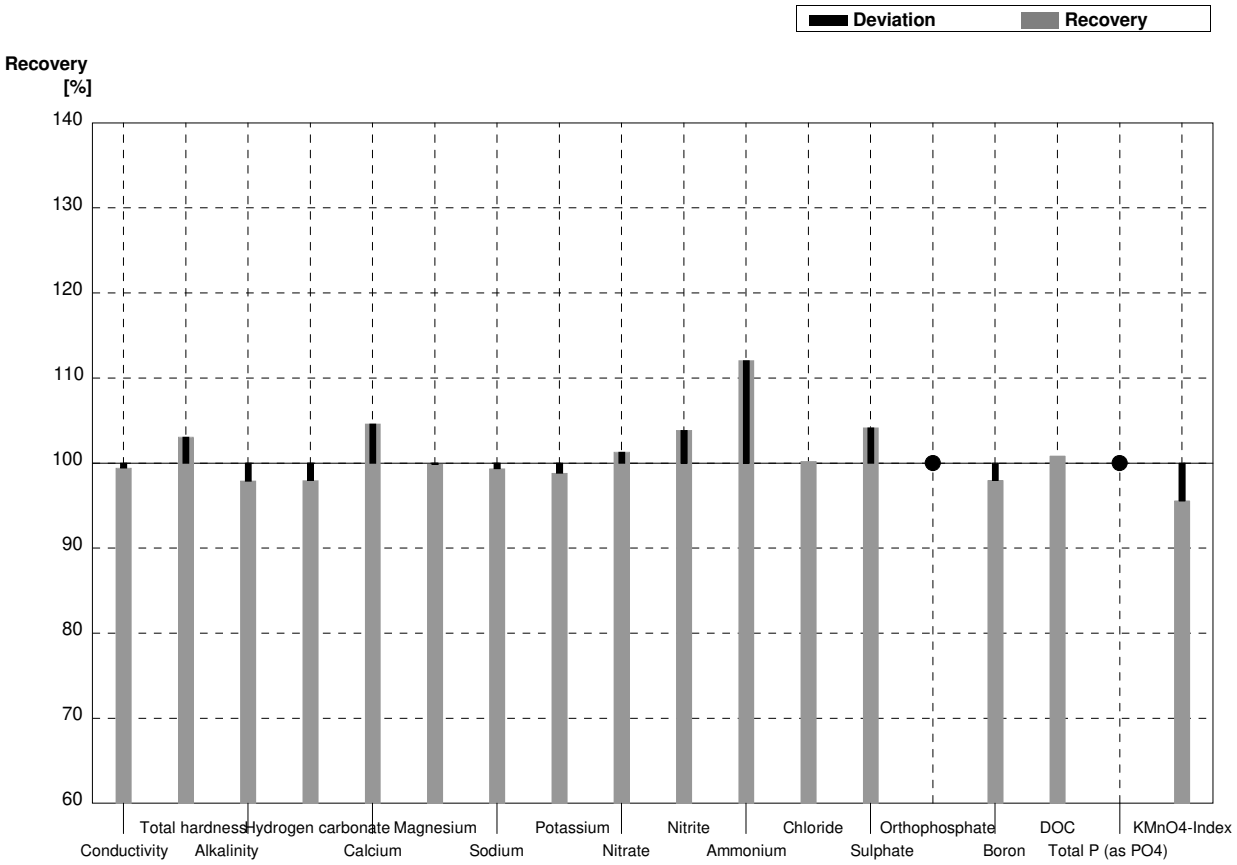
Sample N162A
Laboratory C

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2	432	19,4	µS/cm	99%
Total hardness	1,350	0,014	1,37		mmol/l	101%
Alkalinity	2,93	0,03	2,90	0,20	mmol/l	99%
Hydrogen carbonate	175,8	1,7	174		mg/l	99%
Calcium	38,7	0,6	39,6	6,2	mg/l	102%
Magnesium	9,34	0,11	9,38	1,0	mg/l	100%
Sodium	37,7	0,3	38,1	3,3	mg/l	101%
Potassium	5,60	0,04	5,68	0,5	mg/l	101%
Nitrate	41,3	0,8	41,0	5,8	mg/l	99%
Nitrite	0,0404	0,0010	0,0421	0,006	mg/l	104%
Ammonium	<0,01		<0,01		mg/l	•
Chloride	9,3	0,2	9,88	1,4	mg/l	106%
Sulphate	29,81	0,18	29,7	2,4	mg/l	100%
Orthophosphate	0,061	0,002	0,059	0,02	mg/l	97%
Boron	0,0707	0,0011	0,068	0,002	mg/l	96%
DOC	4,72	0,05	4,714	0,56	mg/l	100%
Total P (as PO4)	0,107	0,002	0,096	0,0084	mg/l	90%
KMnO4-Index	4,62	0,16	4,80		mg/l	104%



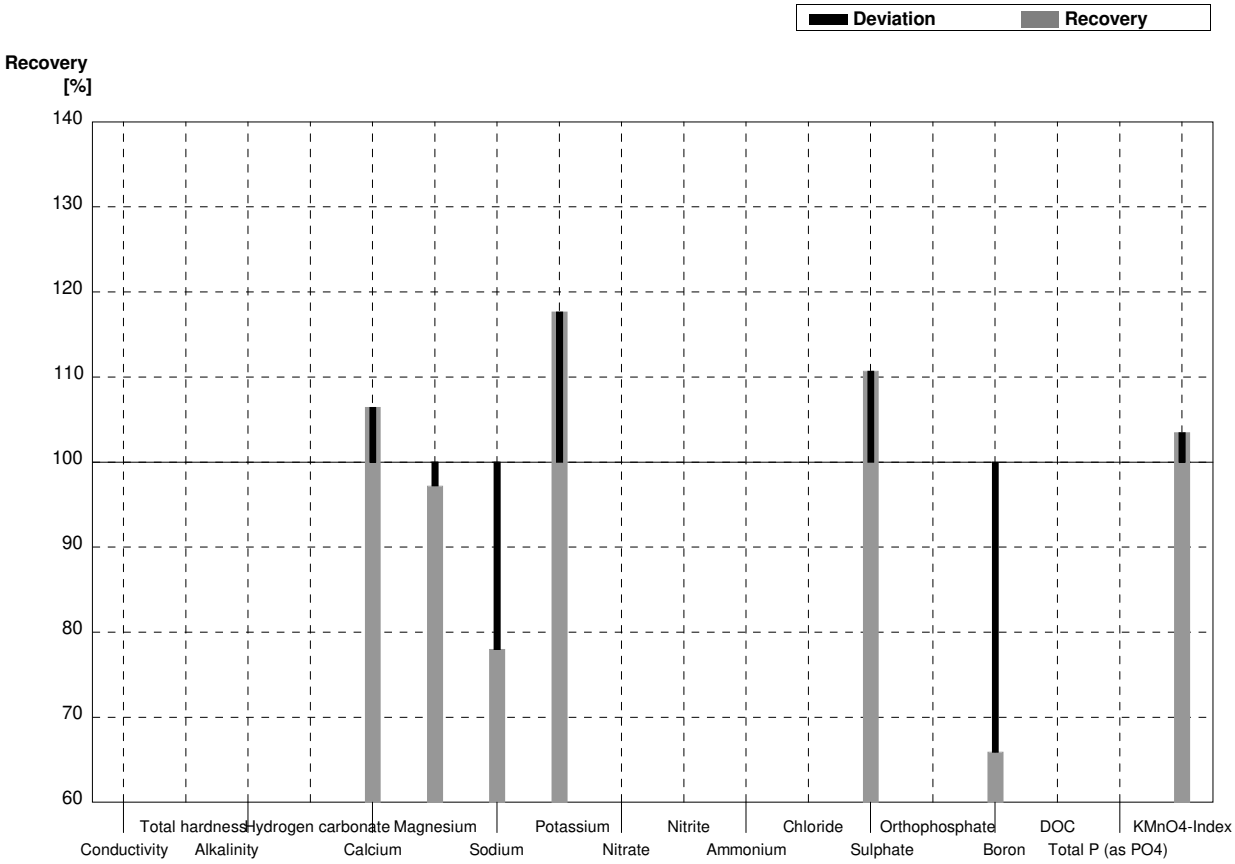
Sample N162B
Laboratory C

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2	519	23,4	µS/cm	99%
Total hardness	1,785	0,017	1,84		mmol/l	103%
Alkalinity	1,91	0,03	1,87	0,13	mmol/l	98%
Hydrogen carbonate	113,3	1,5	111		mg/l	98%
Calcium	47,9	0,7	50,1	7,8	mg/l	105%
Magnesium	14,32	0,11	14,3	1,5	mg/l	100%
Sodium	30,9	0,3	30,7	2,6	mg/l	99%
Potassium	4,26	0,03	4,21	0,4	mg/l	99%
Nitrate	30,9	0,6	31,3	4,4	mg/l	101%
Nitrite	0,0936	0,0008	0,0972	0,01	mg/l	104%
Ammonium	0,058	0,004	0,065	0,011	mg/l	112%
Chloride	52,2	0,8	52,3	7,4	mg/l	100%
Sulphate	55,4	0,3	57,7	4,7	mg/l	104%
Orthophosphate	<0,009		<0,01		mg/l	•
Boron	0,1092	0,0007	0,107		mg/l	98%
DOC	3,98	0,05	4,014	0,48	mg/l	101%
Total P (as PO4)	<0,009		<0,03		mg/l	•
KMnO4-Index	2,93	0,08	2,80		mg/l	96%



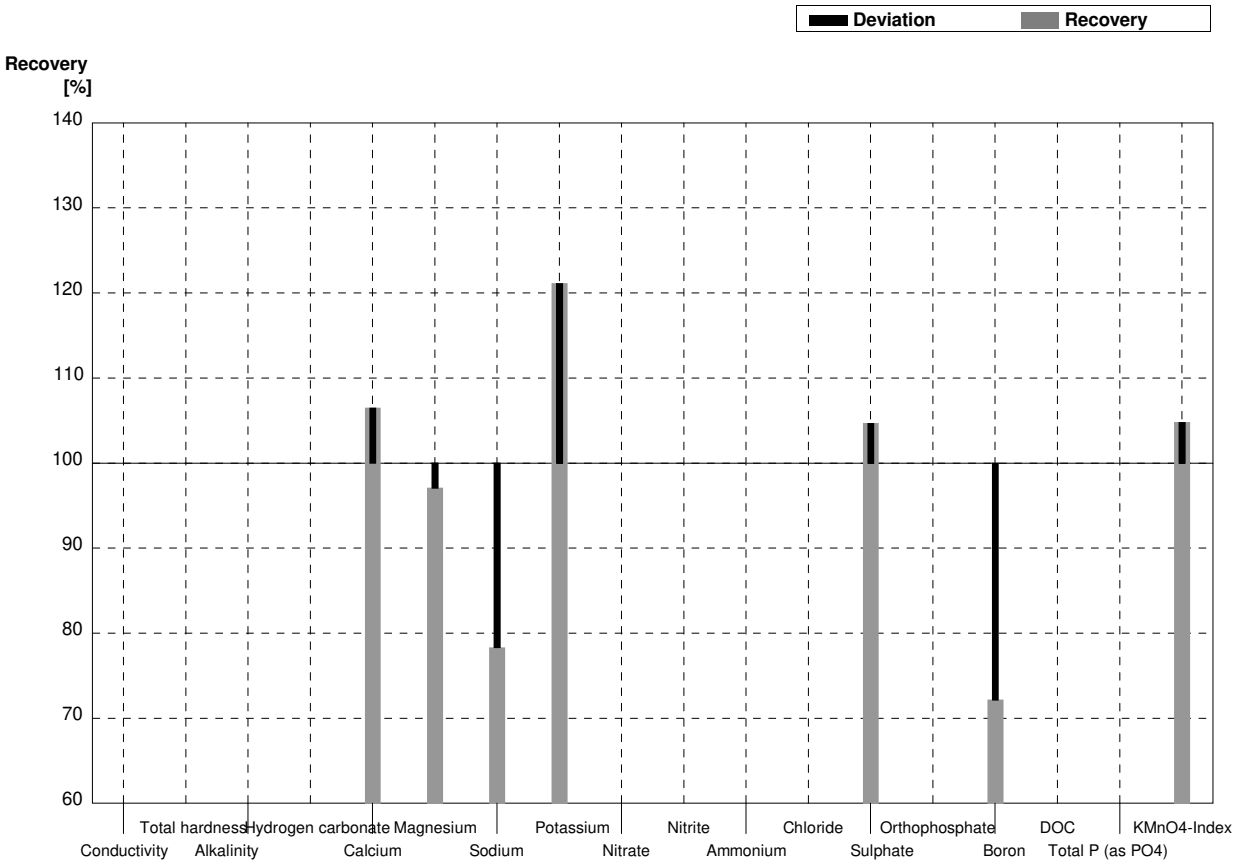
Sample N162A
Laboratory D

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2			µS/cm	
Total hardness	1,350	0,014			mmol/l	
Alkalinity	2,93	0,03			mmol/l	
Hydrogen carbonate	175,8	1,7			mg/l	
Calcium	38,7	0,6	41,2	8,2	mg/l	106%
Magnesium	9,34	0,11	9,08	1,82	mg/l	97%
Sodium	37,7	0,3	29,4	5,9	mg/l	78%
Potassium	5,60	0,04	6,59	1,32	mg/l	118%
Nitrate	41,3	0,8			mg/l	
Nitrite	0,0404	0,0010			mg/l	
Ammonium	<0,01				mg/l	
Chloride	9,3	0,2			mg/l	
Sulphate	29,81	0,18	33,0	2,5	mg/l	111%
Orthophosphate	0,061	0,002			mg/l	
Boron	0,0707	0,0011	0,0466	0,0093	mg/l	66%
DOC	4,72	0,05			mg/l	
Total P (as PO4)	0,107	0,002			mg/l	
KMnO4-Index	4,62	0,16	4,78	0,58	mg/l	103%



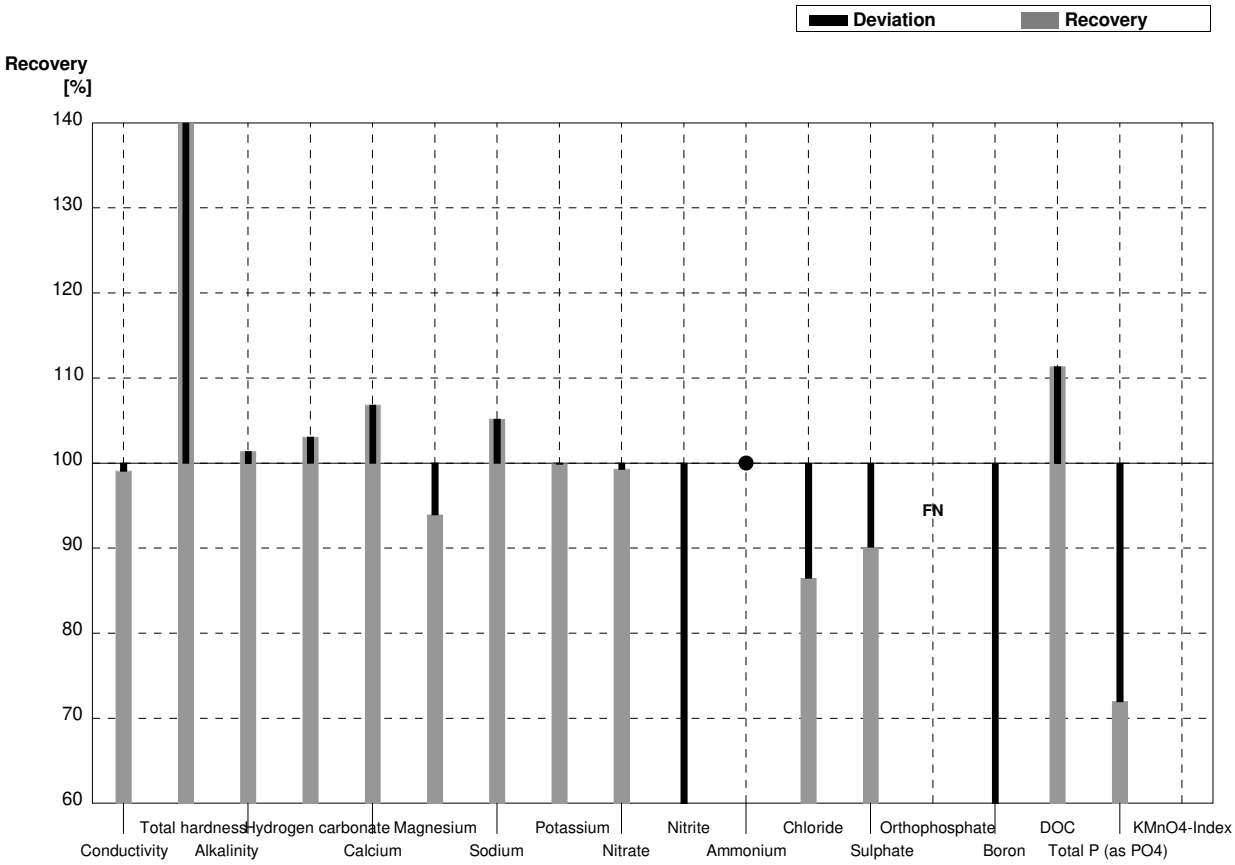
Sample N162B
Laboratory D

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2			µS/cm	
Total hardness	1,785	0,017			mmol/l	
Alkalinity	1,91	0,03			mmol/l	
Hydrogen carbonate	113,3	1,5			mg/l	
Calcium	47,9	0,7	51,0	10,2	mg/l	106%
Magnesium	14,32	0,11	13,9	2,8	mg/l	97%
Sodium	30,9	0,3	24,2	4,8	mg/l	78%
Potassium	4,26	0,03	5,16	1,03	mg/l	121%
Nitrate	30,9	0,6			mg/l	
Nitrite	0,0936	0,0008			mg/l	
Ammonium	0,058	0,004			mg/l	
Chloride	52,2	0,8			mg/l	
Sulphate	55,4	0,3	58	4,5	mg/l	105%
Orthophosphate	<0,009				mg/l	
Boron	0,1092	0,0007	0,0788	0,0158	mg/l	72%
DOC	3,98	0,05			mg/l	
Total P (as PO4)	<0,009				mg/l	
KMnO4-Index	2,93	0,08	3,07	0,37	mg/l	105%



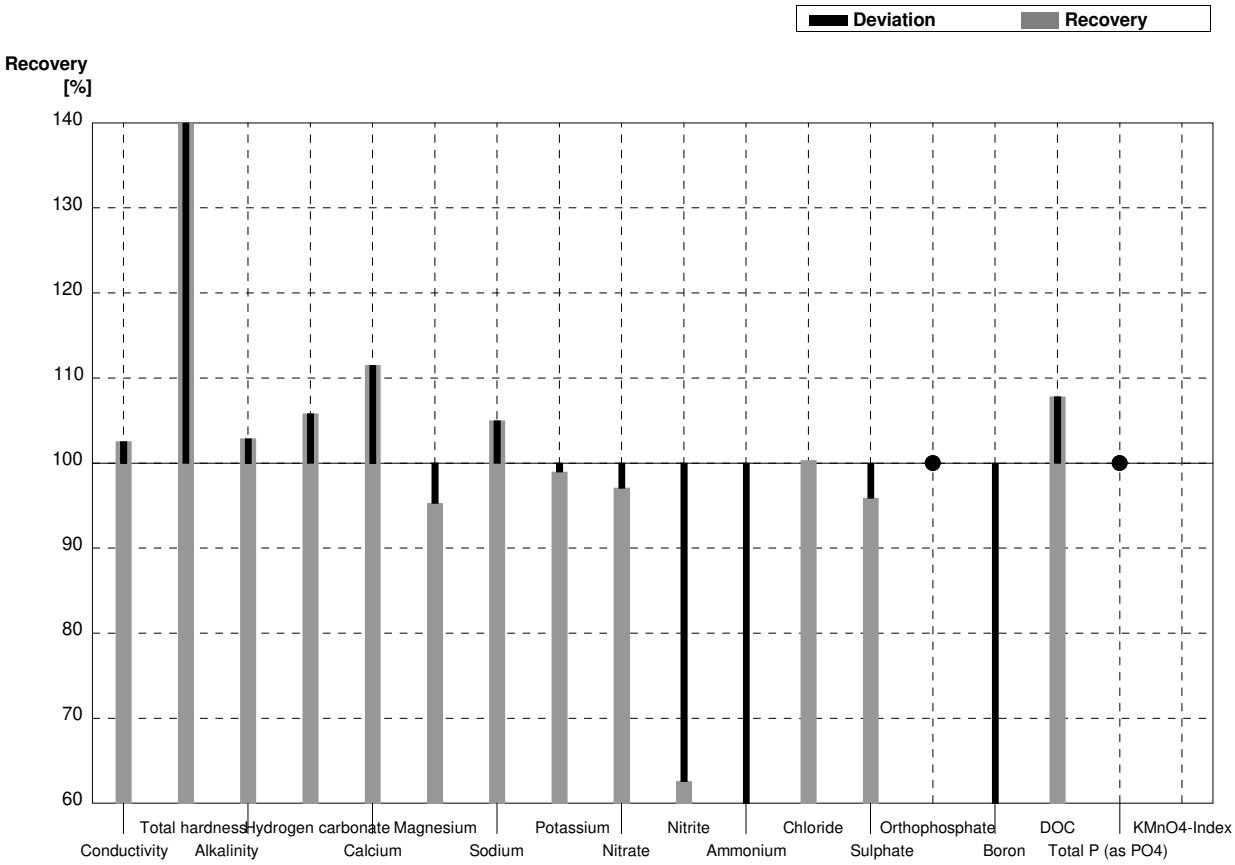
Sample N162A
Laboratory E

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2	432,9	1,6	µS/cm	99%
Total hardness	1,350	0,014	7,28	0,03	mmol/l	539%
Alkalinity	2,93	0,03	2,97	0,11	mmol/l	101%
Hydrogen carbonate	175,8	1,7	181,17	6,71	mg/l	103%
Calcium	38,7	0,6	41,348	2,709	mg/l	107%
Magnesium	9,34	0,11	8,773	0,829	mg/l	94%
Sodium	37,7	0,3	39,659	0,668	mg/l	105%
Potassium	5,60	0,04	5,594	0,185	mg/l	100%
Nitrate	41,3	0,8	41,008	2,673	mg/l	99%
Nitrite	0,0404	0,0010	0,0215	0,004	mg/l	53%
Ammonium	<0,01		0,0137	0,004	mg/l	•
Chloride	9,3	0,2	8,044	0,811	mg/l	86%
Sulphate	29,81	0,18	26,872	0,826	mg/l	90%
Orthophosphate	0,061	0,002	<0,05	0,00	mg/l	FN
Boron	0,0707	0,0011	0,0366	0,0028	mg/l	52%
DOC	4,72	0,05	5,255	0,035	mg/l	111%
Total P (as PO4)	0,107	0,002	0,077	0,018	mg/l	72%
KMnO4-Index	4,62	0,16			mg/l	



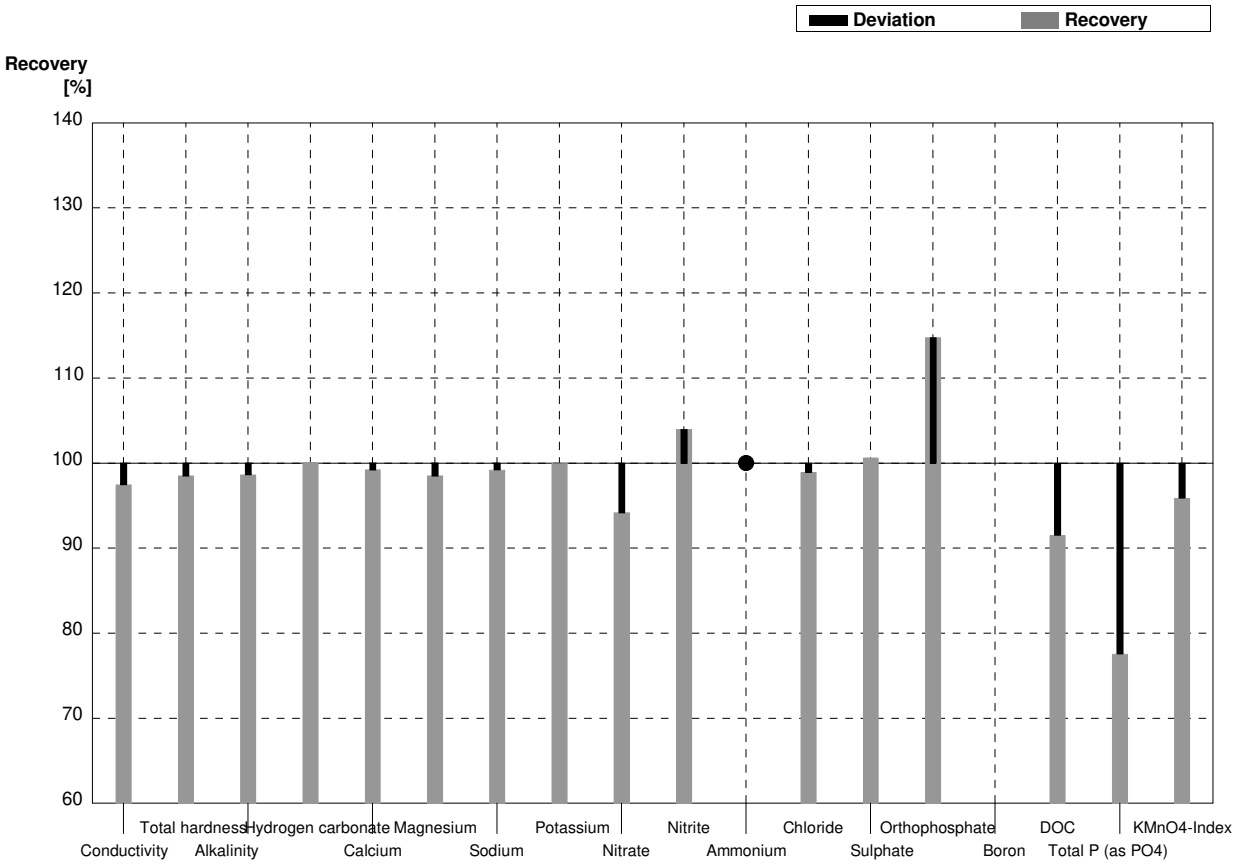
Sample N162B
Laboratory E

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2	535,3	0,20	µS/cm	103%
Total hardness	1,785	0,017	9,65	0,07	mmol/l	541%
Alkalinity	1,91	0,03	1,965	0,145	mmol/l	103%
Hydrogen carbonate	113,3	1,5	119,87	8	mg/l	106%
Calcium	47,9	0,7	53,411	3,393	mg/l	112%
Magnesium	14,32	0,11	13,644	0,717	mg/l	95%
Sodium	30,9	0,3	32,438	0,548	mg/l	105%
Potassium	4,26	0,03	4,217	0,167	mg/l	99%
Nitrate	30,9	0,6	30,00	1,578	mg/l	97%
Nitrite	0,0936	0,0008	0,0586	0,094	mg/l	63%
Ammonium	0,058	0,004	0,0102	0,0136	mg/l	18%
Chloride	52,2	0,8	52,362	0,185	mg/l	100%
Sulphate	55,4	0,3	53,125	0,749	mg/l	96%
Orthophosphate	<0,009		<0,05	0,0	mg/l	•
Boron	0,1092	0,0007	0,0564	0,0028	mg/l	52%
DOC	3,98	0,05	4,29	0,052	mg/l	108%
Total P (as PO4)	<0,009		<0,05	0,00	mg/l	•
KMnO4-Index	2,93	0,08			mg/l	



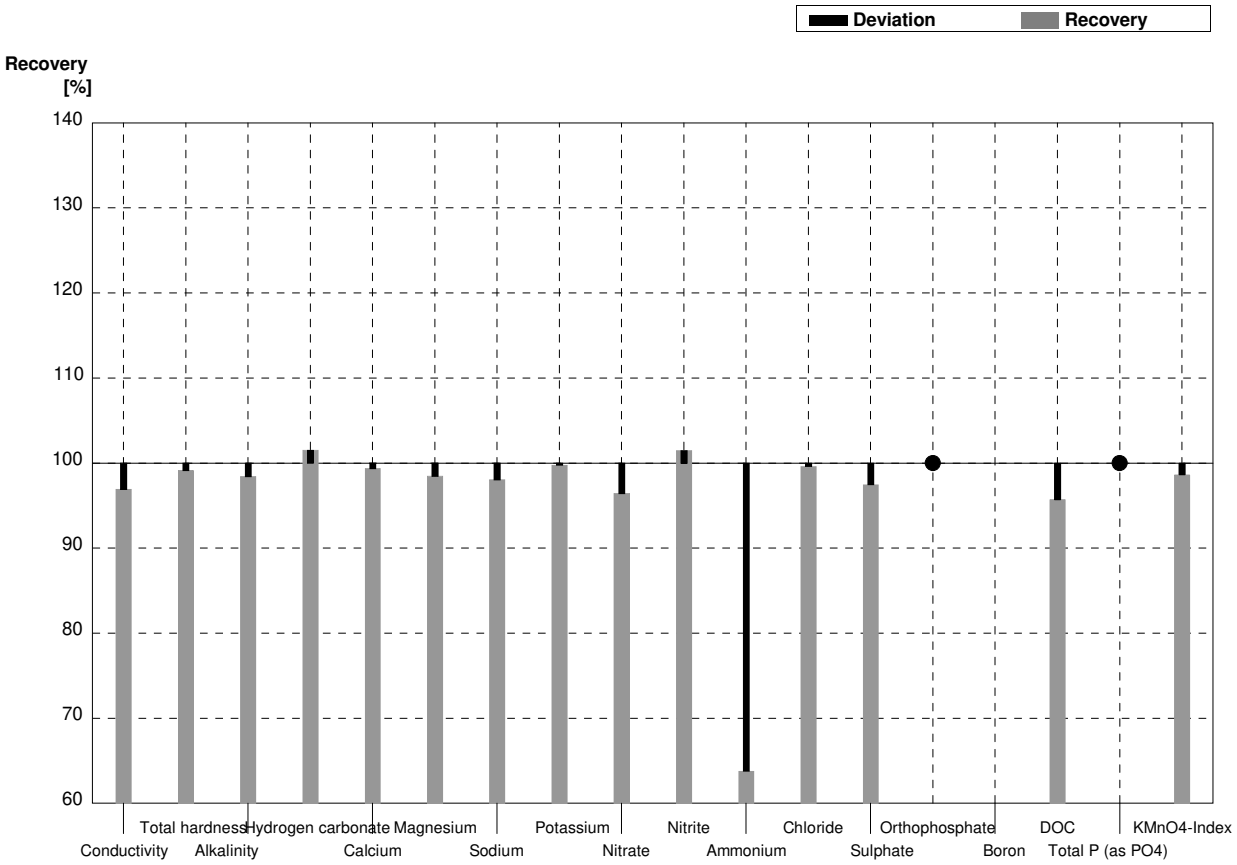
Sample N162A
Laboratory F

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2	426	9,2	µS/cm	97%
Total hardness	1,350	0,014	1,33	0,11	mmol/l	99%
Alkalinity	2,93	0,03	2,89	0,13	mmol/l	99%
Hydrogen carbonate	175,8	1,7	176	7,9	mg/l	100%
Calcium	38,7	0,6	38,4	2,0	mg/l	99%
Magnesium	9,34	0,11	9,2	0,58	mg/l	99%
Sodium	37,7	0,3	37,4	2,8	mg/l	99%
Potassium	5,60	0,04	5,6	0,20	mg/l	100%
Nitrate	41,3	0,8	38,9	1,9	mg/l	94%
Nitrite	0,0404	0,0010	0,0420	0,0062	mg/l	104%
Ammonium	<0,01		<0,01		mg/l	•
Chloride	9,3	0,2	9,2	0,73	mg/l	99%
Sulphate	29,81	0,18	30,0	1,8	mg/l	101%
Orthophosphate	0,061	0,002	0,070	0,0060	mg/l	115%
Boron	0,0707	0,0011			mg/l	
DOC	4,72	0,05	4,32	0,72	mg/l	92%
Total P (as PO4)	0,107	0,002	0,083	0,011	mg/l	78%
KMnO4-Index	4,62	0,16	4,43	0,28	mg/l	96%



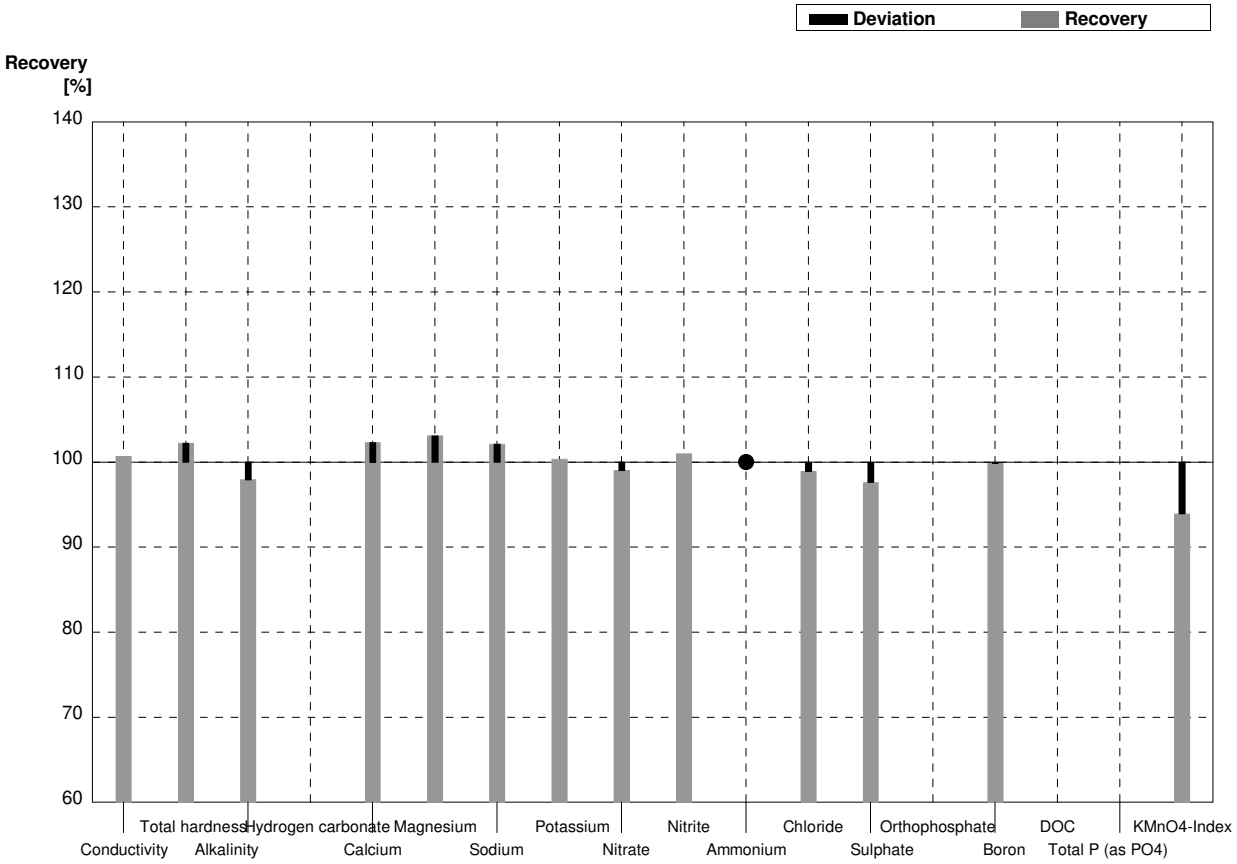
Sample N162B
Laboratory F

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2	506	11	µS/cm	97%
Total hardness	1,785	0,017	1,77	0,14	mmol/l	99%
Alkalinity	1,91	0,03	1,88	0,08	mmol/l	98%
Hydrogen carbonate	113,3	1,5	115	5,2	mg/l	102%
Calcium	47,9	0,7	47,6	2,5	mg/l	99%
Magnesium	14,32	0,11	14,1	0,89	mg/l	98%
Sodium	30,9	0,3	30,3	2,3	mg/l	98%
Potassium	4,26	0,03	4,25	0,15	mg/l	100%
Nitrate	30,9	0,6	29,8	1,4	mg/l	96%
Nitrite	0,0936	0,0008	0,095	0,0139	mg/l	101%
Ammonium	0,058	0,004	0,0370	0,0027	mg/l	64%
Chloride	52,2	0,8	52	4,1	mg/l	100%
Sulphate	55,4	0,3	54	3,3	mg/l	97%
Orthophosphate	<0,009		<0,01		mg/l	•
Boron	0,1092	0,0007			mg/l	
DOC	3,98	0,05	3,81	0,64	mg/l	96%
Total P (as PO4)	<0,009		<0,01		mg/l	•
KMnO4-Index	2,93	0,08	2,89	0,18	mg/l	99%



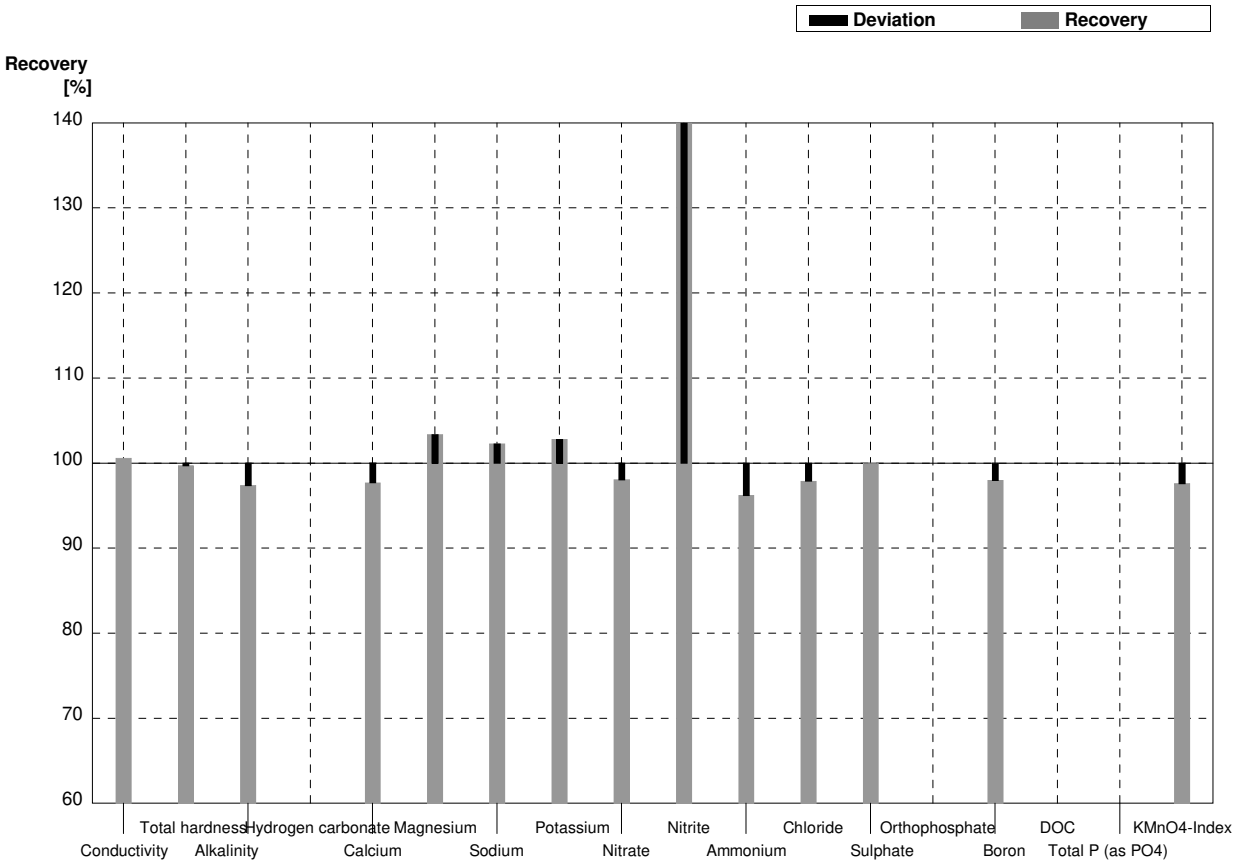
Sample N162A
Laboratory G

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2	440	10	µS/cm	101%
Total hardness	1,350	0,014	1,38	0,28	mmol/l	102%
Alkalinity	2,93	0,03	2,87	0,57	mmol/l	98%
Hydrogen carbonate	175,8	1,7			mg/l	
Calcium	38,7	0,6	39,6	7,9	mg/l	102%
Magnesium	9,34	0,11	9,63	1,9	mg/l	103%
Sodium	37,7	0,3	38,5	5,8	mg/l	102%
Potassium	5,60	0,04	5,62	1,1	mg/l	100%
Nitrate	41,3	0,8	40,9	4,1	mg/l	99%
Nitrite	0,0404	0,0010	0,0408	0,01	mg/l	101%
Ammonium	<0,01		<0,02		mg/l	•
Chloride	9,3	0,2	9,2	1,0	mg/l	99%
Sulphate	29,81	0,18	29,1	2,9	mg/l	98%
Orthophosphate	0,061	0,002			mg/l	
Boron	0,0707	0,0011	0,0706	0,018	mg/l	100%
DOC	4,72	0,05			mg/l	
Total P (as PO4)	0,107	0,002			mg/l	
KMnO4-Index	4,62	0,16	4,34	0,87	mg/l	94%



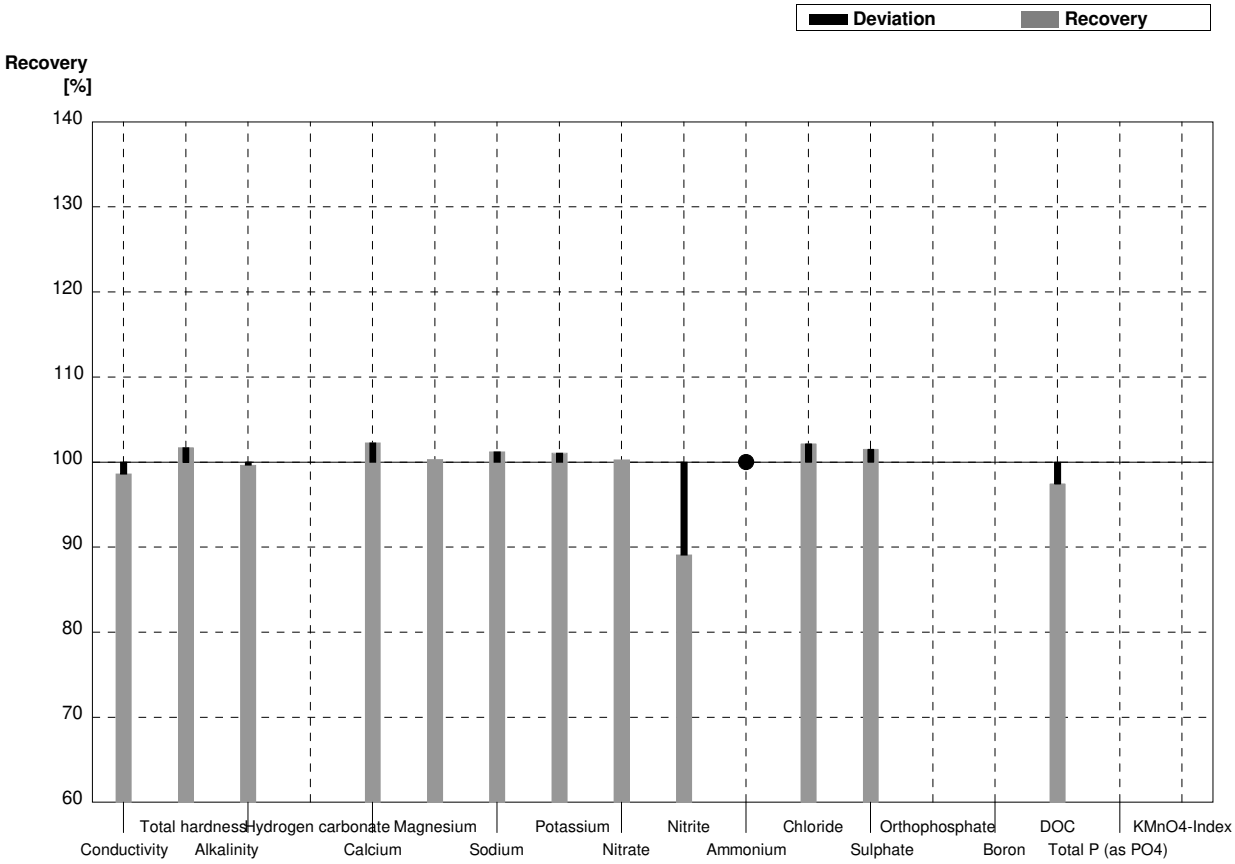
Sample **N162B**
Laboratory **G**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2	525	10	µS/cm	101%
Total hardness	1,785	0,017	1,78	0,36	mmol/l	100%
Alkalinity	1,91	0,03	1,86	0,37	mmol/l	97%
Hydrogen carbonate	113,3	1,5			mg/l	
Calcium	47,9	0,7	46,8	9,4	mg/l	98%
Magnesium	14,32	0,11	14,8	3,0	mg/l	103%
Sodium	30,9	0,3	31,6	6,3	mg/l	102%
Potassium	4,26	0,03	4,38	0,85	mg/l	103%
Nitrate	30,9	0,6	30,3	3,0	mg/l	98%
Nitrite	0,0936	0,0008	0,1385	0,035	mg/l	148%
Ammonium	0,058	0,004	0,0558	0,014	mg/l	96%
Chloride	52,2	0,8	51,1	5,1	mg/l	98%
Sulphate	55,4	0,3	55,4	5,5	mg/l	100%
Orthophosphate	<0,009				mg/l	
Boron	0,1092	0,0007	0,107	0,027	mg/l	98%
DOC	3,98	0,05			mg/l	
Total P (as PO4)	<0,009				mg/l	
KMnO4-Index	2,93	0,08	2,86	0,57	mg/l	98%



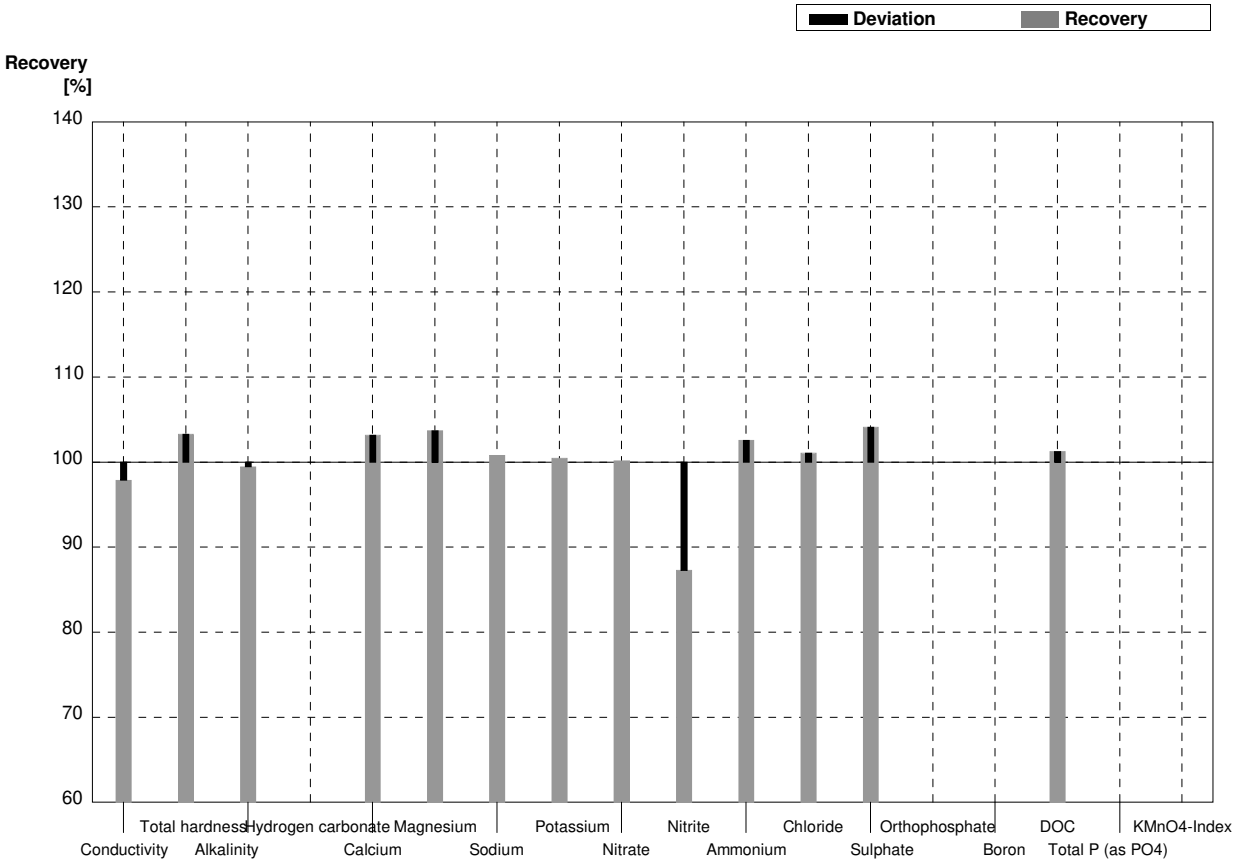
Sample N162A
Laboratory H

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2	431	30	µS/cm	99%
Total hardness	1,350	0,014	1,373	0,05	mmol/l	102%
Alkalinity	2,93	0,03	2,92	0,02	mmol/l	100%
Hydrogen carbonate	175,8	1,7			mg/l	
Calcium	38,7	0,6	39,59	0,6	mg/l	102%
Magnesium	9,34	0,11	9,37	0,6	mg/l	100%
Sodium	37,7	0,3	38,16	0,3	mg/l	101%
Potassium	5,60	0,04	5,66	0,06	mg/l	101%
Nitrate	41,3	0,8	41,41	0,5	mg/l	100%
Nitrite	0,0404	0,0010	0,0360	0,015	mg/l	89%
Ammonium	<0,01		<0,030	0,080	mg/l	•
Chloride	9,3	0,2	9,50	0,25	mg/l	102%
Sulphate	29,81	0,18	30,27	3,0	mg/l	102%
Orthophosphate	0,061	0,002			mg/l	
Boron	0,0707	0,0011			mg/l	
DOC	4,72	0,05	4,60	0,03	mg/l	97%
Total P (as PO4)	0,107	0,002			mg/l	
KMnO4-Index	4,62	0,16			mg/l	



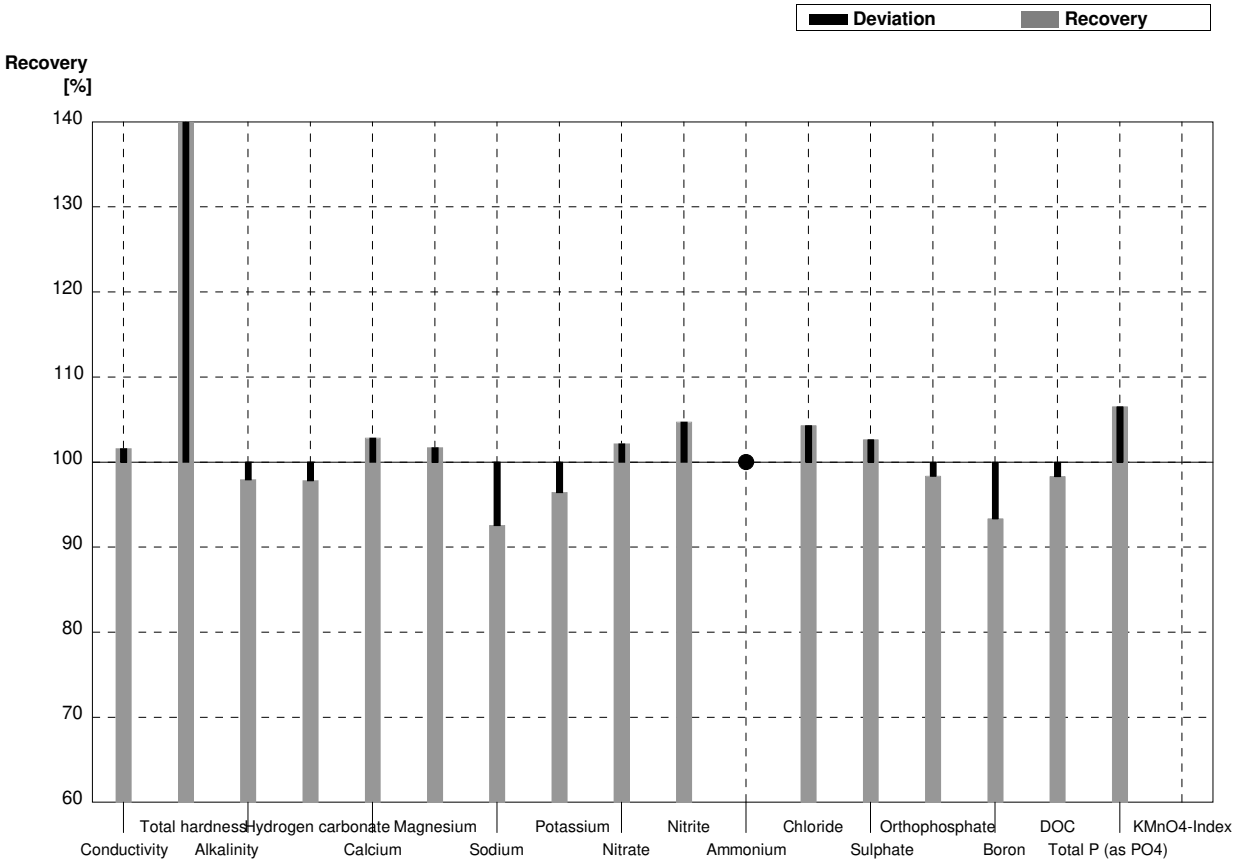
Sample N162B
Laboratory H

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2	511	30	µS/cm	98%
Total hardness	1,785	0,017	1,844	0,05	mmol/l	103%
Alkalinity	1,91	0,03	1,90	0,02	mmol/l	99%
Hydrogen carbonate	113,3	1,5			mg/l	
Calcium	47,9	0,7	49,42	0,6	mg/l	103%
Magnesium	14,32	0,11	14,85	0,6	mg/l	104%
Sodium	30,9	0,3	31,15	0,3	mg/l	101%
Potassium	4,26	0,03	4,28	0,06	mg/l	100%
Nitrate	30,9	0,6	30,95	0,5	mg/l	100%
Nitrite	0,0936	0,0008	0,0817	0,015	mg/l	87%
Ammonium	0,058	0,004	0,0595	0,080	mg/l	103%
Chloride	52,2	0,8	52,76	0,25	mg/l	101%
Sulphate	55,4	0,3	57,68	3,0	mg/l	104%
Orthophosphate	<0,009				mg/l	
Boron	0,1092	0,0007			mg/l	
DOC	3,98	0,05	4,03	0,03	mg/l	101%
Total P (as PO4)	<0,009				mg/l	
KMnO4-Index	2,93	0,08			mg/l	



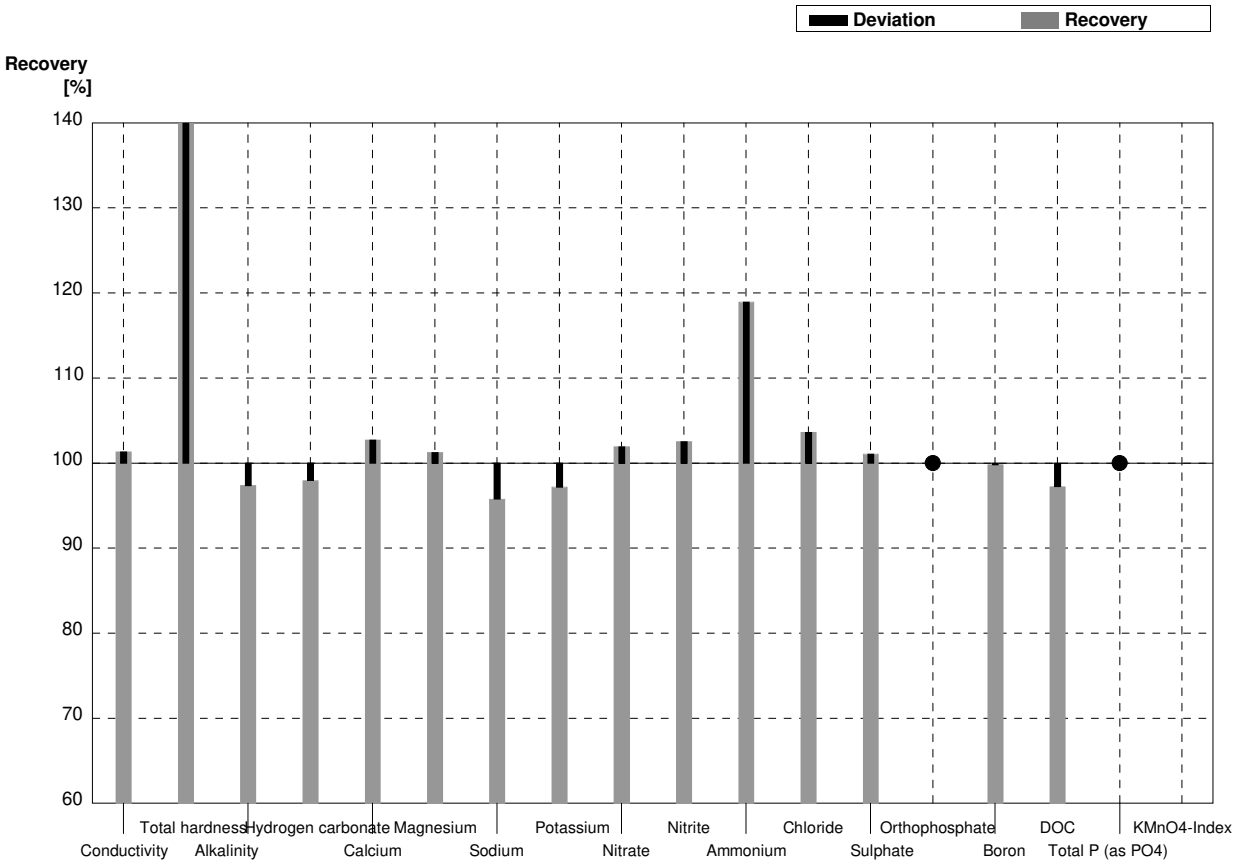
Sample N162A
Laboratory I

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2	444	26,6	µS/cm	102%
Total hardness	1,350	0,014	7,8	0,58	mmol/l	578%
Alkalinity	2,93	0,03	2,87	0,273	mmol/l	98%
Hydrogen carbonate	175,8	1,7	172	16,3	mg/l	98%
Calcium	38,7	0,6	39,8	2,39	mg/l	103%
Magnesium	9,34	0,11	9,5	1,14	mg/l	102%
Sodium	37,7	0,3	34,9	2,27	mg/l	93%
Potassium	5,60	0,04	5,4	0,54	mg/l	96%
Nitrate	41,3	0,8	42,2	4,43	mg/l	102%
Nitrite	0,0404	0,0010	0,0423	0,00423	mg/l	105%
Ammonium	<0,01		<0,04		mg/l	•
Chloride	9,3	0,2	9,7	0,87	mg/l	104%
Sulphate	29,81	0,18	30,6	2,75	mg/l	103%
Orthophosphate	0,061	0,002	0,060	0,0060	mg/l	98%
Boron	0,0707	0,0011	0,066	0,0092	mg/l	93%
DOC	4,72	0,05	4,64	0,278	mg/l	98%
Total P (as PO4)	0,107	0,002	0,114	0,0114	mg/l	107%
KMnO4-Index	4,62	0,16			mg/l	



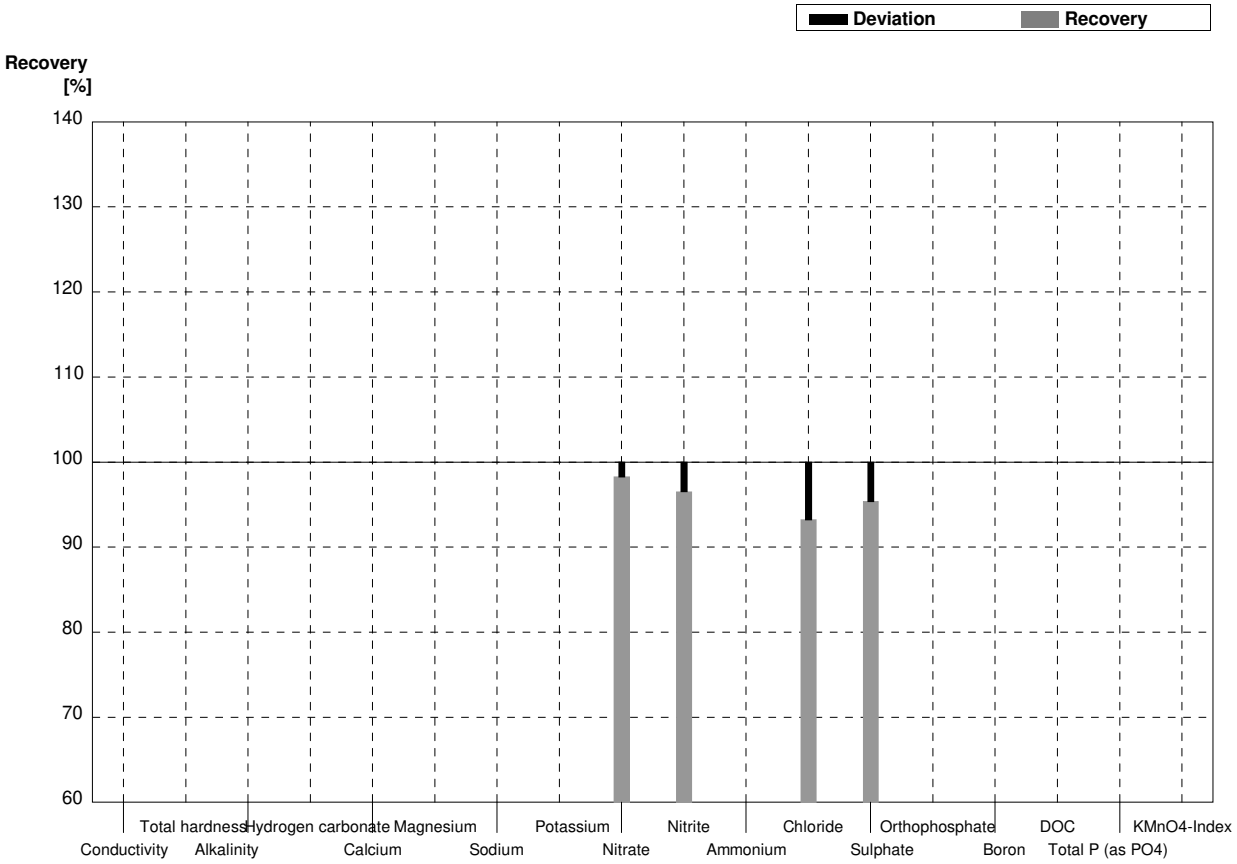
Sample N162B
Laboratory I

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2	529	31,7	µS/cm	101%
Total hardness	1,785	0,017	10,2	0,77	mmol/l	571%
Alkalinity	1,91	0,03	1,86	0,177	mmol/l	97%
Hydrogen carbonate	113,3	1,5	111	10,5	mg/l	98%
Calcium	47,9	0,7	49,2	2,95	mg/l	103%
Magnesium	14,32	0,11	14,5	1,74	mg/l	101%
Sodium	30,9	0,3	29,6	1,92	mg/l	96%
Potassium	4,26	0,03	4,14	0,414	mg/l	97%
Nitrate	30,9	0,6	31,5	3,31	mg/l	102%
Nitrite	0,0936	0,0008	0,096	0,0096	mg/l	103%
Ammonium	0,058	0,004	0,069	0,0069	mg/l	119%
Chloride	52,2	0,8	54,1	4,87	mg/l	104%
Sulphate	55,4	0,3	56,0	5,04	mg/l	101%
Orthophosphate	<0,009		<0,06		mg/l	•
Boron	0,1092	0,0007	0,109	0,0153	mg/l	100%
DOC	3,98	0,05	3,87	0,232	mg/l	97%
Total P (as PO4)	<0,009		<0,06		mg/l	•
KMnO4-Index	2,93	0,08			mg/l	



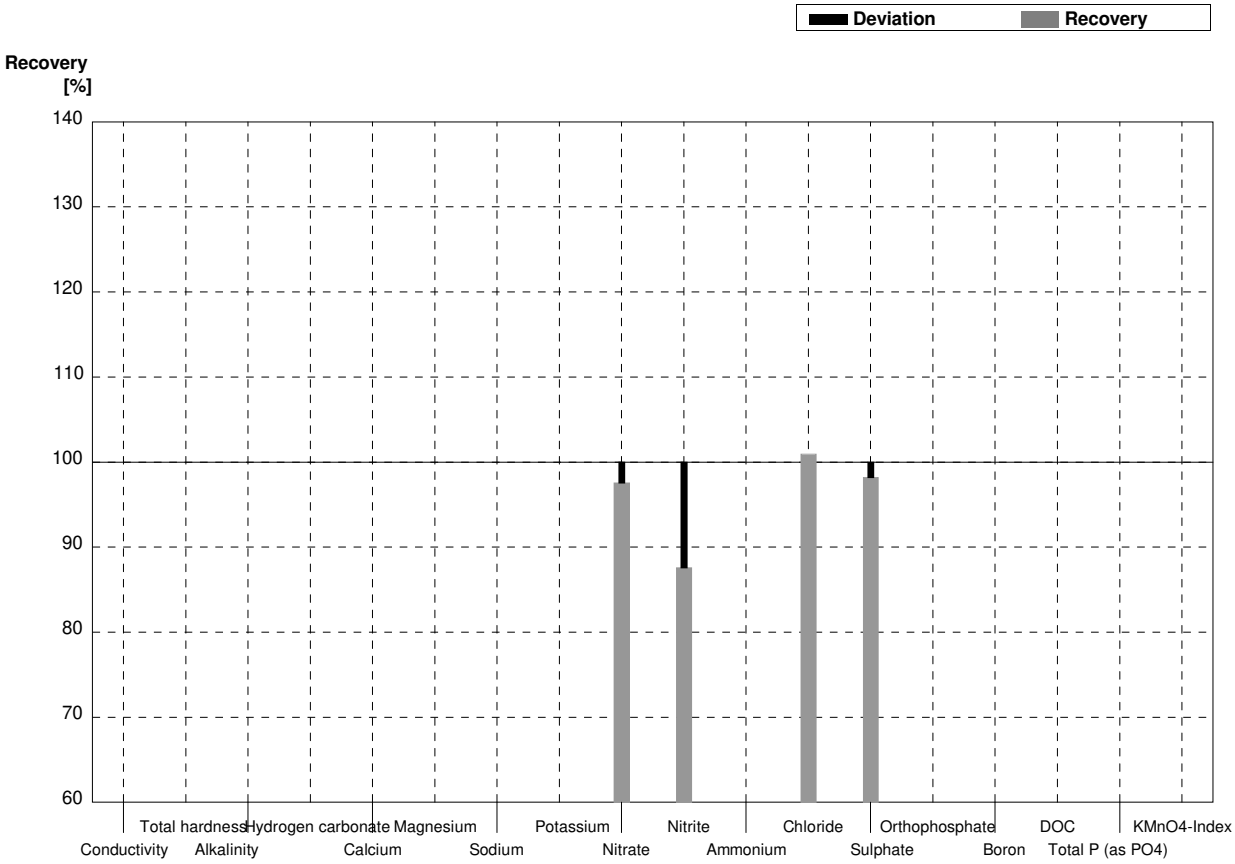
Sample N162A
Laboratory J

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2			µS/cm	
Total hardness	1,350	0,014			mmol/l	
Alkalinity	2,93	0,03			mmol/l	
Hydrogen carbonate	175,8	1,7			mg/l	
Calcium	38,7	0,6			mg/l	
Magnesium	9,34	0,11			mg/l	
Sodium	37,7	0,3			mg/l	
Potassium	5,60	0,04			mg/l	
Nitrate	41,3	0,8	40,588	2,5	mg/l	98%
Nitrite	0,0404	0,0010	0,0390	0,004	mg/l	97%
Ammonium	<0,01				mg/l	
Chloride	9,3	0,2	8,672	1,29	mg/l	93%
Sulphate	29,81	0,18	28,437	4,2	mg/l	95%
Orthophosphate	0,061	0,002			mg/l	
Boron	0,0707	0,0011			mg/l	
DOC	4,72	0,05			mg/l	
Total P (as PO4)	0,107	0,002			mg/l	
KMnO4-Index	4,62	0,16			mg/l	



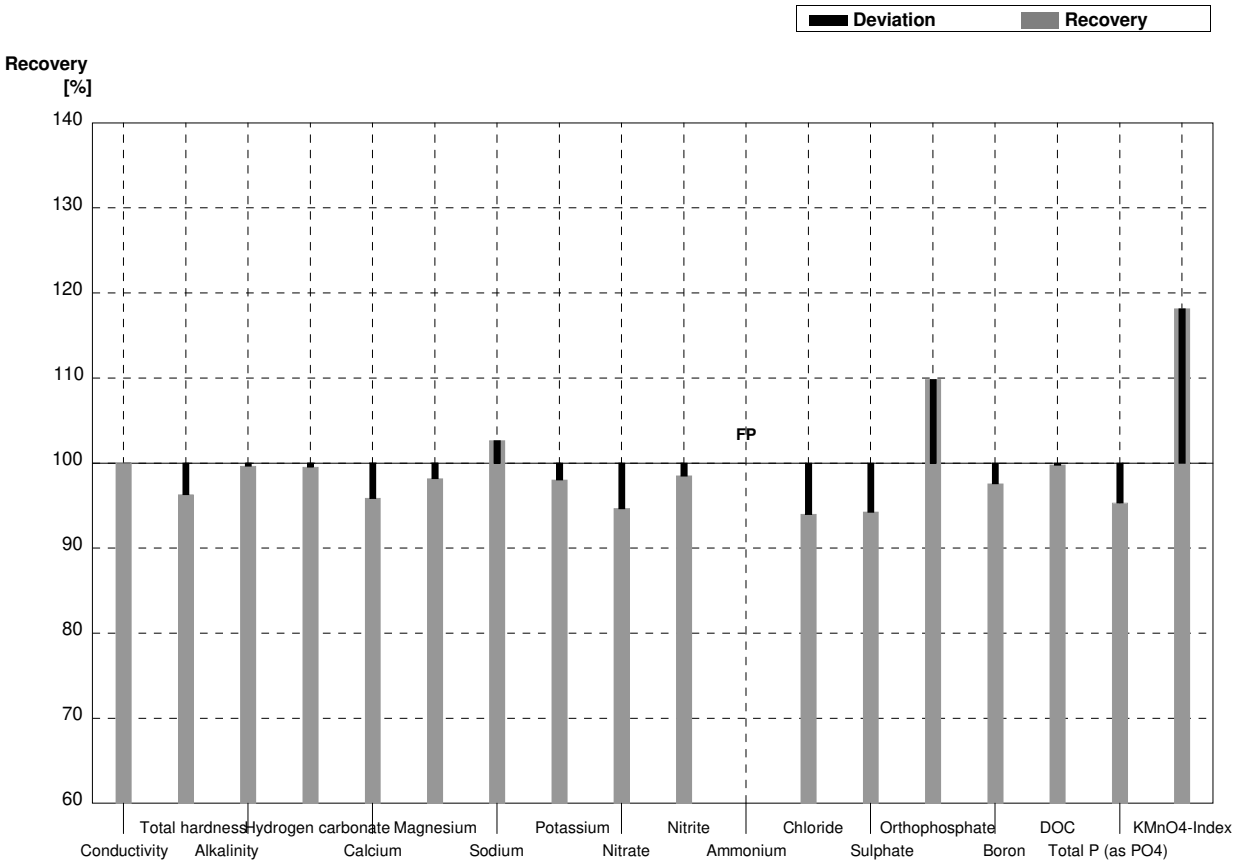
Sample N162B
Laboratory J

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2			µS/cm	
Total hardness	1,785	0,017			mmol/l	
Alkalinity	1,91	0,03			mmol/l	
Hydrogen carbonate	113,3	1,5			mg/l	
Calcium	47,9	0,7			mg/l	
Magnesium	14,32	0,11			mg/l	
Sodium	30,9	0,3			mg/l	
Potassium	4,26	0,03			mg/l	
Nitrate	30,9	0,6	30,152	1,8	mg/l	98%
Nitrite	0,0936	0,0008	0,082	0,009	mg/l	88%
Ammonium	0,058	0,004			mg/l	
Chloride	52,2	0,8	52,698	7,9	mg/l	101%
Sulphate	55,4	0,3	54,402	8,1	mg/l	98%
Orthophosphate	<0,009				mg/l	
Boron	0,1092	0,0007			mg/l	
DOC	3,98	0,05			mg/l	
Total P (as PO4)	<0,009				mg/l	
KMnO4-Index	2,93	0,08			mg/l	



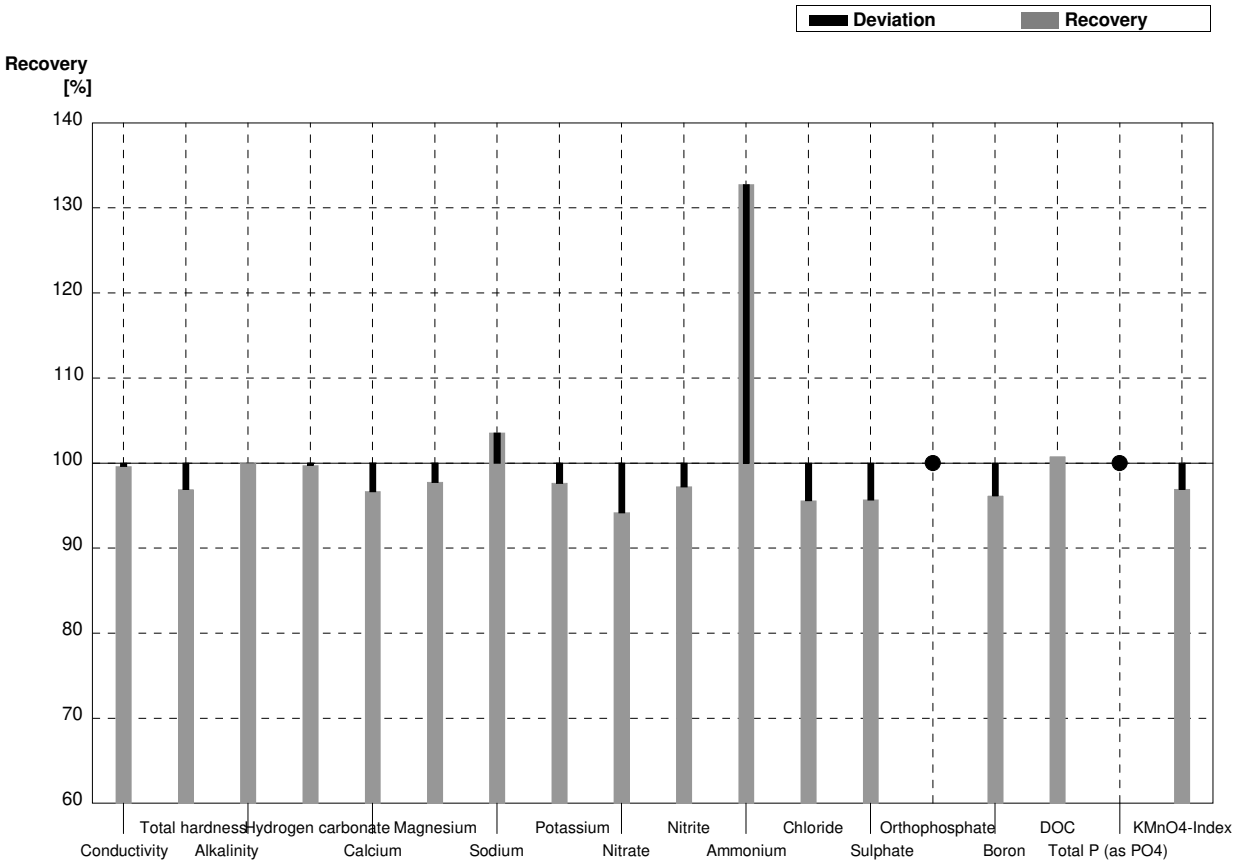
Sample N162A
Laboratory K

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2	437	17	µS/cm	100%
Total hardness	1,350	0,014	1,30	0,23	mmol/l	96%
Alkalinity	2,93	0,03	2,92	0,12	mmol/l	100%
Hydrogen carbonate	175,8	1,7	175	7	mg/l	100%
Calcium	38,7	0,6	37,1	6,7	mg/l	96%
Magnesium	9,34	0,11	9,17	1,7	mg/l	98%
Sodium	37,7	0,3	38,7	7	mg/l	103%
Potassium	5,60	0,04	5,49	0,99	mg/l	98%
Nitrate	41,3	0,8	39,1	3,5	mg/l	95%
Nitrite	0,0404	0,0010	0,0398	0,004	mg/l	99%
Ammonium	<0,01		0,0150	0,001	mg/l	FP
Chloride	9,3	0,2	8,74	0,78	mg/l	94%
Sulphate	29,81	0,18	28,1	2,5	mg/l	94%
Orthophosphate	0,061	0,002	0,067	0,006	mg/l	110%
Boron	0,0707	0,0011	0,069	0,01	mg/l	98%
DOC	4,72	0,05	4,71	0,42	mg/l	100%
Total P (as PO4)	0,107	0,002	0,102	0,004	mg/l	95%
KMnO4-Index	4,62	0,16	5,46	0,49	mg/l	118%



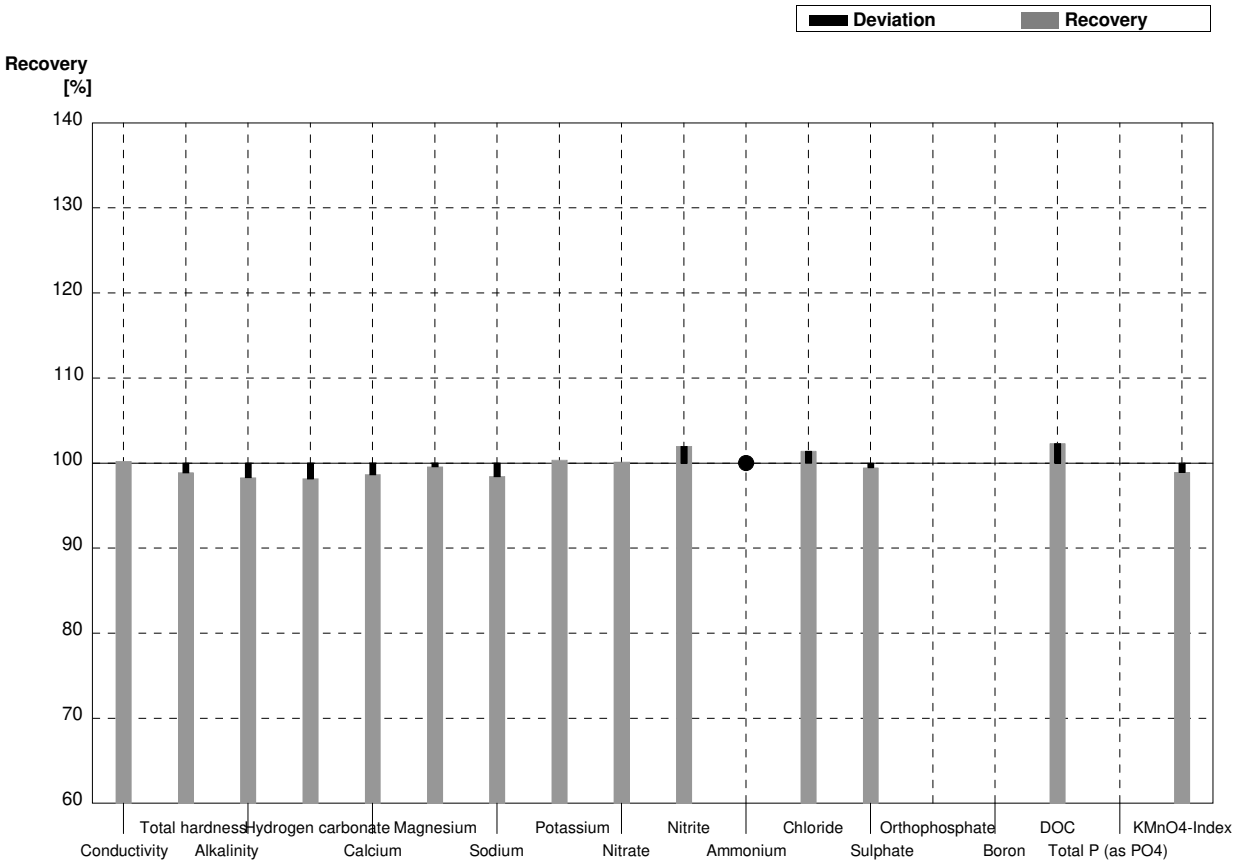
Sample N162B
Laboratory K

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2	520	21	µS/cm	100%
Total hardness	1,785	0,017	1,73	0,31	mmol/l	97%
Alkalinity	1,91	0,03	1,91	0,08	mmol/l	100%
Hydrogen carbonate	113,3	1,5	113	4,5	mg/l	100%
Calcium	47,9	0,7	46,3	8,3	mg/l	97%
Magnesium	14,32	0,11	14,0	2,5	mg/l	98%
Sodium	30,9	0,3	32,0	5,8	mg/l	104%
Potassium	4,26	0,03	4,16	0,75	mg/l	98%
Nitrate	30,9	0,6	29,1	2,6	mg/l	94%
Nitrite	0,0936	0,0008	0,091	0,008	mg/l	97%
Ammonium	0,058	0,004	0,077	0,007	mg/l	133%
Chloride	52,2	0,8	49,9	4,5	mg/l	96%
Sulphate	55,4	0,3	53,0	4,8	mg/l	96%
Orthophosphate	<0,009		<0,01		mg/l	•
Boron	0,1092	0,0007	0,105	0,02	mg/l	96%
DOC	3,98	0,05	4,01	0,36	mg/l	101%
Total P (as PO4)	<0,009		<0,05		mg/l	•
KMnO4-Index	2,93	0,08	2,84	0,26	mg/l	97%



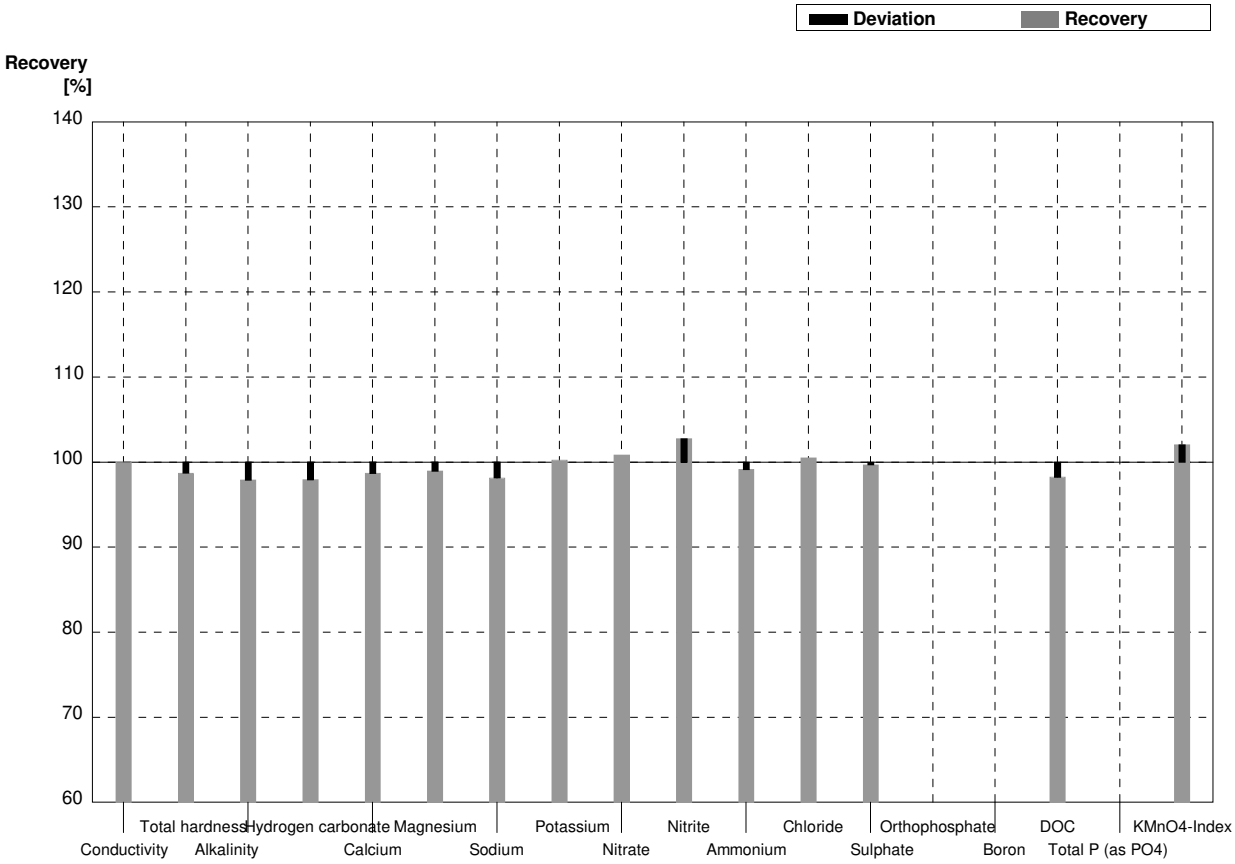
Sample N162A
Laboratory L

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2	438	10	µS/cm	100%
Total hardness	1,350	0,014	1,335	0,05	mmol/l	99%
Alkalinity	2,93	0,03	2,88	0,06	mmol/l	98%
Hydrogen carbonate	175,8	1,7	172,57	3,6	mg/l	98%
Calcium	38,7	0,6	38,18	1,49	mg/l	99%
Magnesium	9,34	0,11	9,30	0,44	mg/l	100%
Sodium	37,7	0,3	37,11	1,78	mg/l	98%
Potassium	5,60	0,04	5,62	0,36	mg/l	100%
Nitrate	41,3	0,8	41,36	2,77	mg/l	100%
Nitrite	0,0404	0,0010	0,0412	0,003	mg/l	102%
Ammonium	<0,01		<0,0050		mg/l	•
Chloride	9,3	0,2	9,43	0,44	mg/l	101%
Sulphate	29,81	0,18	29,65	1,48	mg/l	99%
Orthophosphate	0,061	0,002			mg/l	
Boron	0,0707	0,0011			mg/l	
DOC	4,72	0,05	4,83	0,84	mg/l	102%
Total P (as PO4)	0,107	0,002			mg/l	
KMnO4-Index	4,62	0,16	4,57	0,97	mg/l	99%



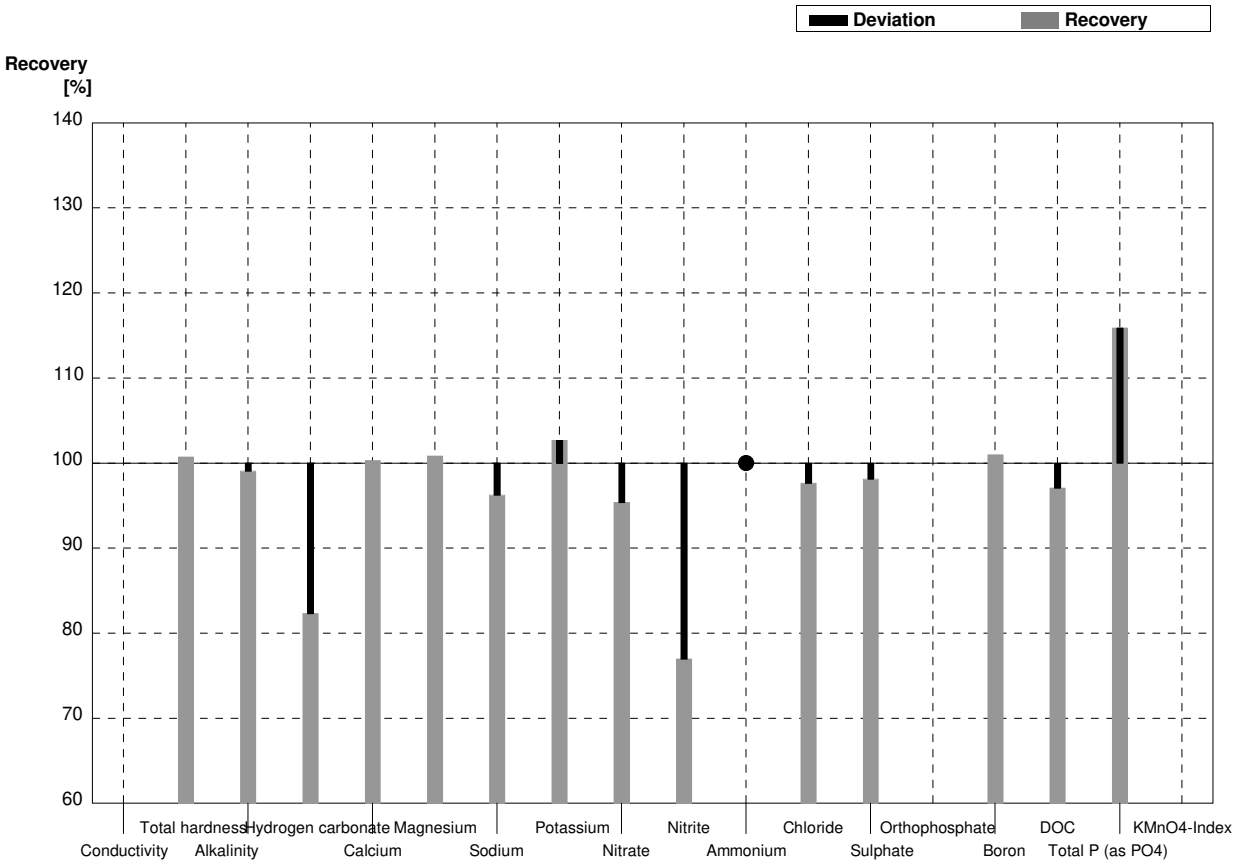
Sample N162B
Laboratory L

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2	522	11	µS/cm	100%
Total hardness	1,785	0,017	1,762	0,07	mmol/l	99%
Alkalinity	1,91	0,03	1,87	0,04	mmol/l	98%
Hydrogen carbonate	113,3	1,5	110,98	2,3	mg/l	98%
Calcium	47,9	0,7	47,27	1,84	mg/l	99%
Magnesium	14,32	0,11	14,17	0,67	mg/l	99%
Sodium	30,9	0,3	30,33	1,46	mg/l	98%
Potassium	4,26	0,03	4,27	0,27	mg/l	100%
Nitrate	30,9	0,6	31,16	2,09	mg/l	101%
Nitrite	0,0936	0,0008	0,0962	0,007	mg/l	103%
Ammonium	0,058	0,004	0,0575	0,009	mg/l	99%
Chloride	52,2	0,8	52,46	2,47	mg/l	100%
Sulphate	55,4	0,3	55,23	2,76	mg/l	100%
Orthophosphate	<0,009				mg/l	
Boron	0,1092	0,0007			mg/l	
DOC	3,98	0,05	3,91	0,68	mg/l	98%
Total P (as PO4)	<0,009				mg/l	
KMnO4-Index	2,93	0,08	2,99	0,63	mg/l	102%



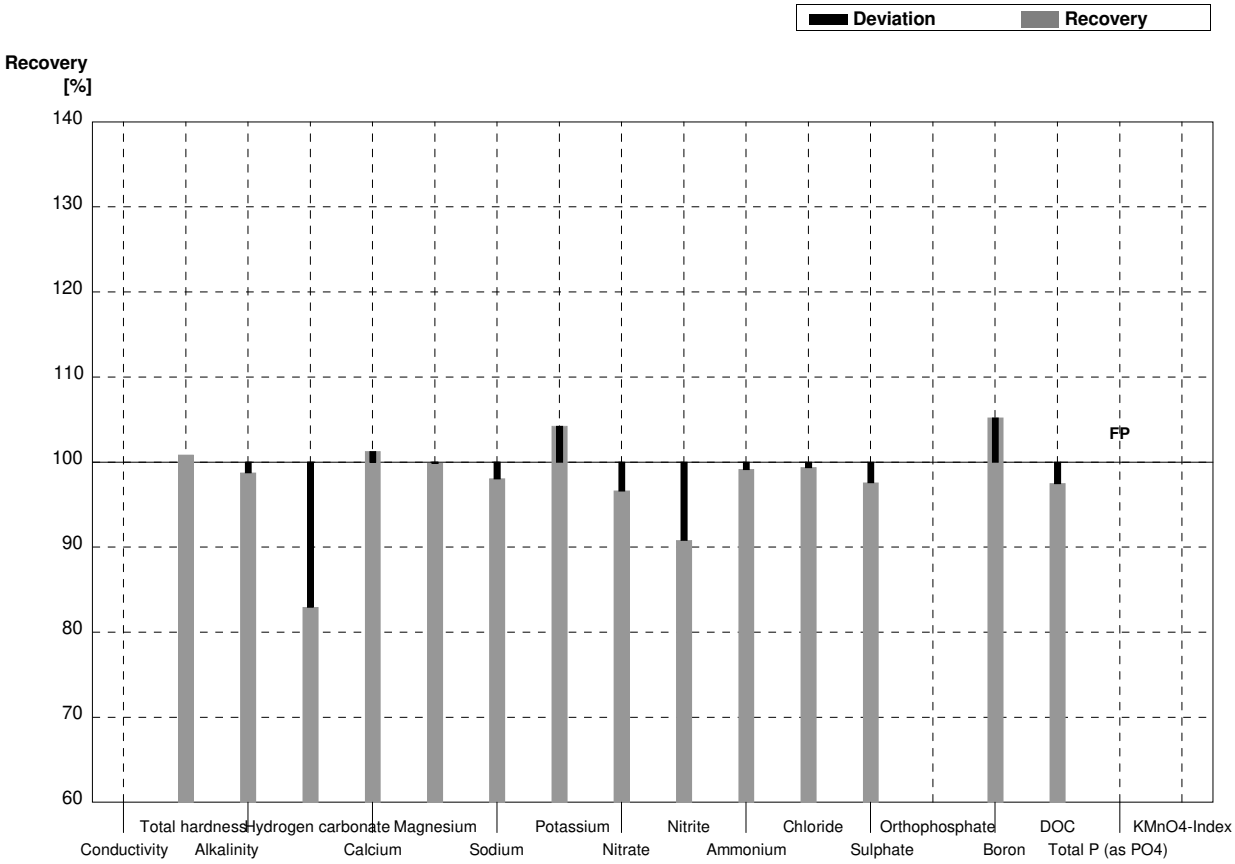
Sample N162A
Laboratory M

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2			µS/cm	
Total hardness	1,350	0,014	1,36	0,02	mmol/l	101%
Alkalinity	2,93	0,03	2,903	0,04	mmol/l	99%
Hydrogen carbonate	175,8	1,7	144,7	1,4	mg/l	82%
Calcium	38,7	0,6	38,83	1,65	mg/l	100%
Magnesium	9,34	0,11	9,42	0,58	mg/l	101%
Sodium	37,7	0,3	36,29	1,81	mg/l	96%
Potassium	5,60	0,04	5,75	0,29	mg/l	103%
Nitrate	41,3	0,8	39,4	0,2	mg/l	95%
Nitrite	0,0404	0,0010	0,0311	0,001	mg/l	77%
Ammonium	<0,01		<0,04	0,003	mg/l	•
Chloride	9,3	0,2	9,08	0,1	mg/l	98%
Sulphate	29,81	0,18	29,25	0,1	mg/l	98%
Orthophosphate	0,061	0,002			mg/l	
Boron	0,0707	0,0011	0,0714	0,001	mg/l	101%
DOC	4,72	0,05	4,582	0,05	mg/l	97%
Total P (as PO4)	0,107	0,002	0,124	0,013	mg/l	116%
KMnO4-Index	4,62	0,16			mg/l	



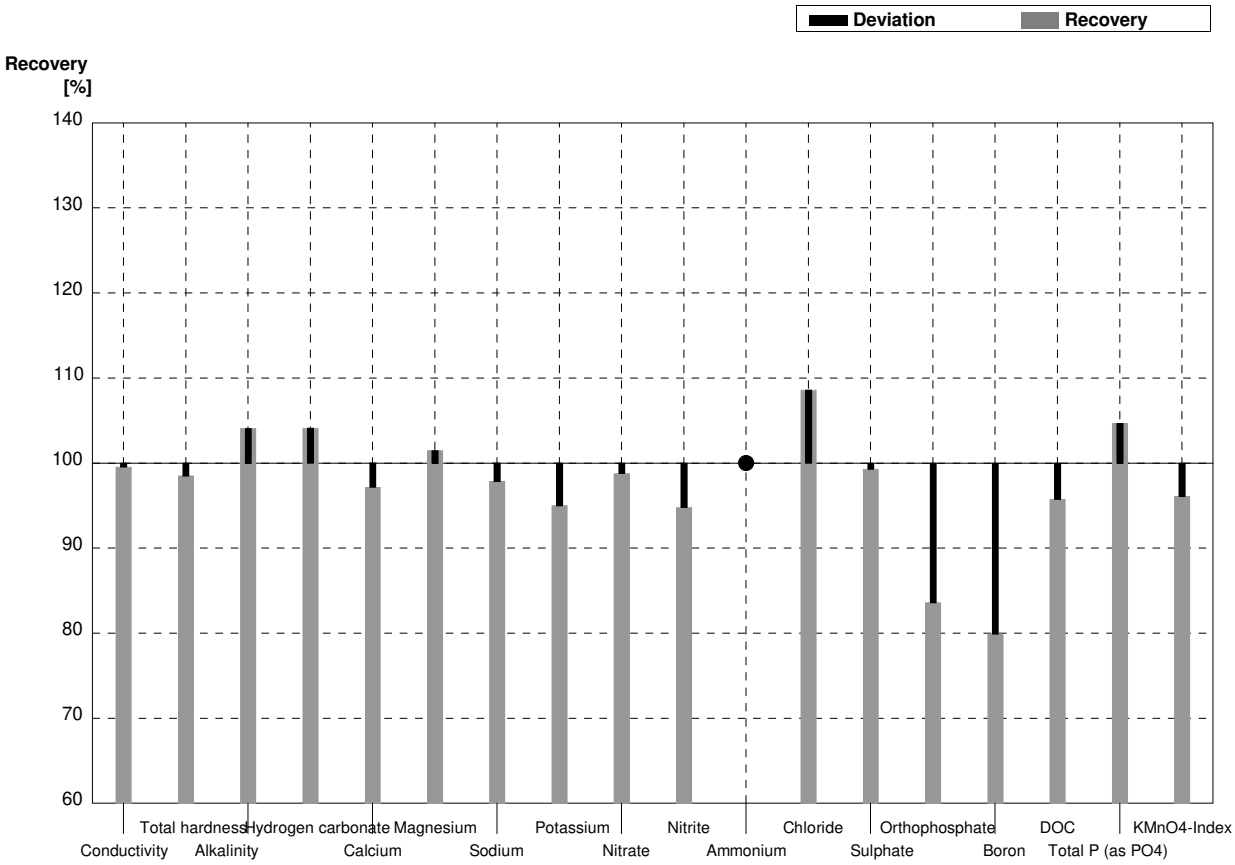
Sample N162B
Laboratory M

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2			µS/cm	
Total hardness	1,785	0,017	1,80	0,02	mmol/l	101%
Alkalinity	1,91	0,03	1,886	0,03	mmol/l	99%
Hydrogen carbonate	113,3	1,5	93,98	1,2	mg/l	83%
Calcium	47,9	0,7	48,50	2,06	mg/l	101%
Magnesium	14,32	0,11	14,30	0,88	mg/l	100%
Sodium	30,9	0,3	30,30	1,51	mg/l	98%
Potassium	4,26	0,03	4,44	0,22	mg/l	104%
Nitrate	30,9	0,6	29,86	0,2	mg/l	97%
Nitrite	0,0936	0,0008	0,085	0,001	mg/l	91%
Ammonium	0,058	0,004	0,0575	0,004	mg/l	99%
Chloride	52,2	0,8	51,87	0,8	mg/l	99%
Sulphate	55,4	0,3	54,06	0,8	mg/l	98%
Orthophosphate	<0,009				mg/l	
Boron	0,1092	0,0007	0,1149	0,01	mg/l	105%
DOC	3,98	0,05	3,88	0,04	mg/l	97%
Total P (as PO4)	<0,009		0,0122	0,0013	mg/l	FP
KMnO4-Index	2,93	0,08			mg/l	



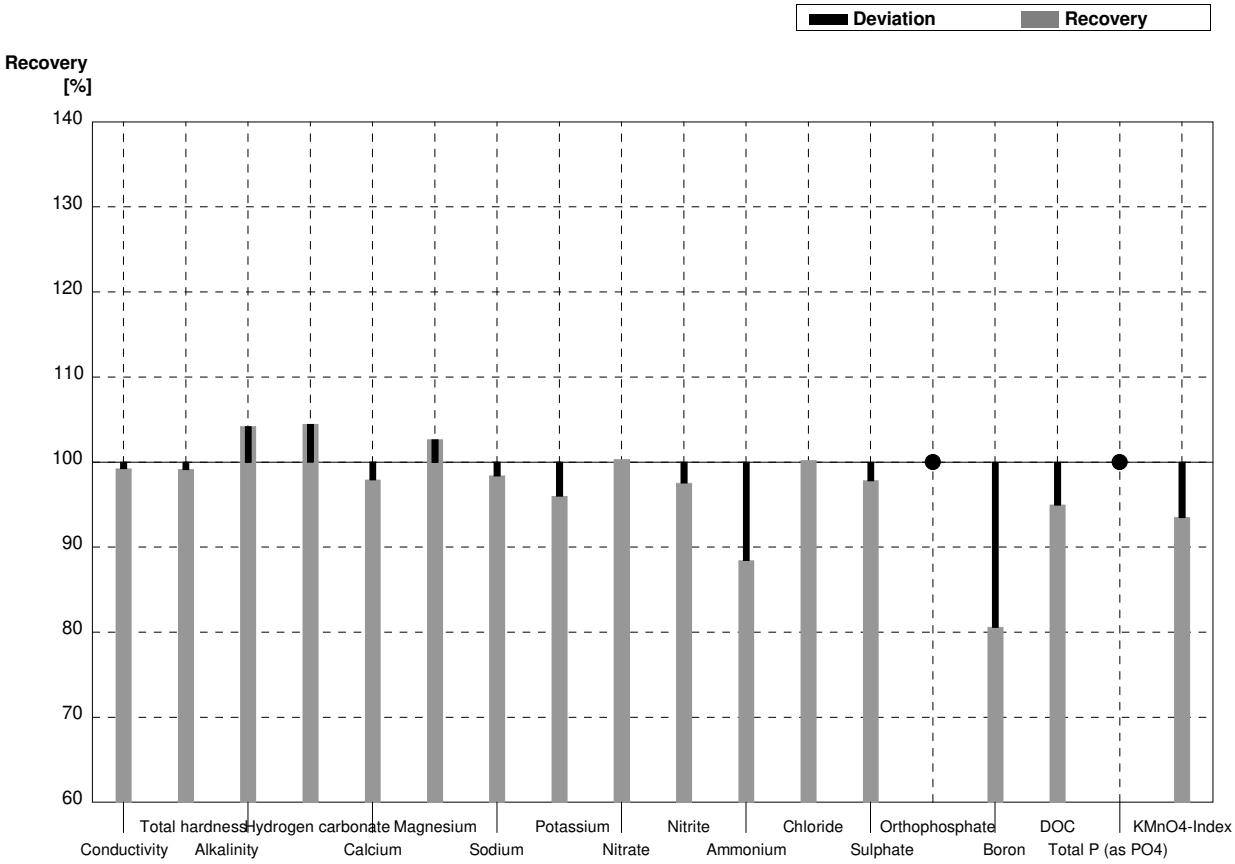
Sample N162A
Laboratory N

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2	435	40	µS/cm	100%
Total hardness	1,350	0,014	1,33	0,13	mmol/l	99%
Alkalinity	2,93	0,03	3,05	0,15	mmol/l	104%
Hydrogen carbonate	175,8	1,7	183,05	6,10	mg/l	104%
Calcium	38,7	0,6	37,6	3,62	mg/l	97%
Magnesium	9,34	0,11	9,48	0,88	mg/l	101%
Sodium	37,7	0,3	36,9	2,59	mg/l	98%
Potassium	5,60	0,04	5,32	0,72	mg/l	95%
Nitrate	41,3	0,8	40,8	2,7	mg/l	99%
Nitrite	0,0404	0,0010	0,0383	0,002	mg/l	95%
Ammonium	<0,01		<0,01	0,0009	mg/l	•
Chloride	9,3	0,2	10,1	0,5	mg/l	109%
Sulphate	29,81	0,18	29,6	2,6	mg/l	99%
Orthophosphate	0,061	0,002	0,051	0,004	mg/l	84%
Boron	0,0707	0,0011	0,0565	0,0042	mg/l	80%
DOC	4,72	0,05	4,52	0,27	mg/l	96%
Total P (as PO4)	0,107	0,002	0,112	0,01	mg/l	105%
KMnO4-Index	4,62	0,16	4,44	0,95	mg/l	96%



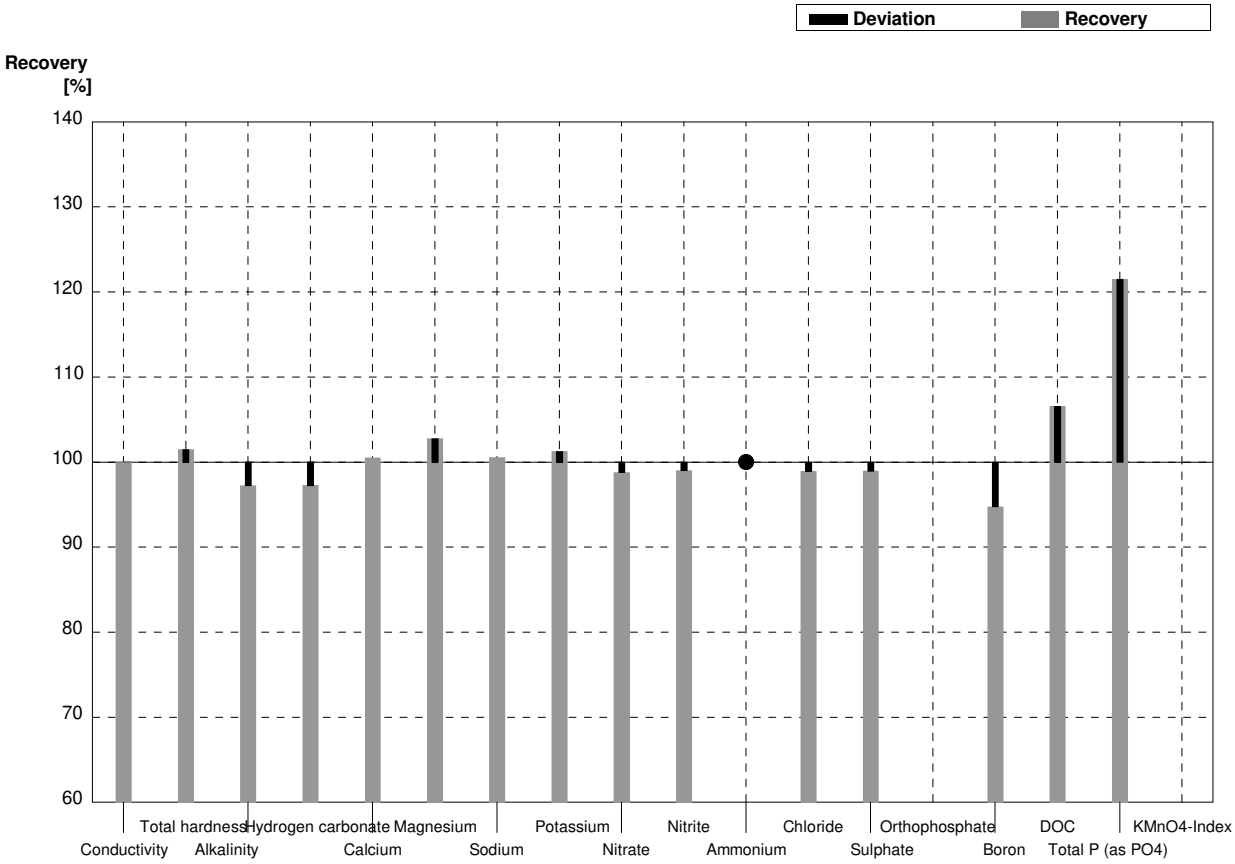
Sample N162B
Laboratory N

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2	518	48	µS/cm	99%
Total hardness	1,785	0,017	1,77	0,17	mmol/l	99%
Alkalinity	1,91	0,03	1,99	0,10	mmol/l	104%
Hydrogen carbonate	113,3	1,5	118,37	3,05	mg/l	104%
Calcium	47,9	0,7	46,9	4,41	mg/l	98%
Magnesium	14,32	0,11	14,7	1,35	mg/l	103%
Sodium	30,9	0,3	30,4	2,12	mg/l	98%
Potassium	4,26	0,03	4,09	0,56	mg/l	96%
Nitrate	30,9	0,6	31,0	2,1	mg/l	100%
Nitrite	0,0936	0,0008	0,0913	0,004	mg/l	98%
Ammonium	0,058	0,004	0,0513	0,004	mg/l	88%
Chloride	52,2	0,8	52,3	2,8	mg/l	100%
Sulphate	55,4	0,3	54,2	4,7	mg/l	98%
Orthophosphate	<0,009		<0,002	0,0002	mg/l	•
Boron	0,1092	0,0007	0,088	0,0066	mg/l	81%
DOC	3,98	0,05	3,78	0,23	mg/l	95%
Total P (as PO4)	<0,009		<0,01	0,001	mg/l	•
KMnO4-Index	2,93	0,08	2,74	0,59	mg/l	94%



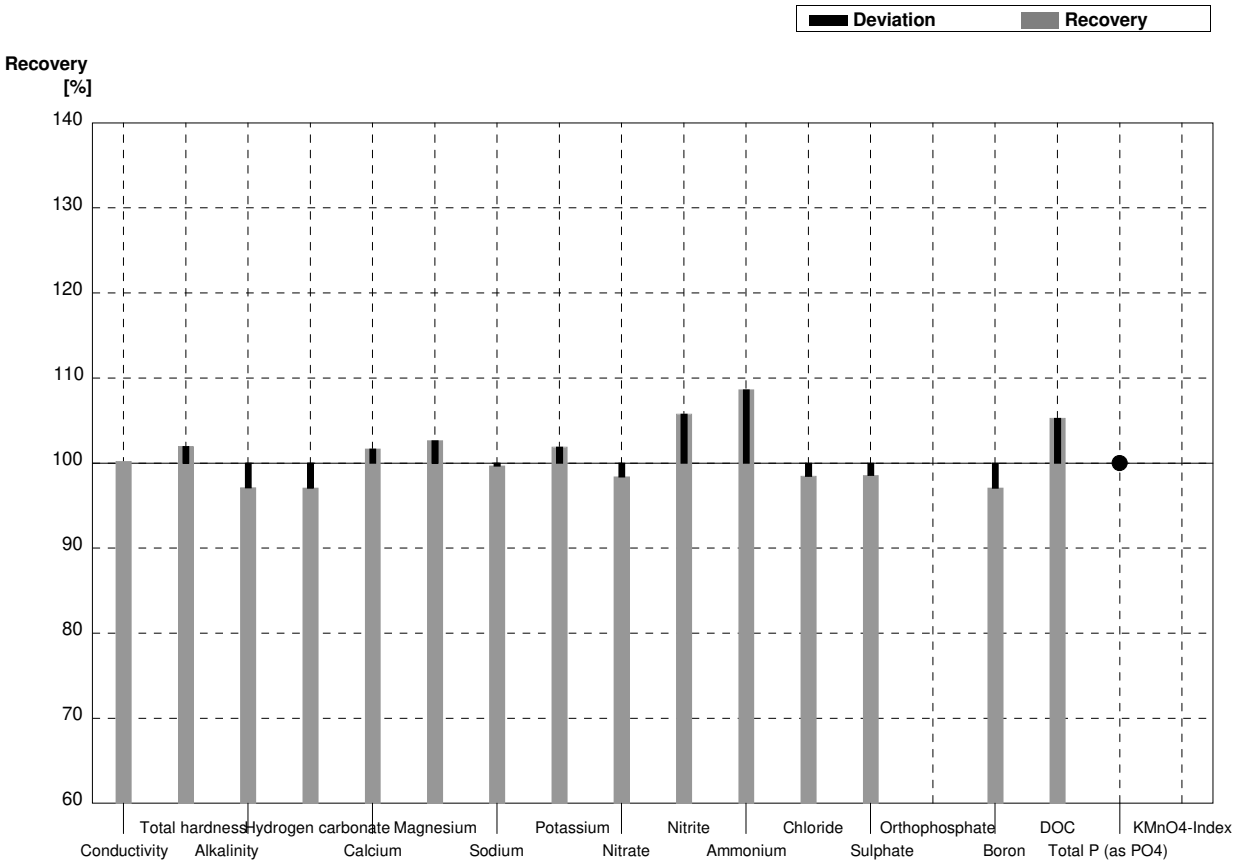
Sample N162A
Laboratory O

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2	437	9	µS/cm	100%
Total hardness	1,350	0,014	1,37	0,29	mmol/l	101%
Alkalinity	2,93	0,03	2,849	0,285	mmol/l	97%
Hydrogen carbonate	175,8	1,7	171	17	mg/l	97%
Calcium	38,7	0,6	38,9	6,6	mg/l	101%
Magnesium	9,34	0,11	9,60	1,15	mg/l	103%
Sodium	37,7	0,3	37,9	3,4	mg/l	101%
Potassium	5,60	0,04	5,67	0,57	mg/l	101%
Nitrate	41,3	0,8	40,8	7,3	mg/l	99%
Nitrite	0,0404	0,0010	0,0400	0,0060	mg/l	99%
Ammonium	<0,01		<0,010		mg/l	•
Chloride	9,3	0,2	9,2	0,9	mg/l	99%
Sulphate	29,81	0,18	29,5	4,7	mg/l	99%
Orthophosphate	0,061	0,002			mg/l	
Boron	0,0707	0,0011	0,067	0,006	mg/l	95%
DOC	4,72	0,05	5,03	0,55	mg/l	107%
Total P (as PO4)	0,107	0,002	0,130	0,040	mg/l	121%
KMnO4-Index	4,62	0,16			mg/l	



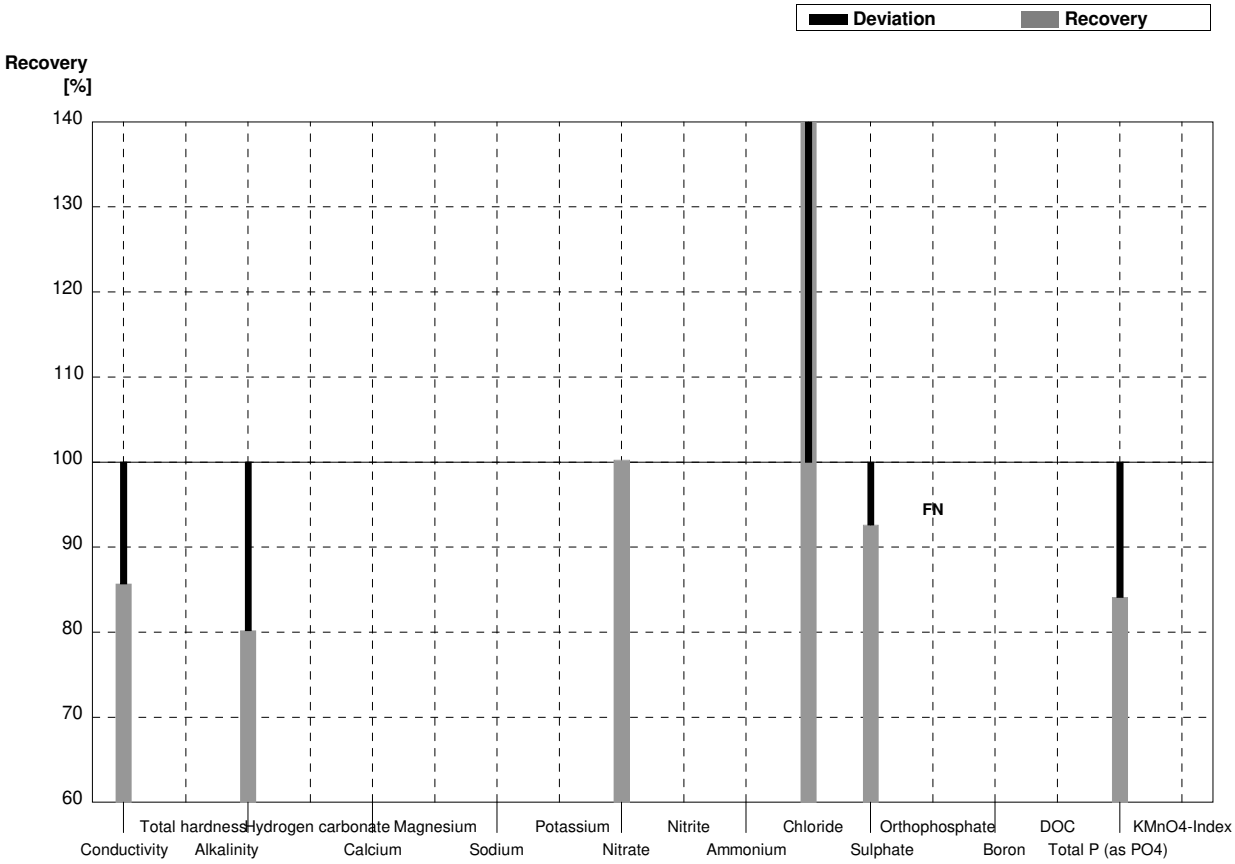
Sample N162B
Laboratory O

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2	523	10	µS/cm	100%
Total hardness	1,785	0,017	1,82	0,38	mmol/l	102%
Alkalinity	1,91	0,03	1,855	0,186	mmol/l	97%
Hydrogen carbonate	113,3	1,5	110	11	mg/l	97%
Calcium	47,9	0,7	48,7	8,3	mg/l	102%
Magnesium	14,32	0,11	14,7	1,8	mg/l	103%
Sodium	30,9	0,3	30,8	2,8	mg/l	100%
Potassium	4,26	0,03	4,34	0,43	mg/l	102%
Nitrate	30,9	0,6	30,4	5,5	mg/l	98%
Nitrite	0,0936	0,0008	0,099	0,014	mg/l	106%
Ammonium	0,058	0,004	0,063	0,010	mg/l	109%
Chloride	52,2	0,8	51,4	5,1	mg/l	98%
Sulphate	55,4	0,3	54,6	8,7	mg/l	99%
Orthophosphate	<0,009				mg/l	
Boron	0,1092	0,0007	0,106	0,010	mg/l	97%
DOC	3,98	0,05	4,19	0,46	mg/l	105%
Total P (as PO4)	<0,009		<0,03		mg/l	•
KMnO4-Index	2,93	0,08			mg/l	



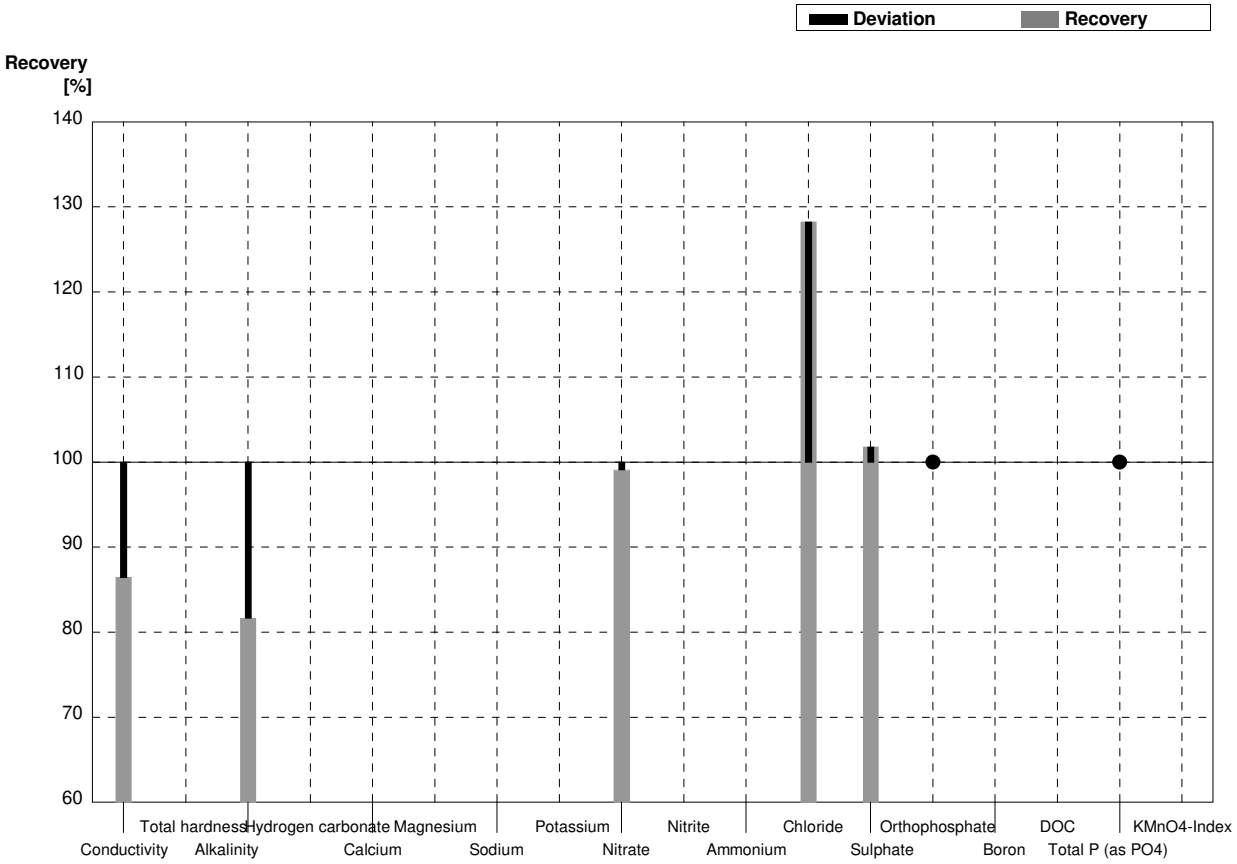
Sample N162A
Laboratory P

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2	374,44		µS/cm	86%
Total hardness	1,350	0,014			mmol/l	
Alkalinity	2,93	0,03	2,35		mmol/l	80%
Hydrogen carbonate	175,8	1,7			mg/l	
Calcium	38,7	0,6			mg/l	
Magnesium	9,34	0,11			mg/l	
Sodium	37,7	0,3			mg/l	
Potassium	5,60	0,04			mg/l	
Nitrate	41,3	0,8	41,40		mg/l	100%
Nitrite	0,0404	0,0010			mg/l	
Ammonium	<0,01				mg/l	
Chloride	9,3	0,2	13,94		mg/l	150%
Sulphate	29,81	0,18	27,61		mg/l	93%
Orthophosphate	0,061	0,002	0,000		mg/l	FN
Boron	0,0707	0,0011			mg/l	
DOC	4,72	0,05			mg/l	
Total P (as PO4)	0,107	0,002	0,0900		mg/l	84%
KMnO4-Index	4,62	0,16			mg/l	



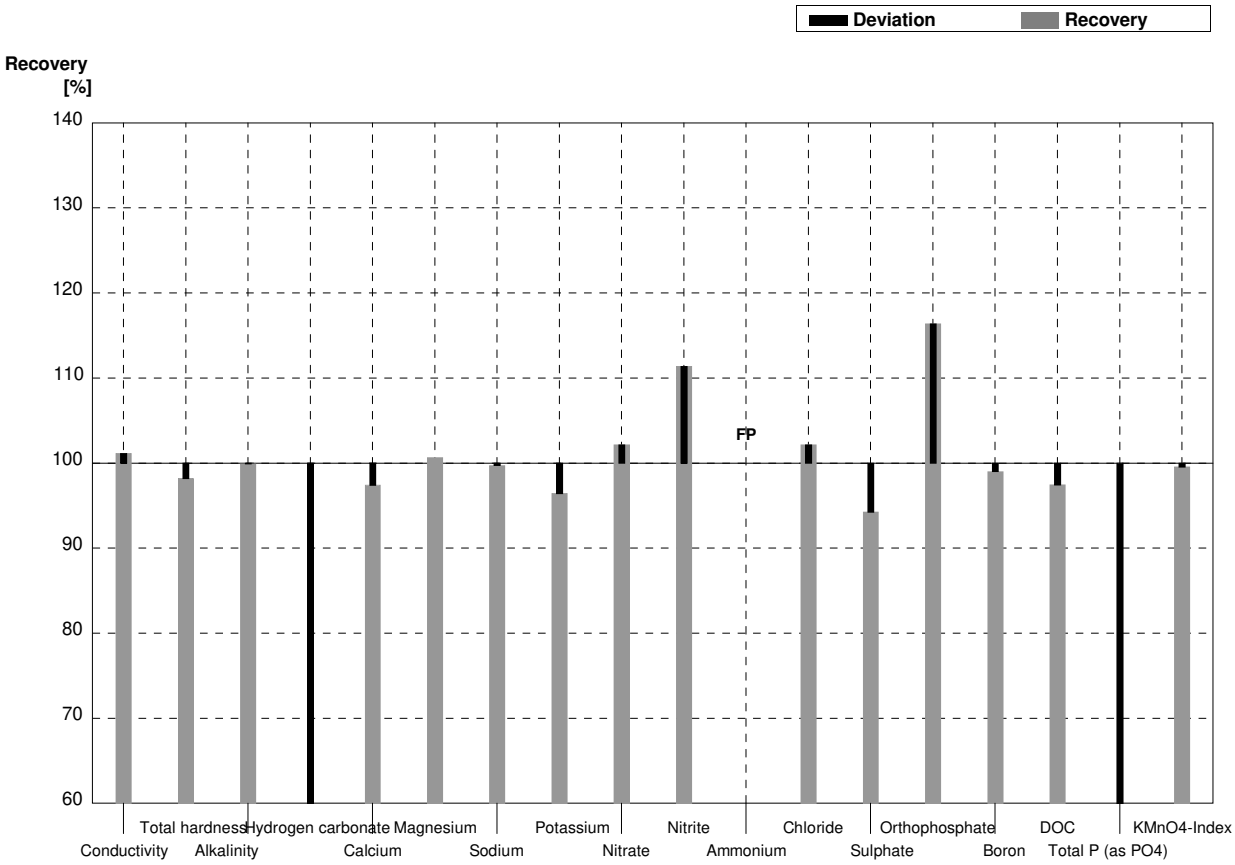
Sample N162B
Laboratory P

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2	451,28		µS/cm	86%
Total hardness	1,785	0,017			mmol/l	
Alkalinity	1,91	0,03	1,56		mmol/l	82%
Hydrogen carbonate	113,3	1,5			mg/l	
Calcium	47,9	0,7			mg/l	
Magnesium	14,32	0,11			mg/l	
Sodium	30,9	0,3			mg/l	
Potassium	4,26	0,03			mg/l	
Nitrate	30,9	0,6	30,62		mg/l	99%
Nitrite	0,0936	0,0008			mg/l	
Ammonium	0,058	0,004			mg/l	
Chloride	52,2	0,8	66,94		mg/l	128%
Sulphate	55,4	0,3	56,40		mg/l	102%
Orthophosphate	<0,009		0,000		mg/l	•
Boron	0,1092	0,0007			mg/l	
DOC	3,98	0,05			mg/l	
Total P (as PO4)	<0,009		0,000		mg/l	•
KMnO4-Index	2,93	0,08			mg/l	



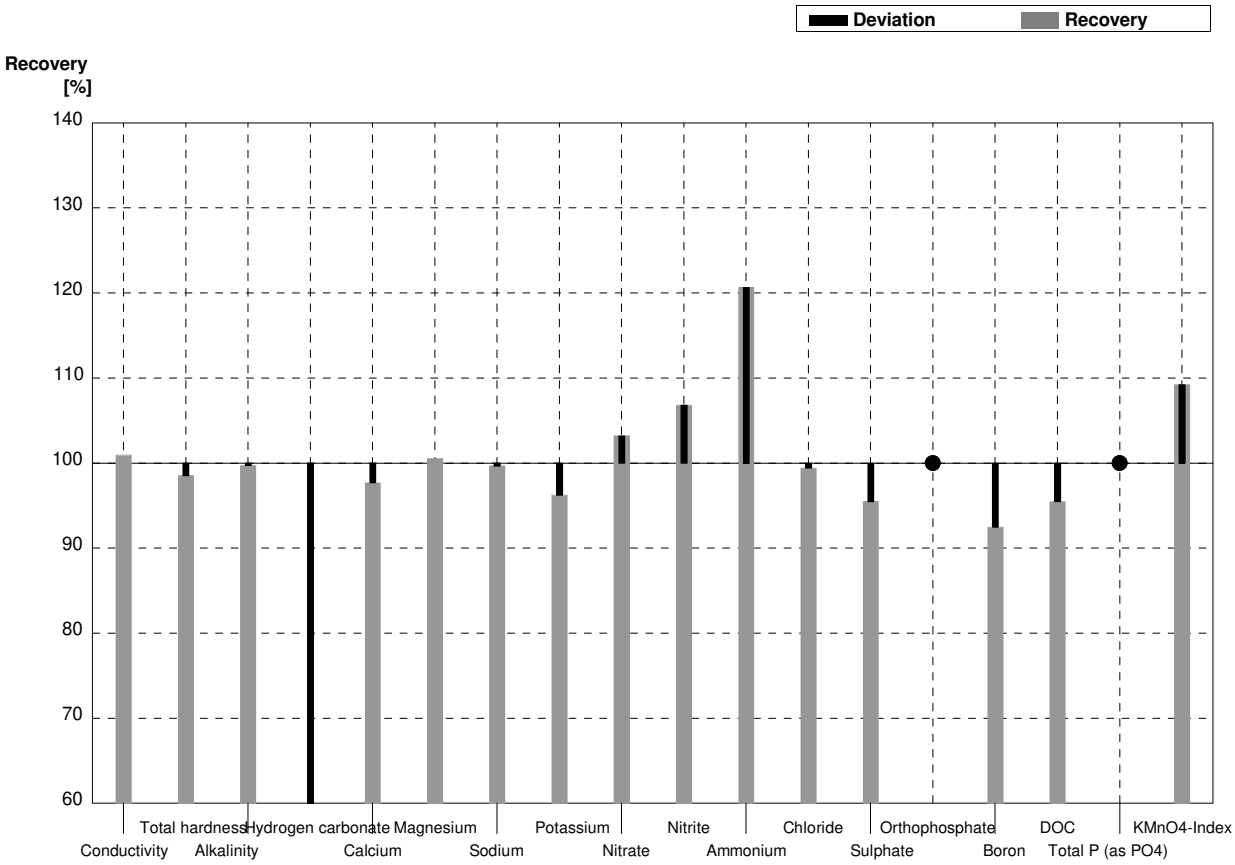
Sample N162A
Laboratory Q

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2	442	25	µS/cm	101%
Total hardness	1,350	0,014	1,326	0,176	mmol/l	98%
Alkalinity	2,93	0,03	2,928		mmol/l	100%
Hydrogen carbonate	175,8	1,7	8,2		mg/l	5%
Calcium	38,7	0,6	37,7	5,03	mg/l	97%
Magnesium	9,34	0,11	9,4	1,24	mg/l	101%
Sodium	37,7	0,3	37,6	6,65	mg/l	100%
Potassium	5,60	0,04	5,4	0,89	mg/l	96%
Nitrate	41,3	0,8	42,2	3,56	mg/l	102%
Nitrite	0,0404	0,0010	0,0450	0,005	mg/l	111%
Ammonium	<0,01		0,0300	0,010	mg/l	FP
Chloride	9,3	0,2	9,5	0,79	mg/l	102%
Sulphate	29,81	0,18	28,1	1,81	mg/l	94%
Orthophosphate	0,061	0,002	0,071	0,020	mg/l	116%
Boron	0,0707	0,0011	0,070	0,001	mg/l	99%
DOC	4,72	0,05	4,60	0,86	mg/l	97%
Total P (as PO4)	0,107	0,002	0,0300	0,005	mg/l	28%
KMnO4-Index	4,62	0,16	4,60	1,6	mg/l	100%



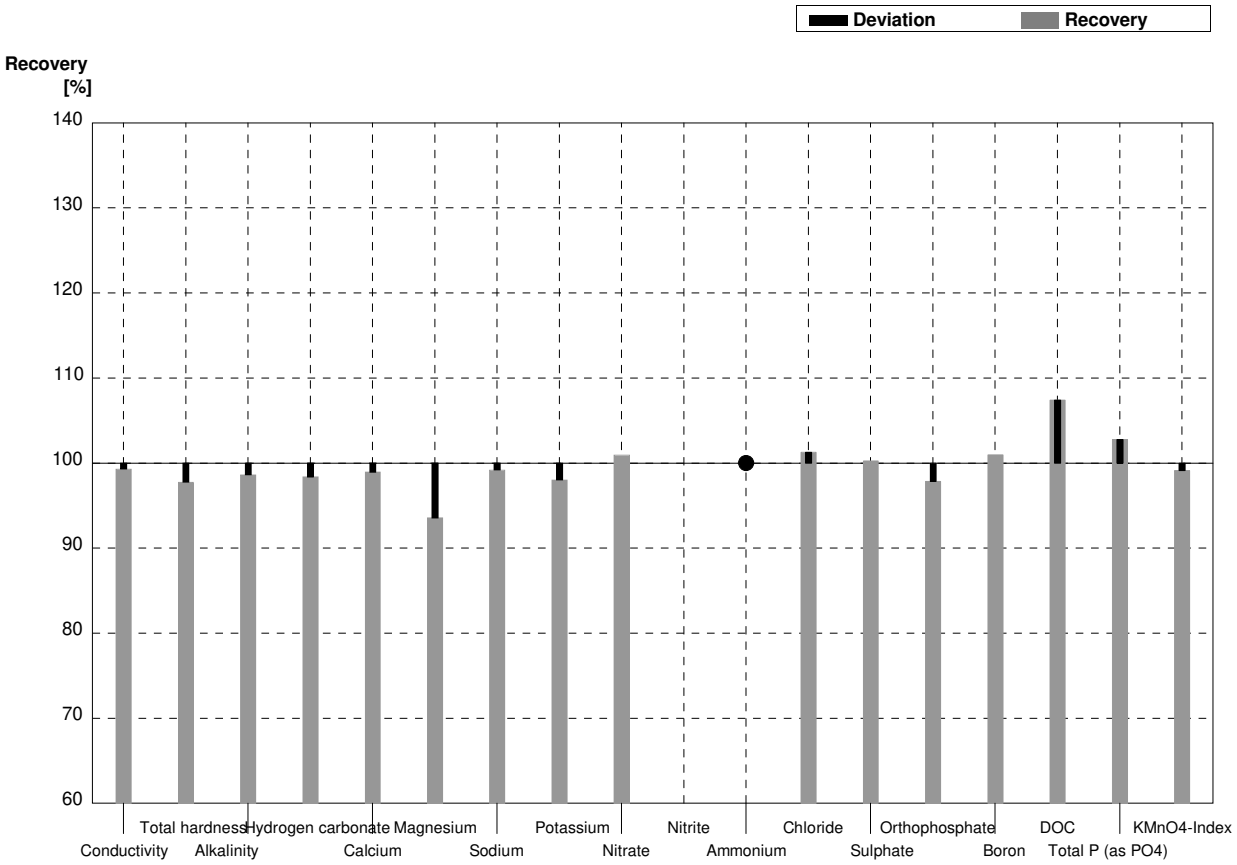
Sample N162B
Laboratory Q

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2	527	29,8	µS/cm	101%
Total hardness	1,785	0,017	1,759	0,234	mmol/l	99%
Alkalinity	1,91	0,03	1,905		mmol/l	100%
Hydrogen carbonate	113,3	1,5	5,3		mg/l	5%
Calcium	47,9	0,7	46,8	6,24	mg/l	98%
Magnesium	14,32	0,11	14,4	1,9	mg/l	101%
Sodium	30,9	0,3	30,8	5,45	mg/l	100%
Potassium	4,26	0,03	4,10	0,68	mg/l	96%
Nitrate	30,9	0,6	31,9	2,69	mg/l	103%
Nitrite	0,0936	0,0008	0,100	0,011	mg/l	107%
Ammonium	0,058	0,004	0,070	0,020	mg/l	121%
Chloride	52,2	0,8	51,9	4,33	mg/l	99%
Sulphate	55,4	0,3	52,9	3,41	mg/l	95%
Orthophosphate	<0,009		<0,03		mg/l	•
Boron	0,1092	0,0007	0,101	0,002	mg/l	92%
DOC	3,98	0,05	3,80	0,71	mg/l	95%
Total P (as PO4)	<0,009		<0,005		mg/l	•
KMnO4-Index	2,93	0,08	3,20	1,11	mg/l	109%



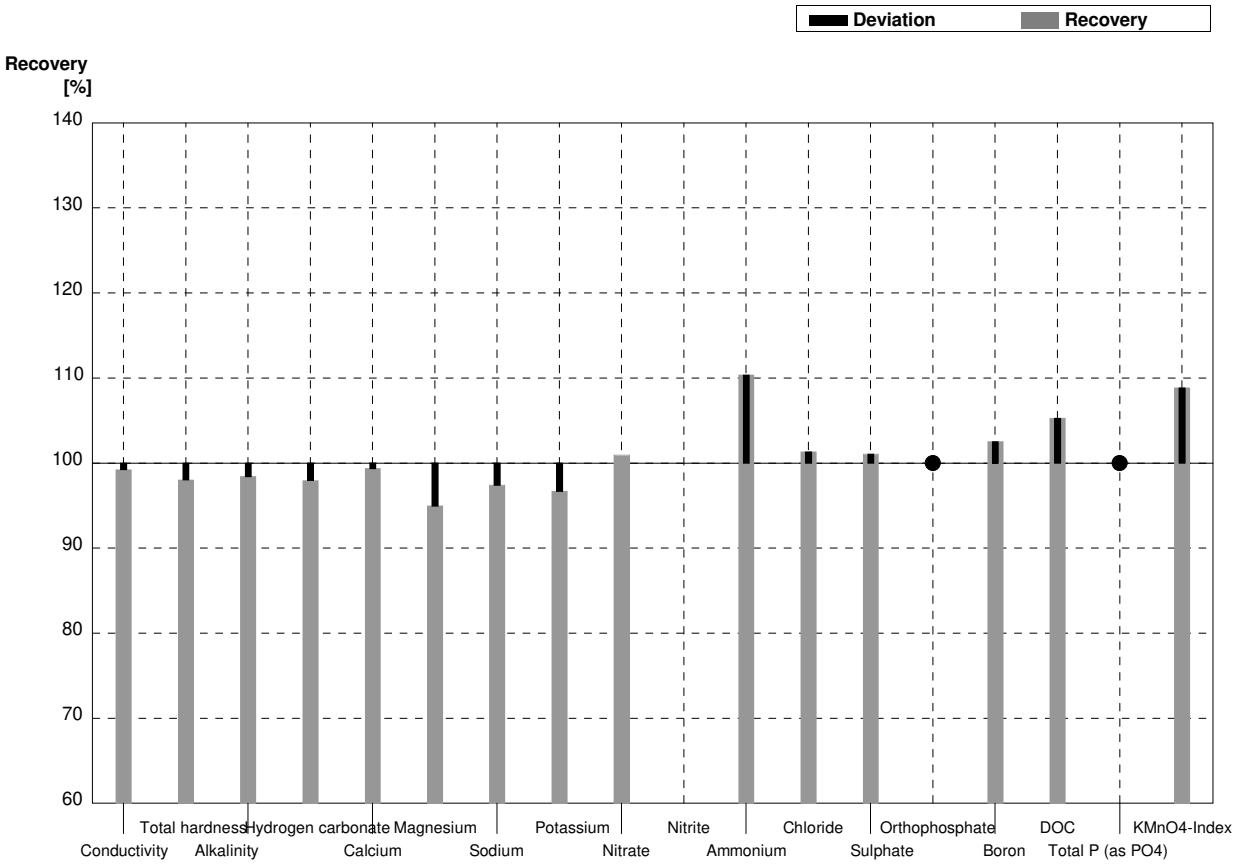
Sample N162A
Laboratory R

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2	434	0,345	µS/cm	99%
Total hardness	1,350	0,014	1,32	0,00841	mmol/l	98%
Alkalinity	2,93	0,03	2,89	0,107	mmol/l	99%
Hydrogen carbonate	175,8	1,7	173	3,47	mg/l	98%
Calcium	38,7	0,6	38,3	0,301	mg/l	99%
Magnesium	9,34	0,11	8,74	0,0921	mg/l	94%
Sodium	37,7	0,3	37,4	0,752	mg/l	99%
Potassium	5,60	0,04	5,49	0,872	mg/l	98%
Nitrate	41,3	0,8	41,7	0,308	mg/l	101%
Nitrite	0,0404	0,0010			mg/l	
Ammonium	<0,01		<0,01		mg/l	•
Chloride	9,3	0,2	9,42	0,105	mg/l	101%
Sulphate	29,81	0,18	29,9	0,268	mg/l	100%
Orthophosphate	0,061	0,002	0,0597	0,00288	mg/l	98%
Boron	0,0707	0,0011	0,0714	0,00085	mg/l	101%
DOC	4,72	0,05	5,07	0,0354	mg/l	107%
Total P (as PO4)	0,107	0,002	0,110	0,00085	mg/l	103%
KMnO4-Index	4,62	0,16	4,58		mg/l	99%



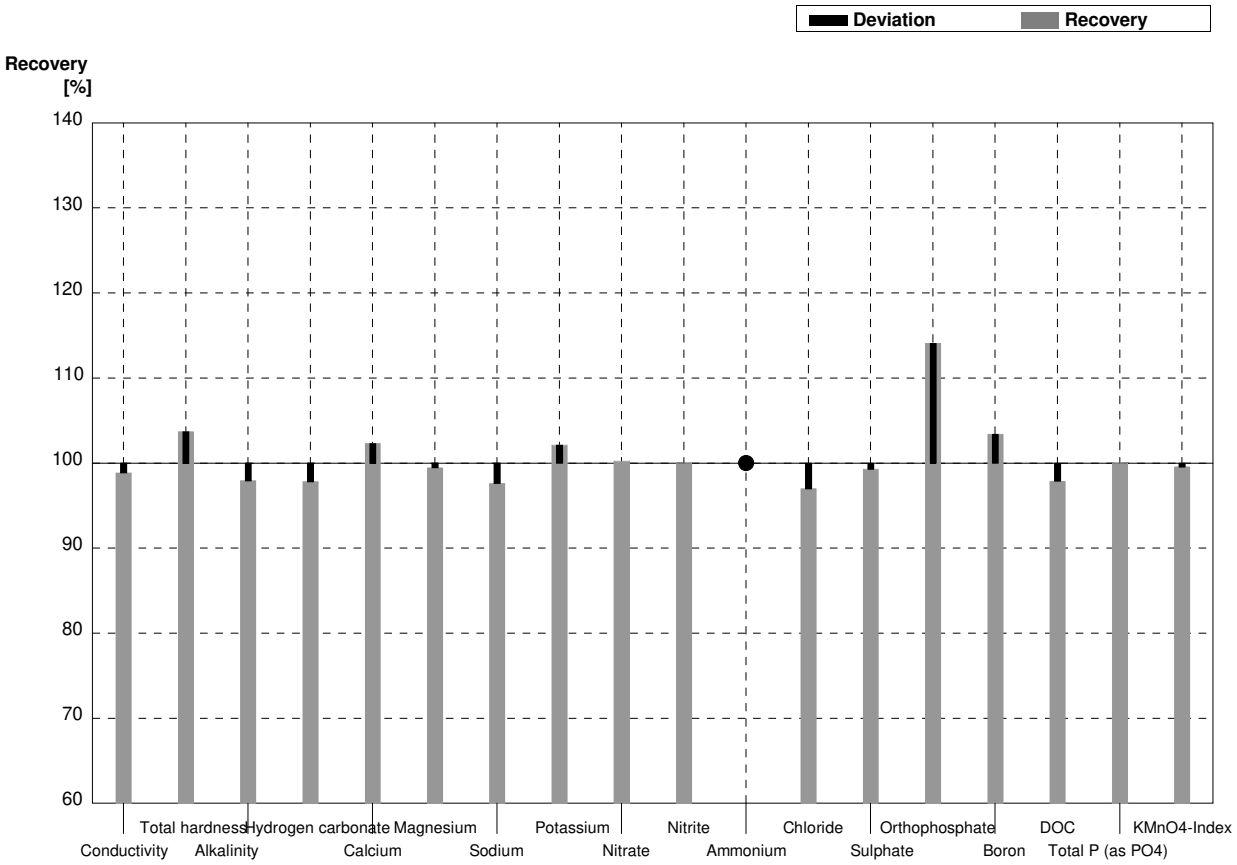
Sample N162B
Laboratory R

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2	518	0,226	µS/cm	99%
Total hardness	1,785	0,017	1,75	0,0134	mmol/l	98%
Alkalinity	1,91	0,03	1,88	0,0865	mmol/l	98%
Hydrogen carbonate	113,3	1,5	111	2,23	mg/l	98%
Calcium	47,9	0,7	47,6	0,314	mg/l	99%
Magnesium	14,32	0,11	13,6	0,264	mg/l	95%
Sodium	30,9	0,3	30,1	0,746	mg/l	97%
Potassium	4,26	0,03	4,12	0,891	mg/l	97%
Nitrate	30,9	0,6	31,2	0,270	mg/l	101%
Nitrite	0,0936	0,0008			mg/l	
Ammonium	0,058	0,004	0,0640	0,00072	mg/l	110%
Chloride	52,2	0,8	52,9	0,719	mg/l	101%
Sulphate	55,4	0,3	56,0	0,539	mg/l	101%
Orthophosphate	<0,009		[0,004]		mg/l	•
Boron	0,1092	0,0007	0,112	0,00090	mg/l	103%
DOC	3,98	0,05	4,19	0,0345	mg/l	105%
Total P (as PO4)	<0,009		<0,0150		mg/l	•
KMnO4-Index	2,93	0,08	3,19		mg/l	109%



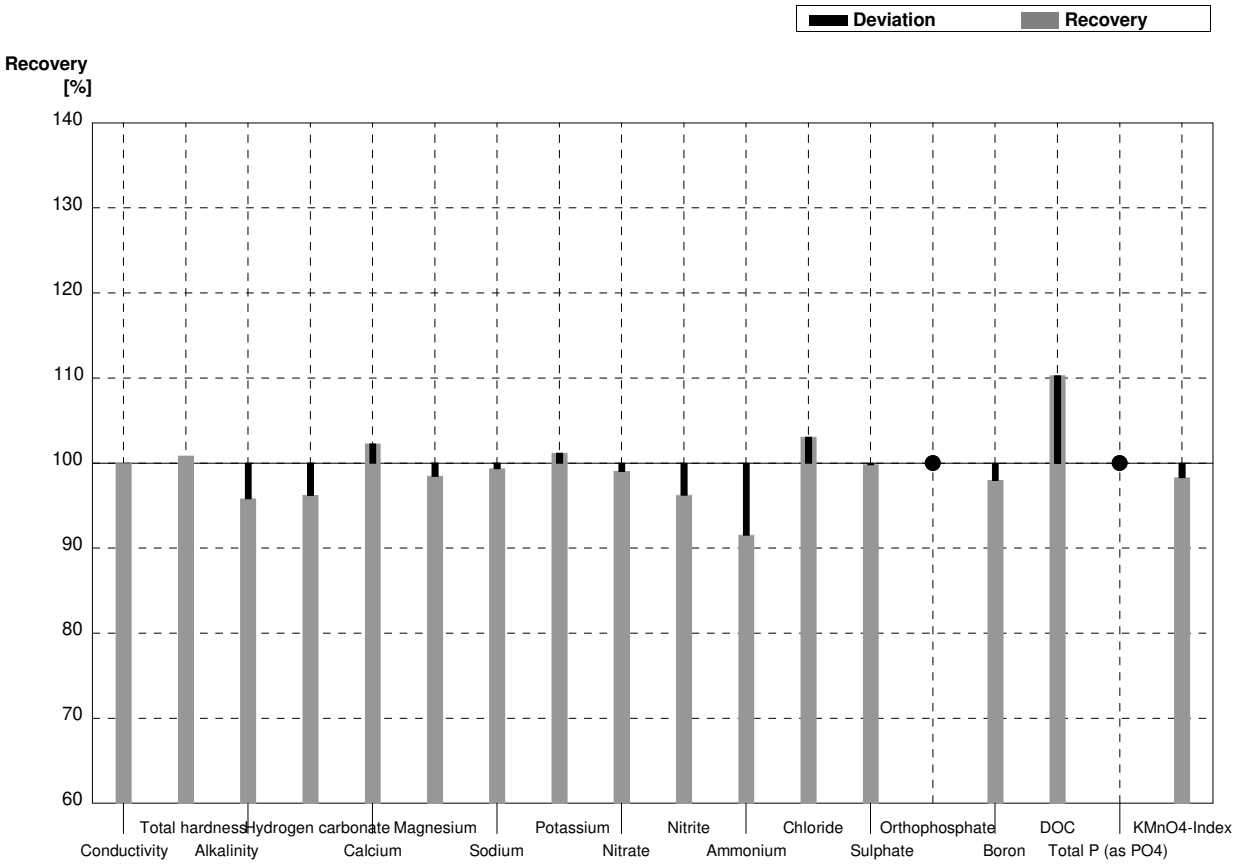
Sample **N162A**
Laboratory **S**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2	432	11	µS/cm	99%
Total hardness	1,350	0,014	1,40	0,14	mmol/l	104%
Alkalinity	2,93	0,03	2,87	0,13	mmol/l	98%
Hydrogen carbonate	175,8	1,7	172	8	mg/l	98%
Calcium	38,7	0,6	39,6	2,5	mg/l	102%
Magnesium	9,34	0,11	9,29	0,73	mg/l	99%
Sodium	37,7	0,3	36,8	3,0	mg/l	98%
Potassium	5,60	0,04	5,72	0,46	mg/l	102%
Nitrate	41,3	0,8	41,4	2,8	mg/l	100%
Nitrite	0,0404	0,0010	0,0404	0,0057	mg/l	100%
Ammonium	<0,01		<0,003		mg/l	•
Chloride	9,3	0,2	9,02	0,64	mg/l	97%
Sulphate	29,81	0,18	29,6	1,6	mg/l	99%
Orthophosphate	0,061	0,002	0,0696	0,0096	mg/l	114%
Boron	0,0707	0,0011	0,0731	0,0101	mg/l	103%
DOC	4,72	0,05	4,62	0,82	mg/l	98%
Total P (as PO4)	0,107	0,002	0,107	0,016	mg/l	100%
KMnO4-Index	4,62	0,16	4,60	0,73	mg/l	100%



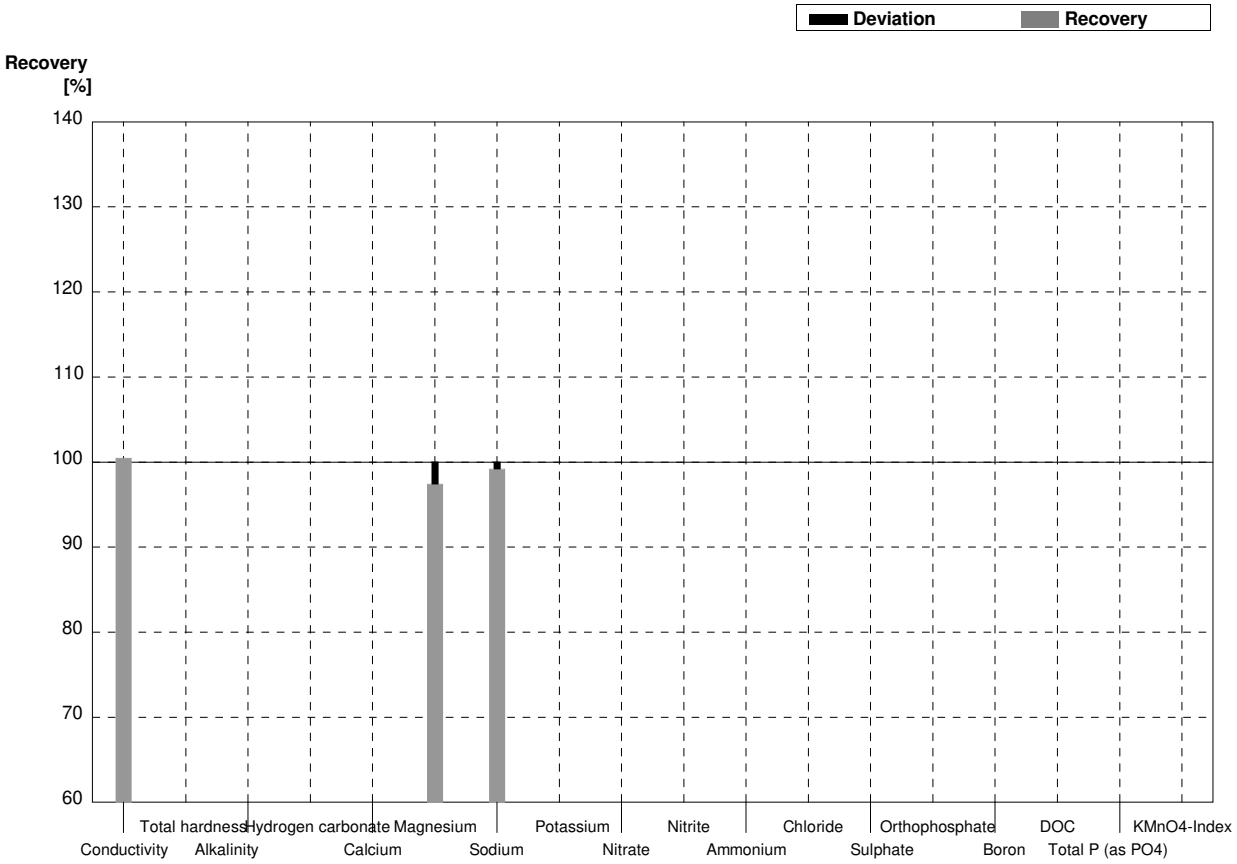
Sample N162B
Laboratory S

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2	522	13	µS/cm	100%
Total hardness	1,785	0,017	1,80	0,18	mmol/l	101%
Alkalinity	1,91	0,03	1,83	0,08	mmol/l	96%
Hydrogen carbonate	113,3	1,5	109	5	mg/l	96%
Calcium	47,9	0,7	49,0	3,1	mg/l	102%
Magnesium	14,32	0,11	14,1	1,1	mg/l	98%
Sodium	30,9	0,3	30,7	2,5	mg/l	99%
Potassium	4,26	0,03	4,31	0,34	mg/l	101%
Nitrate	30,9	0,6	30,6	2,1	mg/l	99%
Nitrite	0,0936	0,0008	0,0901	0,0128	mg/l	96%
Ammonium	0,058	0,004	0,0531	0,0091	mg/l	92%
Chloride	52,2	0,8	53,8	3,8	mg/l	103%
Sulphate	55,4	0,3	55,3	3,0	mg/l	100%
Orthophosphate	<0,009		0,00889	0,00123	mg/l	•
Boron	0,1092	0,0007	0,107	0,015	mg/l	98%
DOC	3,98	0,05	4,39	0,77	mg/l	110%
Total P (as PO4)	<0,009		<0,005		mg/l	•
KMnO4-Index	2,93	0,08	2,88	0,46	mg/l	98%



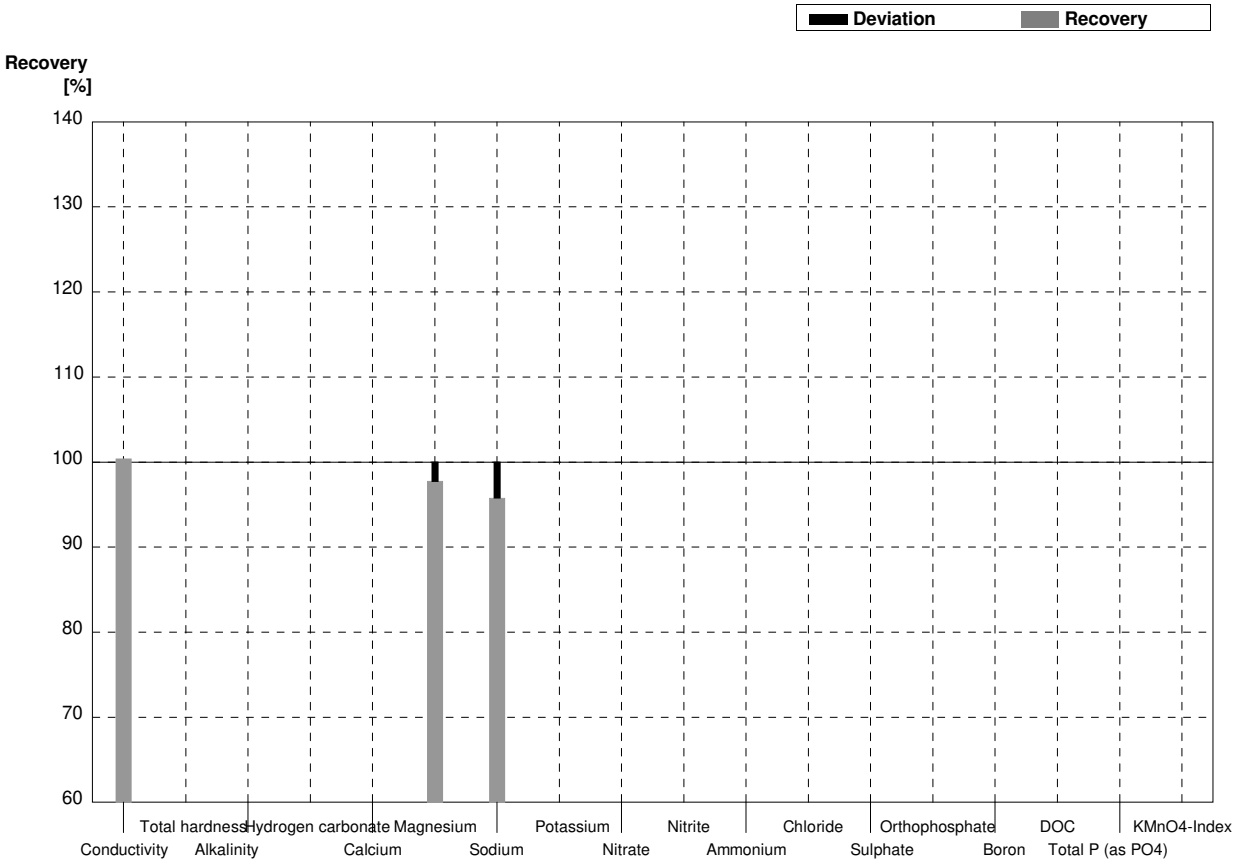
Sample N162A
Laboratory T

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2	439	11	µS/cm	100%
Total hardness	1,350	0,014			mmol/l	
Alkalinity	2,93	0,03			mmol/l	
Hydrogen carbonate	175,8	1,7			mg/l	
Calcium	38,7	0,6			mg/l	
Magnesium	9,34	0,11	9,10	0,50	mg/l	97%
Sodium	37,7	0,3	37,4	3,7	mg/l	99%
Potassium	5,60	0,04			mg/l	
Nitrate	41,3	0,8			mg/l	
Nitrite	0,0404	0,0010			mg/l	
Ammonium	<0,01				mg/l	
Chloride	9,3	0,2			mg/l	
Sulphate	29,81	0,18			mg/l	
Orthophosphate	0,061	0,002			mg/l	
Boron	0,0707	0,0011			mg/l	
DOC	4,72	0,05			mg/l	
Total P (as PO4)	0,107	0,002			mg/l	
KMnO4-Index	4,62	0,16			mg/l	



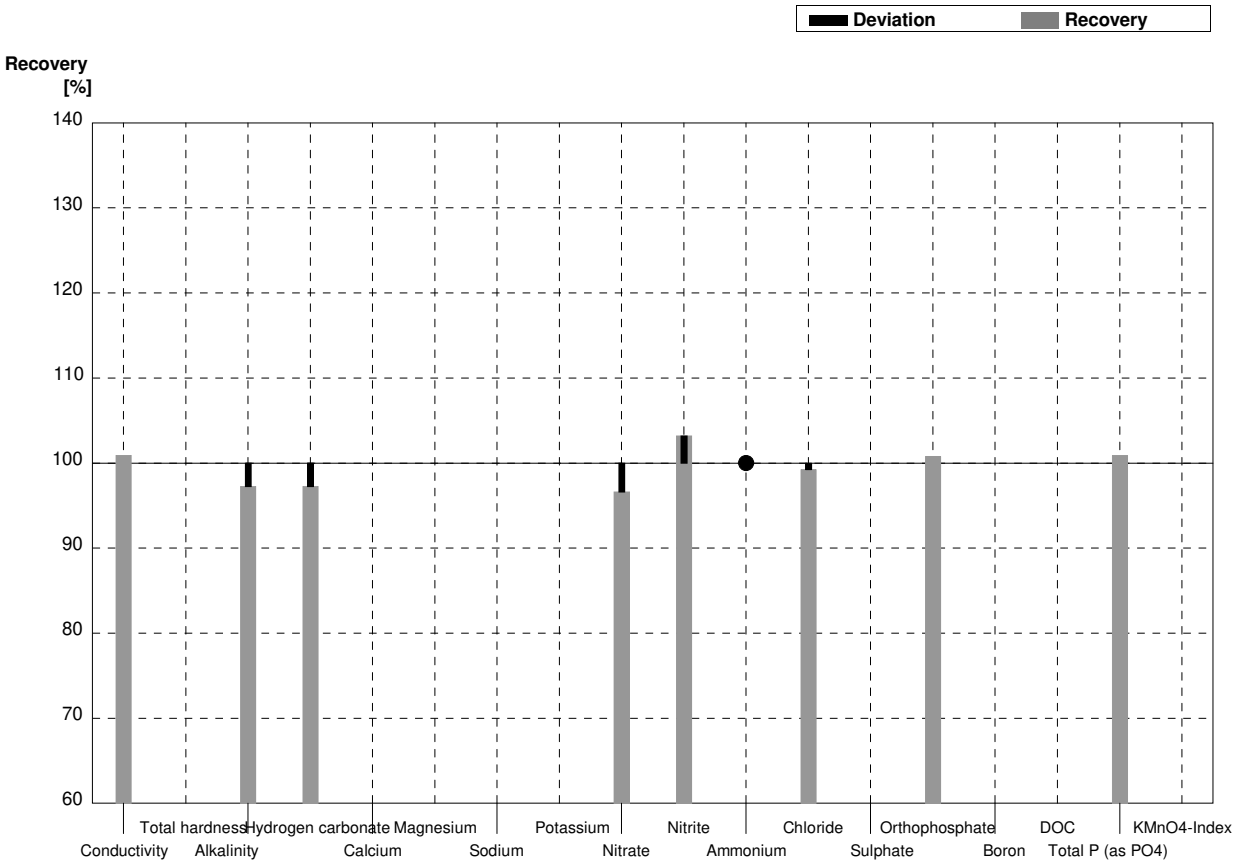
Sample N162B
Laboratory T

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2	524	13	µS/cm	100%
Total hardness	1,785	0,017			mmol/l	
Alkalinity	1,91	0,03			mmol/l	
Hydrogen carbonate	113,3	1,5			mg/l	
Calcium	47,9	0,7			mg/l	
Magnesium	14,32	0,11	14,0	0,8	mg/l	98%
Sodium	30,9	0,3	29,6	3,0	mg/l	96%
Potassium	4,26	0,03			mg/l	
Nitrate	30,9	0,6			mg/l	
Nitrite	0,0936	0,0008			mg/l	
Ammonium	0,058	0,004			mg/l	
Chloride	52,2	0,8			mg/l	
Sulphate	55,4	0,3			mg/l	
Orthophosphate	<0,009				mg/l	
Boron	0,1092	0,0007			mg/l	
DOC	3,98	0,05			mg/l	
Total P (as PO4)	<0,009				mg/l	
KMnO4-Index	2,93	0,08			mg/l	



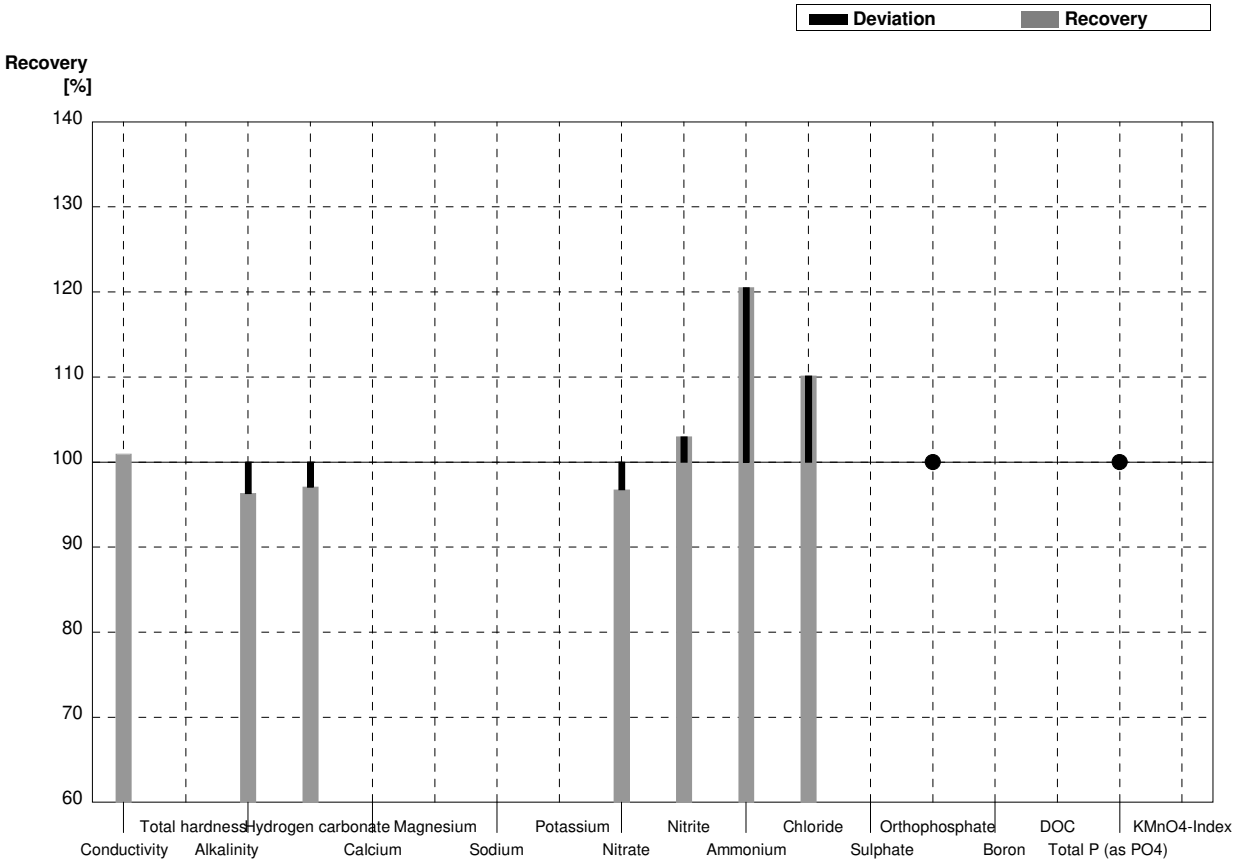
Sample N162A
Laboratory U

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2	441	3,12	µS/cm	101%
Total hardness	1,350	0,014			mmol/l	
Alkalinity	2,93	0,03	2,85	0,08	mmol/l	97%
Hydrogen carbonate	175,8	1,7	171	2,47	mg/l	97%
Calcium	38,7	0,6			mg/l	
Magnesium	9,34	0,11			mg/l	
Sodium	37,7	0,3			mg/l	
Potassium	5,60	0,04			mg/l	
Nitrate	41,3	0,8	39,9	2,73	mg/l	97%
Nitrite	0,0404	0,0010	0,0417	0,0042	mg/l	103%
Ammonium	<0,01		<0,005	0	mg/l	•
Chloride	9,3	0,2	9,23	0,09	mg/l	99%
Sulphate	29,81	0,18			mg/l	
Orthophosphate	0,061	0,002	0,0615	0,0072	mg/l	101%
Boron	0,0707	0,0011			mg/l	
DOC	4,72	0,05			mg/l	
Total P (as PO4)	0,107	0,002	0,108	0,014	mg/l	101%
KMnO4-Index	4,62	0,16			mg/l	



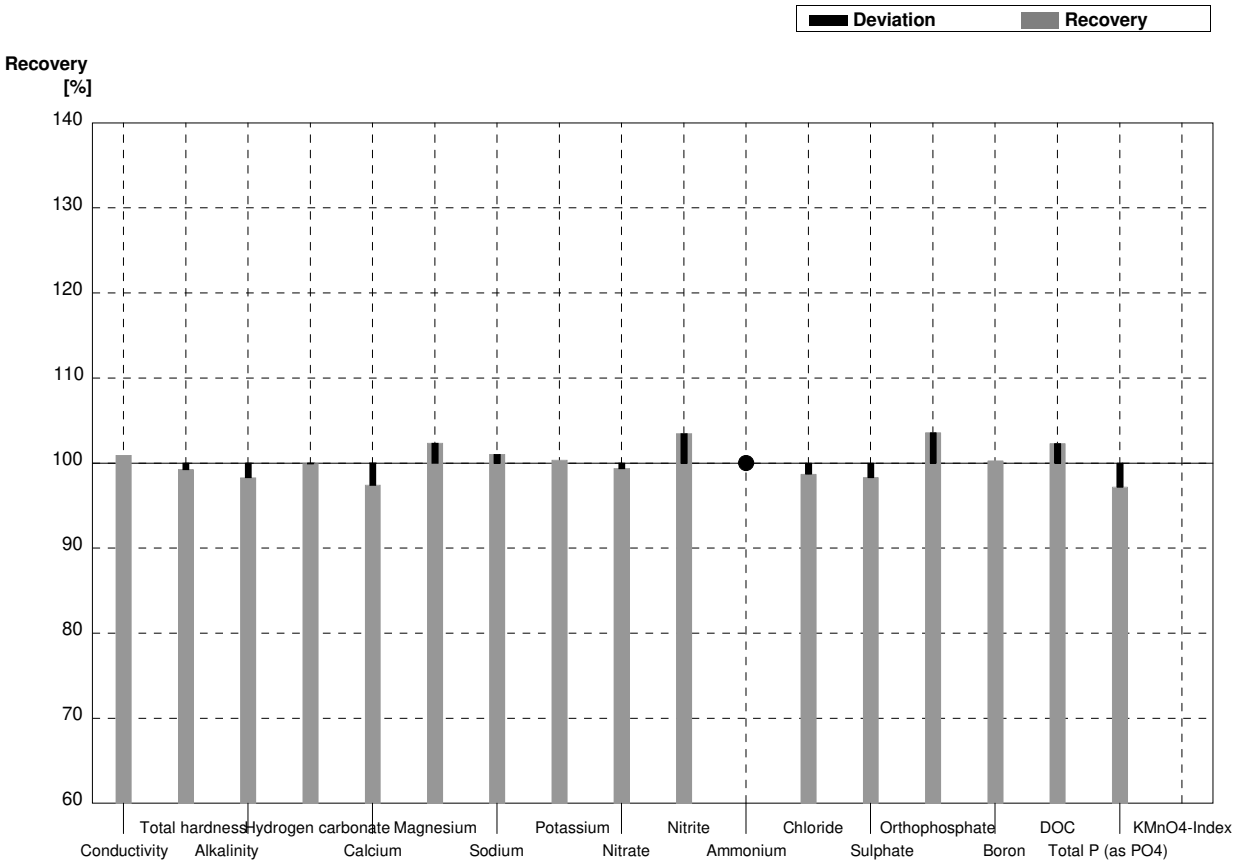
Sample N162B
Laboratory U

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2	527	3,73	µS/cm	101%
Total hardness	1,785	0,017			mmol/l	
Alkalinity	1,91	0,03	1,84	0,05	mmol/l	96%
Hydrogen carbonate	113,3	1,5	110	1,59	mg/l	97%
Calcium	47,9	0,7			mg/l	
Magnesium	14,32	0,11			mg/l	
Sodium	30,9	0,3			mg/l	
Potassium	4,26	0,03			mg/l	
Nitrate	30,9	0,6	29,9	2,05	mg/l	97%
Nitrite	0,0936	0,0008	0,0964	0,0096	mg/l	103%
Ammonium	0,058	0,004	0,0699	0,0105	mg/l	121%
Chloride	52,2	0,8	57,5	0,58	mg/l	110%
Sulphate	55,4	0,3			mg/l	
Orthophosphate	<0,009		<0,006	0	mg/l	•
Boron	0,1092	0,0007			mg/l	
DOC	3,98	0,05			mg/l	
Total P (as PO4)	<0,009		<0,006	0	mg/l	•
KMnO4-Index	2,93	0,08			mg/l	



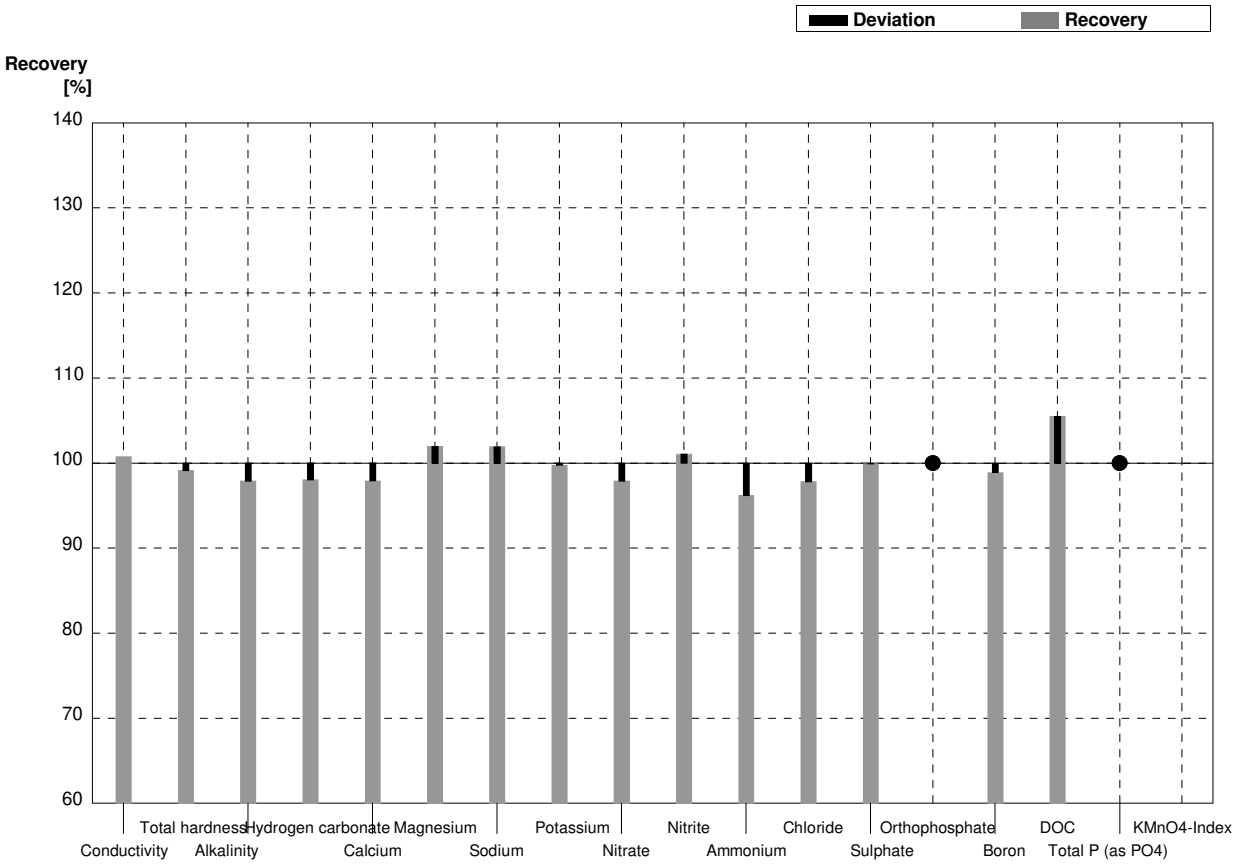
Sample N162A
Laboratory V

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2	441	10	µS/cm	101%
Total hardness	1,350	0,014	1,34	0,13	mmol/l	99%
Alkalinity	2,93	0,03	2,88	0,29	mmol/l	98%
Hydrogen carbonate	175,8	1,7	175,7	18	mg/l	100%
Calcium	38,7	0,6	37,7	7,6	mg/l	97%
Magnesium	9,34	0,11	9,56	1,9	mg/l	102%
Sodium	37,7	0,3	38,1	5,7	mg/l	101%
Potassium	5,60	0,04	5,62	1,1	mg/l	100%
Nitrate	41,3	0,8	41,04	4,1	mg/l	99%
Nitrite	0,0404	0,0010	0,0418	0,0077	mg/l	103%
Ammonium	<0,01		<0,010		mg/l	•
Chloride	9,3	0,2	9,18	9,2	mg/l	99%
Sulphate	29,81	0,18	29,31	2,9	mg/l	98%
Orthophosphate	0,061	0,002	0,0632	0,0131	mg/l	104%
Boron	0,0707	0,0011	0,0709	0,018	mg/l	100%
DOC	4,72	0,05	4,83	0,48	mg/l	102%
Total P (as PO4)	0,107	0,002	0,1040	0,0216	mg/l	97%
KMnO4-Index	4,62	0,16			mg/l	



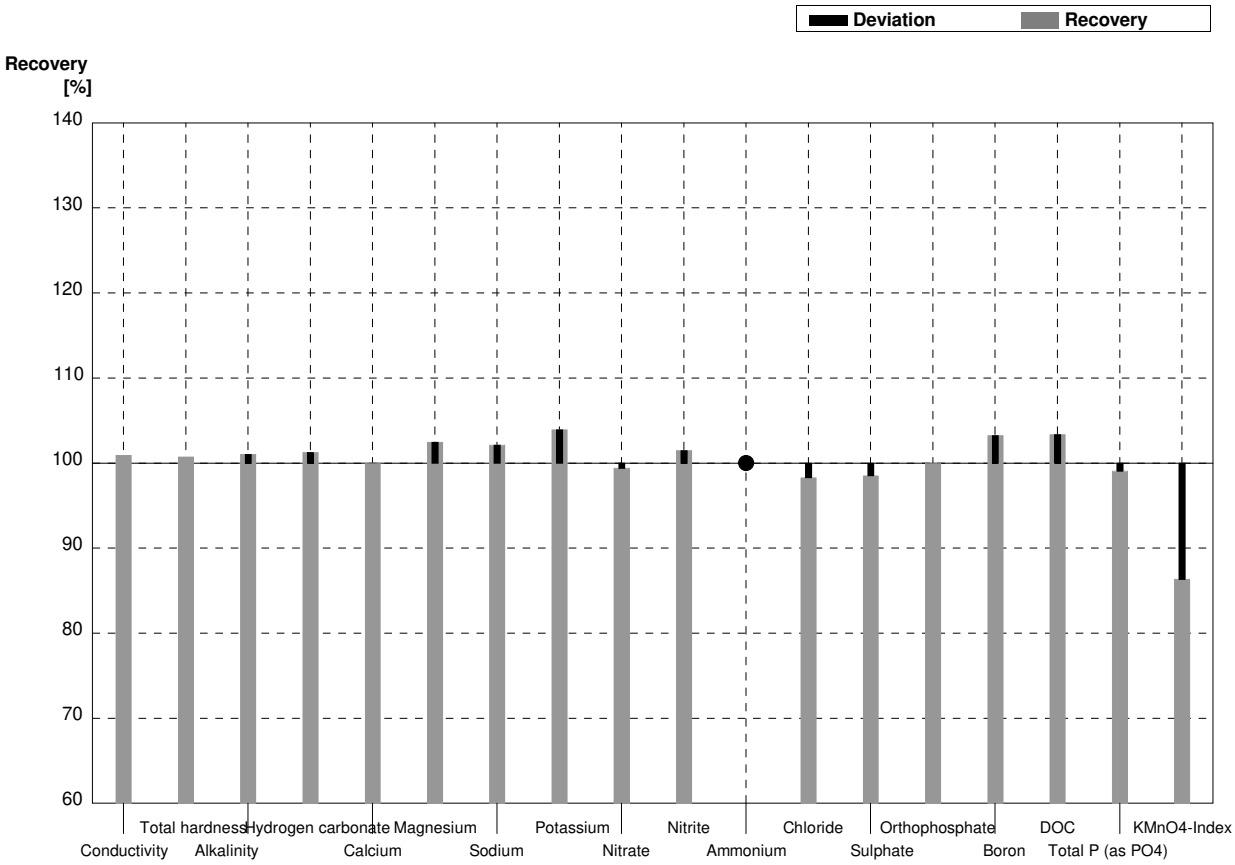
Sample N162B
Laboratory V

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2	526	10	µS/cm	101%
Total hardness	1,785	0,017	1,77	0,18	mmol/l	99%
Alkalinity	1,91	0,03	1,87	0,19	mmol/l	98%
Hydrogen carbonate	113,3	1,5	111,1	11	mg/l	98%
Calcium	47,9	0,7	46,9	9,4	mg/l	98%
Magnesium	14,32	0,11	14,6	2,9	mg/l	102%
Sodium	30,9	0,3	31,5	6,3	mg/l	102%
Potassium	4,26	0,03	4,25	0,90	mg/l	100%
Nitrate	30,9	0,6	30,25	3,0	mg/l	98%
Nitrite	0,0936	0,0008	0,0946	0,0174	mg/l	101%
Ammonium	0,058	0,004	0,0558	0,0090	mg/l	96%
Chloride	52,2	0,8	51,07	5,1	mg/l	98%
Sulphate	55,4	0,3	55,37	5,5	mg/l	100%
Orthophosphate	<0,009		<0,015		mg/l	•
Boron	0,1092	0,0007	0,108	0,027	mg/l	99%
DOC	3,98	0,05	4,20	0,42	mg/l	106%
Total P (as PO4)	<0,009		<0,015		mg/l	•
KMnO4-Index	2,93	0,08			mg/l	



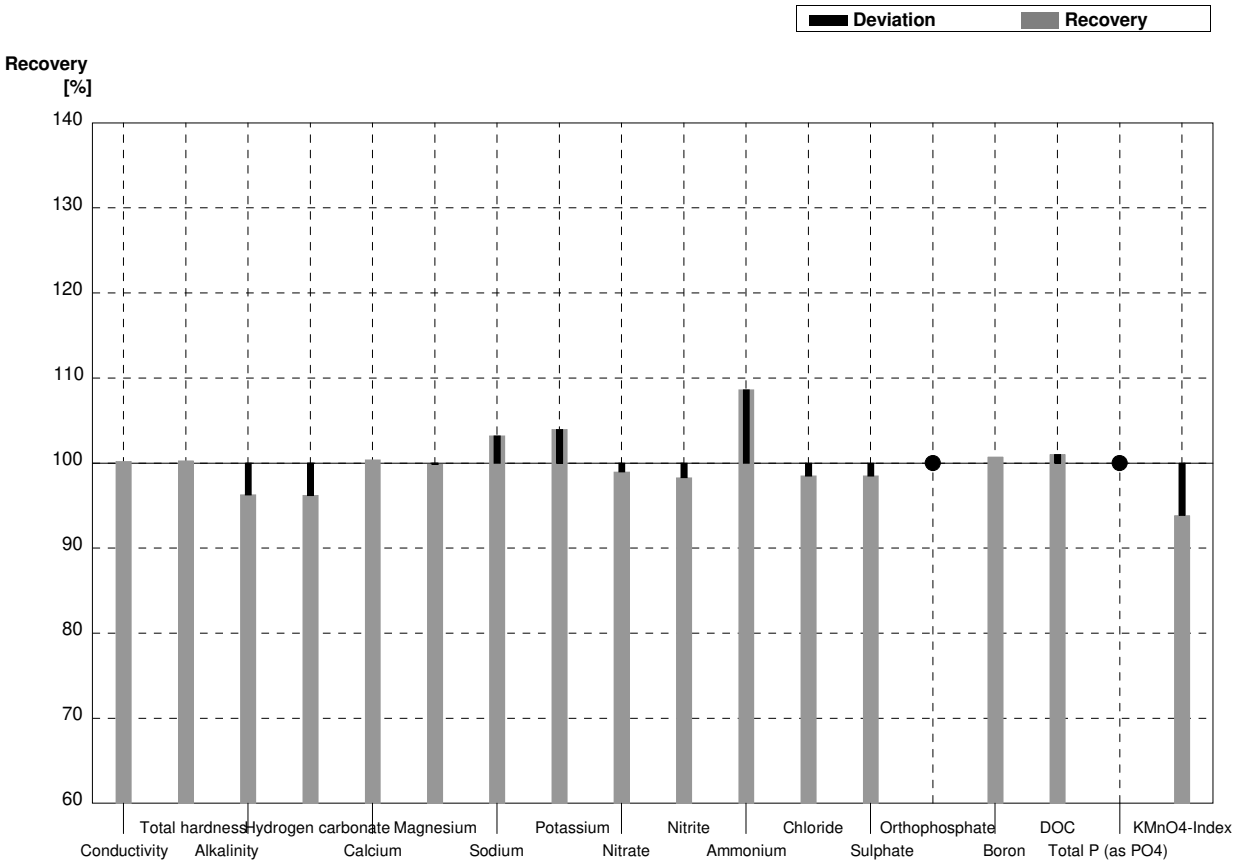
Sample N162A
Laboratory W

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2	441	24,52	µS/cm	101%
Total hardness	1,350	0,014	1,36	0,136	mmol/l	101%
Alkalinity	2,93	0,03	2,96	0,171	mmol/l	101%
Hydrogen carbonate	175,8	1,7	178	8,9	mg/l	101%
Calcium	38,7	0,6	38,7	3,9	mg/l	100%
Magnesium	9,34	0,11	9,57	0,96	mg/l	102%
Sodium	37,7	0,3	38,5	3,9	mg/l	102%
Potassium	5,60	0,04	5,82	0,58	mg/l	104%
Nitrate	41,3	0,8	41,055	2,053	mg/l	99%
Nitrite	0,0404	0,0010	0,0410	0,004	mg/l	101%
Ammonium	<0,01		<0,01		mg/l	•
Chloride	9,3	0,2	9,142	0,457	mg/l	98%
Sulphate	29,81	0,18	29,373	1,469	mg/l	99%
Orthophosphate	0,061	0,002	0,0610	0,006	mg/l	100%
Boron	0,0707	0,0011	0,073	0,007	mg/l	103%
DOC	4,72	0,05	4,879	0,976	mg/l	103%
Total P (as PO4)	0,107	0,002	0,106	0,011	mg/l	99%
KMnO4-Index	4,62	0,16	3,99	0,519	mg/l	86%



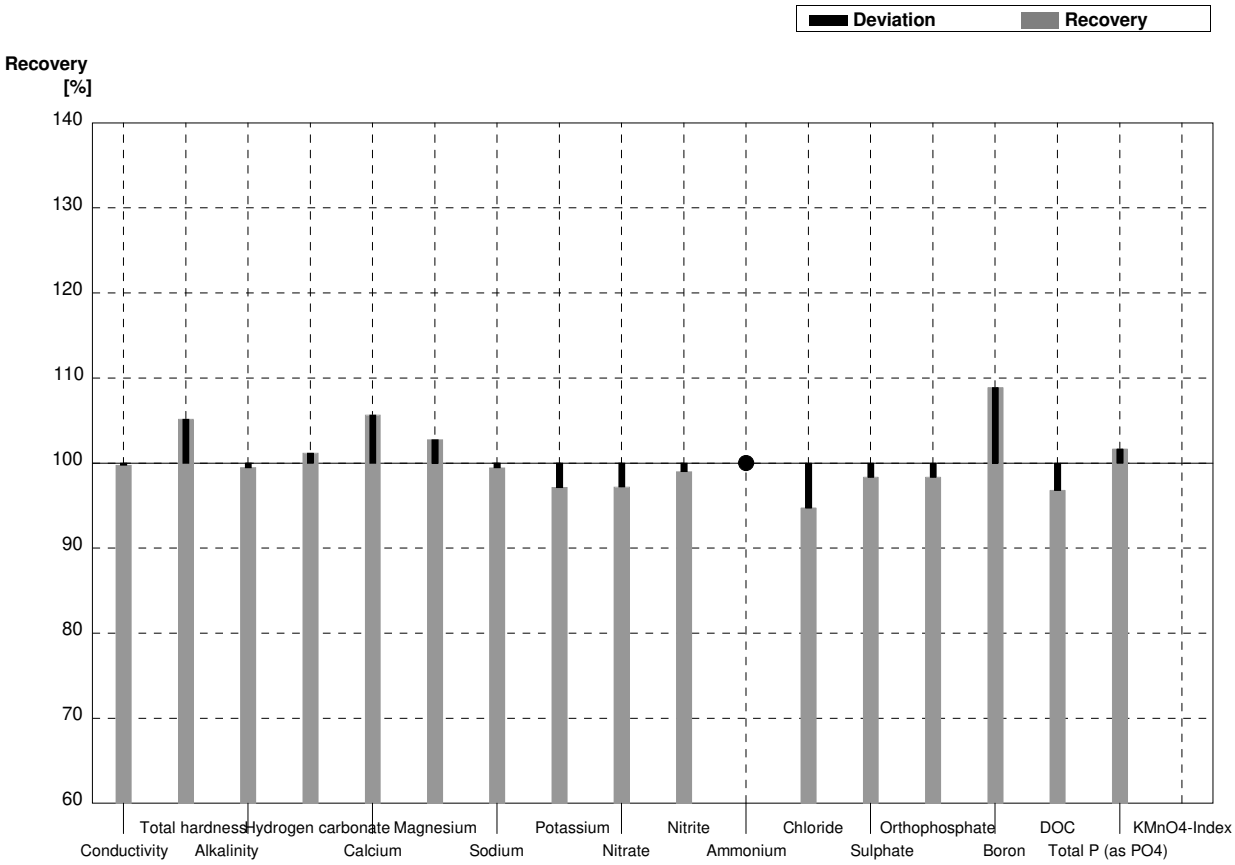
Sample N162B
Laboratory W

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2	523	29,08	µS/cm	100%
Total hardness	1,785	0,017	1,79	0,179	mmol/l	100%
Alkalinity	1,91	0,03	1,839	0,106	mmol/l	96%
Hydrogen carbonate	113,3	1,5	109	5,45	mg/l	96%
Calcium	47,9	0,7	48,1	4,8	mg/l	100%
Magnesium	14,32	0,11	14,3	1,4	mg/l	100%
Sodium	30,9	0,3	31,9	3,2	mg/l	103%
Potassium	4,26	0,03	4,43	0,44	mg/l	104%
Nitrate	30,9	0,6	30,587	1,529	mg/l	99%
Nitrite	0,0936	0,0008	0,092	0,009	mg/l	98%
Ammonium	0,058	0,004	0,063	0,006	mg/l	109%
Chloride	52,2	0,8	51,420	2,571	mg/l	99%
Sulphate	55,4	0,3	54,567	2,728	mg/l	98%
Orthophosphate	<0,009		<0,01		mg/l	•
Boron	0,1092	0,0007	0,110	0,011	mg/l	101%
DOC	3,98	0,05	4,021	0,804	mg/l	101%
Total P (as PO4)	<0,009		<0,01		mg/l	•
KMnO4-Index	2,93	0,08	2,75	0,358	mg/l	94%



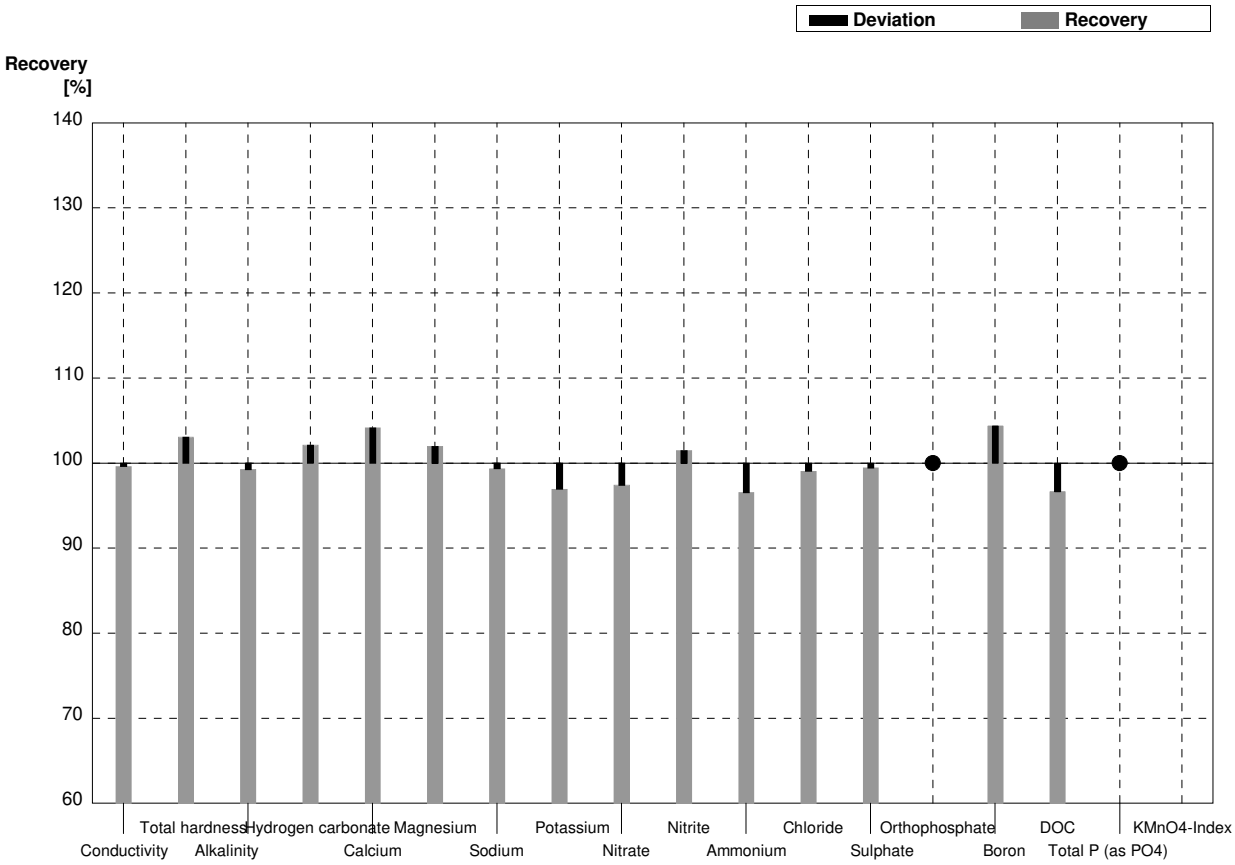
Sample N162A
Laboratory X

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2	436	4	µS/cm	100%
Total hardness	1,350	0,014	1,42	0,13	mmol/l	105%
Alkalinity	2,93	0,03	2,915	0,175	mmol/l	99%
Hydrogen carbonate	175,8	1,7	177,87	10,7	mg/l	101%
Calcium	38,7	0,6	40,90	2,0	mg/l	106%
Magnesium	9,34	0,11	9,60	0,48	mg/l	103%
Sodium	37,7	0,3	37,5	1,9	mg/l	99%
Potassium	5,60	0,04	5,44	0,22	mg/l	97%
Nitrate	41,3	0,8	40,15	2,0	mg/l	97%
Nitrite	0,0404	0,0010	0,0400	0,002	mg/l	99%
Ammonium	<0,01		<0,01		mg/l	•
Chloride	9,3	0,2	8,81	0,4	mg/l	95%
Sulphate	29,81	0,18	29,32	1,2	mg/l	98%
Orthophosphate	0,061	0,002	0,060	0,0024	mg/l	98%
Boron	0,0707	0,0011	0,077	0,01	mg/l	109%
DOC	4,72	0,05	4,57	0,37	mg/l	97%
Total P (as PO4)	0,107	0,002	0,1088	0,0218	mg/l	102%
KMnO4-Index	4,62	0,16			mg/l	



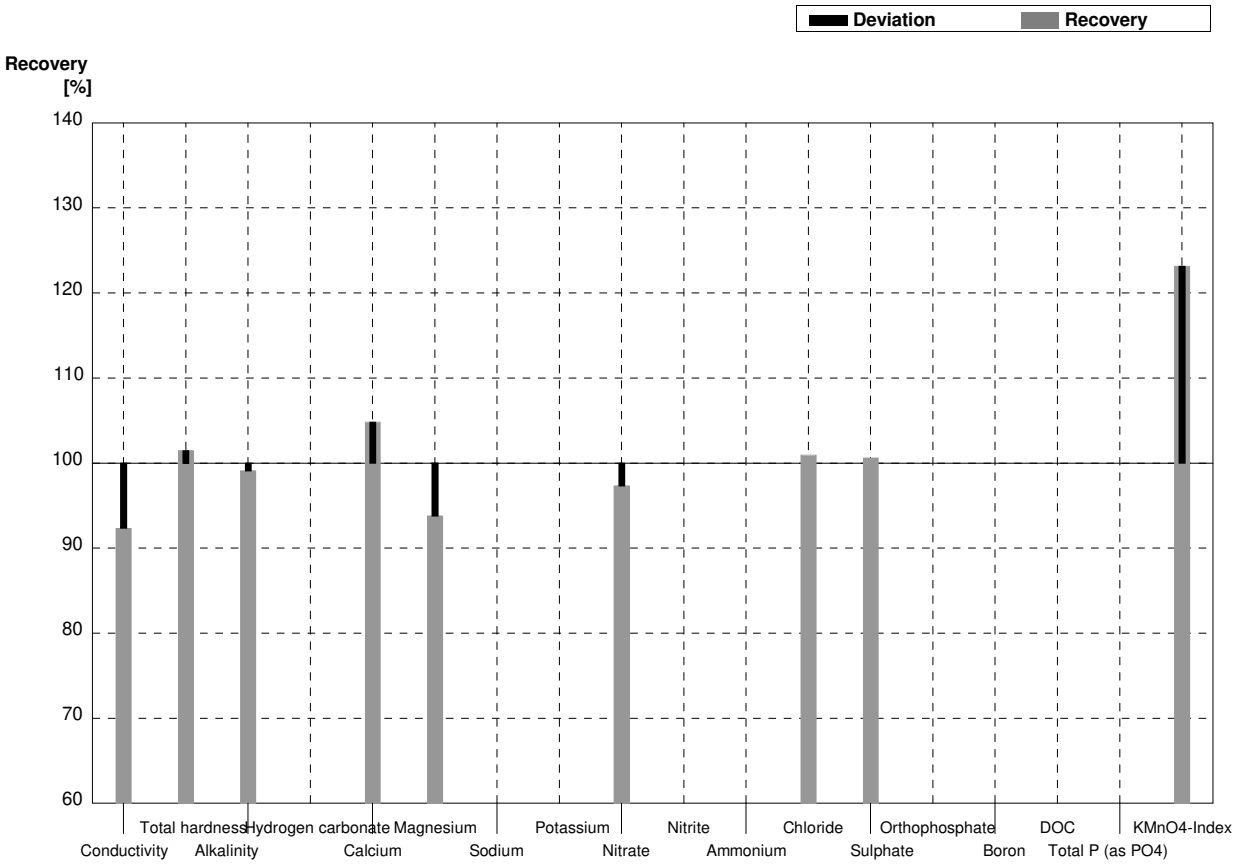
Sample N162B
Laboratory X

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2	520	5	µS/cm	100%
Total hardness	1,785	0,017	1,84	0,17	mmol/l	103%
Alkalinity	1,91	0,03	1,896	0,114	mmol/l	99%
Hydrogen carbonate	113,3	1,5	115,7	6,9	mg/l	102%
Calcium	47,9	0,7	49,9	2,5	mg/l	104%
Magnesium	14,32	0,11	14,6	0,7	mg/l	102%
Sodium	30,9	0,3	30,7	1,5	mg/l	99%
Potassium	4,26	0,03	4,13	0,17	mg/l	97%
Nitrate	30,9	0,6	30,1	1,5	mg/l	97%
Nitrite	0,0936	0,0008	0,095	0,004	mg/l	101%
Ammonium	0,058	0,004	0,056	0,008	mg/l	97%
Chloride	52,2	0,8	51,7	2,6	mg/l	99%
Sulphate	55,4	0,3	55,1	2,2	mg/l	99%
Orthophosphate	<0,009		<0,015		mg/l	•
Boron	0,1092	0,0007	0,114	0,02	mg/l	104%
DOC	3,98	0,05	3,847	0,31	mg/l	97%
Total P (as PO4)	<0,009		<0,03		mg/l	•
KMnO4-Index	2,93	0,08			mg/l	



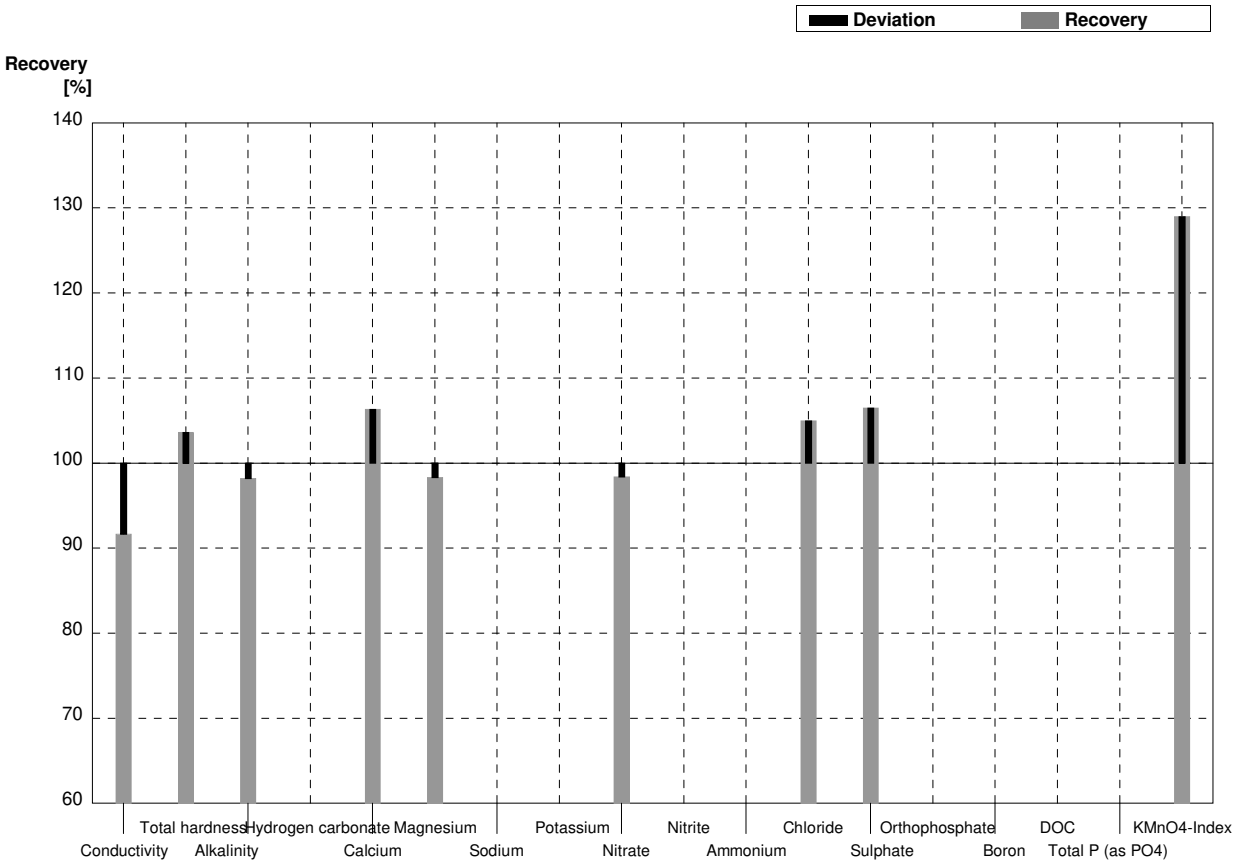
Sample N162A
Laboratory Y

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2	403,6	0,275	µS/cm	92%
Total hardness	1,350	0,014	1,37	0,06	mmol/l	101%
Alkalinity	2,93	0,03	2,904	0,06	mmol/l	99%
Hydrogen carbonate	175,8	1,7			mg/l	
Calcium	38,7	0,6	40,57	0,82	mg/l	105%
Magnesium	9,34	0,11	8,76	1,53	mg/l	94%
Sodium	37,7	0,3			mg/l	
Potassium	5,60	0,04			mg/l	
Nitrate	41,3	0,8	40,2	0,482	mg/l	97%
Nitrite	0,0404	0,0010			mg/l	
Ammonium	<0,01				mg/l	
Chloride	9,3	0,2	9,39	1,074	mg/l	101%
Sulphate	29,81	0,18	30,0	7,4	mg/l	101%
Orthophosphate	0,061	0,002			mg/l	
Boron	0,0707	0,0011			mg/l	
DOC	4,72	0,05			mg/l	
Total P (as PO4)	0,107	0,002			mg/l	
KMnO4-Index	4,62	0,16	5,69	0,588	mg/l	123%



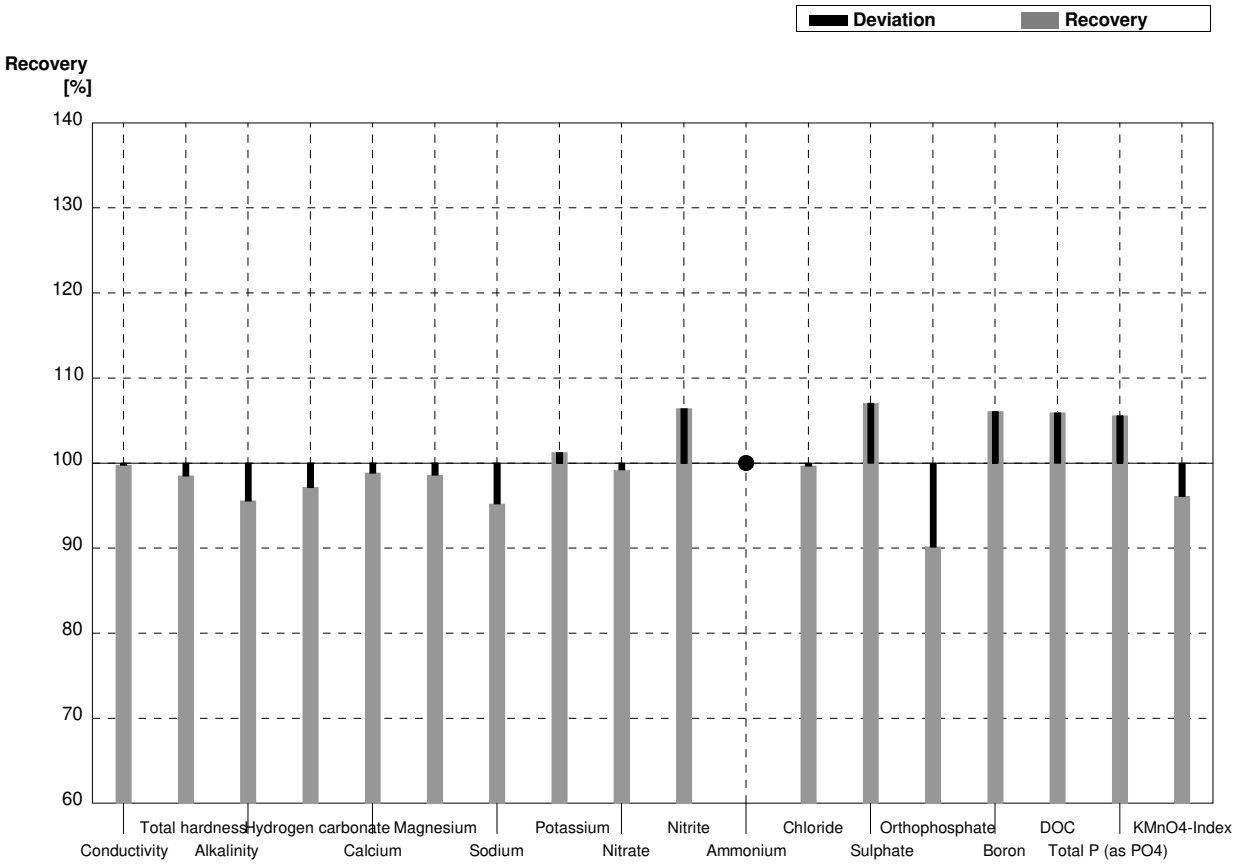
Sample N162B
Laboratory Y

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2	478,5	0,275	µS/cm	92%
Total hardness	1,785	0,017	1,85	0,06	mmol/l	104%
Alkalinity	1,91	0,03	1,876	0,06	mmol/l	98%
Hydrogen carbonate	113,3	1,5			mg/l	
Calcium	47,9	0,7	50,94	0,82	mg/l	106%
Magnesium	14,32	0,11	14,08	1,53	mg/l	98%
Sodium	30,9	0,3			mg/l	
Potassium	4,26	0,03			mg/l	
Nitrate	30,9	0,6	30,4	0,482	mg/l	98%
Nitrite	0,0936	0,0008			mg/l	
Ammonium	0,058	0,004			mg/l	
Chloride	52,2	0,8	54,8	1,074	mg/l	105%
Sulphate	55,4	0,3	59,0	7,4	mg/l	106%
Orthophosphate	<0,009				mg/l	
Boron	0,1092	0,0007			mg/l	
DOC	3,98	0,05			mg/l	
Total P (as PO4)	<0,009				mg/l	
KMnO4-Index	2,93	0,08	3,78	0,588	mg/l	129%



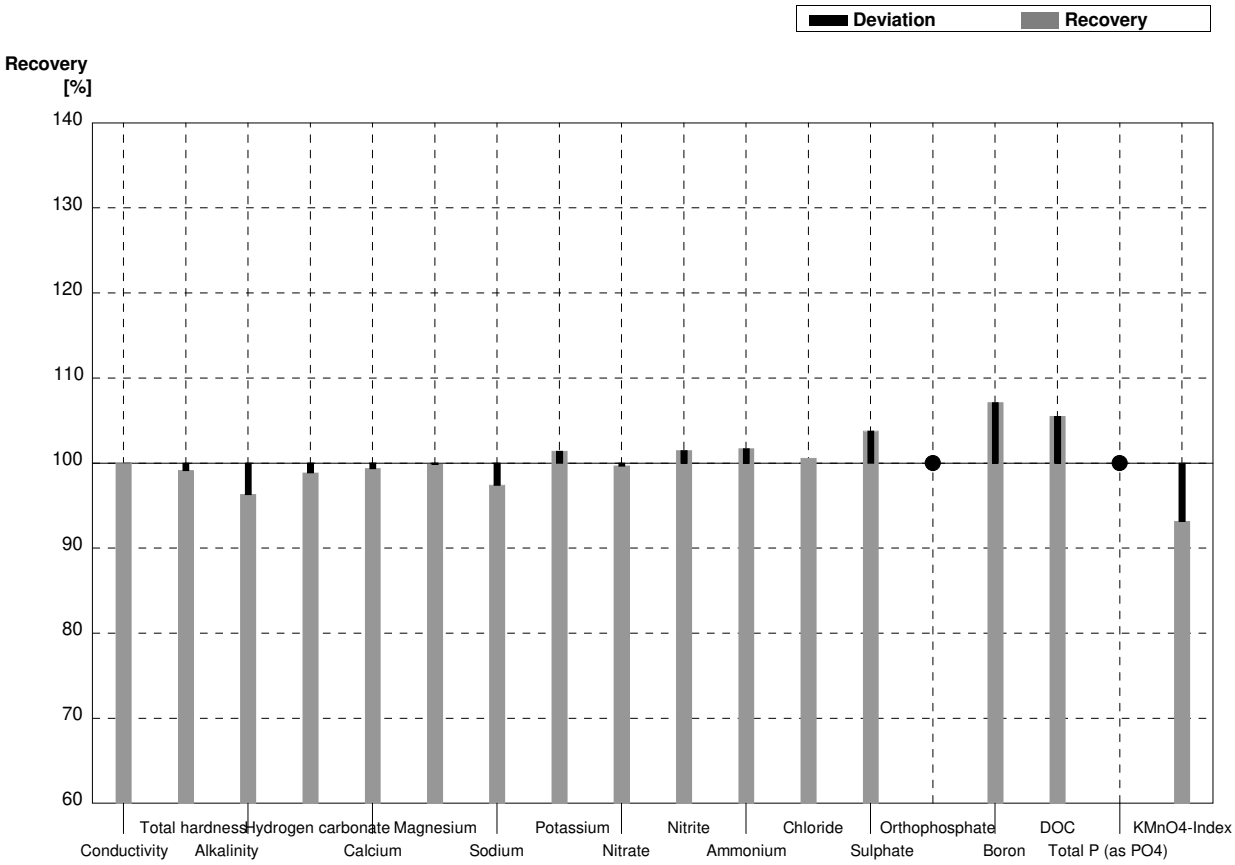
Sample N162A
Laboratory Z

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2	436	17,4	µS/cm	100%
Total hardness	1,350	0,014	1,33		mmol/l	99%
Alkalinity	2,93	0,03	2,80	0,42	mmol/l	96%
Hydrogen carbonate	175,8	1,7	170,8	25,63	mg/l	97%
Calcium	38,7	0,6	38,25	3,825	mg/l	99%
Magnesium	9,34	0,11	9,21	0,921	mg/l	99%
Sodium	37,7	0,3	35,9	3,59	mg/l	95%
Potassium	5,60	0,04	5,67	0,567	mg/l	101%
Nitrate	41,3	0,8	40,97	0,567	mg/l	99%
Nitrite	0,0404	0,0010	0,0430	0,0034	mg/l	106%
Ammonium	<0,01		<0,005		mg/l	•
Chloride	9,3	0,2	9,27	0,464	mg/l	100%
Sulphate	29,81	0,18	31,91	1,596	mg/l	107%
Orthophosphate	0,061	0,002	0,055	0,0066	mg/l	90%
Boron	0,0707	0,0011	0,075	0,009	mg/l	106%
DOC	4,72	0,05	5,0	0,40	mg/l	106%
Total P (as PO4)	0,107	0,002	0,113	0,017	mg/l	106%
KMnO4-Index	4,62	0,16	4,44	0,71	mg/l	96%



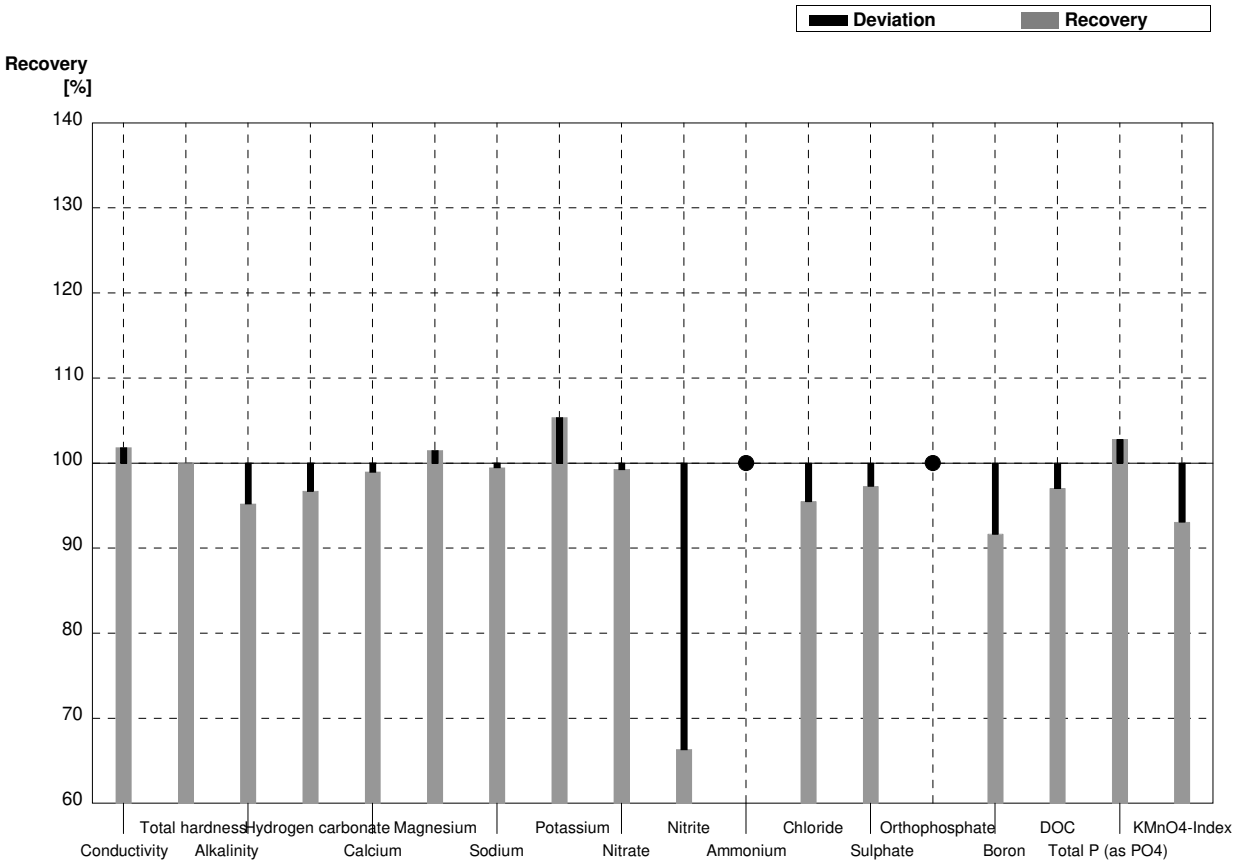
Sample N162B
Laboratory Z

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2	522	20,9	µS/cm	100%
Total hardness	1,785	0,017	1,77		mmol/l	99%
Alkalinity	1,91	0,03	1,84	0,276	mmol/l	96%
Hydrogen carbonate	113,3	1,5	112	16,8	mg/l	99%
Calcium	47,9	0,7	47,6	4,76	mg/l	99%
Magnesium	14,32	0,11	14,3	1,43	mg/l	100%
Sodium	30,9	0,3	30,1	3,01	mg/l	97%
Potassium	4,26	0,03	4,32	0,432	mg/l	101%
Nitrate	30,9	0,6	30,8	1,23	mg/l	100%
Nitrite	0,0936	0,0008	0,095	0,0076	mg/l	101%
Ammonium	0,058	0,004	0,059	0,0059	mg/l	102%
Chloride	52,2	0,8	52,5	2,62	mg/l	101%
Sulphate	55,4	0,3	57,5	2,87	mg/l	104%
Orthophosphate	<0,009		0,0090	0,0011	mg/l	•
Boron	0,1092	0,0007	0,117	0,014	mg/l	107%
DOC	3,98	0,05	4,20	0,34	mg/l	106%
Total P (as PO4)	<0,009		<0,015		mg/l	•
KMnO4-Index	2,93	0,08	2,73	0,437	mg/l	93%



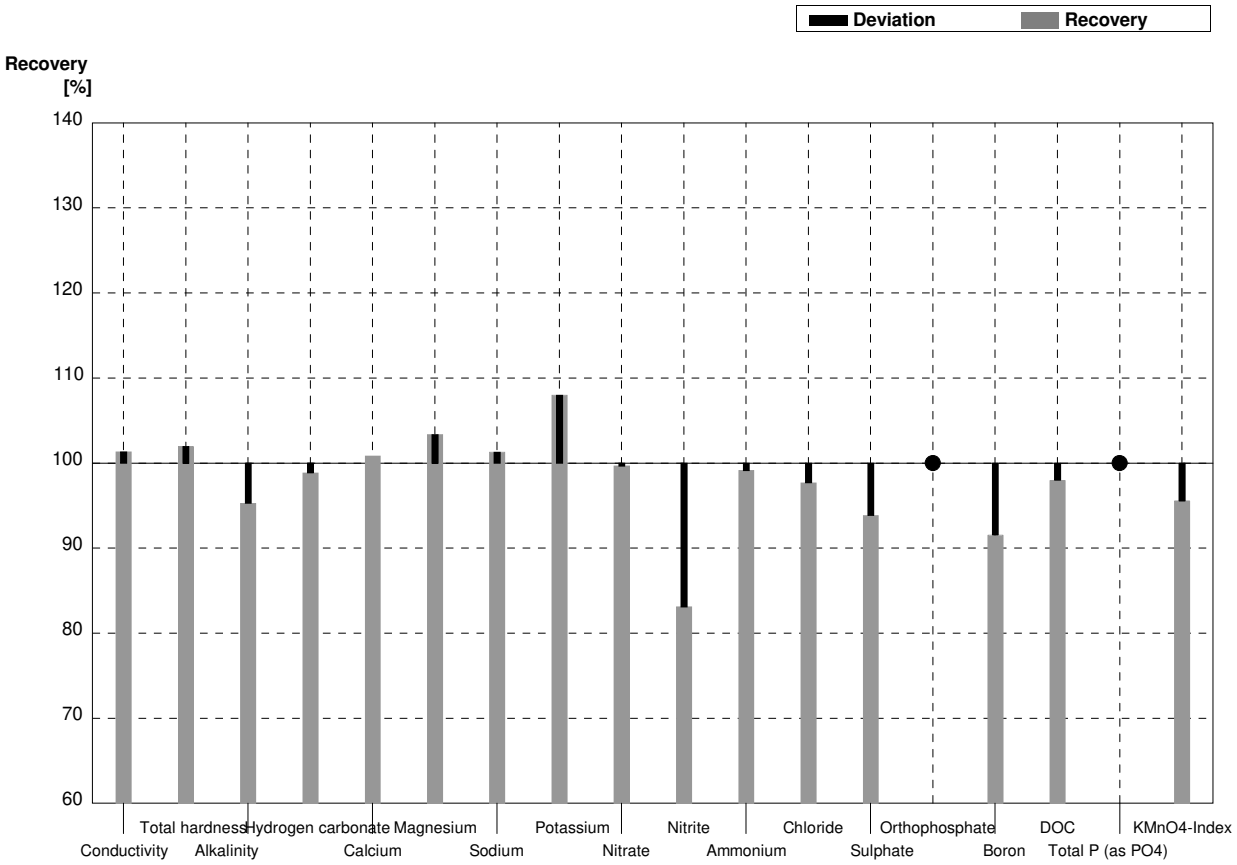
Sample N162A
Laboratory AA

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2	445	45	µS/cm	102%
Total hardness	1,350	0,014	1,35	0,3	mmol/l	100%
Alkalinity	2,93	0,03	2,79	0,3	mmol/l	95%
Hydrogen carbonate	175,8	1,7	170	17	mg/l	97%
Calcium	38,7	0,6	38,3	8	mg/l	99%
Magnesium	9,34	0,11	9,48	2	mg/l	101%
Sodium	37,7	0,3	37,5	8	mg/l	99%
Potassium	5,60	0,04	5,90	1,2	mg/l	105%
Nitrate	41,3	0,8	41,0	6	mg/l	99%
Nitrite	0,0404	0,0010	0,0268	0,004	mg/l	66%
Ammonium	<0,01		<0,01		mg/l	•
Chloride	9,3	0,2	8,88	1,3	mg/l	95%
Sulphate	29,81	0,18	29,0	4,4	mg/l	97%
Orthophosphate	0,061	0,002	<0,1		mg/l	•
Boron	0,0707	0,0011	0,0648	0,013	mg/l	92%
DOC	4,72	0,05	4,58	1,4	mg/l	97%
Total P (as PO4)	0,107	0,002	0,110	0,022	mg/l	103%
KMnO4-Index	4,62	0,16	4,30	1	mg/l	93%



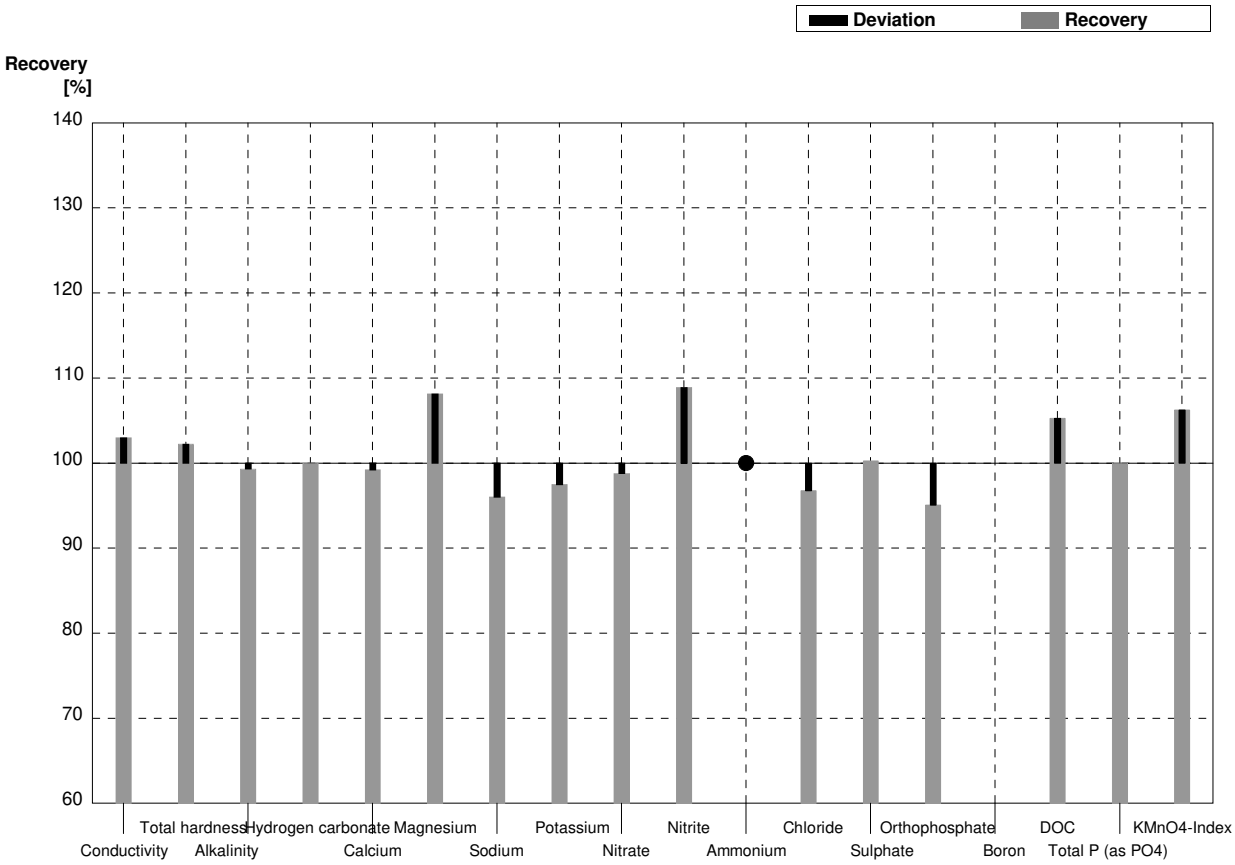
Sample N162B
Laboratory AA

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2	529	53	µS/cm	101%
Total hardness	1,785	0,017	1,82	0,4	mmol/l	102%
Alkalinity	1,91	0,03	1,82	0,2	mmol/l	95%
Hydrogen carbonate	113,3	1,5	112	11	mg/l	99%
Calcium	47,9	0,7	48,3	10	mg/l	101%
Magnesium	14,32	0,11	14,8	3	mg/l	103%
Sodium	30,9	0,3	31,3	7	mg/l	101%
Potassium	4,26	0,03	4,60	1	mg/l	108%
Nitrate	30,9	0,6	30,8	5	mg/l	100%
Nitrite	0,0936	0,0008	0,0778	0,012	mg/l	83%
Ammonium	0,058	0,004	0,0575	0,02	mg/l	99%
Chloride	52,2	0,8	51,0	8	mg/l	98%
Sulphate	55,4	0,3	52,0	8	mg/l	94%
Orthophosphate	<0,009		<0,1		mg/l	•
Boron	0,1092	0,0007	0,100	0,02	mg/l	92%
DOC	3,98	0,05	3,90	1,2	mg/l	98%
Total P (as PO4)	<0,009		<0,031		mg/l	•
KMnO4-Index	2,93	0,08	2,80	1	mg/l	96%



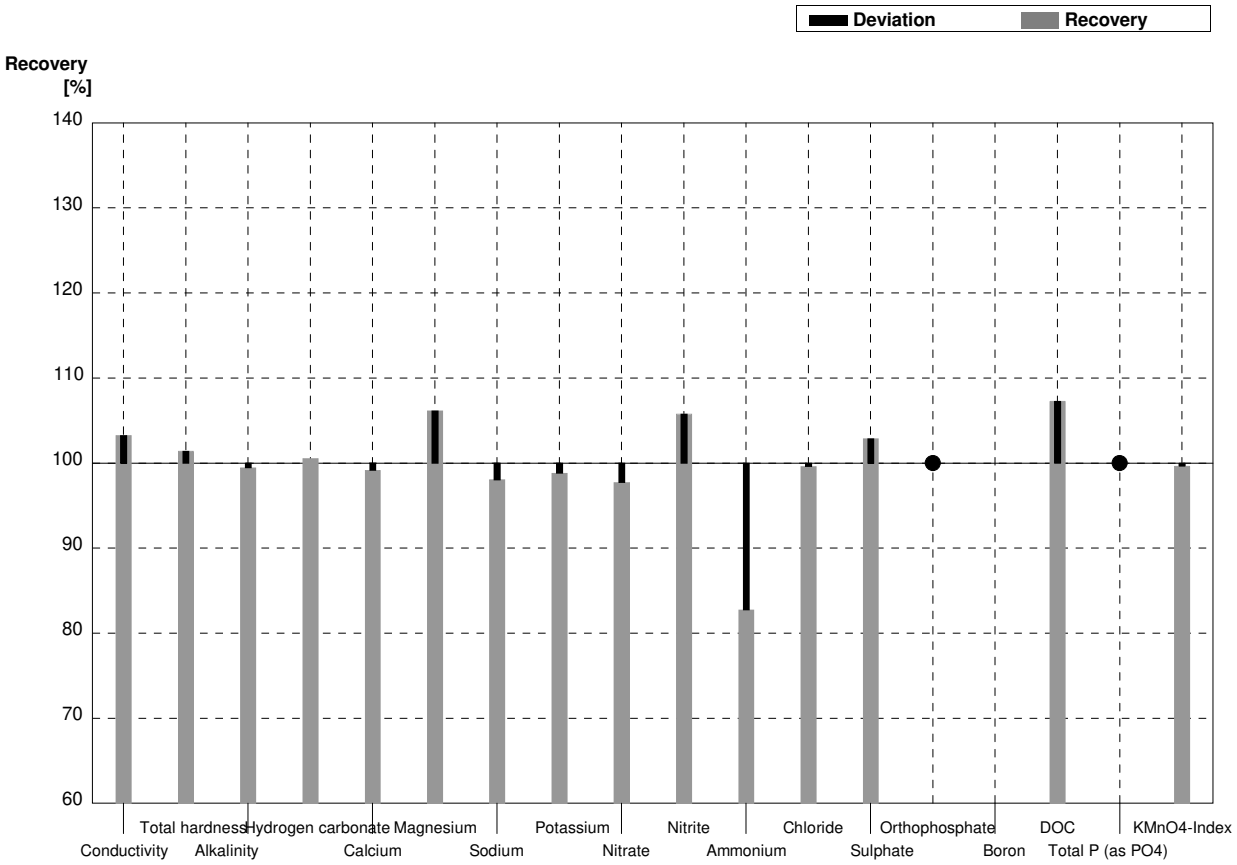
Sample N162A
Laboratory AB

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2	450	11	µS/cm	103%
Total hardness	1,350	0,014	1,38	0,01	mmol/l	102%
Alkalinity	2,93	0,03	2,91	0,01	mmol/l	99%
Hydrogen carbonate	175,8	1,7	175,8	3,5	mg/l	100%
Calcium	38,7	0,6	38,4	0,4	mg/l	99%
Magnesium	9,34	0,11	10,1	0,1	mg/l	108%
Sodium	37,7	0,3	36,2	0,7	mg/l	96%
Potassium	5,60	0,04	5,46	0,32	mg/l	98%
Nitrate	41,3	0,8	40,8	2,0	mg/l	99%
Nitrite	0,0404	0,0010	0,0440	0,0044	mg/l	109%
Ammonium	<0,01		<0,01		mg/l	•
Chloride	9,3	0,2	9,0	0,5	mg/l	97%
Sulphate	29,81	0,18	29,9	0,9	mg/l	100%
Orthophosphate	0,061	0,002	0,058	0,007	mg/l	95%
Boron	0,0707	0,0011			mg/l	
DOC	4,72	0,05	4,97	0,75	mg/l	105%
Total P (as PO4)	0,107	0,002	0,107	0,006	mg/l	100%
KMnO4-Index	4,62	0,16	4,91	0,59	mg/l	106%



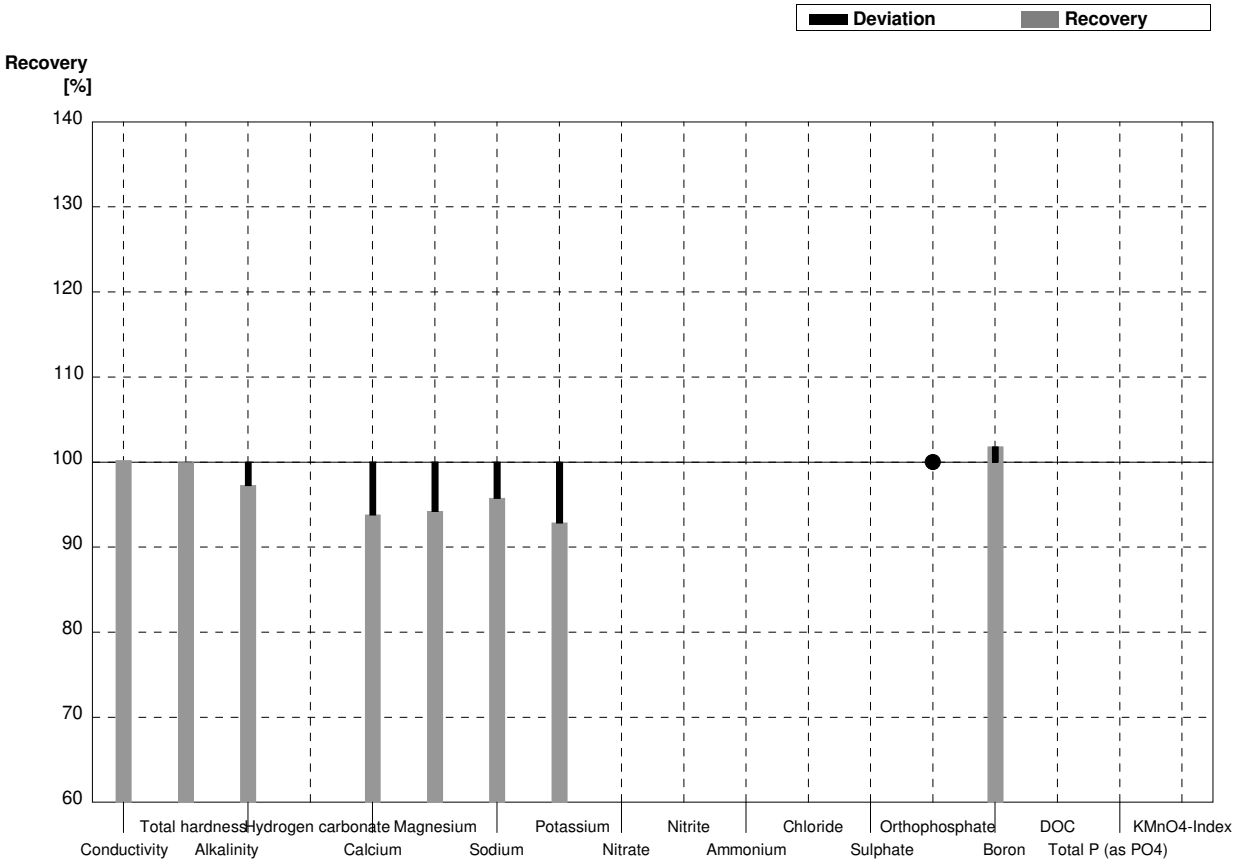
Sample N162B
Laboratory AB

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2	539	13	µS/cm	103%
Total hardness	1,785	0,017	1,81	0,02	mmol/l	101%
Alkalinity	1,91	0,03	1,90	0,01	mmol/l	99%
Hydrogen carbonate	113,3	1,5	113,9	2,3	mg/l	101%
Calcium	47,9	0,7	47,5	0,5	mg/l	99%
Magnesium	14,32	0,11	15,2	0,2	mg/l	106%
Sodium	30,9	0,3	30,3	0,6	mg/l	98%
Potassium	4,26	0,03	4,21	0,25	mg/l	99%
Nitrate	30,9	0,6	30,2	1,5	mg/l	98%
Nitrite	0,0936	0,0008	0,099	0,010	mg/l	106%
Ammonium	0,058	0,004	0,0480	0,0029	mg/l	83%
Chloride	52,2	0,8	52	3	mg/l	100%
Sulphate	55,4	0,3	57	2	mg/l	103%
Orthophosphate	<0,009		<0,003		mg/l	•
Boron	0,1092	0,0007			mg/l	
DOC	3,98	0,05	4,27	0,64	mg/l	107%
Total P (as PO4)	<0,009		0,0060	0,0004	mg/l	•
KMnO4-Index	2,93	0,08	2,92	0,35	mg/l	100%



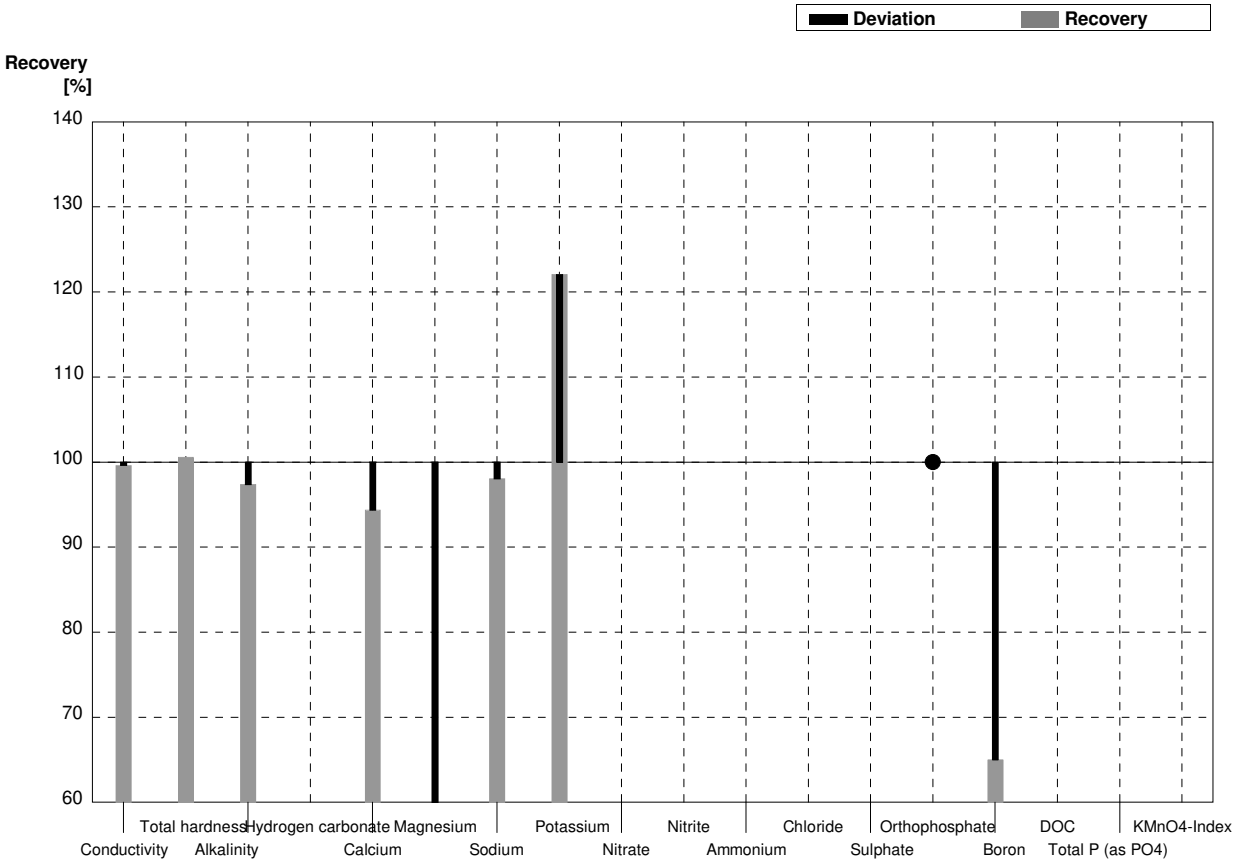
Sample **N162A**
Laboratory **AC**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2	438		µS/cm	100%
Total hardness	1,350	0,014	1,350		mmol/l	100%
Alkalinity	2,93	0,03	2,85		mmol/l	97%
Hydrogen carbonate	175,8	1,7			mg/l	
Calcium	38,7	0,6	36,3		mg/l	94%
Magnesium	9,34	0,11	8,8		mg/l	94%
Sodium	37,7	0,3	36,1		mg/l	96%
Potassium	5,60	0,04	5,2		mg/l	93%
Nitrate	41,3	0,8			mg/l	
Nitrite	0,0404	0,0010			mg/l	
Ammonium	<0,01				mg/l	
Chloride	9,3	0,2			mg/l	
Sulphate	29,81	0,18			mg/l	
Orthophosphate	0,061	0,002	<0,2		mg/l	•
Boron	0,0707	0,0011	0,072		mg/l	102%
DOC	4,72	0,05			mg/l	
Total P (as PO4)	0,107	0,002			mg/l	
KMnO4-Index	4,62	0,16			mg/l	



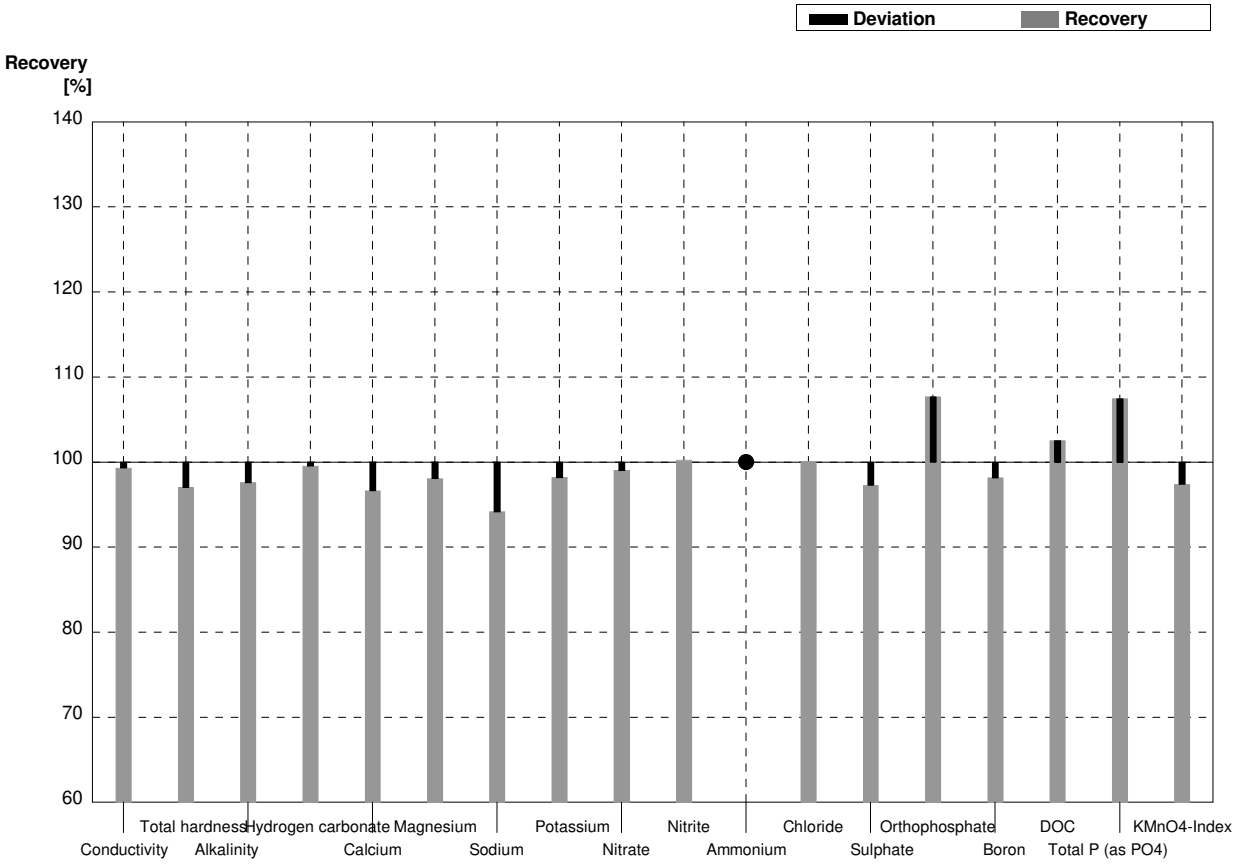
Sample **N162B**
Laboratory **AC**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2	520		µS/cm	100%
Total hardness	1,785	0,017	1,795		mmol/l	101%
Alkalinity	1,91	0,03	1,86		mmol/l	97%
Hydrogen carbonate	113,3	1,5			mg/l	
Calcium	47,9	0,7	45,2		mg/l	94%
Magnesium	14,32	0,11	8,5		mg/l	59%
Sodium	30,9	0,3	30,3		mg/l	98%
Potassium	4,26	0,03	5,2		mg/l	122%
Nitrate	30,9	0,6			mg/l	
Nitrite	0,0936	0,0008			mg/l	
Ammonium	0,058	0,004			mg/l	
Chloride	52,2	0,8			mg/l	
Sulphate	55,4	0,3			mg/l	
Orthophosphate	<0,009		<0,2		mg/l	•
Boron	0,1092	0,0007	0,071		mg/l	65%
DOC	3,98	0,05			mg/l	
Total P (as PO4)	<0,009				mg/l	
KMnO4-Index	2,93	0,08			mg/l	



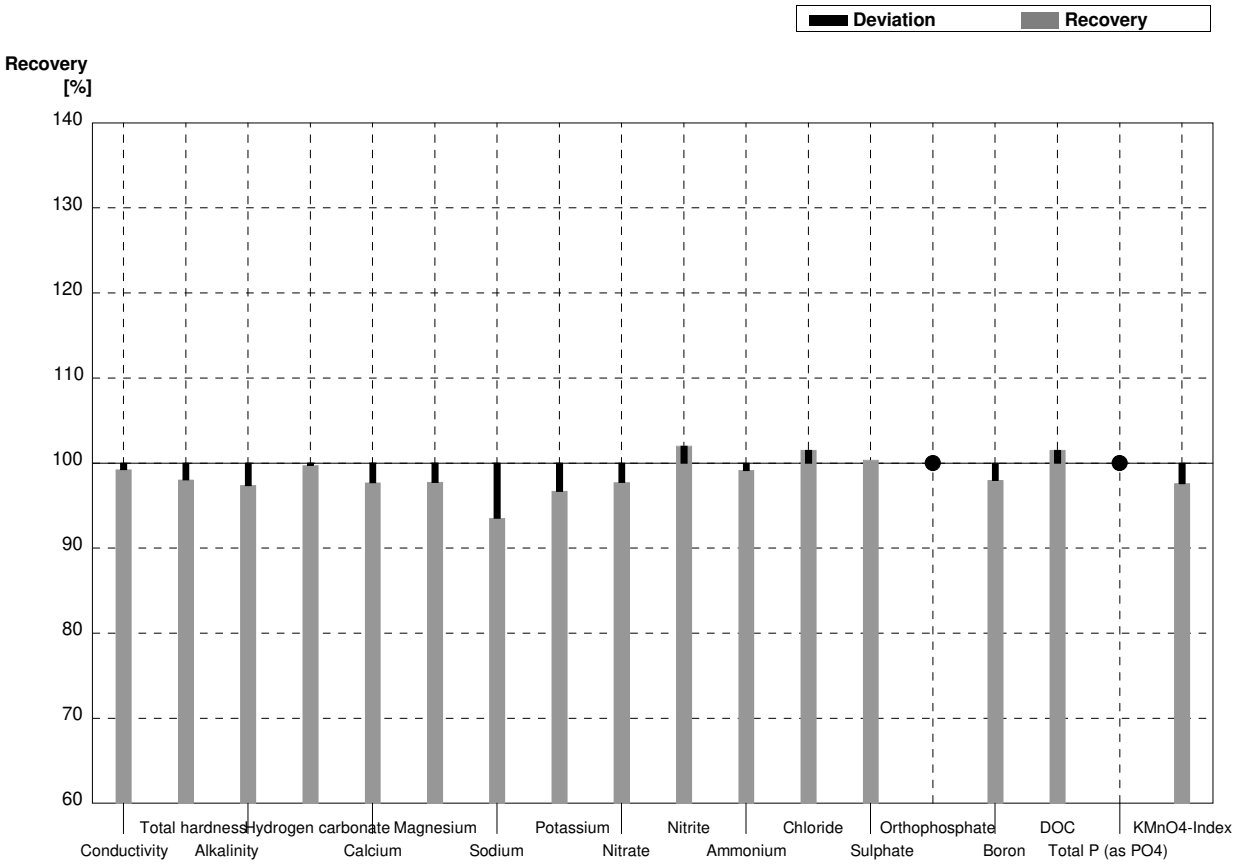
Sample N162A
Laboratory AD

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2	434	13	µS/cm	99%
Total hardness	1,350	0,014	1,31	0,11	mmol/l	97%
Alkalinity	2,93	0,03	2,86	0,14	mmol/l	98%
Hydrogen carbonate	175,8	1,7	175	8,4	mg/l	100%
Calcium	38,7	0,6	37,4	1,7	mg/l	97%
Magnesium	9,34	0,11	9,16	0,75	mg/l	98%
Sodium	37,7	0,3	35,5	2,5	mg/l	94%
Potassium	5,60	0,04	5,50	0,40	mg/l	98%
Nitrate	41,3	0,8	40,9	1,3	mg/l	99%
Nitrite	0,0404	0,0010	0,0405	0,0041	mg/l	100%
Ammonium	<0,01		<0,01		mg/l	•
Chloride	9,3	0,2	9,31	0,62	mg/l	100%
Sulphate	29,81	0,18	29,0	1,0	mg/l	97%
Orthophosphate	0,061	0,002	0,0657	0,005	mg/l	108%
Boron	0,0707	0,0011	0,0694	0,0086	mg/l	98%
DOC	4,72	0,05	4,84	0,77	mg/l	103%
Total P (as PO4)	0,107	0,002	0,115	0,0079	mg/l	107%
KMnO4-Index	4,62	0,16	4,50	0,68	mg/l	97%



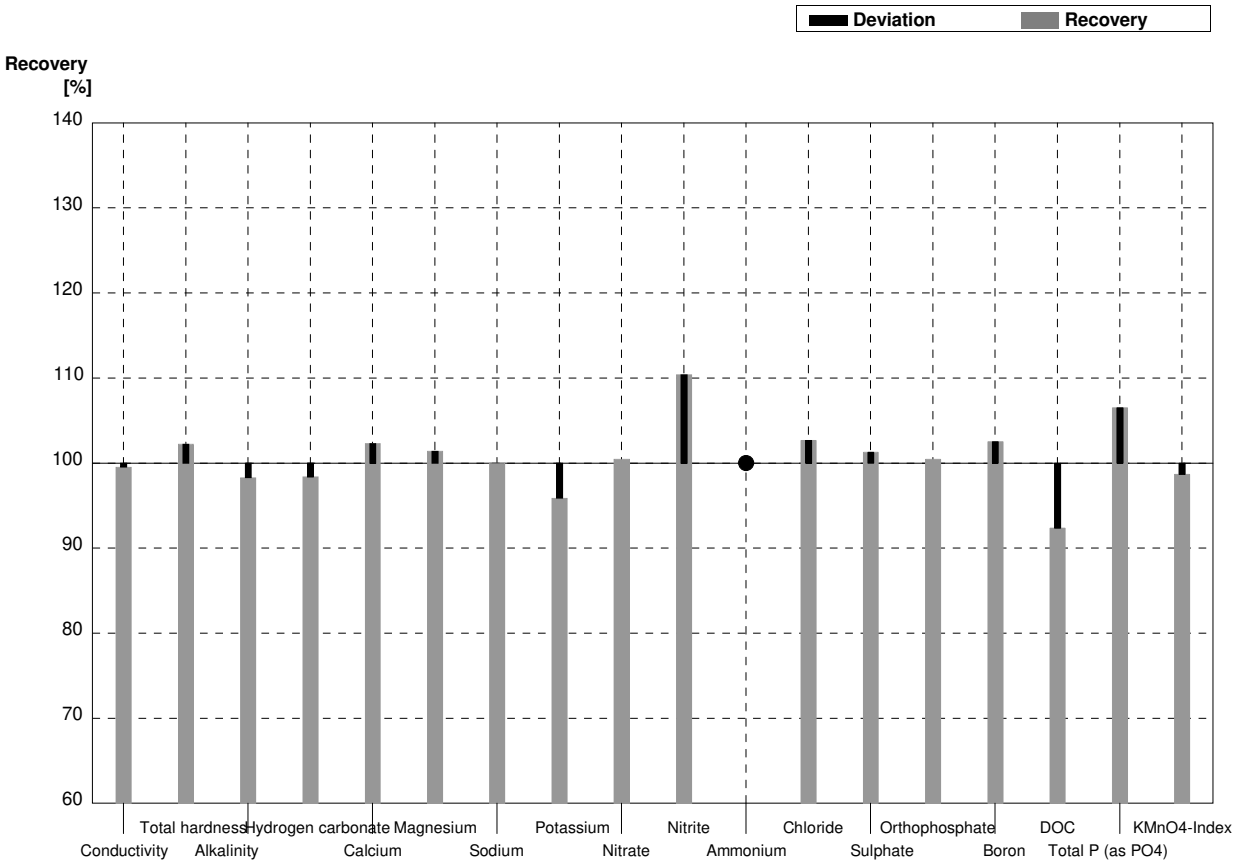
Sample N162B
Laboratory AD

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2	518	16	µS/cm	99%
Total hardness	1,785	0,017	1,75	0,14	mmol/l	98%
Alkalinity	1,91	0,03	1,86	0,089	mmol/l	97%
Hydrogen carbonate	113,3	1,5	113	5,4	mg/l	100%
Calcium	47,9	0,7	46,8	2,1	mg/l	98%
Magnesium	14,32	0,11	14,0	1,1	mg/l	98%
Sodium	30,9	0,3	28,9	2,1	mg/l	94%
Potassium	4,26	0,03	4,12	0,30	mg/l	97%
Nitrate	30,9	0,6	30,2	1,0	mg/l	98%
Nitrite	0,0936	0,0008	0,0955	0,01	mg/l	102%
Ammonium	0,058	0,004	0,0575	0,004	mg/l	99%
Chloride	52,2	0,8	53,0	3,6	mg/l	102%
Sulphate	55,4	0,3	55,6	1,8	mg/l	100%
Orthophosphate	<0,009		<0,015		mg/l	•
Boron	0,1092	0,0007	0,107	0,013	mg/l	98%
DOC	3,98	0,05	4,04	0,65	mg/l	102%
Total P (as PO4)	<0,009		<0,015		mg/l	•
KMnO4-Index	2,93	0,08	2,86	0,43	mg/l	98%



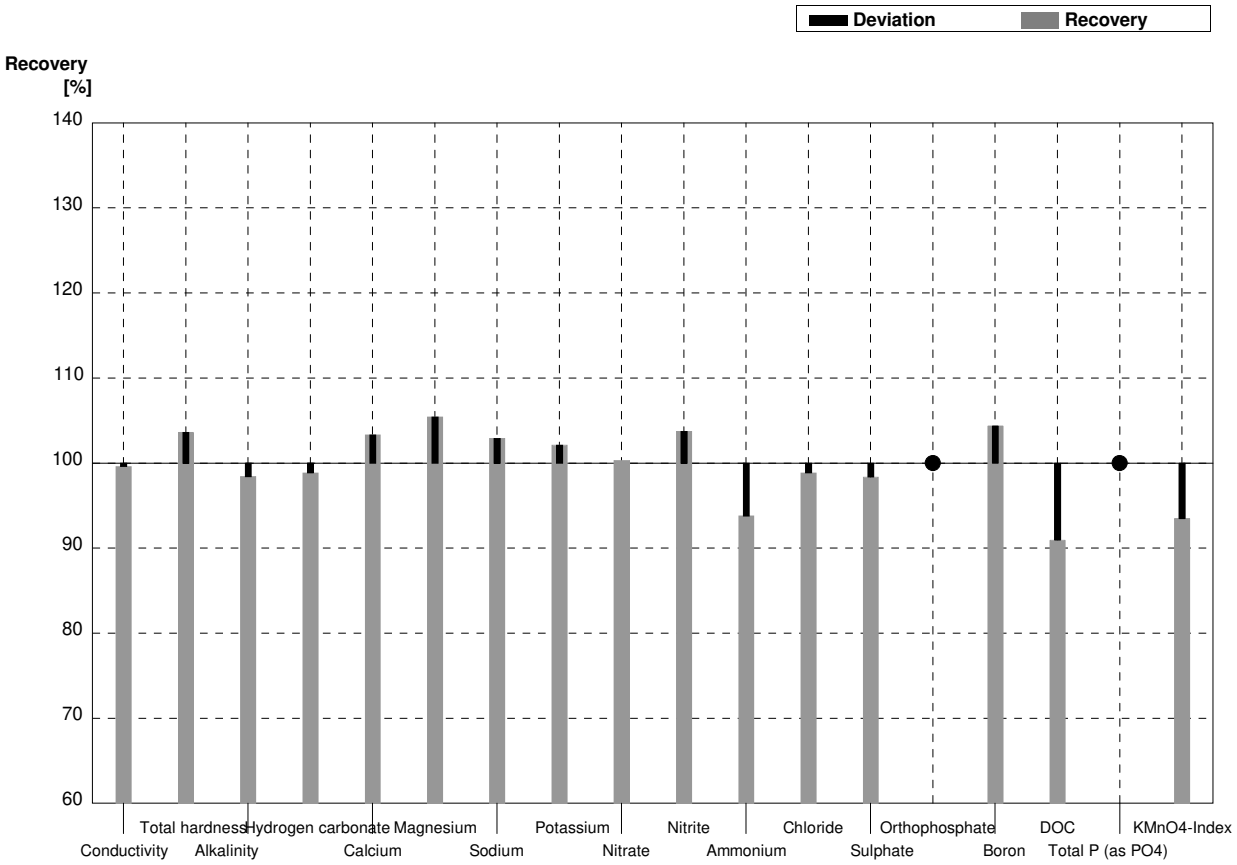
Sample N162A
Laboratory AE

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2	435	6,5	µS/cm	100%
Total hardness	1,350	0,014	1,38	0,021	mmol/l	102%
Alkalinity	2,93	0,03	2,88	0,006	mmol/l	98%
Hydrogen carbonate	175,8	1,7	173	0,58	mg/l	98%
Calcium	38,7	0,6	39,6	0,55	mg/l	102%
Magnesium	9,34	0,11	9,47	0,27	mg/l	101%
Sodium	37,7	0,3	37,7	1,4	mg/l	100%
Potassium	5,60	0,04	5,37	0,13	mg/l	96%
Nitrate	41,3	0,8	41,5	0,24	mg/l	100%
Nitrite	0,0404	0,0010	0,0446	0,001	mg/l	110%
Ammonium	<0,01		<0,010		mg/l	•
Chloride	9,3	0,2	9,55	0,050	mg/l	103%
Sulphate	29,81	0,18	30,2	0,12	mg/l	101%
Orthophosphate	0,061	0,002	0,0613	0,002	mg/l	100%
Boron	0,0707	0,0011	0,0725	0,003	mg/l	103%
DOC	4,72	0,05	4,36	0,028	mg/l	92%
Total P (as PO4)	0,107	0,002	0,114	0,005	mg/l	107%
KMnO4-Index	4,62	0,16	4,56	0,020	mg/l	99%



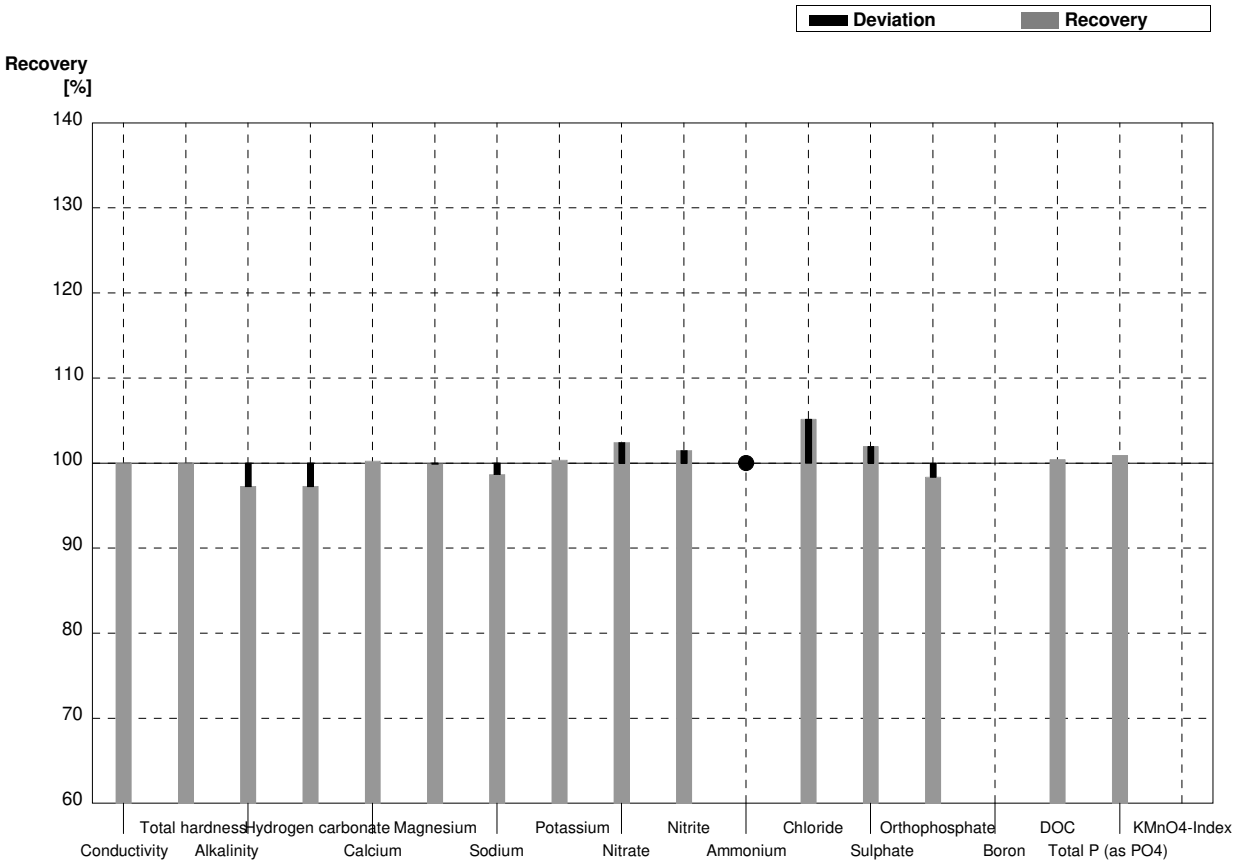
Sample N162B
Laboratory AE

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2	520	7,8	µS/cm	100%
Total hardness	1,785	0,017	1,85	0,021	mmol/l	104%
Alkalinity	1,91	0,03	1,88	0,006	mmol/l	98%
Hydrogen carbonate	113,3	1,5	112	0,58	mg/l	99%
Calcium	47,9	0,7	49,5	0,65	mg/l	103%
Magnesium	14,32	0,11	15,1	0,44	mg/l	105%
Sodium	30,9	0,3	31,8	0,93	mg/l	103%
Potassium	4,26	0,03	4,35	0,11	mg/l	102%
Nitrate	30,9	0,6	31,0	0,14	mg/l	100%
Nitrite	0,0936	0,0008	0,0971	0,002	mg/l	104%
Ammonium	0,058	0,004	0,0544	0,003	mg/l	94%
Chloride	52,2	0,8	51,6	0,24	mg/l	99%
Sulphate	55,4	0,3	54,5	0,23	mg/l	98%
Orthophosphate	<0,009		<0,015		mg/l	•
Boron	0,1092	0,0007	0,114	0,005	mg/l	104%
DOC	3,98	0,05	3,62	0,014	mg/l	91%
Total P (as PO4)	<0,009		<0,015		mg/l	•
KMnO4-Index	2,93	0,08	2,74	0,014	mg/l	94%



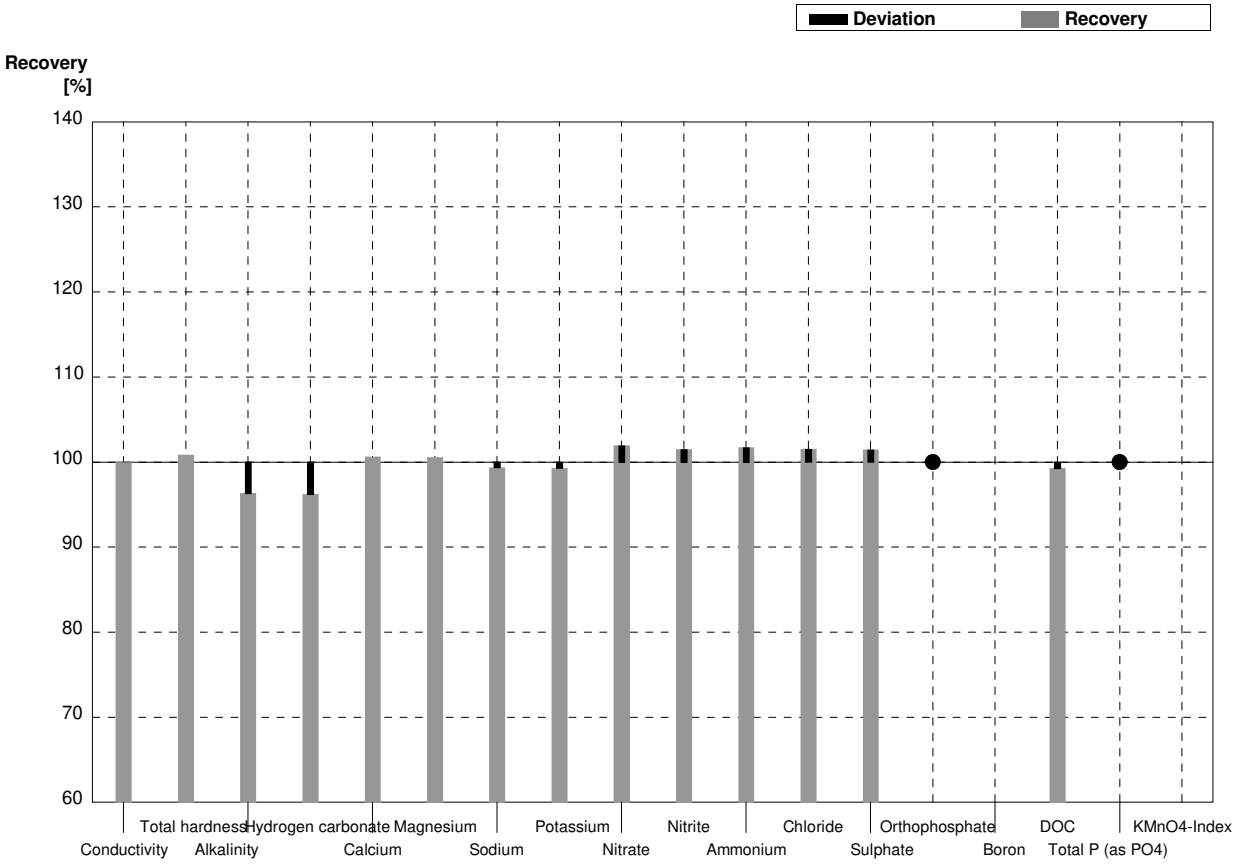
Sample **N162A**
Laboratory **AF**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2	437	18	µS/cm	100%
Total hardness	1,350	0,014	1,35	0,1	mmol/l	100%
Alkalinity	2,93	0,03	2,85	0,2	mmol/l	97%
Hydrogen carbonate	175,8	1,7	171	7	mg/l	97%
Calcium	38,7	0,6	38,8	4	mg/l	100%
Magnesium	9,34	0,11	9,33	1,2	mg/l	100%
Sodium	37,7	0,3	37,2	6	mg/l	99%
Potassium	5,60	0,04	5,62	0,8	mg/l	100%
Nitrate	41,3	0,8	42,3	3	mg/l	102%
Nitrite	0,0404	0,0010	0,0410	0,003	mg/l	101%
Ammonium	<0,01		<0,013		mg/l	•
Chloride	9,3	0,2	9,78	0,6	mg/l	105%
Sulphate	29,81	0,18	30,4	3	mg/l	102%
Orthophosphate	0,061	0,002	0,060	0,006	mg/l	98%
Boron	0,0707	0,0011			mg/l	
DOC	4,72	0,05	4,74	0,7	mg/l	100%
Total P (as PO4)	0,107	0,002	0,108	0,01	mg/l	101%
KMnO4-Index	4,62	0,16			mg/l	



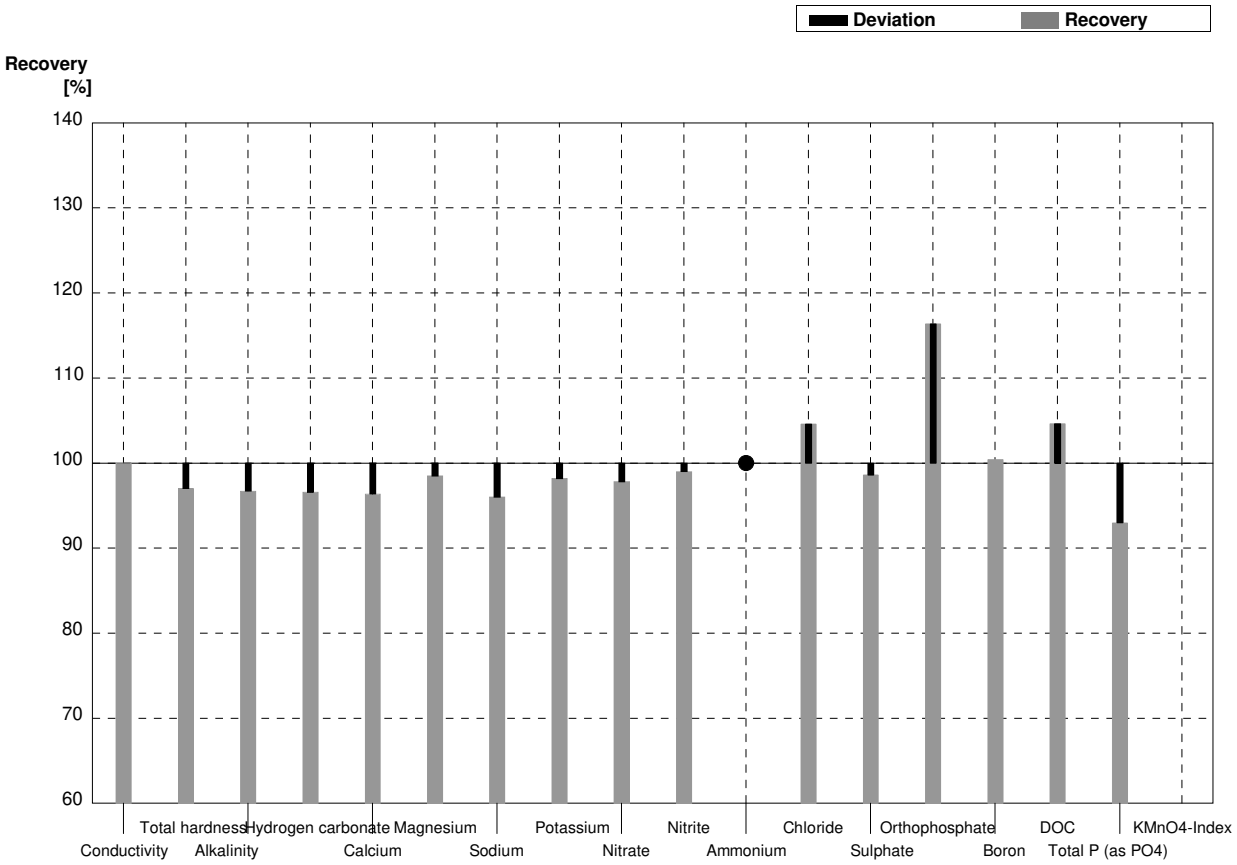
Sample **N162B**
Laboratory **AF**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2	522	21	µS/cm	100%
Total hardness	1,785	0,017	1,80	0,1	mmol/l	101%
Alkalinity	1,91	0,03	1,84	0,1	mmol/l	96%
Hydrogen carbonate	113,3	1,5	109	5	mg/l	96%
Calcium	47,9	0,7	48,2	4	mg/l	101%
Magnesium	14,32	0,11	14,4	1,8	mg/l	101%
Sodium	30,9	0,3	30,7	5	mg/l	99%
Potassium	4,26	0,03	4,23	0,6	mg/l	99%
Nitrate	30,9	0,6	31,5	3	mg/l	102%
Nitrite	0,0936	0,0008	0,095	0,007	mg/l	101%
Ammonium	0,058	0,004	0,059	0,007	mg/l	102%
Chloride	52,2	0,8	53,0	4	mg/l	102%
Sulphate	55,4	0,3	56,2	4	mg/l	101%
Orthophosphate	<0,009		<0,01		mg/l	•
Boron	0,1092	0,0007			mg/l	
DOC	3,98	0,05	3,95	0,6	mg/l	99%
Total P (as PO4)	<0,009		<0,013		mg/l	•
KMnO4-Index	2,93	0,08			mg/l	



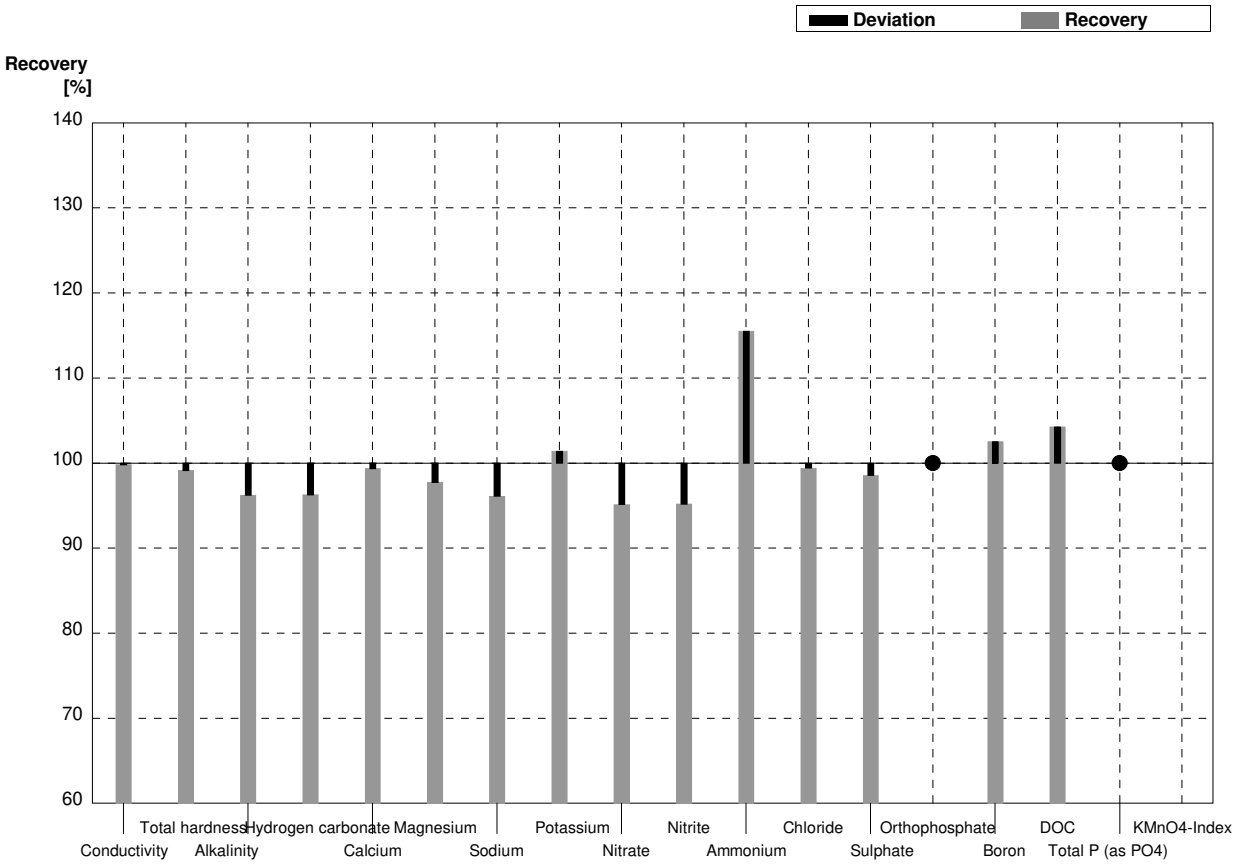
Sample **N162A**
Laboratory **AG**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2	437	17	µS/cm	100%
Total hardness	1,350	0,014	1,31	0,07	mmol/l	97%
Alkalinity	2,93	0,03	2,834	0,204	mmol/l	97%
Hydrogen carbonate	175,8	1,7	169,8	12,5	mg/l	97%
Calcium	38,7	0,6	37,3	1,8	mg/l	96%
Magnesium	9,34	0,11	9,2	0,6	mg/l	99%
Sodium	37,7	0,3	36,2	1,8	mg/l	96%
Potassium	5,60	0,04	5,5	0,2	mg/l	98%
Nitrate	41,3	0,8	40,4	2,5	mg/l	98%
Nitrite	0,0404	0,0010	0,0400	0,0048	mg/l	99%
Ammonium	<0,01		<0,010		mg/l	•
Chloride	9,3	0,2	9,73	0,98	mg/l	105%
Sulphate	29,81	0,18	29,4	2,8	mg/l	99%
Orthophosphate	0,061	0,002	0,071	0,010	mg/l	116%
Boron	0,0707	0,0011	0,071	0,007	mg/l	100%
DOC	4,72	0,05	4,94	0,94	mg/l	105%
Total P (as PO4)	0,107	0,002	0,0995	0,0169	mg/l	93%
KMnO4-Index	4,62	0,16	n,a		mg/l	



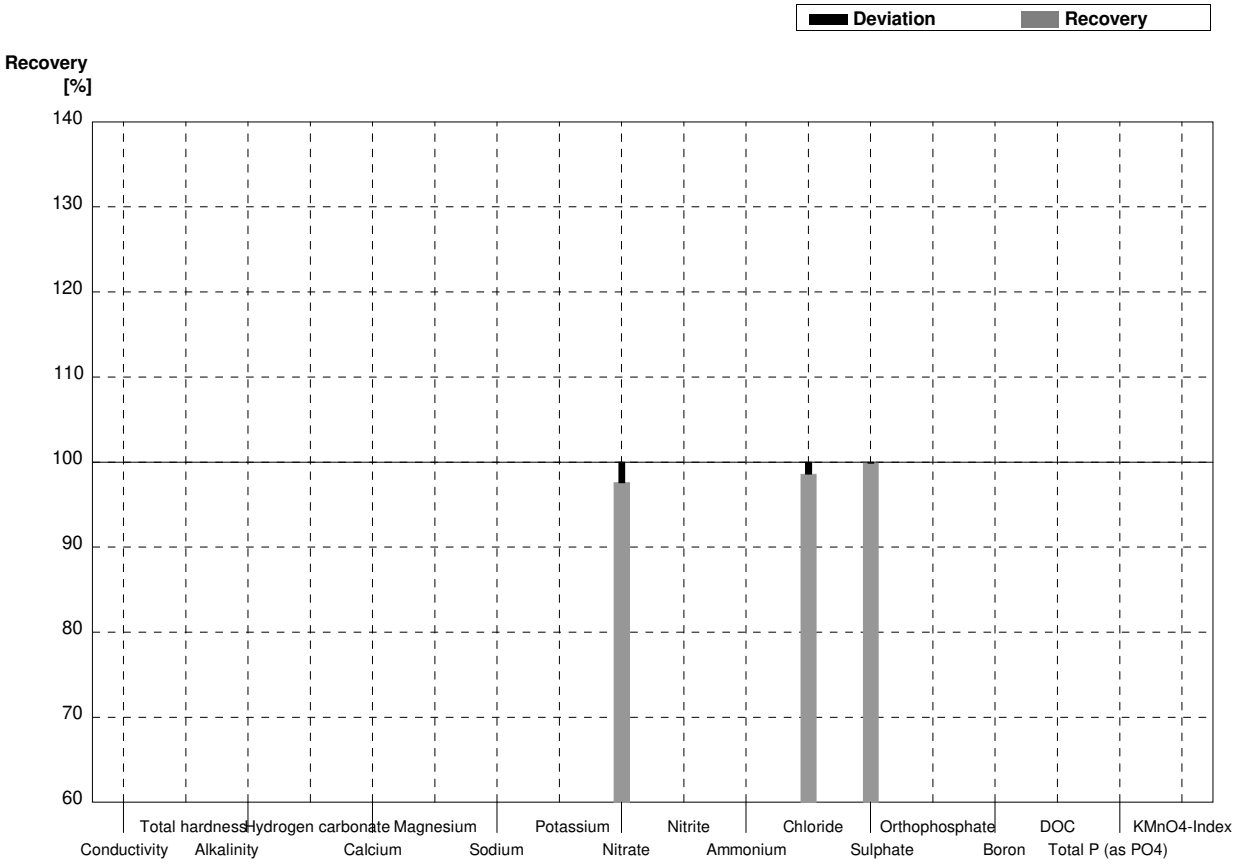
Sample **N162B**
Laboratory **AG**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2	521	21	µS/cm	100%
Total hardness	1,785	0,017	1,77	0,09	mmol/l	99%
Alkalinity	1,91	0,03	1,838	0,142	mmol/l	96%
Hydrogen carbonate	113,3	1,5	109,1	8,7	mg/l	96%
Calcium	47,9	0,7	47,6	2,3	mg/l	99%
Magnesium	14,32	0,11	14,0	0,9	mg/l	98%
Sodium	30,9	0,3	29,7	1,5	mg/l	96%
Potassium	4,26	0,03	4,32	0,20	mg/l	101%
Nitrate	30,9	0,6	29,4	1,8	mg/l	95%
Nitrite	0,0936	0,0008	0,0891	0,0082	mg/l	95%
Ammonium	0,058	0,004	0,067	0,012	mg/l	116%
Chloride	52,2	0,8	51,9	4,1	mg/l	99%
Sulphate	55,4	0,3	54,6	0,14	mg/l	99%
Orthophosphate	<0,009		<0,010		mg/l	•
Boron	0,1092	0,0007	0,112	0,011	mg/l	103%
DOC	3,98	0,05	4,15	0,81	mg/l	104%
Total P (as PO4)	<0,009		<0,010		mg/l	•
KMnO4-Index	2,93	0,08			mg/l	



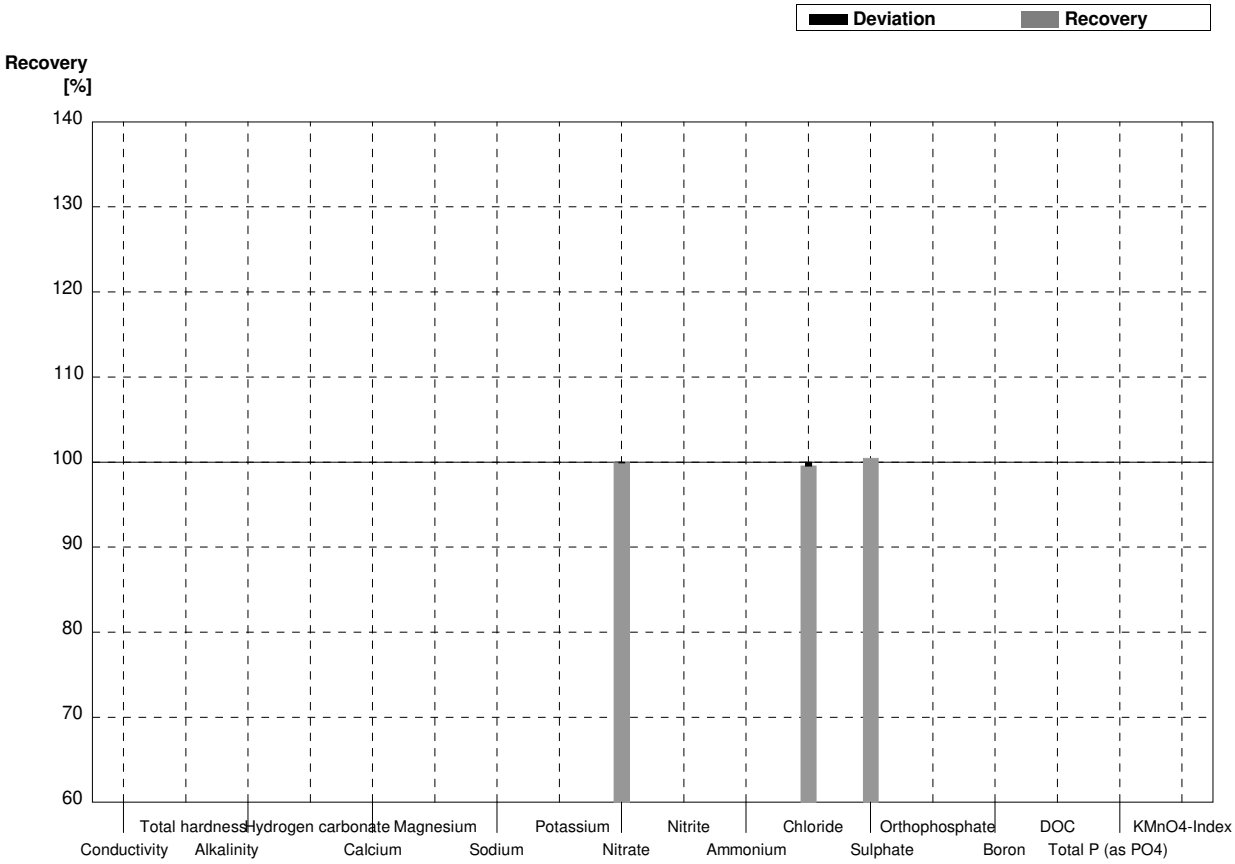
Sample N162A
Laboratory AH

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2			µS/cm	
Total hardness	1,350	0,014			mmol/l	
Alkalinity	2,93	0,03			mmol/l	
Hydrogen carbonate	175,8	1,7			mg/l	
Calcium	38,7	0,6			mg/l	
Magnesium	9,34	0,11			mg/l	
Sodium	37,7	0,3			mg/l	
Potassium	5,60	0,04			mg/l	
Nitrate	41,3	0,8	40,31	4,03	mg/l	98%
Nitrite	0,0404	0,0010			mg/l	
Ammonium	<0,01				mg/l	
Chloride	9,3	0,2	9,17	0,92	mg/l	99%
Sulphate	29,81	0,18	29,78	2,98	mg/l	100%
Orthophosphate	0,061	0,002			mg/l	
Boron	0,0707	0,0011			mg/l	
DOC	4,72	0,05			mg/l	
Total P (as PO4)	0,107	0,002			mg/l	
KMnO4-Index	4,62	0,16			mg/l	



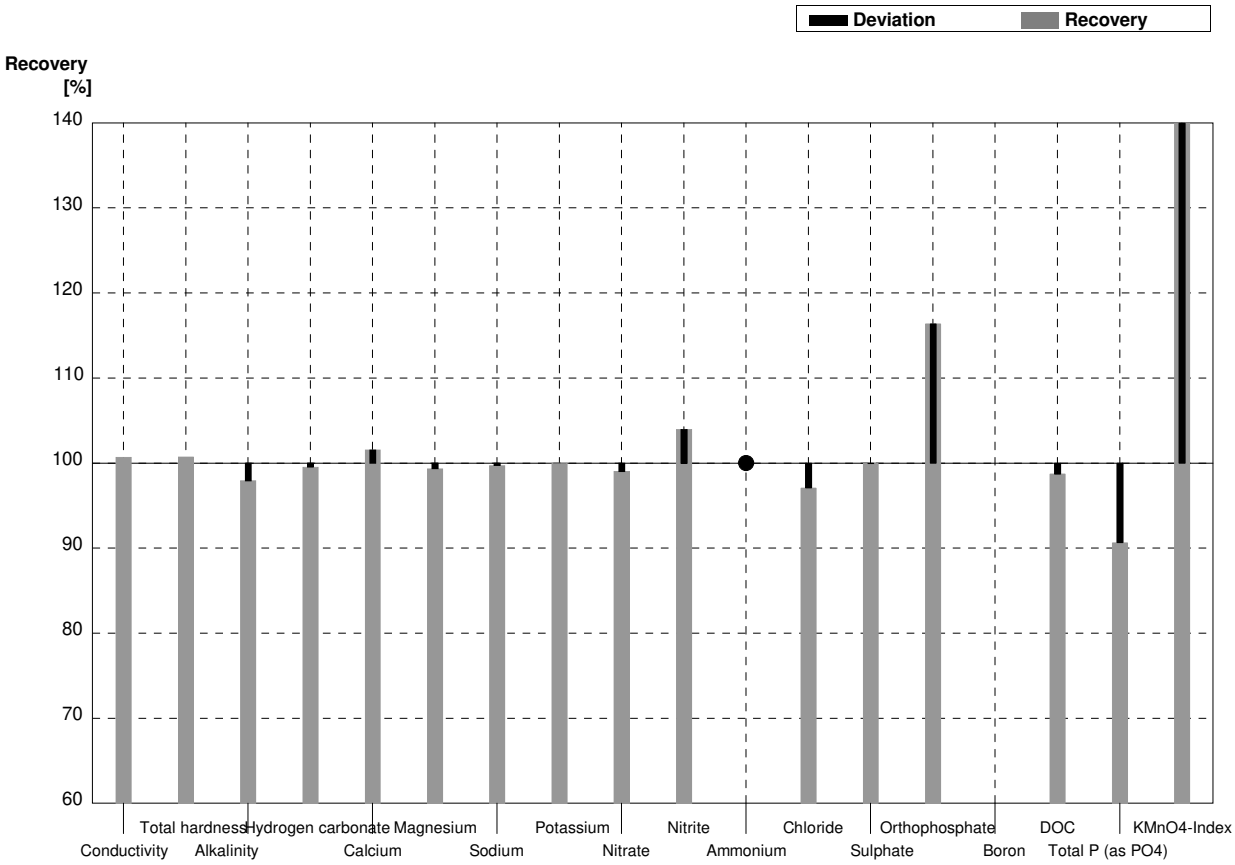
Sample N162B
Laboratory AH

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2			µS/cm	
Total hardness	1,785	0,017			mmol/l	
Alkalinity	1,91	0,03			mmol/l	
Hydrogen carbonate	113,3	1,5			mg/l	
Calcium	47,9	0,7			mg/l	
Magnesium	14,32	0,11			mg/l	
Sodium	30,9	0,3			mg/l	
Potassium	4,26	0,03			mg/l	
Nitrate	30,9	0,6	30,88	3,09	mg/l	100%
Nitrite	0,0936	0,0008			mg/l	
Ammonium	0,058	0,004			mg/l	
Chloride	52,2	0,8	51,97	5,20	mg/l	100%
Sulphate	55,4	0,3	55,66	5,57	mg/l	100%
Orthophosphate	<0,009				mg/l	
Boron	0,1092	0,0007			mg/l	
DOC	3,98	0,05			mg/l	
Total P (as PO4)	<0,009				mg/l	
KMnO4-Index	2,93	0,08			mg/l	



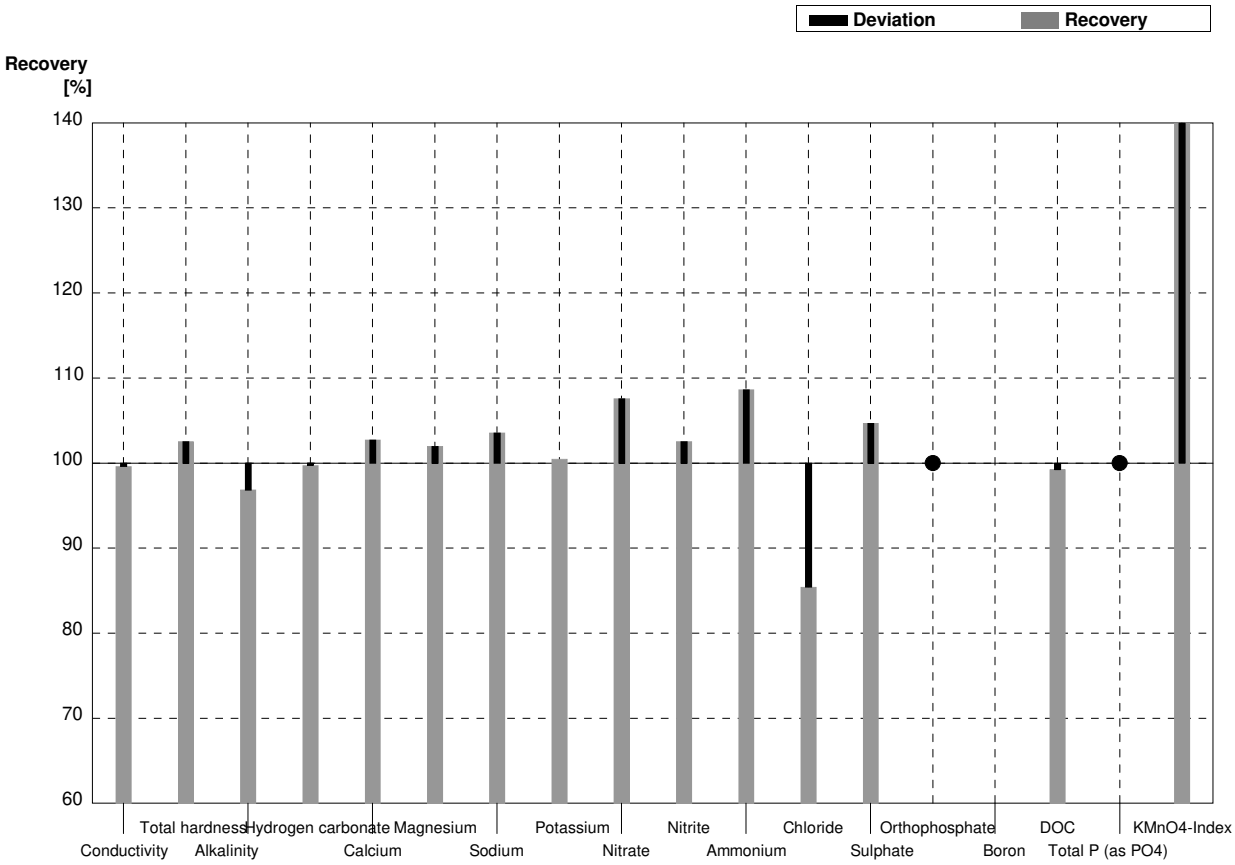
Sample N162A
Laboratory AI

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2	440	9	µS/cm	101%
Total hardness	1,350	0,014	1,36	0,1	mmol/l	101%
Alkalinity	2,93	0,03	2,87	0,15	mmol/l	98%
Hydrogen carbonate	175,8	1,7	175	14	mg/l	100%
Calcium	38,7	0,6	39,3	3,1	mg/l	102%
Magnesium	9,34	0,11	9,28	0,74	mg/l	99%
Sodium	37,7	0,3	37,6	2,3	mg/l	100%
Potassium	5,60	0,04	5,6	0,62	mg/l	100%
Nitrate	41,3	0,8	40,9	3,3	mg/l	99%
Nitrite	0,0404	0,0010	0,0420	0,005	mg/l	104%
Ammonium	<0,01		<0,020		mg/l	•
Chloride	9,3	0,2	9,03	0,99	mg/l	97%
Sulphate	29,81	0,18	29,8	1,8	mg/l	100%
Orthophosphate	0,061	0,002	0,071	0,006	mg/l	116%
Boron	0,0707	0,0011			mg/l	
DOC	4,72	0,05	4,66	0,56	mg/l	99%
Total P (as PO4)	0,107	0,002	0,097	0,009	mg/l	91%
KMnO4-Index	4,62	0,16	20,1	1,407	mg/l	435%



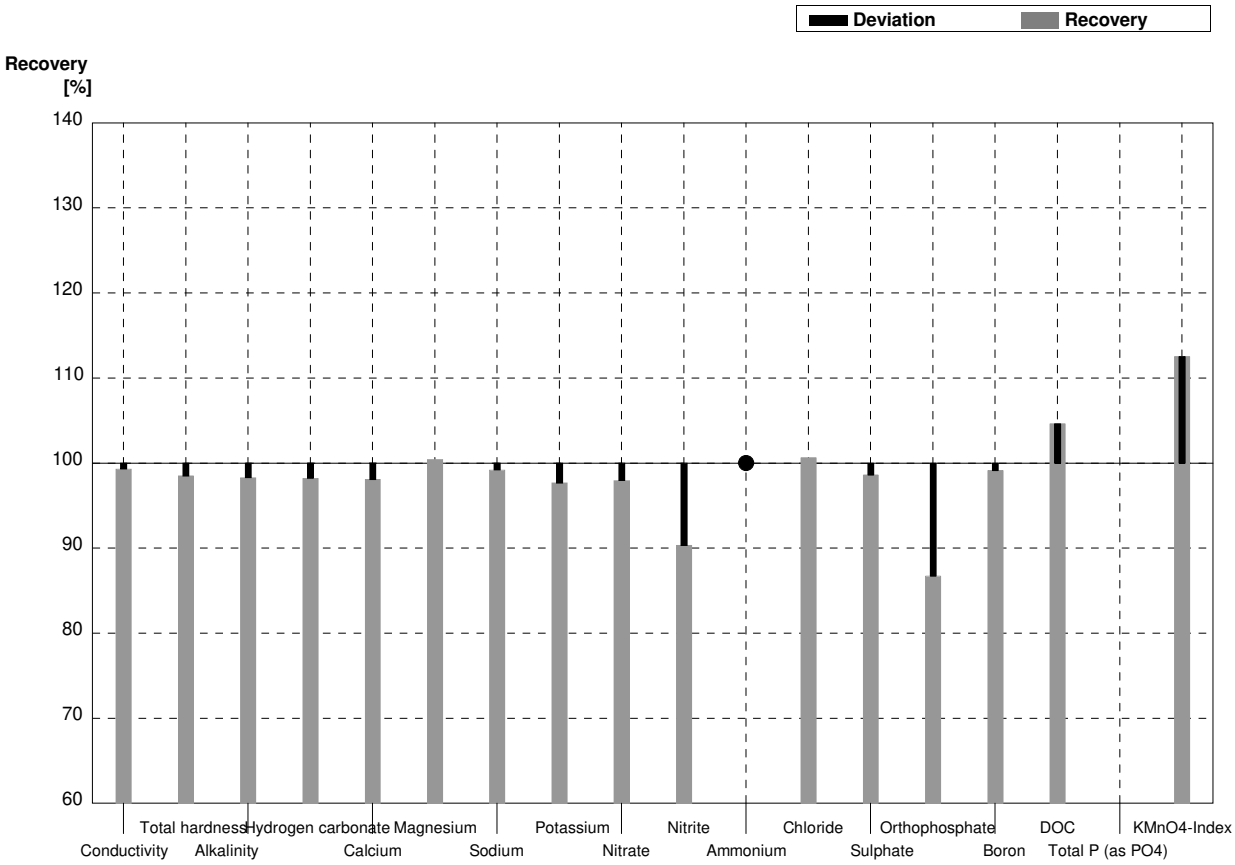
Sample N162B
Laboratory AI

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2	520	10	µS/cm	100%
Total hardness	1,785	0,017	1,83	0,1	mmol/l	103%
Alkalinity	1,91	0,03	1,85	0,10	mmol/l	97%
Hydrogen carbonate	113,3	1,5	113	9	mg/l	100%
Calcium	47,9	0,7	49,2	3,9	mg/l	103%
Magnesium	14,32	0,11	14,6	1,2	mg/l	102%
Sodium	30,9	0,3	32,0	1,9	mg/l	104%
Potassium	4,26	0,03	4,28	0,47	mg/l	100%
Nitrate	30,9	0,6	33,24	2,7	mg/l	108%
Nitrite	0,0936	0,0008	0,096	0,012	mg/l	103%
Ammonium	0,058	0,004	0,063	0,014	mg/l	109%
Chloride	52,2	0,8	44,6	3,6	mg/l	85%
Sulphate	55,4	0,3	58	3,5	mg/l	105%
Orthophosphate	<0,009		<0,003		mg/l	•
Boron	0,1092	0,0007			mg/l	
DOC	3,98	0,05	3,95	0,47	mg/l	99%
Total P (as PO4)	<0,009		<0,003		mg/l	•
KMnO4-Index	2,93	0,08	12,7	0,889	mg/l	433%



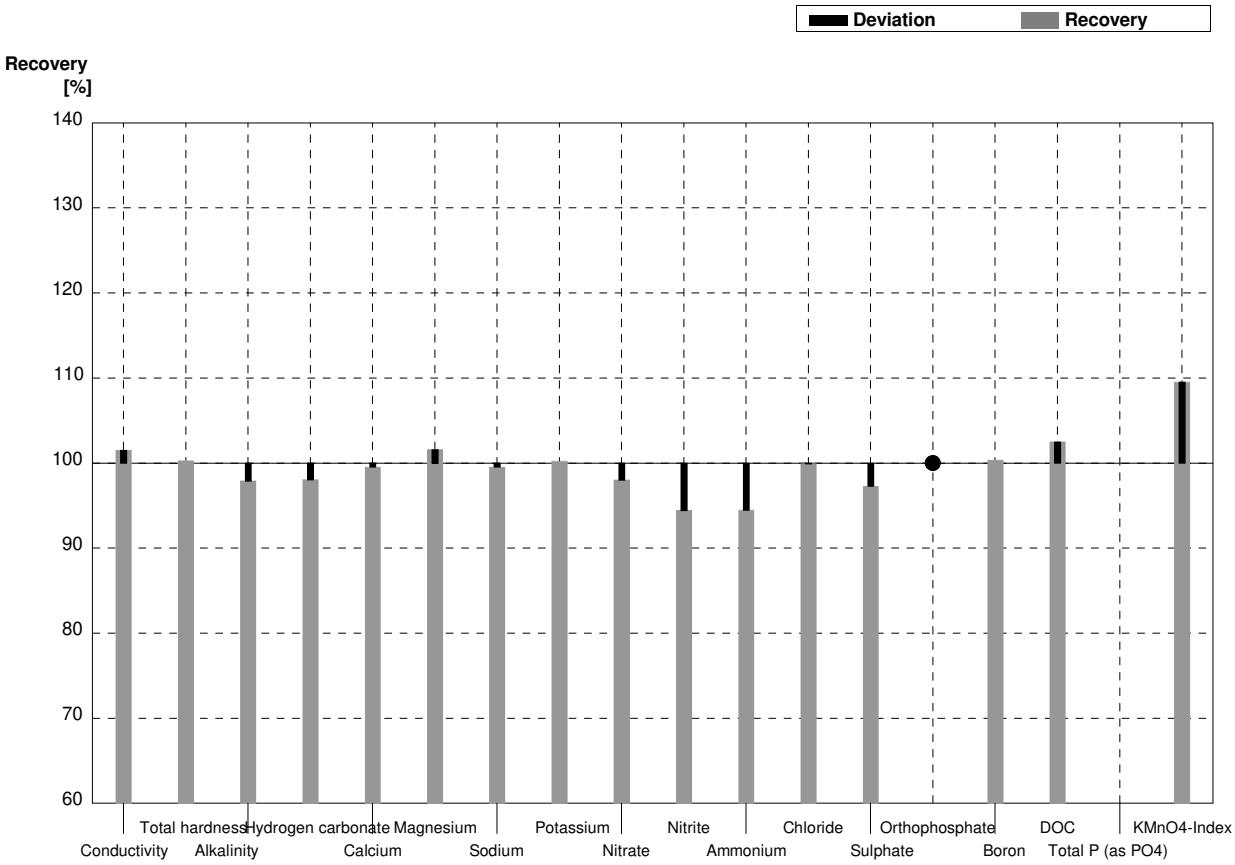
Sample N162A
Laboratory AJ

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2	434		µS/cm	99%
Total hardness	1,350	0,014	1,33		mmol/l	99%
Alkalinity	2,93	0,03	2,88		mmol/l	98%
Hydrogen carbonate	175,8	1,7	172,7		mg/l	98%
Calcium	38,7	0,6	37,96		mg/l	98%
Magnesium	9,34	0,11	9,38		mg/l	100%
Sodium	37,7	0,3	37,40		mg/l	99%
Potassium	5,60	0,04	5,47		mg/l	98%
Nitrate	41,3	0,8	40,46		mg/l	98%
Nitrite	0,0404	0,0010	0,0365		mg/l	90%
Ammonium	<0,01		<0,05		mg/l	•
Chloride	9,3	0,2	9,36		mg/l	101%
Sulphate	29,81	0,18	29,40		mg/l	99%
Orthophosphate	0,061	0,002	0,0529		mg/l	87%
Boron	0,0707	0,0011	0,0701		mg/l	99%
DOC	4,72	0,05	4,94		mg/l	105%
Total P (as PO4)	0,107	0,002			mg/l	
KMnO4-Index	4,62	0,16	5,20		mg/l	113%



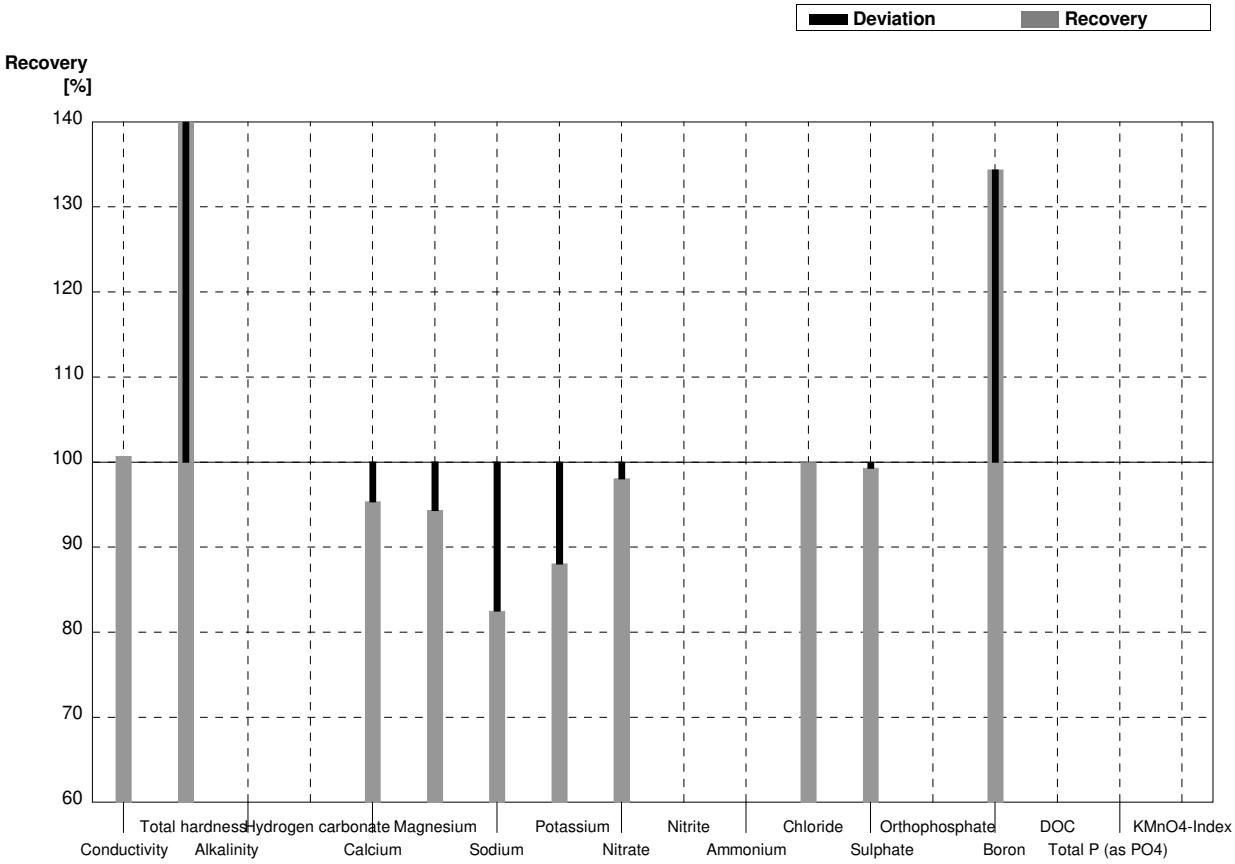
Sample N162B
Laboratory AJ

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2	530		µS/cm	102%
Total hardness	1,785	0,017	1,79		mmol/l	100%
Alkalinity	1,91	0,03	1,87		mmol/l	98%
Hydrogen carbonate	113,3	1,5	111,1		mg/l	98%
Calcium	47,9	0,7	47,68		mg/l	100%
Magnesium	14,32	0,11	14,55		mg/l	102%
Sodium	30,9	0,3	30,76		mg/l	100%
Potassium	4,26	0,03	4,27		mg/l	100%
Nitrate	30,9	0,6	30,29		mg/l	98%
Nitrite	0,0936	0,0008	0,0884		mg/l	94%
Ammonium	0,058	0,004	0,0548		mg/l	94%
Chloride	52,2	0,8	52,17		mg/l	100%
Sulphate	55,4	0,3	53,90		mg/l	97%
Orthophosphate	<0,009		<0,01		mg/l	•
Boron	0,1092	0,0007	0,1096		mg/l	100%
DOC	3,98	0,05	4,08		mg/l	103%
Total P (as PO4)	<0,009				mg/l	
KMnO4-Index	2,93	0,08	3,21		mg/l	110%



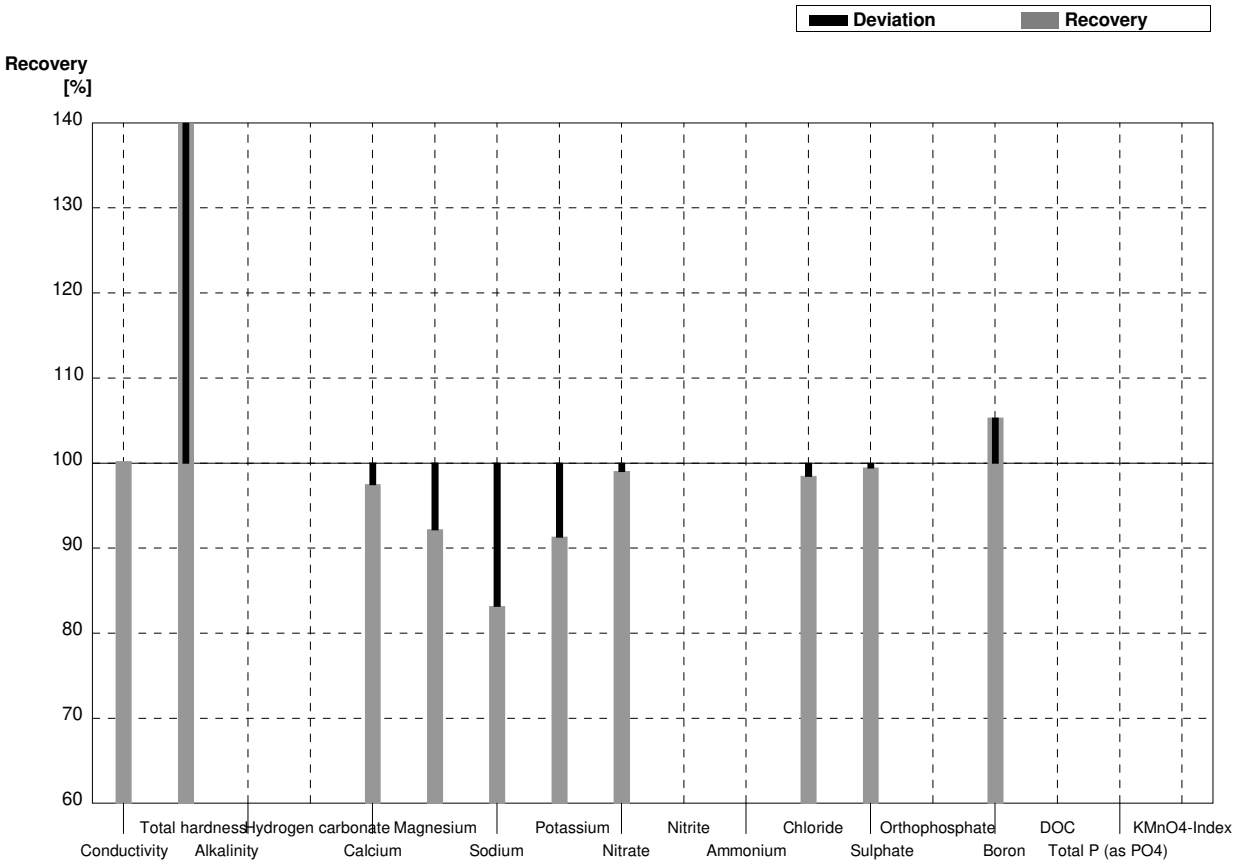
Sample **N162A**
Laboratory **AK**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2	440	1,8	µS/cm	101%
Total hardness	1,350	0,014	7,20	0,20	mmol/l	533%
Alkalinity	2,93	0,03			mmol/l	
Hydrogen carbonate	175,8	1,7			mg/l	
Calcium	38,7	0,6	36,9	0,8	mg/l	95%
Magnesium	9,34	0,11	8,81	0,25	mg/l	94%
Sodium	37,7	0,3	31,1	0,7	mg/l	82%
Potassium	5,60	0,04	4,93	0,16	mg/l	88%
Nitrate	41,3	0,8	40,5	0,3	mg/l	98%
Nitrite	0,0404	0,0010			mg/l	
Ammonium	<0,01				mg/l	
Chloride	9,3	0,2	9,30	0,1	mg/l	100%
Sulphate	29,81	0,18	29,6	0,1	mg/l	99%
Orthophosphate	0,061	0,002			mg/l	
Boron	0,0707	0,0011	0,095	0,002	mg/l	134%
DOC	4,72	0,05			mg/l	
Total P (as PO4)	0,107	0,002			mg/l	
KMnO4-Index	4,62	0,16			mg/l	



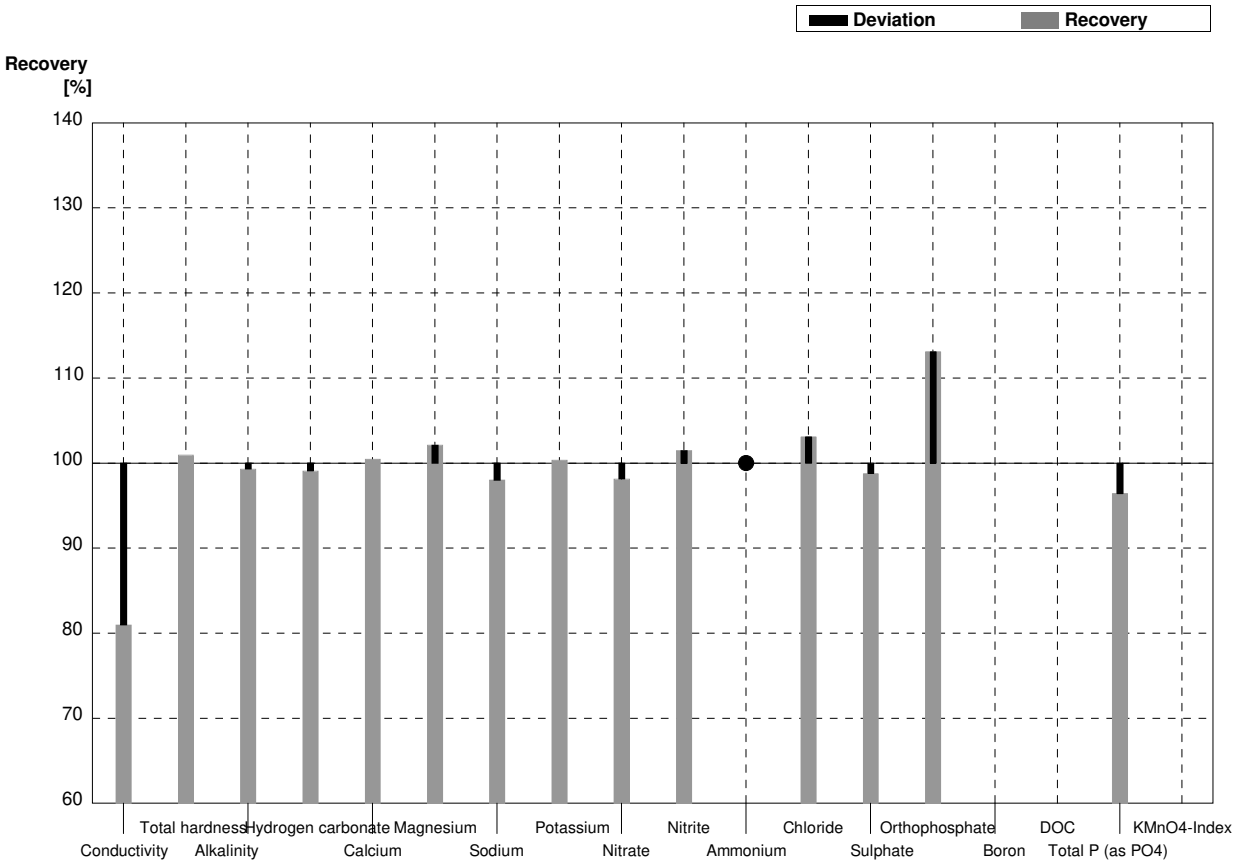
Sample **N162B**
Laboratory **AK**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2	523	1,8	µS/cm	100%
Total hardness	1,785	0,017	9,58	0,41	mmol/l	537%
Alkalinity	1,91	0,03			mmol/l	
Hydrogen carbonate	113,3	1,5			mg/l	
Calcium	47,9	0,7	46,7	1,5	mg/l	97%
Magnesium	14,32	0,11	13,2	0,4	mg/l	92%
Sodium	30,9	0,3	25,7	0,8	mg/l	83%
Potassium	4,26	0,03	3,89	0,10	mg/l	91%
Nitrate	30,9	0,6	30,6	0,3	mg/l	99%
Nitrite	0,0936	0,0008			mg/l	
Ammonium	0,058	0,004			mg/l	
Chloride	52,2	0,8	51,4	0,8	mg/l	98%
Sulphate	55,4	0,3	55,1	0,3	mg/l	99%
Orthophosphate	<0,009				mg/l	
Boron	0,1092	0,0007	0,115	0,011	mg/l	105%
DOC	3,98	0,05			mg/l	
Total P (as PO4)	<0,009				mg/l	
KMnO4-Index	2,93	0,08			mg/l	



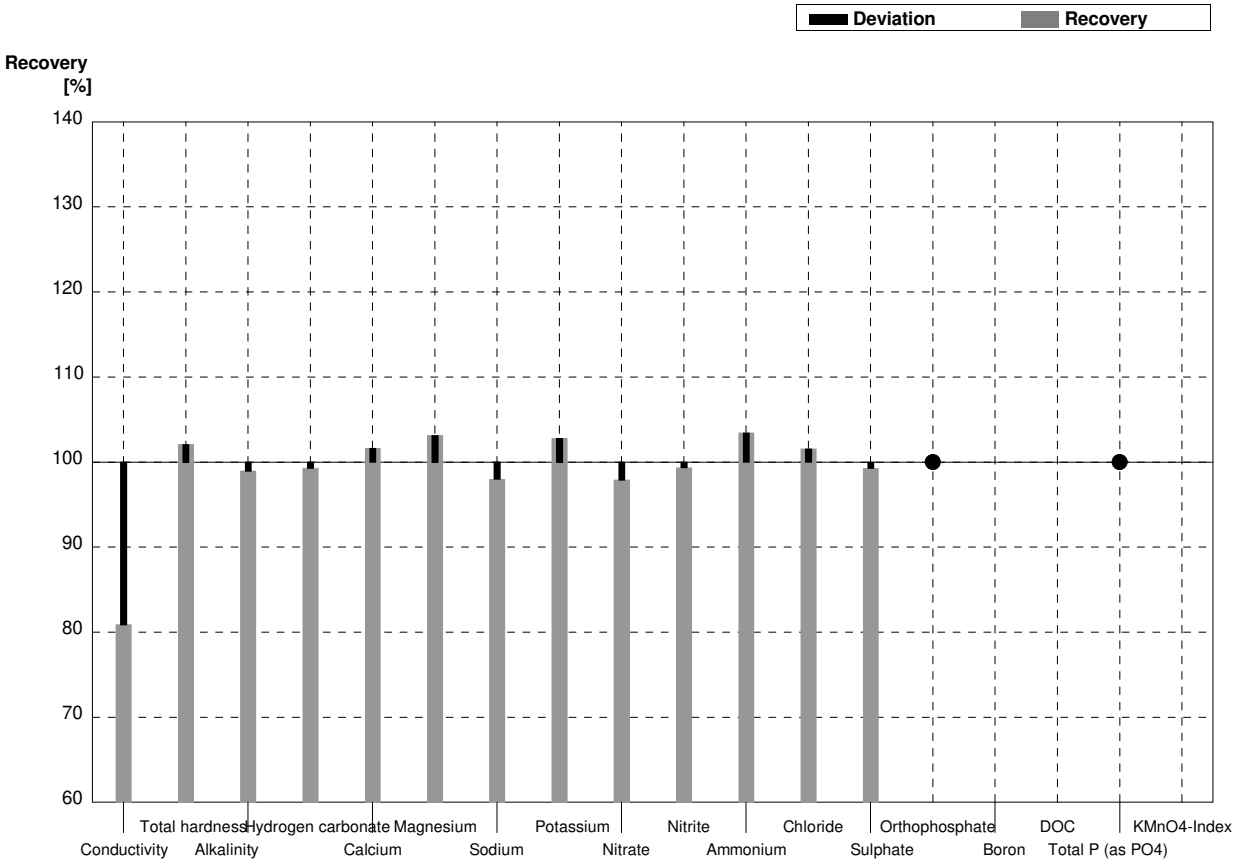
Sample N162A
Laboratory AL

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2	353,91	17,70	µS/cm	81%
Total hardness	1,350	0,014	1,363		mmol/l	101%
Alkalinity	2,93	0,03	2,91	0,15	mmol/l	99%
Hydrogen carbonate	175,8	1,7	174,2	8,71	mg/l	99%
Calcium	38,7	0,6	38,89	2,33	mg/l	100%
Magnesium	9,34	0,11	9,54	0,57	mg/l	102%
Sodium	37,7	0,3	36,95	2,22	mg/l	98%
Potassium	5,60	0,04	5,62	0,34	mg/l	100%
Nitrate	41,3	0,8	40,54	4,05	mg/l	98%
Nitrite	0,0404	0,0010	0,0410	0,0041	mg/l	101%
Ammonium	<0,01		<0,02		mg/l	•
Chloride	9,3	0,2	9,59	0,96	mg/l	103%
Sulphate	29,81	0,18	29,45	2,95	mg/l	99%
Orthophosphate	0,061	0,002	0,0690	0,0104	mg/l	113%
Boron	0,0707	0,0011	n,u.		mg/l	
DOC	4,72	0,05	n,u.		mg/l	
Total P (as PO4)	0,107	0,002	0,1032	0,0155	mg/l	96%
KMnO4-Index	4,62	0,16	n,u.		mg/l	



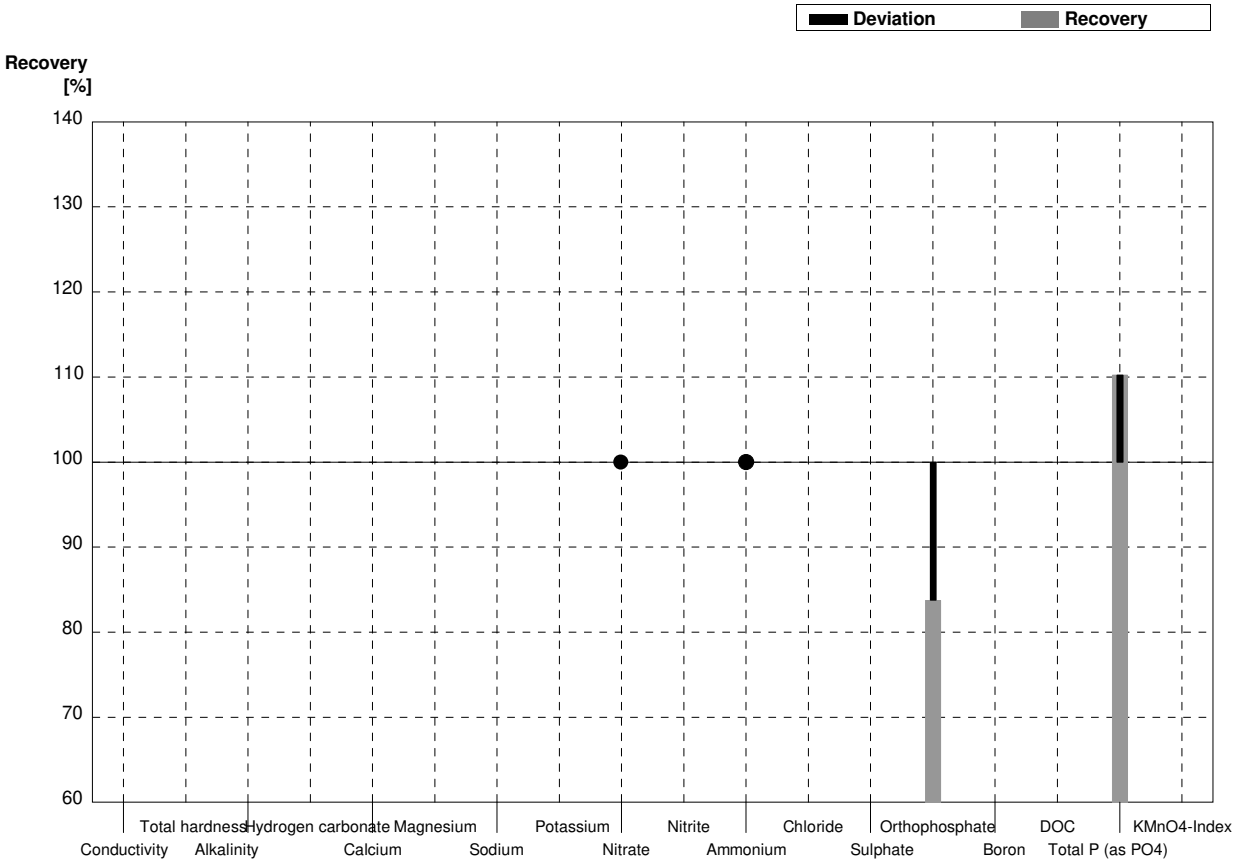
Sample N162B
Laboratory AL

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2	422,29	21,11	µS/cm	81%
Total hardness	1,785	0,017	1,822		mmol/l	102%
Alkalinity	1,91	0,03	1,89	0,09	mmol/l	99%
Hydrogen carbonate	113,3	1,5	112,5	5,63	mg/l	99%
Calcium	47,9	0,7	48,68	2,92	mg/l	102%
Magnesium	14,32	0,11	14,77	0,89	mg/l	103%
Sodium	30,9	0,3	30,28	1,82	mg/l	98%
Potassium	4,26	0,03	4,38	0,26	mg/l	103%
Nitrate	30,9	0,6	30,25	3,03	mg/l	98%
Nitrite	0,0936	0,0008	0,0930	0,0093	mg/l	99%
Ammonium	0,058	0,004	0,060	0,009	mg/l	103%
Chloride	52,2	0,8	53,01	5,30	mg/l	102%
Sulphate	55,4	0,3	55,00	5,50	mg/l	99%
Orthophosphate	<0,009		<0,0153		mg/l	•
Boron	0,1092	0,0007	n,u.		mg/l	
DOC	3,98	0,05	n,u.		mg/l	
Total P (as PO4)	<0,009		<0,0307		mg/l	•
KMnO4-Index	2,93	0,08	n,u		mg/l	



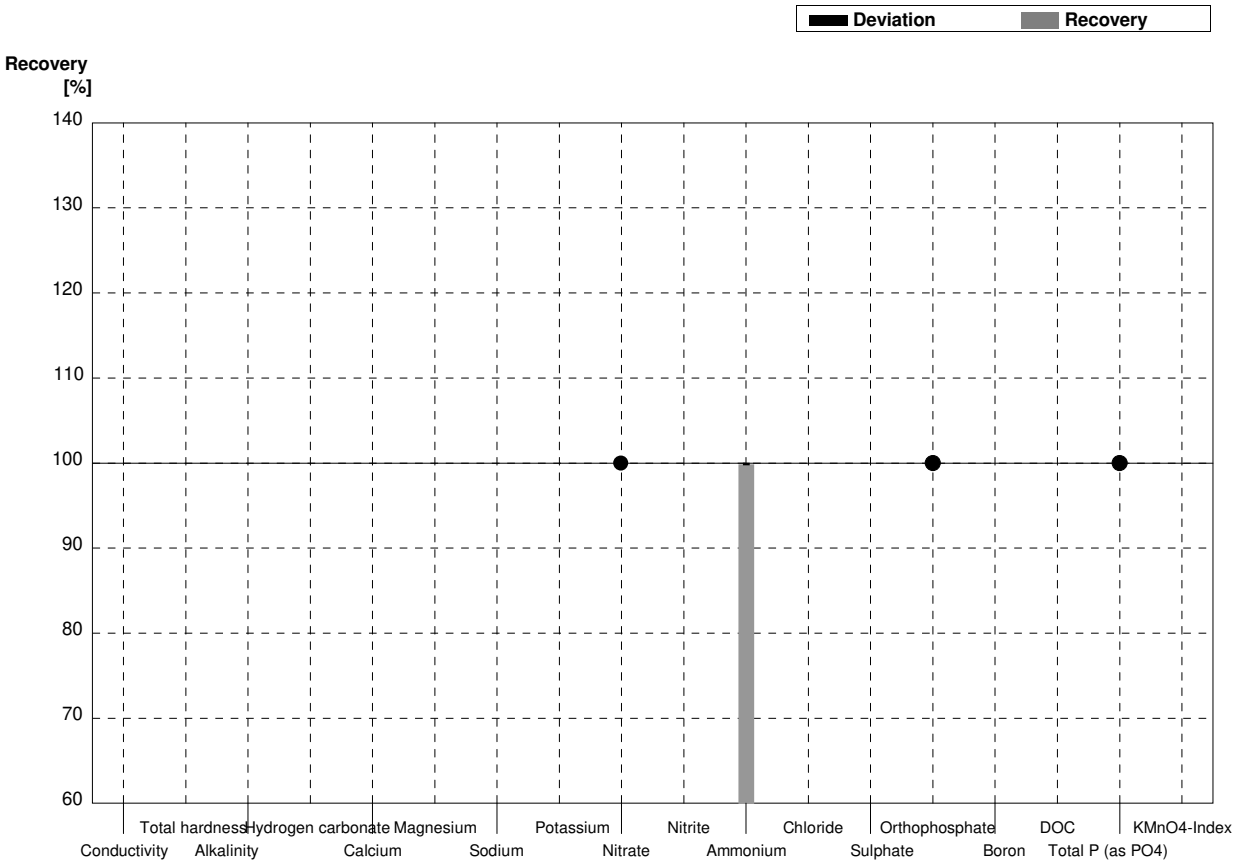
Sample N162A
Laboratory AM

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2			µS/cm	
Total hardness	1,350	0,014			mmol/l	
Alkalinity	2,93	0,03			mmol/l	
Hydrogen carbonate	175,8	1,7			mg/l	
Calcium	38,7	0,6			mg/l	
Magnesium	9,34	0,11			mg/l	
Sodium	37,7	0,3			mg/l	
Potassium	5,60	0,04			mg/l	
Nitrate	41,3	0,8	>30		mg/l	•
Nitrite	0,0404	0,0010			mg/l	
Ammonium	<0,01		<0,01		mg/l	•
Chloride	9,3	0,2			mg/l	
Sulphate	29,81	0,18			mg/l	
Orthophosphate	0,061	0,002	0,0511	0,0035	mg/l	84%
Boron	0,0707	0,0011			mg/l	
DOC	4,72	0,05			mg/l	
Total P (as PO4)	0,107	0,002	0,1180	0,0043	mg/l	110%
KMnO4-Index	4,62	0,16			mg/l	



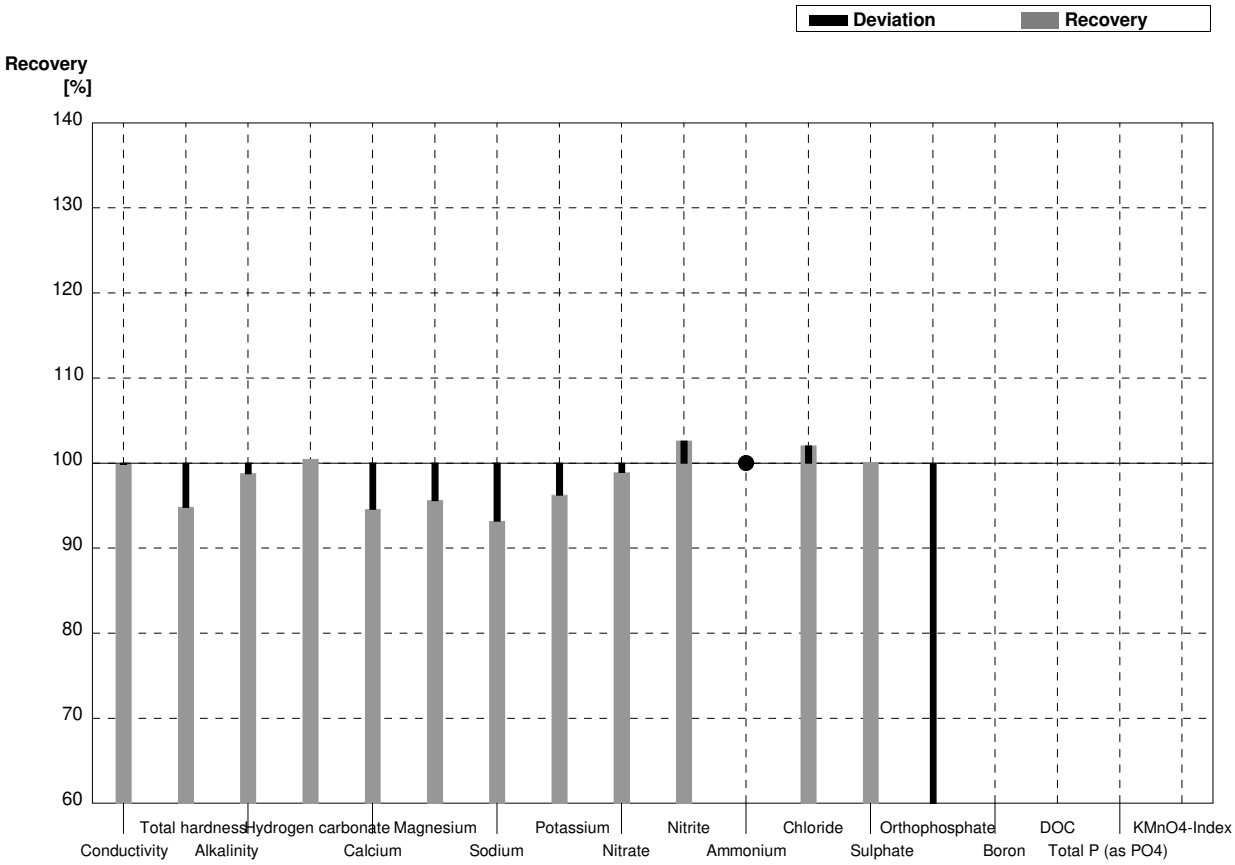
Sample **N162B**
Laboratory **AM**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2			µS/cm	
Total hardness	1,785	0,017			mmol/l	
Alkalinity	1,91	0,03			mmol/l	
Hydrogen carbonate	113,3	1,5			mg/l	
Calcium	47,9	0,7			mg/l	
Magnesium	14,32	0,11			mg/l	
Sodium	30,9	0,3			mg/l	
Potassium	4,26	0,03			mg/l	
Nitrate	30,9	0,6	>30		mg/l	•
Nitrite	0,0936	0,0008			mg/l	
Ammonium	0,058	0,004	0,0579	0,0036	mg/l	100%
Chloride	52,2	0,8			mg/l	
Sulphate	55,4	0,3			mg/l	
Orthophosphate	<0,009		<0,019		mg/l	•
Boron	0,1092	0,0007			mg/l	
DOC	3,98	0,05			mg/l	
Total P (as PO4)	<0,009		<0,02		mg/l	•
KMnO4-Index	2,93	0,08			mg/l	



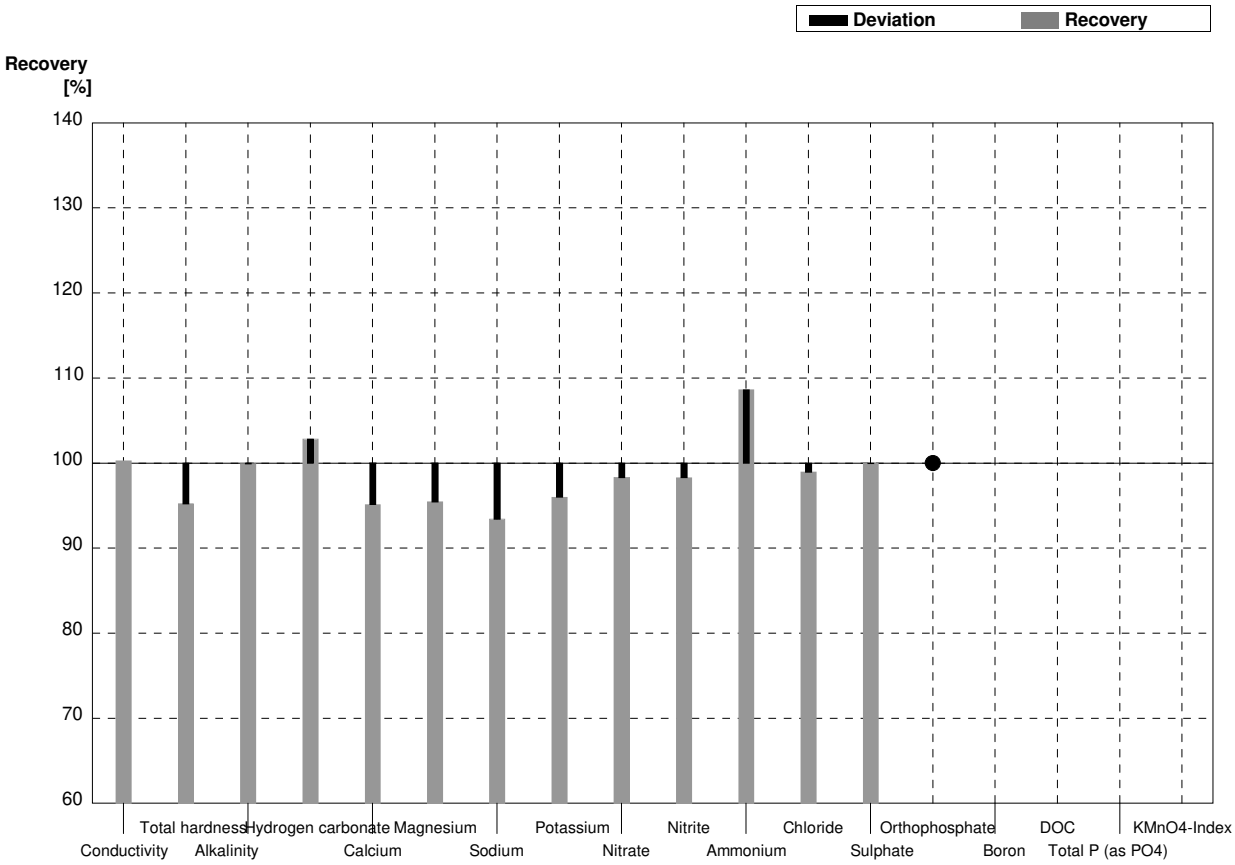
Sample N162A
Laboratory AN

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2	436,4	15,23	µS/cm	100%
Total hardness	1,350	0,014	1,28	0,14	mmol/l	95%
Alkalinity	2,93	0,03	2,894	0,13	mmol/l	99%
Hydrogen carbonate	175,8	1,7	176,6	7,98	mg/l	100%
Calcium	38,7	0,6	36,6	4,077	mg/l	95%
Magnesium	9,34	0,11	8,93	0,736	mg/l	96%
Sodium	37,7	0,3	35,13	2,83	mg/l	93%
Potassium	5,60	0,04	5,39	0,434	mg/l	96%
Nitrate	41,3	0,8	40,85	4,24	mg/l	99%
Nitrite	0,0404	0,0010	0,04145	0,0041	mg/l	103%
Ammonium	<0,01		0,00350	0,00073	mg/l	•
Chloride	9,3	0,2	9,49	0,902	mg/l	102%
Sulphate	29,81	0,18	29,84	3,402	mg/l	100%
Orthophosphate	0,061	0,002	0,0181	0,0076	mg/l	30%
Boron	0,0707	0,0011			mg/l	
DOC	4,72	0,05			mg/l	
Total P (as PO4)	0,107	0,002			mg/l	
KMnO4-Index	4,62	0,16			mg/l	



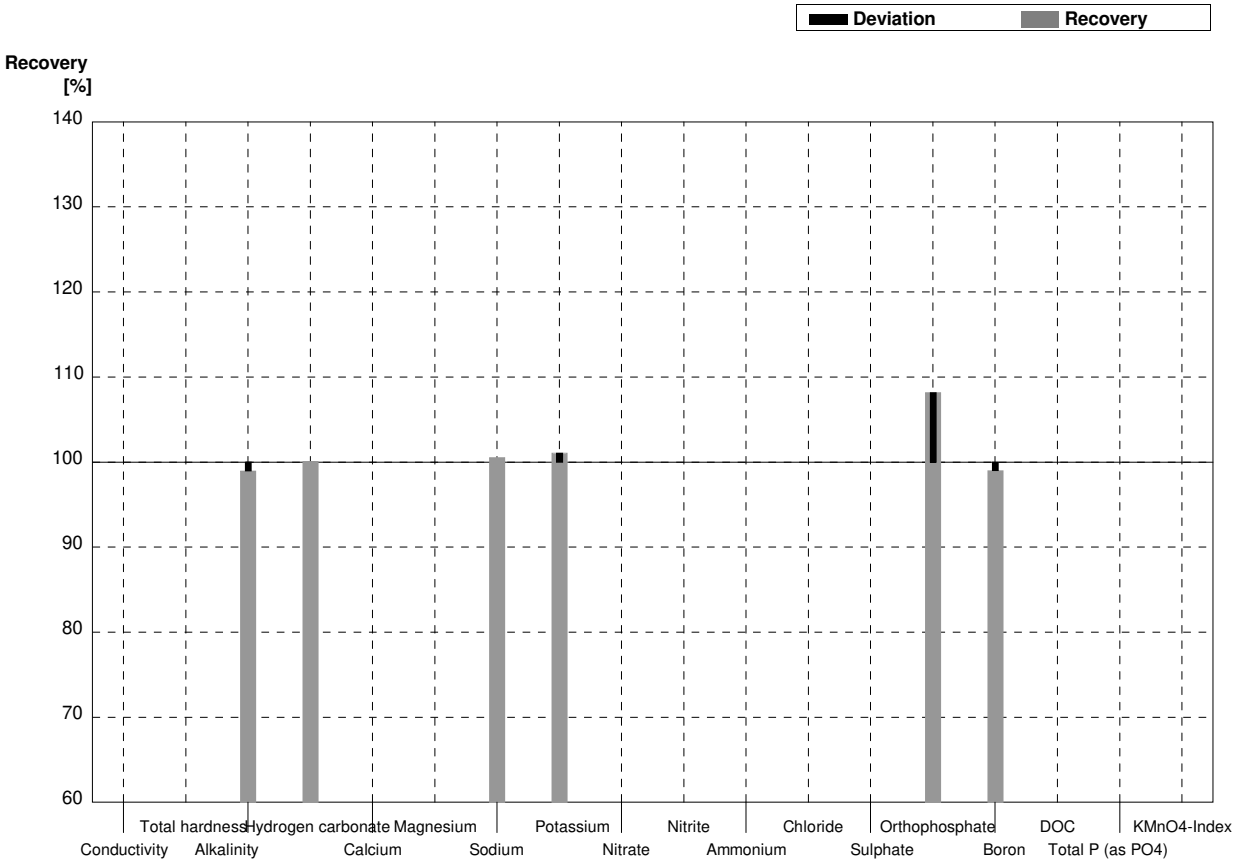
Sample N162B
Laboratory AN

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2	523,4	18,27	µS/cm	100%
Total hardness	1,785	0,017	1,70	0,19	mmol/l	95%
Alkalinity	1,91	0,03	1,909	0,086	mmol/l	100%
Hydrogen carbonate	113,3	1,5	116,5	5,27	mg/l	103%
Calcium	47,9	0,7	45,57	5,076	mg/l	95%
Magnesium	14,32	0,11	13,67	1,1	mg/l	95%
Sodium	30,9	0,3	28,87	2,327	mg/l	93%
Potassium	4,26	0,03	4,09	0,33	mg/l	96%
Nitrate	30,9	0,6	30,38	3,15	mg/l	98%
Nitrite	0,0936	0,0008	0,0920	0,0091	mg/l	98%
Ammonium	0,058	0,004	0,063	0,0013	mg/l	109%
Chloride	52,2	0,8	51,66	4,91	mg/l	99%
Sulphate	55,4	0,3	55,38	6,313	mg/l	100%
Orthophosphate	<0,009		<0,0200	0,0076	mg/l	•
Boron	0,1092	0,0007			mg/l	
DOC	3,98	0,05			mg/l	
Total P (as PO4)	<0,009				mg/l	
KMnO4-Index	2,93	0,08			mg/l	



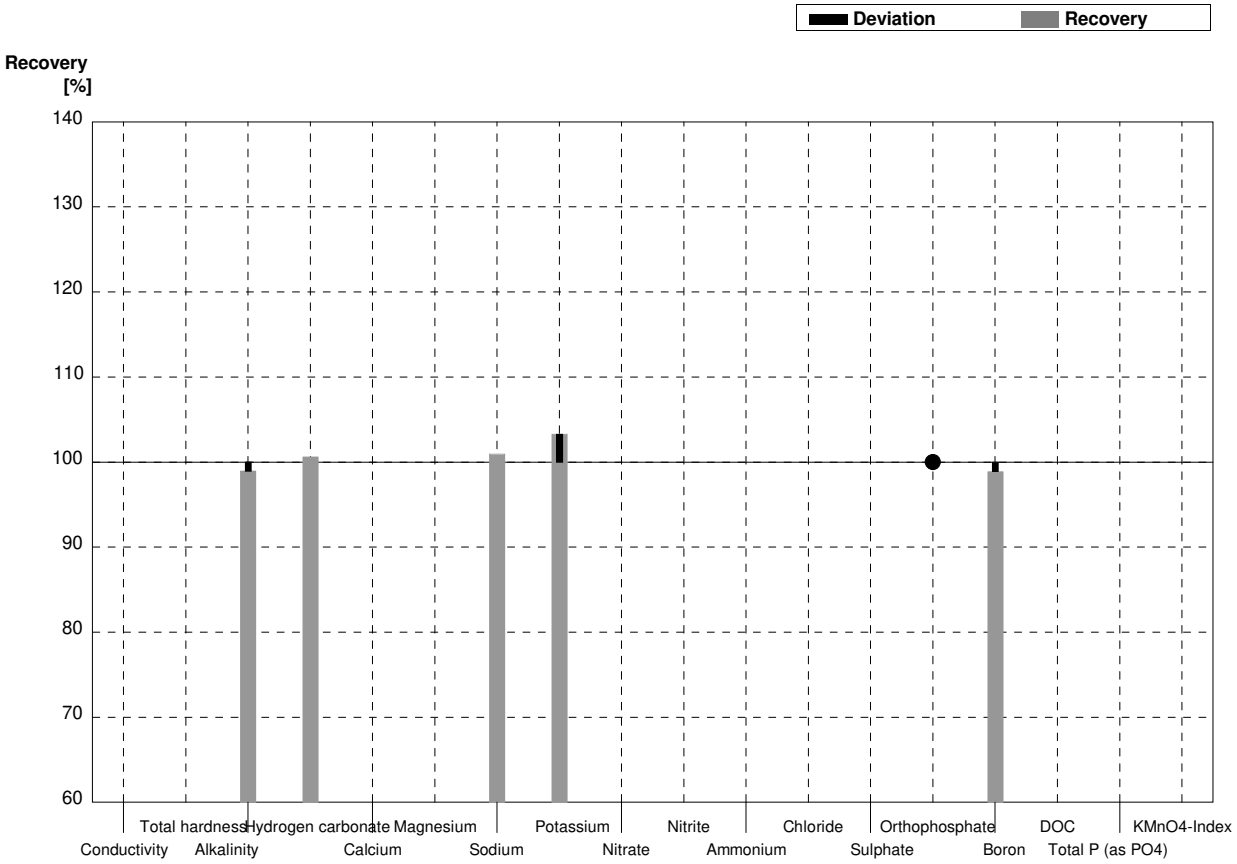
Sample **N162A**
Laboratory **AO**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2			µS/cm	
Total hardness	1,350	0,014			mmol/l	
Alkalinity	2,93	0,03	2,90	0,02	mmol/l	99%
Hydrogen carbonate	175,8	1,7	176	1,1	mg/l	100%
Calcium	38,7	0,6			mg/l	
Magnesium	9,34	0,11			mg/l	
Sodium	37,7	0,3	37,9	1,7	mg/l	101%
Potassium	5,60	0,04	5,66	0,33	mg/l	101%
Nitrate	41,3	0,8			mg/l	
Nitrite	0,0404	0,0010			mg/l	
Ammonium	<0,01				mg/l	
Chloride	9,3	0,2			mg/l	
Sulphate	29,81	0,18			mg/l	
Orthophosphate	0,061	0,002	0,066	0,005	mg/l	108%
Boron	0,0707	0,0011	0,070	0,005	mg/l	99%
DOC	4,72	0,05			mg/l	
Total P (as PO4)	0,107	0,002			mg/l	
KMnO4-Index	4,62	0,16			mg/l	



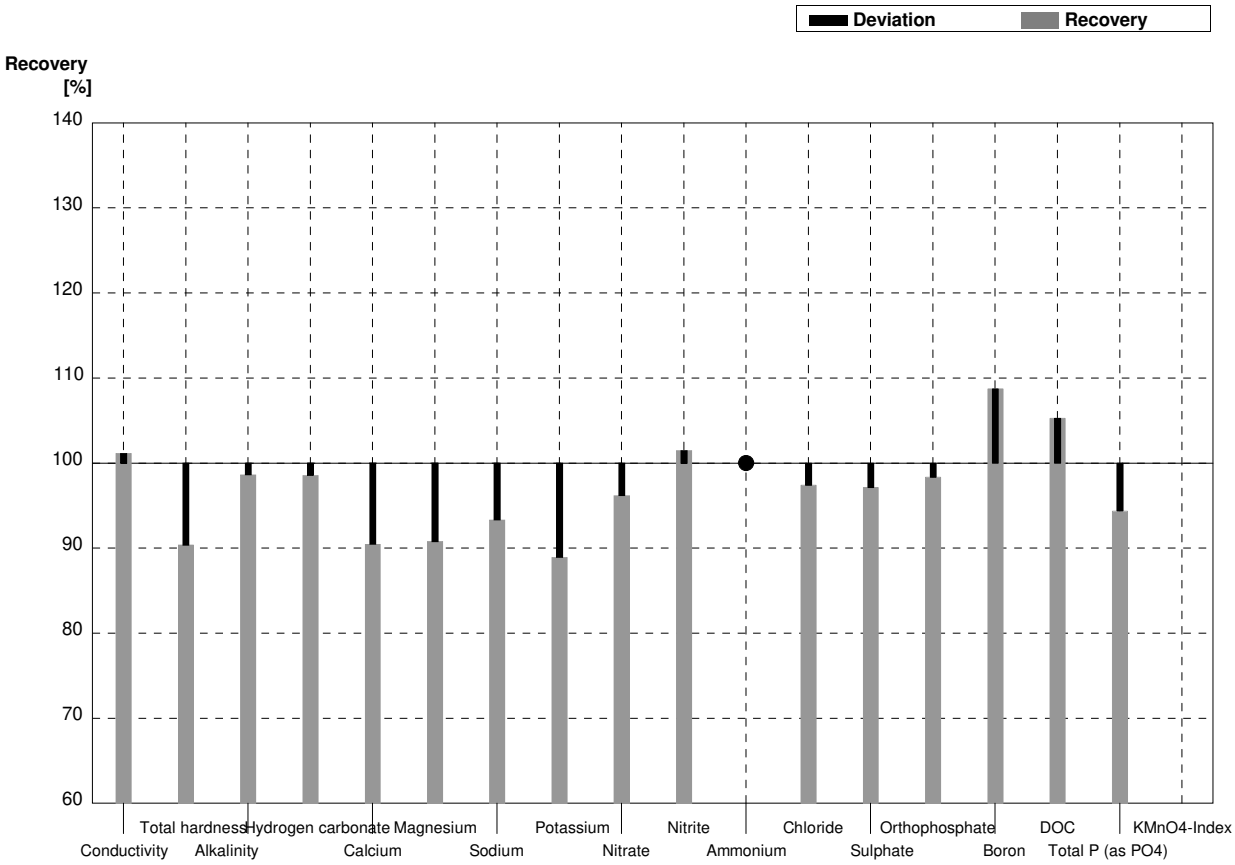
Sample **N162B**
Laboratory **AO**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2			µS/cm	
Total hardness	1,785	0,017			mmol/l	
Alkalinity	1,91	0,03	1,89	0,01	mmol/l	99%
Hydrogen carbonate	113,3	1,5	114	0,7	mg/l	101%
Calcium	47,9	0,7			mg/l	
Magnesium	14,32	0,11			mg/l	
Sodium	30,9	0,3	31,2	1,4	mg/l	101%
Potassium	4,26	0,03	4,40	0,26	mg/l	103%
Nitrate	30,9	0,6			mg/l	
Nitrite	0,0936	0,0008			mg/l	
Ammonium	0,058	0,004			mg/l	
Chloride	52,2	0,8			mg/l	
Sulphate	55,4	0,3			mg/l	
Orthophosphate	<0,009		<0,010		mg/l	•
Boron	0,1092	0,0007	0,108	0,008	mg/l	99%
DOC	3,98	0,05			mg/l	
Total P (as PO4)	<0,009				mg/l	
KMnO4-Index	2,93	0,08			mg/l	



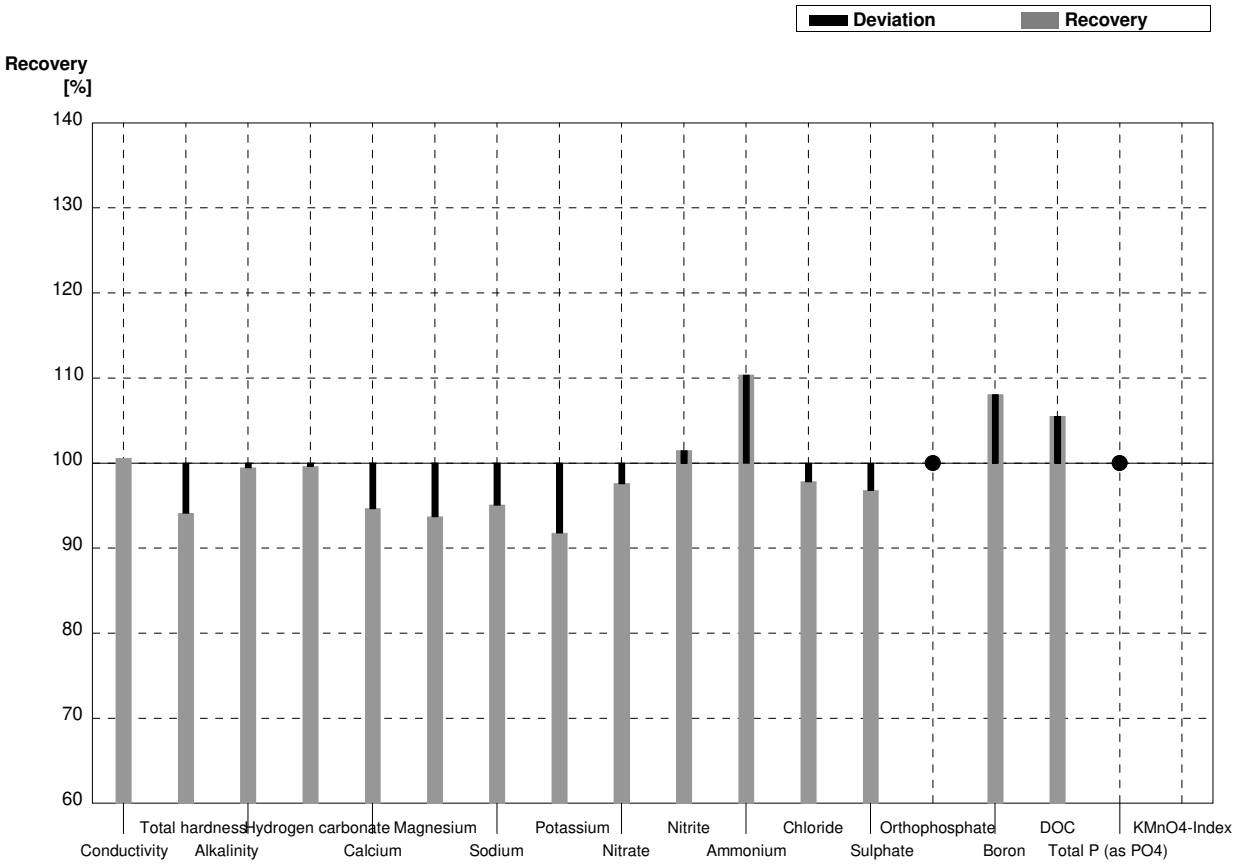
Sample N162A
Laboratory AP

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2	442	4,51	µS/cm	101%
Total hardness	1,350	0,014	1,22		mmol/l	90%
Alkalinity	2,93	0,03	2,89	0,29	mmol/l	99%
Hydrogen carbonate	175,8	1,7	173,26		mg/l	99%
Calcium	38,7	0,6	35,01	3,5	mg/l	90%
Magnesium	9,34	0,11	8,48	0,85	mg/l	91%
Sodium	37,7	0,3	35,19	3,5	mg/l	93%
Potassium	5,60	0,04	4,98	0,49	mg/l	89%
Nitrate	41,3	0,8	39,73	3,9	mg/l	96%
Nitrite	0,0404	0,0010	0,0410	0,004	mg/l	101%
Ammonium	<0,01		<0,009		mg/l	•
Chloride	9,3	0,2	9,06	0,9	mg/l	97%
Sulphate	29,81	0,18	28,96	2,8	mg/l	97%
Orthophosphate	0,061	0,002	0,060	0,006	mg/l	98%
Boron	0,0707	0,0011	0,0769	0,0077	mg/l	109%
DOC	4,72	0,05	4,97	0,5	mg/l	105%
Total P (as PO4)	0,107	0,002	0,101	0,010	mg/l	94%
KMnO4-Index	4,62	0,16			mg/l	



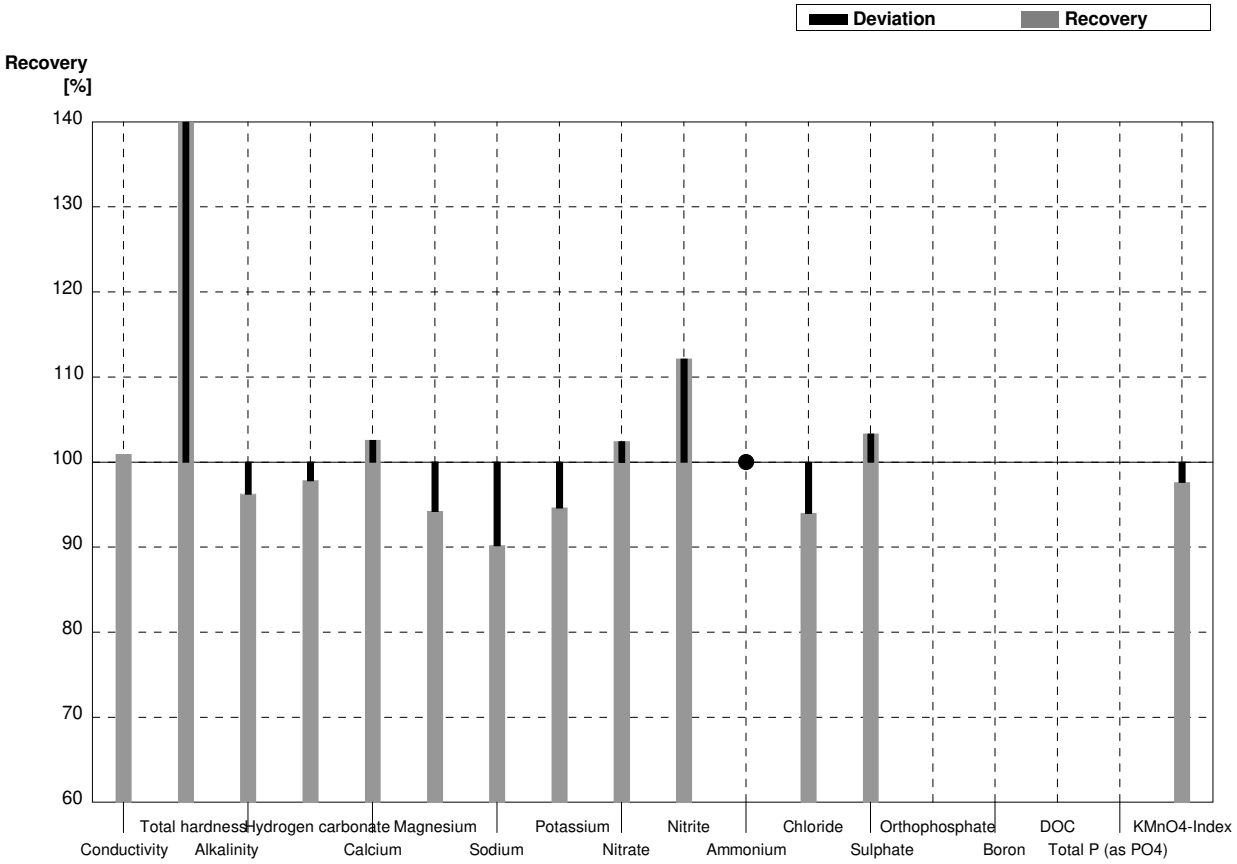
Sample N162B
Laboratory AP

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2	525	4,51	µS/cm	101%
Total hardness	1,785	0,017	1,68		mmol/l	94%
Alkalinity	1,91	0,03	1,90	0,19	mmol/l	99%
Hydrogen carbonate	113,3	1,5	112,86		mg/l	100%
Calcium	47,9	0,7	45,35	4,5	mg/l	95%
Magnesium	14,32	0,11	13,42	1,3	mg/l	94%
Sodium	30,9	0,3	29,38	2,9	mg/l	95%
Potassium	4,26	0,03	3,91	0,39	mg/l	92%
Nitrate	30,9	0,6	30,16	3,0	mg/l	98%
Nitrite	0,0936	0,0008	0,095	0,009	mg/l	101%
Ammonium	0,058	0,004	0,064	0,006	mg/l	110%
Chloride	52,2	0,8	51,06	5,1	mg/l	98%
Sulphate	55,4	0,3	53,62	5,3	mg/l	97%
Orthophosphate	<0,009		<0,0018		mg/l	•
Boron	0,1092	0,0007	0,118	0,012	mg/l	108%
DOC	3,98	0,05	4,20	0,4	mg/l	106%
Total P (as PO4)	<0,009		<0,0036		mg/l	•
KMnO4-Index	2,93	0,08			mg/l	



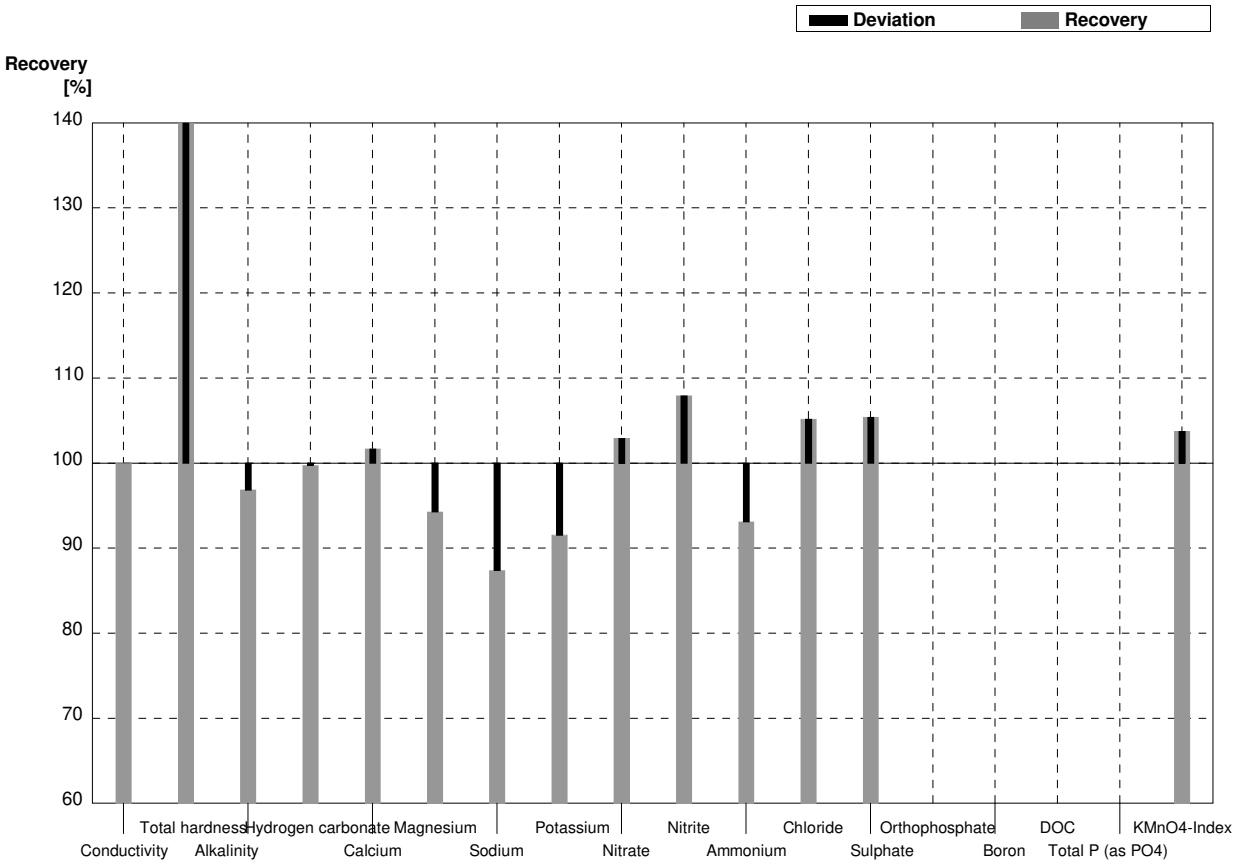
Sample N162A
Laboratory AQ

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2	441	40	µS/cm	101%
Total hardness	1,350	0,014	7,4	0,7	mmol/l	548%
Alkalinity	2,93	0,03	2,82	0,2	mmol/l	96%
Hydrogen carbonate	175,8	1,7	172	17	mg/l	98%
Calcium	38,7	0,6	39,7	4,0	mg/l	103%
Magnesium	9,34	0,11	8,8	0,9	mg/l	94%
Sodium	37,7	0,3	34,0	3,4	mg/l	90%
Potassium	5,60	0,04	5,3	0,5	mg/l	95%
Nitrate	41,3	0,8	42,3	4,2	mg/l	102%
Nitrite	0,0404	0,0010	0,0453	0,005	mg/l	112%
Ammonium	<0,01		<0,01		mg/l	•
Chloride	9,3	0,2	8,74	0,9	mg/l	94%
Sulphate	29,81	0,18	30,8	3,1	mg/l	103%
Orthophosphate	0,061	0,002			mg/l	
Boron	0,0707	0,0011			mg/l	
DOC	4,72	0,05			mg/l	
Total P (as PO4)	0,107	0,002			mg/l	
KMnO4-Index	4,62	0,16	4,51	0,70	mg/l	98%



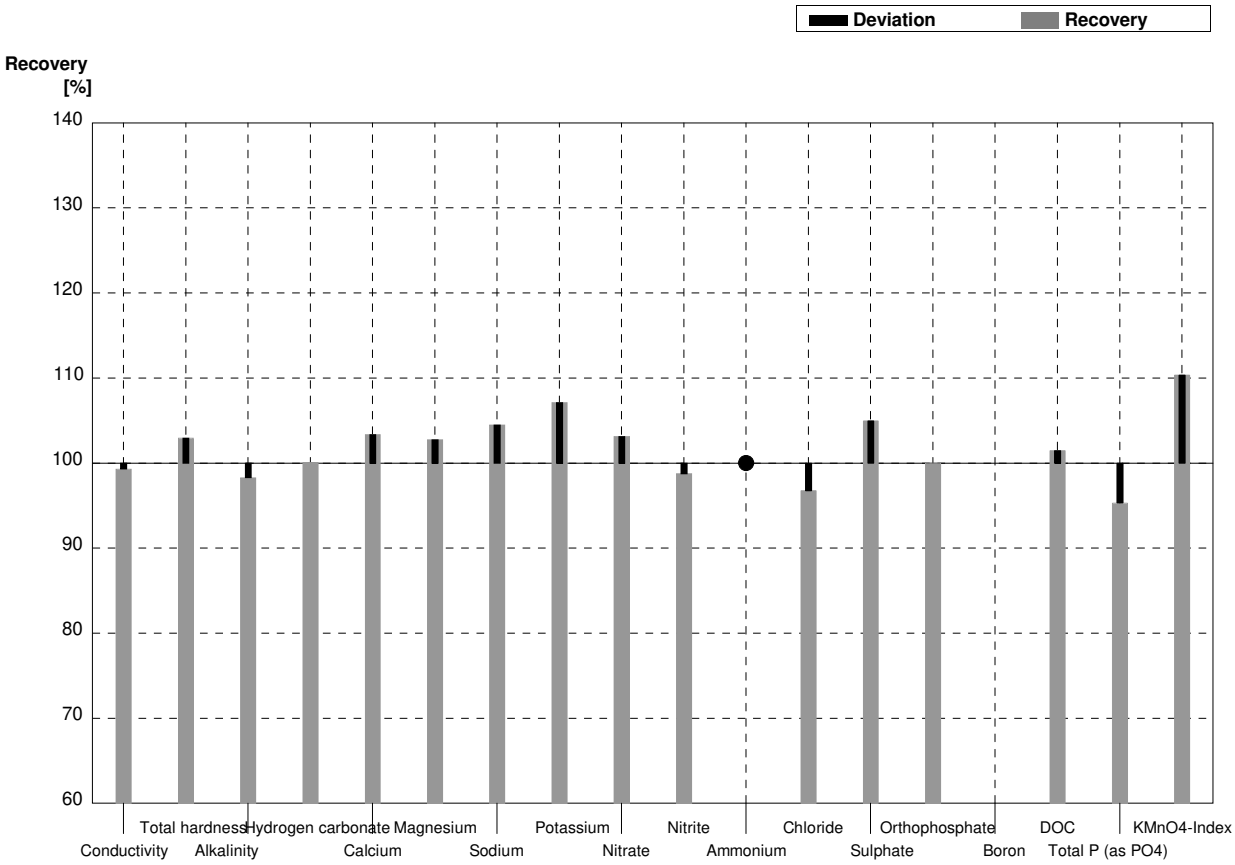
Sample **N162B**
Laboratory **AQ**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2	522	50	µS/cm	100%
Total hardness	1,785	0,017	9,7	0,9	mmol/l	543%
Alkalinity	1,91	0,03	1,85	0,19	mmol/l	97%
Hydrogen carbonate	113,3	1,5	113	11	mg/l	100%
Calcium	47,9	0,7	48,7	4,9	mg/l	102%
Magnesium	14,32	0,11	13,5	1,4	mg/l	94%
Sodium	30,9	0,3	27,0	2,7	mg/l	87%
Potassium	4,26	0,03	3,90	0,40	mg/l	92%
Nitrate	30,9	0,6	31,8	3,2	mg/l	103%
Nitrite	0,0936	0,0008	0,101	0,01	mg/l	108%
Ammonium	0,058	0,004	0,054	0,005	mg/l	93%
Chloride	52,2	0,8	54,9	5,5	mg/l	105%
Sulphate	55,4	0,3	58,4	5,8	mg/l	105%
Orthophosphate	<0,009				mg/l	
Boron	0,1092	0,0007			mg/l	
DOC	3,98	0,05			mg/l	
Total P (as PO4)	<0,009				mg/l	
KMnO4-Index	2,93	0,08	3,04	0,5	mg/l	104%



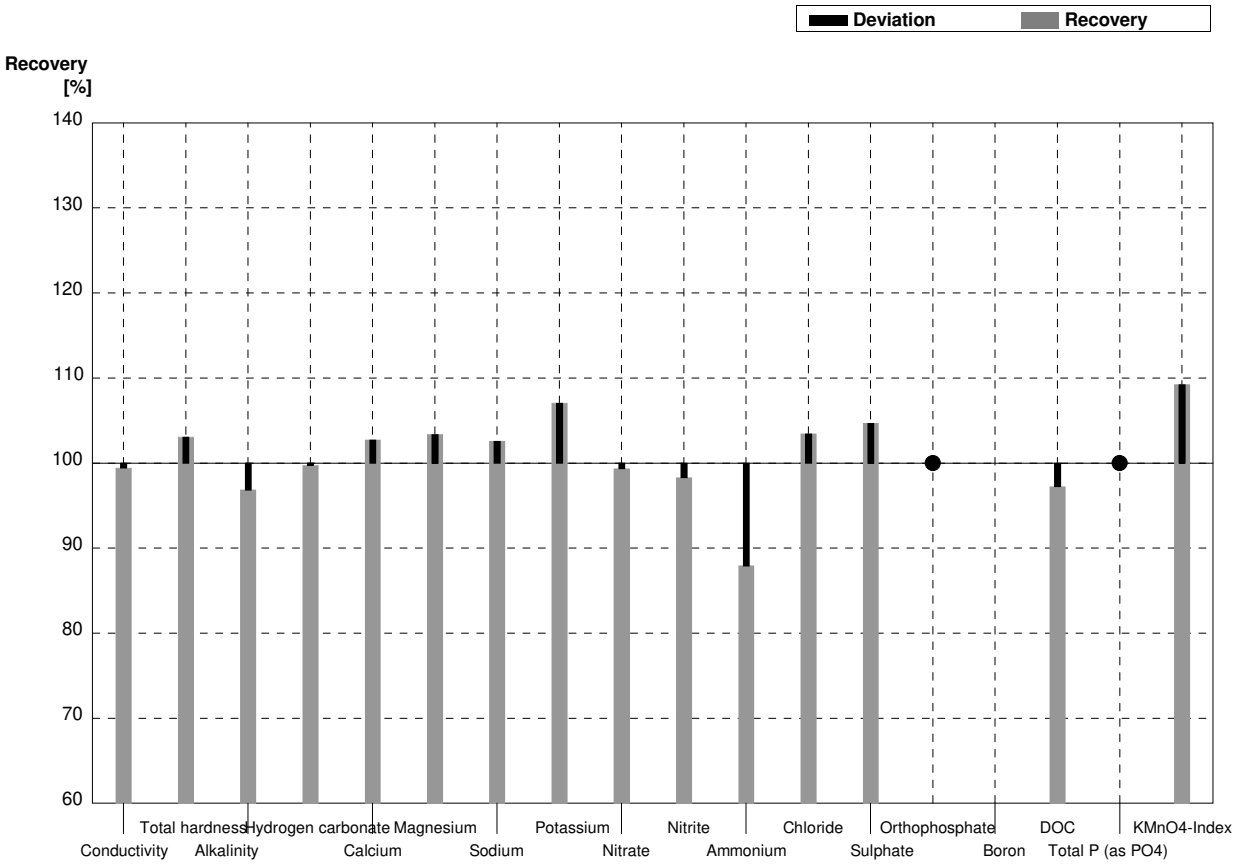
Sample **N162A**
Laboratory **AR**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2	434	10	µS/cm	99%
Total hardness	1,350	0,014	1,39	0,12	mmol/l	103%
Alkalinity	2,93	0,03	2,88	0,13	mmol/l	98%
Hydrogen carbonate	175,8	1,7	176	8	mg/l	100%
Calcium	38,7	0,6	40,0	2,5	mg/l	103%
Magnesium	9,34	0,11	9,6	0,6	mg/l	103%
Sodium	37,7	0,3	39,4	2,1	mg/l	105%
Potassium	5,60	0,04	6,0	0,3	mg/l	107%
Nitrate	41,3	0,8	42,6	1,7	mg/l	103%
Nitrite	0,0404	0,0010	0,0399	0,0029	mg/l	99%
Ammonium	<0,01		<0,02		mg/l	•
Chloride	9,3	0,2	9,0	0,5	mg/l	97%
Sulphate	29,81	0,18	31,3	1,2	mg/l	105%
Orthophosphate	0,061	0,002	0,061	0,006	mg/l	100%
Boron	0,0707	0,0011			mg/l	
DOC	4,72	0,05	4,79	0,60	mg/l	101%
Total P (as PO4)	0,107	0,002	0,102	0,022	mg/l	95%
KMnO4-Index	4,62	0,16	5,1	0,7	mg/l	110%



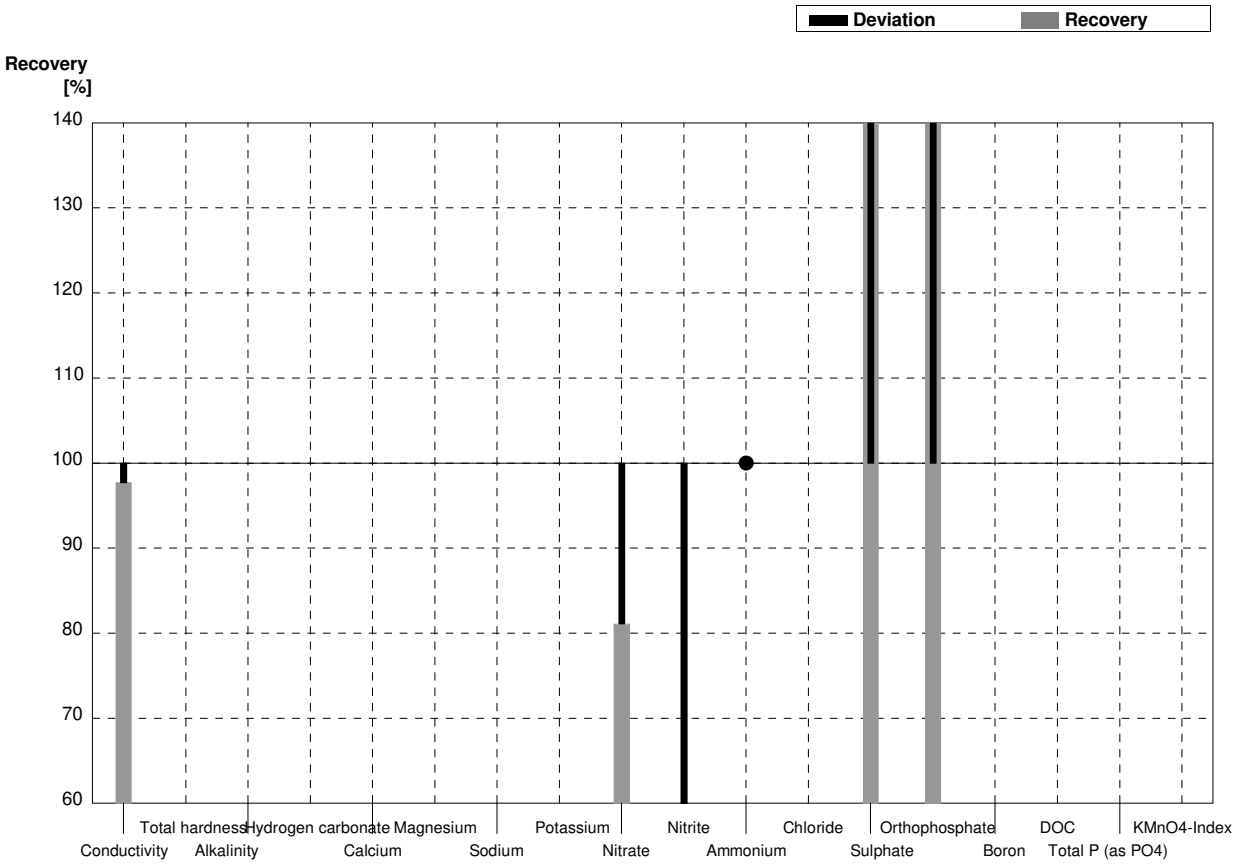
Sample N162B
Laboratory AR

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2	519	11	µS/cm	99%
Total hardness	1,785	0,017	1,84	0,16	mmol/l	103%
Alkalinity	1,91	0,03	1,850	0,082	mmol/l	97%
Hydrogen carbonate	113,3	1,5	113	5	mg/l	100%
Calcium	47,9	0,7	49,2	3,1	mg/l	103%
Magnesium	14,32	0,11	14,8	0,8	mg/l	103%
Sodium	30,9	0,3	31,7	1,7	mg/l	103%
Potassium	4,26	0,03	4,56	0,19	mg/l	107%
Nitrate	30,9	0,6	30,7	1,2	mg/l	99%
Nitrite	0,0936	0,0008	0,092	0,007	mg/l	98%
Ammonium	0,058	0,004	0,051	0,007	mg/l	88%
Chloride	52,2	0,8	54	3	mg/l	103%
Sulphate	55,4	0,3	58	3	mg/l	105%
Orthophosphate	<0,009		<0,01		mg/l	•
Boron	0,1092	0,0007			mg/l	
DOC	3,98	0,05	3,87	0,48	mg/l	97%
Total P (as PO4)	<0,009		<0,01		mg/l	•
KMnO4-Index	2,93	0,08	3,20	0,43	mg/l	109%



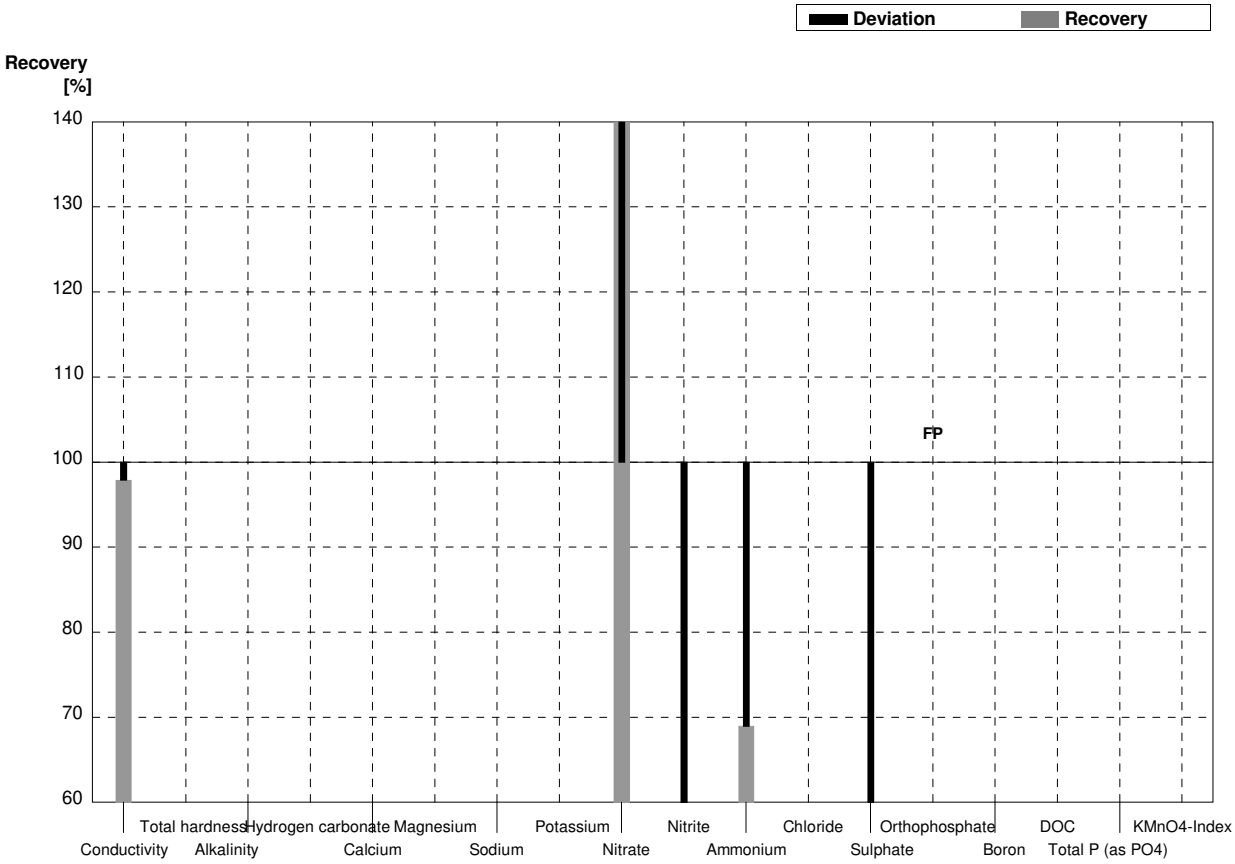
Sample N162A
Laboratory AS

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2	427	37,2	µS/cm	98%
Total hardness	1,350	0,014			mmol/l	
Alkalinity	2,93	0,03			mmol/l	
Hydrogen carbonate	175,8	1,7			mg/l	
Calcium	38,7	0,6			mg/l	
Magnesium	9,34	0,11			mg/l	
Sodium	37,7	0,3			mg/l	
Potassium	5,60	0,04			mg/l	
Nitrate	41,3	0,8	33,5	0,603	mg/l	81%
Nitrite	0,0404	0,0010	0,00450	0,00038	mg/l	11%
Ammonium	<0,01		0,0150	0,00540	mg/l	•
Chloride	9,3	0,2			mg/l	
Sulphate	29,81	0,18	68	3,74	mg/l	228%
Orthophosphate	0,061	0,002	0,95	0,134	mg/l	1557%
Boron	0,0707	0,0011			mg/l	
DOC	4,72	0,05			mg/l	
Total P (as PO4)	0,107	0,002			mg/l	
KMnO4-Index	4,62	0,16			mg/l	



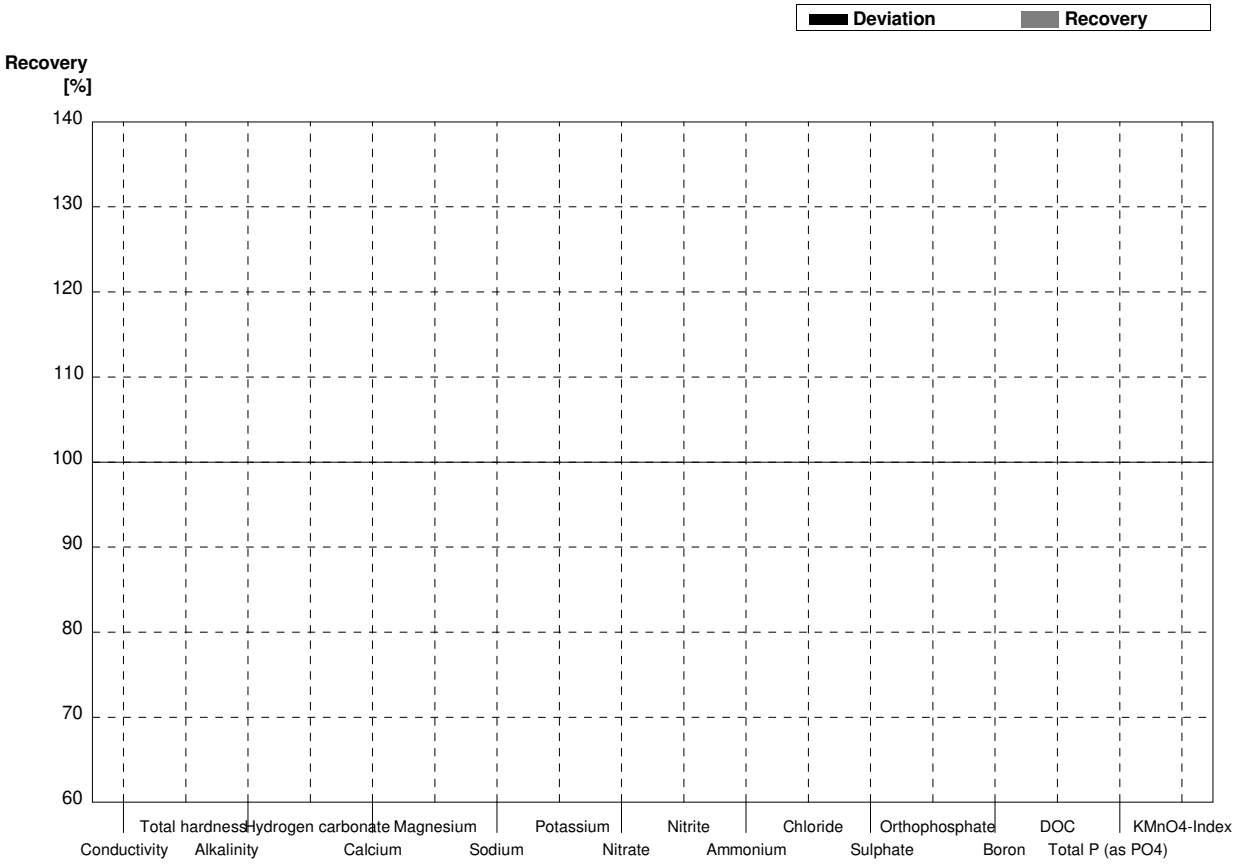
Sample N162B
Laboratory AS

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2	511	44,5	µS/cm	98%
Total hardness	1,785	0,017			mmol/l	
Alkalinity	1,91	0,03			mmol/l	
Hydrogen carbonate	113,3	1,5			mg/l	
Calcium	47,9	0,7			mg/l	
Magnesium	14,32	0,11			mg/l	
Sodium	30,9	0,3			mg/l	
Potassium	4,26	0,03			mg/l	
Nitrate	30,9	0,6	57,0	1,03	mg/l	184%
Nitrite	0,0936	0,0008	0,0170	0,00145	mg/l	18%
Ammonium	0,058	0,004	0,0400	0,144	mg/l	69%
Chloride	52,2	0,8			mg/l	
Sulphate	55,4	0,3	28,5	1,57	mg/l	51%
Orthophosphate	<0,009		0,0400	0,00564	mg/l	FP
Boron	0,1092	0,0007			mg/l	
DOC	3,98	0,05			mg/l	
Total P (as PO4)	<0,009				mg/l	
KMnO4-Index	2,93	0,08			mg/l	



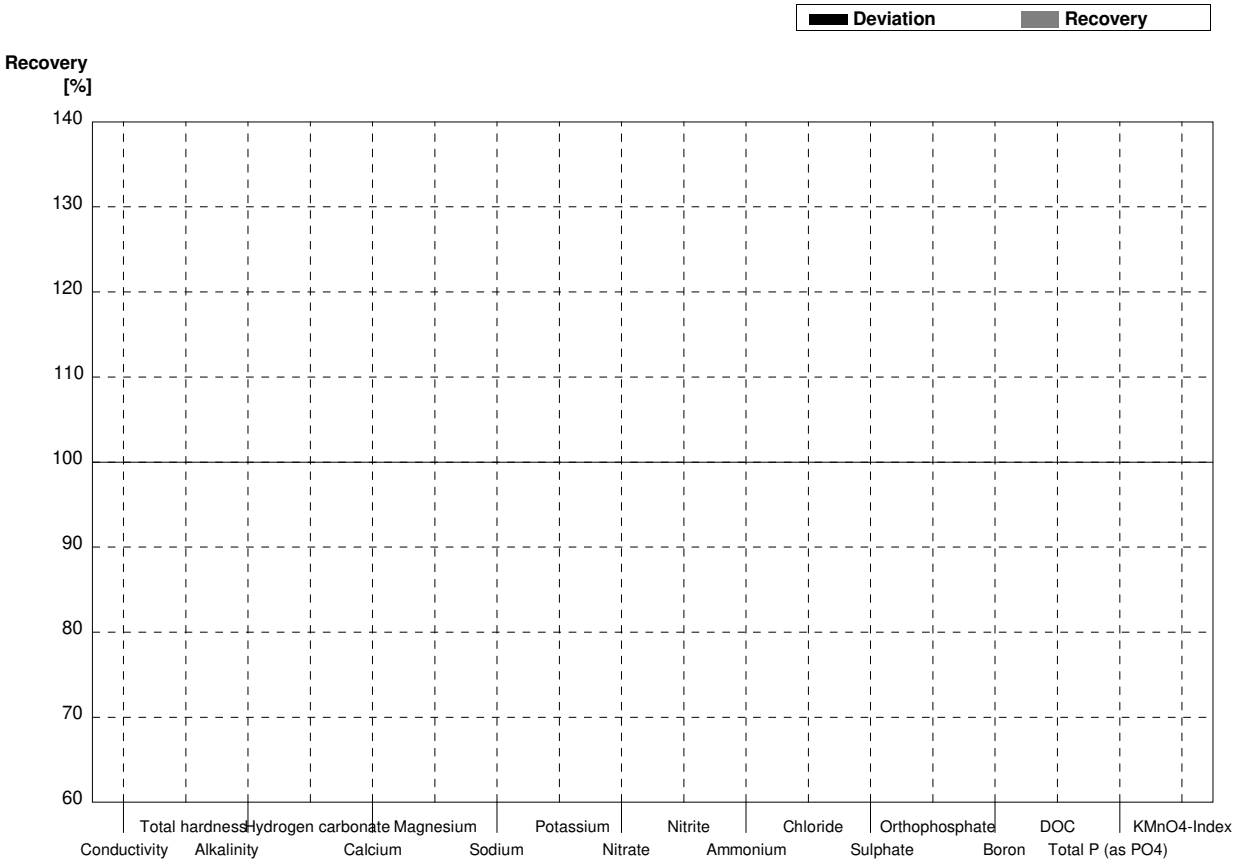
Sample N162A
Laboratory AT

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2			µS/cm	
Total hardness	1,350	0,014			mmol/l	
Alkalinity	2,93	0,03			mmol/l	
Hydrogen carbonate	175,8	1,7			mg/l	
Calcium	38,7	0,6			mg/l	
Magnesium	9,34	0,11			mg/l	
Sodium	37,7	0,3			mg/l	
Potassium	5,60	0,04			mg/l	
Nitrate	41,3	0,8			mg/l	
Nitrite	0,0404	0,0010			mg/l	
Ammonium	<0,01				mg/l	
Chloride	9,3	0,2			mg/l	
Sulphate	29,81	0,18			mg/l	
Orthophosphate	0,061	0,002			mg/l	
Boron	0,0707	0,0011			mg/l	
DOC	4,72	0,05			mg/l	
Total P (as PO4)	0,107	0,002			mg/l	
KMnO4-Index	4,62	0,16			mg/l	



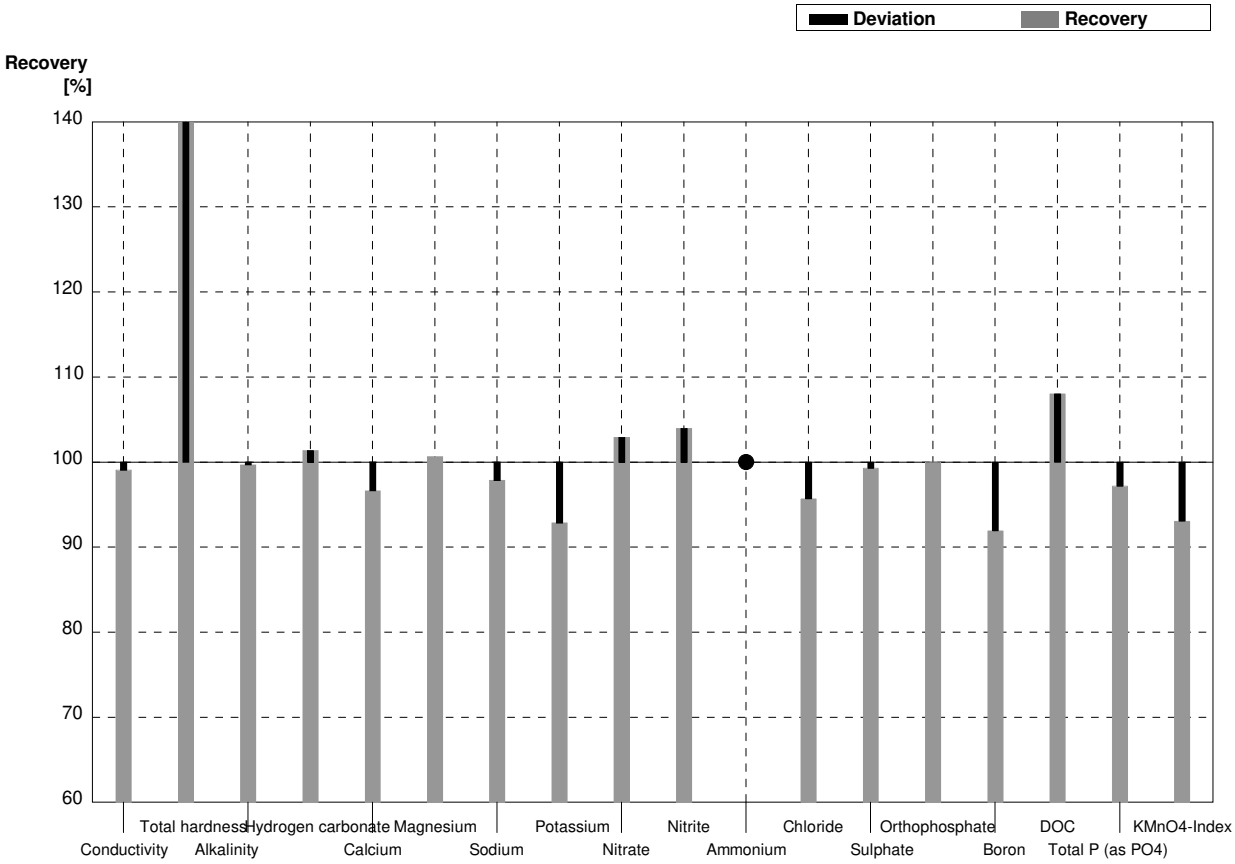
Sample N162B
Laboratory AT

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2			µS/cm	
Total hardness	1,785	0,017			mmol/l	
Alkalinity	1,91	0,03			mmol/l	
Hydrogen carbonate	113,3	1,5			mg/l	
Calcium	47,9	0,7			mg/l	
Magnesium	14,32	0,11			mg/l	
Sodium	30,9	0,3			mg/l	
Potassium	4,26	0,03			mg/l	
Nitrate	30,9	0,6			mg/l	
Nitrite	0,0936	0,0008			mg/l	
Ammonium	0,058	0,004			mg/l	
Chloride	52,2	0,8			mg/l	
Sulphate	55,4	0,3			mg/l	
Orthophosphate	<0,009				mg/l	
Boron	0,1092	0,0007			mg/l	
DOC	3,98	0,05			mg/l	
Total P (as PO4)	<0,009				mg/l	
KMnO4-Index	2,93	0,08			mg/l	



Sample N162A
Laboratory AU

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	437	2	433	48	µS/cm	99%
Total hardness	1,350	0,014	7,4		mmol/l	548%
Alkalinity	2,93	0,03	2,921		mmol/l	100%
Hydrogen carbonate	175,8	1,7	178,2		mg/l	101%
Calcium	38,7	0,6	37,4	4,5	mg/l	97%
Magnesium	9,34	0,11	9,4	0,8	mg/l	101%
Sodium	37,7	0,3	36,9	4,8	mg/l	98%
Potassium	5,60	0,04	5,2	0,8	mg/l	93%
Nitrate	41,3	0,8	42,5	5,1	mg/l	103%
Nitrite	0,0404	0,0010	0,0420	0,007	mg/l	104%
Ammonium	<0,01		<0,005		mg/l	•
Chloride	9,3	0,2	8,9	0,9	mg/l	96%
Sulphate	29,81	0,18	29,6	2,4	mg/l	99%
Orthophosphate	0,061	0,002	0,061	0,007	mg/l	100%
Boron	0,0707	0,0011	0,065	0,008	mg/l	92%
DOC	4,72	0,05	5,1	0,6	mg/l	108%
Total P (as PO4)	0,107	0,002	0,104	0,008	mg/l	97%
KMnO4-Index	4,62	0,16	4,30	0,7	mg/l	93%



Sample N162B
Laboratory AU

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	522	2	515	57	µS/cm	99%
Total hardness	1,785	0,017	9,9		mmol/l	555%
Alkalinity	1,91	0,03	1,894		mmol/l	99%
Hydrogen carbonate	113,3	1,5	115,5		mg/l	102%
Calcium	47,9	0,7	46,8	5,6	mg/l	98%
Magnesium	14,32	0,11	14,3	1,3	mg/l	100%
Sodium	30,9	0,3	30,5	4,0	mg/l	99%
Potassium	4,26	0,03	3,95	0,6	mg/l	93%
Nitrate	30,9	0,6	28,5	3,4	mg/l	92%
Nitrite	0,0936	0,0008	0,093	0,015	mg/l	99%
Ammonium	0,058	0,004	0,054	0,016	mg/l	93%
Chloride	52,2	0,8	48,0	4,8	mg/l	92%
Sulphate	55,4	0,3	50,9	4,1	mg/l	92%
Orthophosphate	<0,009		<0,003		mg/l	•
Boron	0,1092	0,0007	0,101	0,013	mg/l	92%
DOC	3,98	0,05	4,34	0,5	mg/l	109%
Total P (as PO4)	<0,009		<0,003		mg/l	•
KMnO4-Index	2,93	0,08	2,80	0,5	mg/l	96%