IFA-Proficiency Testing Scheme for Water Analysis

Round N147
Major Ions

Sample Dispatch: 3 June 2019

TULLN

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Round: N147	Date / Signature:	5.7.2019

This report has 147 pages.

This report summarises the results of round N147 (major ions) within the IFA-Proficiency Testing Scheme for Water Analysis. The samples N147A and N147B were distributed to the participants on Monday, 3 June 2019. Closing date for reporting results to the IFA-Tulln was Friday, 28 June 2019. Each participant received two samples of 1000 mL, each filled into two 500 mL PET bottles.

46 laboratories participated in this interlaboratory comparison. All participants submitted results.

To make the results of this round anonymous, each laboratory was given a laboratory code on a random basis.

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, $NaHCO_3$, $KHCO_3$, $C_6H_{15}PO_3$, potassium hydrogen phthalate (for DOC), sodium salicylate (for $KMnO_4$-Index) and certified standard solutions of $NaNO_2$, NH_4Cl, KH_2PO_4 and H_3BO_3. Both samples, N147A and N147B, contained free CO_2, which was used for dissolution of $CaCO_3$. No other substances (e.g. preservatives) were added. The samples were stabilised by sterile filtration and low temperature.

Ammonium was not added to sample N147A. No phosphorus substances were added to sample N147B in order to check the analytical blank values.

Homogeneity, accuracy and stability tests at the IFA-Tulln

Three bottles per sample (N147A and N147B) were analysed for all investigated parameters prior to shipment to the participants. The results of the measurements are listed in the result tables and the parameter oriented part of the report (”IFA result”).

After ca. four weeks DOC, NH_4^+, NO_2^-, o-PO_4^{3-} and $KMnO_4$-Index were determined in two bottles of N147A and N147B. The results of the measurements are listed in the result tables and the parameter oriented part of the report (”Stability test”). Stability tests for all other parameters will be carried out together with the accuracy tests of the following round (N148).

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^- and Cl^- when stored at 4°C in the dark. For the parameters NH_4^+, NO_2^-, o-PO_4^{3-} 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, the laboratory mean has a smaller uncertainty than our estimate calculated from the target concentrations by Debye-Hückel´s theory: 2.4 % (p = 95 %). However, the calculated electrical conductivity was 798 µS/cm in sample N147A and 356 µS/cm in sample N147B.

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 2.72 mg/L in sample N147A and 1.67 mg/L in sample N147B. Assuming complete oxidation to carbon dioxide, nitrate and water (considering nitrite), the theoretical values were 3.82 mg/L O_2 (N147A) and 2.36 mg/L O_2 (N147B). However, the laboratory mean values were taken as reference values in this report: 3.43 mg/L O_2 for N147A and 2.38 mg/L O_2 for N147B.

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 N147A and <0.009 mg/L o-PO_4^{3-} and <0.009 mg/L total-P (as PO_4^3) in N147B, 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 97.7 % (boron in sample N147B) and 105.6 % (DOC in sample N147A).

The between laboratory CVs covered the range between 0.9 % (conductivity in sample N147A) and 13.6 % (total-P) in sample N147B).

All confidence intervals of the outlier-corrected laboratory mean values except for alkalinity $K_{S4.3}$ in sample N147A (98.2 % ± 0.6 %) and DOC in sample N147A (105.6 % ± 3.6 %) encompass the corresponding target values with their uncertainties. For all other parameters, 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

$$z = \frac{x_i - \bar{x}}{\sigma}$$

z	z-score
x_i	result of laboratory
$\bar{x}$	target value or mean value („consensus value“)
σ	standard deviation

Thus, the z-score is the ratio of the estimated bias (difference between result and target value) and a standard deviation. The z-score criteria were determined from relative standard deviations from all interlaboratory comparisons that were organised by the IFA-Tulln in the period from 2008 to 2018. They represent long-term performance data of all former participating laboratories. The z-scores are listed together with the recoveries in the tables of the parameter oriented part.

Additionally, each laboratory obtained for every sample a single sheet that summarises the z-scores of the laboratory in graphical and tabular form.

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	z-Score-criteria (%)	Lower limit	Unit
Alkalinity $K_{S4.3}$	2.2	0.2	mmol/L
Ammonium	13	0.01	mg/L
Boron	8.6	0.012	mg/L
Calcium	3.3	9	mg/L
Chloride	3.2	2	mg/L
el. Conductivity	1.3	50	µS/cm
DOC	6.0	1	mg/L
Hydrogen carbonate	2.5	20	mg/L
$KMnO_4$-Index	10	1	mg/L
Magnesium	3.6	1	mg/L
Nitrate	3.5	2	mg/L
Nitrite	5.6	0.01	mg/L
Orthophosphate	11	0.015	mg/L
Potassium	4.8	0.5	mg/L
Sodium	3.4	1	mg/L
Sulphate	3.1	3	mg/L
Total hardness	2.8	0.1	mmol/L
Total-P (as PO_4^{3-})	11	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

Please note that this evaluation is made on the background of the average performance of all participants of the IFA-Proficiency Testing Scheme during the period from 2008 to 2018.

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
- “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, 5 July 2019

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

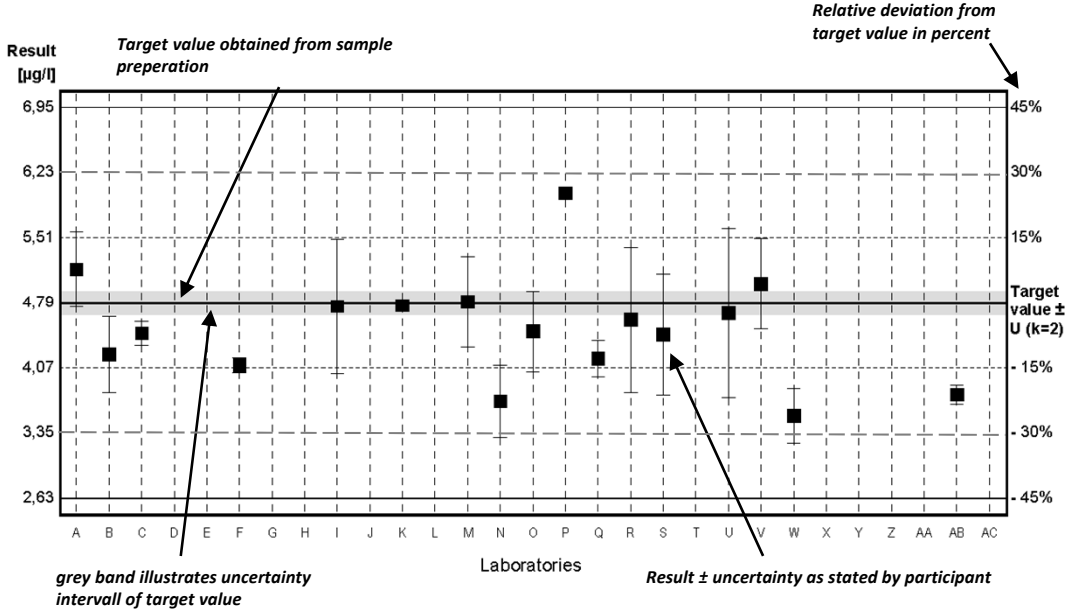


Diagram 1: Measurement results and their uncertainties

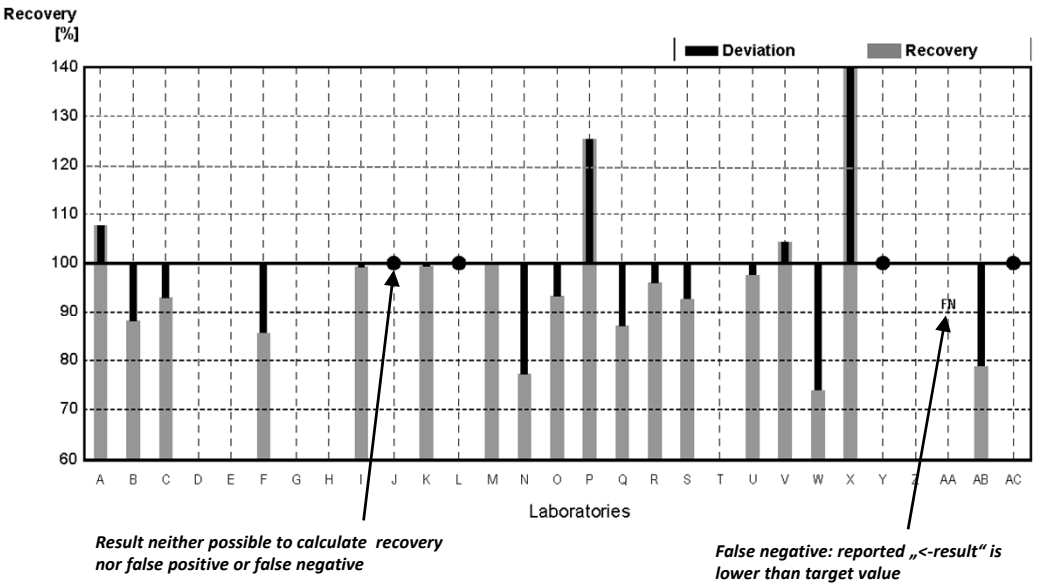


Diagram 2: Recoveries and deviations from target values

Illustration of Results
Tables and Parameter Oriented Part

Round N147
Major Ions

Sample Dispatch: 3 June 2019

TULLN

Results Sample N147A

	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		812	3.06	3.97	239	86.1	22.1	44.9	6.15	45.1
IFA result	6.67	819	3.16	3.91	236	89.2	22.6	46.6	6.39	44.1
Stability test										
A			2.94	3.87						
B	6.07	791	3.19	n.b.	n.b.	77.95	20.98	42.25	6.35	47.77
C	6.63	826	3.05	3.93	236	87.6	21.1	44.2	6.22	45.2
D	6.82	805	3.07	3.939	240.4	87	22	44.4	6.16	45
E	6.32	799	3.05	3.9	234.6	85.4	22.2	44.3	6.2	45.3
F	6.5	800	3.0			83.2	23.1			44
G	6.70	811	3.04	3.89	234	86.2	21.7	44.2	6.28	44.5
H	6.5	822	2.97	3.83	231	79.6	24.0	42.3	6.46	45.2
I	6.53	815	3.06	3.87	233	86.1	22.3	43.4	6.28	45.9
J	6.42	821	3.06	3.88	234	85.7	22.3	44.8	6.36	44.8
K	6.5	818	3.0	3.93	240	82.8	20.9	42.8	5.7	44.5
L	6.4	825		3.89	230					
M	6.71	802	3.1	4.04	243	87.3	23.1	45.9	6.53	45.5
N	6.41	813	3.16	3.933		88.3	23.3	47.7	6.31	
O	6.26	814		3.96	239					44.7
P	6.2	772	3.16	3.90	235	87.1	24.0	45.5	6.8	45.1
Q	6.6	798	3.08	3.96	242	85.5	22.9	44	5.8	45.3
R	6.34	817	2.88	3.90	235	82.4	20.1	45.5	6.30	46.3
S	6.44	807	3.01	3.93	240	83.7	22.5	41.5	6.11	45.8
T	6.3	801	2.95	3.98	243	83.2	22.3	48.0	7.00	40
U						90.20	22.33	44.69	6.13	44.56
V	6.43	814	3.16	3.93	240	88.2	23.4	46.0	6.6	46.4
W	6.4	816	3.01	3.858	232.3	85.6	21.2	44.0	5.9	44.6
X	7.50	809	3.03	3.94	237	85.5	21.7	44.7	6.05	41.5
Y		737				87.2	22.3	43.6	5.9	45.3
Z	6.4	819	3.06	3.88	236.7	85.7	22.4	45.0	6.00	45.3
AA										>30
AB	6.59	819	3.06	3.93	238	85.8	22.2	45.8	6.3	44.8
AC	6.6	815	2.47	2.07	253	73.5	16.82	45.68	6.416	47.2
AD	6.46	818	3.03	3.9	238	86.12	21.29	42.35	6.04	46.2
AE	7.30	808	3.07	3.82	230.01	85.88	22.49	44.24	6.44	47.71
AF	6.6	816	2.98	3.965	238.9	84	21.4	43.9	6.2	43.9
AG	6.69	804	3.10	3.96	241.8	81.3	21.1	44.5	6.0	46.1
AH	6.46	815.00	3.16	3.80	229.00	89.05	22.71	47.30	6.53	41.59
AI		812	3.01	3.88	234	86.2	20.9	44.8	6.2	44.7
AJ										
AK	6.56	815	3.14	4.4	268.5	84	25			
AL	6.40	802	2.96	3.91	239	83.7	21.1	41.3	5.60	45.3
AM	6.5	815	3.07	3.90	235	86.4	22.2	45.1	5.95	47.6
AN	6.4	814		3.92	239					43.5
AO	6.53	815	3.05	3.808	232.4	85.85	22.01	43.59	6.28	43.17
AP	6.5	797	3.01	3.77	230	83.79	22.35	44.5	6.1	45.928
AQ	6.4	818	2.98		239	84.8	21.4	43.8	6.27	35.5
AR	6.5	850	3.00	3.90	235	86.6	20.3	43.4	5.77	45.5
AS	6.32	804	3.02	3.90	234.6	85.8	21.6	50.4	7.08	44.1
AT	6.41	818								45.72

Measurement Uncertainties Sample N147A

	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	0.03	0.04	2	1.1	0.2	0.5	0.07	0.9
IFA result	0.20	25	0.16	0.20	12	5.4	1.1	3.3	0.38	2.2
Stability test										
A			0.38							
B	0.00	133	0.02			0.59	0.15	0.95	0.09	0.09
C	0.07		0.06	0.13	4.73	1.45	1.15	0.90	0.58	0.30
D	0.27	8	0.3	0.236	14.4	4.4	1.1	2.2	0.25	2.3
E	0.01	13	0.1	0.03	1.4	1.6	1.2	1.0	0.2	1.2
F	0.3	40	0.2			4.2	1.2			2.2
G	0.27	32	0.27	0.16	9.4	7.8	2.0	4.0	0.57	4.0
H	0.3	82	0.45	0.38	23	11.9	3.6	6.3	0.97	6.8
I		16	0.12	0.19	12	3.4	1.1	2.2	0.31	1.4
J	0.30	25	0.34	0.12	7	7.7	2.0	3.6	0.45	4.0
K	0.13	8.2	0.3	0.2	12	12.4	3.1	6.4	0.9	4.9
L	0.11	15.6								
M	0.17	20	0.3	0.1	6	9	2	5	6	5
N	0.013	4.9	0.19			3.53	1.63	2.39	0.252	
O										
P	0.1	15	0.22	0.16	9	6.1	1.5	1.8	0.3	2.3
Q	0.2	40	0.3	0.4	20	8	2.2			4.5
R						3.5	1.4	0.8	0.23	0.8
S	0.05	2	0.15	0.2	12	4	1	2	0.3	2
T	0.4	40	0.3	0.2	12	9	3	5	1	4
U						0.1	0.2	0.1	0.3	0.2
V	0.12	16	0.32	0.28	19	3.5	0.9	1.8	0.5	3.2
W	0.2	33	0.16	0.1096	6.7	4.0	1.3	2.2	0.3	5.5
X	0.0001	0.577	0.012	0.010	1.000	0.252	0.100	0.058	0.012	0.183
Y		22				8.7	2.2	2.2	0.6	2.3
Z	0.1	5	0.3	0.4	23.7	8.6	2.3	4.5	0.6	4.5
AA										
AB										
AC										
AD	0.39	65	0.3	0.17	10.5	8.612	2.129	4.235	0.604	4.14
AE	0.1	4.51		0.38		8.6	2.2	4.4	0.65	4.7
AF										
AG	0.05	2	0.1	0.1	6.1	1.7	0.8	0.8	0.3	0.4
AH	0.1	10	0.16	0.04	3	4.5	1.2	2	0.4	2
AI		43	0.39	0.12	7.0	6.7	1.1	4.9	1.0	2.7
AJ										
AK	0.08	58				15	3.1			
AL	0.03	24	0.24	0.19	11.3	3.8	1.7	2.9	0.40	1.5
AM	0.3	33	0.2	0.2	10	7	3	7	0.8	4
AN	0.01	0.4		0.004	0.004					0.6
AO	0.13	24				5.15	3.96	3.92	0.63	4.75
AP	0.39	31.9		0.566	34.51	3.352	1.341	2.67	0.61	1.8371
AQ		8	0.07		8	1.4	1.3	0.639	0.384	0.973
AR	0.2	85	0.30	0.39	24	8.7	2.0	4.3	0.58	4.6
AS	0.08	25	0.25	0.19	11.7	6.8	1.3	7.5	0.50	1.41
AT	0.32	41								4.57

Results Sample N147A

	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	0.050	<0.01	75.2	68.4	0.041	0.036	2.99	0.102	3.43
IFA result	0.049	<0.01	74.0	68.5	0.043	0.034	2.98	0.112	3.46
Stability test	0.050	<0.01			0.042		3.01		3.69
A			76	68					
B	<0.02	<0.02	77.77	72.07	<0.15	0.04	3.65	<0.15	n.b
C	0.0493	<0.010	77.1	68.7	0.0434	0.035	3.00	0.1049	3.50
D	0.049	<0.01	75	70	0.043	0.0349	2.94	0.078	3.5
E	0.046	<0.01	74.9	69	0.047	0.03	3.18	0.110	
F	0.05	<0.06	74	67	0.05	<0.10			
G	0.050	<0.01	74.0	67.2	0.044	0.035	3.13	0.108	3.42
H	0.005	<0.04	77.4	72.2	0.037	0.079	3.53	0.041	
I	0.051	<0.030	75.3	69.9	0.038	<0.050	2.73	0.150	3.74
J	0.054	<0.008	75.0	67.4	0.045	0.036	2.96	0.106	
K	0.05	<0.01	74.6	69.5	<0.15	0.035	3.5	<0.15	
L	0.050								12
M	0.053	<0.01	76.3	70.0	0.039	0.034	3.28	0.12	3.62
N						0.0353		0.105	
O	0.050	0.008	75.6		0.043			0.099	
P	0.046	<0.01	77.4	70.1	0.036	<0.05	3.22	0.116	3.48
Q	0.05	<0.01	76.4	75.3					3.3
R	0.052	<0.01	77.5	72.5	0.041	0.024	3.025	0.087	2.9
S	0.0482	0.05	77.3	71.5	0.036			0.095	
T	0.053	<0.01	72	65	<0.1	0.034	3.4	0.143	3.6
U				71.33					
V	0.050	<0.020	76.1	69.9	0.044	0.0351	0.14	0.101	3.4
W	0.049	<0.01	73.3	68.1	0.039	0.0363	2.85	0.095	
X	0.0531	0.0067	80.2	67.1	0.0457	0.0393	3.00	0.104	4.03
Y			75.3	66.4		0.0352			
Z	0.049	0.010	74.9	69.2	0.041		3.315	0.101	
AA		<0.01			0.045				
AB	0.052	<0.01	76.5	68.4	0.043		3.4	0.104	3.33
AC	0.0461	<0.042	77.1	68.8		0.028	3.03		2.92
AD	0.052	<0.01	77.4	69.9	0.046	0.031	2.83	<0.003	3.63
AE	0.050	<0.009	80.85	72.97	0.041	0.041	3.03	0.104	
AF	0.055	<0.03	74.6	66.2	0.04	0.043	3.2	0.092	3.6
AG	0.049	<0.006	76.1	68	0.044		3.3	0.091	
AH	0.04	<0.04	73.18	65.53					3.39
AI	<0.2	<0.2	71.4	67.2	<2.0	0.038		0.14	
AJ	0.046					0.036		0.092	
AK									4.08
AL	0.0485	<0.01	74.1	70.1	0.0715	0.0412	3.18	0.107	3.15
AM	0.050	<0.013	76.1	70.7	0.042		3.15	0.104	
AN	0.051	0.009			0.042		3.08	0.095	
AO	0.050	<0.005	68.47	65.02	0.014	0.0355	3.3	0.033	3.0
AP	0.049	[0.00064]	76.88	67.7	0.043	0.036	3.2	0.037	3.22
AQ	0.052	<0.0067	71.1	78.9	0.054			0.112	3.55
AR	0.054	<0.010	74.3	68.8	0.035	0.035	3.20	0.123	2.98
AS	0.041	<0.010	76.5	70.2	0.029	0.033	3.0	0.101	3.59
AT	0.051	<0.012	74.39	66.70	0.042		3.14	0.090	

Measurement Uncertainties Sample N147A

	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	0.001		1.1	0.8	0.004	0.001	0.04	0.003	0.14
IFA result	0.002		3.7	2.7	0.002	0.003	0.12	0.026	0.62
Stability test	0.003				0.002		0.12		0.66
A			4	4					
B			0.15	0.14		0.00	0.11		
C	0.0009		0.23	0.75	0.0020	0.003	0.03	0.0021	
D	0.002		3.8	2.8	0.002	0.0052	0.23	0.016	0.85
E	0.002		1.7	1.8	0.004	0.003	0.29	0.010	
F	0.003		3.7	3.4	0.003				
G	0.005		6.66	6.0	0.004	0.006	0.28	0.004	0.31
H	0.008		11.6	10.8	0.006	0.012	1.06	0.010	
I	0.005		2.3	2.1	0.004		0.27	0.023	0.37
J	0.007		3.8	3.4	0.005	0.004	0.27	0.011	
K	0.003		7.5	7		0.009	0.39		
L	0.004								1.14
M	0.005		8	7	0.004	0.003	0.3	0.01	0.4
N						0.00212		0.0158	
O									
P	0.004		3.9	3.5	0.003		0.36	0.010	0.35
Q	0.005		7.6	7.5					0.5
R	0.001		2.1	2.6	0.002	0.007		0.004	0.04
S	0.0025	0.0025	3.5	3.5	0.002			0.005	
T	0.006		8	7		0.004	0.4	0.2	0.2
U				0.35					
V	0.005	0.006	6.1	4.2	0.007	0.0025	0.02	0.018	0.3
W	0.005		5.7	6.3	0.005	0.0054	0.61	0.014	
X	0.0009	0.001	0.417	0.383	0.001	0.0004	0.006	0.0014	0.021
Y			3.8	6.6		0.007			
Z	0.005	0.001	7.5	6.9	0.004		0.332	0.01	
AA					0.001				
AB									
AC									
AD	0.005		0.08	4.68	0.005	0.003	0.33		0.04
AE	0.005		8.1	7.3	0.004	0.006	0.3	0.010	
AF									
AG	0.002	0.003	0.2	2	0.002		0.2	0.005	
AH	0.009		4	3					0.17
AI			5.6	8.9		0.004		0.02	
AJ	0.007					0.007		0.016	
AK									1.1
AL	0.005		5.0	2.3	0.005	0.005	0.51	0.007	0.47
AM	0.004		6	5	0.006		0.5	0.02	
AN	0.001	0.001			0.001		0.008	0.0003	
AO	0.005		7.53	7.80	0.001	0.0032	0.4	0.002	0.5
AP	0.0039		3.075	4.062	0.0052	0.0043	0.32	0.0055	0.515
AQ	0.003		1.25	2.8	0.0019			0.0014	0.130
AR	0.005		7.4	6.9	0.004	0.004	0.32	0.025	0.60
AS	0.002		3.1	2.1	0.001	0.003	0.5	0.01	0.61
AT	0.014		7.43	6.67	0.007		0.57	0.011	

Results Sample N147B

	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		361	1.00	1.75	104	24.9	9.07	30.6	5.52	20.1
IFA result	7.17	364	1.03	1.74	103	26.1	9.08	32.4	5.79	19.7
Stability test										
A			0.96	1.72						
B	6.55	364	1.05	n.b.	n.b.	23.9	8.85	29.73	5.53	20.70
C	7.03	367	1.00	1.74	103	25.5	8.91	30.1	5.56	20.2
D	7.28	357	1.03	1.733	105.7	26	9	30.3	5.53	20
E	6.81	358	1.0	1.75	103.4	24.9	9.1	30.1	5.5	20.2
F	7.2	360	1.0			25.1	9.7			20
G	7.15	360	0.978	1.74	103	24.6	8.86	30.2	5.73	19.7
H	7.0	355	0.94	1.71	101	22.3	9.4	29.5	5.57	20.1
I	7.05	366	1.06	1.76	104	25.8	10.0	28.8	5.38	21.4
J	6.71	365	1.01	1.73	103	25.1	9.37	30.6	5.71	20.0
K	6.9	360	1.0	1.75	107	24.3	8.7	29.4	5.1	20.1
L	6.81	372		1.73	100					
M	6.95	354	1.1	1.78	106	25.5	10.3	31.9	5.88	20.3
N	6.85	361	1.05	1.805		26.3	9.63	33.2	5.69	
O	6.77	361		1.76	104					19.9
P	6.7	361	1.05	1.65	97.6	24.7	10.5	31.5	6.2	19.5
Q	7.0	349	0.99	1.71	104	23.2	9.9	30	5.2	20.7
R	6.82	365	0.95	1.75	104	24.3	8.33	31.1	5.66	20.2
S	6.87	358	0.99	1.75	107	24.4	9.30	29.2	5.39	20.6
T	6.7	356	1.00	1.76	108	23.9	9.48	35.0	6.57	21
U						25.71	9.03	30.50	5.53	20.21
V	6.74	358	1.05	1.75	107	26.6	9.8	31.5	5.9	20.5
W	7	361	0.992	1.700	100.7	24.8	9.0	30.3	5.4	19.5
X	7.79	363	0.880	1.75	104	22.0	8.06	27.5	4.78	20.0
Y		331				27.0	9.1	29.4	5.3	20.3
Z	6.6	364	1.02	1.73	105.6	25.4	9.42	31.0	5.38	19.5
AA										22.42
AB	7.06	363	1.01	1.77	105	25.4	9.1	31.0	5.7	19.9
AC	7.1	353	0.786	0.88	108	21.2	6.904	31.36	5.764	20.1
AD	7.02	359	0.962	1.7	106	23.87	8.91	29.06	5.38	20.9
AE	7.62	362	1.02	1.74	103.11	26.06	9.00	30.88	5.59	24.36
AF	7.0	362	0.798	1.781	105.6	20.9	6.7	10.2	3.0	18.7
AG	6.98	357	1.01	1.75	106.8	23.9	8.8	29.4	5.1	19.9
AH	6.80	360.00	1.05	1.80	107.00	27.17	8.99	32.15	5.91	20.30
AI		367	0.992	1.73	103	25.3	8.8	30.5	5.7	19.8
AJ										
AK	7.04	362	1.23	2.9	176.9	32	11			
AL	6.62	355	0.959	1.68	103	24.0	8.72	27.1	4.95	20.1
AM	6.8	361	1.01	1.73	102	25.3	9.13	30.8	5.29	20.6
AN	6.8	361		1.75	106.8					18.5
AO	6.97	362	0.98	1.667	101.7	24.97	8.76	30.19	5.72	19.36
AP	6.8	353	1.01	1.67	101.9	25.18	9.23	30.04	5.59	20.107
AQ	6.8	365	1.01		103	25.2	9.1	27.7	5.58	15.8
AR	6.9	368	1.04	1.76	104	27.7	8.42	29.3	5.12	20.5
AS	6.80	358	1.0	1.74	103.1	25.7	9.25	35.6	6.30	20.1
AT	6.95	364								20.35

Measurement Uncertainties Sample N147B

	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		1	0.01	0.01	1	0.3	0.09	0.1	0.04	0.4
IFA result	0.20	11	0.05	0.09	5	1.6	0.45	2.3	0.35	1.0
Stability test										
A			0.12							
B	0.06	25.4	0.02			0.56	0.20	0.61	0.08	0.04
C	0.07		0.04	0.08	2.06	1.40	0.13	0.81	0.59	0.27
D	0.29	4	0.1	0.104	6.3	1.3	0.5	1.5	0.22	0.1
E	0.01	6	0.02	0.01	0.6	0.5	0.5	0.7	0.2	0.52
F	0.4	18	0.1			1.3	0.5			1.0
G	0.29	14	0.09	0.07	4.1	2.2	0.80	2.7	0.52	1.77
H	0.4	36	0.14	0.26	10	3.30	1.41	4.43	0.84	3.0
I		7	0.04	0.09	5	1.0	0.5	1.4	0.27	0.6
J	0.30	11	0.11	0.06	3	2.3	0.85	2.5	0.40	1.8
K	0.14	3.6	0.1	0.09	5.4	3.6	1.3	4.4	0.8	2.2
L	0.12	7.04								
M	0.17	9	0.1	0.04	2.6	3	1	3	6	2
N	0.014	2.2	0.063			1.05	0.674	1.66	0.228	
O										
P	0.1	7	0.07	0.07	3.9	1.7	0.6	1.3	0.3	1.0
Q	0.2	17	0.1	0.2	10	2.3	1.0			2.1
R						0.9	0.47	0.7	0.23	0.7
S	0.05	1	0.05	0.1	5	1	0.5	1.5	0.3	1
T	0.4	20	0.1	0.1	5	3	1	4	0.7	2
U						0.3	0.05	0.1	0.1	0.2
V	0.12	7	0.11	0.12	9	1.1	0.6	1.3	0.5	1.4
W	0.3	14	0.056	0.114	6.9	1.2	0.6	1.5	0.2	2.4
X	0.0001	0.0001	0.046	0.006	0.0001	0.636	0.388	1.375	0.127	0.146
Y		10				2.7	0.9	1.5	0.5	1.0
Z	0.1	5	0.1	0.2	10.6	2.6	0.95	3.1	0.54	2.0
AA										3.34
AB										
AC										
AD	0.42	29	0.09	0.08	4.7	2.387	0.891	2.906	0.538	1.89
AE	0.1	4.51		0.17		2.6	0.9	3.1	0.57	2.4
AF										
AG	0.05	2	0.1	0.1	6.1	1.7	0.8	0.8	0.3	0.4
AH	0.1	10	0.05	0.04	3	1.4	0.5	1.7	0.3	1.1
AI		19	0.130	0.05	3.1	2.0	0.5	3.3	0.9	1.2
AJ										
AK	0.09	26				6	1.3			
AL	0.03	10.6	0.078	0.08	4.9	1.1	0.72	1.9	0.36	0.7
AM	0.3	15	0.1	0.1	5	3	1.1	5	0.7	2
AN	0.05	0.0		0.002	0.002					0.3
AO	0.14	11				1.50	1.58	2.72	0.57	2.13
AP	0.41	14.1		0.251	15.28	1.007	0.554	1.802	0.559	0.8043
AQ		5	0.04		4	0.57	0.86	0.631	0.361	0.160
AR	0.2	37	0.10	0.18	10	2.8	0.84	2.9	0.51	2.1
AS	0.08	11	0.08	0.08	5.0	2.0	0.55	5.3	0.31	0.64
AT	0.35	18								2.04

Results Sample N147B

	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	0.076	0.050	28.9	27.4	<0.009	0.086	5.22	<0.009	2.38
IFA result	0.074	0.052	28.6	28.1	<0.009	0.086	5.18	<0.009	2.29
Stability test	0.075	0.051			<0.009		5.21		2.32
A			29	29					
B	0.071	0.056	29.00	28.84	<0.15	0.08	5.39	<0.15	n.b.
C	0.0726	0.0572	29.8	27.5	[0.0024]	0.085	5.21	[0.0022]	2.49
D	0.074	0.050	29	28	<0.015	0.0833	5.02	<0.015	2.4
E	0.072	0.050	29.0	28	<0.01	0.08	5.42	<0.01	
F	0.08	0.08	28	27	<0.05	<0.10			
G	0.073	0.055	28.6	26.8	<0.01	0.085	5.36	<0.05	2.44
H	0.078	0.049	29.0	27.3	<0.015	0.026	5.47	<0.015	
I	0.078	0.055	30.7	30.0	<0.020	0.088	4.78	<0.031	2.69
J	0.083	0.052	29.2	27.5	<0.006	0.089	5.19	<0.006	
K	0.08	0.05	28.9	28.4	<0.15	0.081	5.73	<0.15	
L	0.077								8.6
M	0.079	0.053	28.0	27.2	<0.02	0.087	5.35	<0.050	2.22
N						0.0834		<0.0631	
O	0.075	0.054	29.0		<0.006			<0.006	
P	0.071	0.041	29.4	27.3	<0.015	0.089	5.32	<0.015	2.82
Q	0.08	0.05	28.9	28.0					2.2
R	0.079	0.048	30.3	27.9	<0.01	0.075	5.262	<0.009	1.9
S	0.0702	<0.01	30.3	29.6	<0.02			<0.02	
T	0.077	0.05	29	28	<0.1	0.080	5.5	<0.031	2.6
U				28.20					
V	0.076	0.052	28.7	27.6	<0.009	0.0837	4.95	<0.009	2.1
W	0.076	0.053	27.9	26.9	<0.01	0.0871	5.16	<0.01	
X	0.0787	0.0541	29.3	27.7	0.0018	0.0901	5.48	0.0166	2.61
Y			29.3	26.3		0.0819			
Z	0.075	0.050	27.7	26.5	<0.009		5.394	<0.009	
AA		0.045			<0.019				
AB	0.079	0.048	29.5	27.4	<0.01		5.5	<0.01	2.30
AC	0.0732	0.046	29.3	26.8		0.077	5.35		2.28
AD	0.076	0.048	29.8	28.4	0.01	0.079	4.93	<0.003	2.63
AE	0.075	0.050	31.79	31.01	<0.0015	0.095	5.02	<0.001	
AF	0.074	0.06	28.3	25.4	<0.03	0.084	5.3	<0.03	2.4
AG	0.079	0.053	28.5	27	<0.003		5.5	<0.009	
AH	0.07	0.0649	26.86	26.35					2.16
AI	<0.2	<0.2	27.4	27.2	<2.0	0.088		<0.08	
AJ	0.069					0.087		<0.030	
AK									2.96
AL	0.073	0.050	28.7	28.2	<0.015	0.0901	5.29	<0.015	2.01
AM	0.075	0.048	29.2	28.2	<0.01		5.29	<0.013	
AN	0.076	0.052			<0.006		5.25	<0.006	
AO	0.076	0.049	25.10	24.26	0.002	0.0866	6.2	0.002	2.2
AP	0.076	0.046	29.7	27.4	0.009	0.076	5.4	0.0337	2.03
AQ	0.079	0.023	25.6	40.7	<0.012			<0.018	2.30
AR	0.080	0.057	30.9	27.7	<0.008	0.082	5.49	<0.015	2.17
AS	0.070	0.053	29.0	28.3	<0.015	0.080	5.1	<0.015	2.74
AT	0.076	0.056	29.04	28.26	<0.015		5.08	<0.015	

Measurement Uncertainties Sample N147B

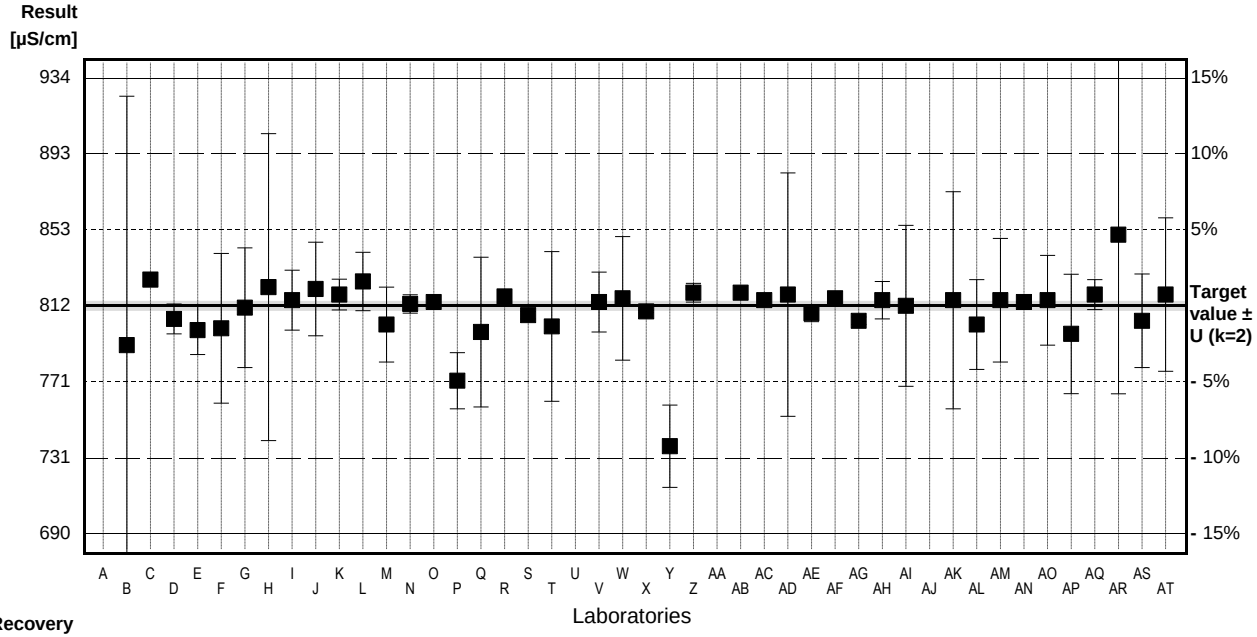
	NO_2^- ±	NH_4^+ ±	Cl^- ±	SO_4^{2-} ±	o-PO_4^{3-} ±	Boron ±	DOC ±	total-P (as PO_4^{3-}) ±	$KMnO_4$-Index ±
Unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Target value	0.001	0.004	0.5	0.3		0.001	0.05		0.12
IFA result	0.004	0.004	1.4	1.1		0.009	0.21		0.41
Stability test	0.004	0.004					0.21		0.42
A			2	2					
B	0.001	0.001	0.05	0.05		0.01	0.05		
C	0.0009	0.0013	0.11	0.37		0.003	0.03		
D	0.003	0.008	1.5	1.1		0.0125	0.40		0.577
E	0.004	0.002	0.7	0.7		0.01	0.49		
F	0.004	0.004	1.4	1.4					
G	0.007	0.005	2.6	2.4		0.02	0.48		0.22
H	0.012	0.007	4.3	4.1		0.004	1.64		
I	0.008	0.006	0.9	0.9		0.009	0.48		0.27
J	0.010	0.008	1.5	1.4		0.009	0.47		
K	0.005	0.005	2.9	2.8		0.020	0.63		
L	0.0014								0.81
M	0.008	0.005	3	3		0.009	0.5		0.2
N						0.00501			
O									
P	0.004	0.004	1.5	1.4	0.003	0.022	0.60		0.28
Q	0.005	0.005	3.0	2.8					0.3
R	0.001	0.001	0.4	1.2		0.005			0.1
S	0.0035		1.5	1.5					
T	0.008	0.02	3	3		0.008	0.5		0.2
U				0.8					
V	0.008	0.016	2.3	1.7	0.001	0.0059	0.69	0.002	0.2
W	0.007	0.010	2.3	2.6		0.0115	0.98		
X	0.0009	0.0026	0.114	0.080	0.001	0.0009	0.028	0.0003	0.015
Y			1.5	2.7		0.016			
Z	0.008	0.005	2.8	2.7			0.539		
AA		0.002							
AB									
AC									
AD	0.007	0.0094	0.03	3.12	0.001	0.0079	0.59		0.03
AE	0.007	0.004	3.2	3.1		0.014	0.5		
AF									
AG	0.002	0.003	0.2	2	0.002		0.2	0.005	
AH	0.009	0.0027	1.4	1.4					0.17
AI			2.2	3.6		0.009			
AJ	0.010					0.017			
AK									0.8
AL	0.008	0.004	1.9	0.9		0.011	0.85		0.30
AM	0.006	0.007	3	2			0.8		
AN	0.001	0.001					0.003		
AO	0.007	0.007	2.71	2.91	0.000	0.0078	0.7	0.000	0.33
AP	0.006	0.0046	1.188	1.644	0.0011	0.0091	0.54	0.0052	0.325
AQ	0.004	0.006	0.42	2.0					0.09
AR	0.008	0.006	3.1	2.8		0.008	0.55		0.43
AS	0.003	0.005	1.2	8.5		0.008	0.9		0.46
AT	0.021	0.013	2.90	2.83			0.91		

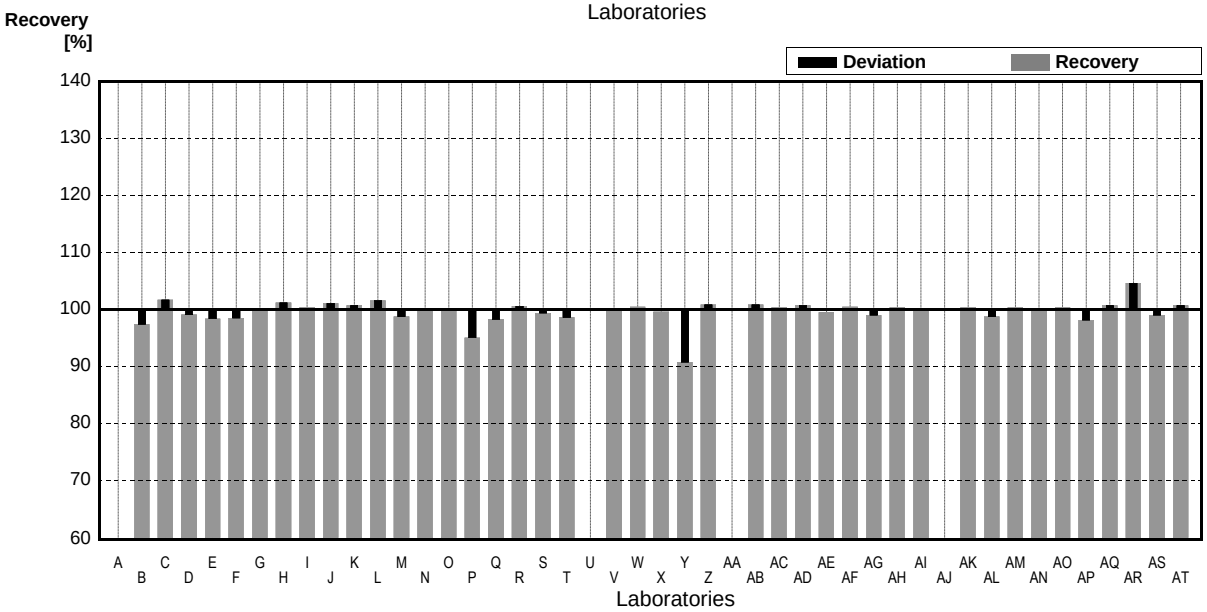
Sample N147A

Parameter Conductivity

Target value ± U (k=2)	812	µS/cm	±	2	µS/cm
IFA result ± U (k=2)	819	µS/cm	±	25	µS/cm
Stability test		µS/cm			

Lab Code	Result		±	Unit	Recovery	z-Score
A				µS/cm		
B	791	*	133	µS/cm	97%	-1,99
C	826			µS/cm	102%	1,33
D	805		8	µS/cm	99%	-0,66
E	799		13	µS/cm	98%	-1,23
F	800		40	µS/cm	99%	-1,14
G	811		32	µS/cm	100%	-0,09
H	822		82	µS/cm	101%	0,95
I	815		16	µS/cm	100%	0,28
J	821		25	µS/cm	101%	0,85
K	818		8,2	µS/cm	101%	0,57
L	825		15,6	µS/cm	102%	1,23
M	802		20	µS/cm	99%	-0,95
N	813		4,9	µS/cm	100%	0,09
O	814			µS/cm	100%	0,19
P	772	*	15	µS/cm	95%	-3,79
Q	798		40	µS/cm	98%	-1,33
R	817			µS/cm	101%	0,47
S	807		2	µS/cm	99%	-0,47
T	801		40	µS/cm	99%	-1,04
U				µS/cm		
V	814		16	µS/cm	100%	0,19
W	816		33	µS/cm	100%	0,38
X	809		0,577	µS/cm	100%	-0,28
Y	737	*	22	µS/cm	91%	-7,10
Z	819		5	µS/cm	101%	0,66
AA				µS/cm		
AB	819			µS/cm	101%	0,66
AC	815			µS/cm	100%	0,28
AD	818		65	µS/cm	101%	0,57
AE	808		4,51	µS/cm	100%	-0,38
AF	816			µS/cm	100%	0,38
AG	804		2	µS/cm	99%	-0,76
AH	815,00		10	µS/cm	100%	0,28
AI	812		43	µS/cm	100%	0,00
AJ				µS/cm		
AK	815		58	µS/cm	100%	0,28
AL	802		24	µS/cm	99%	-0,95
AM	815		33	µS/cm	100%	0,28
AN	814		0,4	µS/cm	100%	0,19
AO	815		24	µS/cm	100%	0,28
AP	797		31,9	µS/cm	98%	-1,42
AQ	818		8	µS/cm	101%	0,57
AR	850	*	85	µS/cm	105%	3,60
AS	804		25	µS/cm	99%	-0,76
AT	818		41	µS/cm	101%	0,57





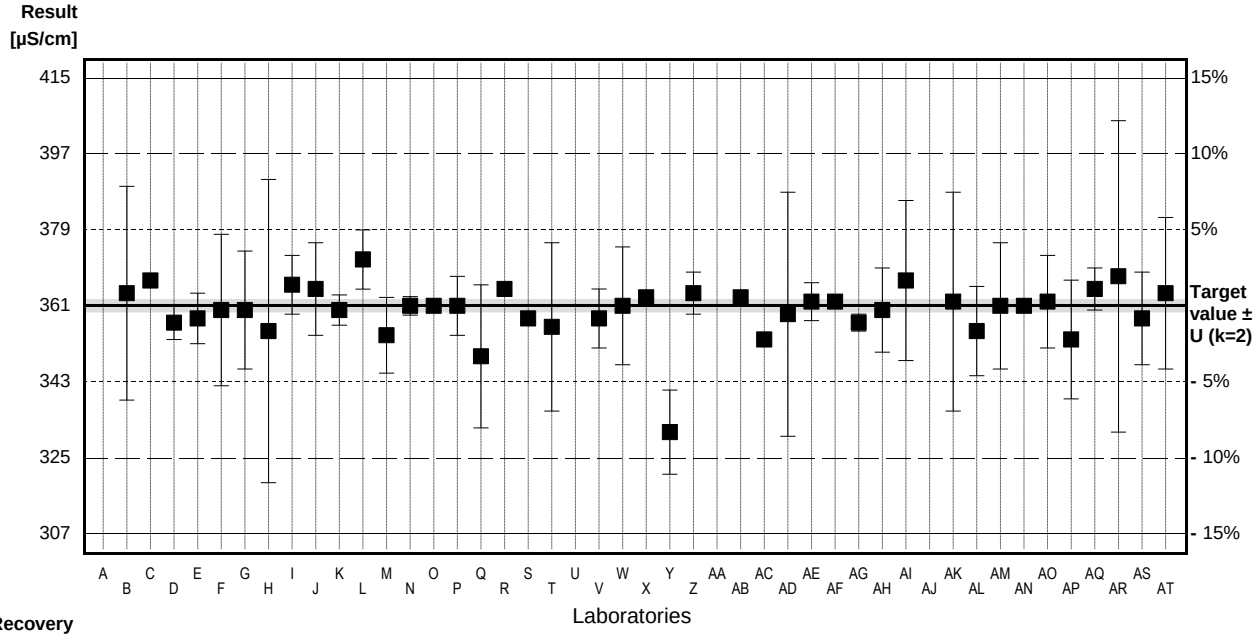
	All results	Outliers excl.	Unit
Mean ± CI(99%)	810 ± 7	812 ± 3	µS/cm
Recov. ± CI(99%)	99,7 ± 0,8	100,0 ± 0,4	%
SD between labs	16	8	µS/cm
RSD between labs	2,0	0,9	%
n for calculation	42	38	

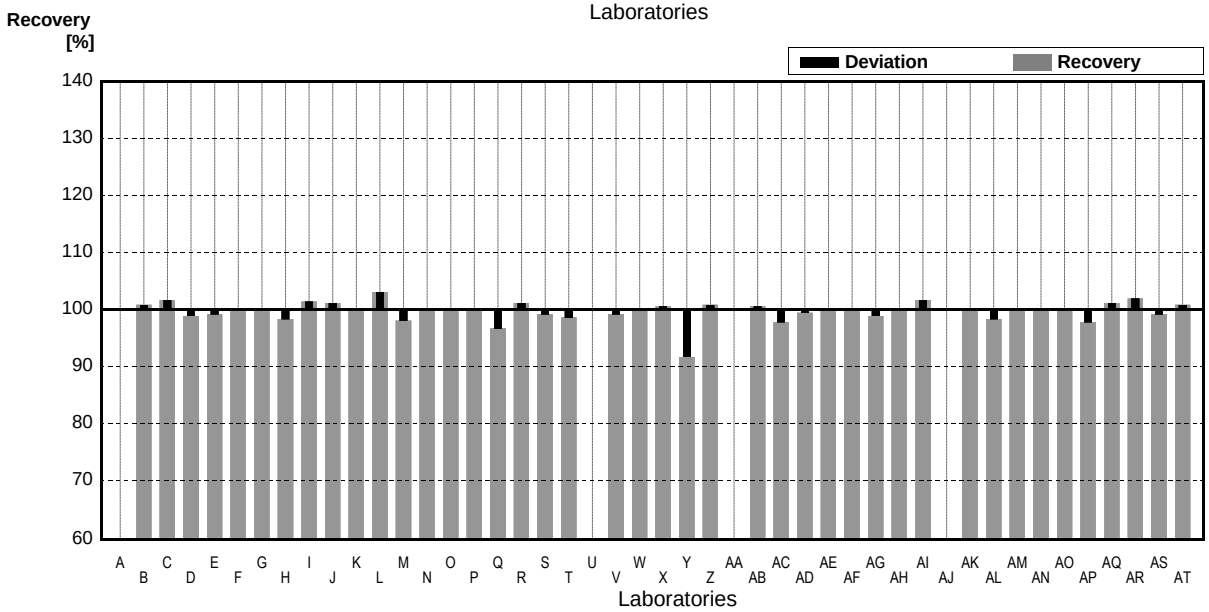
Sample N147B

Parameter Conductivity

Target value ± U (k=2)	361	µS/cm	±	1	µS/cm
IFA result ± U (k=2)	364	µS/cm	±	11	µS/cm
Stability test		µS/cm			

Lab Code	Result	±	Unit	Recovery	z-Score
A			µS/cm		
B	364	25,4	µS/cm	101%	0,64
C	367		µS/cm	102%	1,28
D	357	4	µS/cm	99%	-0,85
E	358	6	µS/cm	99%	-0,64
F	360	18	µS/cm	100%	-0,21
G	360	14	µS/cm	100%	-0,21
H	355	36	µS/cm	98%	-1,28
I	366	7	µS/cm	101%	1,07
J	365	11	µS/cm	101%	0,85
K	360	3,6	µS/cm	100%	-0,21
L	372	7,04	µS/cm	103%	2,34
M	354	9	µS/cm	98%	-1,49
N	361	2,2	µS/cm	100%	0,00
O	361		µS/cm	100%	0,00
P	361	7	µS/cm	100%	0,00
Q	349	17	µS/cm	97%	-2,56
R	365		µS/cm	101%	0,85
S	358	1	µS/cm	99%	-0,64
T	356	20	µS/cm	99%	-1,07
U			µS/cm		
V	358	7	µS/cm	99%	-0,64
W	361	14	µS/cm	100%	0,00
X	363	0,0001	µS/cm	101%	0,43
Y	331 *	10	µS/cm	92%	-6,39
Z	364	5	µS/cm	101%	0,64
AA			µS/cm		
AB	363		µS/cm	101%	0,43
AC	353		µS/cm	98%	-1,70
AD	359	29	µS/cm	99%	-0,43
AE	362	4,51	µS/cm	100%	0,21
AF	362		µS/cm	100%	0,21
AG	357	2	µS/cm	99%	-0,85
AH	360,00	10	µS/cm	100%	-0,21
AI	367	19	µS/cm	102%	1,28
AJ			µS/cm		
AK	362	26	µS/cm	100%	0,21
AL	355	10,6	µS/cm	98%	-1,28
AM	361	15	µS/cm	100%	0,00
AN	361	0,0	µS/cm	100%	0,00
AO	362	11	µS/cm	100%	0,21
AP	353	14,1	µS/cm	98%	-1,70
AQ	365	5	µS/cm	101%	0,85
AR	368	37	µS/cm	102%	1,49
AS	358	11	µS/cm	99%	-0,64
AT	364	18	µS/cm	101%	0,64





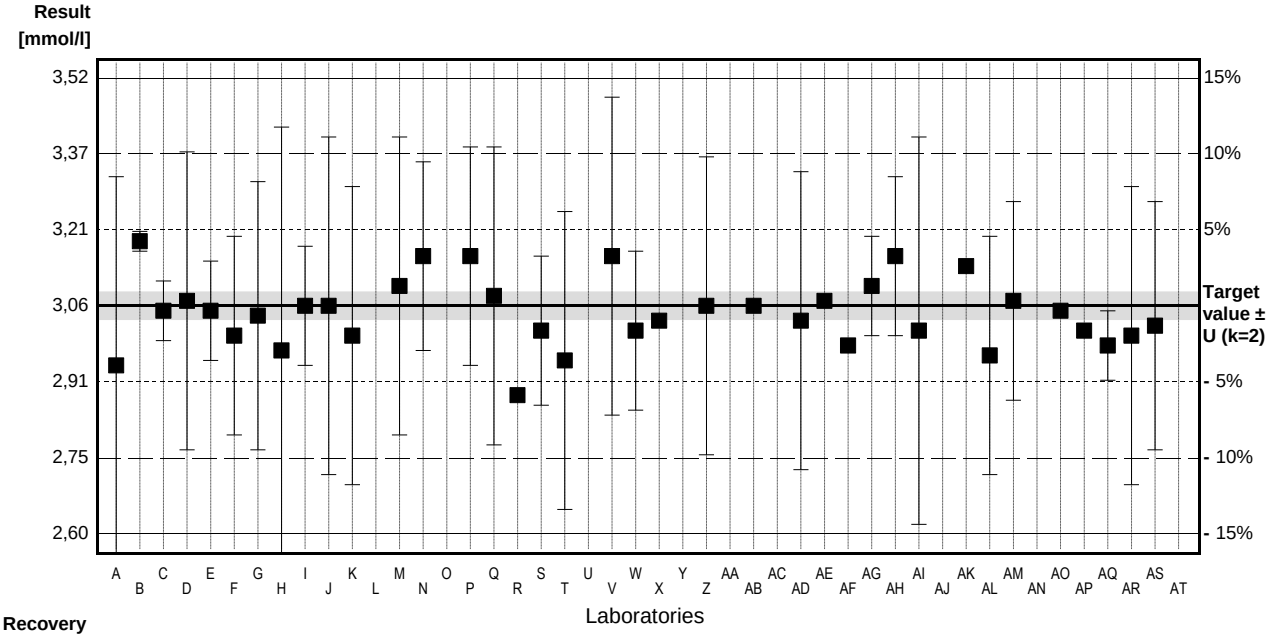
	All results	Outliers excl.	Unit
Mean ± CI(99%)	360 ± 3	361 ± 2	µS/cm
Recov. ± CI(99%)	99,7 ± 0,7	99,9 ± 0,5	%
SD between labs	6	5	µS/cm
RSD between labs	1,8	1,3	%
n for calculation	42	41	

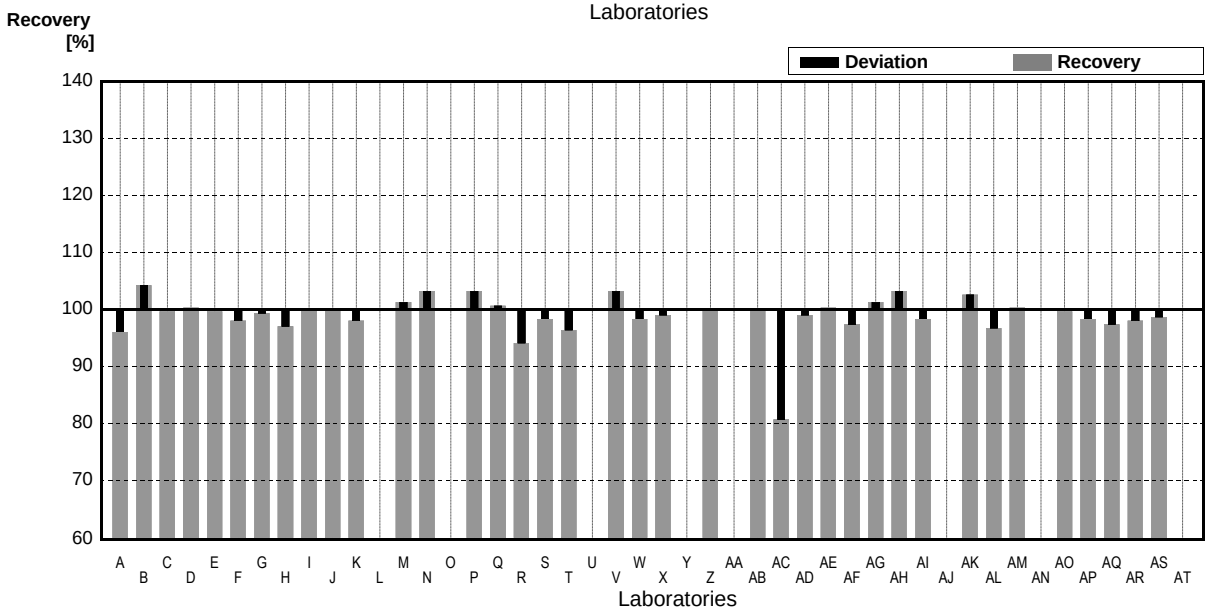
Sample N147A

Parameter Total hardness

Target value ± U (k=2)	3,06	mmol/l	±	0,03	mmol/l
IFA result ± U (k=2)	3,16	mmol/l	±	0,16	mmol/l
Stability test		mmol/l			

Lab Code	Result	±	Unit	Recovery	z-Score
A	2,94	0,38	mmol/l	96%	-1,40
B	3,19	0,02	mmol/l	104%	1,52
C	3,05	0,06	mmol/l	100%	-0,12
D	3,07	0,3	mmol/l	100%	0,12
E	3,05	0,1	mmol/l	100%	-0,12
F	3,0	0,2	mmol/l	98%	-0,70
G	3,04	0,27	mmol/l	99%	-0,23
H	2,97	0,45	mmol/l	97%	-1,05
I	3,06	0,12	mmol/l	100%	0,00
J	3,06	0,34	mmol/l	100%	0,00
K	3,0	0,3	mmol/l	98%	-0,70
L			mmol/l		
M	3,1	0,3	mmol/l	101%	0,47
N	3,16	0,19	mmol/l	103%	1,17
O			mmol/l		
P	3,16	0,22	mmol/l	103%	1,17
Q	3,08	0,3	mmol/l	101%	0,23
R	2,88		mmol/l	94%	-2,10
S	3,01	0,15	mmol/l	98%	-0,58
T	2,95	0,3	mmol/l	96%	-1,28
U			mmol/l		
V	3,16	0,32	mmol/l	103%	1,17
W	3,01	0,16	mmol/l	98%	-0,58
X	3,03	0,012	mmol/l	99%	-0,35
Y			mmol/l		
Z	3,06	0,3	mmol/l	100%	0,00
AA			mmol/l		
AB	3,06		mmol/l	100%	0,00
AC	2,47 *		mmol/l	81%	-6,89
AD	3,03	0,3	mmol/l	99%	-0,35
AE	3,07		mmol/l	100%	0,12
AF	2,98		mmol/l	97%	-0,93
AG	3,10	0,1	mmol/l	101%	0,47
AH	3,16	0,16	mmol/l	103%	1,17
AI	3,01	0,39	mmol/l	98%	-0,58
AJ			mmol/l		
AK	3,14		mmol/l	103%	0,93
AL	2,96	0,24	mmol/l	97%	-1,17
AM	3,07	0,2	mmol/l	100%	0,12
AN			mmol/l		
AO	3,05		mmol/l	100%	-0,12
AP	3,01		mmol/l	98%	-0,58
AQ	2,98	0,07	mmol/l	97%	-0,93
AR	3,00	0,30	mmol/l	98%	-0,70
AS	3,02	0,25	mmol/l	99%	-0,47
AT			mmol/l		





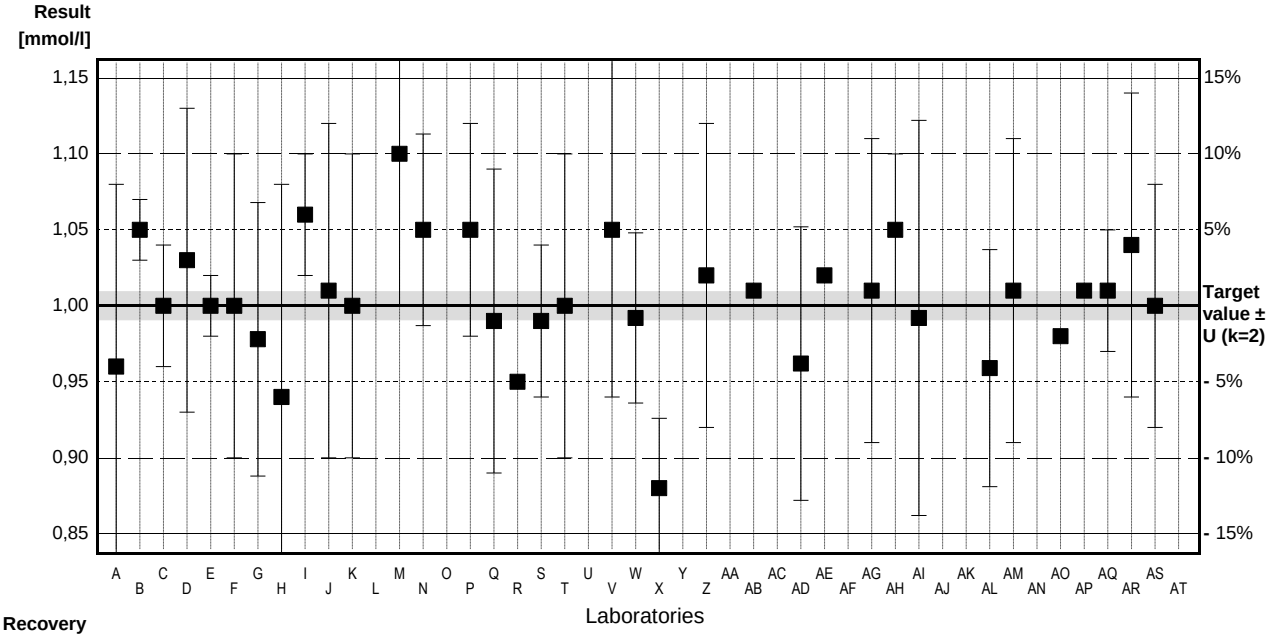
	All results	Outliers excl.	Unit
Mean ± CI(99%)	3,03 ± 0,05	3,05 ± 0,03	mmol/l
Recov. ± CI(99%)	99,0 ± 1,7	99,5 ± 1,0	%
SD between labs	0,12	0,07	mmol/l
RSD between labs	3,8	2,3	%
n for calculation	38	37	

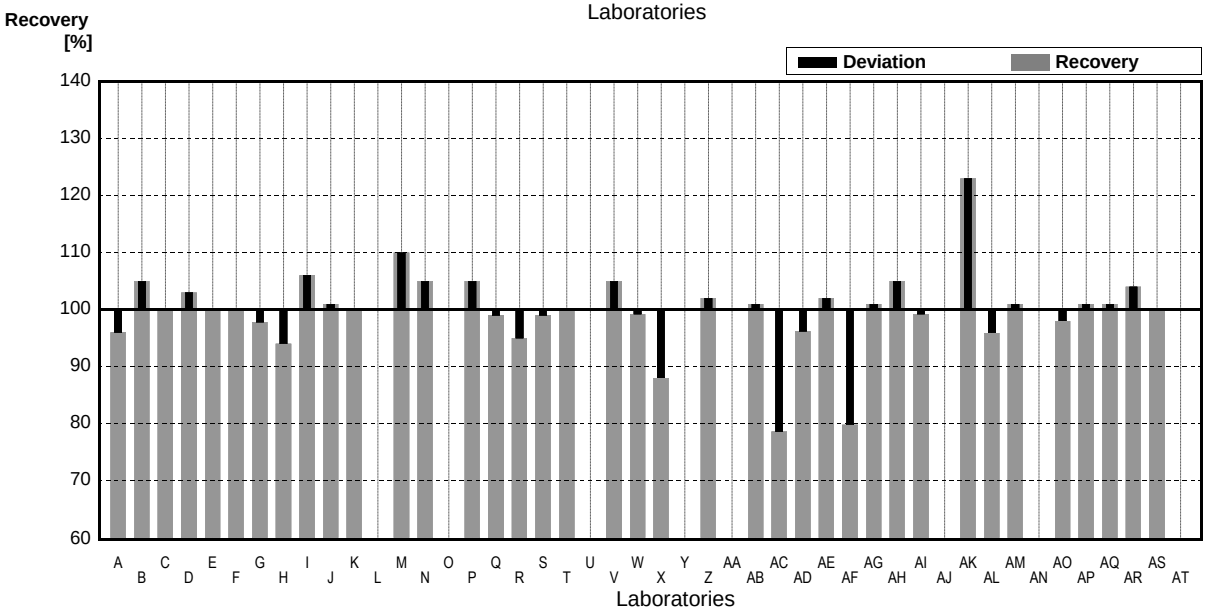
Sample N147B

Parameter Total hardness

Target value ± U (k=2)	1,00	mmol/l	±	0,01	mmol/l
IFA result ± U (k=2)	1,03	mmol/l	±	0,05	mmol/l
Stability test		mmol/l			

Lab Code	Result		±	Unit	Recovery	z-Score
A	0,96		0,12	mmol/l	96%	-1,43
B	1,05		0,02	mmol/l	105%	1,79
C	1,00		0,04	mmol/l	100%	0,00
D	1,03		0,1	mmol/l	103%	1,07
E	1,0		0,02	mmol/l	100%	0,00
F	1,0		0,1	mmol/l	100%	0,00
G	0,978		0,09	mmol/l	98%	-0,79
H	0,94		0,14	mmol/l	94%	-2,14
I	1,06		0,04	mmol/l	106%	2,14
J	1,01		0,11	mmol/l	101%	0,36
K	1,0		0,1	mmol/l	100%	0,00
L				mmol/l		
M	1,1	*	0,1	mmol/l	110%	3,57
N	1,05		0,063	mmol/l	105%	1,79
O				mmol/l		
P	1,05		0,07	mmol/l	105%	1,79
Q	0,99		0,1	mmol/l	99%	-0,36
R	0,95			mmol/l	95%	-1,79
S	0,99		0,05	mmol/l	99%	-0,36
T	1,00		0,1	mmol/l	100%	0,00
U				mmol/l		
V	1,05		0,11	mmol/l	105%	1,79
W	0,992		0,056	mmol/l	99%	-0,29
X	0,880	*	0,046	mmol/l	88%	-4,29
Y				mmol/l		
Z	1,02		0,1	mmol/l	102%	0,71
AA				mmol/l		
AB	1,01			mmol/l	101%	0,36
AC	0,786	*		mmol/l	79%	-7,64
AD	0,962		0,09	mmol/l	96%	-1,36
AE	1,02			mmol/l	102%	0,71
AF	0,798	*		mmol/l	80%	-7,21
AG	1,01		0,1	mmol/l	101%	0,36
AH	1,05		0,05	mmol/l	105%	1,79
AI	0,992		0,130	mmol/l	99%	-0,29
AJ				mmol/l		
AK	1,23	*		mmol/l	123%	8,21
AL	0,959		0,078	mmol/l	96%	-1,46
AM	1,01		0,1	mmol/l	101%	0,36
AN				mmol/l		
AO	0,98			mmol/l	98%	-0,71
AP	1,01			mmol/l	101%	0,36
AQ	1,01		0,04	mmol/l	101%	0,36
AR	1,04		0,10	mmol/l	104%	1,43
AS	1,0		0,08	mmol/l	100%	0,00
AT				mmol/l		



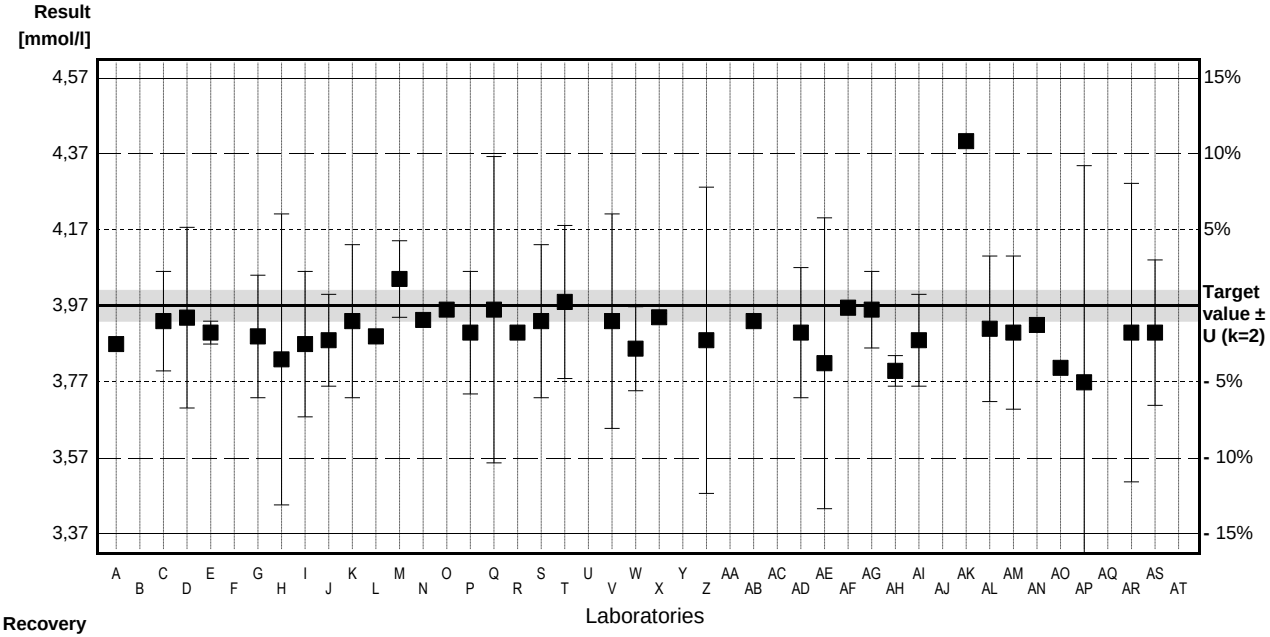


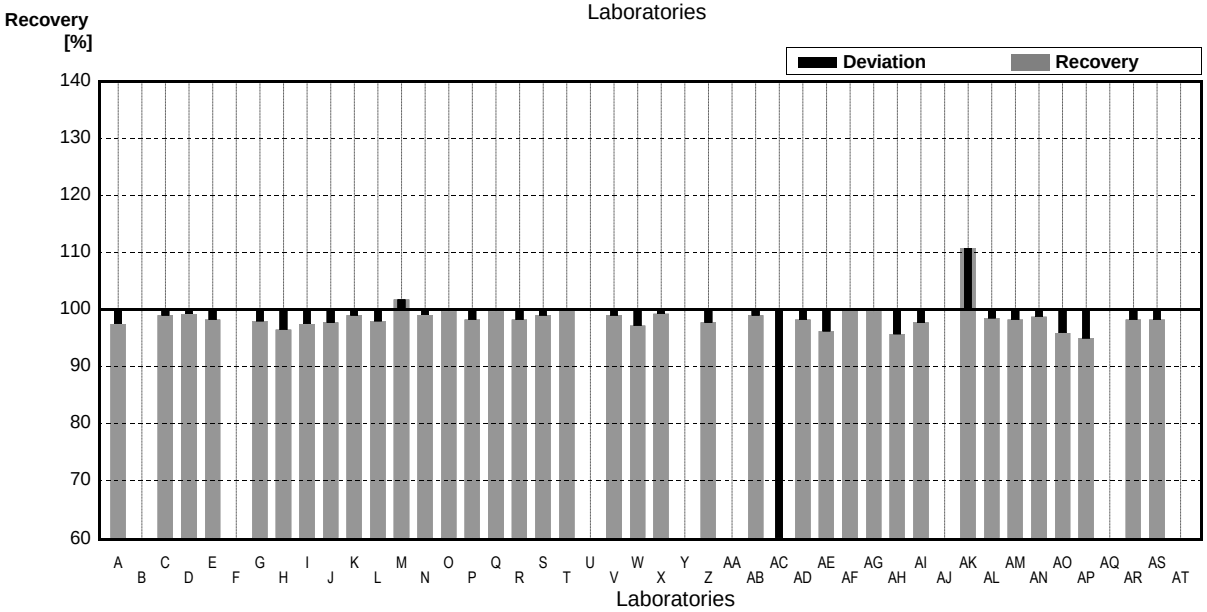
	All results	Outliers excl.	Unit
Mean ± CI(99%)	1,00 ± 0,03	1,01 ± 0,01	mmol/l
Recov. ± CI(99%)	99,9 ± 3,2	100,5 ± 1,5	%
SD between labs	0,07	0,03	mmol/l
RSD between labs	7,3	3,1	%
n for calculation	38	33	

Sample N147A
Parameter Alkalinity

Target value ± U (k=2)	3,97	mmol/l	±	0,04	mmol/l
IFA result ± U (k=2)	3,91	mmol/l	±	0,20	mmol/l
Stability test		mmol/l			

Lab Code	Result		±	Unit	Recovery	z-Score
A	3,87			mmol/l	97%	-1,14
B	n.b.			mmol/l		
C	3,93		0,13	mmol/l	99%	-0,46
D	3,939		0,236	mmol/l	99%	-0,35
E	3,9		0,03	mmol/l	98%	-0,80
F				mmol/l		
G	3,89		0,16	mmol/l	98%	-0,92
H	3,83		0,38	mmol/l	96%	-1,60
I	3,87		0,19	mmol/l	97%	-1,14
J	3,88		0,12	mmol/l	98%	-1,03
K	3,93		0,2	mmol/l	99%	-0,46
L	3,89			mmol/l	98%	-0,92
M	4,04	*	0,1	mmol/l	102%	0,80
N	3,933			mmol/l	99%	-0,42
O	3,96			mmol/l	100%	-0,11
P	3,90		0,16	mmol/l	98%	-0,80
Q	3,96		0,4	mmol/l	100%	-0,11
R	3,90			mmol/l	98%	-0,80
S	3,93		0,2	mmol/l	99%	-0,46
T	3,98		0,2	mmol/l	100%	0,11
U				mmol/l		
V	3,93		0,28	mmol/l	99%	-0,46
W	3,858		0,1096	mmol/l	97%	-1,28
X	3,94		0,010	mmol/l	99%	-0,34
Y				mmol/l		
Z	3,88		0,4	mmol/l	98%	-1,03
AA				mmol/l		
AB	3,93			mmol/l	99%	-0,46
AC	2,07	*		mmol/l	52%	-21,75
AD	3,9		0,17	mmol/l	98%	-0,80
AE	3,82		0,38	mmol/l	96%	-1,72
AF	3,965			mmol/l	100%	-0,06
AG	3,96		0,1	mmol/l	100%	-0,11
AH	3,80		0,04	mmol/l	96%	-1,95
AI	3,88		0,12	mmol/l	98%	-1,03
AJ				mmol/l		
AK	4,4	*		mmol/l	111%	4,92
AL	3,91		0,19	mmol/l	98%	-0,69
AM	3,90		0,2	mmol/l	98%	-0,80
AN	3,92		0,004	mmol/l	99%	-0,57
AO	3,808			mmol/l	96%	-1,85
AP	3,77		0,566	mmol/l	95%	-2,29
AQ				mmol/l		
AR	3,90		0,39	mmol/l	98%	-0,80
AS	3,90		0,19	mmol/l	98%	-0,80
AT				mmol/l		



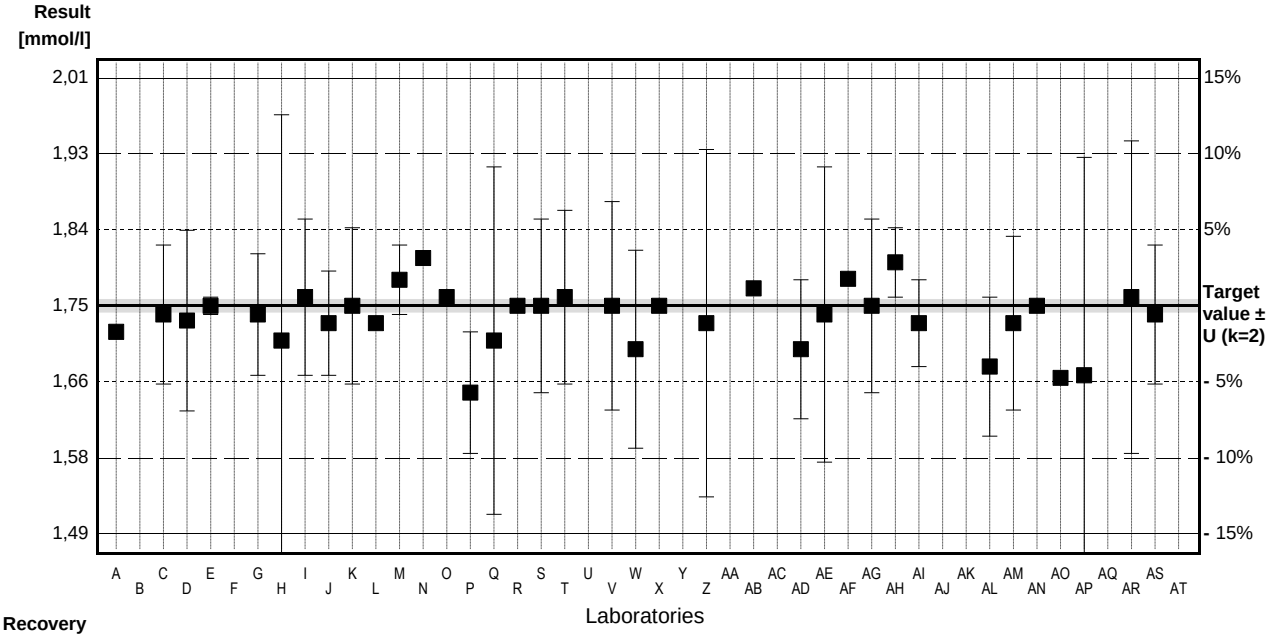


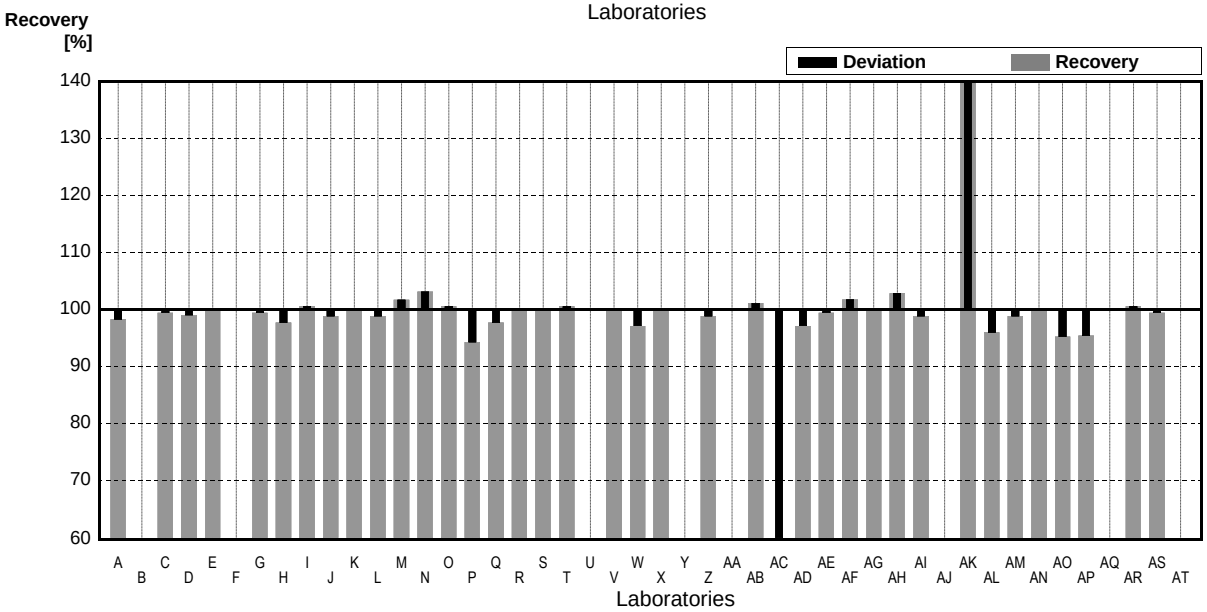
	All results	Outliers excl.	Unit
Mean ± CI(99%)	3,87 ± 0,14	3,90 ± 0,02	mmol/l
Recov. ± CI(99%)	97,4 ± 3,5	98,2 ± 0,6	%
SD between labs	0,31	0,05	mmol/l
RSD between labs	8,1	1,3	%
n for calculation	38	35	

Sample N147B
Parameter Alkalinity

Target value ± U (k=2)	1,75	mmol/l	±	0,01	mmol/l
IFA result ± U (k=2)	1,74	mmol/l	±	0,09	mmol/l
Stability test		mmol/l			

Lab Code	Result		±	Unit	Recovery	z-Score
A	1,72			mmol/l	98%	-0,78
B	n.b.			mmol/l		
C	1,74		0,08	mmol/l	99%	-0,26
D	1,733		0,104	mmol/l	99%	-0,44
E	1,75		0,01	mmol/l	100%	0,00
F				mmol/l		
G	1,74		0,07	mmol/l	99%	-0,26
H	1,71		0,26	mmol/l	98%	-1,04
I	1,76		0,09	mmol/l	101%	0,26
J	1,73		0,06	mmol/l	99%	-0,52
K	1,75		0,09	mmol/l	100%	0,00
L	1,73			mmol/l	99%	-0,52
M	1,78		0,04	mmol/l	102%	0,78
N	1,805			mmol/l	103%	1,43
O	1,76			mmol/l	101%	0,26
P	1,65		0,07	mmol/l	94%	-2,60
Q	1,71		0,2	mmol/l	98%	-1,04
R	1,75			mmol/l	100%	0,00
S	1,75		0,1	mmol/l	100%	0,00
T	1,76		0,1	mmol/l	101%	0,26
U				mmol/l		
V	1,75		0,12	mmol/l	100%	0,00
W	1,700		0,114	mmol/l	97%	-1,30
X	1,75		0,006	mmol/l	100%	0,00
Y				mmol/l		
Z	1,73		0,2	mmol/l	99%	-0,52
AA				mmol/l		
AB	1,77			mmol/l	101%	0,52
AC	0,88	*		mmol/l	50%	-22,60
AD	1,7		0,08	mmol/l	97%	-1,30
AE	1,74		0,17	mmol/l	99%	-0,26
AF	1,781			mmol/l	102%	0,81
AG	1,75		0,1	mmol/l	100%	0,00
AH	1,80		0,04	mmol/l	103%	1,30
AI	1,73		0,05	mmol/l	99%	-0,52
AJ				mmol/l		
AK	2,9	*		mmol/l	166%	29,87
AL	1,68		0,08	mmol/l	96%	-1,82
AM	1,73		0,1	mmol/l	99%	-0,52
AN	1,75		0,002	mmol/l	100%	0,00
AO	1,667			mmol/l	95%	-2,16
AP	1,67		0,251	mmol/l	95%	-2,08
AQ				mmol/l		
AR	1,76		0,18	mmol/l	101%	0,26
AS	1,74		0,08	mmol/l	99%	-0,26
AT				mmol/l		





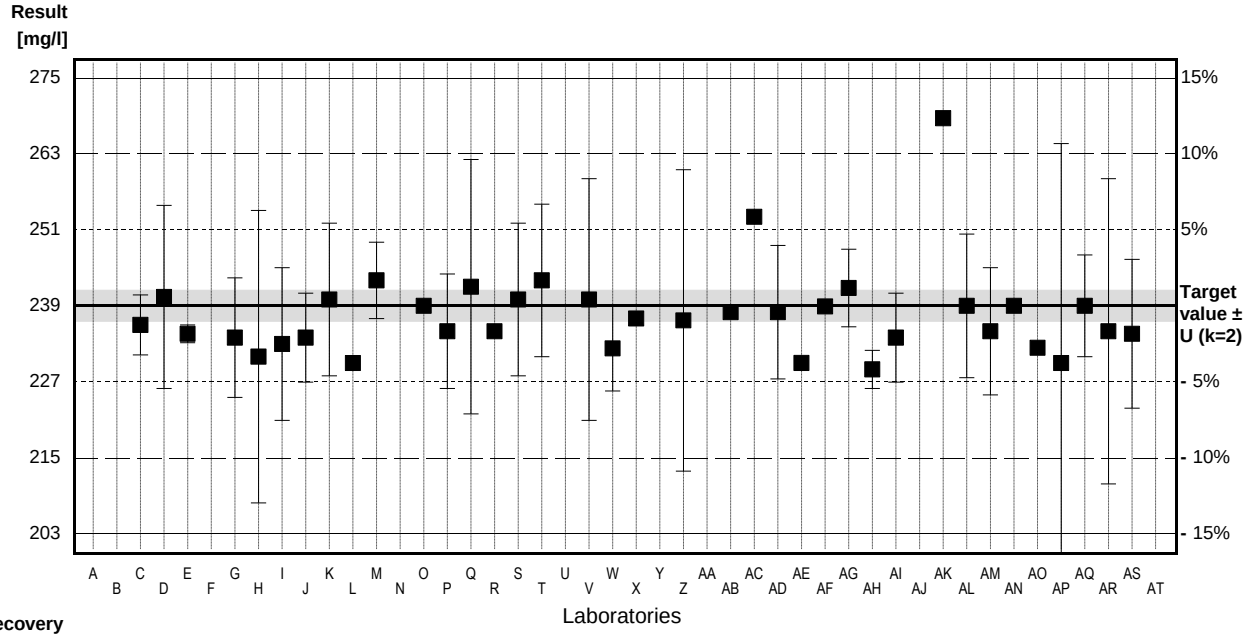
	All results	Outliers excl.	Unit
Mean ± CI(99%)	1,74 ± 0,11	1,74 ± 0,02	mmol/l
Recov. ± CI(99%)	99,7 ± 6,0	99,2 ± 0,9	%
SD between labs	0,24	0,03	mmol/l
RSD between labs	13,7	2,0	%
n for calculation	38	36	

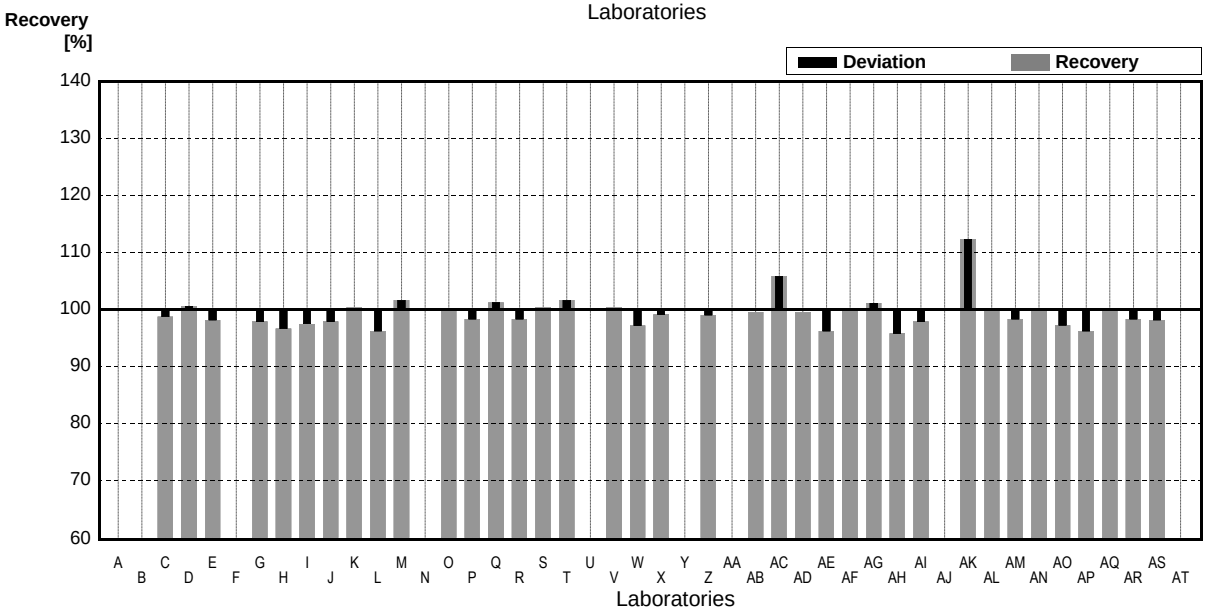
Sample N147A

Parameter Hydrogen carbonate

Target value ± U (k=2)	239	mg/l	±	2	mg/l
IFA result ± U (k=2)	236	mg/l	±	12	mg/l
Stability test		mg/l			

Lab Code	Result	±	Unit	Recovery	z-Score
A			mg/l		
B	n.b.		mg/l		
C	236	4,73	mg/l	99%	-0,50
D	240,4	14,4	mg/l	101%	0,23
E	234,6	1,4	mg/l	98%	-0,74
F			mg/l		
G	234	9,4	mg/l	98%	-0,84
H	231	23	mg/l	97%	-1,34
I	233	12	mg/l	97%	-1,00
J	234	7	mg/l	98%	-0,84
K	240	12	mg/l	100%	0,17
L	230		mg/l	96%	-1,51
M	243	6	mg/l	102%	0,67
N			mg/l		
O	239		mg/l	100%	0,00
P	235	9	mg/l	98%	-0,67
Q	242	20	mg/l	101%	0,50
R	235		mg/l	98%	-0,67
S	240	12	mg/l	100%	0,17
T	243	12	mg/l	102%	0,67
U			mg/l		
V	240	19	mg/l	100%	0,17
W	232,3	6,7	mg/l	97%	-1,12
X	237	1,000	mg/l	99%	-0,33
Y			mg/l		
Z	236,7	23,7	mg/l	99%	-0,38
AA			mg/l		
AB	238		mg/l	100%	-0,17
AC	253 *		mg/l	106%	2,34
AD	238	10,5	mg/l	100%	-0,17
AE	230,01		mg/l	96%	-1,50
AF	238,9		mg/l	100%	-0,02
AG	241,8	6,1	mg/l	101%	0,47
AH	229,00	3	mg/l	96%	-1,67
AI	234	7,0	mg/l	98%	-0,84
AJ			mg/l		
AK	268,5 *		mg/l	112%	4,94
AL	239	11,3	mg/l	100%	0,00
AM	235	10	mg/l	98%	-0,67
AN	239	0,004	mg/l	100%	0,00
AO	232,4		mg/l	97%	-1,10
AP	230	34,51	mg/l	96%	-1,51
AQ	239	8	mg/l	100%	0,00
AR	235	24	mg/l	98%	-0,67
AS	234,6	11,7	mg/l	98%	-0,74
AT			mg/l		





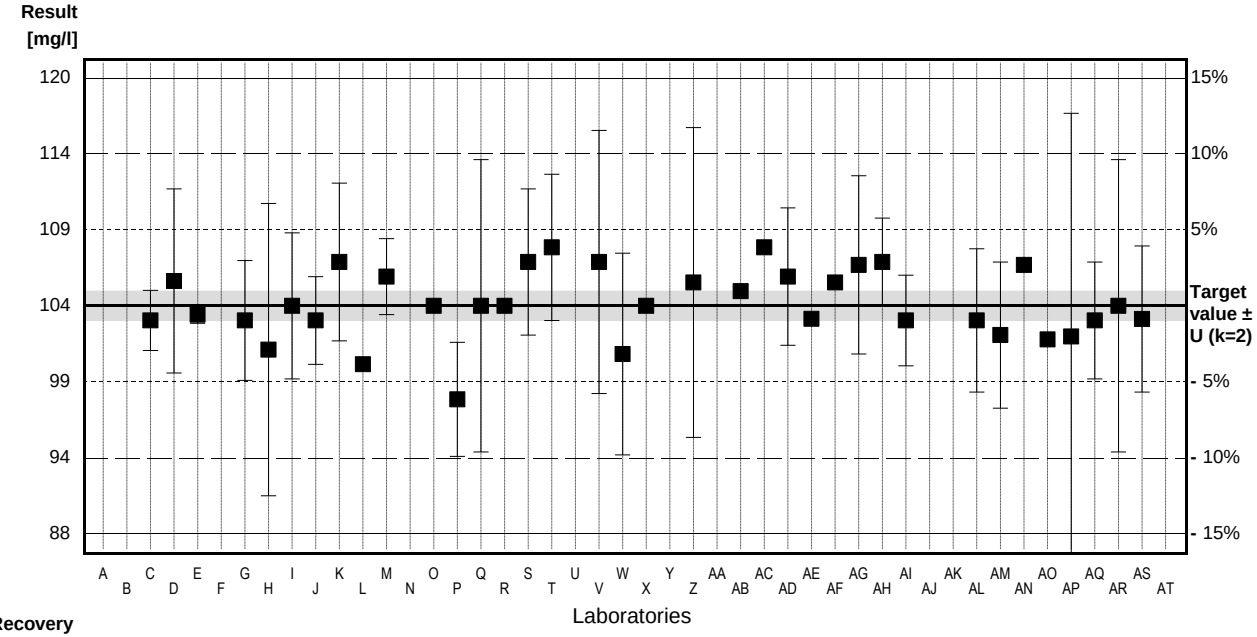
	All results	Outliers excl.	Unit
Mean ± CI(99%)	238 ± 3	236 ± 2	mg/l
Recov. ± CI(99%)	99,4 ± 1,3	98,9 ± 0,8	%
SD between labs	7	4	mg/l
RSD between labs	3,0	1,7	%
n for calculation	37	35	

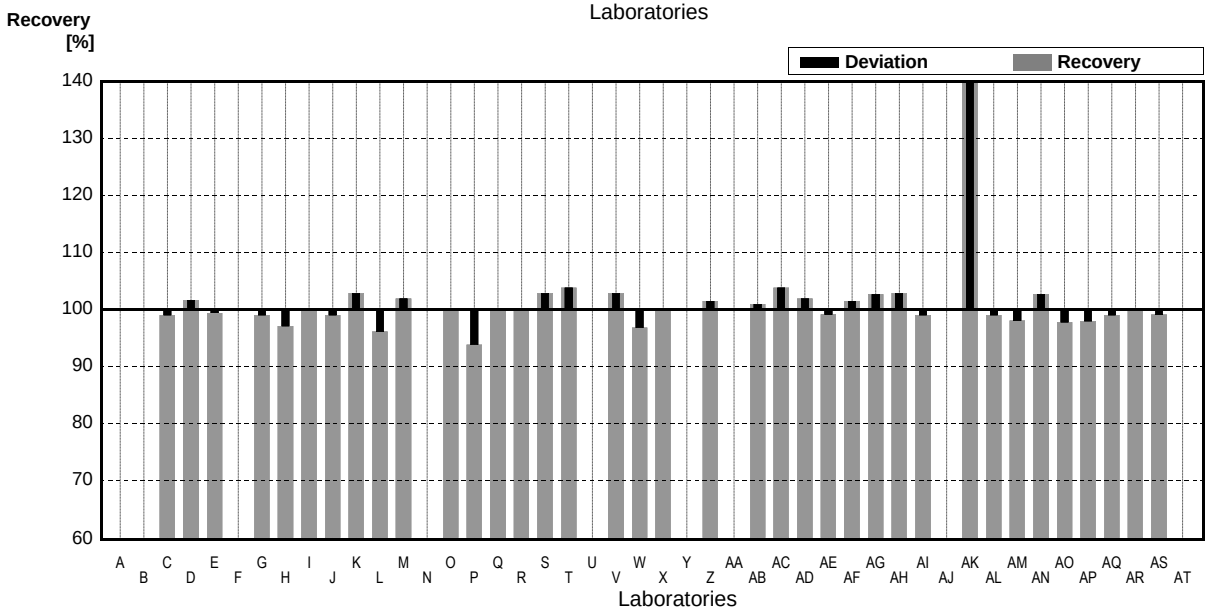
Sample N147B

Parameter Hydrogen carbonate

Target value ± U (k=2)	104	mg/l	±	1	mg/l
IFA result ± U (k=2)	103	mg/l	±	5	mg/l
Stability test		mg/l			

Lab Code	Result	±	Unit	Recovery	z-Score
A			mg/l		
B	n.b.		mg/l		
C	103	2,06	mg/l	99%	-0,38
D	105,7	6,3	mg/l	102%	0,65
E	103,4	0,6	mg/l	99%	-0,23
F			mg/l		
G	103	4,1	mg/l	99%	-0,38
H	101	10	mg/l	97%	-1,15
I	104	5	mg/l	100%	0,00
J	103	3	mg/l	99%	-0,38
K	107	5,4	mg/l	103%	1,15
L	100		mg/l	96%	-1,54
M	106	2,6	mg/l	102%	0,77
N			mg/l		
O	104		mg/l	100%	0,00
P	97,6	3,9	mg/l	94%	-2,46
Q	104	10	mg/l	100%	0,00
R	104		mg/l	100%	0,00
S	107	5	mg/l	103%	1,15
T	108	5	mg/l	104%	1,54
U			mg/l		
V	107	9	mg/l	103%	1,15
W	100,7	6,9	mg/l	97%	-1,27
X	104	0,0001	mg/l	100%	0,00
Y			mg/l		
Z	105,6	10,6	mg/l	102%	0,62
AA			mg/l		
AB	105		mg/l	101%	0,38
AC	108		mg/l	104%	1,54
AD	106	4,7	mg/l	102%	0,77
AE	103,11		mg/l	99%	-0,34
AF	105,6		mg/l	102%	0,62
AG	106,8	6,1	mg/l	103%	1,08
AH	107,00	3	mg/l	103%	1,15
AI	103	3,1	mg/l	99%	-0,38
AJ			mg/l		
AK	176,9 *		mg/l	170%	28,04
AL	103	4,9	mg/l	99%	-0,38
AM	102	5	mg/l	98%	-0,77
AN	106,8	0,002	mg/l	103%	1,08
AO	101,7		mg/l	98%	-0,88
AP	101,9	15,28	mg/l	98%	-0,81
AQ	103	4	mg/l	99%	-0,38
AR	104	10	mg/l	100%	0,00
AS	103,1	5,0	mg/l	99%	-0,35
AT			mg/l		



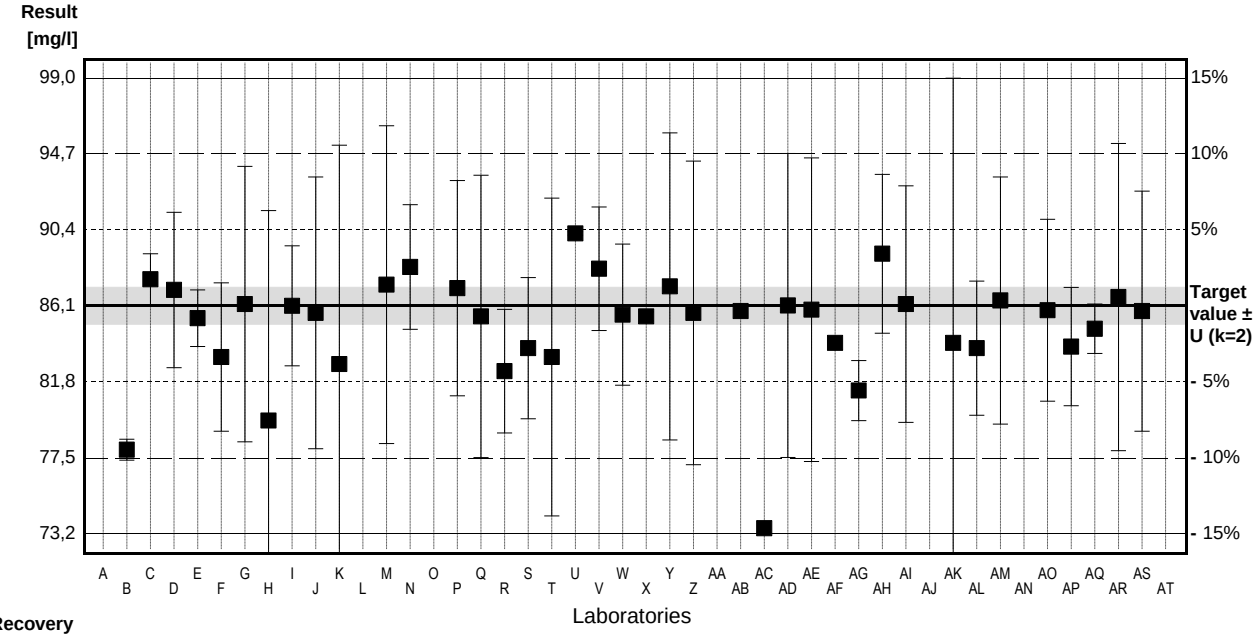


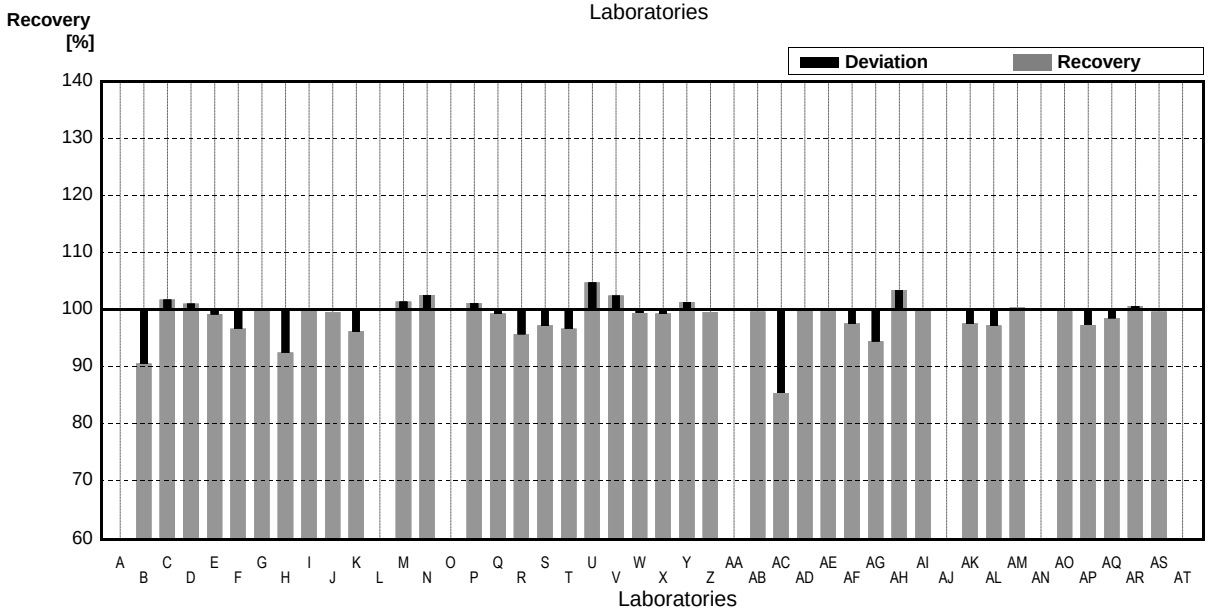
	All results	Outliers excl.	Unit
Mean ± CI(99%)	106 ± 5	104 ± 1	mg/l
Recov. ± CI(99%)	102,0 ± 5,2	100,1 ± 1,0	%
SD between labs	12	2	mg/l
RSD between labs	11,5	2,3	%
n for calculation	37	36	

Sample N147A
Parameter Calcium

Target value ± U (k=2)	86,1	mg/l	±	1,1	mg/l
IFA result ± U (k=2)	89,2	mg/l	±	5,4	mg/l
Stability test		mg/l			

Lab Code	Result	±	Unit	Recovery	z-Score
A			mg/l		
B	77,95 *	0,59	mg/l	91%	-2,87
C	87,6	1,45	mg/l	102%	0,53
D	87	4,4	mg/l	101%	0,32
E	85,4	1,6	mg/l	99%	-0,25
F	83,2	4,2	mg/l	97%	-1,02
G	86,2	7,8	mg/l	100%	0,04
H	79,6	11,9	mg/l	92%	-2,29
I	86,1	3,4	mg/l	100%	0,00
J	85,7	7,7	mg/l	100%	-0,14
K	82,8	12,4	mg/l	96%	-1,16
L			mg/l		
M	87,3	9	mg/l	101%	0,42
N	88,3	3,53	mg/l	103%	0,77
O			mg/l		
P	87,1	6,1	mg/l	101%	0,35
Q	85,5	8	mg/l	99%	-0,21
R	82,4	3,5	mg/l	96%	-1,30
S	83,7	4	mg/l	97%	-0,84
T	83,2	9	mg/l	97%	-1,02
U	90,20	0,1	mg/l	105%	1,44
V	88,2	3,5	mg/l	102%	0,74
W	85,6	4,0	mg/l	99%	-0,18
X	85,5	0,252	mg/l	99%	-0,21
Y	87,2	8,7	mg/l	101%	0,39
Z	85,7	8,6	mg/l	100%	-0,14
AA			mg/l		
AB	85,8		mg/l	100%	-0,11
AC	73,5 *		mg/l	85%	-4,43
AD	86,12	8,612	mg/l	100%	0,01
AE	85,88	8,6	mg/l	100%	-0,08
AF	84		mg/l	98%	-0,74
AG	81,3	1,7	mg/l	94%	-1,69
AH	89,05	4,5	mg/l	103%	1,04
AI	86,2	6,7	mg/l	100%	0,04
AJ			mg/l		
AK	84	15	mg/l	98%	-0,74
AL	83,7	3,8	mg/l	97%	-0,84
AM	86,4	7	mg/l	100%	0,11
AN			mg/l		
AO	85,85	5,15	mg/l	100%	-0,09
AP	83,79	3,352	mg/l	97%	-0,81
AQ	84,8	1,4	mg/l	98%	-0,46
AR	86,6	8,7	mg/l	101%	0,18
AS	85,8	6,8	mg/l	100%	-0,11
AT			mg/l		



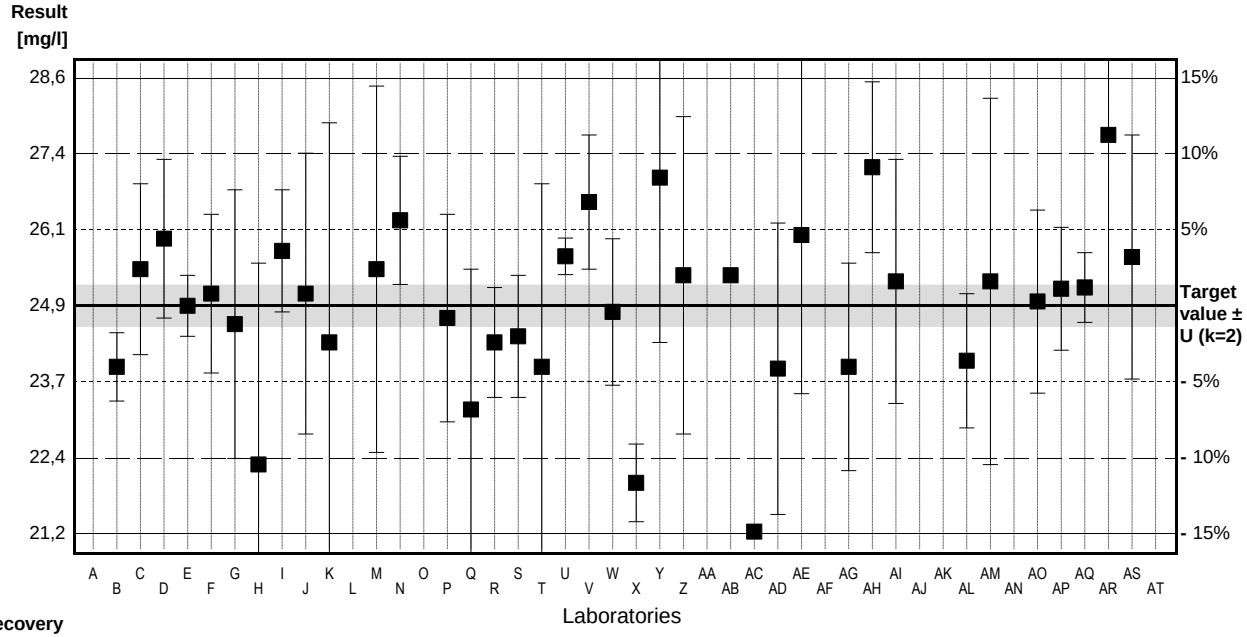


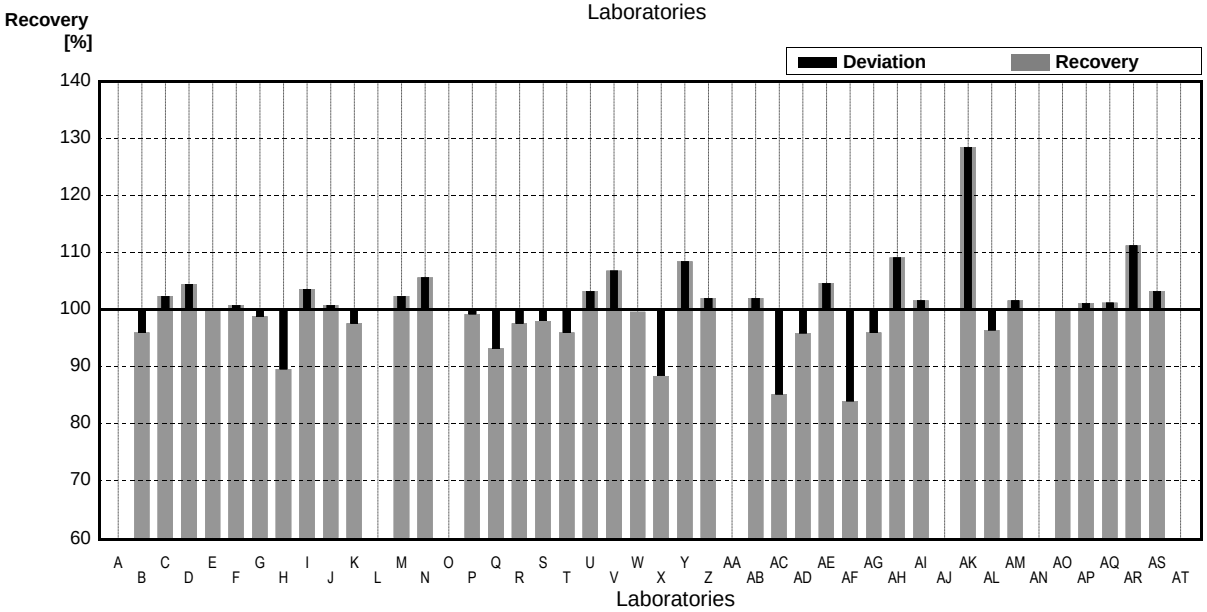
	All results	Outliers excl.	Unit
Mean ± CI(99%)	85,0 ± 1,3	85,5 ± 1,0	mg/l
Recov. ± CI(99%)	98,7 ± 1,5	99,3 ± 1,1	%
SD between labs	3,1	2,1	mg/l
RSD between labs	3,6	2,5	%
n for calculation	39	37	

Sample N147B
Parameter Calcium

Target value ± U (k=2)	24,9 mg/l	±	0,3 mg/l
IFA result ± U (k=2)	26,1 mg/l	±	1,6 mg/l
Stability test	mg/l		

Lab Code	Result		±	Unit	Recovery	z-Score
A				mg/l		
B	23,9		0,56	mg/l	96%	-1,22
C	25,5		1,40	mg/l	102%	0,73
D	26		1,3	mg/l	104%	1,34
E	24,9		0,5	mg/l	100%	0,00
F	25,1		1,3	mg/l	101%	0,24
G	24,6		2,2	mg/l	99%	-0,37
H	22,3		3,30	mg/l	90%	-3,16
I	25,8		1,0	mg/l	104%	1,10
J	25,1		2,3	mg/l	101%	0,24
K	24,3		3,6	mg/l	98%	-0,73
L				mg/l		
M	25,5		3	mg/l	102%	0,73
N	26,3		1,05	mg/l	106%	1,70
O				mg/l		
P	24,7		1,7	mg/l	99%	-0,24
Q	23,2		2,3	mg/l	93%	-2,07
R	24,3		0,9	mg/l	98%	-0,73
S	24,4		1	mg/l	98%	-0,61
T	23,9		3	mg/l	96%	-1,22
U	25,71		0,3	mg/l	103%	0,99
V	26,6		1,1	mg/l	107%	2,07
W	24,8		1,2	mg/l	100%	-0,12
X	22,0		0,636	mg/l	88%	-3,53
Y	27,0		2,7	mg/l	108%	2,56
Z	25,4		2,6	mg/l	102%	0,61
AA				mg/l		
AB	25,4			mg/l	102%	0,61
AC	21,2	*		mg/l	85%	-4,50
AD	23,87		2,387	mg/l	96%	-1,25
AE	26,06		2,6	mg/l	105%	1,41
AF	20,9	*		mg/l	84%	-4,87
AG	23,9		1,7	mg/l	96%	-1,22
AH	27,17		1,4	mg/l	109%	2,76
AI	25,3		2,0	mg/l	102%	0,49
AJ				mg/l		
AK	32	*	6	mg/l	129%	8,64
AL	24,0		1,1	mg/l	96%	-1,10
AM	25,3		3	mg/l	102%	0,49
AN				mg/l		
AO	24,97		1,50	mg/l	100%	0,09
AP	25,18		1,007	mg/l	101%	0,34
AQ	25,2		0,57	mg/l	101%	0,37
AR	27,7		2,8	mg/l	111%	3,41
AS	25,7		2,0	mg/l	103%	0,97
AT				mg/l		





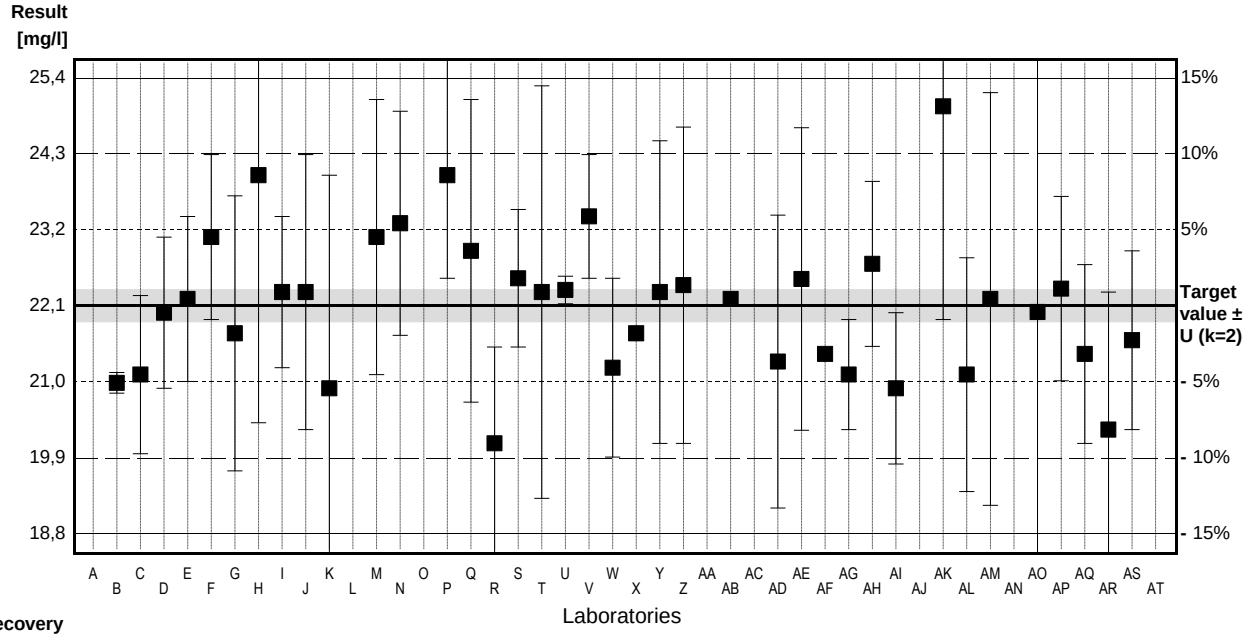
	All results	Outliers excl.	Unit
Mean ± CI(99%)	25,0 ± 0,8	25,0 ± 0,6	mg/l
Recov. ± CI(99%)	100,4 ± 3,3	100,5 ± 2,2	%
SD between labs	1,9	1,2	mg/l
RSD between labs	7,5	4,9	%
n for calculation	39	36	

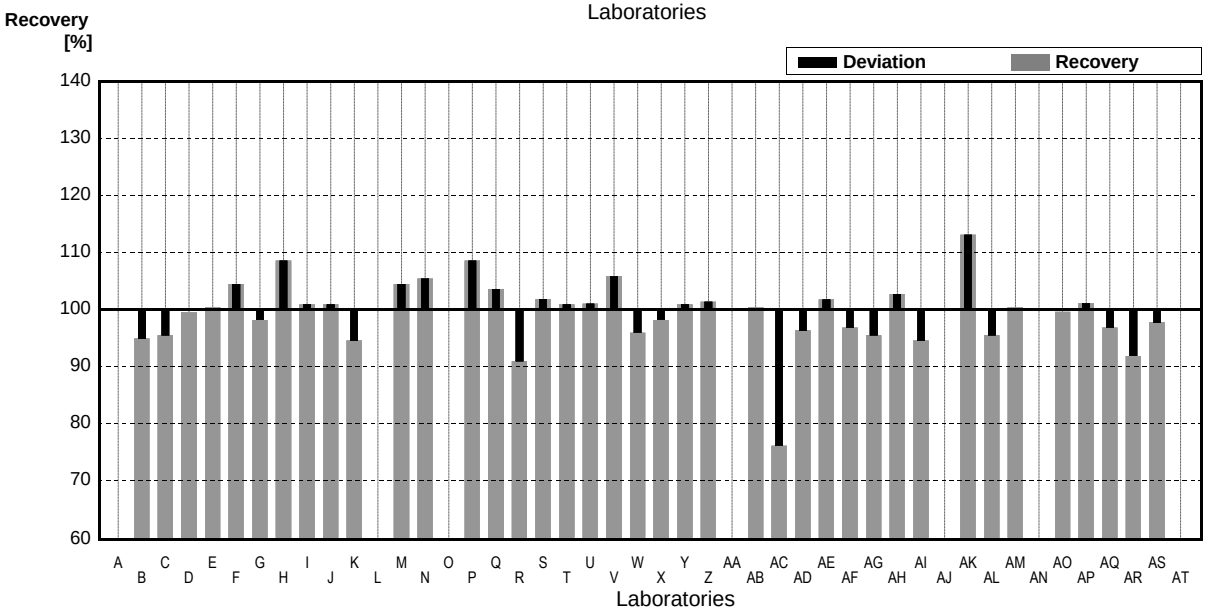
Sample N147A

Parameter Magnesium

Target value ± U (k=2)	22,1	mg/l	±	0,2	mg/l
IFA result ± U (k=2)	22,6	mg/l	±	1,1	mg/l
Stability test		mg/l			

Lab Code	Result	±	Unit	Recovery	z-Score
A			mg/l		
B	20,98	0,15	mg/l	95%	-1,41
C	21,1	1,15	mg/l	95%	-1,26
D	22	1,1	mg/l	100%	-0,13
E	22,2	1,2	mg/l	100%	0,13
F	23,1	1,2	mg/l	105%	1,26
G	21,7	2,0	mg/l	98%	-0,50
H	24,0	3,6	mg/l	109%	2,39
I	22,3	1,1	mg/l	101%	0,25
J	22,3	2,0	mg/l	101%	0,25
K	20,9	3,1	mg/l	95%	-1,51
L			mg/l		
M	23,1	2	mg/l	105%	1,26
N	23,3	1,63	mg/l	105%	1,51
O			mg/l		
P	24,0	1,5	mg/l	109%	2,39
Q	22,9	2,2	mg/l	104%	1,01
R	20,1	1,4	mg/l	91%	-2,51
S	22,5	1	mg/l	102%	0,50
T	22,3	3	mg/l	101%	0,25
U	22,33	0,2	mg/l	101%	0,29
V	23,4	0,9	mg/l	106%	1,63
W	21,2	1,3	mg/l	96%	-1,13
X	21,7	0,100	mg/l	98%	-0,50
Y	22,3	2,2	mg/l	101%	0,25
Z	22,4	2,3	mg/l	101%	0,38
AA			mg/l		
AB	22,2		mg/l	100%	0,13
AC	16,82 *		mg/l	76%	-6,64
AD	21,29	2,129	mg/l	96%	-1,02
AE	22,49	2,2	mg/l	102%	0,49
AF	21,4		mg/l	97%	-0,88
AG	21,1	0,8	mg/l	95%	-1,26
AH	22,71	1,2	mg/l	103%	0,77
AI	20,9	1,1	mg/l	95%	-1,51
AJ			mg/l		
AK	25	3,1	mg/l	113%	3,65
AL	21,1	1,7	mg/l	95%	-1,26
AM	22,2	3	mg/l	100%	0,13
AN			mg/l		
AO	22,01	3,96	mg/l	100%	-0,11
AP	22,35	1,341	mg/l	101%	0,31
AQ	21,4	1,3	mg/l	97%	-0,88
AR	20,3	2,0	mg/l	92%	-2,26
AS	21,6	1,3	mg/l	98%	-0,63
AT			mg/l		





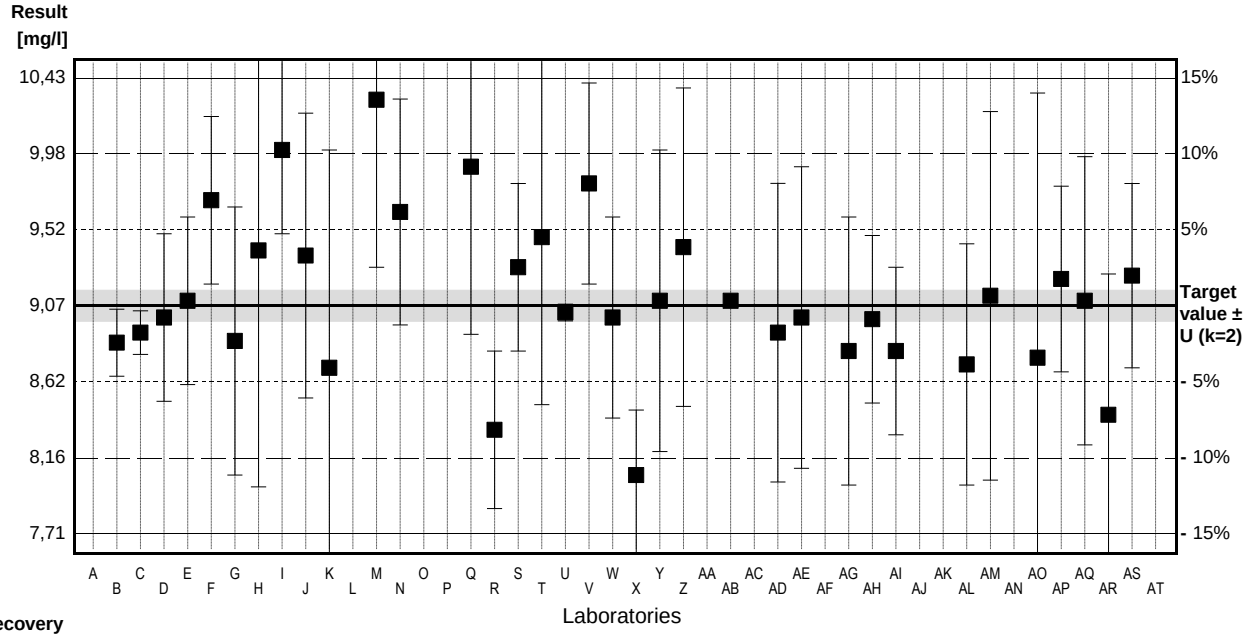
	All results	Outliers excl.	Unit
Mean ± CI(99%)	22,0 ± 0,6	22,1 ± 0,5	mg/l
Recov. ± CI(99%)	99,4 ± 2,6	100,0 ± 2,1	%
SD between labs	1,3	1,0	mg/l
RSD between labs	6,0	4,7	%
n for calculation	39	38	

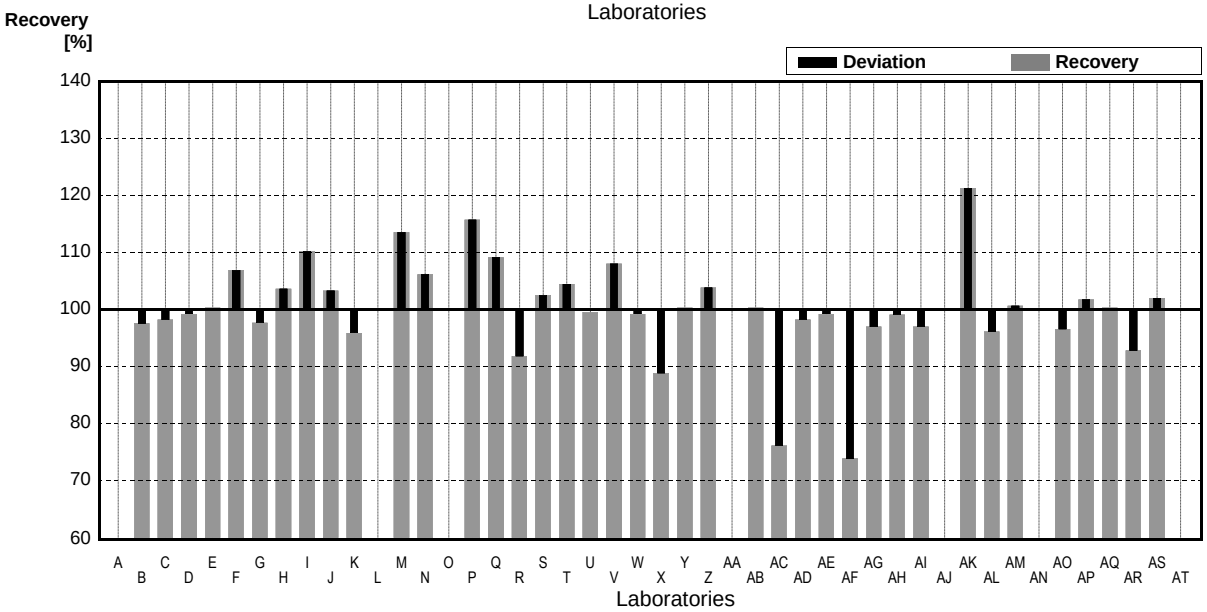
Sample N147B

Parameter Magnesium

Target value ± U (k=2)	9,07	mg/l	±	0,09	mg/l
IFA result ± U (k=2)	9,08	mg/l	±	0,45	mg/l
Stability test		mg/l			

Lab Code	Result	±	Unit	Recovery	z-Score
A			mg/l		
B	8,85	0,20	mg/l	98%	-0,67
C	8,91	0,13	mg/l	98%	-0,49
D	9	0,5	mg/l	99%	-0,21
E	9,1	0,5	mg/l	100%	0,09
F	9,7	0,5	mg/l	107%	1,93
G	8,86	0,80	mg/l	98%	-0,64
H	9,4	1,41	mg/l	104%	1,01
I	10,0	0,5	mg/l	110%	2,85
J	9,37	0,85	mg/l	103%	0,92
K	8,7	1,3	mg/l	96%	-1,13
L			mg/l		
M	10,3	1	mg/l	114%	3,77
N	9,63	0,674	mg/l	106%	1,72
O			mg/l		
P	10,5 *	0,6	mg/l	116%	4,38
Q	9,9	1,0	mg/l	109%	2,54
R	8,33	0,47	mg/l	92%	-2,27
S	9,30	0,5	mg/l	103%	0,70
T	9,48	1	mg/l	105%	1,26
U	9,03	0,05	mg/l	100%	-0,12
V	9,8	0,6	mg/l	108%	2,24
W	9,0	0,6	mg/l	99%	-0,21
X	8,06	0,388	mg/l	89%	-3,09
Y	9,1	0,9	mg/l	100%	0,09
Z	9,42	0,95	mg/l	104%	1,07
AA			mg/l		
AB	9,1		mg/l	100%	0,09
AC	6,904 *		mg/l	76%	-6,63
AD	8,91	0,891	mg/l	98%	-0,49
AE	9,00	0,9	mg/l	99%	-0,21
AF	6,7 *		mg/l	74%	-7,26
AG	8,8	0,8	mg/l	97%	-0,83
AH	8,99	0,5	mg/l	99%	-0,25
AI	8,8	0,5	mg/l	97%	-0,83
AJ			mg/l		
AK	11 *	1,3	mg/l	121%	5,91
AL	8,72	0,72	mg/l	96%	-1,07
AM	9,13	1,1	mg/l	101%	0,18
AN			mg/l		
AO	8,76	1,58	mg/l	97%	-0,95
AP	9,23	0,554	mg/l	102%	0,49
AQ	9,1	0,86	mg/l	100%	0,09
AR	8,42	0,84	mg/l	93%	-1,99
AS	9,25	0,55	mg/l	102%	0,55
AT			mg/l		



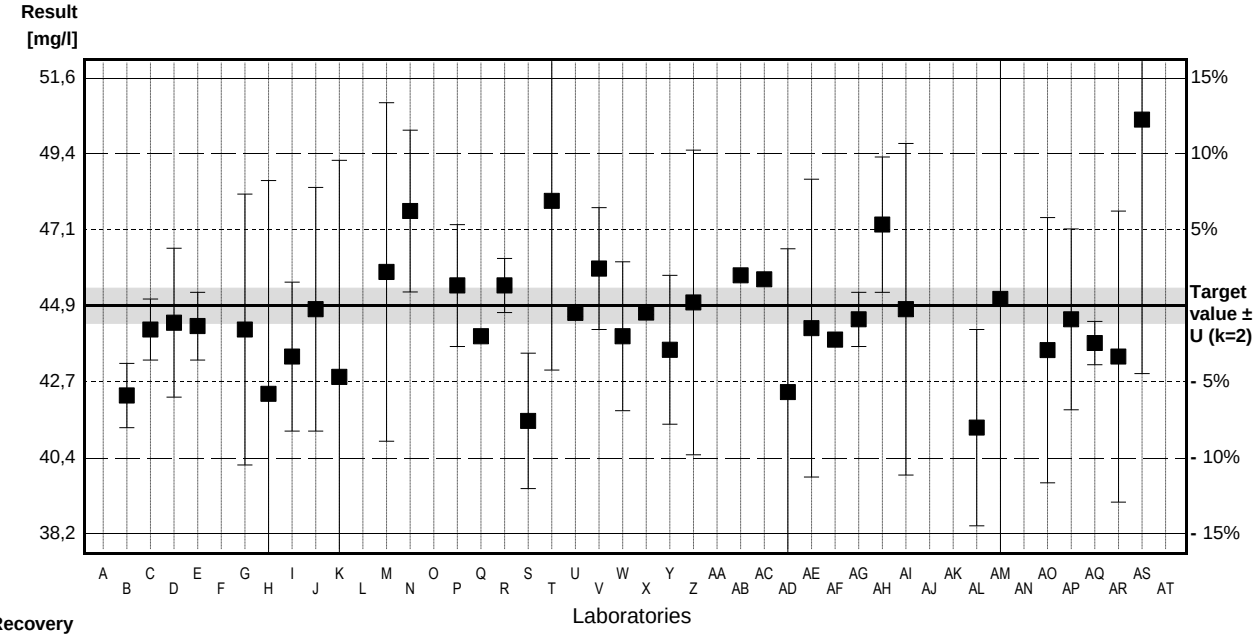


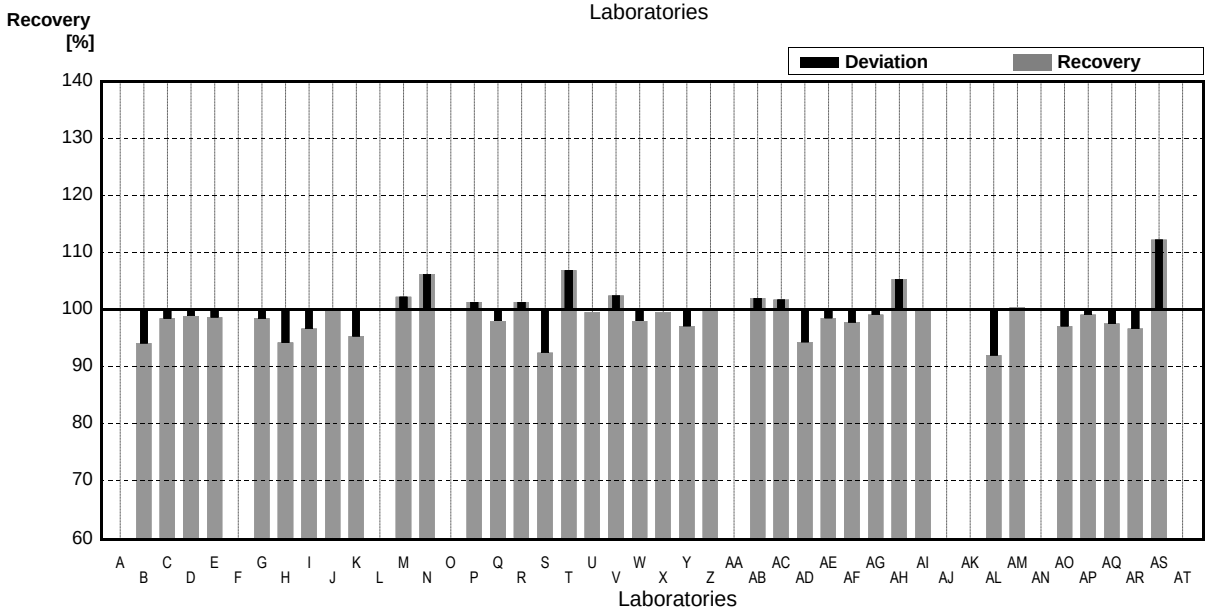
	All results	Outliers excl.	Unit
Mean ± CI(99%)	9,09 ± 0,34	9,13 ± 0,22	mg/l
Recov. ± CI(99%)	100,2 ± 3,8	100,6 ± 2,4	%
SD between labs	0,79	0,47	mg/l
RSD between labs	8,7	5,1	%
n for calculation	39	35	

Sample N147A
Parameter Sodium

Target value ± U (k=2)	44,9 mg/l	±	0,5 mg/l
IFA result ± U (k=2)	46,6 mg/l	±	3,3 mg/l
Stability test	mg/l		

Lab Code	Result	±	Unit	Recovery	z-Score
A			mg/l		
B	42,25	0,95	mg/l	94%	-1,74
C	44,2	0,90	mg/l	98%	-0,46
D	44,4	2,2	mg/l	99%	-0,33
E	44,3	1,0	mg/l	99%	-0,39
F			mg/l		
G	44,2	4,0	mg/l	98%	-0,46
H	42,3	6,3	mg/l	94%	-1,70
I	43,4	2,2	mg/l	97%	-0,98
J	44,8	3,6	mg/l	100%	-0,07
K	42,8	6,4	mg/l	95%	-1,38
L			mg/l		
M	45,9	5	mg/l	102%	0,66
N	47,7	2,39	mg/l	106%	1,83
O			mg/l		
P	45,5	1,8	mg/l	101%	0,39
Q	44		mg/l	98%	-0,59
R	45,5	0,8	mg/l	101%	0,39
S	41,5	2	mg/l	92%	-2,23
T	48,0	5	mg/l	107%	2,03
U	44,69	0,1	mg/l	100%	-0,14
V	46,0	1,8	mg/l	102%	0,72
W	44,0	2,2	mg/l	98%	-0,59
X	44,7	0,058	mg/l	100%	-0,13
Y	43,6	2,2	mg/l	97%	-0,85
Z	45,0	4,5	mg/l	100%	0,07
AA			mg/l		
AB	45,8		mg/l	102%	0,59
AC	45,68		mg/l	102%	0,51
AD	42,35	4,235	mg/l	94%	-1,67
AE	44,24	4,4	mg/l	99%	-0,43
AF	43,9		mg/l	98%	-0,66
AG	44,5	0,8	mg/l	99%	-0,26
AH	47,30	2	mg/l	105%	1,57
AI	44,8	4,9	mg/l	100%	-0,07
AJ			mg/l		
AK			mg/l		
AL	41,3	2,9	mg/l	92%	-2,36
AM	45,1	7	mg/l	100%	0,13
AN			mg/l		
AO	43,59	3,92	mg/l	97%	-0,86
AP	44,5	2,67	mg/l	99%	-0,26
AQ	43,8	0,639	mg/l	98%	-0,72
AR	43,4	4,3	mg/l	97%	-0,98
AS	50,4 *	7,5	mg/l	112%	3,60
AT			mg/l		



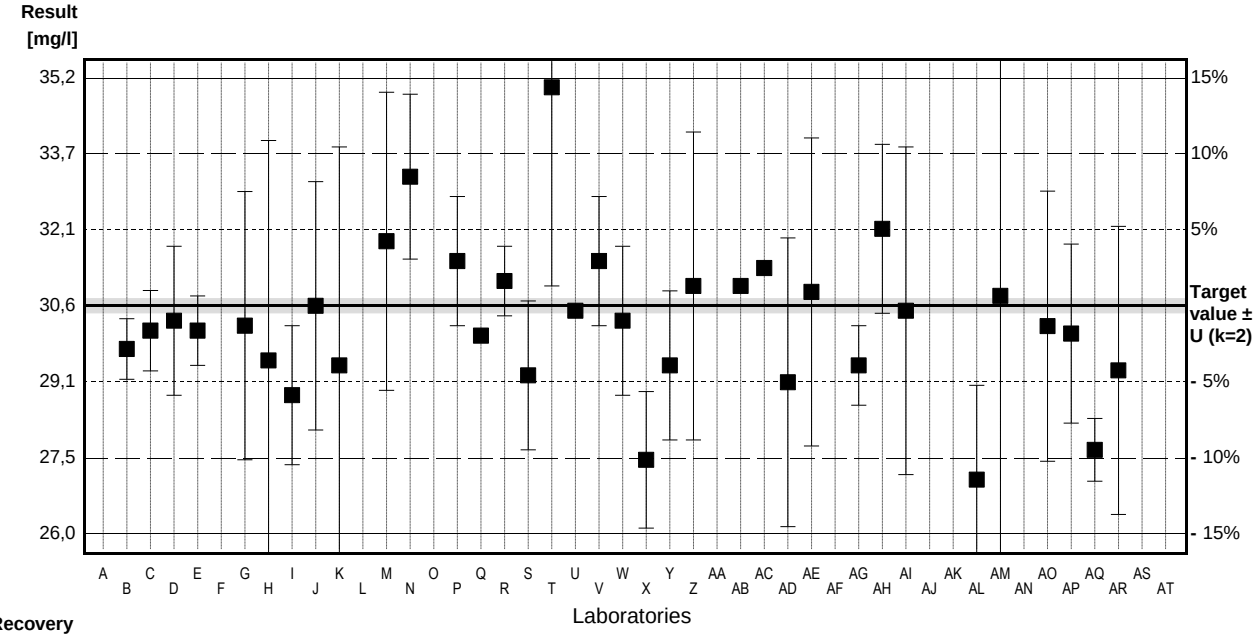


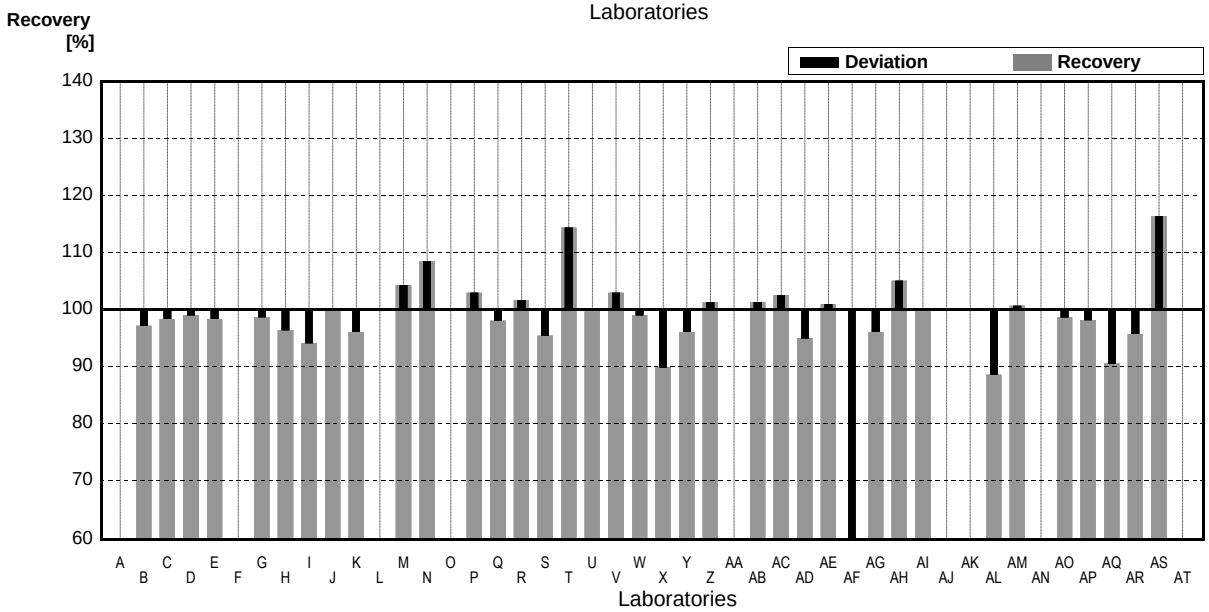
	All results	Outliers excl.	Unit
Mean ± CI(99%)	44,6 ± 0,8	44,4 ± 0,7	mg/l
Recov. ± CI(99%)	99,3 ± 1,8	98,9 ± 1,6	%
SD between labs	1,8	1,5	mg/l
RSD between labs	4,1	3,5	%
n for calculation	37	36	

Sample N147B
Parameter Sodium

Target value ± U (k=2)	30,6	mg/l	±	0,1	mg/l
IFA result ± U (k=2)	32,4	mg/l	±	2,3	mg/l
Stability test		mg/l			

Lab Code	Result		±	Unit	Recovery	z-Score
A				mg/l		
B	29,73		0,61	mg/l	97%	-0,84
C	30,1		0,81	mg/l	98%	-0,48
D	30,3		1,5	mg/l	99%	-0,29
E	30,1		0,7	mg/l	98%	-0,48
F				mg/l		
G	30,2		2,7	mg/l	99%	-0,38
H	29,5		4,43	mg/l	96%	-1,06
I	28,8		1,4	mg/l	94%	-1,73
J	30,6		2,5	mg/l	100%	0,00
K	29,4		4,4	mg/l	96%	-1,15
L				mg/l		
M	31,9		3	mg/l	104%	1,25
N	33,2		1,66	mg/l	108%	2,50
O				mg/l		
P	31,5		1,3	mg/l	103%	0,87
Q	30			mg/l	98%	-0,58
R	31,1		0,7	mg/l	102%	0,48
S	29,2		1,5	mg/l	95%	-1,35
T	35,0	*	4	mg/l	114%	4,23
U	30,50		0,1	mg/l	100%	-0,10
V	31,5		1,3	mg/l	103%	0,87
W	30,3		1,5	mg/l	99%	-0,29
X	27,5		1,375	mg/l	90%	-2,98
Y	29,4		1,5	mg/l	96%	-1,15
Z	31,0		3,1	mg/l	101%	0,38
AA				mg/l		
AB	31,0			mg/l	101%	0,38
AC	31,36			mg/l	102%	0,73
AD	29,06		2,906	mg/l	95%	-1,48
AE	30,88		3,1	mg/l	101%	0,27
AF	10,2	*		mg/l	33%	-19,61
AG	29,4		0,8	mg/l	96%	-1,15
AH	32,15		1,7	mg/l	105%	1,49
AI	30,5		3,3	mg/l	100%	-0,10
AJ				mg/l		
AK				mg/l		
AL	27,1		1,9	mg/l	89%	-3,36
AM	30,8		5	mg/l	101%	0,19
AN				mg/l		
AO	30,19		2,72	mg/l	99%	-0,39
AP	30,04		1,802	mg/l	98%	-0,54
AQ	27,7		0,631	mg/l	91%	-2,79
AR	29,3		2,9	mg/l	96%	-1,25
AS	35,6	*	5,3	mg/l	116%	4,81
AT				mg/l		



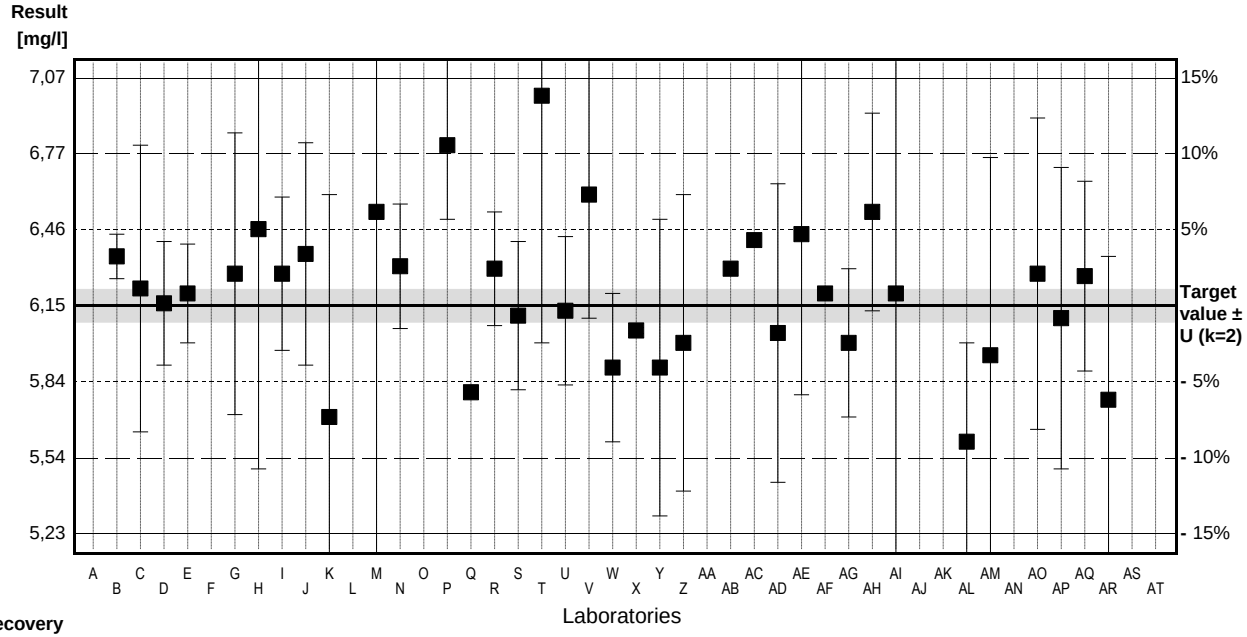


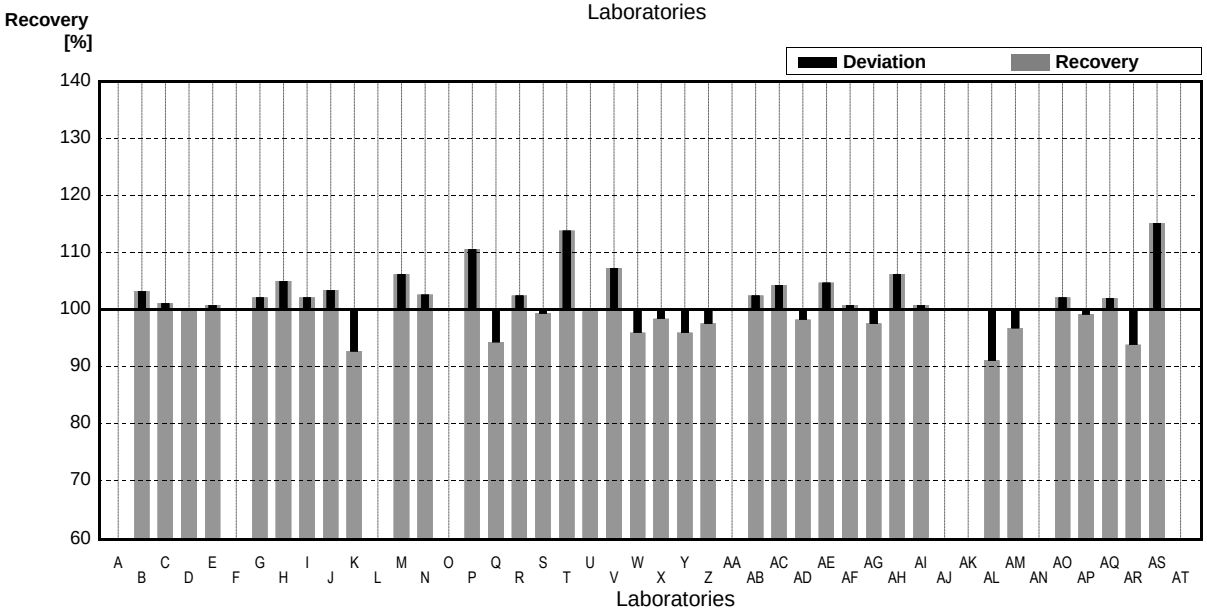
	All results	Outliers excl.	Unit
Mean ± CI(99%)	29,9 ± 1,7	30,2 ± 0,6	mg/l
Recov. ± CI(99%)	97,7 ± 5,5	98,5 ± 2,0	%
SD between labs	3,7	1,3	mg/l
RSD between labs	12,5	4,3	%
n for calculation	37	34	

Sample N147A
Parameter Potassium

Target value ± U (k=2)	6,15	mg/l	±	0,07	mg/l
IFA result ± U (k=2)	6,39	mg/l	±	0,38	mg/l
Stability test		mg/l			

Lab Code	Result	±	Unit	Recovery	z-Score
A			mg/l		
B	6,35	0,09	mg/l	103%	0,68
C	6,22	0,58	mg/l	101%	0,24
D	6,16	0,25	mg/l	100%	0,03
E	6,2	0,2	mg/l	101%	0,17
F			mg/l		
G	6,28	0,57	mg/l	102%	0,44
H	6,46	0,97	mg/l	105%	1,05
I	6,28	0,31	mg/l	102%	0,44
J	6,36	0,45	mg/l	103%	0,71
K	5,7	0,9	mg/l	93%	-1,52
L			mg/l		
M	6,53	6	mg/l	106%	1,29
N	6,31	0,252	mg/l	103%	0,54
O			mg/l		
P	6,8	0,3	mg/l	111%	2,20
Q	5,8		mg/l	94%	-1,19
R	6,30	0,23	mg/l	102%	0,51
S	6,11	0,3	mg/l	99%	-0,14
T	7,00	1	mg/l	114%	2,88
U	6,13	0,3	mg/l	100%	-0,07
V	6,6	0,5	mg/l	107%	1,52
W	5,9	0,3	mg/l	96%	-0,85
X	6,05	0,012	mg/l	98%	-0,34
Y	5,9	0,6	mg/l	96%	-0,85
Z	6,00	0,6	mg/l	98%	-0,51
AA			mg/l		
AB	6,3		mg/l	102%	0,51
AC	6,416		mg/l	104%	0,90
AD	6,04	0,604	mg/l	98%	-0,37
AE	6,44	0,65	mg/l	105%	0,98
AF	6,2		mg/l	101%	0,17
AG	6,0	0,3	mg/l	98%	-0,51
AH	6,53	0,4	mg/l	106%	1,29
AI	6,2	1,0	mg/l	101%	0,17
AJ			mg/l		
AK			mg/l		
AL	5,60	0,40	mg/l	91%	-1,86
AM	5,95	0,8	mg/l	97%	-0,68
AN			mg/l		
AO	6,28	0,63	mg/l	102%	0,44
AP	6,1	0,61	mg/l	99%	-0,17
AQ	6,27	0,384	mg/l	102%	0,41
AR	5,77	0,58	mg/l	94%	-1,29
AS	7,08 *	0,50	mg/l	115%	3,15
AT			mg/l		



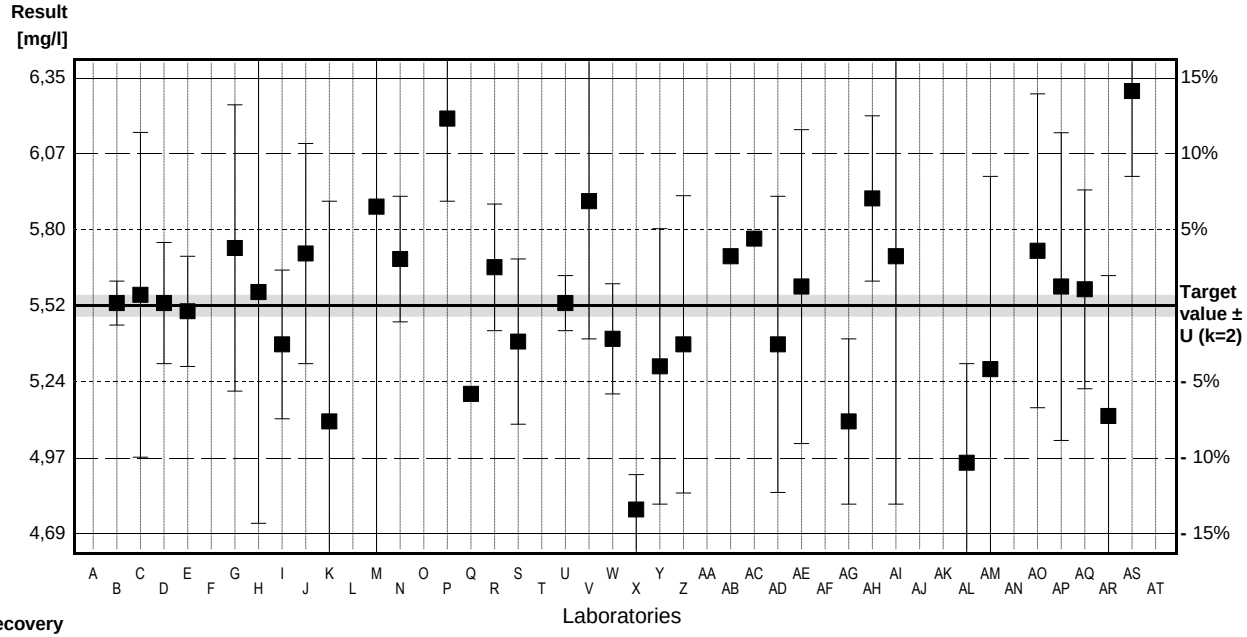


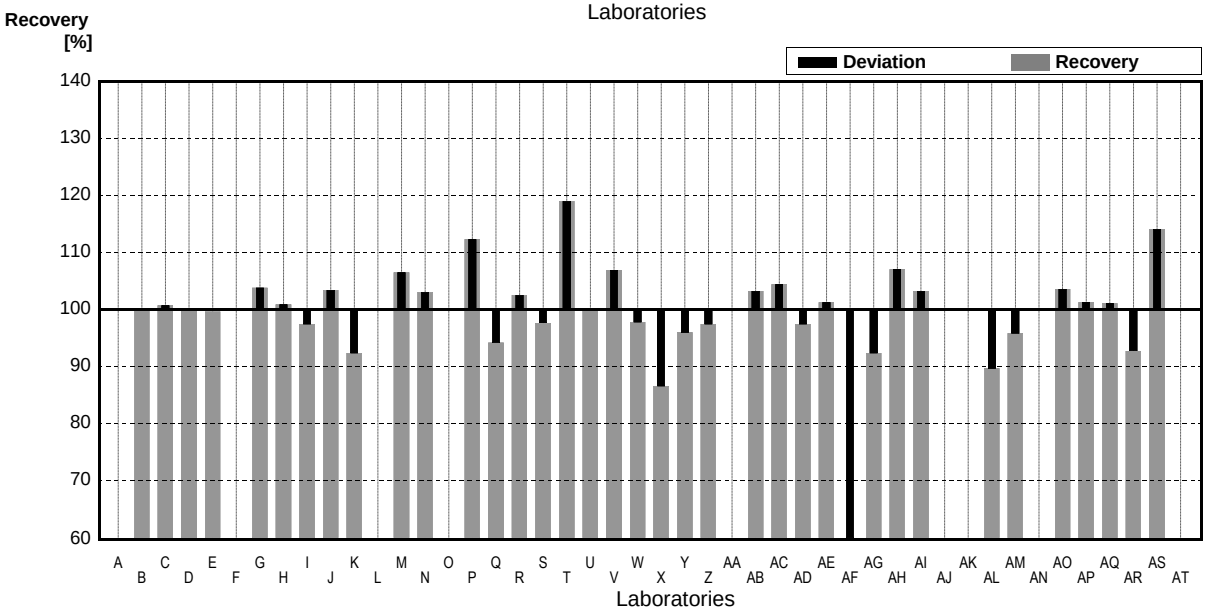
	All results	Outliers excl.	Unit
Mean ± CI(99%)	6,23 ± 0,14	6,21 ± 0,13	mg/l
Recov. ± CI(99%)	101,3 ± 2,3	101,0 ± 2,2	%
SD between labs	0,32	0,29	mg/l
RSD between labs	5,2	4,7	%
n for calculation	37	36	

Sample N147B
Parameter Potassium

Target value ± U (k=2)	5,52	mg/l	±	0,04	mg/l
IFA result ± U (k=2)	5,79	mg/l	±	0,35	mg/l
Stability test		mg/l			

Lab Code	Result		±	Unit	Recovery	z-Score
A				mg/l		
B	5,53		0,08	mg/l	100%	0,04
C	5,56		0,59	mg/l	101%	0,15
D	5,53		0,22	mg/l	100%	0,04
E	5,5		0,2	mg/l	100%	-0,08
F				mg/l		
G	5,73		0,52	mg/l	104%	0,79
H	5,57		0,84	mg/l	101%	0,19
I	5,38		0,27	mg/l	97%	-0,53
J	5,71		0,40	mg/l	103%	0,72
K	5,1		0,8	mg/l	92%	-1,59
L				mg/l		
M	5,88		6	mg/l	107%	1,36
N	5,69		0,228	mg/l	103%	0,64
O				mg/l		
P	6,2		0,3	mg/l	112%	2,57
Q	5,2			mg/l	94%	-1,21
R	5,66		0,23	mg/l	103%	0,53
S	5,39		0,3	mg/l	98%	-0,49
T	6,57	*	0,7	mg/l	119%	3,96
U	5,53		0,1	mg/l	100%	0,04
V	5,9		0,5	mg/l	107%	1,43
W	5,4		0,2	mg/l	98%	-0,45
X	4,78		0,127	mg/l	87%	-2,79
Y	5,3		0,5	mg/l	96%	-0,83
Z	5,38		0,54	mg/l	97%	-0,53
AA				mg/l		
AB	5,7			mg/l	103%	0,68
AC	5,764			mg/l	104%	0,92
AD	5,38		0,538	mg/l	97%	-0,53
AE	5,59		0,57	mg/l	101%	0,26
AF	3,0	*		mg/l	54%	-9,51
AG	5,1		0,3	mg/l	92%	-1,59
AH	5,91		0,3	mg/l	107%	1,47
AI	5,7		0,9	mg/l	103%	0,68
AJ				mg/l		
AK				mg/l		
AL	4,95		0,36	mg/l	90%	-2,15
AM	5,29		0,7	mg/l	96%	-0,87
AN				mg/l		
AO	5,72		0,57	mg/l	104%	0,75
AP	5,59		0,559	mg/l	101%	0,26
AQ	5,58		0,361	mg/l	101%	0,23
AR	5,12		0,51	mg/l	93%	-1,51
AS	6,30		0,31	mg/l	114%	2,94
AT				mg/l		



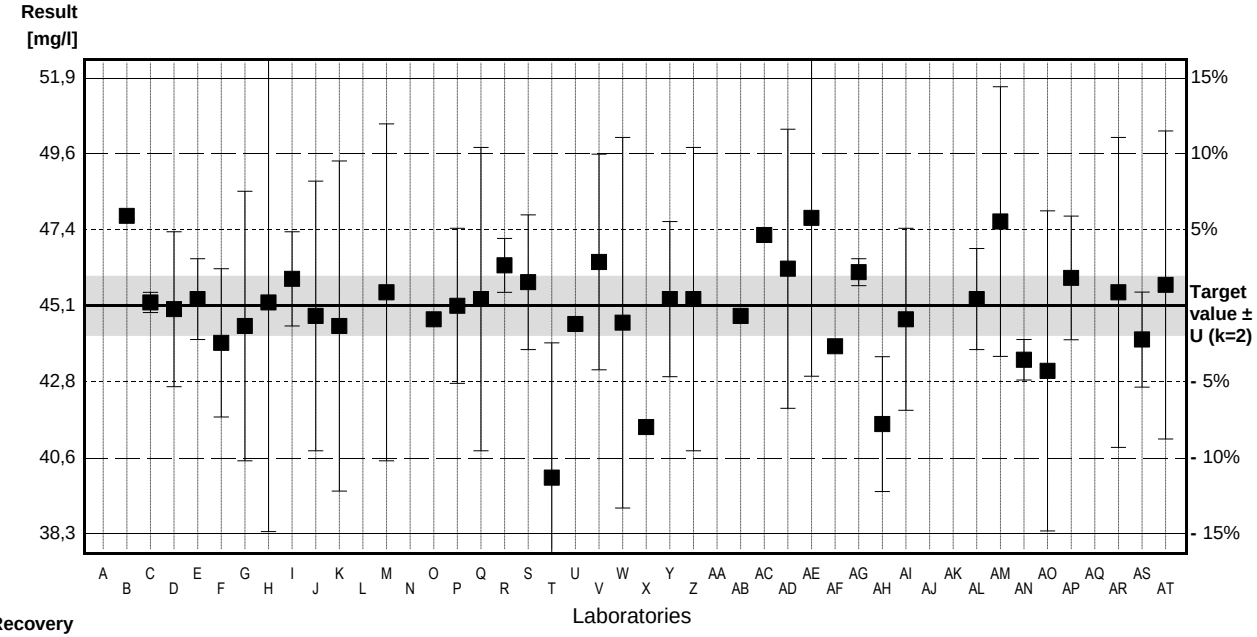


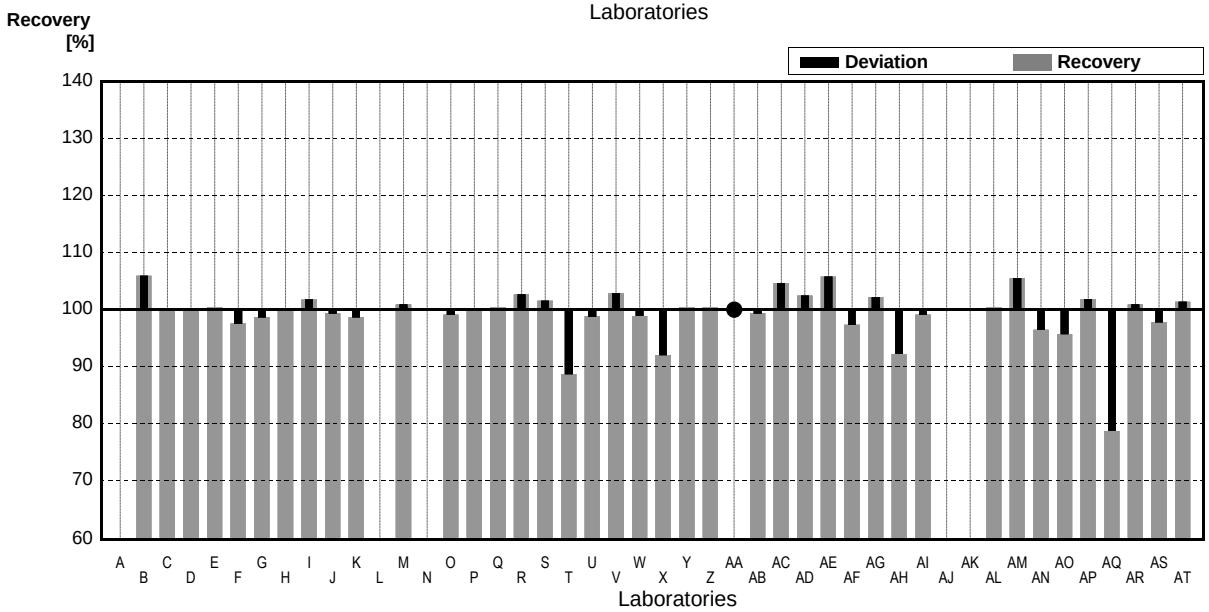
	All results	Outliers excl.	Unit
Mean ± CI(99%)	5,49 ± 0,25	5,53 ± 0,15	mg/l
Recov. ± CI(99%)	99,5 ± 4,5	100,2 ± 2,7	%
SD between labs	0,55	0,32	mg/l
RSD between labs	10,0	5,8	%
n for calculation	37	35	

Sample N147A
Parameter Nitrate

Target value ± U (k=2)	45,1 mg/l	±	0,9 mg/l
IFA result ± U (k=2)	44,1 mg/l	±	2,2 mg/l
Stability test	mg/l		

Lab Code	Result		±	Unit	Recovery	z-Score
A				mg/l		
B	47,77		0,09	mg/l	106%	1,69
C	45,2		0,30	mg/l	100%	0,06
D	45		2,3	mg/l	100%	-0,06
E	45,3		1,2	mg/l	100%	0,13
F	44		2,2	mg/l	98%	-0,70
G	44,5		4,0	mg/l	99%	-0,38
H	45,2		6,8	mg/l	100%	0,06
I	45,9		1,4	mg/l	102%	0,51
J	44,8		4,0	mg/l	99%	-0,19
K	44,5		4,9	mg/l	99%	-0,38
L				mg/l		
M	45,5		5	mg/l	101%	0,25
N				mg/l		
O	44,7			mg/l	99%	-0,25
P	45,1		2,3	mg/l	100%	0,00
Q	45,3		4,5	mg/l	100%	0,13
R	46,3		0,8	mg/l	103%	0,76
S	45,8		2	mg/l	102%	0,44
T	40	*	4	mg/l	89%	-3,23
U	44,56		0,2	mg/l	99%	-0,34
V	46,4		3,2	mg/l	103%	0,82
W	44,6		5,5	mg/l	99%	-0,32
X	41,5	*	0,183	mg/l	92%	-2,28
Y	45,3		2,3	mg/l	100%	0,13
Z	45,3		4,5	mg/l	100%	0,13
AA	>30			mg/l	•	
AB	44,8			mg/l	99%	-0,19
AC	47,2			mg/l	105%	1,33
AD	46,2		4,14	mg/l	102%	0,70
AE	47,71		4,7	mg/l	106%	1,65
AF	43,9			mg/l	97%	-0,76
AG	46,1		0,4	mg/l	102%	0,63
AH	41,59	*	2	mg/l	92%	-2,22
AI	44,7		2,7	mg/l	99%	-0,25
AJ				mg/l		
AK				mg/l		
AL	45,3		1,5	mg/l	100%	0,13
AM	47,6		4	mg/l	106%	1,58
AN	43,5		0,6	mg/l	96%	-1,01
AO	43,17		4,75	mg/l	96%	-1,22
AP	45,928		1,8371	mg/l	102%	0,52
AQ	35,5	*	0,973	mg/l	79%	-6,08
AR	45,5		4,6	mg/l	101%	0,25
AS	44,1		1,41	mg/l	98%	-0,63
AT	45,72		4,57	mg/l	101%	0,39



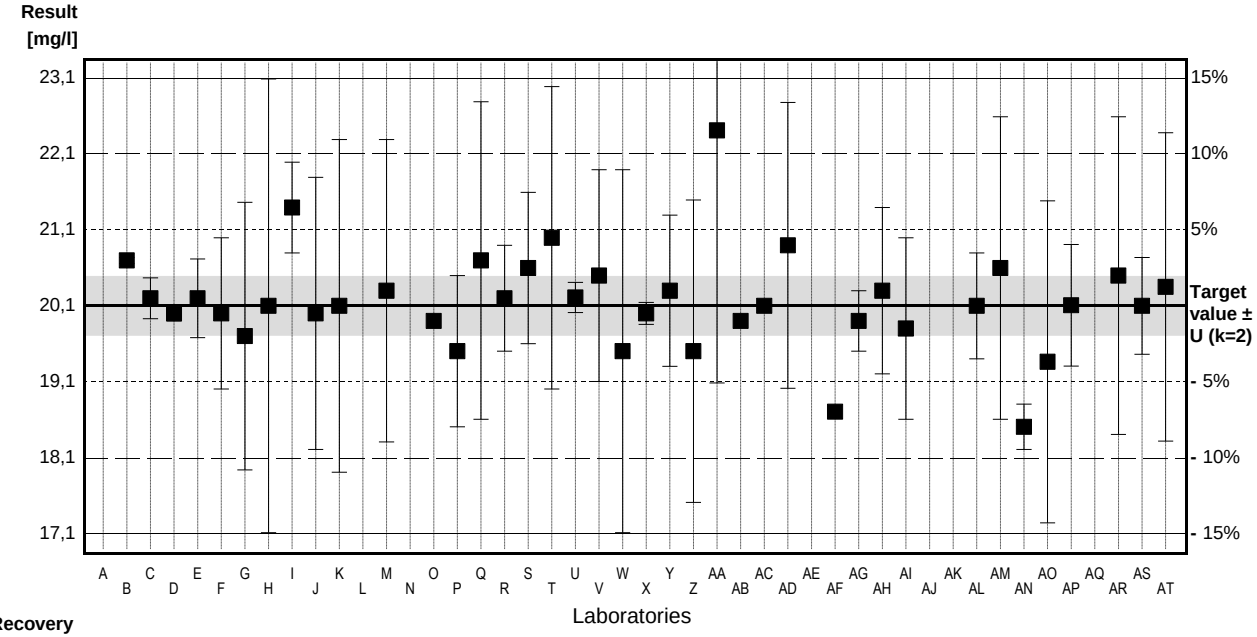


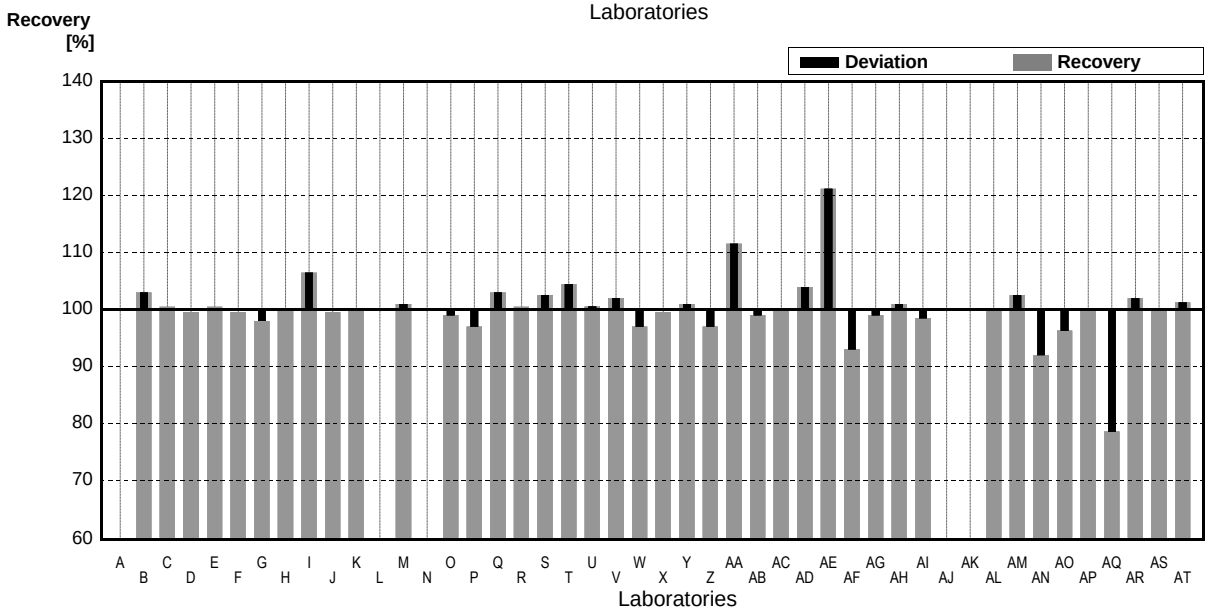
	All results	Outliers excl.	Unit
Mean ± CI(99%)	44,8 ± 0,9	45,3 ± 0,5	mg/l
Recov. ± CI(99%)	99,3 ± 2,1	100,5 ± 1,1	%
SD between labs	2,2	1,1	mg/l
RSD between labs	4,8	2,4	%
n for calculation	40	36	

Sample N147B
Parameter Nitrate

Target value ± U (k=2)	20,1 mg/l	±	0,4 mg/l
IFA result ± U (k=2)	19,7 mg/l	±	1,0 mg/l
Stability test	mg/l		

Lab Code	Result		±	Unit	Recovery	z-Score
A				mg/l		
B	20,70		0,04	mg/l	103%	0,85
C	20,2		0,27	mg/l	100%	0,14
D	20		0,1	mg/l	100%	-0,14
E	20,2		0,52	mg/l	100%	0,14
F	20		1,0	mg/l	100%	-0,14
G	19,7		1,77	mg/l	98%	-0,57
H	20,1		3,0	mg/l	100%	0,00
I	21,4	*	0,6	mg/l	106%	1,85
J	20,0		1,8	mg/l	100%	-0,14
K	20,1		2,2	mg/l	100%	0,00
L				mg/l		
M	20,3		2	mg/l	101%	0,28
N				mg/l		
O	19,9			mg/l	99%	-0,28
P	19,5		1,0	mg/l	97%	-0,85
Q	20,7		2,1	mg/l	103%	0,85
R	20,2		0,7	mg/l	100%	0,14
S	20,6		1	mg/l	102%	0,71
T	21		2	mg/l	104%	1,28
U	20,21		0,2	mg/l	101%	0,16
V	20,5		1,4	mg/l	102%	0,57
W	19,5		2,4	mg/l	97%	-0,85
X	20,0		0,146	mg/l	100%	-0,14
Y	20,3		1,0	mg/l	101%	0,28
Z	19,5		2,0	mg/l	97%	-0,85
AA	22,42	*	3,34	mg/l	112%	3,30
AB	19,9			mg/l	99%	-0,28
AC	20,1			mg/l	100%	0,00
AD	20,9		1,89	mg/l	104%	1,14
AE	24,36	*	2,4	mg/l	121%	6,06
AF	18,7	*		mg/l	93%	-1,99
AG	19,9		0,4	mg/l	99%	-0,28
AH	20,30		1,1	mg/l	101%	0,28
AI	19,8		1,2	mg/l	99%	-0,43
AJ				mg/l		
AK				mg/l		
AL	20,1		0,7	mg/l	100%	0,00
AM	20,6		2	mg/l	102%	0,71
AN	18,5	*	0,3	mg/l	92%	-2,27
AO	19,36		2,13	mg/l	96%	-1,05
AP	20,107		0,8043	mg/l	100%	0,01
AQ	15,8	*	0,160	mg/l	79%	-6,11
AR	20,5		2,1	mg/l	102%	0,57
AS	20,1		0,64	mg/l	100%	0,00
AT	20,35		2,04	mg/l	101%	0,36



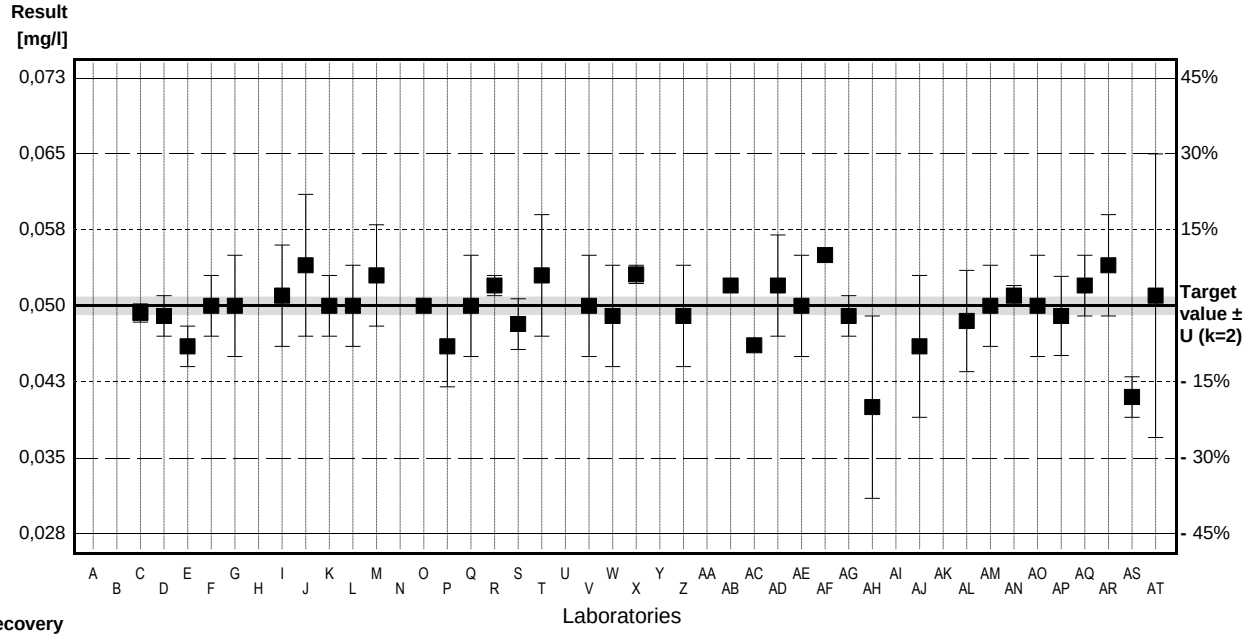


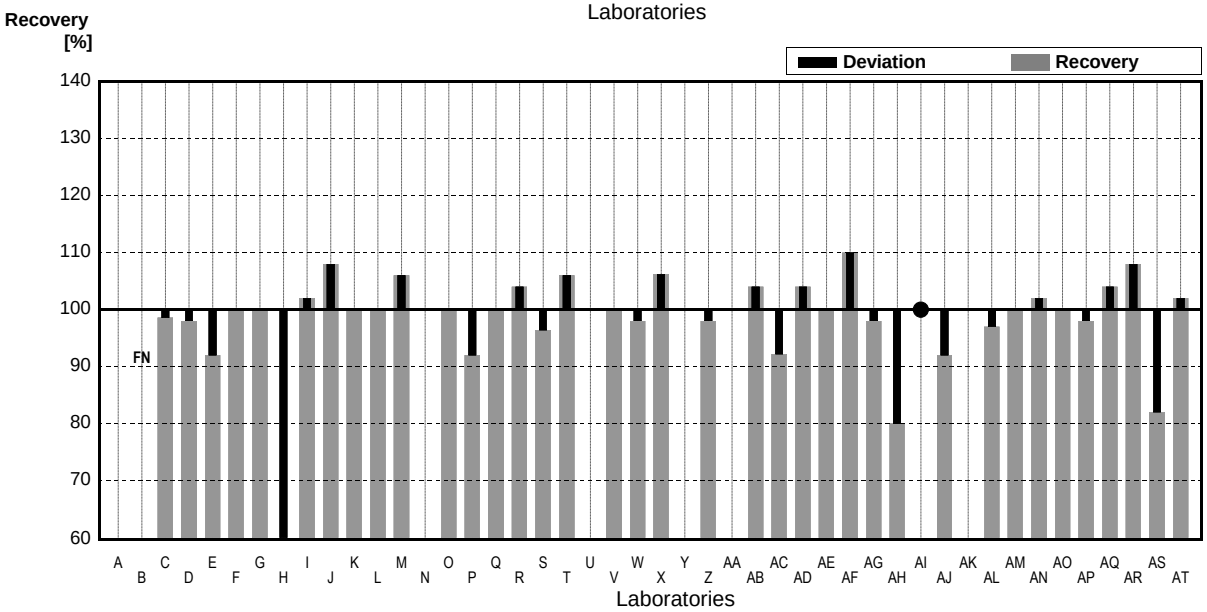
	All results	Outliers excl.	Unit
Mean ± CI(99%)	20,2 ± 0,5	20,1 ± 0,2	mg/l
Recov. ± CI(99%)	100,3 ± 2,4	100,2 ± 0,9	%
SD between labs	1,2	0,4	mg/l
RSD between labs	5,7	1,9	%
n for calculation	41	35	

Sample N147A
Parameter Nitrite

Target value ± U (k=2)	0,050	mg/l	±	0,001	mg/l
IFA result ± U (k=2)	0,049	mg/l	±	0,002	mg/l
Stability test ± U (k=2)	0,050	mg/l	±	0,003	mg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A			mg/l		
B	<0,02		mg/l	FN	
C	0,0493	0,0009	mg/l	99%	-0,25
D	0,049	0,002	mg/l	98%	-0,36
E	0,046	0,002	mg/l	92%	-1,43
F	0,05	0,003	mg/l	100%	0,00
G	0,050	0,005	mg/l	100%	0,00
H	0,005 *	0,008	mg/l	10%	-16,07
I	0,051	0,005	mg/l	102%	0,36
J	0,054	0,007	mg/l	108%	1,43
K	0,05	0,003	mg/l	100%	0,00
L	0,050	0,004	mg/l	100%	0,00
M	0,053	0,005	mg/l	106%	1,07
N			mg/l		
O	0,050		mg/l	100%	0,00
P	0,046	0,004	mg/l	92%	-1,43
Q	0,05	0,005	mg/l	100%	0,00
R	0,052	0,001	mg/l	104%	0,71
S	0,0482	0,0025	mg/l	96%	-0,64
T	0,053	0,006	mg/l	106%	1,07
U			mg/l		
V	0,050	0,005	mg/l	100%	0,00
W	0,049	0,005	mg/l	98%	-0,36
X	0,0531	0,0009	mg/l	106%	1,11
Y			mg/l		
Z	0,049	0,005	mg/l	98%	-0,36
AA			mg/l		
AB	0,052		mg/l	104%	0,71
AC	0,0461		mg/l	92%	-1,39
AD	0,052	0,005	mg/l	104%	0,71
AE	0,050	0,005	mg/l	100%	0,00
AF	0,055		mg/l	110%	1,79
AG	0,049	0,002	mg/l	98%	-0,36
AH	0,04 *	0,009	mg/l	80%	-3,57
AI	<0,2		mg/l	•	
AJ	0,046	0,007	mg/l	92%	-1,43
AK			mg/l		
AL	0,0485	0,005	mg/l	97%	-0,54
AM	0,050	0,004	mg/l	100%	0,00
AN	0,051	0,001	mg/l	102%	0,36
AO	0,050	0,005	mg/l	100%	0,00
AP	0,049	0,0039	mg/l	98%	-0,36
AQ	0,052	0,003	mg/l	104%	0,71
AR	0,054	0,005	mg/l	108%	1,43
AS	0,041 *	0,002	mg/l	82%	-3,21
AT	0,051	0,014	mg/l	102%	0,36



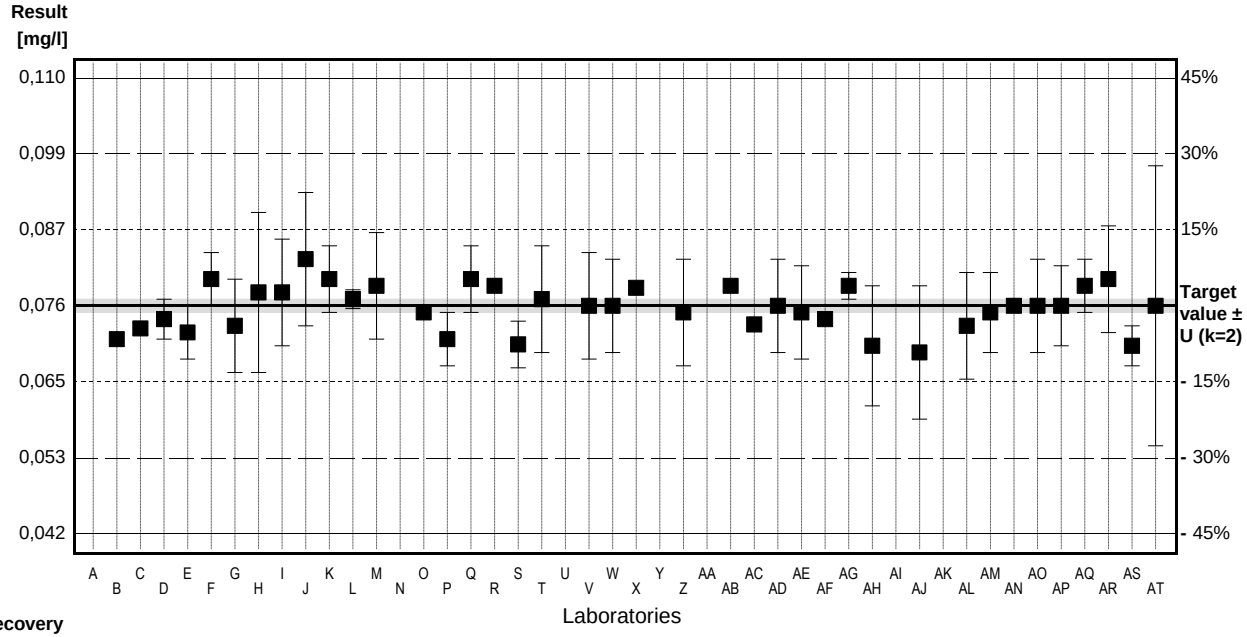


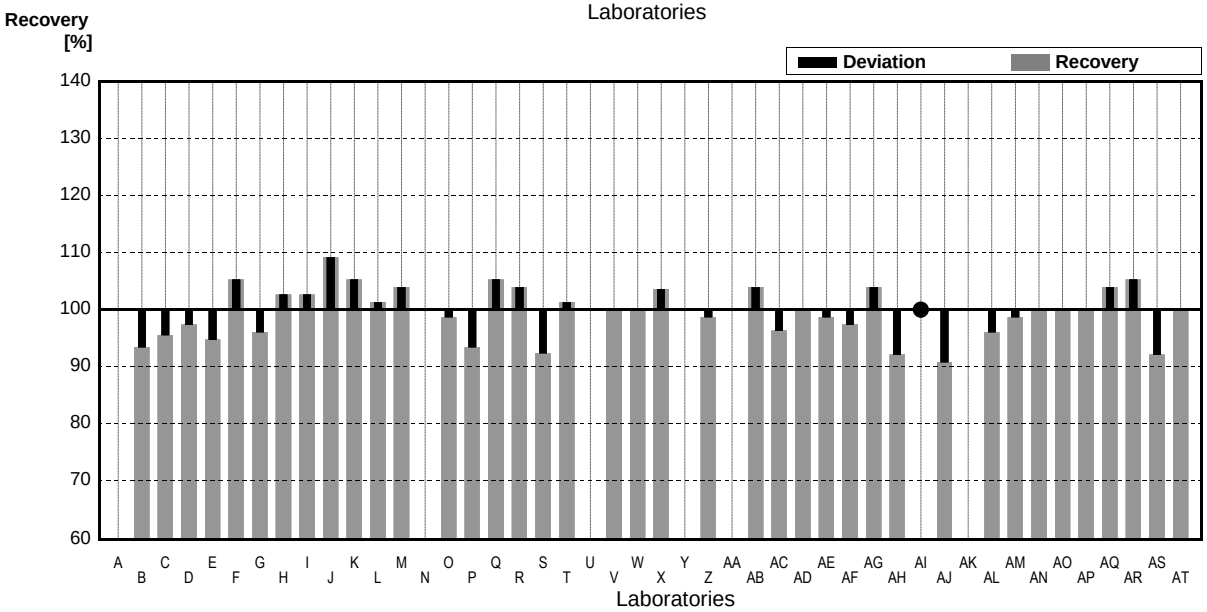
	All results	Outliers excl.	Unit
Mean ± CI(99%)	0,049 ± 0,003	0,050 ± 0,001	mg/l
Recov. ± CI(99%)	97,1 ± 7,0	100,5 ± 2,1	%
SD between labs	0,008	0,002	mg/l
RSD between labs	16,3	4,5	%
n for calculation	38	35	

Sample N147B
Parameter Nitrite

Target value ± U (k=2)	0,076 mg/l	±	0,001 mg/l
IFA result ± U (k=2)	0,074 mg/l	±	0,004 mg/l
Stability test ± U (k=2)	0,075 mg/l	±	0,004 mg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A			mg/l		
B	0,071	0,001	mg/l	93%	-1,17
C	0,0726	0,0009	mg/l	96%	-0,80
D	0,074	0,003	mg/l	97%	-0,47
E	0,072	0,004	mg/l	95%	-0,94
F	0,08	0,004	mg/l	105%	0,94
G	0,073	0,007	mg/l	96%	-0,70
H	0,078	0,012	mg/l	103%	0,47
I	0,078	0,008	mg/l	103%	0,47
J	0,083	0,010	mg/l	109%	1,64
K	0,08	0,005	mg/l	105%	0,94
L	0,077	0,0014	mg/l	101%	0,23
M	0,079	0,008	mg/l	104%	0,70
N			mg/l		
O	0,075		mg/l	99%	-0,23
P	0,071	0,004	mg/l	93%	-1,17
Q	0,08	0,005	mg/l	105%	0,94
R	0,079	0,001	mg/l	104%	0,70
S	0,0702	0,0035	mg/l	92%	-1,36
T	0,077	0,008	mg/l	101%	0,23
U			mg/l		
V	0,076	0,008	mg/l	100%	0,00
W	0,076	0,007	mg/l	100%	0,00
X	0,0787	0,0009	mg/l	104%	0,63
Y			mg/l		
Z	0,075	0,008	mg/l	99%	-0,23
AA			mg/l		
AB	0,079		mg/l	104%	0,70
AC	0,0732		mg/l	96%	-0,66
AD	0,076	0,007	mg/l	100%	0,00
AE	0,075	0,007	mg/l	99%	-0,23
AF	0,074		mg/l	97%	-0,47
AG	0,079	0,002	mg/l	104%	0,70
AH	0,07	0,009	mg/l	92%	-1,41
AI	<0,2		mg/l	•	
AJ	0,069	0,010	mg/l	91%	-1,64
AK			mg/l		
AL	0,073	0,008	mg/l	96%	-0,70
AM	0,075	0,006	mg/l	99%	-0,23
AN	0,076	0,001	mg/l	100%	0,00
AO	0,076	0,007	mg/l	100%	0,00
AP	0,076	0,006	mg/l	100%	0,00
AQ	0,079	0,004	mg/l	104%	0,70
AR	0,080	0,008	mg/l	105%	0,94
AS	0,070	0,003	mg/l	92%	-1,41
AT	0,076	0,021	mg/l	100%	0,00





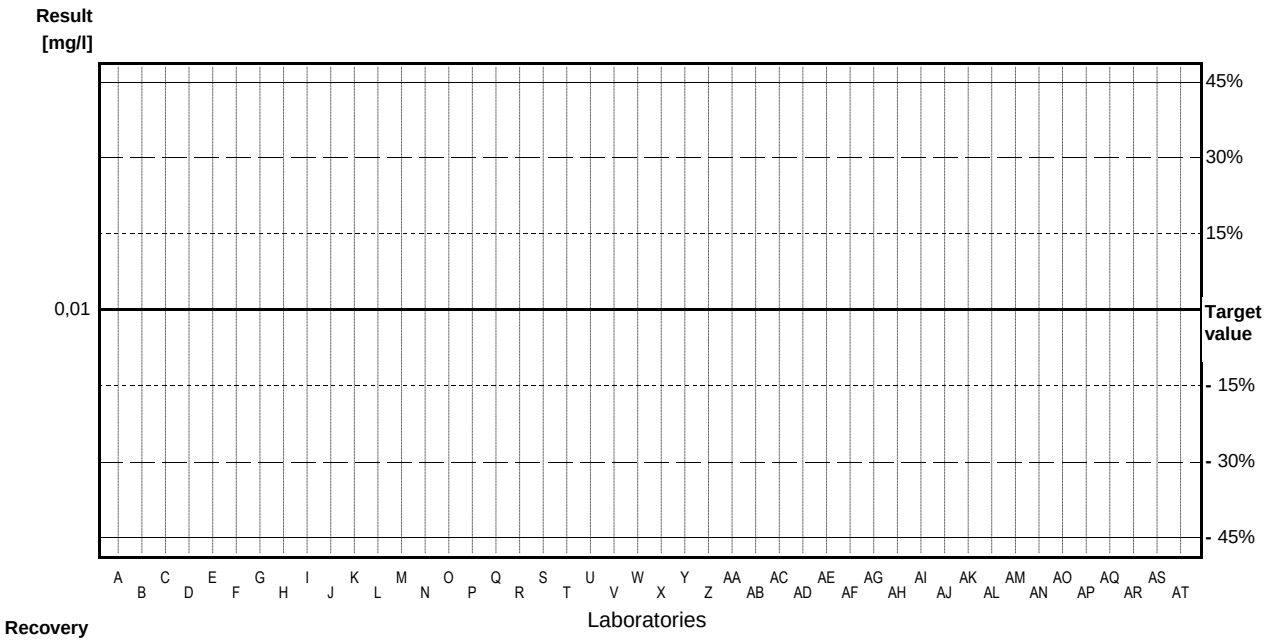
	All results	Outliers excl.	Unit
Mean ± CI(99%)	0,076 ± 0,001	0,076 ± 0,001	mg/l
Recov. ± CI(99%)	99,6 ± 1,9	99,6 ± 1,9	%
SD between labs	0,003	0,003	mg/l
RSD between labs	4,5	4,5	%
n for calculation	39	39	

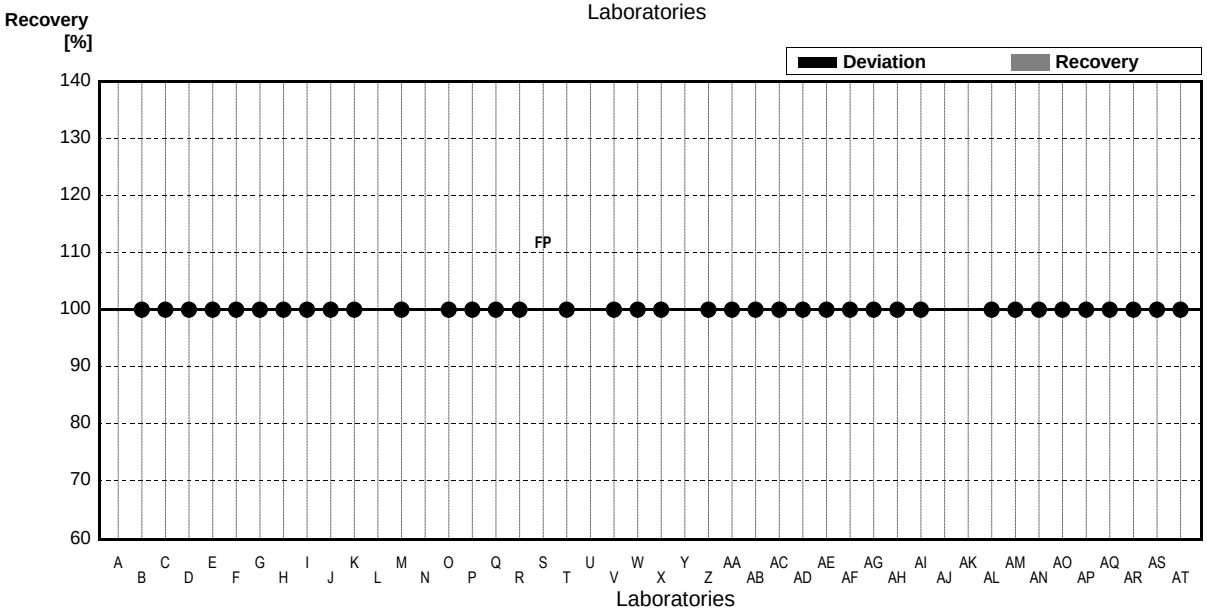
Sample N147A

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	<0,02		mg/l	•	
C	<0,010		mg/l	•	
D	<0,01		mg/l	•	
E	<0,01		mg/l	•	
F	<0,06		mg/l	•	
G	<0,01		mg/l	•	
H	<0,04		mg/l	•	
I	<0,030		mg/l	•	
J	<0,008		mg/l	•	
K	<0,01		mg/l	•	
L			mg/l		
M	<0,01		mg/l	•	
N			mg/l		
O	0,008		mg/l	•	
P	<0,01		mg/l	•	
Q	<0,01		mg/l	•	
R	<0,01		mg/l	•	
S	0,05	0,0025	mg/l	FP	
T	<0,01		mg/l	•	
U			mg/l		
V	<0,020	0,006	mg/l	•	
W	<0,01		mg/l	•	
X	0,0067	0,001	mg/l	•	
Y			mg/l		
Z	0,010	0,001	mg/l	•	
AA	<0,01		mg/l	•	
AB	<0,01		mg/l	•	
AC	<0,042		mg/l	•	
AD	<0,01		mg/l	•	
AE	<0,009		mg/l	•	
AF	<0,03		mg/l	•	
AG	<0,006	0,003	mg/l	•	
AH	<0,04		mg/l	•	
AI	<0,2		mg/l	•	
AJ			mg/l		
AK			mg/l		
AL	<0,01		mg/l	•	
AM	<0,013		mg/l	•	
AN	0,009	0,001	mg/l	•	
AO	<0,005		mg/l	•	
AP	[0,00064]		mg/l	•	
AQ	<0,0067		mg/l	•	
AR	<0,010		mg/l	•	
AS	<0,010		mg/l	•	
AT	<0,012		mg/l	•	





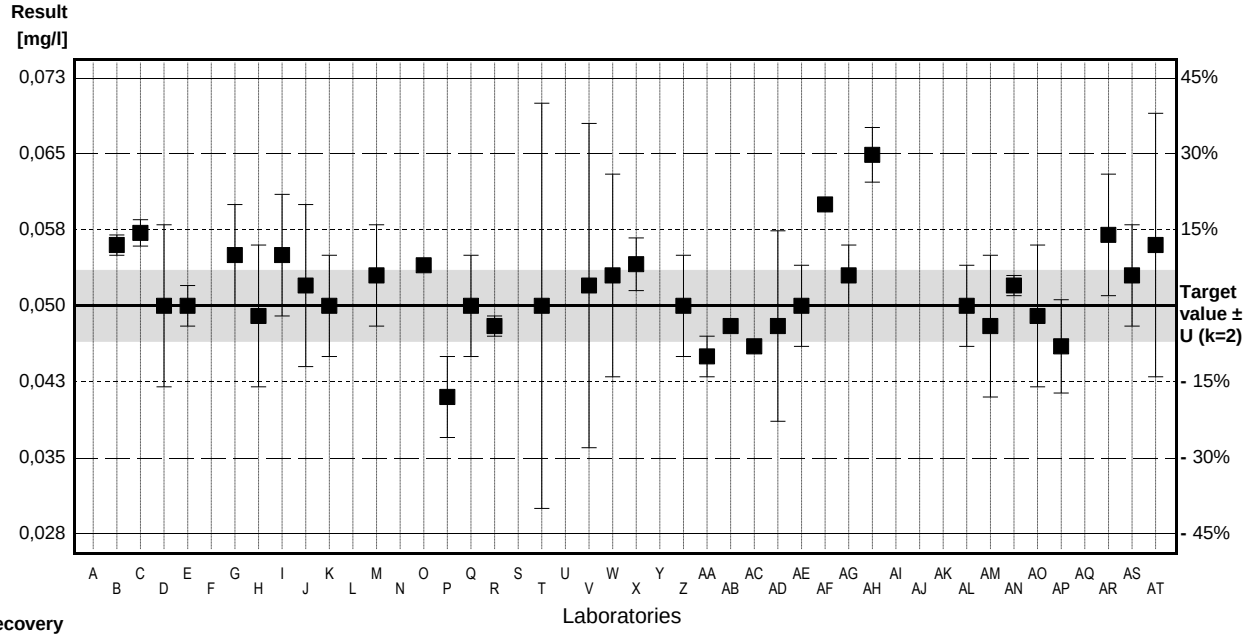
	All results	Outliers excl.	Unit
Mean ± CI(99%)			mg/l
Recov. ± CI(99%)			%
SD between labs			mg/l
RSD between labs			%
n for calculation			

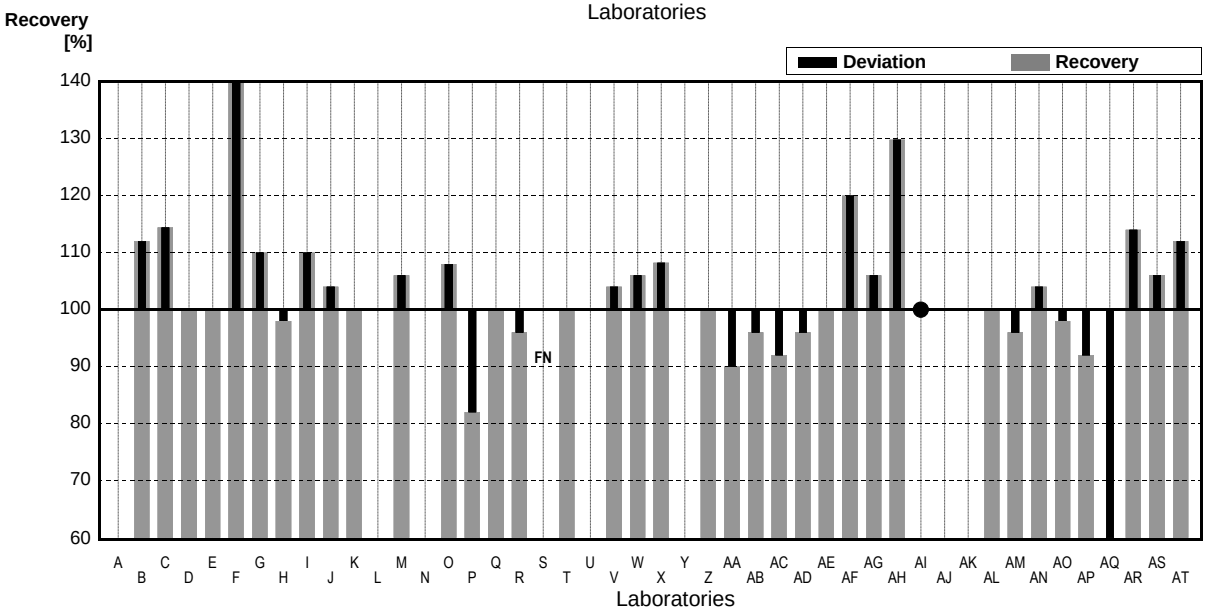
Sample N147B

Parameter Ammonium

Target value ± U (k=2)	0,050	mg/l	±	0,004	mg/l
IFA result ± U (k=2)	0,052	mg/l	±	0,004	mg/l
Stability test ± U (k=2)	0,051	mg/l	±	0,004	mg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A			mg/l		
B	0,056	0,001	mg/l	112%	0,92
C	0,0572	0,0013	mg/l	114%	1,11
D	0,050	0,008	mg/l	100%	0,00
E	0,050	0,002	mg/l	100%	0,00
F	0,08 *	0,004	mg/l	160%	4,62
G	0,055	0,005	mg/l	110%	0,77
H	0,049	0,007	mg/l	98%	-0,15
I	0,055	0,006	mg/l	110%	0,77
J	0,052	0,008	mg/l	104%	0,31
K	0,05	0,005	mg/l	100%	0,00
L			mg/l		
M	0,053	0,005	mg/l	106%	0,46
N			mg/l		
O	0,054		mg/l	108%	0,62
P	0,041	0,004	mg/l	82%	-1,38
Q	0,05	0,005	mg/l	100%	0,00
R	0,048	0,001	mg/l	96%	-0,31
S	<0,01		mg/l	FN	
T	0,05	0,02	mg/l	100%	0,00
U			mg/l		
V	0,052	0,016	mg/l	104%	0,31
W	0,053	0,010	mg/l	106%	0,46
X	0,0541	0,0026	mg/l	108%	0,63
Y			mg/l		
Z	0,050	0,005	mg/l	100%	0,00
AA	0,045	0,002	mg/l	90%	-0,77
AB	0,048		mg/l	96%	-0,31
AC	0,046		mg/l	92%	-0,62
AD	0,048	0,0094	mg/l	96%	-0,31
AE	0,050	0,004	mg/l	100%	0,00
AF	0,06		mg/l	120%	1,54
AG	0,053	0,003	mg/l	106%	0,46
AH	0,0649 *	0,0027	mg/l	130%	2,29
AI	<0,2		mg/l	•	
AJ			mg/l		
AK			mg/l		
AL	0,050	0,004	mg/l	100%	0,00
AM	0,048	0,007	mg/l	96%	-0,31
AN	0,052	0,001	mg/l	104%	0,31
AO	0,049	0,007	mg/l	98%	-0,15
AP	0,046	0,0046	mg/l	92%	-0,62
AQ	0,023 *	0,006	mg/l	46%	-4,15
AR	0,057	0,006	mg/l	114%	1,08
AS	0,053	0,005	mg/l	106%	0,46
AT	0,056	0,013	mg/l	112%	0,92



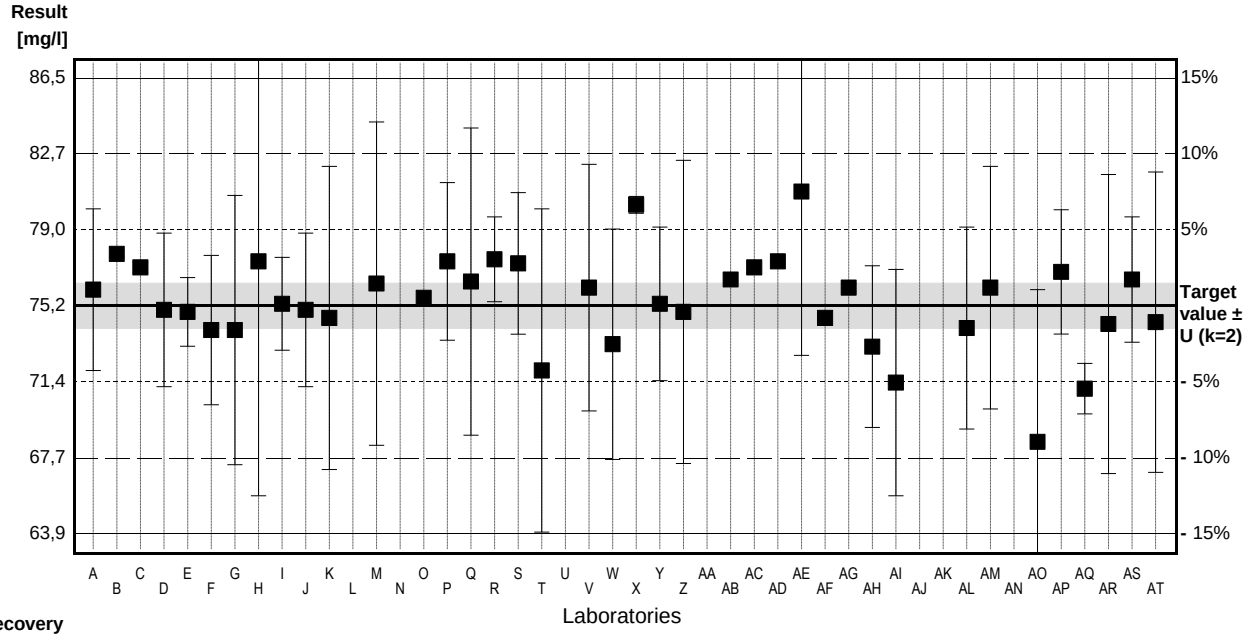


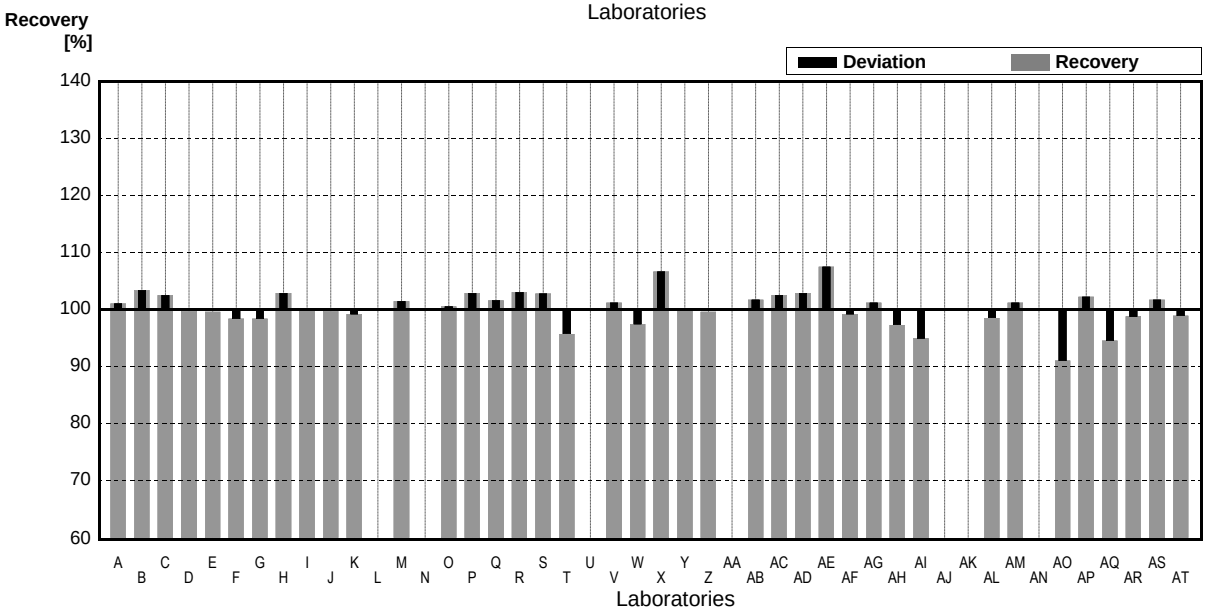
	All results	Outliers excl.	Unit
Mean ± CI(99%)	0,052 ± 0,004	0,051 ± 0,002	mg/l
Recov. ± CI(99%)	103,1 ± 7,2	102,4 ± 3,7	%
SD between labs	0,008	0,004	mg/l
RSD between labs	15,6	7,7	%
n for calculation	37	34	

Sample N147A
Parameter Chloride

Target value ± U (k=2)	75,2	mg/l	±	1,1	mg/l
IFA result ± U (k=2)	74,0	mg/l	±	3,7	mg/l
Stability test		mg/l			

Lab Code	Result	±	Unit	Recovery	z-Score
A	76	4	mg/l	101%	0,33
B	77,77	0,15	mg/l	103%	1,07
C	77,1	0,23	mg/l	103%	0,79
D	75	3,8	mg/l	100%	-0,08
E	74,9	1,7	mg/l	100%	-0,12
F	74	3,7	mg/l	98%	-0,50
G	74,0	6,66	mg/l	98%	-0,50
H	77,4	11,6	mg/l	103%	0,91
I	75,3	2,3	mg/l	100%	0,04
J	75,0	3,8	mg/l	100%	-0,08
K	74,6	7,5	mg/l	99%	-0,25
L			mg/l		
M	76,3	8	mg/l	101%	0,46
N			mg/l		
O	75,6		mg/l	101%	0,17
P	77,4	3,9	mg/l	103%	0,91
Q	76,4	7,6	mg/l	102%	0,50
R	77,5	2,1	mg/l	103%	0,96
S	77,3	3,5	mg/l	103%	0,87
T	72	8	mg/l	96%	-1,33
U			mg/l		
V	76,1	6,1	mg/l	101%	0,37
W	73,3	5,7	mg/l	97%	-0,79
X	80,2	0,417	mg/l	107%	2,08
Y	75,3	3,8	mg/l	100%	0,04
Z	74,9	7,5	mg/l	100%	-0,12
AA			mg/l		
AB	76,5		mg/l	102%	0,54
AC	77,1		mg/l	103%	0,79
AD	77,4	0,08	mg/l	103%	0,91
AE	80,85	8,1	mg/l	108%	2,35
AF	74,6		mg/l	99%	-0,25
AG	76,1	0,2	mg/l	101%	0,37
AH	73,18	4	mg/l	97%	-0,84
AI	71,4	5,6	mg/l	95%	-1,58
AJ			mg/l		
AK			mg/l		
AL	74,1	5,0	mg/l	99%	-0,46
AM	76,1	6	mg/l	101%	0,37
AN			mg/l		
AO	68,47 *	7,53	mg/l	91%	-2,80
AP	76,88	3,075	mg/l	102%	0,70
AQ	71,1	1,25	mg/l	95%	-1,70
AR	74,3	7,4	mg/l	99%	-0,37
AS	76,5	3,1	mg/l	102%	0,54
AT	74,39	7,43	mg/l	99%	-0,34



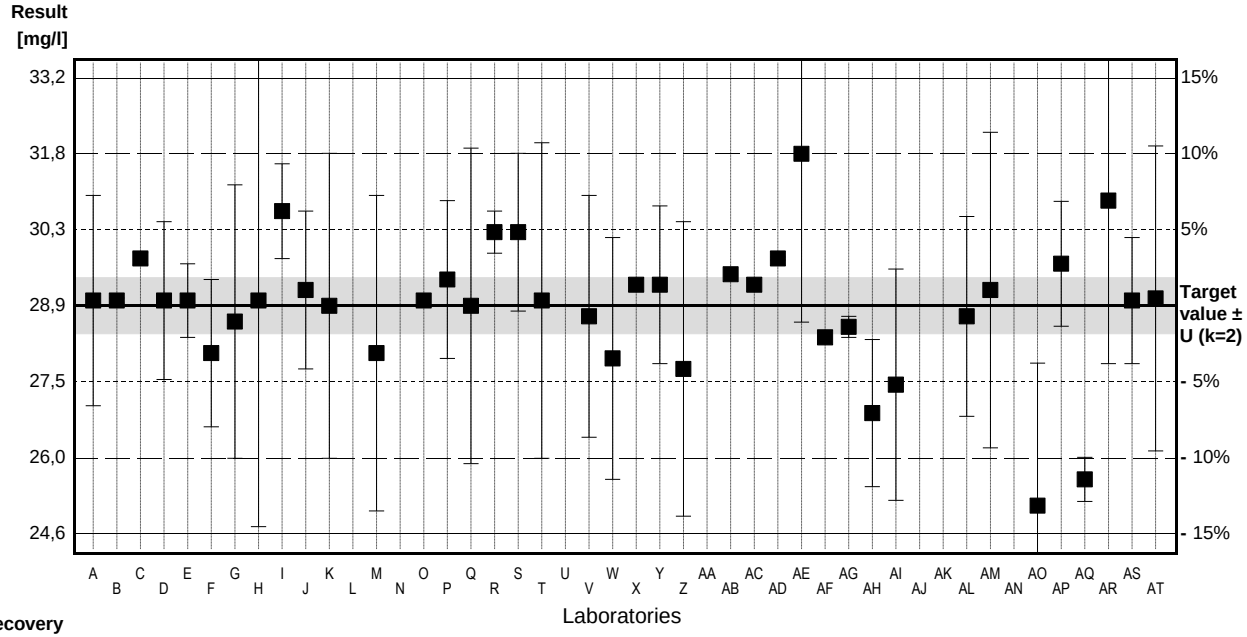


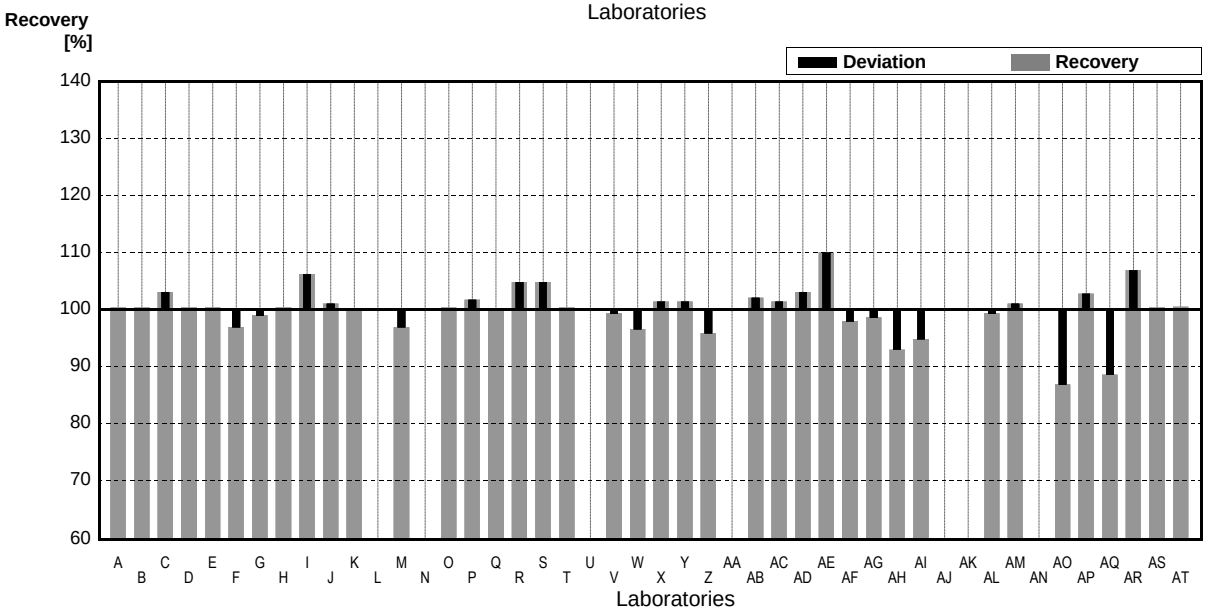
	All results	Outliers excl.	Unit
Mean ± CI(99%)	75,4 ± 1,0	75,6 ± 0,9	mg/l
Recov. ± CI(99%)	100,3 ± 1,3	100,6 ± 1,2	%
SD between labs	2,3	2,1	mg/l
RSD between labs	3,1	2,7	%
n for calculation	39	38	

Sample N147B
Parameter Chloride

Target value ± U (k=2)	28,9 mg/l	±	0,5 mg/l
IFA result ± U (k=2)	28,6 mg/l	±	1,4 mg/l
Stability test	mg/l		

Lab Code	Result		±	Unit	Recovery	z-Score
A	29		2	mg/l	100%	0,11
B	29,00		0,05	mg/l	100%	0,11
C	29,8		0,11	mg/l	103%	0,97
D	29		1,5	mg/l	100%	0,11
E	29,0		0,7	mg/l	100%	0,11
F	28		1,4	mg/l	97%	-0,97
G	28,6		2,6	mg/l	99%	-0,32
H	29,0		4,3	mg/l	100%	0,11
I	30,7		0,9	mg/l	106%	1,95
J	29,2		1,5	mg/l	101%	0,32
K	28,9		2,9	mg/l	100%	0,00
L				mg/l		
M	28,0		3	mg/l	97%	-0,97
N				mg/l		
O	29,0			mg/l	100%	0,11
P	29,4		1,5	mg/l	102%	0,54
Q	28,9		3,0	mg/l	100%	0,00
R	30,3		0,4	mg/l	105%	1,51
S	30,3		1,5	mg/l	105%	1,51
T	29		3	mg/l	100%	0,11
U				mg/l		
V	28,7		2,3	mg/l	99%	-0,22
W	27,9		2,3	mg/l	97%	-1,08
X	29,3		0,114	mg/l	101%	0,43
Y	29,3		1,5	mg/l	101%	0,43
Z	27,7		2,8	mg/l	96%	-1,30
AA				mg/l		
AB	29,5			mg/l	102%	0,65
AC	29,3			mg/l	101%	0,43
AD	29,8		0,03	mg/l	103%	0,97
AE	31,79	*	3,2	mg/l	110%	3,13
AF	28,3			mg/l	98%	-0,65
AG	28,5		0,2	mg/l	99%	-0,43
AH	26,86	*	1,4	mg/l	93%	-2,21
AI	27,4		2,2	mg/l	95%	-1,62
AJ				mg/l		
AK				mg/l		
AL	28,7		1,9	mg/l	99%	-0,22
AM	29,2		3	mg/l	101%	0,32
AN				mg/l		
AO	25,10	*	2,71	mg/l	87%	-4,11
AP	29,7		1,188	mg/l	103%	0,87
AQ	25,6	*	0,42	mg/l	89%	-3,57
AR	30,9	*	3,1	mg/l	107%	2,16
AS	29,0		1,2	mg/l	100%	0,11
AT	29,04		2,90	mg/l	100%	0,15



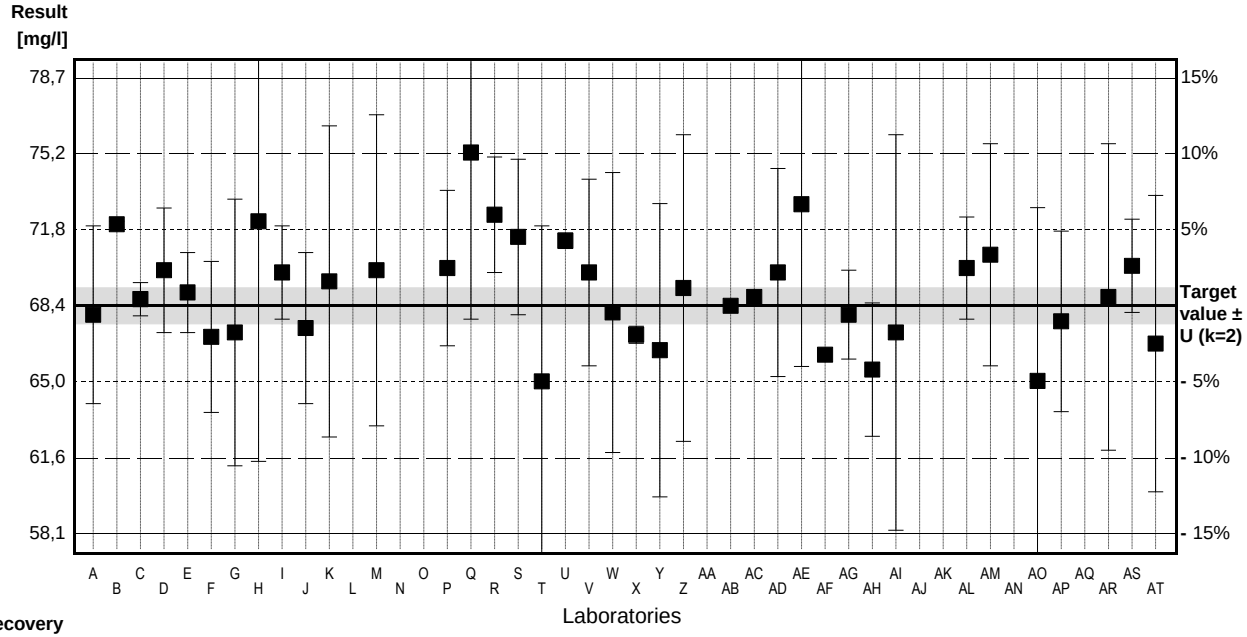


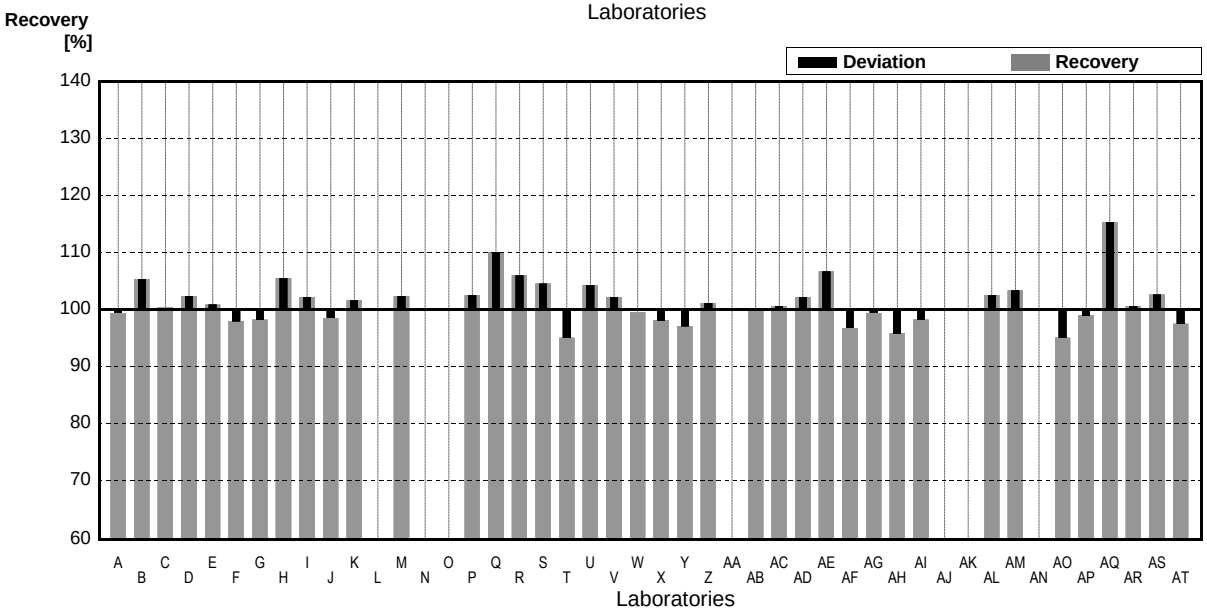
	All results	Outliers excl.	Unit
Mean ± CI(99%)	28,9 ± 0,5	29,0 ± 0,3	mg/l
Recov. ± CI(99%)	100,0 ± 1,9	100,4 ± 1,2	%
SD between labs	1,3	0,7	mg/l
RSD between labs	4,3	2,5	%
n for calculation	39	34	

Sample N147A
Parameter Sulphate

Target value ± U (k=2)	68,4 mg/l	±	0,8 mg/l
IFA result ± U (k=2)	68,5 mg/l	±	2,7 mg/l
Stability test	mg/l		

Lab Code	Result	±	Unit	Recovery	z-Score
A	68	4	mg/l	99%	-0,19
B	72,07	0,14	mg/l	105%	1,73
C	68,7	0,75	mg/l	100%	0,14
D	70	2,8	mg/l	102%	0,75
E	69	1,8	mg/l	101%	0,28
F	67	3,4	mg/l	98%	-0,66
G	67,2	6,0	mg/l	98%	-0,57
H	72,2	10,8	mg/l	106%	1,79
I	69,9	2,1	mg/l	102%	0,71
J	67,4	3,4	mg/l	99%	-0,47
K	69,5	7	mg/l	102%	0,52
L			mg/l		
M	70,0	7	mg/l	102%	0,75
N			mg/l		
O			mg/l		
P	70,1	3,5	mg/l	102%	0,80
Q	75,3	7,5	mg/l	110%	3,25
R	72,5	2,6	mg/l	106%	1,93
S	71,5	3,5	mg/l	105%	1,46
T	65	7	mg/l	95%	-1,60
U	71,33	0,35	mg/l	104%	1,38
V	69,9	4,2	mg/l	102%	0,71
W	68,1	6,3	mg/l	100%	-0,14
X	67,1	0,383	mg/l	98%	-0,61
Y	66,4	6,6	mg/l	97%	-0,94
Z	69,2	6,9	mg/l	101%	0,38
AA			mg/l		
AB	68,4		mg/l	100%	0,00
AC	68,8		mg/l	101%	0,19
AD	69,9	4,68	mg/l	102%	0,71
AE	72,97	7,3	mg/l	107%	2,16
AF	66,2		mg/l	97%	-1,04
AG	68	2	mg/l	99%	-0,19
AH	65,53	3	mg/l	96%	-1,35
AI	67,2	8,9	mg/l	98%	-0,57
AJ			mg/l		
AK			mg/l		
AL	70,1	2,3	mg/l	102%	0,80
AM	70,7	5	mg/l	103%	1,08
AN			mg/l		
AO	65,02	7,80	mg/l	95%	-1,59
AP	67,7	4,062	mg/l	99%	-0,33
AQ	78,9 *	2,8	mg/l	115%	4,95
AR	68,8	6,9	mg/l	101%	0,19
AS	70,2	2,1	mg/l	103%	0,85
AT	66,70	6,67	mg/l	98%	-0,80



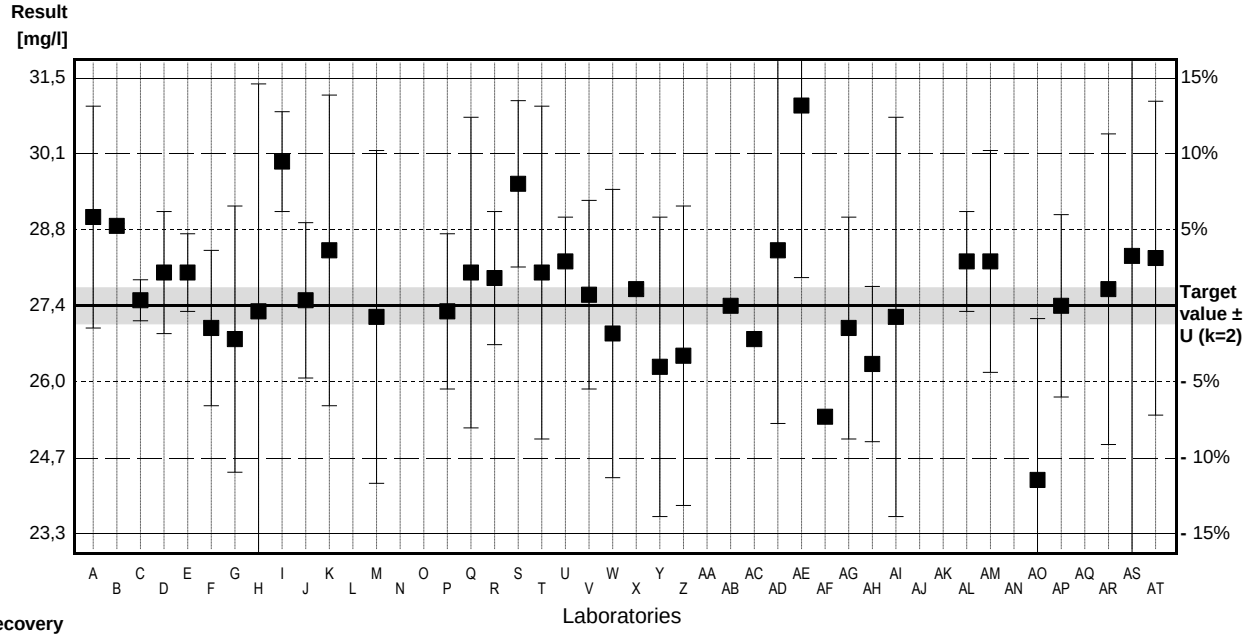


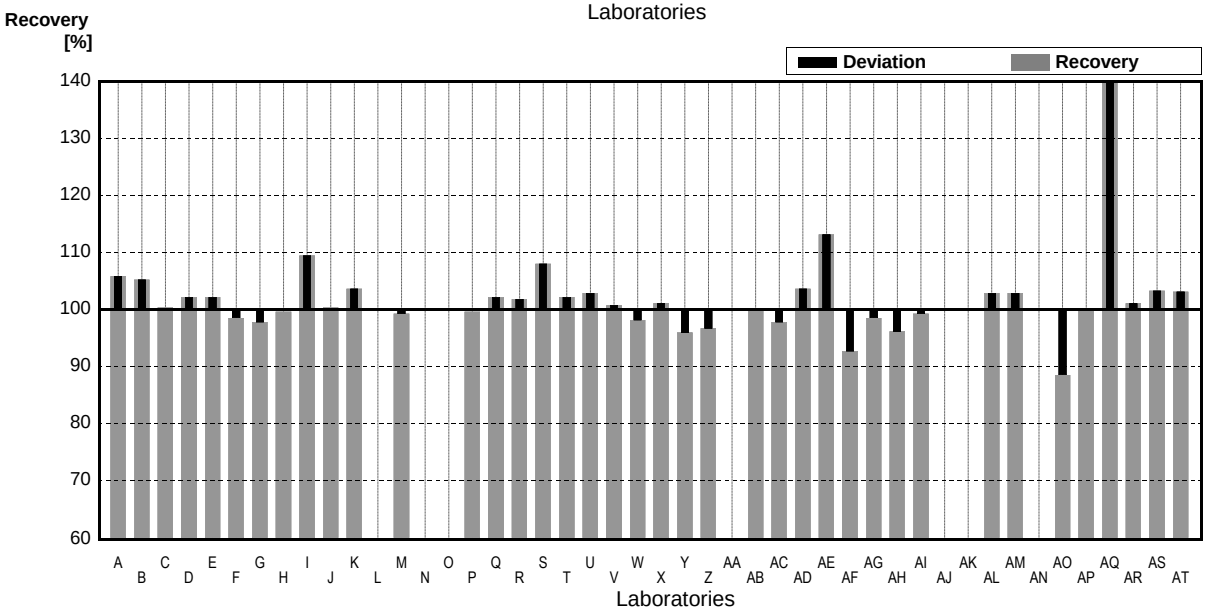
	All results	Outliers excl.	Unit
Mean ± CI(99%)	69,3 ± 1,2	69,0 ± 1,0	mg/l
Recov. ± CI(99%)	101,3 ± 1,8	100,9 ± 1,5	%
SD between labs	2,8	2,3	mg/l
RSD between labs	4,0	3,3	%
n for calculation	39	38	

Sample N147B
Parameter Sulphate

Target value ± U (k=2)	27,4 mg/l	±	0,3 mg/l
IFA result ± U (k=2)	28,1 mg/l	±	1,1 mg/l
Stability test	mg/l		

Lab Code	Result	±	Unit	Recovery	z-Score
A	29	2	mg/l	106%	1,88
B	28,84	0,05	mg/l	105%	1,70
C	27,5	0,37	mg/l	100%	0,12
D	28	1,1	mg/l	102%	0,71
E	28	0,7	mg/l	102%	0,71
F	27	1,4	mg/l	99%	-0,47
G	26,8	2,4	mg/l	98%	-0,71
H	27,3	4,1	mg/l	100%	-0,12
I	30,0	0,9	mg/l	109%	3,06
J	27,5	1,4	mg/l	100%	0,12
K	28,4	2,8	mg/l	104%	1,18
L			mg/l		
M	27,2	3	mg/l	99%	-0,24
N			mg/l		
O			mg/l		
P	27,3	1,4	mg/l	100%	-0,12
Q	28,0	2,8	mg/l	102%	0,71
R	27,9	1,2	mg/l	102%	0,59
S	29,6	1,5	mg/l	108%	2,59
T	28	3	mg/l	102%	0,71
U	28,20	0,8	mg/l	103%	0,94
V	27,6	1,7	mg/l	101%	0,24
W	26,9	2,6	mg/l	98%	-0,59
X	27,7	0,080	mg/l	101%	0,35
Y	26,3	2,7	mg/l	96%	-1,30
Z	26,5	2,7	mg/l	97%	-1,06
AA			mg/l		
AB	27,4		mg/l	100%	0,00
AC	26,8		mg/l	98%	-0,71
AD	28,4	3,12	mg/l	104%	1,18
AE	31,01 *	3,1	mg/l	113%	4,25
AF	25,4		mg/l	93%	-2,35
AG	27	2	mg/l	99%	-0,47
AH	26,35	1,4	mg/l	96%	-1,24
AI	27,2	3,6	mg/l	99%	-0,24
AJ			mg/l		
AK			mg/l		
AL	28,2	0,9	mg/l	103%	0,94
AM	28,2	2	mg/l	103%	0,94
AN			mg/l		
AO	24,26 *	2,91	mg/l	89%	-3,70
AP	27,4	1,644	mg/l	100%	0,00
AQ	40,7 *	2,0	mg/l	149%	15,66
AR	27,7	2,8	mg/l	101%	0,35
AS	28,3	8,5	mg/l	103%	1,06
AT	28,26	2,83	mg/l	103%	1,01



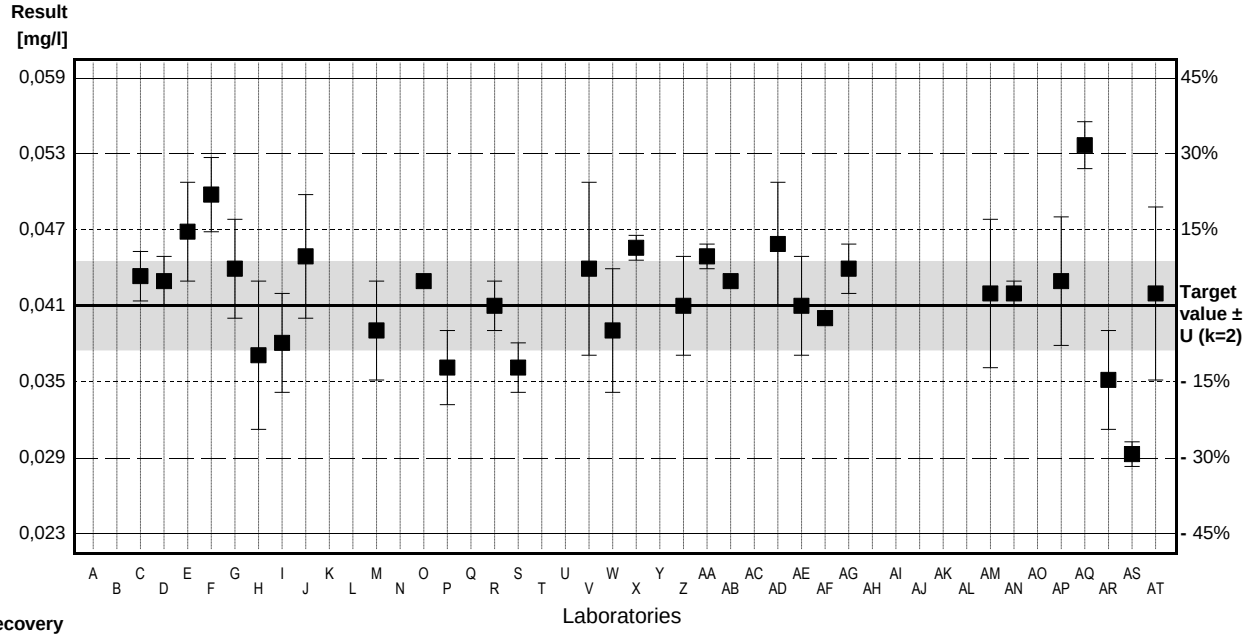


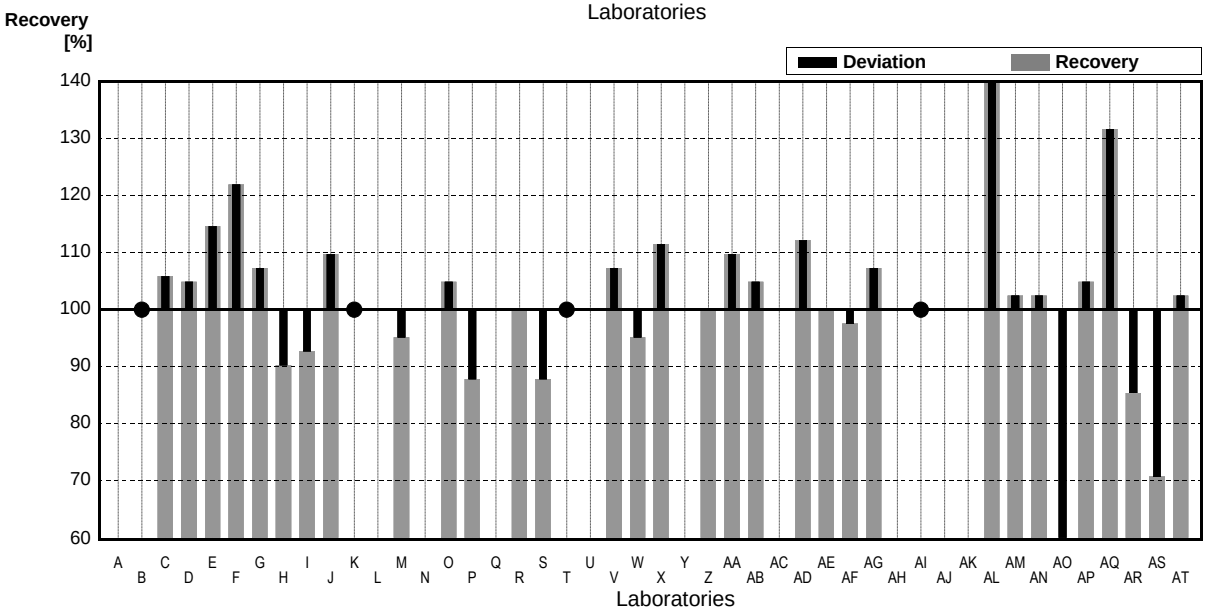
	All results	Outliers excl.	Unit
Mean ± CI(99%)	28,0 ± 1,0	27,7 ± 0,4	mg/l
Recov. ± CI(99%)	102,2 ± 3,8	101,0 ± 1,5	%
SD between labs	2,4	0,9	mg/l
RSD between labs	8,5	3,3	%
n for calculation	39	36	

Sample N147A
Parameter Orthophosphate

Target value ± U (k=2)	0,041 mg/l	±	0,004 mg/l
IFA result ± U (k=2)	0,043 mg/l	±	0,002 mg/l
Stability test ± U (k=2)	0,042 mg/l	±	0,002 mg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A			mg/l		
B	<0,15		mg/l	•	
C	0,0434	0,0020	mg/l	106%	0,53
D	0,043	0,002	mg/l	105%	0,44
E	0,047	0,004	mg/l	115%	1,33
F	0,05	0,003	mg/l	122%	2,00
G	0,044	0,004	mg/l	107%	0,67
H	0,037	0,006	mg/l	90%	-0,89
I	0,038	0,004	mg/l	93%	-0,67
J	0,045	0,005	mg/l	110%	0,89
K	<0,15		mg/l	•	
L			mg/l		
M	0,039	0,004	mg/l	95%	-0,44
N			mg/l		
O	0,043		mg/l	105%	0,44
P	0,036	0,003	mg/l	88%	-1,11
Q			mg/l		
R	0,041	0,002	mg/l	100%	0,00
S	0,036	0,002	mg/l	88%	-1,11
T	<0,1		mg/l	•	
U			mg/l		
V	0,044	0,007	mg/l	107%	0,67
W	0,039	0,005	mg/l	95%	-0,44
X	0,0457	0,001	mg/l	111%	1,04
Y			mg/l		
Z	0,041	0,004	mg/l	100%	0,00
AA	0,045	0,001	mg/l	110%	0,89
AB	0,043		mg/l	105%	0,44
AC			mg/l		
AD	0,046	0,005	mg/l	112%	1,11
AE	0,041	0,004	mg/l	100%	0,00
AF	0,04		mg/l	98%	-0,22
AG	0,044	0,002	mg/l	107%	0,67
AH			mg/l		
AI	<2,0		mg/l	•	
AJ			mg/l		
AK			mg/l		
AL	0,0715 *	0,005	mg/l	174%	6,76
AM	0,042	0,006	mg/l	102%	0,22
AN	0,042	0,001	mg/l	102%	0,22
AO	0,014 *	0,001	mg/l	34%	-5,99
AP	0,043	0,0052	mg/l	105%	0,44
AQ	0,054 *	0,0019	mg/l	132%	2,88
AR	0,035	0,004	mg/l	85%	-1,33
AS	0,029 *	0,001	mg/l	71%	-2,66
AT	0,042	0,007	mg/l	102%	0,22



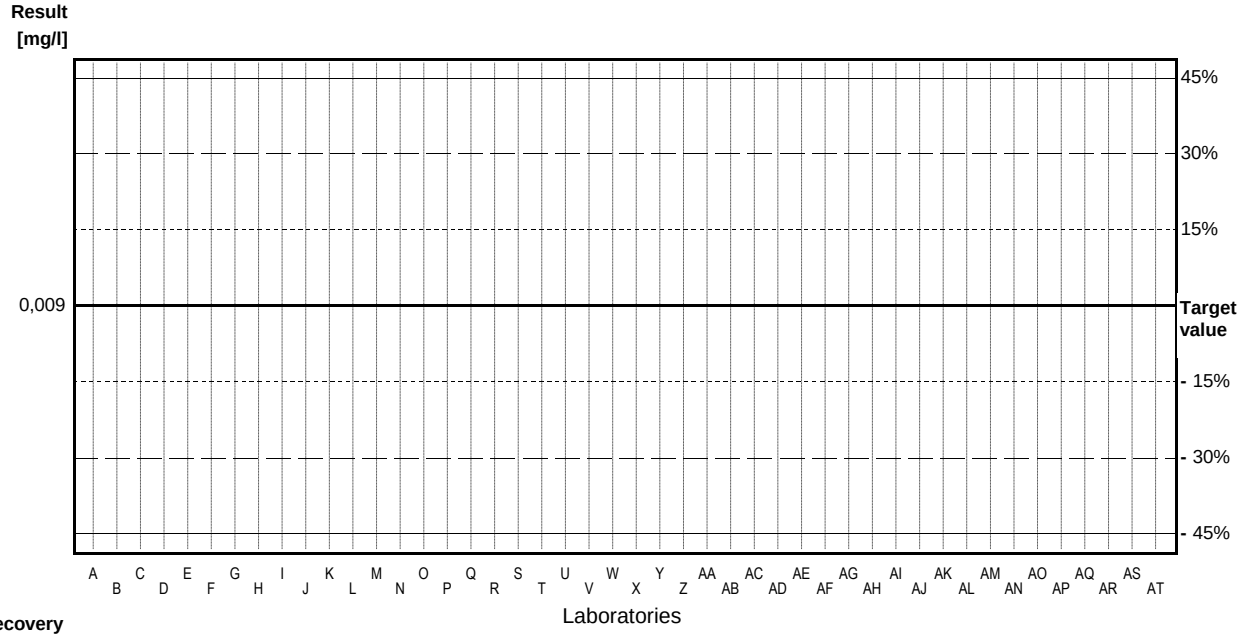


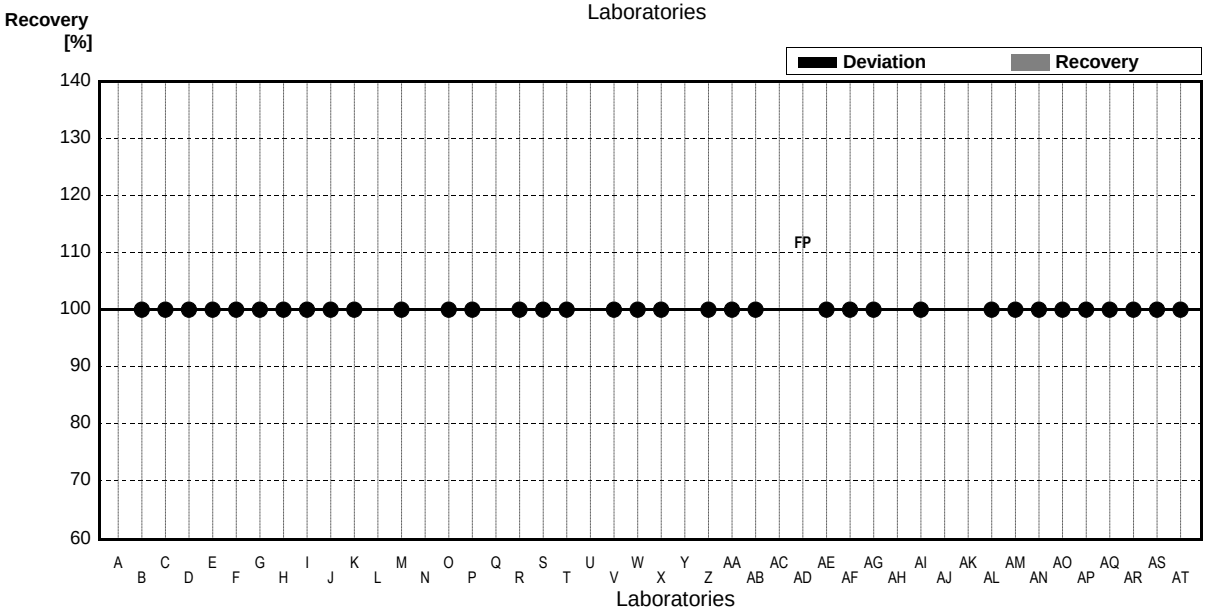
	All results	Outliers excl.	Unit
Mean ± CI(99%)	0,042 ± 0,004	0,042 ± 0,002	mg/l
Recov. ± CI(99%)	102,4 ± 10,2	102,4 ± 4,5	%
SD between labs	0,009	0,004	mg/l
RSD between labs	20,6	8,5	%
n for calculation	32	28	

Sample N147B
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	<0,15		mg/l	•	
C	[0,0024]		mg/l	•	
D	<0,015		mg/l	•	
E	<0,01		mg/l	•	
F	<0,05		mg/l	•	
G	<0,01		mg/l	•	
H	<0,015		mg/l	•	
I	<0,020		mg/l	•	
J	<0,006		mg/l	•	
K	<0,15		mg/l	•	
L			mg/l		
M	<0,02		mg/l	•	
N			mg/l		
O	<0,006		mg/l	•	
P	<0,015	0,003	mg/l	•	
Q			mg/l		
R	<0,01		mg/l	•	
S	<0,02		mg/l	•	
T	<0,1		mg/l	•	
U			mg/l		
V	<0,009	0,001	mg/l	•	
W	<0,01		mg/l	•	
X	0,0018	0,001	mg/l	•	
Y			mg/l		
Z	<0,009		mg/l	•	
AA	<0,019		mg/l	•	
AB	<0,01		mg/l	•	
AC			mg/l		
AD	0,01	0,001	mg/l	FP	
AE	<0,0015		mg/l	•	
AF	<0,03		mg/l	•	
AG	<0,003	0,002	mg/l	•	
AH			mg/l		
AI	<2,0		mg/l	•	
AJ			mg/l		
AK			mg/l		
AL	<0,015		mg/l	•	
AM	<0,01		mg/l	•	
AN	<0,006		mg/l	•	
AO	0,002	0,000	mg/l	•	
AP	0,009	0,0011	mg/l	•	
AQ	<0,012		mg/l	•	
AR	<0,008		mg/l	•	
AS	<0,015		mg/l	•	
AT	<0,015		mg/l	•	



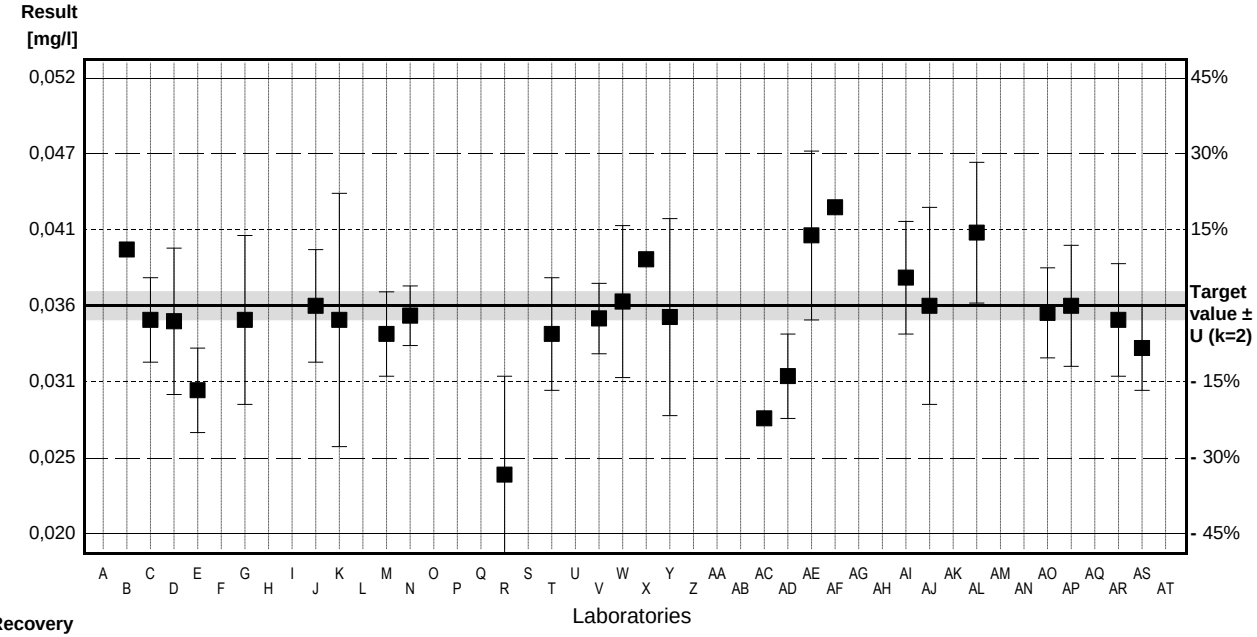


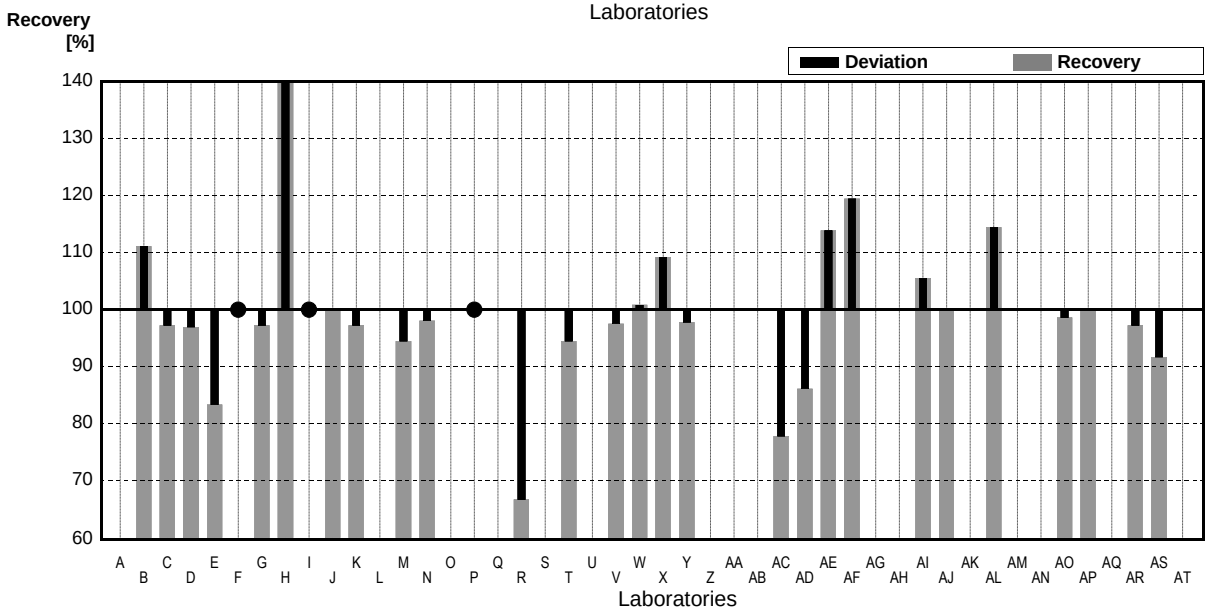
	All results	Outliers excl.	Unit
Mean ± CI(99%)			mg/l
Recov. ± CI(99%)			%
SD between labs			mg/l
RSD between labs			%
n for calculation			

Sample N147A
Parameter Boron

Target value ± U (k=2)	0,036 mg/l	±	0,001 mg/l
IFA result ± U (k=2)	0,034 mg/l	±	0,003 mg/l
Stability test	mg/l		

Lab Code	Result	±	Unit	Recovery	z-Score
A			mg/l		
B	0,04	0,00	mg/l	111%	1,29
C	0,035	0,003	mg/l	97%	-0,32
D	0,0349	0,0052	mg/l	97%	-0,36
E	0,03	0,003	mg/l	83%	-1,94
F	<0,10		mg/l	•	
G	0,035	0,006	mg/l	97%	-0,32
H	0,079 *	0,012	mg/l	219%	13,89
I	<0,050		mg/l	•	
J	0,036	0,004	mg/l	100%	0,00
K	0,035	0,009	mg/l	97%	-0,32
L			mg/l		
M	0,034	0,003	mg/l	94%	-0,65
N	0,0353	0,00212	mg/l	98%	-0,23
O			mg/l		
P	<0,05		mg/l	•	
Q			mg/l		
R	0,024 *	0,007	mg/l	67%	-3,88
S			mg/l		
T	0,034	0,004	mg/l	94%	-0,65
U			mg/l		
V	0,0351	0,0025	mg/l	98%	-0,29
W	0,0363	0,0054	mg/l	101%	0,10
X	0,0393	0,0004	mg/l	109%	1,07
Y	0,0352	0,007	mg/l	98%	-0,26
Z			mg/l		
AA			mg/l		
AB			mg/l		
AC	0,028 *		mg/l	78%	-2,58
AD	0,031	0,003	mg/l	86%	-1,61
AE	0,041 *	0,006	mg/l	114%	1,61
AF	0,043 *		mg/l	119%	2,26
AG			mg/l		
AH			mg/l		
AI	0,038	0,004	mg/l	106%	0,65
AJ	0,036	0,007	mg/l	100%	0,00
AK			mg/l		
AL	0,0412 *	0,005	mg/l	114%	1,68
AM			mg/l		
AN			mg/l		
AO	0,0355	0,0032	mg/l	99%	-0,16
AP	0,036	0,0043	mg/l	100%	0,00
AQ			mg/l		
AR	0,035	0,004	mg/l	97%	-0,32
AS	0,033	0,003	mg/l	92%	-0,97
AT			mg/l		



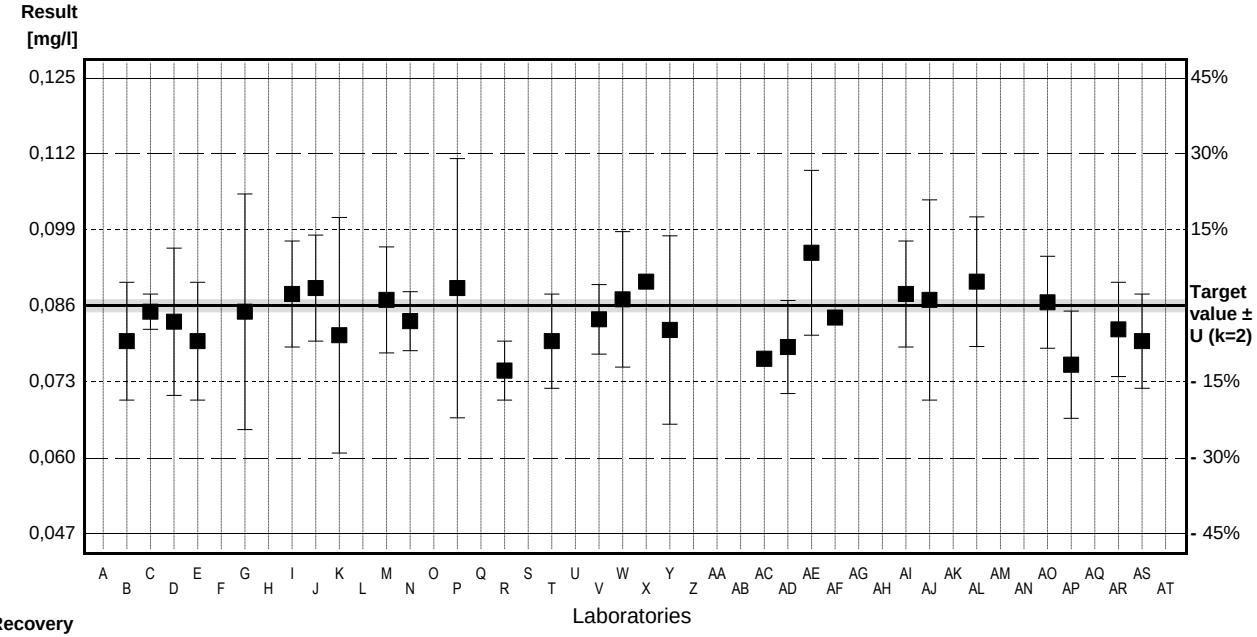


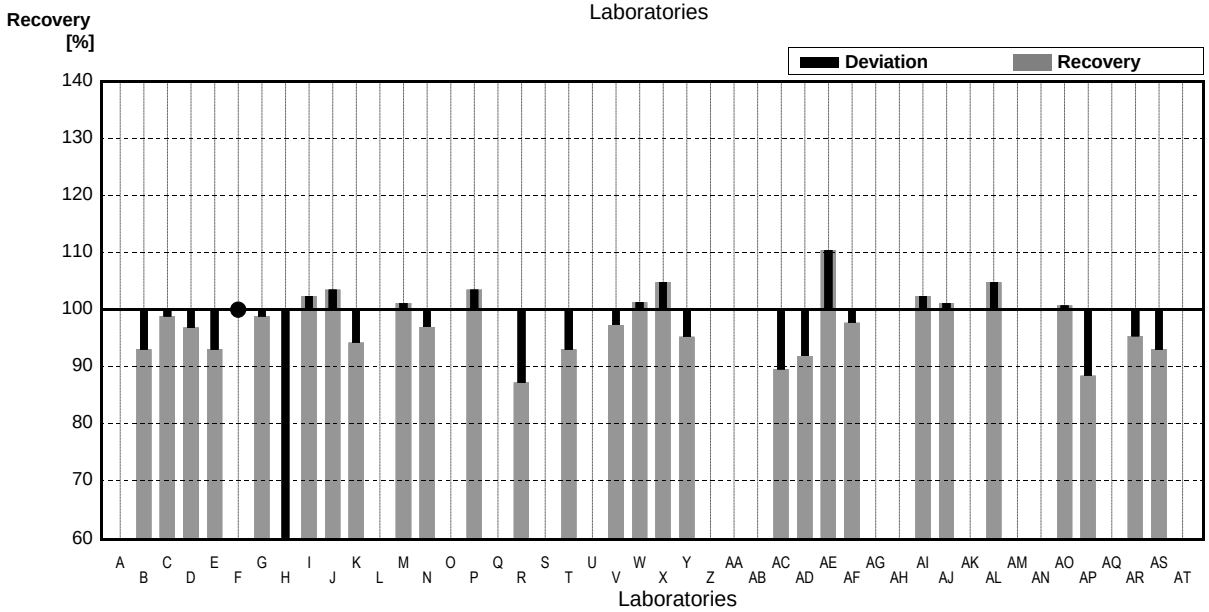
	All results	Outliers excl.	Unit
Mean ± CI(99%)	0,037 ± 0,005	0,035 ± 0,001	mg/l
Recov. ± CI(99%)	102,4 ± 13,8	97,8 ± 3,9	%
SD between labs	0,009	0,002	mg/l
RSD between labs	25,2	6,5	%
n for calculation	27	21	

Sample N147B
Parameter Boron

Target value ± U (k=2)	0,086	mg/l	±	0,001	mg/l
IFA result ± U (k=2)	0,086	mg/l	±	0,009	mg/l
Stability test		mg/l			

Lab Code	Result	±	Unit	Recovery	z-Score
A			mg/l		
B	0,08	0,01	mg/l	93%	-0,81
C	0,085	0,003	mg/l	99%	-0,14
D	0,0833	0,0125	mg/l	97%	-0,37
E	0,08	0,01	mg/l	93%	-0,81
F	<0,10		mg/l	•	
G	0,085	0,02	mg/l	99%	-0,14
H	0,026 *	0,004	mg/l	30%	-8,11
I	0,088	0,009	mg/l	102%	0,27
J	0,089	0,009	mg/l	103%	0,41
K	0,081	0,020	mg/l	94%	-0,68
L			mg/l		
M	0,087	0,009	mg/l	101%	0,14
N	0,0834	0,00501	mg/l	97%	-0,35
O			mg/l		
P	0,089	0,022	mg/l	103%	0,41
Q			mg/l		
R	0,075	0,005	mg/l	87%	-1,49
S			mg/l		
T	0,080	0,008	mg/l	93%	-0,81
U			mg/l		
V	0,0837	0,0059	mg/l	97%	-0,31
W	0,0871	0,0115	mg/l	101%	0,15
X	0,0901	0,0009	mg/l	105%	0,55
Y	0,0819	0,016	mg/l	95%	-0,55
Z			mg/l		
AA			mg/l		
AB			mg/l		
AC	0,077		mg/l	90%	-1,22
AD	0,079	0,0079	mg/l	92%	-0,95
AE	0,095	0,014	mg/l	110%	1,22
AF	0,084		mg/l	98%	-0,27
AG			mg/l		
AH			mg/l		
AI	0,088	0,009	mg/l	102%	0,27
AJ	0,087	0,017	mg/l	101%	0,14
AK			mg/l		
AL	0,0901	0,011	mg/l	105%	0,55
AM			mg/l		
AN			mg/l		
AO	0,0866	0,0078	mg/l	101%	0,08
AP	0,076	0,0091	mg/l	88%	-1,35
AQ			mg/l		
AR	0,082	0,008	mg/l	95%	-0,54
AS	0,080	0,008	mg/l	93%	-0,81
AT			mg/l		



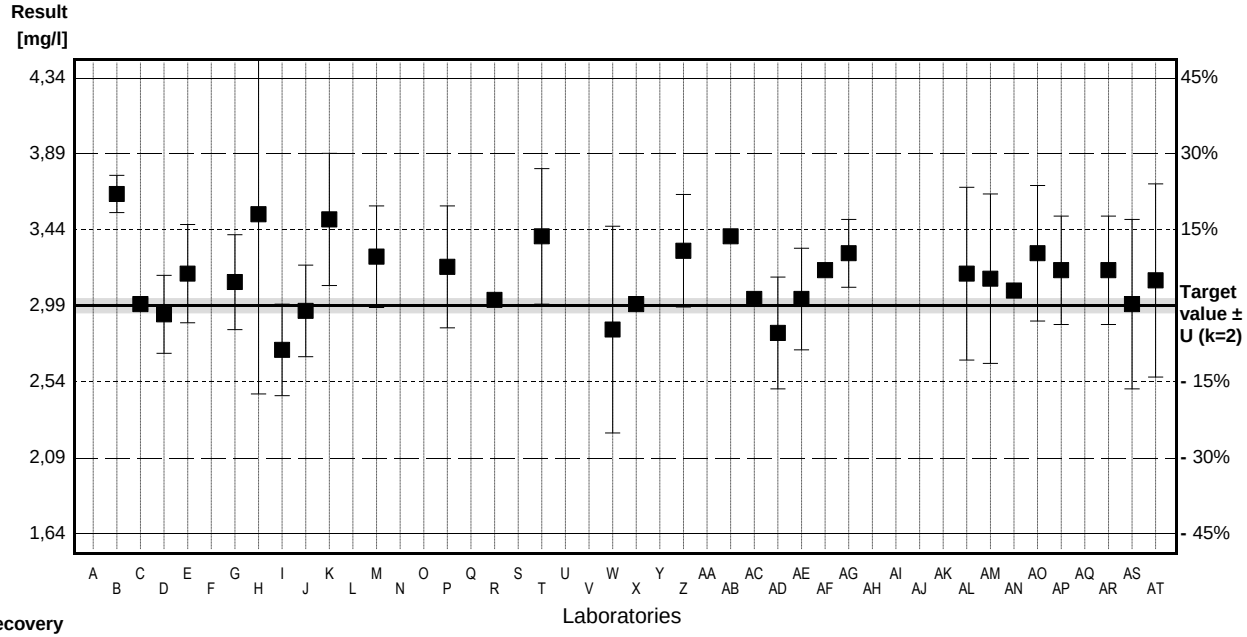


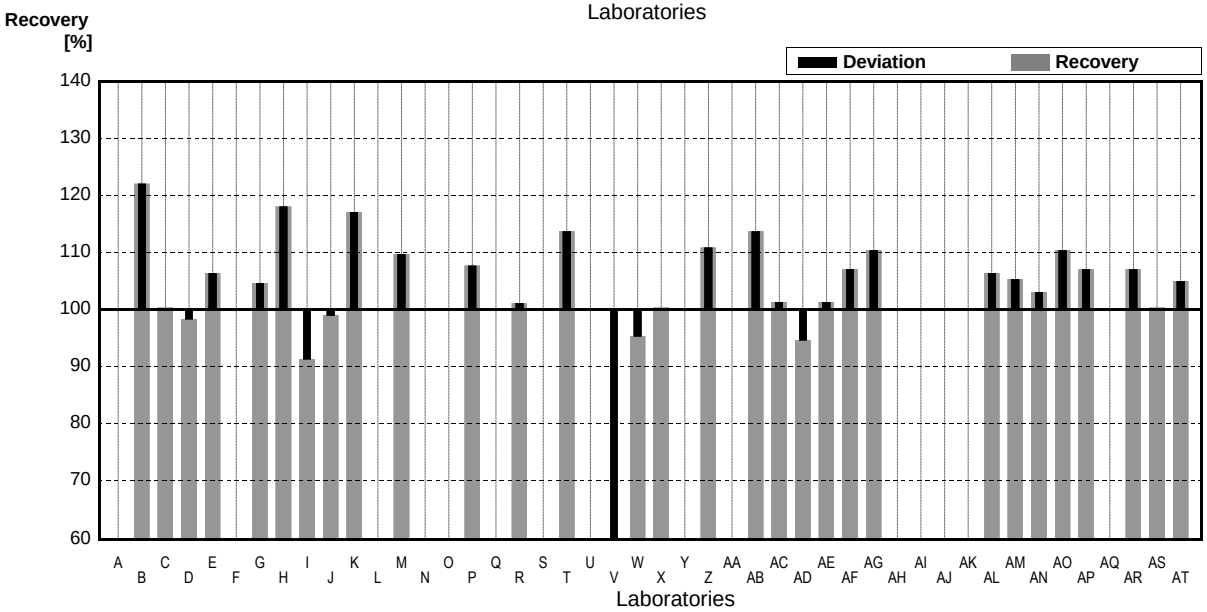
	All results	Outliers excl.	Unit
Mean ± CI(99%)	0,082 ± 0,006	0,084 ± 0,002	mg/l
Recov. ± CI(99%)	95,4 ± 7,0	97,7 ± 2,9	%
SD between labs	0,012	0,005	mg/l
RSD between labs	14,3	5,7	%
n for calculation	29	28	

Sample N147A
Parameter DOC

Target value ± U (k=2)	2,99	mg/l	±	0,04	mg/l
IFA result ± U (k=2)	2,98	mg/l	±	0,12	mg/l
Stability test ± U (k=2)	3,01	mg/l	±	0,12	mg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A			mg/l		
B	3,65	0,11	mg/l	122%	3,68
C	3,00	0,03	mg/l	100%	0,06
D	2,94	0,23	mg/l	98%	-0,28
E	3,18	0,29	mg/l	106%	1,06
F			mg/l		
G	3,13	0,28	mg/l	105%	0,78
H	3,53	1,06	mg/l	118%	3,01
I	2,73	0,27	mg/l	91%	-1,45
J	2,96	0,27	mg/l	99%	-0,17
K	3,5	0,39	mg/l	117%	2,84
L			mg/l		
M	3,28	0,3	mg/l	110%	1,62
N			mg/l		
O			mg/l		
P	3,22	0,36	mg/l	108%	1,28
Q			mg/l		
R	3,025		mg/l	101%	0,20
S			mg/l		
T	3,4	0,4	mg/l	114%	2,29
U			mg/l		
V	0,14 *	0,02	mg/l	5%	-15,89
W	2,85	0,61	mg/l	95%	-0,78
X	3,00	0,006	mg/l	100%	0,06
Y			mg/l		
Z	3,315	0,332	mg/l	111%	1,81
AA			mg/l		
AB	3,4		mg/l	114%	2,29
AC	3,03		mg/l	101%	0,22
AD	2,83	0,33	mg/l	95%	-0,89
AE	3,03	0,3	mg/l	101%	0,22
AF	3,2		mg/l	107%	1,17
AG	3,3	0,2	mg/l	110%	1,73
AH			mg/l		
AI			mg/l		
AJ			mg/l		
AK			mg/l		
AL	3,18	0,51	mg/l	106%	1,06
AM	3,15	0,5	mg/l	105%	0,89
AN	3,08	0,008	mg/l	103%	0,50
AO	3,3	0,4	mg/l	110%	1,73
AP	3,2	0,32	mg/l	107%	1,17
AQ			mg/l		
AR	3,20	0,32	mg/l	107%	1,17
AS	3,0	0,5	mg/l	100%	0,06
AT	3,14	0,57	mg/l	105%	0,84



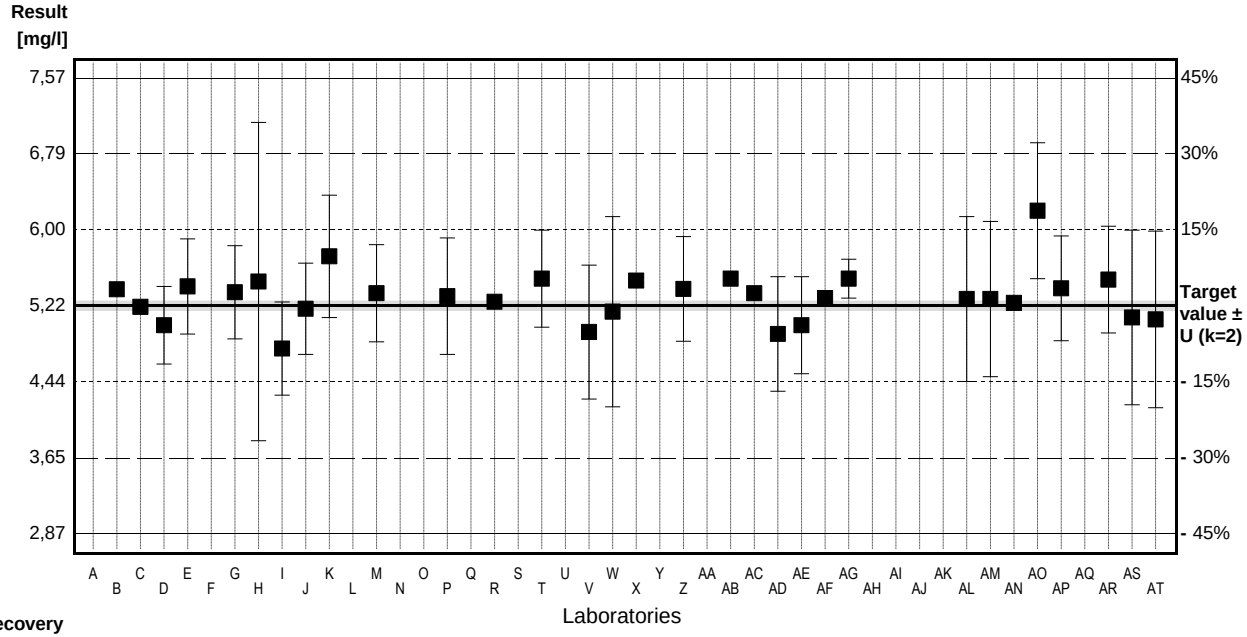


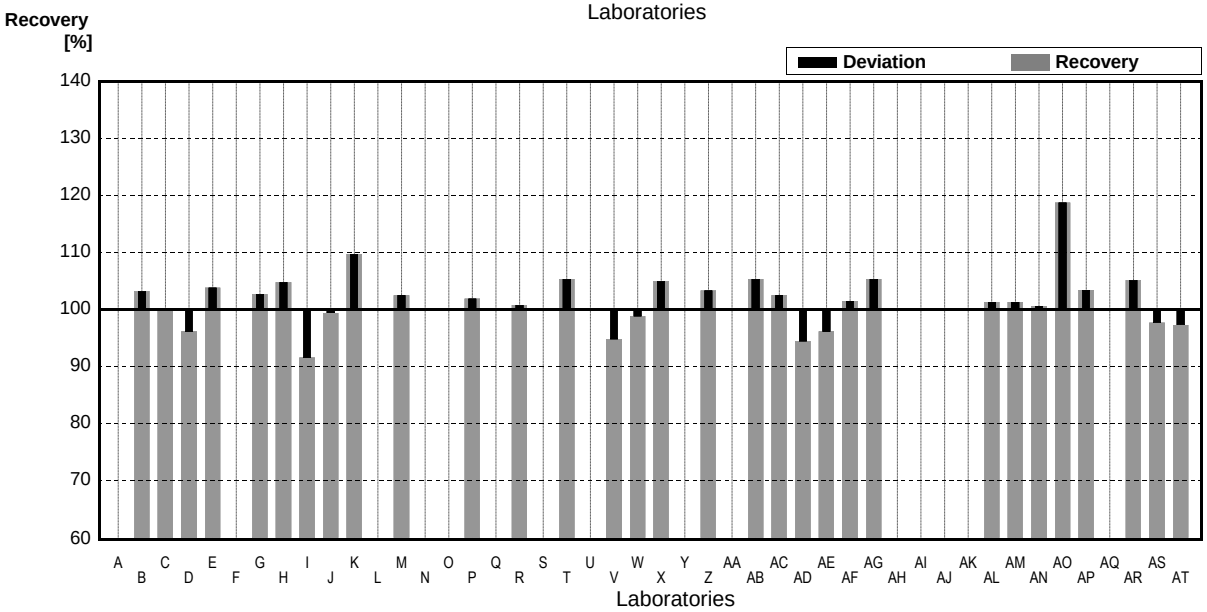
	All results	Outliers excl.	Unit
Mean ± CI(99%)	3,06 ± 0,29	3,16 ± 0,11	mg/l
Recov. ± CI(99%)	102,4 ± 9,6	105,6 ± 3,6	%
SD between labs	0,58	0,21	mg/l
RSD between labs	19,0	6,7	%
n for calculation	31	30	

Sample N147B
Parameter DOC

Target value ± U (k=2)	5,22 mg/l	±	0,05 mg/l
IFA result ± U (k=2)	5,18 mg/l	±	0,21 mg/l
Stability test ± U (k=2)	5,21 mg/l	±	0,21 mg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A			mg/l		
B	5,39	0,05	mg/l	103%	0,54
C	5,21	0,03	mg/l	100%	-0,03
D	5,02	0,40	mg/l	96%	-0,64
E	5,42	0,49	mg/l	104%	0,64
F			mg/l		
G	5,36	0,48	mg/l	103%	0,45
H	5,47	1,64	mg/l	105%	0,80
I	4,78	0,48	mg/l	92%	-1,40
J	5,19	0,47	mg/l	99%	-0,10
K	5,73	0,63	mg/l	110%	1,63
L			mg/l		
M	5,35	0,5	mg/l	102%	0,42
N			mg/l		
O			mg/l		
P	5,32	0,60	mg/l	102%	0,32
Q			mg/l		
R	5,262		mg/l	101%	0,13
S			mg/l		
T	5,5	0,5	mg/l	105%	0,89
U			mg/l		
V	4,95	0,69	mg/l	95%	-0,86
W	5,16	0,98	mg/l	99%	-0,19
X	5,48	0,028	mg/l	105%	0,83
Y			mg/l		
Z	5,394	0,539	mg/l	103%	0,56
AA			mg/l		
AB	5,5		mg/l	105%	0,89
AC	5,35		mg/l	102%	0,42
AD	4,93	0,59	mg/l	94%	-0,93
AE	5,02	0,5	mg/l	96%	-0,64
AF	5,3		mg/l	102%	0,26
AG	5,5	0,2	mg/l	105%	0,89
AH			mg/l		
AI			mg/l		
AJ			mg/l		
AK			mg/l		
AL	5,29	0,85	mg/l	101%	0,22
AM	5,29	0,8	mg/l	101%	0,22
AN	5,25	0,003	mg/l	101%	0,10
AO	6,2 *	0,7	mg/l	119%	3,13
AP	5,4	0,54	mg/l	103%	0,57
AQ			mg/l		
AR	5,49	0,55	mg/l	105%	0,86
AS	5,1	0,9	mg/l	98%	-0,38
AT	5,08	0,91	mg/l	97%	-0,45





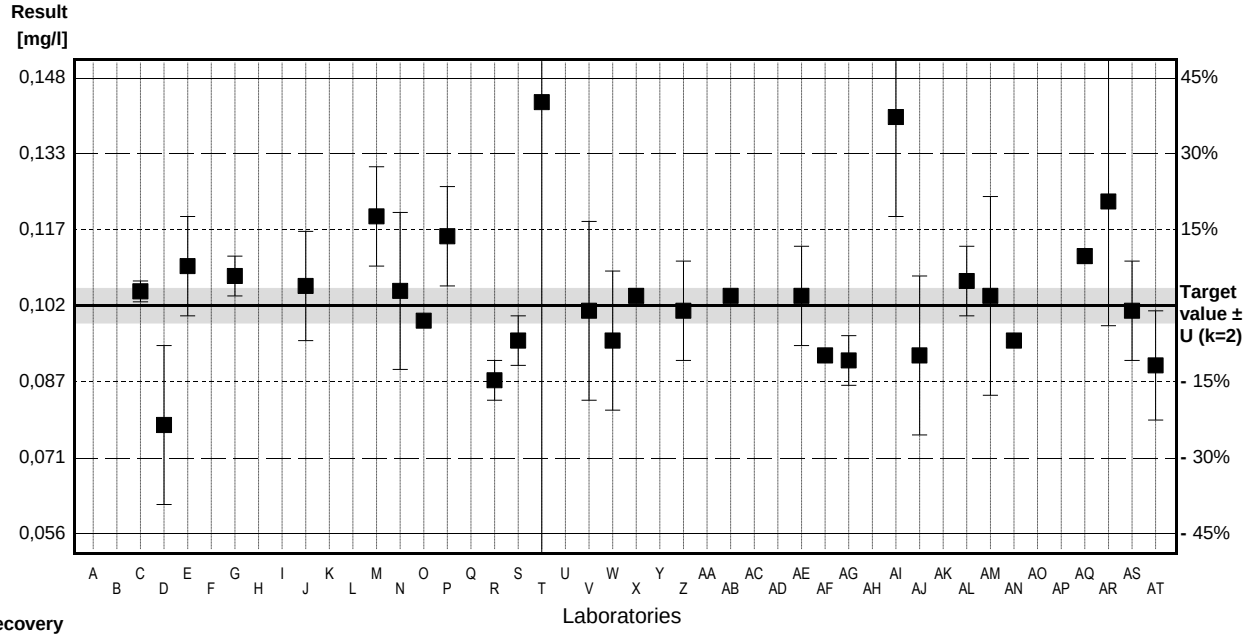
	All results	Outliers excl.	Unit
Mean ± CI(99%)	5,31 ± 0,13	5,28 ± 0,11	mg/l
Recov. ± CI(99%)	101,8 ± 2,5	101,2 ± 2,0	%
SD between labs	0,26	0,21	mg/l
RSD between labs	5,0	3,9	%
n for calculation	31	30	

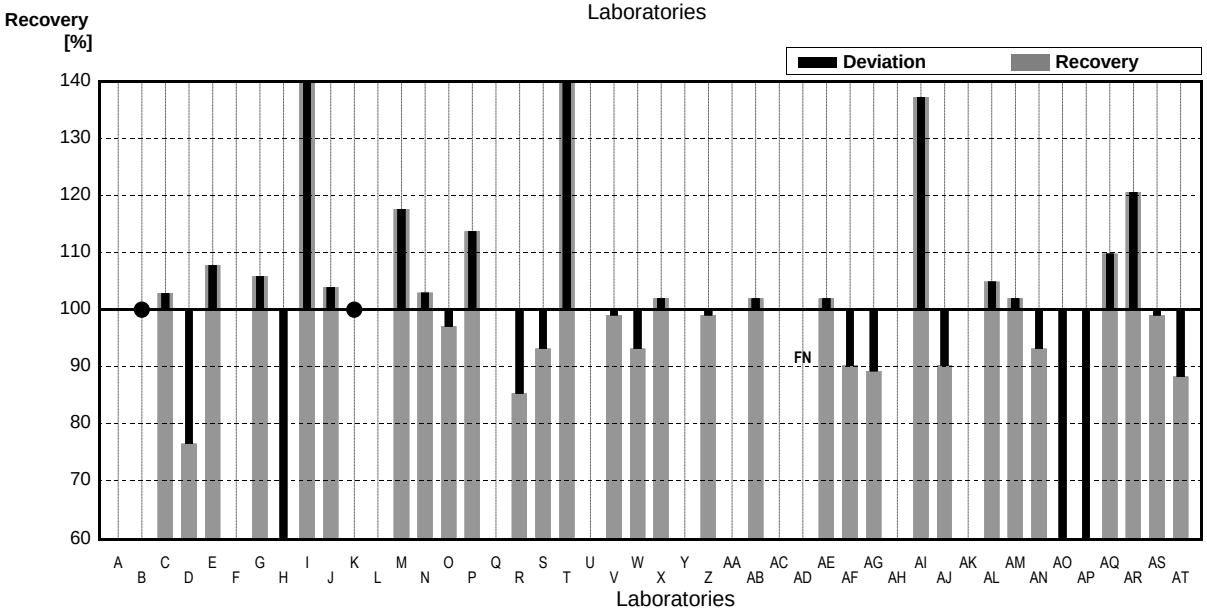
Sample N147A

Parameter Total P (as PO4)

Target value ± U (k=2)	0,102	mg/l	±	0,003	mg/l
IFA result ± U (k=2)	0,112	mg/l	±	0,026	mg/l
Stability test		mg/l			

Lab Code	Result		±	Unit	Recovery	z-Score
A				mg/l		
B	<0,15			mg/l	•	
C	0,1049		0,0021	mg/l	103%	0,26
D	0,078		0,016	mg/l	76%	-2,14
E	0,110		0,010	mg/l	108%	0,71
F				mg/l		
G	0,108		0,004	mg/l	106%	0,53
H	0,041	*	0,010	mg/l	40%	-5,44
I	0,150	*	0,023	mg/l	147%	4,28
J	0,106		0,011	mg/l	104%	0,36
K	<0,15			mg/l	•	
L				mg/l		
M	0,12		0,01	mg/l	118%	1,60
N	0,105		0,0158	mg/l	103%	0,27
O	0,099			mg/l	97%	-0,27
P	0,116		0,010	mg/l	114%	1,25
Q				mg/l		
R	0,087		0,004	mg/l	85%	-1,34
S	0,095		0,005	mg/l	93%	-0,62
T	0,143		0,2	mg/l	140%	3,65
U				mg/l		
V	0,101		0,018	mg/l	99%	-0,09
W	0,095		0,014	mg/l	93%	-0,62
X	0,104		0,0014	mg/l	102%	0,18
Y				mg/l		
Z	0,101		0,01	mg/l	99%	-0,09
AA				mg/l		
AB	0,104			mg/l	102%	0,18
AC				mg/l		
AD	<0,003			mg/l	FN	
AE	0,104		0,010	mg/l	102%	0,18
AF	0,092			mg/l	90%	-0,89
AG	0,091		0,005	mg/l	89%	-0,98
AH				mg/l		
AI	0,14		0,02	mg/l	137%	3,39
AJ	0,092		0,016	mg/l	90%	-0,89
AK				mg/l		
AL	0,107		0,007	mg/l	105%	0,45
AM	0,104		0,02	mg/l	102%	0,18
AN	0,095		0,0003	mg/l	93%	-0,62
AO	0,033	*	0,002	mg/l	32%	-6,15
AP	0,037	*	0,0055	mg/l	36%	-5,79
AQ	0,112		0,0014	mg/l	110%	0,89
AR	0,123		0,025	mg/l	121%	1,87
AS	0,101		0,01	mg/l	99%	-0,09
AT	0,090		0,011	mg/l	88%	-1,07



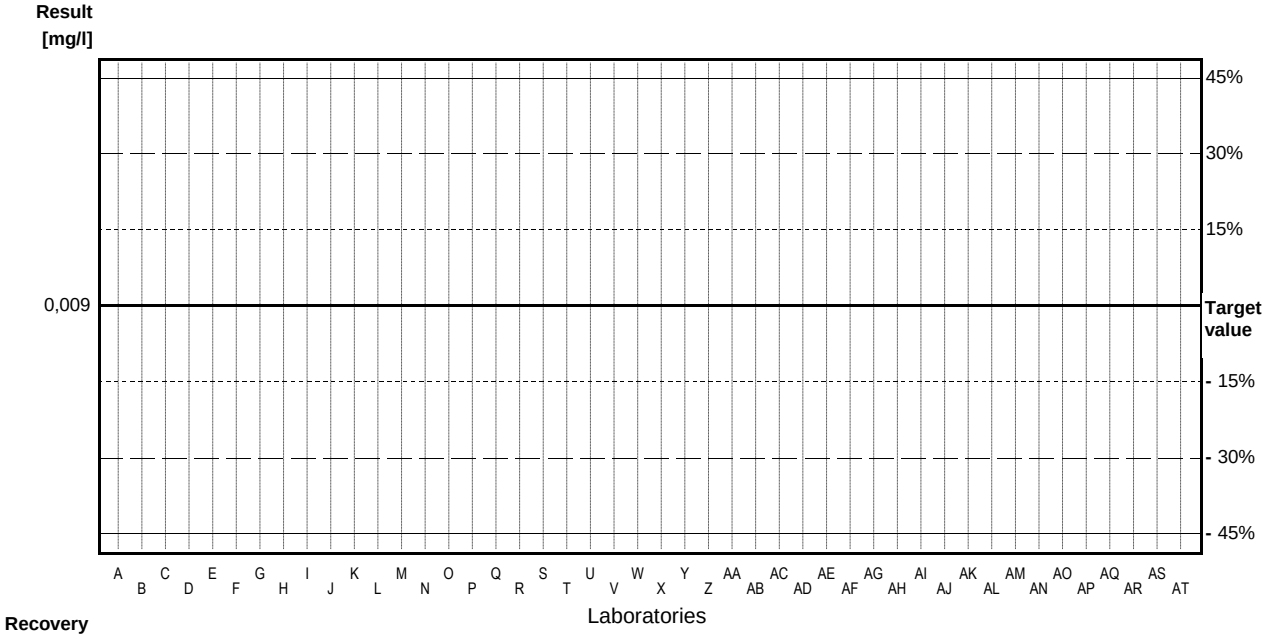


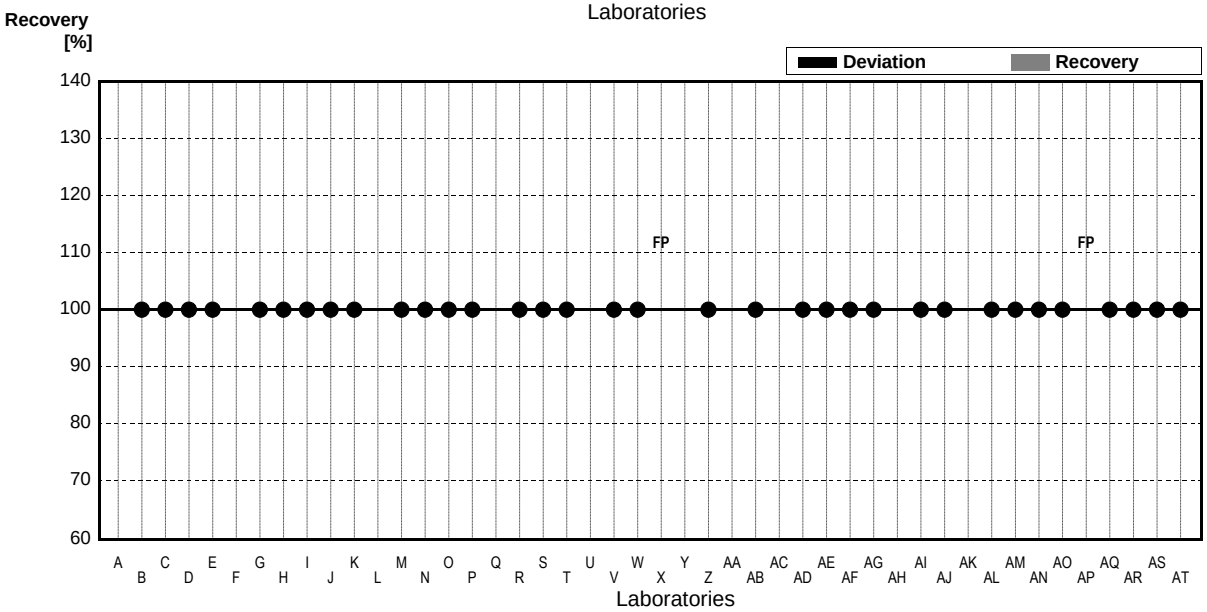
	All results	Outliers excl.	Unit
Mean ± CI(99%)	0,100 ± 0,012	0,104 ± 0,007	mg/l
Recov. ± CI(99%)	97,7 ± 11,9	102,4 ± 7,1	%
SD between labs	0,025	0,014	mg/l
RSD between labs	25,5	13,6	%
n for calculation	33	29	

Sample N147B
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	<0,15		mg/l	•	
C	[0,0022]		mg/l	•	
D	<0,015		mg/l	•	
E	<0,01		mg/l	•	
F			mg/l		
G	<0,05		mg/l	•	
H	<0,015		mg/l	•	
I	<0,031		mg/l	•	
J	<0,006		mg/l	•	
K	<0,15		mg/l	•	
L			mg/l		
M	<0,050		mg/l	•	
N	<0,0631		mg/l	•	
O	<0,006		mg/l	•	
P	<0,015		mg/l	•	
Q			mg/l		
R	<0,009		mg/l	•	
S	<0,02		mg/l	•	
T	<0,031		mg/l	•	
U			mg/l		
V	<0,009	0,002	mg/l	•	
W	<0,01		mg/l	•	
X	0,0166	0,0003	mg/l	FP	
Y			mg/l		
Z	<0,009		mg/l	•	
AA			mg/l		
AB	<0,01		mg/l	•	
AC			mg/l		
AD	<0,003		mg/l	•	
AE	<0,001		mg/l	•	
AF	<0,03		mg/l	•	
AG	<0,009	0,005	mg/l	•	
AH			mg/l		
AI	<0,08		mg/l	•	
AJ	<0,030		mg/l	•	
AK			mg/l		
AL	<0,015		mg/l	•	
AM	<0,013		mg/l	•	
AN	<0,006		mg/l	•	
AO	0,002	0,000	mg/l	•	
AP	0,0337	0,0052	mg/l	FP	
AQ	<0,018		mg/l	•	
AR	<0,015		mg/l	•	
AS	<0,015		mg/l	•	
AT	<0,015		mg/l	•	



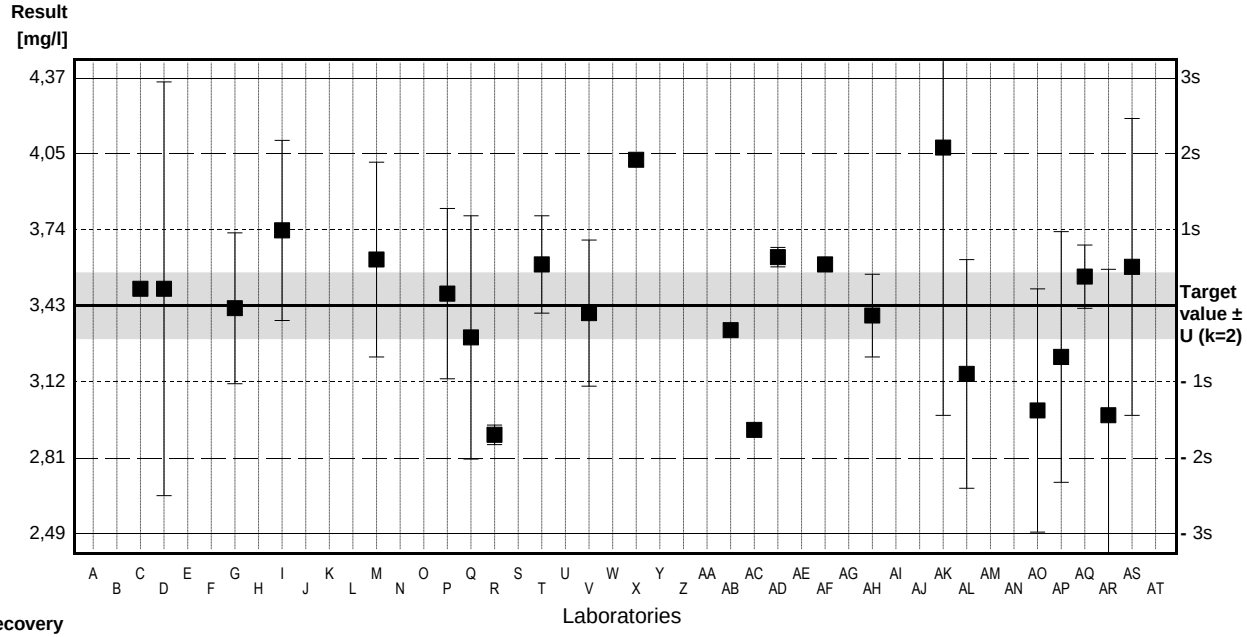


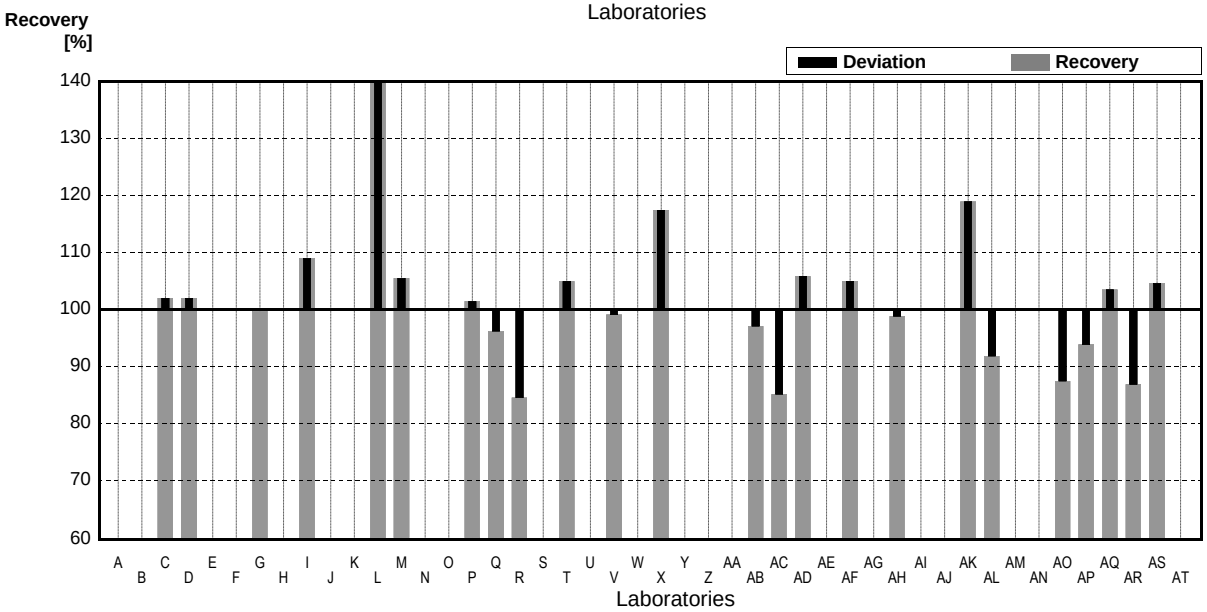
	All results	Outliers excl.	Unit
Mean ± CI(99%)			mg/l
Recov. ± CI(99%)			%
SD between labs			mg/l
RSD between labs			%
n for calculation			

Sample N147A
Parameter KMnO4-Index

Target value ± U (k=2)	3,43	mg/l	±	0,14	mg/l
IFA result ± U (k=2)	3,46	mg/l	±	0,62	mg/l
Stability test ± U (k=2)	3,69	mg/l	±	0,66	mg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A			mg/l		
B	n.b		mg/l		
C	3,50		mg/l	102%	0,20
D	3,5	0,85	mg/l	102%	0,20
E			mg/l		
F			mg/l		
G	3,42	0,31	mg/l	100%	-0,03
H			mg/l		
I	3,74	0,37	mg/l	109%	0,90
J			mg/l		
K			mg/l		
L	12 *	1,14	mg/l	350%	24,99
M	3,62	0,4	mg/l	106%	0,55
N			mg/l		
O			mg/l		
P	3,48	0,35	mg/l	101%	0,15
Q	3,3	0,5	mg/l	96%	-0,38
R	2,9	0,04	mg/l	85%	-1,55
S			mg/l		
T	3,6	0,2	mg/l	105%	0,50
U			mg/l		
V	3,4	0,3	mg/l	99%	-0,09
W			mg/l		
X	4,03	0,021	mg/l	117%	1,75
Y			mg/l		
Z			mg/l		
AA			mg/l		
AB	3,33		mg/l	97%	-0,29
AC	2,92		mg/l	85%	-1,49
AD	3,63	0,04	mg/l	106%	0,58
AE			mg/l		
AF	3,6		mg/l	105%	0,50
AG			mg/l		
AH	3,39	0,17	mg/l	99%	-0,12
AI			mg/l		
AJ			mg/l		
AK	4,08	1,1	mg/l	119%	1,90
AL	3,15	0,47	mg/l	92%	-0,82
AM			mg/l		
AN			mg/l		
AO	3,0	0,5	mg/l	87%	-1,25
AP	3,22	0,515	mg/l	94%	-0,61
AQ	3,55	0,130	mg/l	103%	0,35
AR	2,98	0,60	mg/l	87%	-1,31
AS	3,59	0,61	mg/l	105%	0,47
AT			mg/l		



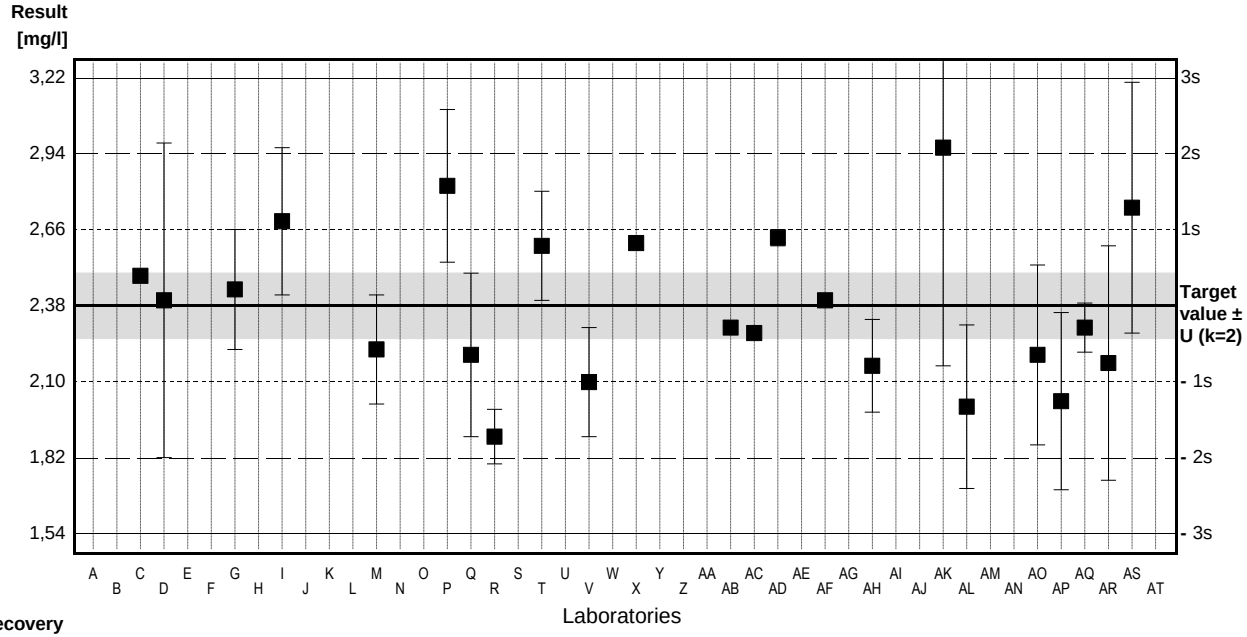


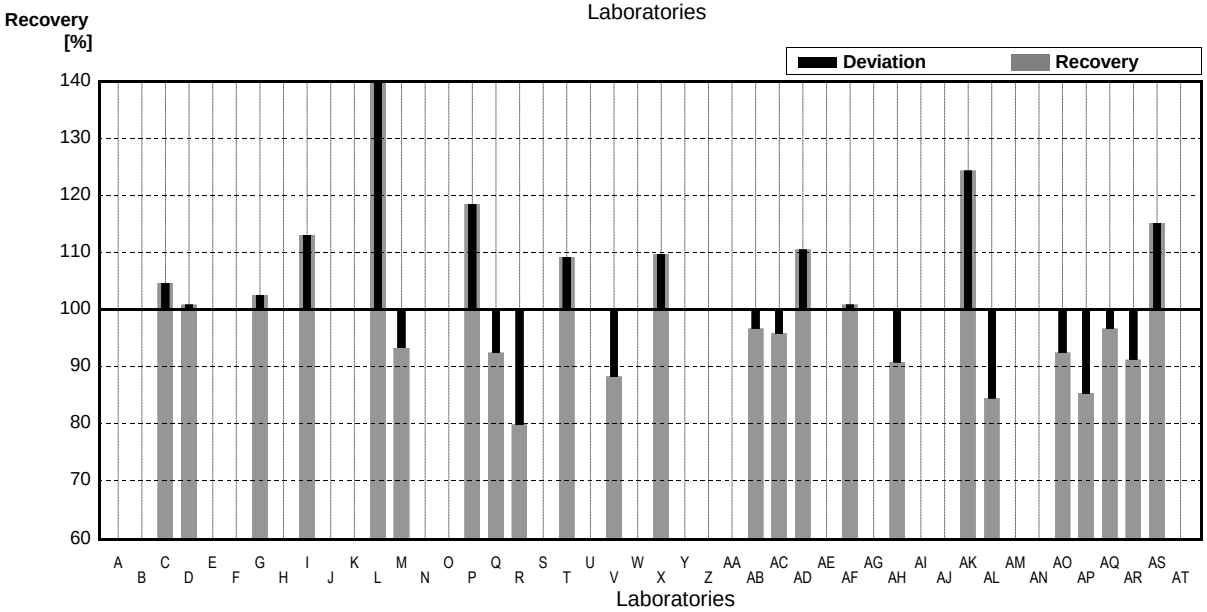
	All results	Outliers excl.	Unit
Mean ± CI(99%)	3,79 ± 1,02	3,43 ± 0,18	mg/l
Recov. ± CI(99%)	110,5 ± 29,7	100,1 ± 5,4	%
SD between labs	1,78	0,31	mg/l
RSD between labs	46,9	9,1	%
n for calculation	24	23	

Sample N147B
Parameter KMnO4-Index

Target value ± U (k=2)	2,38	mg/l	±	0,12	mg/l
IFA result ± U (k=2)	2,29	mg/l	±	0,41	mg/l
Stability test ± U (k=2)	2,32	mg/l	±	0,42	mg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A			mg/l		
B	n.b.		mg/l		
C	2,49		mg/l	105%	0,46
D	2,4	0,577	mg/l	101%	0,08
E			mg/l		
F			mg/l		
G	2,44	0,22	mg/l	103%	0,25
H			mg/l		
I	2,69	0,27	mg/l	113%	1,30
J			mg/l		
K			mg/l		
L	8,6 *	0,81	mg/l	361%	26,13
M	2,22	0,2	mg/l	93%	-0,67
N			mg/l		
O			mg/l		
P	2,82	0,28	mg/l	118%	1,85
Q	2,2	0,3	mg/l	92%	-0,76
R	1,9	0,1	mg/l	80%	-2,02
S			mg/l		
T	2,6	0,2	mg/l	109%	0,92
U			mg/l		
V	2,1	0,2	mg/l	88%	-1,18
W			mg/l		
X	2,61	0,015	mg/l	110%	0,97
Y			mg/l		
Z			mg/l		
AA			mg/l		
AB	2,30		mg/l	97%	-0,34
AC	2,28		mg/l	96%	-0,42
AD	2,63	0,03	mg/l	111%	1,05
AE			mg/l		
AF	2,4		mg/l	101%	0,08
AG			mg/l		
AH	2,16	0,17	mg/l	91%	-0,92
AI			mg/l		
AJ			mg/l		
AK	2,96	0,8	mg/l	124%	2,44
AL	2,01	0,30	mg/l	84%	-1,55
AM			mg/l		
AN			mg/l		
AO	2,2	0,33	mg/l	92%	-0,76
AP	2,03	0,325	mg/l	85%	-1,47
AQ	2,30	0,09	mg/l	97%	-0,34
AR	2,17	0,43	mg/l	91%	-0,88
AS	2,74	0,46	mg/l	115%	1,51
AT			mg/l		





	All results	Outliers excl.	Unit
Mean ± CI(99%)	2,64 ± 0,75	2,38 ± 0,16	mg/l
Recov. ± CI(99%)	110,7 ± 31,3	99,8 ± 6,9	%
SD between labs	1,30	0,28	mg/l
RSD between labs	49,3	11,7	%
n for calculation	24	23	

Illustration of Results
Laboratory Oriented Part

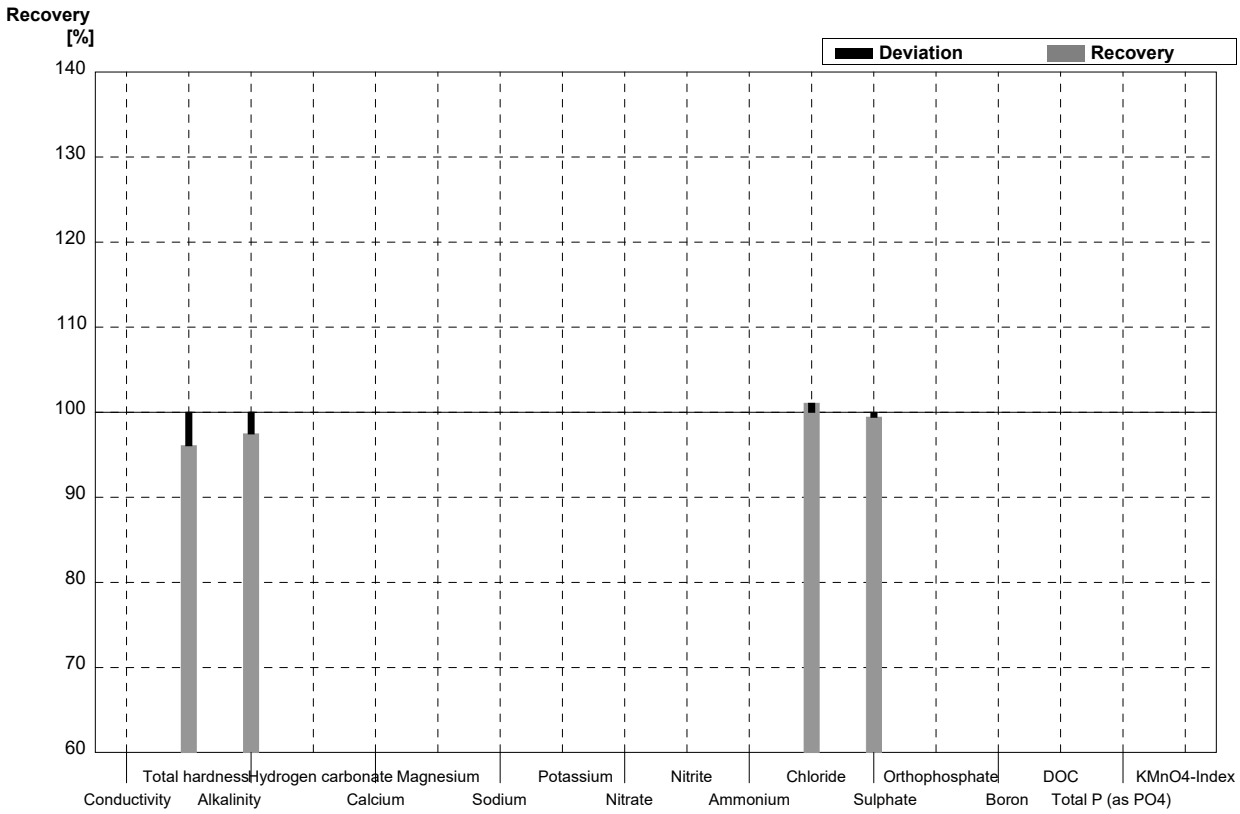
Round N147
Major Ions

Sample Dispatch: 3 June 2019

TULLN

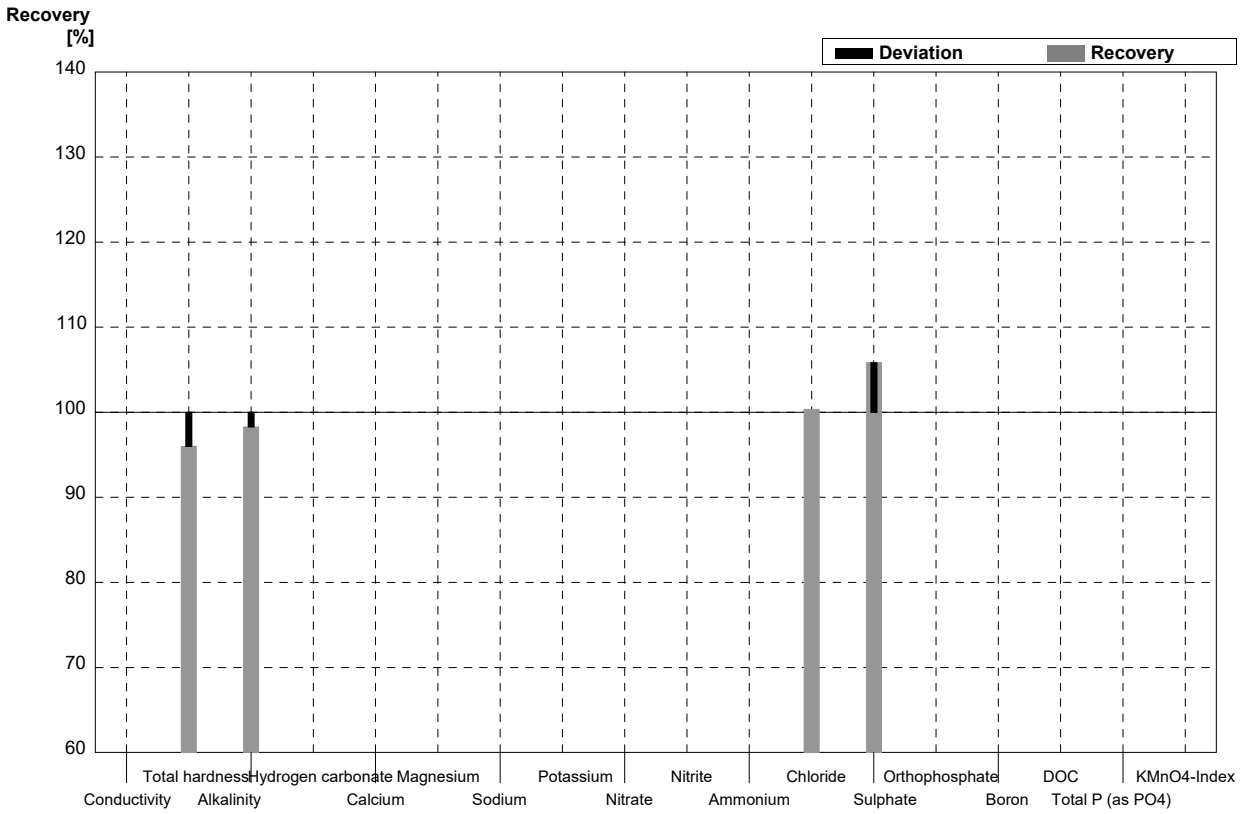
Sample N147A
Laboratory A

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2			µS/cm	
Total hardness	3,06	0,03	2,94	0,38	mmol/l	96%
Alkalinity	3,97	0,04	3,87		mmol/l	97%
Hydrogen carbonate	239	2			mg/l	
Calcium	86,1	1,1			mg/l	
Magnesium	22,1	0,2			mg/l	
Sodium	44,9	0,5			mg/l	
Potassium	6,15	0,07			mg/l	
Nitrate	45,1	0,9			mg/l	
Nitrite	0,050	0,001			mg/l	
Ammonium	<0,01				mg/l	
Chloride	75,2	1,1	76	4	mg/l	101%
Sulphate	68,4	0,8	68	4	mg/l	99%
Orthophosphate	0,041	0,004			mg/l	
Boron	0,036	0,001			mg/l	
DOC	2,99	0,04			mg/l	
Total P (as PO4)	0,102	0,003			mg/l	
KMnO4-Index	3,43	0,14			mg/l	



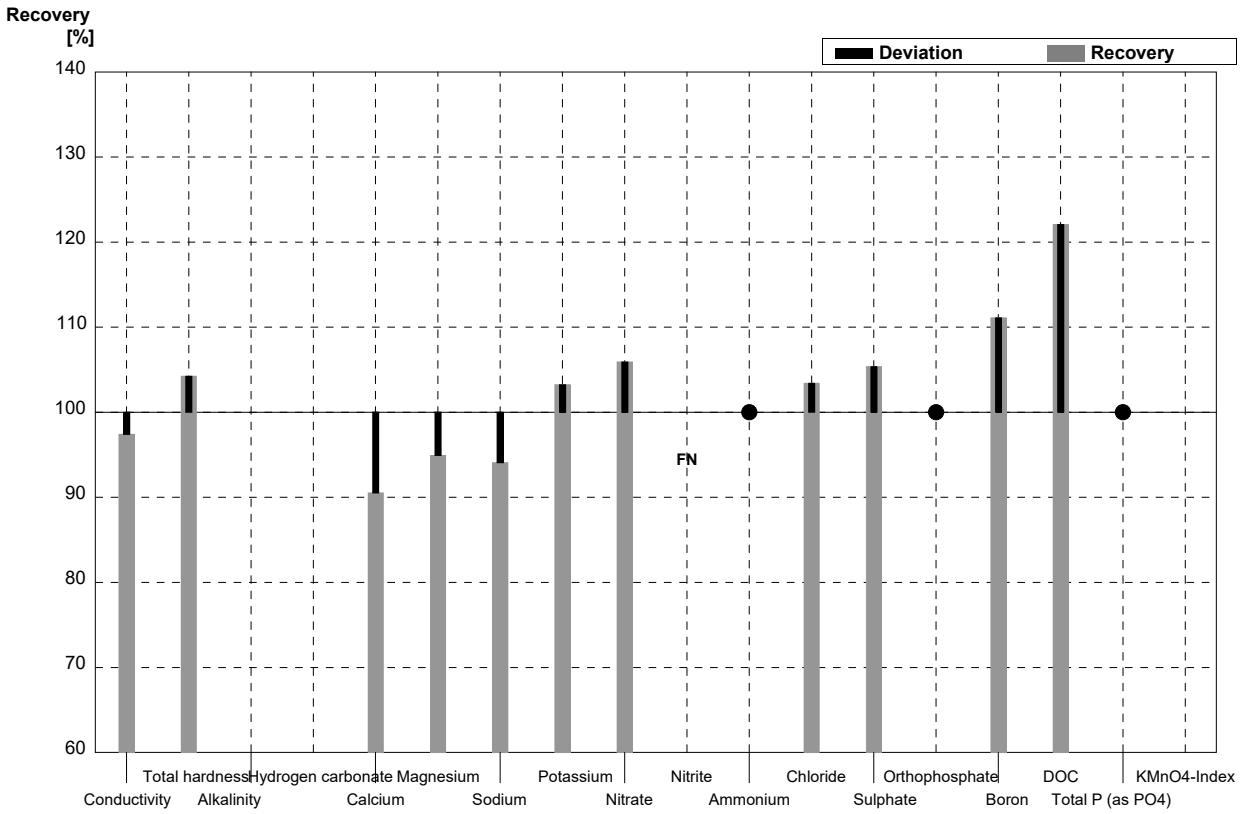
Sample N147B
Laboratory A

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1			µS/cm	
Total hardness	1,00	0,01	0,96	0,12	mmol/l	96%
Alkalinity	1,75	0,01	1,72		mmol/l	98%
Hydrogen carbonate	104	1			mg/l	
Calcium	24,9	0,3			mg/l	
Magnesium	9,07	0,09			mg/l	
Sodium	30,6	0,1			mg/l	
Potassium	5,52	0,04			mg/l	
Nitrate	20,1	0,4			mg/l	
Nitrite	0,076	0,001			mg/l	
Ammonium	0,050	0,004			mg/l	
Chloride	28,9	0,5	29	2	mg/l	100%
Sulphate	27,4	0,3	29	2	mg/l	106%
Orthophosphate	<0,009				mg/l	
Boron	0,086	0,001			mg/l	
DOC	5,22	0,05			mg/l	
Total P (as PO4)	<0,009				mg/l	
KMnO4-Index	2,38	0,12			mg/l	



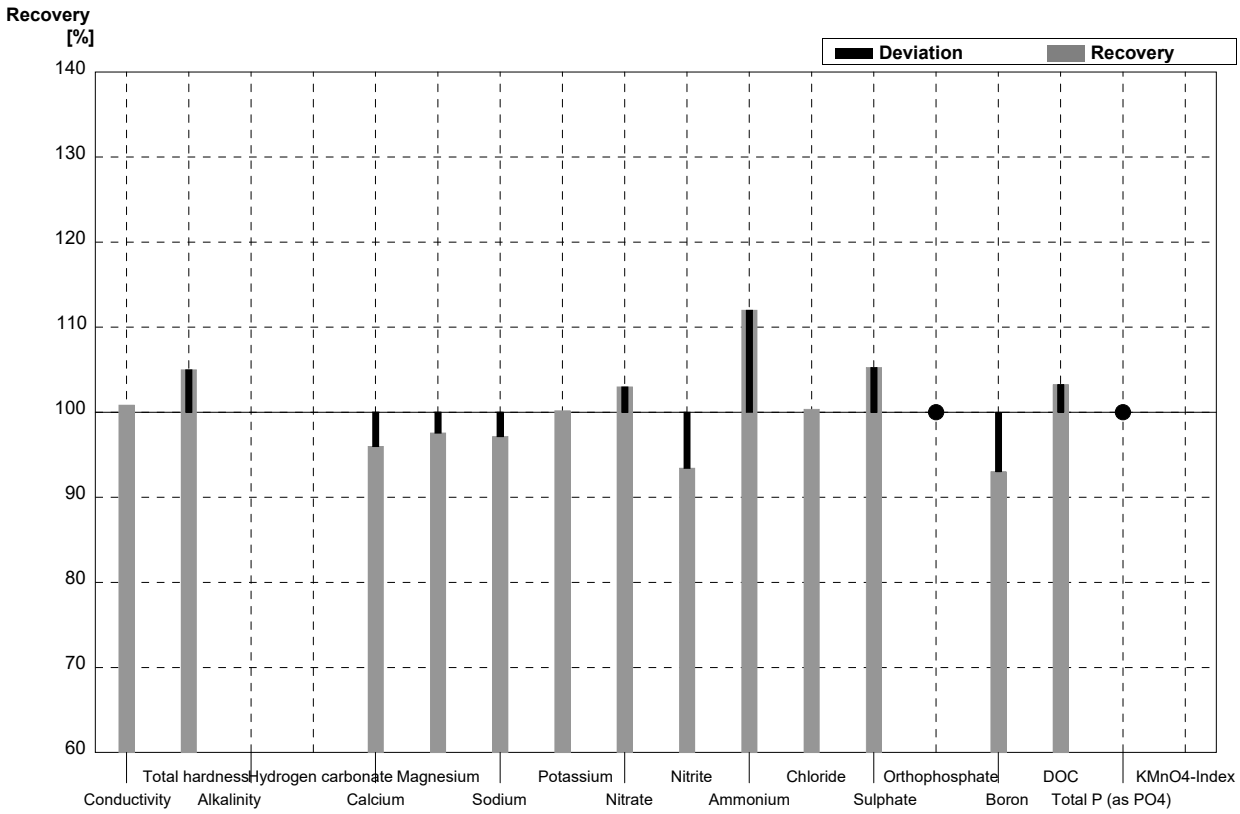
Sample N147A
Laboratory B

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2	791	133	µS/cm	97%
Total hardness	3,06	0,03	3,19	0,02	mmol/l	104%
Alkalinity	3,97	0,04	n,b.		mmol/l	
Hydrogen carbonate	239	2	n,b.		mg/l	
Calcium	86,1	1,1	77,95	0,59	mg/l	91%
Magnesium	22,1	0,2	20,98	0,15	mg/l	95%
Sodium	44,9	0,5	42,25	0,95	mg/l	94%
Potassium	6,15	0,07	6,35	0,09	mg/l	103%
Nitrate	45,1	0,9	47,77	0,09	mg/l	106%
Nitrite	0,050	0,001	<0,02		mg/l	FN
Ammonium	<0,01		<0,02		mg/l	•
Chloride	75,2	1,1	77,77	0,15	mg/l	103%
Sulphate	68,4	0,8	72,07	0,14	mg/l	105%
Orthophosphate	0,041	0,004	<0,15		mg/l	•
Boron	0,036	0,001	0,04	0,00	mg/l	111%
DOC	2,99	0,04	3,65	0,11	mg/l	122%
Total P (as PO4)	0,102	0,003	<0,15		mg/l	•
KMnO4-Index	3,43	0,14	n,b		mg/l	



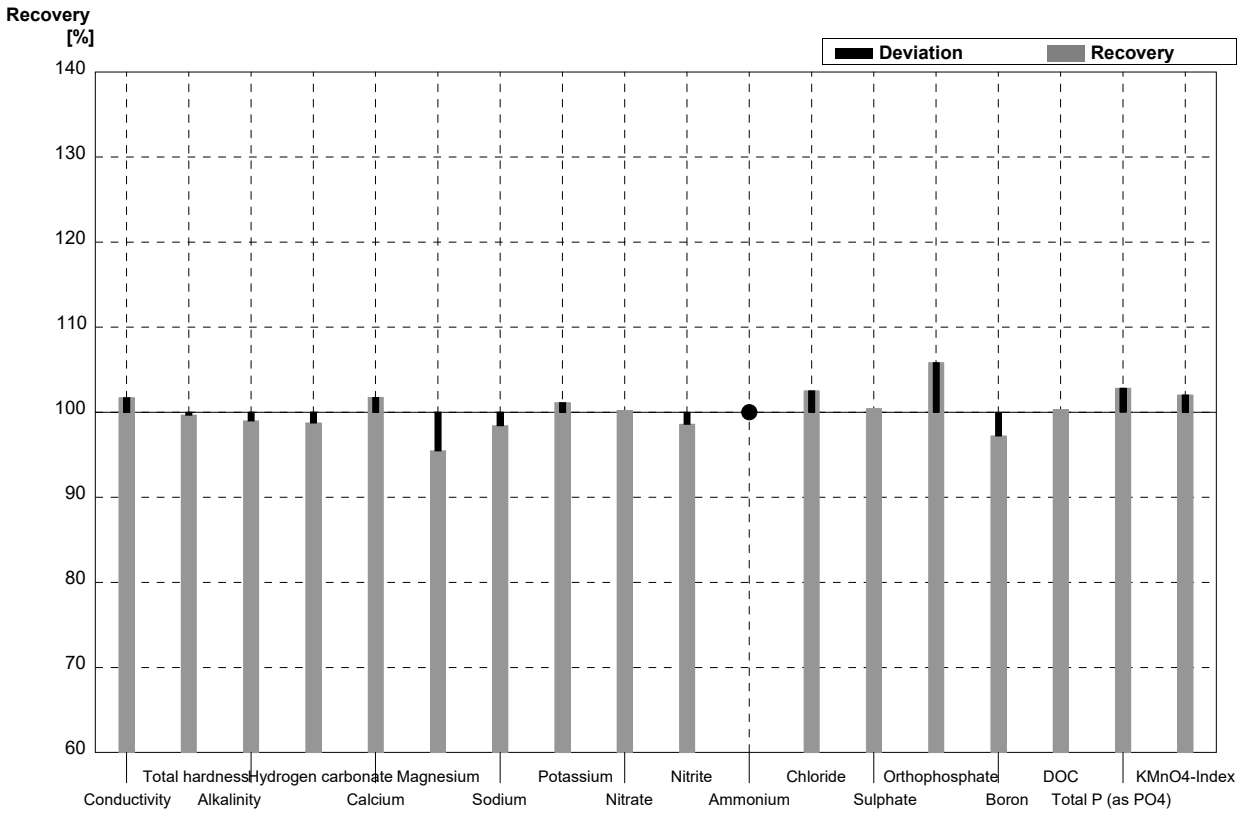
Sample N147B
Laboratory B

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1	364	25,4	µS/cm	101%
Total hardness	1,00	0,01	1,05	0,02	mmol/l	105%
Alkalinity	1,75	0,01	n,b.		mmol/l	
Hydrogen carbonate	104	1	n,b.		mg/l	
Calcium	24,9	0,3	23,9	0,56	mg/l	96%
Magnesium	9,07	0,09	8,85	0,20	mg/l	98%
Sodium	30,6	0,1	29,73	0,61	mg/l	97%
Potassium	5,52	0,04	5,53	0,08	mg/l	100%
Nitrate	20,1	0,4	20,70	0,04	mg/l	103%
Nitrite	0,076	0,001	0,071	0,001	mg/l	93%
Ammonium	0,050	0,004	0,056	0,001	mg/l	112%
Chloride	28,9	0,5	29,00	0,05	mg/l	100%
Sulphate	27,4	0,3	28,84	0,05	mg/l	105%
Orthophosphate	<0,009		<0,15		mg/l	•
Boron	0,086	0,001	0,08	0,01	mg/l	93%
DOC	5,22	0,05	5,39	0,05	mg/l	103%
Total P (as PO4)	<0,009		<0,15		mg/l	•
KMnO4-Index	2,38	0,12	n,b.		mg/l	



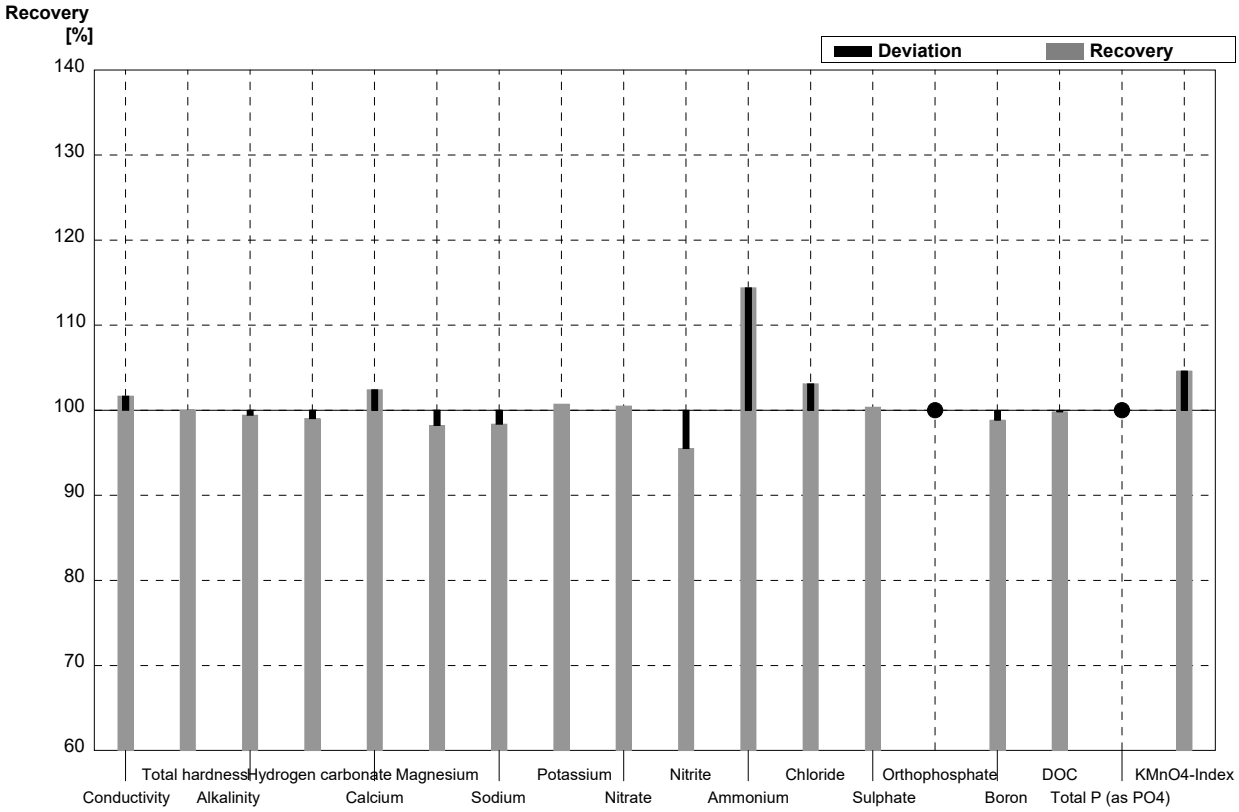
Sample N147A
Laboratory C

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2	826		µS/cm	102%
Total hardness	3,06	0,03	3,05	0,06	mmol/l	100%
Alkalinity	3,97	0,04	3,93	0,13	mmol/l	99%
Hydrogen carbonate	239	2	236	4,73	mg/l	99%
Calcium	86,1	1,1	87,6	1,45	mg/l	102%
Magnesium	22,1	0,2	21,1	1,15	mg/l	95%
Sodium	44,9	0,5	44,2	0,90	mg/l	98%
Potassium	6,15	0,07	6,22	0,58	mg/l	101%
Nitrate	45,1	0,9	45,2	0,30	mg/l	100%
Nitrite	0,050	0,001	0,0493	0,0009	mg/l	99%
Ammonium	<0,01		<0,010		mg/l	•
Chloride	75,2	1,1	77,1	0,23	mg/l	103%
Sulphate	68,4	0,8	68,7	0,75	mg/l	100%
Orthophosphate	0,041	0,004	0,0434	0,0020	mg/l	106%
Boron	0,036	0,001	0,035	0,003	mg/l	97%
DOC	2,99	0,04	3,00	0,03	mg/l	100%
Total P (as PO4)	0,102	0,003	0,1049	0,0021	mg/l	103%
KMnO4-Index	3,43	0,14	3,50		mg/l	102%



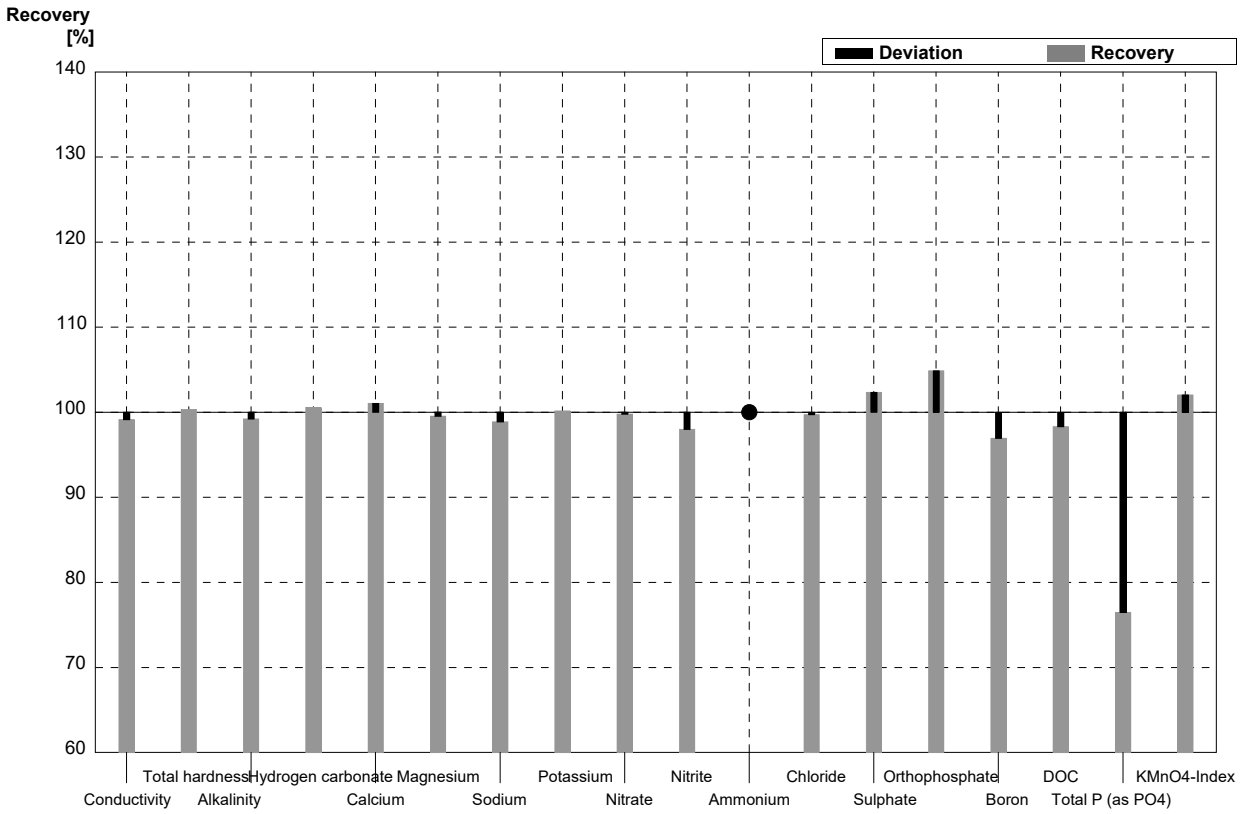
Sample N147B
Laboratory C

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1	367		µS/cm	102%
Total hardness	1,00	0,01	1,00	0,04	mmol/l	100%
Alkalinity	1,75	0,01	1,74	0,08	mmol/l	99%
Hydrogen carbonate	104	1	103	2,06	mg/l	99%
Calcium	24,9	0,3	25,5	1,40	mg/l	102%
Magnesium	9,07	0,09	8,91	0,13	mg/l	98%
Sodium	30,6	0,1	30,1	0,81	mg/l	98%
Potassium	5,52	0,04	5,56	0,59	mg/l	101%
Nitrate	20,1	0,4	20,2	0,27	mg/l	100%
Nitrite	0,076	0,001	0,0726	0,0009	mg/l	96%
Ammonium	0,050	0,004	0,0572	0,0013	mg/l	114%
Chloride	28,9	0,5	29,8	0,11	mg/l	103%
Sulphate	27,4	0,3	27,5	0,37	mg/l	100%
Orthophosphate	<0,009		[0,0024]		mg/l	•
Boron	0,086	0,001	0,085	0,003	mg/l	99%
DOC	5,22	0,05	5,21	0,03	mg/l	100%
Total P (as PO4)	<0,009		[0,0022]		mg/l	•
KMnO4-Index	2,38	0,12	2,49		mg/l	105%



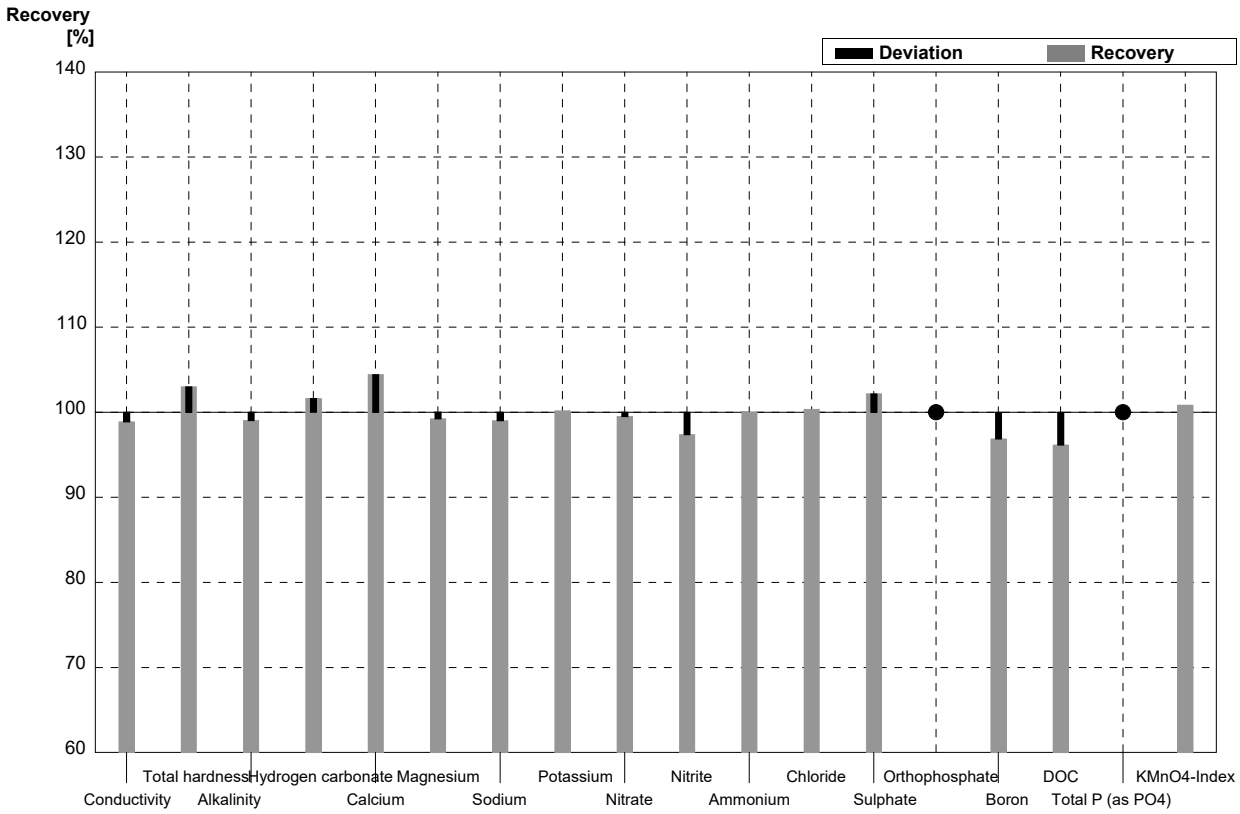
Sample N147A
Laboratory D

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2	805	8	µS/cm	99%
Total hardness	3,06	0,03	3,07	0,3	mmol/l	100%
Alkalinity	3,97	0,04	3,939	0,236	mmol/l	99%
Hydrogen carbonate	239	2	240,4	14,4	mg/l	101%
Calcium	86,1	1,1	87	4,4	mg/l	101%
Magnesium	22,1	0,2	22	1,1	mg/l	100%
Sodium	44,9	0,5	44,4	2,2	mg/l	99%
Potassium	6,15	0,07	6,16	0,25	mg/l	100%
Nitrate	45,1	0,9	45	2,3	mg/l	100%
Nitrite	0,050	0,001	0,049	0,002	mg/l	98%
Ammonium	<0,01		<0,01		mg/l	•
Chloride	75,2	1,1	75	3,8	mg/l	100%
Sulphate	68,4	0,8	70	2,8	mg/l	102%
Orthophosphate	0,041	0,004	0,043	0,002	mg/l	105%
Boron	0,036	0,001	0,0349	0,0052	mg/l	97%
DOC	2,99	0,04	2,94	0,23	mg/l	98%
Total P (as PO4)	0,102	0,003	0,078	0,016	mg/l	76%
KMnO4-Index	3,43	0,14	3,5	0,85	mg/l	102%



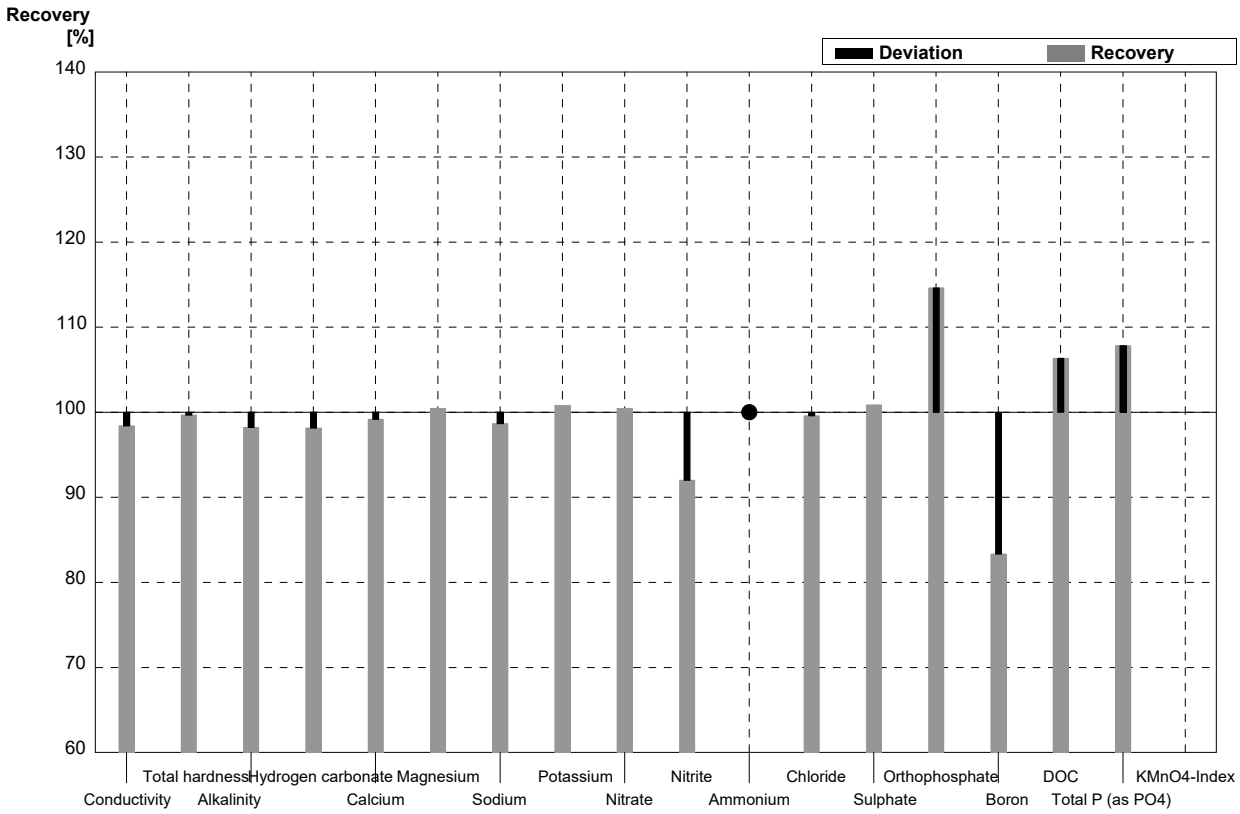
Sample N147B
Laboratory D

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1	357	4	µS/cm	99%
Total hardness	1,00	0,01	1,03	0,1	mmol/l	103%
Alkalinity	1,75	0,01	1,733	0,104	mmol/l	99%
Hydrogen carbonate	104	1	105,7	6,3	mg/l	102%
Calcium	24,9	0,3	26	1,3	mg/l	104%
Magnesium	9,07	0,09	9	0,5	mg/l	99%
Sodium	30,6	0,1	30,3	1,5	mg/l	99%
Potassium	5,52	0,04	5,53	0,22	mg/l	100%
Nitrate	20,1	0,4	20	0,1	mg/l	100%
Nitrite	0,076	0,001	0,074	0,003	mg/l	97%
Ammonium	0,050	0,004	0,050	0,008	mg/l	100%
Chloride	28,9	0,5	29	1,5	mg/l	100%
Sulphate	27,4	0,3	28	1,1	mg/l	102%
Orthophosphate	<0,009		<0,015		mg/l	•
Boron	0,086	0,001	0,0833	0,0125	mg/l	97%
DOC	5,22	0,05	5,02	0,40	mg/l	96%
Total P (as PO4)	<0,009		<0,015		mg/l	•
KMnO4-Index	2,38	0,12	2,4	0,577	mg/l	101%



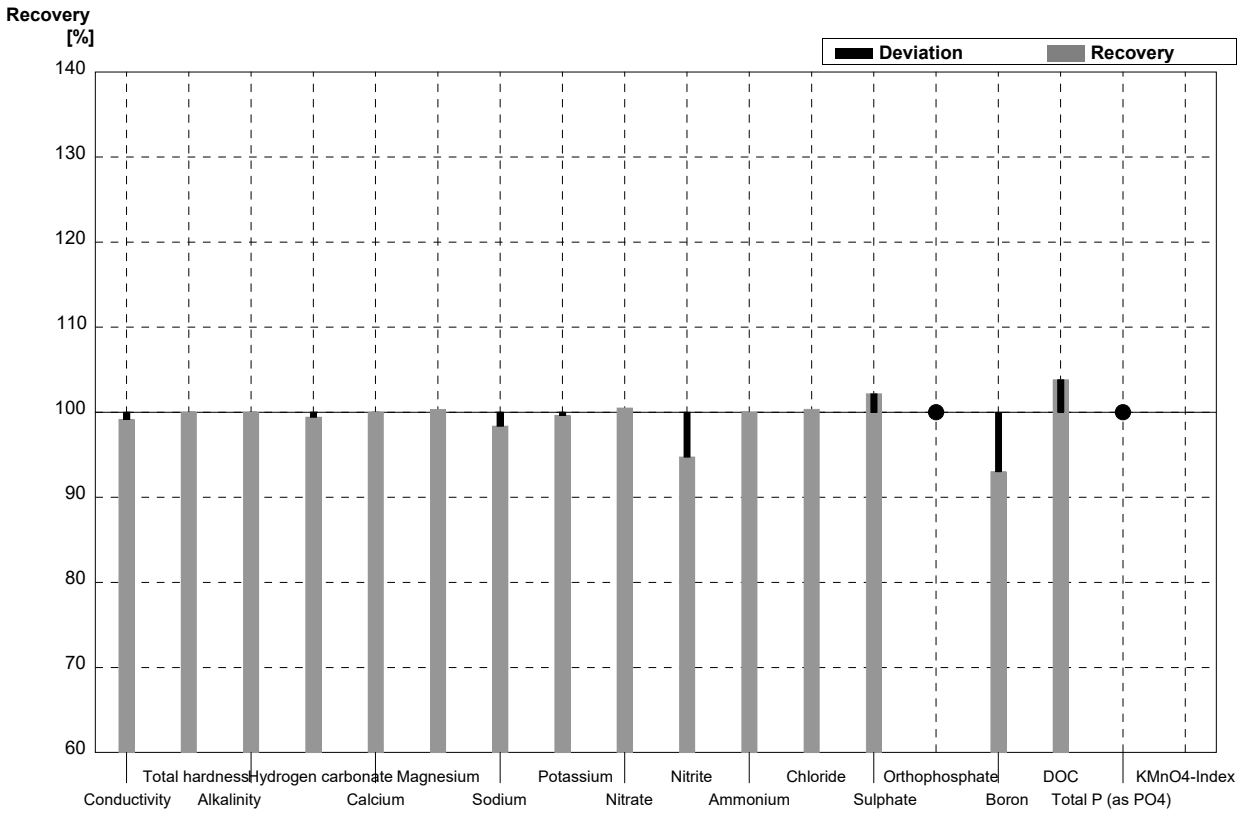
Sample N147A
Laboratory E

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2	799	13	µS/cm	98%
Total hardness	3,06	0,03	3,05	0,1	mmol/l	100%
Alkalinity	3,97	0,04	3,9	0,03	mmol/l	98%
Hydrogen carbonate	239	2	234,6	1,4	mg/l	98%
Calcium	86,1	1,1	85,4	1,6	mg/l	99%
Magnesium	22,1	0,2	22,2	1,2	mg/l	100%
Sodium	44,9	0,5	44,3	1,0	mg/l	99%
Potassium	6,15	0,07	6,2	0,2	mg/l	101%
Nitrate	45,1	0,9	45,3	1,2	mg/l	100%
Nitrite	0,050	0,001	0,046	0,002	mg/l	92%
Ammonium	<0,01		<0,01		mg/l	•
Chloride	75,2	1,1	74,9	1,7	mg/l	100%
Sulphate	68,4	0,8	69	1,8	mg/l	101%
Orthophosphate	0,041	0,004	0,047	0,004	mg/l	115%
Boron	0,036	0,001	0,03	0,003	mg/l	83%
DOC	2,99	0,04	3,18	0,29	mg/l	106%
Total P (as PO4)	0,102	0,003	0,110	0,010	mg/l	108%
KMnO4-Index	3,43	0,14			mg/l	



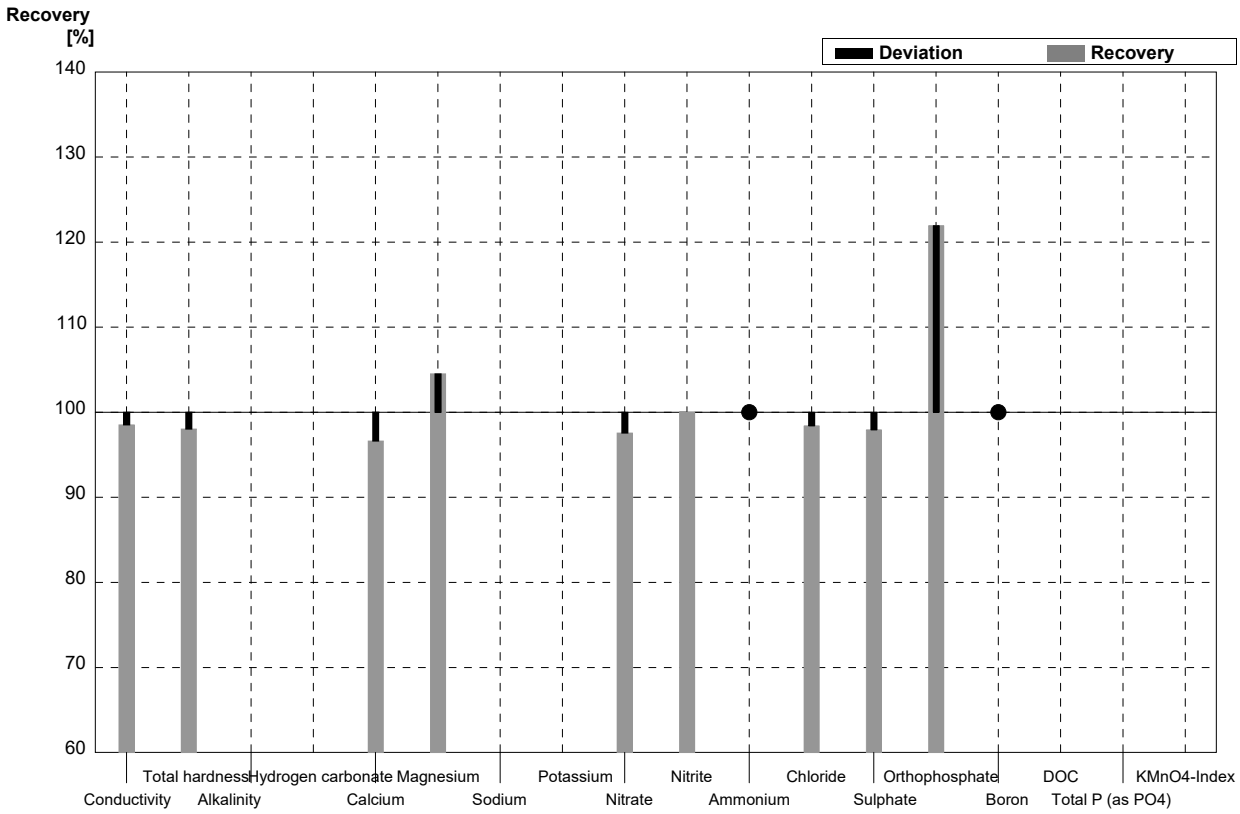
Sample N147B
Laboratory E

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1	358	6	µS/cm	99%
Total hardness	1,00	0,01	1,0	0,02	mmol/l	100%
Alkalinity	1,75	0,01	1,75	0,01	mmol/l	100%
Hydrogen carbonate	104	1	103,4	0,6	mg/l	99%
Calcium	24,9	0,3	24,9	0,5	mg/l	100%
Magnesium	9,07	0,09	9,1	0,5	mg/l	100%
Sodium	30,6	0,1	30,1	0,7	mg/l	98%
Potassium	5,52	0,04	5,5	0,2	mg/l	100%
Nitrate	20,1	0,4	20,2	0,52	mg/l	100%
Nitrite	0,076	0,001	0,072	0,004	mg/l	95%
Ammonium	0,050	0,004	0,050	0,002	mg/l	100%
Chloride	28,9	0,5	29,0	0,7	mg/l	100%
Sulphate	27,4	0,3	28	0,7	mg/l	102%
Orthophosphate	<0,009		<0,01		mg/l	•
Boron	0,086	0,001	0,08	0,01	mg/l	93%
DOC	5,22	0,05	5,42	0,49	mg/l	104%
Total P (as PO4)	<0,009		<0,01		mg/l	•
KMnO4-Index	2,38	0,12			mg/l	



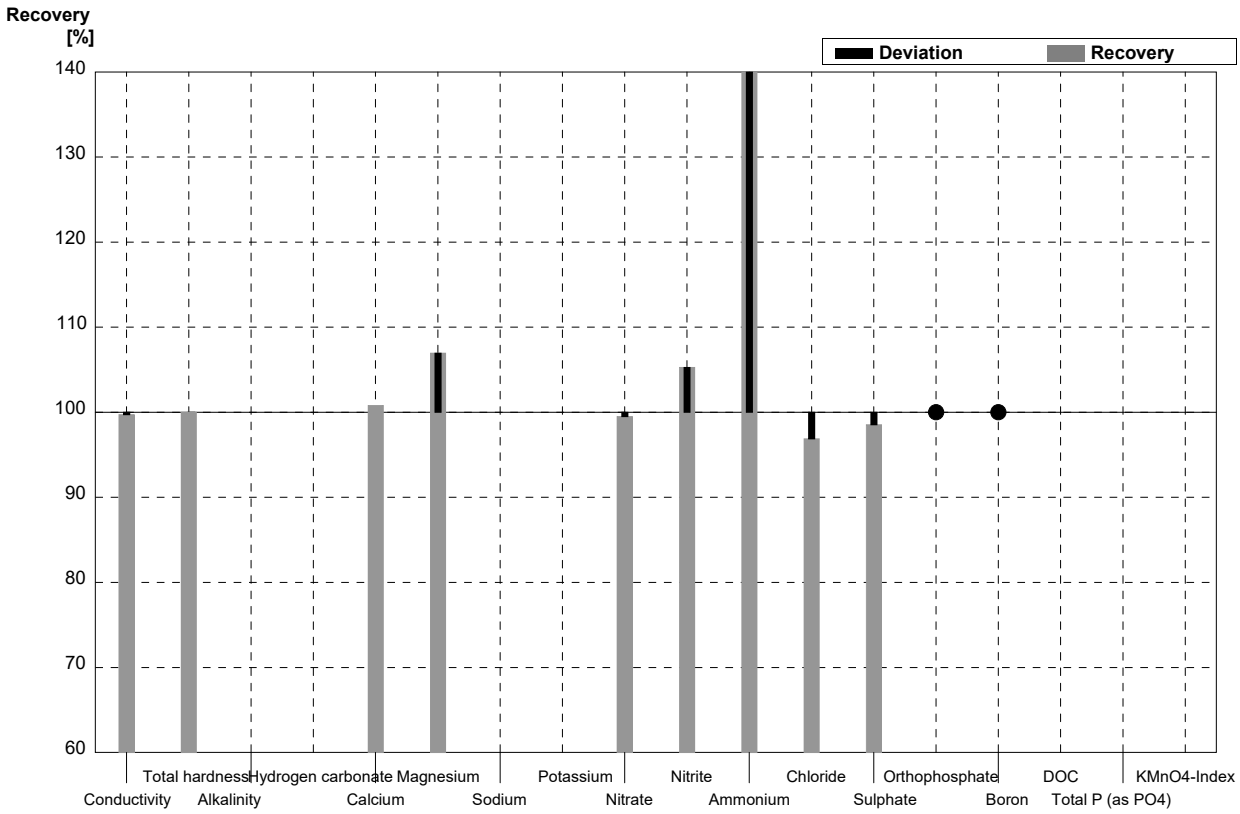
Sample N147A
Laboratory F

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2	800	40	µS/cm	99%
Total hardness	3,06	0,03	3,0	0,2	mmol/l	98%
Alkalinity	3,97	0,04			mmol/l	
Hydrogen carbonate	239	2			mg/l	
Calcium	86,1	1,1	83,2	4,2	mg/l	97%
Magnesium	22,1	0,2	23,1	1,2	mg/l	105%
Sodium	44,9	0,5			mg/l	
Potassium	6,15	0,07			mg/l	
Nitrate	45,1	0,9	44	2,2	mg/l	98%
Nitrite	0,050	0,001	0,05	0,003	mg/l	100%
Ammonium	<0,01		<0,06		mg/l	•
Chloride	75,2	1,1	74	3,7	mg/l	98%
Sulphate	68,4	0,8	67	3,4	mg/l	98%
Orthophosphate	0,041	0,004	0,05	0,003	mg/l	122%
Boron	0,036	0,001	<0,10		mg/l	•
DOC	2,99	0,04			mg/l	
Total P (as PO4)	0,102	0,003			mg/l	
KMnO4-Index	3,43	0,14			mg/l	



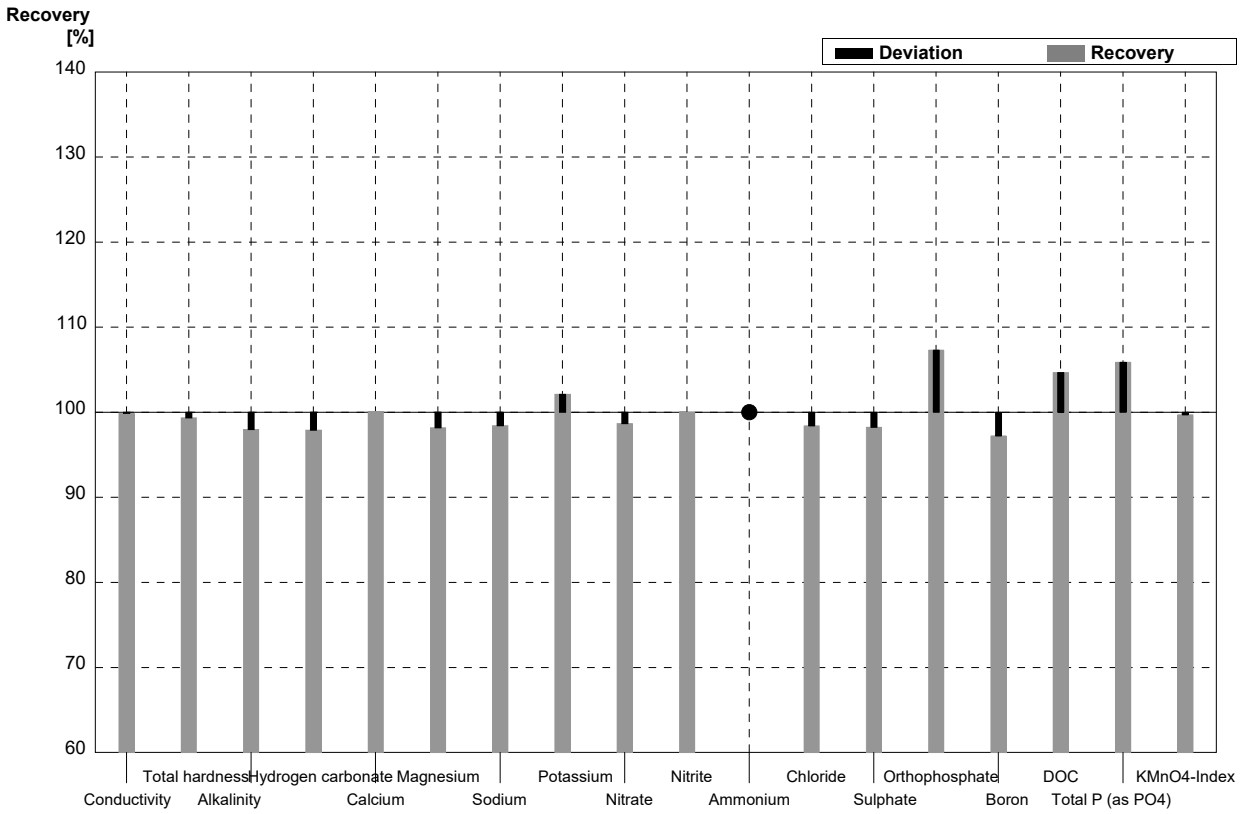
Sample N147B
Laboratory F

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1	360	18	µS/cm	100%
Total hardness	1,00	0,01	1,0	0,1	mmol/l	100%
Alkalinity	1,75	0,01			mmol/l	
Hydrogen carbonate	104	1			mg/l	
Calcium	24,9	0,3	25,1	1,3	mg/l	101%
Magnesium	9,07	0,09	9,7	0,5	mg/l	107%
Sodium	30,6	0,1			mg/l	
Potassium	5,52	0,04			mg/l	
Nitrate	20,1	0,4	20	1,0	mg/l	100%
Nitrite	0,076	0,001	0,08	0,004	mg/l	105%
Ammonium	0,050	0,004	0,08	0,004	mg/l	160%
Chloride	28,9	0,5	28	1,4	mg/l	97%
Sulphate	27,4	0,3	27	1,4	mg/l	99%
Orthophosphate	<0,009		<0,05		mg/l	•
Boron	0,086	0,001	<0,10		mg/l	•
DOC	5,22	0,05			mg/l	
Total P (as PO4)	<0,009				mg/l	
KMnO4-Index	2,38	0,12			mg/l	



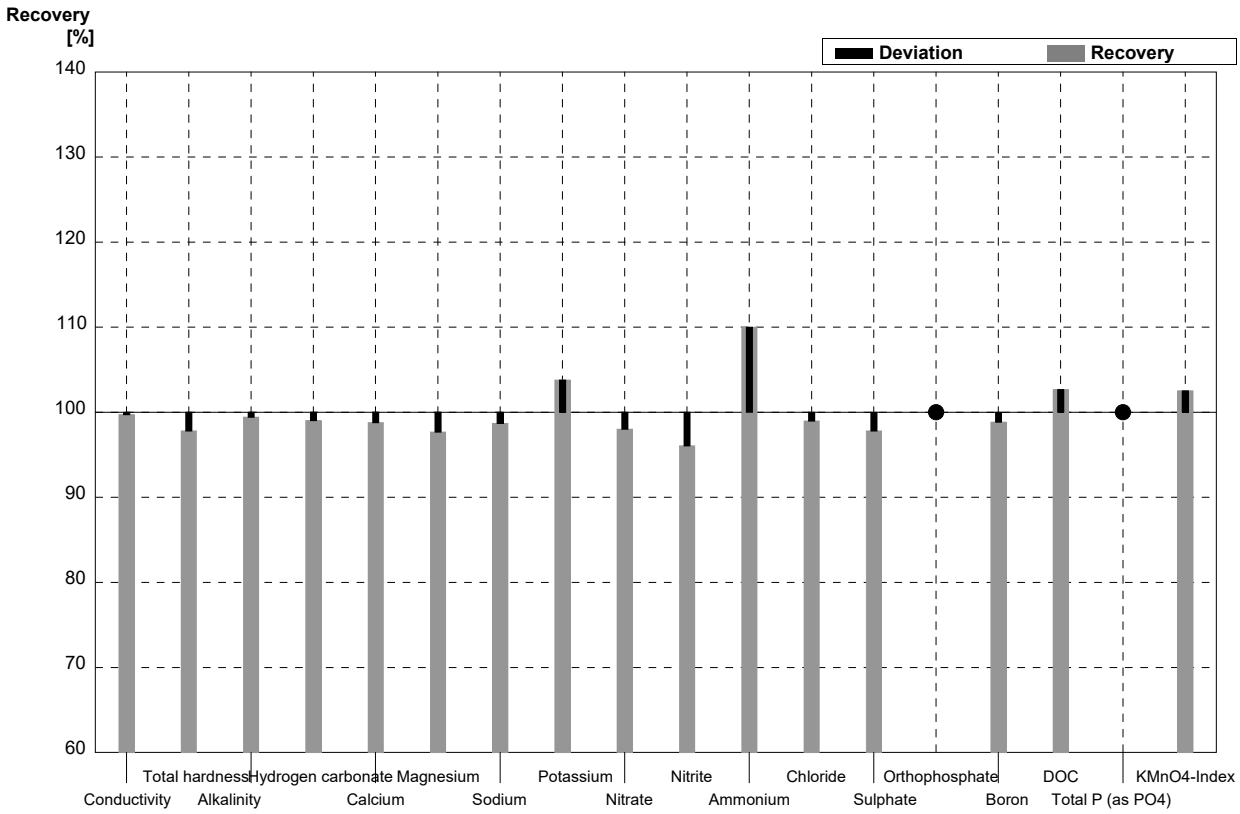
Sample N147A
Laboratory G

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2	811	32	µS/cm	100%
Total hardness	3,06	0,03	3,04	0,27	mmol/l	99%
Alkalinity	3,97	0,04	3,89	0,16	mmol/l	98%
Hydrogen carbonate	239	2	234	9,4	mg/l	98%
Calcium	86,1	1,1	86,2	7,8	mg/l	100%
Magnesium	22,1	0,2	21,7	2,0	mg/l	98%
Sodium	44,9	0,5	44,2	4,0	mg/l	98%
Potassium	6,15	0,07	6,28	0,57	mg/l	102%
Nitrate	45,1	0,9	44,5	4,0	mg/l	99%
Nitrite	0,050	0,001	0,050	0,005	mg/l	100%
Ammonium	<0,01		<0,01		mg/l	•
Chloride	75,2	1,1	74,0	6,66	mg/l	98%
Sulphate	68,4	0,8	67,2	6,0	mg/l	98%
Orthophosphate	0,041	0,004	0,044	0,004	mg/l	107%
Boron	0,036	0,001	0,035	0,006	mg/l	97%
DOC	2,99	0,04	3,13	0,28	mg/l	105%
Total P (as PO4)	0,102	0,003	0,108	0,004	mg/l	106%
KMnO4-Index	3,43	0,14	3,42	0,31	mg/l	100%



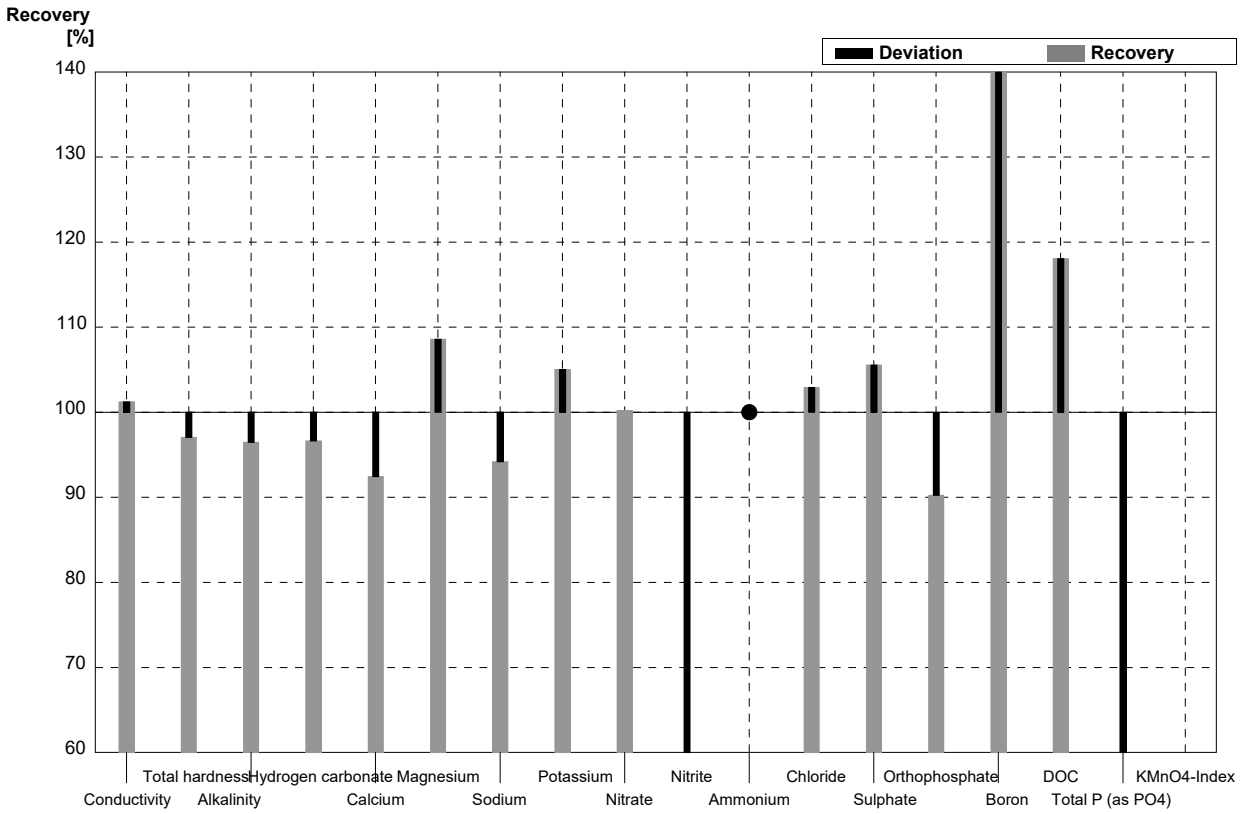
Sample N147B
Laboratory G

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1	360	14	µS/cm	100%
Total hardness	1,00	0,01	0,978	0,09	mmol/l	98%
Alkalinity	1,75	0,01	1,74	0,07	mmol/l	99%
Hydrogen carbonate	104	1	103	4,1	mg/l	99%
Calcium	24,9	0,3	24,6	2,2	mg/l	99%
Magnesium	9,07	0,09	8,86	0,80	mg/l	98%
Sodium	30,6	0,1	30,2	2,7	mg/l	99%
Potassium	5,52	0,04	5,73	0,52	mg/l	104%
Nitrate	20,1	0,4	19,7	1,77	mg/l	98%
Nitrite	0,076	0,001	0,073	0,007	mg/l	96%
Ammonium	0,050	0,004	0,055	0,005	mg/l	110%
Chloride	28,9	0,5	28,6	2,6	mg/l	99%
Sulphate	27,4	0,3	26,8	2,4	mg/l	98%
Orthophosphate	<0,009		<0,01		mg/l	•
Boron	0,086	0,001	0,085	0,02	mg/l	99%
DOC	5,22	0,05	5,36	0,48	mg/l	103%
Total P (as PO4)	<0,009		<0,05		mg/l	•
KMnO4-Index	2,38	0,12	2,44	0,22	mg/l	103%



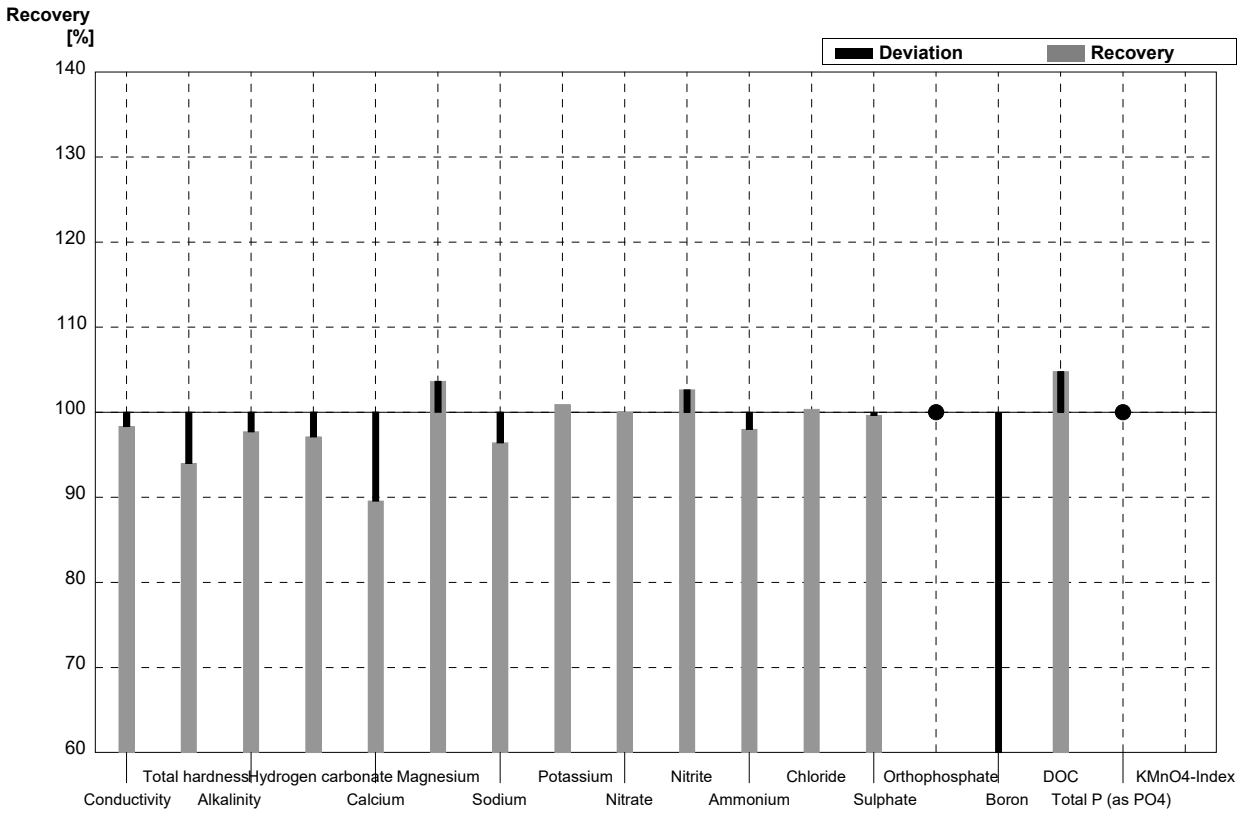
Sample N147A
Laboratory H

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2	822	82	µS/cm	101%
Total hardness	3,06	0,03	2,97	0,45	mmol/l	97%
Alkalinity	3,97	0,04	3,83	0,38	mmol/l	96%
Hydrogen carbonate	239	2	231	23	mg/l	97%
Calcium	86,1	1,1	79,6	11,9	mg/l	92%
Magnesium	22,1	0,2	24,0	3,6	mg/l	109%
Sodium	44,9	0,5	42,3	6,3	mg/l	94%
Potassium	6,15	0,07	6,46	0,97	mg/l	105%
Nitrate	45,1	0,9	45,2	6,8	mg/l	100%
Nitrite	0,050	0,001	0,005	0,008	mg/l	10%
Ammonium	<0,01		<0,04		mg/l	•
Chloride	75,2	1,1	77,4	11,6	mg/l	103%
Sulphate	68,4	0,8	72,2	10,8	mg/l	106%
Orthophosphate	0,041	0,004	0,037	0,006	mg/l	90%
Boron	0,036	0,001	0,079	0,012	mg/l	219%
DOC	2,99	0,04	3,53	1,06	mg/l	118%
Total P (as PO4)	0,102	0,003	0,041	0,010	mg/l	40%
KMnO4-Index	3,43	0,14			mg/l	



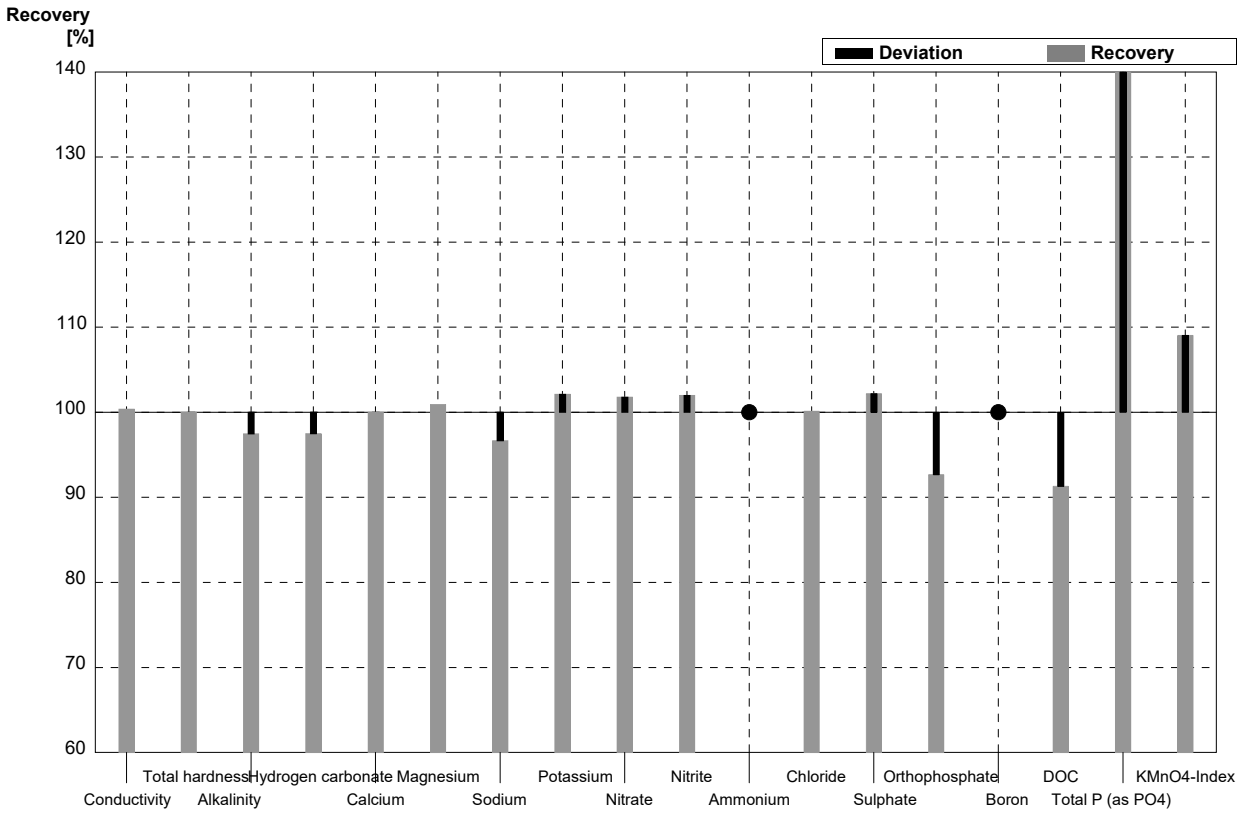
Sample N147B
Laboratory H

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1	355	36	µS/cm	98%
Total hardness	1,00	0,01	0,94	0,14	mmol/l	94%
Alkalinity	1,75	0,01	1,71	0,26	mmol/l	98%
Hydrogen carbonate	104	1	101	10	mg/l	97%
Calcium	24,9	0,3	22,3	3,30	mg/l	90%
Magnesium	9,07	0,09	9,4	1,41	mg/l	104%
Sodium	30,6	0,1	29,5	4,43	mg/l	96%
Potassium	5,52	0,04	5,57	0,84	mg/l	101%
Nitrate	20,1	0,4	20,1	3,0	mg/l	100%
Nitrite	0,076	0,001	0,078	0,012	mg/l	103%
Ammonium	0,050	0,004	0,049	0,007	mg/l	98%
Chloride	28,9	0,5	29,0	4,3	mg/l	100%
Sulphate	27,4	0,3	27,3	4,1	mg/l	100%
Orthophosphate	<0,009		<0,015		mg/l	•
Boron	0,086	0,001	0,026	0,004	mg/l	30%
DOC	5,22	0,05	5,47	1,64	mg/l	105%
Total P (as PO4)	<0,009		<0,015		mg/l	•
KMnO4-Index	2,38	0,12			mg/l	



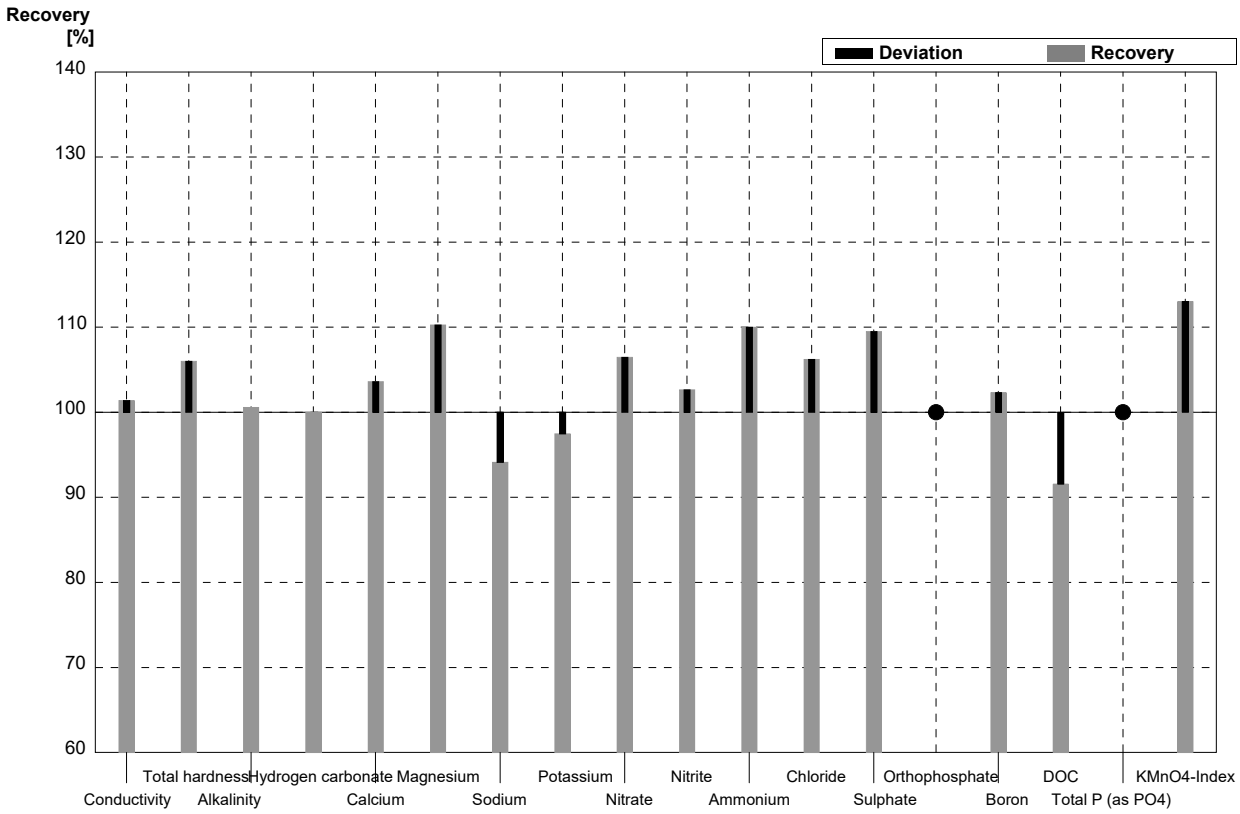
Sample N147A
Laboratory I

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2	815	16	µS/cm	100%
Total hardness	3,06	0,03	3,06	0,12	mmol/l	100%
Alkalinity	3,97	0,04	3,87	0,19	mmol/l	97%
Hydrogen carbonate	239	2	233	12	mg/l	97%
Calcium	86,1	1,1	86,1	3,4	mg/l	100%
Magnesium	22,1	0,2	22,3	1,1	mg/l	101%
Sodium	44,9	0,5	43,4	2,2	mg/l	97%
Potassium	6,15	0,07	6,28	0,31	mg/l	102%
Nitrate	45,1	0,9	45,9	1,4	mg/l	102%
Nitrite	0,050	0,001	0,051	0,005	mg/l	102%
Ammonium	<0,01		<0,030		mg/l	•
Chloride	75,2	1,1	75,3	2,3	mg/l	100%
Sulphate	68,4	0,8	69,9	2,1	mg/l	102%
Orthophosphate	0,041	0,004	0,038	0,004	mg/l	93%
Boron	0,036	0,001	<0,050		mg/l	•
DOC	2,99	0,04	2,73	0,27	mg/l	91%
Total P (as PO4)	0,102	0,003	0,150	0,023	mg/l	147%
KMnO4-Index	3,43	0,14	3,74	0,37	mg/l	109%



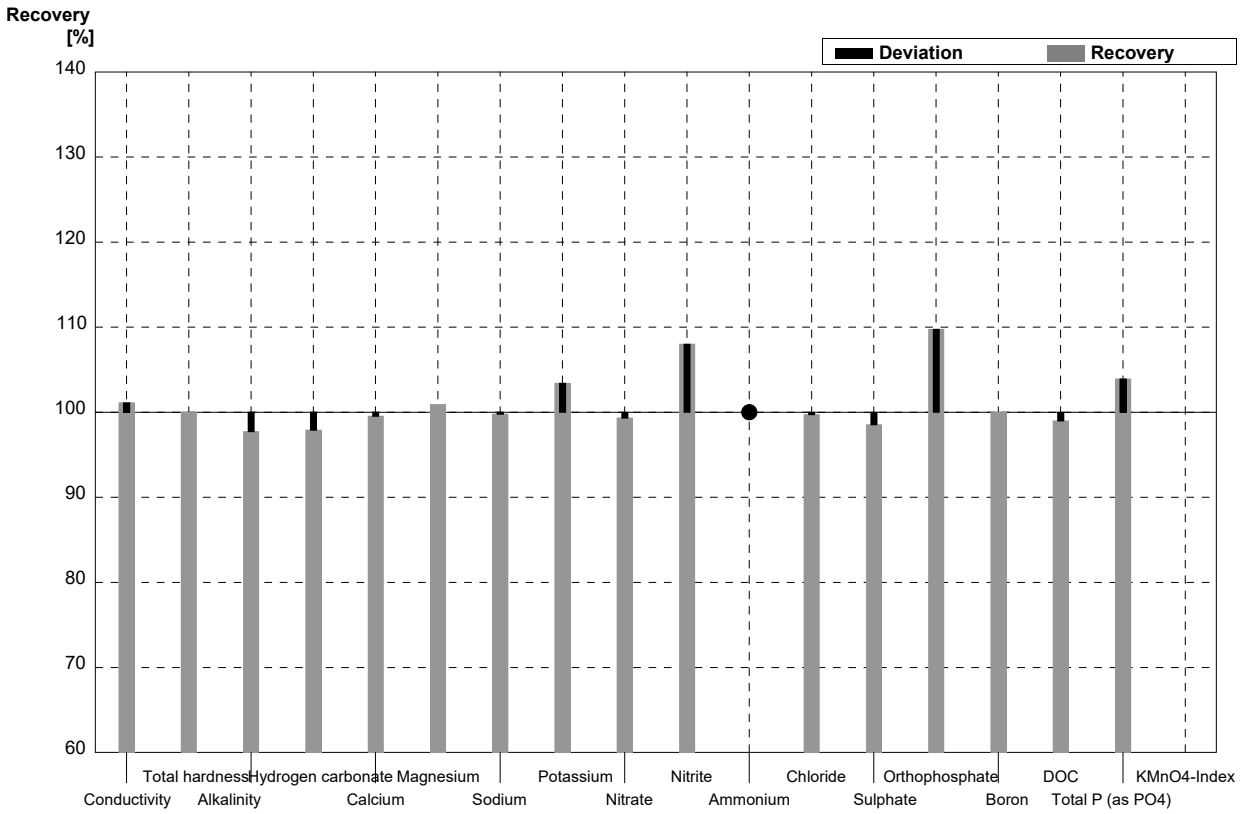
Sample N147B
Laboratory I

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1	366	7	µS/cm	101%
Total hardness	1,00	0,01	1,06	0,04	mmol/l	106%
Alkalinity	1,75	0,01	1,76	0,09	mmol/l	101%
Hydrogen carbonate	104	1	104	5	mg/l	100%
Calcium	24,9	0,3	25,8	1,0	mg/l	104%
Magnesium	9,07	0,09	10,0	0,5	mg/l	110%
Sodium	30,6	0,1	28,8	1,4	mg/l	94%
Potassium	5,52	0,04	5,38	0,27	mg/l	97%
Nitrate	20,1	0,4	21,4	0,6	mg/l	106%
Nitrite	0,076	0,001	0,078	0,008	mg/l	103%
Ammonium	0,050	0,004	0,055	0,006	mg/l	110%
Chloride	28,9	0,5	30,7	0,9	mg/l	106%
Sulphate	27,4	0,3	30,0	0,9	mg/l	109%
Orthophosphate	<0,009		<0,020		mg/l	•
Boron	0,086	0,001	0,088	0,009	mg/l	102%
DOC	5,22	0,05	4,78	0,48	mg/l	92%
Total P (as PO4)	<0,009		<0,031		mg/l	•
KMnO4-Index	2,38	0,12	2,69	0,27	mg/l	113%



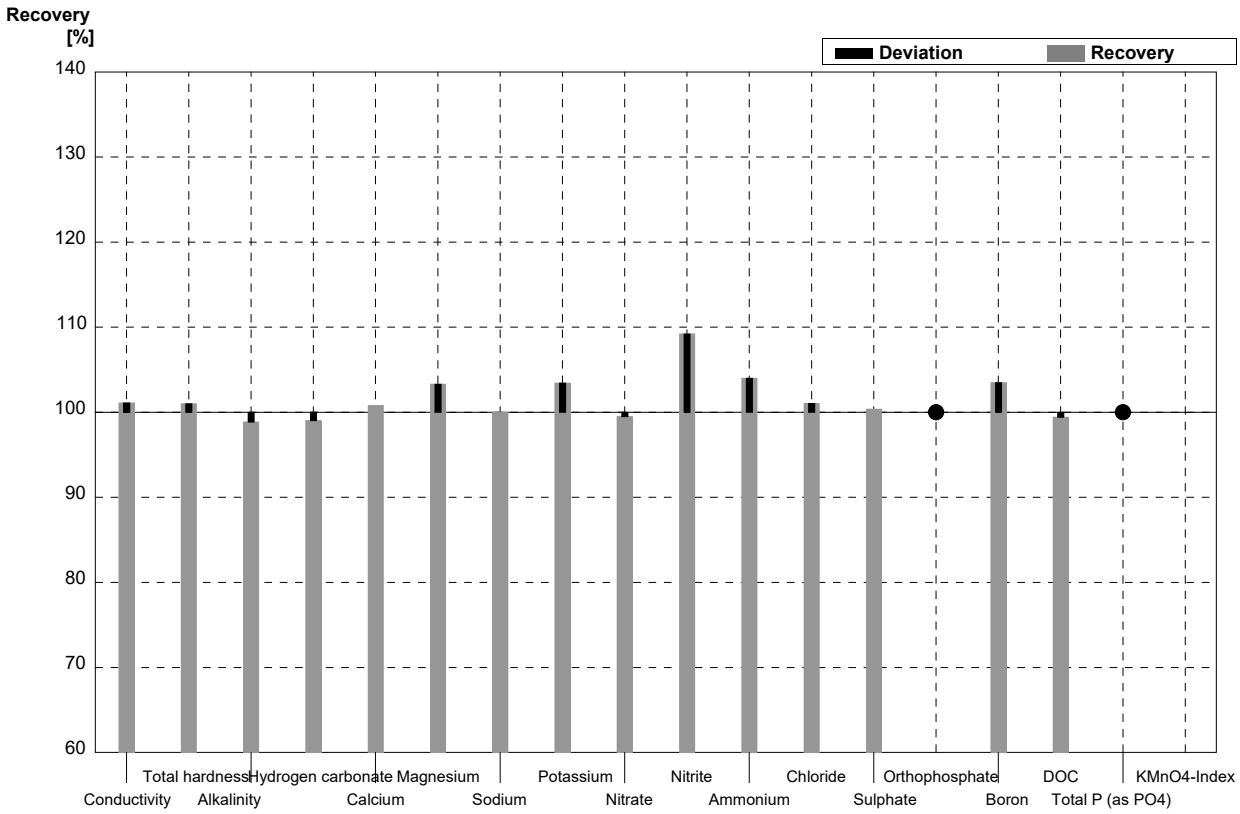
Sample N147A
Laboratory J

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2	821	25	µS/cm	101%
Total hardness	3,06	0,03	3,06	0,34	mmol/l	100%
Alkalinity	3,97	0,04	3,88	0,12	mmol/l	98%
Hydrogen carbonate	239	2	234	7	mg/l	98%
Calcium	86,1	1,1	85,7	7,7	mg/l	100%
Magnesium	22,1	0,2	22,3	2,0	mg/l	101%
Sodium	44,9	0,5	44,8	3,6	mg/l	100%
Potassium	6,15	0,07	6,36	0,45	mg/l	103%
Nitrate	45,1	0,9	44,8	4,0	mg/l	99%
Nitrite	0,050	0,001	0,054	0,007	mg/l	108%
Ammonium	<0,01		<0,008		mg/l	•
Chloride	75,2	1,1	75,0	3,8	mg/l	100%
Sulphate	68,4	0,8	67,4	3,4	mg/l	99%
Orthophosphate	0,041	0,004	0,045	0,005	mg/l	110%
Boron	0,036	0,001	0,036	0,004	mg/l	100%
DOC	2,99	0,04	2,96	0,27	mg/l	99%
Total P (as PO4)	0,102	0,003	0,106	0,011	mg/l	104%
KMnO4-Index	3,43	0,14			mg/l	



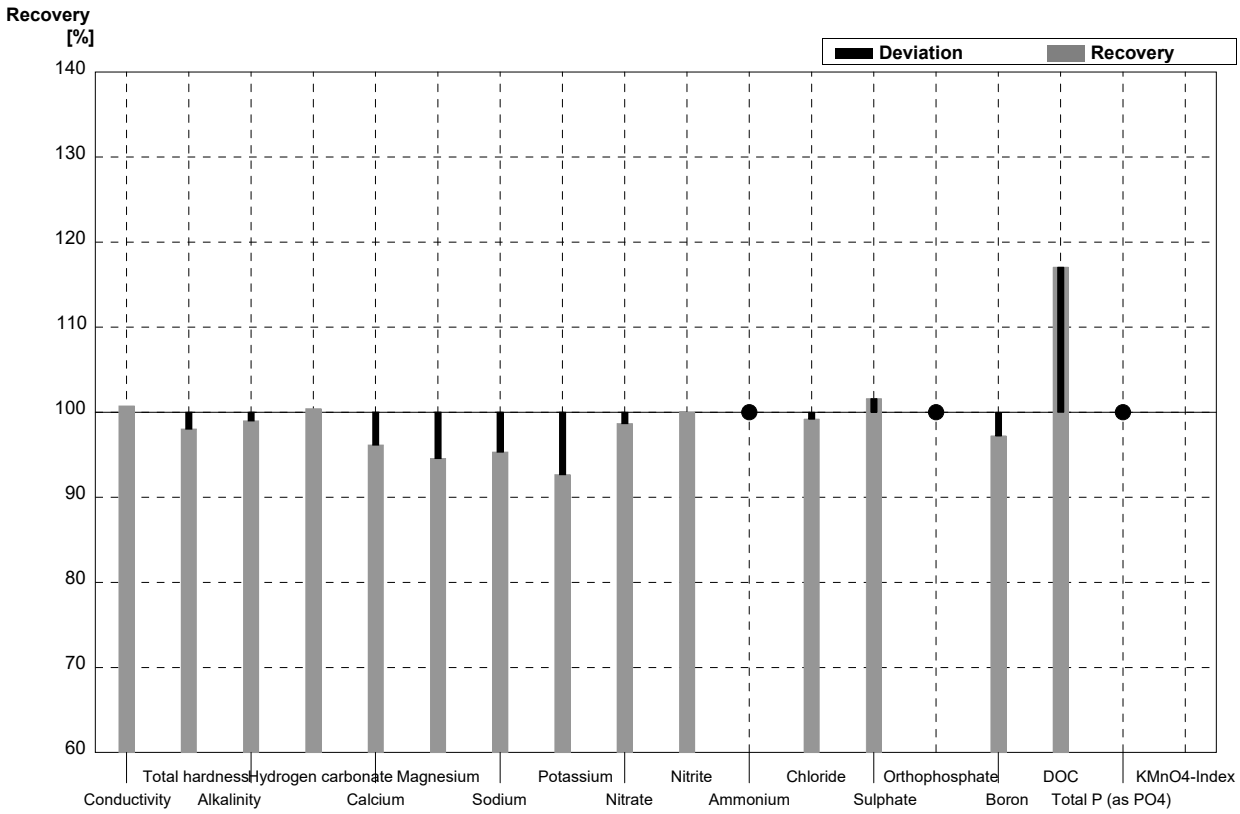
Sample N147B
Laboratory J

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1	365	11	µS/cm	101%
Total hardness	1,00	0,01	1,01	0,11	mmol/l	101%
Alkalinity	1,75	0,01	1,73	0,06	mmol/l	99%
Hydrogen carbonate	104	1	103	3	mg/l	99%
Calcium	24,9	0,3	25,1	2,3	mg/l	101%
Magnesium	9,07	0,09	9,37	0,85	mg/l	103%
Sodium	30,6	0,1	30,6	2,5	mg/l	100%
Potassium	5,52	0,04	5,71	0,40	mg/l	103%
Nitrate	20,1	0,4	20,0	1,8	mg/l	100%
Nitrite	0,076	0,001	0,083	0,010	mg/l	109%
Ammonium	0,050	0,004	0,052	0,008	mg/l	104%
Chloride	28,9	0,5	29,2	1,5	mg/l	101%
Sulphate	27,4	0,3	27,5	1,4	mg/l	100%
Orthophosphate	<0,009		<0,006		mg/l	•
Boron	0,086	0,001	0,089	0,009	mg/l	103%
DOC	5,22	0,05	5,19	0,47	mg/l	99%
Total P (as PO4)	<0,009		<0,006		mg/l	•
KMnO4-Index	2,38	0,12			mg/l	



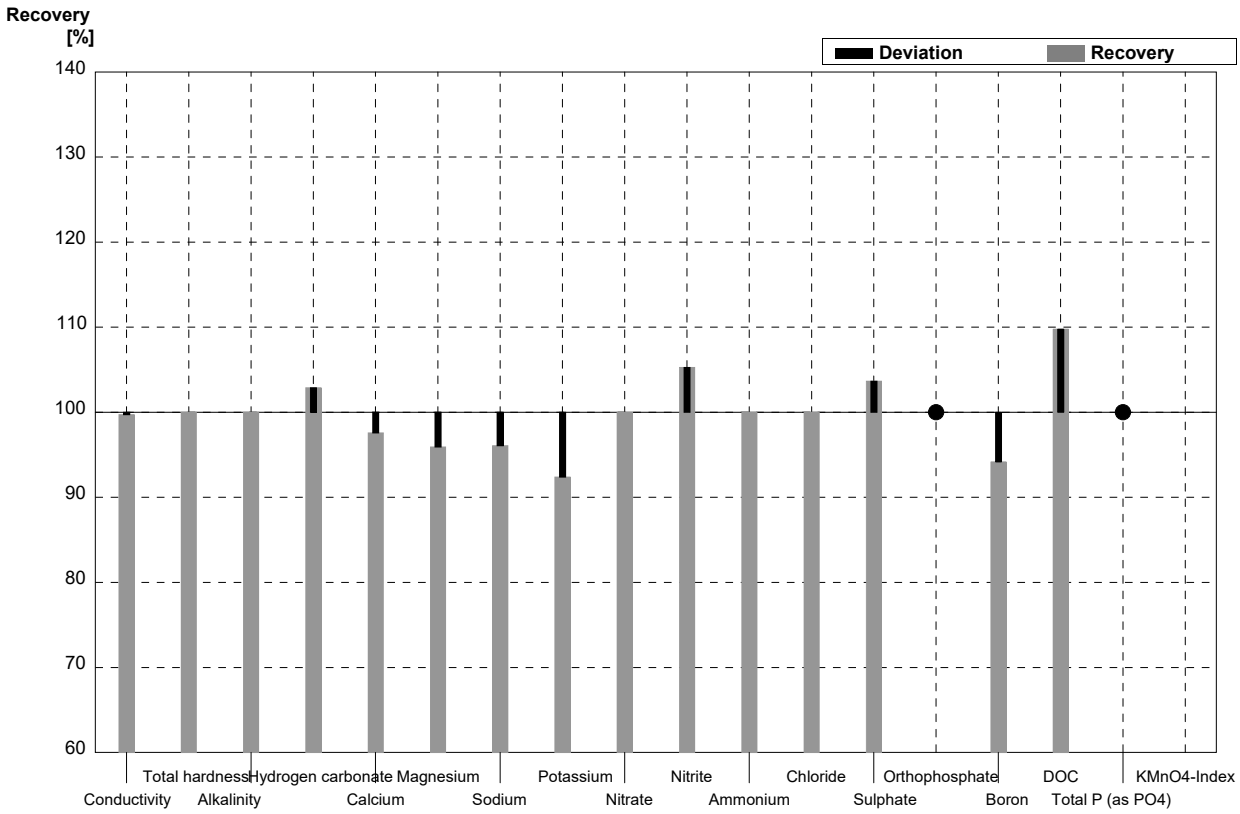
Sample N147A
Laboratory K

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2	818	8,2	µS/cm	101%
Total hardness	3,06	0,03	3,0	0,3	mmol/l	98%
Alkalinity	3,97	0,04	3,93	0,2	mmol/l	99%
Hydrogen carbonate	239	2	240	12	mg/l	100%
Calcium	86,1	1,1	82,8	12,4	mg/l	96%
Magnesium	22,1	0,2	20,9	3,1	mg/l	95%
Sodium	44,9	0,5	42,8	6,4	mg/l	95%
Potassium	6,15	0,07	5,7	0,9	mg/l	93%
Nitrate	45,1	0,9	44,5	4,9	mg/l	99%
Nitrite	0,050	0,001	0,05	0,003	mg/l	100%
Ammonium	<0,01		<0,01		mg/l	•
Chloride	75,2	1,1	74,6	7,5	mg/l	99%
Sulphate	68,4	0,8	69,5	7	mg/l	102%
Orthophosphate	0,041	0,004	<0,15		mg/l	•
Boron	0,036	0,001	0,035	0,009	mg/l	97%
DOC	2,99	0,04	3,5	0,39	mg/l	117%
Total P (as PO4)	0,102	0,003	<0,15		mg/l	•
KMnO4-Index	3,43	0,14			mg/l	



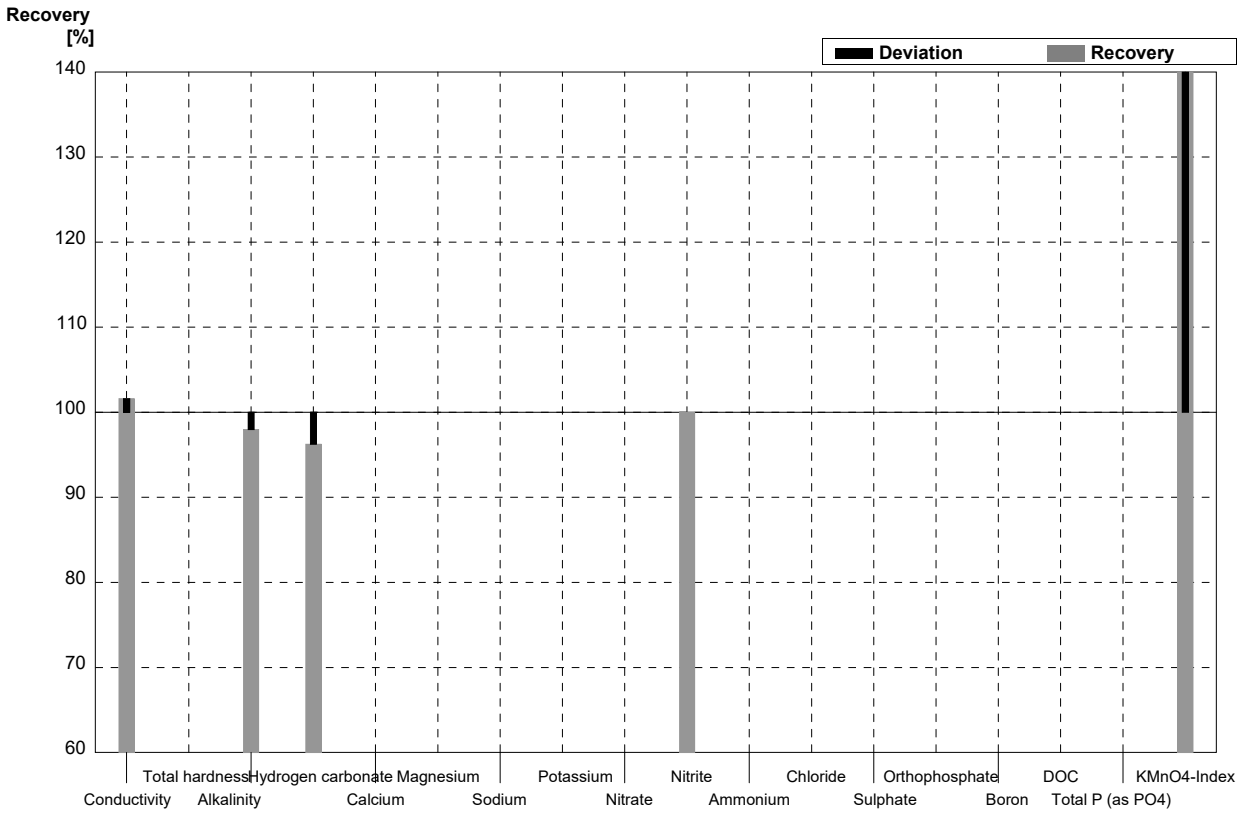
Sample N147B
Laboratory K

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1	360	3,6	µS/cm	100%
Total hardness	1,00	0,01	1,0	0,1	mmol/l	100%
Alkalinity	1,75	0,01	1,75	0,09	mmol/l	100%
Hydrogen carbonate	104	1	107	5,4	mg/l	103%
Calcium	24,9	0,3	24,3	3,6	mg/l	98%
Magnesium	9,07	0,09	8,7	1,3	mg/l	96%
Sodium	30,6	0,1	29,4	4,4	mg/l	96%
Potassium	5,52	0,04	5,1	0,8	mg/l	92%
Nitrate	20,1	0,4	20,1	2,2	mg/l	100%
Nitrite	0,076	0,001	0,08	0,005	mg/l	105%
Ammonium	0,050	0,004	0,05	0,005	mg/l	100%
Chloride	28,9	0,5	28,9	2,9	mg/l	100%
Sulphate	27,4	0,3	28,4	2,8	mg/l	104%
Orthophosphate	<0,009		<0,15		mg/l	•
Boron	0,086	0,001	0,081	0,020	mg/l	94%
DOC	5,22	0,05	5,73	0,63	mg/l	110%
Total P (as PO4)	<0,009		<0,15		mg/l	•
KMnO4-Index	2,38	0,12			mg/l	



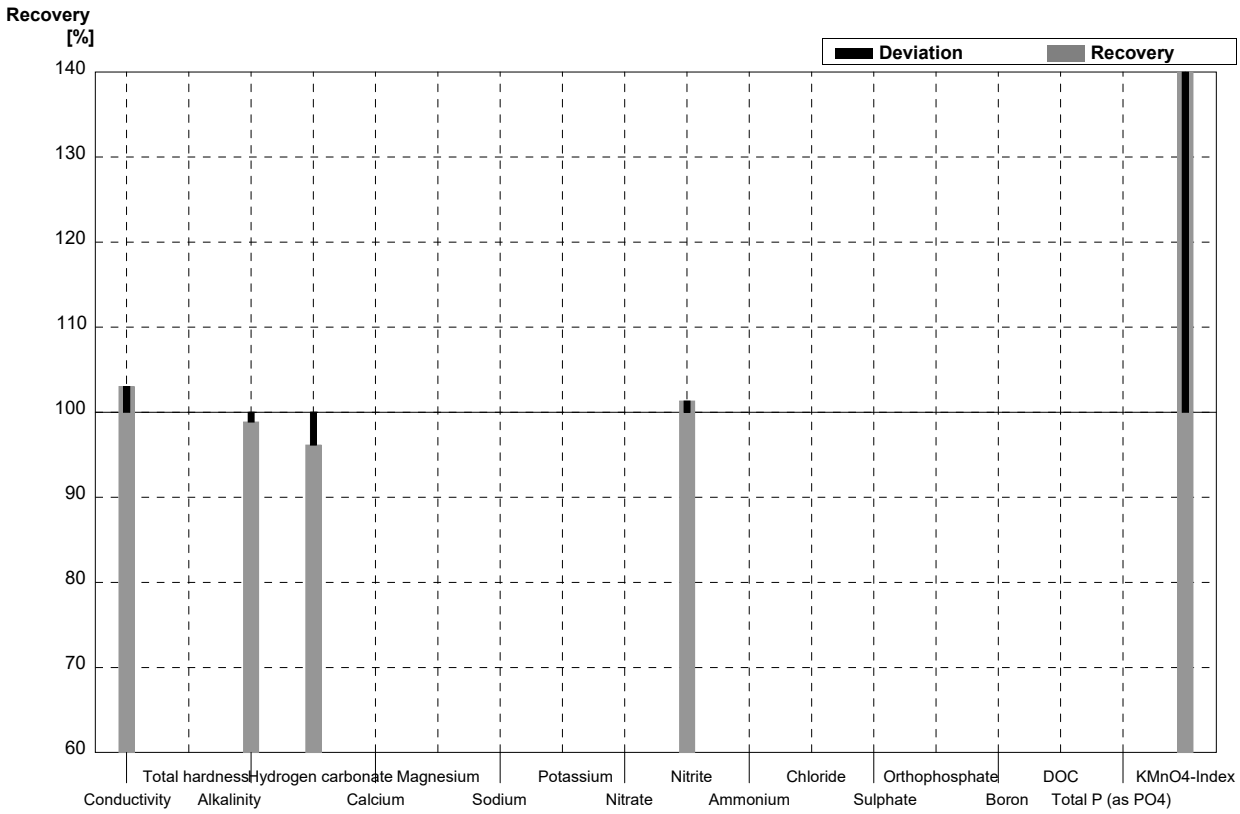
Sample N147A
Laboratory L

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2	825	15,6	µS/cm	102%
Total hardness	3,06	0,03			mmol/l	
Alkalinity	3,97	0,04	3,89		mmol/l	98%
Hydrogen carbonate	239	2	230		mg/l	96%
Calcium	86,1	1,1			mg/l	
Magnesium	22,1	0,2			mg/l	
Sodium	44,9	0,5			mg/l	
Potassium	6,15	0,07			mg/l	
Nitrate	45,1	0,9			mg/l	
Nitrite	0,050	0,001	0,050	0,004	mg/l	100%
Ammonium	<0,01				mg/l	
Chloride	75,2	1,1			mg/l	
Sulphate	68,4	0,8			mg/l	
Orthophosphate	0,041	0,004			mg/l	
Boron	0,036	0,001			mg/l	
DOC	2,99	0,04			mg/l	
Total P (as PO4)	0,102	0,003			mg/l	
KMnO4-Index	3,43	0,14	12	1,14	mg/l	350%



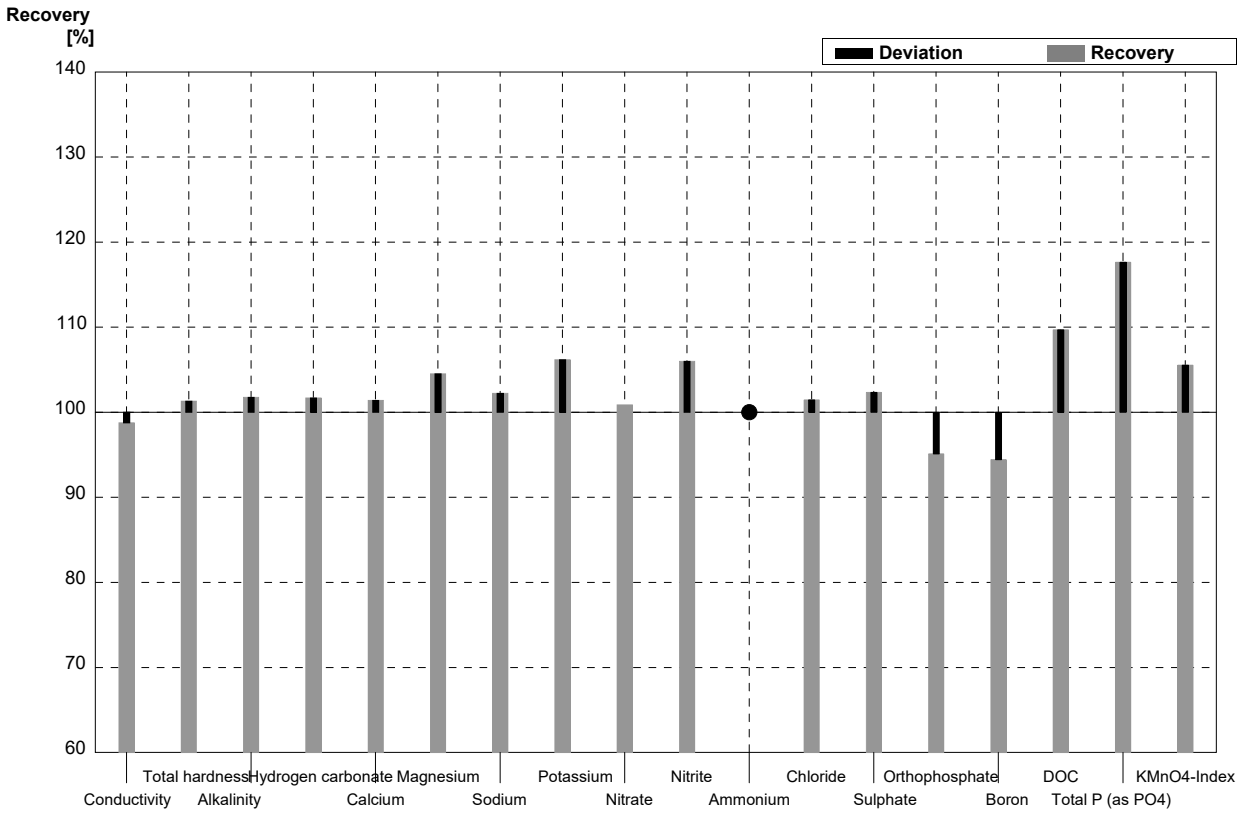
Sample N147B
Laboratory L

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1	372	7,04	µS/cm	103%
Total hardness	1,00	0,01			mmol/l	
Alkalinity	1,75	0,01	1,73		mmol/l	99%
Hydrogen carbonate	104	1	100		mg/l	96%
Calcium	24,9	0,3			mg/l	
Magnesium	9,07	0,09			mg/l	
Sodium	30,6	0,1			mg/l	
Potassium	5,52	0,04			mg/l	
Nitrate	20,1	0,4			mg/l	
Nitrite	0,076	0,001	0,077	0,0014	mg/l	101%
Ammonium	0,050	0,004			mg/l	
Chloride	28,9	0,5			mg/l	
Sulphate	27,4	0,3			mg/l	
Orthophosphate	<0,009				mg/l	
Boron	0,086	0,001			mg/l	
DOC	5,22	0,05			mg/l	
Total P (as PO4)	<0,009				mg/l	
KMnO4-Index	2,38	0,12	8,6	0,81	mg/l	361%



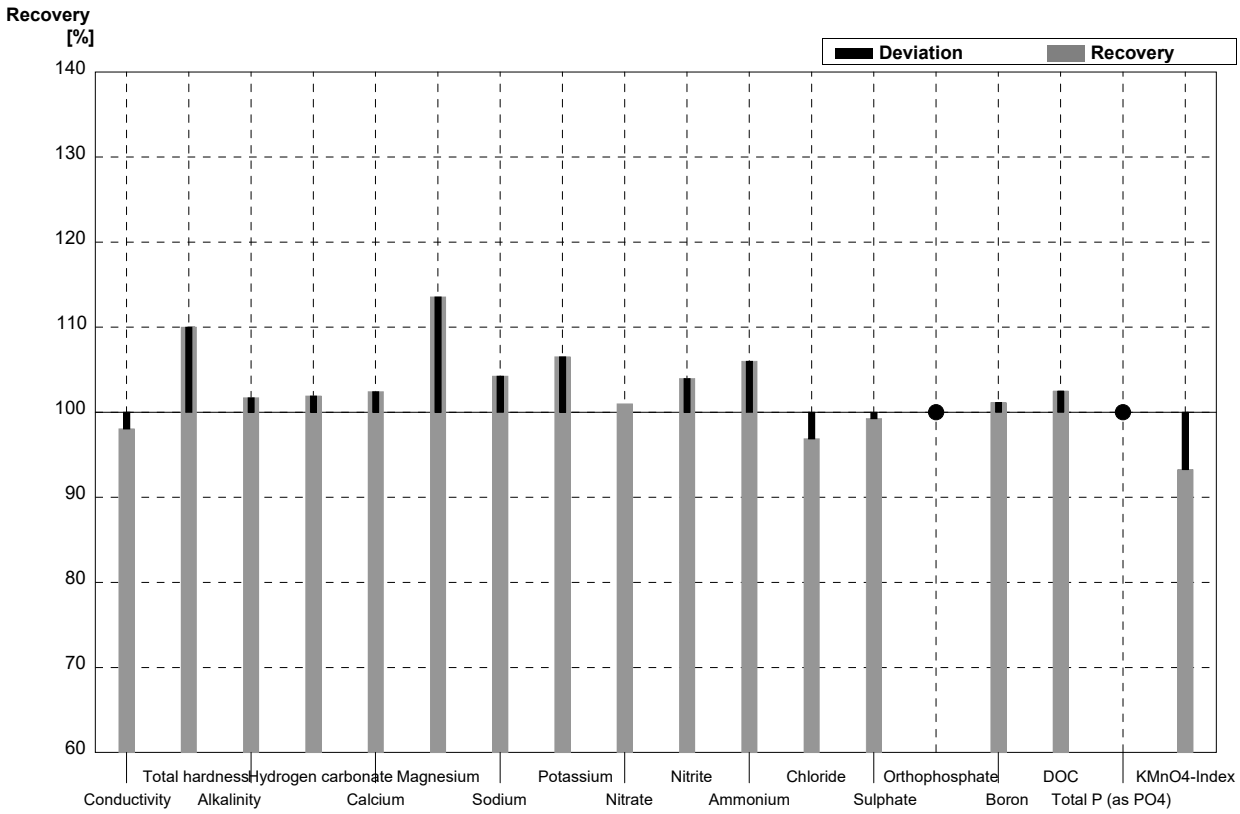
Sample N147A
Laboratory M

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2	802	20	µS/cm	99%
Total hardness	3,06	0,03	3,1	0,3	mmol/l	101%
Alkalinity	3,97	0,04	4,04	0,1	mmol/l	102%
Hydrogen carbonate	239	2	243	6	mg/l	102%
Calcium	86,1	1,1	87,3	9	mg/l	101%
Magnesium	22,1	0,2	23,1	2	mg/l	105%
Sodium	44,9	0,5	45,9	5	mg/l	102%
Potassium	6,15	0,07	6,53	6	mg/l	106%
Nitrate	45,1	0,9	45,5	5	mg/l	101%
Nitrite	0,050	0,001	0,053	0,005	mg/l	106%
Ammonium	<0,01		<0,01		mg/l	•
Chloride	75,2	1,1	76,3	8	mg/l	101%
Sulphate	68,4	0,8	70,0	7	mg/l	102%
Orthophosphate	0,041	0,004	0,039	0,004	mg/l	95%
Boron	0,036	0,001	0,034	0,003	mg/l	94%
DOC	2,99	0,04	3,28	0,3	mg/l	110%
Total P (as PO4)	0,102	0,003	0,12	0,01	mg/l	118%
KMnO4-Index	3,43	0,14	3,62	0,4	mg/l	106%



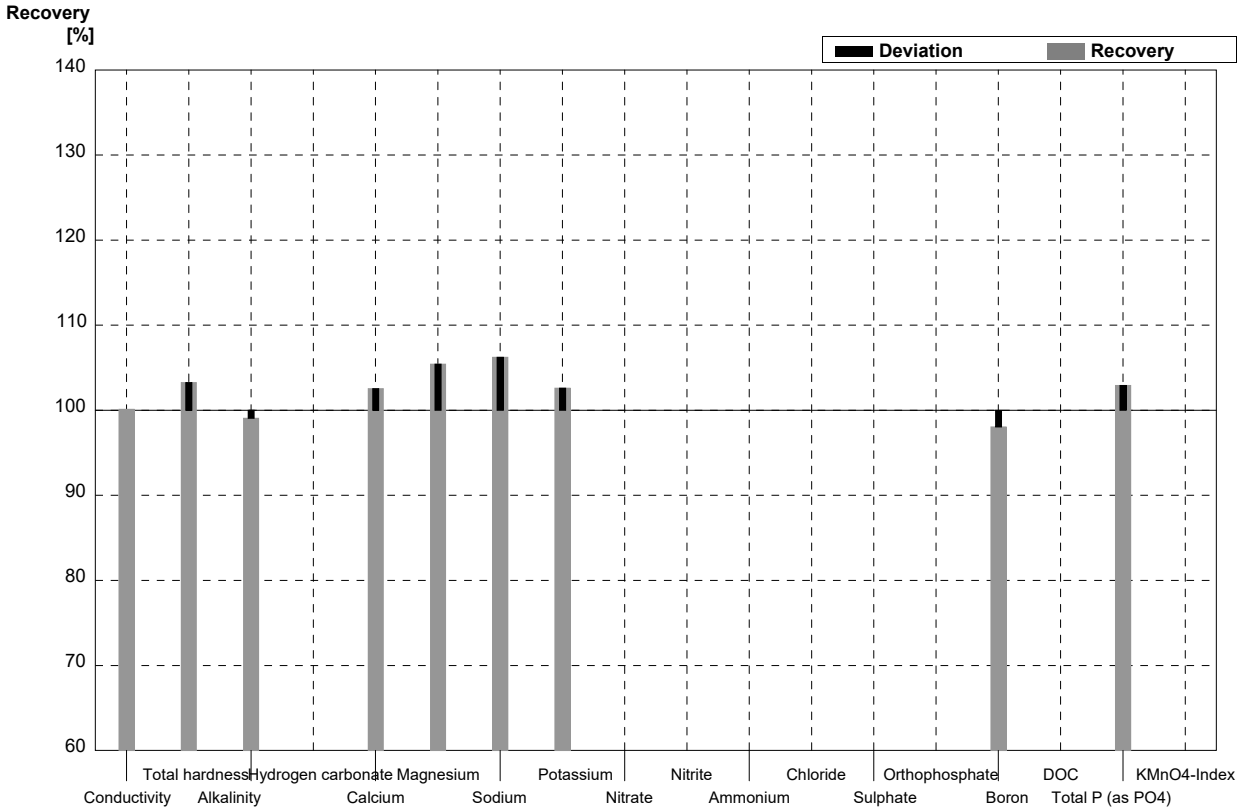
Sample N147B
Laboratory M

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1	354	9	µS/cm	98%
Total hardness	1,00	0,01	1,1	0,1	mmol/l	110%
Alkalinity	1,75	0,01	1,78	0,04	mmol/l	102%
Hydrogen carbonate	104	1	106	2,6	mg/l	102%
Calcium	24,9	0,3	25,5	3	mg/l	102%
Magnesium	9,07	0,09	10,3	1	mg/l	114%
Sodium	30,6	0,1	31,9	3	mg/l	104%
Potassium	5,52	0,04	5,88	6	mg/l	107%
Nitrate	20,1	0,4	20,3	2	mg/l	101%
Nitrite	0,076	0,001	0,079	0,008	mg/l	104%
Ammonium	0,050	0,004	0,053	0,005	mg/l	106%
Chloride	28,9	0,5	28,0	3	mg/l	97%
Sulphate	27,4	0,3	27,2	3	mg/l	99%
Orthophosphate	<0,009		<0,02		mg/l	•
Boron	0,086	0,001	0,087	0,009	mg/l	101%
DOC	5,22	0,05	5,35	0,5	mg/l	102%
Total P (as PO4)	<0,009		<0,050		mg/l	•
KMnO4-Index	2,38	0,12	2,22	0,2	mg/l	93%



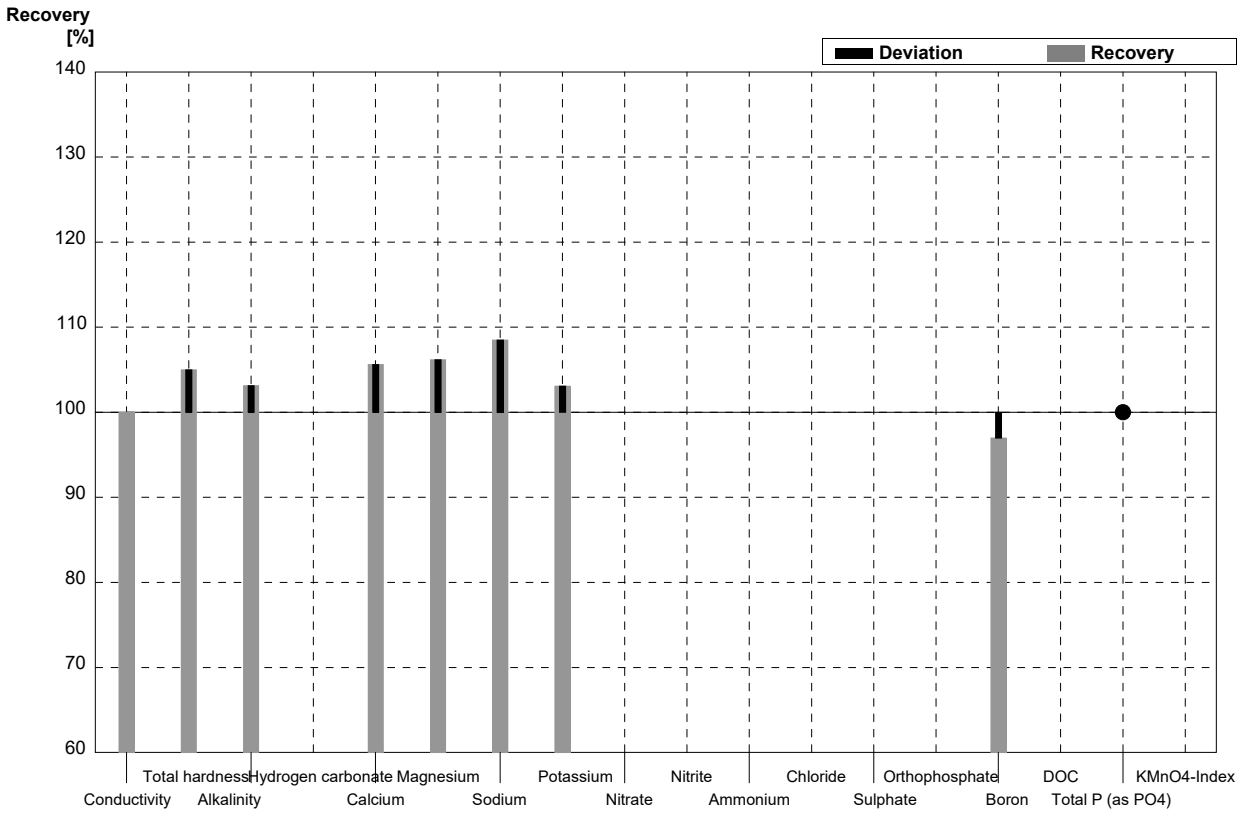
Sample N147A
Laboratory N

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2	813	4,9	µS/cm	100%
Total hardness	3,06	0,03	3,16	0,19	mmol/l	103%
Alkalinity	3,97	0,04	3,933		mmol/l	99%
Hydrogen carbonate	239	2			mg/l	
Calcium	86,1	1,1	88,3	3,53	mg/l	103%
Magnesium	22,1	0,2	23,3	1,63	mg/l	105%
Sodium	44,9	0,5	47,7	2,39	mg/l	106%
Potassium	6,15	0,07	6,31	0,252	mg/l	103%
Nitrate	45,1	0,9			mg/l	
Nitrite	0,050	0,001			mg/l	
Ammonium	<0,01				mg/l	
Chloride	75,2	1,1			mg/l	
Sulphate	68,4	0,8			mg/l	
Orthophosphate	0,041	0,004			mg/l	
Boron	0,036	0,001	0,0353	0,00212	mg/l	98%
DOC	2,99	0,04			mg/l	
Total P (as PO4)	0,102	0,003	0,105	0,0158	mg/l	103%
KMnO4-Index	3,43	0,14			mg/l	



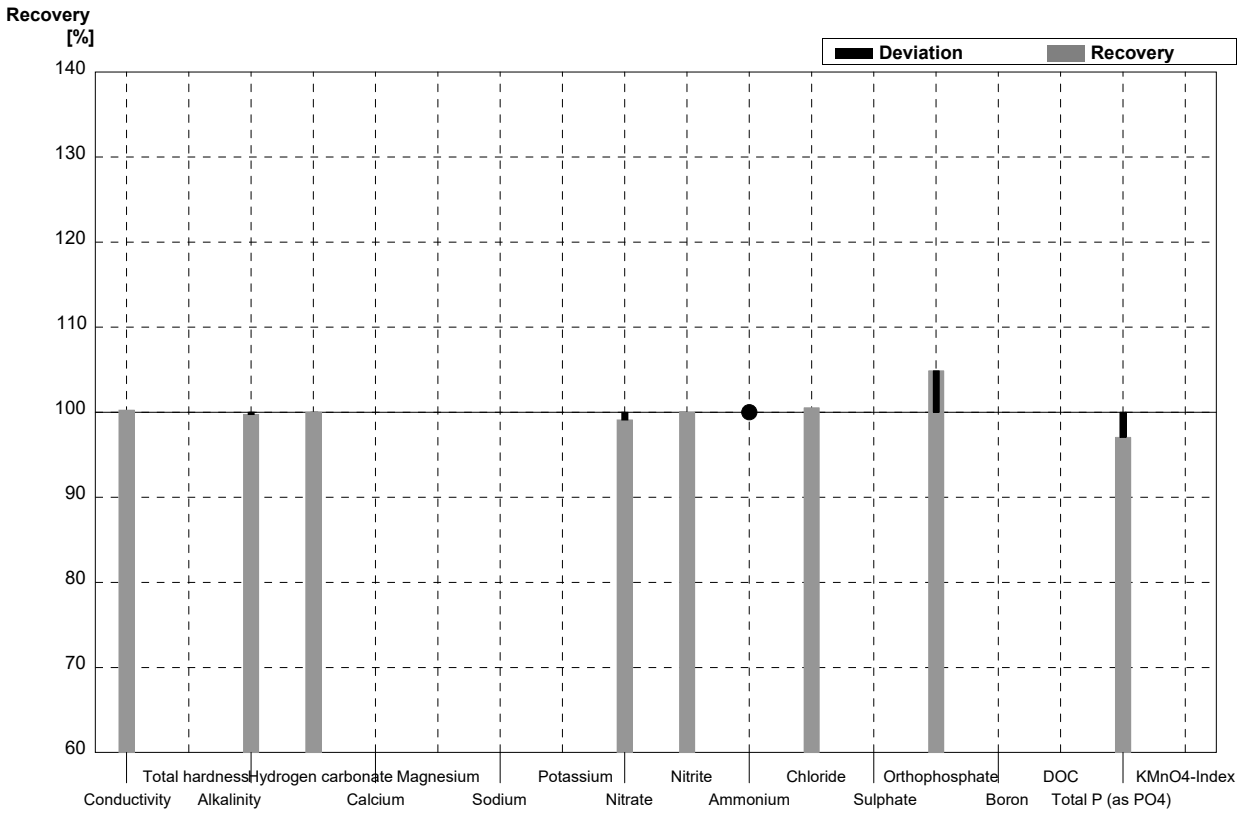
Sample N147B
Laboratory N

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1	361	2,2	µS/cm	100%
Total hardness	1,00	0,01	1,05	0,063	mmol/l	105%
Alkalinity	1,75	0,01	1,805		mmol/l	103%
Hydrogen carbonate	104	1			mg/l	
Calcium	24,9	0,3	26,3	1,05	mg/l	106%
Magnesium	9,07	0,09	9,63	0,674	mg/l	106%
Sodium	30,6	0,1	33,2	1,66	mg/l	108%
Potassium	5,52	0,04	5,69	0,228	mg/l	103%
Nitrate	20,1	0,4			mg/l	
Nitrite	0,076	0,001			mg/l	
Ammonium	0,050	0,004			mg/l	
Chloride	28,9	0,5			mg/l	
Sulphate	27,4	0,3			mg/l	
Orthophosphate	<0,009				mg/l	
Boron	0,086	0,001	0,0834	0,00501	mg/l	97%
DOC	5,22	0,05			mg/l	
Total P (as PO4)	<0,009		<0,0631		mg/l	•
KMnO4-Index	2,38	0,12			mg/l	



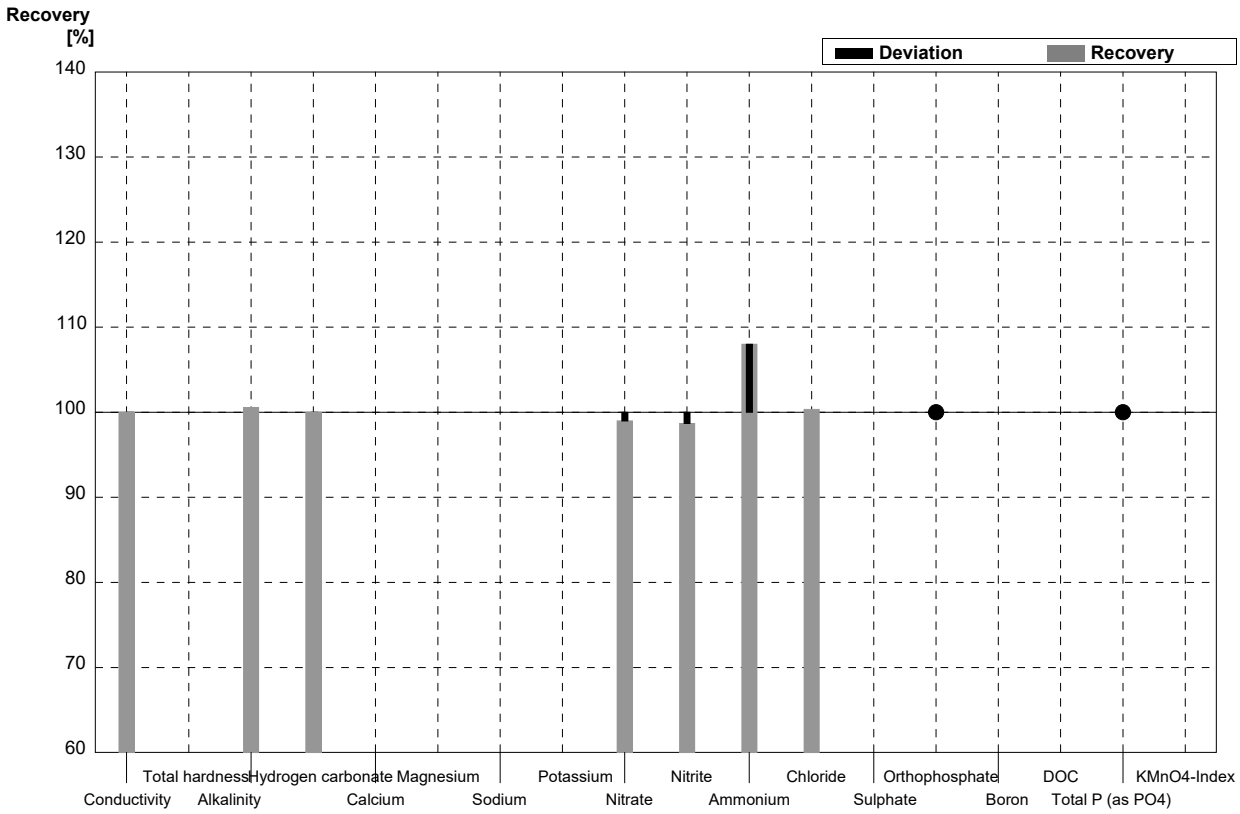
Sample N147A
Laboratory O

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2	814		µS/cm	100%
Total hardness	3,06	0,03			mmol/l	
Alkalinity	3,97	0,04	3,96		mmol/l	100%
Hydrogen carbonate	239	2	239		mg/l	100%
Calcium	86,1	1,1			mg/l	
Magnesium	22,1	0,2			mg/l	
Sodium	44,9	0,5			mg/l	
Potassium	6,15	0,07			mg/l	
Nitrate	45,1	0,9	44,7		mg/l	99%
Nitrite	0,050	0,001	0,050		mg/l	100%
Ammonium	<0,01		0,008		mg/l	•
Chloride	75,2	1,1	75,6		mg/l	101%
Sulphate	68,4	0,8			mg/l	
Orthophosphate	0,041	0,004	0,043		mg/l	105%
Boron	0,036	0,001			mg/l	
DOC	2,99	0,04			mg/l	
Total P (as PO4)	0,102	0,003	0,099		mg/l	97%
KMnO4-Index	3,43	0,14			mg/l	



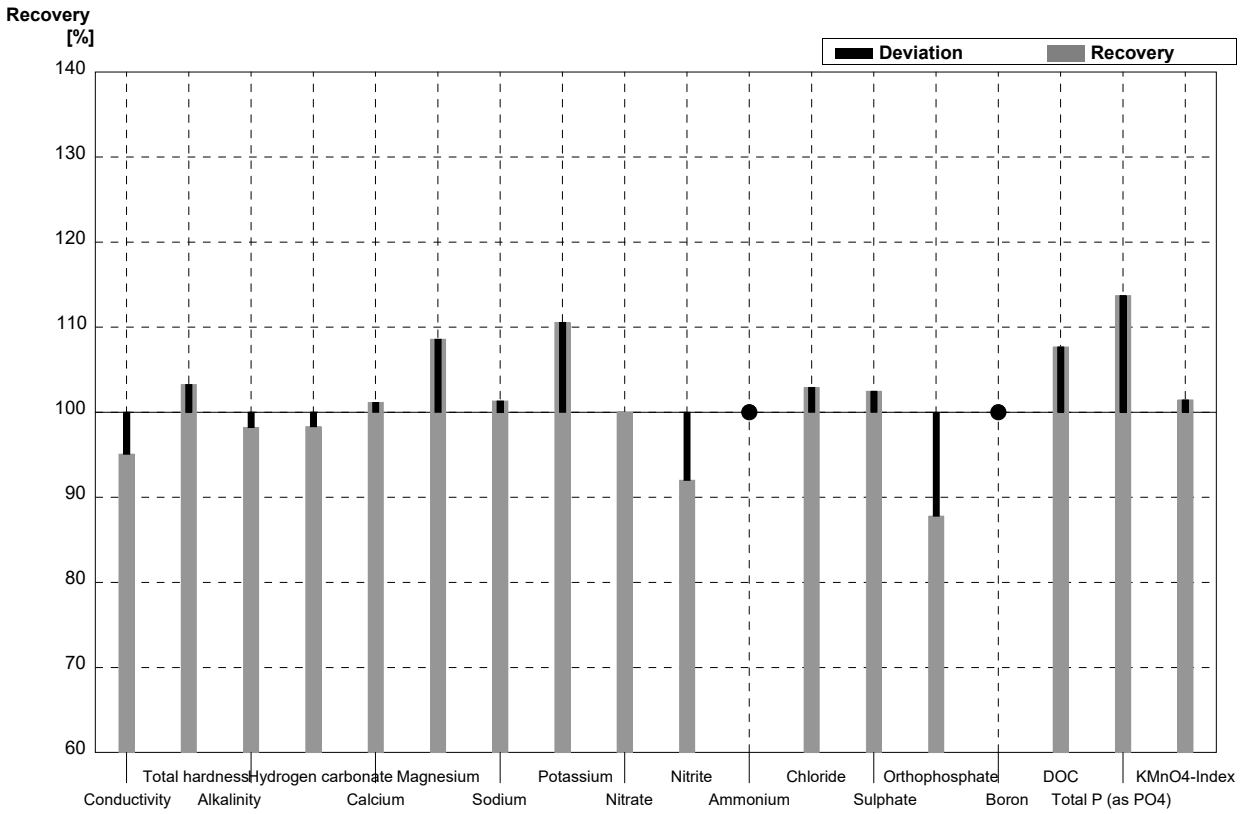
Sample N147B
Laboratory O

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1	361		µS/cm	100%
Total hardness	1,00	0,01			mmol/l	
Alkalinity	1,75	0,01	1,76		mmol/l	101%
Hydrogen carbonate	104	1	104		mg/l	100%
Calcium	24,9	0,3			mg/l	
Magnesium	9,07	0,09			mg/l	
Sodium	30,6	0,1			mg/l	
Potassium	5,52	0,04			mg/l	
Nitrate	20,1	0,4	19,9		mg/l	99%
Nitrite	0,076	0,001	0,075		mg/l	99%
Ammonium	0,050	0,004	0,054		mg/l	108%
Chloride	28,9	0,5	29,0		mg/l	100%
Sulphate	27,4	0,3			mg/l	
Orthophosphate	<0,009		<0,006		mg/l	•
Boron	0,086	0,001			mg/l	
DOC	5,22	0,05			mg/l	
Total P (as PO4)	<0,009		<0,006		mg/l	•
KMnO4-Index	2,38	0,12			mg/l	



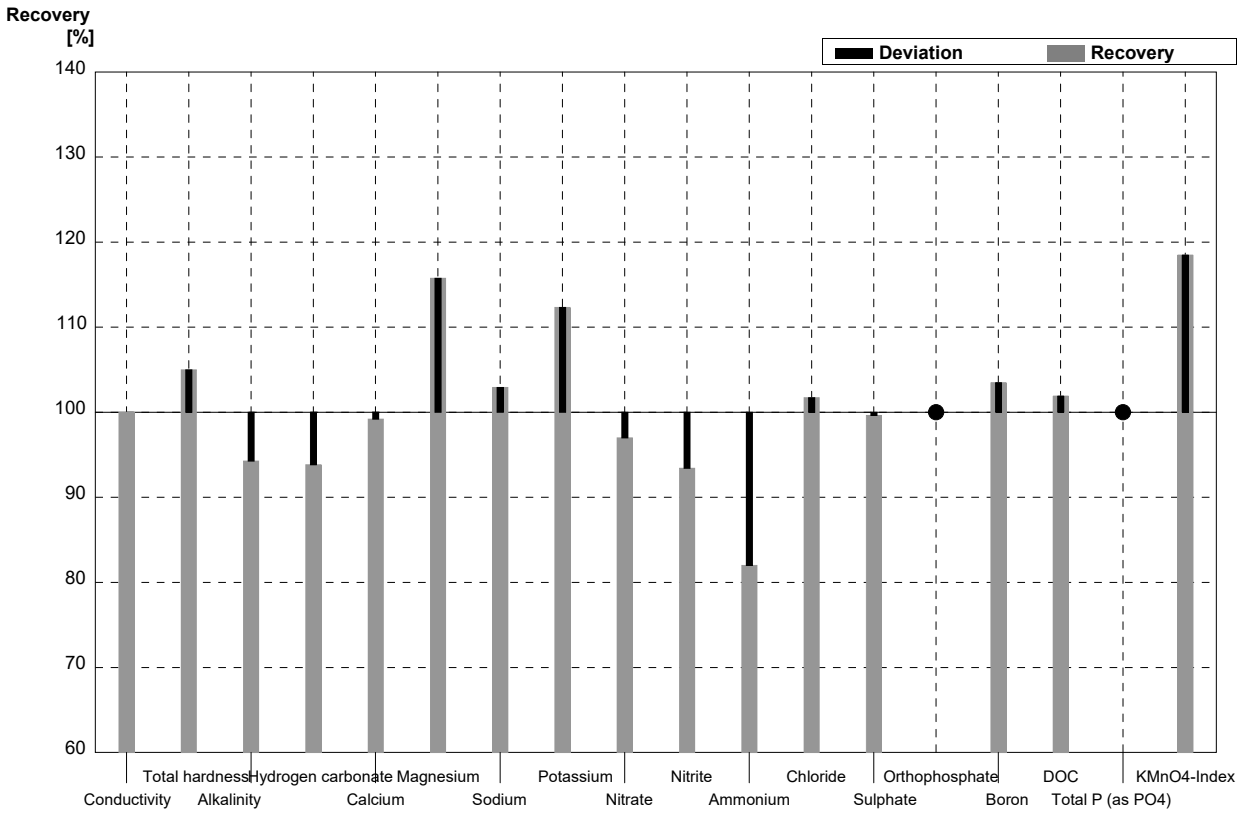
Sample N147A
Laboratory P

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2	772	15	µS/cm	95%
Total hardness	3,06	0,03	3,16	0,22	mmol/l	103%
Alkalinity	3,97	0,04	3,90	0,16	mmol/l	98%
Hydrogen carbonate	239	2	235	9	mg/l	98%
Calcium	86,1	1,1	87,1	6,1	mg/l	101%
Magnesium	22,1	0,2	24,0	1,5	mg/l	109%
Sodium	44,9	0,5	45,5	1,8	mg/l	101%
Potassium	6,15	0,07	6,8	0,3	mg/l	111%
Nitrate	45,1	0,9	45,1	2,3	mg/l	100%
Nitrite	0,050	0,001	0,046	0,004	mg/l	92%
Ammonium	<0,01		<0,01		mg/l	•
Chloride	75,2	1,1	77,4	3,9	mg/l	103%
Sulphate	68,4	0,8	70,1	3,5	mg/l	102%
Orthophosphate	0,041	0,004	0,036	0,003	mg/l	88%
Boron	0,036	0,001	<0,05		mg/l	•
DOC	2,99	0,04	3,22	0,36	mg/l	108%
Total P (as PO4)	0,102	0,003	0,116	0,010	mg/l	114%
KMnO4-Index	3,43	0,14	3,48	0,35	mg/l	101%



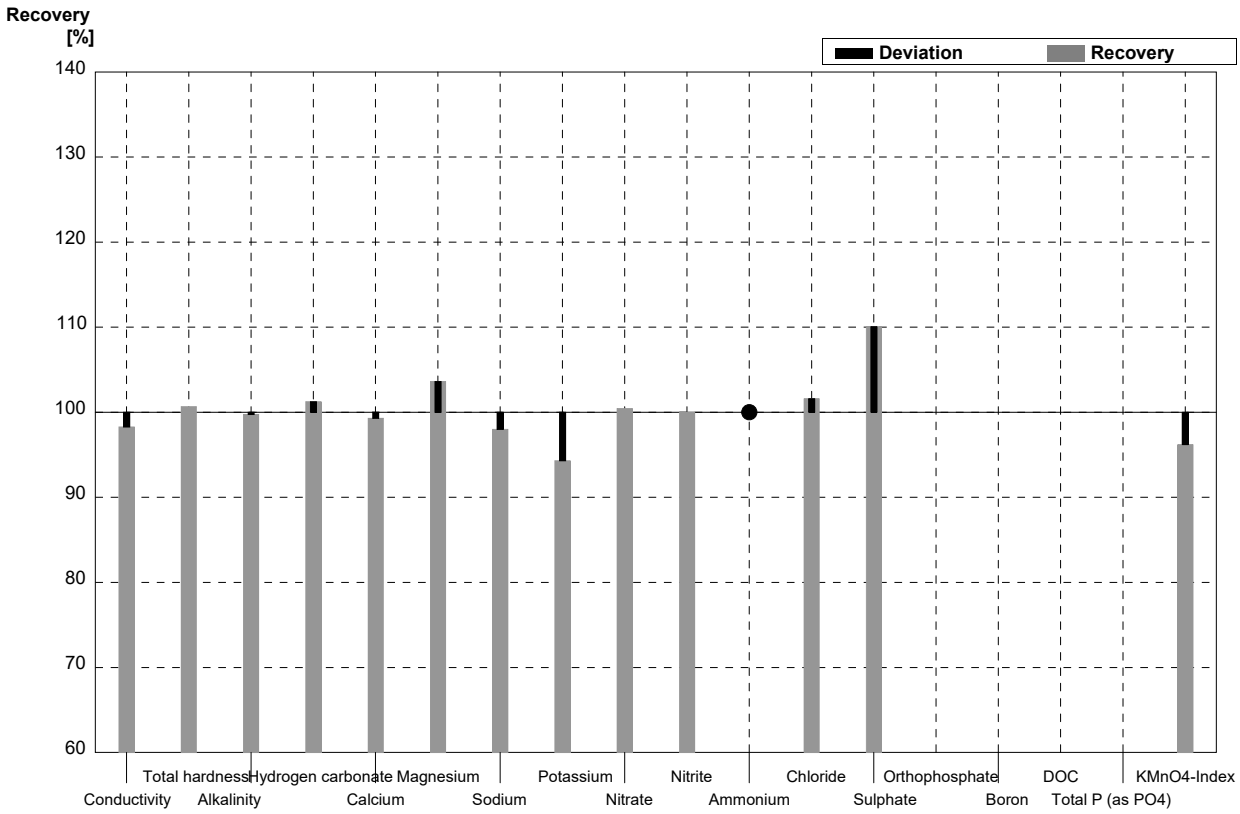
Sample N147B
Laboratory P

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1	361	7	µS/cm	100%
Total hardness	1,00	0,01	1,05	0,07	mmol/l	105%
Alkalinity	1,75	0,01	1,65	0,07	mmol/l	94%
Hydrogen carbonate	104	1	97,6	3,9	mg/l	94%
Calcium	24,9	0,3	24,7	1,7	mg/l	99%
Magnesium	9,07	0,09	10,5	0,6	mg/l	116%
Sodium	30,6	0,1	31,5	1,3	mg/l	103%
Potassium	5,52	0,04	6,2	0,3	mg/l	112%
Nitrate	20,1	0,4	19,5	1,0	mg/l	97%
Nitrite	0,076	0,001	0,071	0,004	mg/l	93%
Ammonium	0,050	0,004	0,041	0,004	mg/l	82%
Chloride	28,9	0,5	29,4	1,5	mg/l	102%
Sulphate	27,4	0,3	27,3	1,4	mg/l	100%
Orthophosphate	<0,009		<0,015	0,003	mg/l	•
Boron	0,086	0,001	0,089	0,022	mg/l	103%
DOC	5,22	0,05	5,32	0,60	mg/l	102%
Total P (as PO4)	<0,009		<0,015		mg/l	•
KMnO4-Index	2,38	0,12	2,82	0,28	mg/l	118%



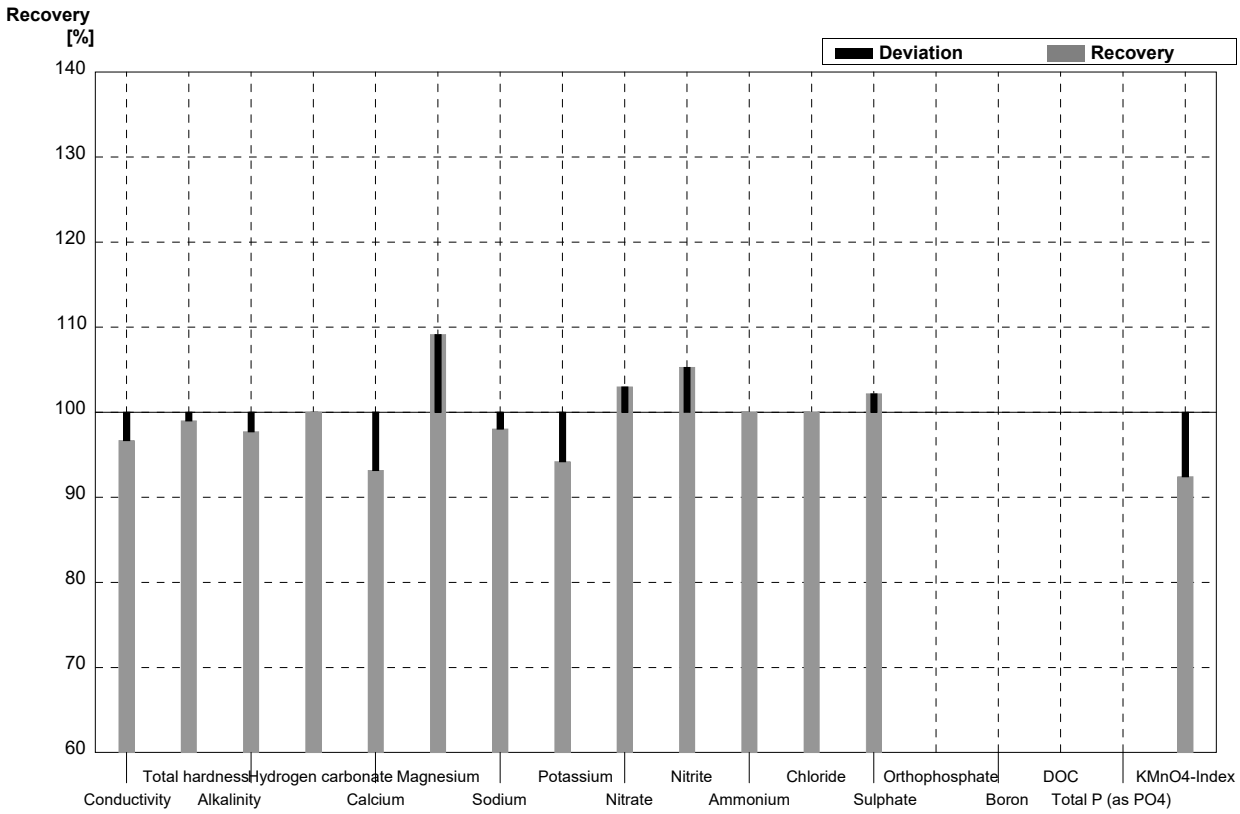
Sample N147A
Laboratory Q

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2	798	40	µS/cm	98%
Total hardness	3,06	0,03	3,08	0,3	mmol/l	101%
Alkalinity	3,97	0,04	3,96	0,4	mmol/l	100%
Hydrogen carbonate	239	2	242	20	mg/l	101%
Calcium	86,1	1,1	85,5	8	mg/l	99%
Magnesium	22,1	0,2	22,9	2,2	mg/l	104%
Sodium	44,9	0,5	44		mg/l	98%
Potassium	6,15	0,07	5,8		mg/l	94%
Nitrate	45,1	0,9	45,3	4,5	mg/l	100%
Nitrite	0,050	0,001	0,05	0,005	mg/l	100%
Ammonium	<0,01		<0,01		mg/l	•
Chloride	75,2	1,1	76,4	7,6	mg/l	102%
Sulphate	68,4	0,8	75,3	7,5	mg/l	110%
Orthophosphate	0,041	0,004			mg/l	
Boron	0,036	0,001			mg/l	
DOC	2,99	0,04			mg/l	
Total P (as PO4)	0,102	0,003			mg/l	
KMnO4-Index	3,43	0,14	3,3	0,5	mg/l	96%



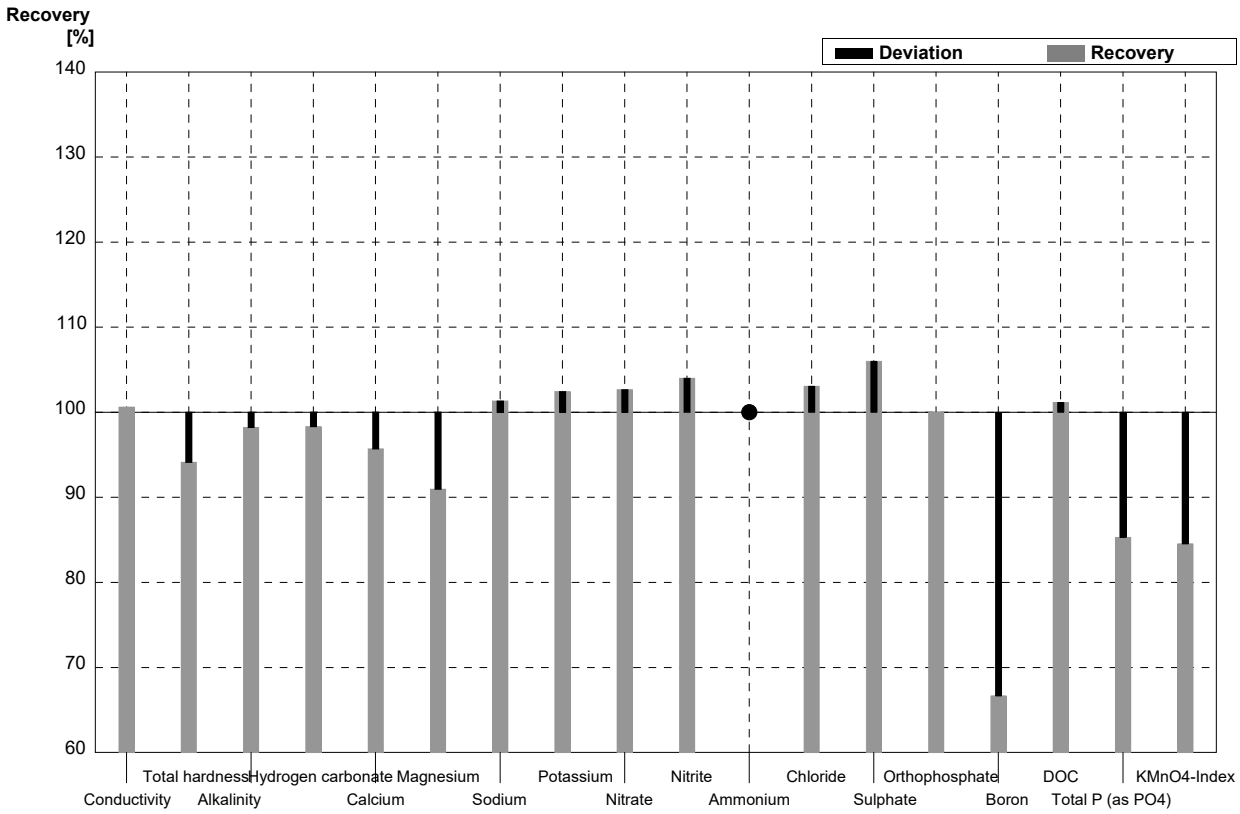
Sample N147B
Laboratory Q

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1	349	17	µS/cm	97%
Total hardness	1,00	0,01	0,99	0,1	mmol/l	99%
Alkalinity	1,75	0,01	1,71	0,2	mmol/l	98%
Hydrogen carbonate	104	1	104	10	mg/l	100%
Calcium	24,9	0,3	23,2	2,3	mg/l	93%
Magnesium	9,07	0,09	9,9	1,0	mg/l	109%
Sodium	30,6	0,1	30		mg/l	98%
Potassium	5,52	0,04	5,2		mg/l	94%
Nitrate	20,1	0,4	20,7	2,1	mg/l	103%
Nitrite	0,076	0,001	0,08	0,005	mg/l	105%
Ammonium	0,050	0,004	0,05	0,005	mg/l	100%
Chloride	28,9	0,5	28,9	3,0	mg/l	100%
Sulphate	27,4	0,3	28,0	2,8	mg/l	102%
Orthophosphate	<0,009				mg/l	
Boron	0,086	0,001			mg/l	
DOC	5,22	0,05			mg/l	
Total P (as PO4)	<0,009				mg/l	
KMnO4-Index	2,38	0,12	2,2	0,3	mg/l	92%



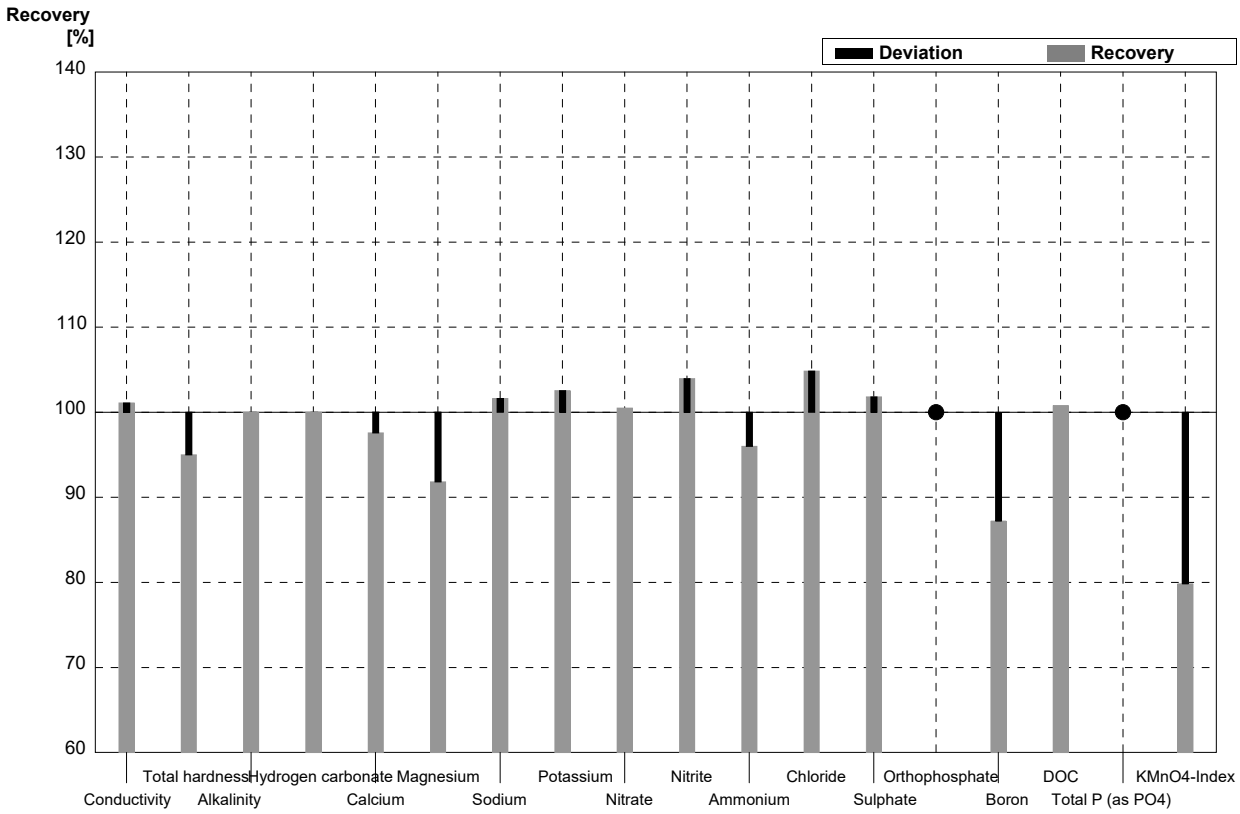
Sample N147A
Laboratory R

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2	817		µS/cm	101%
Total hardness	3,06	0,03	2,88		mmol/l	94%
Alkalinity	3,97	0,04	3,90		mmol/l	98%
Hydrogen carbonate	239	2	235		mg/l	98%
Calcium	86,1	1,1	82,4	3,5	mg/l	96%
Magnesium	22,1	0,2	20,1	1,4	mg/l	91%
Sodium	44,9	0,5	45,5	0,8	mg/l	101%
Potassium	6,15	0,07	6,30	0,23	mg/l	102%
Nitrate	45,1	0,9	46,3	0,8	mg/l	103%
Nitrite	0,050	0,001	0,052	0,001	mg/l	104%
Ammonium	<0,01		<0,01		mg/l	•
Chloride	75,2	1,1	77,5	2,1	mg/l	103%
Sulphate	68,4	0,8	72,5	2,6	mg/l	106%
Orthophosphate	0,041	0,004	0,041	0,002	mg/l	100%
Boron	0,036	0,001	0,024	0,007	mg/l	67%
DOC	2,99	0,04	3,025		mg/l	101%
Total P (as PO4)	0,102	0,003	0,087	0,004	mg/l	85%
KMnO4-Index	3,43	0,14	2,9	0,04	mg/l	85%



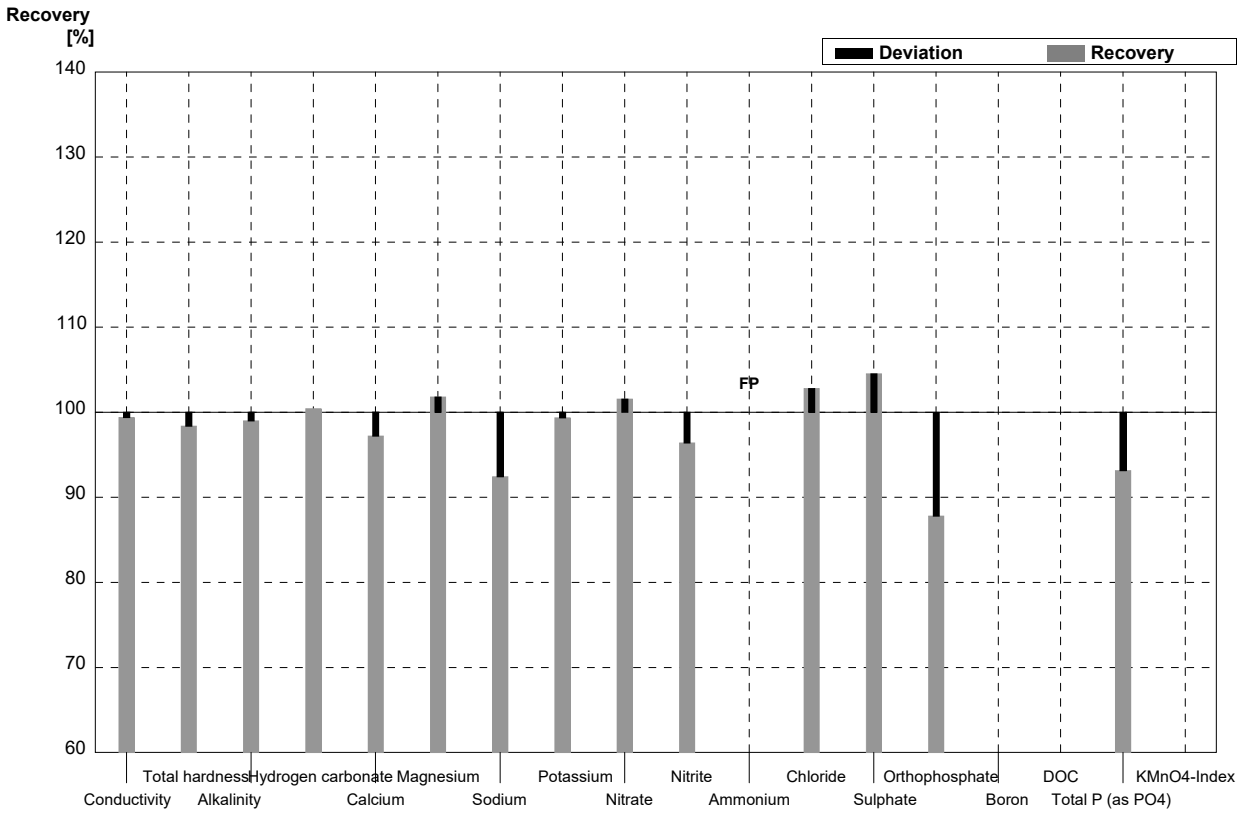
Sample N147B
Laboratory R

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1	365		µS/cm	101%
Total hardness	1,00	0,01	0,95		mmol/l	95%
Alkalinity	1,75	0,01	1,75		mmol/l	100%
Hydrogen carbonate	104	1	104		mg/l	100%
Calcium	24,9	0,3	24,3	0,9	mg/l	98%
Magnesium	9,07	0,09	8,33	0,47	mg/l	92%
Sodium	30,6	0,1	31,1	0,7	mg/l	102%
Potassium	5,52	0,04	5,66	0,23	mg/l	103%
Nitrate	20,1	0,4	20,2	0,7	mg/l	100%
Nitrite	0,076	0,001	0,079	0,001	mg/l	104%
Ammonium	0,050	0,004	0,048	0,001	mg/l	96%
Chloride	28,9	0,5	30,3	0,4	mg/l	105%
Sulphate	27,4	0,3	27,9	1,2	mg/l	102%
Orthophosphate	<0,009		<0,01		mg/l	•
Boron	0,086	0,001	0,075	0,005	mg/l	87%
DOC	5,22	0,05	5,262		mg/l	101%
Total P (as PO4)	<0,009		<0,009		mg/l	•
KMnO4-Index	2,38	0,12	1,9	0,1	mg/l	80%



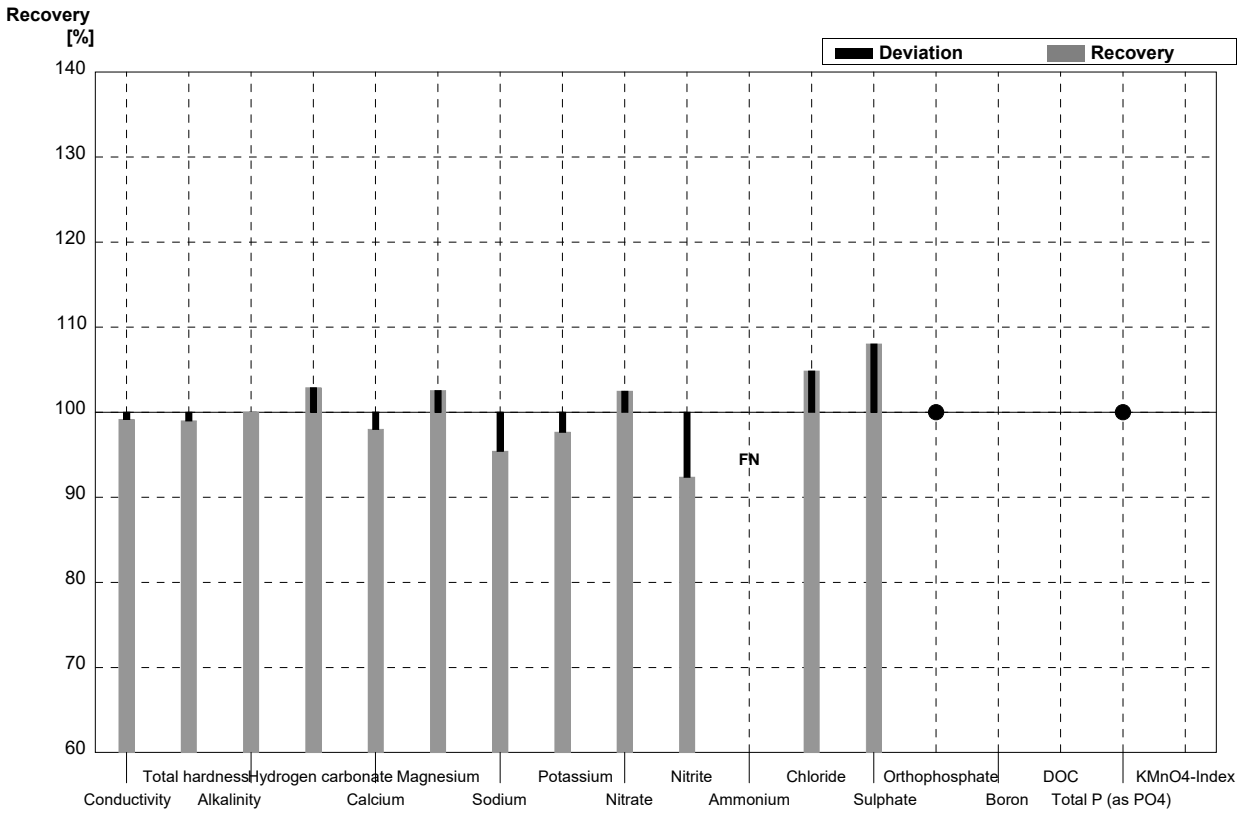
Sample N147A
Laboratory S

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2	807	2	µS/cm	99%
Total hardness	3,06	0,03	3,01	0,15	mmol/l	98%
Alkalinity	3,97	0,04	3,93	0,2	mmol/l	99%
Hydrogen carbonate	239	2	240	12	mg/l	100%
Calcium	86,1	1,1	83,7	4	mg/l	97%
Magnesium	22,1	0,2	22,5	1	mg/l	102%
Sodium	44,9	0,5	41,5	2	mg/l	92%
Potassium	6,15	0,07	6,11	0,3	mg/l	99%
Nitrate	45,1	0,9	45,8	2	mg/l	102%
Nitrite	0,050	0,001	0,0482	0,0025	mg/l	96%
Ammonium	<0,01		0,05	0,0025	mg/l	FP
Chloride	75,2	1,1	77,3	3,5	mg/l	103%
Sulphate	68,4	0,8	71,5	3,5	mg/l	105%
Orthophosphate	0,041	0,004	0,036	0,002	mg/l	88%
Boron	0,036	0,001			mg/l	
DOC	2,99	0,04			mg/l	
Total P (as PO4)	0,102	0,003	0,095	0,005	mg/l	93%
KMnO4-Index	3,43	0,14			mg/l	



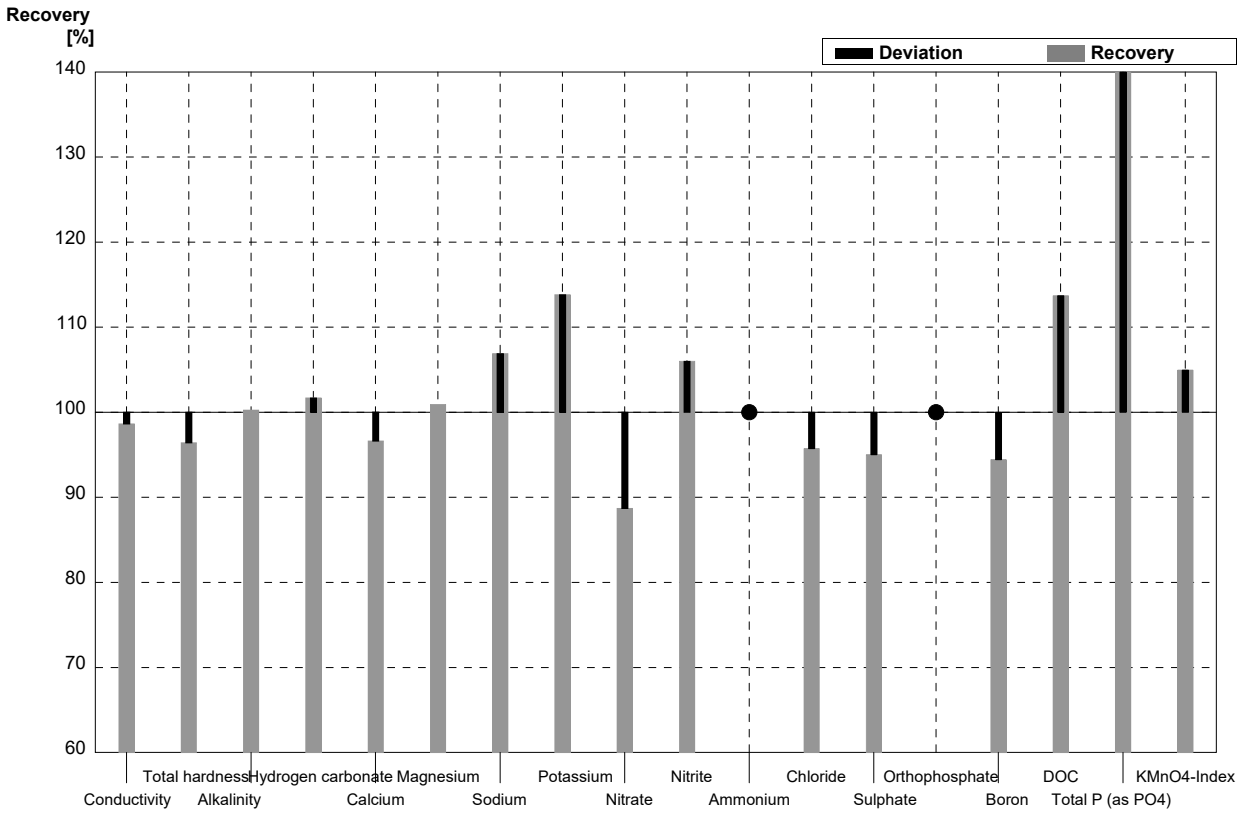
Sample N147B
Laboratory S

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1	358	1	µS/cm	99%
Total hardness	1,00	0,01	0,99	0,05	mmol/l	99%
Alkalinity	1,75	0,01	1,75	0,1	mmol/l	100%
Hydrogen carbonate	104	1	107	5	mg/l	103%
Calcium	24,9	0,3	24,4	1	mg/l	98%
Magnesium	9,07	0,09	9,30	0,5	mg/l	103%
Sodium	30,6	0,1	29,2	1,5	mg/l	95%
Potassium	5,52	0,04	5,39	0,3	mg/l	98%
Nitrate	20,1	0,4	20,6	1	mg/l	102%
Nitrite	0,076	0,001	0,0702	0,0035	mg/l	92%
Ammonium	0,050	0,004	<0,01		mg/l	FN
Chloride	28,9	0,5	30,3	1,5	mg/l	105%
Sulphate	27,4	0,3	29,6	1,5	mg/l	108%
Orthophosphate	<0,009		<0,02		mg/l	•
Boron	0,086	0,001			mg/l	
DOC	5,22	0,05			mg/l	
Total P (as PO4)	<0,009		<0,02		mg/l	•
KMnO4-Index	2,38	0,12			mg/l	



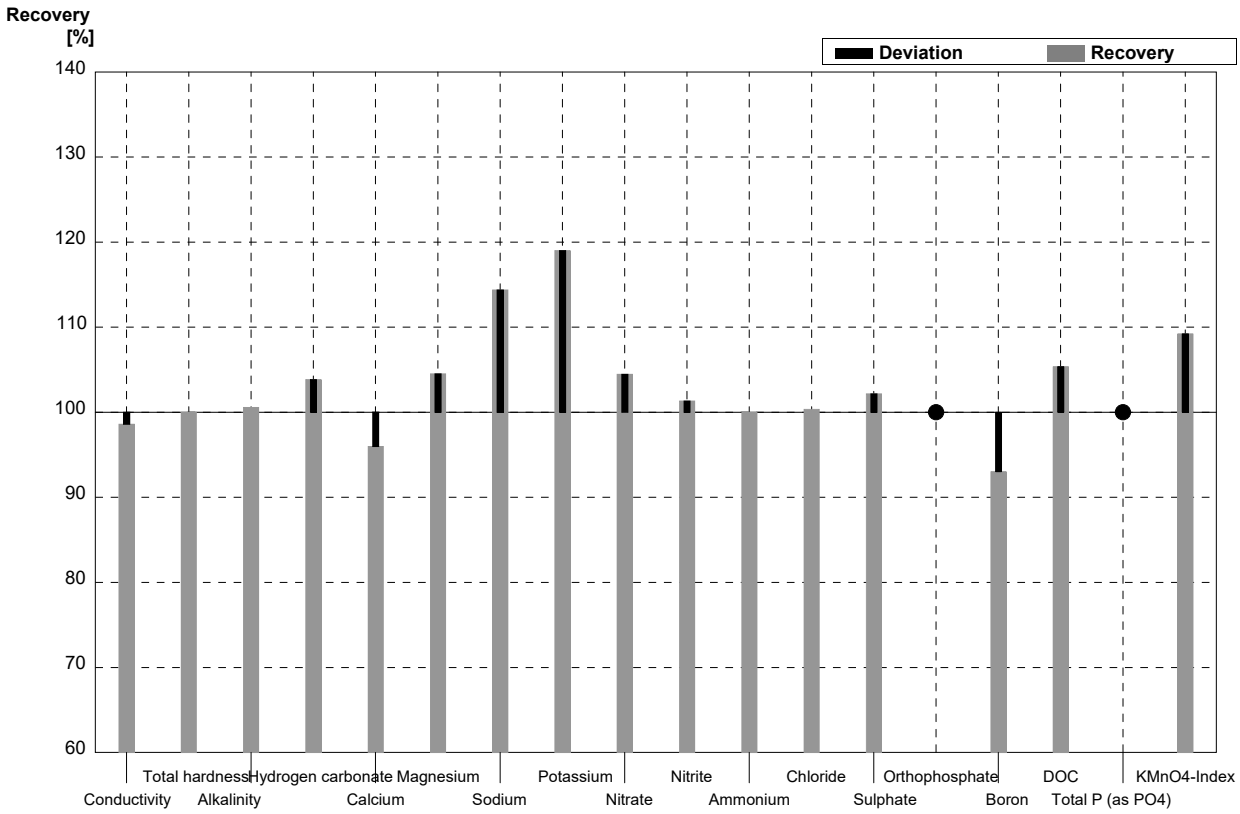
Sample N147A
Laboratory T

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2	801	40	µS/cm	99%
Total hardness	3,06	0,03	2,95	0,3	mmol/l	96%
Alkalinity	3,97	0,04	3,98	0,2	mmol/l	100%
Hydrogen carbonate	239	2	243	12	mg/l	102%
Calcium	86,1	1,1	83,2	9	mg/l	97%
Magnesium	22,1	0,2	22,3	3	mg/l	101%
Sodium	44,9	0,5	48,0	5	mg/l	107%
Potassium	6,15	0,07	7,00	1	mg/l	114%
Nitrate	45,1	0,9	40	4	mg/l	89%
Nitrite	0,050	0,001	0,053	0,006	mg/l	106%
Ammonium	<0,01		<0,01		mg/l	•
Chloride	75,2	1,1	72	8	mg/l	96%
Sulphate	68,4	0,8	65	7	mg/l	95%
Orthophosphate	0,041	0,004	<0,1		mg/l	•
Boron	0,036	0,001	0,034	0,004	mg/l	94%
DOC	2,99	0,04	3,4	0,4	mg/l	114%
Total P (as PO4)	0,102	0,003	0,143	0,2	mg/l	140%
KMnO4-Index	3,43	0,14	3,6	0,2	mg/l	105%



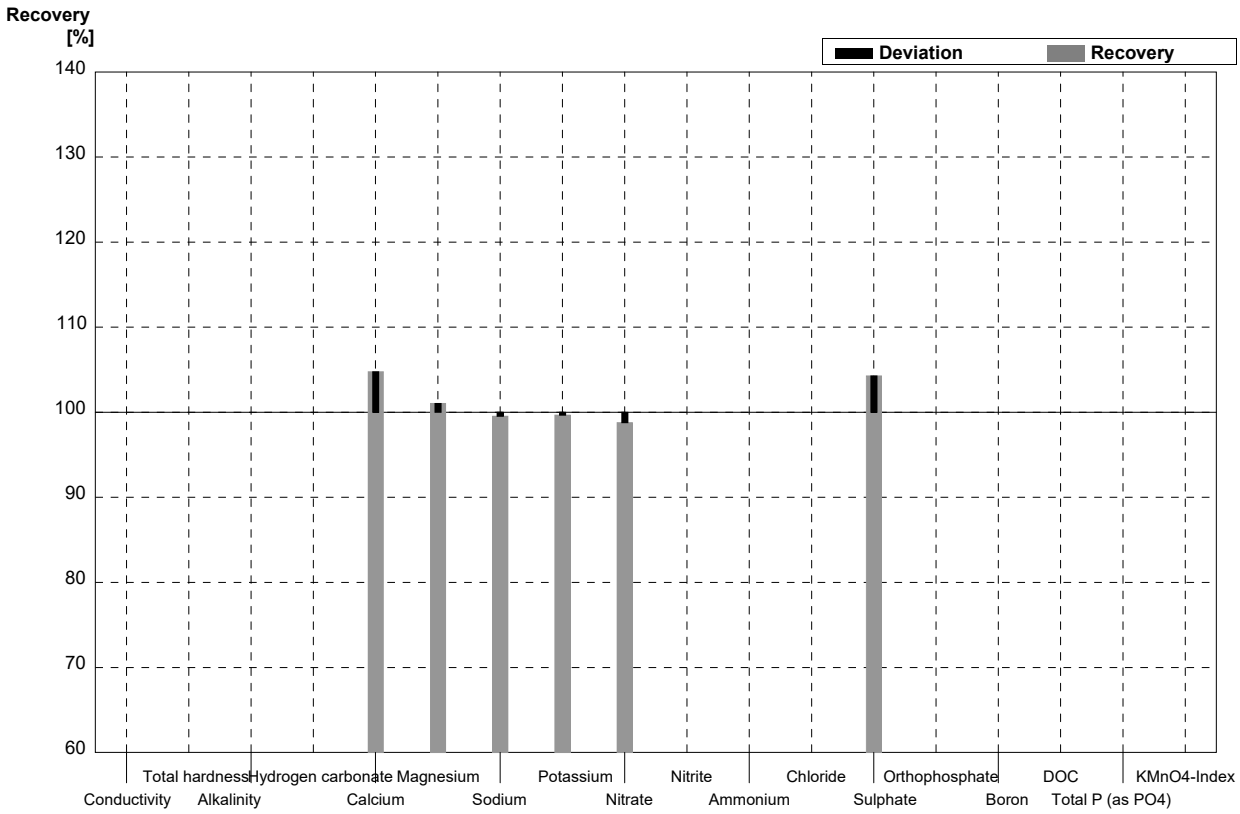
Sample N147B
Laboratory T

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1	356	20	µS/cm	99%
Total hardness	1,00	0,01	1,00	0,1	mmol/l	100%
Alkalinity	1,75	0,01	1,76	0,1	mmol/l	101%
Hydrogen carbonate	104	1	108	5	mg/l	104%
Calcium	24,9	0,3	23,9	3	mg/l	96%
Magnesium	9,07	0,09	9,48	1	mg/l	105%
Sodium	30,6	0,1	35,0	4	mg/l	114%
Potassium	5,52	0,04	6,57	0,7	mg/l	119%
Nitrate	20,1	0,4	21	2	mg/l	104%
Nitrite	0,076	0,001	0,077	0,008	mg/l	101%
Ammonium	0,050	0,004	0,05	0,02	mg/l	100%
Chloride	28,9	0,5	29	3	mg/l	100%
Sulphate	27,4	0,3	28	3	mg/l	102%
Orthophosphate	<0,009		<0,1		mg/l	•
Boron	0,086	0,001	0,080	0,008	mg/l	93%
DOC	5,22	0,05	5,5	0,5	mg/l	105%
Total P (as PO4)	<0,009		<0,031		mg/l	•
KMnO4-Index	2,38	0,12	2,6	0,2	mg/l	109%



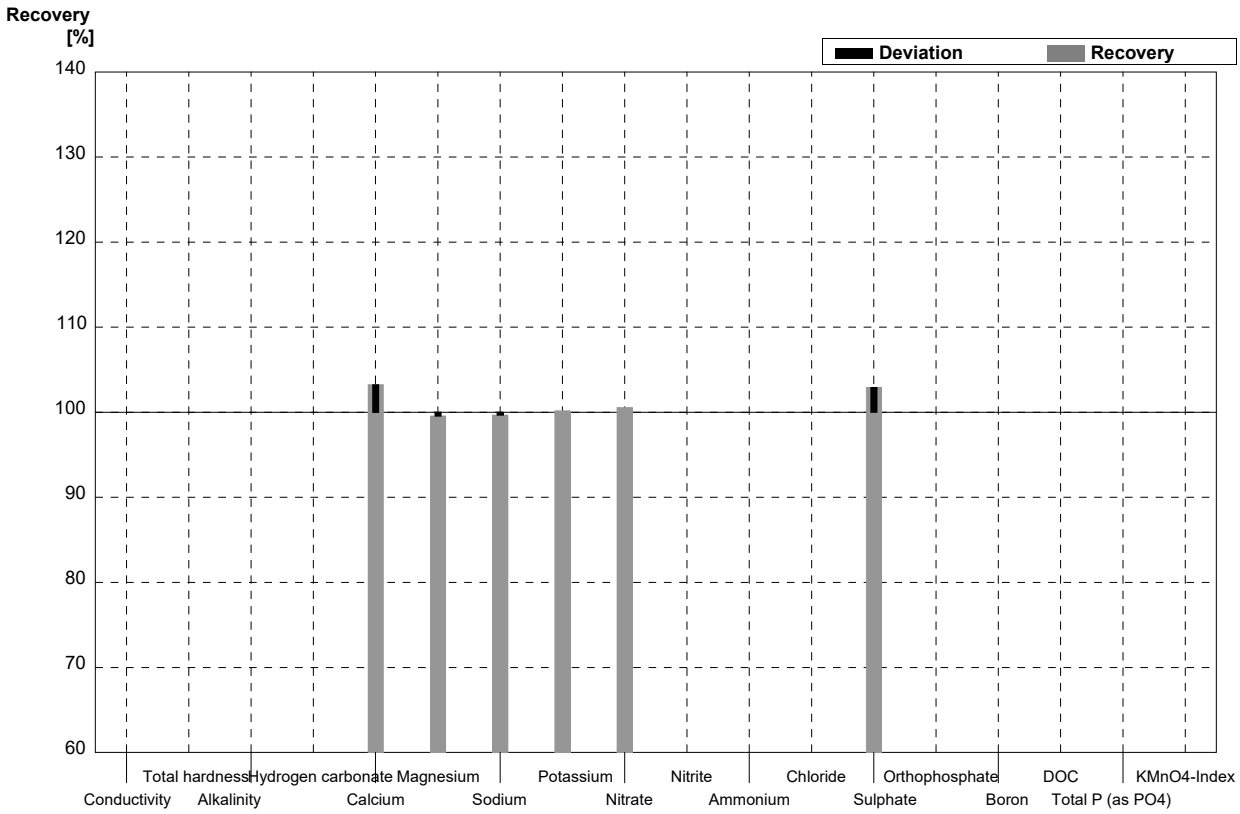
Sample N147A
Laboratory U

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2			µS/cm	
Total hardness	3,06	0,03			mmol/l	
Alkalinity	3,97	0,04			mmol/l	
Hydrogen carbonate	239	2			mg/l	
Calcium	86,1	1,1	90,20	0,1	mg/l	105%
Magnesium	22,1	0,2	22,33	0,2	mg/l	101%
Sodium	44,9	0,5	44,69	0,1	mg/l	100%
Potassium	6,15	0,07	6,13	0,3	mg/l	100%
Nitrate	45,1	0,9	44,56	0,2	mg/l	99%
Nitrite	0,050	0,001			mg/l	
Ammonium	<0,01				mg/l	
Chloride	75,2	1,1			mg/l	
Sulphate	68,4	0,8	71,33	0,35	mg/l	104%
Orthophosphate	0,041	0,004			mg/l	
Boron	0,036	0,001			mg/l	
DOC	2,99	0,04			mg/l	
Total P (as PO4)	0,102	0,003			mg/l	
KMnO4-Index	3,43	0,14			mg/l	



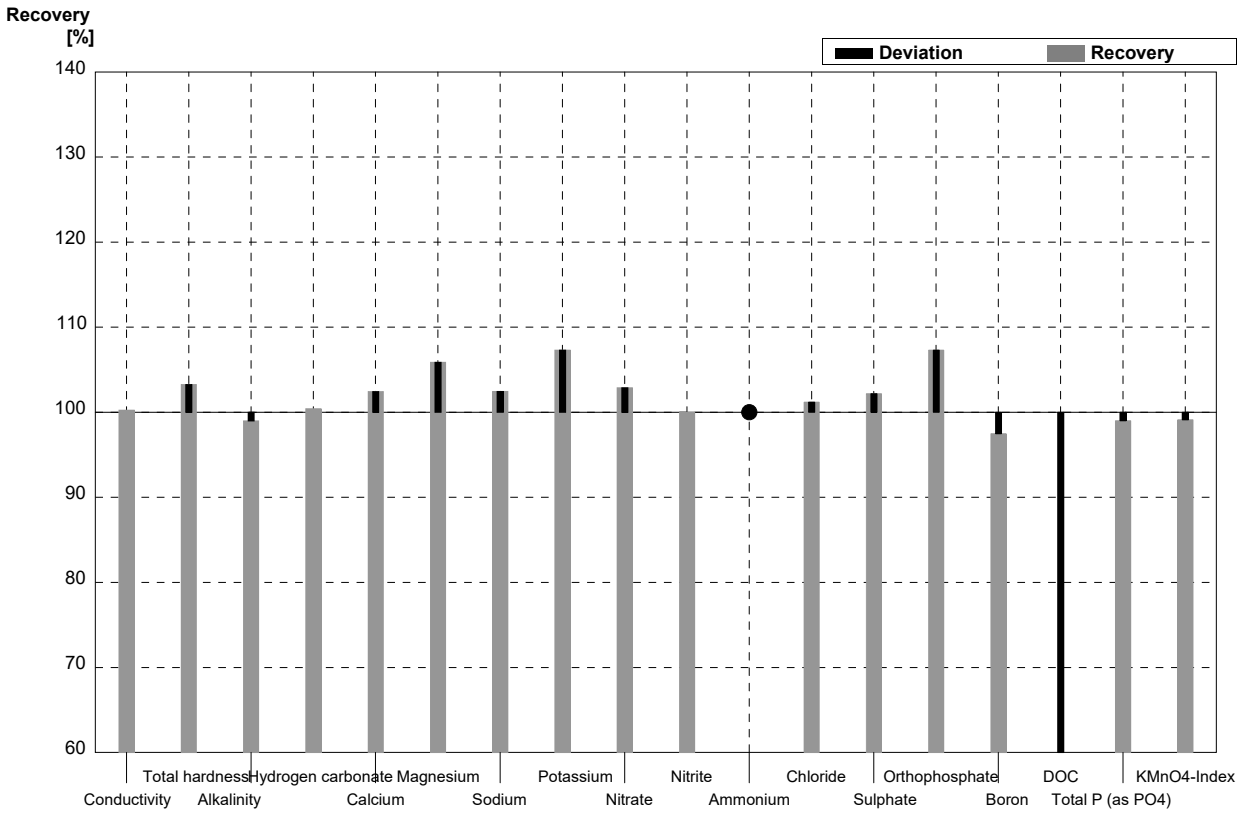
Sample N147B
Laboratory U

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1			µS/cm	
Total hardness	1,00	0,01			mmol/l	
Alkalinity	1,75	0,01			mmol/l	
Hydrogen carbonate	104	1			mg/l	
Calcium	24,9	0,3	25,71	0,3	mg/l	103%
Magnesium	9,07	0,09	9,03	0,05	mg/l	100%
Sodium	30,6	0,1	30,50	0,1	mg/l	100%
Potassium	5,52	0,04	5,53	0,1	mg/l	100%
Nitrate	20,1	0,4	20,21	0,2	mg/l	101%
Nitrite	0,076	0,001			mg/l	
Ammonium	0,050	0,004			mg/l	
Chloride	28,9	0,5			mg/l	
Sulphate	27,4	0,3	28,20	0,8	mg/l	103%
Orthophosphate	<0,009				mg/l	
Boron	0,086	0,001			mg/l	
DOC	5,22	0,05			mg/l	
Total P (as PO4)	<0,009				mg/l	
KMnO4-Index	2,38	0,12			mg/l	



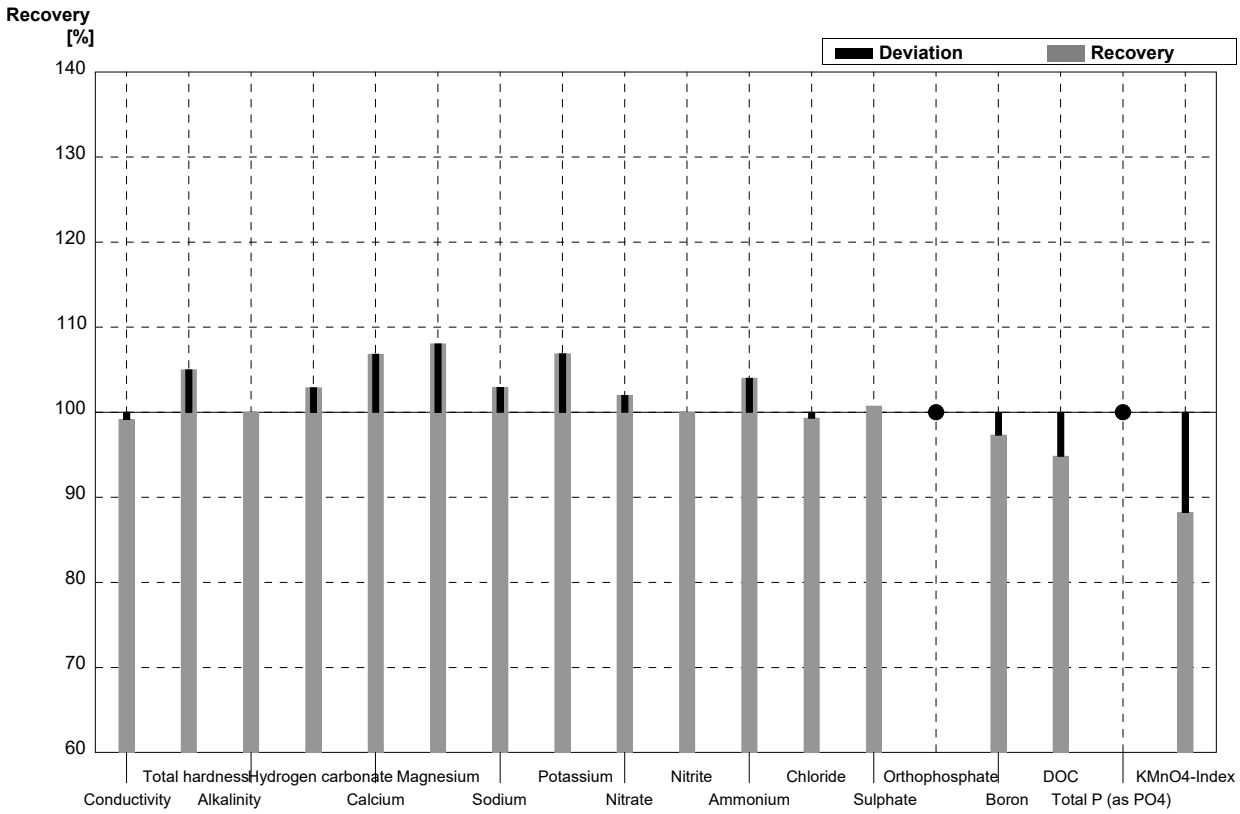
Sample N147A
Laboratory V

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2	814	16	µS/cm	100%
Total hardness	3,06	0,03	3,16	0,32	mmol/l	103%
Alkalinity	3,97	0,04	3,93	0,28	mmol/l	99%
Hydrogen carbonate	239	2	240	19	mg/l	100%
Calcium	86,1	1,1	88,2	3,5	mg/l	102%
Magnesium	22,1	0,2	23,4	0,9	mg/l	106%
Sodium	44,9	0,5	46,0	1,8	mg/l	102%
Potassium	6,15	0,07	6,6	0,5	mg/l	107%
Nitrate	45,1	0,9	46,4	3,2	mg/l	103%
Nitrite	0,050	0,001	0,050	0,005	mg/l	100%
Ammonium	<0,01		<0,020	0,006	mg/l	•
Chloride	75,2	1,1	76,1	6,1	mg/l	101%
Sulphate	68,4	0,8	69,9	4,2	mg/l	102%
Orthophosphate	0,041	0,004	0,044	0,007	mg/l	107%
Boron	0,036	0,001	0,0351	0,0025	mg/l	98%
DOC	2,99	0,04	0,14	0,02	mg/l	5%
Total P (as PO4)	0,102	0,003	0,101	0,018	mg/l	99%
KMnO4-Index	3,43	0,14	3,4	0,3	mg/l	99%



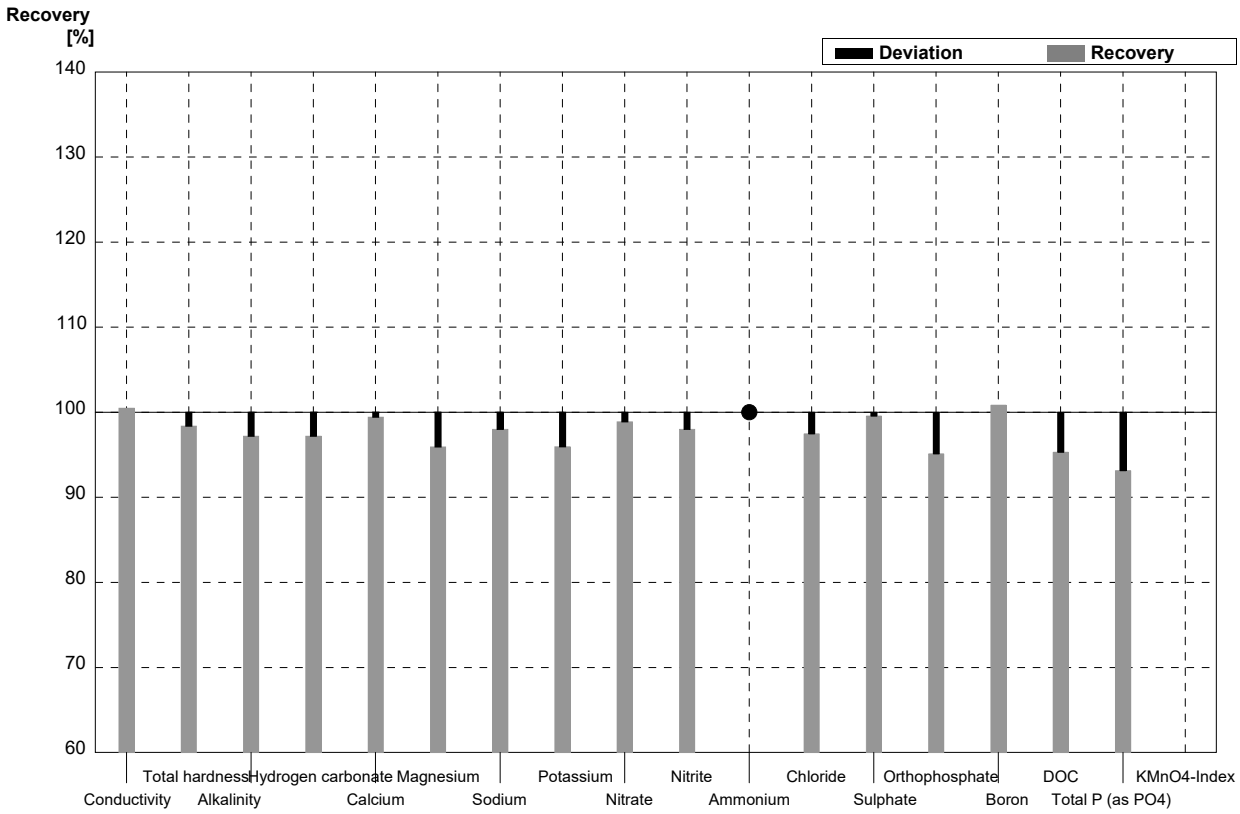
Sample N147B
Laboratory V

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1	358	7	µS/cm	99%
Total hardness	1,00	0,01	1,05	0,11	mmol/l	105%
Alkalinity	1,75	0,01	1,75	0,12	mmol/l	100%
Hydrogen carbonate	104	1	107	9	mg/l	103%
Calcium	24,9	0,3	26,6	1,1	mg/l	107%
Magnesium	9,07	0,09	9,8	0,6	mg/l	108%
Sodium	30,6	0,1	31,5	1,3	mg/l	103%
Potassium	5,52	0,04	5,9	0,5	mg/l	107%
Nitrate	20,1	0,4	20,5	1,4	mg/l	102%
Nitrite	0,076	0,001	0,076	0,008	mg/l	100%
Ammonium	0,050	0,004	0,052	0,016	mg/l	104%
Chloride	28,9	0,5	28,7	2,3	mg/l	99%
Sulphate	27,4	0,3	27,6	1,7	mg/l	101%
Orthophosphate	<0,009		<0,009	0,001	mg/l	•
Boron	0,086	0,001	0,0837	0,0059	mg/l	97%
DOC	5,22	0,05	4,95	0,69	mg/l	95%
Total P (as PO4)	<0,009		<0,009	0,002	mg/l	•
KMnO4-Index	2,38	0,12	2,1	0,2	mg/l	88%



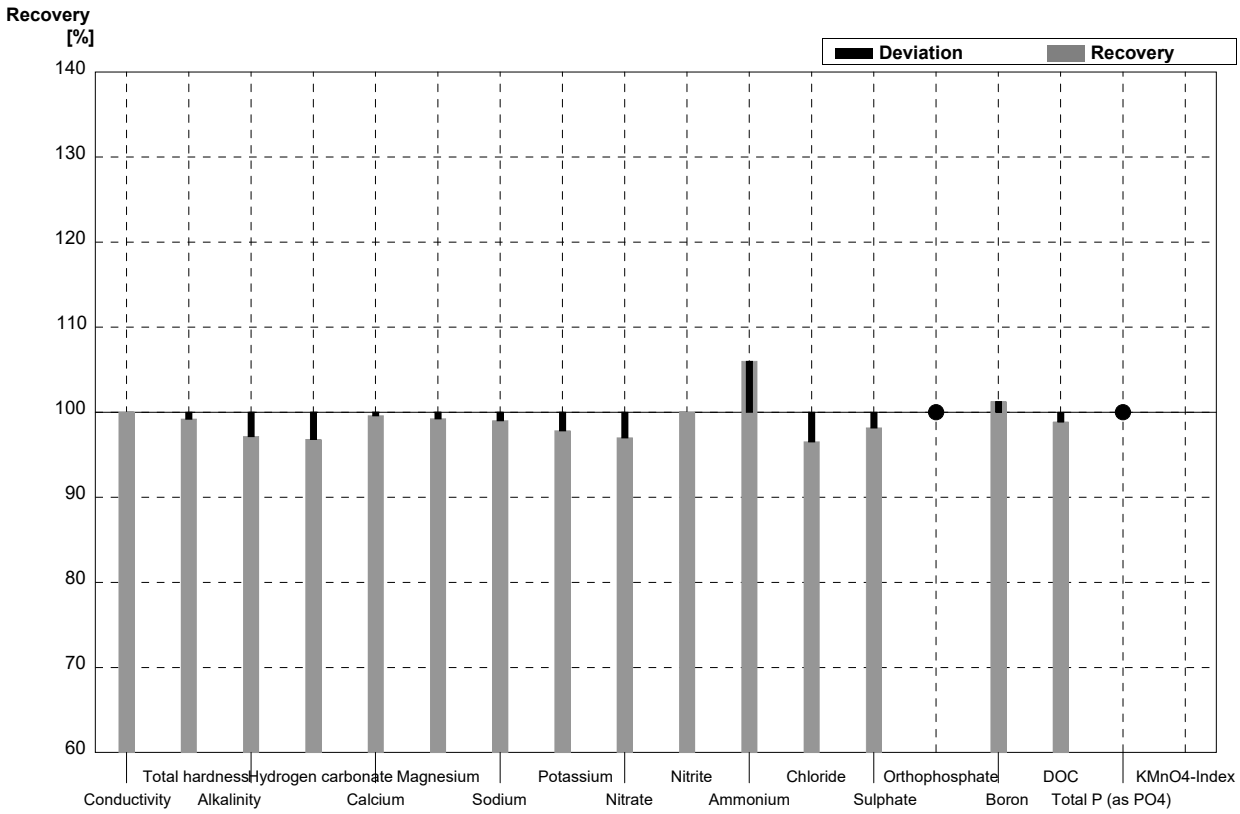
Sample N147A
Laboratory W

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2	816	33	µS/cm	100%
Total hardness	3,06	0,03	3,01	0,16	mmol/l	98%
Alkalinity	3,97	0,04	3,858	0,1096	mmol/l	97%
Hydrogen carbonate	239	2	232,3	6,7	mg/l	97%
Calcium	86,1	1,1	85,6	4,0	mg/l	99%
Magnesium	22,1	0,2	21,2	1,3	mg/l	96%
Sodium	44,9	0,5	44,0	2,2	mg/l	98%
Potassium	6,15	0,07	5,9	0,3	mg/l	96%
Nitrate	45,1	0,9	44,6	5,5	mg/l	99%
Nitrite	0,050	0,001	0,049	0,005	mg/l	98%
Ammonium	<0,01		<0,01		mg/l	•
Chloride	75,2	1,1	73,3	5,7	mg/l	97%
Sulphate	68,4	0,8	68,1	6,3	mg/l	100%
Orthophosphate	0,041	0,004	0,039	0,005	mg/l	95%
Boron	0,036	0,001	0,0363	0,0054	mg/l	101%
DOC	2,99	0,04	2,85	0,61	mg/l	95%
Total P (as PO4)	0,102	0,003	0,095	0,014	mg/l	93%
KMnO4-Index	3,43	0,14			mg/l	



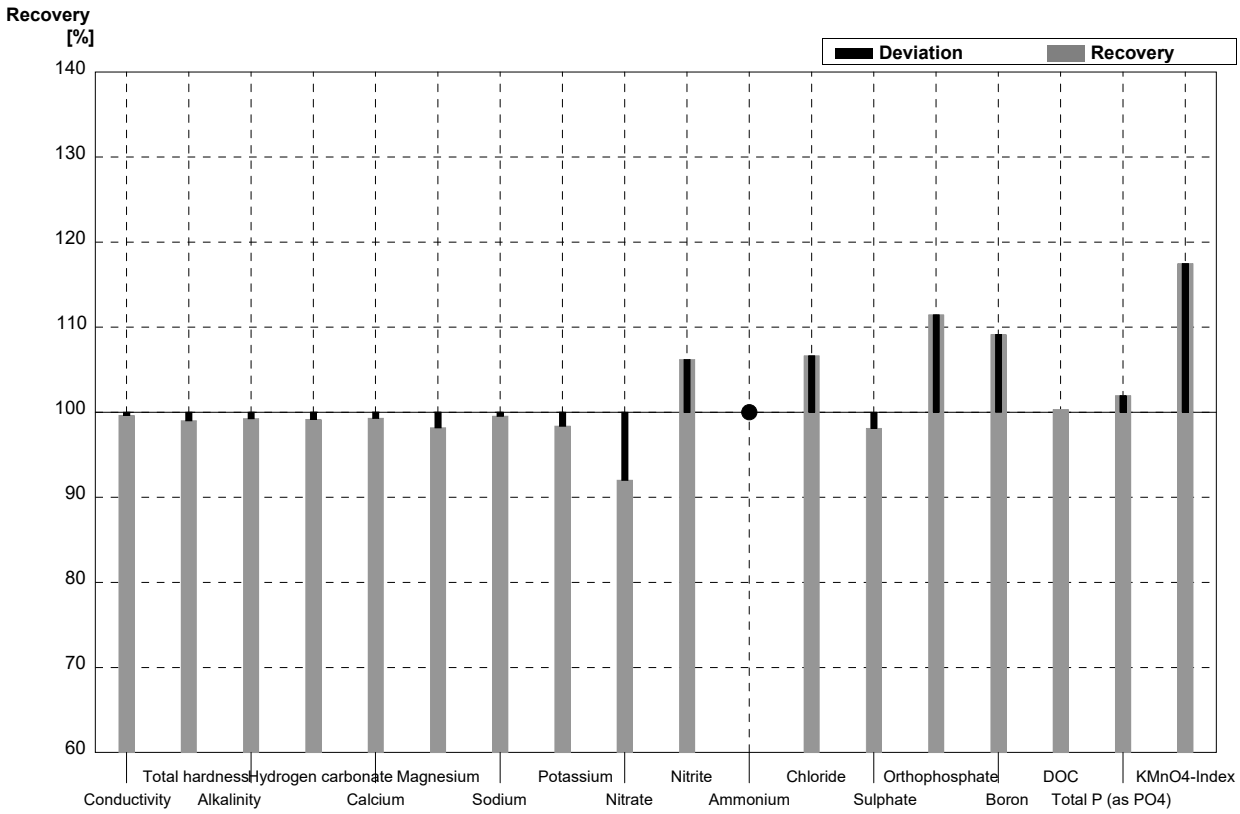
Sample N147B
Laboratory W

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1	361	14	µS/cm	100%
Total hardness	1,00	0,01	0,992	0,056	mmol/l	99%
Alkalinity	1,75	0,01	1,700	0,114	mmol/l	97%
Hydrogen carbonate	104	1	100,7	6,9	mg/l	97%
Calcium	24,9	0,3	24,8	1,2	mg/l	100%
Magnesium	9,07	0,09	9,0	0,6	mg/l	99%
Sodium	30,6	0,1	30,3	1,5	mg/l	99%
Potassium	5,52	0,04	5,4	0,2	mg/l	98%
Nitrate	20,1	0,4	19,5	2,4	mg/l	97%
Nitrite	0,076	0,001	0,076	0,007	mg/l	100%
Ammonium	0,050	0,004	0,053	0,010	mg/l	106%
Chloride	28,9	0,5	27,9	2,3	mg/l	97%
Sulphate	27,4	0,3	26,9	2,6	mg/l	98%
Orthophosphate	<0,009		<0,01		mg/l	•
Boron	0,086	0,001	0,0871	0,0115	mg/l	101%
DOC	5,22	0,05	5,16	0,98	mg/l	99%
Total P (as PO4)	<0,009		<0,01		mg/l	•
KMnO4-Index	2,38	0,12			mg/l	



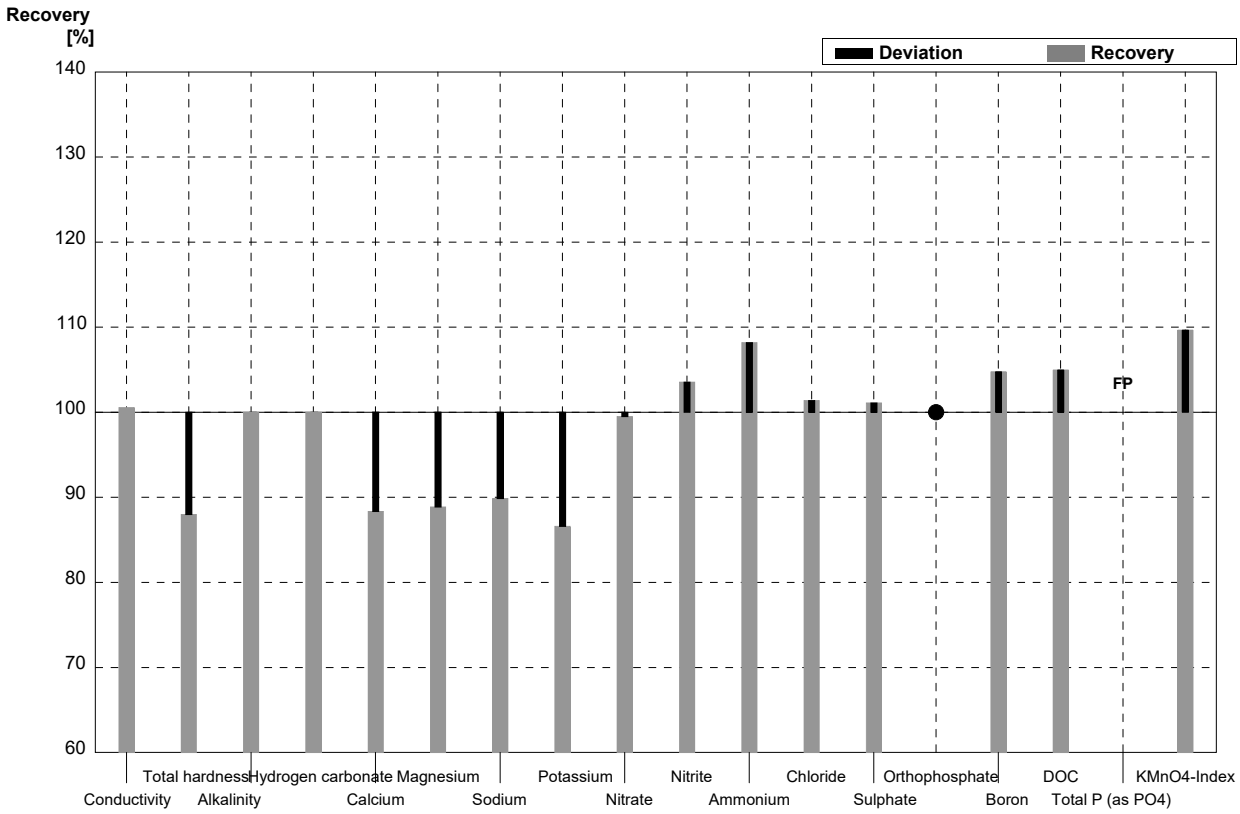
Sample N147A
Laboratory X

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2	809	0,577	µS/cm	100%
Total hardness	3,06	0,03	3,03	0,012	mmol/l	99%
Alkalinity	3,97	0,04	3,94	0,010	mmol/l	99%
Hydrogen carbonate	239	2	237	1,000	mg/l	99%
Calcium	86,1	1,1	85,5	0,252	mg/l	99%
Magnesium	22,1	0,2	21,7	0,100	mg/l	98%
Sodium	44,9	0,5	44,7	0,058	mg/l	100%
Potassium	6,15	0,07	6,05	0,012	mg/l	98%
Nitrate	45,1	0,9	41,5	0,183	mg/l	92%
Nitrite	0,050	0,001	0,0531	0,0009	mg/l	106%
Ammonium	<0,01		0,0067	0,001	mg/l	•
Chloride	75,2	1,1	80,2	0,417	mg/l	107%
Sulphate	68,4	0,8	67,1	0,383	mg/l	98%
Orthophosphate	0,041	0,004	0,0457	0,001	mg/l	111%
Boron	0,036	0,001	0,0393	0,0004	mg/l	109%
DOC	2,99	0,04	3,00	0,006	mg/l	100%
Total P (as PO4)	0,102	0,003	0,104	0,0014	mg/l	102%
KMnO4-Index	3,43	0,14	4,03	0,021	mg/l	117%



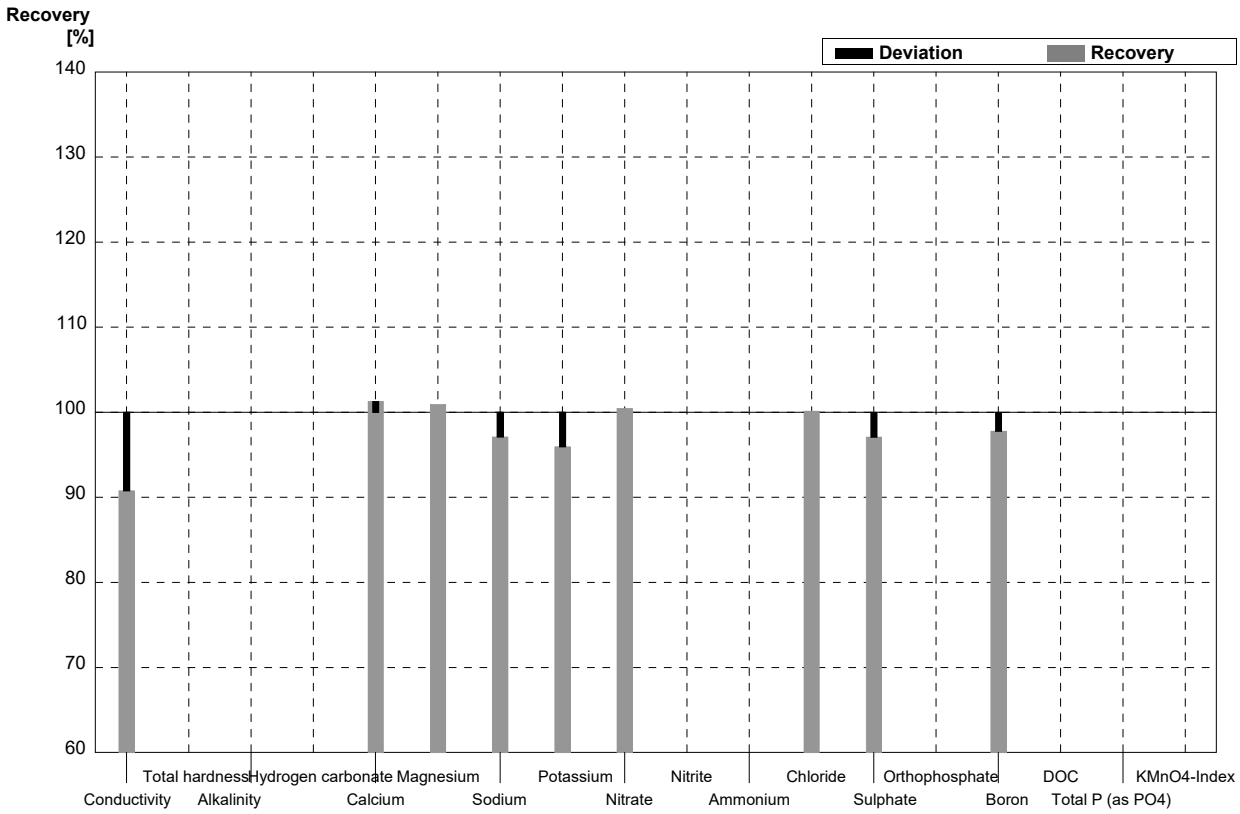
Sample N147B
Laboratory X

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1	363	0,0001	µS/cm	101%
Total hardness	1,00	0,01	0,880	0,046	mmol/l	88%
Alkalinity	1,75	0,01	1,75	0,006	mmol/l	100%
Hydrogen carbonate	104	1	104	0,0001	mg/l	100%
Calcium	24,9	0,3	22,0	0,636	mg/l	88%
Magnesium	9,07	0,09	8,06	0,388	mg/l	89%
Sodium	30,6	0,1	27,5	1,375	mg/l	90%
Potassium	5,52	0,04	4,78	0,127	mg/l	87%
Nitrate	20,1	0,4	20,0	0,146	mg/l	100%
Nitrite	0,076	0,001	0,0787	0,0009	mg/l	104%
Ammonium	0,050	0,004	0,0541	0,0026	mg/l	108%
Chloride	28,9	0,5	29,3	0,114	mg/l	101%
Sulphate	27,4	0,3	27,7	0,080	mg/l	101%
Orthophosphate	<0,009		0,0018	0,001	mg/l	•
Boron	0,086	0,001	0,0901	0,0009	mg/l	105%
DOC	5,22	0,05	5,48	0,028	mg/l	105%
Total P (as PO4)	<0,009		0,0166	0,0003	mg/l	FP
KMnO4-Index	2,38	0,12	2,61	0,015	mg/l	110%



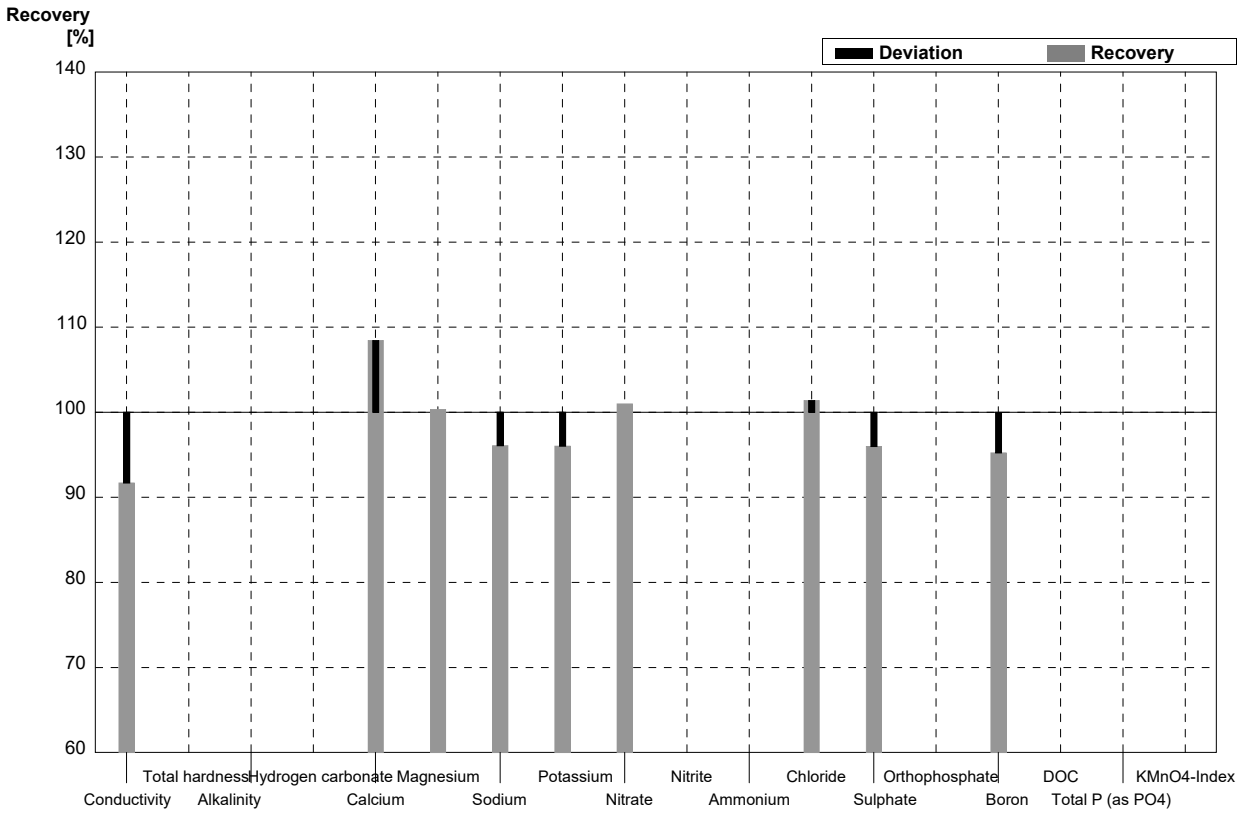
Sample N147A
Laboratory Y

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2	737	22	µS/cm	91%
Total hardness	3,06	0,03			mmol/l	
Alkalinity	3,97	0,04			mmol/l	
Hydrogen carbonate	239	2			mg/l	
Calcium	86,1	1,1	87,2	8,7	mg/l	101%
Magnesium	22,1	0,2	22,3	2,2	mg/l	101%
Sodium	44,9	0,5	43,6	2,2	mg/l	97%
Potassium	6,15	0,07	5,9	0,6	mg/l	96%
Nitrate	45,1	0,9	45,3	2,3	mg/l	100%
Nitrite	0,050	0,001			mg/l	
Ammonium	<0,01				mg/l	
Chloride	75,2	1,1	75,3	3,8	mg/l	100%
Sulphate	68,4	0,8	66,4	6,6	mg/l	97%
Orthophosphate	0,041	0,004			mg/l	
Boron	0,036	0,001	0,0352	0,007	mg/l	98%
DOC	2,99	0,04			mg/l	
Total P (as PO4)	0,102	0,003			mg/l	
KMnO4-Index	3,43	0,14			mg/l	



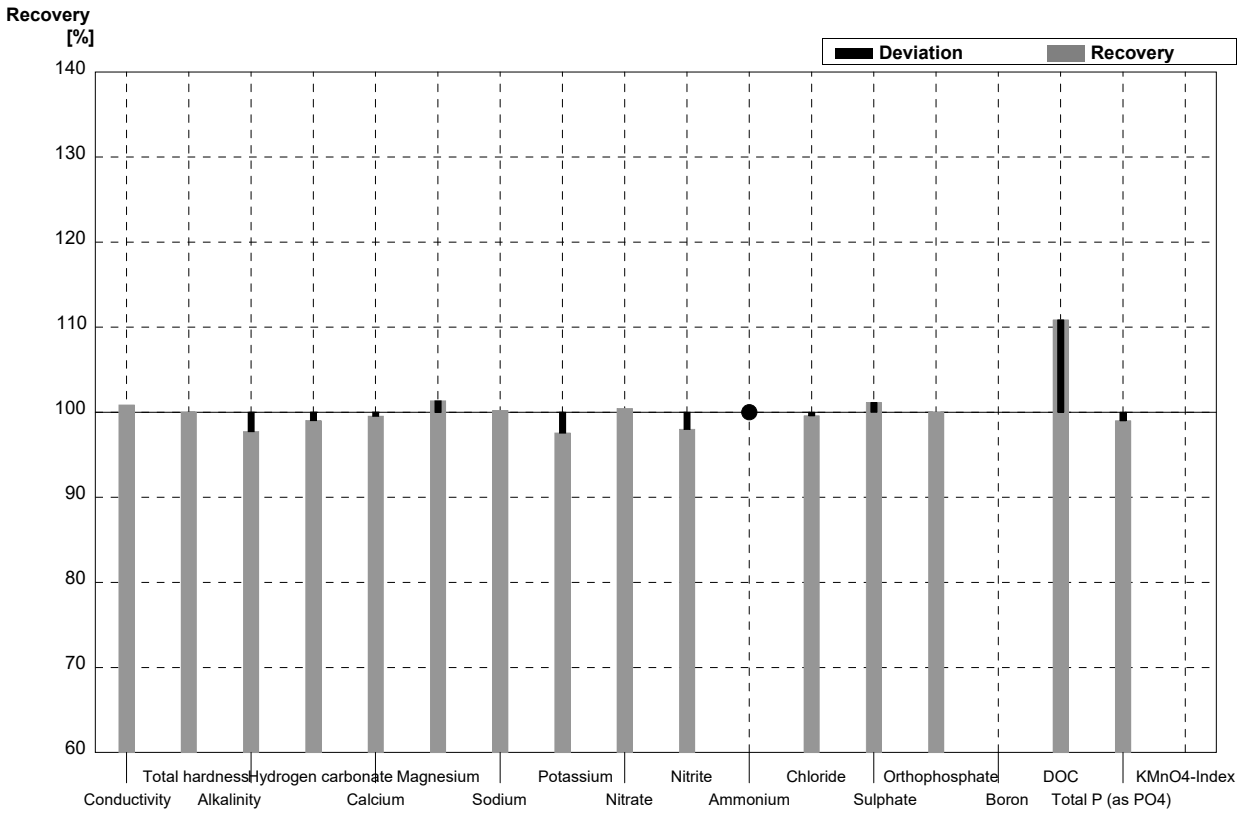
Sample N147B
Laboratory Y

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1	331	10	µS/cm	92%
Total hardness	1,00	0,01			mmol/l	
Alkalinity	1,75	0,01			mmol/l	
Hydrogen carbonate	104	1			mg/l	
Calcium	24,9	0,3	27,0	2,7	mg/l	108%
Magnesium	9,07	0,09	9,1	0,9	mg/l	100%
Sodium	30,6	0,1	29,4	1,5	mg/l	96%
Potassium	5,52	0,04	5,3	0,5	mg/l	96%
Nitrate	20,1	0,4	20,3	1,0	mg/l	101%
Nitrite	0,076	0,001			mg/l	
Ammonium	0,050	0,004			mg/l	
Chloride	28,9	0,5	29,3	1,5	mg/l	101%
Sulphate	27,4	0,3	26,3	2,7	mg/l	96%
Orthophosphate	<0,009				mg/l	
Boron	0,086	0,001	0,0819	0,016	mg/l	95%
DOC	5,22	0,05			mg/l	
Total P (as PO4)	<0,009				mg/l	
KMnO4-Index	2,38	0,12			mg/l	



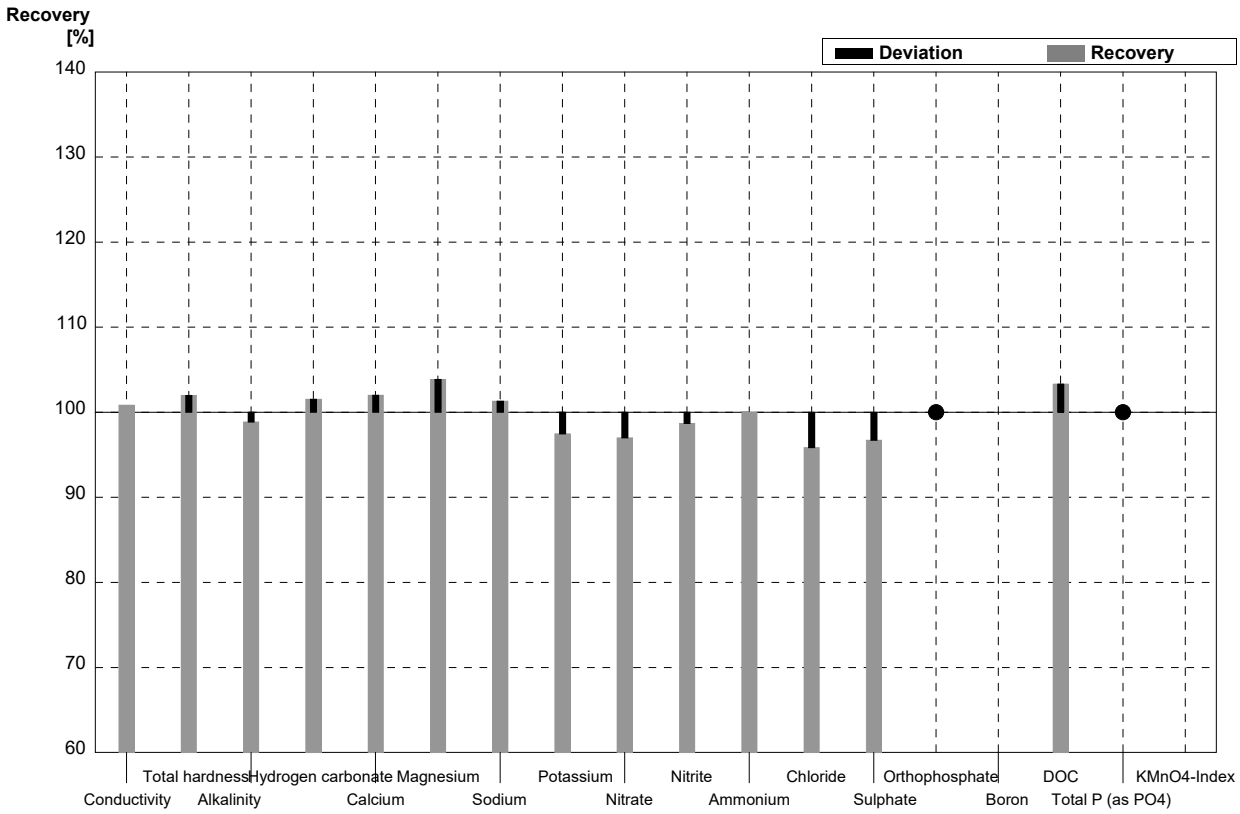
Sample N147A
Laboratory Z

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2	819	5	µS/cm	101%
Total hardness	3,06	0,03	3,06	0,3	mmol/l	100%
Alkalinity	3,97	0,04	3,88	0,4	mmol/l	98%
Hydrogen carbonate	239	2	236,7	23,7	mg/l	99%
Calcium	86,1	1,1	85,7	8,6	mg/l	100%
Magnesium	22,1	0,2	22,4	2,3	mg/l	101%
Sodium	44,9	0,5	45,0	4,5	mg/l	100%
Potassium	6,15	0,07	6,00	0,6	mg/l	98%
Nitrate	45,1	0,9	45,3	4,5	mg/l	100%
Nitrite	0,050	0,001	0,049	0,005	mg/l	98%
Ammonium	<0,01		0,010	0,001	mg/l	•
Chloride	75,2	1,1	74,9	7,5	mg/l	100%
Sulphate	68,4	0,8	69,2	6,9	mg/l	101%
Orthophosphate	0,041	0,004	0,041	0,004	mg/l	100%
Boron	0,036	0,001			mg/l	
DOC	2,99	0,04	3,315	0,332	mg/l	111%
Total P (as PO4)	0,102	0,003	0,101	0,01	mg/l	99%
KMnO4-Index	3,43	0,14			mg/l	



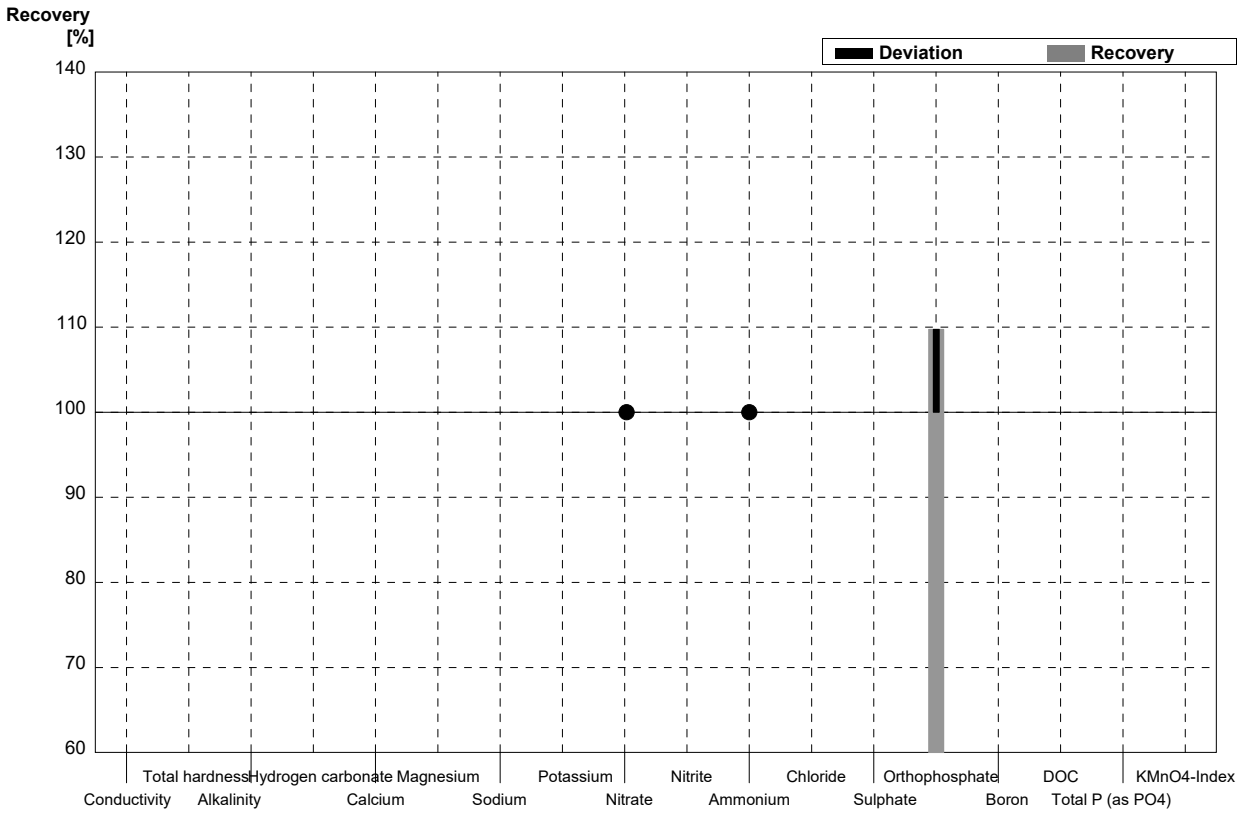
Sample N147B
Laboratory Z

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1	364	5	µS/cm	101%
Total hardness	1,00	0,01	1,02	0,1	mmol/l	102%
Alkalinity	1,75	0,01	1,73	0,2	mmol/l	99%
Hydrogen carbonate	104	1	105,6	10,6	mg/l	102%
Calcium	24,9	0,3	25,4	2,6	mg/l	102%
Magnesium	9,07	0,09	9,42	0,95	mg/l	104%
Sodium	30,6	0,1	31,0	3,1	mg/l	101%
Potassium	5,52	0,04	5,38	0,54	mg/l	97%
Nitrate	20,1	0,4	19,5	2,0	mg/l	97%
Nitrite	0,076	0,001	0,075	0,008	mg/l	99%
Ammonium	0,050	0,004	0,050	0,005	mg/l	100%
Chloride	28,9	0,5	27,7	2,8	mg/l	96%
Sulphate	27,4	0,3	26,5	2,7	mg/l	97%
Orthophosphate	<0,009		<0,009		mg/l	•
Boron	0,086	0,001			mg/l	
DOC	5,22	0,05	5,394	0,539	mg/l	103%
Total P (as PO4)	<0,009		<0,009		mg/l	•
KMnO4-Index	2,38	0,12			mg/l	



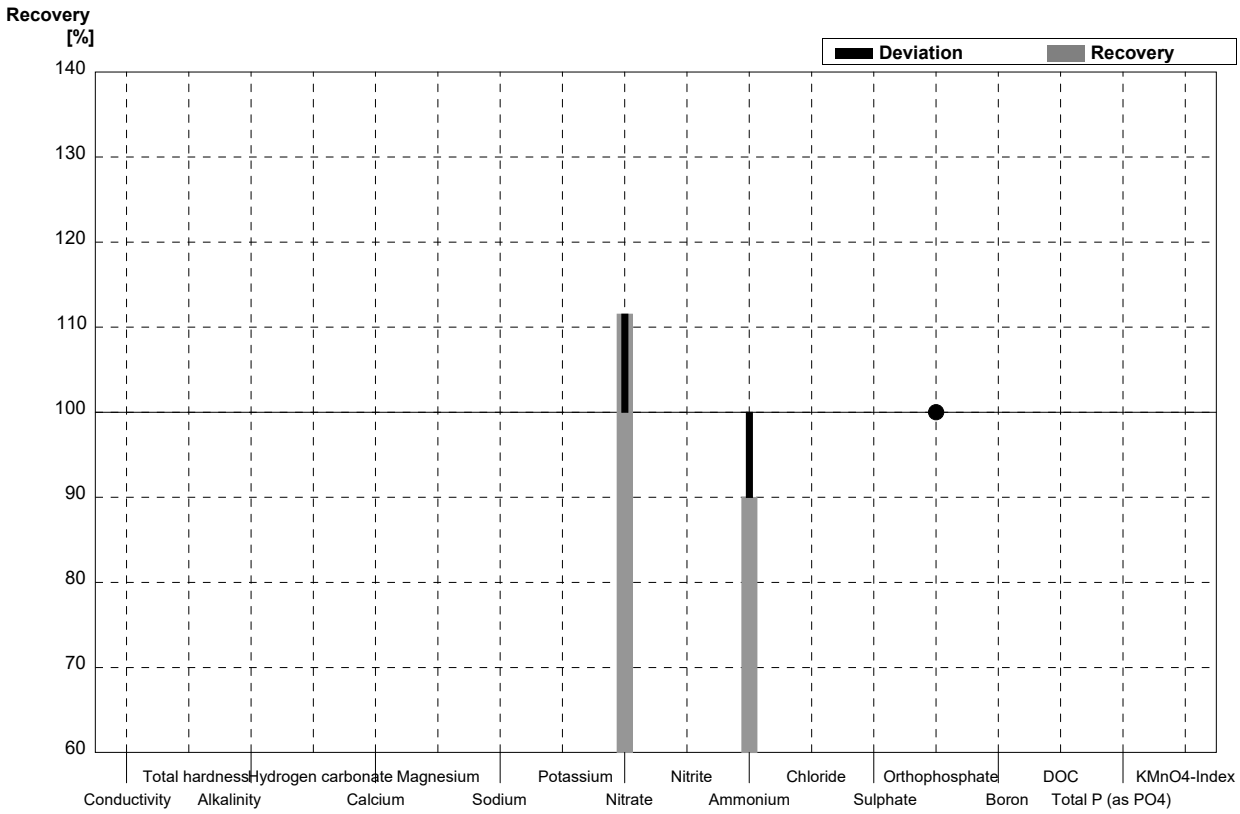
Sample N147A
Laboratory AA

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2			µS/cm	
Total hardness	3,06	0,03			mmol/l	
Alkalinity	3,97	0,04			mmol/l	
Hydrogen carbonate	239	2			mg/l	
Calcium	86,1	1,1			mg/l	
Magnesium	22,1	0,2			mg/l	
Sodium	44,9	0,5			mg/l	
Potassium	6,15	0,07			mg/l	
Nitrate	45,1	0,9	>30		mg/l	•
Nitrite	0,050	0,001			mg/l	
Ammonium	<0,01		<0,01		mg/l	•
Chloride	75,2	1,1			mg/l	
Sulphate	68,4	0,8			mg/l	
Orthophosphate	0,041	0,004	0,045	0,001	mg/l	110%
Boron	0,036	0,001			mg/l	
DOC	2,99	0,04			mg/l	
Total P (as PO4)	0,102	0,003			mg/l	
KMnO4-Index	3,43	0,14			mg/l	



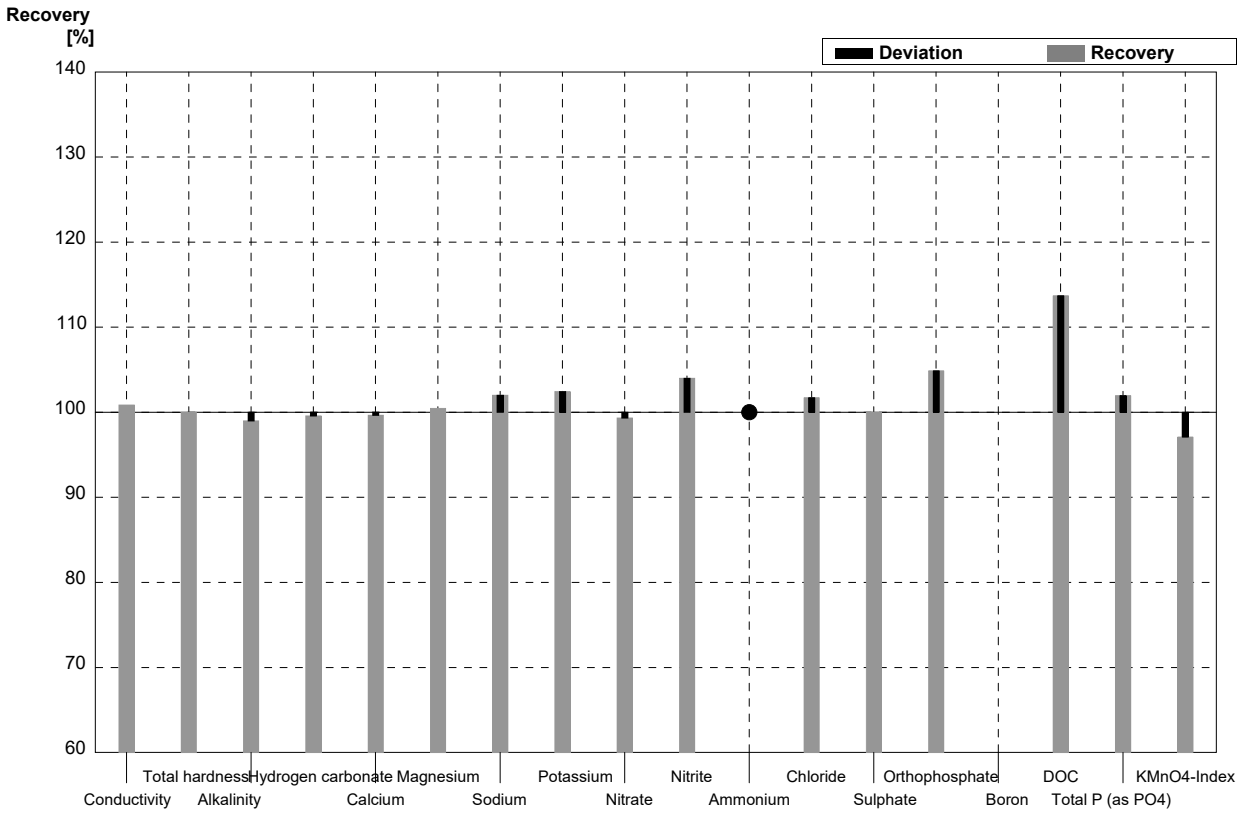
Sample N147B
Laboratory AA

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1			µS/cm	
Total hardness	1,00	0,01			mmol/l	
Alkalinity	1,75	0,01			mmol/l	
Hydrogen carbonate	104	1			mg/l	
Calcium	24,9	0,3			mg/l	
Magnesium	9,07	0,09			mg/l	
Sodium	30,6	0,1			mg/l	
Potassium	5,52	0,04			mg/l	
Nitrate	20,1	0,4	22,42	3,34	mg/l	112%
Nitrite	0,076	0,001			mg/l	
Ammonium	0,050	0,004	0,045	0,002	mg/l	90%
Chloride	28,9	0,5			mg/l	
Sulphate	27,4	0,3			mg/l	
Orthophosphate	<0,009		<0,019		mg/l	•
Boron	0,086	0,001			mg/l	
DOC	5,22	0,05			mg/l	
Total P (as PO4)	<0,009				mg/l	
KMnO4-Index	2,38	0,12			mg/l	



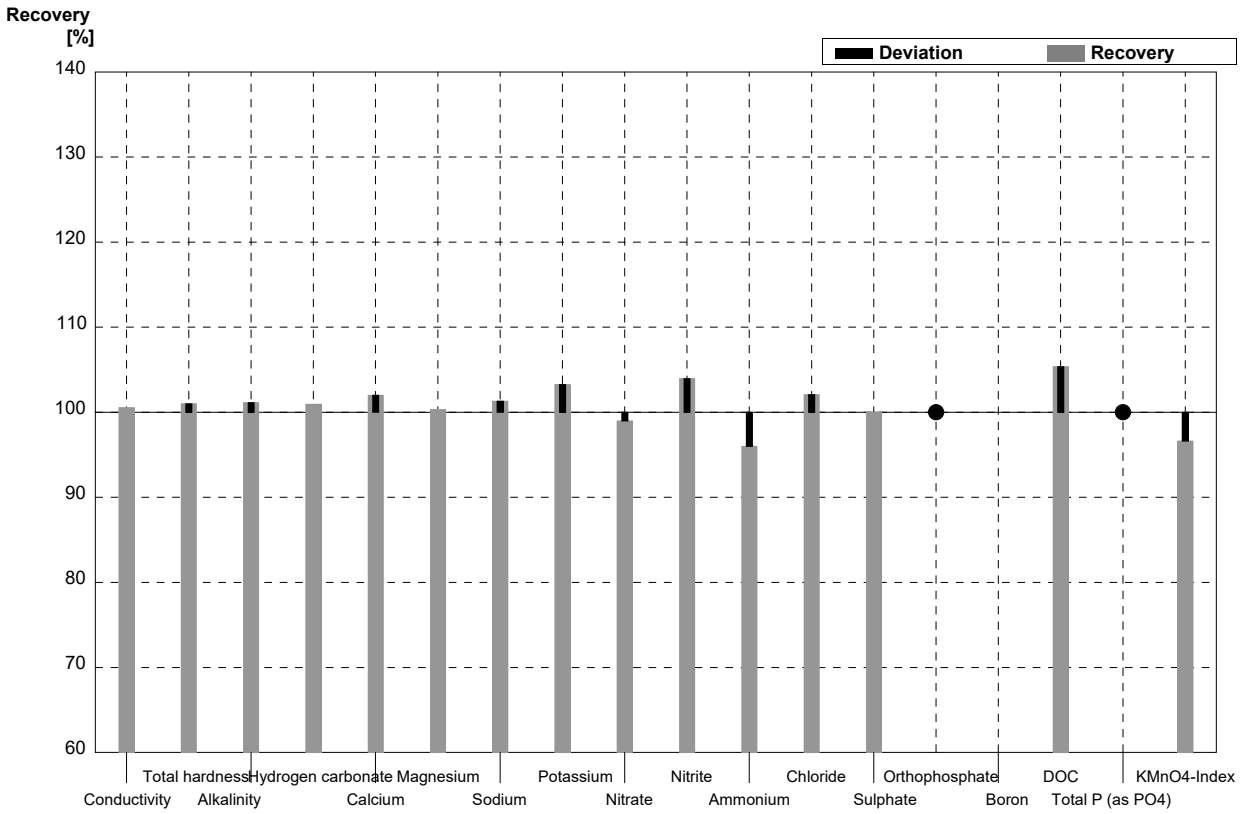
Sample N147A
Laboratory AB

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2	819		µS/cm	101%
Total hardness	3,06	0,03	3,06		mmol/l	100%
Alkalinity	3,97	0,04	3,93		mmol/l	99%
Hydrogen carbonate	239	2	238		mg/l	100%
Calcium	86,1	1,1	85,8		mg/l	100%
Magnesium	22,1	0,2	22,2		mg/l	100%
Sodium	44,9	0,5	45,8		mg/l	102%
Potassium	6,15	0,07	6,3		mg/l	102%
Nitrate	45,1	0,9	44,8		mg/l	99%
Nitrite	0,050	0,001	0,052		mg/l	104%
Ammonium	<0,01		<0,01		mg/l	•
Chloride	75,2	1,1	76,5		mg/l	102%
Sulphate	68,4	0,8	68,4		mg/l	100%
Orthophosphate	0,041	0,004	0,043		mg/l	105%
Boron	0,036	0,001			mg/l	
DOC	2,99	0,04	3,4		mg/l	114%
Total P (as PO4)	0,102	0,003	0,104		mg/l	102%
KMnO4-Index	3,43	0,14	3,33		mg/l	97%



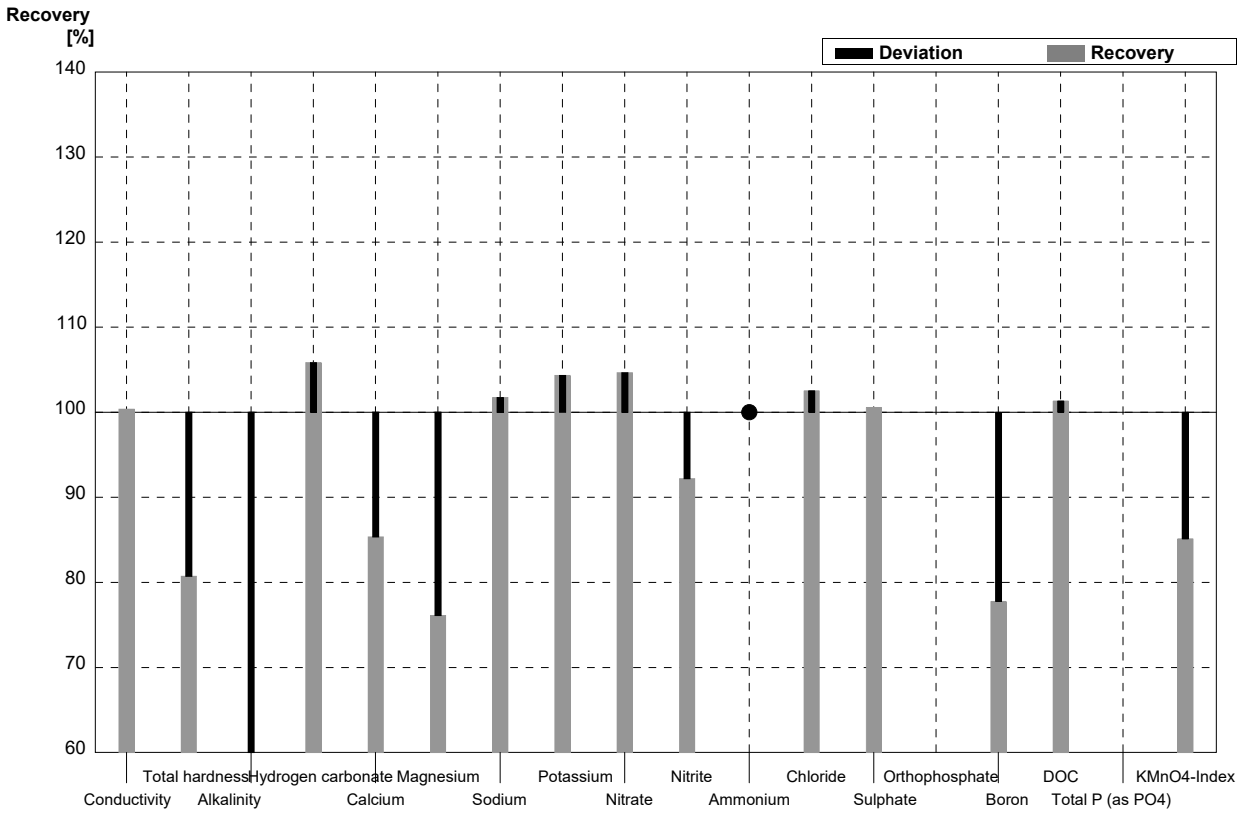
Sample N147B
Laboratory AB

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1	363		µS/cm	101%
Total hardness	1,00	0,01	1,01		mmol/l	101%
Alkalinity	1,75	0,01	1,77		mmol/l	101%
Hydrogen carbonate	104	1	105		mg/l	101%
Calcium	24,9	0,3	25,4		mg/l	102%
Magnesium	9,07	0,09	9,1		mg/l	100%
Sodium	30,6	0,1	31,0		mg/l	101%
Potassium	5,52	0,04	5,7		mg/l	103%
Nitrate	20,1	0,4	19,9		mg/l	99%
Nitrite	0,076	0,001	0,079		mg/l	104%
Ammonium	0,050	0,004	0,048		mg/l	96%
Chloride	28,9	0,5	29,5		mg/l	102%
Sulphate	27,4	0,3	27,4		mg/l	100%
Orthophosphate	<0,009		<0,01		mg/l	•
Boron	0,086	0,001			mg/l	
DOC	5,22	0,05	5,5		mg/l	105%
Total P (as PO4)	<0,009		<0,01		mg/l	•
KMnO4-Index	2,38	0,12	2,30		mg/l	97%



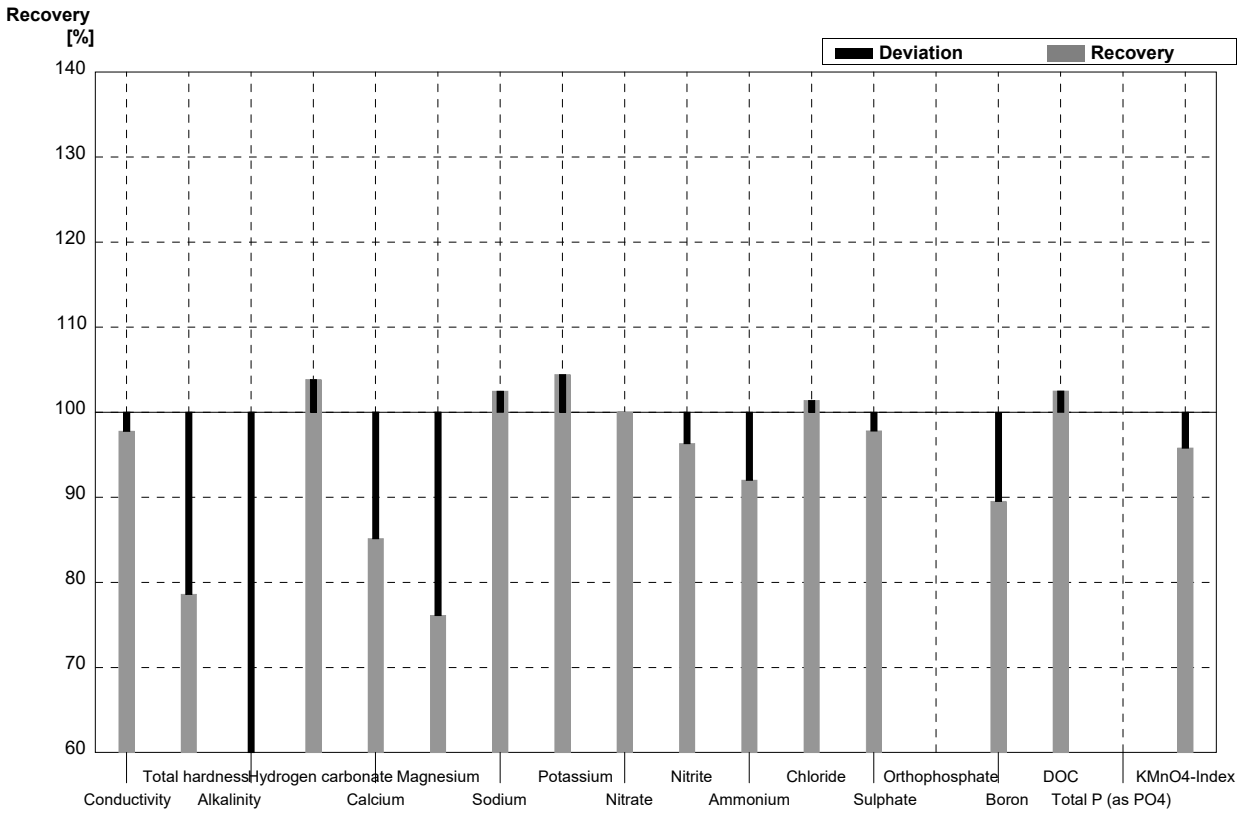
Sample N147A
Laboratory AC

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2	815		µS/cm	100%
Total hardness	3,06	0,03	2,47		mmol/l	81%
Alkalinity	3,97	0,04	2,07		mmol/l	52%
Hydrogen carbonate	239	2	253		mg/l	106%
Calcium	86,1	1,1	73,5		mg/l	85%
Magnesium	22,1	0,2	16,82		mg/l	76%
Sodium	44,9	0,5	45,68		mg/l	102%
Potassium	6,15	0,07	6,416		mg/l	104%
Nitrate	45,1	0,9	47,2		mg/l	105%
Nitrite	0,050	0,001	0,0461		mg/l	92%
Ammonium	<0,01		<0,042		mg/l	•
Chloride	75,2	1,1	77,1		mg/l	103%
Sulphate	68,4	0,8	68,8		mg/l	101%
Orthophosphate	0,041	0,004			mg/l	
Boron	0,036	0,001	0,028		mg/l	78%
DOC	2,99	0,04	3,03		mg/l	101%
Total P (as PO4)	0,102	0,003			mg/l	
KMnO4-Index	3,43	0,14	2,92		mg/l	85%



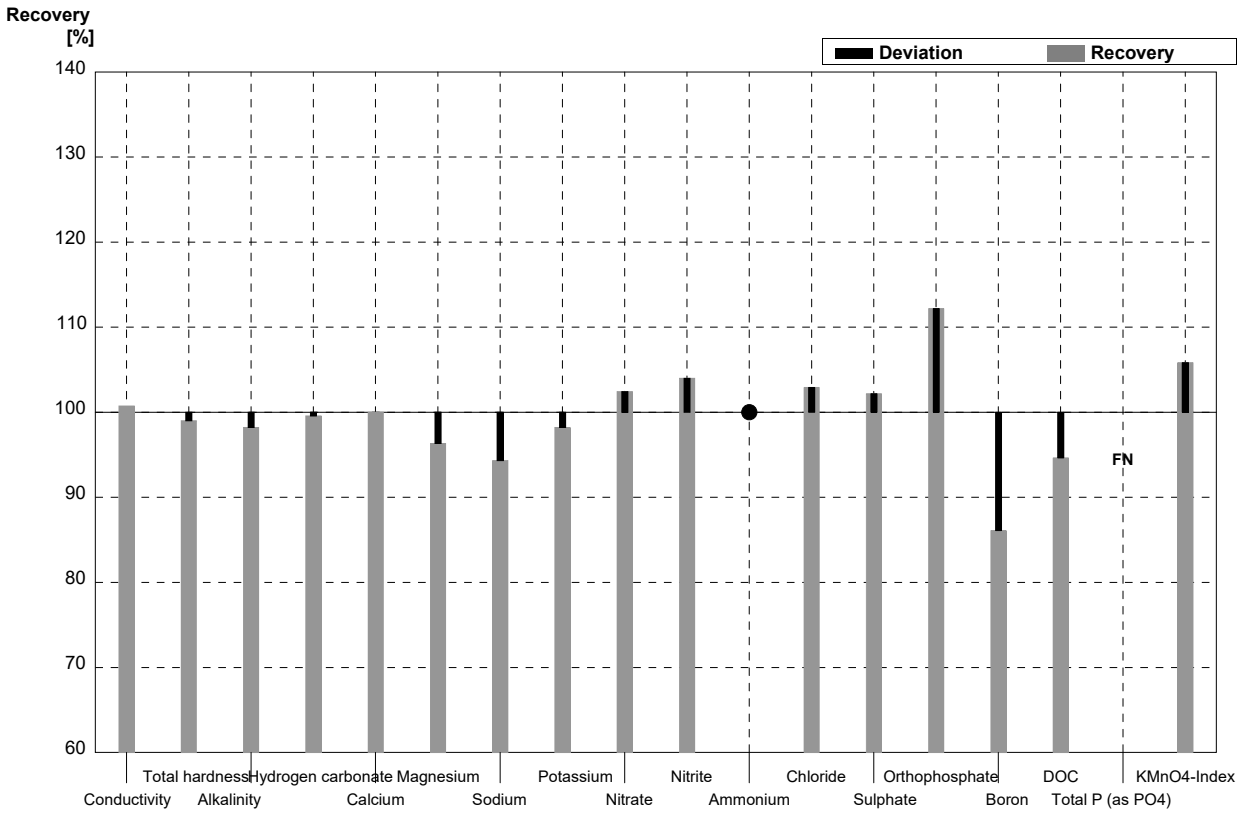
Sample N147B
Laboratory AC

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1	353		µS/cm	98%
Total hardness	1,00	0,01	0,786		mmol/l	79%
Alkalinity	1,75	0,01	0,88		mmol/l	50%
Hydrogen carbonate	104	1	108		mg/l	104%
Calcium	24,9	0,3	21,2		mg/l	85%
Magnesium	9,07	0,09	6,904		mg/l	76%
Sodium	30,6	0,1	31,36		mg/l	102%
Potassium	5,52	0,04	5,764		mg/l	104%
Nitrate	20,1	0,4	20,1		mg/l	100%
Nitrite	0,076	0,001	0,0732		mg/l	96%
Ammonium	0,050	0,004	0,046		mg/l	92%
Chloride	28,9	0,5	29,3		mg/l	101%
Sulphate	27,4	0,3	26,8		mg/l	98%
Orthophosphate	<0,009				mg/l	
Boron	0,086	0,001	0,077		mg/l	90%
DOC	5,22	0,05	5,35		mg/l	102%
Total P (as PO4)	<0,009				mg/l	
KMnO4-Index	2,38	0,12	2,28		mg/l	96%



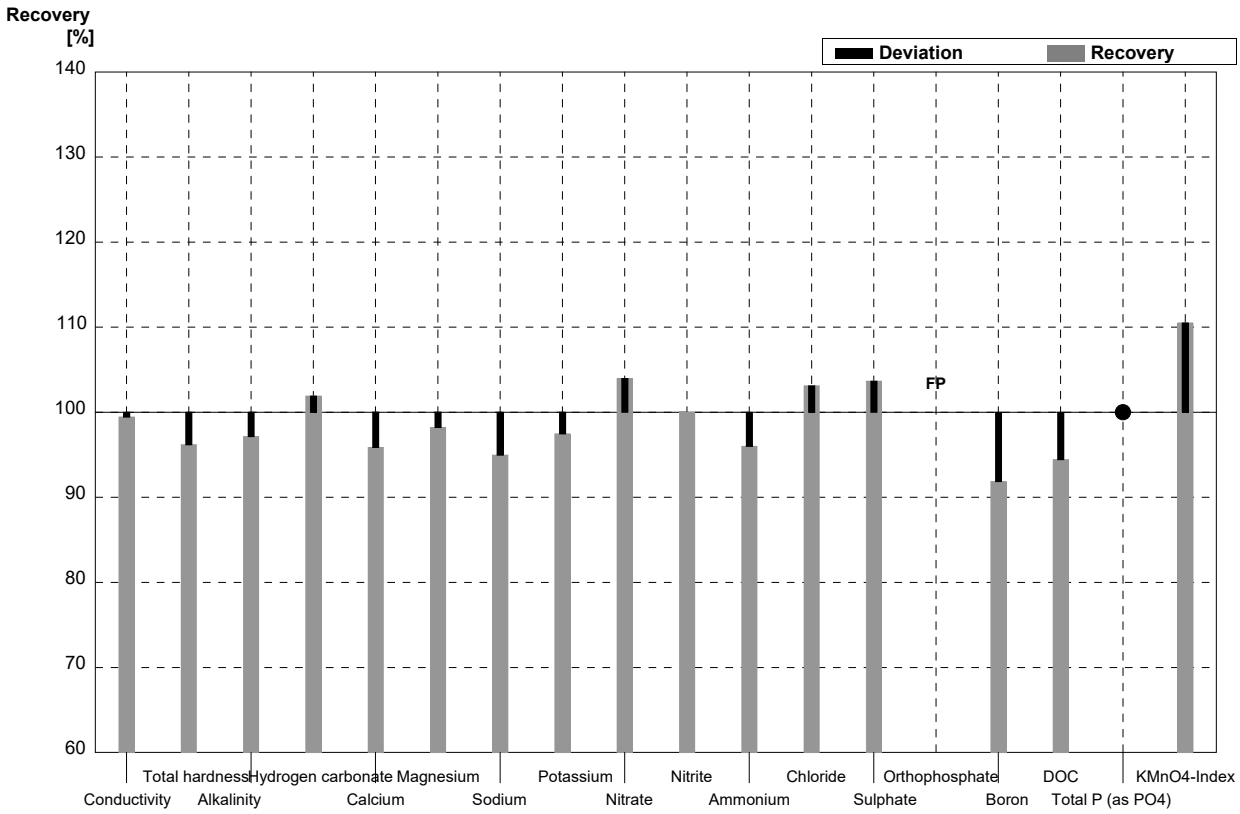
Sample N147A
Laboratory AD

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2	818	65	µS/cm	101%
Total hardness	3,06	0,03	3,03	0,3	mmol/l	99%
Alkalinity	3,97	0,04	3,9	0,17	mmol/l	98%
Hydrogen carbonate	239	2	238	10,5	mg/l	100%
Calcium	86,1	1,1	86,12	8,612	mg/l	100%
Magnesium	22,1	0,2	21,29	2,129	mg/l	96%
Sodium	44,9	0,5	42,35	4,235	mg/l	94%
Potassium	6,15	0,07	6,04	0,604	mg/l	98%
Nitrate	45,1	0,9	46,2	4,14	mg/l	102%
Nitrite	0,050	0,001	0,052	0,005	mg/l	104%
Ammonium	<0,01		<0,01		mg/l	•
Chloride	75,2	1,1	77,4	0,08	mg/l	103%
Sulphate	68,4	0,8	69,9	4,68	mg/l	102%
Orthophosphate	0,041	0,004	0,046	0,005	mg/l	112%
Boron	0,036	0,001	0,031	0,003	mg/l	86%
DOC	2,99	0,04	2,83	0,33	mg/l	95%
Total P (as PO4)	0,102	0,003	<0,003		mg/l	FN
KMnO4-Index	3,43	0,14	3,63	0,04	mg/l	106%



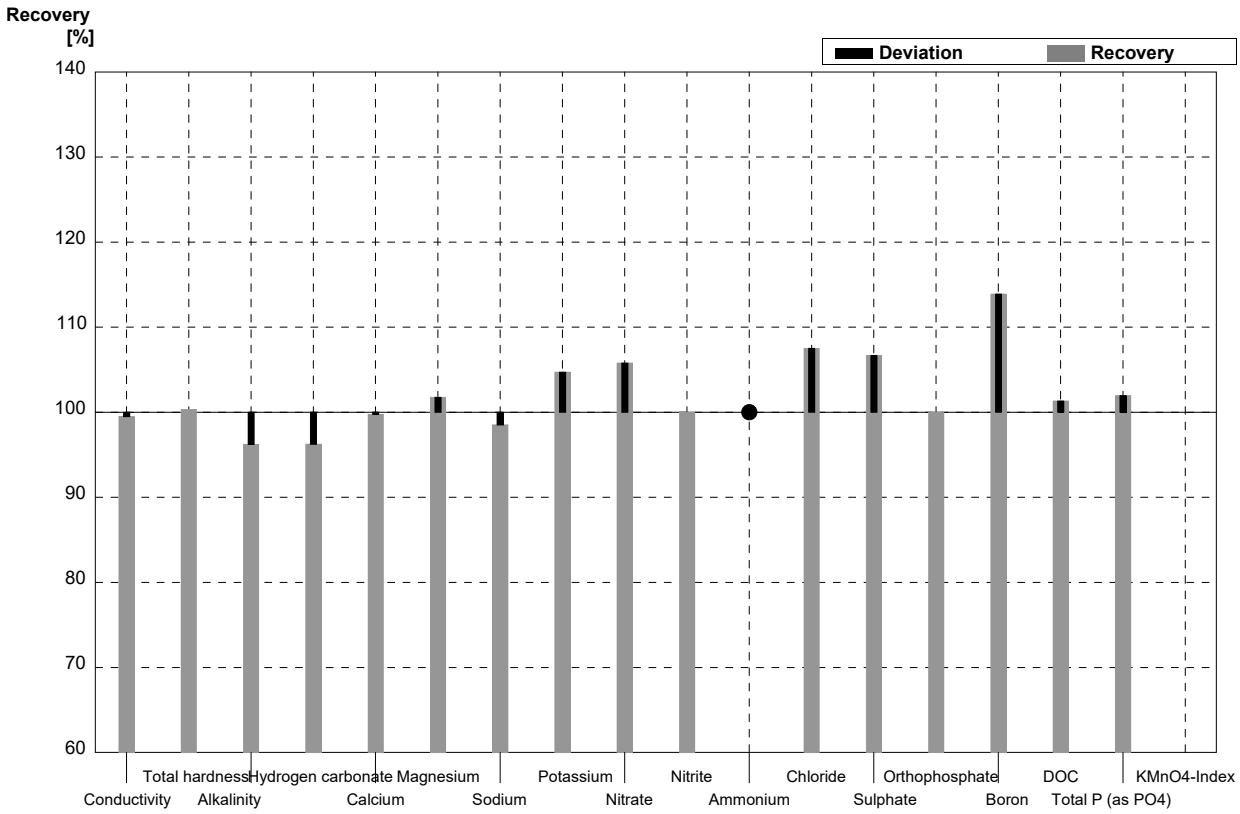
Sample N147B
Laboratory AD

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1	359	29	µS/cm	99%
Total hardness	1,00	0,01	0,962	0,09	mmol/l	96%
Alkalinity	1,75	0,01	1,7	0,08	mmol/l	97%
Hydrogen carbonate	104	1	106	4,7	mg/l	102%
Calcium	24,9	0,3	23,87	2,387	mg/l	96%
Magnesium	9,07	0,09	8,91	0,891	mg/l	98%
Sodium	30,6	0,1	29,06	2,906	mg/l	95%
Potassium	5,52	0,04	5,38	0,538	mg/l	97%
Nitrate	20,1	0,4	20,9	1,89	mg/l	104%
Nitrite	0,076	0,001	0,076	0,007	mg/l	100%
Ammonium	0,050	0,004	0,048	0,0094	mg/l	96%
Chloride	28,9	0,5	29,8	0,03	mg/l	103%
Sulphate	27,4	0,3	28,4	3,12	mg/l	104%
Orthophosphate	<0,009		0,01	0,001	mg/l	FP
Boron	0,086	0,001	0,079	0,0079	mg/l	92%
DOC	5,22	0,05	4,93	0,59	mg/l	94%
Total P (as PO4)	<0,009		<0,003		mg/l	•
KMnO4-Index	2,38	0,12	2,63	0,03	mg/l	111%



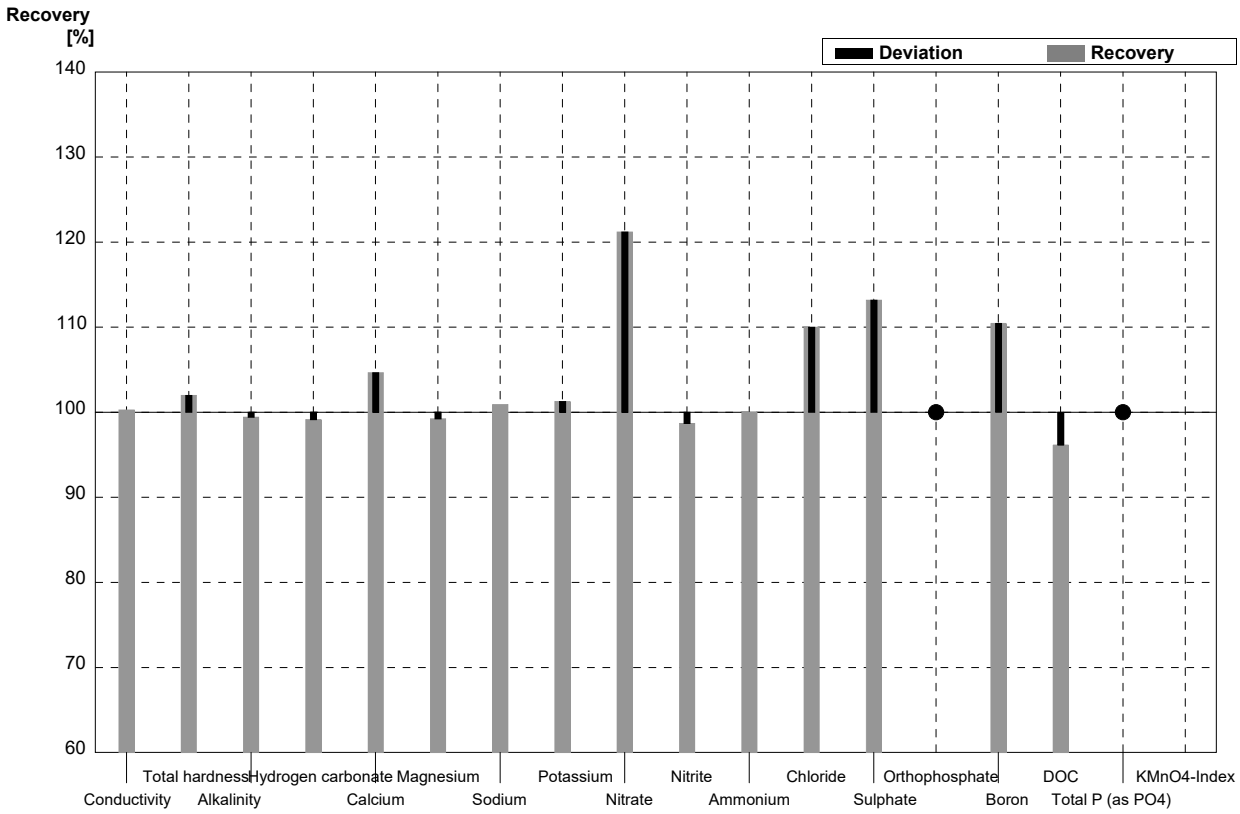
Sample N147A
Laboratory AE

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2	808	4,51	µS/cm	100%
Total hardness	3,06	0,03	3,07		mmol/l	100%
Alkalinity	3,97	0,04	3,82	0,38	mmol/l	96%
Hydrogen carbonate	239	2	230,01		mg/l	96%
Calcium	86,1	1,1	85,88	8,6	mg/l	100%
Magnesium	22,1	0,2	22,49	2,2	mg/l	102%
Sodium	44,9	0,5	44,24	4,4	mg/l	99%
Potassium	6,15	0,07	6,44	0,65	mg/l	105%
Nitrate	45,1	0,9	47,71	4,7	mg/l	106%
Nitrite	0,050	0,001	0,050	0,005	mg/l	100%
Ammonium	<0,01		<0,009		mg/l	•
Chloride	75,2	1,1	80,85	8,1	mg/l	108%
Sulphate	68,4	0,8	72,97	7,3	mg/l	107%
Orthophosphate	0,041	0,004	0,041	0,004	mg/l	100%
Boron	0,036	0,001	0,041	0,006	mg/l	114%
DOC	2,99	0,04	3,03	0,3	mg/l	101%
Total P (as PO4)	0,102	0,003	0,104	0,010	mg/l	102%
KMnO4-Index	3,43	0,14			mg/l	



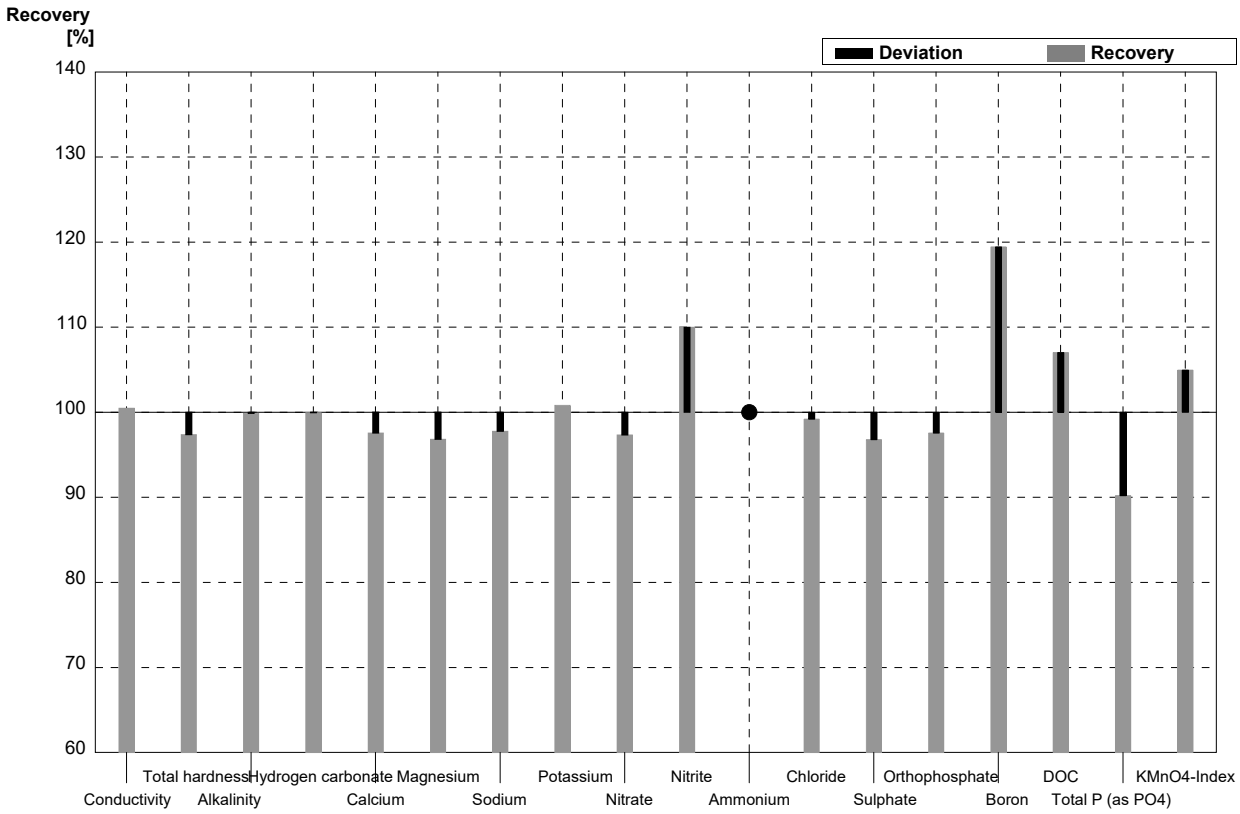
Sample N147B
Laboratory AE

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1	362	4,51	µS/cm	100%
Total hardness	1,00	0,01	1,02		mmol/l	102%
Alkalinity	1,75	0,01	1,74	0,17	mmol/l	99%
Hydrogen carbonate	104	1	103,11		mg/l	99%
Calcium	24,9	0,3	26,06	2,6	mg/l	105%
Magnesium	9,07	0,09	9,00	0,9	mg/l	99%
Sodium	30,6	0,1	30,88	3,1	mg/l	101%
Potassium	5,52	0,04	5,59	0,57	mg/l	101%
Nitrate	20,1	0,4	24,36	2,4	mg/l	121%
Nitrite	0,076	0,001	0,075	0,007	mg/l	99%
Ammonium	0,050	0,004	0,050	0,004	mg/l	100%
Chloride	28,9	0,5	31,79	3,2	mg/l	110%
Sulphate	27,4	0,3	31,01	3,1	mg/l	113%
Orthophosphate	<0,009		<0,0015		mg/l	•
Boron	0,086	0,001	0,095	0,014	mg/l	110%
DOC	5,22	0,05	5,02	0,5	mg/l	96%
Total P (as PO4)	<0,009		<0,001		mg/l	•
KMnO4-Index	2,38	0,12			mg/l	



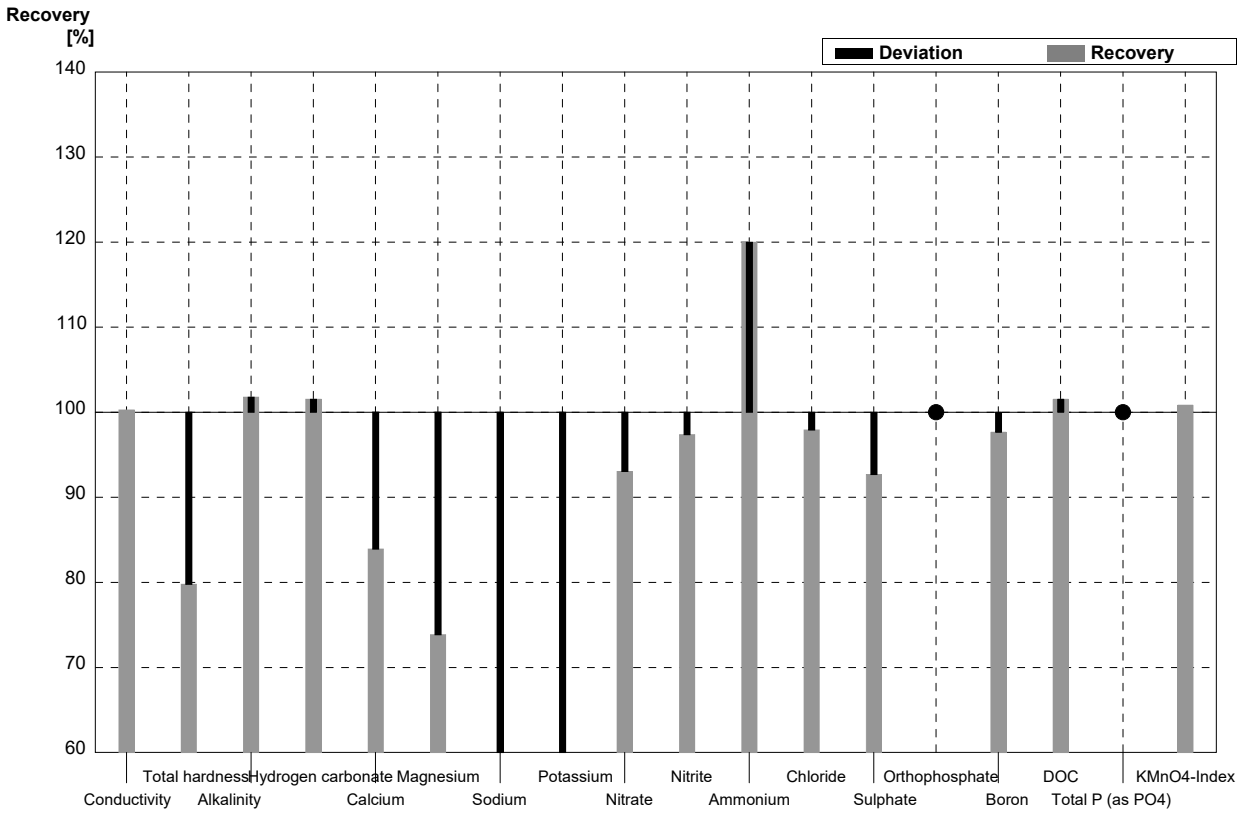
Sample N147A
Laboratory AF

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2	816		µS/cm	100%
Total hardness	3,06	0,03	2,98		mmol/l	97%
Alkalinity	3,97	0,04	3,965		mmol/l	100%
Hydrogen carbonate	239	2	238,9		mg/l	100%
Calcium	86,1	1,1	84		mg/l	98%
Magnesium	22,1	0,2	21,4		mg/l	97%
Sodium	44,9	0,5	43,9		mg/l	98%
Potassium	6,15	0,07	6,2		mg/l	101%
Nitrate	45,1	0,9	43,9		mg/l	97%
Nitrite	0,050	0,001	0,055		mg/l	110%
Ammonium	<0,01		<0,03		mg/l	•
Chloride	75,2	1,1	74,6		mg/l	99%
Sulphate	68,4	0,8	66,2		mg/l	97%
Orthophosphate	0,041	0,004	0,04		mg/l	98%
Boron	0,036	0,001	0,043		mg/l	119%
DOC	2,99	0,04	3,2		mg/l	107%
Total P (as PO4)	0,102	0,003	0,092		mg/l	90%
KMnO4-Index	3,43	0,14	3,6		mg/l	105%



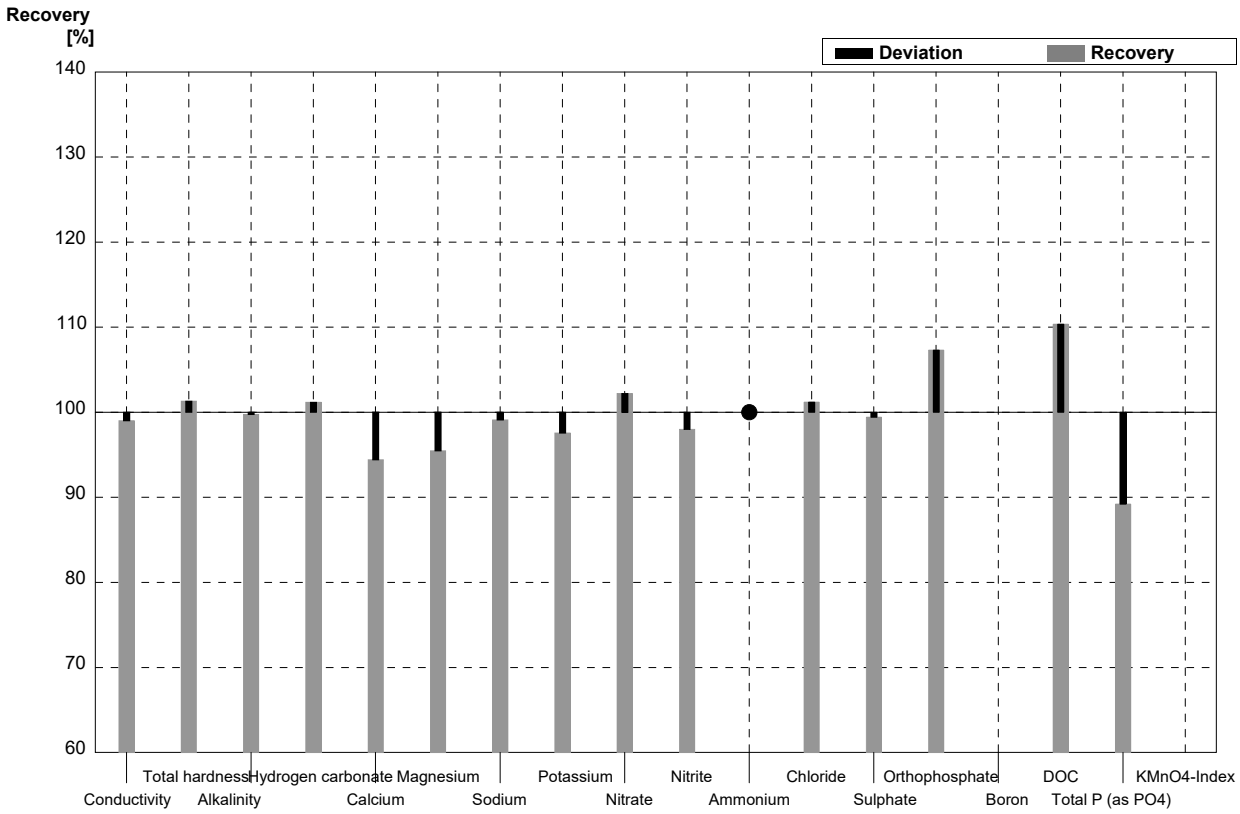
Sample N147B
Laboratory AF

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1	362		µS/cm	100%
Total hardness	1,00	0,01	0,798		mmol/l	80%
Alkalinity	1,75	0,01	1,781		mmol/l	102%
Hydrogen carbonate	104	1	105,6		mg/l	102%
Calcium	24,9	0,3	20,9		mg/l	84%
Magnesium	9,07	0,09	6,7		mg/l	74%
Sodium	30,6	0,1	10,2		mg/l	33%
Potassium	5,52	0,04	3,0		mg/l	54%
Nitrate	20,1	0,4	18,7		mg/l	93%
Nitrite	0,076	0,001	0,074		mg/l	97%
Ammonium	0,050	0,004	0,06		mg/l	120%
Chloride	28,9	0,5	28,3		mg/l	98%
Sulphate	27,4	0,3	25,4		mg/l	93%
Orthophosphate	<0,009		<0,03		mg/l	•
Boron	0,086	0,001	0,084		mg/l	98%
DOC	5,22	0,05	5,3		mg/l	102%
Total P (as PO4)	<0,009		<0,03		mg/l	•
KMnO4-Index	2,38	0,12	2,4		mg/l	101%



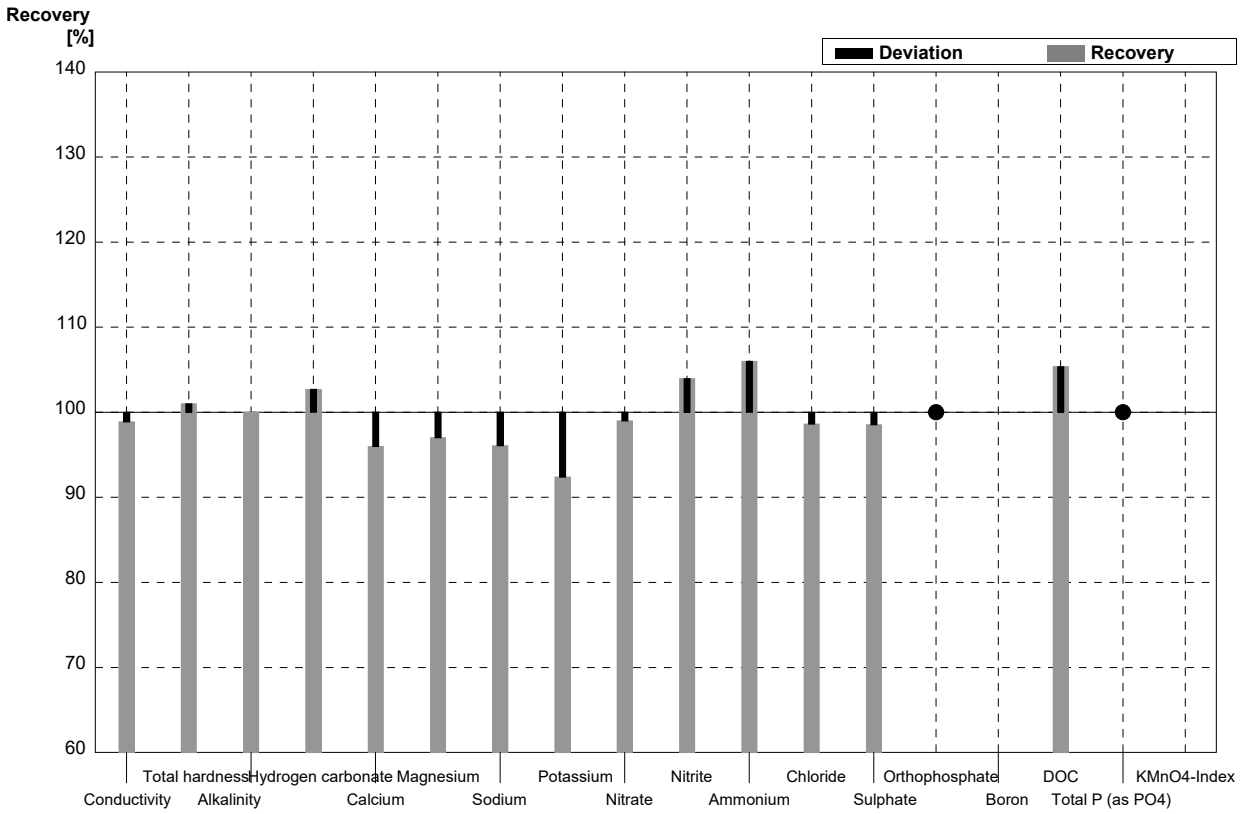
Sample N147A
Laboratory AG

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2	804	2	µS/cm	99%
Total hardness	3,06	0,03	3,10	0,1	mmol/l	101%
Alkalinity	3,97	0,04	3,96	0,1	mmol/l	100%
Hydrogen carbonate	239	2	241,8	6,1	mg/l	101%
Calcium	86,1	1,1	81,3	1,7	mg/l	94%
Magnesium	22,1	0,2	21,1	0,8	mg/l	95%
Sodium	44,9	0,5	44,5	0,8	mg/l	99%
Potassium	6,15	0,07	6,0	0,3	mg/l	98%
Nitrate	45,1	0,9	46,1	0,4	mg/l	102%
Nitrite	0,050	0,001	0,049	0,002	mg/l	98%
Ammonium	<0,01		<0,006	0,003	mg/l	•
Chloride	75,2	1,1	76,1	0,2	mg/l	101%
Sulphate	68,4	0,8	68	2	mg/l	99%
Orthophosphate	0,041	0,004	0,044	0,002	mg/l	107%
Boron	0,036	0,001			mg/l	
DOC	2,99	0,04	3,3	0,2	mg/l	110%
Total P (as PO4)	0,102	0,003	0,091	0,005	mg/l	89%
KMnO4-Index	3,43	0,14			mg/l	



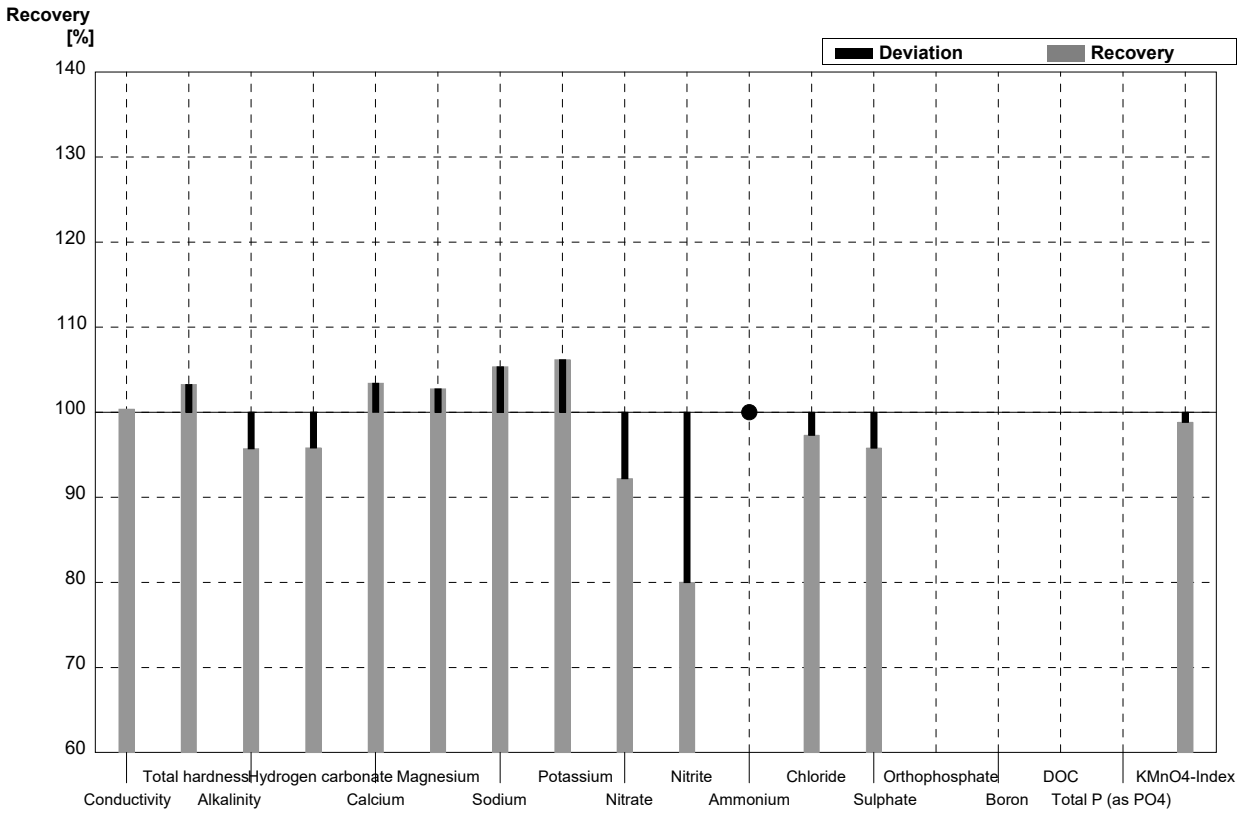
Sample N147B
Laboratory AG

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1	357	2	µS/cm	99%
Total hardness	1,00	0,01	1,01	0,1	mmol/l	101%
Alkalinity	1,75	0,01	1,75	0,1	mmol/l	100%
Hydrogen carbonate	104	1	106,8	6,1	mg/l	103%
Calcium	24,9	0,3	23,9	1,7	mg/l	96%
Magnesium	9,07	0,09	8,8	0,8	mg/l	97%
Sodium	30,6	0,1	29,4	0,8	mg/l	96%
Potassium	5,52	0,04	5,1	0,3	mg/l	92%
Nitrate	20,1	0,4	19,9	0,4	mg/l	99%
Nitrite	0,076	0,001	0,079	0,002	mg/l	104%
Ammonium	0,050	0,004	0,053	0,003	mg/l	106%
Chloride	28,9	0,5	28,5	0,2	mg/l	99%
Sulphate	27,4	0,3	27	2	mg/l	99%
Orthophosphate	<0,009		<0,003	0,002	mg/l	•
Boron	0,086	0,001			mg/l	
DOC	5,22	0,05	5,5	0,2	mg/l	105%
Total P (as PO4)	<0,009		<0,009	0,005	mg/l	•
KMnO4-Index	2,38	0,12			mg/l	



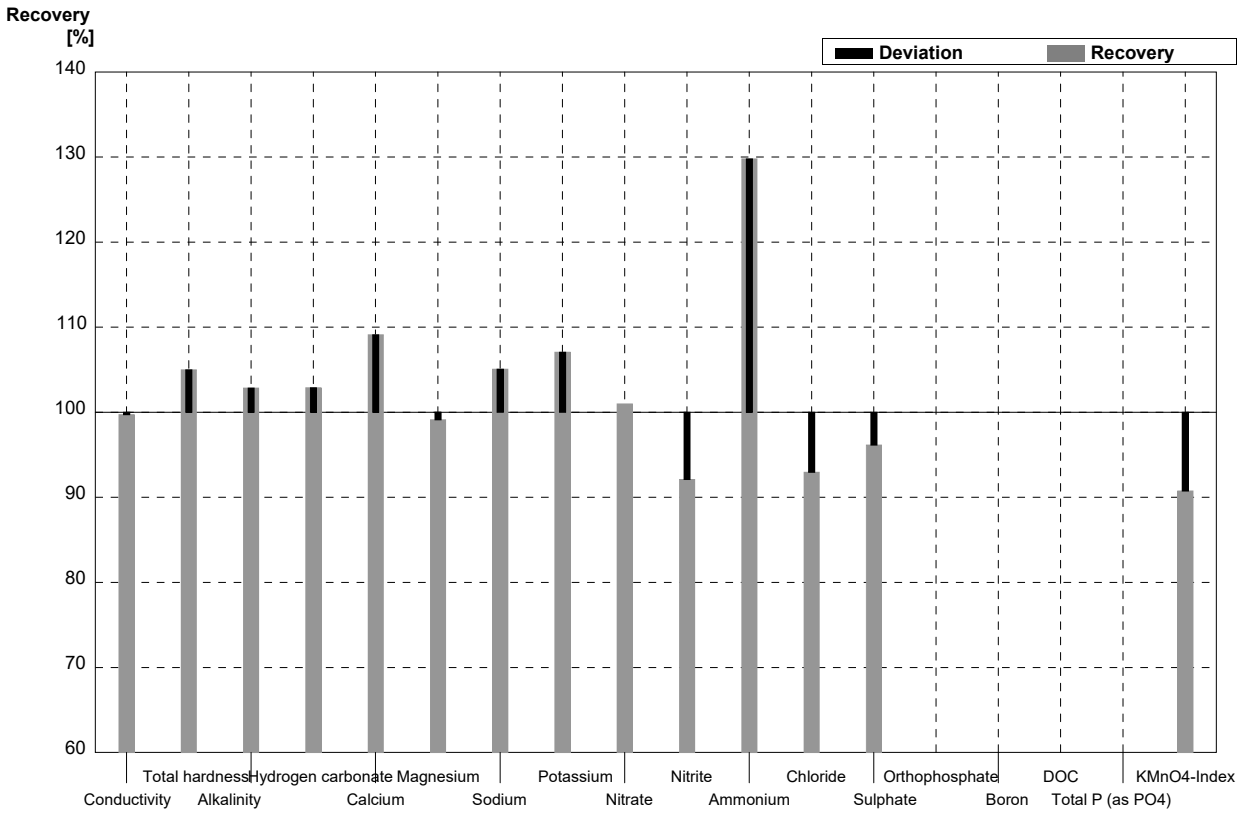
Sample N147A
Laboratory AH

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2	815,00	10	µS/cm	100%
Total hardness	3,06	0,03	3,16	0,16	mmol/l	103%
Alkalinity	3,97	0,04	3,80	0,04	mmol/l	96%
Hydrogen carbonate	239	2	229,00	3	mg/l	96%
Calcium	86,1	1,1	89,05	4,5	mg/l	103%
Magnesium	22,1	0,2	22,71	1,2	mg/l	103%
Sodium	44,9	0,5	47,30	2	mg/l	105%
Potassium	6,15	0,07	6,53	0,4	mg/l	106%
Nitrate	45,1	0,9	41,59	2	mg/l	92%
Nitrite	0,050	0,001	0,04	0,009	mg/l	80%
Ammonium	<0,01		<0,04		mg/l	•
Chloride	75,2	1,1	73,18	4	mg/l	97%
Sulphate	68,4	0,8	65,53	3	mg/l	96%
Orthophosphate	0,041	0,004			mg/l	
Boron	0,036	0,001			mg/l	
DOC	2,99	0,04			mg/l	
Total P (as PO4)	0,102	0,003			mg/l	
KMnO4-Index	3,43	0,14	3,39	0,17	mg/l	99%



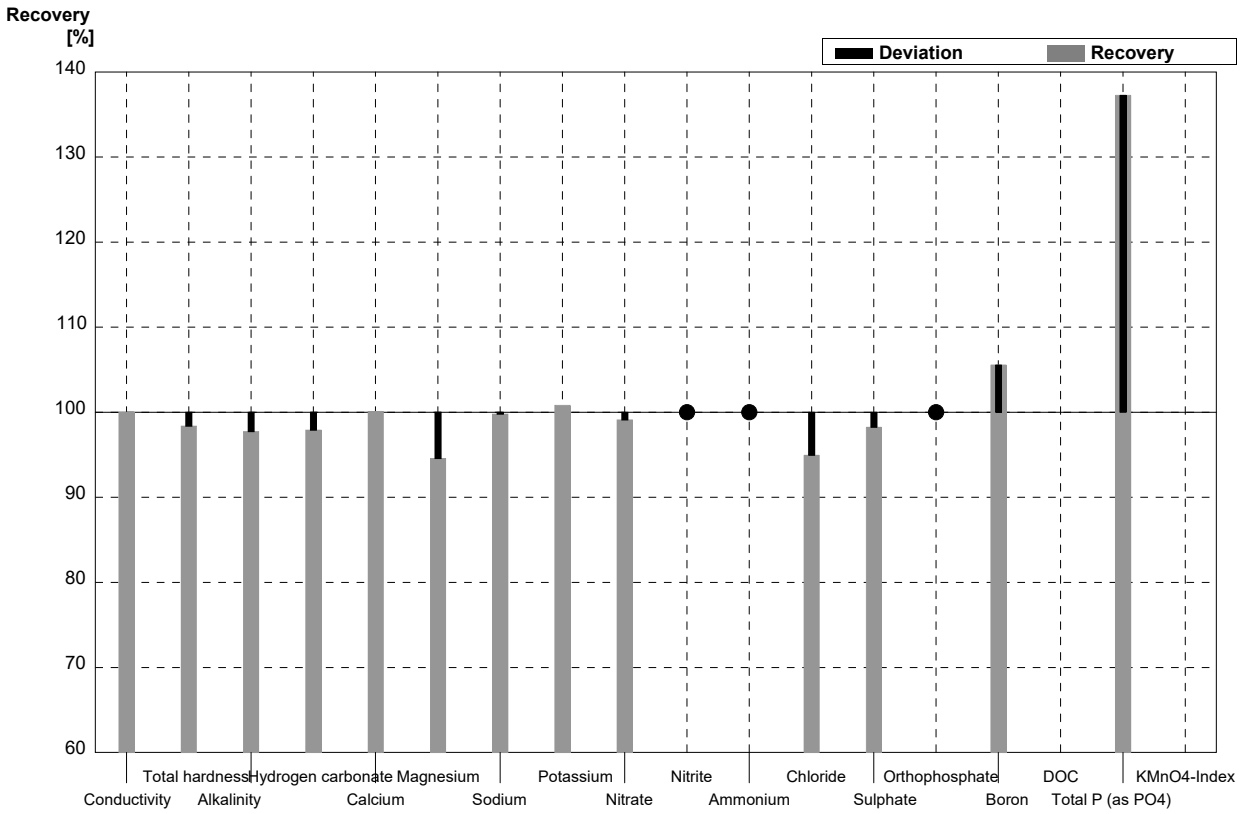
Sample N147B
Laboratory AH

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1	360,00	10	µS/cm	100%
Total hardness	1,00	0,01	1,05	0,05	mmol/l	105%
Alkalinity	1,75	0,01	1,80	0,04	mmol/l	103%
Hydrogen carbonate	104	1	107,00	3	mg/l	103%
Calcium	24,9	0,3	27,17	1,4	mg/l	109%
Magnesium	9,07	0,09	8,99	0,5	mg/l	99%
Sodium	30,6	0,1	32,15	1,7	mg/l	105%
Potassium	5,52	0,04	5,91	0,3	mg/l	107%
Nitrate	20,1	0,4	20,30	1,1	mg/l	101%
Nitrite	0,076	0,001	0,07	0,009	mg/l	92%
Ammonium	0,050	0,004	0,0649	0,0027	mg/l	130%
Chloride	28,9	0,5	26,86	1,4	mg/l	93%
Sulphate	27,4	0,3	26,35	1,4	mg/l	96%
Orthophosphate	<0,009				mg/l	
Boron	0,086	0,001			mg/l	
DOC	5,22	0,05			mg/l	
Total P (as PO4)	<0,009				mg/l	
KMnO4-Index	2,38	0,12	2,16	0,17	mg/l	91%



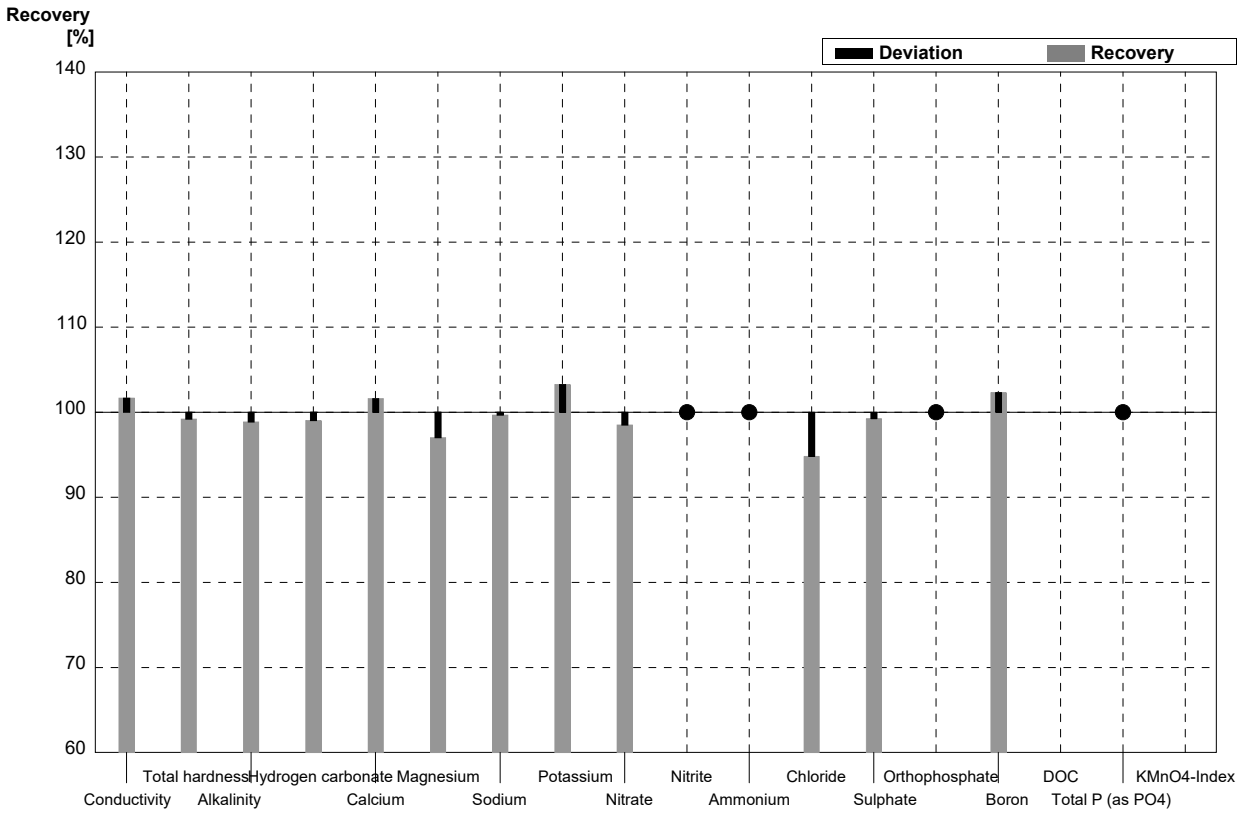
Sample N147A
Laboratory AI

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2	812	43	µS/cm	100%
Total hardness	3,06	0,03	3,01	0,39	mmol/l	98%
Alkalinity	3,97	0,04	3,88	0,12	mmol/l	98%
Hydrogen carbonate	239	2	234	7,0	mg/l	98%
Calcium	86,1	1,1	86,2	6,7	mg/l	100%
Magnesium	22,1	0,2	20,9	1,1	mg/l	95%
Sodium	44,9	0,5	44,8	4,9	mg/l	100%
Potassium	6,15	0,07	6,2	1,0	mg/l	101%
Nitrate	45,1	0,9	44,7	2,7	mg/l	99%
Nitrite	0,050	0,001	<0,2		mg/l	•
Ammonium	<0,01		<0,2		mg/l	•
Chloride	75,2	1,1	71,4	5,6	mg/l	95%
Sulphate	68,4	0,8	67,2	8,9	mg/l	98%
Orthophosphate	0,041	0,004	<2,0		mg/l	•
Boron	0,036	0,001	0,038	0,004	mg/l	106%
DOC	2,99	0,04			mg/l	
Total P (as PO4)	0,102	0,003	0,14	0,02	mg/l	137%
KMnO4-Index	3,43	0,14			mg/l	



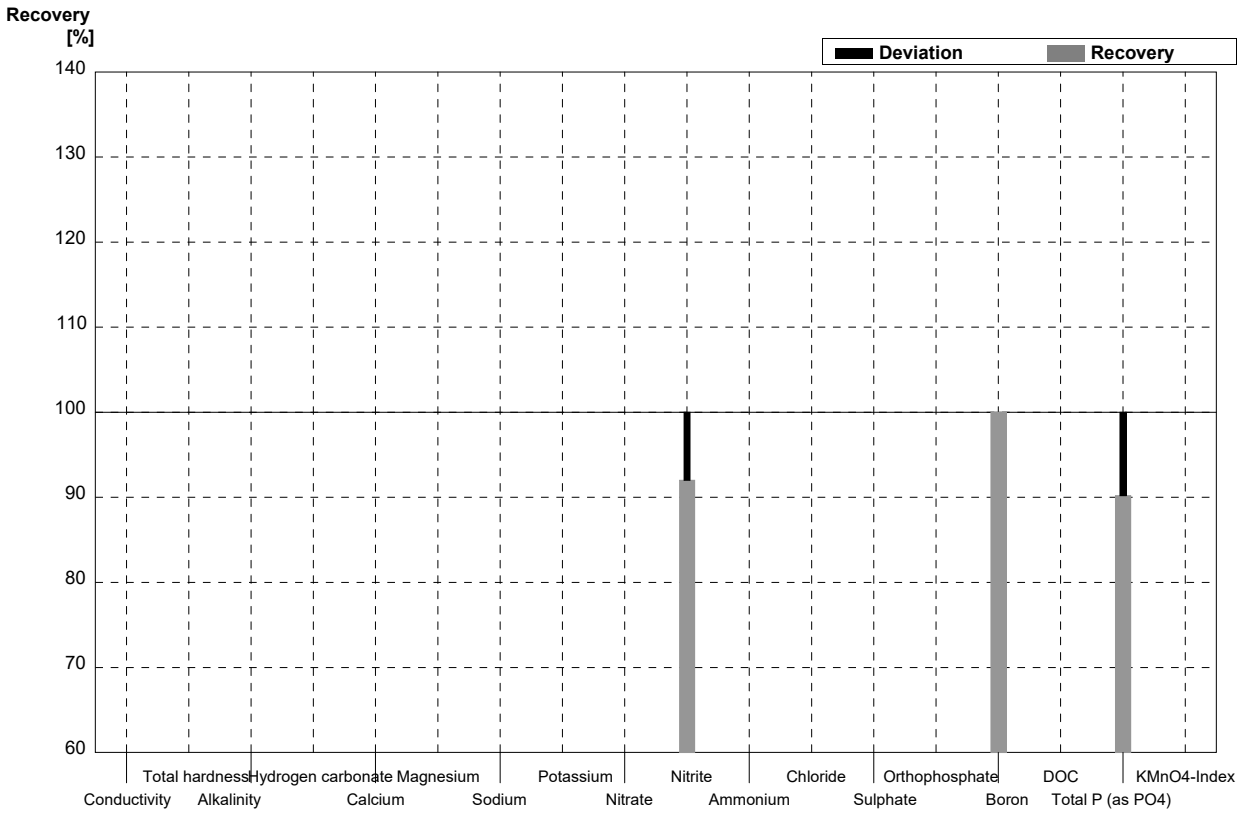
Sample N147B
Laboratory AI

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1	367	19	µS/cm	102%
Total hardness	1,00	0,01	0,992	0,130	mmol/l	99%
Alkalinity	1,75	0,01	1,73	0,05	mmol/l	99%
Hydrogen carbonate	104	1	103	3,1	mg/l	99%
Calcium	24,9	0,3	25,3	2,0	mg/l	102%
Magnesium	9,07	0,09	8,8	0,5	mg/l	97%
Sodium	30,6	0,1	30,5	3,3	mg/l	100%
Potassium	5,52	0,04	5,7	0,9	mg/l	103%
Nitrate	20,1	0,4	19,8	1,2	mg/l	99%
Nitrite	0,076	0,001	<0,2		mg/l	•
Ammonium	0,050	0,004	<0,2		mg/l	•
Chloride	28,9	0,5	27,4	2,2	mg/l	95%
Sulphate	27,4	0,3	27,2	3,6	mg/l	99%
Orthophosphate	<0,009		<2,0		mg/l	•
Boron	0,086	0,001	0,088	0,009	mg/l	102%
DOC	5,22	0,05			mg/l	
Total P (as PO4)	<0,009		<0,08		mg/l	•
KMnO4-Index	2,38	0,12			mg/l	



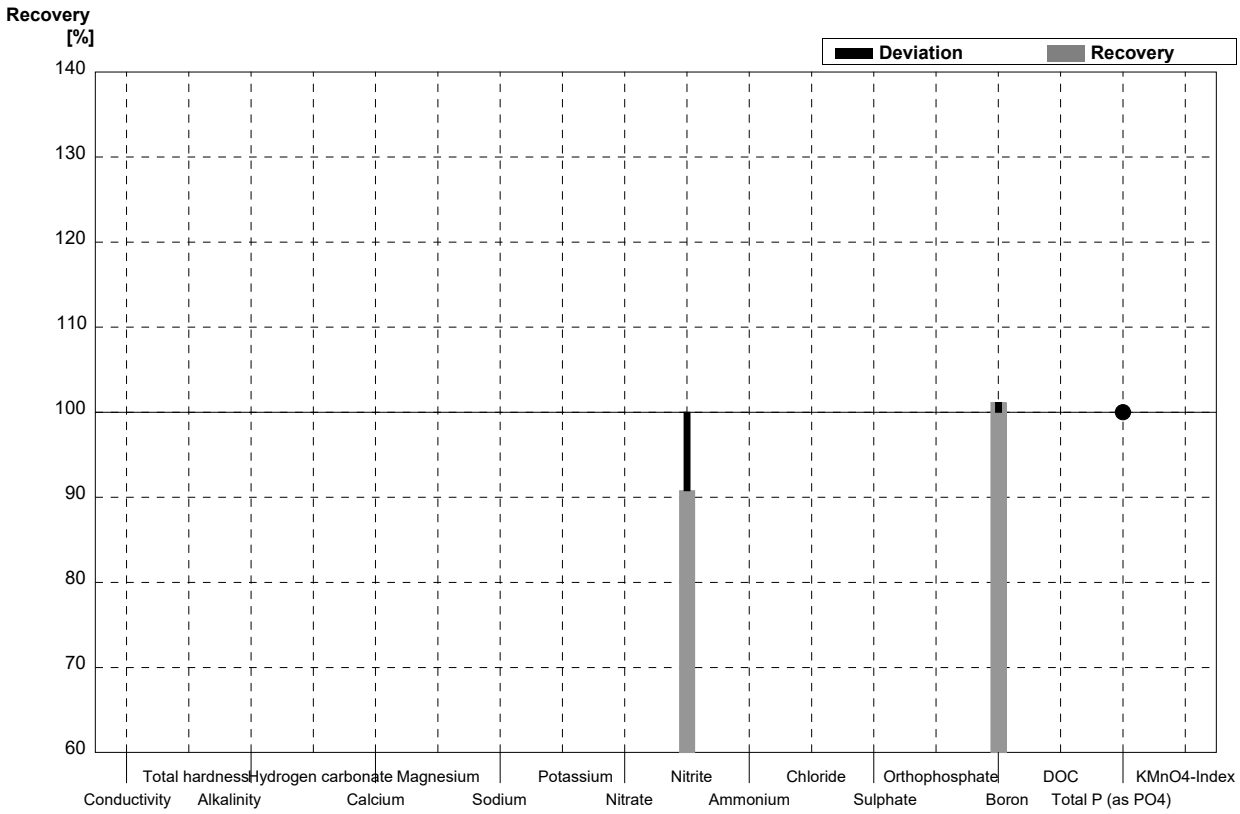
Sample N147A
Laboratory AJ

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2			µS/cm	
Total hardness	3,06	0,03			mmol/l	
Alkalinity	3,97	0,04			mmol/l	
Hydrogen carbonate	239	2			mg/l	
Calcium	86,1	1,1			mg/l	
Magnesium	22,1	0,2			mg/l	
Sodium	44,9	0,5			mg/l	
Potassium	6,15	0,07			mg/l	
Nitrate	45,1	0,9			mg/l	
Nitrite	0,050	0,001	0,046	0,007	mg/l	92%
Ammonium	<0,01				mg/l	
Chloride	75,2	1,1			mg/l	
Sulphate	68,4	0,8			mg/l	
Orthophosphate	0,041	0,004			mg/l	
Boron	0,036	0,001	0,036	0,007	mg/l	100%
DOC	2,99	0,04			mg/l	
Total P (as PO4)	0,102	0,003	0,092	0,016	mg/l	90%
KMnO4-Index	3,43	0,14			mg/l	



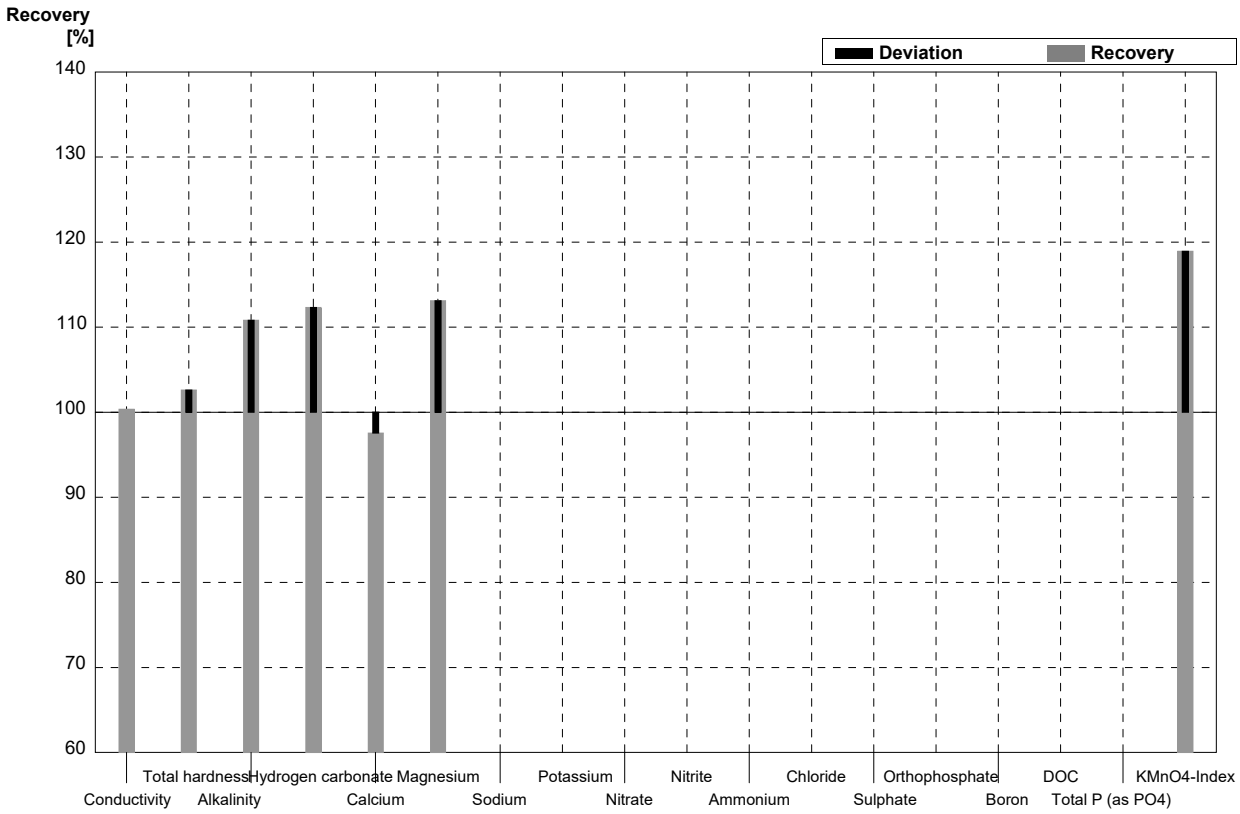
Sample N147B
Laboratory AJ

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1			µS/cm	
Total hardness	1,00	0,01			mmol/l	
Alkalinity	1,75	0,01			mmol/l	
Hydrogen carbonate	104	1			mg/l	
Calcium	24,9	0,3			mg/l	
Magnesium	9,07	0,09			mg/l	
Sodium	30,6	0,1			mg/l	
Potassium	5,52	0,04			mg/l	
Nitrate	20,1	0,4			mg/l	
Nitrite	0,076	0,001	0,069	0,010	mg/l	91%
Ammonium	0,050	0,004			mg/l	
Chloride	28,9	0,5			mg/l	
Sulphate	27,4	0,3			mg/l	
Orthophosphate	<0,009				mg/l	
Boron	0,086	0,001	0,087	0,017	mg/l	101%
DOC	5,22	0,05			mg/l	
Total P (as PO4)	<0,009		<0,030		mg/l	•
KMnO4-Index	2,38	0,12			mg/l	



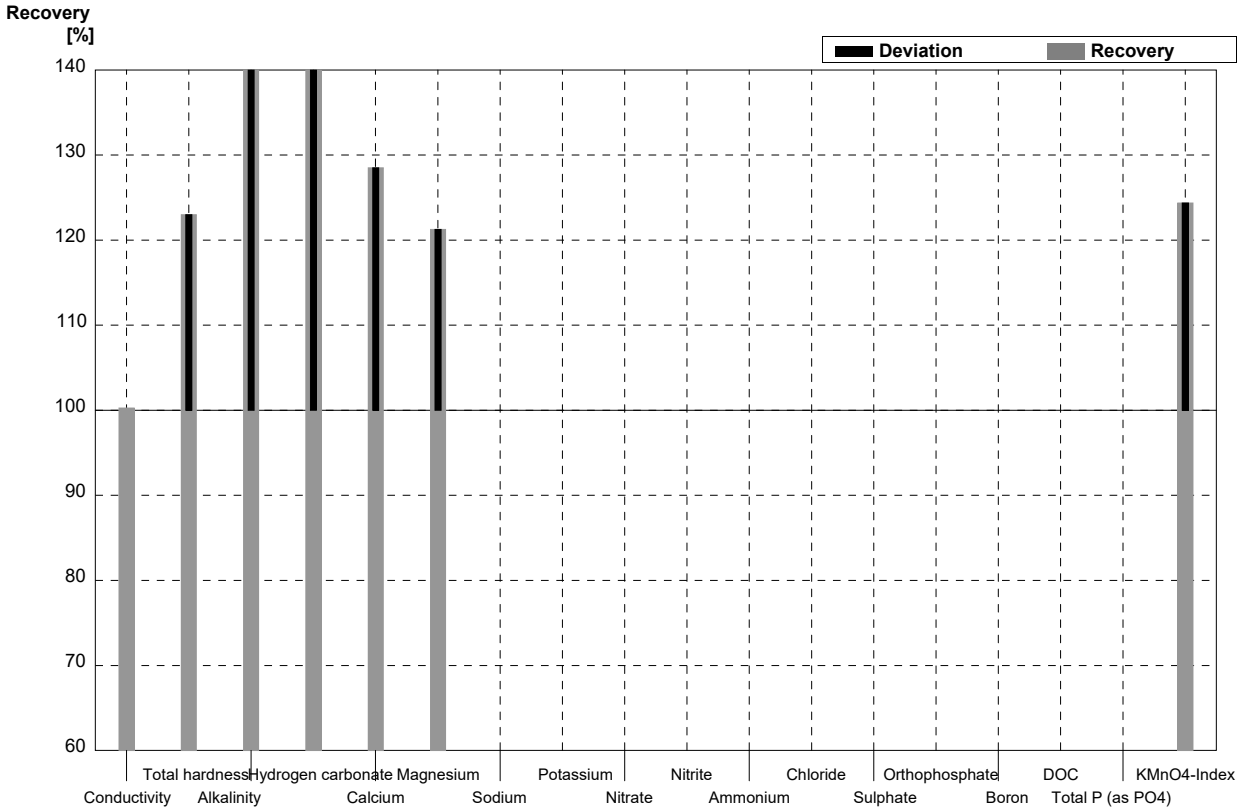
Sample N147A
Laboratory AK

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2	815	58	µS/cm	100%
Total hardness	3,06	0,03	3,14		mmol/l	103%
Alkalinity	3,97	0,04	4,4		mmol/l	111%
Hydrogen carbonate	239	2	268,5		mg/l	112%
Calcium	86,1	1,1	84	15	mg/l	98%
Magnesium	22,1	0,2	25	3,1	mg/l	113%
Sodium	44,9	0,5			mg/l	
Potassium	6,15	0,07			mg/l	
Nitrate	45,1	0,9			mg/l	
Nitrite	0,050	0,001			mg/l	
Ammonium	<0,01				mg/l	
Chloride	75,2	1,1			mg/l	
Sulphate	68,4	0,8			mg/l	
Orthophosphate	0,041	0,004			mg/l	
Boron	0,036	0,001			mg/l	
DOC	2,99	0,04			mg/l	
Total P (as PO4)	0,102	0,003			mg/l	
KMnO4-Index	3,43	0,14	4,08	1,1	mg/l	119%



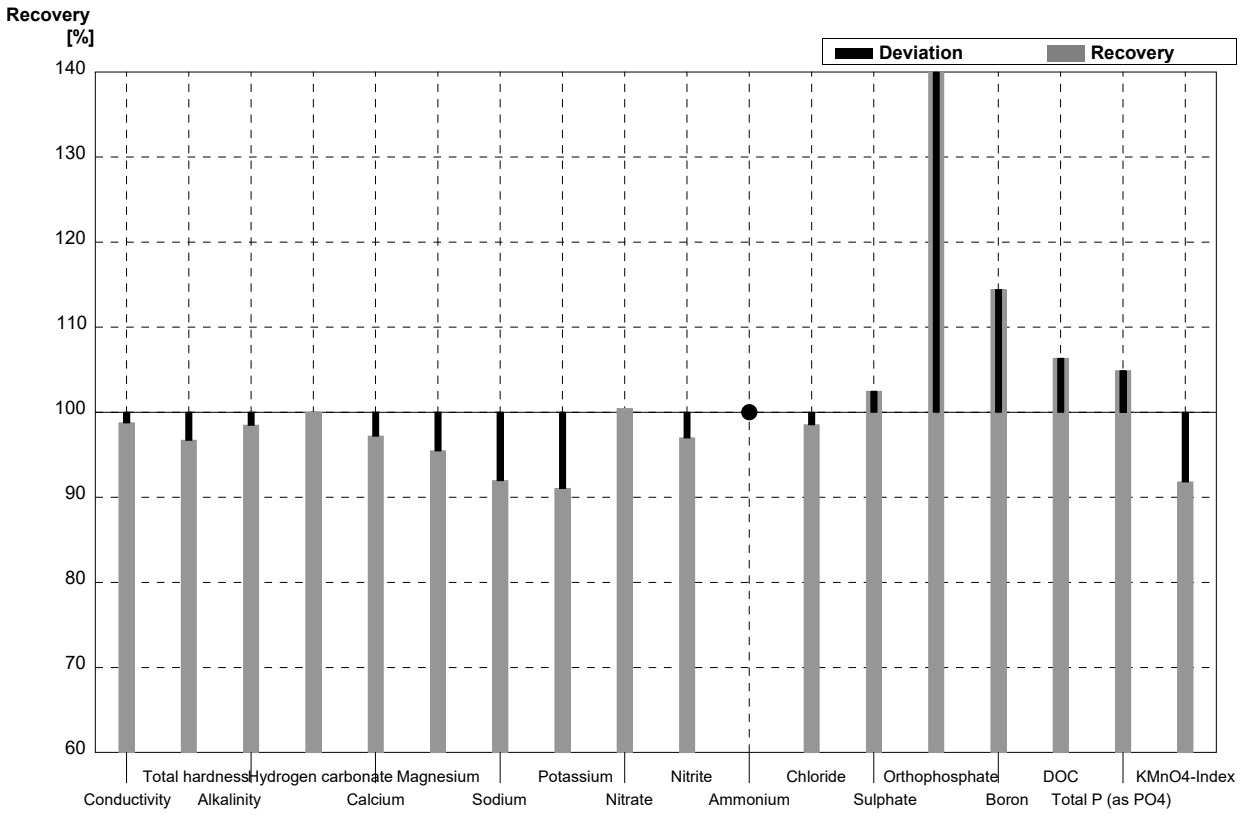
Sample N147B
Laboratory AK

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1	362	26	µS/cm	100%
Total hardness	1,00	0,01	1,23		mmol/l	123%
Alkalinity	1,75	0,01	2,9		mmol/l	166%
Hydrogen carbonate	104	1	176,9		mg/l	170%
Calcium	24,9	0,3	32	6	mg/l	129%
Magnesium	9,07	0,09	11	1,3	mg/l	121%
Sodium	30,6	0,1			mg/l	
Potassium	5,52	0,04			mg/l	
Nitrate	20,1	0,4			mg/l	
Nitrite	0,076	0,001			mg/l	
Ammonium	0,050	0,004			mg/l	
Chloride	28,9	0,5			mg/l	
Sulphate	27,4	0,3			mg/l	
Orthophosphate	<0,009				mg/l	
Boron	0,086	0,001			mg/l	
DOC	5,22	0,05			mg/l	
Total P (as PO4)	<0,009				mg/l	
KMnO4-Index	2,38	0,12	2,96	0,8	mg/l	124%



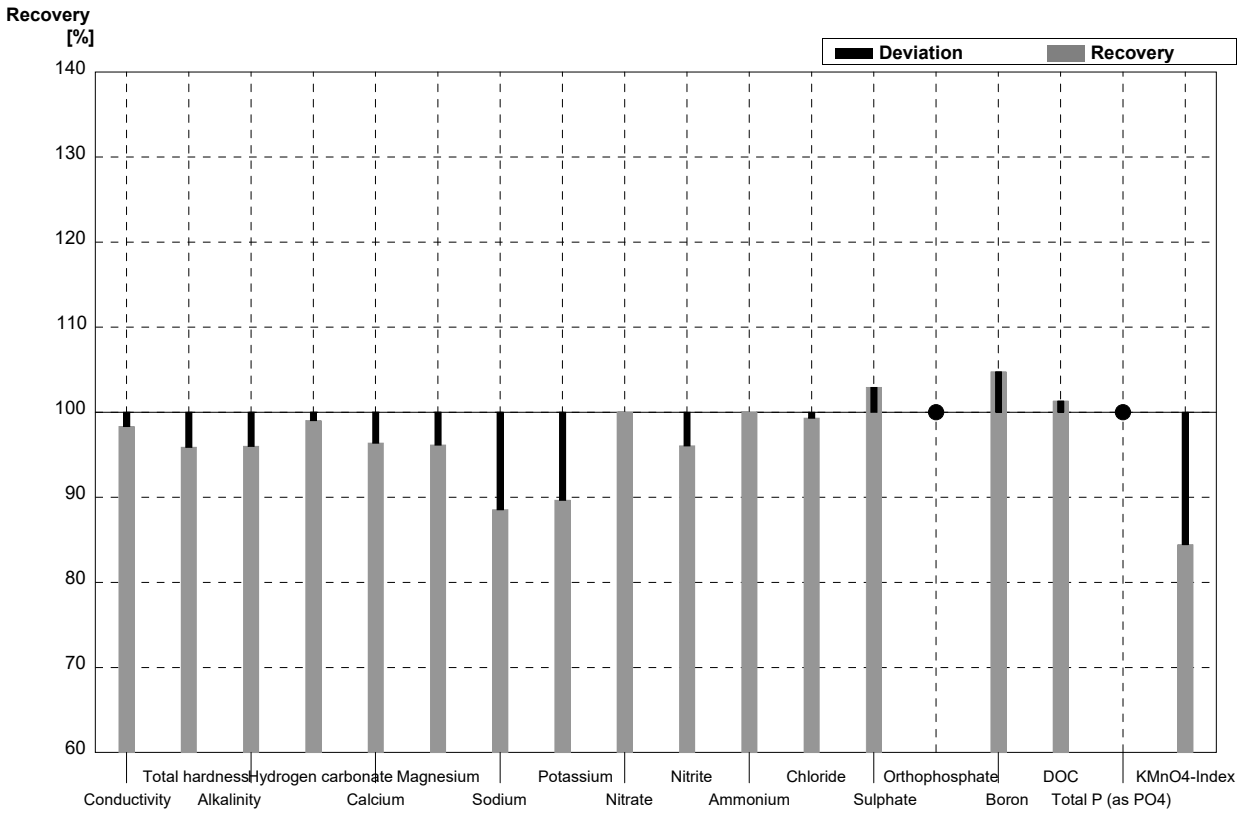
Sample N147A
Laboratory AL

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2	802	24	µS/cm	99%
Total hardness	3,06	0,03	2,96	0,24	mmol/l	97%
Alkalinity	3,97	0,04	3,91	0,19	mmol/l	98%
Hydrogen carbonate	239	2	239	11,3	mg/l	100%
Calcium	86,1	1,1	83,7	3,8	mg/l	97%
Magnesium	22,1	0,2	21,1	1,7	mg/l	95%
Sodium	44,9	0,5	41,3	2,9	mg/l	92%
Potassium	6,15	0,07	5,60	0,40	mg/l	91%
Nitrate	45,1	0,9	45,3	1,5	mg/l	100%
Nitrite	0,050	0,001	0,0485	0,005	mg/l	97%
Ammonium	<0,01		<0,01		mg/l	•
Chloride	75,2	1,1	74,1	5,0	mg/l	99%
Sulphate	68,4	0,8	70,1	2,3	mg/l	102%
Orthophosphate	0,041	0,004	0,0715	0,005	mg/l	174%
Boron	0,036	0,001	0,0412	0,005	mg/l	114%
DOC	2,99	0,04	3,18	0,51	mg/l	106%
Total P (as PO4)	0,102	0,003	0,107	0,007	mg/l	105%
KMnO4-Index	3,43	0,14	3,15	0,47	mg/l	92%



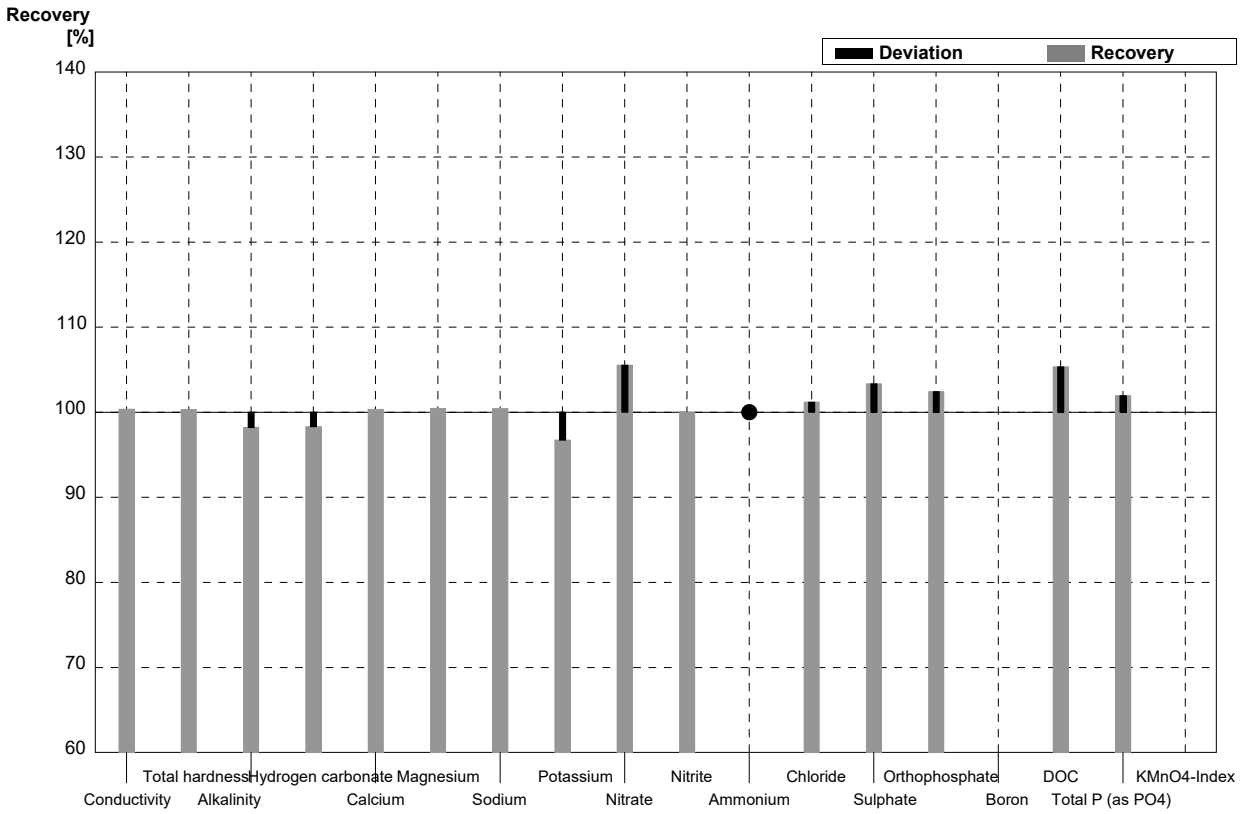
Sample N147B
Laboratory AL

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1	355	10,6	µS/cm	98%
Total hardness	1,00	0,01	0,959	0,078	mmol/l	96%
Alkalinity	1,75	0,01	1,68	0,08	mmol/l	96%
Hydrogen carbonate	104	1	103	4,9	mg/l	99%
Calcium	24,9	0,3	24,0	1,1	mg/l	96%
Magnesium	9,07	0,09	8,72	0,72	mg/l	96%
Sodium	30,6	0,1	27,1	1,9	mg/l	89%
Potassium	5,52	0,04	4,95	0,36	mg/l	90%
Nitrate	20,1	0,4	20,1	0,7	mg/l	100%
Nitrite	0,076	0,001	0,073	0,008	mg/l	96%
Ammonium	0,050	0,004	0,050	0,004	mg/l	100%
Chloride	28,9	0,5	28,7	1,9	mg/l	99%
Sulphate	27,4	0,3	28,2	0,9	mg/l	103%
Orthophosphate	<0,009		<0,015		mg/l	•
Boron	0,086	0,001	0,0901	0,011	mg/l	105%
DOC	5,22	0,05	5,29	0,85	mg/l	101%
Total P (as PO4)	<0,009		<0,015		mg/l	•
KMnO4-Index	2,38	0,12	2,01	0,30	mg/l	84%



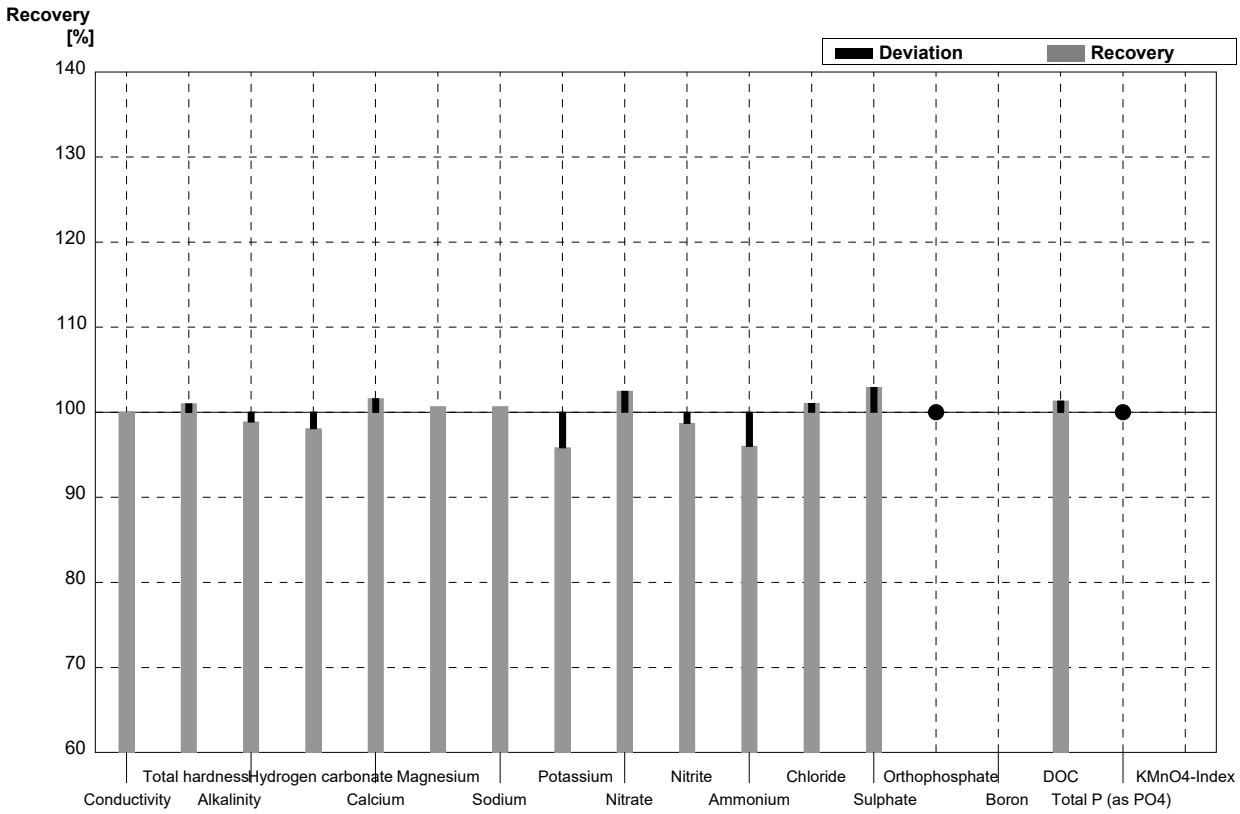
Sample N147A
Laboratory AM

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2	815	33	µS/cm	100%
Total hardness	3,06	0,03	3,07	0,2	mmol/l	100%
Alkalinity	3,97	0,04	3,90	0,2	mmol/l	98%
Hydrogen carbonate	239	2	235	10	mg/l	98%
Calcium	86,1	1,1	86,4	7	mg/l	100%
Magnesium	22,1	0,2	22,2	3	mg/l	100%
Sodium	44,9	0,5	45,1	7	mg/l	100%
Potassium	6,15	0,07	5,95	0,8	mg/l	97%
Nitrate	45,1	0,9	47,6	4	mg/l	106%
Nitrite	0,050	0,001	0,050	0,004	mg/l	100%
Ammonium	<0,01		<0,013		mg/l	•
Chloride	75,2	1,1	76,1	6	mg/l	101%
Sulphate	68,4	0,8	70,7	5	mg/l	103%
Orthophosphate	0,041	0,004	0,042	0,006	mg/l	102%
Boron	0,036	0,001			mg/l	
DOC	2,99	0,04	3,15	0,5	mg/l	105%
Total P (as PO4)	0,102	0,003	0,104	0,02	mg/l	102%
KMnO4-Index	3,43	0,14			mg/l	



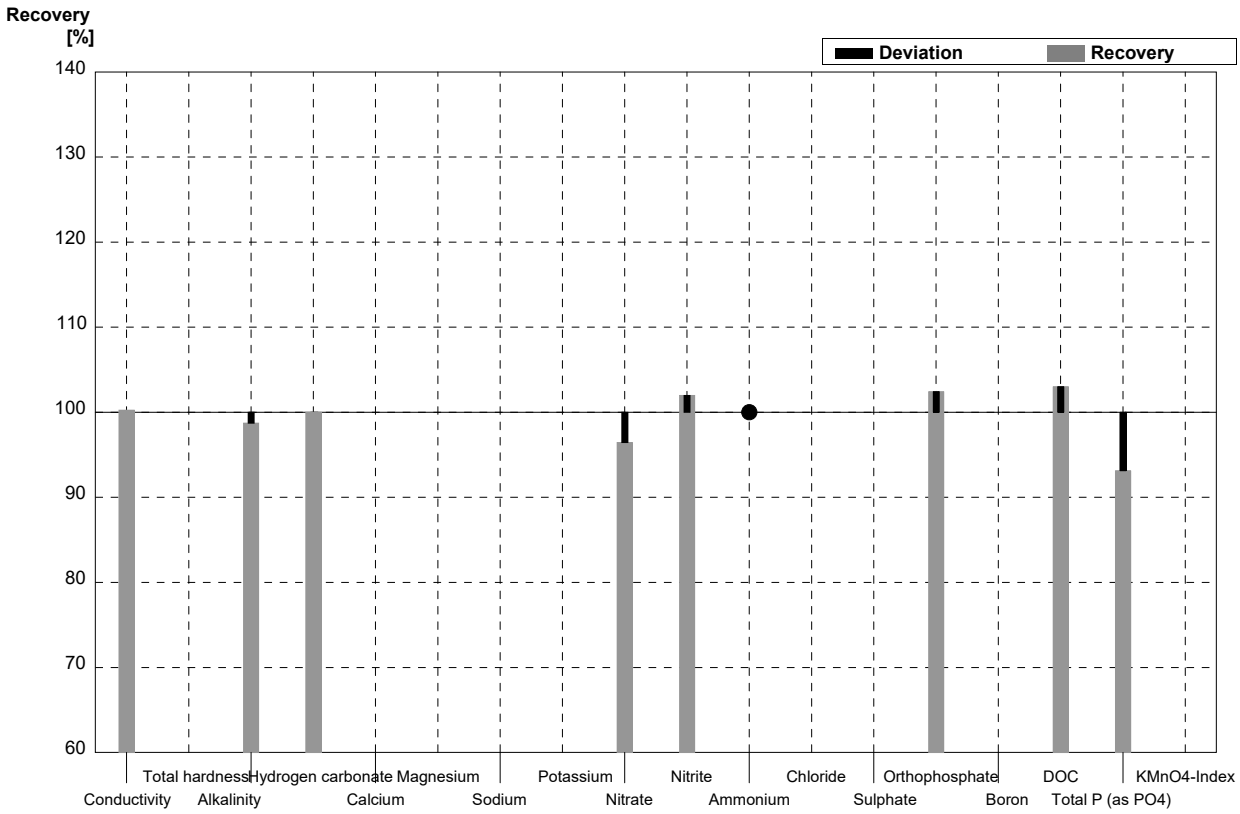
Sample N147B
Laboratory AM

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1	361	15	µS/cm	100%
Total hardness	1,00	0,01	1,01	0,1	mmol/l	101%
Alkalinity	1,75	0,01	1,73	0,1	mmol/l	99%
Hydrogen carbonate	104	1	102	5	mg/l	98%
Calcium	24,9	0,3	25,3	3	mg/l	102%
Magnesium	9,07	0,09	9,13	1,1	mg/l	101%
Sodium	30,6	0,1	30,8	5	mg/l	101%
Potassium	5,52	0,04	5,29	0,7	mg/l	96%
Nitrate	20,1	0,4	20,6	2	mg/l	102%
Nitrite	0,076	0,001	0,075	0,006	mg/l	99%
Ammonium	0,050	0,004	0,048	0,007	mg/l	96%
Chloride	28,9	0,5	29,2	3	mg/l	101%
Sulphate	27,4	0,3	28,2	2	mg/l	103%
Orthophosphate	<0,009		<0,01		mg/l	•
Boron	0,086	0,001			mg/l	
DOC	5,22	0,05	5,29	0,8	mg/l	101%
Total P (as PO4)	<0,009		<0,013		mg/l	•
KMnO4-Index	2,38	0,12			mg/l	



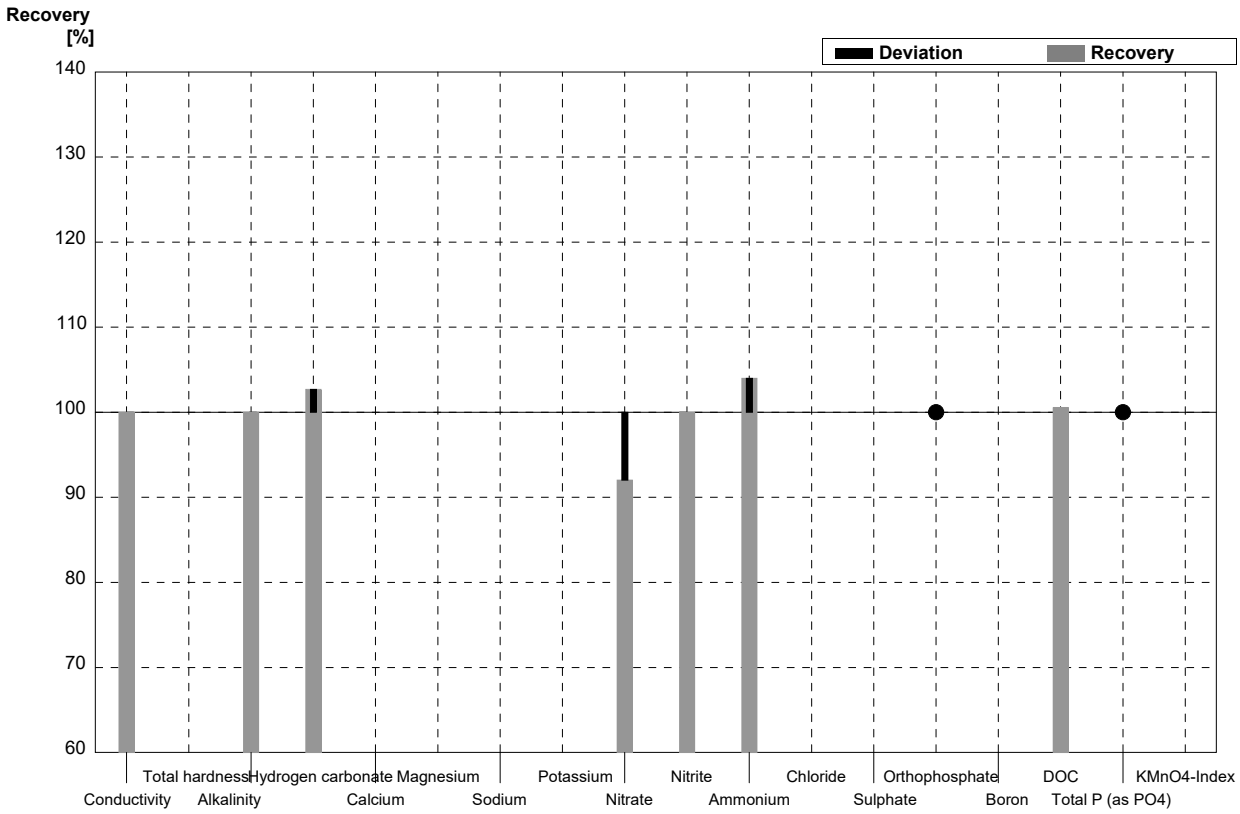
Sample N147A
Laboratory AN

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2	814	0,4	µS/cm	100%
Total hardness	3,06	0,03			mmol/l	
Alkalinity	3,97	0,04	3,92	0,004	mmol/l	99%
Hydrogen carbonate	239	2	239	0,004	mg/l	100%
Calcium	86,1	1,1			mg/l	
Magnesium	22,1	0,2			mg/l	
Sodium	44,9	0,5			mg/l	
Potassium	6,15	0,07			mg/l	
Nitrate	45,1	0,9	43,5	0,6	mg/l	96%
Nitrite	0,050	0,001	0,051	0,001	mg/l	102%
Ammonium	<0,01		0,009	0,001	mg/l	•
Chloride	75,2	1,1			mg/l	
Sulphate	68,4	0,8			mg/l	
Orthophosphate	0,041	0,004	0,042	0,001	mg/l	102%
Boron	0,036	0,001			mg/l	
DOC	2,99	0,04	3,08	0,008	mg/l	103%
Total P (as PO4)	0,102	0,003	0,095	0,0003	mg/l	93%
KMnO4-Index	3,43	0,14			mg/l	



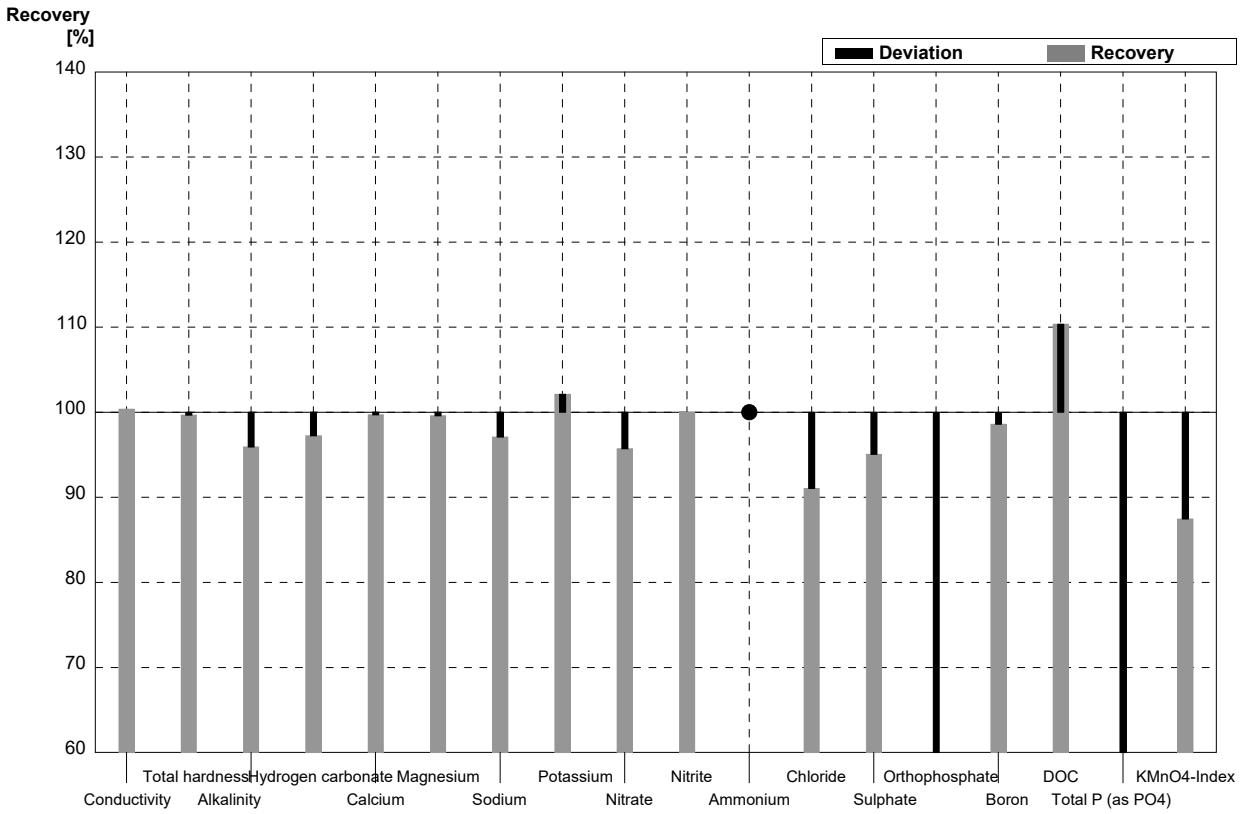
Sample N147B
Laboratory AN

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1	361	0,0	µS/cm	100%
Total hardness	1,00	0,01			mmol/l	
Alkalinity	1,75	0,01	1,75	0,002	mmol/l	100%
Hydrogen carbonate	104	1	106,8	0,002	mg/l	103%
Calcium	24,9	0,3			mg/l	
Magnesium	9,07	0,09			mg/l	
Sodium	30,6	0,1			mg/l	
Potassium	5,52	0,04			mg/l	
Nitrate	20,1	0,4	18,5	0,3	mg/l	92%
Nitrite	0,076	0,001	0,076	0,001	mg/l	100%
Ammonium	0,050	0,004	0,052	0,001	mg/l	104%
Chloride	28,9	0,5			mg/l	
Sulphate	27,4	0,3			mg/l	
Orthophosphate	<0,009		<0,006		mg/l	•
Boron	0,086	0,001			mg/l	
DOC	5,22	0,05	5,25	0,003	mg/l	101%
Total P (as PO4)	<0,009		<0,006		mg/l	•
KMnO4-Index	2,38	0,12			mg/l	



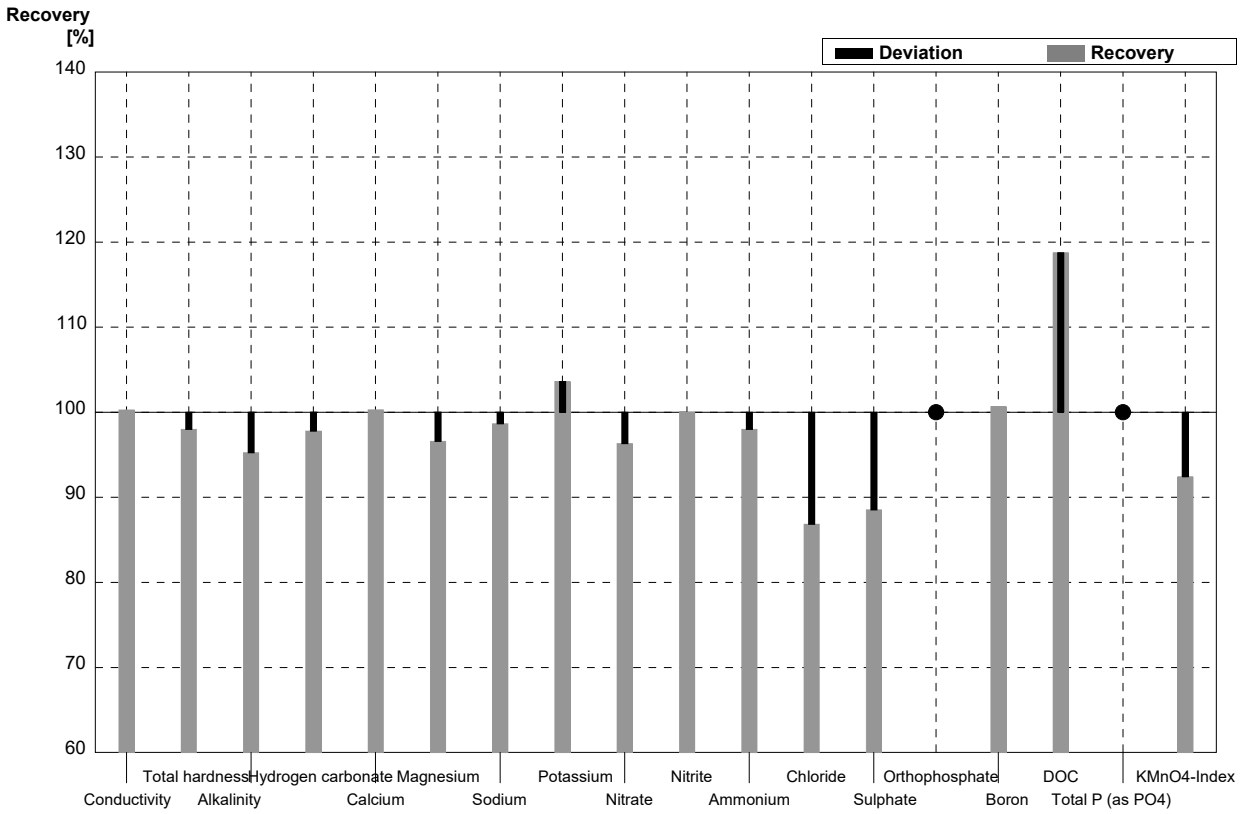
Sample N147A
Laboratory AO

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2	815	24	µS/cm	100%
Total hardness	3,06	0,03	3,05		mmol/l	100%
Alkalinity	3,97	0,04	3,808		mmol/l	96%
Hydrogen carbonate	239	2	232,4		mg/l	97%
Calcium	86,1	1,1	85,85	5,15	mg/l	100%
Magnesium	22,1	0,2	22,01	3,96	mg/l	100%
Sodium	44,9	0,5	43,59	3,92	mg/l	97%
Potassium	6,15	0,07	6,28	0,63	mg/l	102%
Nitrate	45,1	0,9	43,17	4,75	mg/l	96%
Nitrite	0,050	0,001	0,050	0,005	mg/l	100%
Ammonium	<0,01		<0,005		mg/l	•
Chloride	75,2	1,1	68,47	7,53	mg/l	91%
Sulphate	68,4	0,8	65,02	7,80	mg/l	95%
Orthophosphate	0,041	0,004	0,014	0,001	mg/l	34%
Boron	0,036	0,001	0,0355	0,0032	mg/l	99%
DOC	2,99	0,04	3,3	0,4	mg/l	110%
Total P (as PO4)	0,102	0,003	0,033	0,002	mg/l	32%
KMnO4-Index	3,43	0,14	3,0	0,5	mg/l	87%



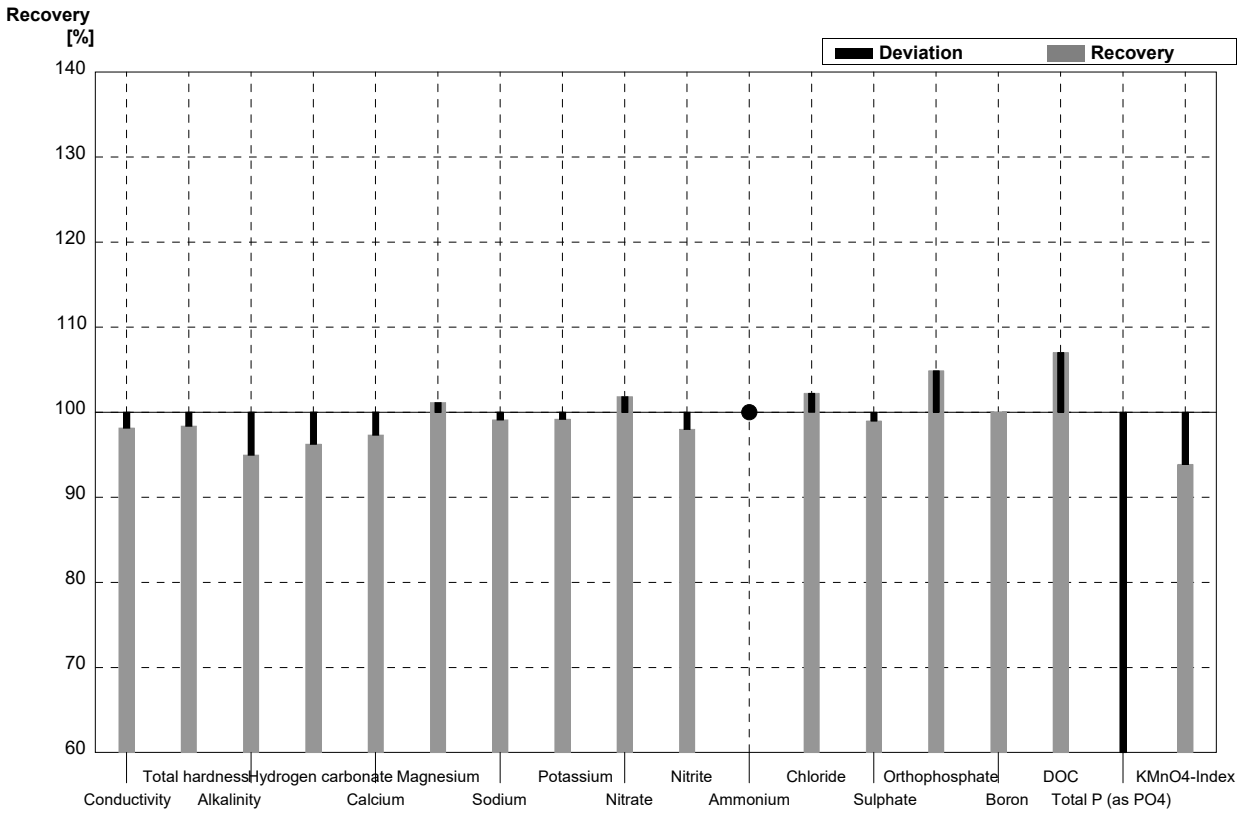
Sample N147B
Laboratory AO

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1	362	11	µS/cm	100%
Total hardness	1,00	0,01	0,98		mmol/l	98%
Alkalinity	1,75	0,01	1,667		mmol/l	95%
Hydrogen carbonate	104	1	101,7		mg/l	98%
Calcium	24,9	0,3	24,97	1,50	mg/l	100%
Magnesium	9,07	0,09	8,76	1,58	mg/l	97%
Sodium	30,6	0,1	30,19	2,72	mg/l	99%
Potassium	5,52	0,04	5,72	0,57	mg/l	104%
Nitrate	20,1	0,4	19,36	2,13	mg/l	96%
Nitrite	0,076	0,001	0,076	0,007	mg/l	100%
Ammonium	0,050	0,004	0,049	0,007	mg/l	98%
Chloride	28,9	0,5	25,10	2,71	mg/l	87%
Sulphate	27,4	0,3	24,26	2,91	mg/l	89%
Orthophosphate	<0,009		0,002	0,000	mg/l	•
Boron	0,086	0,001	0,0866	0,0078	mg/l	101%
DOC	5,22	0,05	6,2	0,7	mg/l	119%
Total P (as PO4)	<0,009		0,002	0,000	mg/l	•
KMnO4-Index	2,38	0,12	2,2	0,33	mg/l	92%



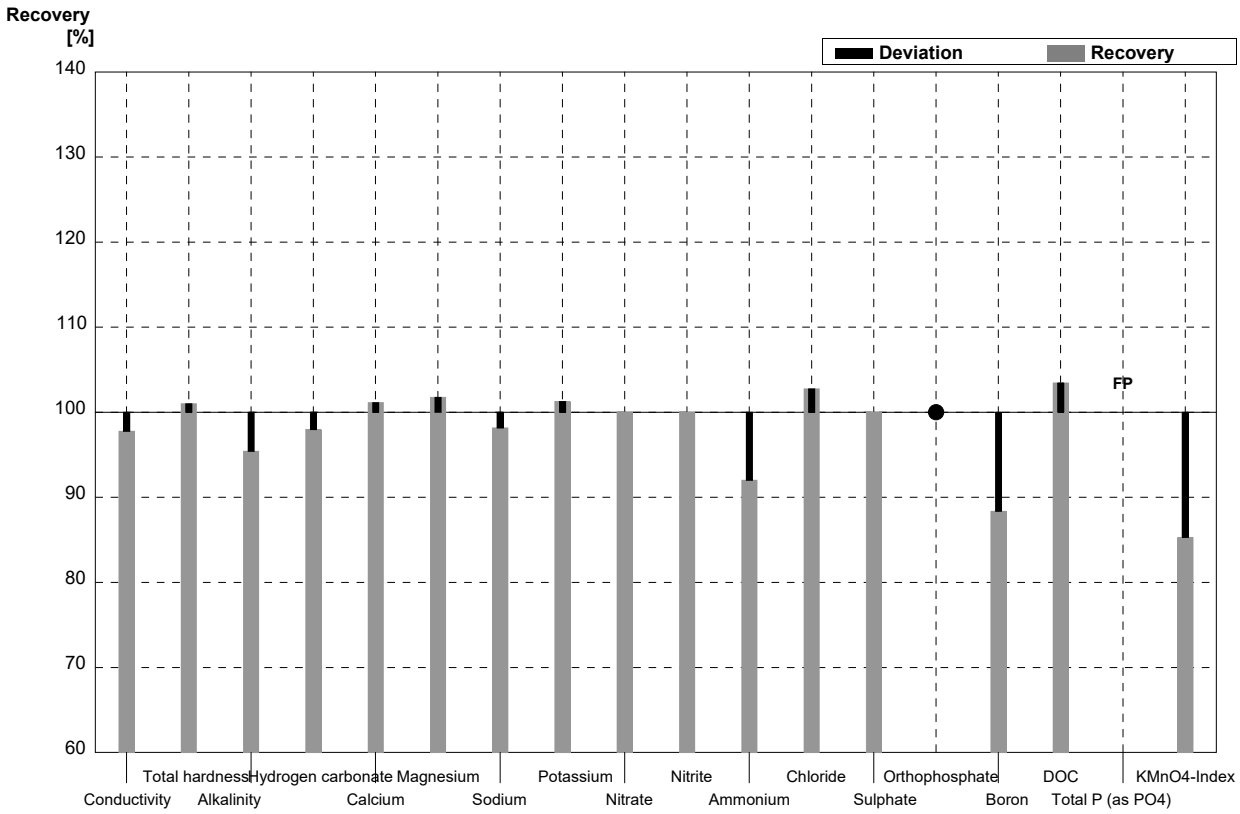
Sample N147A
Laboratory AP

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2	797	31,9	µS/cm	98%
Total hardness	3,06	0,03	3,01		mmol/l	98%
Alkalinity	3,97	0,04	3,77	0,566	mmol/l	95%
Hydrogen carbonate	239	2	230	34,51	mg/l	96%
Calcium	86,1	1,1	83,79	3,352	mg/l	97%
Magnesium	22,1	0,2	22,35	1,341	mg/l	101%
Sodium	44,9	0,5	44,5	2,67	mg/l	99%
Potassium	6,15	0,07	6,1	0,61	mg/l	99%
Nitrate	45,1	0,9	45,928	1,8371	mg/l	102%
Nitrite	0,050	0,001	0,049	0,0039	mg/l	98%
Ammonium	<0,01		[0,00064]		mg/l	•
Chloride	75,2	1,1	76,88	3,075	mg/l	102%
Sulphate	68,4	0,8	67,7	4,062	mg/l	99%
Orthophosphate	0,041	0,004	0,043	0,0052	mg/l	105%
Boron	0,036	0,001	0,036	0,0043	mg/l	100%
DOC	2,99	0,04	3,2	0,32	mg/l	107%
Total P (as PO4)	0,102	0,003	0,037	0,0055	mg/l	36%
KMnO4-Index	3,43	0,14	3,22	0,515	mg/l	94%



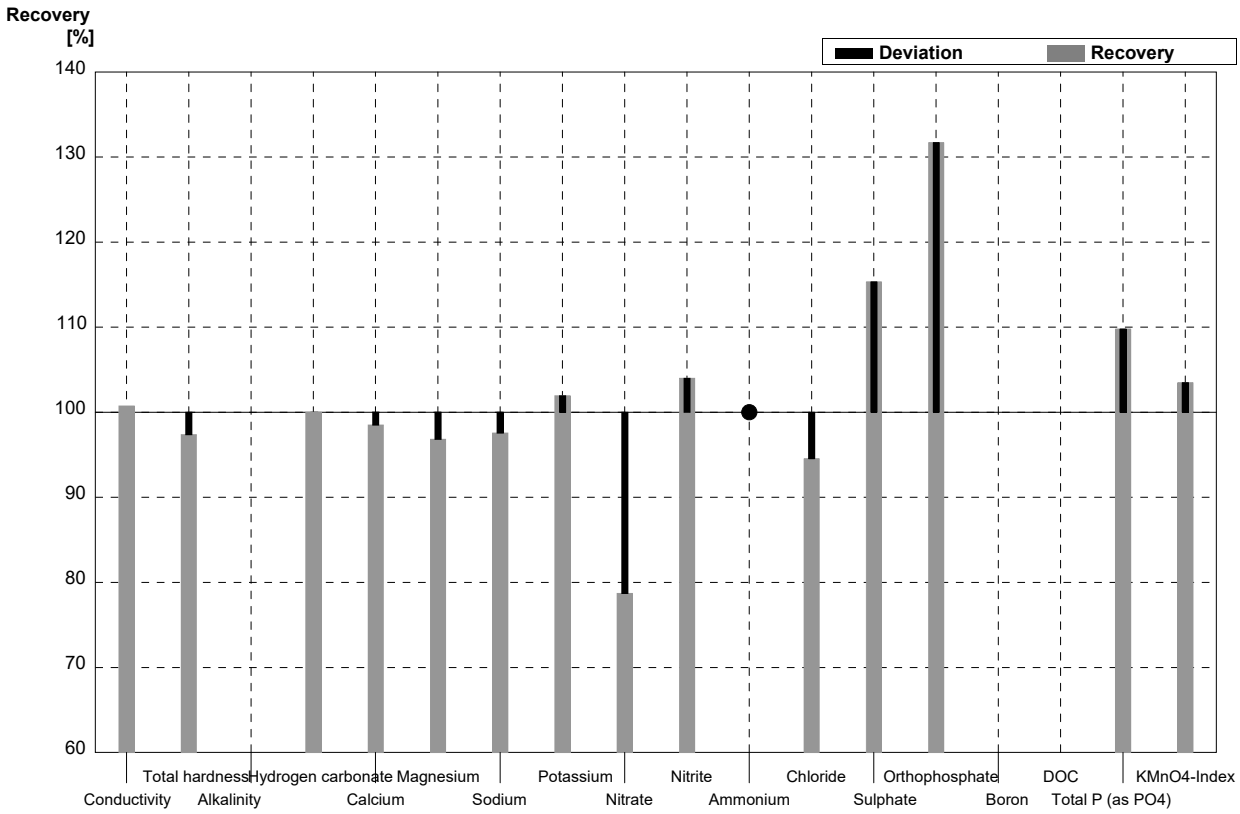
Sample N147B
Laboratory AP

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1	353	14,1	µS/cm	98%
Total hardness	1,00	0,01	1,01		mmol/l	101%
Alkalinity	1,75	0,01	1,67	0,251	mmol/l	95%
Hydrogen carbonate	104	1	101,9	15,28	mg/l	98%
Calcium	24,9	0,3	25,18	1,007	mg/l	101%
Magnesium	9,07	0,09	9,23	0,554	mg/l	102%
Sodium	30,6	0,1	30,04	1,802	mg/l	98%
Potassium	5,52	0,04	5,59	0,559	mg/l	101%
Nitrate	20,1	0,4	20,107	0,8043	mg/l	100%
Nitrite	0,076	0,001	0,076	0,006	mg/l	100%
Ammonium	0,050	0,004	0,046	0,0046	mg/l	92%
Chloride	28,9	0,5	29,7	1,188	mg/l	103%
Sulphate	27,4	0,3	27,4	1,644	mg/l	100%
Orthophosphate	<0,009		0,009	0,0011	mg/l	•
Boron	0,086	0,001	0,076	0,0091	mg/l	88%
DOC	5,22	0,05	5,4	0,54	mg/l	103%
Total P (as PO4)	<0,009		0,0337	0,0052	mg/l	FP
KMnO4-Index	2,38	0,12	2,03	0,325	mg/l	85%



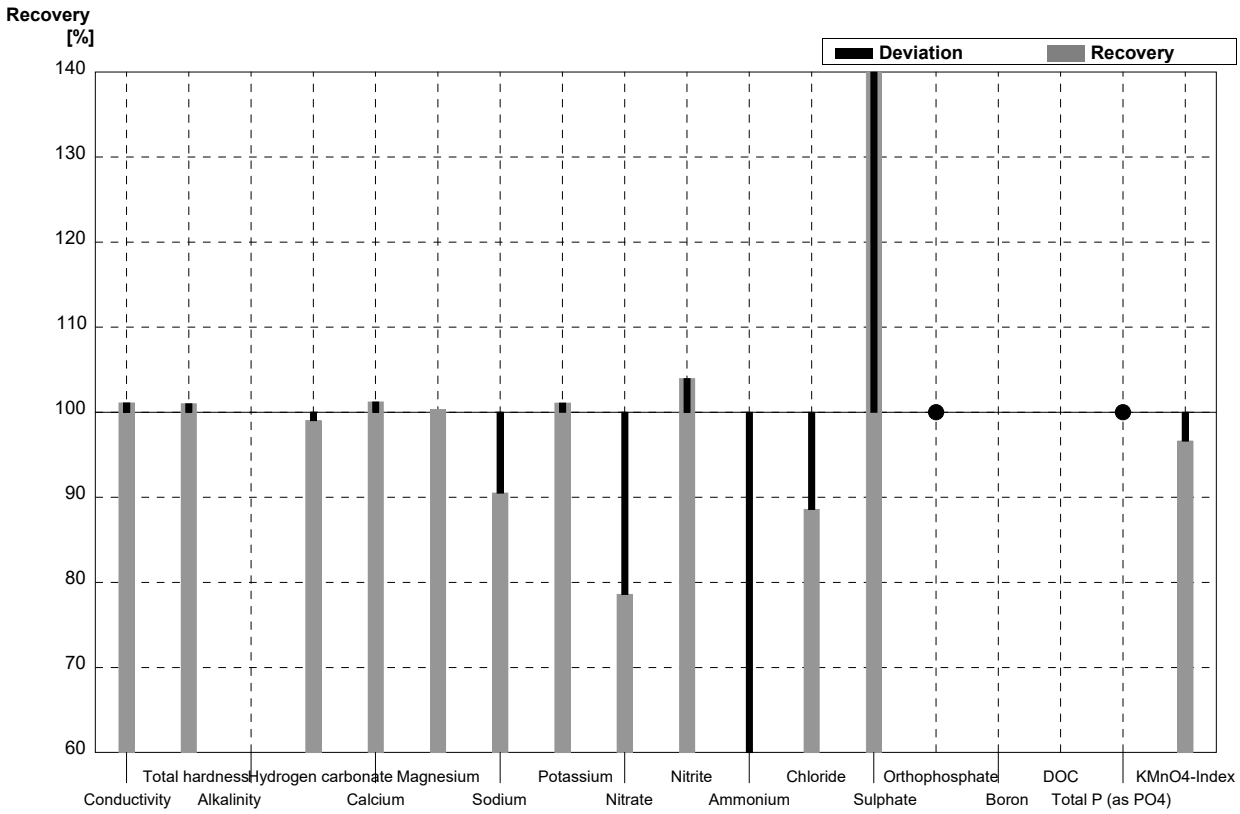
Sample N147A
Laboratory AQ

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2	818	8	µS/cm	101%
Total hardness	3,06	0,03	2,98	0,07	mmol/l	97%
Alkalinity	3,97	0,04			mmol/l	
Hydrogen carbonate	239	2	239	8	mg/l	100%
Calcium	86,1	1,1	84,8	1,4	mg/l	98%
Magnesium	22,1	0,2	21,4	1,3	mg/l	97%
Sodium	44,9	0,5	43,8	0,639	mg/l	98%
Potassium	6,15	0,07	6,27	0,384	mg/l	102%
Nitrate	45,1	0,9	35,5	0,973	mg/l	79%
Nitrite	0,050	0,001	0,052	0,003	mg/l	104%
Ammonium	<0,01		<0,0067		mg/l	•
Chloride	75,2	1,1	71,1	1,25	mg/l	95%
Sulphate	68,4	0,8	78,9	2,8	mg/l	115%
Orthophosphate	0,041	0,004	0,054	0,0019	mg/l	132%
Boron	0,036	0,001			mg/l	
DOC	2,99	0,04			mg/l	
Total P (as PO4)	0,102	0,003	0,112	0,0014	mg/l	110%
KMnO4-Index	3,43	0,14	3,55	0,130	mg/l	103%



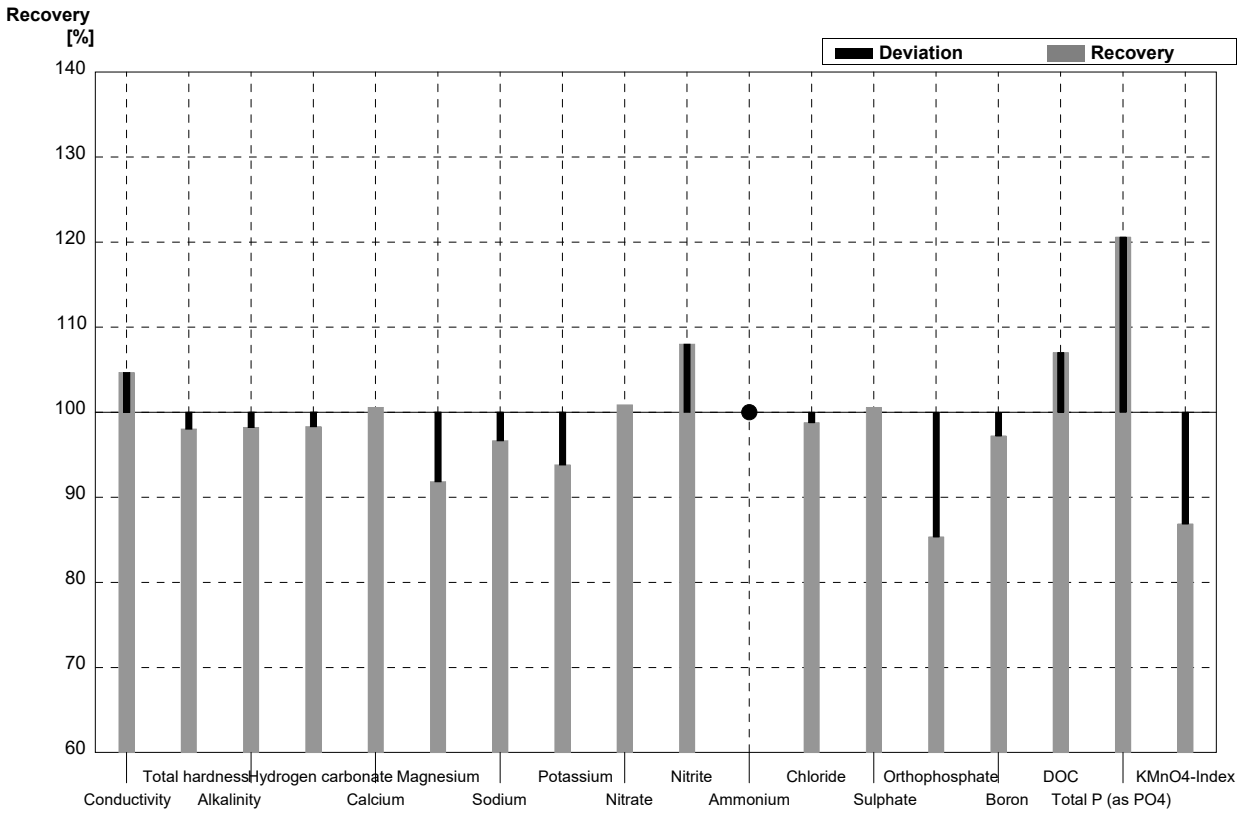
Sample N147B
Laboratory AQ

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1	365	5	µS/cm	101%
Total hardness	1,00	0,01	1,01	0,04	mmol/l	101%
Alkalinity	1,75	0,01			mmol/l	
Hydrogen carbonate	104	1	103	4	mg/l	99%
Calcium	24,9	0,3	25,2	0,57	mg/l	101%
Magnesium	9,07	0,09	9,1	0,86	mg/l	100%
Sodium	30,6	0,1	27,7	0,631	mg/l	91%
Potassium	5,52	0,04	5,58	0,361	mg/l	101%
Nitrate	20,1	0,4	15,8	0,160	mg/l	79%
Nitrite	0,076	0,001	0,079	0,004	mg/l	104%
Ammonium	0,050	0,004	0,023	0,006	mg/l	46%
Chloride	28,9	0,5	25,6	0,42	mg/l	89%
Sulphate	27,4	0,3	40,7	2,0	mg/l	149%
Orthophosphate	<0,009		<0,012		mg/l	•
Boron	0,086	0,001			mg/l	
DOC	5,22	0,05			mg/l	
Total P (as PO4)	<0,009		<0,018		mg/l	•
KMnO4-Index	2,38	0,12	2,30	0,09	mg/l	97%



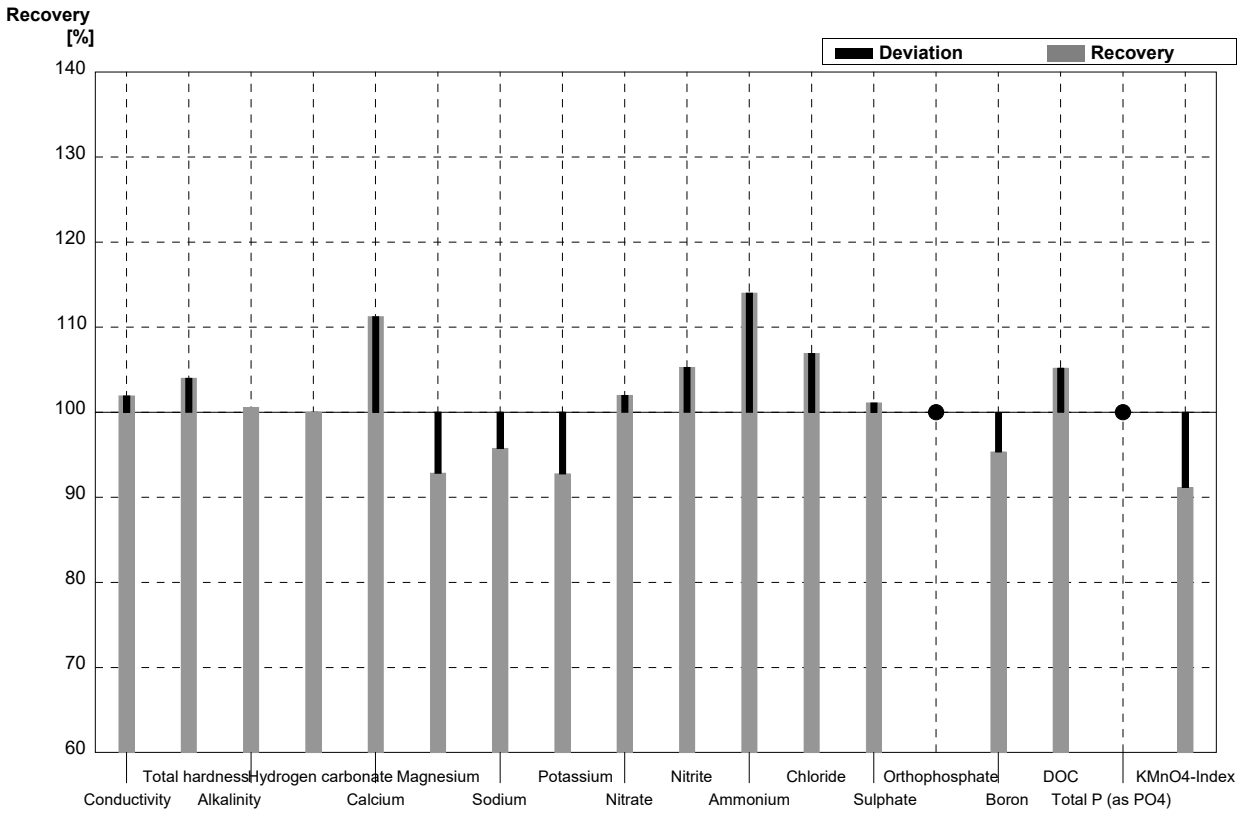
Sample N147A
Laboratory AR

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2	850	85	µS/cm	105%
Total hardness	3,06	0,03	3,00	0,30	mmol/l	98%
Alkalinity	3,97	0,04	3,90	0,39	mmol/l	98%
Hydrogen carbonate	239	2	235	24	mg/l	98%
Calcium	86,1	1,1	86,6	8,7	mg/l	101%
Magnesium	22,1	0,2	20,3	2,0	mg/l	92%
Sodium	44,9	0,5	43,4	4,3	mg/l	97%
Potassium	6,15	0,07	5,77	0,58	mg/l	94%
Nitrate	45,1	0,9	45,5	4,6	mg/l	101%
Nitrite	0,050	0,001	0,054	0,005	mg/l	108%
Ammonium	<0,01		<0,010		mg/l	•
Chloride	75,2	1,1	74,3	7,4	mg/l	99%
Sulphate	68,4	0,8	68,8	6,9	mg/l	101%
Orthophosphate	0,041	0,004	0,035	0,004	mg/l	85%
Boron	0,036	0,001	0,035	0,004	mg/l	97%
DOC	2,99	0,04	3,20	0,32	mg/l	107%
Total P (as PO4)	0,102	0,003	0,123	0,025	mg/l	121%
KMnO4-Index	3,43	0,14	2,98	0,60	mg/l	87%



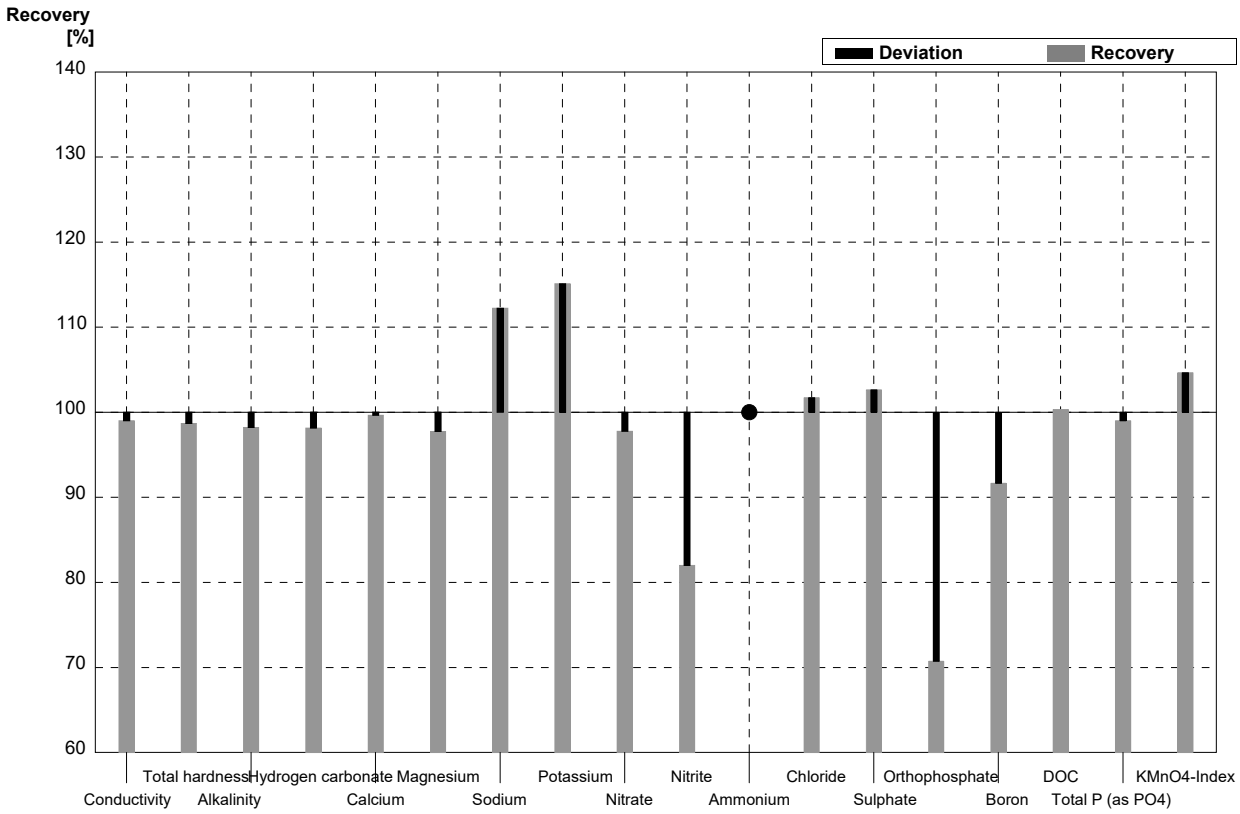
Sample N147B
Laboratory AR

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1	368	37	µS/cm	102%
Total hardness	1,00	0,01	1,04	0,10	mmol/l	104%
Alkalinity	1,75	0,01	1,76	0,18	mmol/l	101%
Hydrogen carbonate	104	1	104	10	mg/l	100%
Calcium	24,9	0,3	27,7	2,8	mg/l	111%
Magnesium	9,07	0,09	8,42	0,84	mg/l	93%
Sodium	30,6	0,1	29,3	2,9	mg/l	96%
Potassium	5,52	0,04	5,12	0,51	mg/l	93%
Nitrate	20,1	0,4	20,5	2,1	mg/l	102%
Nitrite	0,076	0,001	0,080	0,008	mg/l	105%
Ammonium	0,050	0,004	0,057	0,006	mg/l	114%
Chloride	28,9	0,5	30,9	3,1	mg/l	107%
Sulphate	27,4	0,3	27,7	2,8	mg/l	101%
Orthophosphate	<0,009		<0,008		mg/l	•
Boron	0,086	0,001	0,082	0,008	mg/l	95%
DOC	5,22	0,05	5,49	0,55	mg/l	105%
Total P (as PO4)	<0,009		<0,015		mg/l	•
KMnO4-Index	2,38	0,12	2,17	0,43	mg/l	91%



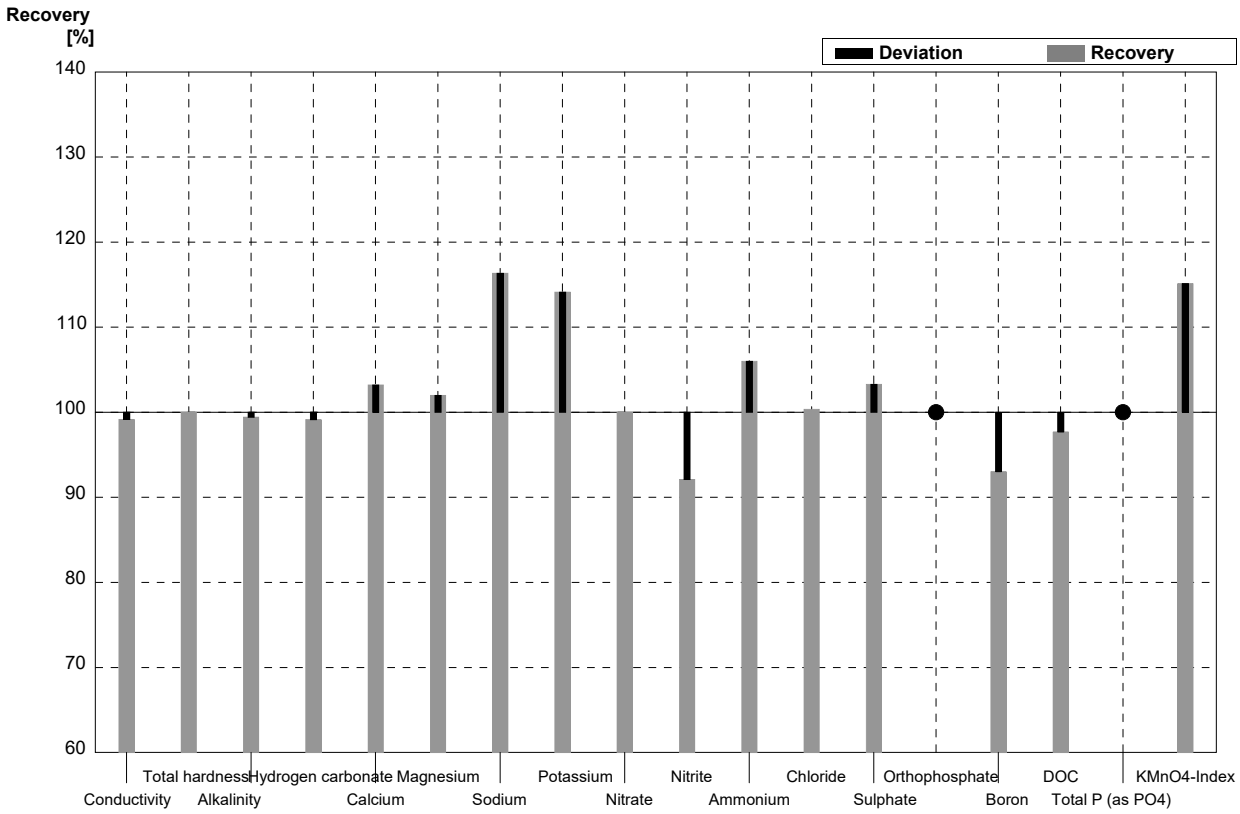
Sample N147A
Laboratory AS

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2	804	25	µS/cm	99%
Total hardness	3,06	0,03	3,02	0,25	mmol/l	99%
Alkalinity	3,97	0,04	3,90	0,19	mmol/l	98%
Hydrogen carbonate	239	2	234,6	11,7	mg/l	98%
Calcium	86,1	1,1	85,8	6,8	mg/l	100%
Magnesium	22,1	0,2	21,6	1,3	mg/l	98%
Sodium	44,9	0,5	50,4	7,5	mg/l	112%
Potassium	6,15	0,07	7,08	0,50	mg/l	115%
Nitrate	45,1	0,9	44,1	1,41	mg/l	98%
Nitrite	0,050	0,001	0,041	0,002	mg/l	82%
Ammonium	<0,01		<0,010		mg/l	•
Chloride	75,2	1,1	76,5	3,1	mg/l	102%
Sulphate	68,4	0,8	70,2	2,1	mg/l	103%
Orthophosphate	0,041	0,004	0,029	0,001	mg/l	71%
Boron	0,036	0,001	0,033	0,003	mg/l	92%
DOC	2,99	0,04	3,0	0,5	mg/l	100%
Total P (as PO4)	0,102	0,003	0,101	0,01	mg/l	99%
KMnO4-Index	3,43	0,14	3,59	0,61	mg/l	105%



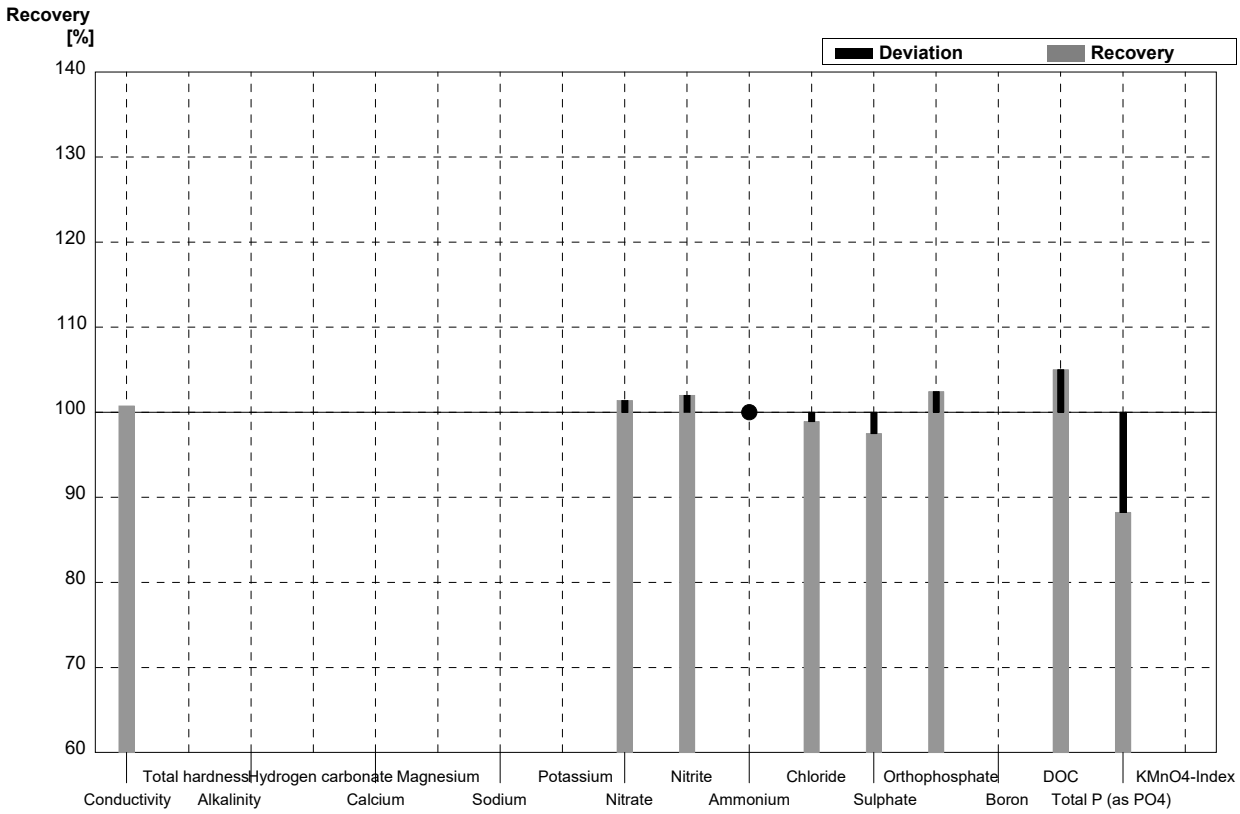
Sample N147B
Laboratory AS

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1	358	11	µS/cm	99%
Total hardness	1,00	0,01	1,0	0,08	mmol/l	100%
Alkalinity	1,75	0,01	1,74	0,08	mmol/l	99%
Hydrogen carbonate	104	1	103,1	5,0	mg/l	99%
Calcium	24,9	0,3	25,7	2,0	mg/l	103%
Magnesium	9,07	0,09	9,25	0,55	mg/l	102%
Sodium	30,6	0,1	35,6	5,3	mg/l	116%
Potassium	5,52	0,04	6,30	0,31	mg/l	114%
Nitrate	20,1	0,4	20,1	0,64	mg/l	100%
Nitrite	0,076	0,001	0,070	0,003	mg/l	92%
Ammonium	0,050	0,004	0,053	0,005	mg/l	106%
Chloride	28,9	0,5	29,0	1,2	mg/l	100%
Sulphate	27,4	0,3	28,3	8,5	mg/l	103%
Orthophosphate	<0,009		<0,015		mg/l	•
Boron	0,086	0,001	0,080	0,008	mg/l	93%
DOC	5,22	0,05	5,1	0,9	mg/l	98%
Total P (as PO4)	<0,009		<0,015		mg/l	•
KMnO4-Index	2,38	0,12	2,74	0,46	mg/l	115%



Sample N147A
Laboratory AT

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	812	2	818	41	µS/cm	101%
Total hardness	3,06	0,03			mmol/l	
Alkalinity	3,97	0,04			mmol/l	
Hydrogen carbonate	239	2			mg/l	
Calcium	86,1	1,1			mg/l	
Magnesium	22,1	0,2			mg/l	
Sodium	44,9	0,5			mg/l	
Potassium	6,15	0,07			mg/l	
Nitrate	45,1	0,9	45,72	4,57	mg/l	101%
Nitrite	0,050	0,001	0,051	0,014	mg/l	102%
Ammonium	<0,01		<0,012		mg/l	•
Chloride	75,2	1,1	74,39	7,43	mg/l	99%
Sulphate	68,4	0,8	66,70	6,67	mg/l	98%
Orthophosphate	0,041	0,004	0,042	0,007	mg/l	102%
Boron	0,036	0,001			mg/l	
DOC	2,99	0,04	3,14	0,57	mg/l	105%
Total P (as PO4)	0,102	0,003	0,090	0,011	mg/l	88%
KMnO4-Index	3,43	0,14			mg/l	



Sample N147B
Laboratory AT

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Conductivity	361	1	364	18	µS/cm	101%
Total hardness	1,00	0,01			mmol/l	
Alkalinity	1,75	0,01			mmol/l	
Hydrogen carbonate	104	1			mg/l	
Calcium	24,9	0,3			mg/l	
Magnesium	9,07	0,09			mg/l	
Sodium	30,6	0,1			mg/l	
Potassium	5,52	0,04			mg/l	
Nitrate	20,1	0,4	20,35	2,04	mg/l	101%
Nitrite	0,076	0,001	0,076	0,021	mg/l	100%
Ammonium	0,050	0,004	0,056	0,013	mg/l	112%
Chloride	28,9	0,5	29,04	2,90	mg/l	100%
Sulphate	27,4	0,3	28,26	2,83	mg/l	103%
Orthophosphate	<0,009		<0,015		mg/l	•
Boron	0,086	0,001			mg/l	
DOC	5,22	0,05	5,08	0,91	mg/l	97%
Total P (as PO4)	<0,009		<0,015		mg/l	•
KMnO4-Index	2,38	0,12			mg/l