

IFA-Proficiency Testing Scheme zur Wasseranalytik / for Water Analysis

Endbericht / Final Report
Eignungsprüfungsrunde / Proficiency testing round
N174

Nährstoffe
Nutrients / Major ions

Probenversand / Sample dispatch: 11. 11. 2024

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Allgemeine Informationen

Diese Zusammenfassung beschreibt die 174. Runde der regelmäßigen Eignungsprüfungen zur Parametergruppe „Nährstoffe“. Die Prüfgegenstände N174A und N174B wurden am 11. November 2024 an 43 Teilnehmer versendet. Jedes Labor erhielt zwei Prüfgegenstände zu 1000 ml, abgefüllt in je zwei 500-ml-Flaschen aus PET.

Einsendeschluss für die Ergebnisse war am 6. Dezember 2024. Von 42 Teilnehmern wurden Ergebnisse übermittelt. Zur Anonymisierung wurde jedem Labor per Zufallsgenerator ein Buchstabencode zugeteilt.

Zusammensetzung der Prüfgegenstände

Die Prüfgegenstände N174A und N174B wurden durch Einwaage von reinen Salzen hergestellt, wobei die meisten der in der österreichischen Gewässerzustandsüberwachungsverordnung (GZÜV i.d.g.F.) für den Parameterblock 1 genannten Parameter berücksichtigt wurden. Zur Herstellung wurden CaCO_3 , CaCl_2 , $\text{Ca}(\text{NO}_3)_2$, MgSO_4 , MgCl_2 , $\text{Mg}(\text{NO}_3)_2$, Natriumsalicylat (für KMnO_4 -Index), NaCl , NaHCO_3 , KHCO_3 , $\text{C}_6\text{H}_{15}\text{PO}_3$ (für Gesamt-P) und Kaliumhydrogenphthalat (für DOC) als Reinsubstanzen sowie zertifizierte Standardlösungen von NaNO_2 , Na_2SiO_3 , NH_4Cl , KH_2PO_4 und H_3BO_3 verwendet. Beide Prüfgegenstände enthielten freies CO_2 , welches zum Lösen von CaCO_3 und zum Neutralisieren von Na_2SiO_3 verwendet wurde. Stabilisierung der Prüfgegenstände erfolgte durch Sterilfiltration und über die Temperatur.

Homogenitäts-, Richtigkeits- und Stabilitätsuntersuchung

Die Prüfgegenstände wurden vor dem Versand am IFA-Tulln auf Homogenität und Richtigkeit untersucht. Die Ergebnisse der Kontrollanalytik finden sich auf den Rohdatenblättern sowie auf den Auswertungen zu jedem Parameter.

Zur Überprüfung der Stabilität wurden vier Wochen nach dem Versand alle Parameter nochmals bestimmt. Die Ergebnisse befinden sich ebenfalls auf den Rohdatenblättern sowie auf den Auswertungen zu jedem Parameter.

Unserer Erfahrung nach sind die Prüfgegenstände hinsichtlich der Parameter Leitfähigkeit, Gesamthärte, Säurekapazität, Ca^{2+} , Mg^{2+} , Na^+ , K^+ , NO_3^- , Cl^- , SO_4^{2-} , Bor und HCO_3^- bis 18 Monate stabil. Für die Parameter NH_4^+ , NO_2^- , o-PO_4^{3-} Gesamt-P, DOC und KMnO_4 -Index sind die Prüfgegenstände mehrere Wochen stabil, wobei die ersten Veränderungen üblicherweise bei Ammonium beobachtet werden können.

Zugewiesene Werte

Die zugewiesenen Werte ergaben sich aus den Einwaagewerten der verwendeten Chemikalien. Die Unsicherheiten der zugewiesenen Werte (erweiterte Unsicherheiten, $k = 2$, $\alpha = 0,05$) wurden nach den Vorgaben des EURACHEM / CITAC Guides „Quantifying Uncertainty in Analytical Measurement, 3rd Edition (2012)“ ermittelt.

Der zugewiesene Wert für die Leitfähigkeit wurde mit einer Näherung nach Debye-Hückel berechnet. Die Auswertung der bis jetzt erhobenen Daten zeigte, dass bei mehr als 20 Teilnehmern und den beobachteten Standardabweichungen der Messwerte zwischen den Labors von ca. 1 % die Mittelwerte der ausreißerbereinigten Daten eine geringere Unsicherheit haben als die mit der Näherung berechneten Werte. Deshalb wurde die Leitfähigkeit über die Labormittelwerte ausgewertet. Die mit der Näherung berechneten Werte waren $351 \mu\text{S}/\text{cm}$ für N174A und $536 \mu\text{S}/\text{cm}$ für N174B.

Für den pH-Wert lassen sich keine zugewiesenen Werte angeben. Daher wurden die Messwerte nicht weiter ausgewertet. Die Werte können anhand der Rohdatenblätter verglichen werden. Dabei ist jedoch zu berücksichtigen, dass die Prüfgegenstände nur schwach gepuffert waren und freies CO_2 enthielten. Man beobachtet daher in der Regel ein leichtes Ansteigen des pH-Wertes mit der Zeit.

Als Standardsubstanz für den Parameter Gesamt-P (als PO_4^{3-}) nach Aufschluss nach DIN EN ISO 6878 wurde Ethylphosphonsäurediethylester ($\text{C}_6\text{H}_{15}\text{PO}_3$) verwendet. Diese Substanz kann nur nach einem oxidierenden Aufschluss als Phosphat erfasst werden. Die zugewiesenen Werte wurden aus den Einwaagen von KH_2PO_4 und $\text{C}_6\text{H}_{15}\text{PO}_3$ berechnet. Die Ergebnisse wurden in mg/l PO_4^{3-} angegeben.

Als Standardsubstanz für den KMnO_4 -Index wurde Natriumsalicylat in den Konzentrationen 1,51 mg/l (N174A) und 2,41 mg/l (N174B) verwendet. Geht man von einer vollständigen Oxidation zu CO_2 , Wasser und Nitrat aus, ergeben sich unter Berücksichtigung von Nitrit theoretische Werte von 2,11 mg/l O_2 (N174A) und 3,39 mg/l O_2 (N174B). Die endgültige Auswertung erfolgte über die Labormittelwerte. Diese waren 2,10 mg/l O_2 für N174A und 3,13 mg/l O_2 für N174B.

Dem Prüfgegenstand N174A wurden keine Phosphorverbindungen und N174B kein Ammonium zugesetzt. Die zugewiesenen Werte von $<0,01 \text{ mg/l NH}_4^+$, $<0,009 \text{ mg/l o-PO}_4^{3-}$ und $<0,009 \text{ mg/l Ges-P}$ (als PO_4^{3-}) wurden bei diesen Überprüfungen der Blindwerte entsprechend den Mindestbestimmungsgrenzen der GZÜV festgelegt.

Auswertung

Mit den bei uns eingegangenen Messwerten wurde ein Ausreißertest nach Hampel durchgeführt. Die durch den Test als auffällig eingestuft Werte wurden in der parameterorientierten Auswertung mit einem Stern gekennzeichnet. Die aus den ausreißerbereinigten Daten berechneten, auf die zugewiesenen Werte bezogenen mittleren Wiederfindungen lagen zwischen 97,0 % (Orthophosphat in N174B) und 105,7 % (DOC in N174B). Die aus den ausreißerbereinigten Daten berechneten Standardabweichungen bewegten sich im Bereich von 1,2 % (Leitfähigkeit in N174A und N174B) bis 16,2 % (Orthophosphat in N174B).

Zu den Mittelwerten und mittleren Wiederfindungen wurden auch die Vertrauensbereiche ($P=99\%$) angegeben. Diese Vertrauensbereiche der Labormittelwerte enthalten in allen Fällen mit Ausnahme von DOC in N174B ($105,7\% \pm 3,4\%$) die entsprechenden zugewiesenen Werte mit ihren Unsicherheiten.

Die Standardunsicherheiten aller zugewiesenen Werte wurden nach dem Kriterium

$$u(x_{pp}) < 0,3\sigma_{pp} \text{ oder } u(x_{pp}) < 0,1\delta E \text{ (DIN ISO 13528, Punkt 9.2)}$$

überprüft und entsprach in allen Fällen bis auf Säurekapazität und Nitrat im Prüfgegenstand N174A und Säurekapazität, Nitrat, Nitrit, Sulfat und Orthophosphat im Prüfgegenstand N174B der Vorgabe.

Bei diesen Parametern, sowie auch für den DOC in N174B wurde deshalb zusätzlich der Vergleich der absoluten Differenz zwischen zugewiesenem Wert (x_{pt}) und Labormittelwert (\bar{X}) unter Berücksichtigung der Messunsicherheiten $u(x_{pt})$ und $u(\bar{X})$ durchgeführt. Alle Parameter entsprachen der Vorgabe:

$$|x_{pt} - \bar{X}| < 2 * \sqrt{u(x_{pt})^2 + u(\bar{X})^2} \quad (\text{DIN ISO 13528, Punkt 7 und E7})$$

Daher wurden alle ermittelten zugewiesenen Werte mit ihren Standardunsicherheiten übernommen.

z-Score-Auswertung

Ein z-Score ist die auf eine Standardabweichung bezogene Abweichung eines Messwertes vom zugewiesenen Wert. Er wird mittels folgender Formel berechnet:

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

z	z-Score
x_i	Messwert eines Labors
X	Zugewiesener Wert oder ausreißerbereinigter Mittelwert („konventioneller zugewiesener Wert“)
σ_{pt}	Standardabweichung für die Eignungsbewertung

Es handelt sich also um das Verhältnis der Abweichung des Messwertes eines Labors vom zugewiesenen Wert zu einer vorgegebenen Standardabweichung.

Die Standardabweichungen für die Eignungsbewertung wurden aus den Ergebnissen der im Zeitraum 2013 - 2023 vom IFA-Tulln veranstalteten Eignungsprüfungen berechnet.

Diese Vorgehensweise wurde deshalb gewählt, weil unserer Erfahrung nach, die Standardabweichungen der ausreißerbereinigten Messwerte zwischen den einzelnen Eignungsprüfungen variieren. Die Ermittlung der Standardabweichung über die Eignungsprüfungsrunden aus mehreren Jahren bieten jedoch eine gut abgesicherte Basis auf einer breiten Datengrundlage und ist somit meistens besser geeignet, als das bei der direkt aus der Eignungsprüfung berechneten Standardabweichung der Fall wäre. (EN ISO/IEC 17043:2010, B.3.1.3)

Der Vorteil, der sich für alle Teilnehmer daraus ergibt ist, dass dadurch bei unseren Eignungsprüfungen schon vor der Teilnahme vorhersehbar ist, welche z-Scores man mit den eigenen, aus Routineverfahren bekannten, Messabweichungen erwarten kann.

Rechenbeispiel:

Ein Labor bestimmte für den Parameter DOC einen Wert von 7,00 mg/l (Wiederfindung von 116%). Der zugewiesene Wert war 6,02 mg/l (100%).

In der nachfolgenden Tabelle (und in der Tabelle des Jahresprogrammes www.ifatest.at) ist die relative Standardabweichung für die Eignungsbewertung beim Parameter DOC mit 5,4 % angegeben. Bezogen auf den zugewiesenen Wert von 6,02 mg/l DOC entsprechen 5,4 % 0,33 mg/l.

$$z = \frac{x_i - X}{\sigma_{pt}} = \frac{7,00 \text{ mg/l} - 6,02 \text{ mg/l}}{0,33 \text{ mg/l}} \approx 3,0 \quad \text{oder} \quad \frac{116 \% - 100 \%}{5,4 \%} \approx 3,0$$

z	z-Score
x_i	7,00 mg/l entsprechen 116 % (Messwert des Labors)
X	6,02 mg/l entsprechen 100 % (zugewiesener Wert)
σ_{pt}	0,33 mg/l entsprechen 5,4 % (Standardabweichung für die Eignungsbewertung, siehe Tabelle)

Abweichungen in den Nachkommastellen können sich bei Nachberechnung dadurch ergeben, dass im Bericht bei den Wiederfindungen zwecks Übersichtlichkeit gerundete Werte angegeben sind.

Die folgende Tabelle enthält die Standardabweichung für die Eignungsbewertung bezogen auf den zugewiesenen Wert mit ihren Anwendungsbereichen. Die Berechnung von z-Scores erfolgt nur dann, wenn der zugehörige zugewiesene Wert über der in der Tabelle angegebenen Konzentration liegt.

Parameter	Standardabweichung für die Eignungsbewertung bezogen auf den zugewiesenen Wert	untere Grenze
Ammonium	11 %	0,01 mg/l
Bor	7,1 %	0,012 mg/l
Calcium	3,1 %	9 mg/l
Chlorid	2,7 %	2 mg/l
DOC	5,4 %	1 mg/l
Gesamthärte	2,8 %	0,1 mmol/l
Gesamt-P (als PO ₄ ³⁻)	9,1 %	0,015 mg/l
Hydrogencarbonat	2,3 %	20 mg/l
Kalium	4,0 %	0,5 mg/l
KMnO ₄ -Index	8,2 %	1 mg/l
Leitfähigkeit	1,2 %	50 µS/cm
Magnesium	3,5 %	1 mg/l
Natrium	3,1 %	1 mg/l
Nitrat	3,0 %	2 mg/l
Nitrit	5,5 %	0,01 mg/l
Orthophosphat	9,2 %	0,015 mg/l
Säurekapazität	1,8 %	0,2 mmol/l
Sulfat	3,0 %	3 mg/l

Zur Interpretation von z-Scores wird meist folgende Klassifikation vorgeschlagen:

z-Score	Klassifikation
≤2	zufriedenstellend
2< z <3	fraglich
≥3	nicht zufriedenstellend

Die z-Scores sind in der parameterorientierten Auswertung in den Tabellen neben den Wiederfindungen angegeben. Jedes Labor erhält zusätzlich zu dieser Auswertung ein Blatt, auf dem die erzielten z-Scores zusammengefasst und grafisch dargestellt sind. Die Standardabweichungen für die Eignungsbewertung sind dort in Konzentrationseinheiten angegeben.

Eine Übersichtstabelle aller z-Scores ist im Anschluss an die Rohdatentabellen im parameterorientierten Teil zu finden.

Darstellung der Ergebnisse in der Auswertung

Eine Legende zur Darstellung der Ergebnisse finden Sie auf der nächsten Seite. In den Tabellen der Auswertung sind jeweils der zugewiesene Wert, Messwert, Unsicherheit und die Wiederfindung dargestellt. In der parameterorientierten Auswertung befindet sich der direkt unter der Parameterbezeichnung. Die Unsicherheit des zugewiesenen Wertes ist immer als erweiterte Unsicherheit ($k = 2$; $\alpha = 0,05$) angegeben. Sie wurde nach den Vorgaben des EURACHEM / CITAC Guides „Quantifying Uncertainty in Analytical Measurement, 3rd Edition (2012)“ ermittelt. Die grafische Darstellung der Ergebnisse enthält die Unsicherheit des zugewiesenen Wertes als grau unterlegtes Band.

In der parameterorientierten Auswertung wurden die Messwerte, die nach dem Test nach Hampel als Ausreißer gewertet wurden, mit einem Stern (*) gekennzeichnet. Die Grafik der Messwerte wurde für Nitrit, Ammonium, Orthophosphat, Bor, DOC, ges-P (als PO_4^{3-}) und KMnO_4 -Index auf $100 \% \pm 45 \%$ des zugewiesenen Wertes und für alle übrigen Parameter auf $100 \% \pm 15 \%$ des zugewiesenen Wertes skaliert. Die kleine Tabelle unten links enthält statistische Parameter, darunter den 99 % - Vertrauensbereich der Labormittelwerte vor und nach Ausreißereliminierung.

Ergebnisse, für die keine Wiederfindung bzw. Abweichung vom zugewiesenen Wert berechnet werden kann (d.h. „kleiner als“ Ergebnisse oder Zahlenwerte bei nicht zugegebenen Substanzen) werden in den Tabellen und Grafiken entweder als **FN** (falsch negativ), **FP** (falsch positiv) oder als • - Symbol dargestellt.

- Als falsch negativ gelten „< Ergebnisse“ mit einem Betrag des < - Wertes unterhalb des zugewiesenen Wertes bzw. Messwert „0“ bei zugegebenen Substanzen.
- Falsch positive Ergebnisse sind nur für Substanzen möglich, die über „< zugewiesener Wert“ ausgewertet wurden. Mit FP werden alle Messwerte gekennzeichnet, die mit Ihren Unsicherheiten das Kriterium „< zugewiesener Wert“ nicht einschließen (tangieren).
- Mit einem • - Symbol werden alle weiteren Ergebnisse illustriert, für die keine Wiederfindung berechnet werden kann

Prüfmethoden

Den Teilnehmenden stand, mit Ausnahme der Parameter Gesamt-P (als PO_4^{3-}) und KMnO_4 -Index, die Wahl der Analysenmethode frei. Die Prüfmethoden sollten mit den jeweilig im Teilnehmerlabor verwendeten Routineverfahren übereinstimmen. Gesamt-P (als PO_4^{3-}) sollte gemäß DIN EN ISO 6878:2004 nach oxidierendem Aufschluss und KMnO_4 -Index nach EN ISO 8467 (H5) analysiert werden, wobei gleichwertige oder bessere Verfahren, die vergleichbare Messwerte liefern, zulässig waren. Eine Übersicht der angewendeten Methoden befindet sich am Ende des Berichts. „< Werte“ bzw. „> Werte“ sowie stark abweichende Messwerte, welche zu einer unübersichtlichen Skalierung führen würden, sind in den Graphiken nicht berücksichtigt.

Tulln, 16. December 2024

Probe M106A

Parameter Kupfer

*Sollwert ± U (k=2) 4,79 µg/l ± 0,13 µg/l
 IFA-Kontrolle ± U (k=2) 4,79 µg/l ± 0,38 µg/l
 IFA-Stabilität ± U (k=2) 4,69 µg/l ± 0,38 µg/l

*Sollwert = "zugewiesener Wert"
Sollwert ± Unsicherheit aus Einwaage
Kontrollmessung IFA vor Versand
Messung IFA 3 Wochen nach Versand

Labor-Kennung	Messwert	±	Einheit	Wiederfindung	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	95%	-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	*	

Wiederfindung des zugewiesenen Wertes in Prozent

z-Score des Labors

Ein Stern markiert einen Ausreißer nach dem Hampel-Test

Ergebnisunsicherheit laut Teilnehmer

	alle Ergebnisse	ohne Ausreißer	Einheit
MW ± VB(99%)	4,65 ± 0,57	4,51 ± 0,42	µg/l
WF ± VB(99%)	97,1 ± 12,0	94,1 ± 8,8	%
Standardabw.	0,84	0,59	µg/l
rel. Standardabw.	18,1	13,2	%
n für Berechnung	18	17	

Standardabweichung zwischen den Labors

Mittelwert der Messwerte und Wiederfindung des zugewiesenen Wertes mit zugehörigen Vertrauensbereichen (p=99%)

Anzahl der Messungen zur Berechnung der statistischen Kenngrößen

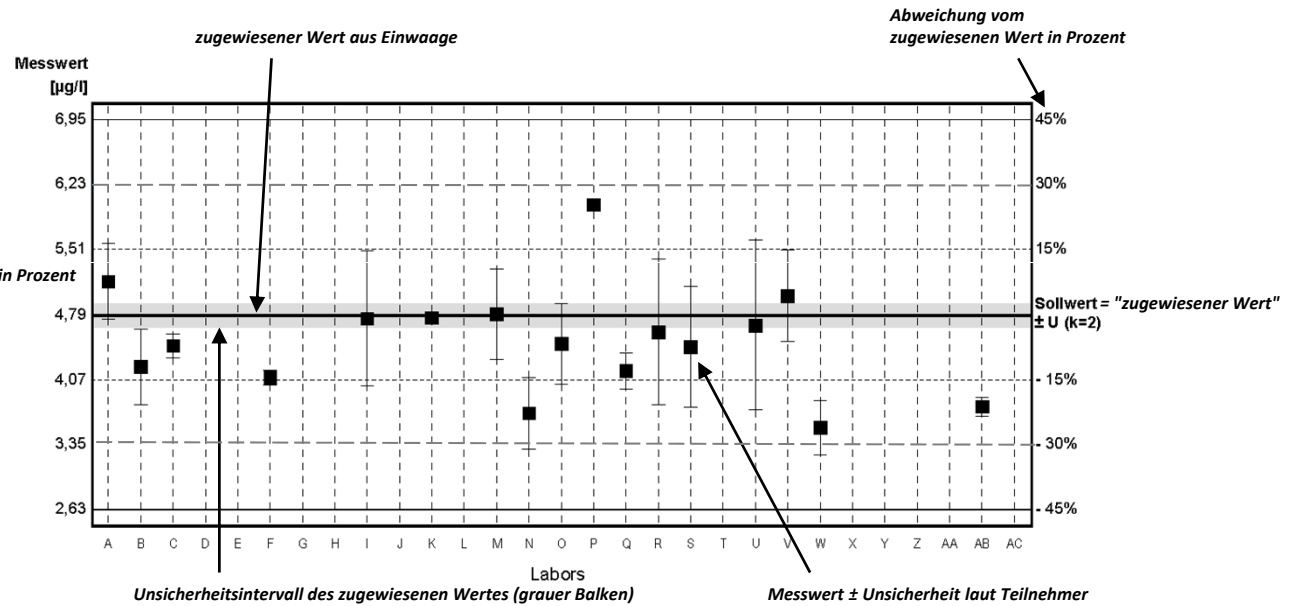
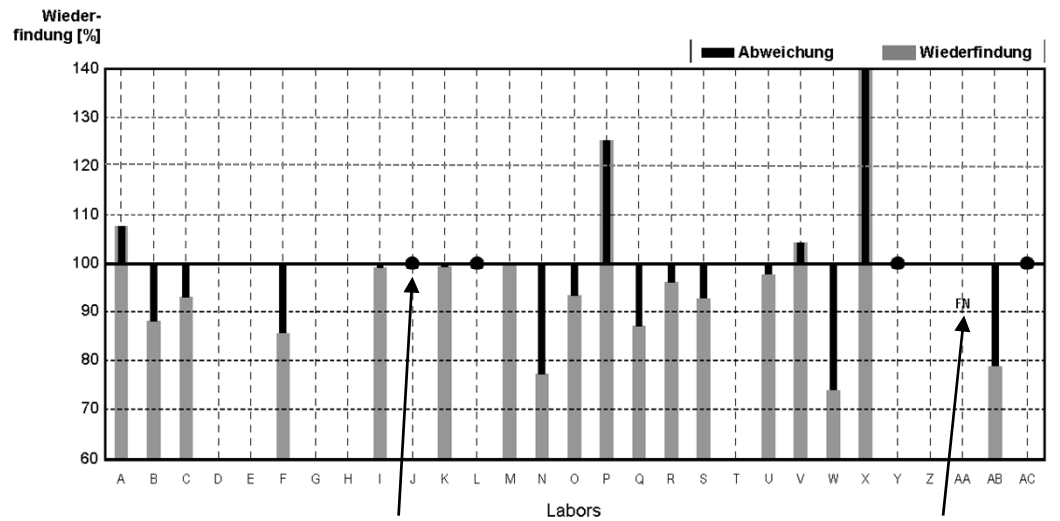


Diagramm 1: Messwerte mit zugehörigen Unsicherheitsintervallen



Ergebnis abgegeben, Berechnung der Wiederfindung oder Zuordnung FN, FP nicht möglich

Falsch negativ „< Ergebnis“ kleiner als der theoretische Sollwert

Diagramm 2: Wiederfindung und Abweichung vom zugewiesenen Wert

LEGENDE

Information

This report summarises the results of round N174 (major ions) within the IFA-Proficiency Testing Scheme for Water Analysis. The proficiency testing items N174A and N174B were distributed to 43 participants on Monday, 11. November 2024. Each participant received two proficiency testing items of 1000 mL, each filled into two 500 mL PET bottles.

Closing date for reporting results to the IFA-Tulln was Friday, 6 December 2024. 42 participants submitted results. To make the participants anonymous, each laboratory obtained a letter code by random.

Proficiency testing items

The proficiency testing items consisted of artificial ground water. For proficiency testing item preparation, ultrapure water was spiked with solutions of salts and standards to simulate the ionic composition of natural Austrian ground water. The following substances were added to the proficiency testing items: CaCO_3 , CaCl_2 , $\text{Ca}(\text{NO}_3)_2$, MgSO_4 , MgCl_2 , $\text{Mg}(\text{NO}_3)_2$, NaCl , NaHCO_3 , KHCO_3 , diethyl ethylphosphonate ($\text{C}_6\text{H}_{15}\text{PO}_3$, for total-P), potassium hydrogen phthalate (for DOC), sodium salicylate (for KMnO_4 -Index) and certified standard solutions of NaNO_2 , Na_2SiO_3 , NH_4Cl , KH_2PO_4 and H_3BO_3 . Both proficiency testing items, N174A and N174B, contained free CO_2 , which was used for dissolution of CaCO_3 and neutralisation of Na_2SiO_3 . No other substances (e.g. preservatives) were added. The proficiency testing items were stabilised by sterile filtration and low temperature.

Homogeneity, accuracy and stability tests

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

To verify stability, all parameters of proficiency testing items N174A and N174B were determined in several proficiency testing items four weeks after shipment. The results are listed in the result tables ("Stability test") and the parameter oriented part of the report ("IFA result").

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

Results

Data evaluation was based on concentrations that were calculated from the weights of the substances and standards used to produce the proficiency testing items. 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 assigned value of the electrical conductivity was set to the laboratory mean (consensus value). When calculated from more than 20 results with a standard deviation between the laboratories of about 1 %, the consensus value has a confidence interval that is smaller than the uncertainty of our estimate calculated from the assigned concentrations by Debye-Hückel's theory: 2.4 % ($p = 95$ %). However, the calculated electrical conductivity was 351 $\mu\text{S}/\text{cm}$ in proficiency testing item N174A and 536 $\mu\text{S}/\text{cm}$ in proficiency testing item N174B.

For the pH no assigned values can be defined. The results can be compared on the tables. In this kind of proficiency testing items 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 assigned values of total-P were calculated from the weights of the two substances. The results were given in mg/L PO_4^{3-} .

The concentrations of sodium salicylate, which was used as standard substance for the $KMnO_4$ -Index, were 1.51 mg/L in proficiency testing item N174A and 2.41 mg/L in proficiency testing item N174B. Assuming complete oxidation to carbon dioxide, nitrate and water (considering nitrite), the theoretical values were 2.11 mg/L O_2 (N174A) and 3.39 mg/L O_2 (N174B). However, the laboratory mean values were taken as reference values in this report: 2.10 mg/L O_2 for N174A and 3.13 mg/L O_2 for N174B.

No phosphorus substances were added to N174A. Ammonium was not added added to N174B to check the analytical blank values. The assigned concentrations were set to <0.01 mg/L NH_4^+ , <0.009 mg/L $o-PO_4^{3-}$ and <0.009 mg/L total-P (as PO_4^{3-}), 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.

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

The recoveries of the concentrations, calculated from outlier-corrected data mean values ranged between 97.0 % (orthophosphate in N174B) and 105.7 % (DOC in N174B).

The between laboratory CVs covered the range between 1.2 % (conductivity in N174A and N174B) and 16.2 % (orthophosphate in N174B).

All confidence intervals of the outlier-corrected laboratory mean values except for DOC in N174B ($105.7\% \pm 3.4\%$) encompass the corresponding assigned values with their uncertainties. For all other parameters, statistically, no difference could be detected between theoretical concentrations and outlier corrected laboratory means.

The standard uncertainties of all assigned values were checked according to the criterion

$$u(x_{pp}) < 0,3\sigma_{pp} \text{ oder } u(x_{pp}) < 0,1\delta E, \text{ (DIN ISO 13528, Section 9.2)}$$

and met the requirement in all cases except for alkalinity and nitrate in N174A and alkalinity, nitrate, nitrite, sulphate and orthophosphate in N174B.

For these parameters and additionally for DOC in N174B, the comparison of the absolute difference between the assigned value (x_{pt}) and the laboratory mean value (\bar{X}), considering the measurement uncertainties $u(x_{pt})$ and $u(\bar{X})$, was additionally carried out. All parameters met the requirement:

$$|x_{pt} - \bar{X}| < 2 * \sqrt{u(x_{pt})^2 + u(\bar{X})^2} \quad \text{(DIN ISO 13528, Section 7 and E7)}$$

Therefore, all determined assigned values with their standard uncertainties were adopted.

z-scores

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

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

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

Thus, the z-score is the ratio of the estimated bias (difference between result and assigned value) and a standard deviation. The standard deviations for proficiency assessment were determined from the results of all interlaboratory comparisons that have been organised by the IFA-Tulln from 2013 to 2023. They represent average performance data of all former participating laboratories.

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

Calculation example:

A laboratory found 7.00 mg/L for the parameter DOC (recovery of 116 %). The assigned value for the DOC was 6.02 mg/L (100 %). The relative standard deviation for proficiency assessment is given in the table below (as well as in the annual program www.ifatest.eu) by 5.4 %, which is 0.33 mg/L DOC, when based on the assigned value.

$$z = \frac{x_i - X}{\sigma_{PT}} = \frac{7.00 \text{ mg/L} - 6.02 \text{ mg/L}}{0.33 \text{ mg/L}} \approx 3.0 \quad \text{or} \quad \frac{116 \% - 100 \%}{5.4 \%} \approx 3.0$$

- z z-score
 x_i 7.00 mg/L equivalent to 116 % (value of the laboratory)
X 6.02 mg/L equivalent to 100 % (assigned value)
 σ_{PT} 0.33 mg/L equivalent to 3.0 % (standard deviation for proficiency assessment, see table below)

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

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

Parameter	standard deviation for proficiency assessment based on the assigned value	Lower limit
Alkalinity $K_{S4.3}$	1.8 %	0.2 mmol/L
Ammonium	11 %	0.01 mg/L
Boron	7.1 %	0.012 mg/L
Calcium	3.1 %	9 mg/L
Chloride	2.7 %	2 mg/L
el. Conductivity	1.2 %	50 μ S/cm
DOC	5.4 %	1 mg/L
Hydrogen carbonate	2.3 %	20 mg/L
KMnO ₄ -Index	8.2 %	1 mg/L
Magnesium	3.5 %	1 mg/L
Nitrate	3.0 %	2 mg/L
Nitrite	5.5 %	0.01 mg/L
Orthophosphate	9.2 %	0.015 mg/L
Potassium	4.0 %	0.5 mg/L
Sodium	3.1 %	1 mg/L
Sulphate	3.0 %	3 mg/L
Total hardness	2.8 %	0.1 mmol/L
Total-P (as PO ₄ ³⁻)	9.1 %	0.015 mg/L

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

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

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

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

Illustration of results

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

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

In the **parameter oriented part** the reported results and corresponding uncertainties are illustrated together with recoveries of the assigned 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 assigned 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 assigned value or the measured value was given as "0" when the substance was added.
- "FP": False positive results can only be obtained for compounds that were evaluated based on "< assigned value". A result is termed FP if it does not include (strike) the "< "assigned value" with its measurement uncertainty.
- "•": All other results for which no recoveries can be calculated are illustrated by this symbol

Overview of measurement methods

Except for total-P (as PO_4^{3-}) and KMnO_4 -Index the participants were free to choose the analysis method. The test methods should be consistent with the methods applied in routine. Total-P (as PO_4^{3-}) should be analysed according to EN ISO 6878:2004 and KMnO_4 -Index should be analysed according to EN ISO 8467-H5 whereby equivalent or better methods that provide comparable measured values were allowed. An overview of the methods used can be found at the end of the report.

"< values" or "> values" as well as significantly different measured values, which would lead to confusing scaling, are not included in the graphics.

Tulln, 16 December 2024

Sample M106A
Parameter Copper

*Target value ± U (k=2) 4,79 µg/l ± 0,13 µg/l
 IFA result ± U (k=2) 4,79 µg/l ± 0,38 µg/l
 Stability test ± U (k=2) 4,69 µg/l ± 0,38 µg/l

**Target value = "assigned value"*
Obtained from sample preparation, U=uncertainty
Determined at IFA prior to shipment of samples
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 assigned 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 assigned value with corresponding confidence intervals (p=99%)

Number of results used for calculation of statistic parameters

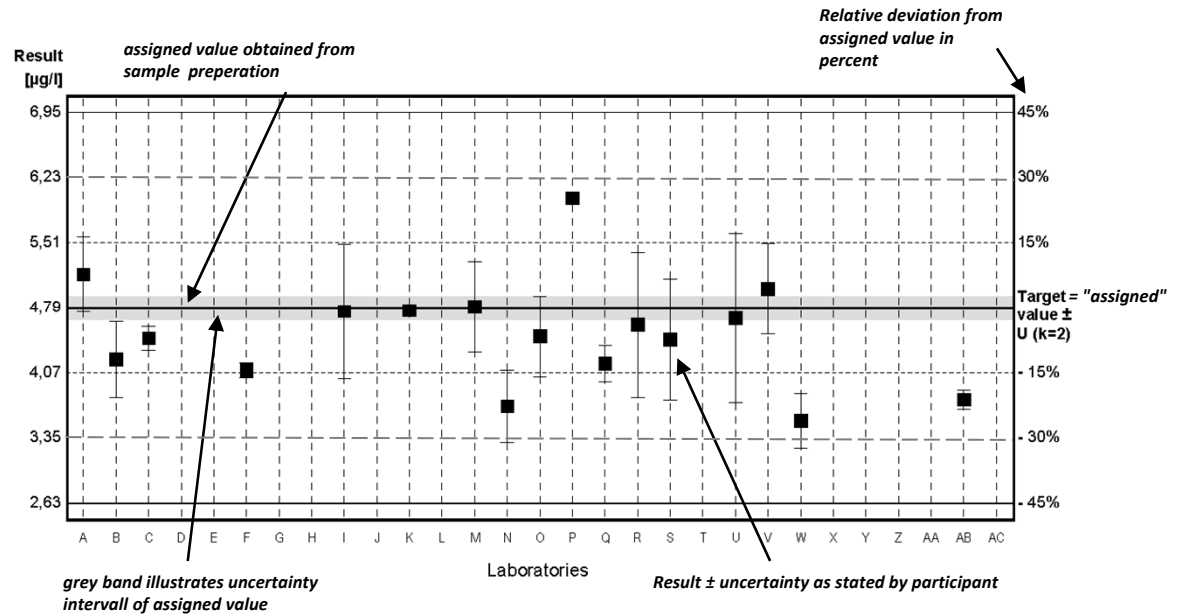
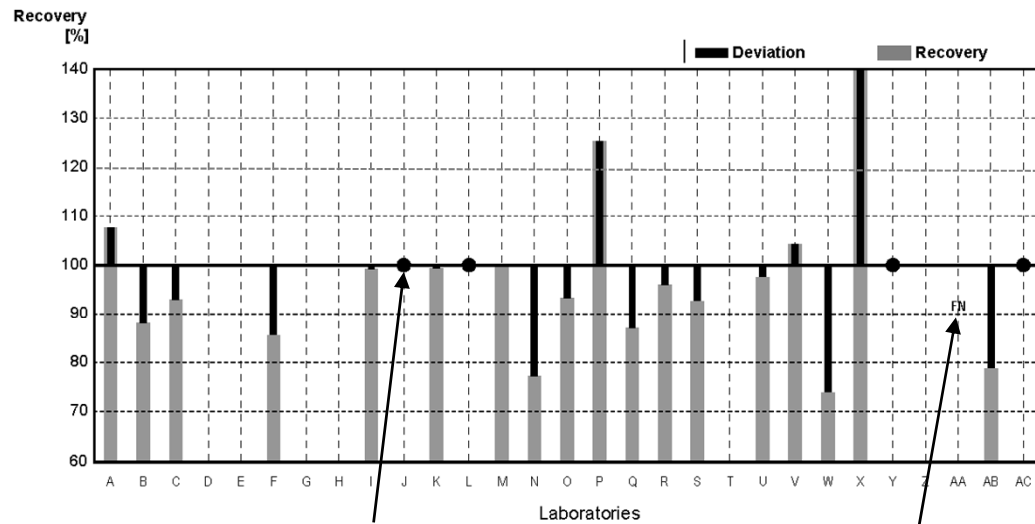


Diagram 1: Measurement results and their uncertainties



Result neither possible to calculate recovery nor false positive or false negative

False negative: reported „<-result“ is lower than target value

Diagram 2: Recoveries and deviations from assigned values

EXPLANATION

Rohdatenblätter und Parameterorientierte Auswertung Tables and Parameter Oriented Part

Eignungsprüfungsrunde / Proficiency testing round
N174

Nährstoffe
Nutrients / Major ions

Versand / Dispatch: 11.11.2024

Results N174A

	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
assigned value		360	0.879	1.517	89.5	25.1	6.15	32.9	5.90	9.7
IFA result	6.57	359	0.90	1.48	87	25.7	6.3	34.5	5.9	9.5
Stability test	6.57	359	0.89	1.49	88	25.1	6.5	32.9	5.8	9.6
A	7.08	362	0.87	1.53	93.33	24.2	6.48	34.6	6.07	
B										
C	6.43	365	0.91	1.48	90.3	26.2	6.17	33.7	6.13	9.17
D	6.59	359	0.842	1.50	88.5	24.1	5.84	33.2	5.93	9.35
E	6.8	361	0.88	1.50	88.5	24.6	6.47	33.5	6.09	9.96
F	6.90	359	4.93	1.44	88.1	25.0	6.19	32.7	5.81	9.20
G	6.58	357	0.888	1.511	92.2	24.54	5.93	32.19	5.95	9.54
H		362								
I	6.43	356	0.876	1.504	88.7	24.8	6.26	32.9	5.97	9.62
J	6.4	360	0.86	1.50	92	24.7	6.1	32.1	6.2	9.3
K	6.50	361								9.483
L	6.63	353	0.881	1.50	91.3	25.0	6.33	33.0	5.75	8.93
M	6.38	355.0	0.872	1.45	85.37	25.05	6.00	32.76	5.97	9.39
N		354	0.90	1.51	92	25.71	6.16	33.8	6.19	9.95
O										9.802
P						25.9	6.61	34.8	6.17	9.69
Q	6.32	361	0.92296	1.50		26.47	6.38	31.28	6.03	10.31
R	6.40	364.4	0.88	1.78	109					9.10
S		355	0.888	1.52						11.677
T										
U	7.7	295	0.91	1.96	119.6	26.12	6.21	33.47	6.02	9.544
V	6.75	360	1.93	1.96	119.5	46.3	20.0	8.88	1.196	8.78
W	6.43	363	0.91	1.51		26.3	6.2	33.1	5.98	9.4
X						26.75	6.03	32.88	5.96	9.59
Y	6.7	357	0.856	1.48	90.2	24.4	6.0	32.0	5.7	9.7
Z	6.66	366	0.882	1.54	90.90	25.704	5.857	32.866	5.321	10.382
AA	6.51	361		1.50	88					9.2
AB	6.75	366	0.83	1.467	86.46	29.2	<3			9.7
AC	6.6	355	0.909	1.51	89.1	26.0	6.3	33.5	6.02	9.7
AD	6.4	368	0.89	1.531	90.3	24.93	6.44	34.57	6.218	9.813
AE	6.4	363	0.842	1.58	93.4	24.1	5.85	30.3	5.72	9.80
AF	6.68	369		1.525	90.0					9.86
AG	6.64	357	0.908	1.580	96.4	26.1	6.3	33.2	6.9	10.0
AH	6.42	359	0.845	1.49	1.44	23.7	6.2	31.6	5.66	9.72
AI	6.53	357	0.91	1.49	87.9	26.4	6.18	33.2	5.77	9.73
AJ	6.58	354	0.912	1.53	92.7	26.2	6.34	35.3	5.70	9.79
AK	6.45	359	0.88	1.53	88.7	24.76	5.97	32.71	5.5	9.49
AL	6.63	358	0.863	1.00	58.0	24.6	6.05	32.1	5.72	9.40
AM	6.46	354	1.61	0.85	98	24.1	6.0	33.7	6.0	9.8
AN				1.47						
AO	6.55	359	0.869	1.49	90.9	25.0	5.94	31.3	5.57	9.35
AP	6.46	370	0.870	1.49	87.9	25.0	5.97	32.6	5.61	8.95
AQ	6.63	360								9.6

Measurement Uncertainties N174A

	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
assigned value		1	0.010	0.018	1.1	0.4	0.10	0.2	0.03	0.3
IFA result	0.20	6	0.05	0.06	4	1.7	0.4	1.2	0.3	0.5
Stability test	0.20	6	0.05	0.06	4	1.7	0.4	1.2	0.3	0.5
A	0.04	5.4		0.05		1.5	0.39	1.2	0.18	
B										
C	0.04	18	0.055	0.089	5.4	0.79	0.185	2.02	0.18	0.73
D	0.0659	0.198	0.0217	0.0790	1.77	0.870	0.0354	0.594	0.535	0.0873
E	0.1	10	0.09	0.2	8.9	5.0	1.3	5.1	1.2	1.0
F	0.30	11	0.37	0.05	3.5	1.2	0.36	1.0	0.46	0.49
G	0.05	2	0.1	0.1	6.1	1.0	0.2	0.2	0.1	0.4
H		4.489								
I	0.3	15	0.03	0.1	4	2	0.8	5	0.8	0.7
J	0.1	4	0.15	0.2	2	1.5	1	1.7	0.5	1
K	0.65	18								0.420
L	0.66	35	0.18	0.15	9.13	5.0	1.3	6.6	1.2	1.3
M	0.26	7.8	0.03	0.03	1.79	0.98	0.28	1.57	0.38	0.63
N		11	0.05	0.08	7	1.50	0.50	2.0	0.50	0.60
O										0.909
P						3.89	0.991	5.22	0.925	1.45
Q										
R										
S		7.06	0.064	0.04						0.81
T										
U	0.2	29.5		0.294	17.94	2.612	0.621	3.347	0.602	0.4772
V				0.0078	0.48	0.46	0.14	0.088	0.036	0.20
W	0.06	4	0.04	0.005		1.1	0.3	2.3	0.5	0.6
X						0.36	0.12	0.05	0.08	0.24
Y	0.2	14	0.041	0.10	6.3	1.0	0.4	1.8	0.3	1.0
Z	0.1	4.51		0.15		2.55	0.59	3.31	0.53	1.06
AA	0.01	3		0.04	1					0.6
AB										
AC		7.0		0.103		1.7	0.5	2.5	0.52	0.7
AD	0.19	20.46	0.05	0.084	4.97	1.37	0.23	1.21	0.22	0.942
AE	0.32	10.9	0.067	0.174	10.3	2.89	0.53	3.03	0.629	0.98
AF	0.04	10.7		0.147	8.7					0.36
AG	0.05	8	0.075	0.070	4.3	1.2	0.3	1.4	0.3	0.4
AH	0.13	18	0.17	0.15	0.14	3.92	0.68	2.84	0.68	0.74
AI				0.10		2.2	0.7	2.8	0.5	1.4
AJ	0.20	0.58	0.009	0.006	0.40	0.42	0.075	0.41	0.026	0.035
AK	0.25	9	0.04	0.01	3.6	0.10	0.11	0.65	0.3	0.47
AL										
AM	0.06	7.6	0.13	0.072	4.4	1.2	0.38	2.6	0.21	0.47
AN				0.22						
AO	0.20	11	0.13	0.12	7.3	3.8	0.71	4.1	0.56	0.94
AP	0.10	19	0.174	0.07	4.4	5.0	0.60	3.3	0.56	0.89
AQ										0.35

Results N174A

	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
assigned value	0.02228	0.0406	46.5	16.8	<0.009	0.136	5.53	<0.009	2.10
IFA result	0.0219	0.0410	46.2	16.5	<0.009	0.135	5.42	<0.009	2.30
Stability test	0.0215	0.0408	45.9	16.7	<0.009	0.129	5.49	<0.009	2.37
A	0.0200	0.0390			<0.007			<0.005	2.25
B								0.0060	
C	0.0200	0.0400	43.8	15.5	<0.01	0.129	6.7	<0.01	
D	0.0222	0.0464	45.2	15.7	<0.0150	0.135	5.52	<0.0150	
E	0.0234	0.0426	46.75	16.54	<0.009	0.136	5.69	<0.009	
F	0.0210	0.0439	46.0	17.4	<0.006	0.0780	5.38	<0.006	
G	0.0244	0.0390	46.20	16.35	0.00307		5.86	<0.0092	
H		0.0515			0.0105			0.0405	
I	0.0220	0.0410	46.9	16.8	<0.01		5.70	<0.013	
J	0.0212	0.0439	46.4	16.4		0.142	5.8	<0.20	2.10
K	0.0246	0.0465	45.596	16.276	<0.015		5.673	<0.015	
L	0.0200	0.0475	44.5	15.8	<0.1	0.132	5.38	<0.031	2.00
M		0.0386	46.87	16.49			5.631		2.16
N	0.0210	0.0400	46.9	17.2	<0.0090		5.3	<0.0090	
O		0.0454			<0.019			<0.02	
P	0.0308	0.0694			<0.01	0.145			
Q	<0.033	0.0617	47.55	14.80					2.02
R	0.0300	<0.10	45.80	12.58					
S	0.0230	0.0475			<0.04	0.189		<0.0004	
T									
U	0.0230	0.050	46.63	17.52	0.0120	0.137	5.60	<0.01533	2.44
V	0.0206	0.0279	44.45	15.15	0.0092	0.0155	5.688	0.0250	1.60
W	0.0180	0.0400	46.6	16.7	<0.03	0.140	5.6	<0.03	2.00
X			46.43	16.80					
Y	0.0207	0.0437	47.0	16.9	<0.010	0.135	5.4	<0.010	
Z	0.0224	0.0390	50.05	17.198	<0.001	0.140	5.86	<0.0032	
AA	0.0228	0.0415	47.0		<0.006			<0.006	
AB	<0.05	<0.05	50.2	<40	<0.15				
AC	0.0223	<0.050	47.3	16.5		0.142	0.489		
AD	0.0200	0.0410	45.118	16.84	<0.010	0.140	5.595	<0.010	2.36
AE	<0.200	0.0490	42.8	15.4	<0.015	132	6.32	<0.015	
AF	0.02233	<0.038	47.38	18.72	<0.0153		5.35	<0.0153	1.94
AG	0.0220	0.0446	48.1	17.0	<0.01		5.8	<0.1	2.39
AH	0.0226	0.0330	45.9	16.7	<0.1	0.140	5.97	<0.03	2.12
AI	0.0225	0.0430	46.3	16.5	<0.01	0.140	5.61	<0.031	1.92
AJ	0.0207	0.0393	49.9	16.9	<0.009	0.143	5.47	<0.009	1.95
AK	0.0240	0.0410	45.78	16.53	<0.005		5.41	0.0092	2.13
AL	0.0270		46.4	16.2		0.128			
AM	0.020	0.0380	44.8	15.3	<0.01		5.4	0.050	2.02
AN		0.0443			<0.015				
AO	0.0236	0.0433	46.9	16.4	<0.015	0.137	5.45	<0.015	2.08
AP	0.0230	0.0457	44.6	15.5	<0.015	0.129	5.96	<0.015	2.28
AQ	0.0490								

Measurement Uncertainties N174A

	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
assigned value	0.00008	0.0019	0.5	0.3		0.004	0.07		0.10
IFA result	0.0010	0.0017	1.6	0.5		0.012	0.11		0.23
Stability test	0.0010	0.0017	1.6	0.5		0.011	0.11		0.24
A	0.001	0.002							0.21
B								0.00037	
C	0.006	0.012	3.5	1.55	0.0033	0.016	0.54	0.0033	
D	0.00093	0.00082	1.63	1.70		0.00132	0.0457		
E	0.0034	0.007	4.7	1.7		0.034	0.57		
F	0.0015	0.0036	2.3	1.0		0.0070	0.48		
G	0.002	0.003	0.2	2	0.0015		0.2	0.0046	
H		0.0118			0.00072			0.00488	
I	0.002	0.005	4	1.1			0.8		
J	0.01	0.01	2	1.2		0.02	0.5		0.3
K	0.0069	0.0107	5.964	0.991			1.021		
L	0.003	0.0095	6.7	2.4		0.027	1.6		0.4
M		0.007	2.20	0.82			0.98		0.46
N	0.0030	0.0080	3.8	1.0			0.7		
O		0.0015							
P	0.0023	0.0083				0.022			
Q									
R									
S	0.0026	0.0065				0.0295			
T									
U	0.00340	0.0050	4.663	1.752	0.00180	0.0206	0.45		0.390
V	0.0013	0.0009	3.11	0.88	0.0011	0.00071	0.068	0.007	0.0
W	0.001	0.002	2.8	1.0	0	0.014	0.3	0	0.04
X			0.34	0.34					
Y	0.0032	0.0085	3.7	1.5		0.0098	1.0		
Z	0.002	0.004	5.11	1.73		0.014	0.59		
AA	0.0023	0.0063	0.5						
AB									
AC	0.004		6.1	0.8		0.016	0.080		
AD	0.002	0.004	4.74	1.448		0.025	1.119		0.307
AE		0.007	4.28	1.08		15.8	1.01		
AF	0.00078		2.27	0.86			0.31		0.19
AG	0.0016	0.0054	1.9	0.7			0.8		0.32
AH	0.003	0.004	5.92	2.27		0.02	1.13	0.01	0.23
AI	0.003	0.006	6.6	1.3		0.024	0.67		
AJ	0.001	0.001	0.23	0.15		0.003	0.031		0.020
AK	0.0024	0.0025	2.75	0.50			0.81	0.0015	0.26
AL									
AM	0.0012	0.0028	3.6	0.93			0.50	0.0065	0.092
AN		0.00443							
AO	0.0026	0.0035	4.7	2.6		0.018	1.1		0.31
AP	0.0032	0.0064	4.5	1.6		0.026	1.07		0.34
AQ	0.001								

Results N174B

	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
assigned value		544	1.92	3.70	222	55.5	12.93	39.9	1.97	40.1
IFA result	6.38	544	2.01	3.78	228	58	13.4	41.7	1.91	39.5
Stability test	6.38	543	1.94	3.82	230	56	13.3	39.8	1.86	40.1
A	6.91	549	1.93	3.68	224.48	54.5	13.93	42.4	2.00	
B										
C	6.22	554	1.95	3.53	215	56.8	13.0	40.8	2.06	39.1
D	6.40	545	1.85	3.64	219	53.9	12.2	40.1	2.01	38.5
E	6.6	546	1.91	3.61	220.3	54.3	13.4	40.5	1.92	41.18
F	6.93	544	10.6	3.58	218	54.5	13.0	39.5	1.91	38.0
G	6.40	541	1.923	3.671	224	54.37	12.57	38.69	1.94	38.96
H		548								
I	6.25	544	1.90	3.636	219	54.6	13.0	39.6	2.00	39.5
J	6.2	545	1.89	3.55	217	54.7	12.7	38.4	2.25	39.7
K	6.34	547								39.004
L	6.40	542	1.87	3.72	227	53.8	13.0	40.0	1.90	38.5
M	6.25	536.0	1.886	3.50	210.38	54.80	12.62	39.62	1.91	39.41
N		536	1.94	3.57	218	55.97	13.088	40.8	2.17	42.2
O										>30
P						57.6	13.1	42.5	1.86	40.1
Q	6.16	546	1.99307	3.60		57.98	13.28	37.99	2.37	41.45
R	6.25	547.9	2.84	3.95	241					39.37
S		530	1.895	3.64						40.997
T										
U	7.7	165	1.95	1.39	84.8	56.47	13.09	40.86	2.01	39.425
V	6.51	546	1.95	4.298	262.3	46.88	20.26	8.93	1.198	41.21
W	6.27	550	2.00	3.64		57.3	13.9	39.8	2.00	38.5
X						58.12	13.02	39.57	1.88	39.72
Y	6.5	543	1.91	3.58	218.3	55.6	12.7	38.4	1.98	39.9
Z	6.51	551	1.955	3.66	220.24	57.465	12.682	40.846	1.957	43.810
AA	6.34	545		3.61	217					39.7
AB	6.23	548	1.83	3.538	212.83	58.8	8.44			39.5
AC	6.5	532	1.89	3.64	219	54.5	12.9	39.8	2.08	39.5
AD	6.2	560	1.92	3.727	224	54.75	13.52	41.39	2.072	39.35
AE	6.2	551	1.83	3.70	223	52.9	12.5	37.9	1.94	40.9
AF	6.24	543		3.63	218.4					39.44
AG	6.63	542	1.92	3.73	228	56	13.0	40.3	2.83	40.4
AH	6.2	536	1.86	3.62	3.58	52.9	13.0	38.5	1.88	39.7
AI	6.86	538	1.92	3.60	216.6	55.9	12.7	40.0	1.93	38.9
AJ	6.36	537	1.93	3.64	222	54.4	13.9	39.2	1.98	41.0
AK	6.23	546	1.90	3.66	220	54.93	12.6	39.44	2.19	39.38
AL	6.24	543	1.856	2.50	149.5	53.4	12.7	38.8	1.91	39.5
AM	6.28	440	1.84	3.78	231	53	12.7	40.7	2.14	40.7
AN				3.62						
AO	6.37	541	1.87	3.56	217	54.6	12.4	38.0	1.73	39.6
AP	6.28	557	1.93	3.57	215	55.2	13.4	39.5	2.01	38.6
AQ	6.40	534								40.6

Measurement Uncertainties N174B

	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
assigned value		2	0.02	0.05	3	0.9	0.18	0.6	0.04	1.0
IFA result	0.20	9	0.11	0.16	9	4	0.7	1.4	0.16	2.0
Stability test	0.20	9	0.10	0.16	9	4	0.7	1.3	0.15	2.0
A	0.03	8.2		0.13		3.3	0.84	1.5	0.06	
B										
C	0.04	27	0.12	0.21	13	1.70	0.39	2.45	0.06	3.1
D	0.0640	0.233	0.0246	0.122	4.37	0.900	0.245	0.633	0.0314	1.61
E	0.1	10	0.2	0.4	22.0	10.9	2.7	6.1	0.39	4.1
F	0.30	16	0.8	0.12	9	2.6	0.8	1.2	0.15	2.0
G	0.05	2	0.1	0.1	6.1	1.0	0.2	0.2	0.1	0.4
H		6.795								
I	0.3	22	0.1	0.2	9	5	1.6	6	0.3	3
J	0.1	6	0.18	0.2	3	2	1	1.8	0.2	3
K	0.63	27								1.728
L	0.64	54	0.37	0.37	23	11	2.6	8.0	0.38	5.8
M	0.25	11.8	0.08	0.07	4.42	2.14	0.59	1.90	0.12	2.64
N		16	0.10	0.18	17	3.36	1.05	2.5	0.17	2.5
O										
P						8.63	1.96	6.37	0.278	6.02
Q										
R										
S		10.55	0.137	0.10						2.85
T										
U	0.2	16.5		0.209	12.72	5.647	1.309	4.086	0.201	1.9713
V				0.16	9.97	0.94	0.43	0.14	0.026	1.11
W	0.06	6	0.09	0.01		2.3	0.7	2.8	0.2	2.3
X						0.61	0.11	0.42	0.01	0.24
Y	0.2	22	0.084	0.21	12.7	2.1	0.8	2.2	0.14	3.9
Z	0.1	4.51		0.36		5.73	1.27	4.11	0.19	4.42
AA	0.01	4		0.10	3					2.7
AB										
AC		11		0.248		3.5	1.1	2.9	0.18	2.7
AD	0.19	31.14	0.096	0.205	12.32	3.01	0.47	1.45	0.08	3.78
AE	0.31	17.0	0.147	0.407	24.5	6.35	1.13	3.79	0.213	3.68
AF	0.04	15.7		0.351	21.1					1.46
AG	0.05	12	0.16	0.17	11	3	0.5	1.7	0.11	1.5
AH	0.12	27	0.37	0.36	0.36	8.5	1.44	3.46	0.23	3.02
AI				0.25		4.7	1.4	3.4	0.2	5.5
AJ	0.20	1.16	0.018	0.012	0.92	0.84	0.15	0.46	0.012	0.21
AK	0.25	14	0.08	0.01	9	0.88	0.24	0.79	0.13	1.97
AL										
AM	0.06	9.5	0.15	0.32	10	2.7	0.80	3.1	0.075	2.0
AN				0.54						
AO	0.19	16	0.28	0.28	17	8.2	1.5	4.9	0.17	4.0
AP	0.10	28	0.39	0.18	11	11.0	1.3	3.9	0.20	3.9
AQ										1.49

Results N174B

	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
assigned value	0.0432	<0.01	23.6	29.7	0.0456	0.086	4.14	0.115	3.13
IFA result	0.0429	<0.01	23.4	29.5	0.0460	0.086	4.18	0.124	3.35
Stability test	0.0420	<0.01	22.9	29.1	0.0456	0.081	4.22	0.119	3.53
A	0.0410	<0.03			0.0294			0.114	3.28
B								0.1195	
C	0.0400	<0.01	21.5	28.8	0.050	0.072	7.7	0.110	
D	0.0422	<0.0100	22.7	27.9	0.0436	0.0823	4.23	0.115	
E	0.0441	<0.010	22.85	29.09	0.0499	0.0854	4.27	0.1121	
F	0.0430	<0.008	23.5	29.6	0.0475	0.120	4.14	0.120	
G	0.0468	<0.0064	23.40	28.89	0.0460		4.51	0.109	
H		0.00500			0.0475			0.1015	
I	0.0430	<0.013	23.7	29.0	0.0460		4.39	0.115	
J	0.0412	<0.02	24.0	29.1		0.093	4.88	<0.20	3.00
K	0.0458	<0.012	23.189	28.776	0.0445		4.467	0.101	
L	0.0400	<0.01	23.0	28.8	<0.1	0.0818	4.13	0.124	2.70
M		<0.002	23.84	29.27			4.314		3.25
N	0.0430	<0.020	23.1	30.7	0.0450		4.05	0.121	
O		<0.01			0.0317			0.121	
P	0.0780	0.0250			0.0306	0.0921			
Q	0.0440	0.0180	24.25	27.75					3.15
R	0.0480	<0.1	23.04	24.89					
S	0.0450	<0.010			0.0515	0.1455		0.108	
T									
U	0.0430	<0.00515	13.61	30.19	0.0430	0.087	4.30	0.1012	3.48
V	0.0399	<0.02	22.26	30.44	0.060	7.00	4.398	0.117	2.40
W	0.0390	<0.03	23.5	29.7	0.0400	0.080	4.32	0.120	3.14
X			23.61	29.41					
Y	0.0417	<0.010	24.3	29.8	0.0463	0.0836	4.15	0.113	
Z	0.0431	<0.0090	25.688	30.801	0.0402	0.093	4.57	0.1165	
AA	0.0436	<0.005	23.1		0.0408			0.114	
AB	<0.05	<0.05	25.6	<40	<0.15				
AC	0.0440	<0.050	22.6	29.0		0.088	4.08		
AD	0.0420	<0.010	22.6	29.39	0.0470	89.24	4.256	0.116	3.29
AE	0.0460	<0.010	22.3	30.3	0.053	81.4	4.95	0.109	
AF	0.04269	<0.038	25.20	31.98	0.0527		4.18	0.1147	2.84
AG	0.0432	<0.02	23.7	30.2	0.0471		4.58	0.110	3.50
AH	0.0143	<0.02	23.5	28.9	<0.1	0.087	5.94	0.115	3.12
AI	0.0432	<0.01	23.5	29.3	0.0437	0.0883	4.19	0.106	2.91
AJ	0.0433	<0.01	25.4	30.6	0.0245	0.0858	4.17	0.0831	3.07
AK	0.0450	n.n.	23.03	29.03	0.0429		4.19	0.1134	3.19
AL	0.0490		23.5	29.0		0.0795			
AM	0.039	<0.01	21.3	27.0	0.0260		4.54	0.154	2.98
AN		<0.01			0.0417				
AO	0.0447	<0.0100	23.5	29.9	0.0468	0.0840	4.92	0.113	3.17
AP	0.0427	<0.010	23.4	28.2	0.0300	0.0780	4.62	0.0780	3.14
AQ	0.063								

Measurement Uncertainties N174B

	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
assigned value	0.0015		0.3	0.6	0.0030	0.002	0.07	0.003	0.11
IFA result	0.0017		0.8	0.8	0.0015	0.007	0.09	0.021	0.33
Stability test	0.0021		0.8	0.8	0.0015	0.007	0.09	0.020	0.35
A	0.002				0.0025				0.31
B								0.0074	
C	0.012	0.0033	1.7	2.88	0.005	0.0009	0.62	0.011	
D	0.00090		1.47	1.83	0.00099	0.00122	0.0438	0.00101	
E	0.0064		2.3	2.9	0.0059	0.022	0.43	0.0132	
F	0.0031		1.2	1.6	0.0022	0.011	0.37	0.008	
G	0.002	0.003	0.2	2	0.0015		0.2	0.0046	
H		0.00115			0.00326			0.01223	
I	0.004		2	2	0.008		0.7	0.02	
J	0.01		1.5	2		0.02	0.8		0.5
K	0.0128		3.03	1.752	0.0076		0.804	0.012	
L	0.006		3.5	4.3		0.016	1.2	0.025	0.54
M			1.12	1.46			0.75		0.69
N	0.0060		1.8	2.2	0.0090		0.57	0.017	
O					0.0071			0.0094	
P	0.0059	0.0030			0.0030	0.014			
Q									
R									
S	0.0052				0.0037	0.0227		0.011	
T									
U	0.0064		2.316	3.019	0.0064	0.0131	0.34	0.01533	0.557
V	0.00032		0.31	1.00	0.0	1.41	0.15	0.012	0.0
W	0.002	0	1.4	1.8	0.002	0.008	0.2	0.005	0.06
X			0.17	0.44					
Y	0.0049		2.0	2.5	0.0070	0.0008	0.81	0.012	
Z	0.004		2.60	3.09	0.004	0.009	0.46	0.012	
AA	0.0044		0.2		0.0048			0.015	
AB									
AC	0.009		2.9	1.4		0.009	0.66		
AD	0.004		2.396	2.528	0.005	16	0.851	0.012	0.428
AE	0.006		2.23	2.12	0.007	9.77	0.792	0.0163	
AF	0.00149		1.21	1.47	0.0042		0.24	0.0093	0.28
AG	0.0032		1.0	1.2	0.0041		0.57	0.024	0.47
AH	0.002		3.03	3.93		0.01	1.13	0.015	0.34
AI	0.006		3.3	2.4		0.02	0.50	0.009	
AJ	0.002		0.10	0.29	0.001	0.001	0.015	0.001	0.042
AK	0.0045		1.38	0.87	0.0052		0.63	0.0205	0.38
AL									
AM	0.0023		1.7	1.6	0.0038		0.42	0.020	0.14
AN					0.00626				
AO	0.0049		2.4	4.8	0.0037	0.011	1.0	0.0091	0.48
AP	0.0060		2.3	2.8	0.0042	0.0156	0.83	0.0117	0.47
AQ	0.001								

z-Scores N174A

	Cond.	total-Hardn.	K _{s4.3}	HCO ₃ ⁻	Ca ²⁺	Mg ²⁺	Na ⁺	K ⁺	NO ₃ ⁻
A	0.46	-0.37	0.48	1.86	-1.16	1.53	1.67	0.72	
B									
C	1.16	1.26	-1.36	0.39	1.41	0.09	0.78	0.97	-1.82
D	-0.23	-1.50	-0.62	-0.49	-1.29	-1.44	0.29	0.13	-1.20
E	0.23	0.04	-0.62	-0.49	-0.64	1.49	0.59	0.81	0.89
F	-0.23	164.59	-2.82	-0.68	-0.13	0.19	-0.20	-0.38	-1.72
G	-0.69	0.37	-0.22	1.31	-0.72	-1.02	-0.70	0.21	-0.55
H	0.46								
I	-0.93	-0.12	-0.48	-0.39	-0.39	0.51	0.00	0.30	-0.27
J	0.00	-0.77	-0.62	1.21	-0.51	-0.23	-0.78	1.27	-1.37
K	0.23								-0.75
L	-1.62	0.08	-0.62	0.87	-0.13	0.84	0.10	-0.64	-2.65
M	-1.16	-0.28	-2.45	-2.01	-0.06	-0.70	-0.14	0.30	-1.07
N	-1.39	0.85	-0.26	1.21	0.78	0.05	0.88	1.23	0.86
O									0.35
P					1.03	2.14	1.86	1.14	-0.03
Q	0.23	1.79	-0.62		1.76	1.07	-1.59	0.55	2.10
R	1.02	0.04	9.63	9.47					-2.06
S	-1.16	0.37	0.11						6.79
T									
U	-15.05	1.26	16.22	14.62	1.31	0.28	0.56	0.51	-0.54
V	0.00	42.70	16.22	14.57	27.25	64.34	-23.55	-19.93	-3.16
W	0.69	1.26	-0.26		1.54	0.23	0.20	0.34	-1.03
X					2.12	-0.56	-0.02	0.25	-0.38
Y	-0.69	-0.93	-1.36	0.34	-0.90	-0.70	-0.88	-0.85	0.00
Z	1.39	0.12	0.84	0.68	0.78	-1.36	-0.03	-2.45	2.34
AA	0.23		-0.62	-0.73					-1.72
AB	1.39	-1.99	-1.83	-1.48	5.27				0.00
AC	-1.16	1.22	-0.26	-0.19	1.16	0.70	0.59	0.51	0.00
AD	1.85	0.45	0.51	0.39	-0.22	1.35	1.64	1.35	0.39
AE	0.69	-1.50	2.31	1.89	-1.29	-1.39	-2.55	-0.76	0.34
AF	2.08		0.29	0.24					0.55
AG	-0.69	1.18	2.31	3.35	1.29	0.70	0.29	4.24	1.03
AH	-0.23	-1.38	-0.99	-42.78	-1.80	0.23	-1.27	-1.02	0.07
AI	-0.69	1.26	-0.99	-0.78	1.67	0.14	0.29	-0.55	0.10
AJ	-1.39	1.34	0.48	1.55	1.41	0.88	2.35	-0.85	0.31
AK	-0.23	0.04	0.48	-0.39	-0.44	-0.84	-0.19	-1.69	-0.72
AL	-0.46	-0.65	-18.93	-15.30	-0.64	-0.46	-0.78	-0.76	-1.03
AM	-1.39	29.70	-24.43	4.13	-1.29	-0.70	0.78	0.42	0.34
AN			-1.72						
AO	-0.23	-0.41	-0.99	0.68	-0.13	-0.98	-1.57	-1.40	-1.20
AP	2.31	-0.37	-0.99	-0.78	-0.13	-0.84	-0.29	-1.23	-2.58
AQ	0.00								-0.34

z-Scores N174A

	NO ₂ ⁻	NH ₄ ⁺	Cl ⁻	SO ₄ ²⁻	o-PO ₄ ³⁻	Boron	DOC	total-P (as PO ₄ ³⁻)	KMnO ₄ - Index
A	-1.86	-0.36							0.87
B									
C	-1.86	-0.13	-2.15	-2.58		-0.72	3.92		
D	-0.07	1.30	-1.04	-2.18		-0.10	-0.03		
E	0.91	0.45	0.20	-0.52		0.00	0.54		
F	-1.04	0.74	-0.40	1.19		-6.01	-0.50		
G	1.73	-0.36	-0.24	-0.89			1.11		
H		2.44							
I	-0.23	0.09	0.32	0.00			0.57		
J	-0.88	0.74	-0.08	-0.79		0.62	0.90		0.00
K	1.89	1.32	-0.72	-1.04			0.48		
L	-1.86	1.55	-1.59	-1.98		-0.41	-0.50		-0.58
M		-0.45	0.29	-0.62			0.34		0.35
N	-1.04	-0.13	0.32	0.79			-0.77		
O		1.07							
P	6.95	6.45				0.93			
Q		4.72	0.84	-3.97					-0.46
R	6.30		-0.56	-8.37					
S	0.59	1.55				5.49			
T									
U	0.59	2.10	0.10	1.43		0.10	0.23		1.97
V	-1.37	-2.84	-1.63	-3.27		-12.48	0.53		-2.90
W	-3.49	-0.13	0.08	-0.20		0.41	0.23		-0.58
X			-0.06	0.00					
Y	-1.29	0.69	0.40	0.20		-0.10	-0.44		
Z	0.10	-0.36	2.83	0.79		0.41	1.11		
AA	0.42	0.20	0.40						
AB			2.95						
AC	0.02		0.64	-0.60		0.62	-16.88		
AD	-1.86	0.09	-1.10	0.08		0.41	0.22		1.51
AE		1.88	-2.95	-2.78		13656.17	2.65		
AF	0.04		0.70	3.81			-0.60		-0.93
AG	-0.23	0.90	1.27	0.40			0.90		1.68
AH	0.26	-1.70	-0.48	-0.20		0.41	1.47		0.12
AI	0.18	0.54	-0.16	-0.60		0.41	0.27		-1.05
AJ	-1.29	-0.29	2.71	0.20		0.72	-0.20		-0.87
AK	1.40	0.09	-0.57	-0.54			-0.40		0.17
AL	3.85		-0.08	-1.19		-0.83			
AM	-1.86	-0.58	-1.35	-2.98			-0.44		-0.46
AN		0.83							
AO	1.08	0.60	0.32	-0.79		0.10	-0.27		-0.12
AP	0.59	1.14	-1.51	-2.58		-0.72	1.44		1.05
AQ	21.81								

z-Scores N174B

	Cond.	total-Hardn.	K _s 4.3	HCO ₃ ⁻	Ca ²⁺	Mg ²⁺	Na ⁺	K ⁺	NO ₃ ⁻
A	0.77	0.19	-0.30	0.49	-0.58	2.21	2.02	0.38	
B									
C	1.53	0.56	-2.55	-1.37	0.76	0.15	0.73	1.14	-0.83
D	0.15	-1.30	-0.90	-0.59	-0.93	-1.61	0.16	0.51	-1.33
E	0.31	-0.19	-1.35	-0.33	-0.70	1.04	0.49	-0.63	0.90
F	0.00	161.46	-1.80	-0.78	-0.58	0.15	-0.32	-0.76	-1.75
G	-0.46	0.06	-0.44	0.39	-0.66	-0.80	-0.98	-0.38	-0.95
H	0.61								
I	0.00	-0.37	-0.96	-0.59	-0.52	0.15	-0.24	0.38	-0.50
J	0.15	-0.56	-2.25	-0.98	-0.46	-0.51	-1.21	3.55	-0.33
K	0.46								-0.91
L	-0.31	-0.93	0.30	0.98	-0.99	0.15	0.08	-0.89	-1.33
M	-1.23	-0.63	-3.00	-2.28	-0.41	-0.69	-0.23	-0.76	-0.57
N	-1.23	0.37	-1.95	-0.78	0.27	0.35	0.73	2.54	1.75
O									
P					1.22	0.38	2.10	-1.40	0.00
Q	0.31	1.36	-1.50		1.44	0.77	-1.54	5.08	1.12
R	0.60	17.11	3.75	3.72					-0.61
S	-2.14	-0.47	-0.90						0.75
T									
U	-58.06	0.56	-34.68	-26.87	0.56	0.35	0.78	0.51	-0.56
V	0.31	0.56	8.98	7.89	-5.01	16.20	-25.04	-9.80	0.92
W	0.92	1.49	-0.90		1.05	2.14	-0.08	0.38	-1.33
X					1.52	0.20	-0.27	-1.14	-0.32
Y	-0.15	-0.19	-1.80	-0.72	0.06	-0.51	-1.21	0.13	-0.17
Z	1.07	0.65	-0.60	-0.34	1.14	-0.55	0.76	-0.16	3.08
AA	0.15		-1.35	-0.98					-0.33
AB	0.61	-1.67	-2.43	-1.80	1.92	-9.92			-0.50
AC	-1.84	-0.56	-0.90	-0.59	-0.58	-0.07	-0.08	1.40	-0.50
AD	2.45	0.00	0.41	0.39	-0.44	1.30	1.20	1.29	-0.62
AE	1.07	-1.67	0.00	0.20	-1.51	-0.95	-1.62	-0.38	0.67
AF	-0.15		-1.05	-0.71					-0.55
AG	-0.31	0.00	0.45	1.18	0.29	0.15	0.32	10.91	0.25
AH	-1.23	-1.12	-1.20	-42.78	-1.51	0.15	-1.13	-1.14	-0.33
AI	-0.92	0.00	-1.50	-1.06	0.23	-0.51	0.08	-0.51	-1.00
AJ	-1.07	0.19	-0.90	0.00	-0.64	2.14	-0.57	0.13	0.75
AK	0.31	-0.37	-0.60	-0.39	-0.33	-0.73	-0.37	2.79	-0.60
AL	-0.15	-1.19	-18.02	-14.20	-1.22	-0.51	-0.89	-0.76	-0.50
AM	-15.93	-1.49	1.20	1.76	-1.45	-0.51	0.65	2.16	0.50
AN			-1.20						
AO	-0.46	-0.93	-2.10	-0.98	-0.52	-1.17	-1.54	-3.05	-0.42
AP	1.99	0.19	-1.95	-1.37	-0.17	1.04	-0.32	0.51	-1.25
AQ	-1.53								0.42

z-Scores N174B

	NO ₂ ⁻	NH ₄ ⁺	Cl ⁻	SO ₄ ²⁻	o-PO ₄ ³⁻	Boron	DOC	total-P (as PO ₄ ³⁻)	KMnO ₄ - Index ⁻
A	-0.93				-3.86			-0.10	0.58
B								0.43	
C	-1.35		-3.30	-1.01	1.05	-2.29	15.92	-0.48	
D	-0.42		-1.41	-2.02	-0.48	-0.61	0.40	0.00	
E	0.38		-1.18	-0.68	1.02	-0.10	0.58	-0.28	
F	-0.08		-0.16	-0.11	0.45	5.57	0.00	0.48	
G	1.52		-0.31	-0.91	0.10		1.66	-0.57	
H					0.45			-1.29	
I	-0.08		0.16	-0.79	0.10		1.12	0.00	
J	-0.84		0.63	-0.67		1.15	3.31		-0.51
K	1.09		-0.65	-1.04	-0.26		1.46	-1.34	
L	-1.35		-0.94	-1.01		-0.69	-0.04	0.86	-1.68
M			0.38	-0.48			0.78		0.47
N	-0.08		-0.78	1.12	-0.14		-0.40	0.57	
O					-3.31			0.57	
P	14.65				-3.58	1.00			
Q	0.34		1.02	-2.19					0.08
R	2.02		-0.88	-5.40					
S	0.76				1.41	9.74		-0.67	
T									
U	-0.08		-15.68	0.55	-0.62	0.16	0.72	-1.32	1.36
V	-1.39		-2.10	0.83	3.43	1132.33	1.15	0.19	-2.84
W	-1.77		-0.16	0.00	-1.33	-0.98	0.81	0.48	0.04
X			0.02	-0.33					
Y	-0.63		1.10	0.11	0.17	-0.39	0.04	-0.19	
Z	-0.04		3.28	1.24	-1.29	1.15	1.92	0.14	
AA	0.17		-0.78		-1.14			-0.10	
AB			3.14						
AC	0.34		-1.57	-0.79		0.33	-0.27		
AD	-0.51		-1.57	-0.35	0.33	14601.05	0.52	0.10	0.62
AE	1.18		-2.04	0.67	1.76	13317.07	3.62	-0.57	
AF	-0.21		2.51	2.56	1.69		0.18	-0.03	-1.13
AG	0.00		0.16	0.56	0.36		1.97	-0.48	1.44
AH	-12.16		-0.16	-0.90		0.16	8.05	0.00	-0.04
AI	0.00		-0.16	-0.45	-0.45	0.38	0.22	-0.86	-0.86
AJ	0.04		2.82	1.01	-5.03	-0.03	0.13	-3.05	-0.23
AK	0.76		-0.89	-0.75	-0.64		0.22	-0.15	0.23
AL	2.44		-0.16	-0.79		-1.06			
AM	-1.77		-3.61	-3.03	-4.67		1.79	3.73	-0.58
AN					-0.93				
AO	0.63		-0.16	0.22	0.29	-0.33	3.49	-0.19	0.16
AP	-0.21		-0.31	-1.68	-3.72	-1.31	2.15	-3.54	0.04
AQ	8.33								

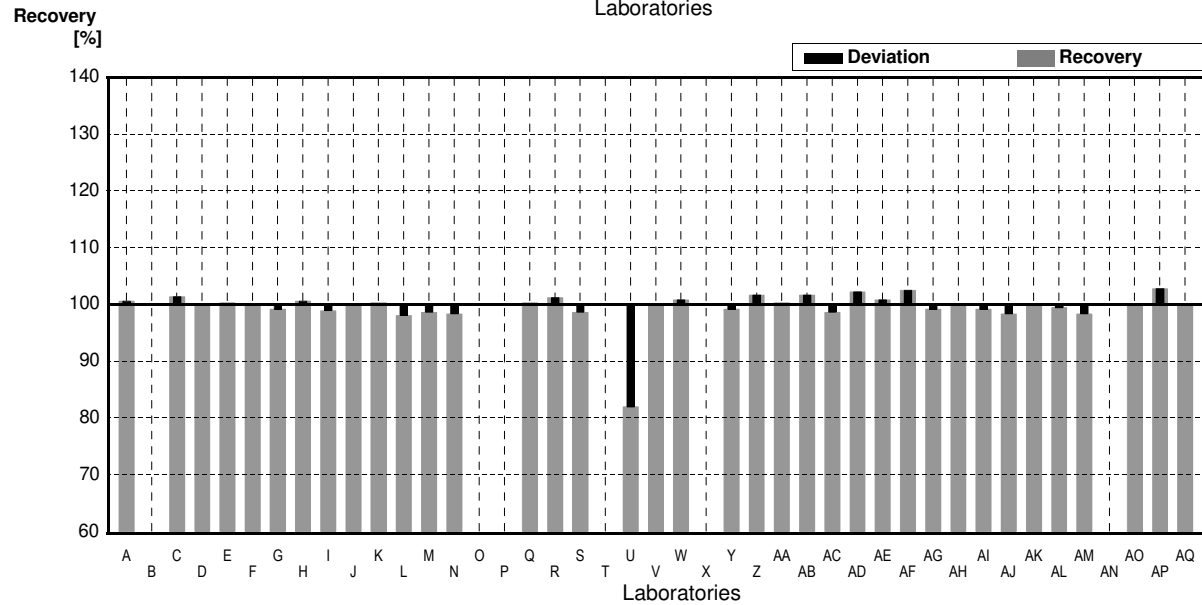
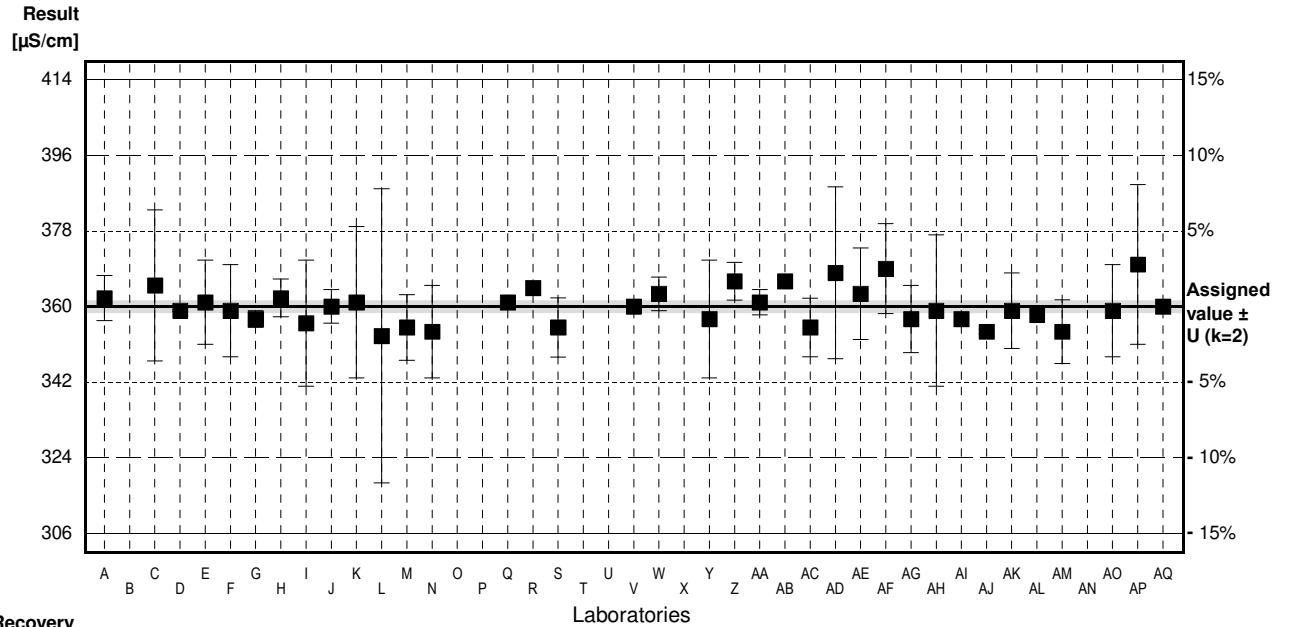
Sample N174A

Parameter Conductivity (25°C)

Assigned value ± U (k=2) 360 µS/cm ± 1 µS/cm
 IFA result ± U (k=2) 359 µS/cm ± 6 µS/cm
 Stability test ± U (k=2) 359 µS/cm ± 6 µS/cm

Lab Code	Result	±	Unit	Recovery	z-Score
A	362	5.4	µS/cm	101%	0.46
B			µS/cm		
C	365	18	µS/cm	101%	1.16
D	359	0.198	µS/cm	100%	-0.23
E	361	10	µS/cm	100%	0.23
F	359	11	µS/cm	100%	-0.23
G	357	2	µS/cm	99%	-0.69
H	362	4.489	µS/cm	101%	0.46
I	356	15	µS/cm	99%	-0.93
J	360	4	µS/cm	100%	0.00
K	361	18	µS/cm	100%	0.23
L	353	35	µS/cm	98%	-1.62
M	355.0	7.8	µS/cm	99%	-1.16
N	354	11	µS/cm	98%	-1.39
O			µS/cm		
P			µS/cm		
Q	361		µS/cm	100%	0.23
R	364.4		µS/cm	101%	1.02
S	355	7.06	µS/cm	99%	-1.16
T			µS/cm		
U	295 *	29.5	µS/cm	82%	-15.05
V	360		µS/cm	100%	0.00
W	363	4	µS/cm	101%	0.69
X			µS/cm		
Y	357	14	µS/cm	99%	-0.69
Z	366	4.51	µS/cm	102%	1.39
AA	361	3	µS/cm	100%	0.23
AB	366		µS/cm	102%	1.39
AC	355	7.0	µS/cm	99%	-1.16
AD	368	20.46	µS/cm	102%	1.85
AE	363	10.9	µS/cm	101%	0.69
AF	369	10.7	µS/cm	103%	2.08
AG	357	8	µS/cm	99%	-0.69
AH	359	18	µS/cm	100%	-0.23
AI	357		µS/cm	99%	-0.69
AJ	354	0.58	µS/cm	98%	-1.39
AK	359	9	µS/cm	100%	-0.23
AL	358		µS/cm	99%	-0.46
AM	354	7.6	µS/cm	98%	-1.39
AN			µS/cm		
AO	359	11	µS/cm	100%	-0.23
AP	370	19	µS/cm	103%	2.31
AQ	360		µS/cm	100%	0.00

	All results	Outliers excl.	Unit
Mean ± CI(99%)	358 ± 5	360 ± 2	µS/cm
Recov. ± CI(99%)	99,5 ± 1,4	100,0 ± 0,6	%
SD between labs	12	4	µS/cm
RSD between labs	3,2	1,2	%
n for calculation	37	36	



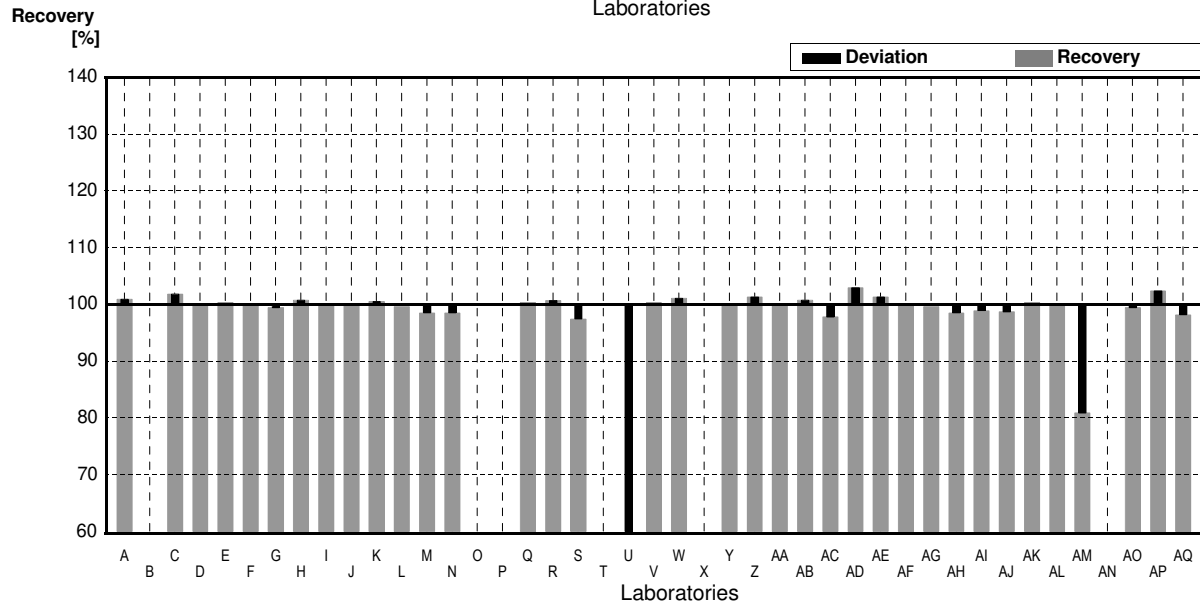
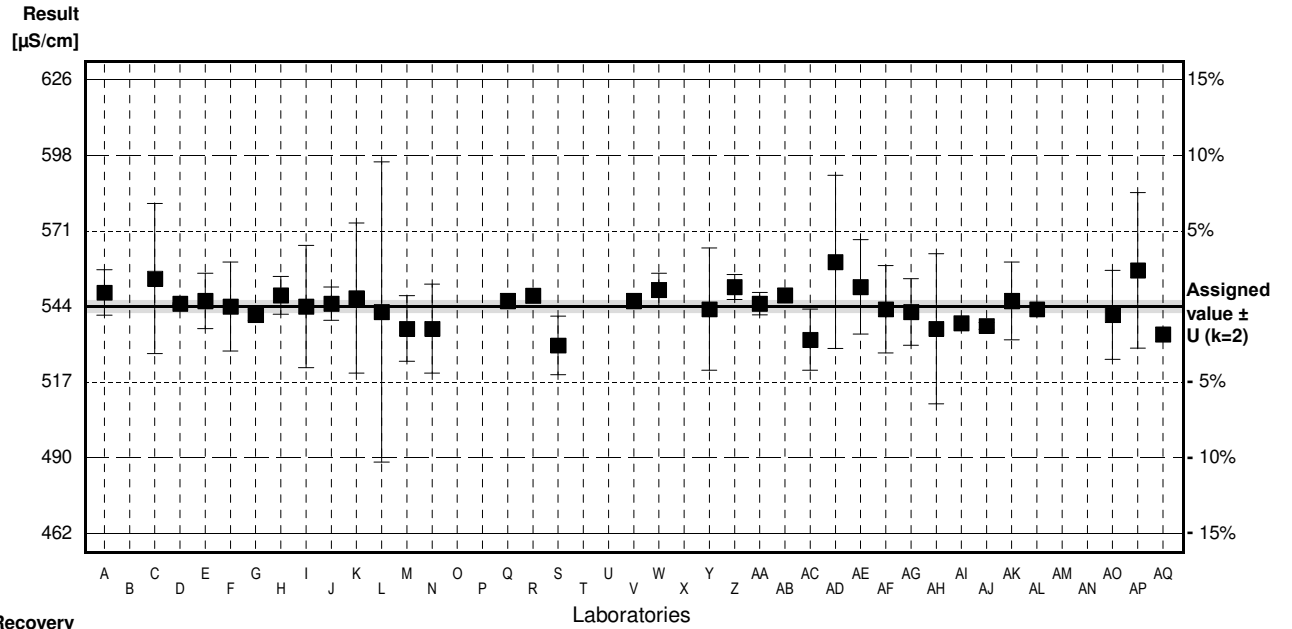
Sample N174B

Parameter Conductivity (25°C)

Assigned value ± U (k=2) 544 µS/cm ± 2 µS/cm
 IFA result ± U (k=2) 544 µS/cm ± 9 µS/cm
 Stability test ± U (k=2) 543 µS/cm ± 9 µS/cm

Lab Code	Result	±	Unit	Recovery	z-Score
A	549	8.2	µS/cm	101%	0.77
B			µS/cm		
C	554	27	µS/cm	102%	1.53
D	545	0.233	µS/cm	100%	0.15
E	546	10	µS/cm	100%	0.31
F	544	16	µS/cm	100%	0.00
G	541	2	µS/cm	99%	-0.46
H	548	6.795	µS/cm	101%	0.61
I	544	22	µS/cm	100%	0.00
J	545	6	µS/cm	100%	0.15
K	547	27	µS/cm	101%	0.46
L	542	54	µS/cm	100%	-0.31
M	536.0	11.8	µS/cm	99%	-1.23
N	536	16	µS/cm	99%	-1.23
O			µS/cm		
P			µS/cm		
Q	546		µS/cm	100%	0.31
R	547.9		µS/cm	101%	0.60
S	530	10.55	µS/cm	97%	-2.14
T			µS/cm		
U	165 *	16.5	µS/cm	30%	-58.06
V	546		µS/cm	100%	0.31
W	550	6	µS/cm	101%	0.92
X			µS/cm		
Y	543	22	µS/cm	100%	-0.15
Z	551	4.51	µS/cm	101%	1.07
AA	545	4	µS/cm	100%	0.15
AB	548		µS/cm	101%	0.61
AC	532	11	µS/cm	98%	-1.84
AD	560	31.14	µS/cm	103%	2.45
AE	551	17.0	µS/cm	101%	1.07
AF	543	15.7	µS/cm	100%	-0.15
AG	542	12	µS/cm	100%	-0.31
AH	536	27	µS/cm	99%	-1.23
AI	538		µS/cm	99%	-0.92
AJ	537	1.16	µS/cm	99%	-1.07
AK	546	14	µS/cm	100%	0.31
AL	543		µS/cm	100%	-0.15
AM	440 *	9.5	µS/cm	81%	-15.93
AN			µS/cm		
AO	541	16	µS/cm	99%	-0.46
AP	557	28	µS/cm	102%	1.99
AQ	534		µS/cm	98%	-1.53

	All results	Outliers excl.	Unit
Mean ± CI(99%)	531 ± 29	544 ± 3	µS/cm
Recov. ± CI(99%)	97,6 ± 5,3	100,0 ± 0,6	%
SD between labs	64	7	µS/cm
RSD between labs	12.1	1.2	%
n for calculation	37	35	



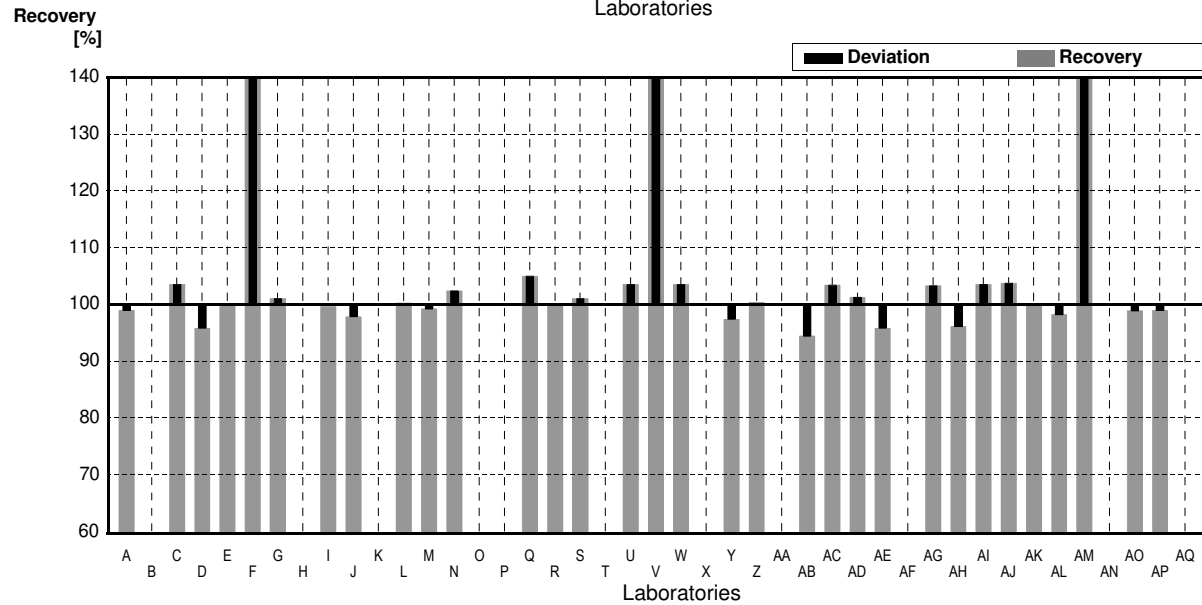
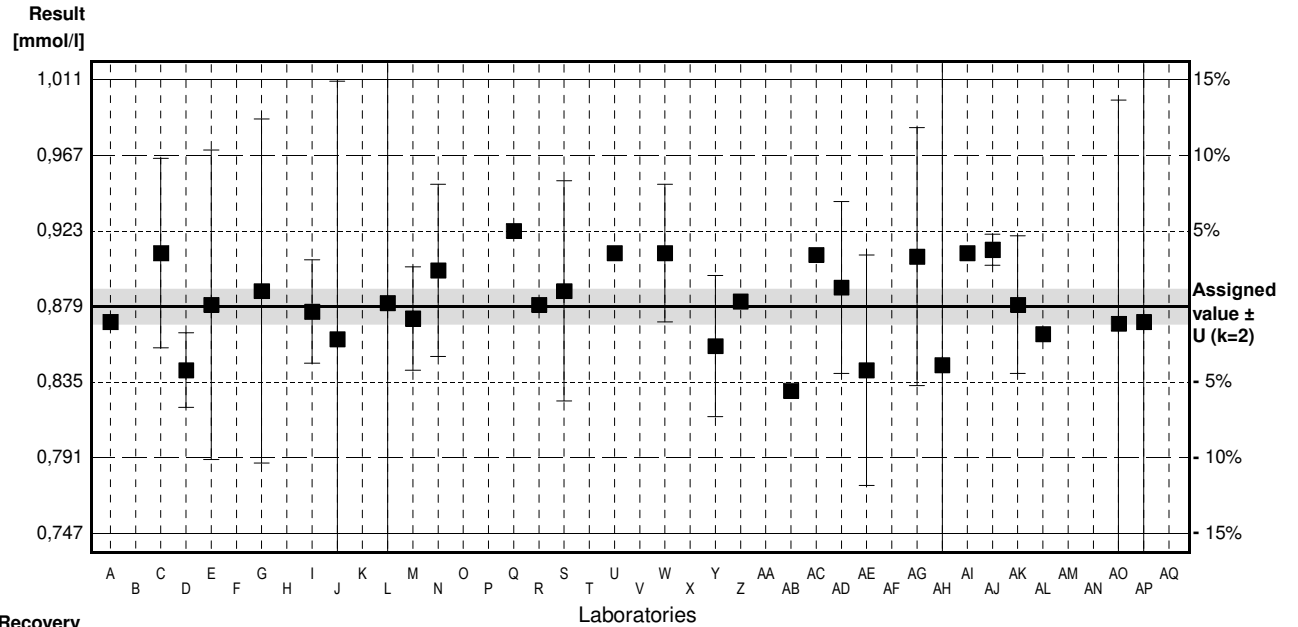
Sample N174A

Parameter Total hardness

Assigned value ± U (k=2) 0,879 mmol/l ± 0,010 mmol/l
 IFA result ± U (k=2) 0,90 mmol/l ± 0,05 mmol/l
 Stability test ± U (k=2) 0,89 mmol/l ± 0,05 mmol/l

Lab Code	Result	±	Unit	Recovery	z-Score
A	0.87		mmol/l	99%	-0.37
B			mmol/l		
C	0.91	0.055	mmol/l	104%	1.26
D	0.842	0.0217	mmol/l	96%	-1.50
E	0.88	0.09	mmol/l	100%	0.04
F	4.93 *	0.37	mmol/l	561%	164.59
G	0.888	0.1	mmol/l	101%	0.37
H			mmol/l		
I	0.876	0.03	mmol/l	100%	-0.12
J	0.86	0.15	mmol/l	98%	-0.77
K			mmol/l		
L	0.881	0.18	mmol/l	100%	0.08
M	0.872	0.03	mmol/l	99%	-0.28
N	0.90	0.05	mmol/l	102%	0.85
O			mmol/l		
P			mmol/l		
Q	0.92296		mmol/l	105%	1.79
R	0.88		mmol/l	100%	0.04
S	0.888	0.064	mmol/l	101%	0.37
T			mmol/l		
U	0.91		mmol/l	104%	1.26
V	1.93 *		mmol/l	220%	42.70
W	0.91	0.04	mmol/l	104%	1.26
X			mmol/l		
Y	0.856	0.041	mmol/l	97%	-0.93
Z	0.882		mmol/l	100%	0.12
AA			mmol/l		
AB	0.83		mmol/l	94%	-1.99
AC	0.909		mmol/l	103%	1.22
AD	0.89	0.05	mmol/l	101%	0.45
AE	0.842	0.067	mmol/l	96%	-1.50
AF			mmol/l		
AG	0.908	0.075	mmol/l	103%	1.18
AH	0.845	0.17	mmol/l	96%	-1.38
AI	0.91		mmol/l	104%	1.26
AJ	0.912	0.009	mmol/l	104%	1.34
AK	0.88	0.04	mmol/l	100%	0.04
AL	0.863		mmol/l	98%	-0.65
AM	1.61 *	0.13	mmol/l	183%	29.70
AN			mmol/l		
AO	0.869	0.13	mmol/l	99%	-0.41
AP	0.870	0.174	mmol/l	99%	-0.37
AQ			mmol/l		

	All results	Outliers excl.	Unit
Mean ± CI(99%)	1,063 ± 0,360	0,881 ± 0,013	mmol/l
Recov. ± CI(99%)	121,0 ± 40,9	100,3 ± 1,4	%
SD between labs	0,740	0,025	mmol/l
RSD between labs	69.6	2.8	%
n for calculation	32	29	



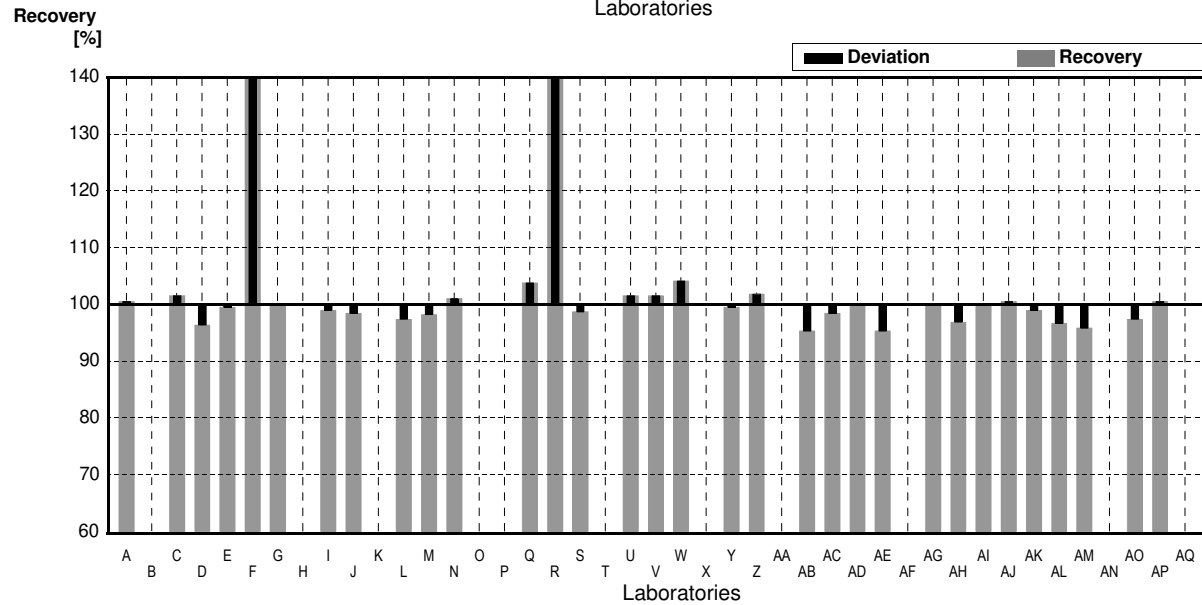
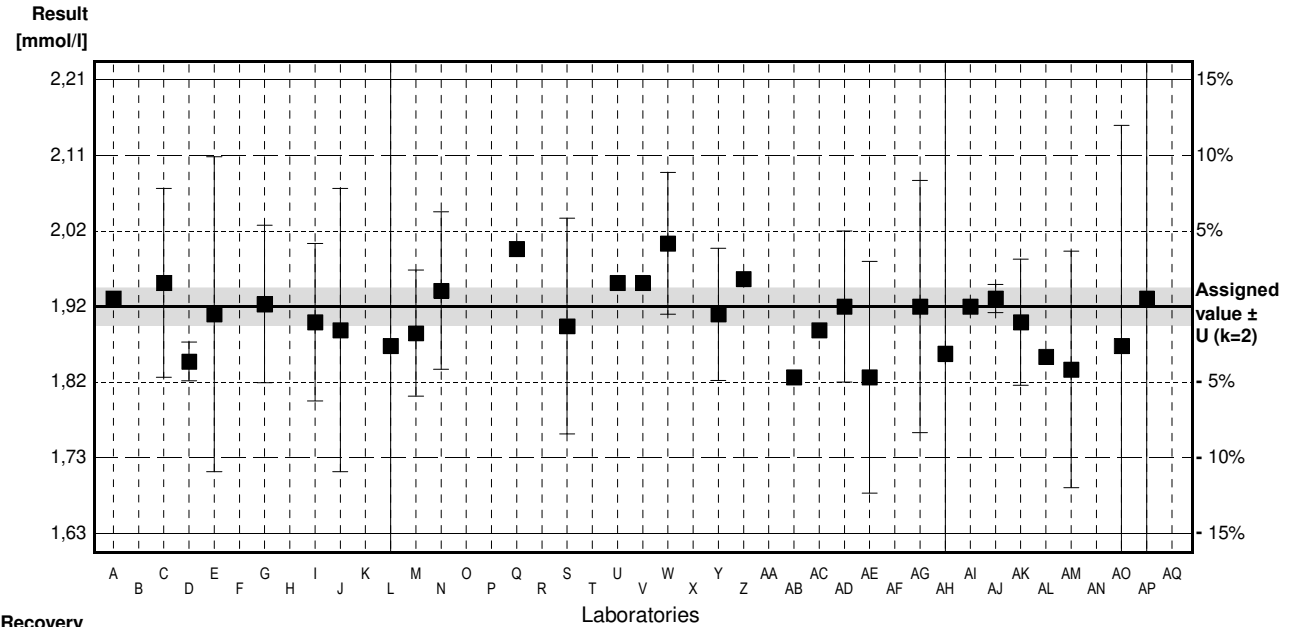
Sample N174B

Parameter Total hardness

Assigned value ± U (k=2) 1,92 mmol/l ± 0,02 mmol/l
 IFA result ± U (k=2) 2,01 mmol/l ± 0,11 mmol/l
 Stability test ± U (k=2) 1,94 mmol/l ± 0,10 mmol/l

Lab Code	Result	±	Unit	Recovery	z-Score
A	1.93		mmol/l	101%	0.19
B			mmol/l		
C	1.95	0.12	mmol/l	102%	0.56
D	1.85	0.0246	mmol/l	96%	-1.30
E	1.91	0.2	mmol/l	99%	-0.19
F	10.6 *	0.8	mmol/l	552%	161.46
G	1.923	0.1	mmol/l	100%	0.06
H			mmol/l		
I	1.90	0.1	mmol/l	99%	-0.37
J	1.89	0.18	mmol/l	98%	-0.56
K			mmol/l		
L	1.87	0.37	mmol/l	97%	-0.93
M	1.886	0.08	mmol/l	98%	-0.63
N	1.94	0.10	mmol/l	101%	0.37
O			mmol/l		
P			mmol/l		
Q	1.99307		mmol/l	104%	1.36
R	2.84 *		mmol/l	148%	17.11
S	1.895	0.137	mmol/l	99%	-0.47
T			mmol/l		
U	1.95		mmol/l	102%	0.56
V	1.95		mmol/l	102%	0.56
W	2.00	0.09	mmol/l	104%	1.49
X			mmol/l		
Y	1.91	0.084	mmol/l	99%	-0.19
Z	1.955		mmol/l	102%	0.65
AA			mmol/l		
AB	1.83		mmol/l	95%	-1.67
AC	1.89		mmol/l	98%	-0.56
AD	1.92	0.096	mmol/l	100%	0.00
AE	1.83	0.147	mmol/l	95%	-1.67
AF			mmol/l		
AG	1.92	0.16	mmol/l	100%	0.00
AH	1.86	0.37	mmol/l	97%	-1.12
AI	1.92		mmol/l	100%	0.00
AJ	1.93	0.018	mmol/l	101%	0.19
AK	1.90	0.08	mmol/l	99%	-0.37
AL	1.856		mmol/l	97%	-1.19
AM	1.84	0.15	mmol/l	96%	-1.49
AN			mmol/l		
AO	1.87	0.28	mmol/l	97%	-0.93
AP	1.93	0.39	mmol/l	101%	0.19
AQ			mmol/l		

	All results	Outliers excl.	Unit
Mean ± CI(99%)	2,21 ± 0,75	1,91 ± 0,02	mmol/l
Recov. ± CI(99%)	115,0 ± 39,0	99,3 ± 1,2	%
SD between labs	1,54	0,04	mmol/l
RSD between labs	69,8	2,3	%
n for calculation	32	30	



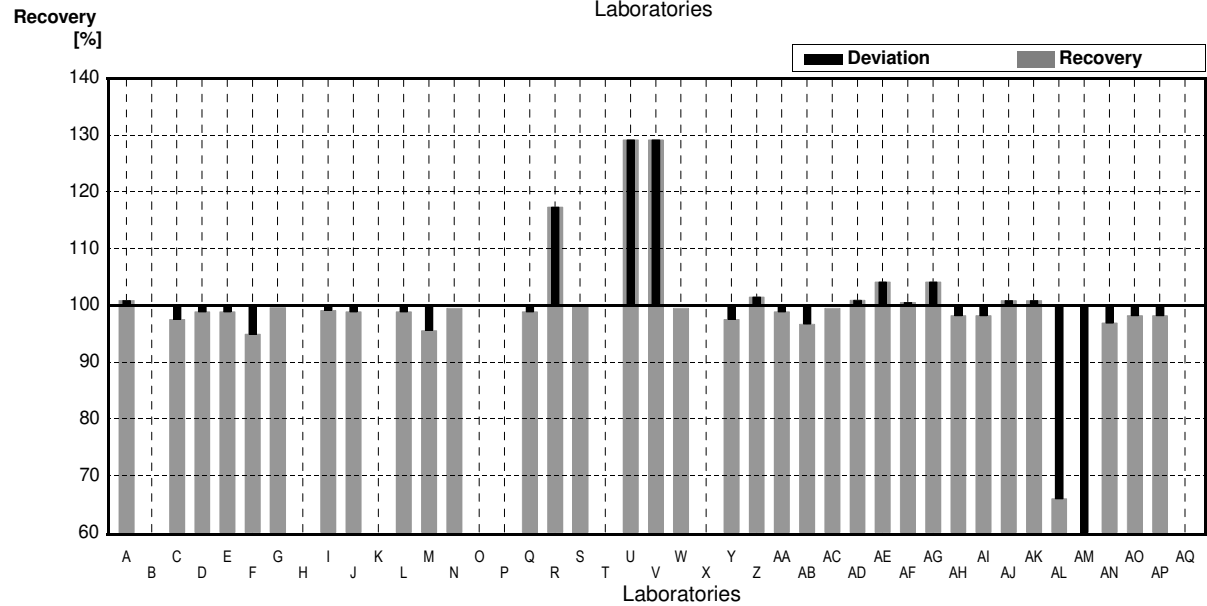
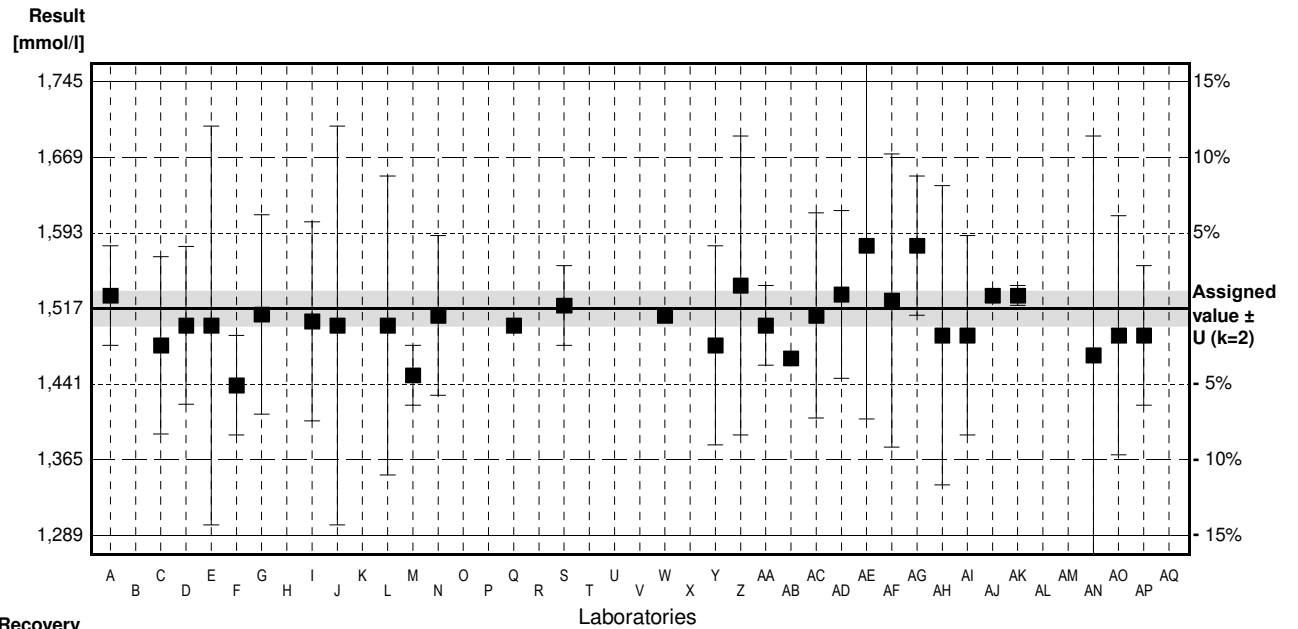
Sample N174A

Parameter Alkalinity KS 4,3 (as H⁺)

Assigned value ± U (k=2) 1,517 mmol/l ± 0,018 mmol/l
 IFA result ± U (k=2) 1,48 mmol/l ± 0,06 mmol/l
 Stability test ± U (k=2) 1,49 mmol/l ± 0,06 mmol/l

Lab Code	Result	±	Unit	Recovery	z-Score
A	1.53	0.05	mmol/l	101%	0.48
B			mmol/l		
C	1.48	0.089	mmol/l	98%	-1.36
D	1.50	0.0790	mmol/l	99%	-0.62
E	1.50	0.2	mmol/l	99%	-0.62
F	1.44	0.05	mmol/l	95%	-2.82
G	1.511	0.1	mmol/l	100%	-0.22
H			mmol/l		
I	1.504	0.1	mmol/l	99%	-0.48
J	1.50	0.2	mmol/l	99%	-0.62
K			mmol/l		
L	1.50	0.15	mmol/l	99%	-0.62
M	1.45	0.03	mmol/l	96%	-2.45
N	1.51	0.08	mmol/l	100%	-0.26
O			mmol/l		
P			mmol/l		
Q	1.50		mmol/l	99%	-0.62
R	1.78	*	mmol/l	117%	9.63
S	1.52	0.04	mmol/l	100%	0.11
T			mmol/l		
U	1.96	*	0.294	129%	16.22
V	1.96	*	0.0078	129%	16.22
W	1.51	0.005	mmol/l	100%	-0.26
X			mmol/l		
Y	1.48	0.10	mmol/l	98%	-1.36
Z	1.54	0.15	mmol/l	102%	0.84
AA	1.50	0.04	mmol/l	99%	-0.62
AB	1.467		mmol/l	97%	-1.83
AC	1.51	0.103	mmol/l	100%	-0.26
AD	1.531	0.084	mmol/l	101%	0.51
AE	1.58	0.174	mmol/l	104%	2.31
AF	1.525	0.147	mmol/l	101%	0.29
AG	1.580	0.070	mmol/l	104%	2.31
AH	1.49	0.15	mmol/l	98%	-0.99
AI	1.49	0.10	mmol/l	98%	-0.99
AJ	1.53	0.006	mmol/l	101%	0.48
AK	1.53	0.01	mmol/l	101%	0.48
AL	1.00	*	mmol/l	66%	-18.93
AM	0.85	*	0.072	56%	-24.43
AN	1.47	0.22	mmol/l	97%	-1.72
AO	1.49	0.12	mmol/l	98%	-0.99
AP	1.49	0.07	mmol/l	98%	-0.99
AQ			mmol/l		

	All results	Outliers excl.	Unit
Mean ± CI(99%)	1,506 ± 0,087	1,505 ± 0,016	mmol/l
Recov. ± CI(99%)	99,3 ± 5,7	99,2 ± 1,0	%
SD between labs	0,188	0,031	mmol/l
RSD between labs	12,5	2,1	%
n for calculation	35	30	



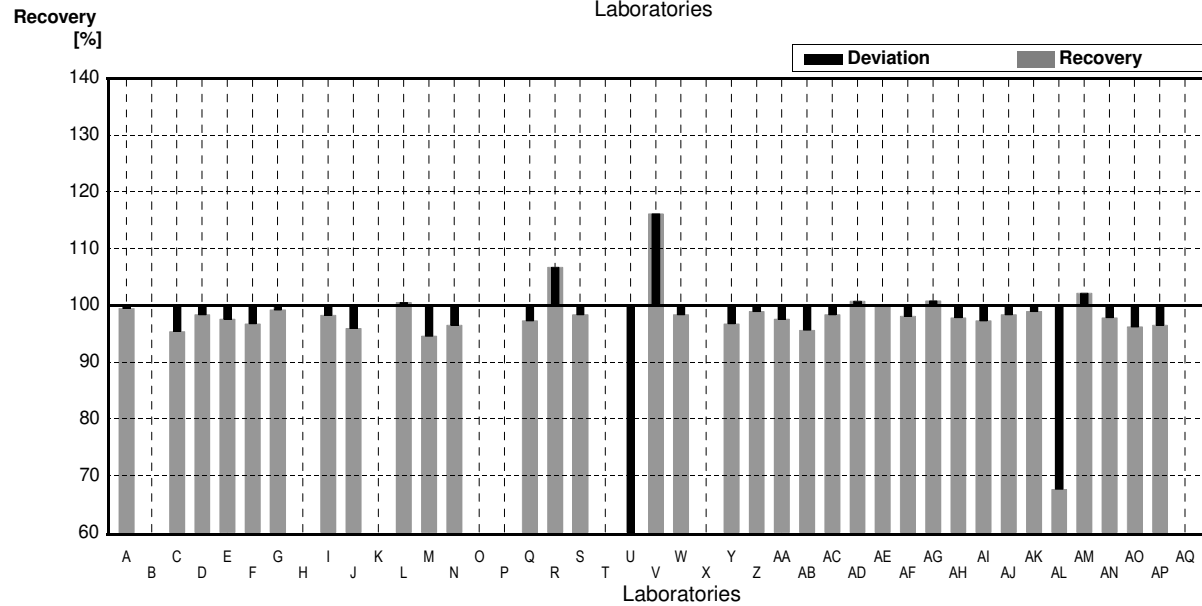
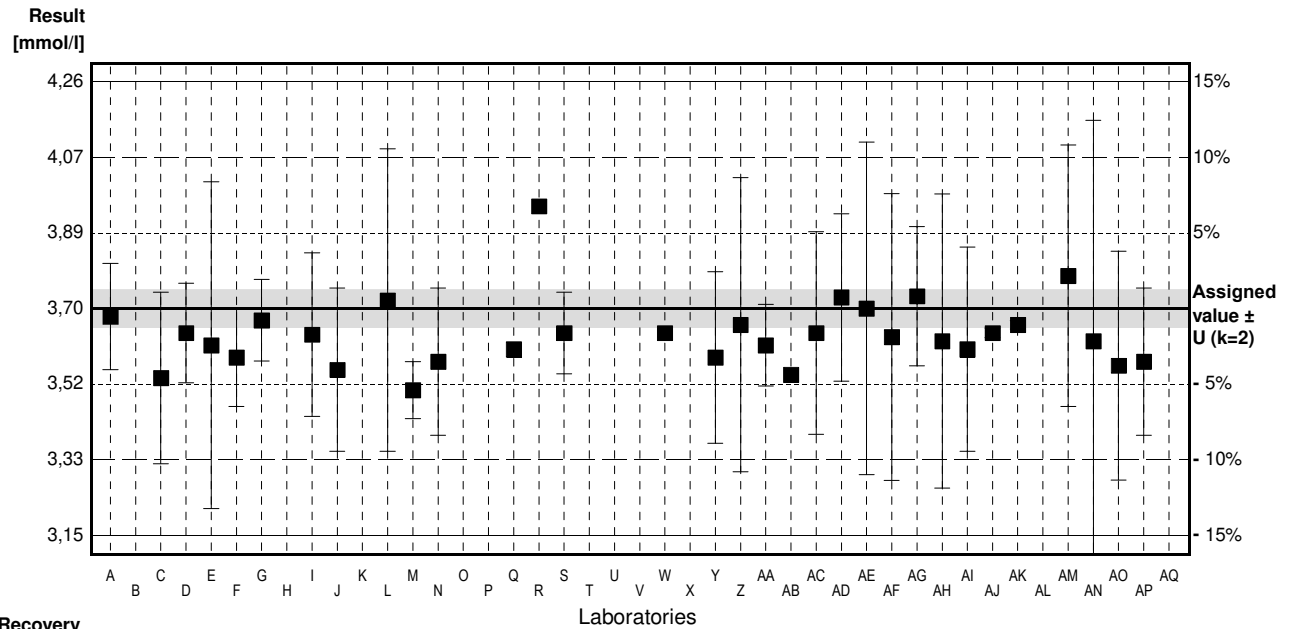
Sample N174B

Parameter Alkalinity KS 4,3 (as H+)

Assigned value ± U (k=2) 3,70 mmol/l ± 0,05 mmol/l
 IFA result ± U (k=2) 3,78 mmol/l ± 0,16 mmol/l
 Stability test ± U (k=2) 3,82 mmol/l ± 0,16 mmol/l

Lab Code	Result	±	Unit	Recovery	z-Score
A	3.68	0.13	mmol/l	99%	-0.30
B			mmol/l		
C	3.53	0.21	mmol/l	95%	-2.55
D	3.64	0.122	mmol/l	98%	-0.90
E	3.61	0.4	mmol/l	98%	-1.35
F	3.58	0.12	mmol/l	97%	-1.80
G	3.671	0.1	mmol/l	99%	-0.44
H			mmol/l		
I	3.636	0.2	mmol/l	98%	-0.96
J	3.55	0.2	mmol/l	96%	-2.25
K			mmol/l		
L	3.72	0.37	mmol/l	101%	0.30
M	3.50	0.07	mmol/l	95%	-3.00
N	3.57	0.18	mmol/l	96%	-1.95
O			mmol/l		
P			mmol/l		
Q	3.60		mmol/l	97%	-1.50
R	3.95	*	mmol/l	107%	3.75
S	3.64	0.10	mmol/l	98%	-0.90
T			mmol/l		
U	1.39	*	0.209	38%	-34.68
V	4.298	*	0.16	116%	8.98
W	3.64	0.01	mmol/l	98%	-0.90
X			mmol/l		
Y	3.58	0.21	mmol/l	97%	-1.80
Z	3.66	0.36	mmol/l	99%	-0.60
AA	3.61	0.10	mmol/l	98%	-1.35
AB	3.538		mmol/l	96%	-2.43
AC	3.64	0.248	mmol/l	98%	-0.90
AD	3.727	0.205	mmol/l	101%	0.41
AE	3.70	0.407	mmol/l	100%	0.00
AF	3.63	0.351	mmol/l	98%	-1.05
AG	3.73	0.17	mmol/l	101%	0.45
AH	3.62	0.36	mmol/l	98%	-1.20
AI	3.60	0.25	mmol/l	97%	-1.50
AJ	3.64	0.012	mmol/l	98%	-0.90
AK	3.66	0.01	mmol/l	99%	-0.60
AL	2.50	*	mmol/l	68%	-18.02
AM	3.78	0.32	mmol/l	102%	1.20
AN	3.62	0.54	mmol/l	98%	-1.20
AO	3.56	0.28	mmol/l	96%	-2.10
AP	3.57	0.18	mmol/l	96%	-1.95
AQ			mmol/l		

	All results	Outliers excl.	Unit
Mean ± CI(99%)	3,56 ± 0,21	3,63 ± 0,03	mmol/l
Recov. ± CI(99%)	96,2 ± 5,6	98,0 ± 0,9	%
SD between labs	0,45	0,06	mmol/l
RSD between labs	12,6	1,8	%
n for calculation	35	31	



Sample N174A

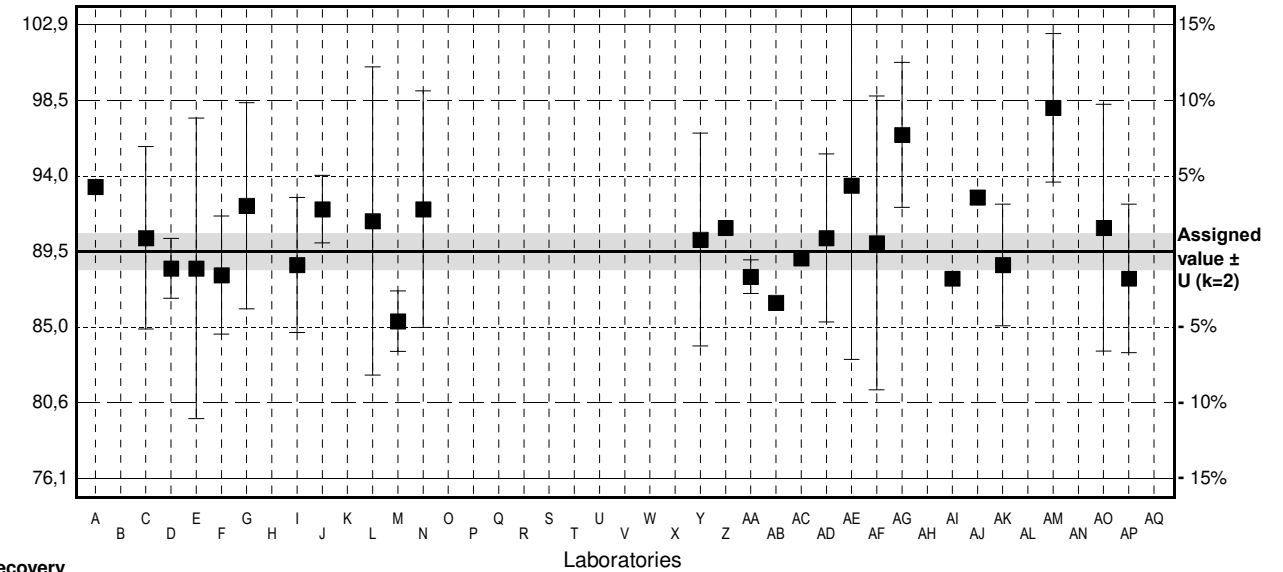
Parameter Hydrogen carbonate

Assigned value ± U (k=2) 89,5 mg/l ± 1,1 mg/l
 IFA result ± U (k=2) 87 mg/l ± 4 mg/l
 Stability test ± U (k=2) 88 mg/l ± 4 mg/l

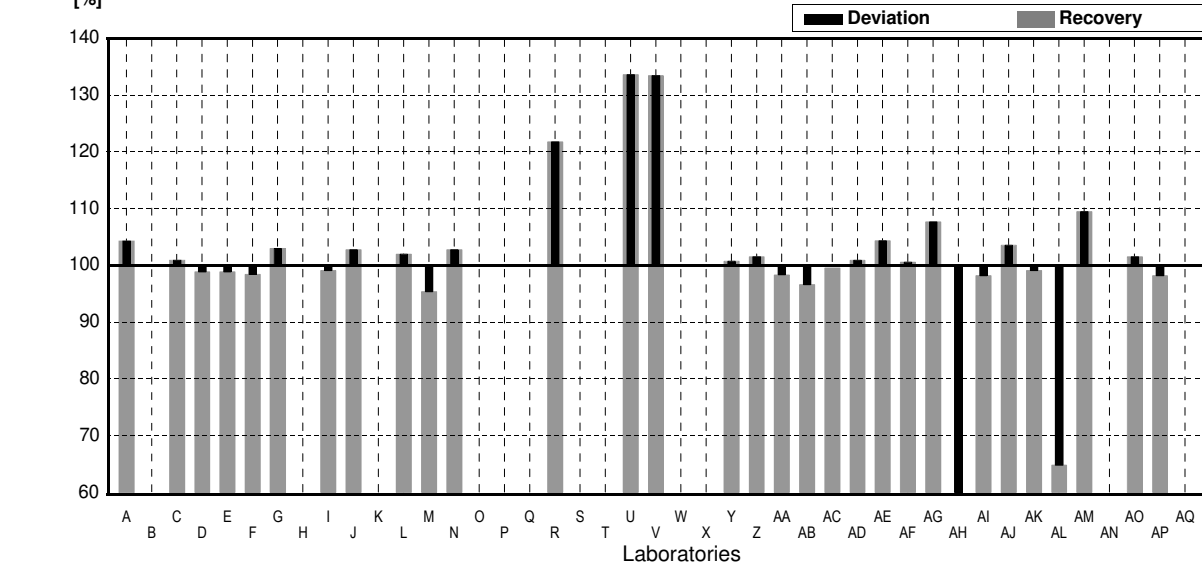
Lab Code	Result	±	Unit	Recovery	z-Score
A	93.33		mg/l	104%	1.86
B			mg/l		
C	90.3	5.4	mg/l	101%	0.39
D	88.5	1.77	mg/l	99%	-0.49
E	88.5	8.9	mg/l	99%	-0.49
F	88.1	3.5	mg/l	98%	-0.68
G	92.2	6.1	mg/l	103%	1.31
H			mg/l		
I	88.7	4	mg/l	99%	-0.39
J	92	2	mg/l	103%	1.21
K			mg/l		
L	91.3	9.13	mg/l	102%	0.87
M	85.37	1.79	mg/l	95%	-2.01
N	92	7	mg/l	103%	1.21
O			mg/l		
P			mg/l		
Q			mg/l		
R	109 *		mg/l	122%	9.47
S			mg/l		
T			mg/l		
U	119.6 *	17.94	mg/l	134%	14.62
V	119.5 *	0.48	mg/l	134%	14.57
W			mg/l		
X			mg/l		
Y	90.2	6.3	mg/l	101%	0.34
Z	90.90		mg/l	102%	0.68
AA	88	1	mg/l	98%	-0.73
AB	86.46		mg/l	97%	-1.48
AC	89.1		mg/l	100%	-0.19
AD	90.3	4.97	mg/l	101%	0.39
AE	93.4	10.3	mg/l	104%	1.89
AF	90.0	8.7	mg/l	101%	0.24
AG	96.4	4.3	mg/l	108%	3.35
AH	1.44 *	0.14	mg/l	2%	-42.78
AI	87.9		mg/l	98%	-0.78
AJ	92.7	0.40	mg/l	104%	1.55
AK	88.7	3.6	mg/l	99%	-0.39
AL	58.0 *		mg/l	65%	-15.30
AM	98	4.4	mg/l	109%	4.13
AN			mg/l		
AO	90.9	7.3	mg/l	102%	0.68
AP	87.9	4.4	mg/l	98%	-0.78
AQ			mg/l		

	All results	Outliers excl.	Unit
Mean ± CI(99%)	89,0 ± 9,5	90,4 ± 1,6	mg/l
Recov. ± CI(99%)	99,4 ± 10,6	101,0 ± 1,8	%
SD between labs	19,3	2,9	mg/l
RSD between labs	21,7	3,2	%
n for calculation	31	26	

Result [mg/l]



Recovery [%]



Sample N174B

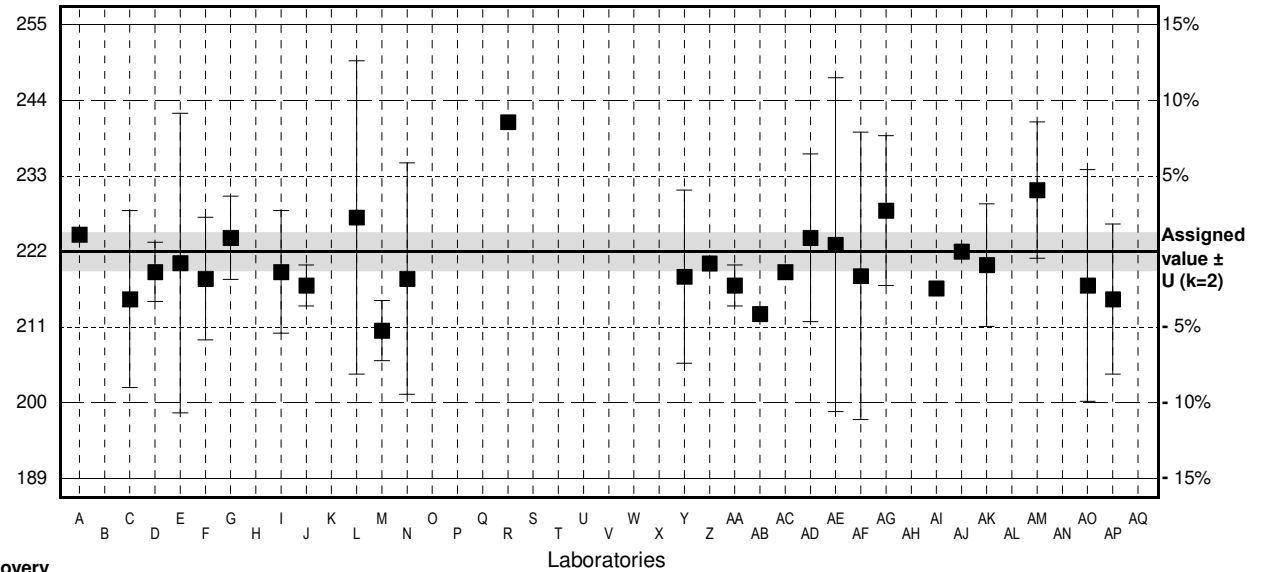
Parameter Hydrogen carbonate

Assigned value ± U (k=2) 222 mg/l ± 3 mg/l
 IFA result ± U (k=2) 228 mg/l ± 9 mg/l
 Stability test ± U (k=2) 230 mg/l ± 9 mg/l

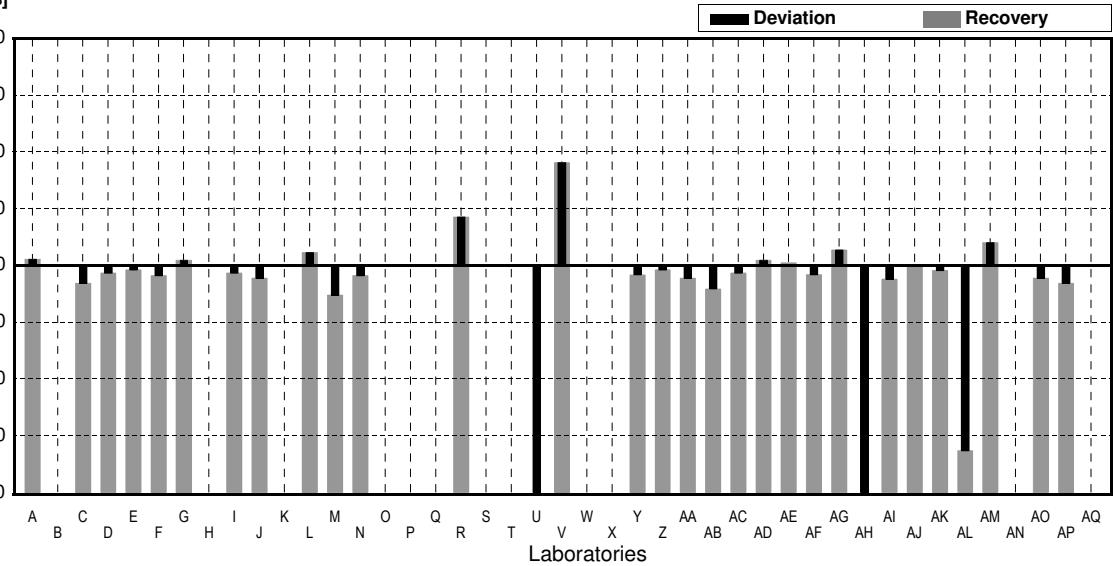
Lab Code	Result	±	Unit	Recovery	z-Score
A	224.48		mg/l	101%	0.49
B			mg/l		
C	215	13	mg/l	97%	-1.37
D	219	4.37	mg/l	99%	-0.59
E	220.3	22.0	mg/l	99%	-0.33
F	218	9	mg/l	98%	-0.78
G	224	6.1	mg/l	101%	0.39
H			mg/l		
I	219	9	mg/l	99%	-0.59
J	217	3	mg/l	98%	-0.98
K			mg/l		
L	227	23	mg/l	102%	0.98
M	210.38	4.42	mg/l	95%	-2.28
N	218	17	mg/l	98%	-0.78
O			mg/l		
P			mg/l		
Q			mg/l		
R	241	*	mg/l	109%	3.72
S			mg/l		
T			mg/l		
U	84.8	*	12.72	38%	-26.87
V	262.3	*	9.97	118%	7.89
W			mg/l		
X			mg/l		
Y	218.3	12.7	mg/l	98%	-0.72
Z	220.24		mg/l	99%	-0.34
AA	217	3	mg/l	98%	-0.98
AB	212.83		mg/l	96%	-1.80
AC	219		mg/l	99%	-0.59
AD	224	12.32	mg/l	101%	0.39
AE	223	24.5	mg/l	100%	0.20
AF	218.4	21.1	mg/l	98%	-0.71
AG	228	11	mg/l	103%	1.18
AH	3.58	*	0.36	2%	-42.78
AI	216.6		mg/l	98%	-1.06
AJ	222	0.92	mg/l	100%	0.00
AK	220	9	mg/l	99%	-0.39
AL	149.5	*	mg/l	67%	-14.20
AM	231	10	mg/l	104%	1.76
AN			mg/l		
AO	217	17	mg/l	98%	-0.98
AP	215	11	mg/l	97%	-1.37
AQ			mg/l		

	All results	Outliers excl.	Unit
Mean ± CI(99%)	208 ± 24	220 ± 3	mg/l
Recov. ± CI(99%)	93,8 ± 10,6	99,0 ± 1,2	%
SD between labs	48	5	mg/l
RSD between labs	23.0	2.1	%
n for calculation	31	26	

Result [mg/l]



Recovery [%]



Sample N174A

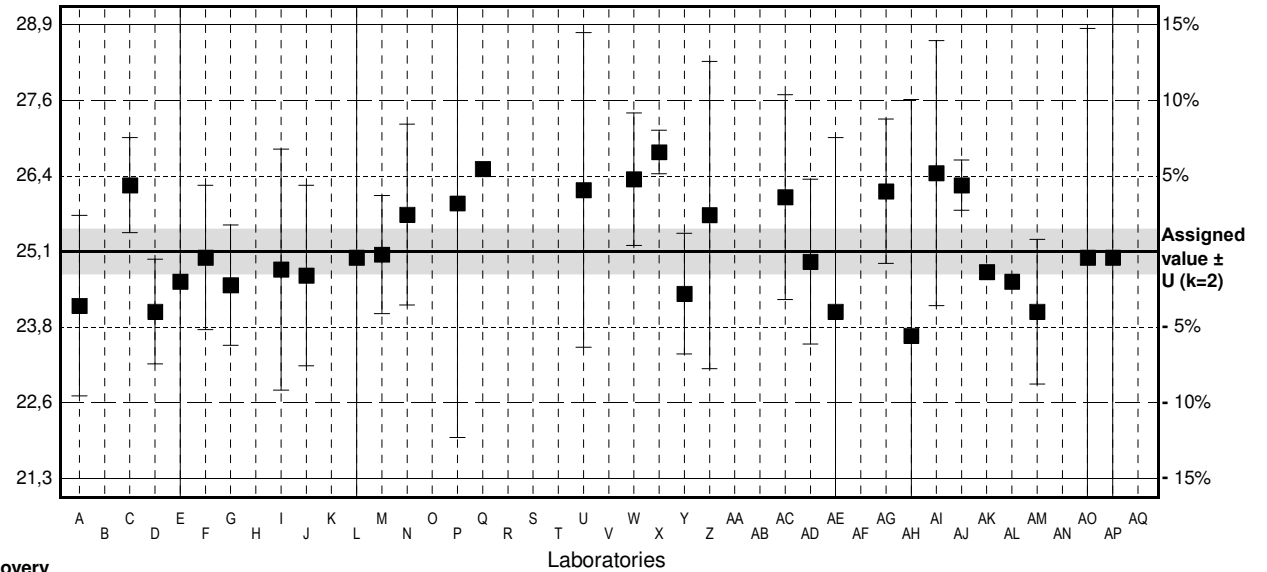
Parameter Calcium

Assigned value $\pm U$ (k=2) 25,1 mg/l \pm 0,4 mg/l
 IFA result $\pm U$ (k=2) 25,7 mg/l \pm 1,7 mg/l
 Stability test $\pm U$ (k=2) 25,1 mg/l \pm 1,7 mg/l

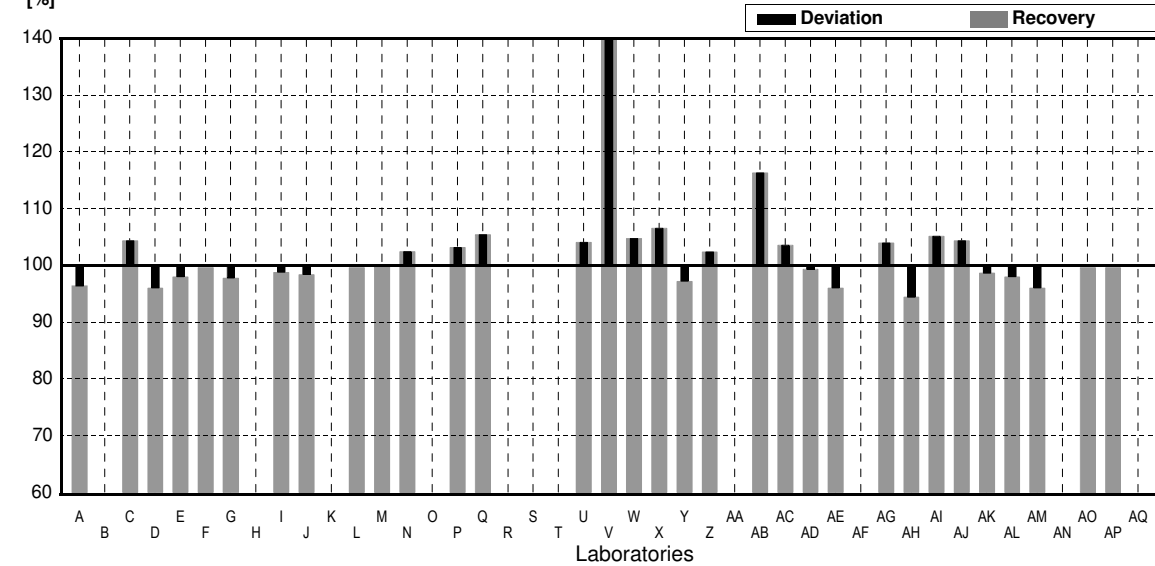
Lab Code	Result	\pm	Unit	Recovery	z-Score
A	24.2	1.5	mg/l	96%	-1.16
B			mg/l		
C	26.2	0.79	mg/l	104%	1.41
D	24.1	0.870	mg/l	96%	-1.29
E	24.6	5.0	mg/l	98%	-0.64
F	25.0	1.2	mg/l	100%	-0.13
G	24.54	1.0	mg/l	98%	-0.72
H			mg/l		
I	24.8	2	mg/l	99%	-0.39
J	24.7	1.5	mg/l	98%	-0.51
K			mg/l		
L	25.0	5.0	mg/l	100%	-0.13
M	25.05	0.98	mg/l	100%	-0.06
N	25.71	1.50	mg/l	102%	0.78
O			mg/l		
P	25.9	3.89	mg/l	103%	1.03
Q	26.47		mg/l	105%	1.76
R			mg/l		
S			mg/l		
T			mg/l		
U	26.12	2.612	mg/l	104%	1.31
V	46.3	0.46	mg/l	184%	27.25
W	26.3	1.1	mg/l	105%	1.54
X	26.75	0.36	mg/l	107%	2.12
Y	24.4	1.0	mg/l	97%	-0.90
Z	25.704	2.55	mg/l	102%	0.78
AA			mg/l		
AB	29.2	*	mg/l	116%	5.27
AC	26.0	1.7	mg/l	104%	1.16
AD	24.93	1.37	mg/l	99%	-0.22
AE	24.1	2.89	mg/l	96%	-1.29
AF			mg/l		
AG	26.1	1.2	mg/l	104%	1.29
AH	23.7	3.92	mg/l	94%	-1.80
AI	26.4	2.2	mg/l	105%	1.67
AJ	26.2	0.42	mg/l	104%	1.41
AK	24.76	0.10	mg/l	99%	-0.44
AL	24.6		mg/l	98%	-0.64
AM	24.1	1.2	mg/l	96%	-1.29
AN			mg/l		
AO	25.0	3.8	mg/l	100%	-0.13
AP	25.0	5.0	mg/l	100%	-0.13
AQ			mg/l		

	All results	Outliers excl.	Unit
Mean \pm CI(99%)	26,0 \pm 1,9	25,2 \pm 0,4	mg/l
Recov. \pm CI(99%)	103,6 \pm 7,5	100,5 \pm 1,7	%
SD between labs	3,9	0,9	mg/l
RSD between labs	14,9	3,4	%
n for calculation	32	30	

Result [mg/l]



Recovery [%]



Sample N174B

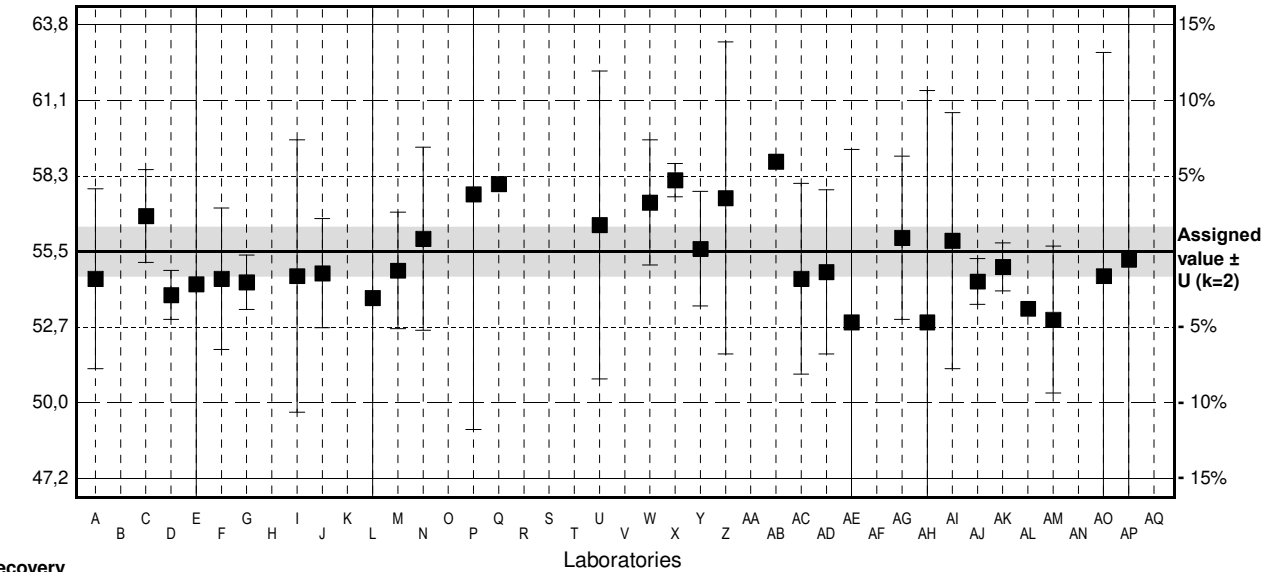
Parameter Calcium

Assigned value ± U (k=2) 55,5 mg/l ± 0,9 mg/l
 IFA result ± U (k=2) 58 mg/l ± 4 mg/l
 Stability test ± U (k=2) 56 mg/l ± 4 mg/l

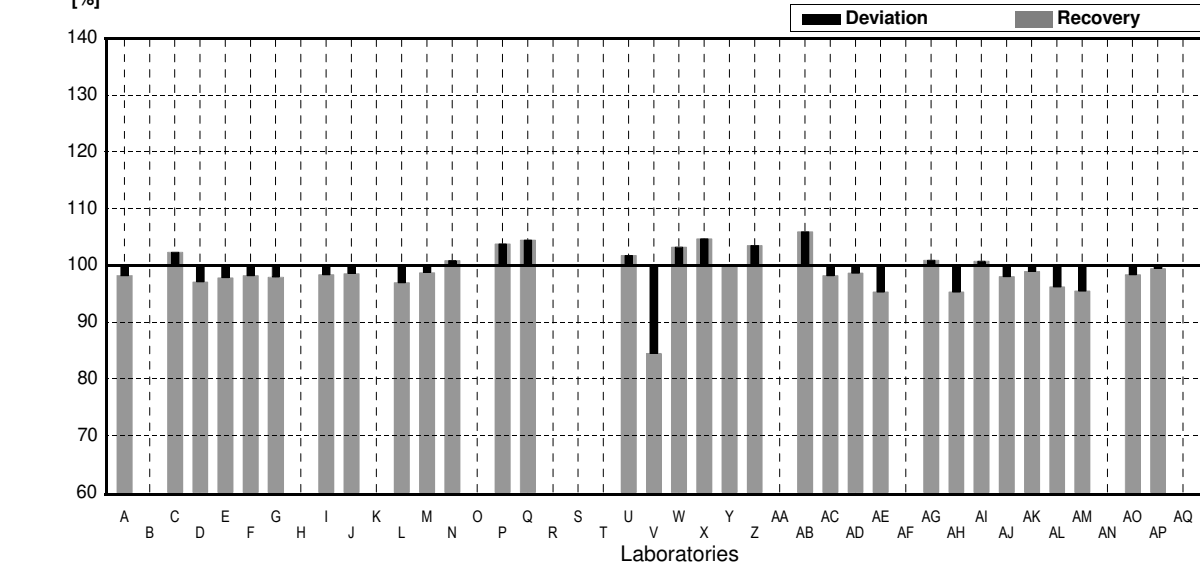
Lab Code	Result	±	Unit	Recovery	z-Score
A	54.5	3.3	mg/l	98%	-0.58
B			mg/l		
C	56.8	1.70	mg/l	102%	0.76
D	53.9	0.900	mg/l	97%	-0.93
E	54.3	10.9	mg/l	98%	-0.70
F	54.5	2.6	mg/l	98%	-0.58
G	54.37	1.0	mg/l	98%	-0.66
H			mg/l		
I	54.6	5	mg/l	98%	-0.52
J	54.7	2	mg/l	99%	-0.46
K			mg/l		
L	53.8	11	mg/l	97%	-0.99
M	54.80	2.14	mg/l	99%	-0.41
N	55.97	3.36	mg/l	101%	0.27
O			mg/l		
P	57.6	8.63	mg/l	104%	1.22
Q	57.98		mg/l	104%	1.44
R			mg/l		
S			mg/l		
T			mg/l		
U	56.47	5.647	mg/l	102%	0.56
V	46.88	0.94	mg/l	84%	-5.01
W	57.3	2.3	mg/l	103%	1.05
X	58.12	0.61	mg/l	105%	1.52
Y	55.6	2.1	mg/l	100%	0.06
Z	57.465	5.73	mg/l	104%	1.14
AA			mg/l		
AB	58.8		mg/l	106%	1.92
AC	54.5	3.5	mg/l	98%	-0.58
AD	54.75	3.01	mg/l	99%	-0.44
AE	52.9	6.35	mg/l	95%	-1.51
AF			mg/l		
AG	56	3	mg/l	101%	0.29
AH	52.9	8.5	mg/l	95%	-1.51
AI	55.9	4.7	mg/l	101%	0.23
AJ	54.4	0.84	mg/l	98%	-0.64
AK	54.93	0.88	mg/l	99%	-0.33
AL	53.4		mg/l	96%	-1.22
AM	53	2.7	mg/l	95%	-1.45
AN			mg/l		
AO	54.6	8.2	mg/l	98%	-0.52
AP	55.2	11.0	mg/l	99%	-0.17
AQ			mg/l		

	All results	Outliers excl.	Unit
Mean ± CI(99%)	55,0 ± 1,1	55,3 ± 0,8	mg/l
Recov. ± CI(99%)	99,2 ± 1,9	99,6 ± 1,4	%
SD between labs	2,2	1,6	mg/l
RSD between labs	3,9	2,9	%
n for calculation	32	31	

Result [mg/l]



Recovery [%]



Sample N174A

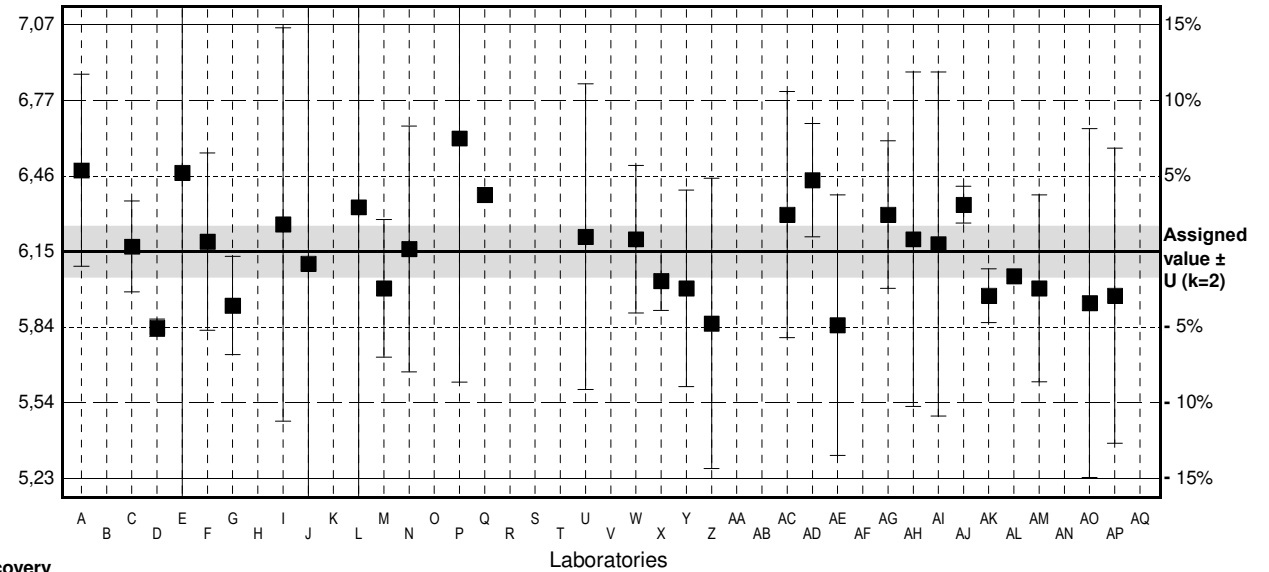
Parameter Magnesium

Assigned value ± U (k=2) 6,15 mg/l ± 0,10 mg/l
 IFA result ± U (k=2) 6,3 mg/l ± 0,4 mg/l
 Stability test ± U (k=2) 6,5 mg/l ± 0,4 mg/l

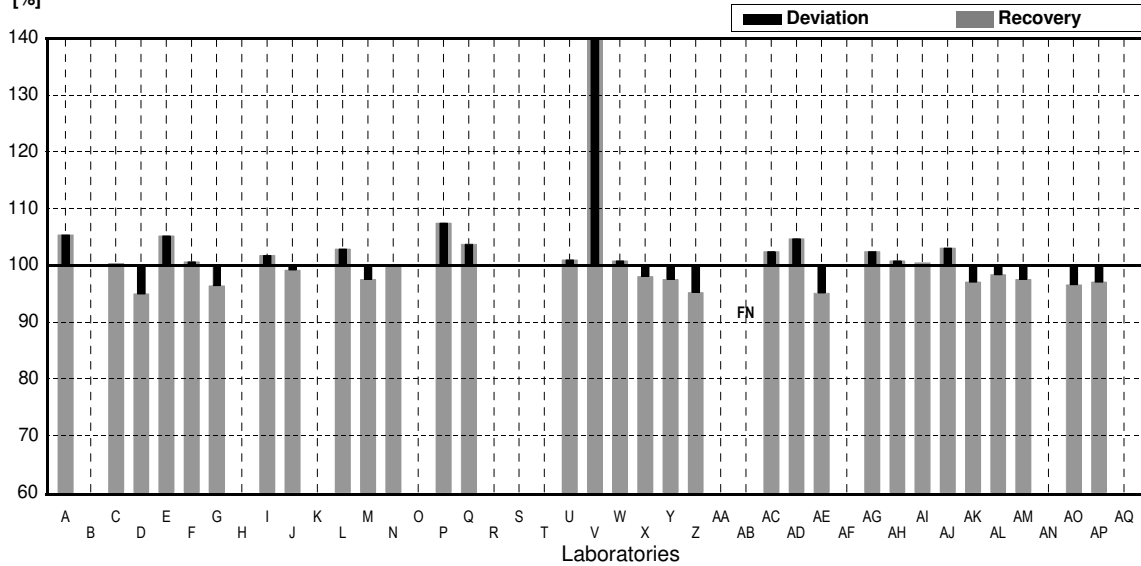
Lab Code	Result	±	Unit	Recovery	z-Score
A	6.48	0.39	mg/l	105%	1.53
B			mg/l		
C	6.17	0.185	mg/l	100%	0.09
D	5.84	0.0354	mg/l	95%	-1.44
E	6.47	1.3	mg/l	105%	1.49
F	6.19	0.36	mg/l	101%	0.19
G	5.93	0.2	mg/l	96%	-1.02
H			mg/l		
I	6.26	0.8	mg/l	102%	0.51
J	6.1	1	mg/l	99%	-0.23
K			mg/l		
L	6.33	1.3	mg/l	103%	0.84
M	6.00	0.28	mg/l	98%	-0.70
N	6.16	0.50	mg/l	100%	0.05
O			mg/l		
P	6.61	0.991	mg/l	107%	2.14
Q	6.38		mg/l	104%	1.07
R			mg/l		
S			mg/l		
T			mg/l		
U	6.21	0.621	mg/l	101%	0.28
V	20.0 *	0.14	mg/l	325%	64.34
W	6.2	0.3	mg/l	101%	0.23
X	6.03	0.12	mg/l	98%	-0.56
Y	6.0	0.4	mg/l	98%	-0.70
Z	5.857	0.59	mg/l	95%	-1.36
AA			mg/l		
AB	<3		mg/l	FN	
AC	6.3	0.5	mg/l	102%	0.70
AD	6.44	0.23	mg/l	105%	1.35
AE	5.85	0.53	mg/l	95%	-1.39
AF			mg/l		
AG	6.3	0.3	mg/l	102%	0.70
AH	6.2	0.68	mg/l	101%	0.23
AI	6.18	0.7	mg/l	100%	0.14
AJ	6.34	0.075	mg/l	103%	0.88
AK	5.97	0.11	mg/l	97%	-0.84
AL	6.05		mg/l	98%	-0.46
AM	6.0	0.38	mg/l	98%	-0.70
AN			mg/l		
AO	5.94	0.71	mg/l	97%	-0.98
AP	5.97	0.60	mg/l	97%	-0.84
AQ			mg/l		

	All results	Outliers excl.	Unit
Mean ± CI(99%)	6,61 ± 1,23	6,16 ± 0,10	mg/l
Recov. ± CI(99%)	107,4 ± 20,0	100,1 ± 1,7	%
SD between labs	2,49	0,20	mg/l
RSD between labs	37,8	3,3	%
n for calculation	31	30	

Result [mg/l]



Recovery [%]



Sample N174B

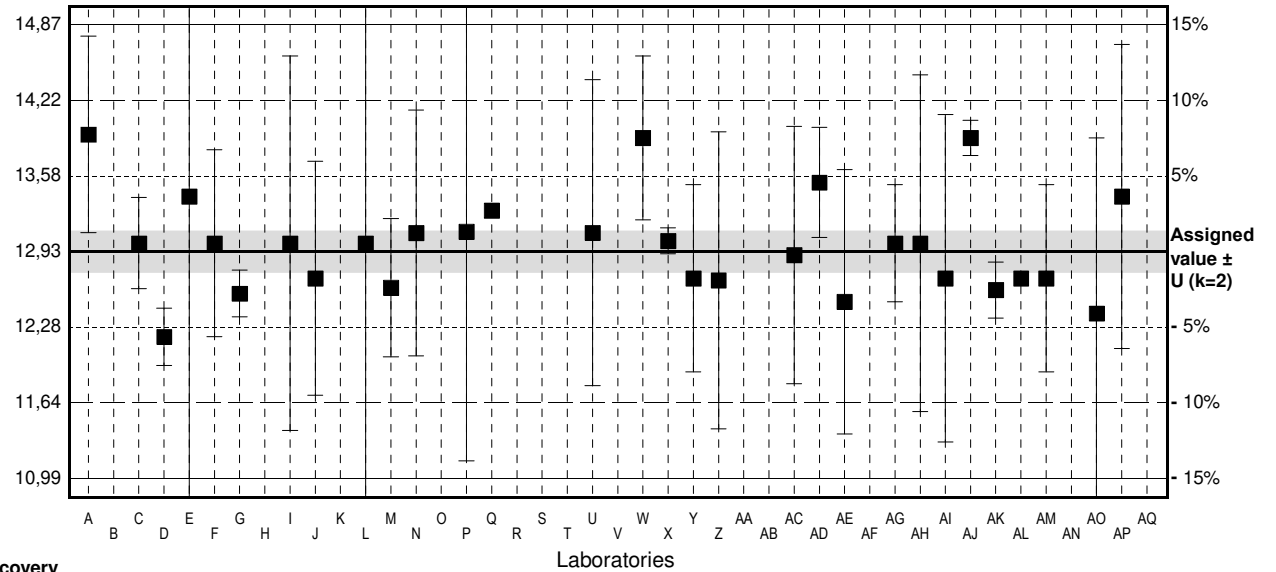
Parameter Magnesium

Assigned value ± U (k=2) 12,93 mg/l ± 0,18 mg/l
 IFA result ± U (k=2) 13,4 mg/l ± 0,7 mg/l
 Stability test ± U (k=2) 13,3 mg/l ± 0,7 mg/l

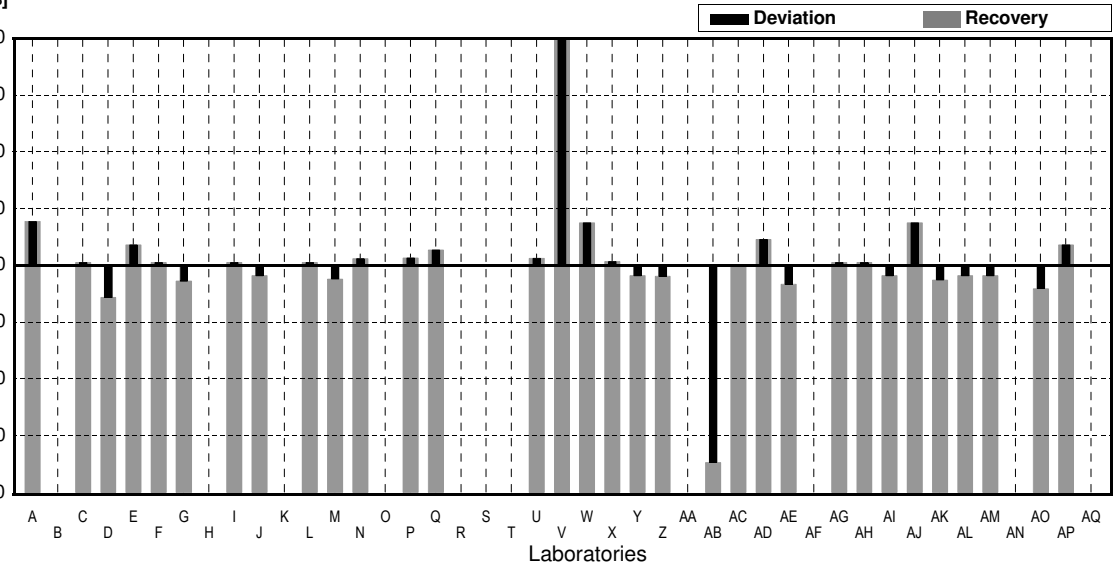
Lab Code	Result	±	Unit	Recovery	z-Score
A	13,93	0,84	mg/l	108%	2,21
B			mg/l		
C	13,0	0,39	mg/l	101%	0,15
D	12,2	0,245	mg/l	94%	-1,61
E	13,4	2,7	mg/l	104%	1,04
F	13,0	0,8	mg/l	101%	0,15
G	12,57	0,2	mg/l	97%	-0,80
H			mg/l		
I	13,0	1,6	mg/l	101%	0,15
J	12,7	1	mg/l	98%	-0,51
K			mg/l		
L	13,0	2,6	mg/l	101%	0,15
M	12,62	0,59	mg/l	98%	-0,69
N	13,088	1,05	mg/l	101%	0,35
O			mg/l		
P	13,1	1,96	mg/l	101%	0,38
Q	13,28		mg/l	103%	0,77
R			mg/l		
S			mg/l		
T			mg/l		
U	13,09	1,309	mg/l	101%	0,35
V	20,26 *	0,43	mg/l	157%	16,20
W	13,9	0,7	mg/l	108%	2,14
X	13,02	0,11	mg/l	101%	0,20
Y	12,7	0,8	mg/l	98%	-0,51
Z	12,682	1,27	mg/l	98%	-0,55
AA			mg/l		
AB	8,44 *		mg/l	65%	-9,92
AC	12,9	1,1	mg/l	100%	-0,07
AD	13,52	0,47	mg/l	105%	1,30
AE	12,5	1,13	mg/l	97%	-0,95
AF			mg/l		
AG	13,0	0,5	mg/l	101%	0,15
AH	13,0	1,44	mg/l	101%	0,15
AI	12,7	1,4	mg/l	98%	-0,51
AJ	13,9	0,15	mg/l	108%	2,14
AK	12,6	0,24	mg/l	97%	-0,73
AL	12,7		mg/l	98%	-0,51
AM	12,7	0,80	mg/l	98%	-0,51
AN			mg/l		
AO	12,4	1,5	mg/l	96%	-1,17
AP	13,4	1,3	mg/l	104%	1,04
AQ			mg/l		

	All results	Outliers excl.	Unit
Mean ± CI(99%)	13,07 ± 0,78	12,99 ± 0,22	mg/l
Recov. ± CI(99%)	101,1 ± 6,0	100,4 ± 1,7	%
SD between labs	1,59	0,43	mg/l
RSD between labs	12,2	3,3	%
n for calculation	32	30	

Result [mg/l]



Recovery [%]



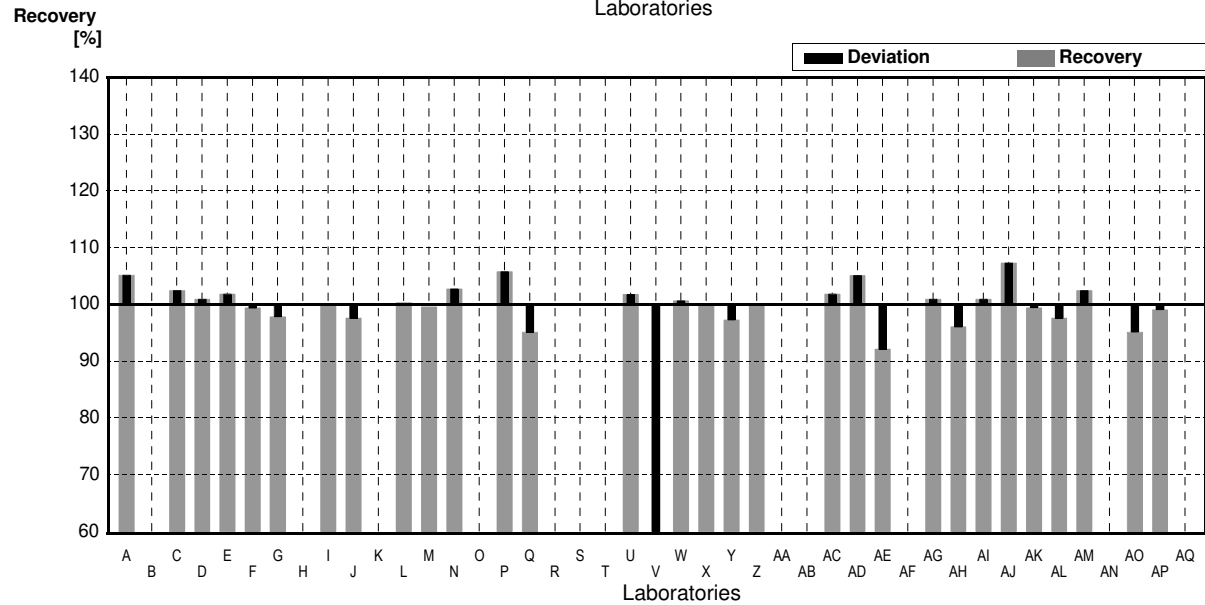
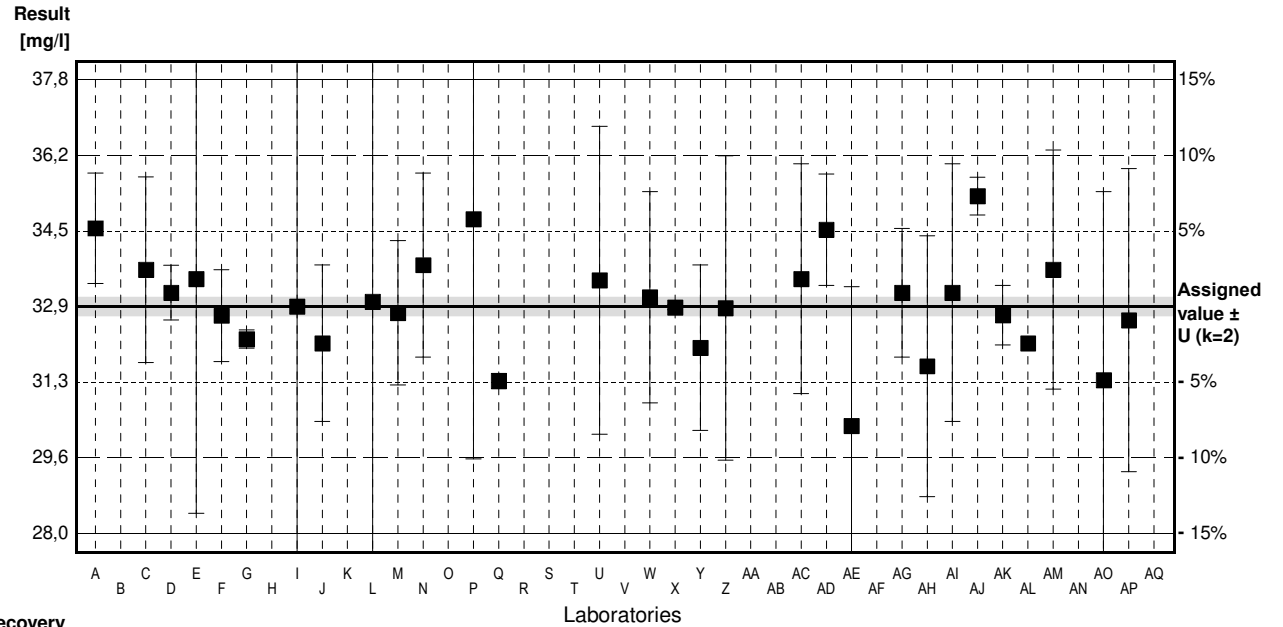
Sample N174A

Parameter Sodium

Assigned value ± U (k=2) 32,9 mg/l ± 0,2 mg/l
 IFA result ± U (k=2) 34,5 mg/l ± 1,2 mg/l
 Stability test ± U (k=2) 32,9 mg/l ± 1,2 mg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A	34.6	1.2	mg/l	105%	1.67
B			mg/l		
C	33.7	2.02	mg/l	102%	0.78
D	33.2	0.594	mg/l	101%	0.29
E	33.5	5.1	mg/l	102%	0.59
F	32.7	1.0	mg/l	99%	-0.20
G	32.19	0.2	mg/l	98%	-0.70
H			mg/l		
I	32.9	5	mg/l	100%	0.00
J	32.1	1.7	mg/l	98%	-0.78
K			mg/l		
L	33.0	6.6	mg/l	100%	0.10
M	32.76	1.57	mg/l	100%	-0.14
N	33.8	2.0	mg/l	103%	0.88
O			mg/l		
P	34.8	5.22	mg/l	106%	1.86
Q	31.28		mg/l	95%	-1.59
R			mg/l		
S			mg/l		
T			mg/l		
U	33.47	3.347	mg/l	102%	0.56
V	8.88	0.088	mg/l	27%	-23.55
W	33.1	2.3	mg/l	101%	0.20
X	32.88	0.05	mg/l	100%	-0.02
Y	32.0	1.8	mg/l	97%	-0.88
Z	32.866	3.31	mg/l	100%	-0.03
AA			mg/l		
AB			mg/l		
AC	33.5	2.5	mg/l	102%	0.59
AD	34.57	1.21	mg/l	105%	1.64
AE	30.3	3.03	mg/l	92%	-2.55
AF			mg/l		
AG	33.2	1.4	mg/l	101%	0.29
AH	31.6	2.84	mg/l	96%	-1.27
AI	33.2	2.8	mg/l	101%	0.29
AJ	35.3	0.41	mg/l	107%	2.35
AK	32.71	0.65	mg/l	99%	-0.19
AL	32.1		mg/l	98%	-0.78
AM	33.7	2.6	mg/l	102%	0.78
AN			mg/l		
AO	31.3	4.1	mg/l	95%	-1.57
AP	32.6	3.3	mg/l	99%	-0.29
AQ			mg/l		

	All results	Outliers excl.	Unit
Mean ± CI(99%)	32,2 ± 2,2	33,0 ± 0,6	mg/l
Recov. ± CI(99%)	97,8 ± 6,7	100,2 ± 1,7	%
SD between labs	4,5	1,1	mg/l
RSD between labs	13,8	3,3	%
n for calculation	31	30	



Sample N174B

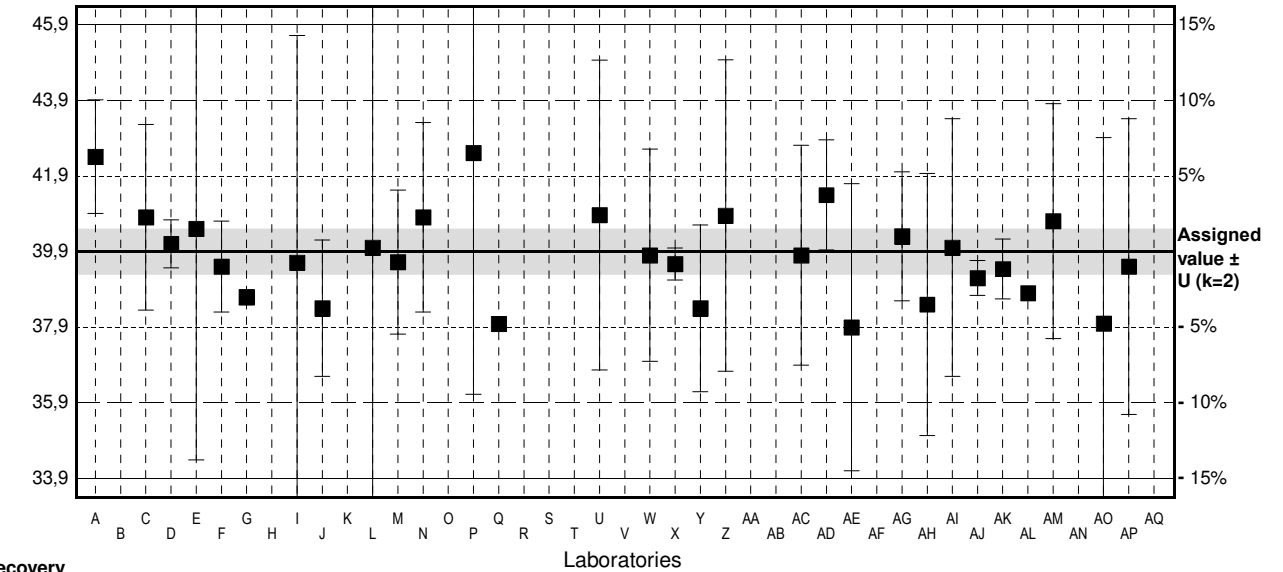
Parameter Sodium

Assigned value ± U (k=2) 39,9 mg/l ± 0,6 mg/l
 IFA result ± U (k=2) 41,7 mg/l ± 1,4 mg/l
 Stability test ± U (k=2) 39,8 mg/l ± 1,3 mg/l

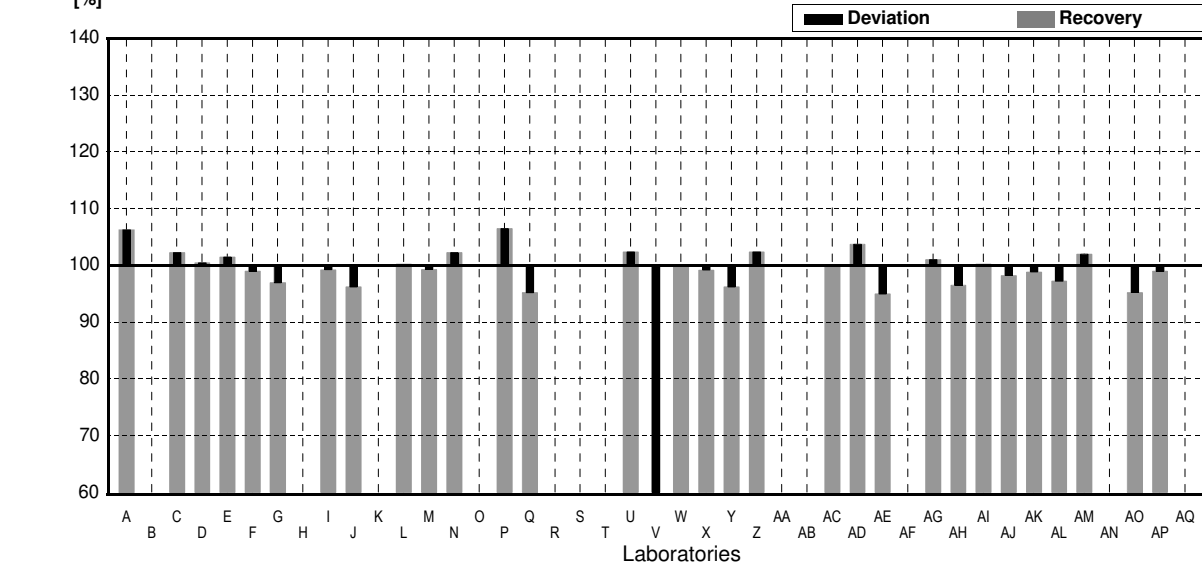
Lab Code	Result	±	Unit	Recovery	z-Score
A	42.4	1.5	mg/l	106%	2.02
B			mg/l		
C	40.8	2.45	mg/l	102%	0.73
D	40.1	0.633	mg/l	101%	0.16
E	40.5	6.1	mg/l	102%	0.49
F	39.5	1.2	mg/l	99%	-0.32
G	38.69	0.2	mg/l	97%	-0.98
H			mg/l		
I	39.6	6	mg/l	99%	-0.24
J	38.4	1.8	mg/l	96%	-1.21
K			mg/l		
L	40.0	8.0	mg/l	100%	0.08
M	39.62	1.90	mg/l	99%	-0.23
N	40.8	2.5	mg/l	102%	0.73
O			mg/l		
P	42.5	6.37	mg/l	107%	2.10
Q	37.99		mg/l	95%	-1.54
R			mg/l		
S			mg/l		
T			mg/l		
U	40.86	4.086	mg/l	102%	0.78
V	8.93	0.14	mg/l	22%	-25.04
W	39.8	2.8	mg/l	100%	-0.08
X	39.57	0.42	mg/l	99%	-0.27
Y	38.4	2.2	mg/l	96%	-1.21
Z	40.846	4.11	mg/l	102%	0.76
AA			mg/l		
AB			mg/l		
AC	39.8	2.9	mg/l	100%	-0.08
AD	41.39	1.45	mg/l	104%	1.20
AE	37.9	3.79	mg/l	95%	-1.62
AF			mg/l		
AG	40.3	1.7	mg/l	101%	0.32
AH	38.5	3.46	mg/l	96%	-1.13
AI	40.0	3.4	mg/l	100%	0.08
AJ	39.2	0.46	mg/l	98%	-0.57
AK	39.44	0.79	mg/l	99%	-0.37
AL	38.8		mg/l	97%	-0.89
AM	40.7	3.1	mg/l	102%	0.65
AN			mg/l		
AO	38.0	4.9	mg/l	95%	-1.54
AP	39.5	3.9	mg/l	99%	-0.32
AQ			mg/l		

	All results	Outliers excl.	Unit
Mean ± CI(99%)	38,8 ± 2,8	39,8 ± 0,6	mg/l
Recov. ± CI(99%)	97,2 ± 7,0	99,7 ± 1,5	%
SD between labs	5,7	1,2	mg/l
RSD between labs	14,6	3,0	%
n for calculation	31	30	

Result [mg/l]



Recovery [%]



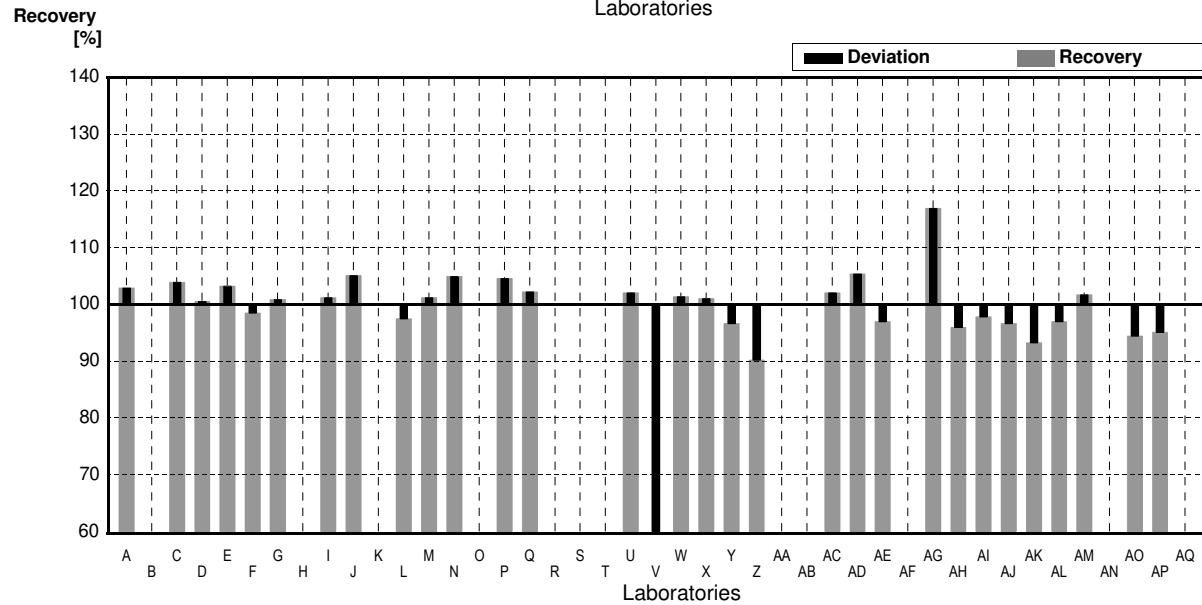
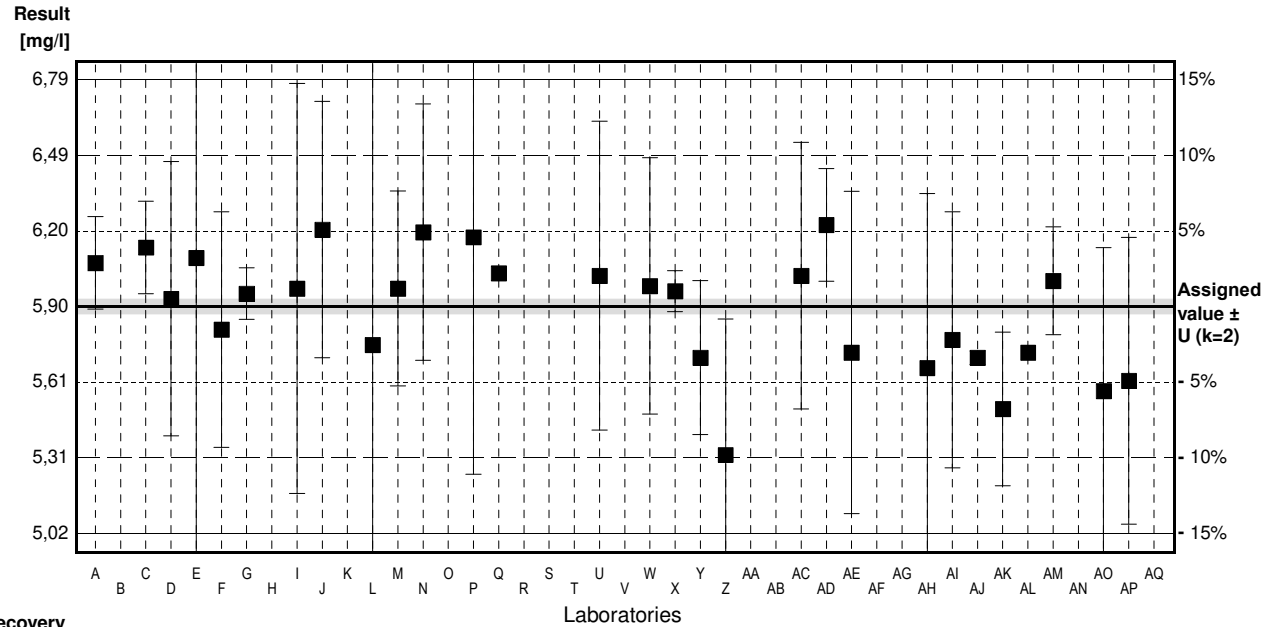
Sample N174A

Parameter Potassium

Assigned value ± U (k=2) 5,90 mg/l ± 0,03 mg/l
 IFA result ± U (k=2) 5,9 mg/l ± 0,3 mg/l
 Stability test ± U (k=2) 5,8 mg/l ± 0,3 mg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A	6.07	0.18	mg/l	103%	0.72
B			mg/l		
C	6.13	0.18	mg/l	104%	0.97
D	5.93	0.535	mg/l	101%	0.13
E	6.09	1.2	mg/l	103%	0.81
F	5.81	0.46	mg/l	98%	-0.38
G	5.95	0.1	mg/l	101%	0.21
H			mg/l		
I	5.97	0.8	mg/l	101%	0.30
J	6.2	0.5	mg/l	105%	1.27
K			mg/l		
L	5.75	1.2	mg/l	97%	-0.64
M	5.97	0.38	mg/l	101%	0.30
N	6.19	0.50	mg/l	105%	1.23
O			mg/l		
P	6.17	0.925	mg/l	105%	1.14
Q	6.03		mg/l	102%	0.55
R			mg/l		
S			mg/l		
T			mg/l		
U	6.02	0.602	mg/l	102%	0.51
V	1.196 *	0.036	mg/l	20%	-19.93
W	5.98	0.5	mg/l	101%	0.34
X	5.96	0.08	mg/l	101%	0.25
Y	5.7	0.3	mg/l	97%	-0.85
Z	5.321	0.53	mg/l	90%	-2.45
AA			mg/l		
AB			mg/l		
AC	6.02	0.52	mg/l	102%	0.51
AD	6.218	0.22	mg/l	105%	1.35
AE	5.72	0.629	mg/l	97%	-0.76
AF			mg/l		
AG	6.9	0.3	mg/l	117%	4.24
AH	5.66	0.68	mg/l	96%	-1.02
AI	5.77	0.5	mg/l	98%	-0.55
AJ	5.70	0.026	mg/l	97%	-0.85
AK	5.5	0.3	mg/l	93%	-1.69
AL	5.72		mg/l	97%	-0.76
AM	6.0	0.21	mg/l	102%	0.42
AN			mg/l		
AO	5.57	0.56	mg/l	94%	-1.40
AP	5.61	0.56	mg/l	95%	-1.23
AQ			mg/l		

	All results	Outliers excl.	Unit
Mean ± CI(99%)	5,77 ± 0,44	5,92 ± 0,15	mg/l
Recov. ± CI(99%)	97,8 ± 7,5	100,4 ± 2,5	%
SD between labs	0,90	0,29	mg/l
RSD between labs	15,5	4,9	%
n for calculation	31	30	



Sample N174B

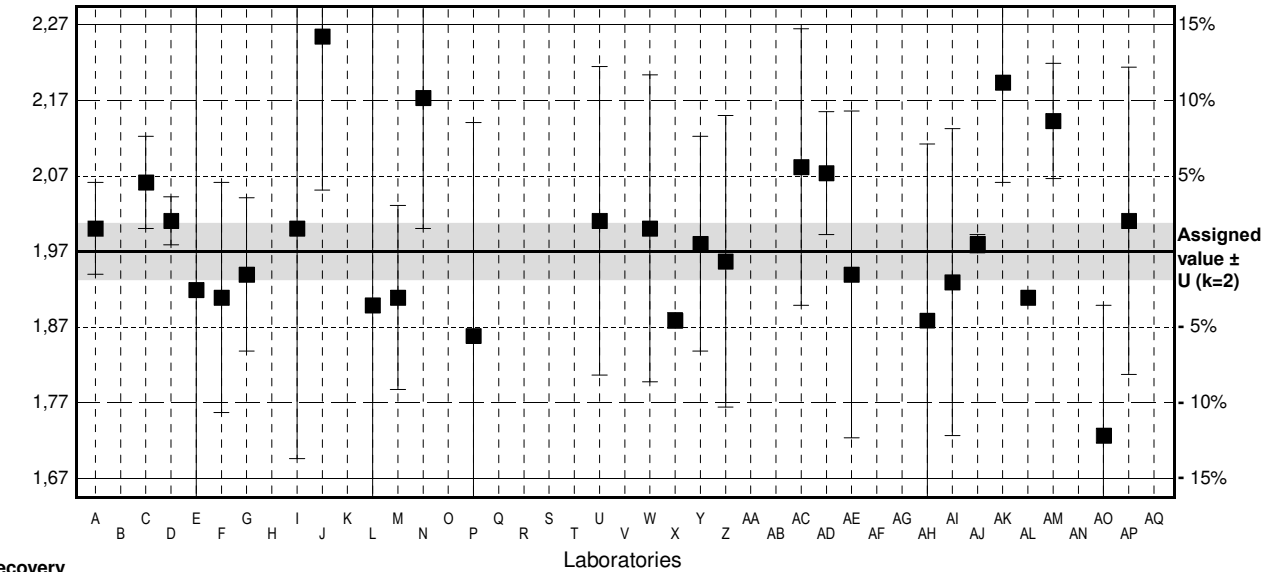
Parameter Potassium

Assigned value ± U (k=2) 1,97 mg/l ± 0,04 mg/l
 IFA result ± U (k=2) 1,91 mg/l ± 0,16 mg/l
 Stability test ± U (k=2) 1,86 mg/l ± 0,15 mg/l

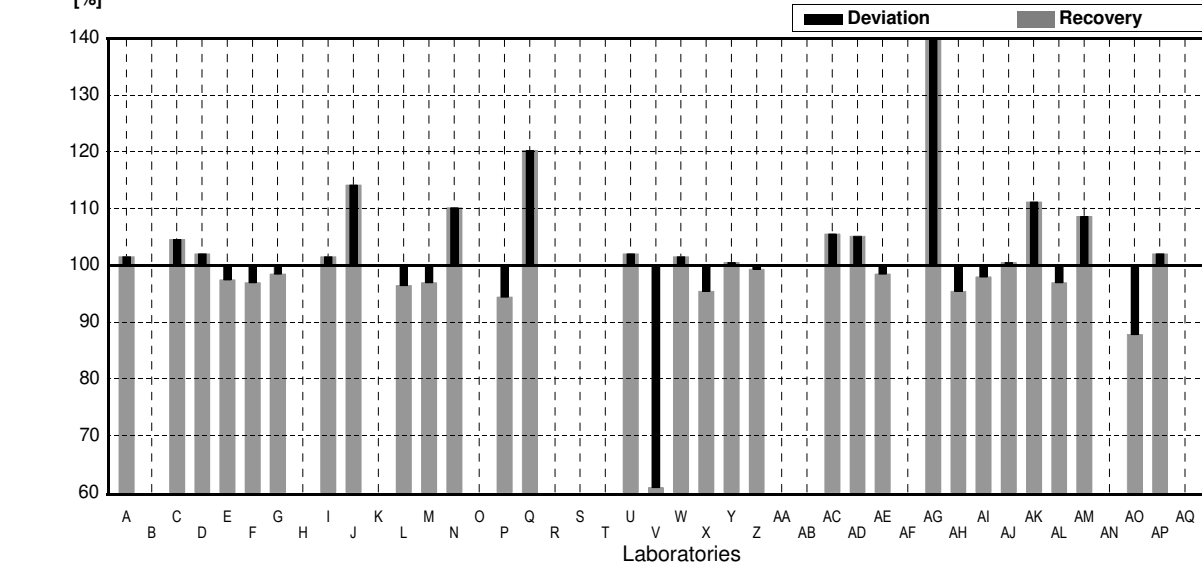
Lab Code	Result	±	Unit	Recovery	z-Score
A	2.00	0.06	mg/l	102%	0.38
B			mg/l		
C	2.06	0.06	mg/l	105%	1.14
D	2.01	0.0314	mg/l	102%	0.51
E	1.92	0.39	mg/l	97%	-0.63
F	1.91	0.15	mg/l	97%	-0.76
G	1.94	0.1	mg/l	98%	-0.38
H			mg/l		
I	2.00	0.3	mg/l	102%	0.38
J	2.25	0.2	mg/l	114%	3.55
K			mg/l		
L	1.90	0.38	mg/l	96%	-0.89
M	1.91	0.12	mg/l	97%	-0.76
N	2.17	0.17	mg/l	110%	2.54
O			mg/l		
P	1.86	0.278	mg/l	94%	-1.40
Q	2.37	*	mg/l	120%	5.08
R			mg/l		
S			mg/l		
T			mg/l		
U	2.01	0.201	mg/l	102%	0.51
V	1.198	*	0.026	61%	-9.80
W	2.00	0.2	mg/l	102%	0.38
X	1.88	0.01	mg/l	95%	-1.14
Y	1.98	0.14	mg/l	101%	0.13
Z	1.957	0.19	mg/l	99%	-0.16
AA			mg/l		
AB			mg/l		
AC	2.08	0.18	mg/l	106%	1.40
AD	2.072	0.08	mg/l	105%	1.29
AE	1.94	0.213	mg/l	98%	-0.38
AF			mg/l		
AG	2.83	*	0.11	144%	10.91
AH	1.88	0.23	mg/l	95%	-1.14
AI	1.93	0.2	mg/l	98%	-0.51
AJ	1.98	0.012	mg/l	101%	0.13
AK	2.19	0.13	mg/l	111%	2.79
AL	1.91		mg/l	97%	-0.76
AM	2.14	0.075	mg/l	109%	2.16
AN			mg/l		
AO	1.73	0.17	mg/l	88%	-3.05
AP	2.01	0.20	mg/l	102%	0.51
AQ			mg/l		

	All results	Outliers excl.	Unit
Mean ± CI(99%)	2,00 ± 0,12	1,99 ± 0,06	mg/l
Recov. ± CI(99%)	101,6 ± 6,2	100,8 ± 3,0	%
SD between labs	0,25	0,11	mg/l
RSD between labs	12,3	5,6	%
n for calculation	31	28	

Result [mg/l]



Recovery [%]



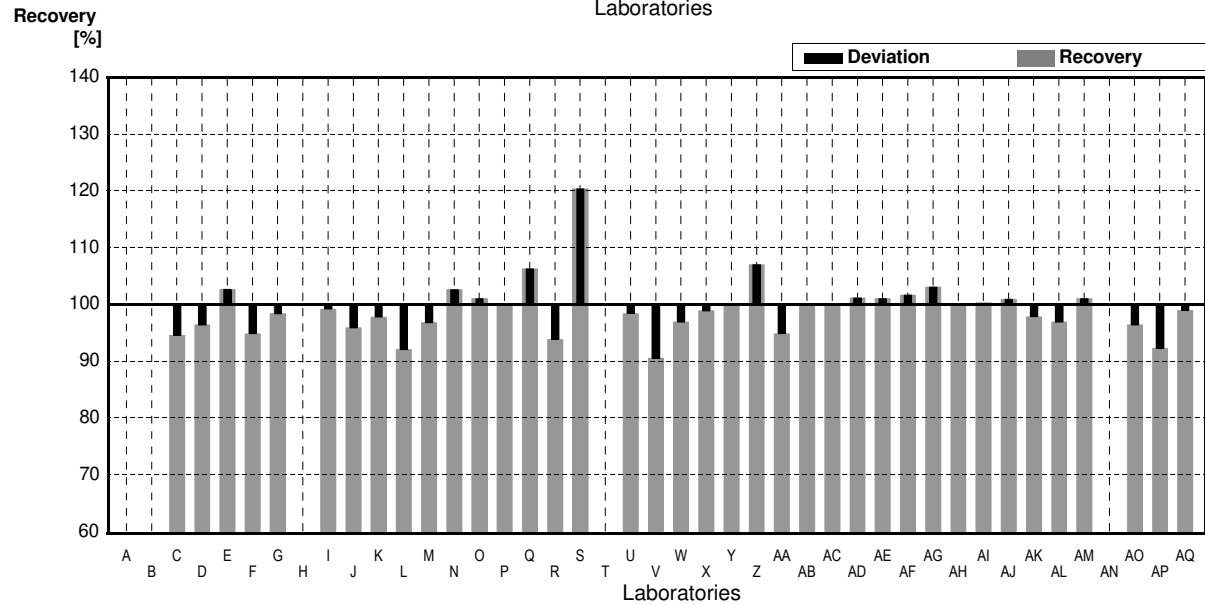
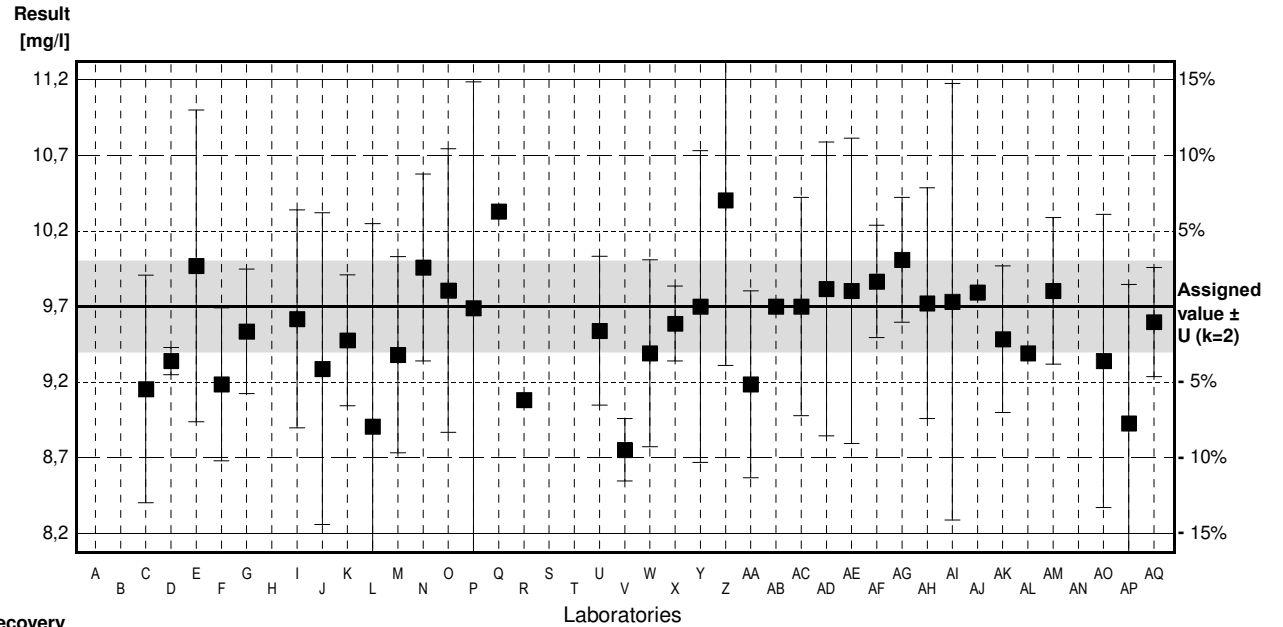
Sample N174A

Parameter Nitrate (as NO3)

Assigned value ± U (k=2) 9,7 mg/l ± 0,3 mg/l
 IFA result ± U (k=2) 9,5 mg/l ± 0,5 mg/l
 Stability test ± U (k=2) 9,6 mg/l ± 0,5 mg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A			mg/l		
B			mg/l		
C	9,17	0,73	mg/l	95%	-1,82
D	9,35	0,0873	mg/l	96%	-1,20
E	9,96	1,0	mg/l	103%	0,89
F	9,20	0,49	mg/l	95%	-1,72
G	9,54	0,4	mg/l	98%	-0,55
H			mg/l		
I	9,62	0,7	mg/l	99%	-0,27
J	9,3	1	mg/l	96%	-1,37
K	9,483	0,420	mg/l	98%	-0,75
L	8,93	1,3	mg/l	92%	-2,65
M	9,39	0,63	mg/l	97%	-1,07
N	9,95	0,60	mg/l	103%	0,86
O	9,802	0,909	mg/l	101%	0,35
P	9,69	1,45	mg/l	100%	-0,03
Q	10,31		mg/l	106%	2,10
R	9,10		mg/l	94%	-2,06
S	11,677 *	0,81	mg/l	120%	6,79
T			mg/l		
U	9,544	0,4772	mg/l	98%	-0,54
V	8,78	0,20	mg/l	91%	-3,16
W	9,4	0,6	mg/l	97%	-1,03
X	9,59	0,24	mg/l	99%	-0,38
Y	9,7	1,0	mg/l	100%	0,00
Z	10,382	1,06	mg/l	107%	2,34
AA	9,2	0,6	mg/l	95%	-1,72
AB	9,7		mg/l	100%	0,00
AC	9,7	0,7	mg/l	100%	0,00
AD	9,813	0,942	mg/l	101%	0,39
AE	9,80	0,98	mg/l	101%	0,34
AF	9,86	0,36	mg/l	102%	0,55
AG	10,0	0,4	mg/l	103%	1,03
AH	9,72	0,74	mg/l	100%	0,07
AI	9,73	1,4	mg/l	100%	0,10
AJ	9,79	0,035	mg/l	101%	0,31
AK	9,49	0,47	mg/l	98%	-0,72
AL	9,40		mg/l	97%	-1,03
AM	9,8	0,47	mg/l	101%	0,34
AN			mg/l		
AO	9,35	0,94	mg/l	96%	-1,20
AP	8,95	0,89	mg/l	92%	-2,58
AQ	9,6	0,35	mg/l	99%	-0,34

	All results	Outliers excl.	Unit
Mean ± CI(99%)	9,6 ± 0,2	9,6 ± 0,2	mg/l
Recov. ± CI(99%)	99,2 ± 2,2	98,7 ± 1,6	%
SD between labs	0,5	0,4	mg/l
RSD between labs	5,1	3,7	%
n for calculation	38	37	



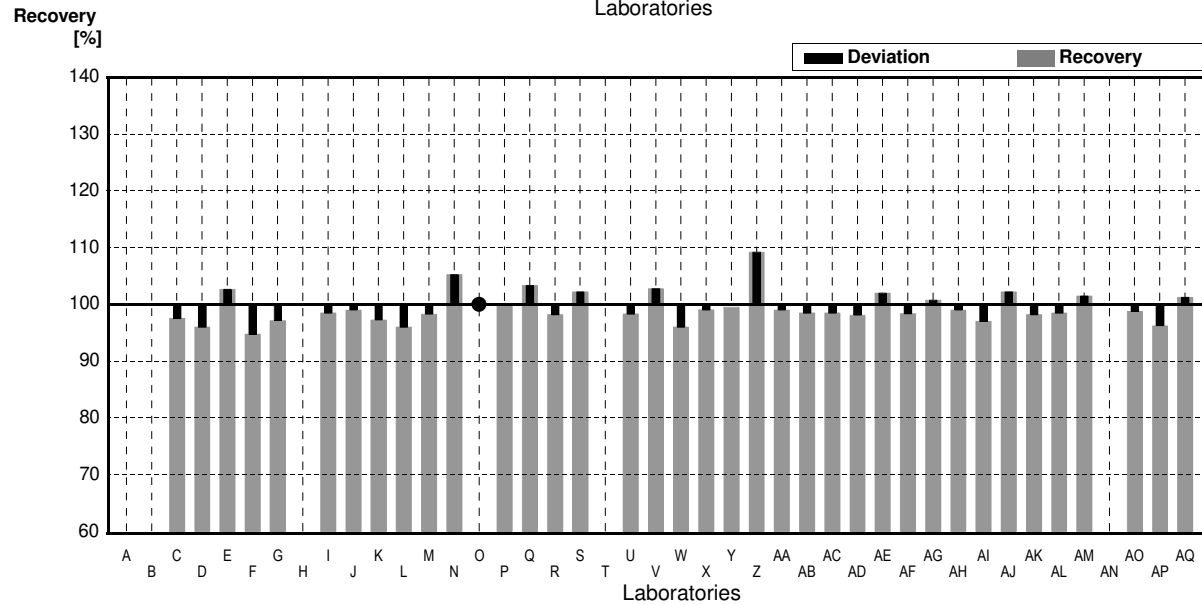
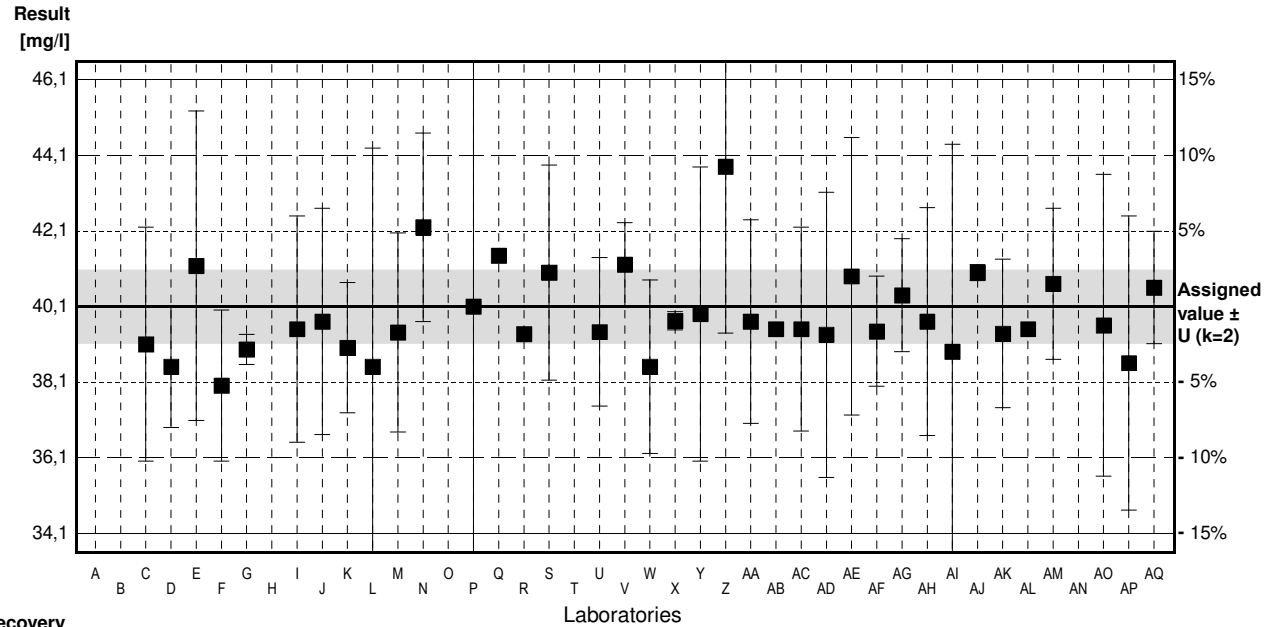
Sample N174B

Parameter Nitrate (as NO3)

Assigned value ± U (k=2) 40,1 mg/l ± 1,0 mg/l
 IFA result ± U (k=2) 39,5 mg/l ± 2,0 mg/l
 Stability test ± U (k=2) 40,1 mg/l ± 2,0 mg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A			mg/l		
B			mg/l		
C	39.1	3.1	mg/l	98%	-0.83
D	38.5	1.61	mg/l	96%	-1.33
E	41.18	4.1	mg/l	103%	0.90
F	38.0	2.0	mg/l	95%	-1.75
G	38.96	0.4	mg/l	97%	-0.95
H			mg/l		
I	39.5	3	mg/l	99%	-0.50
J	39.7	3	mg/l	99%	-0.33
K	39.004	1.728	mg/l	97%	-0.91
L	38.5	5.8	mg/l	96%	-1.33
M	39.41	2.64	mg/l	98%	-0.57
N	42.2 *	2.5	mg/l	105%	1.75
O	>30		mg/l	*	
P	40.1	6.02	mg/l	100%	0.00
Q	41.45		mg/l	103%	1.12
R	39.37		mg/l	98%	-0.61
S	40.997	2.85	mg/l	102%	0.75
T			mg/l		
U	39.425	1.9713	mg/l	98%	-0.56
V	41.21	1.11	mg/l	103%	0.92
W	38.5	2.3	mg/l	96%	-1.33
X	39.72	0.24	mg/l	99%	-0.32
Y	39.9	3.9	mg/l	100%	-0.17
Z	43.810 *	4.42	mg/l	109%	3.08
AA	39.7	2.7	mg/l	99%	-0.33
AB	39.5		mg/l	99%	-0.50
AC	39.5	2.7	mg/l	99%	-0.50
AD	39.35	3.78	mg/l	98%	-0.62
AE	40.9	3.68	mg/l	102%	0.67
AF	39.44	1.46	mg/l	98%	-0.55
AG	40.4	1.5	mg/l	101%	0.25
AH	39.7	3.02	mg/l	99%	-0.33
AI	38.9	5.5	mg/l	97%	-1.00
AJ	41.0	0.21	mg/l	102%	0.75
AK	39.38	1.97	mg/l	98%	-0.60
AL	39.5		mg/l	99%	-0.50
AM	40.7	2.0	mg/l	101%	0.50
AN			mg/l		
AO	39.6	4.0	mg/l	99%	-0.42
AP	38.6	3.9	mg/l	96%	-1.25
AQ	40.6	1.49	mg/l	101%	0.42

	All results	Outliers excl.	Unit
Mean ± CI(99%)	39,9 ± 0,5	39,7 ± 0,4	mg/l
Recov. ± CI(99%)	99,4 ± 1,3	99,0 ± 1,0	%
SD between labs	1,2	0,9	mg/l
RSD between labs	2,9	2,2	%
n for calculation	37	35	



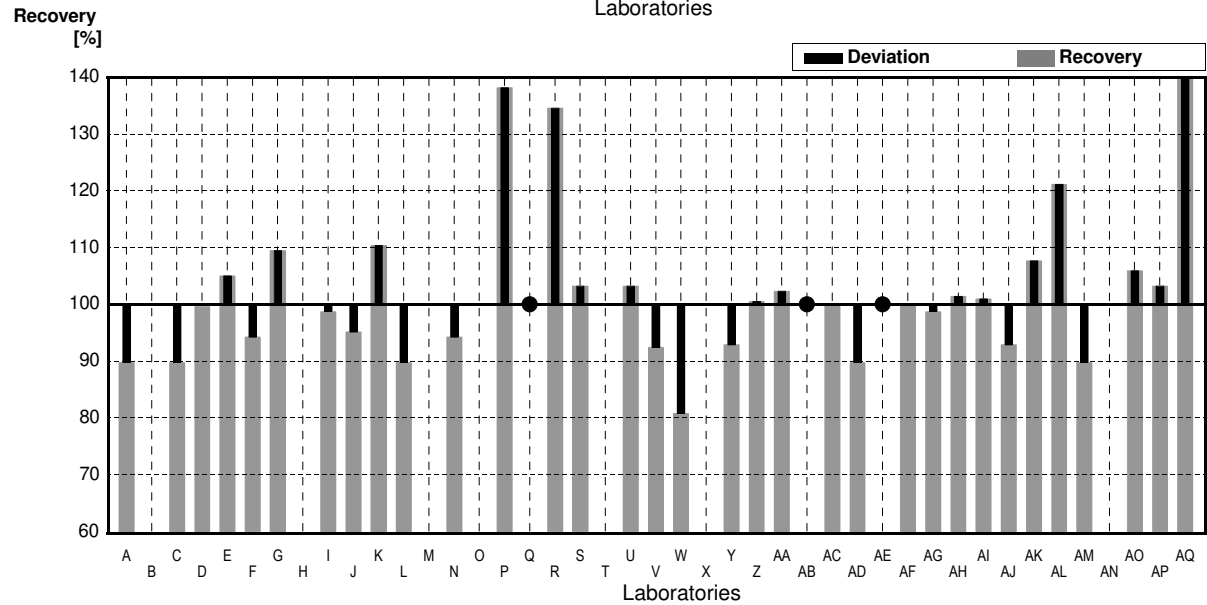
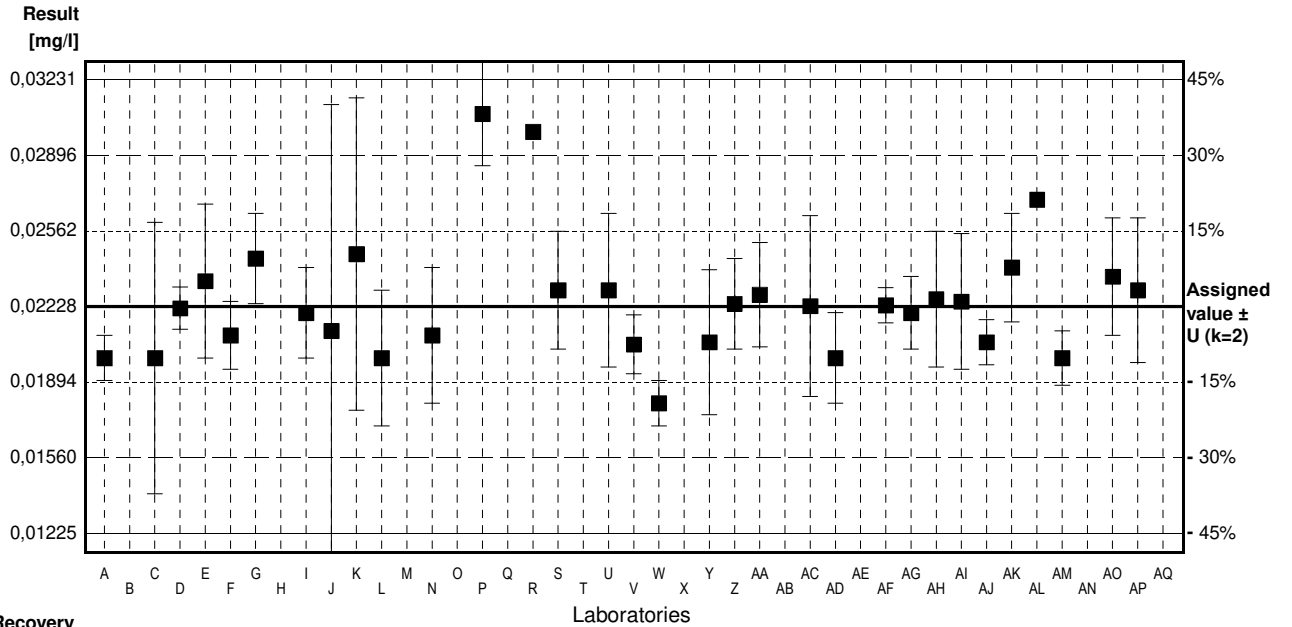
Sample N174A

Parameter Nitrite (as NO2)

Assigned value ± U (k=2) 0,02228 mg/l ± 0,00008 mg/l
 IFA result ± U (k=2) 0,0219 mg/l ± 0,0010 mg/l
 Stability test ± U (k=2) 0,0215 mg/l ± 0,0010 mg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A	0.0200	0.001	mg/l	90%	-1.86
B			mg/l		
C	0.0200	0.006	mg/l	90%	-1.86
D	0.0222	0.00093	mg/l	100%	-0.07
E	0.0234	0.0034	mg/l	105%	0.91
F	0.0210	0.0015	mg/l	94%	-1.04
G	0.0244	0.002	mg/l	110%	1.73
H			mg/l		
I	0.0220	0.002	mg/l	99%	-0.23
J	0.0212	0.01	mg/l	95%	-0.88
K	0.0246	0.0069	mg/l	110%	1.89
L	0.0200	0.003	mg/l	90%	-1.86
M			mg/l		
N	0.0210	0.0030	mg/l	94%	-1.04
O			mg/l		
P	0.0308 *	0.0023	mg/l	138%	6.95
Q	<0.033		mg/l	*	
R	0.0300 *		mg/l	135%	6.30
S	0.0230	0.0026	mg/l	103%	0.59
T			mg/l		
U	0.0230	0.00340	mg/l	103%	0.59
V	0.0206	0.0013	mg/l	92%	-1.37
W	0.0180	0.001	mg/l	81%	-3.49
X			mg/l		
Y	0.0207	0.0032	mg/l	93%	-1.29
Z	0.0224	0.002	mg/l	101%	0.10
AA	0.0228	0.0023	mg/l	102%	0.42
AB	<0.05		mg/l	*	
AC	0.0223	0.004	mg/l	100%	0.02
AD	0.0200	0.002	mg/l	90%	-1.86
AE	<0.200		mg/l	*	
AF	0.02233	0.00078	mg/l	100%	0.04
AG	0.0220	0.0016	mg/l	99%	-0.23
AH	0.0226	0.003	mg/l	101%	0.26
AI	0.0225	0.003	mg/l	101%	0.18
AJ	0.0207	0.001	mg/l	93%	-1.29
AK	0.0240	0.0024	mg/l	108%	1.40
AL	0.0270		mg/l	121%	3.85
AM	0.020	0.0012	mg/l	90%	-1.86
AN			mg/l		
AO	0.0236	0.0026	mg/l	106%	1.08
AP	0.0230	0.0032	mg/l	103%	0.59
AQ	0.0490 *	0.001	mg/l	220%	21.81

	All results	Outliers excl.	Unit
Mean ± CI(99%)	0,02334 ± 0,0025	0,02201 ± 0,0009	mg/l
Recov. ± CI(99%)	104,7 ± 11,4	98,8 ± 4,1	%
SD between labs	0,00532	0,00181	mg/l
RSD between labs	22,8	8,2	%
n for calculation	33	30	



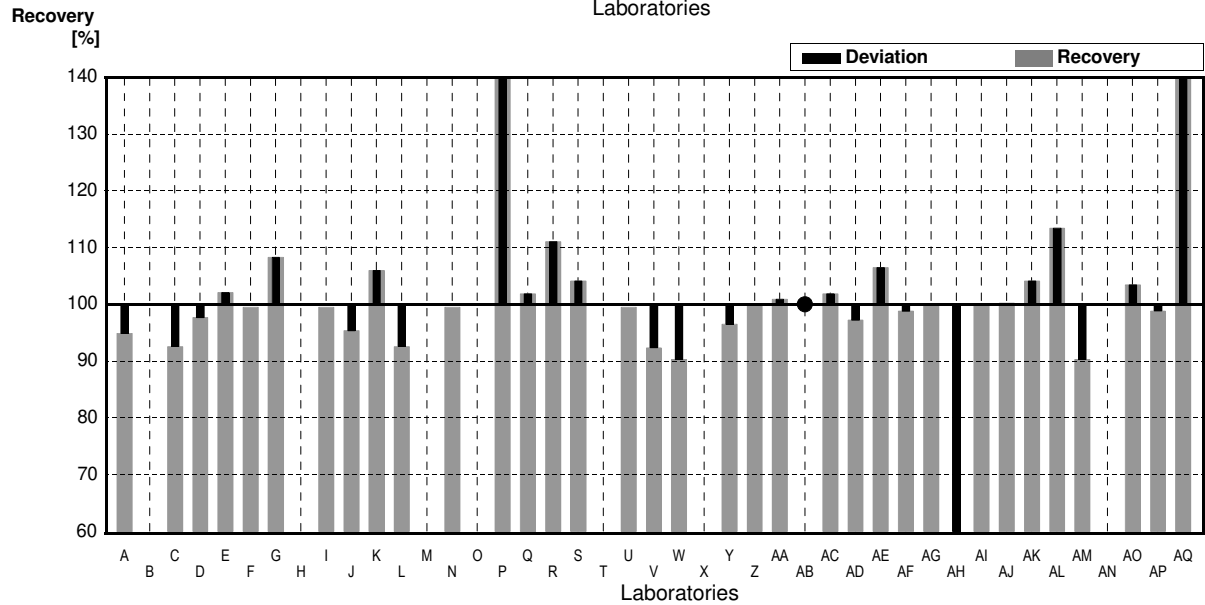
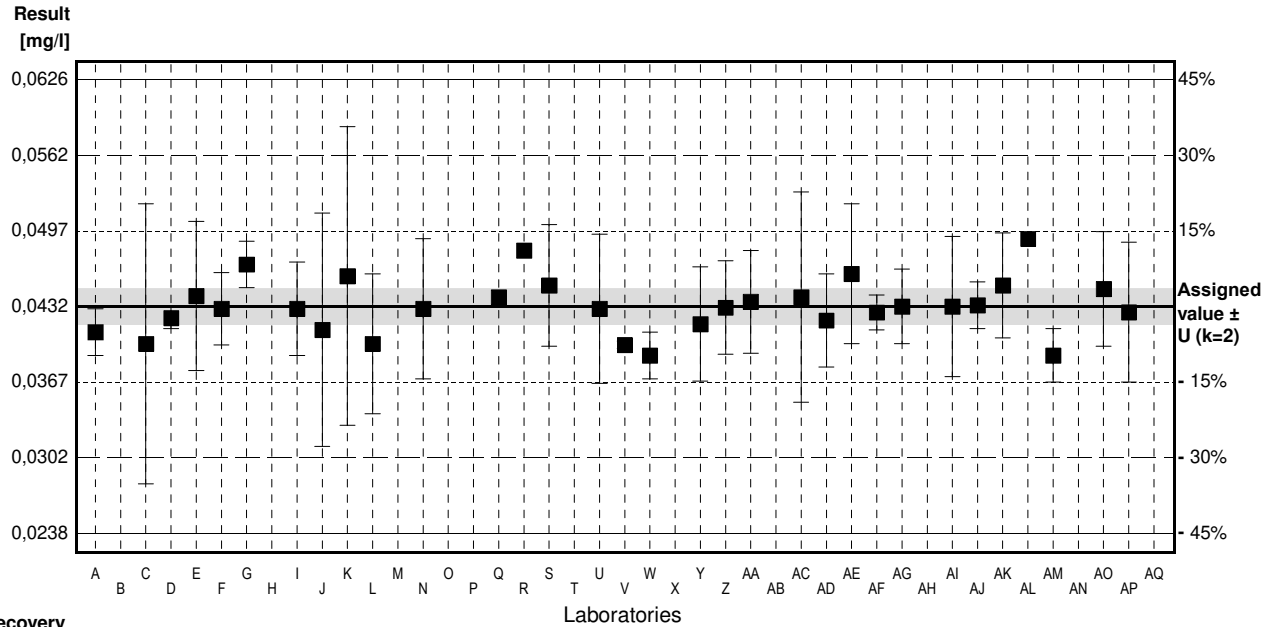
Sample N174B

Parameter Nitrite (as NO2)

Assigned value ± U (k=2) 0,0432 mg/l ± 0,0015 mg/l
 IFA result ± U (k=2) 0,0429 mg/l ± 0,0017 mg/l
 Stability test ± U (k=2) 0,0420 mg/l ± 0,0021 mg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A	0.0410	0.002	mg/l	95%	-0.93
B			mg/l		
C	0.0400	0.012	mg/l	93%	-1.35
D	0.0422	0.00090	mg/l	98%	-0.42
E	0.0441	0.0064	mg/l	102%	0.38
F	0.0430	0.0031	mg/l	100%	-0.08
G	0.0468	0.002	mg/l	108%	1.52
H			mg/l		
I	0.0430	0.004	mg/l	100%	-0.08
J	0.0412	0.01	mg/l	95%	-0.84
K	0.0458	0.0128	mg/l	106%	1.09
L	0.0400	0.006	mg/l	93%	-1.35
M			mg/l		
N	0.0430	0.0060	mg/l	100%	-0.08
O			mg/l		
P	0.0780 *	0.0059	mg/l	181%	14.65
Q	0.0440		mg/l	102%	0.34
R	0.0480		mg/l	111%	2.02
S	0.0450	0.0052	mg/l	104%	0.76
T			mg/l		
U	0.0430	0.0064	mg/l	100%	-0.08
V	0.0399	0.00032	mg/l	92%	-1.39
W	0.0390	0.002	mg/l	90%	-1.77
X			mg/l		
Y	0.0417	0.0049	mg/l	97%	-0.63
Z	0.0431	0.004	mg/l	100%	-0.04
AA	0.0436	0.0044	mg/l	101%	0.17
AB	<0.05		mg/l	-	
AC	0.0440	0.009	mg/l	102%	0.34
AD	0.0420	0.004	mg/l	97%	-0.51
AE	0.0460	0.006	mg/l	106%	1.18
AF	0.04269	0.00149	mg/l	99%	-0.21
AG	0.0432	0.0032	mg/l	100%	0.00
AH	0.0143 *	0.002	mg/l	33%	-12.16
AI	0.0432	0.006	mg/l	100%	0.00
AJ	0.0433	0.002	mg/l	100%	0.04
AK	0.0450	0.0045	mg/l	104%	0.76
AL	0.0490		mg/l	113%	2.44
AM	0.039	0.0023	mg/l	90%	-1.77
AN			mg/l		
AO	0.0447	0.0049	mg/l	103%	0.63
AP	0.0427	0.0060	mg/l	99%	-0.21
AQ	0.063 *	0.001	mg/l	146%	8.33

	All results	Outliers excl.	Unit
Mean ± CI(99%)	0,0439 ± 0,0040	0,0432 ± 0,0012	mg/l
Recov. ± CI(99%)	101,7 ± 9,3	100,0 ± 2,7	%
SD between labs	0,0087	0,0024	mg/l
RSD between labs	19,9	5,5	%
n for calculation	35	32	



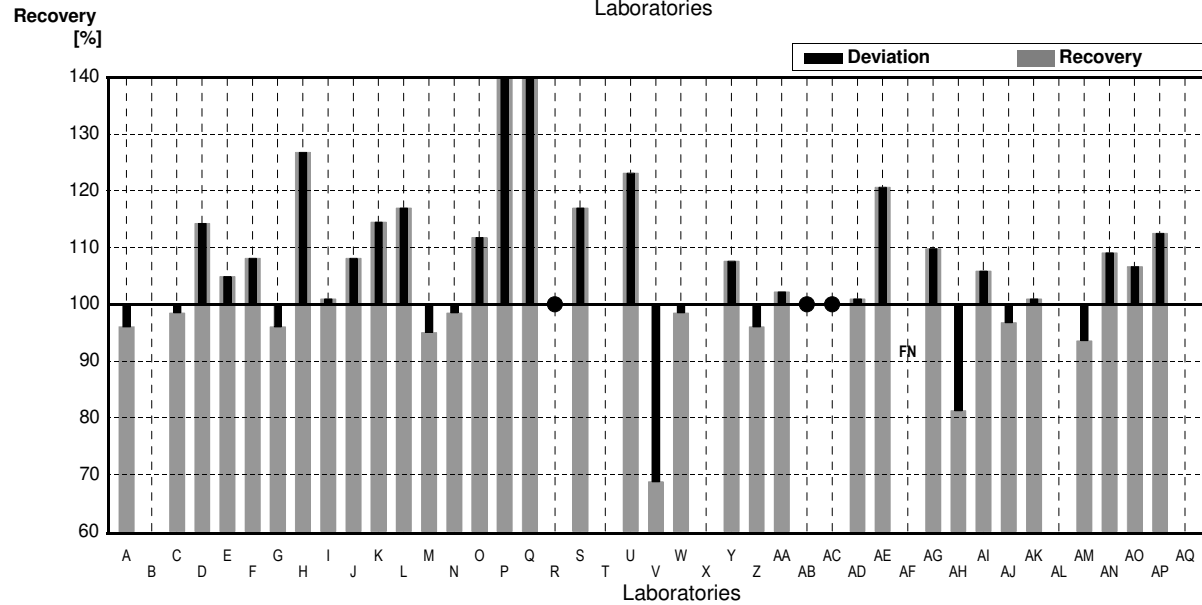
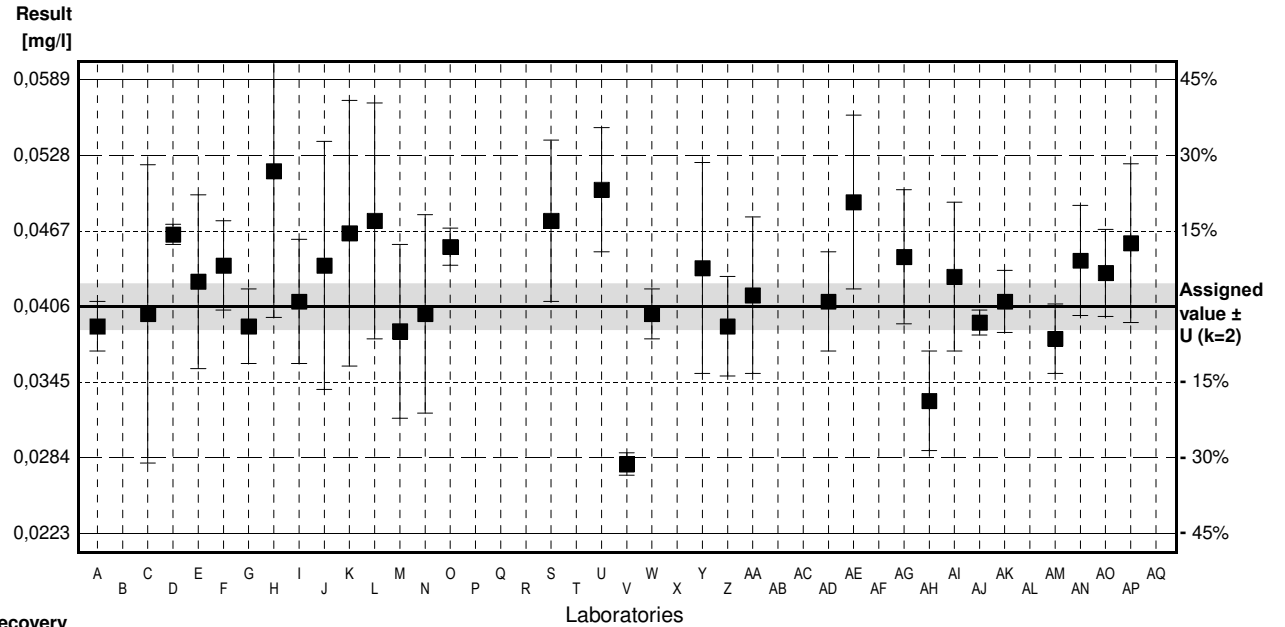
Sample N174A

Parameter Ammonium (as NH4)

Assigned value ± U (k=2) 0,0406 mg/l ± 0,0019 mg/l
 IFA result ± U (k=2) 0,0410 mg/l ± 0,0017 mg/l
 Stability test ± U (k=2) 0,0408 mg/l ± 0,0017 mg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A	0.0390	0.002	mg/l	96%	-0.36
B			mg/l		
C	0.0400	0.012	mg/l	99%	-0.13
D	0.0464	0.00082	mg/l	114%	1.30
E	0.0426	0.007	mg/l	105%	0.45
F	0.0439	0.0036	mg/l	108%	0.74
G	0.0390	0.003	mg/l	96%	-0.36
H	0.0515	0.0118	mg/l	127%	2.44
I	0.0410	0.005	mg/l	101%	0.09
J	0.0439	0.01	mg/l	108%	0.74
K	0.0465	0.0107	mg/l	115%	1.32
L	0.0475	0.0095	mg/l	117%	1.55
M	0.0386	0.007	mg/l	95%	-0.45
N	0.0400	0.0080	mg/l	99%	-0.13
O	0.0454	0.0015	mg/l	112%	1.07
P	0.0694 *	0.0083	mg/l	171%	6.45
Q	0.0617 *		mg/l	152%	4.72
R	<0.10		mg/l	*	
S	0.0475	0.0065	mg/l	117%	1.55
T			mg/l		
U	0.050	0.0050	mg/l	123%	2.10
V	0.0279 *	0.0009	mg/l	69%	-2.84
W	0.0400	0.002	mg/l	99%	-0.13
X			mg/l		
Y	0.0437	0.0085	mg/l	108%	0.69
Z	0.0390	0.004	mg/l	96%	-0.36
AA	0.0415	0.0063	mg/l	102%	0.20
AB	<0.05		mg/l	*	
AC	<0.050		mg/l	*	
AD	0.0410	0.004	mg/l	101%	0.09
AE	0.0490	0.007	mg/l	121%	1.88
AF	<0.038		mg/l	FN	
AG	0.0446	0.0054	mg/l	110%	0.90
AH	0.0330	0.004	mg/l	81%	-1.70
AI	0.0430	0.006	mg/l	106%	0.54
AJ	0.0393	0.001	mg/l	97%	-0.29
AK	0.0410	0.0025	mg/l	101%	0.09
AL			mg/l		
AM	0.0380	0.0028	mg/l	94%	-0.58
AN	0.0443	0.00443	mg/l	109%	0.83
AO	0.0433	0.0035	mg/l	107%	0.60
AP	0.0457	0.0064	mg/l	113%	1.14
AQ			mg/l		

	All results	Outliers excl.	Unit
Mean ± CI(99%)	0,0438 ± 0,0034	0,0429 ± 0,0020	mg/l
Recov. ± CI(99%)	107,8 ± 8,4	105,6 ± 4,9	%
SD between labs	0,0073	0,0040	mg/l
RSD between labs	16,6	9,4	%
n for calculation	34	31	



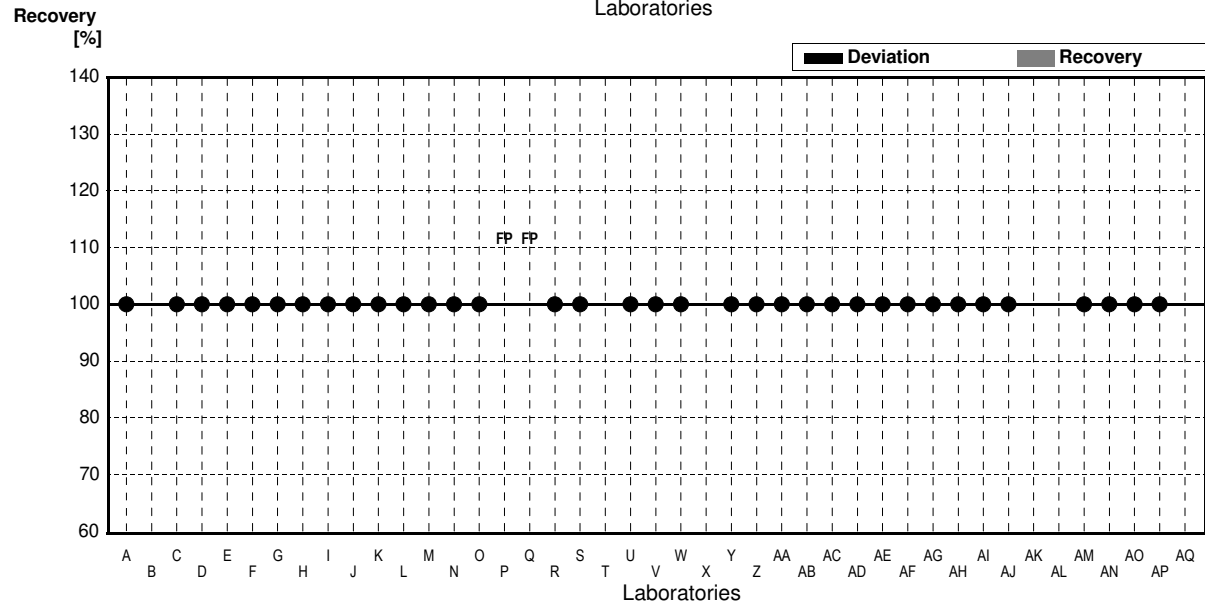
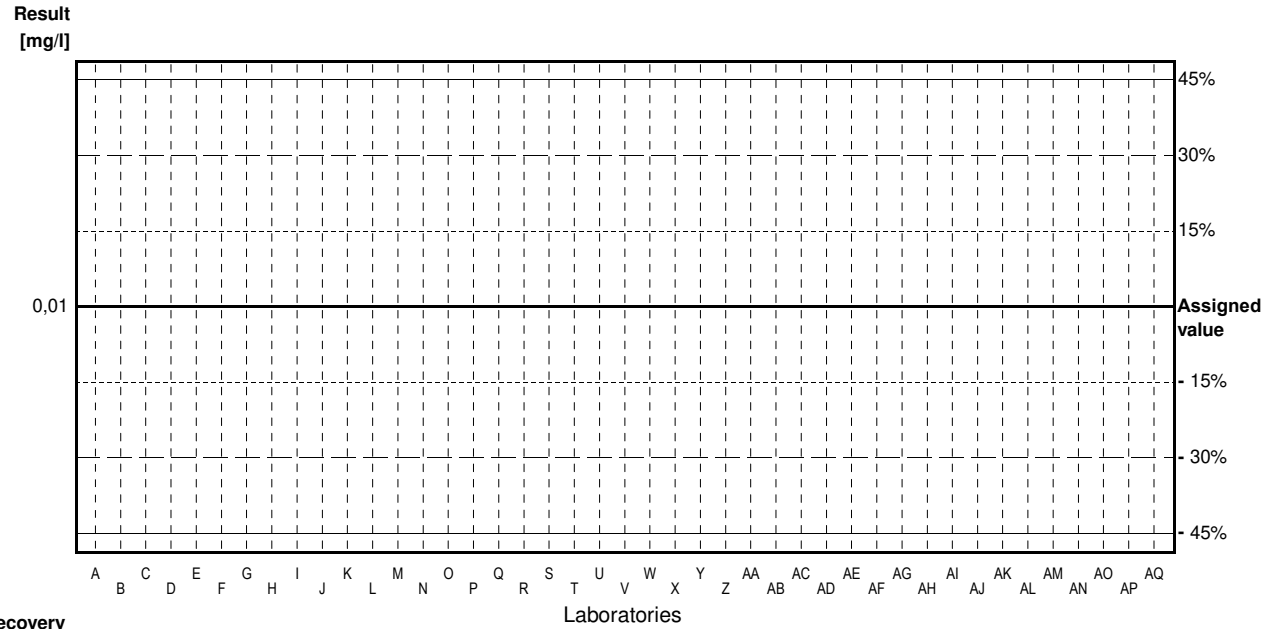
Sample N174B

Parameter Ammonium (as NH4)

Assigned 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	<0.03		mg/l	•	
B			mg/l		
C	<0.01	0.0033	mg/l	•	
D	<0.0100		mg/l	•	
E	<0.010		mg/l	•	
F	<0.008		mg/l	•	
G	<0.0064	0.003	mg/l	•	
H	0.00500	0.00115	mg/l	•	
I	<0.013		mg/l	•	
J	<0.02		mg/l	•	
K	<0.012		mg/l	•	
L	<0.01		mg/l	•	
M	<0.002		mg/l	•	
N	<0.020		mg/l	•	
O	<0.01		mg/l	•	
P	0.0250	0.0030	mg/l	FP	
Q	0.0180		mg/l	FP	
R	<0.1		mg/l	•	
S	<0.010		mg/l	•	
T			mg/l		
U	<0.00515		mg/l	•	
V	<0.02		mg/l	•	
W	<0.03	0	mg/l	•	
X			mg/l		
Y	<0.010		mg/l	•	
Z	<0.0090		mg/l	•	
AA	<0.005		mg/l	•	
AB	<0.05		mg/l	•	
AC	<0.050		mg/l	•	
AD	<0.010		mg/l	•	
AE	<0.010		mg/l	•	
AF	<0.038		mg/l	•	
AG	<0.02		mg/l	•	
AH	<0.02		mg/l	•	
AI	<0.01		mg/l	•	
AJ	<0.01		mg/l	•	
AK	n.n.		mg/l		
AL			mg/l		
AM	<0.01		mg/l	•	
AN	<0.01		mg/l	•	
AO	<0.0100		mg/l	•	
AP	<0.010		mg/l	•	
AQ			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			



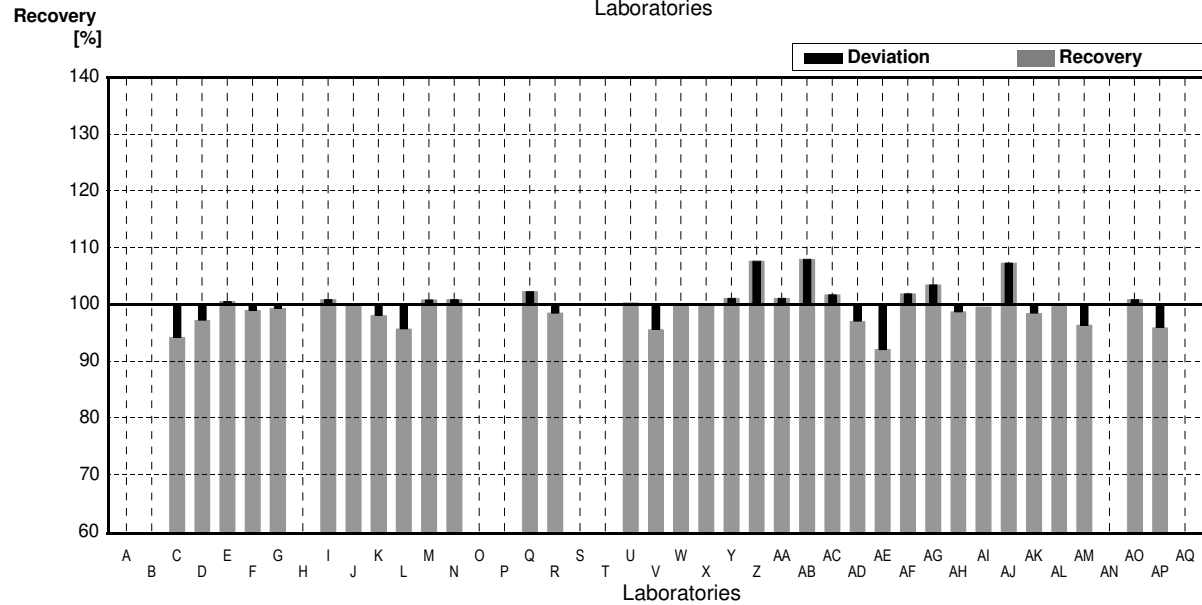
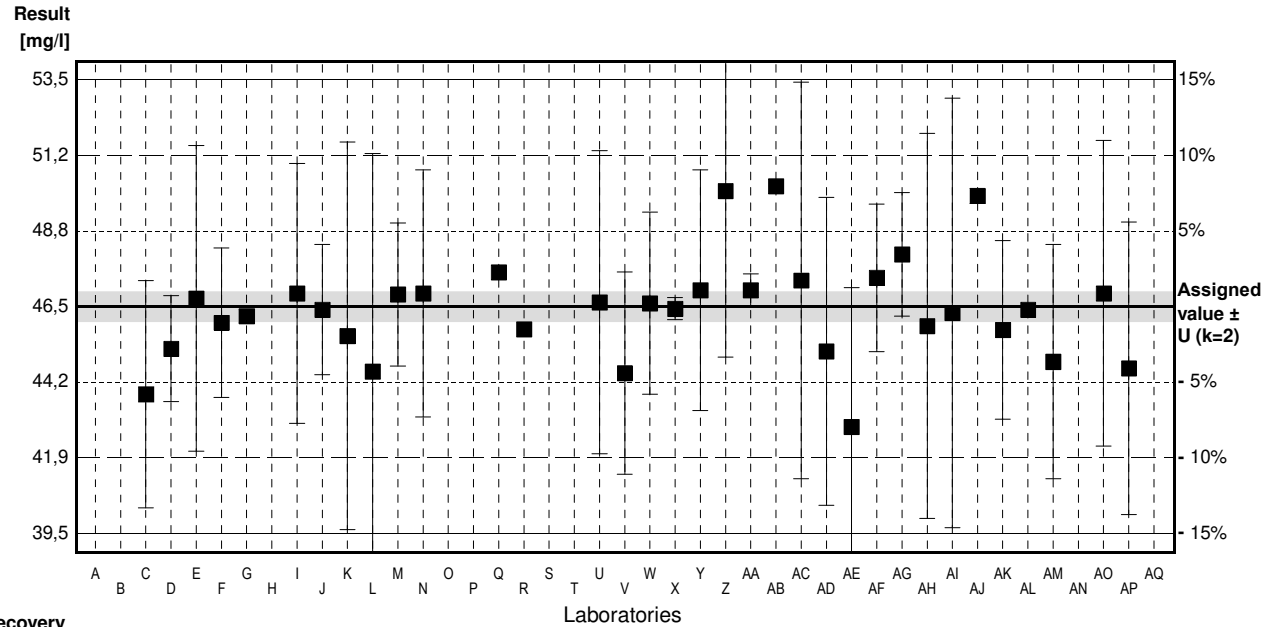
Sample N174A

Parameter Chloride

Assigned value ± U (k=2) 46,5 mg/l ± 0,5 mg/l
 IFA result ± U (k=2) 46,2 mg/l ± 1,6 mg/l
 Stability test ± U (k=2) 45,9 mg/l ± 1,6 mg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A			mg/l		
B			mg/l		
C	43.8	3.5	mg/l	94%	-2.15
D	45.2	1.63	mg/l	97%	-1.04
E	46.75	4.7	mg/l	101%	0.20
F	46.0	2.3	mg/l	99%	-0.40
G	46.20	0.2	mg/l	99%	-0.24
H			mg/l		
I	46.9	4	mg/l	101%	0.32
J	46.4	2	mg/l	100%	-0.08
K	45.596	5.964	mg/l	98%	-0.72
L	44.5	6.7	mg/l	96%	-1.59
M	46.87	2.20	mg/l	101%	0.29
N	46.9	3.8	mg/l	101%	0.32
O			mg/l		
P			mg/l		
Q	47.55		mg/l	102%	0.84
R	45.80		mg/l	98%	-0.56
S			mg/l		
T			mg/l		
U	46.63	4.663	mg/l	100%	0.10
V	44.45	3.11	mg/l	96%	-1.63
W	46.6	2.8	mg/l	100%	0.08
X	46.43	0.34	mg/l	100%	-0.06
Y	47.0	3.7	mg/l	101%	0.40
Z	50.05 *	5.11	mg/l	108%	2.83
AA	47.0	0.5	mg/l	101%	0.40
AB	50.2 *		mg/l	108%	2.95
AC	47.3	6.1	mg/l	102%	0.64
AD	45.118	4.74	mg/l	97%	-1.10
AE	42.8 *	4.28	mg/l	92%	-2.95
AF	47.38	2.27	mg/l	102%	0.70
AG	48.1	1.9	mg/l	103%	1.27
AH	45.9	5.92	mg/l	99%	-0.48
AI	46.3	6.6	mg/l	100%	-0.16
AJ	49.9 *	0.23	mg/l	107%	2.71
AK	45.78	2.75	mg/l	98%	-0.57
AL	46.4		mg/l	100%	-0.08
AM	44.8	3.6	mg/l	96%	-1.35
AN			mg/l		
AO	46.9	4.7	mg/l	101%	0.32
AP	44.6	4.5	mg/l	96%	-1.51
AQ			mg/l		

	All results	Outliers excl.	Unit
Mean ± CI(99%)	46,4 ± 0,8	46,2 ± 0,5	mg/l
Recov. ± CI(99%)	99,8 ± 1,6	99,3 ± 1,1	%
SD between labs	1,6	1,0	mg/l
RSD between labs	3,5	2,2	%
n for calculation	34	30	



Sample N174B

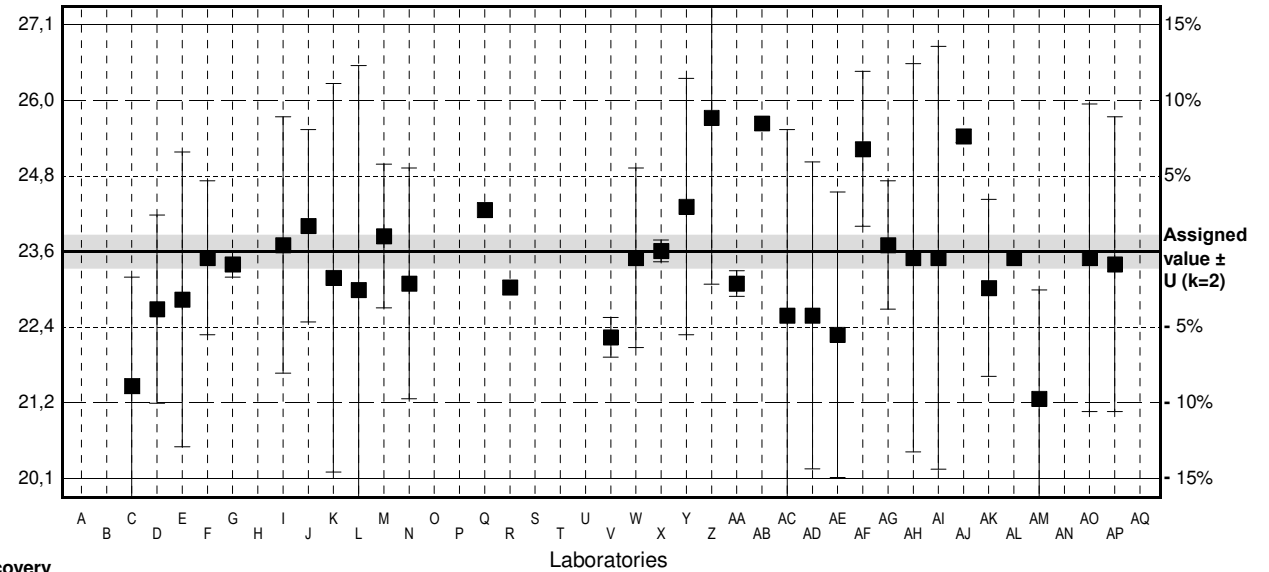
Parameter Chloride

Assigned value ± U (k=2) 23,6 mg/l ± 0,3 mg/l
 IFA result ± U (k=2) 23,4 mg/l ± 0,8 mg/l
 Stability test ± U (k=2) 22,9 mg/l ± 0,8 mg/l

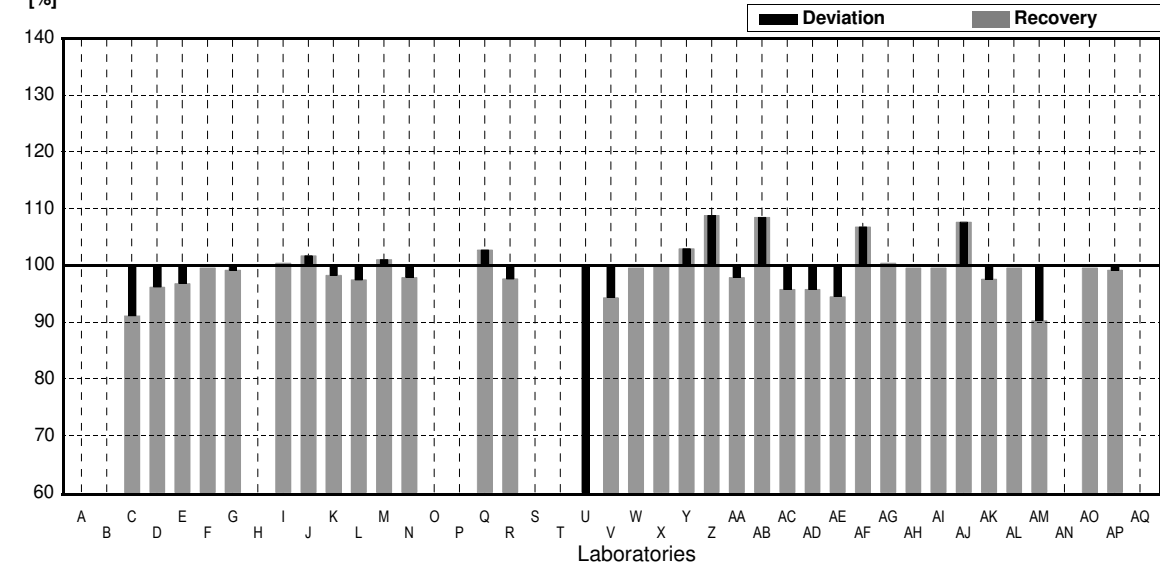
Lab Code	Result	±	Unit	Recovery	z-Score
A			mg/l		
B			mg/l		
C	21,5	1,7	mg/l	91%	-3,30
D	22,7	1,47	mg/l	96%	-1,41
E	22,85	2,3	mg/l	97%	-1,18
F	23,5	1,2	mg/l	100%	-0,16
G	23,40	0,2	mg/l	99%	-0,31
H			mg/l		
I	23,7	2	mg/l	100%	0,16
J	24,0	1,5	mg/l	102%	0,63
K	23,189	3,03	mg/l	98%	-0,65
L	23,0	3,5	mg/l	97%	-0,94
M	23,84	1,12	mg/l	101%	0,38
N	23,1	1,8	mg/l	98%	-0,78
O			mg/l		
P			mg/l		
Q	24,25		mg/l	103%	1,02
R	23,04		mg/l	98%	-0,88
S			mg/l		
T			mg/l		
U	13,61 *	2,316	mg/l	58%	-15,68
V	22,26	0,31	mg/l	94%	-2,10
W	23,5	1,4	mg/l	100%	-0,16
X	23,61	0,17	mg/l	100%	0,02
Y	24,3	2,0	mg/l	103%	1,10
Z	25,688 *	2,60	mg/l	109%	3,28
AA	23,1	0,2	mg/l	98%	-0,78
AB	25,6 *		mg/l	108%	3,14
AC	22,6	2,9	mg/l	96%	-1,57
AD	22,6	2,396	mg/l	96%	-1,57
AE	22,3	2,23	mg/l	94%	-2,04
AF	25,20	1,21	mg/l	107%	2,51
AG	23,7	1,0	mg/l	100%	0,16
AH	23,5	3,03	mg/l	100%	-0,16
AI	23,5	3,3	mg/l	100%	-0,16
AJ	25,4	0,10	mg/l	108%	2,82
AK	23,03	1,38	mg/l	98%	-0,89
AL	23,5		mg/l	100%	-0,16
AM	21,3 *	1,7	mg/l	90%	-3,61
AN			mg/l		
AO	23,5	2,4	mg/l	100%	-0,16
AP	23,4	2,3	mg/l	99%	-0,31
AQ			mg/l		

	All results	Outliers excl.	Unit
Mean ± CI(99%)	23,2 ± 0,9	23,4 ± 0,4	mg/l
Recov. ± CI(99%)	98,1 ± 3,9	99,0 ± 1,7	%
SD between labs	2,0	0,8	mg/l
RSD between labs	8,5	3,4	%
n for calculation	34	30	

Result [mg/l]



Recovery [%]



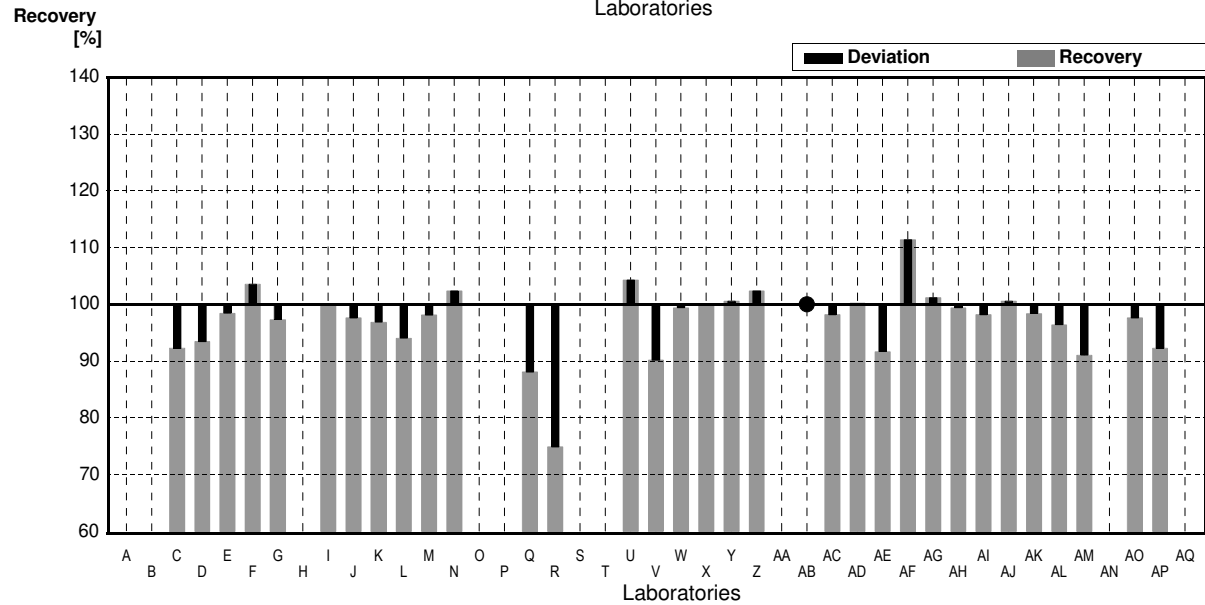
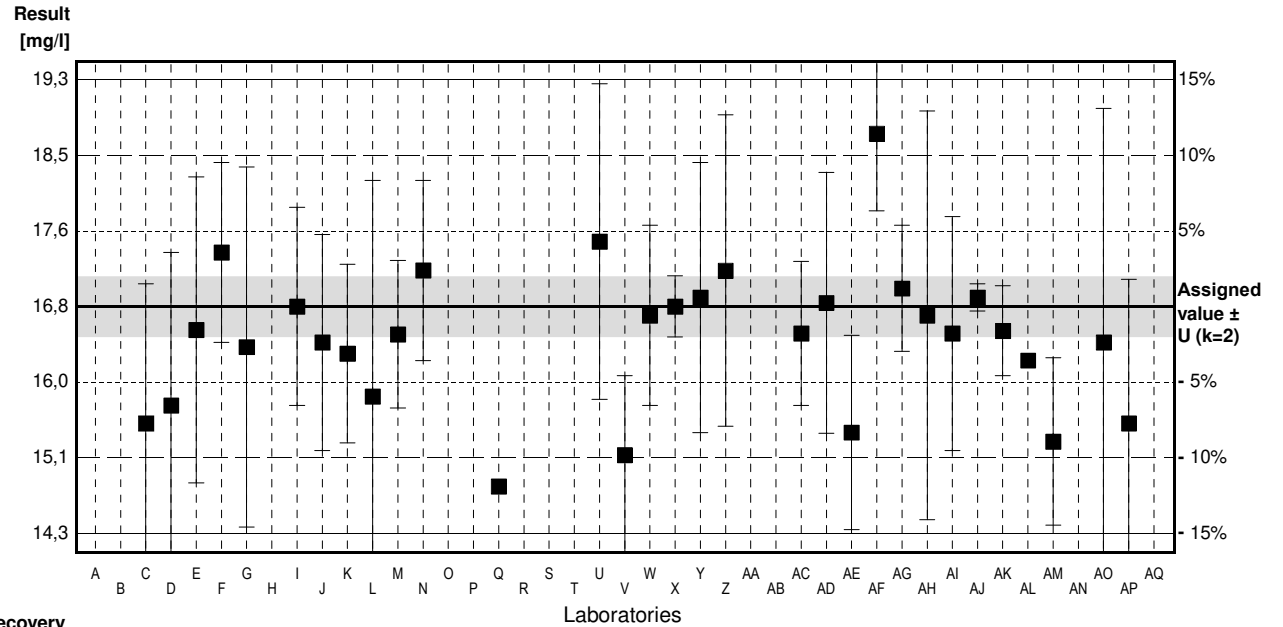
Sample N174A

Parameter Sulphate (as SO4)

Assigned value ± U (k=2) 16,8 mg/l ± 0,3 mg/l
 IFA result ± U (k=2) 16,5 mg/l ± 0,5 mg/l
 Stability test ± U (k=2) 16,7 mg/l ± 0,5 mg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A			mg/l		
B			mg/l		
C	15.5	1.55	mg/l	92%	-2.58
D	15.7	1.70	mg/l	93%	-2.18
E	16.54	1.7	mg/l	98%	-0.52
F	17.4	1.0	mg/l	104%	1.19
G	16.35	2	mg/l	97%	-0.89
H			mg/l		
I	16.8	1.1	mg/l	100%	0.00
J	16.4	1.2	mg/l	98%	-0.79
K	16.276	0.991	mg/l	97%	-1.04
L	15.8	2.4	mg/l	94%	-1.98
M	16.49	0.82	mg/l	98%	-0.62
N	17.2	1.0	mg/l	102%	0.79
O			mg/l		
P			mg/l		
Q	14.80		mg/l	88%	-3.97
R	12.58	*	mg/l	75%	-8.37
S			mg/l		
T			mg/l		
U	17.52	1.752	mg/l	104%	1.43
V	15.15	0.88	mg/l	90%	-3.27
W	16.7	1.0	mg/l	99%	-0.20
X	16.80	0.34	mg/l	100%	0.00
Y	16.9	1.5	mg/l	101%	0.20
Z	17.198	1.73	mg/l	102%	0.79
AA			mg/l		
AB	<40		mg/l	-	
AC	16.5	0.8	mg/l	98%	-0.60
AD	16.84	1.448	mg/l	100%	0.08
AE	15.4	1.08	mg/l	92%	-2.78
AF	18.72	*	mg/l	111%	3.81
AG	17.0	0.7	mg/l	101%	0.40
AH	16.7	2.27	mg/l	99%	-0.20
AI	16.5	1.3	mg/l	98%	-0.60
AJ	16.9	0.15	mg/l	101%	0.20
AK	16.53	0.50	mg/l	98%	-0.54
AL	16.2		mg/l	96%	-1.19
AM	15.3	0.93	mg/l	91%	-2.98
AN			mg/l		
AO	16.4	2.6	mg/l	98%	-0.79
AP	15.5	1.6	mg/l	92%	-2.58
AQ			mg/l		

	All results	Outliers excl.	Unit
Mean ± CI(99%)	16,3 ± 0,5	16,4 ± 0,4	mg/l
Recov. ± CI(99%)	97,2 ± 3,0	97,5 ± 2,1	%
SD between labs	1,0	0,7	mg/l
RSD between labs	6,4	4,2	%
n for calculation	32	30	



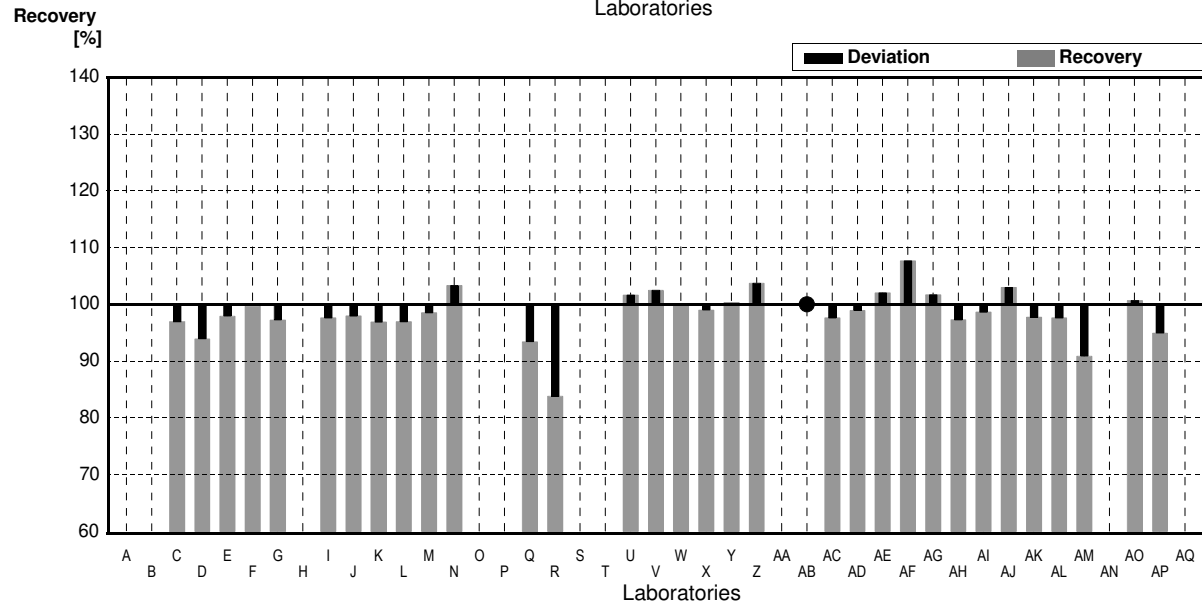
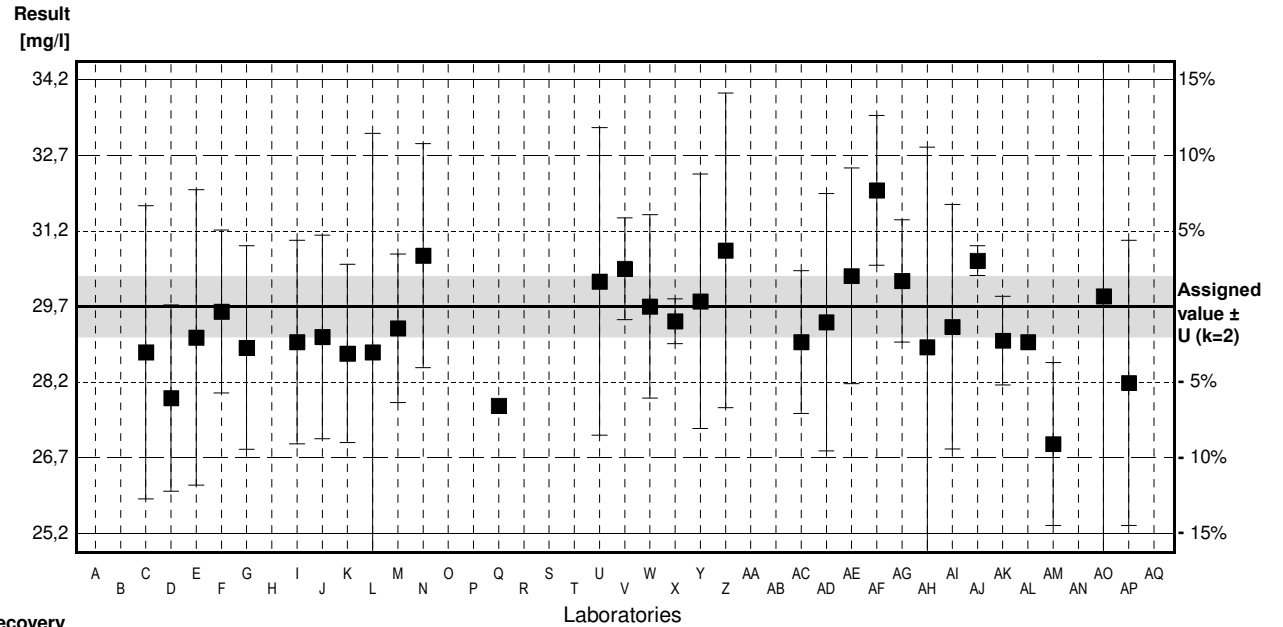
Sample N174B

Parameter Sulphate (as SO4)

Assigned value ± U (k=2) 29,7 mg/l ± 0,6 mg/l
 IFA result ± U (k=2) 29,5 mg/l ± 0,8 mg/l
 Stability test ± U (k=2) 29,1 mg/l ± 0,8 mg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A			mg/l		
B			mg/l		
C	28.8	2.88	mg/l	97%	-1.01
D	27.9	1.83	mg/l	94%	-2.02
E	29.09	2.9	mg/l	98%	-0.68
F	29.6	1.6	mg/l	100%	-0.11
G	28.89	2	mg/l	97%	-0.91
H			mg/l		
I	29.0	2	mg/l	98%	-0.79
J	29.1	2	mg/l	98%	-0.67
K	28.776	1.752	mg/l	97%	-1.04
L	28.8	4.3	mg/l	97%	-1.01
M	29.27	1.46	mg/l	99%	-0.48
N	30.7	2.2	mg/l	103%	1.12
O			mg/l		
P			mg/l		
Q	27.75		mg/l	93%	-2.19
R	24.89 *		mg/l	84%	-5.40
S			mg/l		
T			mg/l		
U	30.19	3.019	mg/l	102%	0.55
V	30.44	1.00	mg/l	102%	0.83
W	29.7	1.8	mg/l	100%	0.00
X	29.41	0.44	mg/l	99%	-0.33
Y	29.8	2.5	mg/l	100%	0.11
Z	30.801	3.09	mg/l	104%	1.24
AA			mg/l		
AB	<40		mg/l	-	
AC	29.0	1.4	mg/l	98%	-0.79
AD	29.39	2.528	mg/l	99%	-0.35
AE	30.3	2.12	mg/l	102%	0.67
AF	31.98 *	1.47	mg/l	108%	2.56
AG	30.2	1.2	mg/l	102%	0.56
AH	28.9	3.93	mg/l	97%	-0.90
AI	29.3	2.4	mg/l	99%	-0.45
AJ	30.6	0.29	mg/l	103%	1.01
AK	29.03	0.87	mg/l	98%	-0.75
AL	29.0		mg/l	98%	-0.79
AM	27.0 *	1.6	mg/l	91%	-3.03
AN			mg/l		
AO	29.9	4.8	mg/l	101%	0.22
AP	28.2	2.8	mg/l	95%	-1.68
AQ			mg/l		

	All results	Outliers excl.	Unit
Mean ± CI(99%)	29,2 ± 0,6	29,4 ± 0,4	mg/l
Recov. ± CI(99%)	98,5 ± 2,1	98,9 ± 1,4	%
SD between labs	1,3	0,8	mg/l
RSD between labs	4,3	2,7	%
n for calculation	32	29	



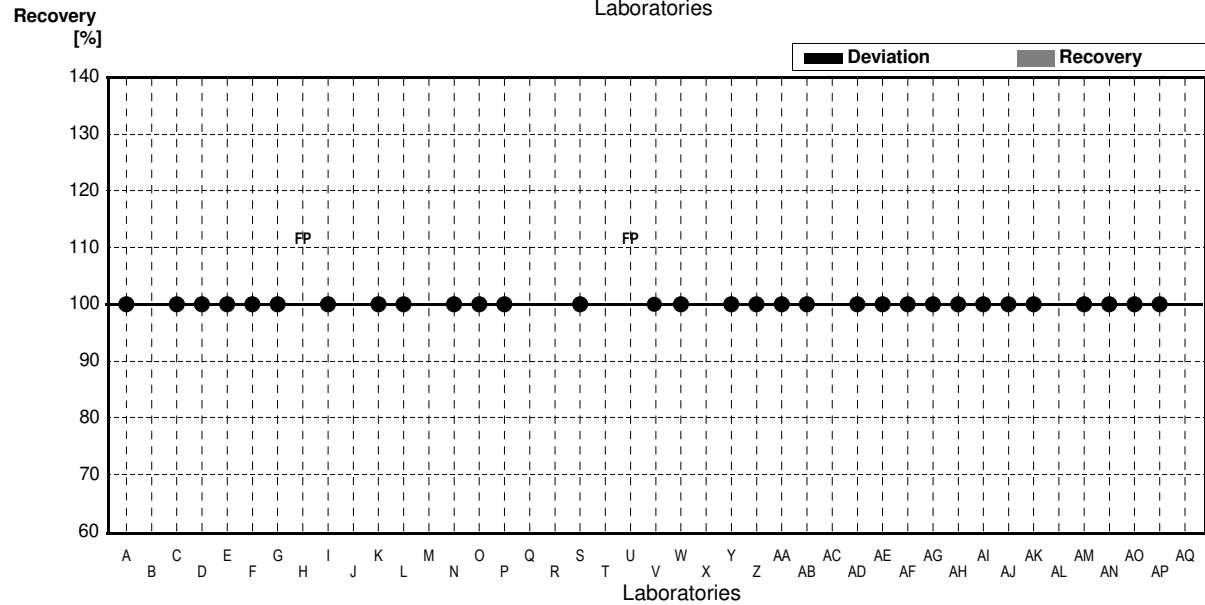
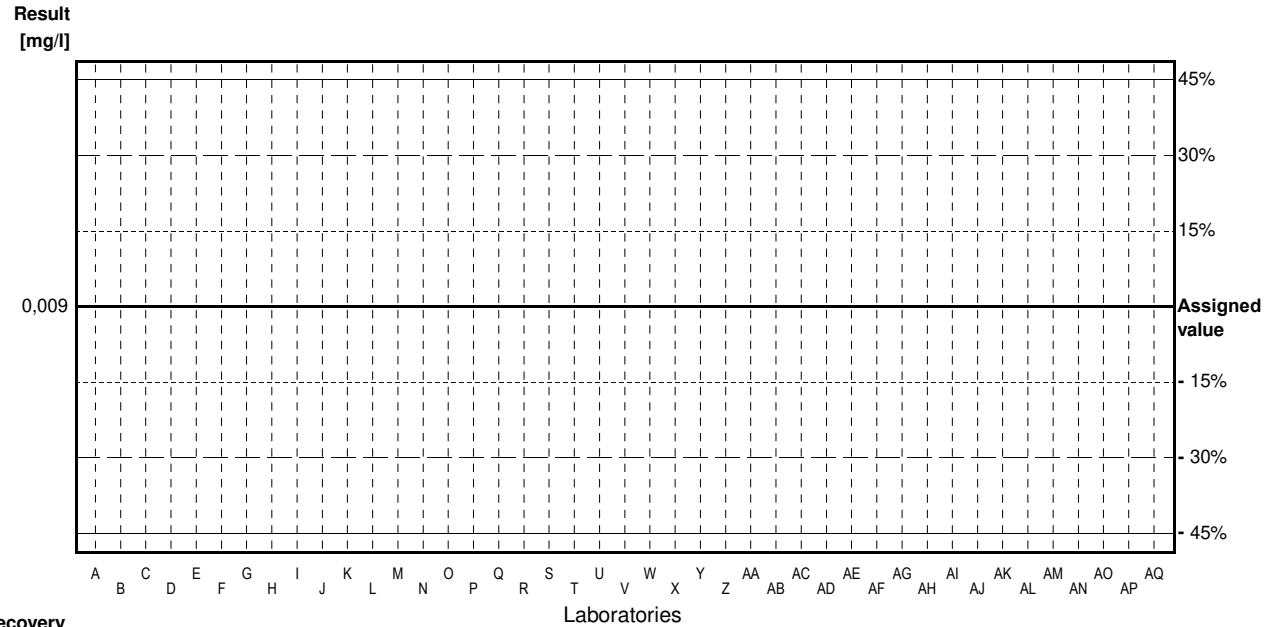
Sample N174A

Parameter Orthophosphate (as PO4)

Assigned 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	<0.007		mg/l	•	
B			mg/l	•	
C	<0.01	0.0033	mg/l	•	
D	<0.0150		mg/l	•	
E	<0.009		mg/l	•	
F	<0.006		mg/l	•	
G	0.00307	0.0015	mg/l	•	
H	0.0105	0.00072	mg/l	FP	
I	<0.01		mg/l	•	
J			mg/l	•	
K	<0.015		mg/l	•	
L	<0.1		mg/l	•	
M			mg/l	•	
N	<0.0090		mg/l	•	
O	<0.019		mg/l	•	
P	<0.01		mg/l	•	
Q			mg/l	•	
R			mg/l	•	
S	<0.04		mg/l	•	
T			mg/l	•	
U	0.0120	0.00180	mg/l	FP	
V	0.0092	0.0011	mg/l	•	
W	<0.03	0	mg/l	•	
X			mg/l	•	
Y	<0.010		mg/l	•	
Z	<0.001		mg/l	•	
AA	<0.006		mg/l	•	
AB	<0.15		mg/l	•	
AC			mg/l	•	
AD	<0.010		mg/l	•	
AE	<0.015		mg/l	•	
AF	<0.0153		mg/l	•	
AG	<0.01		mg/l	•	
AH	<0.1		mg/l	•	
AI	<0.01		mg/l	•	
AJ	<0.009		mg/l	•	
AK	<0.005		mg/l	•	
AL			mg/l	•	
AM	<0.01		mg/l	•	
AN	<0.015		mg/l	•	
AO	<0.015		mg/l	•	
AP	<0.015		mg/l	•	
AQ			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			



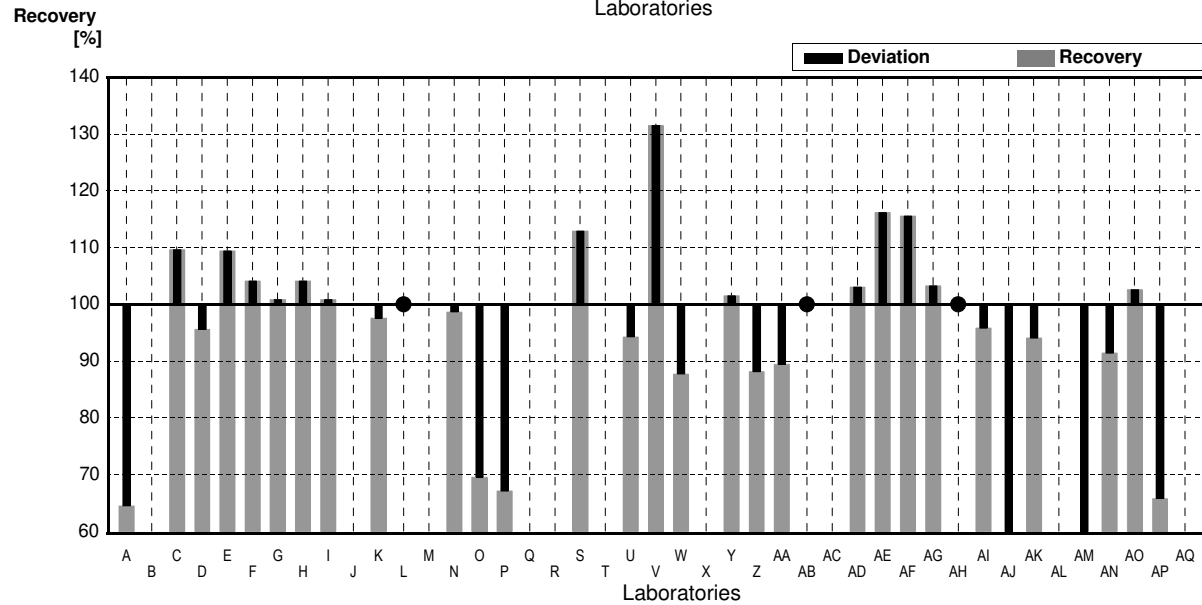
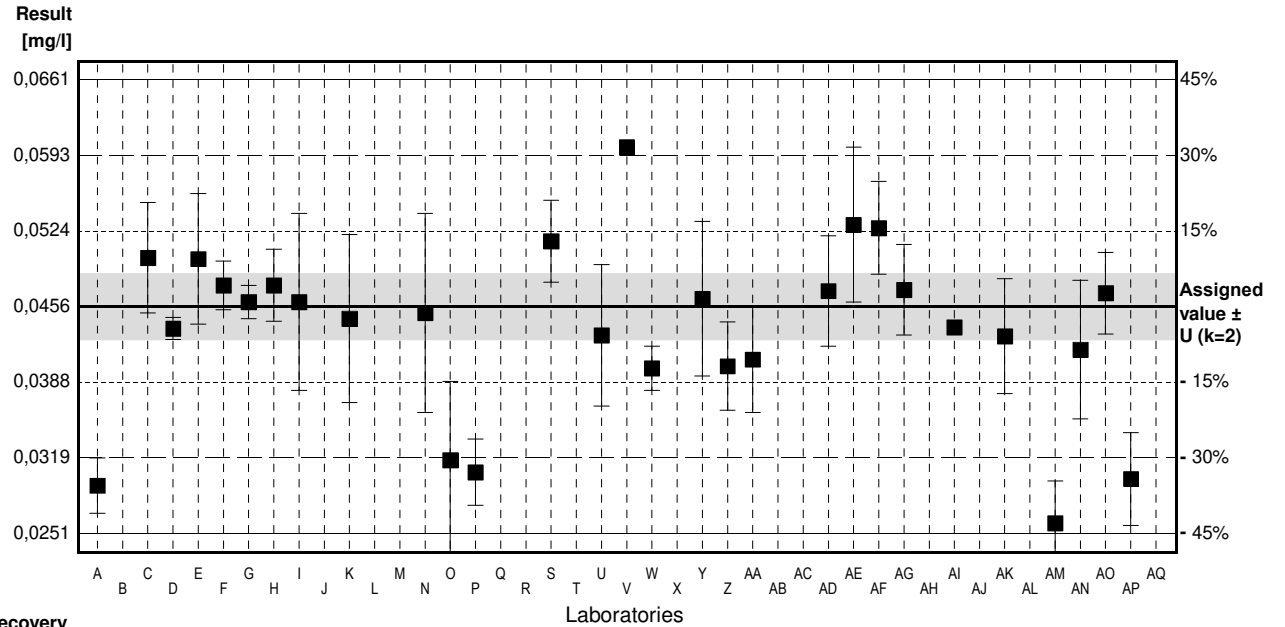
Sample N174B

Parameter Orthophosphate (as PO4)

Assigned value ± U (k=2) 0,0456 mg/l ± 0,0030 mg/l
 IFA result ± U (k=2) 0,0460 mg/l ± 0,0015 mg/l
 Stability test ± U (k=2) 0,0456 mg/l ± 0,0015 mg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A	0.0294	0.0025	mg/l	64%	-3.86
B			mg/l		
C	0.050	0.005	mg/l	110%	1.05
D	0.0436	0.00099	mg/l	96%	-0.48
E	0.0499	0.0059	mg/l	109%	1.02
F	0.0475	0.0022	mg/l	104%	0.45
G	0.0460	0.0015	mg/l	101%	0.10
H	0.0475	0.00326	mg/l	104%	0.45
I	0.0460	0.008	mg/l	101%	0.10
J			mg/l		
K	0.0445	0.0076	mg/l	98%	-0.26
L	<0.1		mg/l	*	
M			mg/l		
N	0.0450	0.0090	mg/l	99%	-0.14
O	0.0317	0.0071	mg/l	70%	-3.31
P	0.0306	0.0030	mg/l	67%	-3.58
Q			mg/l		
R			mg/l		
S	0.0515	0.0037	mg/l	113%	1.41
T			mg/l		
U	0.0430	0.0064	mg/l	94%	-0.62
V	0.060	0.0	mg/l	132%	3.43
W	0.0400	0.002	mg/l	88%	-1.33
X			mg/l		
Y	0.0463	0.0070	mg/l	102%	0.17
Z	0.0402	0.004	mg/l	88%	-1.29
AA	0.0408	0.0048	mg/l	89%	-1.14
AB	<0.15		mg/l	*	
AC			mg/l		
AD	0.0470	0.005	mg/l	103%	0.33
AE	0.053	0.007	mg/l	116%	1.76
AF	0.0527	0.0042	mg/l	116%	1.69
AG	0.0471	0.0041	mg/l	103%	0.36
AH	<0.1		mg/l	*	
AI	0.0437		mg/l	96%	-0.45
AJ	0.0245 *	0.001	mg/l	54%	-5.03
AK	0.0429	0.0052	mg/l	94%	-0.64
AL			mg/l		
AM	0.0260 *	0.0038	mg/l	57%	-4.67
AN	0.0417	0.00626	mg/l	91%	-0.93
AO	0.0468	0.0037	mg/l	103%	0.29
AP	0.0300	0.0042	mg/l	66%	-3.72
AQ			mg/l		

	All results	Outliers excl.	Unit
Mean ± CI(99%)	0,0430 ± 0,0043	0,0442 ± 0,0038	mg/l
Recov. ± CI(99%)	94,2 ± 9,3	97,0 ± 8,2	%
SD between labs	0,0084	0,0072	mg/l
RSD between labs	19,6	16,2	%
n for calculation	30	28	



Sample N174A

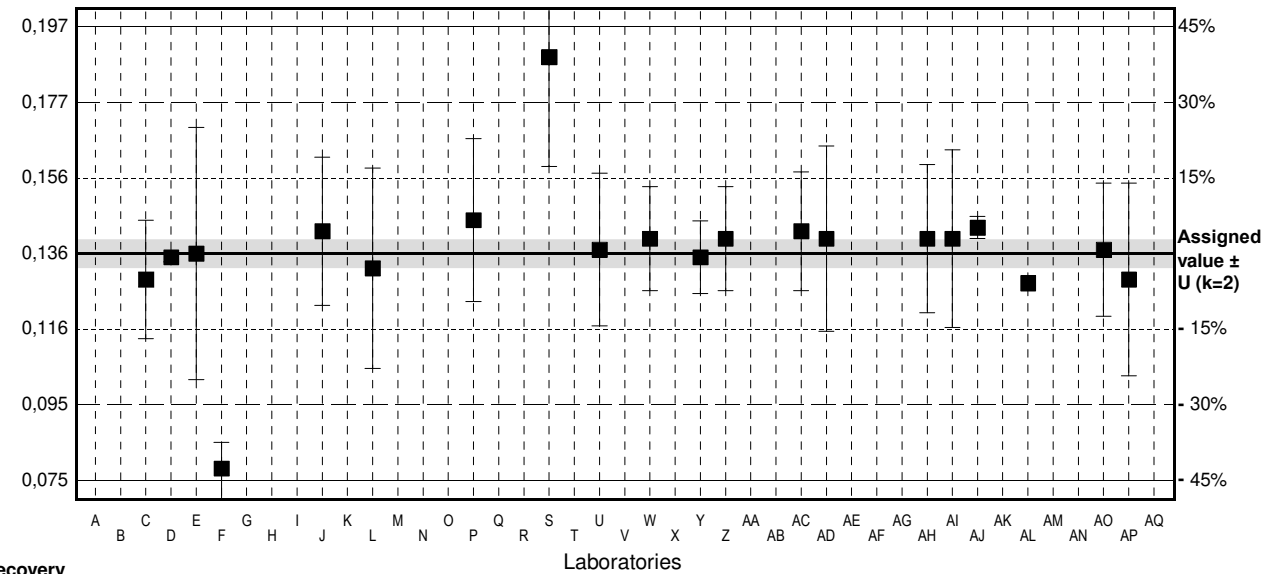
Parameter Boron

Assigned value ± U (k=2) 0,136 mg/l ± 0,004 mg/l
 IFA result ± U (k=2) 0,135 mg/l ± 0,012 mg/l
 Stability test ± U (k=2) 0,129 mg/l ± 0,011 mg/l

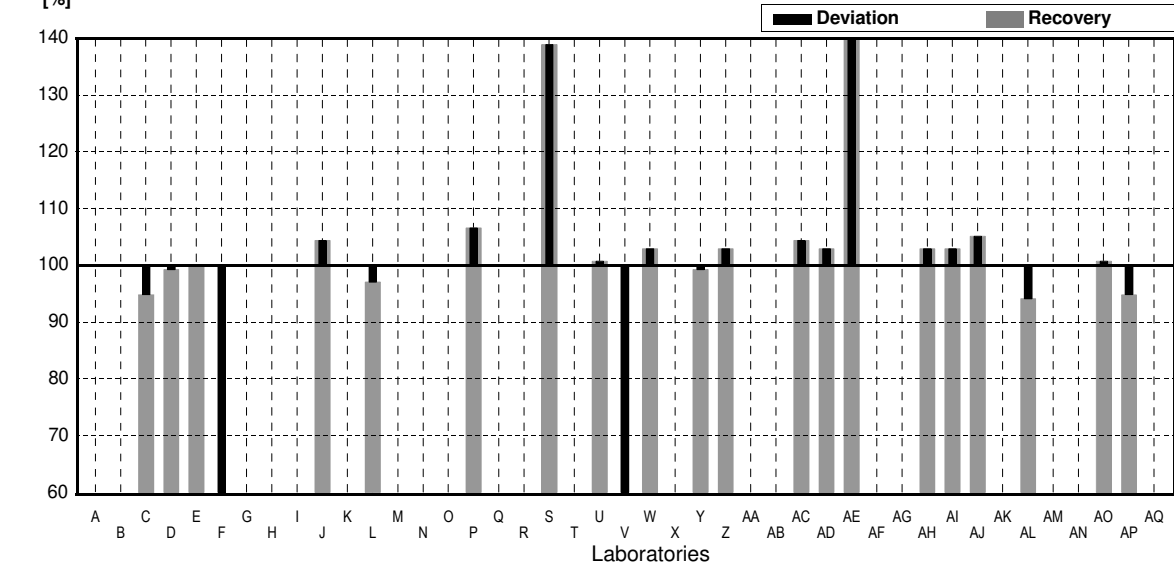
Lab Code	Result	±	Unit	Recovery	z-Score
A			mg/l		
B			mg/l		
C	0.129	0.016	mg/l	95%	-0.72
D	0.135	0.00132	mg/l	99%	-0.10
E	0.136	0.034	mg/l	100%	0.00
F	0.0780 *	0.0070	mg/l	57%	-6.01
G			mg/l		
H			mg/l		
I			mg/l		
J	0.142	0.02	mg/l	104%	0.62
K			mg/l		
L	0.132	0.027	mg/l	97%	-0.41
M			mg/l		
N			mg/l		
O			mg/l		
P	0.145	0.022	mg/l	107%	0.93
Q			mg/l		
R			mg/l		
S	0.189 *	0.0295	mg/l	139%	5.49
T			mg/l		
U	0.137	0.0206	mg/l	101%	0.10
V	0.0155 *	0.00071	mg/l	11%	-12.48
W	0.140	0.014	mg/l	103%	0.41
X			mg/l		
Y	0.135	0.0098	mg/l	99%	-0.10
Z	0.140	0.014	mg/l	103%	0.41
AA			mg/l		
AB			mg/l		
AC	0.142	0.016	mg/l	104%	0.62
AD	0.140	0.025	mg/l	103%	0.41
AE	132 *	15.8	mg/l	97059%	13656.17
AF			mg/l		
AG			mg/l		
AH	0.140	0.02	mg/l	103%	0.41
AI	0.140	0.024	mg/l	103%	0.41
AJ	0.143	0.003	mg/l	105%	0.72
AK			mg/l		
AL	0.128		mg/l	94%	-0.83
AM			mg/l		
AN			mg/l		
AO	0.137	0.018	mg/l	101%	0.10
AP	0.129	0.026	mg/l	95%	-0.72
AQ			mg/l		

	All results	Outliers excl.	Unit
Mean ± CI(99%)	6,125 ± 16,963	0,137 ± 0,003	mg/l
Recov. ± CI(99%)	4503,8 ± 12472,	100,9 ± 2,5	%
SD between labs	28,115	0,005	mg/l
RSD between labs	459,0	3,7	%
n for calculation	22	18	

Result [mg/l]



Recovery [%]



Sample N174B

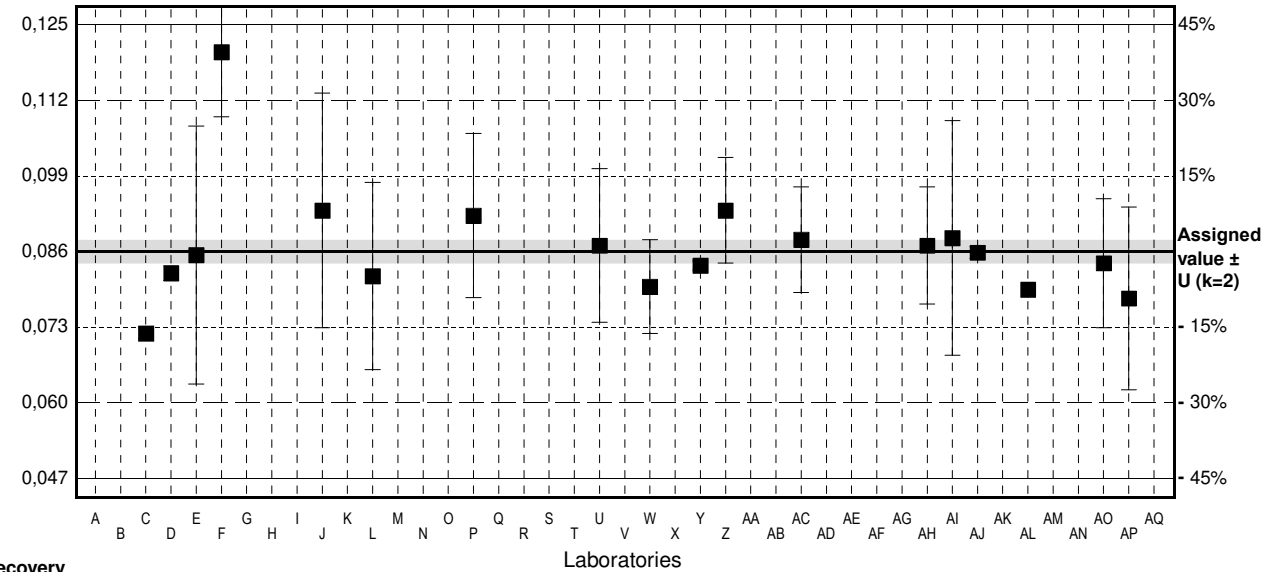
Parameter Boron

Assigned value ± U (k=2) 0,086 mg/l ± 0,002 mg/l
 IFA result ± U (k=2) 0,086 mg/l ± 0,007 mg/l
 Stability test ± U (k=2) 0,081 mg/l ± 0,007 mg/l

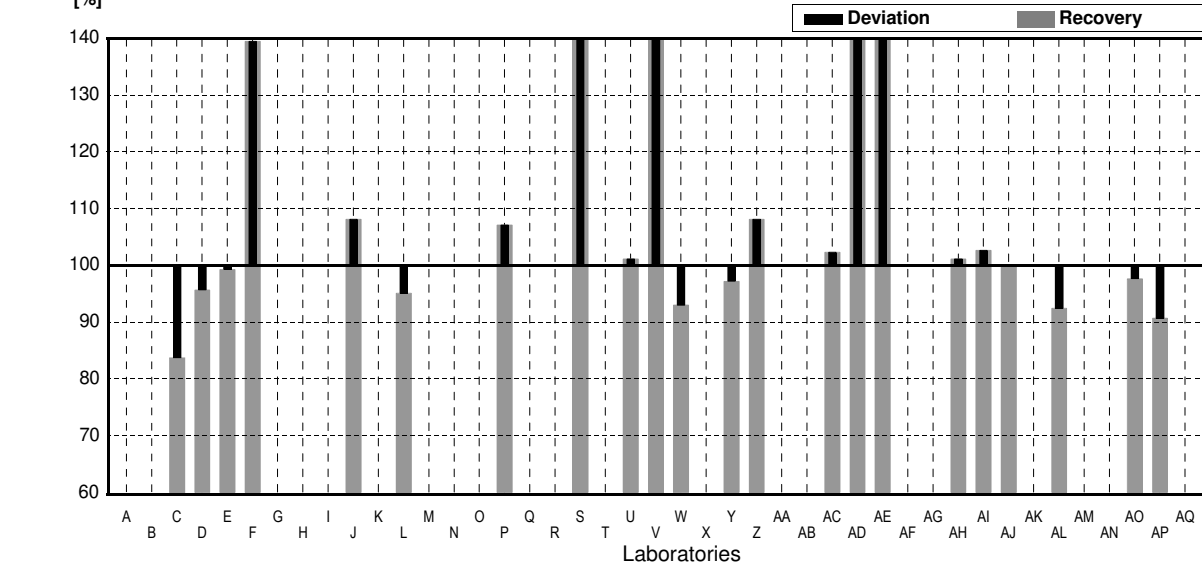
Lab Code	Result	±	Unit	Recovery	z-Score
A			mg/l		
B			mg/l		
C	0.072	0.0009	mg/l	84%	-2.29
D	0.0823	0.00122	mg/l	96%	-0.61
E	0.0854	0.022	mg/l	99%	-0.10
F	0.120 *	0.011	mg/l	140%	5.57
G			mg/l		
H			mg/l		
I			mg/l		
J	0.093	0.02	mg/l	108%	1.15
K			mg/l		
L	0.0818	0.016	mg/l	95%	-0.69
M			mg/l		
N			mg/l		
O			mg/l		
P	0.0921	0.014	mg/l	107%	1.00
Q			mg/l		
R			mg/l		
S	0.1455 *	0.0227	mg/l	169%	9.74
T			mg/l		
U	0.087	0.0131	mg/l	101%	0.16
V	7.00 *	1.41	mg/l	8140%	1132.33
W	0.080	0.008	mg/l	93%	-0.98
X			mg/l		
Y	0.0836	0.0008	mg/l	97%	-0.39
Z	0.093	0.009	mg/l	108%	1.15
AA			mg/l		
AB			mg/l		
AC	0.088	0.009	mg/l	102%	0.33
AD	89.24 *	16	mg/l	103767%	14601.05
AE	81.4 *	9.77	mg/l	94651%	13317.07
AF			mg/l		
AG			mg/l		
AH	0.087	0.01	mg/l	101%	0.16
AI	0.0883	0.02	mg/l	103%	0.38
AJ	0.0858	0.001	mg/l	100%	-0.03
AK			mg/l		
AL	0.0795		mg/l	92%	-1.06
AM			mg/l		
AN			mg/l		
AO	0.0840	0.011	mg/l	98%	-0.33
AP	0.0780	0.0156	mg/l	91%	-1.31
AQ			mg/l		

	All results	Outliers excl.	Unit
Mean ± CI(99%)	8,152 ± 15,114	0,085 ± 0,004	mg/l
Recov. ± CI(99%)	9479,2 ± 17574,	98,5 ± 4,6	%
SD between labs	25,049	0,006	mg/l
RSD between labs	307,3	6,6	%
n for calculation	22	17	

Result [mg/l]



Recovery [%]



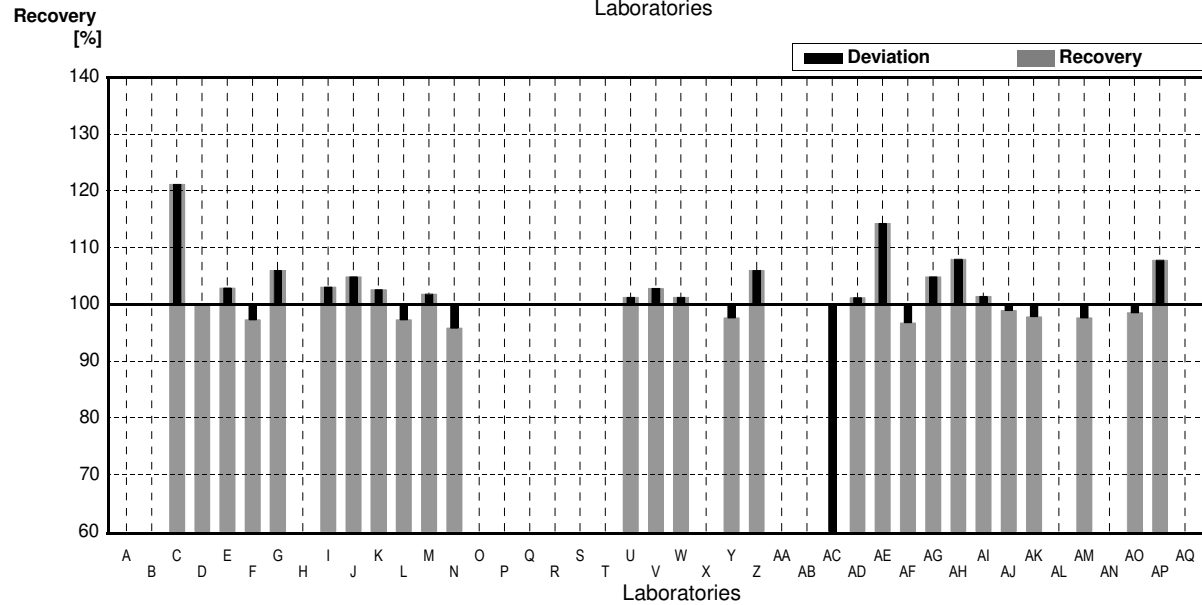
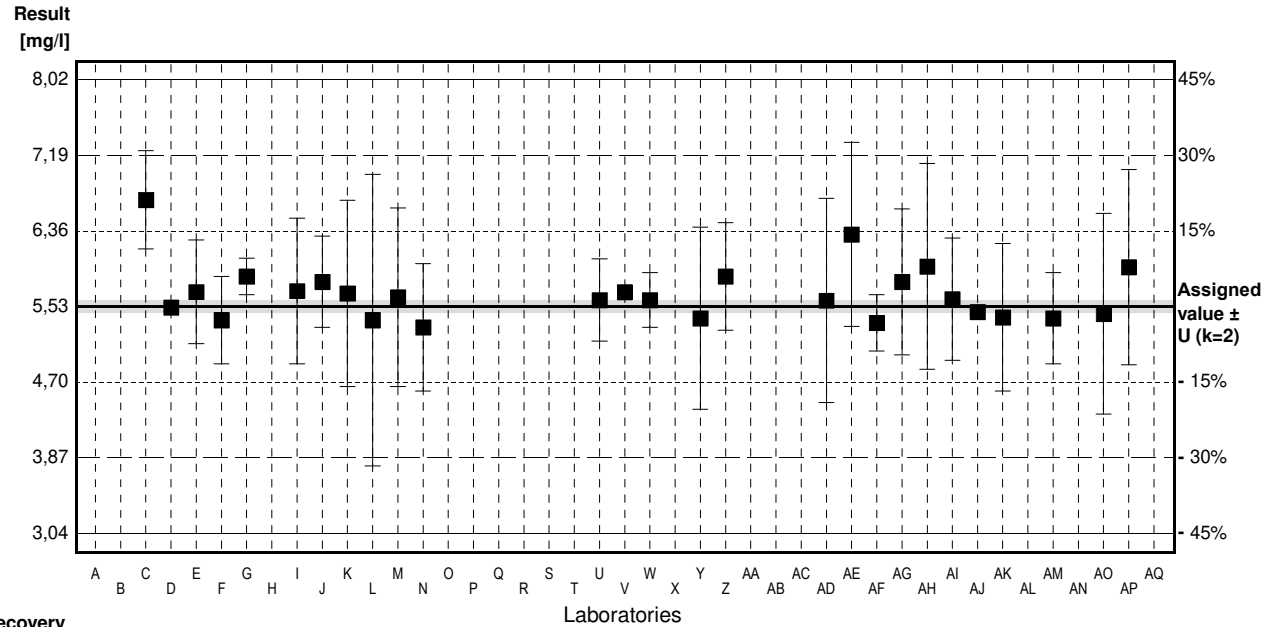
Sample N174A

Parameter DOC (as C)

Assigned value ± U (k=2) 5,53 mg/l ± 0,07 mg/l
 IFA result ± U (k=2) 5,42 mg/l ± 0,11 mg/l
 Stability test ± U (k=2) 5,49 mg/l ± 0,11 mg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A			mg/l		
B			mg/l		
C	6.7 *	0.54	mg/l	121%	3.92
D	5.52	0.0457	mg/l	100%	-0.03
E	5.69	0.57	mg/l	103%	0.54
F	5.38	0.48	mg/l	97%	-0.50
G	5.86	0.2	mg/l	106%	1.11
H			mg/l		
I	5.70	0.8	mg/l	103%	0.57
J	5.8	0.5	mg/l	105%	0.90
K	5.673	1.021	mg/l	103%	0.48
L	5.38	1.6	mg/l	97%	-0.50
M	5.631	0.98	mg/l	102%	0.34
N	5.3	0.7	mg/l	96%	-0.77
O			mg/l		
P			mg/l		
Q			mg/l		
R			mg/l		
S			mg/l		
T			mg/l		
U	5.60	0.45	mg/l	101%	0.23
V	5.688	0.068	mg/l	103%	0.53
W	5.6	0.3	mg/l	101%	0.23
X			mg/l		
Y	5.4	1.0	mg/l	98%	-0.44
Z	5.86	0.59	mg/l	106%	1.11
AA			mg/l		
AB			mg/l		
AC	0.489 *	0.080	mg/l	9%	-16.88
AD	5.595	1.119	mg/l	101%	0.22
AE	6.32	1.01	mg/l	114%	2.65
AF	5.35	0.31	mg/l	97%	-0.60
AG	5.8	0.8	mg/l	105%	0.90
AH	5.97	1.13	mg/l	108%	1.47
AI	5.61	0.67	mg/l	101%	0.27
AJ	5.47	0.031	mg/l	99%	-0.20
AK	5.41	0.81	mg/l	98%	-0.40
AL			mg/l		
AM	5.4	0.50	mg/l	98%	-0.44
AN			mg/l		
AO	5.45	1.1	mg/l	99%	-0.27
AP	5.96	1.07	mg/l	108%	1.44
AQ			mg/l		

	All results	Outliers excl.	Unit
Mean ± CI(99%)	5,49 ± 0,54	5,63 ± 0,13	mg/l
Recov. ± CI(99%)	99,2 ± 9,7	101,8 ± 2,4	%
SD between labs	1,03	0,24	mg/l
RSD between labs	18,7	4,2	%
n for calculation	28	26	



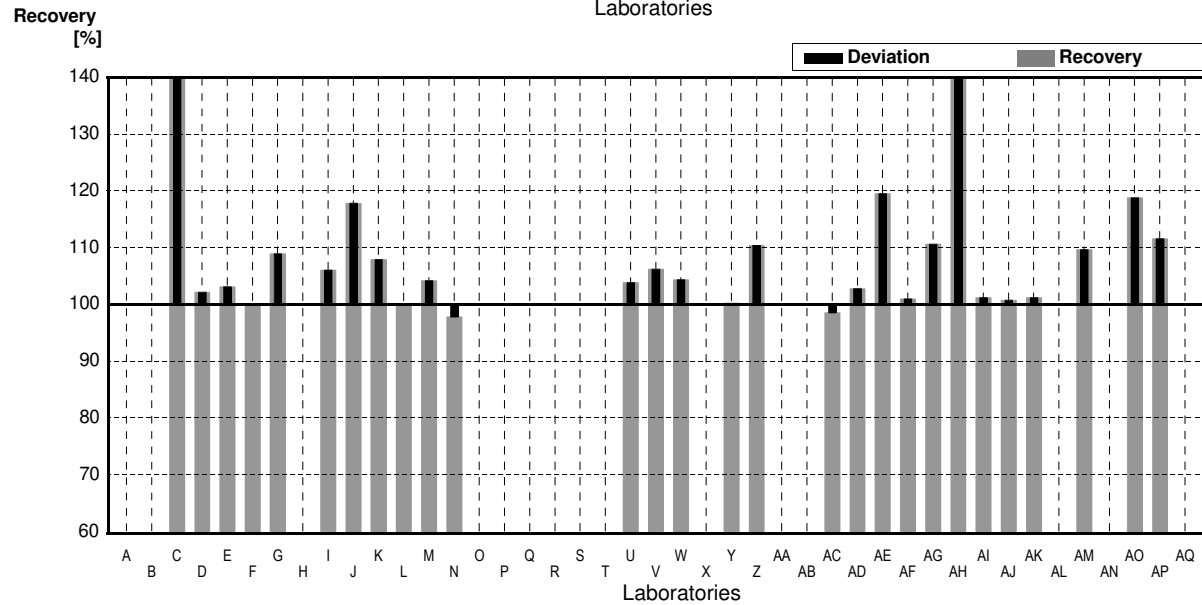
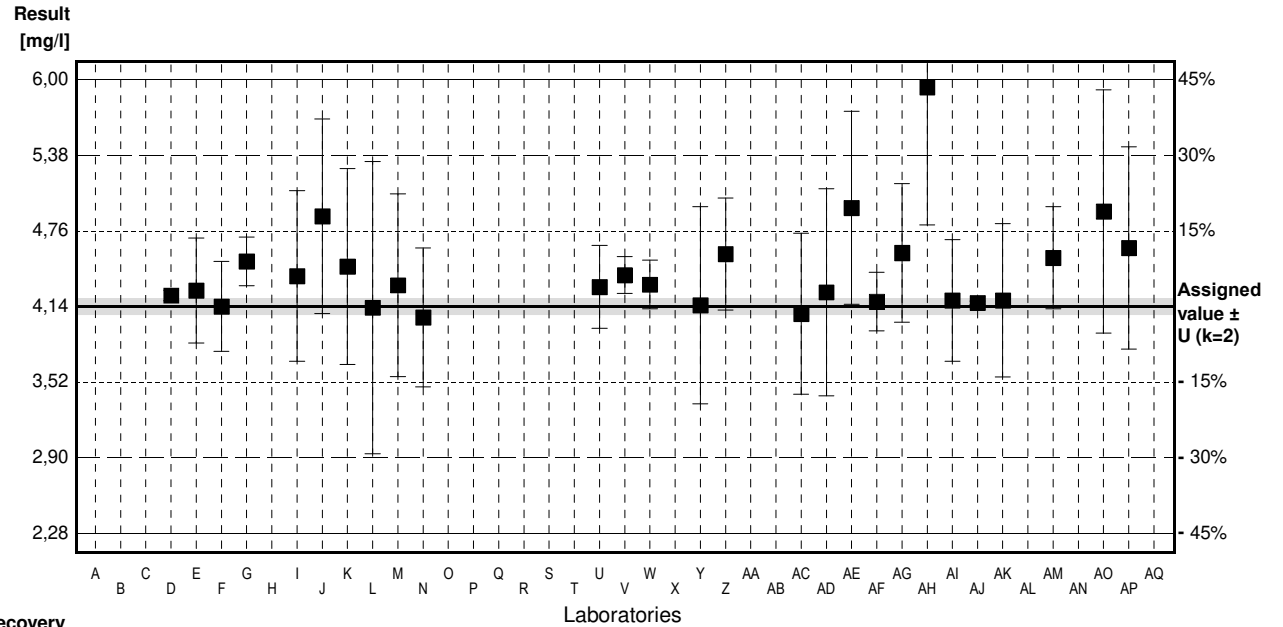
Sample N174B

Parameter DOC (as C)

Assigned value ± U (k=2) 4,14 mg/l ± 0,07 mg/l
 IFA result ± U (k=2) 4,18 mg/l ± 0,09 mg/l
 Stability test ± U (k=2) 4,22 mg/l ± 0,09 mg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A			mg/l		
B			mg/l		
C	7.7 *	0.62	mg/l	186%	15.92
D	4.23	0.0438	mg/l	102%	0.40
E	4.27	0.43	mg/l	103%	0.58
F	4.14	0.37	mg/l	100%	0.00
G	4.51	0.2	mg/l	109%	1.66
H			mg/l		
I	4.39	0.7	mg/l	106%	1.12
J	4.88	0.8	mg/l	118%	3.31
K	4.467	0.804	mg/l	108%	1.46
L	4.13	1.2	mg/l	100%	-0.04
M	4.314	0.75	mg/l	104%	0.78
N	4.05	0.57	mg/l	98%	-0.40
O			mg/l		
P			mg/l		
Q			mg/l		
R			mg/l		
S			mg/l		
T			mg/l		
U	4.30	0.34	mg/l	104%	0.72
V	4.398	0.15	mg/l	106%	1.15
W	4.32	0.2	mg/l	104%	0.81
X			mg/l		
Y	4.15	0.81	mg/l	100%	0.04
Z	4.57	0.46	mg/l	110%	1.92
AA			mg/l		
AB			mg/l		
AC	4.08	0.66	mg/l	99%	-0.27
AD	4.256	0.851	mg/l	103%	0.52
AE	4.95	0.792	mg/l	120%	3.62
AF	4.18	0.24	mg/l	101%	0.18
AG	4.58	0.57	mg/l	111%	1.97
AH	5.94 *	1.13	mg/l	143%	8.05
AI	4.19	0.50	mg/l	101%	0.22
AJ	4.17	0.015	mg/l	101%	0.13
AK	4.19	0.63	mg/l	101%	0.22
AL			mg/l		
AM	4.54	0.42	mg/l	110%	1.79
AN			mg/l		
AO	4.92	1.0	mg/l	119%	3.49
AP	4.62	0.83	mg/l	112%	2.15
AQ			mg/l		

	All results	Outliers excl.	Unit
Mean ± CI(99%)	4,55 ± 0,38	4,38 ± 0,14	mg/l
Recov. ± CI(99%)	109,9 ± 9,2	105,7 ± 3,4	%
SD between labs	0,73	0,26	mg/l
RSD between labs	16,0	5,9	%
n for calculation	28	26	



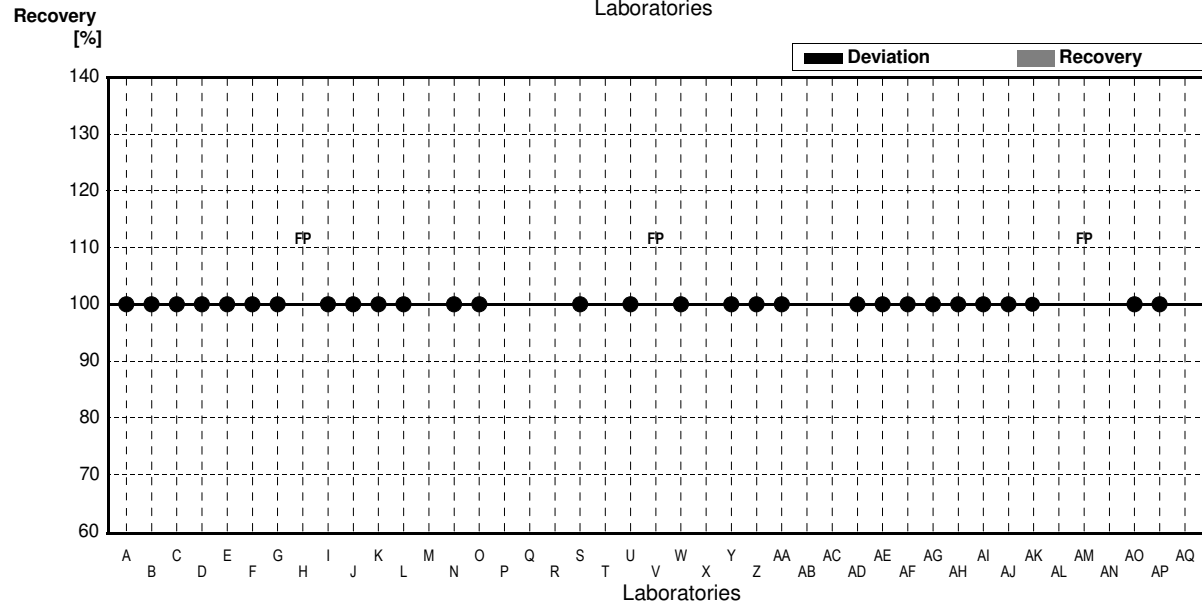
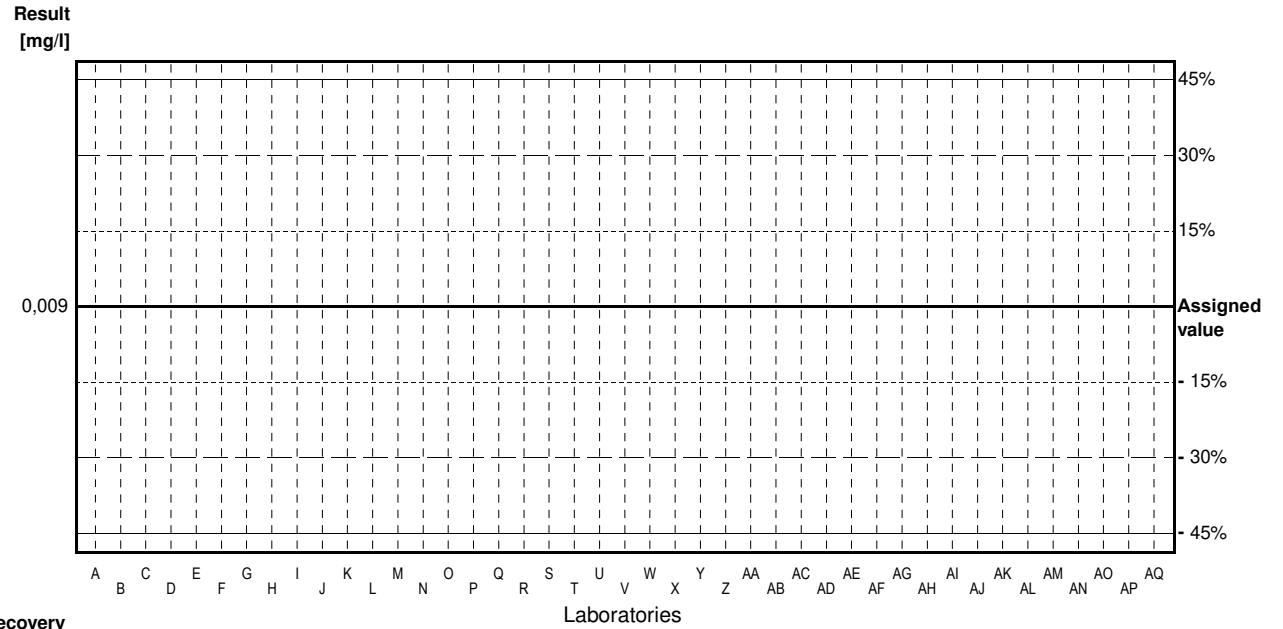
Sample N174A

Parameter Total P (as PO4)

Assigned 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	<0.005		mg/l	•	
B	0.0060	0.00037	mg/l	•	
C	<0.01	0.0033	mg/l	•	
D	<0.0150		mg/l	•	
E	<0.009		mg/l	•	
F	<0.006		mg/l	•	
G	<0.0092	0.0046	mg/l	•	
H	0.0405	0.00488	mg/l	FP	
I	<0.013		mg/l	•	
J	<0.20		mg/l	•	
K	<0.015		mg/l	•	
L	<0.031		mg/l	•	
M			mg/l		
N	<0.0090		mg/l	•	
O	<0.02		mg/l	•	
P			mg/l		
Q			mg/l		
R			mg/l		
S	<0.0004		mg/l	•	
T			mg/l		
U	<0.01533		mg/l	•	
V	0.0250	0.007	mg/l	FP	
W	<0.03	0	mg/l	•	
X			mg/l		
Y	<0.010		mg/l	•	
Z	<0.0032		mg/l	•	
AA	<0.006		mg/l	•	
AB			mg/l		
AC			mg/l		
AD	<0.010		mg/l	•	
AE	<0.015		mg/l	•	
AF	<0.0153		mg/l	•	
AG	<0.1		mg/l	•	
AH	<0.03	0.01	mg/l	•	
AI	<0.031		mg/l	•	
AJ	<0.009		mg/l	•	
AK	0.0092	0.0015	mg/l	•	
AL			mg/l		
AM	0.050	0.0065	mg/l	FP	
AN			mg/l		
AO	<0.015		mg/l	•	
AP	<0.015		mg/l	•	
AQ			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			



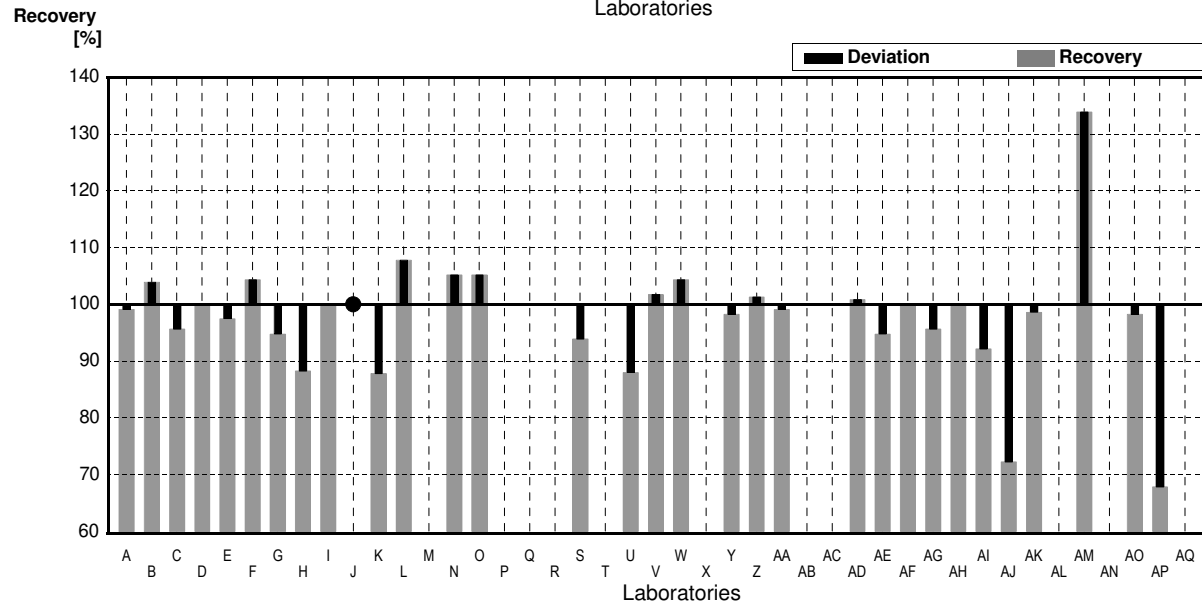
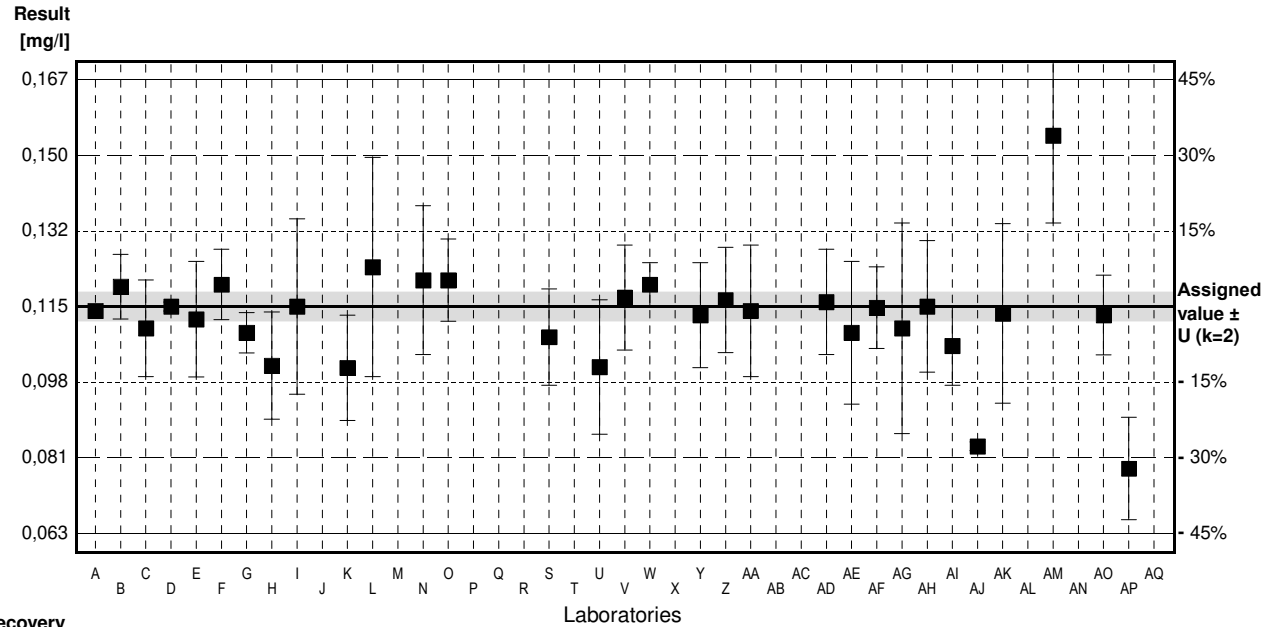
Sample N174B

Parameter Total P (as PO4)

Assigned value ± U (k=2) 0,115 mg/l ± 0,003 mg/l
 IFA result ± U (k=2) 0,124 mg/l ± 0,021 mg/l
 Stability test ± U (k=2) 0,119 mg/l ± 0,020 mg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A	0.114		mg/l	99%	-0.10
B	0.1195	0.0074	mg/l	104%	0.43
C	0.110	0.011	mg/l	96%	-0.48
D	0.115	0.00101	mg/l	100%	0.00
E	0.1121	0.0132	mg/l	97%	-0.28
F	0.120	0.008	mg/l	104%	0.48
G	0.109	0.0046	mg/l	95%	-0.57
H	0.1015	0.01223	mg/l	88%	-1.29
I	0.115	0.02	mg/l	100%	0.00
J	<0.20		mg/l	*	
K	0.101	0.012	mg/l	88%	-1.34
L	0.124	0.025	mg/l	108%	0.86
M			mg/l		
N	0.121	0.017	mg/l	105%	0.57
O	0.121	0.0094	mg/l	105%	0.57
P			mg/l		
Q			mg/l		
R			mg/l		
S	0.108	0.011	mg/l	94%	-0.67
T			mg/l		
U	0.1012	0.01533	mg/l	88%	-1.32
V	0.117	0.012	mg/l	102%	0.19
W	0.120	0.005	mg/l	104%	0.48
X			mg/l		
Y	0.113	0.012	mg/l	98%	-0.19
Z	0.1165	0.012	mg/l	101%	0.14
AA	0.114	0.015	mg/l	99%	-0.10
AB			mg/l		
AC			mg/l		
AD	0.116	0.012	mg/l	101%	0.10
AE	0.109	0.0163	mg/l	95%	-0.57
AF	0.1147	0.0093	mg/l	100%	-0.03
AG	0.110	0.024	mg/l	96%	-0.48
AH	0.115	0.015	mg/l	100%	0.00
AI	0.106	0.009	mg/l	92%	-0.86
AJ	0.0831 *	0.001	mg/l	72%	-3.05
AK	0.1134	0.0205	mg/l	99%	-0.15
AL			mg/l		
AM	0.154 *	0.020	mg/l	134%	3.73
AN			mg/l		
AO	0.113	0.0091	mg/l	98%	-0.19
AP	0.0780 *	0.0117	mg/l	68%	-3.54
AQ			mg/l		

	All results	Outliers excl.	Unit
Mean ± CI(99%)	0,112 ± 0,006	0,113 ± 0,003	mg/l
Recov. ± CI(99%)	97,8 ± 5,4	98,4 ± 2,7	%
SD between labs	0,013	0,006	mg/l
RSD between labs	11,2	5,3	%
n for calculation	31	28	



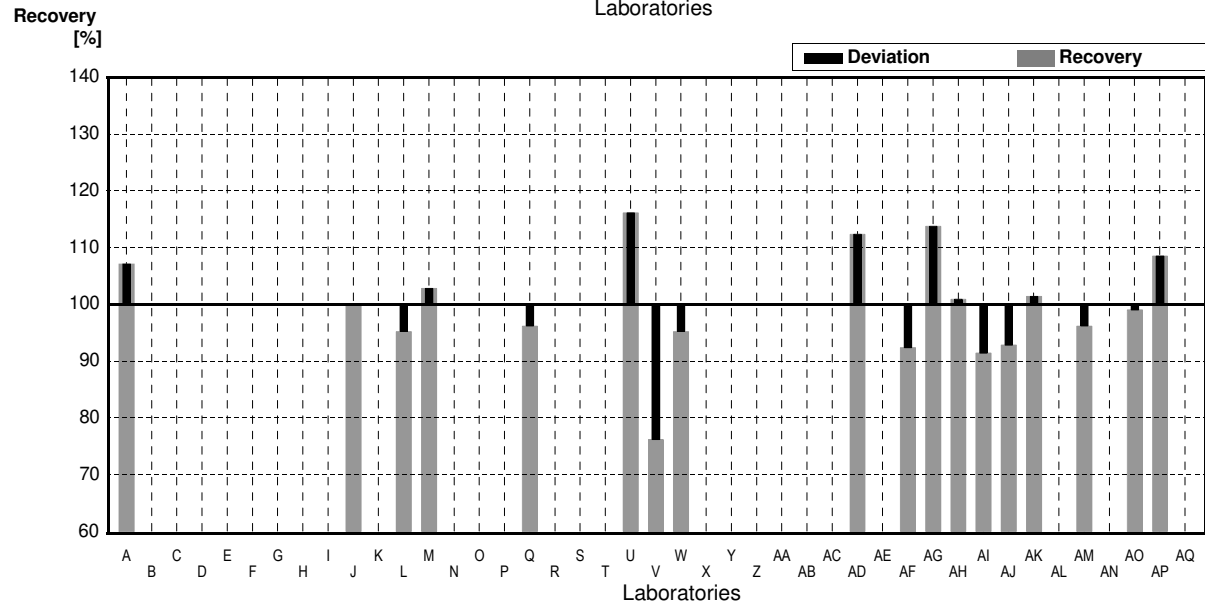
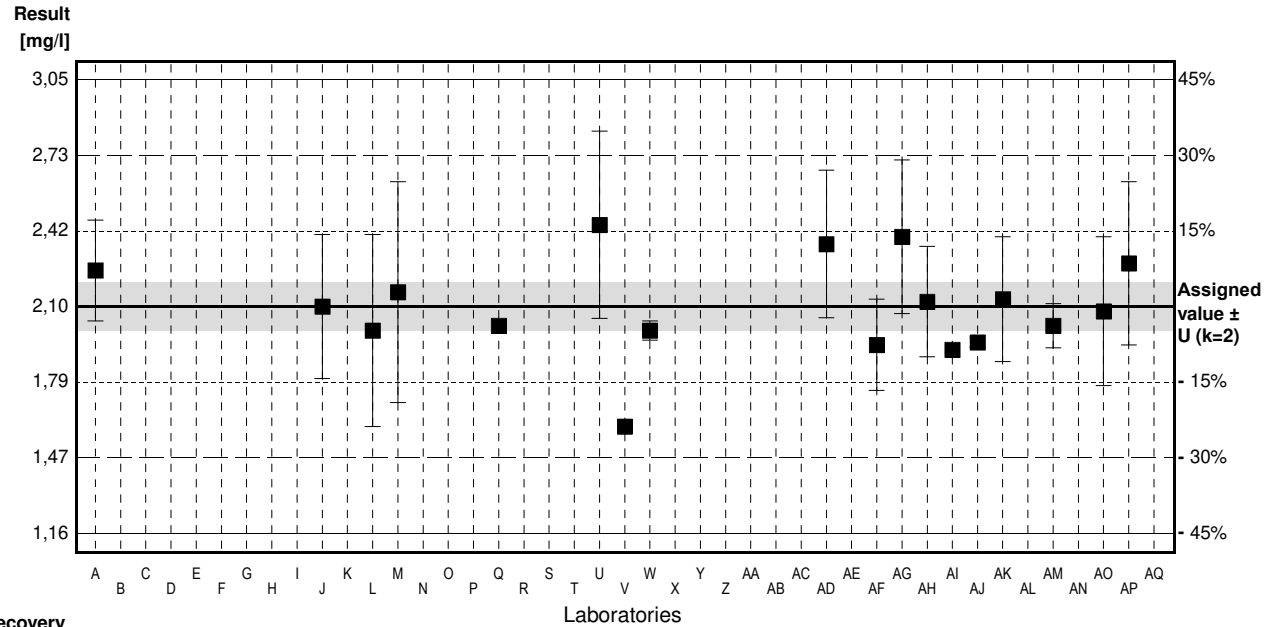
Sample N174A

Parameter KMnO4-Index (as O2)

Assigned value ± U (k=2) 2,10 mg/l ± 0,10 mg/l
 IFA result ± U (k=2) 2,30 mg/l ± 0,23 mg/l
 Stability test ± U (k=2) 2,37 mg/l ± 0,24 mg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A	2,25	0,21	mg/l	107%	0,87
B			mg/l		
C			mg/l		
D			mg/l		
E			mg/l		
F			mg/l		
G			mg/l		
H			mg/l		
I			mg/l		
J	2,10	0,3	mg/l	100%	0,00
K			mg/l		
L	2,00	0,4	mg/l	95%	-0,58
M	2,16	0,46	mg/l	103%	0,35
N			mg/l		
O			mg/l		
P			mg/l		
Q	2,02		mg/l	96%	-0,46
R			mg/l		
S			mg/l		
T			mg/l		
U	2,44	0,390	mg/l	116%	1,97
V	1,60	0,0	mg/l	76%	-2,90
W	2,00	0,04	mg/l	95%	-0,58
X			mg/l		
Y			mg/l		
Z			mg/l		
AA			mg/l		
AB			mg/l		
AC			mg/l		
AD	2,36	0,307	mg/l	112%	1,51
AE			mg/l		
AF	1,94	0,19	mg/l	92%	-0,93
AG	2,39	0,32	mg/l	114%	1,68
AH	2,12	0,23	mg/l	101%	0,12
AI	1,92		mg/l	91%	-1,05
AJ	1,95	0,020	mg/l	93%	-0,87
AK	2,13	0,26	mg/l	101%	0,17
AL			mg/l		
AM	2,02	0,092	mg/l	96%	-0,46
AN			mg/l		
AO	2,08	0,31	mg/l	99%	-0,12
AP	2,28	0,34	mg/l	109%	1,05
AQ			mg/l		

	All results	Outliers excl.	Unit
Mean ± CI(99%)	2,10 ± 0,14	2,10 ± 0,14	mg/l
Recov. ± CI(99%)	99,9 ± 6,6	99,9 ± 6,6	%
SD between labs	0,20	0,20	mg/l
RSD between labs	9,6	9,6	%
n for calculation	18	18	



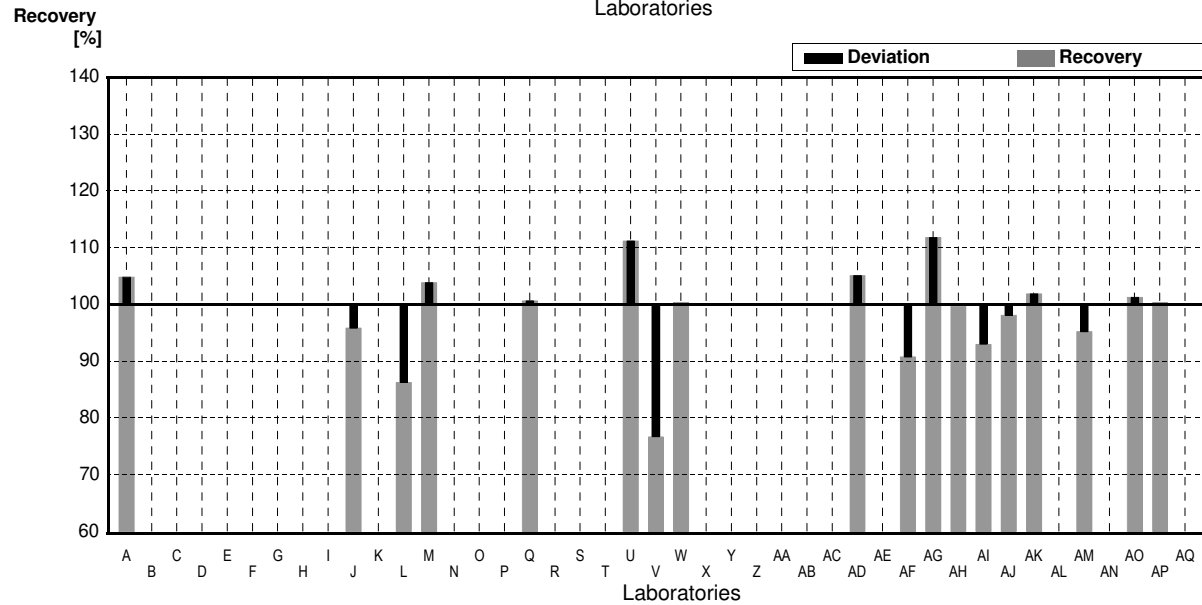
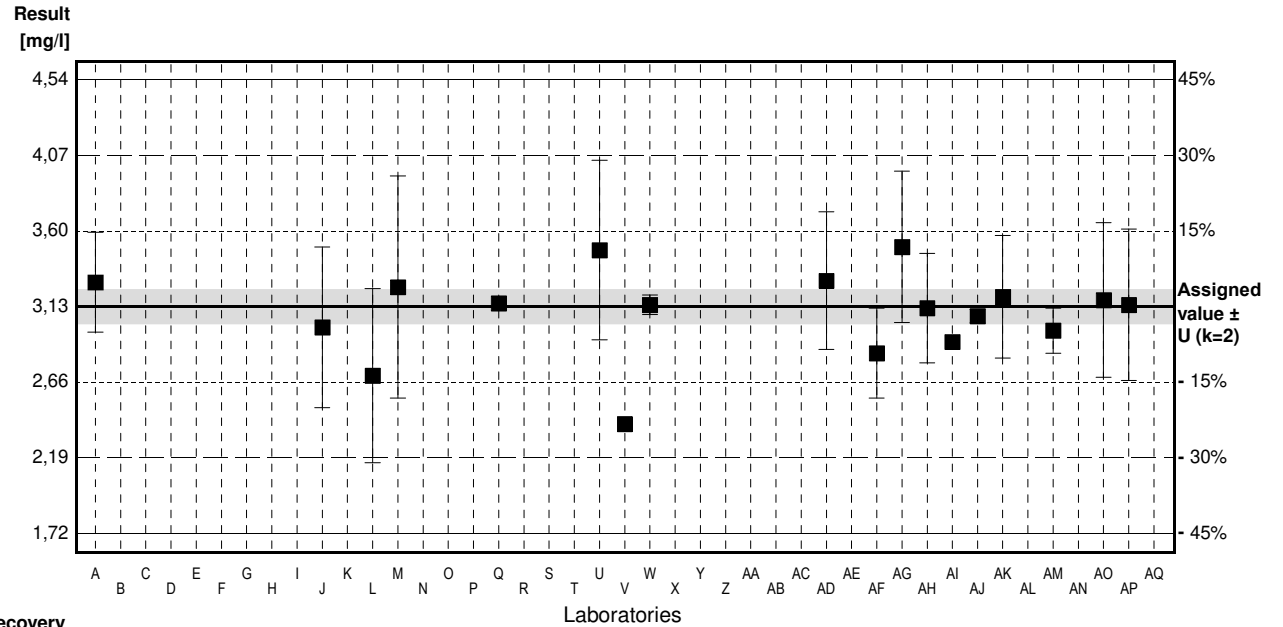
Sample N174B

Parameter KMnO4-Index (as O2)

Assigned value ± U (k=2) 3,13 mg/l ± 0,11 mg/l
 IFA result ± U (k=2) 3,35 mg/l ± 0,33 mg/l
 Stability test ± U (k=2) 3,53 mg/l ± 0,35 mg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A	3,28	0,31	mg/l	105%	0,58
B			mg/l		
C			mg/l		
D			mg/l		
E			mg/l		
F			mg/l		
G			mg/l		
H			mg/l		
I			mg/l		
J	3,00	0,5	mg/l	96%	-0,51
K			mg/l		
L	2,70	0,54	mg/l	86%	-1,68
M	3,25	0,69	mg/l	104%	0,47
N			mg/l		
O			mg/l		
P			mg/l		
Q	3,15		mg/l	101%	0,08
R			mg/l		
S			mg/l		
T			mg/l		
U	3,48	0,557	mg/l	111%	1,36
V	2,40	0,0	mg/l	77%	-2,84
W	3,14	0,06	mg/l	100%	0,04
X			mg/l		
Y			mg/l		
Z			mg/l		
AA			mg/l		
AB			mg/l		
AC			mg/l		
AD	3,29	0,428	mg/l	105%	0,62
AE			mg/l		
AF	2,84	0,28	mg/l	91%	-1,13
AG	3,50	0,47	mg/l	112%	1,44
AH	3,12	0,34	mg/l	100%	-0,04
AI	2,91		mg/l	93%	-0,86
AJ	3,07	0,042	mg/l	98%	-0,23
AK	3,19	0,38	mg/l	102%	0,23
AL			mg/l		
AM	2,98	0,14	mg/l	95%	-0,58
AN			mg/l		
AO	3,17	0,48	mg/l	101%	0,16
AP	3,14	0,47	mg/l	100%	0,04
AQ			mg/l		

	All results	Outliers excl.	Unit
Mean ± CI(99%)	3,09 ± 0,18	3,13 ± 0,15	mg/l
Recov. ± CI(99%)	98,7 ± 5,8	100,0 ± 4,7	%
SD between labs	0,26	0,21	mg/l
RSD between labs	8,6	6,6	%
n for calculation	18	17	



Labororientierte Auswertung

Laboratory Oriented Part

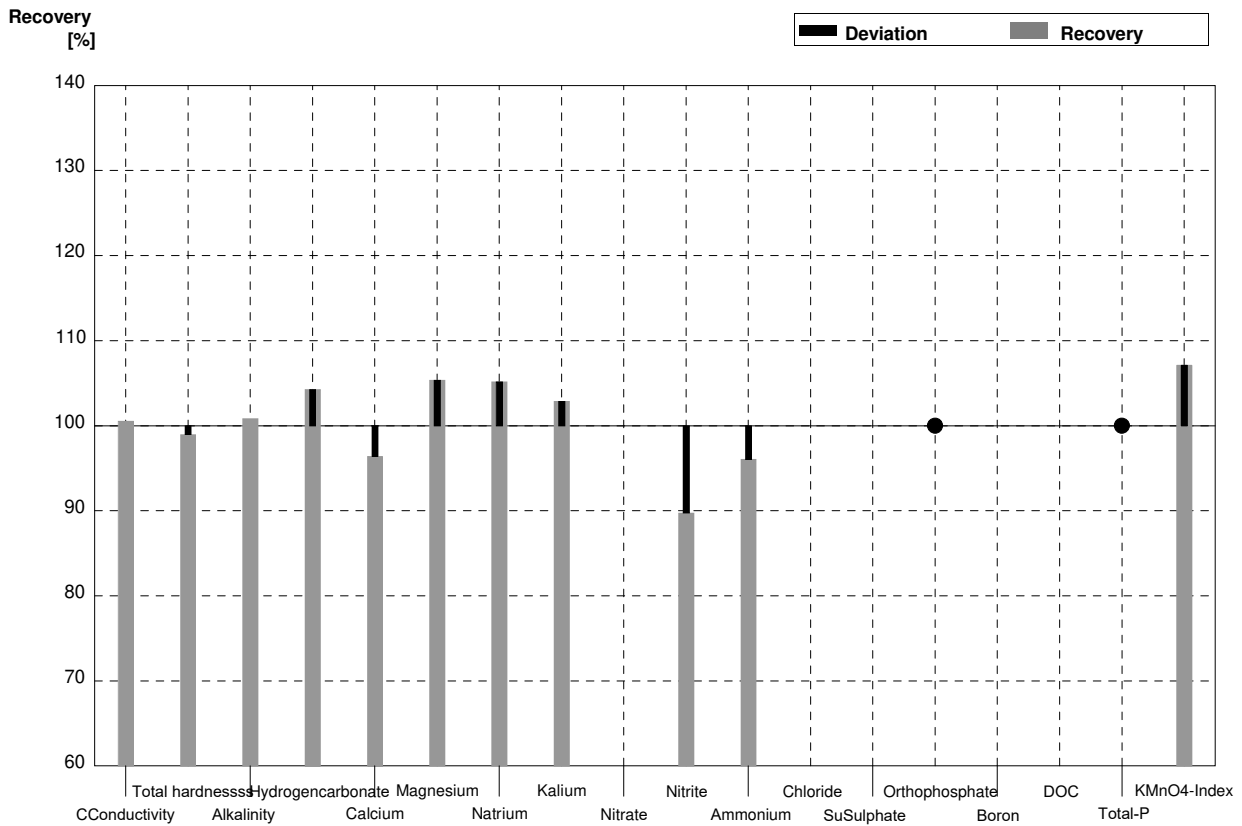
Eignungsprüfungsrunde / Proficiency testing round
N174

Nährstoffe
Nutrients / Major ions

Versand / Dispatch: 11.11.2024

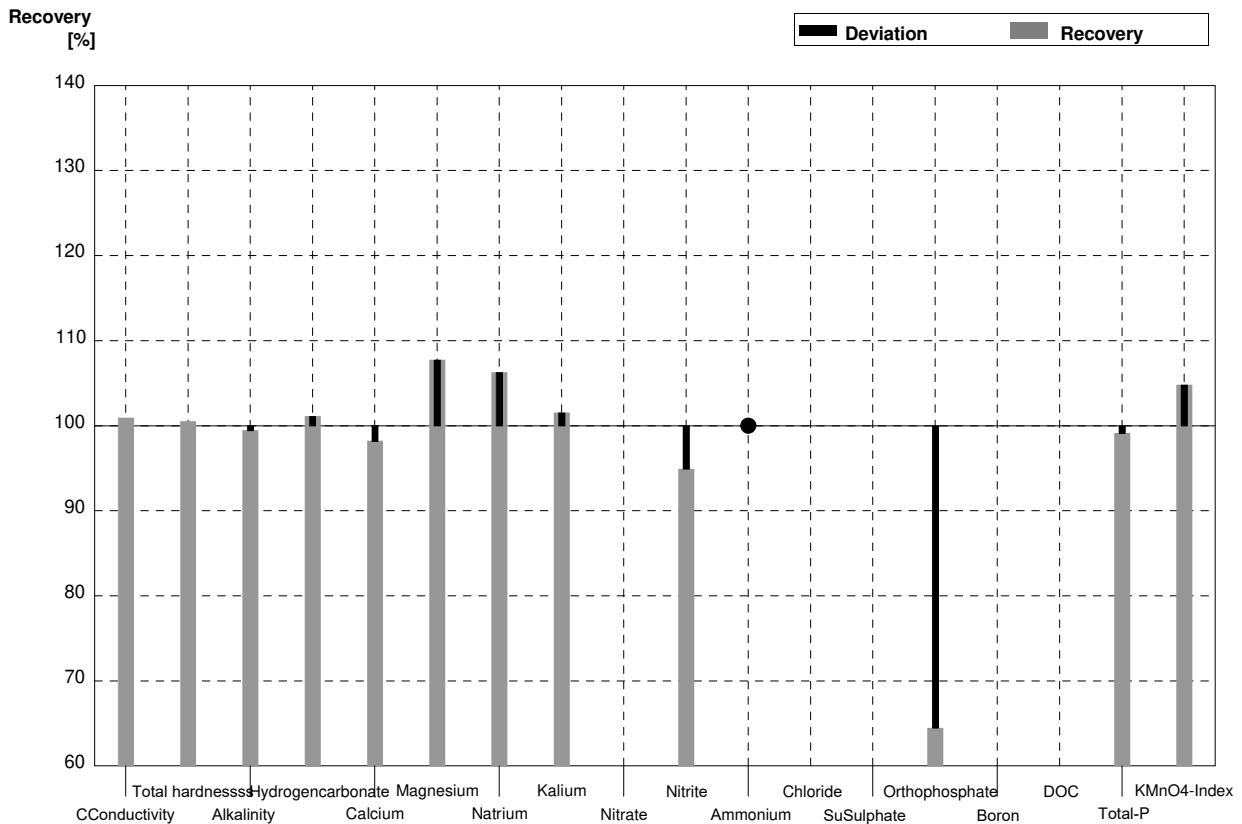
Sample N174A
Laboratory A

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	360	1	362	5,4	µS/cm	101%
Total hardness	0,879	0,010	0,87		mmol/l	99%
Alkalinity KS 4,3 (as H+)	1,517	0,018	1,53	0,05	mmol/l	101%
Hydrogen carbonate	89,5	1,1	93,33		mg/l	104%
Calcium	25,1	0,4	24,2	1,5	mg/l	96%
Magnesium	6,15	0,10	6,48	0,39	mg/l	105%
Sodium	32,9	0,2	34,6	1,2	mg/l	105%
Potassium	5,90	0,03	6,07	0,18	mg/l	103%
Nitrate (as NO3)	9,7	0,3			mg/l	
Nitrite (as NO2)	0,02228	0,00008	0,0200	0,001	mg/l	90%
Ammonium (as NH4)	0,0406	0,0019	0,0390	0,002	mg/l	96%
Chloride	46,5	0,5			mg/l	
Sulphate (as SO4)	16,8	0,3			mg/l	
Orthophosphate (as PO4)	<0,009		<0,007		mg/l	•
Boron	0,136	0,004			mg/l	
DOC (as C)	5,53	0,07			mg/l	
Total P (as PO4)	<0,009		<0,005		mg/l	•
KMnO4-Index (as O2)	2,10	0,10	2,25	0,21	mg/l	107%



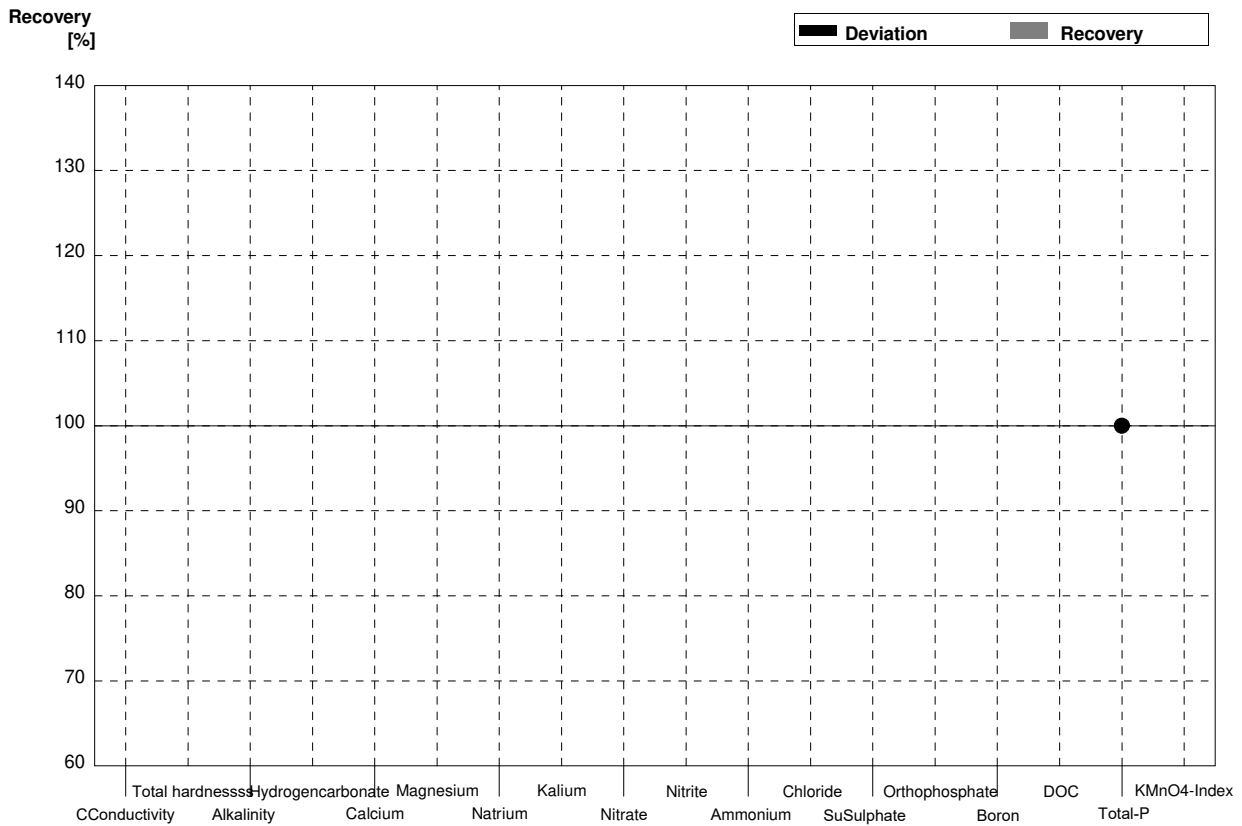
Sample N174B
Laboratory A

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	544	2	549	8,2	µS/cm	101%
Total hardness	1,92	0,02	1,93		mmol/l	101%
Alkalinity KS 4,3 (as H+)	3,70	0,05	3,68	0,13	mmol/l	99%
Hydrogen carbonate	222	3	224,48		mg/l	101%
Calcium	55,5	0,9	54,5	3,3	mg/l	98%
Magnesium	12,93	0,18	13,93	0,84	mg/l	108%
Sodium	39,9	0,6	42,4	1,5	mg/l	106%
Potassium	1,97	0,04	2,00	0,06	mg/l	102%
Nitrate (as NO3)	40,1	1,0			mg/l	
Nitrite (as NO2)	0,0432	0,0015	0,0410	0,002	mg/l	95%
Ammonium (as NH4)	<0,01		<0,03		mg/l	•
Chloride	23,6	0,3			mg/l	
Sulphate (as SO4)	29,7	0,6			mg/l	
Orthophosphate (as PO4)	0,0456	0,0030	0,0294	0,0025	mg/l	64%
Boron	0,086	0,002			mg/l	
DOC (as C)	4,14	0,07			mg/l	
Total P (as PO4)	0,115	0,003	0,114		mg/l	99%
KMnO4-Index (as O2)	3,13	0,11	3,28	0,31	mg/l	105%



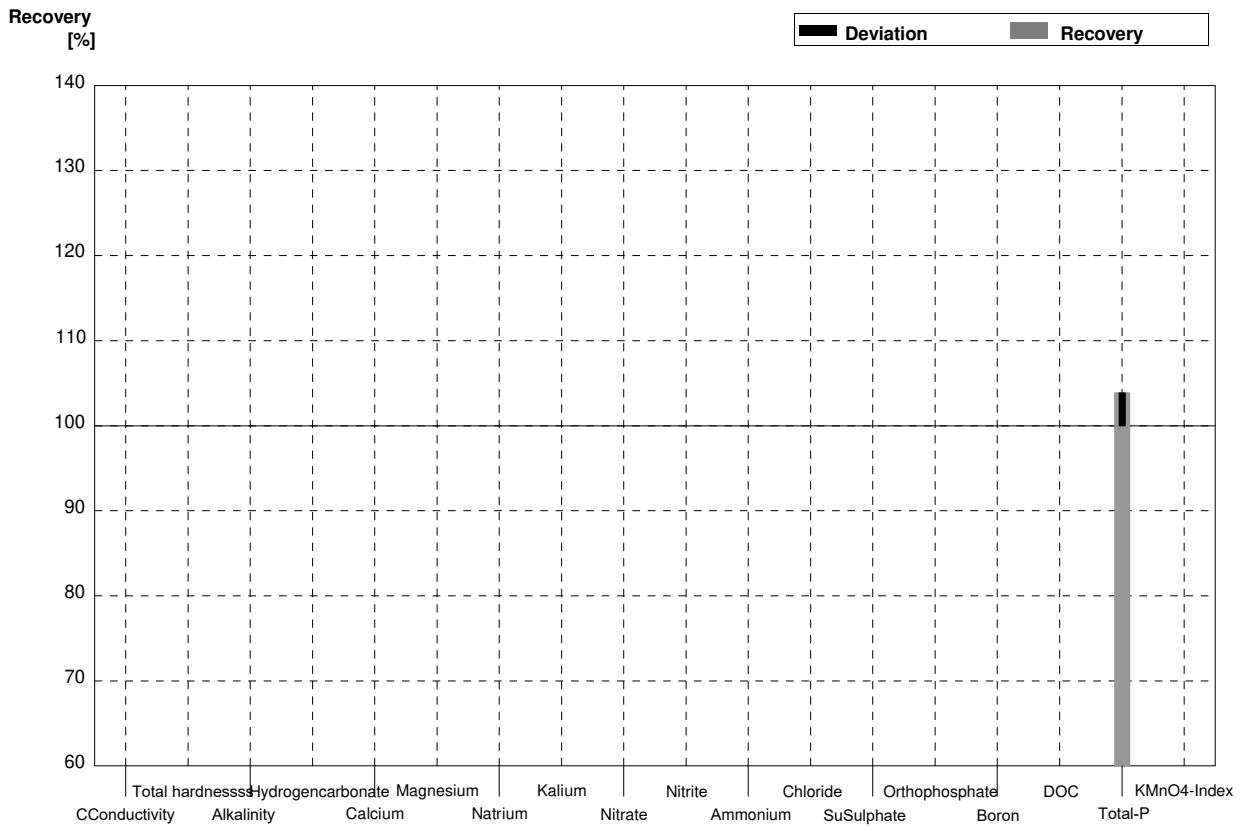
Sample N174A
Laboratory B

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	360	1			µS/cm	
Total hardness	0,879	0,010			mmol/l	
Alkalinity KS 4,3 (as H+)	1,517	0,018			mmol/l	
Hydrogen carbonate	89,5	1,1			mg/l	
Calcium	25,1	0,4			mg/l	
Magnesium	6,15	0,10			mg/l	
Sodium	32,9	0,2			mg/l	
Potassium	5,90	0,03			mg/l	
Nitrate (as NO3)	9,7	0,3			mg/l	
Nitrite (as NO2)	0,02228	0,00008			mg/l	
Ammonium (as NH4)	0,0406	0,0019			mg/l	
Chloride	46,5	0,5			mg/l	
Sulphate (as SO4)	16,8	0,3			mg/l	
Orthophosphate (as PO4)	<0,009				mg/l	
Boron	0,136	0,004			mg/l	
DOC (as C)	5,53	0,07			mg/l	
Total P (as PO4)	<0,009		0,0060	0,00037	mg/l	•
KMnO4-Index (as O2)	2,10	0,10			mg/l	



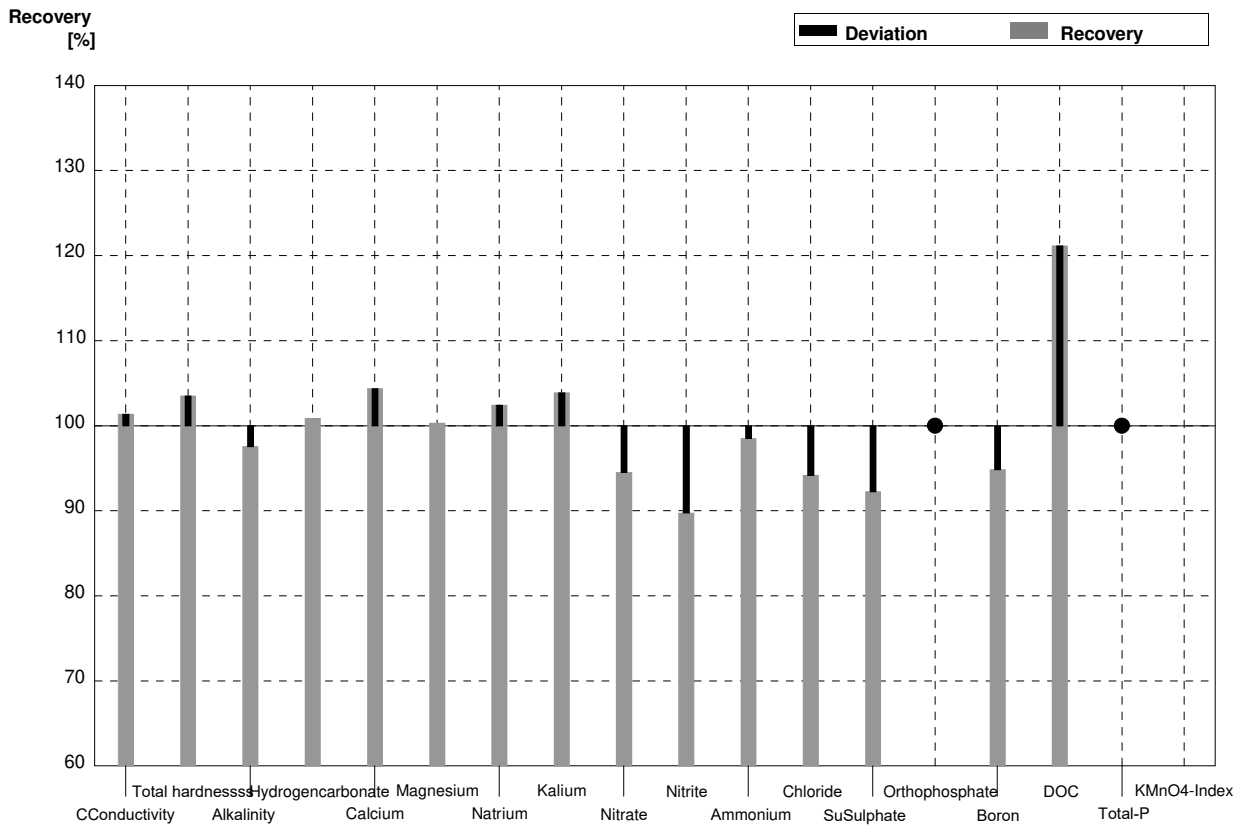
Sample N174B
Laboratory B

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	544	2			µS/cm	
Total hardness	1,92	0,02			mmol/l	
Alkalinity KS 4,3 (as H+)	3,70	0,05			mmol/l	
Hydrogen carbonate	222	3			mg/l	
Calcium	55,5	0,9			mg/l	
Magnesium	12,93	0,18			mg/l	
Sodium	39,9	0,6			mg/l	
Potassium	1,97	0,04			mg/l	
Nitrate (as NO3)	40,1	1,0			mg/l	
Nitrite (as NO2)	0,0432	0,0015			mg/l	
Ammonium (as NH4)	<0,01				mg/l	
Chloride	23,6	0,3			mg/l	
Sulphate (as SO4)	29,7	0,6			mg/l	
Orthophosphate (as PO4)	0,0456	0,0030			mg/l	
Boron	0,086	0,002			mg/l	
DOC (as C)	4,14	0,07			mg/l	
Total P (as PO4)	0,115	0,003	0,1195	0,0074	mg/l	104%
KMnO4-Index (as O2)	3,13	0,11			mg/l	



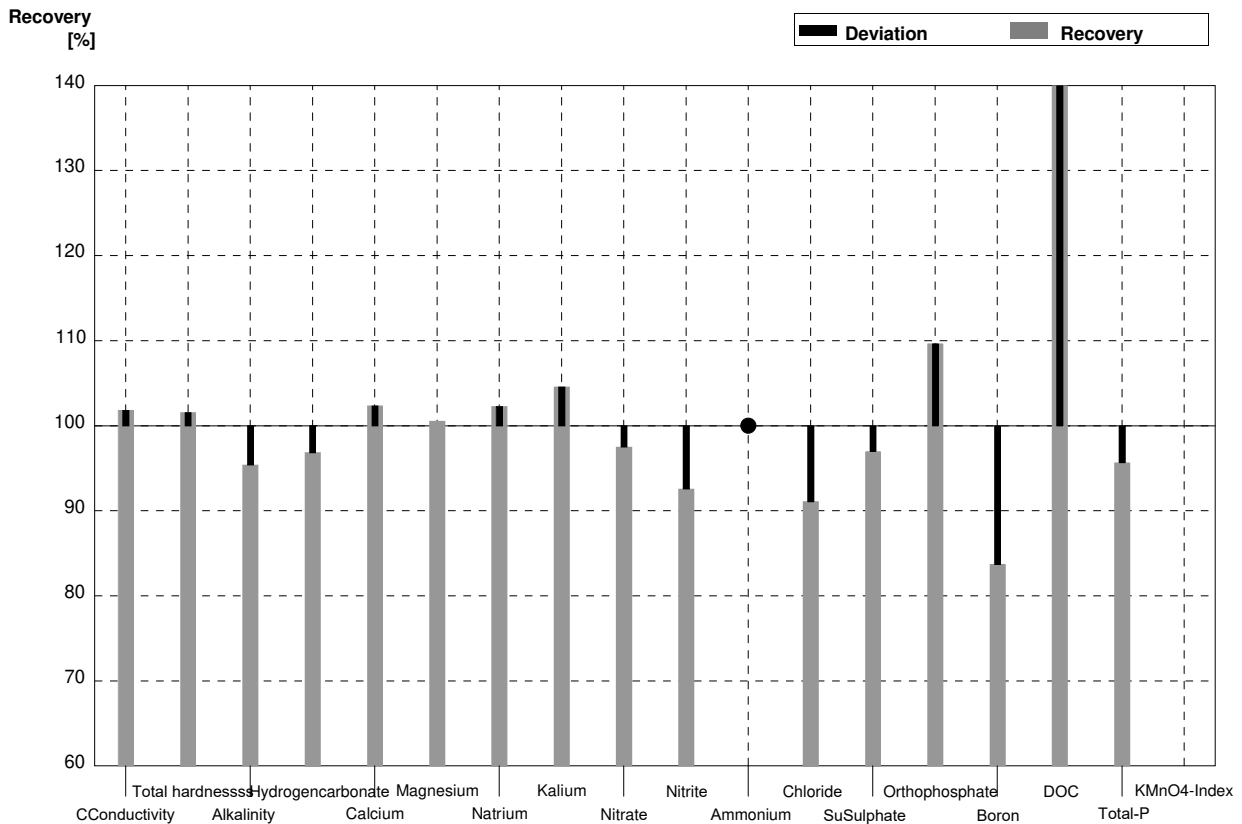
Sample N174A
Laboratory C

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	360	1	365	18	µS/cm	101%
Total hardness	0,879	0,010	0,91	0,055	mmol/l	104%
Alkalinity KS 4,3 (as H+)	1,517	0,018	1,48	0,089	mmol/l	98%
Hydrogen carbonate	89,5	1,1	90,3	5,4	mg/l	101%
Calcium	25,1	0,4	26,2	0,79	mg/l	104%
Magnesium	6,15	0,10	6,17	0,185	mg/l	100%
Sodium	32,9	0,2	33,7	2,02	mg/l	102%
Potassium	5,90	0,03	6,13	0,18	mg/l	104%
Nitrate (as NO3)	9,7	0,3	9,17	0,73	mg/l	95%
Nitrite (as NO2)	0,02228	0,00008	0,0200	0,006	mg/l	90%
Ammonium (as NH4)	0,0406	0,0019	0,0400	0,012	mg/l	99%
Chloride	46,5	0,5	43,8	3,5	mg/l	94%
Sulphate (as SO4)	16,8	0,3	15,5	1,55	mg/l	92%
Orthophosphate (as PO4)	<0,009		<0,01	0,0033	mg/l	•
Boron	0,136	0,004	0,129	0,016	mg/l	95%
DOC (as C)	5,53	0,07	6,7	0,54	mg/l	121%
Total P (as PO4)	<0,009		<0,01	0,0033	mg/l	•
KMnO4-Index (as O2)	2,10	0,10			mg/l	



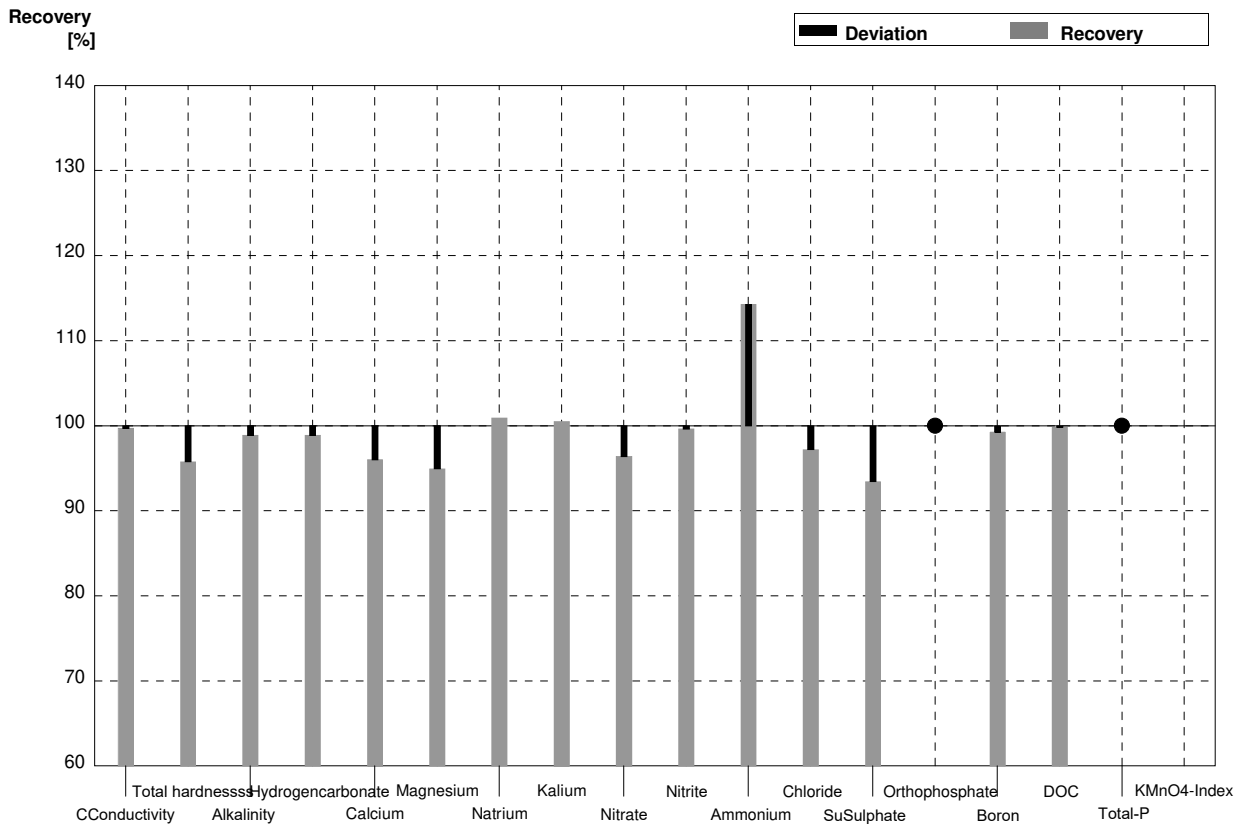
Sample N174B
Laboratory C

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	544	2	554	27	µS/cm	102%
Total hardness	1,92	0,02	1,95	0,12	mmol/l	102%
Alkalinity KS 4,3 (as H+)	3,70	0,05	3,53	0,21	mmol/l	95%
Hydrogen carbonate	222	3	215	13	mg/l	97%
Calcium	55,5	0,9	56,8	1,70	mg/l	102%
Magnesium	12,93	0,18	13,0	0,39	mg/l	101%
Sodium	39,9	0,6	40,8	2,45	mg/l	102%
Potassium	1,97	0,04	2,06	0,06	mg/l	105%
Nitrate (as NO3)	40,1	1,0	39,1	3,1	mg/l	98%
Nitrite (as NO2)	0,0432	0,0015	0,0400	0,012	mg/l	93%
Ammonium (as NH4)	<0,01		<0,01	0,0033	mg/l	•
Chloride	23,6	0,3	21,5	1,7	mg/l	91%
Sulphate (as SO4)	29,7	0,6	28,8	2,88	mg/l	97%
Orthophosphate (as PO4)	0,0456	0,0030	0,050	0,005	mg/l	110%
Boron	0,086	0,002	0,072	0,0009	mg/l	84%
DOC (as C)	4,14	0,07	7,7	0,62	mg/l	186%
Total P (as PO4)	0,115	0,003	0,110	0,011	mg/l	96%
KMnO4-Index (as O2)	3,13	0,11			mg/l	



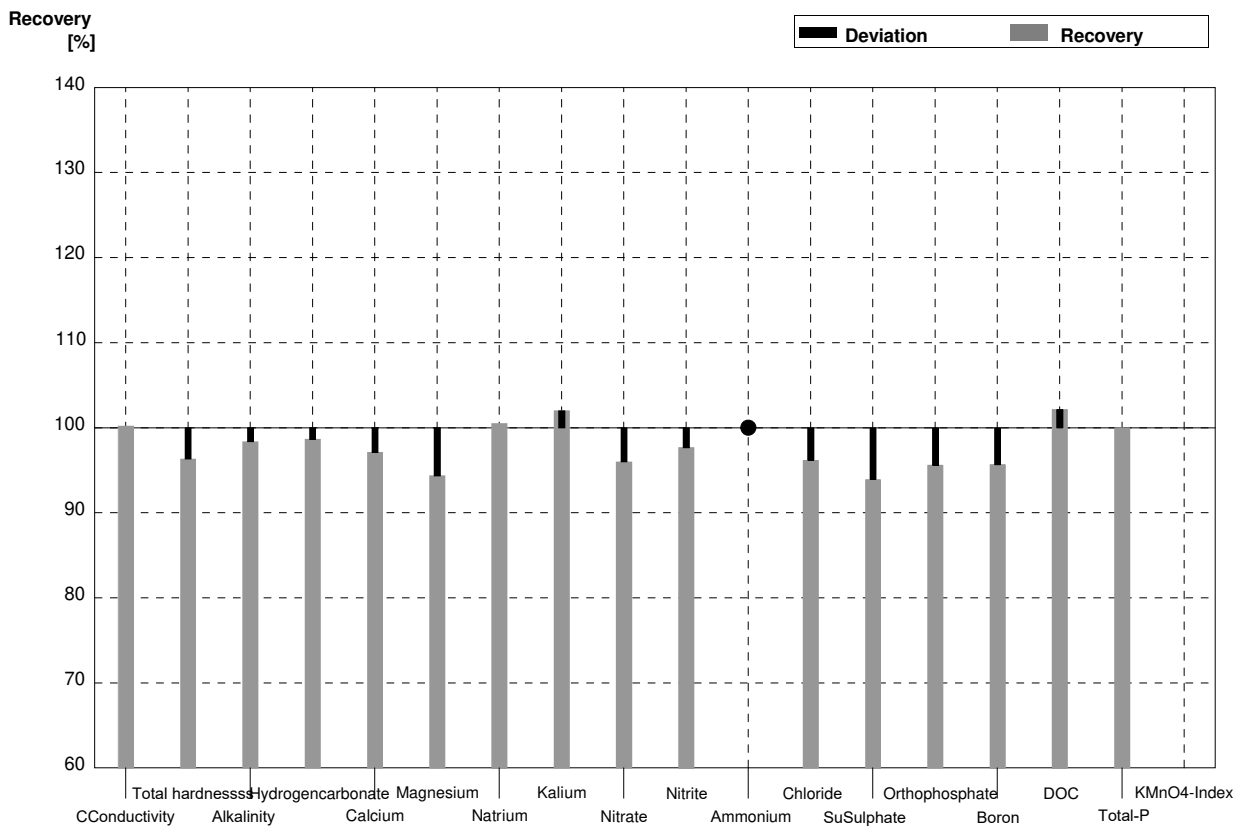
Sample N174A
Laboratory D

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	360	1	359	0,198	µS/cm	100%
Total hardness	0,879	0,010	0,842	0,0217	mmol/l	96%
Alkalinity KS 4,3 (as H+)	1,517	0,018	1,50	0,0790	mmol/l	99%
Hydrogen carbonate	89,5	1,1	88,5	1,77	mg/l	99%
Calcium	25,1	0,4	24,1	0,870	mg/l	96%
Magnesium	6,15	0,10	5,84	0,0354	mg/l	95%
Sodium	32,9	0,2	33,2	0,594	mg/l	101%
Potassium	5,90	0,03	5,93	0,535	mg/l	101%
Nitrate (as NO3)	9,7	0,3	9,35	0,0873	mg/l	96%
Nitrite (as NO2)	0,02228	0,00008	0,0222	0,00093	mg/l	100%
Ammonium (as NH4)	0,0406	0,0019	0,0464	0,00082	mg/l	114%
Chloride	46,5	0,5	45,2	1,63	mg/l	97%
Sulphate (as SO4)	16,8	0,3	15,7	1,70	mg/l	93%
Orthophosphate (as PO4)	<0,009		<0,0150		mg/l	•
Boron	0,136	0,004	0,135	0,00132	mg/l	99%
DOC (as C)	5,53	0,07	5,52	0,0457	mg/l	100%
Total P (as PO4)	<0,009		<0,0150		mg/l	•
KMnO4-Index (as O2)	2,10	0,10			mg/l	



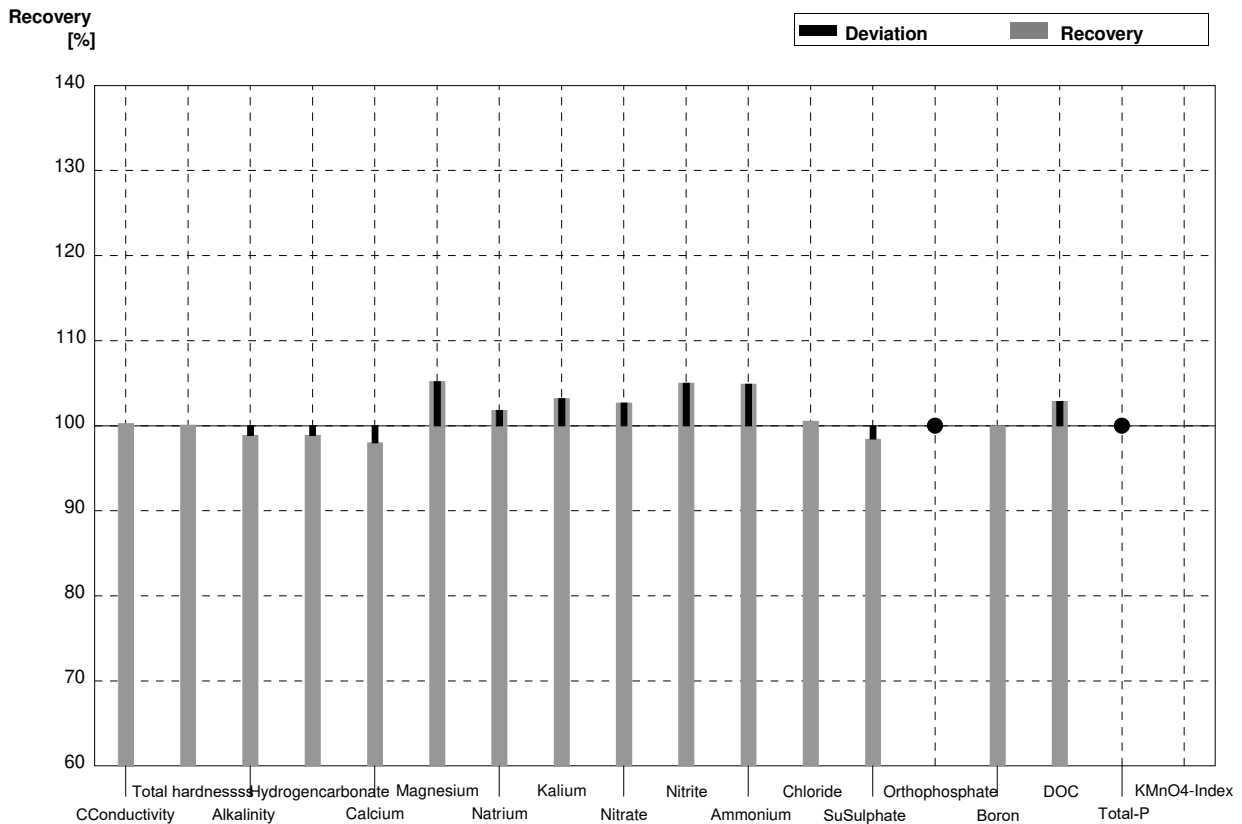
Sample N174B
Laboratory D

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	544	2	545	0,233	µS/cm	100%
Total hardness	1,92	0,02	1,85	0,0246	mmol/l	96%
Alkalinity KS 4,3 (as H+)	3,70	0,05	3,64	0,122	mmol/l	98%
Hydrogen carbonate	222	3	219	4,37	mg/l	99%
Calcium	55,5	0,9	53,9	0,900	mg/l	97%
Magnesium	12,93	0,18	12,2	0,245	mg/l	94%
Sodium	39,9	0,6	40,1	0,633	mg/l	101%
Potassium	1,97	0,04	2,01	0,0314	mg/l	102%
Nitrate (as NO3)	40,1	1,0	38,5	1,61	mg/l	96%
Nitrite (as NO2)	0,0432	0,0015	0,0422	0,00090	mg/l	98%
Ammonium (as NH4)	<0,01		<0,0100		mg/l	•
Chloride	23,6	0,3	22,7	1,47	mg/l	96%
Sulphate (as SO4)	29,7	0,6	27,9	1,83	mg/l	94%
Orthophosphate (as PO4)	0,0456	0,0030	0,0436	0,00099	mg/l	96%
Boron	0,086	0,002	0,0823	0,00122	mg/l	96%
DOC (as C)	4,14	0,07	4,23	0,0438	mg/l	102%
Total P (as PO4)	0,115	0,003	0,115	0,00101	mg/l	100%
KMnO4-Index (as O2)	3,13	0,11			mg/l	



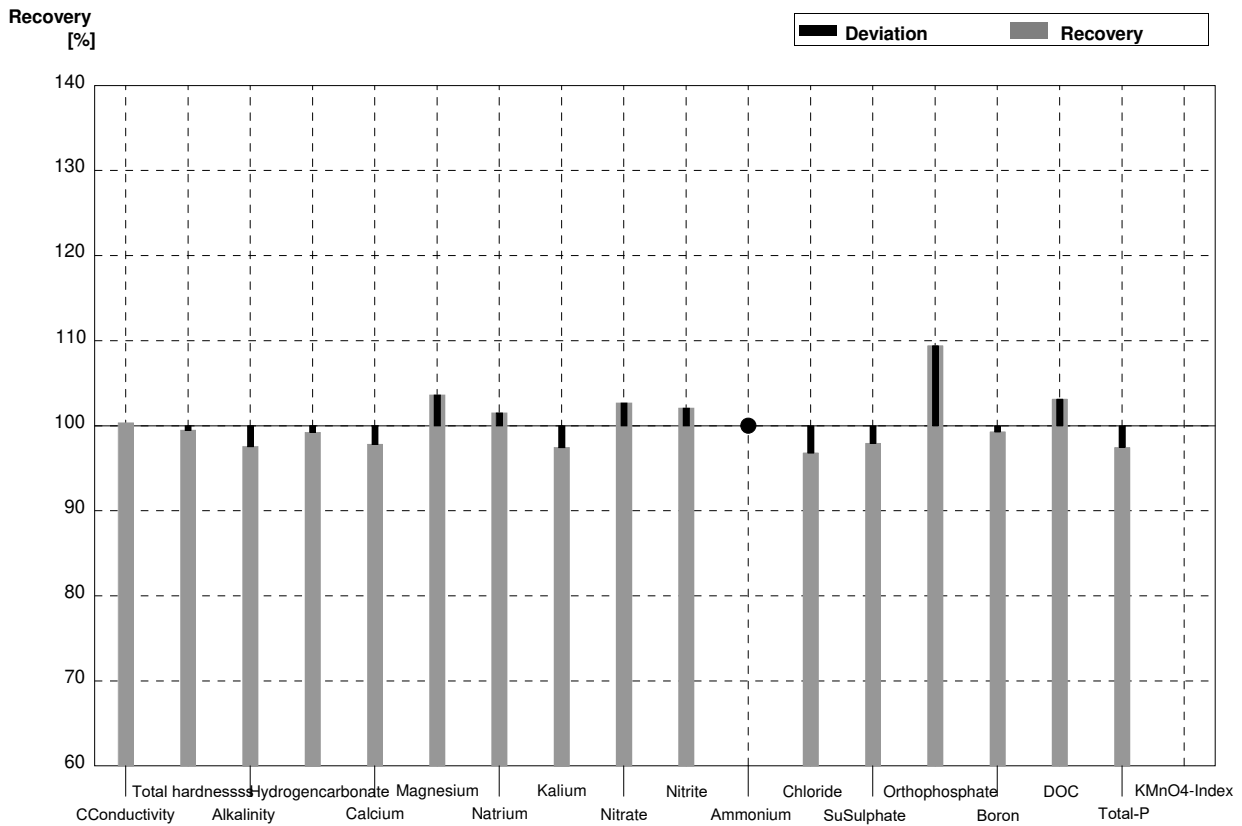
Sample N174A
Laboratory E

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	360	1	361	10	µS/cm	100%
Total hardness	0,879	0,010	0,88	0,09	mmol/l	100%
Alkalinity KS 4,3 (as H+)	1,517	0,018	1,50	0,2	mmol/l	99%
Hydrogen carbonate	89,5	1,1	88,5	8,9	mg/l	99%
Calcium	25,1	0,4	24,6	5,0	mg/l	98%
Magnesium	6,15	0,10	6,47	1,3	mg/l	105%
Sodium	32,9	0,2	33,5	5,1	mg/l	102%
Potassium	5,90	0,03	6,09	1,2	mg/l	103%
Nitrate (as NO3)	9,7	0,3	9,96	1,0	mg/l	103%
Nitrite (as NO2)	0,02228	0,00008	0,0234	0,0034	mg/l	105%
Ammonium (as NH4)	0,0406	0,0019	0,0426	0,007	mg/l	105%
Chloride	46,5	0,5	46,75	4,7	mg/l	101%
Sulphate (as SO4)	16,8	0,3	16,54	1,7	mg/l	98%
Orthophosphate (as PO4)	<0,009		<0,009		mg/l	•
Boron	0,136	0,004	0,136	0,034	mg/l	100%
DOC (as C)	5,53	0,07	5,69	0,57	mg/l	103%
Total P (as PO4)	<0,009		<0,009		mg/l	•
KMnO4-Index (as O2)	2,10	0,10			mg/l	



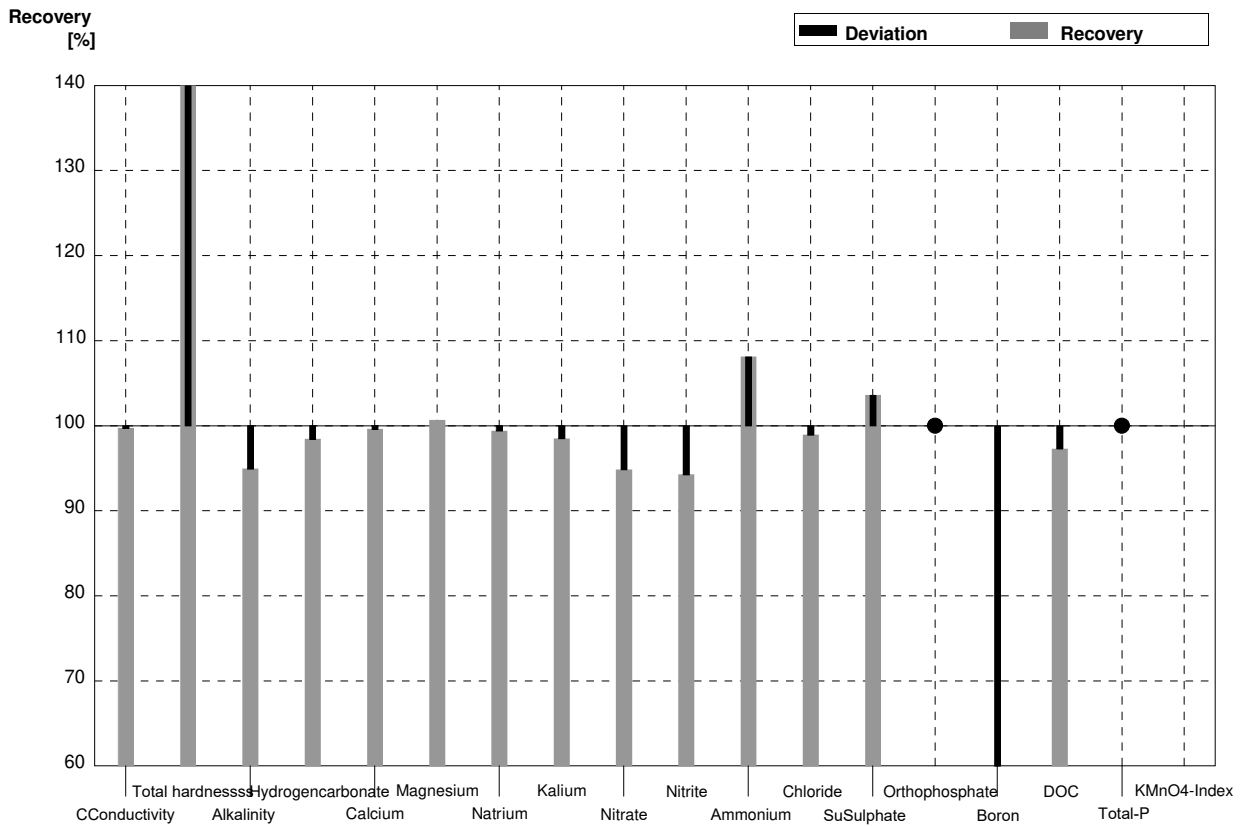
Sample N174B
Laboratory E

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	544	2	546	10	µS/cm	100%
Total hardness	1,92	0,02	1,91	0,2	mmol/l	99%
Alkalinity KS 4,3 (as H+)	3,70	0,05	3,61	0,4	mmol/l	98%
Hydrogen carbonate	222	3	220,3	22,0	mg/l	99%
Calcium	55,5	0,9	54,3	10,9	mg/l	98%
Magnesium	12,93	0,18	13,4	2,7	mg/l	104%
Sodium	39,9	0,6	40,5	6,1	mg/l	102%
Potassium	1,97	0,04	1,92	0,39	mg/l	97%
Nitrate (as NO3)	40,1	1,0	41,18	4,1	mg/l	103%
Nitrite (as NO2)	0,0432	0,0015	0,0441	0,0064	mg/l	102%
Ammonium (as NH4)	<0,01		<0,010		mg/l	•
Chloride	23,6	0,3	22,85	2,3	mg/l	97%
Sulphate (as SO4)	29,7	0,6	29,09	2,9	mg/l	98%
Orthophosphate (as PO4)	0,0456	0,0030	0,0499	0,0059	mg/l	109%
Boron	0,086	0,002	0,0854	0,022	mg/l	99%
DOC (as C)	4,14	0,07	4,27	0,43	mg/l	103%
Total P (as PO4)	0,115	0,003	0,1121	0,0132	mg/l	97%
KMnO4-Index (as O2)	3,13	0,11			mg/l	



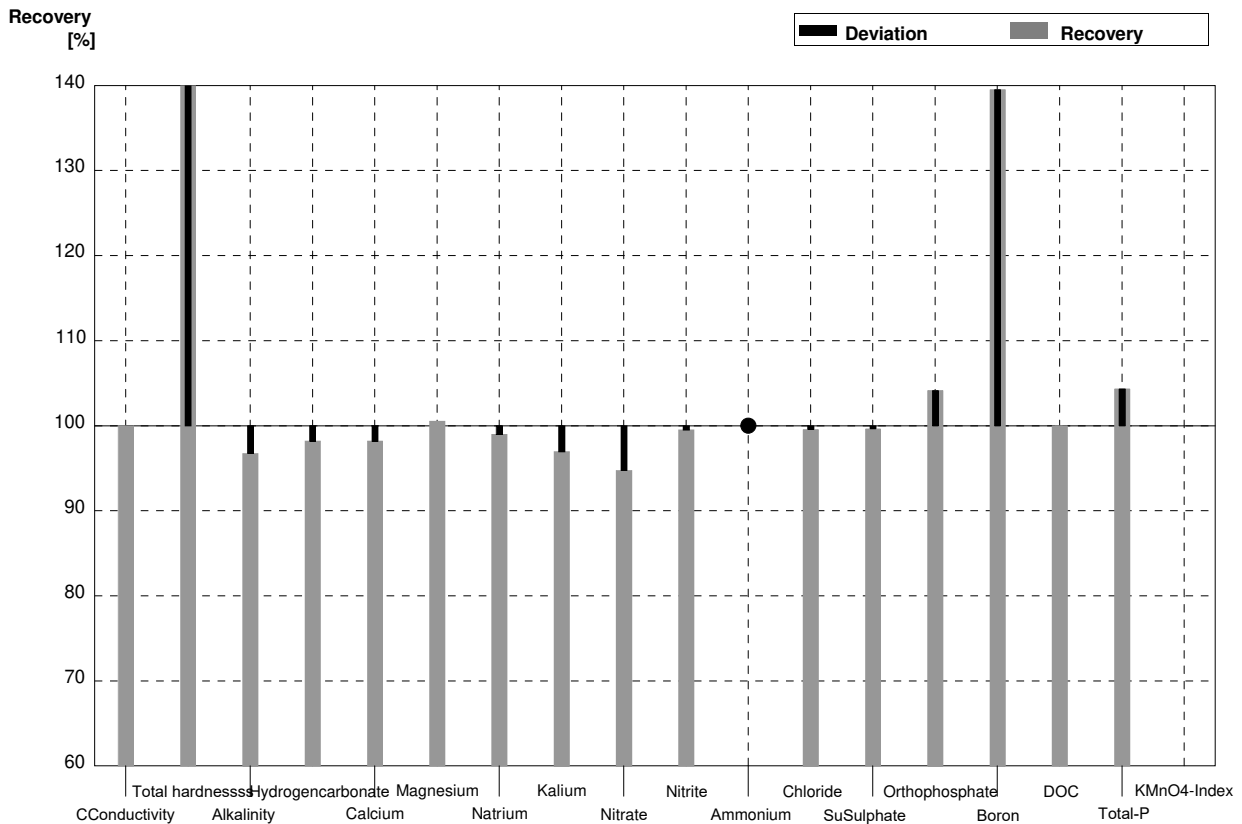
Sample N174A
Laboratory F

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	360	1	359	11	µS/cm	100%
Total hardness	0,879	0,010	4,93	0,37	mmol/l	561%
Alkalinity KS 4,3 (as H+)	1,517	0,018	1,44	0,05	mmol/l	95%
Hydrogen carbonate	89,5	1,1	88,1	3,5	mg/l	98%
Calcium	25,1	0,4	25,0	1,2	mg/l	100%
Magnesium	6,15	0,10	6,19	0,36	mg/l	101%
Sodium	32,9	0,2	32,7	1,0	mg/l	99%
Potassium	5,90	0,03	5,81	0,46	mg/l	98%
Nitrate (as NO3)	9,7	0,3	9,20	0,49	mg/l	95%
Nitrite (as NO2)	0,02228	0,00008	0,0210	0,0015	mg/l	94%
Ammonium (as NH4)	0,0406	0,0019	0,0439	0,0036	mg/l	108%
Chloride	46,5	0,5	46,0	2,3	mg/l	99%
Sulphate (as SO4)	16,8	0,3	17,4	1,0	mg/l	104%
Orthophosphate (as PO4)	<0,009		<0,006		mg/l	•
Boron	0,136	0,004	0,0780	0,0070	mg/l	57%
DOC (as C)	5,53	0,07	5,38	0,48	mg/l	97%
Total P (as PO4)	<0,009		<0,006		mg/l	•
KMnO4-Index (as O2)	2,10	0,10			mg/l	



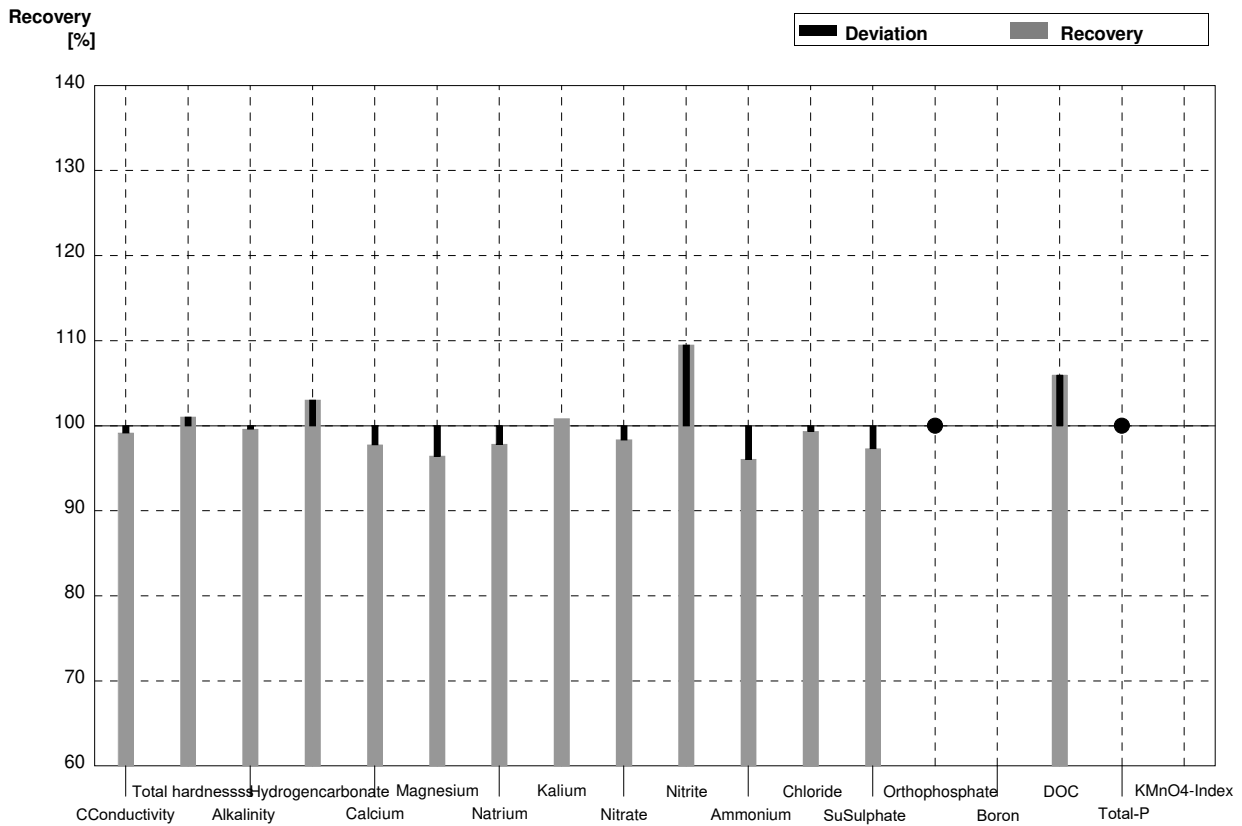
Sample N174B
Laboratory F

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	544	2	544	16	µS/cm	100%
Total hardness	1,92	0,02	10,6	0,8	mmol/l	552%
Alkalinity KS 4,3 (as H+)	3,70	0,05	3,58	0,12	mmol/l	97%
Hydrogen carbonate	222	3	218	9	mg/l	98%
Calcium	55,5	0,9	54,5	2,6	mg/l	98%
Magnesium	12,93	0,18	13,0	0,8	mg/l	101%
Sodium	39,9	0,6	39,5	1,2	mg/l	99%
Potassium	1,97	0,04	1,91	0,15	mg/l	97%
Nitrate (as NO3)	40,1	1,0	38,0	2,0	mg/l	95%
Nitrite (as NO2)	0,0432	0,0015	0,0430	0,0031	mg/l	100%
Ammonium (as NH4)	<0,01		<0,008		mg/l	•
Chloride	23,6	0,3	23,5	1,2	mg/l	100%
Sulphate (as SO4)	29,7	0,6	29,6	1,6	mg/l	100%
Orthophosphate (as PO4)	0,0456	0,0030	0,0475	0,0022	mg/l	104%
Boron	0,086	0,002	0,120	0,011	mg/l	140%
DOC (as C)	4,14	0,07	4,14	0,37	mg/l	100%
Total P (as PO4)	0,115	0,003	0,120	0,008	mg/l	104%
KMnO4-Index (as O2)	3,13	0,11			mg/l	



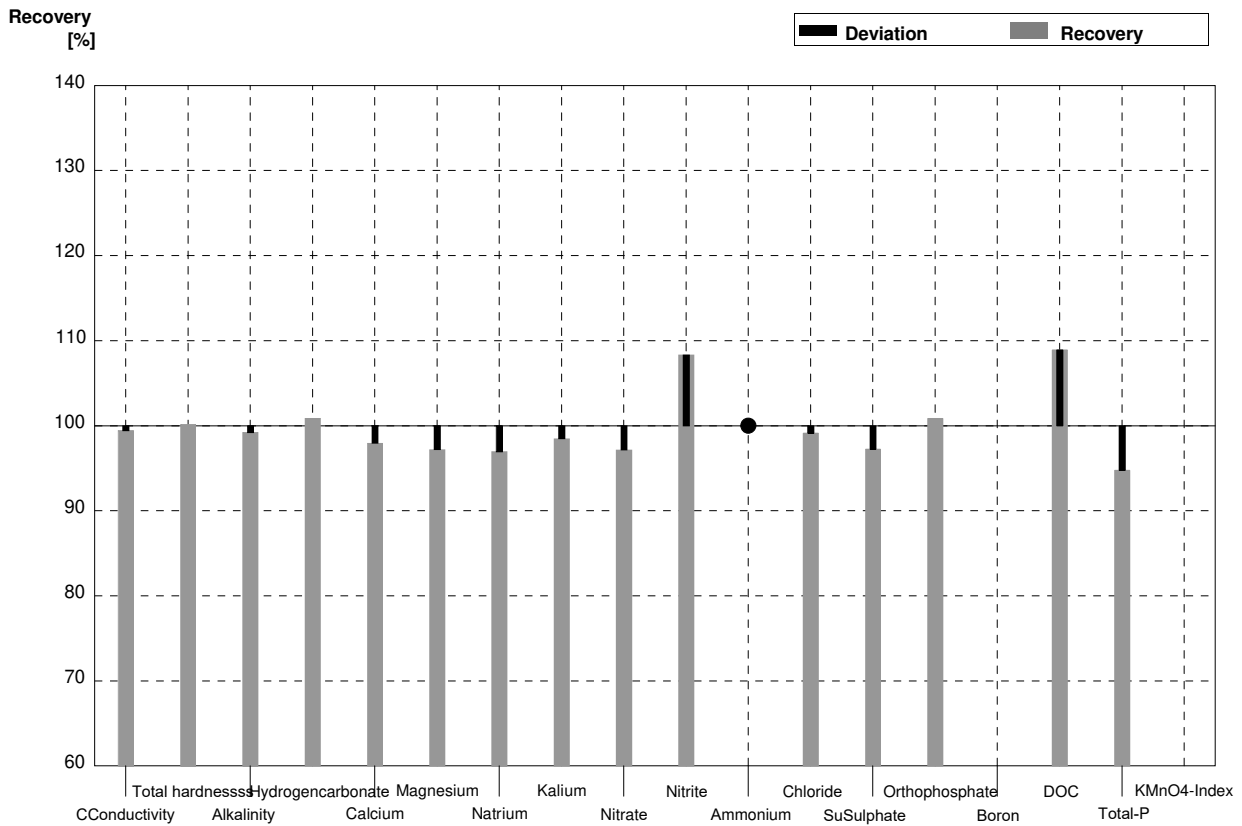
Sample N174A
Laboratory G

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	360	1	357	2	µS/cm	99%
Total hardness	0,879	0,010	0,888	0,1	mmol/l	101%
Alkalinity KS 4,3 (as H+)	1,517	0,018	1,511	0,1	mmol/l	100%
Hydrogen carbonate	89,5	1,1	92,2	6,1	mg/l	103%
Calcium	25,1	0,4	24,54	1,0	mg/l	98%
Magnesium	6,15	0,10	5,93	0,2	mg/l	96%
Sodium	32,9	0,2	32,19	0,2	mg/l	98%
Potassium	5,90	0,03	5,95	0,1	mg/l	101%
Nitrate (as NO3)	9,7	0,3	9,54	0,4	mg/l	98%
Nitrite (as NO2)	0,02228	0,00008	0,0244	0,002	mg/l	110%
Ammonium (as NH4)	0,0406	0,0019	0,0390	0,003	mg/l	96%
Chloride	46,5	0,5	46,20	0,2	mg/l	99%
Sulphate (as SO4)	16,8	0,3	16,35	2	mg/l	97%
Orthophosphate (as PO4)	<0,009		0,00307	0,0015	mg/l	•
Boron	0,136	0,004			mg/l	
DOC (as C)	5,53	0,07	5,86	0,2	mg/l	106%
Total P (as PO4)	<0,009		<0,0092	0,0046	mg/l	•
KMnO4-Index (as O2)	2,10	0,10			mg/l	



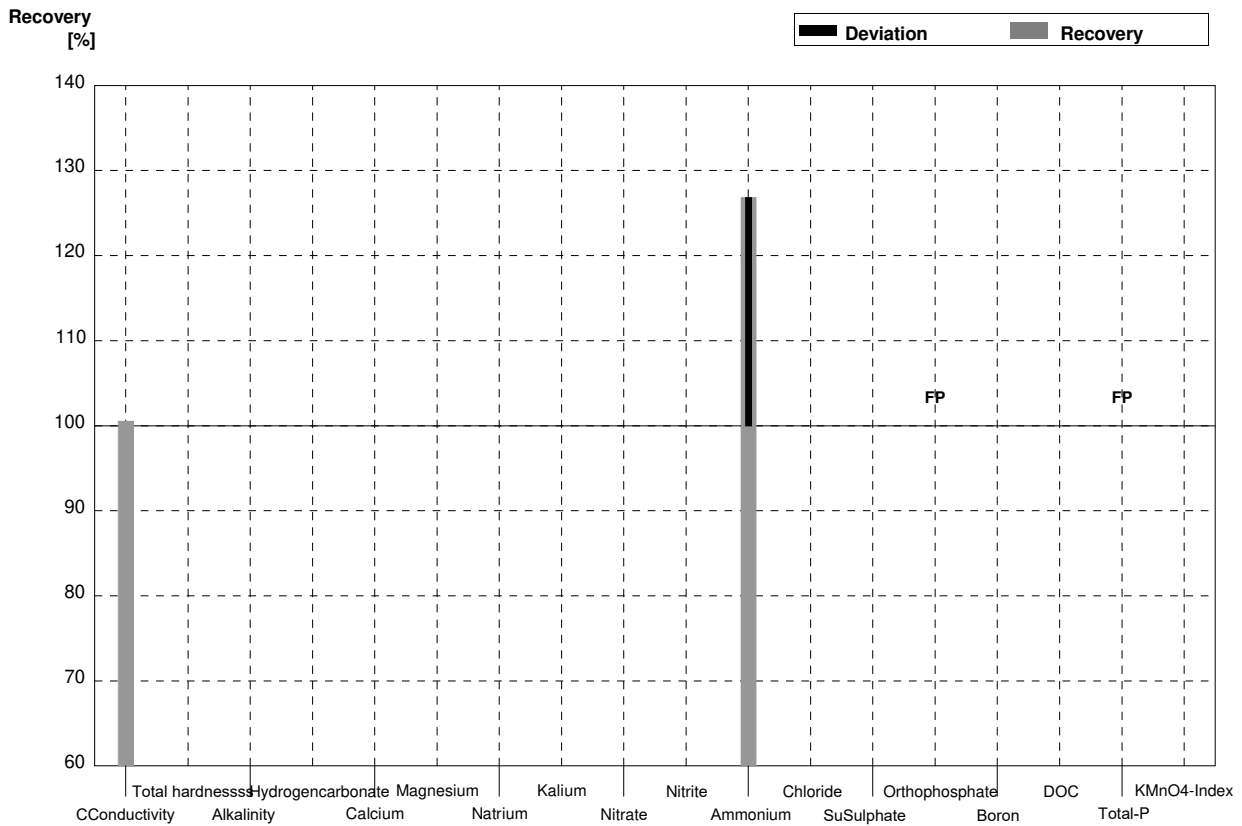
Sample N174B
Laboratory G

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	544	2	541	2	µS/cm	99%
Total hardness	1,92	0,02	1,923	0,1	mmol/l	100%
Alkalinity KS 4,3 (as H+)	3,70	0,05	3,671	0,1	mmol/l	99%
Hydrogen carbonate	222	3	224	6,1	mg/l	101%
Calcium	55,5	0,9	54,37	1,0	mg/l	98%
Magnesium	12,93	0,18	12,57	0,2	mg/l	97%
Sodium	39,9	0,6	38,69	0,2	mg/l	97%
Potassium	1,97	0,04	1,94	0,1	mg/l	98%
Nitrate (as NO3)	40,1	1,0	38,96	0,4	mg/l	97%
Nitrite (as NO2)	0,0432	0,0015	0,0468	0,002	mg/l	108%
Ammonium (as NH4)	<0,01		<0,0064	0,003	mg/l	•
Chloride	23,6	0,3	23,40	0,2	mg/l	99%
Sulphate (as SO4)	29,7	0,6	28,89	2	mg/l	97%
Orthophosphate (as PO4)	0,0456	0,0030	0,0460	0,0015	mg/l	101%
Boron	0,086	0,002			mg/l	
DOC (as C)	4,14	0,07	4,51	0,2	mg/l	109%
Total P (as PO4)	0,115	0,003	0,109	0,0046	mg/l	95%
KMnO4-Index (as O2)	3,13	0,11			mg/l	



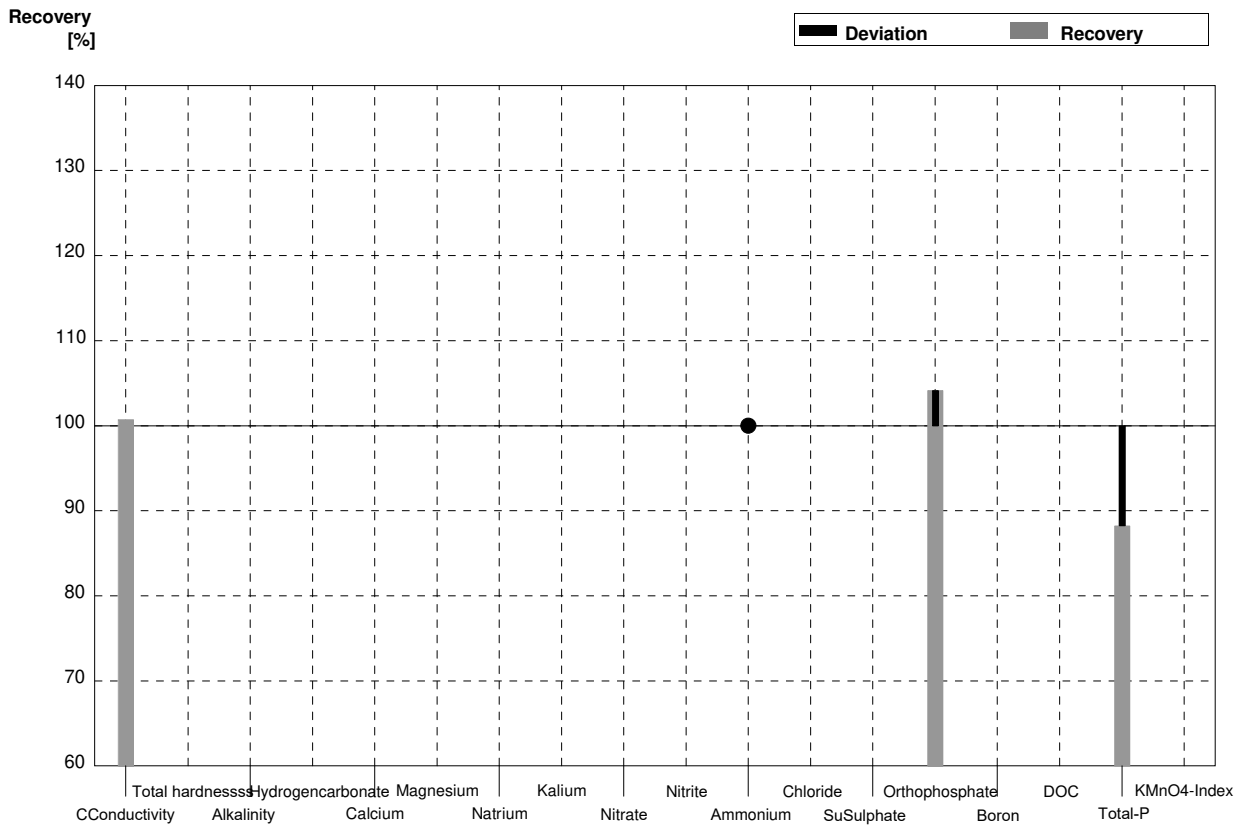
Sample N174A
Laboratory H

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	360	1	362	4,489	µS/cm	101%
Total hardness	0,879	0,010			mmol/l	
Alkalinity KS 4,3 (as H+)	1,517	0,018			mmol/l	
Hydrogen carbonate	89,5	1,1			mg/l	
Calcium	25,1	0,4			mg/l	
Magnesium	6,15	0,10			mg/l	
Sodium	32,9	0,2			mg/l	
Potassium	5,90	0,03			mg/l	
Nitrate (as NO3)	9,7	0,3			mg/l	
Nitrite (as NO2)	0,02228	0,00008			mg/l	
Ammonium (as NH4)	0,0406	0,0019	0,0515	0,0118	mg/l	127%
Chloride	46,5	0,5			mg/l	
Sulphate (as SO4)	16,8	0,3			mg/l	
Orthophosphate (as PO4)	<0,009		0,0105	0,00072	mg/l	FP
Boron	0,136	0,004			mg/l	
DOC (as C)	5,53	0,07			mg/l	
Total P (as PO4)	<0,009		0,0405	0,00488	mg/l	FP
KMnO4-Index (as O2)	2,10	0,10			mg/l	



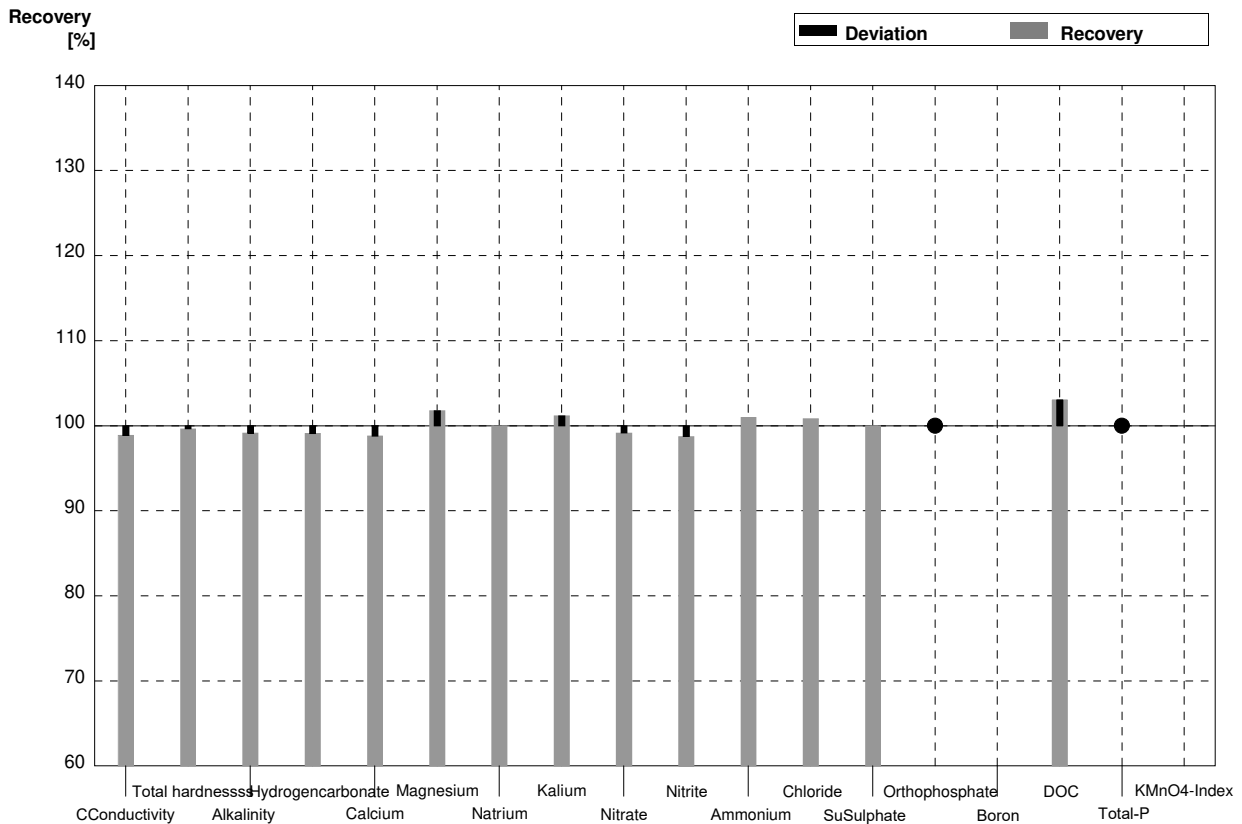
Sample N174B
Laboratory H

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	544	2	548	6,795	µS/cm	101%
Total hardness	1,92	0,02			mmol/l	
Alkalinity KS 4,3 (as H+)	3,70	0,05			mmol/l	
Hydrogen carbonate	222	3			mg/l	
Calcium	55,5	0,9			mg/l	
Magnesium	12,93	0,18			mg/l	
Sodium	39,9	0,6			mg/l	
Potassium	1,97	0,04			mg/l	
Nitrate (as NO3)	40,1	1,0			mg/l	
Nitrite (as NO2)	0,0432	0,0015			mg/l	
Ammonium (as NH4)	<0,01		0,00500	0,00115	mg/l	•
Chloride	23,6	0,3			mg/l	
Sulphate (as SO4)	29,7	0,6			mg/l	
Orthophosphate (as PO4)	0,0456	0,0030	0,0475	0,00326	mg/l	104%
Boron	0,086	0,002			mg/l	
DOC (as C)	4,14	0,07			mg/l	
Total P (as PO4)	0,115	0,003	0, 1015	0,01223	mg/l	88%
KMnO4-Index (as O2)	3,13	0,11			mg/l	



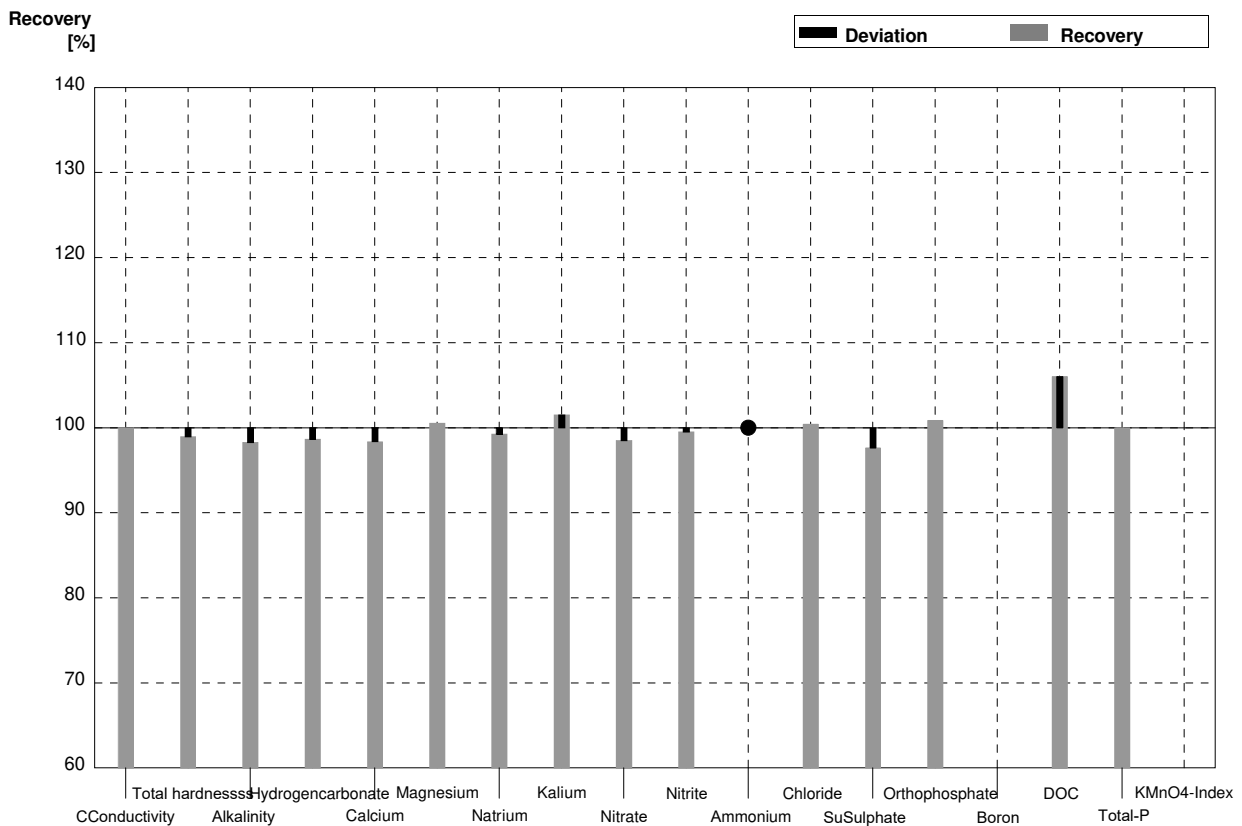
Sample N174A
Laboratory I

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	360	1	356	15	µS/cm	99%
Total hardness	0,879	0,010	0,876	0,03	mmol/l	100%
Alkalinity KS 4,3 (as H+)	1,517	0,018	1,504	0,1	mmol/l	99%
Hydrogen carbonate	89,5	1,1	88,7	4	mg/l	99%
Calcium	25,1	0,4	24,8	2	mg/l	99%
Magnesium	6,15	0,10	6,26	0,8	mg/l	102%
Sodium	32,9	0,2	32,9	5	mg/l	100%
Potassium	5,90	0,03	5,97	0,8	mg/l	101%
Nitrate (as NO3)	9,7	0,3	9,62	0,7	mg/l	99%
Nitrite (as NO2)	0,02228	0,00008	0,0220	0,002	mg/l	99%
Ammonium (as NH4)	0,0406	0,0019	0,0410	0,005	mg/l	101%
Chloride	46,5	0,5	46,9	4	mg/l	101%
Sulphate (as SO4)	16,8	0,3	16,8	1,1	mg/l	100%
Orthophosphate (as PO4)	<0,009		<0,01		mg/l	•
Boron	0,136	0,004			mg/l	
DOC (as C)	5,53	0,07	5,70	0,8	mg/l	103%
Total P (as PO4)	<0,009		<0,013		mg/l	•
KMnO4-Index (as O2)	2,10	0,10			mg/l	



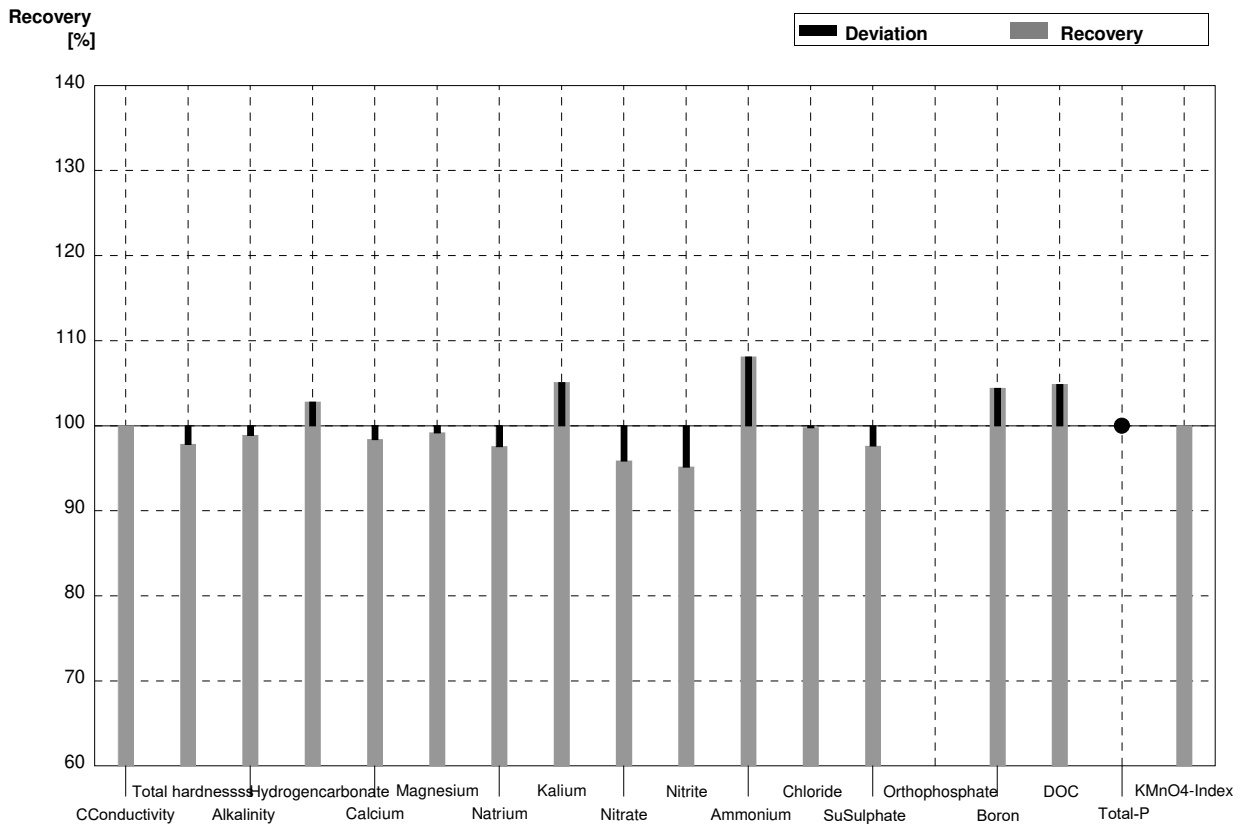
Sample N174B
Laboratory I

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	544	2	544	22	µS/cm	100%
Total hardness	1,92	0,02	1,90	0,1	mmol/l	99%
Alkalinity KS 4,3 (as H+)	3,70	0,05	3,636	0,2	mmol/l	98%
Hydrogen carbonate	222	3	219	9	mg/l	99%
Calcium	55,5	0,9	54,6	5	mg/l	98%
Magnesium	12,93	0,18	13,0	1,6	mg/l	101%
Sodium	39,9	0,6	39,6	6	mg/l	99%
Potassium	1,97	0,04	2,00	0,3	mg/l	102%
Nitrate (as NO3)	40,1	1,0	39,5	3	mg/l	99%
Nitrite (as NO2)	0,0432	0,0015	0,0430	0,004	mg/l	100%
Ammonium (as NH4)	<0,01		<0,013		mg/l	•
Chloride	23,6	0,3	23,7	2	mg/l	100%
Sulphate (as SO4)	29,7	0,6	29,0	2	mg/l	98%
Orthophosphate (as PO4)	0,0456	0,0030	0,0460	0,008	mg/l	101%
Boron	0,086	0,002			mg/l	
DOC (as C)	4,14	0,07	4,39	0,7	mg/l	106%
Total P (as PO4)	0,115	0,003	0,115	0,02	mg/l	100%
KMnO4-Index (as O2)	3,13	0,11			mg/l	



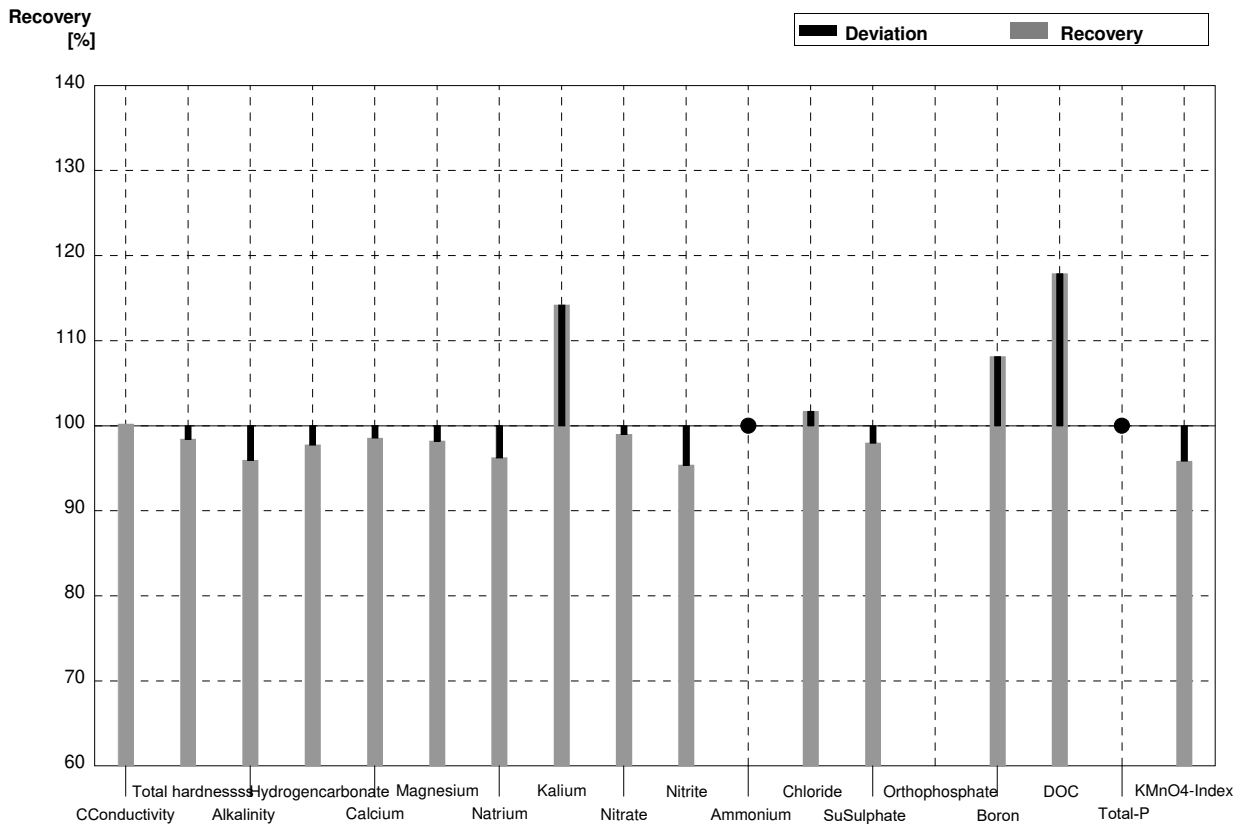
Sample N174A
Laboratory J

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	360	1	360	4	µS/cm	100%
Total hardness	0,879	0,010	0,86	0,15	mmol/l	98%
Alkalinity KS 4,3 (as H+)	1,517	0,018	1,50	0,2	mmol/l	99%
Hydrogen carbonate	89,5	1,1	92	2	mg/l	103%
Calcium	25,1	0,4	24,7	1,5	mg/l	98%
Magnesium	6,15	0,10	6,1	1	mg/l	99%
Sodium	32,9	0,2	32,1	1,7	mg/l	98%
Potassium	5,90	0,03	6,2	0,5	mg/l	105%
Nitrate (as NO3)	9,7	0,3	9,3	1	mg/l	96%
Nitrite (as NO2)	0,02228	0,00008	0,0212	0,01	mg/l	95%
Ammonium (as NH4)	0,0406	0,0019	0,0439	0,01	mg/l	108%
Chloride	46,5	0,5	46,4	2	mg/l	100%
Sulphate (as SO4)	16,8	0,3	16,4	1,2	mg/l	98%
Orthophosphate (as PO4)	<0,009				mg/l	
Boron	0,136	0,004	0,142	0,02	mg/l	104%
DOC (as C)	5,53	0,07	5,8	0,5	mg/l	105%
Total P (as PO4)	<0,009		<0,20		mg/l	•
KMnO4-Index (as O2)	2,10	0,10	2,10	0,3	mg/l	100%



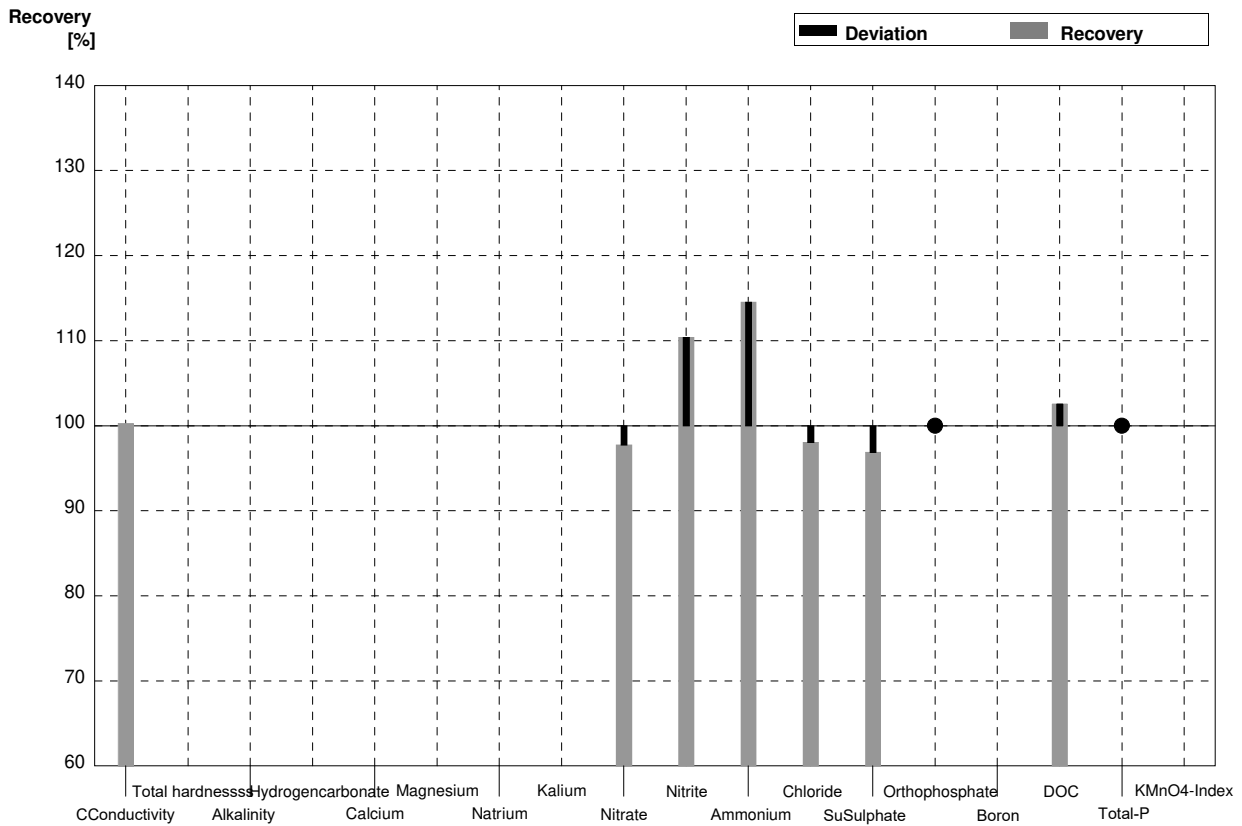
Sample N174B
Laboratory J

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	544	2	545	6	µS/cm	100%
Total hardness	1,92	0,02	1,89	0,18	mmol/l	98%
Alkalinity KS 4,3 (as H+)	3,70	0,05	3,55	0,2	mmol/l	96%
Hydrogen carbonate	222	3	217	3	mg/l	98%
Calcium	55,5	0,9	54,7	2	mg/l	99%
Magnesium	12,93	0,18	12,7	1	mg/l	98%
Sodium	39,9	0,6	38,4	1,8	mg/l	96%
Potassium	1,97	0,04	2,25	0,2	mg/l	114%
Nitrate (as NO3)	40,1	1,0	39,7	3	mg/l	99%
Nitrite (as NO2)	0,0432	0,0015	0,0412	0,01	mg/l	95%
Ammonium (as NH4)	<0,01		<0,02		mg/l	•
Chloride	23,6	0,3	24,0	1,5	mg/l	102%
Sulphate (as SO4)	29,7	0,6	29,1	2	mg/l	98%
Orthophosphate (as PO4)	0,0456	0,0030			mg/l	
Boron	0,086	0,002	0,093	0,02	mg/l	108%
DOC (as C)	4,14	0,07	4,88	0,8	mg/l	118%
Total P (as PO4)	0,115	0,003	<0,20		mg/l	•
KMnO4-Index (as O2)	3,13	0,11	3,00	0,5	mg/l	96%



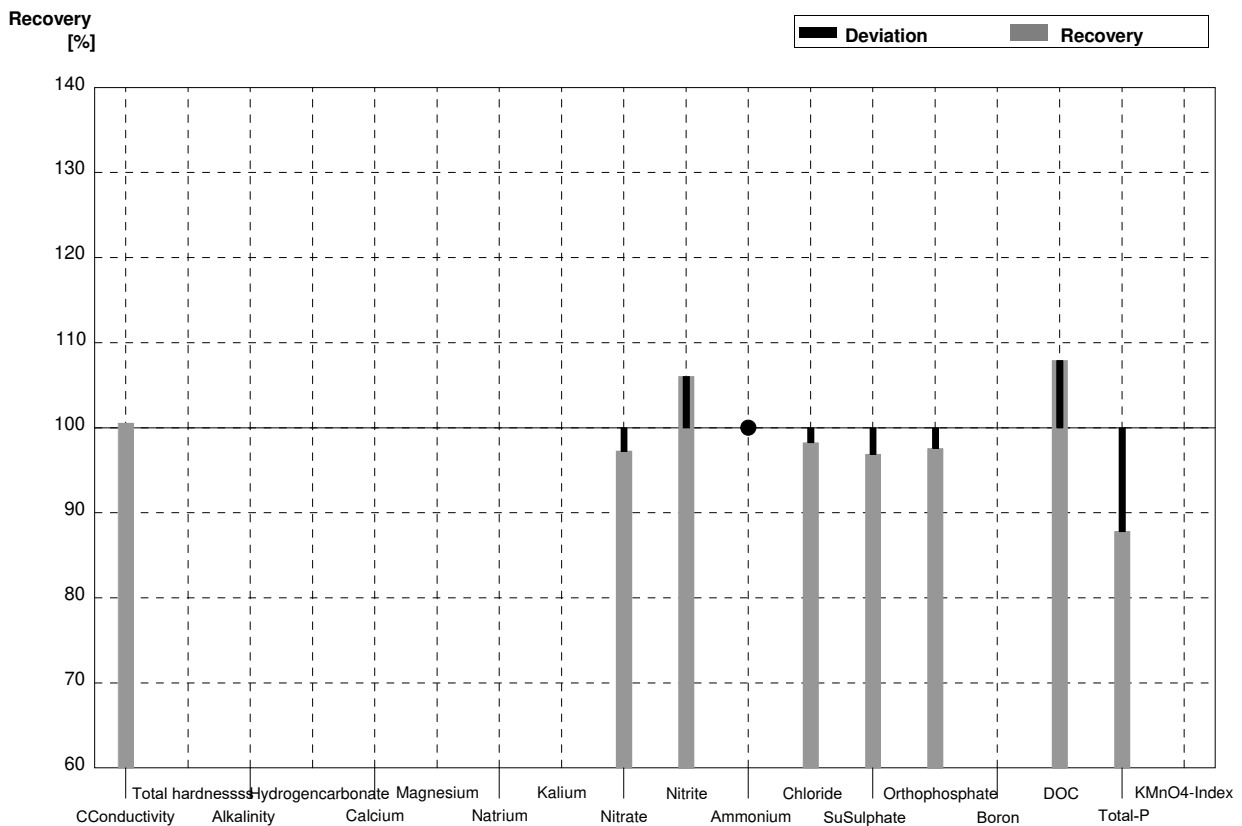
Sample N174A
Laboratory K

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	360	1	361	18	µS/cm	100%
Total hardness	0,879	0,010			mmol/l	
Alkalinity KS 4,3 (as H+)	1,517	0,018			mmol/l	
Hydrogen carbonate	89,5	1,1			mg/l	
Calcium	25,1	0,4			mg/l	
Magnesium	6,15	0,10			mg/l	
Sodium	32,9	0,2			mg/l	
Potassium	5,90	0,03			mg/l	
Nitrate (as NO3)	9,7	0,3	9,483	0,420	mg/l	98%
Nitrite (as NO2)	0,02228	0,00008	0,0246	0,0069	mg/l	110%
Ammonium (as NH4)	0,0406	0,0019	0,0465	0,0107	mg/l	115%
Chloride	46,5	0,5	45,596	5,964	mg/l	98%
Sulphate (as SO4)	16,8	0,3	16,276	0,991	mg/l	97%
Orthophosphate (as PO4)	<0,009		<0,015		mg/l	•
Boron	0,136	0,004			mg/l	
DOC (as C)	5,53	0,07	5,673	1,021	mg/l	103%
Total P (as PO4)	<0,009		<0,015		mg/l	•
KMnO4-Index (as O2)	2,10	0,10			mg/l	



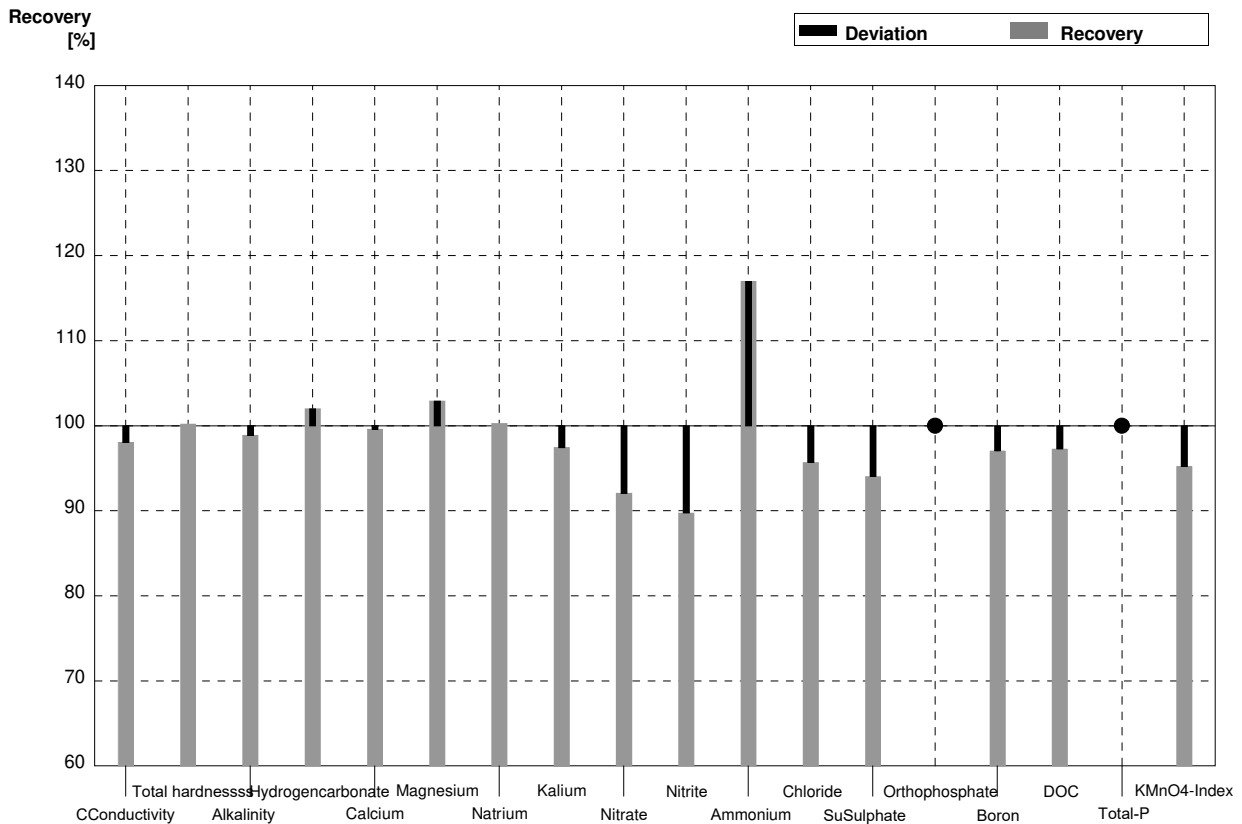
Sample N174B
Laboratory K

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	544	2	547	27	µS/cm	101%
Total hardness	1,92	0,02			mmol/l	
Alkalinity KS 4,3 (as H+)	3,70	0,05			mmol/l	
Hydrogen carbonate	222	3			mg/l	
Calcium	55,5	0,9			mg/l	
Magnesium	12,93	0,18			mg/l	
Sodium	39,9	0,6			mg/l	
Potassium	1,97	0,04			mg/l	
Nitrate (as NO3)	40,1	1,0	39,004	1,728	mg/l	97%
Nitrite (as NO2)	0,0432	0,0015	0,0458	0,0128	mg/l	106%
Ammonium (as NH4)	<0,01		<0,012		mg/l	•
Chloride	23,6	0,3	23,189	3,03	mg/l	98%
Sulphate (as SO4)	29,7	0,6	28,776	1,752	mg/l	97%
Orthophosphate (as PO4)	0,0456	0,0030	0,0445	0,0076	mg/l	98%
Boron	0,086	0,002			mg/l	
DOC (as C)	4,14	0,07	4,467	0,804	mg/l	108%
Total P (as PO4)	0,115	0,003	0,101	0,012	mg/l	88%
KMnO4-Index (as O2)	3,13	0,11			mg/l	



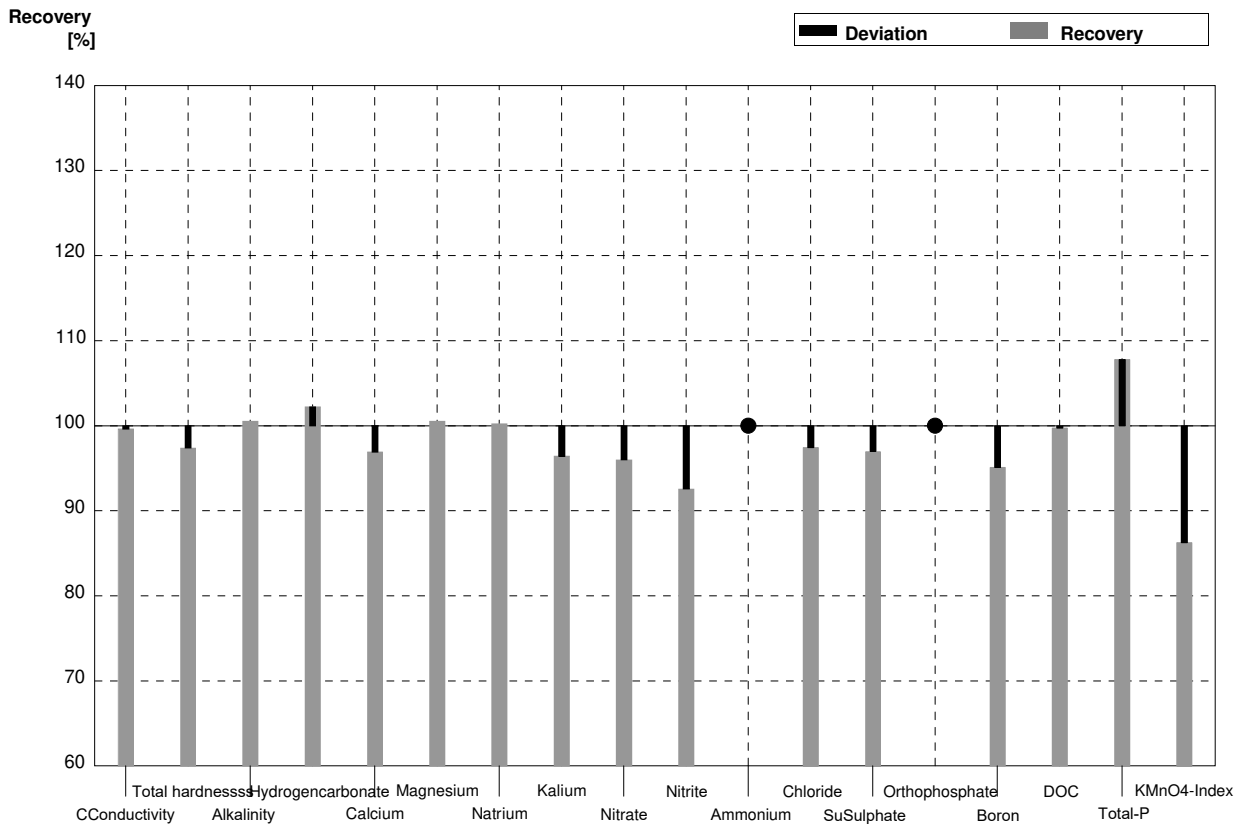
Sample N174A
Laboratory L

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	360	1	353	35	µS/cm	98%
Total hardness	0,879	0,010	0,881	0,18	mmol/l	100%
Alkalinity KS 4,3 (as H+)	1,517	0,018	1,50	0,15	mmol/l	99%
Hydrogen carbonate	89,5	1,1	91,3	9,13	mg/l	102%
Calcium	25,1	0,4	25,0	5,0	mg/l	100%
Magnesium	6,15	0,10	6,33	1,3	mg/l	103%
Sodium	32,9	0,2	33,0	6,6	mg/l	100%
Potassium	5,90	0,03	5,75	1,2	mg/l	97%
Nitrate (as NO3)	9,7	0,3	8,93	1,3	mg/l	92%
Nitrite (as NO2)	0,02228	0,00008	0,0200	0,003	mg/l	90%
Ammonium (as NH4)	0,0406	0,0019	0,0475	0,0095	mg/l	117%
Chloride	46,5	0,5	44,5	6,7	mg/l	96%
Sulphate (as SO4)	16,8	0,3	15,8	2,4	mg/l	94%
Orthophosphate (as PO4)	<0,009		<0,1		mg/l	•
Boron	0,136	0,004	0,132	0,027	mg/l	97%
DOC (as C)	5,53	0,07	5,38	1,6	mg/l	97%
Total P (as PO4)	<0,009		<0,031		mg/l	•
KMnO4-Index (as O2)	2,10	0,10	2,00	0,4	mg/l	95%



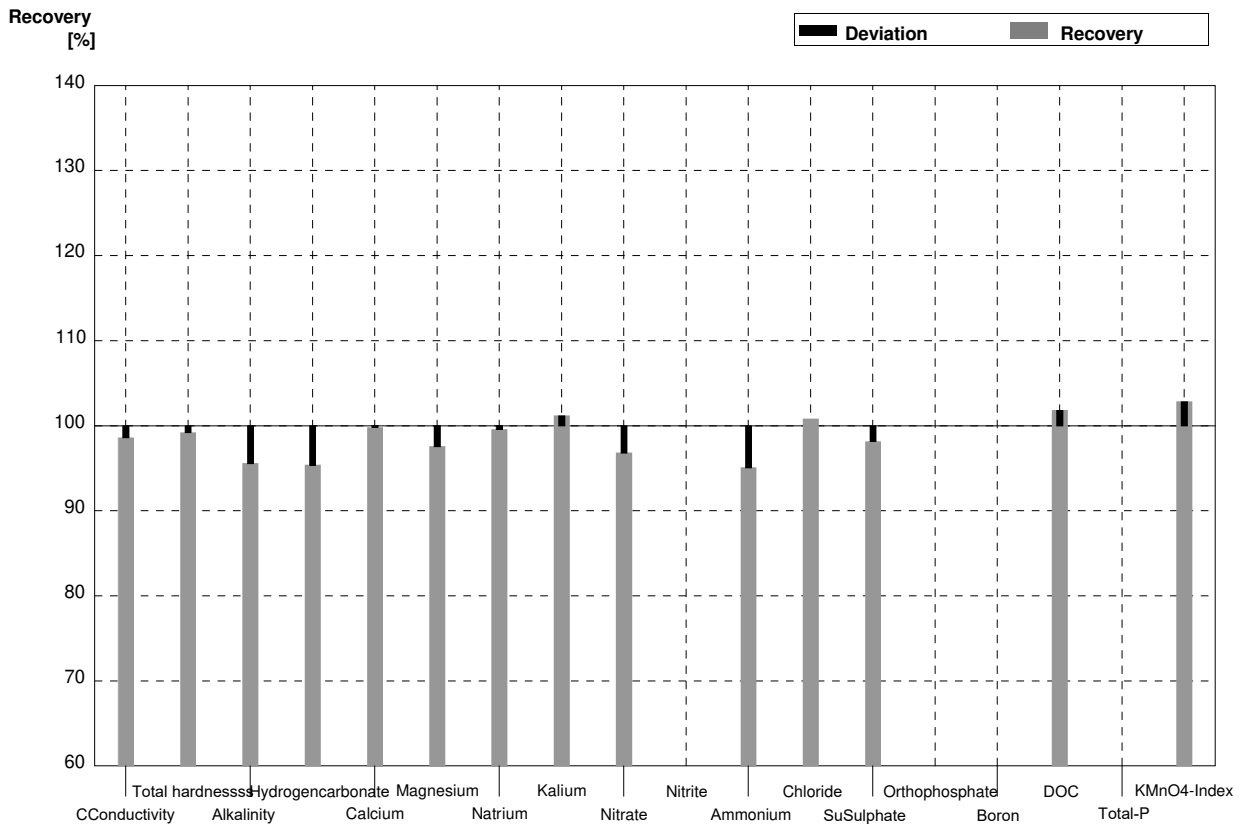
Sample N174B
Laboratory L

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	544	2	542	54	µS/cm	100%
Total hardness	1,92	0,02	1,87	0,37	mmol/l	97%
Alkalinity KS 4,3 (as H+)	3,70	0,05	3,72	0,37	mmol/l	101%
Hydrogen carbonate	222	3	227	23	mg/l	102%
Calcium	55,5	0,9	53,8	11	mg/l	97%
Magnesium	12,93	0,18	13,0	2,6	mg/l	101%
Sodium	39,9	0,6	40,0	8,0	mg/l	100%
Potassium	1,97	0,04	1,90	0,38	mg/l	96%
Nitrate (as NO3)	40,1	1,0	38,5	5,8	mg/l	96%
Nitrite (as NO2)	0,0432	0,0015	0,0400	0,006	mg/l	93%
Ammonium (as NH4)	<0,01		<0,01		mg/l	•
Chloride	23,6	0,3	23,0	3,5	mg/l	97%
Sulphate (as SO4)	29,7	0,6	28,8	4,3	mg/l	97%
Orthophosphate (as PO4)	0,0456	0,0030	<0,1		mg/l	•
Boron	0,086	0,002	0,0818	0,016	mg/l	95%
DOC (as C)	4,14	0,07	4,13	1,2	mg/l	100%
Total P (as PO4)	0,115	0,003	0,124	0,025	mg/l	108%
KMnO4-Index (as O2)	3,13	0,11	2,70	0,54	mg/l	86%



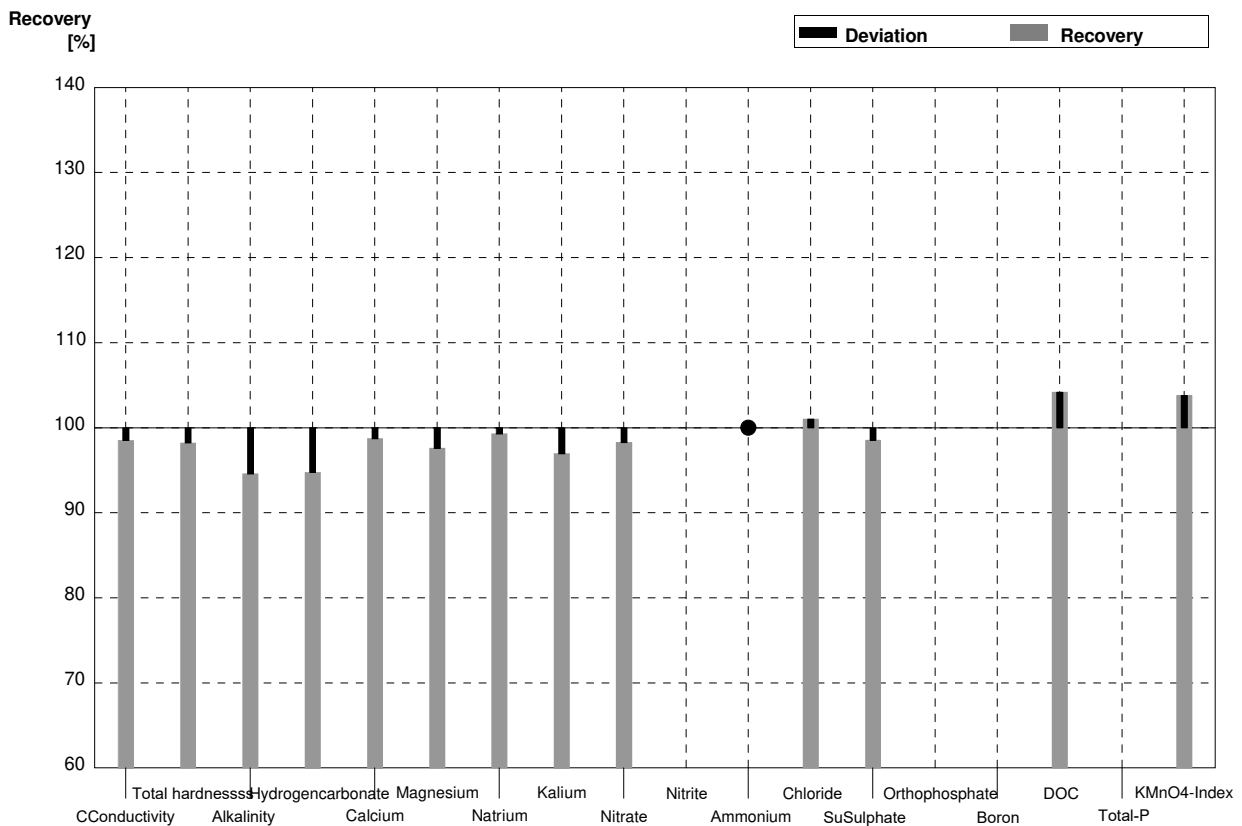
Sample N174A
Laboratory M

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	360	1	355,0	7,8	µS/cm	99%
Total hardness	0,879	0,010	0,872	0,03	mmol/l	99%
Alkalinity KS 4,3 (as H+)	1,517	0,018	1,45	0,03	mmol/l	96%
Hydrogen carbonate	89,5	1,1	85,37	1,79	mg/l	95%
Calcium	25,1	0,4	25,05	0,98	mg/l	100%
Magnesium	6,15	0,10	6,00	0,28	mg/l	98%
Sodium	32,9	0,2	32,76	1,57	mg/l	100%
Potassium	5,90	0,03	5,97	0,38	mg/l	101%
Nitrate (as NO3)	9,7	0,3	9,39	0,63	mg/l	97%
Nitrite (as NO2)	0,02228	0,00008			mg/l	
Ammonium (as NH4)	0,0406	0,0019	0,0386	0,007	mg/l	95%
Chloride	46,5	0,5	46,87	2,20	mg/l	101%
Sulphate (as SO4)	16,8	0,3	16,49	0,82	mg/l	98%
Orthophosphate (as PO4)	<0,009				mg/l	
Boron	0,136	0,004			mg/l	
DOC (as C)	5,53	0,07	5,631	0,98	mg/l	102%
Total P (as PO4)	<0,009				mg/l	
KMnO4-Index (as O2)	2,10	0,10	2,16	0,46	mg/l	103%



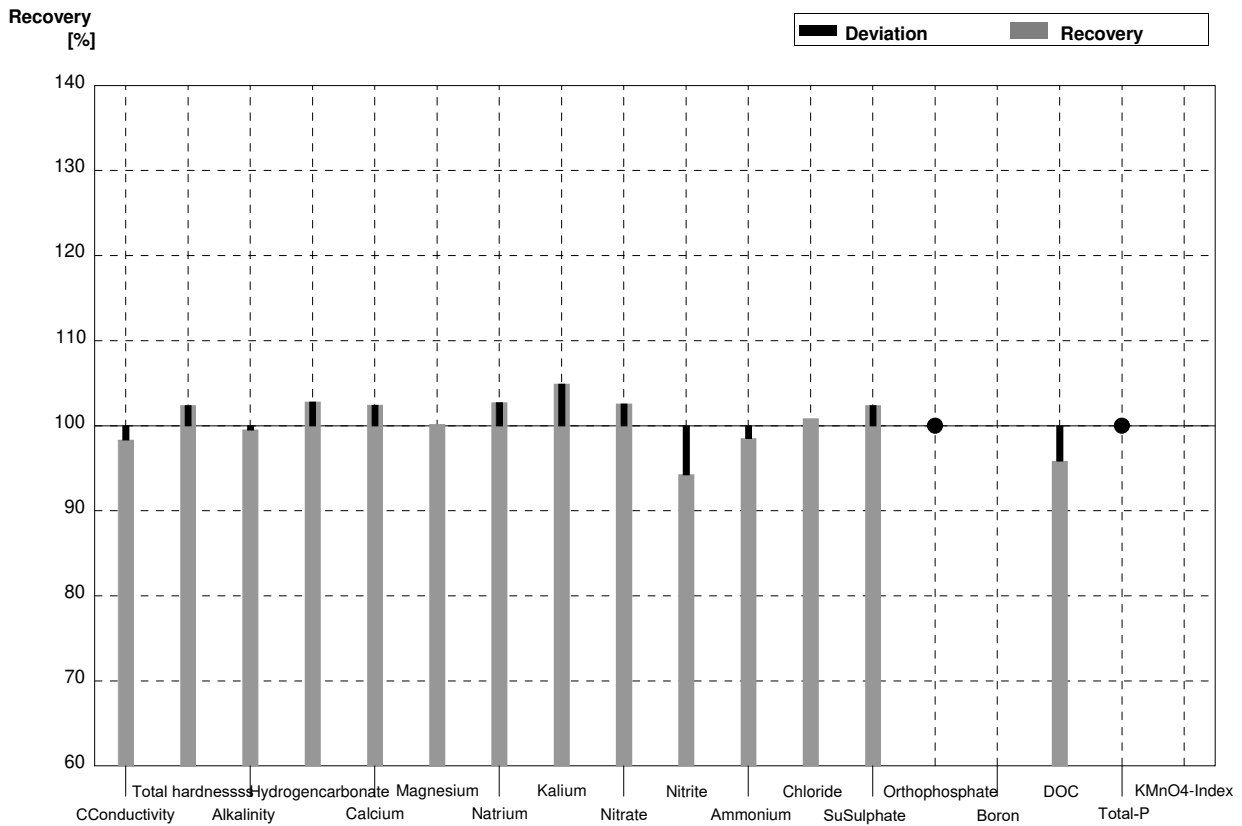
Sample N174B
Laboratory M

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	544	2	536,0	11,8	µS/cm	99%
Total hardness	1,92	0,02	1,886	0,08	mmol/l	98%
Alkalinity KS 4,3 (as H+)	3,70	0,05	3,50	0,07	mmol/l	95%
Hydrogen carbonate	222	3	210,38	4,42	mg/l	95%
Calcium	55,5	0,9	54,80	2,14	mg/l	99%
Magnesium	12,93	0,18	12,62	0,59	mg/l	98%
Sodium	39,9	0,6	39,62	1,90	mg/l	99%
Potassium	1,97	0,04	1,91	0,12	mg/l	97%
Nitrate (as NO3)	40,1	1,0	39,41	2,64	mg/l	98%
Nitrite (as NO2)	0,0432	0,0015			mg/l	
Ammonium (as NH4)	<0,01		<0,002		mg/l	•
Chloride	23,6	0,3	23,84	1,12	mg/l	101%
Sulphate (as SO4)	29,7	0,6	29,27	1,46	mg/l	99%
Orthophosphate (as PO4)	0,0456	0,0030			mg/l	
Boron	0,086	0,002			mg/l	
DOC (as C)	4,14	0,07	4,314	0,75	mg/l	104%
Total P (as PO4)	0,115	0,003			mg/l	
KMnO4-Index (as O2)	3,13	0,11	3,25	0,69	mg/l	104%



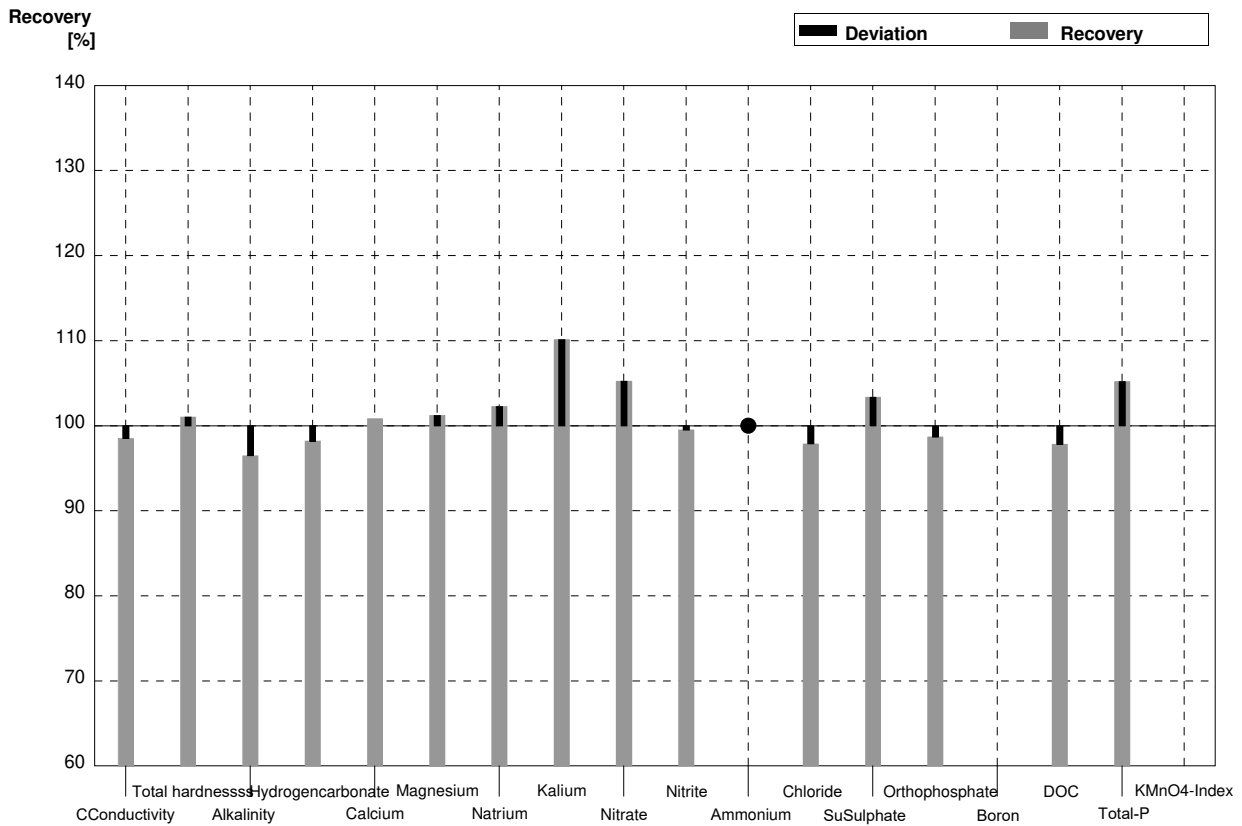
Sample N174A
Laboratory N

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	360	1	354	11	µS/cm	98%
Total hardness	0,879	0,010	0,90	0,05	mmol/l	102%
Alkalinity KS 4,3 (as H+)	1,517	0,018	1,51	0,08	mmol/l	100%
Hydrogen carbonate	89,5	1,1	92	7	mg/l	103%
Calcium	25,1	0,4	25,71	1,50	mg/l	102%
Magnesium	6,15	0,10	6,16	0,50	mg/l	100%
Sodium	32,9	0,2	33,8	2,0	mg/l	103%
Potassium	5,90	0,03	6,19	0,50	mg/l	105%
Nitrate (as NO3)	9,7	0,3	9,95	0,60	mg/l	103%
Nitrite (as NO2)	0,02228	0,00008	0,0210	0,0030	mg/l	94%
Ammonium (as NH4)	0,0406	0,0019	0,0400	0,0080	mg/l	99%
Chloride	46,5	0,5	46,9	3,8	mg/l	101%
Sulphate (as SO4)	16,8	0,3	17,2	1,0	mg/l	102%
Orthophosphate (as PO4)	<0,009		<0,0090		mg/l	•
Boron	0,136	0,004			mg/l	
DOC (as C)	5,53	0,07	5,3	0,7	mg/l	96%
Total P (as PO4)	<0,009		<0,0090		mg/l	•
KMnO4-Index (as O2)	2,10	0,10			mg/l	



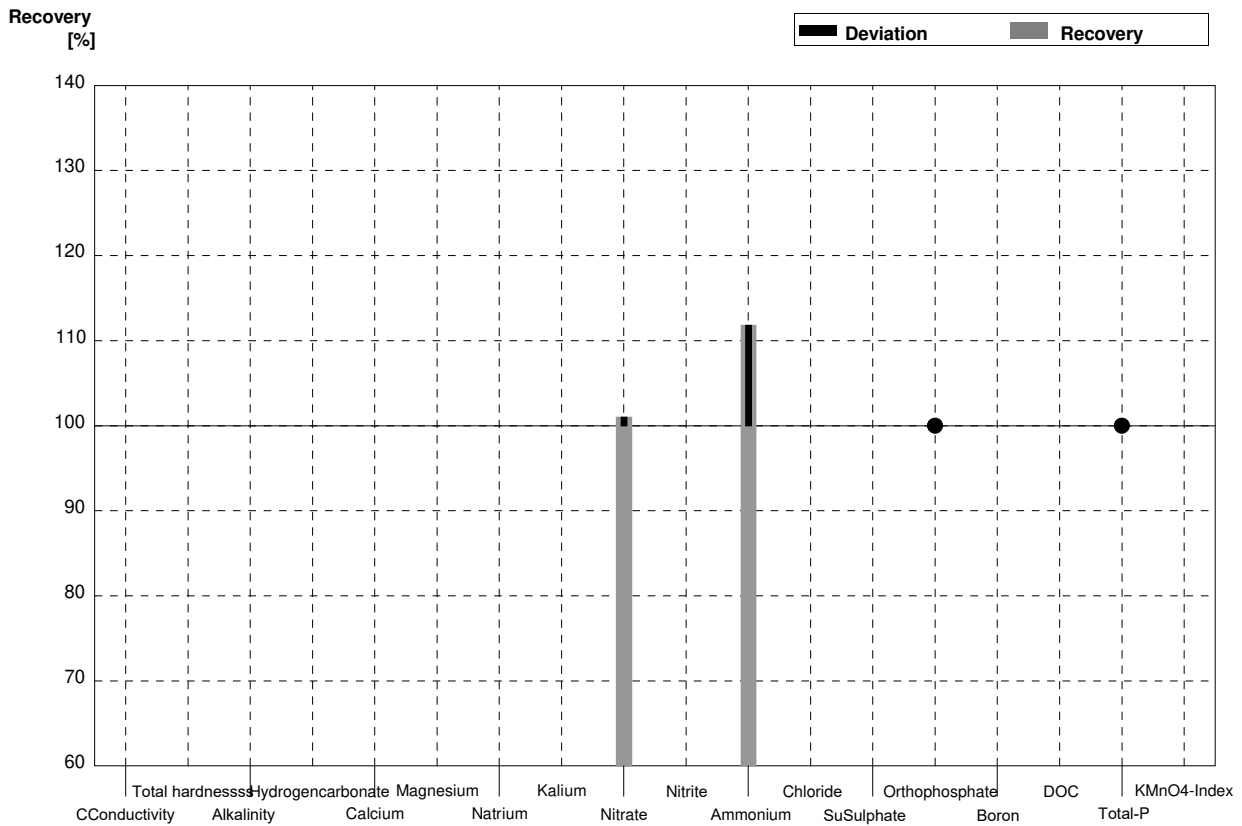
Sample N174B
Laboratory N

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	544	2	536	16	µS/cm	99%
Total hardness	1,92	0,02	1,94	0,10	mmol/l	101%
Alkalinity KS 4,3 (as H+)	3,70	0,05	3,57	0,18	mmol/l	96%
Hydrogen carbonate	222	3	218	17	mg/l	98%
Calcium	55,5	0,9	55,97	3,36	mg/l	101%
Magnesium	12,93	0,18	13,088	1,05	mg/l	101%
Sodium	39,9	0,6	40,8	2,5	mg/l	102%
Potassium	1,97	0,04	2,17	0,17	mg/l	110%
Nitrate (as NO3)	40,1	1,0	42,2	2,5	mg/l	105%
Nitrite (as NO2)	0,0432	0,0015	0,0430	0,0060	mg/l	100%
Ammonium (as NH4)	<0,01		<0,020		mg/l	•
Chloride	23,6	0,3	23,1	1,8	mg/l	98%
Sulphate (as SO4)	29,7	0,6	30,7	2,2	mg/l	103%
Orthophosphate (as PO4)	0,0456	0,0030	0,0450	0,0090	mg/l	99%
Boron	0,086	0,002			mg/l	
DOC (as C)	4,14	0,07	4,05	0,57	mg/l	98%
Total P (as PO4)	0,115	0,003	0,121	0,017	mg/l	105%
KMnO4-Index (as O2)	3,13	0,11			mg/l	



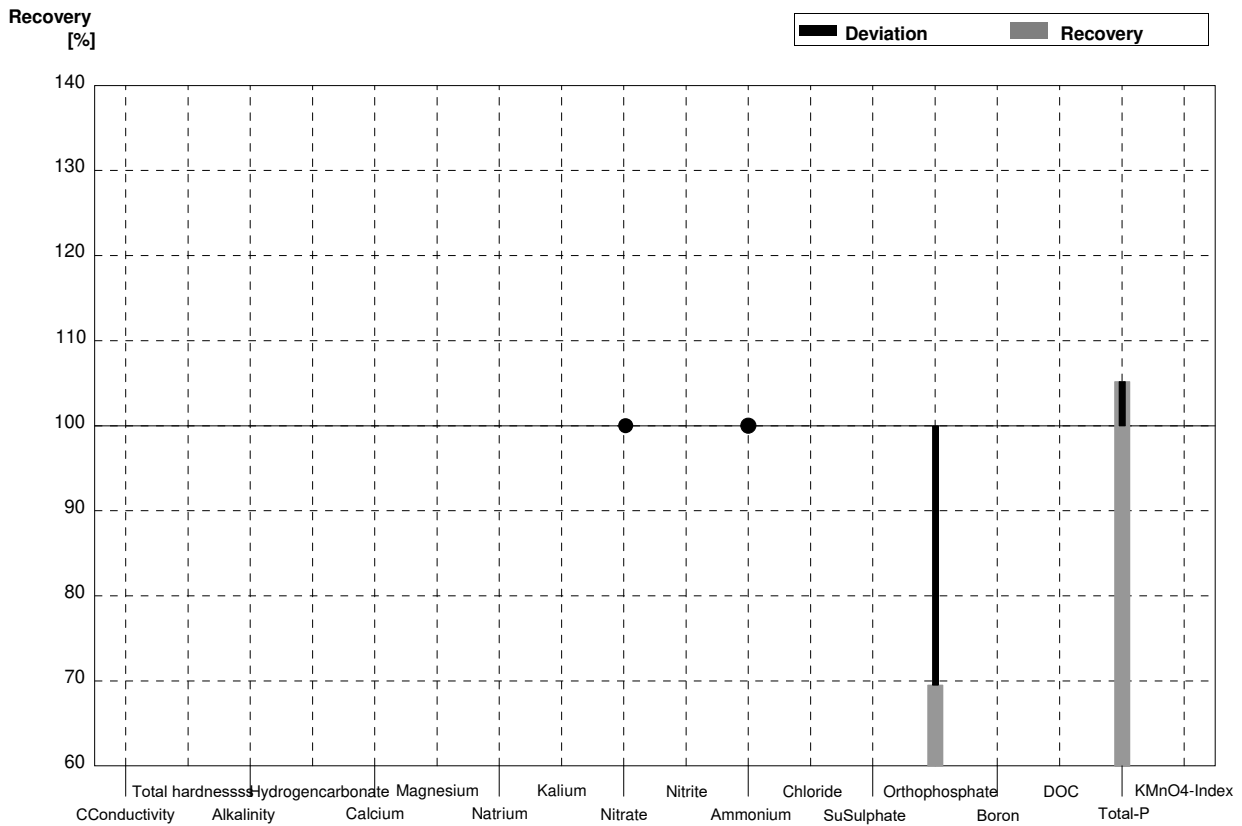
Sample N174A
Laboratory O

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	360	1			µS/cm	
Total hardness	0,879	0,010			mmol/l	
Alkalinity KS 4,3 (as H+)	1,517	0,018			mmol/l	
Hydrogen carbonate	89,5	1,1			mg/l	
Calcium	25,1	0,4			mg/l	
Magnesium	6,15	0,10			mg/l	
Sodium	32,9	0,2			mg/l	
Potassium	5,90	0,03			mg/l	
Nitrate (as NO3)	9,7	0,3	9,802	0,909	mg/l	101%
Nitrite (as NO2)	0,02228	0,00008			mg/l	
Ammonium (as NH4)	0,0406	0,0019	0,0454	0,0015	mg/l	112%
Chloride	46,5	0,5			mg/l	
Sulphate (as SO4)	16,8	0,3			mg/l	
Orthophosphate (as PO4)	<0,009		<0,019		mg/l	•
Boron	0,136	0,004			mg/l	
DOC (as C)	5,53	0,07			mg/l	
Total P (as PO4)	<0,009		<0,02		mg/l	•
KMnO4-Index (as O2)	2,10	0,10			mg/l	



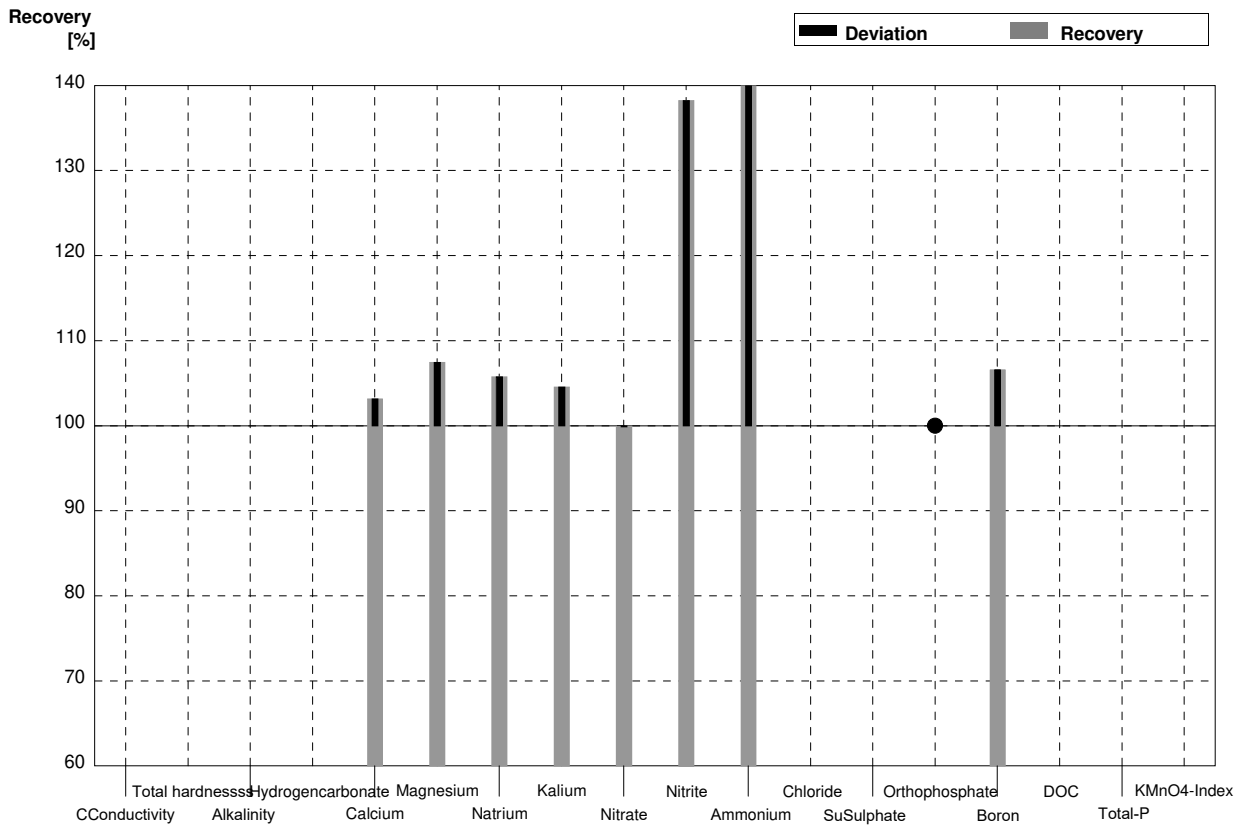
Sample N174B
Laboratory O

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	544	2			µS/cm	
Total hardness	1,92	0,02			mmol/l	
Alkalinity KS 4,3 (as H+)	3,70	0,05			mmol/l	
Hydrogen carbonate	222	3			mg/l	
Calcium	55,5	0,9			mg/l	
Magnesium	12,93	0,18			mg/l	
Sodium	39,9	0,6			mg/l	
Potassium	1,97	0,04			mg/l	
Nitrate (as NO3)	40,1	1,0	>30		mg/l	•
Nitrite (as NO2)	0,0432	0,0015			mg/l	
Ammonium (as NH4)	<0,01		<0,01		mg/l	•
Chloride	23,6	0,3			mg/l	
Sulphate (as SO4)	29,7	0,6			mg/l	
Orthophosphate (as PO4)	0,0456	0,0030	0,0317	0,0071	mg/l	70%
Boron	0,086	0,002			mg/l	
DOC (as C)	4,14	0,07			mg/l	
Total P (as PO4)	0,115	0,003	0,121	0,0094	mg/l	105%
KMnO4-Index (as O2)	3,13	0,11			mg/l	



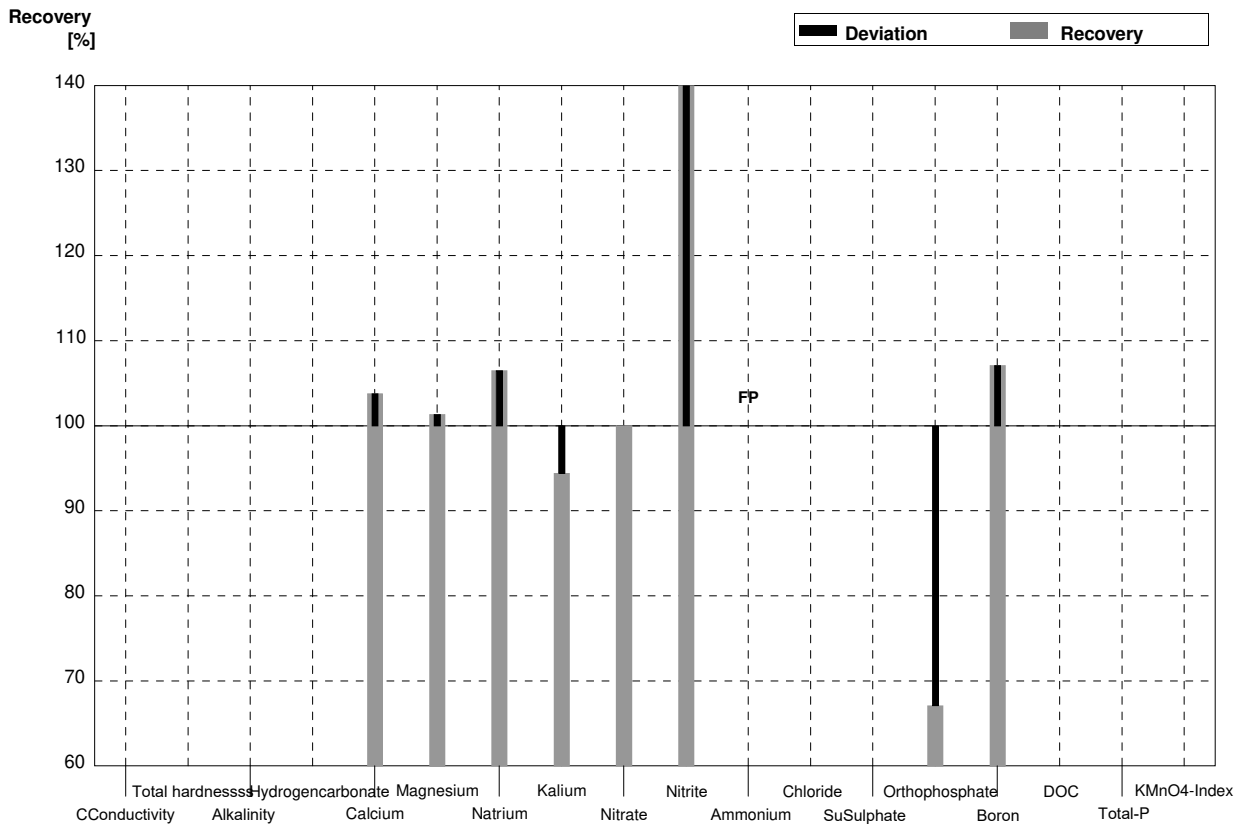
Sample N174A
Laboratory P

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	360	1			µS/cm	
Total hardness	0,879	0,010			mmol/l	
Alkalinity KS 4,3 (as H+)	1,517	0,018			mmol/l	
Hydrogen carbonate	89,5	1,1			mg/l	
Calcium	25,1	0,4	25,9	3,89	mg/l	103%
Magnesium	6,15	0,10	6,61	0,991	mg/l	107%
Sodium	32,9	0,2	34,8	5,22	mg/l	106%
Potassium	5,90	0,03	6,17	0,925	mg/l	105%
Nitrate (as NO3)	9,7	0,3	9,69	1,45	mg/l	100%
Nitrite (as NO2)	0,02228	0,00008	0,0308	0,0023	mg/l	138%
Ammonium (as NH4)	0,0406	0,0019	0,0694	0,0083	mg/l	171%
Chloride	46,5	0,5			mg/l	
Sulphate (as SO4)	16,8	0,3			mg/l	
Orthophosphate (as PO4)	<0,009		<0,01		mg/l	•
Boron	0,136	0,004	0,145	0,022	mg/l	107%
DOC (as C)	5,53	0,07			mg/l	
Total P (as PO4)	<0,009				mg/l	
KMnO4-Index (as O2)	2,10	0,10			mg/l	



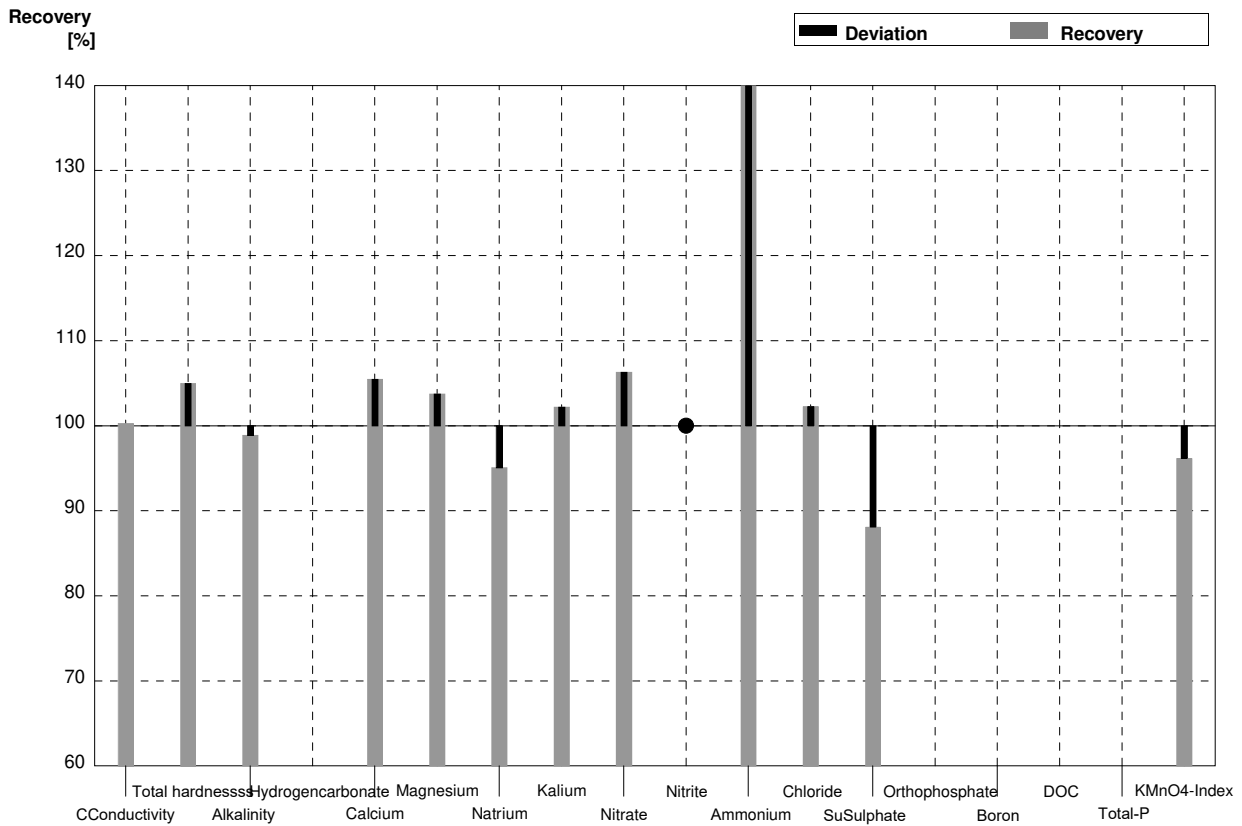
Sample N174B
Laboratory P

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	544	2			µS/cm	
Total hardness	1,92	0,02			mmol/l	
Alkalinity KS 4,3 (as H+)	3,70	0,05			mmol/l	
Hydrogen carbonate	222	3			mg/l	
Calcium	55,5	0,9	57,6	8,63	mg/l	104%
Magnesium	12,93	0,18	13,1	1,96	mg/l	101%
Sodium	39,9	0,6	42,5	6,37	mg/l	107%
Potassium	1,97	0,04	1,86	0,278	mg/l	94%
Nitrate (as NO3)	40,1	1,0	40,1	6,02	mg/l	100%
Nitrite (as NO2)	0,0432	0,0015	0,0780	0,0059	mg/l	181%
Ammonium (as NH4)	<0,01		0,0250	0,0030	mg/l	FP
Chloride	23,6	0,3			mg/l	
Sulphate (as SO4)	29,7	0,6			mg/l	
Orthophosphate (as PO4)	0,0456	0,0030	0,0306	0,0030	mg/l	67%
Boron	0,086	0,002	0,0921	0,014	mg/l	107%
DOC (as C)	4,14	0,07			mg/l	
Total P (as PO4)	0,115	0,003			mg/l	
KMnO4-Index (as O2)	3,13	0,11			mg/l	



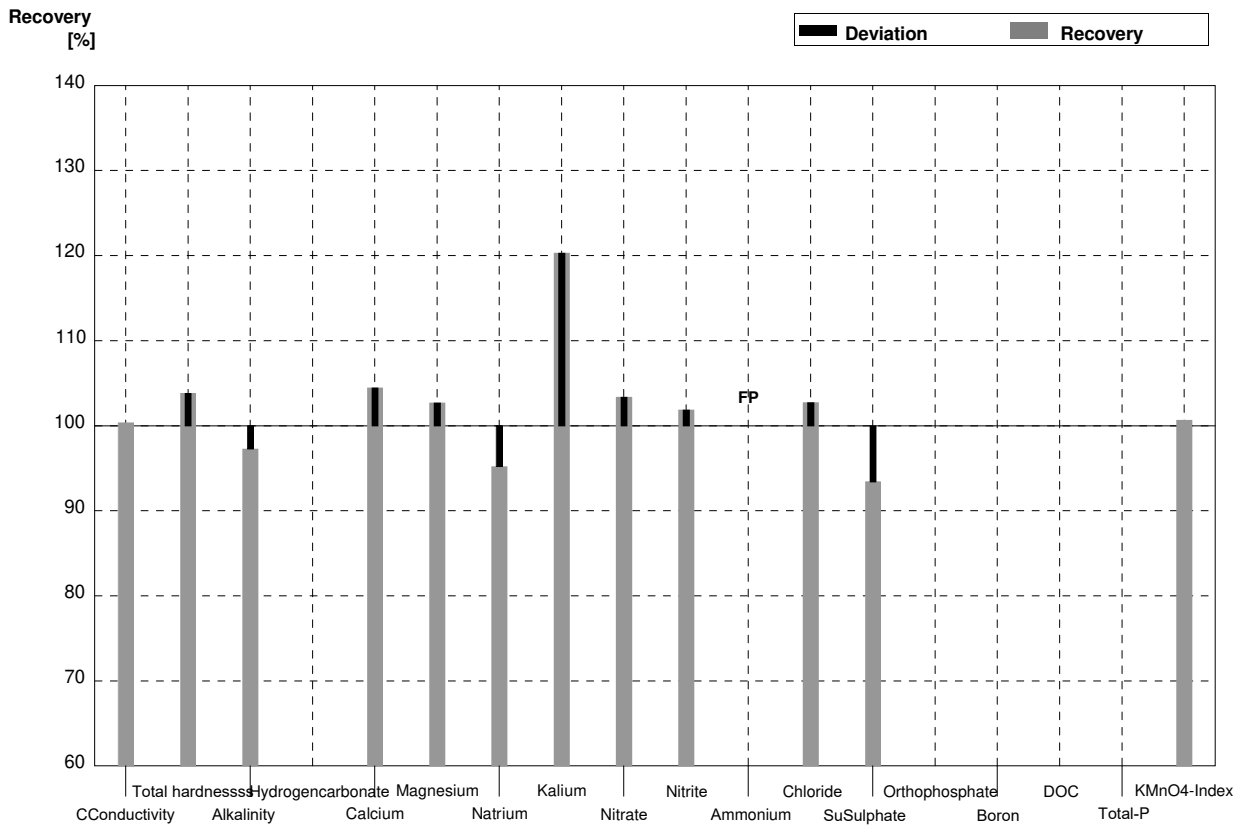
Sample N174A
Laboratory Q

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	360	1	361		µS/cm	100%
Total hardness	0,879	0,010	0,92296		mmol/l	105%
Alkalinity KS 4,3 (as H+)	1,517	0,018	1,50		mmol/l	99%
Hydrogen carbonate	89,5	1,1			mg/l	
Calcium	25,1	0,4	26,47		mg/l	105%
Magnesium	6,15	0,10	6,38		mg/l	104%
Sodium	32,9	0,2	31,28		mg/l	95%
Potassium	5,90	0,03	6,03		mg/l	102%
Nitrate (as NO3)	9,7	0,3	10,31		mg/l	106%
Nitrite (as NO2)	0,02228	0,00008	<0,033		mg/l	•
Ammonium (as NH4)	0,0406	0,0019	0,0617		mg/l	152%
Chloride	46,5	0,5	47,55		mg/l	102%
Sulphate (as SO4)	16,8	0,3	14,80		mg/l	88%
Orthophosphate (as PO4)	<0,009				mg/l	
Boron	0,136	0,004			mg/l	
DOC (as C)	5,53	0,07			mg/l	
Total P (as PO4)	<0,009				mg/l	
KMnO4-Index (as O2)	2,10	0,10	2,02		mg/l	96%



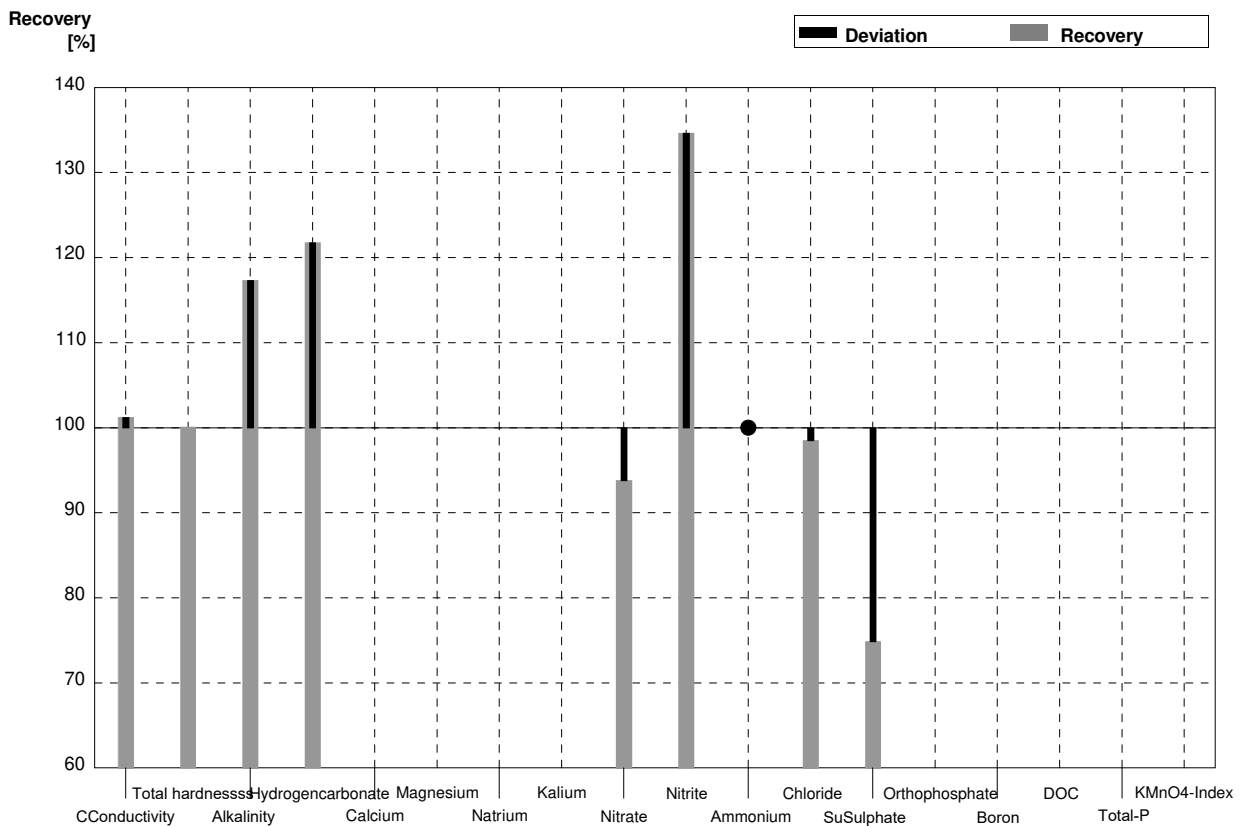
Sample N174B
Laboratory Q

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	544	2	546		µS/cm	100%
Total hardness	1,92	0,02	1,99307		mmol/l	104%
Alkalinity KS 4,3 (as H+)	3,70	0,05	3,60		mmol/l	97%
Hydrogen carbonate	222	3			mg/l	
Calcium	55,5	0,9	57,98		mg/l	104%
Magnesium	12,93	0,18	13,28		mg/l	103%
Sodium	39,9	0,6	37,99		mg/l	95%
Potassium	1,97	0,04	2,37		mg/l	120%
Nitrate (as NO3)	40,1	1,0	41,45		mg/l	103%
Nitrite (as NO2)	0,0432	0,0015	0,0440		mg/l	102%
Ammonium (as NH4)	<0,01		0,0180		mg/l	FP
Chloride	23,6	0,3	24,25		mg/l	103%
Sulphate (as SO4)	29,7	0,6	27,75		mg/l	93%
Orthophosphate (as PO4)	0,0456	0,0030			mg/l	
Boron	0,086	0,002			mg/l	
DOC (as C)	4,14	0,07			mg/l	
Total P (as PO4)	0,115	0,003			mg/l	
KMnO4-Index (as O2)	3,13	0,11	3,15		mg/l	101%



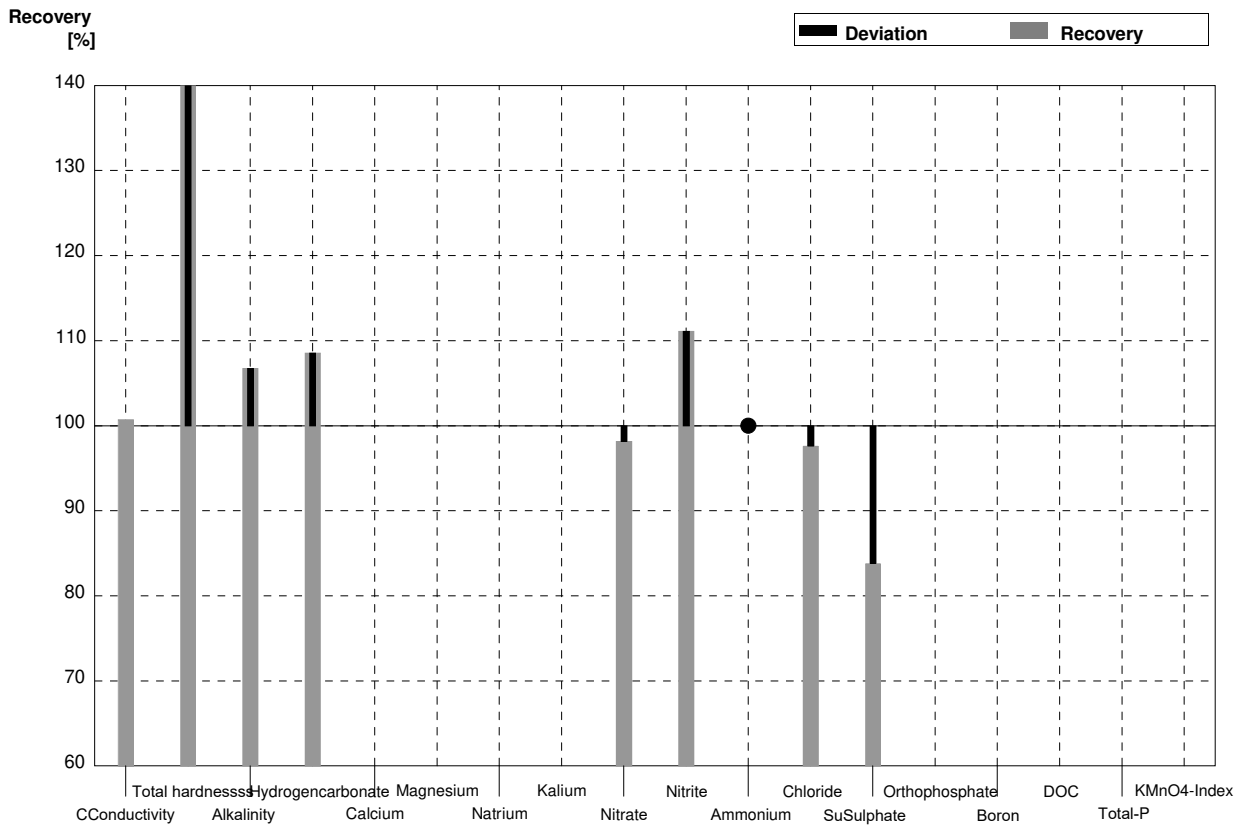
Sample N174A
Laboratory R

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	360	1	364,4		µS/cm	101%
Total hardness	0,879	0,010	0,88		mmol/l	100%
Alkalinity KS 4,3 (as H+)	1,517	0,018	1,78		mmol/l	117%
Hydrogen carbonate	89,5	1,1	109		mg/l	122%
Calcium	25,1	0,4			mg/l	
Magnesium	6,15	0,10			mg/l	
Sodium	32,9	0,2			mg/l	
Potassium	5,90	0,03			mg/l	
Nitrate (as NO3)	9,7	0,3	9,10		mg/l	94%
Nitrite (as NO2)	0,02228	0,00008	0,0300		mg/l	135%
Ammonium (as NH4)	0,0406	0,0019	<0,10		mg/l	•
Chloride	46,5	0,5	45,80		mg/l	98%
Sulphate (as SO4)	16,8	0,3	12,58		mg/l	75%
Orthophosphate (as PO4)	<0,009				mg/l	
Boron	0,136	0,004			mg/l	
DOC (as C)	5,53	0,07			mg/l	
Total P (as PO4)	<0,009				mg/l	
KMnO4-Index (as O2)	2,10	0,10			mg/l	



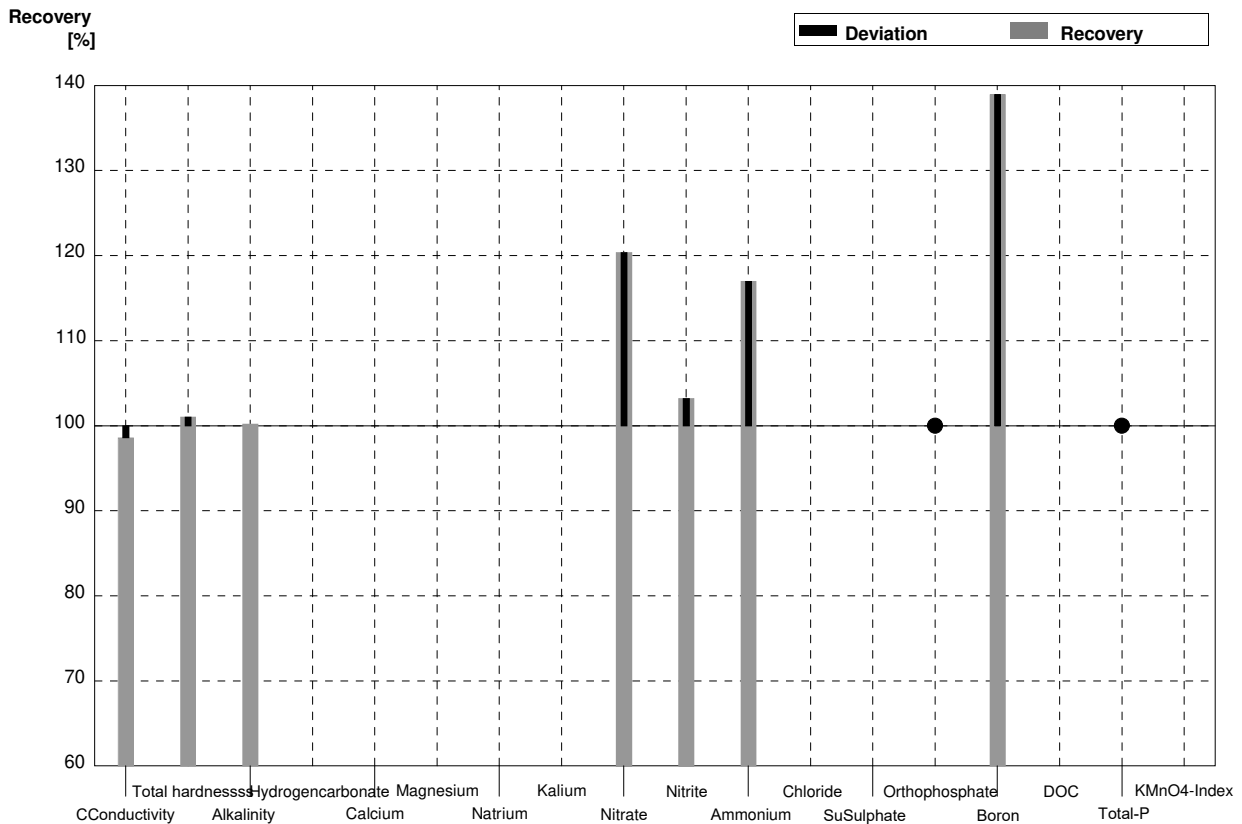
Sample N174B
Laboratory R

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	544	2	547,9		µS/cm	101%
Total hardness	1,92	0,02	2,84		mmol/l	148%
Alkalinity KS 4,3 (as H+)	3,70	0,05	3,95		mmol/l	107%
Hydrogen carbonate	222	3	241		mg/l	109%
Calcium	55,5	0,9			mg/l	
Magnesium	12,93	0,18			mg/l	
Sodium	39,9	0,6			mg/l	
Potassium	1,97	0,04			mg/l	
Nitrate (as NO3)	40,1	1,0	39,37		mg/l	98%
Nitrite (as NO2)	0,0432	0,0015	0,0480		mg/l	111%
Ammonium (as NH4)	<0,01		<0,1		mg/l	•
Chloride	23,6	0,3	23,04		mg/l	98%
Sulphate (as SO4)	29,7	0,6	24,89		mg/l	84%
Orthophosphate (as PO4)	0,0456	0,0030			mg/l	
Boron	0,086	0,002			mg/l	
DOC (as C)	4,14	0,07			mg/l	
Total P (as PO4)	0,115	0,003			mg/l	
KMnO4-Index (as O2)	3,13	0,11			mg/l	



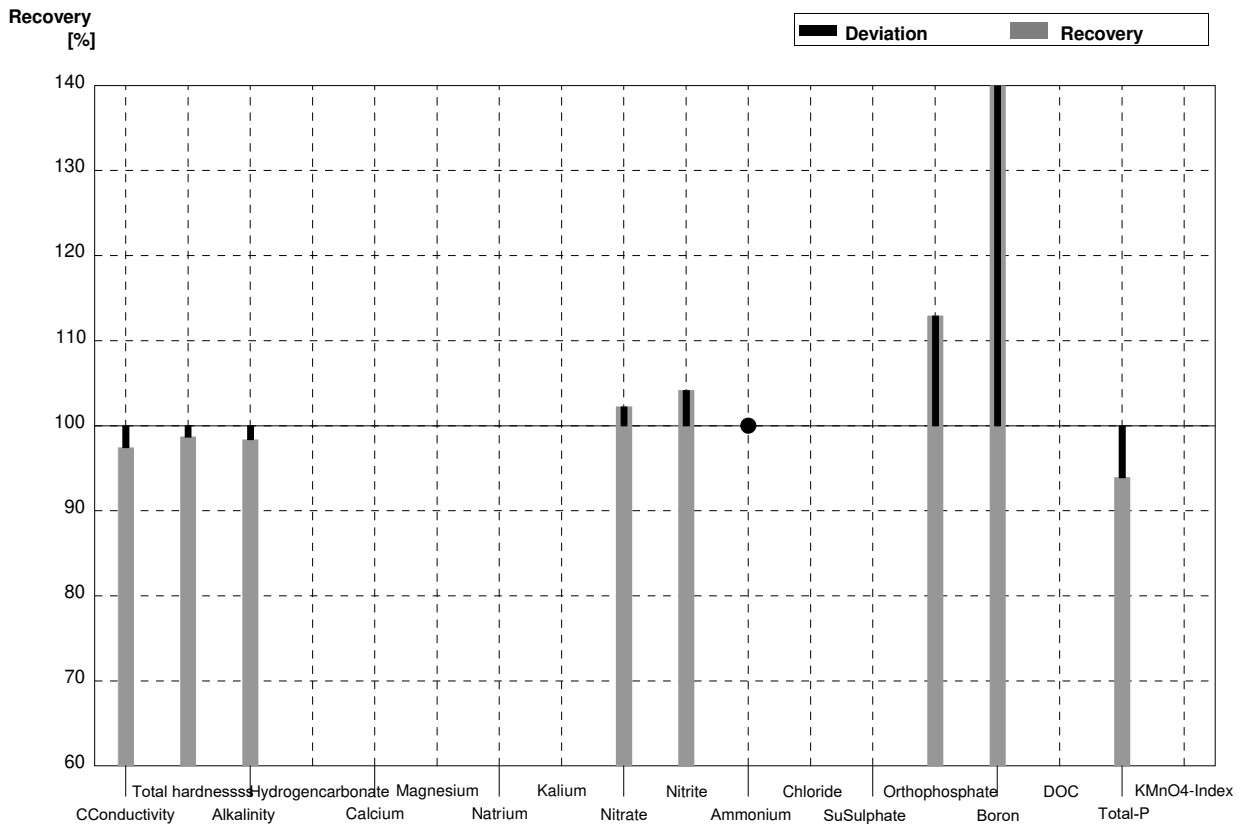
Sample N174A
Laboratory S

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	360	1	355	7,06	µS/cm	99%
Total hardness	0,879	0,010	0,888	0,064	mmol/l	101%
Alkalinity KS 4,3 (as H+)	1,517	0,018	1,52	0,04	mmol/l	100%
Hydrogen carbonate	89,5	1,1			mg/l	
Calcium	25,1	0,4			mg/l	
Magnesium	6,15	0,10			mg/l	
Sodium	32,9	0,2			mg/l	
Potassium	5,90	0,03			mg/l	
Nitrate (as NO3)	9,7	0,3	11,677	0,81	mg/l	120%
Nitrite (as NO2)	0,02228	0,00008	0,0230	0,0026	mg/l	103%
Ammonium (as NH4)	0,0406	0,0019	0,0475	0,0065	mg/l	117%
Chloride	46,5	0,5			mg/l	
Sulphate (as SO4)	16,8	0,3			mg/l	
Orthophosphate (as PO4)	<0,009		<0,04		mg/l	•
Boron	0,136	0,004	0,189	0,0295	mg/l	139%
DOC (as C)	5,53	0,07			mg/l	
Total P (as PO4)	<0,009		<0,0004		mg/l	•
KMnO4-Index (as O2)	2,10	0,10			mg/l	



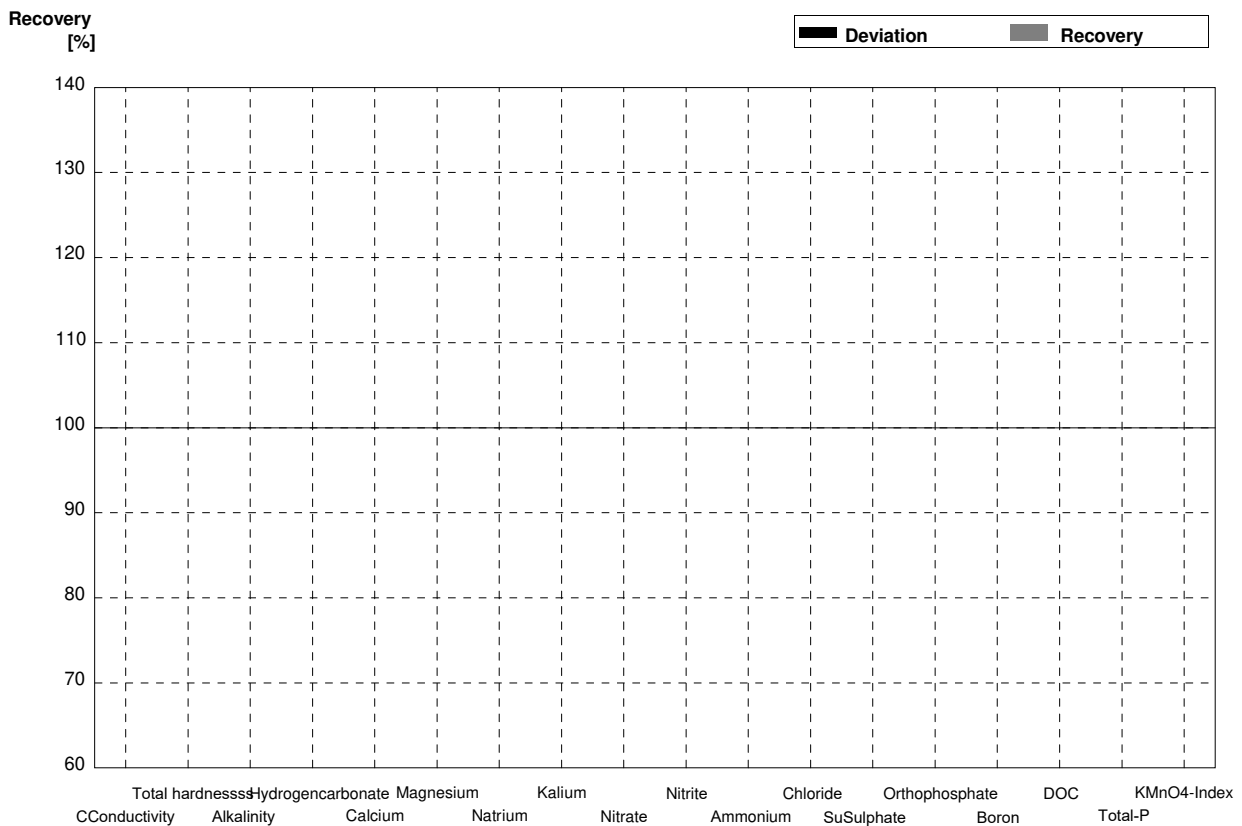
Sample N174B
Laboratory S

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	544	2	530	10,55	µS/cm	97%
Total hardness	1,92	0,02	1,895	0,137	mmol/l	99%
Alkalinity KS 4,3 (as H+)	3,70	0,05	3,64	0,10	mmol/l	98%
Hydrogen carbonate	222	3			mg/l	
Calcium	55,5	0,9			mg/l	
Magnesium	12,93	0,18			mg/l	
Sodium	39,9	0,6			mg/l	
Potassium	1,97	0,04			mg/l	
Nitrate (as NO3)	40,1	1,0	40,997	2,85	mg/l	102%
Nitrite (as NO2)	0,0432	0,0015	0,0450	0,0052	mg/l	104%
Ammonium (as NH4)	<0,01		<0,010		mg/l	•
Chloride	23,6	0,3			mg/l	
Sulphate (as SO4)	29,7	0,6			mg/l	
Orthophosphate (as PO4)	0,0456	0,0030	0,0515	0,0037	mg/l	113%
Boron	0,086	0,002	0,1455	0,0227	mg/l	169%
DOC (as C)	4,14	0,07			mg/l	
Total P (as PO4)	0,115	0,003	0,108	0,011	mg/l	94%
KMnO4-Index (as O2)	3,13	0,11			mg/l	



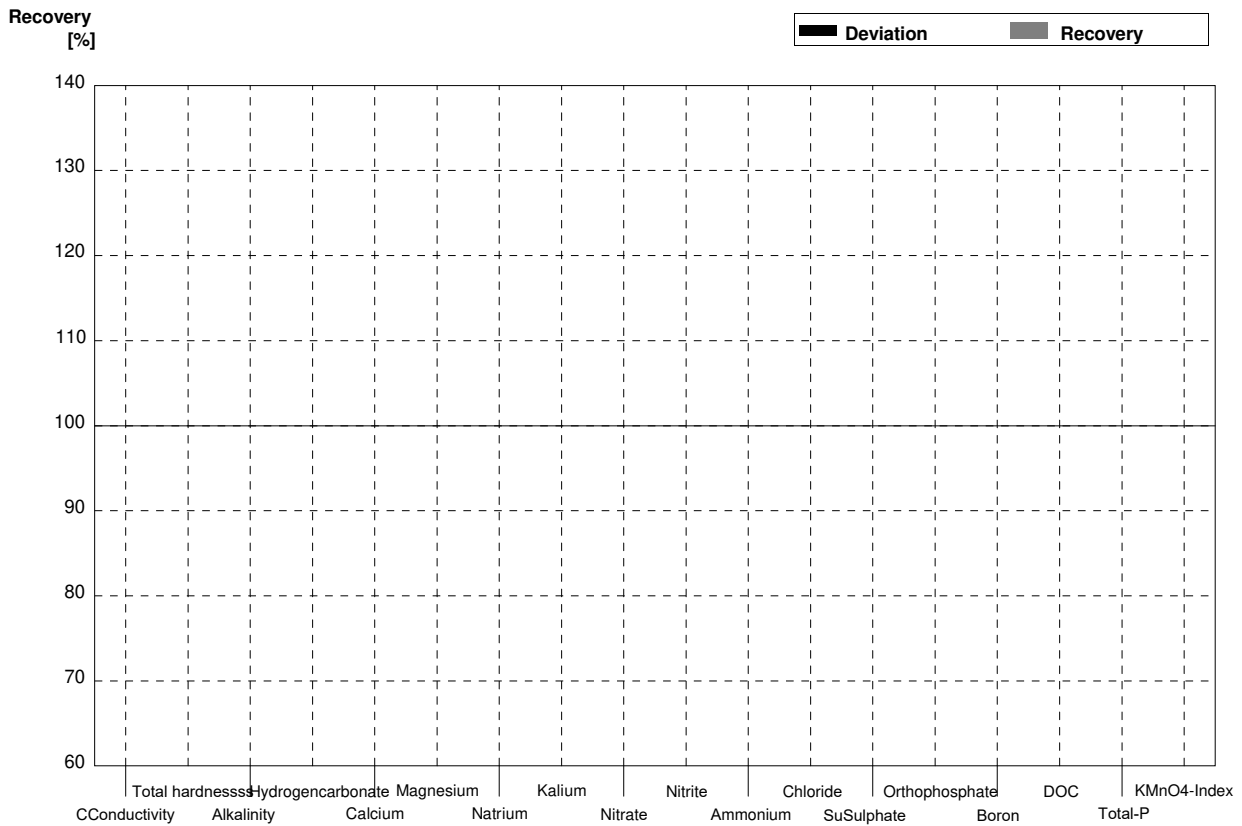
Sample N174A
Laboratory T

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	360	1			µS/cm	
Total hardness	0,879	0,010			mmol/l	
Alkalinity KS 4,3 (as H+)	1,517	0,018			mmol/l	
Hydrogen carbonate	89,5	1,1			mg/l	
Calcium	25,1	0,4			mg/l	
Magnesium	6,15	0,10			mg/l	
Sodium	32,9	0,2			mg/l	
Potassium	5,90	0,03			mg/l	
Nitrate (as NO3)	9,7	0,3			mg/l	
Nitrite (as NO2)	0,02228	0,00008			mg/l	
Ammonium (as NH4)	0,0406	0,0019			mg/l	
Chloride	46,5	0,5			mg/l	
Sulphate (as SO4)	16,8	0,3			mg/l	
Orthophosphate (as PO4)	<0,009				mg/l	
Boron	0,136	0,004			mg/l	
DOC (as C)	5,53	0,07			mg/l	
Total P (as PO4)	<0,009				mg/l	
KMnO4-Index (as O2)	2,10	0,10			mg/l	



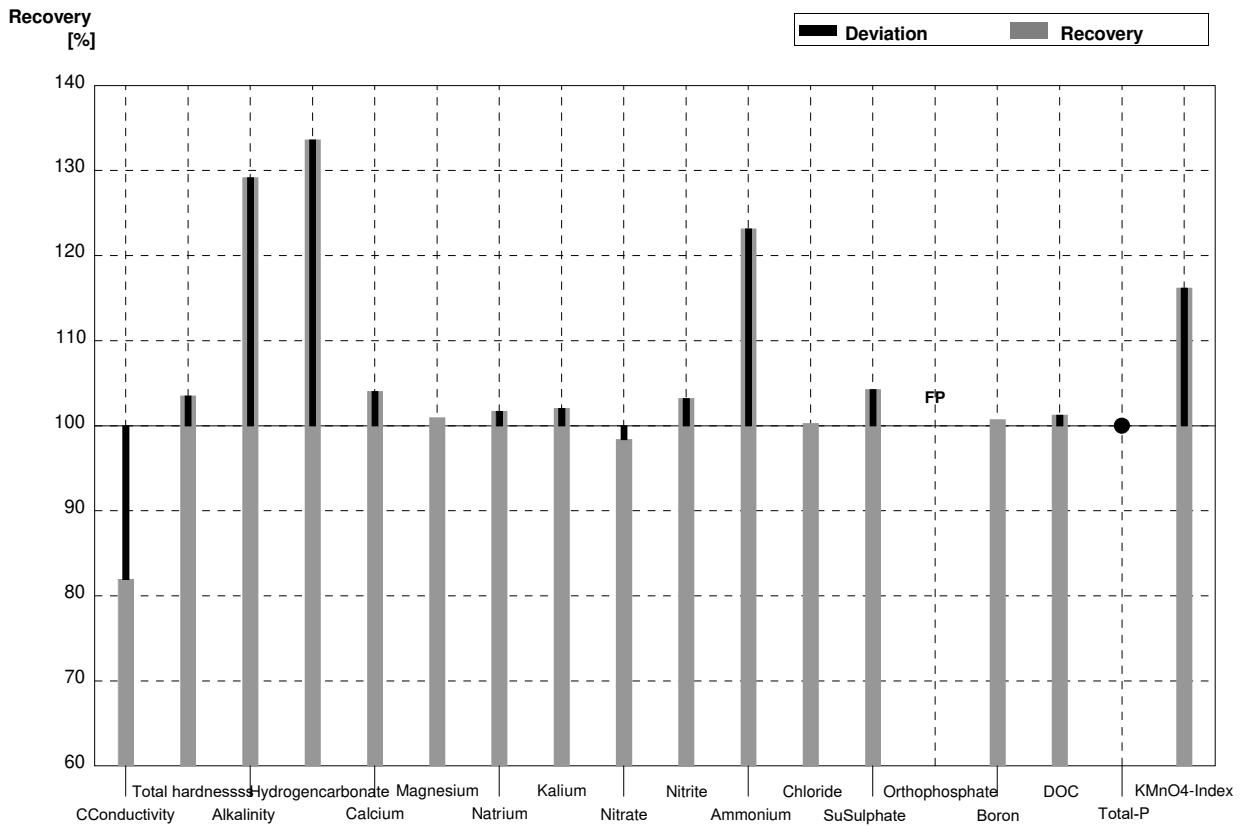
Sample N174B
Laboratory T

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	544	2			µS/cm	
Total hardness	1,92	0,02			mmol/l	
Alkalinity KS 4,3 (as H+)	3,70	0,05			mmol/l	
Hydrogen carbonate	222	3			mg/l	
Calcium	55,5	0,9			mg/l	
Magnesium	12,93	0,18			mg/l	
Sodium	39,9	0,6			mg/l	
Potassium	1,97	0,04			mg/l	
Nitrate (as NO3)	40,1	1,0			mg/l	
Nitrite (as NO2)	0,0432	0,0015			mg/l	
Ammonium (as NH4)	<0,01				mg/l	
Chloride	23,6	0,3			mg/l	
Sulphate (as SO4)	29,7	0,6			mg/l	
Orthophosphate (as PO4)	0,0456	0,0030			mg/l	
Boron	0,086	0,002			mg/l	
DOC (as C)	4,14	0,07			mg/l	
Total P (as PO4)	0,115	0,003			mg/l	
KMnO4-Index (as O2)	3,13	0,11			mg/l	



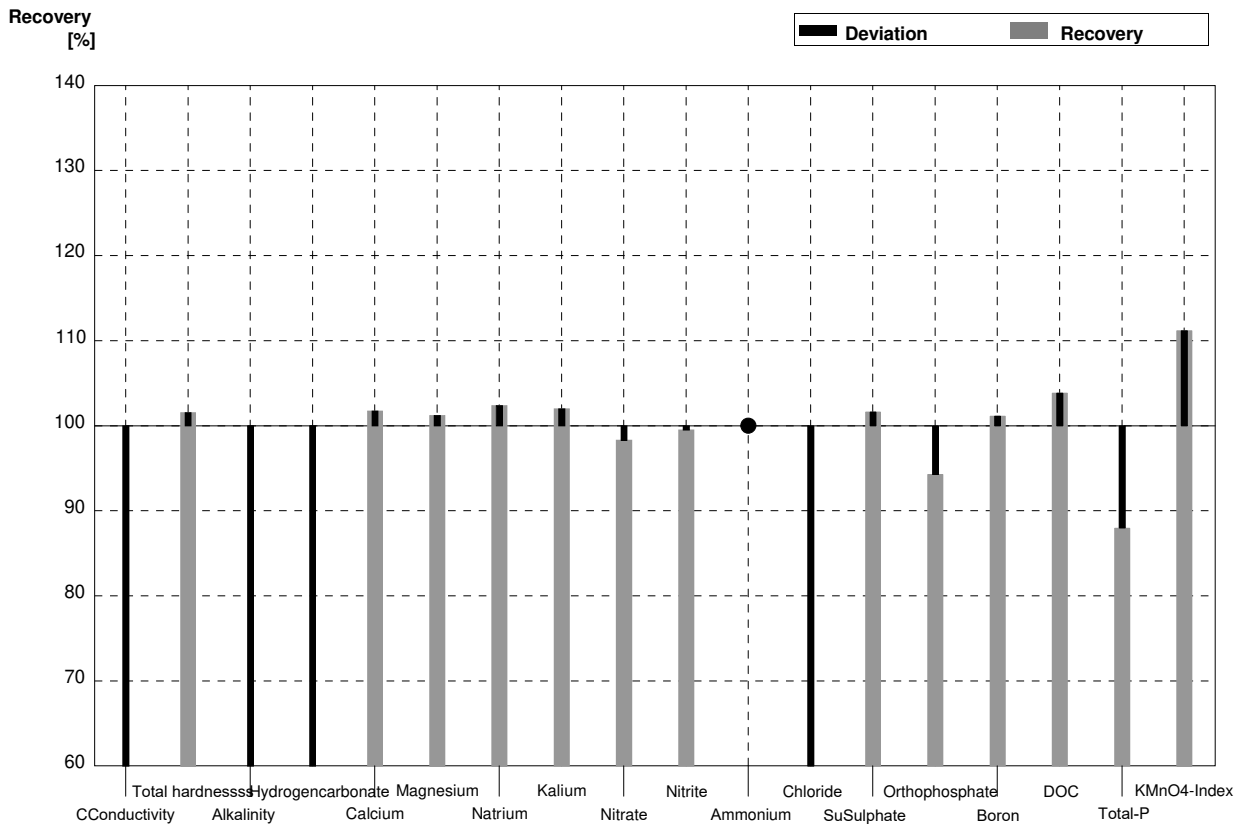
Sample N174A
Laboratory U

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	360	1	295	29,5	µS/cm	82%
Total hardness	0,879	0,010	0,91		mmol/l	104%
Alkalinity KS 4,3 (as H+)	1,517	0,018	1,96	0,294	mmol/l	129%
Hydrogen carbonate	89,5	1,1	119,6	17,94	mg/l	134%
Calcium	25,1	0,4	26,12	2,612	mg/l	104%
Magnesium	6,15	0,10	6,21	0,621	mg/l	101%
Sodium	32,9	0,2	33,47	3,347	mg/l	102%
Potassium	5,90	0,03	6,02	0,602	mg/l	102%
Nitrate (as NO3)	9,7	0,3	9,544	0,4772	mg/l	98%
Nitrite (as NO2)	0,02228	0,00008	0,0230	0,00340	mg/l	103%
Ammonium (as NH4)	0,0406	0,0019	0,050	0,0050	mg/l	123%
Chloride	46,5	0,5	46,63	4,663	mg/l	100%
Sulphate (as SO4)	16,8	0,3	17,52	1,752	mg/l	104%
Orthophosphate (as PO4)	<0,009		0,0120	0,00180	mg/l	FP
Boron	0,136	0,004	0,137	0,0206	mg/l	101%
DOC (as C)	5,53	0,07	5,60	0,45	mg/l	101%
Total P (as PO4)	<0,009		<0,01533		mg/l	•
KMnO4-Index (as O2)	2,10	0,10	2,44	0,390	mg/l	116%



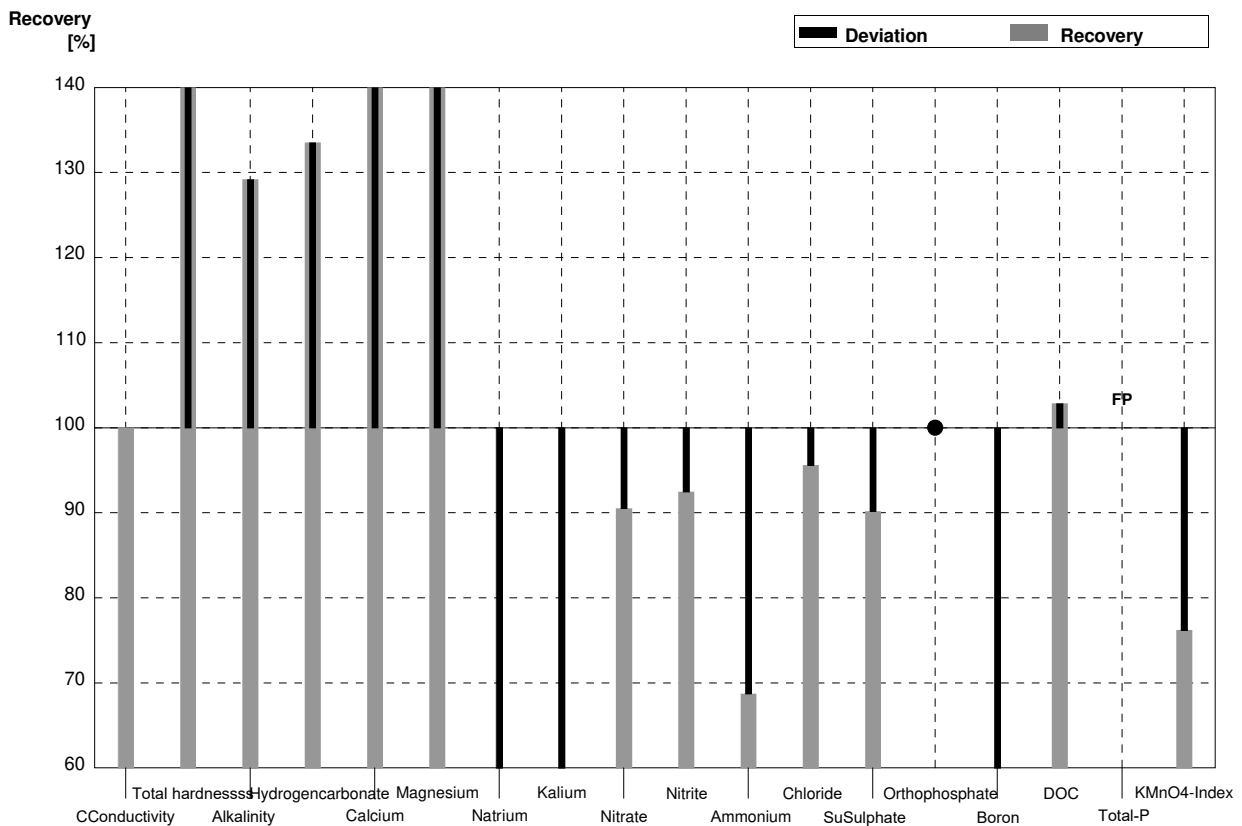
Sample N174B
Laboratory U

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	544	2	165	16,5	µS/cm	30%
Total hardness	1,92	0,02	1,95		mmol/l	102%
Alkalinity KS 4,3 (as H+)	3,70	0,05	1,39	0,209	mmol/l	38%
Hydrogen carbonate	222	3	84,8	12,72	mg/l	38%
Calcium	55,5	0,9	56,47	5,647	mg/l	102%
Magnesium	12,93	0,18	13,09	1,309	mg/l	101%
Sodium	39,9	0,6	40,86	4,086	mg/l	102%
Potassium	1,97	0,04	2,01	0,201	mg/l	102%
Nitrate (as NO3)	40,1	1,0	39,425	1,9713	mg/l	98%
Nitrite (as NO2)	0,0432	0,0015	0,0430	0,0064	mg/l	100%
Ammonium (as NH4)	<0,01		<0,00515		mg/l	•
Chloride	23,6	0,3	13,61	2,316	mg/l	58%
Sulphate (as SO4)	29,7	0,6	30,19	3,019	mg/l	102%
Orthophosphate (as PO4)	0,0456	0,0030	0,0430	0,0064	mg/l	94%
Boron	0,086	0,002	0,087	0,0131	mg/l	101%
DOC (as C)	4,14	0,07	4,30	0,34	mg/l	104%
Total P (as PO4)	0,115	0,003	0,1012	0,01533	mg/l	88%
KMnO4-Index (as O2)	3,13	0,11	3,48	0,557	mg/l	111%



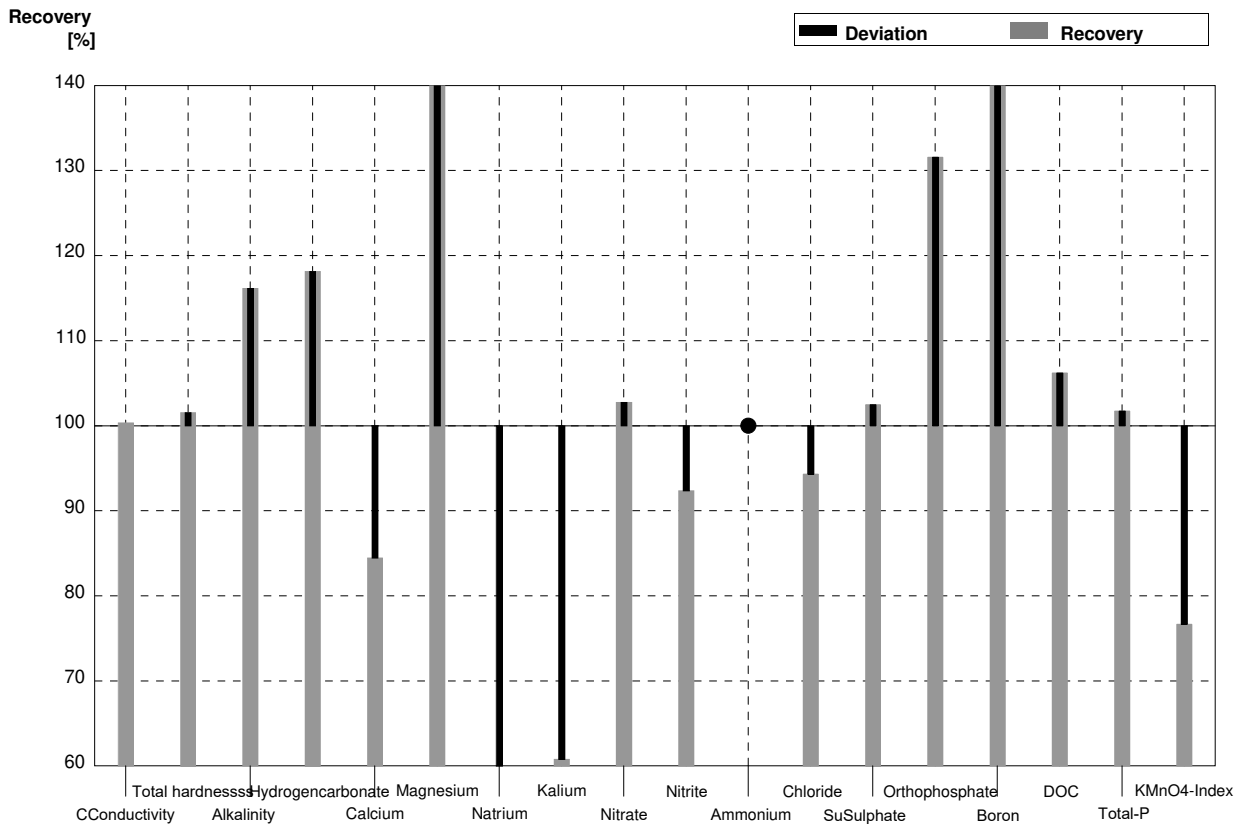
Sample N174A
Laboratory V

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	360	1	360		µS/cm	100%
Total hardness	0,879	0,010	1,93		mmol/l	220%
Alkalinity KS 4,3 (as H+)	1,517	0,018	1,96	0,0078	mmol/l	129%
Hydrogen carbonate	89,5	1,1	119,5	0,48	mg/l	134%
Calcium	25,1	0,4	46,3	0,46	mg/l	184%
Magnesium	6,15	0,10	20,0	0,14	mg/l	325%
Sodium	32,9	0,2	8,88	0,088	mg/l	27%
Potassium	5,90	0,03	1,196	0,036	mg/l	20%
Nitrate (as NO3)	9,7	0,3	8,78	0,20	mg/l	91%
Nitrite (as NO2)	0,02228	0,00008	0,0206	0,0013	mg/l	92%
Ammonium (as NH4)	0,0406	0,0019	0,0279	0,0009	mg/l	69%
Chloride	46,5	0,5	44,45	3,11	mg/l	96%
Sulphate (as SO4)	16,8	0,3	15,15	0,88	mg/l	90%
Orthophosphate (as PO4)	<0,009		0,0092	0,0011	mg/l	•
Boron	0,136	0,004	0,0155	0,00071	mg/l	11%
DOC (as C)	5,53	0,07	5,688	0,068	mg/l	103%
Total P (as PO4)	<0,009		0,0250	0,007	mg/l	FP
KMnO4-Index (as O2)	2,10	0,10	1,60	0,0	mg/l	76%



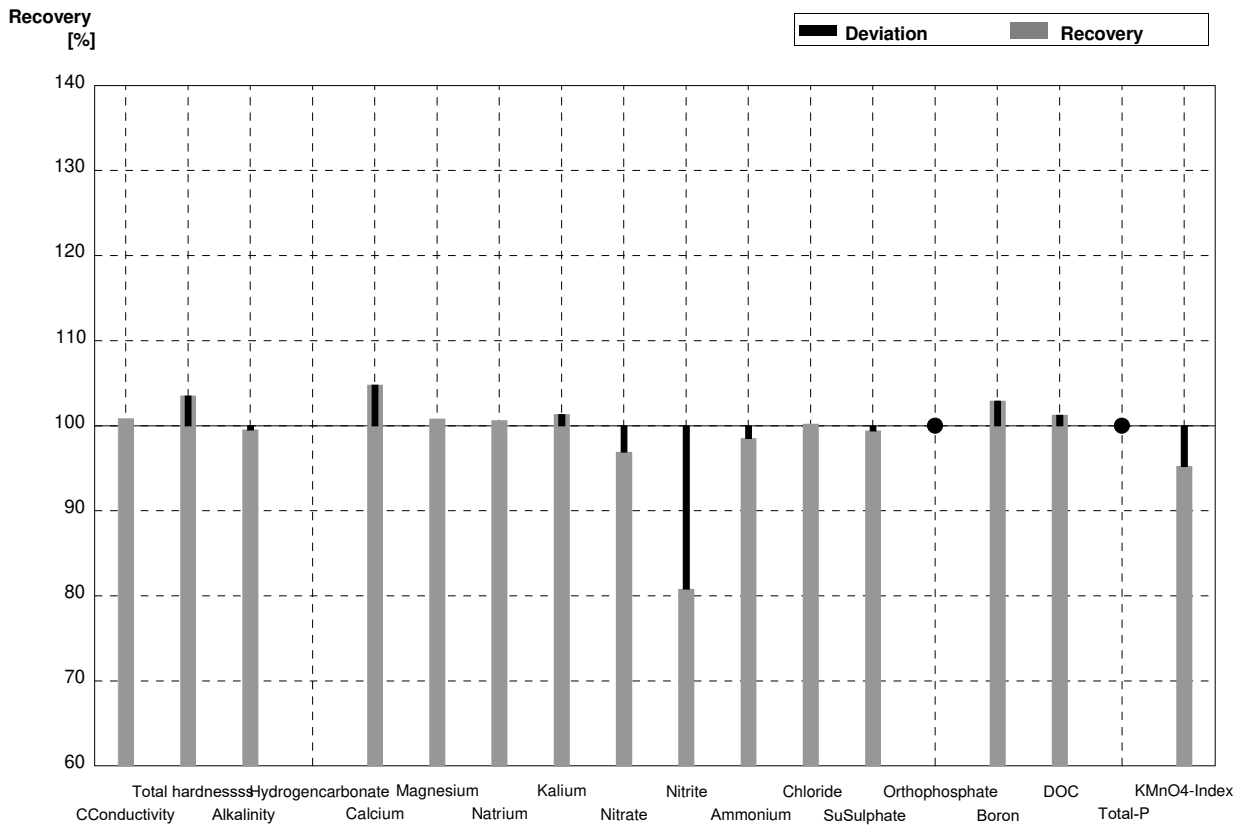
Sample N174B
Laboratory V

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	544	2	546		µS/cm	100%
Total hardness	1,92	0,02	1,95		mmol/l	102%
Alkalinity KS 4,3 (as H+)	3,70	0,05	4,298	0,16	mmol/l	116%
Hydrogen carbonate	222	3	262,3	9,97	mg/l	118%
Calcium	55,5	0,9	46,88	0,94	mg/l	84%
Magnesium	12,93	0,18	20,26	0,43	mg/l	157%
Sodium	39,9	0,6	8,93	0,14	mg/l	22%
Potassium	1,97	0,04	1,198	0,026	mg/l	61%
Nitrate (as NO3)	40,1	1,0	41,21	1,11	mg/l	103%
Nitrite (as NO2)	0,0432	0,0015	0,0399	0,00032	mg/l	92%
Ammonium (as NH4)	<0,01		<0,02		mg/l	•
Chloride	23,6	0,3	22,26	0,31	mg/l	94%
Sulphate (as SO4)	29,7	0,6	30,44	1,00	mg/l	102%
Orthophosphate (as PO4)	0,0456	0,0030	0,060	0,0	mg/l	132%
Boron	0,086	0,002	7,00	1,41	mg/l	8140%
DOC (as C)	4,14	0,07	4,398	0,15	mg/l	106%
Total P (as PO4)	0,115	0,003	0,117	0,012	mg/l	102%
KMnO4-Index (as O2)	3,13	0,11	2,40	0,0	mg/l	77%



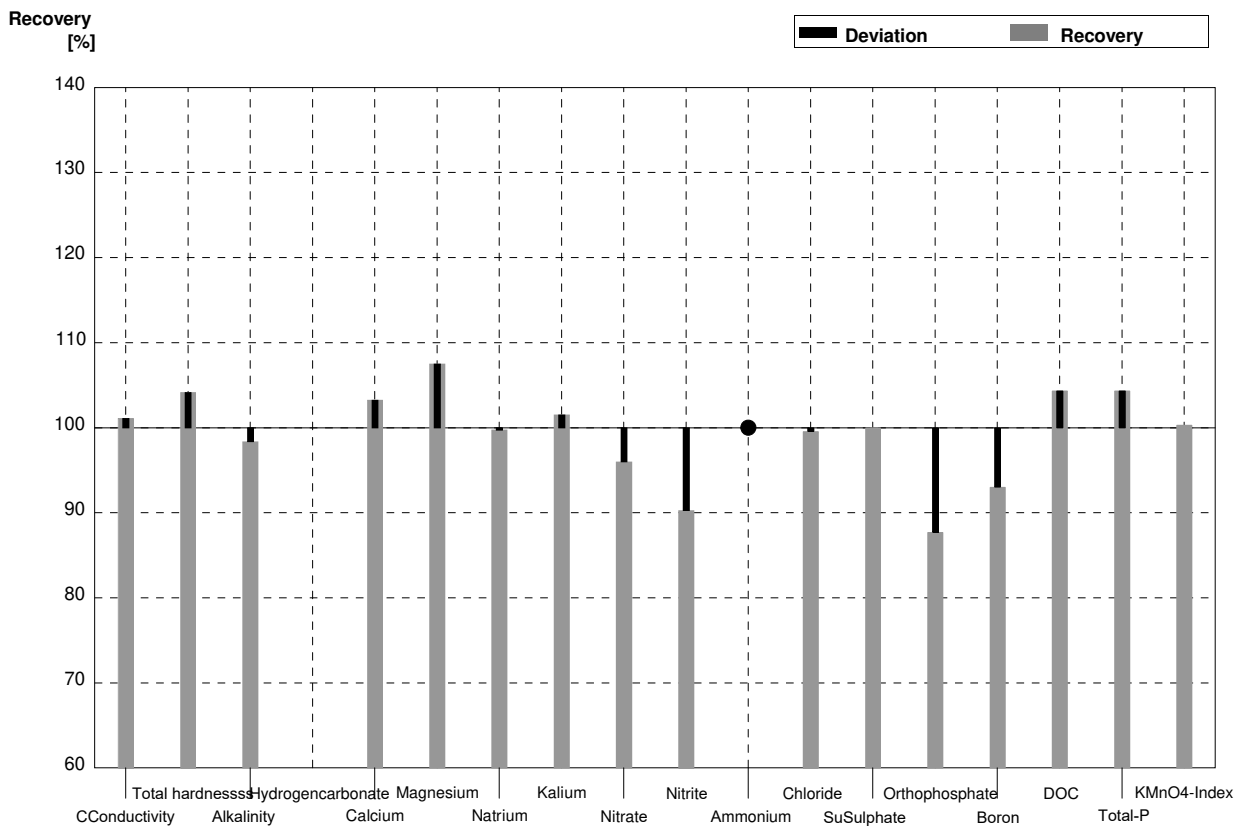
Sample N174A
Laboratory W

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	360	1	363	4	µS/cm	101%
Total hardness	0,879	0,010	0,91	0,04	mmol/l	104%
Alkalinity KS 4,3 (as H+)	1,517	0,018	1,51	0,005	mmol/l	100%
Hydrogen carbonate	89,5	1,1			mg/l	
Calcium	25,1	0,4	26,3	1,1	mg/l	105%
Magnesium	6,15	0,10	6,2	0,3	mg/l	101%
Sodium	32,9	0,2	33,1	2,3	mg/l	101%
Potassium	5,90	0,03	5,98	0,5	mg/l	101%
Nitrate (as NO3)	9,7	0,3	9,4	0,6	mg/l	97%
Nitrite (as NO2)	0,02228	0,00008	0,0180	0,001	mg/l	81%
Ammonium (as NH4)	0,0406	0,0019	0,0400	0,002	mg/l	99%
Chloride	46,5	0,5	46,6	2,8	mg/l	100%
Sulphate (as SO4)	16,8	0,3	16,7	1,0	mg/l	99%
Orthophosphate (as PO4)	<0,009		<0,03	0	mg/l	•
Boron	0,136	0,004	0,140	0,014	mg/l	103%
DOC (as C)	5,53	0,07	5,6	0,3	mg/l	101%
Total P (as PO4)	<0,009		<0,03	0	mg/l	•
KMnO4-Index (as O2)	2,10	0,10	2,00	0,04	mg/l	95%



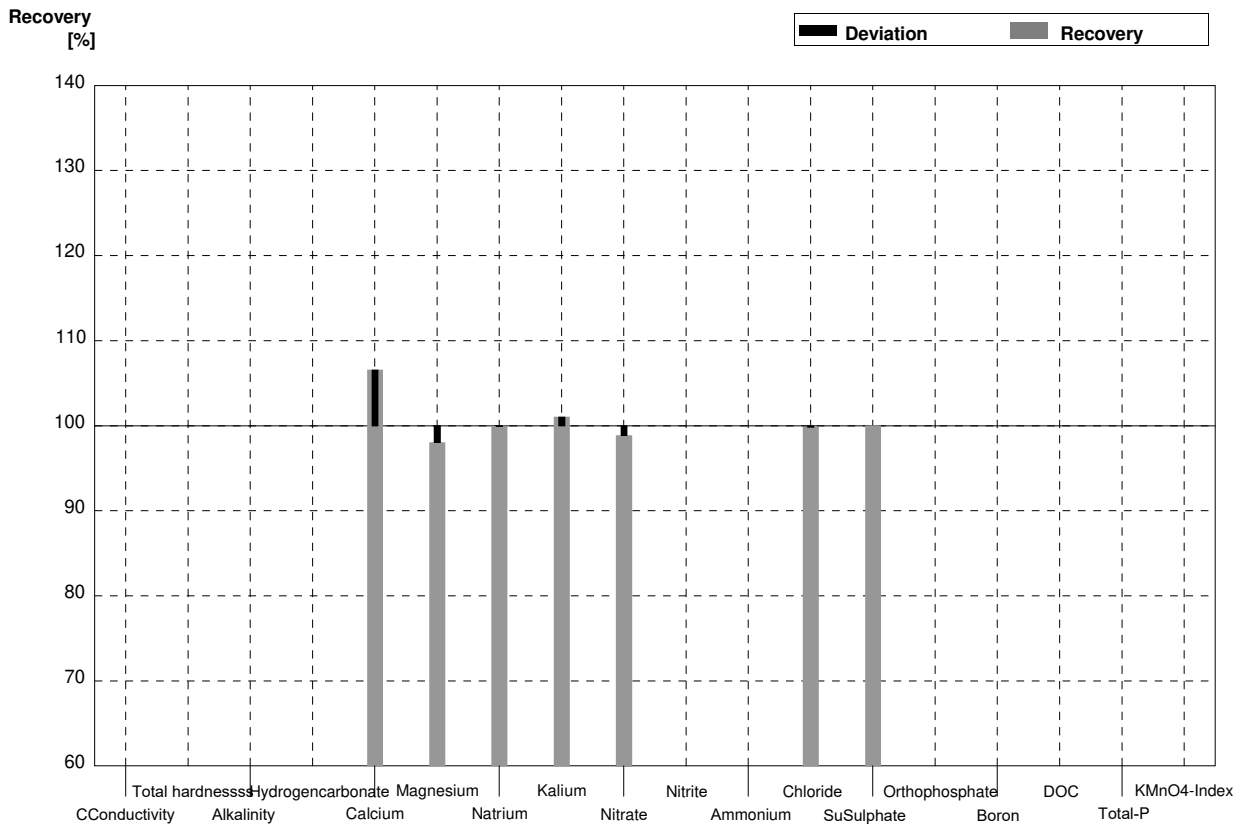
Sample N174B
Laboratory W

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	544	2	550	6	µS/cm	101%
Total hardness	1,92	0,02	2,00	0,09	mmol/l	104%
Alkalinity KS 4,3 (as H+)	3,70	0,05	3,64	0,01	mmol/l	98%
Hydrogen carbonate	222	3			mg/l	
Calcium	55,5	0,9	57,3	2,3	mg/l	103%
Magnesium	12,93	0,18	13,9	0,7	mg/l	108%
Sodium	39,9	0,6	39,8	2,8	mg/l	100%
Potassium	1,97	0,04	2,00	0,2	mg/l	102%
Nitrate (as NO3)	40,1	1,0	38,5	2,3	mg/l	96%
Nitrite (as NO2)	0,0432	0,0015	0,0390	0,002	mg/l	90%
Ammonium (as NH4)	<0,01		<0,03	0	mg/l	•
Chloride	23,6	0,3	23,5	1,4	mg/l	100%
Sulphate (as SO4)	29,7	0,6	29,7	1,8	mg/l	100%
Orthophosphate (as PO4)	0,0456	0,0030	0,0400	0,002	mg/l	88%
Boron	0,086	0,002	0,080	0,008	mg/l	93%
DOC (as C)	4,14	0,07	4,32	0,2	mg/l	104%
Total P (as PO4)	0,115	0,003	0,120	0,005	mg/l	104%
KMnO4-Index (as O2)	3,13	0,11	3,14	0,06	mg/l	100%



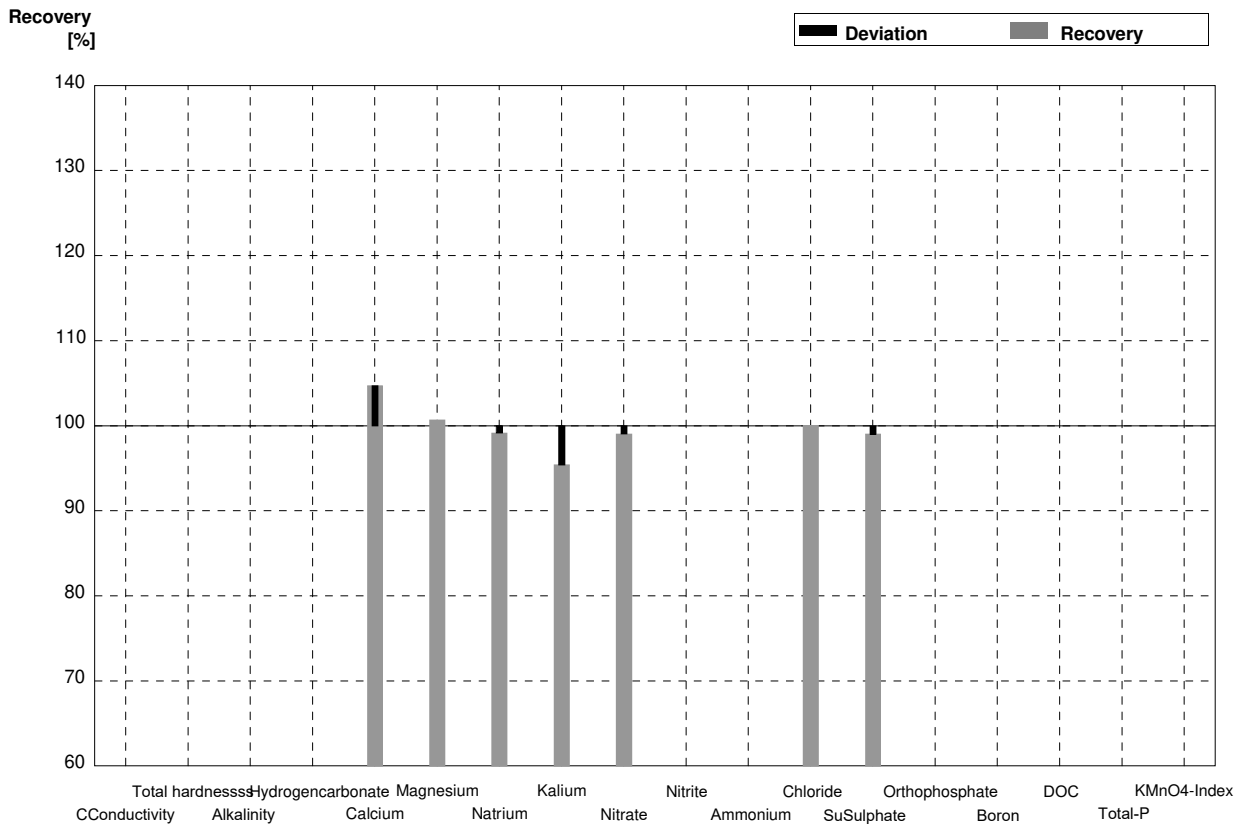
Sample N174A
Laboratory X

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	360	1			µS/cm	
Total hardness	0,879	0,010			mmol/l	
Alkalinity KS 4,3 (as H+)	1,517	0,018			mmol/l	
Hydrogen carbonate	89,5	1,1			mg/l	
Calcium	25,1	0,4	26,75	0,36	mg/l	107%
Magnesium	6,15	0,10	6,03	0,12	mg/l	98%
Sodium	32,9	0,2	32,88	0,05	mg/l	100%
Potassium	5,90	0,03	5,96	0,08	mg/l	101%
Nitrate (as NO3)	9,7	0,3	9,59	0,24	mg/l	99%
Nitrite (as NO2)	0,02228	0,00008			mg/l	
Ammonium (as NH4)	0,0406	0,0019			mg/l	
Chloride	46,5	0,5	46,43	0,34	mg/l	100%
Sulphate (as SO4)	16,8	0,3	16,80	0,34	mg/l	100%
Orthophosphate (as PO4)	<0,009				mg/l	
Boron	0,136	0,004			mg/l	
DOC (as C)	5,53	0,07			mg/l	
Total P (as PO4)	<0,009				mg/l	
KMnO4-Index (as O2)	2,10	0,10			mg/l	



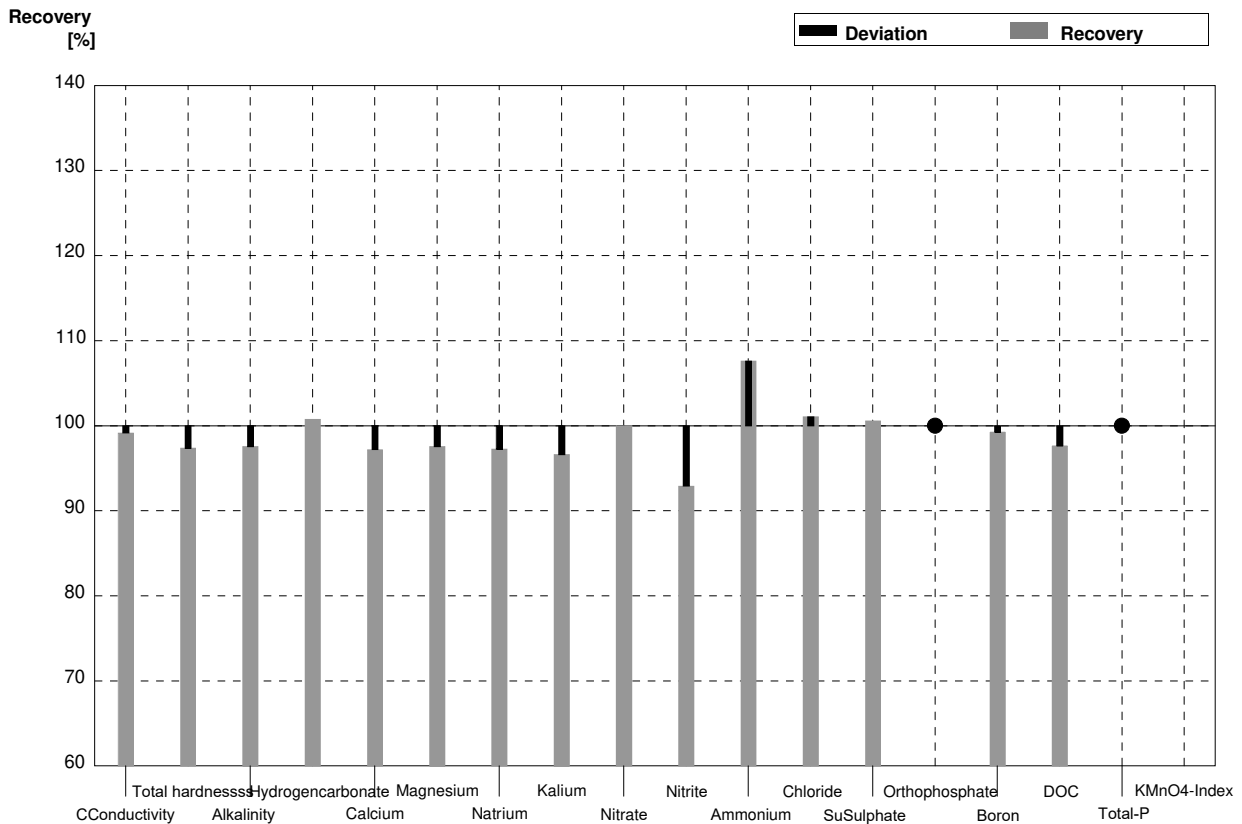
Sample N174B
Laboratory X

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	544	2			µS/cm	
Total hardness	1,92	0,02			mmol/l	
Alkalinity KS 4,3 (as H+)	3,70	0,05			mmol/l	
Hydrogen carbonate	222	3			mg/l	
Calcium	55,5	0,9	58,12	0,61	mg/l	105%
Magnesium	12,93	0,18	13,02	0,11	mg/l	101%
Sodium	39,9	0,6	39,57	0,42	mg/l	99%
Potassium	1,97	0,04	1,88	0,01	mg/l	95%
Nitrate (as NO3)	40,1	1,0	39,72	0,24	mg/l	99%
Nitrite (as NO2)	0,0432	0,0015			mg/l	
Ammonium (as NH4)	<0,01				mg/l	
Chloride	23,6	0,3	23,61	0,17	mg/l	100%
Sulphate (as SO4)	29,7	0,6	29,41	0,44	mg/l	99%
Orthophosphate (as PO4)	0,0456	0,0030			mg/l	
Boron	0,086	0,002			mg/l	
DOC (as C)	4,14	0,07			mg/l	
Total P (as PO4)	0,115	0,003			mg/l	
KMnO4-Index (as O2)	3,13	0,11			mg/l	



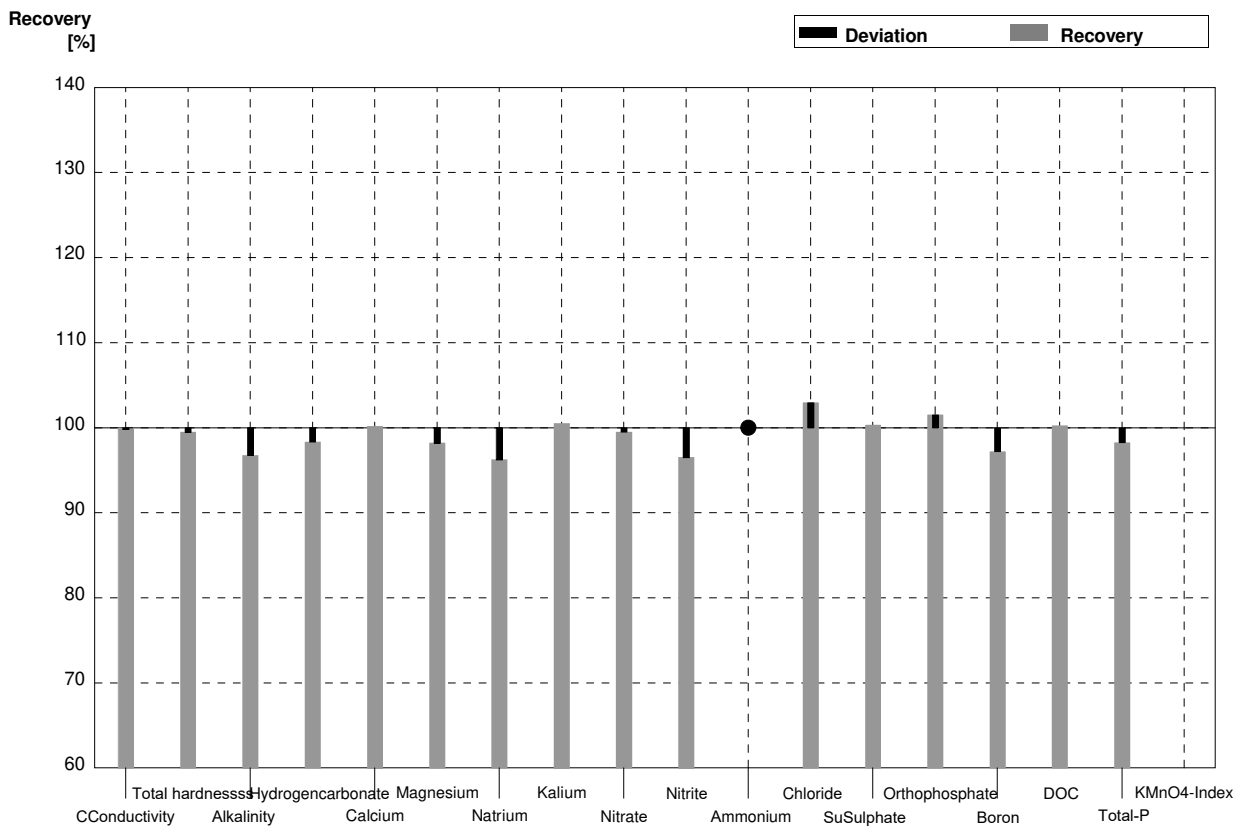
Sample N174A
Laboratory Y

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	360	1	357	14	µS/cm	99%
Total hardness	0,879	0,010	0,856	0,041	mmol/l	97%
Alkalinity KS 4,3 (as H+)	1,517	0,018	1,48	0,10	mmol/l	98%
Hydrogen carbonate	89,5	1,1	90,2	6,3	mg/l	101%
Calcium	25,1	0,4	24,4	1,0	mg/l	97%
Magnesium	6,15	0,10	6,0	0,4	mg/l	98%
Sodium	32,9	0,2	32,0	1,8	mg/l	97%
Potassium	5,90	0,03	5,7	0,3	mg/l	97%
Nitrate (as NO3)	9,7	0,3	9,7	1,0	mg/l	100%
Nitrite (as NO2)	0,02228	0,00008	0,0207	0,0032	mg/l	93%
Ammonium (as NH4)	0,0406	0,0019	0,0437	0,0085	mg/l	108%
Chloride	46,5	0,5	47,0	3,7	mg/l	101%
Sulphate (as SO4)	16,8	0,3	16,9	1,5	mg/l	101%
Orthophosphate (as PO4)	<0,009		<0,010		mg/l	•
Boron	0,136	0,004	0,135	0,0098	mg/l	99%
DOC (as C)	5,53	0,07	5,4	1,0	mg/l	98%
Total P (as PO4)	<0,009		<0,010		mg/l	•
KMnO4-Index (as O2)	2,10	0,10			mg/l	



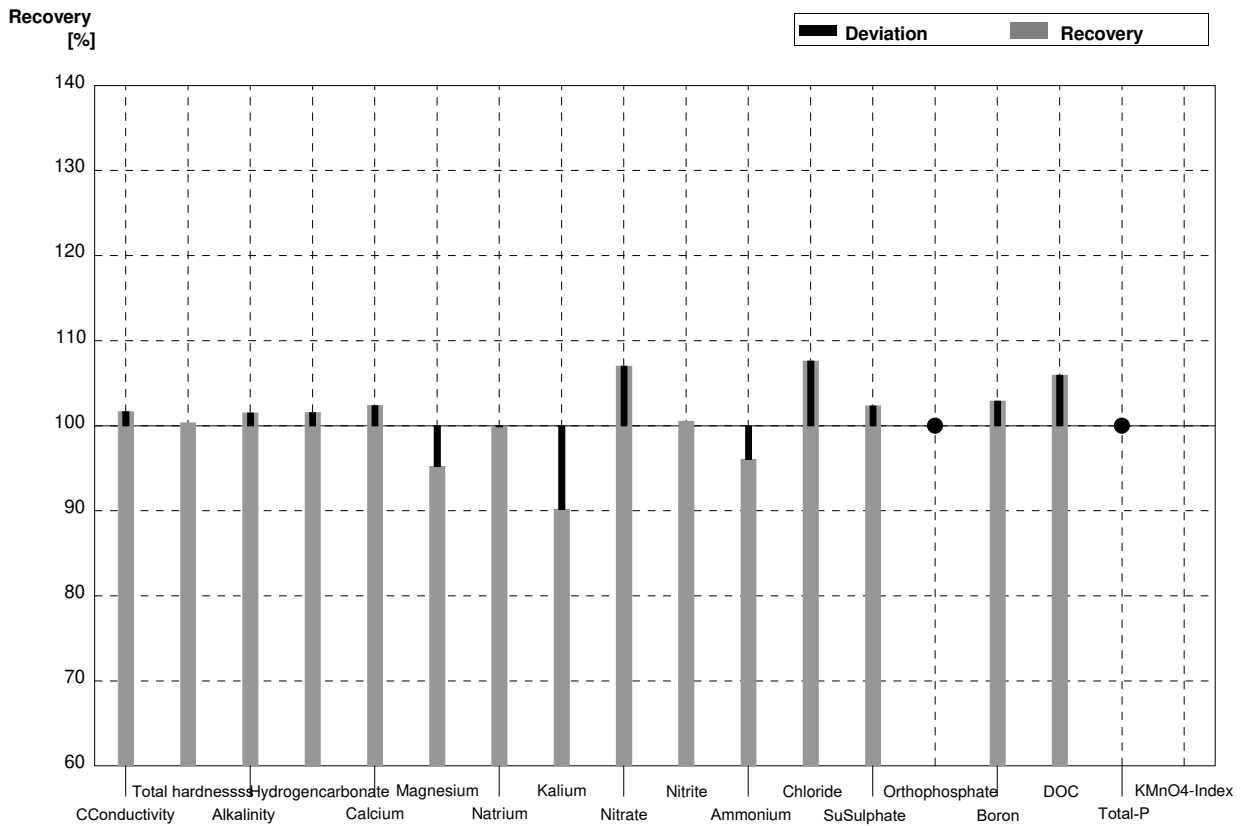
Sample N174B
Laboratory Y

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	544	2	543	22	µS/cm	100%
Total hardness	1,92	0,02	1,91	0,084	mmol/l	99%
Alkalinity KS 4,3 (as H+)	3,70	0,05	3,58	0,21	mmol/l	97%
Hydrogen carbonate	222	3	218,3	12,7	mg/l	98%
Calcium	55,5	0,9	55,6	2,1	mg/l	100%
Magnesium	12,93	0,18	12,7	0,8	mg/l	98%
Sodium	39,9	0,6	38,4	2,2	mg/l	96%
Potassium	1,97	0,04	1,98	0,14	mg/l	101%
Nitrate (as NO3)	40,1	1,0	39,9	3,9	mg/l	100%
Nitrite (as NO2)	0,0432	0,0015	0,0417	0,0049	mg/l	97%
Ammonium (as NH4)	<0,01		<0,010		mg/l	•
Chloride	23,6	0,3	24,3	2,0	mg/l	103%
Sulphate (as SO4)	29,7	0,6	29,8	2,5	mg/l	100%
Orthophosphate (as PO4)	0,0456	0,0030	0,0463	0,0070	mg/l	102%
Boron	0,086	0,002	0,0836	0,0008	mg/l	97%
DOC (as C)	4,14	0,07	4,15	0,81	mg/l	100%
Total P (as PO4)	0,115	0,003	0,113	0,012	mg/l	98%
KMnO4-Index (as O2)	3,13	0,11			mg/l	



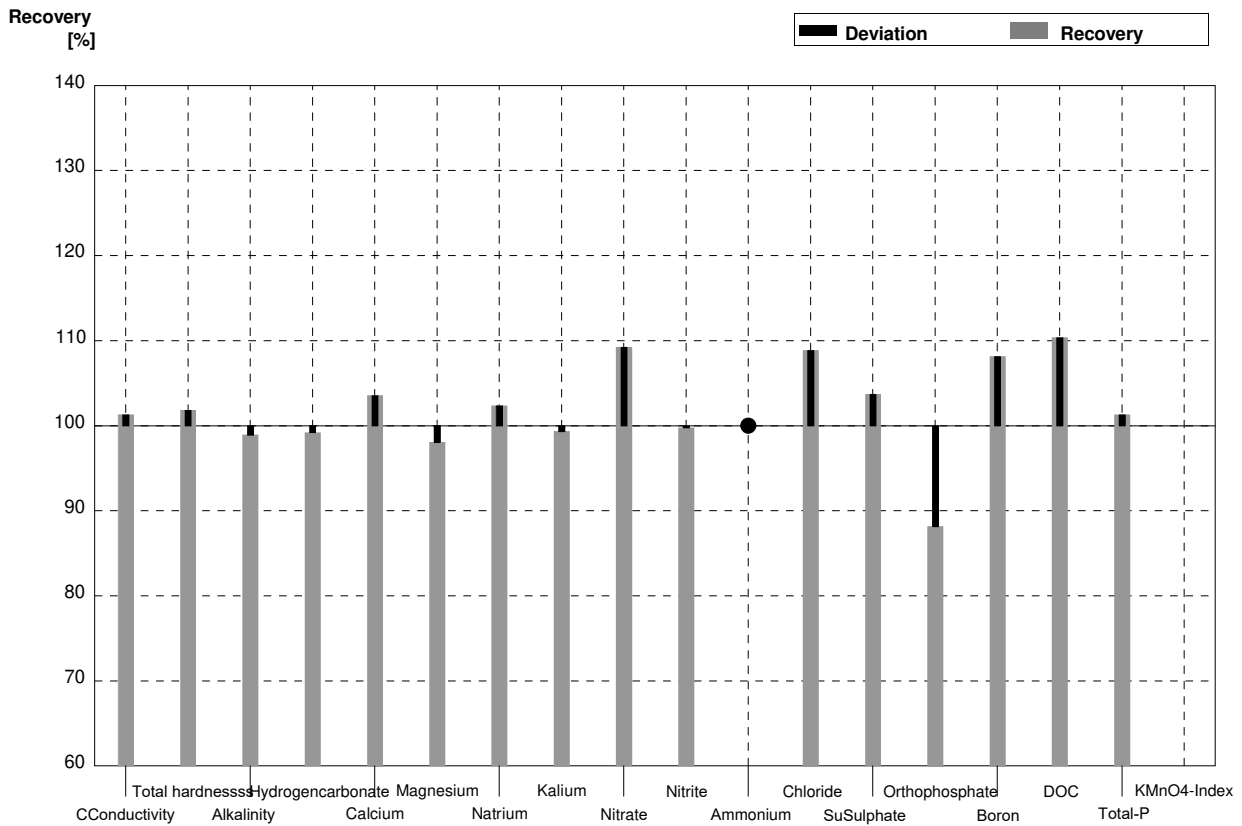
Sample N174A
Laboratory Z

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	360	1	366	4,51	µS/cm	102%
Total hardness	0,879	0,010	0,882		mmol/l	100%
Alkalinity KS 4,3 (as H+)	1,517	0,018	1,54	0,15	mmol/l	102%
Hydrogen carbonate	89,5	1,1	90,90		mg/l	102%
Calcium	25,1	0,4	25,704	2,55	mg/l	102%
Magnesium	6,15	0,10	5,857	0,59	mg/l	95%
Sodium	32,9	0,2	32,866	3,31	mg/l	100%
Potassium	5,90	0,03	5,321	0,53	mg/l	90%
Nitrate (as NO3)	9,7	0,3	10,382	1,06	mg/l	107%
Nitrite (as NO2)	0,02228	0,00008	0,0224	0,002	mg/l	101%
Ammonium (as NH4)	0,0406	0,0019	0,0390	0,004	mg/l	96%
Chloride	46,5	0,5	50,05	5,11	mg/l	108%
Sulphate (as SO4)	16,8	0,3	17,198	1,73	mg/l	102%
Orthophosphate (as PO4)	<0,009		<0,001		mg/l	•
Boron	0,136	0,004	0,140	0,014	mg/l	103%
DOC (as C)	5,53	0,07	5,86	0,59	mg/l	106%
Total P (as PO4)	<0,009		<0,0032		mg/l	•
KMnO4-Index (as O2)	2,10	0,10			mg/l	



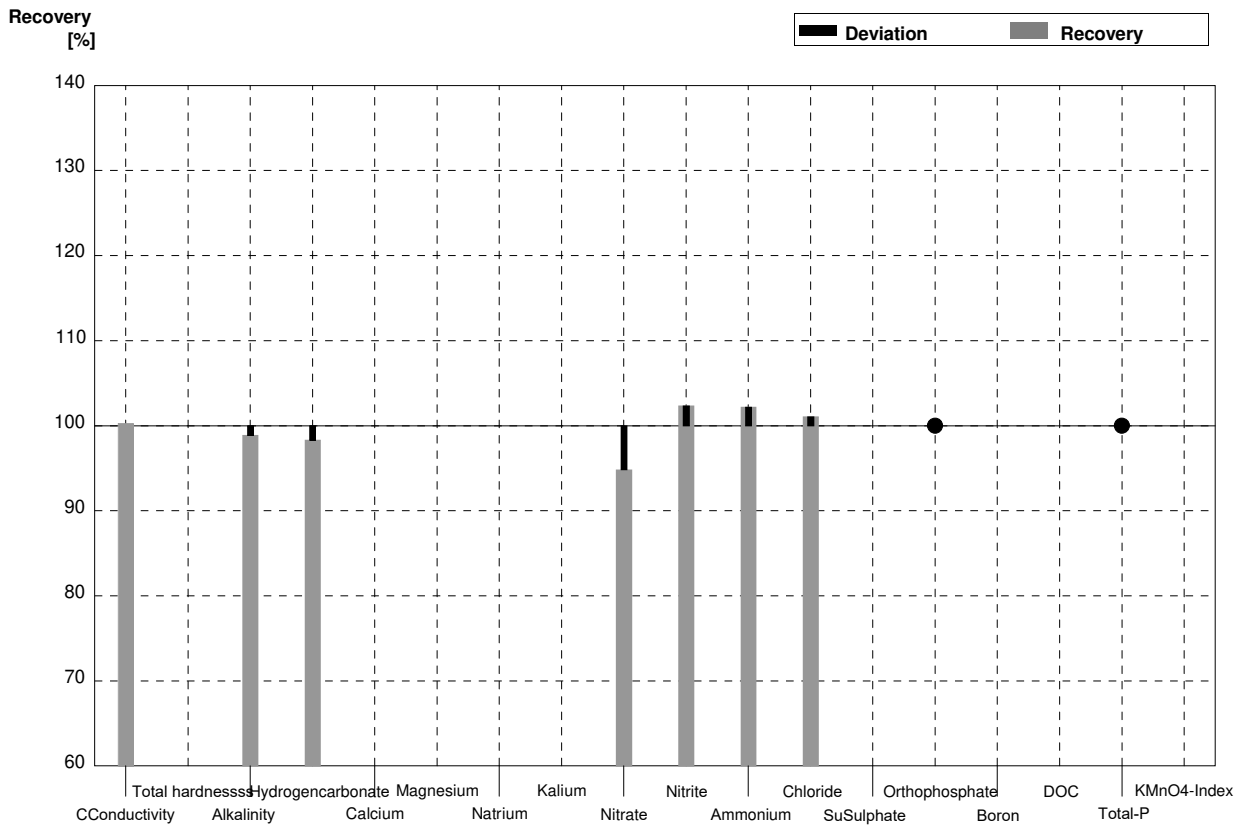
Sample N174B
Laboratory Z

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	544	2	551	4,51	µS/cm	101%
Total hardness	1,92	0,02	1,955		mmol/l	102%
Alkalinity KS 4,3 (as H+)	3,70	0,05	3,66	0,36	mmol/l	99%
Hydrogen carbonate	222	3	220,24		mg/l	99%
Calcium	55,5	0,9	57,465	5,73	mg/l	104%
Magnesium	12,93	0,18	12,682	1,27	mg/l	98%
Sodium	39,9	0,6	40,846	4,11	mg/l	102%
Potassium	1,97	0,04	1,957	0,19	mg/l	99%
Nitrate (as NO3)	40,1	1,0	43,810	4,42	mg/l	109%
Nitrite (as NO2)	0,0432	0,0015	0,0431	0,004	mg/l	100%
Ammonium (as NH4)	<0,01		<0,0090		mg/l	•
Chloride	23,6	0,3	25,688	2,60	mg/l	109%
Sulphate (as SO4)	29,7	0,6	30,801	3,09	mg/l	104%
Orthophosphate (as PO4)	0,0456	0,0030	0,0402	0,004	mg/l	88%
Boron	0,086	0,002	0,093	0,009	mg/l	108%
DOC (as C)	4,14	0,07	4,57	0,46	mg/l	110%
Total P (as PO4)	0,115	0,003	0,1165	0,012	mg/l	101%
KMnO4-Index (as O2)	3,13	0,11			mg/l	



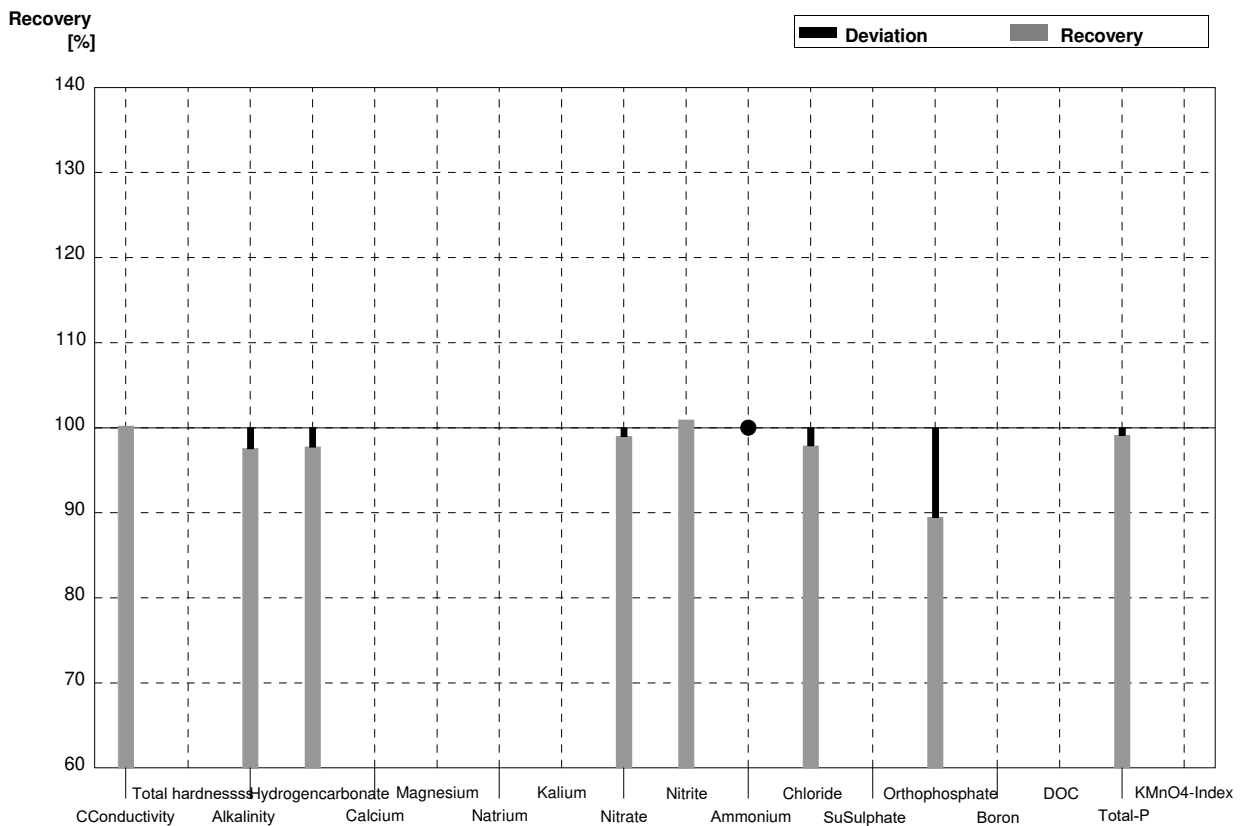
Sample N174A
Laboratory AA

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	360	1	361	3	µS/cm	100%
Total hardness	0,879	0,010			mmol/l	
Alkalinity KS 4,3 (as H+)	1,517	0,018	1,50	0,04	mmol/l	99%
Hydrogen carbonate	89,5	1,1	88	1	mg/l	98%
Calcium	25,1	0,4			mg/l	
Magnesium	6,15	0,10			mg/l	
Sodium	32,9	0,2			mg/l	
Potassium	5,90	0,03			mg/l	
Nitrate (as NO3)	9,7	0,3	9,2	0,6	mg/l	95%
Nitrite (as NO2)	0,02228	0,00008	0,0228	0,0023	mg/l	102%
Ammonium (as NH4)	0,0406	0,0019	0,0415	0,0063	mg/l	102%
Chloride	46,5	0,5	47,0	0,5	mg/l	101%
Sulphate (as SO4)	16,8	0,3			mg/l	
Orthophosphate (as PO4)	<0,009		<0,006		mg/l	•
Boron	0,136	0,004			mg/l	
DOC (as C)	5,53	0,07			mg/l	
Total P (as PO4)	<0,009		<0,006		mg/l	•
KMnO4-Index (as O2)	2,10	0,10			mg/l	



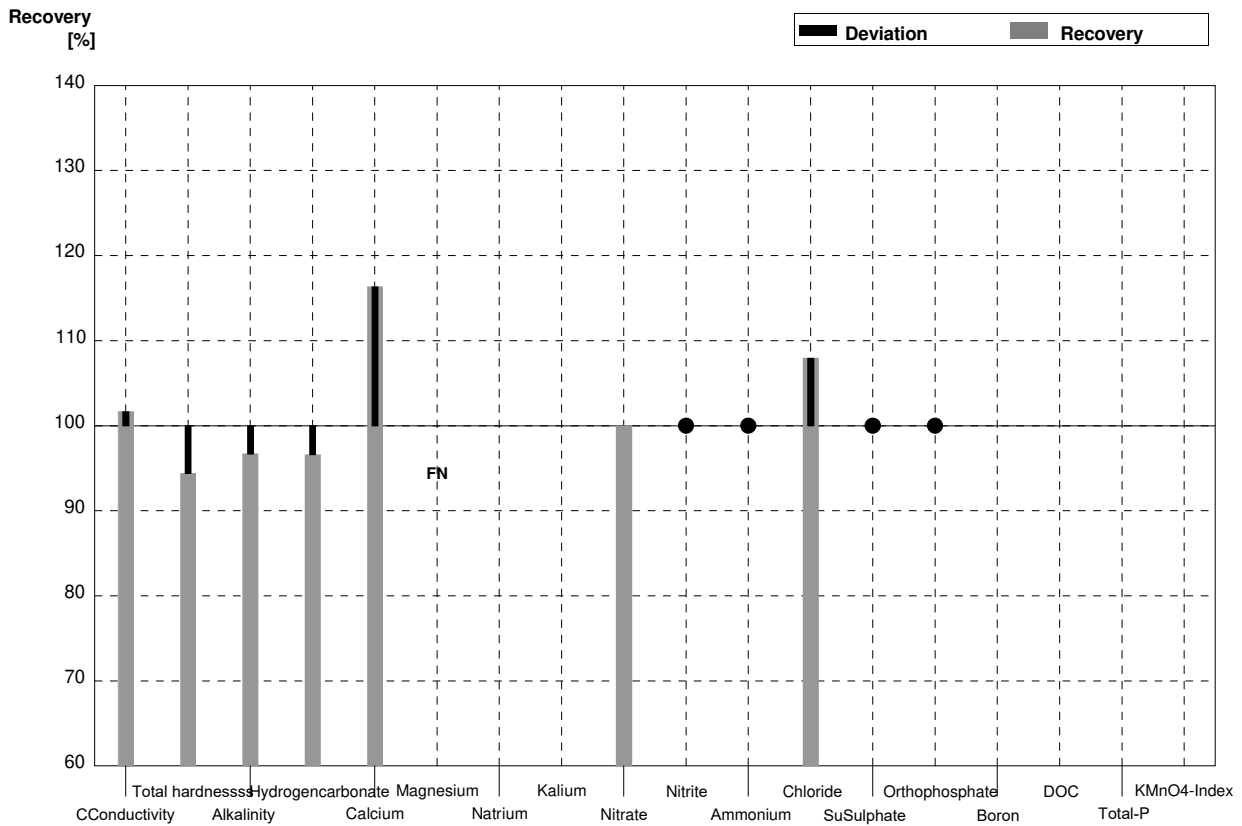
Sample N174B
Laboratory AA

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	544	2	545	4	µS/cm	100%
Total hardness	1,92	0,02			mmol/l	
Alkalinity KS 4,3 (as H+)	3,70	0,05	3,61	0,10	mmol/l	98%
Hydrogen carbonate	222	3	217	3	mg/l	98%
Calcium	55,5	0,9			mg/l	
Magnesium	12,93	0,18			mg/l	
Sodium	39,9	0,6			mg/l	
Potassium	1,97	0,04			mg/l	
Nitrate (as NO3)	40,1	1,0	39,7	2,7	mg/l	99%
Nitrite (as NO2)	0,0432	0,0015	0,0436	0,0044	mg/l	101%
Ammonium (as NH4)	<0,01		<0,005		mg/l	•
Chloride	23,6	0,3	23,1	0,2	mg/l	98%
Sulphate (as SO4)	29,7	0,6			mg/l	
Orthophosphate (as PO4)	0,0456	0,0030	0,0408	0,0048	mg/l	89%
Boron	0,086	0,002			mg/l	
DOC (as C)	4,14	0,07			mg/l	
Total P (as PO4)	0,115	0,003	0,114	0,015	mg/l	99%
KMnO4-Index (as O2)	3,13	0,11			mg/l	



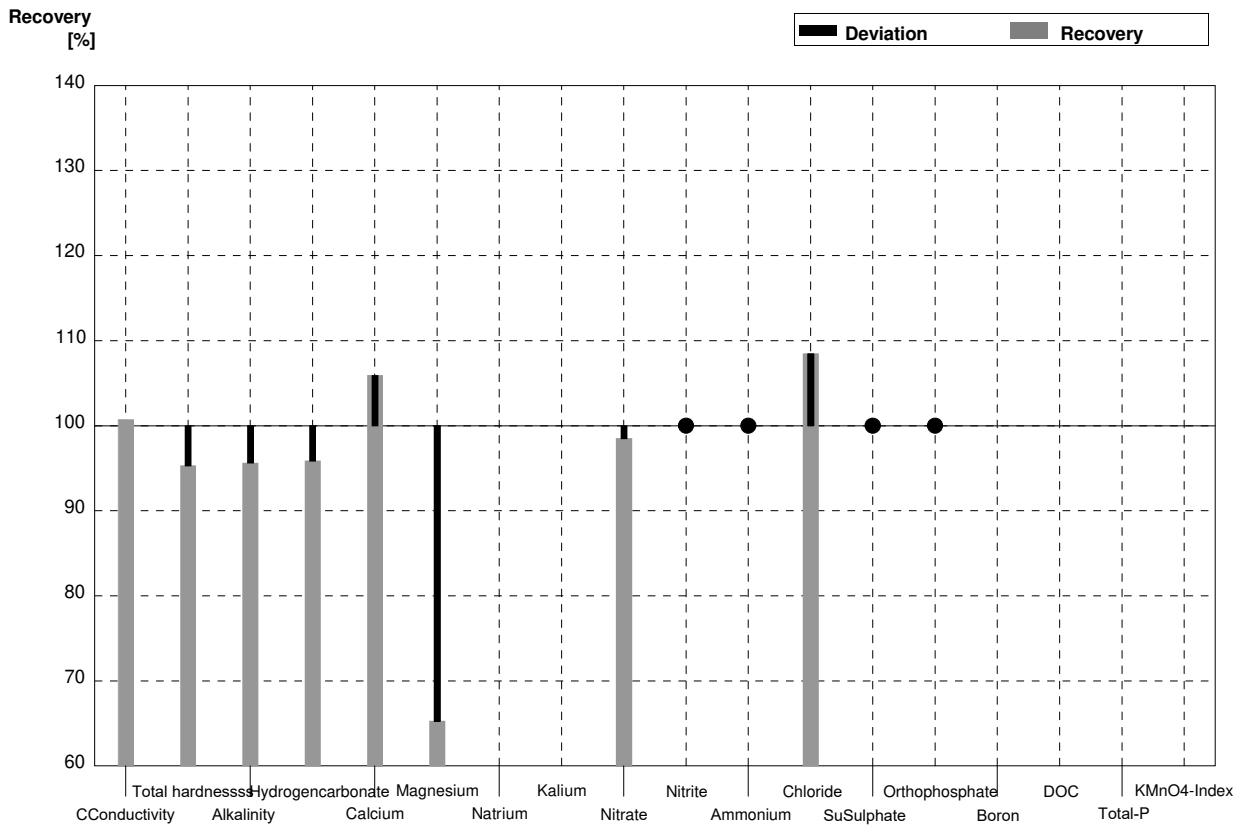
Sample N174A
Laboratory AB

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	360	1	366		µS/cm	102%
Total hardness	0,879	0,010	0,83		mmol/l	94%
Alkalinity KS 4,3 (as H+)	1,517	0,018	1,467		mmol/l	97%
Hydrogen carbonate	89,5	1,1	86,46		mg/l	97%
Calcium	25,1	0,4	29,2		mg/l	116%
Magnesium	6,15	0,10	<3		mg/l	FN
Sodium	32,9	0,2			mg/l	
Potassium	5,90	0,03			mg/l	
Nitrate (as NO3)	9,7	0,3	9,7		mg/l	100%
Nitrite (as NO2)	0,02228	0,00008	<0,05		mg/l	•
Ammonium (as NH4)	0,0406	0,0019	<0,05		mg/l	•
Chloride	46,5	0,5	50,2		mg/l	108%
Sulphate (as SO4)	16,8	0,3	<40		mg/l	•
Orthophosphate (as PO4)	<0,009		<0,15		mg/l	•
Boron	0,136	0,004			mg/l	
DOC (as C)	5,53	0,07			mg/l	
Total P (as PO4)	<0,009				mg/l	
KMnO4-Index (as O2)	2,10	0,10			mg/l	



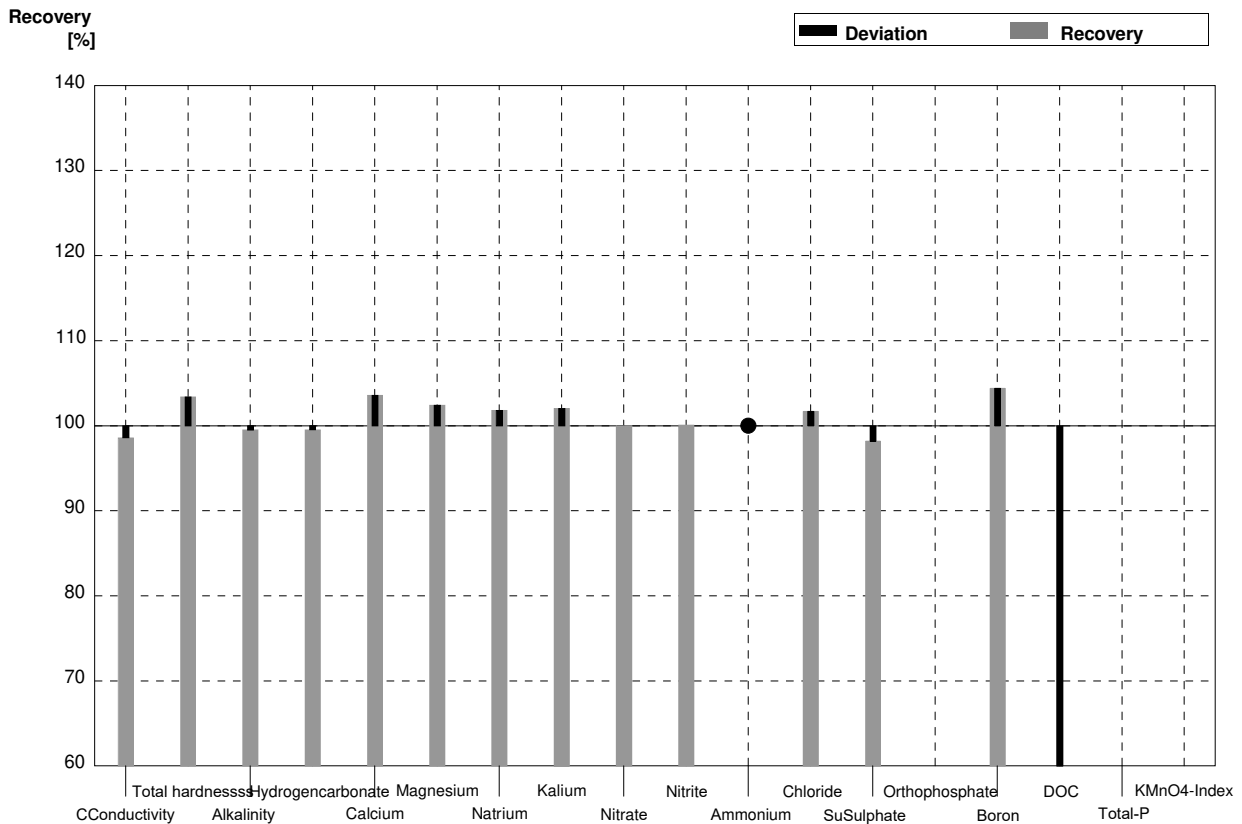
Sample N174B
Laboratory AB

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	544	2	548		µS/cm	101%
Total hardness	1,92	0,02	1,83		mmol/l	95%
Alkalinity KS 4,3 (as H+)	3,70	0,05	3,538		mmol/l	96%
Hydrogen carbonate	222	3	212,83		mg/l	96%
Calcium	55,5	0,9	58,8		mg/l	106%
Magnesium	12,93	0,18	8,44		mg/l	65%
Sodium	39,9	0,6			mg/l	
Potassium	1,97	0,04			mg/l	
Nitrate (as NO3)	40,1	1,0	39,5		mg/l	99%
Nitrite (as NO2)	0,0432	0,0015	<0,05		mg/l	•
Ammonium (as NH4)	<0,01		<0,05		mg/l	•
Chloride	23,6	0,3	25,6		mg/l	108%
Sulphate (as SO4)	29,7	0,6	<40		mg/l	•
Orthophosphate (as PO4)	0,0456	0,0030	<0,15		mg/l	•
Boron	0,086	0,002			mg/l	
DOC (as C)	4,14	0,07			mg/l	
Total P (as PO4)	0,115	0,003			mg/l	
KMnO4-Index (as O2)	3,13	0,11			mg/l	



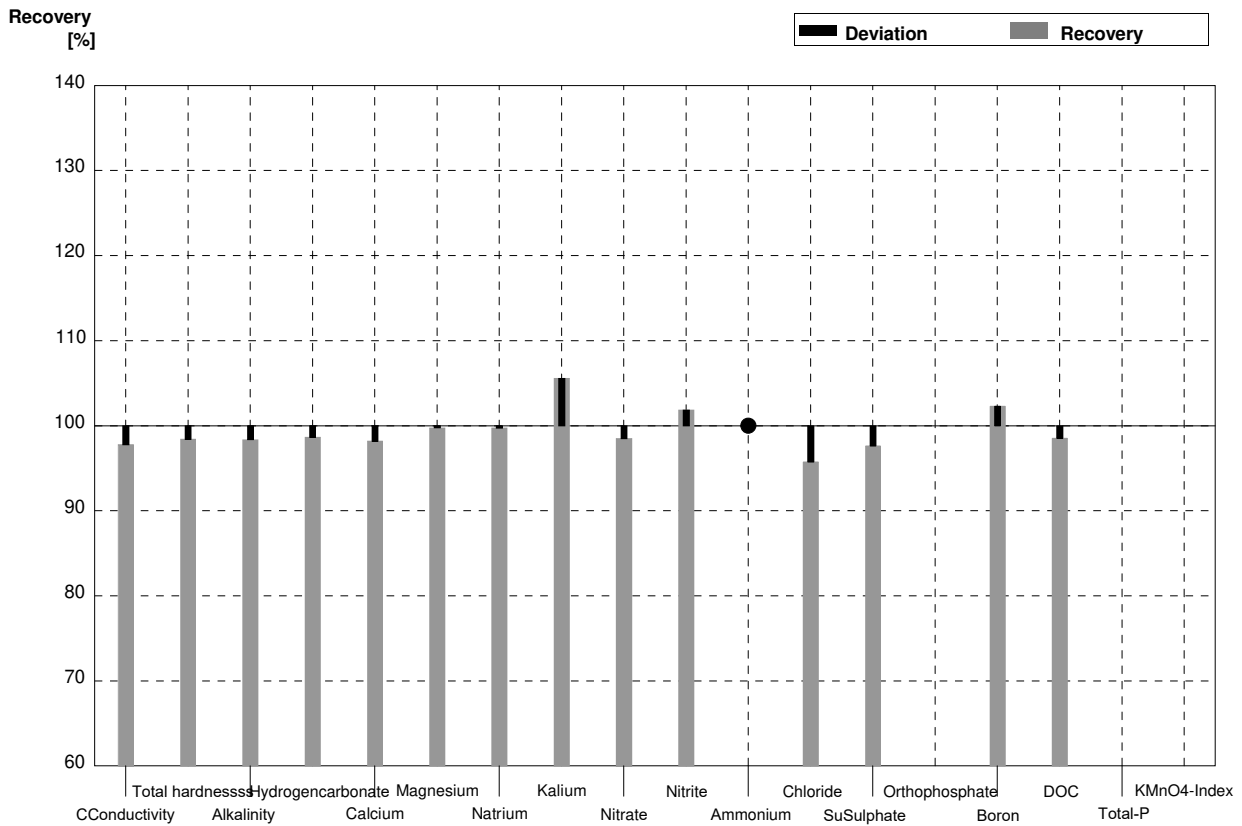
Sample N174A
Laboratory AC

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	360	1	355	7,0	µS/cm	99%
Total hardness	0,879	0,010	0,909		mmol/l	103%
Alkalinity KS 4,3 (as H+)	1,517	0,018	1,51	0,103	mmol/l	100%
Hydrogen carbonate	89,5	1,1	89,1		mg/l	100%
Calcium	25,1	0,4	26,0	1,7	mg/l	104%
Magnesium	6,15	0,10	6,3	0,5	mg/l	102%
Sodium	32,9	0,2	33,5	2,5	mg/l	102%
Potassium	5,90	0,03	6,02	0,52	mg/l	102%
Nitrate (as NO3)	9,7	0,3	9,7	0,7	mg/l	100%
Nitrite (as NO2)	0,02228	0,00008	0,0223	0,004	mg/l	100%
Ammonium (as NH4)	0,0406	0,0019	<0,050		mg/l	•
Chloride	46,5	0,5	47,3	6,1	mg/l	102%
Sulphate (as SO4)	16,8	0,3	16,5	0,8	mg/l	98%
Orthophosphate (as PO4)	<0,009				mg/l	
Boron	0,136	0,004	0,142	0,016	mg/l	104%
DOC (as C)	5,53	0,07	0,489	0,080	mg/l	9%
Total P (as PO4)	<0,009				mg/l	
KMnO4-Index (as O2)	2,10	0,10			mg/l	



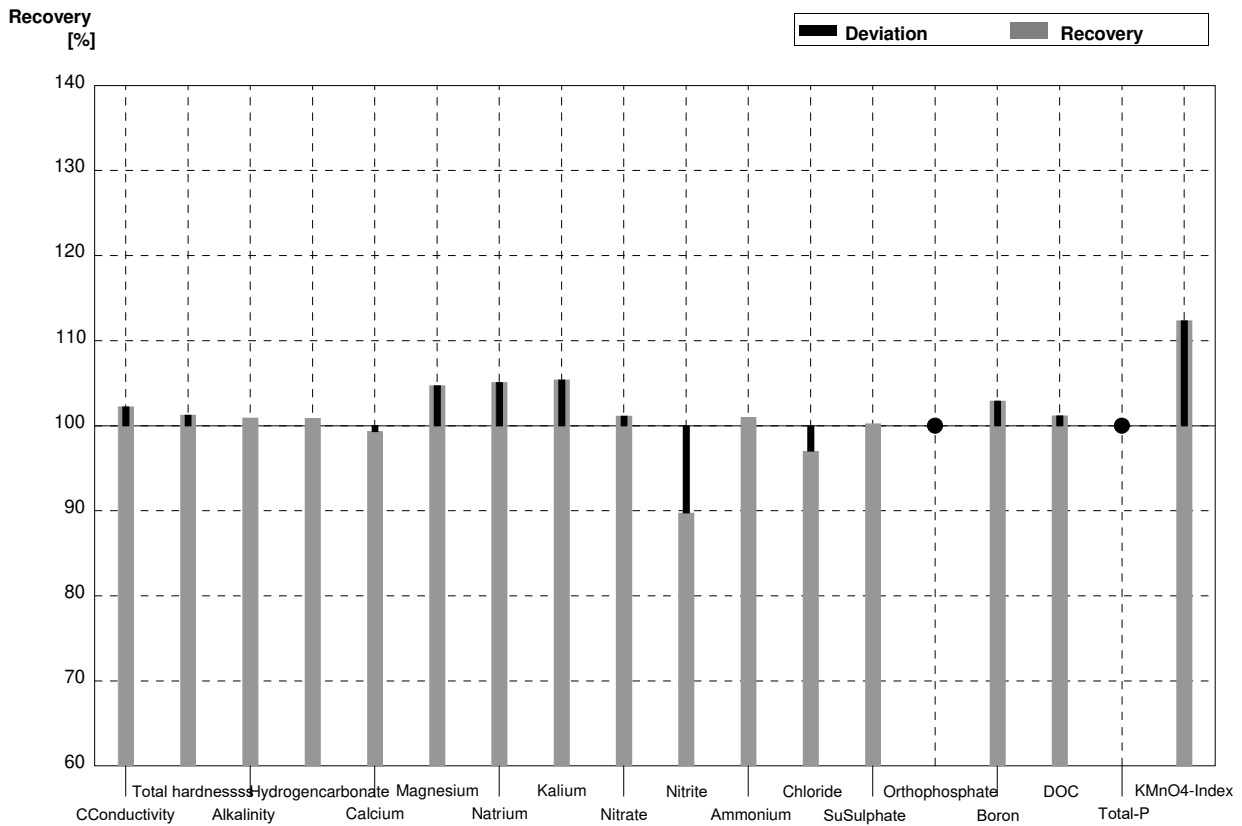
Sample N174B
Laboratory AC

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	544	2	532	11	µS/cm	98%
Total hardness	1,92	0,02	1,89		mmol/l	98%
Alkalinity KS 4,3 (as H+)	3,70	0,05	3,64	0,248	mmol/l	98%
Hydrogen carbonate	222	3	219		mg/l	99%
Calcium	55,5	0,9	54,5	3,5	mg/l	98%
Magnesium	12,93	0,18	12,9	1,1	mg/l	100%
Sodium	39,9	0,6	39,8	2,9	mg/l	100%
Potassium	1,97	0,04	2,08	0,18	mg/l	106%
Nitrate (as NO3)	40,1	1,0	39,5	2,7	mg/l	99%
Nitrite (as NO2)	0,0432	0,0015	0,0440	0,009	mg/l	102%
Ammonium (as NH4)	<0,01		<0,050		mg/l	•
Chloride	23,6	0,3	22,6	2,9	mg/l	96%
Sulphate (as SO4)	29,7	0,6	29,0	1,4	mg/l	98%
Orthophosphate (as PO4)	0,0456	0,0030			mg/l	
Boron	0,086	0,002	0,088	0,009	mg/l	102%
DOC (as C)	4,14	0,07	4,08	0,66	mg/l	99%
Total P (as PO4)	0,115	0,003			mg/l	
KMnO4-Index (as O2)	3,13	0,11			mg/l	



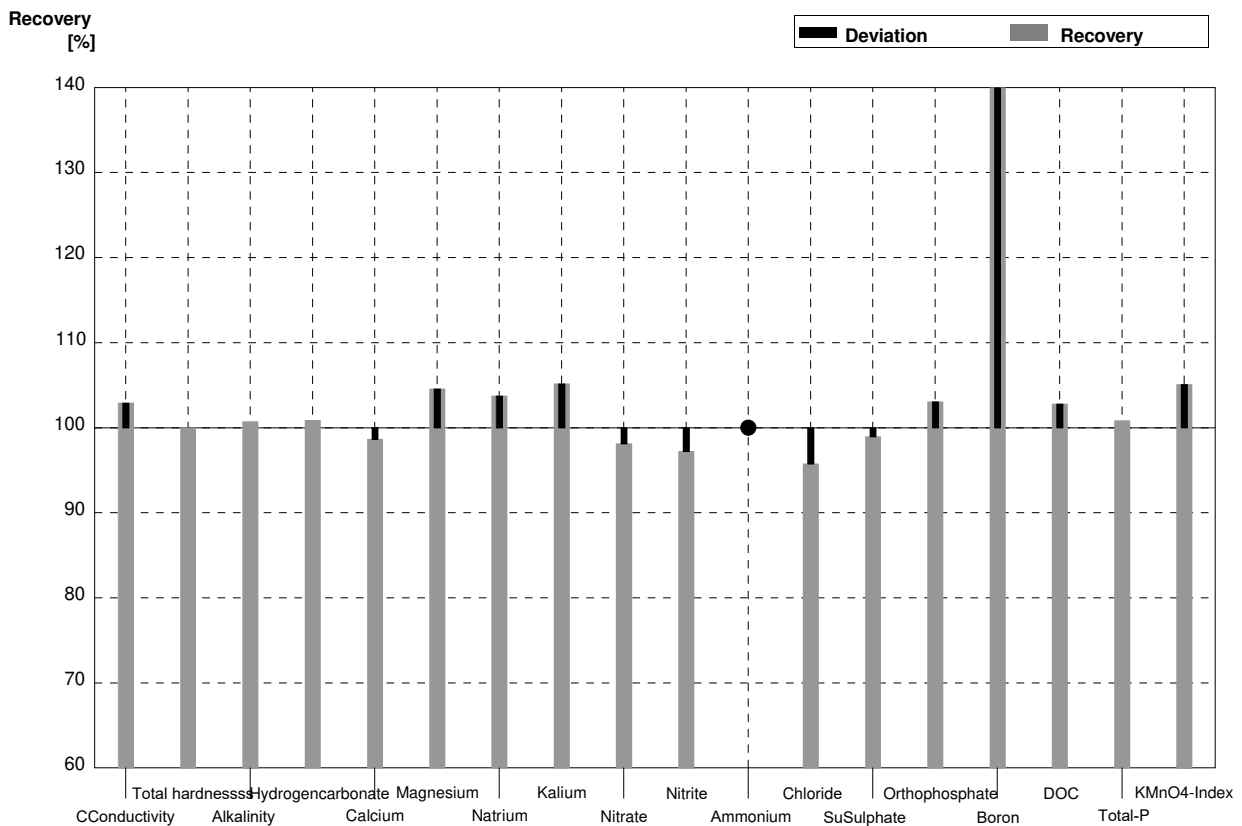
Sample N174A
Laboratory AD

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	360	1	368	20,46	µS/cm	102%
Total hardness	0,879	0,010	0,89	0,05	mmol/l	101%
Alkalinity KS 4,3 (as H+)	1,517	0,018	1,531	0,084	mmol/l	101%
Hydrogen carbonate	89,5	1,1	90,3	4,97	mg/l	101%
Calcium	25,1	0,4	24,93	1,37	mg/l	99%
Magnesium	6,15	0,10	6,44	0,23	mg/l	105%
Sodium	32,9	0,2	34,57	1,21	mg/l	105%
Potassium	5,90	0,03	6,218	0,22	mg/l	105%
Nitrate (as NO3)	9,7	0,3	9,813	0,942	mg/l	101%
Nitrite (as NO2)	0,02228	0,00008	0,0200	0,002	mg/l	90%
Ammonium (as NH4)	0,0406	0,0019	0,0410	0,004	mg/l	101%
Chloride	46,5	0,5	45,118	4,74	mg/l	97%
Sulphate (as SO4)	16,8	0,3	16,84	1,448	mg/l	100%
Orthophosphate (as PO4)	<0,009		<0,010		mg/l	•
Boron	0,136	0,004	0,140	0,025	mg/l	103%
DOC (as C)	5,53	0,07	5,595	1,119	mg/l	101%
Total P (as PO4)	<0,009		<0,010		mg/l	•
KMnO4-Index (as O2)	2,10	0,10	2,36	0,307	mg/l	112%



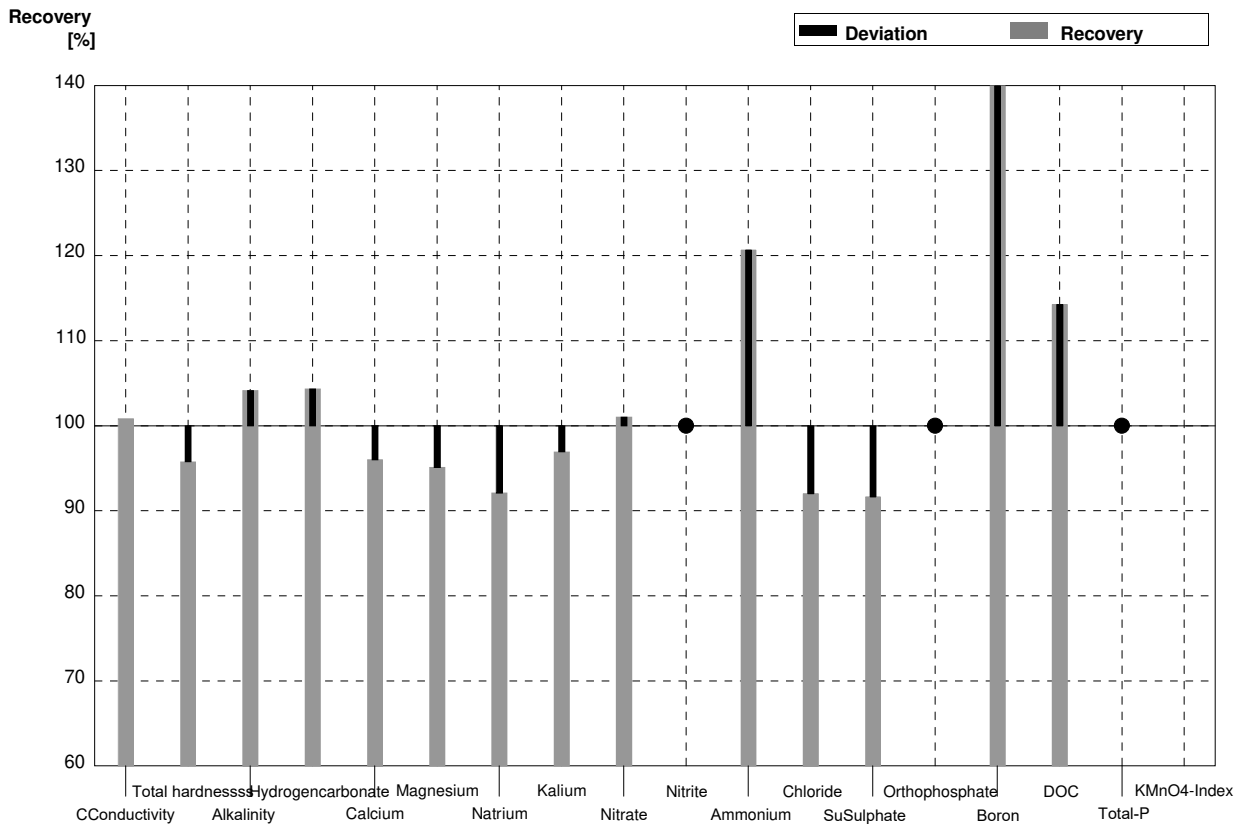
Sample N174B
Laboratory AD

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	544	2	560	31,14	µS/cm	103%
Total hardness	1,92	0,02	1,92	0,096	mmol/l	100%
Alkalinity KS 4,3 (as H+)	3,70	0,05	3,727	0,205	mmol/l	101%
Hydrogen carbonate	222	3	224	12,32	mg/l	101%
Calcium	55,5	0,9	54,75	3,01	mg/l	99%
Magnesium	12,93	0,18	13,52	0,47	mg/l	105%
Sodium	39,9	0,6	41,39	1,45	mg/l	104%
Potassium	1,97	0,04	2,072	0,08	mg/l	105%
Nitrate (as NO3)	40,1	1,0	39,35	3,78	mg/l	98%
Nitrite (as NO2)	0,0432	0,0015	0,0420	0,004	mg/l	97%
Ammonium (as NH4)	<0,01		<0,010		mg/l	•
Chloride	23,6	0,3	22,6	2,396	mg/l	96%
Sulphate (as SO4)	29,7	0,6	29,39	2,528	mg/l	99%
Orthophosphate (as PO4)	0,0456	0,0030	0,0470	0,005	mg/l	103%
Boron	0,086	0,002	89,24	16	mg/l	103767%
DOC (as C)	4,14	0,07	4,256	0,851	mg/l	103%
Total P (as PO4)	0,115	0,003	0,116	0,012	mg/l	101%
KMnO4-Index (as O2)	3,13	0,11	3,29	0,428	mg/l	105%



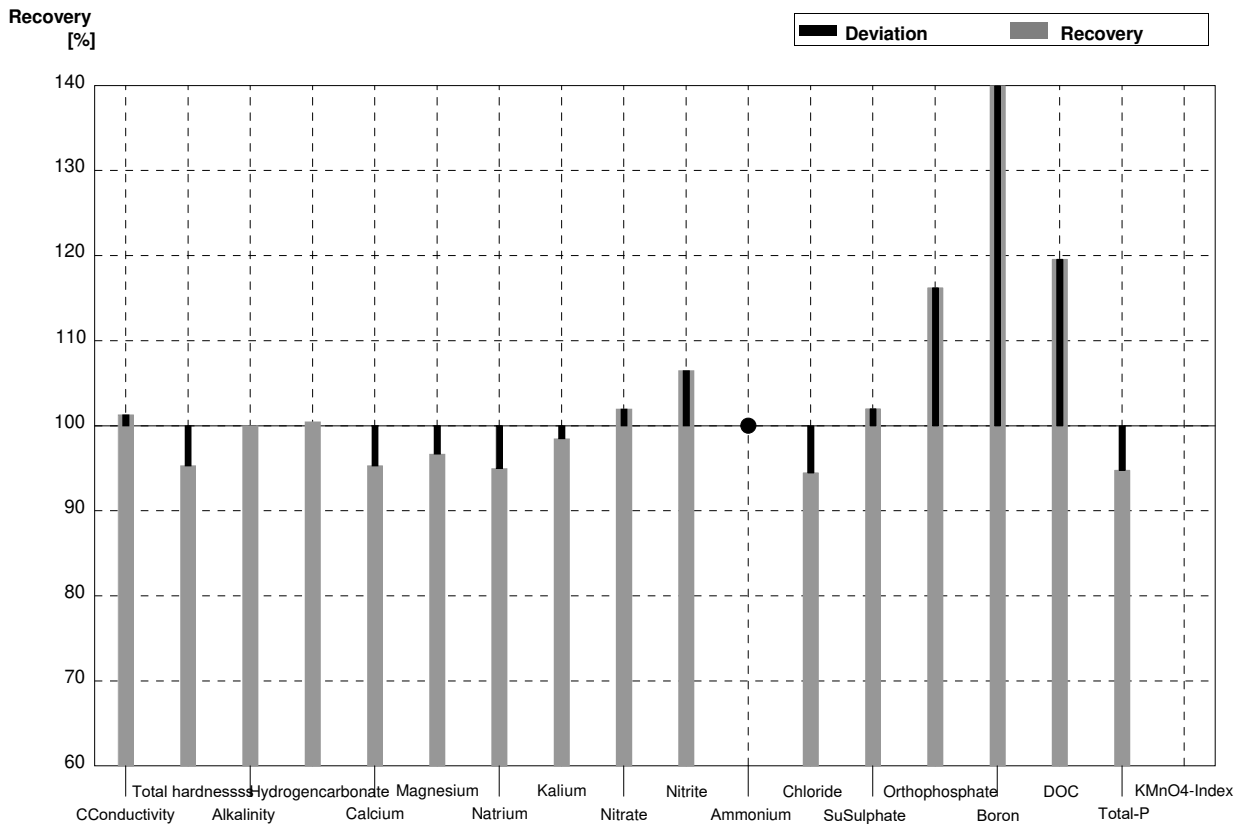
Sample N174A
Laboratory AE

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	360	1	363	10,9	µS/cm	101%
Total hardness	0,879	0,010	0,842	0,067	mmol/l	96%
Alkalinity KS 4,3 (as H+)	1,517	0,018	1,58	0,174	mmol/l	104%
Hydrogen carbonate	89,5	1,1	93,4	10,3	mg/l	104%
Calcium	25,1	0,4	24,1	2,89	mg/l	96%
Magnesium	6,15	0,10	5,85	0,53	mg/l	95%
Sodium	32,9	0,2	30,3	3,03	mg/l	92%
Potassium	5,90	0,03	5,72	0,629	mg/l	97%
Nitrate (as NO3)	9,7	0,3	9,80	0,98	mg/l	101%
Nitrite (as NO2)	0,02228	0,00008	<0,200		mg/l	•
Ammonium (as NH4)	0,0406	0,0019	0,0490	0,007	mg/l	121%
Chloride	46,5	0,5	42,8	4,28	mg/l	92%
Sulphate (as SO4)	16,8	0,3	15,4	1,08	mg/l	92%
Orthophosphate (as PO4)	<0,009		<0,015		mg/l	•
Boron	0,136	0,004	132	15,8	mg/l	97059%
DOC (as C)	5,53	0,07	6,32	1,01	mg/l	114%
Total P (as PO4)	<0,009		<0,015		mg/l	•
KMnO4-Index (as O2)	2,10	0,10			mg/l	



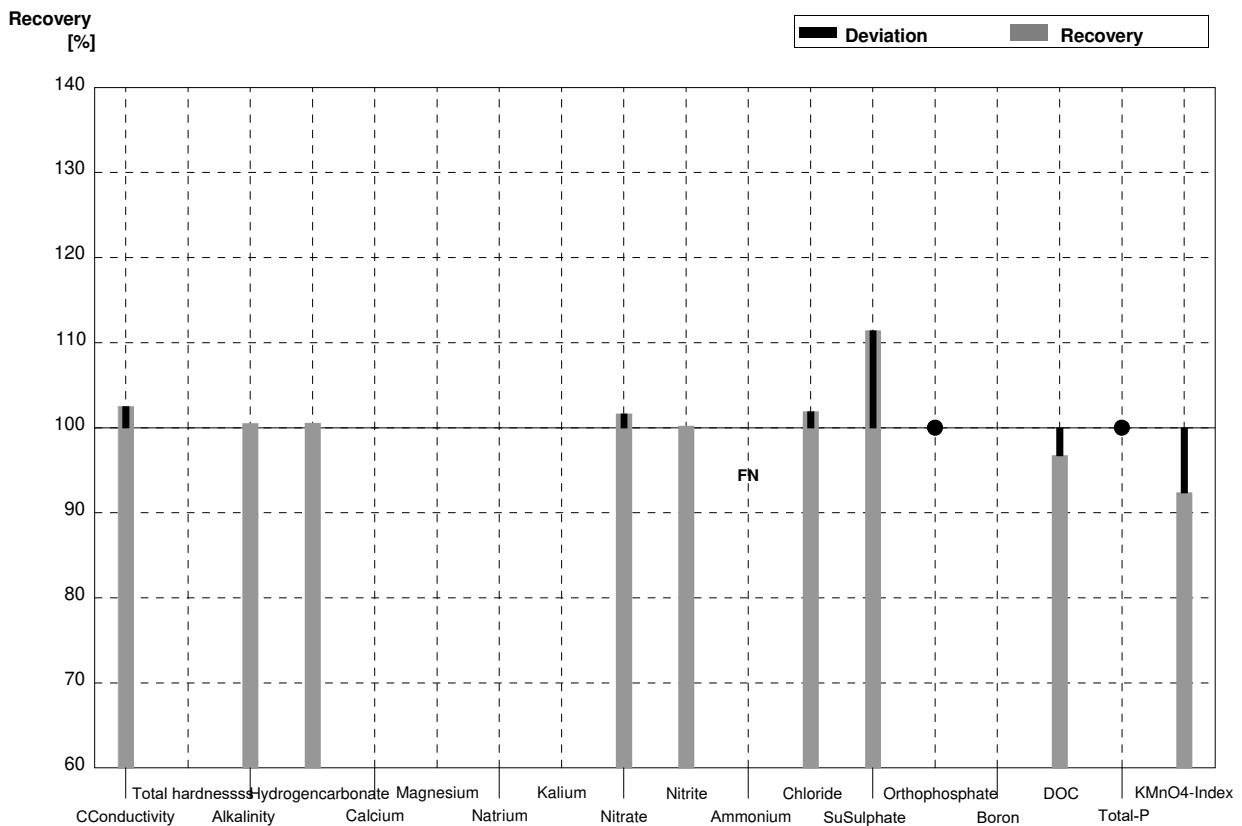
Sample N174B
Laboratory AE

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	544	2	551	17,0	µS/cm	101%
Total hardness	1,92	0,02	1,83	0,147	mmol/l	95%
Alkalinity KS 4,3 (as H+)	3,70	0,05	3,70	0,407	mmol/l	100%
Hydrogen carbonate	222	3	223	24,5	mg/l	100%
Calcium	55,5	0,9	52,9	6,35	mg/l	95%
Magnesium	12,93	0,18	12,5	1,13	mg/l	97%
Sodium	39,9	0,6	37,9	3,79	mg/l	95%
Potassium	1,97	0,04	1,94	0,213	mg/l	98%
Nitrate (as NO3)	40,1	1,0	40,9	3,68	mg/l	102%
Nitrite (as NO2)	0,0432	0,0015	0,0460	0,006	mg/l	106%
Ammonium (as NH4)	<0,01		<0,010		mg/l	•
Chloride	23,6	0,3	22,3	2,23	mg/l	94%
Sulphate (as SO4)	29,7	0,6	30,3	2,12	mg/l	102%
Orthophosphate (as PO4)	0,0456	0,0030	0,053	0,007	mg/l	116%
Boron	0,086	0,002	81,4	9,77	mg/l	94651%
DOC (as C)	4,14	0,07	4,95	0,792	mg/l	120%
Total P (as PO4)	0,115	0,003	0,109	0,0163	mg/l	95%
KMnO4-Index (as O2)	3,13	0,11			mg/l	



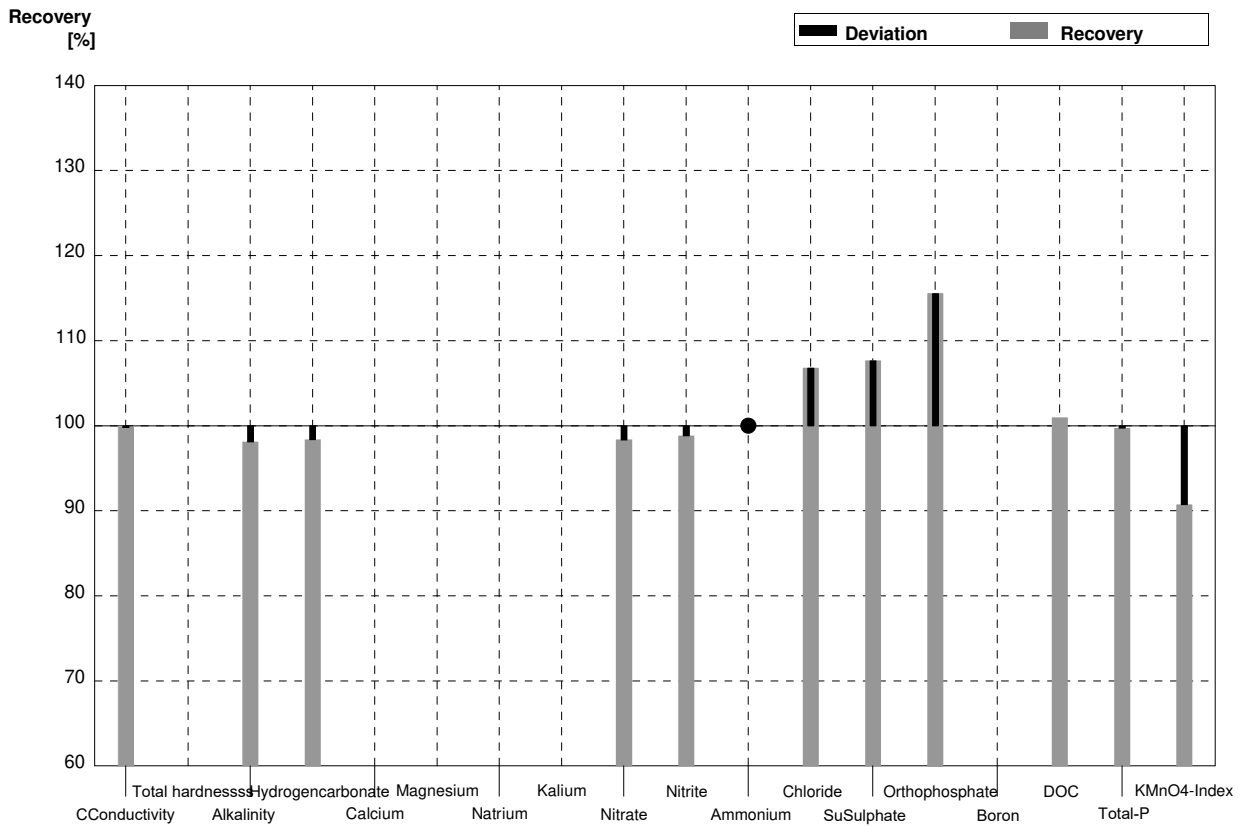
Sample N174A
Laboratory AF

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	360	1	369	10,7	µS/cm	103%
Total hardness	0,879	0,010			mmol/l	
Alkalinity KS 4,3 (as H+)	1,517	0,018	1,525	0,147	mmol/l	101%
Hydrogen carbonate	89,5	1,1	90,0	8,7	mg/l	101%
Calcium	25,1	0,4			mg/l	
Magnesium	6,15	0,10			mg/l	
Sodium	32,9	0,2			mg/l	
Potassium	5,90	0,03			mg/l	
Nitrate (as NO3)	9,7	0,3	9,86	0,36	mg/l	102%
Nitrite (as NO2)	0,02228	0,00008	0,02233	0,00078	mg/l	100%
Ammonium (as NH4)	0,0406	0,0019	<0,038		mg/l	FN
Chloride	46,5	0,5	47,38	2,27	mg/l	102%
Sulphate (as SO4)	16,8	0,3	18,72	0,86	mg/l	111%
Orthophosphate (as PO4)	<0,009		<0,0153		mg/l	•
Boron	0,136	0,004			mg/l	
DOC (as C)	5,53	0,07	5,35	0,31	mg/l	97%
Total P (as PO4)	<0,009		<0,0153		mg/l	•
KMnO4-Index (as O2)	2,10	0,10	1,94	0,19	mg/l	92%



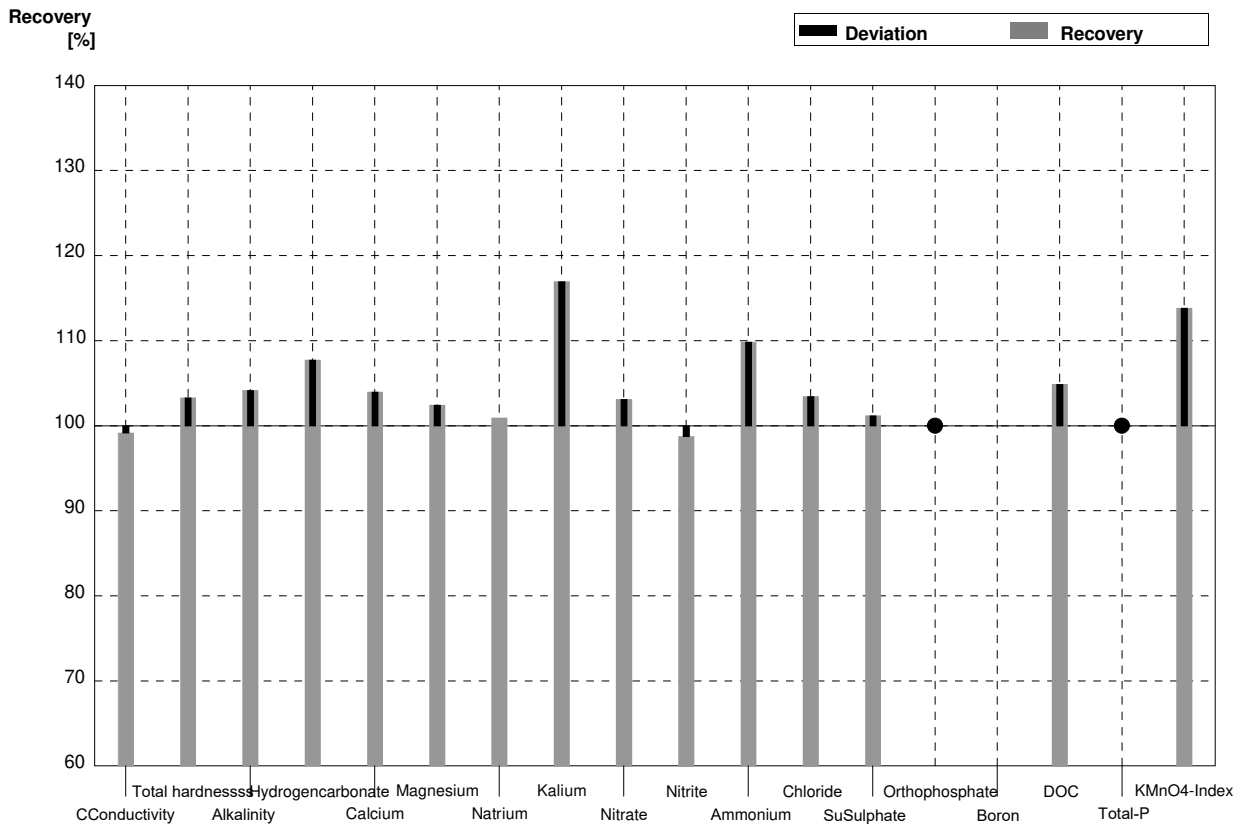
Sample N174B
Laboratory AF

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	544	2	543	15,7	µS/cm	100%
Total hardness	1,92	0,02			mmol/l	
Alkalinity KS 4,3 (as H+)	3,70	0,05	3,63	0,351	mmol/l	98%
Hydrogen carbonate	222	3	218,4	21,1	mg/l	98%
Calcium	55,5	0,9			mg/l	
Magnesium	12,93	0,18			mg/l	
Sodium	39,9	0,6			mg/l	
Potassium	1,97	0,04			mg/l	
Nitrate (as NO3)	40,1	1,0	39,44	1,46	mg/l	98%
Nitrite (as NO2)	0,0432	0,0015	0,04269	0,00149	mg/l	99%
Ammonium (as NH4)	<0,01		<0,038		mg/l	•
Chloride	23,6	0,3	25,20	1,21	mg/l	107%
Sulphate (as SO4)	29,7	0,6	31,98	1,47	mg/l	108%
Orthophosphate (as PO4)	0,0456	0,0030	0,0527	0,0042	mg/l	116%
Boron	0,086	0,002			mg/l	
DOC (as C)	4,14	0,07	4,18	0,24	mg/l	101%
Total P (as PO4)	0,115	0,003	0,1147	0,0093	mg/l	100%
KMnO4-Index (as O2)	3,13	0,11	2,84	0,28	mg/l	91%



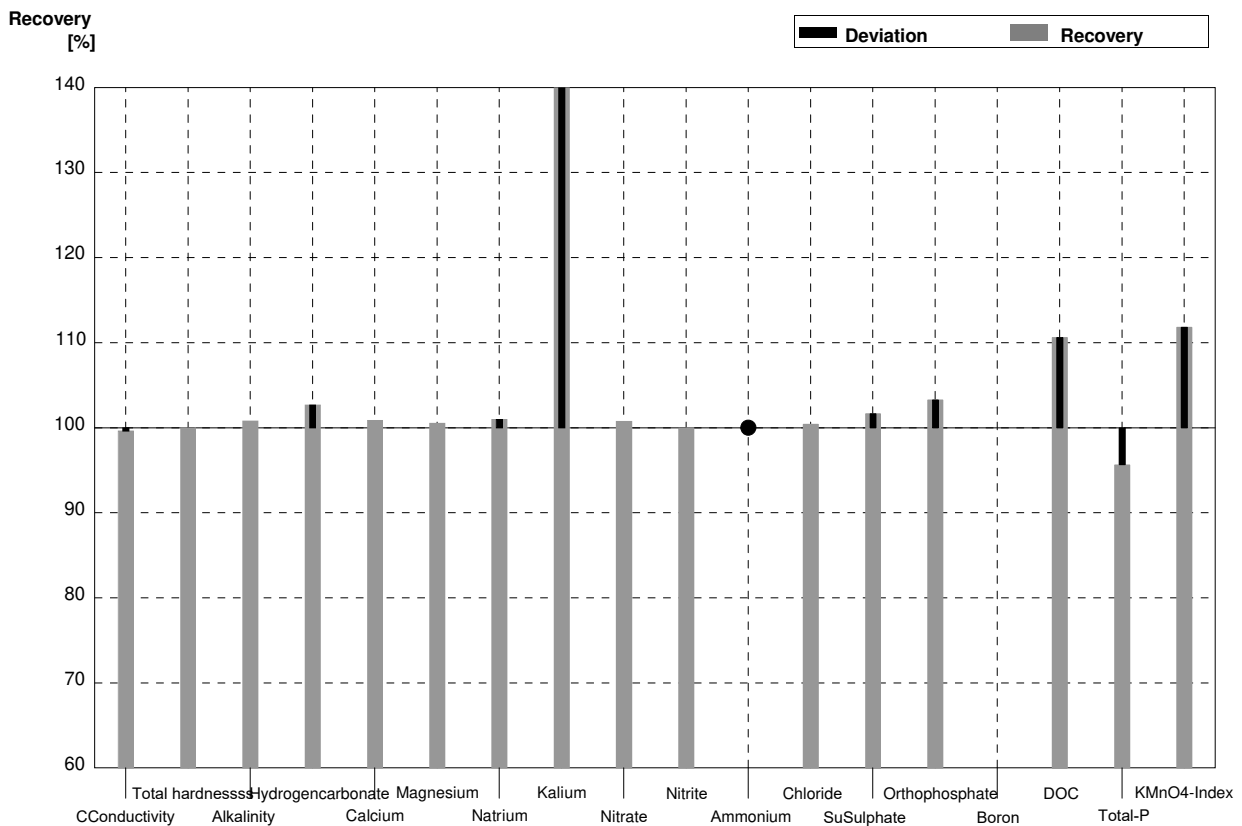
Sample N174A
Laboratory AG

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	360	1	357	8	µS/cm	99%
Total hardness	0,879	0,010	0,908	0,075	mmol/l	103%
Alkalinity KS 4,3 (as H+)	1,517	0,018	1,580	0,070	mmol/l	104%
Hydrogen carbonate	89,5	1,1	96,4	4,3	mg/l	108%
Calcium	25,1	0,4	26,1	1,2	mg/l	104%
Magnesium	6,15	0,10	6,3	0,3	mg/l	102%
Sodium	32,9	0,2	33,2	1,4	mg/l	101%
Potassium	5,90	0,03	6,9	0,3	mg/l	117%
Nitrate (as NO3)	9,7	0,3	10,0	0,4	mg/l	103%
Nitrite (as NO2)	0,02228	0,00008	0,0220	0,0016	mg/l	99%
Ammonium (as NH4)	0,0406	0,0019	0,0446	0,0054	mg/l	110%
Chloride	46,5	0,5	48,1	1,9	mg/l	103%
Sulphate (as SO4)	16,8	0,3	17,0	0,7	mg/l	101%
Orthophosphate (as PO4)	<0,009		<0,01		mg/l	•
Boron	0,136	0,004			mg/l	
DOC (as C)	5,53	0,07	5,8	0,8	mg/l	105%
Total P (as PO4)	<0,009		<0,1		mg/l	•
KMnO4-Index (as O2)	2,10	0,10	2,39	0,32	mg/l	114%



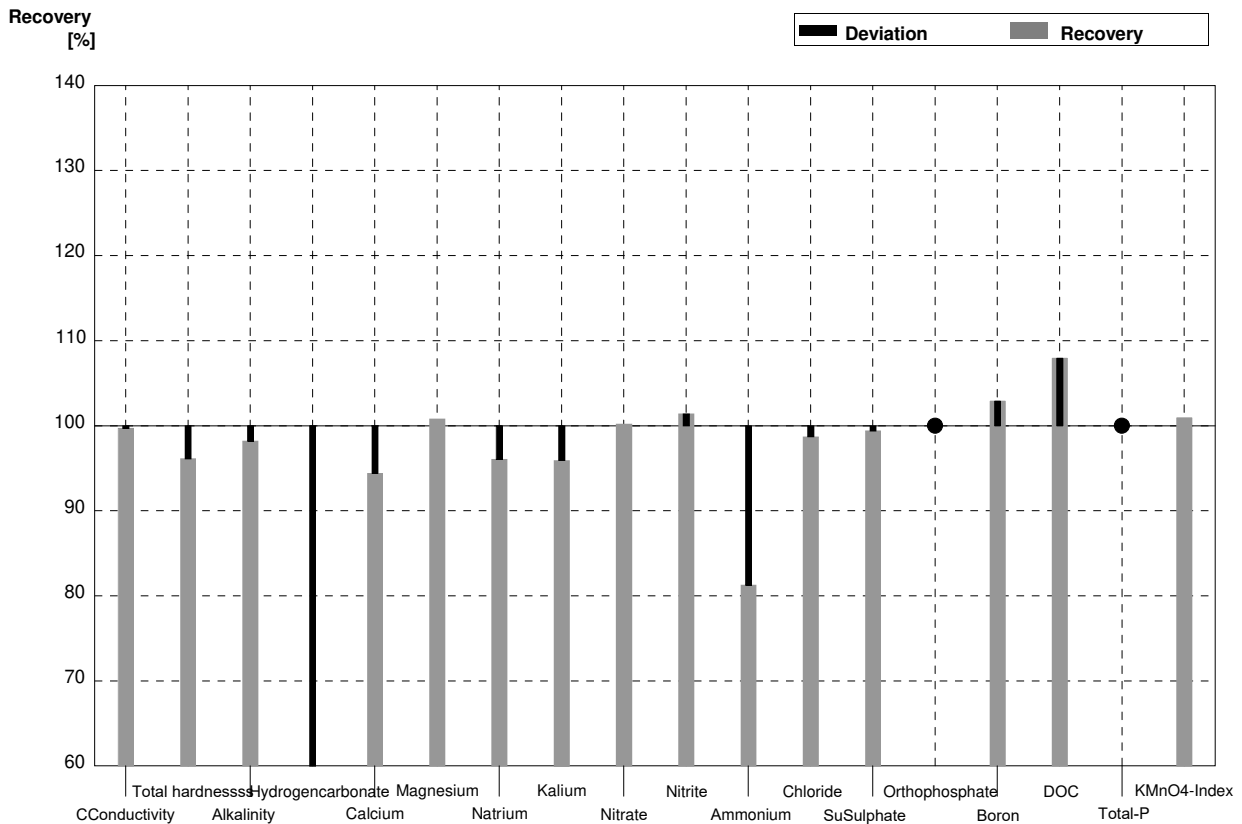
Sample N174B
Laboratory AG

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	544	2	542	12	µS/cm	100%
Total hardness	1,92	0,02	1,92	0,16	mmol/l	100%
Alkalinity KS 4,3 (as H+)	3,70	0,05	3,73	0,17	mmol/l	101%
Hydrogen carbonate	222	3	228	11	mg/l	103%
Calcium	55,5	0,9	56	3	mg/l	101%
Magnesium	12,93	0,18	13,0	0,5	mg/l	101%
Sodium	39,9	0,6	40,3	1,7	mg/l	101%
Potassium	1,97	0,04	2,83	0,11	mg/l	144%
Nitrate (as NO3)	40,1	1,0	40,4	1,5	mg/l	101%
Nitrite (as NO2)	0,0432	0,0015	0,0432	0,0032	mg/l	100%
Ammonium (as NH4)	<0,01		<0,02		mg/l	•
Chloride	23,6	0,3	23,7	1,0	mg/l	100%
Sulphate (as SO4)	29,7	0,6	30,2	1,2	mg/l	102%
Orthophosphate (as PO4)	0,0456	0,0030	0,0471	0,0041	mg/l	103%
Boron	0,086	0,002			mg/l	
DOC (as C)	4,14	0,07	4,58	0,57	mg/l	111%
Total P (as PO4)	0,115	0,003	0,110	0,024	mg/l	96%
KMnO4-Index (as O2)	3,13	0,11	3,50	0,47	mg/l	112%



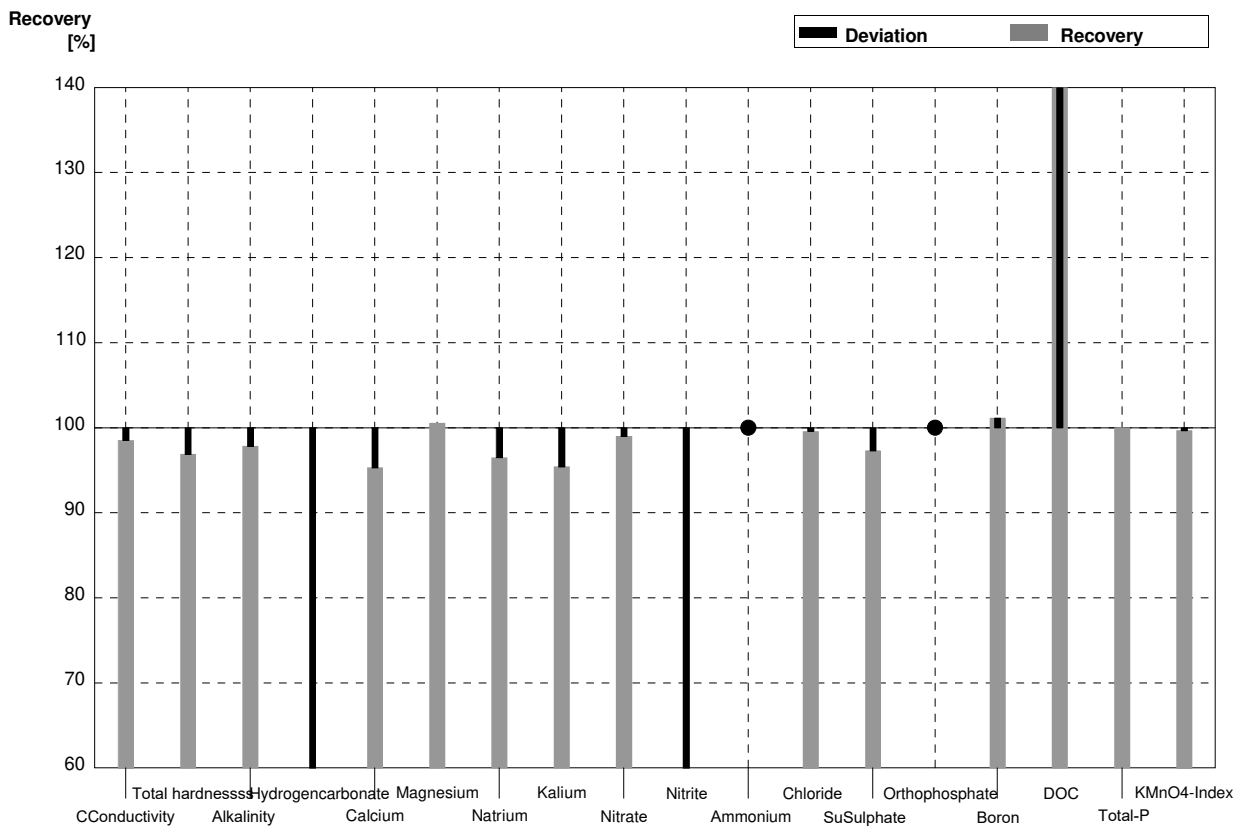
Sample N174A
Laboratory AH

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	360	1	359	18	µS/cm	100%
Total hardness	0,879	0,010	0,845	0,17	mmol/l	96%
Alkalinity KS 4,3 (as H+)	1,517	0,018	1,49	0,15	mmol/l	98%
Hydrogen carbonate	89,5	1,1	1,44	0,14	mg/l	2%
Calcium	25,1	0,4	23,7	3,92	mg/l	94%
Magnesium	6,15	0,10	6,2	0,68	mg/l	101%
Sodium	32,9	0,2	31,6	2,84	mg/l	96%
Potassium	5,90	0,03	5,66	0,68	mg/l	96%
Nitrate (as NO3)	9,7	0,3	9,72	0,74	mg/l	100%
Nitrite (as NO2)	0,02228	0,00008	0,0226	0,003	mg/l	101%
Ammonium (as NH4)	0,0406	0,0019	0,0330	0,004	mg/l	81%
Chloride	46,5	0,5	45,9	5,92	mg/l	99%
Sulphate (as SO4)	16,8	0,3	16,7	2,27	mg/l	99%
Orthophosphate (as PO4)	<0,009		<0,1		mg/l	•
Boron	0,136	0,004	0,140	0,02	mg/l	103%
DOC (as C)	5,53	0,07	5,97	1,13	mg/l	108%
Total P (as PO4)	<0,009		<0,03	0,01	mg/l	•
KMnO4-Index (as O2)	2,10	0,10	2,12	0,23	mg/l	101%



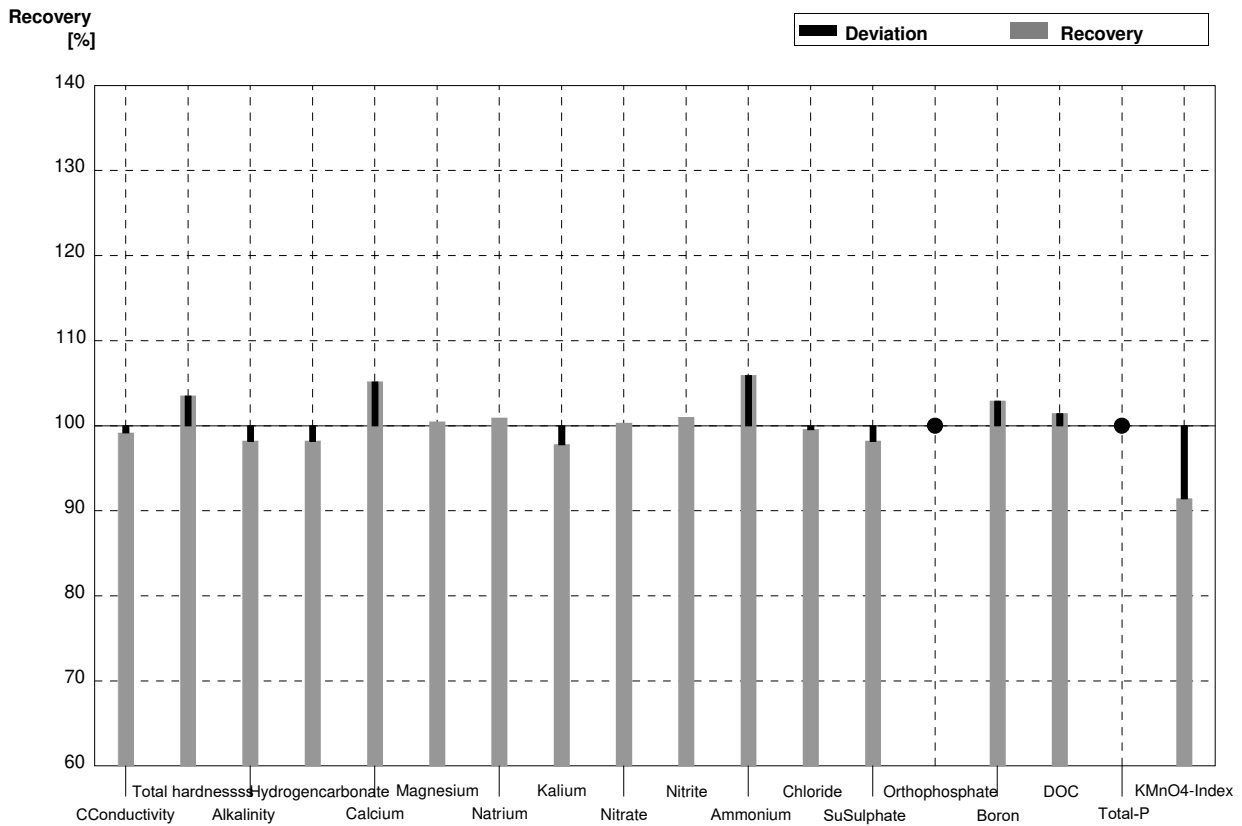
Sample N174B
Laboratory AH

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	544	2	536	27	µS/cm	99%
Total hardness	1,92	0,02	1,86	0,37	mmol/l	97%
Alkalinity KS 4,3 (as H+)	3,70	0,05	3,62	0,36	mmol/l	98%
Hydrogen carbonate	222	3	3,58	0,36	mg/l	2%
Calcium	55,5	0,9	52,9	8,5	mg/l	95%
Magnesium	12,93	0,18	13,0	1,44	mg/l	101%
Sodium	39,9	0,6	38,5	3,46	mg/l	96%
Potassium	1,97	0,04	1,88	0,23	mg/l	95%
Nitrate (as NO3)	40,1	1,0	39,7	3,02	mg/l	99%
Nitrite (as NO2)	0,0432	0,0015	0,0143	0,002	mg/l	33%
Ammonium (as NH4)	<0,01		<0,02		mg/l	•
Chloride	23,6	0,3	23,5	3,03	mg/l	100%
Sulphate (as SO4)	29,7	0,6	28,9	3,93	mg/l	97%
Orthophosphate (as PO4)	0,0456	0,0030	<0,1		mg/l	•
Boron	0,086	0,002	0,087	0,01	mg/l	101%
DOC (as C)	4,14	0,07	5,94	1,13	mg/l	143%
Total P (as PO4)	0,115	0,003	0,115	0,015	mg/l	100%
KMnO4-Index (as O2)	3,13	0,11	3,12	0,34	mg/l	100%



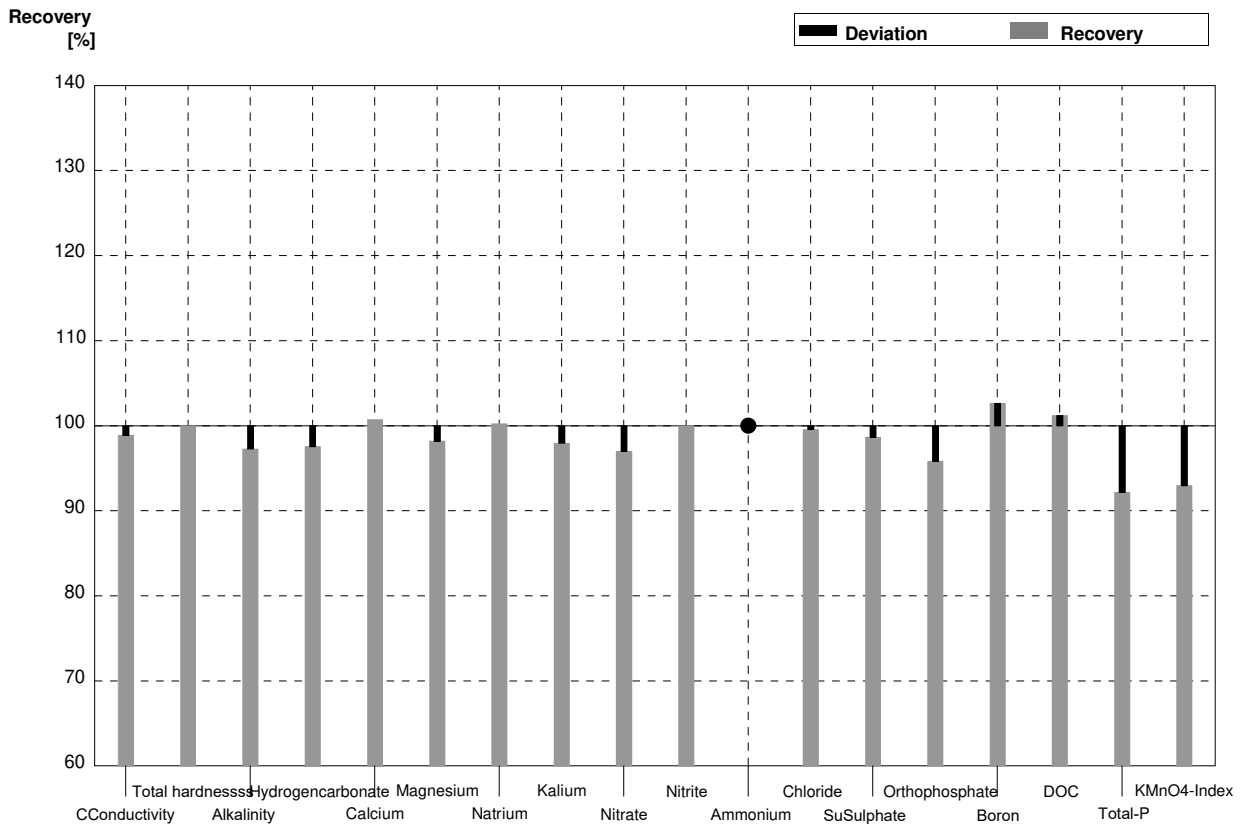
Sample N174A
Laboratory AI

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	360	1	357		µS/cm	99%
Total hardness	0,879	0,010	0,91		mmol/l	104%
Alkalinity KS 4,3 (as H+)	1,517	0,018	1,49	0,10	mmol/l	98%
Hydrogen carbonate	89,5	1,1	87,9		mg/l	98%
Calcium	25,1	0,4	26,4	2,2	mg/l	105%
Magnesium	6,15	0,10	6,18	0,7	mg/l	100%
Sodium	32,9	0,2	33,2	2,8	mg/l	101%
Potassium	5,90	0,03	5,77	0,5	mg/l	98%
Nitrate (as NO3)	9,7	0,3	9,73	1,4	mg/l	100%
Nitrite (as NO2)	0,02228	0,00008	0,0225	0,003	mg/l	101%
Ammonium (as NH4)	0,0406	0,0019	0,0430	0,006	mg/l	106%
Chloride	46,5	0,5	46,3	6,6	mg/l	100%
Sulphate (as SO4)	16,8	0,3	16,5	1,3	mg/l	98%
Orthophosphate (as PO4)	<0,009		<0,01		mg/l	•
Boron	0,136	0,004	0,140	0,024	mg/l	103%
DOC (as C)	5,53	0,07	5,61	0,67	mg/l	101%
Total P (as PO4)	<0,009		<0,031		mg/l	•
KMnO4-Index (as O2)	2,10	0,10	1,92		mg/l	91%



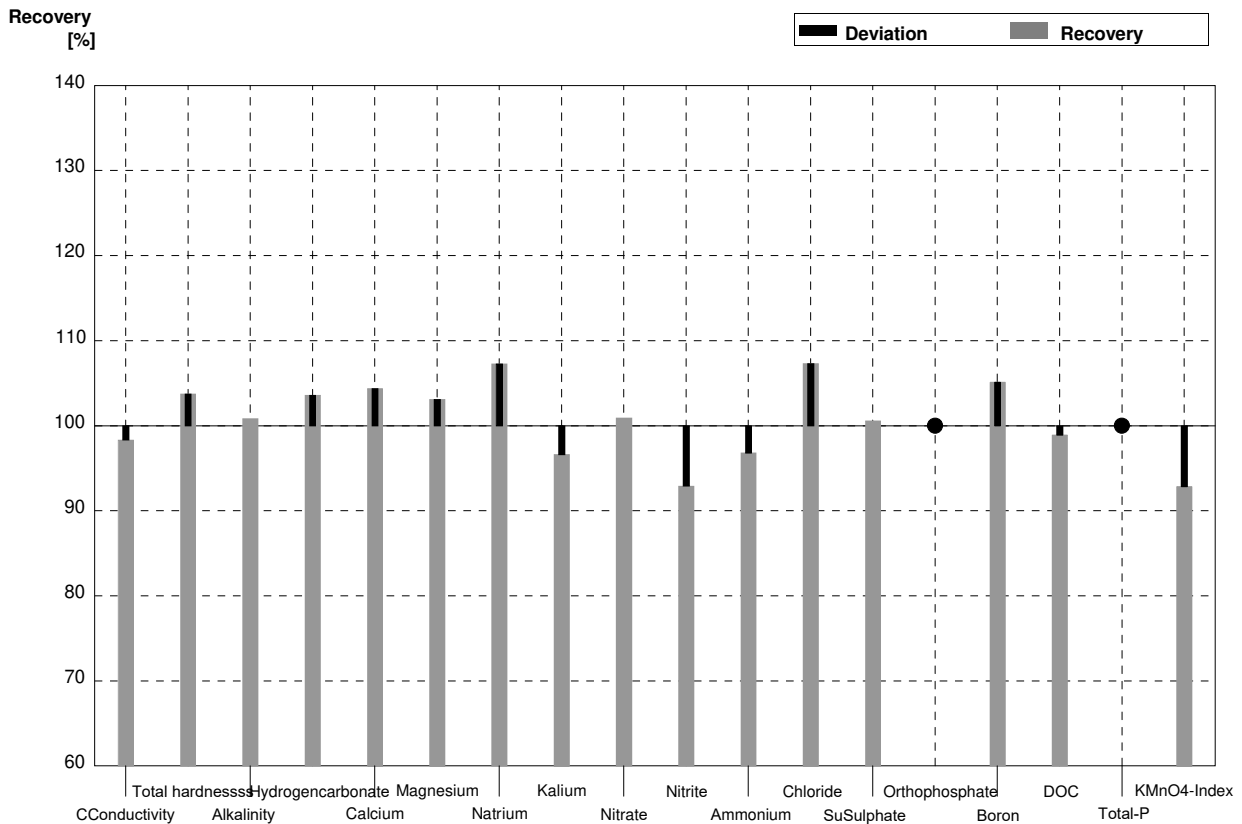
Sample N174B
Laboratory AI

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	544	2	538		µS/cm	99%
Total hardness	1,92	0,02	1,92		mmol/l	100%
Alkalinity KS 4,3 (as H+)	3,70	0,05	3,60	0,25	mmol/l	97%
Hydrogen carbonate	222	3	216,6		mg/l	98%
Calcium	55,5	0,9	55,9	4,7	mg/l	101%
Magnesium	12,93	0,18	12,7	1,4	mg/l	98%
Sodium	39,9	0,6	40,0	3,4	mg/l	100%
Potassium	1,97	0,04	1,93	0,2	mg/l	98%
Nitrate (as NO3)	40,1	1,0	38,9	5,5	mg/l	97%
Nitrite (as NO2)	0,0432	0,0015	0,0432	0,006	mg/l	100%
Ammonium (as NH4)	<0,01		<0,01		mg/l	•
Chloride	23,6	0,3	23,5	3,3	mg/l	100%
Sulphate (as SO4)	29,7	0,6	29,3	2,4	mg/l	99%
Orthophosphate (as PO4)	0,0456	0,0030	0,0437		mg/l	96%
Boron	0,086	0,002	0,0883	0,02	mg/l	103%
DOC (as C)	4,14	0,07	4,19	0,50	mg/l	101%
Total P (as PO4)	0,115	0,003	0,106	0,009	mg/l	92%
KMnO4-Index (as O2)	3,13	0,11	2,91		mg/l	93%



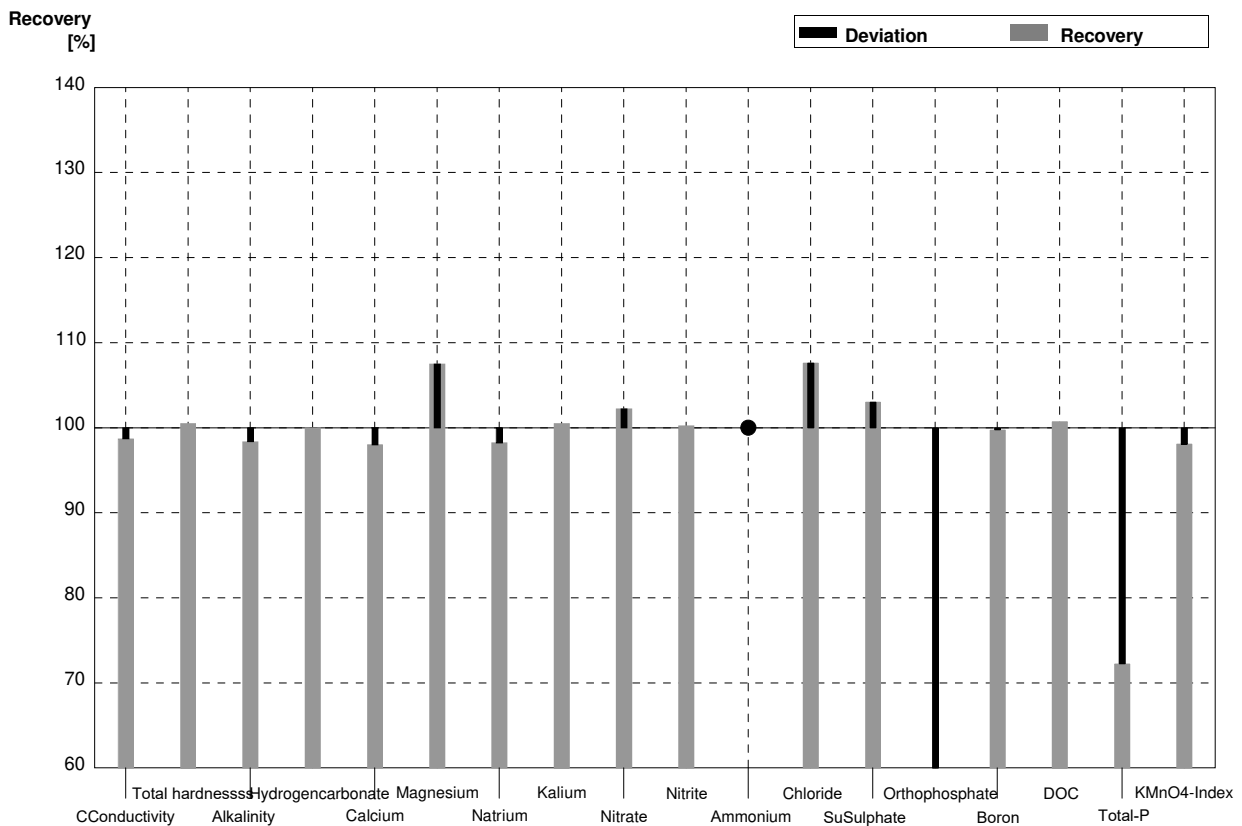
Sample N174A
Laboratory AJ

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	360	1	354	0,58	µS/cm	98%
Total hardness	0,879	0,010	0,912	0,009	mmol/l	104%
Alkalinity KS 4,3 (as H+)	1,517	0,018	1,53	0,006	mmol/l	101%
Hydrogen carbonate	89,5	1,1	92,7	0,40	mg/l	104%
Calcium	25,1	0,4	26,2	0,42	mg/l	104%
Magnesium	6,15	0,10	6,34	0,075	mg/l	103%
Sodium	32,9	0,2	35,3	0,41	mg/l	107%
Potassium	5,90	0,03	5,70	0,026	mg/l	97%
Nitrate (as NO3)	9,7	0,3	9,79	0,035	mg/l	101%
Nitrite (as NO2)	0,02228	0,00008	0,0207	0,001	mg/l	93%
Ammonium (as NH4)	0,0406	0,0019	0,0393	0,001	mg/l	97%
Chloride	46,5	0,5	49,9	0,23	mg/l	107%
Sulphate (as SO4)	16,8	0,3	16,9	0,15	mg/l	101%
Orthophosphate (as PO4)	<0,009		<0,009		mg/l	•
Boron	0,136	0,004	0,143	0,003	mg/l	105%
DOC (as C)	5,53	0,07	5,47	0,031	mg/l	99%
Total P (as PO4)	<0,009		<0,009		mg/l	•
KMnO4-Index (as O2)	2,10	0,10	1,95	0,020	mg/l	93%



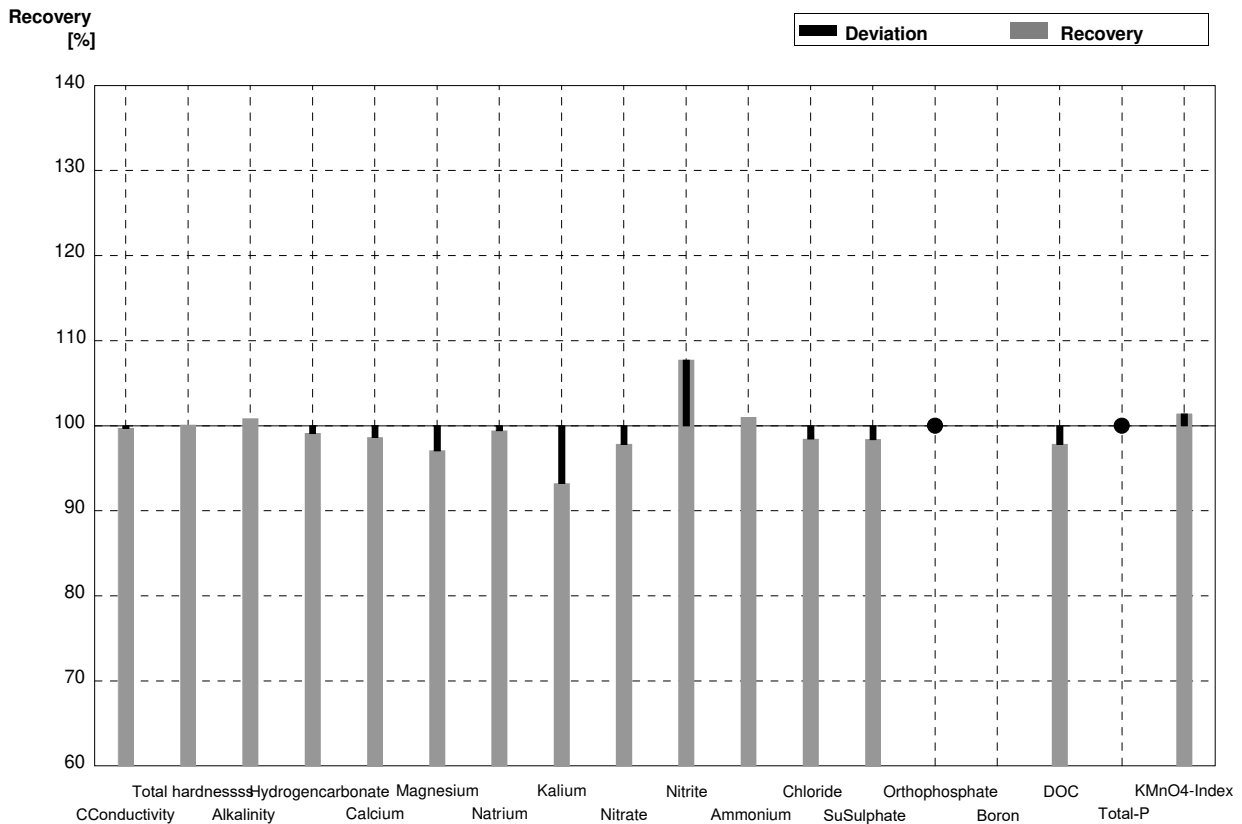
Sample N174B
Laboratory AJ

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	544	2	537	1,16	µS/cm	99%
Total hardness	1,92	0,02	1,93	0,018	mmol/l	101%
Alkalinity KS 4,3 (as H+)	3,70	0,05	3,64	0,012	mmol/l	98%
Hydrogen carbonate	222	3	222	0,92	mg/l	100%
Calcium	55,5	0,9	54,4	0,84	mg/l	98%
Magnesium	12,93	0,18	13,9	0,15	mg/l	108%
Sodium	39,9	0,6	39,2	0,46	mg/l	98%
Potassium	1,97	0,04	1,98	0,012	mg/l	101%
Nitrate (as NO3)	40,1	1,0	41,0	0,21	mg/l	102%
Nitrite (as NO2)	0,0432	0,0015	0,0433	0,002	mg/l	100%
Ammonium (as NH4)	<0,01		<0,01		mg/l	•
Chloride	23,6	0,3	25,4	0,10	mg/l	108%
Sulphate (as SO4)	29,7	0,6	30,6	0,29	mg/l	103%
Orthophosphate (as PO4)	0,0456	0,0030	0,0245	0,001	mg/l	54%
Boron	0,086	0,002	0,0858	0,001	mg/l	100%
DOC (as C)	4,14	0,07	4,17	0,015	mg/l	101%
Total P (as PO4)	0,115	0,003	0,0831	0,001	mg/l	72%
KMnO4-Index (as O2)	3,13	0,11	3,07	0,042	mg/l	98%



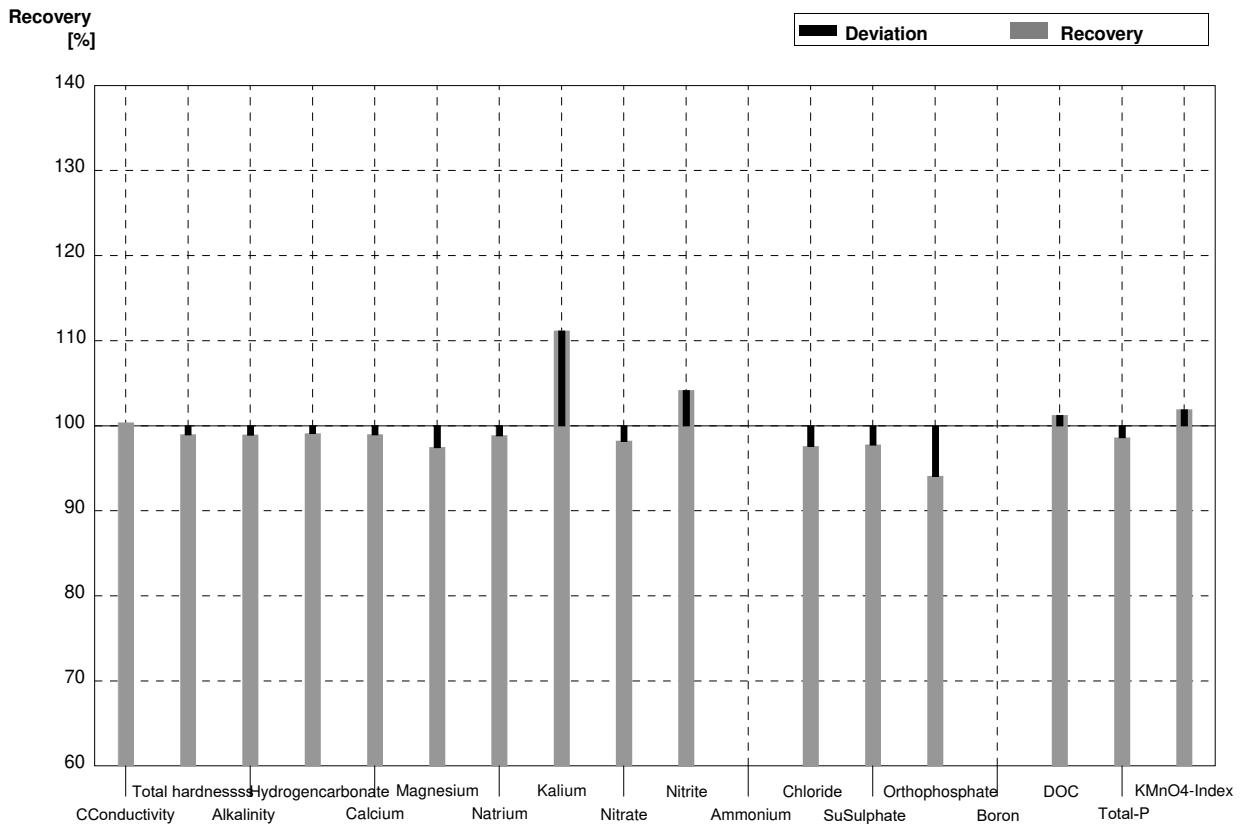
Sample N174A
Laboratory AK

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	360	1	359	9	µS/cm	100%
Total hardness	0,879	0,010	0,88	0,04	mmol/l	100%
Alkalinity KS 4,3 (as H+)	1,517	0,018	1,53	0,01	mmol/l	101%
Hydrogen carbonate	89,5	1,1	88,7	3,6	mg/l	99%
Calcium	25,1	0,4	24,76	0,10	mg/l	99%
Magnesium	6,15	0,10	5,97	0,11	mg/l	97%
Sodium	32,9	0,2	32,71	0,65	mg/l	99%
Potassium	5,90	0,03	5,5	0,3	mg/l	93%
Nitrate (as NO3)	9,7	0,3	9,49	0,47	mg/l	98%
Nitrite (as NO2)	0,02228	0,00008	0,0240	0,0024	mg/l	108%
Ammonium (as NH4)	0,0406	0,0019	0,0410	0,0025	mg/l	101%
Chloride	46,5	0,5	45,78	2,75	mg/l	98%
Sulphate (as SO4)	16,8	0,3	16,53	0,50	mg/l	98%
Orthophosphate (as PO4)	<0,009		<0,005		mg/l	•
Boron	0,136	0,004			mg/l	
DOC (as C)	5,53	0,07	5,41	0,81	mg/l	98%
Total P (as PO4)	<0,009		0,0092	0,0015	mg/l	•
KMnO4-Index (as O2)	2,10	0,10	2,13	0,26	mg/l	101%



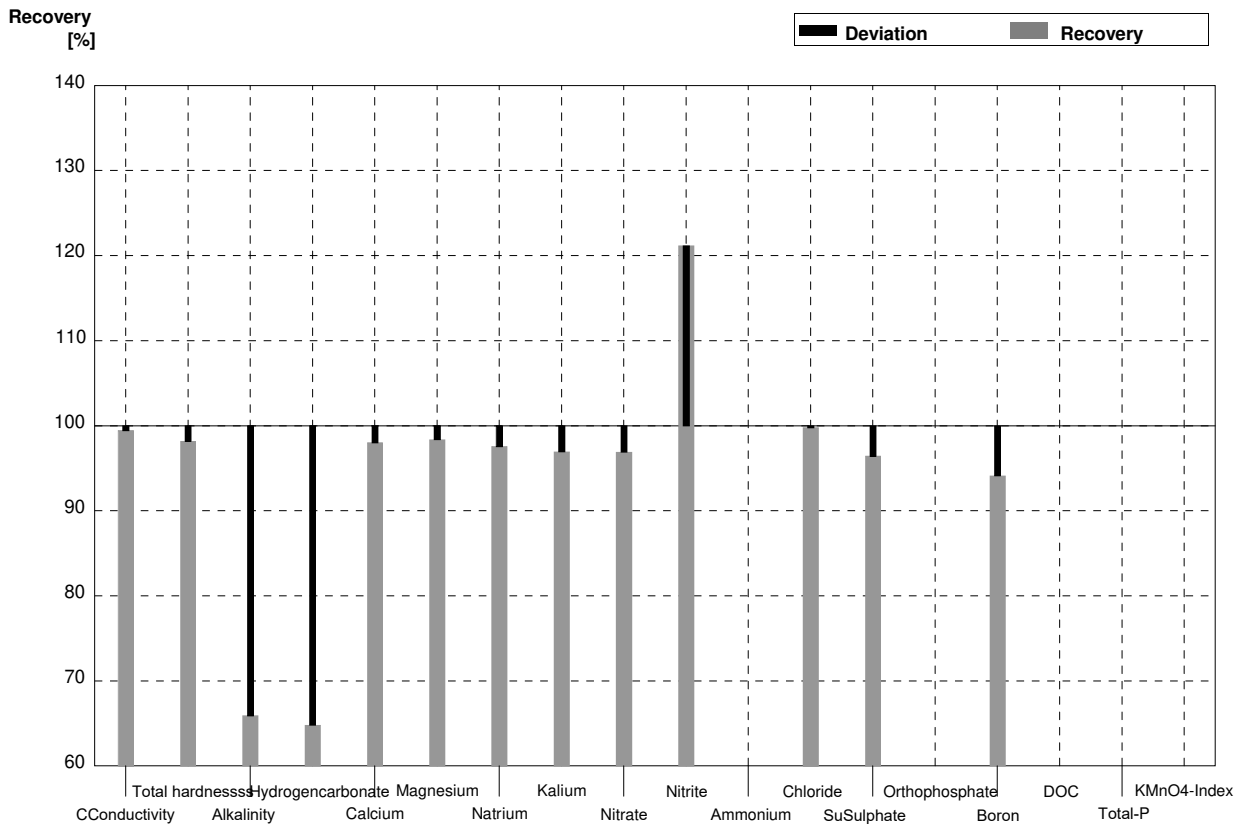
Sample N174B
Laboratory AK

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	544	2	546	14	µS/cm	100%
Total hardness	1,92	0,02	1,90	0,08	mmol/l	99%
Alkalinity KS 4,3 (as H+)	3,70	0,05	3,66	0,01	mmol/l	99%
Hydrogen carbonate	222	3	220	9	mg/l	99%
Calcium	55,5	0,9	54,93	0,88	mg/l	99%
Magnesium	12,93	0,18	12,6	0,24	mg/l	97%
Sodium	39,9	0,6	39,44	0,79	mg/l	99%
Potassium	1,97	0,04	2,19	0,13	mg/l	111%
Nitrate (as NO3)	40,1	1,0	39,38	1,97	mg/l	98%
Nitrite (as NO2)	0,0432	0,0015	0,0450	0,0045	mg/l	104%
Ammonium (as NH4)	<0,01		n.n.		mg/l	
Chloride	23,6	0,3	23,03	1,38	mg/l	98%
Sulphate (as SO4)	29,7	0,6	29,03	0,87	mg/l	98%
Orthophosphate (as PO4)	0,0456	0,0030	0,0429	0,0052	mg/l	94%
Boron	0,086	0,002			mg/l	
DOC (as C)	4,14	0,07	4,19	0,63	mg/l	101%
Total P (as PO4)	0,115	0,003	0,1134	0,0205	mg/l	99%
KMnO4-Index (as O2)	3,13	0,11	3,19	0,38	mg/l	102%



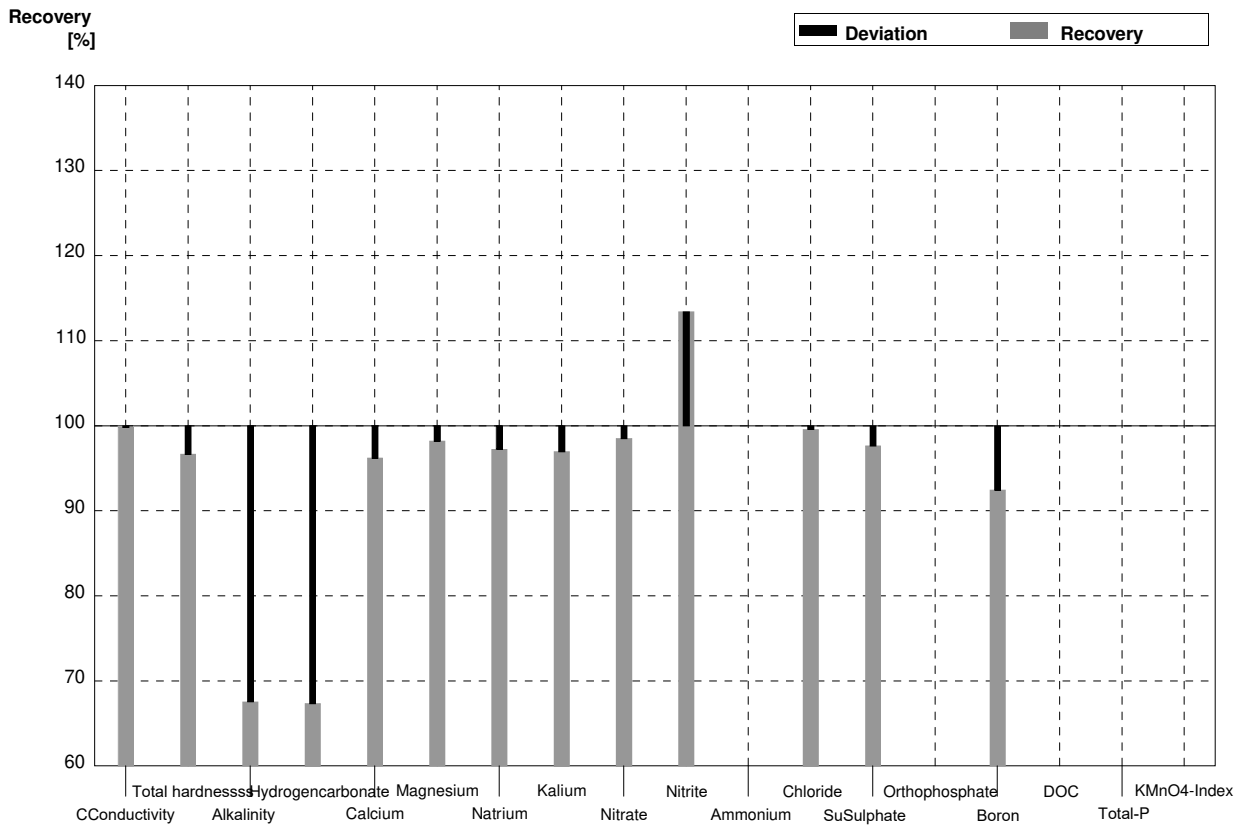
Sample N174A
Laboratory AL

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	360	1	358		µS/cm	99%
Total hardness	0,879	0,010	0,863		mmol/l	98%
Alkalinity KS 4,3 (as H+)	1,517	0,018	1,00		mmol/l	66%
Hydrogen carbonate	89,5	1,1	58,0		mg/l	65%
Calcium	25,1	0,4	24,6		mg/l	98%
Magnesium	6,15	0,10	6,05		mg/l	98%
Sodium	32,9	0,2	32,1		mg/l	98%
Potassium	5,90	0,03	5,72		mg/l	97%
Nitrate (as NO3)	9,7	0,3	9,40		mg/l	97%
Nitrite (as NO2)	0,02228	0,00008	0,0270		mg/l	121%
Ammonium (as NH4)	0,0406	0,0019			mg/l	
Chloride	46,5	0,5	46,4		mg/l	100%
Sulphate (as SO4)	16,8	0,3	16,2		mg/l	96%
Orthophosphate (as PO4)	<0,009				mg/l	
Boron	0,136	0,004	0,128		mg/l	94%
DOC (as C)	5,53	0,07			mg/l	
Total P (as PO4)	<0,009				mg/l	
KMnO4-Index (as O2)	2,10	0,10			mg/l	



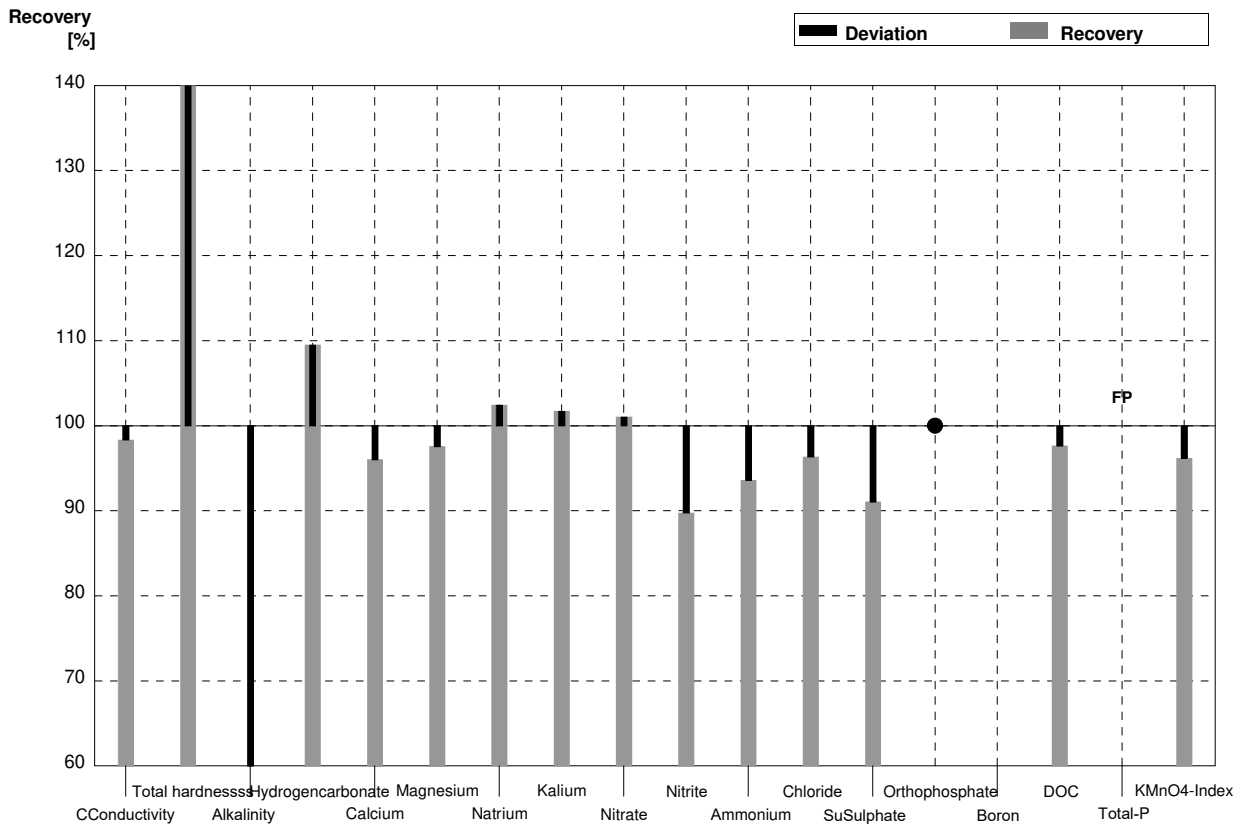
Sample N174B
Laboratory AL

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	544	2	543		µS/cm	100%
Total hardness	1,92	0,02	1,856		mmol/l	97%
Alkalinity KS 4,3 (as H+)	3,70	0,05	2,50		mmol/l	68%
Hydrogen carbonate	222	3	149,5		mg/l	67%
Calcium	55,5	0,9	53,4		mg/l	96%
Magnesium	12,93	0,18	12,7		mg/l	98%
Sodium	39,9	0,6	38,8		mg/l	97%
Potassium	1,97	0,04	1,91		mg/l	97%
Nitrate (as NO3)	40,1	1,0	39,5		mg/l	99%
Nitrite (as NO2)	0,0432	0,0015	0,0490		mg/l	113%
Ammonium (as NH4)	<0,01				mg/l	
Chloride	23,6	0,3	23,5		mg/l	100%
Sulphate (as SO4)	29,7	0,6	29,0		mg/l	98%
Orthophosphate (as PO4)	0,0456	0,0030			mg/l	
Boron	0,086	0,002	0,0795		mg/l	92%
DOC (as C)	4,14	0,07			mg/l	
Total P (as PO4)	0,115	0,003			mg/l	
KMnO4-Index (as O2)	3,13	0,11			mg/l	



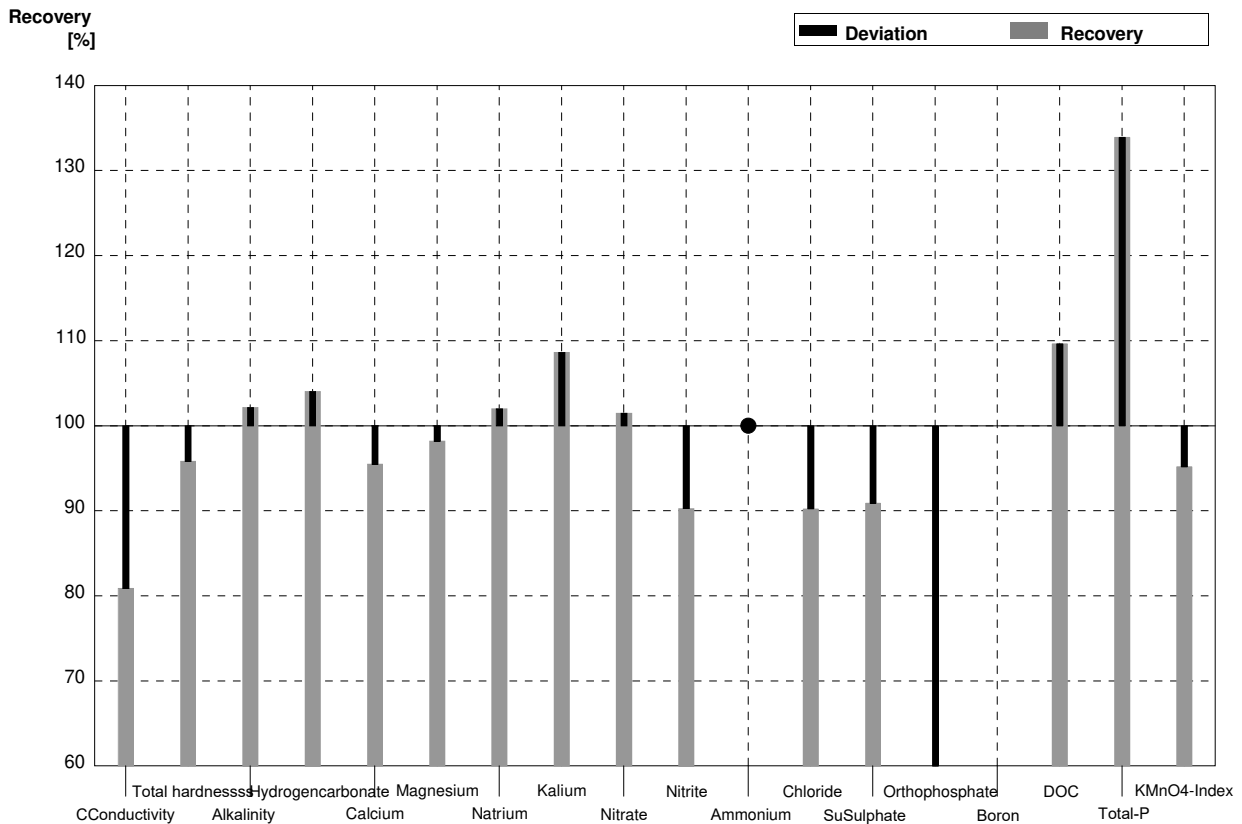
Sample N174A
Laboratory AM

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	360	1	354	7,6	µS/cm	98%
Total hardness	0,879	0,010	1,61	0,13	mmol/l	183%
Alkalinity KS 4,3 (as H+)	1,517	0,018	0,85	0,072	mmol/l	56%
Hydrogen carbonate	89,5	1,1	98	4,4	mg/l	109%
Calcium	25,1	0,4	24,1	1,2	mg/l	96%
Magnesium	6,15	0,10	6,0	0,38	mg/l	98%
Sodium	32,9	0,2	33,7	2,6	mg/l	102%
Potassium	5,90	0,03	6,0	0,21	mg/l	102%
Nitrate (as NO3)	9,7	0,3	9,8	0,47	mg/l	101%
Nitrite (as NO2)	0,02228	0,00008	0,020	0,0012	mg/l	90%
Ammonium (as NH4)	0,0406	0,0019	0,0380	0,0028	mg/l	94%
Chloride	46,5	0,5	44,8	3,6	mg/l	96%
Sulphate (as SO4)	16,8	0,3	15,3	0,93	mg/l	91%
Orthophosphate (as PO4)	<0,009		<0,01		mg/l	•
Boron	0,136	0,004			mg/l	
DOC (as C)	5,53	0,07	5,4	0,50	mg/l	98%
Total P (as PO4)	<0,009		0,050	0,0065	mg/l	FP
KMnO4-Index (as O2)	2,10	0,10	2,02	0,092	mg/l	96%



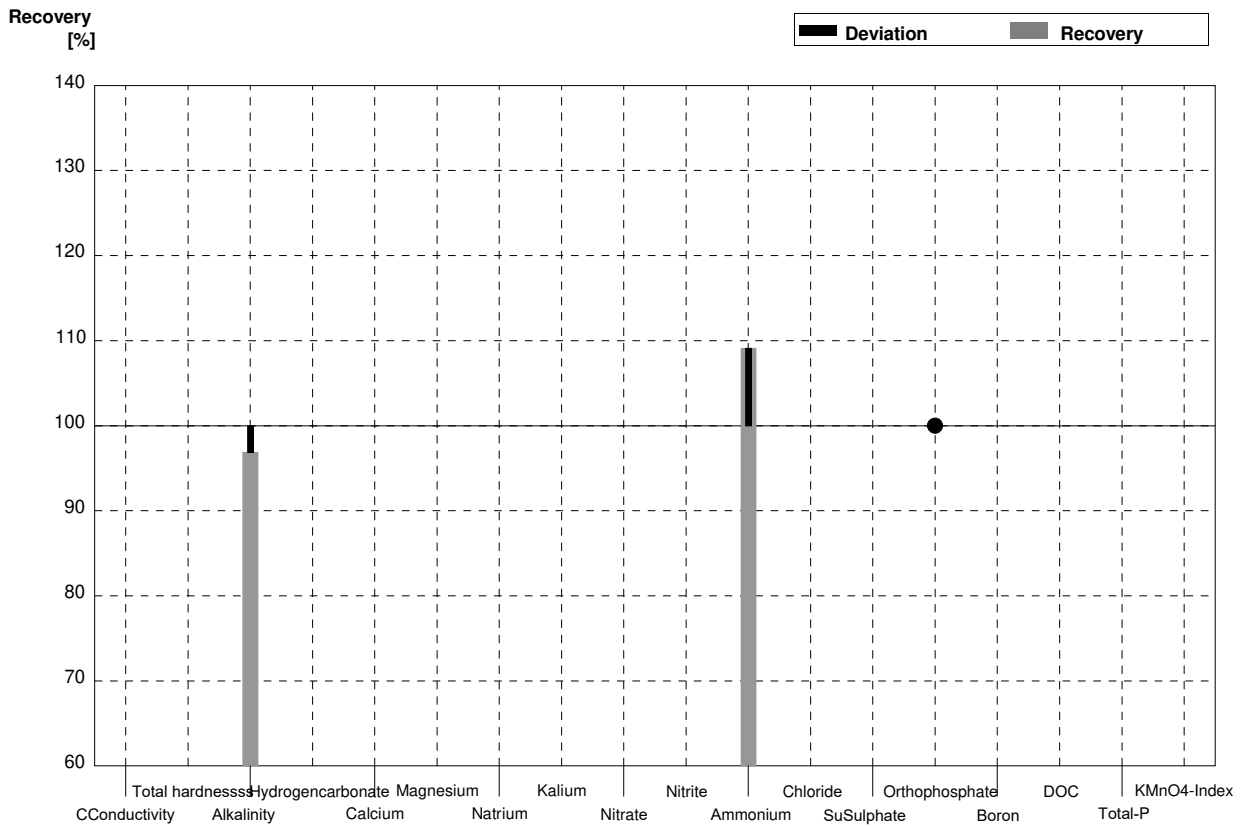
Sample N174B
Laboratory AM

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	544	2	440	9,5	µS/cm	81%
Total hardness	1,92	0,02	1,84	0,15	mmol/l	96%
Alkalinity KS 4,3 (as H+)	3,70	0,05	3,78	0,32	mmol/l	102%
Hydrogen carbonate	222	3	231	10	mg/l	104%
Calcium	55,5	0,9	53	2,7	mg/l	95%
Magnesium	12,93	0,18	12,7	0,80	mg/l	98%
Sodium	39,9	0,6	40,7	3,1	mg/l	102%
Potassium	1,97	0,04	2,14	0,075	mg/l	109%
Nitrate (as NO3)	40,1	1,0	40,7	2,0	mg/l	101%
Nitrite (as NO2)	0,0432	0,0015	0,039	0,0023	mg/l	90%
Ammonium (as NH4)	<0,01		<0,01		mg/l	•
Chloride	23,6	0,3	21,3	1,7	mg/l	90%
Sulphate (as SO4)	29,7	0,6	27,0	1,6	mg/l	91%
Orthophosphate (as PO4)	0,0456	0,0030	0,0260	0,0038	mg/l	57%
Boron	0,086	0,002			mg/l	
DOC (as C)	4,14	0,07	4,54	0,42	mg/l	110%
Total P (as PO4)	0,115	0,003	0,154	0,020	mg/l	134%
KMnO4-Index (as O2)	3,13	0,11	2,98	0,14	mg/l	95%



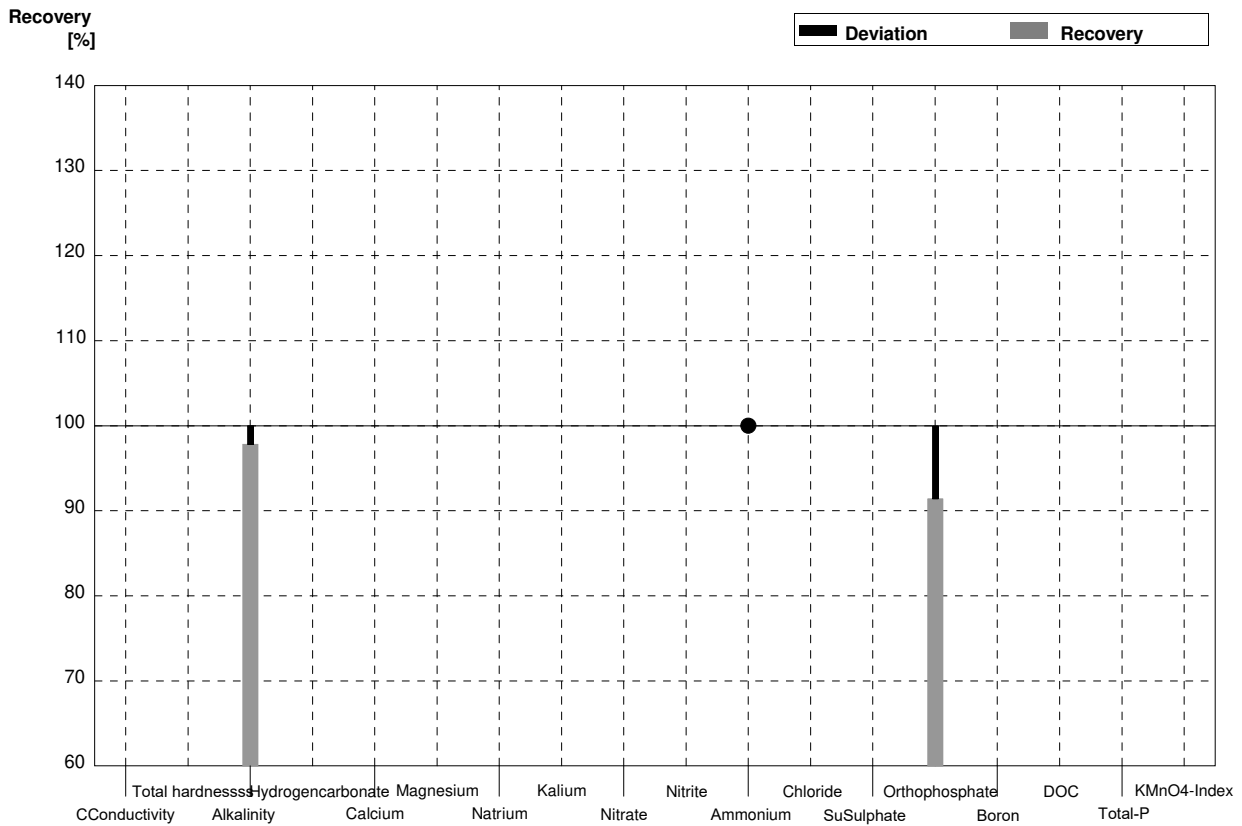
Sample N174A
Laboratory AN

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	360	1			µS/cm	
Total hardness	0,879	0,010			mmol/l	
Alkalinity KS 4,3 (as H+)	1,517	0,018	1,47	0,22	mmol/l	97%
Hydrogen carbonate	89,5	1,1			mg/l	
Calcium	25,1	0,4			mg/l	
Magnesium	6,15	0,10			mg/l	
Sodium	32,9	0,2			mg/l	
Potassium	5,90	0,03			mg/l	
Nitrate (as NO3)	9,7	0,3			mg/l	
Nitrite (as NO2)	0,02228	0,00008			mg/l	
Ammonium (as NH4)	0,0406	0,0019	0,0443	0,00443	mg/l	109%
Chloride	46,5	0,5			mg/l	
Sulphate (as SO4)	16,8	0,3			mg/l	
Orthophosphate (as PO4)	<0,009		<0,015		mg/l	•
Boron	0,136	0,004			mg/l	
DOC (as C)	5,53	0,07			mg/l	
Total P (as PO4)	<0,009				mg/l	
KMnO4-Index (as O2)	2,10	0,10			mg/l	



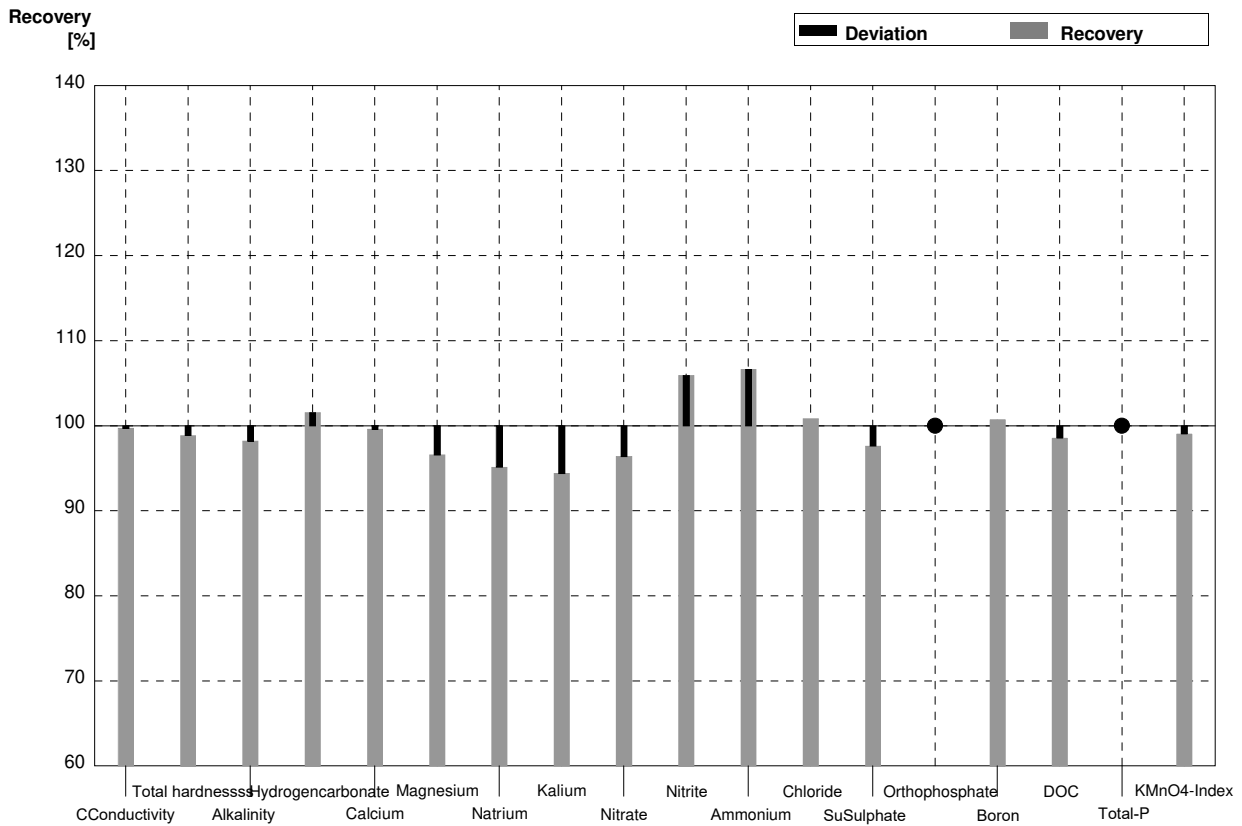
Sample N174B
Laboratory AN

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	544	2			µS/cm	
Total hardness	1,92	0,02			mmol/l	
Alkalinity KS 4,3 (as H+)	3,70	0,05	3,62	0,54	mmol/l	98%
Hydrogen carbonate	222	3			mg/l	
Calcium	55,5	0,9			mg/l	
Magnesium	12,93	0,18			mg/l	
Sodium	39,9	0,6			mg/l	
Potassium	1,97	0,04			mg/l	
Nitrate (as NO3)	40,1	1,0			mg/l	
Nitrite (as NO2)	0,0432	0,0015			mg/l	
Ammonium (as NH4)	<0,01		<0,01		mg/l	•
Chloride	23,6	0,3			mg/l	
Sulphate (as SO4)	29,7	0,6			mg/l	
Orthophosphate (as PO4)	0,0456	0,0030	0,0417	0,00626	mg/l	91%
Boron	0,086	0,002			mg/l	
DOC (as C)	4,14	0,07			mg/l	
Total P (as PO4)	0,115	0,003			mg/l	
KMnO4-Index (as O2)	3,13	0,11			mg/l	



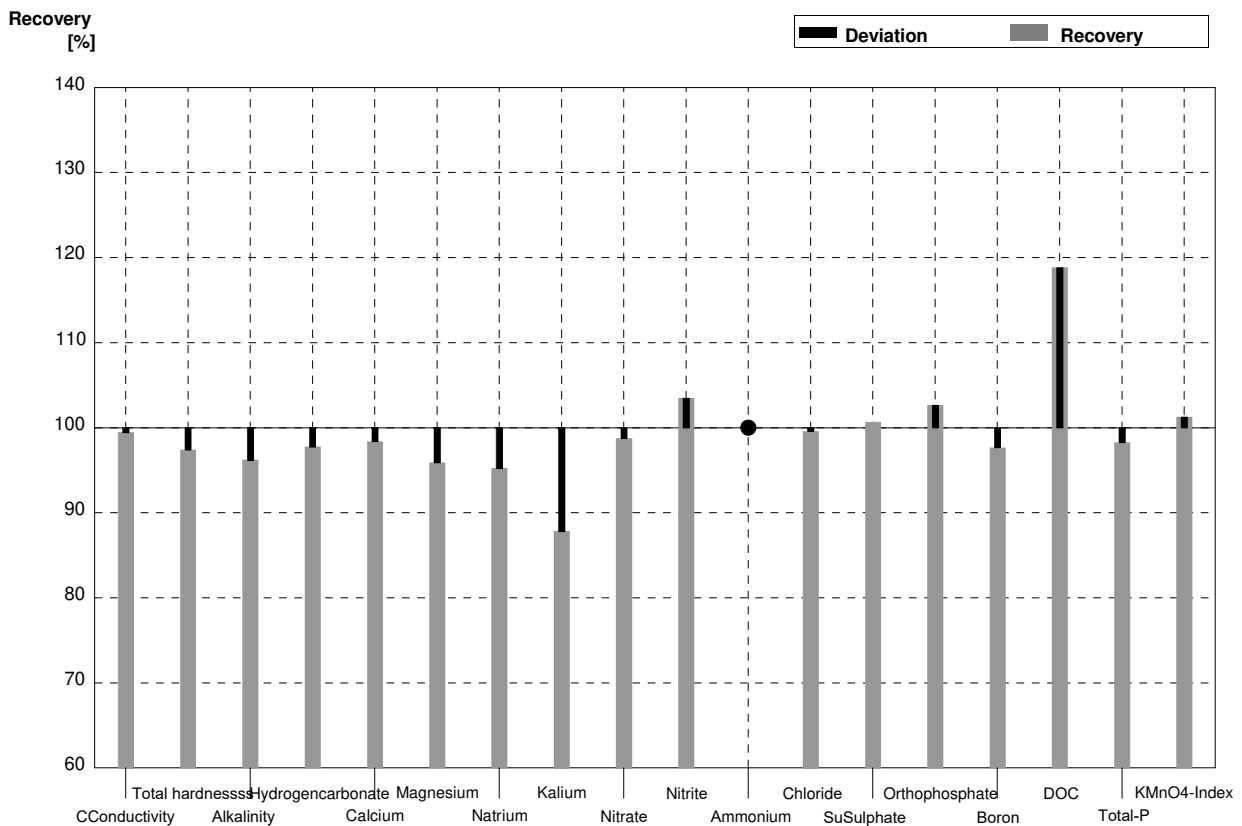
Sample N174A
Laboratory AO

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	360	1	359	11	µS/cm	100%
Total hardness	0,879	0,010	0,869	0,13	mmol/l	99%
Alkalinity KS 4,3 (as H+)	1,517	0,018	1,49	0,12	mmol/l	98%
Hydrogen carbonate	89,5	1,1	90,9	7,3	mg/l	102%
Calcium	25,1	0,4	25,0	3,8	mg/l	100%
Magnesium	6,15	0,10	5,94	0,71	mg/l	97%
Sodium	32,9	0,2	31,3	4,1	mg/l	95%
Potassium	5,90	0,03	5,57	0,56	mg/l	94%
Nitrate (as NO3)	9,7	0,3	9,35	0,94	mg/l	96%
Nitrite (as NO2)	0,02228	0,00008	0,0236	0,0026	mg/l	106%
Ammonium (as NH4)	0,0406	0,0019	0,0433	0,0035	mg/l	107%
Chloride	46,5	0,5	46,9	4,7	mg/l	101%
Sulphate (as SO4)	16,8	0,3	16,4	2,6	mg/l	98%
Orthophosphate (as PO4)	<0,009		<0,015		mg/l	•
Boron	0,136	0,004	0,137	0,018	mg/l	101%
DOC (as C)	5,53	0,07	5,45	1,1	mg/l	99%
Total P (as PO4)	<0,009		<0,015		mg/l	•
KMnO4-Index (as O2)	2,10	0,10	2,08	0,31	mg/l	99%



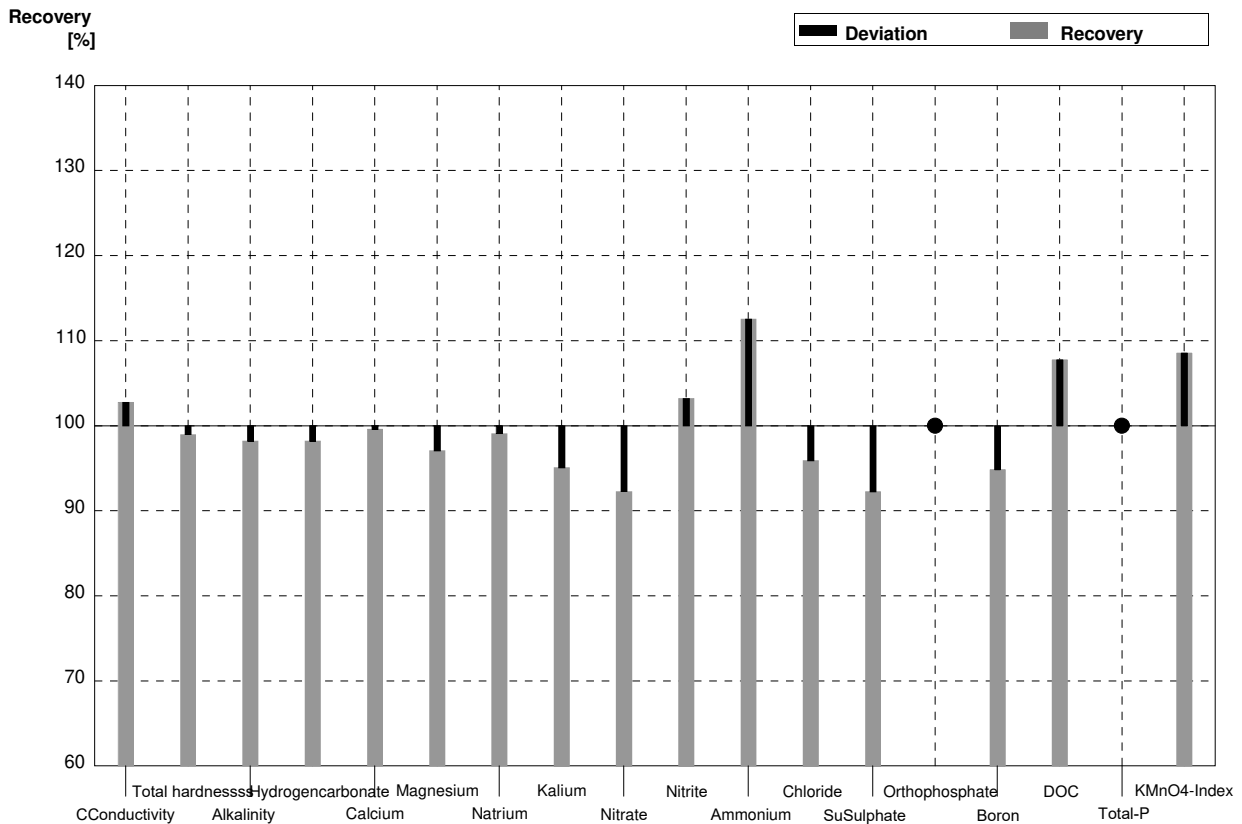
Sample N174B
Laboratory AO

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	544	2	541	16	µS/cm	99%
Total hardness	1,92	0,02	1,87	0,28	mmol/l	97%
Alkalinity KS 4,3 (as H+)	3,70	0,05	3,56	0,28	mmol/l	96%
Hydrogen carbonate	222	3	217	17	mg/l	98%
Calcium	55,5	0,9	54,6	8,2	mg/l	98%
Magnesium	12,93	0,18	12,4	1,5	mg/l	96%
Sodium	39,9	0,6	38,0	4,9	mg/l	95%
Potassium	1,97	0,04	1,73	0,17	mg/l	88%
Nitrate (as NO3)	40,1	1,0	39,6	4,0	mg/l	99%
Nitrite (as NO2)	0,0432	0,0015	0,0447	0,0049	mg/l	103%
Ammonium (as NH4)	<0,01		<0,0100		mg/l	•
Chloride	23,6	0,3	23,5	2,4	mg/l	100%
Sulphate (as SO4)	29,7	0,6	29,9	4,8	mg/l	101%
Orthophosphate (as PO4)	0,0456	0,0030	0,0468	0,0037	mg/l	103%
Boron	0,086	0,002	0,0840	0,011	mg/l	98%
DOC (as C)	4,14	0,07	4,92	1,0	mg/l	119%
Total P (as PO4)	0,115	0,003	0,113	0,0091	mg/l	98%
KMnO4-Index (as O2)	3,13	0,11	3,17	0,48	mg/l	101%



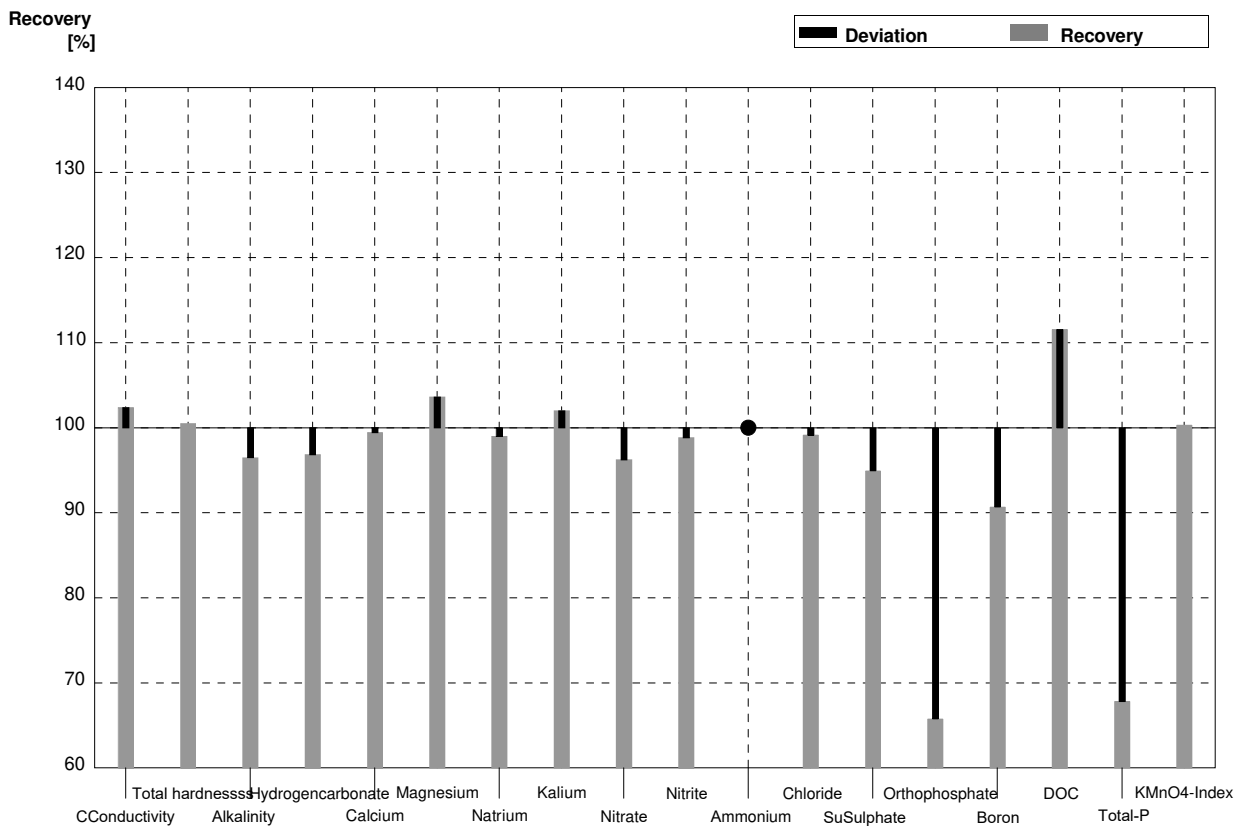
Sample N174A
Laboratory AP

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	360	1	370	19	µS/cm	103%
Total hardness	0,879	0,010	0,870	0,174	mmol/l	99%
Alkalinity KS 4,3 (as H+)	1,517	0,018	1,49	0,07	mmol/l	98%
Hydrogen carbonate	89,5	1,1	87,9	4,4	mg/l	98%
Calcium	25,1	0,4	25,0	5,0	mg/l	100%
Magnesium	6,15	0,10	5,97	0,60	mg/l	97%
Sodium	32,9	0,2	32,6	3,3	mg/l	99%
Potassium	5,90	0,03	5,61	0,56	mg/l	95%
Nitrate (as NO3)	9,7	0,3	8,95	0,89	mg/l	92%
Nitrite (as NO2)	0,02228	0,00008	0,0230	0,0032	mg/l	103%
Ammonium (as NH4)	0,0406	0,0019	0,0457	0,0064	mg/l	113%
Chloride	46,5	0,5	44,6	4,5	mg/l	96%
Sulphate (as SO4)	16,8	0,3	15,5	1,6	mg/l	92%
Orthophosphate (as PO4)	<0,009		<0,015		mg/l	•
Boron	0,136	0,004	0,129	0,026	mg/l	95%
DOC (as C)	5,53	0,07	5,96	1,07	mg/l	108%
Total P (as PO4)	<0,009		<0,015		mg/l	•
KMnO4-Index (as O2)	2,10	0,10	2,28	0,34	mg/l	109%



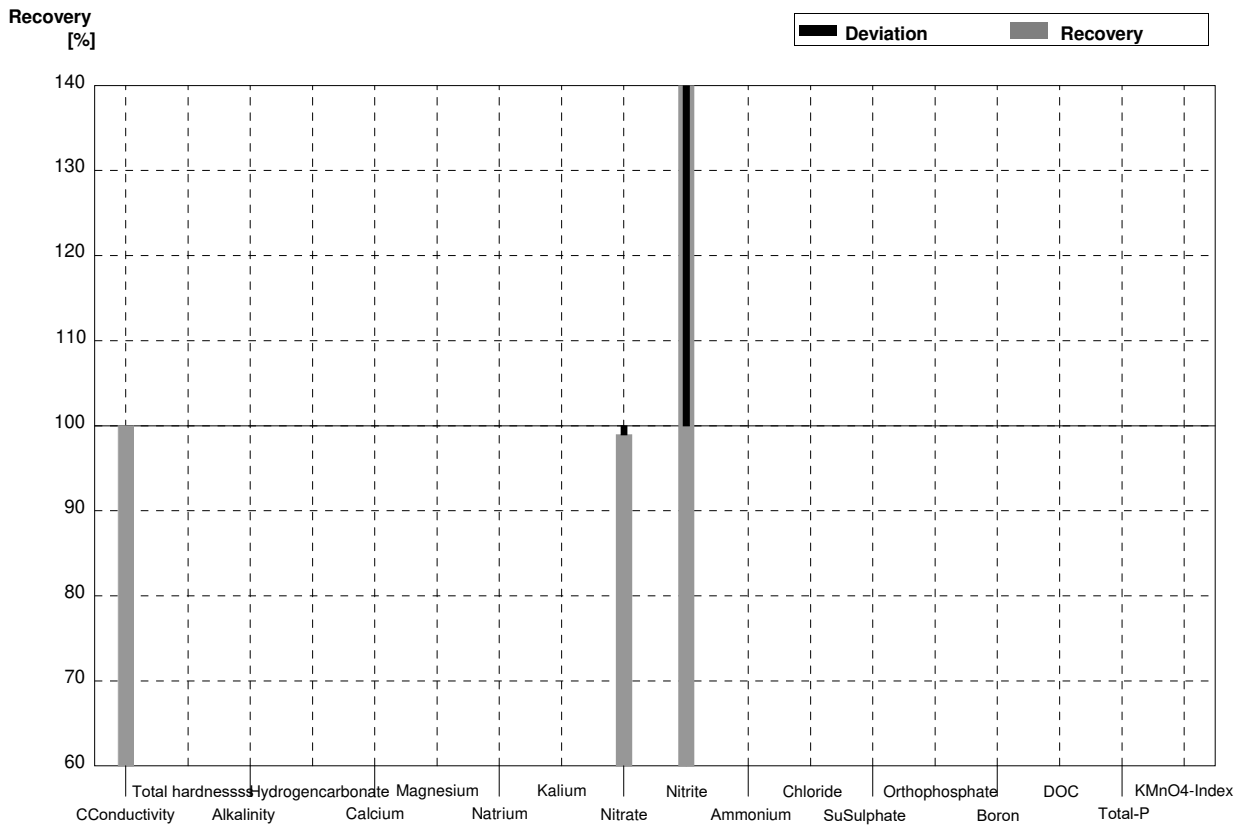
Sample N174B
Laboratory AP

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	544	2	557	28	µS/cm	102%
Total hardness	1,92	0,02	1,93	0,39	mmol/l	101%
Alkalinity KS 4,3 (as H+)	3,70	0,05	3,57	0,18	mmol/l	96%
Hydrogen carbonate	222	3	215	11	mg/l	97%
Calcium	55,5	0,9	55,2	11,0	mg/l	99%
Magnesium	12,93	0,18	13,4	1,3	mg/l	104%
Sodium	39,9	0,6	39,5	3,9	mg/l	99%
Potassium	1,97	0,04	2,01	0,20	mg/l	102%
Nitrate (as NO3)	40,1	1,0	38,6	3,9	mg/l	96%
Nitrite (as NO2)	0,0432	0,0015	0,0427	0,0060	mg/l	99%
Ammonium (as NH4)	<0,01		<0,010		mg/l	•
Chloride	23,6	0,3	23,4	2,3	mg/l	99%
Sulphate (as SO4)	29,7	0,6	28,2	2,8	mg/l	95%
Orthophosphate (as PO4)	0,0456	0,0030	0,0300	0,0042	mg/l	66%
Boron	0,086	0,002	0,0780	0,0156	mg/l	91%
DOC (as C)	4,14	0,07	4,62	0,83	mg/l	112%
Total P (as PO4)	0,115	0,003	0,0780	0,0117	mg/l	68%
KMnO4-Index (as O2)	3,13	0,11	3,14	0,47	mg/l	100%



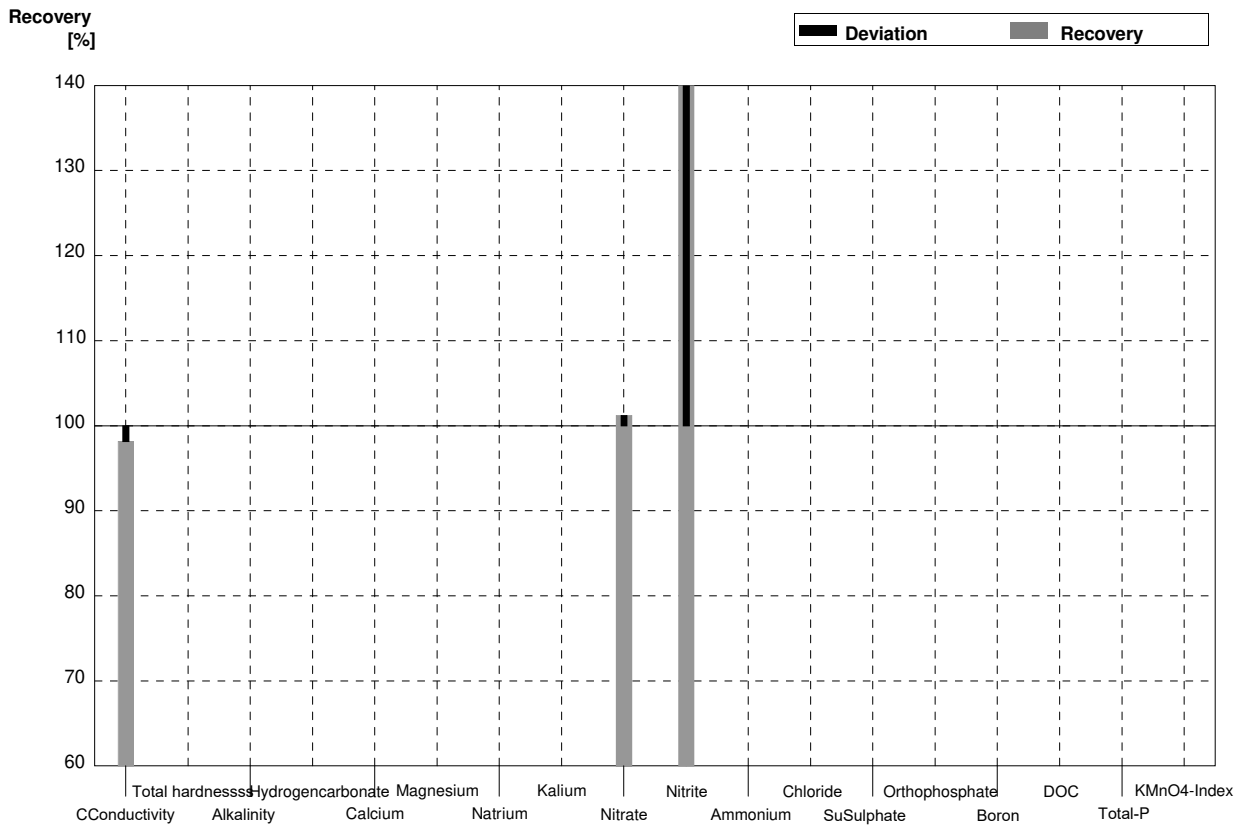
Sample N174A
Laboratory AQ

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	360	1	360		µS/cm	100%
Total hardness	0,879	0,010			mmol/l	
Alkalinity KS 4,3 (as H+)	1,517	0,018			mmol/l	
Hydrogen carbonate	89,5	1,1			mg/l	
Calcium	25,1	0,4			mg/l	
Magnesium	6,15	0,10			mg/l	
Sodium	32,9	0,2			mg/l	
Potassium	5,90	0,03			mg/l	
Nitrate (as NO3)	9,7	0,3	9,6	0,35	mg/l	99%
Nitrite (as NO2)	0,02228	0,00008	0,0490	0,001	mg/l	220%
Ammonium (as NH4)	0,0406	0,0019			mg/l	
Chloride	46,5	0,5			mg/l	
Sulphate (as SO4)	16,8	0,3			mg/l	
Orthophosphate (as PO4)	<0,009				mg/l	
Boron	0,136	0,004			mg/l	
DOC (as C)	5,53	0,07			mg/l	
Total P (as PO4)	<0,009				mg/l	
KMnO4-Index (as O2)	2,10	0,10			mg/l	



Sample N174B
Laboratory AQ

Parameter	Assigned value	± U (k=2)	Result	±	Unit	Recovery
Conductivity (25°C)	544	2	534		µS/cm	98%
Total hardness	1,92	0,02			mmol/l	
Alkalinity KS 4,3 (as H+)	3,70	0,05			mmol/l	
Hydrogen carbonate	222	3			mg/l	
Calcium	55,5	0,9			mg/l	
Magnesium	12,93	0,18			mg/l	
Sodium	39,9	0,6			mg/l	
Potassium	1,97	0,04			mg/l	
Nitrate (as NO3)	40,1	1,0	40,6	1,49	mg/l	101%
Nitrite (as NO2)	0,0432	0,0015	0,063	0,001	mg/l	146%
Ammonium (as NH4)	<0,01				mg/l	
Chloride	23,6	0,3			mg/l	
Sulphate (as SO4)	29,7	0,6			mg/l	
Orthophosphate (as PO4)	0,0456	0,0030			mg/l	
Boron	0,086	0,002			mg/l	
DOC (as C)	4,14	0,07			mg/l	
Total P (as PO4)	0,115	0,003			mg/l	
KMnO4-Index (as O2)	3,13	0,11			mg/l	



Methodenvergleich

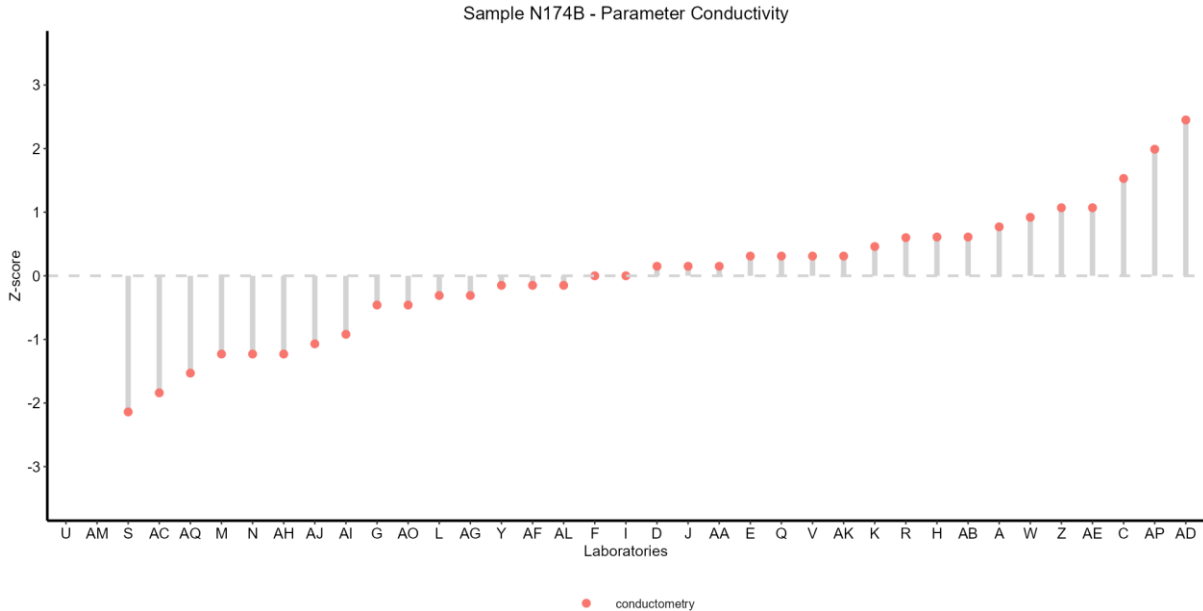
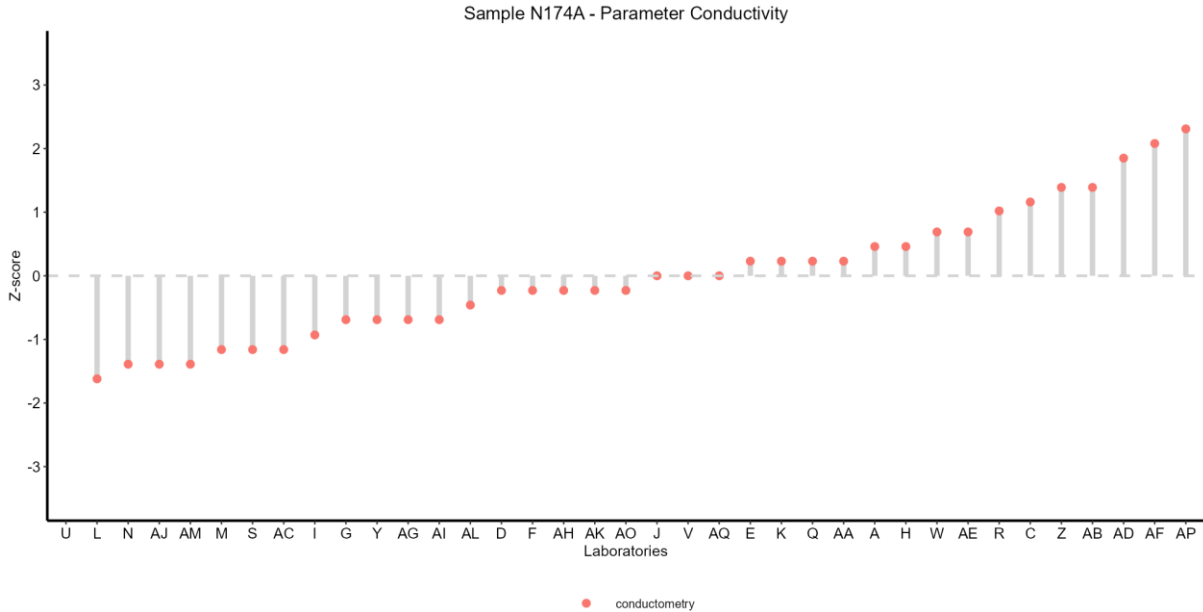
Method comparison

Eignungsprüfungsrunde / Proficiency testing round
N174

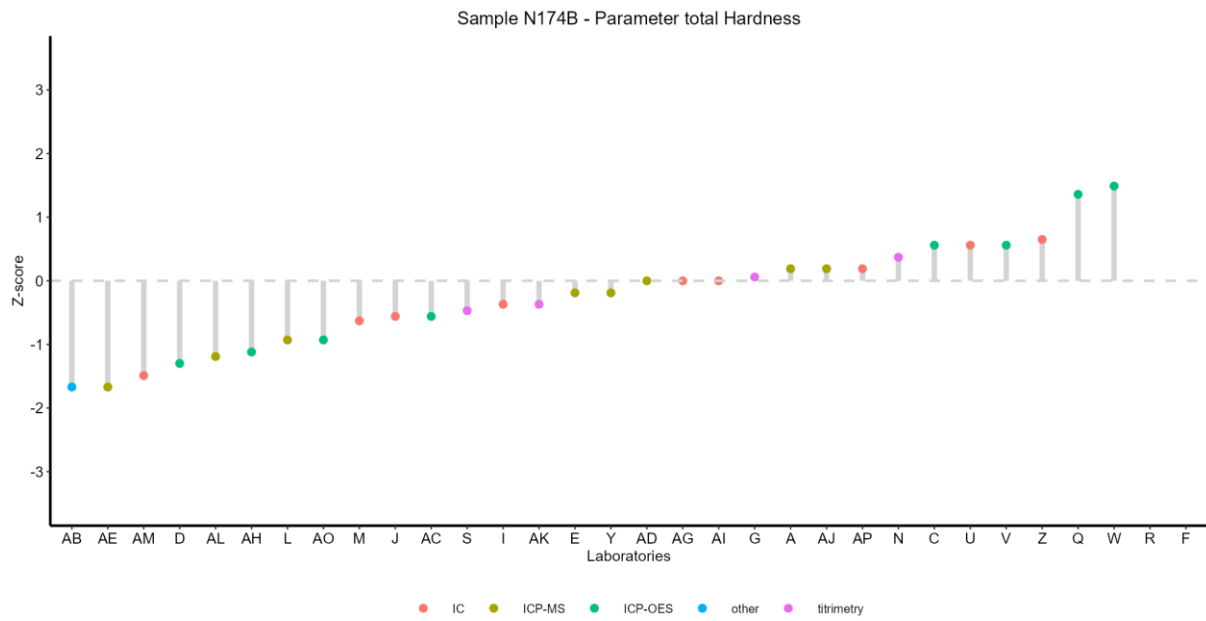
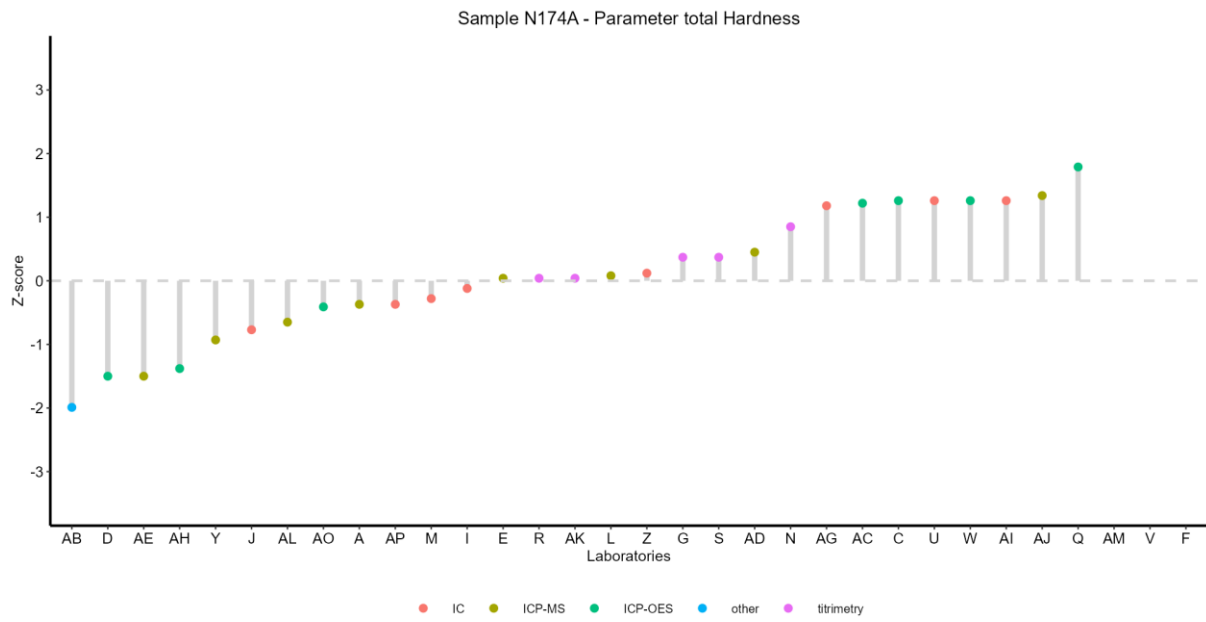
Nährstoffe
Nutrients / Major ions

Versand / Dispatch: 11.11.2024

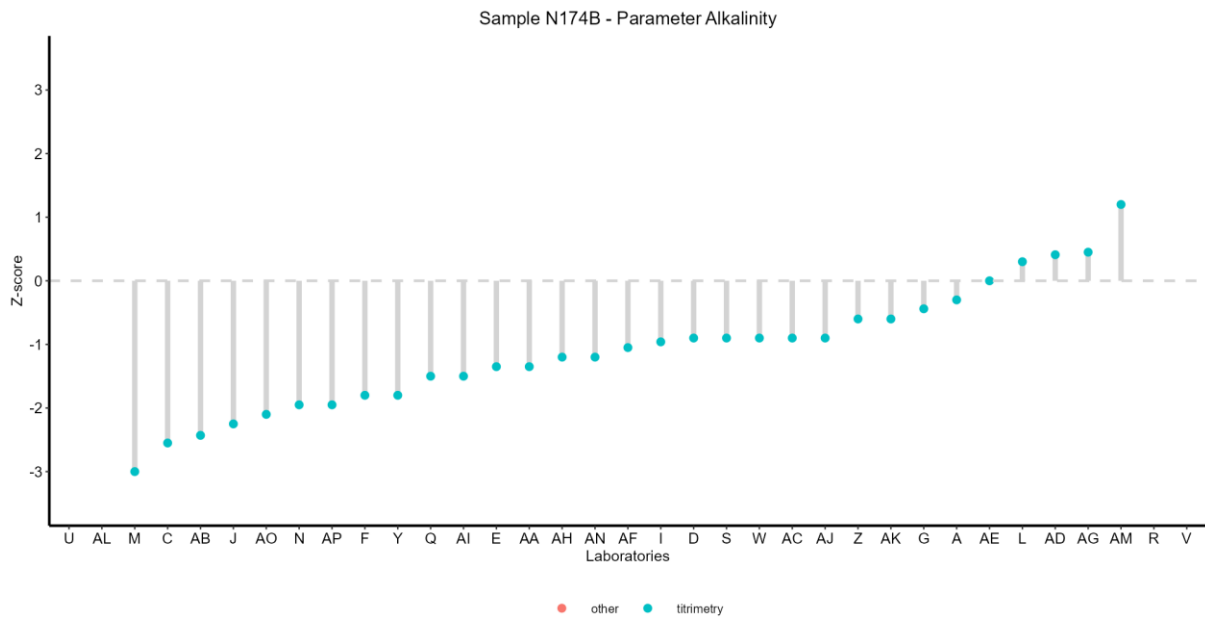
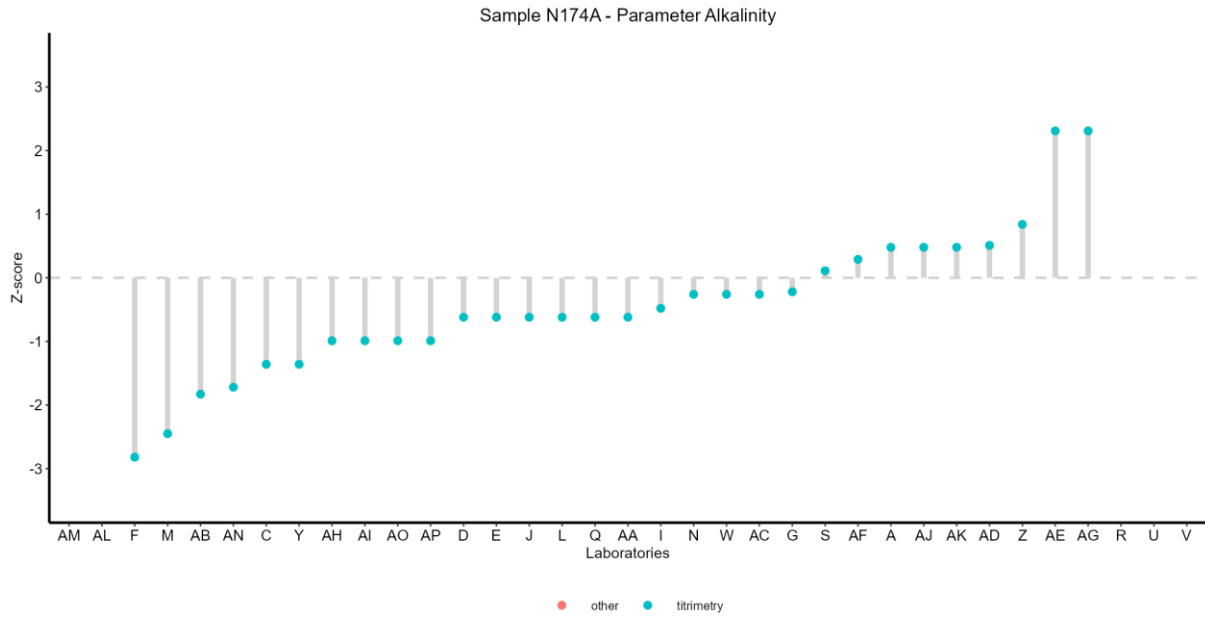
Conductivity



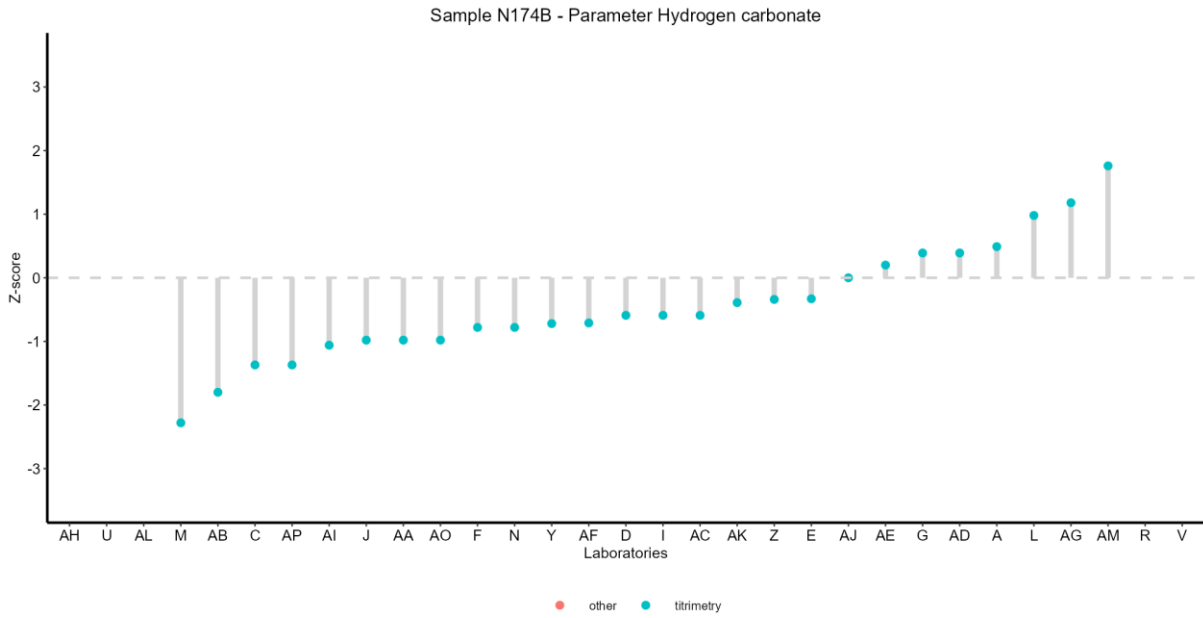
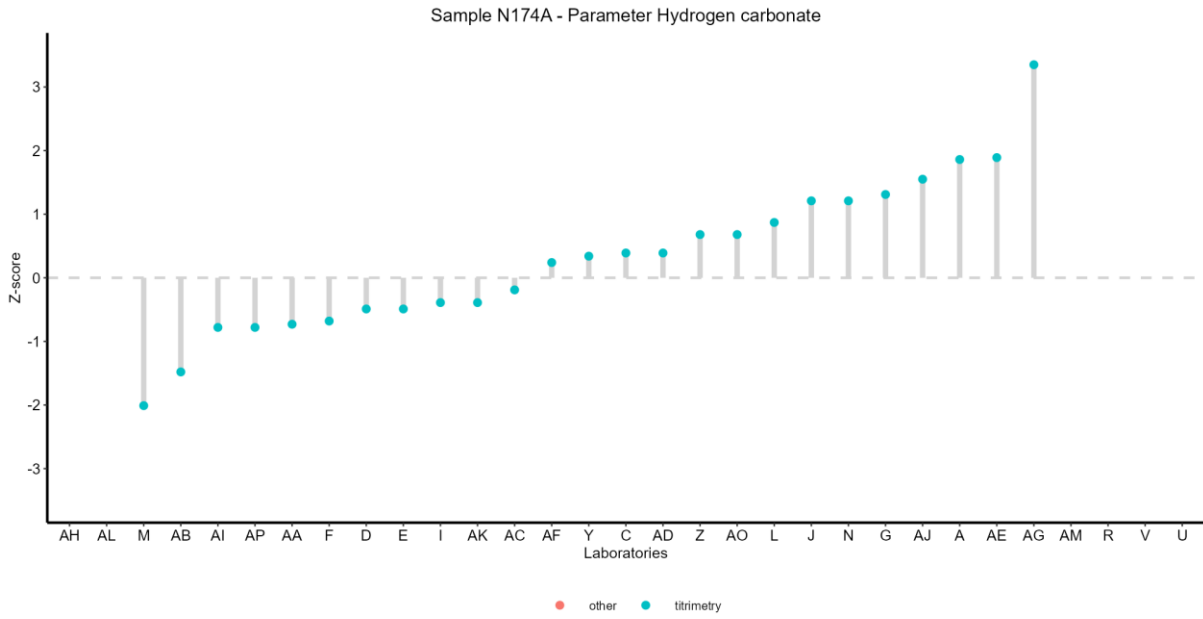
Total Hardness



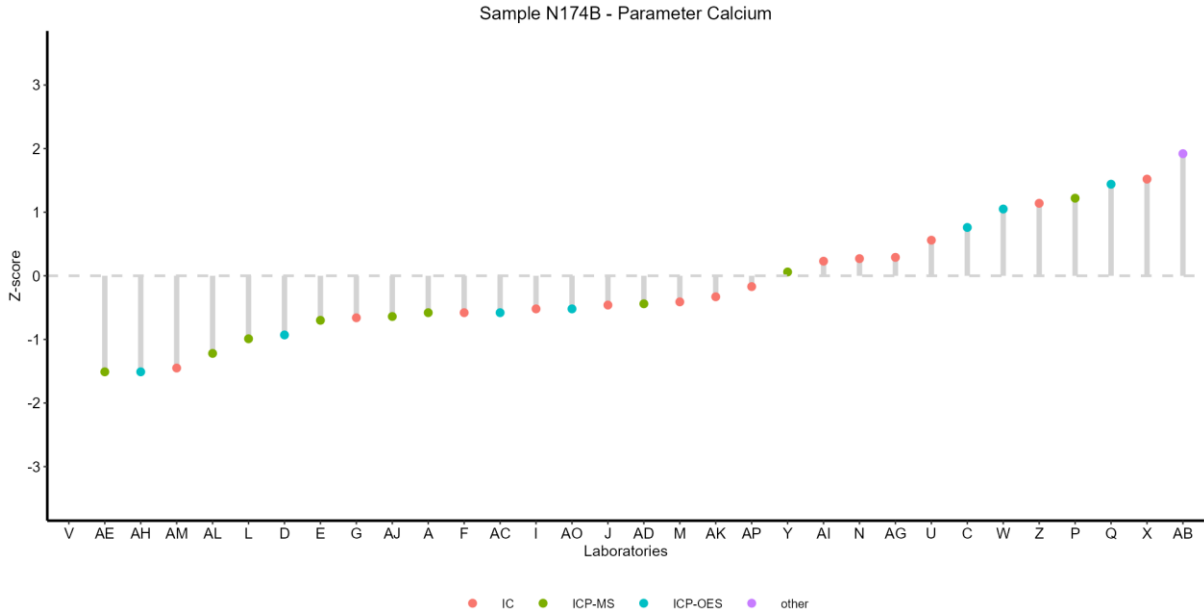
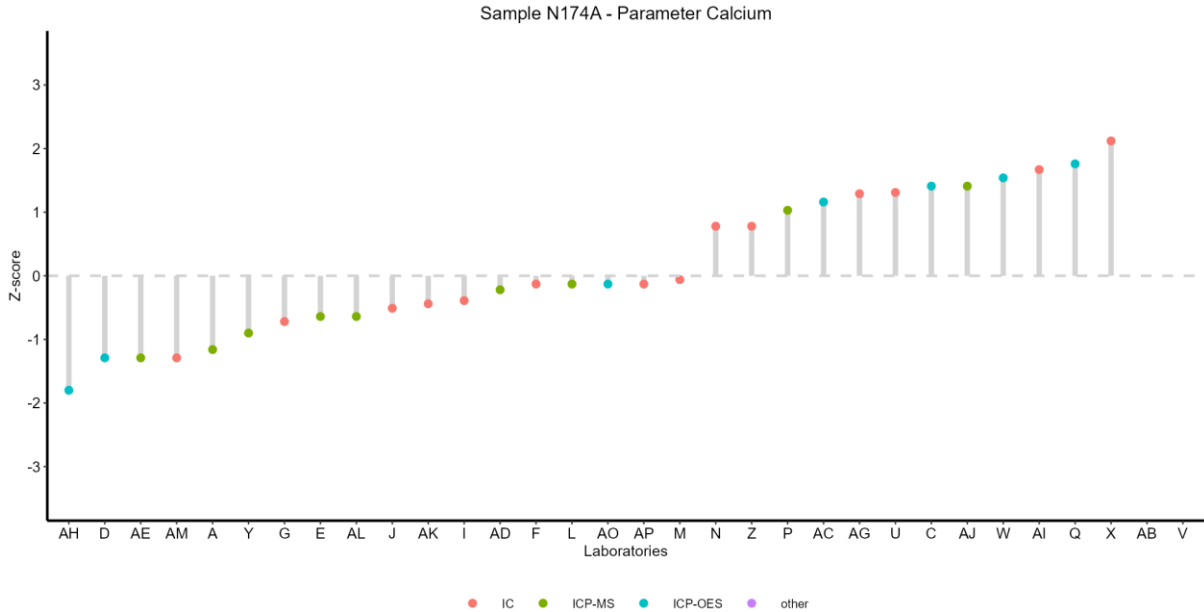
Alkalinity $K_{s 4.3}$ (as H^+)



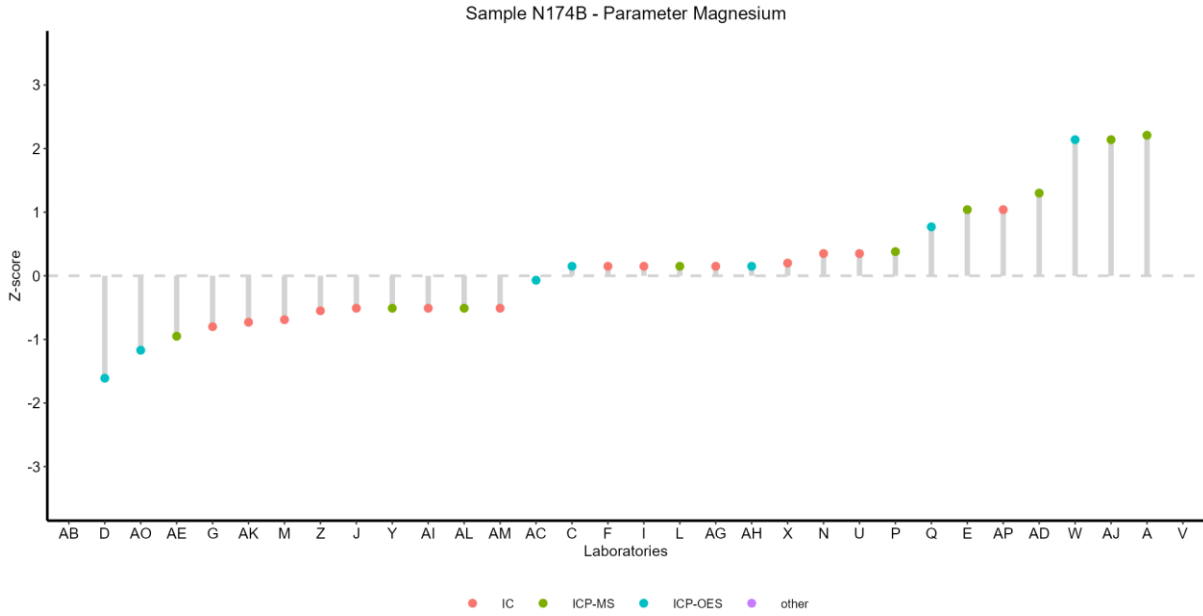
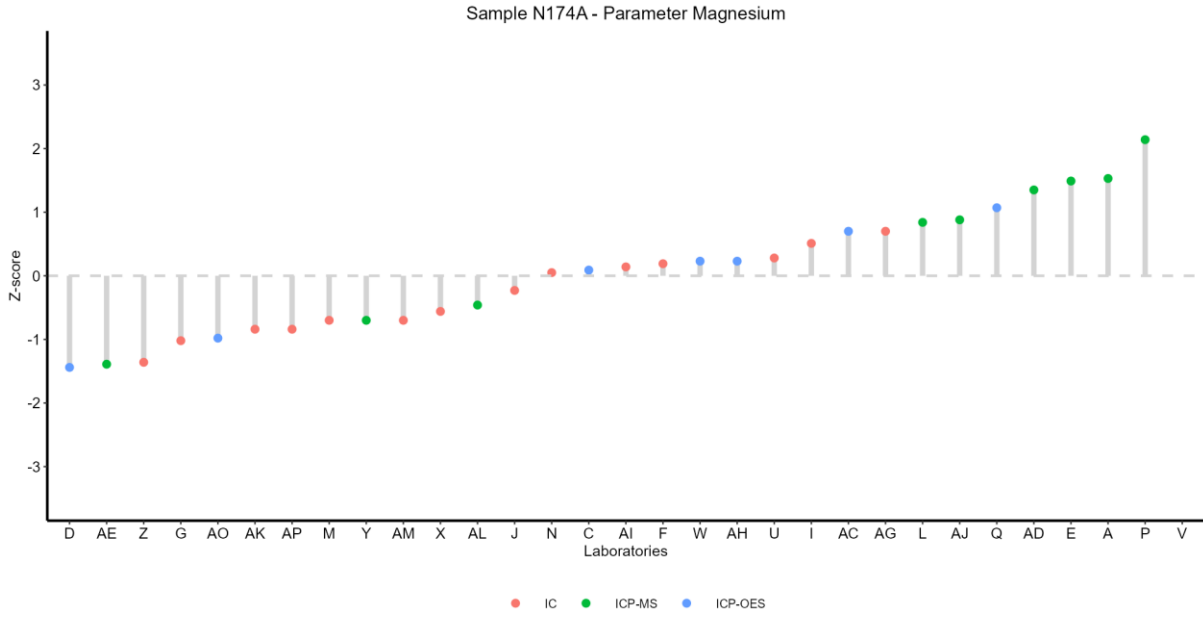
Hydrogen carbonate



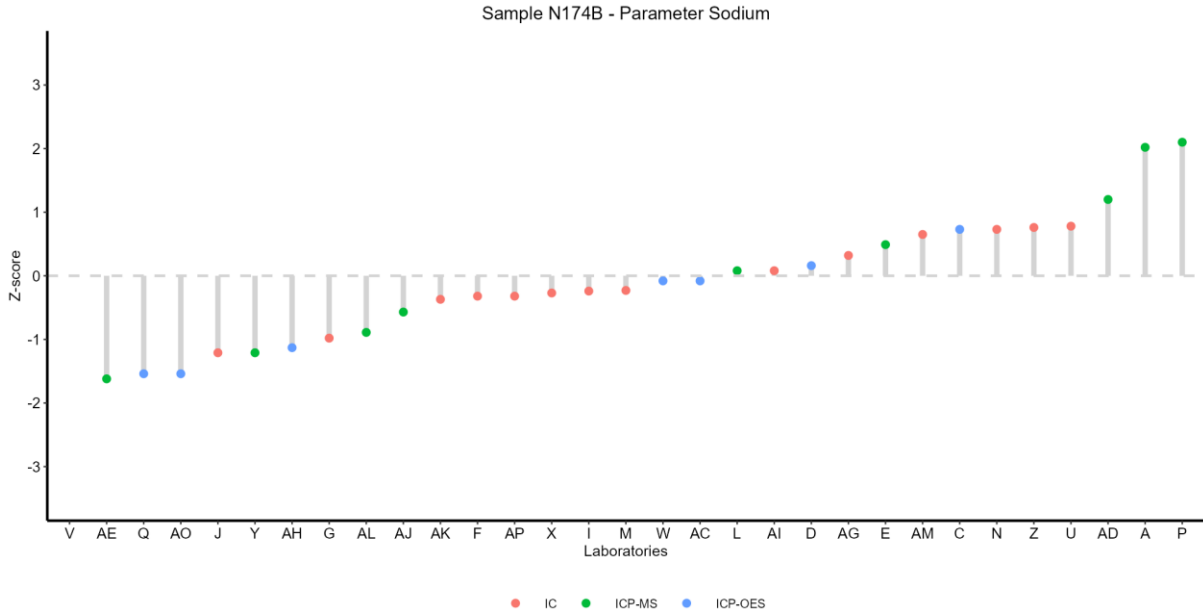
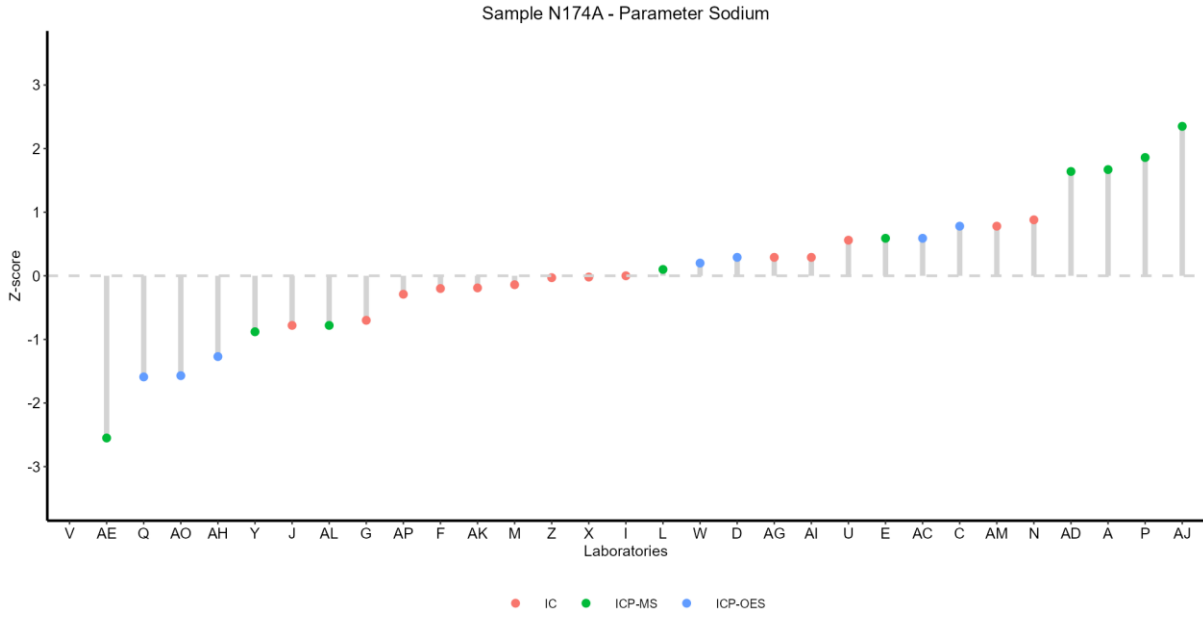
Calcium



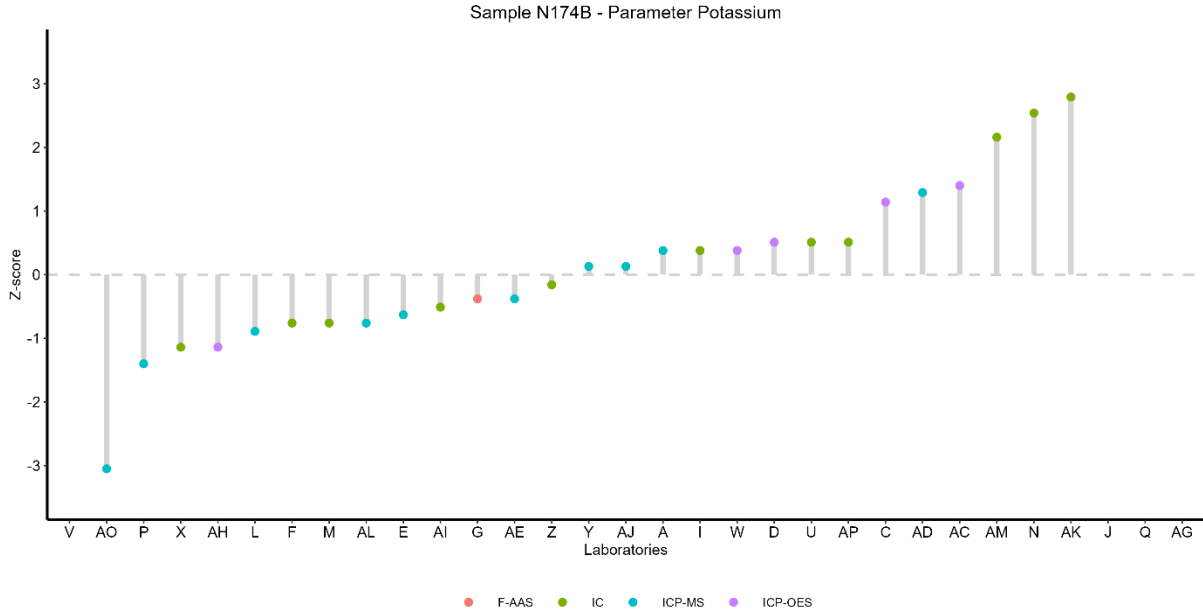
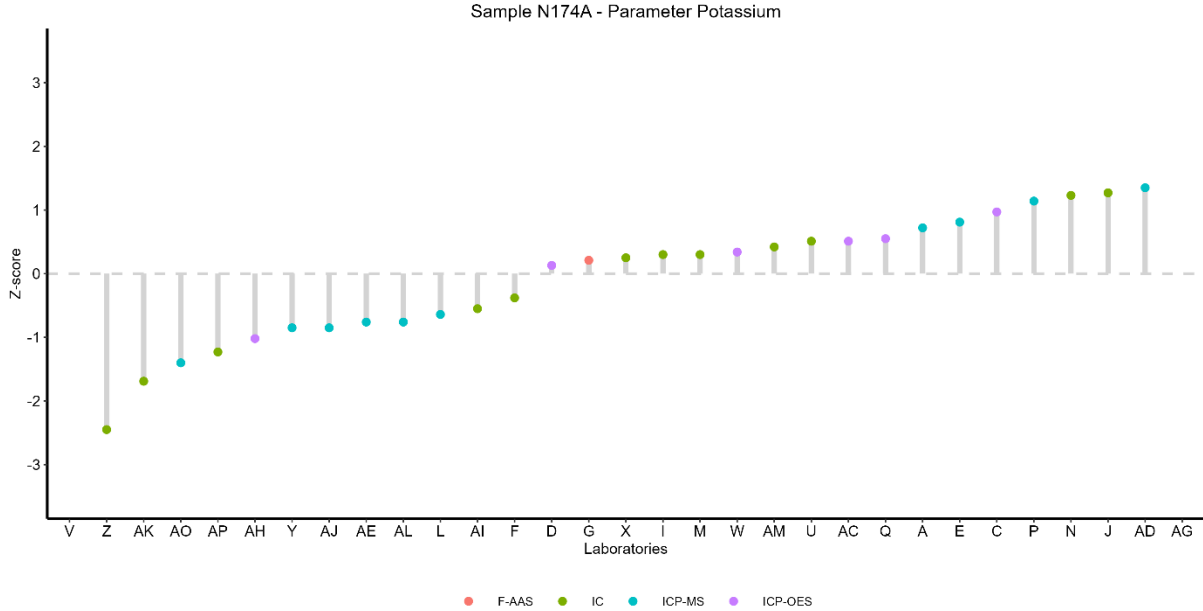
Magnesium



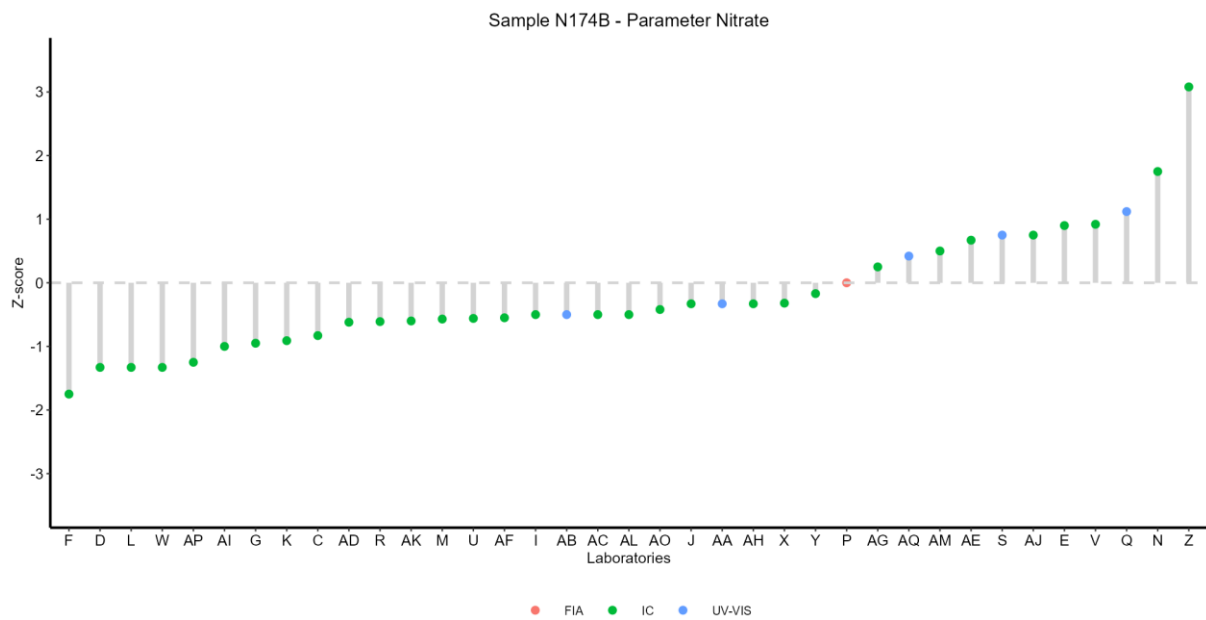
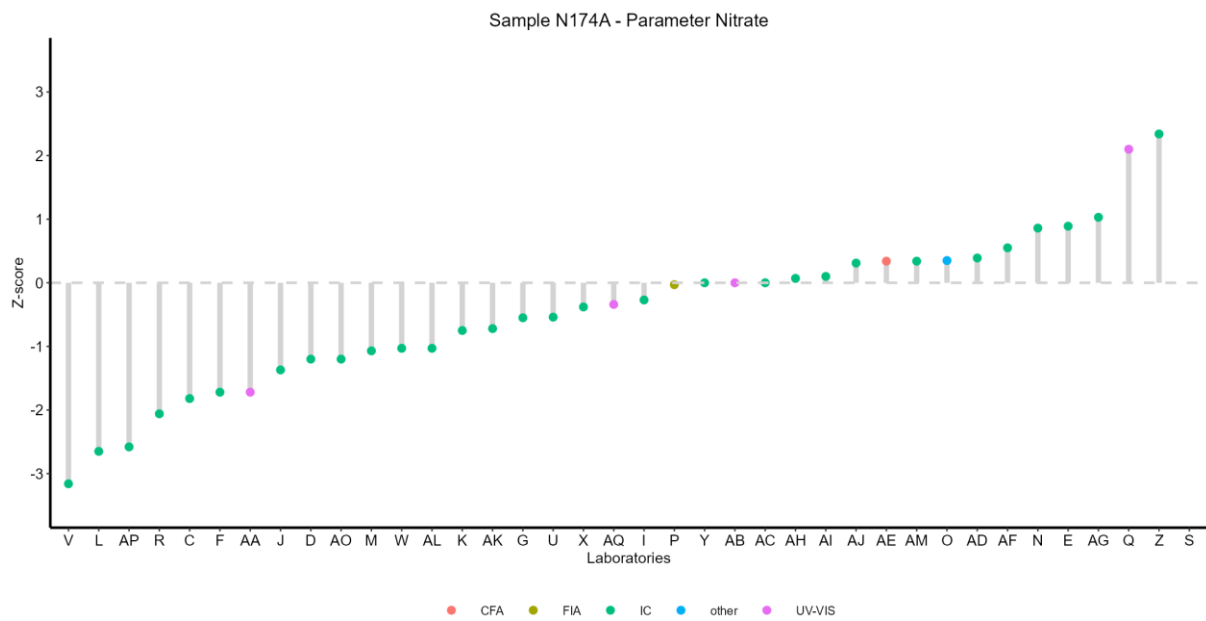
Sodium



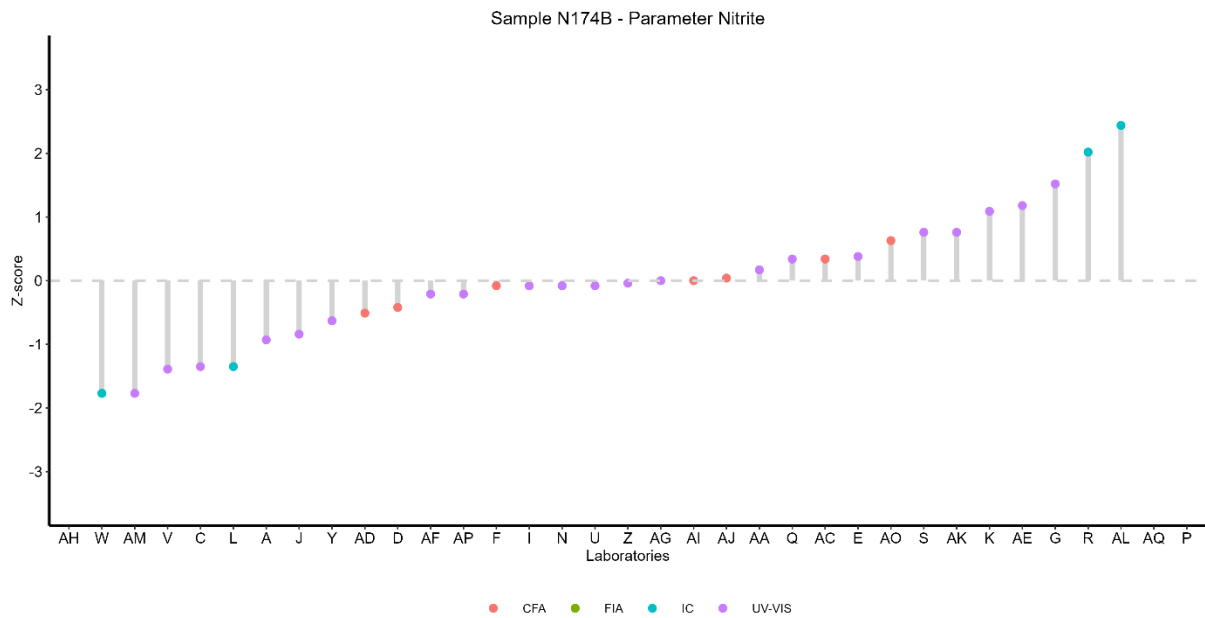
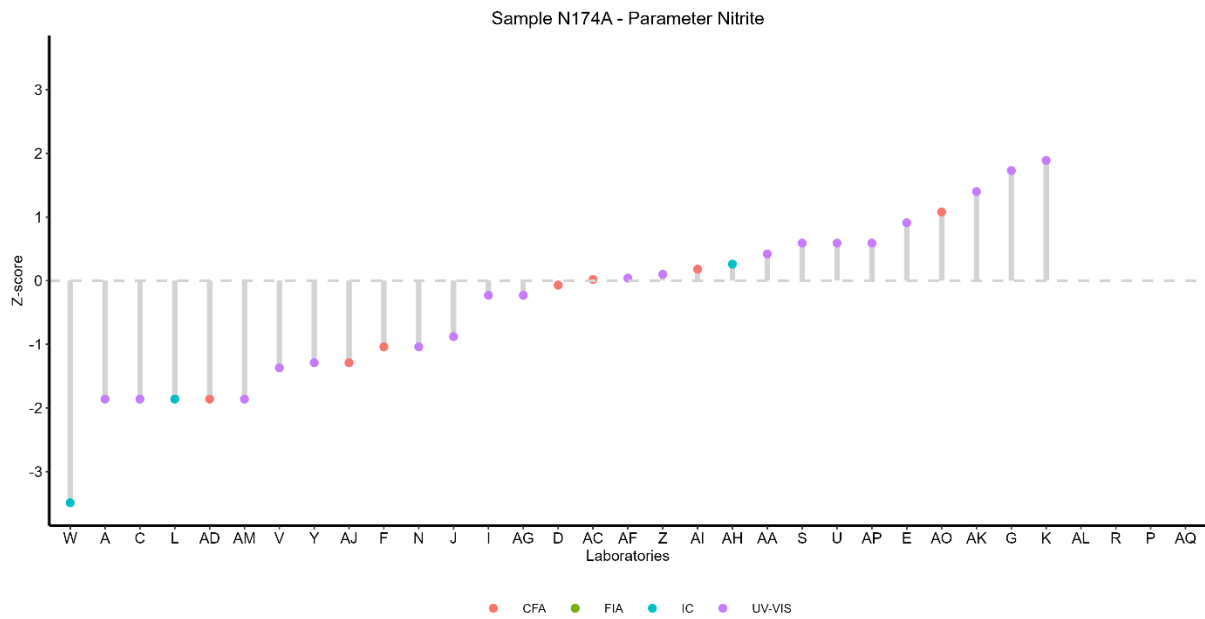
Potassium



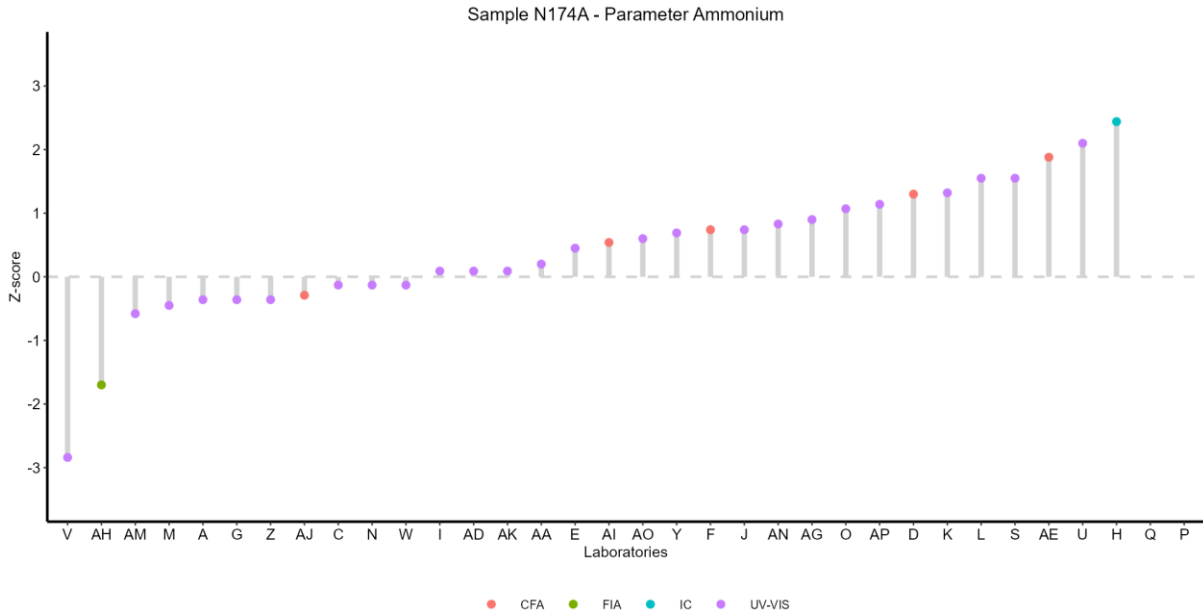
Nitrate (as NO₃⁻)



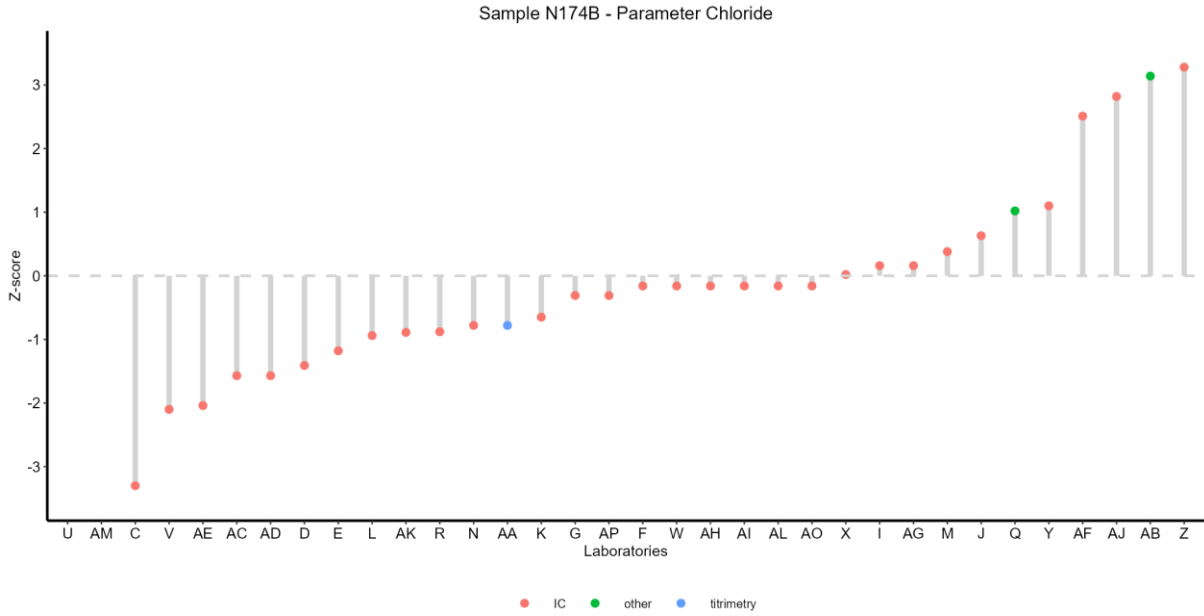
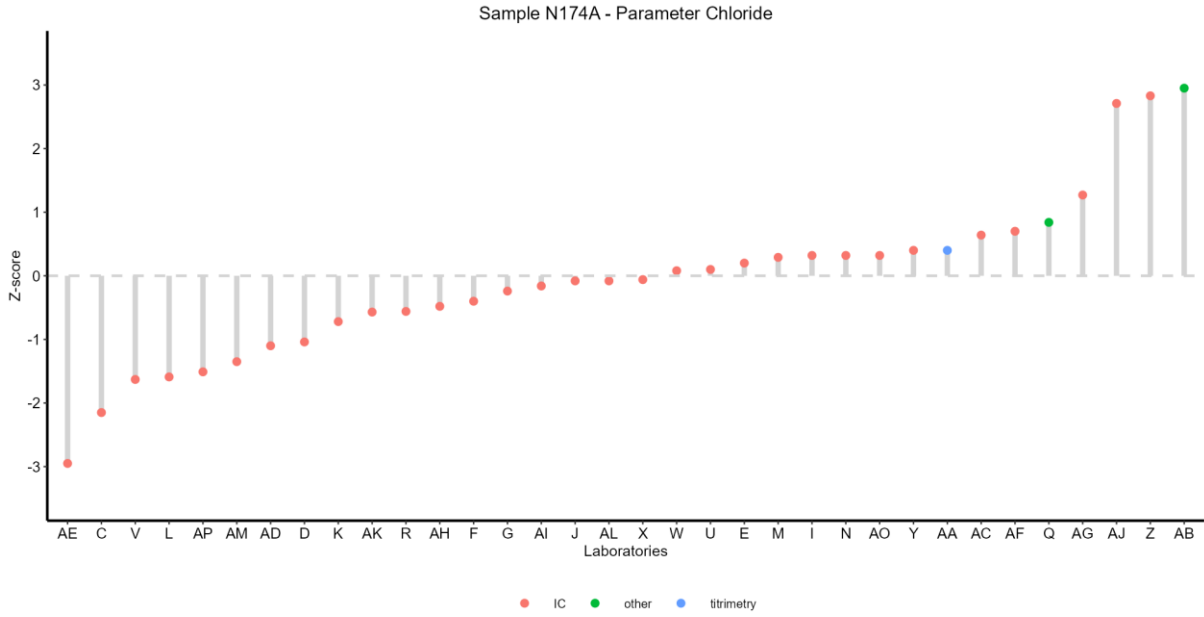
Nitrite (as NO₂⁻)



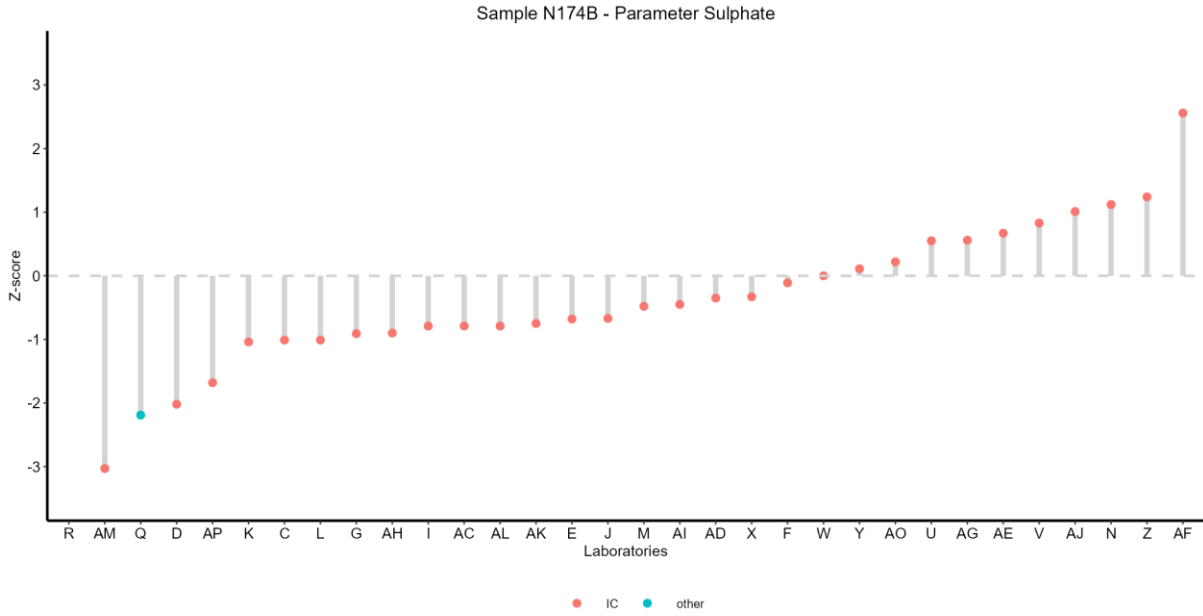
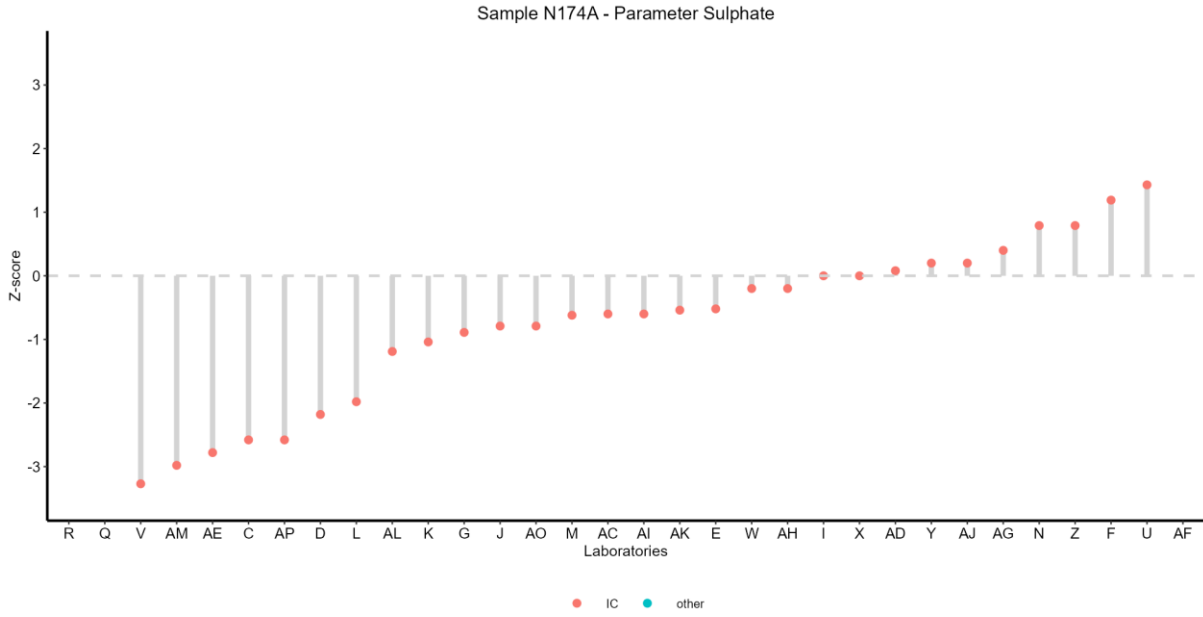
Ammonium (as NH₄⁺)



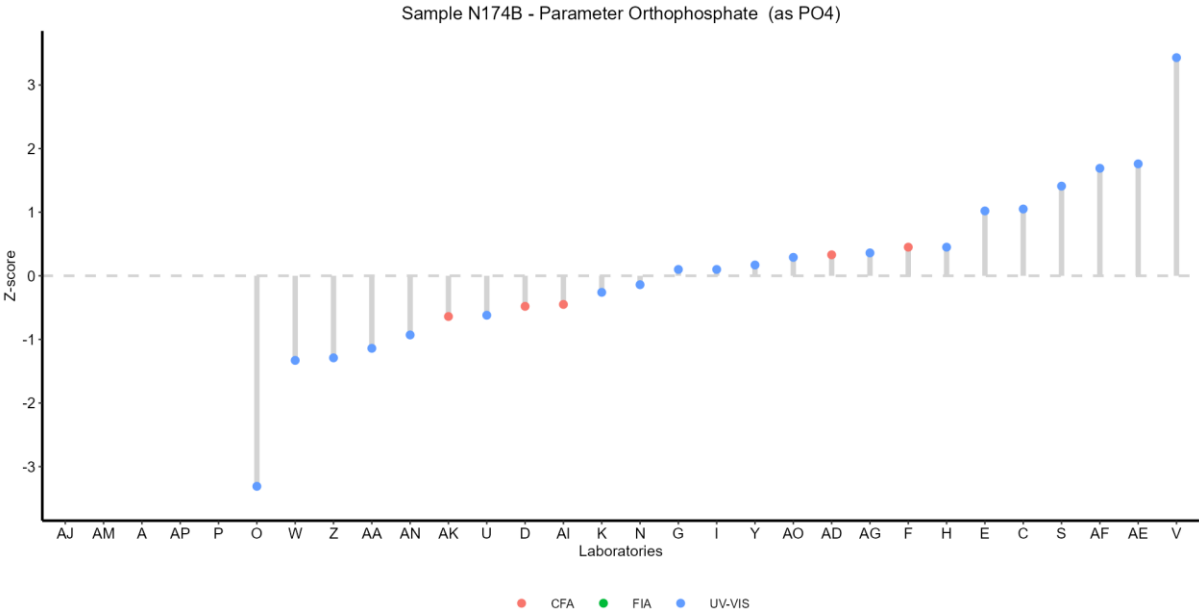
Chloride



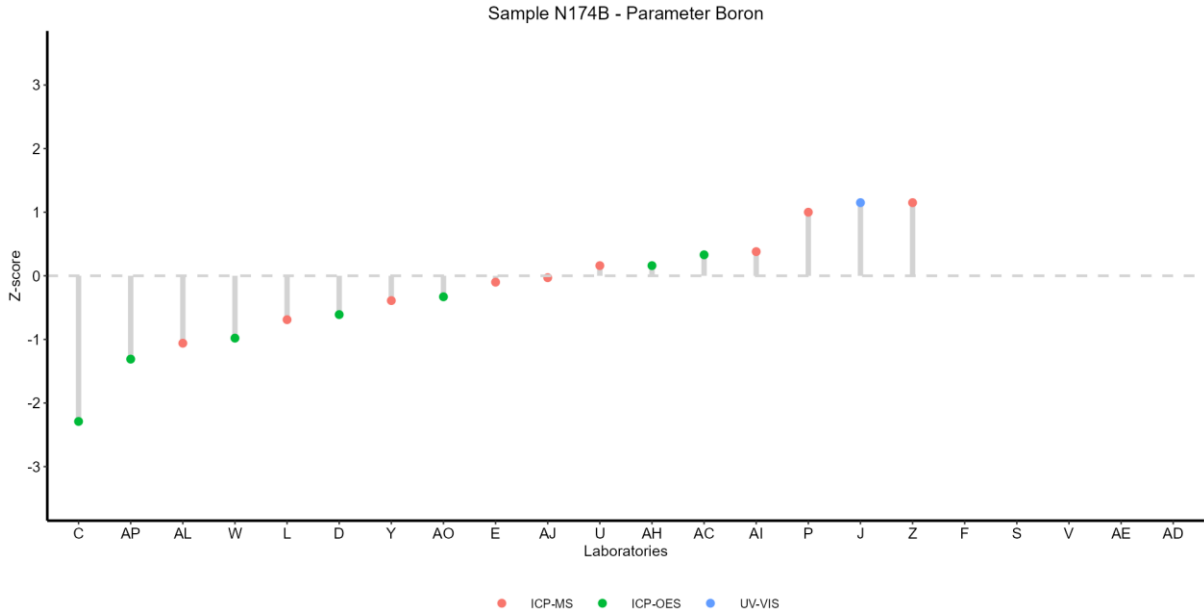
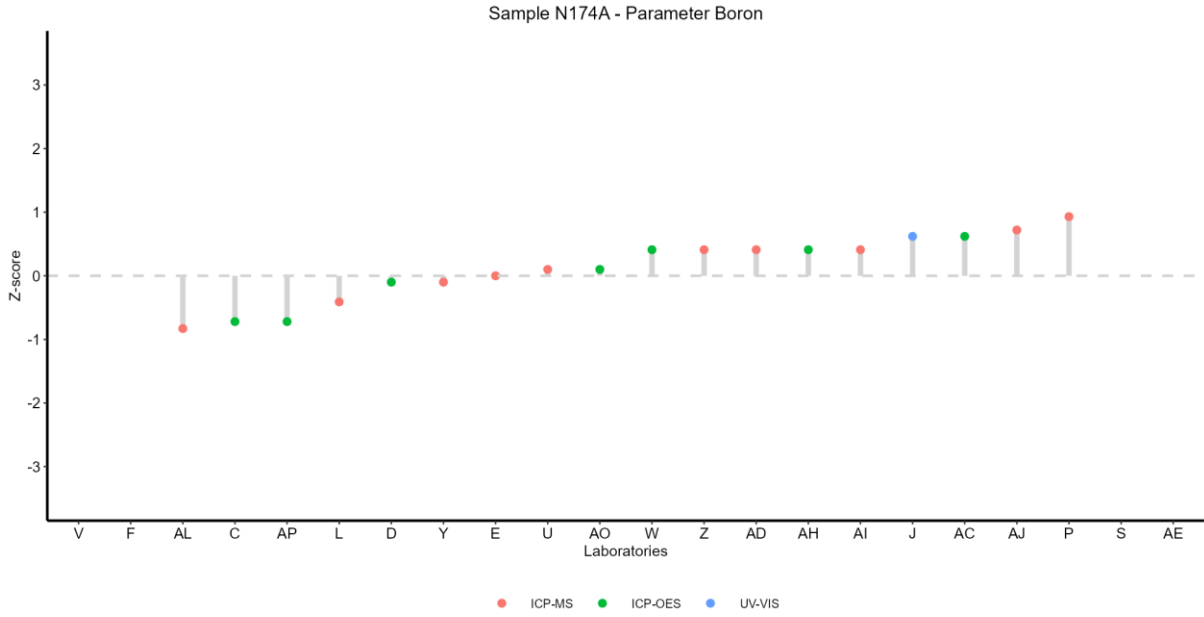
Sulphate (as SO₄²⁻)



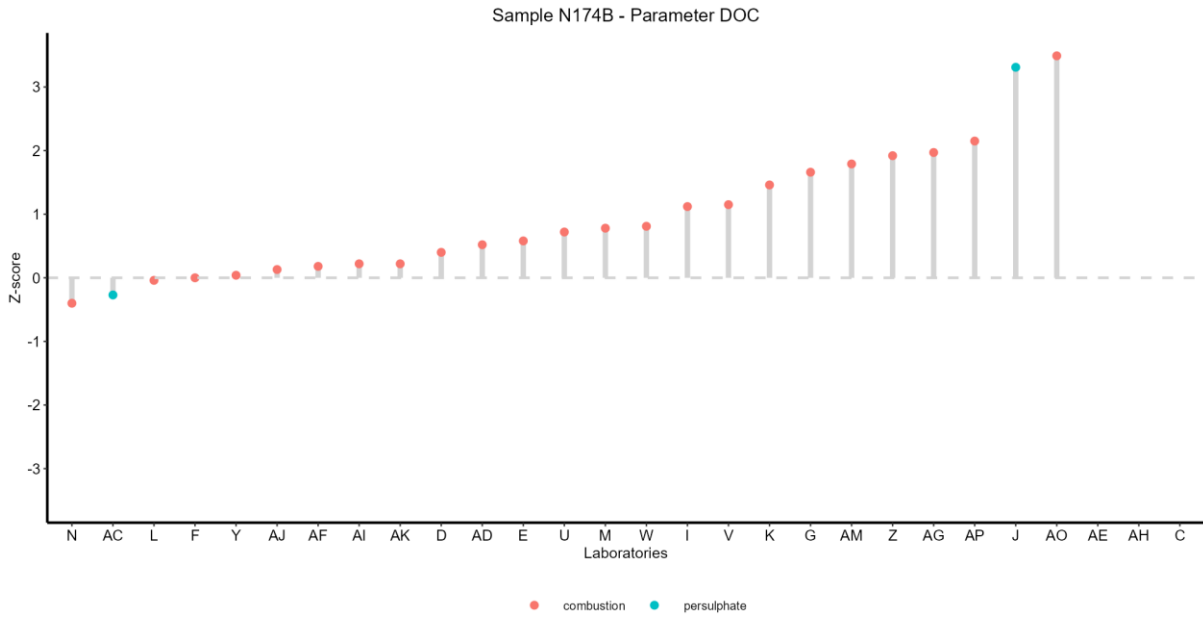
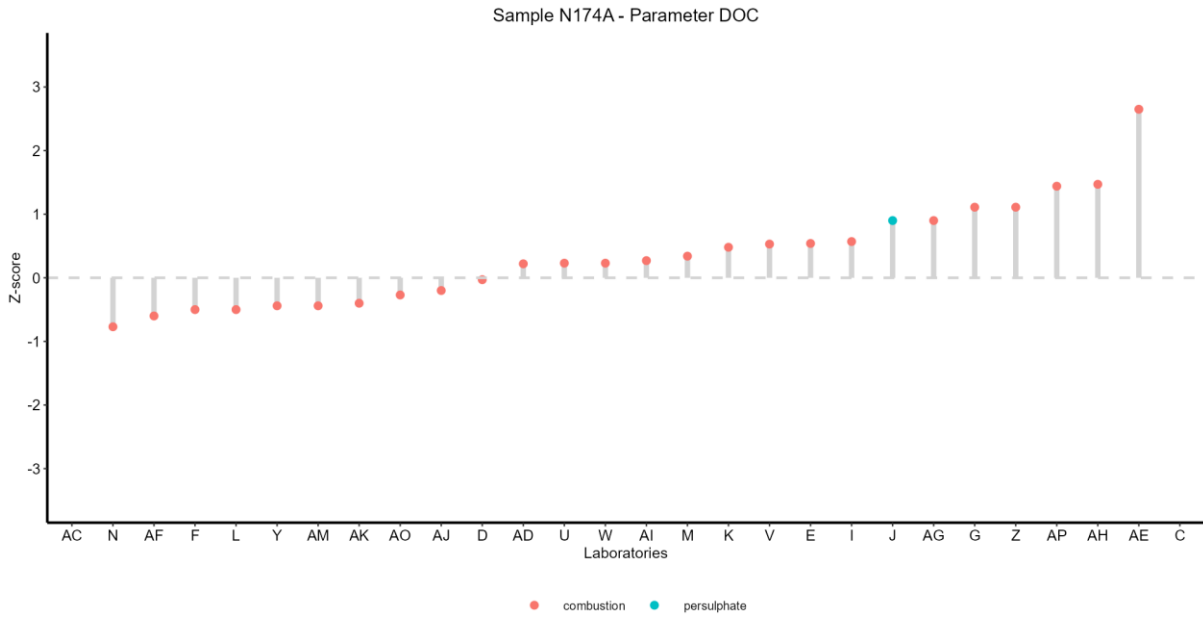
Orthophosphate (as PO₄³⁻)



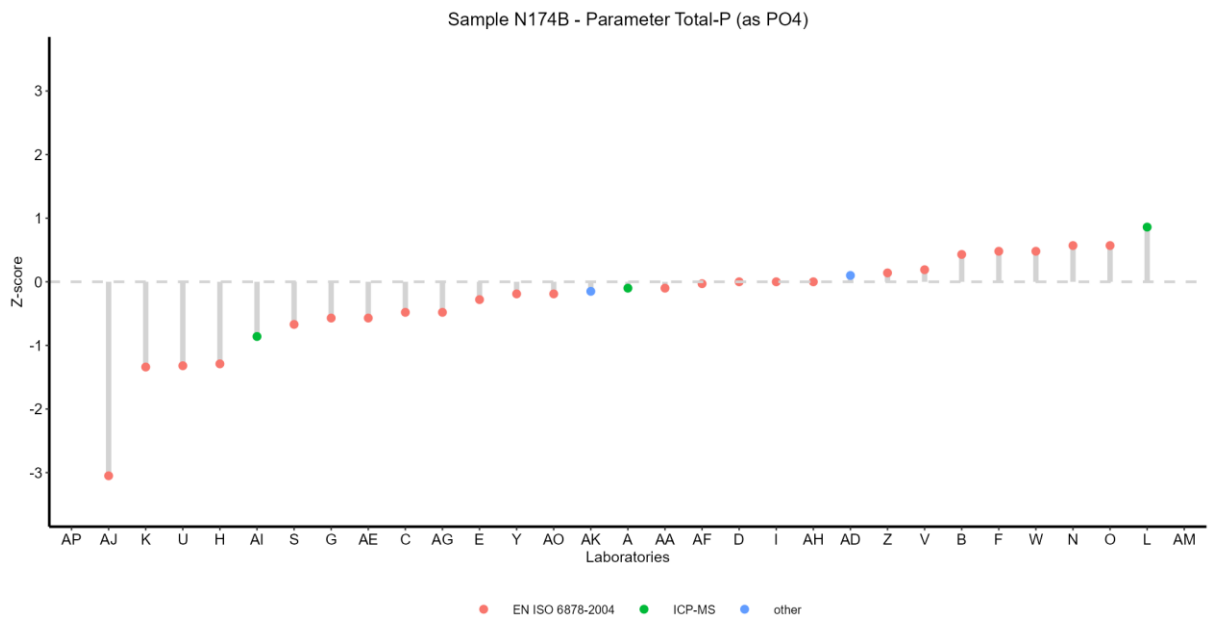
Boron



DOC (as C)



Total-P (as PO₄³⁻)



Permanganate index (as O₂)

