

# IFA-Proficiency Testing Scheme for Water Analysis

Round M161  
Metals

Sample Dispatch: 7 March 2022

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



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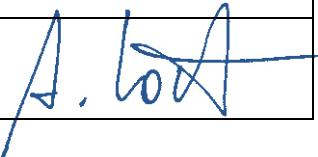
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Report: 1<sup>st</sup> edition, created on 06 April 2022 by Ing. Uta Kachelmeier

99 pages

This report summarises the results of round M161 (trace metals) within the IFA-Proficiency Testing Scheme for Water Analysis. The samples M161A and M161B were distributed to 25 participants on Monday, 7 March 2022. Each participant received two samples of 250 mL filled into LDPE bottles.

Closing date for reporting results to the IFA-Tulln was Friday, 1 April 2022. All participants submitted results. To make the participants anonymous, each laboratory obtained a letter code by random.

## Samples

The samples consisted of artificial ground water spiked with pure standards. For sample preparation, ultrapure water was spiked with concentrated solutions of salts in order to simulate the ionic composition of natural Austrian ground water. The following ultrapure salts were used: CaCO<sub>3</sub>, Mg(NO<sub>3</sub>)<sub>2</sub>, NaCl, KCl, besides ultrapure H<sub>2</sub>SO<sub>4</sub> and HCl. By this, the matrix of the samples consisted of about 46.0 mg/L Ca, (sample B: 46.1 mg/L Ca), 19.7 mg/L Mg, 9.1 mg/L Na, 1.27 mg/L K, 20.4 mg/L SO<sub>4</sub><sup>2-</sup> and 15.5 mg/L Cl<sup>-</sup>, (sample B 15.8 mg/L Cl<sup>-</sup>). Ultrapure HNO<sub>3</sub> (0.5 % v/v) was added to stabilise the sample at a pH below 2, which meets the standard sampling procedure in the Austrian monitoring program.

Traces of Al, As, Cd, Cr, Cu, Fe, Pb, Mn, Hg, Ni, Se, U and Zn were added, using certified spectroscopy standards. For most of the compounds added to the samples, the target concentrations were higher than the minimum quantifiable values of the Austrian ground and river water monitoring program. The calculation of the target concentrations of the compounds was based on the mass of standard added to the samples.

## Homogeneity, accuracy and stability tests at the IFA-Tulln

Some samples of the round M161A and M161B were analysed for all investigated parameters prior to shipment to the participants. The results are listed in the results tables and the parameter oriented part of the report ("IFA result").

Stability tests will be carried out together with the accuracy tests of the following round (M162).

According to our experience, the concentrations of Al, As, Cd, Cr, Cu, Fe, Pb, Mn, Ni, Se, U and Zn in the samples remain stable up to 18 months when stored at 4-6 °C in the dark. For the parameter Hg a concentration decrease of 2 % to 4 % per month can be expected.

## Results

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

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

The recoveries of the target concentrations, calculated from outlier-corrected data mean values ranged between 95.0 % (Hg in sample M161A) and 105.6 % (As in sample M161A).

The between laboratory CVs covered the ranged between 2.6 % (U in sample M161B) and 10.8 % (Zn in sample M161B).

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

## **z-scores**

The most common approach to calculate a z-score is given by

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

$z$  z-score

$x_i$  result of laboratory

$X$  target value or mean value („consensus value“)

$\sigma_{pt}$  standard deviation for proficiency assessment

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

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

### Calculation example:

A laboratory found 73.7 µg/L for the parameter Aluminium (recovery of 102 %). The target value for Aluminium was 72.3 µg/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](http://www.ifatest.eu)) by 7.8 %, which is 5.6 µg/L Al, when based on the target value.

$$z = \frac{x_i - X}{\sigma_{pt}} = \frac{73.7 \text{ µg/L} - 72.3 \text{ µg/L}}{5.6 \text{ µg/L}} \approx 0.25 \quad \text{or} \quad \frac{102\% - 100\%}{7.8\%} \approx 0.25$$

$z$  z-score

$x_i$  73.7 µg/L equivalent to 102 % (result of the laboratory)

$X$  72.3 µg/L equivalent to 100 % (target value)

$\sigma_{pt}$  5.6 µg/L equivalent to 7.8 % (standard deviation for proficiency assessment see table below)

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

The following table lists the standard deviations for proficiency assessment and their limits of applicability.

Parameter	standard deviation for proficiency assessment	Lower limit
Aluminium	7.8 %	8 µg/L
Arsenic	7.4 %	0.5 µg/L
Cadmium	5.6 %	0.1 µg/L
Chromium	6.3 %	0.5 µg/L
Copper	7.8 %	1.0 µg/L
Iron	6.6 %	10 µg/L
Lead	6.8 %	0.3 µg/L
Manganese	5.4 %	2.0 µg/L
Mercury	11 %	0.2 µg/L
Nickel	7.5 %	1.0 µg/L
Selenium	10 %	0.3 µg/L
Uranium	5.6 %	0.35 µg/L
Zinc	7.4 %	3 µg/L

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

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

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

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

## Illustration of results

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

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

In the **parameter oriented part** the reported results and corresponding uncertainties are illustrated together with recoveries of the target values and the z-scores for each parameter and all laboratories. This information is presented in graphical and tabular form. Results, which were identified as outliers by the Hampel test are marked with an asterisk (\*) in the column "out". These values were not considered for the calculation of statistical parameters (mean values, standard deviations and confidence intervals). Moreover, the parameter oriented part contains the uncertainties of the target values. The uncertainty intervals correspond to the expanded uncertainty (coverage factor  $k = 2$ ) as described in the EURACHEM / CITAC Guide "Quantifying Uncertainty in Analytical Measurement" 3<sup>rd</sup> Edition (2012) ". The uncertainty interval of the reference concentration is illustrated in the graphs as a grey band around the 100 % recovery line.

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

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

Tulln, 11 April 2022

## EXPLANATION

### Sample M106A

#### Parameter Copper

Target value  $\pm U$  ( $k=2$ )  $4,79 \mu\text{g/l} \pm 0,13 \mu\text{g/l}$

IFA result  $\pm U$  ( $k=2$ )  $4,79 \mu\text{g/l} \pm 0,38 \mu\text{g/l}$

Stability test  $\pm U$  ( $k=2$ )  $4,69 \mu\text{g/l} \pm 0,38 \mu\text{g/l}$

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	$\pm$	Unit	Recovery	z-Score
A	5.16	0.4128	$\mu\text{g/l}$	108%	0.90
B	4.22	0.42	$\mu\text{g/l}$	88%	-1.38
C	4.45	0.13	$\mu\text{g/l}$	93%	-0.83
D			$\mu\text{g/l}$		
E			$\mu\text{g/l}$		
F	4.10	0.08	$\mu\text{g/l}$	86%	-1.68
G			$\mu\text{g/l}$		
H			$\mu\text{g/l}$		
I	4.75	0.74	$\mu\text{g/l}$	99%	-0.10
J	<5		$\mu\text{g/l}$	*	
K	4.76		$\mu\text{g/l}$	99%	-0.07
L	<10		$\mu\text{g/l}$	*	
M	4.8	0.5	$\mu\text{g/l}$	100%	0.02
N	3.7	0.4	$\mu\text{g/l}$	77%	-2.65
O	4.47	0.447	$\mu\text{g/l}$	93%	-0.78
P	6.0		$\mu\text{g/l}$	125%	2.94
Q	4.17	0.2	$\mu\text{g/l}$	87%	-1.51
R	4.6	0.8	$\mu\text{g/l}$	96%	-0.46
S	4.44	0.67	$\mu\text{g/l}$	93%	-0.85
T			$\mu\text{g/l}$		
U	4.675	0.935	$\mu\text{g/l}$	98%	-0.28
V	5.0	0.50	$\mu\text{g/l}$	104%	0.51
W	3.54	0.3	$\mu\text{g/l}$	74%	-3.03
X	7.108	*	$\mu\text{g/l}$	148%	5.63
Y	<10		$\mu\text{g/l}$	*	
Z			$\mu\text{g/l}$		
AA	<3.0		$\mu\text{g/l}$	FN	
AB	3.775	0.107	$\mu\text{g/l}$	79%	-2.46
AC	<10.0		$\mu\text{g/l}$	*	

An asterisk 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 $\pm CI(99\%)$	$4,65 \pm 0,57$	$4,51 \pm 0,42$	$\mu\text{g/l}$
Recov. $\pm CI(99\%)$	$97,1 \pm 12,0$	$94,1 \pm 8,8$	%
SD between labs	0.84	0.59	$\mu\text{g/l}$
RSD between labs	18.1	13.2	%
n for calculation	18	17	

Between laboratory standard deviation

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

Number of results used for calculation of statistic parameters

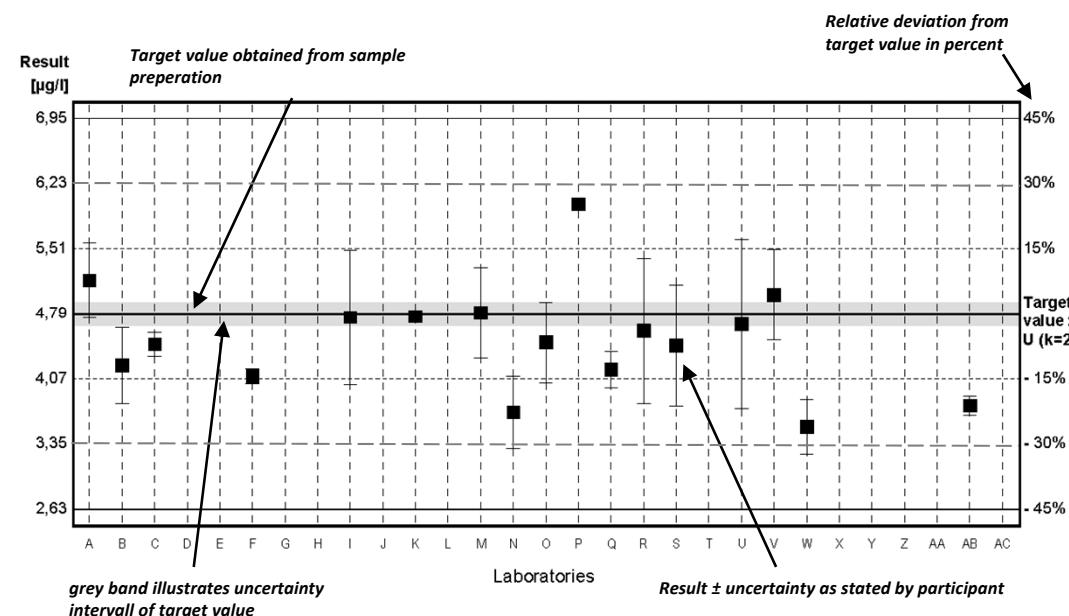


Diagram 1: Measurement results and their uncertainties

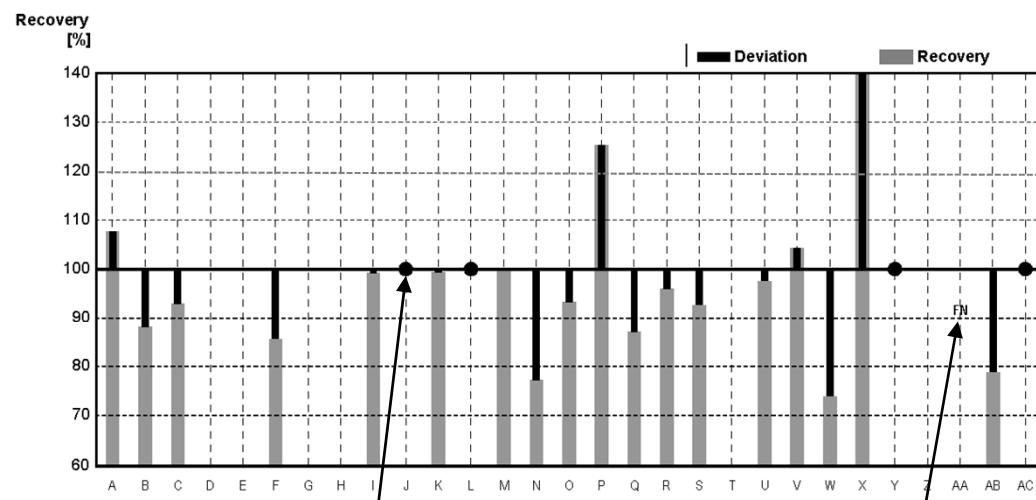


Diagram 2: Recoveries and deviations from target values



# **Illustration of Results Tables and Parameter Oriented Part**

**Round M161  
Metals**

**Sample Dispatch: 7 March 2022**

## Results Sample M161A

	Aluminium	Arsenic	Lead	Cadmium	Chromium	Iron	Copper
Target value	25.8	0.692	1.21	0.393	10.0	38.4	16.7
IFA result	26.0	0.714	1.21	0.431	10.2	37.4	16.0
A			1.33				
B	27.3	<3	<3	<1	9.72	42.3	15.6
C	27.000	0.80000	1.30000	0.40000	10.4000	42.000	16.7000
D	29.9	0.787	1.21	0.385	10.8	40.7	16.6
E	26.78	0.80	1.06	0.403	10.32	41.19	17.52
F	38.5	<1	1.06	0.440	10.4	80	14.8
G	23.0	<1.00	1.24	0.390	9.86	36.4	16.0
H	29.3	<2.00	<2.00	<1.00	9.7	38.4	14.8
I	29.1	<2	<2	0.407	10.2	38.1	16.9
J	23.9	0.64	1.10	0.373	9.7	36.8	14.9
K	23.3	0.70	0.99	0.374	9.2	34.2	14.2
L	22.7	0.71	1.08	0.373	9.31	35.2	14.7
M	27.8					36.2	15.2
N	27.2	0.71	1.16	0.380	10.2	42.8	16.5
O	26.0	<1	1.24	0.360	10.1	37.5	<100
P	26.8	0.742	1.22	0.404	10.2	39.6	15.8
Q	24.86	0.83	1.14	0.400	9.76	36.17	13.69
R	25.8	0.655	1.18	0.371	9.48	36.0	15.5
S	26.0	0.80	1.20	0.460	10.90	42.4	17.7
T	26.7	0.670	1.17	0.411	10.0	38.8	16.2
U	26.7	0.687	1.202	0.385	9.91	40.14	15.96
V	26.3	0.644	1.17	0.389	9.96	38.8	16.0
W	27.0	<1.0	1.30	0.437	10.3	43.3	17.9
X	25.87	0.79	1.05	0.403	10.38	42.13	17.79
Y						<50	

All data in µg/L

### Measurement Uncertainties Sample M161A

	Aluminium ±	Arsenic ±	Lead ±	Cadmium ±	Chromium ±	Iron ±	Copper ±
Target value	0.2	0.007	0.01	0.004	0.1	0.2	0.1
IFA result	1.3	0.079	0.04	0.026	0.3	3.0	0.6
A			0.13				
B							
C	2.70000	0.09600	0.10400	0.03200	1.24800	10.9200	1.3360
D	4.49	0.118	0.18	0.058	1.62	6.11	2.49
E	2.95	0.05	0.13	0.059	1.04	4.19	2.25
F	9		1	0.1	1	30	2
G	0.686		0.106	0.0194	0.129	0.860	0.249
H	2.93				0.97	3.84	1.48
I	4.48			0.03	0.85	3.12	4.39
J	2.39	0.096	0.11	0.0373	0.97	3.68	1.49
K	3.0	0.19	0.27	0.044	1.0	6.8	2.5
L	5.4	0.21	0.27	0.093	2.79	8.4	3.5
M	4.7					6.5	
N	3.5	0.04	0.12	0.05	1.7	7.6	1.7
O	3.9		0.19	0.054	1.0	3.8	
P	3.2	0.126	0.15	0.048	1.9	7.1	1.7
Q	1.53	0.24	0.14		1.1	0.82	0.8
R	2.9	0.037	0.13	0.017	1.3	4.0	0.85
S							
T	6.7	0.2	0.3	0.11	3.0	11.7	4.1
U	2.7	0.07	0.12	0.04	0.99	4	1.6
V	0.49	0.040	0.026	0.012	0.046	0.10	0.20
W	3.9		0.16	0.057	1.5	4.6	2.1
X	2.82	0.05	0.13	0.059	1.04	4.29	2.29
Y							

All data in µg/L

## Results Sample M161A

	Manganese	Nickel	Mercury	Selenium	Uranium	Zinc
Target value	32.7	1.75	0.82	0.94	3.69	46.3
IFA result	32.5	1.79	0.86	1.00	3.72	45.8
A						
B	32.5	<3	0.93	<3	3.33	47.5
C	34.000	1.8000	0.83000	1.00000	3.71	49.0000
D	34.6	1.83	0.788	1.00	3.93	45.3
E	35.12	1.90				54.72
F	55	2.17	0.71			44.0
G	32.4	1.64	0.741	1.18	3.62	45.5
H	32.2	<5.0	<1.00	<2.00	3.63	39.2
I	32.7	<2.0		<5.0		45.8
J	30.8	1.65	0.86	<1	3.45	39.6
K	30.7	1.38	0.490	0.99		41.4
L	30.6	1.52	0.80	0.95	3.46	42.7
M	31.6					
N	33.5	1.77	0.72	0.89	3.60	42.7
O	31.8	<2	0.79	1.00		44.7
P	33.1	1.69	0.655	0.981	3.69	45.7
Q	30.3	1.77	0.74	0.79	3.57	45.76
R	31.1	1.70	0.795	<1.0	3.47	40.9
S	35.7	1.90	0.82	1.20	3.75	50.5
T	33.0	1.80	0.794	0.862	3.51	45.9
U	31.93	1.680	0.747	0.888	3.517	44.68
V	31.4	1.72	0.727	0.941	3.39	43.7
W	31.8	1.27	0.80	<2.0	3.64	48.6
X	35.41	1.94				55.09
Y	<50					

All data in µg/L

### Measurement Uncertainties Sample M161A

	Manganese ±	Nickel ±	Mercury ±	Selenium ±	Uranium ±	Zinc ±
Target value	0.2	0.02	0.02	0.03	0.03	0.6
IFA result	2.3	0.13	0.16	0.13	0.41	5.0
A						
B						
C	3.40000	0.18000	0.125	0.15000	0.186	4.900
D	5.18	0.27	0.118	0.15	0.59	6.80
E	3.58	0.12				5.87
F	20	1	0.1			10
G	0.561	0.166	0.0263	0.132	0.0613	0.294
H	3.22				0.363	3.92
I	3.074					6.41
J	3.08	0.165	0.086		0.345	3.96
K	4.0	0.11	0.092	0.14		7.6
L	7.3	0.46	0.24			10.2
M	5.7					
N	2.1	1.9	0.12	0.25	0.9	4.9
O	3.2		0.12	0.20		6.7
P	3.6	0.39	0.079	0.334	0.37	5.9
Q	0.8	0.1	0.01	0.18	0.29	1.42
R	1.7	0.13	0.12		0.37	2.6
S						
T	9.9	0.45	0.24	0.35	1.1	11.5
U	3.2	0.17	0.075	0.09	0.35	4.5
V	0.27	0.061	0.013	0.043	0.089	0.95
W	3.3	0.34	0.11		0.36	5.9
X	3.61	0.12				5.91
Y						

All data in µg/L

## Results Sample M161B

	Aluminium	Arsenic	Lead	Cadmium	Chromium	Iron	Copper
Target value	51.0	1.35	2.66	0.89	1.71	75.8	2.98
IFA result	50.2	1.33	2.62	0.95	1.76	71.4	2.93
A			2.78				
B	52.0	<3	<3	1.11	1.55	77.4	2.93
C	54.000	1.50000	2.80000	0.92000	1.70000	75.000	3.000
D	56.0	1.38	2.67	0.862	1.90	83.6	2.94
E	55.04	1.53	2.52	1.01	1.78	81.43	3.16
F	68	1.09	2.66	0.98	1.87	97	2.59
G	47.6	1.30	2.68	0.886	1.64	73.2	2.99
H	57	<2.00	2.67	<1.00	<5.0	79	<5.0
I	55.8	<2	3.03	0.920	<5.0	75.0	<10.0
J	48.3	1.36	2.37	0.82	1.68	74	2.76
K	46.5	1.38	2.35	0.86	1.41	68	2.49
L	46.9	1.36	2.39	0.86	1.59	69.0	2.60
M	56					71	<10
N	54	1.43	2.58	0.89	1.72	81.0	2.95
O	51.2	1.35	2.65	0.88	<5	73.2	<100
P	51.3	1.41	2.62	0.897	1.74	76.6	2.96
Q	47.78	1.39	2.43	0.86	<5	70.0	<5
R	46.8	1.30	2.48	0.834	1.61	70.6	2.78
S	50.6	1.60	2.50	1.00	1.80	83.50	3.10
T	51.2	1.31	2.56	0.900	1.71	76.3	2.86
U	54.11	1.315	2.661	0.851	1.645	77.47	2.831
V	52.6	1.39	2.52	0.853	1.63	76.1	2.86
W	51.3	1.40	2.72	0.94	1.74	84.1	4.21
X	54.89	1.56	2.54	0.94	1.76	81.64	3.19
Y						77	

All data in µg/L

### Measurement Uncertainties Sample M161B

	Aluminium ±	Arsenic ±	Lead ±	Cadmium ±	Chromium ±	Iron ±	Copper ±
Target value	0.3	0.01	0.02	0.01	0.02	0.3	0.03
IFA result	2.5	0.15	0.08	0.06	0.07	5.0	0.18
A			0.28				
B							
C	5.4000	0.18000	0.22400	0.0736	0.20400	19.5000	0.2400
D	8.39	0.21	0.40	0.129	0.28	12.5	0.44
E	6.05	0.10	0.32	0.15	0.18	8.29	0.41
F	14	1	1	0.15	1	30	1
G	0.628	0.0619	0.0973	0.0209	0.111	0.877	0.0946
H	5.7		0.267			7.9	
I	8.59		0.52	0.06		6.15	
J	4.83	0.204	0.237	0.082	0.168	7.4	0.276
K	6.0	0.37	0.63	0.10	0.16	14	0.44
L	11.3	0.41	0.60	0.214	0.48	16.6	0.6
M	10					13	
N	8.5	0.21	0.31	0.18	0.32	8.4	0.41
O	7.7	0.20	0.40	0.13		7.3	
P	6.2	0.24	0.31	0.108	0.33	13.8	0.33
Q	0.86	0.23	0.07	0.05		0.8	
R	5.2	0.073	0.26	0.067	0.23	7.8	0.15
S							
T	12.8	0.4	0.64	0.25	0.52	22.9	0.72
U	5.4	0.13	0.27	0.085	0.17	7.7	0.28
V	0.92	0.032	0.031	0.023	0.040	0.38	0.026
W	6.6	0.26	0.33	0.12	0.32	8.5	0.55
X	6.04	0.11	0.32	0.14	0.18	8.31	0.41
Y						6	

All data in  $\mu\text{g/L}$

## Results Sample M161B

	Manganese	Nickel	Mercury	Selenium	Uranium	Zinc
Target value	8.22	2.78	1.51	2.90	2.08	14.0
IFA result	8.06	2.84	1.57	3.00	2.07	15.2
A						
B	7.56	<3	1.73	3.16	1.83	16.6
C	8.000	2.80000	1.512	3.2000	2.0900	14.0000
D	8.72	2.90	1.48	3.10	2.23	12.8
E	8.95	3.00				16.89
F	35.0	2.85	1.31			<20
G	<10.0	2.62	1.42	2.89	2.02	14.2
H	8.9	<5.0	1.36	2.51	2.03	<15.0
I	8.3	2.67		<5.0		14.8
J	8.0	2.70	1.40	2.76	1.99	12.2
K	7.6	2.35	1.02	2.96		12.3
L	7.48	2.43	1.65	2.80	1.95	12.7
M	<10					
N	8.27	2.85	1.45	3.00	2.05	13.0
O	8.21	2.68	1.56	3.21		<50
P	8.35	2.66	1.29	2.98	2.07	13.9
Q	8.07	2.56	1.00	2.82	2.03	12.98
R	7.91	2.75	1.51	2.78	2.07	12.4
S	8.94	2.90	1.51	3.30	2.00	15.50
T	8.30	2.74	1.49	2.78	1.95	13.6
U	7.996	2.716	1.420	2.844	2.013	13.07
V	7.87	2.72	1.38	3.02	1.91	13.4
W	8.0	2.18	1.56	<2.0	2.05	15.0
X	8.94	3.00				16.68
Y	<50					

All data in µg/L

### Measurement Uncertainties Sample M161B

	Manganese ±	Nickel ±	Mercury ±	Selenium ±	Uranium ±	Zinc ±
Target value	0.06	0.03	0.03	0.03	0.02	0.5
IFA result	0.56	0.14	0.30	0.36	0.23	2.0
A						
B						
C	0.8000	0.28000	0.227	0.48000	0.10500	1.4000
D	1.31	0.44	0.22	0.46	0.33	1.91
E	0.91	0.19				1.81
F	15	1	0.15			
G		0.157	0.0260	0.120	0.0641	0.271
H	0.89		0.24	0.251	0.203	
I	0.78	0.33				2.07
J	0.80	0.27	0.14	0.414	0.2	1.22
K	1.0	0.20	0.19	0.41		2.3
L	1.80	0.73	0.50			3.05
M						
N	0.67	0.28	0.26	0.49	0.17	1.6
O	1.23	0.40	0.23	0.48		
P	1.25	0.61	0.15	1.01	0.21	2.2
Q	0.27	0.12	0.01	0.16	0.3	0.4
R	0.43	0.21	0.23	0.33	0.22	0.77
S						
T	2.5	0.69	0.45	1.12	0.59	3.4
U	0.8	0.27	0.14	0.28	0.2	1.3
V	0.072	0.015	0.026	0.26	0.021	0.058
W	1.1	0.45	0.22		0.21	2.1
X	0.91	0.19				1.79
Y						

All data in  $\mu\text{g/L}$

**z-Scores Sample M161A**

	Aluminium	Arsenic	Lead	Cadmium	Chromium	Iron	Copper
A			1.46				
B	0.75				-0.44	1.54	-0.84
C	0.60	2.11	1.09	0.32	0.63	1.42	0.00
D	2.04	1.86	0.00	-0.36	1.27	0.91	-0.08
E	0.49	2.11	-1.82	0.45	0.51	1.10	0.63
F	6.31		-1.82	2.14	0.63	16.41	-1.46
G	-1.39		0.36	-0.14	-0.22	-0.79	-0.54
H	1.74				-0.48	0.00	-1.46
I	1.64			0.64	0.32	-0.12	0.15
J	-0.94	-1.02	-1.34	-0.91	-0.48	-0.63	-1.38
K	-1.24	0.16	-2.67	-0.86	-1.27	-1.66	-1.92
L	-1.54	0.35	-1.58	-0.91	-1.10	-1.26	-1.54
M	0.99					-0.87	-1.15
N	0.70	0.35	-0.61	-0.59	0.32	1.74	-0.15
O	0.10		0.36	-1.50	0.16	-0.36	
P	0.50	0.98	0.12	0.50	0.32	0.47	-0.69
Q	-0.47	2.69	-0.85	0.32	-0.38	-0.88	-2.31
R	0.00	-0.72	-0.36	-1.00	-0.83	-0.95	-0.92
S	0.10	2.11	-0.12	3.04	1.43	1.58	0.77
T	0.45	-0.43	-0.49	0.82	0.00	0.16	-0.38
U	0.45	-0.10	-0.10	-0.36	-0.14	0.69	-0.57
V	0.25	-0.94	-0.49	-0.18	-0.06	0.16	-0.54
W	0.60		1.09	2.00	0.48	1.93	0.92
X	0.03	1.91	-1.94	0.45	0.60	1.47	0.84
Y							

**z-Scores Sample M161A**

	Manganese	Nickel	Mercury	Selenium	Uranium	Zinc
A						
B	-0.11		1.22		-1.74	0.35
C	0.74	0.38	0.11	0.64	0.10	0.79
D	1.08	0.61	-0.35	0.64	1.16	-0.29
E	1.37	1.14				2.46
F	12.63	3.20	-1.22			-0.67
G	-0.17	-0.84	-0.88	2.55	-0.34	-0.23
H	-0.28				-0.29	-2.07
I	0.00					-0.15
J	-1.08	-0.76	0.44		-1.16	-1.96
K	-1.13	-2.82	-3.66	0.53		-1.43
L	-1.19	-1.75	-0.22	0.11	-1.11	-1.05
M	-0.62					
N	0.45	0.15	-1.11	-0.53	-0.44	-1.05
O	-0.51		-0.33	0.64		-0.47
P	0.23	-0.46	-1.83	0.44	0.00	-0.18
Q	-1.36	0.15	-0.89	-1.60	-0.58	-0.16
R	-0.91	-0.38	-0.28		-1.06	-1.58
S	1.70	1.14	0.00	2.77	0.29	1.23
T	0.17	0.38	-0.29	-0.83	-0.87	-0.12
U	-0.44	-0.53	-0.81	-0.55	-0.84	-0.47
V	-0.74	-0.23	-1.03	0.01	-1.45	-0.76
W	-0.51	-3.66	-0.22		-0.24	0.67
X	1.53	1.45				2.57
Y						

**z-Scores Sample M161B**

	Aluminium	Arsenic	Lead	Cadmium	Chromium	Iron	Copper
A			0.66				
B	0.25			4.41	-1.49	0.32	-0.22
C	0.75	1.50	0.77	0.60	-0.09	-0.16	0.09
D	1.26	0.30	0.06	-0.56	1.76	1.56	-0.17
E	1.02	1.80	-0.77	2.41	0.65	1.13	0.77
F	4.27	-2.60	0.00	1.81	1.49	4.24	-1.68
G	-0.85	-0.50	0.11	-0.08	-0.65	-0.52	0.04
H	1.51		0.06			0.64	
I	1.21		2.05	0.60		-0.16	
J	-0.68	0.10	-1.60	-1.40	-0.28	-0.36	-0.95
K	-1.13	0.30	-1.71	-0.60	-2.78	-1.56	-2.11
L	-1.03	0.10	-1.49	-0.60	-1.11	-1.36	-1.63
M	1.26					-0.96	
N	0.75	0.80	-0.44	0.00	0.09	1.04	-0.13
O	0.05	0.00	-0.06	-0.20		-0.52	
P	0.08	0.60	-0.22	0.14	0.28	0.16	-0.09
Q	-0.81	0.40	-1.27	-0.60		-1.16	
R	-1.06	-0.50	-1.00	-1.12	-0.93	-1.04	-0.86
S	-0.10	2.50	-0.88	2.21	0.84	1.54	0.52
T	0.05	-0.40	-0.55	0.20	0.00	0.10	-0.52
U	0.78	-0.35	0.01	-0.78	-0.60	0.33	-0.64
V	0.40	0.40	-0.77	-0.74	-0.74	0.06	-0.52
W	0.08	0.50	0.33	1.00	0.28	1.66	5.29
X	0.98	2.10	-0.66	1.00	0.46	1.17	0.90
Y						0.24	

**z-Scores Sample M161B**

	Manganese	Nickel	Mercury	Selenium	Uranium	Zinc
A						
B	-1.49		1.32	0.90	-2.15	2.51
C	-0.50	0.10	0.01	1.03	0.09	0.00
D	1.13	0.58	-0.18	0.69	1.29	-1.16
E	1.64	1.06				2.79
F	60.33	0.34	-1.20			
G		-0.77	-0.54	-0.03	-0.52	0.19
H	1.53		-0.90	-1.34	-0.43	
I	0.18	-0.53				0.77
J	-0.50	-0.38	-0.66	-0.48	-0.77	-1.74
K	-1.40	-2.06	-2.95	0.21		-1.64
L	-1.67	-1.68	0.84	-0.34	-1.12	-1.25
M						
N	0.11	0.34	-0.36	0.34	-0.26	-0.97
O	-0.02	-0.48	0.30	1.07		
P	0.29	-0.58	-1.32	0.28	-0.09	-0.10
Q	-0.34	-1.06	-3.07	-0.28	-0.43	-0.98
R	-0.70	-0.14	0.00	-0.41	-0.09	-1.54
S	1.62	0.58	0.00	1.38	-0.69	1.45
T	0.18	-0.19	-0.12	-0.41	-1.12	-0.39
U	-0.50	-0.31	-0.54	-0.19	-0.58	-0.90
V	-0.79	-0.29	-0.78	0.41	-1.46	-0.58
W	-0.50	-2.88	0.30		-0.26	0.97
X	1.62	1.06				2.59
Y						

## Sample M161A

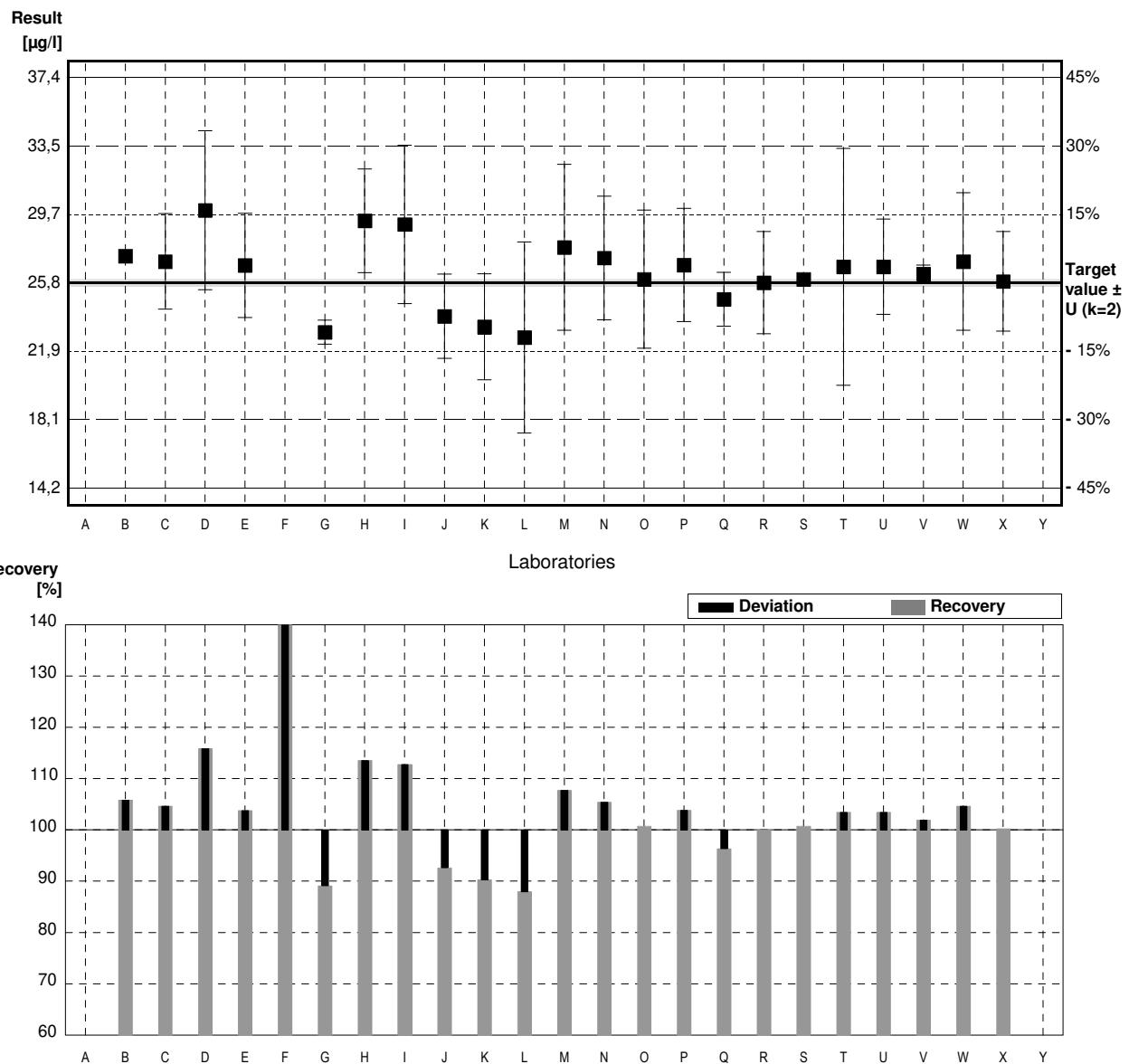
### Parameter Aluminium

Target value  $\pm U$  ( $k=2$ )    25,8  $\mu\text{g/l}$      $\pm$     0,2  $\mu\text{g/l}$   
 IFA result  $\pm U$  ( $k=2$ )    26,0  $\mu\text{g/l}$      $\pm$     1,3  $\mu\text{g/l}$

Stability test                           $\mu\text{g/l}$

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A			$\mu\text{g/l}$		
B	27,3		$\mu\text{g/l}$	106%	0,75
C	27,000	2,70000	$\mu\text{g/l}$	105%	0,60
D	29,9	4,49	$\mu\text{g/l}$	116%	2,04
E	26,78	2,95	$\mu\text{g/l}$	104%	0,49
F	38,5 *	9	$\mu\text{g/l}$	149%	6,31
G	23,0	0,686	$\mu\text{g/l}$	89%	-1,39
H	29,3	2,93	$\mu\text{g/l}$	114%	1,74
I	29,1	4,48	$\mu\text{g/l}$	113%	1,64
J	23,9	2,39	$\mu\text{g/l}$	93%	-0,94
K	23,3	3,0	$\mu\text{g/l}$	90%	-1,24
L	22,7 *	5,4	$\mu\text{g/l}$	88%	-1,54
M	27,8	4,7	$\mu\text{g/l}$	108%	0,99
N	27,2	3,5	$\mu\text{g/l}$	105%	0,70
O	26,0	3,9	$\mu\text{g/l}$	101%	0,10
P	26,8	3,2	$\mu\text{g/l}$	104%	0,50
Q	24,86	1,53	$\mu\text{g/l}$	96%	-0,47
R	25,8	2,9	$\mu\text{g/l}$	100%	0,00
S	26,0		$\mu\text{g/l}$	101%	0,10
T	26,7	6,7	$\mu\text{g/l}$	103%	0,45
U	26,7	2,7	$\mu\text{g/l}$	103%	0,45
V	26,3	0,49	$\mu\text{g/l}$	102%	0,25
W	27,0	3,9	$\mu\text{g/l}$	105%	0,60
X	25,87	2,82	$\mu\text{g/l}$	100%	0,03
Y			$\mu\text{g/l}$		

	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	26,9 $\pm$ 1,9	26,5 $\pm$ 1,1	$\mu\text{g/l}$
Recov. $\pm$ CI(99%)	104,1 $\pm$ 7,2	102,7 $\pm$ 4,3	%
SD between labs	3,2	1,8	$\mu\text{g/l}$
RSD between labs	11,7	6,7	%
n for calculation	23	21	



## Sample M161B

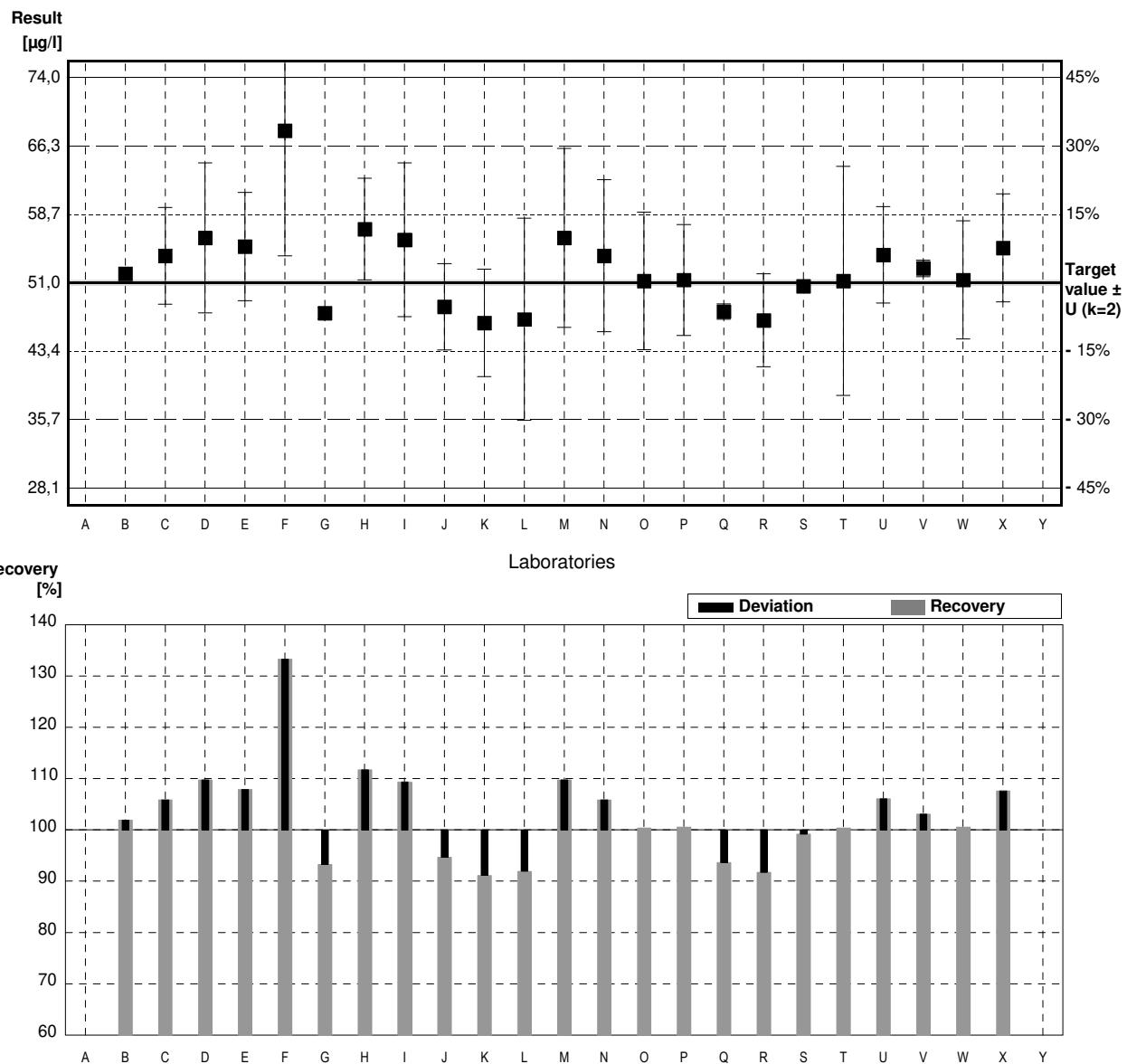
### Parameter Aluminium

Target value  $\pm U$  ( $k=2$ )    51,0  $\mu\text{g/l}$      $\pm$     0,3  $\mu\text{g/l}$   
 IFA result  $\pm U$  ( $k=2$ )    50,2  $\mu\text{g/l}$      $\pm$     2,5  $\mu\text{g/l}$

Stability test                           $\mu\text{g/l}$

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A			$\mu\text{g/l}$		
B	52,0		$\mu\text{g/l}$	102%	0,25
C	54,000	5,4000	$\mu\text{g/l}$	106%	0,75
D	56,0	8,39	$\mu\text{g/l}$	110%	1,26
E	55,04	6,05	$\mu\text{g/l}$	108%	1,02
F	68 *	14	$\mu\text{g/l}$	133%	4,27
G	47,6	0,628	$\mu\text{g/l}$	93%	-0,85
H	57	5,7	$\mu\text{g/l}$	112%	1,51
I	55,8	8,59	$\mu\text{g/l}$	109%	1,21
J	48,3	4,83	$\mu\text{g/l}$	95%	-0,68
K	46,5	6,0	$\mu\text{g/l}$	91%	-1,13
L	46,9	11,3	$\mu\text{g/l}$	92%	-1,03
M	56	10	$\mu\text{g/l}$	110%	1,26
N	54	8,5	$\mu\text{g/l}$	106%	0,75
O	51,2	7,7	$\mu\text{g/l}$	100%	0,05
P	51,3	6,2	$\mu\text{g/l}$	101%	0,08
Q	47,78	0,86	$\mu\text{g/l}$	94%	-0,81
R	46,8	5,2	$\mu\text{g/l}$	92%	-1,06
S	50,6		$\mu\text{g/l}$	99%	-0,10
T	51,2	12,8	$\mu\text{g/l}$	100%	0,05
U	54,11	5,4	$\mu\text{g/l}$	106%	0,78
V	52,6	0,92	$\mu\text{g/l}$	103%	0,40
W	51,3	6,6	$\mu\text{g/l}$	101%	0,08
X	54,89	6,04	$\mu\text{g/l}$	108%	0,98
Y			$\mu\text{g/l}$		

	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	52,6 $\pm$ 2,8	51,9 $\pm$ 2,0	$\mu\text{g/l}$
Recov. $\pm$ CI(99%)	103,1 $\pm$ 5,4	101,7 $\pm$ 4,0	%
SD between labs	4,7	3,4	$\mu\text{g/l}$
RSD between labs	9,0	6,5	%
n for calculation	23	22	



## Sample M161A

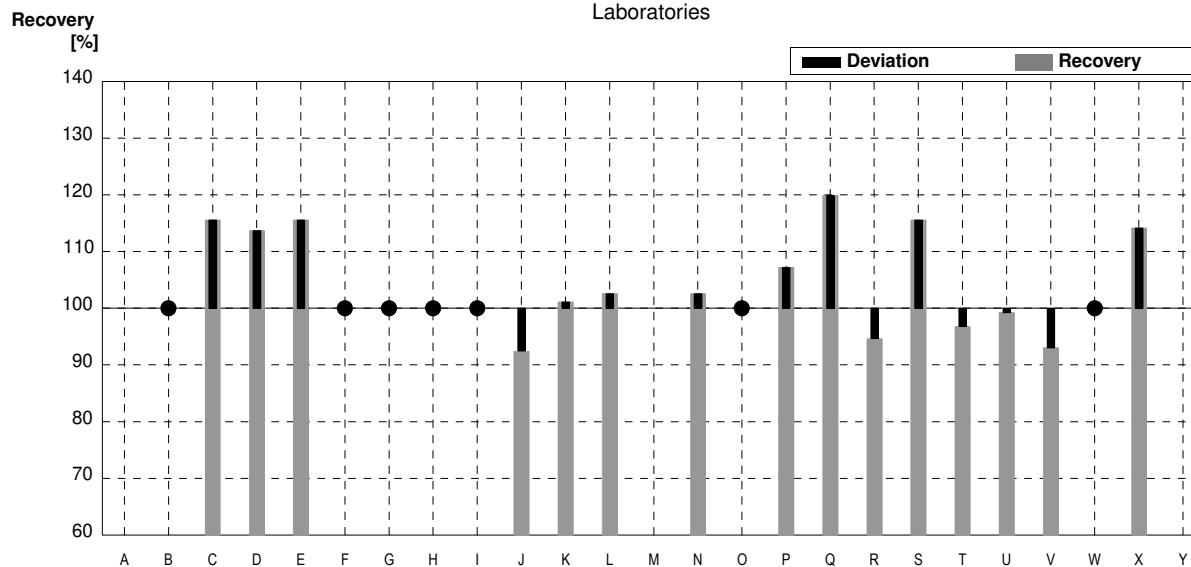
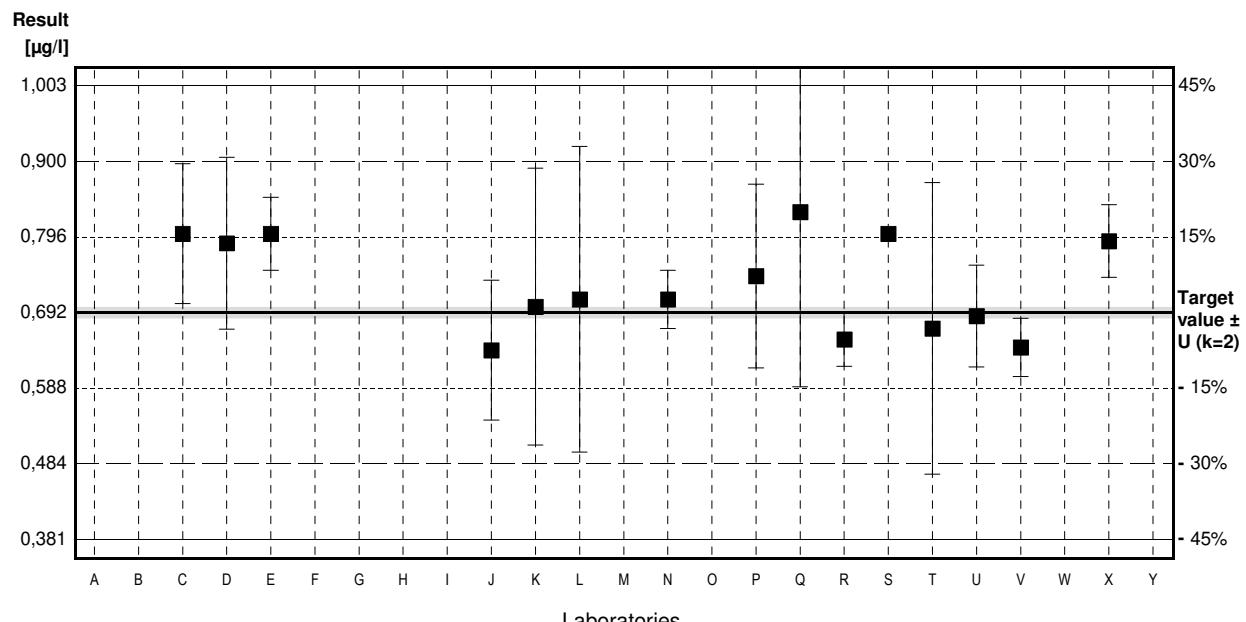
### Parameter Arsenic

Target value  $\pm U$  ( $k=2$ ) 0,692 µg/l  $\pm$  0,007 µg/l  
 IFA result  $\pm U$  ( $k=2$ ) 0,714 µg/l  $\pm$  0,079 µg/l

Stability test µg/l

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A			µg/l		
B	<3		µg/l	•	
C	0,80000	0,09600	µg/l	116%	2,11
D	0,787	0,118	µg/l	114%	1,86
E	0,80	0,05	µg/l	116%	2,11
F	<1		µg/l	•	
G	<1,00		µg/l	•	
H	<2,00		µg/l	•	
I	<2		µg/l	•	
J	0,64	0,096	µg/l	92%	-1,02
K	0,70	0,19	µg/l	101%	0,16
L	0,71	0,21	µg/l	103%	0,35
M			µg/l		
N	0,71	0,04	µg/l	103%	0,35
O	<1		µg/l	•	
P	0,742	0,126	µg/l	107%	0,98
Q	0,83	0,24	µg/l	120%	2,69
R	0,655	0,037	µg/l	95%	-0,72
S	0,80		µg/l	116%	2,11
T	0,670	0,2	µg/l	97%	-0,43
U	0,687	0,07	µg/l	99%	-0,10
V	0,644	0,040	µg/l	93%	-0,94
W	<1,0		µg/l	•	
X	0,79	0,05	µg/l	114%	1,91
Y			µg/l		

	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	0,731 $\pm$ 0,050	0,731 $\pm$ 0,050	µg/l
Recov. $\pm$ CI(99%)	105,6 $\pm$ 7,3	105,6 $\pm$ 7,3	%
SD between labs	0,065	0,065	µg/l
RSD between labs	9,0	9,0	%
n for calculation	15	15	



## Sample M161B

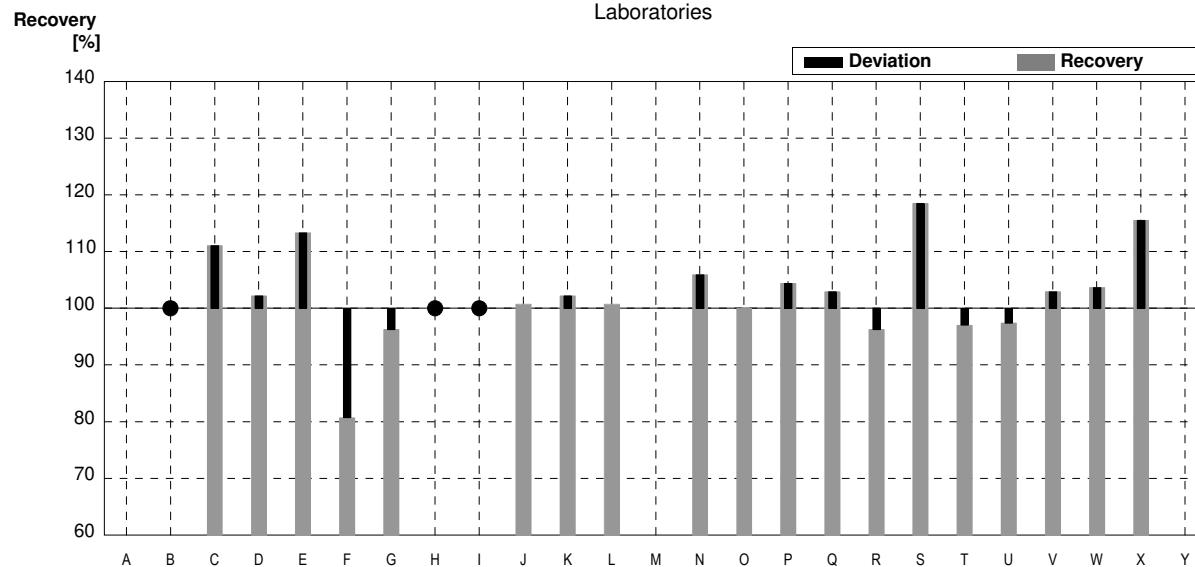
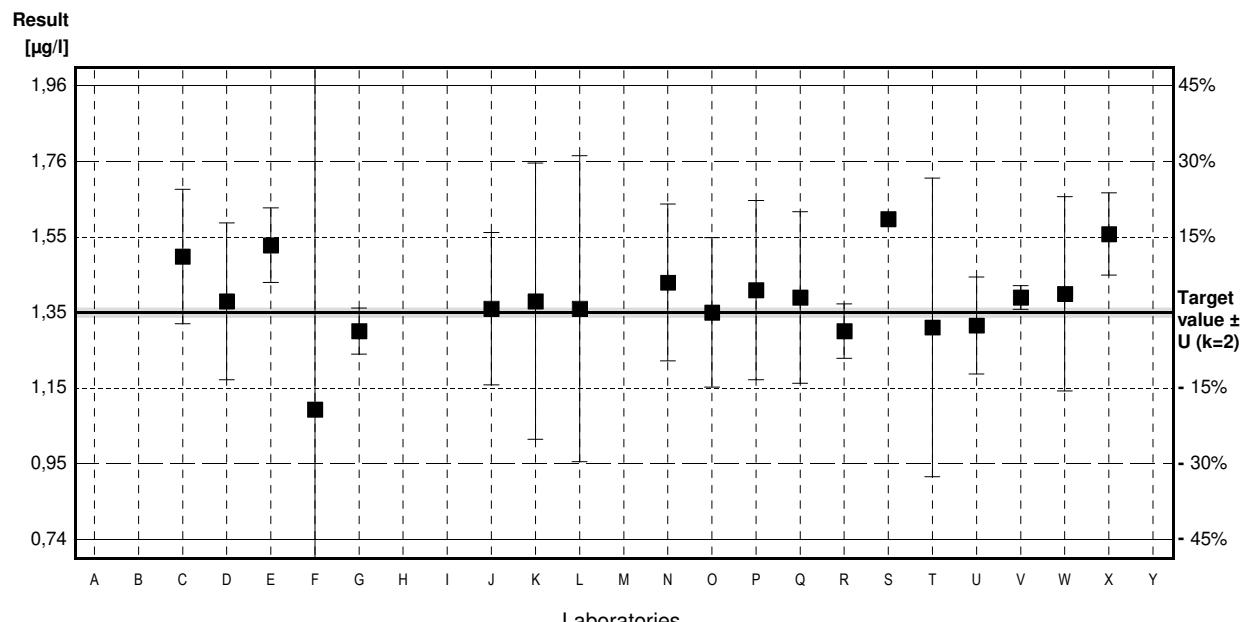
### Parameter Arsenic

Target value  $\pm U$  ( $k=2$ ) 1,35 µg/l  $\pm$  0,01 µg/l  
 IFA result  $\pm U$  ( $k=2$ ) 1,33 µg/l  $\pm$  0,15 µg/l

Stability test µg/l

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A			µg/l		
B	<3		µg/l	*	
C	1,50000	0,18000	µg/l	111%	1,50
D	1,38	0,21	µg/l	102%	0,30
E	1,53	0,10	µg/l	113%	1,80
F	1,09 *	1	µg/l	81%	-2,60
G	1,30	0,0619	µg/l	96%	-0,50
H	<2,00		µg/l	*	
I	<2		µg/l	*	
J	1,36	0,204	µg/l	101%	0,10
K	1,38	0,37	µg/l	102%	0,30
L	1,36	0,41	µg/l	101%	0,10
M			µg/l		
N	1,43	0,21	µg/l	106%	0,80
O	1,35	0,20	µg/l	100%	0,00
P	1,41	0,24	µg/l	104%	0,60
Q	1,39	0,23	µg/l	103%	0,40
R	1,30	0,073	µg/l	96%	-0,50
S	1,60		µg/l	119%	2,50
T	1,31	0,4	µg/l	97%	-0,40
U	1,315	0,13	µg/l	97%	-0,35
V	1,39	0,032	µg/l	103%	0,40
W	1,40	0,26	µg/l	104%	0,50
X	1,56	0,11	µg/l	116%	2,10
Y			µg/l		

	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	1,39 $\pm$ 0,07	1,40 $\pm$ 0,06	µg/l
Recov. $\pm$ CI(99%)	102,7 $\pm$ 5,5	104,0 $\pm$ 4,5	%
SD between labs	0,11	0,09	µg/l
RSD between labs	8,1	6,4	%
n for calculation	19	18	



## Sample M161A

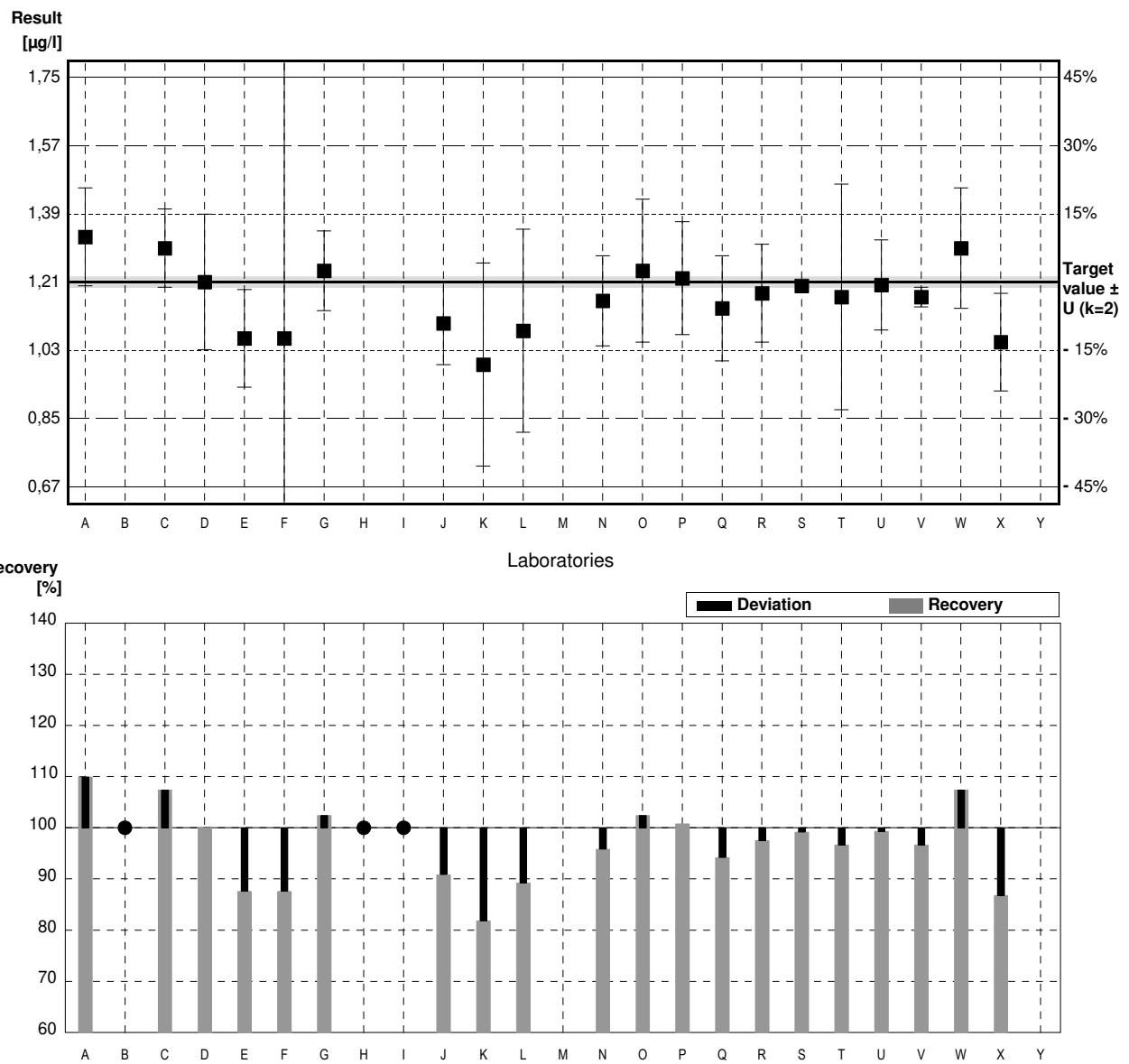
### Parameter Lead

Target value  $\pm U$  ( $k=2$ ) 1,21  $\mu\text{g/l}$   $\pm$  0,01  $\mu\text{g/l}$   
 IFA result  $\pm U$  ( $k=2$ ) 1,21  $\mu\text{g/l}$   $\pm$  0,04  $\mu\text{g/l}$

### Stability test $\mu\text{g/l}$

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A	1,33	0,13	$\mu\text{g/l}$	110%	1,46
B	<3		$\mu\text{g/l}$	•	
C	1,30000	0,10400	$\mu\text{g/l}$	107%	1,09
D	1,21	0,18	$\mu\text{g/l}$	100%	0,00
E	1,06	0,13	$\mu\text{g/l}$	88%	-1,82
F	1,06	1	$\mu\text{g/l}$	88%	-1,82
G	1,24	0,106	$\mu\text{g/l}$	102%	0,36
H	<2,00		$\mu\text{g/l}$	•	
I	<2		$\mu\text{g/l}$	•	
J	1,10	0,11	$\mu\text{g/l}$	91%	-1,34
K	0,99	0,27	$\mu\text{g/l}$	82%	-2,67
L	1,08	0,27	$\mu\text{g/l}$	89%	-1,58
M			$\mu\text{g/l}$		
N	1,16	0,12	$\mu\text{g/l}$	96%	-0,61
O	1,24	0,19	$\mu\text{g/l}$	102%	0,36
P	1,22	0,15	$\mu\text{g/l}$	101%	0,12
Q	1,14	0,14	$\mu\text{g/l}$	94%	-0,85
R	1,18	0,13	$\mu\text{g/l}$	98%	-0,36
S	1,20		$\mu\text{g/l}$	99%	-0,12
T	1,17	0,3	$\mu\text{g/l}$	97%	-0,49
U	1,202	0,12	$\mu\text{g/l}$	99%	-0,10
V	1,17	0,026	$\mu\text{g/l}$	97%	-0,49
W	1,30	0,16	$\mu\text{g/l}$	107%	1,09
X	1,05	0,13	$\mu\text{g/l}$	87%	-1,94
Y			$\mu\text{g/l}$		

	All results	Outliers excl.	Unit
Mean $\pm CI(99\%)$	$1,17 \pm 0,06$	$1,17 \pm 0,06$	$\mu\text{g/l}$
Recov. $\pm CI(99\%)$	$96,7 \pm 4,9$	$96,7 \pm 4,9$	%
SD between labs	0,09	0,09	$\mu\text{g/l}$
RSD between labs	7,9	7,9	%
n for calculation	20	20	



## Sample M161B

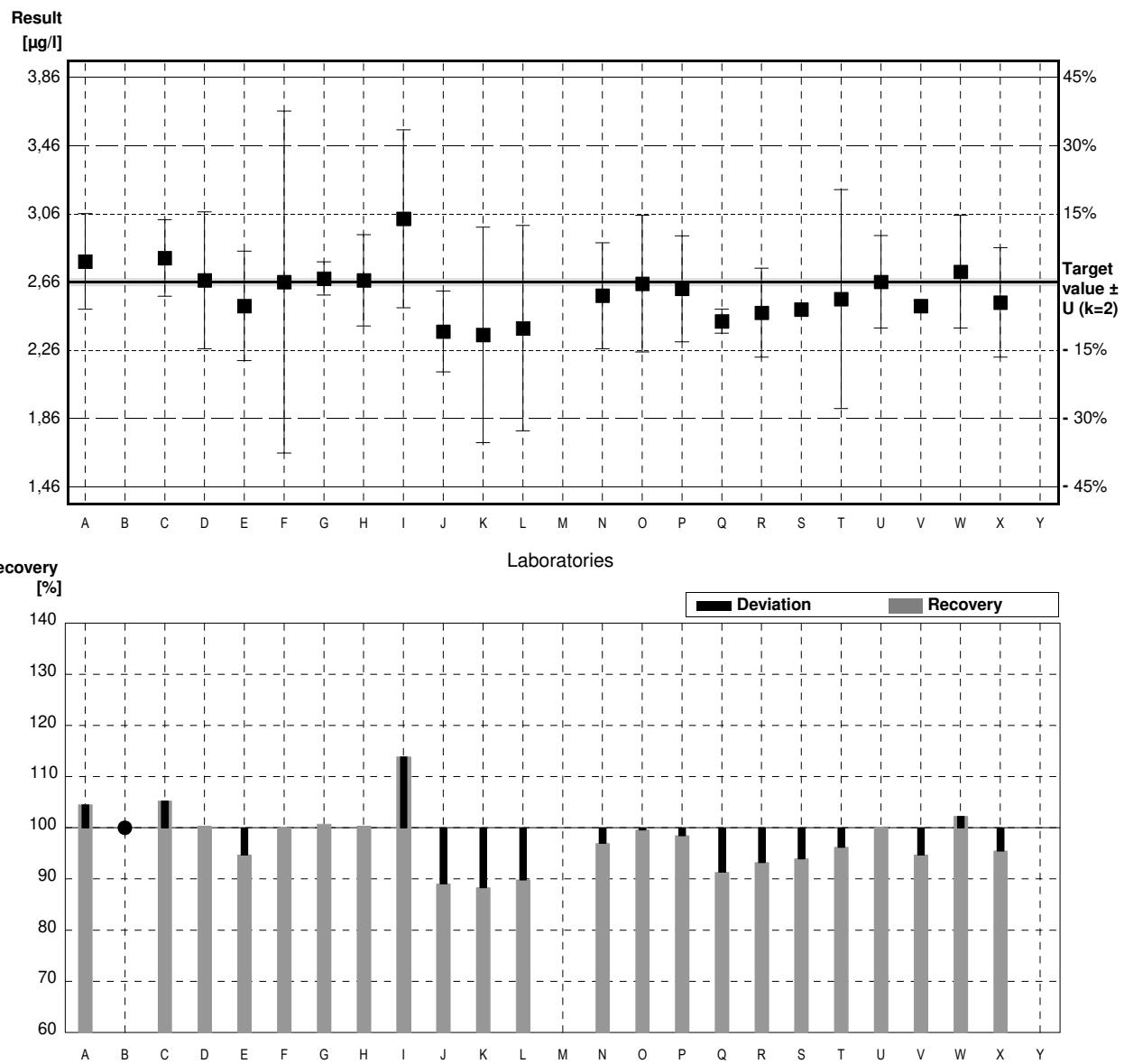
### Parameter Lead

Target value  $\pm U$  ( $k=2$ ) 2,66  $\mu\text{g/l}$   $\pm$  0,02  $\mu\text{g/l}$   
 IFA result  $\pm U$  ( $k=2$ ) 2,62  $\mu\text{g/l}$   $\pm$  0,08  $\mu\text{g/l}$

Stability test  $\mu\text{g/l}$

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A	2,78	0,28	$\mu\text{g/l}$	105%	0,66
B	<3		$\mu\text{g/l}$	*	
C	2,80000	0,22400	$\mu\text{g/l}$	105%	0,77
D	2,67	0,40	$\mu\text{g/l}$	100%	0,06
E	2,52	0,32	$\mu\text{g/l}$	95%	-0,77
F	2,66	1	$\mu\text{g/l}$	100%	0,00
G	2,68	0,0973	$\mu\text{g/l}$	101%	0,11
H	2,67	0,267	$\mu\text{g/l}$	100%	0,06
I	3,03 *	0,52	$\mu\text{g/l}$	114%	2,05
J	2,37	0,237	$\mu\text{g/l}$	89%	-1,60
K	2,35	0,63	$\mu\text{g/l}$	88%	-1,71
L	2,39	0,60	$\mu\text{g/l}$	90%	-1,49
M			$\mu\text{g/l}$		
N	2,58	0,31	$\mu\text{g/l}$	97%	-0,44
O	2,65	0,40	$\mu\text{g/l}$	100%	-0,06
P	2,62	0,31	$\mu\text{g/l}$	98%	-0,22
Q	2,43	0,07	$\mu\text{g/l}$	91%	-1,27
R	2,48	0,26	$\mu\text{g/l}$	93%	-1,00
S	2,50		$\mu\text{g/l}$	94%	-0,88
T	2,56	0,64	$\mu\text{g/l}$	96%	-0,55
U	2,661	0,27	$\mu\text{g/l}$	100%	0,01
V	2,52	0,031	$\mu\text{g/l}$	95%	-0,77
W	2,72	0,33	$\mu\text{g/l}$	102%	0,33
X	2,54	0,32	$\mu\text{g/l}$	95%	-0,66
Y			$\mu\text{g/l}$		

	All results	Outliers excl.	Unit
Mean $\pm CI(99\%)$	2,60 $\pm 0,10$	2,58 $\pm 0,08$	$\mu\text{g/l}$
Recov. $\pm CI(99\%)$	97,7 $\pm 3,6$	96,9 $\pm 3,0$	%
SD between labs	0,16	0,13	$\mu\text{g/l}$
RSD between labs	6,1	5,0	%
n for calculation	22	21	



## Sample M161A

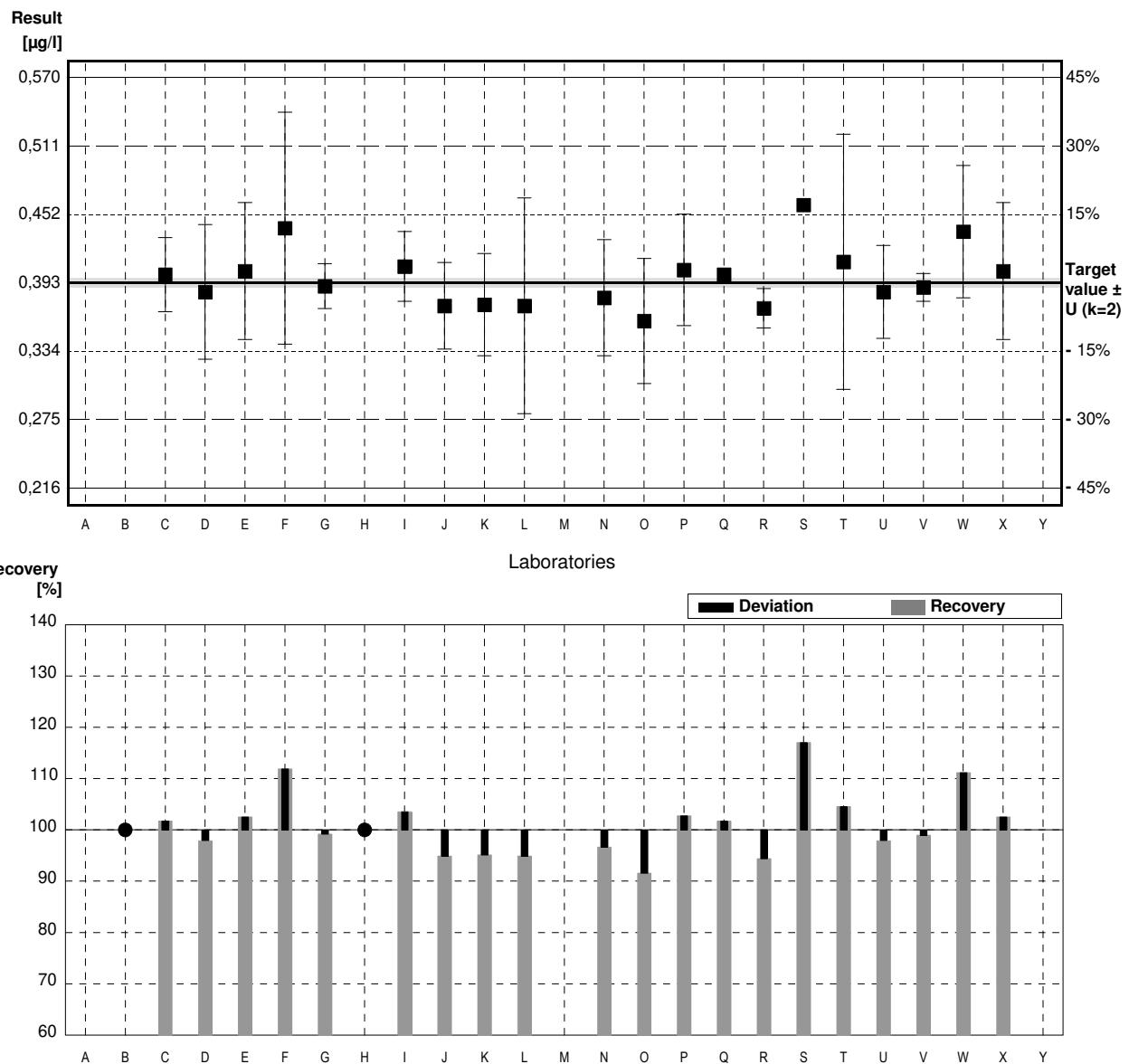
### Parameter Cadmium

Target value  $\pm U$  ( $k=2$ )    0,393 µg/l     $\pm$     0,004 µg/l  
 IFA result  $\pm U$  ( $k=2$ )    0,431 µg/l     $\pm$     0,026 µg/l

Stability test                                  µg/l

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A			µg/l		
B	<1		µg/l	*	
C	0,40000	0,03200	µg/l	102%	0,32
D	0,385	0,058	µg/l	98%	-0,36
E	0,403	0,059	µg/l	103%	0,45
F	0,440	0,1	µg/l	112%	2,14
G	0,390	0,0194	µg/l	99%	-0,14
H	<1,00		µg/l	*	
I	0,407	0,03	µg/l	104%	0,64
J	0,373	0,0373	µg/l	95%	-0,91
K	0,374	0,044	µg/l	95%	-0,86
L	0,373	0,093	µg/l	95%	-0,91
M			µg/l		
N	0,380	0,05	µg/l	97%	-0,59
O	0,360	0,054	µg/l	92%	-1,50
P	0,404	0,048	µg/l	103%	0,50
Q	0,400		µg/l	102%	0,32
R	0,371	0,017	µg/l	94%	-1,00
S	0,460 *		µg/l	117%	3,04
T	0,411	0,11	µg/l	105%	0,82
U	0,385	0,04	µg/l	98%	-0,36
V	0,389	0,012	µg/l	99%	-0,18
W	0,437	0,057	µg/l	111%	2,00
X	0,403	0,059	µg/l	103%	0,45
Y			µg/l		

	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	0,397 $\pm$ 0,016	0,394 $\pm$ 0,014	µg/l
Recov. $\pm$ CI(99%)	101,1 $\pm$ 4,1	100,2 $\pm$ 3,6	%
SD between labs	0,025	0,021	µg/l
RSD between labs	6,4	5,4	%
n for calculation	20	19	



## Sample M161B

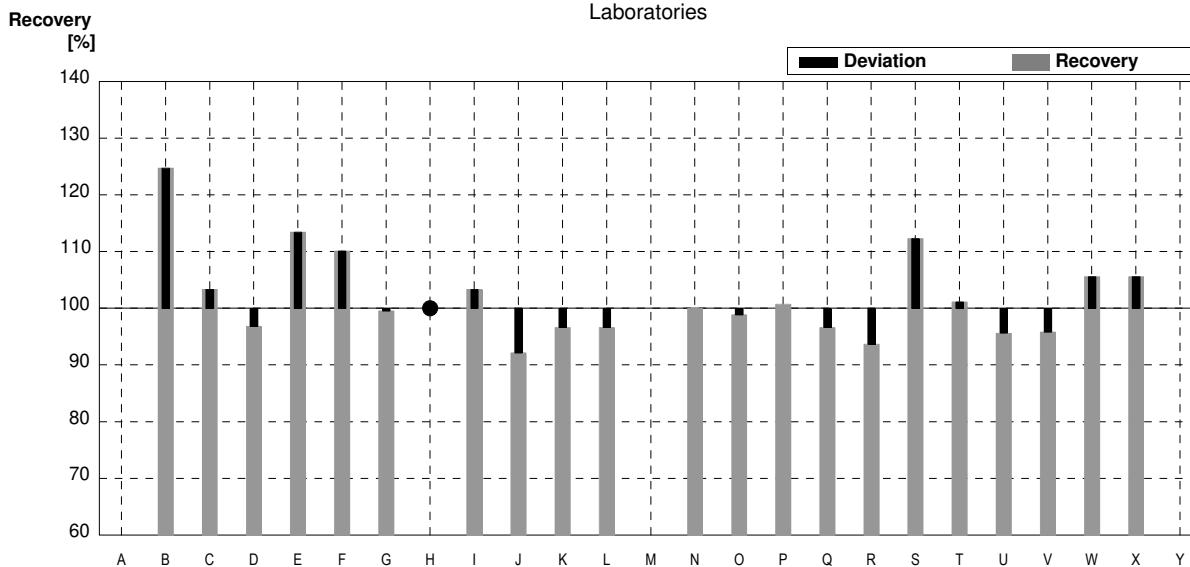
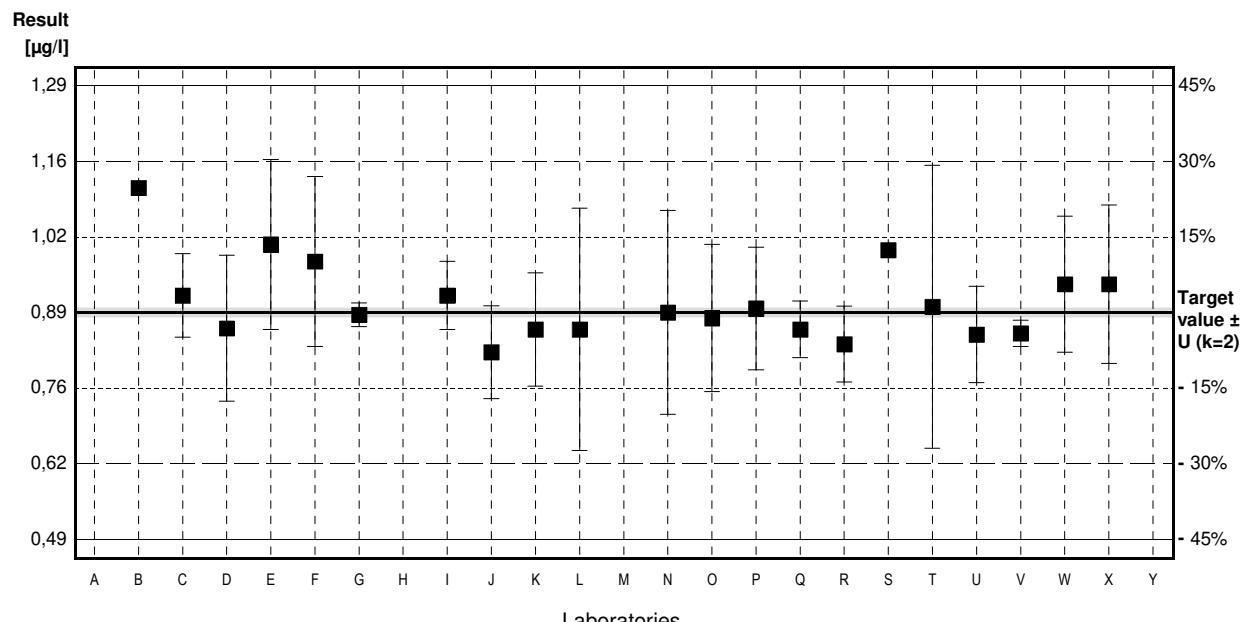
### Parameter Cadmium

Target value  $\pm U$  ( $k=2$ )    0,89 µg/l     $\pm$     0,01 µg/l  
 IFA result  $\pm U$  ( $k=2$ )    0,95 µg/l     $\pm$     0,06 µg/l

Stability test                          µg/l

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A			µg/l		
B	1,11 *		µg/l	125%	4,41
C	0,92000	0,0736	µg/l	103%	0,60
D	0,862	0,129	µg/l	97%	-0,56
E	1,01	0,15	µg/l	113%	2,41
F	0,98	0,15	µg/l	110%	1,81
G	0,886	0,0209	µg/l	100%	-0,08
H	<1,00		µg/l	*	
I	0,920	0,06	µg/l	103%	0,60
J	0,82	0,082	µg/l	92%	-1,40
K	0,86	0,10	µg/l	97%	-0,60
L	0,86	0,214	µg/l	97%	-0,60
M			µg/l		
N	0,89	0,18	µg/l	100%	0,00
O	0,88	0,13	µg/l	99%	-0,20
P	0,897	0,108	µg/l	101%	0,14
Q	0,86	0,05	µg/l	97%	-0,60
R	0,834	0,067	µg/l	94%	-1,12
S	1,00		µg/l	112%	2,21
T	0,900	0,25	µg/l	101%	0,20
U	0,851	0,085	µg/l	96%	-0,78
V	0,853	0,023	µg/l	96%	-0,74
W	0,94	0,12	µg/l	106%	1,00
X	0,94	0,14	µg/l	106%	1,00
Y			µg/l		

	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	$0,91 \pm 0,04$	$0,90 \pm 0,03$	µg/l
Recov. $\pm$ CI(99%)	$102,0 \pm 4,9$	$100,9 \pm 3,9$	%
SD between labs	0,07	0,05	µg/l
RSD between labs	7,7	6,0	%
n for calculation	21	20	



## Sample M161A

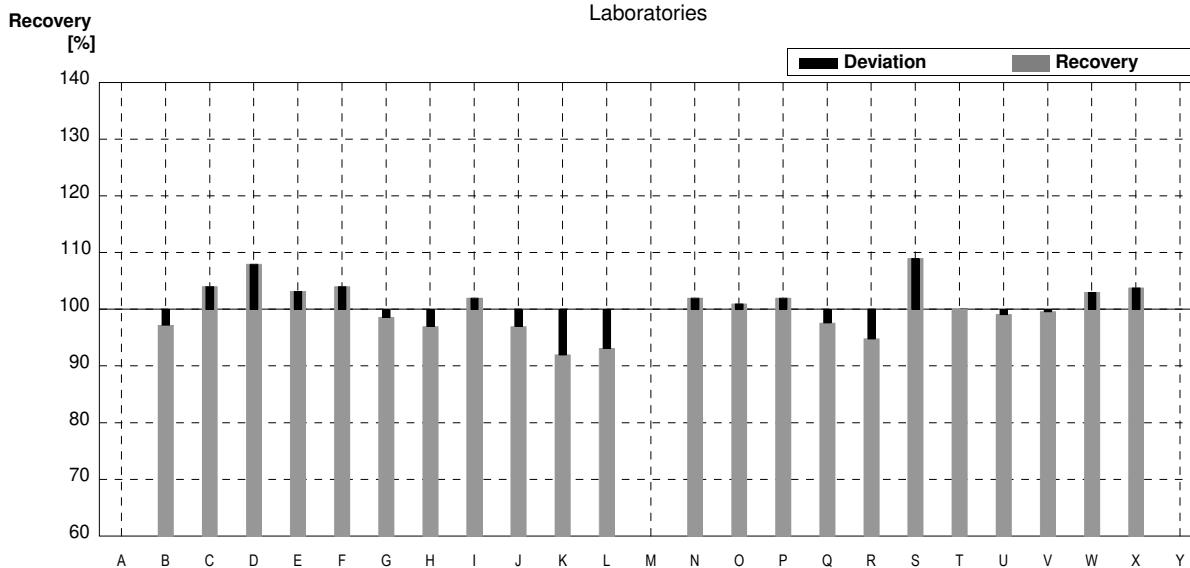
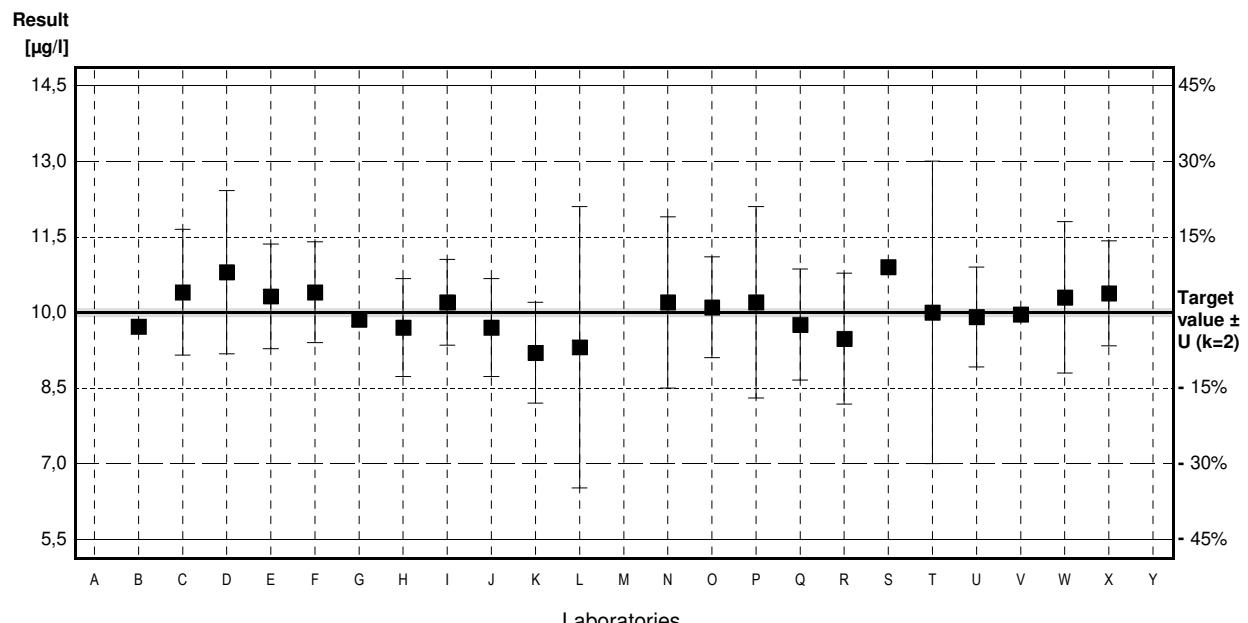
### Parameter Chromium

Target value  $\pm U$  ( $k=2$ ) 10,0  $\mu\text{g/l}$   $\pm$  0,1  $\mu\text{g/l}$   
 IFA result  $\pm U$  ( $k=2$ ) 10,2  $\mu\text{g/l}$   $\pm$  0,3  $\mu\text{g/l}$

### Stability test $\mu\text{g/l}$

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A			$\mu\text{g/l}$		
B	9,72		$\mu\text{g/l}$	97%	-0,44
C	10,4000	1,24800	$\mu\text{g/l}$	104%	0,63
D	10,8	1,62	$\mu\text{g/l}$	108%	1,27
E	10,32	1,04	$\mu\text{g/l}$	103%	0,51
F	10,4	1	$\mu\text{g/l}$	104%	0,63
G	9,86	0,129	$\mu\text{g/l}$	99%	-0,22
H	9,7	0,97	$\mu\text{g/l}$	97%	-0,48
I	10,2	0,85	$\mu\text{g/l}$	102%	0,32
J	9,7	0,97	$\mu\text{g/l}$	97%	-0,48
K	9,2	1,0	$\mu\text{g/l}$	92%	-1,27
L	9,31	2,79	$\mu\text{g/l}$	93%	-1,10
M			$\mu\text{g/l}$		
N	10,2	1,7	$\mu\text{g/l}$	102%	0,32
O	10,1	1,0	$\mu\text{g/l}$	101%	0,16
P	10,2	1,9	$\mu\text{g/l}$	102%	0,32
Q	9,76	1,1	$\mu\text{g/l}$	98%	-0,38
R	9,48	1,3	$\mu\text{g/l}$	95%	-0,83
S	10,90		$\mu\text{g/l}$	109%	1,43
T	10,0	3,0	$\mu\text{g/l}$	100%	0,00
U	9,91	0,99	$\mu\text{g/l}$	99%	-0,14
V	9,96	0,046	$\mu\text{g/l}$	100%	-0,06
W	10,3	1,5	$\mu\text{g/l}$	103%	0,48
X	10,38	1,04	$\mu\text{g/l}$	104%	0,60
Y			$\mu\text{g/l}$		

	All results	Outliers excl.	Unit
Mean $\pm CI(99\%)$	10,0 $\pm$ 0,3	10,0 $\pm$ 0,3	$\mu\text{g/l}$
Recov. $\pm CI(99\%)$	100,4 $\pm$ 2,6	100,4 $\pm$ 2,6	%
SD between labs	0,4	0,4	$\mu\text{g/l}$
RSD between labs	4,3	4,3	%
n for calculation	22	22	



## Sample M161B

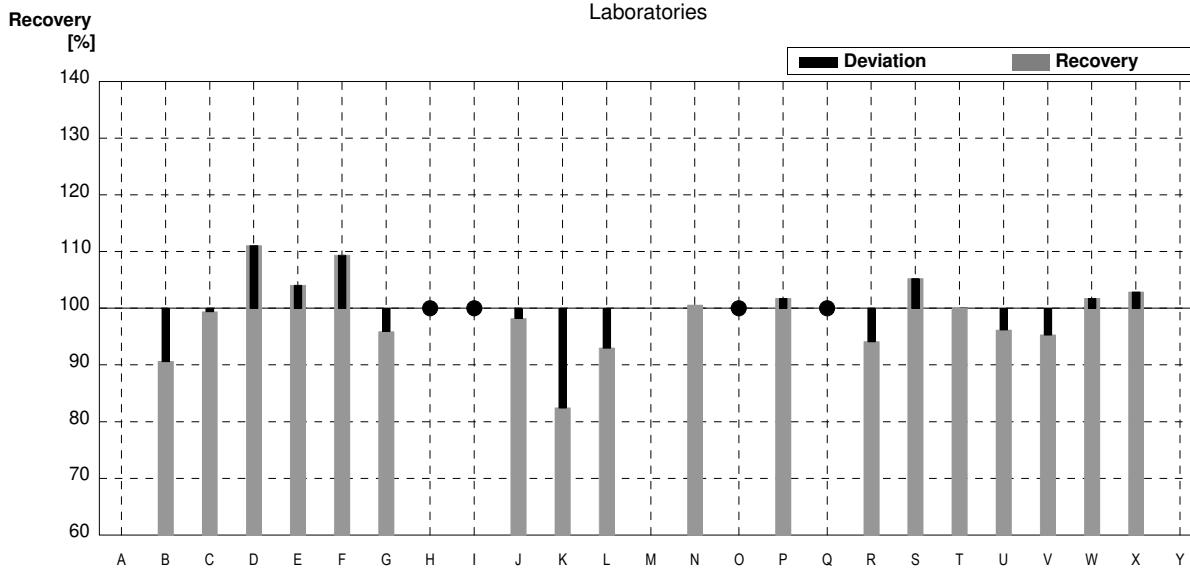
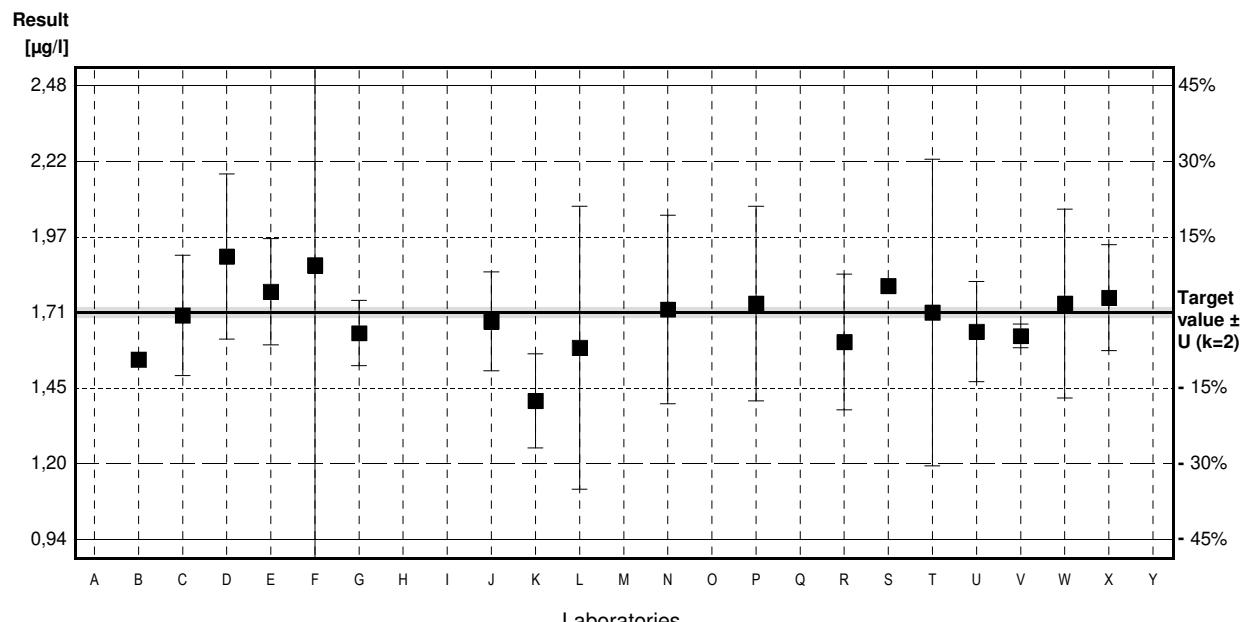
### Parameter Chromium

Target value  $\pm U$  ( $k=2$ ) 1,71  $\mu\text{g/l}$   $\pm$  0,02  $\mu\text{g/l}$   
 IFA result  $\pm U$  ( $k=2$ ) 1,76  $\mu\text{g/l}$   $\pm$  0,07  $\mu\text{g/l}$

Stability test  $\mu\text{g/l}$

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A			$\mu\text{g/l}$		
B	1,55		$\mu\text{g/l}$	91%	-1,49
C	1,70000	0,20400	$\mu\text{g/l}$	99%	-0,09
D	1,90	0,28	$\mu\text{g/l}$	111%	1,76
E	1,78	0,18	$\mu\text{g/l}$	104%	0,65
F	1,87	1	$\mu\text{g/l}$	109%	1,49
G	1,64	0,111	$\mu\text{g/l}$	96%	-0,65
H	<5,0		$\mu\text{g/l}$	•	
I	<5,0		$\mu\text{g/l}$	•	
J	1,68	0,168	$\mu\text{g/l}$	98%	-0,28
K	1,41	0,16	$\mu\text{g/l}$	82%	-2,78
L	1,59	0,48	$\mu\text{g/l}$	93%	-1,11
M			$\mu\text{g/l}$		
N	1,72	0,32	$\mu\text{g/l}$	101%	0,09
O	<5		$\mu\text{g/l}$	•	
P	1,74	0,33	$\mu\text{g/l}$	102%	0,28
Q	<5		$\mu\text{g/l}$	•	
R	1,61	0,23	$\mu\text{g/l}$	94%	-0,93
S	1,80		$\mu\text{g/l}$	105%	0,84
T	1,71	0,52	$\mu\text{g/l}$	100%	0,00
U	1,645	0,17	$\mu\text{g/l}$	96%	-0,60
V	1,63	0,040	$\mu\text{g/l}$	95%	-0,74
W	1,74	0,32	$\mu\text{g/l}$	102%	0,28
X	1,76	0,18	$\mu\text{g/l}$	103%	0,46
Y			$\mu\text{g/l}$		

	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	1,69 $\pm$ 0,08	1,69 $\pm$ 0,08	$\mu\text{g/l}$
Recov. $\pm$ CI(99%)	99,0 $\pm$ 4,7	99,0 $\pm$ 4,7	%
SD between labs	0,12	0,12	$\mu\text{g/l}$
RSD between labs	6,9	6,9	%
n for calculation	18	18	



## Sample M161A

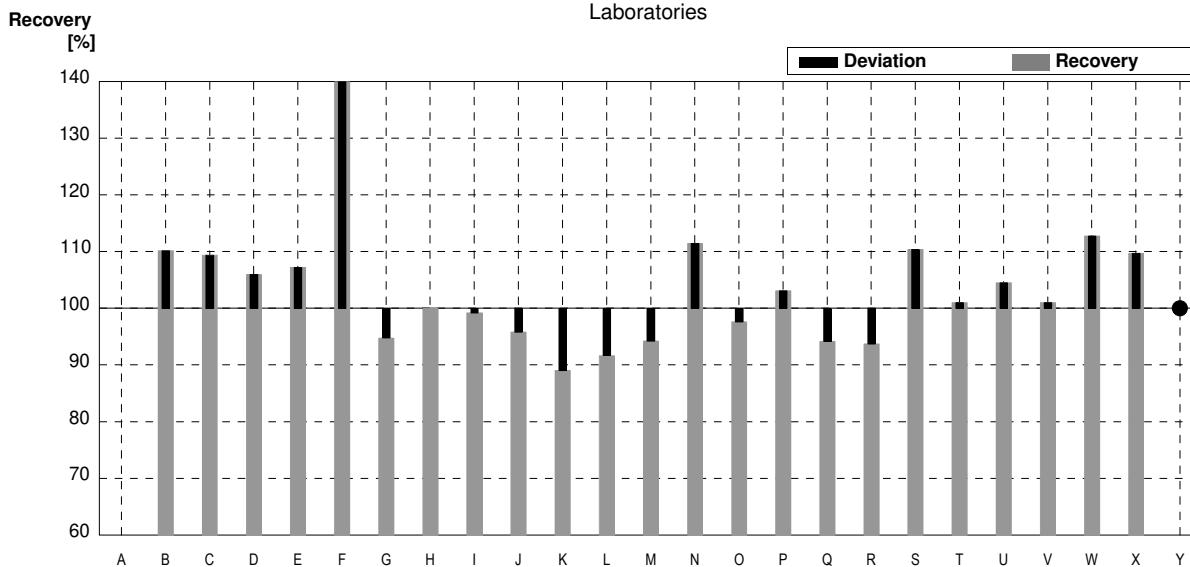
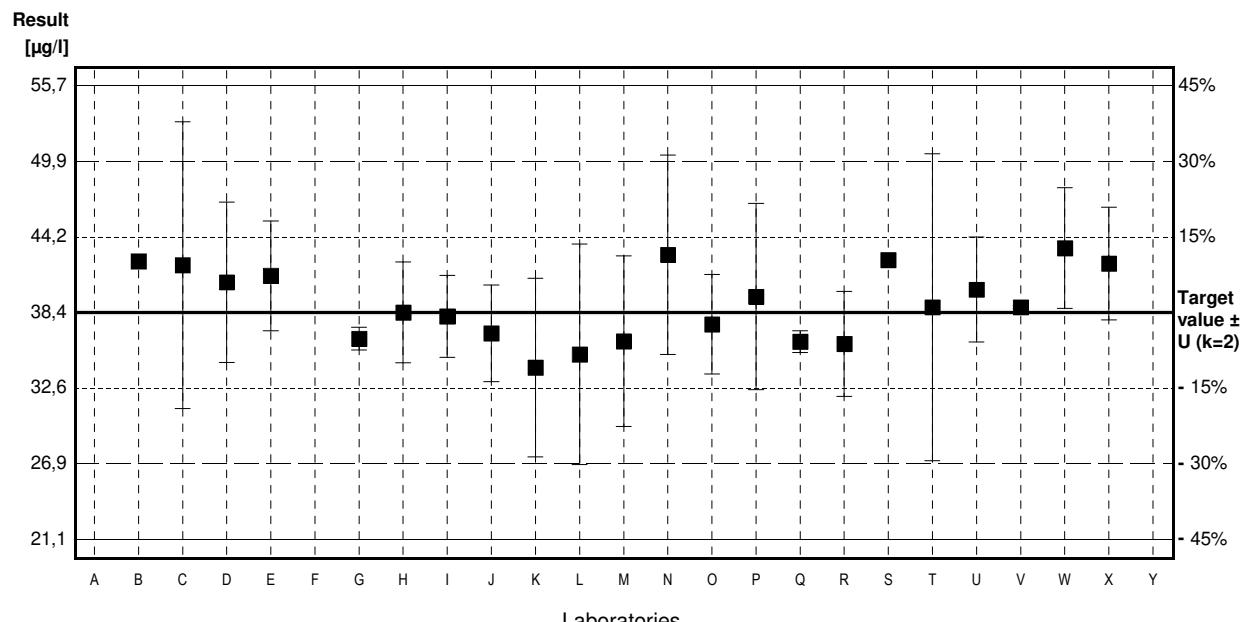
### Parameter Iron

Target value  $\pm U$  ( $k=2$ )    38,4  $\mu\text{g/l}$      $\pm$     0,2  $\mu\text{g/l}$   
 IFA result  $\pm U$  ( $k=2$ )    37,4  $\mu\text{g/l}$      $\pm$     3,0  $\mu\text{g/l}$

Stability test                           $\mu\text{g/l}$

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A			$\mu\text{g/l}$		
B	42,3		$\mu\text{g/l}$	110%	1,54
C	42,000	10,9200	$\mu\text{g/l}$	109%	1,42
D	40,7	6,11	$\mu\text{g/l}$	106%	0,91
E	41,19	4,19	$\mu\text{g/l}$	107%	1,10
F	80 *	30	$\mu\text{g/l}$	208%	16,41
G	36,4	0,860	$\mu\text{g/l}$	95%	-0,79
H	38,4	3,84	$\mu\text{g/l}$	100%	0,00
I	38,1	3,12	$\mu\text{g/l}$	99%	-0,12
J	36,8	3,68	$\mu\text{g/l}$	96%	-0,63
K	34,2	6,8	$\mu\text{g/l}$	89%	-1,66
L	35,2	8,4	$\mu\text{g/l}$	92%	-1,26
M	36,2	6,5	$\mu\text{g/l}$	94%	-0,87
N	42,8	7,6	$\mu\text{g/l}$	111%	1,74
O	37,5	3,8	$\mu\text{g/l}$	98%	-0,36
P	39,6	7,1	$\mu\text{g/l}$	103%	0,47
Q	36,17	0,82	$\mu\text{g/l}$	94%	-0,88
R	36,0	4,0	$\mu\text{g/l}$	94%	-0,95
S	42,4		$\mu\text{g/l}$	110%	1,58
T	38,8	11,7	$\mu\text{g/l}$	101%	0,16
U	40,14	4	$\mu\text{g/l}$	105%	0,69
V	38,8	0,10	$\mu\text{g/l}$	101%	0,16
W	43,3	4,6	$\mu\text{g/l}$	113%	1,93
X	42,13	4,29	$\mu\text{g/l}$	110%	1,47
Y	<50		$\mu\text{g/l}$	*	

	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	40,8 $\pm$ 5,3	39,1 $\pm$ 1,7	$\mu\text{g/l}$
Recov. $\pm$ CI(99%)	106,3 $\pm$ 13,7	101,7 $\pm$ 4,3	%
SD between labs	9,0	2,8	$\mu\text{g/l}$
RSD between labs	21,9	7,1	%
n for calculation	23	22	



## Sample M161B

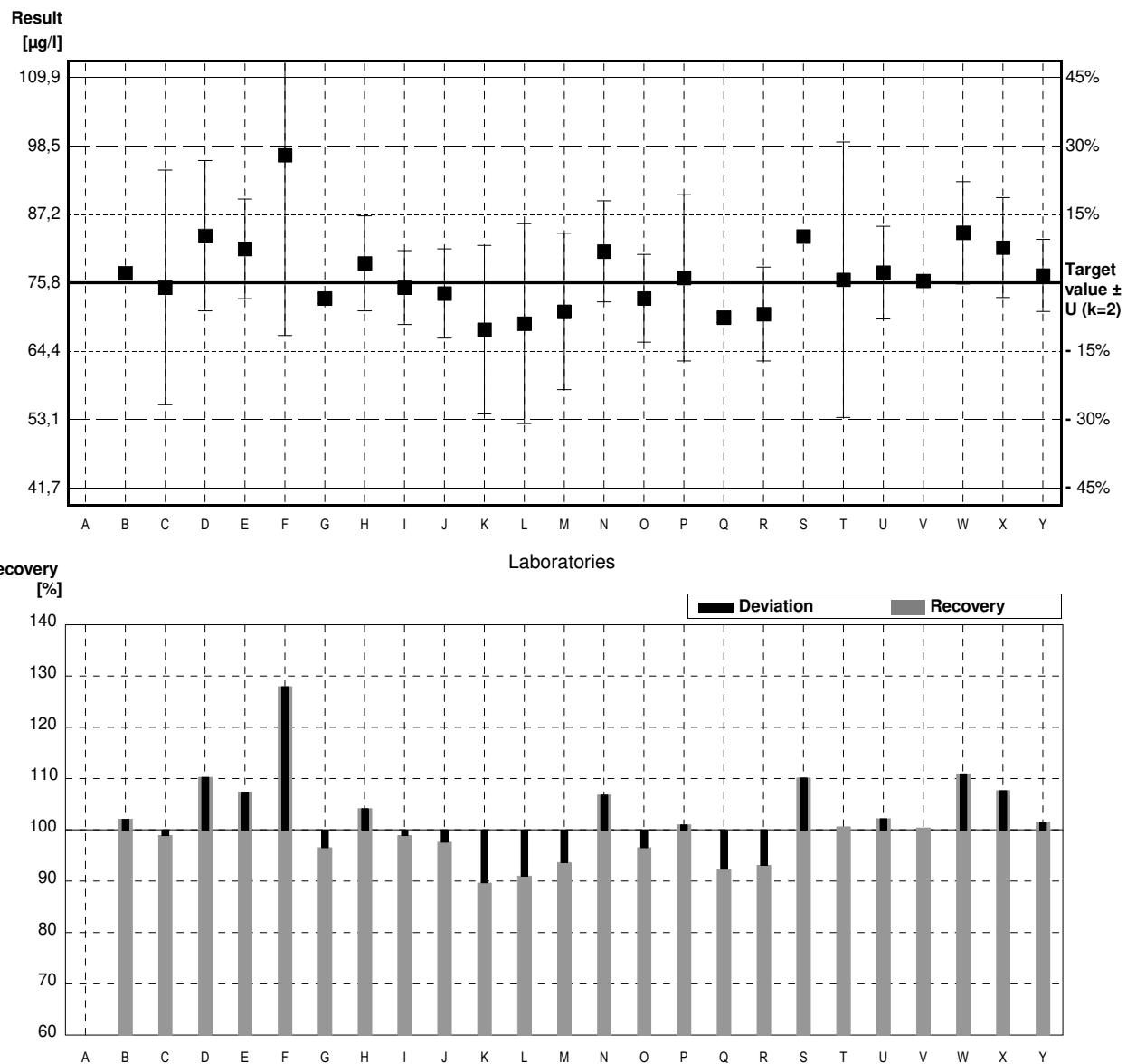
### Parameter Iron

Target value  $\pm U$  ( $k=2$ ) 75,8  $\mu\text{g/l}$   $\pm$  0,3  $\mu\text{g/l}$   
 IFA result  $\pm U$  ( $k=2$ ) 71,4  $\mu\text{g/l}$   $\pm$  5,0  $\mu\text{g/l}$

Stability test  $\mu\text{g/l}$

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A			$\mu\text{g/l}$		
B	77,4		$\mu\text{g/l}$	102%	0,32
C	75,000	19,5000	$\mu\text{g/l}$	99%	-0,16
D	83,6	12,5	$\mu\text{g/l}$	110%	1,56
E	81,43	8,29	$\mu\text{g/l}$	107%	1,13
F	97 *	30	$\mu\text{g/l}$	128%	4,24
G	73,2	0,877	$\mu\text{g/l}$	97%	-0,52
H	79	7,9	$\mu\text{g/l}$	104%	0,64
I	75,0	6,15	$\mu\text{g/l}$	99%	-0,16
J	74	7,4	$\mu\text{g/l}$	98%	-0,36
K	68	14	$\mu\text{g/l}$	90%	-1,56
L	69,0	16,6	$\mu\text{g/l}$	91%	-1,36
M	71	13	$\mu\text{g/l}$	94%	-0,96
N	81,0	8,4	$\mu\text{g/l}$	107%	1,04
O	73,2	7,3	$\mu\text{g/l}$	97%	-0,52
P	76,6	13,8	$\mu\text{g/l}$	101%	0,16
Q	70,0	0,8	$\mu\text{g/l}$	92%	-1,16
R	70,6	7,8	$\mu\text{g/l}$	93%	-1,04
S	83,50		$\mu\text{g/l}$	110%	1,54
T	76,3	22,9	$\mu\text{g/l}$	101%	0,10
U	77,47	7,7	$\mu\text{g/l}$	102%	0,33
V	76,1	0,38	$\mu\text{g/l}$	100%	0,06
W	84,1	8,5	$\mu\text{g/l}$	111%	1,66
X	81,64	8,31	$\mu\text{g/l}$	108%	1,17
Y	77	6	$\mu\text{g/l}$	102%	0,24

	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	77,1 $\pm$ 3,6	76,3 $\pm$ 2,8	$\mu\text{g/l}$
Recov. $\pm$ CI(99%)	101,8 $\pm$ 4,8	100,6 $\pm$ 3,7	%
SD between labs	6,3	4,8	$\mu\text{g/l}$
RSD between labs	8,2	6,3	%
n for calculation	24	23	



## Sample M161A

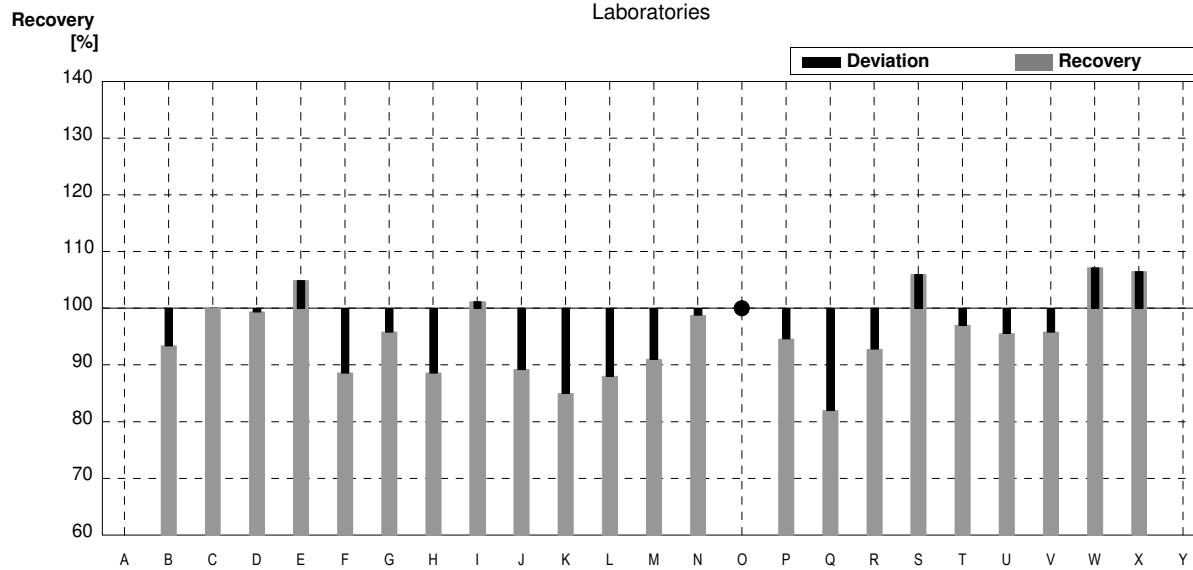
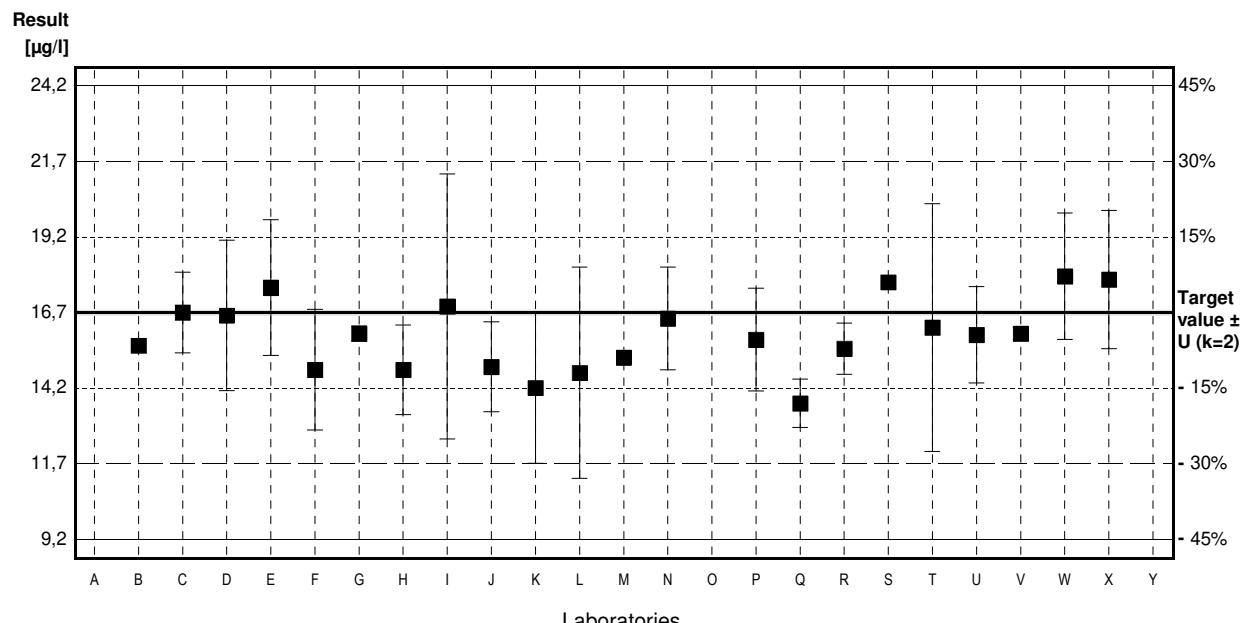
### Parameter Copper

Target value  $\pm U$  ( $k=2$ ) 16,7  $\mu\text{g/l}$   $\pm$  0,1  $\mu\text{g/l}$   
 IFA result  $\pm U$  ( $k=2$ ) 16,0  $\mu\text{g/l}$   $\pm$  0,6  $\mu\text{g/l}$

Stability test  $\mu\text{g/l}$

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A			$\mu\text{g/l}$		
B	15,6		$\mu\text{g/l}$	93%	-0,84
C	16,7000	1,3360	$\mu\text{g/l}$	100%	0,00
D	16,6	2,49	$\mu\text{g/l}$	99%	-0,08
E	17,52	2,25	$\mu\text{g/l}$	105%	0,63
F	14,8	2	$\mu\text{g/l}$	89%	-1,46
G	16,0	0,249	$\mu\text{g/l}$	96%	-0,54
H	14,8	1,48	$\mu\text{g/l}$	89%	-1,46
I	16,9	4,39	$\mu\text{g/l}$	101%	0,15
J	14,9	1,49	$\mu\text{g/l}$	89%	-1,38
K	14,2	2,5	$\mu\text{g/l}$	85%	-1,92
L	14,7	3,5	$\mu\text{g/l}$	88%	-1,54
M	15,2		$\mu\text{g/l}$	91%	-1,15
N	16,5	1,7	$\mu\text{g/l}$	99%	-0,15
O	<100		$\mu\text{g/l}$	*	
P	15,8	1,7	$\mu\text{g/l}$	95%	-0,69
Q	13,69	0,8	$\mu\text{g/l}$	82%	-2,31
R	15,5	0,85	$\mu\text{g/l}$	93%	-0,92
S	17,7		$\mu\text{g/l}$	106%	0,77
T	16,2	4,1	$\mu\text{g/l}$	97%	-0,38
U	15,96	1,6	$\mu\text{g/l}$	96%	-0,57
V	16,0	0,20	$\mu\text{g/l}$	96%	-0,54
W	17,9	2,1	$\mu\text{g/l}$	107%	0,92
X	17,79	2,29	$\mu\text{g/l}$	107%	0,84
Y			$\mu\text{g/l}$		

	All results	Outliers excl.	Unit
Mean $\pm CI(99\%)$	16,0 $\pm$ 0,7	16,0 $\pm$ 0,7	$\mu\text{g/l}$
Recov. $\pm CI(99\%)$	95,5 $\pm$ 4,3	95,5 $\pm$ 4,3	%
SD between labs	1,2	1,2	$\mu\text{g/l}$
RSD between labs	7,4	7,4	%
n for calculation	22	22	



## Sample M161B

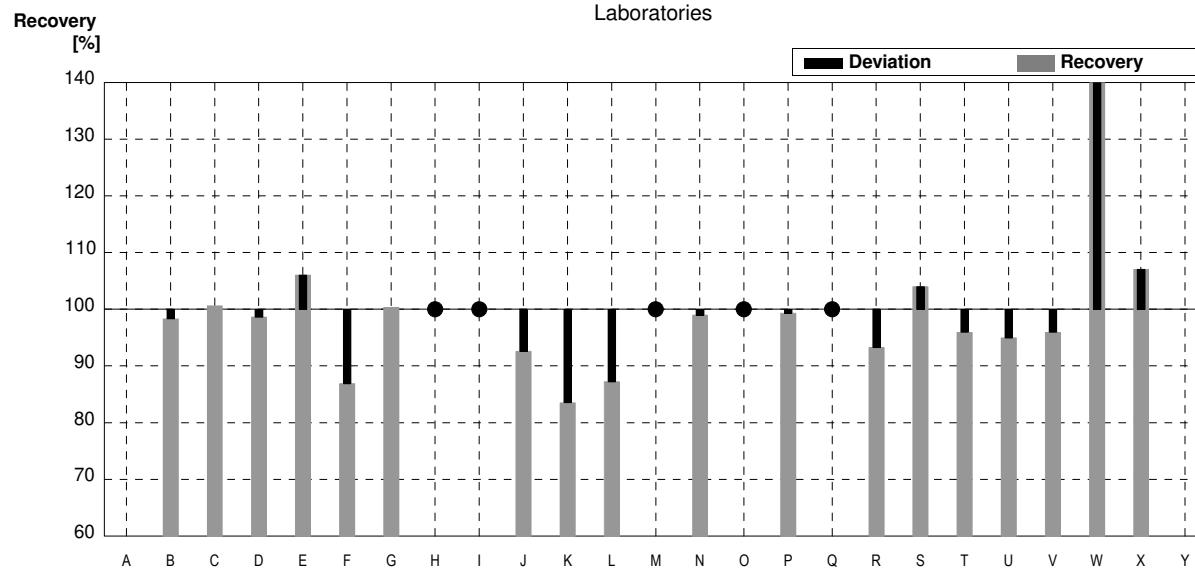
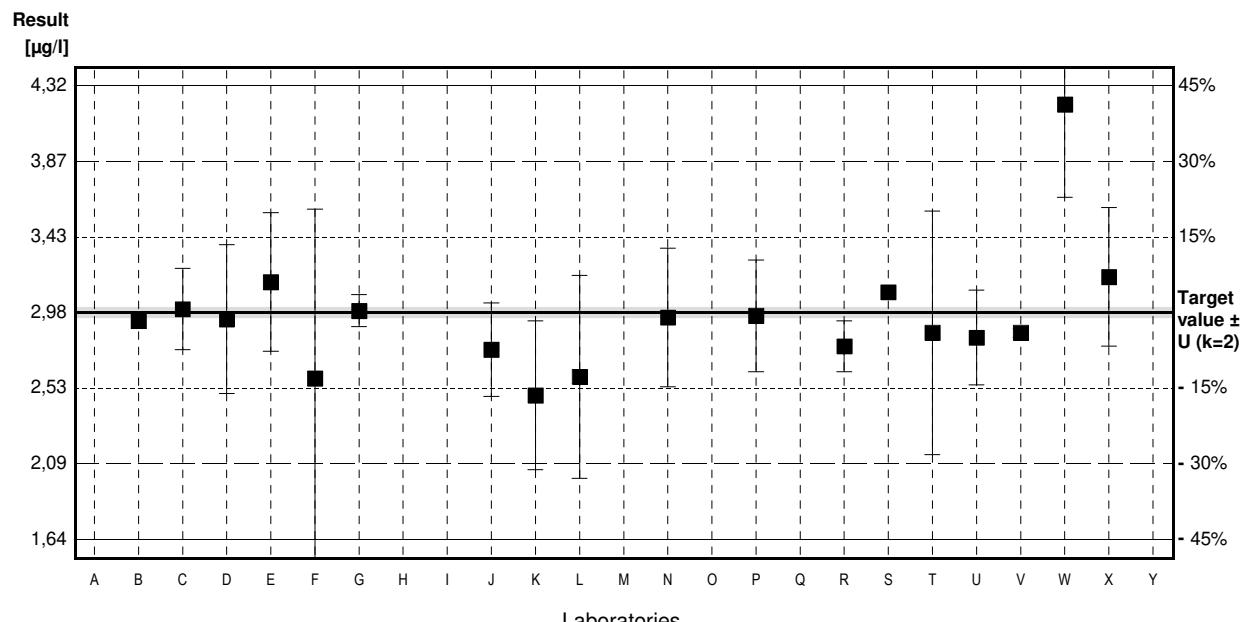
### Parameter Copper

Target value  $\pm U$  ( $k=2$ ) 2,98  $\mu\text{g/l}$   $\pm$  0,03  $\mu\text{g/l}$   
 IFA result  $\pm U$  ( $k=2$ ) 2,93  $\mu\text{g/l}$   $\pm$  0,18  $\mu\text{g/l}$

#### Stability test $\mu\text{g/l}$

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A			$\mu\text{g/l}$		
B	2,93		$\mu\text{g/l}$	98%	-0,22
C	3,000	0,2400	$\mu\text{g/l}$	101%	0,09
D	2,94	0,44	$\mu\text{g/l}$	99%	-0,17
E	3,16	0,41	$\mu\text{g/l}$	106%	0,77
F	2,59	1	$\mu\text{g/l}$	87%	-1,68
G	2,99	0,0946	$\mu\text{g/l}$	100%	0,04
H	<5,0		$\mu\text{g/l}$	•	
I	<10,0		$\mu\text{g/l}$	•	
J	2,76	0,276	$\mu\text{g/l}$	93%	-0,95
K	2,49	0,44	$\mu\text{g/l}$	84%	-2,11
L	2,60	0,6	$\mu\text{g/l}$	87%	-1,63
M	<10		$\mu\text{g/l}$	•	
N	2,95	0,41	$\mu\text{g/l}$	99%	-0,13
O	<100		$\mu\text{g/l}$	•	
P	2,96	0,33	$\mu\text{g/l}$	99%	-0,09
Q	<5		$\mu\text{g/l}$	•	
R	2,78	0,15	$\mu\text{g/l}$	93%	-0,86
S	3,10		$\mu\text{g/l}$	104%	0,52
T	2,86	0,72	$\mu\text{g/l}$	96%	-0,52
U	2,831	0,28	$\mu\text{g/l}$	95%	-0,64
V	2,86	0,026	$\mu\text{g/l}$	96%	-0,52
W	4,21 *	0,55	$\mu\text{g/l}$	141%	5,29
X	3,19	0,41	$\mu\text{g/l}$	107%	0,90
Y			$\mu\text{g/l}$		

	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	2,96 $\pm$ 0,25	2,88 $\pm$ 0,14	$\mu\text{g/l}$
Recov. $\pm$ CI(99%)	99,2 $\pm$ 8,4	96,7 $\pm$ 4,6	%
SD between labs	0,37	0,20	$\mu\text{g/l}$
RSD between labs	12,4	6,8	%
n for calculation	18	17	



## Sample M161A

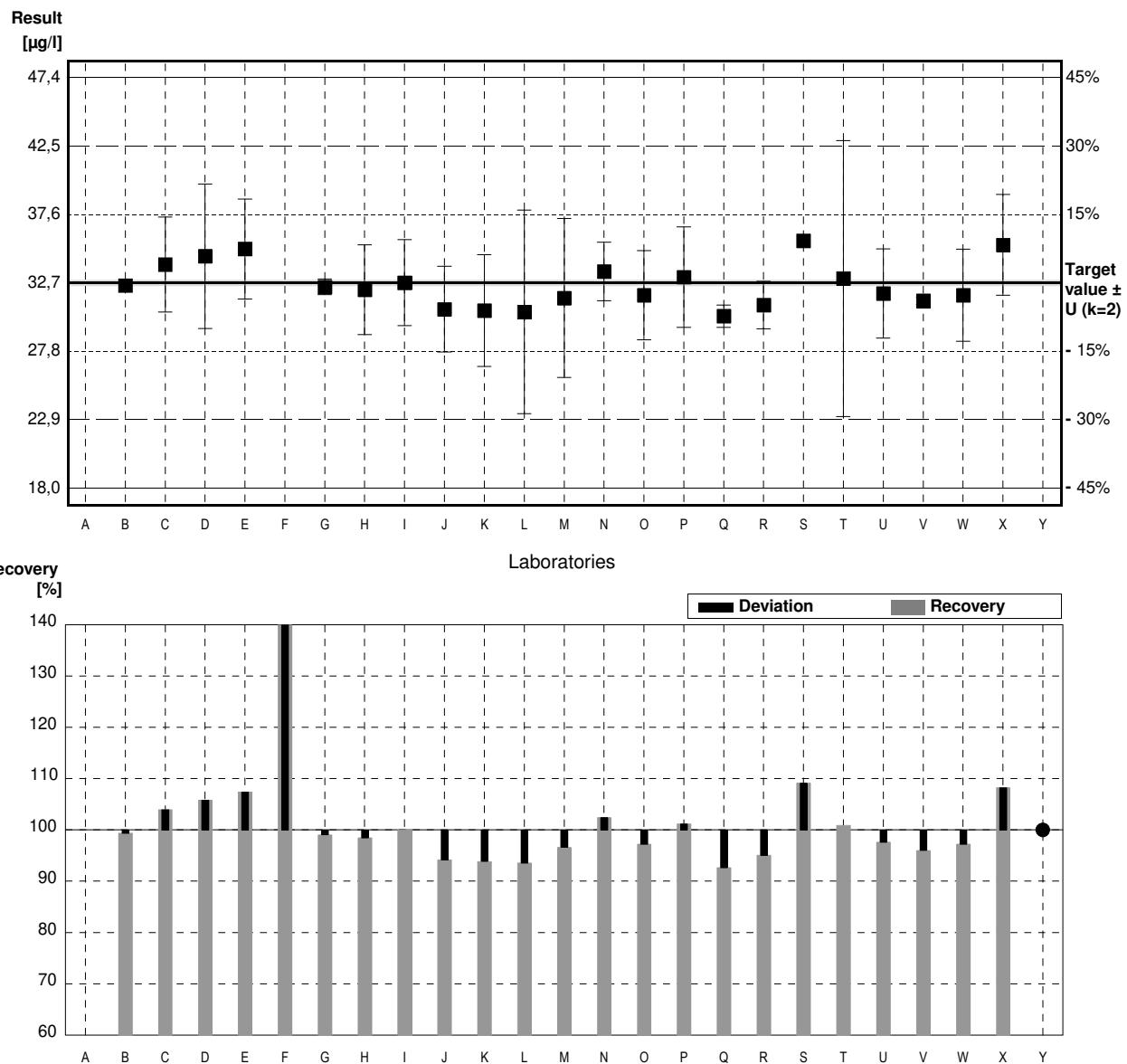
### Parameter Manganese

Target value  $\pm U$  ( $k=2$ )    32,7  $\mu\text{g/l}$      $\pm$     0,2  $\mu\text{g/l}$   
 IFA result  $\pm U$  ( $k=2$ )    32,5  $\mu\text{g/l}$      $\pm$     2,3  $\mu\text{g/l}$

Stability test                           $\mu\text{g/l}$

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A			$\mu\text{g/l}$		
B	32,5		$\mu\text{g/l}$	99%	-0,11
C	34,000	3,40000	$\mu\text{g/l}$	104%	0,74
D	34,6	5,18	$\mu\text{g/l}$	106%	1,08
E	35,12	3,58	$\mu\text{g/l}$	107%	1,37
F	55 *	20	$\mu\text{g/l}$	168%	12,63
G	32,4	0,561	$\mu\text{g/l}$	99%	-0,17
H	32,2	3,22	$\mu\text{g/l}$	98%	-0,28
I	32,7	3,074	$\mu\text{g/l}$	100%	0,00
J	30,8	3,08	$\mu\text{g/l}$	94%	-1,08
K	30,7	4,0	$\mu\text{g/l}$	94%	-1,13
L	30,6	7,3	$\mu\text{g/l}$	94%	-1,19
M	31,6	5,7	$\mu\text{g/l}$	97%	-0,62
N	33,5	2,1	$\mu\text{g/l}$	102%	0,45
O	31,8	3,2	$\mu\text{g/l}$	97%	-0,51
P	33,1	3,6	$\mu\text{g/l}$	101%	0,23
Q	30,3	0,8	$\mu\text{g/l}$	93%	-1,36
R	31,1	1,7	$\mu\text{g/l}$	95%	-0,91
S	35,7		$\mu\text{g/l}$	109%	1,70
T	33,0	9,9	$\mu\text{g/l}$	101%	0,17
U	31,93	3,2	$\mu\text{g/l}$	98%	-0,44
V	31,4	0,27	$\mu\text{g/l}$	96%	-0,74
W	31,8	3,3	$\mu\text{g/l}$	97%	-0,51
X	35,41	3,61	$\mu\text{g/l}$	108%	1,53
Y	<50		$\mu\text{g/l}$	*	

	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	$33,5 \pm 2,9$	$32,6 \pm 1,0$	$\mu\text{g/l}$
Recov. $\pm$ CI(99%)	$102,5 \pm 8,9$	$99,6 \pm 3,0$	%
SD between labs	4,9	1,6	$\mu\text{g/l}$
RSD between labs	14,7	4,9	%
n for calculation	23	22	



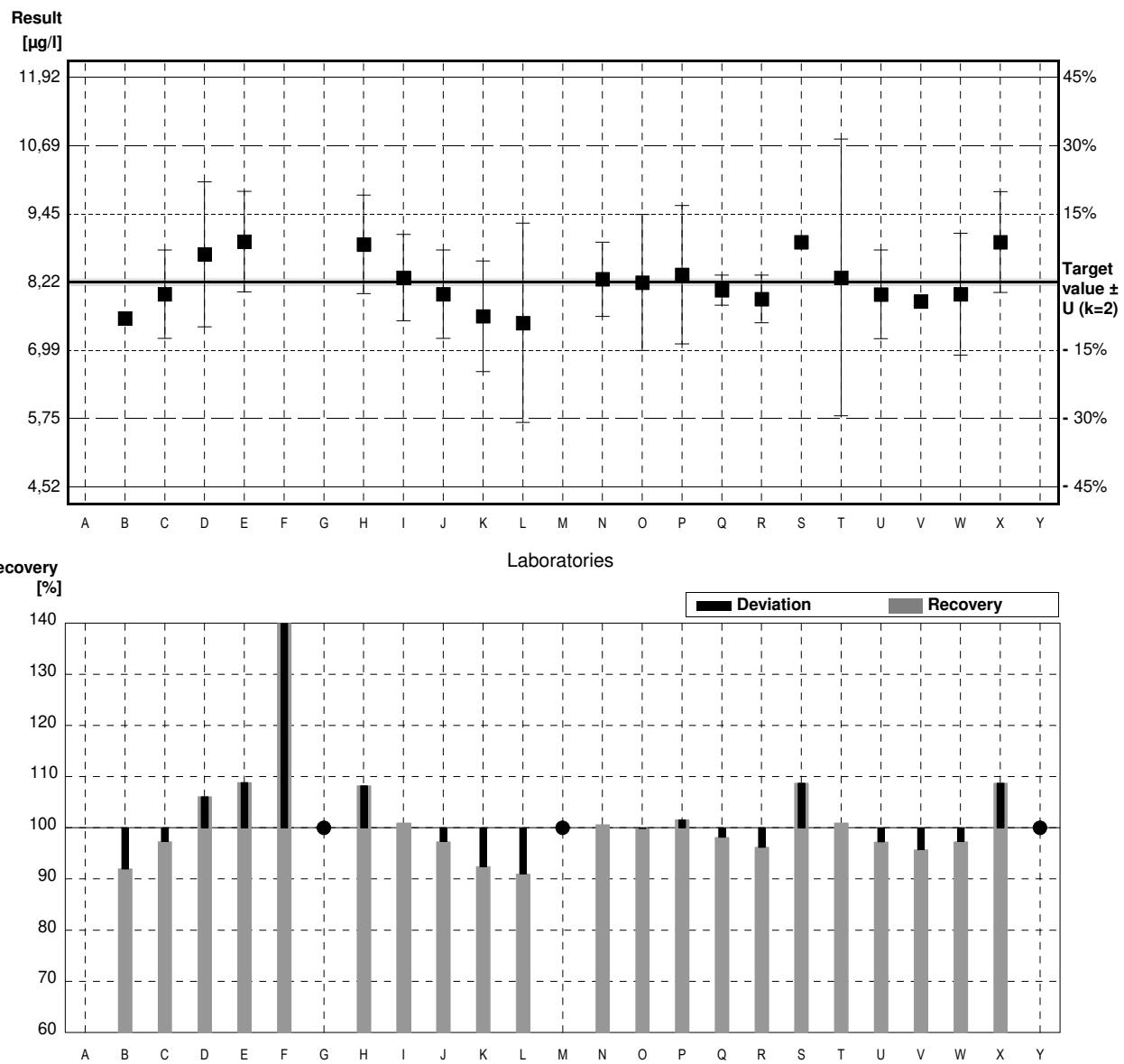
## Sample M161B

### Parameter Manganese

Target value  $\pm U$  ( $k=2$ )    8,22  $\mu\text{g/l}$      $\pm$     0,06  $\mu\text{g/l}$   
 IFA result  $\pm U$  ( $k=2$ )    8,06  $\mu\text{g/l}$      $\pm$     0,56  $\mu\text{g/l}$

Stability test					
Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A			$\mu\text{g/l}$		
B	7,56		$\mu\text{g/l}$	92%	-1,49
C	8,000	0,8000	$\mu\text{g/l}$	97%	-0,50
D	8,72	1,31	$\mu\text{g/l}$	106%	1,13
E	8,95	0,91	$\mu\text{g/l}$	109%	1,64
F	35,0 *	15	$\mu\text{g/l}$	426%	60,33
G	<10,0		$\mu\text{g/l}$	*	
H	8,9	0,89	$\mu\text{g/l}$	108%	1,53
I	8,3	0,78	$\mu\text{g/l}$	101%	0,18
J	8,0	0,80	$\mu\text{g/l}$	97%	-0,50
K	7,6	1,0	$\mu\text{g/l}$	92%	-1,40
L	7,48	1,80	$\mu\text{g/l}$	91%	-1,67
M	<10		$\mu\text{g/l}$	*	
N	8,27	0,67	$\mu\text{g/l}$	101%	0,11
O	8,21	1,23	$\mu\text{g/l}$	100%	-0,02
P	8,35	1,25	$\mu\text{g/l}$	102%	0,29
Q	8,07	0,27	$\mu\text{g/l}$	98%	-0,34
R	7,91	0,43	$\mu\text{g/l}$	96%	-0,70
S	8,94		$\mu\text{g/l}$	109%	1,62
T	8,30	2,5	$\mu\text{g/l}$	101%	0,18
U	7,996	0,8	$\mu\text{g/l}$	97%	-0,50
V	7,87	0,072	$\mu\text{g/l}$	96%	-0,79
W	8,0	1,1	$\mu\text{g/l}$	97%	-0,50
X	8,94	0,91	$\mu\text{g/l}$	109%	1,62
Y	<50		$\mu\text{g/l}$	*	

	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	9,49 $\pm$ 3,65	8,22 $\pm$ 0,30	$\mu\text{g/l}$
Recov. $\pm$ CI(99%)	115,5 $\pm$ 44,4	100,0 $\pm$ 3,6	%
SD between labs	5,86	0,47	$\mu\text{g/l}$
RSD between labs	61,7	5,7	%
n for calculation	21	20	



## Sample M161A

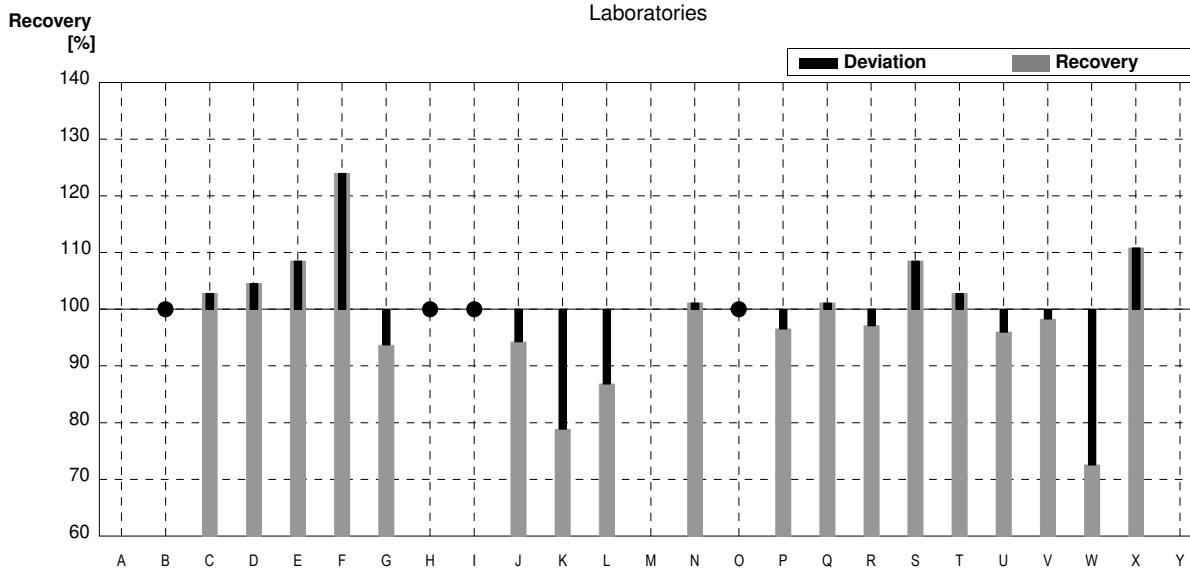
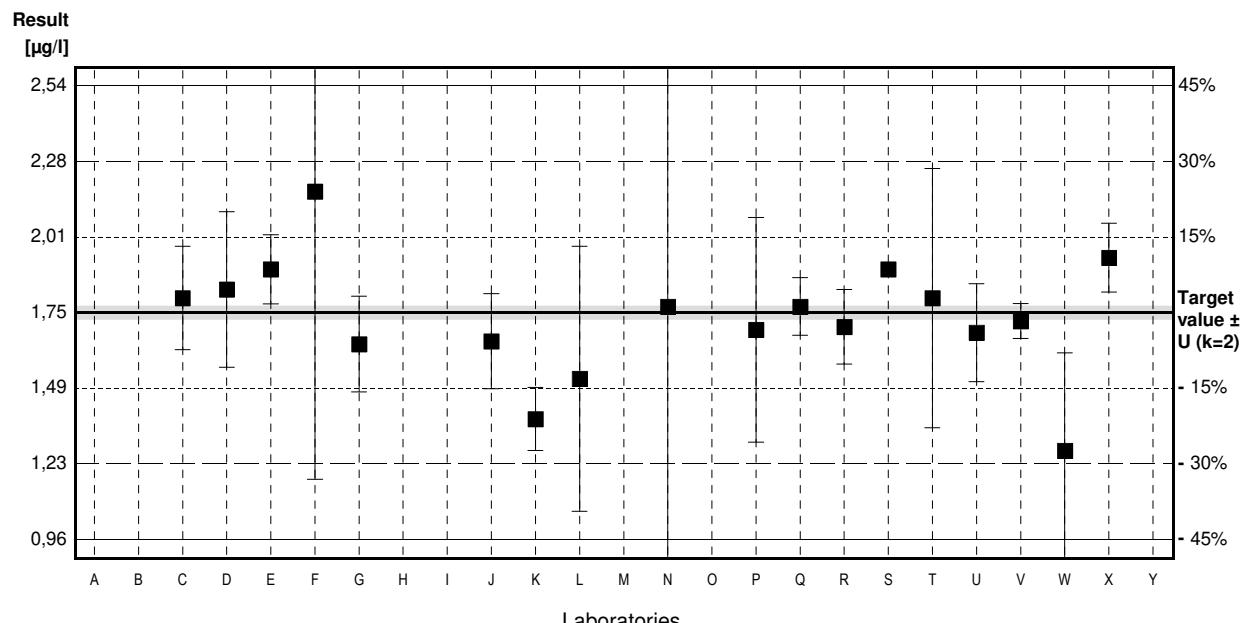
### Parameter Nickel

Target value  $\pm U$  ( $k=2$ ) 1,75 µg/l  $\pm$  0,02 µg/l  
 IFA result  $\pm U$  ( $k=2$ ) 1,79 µg/l  $\pm$  0,13 µg/l

Stability test µg/l

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A			µg/l		
B	<3		µg/l	*	
C	1,8000	0,18000	µg/l	103%	0,38
D	1,83	0,27	µg/l	105%	0,61
E	1,90	0,12	µg/l	109%	1,14
F	2,17	1	µg/l	124%	3,20
G	1,64	0,166	µg/l	94%	-0,84
H	<5,0		µg/l	*	
I	<2,0		µg/l	*	
J	1,65	0,165	µg/l	94%	-0,76
K	1,38	0,11	µg/l	79%	-2,82
L	1,52	0,46	µg/l	87%	-1,75
M			µg/l		
N	1,77	1,9	µg/l	101%	0,15
O	<2		µg/l	*	
P	1,69	0,39	µg/l	97%	-0,46
Q	1,77	0,1	µg/l	101%	0,15
R	1,70	0,13	µg/l	97%	-0,38
S	1,90		µg/l	109%	1,14
T	1,80	0,45	µg/l	103%	0,38
U	1,680	0,17	µg/l	96%	-0,53
V	1,72	0,061	µg/l	98%	-0,23
W	1,27 *	0,34	µg/l	73%	-3,66
X	1,94	0,12	µg/l	111%	1,45
Y			µg/l		

	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	1,73 $\pm$ 0,14	1,76 $\pm$ 0,12	µg/l
Recov. $\pm$ CI(99%)	98,8 $\pm$ 8,0	100,4 $\pm$ 7,1	%
SD between labs	0,21	0,18	µg/l
RSD between labs	11,9	10,0	%
n for calculation	18	17	



## Sample M161B

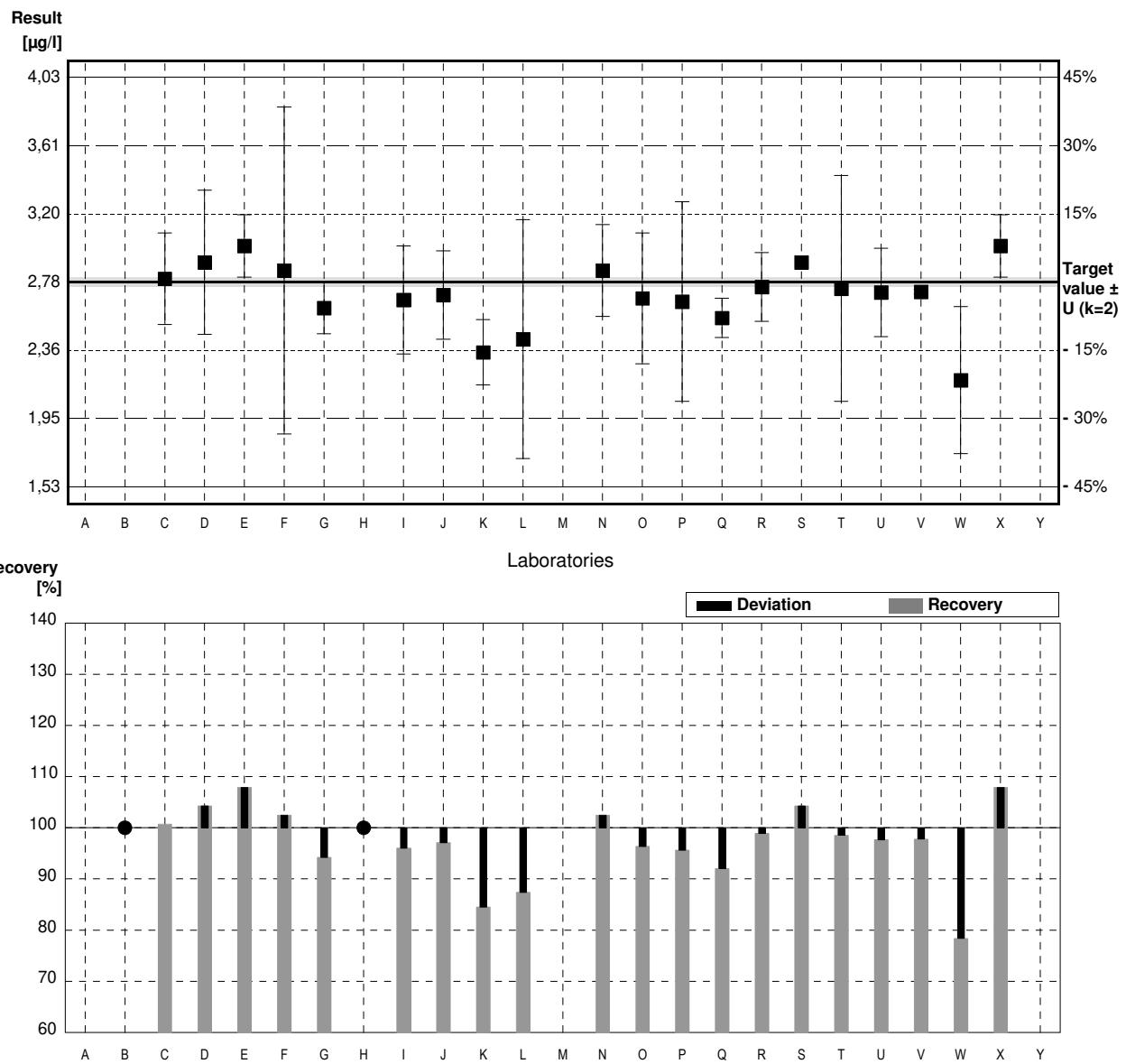
### Parameter Nickel

Target value  $\pm U$  ( $k=2$ ) 2,78  $\mu\text{g/l}$   $\pm$  0,03  $\mu\text{g/l}$   
 IFA result  $\pm U$  ( $k=2$ ) 2,84  $\mu\text{g/l}$   $\pm$  0,14  $\mu\text{g/l}$

Stability test  $\mu\text{g/l}$

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A			$\mu\text{g/l}$		
B	<3		$\mu\text{g/l}$	*	
C	2,80000	0,28000	$\mu\text{g/l}$	101%	0,10
D	2,90	0,44	$\mu\text{g/l}$	104%	0,58
E	3,00	0,19	$\mu\text{g/l}$	108%	1,06
F	2,85	1	$\mu\text{g/l}$	103%	0,34
G	2,62	0,157	$\mu\text{g/l}$	94%	-0,77
H	<5,0		$\mu\text{g/l}$	*	
I	2,67	0,33	$\mu\text{g/l}$	96%	-0,53
J	2,70	0,27	$\mu\text{g/l}$	97%	-0,38
K	2,35	0,20	$\mu\text{g/l}$	85%	-2,06
L	2,43	0,73	$\mu\text{g/l}$	87%	-1,68
M			$\mu\text{g/l}$		
N	2,85	0,28	$\mu\text{g/l}$	103%	0,34
O	2,68	0,40	$\mu\text{g/l}$	96%	-0,48
P	2,66	0,61	$\mu\text{g/l}$	96%	-0,58
Q	2,56	0,12	$\mu\text{g/l}$	92%	-1,06
R	2,75	0,21	$\mu\text{g/l}$	99%	-0,14
S	2,90		$\mu\text{g/l}$	104%	0,58
T	2,74	0,69	$\mu\text{g/l}$	99%	-0,19
U	2,716	0,27	$\mu\text{g/l}$	98%	-0,31
V	2,72	0,015	$\mu\text{g/l}$	98%	-0,29
W	2,18	0,45	$\mu\text{g/l}$	78%	-2,88
X	3,00	0,19	$\mu\text{g/l}$	108%	1,06
Y			$\mu\text{g/l}$		

	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	2,70 $\pm$ 0,13	2,70 $\pm$ 0,13	$\mu\text{g/l}$
Recov. $\pm$ CI(99%)	97,3 $\pm$ 4,8	97,3 $\pm$ 4,8	%
SD between labs	0,21	0,21	$\mu\text{g/l}$
RSD between labs	7,7	7,7	%
n for calculation	20	20	



## Sample M161A

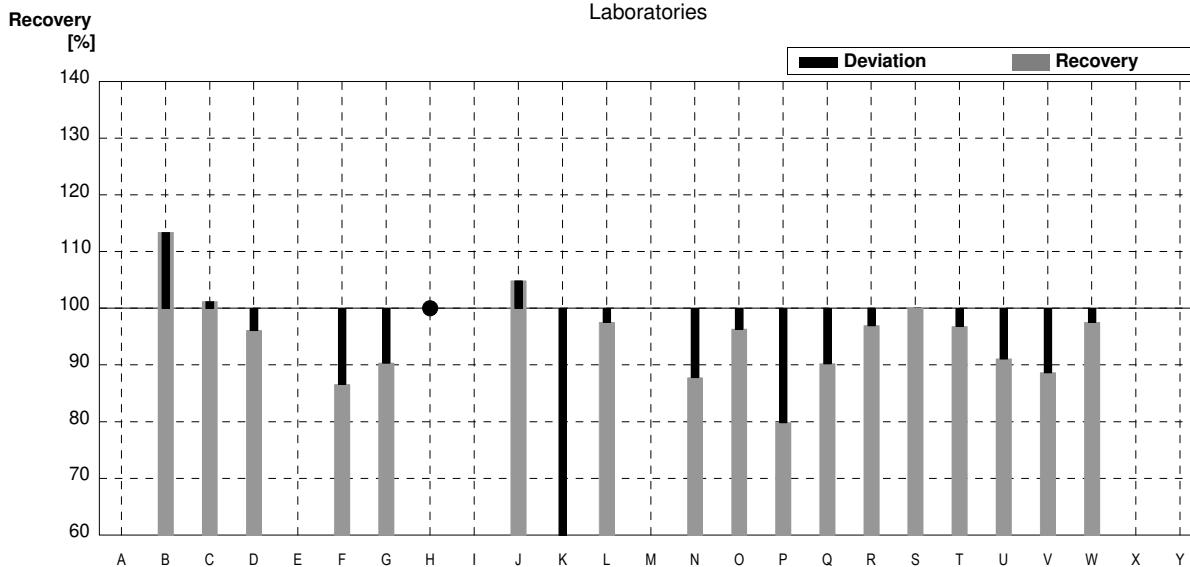
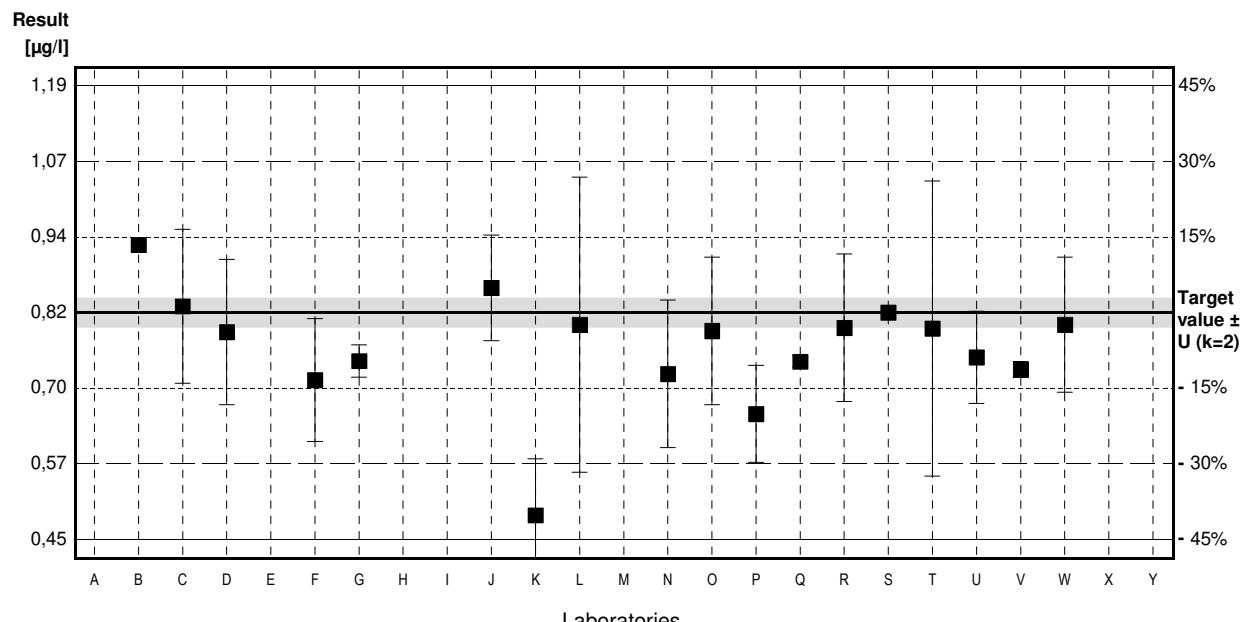
### Parameter Mercury

Target value  $\pm U$  ( $k=2$ )    0.82  $\mu\text{g/l}$      $\pm$     0.02  $\mu\text{g/l}$   
 IFA result  $\pm U$  ( $k=2$ )    0.86  $\mu\text{g/l}$      $\pm$     0.16  $\mu\text{g/l}$

Stability test                           $\mu\text{g/l}$

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A			$\mu\text{g/l}$		
B	0.93		$\mu\text{g/l}$	113%	1.22
C	0.83000	0.125	$\mu\text{g/l}$	101%	0.11
D	0.788	0.118	$\mu\text{g/l}$	96%	-0.35
E			$\mu\text{g/l}$		
F	0.71	0.1	$\mu\text{g/l}$	87%	-1.22
G	0.741	0.0263	$\mu\text{g/l}$	90%	-0.88
H	<1.00		$\mu\text{g/l}$	*	
I			$\mu\text{g/l}$		
J	0.86	0.086	$\mu\text{g/l}$	105%	0.44
K	0.490 *	0.092	$\mu\text{g/l}$	60%	-3.66
L	0.80	0.24	$\mu\text{g/l}$	98%	-0.22
M			$\mu\text{g/l}$		
N	0.72	0.12	$\mu\text{g/l}$	88%	-1.11
O	0.79	0.12	$\mu\text{g/l}$	96%	-0.33
P	0.655	0.079	$\mu\text{g/l}$	80%	-1.83
Q	0.74	0.01	$\mu\text{g/l}$	90%	-0.89
R	0.795	0.12	$\mu\text{g/l}$	97%	-0.28
S	0.82		$\mu\text{g/l}$	100%	0.00
T	0.794	0.24	$\mu\text{g/l}$	97%	-0.29
U	0.747	0.075	$\mu\text{g/l}$	91%	-0.81
V	0.727	0.013	$\mu\text{g/l}$	89%	-1.03
W	0.80	0.11	$\mu\text{g/l}$	98%	-0.22
X			$\mu\text{g/l}$		
Y			$\mu\text{g/l}$		

	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	$0.76 \pm 0.06$	$0.78 \pm 0.05$	$\mu\text{g/l}$
Recov. $\pm$ CI(99%)	$93.1 \pm 7.7$	$95.0 \pm 5.5$	%
SD between labs	0.09	0.06	$\mu\text{g/l}$
RSD between labs	12.1	8.2	%
n for calculation	18	17	



## Sample M161B

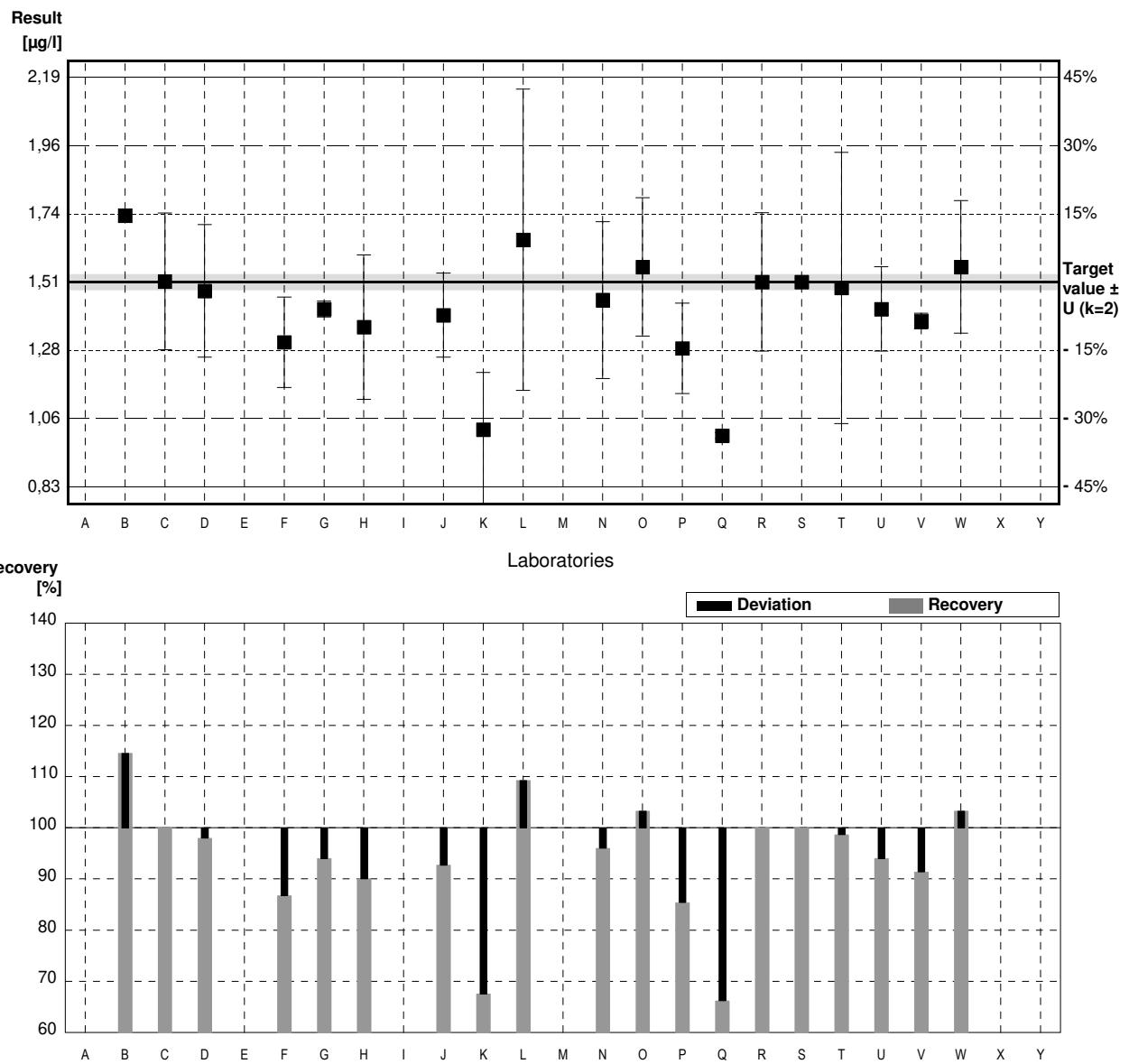
### Parameter Mercury

Target value  $\pm U (k=2)$  1,51 µg/l  $\pm$  0,03 µg/l  
 IFA result  $\pm U (k=2)$  1,57 µg/l  $\pm$  0,30 µg/l

Stability test µg/l

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A			µg/l		
B	1,73		µg/l	115%	1,32
C	1,512	0,227	µg/l	100%	0,01
D	1,48	0,22	µg/l	98%	-0,18
E			µg/l		
F	1,31	0,15	µg/l	87%	-1,20
G	1,42	0,0260	µg/l	94%	-0,54
H	1,36	0,24	µg/l	90%	-0,90
I			µg/l		
J	1,40	0,14	µg/l	93%	-0,66
K	1,02 *	0,19	µg/l	68%	-2,95
L	1,65	0,50	µg/l	109%	0,84
M			µg/l		
N	1,45	0,26	µg/l	96%	-0,36
O	1,56	0,23	µg/l	103%	0,30
P	1,29	0,15	µg/l	85%	-1,32
Q	1,00 *	0,01	µg/l	66%	-3,07
R	1,51	0,23	µg/l	100%	0,00
S	1,51		µg/l	100%	0,00
T	1,49	0,45	µg/l	99%	-0,12
U	1,420	0,14	µg/l	94%	-0,54
V	1,38	0,026	µg/l	91%	-0,78
W	1,56	0,22	µg/l	103%	0,30
X			µg/l		
Y			µg/l		

	All results	Outliers excl.	Unit
Mean $\pm CI(99\%)$	1,42 $\pm$ 0,12	1,47 $\pm$ 0,08	µg/l
Recov. $\pm CI(99\%)$	94,3 $\pm$ 7,9	97,5 $\pm$ 5,4	%
SD between labs	0,18	0,11	µg/l
RSD between labs	12,7	7,8	%
n for calculation	19	17	



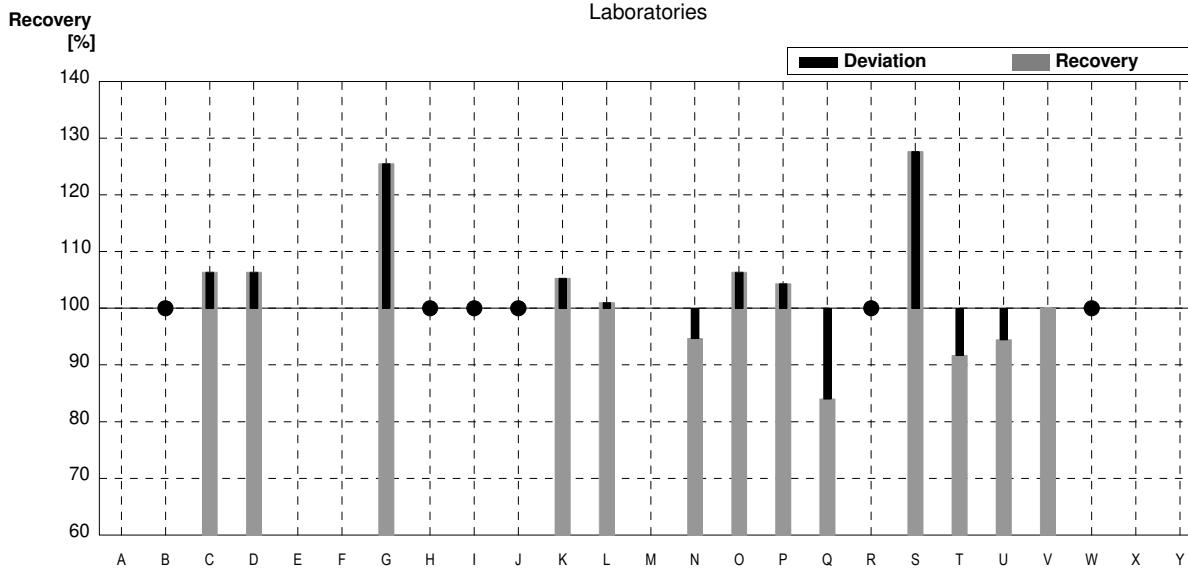
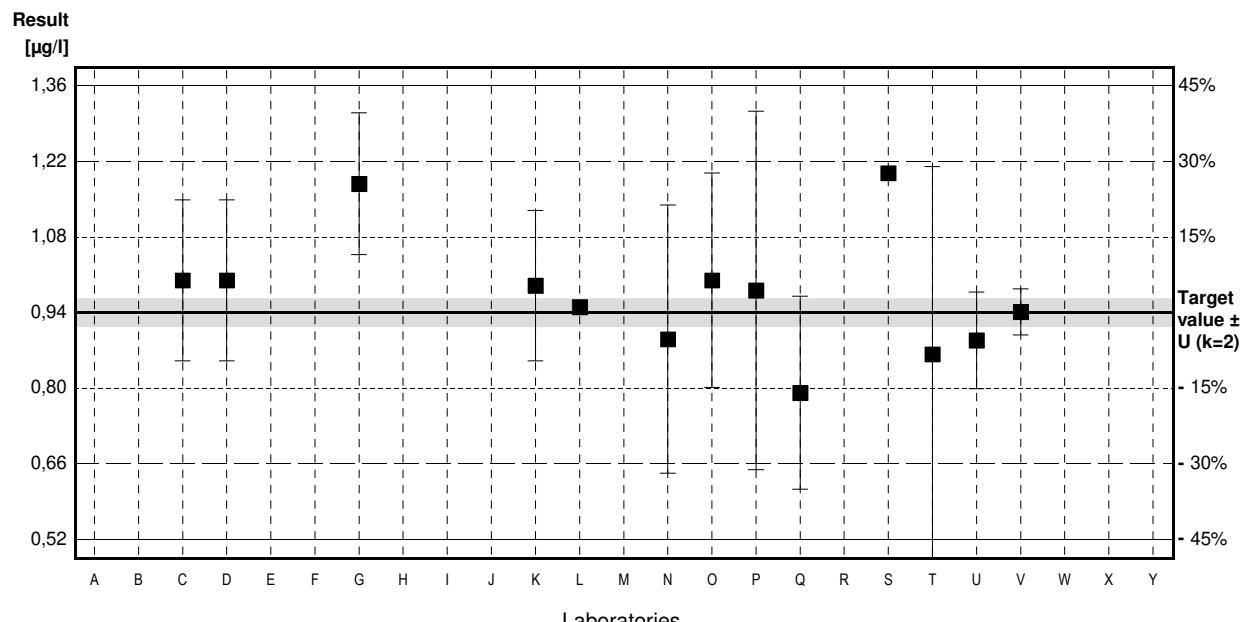
## Sample M161A

### Parameter Selenium

Target value  $\pm U$  ( $k=2$ ) 0,94  $\mu\text{g/l}$   $\pm$  0,03  $\mu\text{g/l}$   
 IFA result  $\pm U$  ( $k=2$ ) 1,00  $\mu\text{g/l}$   $\pm$  0,13  $\mu\text{g/l}$

Stability test					
Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A			$\mu\text{g/l}$		
B	<3		$\mu\text{g/l}$	*	
C	1,00000	0,15000	$\mu\text{g/l}$	106%	0,64
D	1,00	0,15	$\mu\text{g/l}$	106%	0,64
E			$\mu\text{g/l}$		
F			$\mu\text{g/l}$		
G	1,18 *	0,132	$\mu\text{g/l}$	126%	2,55
H	<2,00		$\mu\text{g/l}$	*	
I	<5,0		$\mu\text{g/l}$	*	
J	<1		$\mu\text{g/l}$	*	
K	0,99	0,14	$\mu\text{g/l}$	105%	0,53
L	0,95		$\mu\text{g/l}$	101%	0,11
M			$\mu\text{g/l}$		
N	0,89	0,25	$\mu\text{g/l}$	95%	-0,53
O	1,00	0,20	$\mu\text{g/l}$	106%	0,64
P	0,981	0,334	$\mu\text{g/l}$	104%	0,44
Q	0,79	0,18	$\mu\text{g/l}$	84%	-1,60
R	<1,0		$\mu\text{g/l}$	*	
S	1,20 *		$\mu\text{g/l}$	128%	2,77
T	0,862	0,35	$\mu\text{g/l}$	92%	-0,83
U	0,888	0,09	$\mu\text{g/l}$	94%	-0,55
V	0,941	0,043	$\mu\text{g/l}$	100%	0,01
W	<2,0		$\mu\text{g/l}$	*	
X			$\mu\text{g/l}$		
Y			$\mu\text{g/l}$		

	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	0,97 $\pm$ 0,10	0,94 $\pm$ 0,07	$\mu\text{g/l}$
Recov. $\pm$ CI(99%)	103,7 $\pm$ 10,3	99,5 $\pm$ 7,1	%
SD between labs	0,11	0,07	$\mu\text{g/l}$
RSD between labs	11,8	7,5	%
n for calculation	13	11	



## Sample M161B

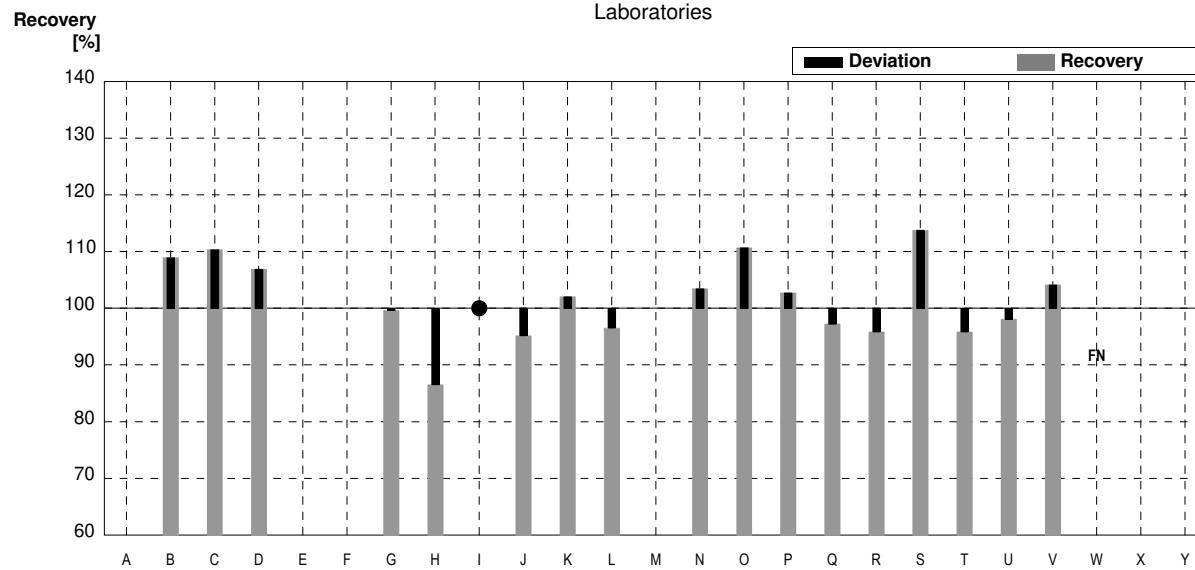
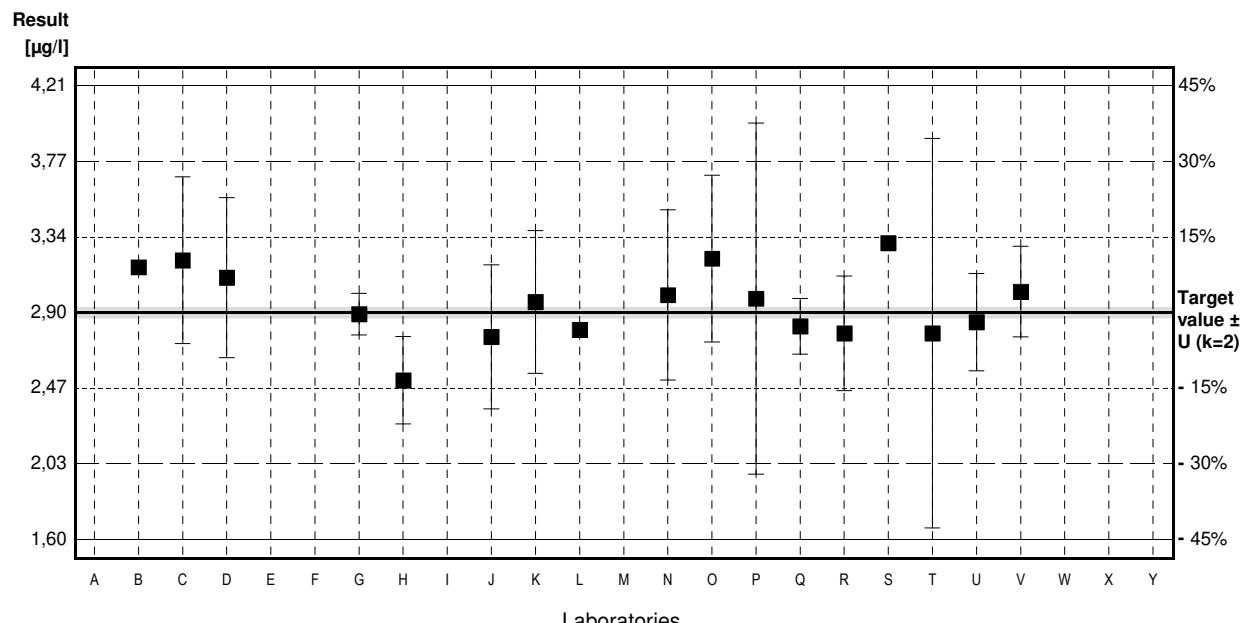
### Parameter Selenium

Target value  $\pm U$  ( $k=2$ ) 2,90  $\mu\text{g/l}$   $\pm$  0,03  $\mu\text{g/l}$   
 IFA result  $\pm U$  ( $k=2$ ) 3,00  $\mu\text{g/l}$   $\pm$  0,36  $\mu\text{g/l}$

Stability test  $\mu\text{g/l}$

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A			$\mu\text{g/l}$		
B	3,16		$\mu\text{g/l}$	109%	0,90
C	3,2000	0,48000	$\mu\text{g/l}$	110%	1,03
D	3,10	0,46	$\mu\text{g/l}$	107%	0,69
E			$\mu\text{g/l}$		
F			$\mu\text{g/l}$		
G	2,89	0,120	$\mu\text{g/l}$	100%	-0,03
H	2,51	0,251	$\mu\text{g/l}$	87%	-1,34
I	<5,0		$\mu\text{g/l}$	*	
J	2,76	0,414	$\mu\text{g/l}$	95%	-0,48
K	2,96	0,41	$\mu\text{g/l}$	102%	0,21
L	2,80		$\mu\text{g/l}$	97%	-0,34
M			$\mu\text{g/l}$		
N	3,00	0,49	$\mu\text{g/l}$	103%	0,34
O	3,21	0,48	$\mu\text{g/l}$	111%	1,07
P	2,98	1,01	$\mu\text{g/l}$	103%	0,28
Q	2,82	0,16	$\mu\text{g/l}$	97%	-0,28
R	2,78	0,33	$\mu\text{g/l}$	96%	-0,41
S	3,30		$\mu\text{g/l}$	114%	1,38
T	2,78	1,12	$\mu\text{g/l}$	96%	-0,41
U	2,844	0,28	$\mu\text{g/l}$	98%	-0,19
V	3,02	0,26	$\mu\text{g/l}$	104%	0,41
W	<2,0		$\mu\text{g/l}$	FN	
X			$\mu\text{g/l}$		
Y			$\mu\text{g/l}$		

	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	2,95 $\pm$ 0,14	2,95 $\pm$ 0,14	$\mu\text{g/l}$
Recov. $\pm$ CI(99%)	101,7 $\pm$ 5,0	101,7 $\pm$ 5,0	%
SD between labs	0,20	0,20	$\mu\text{g/l}$
RSD between labs	6,9	6,9	%
n for calculation	17	17	



## Sample M161A

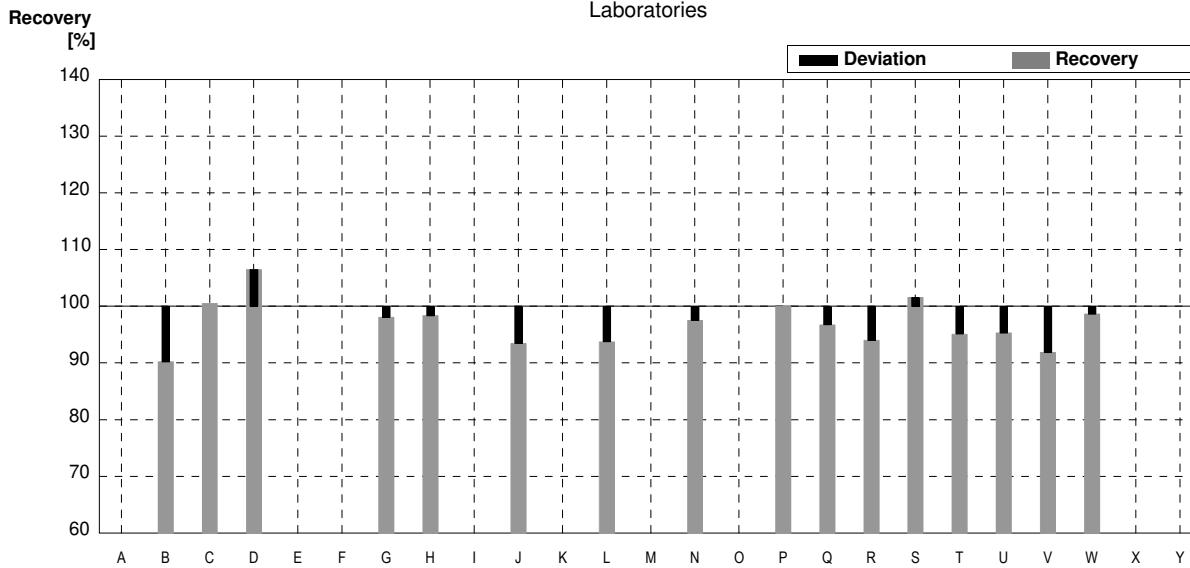
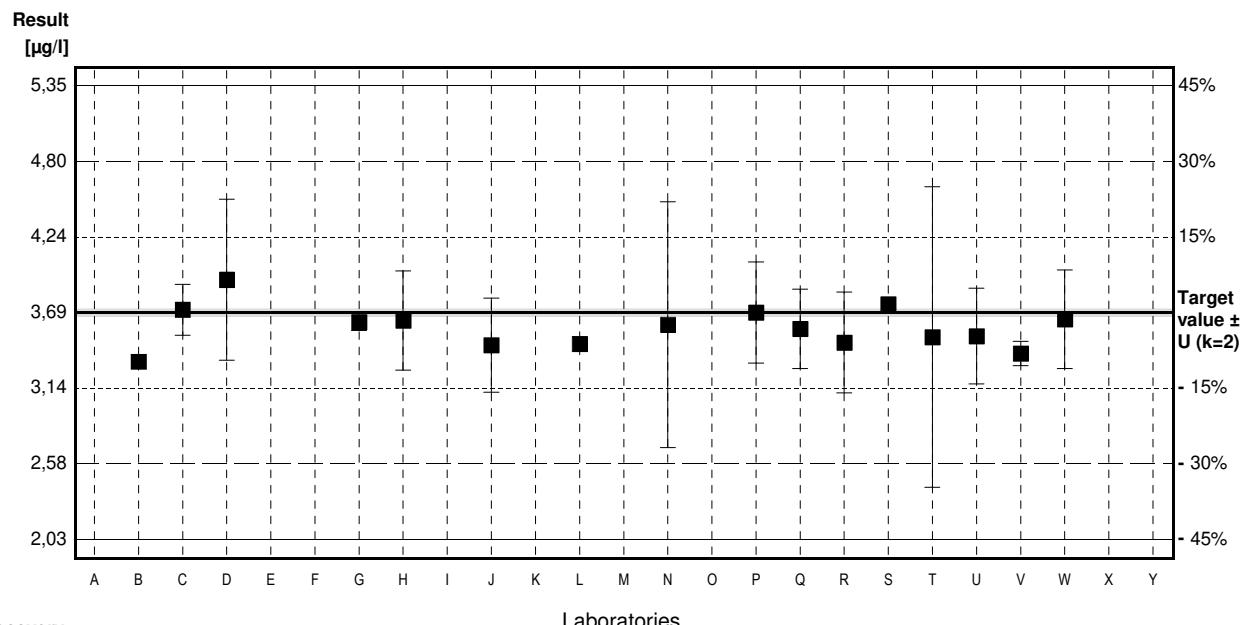
### Parameter Uranium

Target value  $\pm$  U (k=2)    3,69  $\mu\text{g/l}$      $\pm$     0,03  $\mu\text{g/l}$   
 IFA result  $\pm$  U (k=2)    3,72  $\mu\text{g/l}$      $\pm$     0,41  $\mu\text{g/l}$

Stability test                           $\mu\text{g/l}$

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A			$\mu\text{g/l}$		
B	3,33		$\mu\text{g/l}$	90%	-1,74
C	3,71	0,186	$\mu\text{g/l}$	101%	0,10
D	3,93	0,59	$\mu\text{g/l}$	107%	1,16
E			$\mu\text{g/l}$		
F			$\mu\text{g/l}$		
G	3,62	0,0613	$\mu\text{g/l}$	98%	-0,34
H	3,63	0,363	$\mu\text{g/l}$	98%	-0,29
I			$\mu\text{g/l}$		
J	3,45	0,345	$\mu\text{g/l}$	93%	-1,16
K			$\mu\text{g/l}$		
L	3,46		$\mu\text{g/l}$	94%	-1,11
M			$\mu\text{g/l}$		
N	3,60	0,9	$\mu\text{g/l}$	98%	-0,44
O			$\mu\text{g/l}$		
P	3,69	0,37	$\mu\text{g/l}$	100%	0,00
Q	3,57	0,29	$\mu\text{g/l}$	97%	-0,58
R	3,47	0,37	$\mu\text{g/l}$	94%	-1,06
S	3,75		$\mu\text{g/l}$	102%	0,29
T	3,51	1,1	$\mu\text{g/l}$	95%	-0,87
U	3,517	0,35	$\mu\text{g/l}$	95%	-0,84
V	3,39	0,089	$\mu\text{g/l}$	92%	-1,45
W	3,64	0,36	$\mu\text{g/l}$	99%	-0,24
X			$\mu\text{g/l}$		
Y			$\mu\text{g/l}$		

	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	3,58 $\pm$ 0,11	3,58 $\pm$ 0,11	$\mu\text{g/l}$
Recov. $\pm$ CI(99%)	97,0 $\pm$ 3,0	97,0 $\pm$ 3,0	%
SD between labs	0,15	0,15	$\mu\text{g/l}$
RSD between labs	4,2	4,2	%
n for calculation	16	16	



## Sample M161B

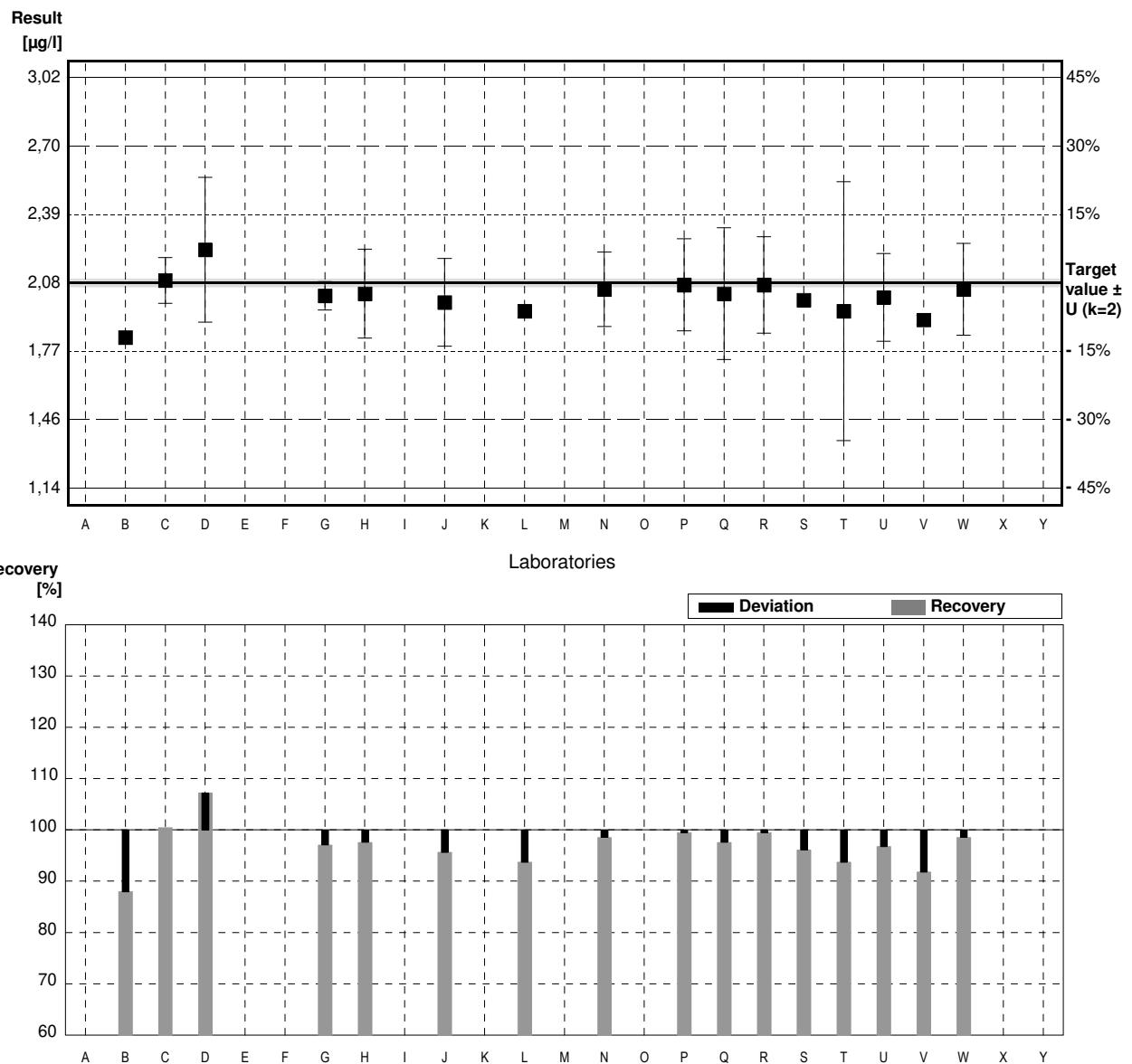
### Parameter Uranium

Target value  $\pm$  U (k=2) 2,08 µg/l  $\pm$  0,02 µg/l  
 IFA result  $\pm$  U (k=2) 2,07 µg/l  $\pm$  0,23 µg/l

Stability test µg/l

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A			µg/l		
B	1,83 *		µg/l	88%	-2,15
C	2,0900	0,10500	µg/l	100%	0,09
D	2,23 *	0,33	µg/l	107%	1,29
E			µg/l		
F			µg/l		
G	2,02	0,0641	µg/l	97%	-0,52
H	2,03	0,203	µg/l	98%	-0,43
I			µg/l		
J	1,99	0,2	µg/l	96%	-0,77
K			µg/l		
L	1,95		µg/l	94%	-1,12
M			µg/l		
N	2,05	0,17	µg/l	99%	-0,26
O			µg/l		
P	2,07	0,21	µg/l	100%	-0,09
Q	2,03	0,3	µg/l	98%	-0,43
R	2,07	0,22	µg/l	100%	-0,09
S	2,00		µg/l	96%	-0,69
T	1,95	0,59	µg/l	94%	-1,12
U	2,013	0,2	µg/l	97%	-0,58
V	1,91	0,021	µg/l	92%	-1,46
W	2,05	0,21	µg/l	99%	-0,26
X			µg/l		
Y			µg/l		

	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	2,02 $\pm$ 0,06	2,02 $\pm$ 0,04	µg/l
Recov. $\pm$ CI(99%)	97,0 $\pm$ 3,1	96,9 $\pm$ 2,0	%
SD between labs	0,09	0,05	µg/l
RSD between labs	4,3	2,6	%
n for calculation	16	14	



## Sample M161A

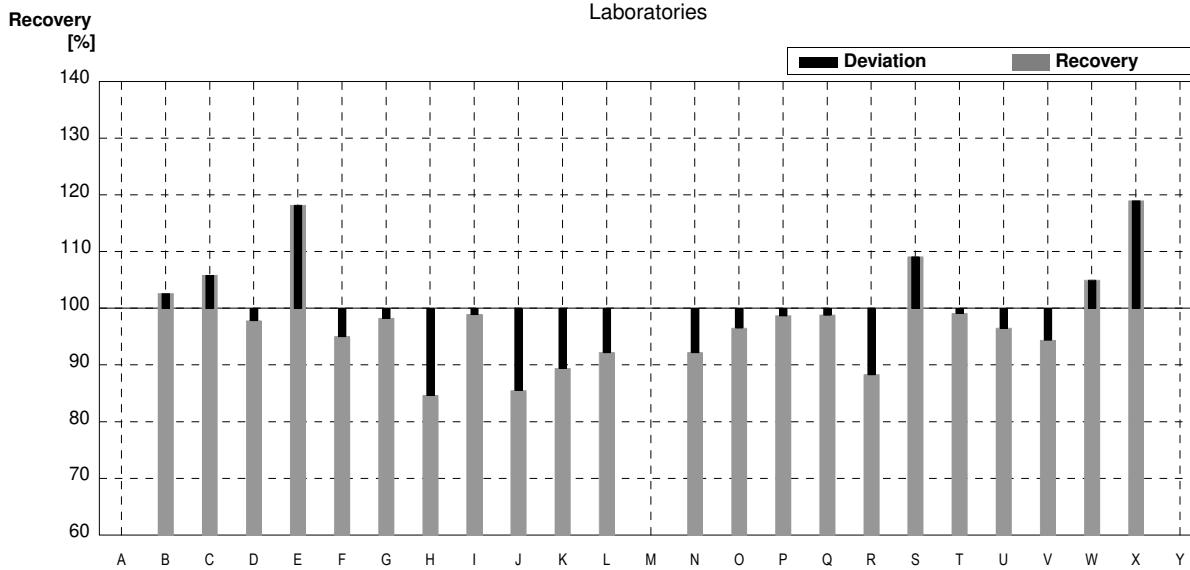
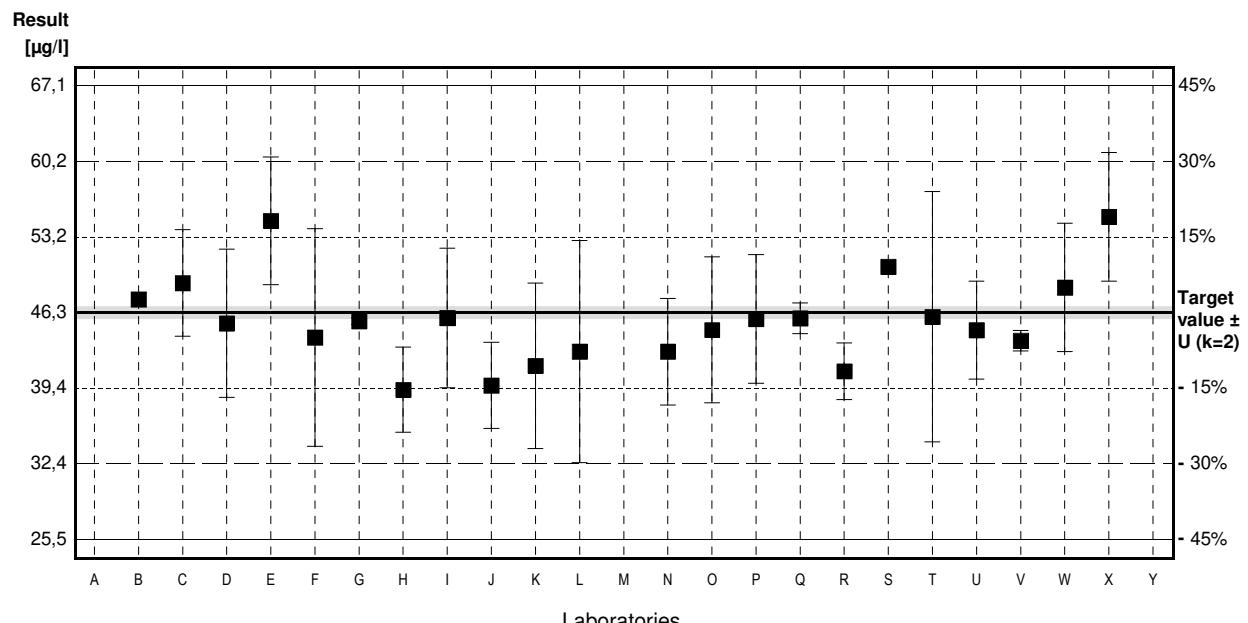
### Parameter Zinc

Target value  $\pm U$  ( $k=2$ )    46,3  $\mu\text{g/l}$      $\pm$     0,6  $\mu\text{g/l}$   
 IFA result  $\pm U$  ( $k=2$ )    45,8  $\mu\text{g/l}$      $\pm$     5,0  $\mu\text{g/l}$

Stability test                           $\mu\text{g/l}$

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A			$\mu\text{g/l}$		
B	47,5		$\mu\text{g/l}$	103%	0,35
C	49,0000	4,900	$\mu\text{g/l}$	106%	0,79
D	45,3	6,80	$\mu\text{g/l}$	98%	-0,29
E	54,72	5,87	$\mu\text{g/l}$	118%	2,46
F	44,0	10	$\mu\text{g/l}$	95%	-0,67
G	45,5	0,294	$\mu\text{g/l}$	98%	-0,23
H	39,2	3,92	$\mu\text{g/l}$	85%	-2,07
I	45,8	6,41	$\mu\text{g/l}$	99%	-0,15
J	39,6	3,96	$\mu\text{g/l}$	86%	-1,96
K	41,4	7,6	$\mu\text{g/l}$	89%	-1,43
L	42,7	10,2	$\mu\text{g/l}$	92%	-1,05
M			$\mu\text{g/l}$		
N	42,7	4,9	$\mu\text{g/l}$	92%	-1,05
O	44,7	6,7	$\mu\text{g/l}$	97%	-0,47
P	45,7	5,9	$\mu\text{g/l}$	99%	-0,18
Q	45,76	1,42	$\mu\text{g/l}$	99%	-0,16
R	40,9	2,6	$\mu\text{g/l}$	88%	-1,58
S	50,5		$\mu\text{g/l}$	109%	1,23
T	45,9	11,5	$\mu\text{g/l}$	99%	-0,12
U	44,68	4,5	$\mu\text{g/l}$	97%	-0,47
V	43,7	0,95	$\mu\text{g/l}$	94%	-0,76
W	48,6	5,9	$\mu\text{g/l}$	105%	0,67
X	55,09	5,91	$\mu\text{g/l}$	119%	2,57
Y			$\mu\text{g/l}$		

	All results	Outliers excl.	Unit
Mean $\pm CI(99\%)$	$45,6 \pm 2,5$	$45,6 \pm 2,5$	$\mu\text{g/l}$
Recov. $\pm CI(99\%)$	$98,5 \pm 5,4$	$98,5 \pm 5,4$	%
SD between labs	4,2	4,2	$\mu\text{g/l}$
RSD between labs	9,1	9,1	%
n for calculation	22	22	



## Sample M161B

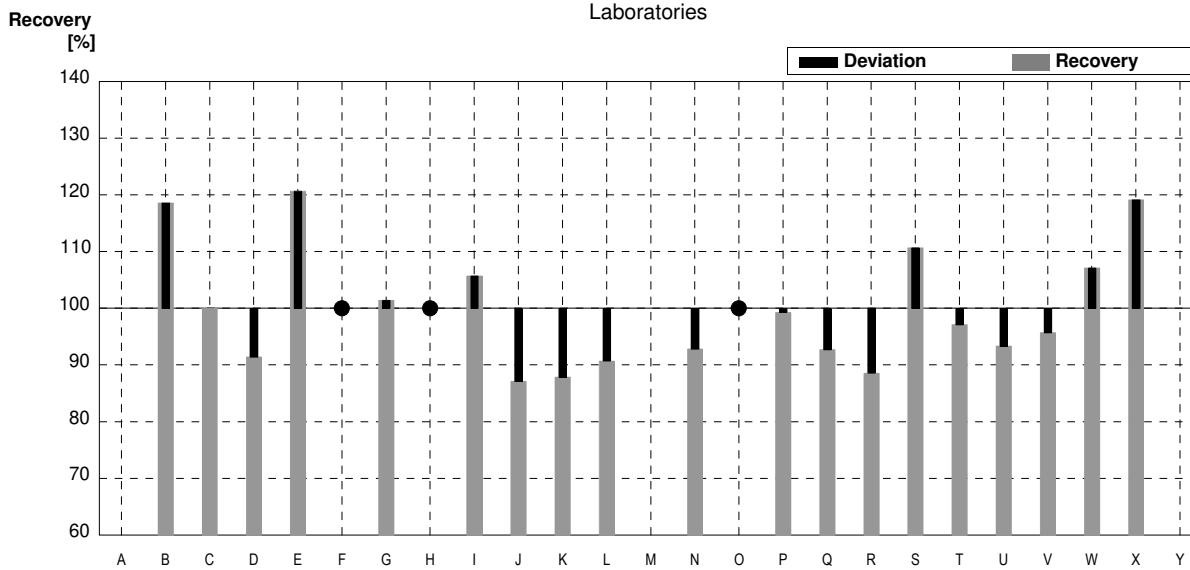
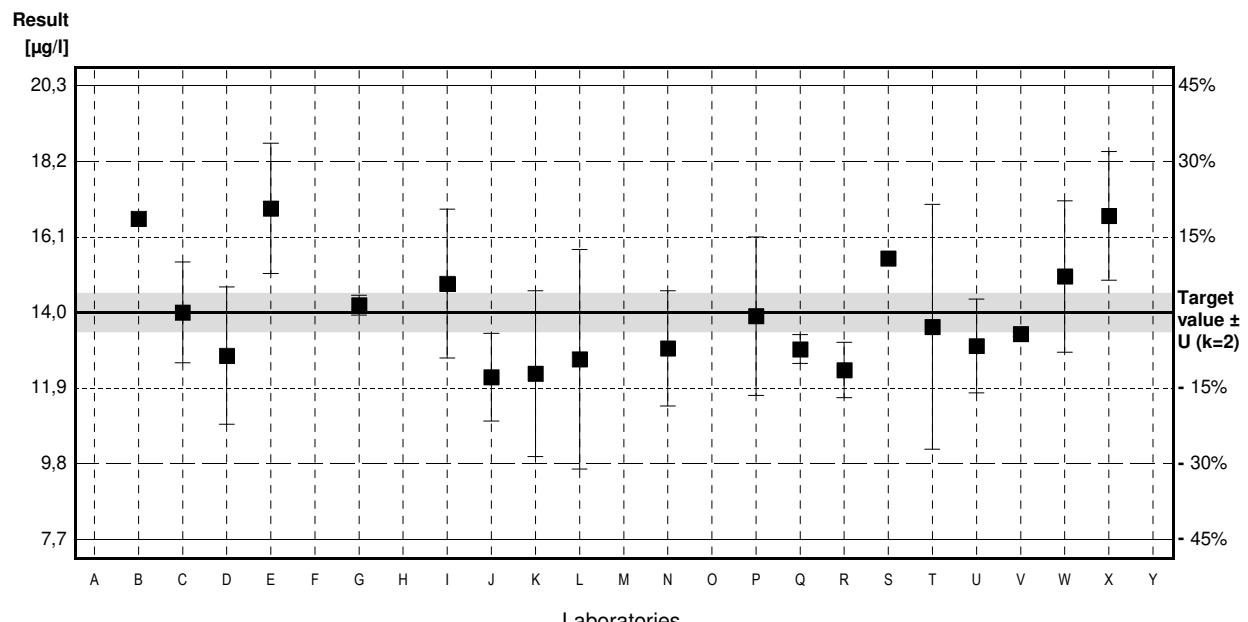
### Parameter Zinc

Target value  $\pm U$  ( $k=2$ ) 14,0  $\mu\text{g/l}$   $\pm$  0,5  $\mu\text{g/l}$   
 IFA result  $\pm U$  ( $k=2$ ) 15,2  $\mu\text{g/l}$   $\pm$  2,0  $\mu\text{g/l}$

Stability test  $\mu\text{g/l}$

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A			$\mu\text{g/l}$		
B	16,6		$\mu\text{g/l}$	119%	2,51
C	14,0000	1,4000	$\mu\text{g/l}$	100%	0,00
D	12,8	1,91	$\mu\text{g/l}$	91%	-1,16
E	16,89	1,81	$\mu\text{g/l}$	121%	2,79
F	<20		$\mu\text{g/l}$	*	
G	14,2	0,271	$\mu\text{g/l}$	101%	0,19
H	<15,0		$\mu\text{g/l}$	*	
I	14,8	2,07	$\mu\text{g/l}$	106%	0,77
J	12,2	1,22	$\mu\text{g/l}$	87%	-1,74
K	12,3	2,3	$\mu\text{g/l}$	88%	-1,64
L	12,7	3,05	$\mu\text{g/l}$	91%	-1,25
M			$\mu\text{g/l}$		
N	13,0	1,6	$\mu\text{g/l}$	93%	-0,97
O	<50		$\mu\text{g/l}$	*	
P	13,9	2,2	$\mu\text{g/l}$	99%	-0,10
Q	12,98	0,4	$\mu\text{g/l}$	93%	-0,98
R	12,4	0,77	$\mu\text{g/l}$	89%	-1,54
S	15,50		$\mu\text{g/l}$	111%	1,45
T	13,6	3,4	$\mu\text{g/l}$	97%	-0,39
U	13,07	1,3	$\mu\text{g/l}$	93%	-0,90
V	13,4	0,058	$\mu\text{g/l}$	96%	-0,58
W	15,0	2,1	$\mu\text{g/l}$	107%	0,97
X	16,68	1,79	$\mu\text{g/l}$	119%	2,59
Y			$\mu\text{g/l}$		

	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	14,0 $\pm$ 1,0	14,0 $\pm$ 1,0	$\mu\text{g/l}$
Recov. $\pm$ CI(99%)	100,0 $\pm$ 7,2	100,0 $\pm$ 7,2	%
SD between labs	1,5	1,5	$\mu\text{g/l}$
RSD between labs	10,8	10,8	%
n for calculation	19	19	





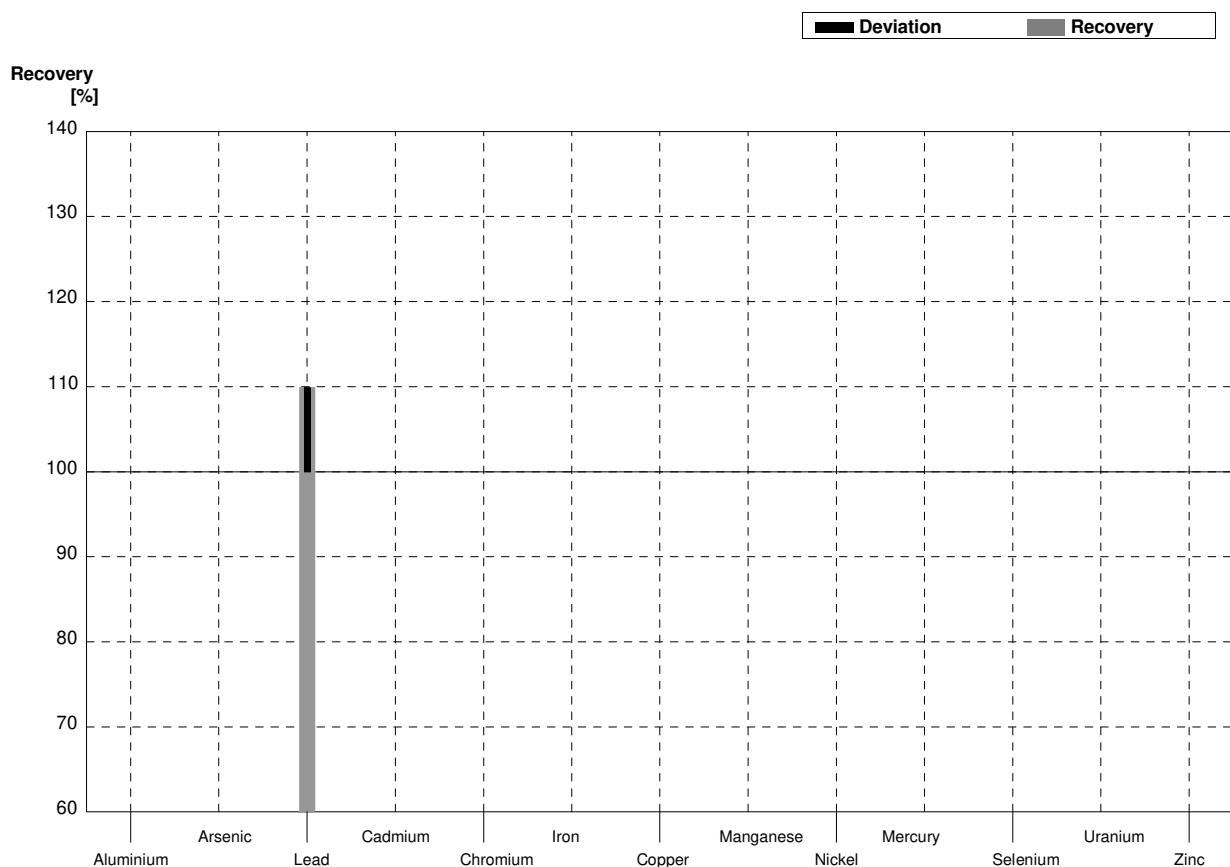
# **Illustration of Results Laboratory Oriented Part**

**Round M161  
Metals**

**Sample Dispatch: 7 March 2022**

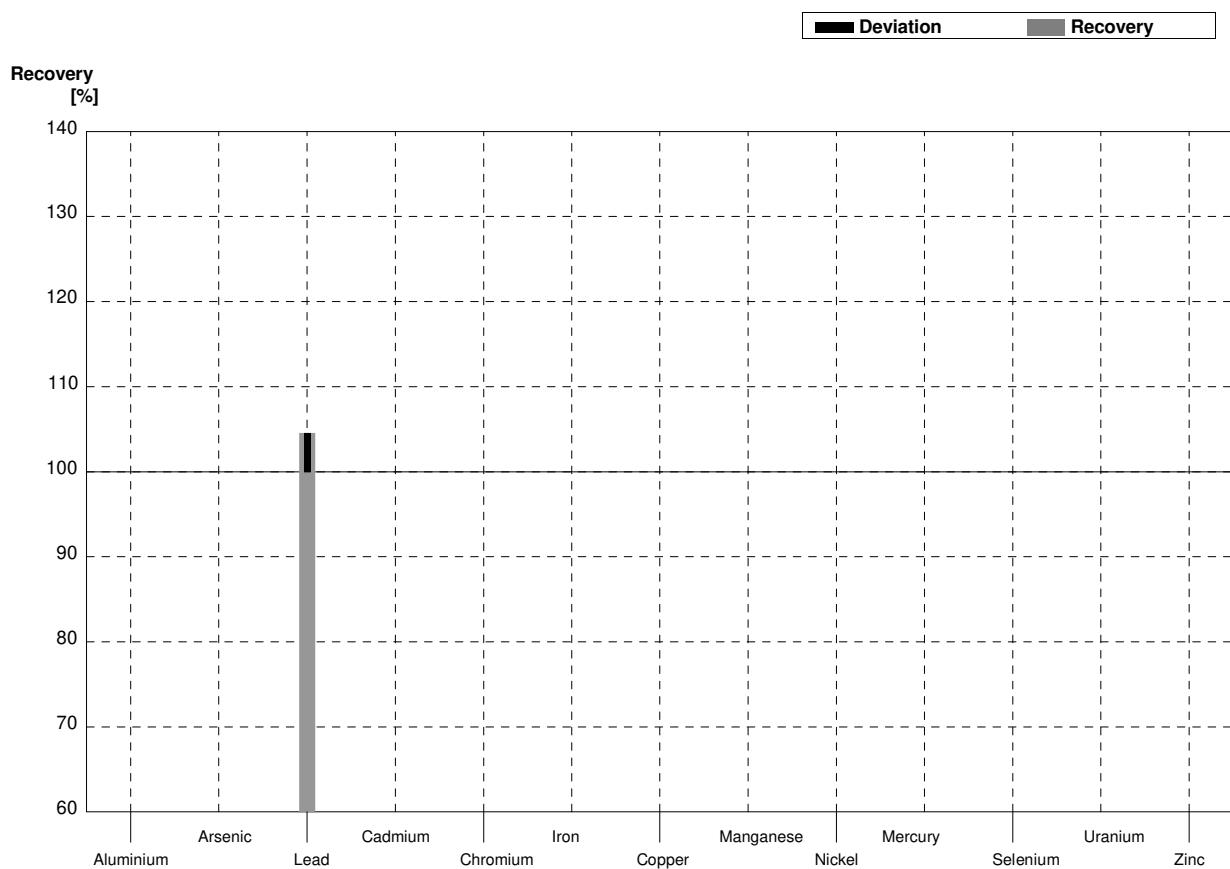
**Sample M161A**  
**Laboratory A**

Parameter	Target value	$\pm$ U ( $k=2$ )	Result	$\pm$	Unit	Recovery
Aluminium	25,8	0,2			$\mu\text{g/l}$	
Arsenic	0,692	0,007			$\mu\text{g/l}$	
Lead	1,21	0,01	1,33	0,13	$\mu\text{g/l}$	110%
Cadmium	0,393	0,004			$\mu\text{g/l}$	
Chromium	10,0	0,1			$\mu\text{g/l}$	
Iron	38,4	0,2			$\mu\text{g/l}$	
Copper	16,7	0,1			$\mu\text{g/l}$	
Manganese	32,7	0,2			$\mu\text{g/l}$	
Nickel	1,75	0,02			$\mu\text{g/l}$	
Mercury	0,82	0,02			$\mu\text{g/l}$	
Selenium	0,94	0,03			$\mu\text{g/l}$	
Uranium	3,69	0,03			$\mu\text{g/l}$	
Zinc	46,3	0,6			$\mu\text{g/l}$	



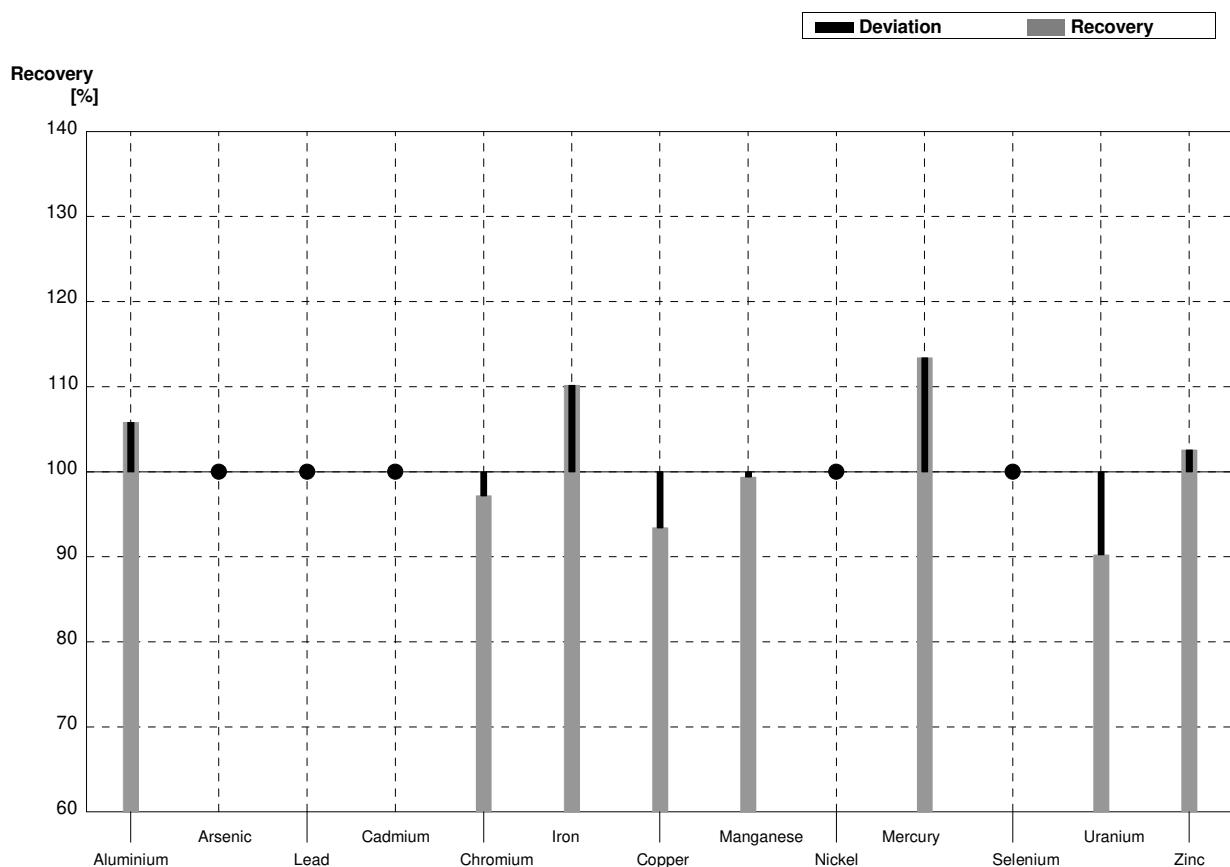
**Sample M161B**  
**Laboratory A**

Parameter	Target value	$\pm U$ ( $k=2$ )	Result	$\pm$	Unit	Recovery
Aluminium	51,0	0,3			$\mu\text{g/l}$	
Arsenic	1,35	0,01			$\mu\text{g/l}$	
Lead	2,66	0,02	2,78	0,28	$\mu\text{g/l}$	105%
Cadmium	0,89	0,01			$\mu\text{g/l}$	
Chromium	1,71	0,02			$\mu\text{g/l}$	
Iron	75,8	0,3			$\mu\text{g/l}$	
Copper	2,98	0,03			$\mu\text{g/l}$	
Manganese	8,22	0,06			$\mu\text{g/l}$	
Nickel	2,78	0,03			$\mu\text{g/l}$	
Mercury	1,51	0,03			$\mu\text{g/l}$	
Selenium	2,90	0,03			$\mu\text{g/l}$	
Uranium	2,08	0,02			$\mu\text{g/l}$	
Zinc	14,0	0,5			$\mu\text{g/l}$	



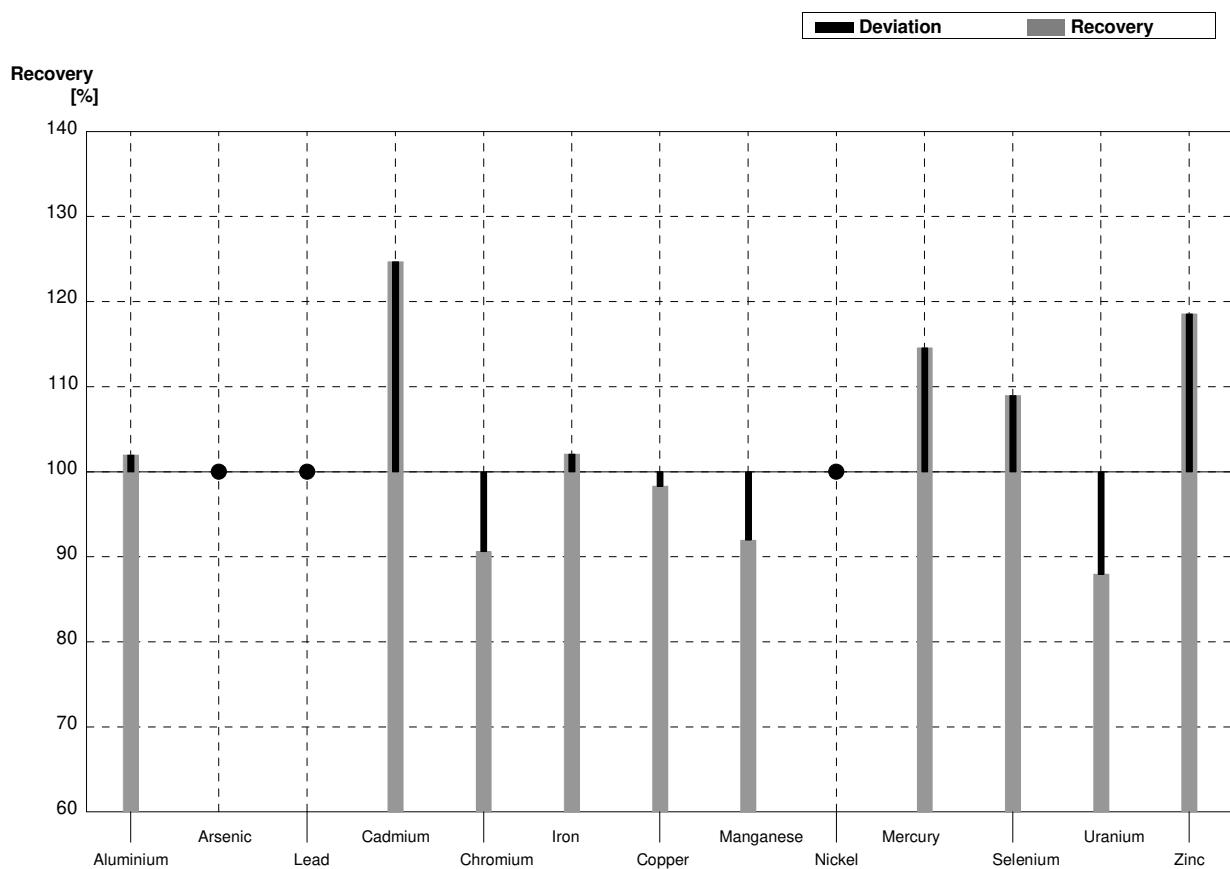
**Sample M161A**  
**Laboratory B**

Parameter	Target value	$\pm$ U ( $k=2$ )	Result	$\pm$	Unit	Recovery
Aluminium	25,8	0,2	27,3		$\mu\text{g/l}$	106%
Arsenic	0,692	0,007	<3		$\mu\text{g/l}$	•
Lead	1,21	0,01	<3		$\mu\text{g/l}$	•
Cadmium	0,393	0,004	<1		$\mu\text{g/l}$	•
Chromium	10,0	0,1	9,72		$\mu\text{g/l}$	97%
Iron	38,4	0,2	42,3		$\mu\text{g/l}$	110%
Copper	16,7	0,1	15,6		$\mu\text{g/l}$	93%
Manganese	32,7	0,2	32,5		$\mu\text{g/l}$	99%
Nickel	1,75	0,02	<3		$\mu\text{g/l}$	•
Mercury	0,82	0,02	0,93		$\mu\text{g/l}$	113%
Selenium	0,94	0,03	<3		$\mu\text{g/l}$	•
Uranium	3,69	0,03	3,33		$\mu\text{g/l}$	90%
Zinc	46,3	0,6	47,5		$\mu\text{g/l}$	103%



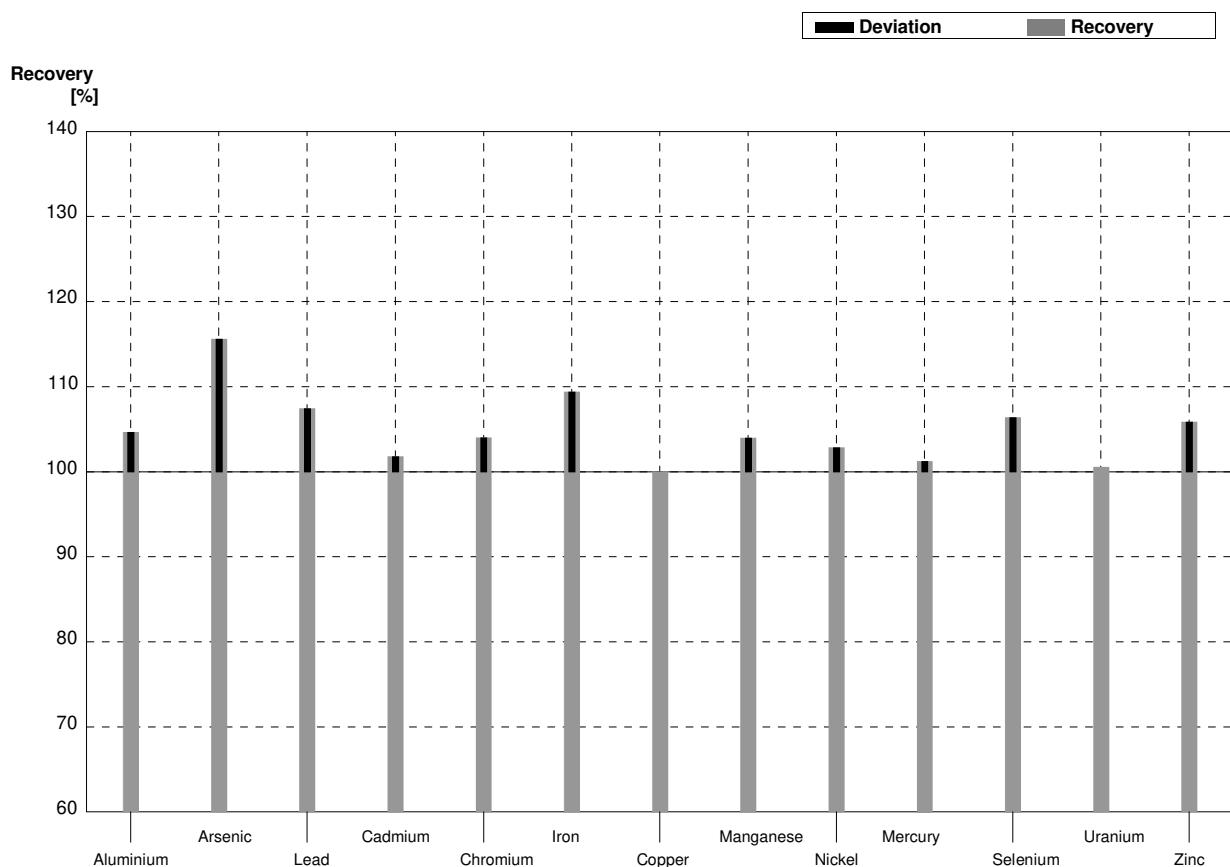
**Sample M161B**  
**Laboratory B**

Parameter	Target value	$\pm$ U ( $k=2$ )	Result	$\pm$	Unit	Recovery
Aluminium	51,0	0,3	52,0		$\mu\text{g/l}$	102%
Arsenic	1,35	0,01	<3		$\mu\text{g/l}$	•
Lead	2,66	0,02	<3		$\mu\text{g/l}$	•
Cadmium	0,89	0,01	1,11		$\mu\text{g/l}$	125%
Chromium	1,71	0,02	1,55		$\mu\text{g/l}$	91%
Iron	75,8	0,3	77,4		$\mu\text{g/l}$	102%
Copper	2,98	0,03	2,93		$\mu\text{g/l}$	98%
Manganese	8,22	0,06	7,56		$\mu\text{g/l}$	92%
Nickel	2,78	0,03	<3		$\mu\text{g/l}$	•
Mercury	1,51	0,03	1,73		$\mu\text{g/l}$	115%
Selenium	2,90	0,03	3,16		$\mu\text{g/l}$	109%
Uranium	2,08	0,02	1,83		$\mu\text{g/l}$	88%
Zinc	14,0	0,5	16,6		$\mu\text{g/l}$	119%



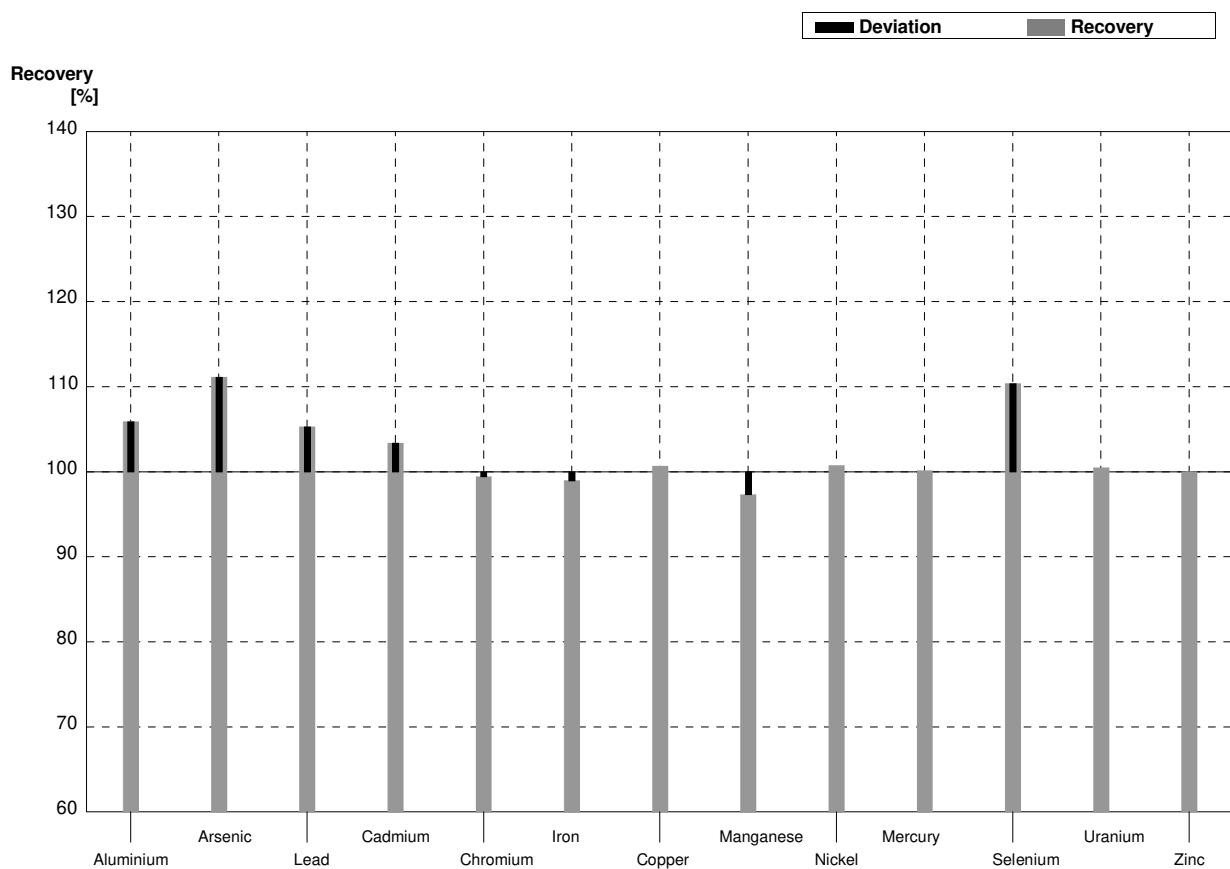
**Sample M161A**  
**Laboratory C**

Parameter	Target value	$\pm$ U ( $k=2$ )	Result	$\pm$	Unit	Recovery
Aluminium	25,8	0,2	27,000	2,70000	$\mu\text{g/l}$	105%
Arsenic	0,692	0,007	0,80000	0,09600	$\mu\text{g/l}$	116%
Lead	1,21	0,01	1,30000	0,10400	$\mu\text{g/l}$	107%
Cadmium	0,393	0,004	0,40000	0,03200	$\mu\text{g/l}$	102%
Chromium	10,0	0,1	10,4000	1,24800	$\mu\text{g/l}$	104%
Iron	38,4	0,2	42,000	10,9200	$\mu\text{g/l}$	109%
Copper	16,7	0,1	16,7000	1,3360	$\mu\text{g/l}$	100%
Manganese	32,7	0,2	34,000	3,40000	$\mu\text{g/l}$	104%
Nickel	1,75	0,02	1,8000	0,18000	$\mu\text{g/l}$	103%
Mercury	0,82	0,02	0,83000	0,125	$\mu\text{g/l}$	101%
Selenium	0,94	0,03	1,00000	0,15000	$\mu\text{g/l}$	106%
Uranium	3,69	0,03	3,71	0,186	$\mu\text{g/l}$	101%
Zinc	46,3	0,6	49,0000	4,900	$\mu\text{g/l}$	106%



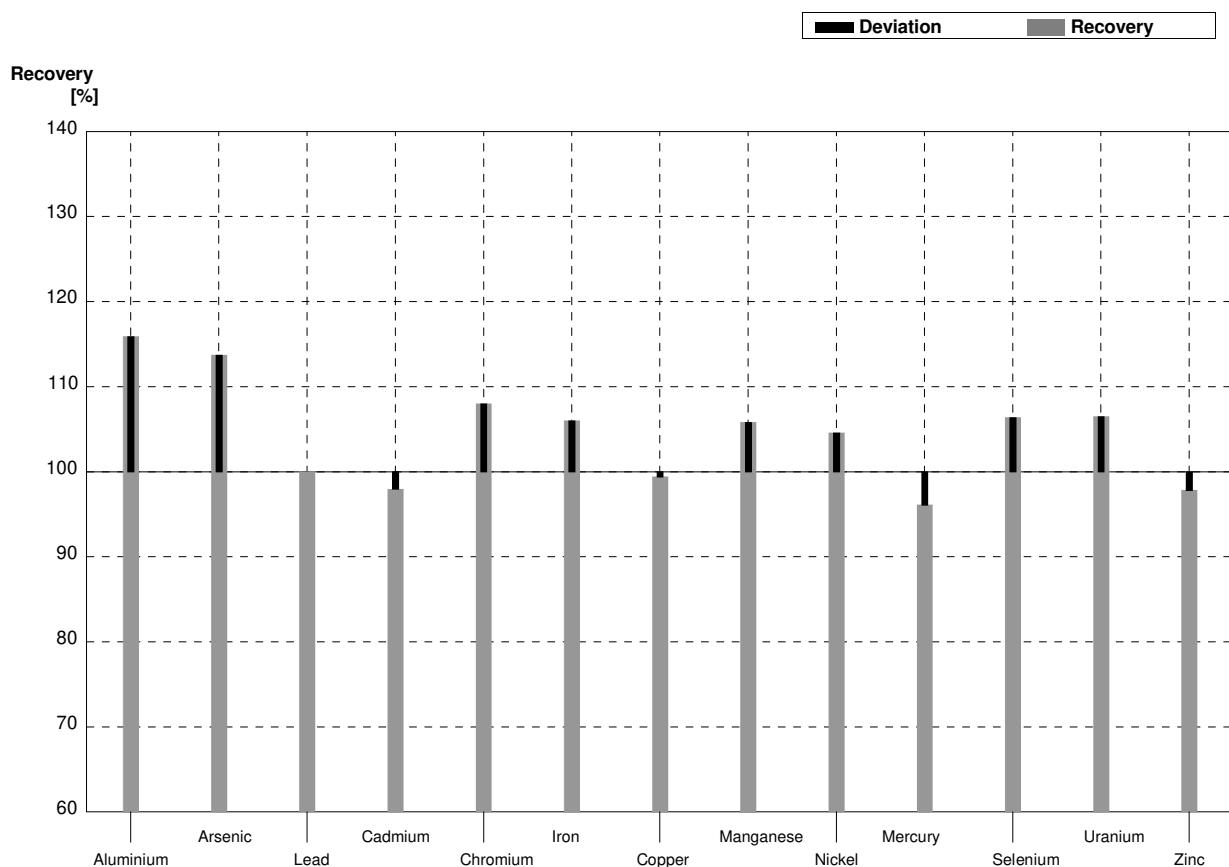
**Sample M161B**  
**Laboratory C**

Parameter	Target value	$\pm$ U ( $k=2$ )	Result	$\pm$	Unit	Recovery
Aluminium	51,0	0,3	54,000	5,4000	$\mu\text{g/l}$	106%
Arsenic	1,35	0,01	1,50000	0,18000	$\mu\text{g/l}$	111%
Lead	2,66	0,02	2,80000	0,22400	$\mu\text{g/l}$	105%
Cadmium	0,89	0,01	0,92000	0,0736	$\mu\text{g/l}$	103%
Chromium	1,71	0,02	1,70000	0,20400	$\mu\text{g/l}$	99%
Iron	75,8	0,3	75,000	19,5000	$\mu\text{g/l}$	99%
Copper	2,98	0,03	3,000	0,2400	$\mu\text{g/l}$	101%
Manganese	8,22	0,06	8,000	0,8000	$\mu\text{g/l}$	97%
Nickel	2,78	0,03	2,80000	0,28000	$\mu\text{g/l}$	101%
Mercury	1,51	0,03	1,512	0,227	$\mu\text{g/l}$	100%
Selenium	2,90	0,03	3,2000	0,48000	$\mu\text{g/l}$	110%
Uranium	2,08	0,02	2,0900	0,10500	$\mu\text{g/l}$	100%
Zinc	14,0	0,5	14,0000	1,4000	$\mu\text{g/l}$	100%



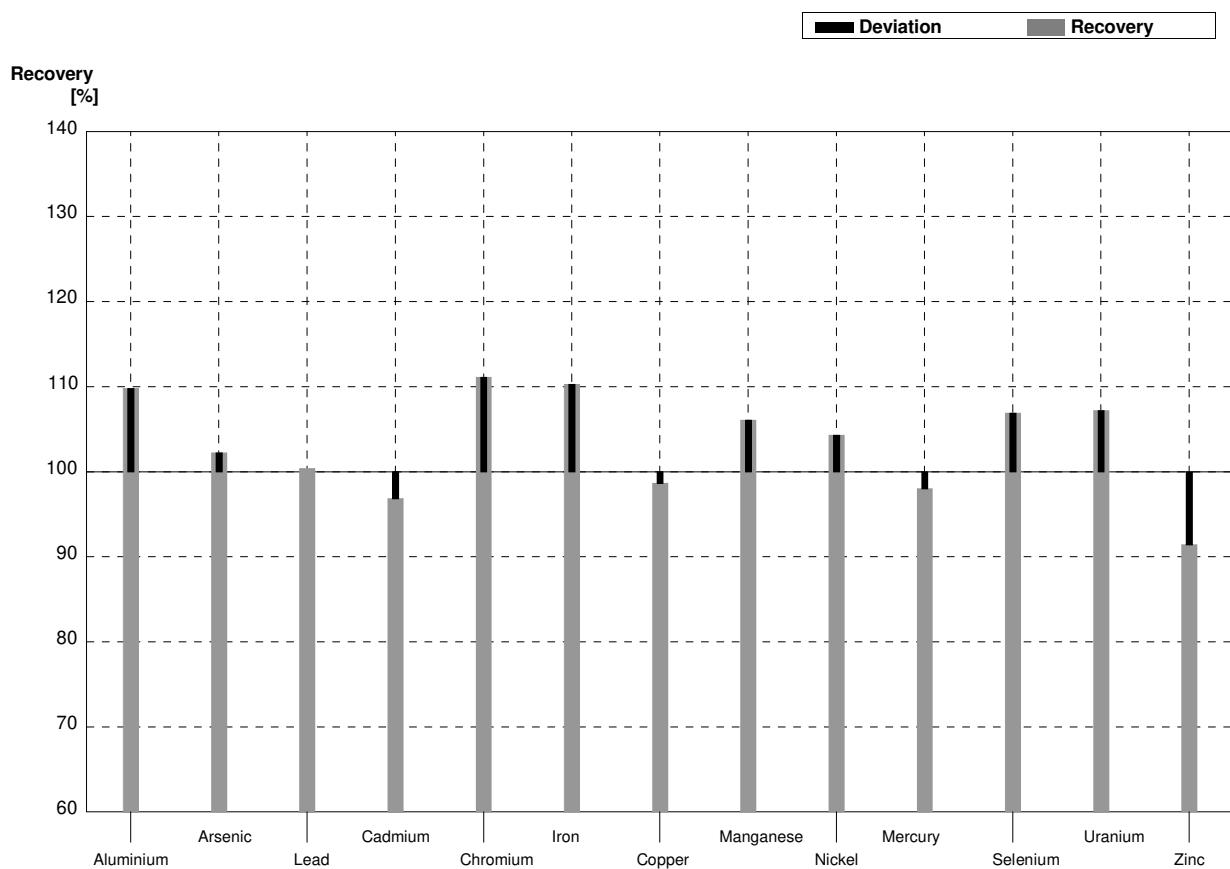
**Sample M161A**  
**Laboratory D**

Parameter	Target value	$\pm$ U ( $k=2$ )	Result	$\pm$	Unit	Recovery
Aluminium	25,8	0,2	29,9	4,49	$\mu\text{g/l}$	116%
Arsenic	0,692	0,007	0,787	0,118	$\mu\text{g/l}$	114%
Lead	1,21	0,01	1,21	0,18	$\mu\text{g/l}$	100%
Cadmium	0,393	0,004	0,385	0,058	$\mu\text{g/l}$	98%
Chromium	10,0	0,1	10,8	1,62	$\mu\text{g/l}$	108%
Iron	38,4	0,2	40,7	6,11	$\mu\text{g/l}$	106%
Copper	16,7	0,1	16,6	2,49	$\mu\text{g/l}$	99%
Manganese	32,7	0,2	34,6	5,18	$\mu\text{g/l}$	106%
Nickel	1,75	0,02	1,83	0,27	$\mu\text{g/l}$	105%
Mercury	0,82	0,02	0,788	0,118	$\mu\text{g/l}$	96%
Selenium	0,94	0,03	1,00	0,15	$\mu\text{g/l}$	106%
Uranium	3,69	0,03	3,93	0,59	$\mu\text{g/l}$	107%
Zinc	46,3	0,6	45,3	6,80	$\mu\text{g/l}$	98%



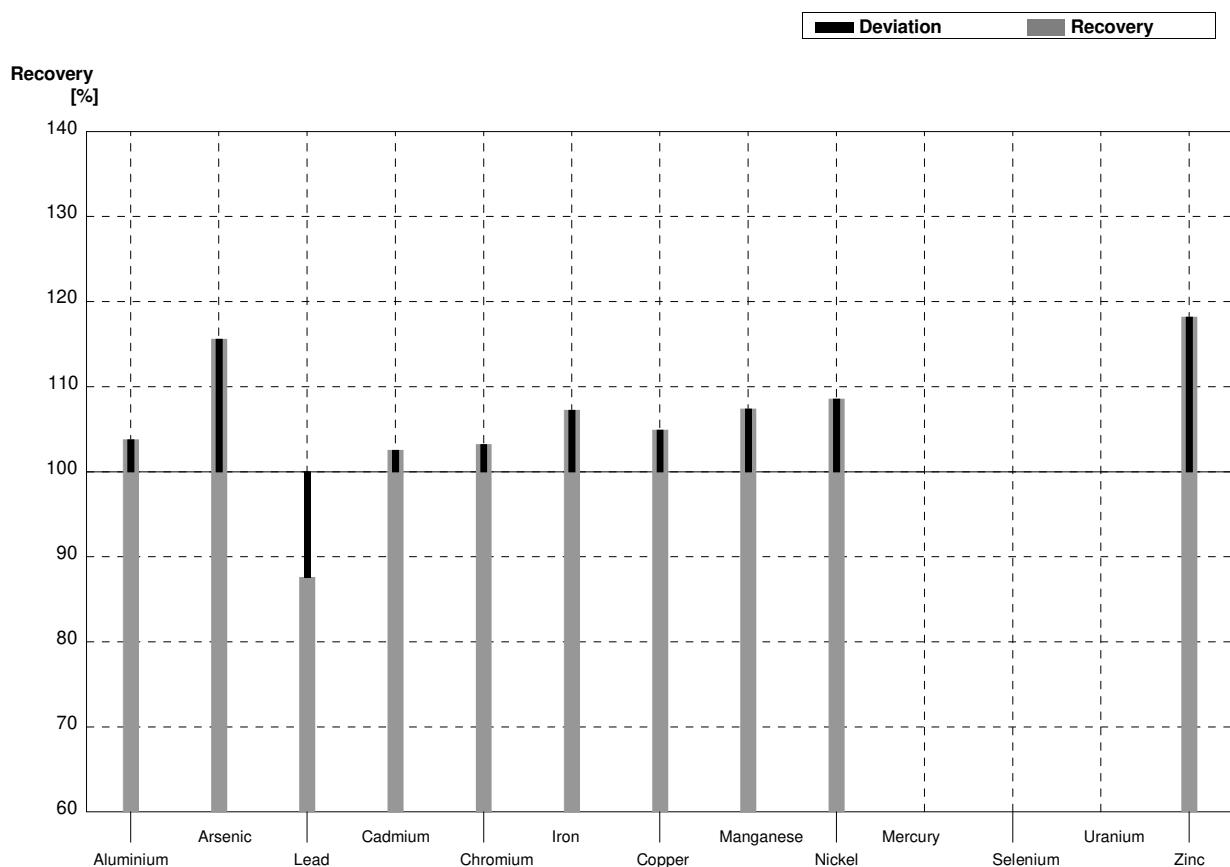
**Sample M161B**  
**Laboratory D**

Parameter	Target value	$\pm$ U ( $k=2$ )	Result	$\pm$	Unit	Recovery
Aluminium	51,0	0,3	56,0	8,39	$\mu\text{g/l}$	110%
Arsenic	1,35	0,01	1,38	0,21	$\mu\text{g/l}$	102%
Lead	2,66	0,02	2,67	0,40	$\mu\text{g/l}$	100%
Cadmium	0,89	0,01	0,862	0,129	$\mu\text{g/l}$	97%
Chromium	1,71	0,02	1,90	0,28	$\mu\text{g/l}$	111%
Iron	75,8	0,3	83,6	12,5	$\mu\text{g/l}$	110%
Copper	2,98	0,03	2,94	0,44	$\mu\text{g/l}$	99%
Manganese	8,22	0,06	8,72	1,31	$\mu\text{g/l}$	106%
Nickel	2,78	0,03	2,90	0,44	$\mu\text{g/l}$	104%
Mercury	1,51	0,03	1,48	0,22	$\mu\text{g/l}$	98%
Selenium	2,90	0,03	3,10	0,46	$\mu\text{g/l}$	107%
Uranium	2,08	0,02	2,23	0,33	$\mu\text{g/l}$	107%
Zinc	14,0	0,5	12,8	1,91	$\mu\text{g/l}$	91%



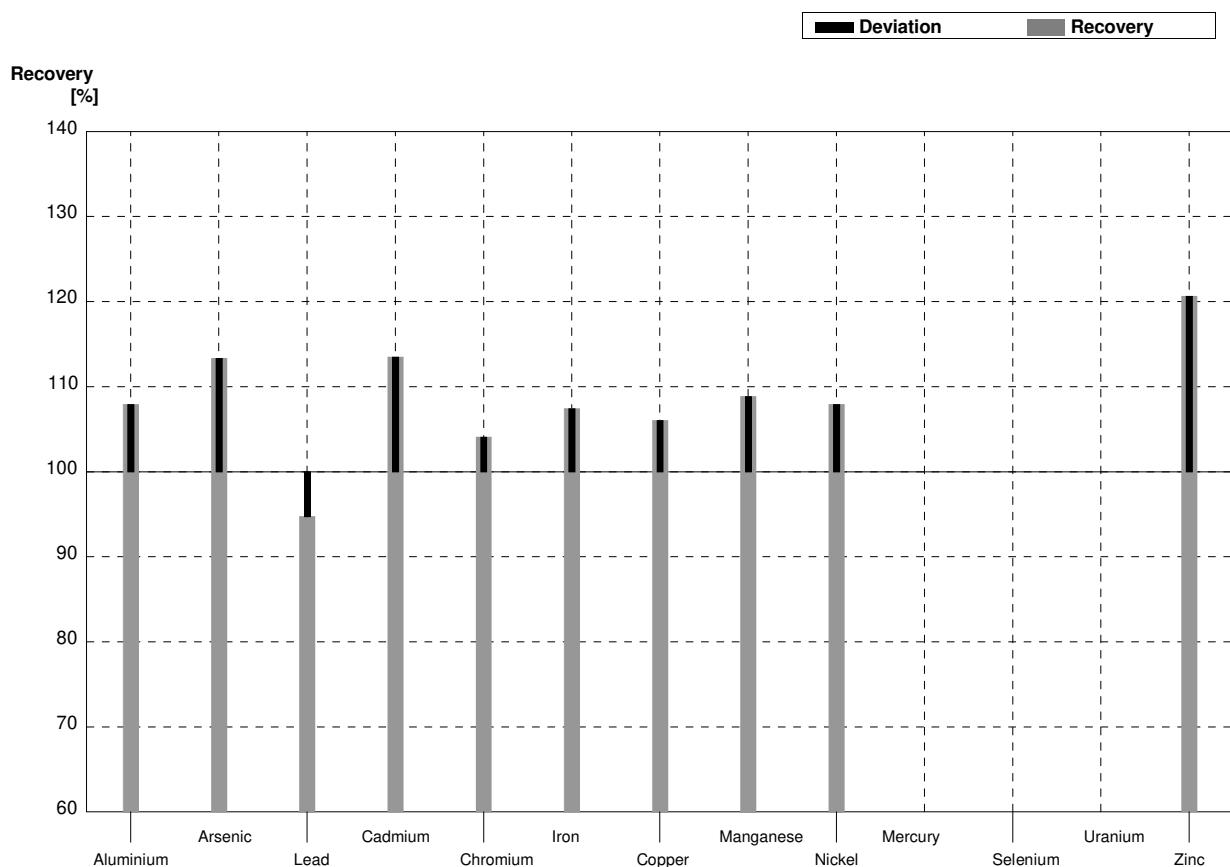
**Sample M161A**  
**Laboratory E**

Parameter	Target value	$\pm$ U (k=2)	Result	$\pm$	Unit	Recovery
Aluminium	25,8	0,2	26,78	2,95	$\mu\text{g/l}$	104%
Arsenic	0,692	0,007	0,80	0,05	$\mu\text{g/l}$	116%
Lead	1,21	0,01	1,06	0,13	$\mu\text{g/l}$	88%
Cadmium	0,393	0,004	0,403	0,059	$\mu\text{g/l}$	103%
Chromium	10,0	0,1	10,32	1,04	$\mu\text{g/l}$	103%
Iron	38,4	0,2	41,19	4,19	$\mu\text{g/l}$	107%
Copper	16,7	0,1	17,52	2,25	$\mu\text{g/l}$	105%
Manganese	32,7	0,2	35,12	3,58	$\mu\text{g/l}$	107%
Nickel	1,75	0,02	1,90	0,12	$\mu\text{g/l}$	109%
Mercury	0,82	0,02			$\mu\text{g/l}$	
Selenium	0,94	0,03			$\mu\text{g/l}$	
Uranium	3,69	0,03			$\mu\text{g/l}$	
Zinc	46,3	0,6	54,72	5,87	$\mu\text{g/l}$	118%



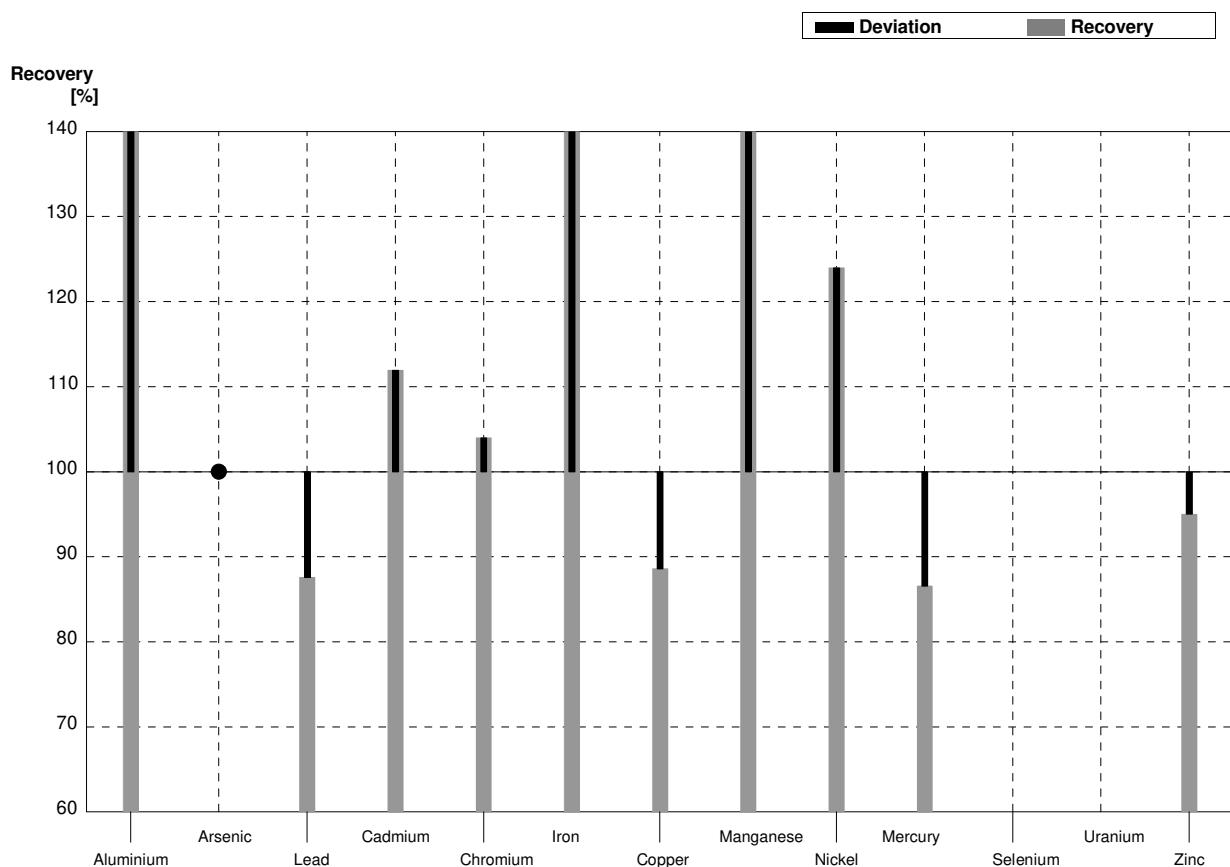
**Sample M161B**  
**Laboratory E**

Parameter	Target value	$\pm$ U ( $k=2$ )	Result	$\pm$	Unit	Recovery
Aluminium	51,0	0,3	55,04	6,05	$\mu\text{g/l}$	108%
Arsenic	1,35	0,01	1,53	0,10	$\mu\text{g/l}$	113%
Lead	2,66	0,02	2,52	0,32	$\mu\text{g/l}$	95%
Cadmium	0,89	0,01	1,01	0,15	$\mu\text{g/l}$	113%
Chromium	1,71	0,02	1,78	0,18	$\mu\text{g/l}$	104%
Iron	75,8	0,3	81,43	8,29	$\mu\text{g/l}$	107%
Copper	2,98	0,03	3,16	0,41	$\mu\text{g/l}$	106%
Manganese	8,22	0,06	8,95	0,91	$\mu\text{g/l}$	109%
Nickel	2,78	0,03	3,00	0,19	$\mu\text{g/l}$	108%
Mercury	1,51	0,03			$\mu\text{g/l}$	
Selenium	2,90	0,03			$\mu\text{g/l}$	
Uranium	2,08	0,02			$\mu\text{g/l}$	
Zinc	14,0	0,5	16,89	1,81	$\mu\text{g/l}$	121%



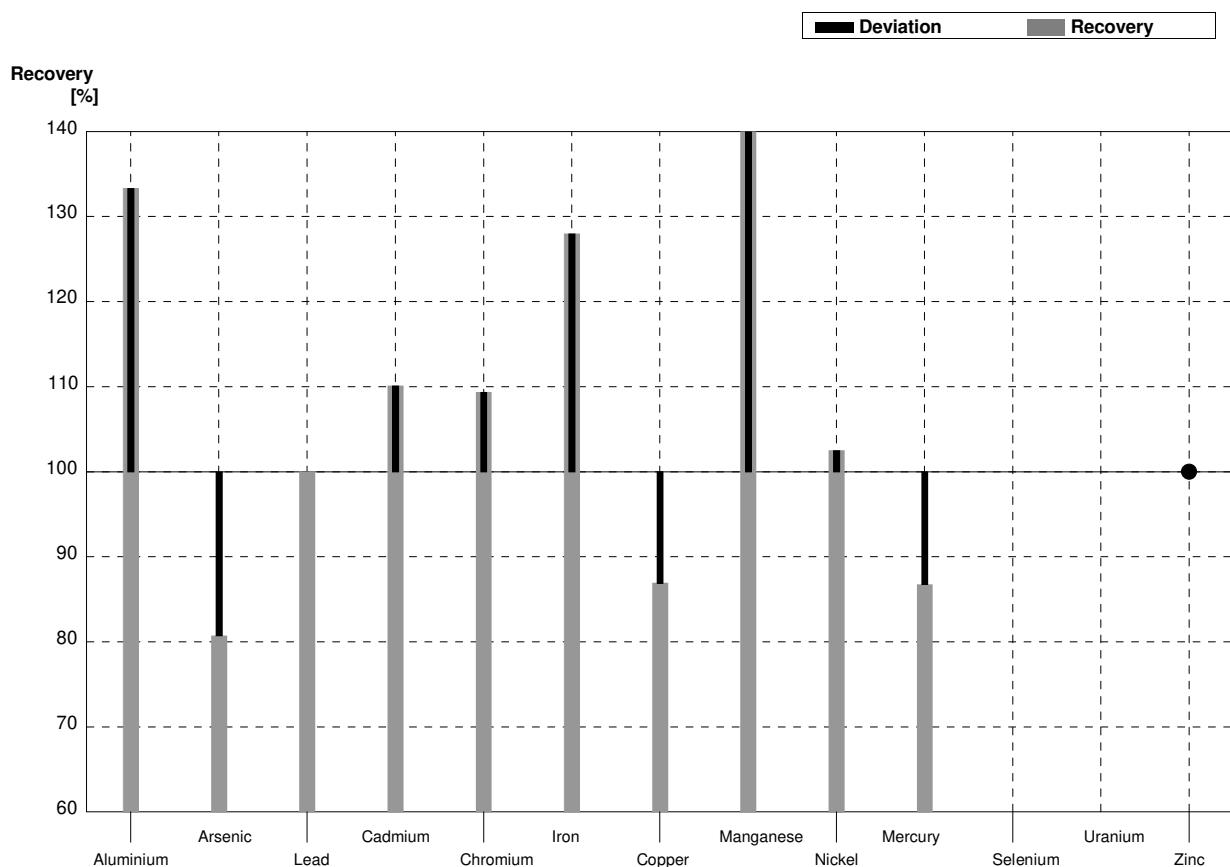
**Sample M161A**  
**Laboratory F**

Parameter	Target value	$\pm$ U ( $k=2$ )	Result	$\pm$	Unit	Recovery
Aluminium	25,8	0,2	38,5	9	$\mu\text{g/l}$	149%
Arsenic	0,692	0,007	<1		$\mu\text{g/l}$	•
Lead	1,21	0,01	1,06	1	$\mu\text{g/l}$	88%
Cadmium	0,393	0,004	0,440	0,1	$\mu\text{g/l}$	112%
Chromium	10,0	0,1	10,4	1	$\mu\text{g/l}$	104%
Iron	38,4	0,2	80	30	$\mu\text{g/l}$	208%
Copper	16,7	0,1	14,8	2	$\mu\text{g/l}$	89%
Manganese	32,7	0,2	55	20	$\mu\text{g/l}$	168%
Nickel	1,75	0,02	2,17	1	$\mu\text{g/l}$	124%
Mercury	0,82	0,02	0,71	0,1	$\mu\text{g/l}$	87%
Selenium	0,94	0,03			$\mu\text{g/l}$	
Uranium	3,69	0,03			$\mu\text{g/l}$	
Zinc	46,3	0,6	44,0	10	$\mu\text{g/l}$	95%



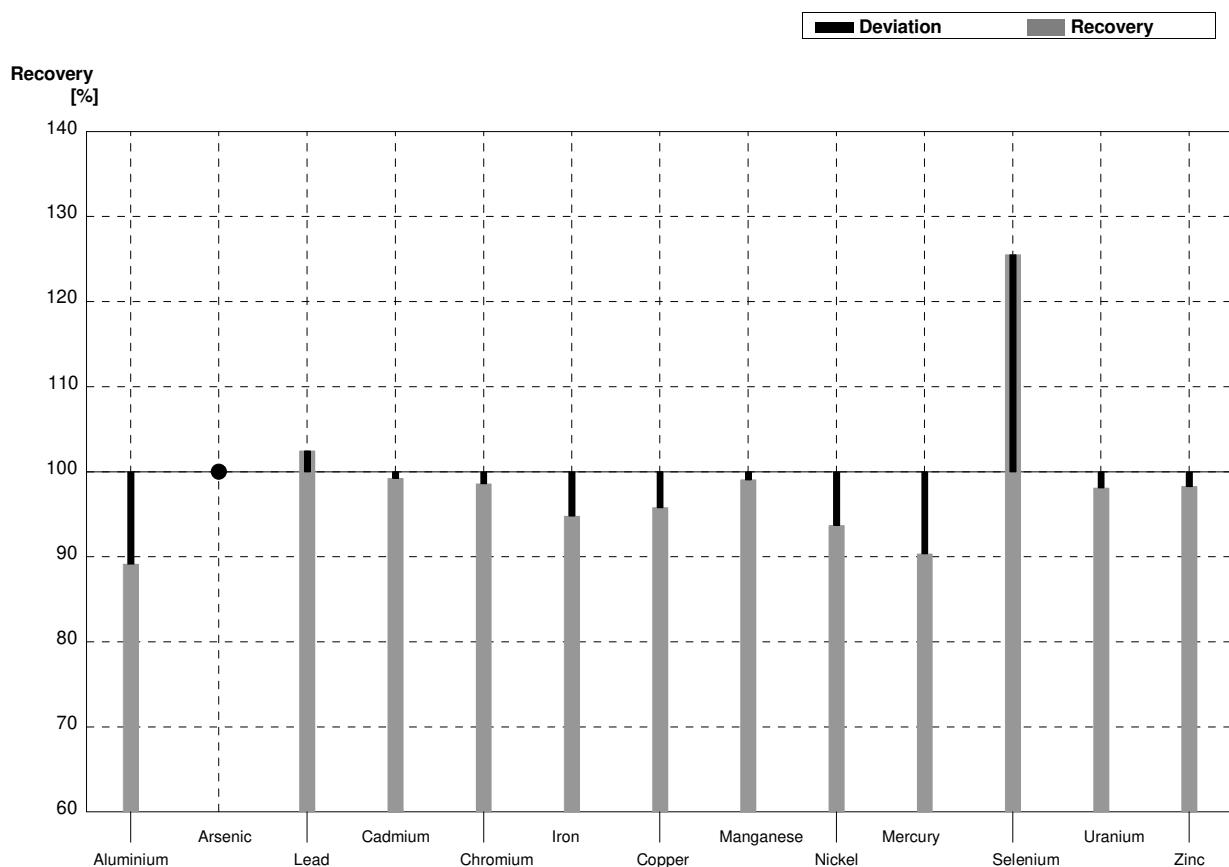
**Sample M161B**  
**Laboratory F**

Parameter	Target value	$\pm$ U ( $k=2$ )	Result	$\pm$	Unit	Recovery
Aluminium	51,0	0,3	68	14	$\mu\text{g/l}$	133%
Arsenic	1,35	0,01	1,09	1	$\mu\text{g/l}$	81%
Lead	2,66	0,02	2,66	1	$\mu\text{g/l}$	100%
Cadmium	0,89	0,01	0,98	0,15	$\mu\text{g/l}$	110%
Chromium	1,71	0,02	1,87	1	$\mu\text{g/l}$	109%
Iron	75,8	0,3	97	30	$\mu\text{g/l}$	128%
Copper	2,98	0,03	2,59	1	$\mu\text{g/l}$	87%
Manganese	8,22	0,06	35,0	15	$\mu\text{g/l}$	426%
Nickel	2,78	0,03	2,85	1	$\mu\text{g/l}$	103%
Mercury	1,51	0,03	1,31	0,15	$\mu\text{g/l}$	87%
Selenium	2,90	0,03			$\mu\text{g/l}$	
Uranium	2,08	0,02			$\mu\text{g/l}$	
Zinc	14,0	0,5	<20		$\mu\text{g/l}$	•



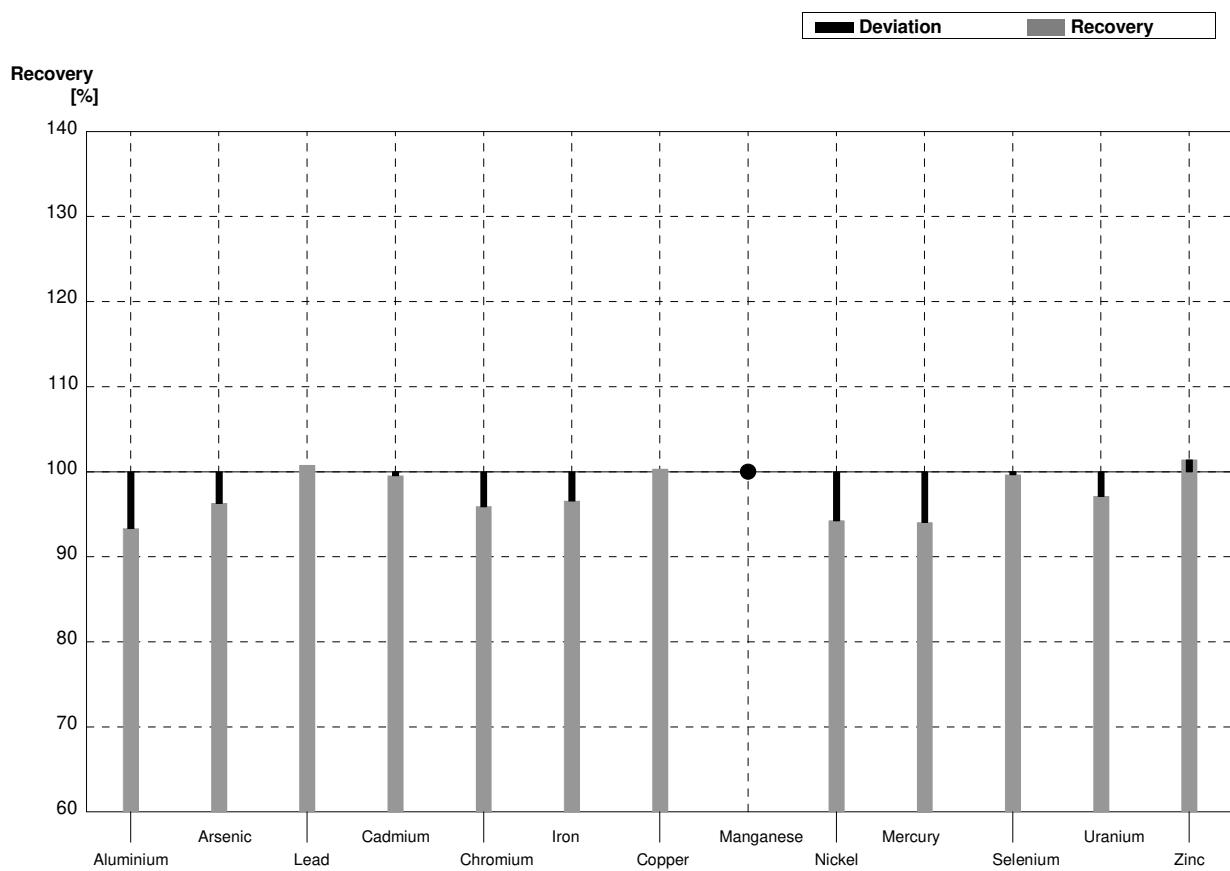
**Sample M161A**  
**Laboratory G**

Parameter	Target value	$\pm$ U ( $k=2$ )	Result	$\pm$	Unit	Recovery
Aluminium	25,8	0,2	23,0	0,686	$\mu\text{g/l}$	89%
Arsenic	0,692	0,007	<1,00		$\mu\text{g/l}$	•
Lead	1,21	0,01	1,24	0,106	$\mu\text{g/l}$	102%
Cadmium	0,393	0,004	0,390	0,0194	$\mu\text{g/l}$	99%
Chromium	10,0	0,1	9,86	0,129	$\mu\text{g/l}$	99%
Iron	38,4	0,2	36,4	0,860	$\mu\text{g/l}$	95%
Copper	16,7	0,1	16,0	0,249	$\mu\text{g/l}$	96%
Manganese	32,7	0,2	32,4	0,561	$\mu\text{g/l}$	99%
Nickel	1,75	0,02	1,64	0,166	$\mu\text{g/l}$	94%
Mercury	0,82	0,02	0,741	0,0263	$\mu\text{g/l}$	90%
Selenium	0,94	0,03	1,18	0,132	$\mu\text{g/l}$	126%
Uranium	3,69	0,03	3,62	0,0613	$\mu\text{g/l}$	98%
Zinc	46,3	0,6	45,5	0,294	$\mu\text{g/l}$	98%



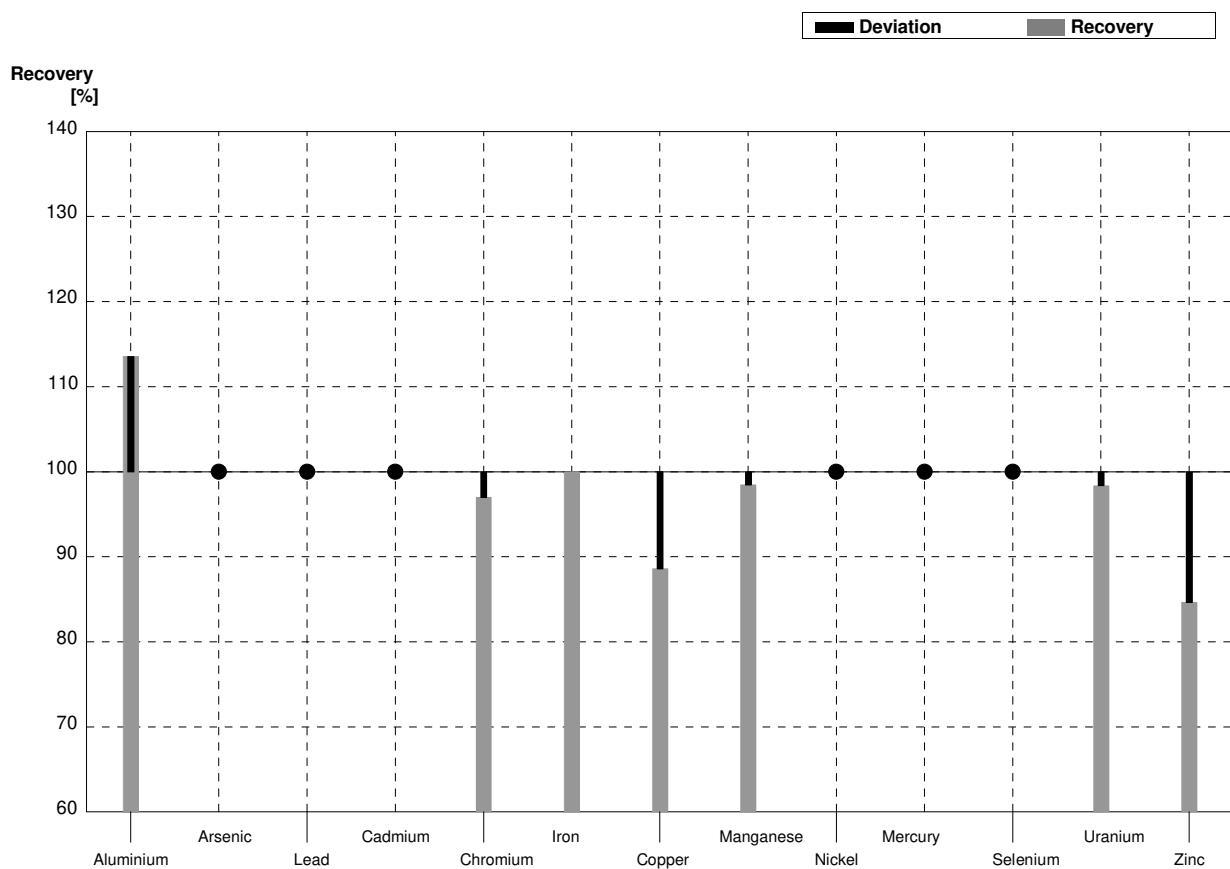
**Sample M161B**  
**Laboratory G**

Parameter	Target value	$\pm$ U ( $k=2$ )	Result	$\pm$	Unit	Recovery
Aluminium	51,0	0,3	47,6	0,628	$\mu\text{g/l}$	93%
Arsenic	1,35	0,01	1,30	0,0619	$\mu\text{g/l}$	96%
Lead	2,66	0,02	2,68	0,0973	$\mu\text{g/l}$	101%
Cadmium	0,89	0,01	0,886	0,0209	$\mu\text{g/l}$	100%
Chromium	1,71	0,02	1,64	0,111	$\mu\text{g/l}$	96%
Iron	75,8	0,3	73,2	0,877	$\mu\text{g/l}$	97%
Copper	2,98	0,03	2,99	0,0946	$\mu\text{g/l}$	100%
Manganese	8,22	0,06	<10,0		$\mu\text{g/l}$	•
Nickel	2,78	0,03	2,62	0,157	$\mu\text{g/l}$	94%
Mercury	1,51	0,03	1,42	0,0260	$\mu\text{g/l}$	94%
Selenium	2,90	0,03	2,89	0,120	$\mu\text{g/l}$	100%
Uranium	2,08	0,02	2,02	0,0641	$\mu\text{g/l}$	97%
Zinc	14,0	0,5	14,2	0,271	$\mu\text{g/l}$	101%



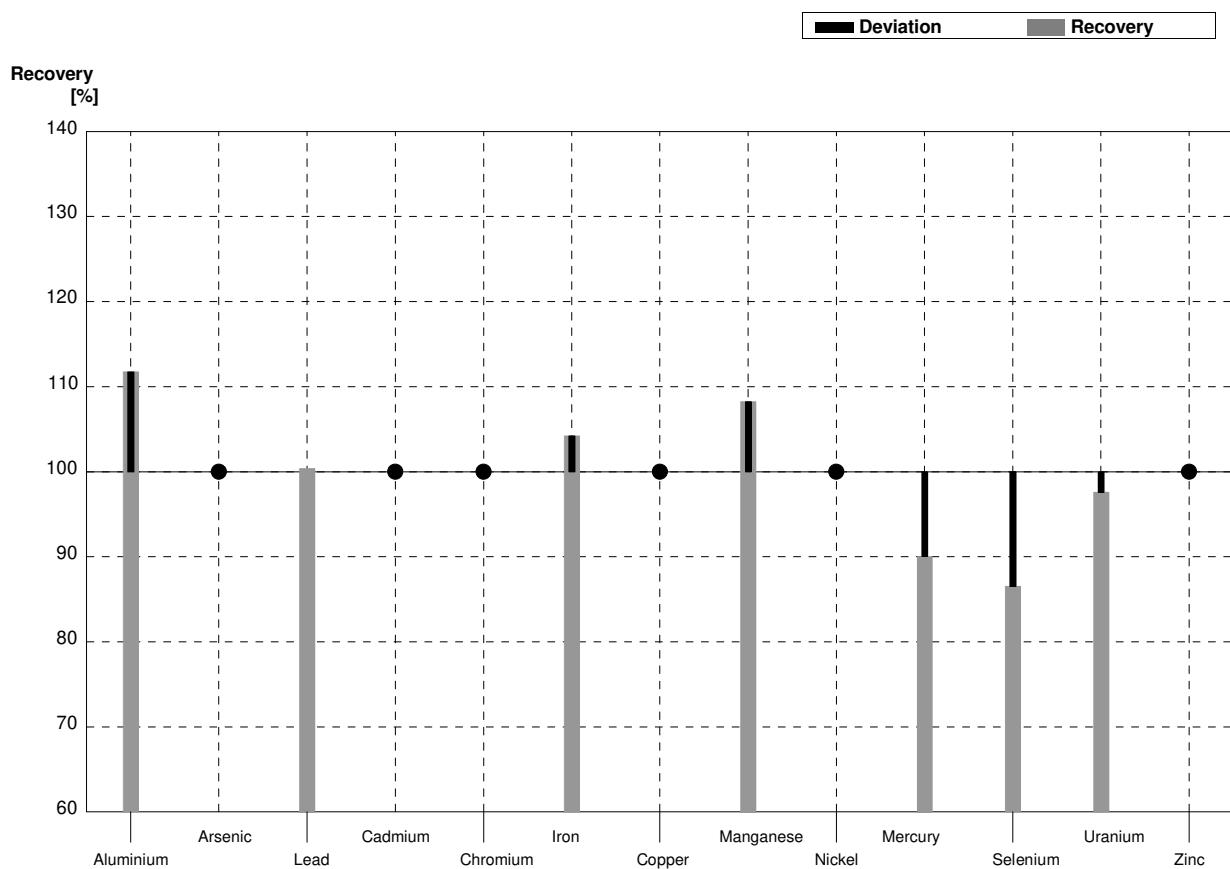
**Sample M161A**  
**Laboratory H**

Parameter	Target value	$\pm$ U ( $k=2$ )	Result	$\pm$	Unit	Recovery
Aluminium	25,8	0,2	29,3	2,93	$\mu\text{g/l}$	114%
Arsenic	0,692	0,007	<2,00		$\mu\text{g/l}$	•
Lead	1,21	0,01	<2,00		$\mu\text{g/l}$	•
Cadmium	0,393	0,004	<1,00		$\mu\text{g/l}$	•
Chromium	10,0	0,1	9,7	0,97	$\mu\text{g/l}$	97%
Iron	38,4	0,2	38,4	3,84	$\mu\text{g/l}$	100%
Copper	16,7	0,1	14,8	1,48	$\mu\text{g/l}$	89%
Manganese	32,7	0,2	32,2	3,22	$\mu\text{g/l}$	98%
Nickel	1,75	0,02	<5,0		$\mu\text{g/l}$	•
Mercury	0,82	0,02	<1,00		$\mu\text{g/l}$	•
Selenium	0,94	0,03	<2,00		$\mu\text{g/l}$	•
Uranium	3,69	0,03	3,63	0,363	$\mu\text{g/l}$	98%
Zinc	46,3	0,6	39,2	3,92	$\mu\text{g/l}$	85%



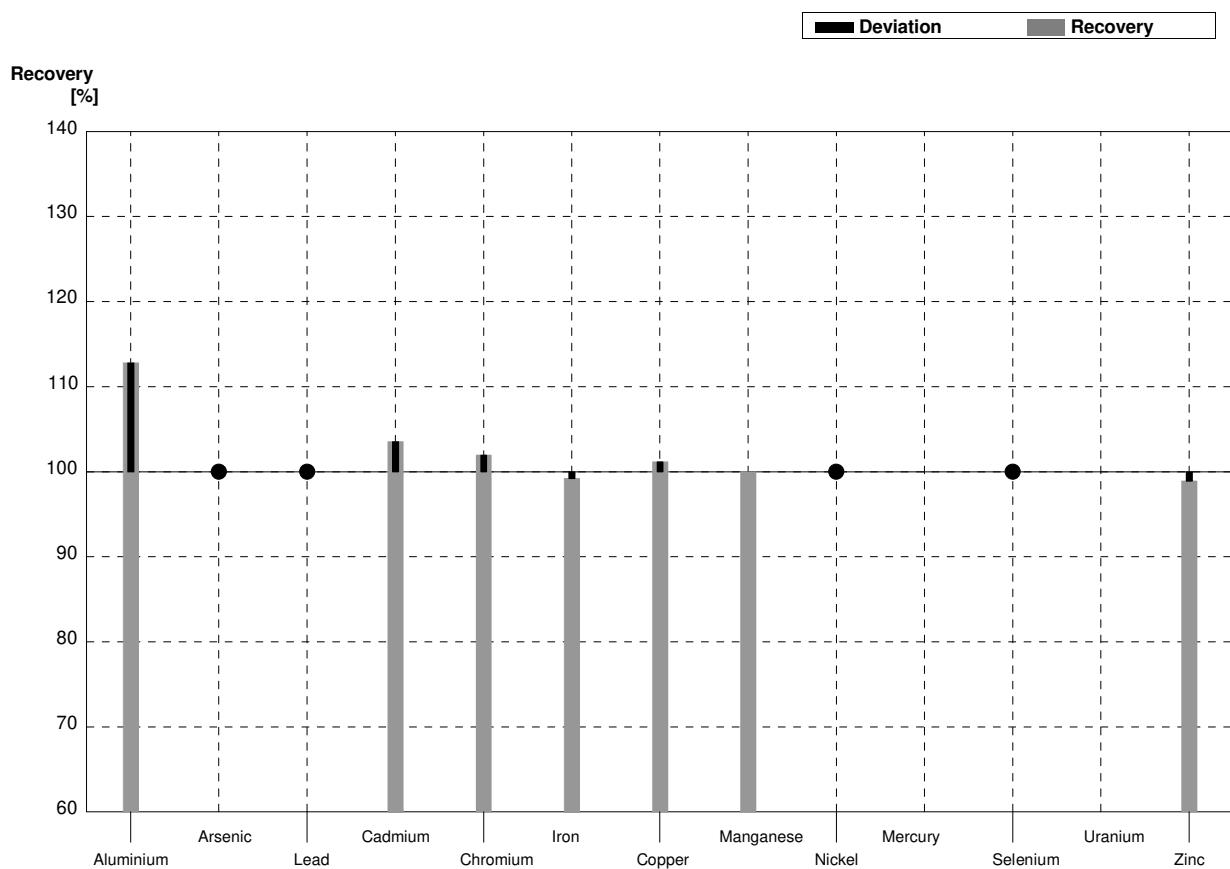
**Sample M161B**  
**Laboratory H**

Parameter	Target value	$\pm$ U ( $k=2$ )	Result	$\pm$	Unit	Recovery
Aluminium	51,0	0,3	57	5,7	$\mu\text{g/l}$	112%
Arsenic	1,35	0,01	<2,00		$\mu\text{g/l}$	•
Lead	2,66	0,02	2,67	0,267	$\mu\text{g/l}$	100%
Cadmium	0,89	0,01	<1,00		$\mu\text{g/l}$	•
Chromium	1,71	0,02	<5,0		$\mu\text{g/l}$	•
Iron	75,8	0,3	79	7,9	$\mu\text{g/l}$	104%
Copper	2,98	0,03	<5,0		$\mu\text{g/l}$	•
Manganese	8,22	0,06	8,9	0,89	$\mu\text{g/l}$	108%
Nickel	2,78	0,03	<5,0		$\mu\text{g/l}$	•
Mercury	1,51	0,03	1,36	0,24	$\mu\text{g/l}$	90%
Selenium	2,90	0,03	2,51	0,251	$\mu\text{g/l}$	87%
Uranium	2,08	0,02	2,03	0,203	$\mu\text{g/l}$	98%
Zinc	14,0	0,5	<15,0		$\mu\text{g/l}$	•



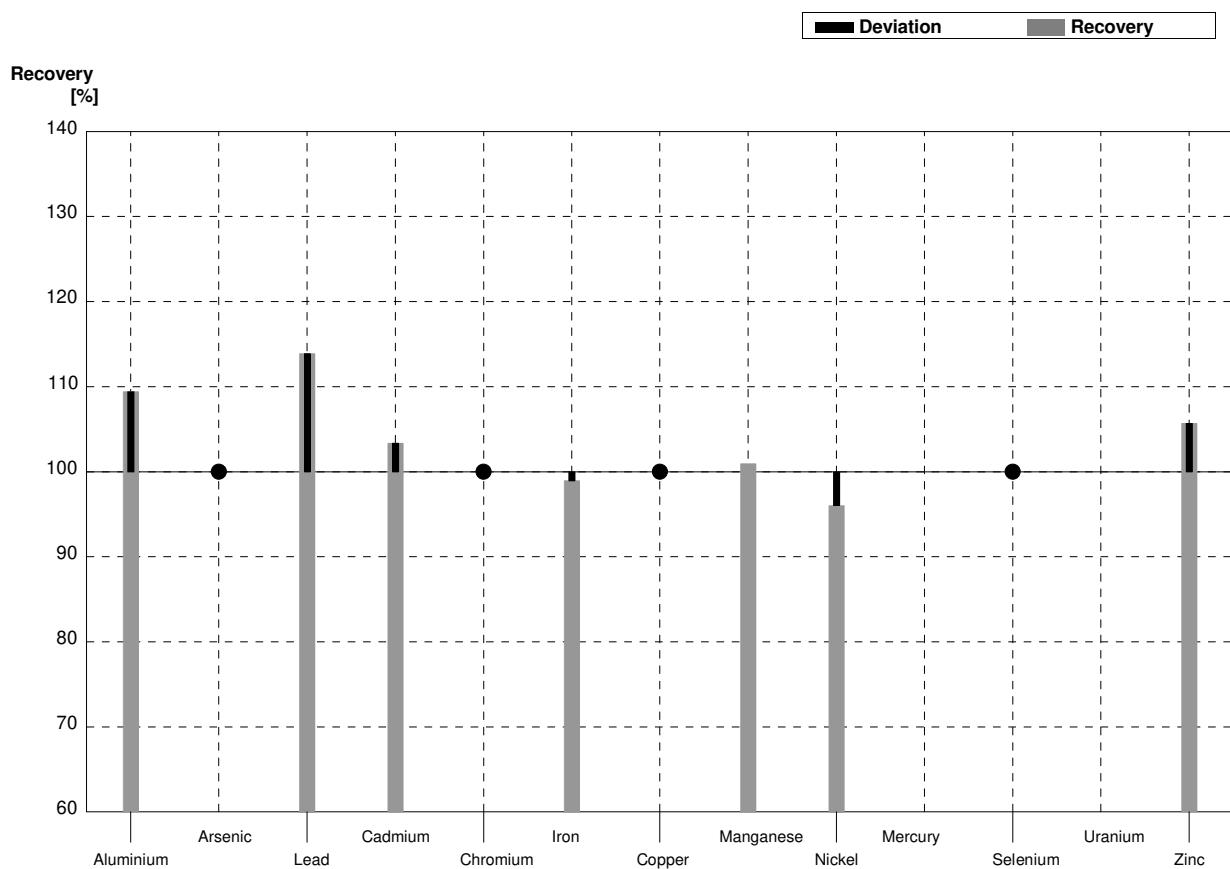
**Sample M161A**  
**Laboratory I**

Parameter	Target value	$\pm$ U ( $k=2$ )	Result	$\pm$	Unit	Recovery
Aluminium	25,8	0,2	29,1	4,48	$\mu\text{g/l}$	113%
Arsenic	0,692	0,007	<2		$\mu\text{g/l}$	•
Lead	1,21	0,01	<2		$\mu\text{g/l}$	•
Cadmium	0,393	0,004	0,407	0,03	$\mu\text{g/l}$	104%
Chromium	10,0	0,1	10,2	0,85	$\mu\text{g/l}$	102%
Iron	38,4	0,2	38,1	3,12	$\mu\text{g/l}$	99%
Copper	16,7	0,1	16,9	4,39	$\mu\text{g/l}$	101%
Manganese	32,7	0,2	32,7	3,074	$\mu\text{g/l}$	100%
Nickel	1,75	0,02	<2,0		$\mu\text{g/l}$	•
Mercury	0,82	0,02			$\mu\text{g/l}$	
Selenium	0,94	0,03	<5,0		$\mu\text{g/l}$	•
Uranium	3,69	0,03			$\mu\text{g/l}$	
Zinc	46,3	0,6	45,8	6,41	$\mu\text{g/l}$	99%



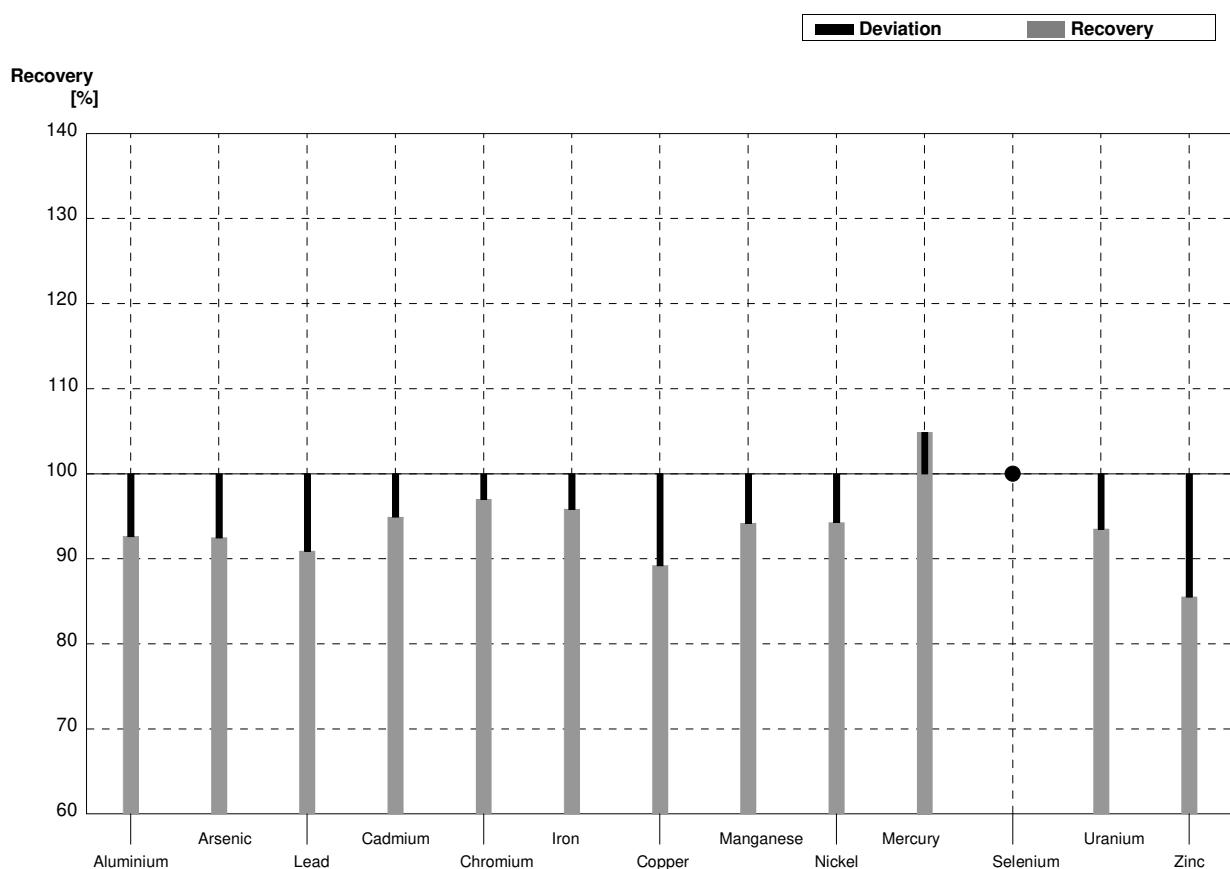
**Sample M161B**  
**Laboratory I**

Parameter	Target value	$\pm$ U (k=2)	Result	$\pm$	Unit	Recovery
Aluminium	51,0	0,3	55,8	8,59	$\mu\text{g/l}$	109%
Arsenic	1,35	0,01	<2		$\mu\text{g/l}$	•
Lead	2,66	0,02	3,03	0,52	$\mu\text{g/l}$	114%
Cadmium	0,89	0,01	0,920	0,06	$\mu\text{g/l}$	103%
Chromium	1,71	0,02	<5,0		$\mu\text{g/l}$	•
Iron	75,8	0,3	75,0	6,15	$\mu\text{g/l}$	99%
Copper	2,98	0,03	<10,0		$\mu\text{g/l}$	•
Manganese	8,22	0,06	8,3	0,78	$\mu\text{g/l}$	101%
Nickel	2,78	0,03	2,67	0,33	$\mu\text{g/l}$	96%
Mercury	1,51	0,03			$\mu\text{g/l}$	
Selenium	2,90	0,03	<5,0		$\mu\text{g/l}$	•
Uranium	2,08	0,02			$\mu\text{g/l}$	
Zinc	14,0	0,5	14,8	2,07	$\mu\text{g/l}$	106%



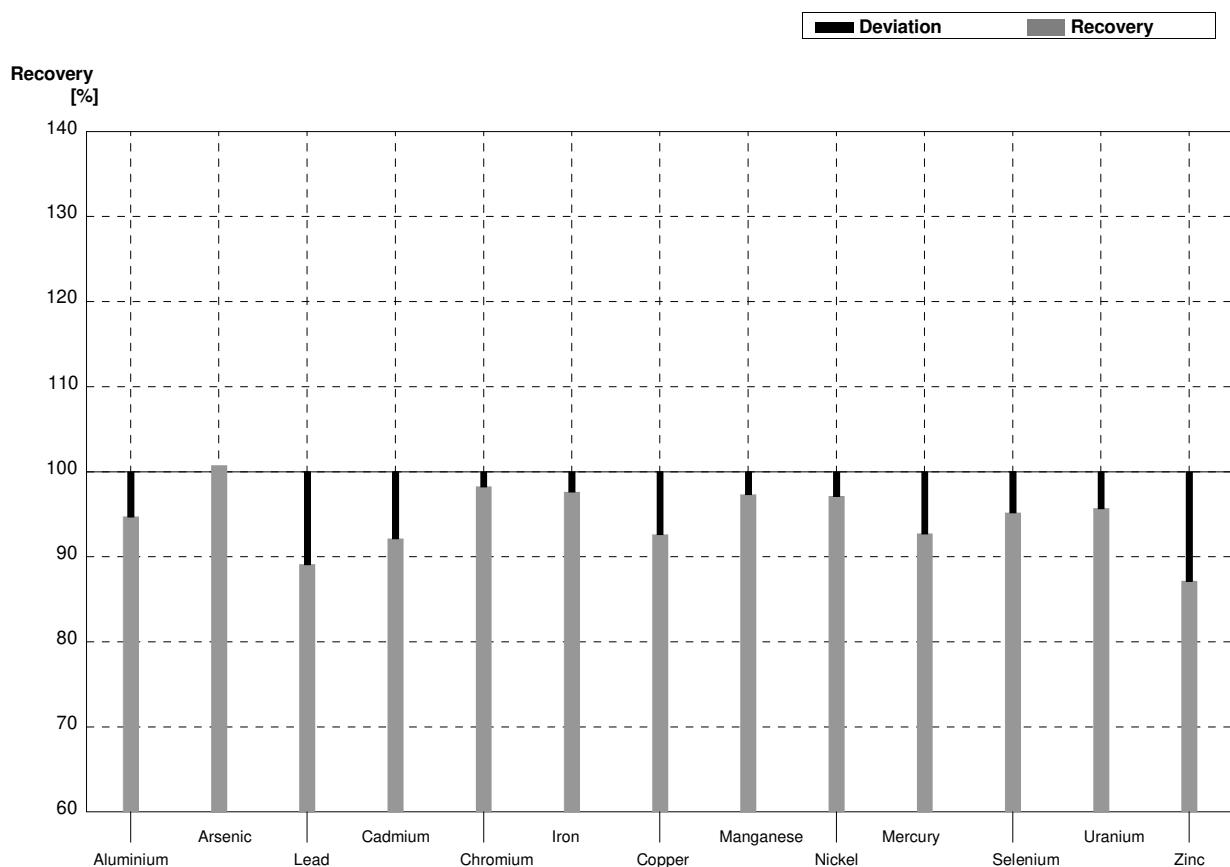
**Sample M161A**  
**Laboratory J**

Parameter	Target value	$\pm$ U (k=2)	Result	$\pm$	Unit	Recovery
Aluminium	25,8	0,2	23,9	2,39	$\mu\text{g/l}$	93%
Arsenic	0,692	0,007	0,64	0,096	$\mu\text{g/l}$	92%
Lead	1,21	0,01	1,10	0,11	$\mu\text{g/l}$	91%
Cadmium	0,393	0,004	0,373	0,0373	$\mu\text{g/l}$	95%
Chromium	10,0	0,1	9,7	0,97	$\mu\text{g/l}$	97%
Iron	38,4	0,2	36,8	3,68	$\mu\text{g/l}$	96%
Copper	16,7	0,1	14,9	1,49	$\mu\text{g/l}$	89%
Manganese	32,7	0,2	30,8	3,08	$\mu\text{g/l}$	94%
Nickel	1,75	0,02	1,65	0,165	$\mu\text{g/l}$	94%
Mercury	0,82	0,02	0,86	0,086	$\mu\text{g/l}$	105%
Selenium	0,94	0,03	<1		$\mu\text{g/l}$	•
Uranium	3,69	0,03	3,45	0,345	$\mu\text{g/l}$	93%
Zinc	46,3	0,6	39,6	3,96	$\mu\text{g/l}$	86%



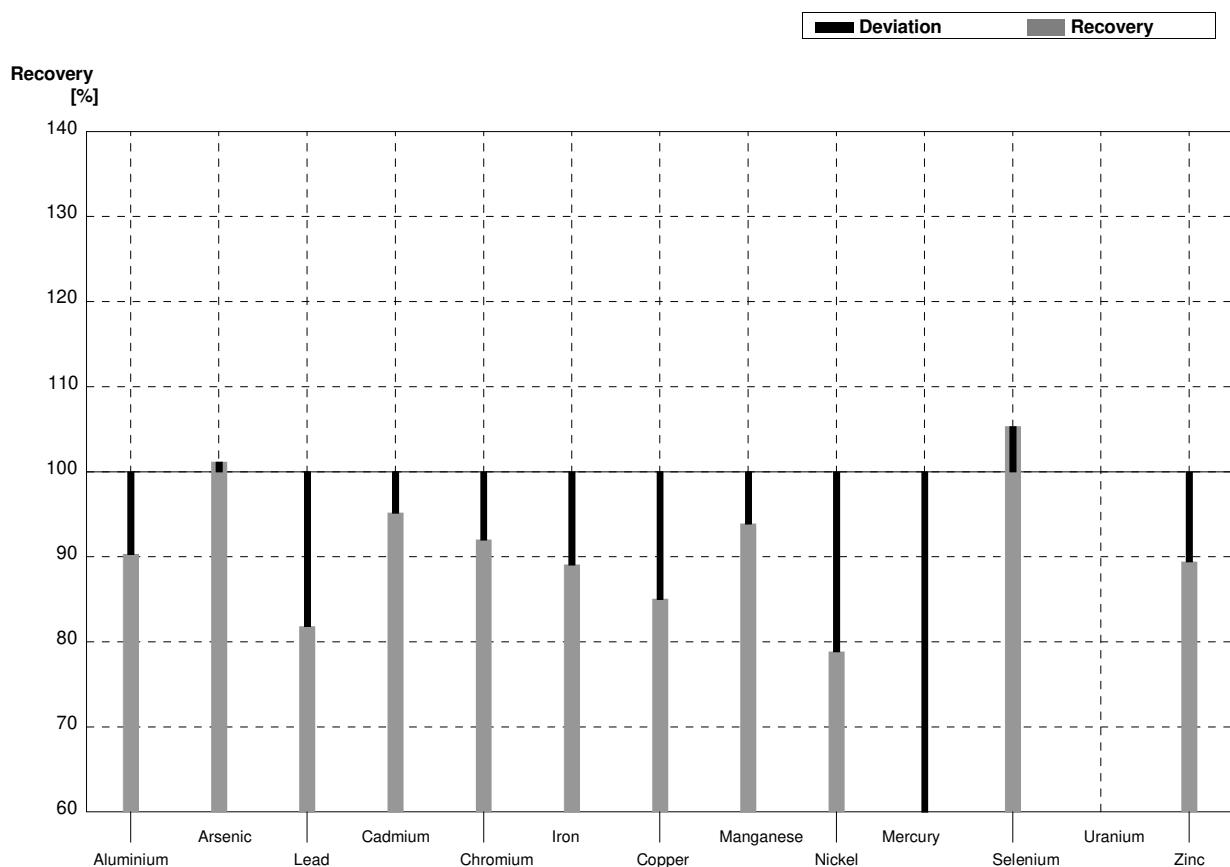
**Sample M161B**  
**Laboratory J**

Parameter	Target value	$\pm$ U ( $k=2$ )	Result	$\pm$	Unit	Recovery
Aluminium	51,0	0,3	48,3	4,83	$\mu\text{g/l}$	95%
Arsenic	1,35	0,01	1,36	0,204	$\mu\text{g/l}$	101%
Lead	2,66	0,02	2,37	0,237	$\mu\text{g/l}$	89%
Cadmium	0,89	0,01	0,82	0,082	$\mu\text{g/l}$	92%
Chromium	1,71	0,02	1,68	0,168	$\mu\text{g/l}$	98%
Iron	75,8	0,3	74	7,4	$\mu\text{g/l}$	98%
Copper	2,98	0,03	2,76	0,276	$\mu\text{g/l}$	93%
Manganese	8,22	0,06	8,0	0,80	$\mu\text{g/l}$	97%
Nickel	2,78	0,03	2,70	0,27	$\mu\text{g/l}$	97%
Mercury	1,51	0,03	1,40	0,14	$\mu\text{g/l}$	93%
Selenium	2,90	0,03	2,76	0,414	$\mu\text{g/l}$	95%
Uranium	2,08	0,02	1,99	0,2	$\mu\text{g/l}$	96%
Zinc	14,0	0,5	12,2	1,22	$\mu\text{g/l}$	87%



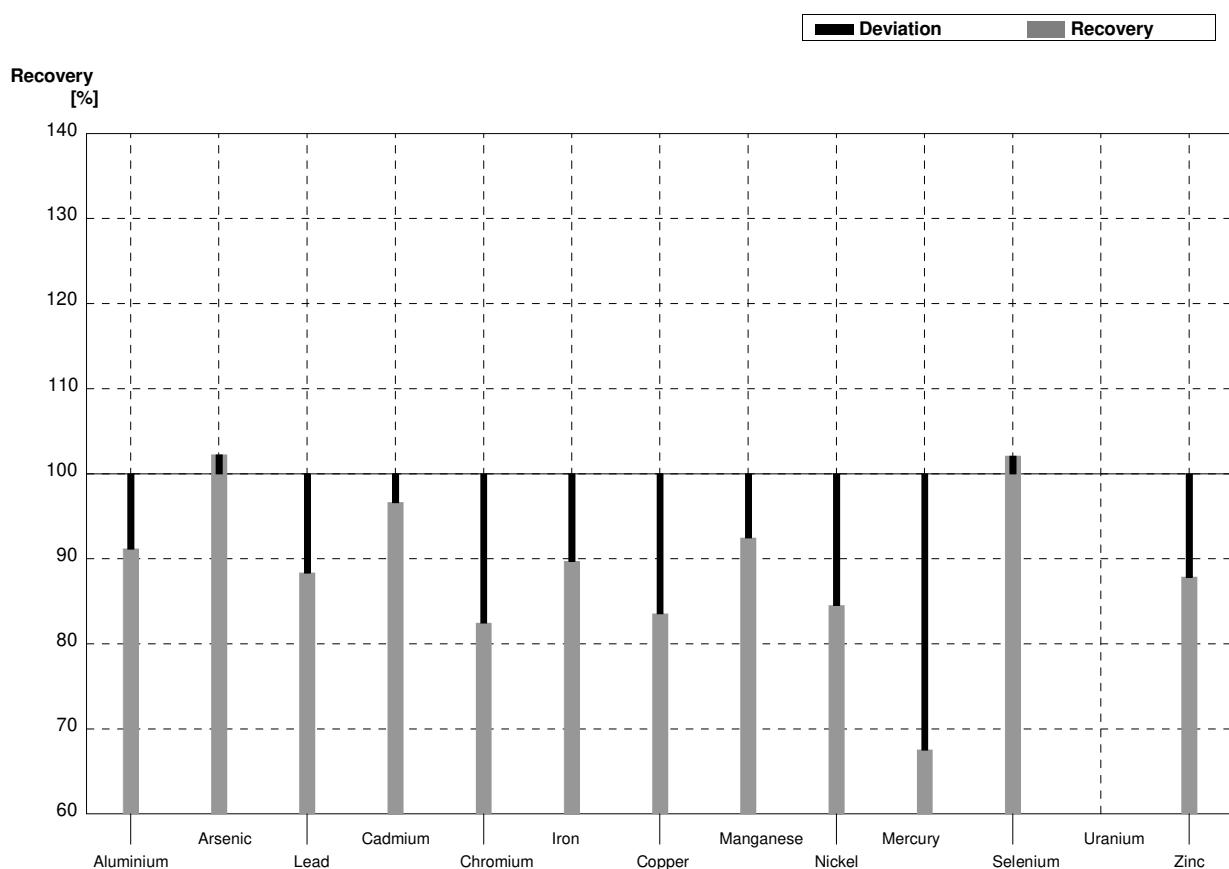
**Sample M161A**  
**Laboratory K**

Parameter	Target value	$\pm$ U ( $k=2$ )	Result	$\pm$	Unit	Recovery
Aluminium	25,8	0,2	23,3	3,0	$\mu\text{g/l}$	90%
Arsenic	0,692	0,007	0,70	0,19	$\mu\text{g/l}$	101%
Lead	1,21	0,01	0,99	0,27	$\mu\text{g/l}$	82%
Cadmium	0,393	0,004	0,374	0,044	$\mu\text{g/l}$	95%
Chromium	10,0	0,1	9,2	1,0	$\mu\text{g/l}$	92%
Iron	38,4	0,2	34,2	6,8	$\mu\text{g/l}$	89%
Copper	16,7	0,1	14,2	2,5	$\mu\text{g/l}$	85%
Manganese	32,7	0,2	30,7	4,0	$\mu\text{g/l}$	94%
Nickel	1,75	0,02	1,38	0,11	$\mu\text{g/l}$	79%
Mercury	0,82	0,02	0,490	0,092	$\mu\text{g/l}$	60%
Selenium	0,94	0,03	0,99	0,14	$\mu\text{g/l}$	105%
Uranium	3,69	0,03			$\mu\text{g/l}$	
Zinc	46,3	0,6	41,4	7,6	$\mu\text{g/l}$	89%



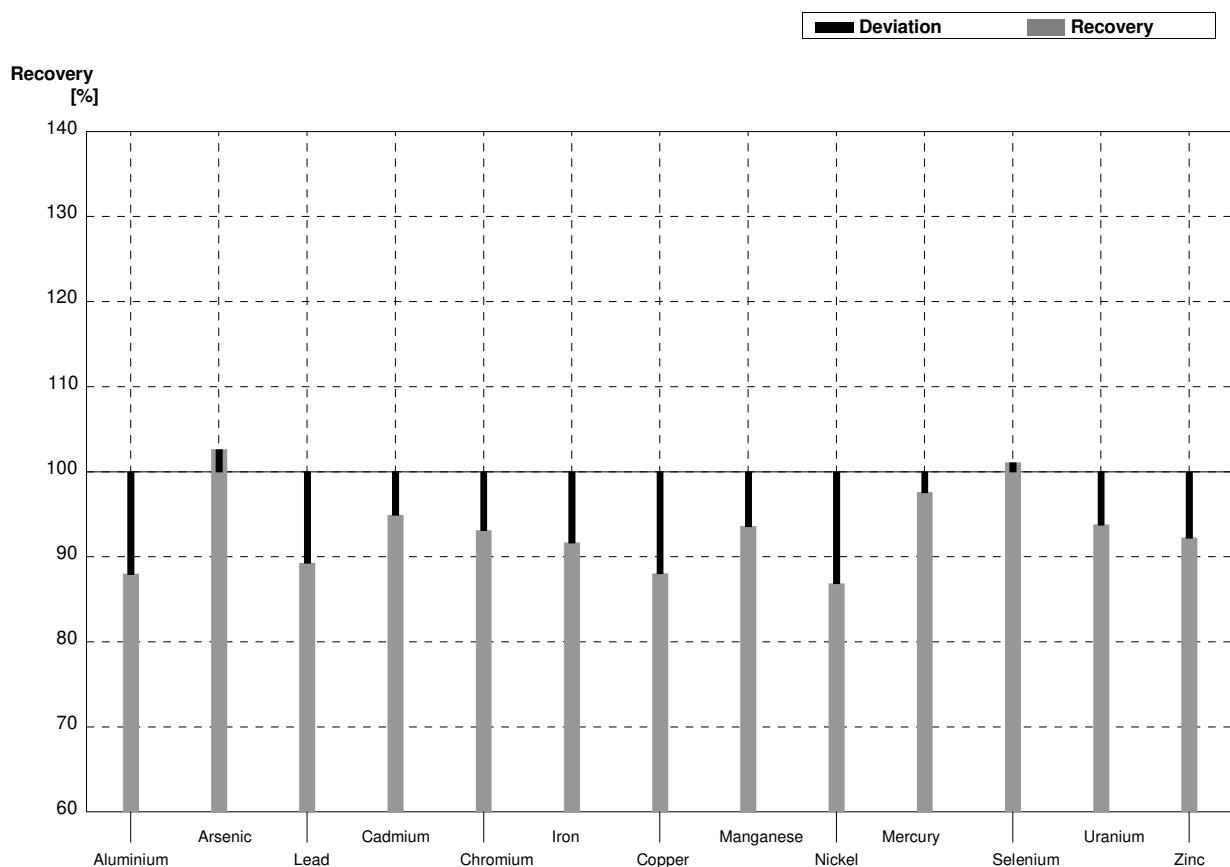
**Sample M161B**  
**Laboratory K**

Parameter	Target value	$\pm$ U ( $k=2$ )	Result	$\pm$	Unit	Recovery
Aluminium	51,0	0,3	46,5	6,0	$\mu\text{g/l}$	91%
Arsenic	1,35	0,01	1,38	0,37	$\mu\text{g/l}$	102%
Lead	2,66	0,02	2,35	0,63	$\mu\text{g/l}$	88%
Cadmium	0,89	0,01	0,86	0,10	$\mu\text{g/l}$	97%
Chromium	1,71	0,02	1,41	0,16	$\mu\text{g/l}$	82%
Iron	75,8	0,3	68	14	$\mu\text{g/l}$	90%
Copper	2,98	0,03	2,49	0,44	$\mu\text{g/l}$	84%
Manganese	8,22	0,06	7,6	1,0	$\mu\text{g/l}$	92%
Nickel	2,78	0,03	2,35	0,20	$\mu\text{g/l}$	85%
Mercury	1,51	0,03	1,02	0,19	$\mu\text{g/l}$	68%
Selenium	2,90	0,03	2,96	0,41	$\mu\text{g/l}$	102%
Uranium	2,08	0,02			$\mu\text{g/l}$	
Zinc	14,0	0,5	12,3	2,3	$\mu\text{g/l}$	88%



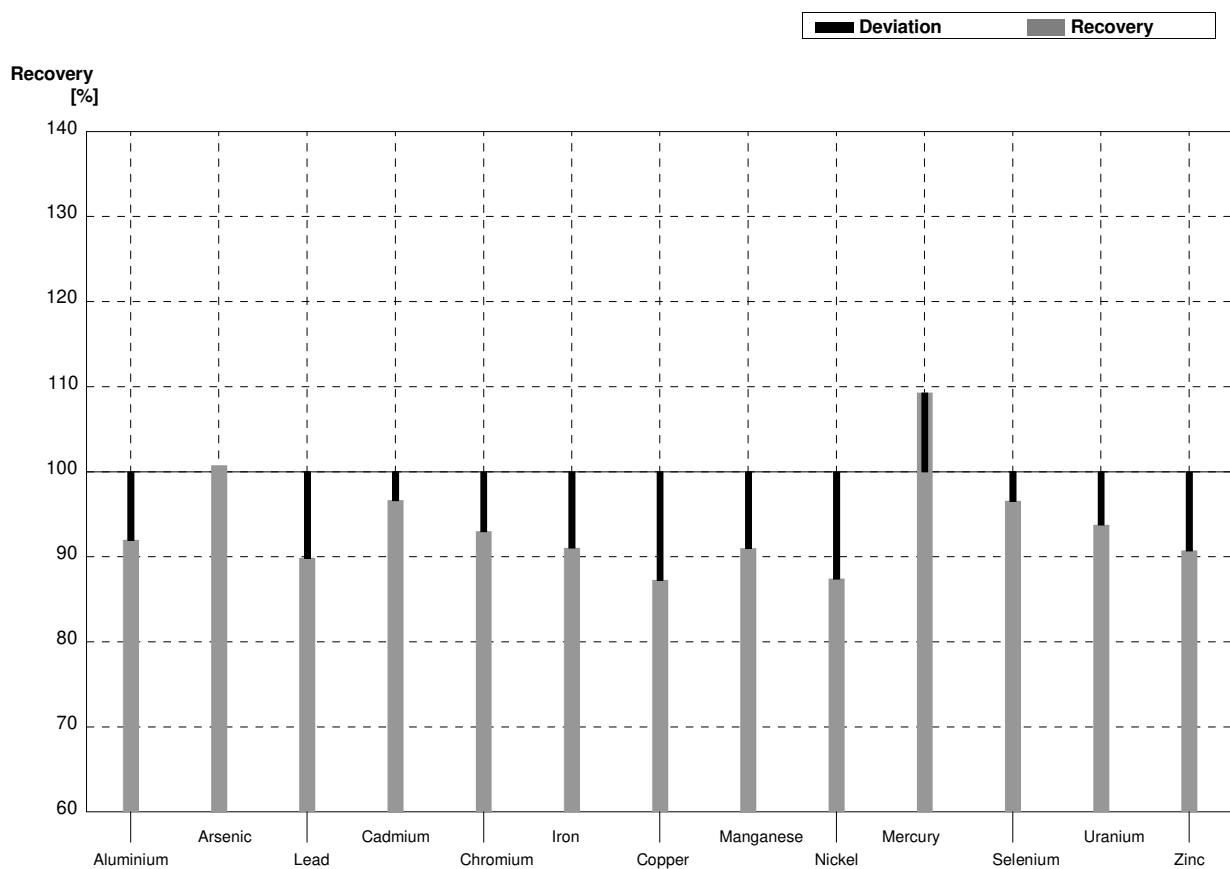
**Sample M161A**  
**Laboratory L**

Parameter	Target value	$\pm$ U ( $k=2$ )	Result	$\pm$	Unit	Recovery
Aluminium	25,8	0,2	22,7	5,4	$\mu\text{g/l}$	88%
Arsenic	0,692	0,007	0,71	0,21	$\mu\text{g/l}$	103%
Lead	1,21	0,01	1,08	0,27	$\mu\text{g/l}$	89%
Cadmium	0,393	0,004	0,373	0,093	$\mu\text{g/l}$	95%
Chromium	10,0	0,1	9,31	2,79	$\mu\text{g/l}$	93%
Iron	38,4	0,2	35,2	8,4	$\mu\text{g/l}$	92%
Copper	16,7	0,1	14,7	3,5	$\mu\text{g/l}$	88%
Manganese	32,7	0,2	30,6	7,3	$\mu\text{g/l}$	94%
Nickel	1,75	0,02	1,52	0,46	$\mu\text{g/l}$	87%
Mercury	0,82	0,02	0,80	0,24	$\mu\text{g/l}$	98%
Selenium	0,94	0,03	0,95		$\mu\text{g/l}$	101%
Uranium	3,69	0,03	3,46		$\mu\text{g/l}$	94%
Zinc	46,3	0,6	42,7	10,2	$\mu\text{g/l}$	92%



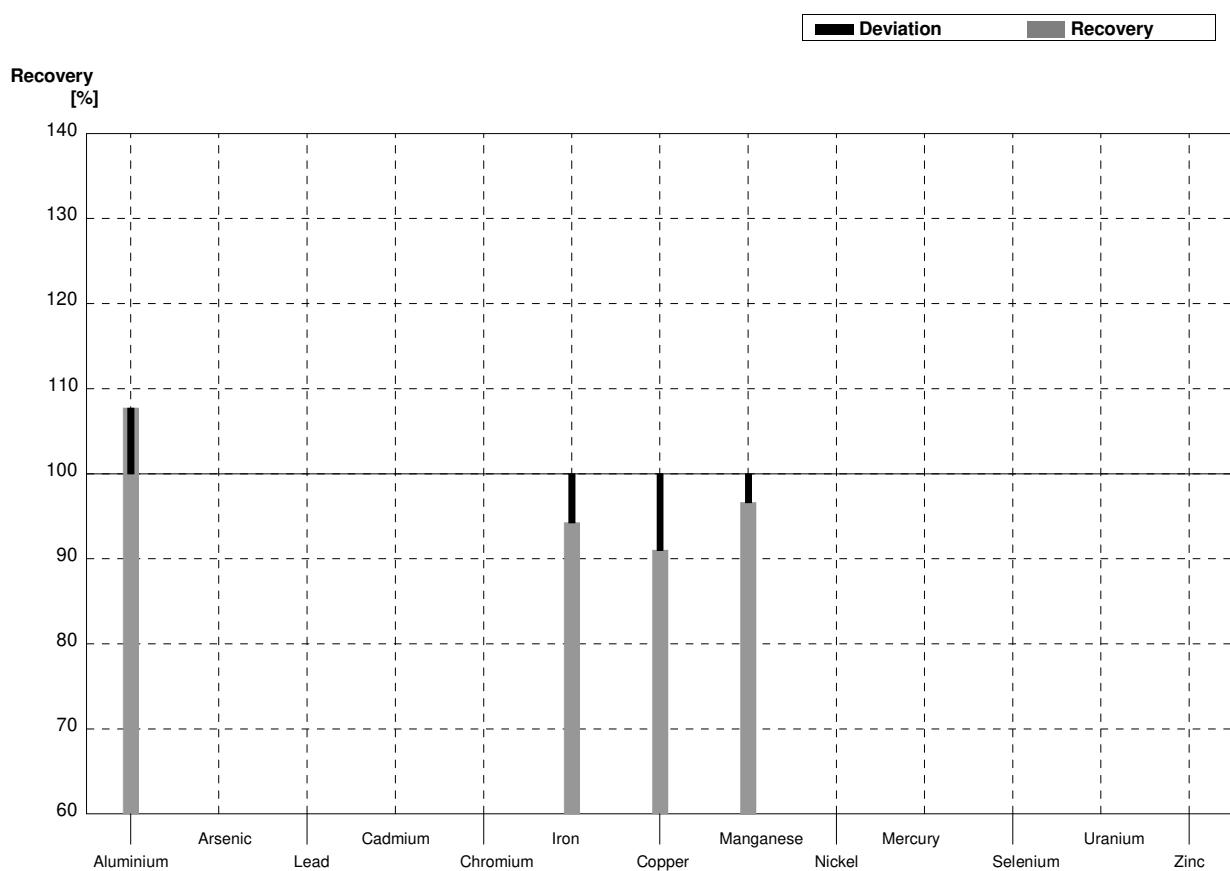
**Sample M161B**  
**Laboratory L**

Parameter	Target value	$\pm$ U ( $k=2$ )	Result	$\pm$	Unit	Recovery
Aluminium	51,0	0,3	46,9	11,3	$\mu\text{g/l}$	92%
Arsenic	1,35	0,01	1,36	0,41	$\mu\text{g/l}$	101%
Lead	2,66	0,02	2,39	0,60	$\mu\text{g/l}$	90%
Cadmium	0,89	0,01	0,86	0,214	$\mu\text{g/l}$	97%
Chromium	1,71	0,02	1,59	0,48	$\mu\text{g/l}$	93%
Iron	75,8	0,3	69,0	16,6	$\mu\text{g/l}$	91%
Copper	2,98	0,03	2,60	0,6	$\mu\text{g/l}$	87%
Manganese	8,22	0,06	7,48	1,80	$\mu\text{g/l}$	91%
Nickel	2,78	0,03	2,43	0,73	$\mu\text{g/l}$	87%
Mercury	1,51	0,03	1,65	0,50	$\mu\text{g/l}$	109%
Selenium	2,90	0,03	2,80		$\mu\text{g/l}$	97%
Uranium	2,08	0,02	1,95		$\mu\text{g/l}$	94%
Zinc	14,0	0,5	12,7	3,05	$\mu\text{g/l}$	91%



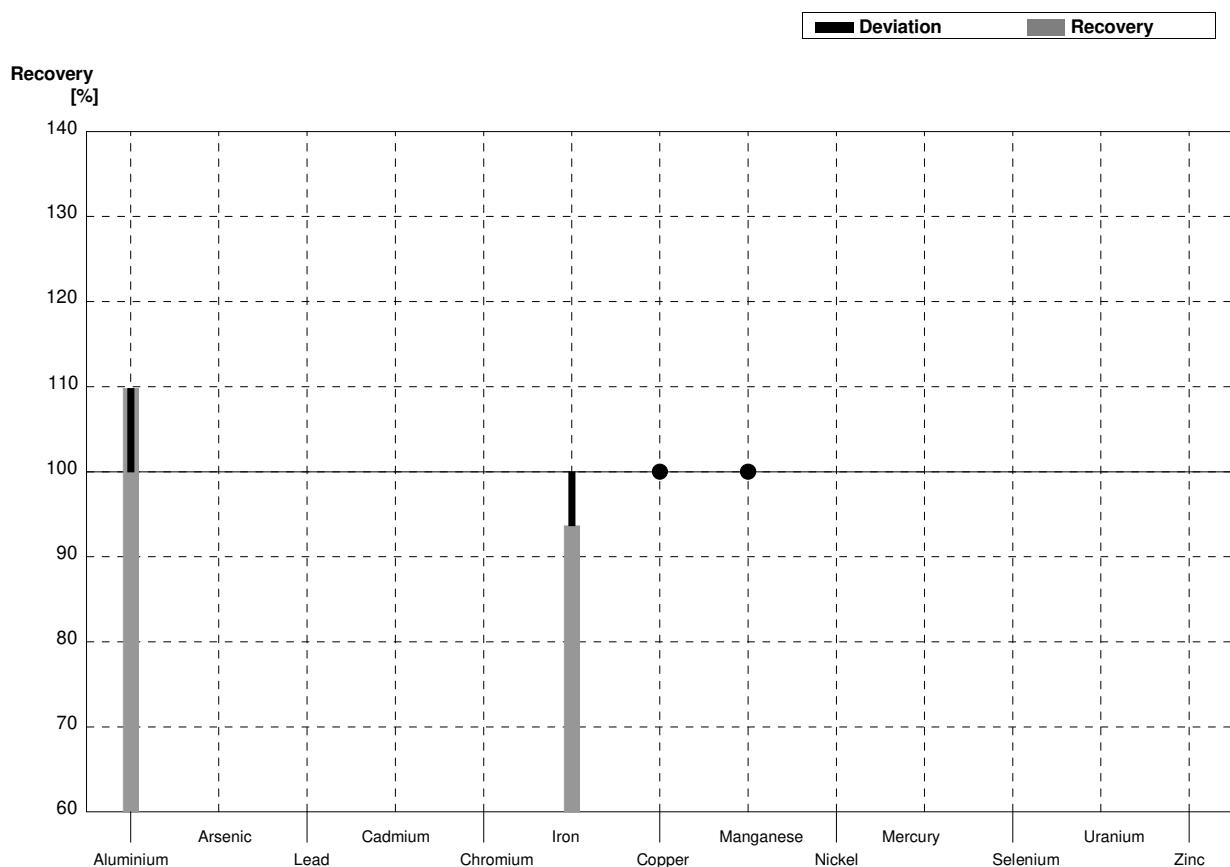
**Sample M161A**  
**Laboratory M**

Parameter	Target value	$\pm$ U ( $k=2$ )	Result	$\pm$	Unit	Recovery
Aluminium	25,8	0,2	27,8	4,7	$\mu\text{g/l}$	108%
Arsenic	0,692	0,007			$\mu\text{g/l}$	
Lead	1,21	0,01			$\mu\text{g/l}$	
Cadmium	0,393	0,004			$\mu\text{g/l}$	
Chromium	10,0	0,1			$\mu\text{g/l}$	
Iron	38,4	0,2	36,2	6,5	$\mu\text{g/l}$	94%
Copper	16,7	0,1	15,2		$\mu\text{g/l}$	91%
Manganese	32,7	0,2	31,6	5,7	$\mu\text{g/l}$	97%
Nickel	1,75	0,02			$\mu\text{g/l}$	
Mercury	0,82	0,02			$\mu\text{g/l}$	
Selenium	0,94	0,03			$\mu\text{g/l}$	
Uranium	3,69	0,03			$\mu\text{g/l}$	
Zinc	46,3	0,6			$\mu\text{g/l}$	



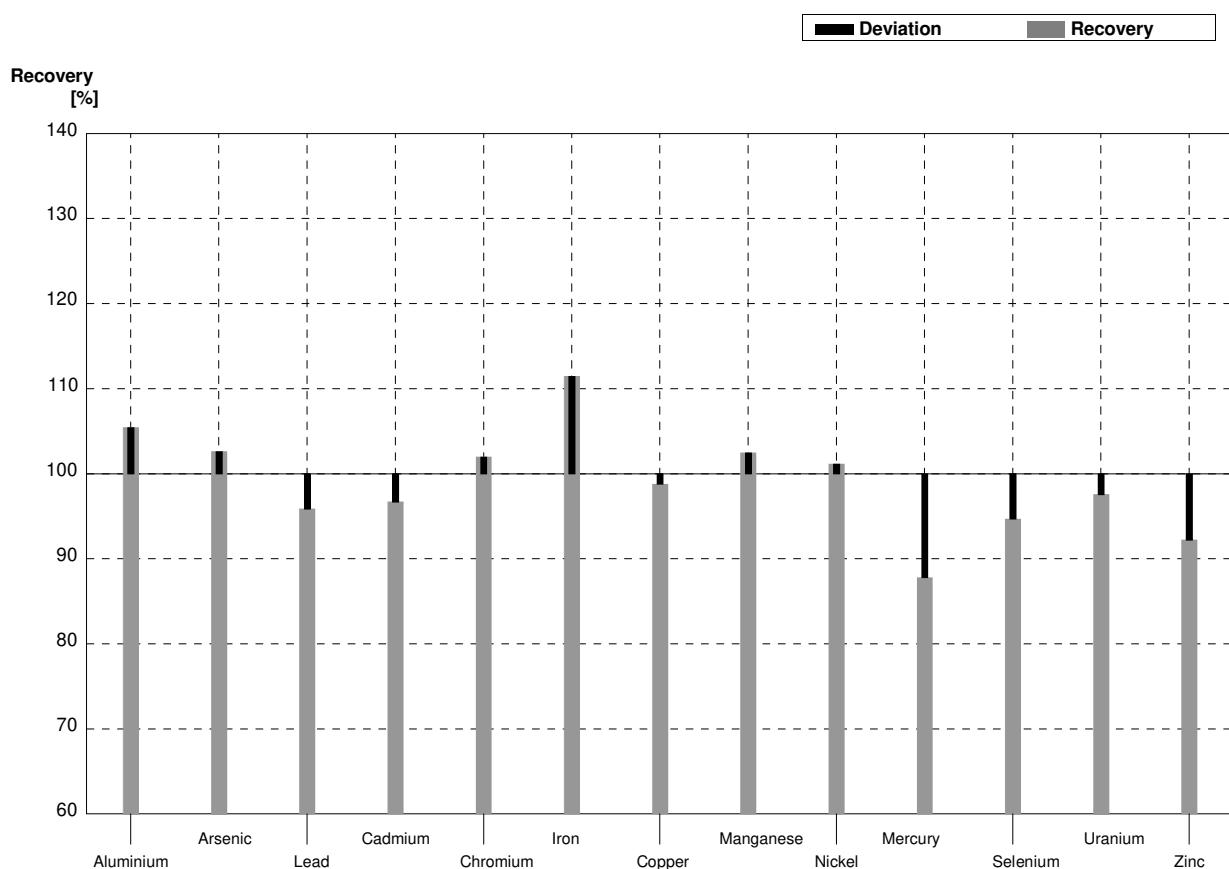
**Sample M161B**  
**Laboratory M**

Parameter	Target value	$\pm$ U (k=2)	Result	$\pm$	Unit	Recovery
Aluminium	51,0	0,3	56	10	$\mu\text{g/l}$	110%
Arsenic	1,35	0,01			$\mu\text{g/l}$	
Lead	2,66	0,02			$\mu\text{g/l}$	
Cadmium	0,89	0,01			$\mu\text{g/l}$	
Chromium	1,71	0,02			$\mu\text{g/l}$	
Iron	75,8	0,3	71	13	$\mu\text{g/l}$	94%
Copper	2,98	0,03	<10		$\mu\text{g/l}$	•
Manganese	8,22	0,06	<10		$\mu\text{g/l}$	•
Nickel	2,78	0,03			$\mu\text{g/l}$	
Mercury	1,51	0,03			$\mu\text{g/l}$	
Selenium	2,90	0,03			$\mu\text{g/l}$	
Uranium	2,08	0,02			$\mu\text{g/l}$	
Zinc	14,0	0,5			$\mu\text{g/l}$	



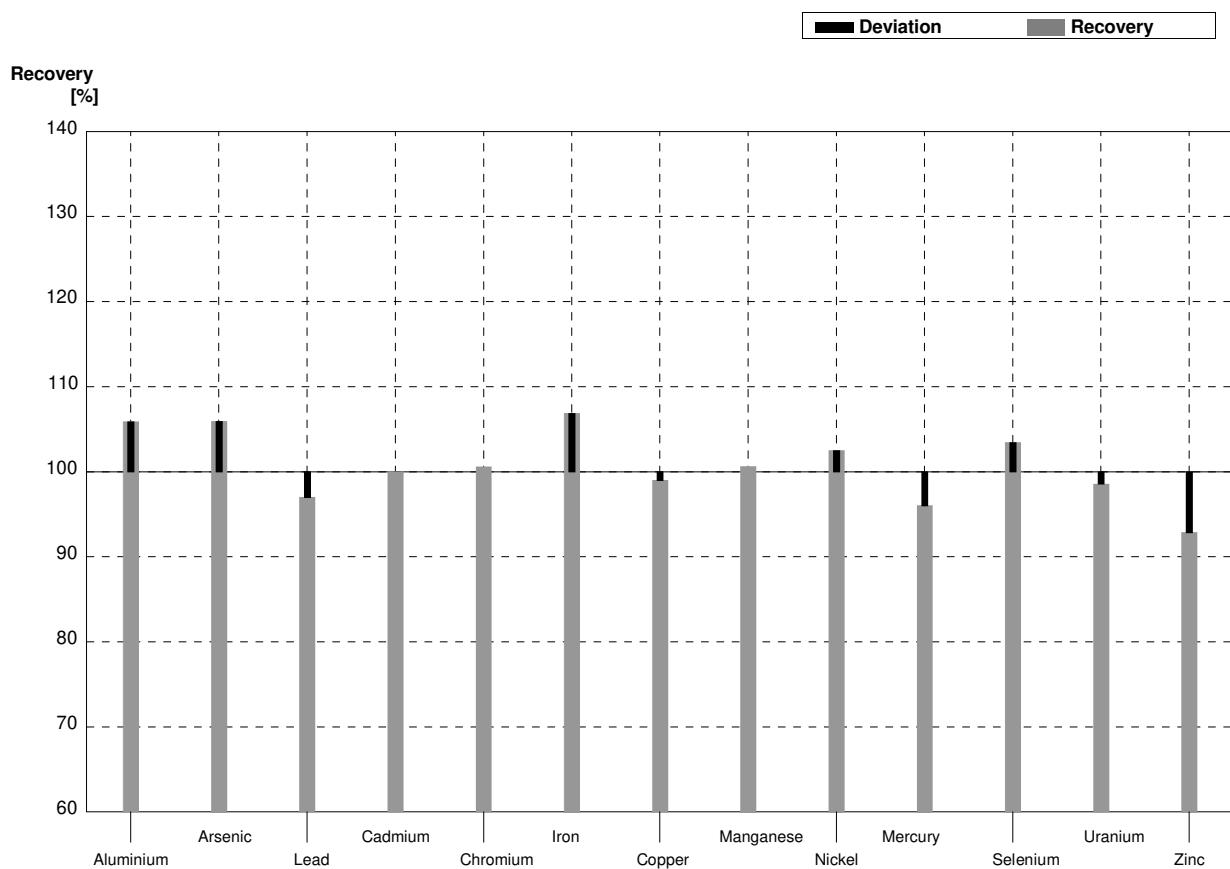
**Sample M161A**  
**Laboratory N**

Parameter	Target value	$\pm$ U ( $k=2$ )	Result	$\pm$	Unit	Recovery
Aluminium	25,8	0,2	27,2	3,5	$\mu\text{g/l}$	105%
Arsenic	0,692	0,007	0,71	0,04	$\mu\text{g/l}$	103%
Lead	1,21	0,01	1,16	0,12	$\mu\text{g/l}$	96%
Cadmium	0,393	0,004	0,380	0,05	$\mu\text{g/l}$	97%
Chromium	10,0	0,1	10,2	1,7	$\mu\text{g/l}$	102%
Iron	38,4	0,2	42,8	7,6	$\mu\text{g/l}$	111%
Copper	16,7	0,1	16,5	1,7	$\mu\text{g/l}$	99%
Manganese	32,7	0,2	33,5	2,1	$\mu\text{g/l}$	102%
Nickel	1,75	0,02	1,77	1,9	$\mu\text{g/l}$	101%
Mercury	0,82	0,02	0,72	0,12	$\mu\text{g/l}$	88%
Selenium	0,94	0,03	0,89	0,25	$\mu\text{g/l}$	95%
Uranium	3,69	0,03	3,60	0,9	$\mu\text{g/l}$	98%
Zinc	46,3	0,6	42,7	4,9	$\mu\text{g/l}$	92%



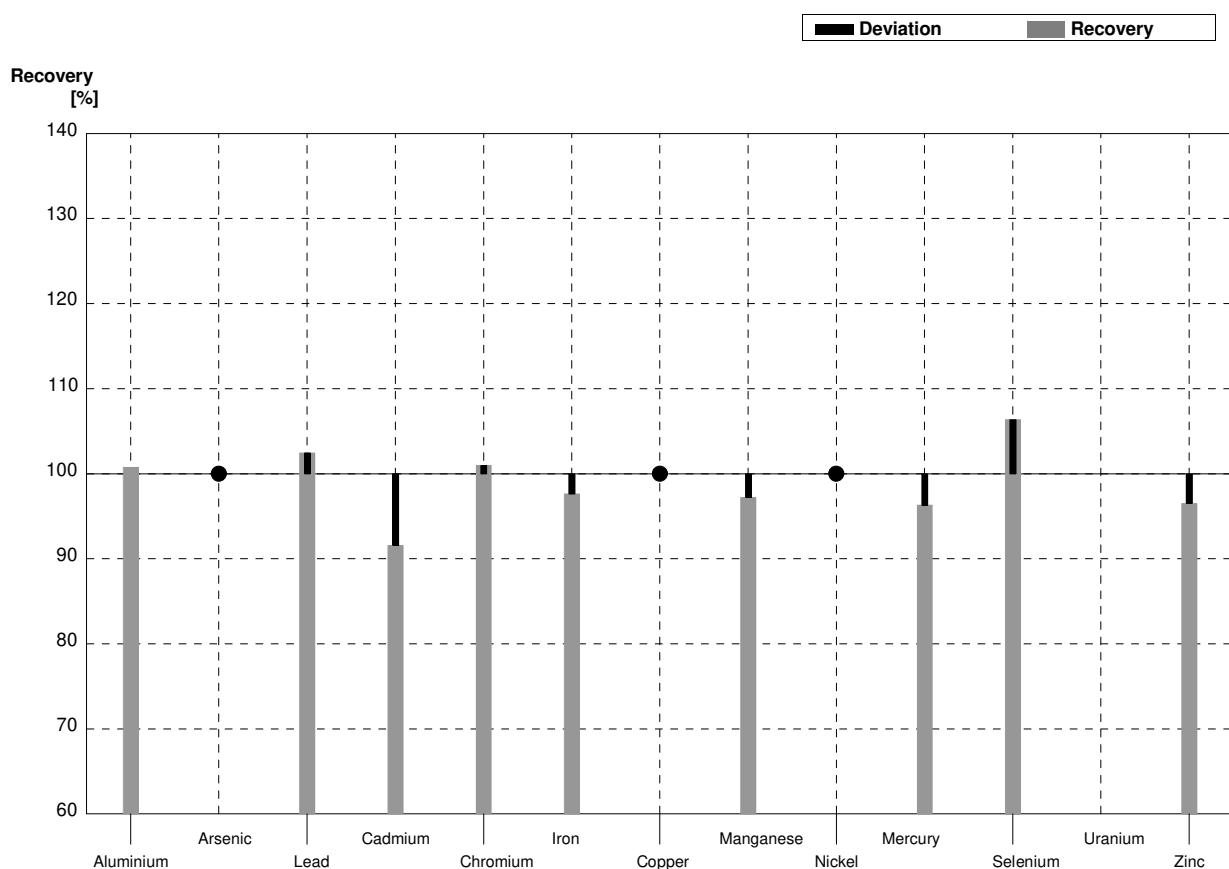
**Sample M161B**  
**Laboratory N**

Parameter	Target value	$\pm U$ ( $k=2$ )	Result	$\pm$	Unit	Recovery
Aluminium	51,0	0,3	54	8,5	$\mu\text{g/l}$	106%
Arsenic	1,35	0,01	1,43	0,21	$\mu\text{g/l}$	106%
Lead	2,66	0,02	2,58	0,31	$\mu\text{g/l}$	97%
Cadmium	0,89	0,01	0,89	0,18	$\mu\text{g/l}$	100%
Chromium	1,71	0,02	1,72	0,32	$\mu\text{g/l}$	101%
Iron	75,8	0,3	81,0	8,4	$\mu\text{g/l}$	107%
Copper	2,98	0,03	2,95	0,41	$\mu\text{g/l}$	99%
Manganese	8,22	0,06	8,27	0,67	$\mu\text{g/l}$	101%
Nickel	2,78	0,03	2,85	0,28	$\mu\text{g/l}$	103%
Mercury	1,51	0,03	1,45	0,26	$\mu\text{g/l}$	96%
Selenium	2,90	0,03	3,00	0,49	$\mu\text{g/l}$	103%
Uranium	2,08	0,02	2,05	0,17	$\mu\text{g/l}$	99%
Zinc	14,0	0,5	13,0	1,6	$\mu\text{g/l}$	93%



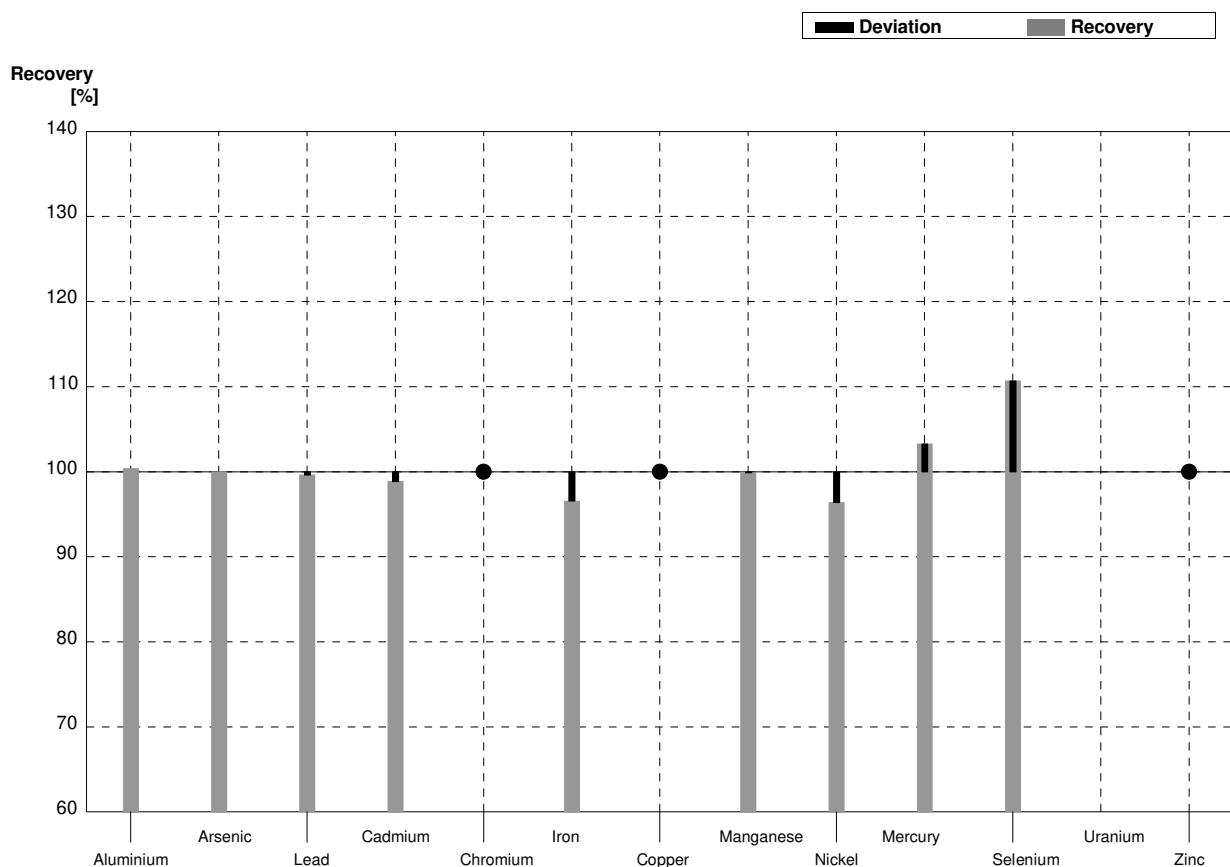
**Sample M161A  
Laboratory O**

Parameter	Target value	$\pm$ U (k=2)	Result	$\pm$	Unit	Recovery
Aluminium	25,8	0,2	26,0	3,9	$\mu\text{g/l}$	101%
Arsenic	0,692	0,007	<1		$\mu\text{g/l}$	•
Lead	1,21	0,01	1,24	0,19	$\mu\text{g/l}$	102%
Cadmium	0,393	0,004	0,360	0,054	$\mu\text{g/l}$	92%
Chromium	10,0	0,1	10,1	1,0	$\mu\text{g/l}$	101%
Iron	38,4	0,2	37,5	3,8	$\mu\text{g/l}$	98%
Copper	16,7	0,1	<100		$\mu\text{g/l}$	•
Manganese	32,7	0,2	31,8	3,2	$\mu\text{g/l}$	97%
Nickel	1,75	0,02	<2		$\mu\text{g/l}$	•
Mercury	0,82	0,02	0,79	0,12	$\mu\text{g/l}$	96%
Selenium	0,94	0,03	1,00	0,20	$\mu\text{g/l}$	106%
Uranium	3,69	0,03			$\mu\text{g/l}$	
Zinc	46,3	0,6	44,7	6,7	$\mu\text{g/l}$	97%



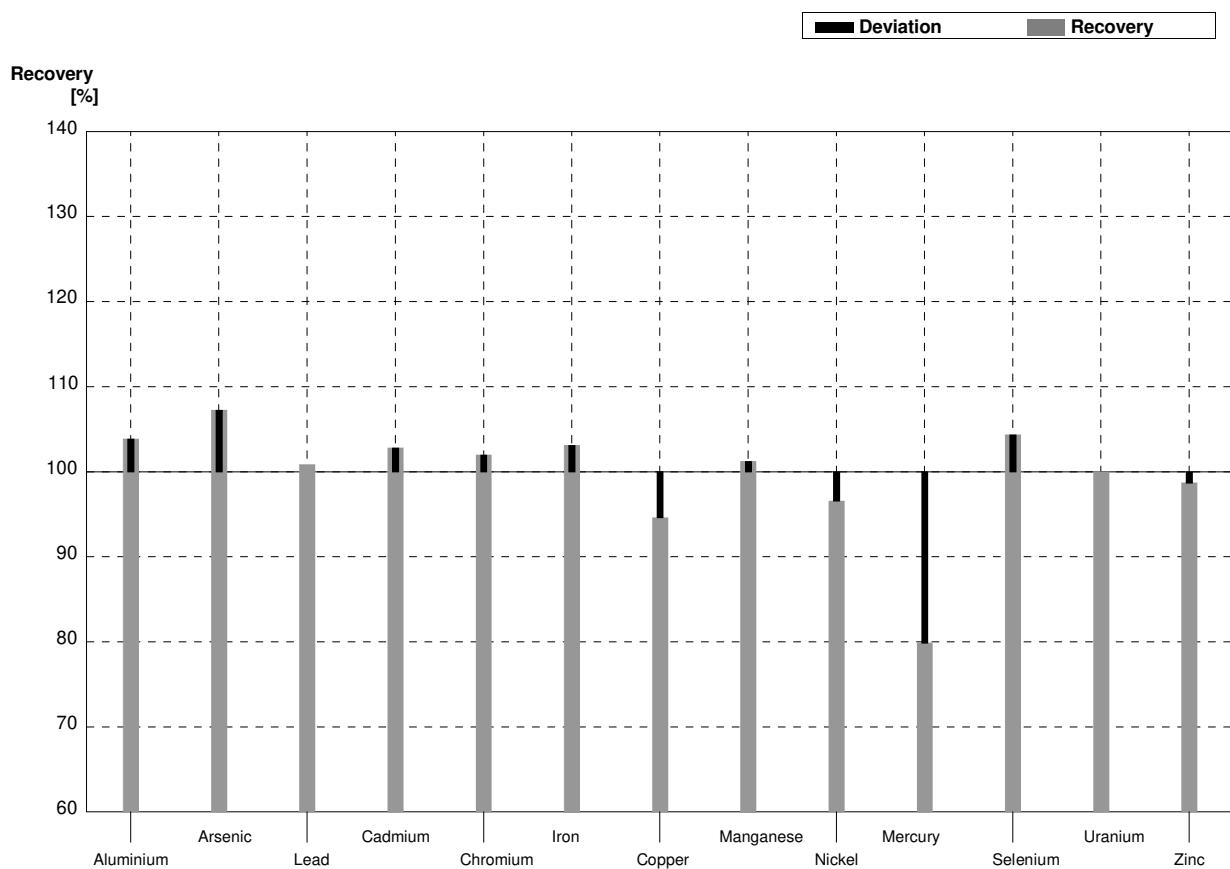
**Sample M161B**  
**Laboratory O**

Parameter	Target value	$\pm$ U ( $k=2$ )	Result	$\pm$	Unit	Recovery
Aluminium	51,0	0,3	51,2	7,7	$\mu\text{g/l}$	100%
Arsenic	1,35	0,01	1,35	0,20	$\mu\text{g/l}$	100%
Lead	2,66	0,02	2,65	0,40	$\mu\text{g/l}$	100%
Cadmium	0,89	0,01	0,88	0,13	$\mu\text{g/l}$	99%
Chromium	1,71	0,02	<5		$\mu\text{g/l}$	•
Iron	75,8	0,3	73,2	7,3	$\mu\text{g/l}$	97%
Copper	2,98	0,03	<100		$\mu\text{g/l}$	•
Manganese	8,22	0,06	8,21	1,23	$\mu\text{g/l}$	100%
Nickel	2,78	0,03	2,68	0,40	$\mu\text{g/l}$	96%
Mercury	1,51	0,03	1,56	0,23	$\mu\text{g/l}$	103%
Selenium	2,90	0,03	3,21	0,48	$\mu\text{g/l}$	111%
Uranium	2,08	0,02			$\mu\text{g/l}$	
Zinc	14,0	0,5	<50		$\mu\text{g/l}$	•



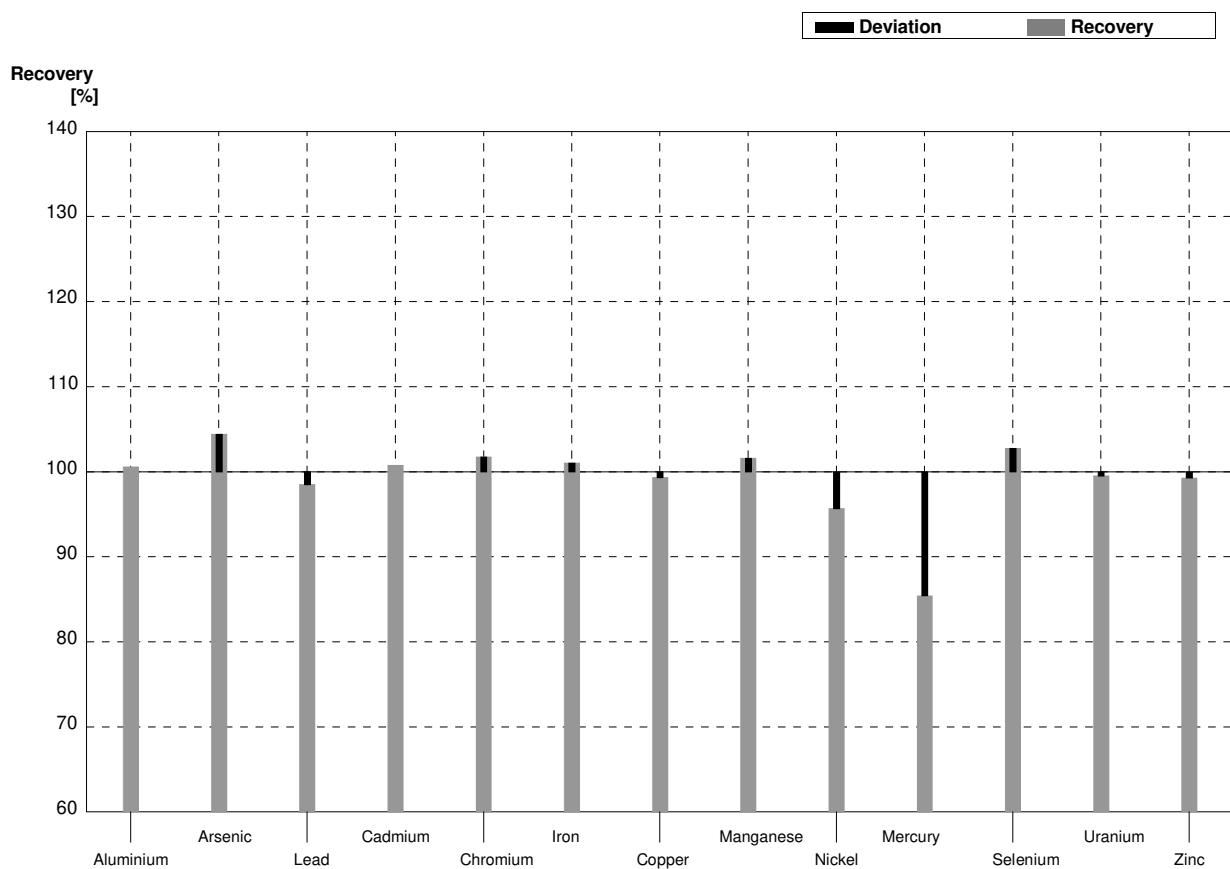
**Sample M161A**  
**Laboratory P**

Parameter	Target value	$\pm$ U ( $k=2$ )	Result	$\pm$	Unit	Recovery
Aluminium	25,8	0,2	26,8	3,2	$\mu\text{g/l}$	104%
Arsenic	0,692	0,007	0,742	0,126	$\mu\text{g/l}$	107%
Lead	1,21	0,01	1,22	0,15	$\mu\text{g/l}$	101%
Cadmium	0,393	0,004	0,404	0,048	$\mu\text{g/l}$	103%
Chromium	10,0	0,1	10,2	1,9	$\mu\text{g/l}$	102%
Iron	38,4	0,2	39,6	7,1	$\mu\text{g/l}$	103%
Copper	16,7	0,1	15,8	1,7	$\mu\text{g/l}$	95%
Manganese	32,7	0,2	33,1	3,6	$\mu\text{g/l}$	101%
Nickel	1,75	0,02	1,69	0,39	$\mu\text{g/l}$	97%
Mercury	0,82	0,02	0,655	0,079	$\mu\text{g/l}$	80%
Selenium	0,94	0,03	0,981	0,334	$\mu\text{g/l}$	104%
Uranium	3,69	0,03	3,69	0,37	$\mu\text{g/l}$	100%
Zinc	46,3	0,6	45,7	5,9	$\mu\text{g/l}$	99%



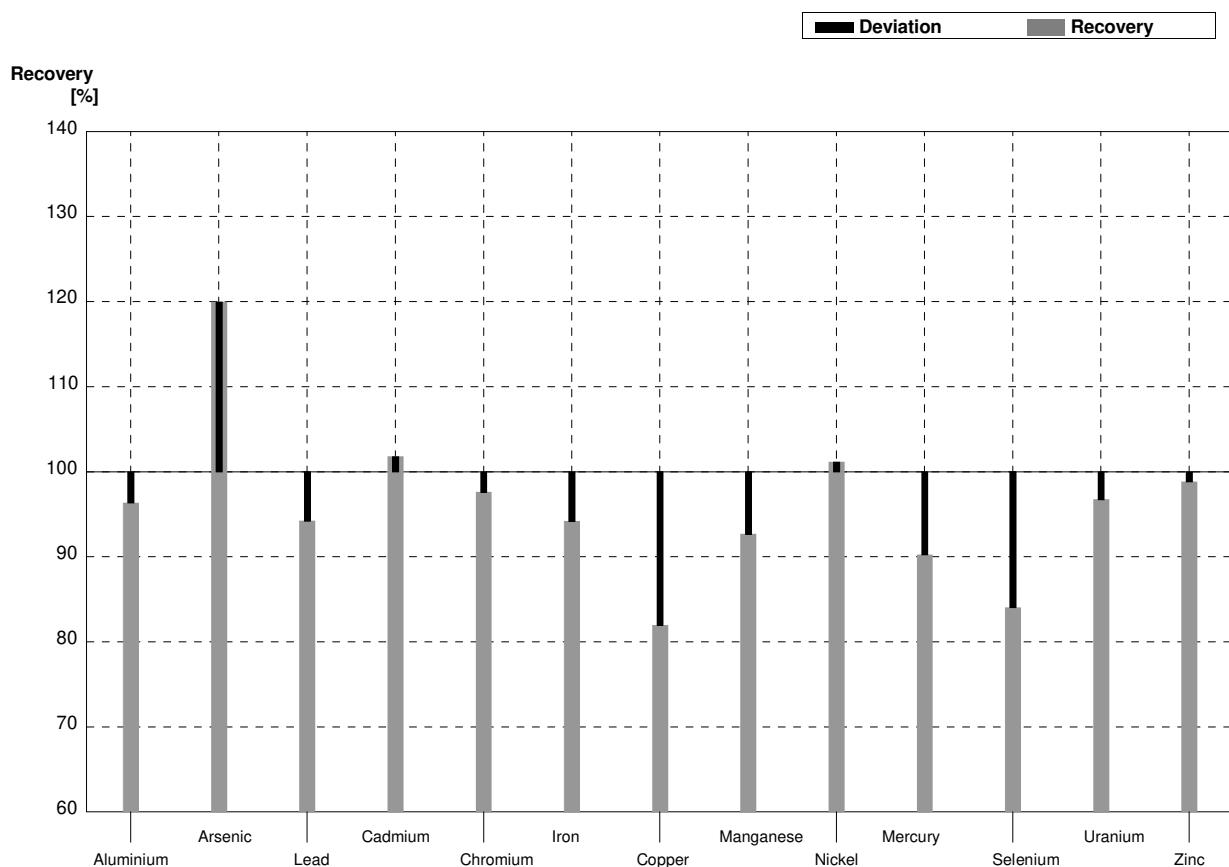
**Sample M161B**  
**Laboratory P**

Parameter	Target value	$\pm$ U ( $k=2$ )	Result	$\pm$	Unit	Recovery
Aluminium	51,0	0,3	51,3	6,2	$\mu\text{g/l}$	101%
Arsenic	1,35	0,01	1,41	0,24	$\mu\text{g/l}$	104%
Lead	2,66	0,02	2,62	0,31	$\mu\text{g/l}$	98%
Cadmium	0,89	0,01	0,897	0,108	$\mu\text{g/l}$	101%
Chromium	1,71	0,02	1,74	0,33	$\mu\text{g/l}$	102%
Iron	75,8	0,3	76,6	13,8	$\mu\text{g/l}$	101%
Copper	2,98	0,03	2,96	0,33	$\mu\text{g/l}$	99%
Manganese	8,22	0,06	8,35	1,25	$\mu\text{g/l}$	102%
Nickel	2,78	0,03	2,66	0,61	$\mu\text{g/l}$	96%
Mercury	1,51	0,03	1,29	0,15	$\mu\text{g/l}$	85%
Selenium	2,90	0,03	2,98	1,01	$\mu\text{g/l}$	103%
Uranium	2,08	0,02	2,07	0,21	$\mu\text{g/l}$	100%
Zinc	14,0	0,5	13,9	2,2	$\mu\text{g/l}$	99%



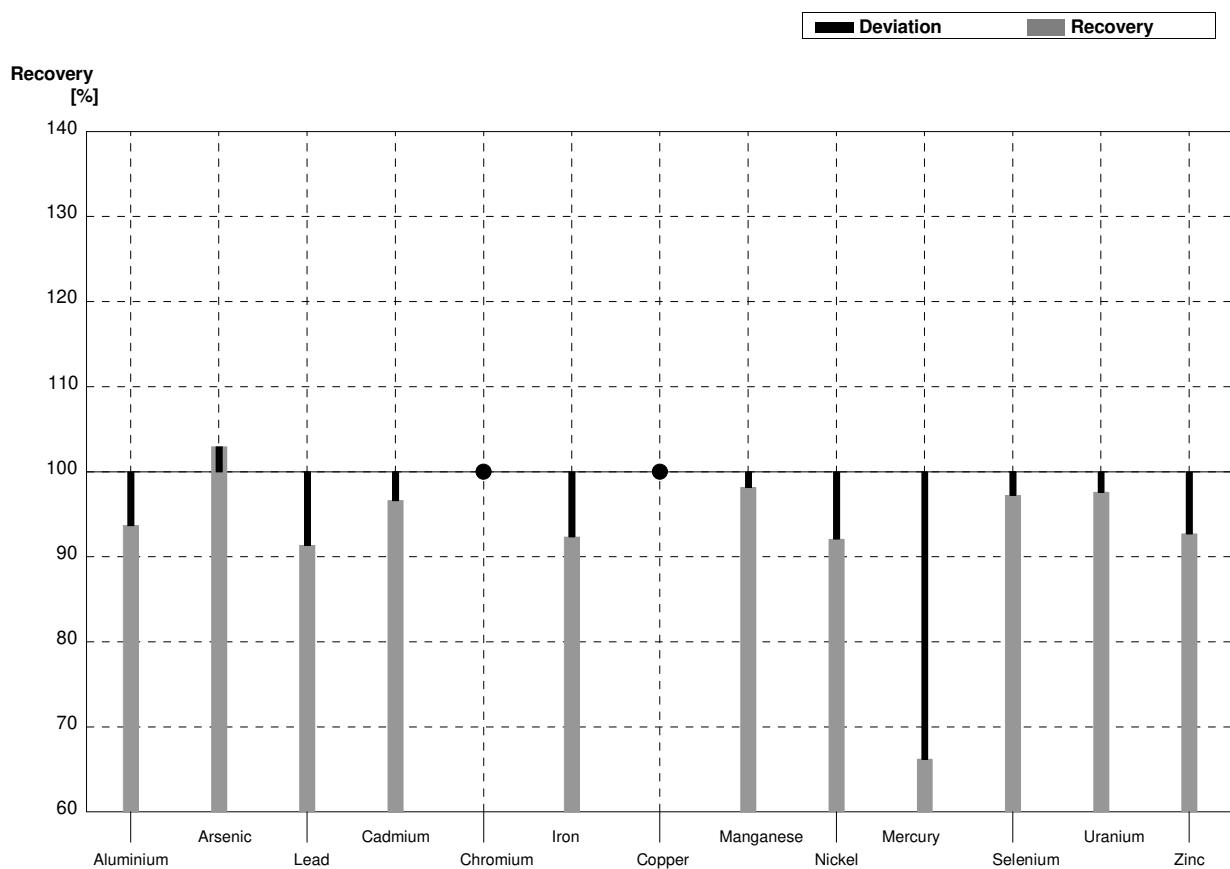
**Sample M161A  
Laboratory Q**

Parameter	Target value	$\pm$ U (k=2)	Result	$\pm$	Unit	Recovery
Aluminium	25,8	0,2	24,86	1,53	$\mu\text{g/l}$	96%
Arsenic	0,692	0,007	0,83	0,24	$\mu\text{g/l}$	120%
Lead	1,21	0,01	1,14	0,14	$\mu\text{g/l}$	94%
Cadmium	0,393	0,004	0,400		$\mu\text{g/l}$	102%
Chromium	10,0	0,1	9,76	1,1	$\mu\text{g/l}$	98%
Iron	38,4	0,2	36,17	0,82	$\mu\text{g/l}$	94%
Copper	16,7	0,1	13,69	0,8	$\mu\text{g/l}$	82%
Manganese	32,7	0,2	30,3	0,8	$\mu\text{g/l}$	93%
Nickel	1,75	0,02	1,77	0,1	$\mu\text{g/l}$	101%
Mercury	0,82	0,02	0,74	0,01	$\mu\text{g/l}$	90%
Selenium	0,94	0,03	0,79	0,18	$\mu\text{g/l}$	84%
Uranium	3,69	0,03	3,57	0,29	$\mu\text{g/l}$	97%
Zinc	46,3	0,6	45,76	1,42	$\mu\text{g/l}$	99%



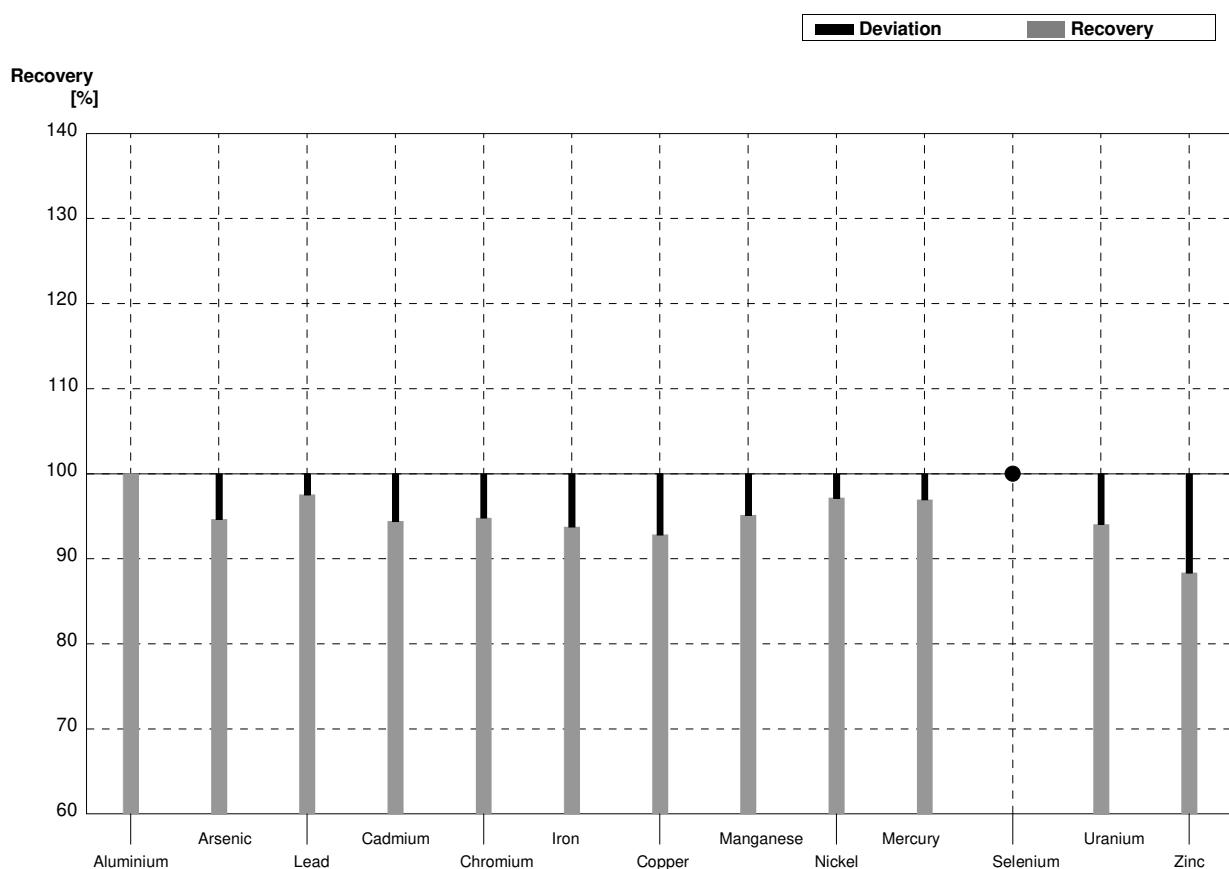
**Sample M161B**  
**Laboratory Q**

Parameter	Target value	$\pm$ U ( $k=2$ )	Result	$\pm$	Unit	Recovery
Aluminium	51,0	0,3	47,78	0,86	$\mu\text{g/l}$	94%
Arsenic	1,35	0,01	1,39	0,23	$\mu\text{g/l}$	103%
Lead	2,66	0,02	2,43	0,07	$\mu\text{g/l}$	91%
Cadmium	0,89	0,01	0,86	0,05	$\mu\text{g/l}$	97%
Chromium	1,71	0,02	<5		$\mu\text{g/l}$	•
Iron	75,8	0,3	70,0	0,8	$\mu\text{g/l}$	92%
Copper	2,98	0,03	<5		$\mu\text{g/l}$	•
Manganese	8,22	0,06	8,07	0,27	$\mu\text{g/l}$	98%
Nickel	2,78	0,03	2,56	0,12	$\mu\text{g/l}$	92%
Mercury	1,51	0,03	1,00	0,01	$\mu\text{g/l}$	66%
Selenium	2,90	0,03	2,82	0,16	$\mu\text{g/l}$	97%
Uranium	2,08	0,02	2,03	0,3	$\mu\text{g/l}$	98%
Zinc	14,0	0,5	12,98	0,4	$\mu\text{g/l}$	93%



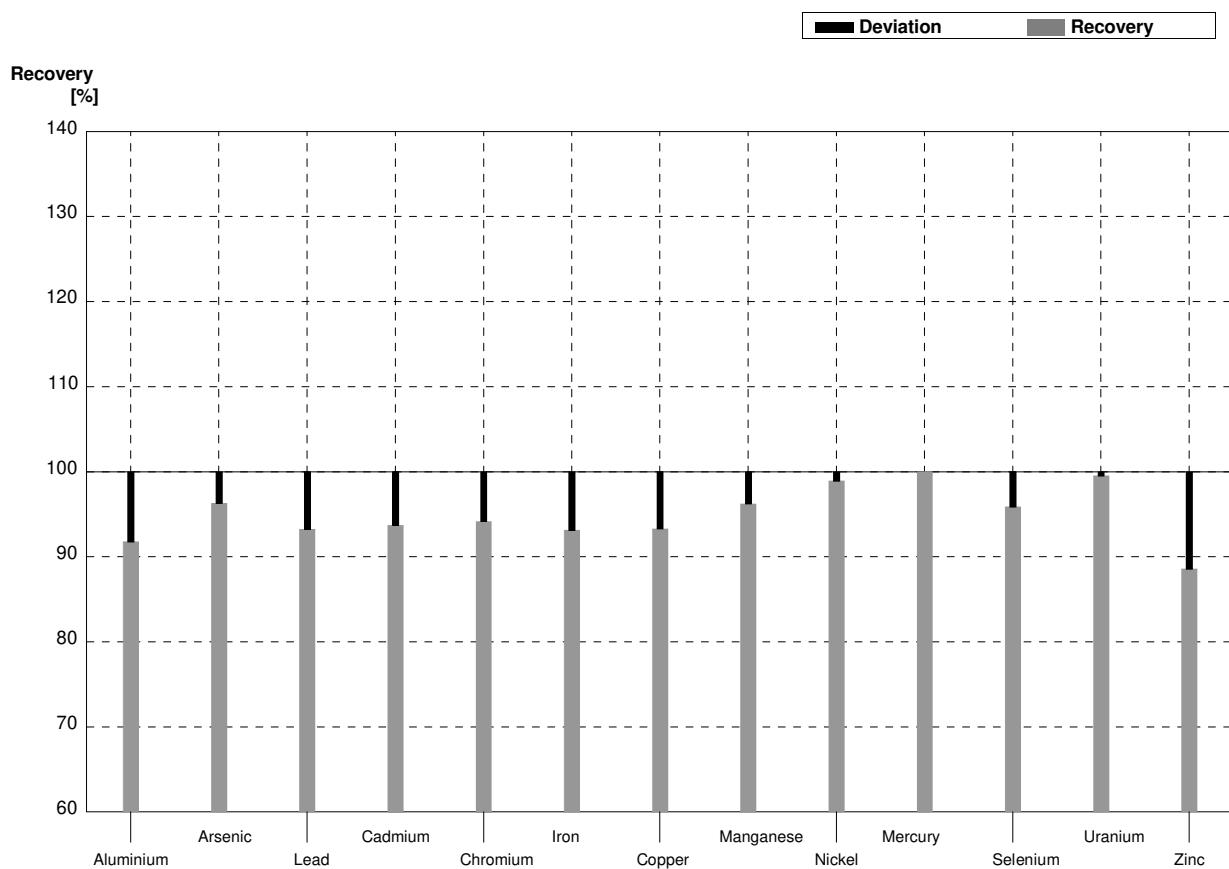
**Sample M161A**  
**Laboratory R**

Parameter	Target value	$\pm$ U ( $k=2$ )	Result	$\pm$	Unit	Recovery
Aluminium	25,8	0,2	25,8	2,9	$\mu\text{g/l}$	100%
Arsenic	0,692	0,007	0,655	0,037	$\mu\text{g/l}$	95%
Lead	1,21	0,01	1,18	0,13	$\mu\text{g/l}$	98%
Cadmium	0,393	0,004	0,371	0,017	$\mu\text{g/l}$	94%
Chromium	10,0	0,1	9,48	1,3	$\mu\text{g/l}$	95%
Iron	38,4	0,2	36,0	4,0	$\mu\text{g/l}$	94%
Copper	16,7	0,1	15,5	0,85	$\mu\text{g/l}$	93%
Manganese	32,7	0,2	31,1	1,7	$\mu\text{g/l}$	95%
Nickel	1,75	0,02	1,70	0,13	$\mu\text{g/l}$	97%
Mercury	0,82	0,02	0,795	0,12	$\mu\text{g/l}$	97%
Selenium	0,94	0,03	<1,0		$\mu\text{g/l}$	•
Uranium	3,69	0,03	3,47	0,37	$\mu\text{g/l}$	94%
Zinc	46,3	0,6	40,9	2,6	$\mu\text{g/l}$	88%



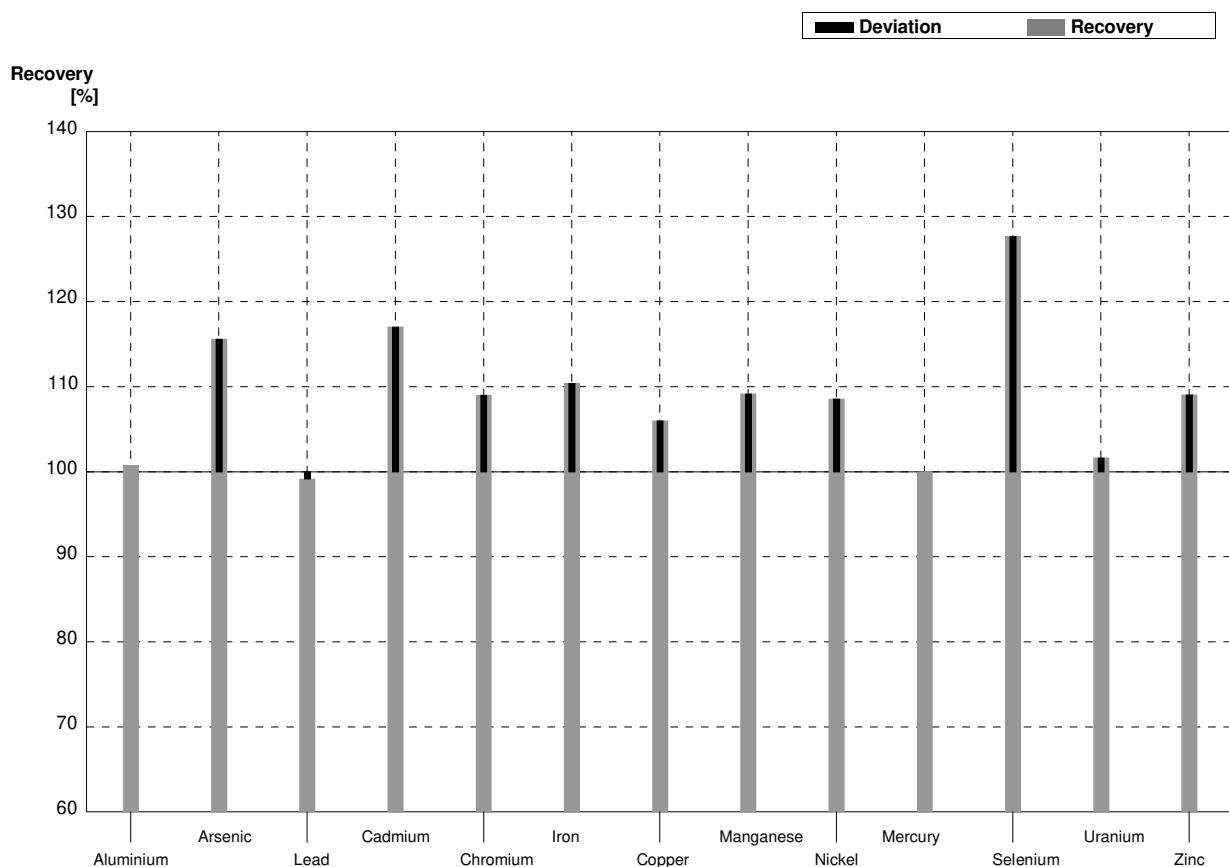
**Sample M161B**  
**Laboratory R**

Parameter	Target value	$\pm$ U ( $k=2$ )	Result	$\pm$	Unit	Recovery
Aluminium	51,0	0,3	46,8	5,2	$\mu\text{g/l}$	92%
Arsenic	1,35	0,01	1,30	0,073	$\mu\text{g/l}$	96%
Lead	2,66	0,02	2,48	0,26	$\mu\text{g/l}$	93%
Cadmium	0,89	0,01	0,834	0,067	$\mu\text{g/l}$	94%
Chromium	1,71	0,02	1,61	0,23	$\mu\text{g/l}$	94%
Iron	75,8	0,3	70,6	7,8	$\mu\text{g/l}$	93%
Copper	2,98	0,03	2,78	0,15	$\mu\text{g/l}$	93%
Manganese	8,22	0,06	7,91	0,43	$\mu\text{g/l}$	96%
Nickel	2,78	0,03	2,75	0,21	$\mu\text{g/l}$	99%
Mercury	1,51	0,03	1,51	0,23	$\mu\text{g/l}$	100%
Selenium	2,90	0,03	2,78	0,33	$\mu\text{g/l}$	96%
Uranium	2,08	0,02	2,07	0,22	$\mu\text{g/l}$	100%
Zinc	14,0	0,5	12,4	0,77	$\mu\text{g/l}$	89%



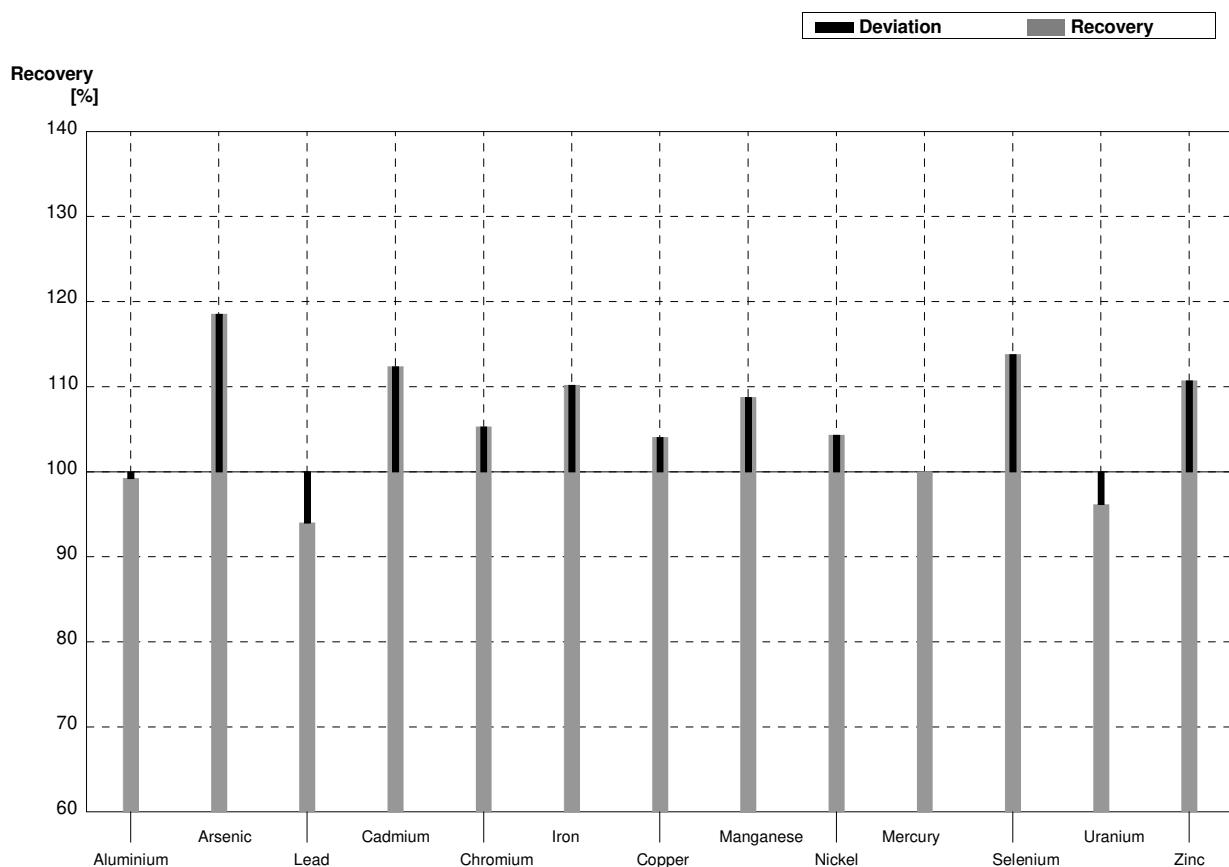
**Sample M161A**  
**Laboratory S**

Parameter	Target value	$\pm$ U ( $k=2$ )	Result	$\pm$	Unit	Recovery
Aluminium	25,8	0,2	26,0		$\mu\text{g/l}$	101%
Arsenic	0,692	0,007	0,80		$\mu\text{g/l}$	116%
Lead	1,21	0,01	1,20		$\mu\text{g/l}$	99%
Cadmium	0,393	0,004	0,460		$\mu\text{g/l}$	117%
Chromium	10,0	0,1	10,90		$\mu\text{g/l}$	109%
Iron	38,4	0,2	42,4		$\mu\text{g/l}$	110%
Copper	16,7	0,1	17,7		$\mu\text{g/l}$	106%
Manganese	32,7	0,2	35,7		$\mu\text{g/l}$	109%
Nickel	1,75	0,02	1,90		$\mu\text{g/l}$	109%
Mercury	0,82	0,02	0,82		$\mu\text{g/l}$	100%
Selenium	0,94	0,03	1,20		$\mu\text{g/l}$	128%
Uranium	3,69	0,03	3,75		$\mu\text{g/l}$	102%
Zinc	46,3	0,6	50,5		$\mu\text{g/l}$	109%



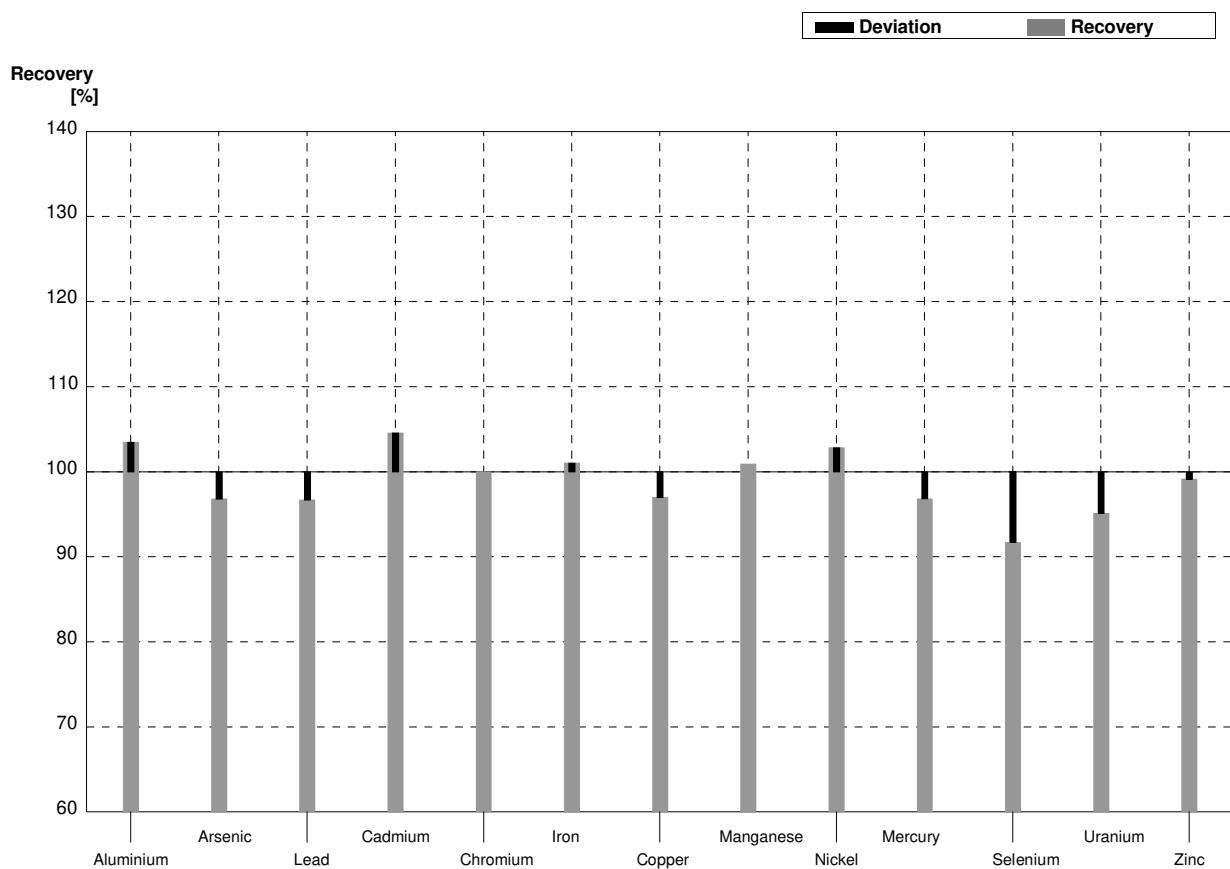
**Sample M161B**  
**Laboratory S**

Parameter	Target value	$\pm$ U ( $k=2$ )	Result	$\pm$	Unit	Recovery
Aluminium	51,0	0,3	50,6		$\mu\text{g/l}$	99%
Arsenic	1,35	0,01	1,60		$\mu\text{g/l}$	119%
Lead	2,66	0,02	2,50		$\mu\text{g/l}$	94%
Cadmium	0,89	0,01	1,00		$\mu\text{g/l}$	112%
Chromium	1,71	0,02	1,80		$\mu\text{g/l}$	105%
Iron	75,8	0,3	83,50		$\mu\text{g/l}$	110%
Copper	2,98	0,03	3,10		$\mu\text{g/l}$	104%
Manganese	8,22	0,06	8,94		$\mu\text{g/l}$	109%
Nickel	2,78	0,03	2,90		$\mu\text{g/l}$	104%
Mercury	1,51	0,03	1,51		$\mu\text{g/l}$	100%
Selenium	2,90	0,03	3,30		$\mu\text{g/l}$	114%
Uranium	2,08	0,02	2,00		$\mu\text{g/l}$	96%
Zinc	14,0	0,5	15,50		$\mu\text{g/l}$	111%



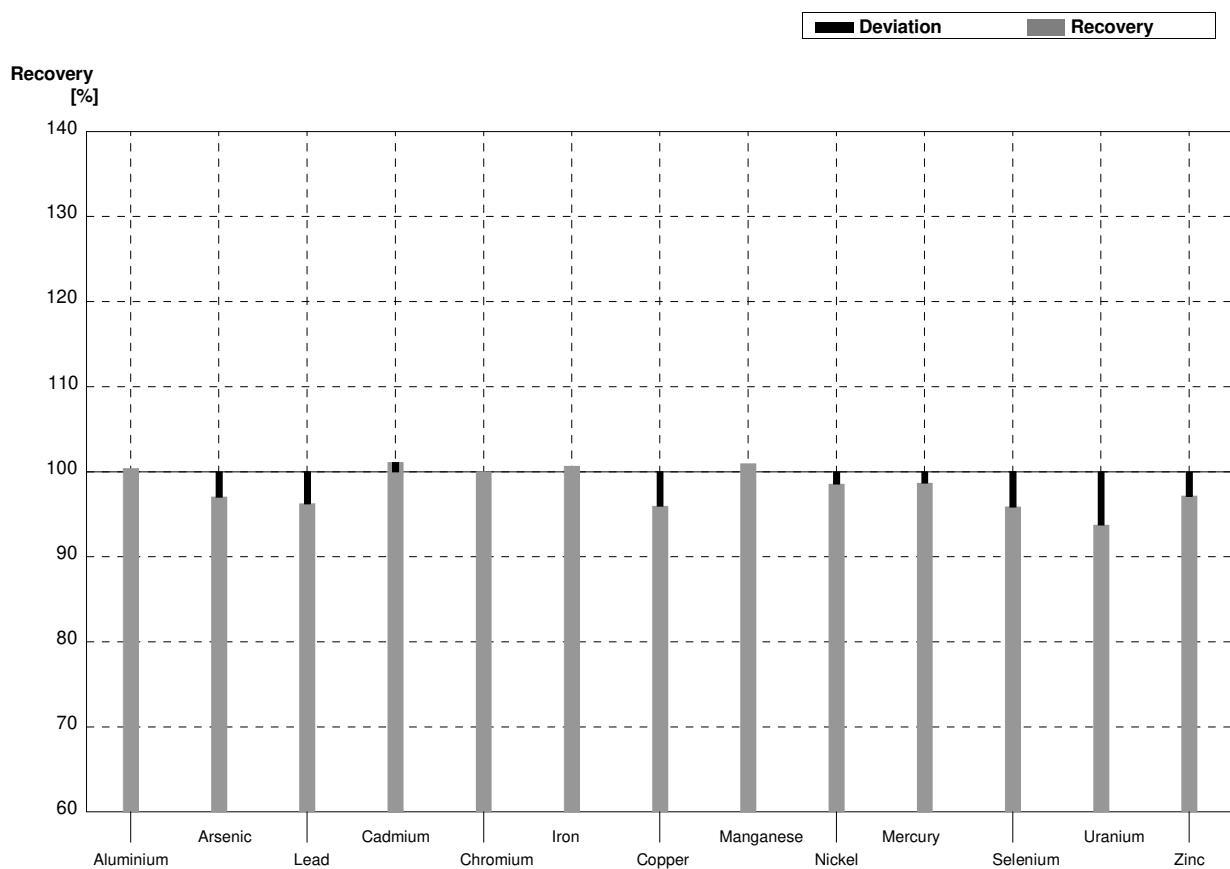
**Sample M161A**  
**Laboratory T**

Parameter	Target value	$\pm$ U ( $k=2$ )	Result	$\pm$	Unit	Recovery
Aluminium	25,8	0,2	26,7	6,7	$\mu\text{g/l}$	103%
Arsenic	0,692	0,007	0,670	0,2	$\mu\text{g/l}$	97%
Lead	1,21	0,01	1,17	0,3	$\mu\text{g/l}$	97%
Cadmium	0,393	0,004	0,411	0,11	$\mu\text{g/l}$	105%
Chromium	10,0	0,1	10,0	3,0	$\mu\text{g/l}$	100%
Iron	38,4	0,2	38,8	11,7	$\mu\text{g/l}$	101%
Copper	16,7	0,1	16,2	4,1	$\mu\text{g/l}$	97%
Manganese	32,7	0,2	33,0	9,9	$\mu\text{g/l}$	101%
Nickel	1,75	0,02	1,80	0,45	$\mu\text{g/l}$	103%
Mercury	0,82	0,02	0,794	0,24	$\mu\text{g/l}$	97%
Selenium	0,94	0,03	0,862	0,35	$\mu\text{g/l}$	92%
Uranium	3,69	0,03	3,51	1,1	$\mu\text{g/l}$	95%
Zinc	46,3	0,6	45,9	11,5	$\mu\text{g/l}$	99%



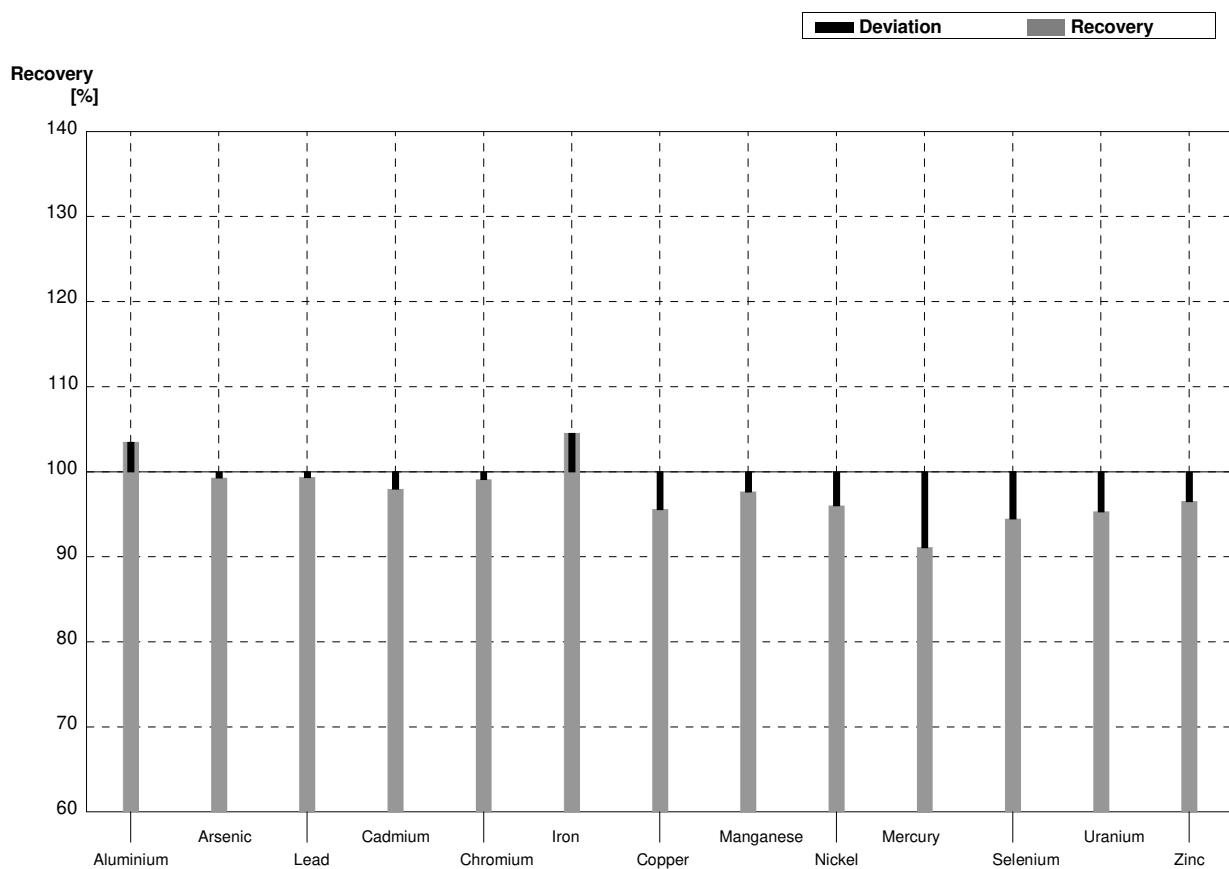
**Sample M161B**  
**Laboratory T**

Parameter	Target value	$\pm$ U ( $k=2$ )	Result	$\pm$	Unit	Recovery
Aluminium	51,0	0,3	51,2	12,8	$\mu\text{g/l}$	100%
Arsenic	1,35	0,01	1,31	0,4	$\mu\text{g/l}$	97%
Lead	2,66	0,02	2,56	0,64	$\mu\text{g/l}$	96%
Cadmium	0,89	0,01	0,900	0,25	$\mu\text{g/l}$	101%
Chromium	1,71	0,02	1,71	0,52	$\mu\text{g/l}$	100%
Iron	75,8	0,3	76,3	22,9	$\mu\text{g/l}$	101%
Copper	2,98	0,03	2,86	0,72	$\mu\text{g/l}$	96%
Manganese	8,22	0,06	8,30	2,5	$\mu\text{g/l}$	101%
Nickel	2,78	0,03	2,74	0,69	$\mu\text{g/l}$	99%
Mercury	1,51	0,03	1,49	0,45	$\mu\text{g/l}$	99%
Selenium	2,90	0,03	2,78	1,12	$\mu\text{g/l}$	96%
Uranium	2,08	0,02	1,95	0,59	$\mu\text{g/l}$	94%
Zinc	14,0	0,5	13,6	3,4	$\mu\text{g/l}$	97%



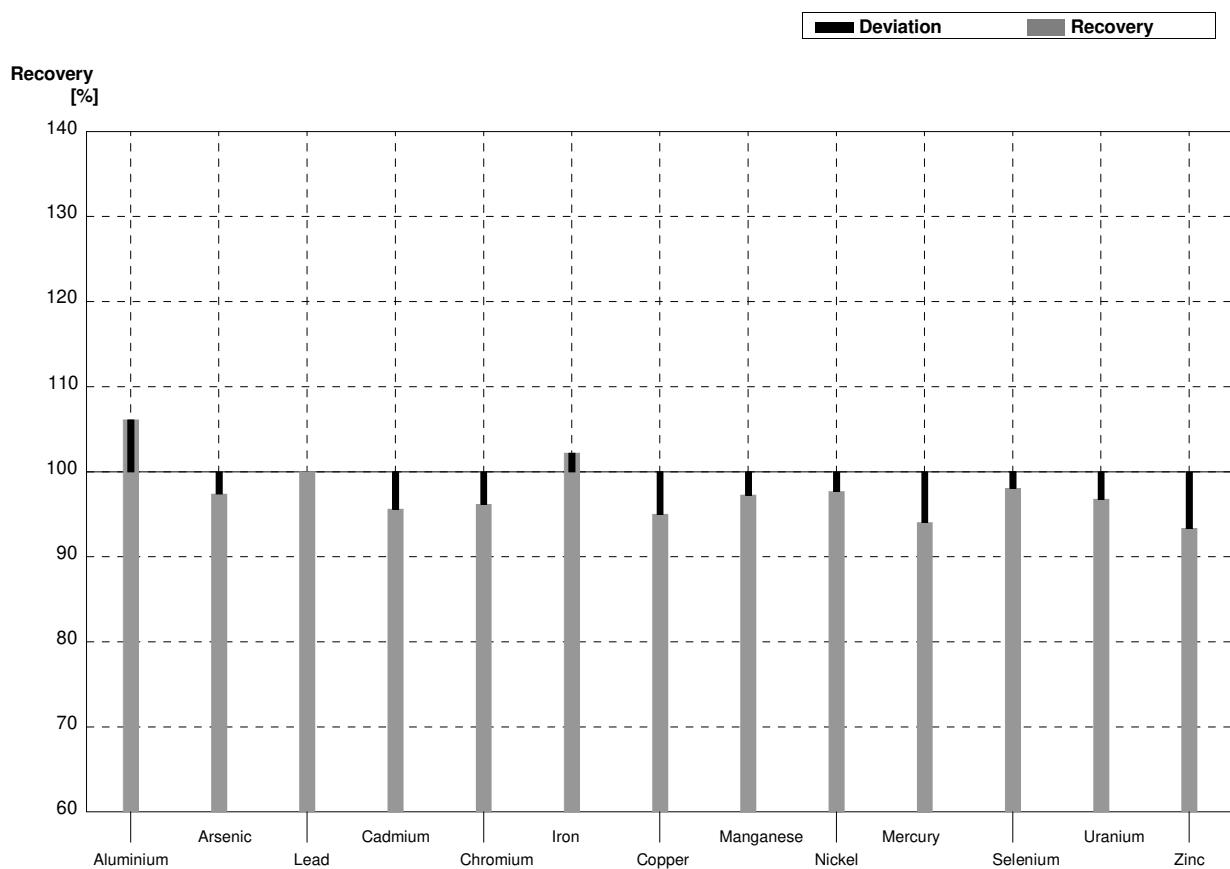
**Sample M161A**  
**Laboratory U**

Parameter	Target value	$\pm$ U ( $k=2$ )	Result	$\pm$	Unit	Recovery
Aluminium	25,8	0,2	26,7	2,7	$\mu\text{g/l}$	103%
Arsenic	0,692	0,007	0,687	0,07	$\mu\text{g/l}$	99%
Lead	1,21	0,01	1,202	0,12	$\mu\text{g/l}$	99%
Cadmium	0,393	0,004	0,385	0,04	$\mu\text{g/l}$	98%
Chromium	10,0	0,1	9,91	0,99	$\mu\text{g/l}$	99%
Iron	38,4	0,2	40,14	4	$\mu\text{g/l}$	105%
Copper	16,7	0,1	15,96	1,6	$\mu\text{g/l}$	96%
Manganese	32,7	0,2	31,93	3,2	$\mu\text{g/l}$	98%
Nickel	1,75	0,02	1,680	0,17	$\mu\text{g/l}$	96%
Mercury	0,82	0,02	0,747	0,075	$\mu\text{g/l}$	91%
Selenium	0,94	0,03	0,888	0,09	$\mu\text{g/l}$	94%
Uranium	3,69	0,03	3,517	0,35	$\mu\text{g/l}$	95%
Zinc	46,3	0,6	44,68	4,5	$\mu\text{g/l}$	97%



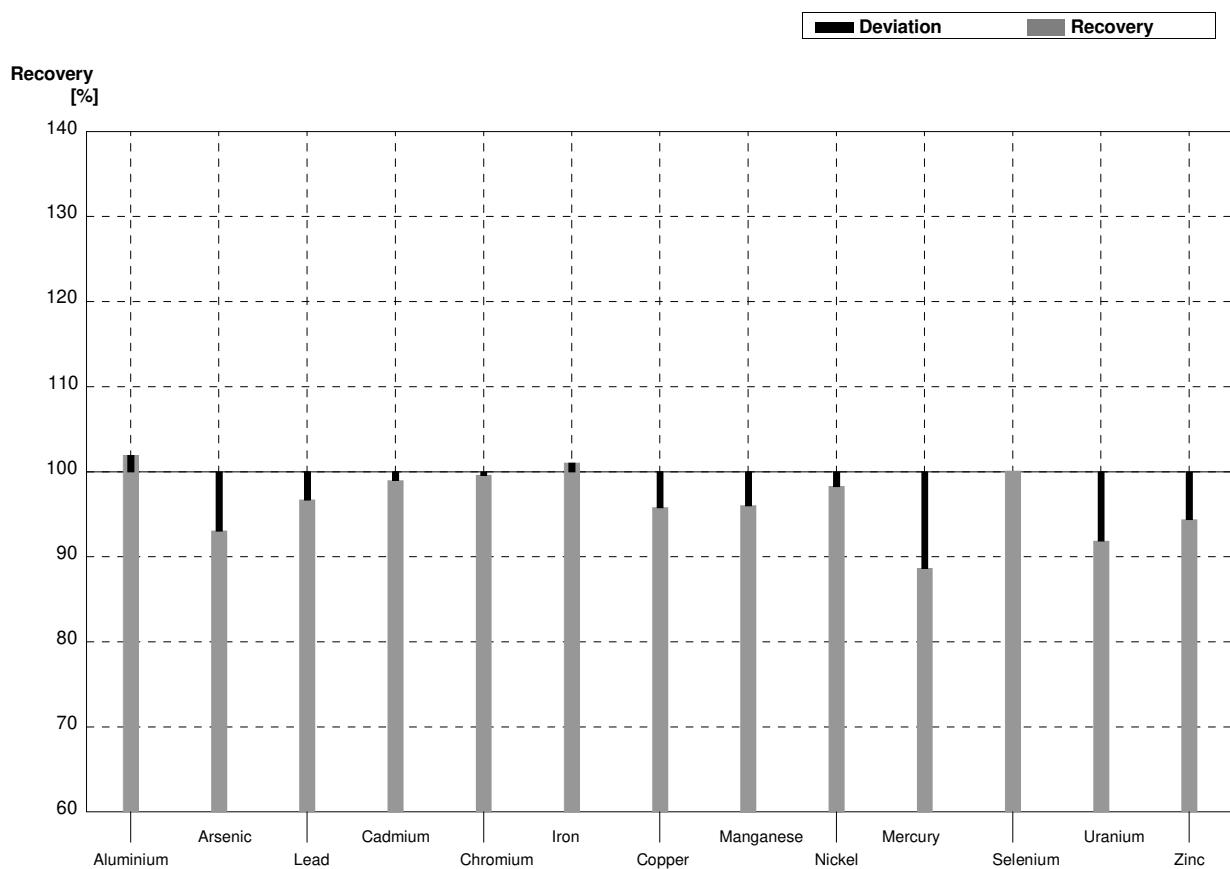
**Sample M161B**  
**Laboratory U**

Parameter	Target value	$\pm$ U ( $k=2$ )	Result	$\pm$	Unit	Recovery
Aluminium	51,0	0,3	54,11	5,4	$\mu\text{g/l}$	106%
Arsenic	1,35	0,01	1,315	0,13	$\mu\text{g/l}$	97%
Lead	2,66	0,02	2,661	0,27	$\mu\text{g/l}$	100%
Cadmium	0,89	0,01	0,851	0,085	$\mu\text{g/l}$	96%
Chromium	1,71	0,02	1,645	0,17	$\mu\text{g/l}$	96%
Iron	75,8	0,3	77,47	7,7	$\mu\text{g/l}$	102%
Copper	2,98	0,03	2,831	0,28	$\mu\text{g/l}$	95%
Manganese	8,22	0,06	7,996	0,8	$\mu\text{g/l}$	97%
Nickel	2,78	0,03	2,716	0,27	$\mu\text{g/l}$	98%
Mercury	1,51	0,03	1,420	0,14	$\mu\text{g/l}$	94%
Selenium	2,90	0,03	2,844	0,28	$\mu\text{g/l}$	98%
Uranium	2,08	0,02	2,013	0,2	$\mu\text{g/l}$	97%
Zinc	14,0	0,5	13,07	1,3	$\mu\text{g/l}$	93%



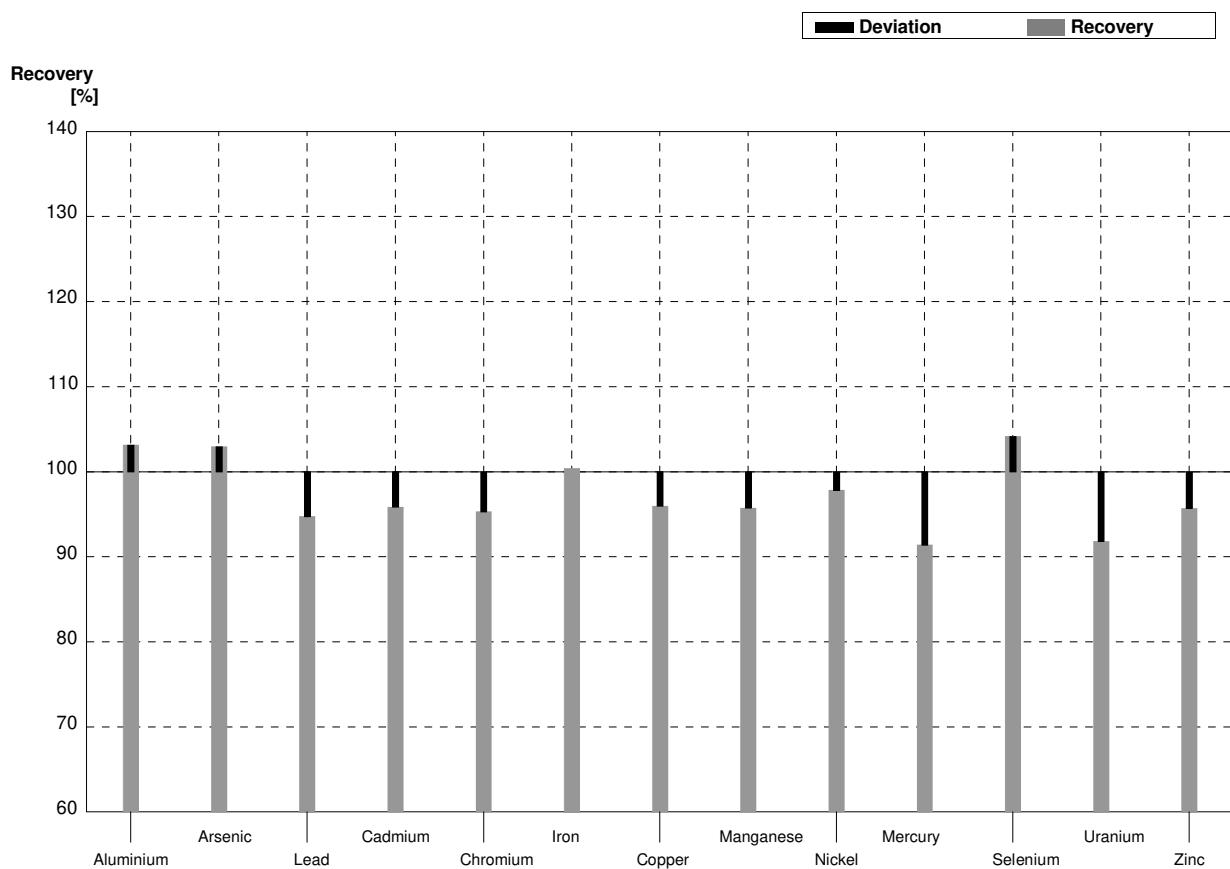
**Sample M161A**  
**Laboratory V**

Parameter	Target value	$\pm$ U ( $k=2$ )	Result	$\pm$	Unit	Recovery
Aluminium	25,8	0,2	26,3	0,49	$\mu\text{g/l}$	102%
Arsenic	0,692	0,007	0,644	0,040	$\mu\text{g/l}$	93%
Lead	1,21	0,01	1,17	0,026	$\mu\text{g/l}$	97%
Cadmium	0,393	0,004	0,389	0,012	$\mu\text{g/l}$	99%
Chromium	10,0	0,1	9,96	0,046	$\mu\text{g/l}$	100%
Iron	38,4	0,2	38,8	0,10	$\mu\text{g/l}$	101%
Copper	16,7	0,1	16,0	0,20	$\mu\text{g/l}$	96%
Manganese	32,7	0,2	31,4	0,27	$\mu\text{g/l}$	96%
Nickel	1,75	0,02	1,72	0,061	$\mu\text{g/l}$	98%
Mercury	0,82	0,02	0,727	0,013	$\mu\text{g/l}$	89%
Selenium	0,94	0,03	0,941	0,043	$\mu\text{g/l}$	100%
Uranium	3,69	0,03	3,39	0,089	$\mu\text{g/l}$	92%
Zinc	46,3	0,6	43,7	0,95	$\mu\text{g/l}$	94%



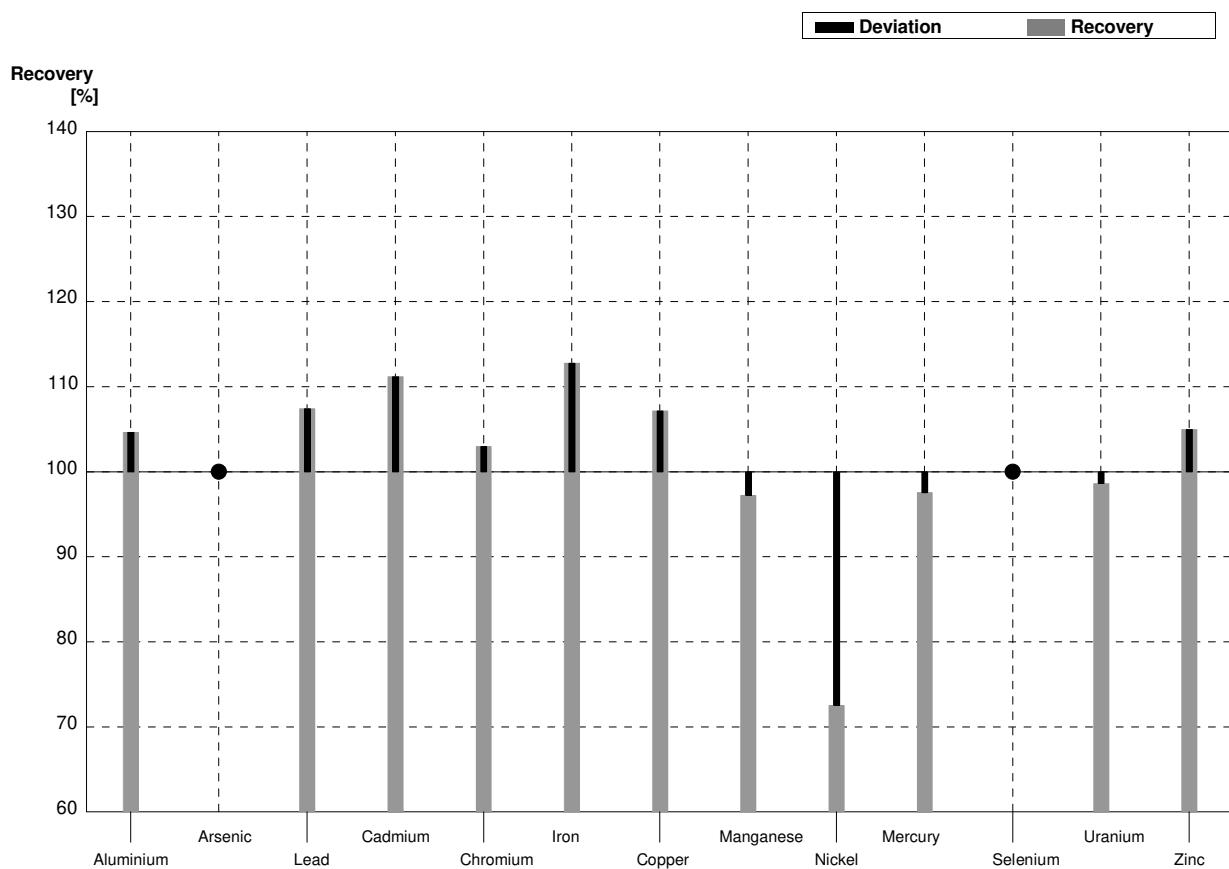
**Sample M161B**  
**Laboratory V**

Parameter	Target value	$\pm$ U ( $k=2$ )	Result	$\pm$	Unit	Recovery
Aluminium	51,0	0,3	52,6	0,92	$\mu\text{g/l}$	103%
Arsenic	1,35	0,01	1,39	0,032	$\mu\text{g/l}$	103%
Lead	2,66	0,02	2,52	0,031	$\mu\text{g/l}$	95%
Cadmium	0,89	0,01	0,853	0,023	$\mu\text{g/l}$	96%
Chromium	1,71	0,02	1,63	0,040	$\mu\text{g/l}$	95%
Iron	75,8	0,3	76,1	0,38	$\mu\text{g/l}$	100%
Copper	2,98	0,03	2,86	0,026	$\mu\text{g/l}$	96%
Manganese	8,22	0,06	7,87	0,072	$\mu\text{g/l}$	96%
Nickel	2,78	0,03	2,72	0,015	$\mu\text{g/l}$	98%
Mercury	1,51	0,03	1,38	0,026	$\mu\text{g/l}$	91%
Selenium	2,90	0,03	3,02	0,26	$\mu\text{g/l}$	104%
Uranium	2,08	0,02	1,91	0,021	$\mu\text{g/l}$	92%
Zinc	14,0	0,5	13,4	0,058	$\mu\text{g/l}$	96%



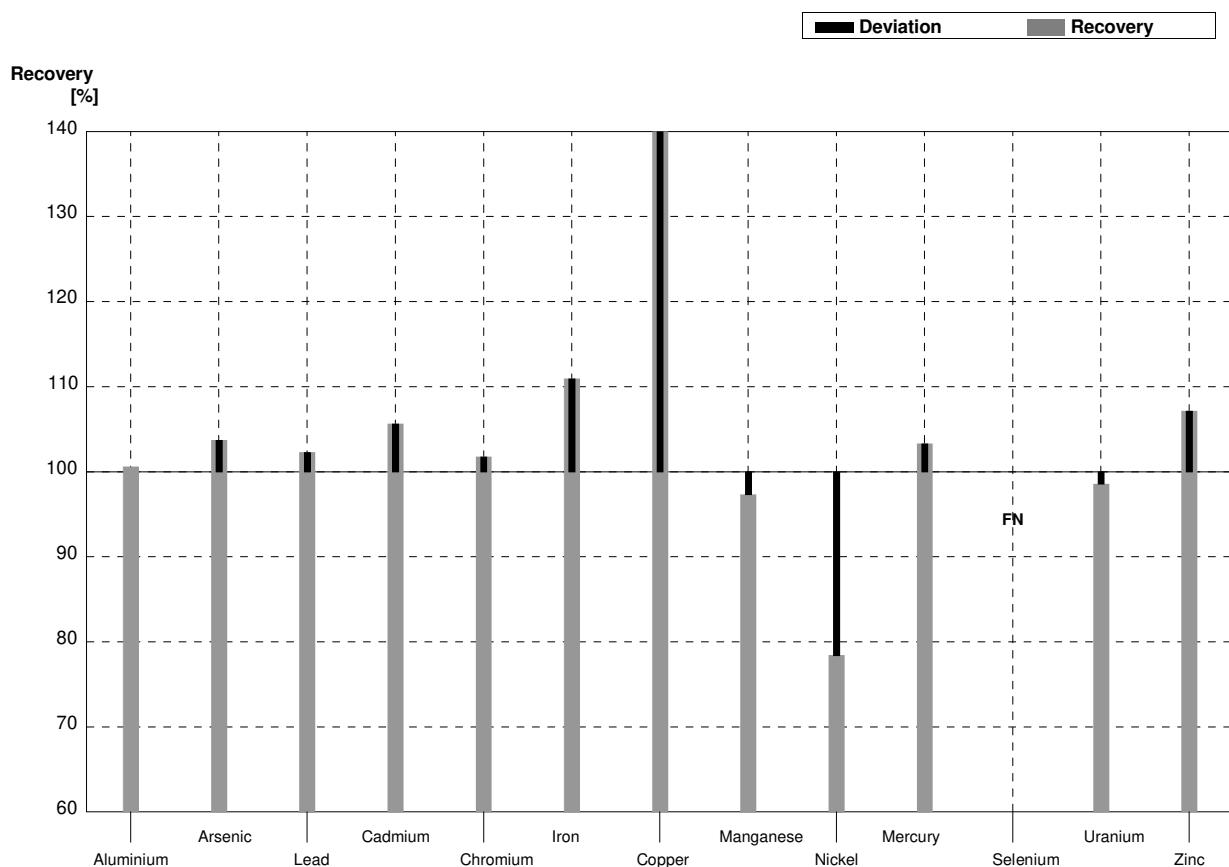
**Sample M161A**  
**Laboratory W**

Parameter	Target value	$\pm$ U ( $k=2$ )	Result	$\pm$	Unit	Recovery
Aluminium	25,8	0,2	27,0	3,9	$\mu\text{g/l}$	105%
Arsenic	0,692	0,007	<1,0		$\mu\text{g/l}$	•
Lead	1,21	0,01	1,30	0,16	$\mu\text{g/l}$	107%
Cadmium	0,393	0,004	0,437	0,057	$\mu\text{g/l}$	111%
Chromium	10,0	0,1	10,3	1,5	$\mu\text{g/l}$	103%
Iron	38,4	0,2	43,3	4,6	$\mu\text{g/l}$	113%
Copper	16,7	0,1	17,9	2,1	$\mu\text{g/l}$	107%
Manganese	32,7	0,2	31,8	3,3	$\mu\text{g/l}$	97%
Nickel	1,75	0,02	1,27	0,34	$\mu\text{g/l}$	73%
Mercury	0,82	0,02	0,80	0,11	$\mu\text{g/l}$	98%
Selenium	0,94	0,03	<2,0		$\mu\text{g/l}$	•
Uranium	3,69	0,03	3,64	0,36	$\mu\text{g/l}$	99%
Zinc	46,3	0,6	48,6	5,9	$\mu\text{g/l}$	105%



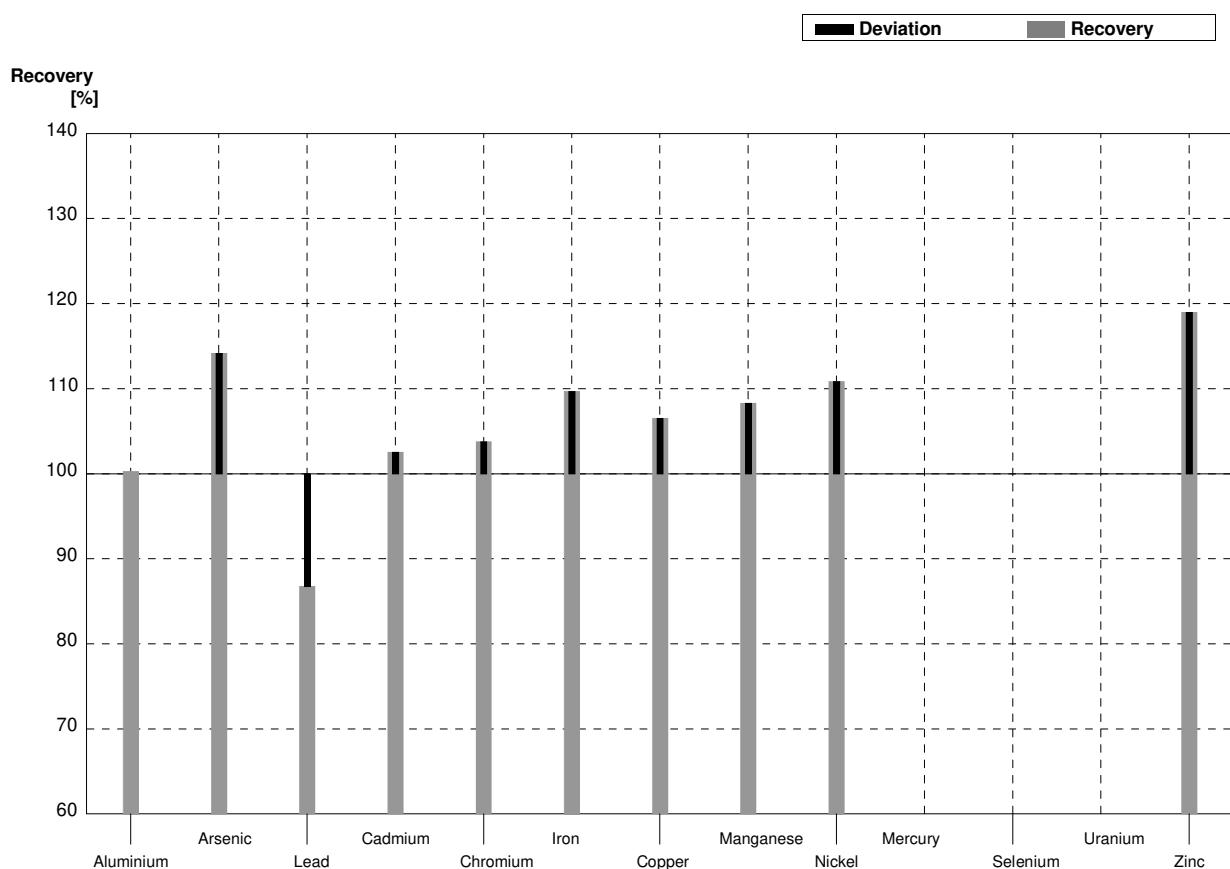
**Sample M161B**  
**Laboratory W**

Parameter	Target value	$\pm$ U ( $k=2$ )	Result	$\pm$	Unit	Recovery
Aluminium	51,0	0,3	51,3	6,6	$\mu\text{g/l}$	101%
Arsenic	1,35	0,01	1,40	0,26	$\mu\text{g/l}$	104%
Lead	2,66	0,02	2,72	0,33	$\mu\text{g/l}$	102%
Cadmium	0,89	0,01	0,94	0,12	$\mu\text{g/l}$	106%
Chromium	1,71	0,02	1,74	0,32	$\mu\text{g/l}$	102%
Iron	75,8	0,3	84,1	8,5	$\mu\text{g/l}$	111%
Copper	2,98	0,03	4,21	0,55	$\mu\text{g/l}$	141%
Manganese	8,22	0,06	8,0	1,1	$\mu\text{g/l}$	97%
Nickel	2,78	0,03	2,18	0,45	$\mu\text{g/l}$	78%
Mercury	1,51	0,03	1,56	0,22	$\mu\text{g/l}$	103%
Selenium	2,90	0,03	<2,0		$\mu\text{g/l}$	FN
Uranium	2,08	0,02	2,05	0,21	$\mu\text{g/l}$	99%
Zinc	14,0	0,5	15,0	2,1	$\mu\text{g/l}$	107%



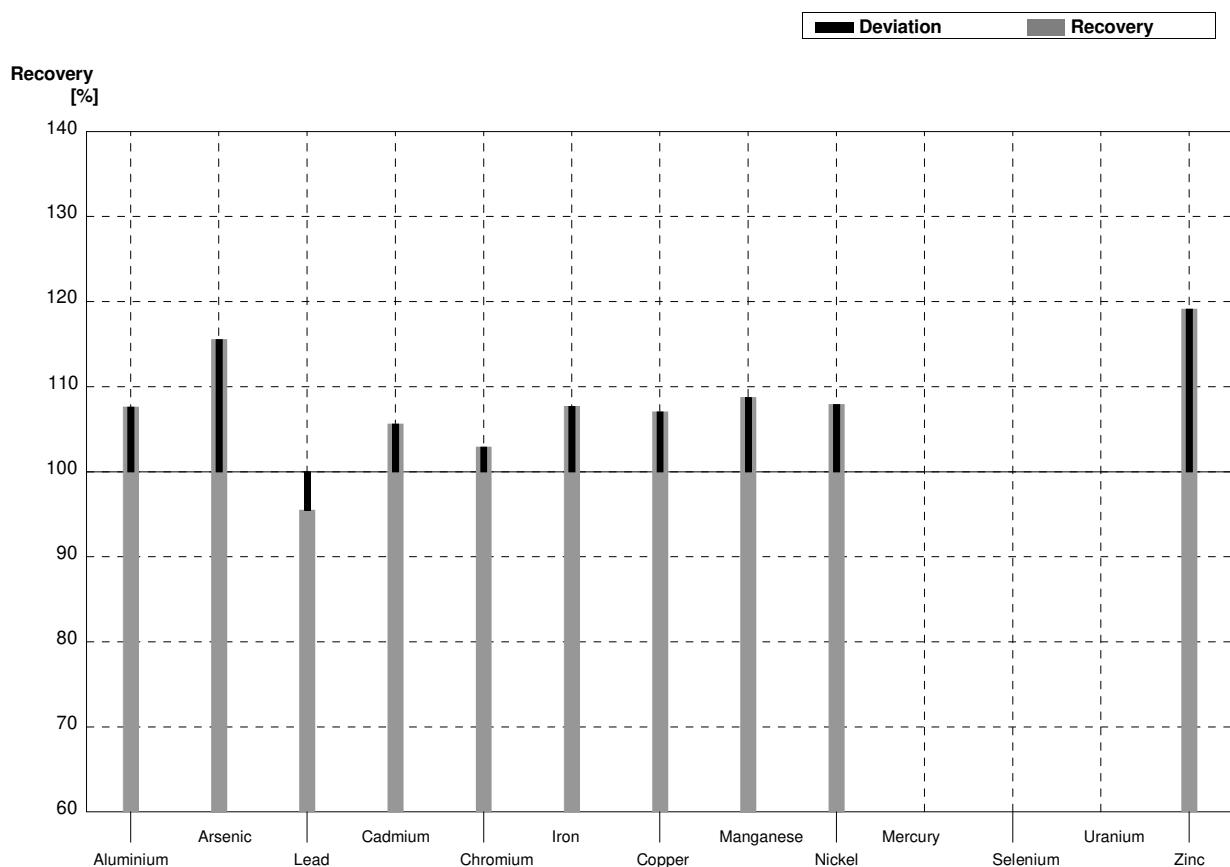
**Sample M161A**  
**Laboratory X**

Parameter	Target value	$\pm$ U (k=2)	Result	$\pm$	Unit	Recovery
Aluminium	25,8	0,2	25,87	2,82	$\mu\text{g/l}$	100%
Arsenic	0,692	0,007	0,79	0,05	$\mu\text{g/l}$	114%
Lead	1,21	0,01	1,05	0,13	$\mu\text{g/l}$	87%
Cadmium	0,393	0,004	0,403	0,059	$\mu\text{g/l}$	103%
Chromium	10,0	0,1	10,38	1,04	$\mu\text{g/l}$	104%
Iron	38,4	0,2	42,13	4,29	$\mu\text{g/l}$	110%
Copper	16,7	0,1	17,79	2,29	$\mu\text{g/l}$	107%
Manganese	32,7	0,2	35,41	3,61	$\mu\text{g/l}$	108%
Nickel	1,75	0,02	1,94	0,12	$\mu\text{g/l}$	111%
Mercury	0,82	0,02			$\mu\text{g/l}$	
Selenium	0,94	0,03			$\mu\text{g/l}$	
Uranium	3,69	0,03			$\mu\text{g/l}$	
Zinc	46,3	0,6	55,09	5,91	$\mu\text{g/l}$	119%



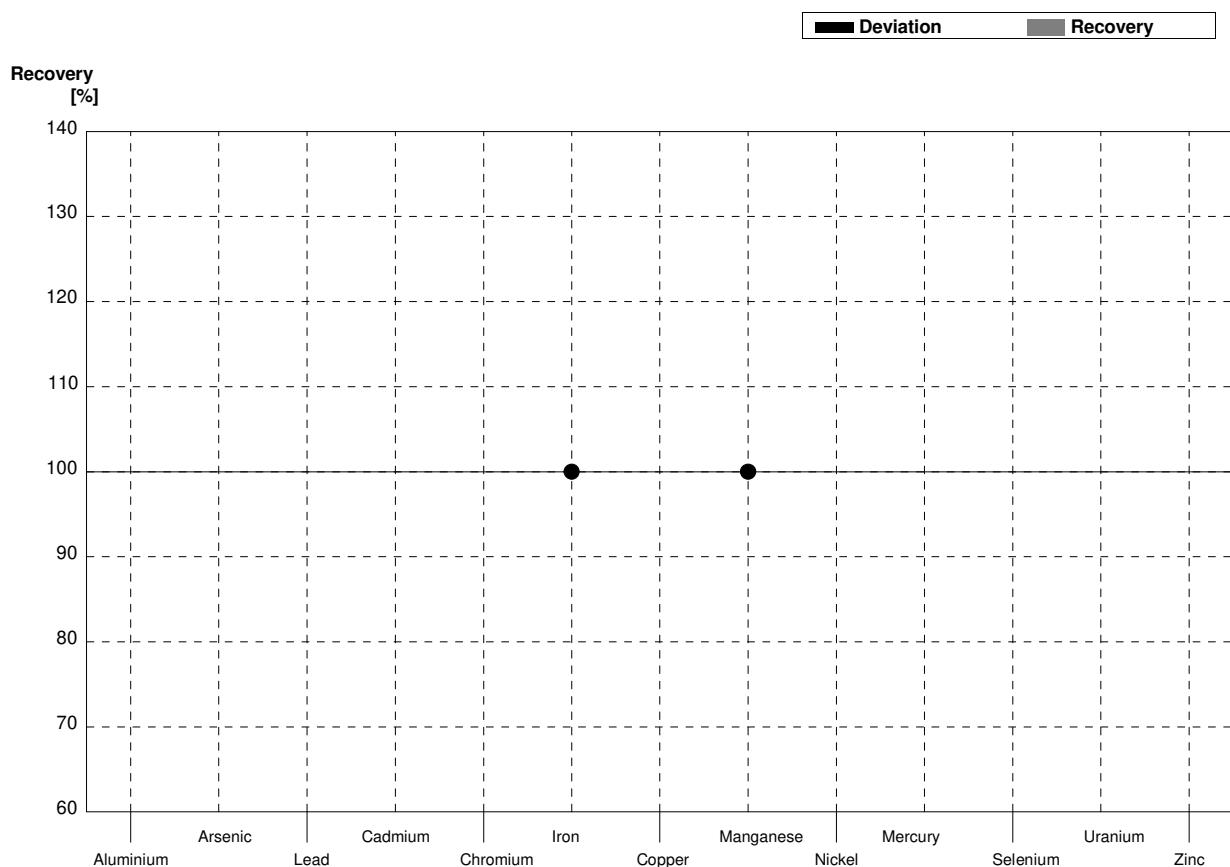
**Sample M161B**  
**Laboratory X**

Parameter	Target value	$\pm$ U (k=2)	Result	$\pm$	Unit	Recovery
Aluminium	51,0	0,3	54,89	6,04	$\mu\text{g/l}$	108%
Arsenic	1,35	0,01	1,56	0,11	$\mu\text{g/l}$	116%
Lead	2,66	0,02	2,54	0,32	$\mu\text{g/l}$	95%
Cadmium	0,89	0,01	0,94	0,14	$\mu\text{g/l}$	106%
Chromium	1,71	0,02	1,76	0,18	$\mu\text{g/l}$	103%
Iron	75,8	0,3	81,64	8,31	$\mu\text{g/l}$	108%
Copper	2,98	0,03	3,19	0,41	$\mu\text{g/l}$	107%
Manganese	8,22	0,06	8,94	0,91	$\mu\text{g/l}$	109%
Nickel	2,78	0,03	3,00	0,19	$\mu\text{g/l}$	108%
Mercury	1,51	0,03			$\mu\text{g/l}$	
Selenium	2,90	0,03			$\mu\text{g/l}$	
Uranium	2,08	0,02			$\mu\text{g/l}$	
Zinc	14,0	0,5	16,68	1,79	$\mu\text{g/l}$	119%



**Sample M161A**  
**Laboratory Y**

Parameter	Target value	$\pm$ U ( $k=2$ )	Result	$\pm$	Unit	Recovery
Aluminium	25,8	0,2			$\mu\text{g/l}$	
Arsenic	0,692	0,007			$\mu\text{g/l}$	
Lead	1,21	0,01			$\mu\text{g/l}$	
Cadmium	0,393	0,004			$\mu\text{g/l}$	
Chromium	10,0	0,1			$\mu\text{g/l}$	
Iron	38,4	0,2	<50		$\mu\text{g/l}$	•
Copper	16,7	0,1			$\mu\text{g/l}$	
Manganese	32,7	0,2	<50		$\mu\text{g/l}$	•
Nickel	1,75	0,02			$\mu\text{g/l}$	
Mercury	0,82	0,02			$\mu\text{g/l}$	
Selenium	0,94	0,03			$\mu\text{g/l}$	
Uranium	3,69	0,03			$\mu\text{g/l}$	
Zinc	46,3	0,6			$\mu\text{g/l}$	



**Sample M161B**  
**Laboratory Y**

Parameter	Target value	$\pm$ U (k=2)	Result	$\pm$	Unit	Recovery
Aluminium	51,0	0,3			$\mu\text{g/l}$	
Arsenic	1,35	0,01			$\mu\text{g/l}$	
Lead	2,66	0,02			$\mu\text{g/l}$	
Cadmium	0,89	0,01			$\mu\text{g/l}$	
Chromium	1,71	0,02			$\mu\text{g/l}$	
Iron	75,8	0,3	77	6	$\mu\text{g/l}$	102%
Copper	2,98	0,03			$\mu\text{g/l}$	
Manganese	8,22	0,06	<50		$\mu\text{g/l}$	•
Nickel	2,78	0,03			$\mu\text{g/l}$	
Mercury	1,51	0,03			$\mu\text{g/l}$	
Selenium	2,90	0,03			$\mu\text{g/l}$	
Uranium	2,08	0,02			$\mu\text{g/l}$	
Zinc	14,0	0,5			$\mu\text{g/l}$	

