

# **IFA-Proficiency Testing Scheme for Water Analysis**

**Round C64  
Volatile Halogenated Hydrocarbons**

**Sample Dispatch: 22 February 2021**



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Report: 1. Edition, created on 25 March 2021 by Ing. Caroline Stadlmann  
75 pages

This report summarises the results of round “Volatile Halogenated Hydrocarbons” within the IFA-Test Proficiency Testing Scheme for Water Analysis. The samples were distributed to the participants on Monday, 22 February 2021. Each participant received two samples of 600 mL filled into aluminium bottles.

Closing date for reporting results to the IFA-Tulln was Friday, 19 March 2021. 15 laboratories participated in this interlaboratory comparison. All laboratories submitted results. To make the participants anonymous, each laboratory obtained a letter code by random.

## Samples

For sample preparation, ultrapure water was spiked with concentrated solutions of inorganic salts in order to simulate the ionic composition of natural ground water. The following salts were added to the samples: Mg(NO<sub>3</sub>)<sub>2</sub>, MgSO<sub>4</sub>, Na<sub>2</sub>SO<sub>4</sub>, NaHCO<sub>3</sub>, KHCO<sub>3</sub>, CaCl<sub>2</sub> and Ca(NO<sub>3</sub>)<sub>2</sub>. Prior to sample preparation, samples of ultrapure water and artificial water matrix were analysed by Purge&Trap-GC-MS to exclude contamination.

The samples C64A and C64B were spiked with traces of trichloroethene, trichloromethane, 1,1,1-trichloroethane, tetrachloromethane, tribromomethane, tetrachloroethene, bromodichloromethane, 1,2-dichloroethane, dibromochloromethane, 1,1-dichloroethene, dichloromethane, cis-1,2-dichloroethene and trans-1,2-dichloroethene.

The calculation of the target concentrations of the compounds was based on the mass of standard added to the samples.

Trichloromethane, tribromomethane and 1,2-dichloroethane were not added to sample C64B, in order to check the analytical blank values.

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

For verification of homogeneity samples were analysed for the compounds of interest by Purge&Trap-GC-MS measurements prior to shipment to the participants. The results of the measurements are listed in the result tables and the parameter oriented part of the report (“IFA result”).

Usually we perform an additional check of PT-samples’ stability three weeks after sample preparation. The results of the measurements are listed in the result tables and the parameter oriented part of the report (“Stability test”).

## Results

Data evaluation was based on target concentrations that were calculated from the weights of the standards used to prepare 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 were calculated from these target concentrations. The results were tested for outliers using the Hampel outlier test (level of significance 99 %). A minimum number of four results was required for the outlier test.

The target concentrations of trichloromethane, tribromomethane and 1,2-dichloroethane, which were not added to sample C64B were set to <0.1 µg/L trichloromethane, <0.1 µg/L tribromomethane and <0.4 µg/L 1,2-dichloroethane, which meets the minimum quantifiable values defined by the Austrian ground and river water monitoring program and the quantification limits of the analytical methods applied in the IFA.

Standard deviations and coefficients of variation (CVs) were only calculated, when at least three results were available. The recoveries of the target concentrations, calculated from outlier-corrected data mean values ranged between 86.6 % (tetrachloroethene in sample C64B) and 102.1 % (trans-1,2-dichloroethene in sample C64B). The between-laboratory coefficients of variation ranged from 6.9 % (1,1-dichloroethene in sample C64A) to 27.3 % (dichloromethane in sample C64B).

The confidence intervals of the outlier-corrected laboratory mean values encompass the corresponding target values with their uncertainties.

## **z-Scores**

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

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

$z$  z-score

$x_i$  result of laboratory

$\bar{x}$  target value or mean value („consensus value“)

$\sigma$  standard deviation

Thus, the z-score is the ratio of the estimated bias (difference between result and target value) and a standard deviation. The z-score criteria were determined from relative standard deviations from all interlaboratory comparisons that have been organised by the IFA-Tulln from 2010 to 2020. They represent average performance data of all former participating laboratories.

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

### Calculation example:

A laboratory found 7.20 µg/L for the parameter Dichloromethane (recovery of 120 %). The target value for Dichloromethane was 6.02 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 14 %, which is 0.84 µg/L Dichloromethane, when based on the target value.

$$z = \frac{x_i - X}{\sigma_{pt}} = \frac{7.20 \text{ } \mu\text{g/L} - 6.02 \text{ } \mu\text{g/L}}{0.84 \text{ } \mu\text{g/L}} \approx 1.4 \quad \text{or} \quad \frac{120\% - 100\%}{14 \%} \approx 1.4$$

$z$  z-score

$x_i$  7.20 µg/L equivalent to 120 % (value of the laboratory)

$X$  6.02 µg/L equivalent to 100 % (target value)

$\sigma_{pt}$  0.84 µg/L equivalent to 14 % (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 z-scores are given 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 represented. On this z-score sheet the criteria are given in concentration units.

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

Parameter	z-Score-criteria (%)	Lower limit [µg/L]
1,1,1-Trichloroethane	15	0.15
1,1-Dichloroethene	18	0.35
1,2-Dichloroethane	13	0.5
cis-1,2-Dichloroethene	14	0.15
trans-1,2-Dichloroethene	13	0.15
Bromodichloromethane	13	0.15
Dibromochloromethane	14	0.2
Dichloromethane	14	1
Tetrachloroethene	16	0.15
Tetrachloromethane	18	0.15
Tribromomethane	15	0.2
Trichloroethene	15	0.15
Trichloromethane	14	0.25

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

z-Score	Classification
$\leq 2$	satisfactory
$2 <  z  < 3$	questionable
$\geq 3$	unsatisfactory

Please note that this evaluation is made on the background of the average performance of all participants of the IFA-Test-Systems proficiency testing scheme during the period from 2010 to 2020.

## **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 value. 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 be obtained for compounds not added to the samples: a result is termed FP if it is higher than the corresponding limit of quantification of the analytical procedure employed at the IFA-Tulln.
- “•”: All other results for which no recovery can be calculated are illustrated by this symbol

Tulln, 25 March 2021

# EXPLANATION

## Sample C10B

### Parameter Dichloromethane

Target value  $\pm U(k=2)$  10,4 µg/l  $\pm 0,5$  µg/l **Obtained from mass weighed out, U = uncertainty**

IFA result  $\pm U(k=2)$  10,2 µg/l  $\pm 1,0$  µg/l **Determined at IFA prior to shipment of samples**

Stability test  $\pm U(k=2)$  10,2 µg/l  $\pm 1,0$  µg/l **Determined at IFA 5 weeks after sample dispatch**

Lab code	Result	Out	$+/ -$	Unit	Recovery	z-Score
A	11,0		1,28	µg/l	106 %	0,30
B	9,0		1,8	µg/l	87 %	-0,71
C	10		2	µg/l	96 %	-0,20
D				µg/l		
E	13,7		0,40	µg/l	132 %	1,67
F	6,8		0,7	µg/l	65 %	-1,82
G	< 20			µg/l		
H				µg/l		
I	11,0			µg/l	106 %	0,30
J	24,1	*	1,51	µg/l	232 %	6,93
K	10,09		1,22	µg/l	97 %	-0,16
L	2,76	*		µg/l	27 %	-3,87
M	6,38		1,87	µg/l	61 %	-2,03
N	< 5		0,5	µg/l	FN	
O	15,6	*	4	µg/l	150 %	2,63
P	10,3		1,0	µg/l	99 %	-0,05
Q	10		1,14	µg/l	96 %	-0,20
R	8,88		0,46	µg/l	85 %	-0,77
S				µg/l		
T	9,03		0,08	µg/l	87 %	-0,69
U	22,5	*	0,5	µg/l	216 %	6,12
V	10,33		0,25	µg/l	99 %	-0,04

An asterisk indicates a result detected as outlier by Hampel test

Interval expected to encompass target value as stated by participant

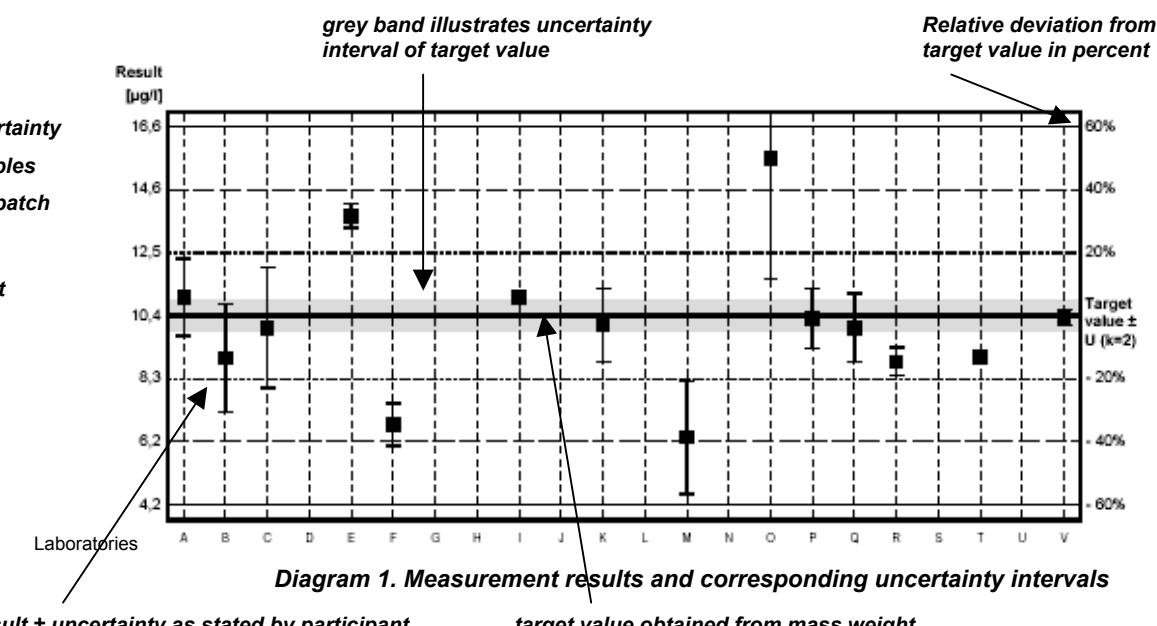
	All results	Outliers excl.	Unit
Mean $+/ -$ CI (99%)	$11,3 \pm 3,8$	$9,7 \pm 1,6$	µg/l
Recov. $+/ -$ CI (99%)	$108,3 \pm 36,3$	$93,6 \pm 15,1$	%
SD between labs	5,3		µg/l
RSD between labs	47,3		%
n for calculation	17	13	

Between laboratory standard deviation

Number of data used for calculation of statistic parameters

Recovery of target value in percent

z-Score of the laboratory



Recovery [%]

[%]

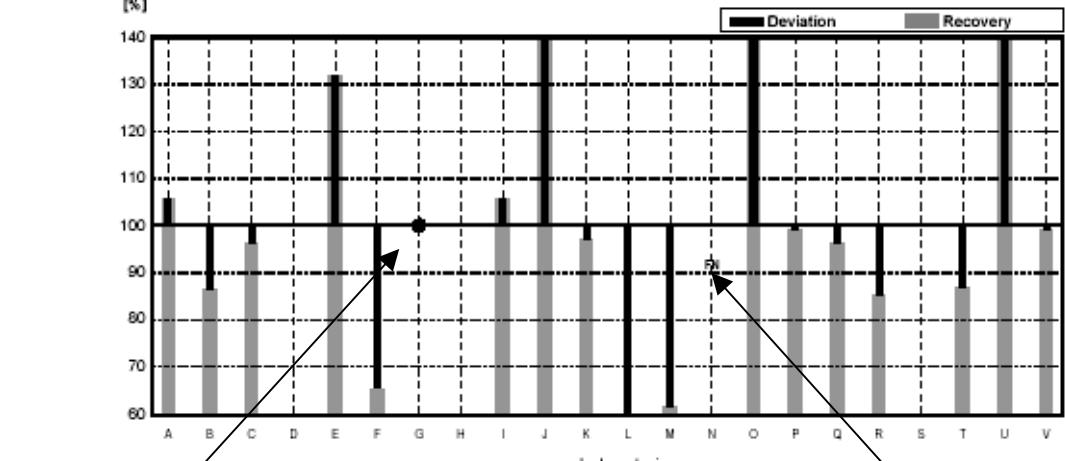


Diagram 2. Recoveries and deviations from target values



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

Round C64  
Volatile Halogenated Hydrocarbons

Sample Dispatch: 22 February 2021



## Results Sample C64A

	Trichloro-ethene	Tetrachloro-ethene	1,1,1-Tri-chloroethane	Trichloro-methane	Tetrachloro-methane	1,1-Dichloro-ethene	Tribromo-methane
Target value	4.01	3.12	1.88	2.74	2.31	2.32	2.27
IFA Result	3.74	2.97	1.85	2.56	2.27	2.22	2.24
Stability test	4.05	3.07	1.88	2.81	2.31	2.31	2.40
A	3.98	3.15	1.61	2.94	2.44	2.28	2.36
B	2.964	2.540	1.709	2.426	2.017	2.204	1.929
C	3.71	2.98	1.87	2.65	2.30	2.38	2.51
D	2.87	2.01	1.54	2.17	1.87	1.96	1.44
E	3.45	2.78	1.76	2.66	2.19	2.29	2.13
F	3.81	3.40	2.25	2.94	2.44	3.11	2.30
G	3.95	2.90	1.80	2.81	2.19	2.42	2.35
H	2.99975	2.08385					
I	4.29	3.07	1.95	2.48	2.53	2.45	2.78
J	3.77	2.72	1.69	2.60	2.02	2.22	2.16
K	3.22	4.50	2.24	3.42	2.84	3.31	3.31
L	3.78	2.90	1.80	2.54	2.37	<0.96	2.07
M	3.60	2.45	1.91	2.47	2.21	n.a.	2.07
N	3.17	2.30	1.42	2.14	1.55	1.58	
O	3.96	2.99	1.84	2.58	2.31	2.46	2.41

All data in µg/L

### Measurement Uncertainties Sample C64A

	Trichloro-ethene ±	Tetrachloro-ethene ±	1,1,1-Tri-chloroethane ±	Trichloro-methane ±	Tetrachloro-methane ±	1,1-Dichloro-ethene ±	Tribromo-methane ±
Target value	0.20	0.16	0.10	0.14	0.12	0.12	0.12
IFA Result	0.56	0.45	0.28	0.38	0.34	0.33	0.34
Stability test	0.61	0.46	0.28	0.42	0.35	0.35	0.36
A	0.8	0.63	0.32	0.59	0.49	0.46	0.47
B	0.889	0.762	0.513	0.728	0.605	0.661	0.579
C	0.74	0.60	0.37	0.53	0.46	0.48	0.50
D	0.011	0.017	0.016	0.014	0.013	0.015	0.029
E	0.79	0.90	0.37	0.68	0.41	0.58	0.46
F	0.99	0.88	0.58	0.76	0.63	0.81	0.60
G	0.28	0.24	0.34	0.56	0.55	0.47	0.59
H	0.84203	0.75769					
I	0.218	0.148	0.102	0.083	0.079	0.13	0.071
J	0.57	0.41	0.25	0.39	0.30	0.33	0.32
K	0.59	0.88	0.45	0.64	0.31	0.68	0.53
L	0.14	0.13	0.17	0.06	0.16		0.06
M	0.25	0.15	0.15	0.15	0.15		0.15
N	0.476	0.345	0.213	0.321	0.232	0.236	
O	0.792	0.598	0.368	0.516	0.462	0.492	0.482

All data in µg/L

## Results Sample C64A

	Bromodichloro-methane	Dibromochloro-methane	Dichloro-methane	1,2-Dichloro-ethane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene
Target value	0.476	1.90	5.96	3.73	1.23	3.75
IFA Result	0.466	1.89	5.81	3.61	1.18	3.56
Stability test	0.479	1.98	6.15	3.79	1.26	3.78
A	0.50	1.90	5.16	3.49	1.15	3.68
B	0.421	1.643	5.519	3.270	1.054	3.422
C	0.475	1.92	6.54	4.05	1.18	4.07
D	0.365	1.40	5.08	3.12	0.915	2.93
E	0.463	1.87	6.94	3.72	1.16	3.49
F	0.571	2.03	5.59	3.46	1.39	4.02
G	0.494	1.88	6.23	3.42	1.22	3.90
H						
I	0.551	2.12	5.86	3.89	1.34	4.52
J	0.449	1.86	5.81	4.11	1.10	3.67
K	0.61	2.58	7.0	4.36	1.46	5.0
L	0.440	1.66	7.15	4.62	1.29	3.72
M	0.462	1.70	5.40	3.31	n.a.	n.a.
N	0.399		5.8	1.27	0.97	3.06
O	0.480	1.89	6.25	3.82	1.31	3.98

All data in µg/L

### Measurement Uncertainties Sample C64A

	Bromodichloro-methane ±	Dibromochloro-methane ±	Dichloro-methane ±	1,2-Dichloro-ethane ±	cis-1,2-Dichloroethene ±	trans-1,2-Dichloroethene ±
Target value	0.031	0.10	0.30	0.21	0.07	0.19
IFA Result	0.070	0.28	0.87	0.54	0.18	0.53
Stability test	0.072	0.30	0.92	0.57	0.19	0.57
A	0.10	0.38	1.03	0.7	0.23	0.74
B	0.126	0.493	1.656	0.981	0.316	1.027
C	0.10	0.38	1.31	0.81	0.24	0.81
D	0.005	0.034	0.061	0.033	0.009	0.016
E	0.116	0.48	1.74	0.88	0.20	0.78
F	0.15	0.53	1.45	0.90	0.36	1.05
G	0.12	0.47	1.6	0.83	0.23	0.78
H						
I	0.077	0.108	0.354	0.255	0.084	0.284
J	0.067	0.28	0.87	0.62	0.17	0.55
K	0.10	0.52	1.1	0.87	0.29	1.0
L	0.01	0.04	0.16	0.07	0.06	0.09
M	0.10	0.15	0.25	0.25		
N	0.060		0.87	0.190	0.145	0.459
O	0.096	0.378	1.250	0.764	0.262	0.796

All data in µg/L

## Results Sample C64B

	Trichloro-ethene	Tetrachloro-ethene	1,1,1-Tri-chloroethane	Trichloro-methane	Tetrachloro-methane	1,1-Dichloro-ethene	Tribromo-methane
Target value	1.20	1.41	0.71	<0.1	1.15	0.398	<0.1
IFA Result	1.15	1.34	0.71	<0.07	1.16	0.375	<0.02
Stability test	1.23	1.41	0.72	<0.07	1.15	0.37	<0.02
A	1.22	1.45	0.67	<0.8	1.32	0.440	<0.08
B	0.850	1.091	0.638	<0.100	0.955	0.374	<0.100
C	1.15	1.36	0.723	<0.1	1.22	0.424	<0.1
D	0.817	0.829	0.580	<0.10	0.940	0.350	<0.10
E	1.02	1.22	0.651	<0.020	1.09	0.401	<0.020
F	0.224	0.296	0.157	<0.1	0.256	<0.1	<0.1
G	1.20	1.34	0.700	<0.10	1.15	0.435	<0.10
H	0.95356	0.99792					
I	1.26	1.31	0.711	<0.05	1.00	0.412	<0.05
J	1.10	1.25	0.632	<0.1	1.01	0.389	<0.1
K	1.02	2.19	0.88	<0.1	1.49	0.62	<0.1
L	1.24	1.36	0.77	<0.83	1.22	<0.96	<0.72
M	1.18	1.14	0.80	<0.10	1.10	n.a.	<0.10
N	0.467	0.473	0.248	<0.1	0.384	0.114	
O	1.21	1.31	0.680	<0.030	1.10	0.410	<0.035

All data in µg/L

### Measurement Uncertainties Sample C64B

	Trichloro-ethene ±	Tetrachloro-ethene ±	1,1,1-Tri-chloroethane ±	Trichloro-methane ±	Tetrachloro-methane ±	1,1-Dichloro-ethene ±	Tribromo-methane ±
Target value	0.06	0.07	0.04		0.06	0.027	
IFA Result	0.17	0.20	0.11		0.17	0.056	
Stability test	0.18	0.21	0.11		0.17	0.06	
A	0.24	0.29	0.13		0.26	0.088	
B	0.255	0.327	0.191		0.286	0.112	
C	0.23	0.27	0.145		0.24	0.085	
D	0.005	0.009	0.006		0.008	0.001	
E	0.23	0.39	0.137		0.21	0.101	
F							
G	0.086	0.11	0.13		0.29	0.085	
H	0.26766	0.36314					
I	0.104	0.1043	0.100		0.087	0.014	
J	0.17	0.19	0.095		0.15	0.058	
K	0.19	0.43	0.18		0.16	0.13	
L	0.02	0.03	0.03		0.05		
M	0.15	0.15	0.10		0.10		
N	0.070	0.071	0.037	0.015	0.058	0.017	
O	0.242	0.262	0.136		0.220	0.082	

All data in µg/L

## Results Sample C64B

	Bromodichloro-methane	Dibromochloro-methane	Dichloro-methane	1,2-Dichloro-ethane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene
Target value	0.78	0.76	1.23	<0.4	0.398	1.24
IFA Result	0.72	0.76	1.22	<0.2	0.389	1.20
Stability test	0.79	0.78	1.23	<0.2	0.408	1.28
A	0.80	0.75	1.85	<0.08	0.450	1.25
B	0.680	0.666	1.118	<0.100	0.342	1.083
C	0.823	0.829	1.39	<0.5	<0.5	1.36
D	0.615	0.545	1.05	<0.10	0.312	1.00
E	0.743	0.740	1.50	<0.020	0.372	1.18
F	0.190	0.206	0.623	<0.1	<0.1	0.296
G	0.802	0.769	1.31	<0.10	0.400	1.31
H						
I	0.913	0.864	1.20	<0.05	0.421	1.31
J	0.715	0.757	0.955	<0.5	<0.5	1.07
K	1.03	1.14	1.56	<0.1	0.50	1.76
L	0.760	0.69	1.52	<0.41	0.470	1.30
M	0.796	0.743	1.16	<0.3	n.a.	n.a.
N	0.455		0.70	0.239	0.170	0.439
O	0.780	0.760	1.28	<0.040	0.350	1.30

All data in µg/L

### Measurement Uncertainties Sample C64B

	Bromodichloro-methane ±	Dibromochloro-methane ±	Dichloro-methane ±	1,2-Dichloro-ethane ±	cis-1,2-Dichloroethene ±	trans-1,2-Dichloroethene ±
Target value	0.04	0.04	0.07		0.032	0.06
IFA Result	0.11	0.11	0.18		0.058	0.18
Stability test	0.12	0.12	0.18		0.061	0.19
A	0.16	0.15	0.37		0.09	0.25
B	0.204	0.200	0.335		0.102	0.325
C	0.165	0.166	0.28			0.27
D	0.007	0.004	0.011		0.001	0.006
E	0.187	0.189	0.38		0.063	0.26
F						
G	0.20	0.19	0.33		0.074	0.26
H						
I	0.075	0.114	0.113		0.091	0.093
J	0.107	0.114	0.143			0.16
K	0.18	0.23	0.24		0.1	0.35
L	0.02	0.02	0.02		0.05	0.02
M	0.10	0.15	0.15			
N	0.068		0.105	0.036	0.025	0.066
O	0.156	0.152	0.256		0.070	0.260

All data in µg/L

## Sample C64A

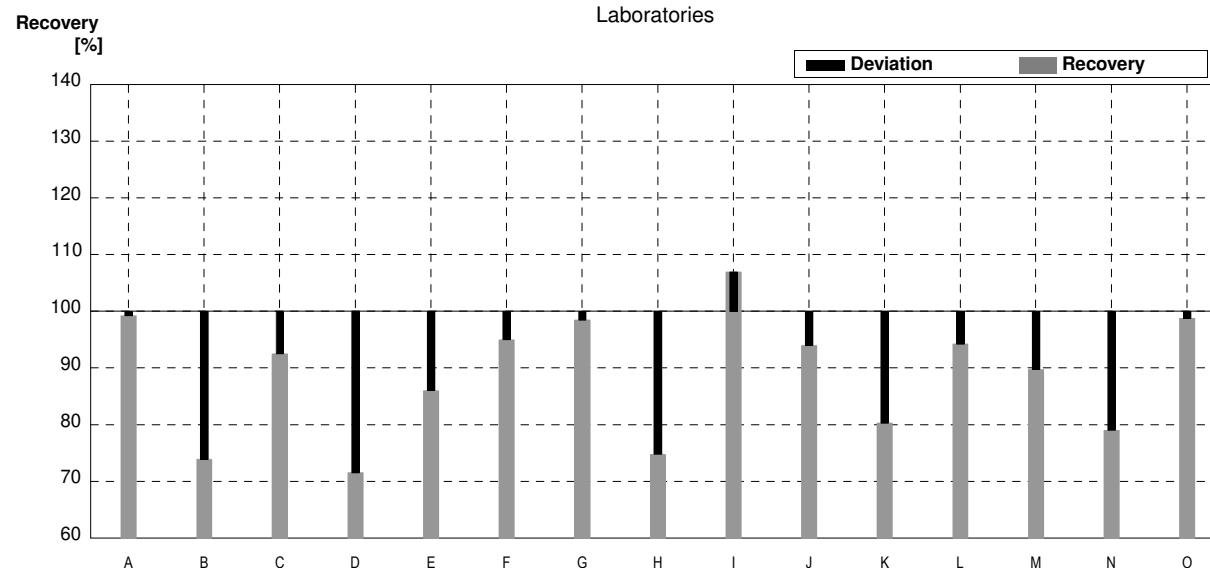
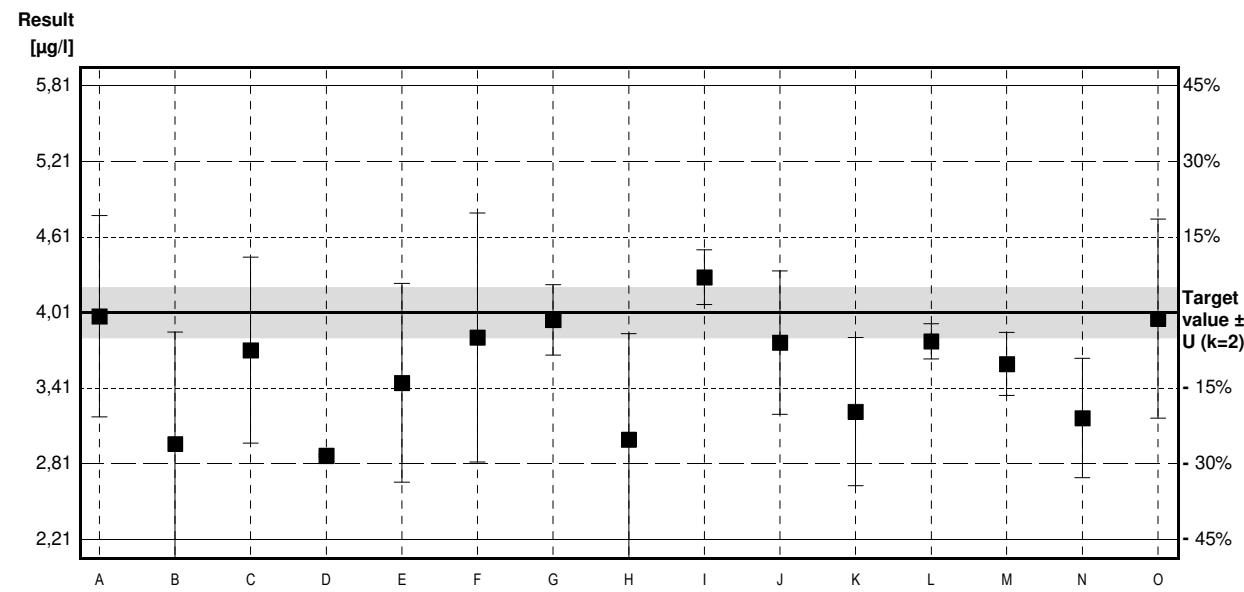
### Parameter Trichloroethene

Target value  $\pm U$  ( $k=2$ ) 4,01 µg/l  $\pm$  0,20 µg/l

IFA result  $\pm U$  ( $k=2$ ) 3,74 µg/l  $\pm$  0,56 µg/l

Stability test  $\pm U$  ( $k=2$ ) 4,05 µg/l  $\pm$  0,61 µg/l

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A	3,98	0,8	µg/l	99%	-0,05
B	2,964	0,889	µg/l	74%	-1,74
C	3,71	0,74	µg/l	93%	-0,50
D	2,87	0,011	µg/l	72%	-1,90
E	3,45	0,79	µg/l	86%	-0,93
F	3,81	0,99	µg/l	95%	-0,33
G	3,95	0,28	µg/l	99%	-0,10
H	2,99975	0,84203	µg/l	75%	-1,68
I	4,29	0,218	µg/l	107%	0,47
J	3,77	0,57	µg/l	94%	-0,40
K	3,22	0,59	µg/l	80%	-1,31
L	3,78	0,14	µg/l	94%	-0,38
M	3,60	0,25	µg/l	90%	-0,68
N	3,17	0,476	µg/l	79%	-1,40
O	3,96	0,792	µg/l	99%	-0,08



	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	$3,57 \pm 0,33$	$3,57 \pm 0,33$	µg/l
Recov. $\pm$ CI(99%)	$89,0 \pm 8,3$	$89,0 \pm 8,3$	%
SD between labs	0,43	0,43	µg/l
RSD between labs	12,1	12,1	%
n for calculation	15	15	

## Sample C64B

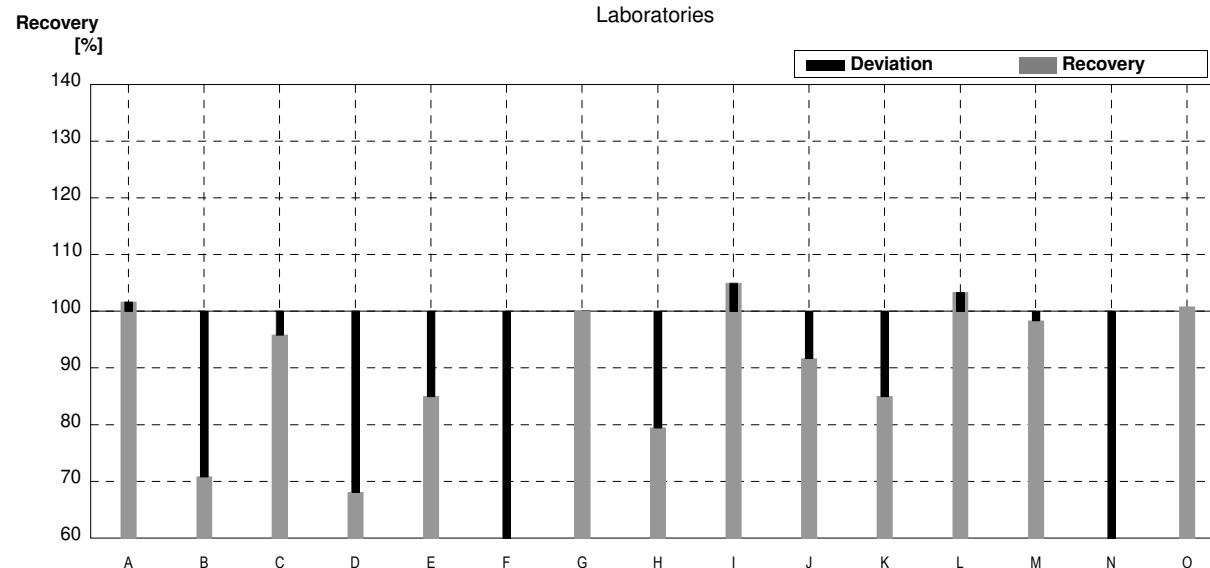
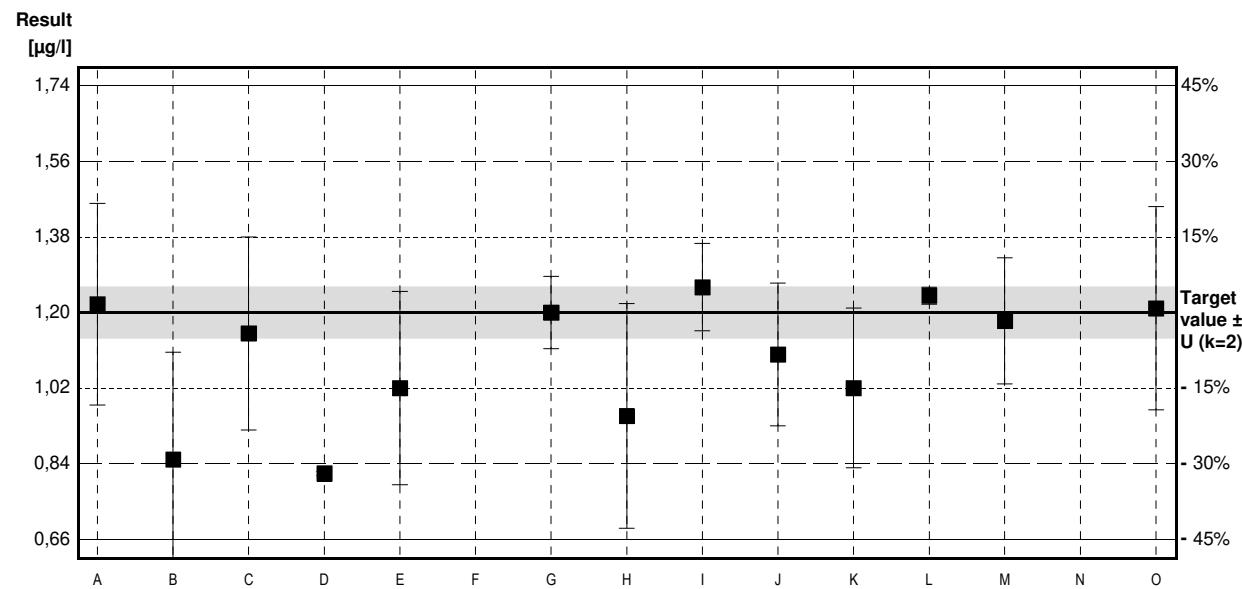
### Parameter Trichloroethene

Target value  $\pm U$  ( $k=2$ ) 1,20 µg/l  $\pm$  0,06 µg/l

IFA result  $\pm U$  ( $k=2$ ) 1,15 µg/l  $\pm$  0,17 µg/l

Stability test  $\pm U$  ( $k=2$ ) 1,23 µg/l  $\pm$  0,18 µg/l

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A	1,22	0,24	µg/l	102%	0,11
B	0,850	0,255	µg/l	71%	-1,94
C	1,15	0,23	µg/l	96%	-0,28
D	0,817	0,005	µg/l	68%	-2,13
E	1,02	0,23	µg/l	85%	-1,00
F	0,224 *		µg/l	19%	-5,42
G	1,20	0,086	µg/l	100%	0,00
H	0,95356	0,26766	µg/l	79%	-1,37
I	1,26	0,104	µg/l	105%	0,33
J	1,10	0,17	µg/l	92%	-0,56
K	1,02	0,19	µg/l	85%	-1,00
L	1,24	0,02	µg/l	103%	0,22
M	1,18	0,15	µg/l	98%	-0,11
N	0,467 *	0,070	µg/l	39%	-4,07
O	1,21	0,242	µg/l	101%	0,06



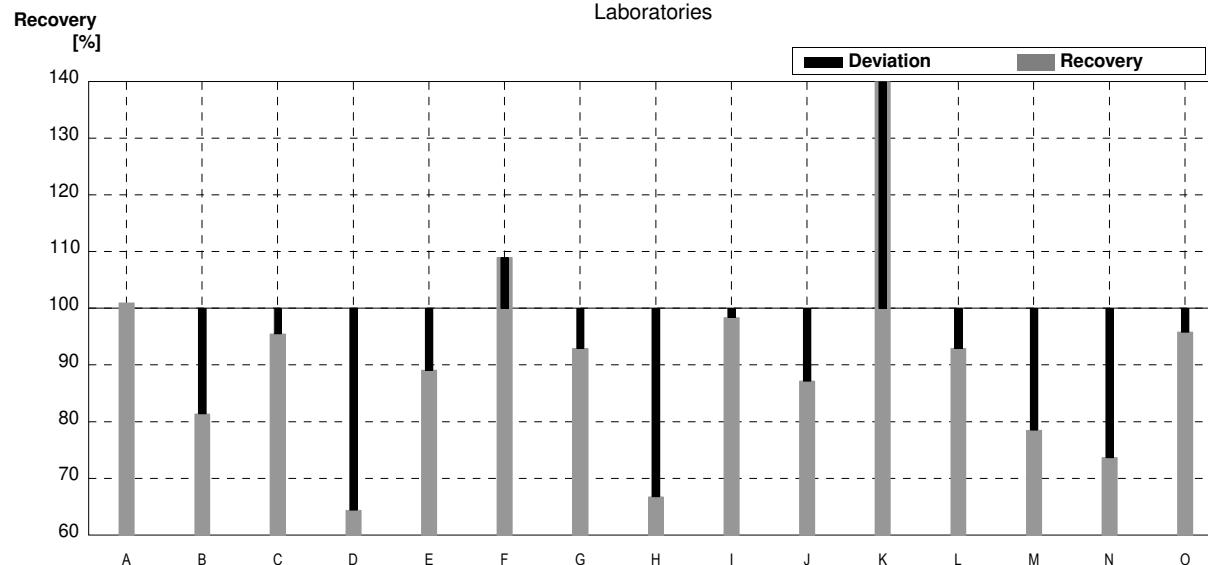
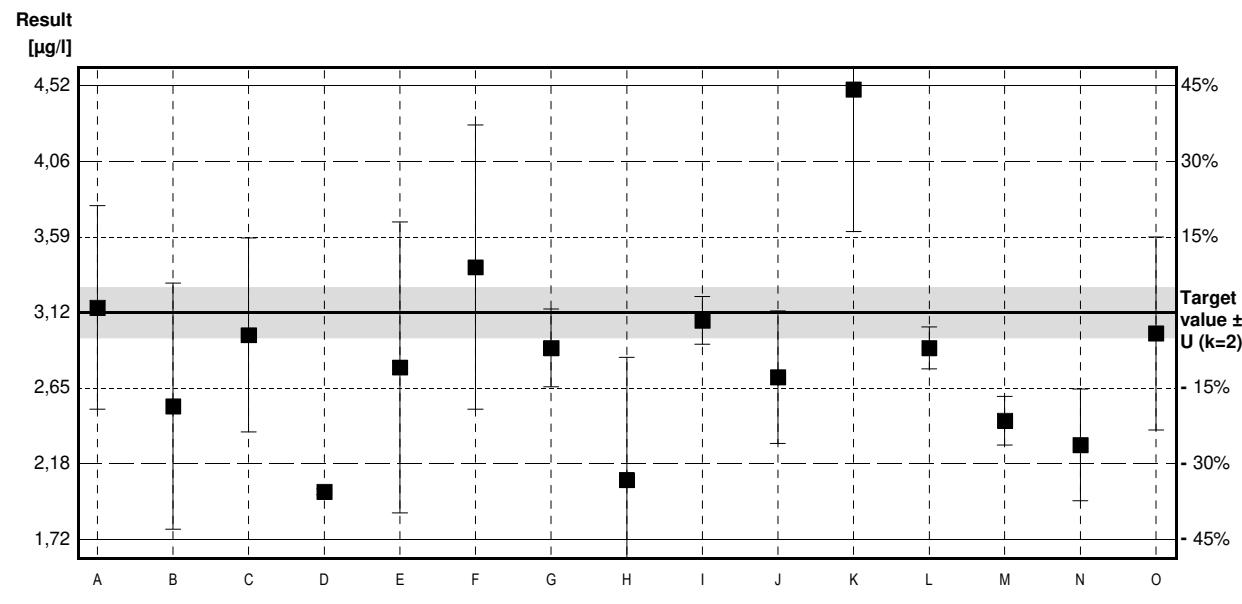
	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	0,99 $\pm$ 0,23	1,09 $\pm$ 0,13	µg/l
Recov. $\pm$ CI(99%)	82,8 $\pm$ 19,3	91,2 $\pm$ 10,5	%
SD between labs	0,30	0,15	µg/l
RSD between labs	30,3	13,6	%
n for calculation	15	13	

## Sample C64A

### Parameter Tetrachloroethene

Target value  $\pm U$  ( $k=2$ ) 3,12 µg/l  $\pm$  0,16 µg/l  
 IFA result  $\pm U$  ( $k=2$ ) 2,97 µg/l  $\pm$  0,45 µg/l  
 Stability test  $\pm U$  ( $k=2$ ) 3,07 µg/l  $\pm$  0,46 µg/l

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A	3,15	0,63	µg/l	101%	0,06
B	2,540	0,762	µg/l	81%	-1,16
C	2,98	0,60	µg/l	96%	-0,28
D	2,01	0,017	µg/l	64%	-2,22
E	2,78	0,90	µg/l	89%	-0,68
F	3,40	0,88	µg/l	109%	0,56
G	2,90	0,24	µg/l	93%	-0,44
H	2,08385	0,75769	µg/l	67%	-2,08
I	3,07	0,148	µg/l	98%	-0,10
J	2,72	0,41	µg/l	87%	-0,80
K	4,50 *	0,88	µg/l	144%	2,76
L	2,90	0,13	µg/l	93%	-0,44
M	2,45	0,15	µg/l	79%	-1,34
N	2,30	0,345	µg/l	74%	-1,64
O	2,99	0,598	µg/l	96%	-0,26



	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	2,85 $\pm$ 0,46	2,73 $\pm$ 0,33	µg/l
Recov. $\pm$ CI(99%)	91,4 $\pm$ 14,9	87,6 $\pm$ 10,5	%
SD between labs	0,60	0,41	µg/l
RSD between labs	21,1	14,9	%
n for calculation	15	14	

## Sample C64B

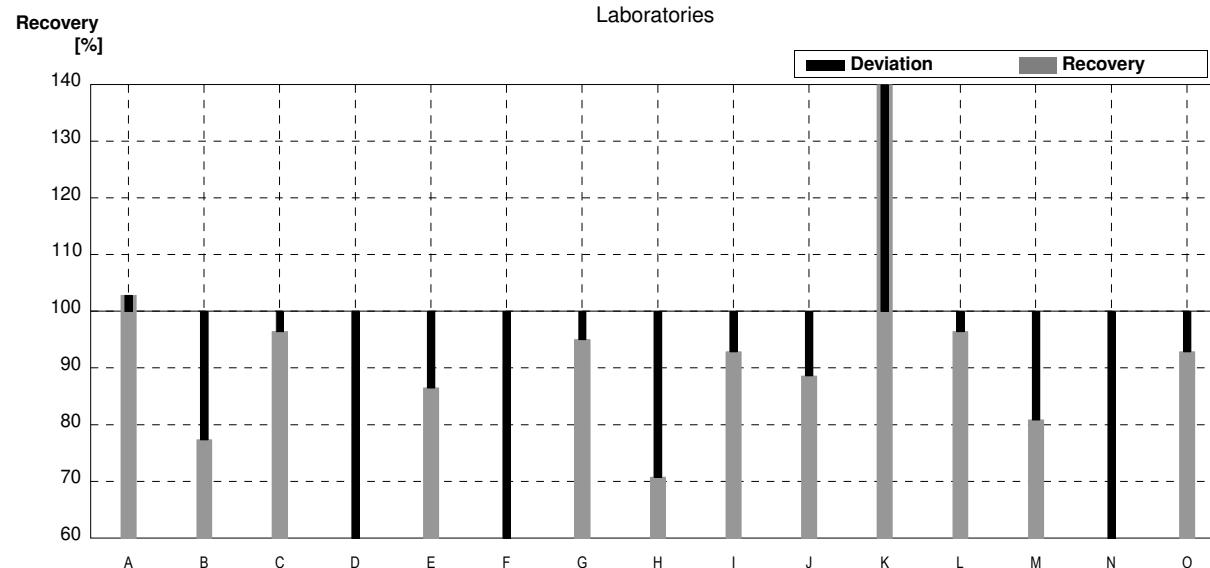
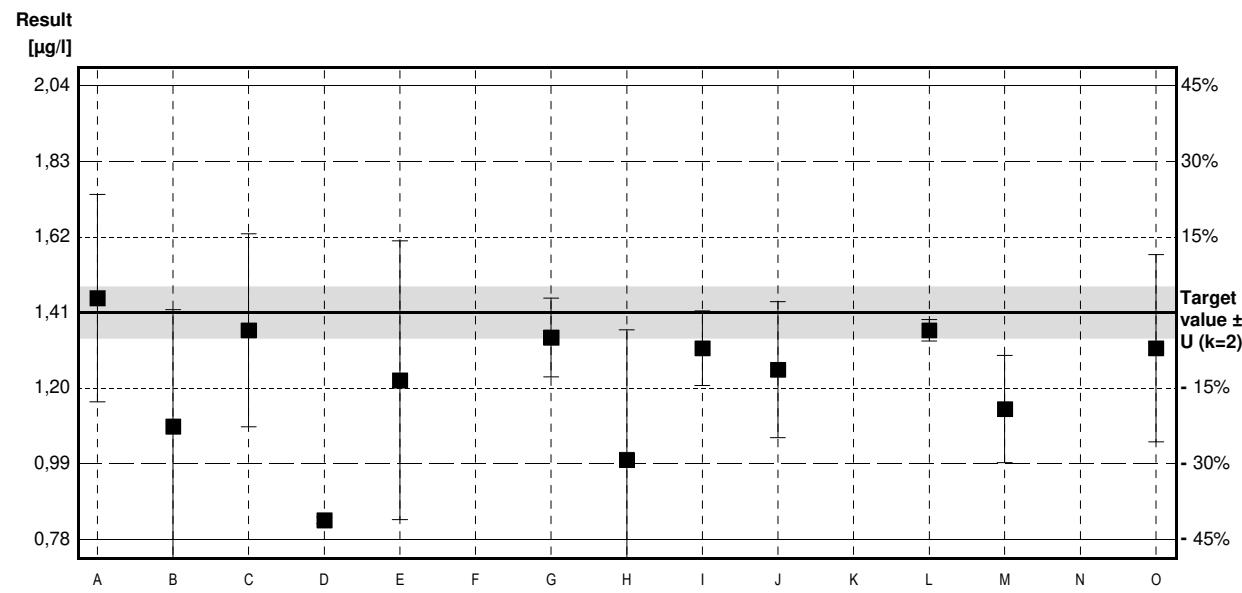
### Parameter Tetrachloroethene

Target value  $\pm U$  ( $k=2$ ) 1,41 µg/l  $\pm$  0,07 µg/l

IFA result  $\pm U$  ( $k=2$ ) 1,34 µg/l  $\pm$  0,20 µg/l

Stability test  $\pm U$  ( $k=2$ ) 1,41 µg/l  $\pm$  0,21 µg/l

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A	1,45	0,29	µg/l	103%	0,18
B	1,091	0,327	µg/l	77%	-1,41
C	1,36	0,27	µg/l	96%	-0,22
D	0,829	0,009	µg/l	59%	-2,58
E	1,22	0,39	µg/l	87%	-0,84
F	0,296 *		µg/l	21%	-4,94
G	1,34	0,11	µg/l	95%	-0,31
H	0,99792	0,36314	µg/l	71%	-1,83
I	1,31	0,1043	µg/l	93%	-0,44
J	1,25	0,19	µg/l	89%	-0,71
K	2,19 *	0,43	µg/l	155%	3,46
L	1,36	0,03	µg/l	96%	-0,22
M	1,14	0,15	µg/l	81%	-1,20
N	0,473 *	0,071	µg/l	34%	-4,15
O	1,31	0,262	µg/l	93%	-0,44



	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	1,17 $\pm$ 0,34	1,22 $\pm$ 0,16	µg/l
Recov. $\pm$ CI(99%)	83,3 $\pm$ 23,8	86,6 $\pm$ 11,3	%
SD between labs	0,44	0,18	µg/l
RSD between labs	37,2	14,6	%
n for calculation	15	12	

## Sample C64A

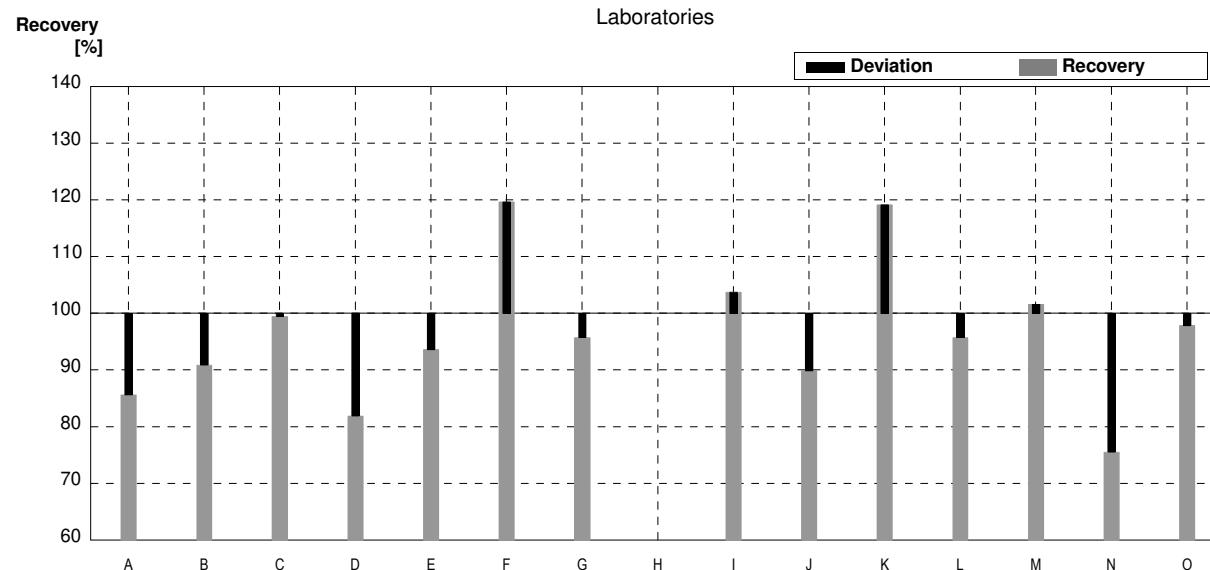
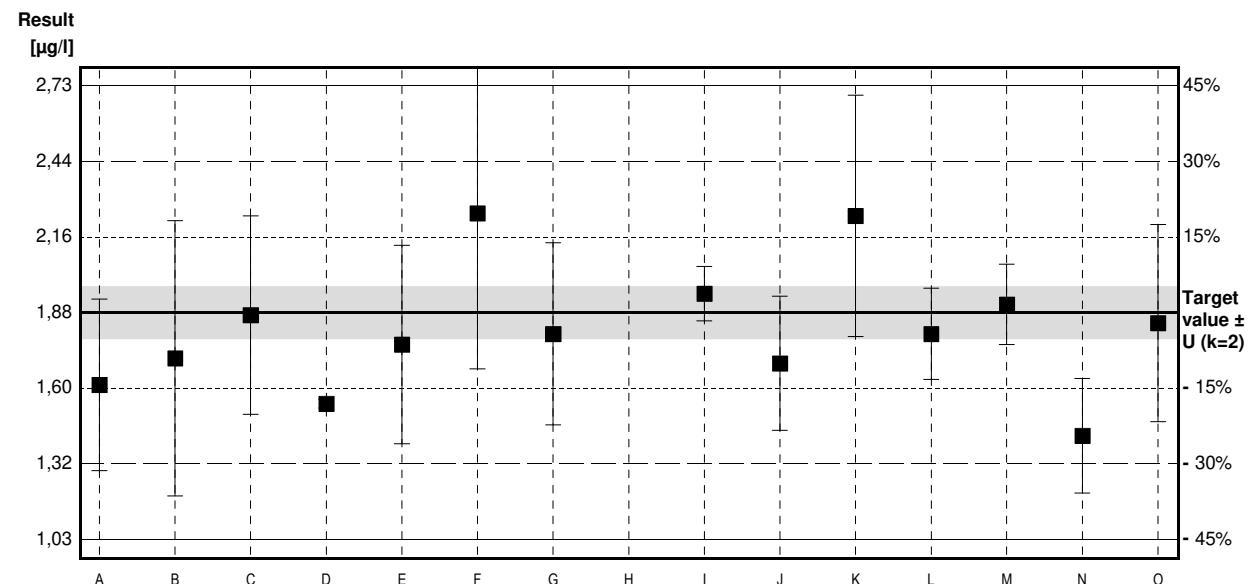
### Parameter 1,1,1-Trichloroethane

Target value  $\pm U$  ( $k=2$ ) 1,88 µg/l  $\pm$  0,10 µg/l

IFA result  $\pm U$  ( $k=2$ ) 1,85 µg/l  $\pm$  0,28 µg/l

Stability test  $\pm U$  ( $k=2$ ) 1,88 µg/l  $\pm$  0,28 µg/l

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A	1,61	0,32	µg/l	86%	-0,96
B	1,709	0,513	µg/l	91%	-0,61
C	1,87	0,37	µg/l	99%	-0,04
D	1,54	0,016	µg/l	82%	-1,21
E	1,76	0,37	µg/l	94%	-0,43
F	2,25	0,58	µg/l	120%	1,31
G	1,80	0,34	µg/l	96%	-0,28
H			µg/l		
I	1,95	0,102	µg/l	104%	0,25
J	1,69	0,25	µg/l	90%	-0,67
K	2,24	0,45	µg/l	119%	1,28
L	1,80	0,17	µg/l	96%	-0,28
M	1,91	0,15	µg/l	102%	0,11
N	1,42	0,213	µg/l	76%	-1,63
O	1,84	0,368	µg/l	98%	-0,14



	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	1,81 $\pm$ 0,19	1,81 $\pm$ 0,19	µg/l
Recov. $\pm$ CI(99%)	96,5 $\pm$ 10,0	96,5 $\pm$ 10,0	%
SD between labs	0,23	0,23	µg/l
RSD between labs	12,8	12,8	%
n for calculation	14	14	

## Sample C64B

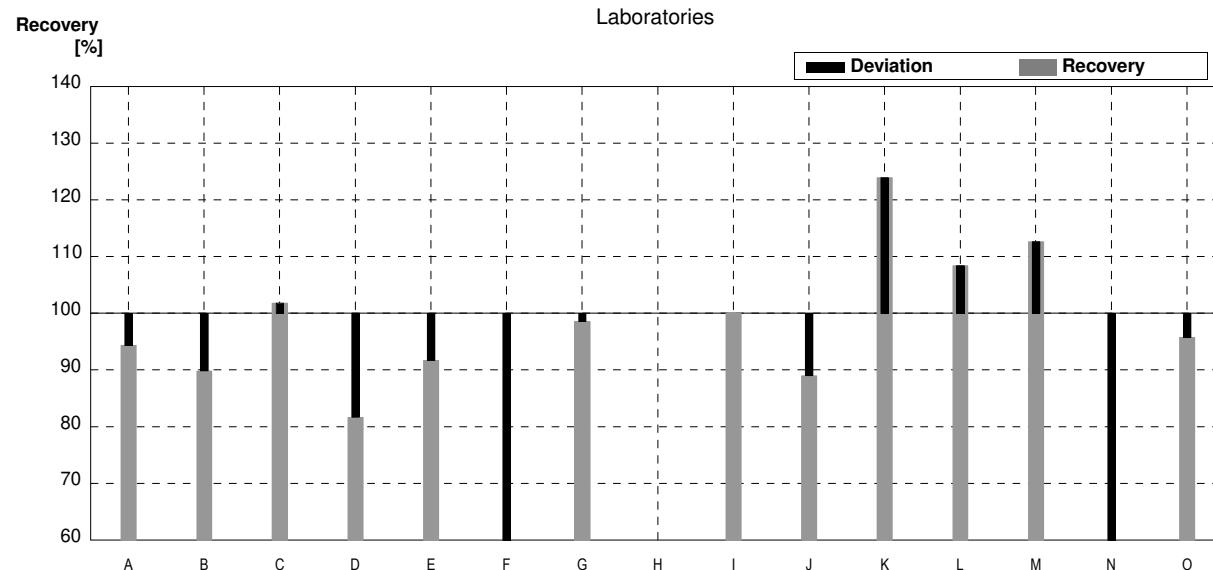
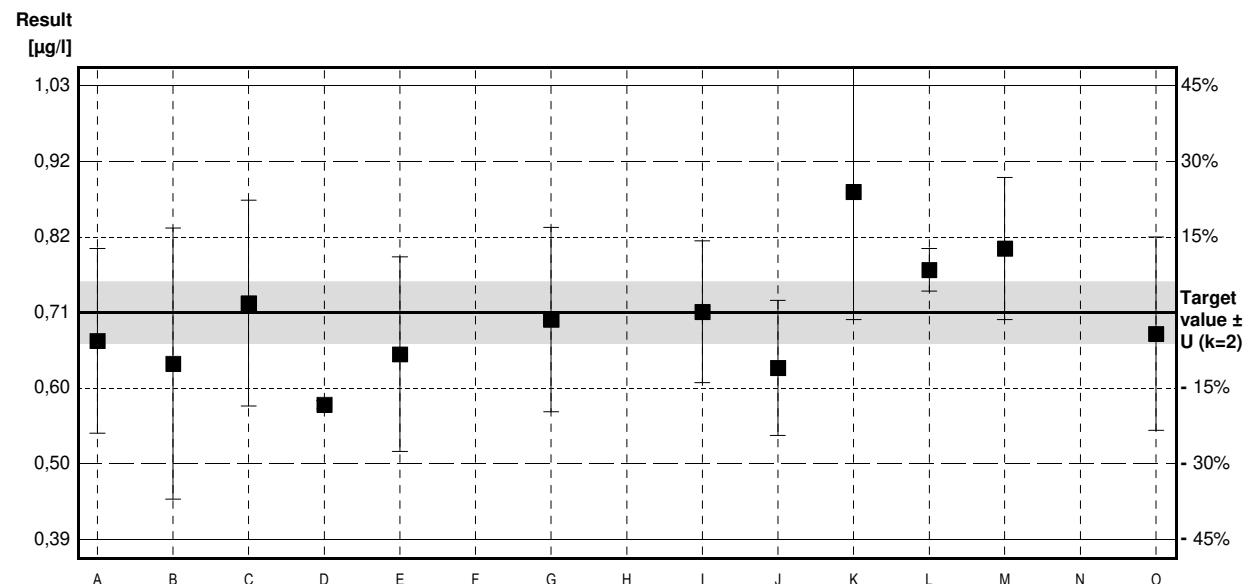
### Parameter 1,1,1-Trichloroethane

Target value  $\pm U$  ( $k=2$ ) 0,71 µg/l  $\pm$  0,04 µg/l

IFA result  $\pm U$  ( $k=2$ ) 0,71 µg/l  $\pm$  0,11 µg/l

Stability test  $\pm U$  ( $k=2$ ) 0,72 µg/l  $\pm$  0,11 µg/l

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A	0,67	0,13	µg/l	94%	-0,38
B	0,638	0,191	µg/l	90%	-0,68
C	0,723	0,145	µg/l	102%	0,12
D	0,580	0,006	µg/l	82%	-1,22
E	0,651	0,137	µg/l	92%	-0,55
F	0,157 *		µg/l	22%	-5,19
G	0,700	0,13	µg/l	99%	-0,09
H			µg/l		
I	0,711	0,100	µg/l	100%	0,01
J	0,632	0,095	µg/l	89%	-0,73
K	0,88	0,18	µg/l	124%	1,60
L	0,77	0,03	µg/l	108%	0,56
M	0,80	0,10	µg/l	113%	0,85
N	0,248 *	0,037	µg/l	35%	-4,34
O	0,680	0,136	µg/l	96%	-0,28



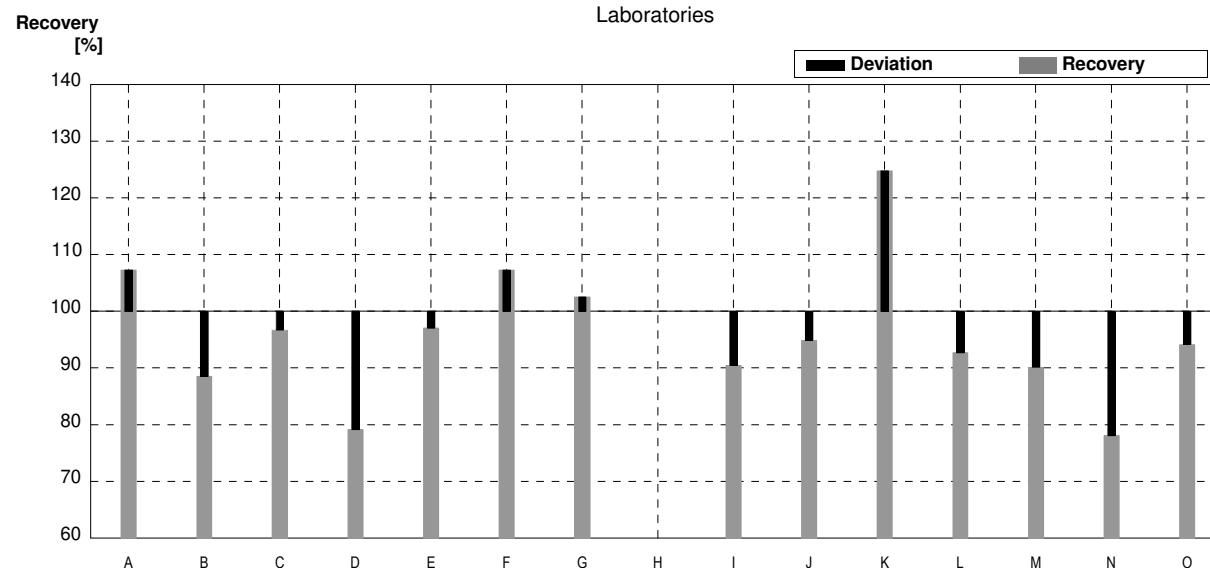
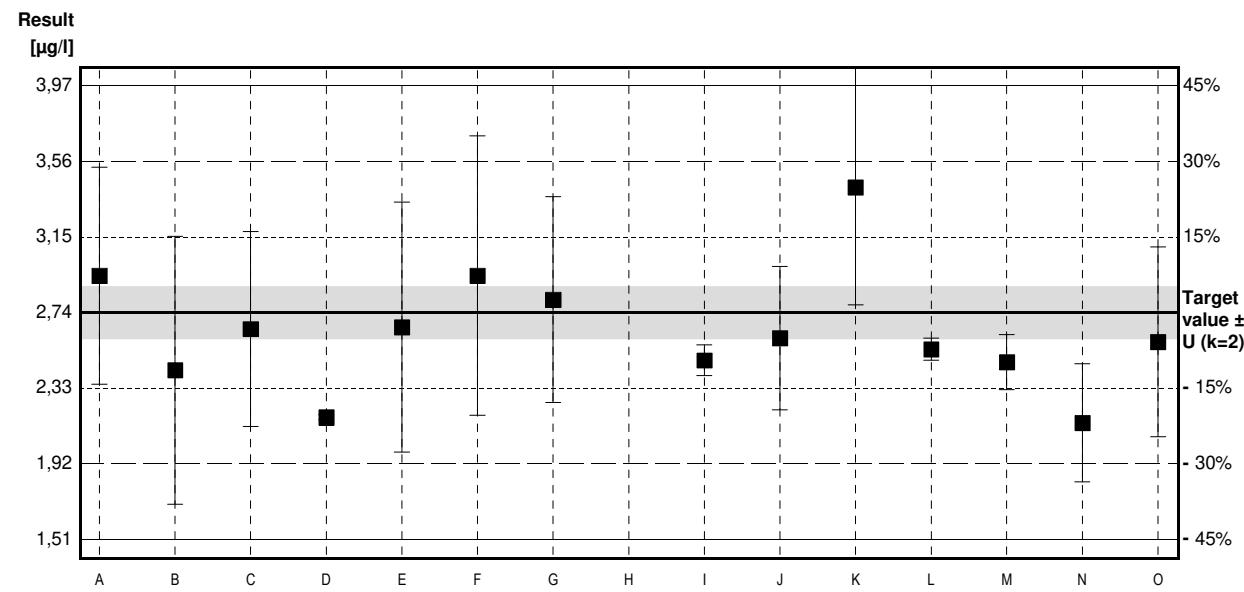
	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	0,63 $\pm$ 0,16	0,70 $\pm$ 0,07	µg/l
Recov. $\pm$ CI(99%)	88,9 $\pm$ 22,4	99,0 $\pm$ 10,4	%
SD between labs	0,20	0,08	µg/l
RSD between labs	31,3	11,7	%
n for calculation	14	12	

## Sample C64A

### Parameter Trichloromethane

Target value  $\pm U$  ( $k=2$ ) 2,74 µg/l  $\pm$  0,14 µg/l  
 IFA result  $\pm U$  ( $k=2$ ) 2,56 µg/l  $\pm$  0,38 µg/l  
 Stability test  $\pm U$  ( $k=2$ ) 2,81 µg/l  $\pm$  0,42 µg/l

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A	2,94	0,59	µg/l	107%	0,52
B	2,426	0,728	µg/l	89%	-0,82
C	2,65	0,53	µg/l	97%	-0,23
D	2,17	0,014	µg/l	79%	-1,49
E	2,66	0,68	µg/l	97%	-0,21
F	2,94	0,76	µg/l	107%	0,52
G	2,81	0,56	µg/l	103%	0,18
H			µg/l		
I	2,48	0,083	µg/l	91%	-0,68
J	2,60	0,39	µg/l	95%	-0,36
K	3,42 *	0,64	µg/l	125%	1,77
L	2,54	0,06	µg/l	93%	-0,52
M	2,47	0,15	µg/l	90%	-0,70
N	2,14	0,321	µg/l	78%	-1,56
O	2,58	0,516	µg/l	94%	-0,42



	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	2,63 $\pm$ 0,26	2,57 $\pm$ 0,21	µg/l
Recov. $\pm$ CI(99%)	96,0 $\pm$ 9,6	93,8 $\pm$ 7,6	%
SD between labs	0,33	0,25	µg/l
RSD between labs	12,5	9,6	%
n for calculation	14	13	

## Sample C64B

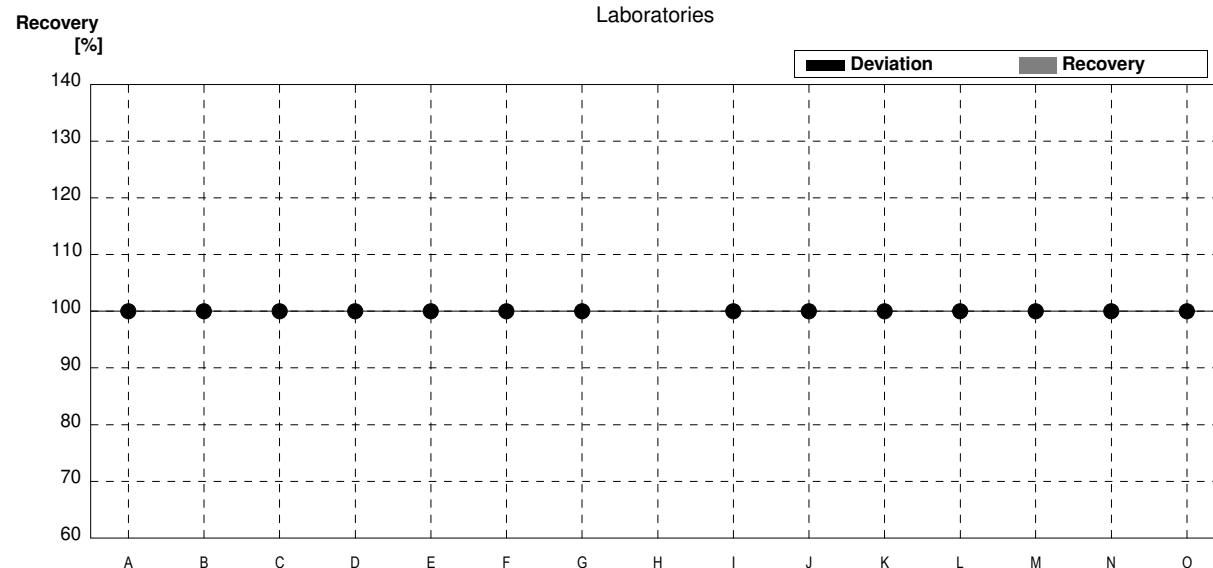
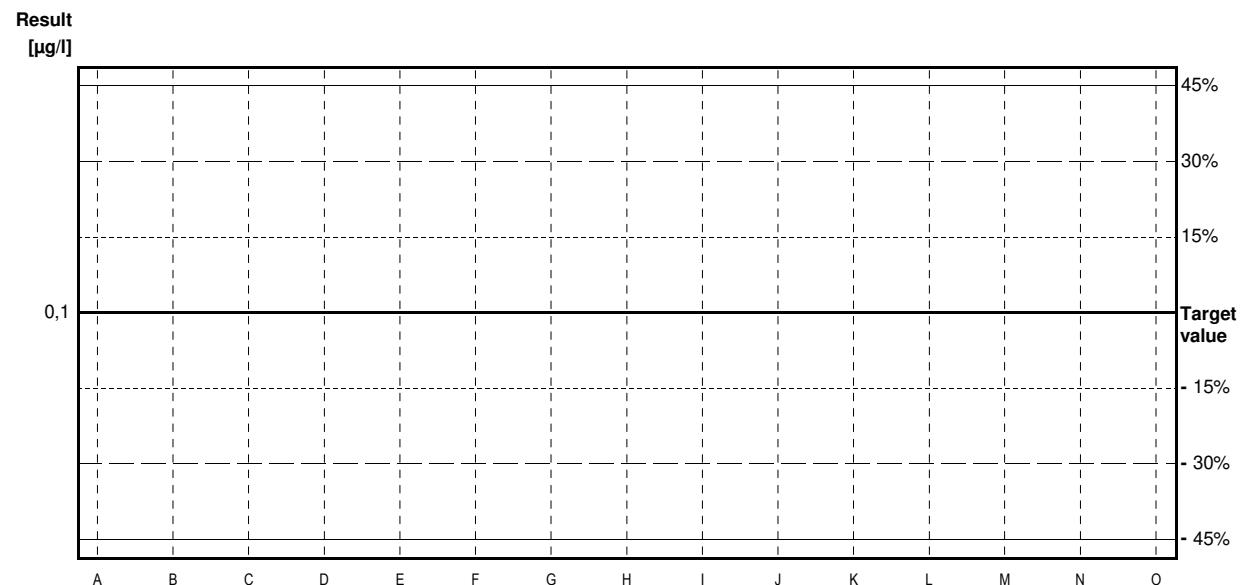
### Parameter Trichloromethane

Target value <0,1 µg/l

IFA result <0,07 µg/l

Stability test <0,07 µg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A	<0,8		µg/l	•	
B	<0,100		µg/l	•	
C	<0,1		µg/l	•	
D	<0,10		µg/l	•	
E	<0,020		µg/l	•	
F	<0,1		µg/l	•	
G	<0,10		µg/l	•	
H			µg/l		
I	<0,05		µg/l	•	
J	<0,1		µg/l	•	
K	<0,1		µg/l	•	
L	<0,83		µg/l	•	
M	<0,10		µg/l	•	
N	<0,1	0,015	µg/l	•	
O	<0,030		µg/l	•	



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

## Sample C64A

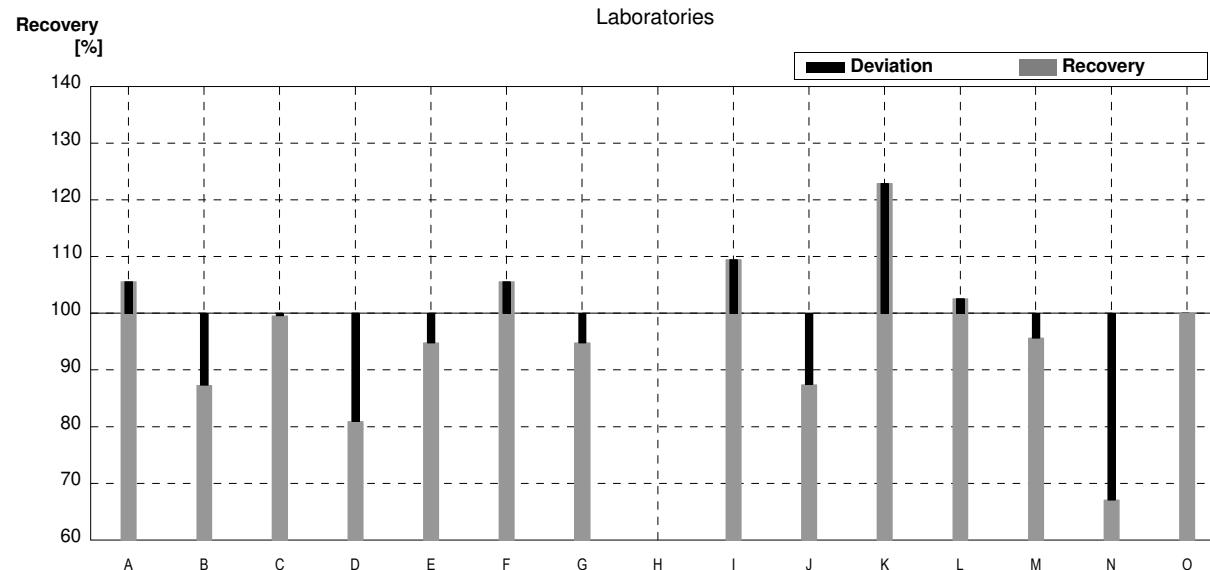
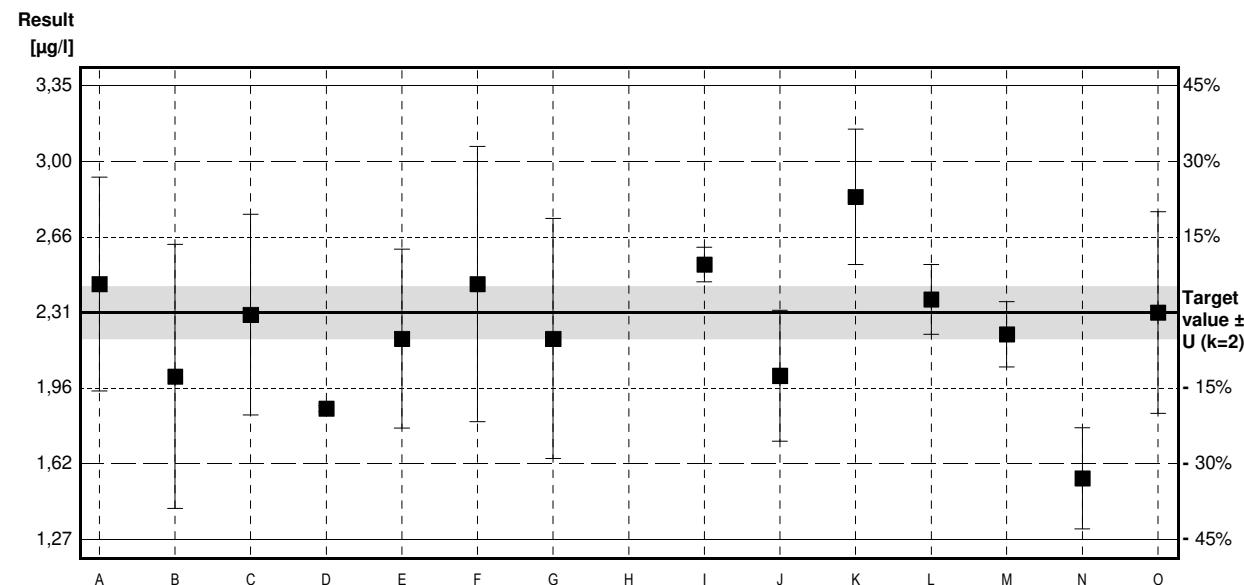
### Parameter Tetrachloromethane

Target value  $\pm U$  ( $k=2$ ) 2,31 µg/l  $\pm$  0,12 µg/l

IFA result  $\pm U$  ( $k=2$ ) 2,27 µg/l  $\pm$  0,34 µg/l

Stability test  $\pm U$  ( $k=2$ ) 2,31 µg/l  $\pm$  0,35 µg/l

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A	2,44	0,49	µg/l	106%	0,31
B	2,017	0,605	µg/l	87%	-0,70
C	2,30	0,46	µg/l	100%	-0,02
D	1,87	0,013	µg/l	81%	-1,06
E	2,19	0,41	µg/l	95%	-0,29
F	2,44	0,63	µg/l	106%	0,31
G	2,19	0,55	µg/l	95%	-0,29
H			µg/l		
I	2,53	0,079	µg/l	110%	0,53
J	2,02	0,30	µg/l	87%	-0,70
K	2,84	0,31	µg/l	123%	1,27
L	2,37	0,16	µg/l	103%	0,14
M	2,21	0,15	µg/l	96%	-0,24
N	1,55	0,232	µg/l	67%	-1,83
O	2,31	0,462	µg/l	100%	0,00



	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	2,23 $\pm$ 0,25	2,23 $\pm$ 0,25	µg/l
Recov. $\pm$ CI(99%)	96,7 $\pm$ 10,9	96,7 $\pm$ 10,9	%
SD between labs	0,31	0,31	µg/l
RSD between labs	14,0	14,0	%
n for calculation	14	14	

## Sample C64B

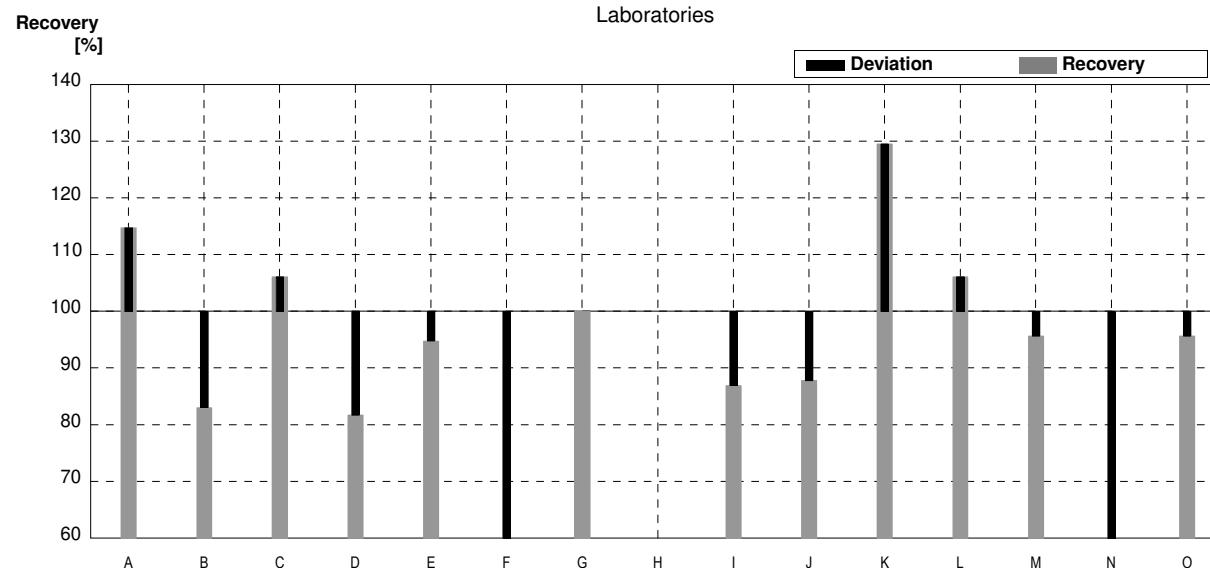
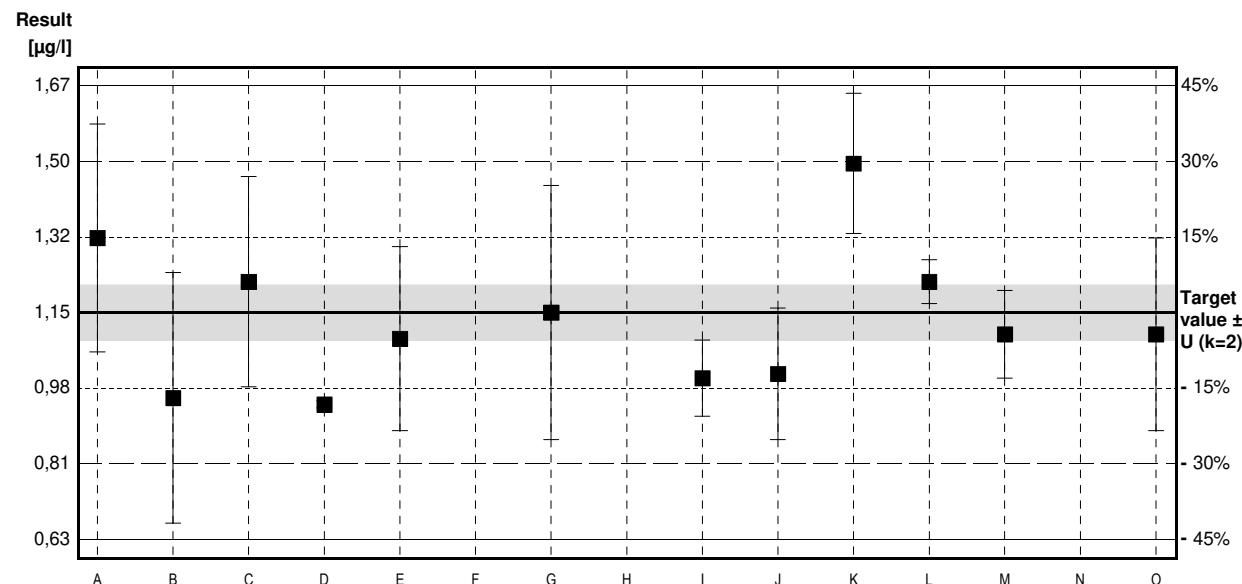
### Parameter Tetrachloromethane

Target value  $\pm U$  ( $k=2$ ) 1,15 µg/l  $\pm$  0,06 µg/l

IFA result  $\pm U$  ( $k=2$ ) 1,16 µg/l  $\pm$  0,17 µg/l

Stability test  $\pm U$  ( $k=2$ ) 1,15 µg/l  $\pm$  0,17 µg/l

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A	1,32	0,26	µg/l	115%	0,82
B	0,955	0,286	µg/l	83%	-0,94
C	1,22	0,24	µg/l	106%	0,34
D	0,940	0,008	µg/l	82%	-1,01
E	1,09	0,21	µg/l	95%	-0,29
F	0,256 *		µg/l	22%	-4,32
G	1,15	0,29	µg/l	100%	0,00
H			µg/l		
I	1,00	0,087	µg/l	87%	-0,72
J	1,01	0,15	µg/l	88%	-0,68
K	1,49	0,16	µg/l	130%	1,64
L	1,22	0,05	µg/l	106%	0,34
M	1,10	0,10	µg/l	96%	-0,24
N	0,384 *	0,058	µg/l	33%	-3,70
O	1,10	0,220	µg/l	96%	-0,24



	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	1,02 $\pm$ 0,27	1,13 $\pm$ 0,14	µg/l
Recov. $\pm$ CI(99%)	88,4 $\pm$ 23,2	98,5 $\pm$ 12,5	%
SD between labs	0,33	0,16	µg/l
RSD between labs	32,6	14,2	%
n for calculation	14	12	

## Sample C64A

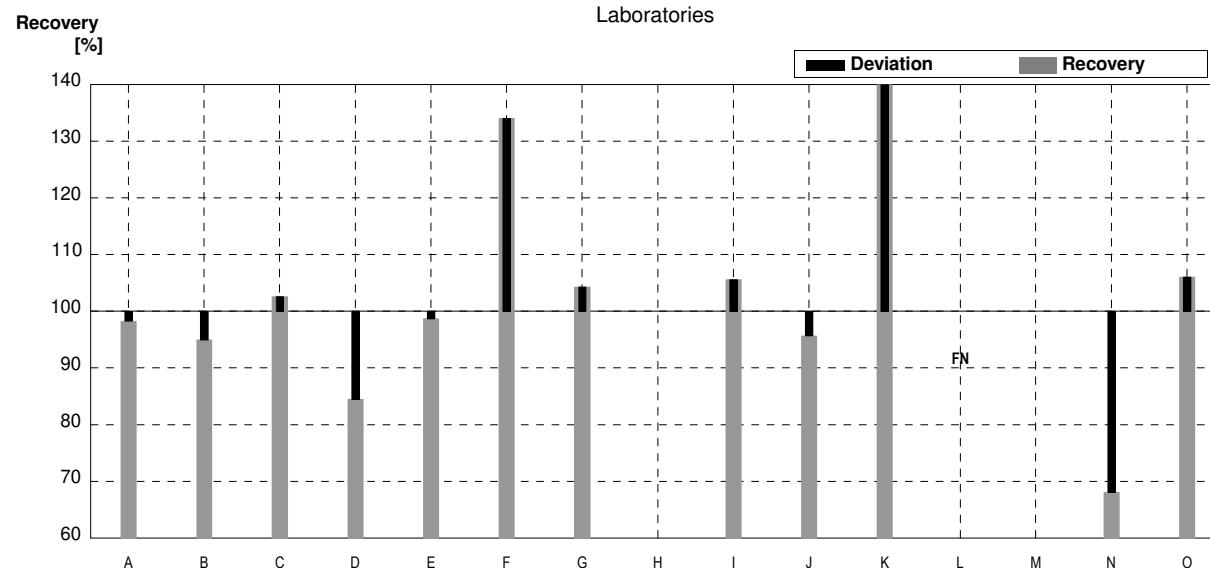
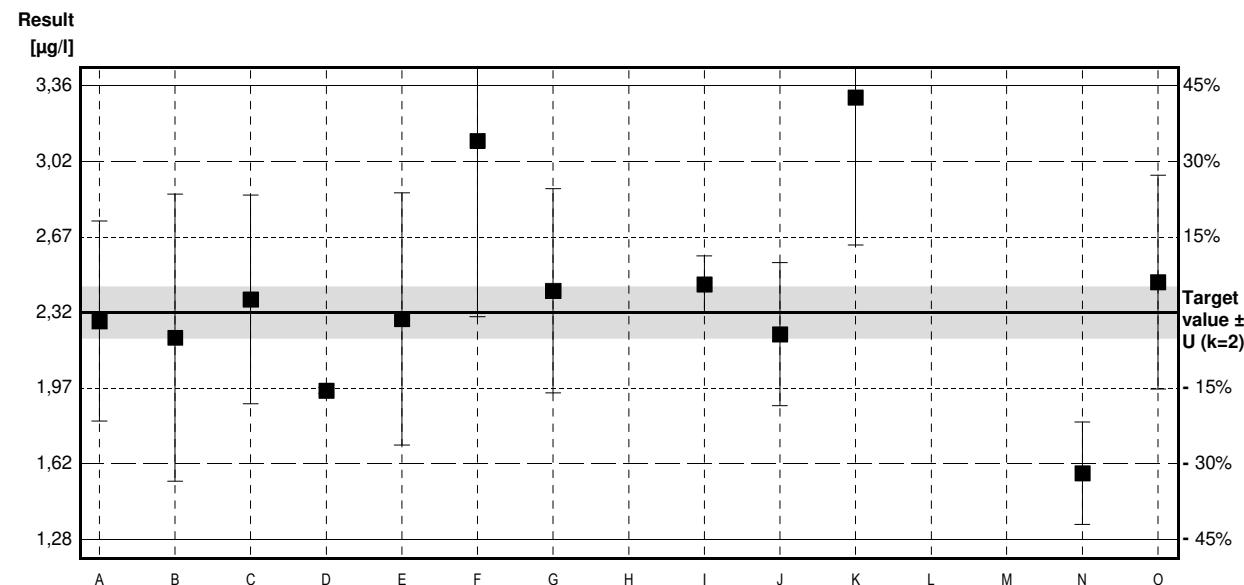
### Parameter 1,1-Dichloroethene

Target value  $\pm U$  ( $k=2$ ) 2,32 µg/l  $\pm$  0,12 µg/l

IFA result  $\pm U$  ( $k=2$ ) 2,22 µg/l  $\pm$  0,33 µg/l

Stability test  $\pm U$  ( $k=2$ ) 2,31 µg/l  $\pm$  0,35 µg/l

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A	2,28	0,46	µg/l	98%	-0,10
B	2,204	0,661	µg/l	95%	-0,28
C	2,38	0,48	µg/l	103%	0,14
D	1,96	0,015	µg/l	84%	-0,86
E	2,29	0,58	µg/l	99%	-0,07
F	3,11 *	0,81	µg/l	134%	1,89
G	2,42	0,47	µg/l	104%	0,24
H			µg/l		
I	2,45	0,13	µg/l	106%	0,31
J	2,22	0,33	µg/l	96%	-0,24
K	3,31 *	0,68	µg/l	143%	2,37
L	<0,96		µg/l	FN	
M	n.a.		µg/l		
N	1,58 *	0,236	µg/l	68%	-1,77
O	2,46	0,492	µg/l	106%	0,34



	All results	Outliers excl.	Unit
Mean $\pm CI(99\%)$	2,39 $\pm$ 0,41	2,30 $\pm$ 0,18	µg/l
Recov. $\pm CI(99\%)$	103,0 $\pm$ 17,7	99,0 $\pm$ 7,6	%
SD between labs	0,46	0,16	µg/l
RSD between labs	19,1	6,9	%
n for calculation	12	9	

## Sample C64B

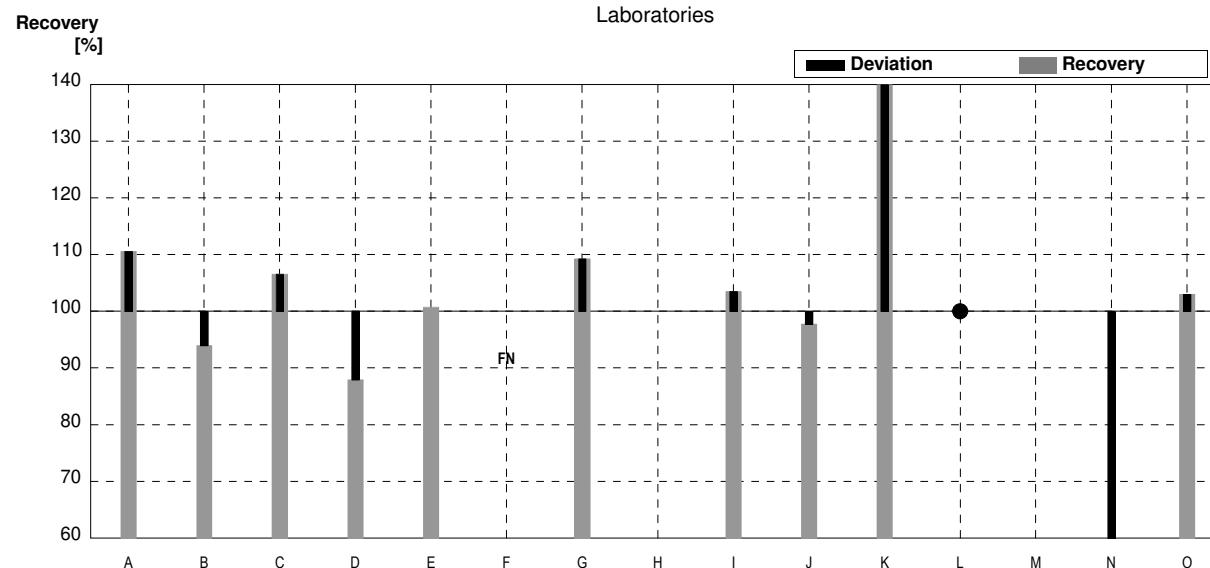
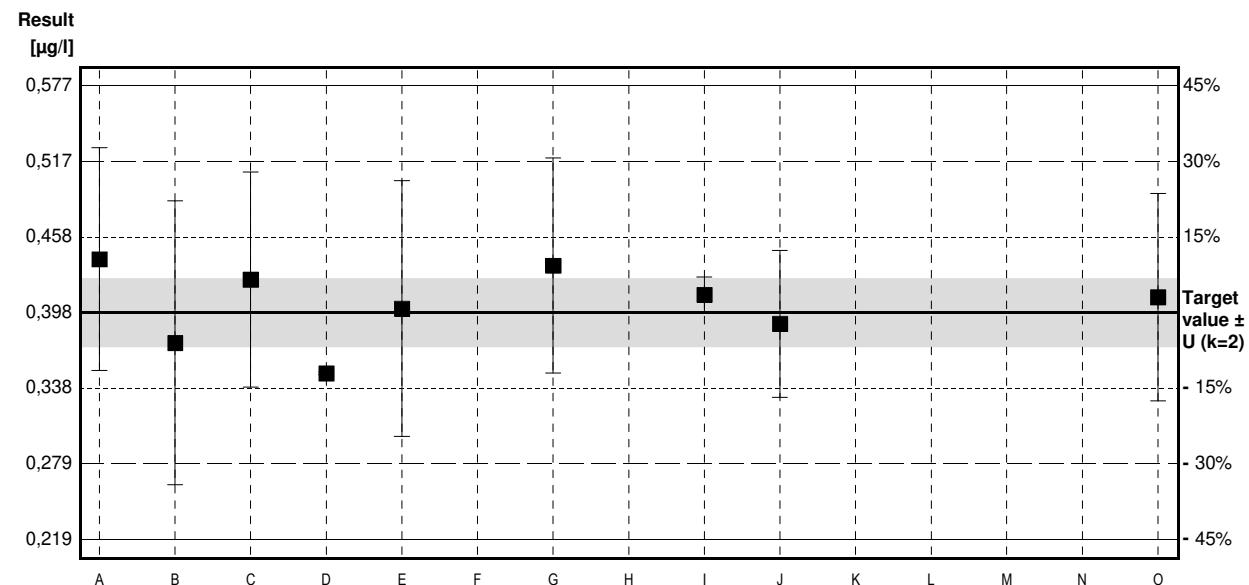
### Parameter 1,1-Dichloroethene

Target value  $\pm U$  ( $k=2$ ) 0,398 µg/l  $\pm$  0,027 µg/l

IFA result  $\pm U$  ( $k=2$ ) 0,375 µg/l  $\pm$  0,056 µg/l

Stability test  $\pm U$  ( $k=2$ ) 0,37 µg/l  $\pm$  0,06 µg/l

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A	0,440	0,088	µg/l	111%	0,59
B	0,374	0,112	µg/l	94%	-0,34
C	0,424	0,085	µg/l	107%	0,36
D	0,350	0,001	µg/l	88%	-0,67
E	0,401	0,101	µg/l	101%	0,04
F	<0,1		µg/l	FN	
G	0,435	0,085	µg/l	109%	0,52
H			µg/l		
I	0,412	0,014	µg/l	104%	0,20
J	0,389	0,058	µg/l	98%	-0,13
K	0,62 *	0,13	µg/l	156%	3,10
L	<0,96		µg/l	*	
M	n.a.		µg/l		
N	0,114 *	0,017	µg/l	29%	-3,96
O	0,410	0,082	µg/l	103%	0,17

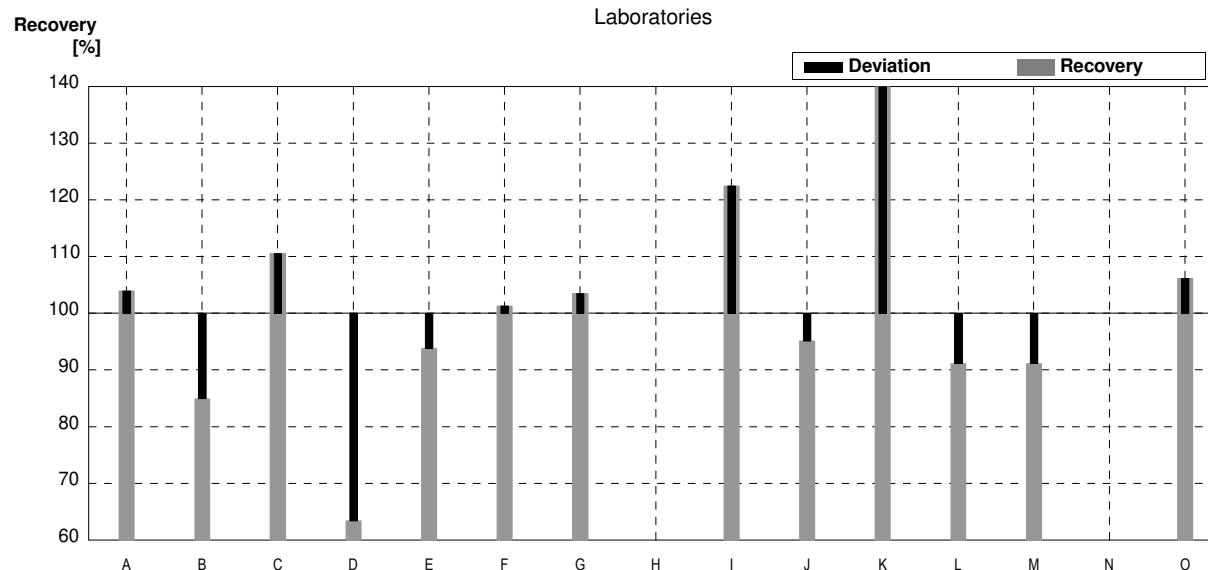
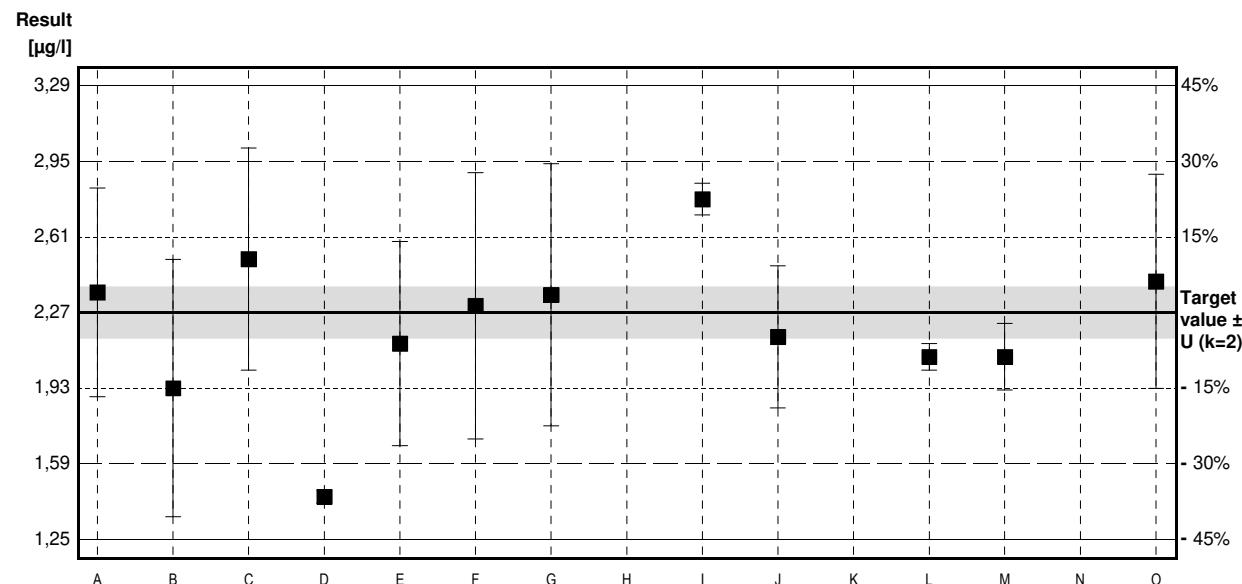


## Sample C64A

### Parameter Tribromomethane

Target value  $\pm U$  ( $k=2$ ) 2,27 µg/l  $\pm$  0,12 µg/l  
 IFA result  $\pm U$  ( $k=2$ ) 2,24 µg/l  $\pm$  0,34 µg/l  
 Stability test  $\pm U$  ( $k=2$ ) 2,40 µg/l  $\pm$  0,36 µg/l

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A	2,36	0,47	µg/l	104%	0,26
B	1,929	0,579	µg/l	85%	-1,00
C	2,51	0,50	µg/l	111%	0,70
D	1,44	0,029	µg/l	63%	-2,44
E	2,13	0,46	µg/l	94%	-0,41
F	2,30	0,60	µg/l	101%	0,09
G	2,35	0,59	µg/l	104%	0,23
H			µg/l		
I	2,78	0,071	µg/l	122%	1,50
J	2,16	0,32	µg/l	95%	-0,32
K	3,31	0,53	µg/l	146%	3,05
L	2,07	0,06	µg/l	91%	-0,59
M	2,07	0,15	µg/l	91%	-0,59
N			µg/l		
O	2,41	0,482	µg/l	106%	0,41



	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	2,29 $\pm$ 0,37	2,29 $\pm$ 0,37	µg/l
Recov. $\pm$ CI(99%)	101,0 $\pm$ 16,5	101,0 $\pm$ 16,5	%
SD between labs	0,44	0,44	µg/l
RSD between labs	19,3	19,3	%
n for calculation	13	13	

## Sample C64B

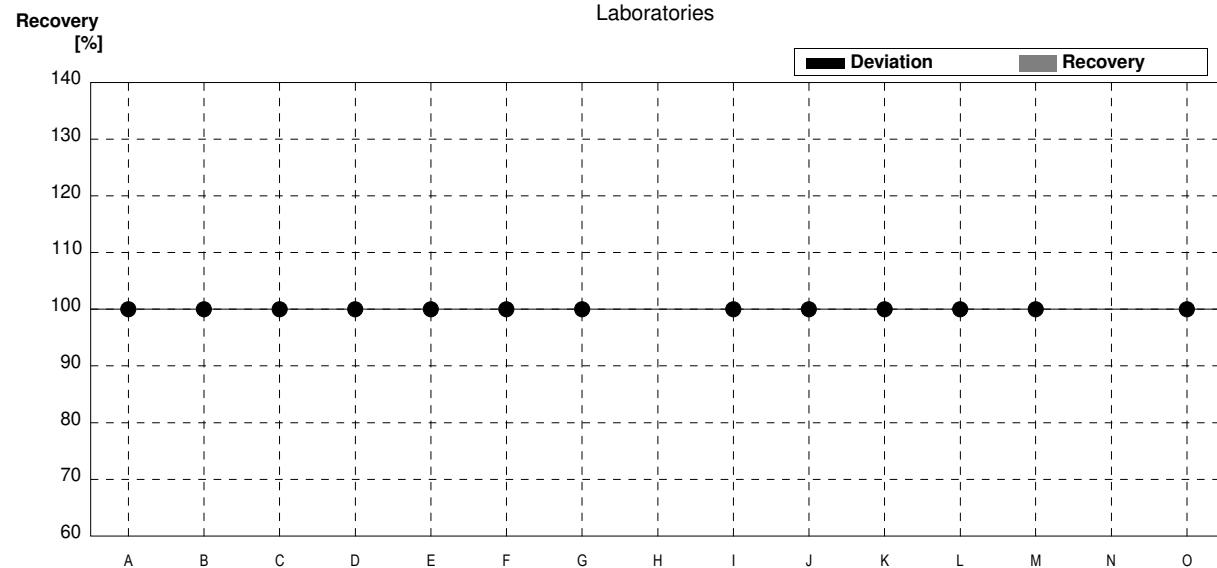
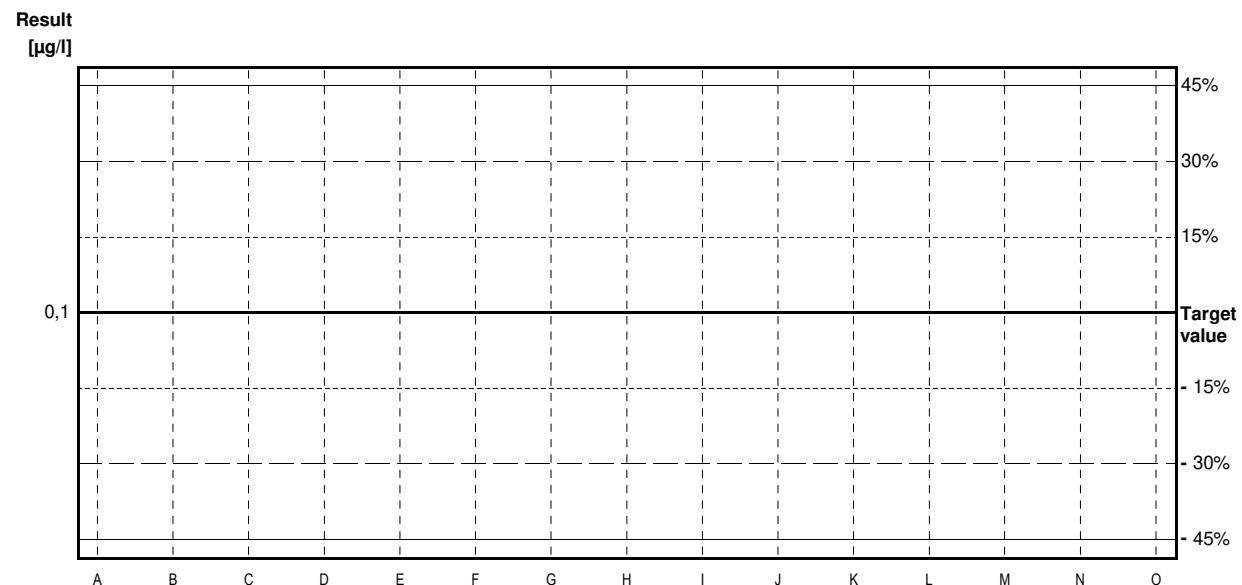
### Parameter Tribromomethane

Target value <0,1 µg/l

IFA result <0,02 µg/l

Stability test <0,02 µg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A	<0,08		µg/l	•	
B	<0,100		µg/l	•	
C	<0,1		µg/l	•	
D	<0,10		µg/l	•	
E	<0,020		µg/l	•	
F	<0,1		µg/l	•	
G	<0,10		µg/l	•	
H			µg/l		
I	<0,05		µg/l	•	
J	<0,1		µg/l	•	
K	<0,1		µg/l	•	
L	<0,72		µg/l	•	
M	<0,10		µg/l	•	
N			µg/l		
O	<0,035		µg/l	•	



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

## Sample C64A

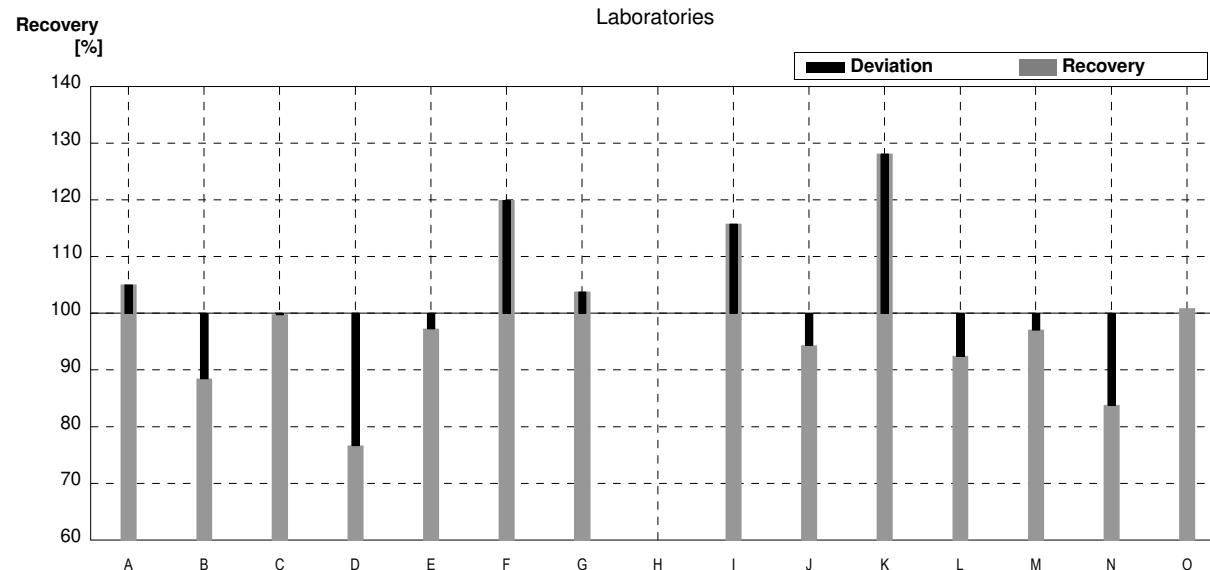
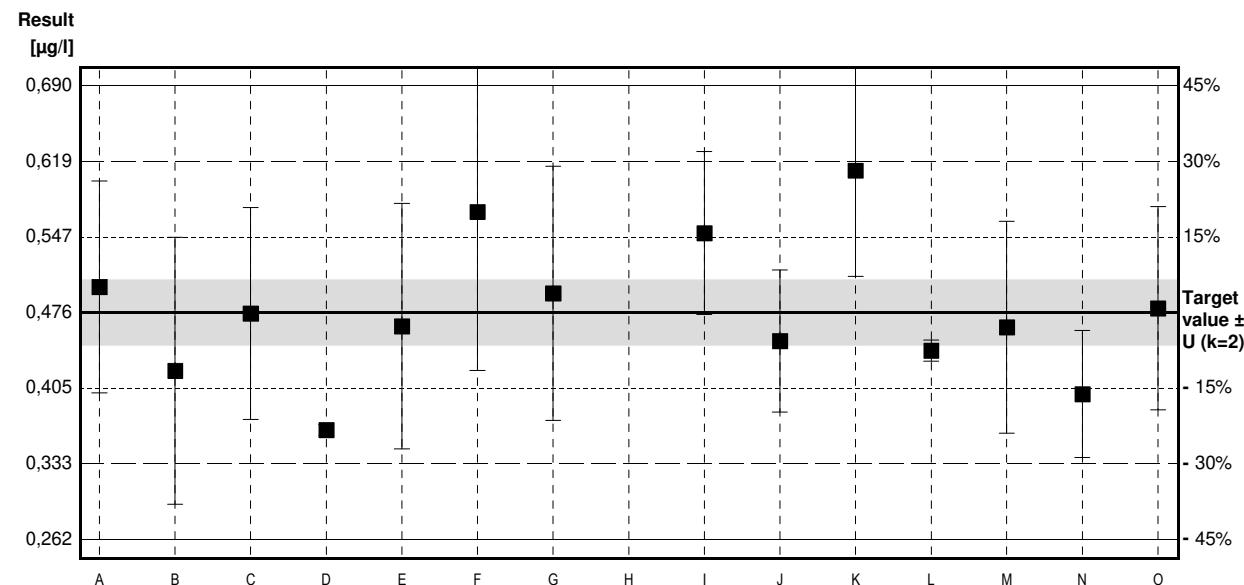
### Parameter Bromodichloromethane

Target value  $\pm U$  ( $k=2$ ) 0,476 µg/l  $\pm$  0,031 µg/l

IFA result  $\pm U$  ( $k=2$ ) 0,466 µg/l  $\pm$  0,070 µg/l

Stability test  $\pm U$  ( $k=2$ ) 0,479 µg/l  $\pm$  0,072 µg/l

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A	0,50	0,10	µg/l	105%	0,39
B	0,421	0,126	µg/l	88%	-0,89
C	0,475	0,10	µg/l	100%	-0,02
D	0,365	0,005	µg/l	77%	-1,79
E	0,463	0,116	µg/l	97%	-0,21
F	0,571	0,15	µg/l	120%	1,54
G	0,494	0,12	µg/l	104%	0,29
H			µg/l		
I	0,551	0,077	µg/l	116%	1,21
J	0,449	0,067	µg/l	94%	-0,44
K	0,61	0,10	µg/l	128%	2,17
L	0,440	0,01	µg/l	92%	-0,58
M	0,462	0,10	µg/l	97%	-0,23
N	0,399	0,060	µg/l	84%	-1,24
O	0,480	0,096	µg/l	101%	0,06



## Sample C64B

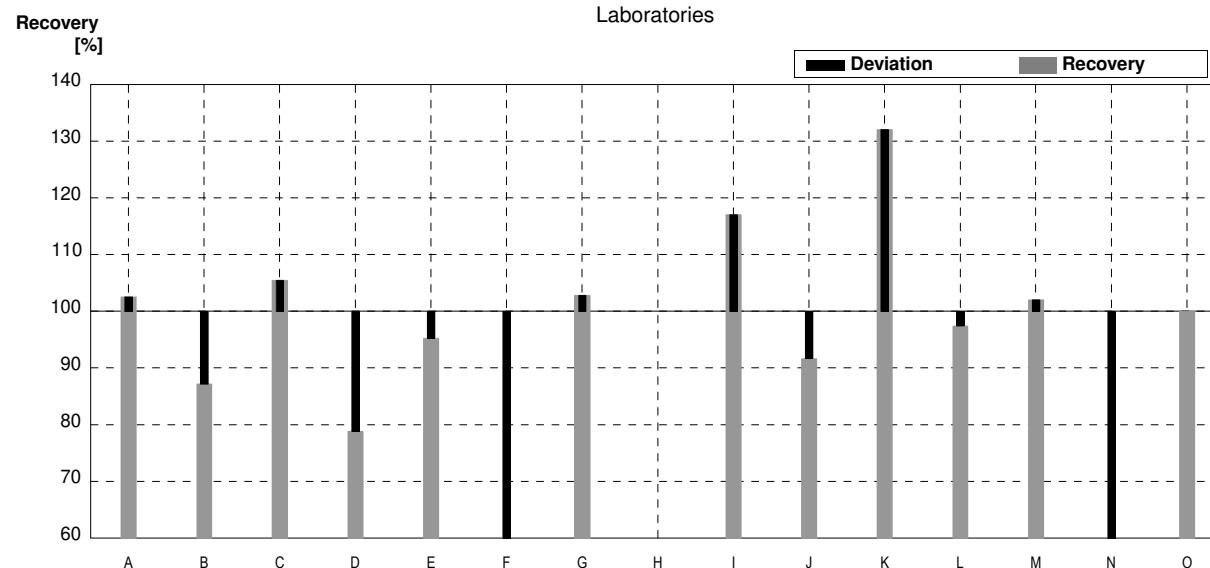
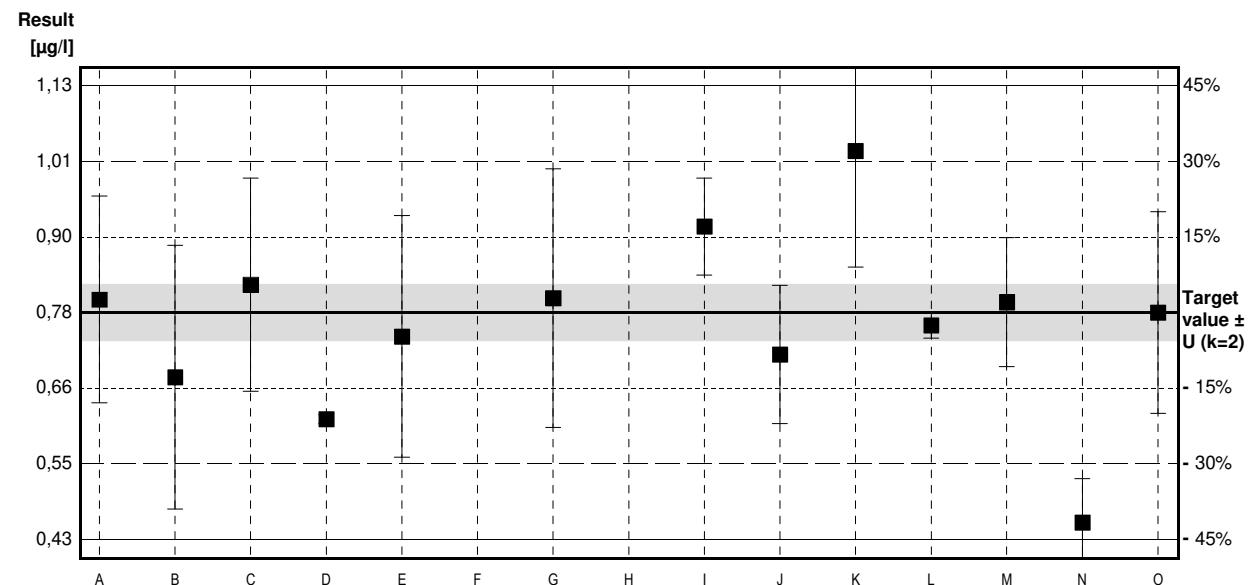
### Parameter Bromodichloromethane

Target value  $\pm U$  ( $k=2$ ) 0,78 µg/l  $\pm$  0,04 µg/l

IFA result  $\pm U$  ( $k=2$ ) 0,72 µg/l  $\pm$  0,11 µg/l

Stability test  $\pm U$  ( $k=2$ ) 0,79 µg/l  $\pm$  0,12 µg/l

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A	0,80	0,16	µg/l	103%	0,20
B	0,680	0,204	µg/l	87%	-0,99
C	0,823	0,165	µg/l	106%	0,42
D	0,615	0,007	µg/l	79%	-1,63
E	0,743	0,187	µg/l	95%	-0,36
F	0,190 *		µg/l	24%	-5,82
G	0,802	0,20	µg/l	103%	0,22
H			µg/l		
I	0,913	0,075	µg/l	117%	1,31
J	0,715	0,107	µg/l	92%	-0,64
K	1,03	0,18	µg/l	132%	2,47
L	0,760	0,02	µg/l	97%	-0,20
M	0,796	0,10	µg/l	102%	0,16
N	0,455 *	0,068	µg/l	58%	-3,21
O	0,780	0,156	µg/l	100%	0,00



	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	0,72 $\pm$ 0,16	0,79 $\pm$ 0,10	µg/l
Recov. $\pm$ CI(99%)	92,5 $\pm$ 20,9	101,0 $\pm$ 12,3	%
SD between labs	0,20	0,11	µg/l
RSD between labs	28,0	13,6	%
n for calculation	14	12	

## Sample C64A

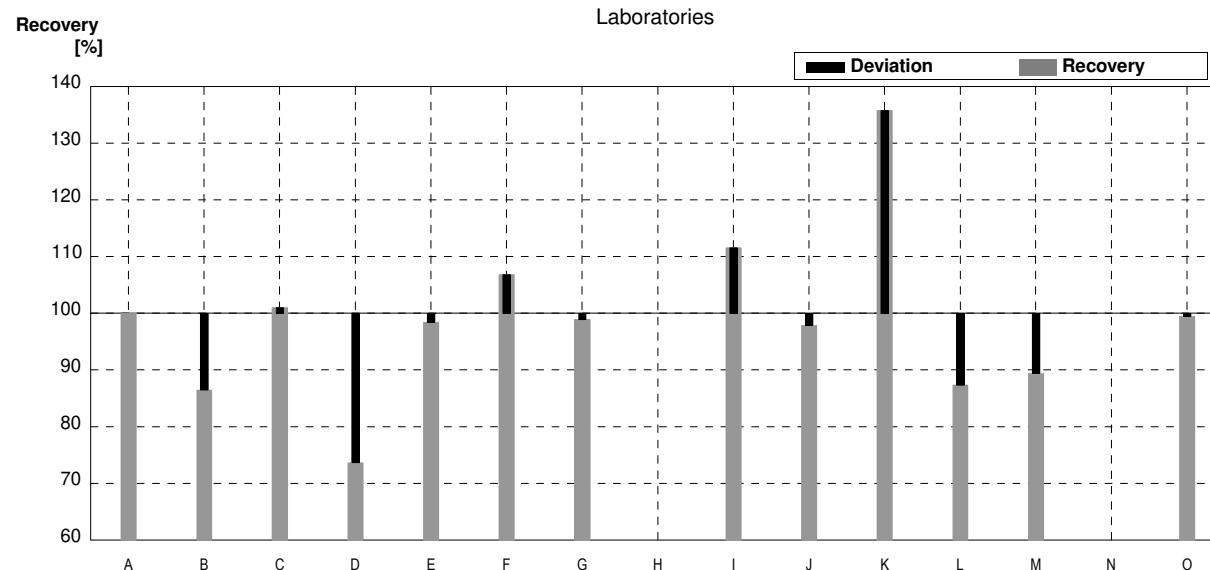
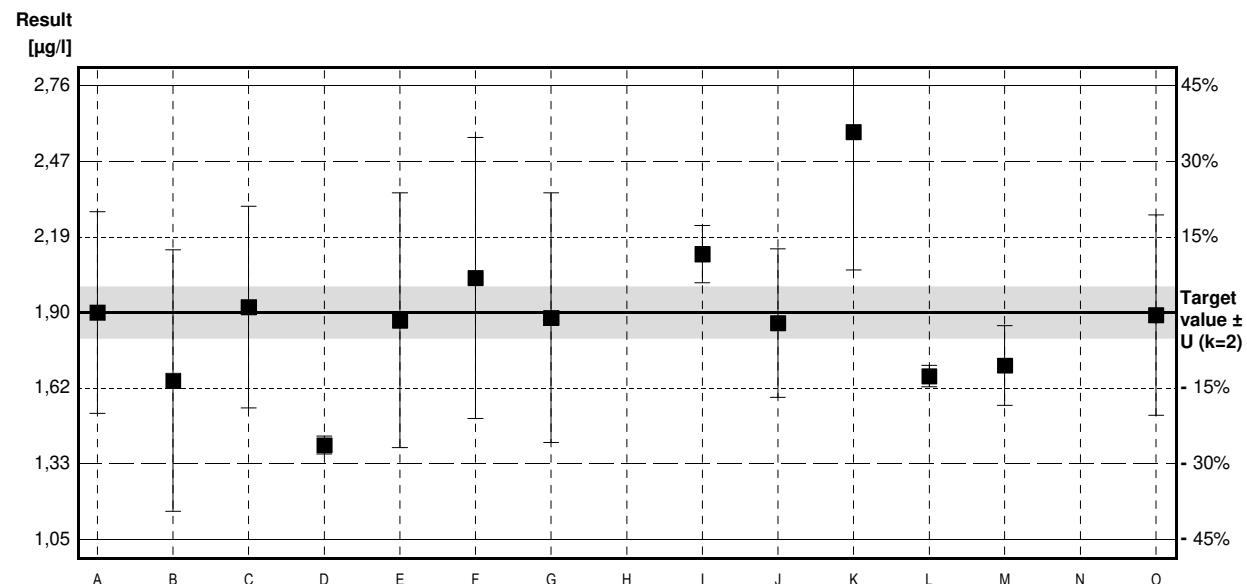
### Parameter Dibromochloromethane

Target value  $\pm U$  ( $k=2$ ) 1,90 µg/l  $\pm$  0,10 µg/l

IFA result  $\pm U$  ( $k=2$ ) 1,89 µg/l  $\pm$  0,28 µg/l

Stability test  $\pm U$  ( $k=2$ ) 1,98 µg/l  $\pm$  0,30 µg/l

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A	1,90	0,38	µg/l	100%	0,00
B	1,643	0,493	µg/l	86%	-0,97
C	1,92	0,38	µg/l	101%	0,08
D	1,40	0,034	µg/l	74%	-1,88
E	1,87	0,48	µg/l	98%	-0,11
F	2,03	0,53	µg/l	107%	0,49
G	1,88	0,47	µg/l	99%	-0,08
H			µg/l		
I	2,12	0,108	µg/l	112%	0,83
J	1,86	0,28	µg/l	98%	-0,15
K	2,58	0,52	µg/l	136%	2,56
L	1,66	0,04	µg/l	87%	-0,90
M	1,70	0,15	µg/l	89%	-0,75
N			µg/l		
O	1,89	0,378	µg/l	99%	-0,04



	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	1,88 $\pm$ 0,24	1,88 $\pm$ 0,24	µg/l
Recov. $\pm$ CI(99%)	99,0 $\pm$ 12,5	99,0 $\pm$ 12,5	%
SD between labs	0,28	0,28	µg/l
RSD between labs	14,9	14,9	%
n for calculation	13	13	

## Sample C64B

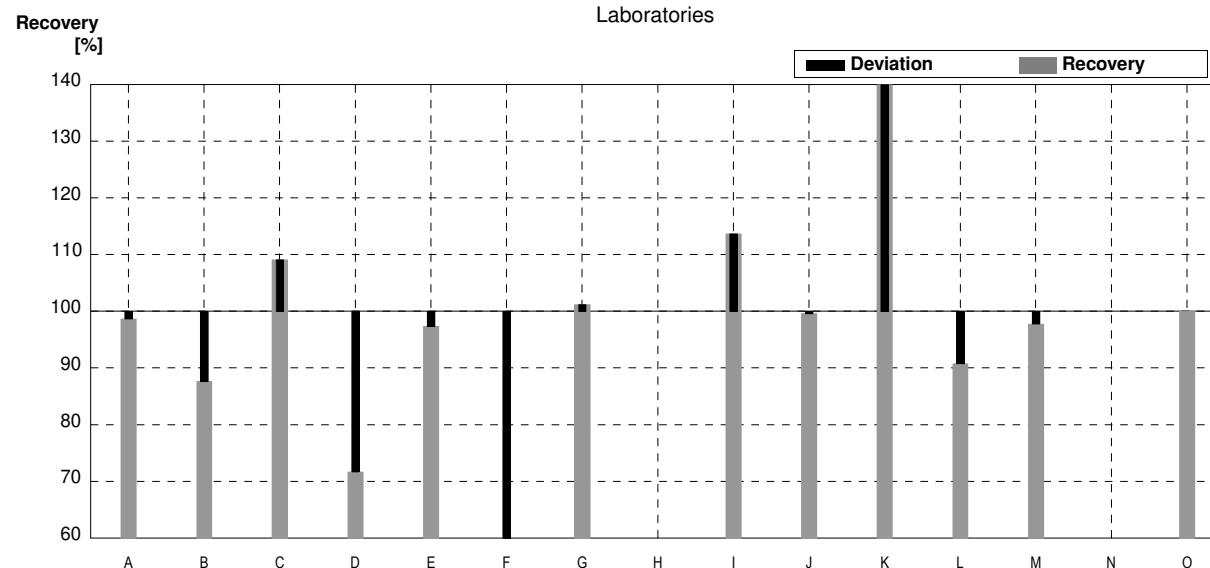
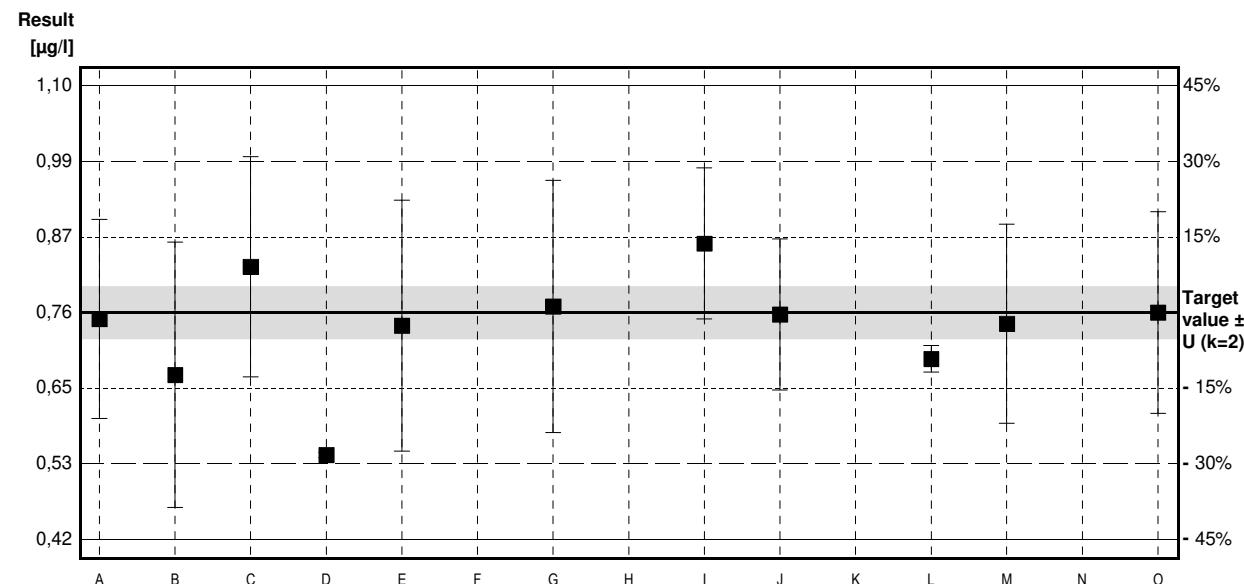
### Parameter Dibromochloromethane

Target value  $\pm U$  ( $k=2$ ) 0,76 µg/l  $\pm$  0,04 µg/l

IFA result  $\pm U$  ( $k=2$ ) 0,76 µg/l  $\pm$  0,11 µg/l

Stability test  $\pm U$  ( $k=2$ ) 0,78 µg/l  $\pm$  0,12 µg/l

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A	0,75	0,15	µg/l	99%	-0,09
B	0,666	0,200	µg/l	88%	-0,88
C	0,829	0,166	µg/l	109%	0,65
D	0,545	0,004	µg/l	72%	-2,02
E	0,740	0,189	µg/l	97%	-0,19
F	0,206 *		µg/l	27%	-5,21
G	0,769	0,19	µg/l	101%	0,08
H			µg/l		
I	0,864	0,114	µg/l	114%	0,98
J	0,757	0,114	µg/l	100%	-0,03
K	1,14 *	0,23	µg/l	150%	3,57
L	0,69	0,02	µg/l	91%	-0,66
M	0,743	0,15	µg/l	98%	-0,16
N			µg/l		
O	0,760	0,152	µg/l	100%	0,00



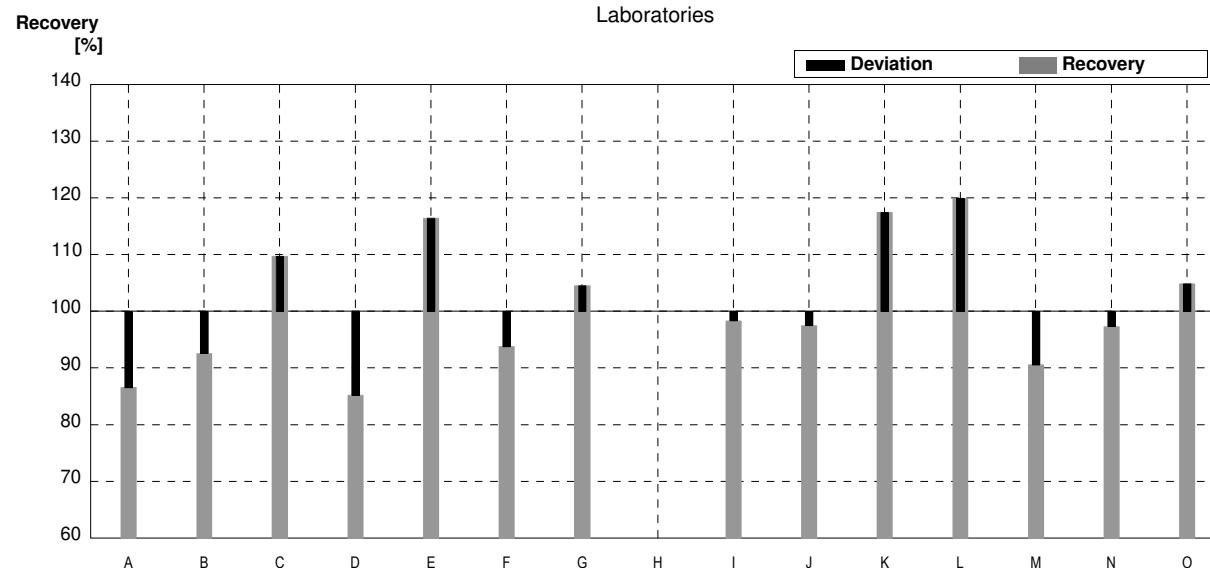
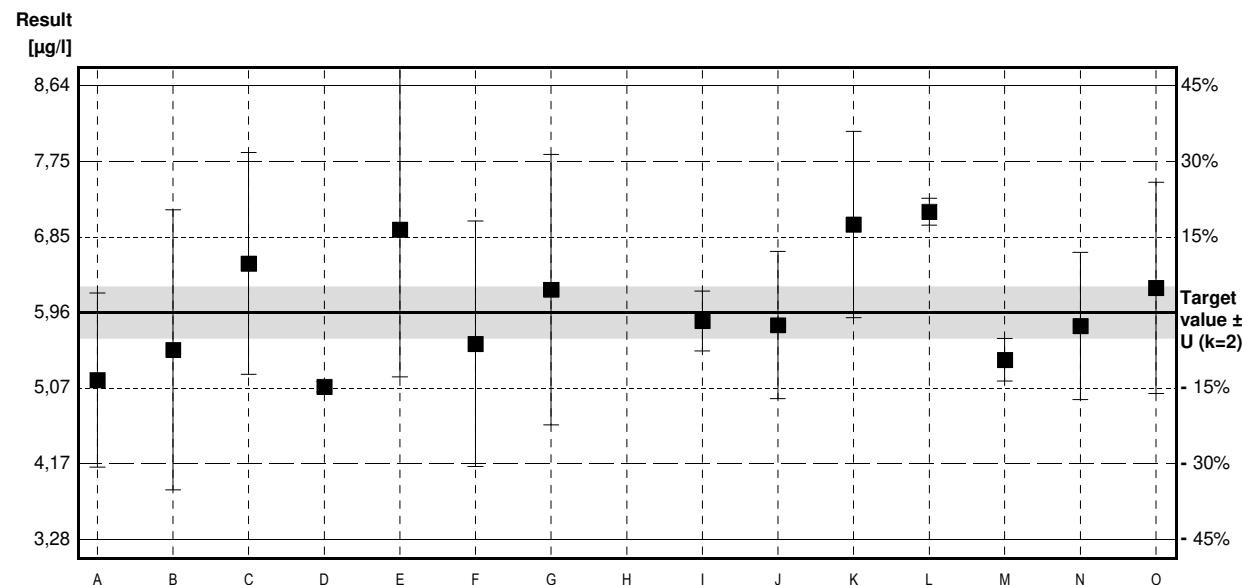
	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	0,73 $\pm$ 0,18	0,74 $\pm$ 0,08	µg/l
Recov. $\pm$ CI(99%)	95,7 $\pm$ 23,0	97,0 $\pm$ 10,6	%
SD between labs	0,21	0,08	µg/l
RSD between labs	28,4	11,4	%
n for calculation	13	11	

## Sample C64A

### Parameter Dichloromethane

Target value  $\pm U$  ( $k=2$ ) 5,96 µg/l  $\pm$  0,30 µg/l  
 IFA result  $\pm U$  ( $k=2$ ) 5,81 µg/l  $\pm$  0,87 µg/l  
 Stability test  $\pm U$  ( $k=2$ ) 6,15 µg/l  $\pm$  0,92 µg/l

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A	5,16	1,03	µg/l	87%	-0,96
B	5,519	1,656	µg/l	93%	-0,53
C	6,54	1,31	µg/l	110%	0,70
D	5,08	0,061	µg/l	85%	-1,05
E	6,94	1,74	µg/l	116%	1,17
F	5,59	1,45	µg/l	94%	-0,44
G	6,23	1,6	µg/l	105%	0,32
H			µg/l		
I	5,86	0,354	µg/l	98%	-0,12
J	5,81	0,87	µg/l	97%	-0,18
K	7,0	1,1	µg/l	117%	1,25
L	7,15	0,16	µg/l	120%	1,43
M	5,40	0,25	µg/l	91%	-0,67
N	5,8	0,87	µg/l	97%	-0,19
O	6,25	1,250	µg/l	105%	0,35



	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	6,02 $\pm$ 0,55	6,02 $\pm$ 0,55	µg/l
Recov. $\pm$ CI(99%)	101,1 $\pm$ 9,2	101,1 $\pm$ 9,2	%
SD between labs	0,68	0,68	µg/l
RSD between labs	11,3	11,3	%
n for calculation	14	14	

## Sample C64B

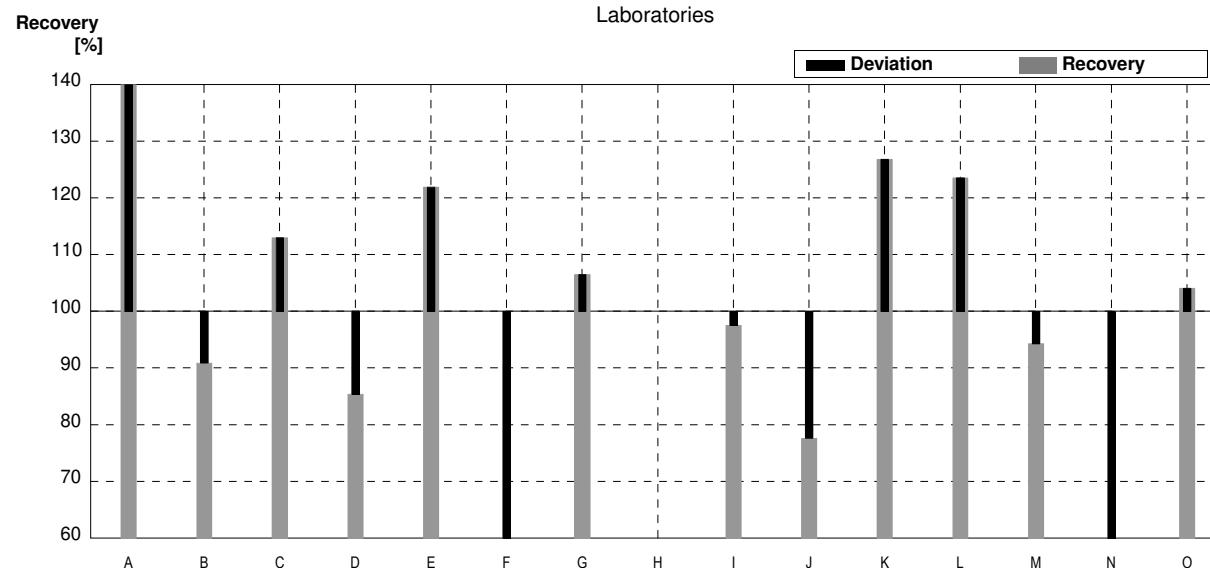
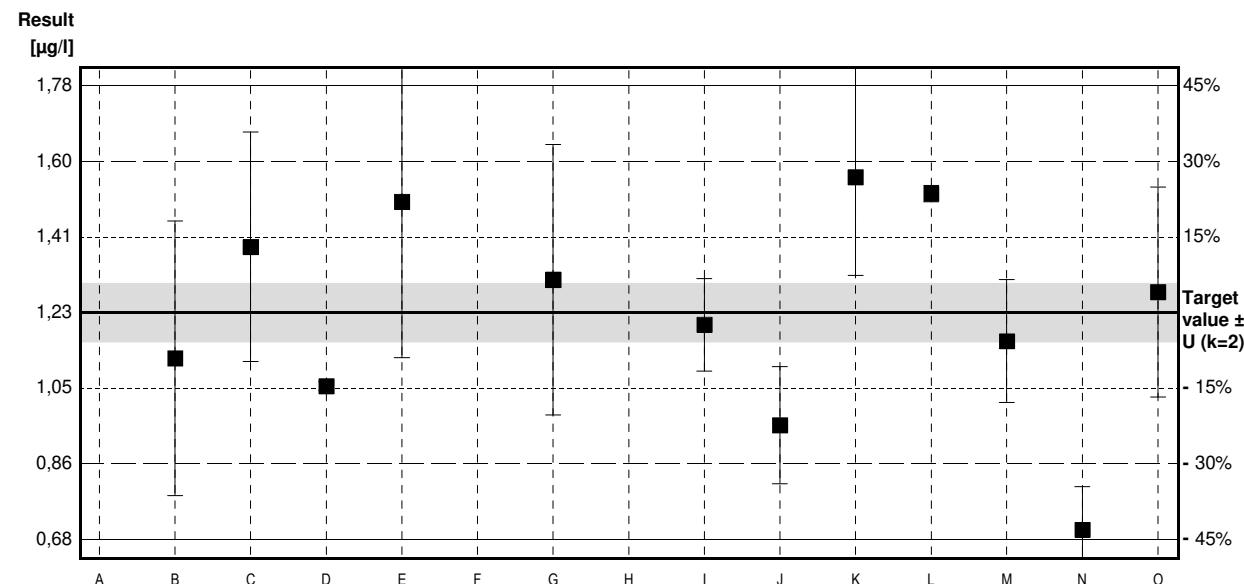
### Parameter Dichloromethane

Target value  $\pm U$  ( $k=2$ ) 1,23 µg/l  $\pm$  0,07 µg/l

IFA result  $\pm U$  ( $k=2$ ) 1,22 µg/l  $\pm$  0,18 µg/l

Stability test  $\pm U$  ( $k=2$ ) 1,23 µg/l  $\pm$  0,18 µg/l

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A	1,85	0,37	µg/l	150%	3,60
B	1,118	0,335	µg/l	91%	-0,65
C	1,39	0,28	µg/l	113%	0,93
D	1,05	0,011	µg/l	85%	-1,05
E	1,50	0,38	µg/l	122%	1,57
F	0,623		µg/l	51%	-3,52
G	1,31	0,33	µg/l	107%	0,46
H			µg/l		
I	1,20	0,113	µg/l	98%	-0,17
J	0,955	0,143	µg/l	78%	-1,60
K	1,56	0,24	µg/l	127%	1,92
L	1,52	0,02	µg/l	124%	1,68
M	1,16	0,15	µg/l	94%	-0,41
N	0,70	0,105	µg/l	57%	-3,08
O	1,28	0,256	µg/l	104%	0,29



	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	1,23 $\pm$ 0,27	1,23 $\pm$ 0,27	µg/l
Recov. $\pm$ CI(99%)	100,0 $\pm$ 21,9	100,0 $\pm$ 21,9	%
SD between labs	0,34	0,34	µg/l
RSD between labs	27,3	27,3	%
n for calculation	14	14	

## Sample C64A

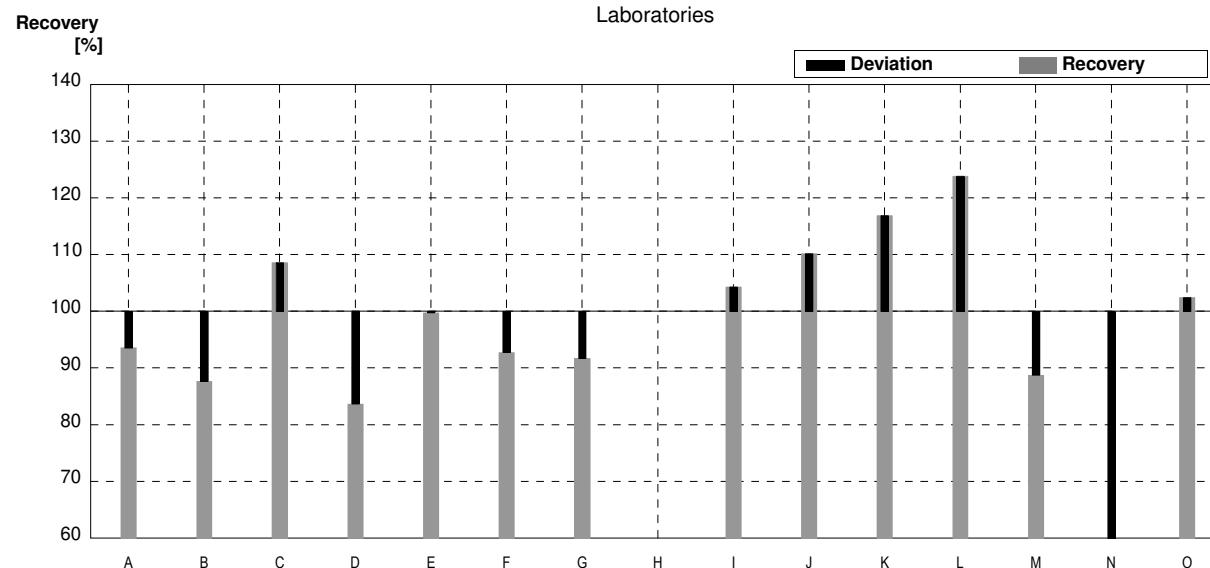
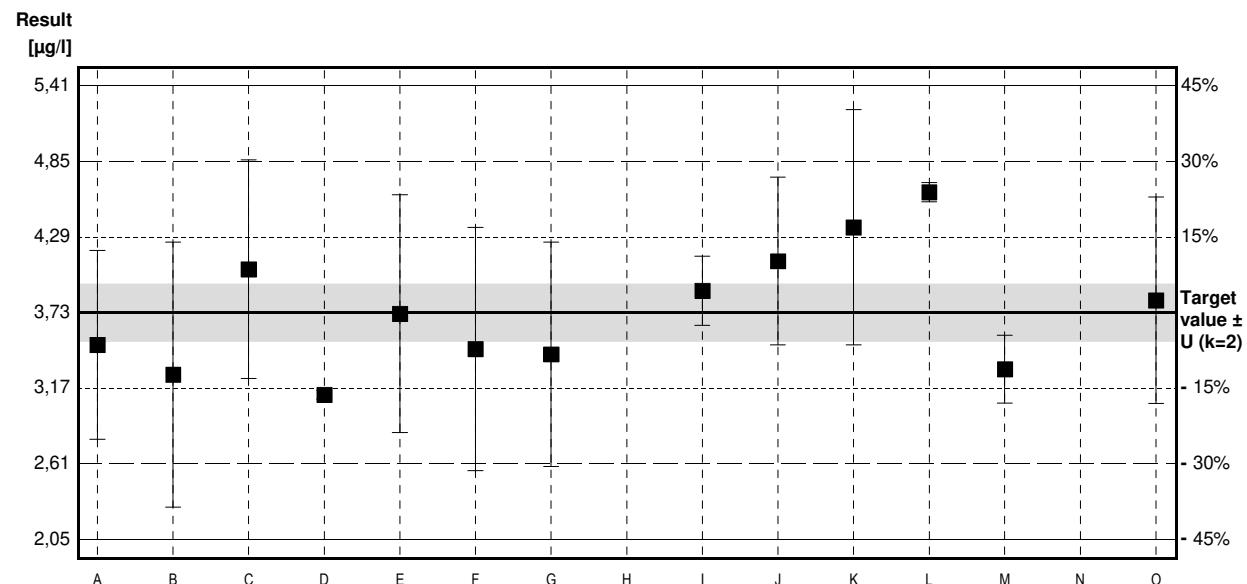
### Parameter 1,2-Dichloroethane

Target value  $\pm U$  ( $k=2$ ) 3,73 µg/l  $\pm$  0,21 µg/l

IFA result  $\pm U$  ( $k=2$ ) 3,61 µg/l  $\pm$  0,54 µg/l

Stability test  $\pm U$  ( $k=2$ ) 3,79 µg/l  $\pm$  0,57 µg/l

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A	3,49	0,7	µg/l	94%	-0,49
B	3,270	0,981	µg/l	88%	-0,95
C	4,05	0,81	µg/l	109%	0,66
D	3,12	0,033	µg/l	84%	-1,26
E	3,72	0,88	µg/l	100%	-0,02
F	3,46	0,90	µg/l	93%	-0,56
G	3,42	0,83	µg/l	92%	-0,64
H			µg/l		
I	3,89	0,255	µg/l	104%	0,33
J	4,11	0,62	µg/l	110%	0,78
K	4,36	0,87	µg/l	117%	1,30
L	4,62	0,07	µg/l	124%	1,84
M	3,31	0,25	µg/l	89%	-0,87
N	1,27 *	0,190	µg/l	34%	-5,07
O	3,82	0,764	µg/l	102%	0,19



	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	3,57 $\pm$ 0,64	3,74 $\pm$ 0,38	µg/l
Recov. $\pm$ CI(99%)	95,6 $\pm$ 17,1	100,3 $\pm$ 10,3	%
SD between labs	0,79	0,45	µg/l
RSD between labs	22,2	12,1	%
n for calculation	14	13	

## Sample C64B

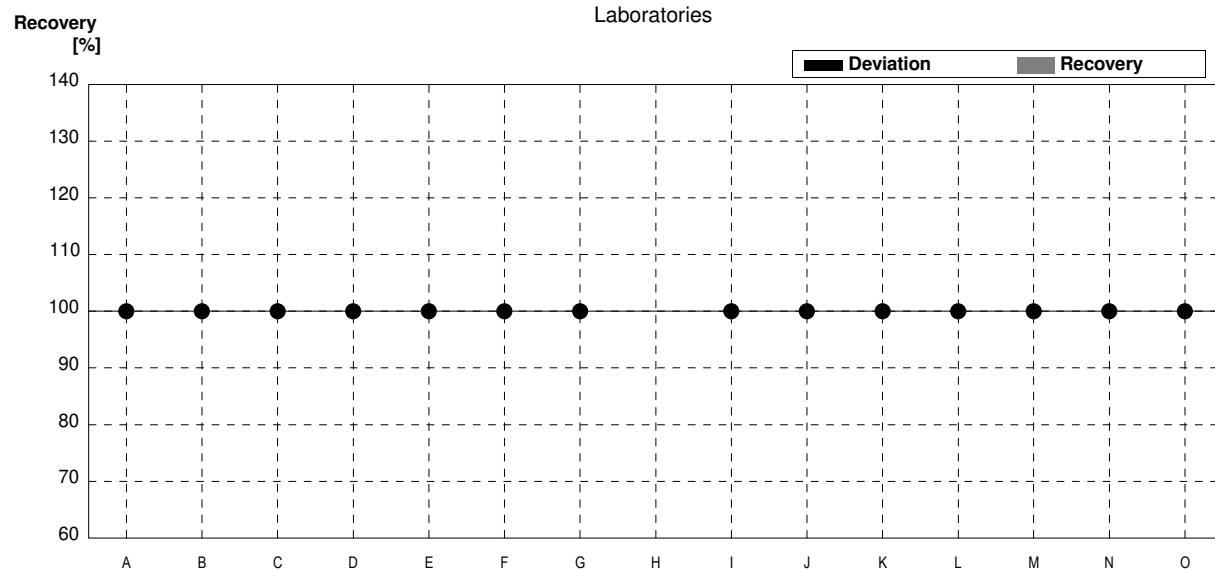
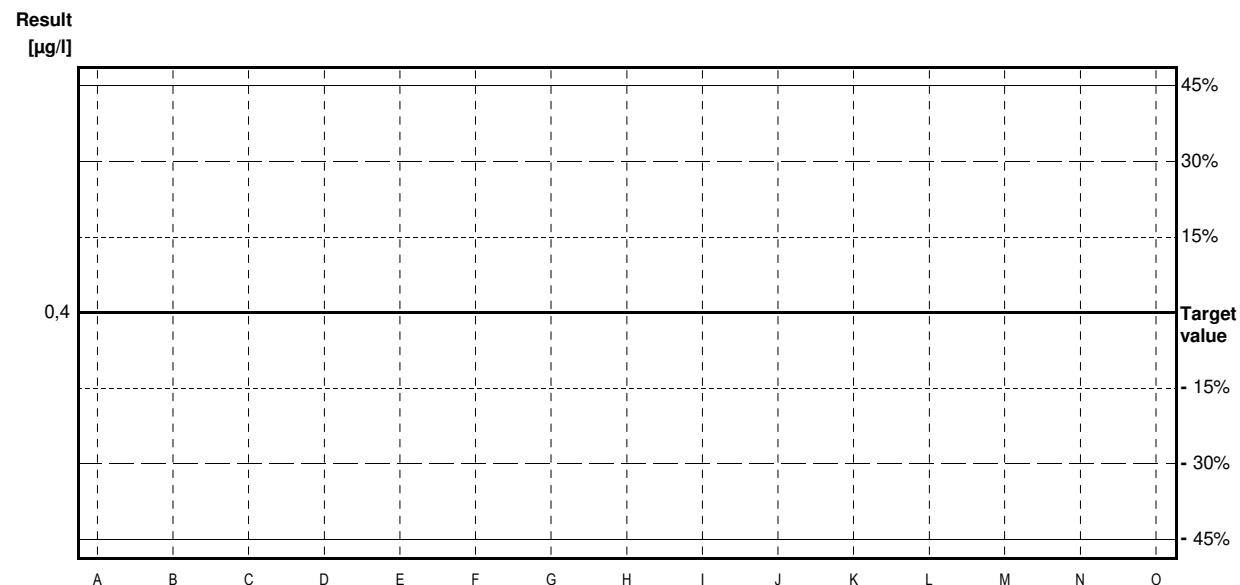
### Parameter 1,2-Dichloroethane

Target value <0,4 µg/l

IFA result <0,2 µg/l

Stability test <0,2 µg/l

Lab Code	Result	±	Unit	Recovery	z-Score
A	<0,08		µg/l	•	
B	<0,100		µg/l	•	
C	<0,5		µg/l	•	
D	<0,10		µg/l	•	
E	<0,020		µg/l	•	
F	<0,1		µg/l	•	
G	<0,10		µg/l	•	
H			µg/l		
I	<0,05		µg/l	•	
J	<0,5		µg/l	•	
K	<0,1		µg/l	•	
L	<0,41		µg/l	•	
M	<0,3		µg/l	•	
N	0,239	0,036	µg/l	•	
O	<0,040		µg/l	•	



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

## Sample C64A

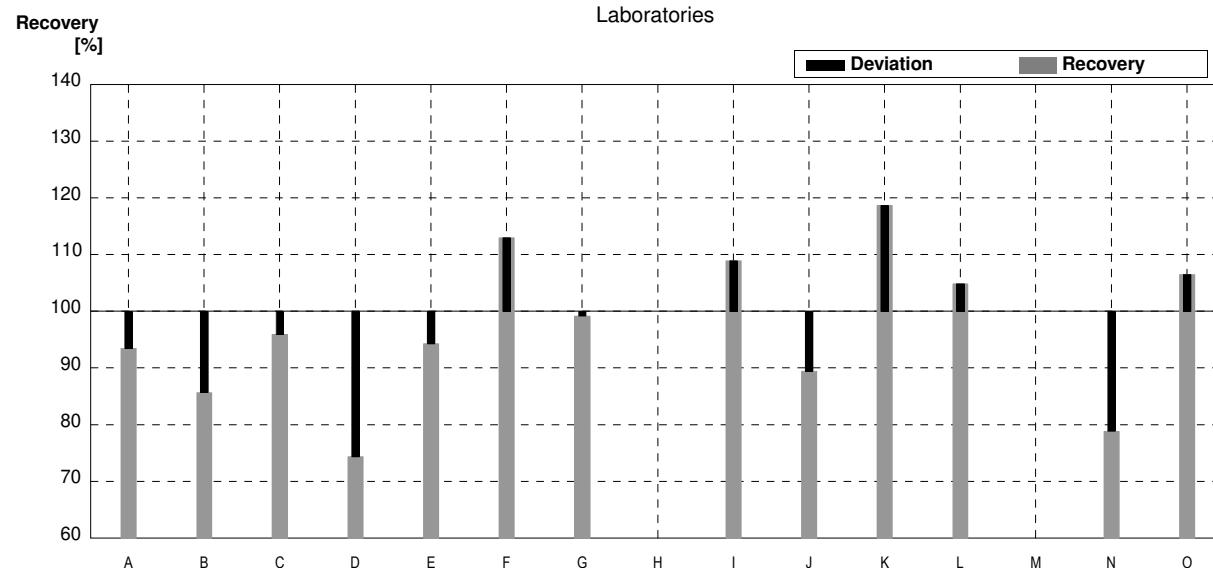
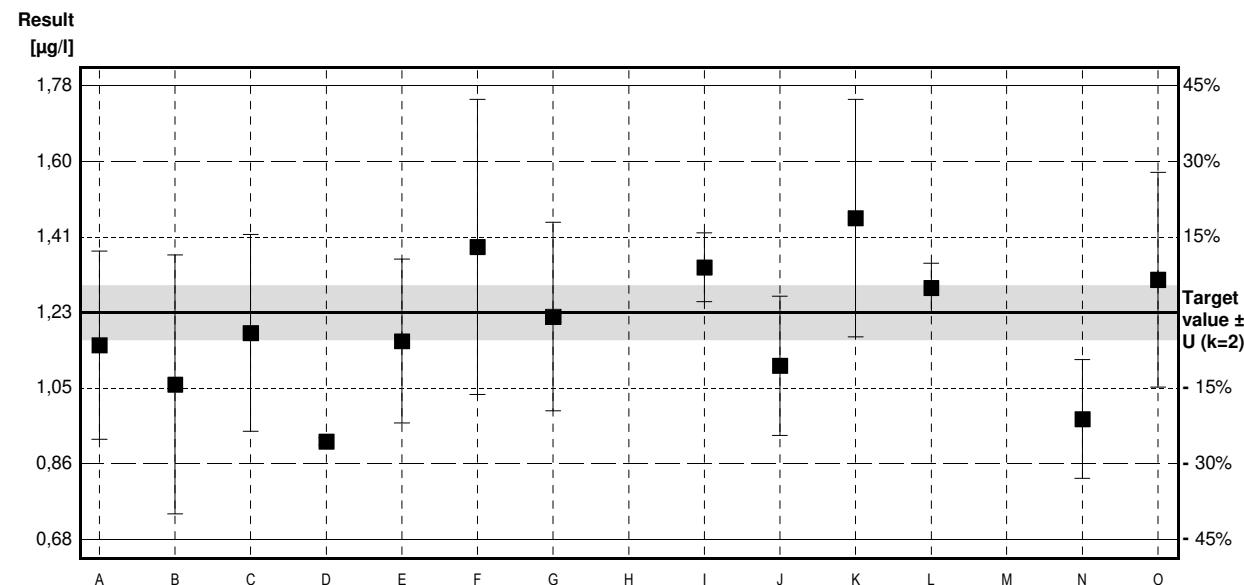
### Parameter cis-1,2-Dichloroethene

Target value  $\pm U$  ( $k=2$ ) 1,23 µg/l  $\pm$  0,07 µg/l

IFA result  $\pm U$  ( $k=2$ ) 1,18 µg/l  $\pm$  0,18 µg/l

Stability test  $\pm U$  ( $k=2$ ) 1,26 µg/l  $\pm$  0,19 µg/l

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A	1,15	0,23	µg/l	93%	-0,46
B	1,054	0,316	µg/l	86%	-1,02
C	1,18	0,24	µg/l	96%	-0,29
D	0,915	0,009	µg/l	74%	-1,83
E	1,16	0,20	µg/l	94%	-0,41
F	1,39	0,36	µg/l	113%	0,93
G	1,22	0,23	µg/l	99%	-0,06
H			µg/l		
I	1,34	0,084	µg/l	109%	0,64
J	1,10	0,17	µg/l	89%	-0,75
K	1,46	0,29	µg/l	119%	1,34
L	1,29	0,06	µg/l	105%	0,35
M	n.a.		µg/l		
N	0,97	0,145	µg/l	79%	-1,51
O	1,31	0,262	µg/l	107%	0,46



	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	$1,20 \pm 0,14$	$1,20 \pm 0,14$	µg/l
Recov. $\pm$ CI(99%)	$97,2 \pm 11,1$	$97,2 \pm 11,1$	%
SD between labs	0,16	0,16	µg/l
RSD between labs	13,5	13,5	%
n for calculation	13	13	

## Sample C64B

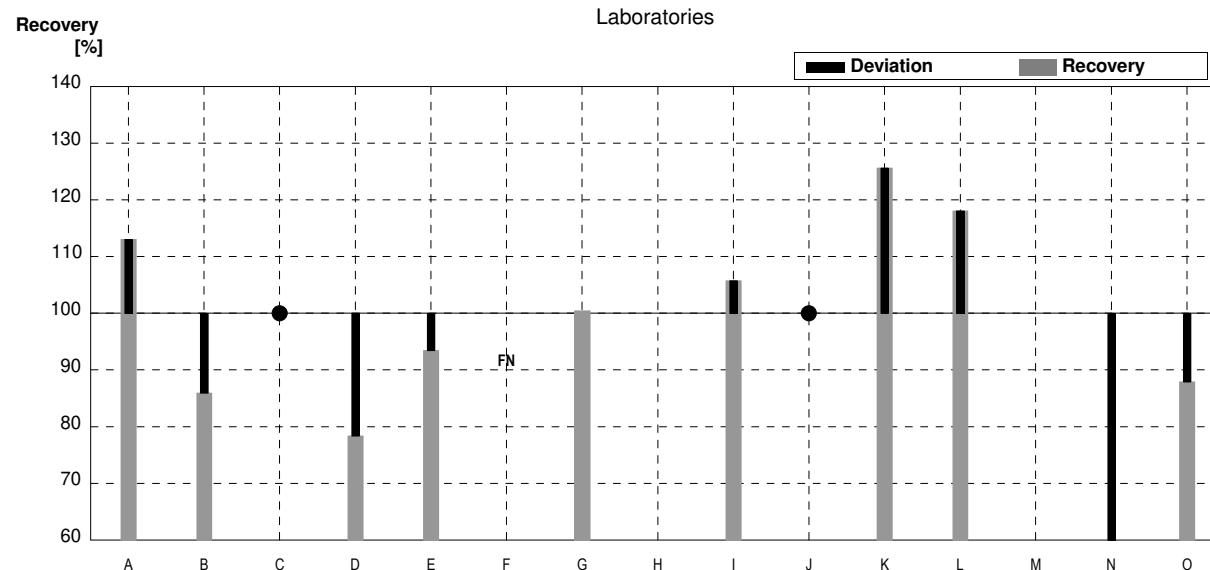
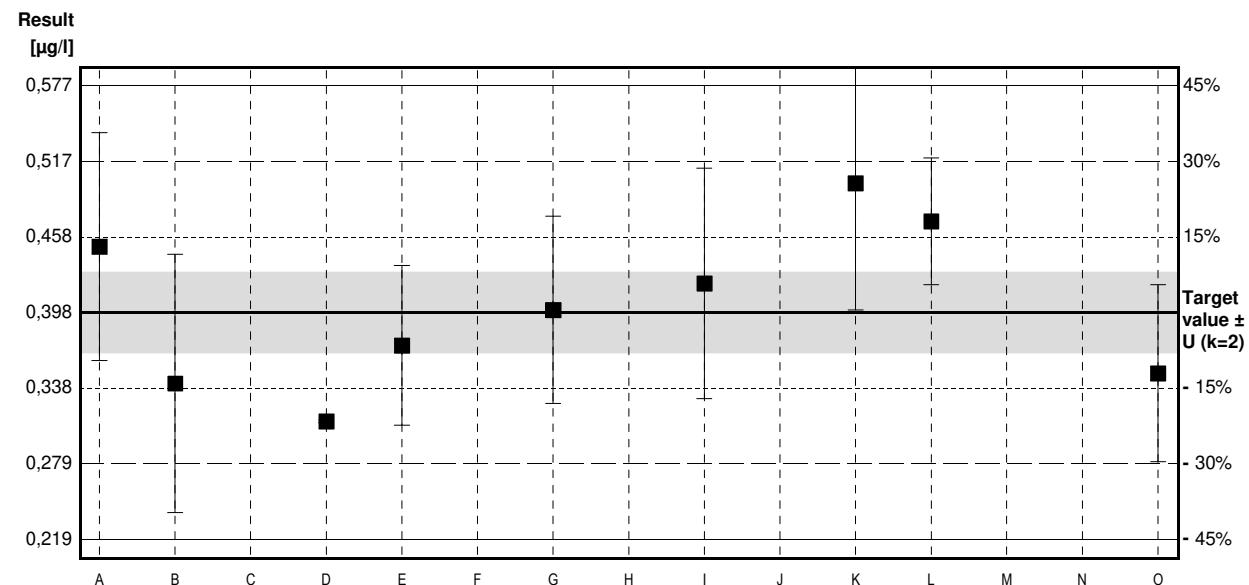
### Parameter cis-1,2-Dichloroethene

Target value  $\pm U$  ( $k=2$ ) 0,398 µg/l  $\pm$  0,032 µg/l

IFA result  $\pm U$  ( $k=2$ ) 0,389 µg/l  $\pm$  0,058 µg/l

Stability test  $\pm U$  ( $k=2$ ) 0,408 µg/l  $\pm$  0,061 µg/l

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A	0,450	0,09	µg/l	113%	0,93
B	0,342	0,102	µg/l	86%	-1,01
C	<0,5		µg/l	•	
D	0,312	0,001	µg/l	78%	-1,54
E	0,372	0,063	µg/l	93%	-0,47
F	<0,1		µg/l	FN	
G	0,400	0,074	µg/l	101%	0,04
H			µg/l		
I	0,421	0,091	µg/l	106%	0,41
J	<0,5		µg/l	•	
K	0,50	0,1	µg/l	126%	1,83
L	0,470	0,05	µg/l	118%	1,29
M	n.a.		µg/l		
N	0,170	0,025	µg/l	43%	-4,09
O	0,350	0,070	µg/l	88%	-0,86



	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	0,379 $\pm$ 0,098	0,379 $\pm$ 0,098	µg/l
Recov. $\pm$ CI(99%)	95,2 $\pm$ 24,7	95,2 $\pm$ 24,7	%
SD between labs	0,095	0,095	µg/l
RSD between labs	25,0	25,0	%
n for calculation	10	10	

## Sample C64A

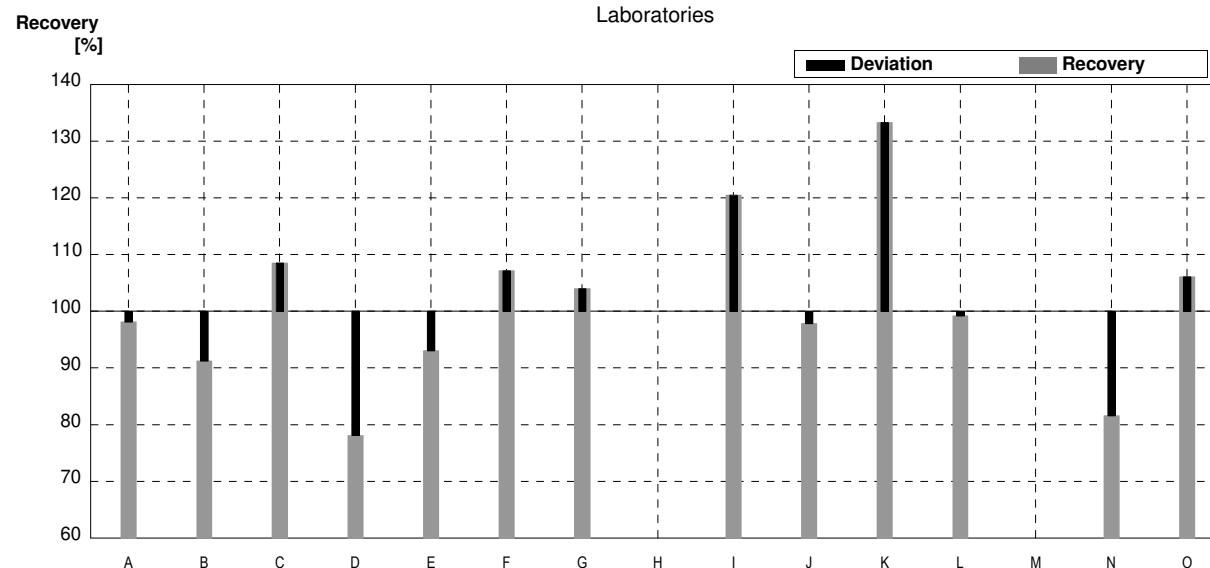
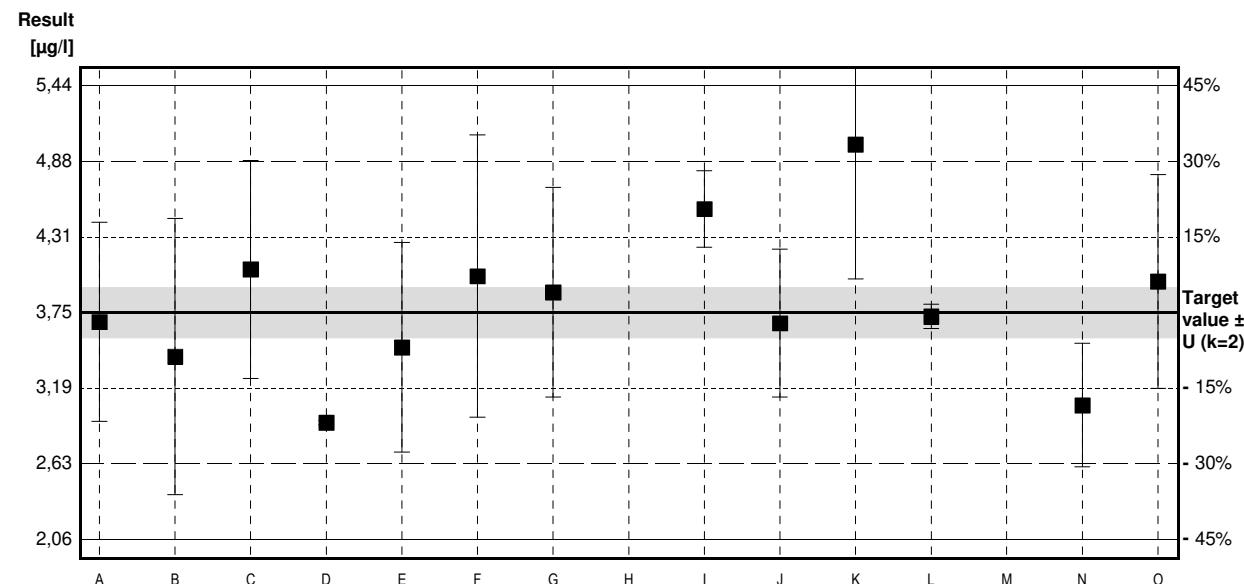
### Parameter trans-1,2-Dichloroethene

Target value  $\pm U$  ( $k=2$ ) 3,75 µg/l  $\pm$  0,19 µg/l

IFA result  $\pm U$  ( $k=2$ ) 3,56 µg/l  $\pm$  0,53 µg/l

Stability test  $\pm U$  ( $k=2$ ) 3,78 µg/l  $\pm$  0,57 µg/l

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A	3,68	0,74	µg/l	98%	-0,14
B	3,422	1,027	µg/l	91%	-0,67
C	4,07	0,81	µg/l	109%	0,66
D	2,93	0,016	µg/l	78%	-1,68
E	3,49	0,78	µg/l	93%	-0,53
F	4,02	1,05	µg/l	107%	0,55
G	3,90	0,78	µg/l	104%	0,31
H			µg/l		
I	4,52	0,284	µg/l	121%	1,58
J	3,67	0,55	µg/l	98%	-0,16
K	5,0	1,0	µg/l	133%	2,56
L	3,72	0,09	µg/l	99%	-0,06
M	n.a.		µg/l		
N	3,06	0,459	µg/l	82%	-1,42
O	3,98	0,796	µg/l	106%	0,47



	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	$3,80 \pm 0,47$	$3,80 \pm 0,47$	µg/l
Recov. $\pm$ CI(99%)	$101,5 \pm 12,5$	$101,5 \pm 12,5$	%
SD between labs	0,56	0,56	µg/l
RSD between labs	14,6	14,6	%
n for calculation	13	13	

## Sample C64B

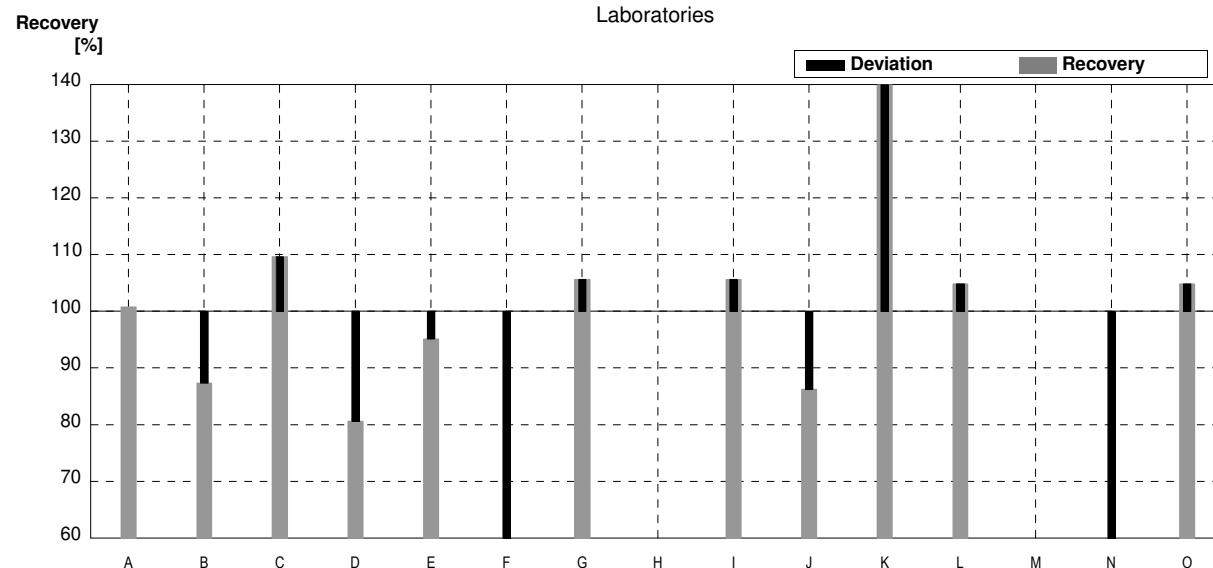
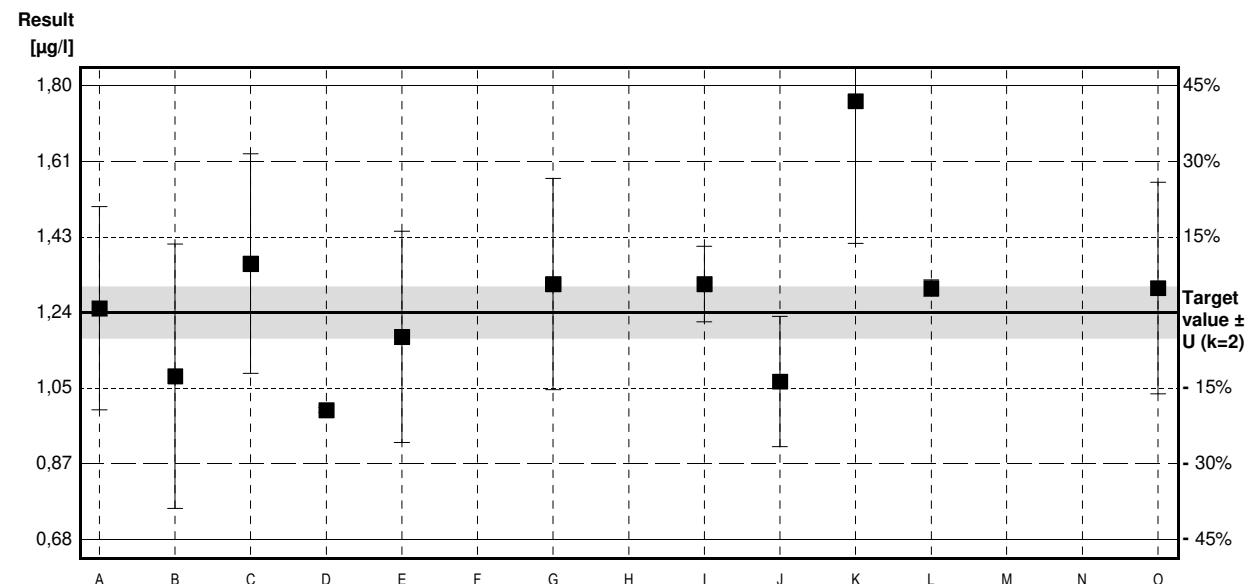
### Parameter trans-1,2-Dichloroethene

Target value  $\pm U$  ( $k=2$ ) 1,24 µg/l  $\pm$  0,06 µg/l

IFA result  $\pm U$  ( $k=2$ ) 1,20 µg/l  $\pm$  0,18 µg/l

Stability test  $\pm U$  ( $k=2$ ) 1,28 µg/l  $\pm$  0,19 µg/l

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A	1,25	0,25	µg/l	101%	0,06
B	1,083	0,325	µg/l	87%	-0,97
C	1,36	0,27	µg/l	110%	0,74
D	1,00	0,006	µg/l	81%	-1,49
E	1,18	0,26	µg/l	95%	-0,37
F	0,296 *		µg/l	24%	-5,86
G	1,31	0,26	µg/l	106%	0,43
H			µg/l		
I	1,31	0,093	µg/l	106%	0,43
J	1,07	0,16	µg/l	86%	-1,05
K	1,76	0,35	µg/l	142%	3,23
L	1,30	0,02	µg/l	105%	0,37
M	n.a.		µg/l		
N	0,439 *	0,066	µg/l	35%	-4,97
O	1,30	0,260	µg/l	105%	0,37



	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	1,13 $\pm$ 0,33	1,27 $\pm$ 0,19	µg/l
Recov. $\pm$ CI(99%)	90,9 $\pm$ 26,3	102,1 $\pm$ 15,6	%
SD between labs	0,39	0,20	µg/l
RSD between labs	34,2	16,0	%
n for calculation	13	11	



# **Illustration of Results Laboratory Oriented Part**

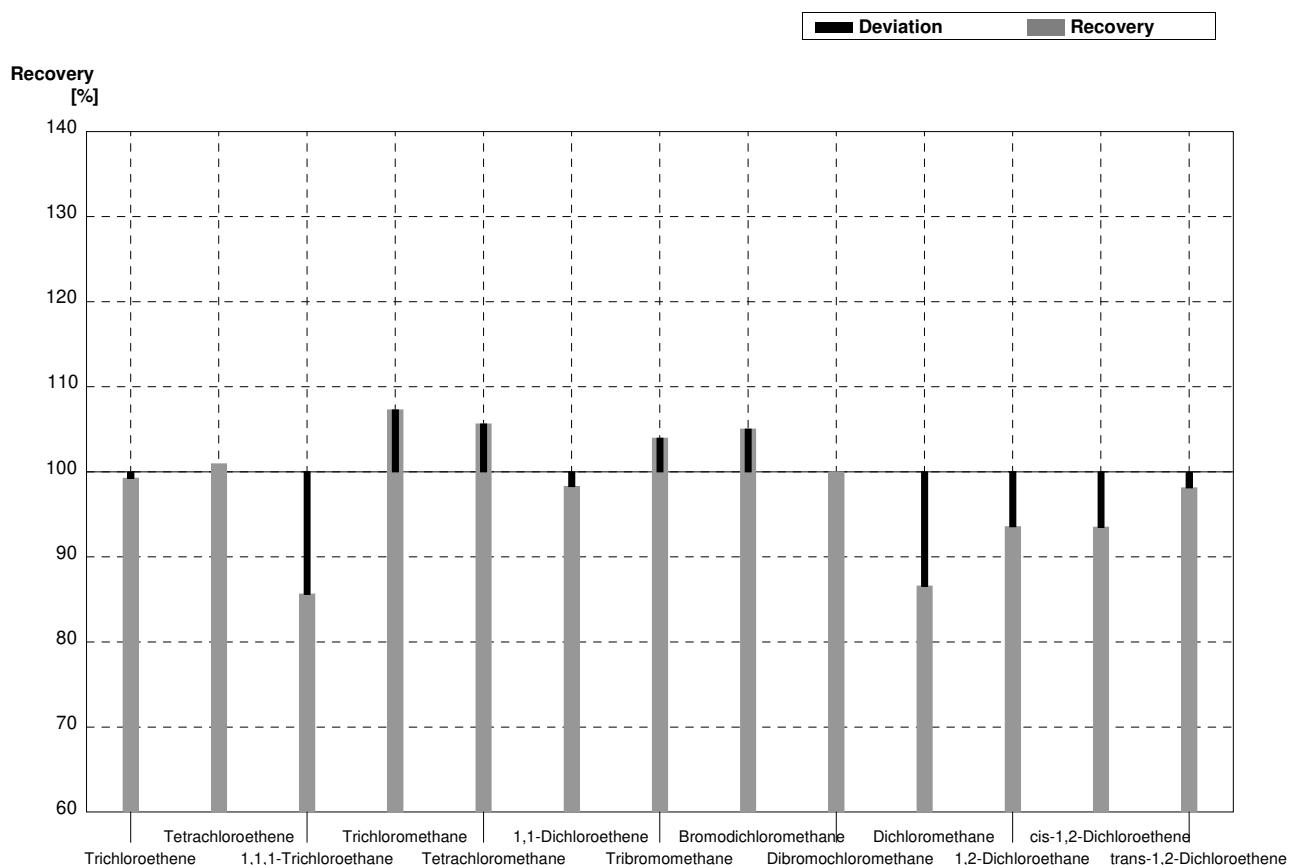
**Round C64  
Volatile Halogenated Hydrocarbons**

**Sample Dispatch: 22 February 2021**



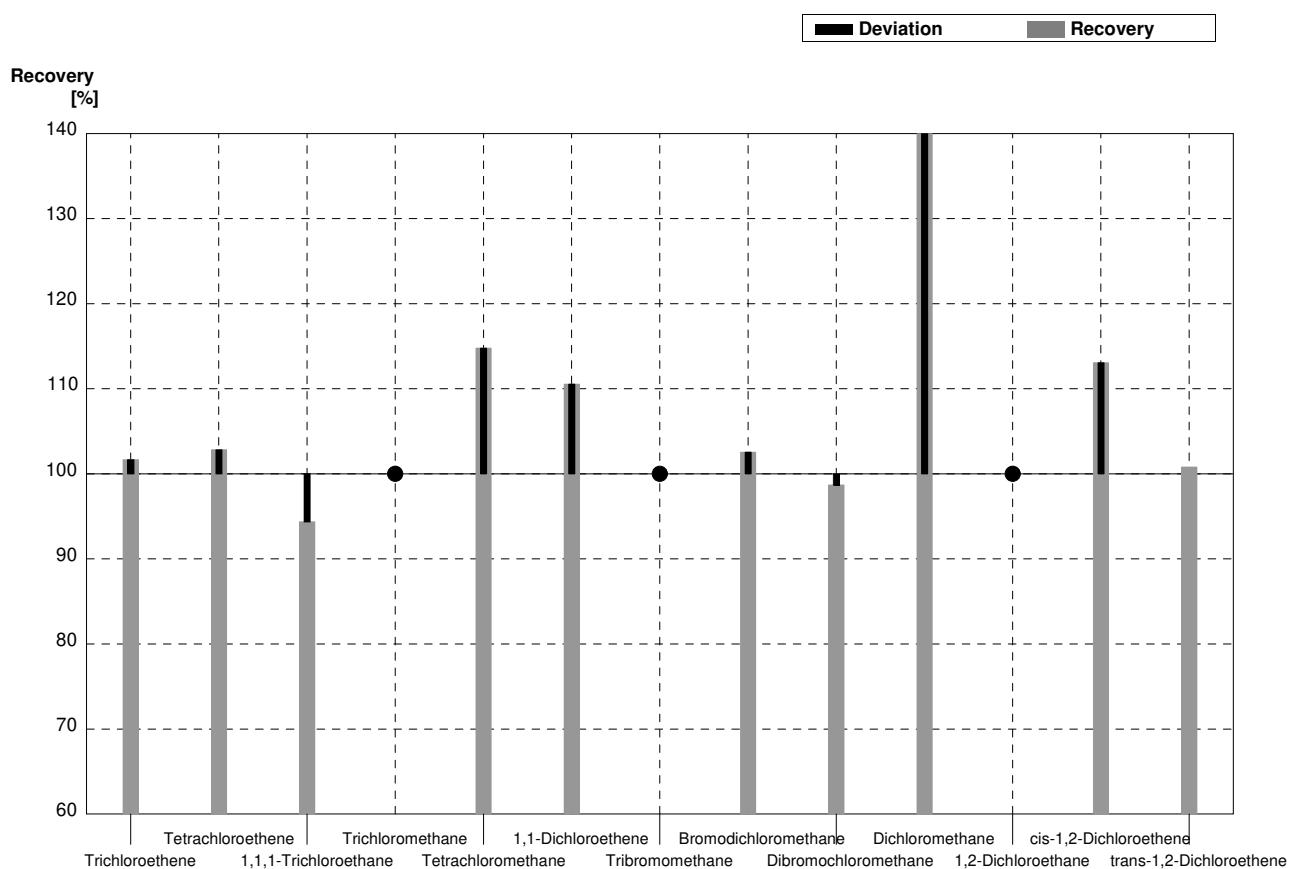
**Sample C64A**  
**Laboratory A**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Trichloroethene	4,01	0,20	3,98	0,8	µg/l	99%
Tetrachloroethene	3,12	0,16	3,15	0,63	µg/l	101%
1,1,1-Trichloroethane	1,88	0,10	1,61	0,32	µg/l	86%
Trichloromethane	2,74	0,14	2,94	0,59	µg/l	107%
Tetrachloromethane	2,31	0,12	2,44	0,49	µg/l	106%
1,1-Dichloroethene	2,32	0,12	2,28	0,46	µg/l	98%
Tribromomethane	2,27	0,12	2,36	0,47	µg/l	104%
Bromodichloromethane	0,476	0,031	0,50	0,10	µg/l	105%
Dibromochloromethane	1,90	0,10	1,90	0,38	µg/l	100%
Dichloromethane	5,96	0,30	5,16	1,03	µg/l	87%
1,2-Dichloroethane	3,73	0,21	3,49	0,7	µg/l	94%
cis-1,2-Dichloroethene	1,23	0,07	1,15	0,23	µg/l	93%
trans-1,2-Dichloroethene	3,75	0,19	3,68	0,74	µg/l	98%



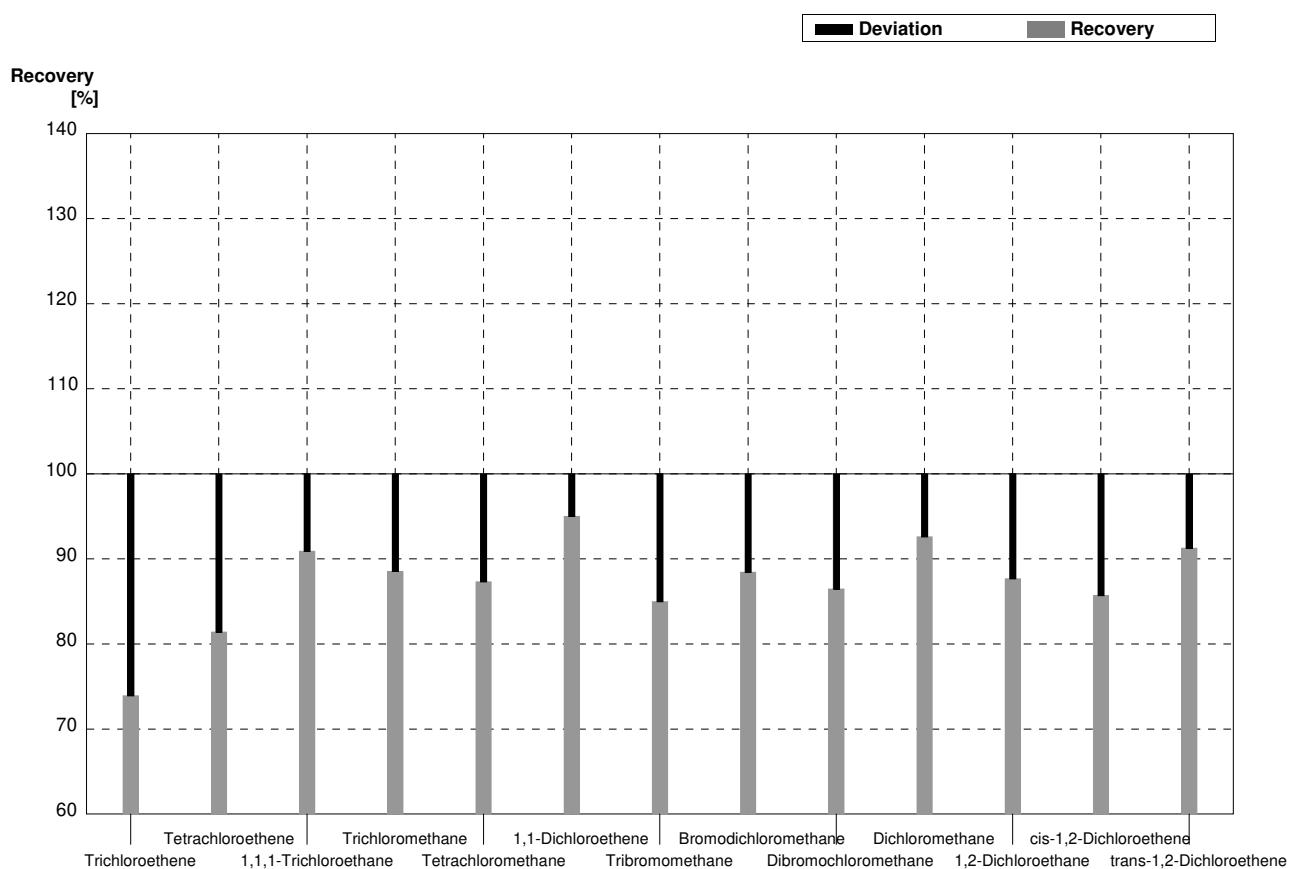
**Sample C64B**  
**Laboratory A**

Parameter	Target value	$\pm U$ ( $k=2$ )	Result	$\pm$	Unit	Recovery
Trichloroethene	1,20	0,06	1,22	0,24	$\mu\text{g/l}$	102%
Tetrachloroethene	1,41	0,07	1,45	0,29	$\mu\text{g/l}$	103%
1,1,1-Trichloroethane	0,71	0,04	0,67	0,13	$\mu\text{g/l}$	94%
Trichloromethane	<0,1		<0,8		$\mu\text{g/l}$	•
Tetrachloromethane	1,15	0,06	1,32	0,26	$\mu\text{g/l}$	115%
1,1-Dichloroethene	0,398	0,027	0,440	0,088	$\mu\text{g/l}$	111%
Tribromomethane	<0,1		<0,08		$\mu\text{g/l}$	•
Bromodichloromethane	0,78	0,04	0,80	0,16	$\mu\text{g/l}$	103%
Dibromochloromethane	0,76	0,04	0,75	0,15	$\mu\text{g/l}$	99%
Dichloromethane	1,23	0,07	1,85	0,37	$\mu\text{g/l}$	150%
1,2-Dichloroethane	<0,4		<0,08		$\mu\text{g/l}$	•
cis-1,2-Dichloroethene	0,398	0,032	0,450	0,09	$\mu\text{g/l}$	113%
trans-1,2-Dichloroethene	1,24	0,06	1,25	0,25	$\mu\text{g/l}$	101%



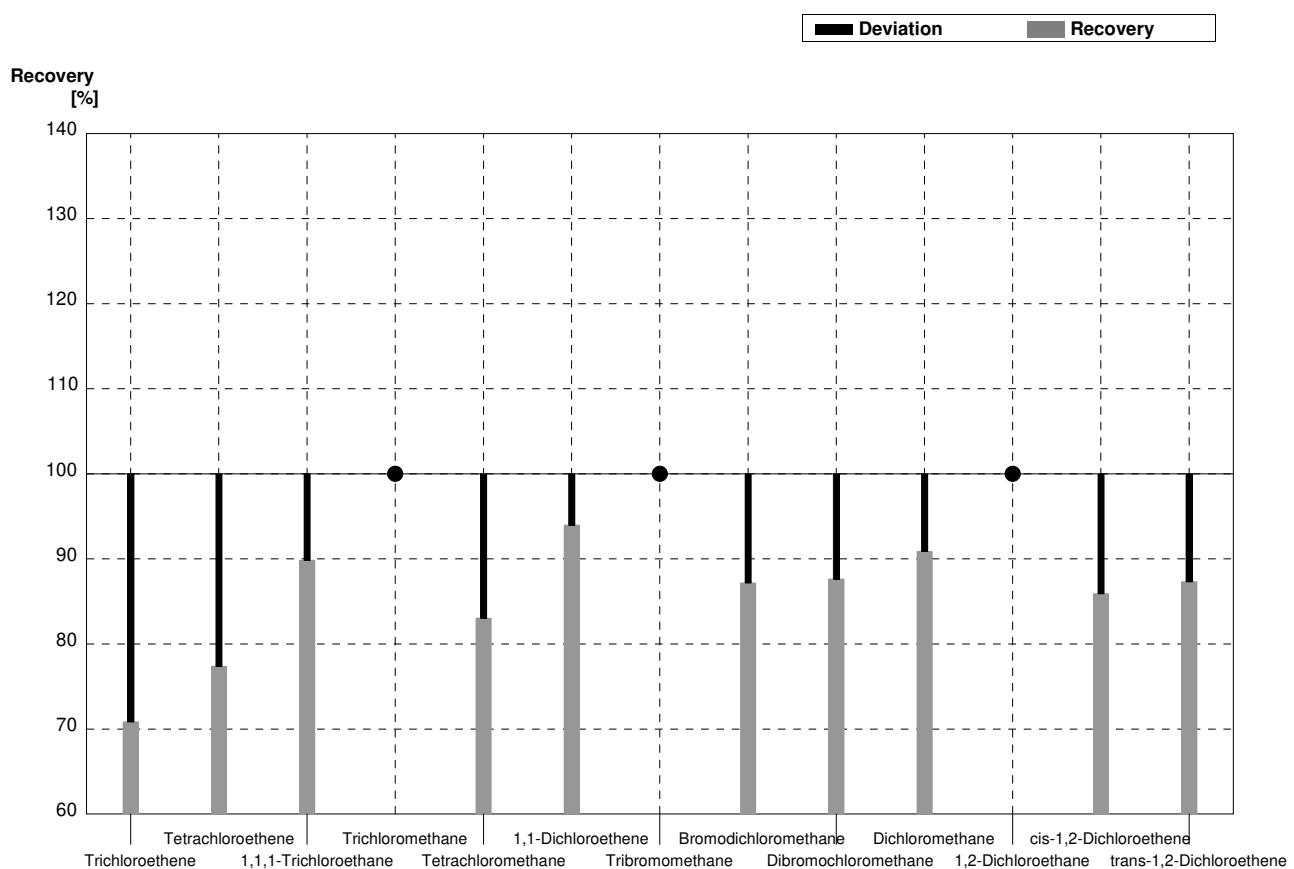
**Sample C64A**  
**Laboratory B**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Trichloroethene	4,01	0,20	2,964	0,889	µg/l	74%
Tetrachloroethene	3,12	0,16	2,540	0,762	µg/l	81%
1,1,1-Trichloroethane	1,88	0,10	1,709	0,513	µg/l	91%
Trichloromethane	2,74	0,14	2,426	0,728	µg/l	89%
Tetrachloromethane	2,31	0,12	2,017	0,605	µg/l	87%
1,1-Dichloroethene	2,32	0,12	2,204	0,661	µg/l	95%
Tribromomethane	2,27	0,12	1,929	0,579	µg/l	85%
Bromodichloromethane	0,476	0,031	0,421	0,126	µg/l	88%
Dibromochloromethane	1,90	0,10	1,643	0,493	µg/l	86%
Dichloromethane	5,96	0,30	5,519	1,656	µg/l	93%
1,2-Dichloroethane	3,73	0,21	3,270	0,981	µg/l	88%
cis-1,2-Dichloroethene	1,23	0,07	1,054	0,316	µg/l	86%
trans-1,2-Dichloroethene	3,75	0,19	3,422	1,027	µg/l	91%



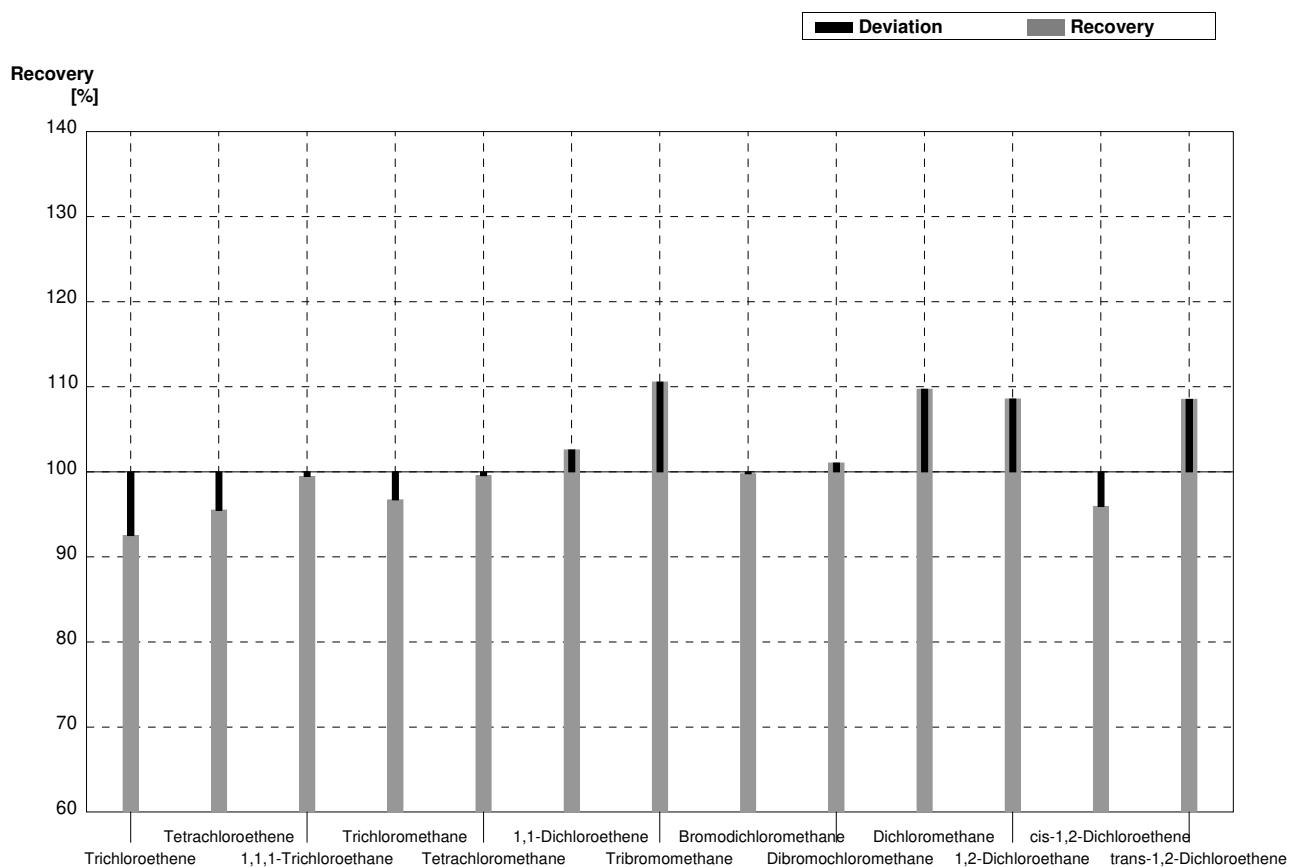
**Sample C64B**  
**Laboratory B**

Parameter	Target value	$\pm U$ ( $k=2$ )	Result	$\pm$	Unit	Recovery
Trichloroethene	1,20	0,06	0,850	0,255	$\mu\text{g/l}$	71%
Tetrachloroethene	1,41	0,07	1,091	0,327	$\mu\text{g/l}$	77%
1,1,1-Trichloroethane	0,71	0,04	0,638	0,191	$\mu\text{g/l}$	90%
Trichloromethane	<0,1		<0,100		$\mu\text{g/l}$	•
Tetrachloromethane	1,15	0,06	0,955	0,286	$\mu\text{g/l}$	83%
1,1-Dichloroethene	0,398	0,027	0,374	0,112	$\mu\text{g/l}$	94%
Tribromomethane	<0,1		<0,100		$\mu\text{g/l}$	•
Bromodichloromethane	0,78	0,04	0,680	0,204	$\mu\text{g/l}$	87%
Dibromochloromethane	0,76	0,04	0,666	0,200	$\mu\text{g/l}$	88%
Dichloromethane	1,23	0,07	1,118	0,335	$\mu\text{g/l}$	91%
1,2-Dichloroethane	<0,4		<0,100		$\mu\text{g/l}$	•
cis-1,2-Dichloroethene	0,398	0,032	0,342	0,102	$\mu\text{g/l}$	86%
trans-1,2-Dichloroethene	1,24	0,06	1,083	0,325	$\mu\text{g/l}$	87%



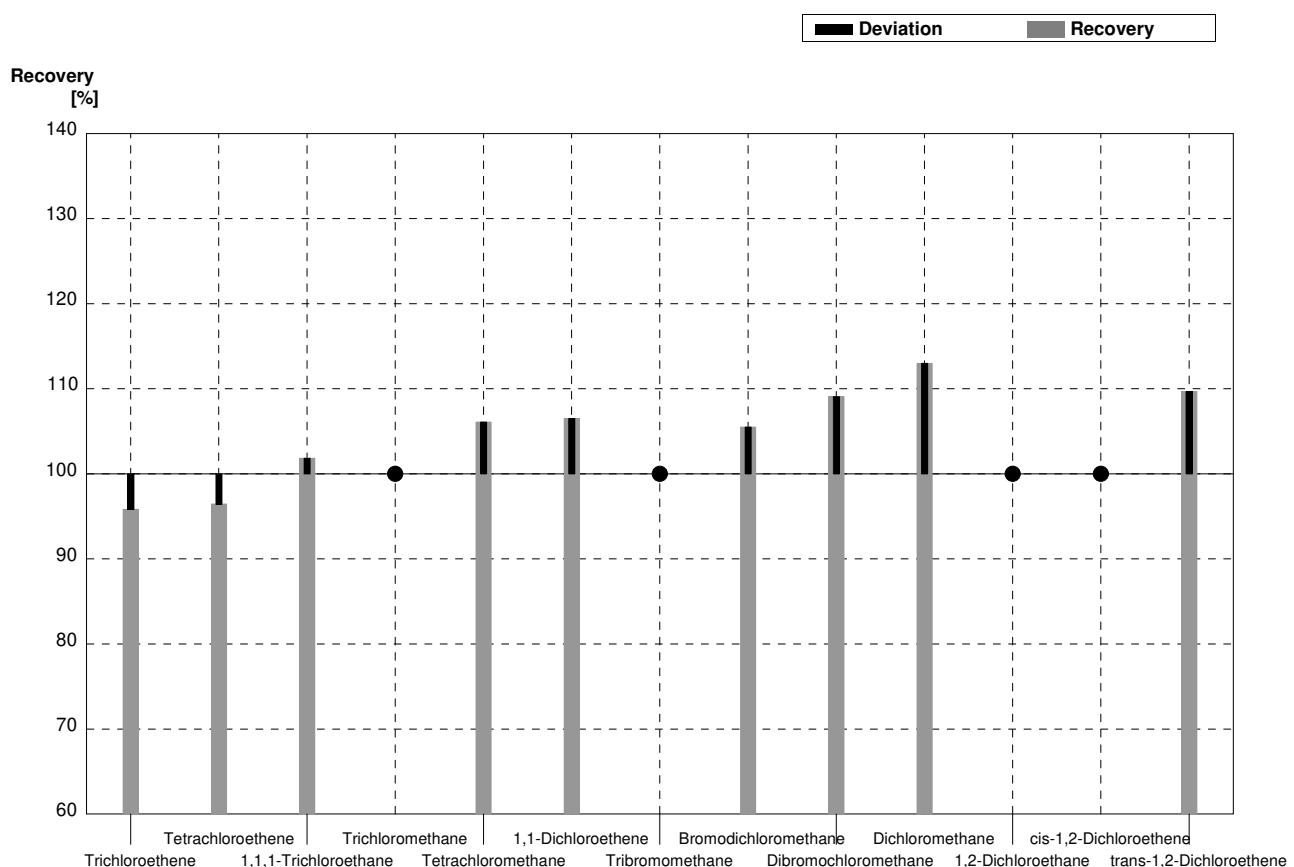
**Sample C64A**  
**Laboratory C**

Parameter	Target value	$\pm U$ ( $k=2$ )	Result	$\pm$	Unit	Recovery
Trichloroethene	4,01	0,20	3,71	0,74	$\mu\text{g/l}$	93%
Tetrachloroethene	3,12	0,16	2,98	0,60	$\mu\text{g/l}$	96%
1,1,1-Trichloroethane	1,88	0,10	1,87	0,37	$\mu\text{g/l}$	99%
Trichloromethane	2,74	0,14	2,65	0,53	$\mu\text{g/l}$	97%
Tetrachloromethane	2,31	0,12	2,30	0,46	$\mu\text{g/l}$	100%
1,1-Dichloroethene	2,32	0,12	2,38	0,48	$\mu\text{g/l}$	103%
Tribromomethane	2,27	0,12	2,51	0,50	$\mu\text{g/l}$	111%
Bromodichloromethane	0,476	0,031	0,475	0,10	$\mu\text{g/l}$	100%
Dibromochloromethane	1,90	0,10	1,92	0,38	$\mu\text{g/l}$	101%
Dichloromethane	5,96	0,30	6,54	1,31	$\mu\text{g/l}$	110%
1,2-Dichloroethane	3,73	0,21	4,05	0,81	$\mu\text{g/l}$	109%
cis-1,2-Dichloroethene	1,23	0,07	1,18	0,24	$\mu\text{g/l}$	96%
trans-1,2-Dichloroethene	3,75	0,19	4,07	0,81	$\mu\text{g/l}$	109%



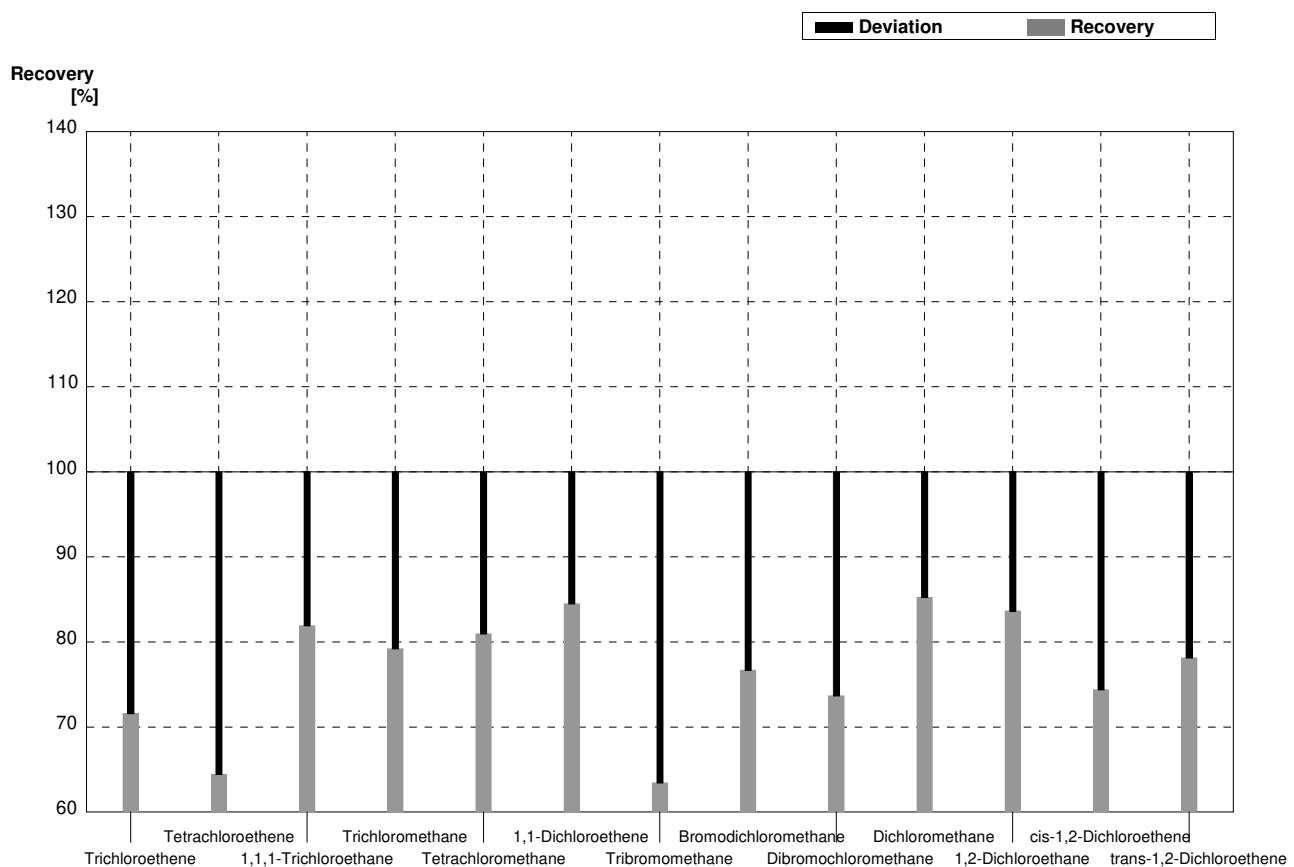
**Sample C64B**  
**Laboratory C**

Parameter	Target value	$\pm U$ ( $k=2$ )	Result	$\pm$	Unit	Recovery
Trichloroethene	1,20	0,06	1,15	0,23	$\mu\text{g/l}$	96%
Tetrachloroethene	1,41	0,07	1,36	0,27	$\mu\text{g/l}$	96%
1,1,1-Trichloroethane	0,71	0,04	0,723	0,145	$\mu\text{g/l}$	102%
Trichloromethane	<0,1		<0,1		$\mu\text{g/l}$	•
Tetrachloromethane	1,15	0,06	1,22	0,24	$\mu\text{g/l}$	106%
1,1-Dichloroethene	0,398	0,027	0,424	0,085	$\mu\text{g/l}$	107%
Tribromomethane	<0,1		<0,1		$\mu\text{g/l}$	•
Bromodichloromethane	0,78	0,04	0,823	0,165	$\mu\text{g/l}$	106%
Dibromochloromethane	0,76	0,04	0,829	0,166	$\mu\text{g/l}$	109%
Dichloromethane	1,23	0,07	1,39	0,28	$\mu\text{g/l}$	113%
1,2-Dichloroethane	<0,4		<0,5		$\mu\text{g/l}$	•
cis-1,2-Dichloroethene	0,398	0,032	<0,5		$\mu\text{g/l}$	•
trans-1,2-Dichloroethene	1,24	0,06	1,36	0,27	$\mu\text{g/l}$	110%



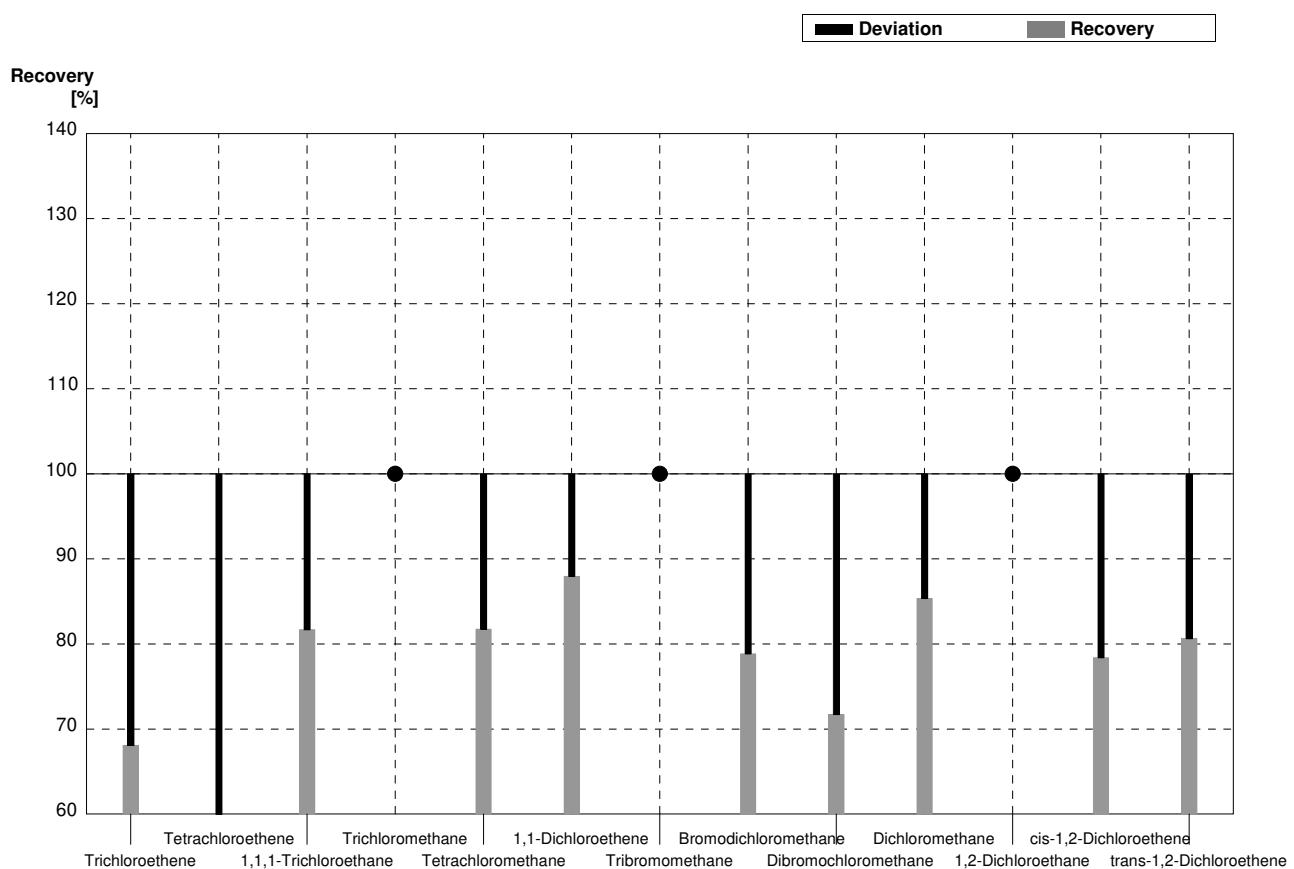
**Sample C64A**  
**Laboratory D**

Parameter	Target value	$\pm U$ ( $k=2$ )	Result	$\pm$	Unit	Recovery
Trichloroethene	4,01	0,20	2,87	0,011	$\mu\text{g/l}$	72%
Tetrachloroethene	3,12	0,16	2,01	0,017	$\mu\text{g/l}$	64%
1,1,1-Trichloroethane	1,88	0,10	1,54	0,016	$\mu\text{g/l}$	82%
Trichloromethane	2,74	0,14	2,17	0,014	$\mu\text{g/l}$	79%
Tetrachloromethane	2,31	0,12	1,87	0,013	$\mu\text{g/l}$	81%
1,1-Dichloroethene	2,32	0,12	1,96	0,015	$\mu\text{g/l}$	84%
Tribromomethane	2,27	0,12	1,44	0,029	$\mu\text{g/l}$	63%
Bromodichloromethane	0,476	0,031	0,365	0,005	$\mu\text{g/l}$	77%
Dibromochloromethane	1,90	0,10	1,40	0,034	$\mu\text{g/l}$	74%
Dichloromethane	5,96	0,30	5,08	0,061	$\mu\text{g/l}$	85%
1,2-Dichloroethane	3,73	0,21	3,12	0,033	$\mu\text{g/l}$	84%
cis-1,2-Dichloroethene	1,23	0,07	0,915	0,009	$\mu\text{g/l}$	74%
trans-1,2-Dichloroethene	3,75	0,19	2,93	0,016	$\mu\text{g/l}$	78%



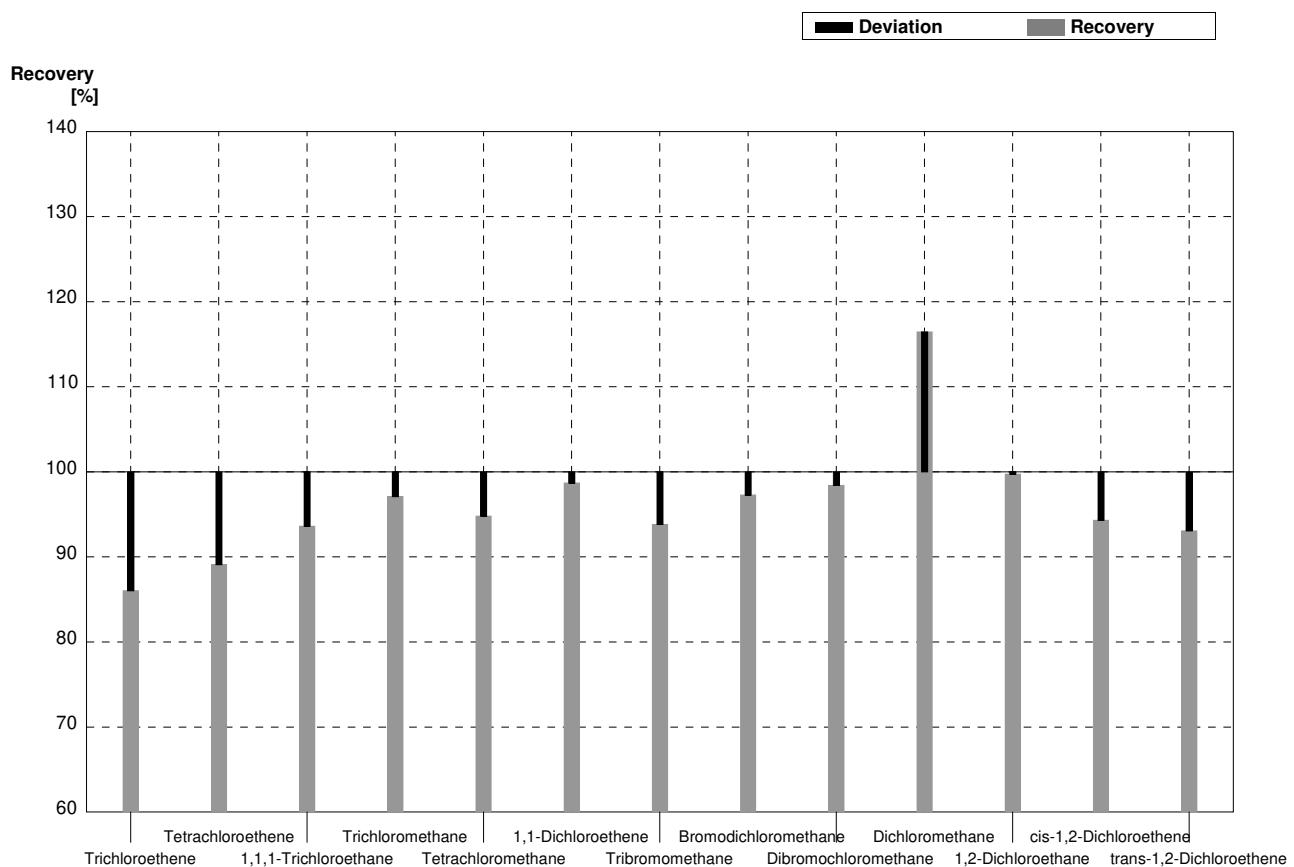
**Sample C64B**  
**Laboratory D**

Parameter	Target value	$\pm U$ ( $k=2$ )	Result	$\pm$	Unit	Recovery
Trichloroethene	1,20	0,06	0,817	0,005	$\mu\text{g/l}$	68%
Tetrachloroethene	1,41	0,07	0,829	0,009	$\mu\text{g/l}$	59%
1,1,1-Trichloroethane	0,71	0,04	0,580	0,006	$\mu\text{g/l}$	82%
Trichloromethane	<0,1		<0,10		$\mu\text{g/l}$	•
Tetrachloromethane	1,15	0,06	0,940	0,008	$\mu\text{g/l}$	82%
1,1-Dichloroethene	0,398	0,027	0,350	0,001	$\mu\text{g/l}$	88%
Tribromomethane	<0,1		<0,10		$\mu\text{g/l}$	•
Bromodichloromethane	0,78	0,04	0,615	0,007	$\mu\text{g/l}$	79%
Dibromochloromethane	0,76	0,04	0,545	0,004	$\mu\text{g/l}$	72%
Dichloromethane	1,23	0,07	1,05	0,011	$\mu\text{g/l}$	85%
1,2-Dichloroethane	<0,4		<0,10		$\mu\text{g/l}$	•
cis-1,2-Dichloroethene	0,398	0,032	0,312	0,001	$\mu\text{g/l}$	78%
trans-1,2-Dichloroethene	1,24	0,06	1,00	0,006	$\mu\text{g/l}$	81%



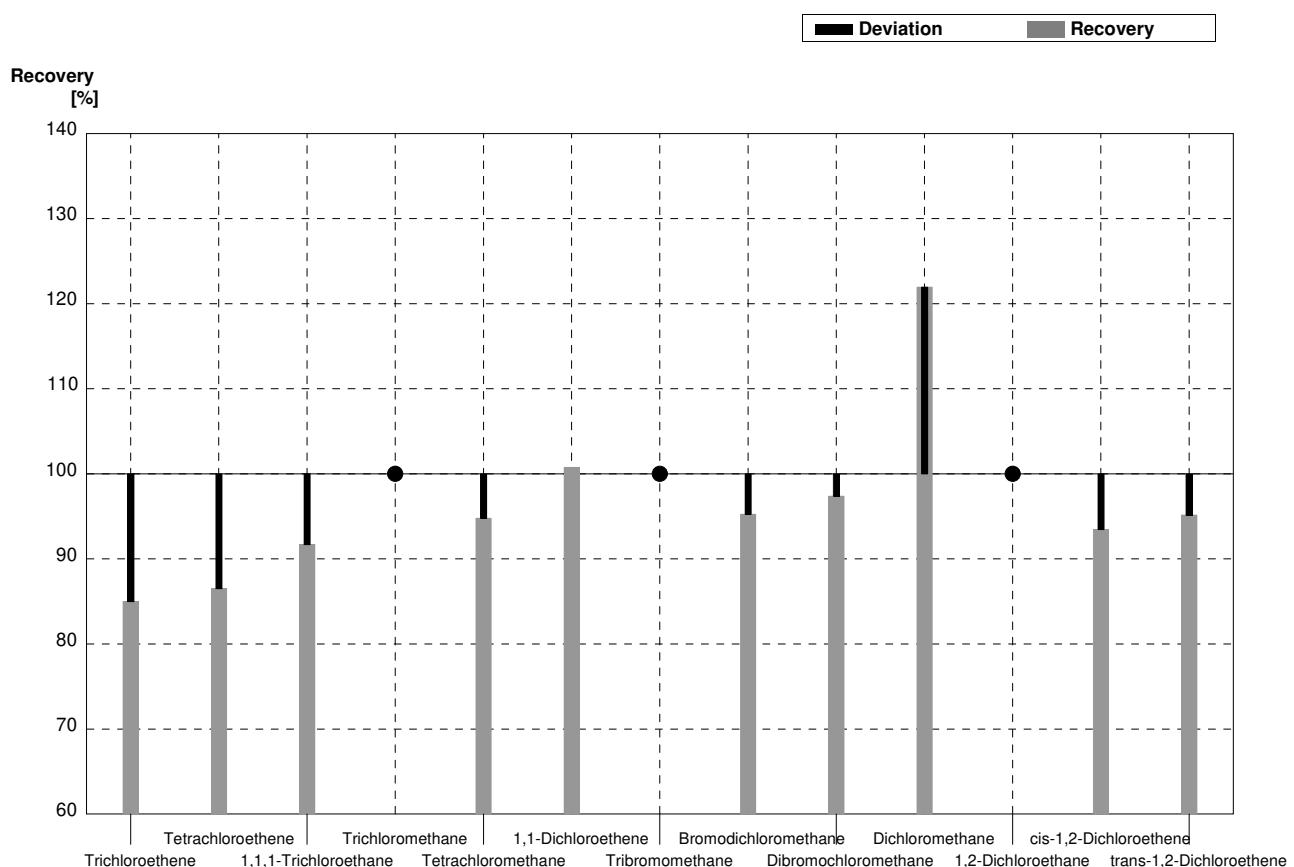
**Sample C64A**  
**Laboratory E**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Trichloroethene	4,01	0,20	3,45	0,79	µg/l	86%
Tetrachloroethene	3,12	0,16	2,78	0,90	µg/l	89%
1,1,1-Trichloroethane	1,88	0,10	1,76	0,37	µg/l	94%
Trichloromethane	2,74	0,14	2,66	0,68	µg/l	97%
Tetrachloromethane	2,31	0,12	2,19	0,41	µg/l	95%
1,1-Dichloroethene	2,32	0,12	2,29	0,58	µg/l	99%
Tribromomethane	2,27	0,12	2,13	0,46	µg/l	94%
Bromodichloromethane	0,476	0,031	0,463	0,116	µg/l	97%
Dibromochloromethane	1,90	0,10	1,87	0,48	µg/l	98%
Dichloromethane	5,96	0,30	6,94	1,74	µg/l	116%
1,2-Dichloroethane	3,73	0,21	3,72	0,88	µg/l	100%
cis-1,2-Dichloroethene	1,23	0,07	1,16	0,20	µg/l	94%
trans-1,2-Dichloroethene	3,75	0,19	3,49	0,78	µg/l	93%



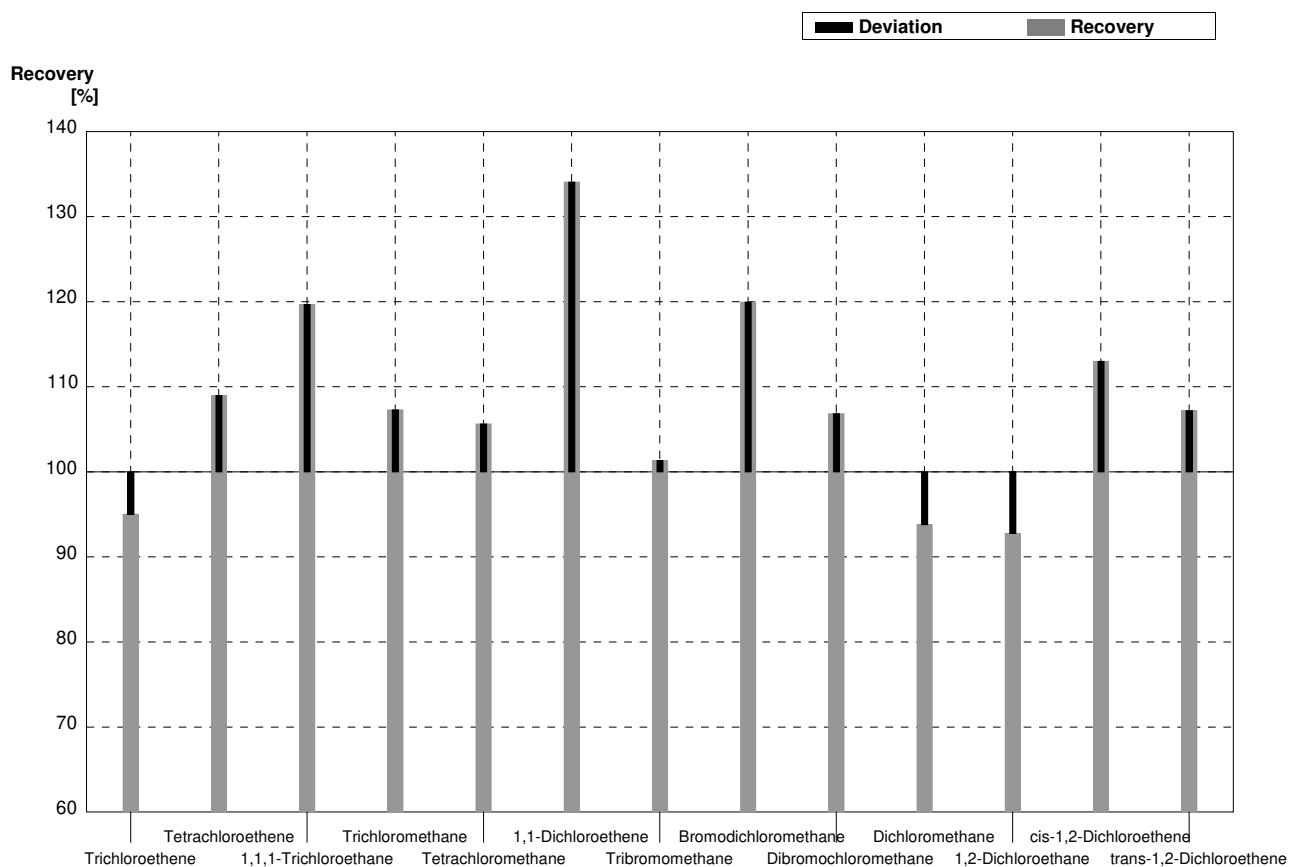
**Sample C64B**  
**Laboratory E**

Parameter	Target value	$\pm U$ ( $k=2$ )	Result	$\pm$	Unit	Recovery
Trichloroethene	1,20	0,06	1,02	0,23	$\mu\text{g/l}$	85%
Tetrachloroethene	1,41	0,07	1,22	0,39	$\mu\text{g/l}$	87%
1,1,1-Trichloroethane	0,71	0,04	0,651	0,137	$\mu\text{g/l}$	92%
Trichloromethane	<0,1		<0,020		$\mu\text{g/l}$	•
Tetrachloromethane	1,15	0,06	1,09	0,21	$\mu\text{g/l}$	95%
1,1-Dichloroethene	0,398	0,027	0,401	0,101	$\mu\text{g/l}$	101%
Tribromomethane	<0,1		<0,020		$\mu\text{g/l}$	•
Bromodichloromethane	0,78	0,04	0,743	0,187	$\mu\text{g/l}$	95%
Dibromochloromethane	0,76	0,04	0,740	0,189	$\mu\text{g/l}$	97%
Dichloromethane	1,23	0,07	1,50	0,38	$\mu\text{g/l}$	122%
1,2-Dichloroethane	<0,4		<0,020		$\mu\text{g/l}$	•
cis-1,2-Dichloroethene	0,398	0,032	0,372	0,063	$\mu\text{g/l}$	93%
trans-1,2-Dichloroethene	1,24	0,06	1,18	0,26	$\mu\text{g/l}$	95%



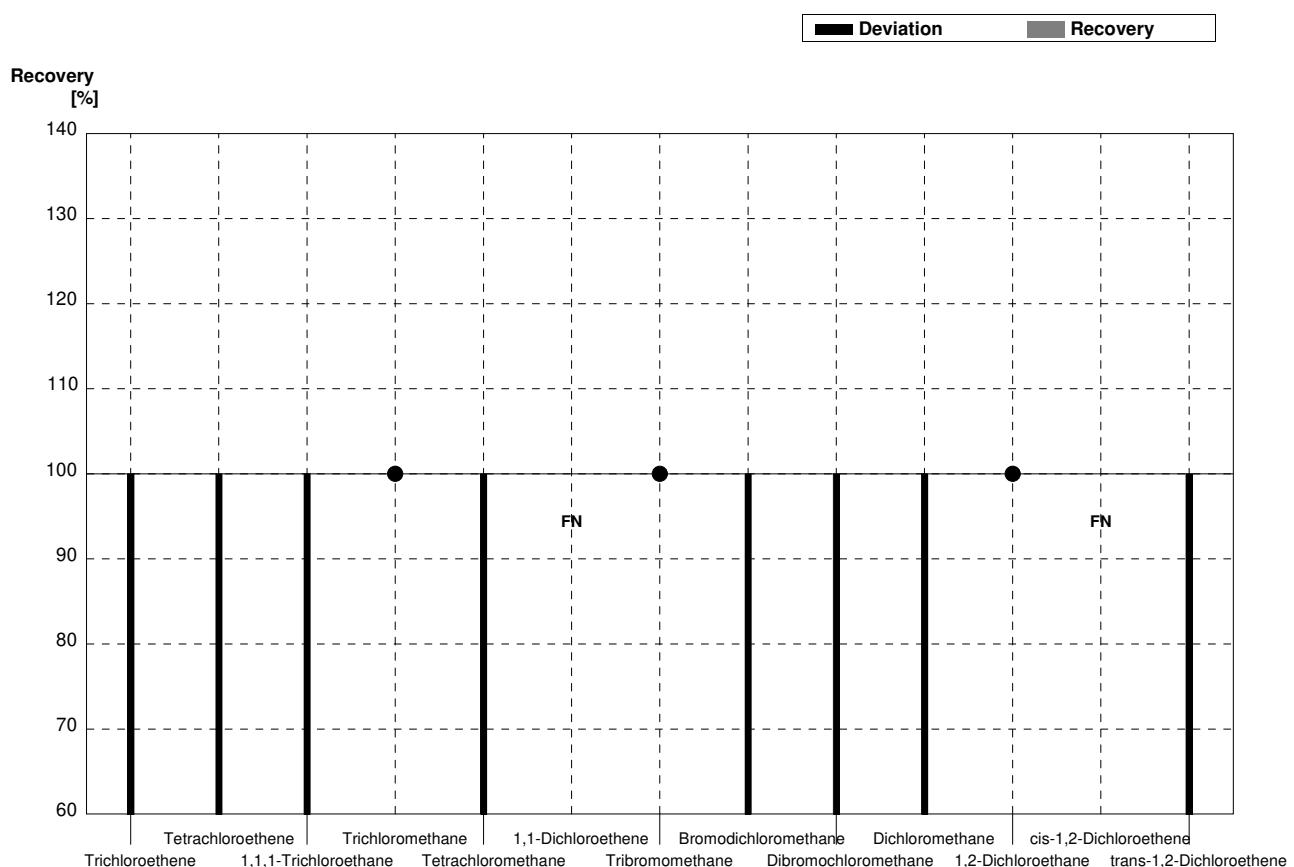
**Sample C64A**  
**Laboratory F**

Parameter	Target value	$\pm U$ ( $k=2$ )	Result	$\pm$	Unit	Recovery
Trichloroethene	4,01	0,20	3,81	0,99	$\mu\text{g/l}$	95%
Tetrachloroethene	3,12	0,16	3,40	0,88	$\mu\text{g/l}$	109%
1,1,1-Trichloroethane	1,88	0,10	2,25	0,58	$\mu\text{g/l}$	120%
Trichloromethane	2,74	0,14	2,94	0,76	$\mu\text{g/l}$	107%
Tetrachloromethane	2,31	0,12	2,44	0,63	$\mu\text{g/l}$	106%
1,1-Dichloroethene	2,32	0,12	3,11	0,81	$\mu\text{g/l}$	134%
Tribromomethane	2,27	0,12	2,30	0,60	$\mu\text{g/l}$	101%
Bromodichloromethane	0,476	0,031	0,571	0,15	$\mu\text{g/l}$	120%
Dibromochloromethane	1,90	0,10	2,03	0,53	$\mu\text{g/l}$	107%
Dichloromethane	5,96	0,30	5,59	1,45	$\mu\text{g/l}$	94%
1,2-Dichloroethane	3,73	0,21	3,46	0,90	$\mu\text{g/l}$	93%
cis-1,2-Dichloroethene	1,23	0,07	1,39	0,36	$\mu\text{g/l}$	113%
trans-1,2-Dichloroethene	3,75	0,19	4,02	1,05	$\mu\text{g/l}$	107%



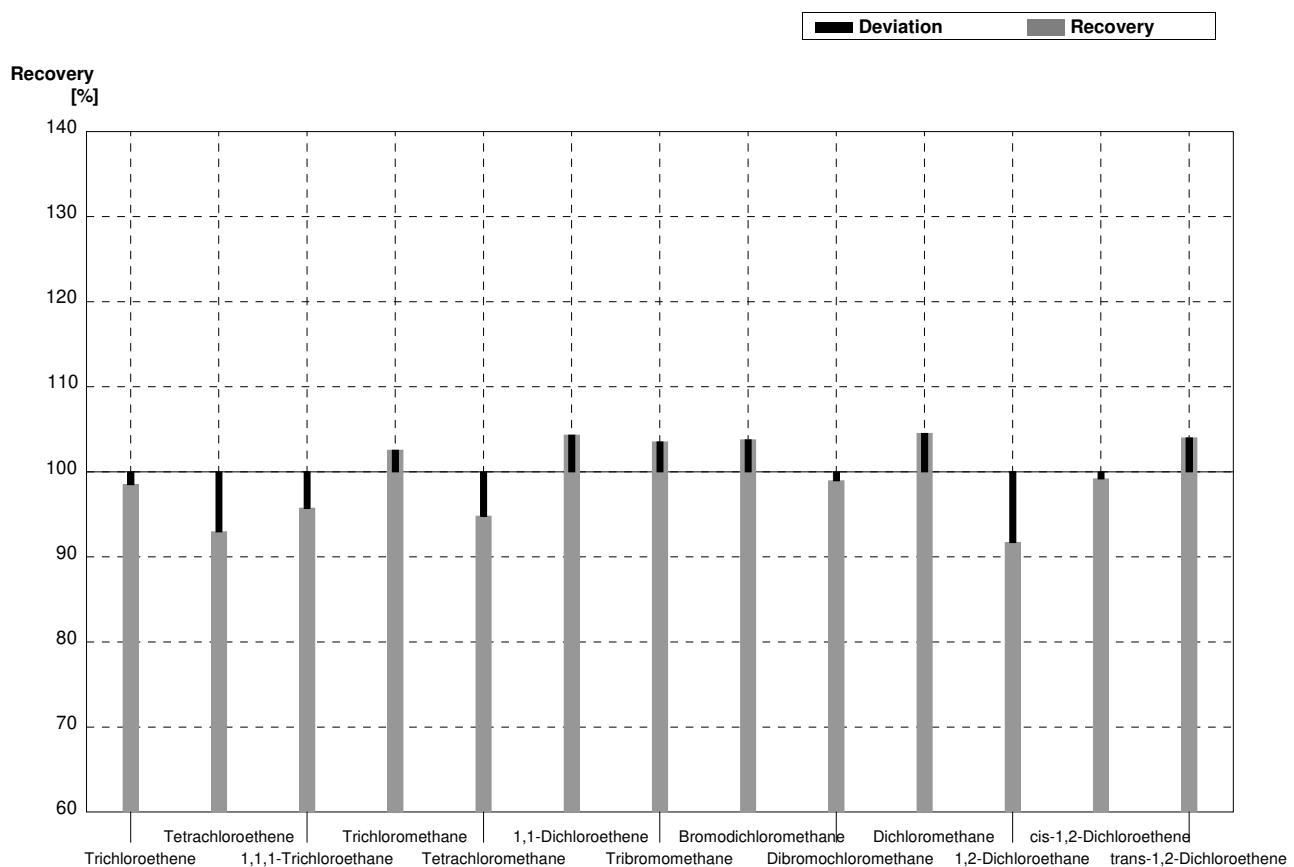
**Sample C64B**  
**Laboratory F**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Trichloroethene	1,20	0,06	0,224		µg/l	19%
Tetrachloroethene	1,41	0,07	0,296		µg/l	21%
1,1,1-Trichloroethane	0,71	0,04	0,157		µg/l	22%
Trichloromethane	<0,1		<0,1		µg/l	•
Tetrachloromethane	1,15	0,06	0,256		µg/l	22%
1,1-Dichloroethene	0,398	0,027	<0,1		µg/l	FN
Tribromomethane	<0,1		<0,1		µg/l	•
Bromodichloromethane	0,78	0,04	0,190		µg/l	24%
Dibromochloromethane	0,76	0,04	0,206		µg/l	27%
Dichloromethane	1,23	0,07	0,623		µg/l	51%
1,2-Dichloroethane	<0,4		<0,1		µg/l	•
cis-1,2-Dichloroethene	0,398	0,032	<0,1		µg/l	FN
trans-1,2-Dichloroethene	1,24	0,06	0,296		µg/l	24%



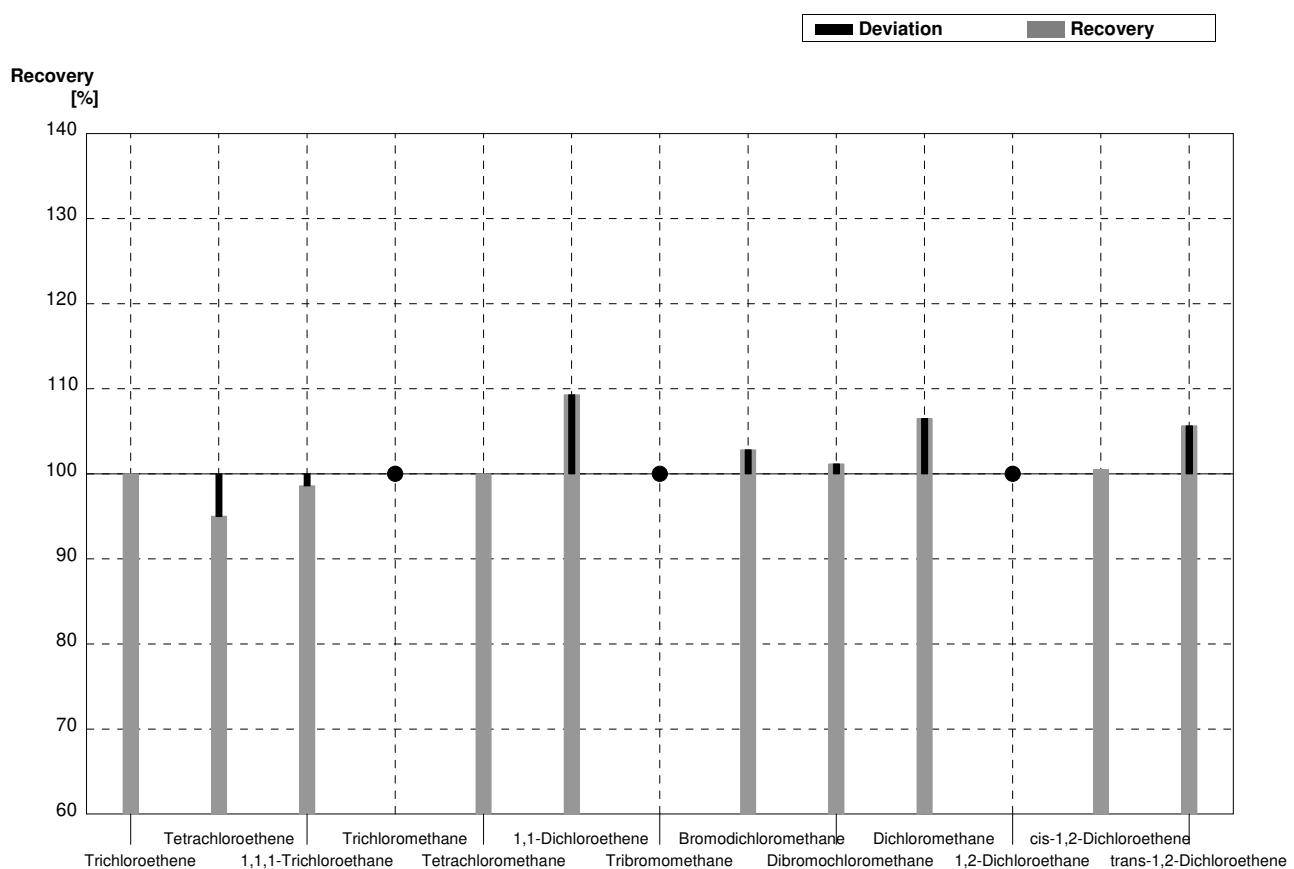
**Sample C64A**  
**Laboratory G**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Trichloroethene	4,01	0,20	3,95	0,28	µg/l	99%
Tetrachloroethene	3,12	0,16	2,90	0,24	µg/l	93%
1,1,1-Trichloroethane	1,88	0,10	1,80	0,34	µg/l	96%
Trichloromethane	2,74	0,14	2,81	0,56	µg/l	103%
Tetrachloromethane	2,31	0,12	2,19	0,55	µg/l	95%
1,1-Dichloroethene	2,32	0,12	2,42	0,47	µg/l	104%
Tribromomethane	2,27	0,12	2,35	0,59	µg/l	104%
Bromodichloromethane	0,476	0,031	0,494	0,12	µg/l	104%
Dibromochloromethane	1,90	0,10	1,88	0,47	µg/l	99%
Dichloromethane	5,96	0,30	6,23	1,6	µg/l	105%
1,2-Dichloroethane	3,73	0,21	3,42	0,83	µg/l	92%
cis-1,2-Dichloroethene	1,23	0,07	1,22	0,23	µg/l	99%
trans-1,2-Dichloroethene	3,75	0,19	3,90	0,78	µg/l	104%



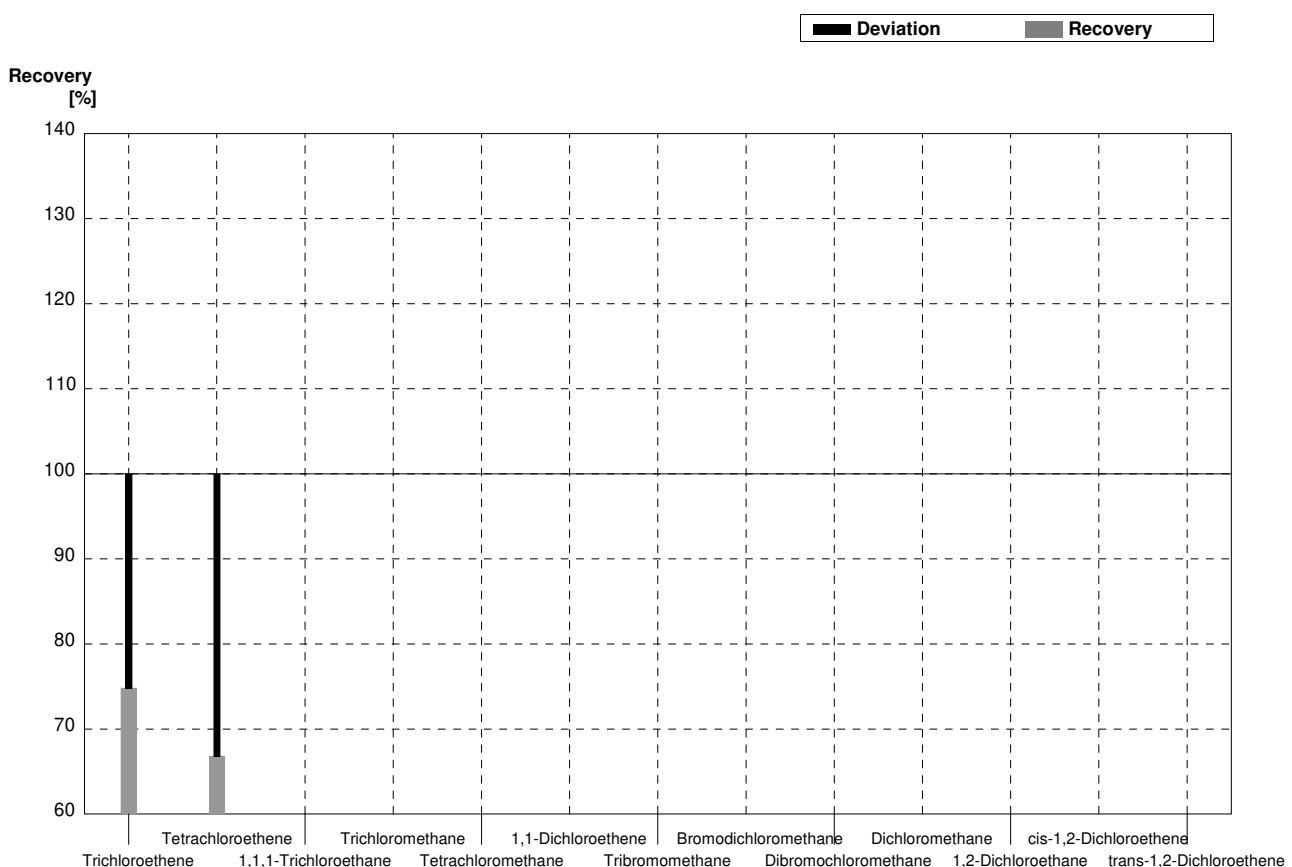
**Sample C64B**  
**Laboratory G**

Parameter	Target value	$\pm U$ ( $k=2$ )	Result	$\pm$	Unit	Recovery
Trichloroethene	1,20	0,06	1,20	0,086	$\mu\text{g/l}$	100%
Tetrachloroethene	1,41	0,07	1,34	0,11	$\mu\text{g/l}$	95%
1,1,1-Trichloroethane	0,71	0,04	0,700	0,13	$\mu\text{g/l}$	99%
Trichloromethane	<0,1		<0,10		$\mu\text{g/l}$	•
Tetrachloromethane	1,15	0,06	1,15	0,29	$\mu\text{g/l}$	100%
1,1-Dichloroethene	0,398	0,027	0,435	0,085	$\mu\text{g/l}$	109%
Tribromomethane	<0,1		<0,10		$\mu\text{g/l}$	•
Bromodichloromethane	0,78	0,04	0,802	0,20	$\mu\text{g/l}$	103%
Dibromochloromethane	0,76	0,04	0,769	0,19	$\mu\text{g/l}$	101%
Dichloromethane	1,23	0,07	1,31	0,33	$\mu\text{g/l}$	107%
1,2-Dichloroethane	<0,4		<0,10		$\mu\text{g/l}$	•
cis-1,2-Dichloroethene	0,398	0,032	0,400	0,074	$\mu\text{g/l}$	101%
trans-1,2-Dichloroethene	1,24	0,06	1,31	0,26	$\mu\text{g/l}$	106%



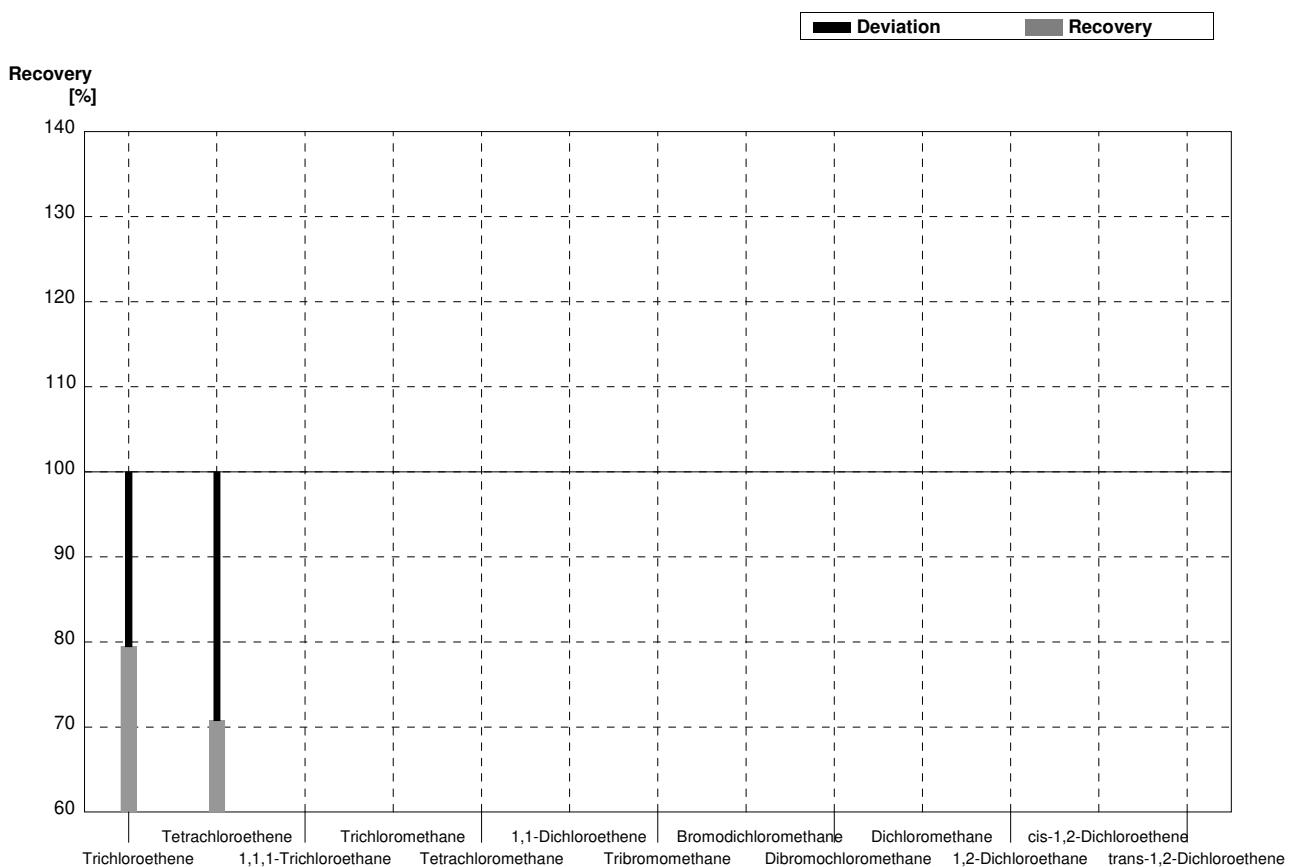
**Sample C64A**  
**Laboratory H**

Parameter	Target value	$\pm U$ ( $k=2$ )	Result	$\pm$	Unit	Recovery
Trichloroethene	4,01	0,20	2,99975	0,84203	$\mu\text{g/l}$	75%
Tetrachloroethene	3,12	0,16	2,08385	0,75769	$\mu\text{g/l}$	67%
1,1,1-Trichloroethane	1,88	0,10			$\mu\text{g/l}$	
Trichloromethane	2,74	0,14			$\mu\text{g/l}$	
Tetrachloromethane	2,31	0,12			$\mu\text{g/l}$	
1,1-Dichloroethene	2,32	0,12			$\mu\text{g/l}$	
Tribromomethane	2,27	0,12			$\mu\text{g/l}$	
Bromodichloromethane	0,476	0,031			$\mu\text{g/l}$	
Dibromochloromethane	1,90	0,10			$\mu\text{g/l}$	
Dichloromethane	5,96	0,30			$\mu\text{g/l}$	
1,2-Dichloroethane	3,73	0,21			$\mu\text{g/l}$	
cis-1,2-Dichloroethene	1,23	0,07			$\mu\text{g/l}$	
trans-1,2-Dichloroethene	3,75	0,19			$\mu\text{g/l}$	



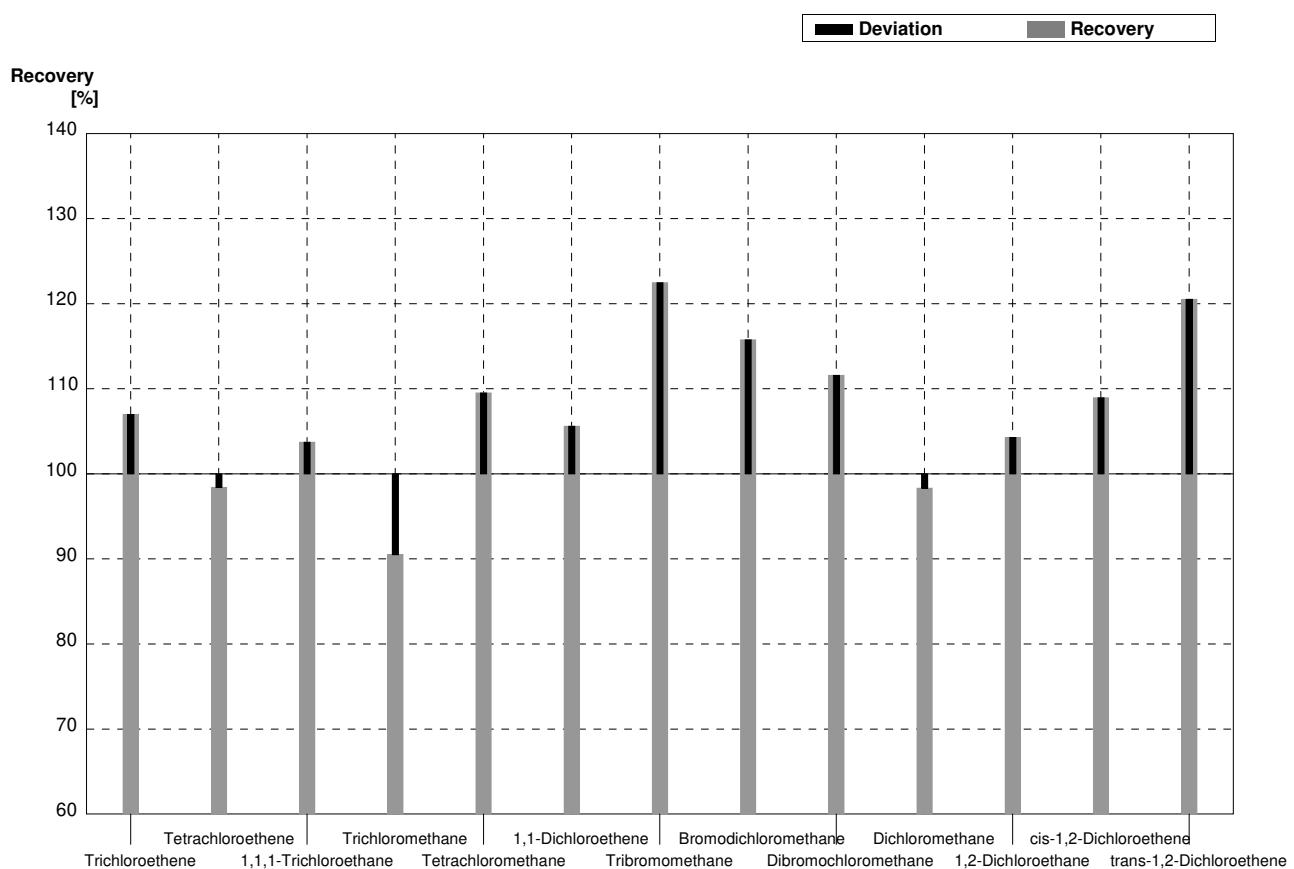
**Sample C64B**  
**Laboratory H**

Parameter	Target value	$\pm U$ ( $k=2$ )	Result	$\pm$	Unit	Recovery
Trichloroethene	1,20	0,06	0,95356	0,26766	$\mu\text{g/l}$	79%
Tetrachloroethene	1,41	0,07	0,99792	0,36314	$\mu\text{g/l}$	71%
1,1,1-Trichloroethane	0,71	0,04			$\mu\text{g/l}$	
Trichloromethane	<0,1				$\mu\text{g/l}$	
Tetrachloromethane	1,15	0,06			$\mu\text{g/l}$	
1,1-Dichloroethene	0,398	0,027			$\mu\text{g/l}$	
Tribromomethane	<0,1				$\mu\text{g/l}$	
Bromodichloromethane	0,78	0,04			$\mu\text{g/l}$	
Dibromochloromethane	0,76	0,04			$\mu\text{g/l}$	
Dichloromethane	1,23	0,07			$\mu\text{g/l}$	
1,2-Dichloroethane	<0,4				$\mu\text{g/l}$	
cis-1,2-Dichloroethene	0,398	0,032			$\mu\text{g/l}$	
trans-1,2-Dichloroethene	1,24	0,06			$\mu\text{g/l}$	



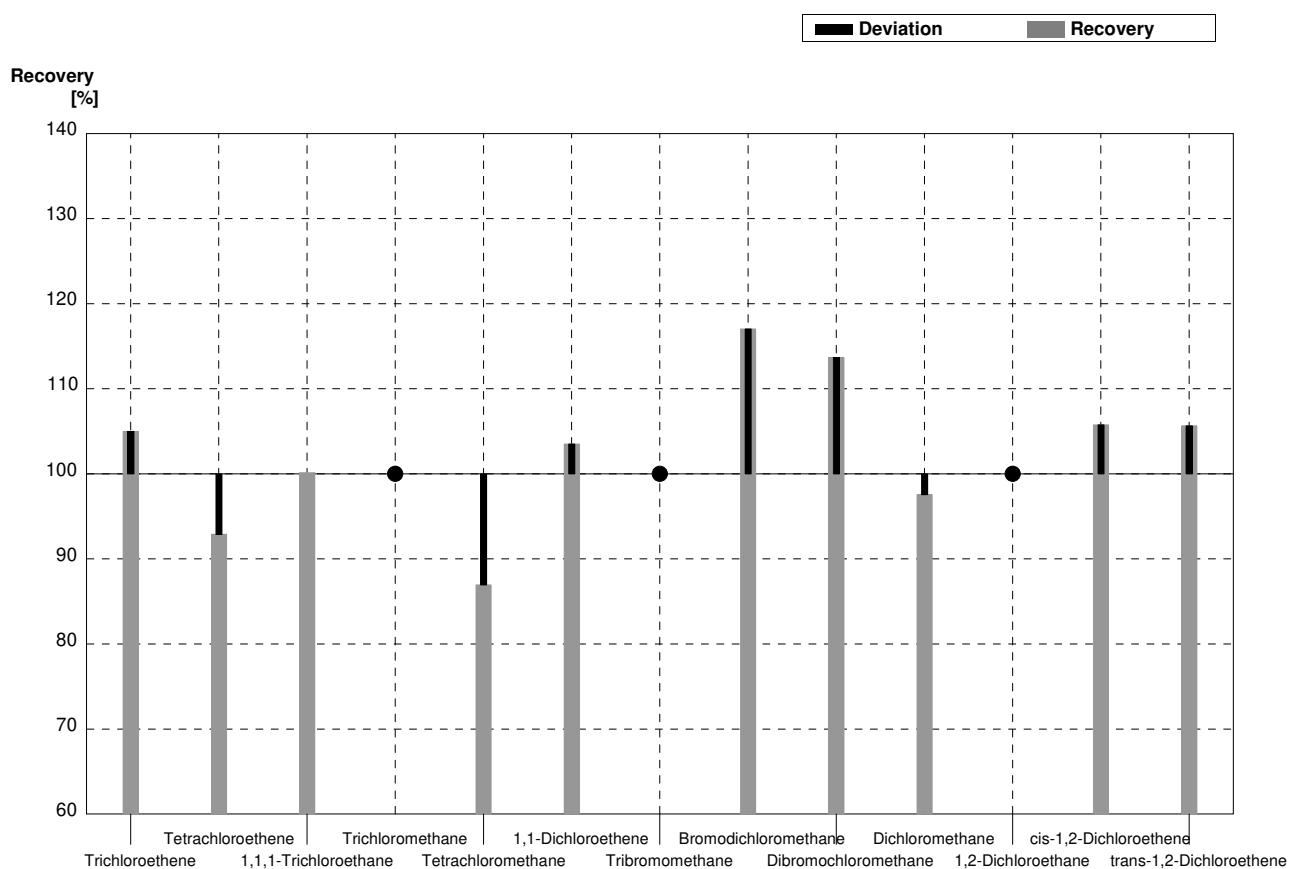
**Sample C64A**  
**Laboratory I**

Parameter	Target value	$\pm U$ ( $k=2$ )	Result	$\pm$	Unit	Recovery
Trichloroethene	4,01	0,20	4,29	0,218	$\mu\text{g/l}$	107%
Tetrachloroethene	3,12	0,16	3,07	0,148	$\mu\text{g/l}$	98%
1,1,1-Trichloroethane	1,88	0,10	1,95	0,102	$\mu\text{g/l}$	104%
Trichloromethane	2,74	0,14	2,48	0,083	$\mu\text{g/l}$	91%
Tetrachloromethane	2,31	0,12	2,53	0,079	$\mu\text{g/l}$	110%
1,1-Dichloroethene	2,32	0,12	2,45	0,13	$\mu\text{g/l}$	106%
Tribromomethane	2,27	0,12	2,78	0,071	$\mu\text{g/l}$	122%
Bromodichloromethane	0,476	0,031	0,551	0,077	$\mu\text{g/l}$	116%
Dibromochloromethane	1,90	0,10	2,12	0,108	$\mu\text{g/l}$	112%
Dichloromethane	5,96	0,30	5,86	0,354	$\mu\text{g/l}$	98%
1,2-Dichloroethane	3,73	0,21	3,89	0,255	$\mu\text{g/l}$	104%
cis-1,2-Dichloroethene	1,23	0,07	1,34	0,084	$\mu\text{g/l}$	109%
trans-1,2-Dichloroethene	3,75	0,19	4,52	0,284	$\mu\text{g/l}$	121%



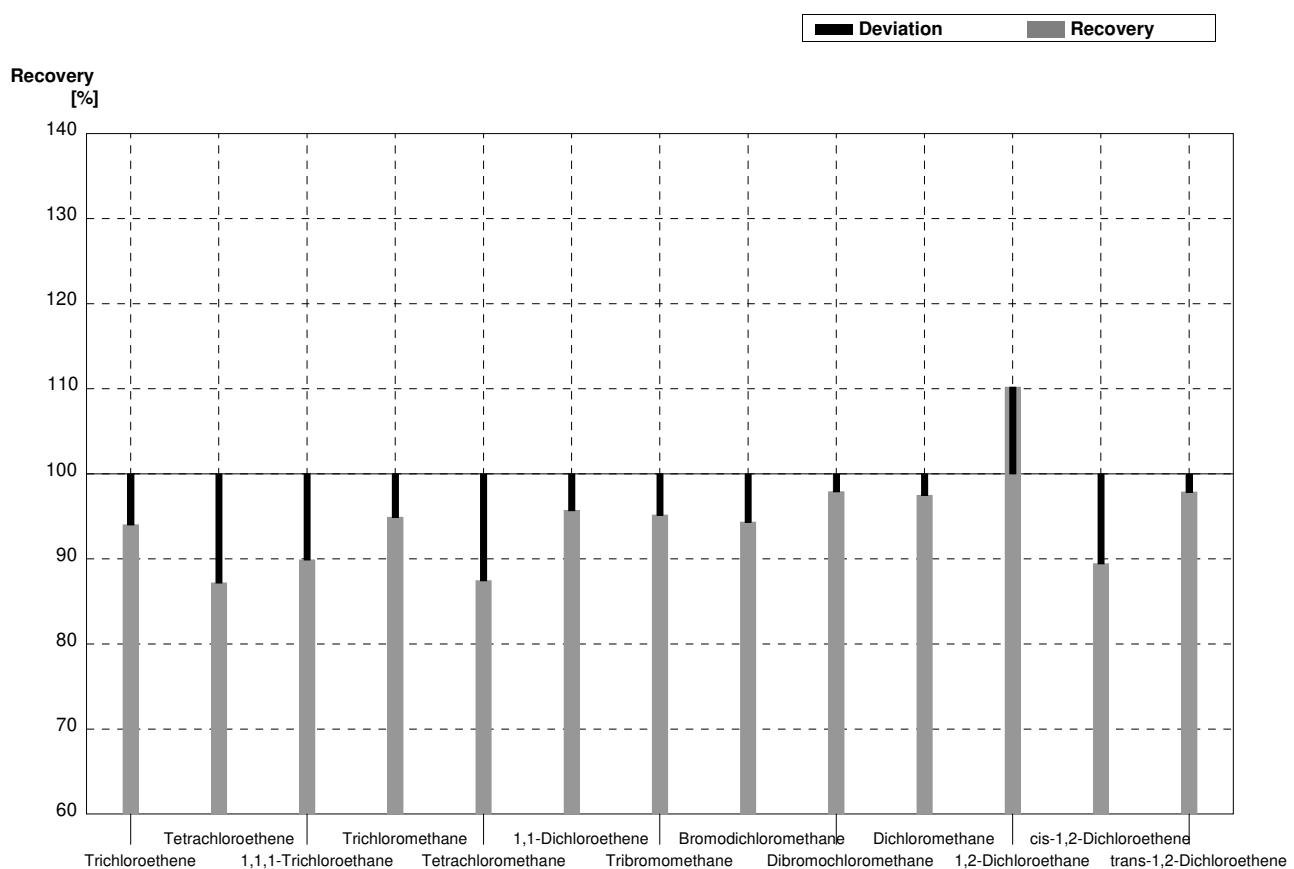
**Sample C64B**  
**Laboratory I**

Parameter	Target value	$\pm U$ ( $k=2$ )	Result	$\pm$	Unit	Recovery
Trichloroethene	1,20	0,06	1,26	0,104	$\mu\text{g/l}$	105%
Tetrachloroethene	1,41	0,07	1,31	0,1043	$\mu\text{g/l}$	93%
1,1,1-Trichloroethane	0,71	0,04	0,711	0,100	$\mu\text{g/l}$	100%
Trichloromethane	<0,1		<0,05		$\mu\text{g/l}$	•
Tetrachloromethane	1,15	0,06	1,00	0,087	$\mu\text{g/l}$	87%
1,1-Dichloroethene	0,398	0,027	0,412	0,014	$\mu\text{g/l}$	104%
Tribromomethane	<0,1		<0,05		$\mu\text{g/l}$	•
Bromodichloromethane	0,78	0,04	0,913	0,075	$\mu\text{g/l}$	117%
Dibromochloromethane	0,76	0,04	0,864	0,114	$\mu\text{g/l}$	114%
Dichloromethane	1,23	0,07	1,20	0,113	$\mu\text{g/l}$	98%
1,2-Dichloroethane	<0,4		<0,05		$\mu\text{g/l}$	•
cis-1,2-Dichloroethene	0,398	0,032	0,421	0,091	$\mu\text{g/l}$	106%
trans-1,2-Dichloroethene	1,24	0,06	1,31	0,093	$\mu\text{g/l}$	106%



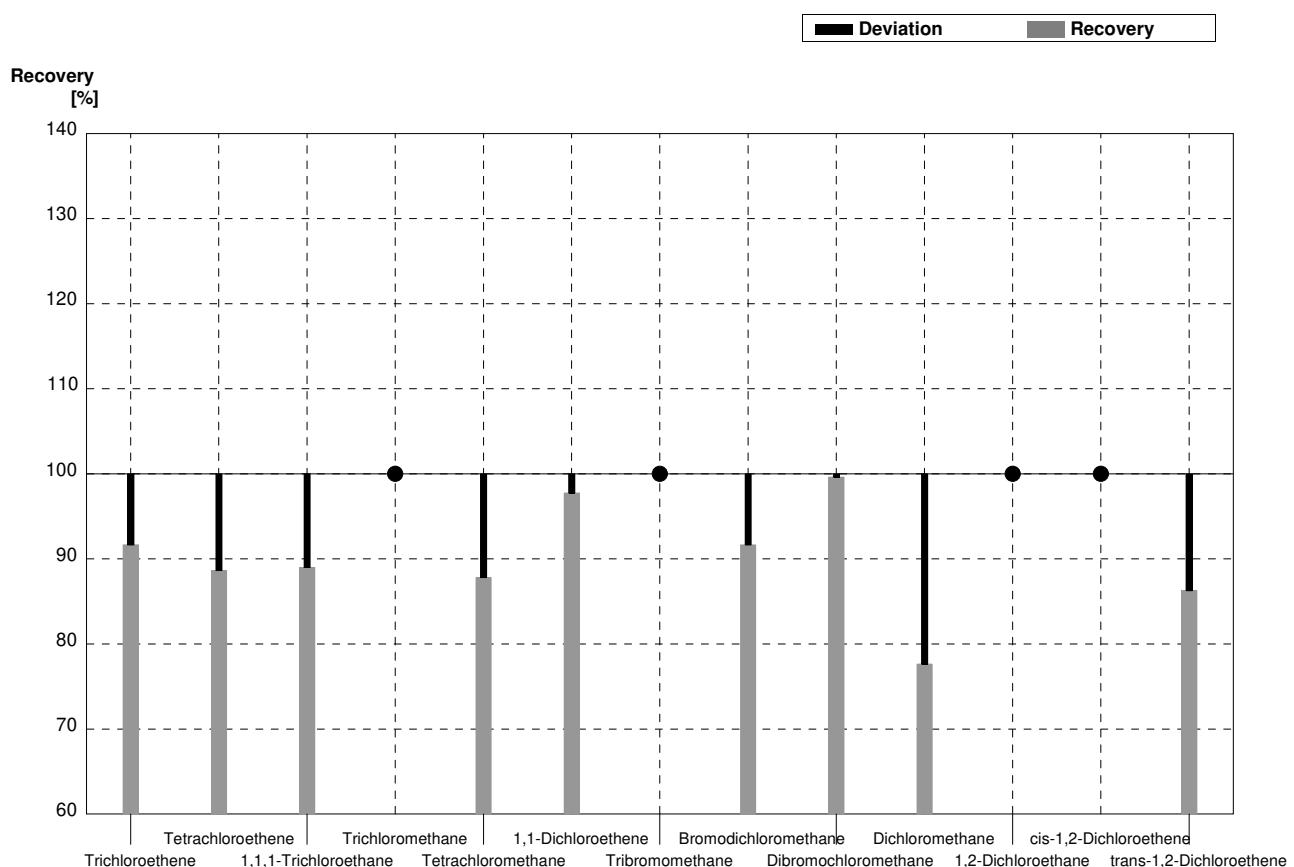
**Sample C64A**  
**Laboratory J**

Parameter	Target value	$\pm U$ ( $k=2$ )	Result	$\pm$	Unit	Recovery
Trichloroethene	4,01	0,20	3,77	0,57	$\mu\text{g/l}$	94%
Tetrachloroethene	3,12	0,16	2,72	0,41	$\mu\text{g/l}$	87%
1,1,1-Trichloroethane	1,88	0,10	1,69	0,25	$\mu\text{g/l}$	90%
Trichloromethane	2,74	0,14	2,60	0,39	$\mu\text{g/l}$	95%
Tetrachloromethane	2,31	0,12	2,02	0,30	$\mu\text{g/l}$	87%
1,1-Dichloroethene	2,32	0,12	2,22	0,33	$\mu\text{g/l}$	96%
Tribromomethane	2,27	0,12	2,16	0,32	$\mu\text{g/l}$	95%
Bromodichloromethane	0,476	0,031	0,449	0,067	$\mu\text{g/l}$	94%
Dibromochloromethane	1,90	0,10	1,86	0,28	$\mu\text{g/l}$	98%
Dichloromethane	5,96	0,30	5,81	0,87	$\mu\text{g/l}$	97%
1,2-Dichloroethane	3,73	0,21	4,11	0,62	$\mu\text{g/l}$	110%
cis-1,2-Dichloroethene	1,23	0,07	1,10	0,17	$\mu\text{g/l}$	89%
trans-1,2-Dichloroethene	3,75	0,19	3,67	0,55	$\mu\text{g/l}$	98%



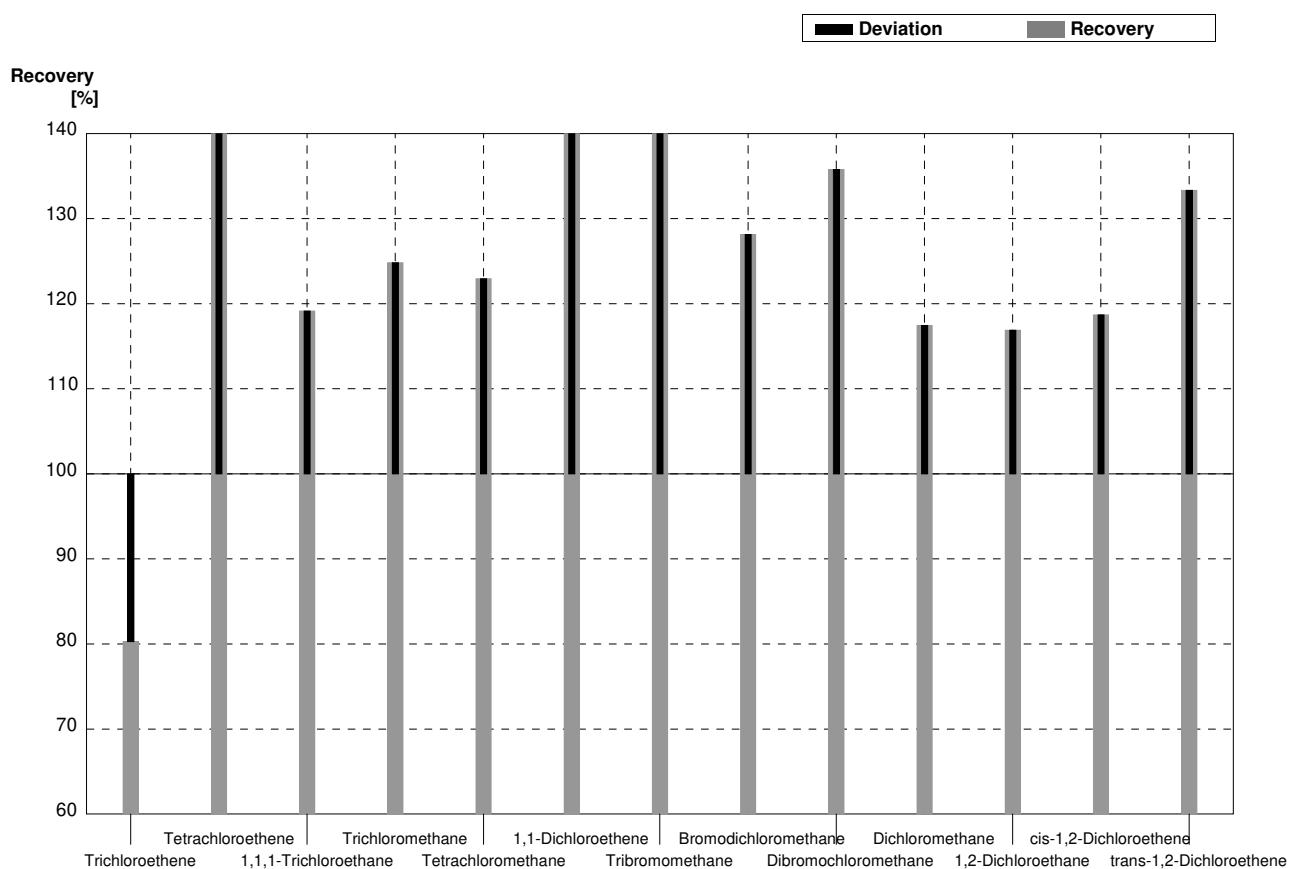
**Sample C64B**  
**Laboratory J**

Parameter	Target value	$\pm U$ ( $k=2$ )	Result	$\pm$	Unit	Recovery
Trichloroethene	1,20	0,06	1,10	0,17	$\mu\text{g/l}$	92%
Tetrachloroethene	1,41	0,07	1,25	0,19	$\mu\text{g/l}$	89%
1,1,1-Trichloroethane	0,71	0,04	0,632	0,095	$\mu\text{g/l}$	89%
Trichloromethane	<0,1		<0,1		$\mu\text{g/l}$	•
Tetrachloromethane	1,15	0,06	1,01	0,15	$\mu\text{g/l}$	88%
1,1-Dichloroethene	0,398	0,027	0,389	0,058	$\mu\text{g/l}$	98%
Tribromomethane	<0,1		<0,1		$\mu\text{g/l}$	•
Bromodichloromethane	0,78	0,04	0,715	0,107	$\mu\text{g/l}$	92%
Dibromochloromethane	0,76	0,04	0,757	0,114	$\mu\text{g/l}$	100%
Dichloromethane	1,23	0,07	0,955	0,143	$\mu\text{g/l}$	78%
1,2-Dichloroethane	<0,4		<0,5		$\mu\text{g/l}$	•
cis-1,2-Dichloroethene	0,398	0,032	<0,5		$\mu\text{g/l}$	•
trans-1,2-Dichloroethene	1,24	0,06	1,07	0,16	$\mu\text{g/l}$	86%



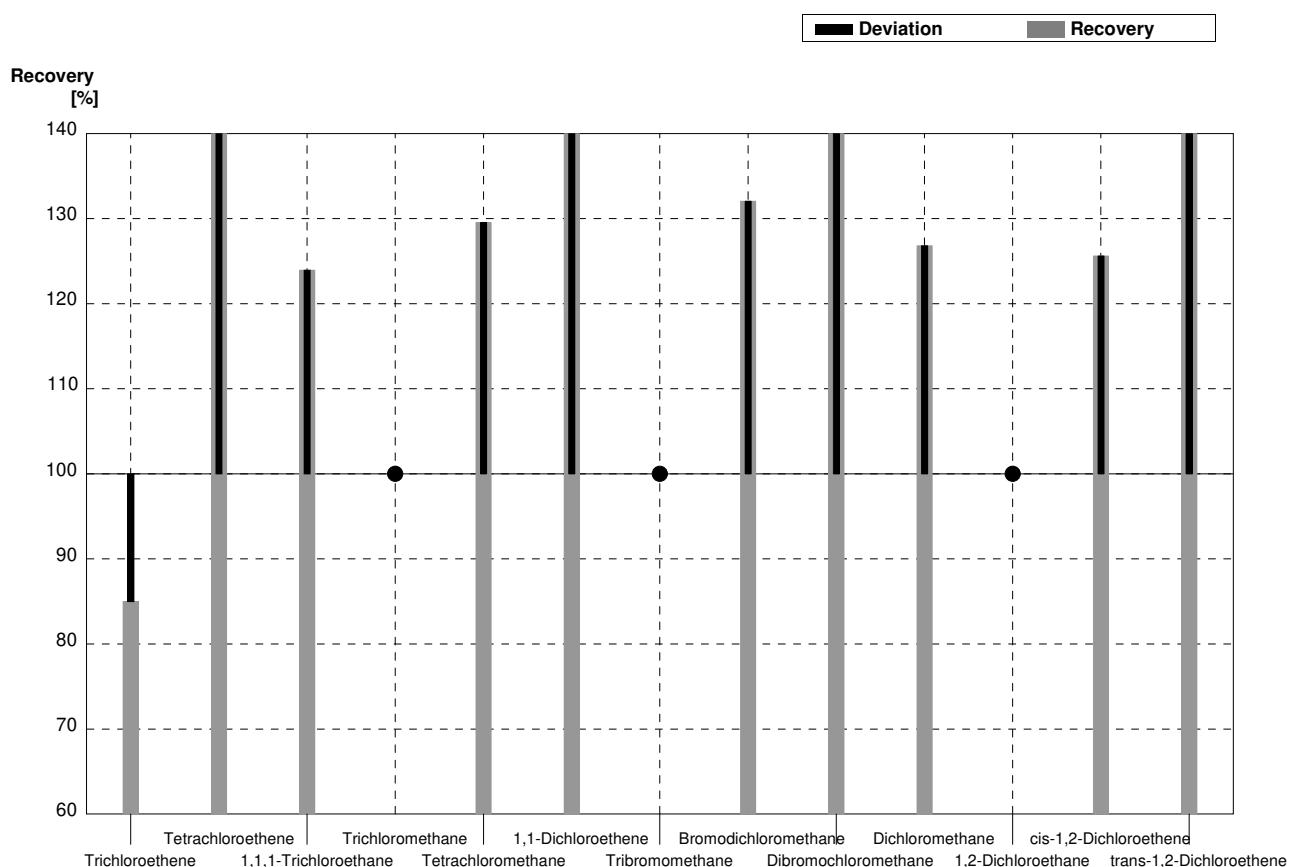
**Sample C64A**  
**Laboratory K**

Parameter	Target value	$\pm U$ ( $k=2$ )	Result	$\pm$	Unit	Recovery
Trichloroethene	4,01	0,20	3,22	0,59	$\mu\text{g/l}$	80%
Tetrachloroethene	3,12	0,16	4,50	0,88	$\mu\text{g/l}$	144%
1,1,1-Trichloroethane	1,88	0,10	2,24	0,45	$\mu\text{g/l}$	119%
Trichloromethane	2,74	0,14	3,42	0,64	$\mu\text{g/l}$	125%
Tetrachloromethane	2,31	0,12	2,84	0,31	$\mu\text{g/l}$	123%
1,1-Dichloroethene	2,32	0,12	3,31	0,68	$\mu\text{g/l}$	143%
Tribromomethane	2,27	0,12	3,31	0,53	$\mu\text{g/l}$	146%
Bromodichloromethane	0,476	0,031	0,61	0,10	$\mu\text{g/l}$	128%
Dibromochloromethane	1,90	0,10	2,58	0,52	$\mu\text{g/l}$	136%
Dichloromethane	5,96	0,30	7,0	1,1	$\mu\text{g/l}$	117%
1,2-Dichloroethane	3,73	0,21	4,36	0,87	$\mu\text{g/l}$	117%
cis-1,2-Dichloroethene	1,23	0,07	1,46	0,29	$\mu\text{g/l}$	119%
trans-1,2-Dichloroethene	3,75	0,19	5,0	1,0	$\mu\text{g/l}$	133%



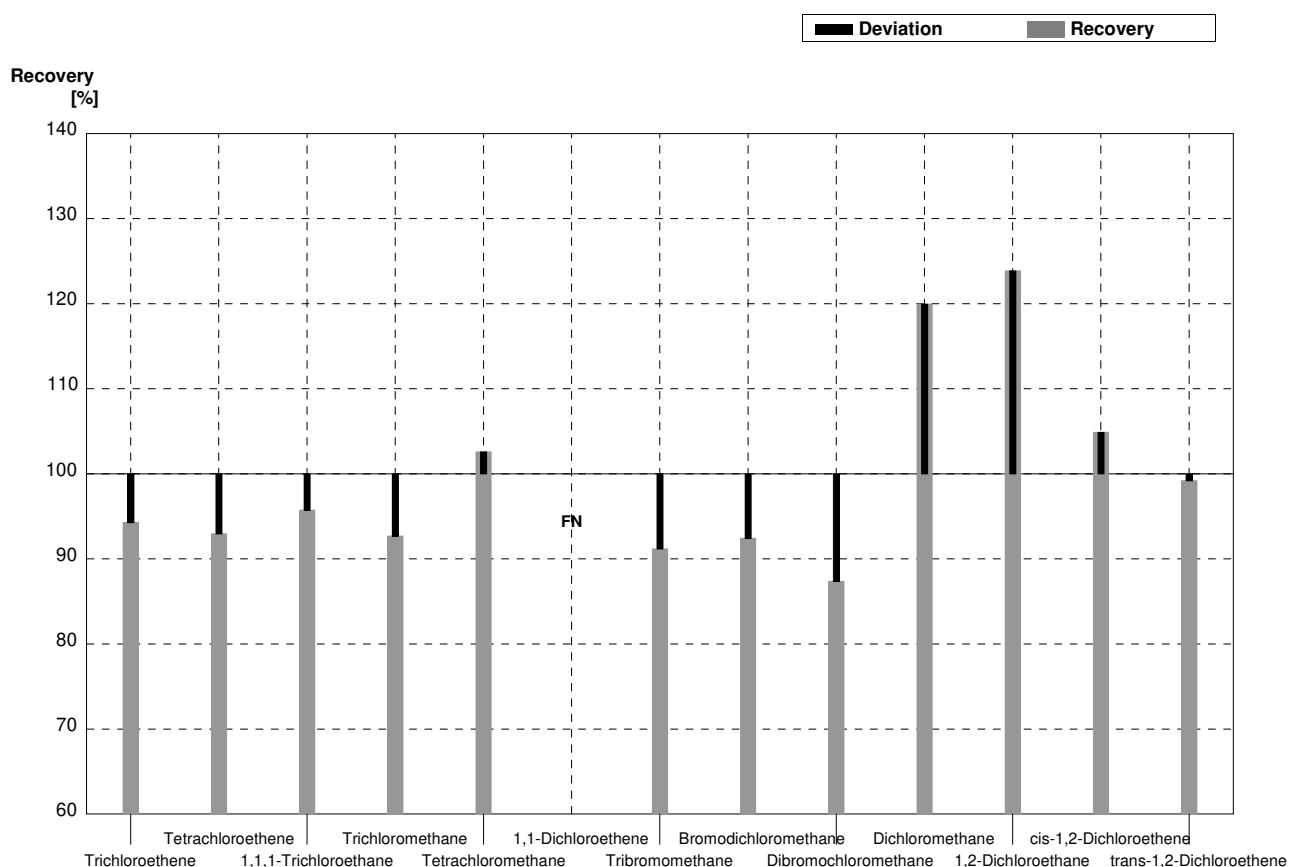
**Sample C64B**  
**Laboratory K**

Parameter	Target value	$\pm U$ ( $k=2$ )	Result	$\pm$	Unit	Recovery
Trichloroethene	1,20	0,06	1,02	0,19	$\mu\text{g/l}$	85%
Tetrachloroethene	1,41	0,07	2,19	0,43	$\mu\text{g/l}$	155%
1,1,1-Trichloroethane	0,71	0,04	0,88	0,18	$\mu\text{g/l}$	124%
Trichloromethane	<0,1		<0,1		$\mu\text{g/l}$	•
Tetrachloromethane	1,15	0,06	1,49	0,16	$\mu\text{g/l}$	130%
1,1-Dichloroethene	0,398	0,027	0,62	0,13	$\mu\text{g/l}$	156%
Tribromomethane	<0,1		<0,1		$\mu\text{g/l}$	•
Bromodichloromethane	0,78	0,04	1,03	0,18	$\mu\text{g/l}$	132%
Dibromochloromethane	0,76	0,04	1,14	0,23	$\mu\text{g/l}$	150%
Dichloromethane	1,23	0,07	1,56	0,24	$\mu\text{g/l}$	127%
1,2-Dichloroethane	<0,4		<0,1		$\mu\text{g/l}$	•
cis-1,2-Dichloroethene	0,398	0,032	0,50	0,1	$\mu\text{g/l}$	126%
trans-1,2-Dichloroethene	1,24	0,06	1,76	0,35	$\mu\text{g/l}$	142%



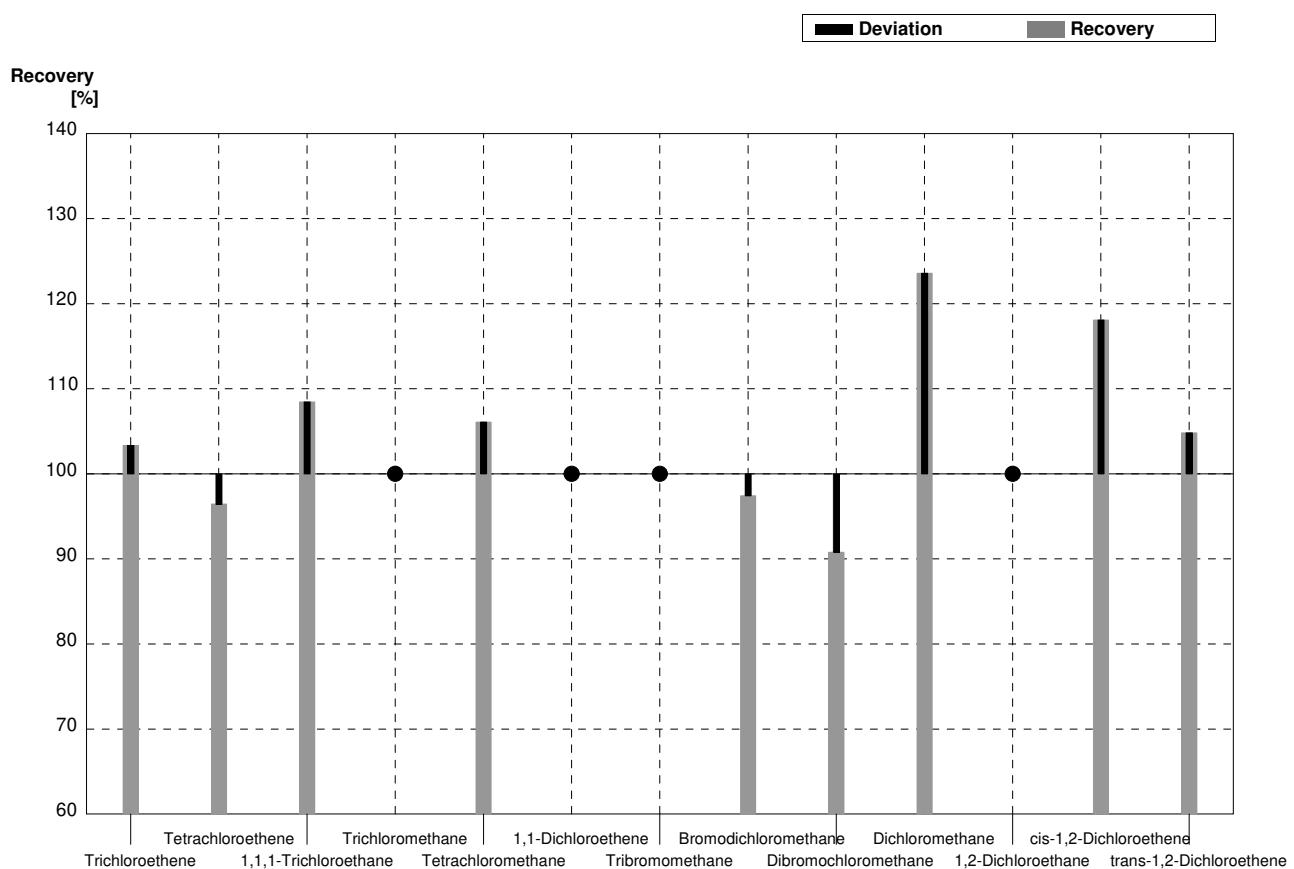
**Sample C64A**  
**Laboratory L**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Trichloroethene	4,01	0,20	3,78	0,14	µg/l	94%
Tetrachloroethene	3,12	0,16	2,90	0,13	µg/l	93%
1,1,1-Trichloroethane	1,88	0,10	1,80	0,17	µg/l	96%
Trichloromethane	2,74	0,14	2,54	0,06	µg/l	93%
Tetrachloromethane	2,31	0,12	2,37	0,16	µg/l	103%
1,1-Dichloroethene	2,32	0,12	<0,96		µg/l	FN
Tribromomethane	2,27	0,12	2,07	0,06	µg/l	91%
Bromodichloromethane	0,476	0,031	0,440	0,01	µg/l	92%
Dibromochloromethane	1,90	0,10	1,66	0,04	µg/l	87%
Dichloromethane	5,96	0,30	7,15	0,16	µg/l	120%
1,2-Dichloroethane	3,73	0,21	4,62	0,07	µg/l	124%
cis-1,2-Dichloroethene	1,23	0,07	1,29	0,06	µg/l	105%
trans-1,2-Dichloroethene	3,75	0,19	3,72	0,09	µg/l	99%



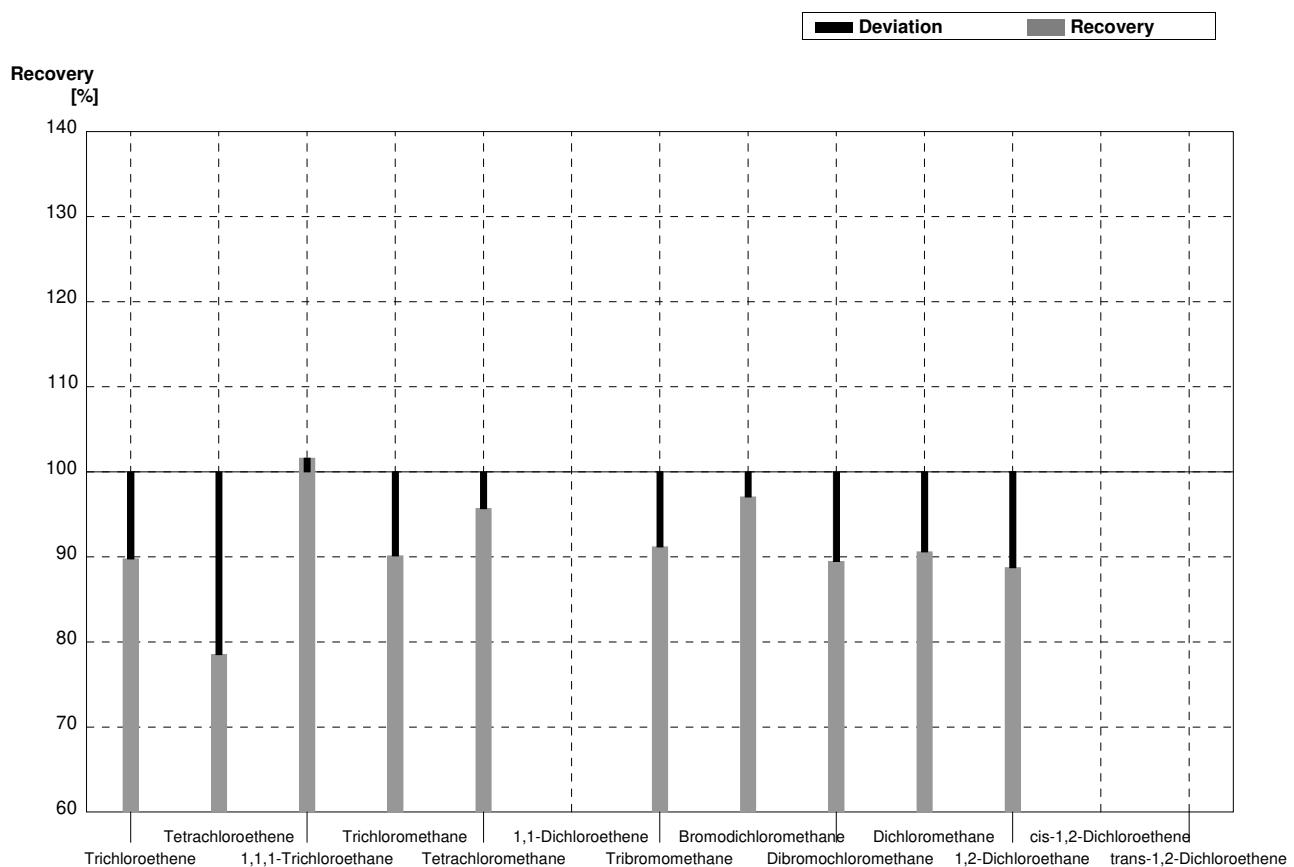
**Sample C64B**  
**Laboratory L**

Parameter	Target value	$\pm U$ ( $k=2$ )	Result	$\pm$	Unit	Recovery
Trichloroethene	1,20	0,06	1,24	0,02	$\mu\text{g/l}$	103%
Tetrachloroethene	1,41	0,07	1,36	0,03	$\mu\text{g/l}$	96%
1,1,1-Trichloroethane	0,71	0,04	0,77	0,03	$\mu\text{g/l}$	108%
Trichloromethane	<0,1		<0,83		$\mu\text{g/l}$	•
Tetrachloromethane	1,15	0,06	1,22	0,05	$\mu\text{g/l}$	106%
1,1-Dichloroethene	0,398	0,027	<0,96		$\mu\text{g/l}$	•
Tribromomethane	<0,1		<0,72		$\mu\text{g/l}$	•
Bromodichloromethane	0,78	0,04	0,760	0,02	$\mu\text{g/l}$	97%
Dibromochloromethane	0,76	0,04	0,69	0,02	$\mu\text{g/l}$	91%
Dichloromethane	1,23	0,07	1,52	0,02	$\mu\text{g/l}$	124%
1,2-Dichloroethane	<0,4		<0,41		$\mu\text{g/l}$	•
cis-1,2-Dichloroethene	0,398	0,032	0,470	0,05	$\mu\text{g/l}$	118%
trans-1,2-Dichloroethene	1,24	0,06	1,30	0,02	$\mu\text{g/l}$	105%



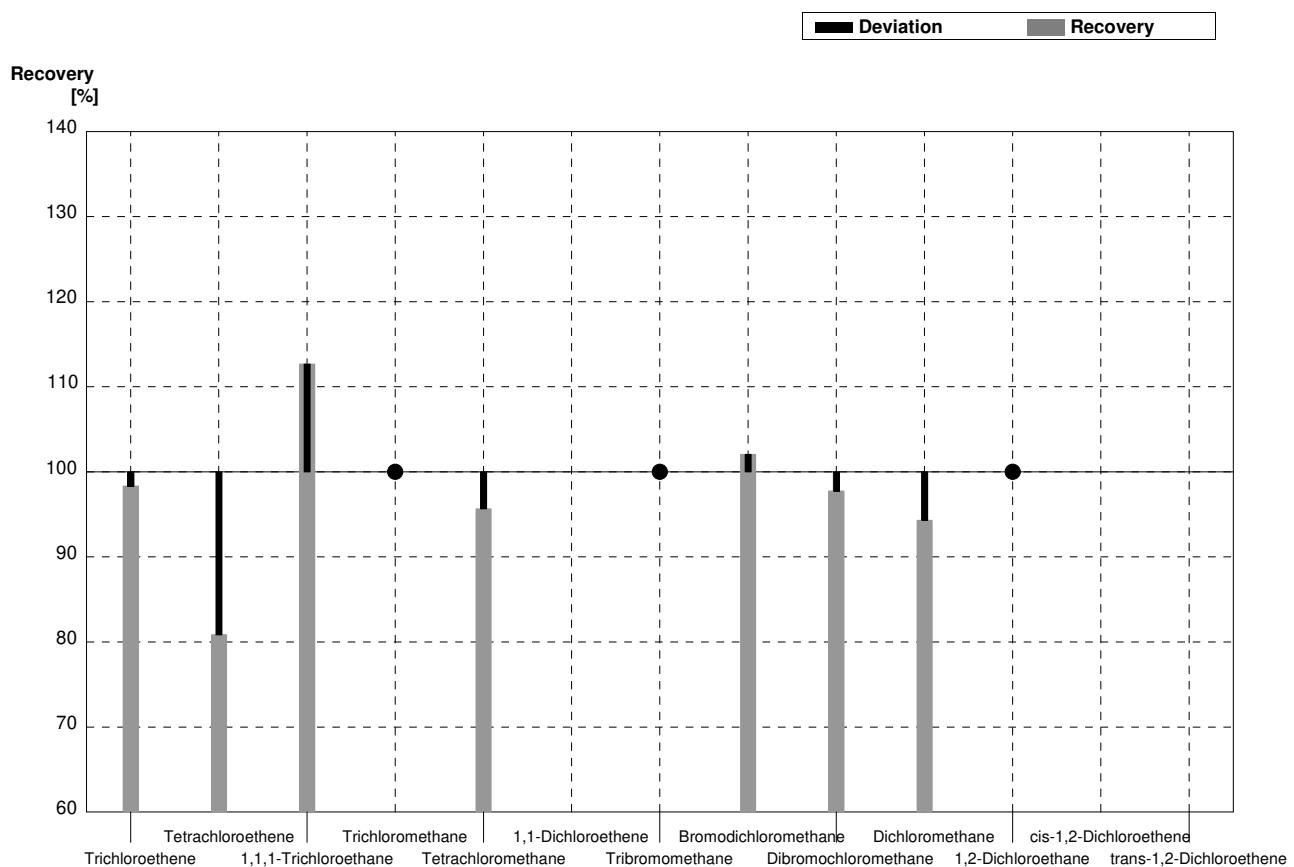
**Sample C64A**  
**Laboratory M**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Trichloroethene	4,01	0,20	3,60	0,25	µg/l	90%
Tetrachloroethene	3,12	0,16	2,45	0,15	µg/l	79%
1,1,1-Trichloroethane	1,88	0,10	1,91	0,15	µg/l	102%
Trichloromethane	2,74	0,14	2,47	0,15	µg/l	90%
Tetrachloromethane	2,31	0,12	2,21	0,15	µg/l	96%
1,1-Dichloroethene	2,32	0,12	n.a.		µg/l	
Tribromomethane	2,27	0,12	2,07	0,15	µg/l	91%
Bromodichloromethane	0,476	0,031	0,462	0,10	µg/l	97%
Dibromochloromethane	1,90	0,10	1,70	0,15	µg/l	89%
Dichloromethane	5,96	0,30	5,40	0,25	µg/l	91%
1,2-Dichloroethane	3,73	0,21	3,31	0,25	µg/l	89%
cis-1,2-Dichloroethene	1,23	0,07	n.a.		µg/l	
trans-1,2-Dichloroethene	3,75	0,19	n.a.		µg/l	



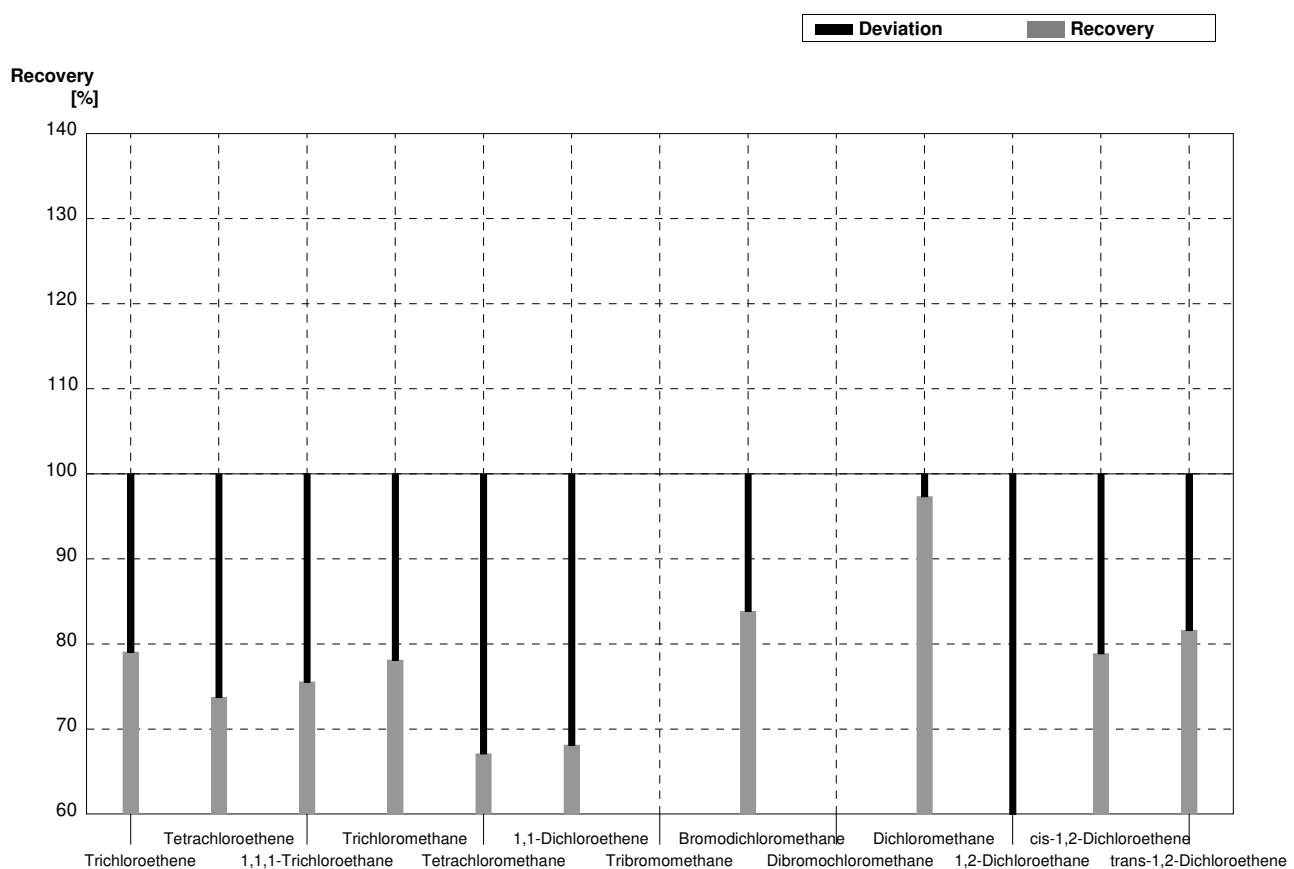
**Sample C64B**  
**Laboratory M**

Parameter	Target value	$\pm U$ ( $k=2$ )	Result	$\pm$	Unit	Recovery
Trichloroethene	1,20	0,06	1,18	0,15	$\mu\text{g/l}$	98%
Tetrachloroethene	1,41	0,07	1,14	0,15	$\mu\text{g/l}$	81%
1,1,1-Trichloroethane	0,71	0,04	0,80	0,10	$\mu\text{g/l}$	113%
Trichloromethane	<0,1		<0,10		$\mu\text{g/l}$	•
Tetrachloromethane	1,15	0,06	1,10	0,10	$\mu\text{g/l}$	96%
1,1-Dichloroethene	0,398	0,027	n.a.		$\mu\text{g/l}$	
Tribromomethane	<0,1		<0,10		$\mu\text{g/l}$	•
Bromodichloromethane	0,78	0,04	0,796	0,10	$\mu\text{g/l}$	102%
Dibromochloromethane	0,76	0,04	0,743	0,15	$\mu\text{g/l}$	98%
Dichloromethane	1,23	0,07	1,16	0,15	$\mu\text{g/l}$	94%
1,2-Dichloroethane	<0,4		<0,3		$\mu\text{g/l}$	•
cis-1,2-Dichloroethene	0,398	0,032	n.a.		$\mu\text{g/l}$	
trans-1,2-Dichloroethene	1,24	0,06	n.a.		$\mu\text{g/l}$	



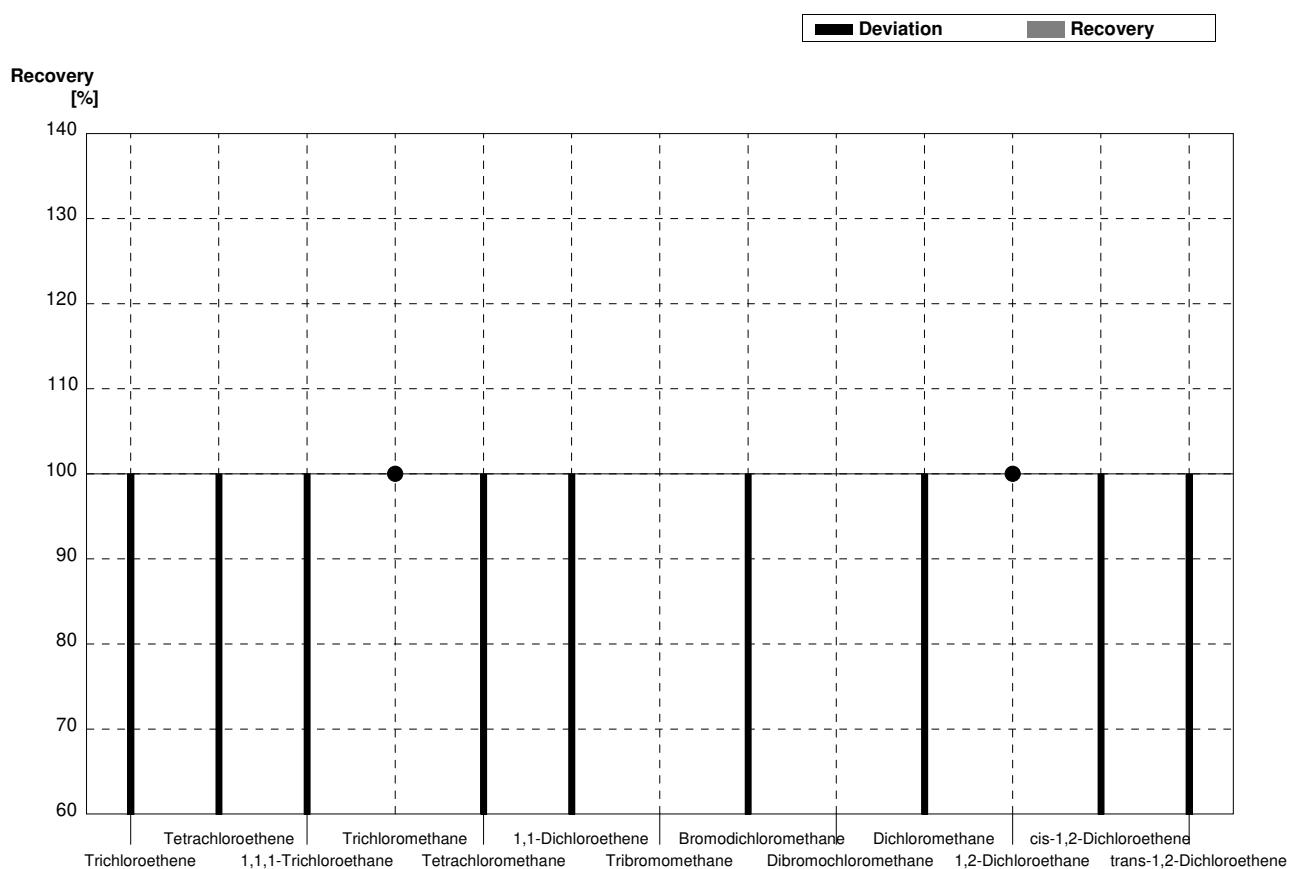
**Sample C64A**  
**Laboratory N**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
Trichloroethene	4,01	0,20	3,17	0,476	µg/l	79%
Tetrachloroethene	3,12	0,16	2,30	0,345	µg/l	74%
1,1,1-Trichloroethane	1,88	0,10	1,42	0,213	µg/l	76%
Trichloromethane	2,74	0,14	2,14	0,321	µg/l	78%
Tetrachloromethane	2,31	0,12	1,55	0,232	µg/l	67%
1,1-Dichloroethene	2,32	0,12	1,58	0,236	µg/l	68%
Tribromomethane	2,27	0,12			µg/l	
Bromodichloromethane	0,476	0,031	0,399	0,060	µg/l	84%
Dibromochloromethane	1,90	0,10			µg/l	
Dichloromethane	5,96	0,30	5,8	0,87	µg/l	97%
1,2-Dichloroethane	3,73	0,21	1,27	0,190	µg/l	34%
cis-1,2-Dichloroethene	1,23	0,07	0,97	0,145	µg/l	79%
trans-1,2-Dichloroethene	3,75	0,19	3,06	0,459	µg/l	82%



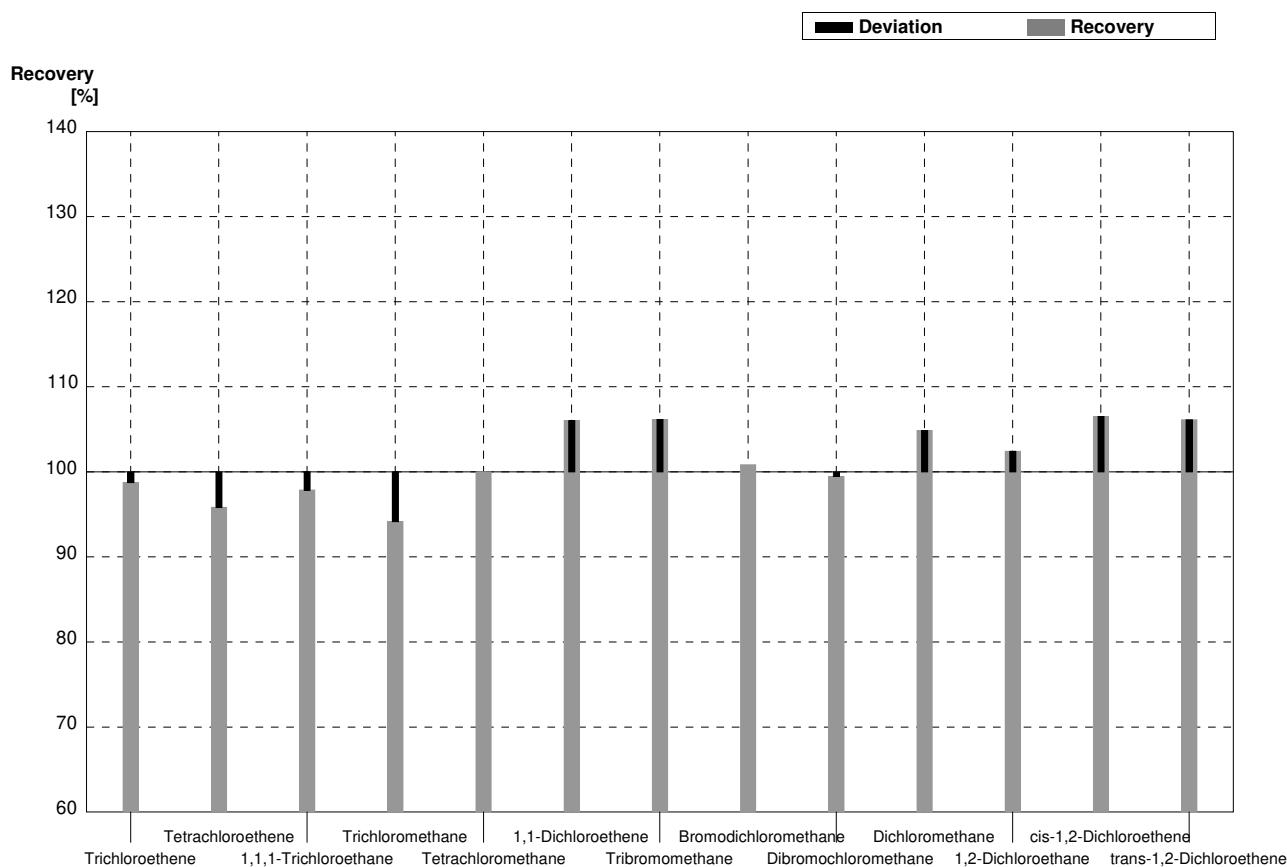
**Sample C64B**  
**Laboratory N**

Parameter	Target value	$\pm U$ ( $k=2$ )	Result	$\pm$	Unit	Recovery
Trichloroethene	1,20	0,06	0,467	0,070	$\mu\text{g/l}$	39%
Tetrachloroethene	1,41	0,07	0,473	0,071	$\mu\text{g/l}$	34%
1,1,1-Trichloroethane	0,71	0,04	0,248	0,037	$\mu\text{g/l}$	35%
Trichloromethane	<0,1		<0,1	0,015	$\mu\text{g/l}$	•
Tetrachloromethane	1,15	0,06	0,384	0,058	$\mu\text{g/l}$	33%
1,1-Dichloroethene	0,398	0,027	0,114	0,017	$\mu\text{g/l}$	29%
Tribromomethane	<0,1				$\mu\text{g/l}$	
Bromodichloromethane	0,78	0,04	0,455	0,068	$\mu\text{g/l}$	58%
Dibromochloromethane	0,76	0,04			$\mu\text{g/l}$	
Dichloromethane	1,23	0,07	0,70	0,105	$\mu\text{g/l}$	57%
1,2-Dichloroethane	<0,4		0,239	0,036	$\mu\text{g/l}$	•
cis-1,2-Dichloroethene	0,398	0,032	0,170	0,025	$\mu\text{g/l}$	43%
trans-1,2-Dichloroethene	1,24	0,06	0,439	0,066	$\mu\text{g/l}$	35%



**Sample C64A**  
**Laboratory O**

Parameter	Target value	$\pm U$ ( $k=2$ )	Result	$\pm$	Unit	Recovery
Trichloroethene	4,01	0,20	3,96	0,792	$\mu\text{g/l}$	99%
Tetrachloroethene	3,12	0,16	2,99	0,598	$\mu\text{g/l}$	96%
1,1,1-Trichloroethane	1,88	0,10	1,84	0,368	$\mu\text{g/l}$	98%
Trichloromethane	2,74	0,14	2,58	0,516	$\mu\text{g/l}$	94%
Tetrachloromethane	2,31	0,12	2,31	0,462	$\mu\text{g/l}$	100%
1,1-Dichloroethene	2,32	0,12	2,46	0,492	$\mu\text{g/l}$	106%
Tribromomethane	2,27	0,12	2,41	0,482	$\mu\text{g/l}$	106%
Bromodichloromethane	0,476	0,031	0,480	0,096	$\mu\text{g/l}$	101%
Dibromochloromethane	1,90	0,10	1,89	0,378	$\mu\text{g/l}$	99%
Dichloromethane	5,96	0,30	6,25	1,250	$\mu\text{g/l}$	105%
1,2-Dichloroethane	3,73	0,21	3,82	0,764	$\mu\text{g/l}$	102%
cis-1,2-Dichloroethene	1,23	0,07	1,31	0,262	$\mu\text{g/l}$	107%
trans-1,2-Dichloroethene	3,75	0,19	3,98	0,796	$\mu\text{g/l}$	106%



**Sample C64B**  
**Laboratory O**

Parameter	Target value	$\pm U$ ( $k=2$ )	Result	$\pm$	Unit	Recovery
Trichloroethene	1,20	0,06	1,21	0,242	$\mu\text{g/l}$	101%
Tetrachloroethene	1,41	0,07	1,31	0,262	$\mu\text{g/l}$	93%
1,1,1-Trichloroethane	0,71	0,04	0,680	0,136	$\mu\text{g/l}$	96%
Trichloromethane	<0,1		<0,030		$\mu\text{g/l}$	•
Tetrachloromethane	1,15	0,06	1,10	0,220	$\mu\text{g/l}$	96%
1,1-Dichloroethene	0,398	0,027	0,410	0,082	$\mu\text{g/l}$	103%
Tribromomethane	<0,1		<0,035		$\mu\text{g/l}$	•
Bromodichloromethane	0,78	0,04	0,780	0,156	$\mu\text{g/l}$	100%
Dibromochloromethane	0,76	0,04	0,760	0,152	$\mu\text{g/l}$	100%
Dichloromethane	1,23	0,07	1,28	0,256	$\mu\text{g/l}$	104%
1,2-Dichloroethane	<0,4		<0,040		$\mu\text{g/l}$	•
cis-1,2-Dichloroethene	0,398	0,032	0,350	0,070	$\mu\text{g/l}$	88%
trans-1,2-Dichloroethene	1,24	0,06	1,30	0,260	$\mu\text{g/l}$	105%

