

# Proficiency Testing Scheme for Water Analysis

Round B8 (BTEX and MTBE)

Sample Dispatch: 14 October 2013





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This report summarises the results of round B8 “Volatile aromatic hydrocarbons and methyl *tert*-butyl ether (MTBE)” within the IFA-Test Systems Proficiency Testing Scheme for Water Analysis. 31 laboratories participated in this interlaboratory performance study. The samples B8A and B8B were distributed to the participants on 14 October 2013. Closing date for submission of results to the IFA-Tulln was the 8 November 2013. Results were received from 28 laboratories.

## Samples

The samples consisted of simulated ground water, which was spiked with diluted pure standards. For sample preparation, solutions of inorganic salts were added to ultrapure water in order to simulate the ionic composition of natural water. The following salts were used:  $\text{Mg}(\text{NO}_3)_2$ ,  $\text{MgSO}_4$ ,  $\text{Na}_2\text{SO}_4$ ,  $\text{NaHCO}_3$ ,  $\text{KHCO}_3$ ,  $\text{CaCl}_2$  and  $\text{Ca}(\text{NO}_3)_2$ . Prior to addition of the volatile compounds, samples of ultrapure water and artificial water matrix were analysed by Purge&Trap-GC-MS in order to exclude contamination with aromatic hydrocarbons, MTBE or other interfering substances. The water matrix was spiked with methanolic solutions of the following compounds: MTBE, benzene, toluene, ethylbenzene, *o*-xylene and *m*-xylene.

The calculation of the target concentrations was based on the weights of standards used. The target concentrations of the volatile compounds ranged from 0.85  $\mu\text{g/L}$  to 5.90  $\mu\text{g/L}$ . The matrix consisted of ca. 23 mg/L  $\text{Ca}^{2+}$ , 8 mg/L  $\text{Mg}^{2+}$ , 10 mg/L  $\text{Na}^+$ , 7 mg/L  $\text{K}^+$ , 50,3 mg/L  $\text{NO}_3^-$ , 27 mg/L  $\text{Cl}^-$ , 24 mg/L  $\text{SO}_4^{2-}$ , 20 mg/L  $\text{HCO}_3^-$  and 16 mg/L methanol.

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

For verification of homogeneity fifteen 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”).

Stability tests for the water samples of the present round were carried out three weeks after sample dispatch. 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” (Second Edition).

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 concentration of MTBE, which was not added to sample B8B, was set to  $< 0.2 \mu\text{g/L}$  MTBE, which meets the minimum quantifiable values defined by the Austrian ground and river water monitoring program and the quantification limit 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 89.1 % (*o*-xylene in sample B8A) and 101.2 % (sum of *m*- and *p*-xylene in sample B8A). The between-

laboratory coefficients of variation ranged from 12.0 % (toluene in sample B8B) to 31.1 % (sum of m- and p-xylene in sample B8A).

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

## z-Scores

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

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

z z-score

$x_i$  result of laboratory

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

$\sigma$  standard deviation (criterion)

Thus, the z-score is the ratio of the estimated bias (difference between result and target value) and a standard deviation (criterion). The z-score criteria were determined from relative standard deviations from all interlaboratory comparisons that were organised by the IFA-Tulln in the period from 2002 to 2012. They represent long-term performance data of all former laboratories participating in our interlaboratory comparison on BTEX and MTBE. The z-scores are listed together with the recoveries in the tables of the parameter oriented part.

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

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

**Thus, no z-score was calculated for sum of m- and p-xylene in sample B8A.**

Parameter	z-Score-criteria (%)	Lower limit [ $\mu\text{g/l}$ ]
MTBE	15	0,1
Benzene	16	1
Toluene	13	1
Ethylbenzene	17	1
Sum of m- and p-xylene	18	4
o-Xylene	14	1

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

z-Score	Classification
<2	satisfactory
2< z <3	questionable
>3	unsatisfactory

Please note that this evaluation is made on the background of the average performance of all participants of the IFA-Test-Systems proficiency testing scheme during the period from 2002 to 2012.

### **Illustration of results**

An explanation to the illustration of the results is given on the following page. Graphical and tabular illustration of results can be divided into a parameter oriented and a laboratory oriented part.

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" (Second Edition). 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, 14 November 2013

### Sample M106A

#### Parameter Copper

Target value ± U (k=2) 4,79 µg/l ± 0,13 µg/l

IFA result ± U (k=2) 4,79 µg/l ± 0,38 µg/l

Stability test ± U (k=2) 4,69 µg/l ± 0,38 µg/l

*Obtained from sample preparation, U=uncertainty  
Determined at IFA prior to shipment of samples  
Determined at IFA 3 weeks after sample dispatch*

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

Recovery of target value in percent

z-Score of the laboratory

An asterik indicates a result detected as outlier by Hampel test

Interval expected to encompass target value as stated by participant

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

Between laboratory standard deviation

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

Number of results used for calculation of statistic parameters

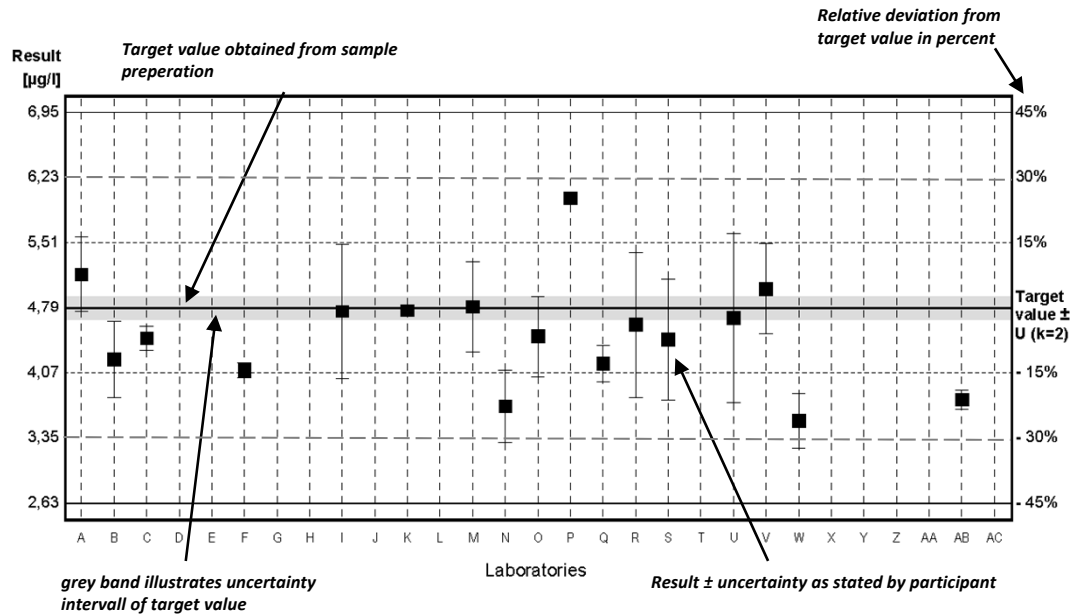


Diagram 1: Measurement results and their uncertainties

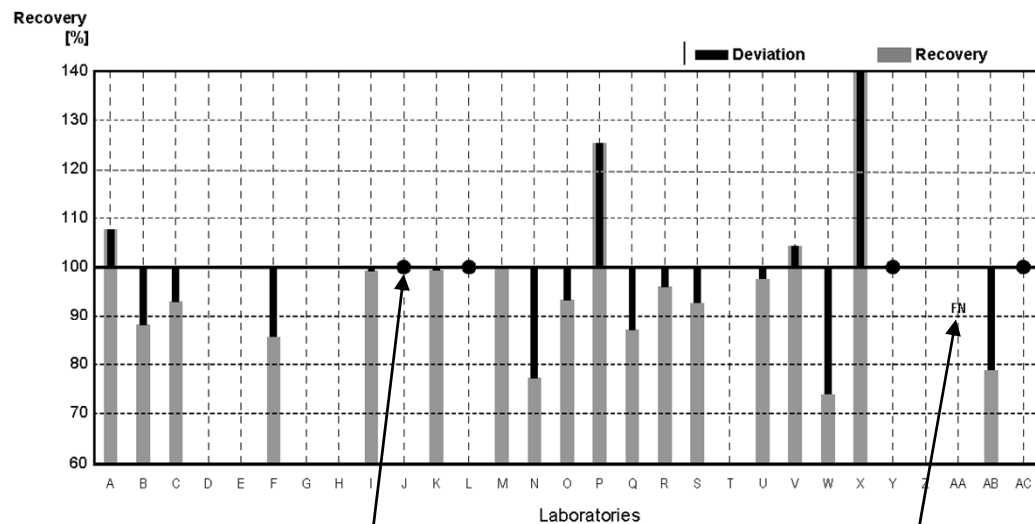


Diagram 2: Recoveries and deviations from target values

EXPLANATION

# Illustration of Results Tables and Parameter Oriented Part

Round B8 BTEX and MTBE

Sample Dispatch: 14 October 2013



## Results Sample B8A

	MTBE	Benzene	Toluene	Ethylbenzene	m, p-Xylene	o-Xylene
Target value	2.10	3.46	5.90	2.47	0.85	5.70
IFA result	2.14	3.58	6.02	2.41	0.85	5.38
Stability test	2.10	3.43	5.71	2.38	0.86	5.27
A	2.15	3.11	5.84	2.32	0.77	5.37
B	2.2	3.7	5.5	2.2	0.79	4.9
C	1.8	3.4	5.4	2.1	0.7	4.8
D	1.77	2.84	5.34	2.38	0.84	5.75
E	2.04	3.36	5.47	2.08	1.31	4.59
F						
G		3.40	5.48	2.33	0.81	5.07
H	1.62	2.90	4.85	2.01	0.61	4.26
I	2.21	3.21	6.05	2.35	1.05	5.22
J		4.3	6.6	2.7	0.84	5.9
K	2.04	3.47	5.58	2.33	0.78	5.64
L						
M		3.38	5.31	2.33	0.88	5.36
N	2.3	4.6	7.4	3.0	<1.1	6.4
O		3.03	4.78	2.23	0.783	4.981
P	2.35	4.33	7.71	3.32	1.46	5.95
Q	2.33	4.23	5.28	2.90	1.33	5.87
R	1.79	3.29	4.95	1.89	0.62	4.20
S	2.2	3.0	5.9	2.4	0.83	5.6
T	1.97	3.13	5.11	2.03	0.76	4.14
U						
V		3.07	4.87	1.91		
W	2.08	3.61	6.12	2.25	0.98	5.33
X	1.92	3.99	6.44	2.49	0.86	5.92
Y	n.b.	2.67	2.88	n.b.	3.73	n.b.
Z	64.45		11.65	0.95	1.15	11.05
AA		2.25	3.52	1.36	0.25	3.10
AB		<5.0	<5.0	<5.0	<5.0	<5.0
AC	2.54	3.63	6.2	1.73	0.55	4
AD	1.54	3.70	6.20	2.63	1.78	5.16
AE		2.76	4.60	2.07	0.84	4.39

All data in µg/L



## Uncertainties Sample B8A

	MTBE	Benzene	Toluene	Ethylbenzene	m, p-Xylene	o-Xylene
Target value	0.11	0.17	0.30	0.12	0.04	0.28
IFA result	0.32	0.54	0.90	0.36	0.13	0.81
Stability test	0.32	0.51	0.86	0.36	0.13	0.79
A	0.215	0.311	0.584	0.232	0.08	0.537
B	0.44	0.75	1.1	0.44	0.16	0.99
C	0.2	0.2	0.3	0.2	0.1	0.2
D	0.27	0.43	0.80	0.36	0.13	0.86
E						
F						
G		0.68	1.12	0.47	0.24	1.01
H	0.01	0.04	0.01	0.01	0.01	0.02
I	0.44	0.64	1.21	0.47	0.21	1.04
J						
K	0.21	0.37	0.56	0.25	0.08	0.57
L						
M		0.20	0.20	0.20	0.20	0.20
N	1.0	1.9	3.2	1.3		2.7
O		0.194	0.592	0.112	0.056	0.359
P						
Q	0.35	0.63	0.79	0.44	0.20	0.88
R	0.30	0.66	0.99	0.38	0.12	0.84
S	0.59	0.79	1.13	0.39	0.14	1.23
T	0.354	0.563	0.920	0.365	0.137	0.744
U						
V		0.6	0.8	0.2		
W	0.42	0.72	1.22	0.45	0.20	1.07
X	0.31	0.60	1.22	0.42	0.15	1.01
Y		0.1	0.1		0.1	
Z						
AA		0.15	0.3	0.2	0.1	0.2
AB						
AC	0.59	0.77	1.7	0.62	0.37	1.1
AD	0.23	0.55	0.93	0.39	0.27	0.77
AE		0.55	0.92	0.41	0.17	0.88

All data in µg/L

## Results Sample B8B

	MTBE	Benzene	Toluene	Ethylbenzene	m, p-Xylene	o-Xylene
Target value	<0.2	1.86	2.16	5.88	4.42	3.62
IFA result	<0.1	1.90	2.12	5.70	4.20	3.49
Stability test	<0.1	1.85	2.07	5.47	4.01	3.40
A	<0.5	1.64	2.16	5.55	4.28	3.46
B	<0.1	2.0	2.0	5.1	4.1	3.2
C	<0.1	1.8	1.9	4.8	3.5	2.9
D	<0.05	1.70	1.99	6.30	4.58	3.95
E	<0.2	1.84	1.91	4.88	1.78	2.91
F						
G		1.85	2.06	5.37	4.14	3.29
H	<0.68	1.58	1.72	5.02	3.51	2.85
I	n.d.	2.05	2.13	5.92	4.52	3.37
J		2.5	2.5	6.25	4.15	3.75
K	<0.1	1.90	1.99	5.63	4.10	3.63
L						
M		1.92	2.05	5.63	4.13	3.37
N	<0.55	2.28	2.5	6.8	4.8	3.7
O		1.76	1.84	5.24	3.862	3.247
P	<0.20	2.37	2.87	7.98	6.26	4.37
Q	<0.05	2.12	1.79	5.70	4.16	3.08
R	<1	1.84	1.85	4.44	3.13	2.63
S	<0.5	1.6	2.1	5.8	4.3	3.6
T	<0.20	1.66	1.92	4.42	3.57	3.06
U						
V		1.61	1.76	4.88		
W	<0.02	1.95	2.15	5.49	5.10	3.54
X	<1	2.15	2.35	5.96	4.36	3.75
Y	n.b.	1.49	1.19	n.b.	2.34	n.b.
Z	66.20		4.40	4.95	4.95	7.45
AA		1.28	1.42	3.98	2.55	2.2
AB		<5.0	<5.0	<5.0	<5.0	<5.0
AC	<0.05	1.89	2.14	5.1	3.7	2.38
AD	<0.2	1.79	2.09	5.93	5.14	3.78
AE		1.68	1.91	4.91	3.74	3.00

All data in µg/L

### Uncertainties Sample B8B (in µg/L)

	MTBE	Benzene	Toluene	Ethylbenzene	m, p-Xylene	o-Xylene
Target value		0.09	0.11	0.29	0.35	0.29
IFA result		0.28	0.32	0.86	0.63	0.52
Stability test		0.28	0.31	0.82	0.60	0.51
A		0.164	0.216	0.555	0.428	0.346
B		0.40	0.40	1.0	0.82	0.63
C		0.2	0.2	0.2	0.2	0.2
D		0.26	0.30	0.94	0.69	0.59
E						
F						
G		0.37	0.41	1.07	0.83	0.66
H		0.03	0.01	0.01	0.02	0.02
I		0.41	0.43	1.18	0.90	0.67
J						
K		0.21	0.20	0.58	0.42	0.38
L						
M		0.20	0.20	0.25	0.20	0.20
N		1.00	1.1	2.9	2.1	1.6
O		0.112	0.228	0.262	0.278	0.234
P						
Q	0.01	0.32	0.27	0.86	0.62	0.46
R		0.37	0.37	0.89	0.63	0.53
S		0.42	0.41	0.94	0.75	0.78
T		0.298	0.345	0.796	0.643	0.551
U						
V		0.3	0.3	0.5		
W		0.39	0.43	1.10	1.02	0.71
X		0.32	0.45	1.01	0.78	0.64
Y		0.1	0.1		0.1	
Z						
AA		0.03	0.17	0.02	0.02	0.02
AB						
AC		0.5	0.65	1.6	1	0.7
AD		0.27	0.31	0.89	0.77	0.57
AE		0.34	0.38	0.98	0.75	0.60

All data in µg/L

# Sample B8A

## Parameter MTBE

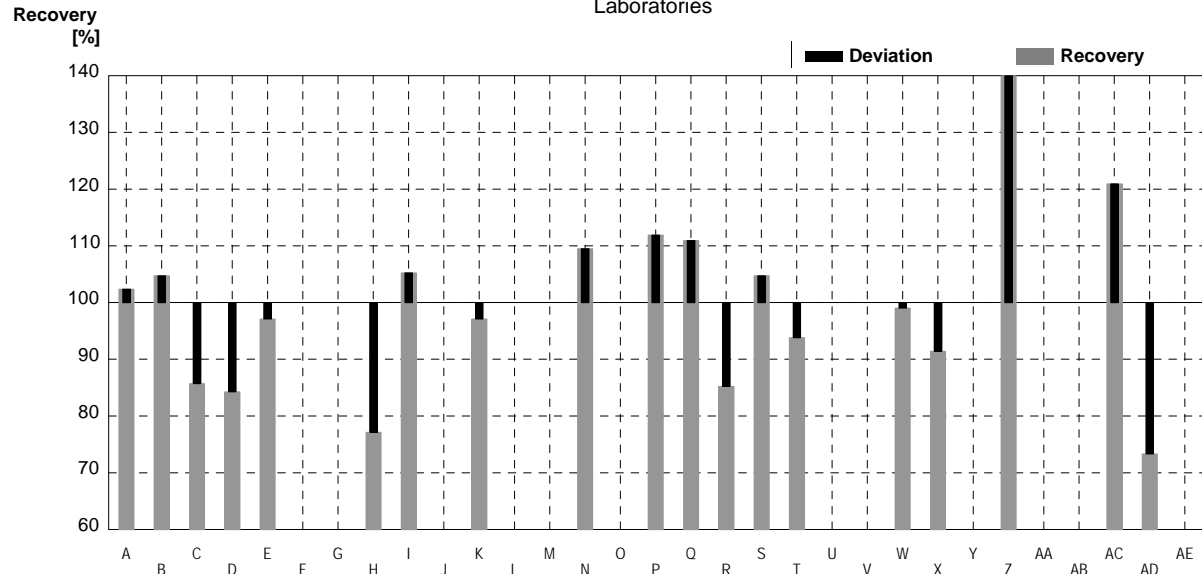
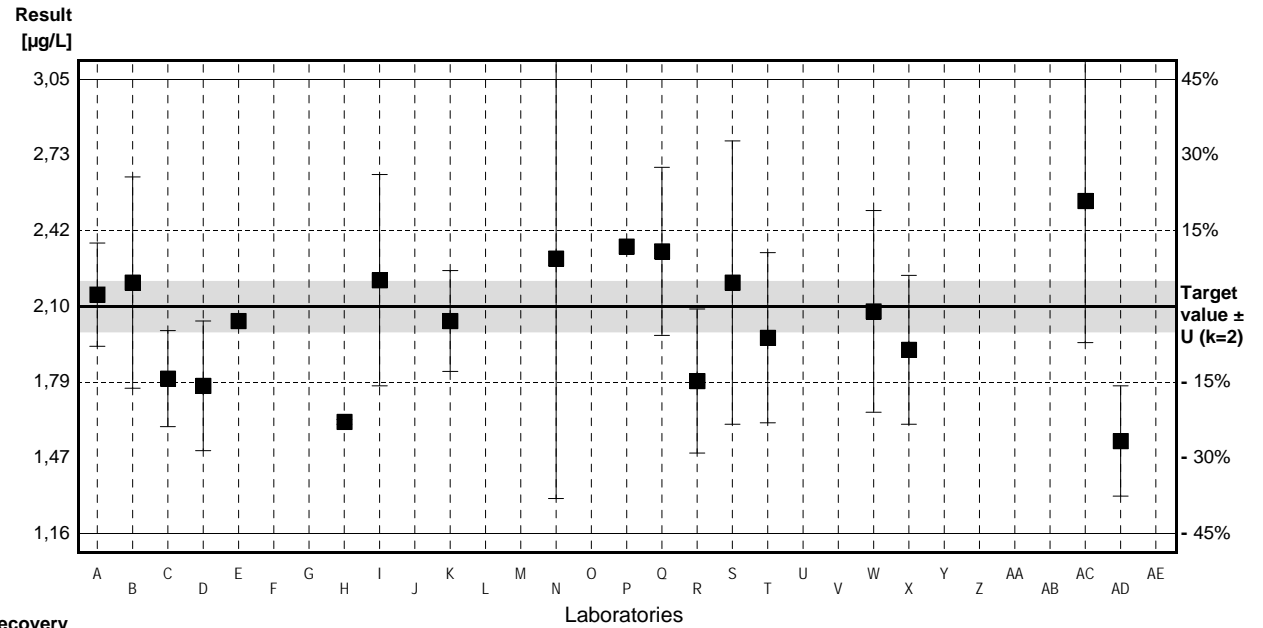
Target value ± U (k=2) 2,10 µg/L ± 0,11 µg/L

IFA result ± U (k=2) 2,14 µg/L ± 0,32 µg/L

Stability test ± U (k=2) 2,10 µg/L ± 0,32 µg/L

Lab Code	Result	±	Unit	Recovery	z-Score
A	2,15	0,215	µg/L	102%	0,16
B	2,2	0,44	µg/L	105%	0,32
C	1,8	0,2	µg/L	86%	-0,95
D	1,77	0,27	µg/L	84%	-1,05
E	2,04		µg/L	97%	-0,19
F			µg/L		
G			µg/L		
H	1,62	0,01	µg/L	77%	-1,52
I	2,21	0,44	µg/L	105%	0,35
J			µg/L		
K	2,04	0,21	µg/L	97%	-0,19
L			µg/L		
M			µg/L		
N	2,3	1,0	µg/L	110%	0,63
O			µg/L		
P	2,35		µg/L	112%	0,79
Q	2,33	0,35	µg/L	111%	0,73
R	1,79	0,30	µg/L	85%	-0,98
S	2,2	0,59	µg/L	105%	0,32
T	1,97	0,354	µg/L	94%	-0,41
U			µg/L		
V			µg/L		
W	2,08	0,42	µg/L	99%	-0,06
X	1,92	0,31	µg/L	91%	-0,57
Y	n.b.		µg/L		
Z	64,45 *		µg/L	3069%	197,94
AA			µg/L		
AB			µg/L		
AC	2,54	0,59	µg/L	121%	1,40
AD	1,54	0,23	µg/L	73%	-1,78
AE			µg/L		

	All results	Outliers excl.	Unit
Mean ± CI(99%)	5,33 ± 9,46	2,05 ± 0,18	µg/L
Recov. ± CI(99%)	253,9 ± 450,5	97,5 ± 8,8	%
SD between labs	14,32	0,27	µg/L
RSD between labs	268,6	13,1	%
n for calculation	19	18	

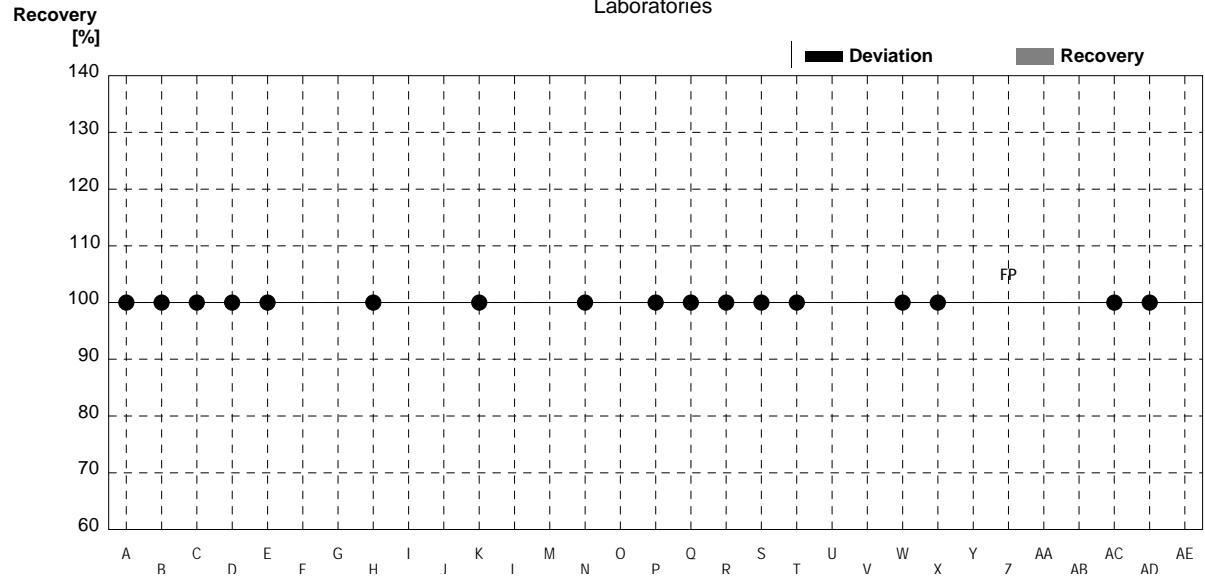
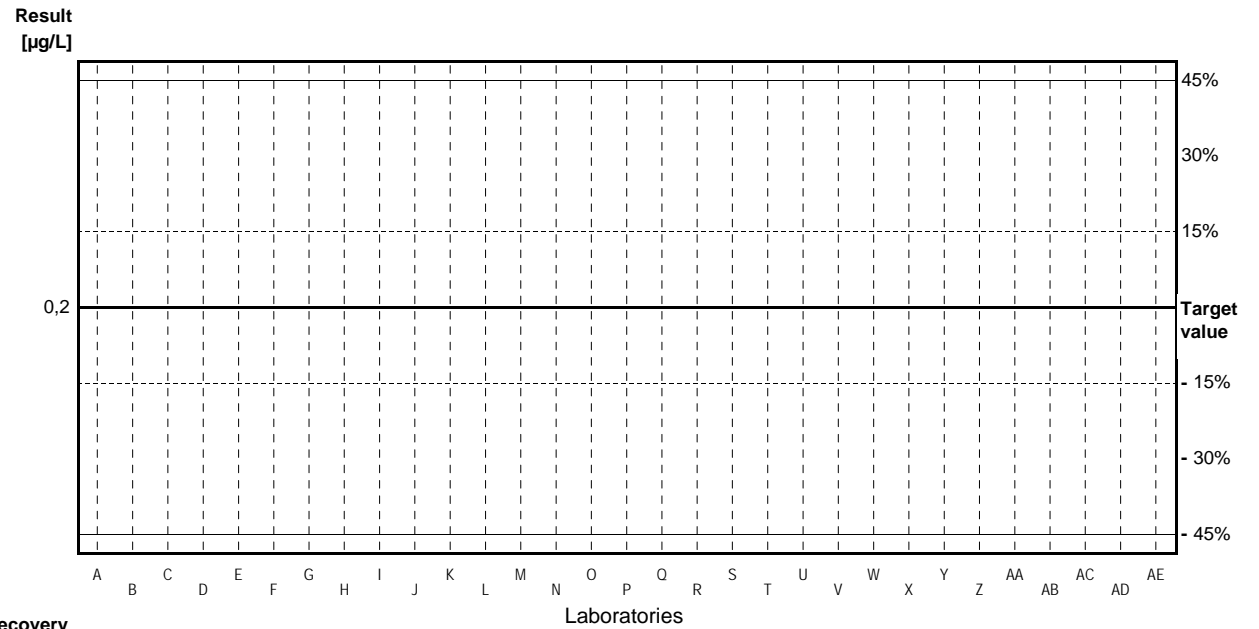


**Sample B8B**  
**Parameter MTBE**

Target value <0,2 µg/L  
IFA result <0,1 µg/L  
Stability test <0,1 µg/L

Lab Code	Result	±	Unit	Recovery	z-Score
A	<0,5		µg/L	•	
B	<0,1		µg/L	•	
C	<0,1		µg/L	•	
D	<0,05		µg/L	•	
E	<0,2		µg/L	•	
F			µg/L		
G			µg/L		
H	<0,68		µg/L	•	
I	n,d.		µg/L		
J			µg/L		
K	<0,1		µg/L	•	
L			µg/L		
M			µg/L		
N	<0,55		µg/L	•	
O			µg/L		
P	<0,20		µg/L	•	
Q	<0,05	0,01	µg/L	•	
R	<1		µg/L	•	
S	<0,5		µg/L	•	
T	<0,20		µg/L	•	
U			µg/L		
V			µg/L		
W	<0,02		µg/L	•	
X	<1		µg/L	•	
Y	n,b.		µg/L		
Z	66,20		µg/L	FP	
AA			µg/L		
AB			µg/L		
AC	<0,05		µg/L	•	
AD	<0,2		µg/L	•	
AE			µg/L		

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



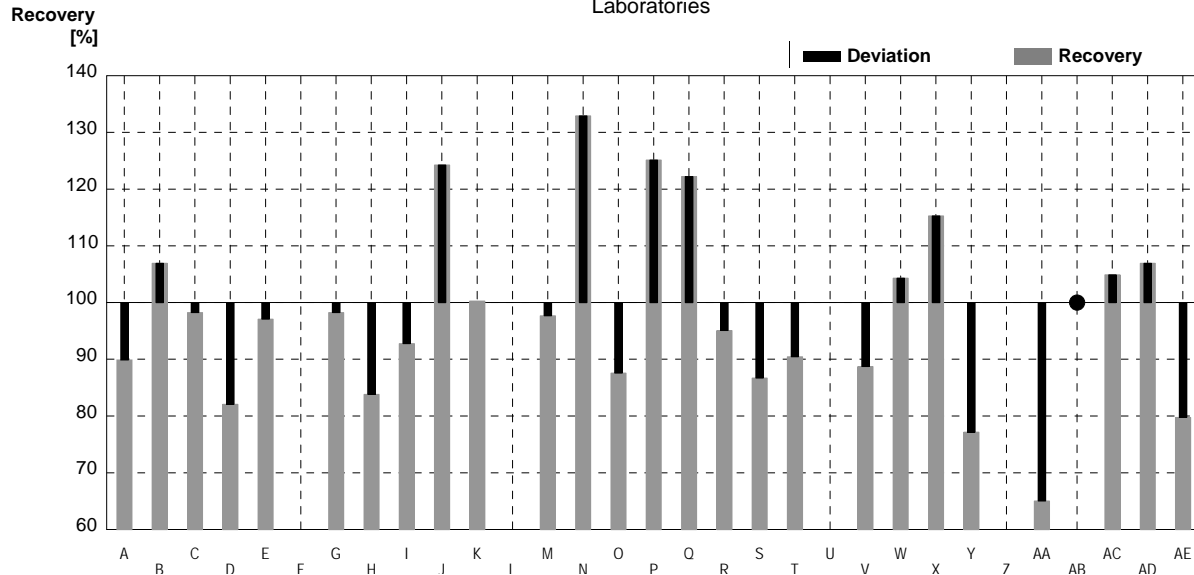
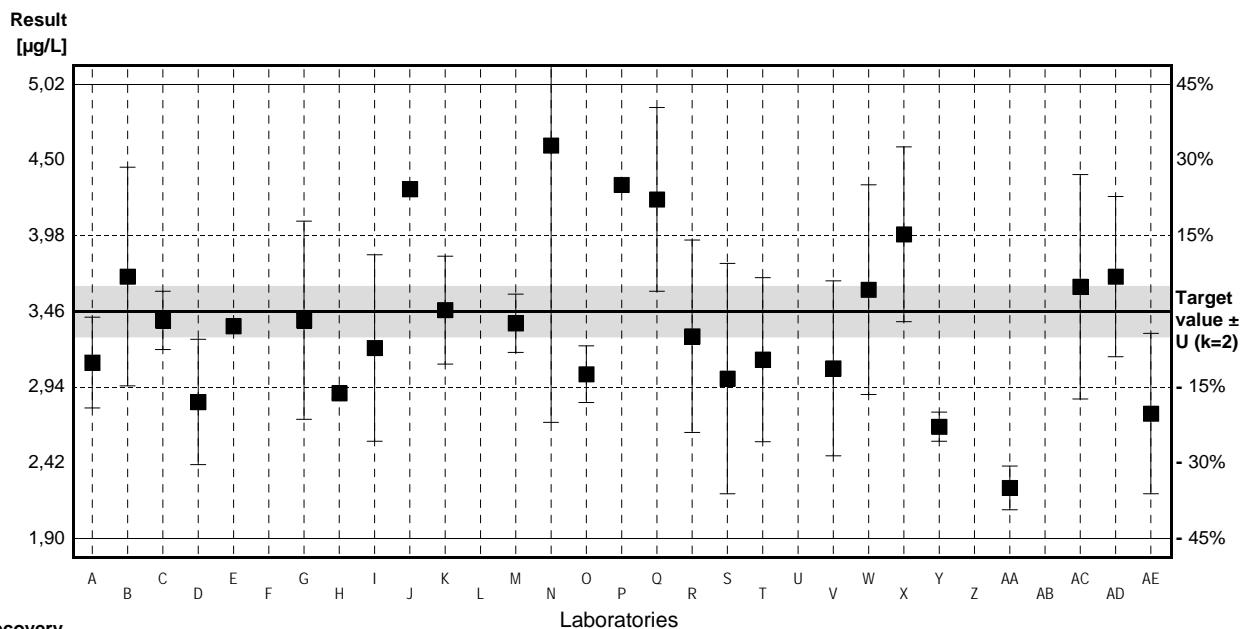
# Sample B8A

## Parameter Benzene

Target value  $\pm U$  (k=2) 3,46  $\mu\text{g/L}$   $\pm$  0,17  $\mu\text{g/L}$   
 IFA result  $\pm U$  (k=2) 3,58  $\mu\text{g/L}$   $\pm$  0,54  $\mu\text{g/L}$   
 Stability test  $\pm U$  (k=2) 3,43  $\mu\text{g/L}$   $\pm$  0,51  $\mu\text{g/L}$

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A	3,11	0,311	$\mu\text{g/L}$	90%	-0,63
B	3,7	0,75	$\mu\text{g/L}$	107%	0,43
C	3,4	0,2	$\mu\text{g/L}$	98%	-0,11
D	2,84	0,43	$\mu\text{g/L}$	82%	-1,12
E	3,36		$\mu\text{g/L}$	97%	-0,18
F			$\mu\text{g/L}$		
G	3,40	0,68	$\mu\text{g/L}$	98%	-0,11
H	2,90	0,04	$\mu\text{g/L}$	84%	-1,01
I	3,21	0,64	$\mu\text{g/L}$	93%	-0,45
J	4,3		$\mu\text{g/L}$	124%	1,52
K	3,47	0,37	$\mu\text{g/L}$	100%	0,02
L			$\mu\text{g/L}$		
M	3,38	0,20	$\mu\text{g/L}$	98%	-0,14
N	4,6	1,9	$\mu\text{g/L}$	133%	2,06
O	3,03	0,194	$\mu\text{g/L}$	88%	-0,78
P	4,33		$\mu\text{g/L}$	125%	1,57
Q	4,23	0,63	$\mu\text{g/L}$	122%	1,39
R	3,29	0,66	$\mu\text{g/L}$	95%	-0,31
S	3,0	0,79	$\mu\text{g/L}$	87%	-0,83
T	3,13	0,563	$\mu\text{g/L}$	90%	-0,60
U			$\mu\text{g/L}$		
V	3,07	0,6	$\mu\text{g/L}$	89%	-0,70
W	3,61	0,72	$\mu\text{g/L}$	104%	0,27
X	3,99	0,60	$\mu\text{g/L}$	115%	0,96
Y	2,67	0,1	$\mu\text{g/L}$	77%	-1,43
Z			$\mu\text{g/L}$		
AA	2,25	0,15	$\mu\text{g/L}$	65%	-2,19
AB	<5,0		$\mu\text{g/L}$	•	
AC	3,63	0,77	$\mu\text{g/L}$	105%	0,31
AD	3,70	0,55	$\mu\text{g/L}$	107%	0,43
AE	2,76	0,55	$\mu\text{g/L}$	80%	-1,26

	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	3,40 $\pm$ 0,31	3,40 $\pm$ 0,31	$\mu\text{g/L}$
Recov. $\pm$ CI(99%)	98,2 $\pm$ 8,9	98,2 $\pm$ 8,9	%
SD between labs	0,56	0,56	$\mu\text{g/L}$
RSD between labs	16,5	16,5	%
n for calculation	26	26	



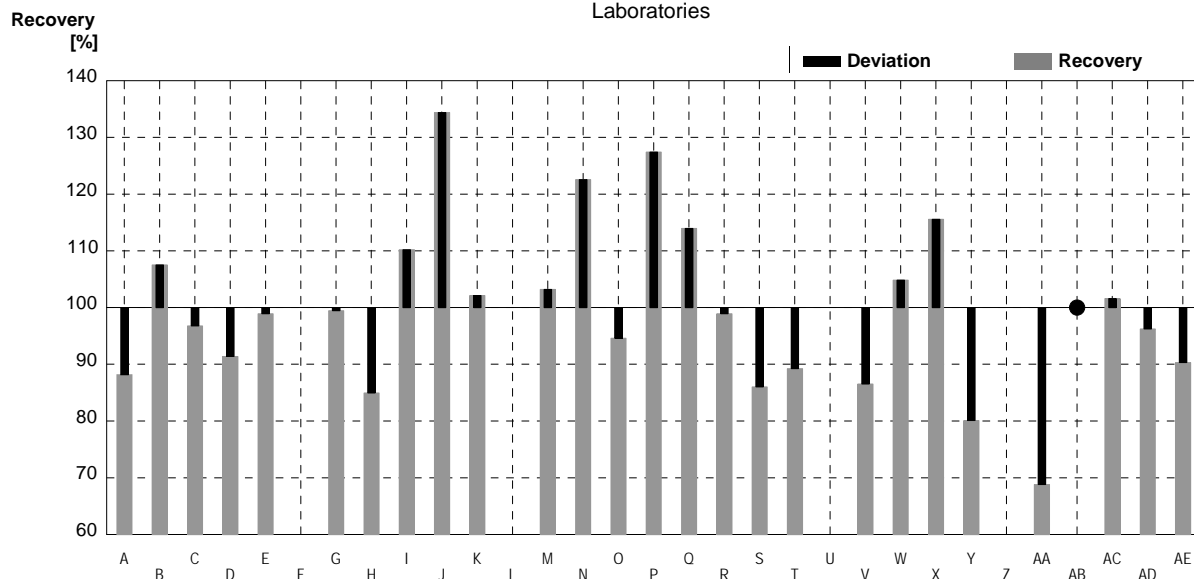
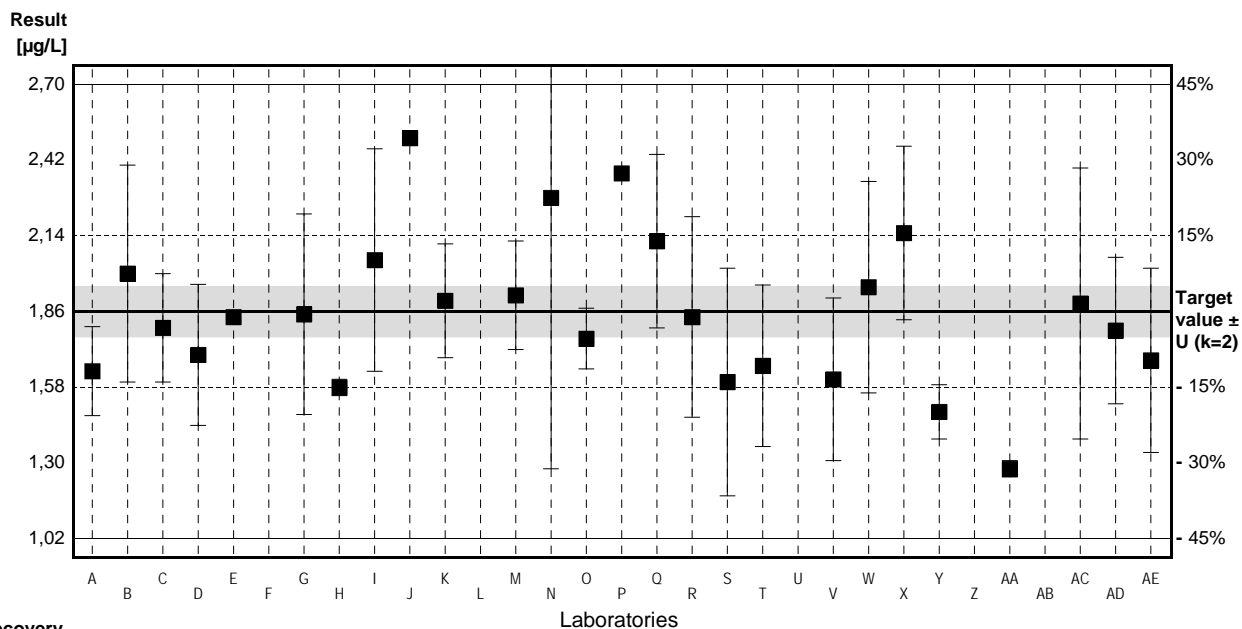
# Sample B8B

## Parameter Benzene

Target value  $\pm U$  (k=2) 1,86  $\mu\text{g/L}$   $\pm$  0,09  $\mu\text{g/L}$   
 IFA result  $\pm U$  (k=2) 1,90  $\mu\text{g/L}$   $\pm$  0,29  $\mu\text{g/L}$   
 Stability test  $\pm U$  (k=2) 1,85  $\mu\text{g/L}$   $\pm$  0,28  $\mu\text{g/L}$

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A	1,64	0,164	$\mu\text{g/L}$	88%	-0,74
B	2,0	0,40	$\mu\text{g/L}$	108%	0,47
C	1,8	0,2	$\mu\text{g/L}$	97%	-0,20
D	1,70	0,26	$\mu\text{g/L}$	91%	-0,54
E	1,84		$\mu\text{g/L}$	99%	-0,07
F			$\mu\text{g/L}$		
G	1,85	0,37	$\mu\text{g/L}$	99%	-0,03
H	1,58	0,03	$\mu\text{g/L}$	85%	-0,94
I	2,05	0,41	$\mu\text{g/L}$	110%	0,64
J	2,5		$\mu\text{g/L}$	134%	2,15
K	1,90	0,21	$\mu\text{g/L}$	102%	0,13
L			$\mu\text{g/L}$		
M	1,92	0,20	$\mu\text{g/L}$	103%	0,20
N	2,28	1,00	$\mu\text{g/L}$	123%	1,41
O	1,76	0,112	$\mu\text{g/L}$	95%	-0,34
P	2,37		$\mu\text{g/L}$	127%	1,71
Q	2,12	0,32	$\mu\text{g/L}$	114%	0,87
R	1,84	0,37	$\mu\text{g/L}$	99%	-0,07
S	1,6	0,42	$\mu\text{g/L}$	86%	-0,87
T	1,66	0,298	$\mu\text{g/L}$	89%	-0,67
U			$\mu\text{g/L}$		
V	1,61	0,3	$\mu\text{g/L}$	87%	-0,84
W	1,95	0,39	$\mu\text{g/L}$	105%	0,30
X	2,15	0,32	$\mu\text{g/L}$	116%	0,97
Y	1,49	0,1	$\mu\text{g/L}$	80%	-1,24
Z			$\mu\text{g/L}$		
AA	1,28	0,03	$\mu\text{g/L}$	69%	-1,95
AB	<5,0		$\mu\text{g/L}$	•	
AC	1,89	0,5	$\mu\text{g/L}$	102%	0,10
AD	1,79	0,27	$\mu\text{g/L}$	96%	-0,24
AE	1,68	0,34	$\mu\text{g/L}$	90%	-0,60

	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	1,86 $\pm$ 0,15	1,86 $\pm$ 0,15	$\mu\text{g/L}$
Recov. $\pm$ CI(99%)	99,8 $\pm$ 8,1	99,8 $\pm$ 8,1	%
SD between labs	0,28	0,28	$\mu\text{g/L}$
RSD between labs	14,9	14,9	%
n for calculation	26	26	



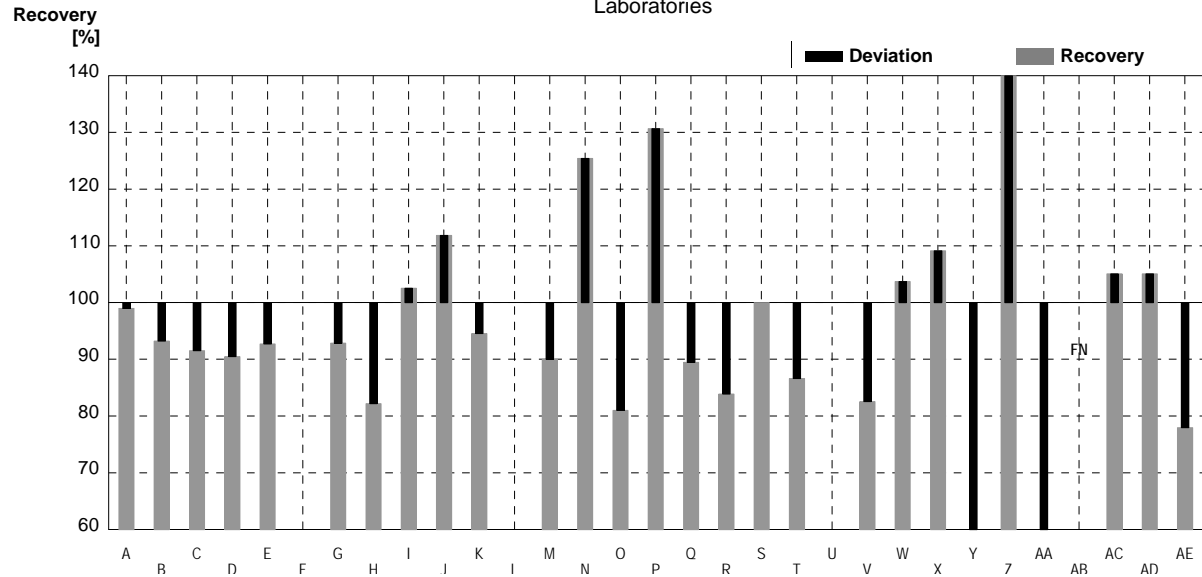
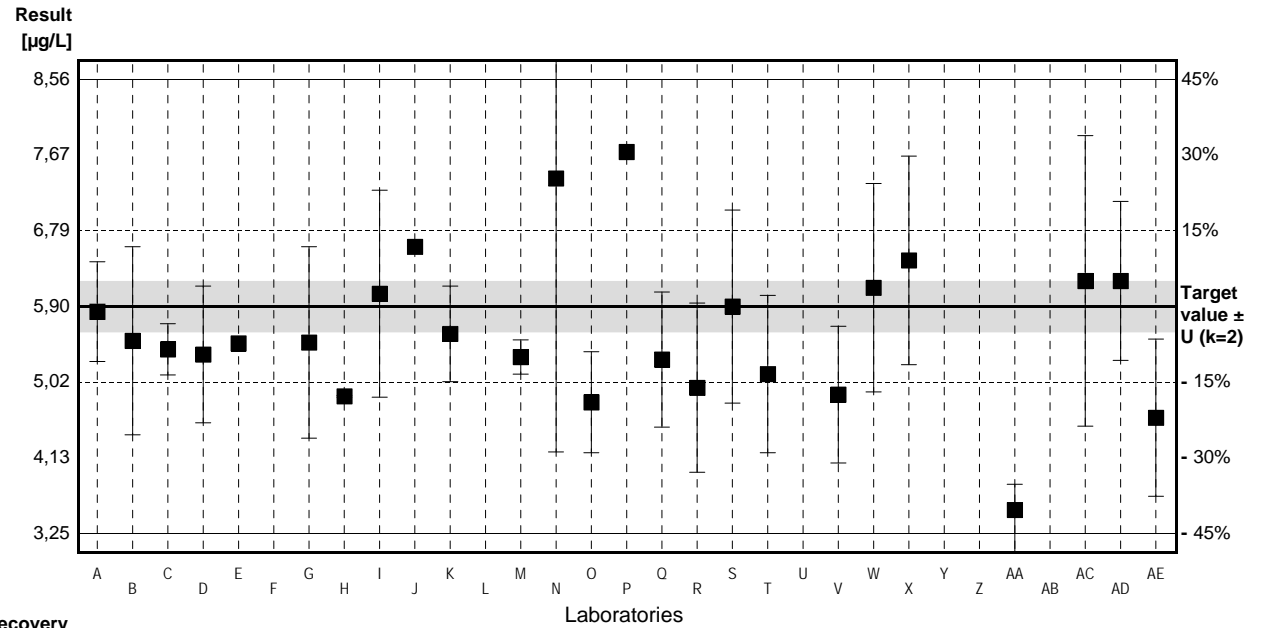
# Sample B8A

## Parameter Toluene

Target value  $\pm U$  (k=2) 5,90  $\mu\text{g/L}$   $\pm$  0,30  $\mu\text{g/L}$   
 IFA result  $\pm U$  (k=2) 6,02  $\mu\text{g/L}$   $\pm$  0,90  $\mu\text{g/L}$   
 Stability test  $\pm U$  (k=2) 5,71  $\mu\text{g/L}$   $\pm$  0,86  $\mu\text{g/L}$

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A	5,84	0,584	$\mu\text{g/L}$	99%	-0,08
B	5,5	1,1	$\mu\text{g/L}$	93%	-0,52
C	5,4	0,3	$\mu\text{g/L}$	92%	-0,65
D	5,34	0,80	$\mu\text{g/L}$	91%	-0,73
E	5,47		$\mu\text{g/L}$	93%	-0,56
F			$\mu\text{g/L}$		
G	5,48	1,12	$\mu\text{g/L}$	93%	-0,55
H	4,85	0,01	$\mu\text{g/L}$	82%	-1,37
I	6,05	1,21	$\mu\text{g/L}$	103%	0,20
J	6,6		$\mu\text{g/L}$	112%	0,91
K	5,58	0,56	$\mu\text{g/L}$	95%	-0,42
L			$\mu\text{g/L}$		
M	5,31	0,20	$\mu\text{g/L}$	90%	-0,77
N	7,4	3,2	$\mu\text{g/L}$	125%	1,96
O	4,78	0,592	$\mu\text{g/L}$	81%	-1,46
P	7,71		$\mu\text{g/L}$	131%	2,36
Q	5,28	0,79	$\mu\text{g/L}$	89%	-0,81
R	4,95	0,99	$\mu\text{g/L}$	84%	-1,24
S	5,9	1,13	$\mu\text{g/L}$	100%	0,00
T	5,11	0,920	$\mu\text{g/L}$	87%	-1,03
U			$\mu\text{g/L}$		
V	4,87	0,8	$\mu\text{g/L}$	83%	-1,34
W	6,12	1,22	$\mu\text{g/L}$	104%	0,29
X	6,44	1,22	$\mu\text{g/L}$	109%	0,70
Y	2,88	0,1	$\mu\text{g/L}$	49%	-3,94
Z	11,65 *		$\mu\text{g/L}$	197%	7,50
AA	3,52	0,3	$\mu\text{g/L}$	60%	-3,10
AB	<5,0		$\mu\text{g/L}$	FN	
AC	6,2	1,7	$\mu\text{g/L}$	105%	0,39
AD	6,20	0,93	$\mu\text{g/L}$	105%	0,39
AE	4,60	0,92	$\mu\text{g/L}$	78%	-1,69

	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	5,74 $\pm$ 0,83	5,51 $\pm$ 0,56	$\mu\text{g/L}$
Recov. $\pm$ CI(99%)	97,3 $\pm$ 14,0	93,5 $\pm$ 9,5	%
SD between labs	1,55	1,02	$\mu\text{g/L}$
RSD between labs	27,0	18,5	%
n for calculation	27	26	





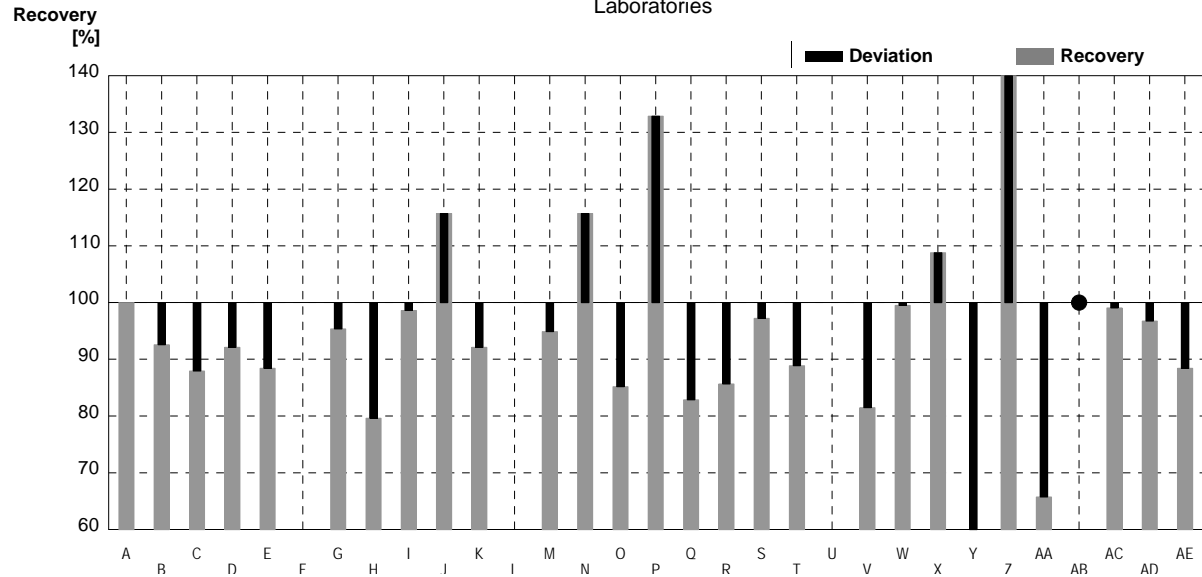
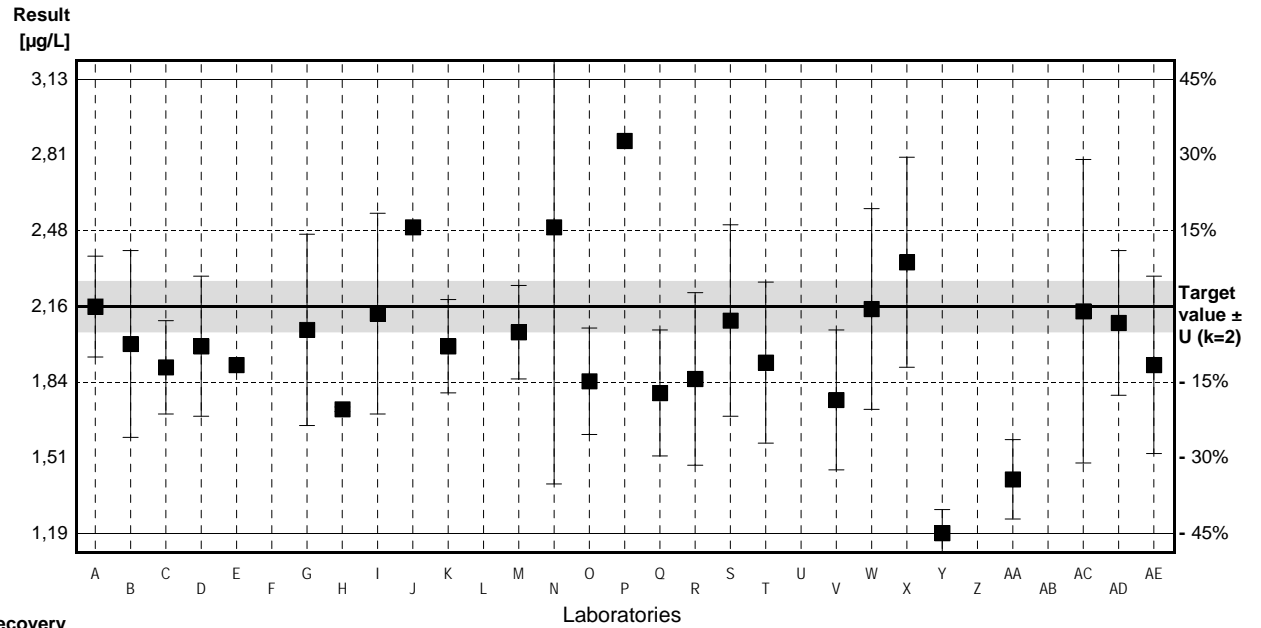
### Sample B8B

#### Parameter Toluene

Target value  $\pm U$  (k=2) 2,16  $\mu\text{g/L}$   $\pm$  0,11  $\mu\text{g/L}$   
 IFA result  $\pm U$  (k=2) 2,12  $\mu\text{g/L}$   $\pm$  0,32  $\mu\text{g/L}$   
 Stability test  $\pm U$  (k=2) 2,07  $\mu\text{g/L}$   $\pm$  0,31  $\mu\text{g/L}$

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A	2,16	0,216	$\mu\text{g/L}$	100%	0,00
B	2,0	0,40	$\mu\text{g/L}$	93%	-0,57
C	1,9	0,2	$\mu\text{g/L}$	88%	-0,93
D	1,99	0,30	$\mu\text{g/L}$	92%	-0,61
E	1,91		$\mu\text{g/L}$	88%	-0,89
F			$\mu\text{g/L}$		
G	2,06	0,41	$\mu\text{g/L}$	95%	-0,36
H	1,72	0,01	$\mu\text{g/L}$	80%	-1,57
I	2,13	0,43	$\mu\text{g/L}$	99%	-0,11
J	2,5		$\mu\text{g/L}$	116%	1,21
K	1,99	0,20	$\mu\text{g/L}$	92%	-0,61
L			$\mu\text{g/L}$		
M	2,05	0,20	$\mu\text{g/L}$	95%	-0,39
N	2,5	1,1	$\mu\text{g/L}$	116%	1,21
O	1,84	0,228	$\mu\text{g/L}$	85%	-1,14
P	2,87 *		$\mu\text{g/L}$	133%	2,53
Q	1,79	0,27	$\mu\text{g/L}$	83%	-1,32
R	1,85	0,37	$\mu\text{g/L}$	86%	-1,10
S	2,1	0,41	$\mu\text{g/L}$	97%	-0,21
T	1,92	0,345	$\mu\text{g/L}$	89%	-0,85
U			$\mu\text{g/L}$		
V	1,76	0,3	$\mu\text{g/L}$	81%	-1,42
W	2,15	0,43	$\mu\text{g/L}$	100%	-0,04
X	2,35	0,45	$\mu\text{g/L}$	109%	0,68
Y	1,19 *	0,1	$\mu\text{g/L}$	55%	-3,45
Z	4,40 *		$\mu\text{g/L}$	204%	7,98
AA	1,42	0,17	$\mu\text{g/L}$	66%	-2,64
AB	<5,0		$\mu\text{g/L}$	•	
AC	2,14	0,65	$\mu\text{g/L}$	99%	-0,07
AD	2,09	0,31	$\mu\text{g/L}$	97%	-0,25
AE	1,91	0,38	$\mu\text{g/L}$	88%	-0,89

	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	2,10 $\pm$ 0,30	2,01 $\pm$ 0,14	$\mu\text{g/L}$
Recov. $\pm$ CI(99%)	97,2 $\pm$ 13,9	93,0 $\pm$ 6,4	%
SD between labs	0,56	0,24	$\mu\text{g/L}$
RSD between labs	26,8	12,0	%
n for calculation	27	24	



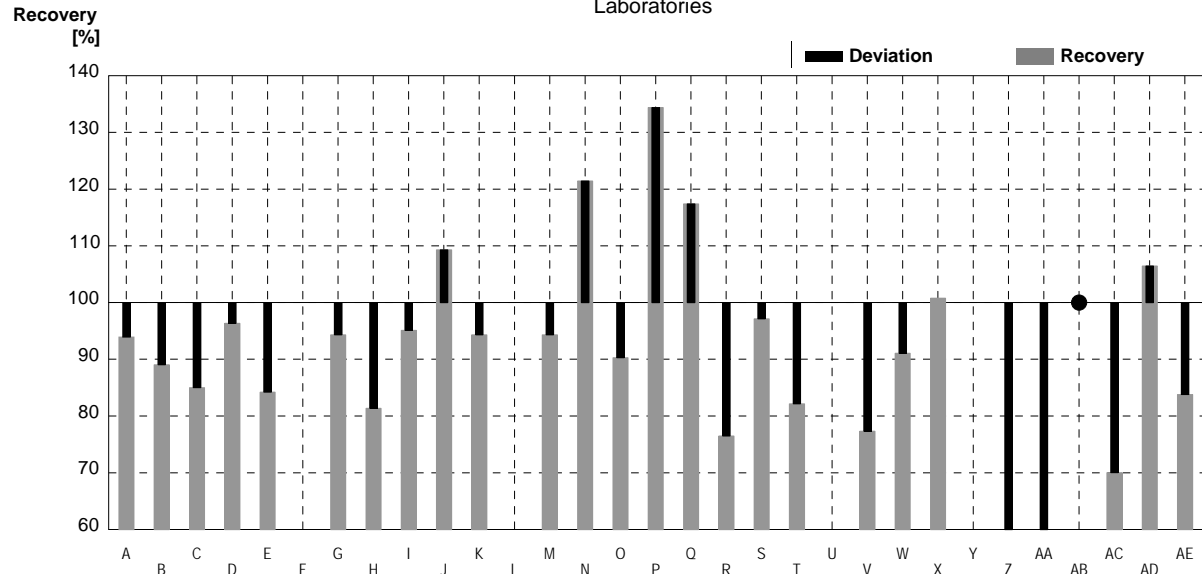
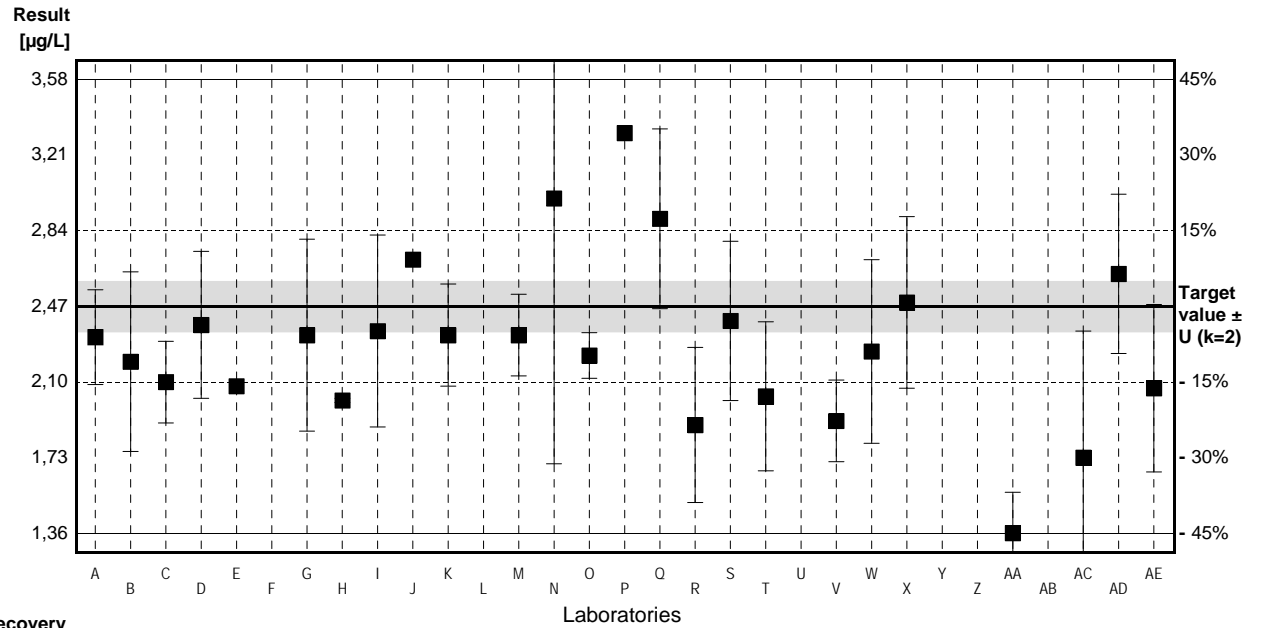
# Sample B8A

## Parameter Ethylbenzene

Target value  $\pm U$  (k=2) 2,47  $\mu\text{g/L}$   $\pm$  0,12  $\mu\text{g/L}$   
 IFA result  $\pm U$  (k=2) 2,41  $\mu\text{g/L}$   $\pm$  0,36  $\mu\text{g/L}$   
 Stability test  $\pm U$  (k=2) 2,38  $\mu\text{g/L}$   $\pm$  0,36  $\mu\text{g/L}$

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A	2,32	0,232	$\mu\text{g/L}$	94%	-0,36
B	2,2	0,44	$\mu\text{g/L}$	89%	-0,64
C	2,1	0,2	$\mu\text{g/L}$	85%	-0,88
D	2,38	0,36	$\mu\text{g/L}$	96%	-0,21
E	2,08		$\mu\text{g/L}$	84%	-0,93
F			$\mu\text{g/L}$		
G	2,33	0,47	$\mu\text{g/L}$	94%	-0,33
H	2,01	0,01	$\mu\text{g/L}$	81%	-1,10
I	2,35	0,47	$\mu\text{g/L}$	95%	-0,29
J	2,7		$\mu\text{g/L}$	109%	0,55
K	2,33	0,25	$\mu\text{g/L}$	94%	-0,33
L			$\mu\text{g/L}$		
M	2,33	0,20	$\mu\text{g/L}$	94%	-0,33
N	3,0	1,3	$\mu\text{g/L}$	121%	1,26
O	2,23	0,112	$\mu\text{g/L}$	90%	-0,57
P	3,32 *		$\mu\text{g/L}$	134%	2,02
Q	2,90	0,44	$\mu\text{g/L}$	117%	1,02
R	1,89	0,38	$\mu\text{g/L}$	77%	-1,38
S	2,4	0,39	$\mu\text{g/L}$	97%	-0,17
T	2,03	0,365	$\mu\text{g/L}$	82%	-1,05
U			$\mu\text{g/L}$		
V	1,91	0,2	$\mu\text{g/L}$	77%	-1,33
W	2,25	0,45	$\mu\text{g/L}$	91%	-0,52
X	2,49	0,42	$\mu\text{g/L}$	101%	0,05
Y	n.b.		$\mu\text{g/L}$		
Z	0,95 *		$\mu\text{g/L}$	38%	-3,62
AA	1,36	0,2	$\mu\text{g/L}$	55%	-2,64
AB	<5,0		$\mu\text{g/L}$	•	
AC	1,73	0,62	$\mu\text{g/L}$	70%	-1,76
AD	2,63	0,39	$\mu\text{g/L}$	106%	0,38
AE	2,07	0,41	$\mu\text{g/L}$	84%	-0,95

	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	2,24 $\pm$ 0,26	2,25 $\pm$ 0,21	$\mu\text{g/L}$
Recov. $\pm$ CI(99%)	90,8 $\pm$ 10,7	91,1 $\pm$ 8,3	%
SD between labs	0,48	0,36	$\mu\text{g/L}$
RSD between labs	21,5	15,9	%
n for calculation	26	24	



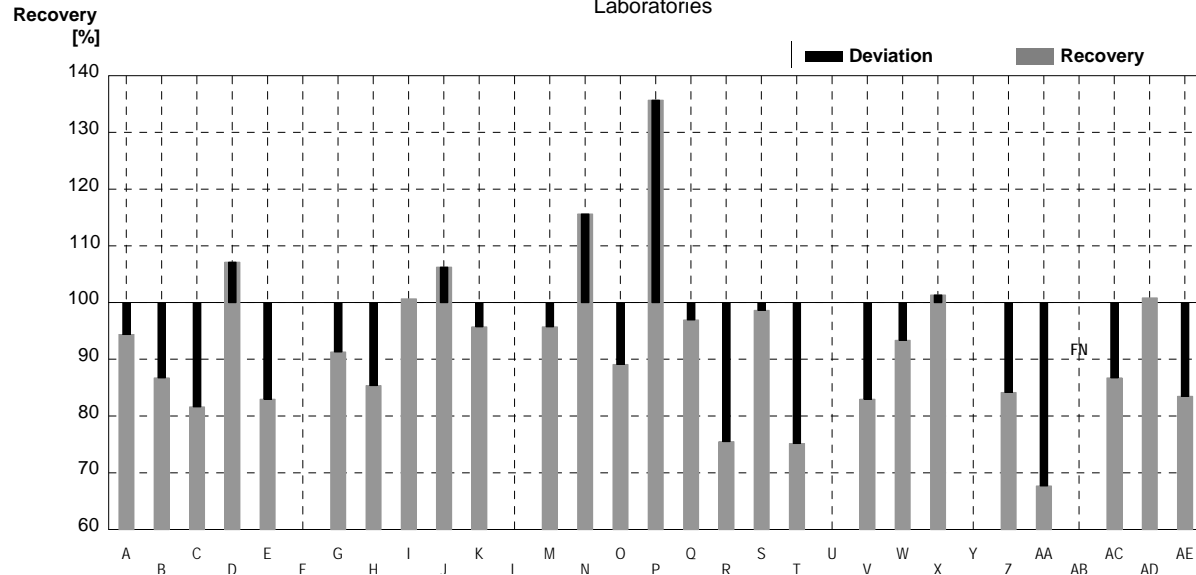
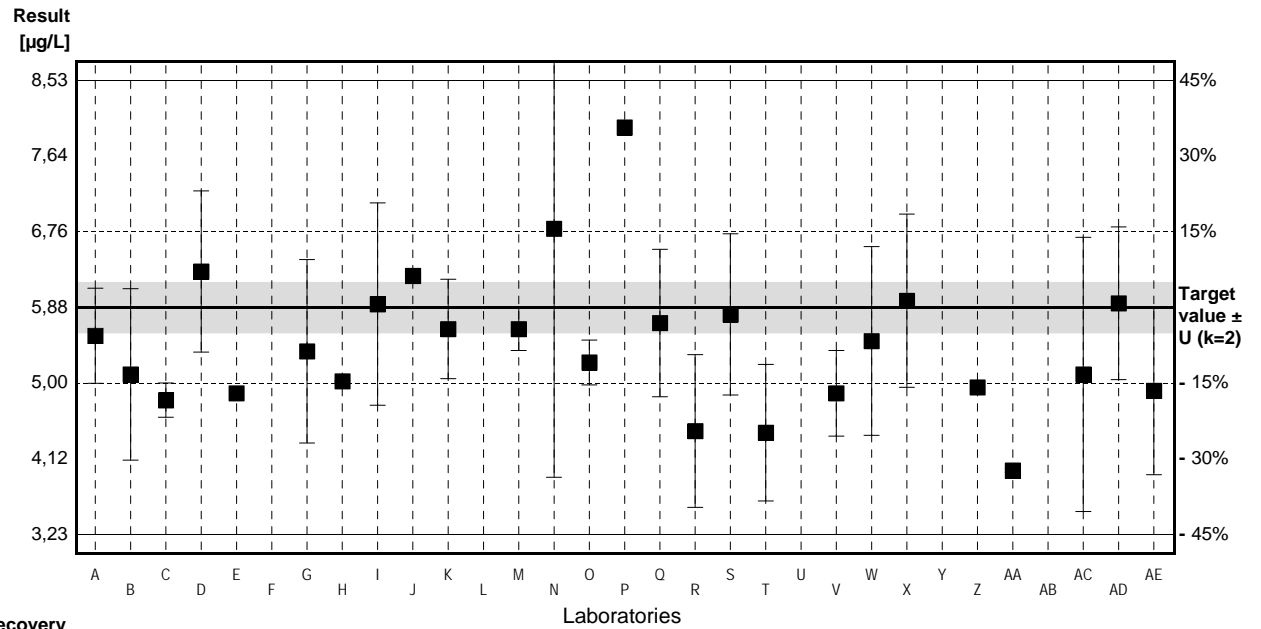
### Sample B8B

#### Parameter Ethylbenzene

Target value  $\pm U$  (k=2) 5,88  $\mu\text{g/L}$   $\pm$  0,29  $\mu\text{g/L}$   
 IFA result  $\pm U$  (k=2) 5,70  $\mu\text{g/L}$   $\pm$  0,86  $\mu\text{g/L}$   
 Stability test  $\pm U$  (k=2) 5,47  $\mu\text{g/L}$   $\pm$  0,82  $\mu\text{g/L}$

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A	5,55	0,555	$\mu\text{g/L}$	94%	-0,33
B	5,1	1,0	$\mu\text{g/L}$	87%	-0,78
C	4,8	0,2	$\mu\text{g/L}$	82%	-1,08
D	6,30	0,94	$\mu\text{g/L}$	107%	0,42
E	4,88		$\mu\text{g/L}$	83%	-1,00
F			$\mu\text{g/L}$		
G	5,37	1,07	$\mu\text{g/L}$	91%	-0,51
H	5,02	0,01	$\mu\text{g/L}$	85%	-0,86
I	5,92	1,18	$\mu\text{g/L}$	101%	0,04
J	6,25		$\mu\text{g/L}$	106%	0,37
K	5,63	0,58	$\mu\text{g/L}$	96%	-0,25
L			$\mu\text{g/L}$		
M	5,63	0,25	$\mu\text{g/L}$	96%	-0,25
N	6,8	2,9	$\mu\text{g/L}$	116%	0,92
O	5,24	0,262	$\mu\text{g/L}$	89%	-0,64
P	7,98 *		$\mu\text{g/L}$	136%	2,10
Q	5,70	0,86	$\mu\text{g/L}$	97%	-0,18
R	4,44	0,89	$\mu\text{g/L}$	76%	-1,44
S	5,8	0,94	$\mu\text{g/L}$	99%	-0,08
T	4,42	0,796	$\mu\text{g/L}$	75%	-1,46
U			$\mu\text{g/L}$		
V	4,88	0,5	$\mu\text{g/L}$	83%	-1,00
W	5,49	1,10	$\mu\text{g/L}$	93%	-0,39
X	5,96	1,01	$\mu\text{g/L}$	101%	0,08
Y	n.b.		$\mu\text{g/L}$		
Z	4,95		$\mu\text{g/L}$	84%	-0,93
AA	3,98	0,02	$\mu\text{g/L}$	68%	-1,90
AB	<5,0		$\mu\text{g/L}$	FN	
AC	5,1	1,6	$\mu\text{g/L}$	87%	-0,78
AD	5,93	0,89	$\mu\text{g/L}$	101%	0,05
AE	4,91	0,98	$\mu\text{g/L}$	84%	-0,97

	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	5,46 $\pm$ 0,45	5,36 $\pm$ 0,37	$\mu\text{g/L}$
Recov. $\pm$ CI(99%)	92,9 $\pm$ 7,6	91,2 $\pm$ 6,2	%
SD between labs	0,82	0,66	$\mu\text{g/L}$
RSD between labs	15,0	12,2	%
n for calculation	26	25	



### Sample B8A

#### Parameter m,p-Xylene

Target value ± U (k=2) 0,85 µg/L ± 0,04 µg/L

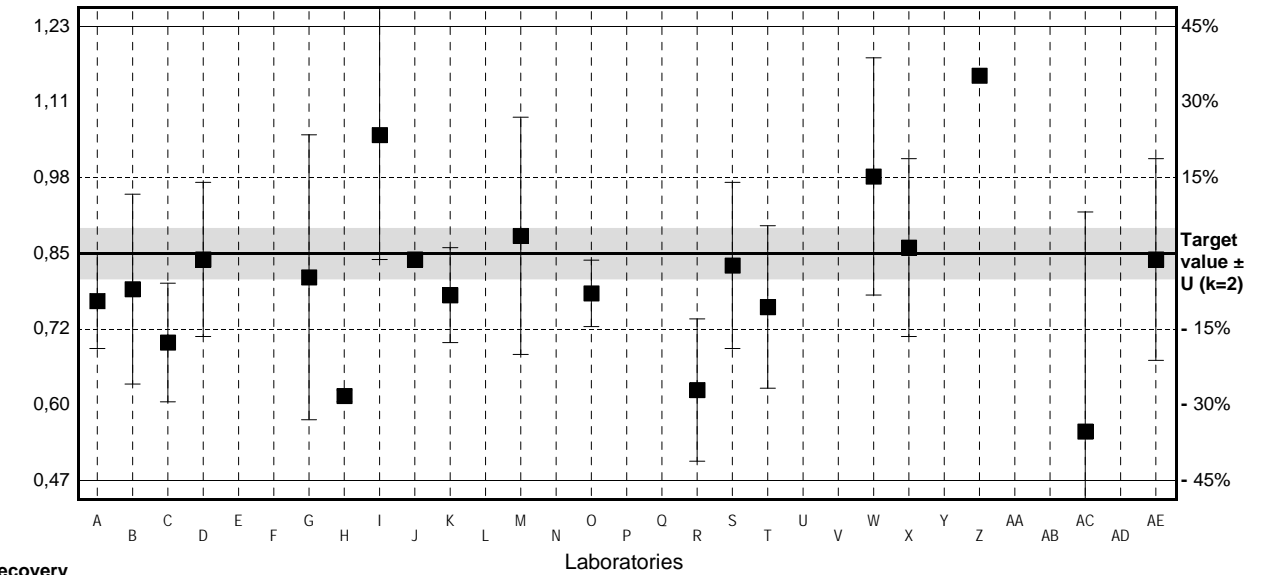
IFA result ± U (k=2) 0,85 µg/L ± 0,13 µg/L

Stability test ± U (k=2) 0,86 µg/L ± 0,13 µg/L

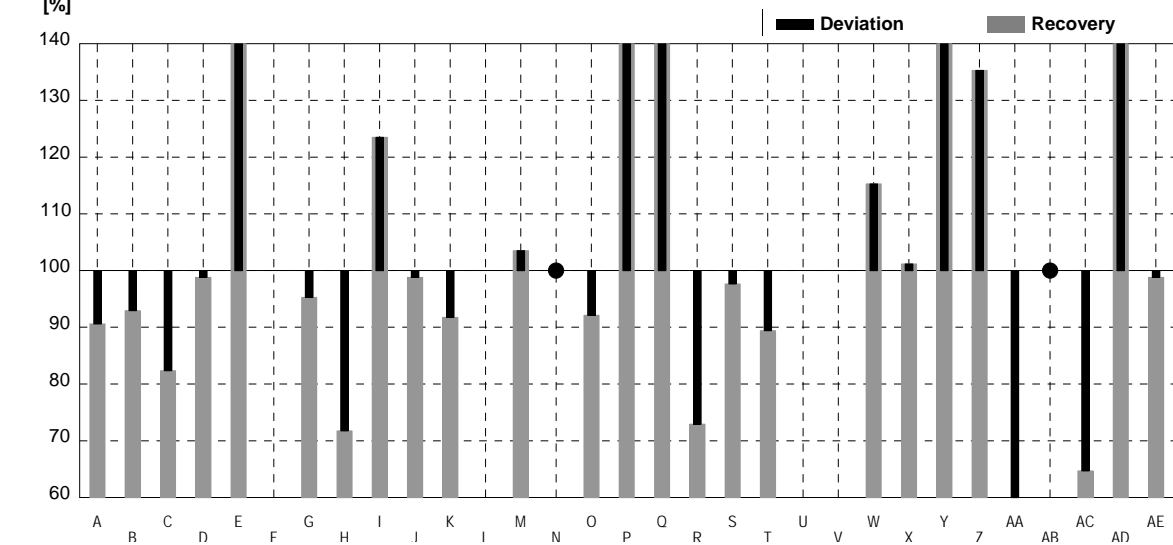
Lab Code	Result	±	Unit	Recovery	z-Score
A	0,77	0,08	µg/L	91%	
B	0,79	0,16	µg/L	93%	
C	0,7	0,1	µg/L	82%	
D	0,84	0,13	µg/L	99%	
E	1,31		µg/L	154%	
F			µg/L		
G	0,81	0,24	µg/L	95%	
H	0,61	0,01	µg/L	72%	
I	1,05	0,21	µg/L	124%	
J	0,84		µg/L	99%	
K	0,78	0,08	µg/L	92%	
L			µg/L		
M	0,88	0,20	µg/L	104%	
N	<1,1		µg/L	•	
O	0,783	0,056	µg/L	92%	
P	1,46		µg/L	172%	
Q	1,33	0,20	µg/L	156%	
R	0,62	0,12	µg/L	73%	
S	0,83	0,14	µg/L	98%	
T	0,76	0,137	µg/L	89%	
U			µg/L		
V			µg/L		
W	0,98	0,20	µg/L	115%	
X	0,86	0,15	µg/L	101%	
Y	3,73 *	0,1	µg/L	439%	
Z	1,15		µg/L	135%	
AA	0,25	0,1	µg/L	29%	
AB	<5,0		µg/L	•	
AC	0,55	0,37	µg/L	65%	
AD	1,78 *	0,27	µg/L	209%	
AE	0,84	0,17	µg/L	99%	

	All results	Outliers excl.	Unit
Mean ± CI(99%)	1,01 ± 0,36	0,86 ± 0,16	µg/L
Recov. ± CI(99%)	119,1 ± 42,7	101,2 ± 18,5	%
SD between labs	0,65	0,27	µg/L
RSD between labs	64,0	31,1	%
n for calculation	25	23	

Result  
[µg/L]



Recovery  
[%]



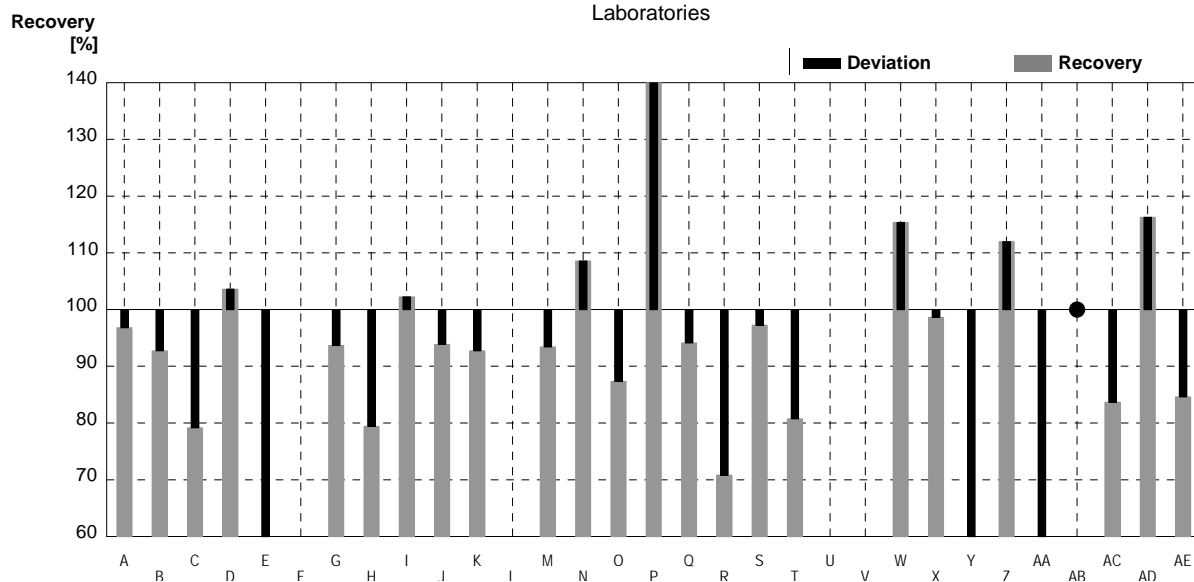
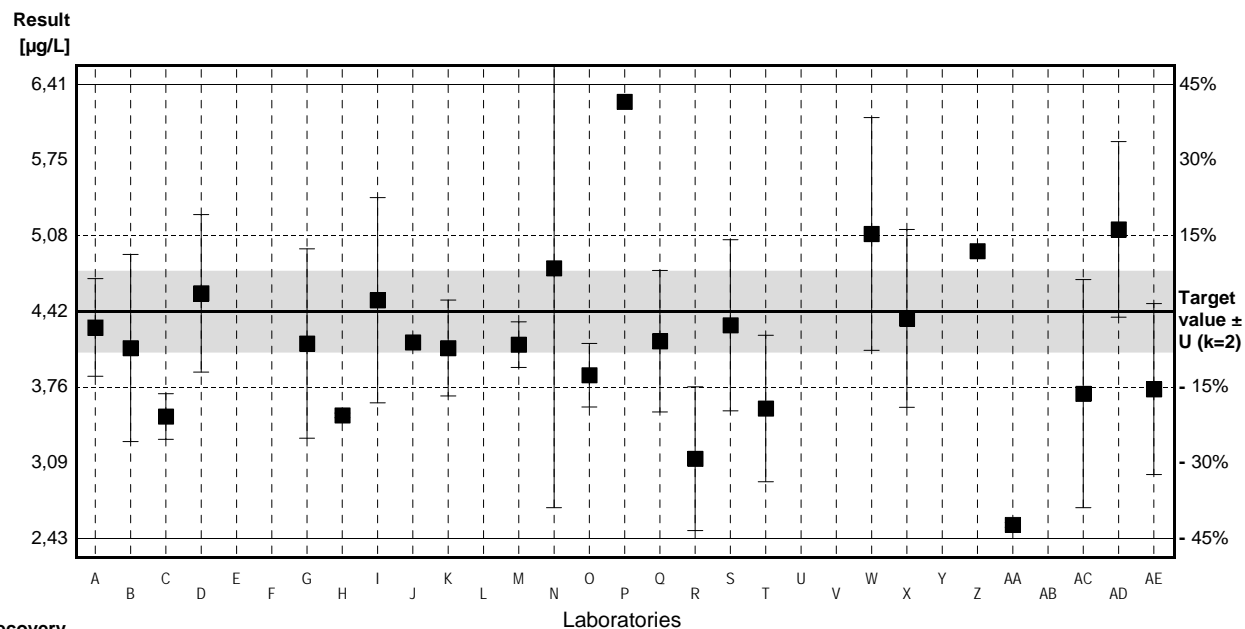
### Sample B8B

#### Parameter m,p-Xylene

Target value  $\pm U$  (k=2) 4,42  $\mu\text{g/L}$   $\pm$  0,35  $\mu\text{g/L}$   
 IFA result  $\pm U$  (k=2) 4,20  $\mu\text{g/L}$   $\pm$  0,63  $\mu\text{g/L}$   
 Stability test  $\pm U$  (k=2) 4,01  $\mu\text{g/L}$   $\pm$  0,60  $\mu\text{g/L}$

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A	4,28	0,428	$\mu\text{g/L}$	97%	-0,18
B	4,1	0,82	$\mu\text{g/L}$	93%	-0,40
C	3,5	0,2	$\mu\text{g/L}$	79%	-1,16
D	4,58	0,69	$\mu\text{g/L}$	104%	0,20
E	1,78 *		$\mu\text{g/L}$	40%	-3,32
F			$\mu\text{g/L}$		
G	4,14	0,83	$\mu\text{g/L}$	94%	-0,35
H	3,51	0,02	$\mu\text{g/L}$	79%	-1,14
I	4,52	0,90	$\mu\text{g/L}$	102%	0,13
J	4,15		$\mu\text{g/L}$	94%	-0,34
K	4,10	0,42	$\mu\text{g/L}$	93%	-0,40
L			$\mu\text{g/L}$		
M	4,13	0,20	$\mu\text{g/L}$	93%	-0,36
N	4,8	2,1	$\mu\text{g/L}$	109%	0,48
O	3,862	0,278	$\mu\text{g/L}$	87%	-0,70
P	6,26 *		$\mu\text{g/L}$	142%	2,31
Q	4,16	0,62	$\mu\text{g/L}$	94%	-0,33
R	3,13	0,63	$\mu\text{g/L}$	71%	-1,62
S	4,3	0,75	$\mu\text{g/L}$	97%	-0,15
T	3,57	0,643	$\mu\text{g/L}$	81%	-1,07
U			$\mu\text{g/L}$		
V			$\mu\text{g/L}$		
W	5,10	1,02	$\mu\text{g/L}$	115%	0,85
X	4,36	0,78	$\mu\text{g/L}$	99%	-0,08
Y	2,34	0,1	$\mu\text{g/L}$	53%	-2,61
Z	4,95		$\mu\text{g/L}$	112%	0,67
AA	2,55	0,02	$\mu\text{g/L}$	58%	-2,35
AB	<5,0		$\mu\text{g/L}$	•	
AC	3,7	1	$\mu\text{g/L}$	84%	-0,90
AD	5,14	0,77	$\mu\text{g/L}$	116%	0,90
AE	3,74	0,75	$\mu\text{g/L}$	85%	-0,85

	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	4,03 $\pm$ 0,51	4,03 $\pm$ 0,41	$\mu\text{g/L}$
Recov. $\pm$ CI(99%)	91,2 $\pm$ 11,5	91,2 $\pm$ 9,2	%
SD between labs	0,93	0,71	$\mu\text{g/L}$
RSD between labs	23,0	17,6	%
n for calculation	26	24	



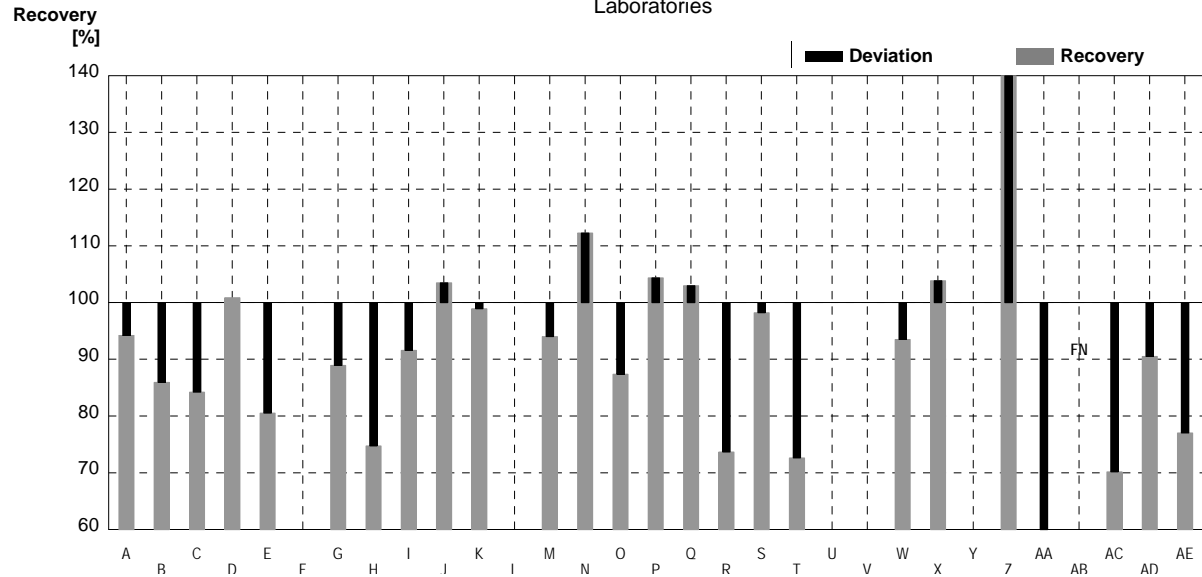
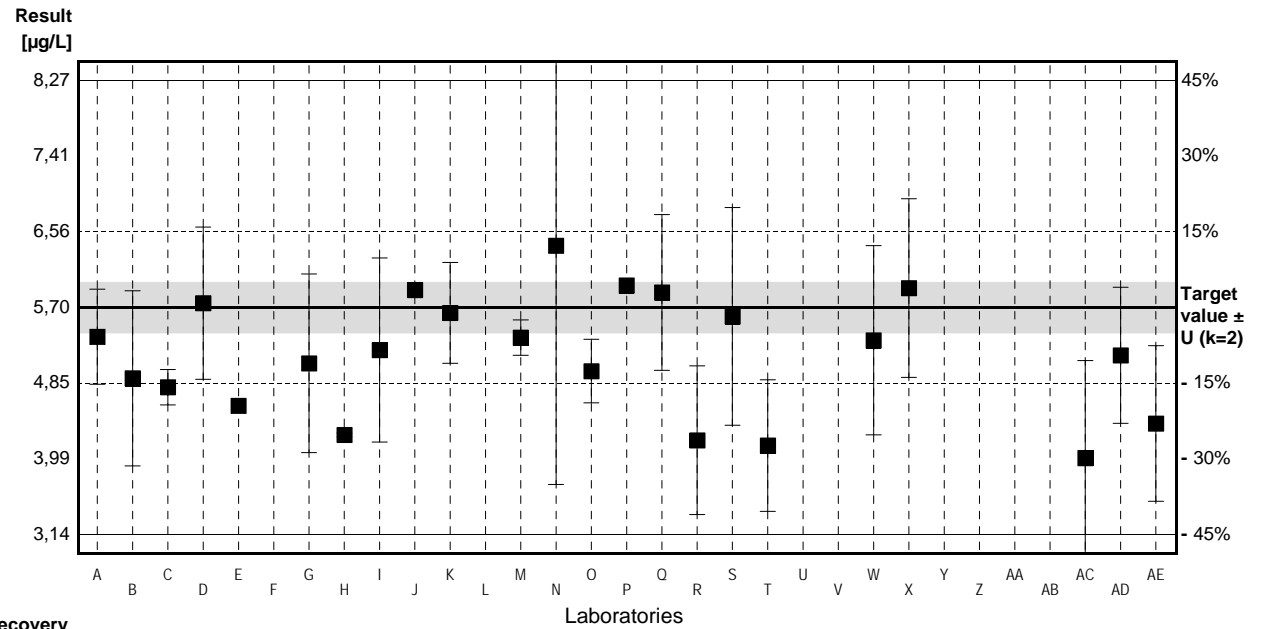
# Sample B8A

## Parameter o-Xylene

Target value  $\pm U$  (k=2) 5,70  $\mu\text{g/L}$   $\pm$  0,29  $\mu\text{g/L}$   
 IFA result  $\pm U$  (k=2) 5,38  $\mu\text{g/L}$   $\pm$  0,81  $\mu\text{g/L}$   
 Stability test  $\pm U$  (k=2) 5,27  $\mu\text{g/L}$   $\pm$  0,79  $\mu\text{g/L}$

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A	5,37	0,537	$\mu\text{g/L}$	94%	-0,41
B	4,9	0,99	$\mu\text{g/L}$	86%	-1,00
C	4,8	0,2	$\mu\text{g/L}$	84%	-1,13
D	5,75	0,86	$\mu\text{g/L}$	101%	0,06
E	4,59		$\mu\text{g/L}$	81%	-1,39
F			$\mu\text{g/L}$		
G	5,07	1,01	$\mu\text{g/L}$	89%	-0,79
H	4,26	0,02	$\mu\text{g/L}$	75%	-1,80
I	5,22	1,04	$\mu\text{g/L}$	92%	-0,60
J	5,9		$\mu\text{g/L}$	104%	0,25
K	5,64	0,57	$\mu\text{g/L}$	99%	-0,08
L			$\mu\text{g/L}$		
M	5,36	0,20	$\mu\text{g/L}$	94%	-0,43
N	6,4	2,7	$\mu\text{g/L}$	112%	0,88
O	4,981	0,359	$\mu\text{g/L}$	87%	-0,90
P	5,95		$\mu\text{g/L}$	104%	0,31
Q	5,87	0,88	$\mu\text{g/L}$	103%	0,21
R	4,20	0,84	$\mu\text{g/L}$	74%	-1,88
S	5,6	1,23	$\mu\text{g/L}$	98%	-0,13
T	4,14	0,744	$\mu\text{g/L}$	73%	-1,95
U			$\mu\text{g/L}$		
V			$\mu\text{g/L}$		
W	5,33	1,07	$\mu\text{g/L}$	94%	-0,46
X	5,92	1,01	$\mu\text{g/L}$	104%	0,28
Y	n.b.		$\mu\text{g/L}$		
Z	11,05 *		$\mu\text{g/L}$	194%	6,70
AA	3,10	0,2	$\mu\text{g/L}$	54%	-3,26
AB	<5,0		$\mu\text{g/L}$	FN	
AC	4	1,1	$\mu\text{g/L}$	70%	-2,13
AD	5,16	0,77	$\mu\text{g/L}$	91%	-0,68
AE	4,39	0,88	$\mu\text{g/L}$	77%	-1,64

	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	5,32 $\pm$ 0,79	5,08 $\pm$ 0,45	$\mu\text{g/L}$
Recov. $\pm$ CI(99%)	93,3 $\pm$ 13,9	89,1 $\pm$ 7,9	%
SD between labs	1,42	0,78	$\mu\text{g/L}$
RSD between labs	26,7	15,4	%
n for calculation	25	24	



### Sample B8B

#### Parameter o-Xylene

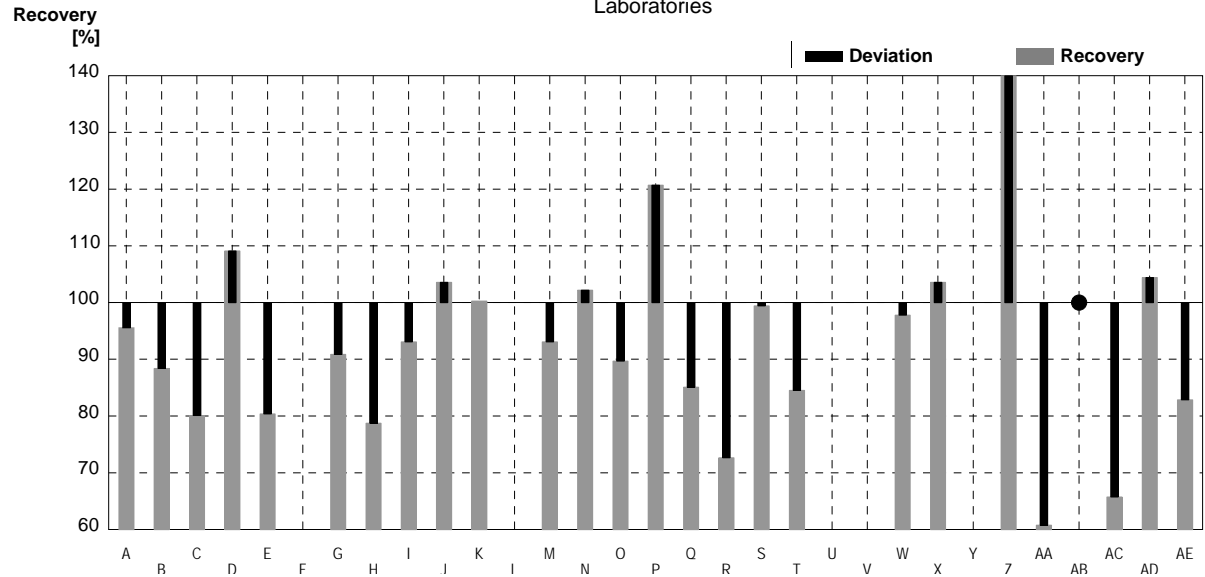
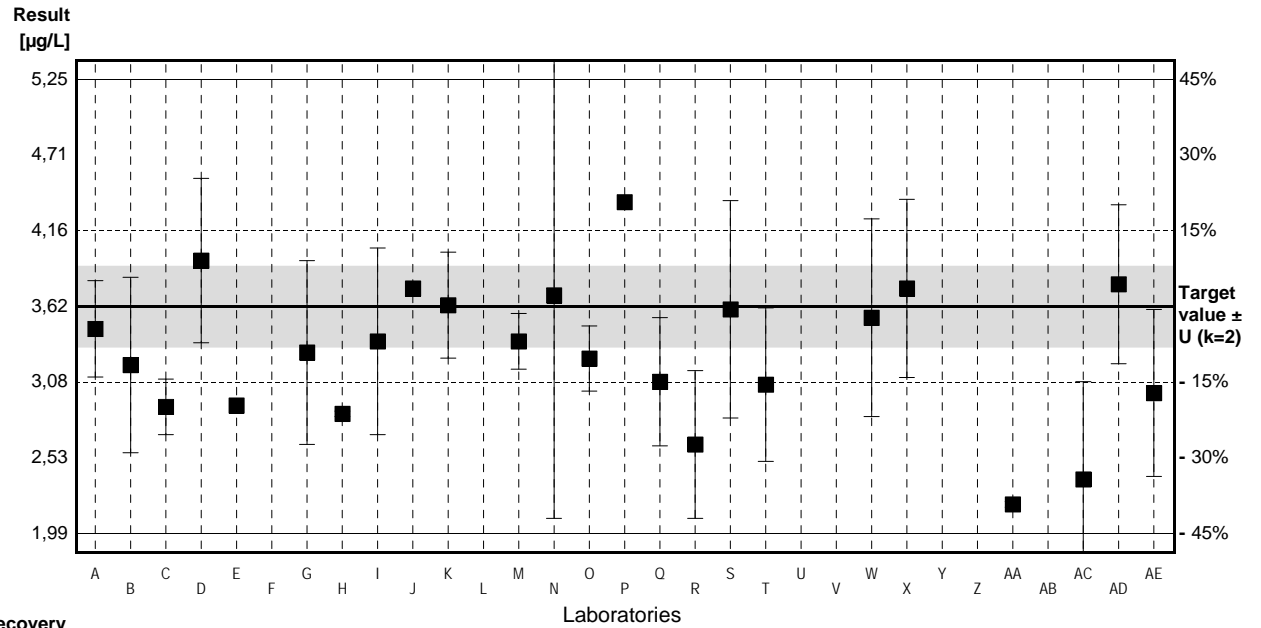
Target value  $\pm U$  (k=2) 3,62  $\mu\text{g/L}$   $\pm$  0,29  $\mu\text{g/L}$

IFA result  $\pm U$  (k=2) 3,49  $\mu\text{g/L}$   $\pm$  0,52  $\mu\text{g/L}$

Stability test  $\pm U$  (k=2) 3,40  $\mu\text{g/L}$   $\pm$  0,51  $\mu\text{g/L}$

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A	3,46	0,346	$\mu\text{g/L}$	96%	-0,32
B	3,2	0,63	$\mu\text{g/L}$	88%	-0,83
C	2,9	0,2	$\mu\text{g/L}$	80%	-1,42
D	3,95	0,59	$\mu\text{g/L}$	109%	0,65
E	2,91		$\mu\text{g/L}$	80%	-1,40
F			$\mu\text{g/L}$		
G	3,29	0,66	$\mu\text{g/L}$	91%	-0,65
H	2,85	0,02	$\mu\text{g/L}$	79%	-1,52
I	3,37	0,67	$\mu\text{g/L}$	93%	-0,49
J	3,75		$\mu\text{g/L}$	104%	0,26
K	3,63	0,38	$\mu\text{g/L}$	100%	0,02
L			$\mu\text{g/L}$		
M	3,37	0,20	$\mu\text{g/L}$	93%	-0,49
N	3,7	1,6	$\mu\text{g/L}$	102%	0,16
O	3,247	0,234	$\mu\text{g/L}$	90%	-0,74
P	4,37		$\mu\text{g/L}$	121%	1,48
Q	3,08	0,46	$\mu\text{g/L}$	85%	-1,07
R	2,63	0,53	$\mu\text{g/L}$	73%	-1,95
S	3,6	0,78	$\mu\text{g/L}$	99%	-0,04
T	3,06	0,551	$\mu\text{g/L}$	85%	-1,10
U			$\mu\text{g/L}$		
V			$\mu\text{g/L}$		
W	3,54	0,71	$\mu\text{g/L}$	98%	-0,16
X	3,75	0,64	$\mu\text{g/L}$	104%	0,26
Y	n.b.		$\mu\text{g/L}$		
Z	7,45 *		$\mu\text{g/L}$	206%	7,56
AA	2,2	0,02	$\mu\text{g/L}$	61%	-2,80
AB	<5,0		$\mu\text{g/L}$	•	
AC	2,38	0,7	$\mu\text{g/L}$	66%	-2,45
AD	3,78	0,57	$\mu\text{g/L}$	104%	0,32
AE	3,00	0,60	$\mu\text{g/L}$	83%	-1,22

	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	3,46 $\pm$ 0,54	3,29 $\pm$ 0,29	$\mu\text{g/L}$
Recov. $\pm$ CI(99%)	95,5 $\pm$ 15,0	90,9 $\pm$ 8,0	%
SD between labs	0,97	0,51	$\mu\text{g/L}$
RSD between labs	28,0	15,4	%
n for calculation	25	24	







# Illustration of Results Laboratory Oriented Part

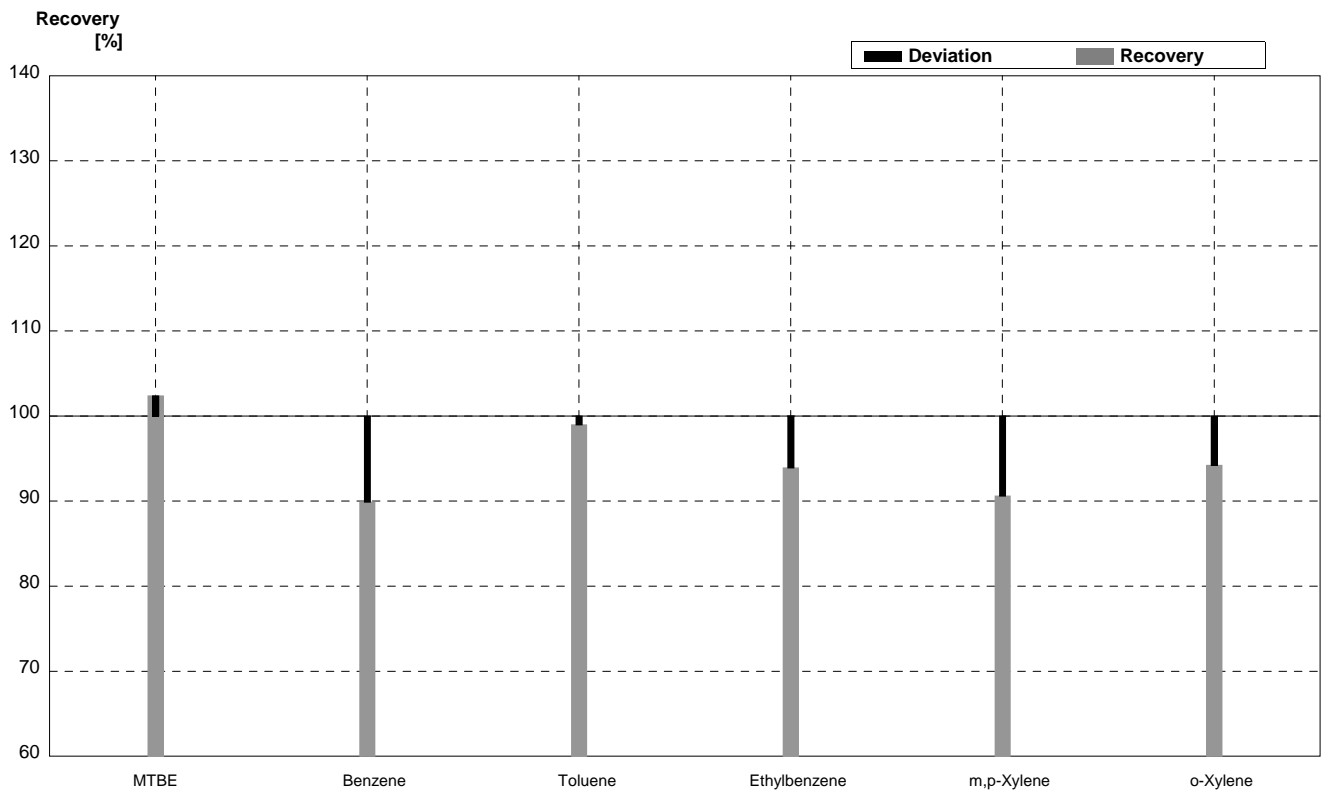
Round B8 (BTEX and MTBE)

Sample Dispatch: 14 October 2013



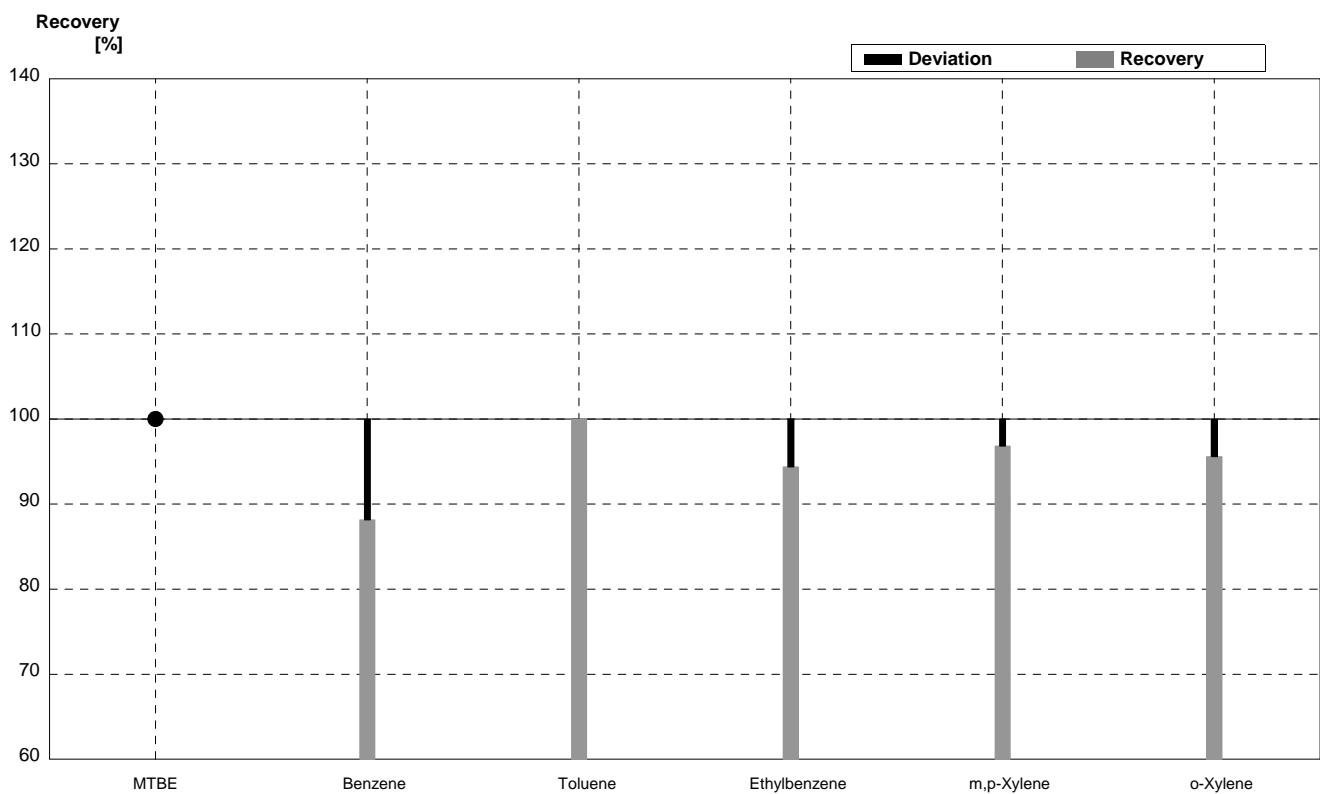
**Sample B8A**  
**Laboratory A**

Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	2,10	0,11	2,15	0,215	$\mu\text{g/L}$	102%
Benzene	3,46	0,17	3,11	0,311	$\mu\text{g/L}$	90%
Toluene	5,90	0,30	5,84	0,584	$\mu\text{g/L}$	99%
Ethylbenzene	2,47	0,12	2,32	0,232	$\mu\text{g/L}$	94%
m,p-Xylene	0,85	0,04	0,77	0,08	$\mu\text{g/L}$	91%
o-Xylene	5,70	0,29	5,37	0,537	$\mu\text{g/L}$	94%



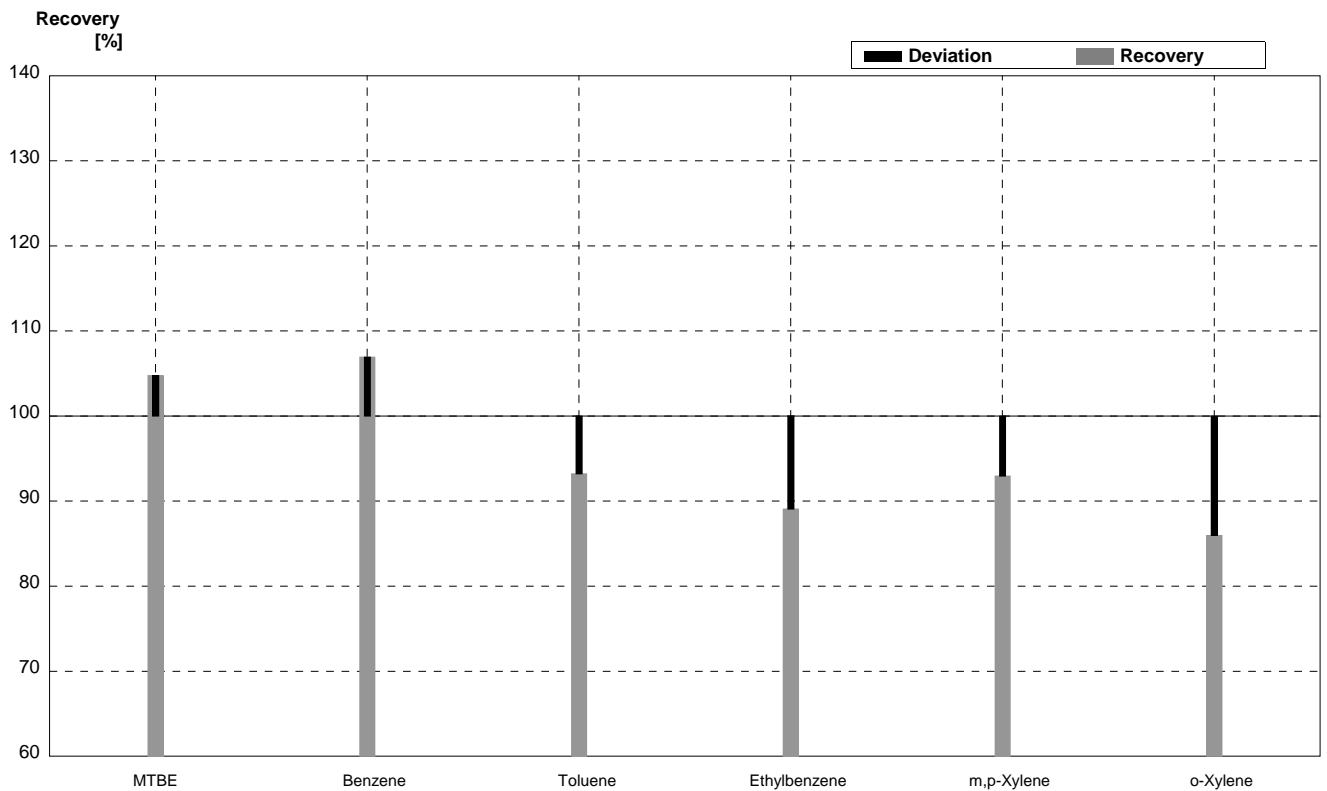
**Sample B8B**  
**Laboratory A**

Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	<0,2		<0,5		$\mu\text{g/L}$	•
Benzene	1,86	0,09	1,64	0,164	$\mu\text{g/L}$	88%
Toluene	2,16	0,11	2,16	0,216	$\mu\text{g/L}$	100%
Ethylbenzene	5,88	0,29	5,55	0,555	$\mu\text{g/L}$	94%
m,p-Xylene	4,42	0,35	4,28	0,428	$\mu\text{g/L}$	97%
o-Xylene	3,62	0,29	3,46	0,346	$\mu\text{g/L}$	96%



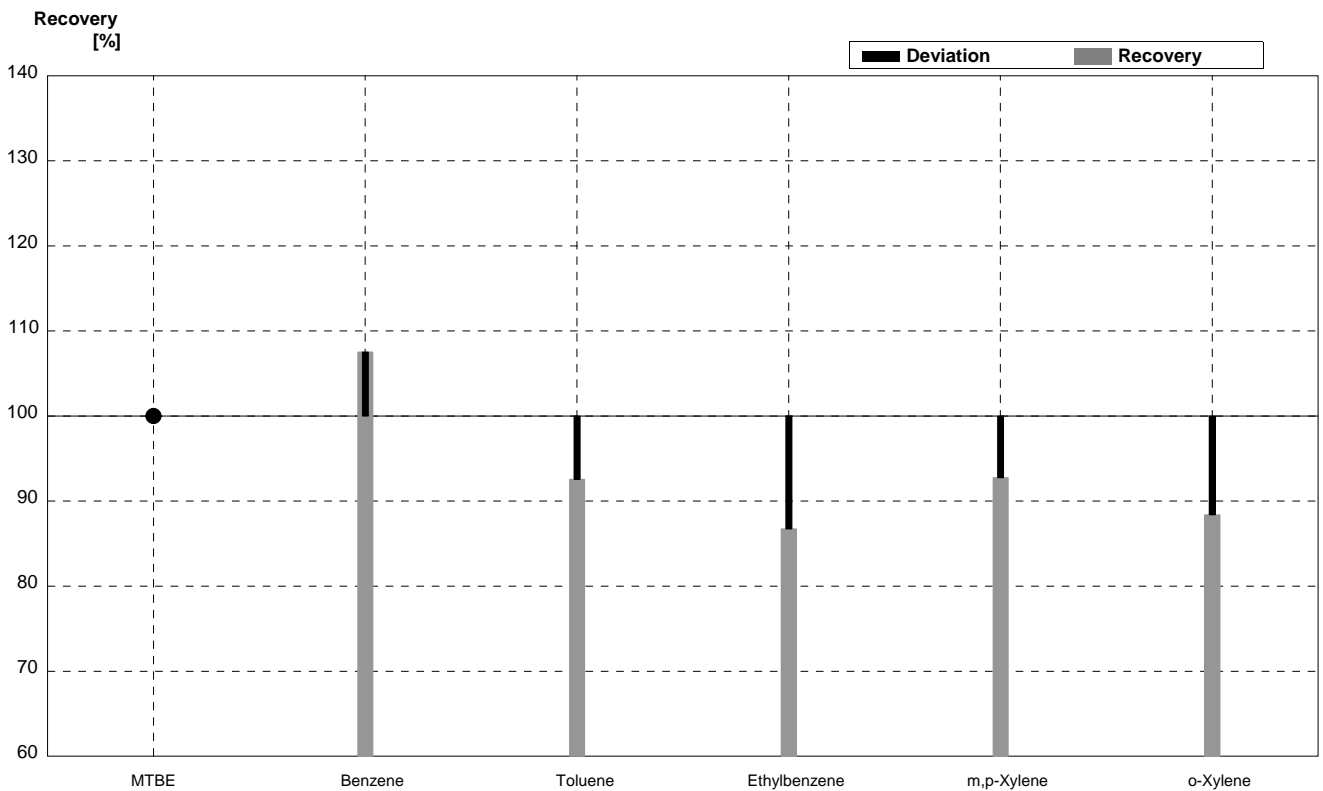
**Sample B8A**  
**Laboratory B**

Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	2,10	0,11	2,2	0,44	$\mu\text{g/L}$	105%
Benzene	3,46	0,17	3,7	0,75	$\mu\text{g/L}$	107%
Toluene	5,90	0,30	5,5	1,1	$\mu\text{g/L}$	93%
Ethylbenzene	2,47	0,12	2,2	0,44	$\mu\text{g/L}$	89%
m,p-Xylene	0,85	0,04	0,79	0,16	$\mu\text{g/L}$	93%
o-Xylene	5,70	0,29	4,9	0,99	$\mu\text{g/L}$	86%



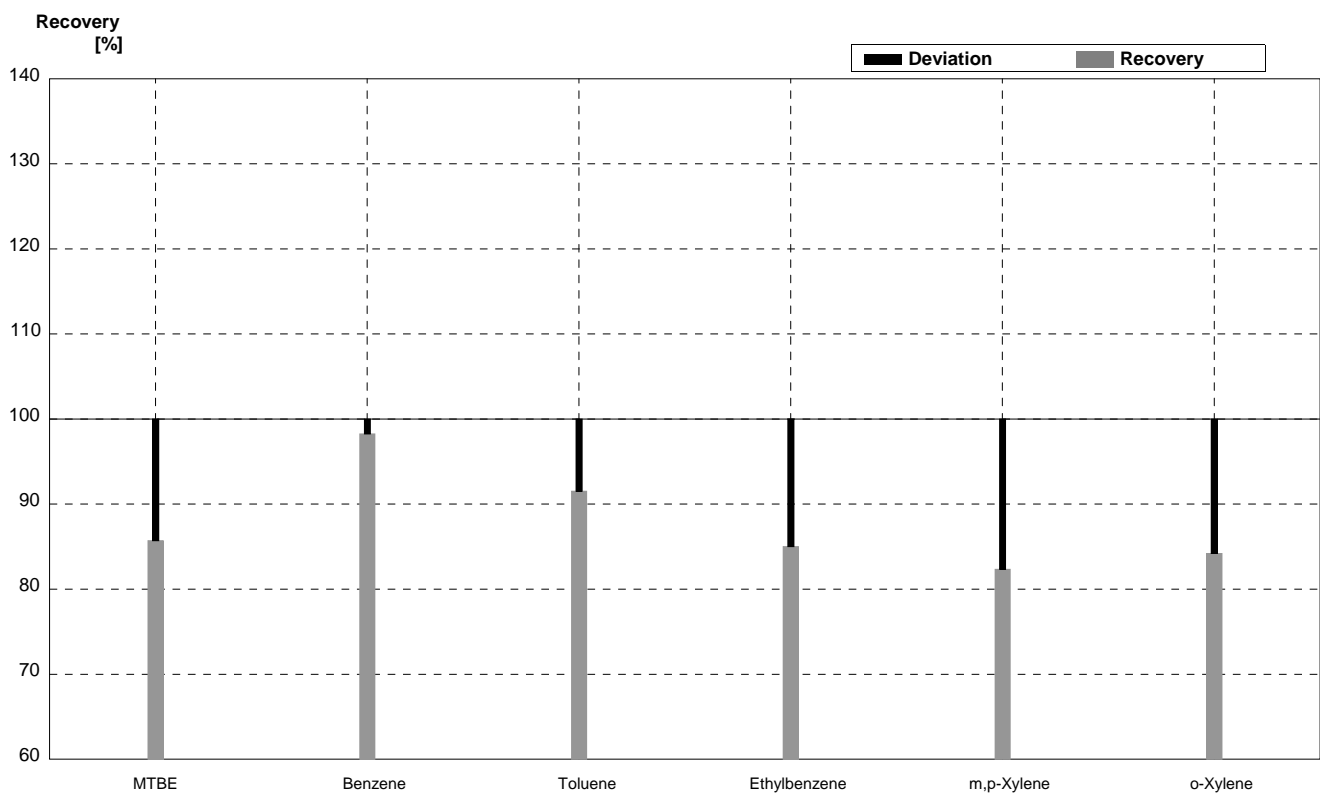
**Sample B8B**  
**Laboratory B**

Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	<0,2		<0,1		$\mu\text{g/L}$	•
Benzene	1,86	0,09	2,0	0,40	$\mu\text{g/L}$	108%
Toluene	2,16	0,11	2,0	0,40	$\mu\text{g/L}$	93%
Ethylbenzene	5,88	0,29	5,1	1,0	$\mu\text{g/L}$	87%
m,p-Xylene	4,42	0,35	4,1	0,82	$\mu\text{g/L}$	93%
o-Xylene	3,62	0,29	3,2	0,63	$\mu\text{g/L}$	88%



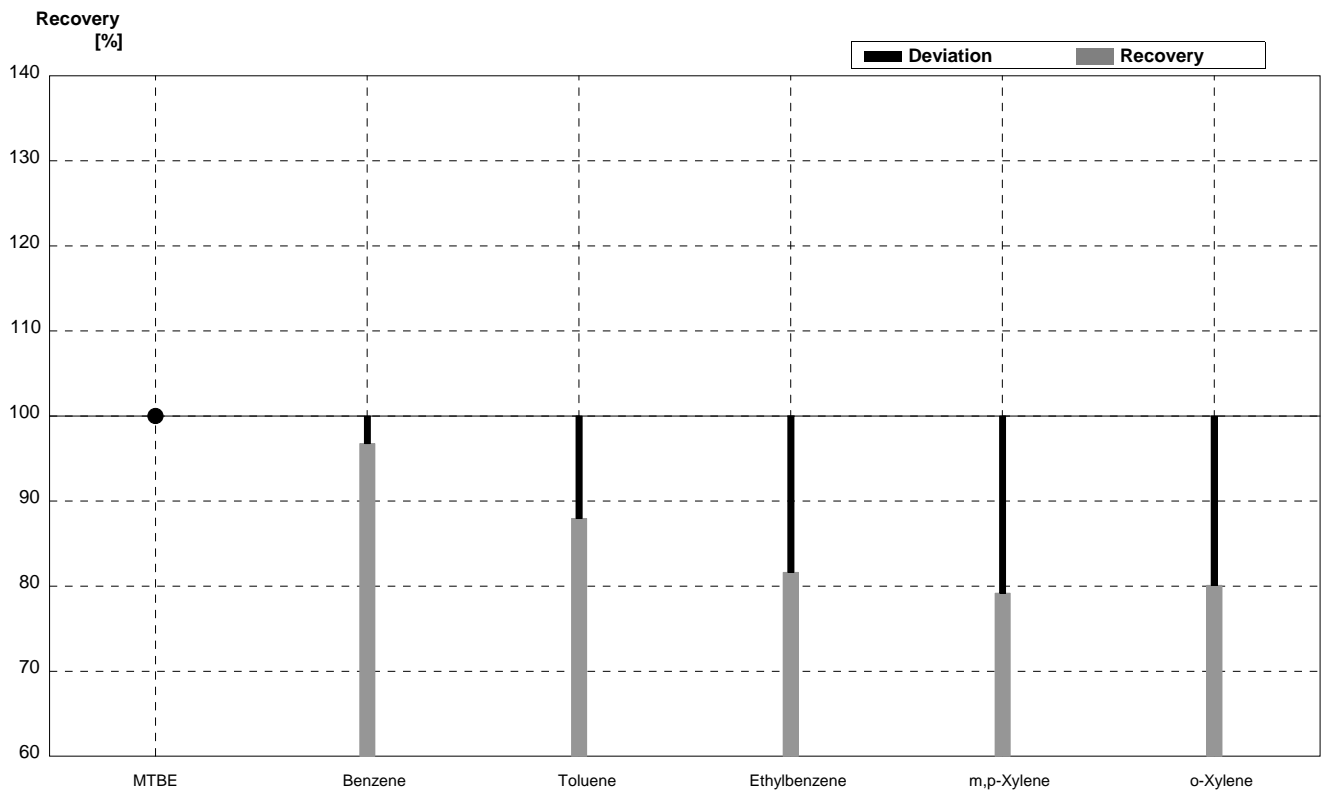
**Sample B8A**  
**Laboratory C**

Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	2,10	0,11	1,8	0,2	$\mu\text{g/L}$	86%
Benzene	3,46	0,17	3,4	0,2	$\mu\text{g/L}$	98%
Toluene	5,90	0,30	5,4	0,3	$\mu\text{g/L}$	92%
Ethylbenzene	2,47	0,12	2,1	0,2	$\mu\text{g/L}$	85%
m,p-Xylene	0,85	0,04	0,7	0,1	$\mu\text{g/L}$	82%
o-Xylene	5,70	0,29	4,8	0,2	$\mu\text{g/L}$	84%



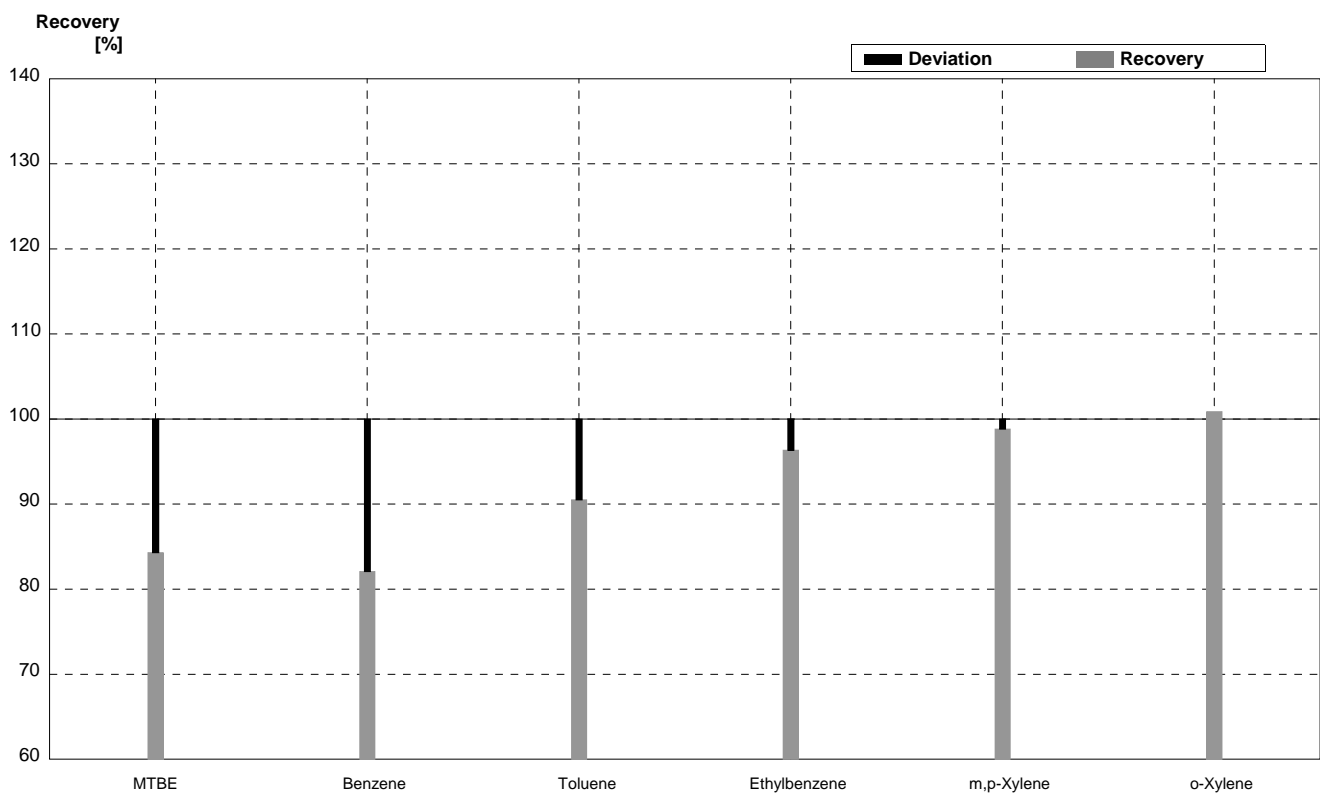
**Sample B8B**  
**Laboratory C**

Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	<0,2		<0,1		$\mu\text{g/L}$	•
Benzene	1,86	0,09	1,8	0,2	$\mu\text{g/L}$	97%
Toluene	2,16	0,11	1,9	0,2	$\mu\text{g/L}$	88%
Ethylbenzene	5,88	0,29	4,8	0,2	$\mu\text{g/L}$	82%
m,p-Xylene	4,42	0,35	3,5	0,2	$\mu\text{g/L}$	79%
o-Xylene	3,62	0,29	2,9	0,2	$\mu\text{g/L}$	80%



**Sample B8A**  
**Laboratory D**

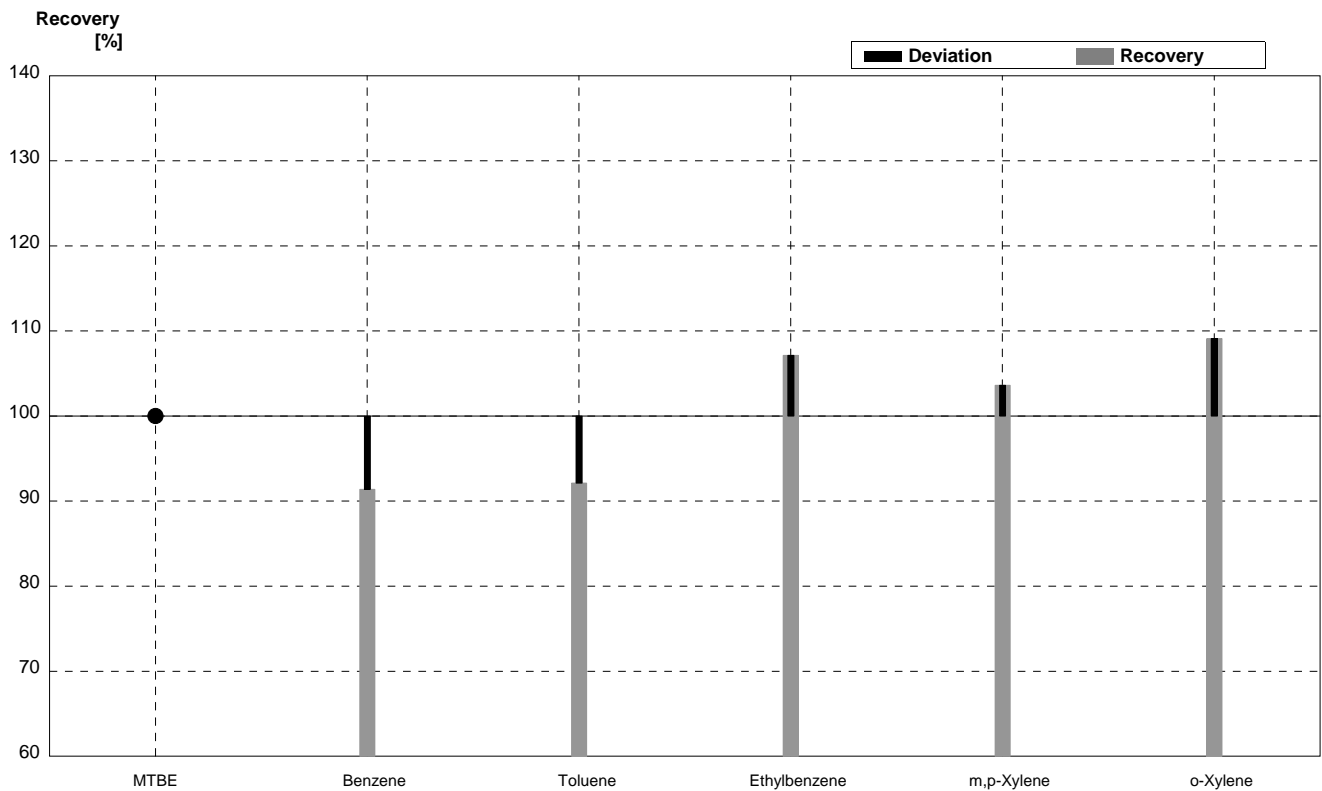
Parameter	Target value	$\pm U$ (k=2)	Result	$\pm$	Unit	Recovery
MTBE	2,10	0,11	1,77	0,27	$\mu\text{g/L}$	84%
Benzene	3,46	0,17	2,84	0,43	$\mu\text{g/L}$	82%
Toluene	5,90	0,30	5,34	0,80	$\mu\text{g/L}$	91%
Ethylbenzene	2,47	0,12	2,38	0,36	$\mu\text{g/L}$	96%
m,p-Xylene	0,85	0,04	0,84	0,13	$\mu\text{g/L}$	99%
o-Xylene	5,70	0,29	5,75	0,86	$\mu\text{g/L}$	101%





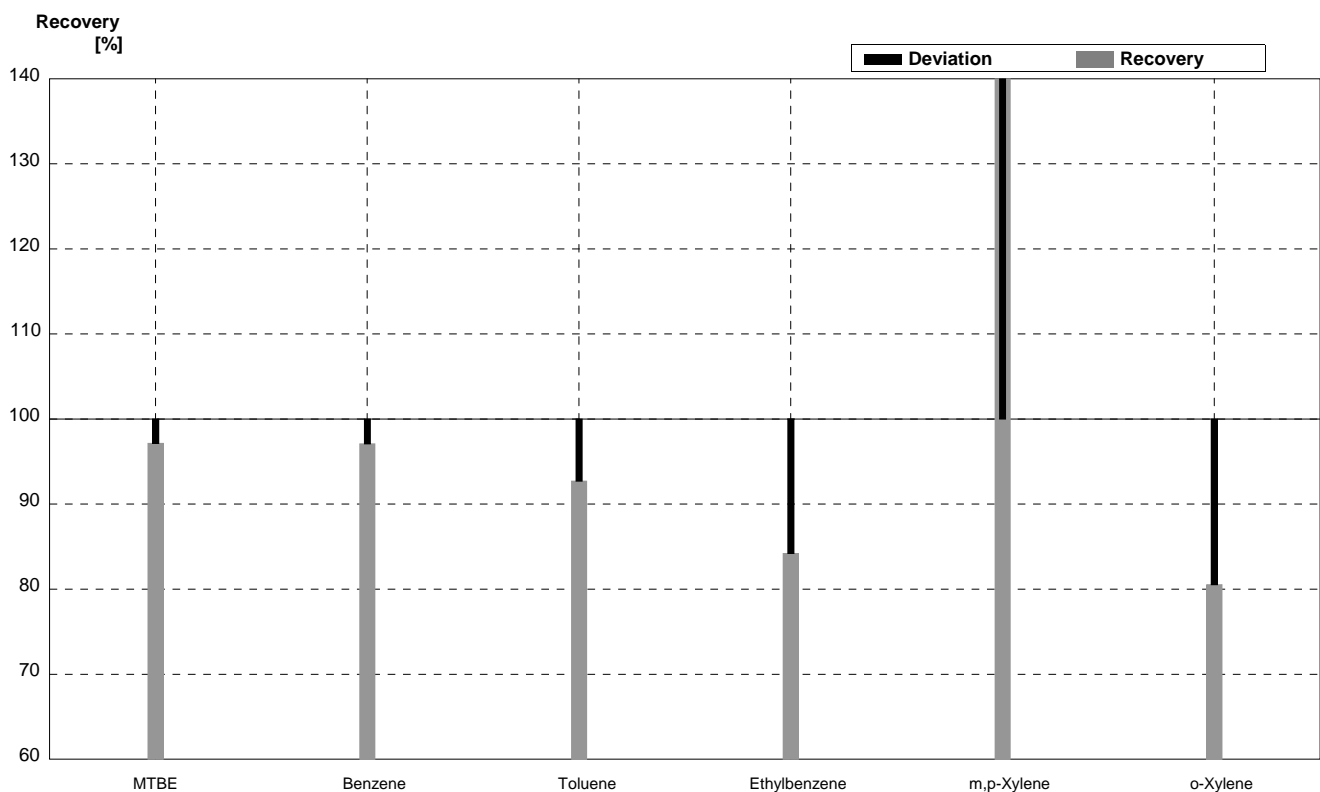
**Sample B8B**  
**Laboratory D**

Parameter	Target value	$\pm U$ (k=2)	Result	$\pm$	Unit	Recovery
MTBE	<0,2		<0,05		$\mu\text{g/L}$	•
Benzene	1,86	0,09	1,70	0,26	$\mu\text{g/L}$	91%
Toluene	2,16	0,11	1,99	0,30	$\mu\text{g/L}$	92%
Ethylbenzene	5,88	0,29	6,30	0,94	$\mu\text{g/L}$	107%
m,p-Xylene	4,42	0,35	4,58	0,69	$\mu\text{g/L}$	104%
o-Xylene	3,62	0,29	3,95	0,59	$\mu\text{g/L}$	109%



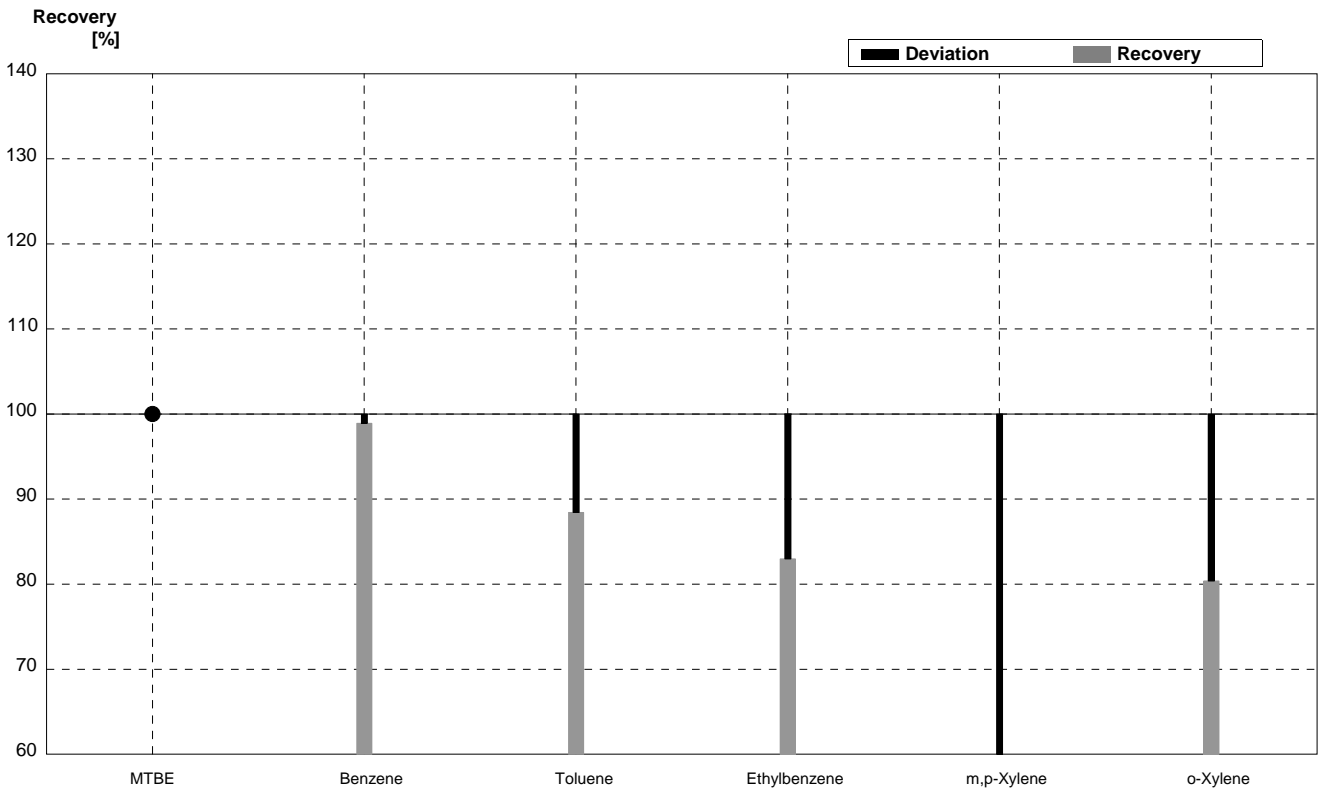
**Sample B8A**  
**Laboratory E**

Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	2,10	0,11	2,04		$\mu\text{g/L}$	97%
Benzene	3,46	0,17	3,36		$\mu\text{g/L}$	97%
Toluene	5,90	0,30	5,47		$\mu\text{g/L}$	93%
Ethylbenzene	2,47	0,12	2,08		$\mu\text{g/L}$	84%
m,p-Xylene	0,85	0,04	1,31		$\mu\text{g/L}$	154%
o-Xylene	5,70	0,29	4,59		$\mu\text{g/L}$	81%



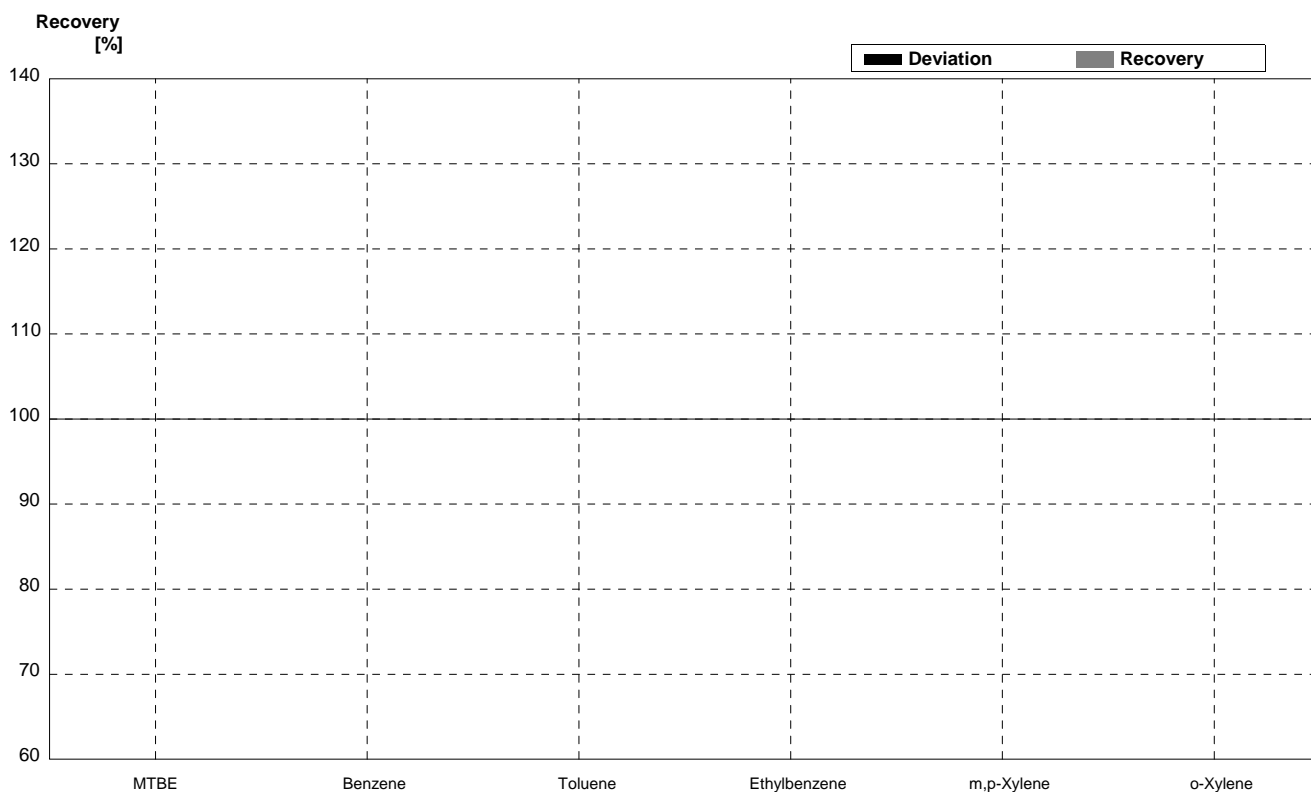
**Sample B8B**  
**Laboratory E**

Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	<0,2		<0,2		$\mu\text{g/L}$	•
Benzene	1,86	0,09	1,84		$\mu\text{g/L}$	99%
Toluene	2,16	0,11	1,91		$\mu\text{g/L}$	88%
Ethylbenzene	5,88	0,29	4,88		$\mu\text{g/L}$	83%
m,p-Xylene	4,42	0,35	1,78		$\mu\text{g/L}$	40%
o-Xylene	3,62	0,29	2,91		$\mu\text{g/L}$	80%



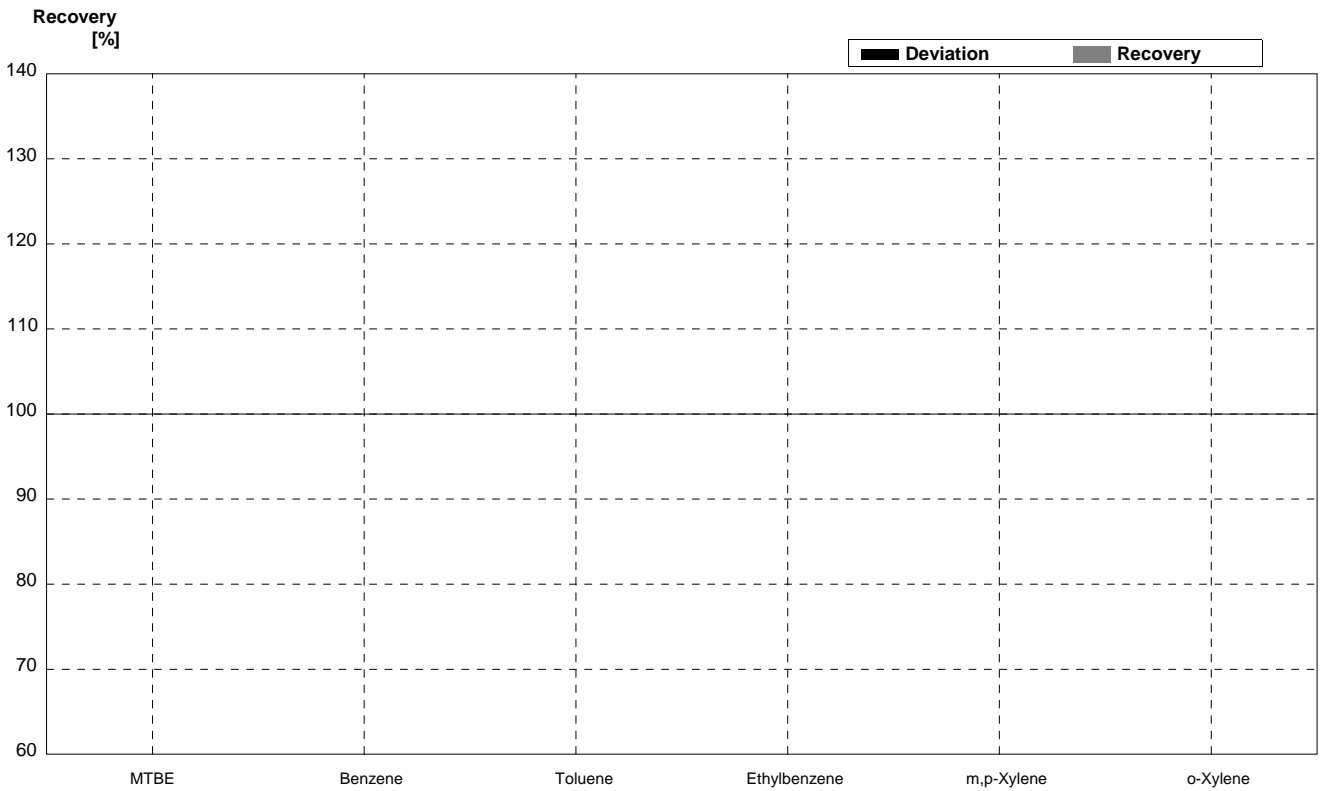
**Sample B8A**  
**Laboratory F**

Parameter	Target value	$\pm U$ (k=2)	Result	$\pm$	Unit	Recovery
MTBE	2,10	0,11			$\mu\text{g/L}$	
Benzene	3,46	0,17			$\mu\text{g/L}$	
Toluene	5,90	0,30			$\mu\text{g/L}$	
Ethylbenzene	2,47	0,12			$\mu\text{g/L}$	
m,p-Xylene	0,85	0,04			$\mu\text{g/L}$	
o-Xylene	5,70	0,29			$\mu\text{g/L}$	



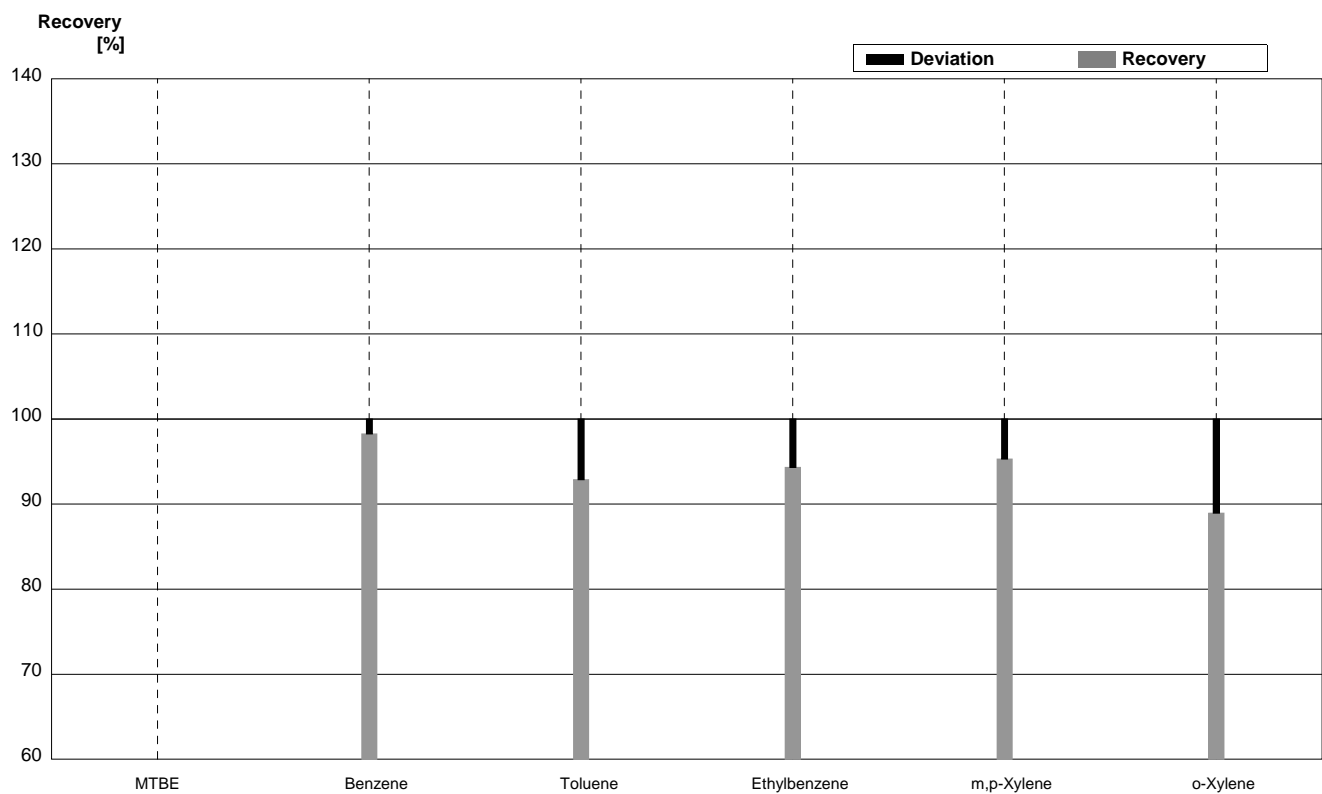
**Sample B8B**  
**Laboratory F**

Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	<0,2				$\mu\text{g/L}$	
Benzene	1,86	0,09			$\mu\text{g/L}$	
Toluene	2,16	0,11			$\mu\text{g/L}$	
Ethylbenzene	5,88	0,29			$\mu\text{g/L}$	
m,p-Xylene	4,42	0,35			$\mu\text{g/L}$	
o-Xylene	3,62	0,29			$\mu\text{g/L}$	



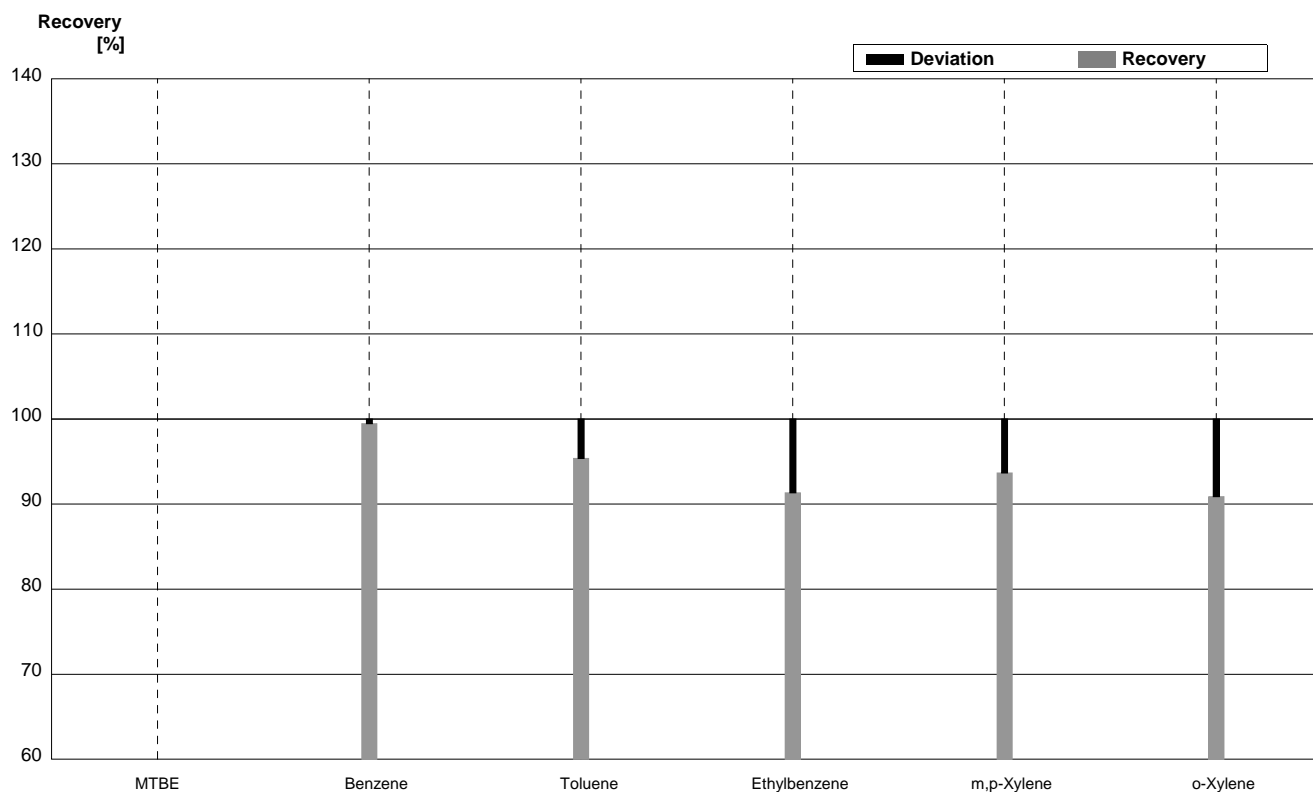
**Sample B8A**  
**Laboratory G**

Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	2,10	0,11			$\mu\text{g/L}$	
Benzene	3,46	0,17	3,40	0,68	$\mu\text{g/L}$	98%
Toluene	5,90	0,30	5,48	1,12	$\mu\text{g/L}$	93%
Ethylbenzene	2,47	0,12	2,33	0,47	$\mu\text{g/L}$	94%
m,p-Xylene	0,85	0,04	0,81	0,24	$\mu\text{g/L}$	95%
o-Xylene	5,70	0,29	5,07	1,01	$\mu\text{g/L}$	89%



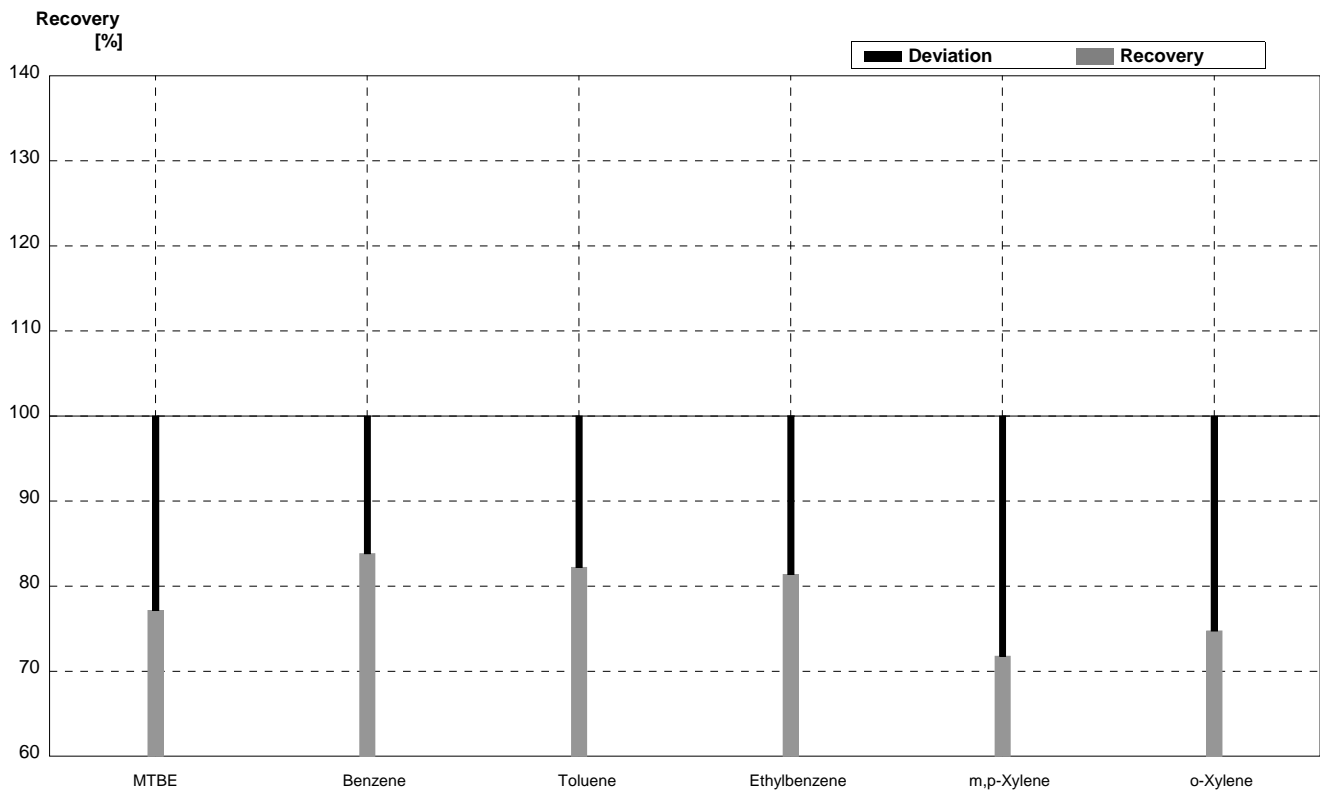
**Sample B8B**  
**Laboratory G**

Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	<0,2				$\mu\text{g/L}$	
Benzene	1,86	0,09	1,85	0,37	$\mu\text{g/L}$	99%
Toluene	2,16	0,11	2,06	0,41	$\mu\text{g/L}$	95%
Ethylbenzene	5,88	0,29	5,37	1,07	$\mu\text{g/L}$	91%
m,p-Xylene	4,42	0,35	4,14	0,83	$\mu\text{g/L}$	94%
o-Xylene	3,62	0,29	3,29	0,66	$\mu\text{g/L}$	91%



**Sample B8A**  
**Laboratory H**

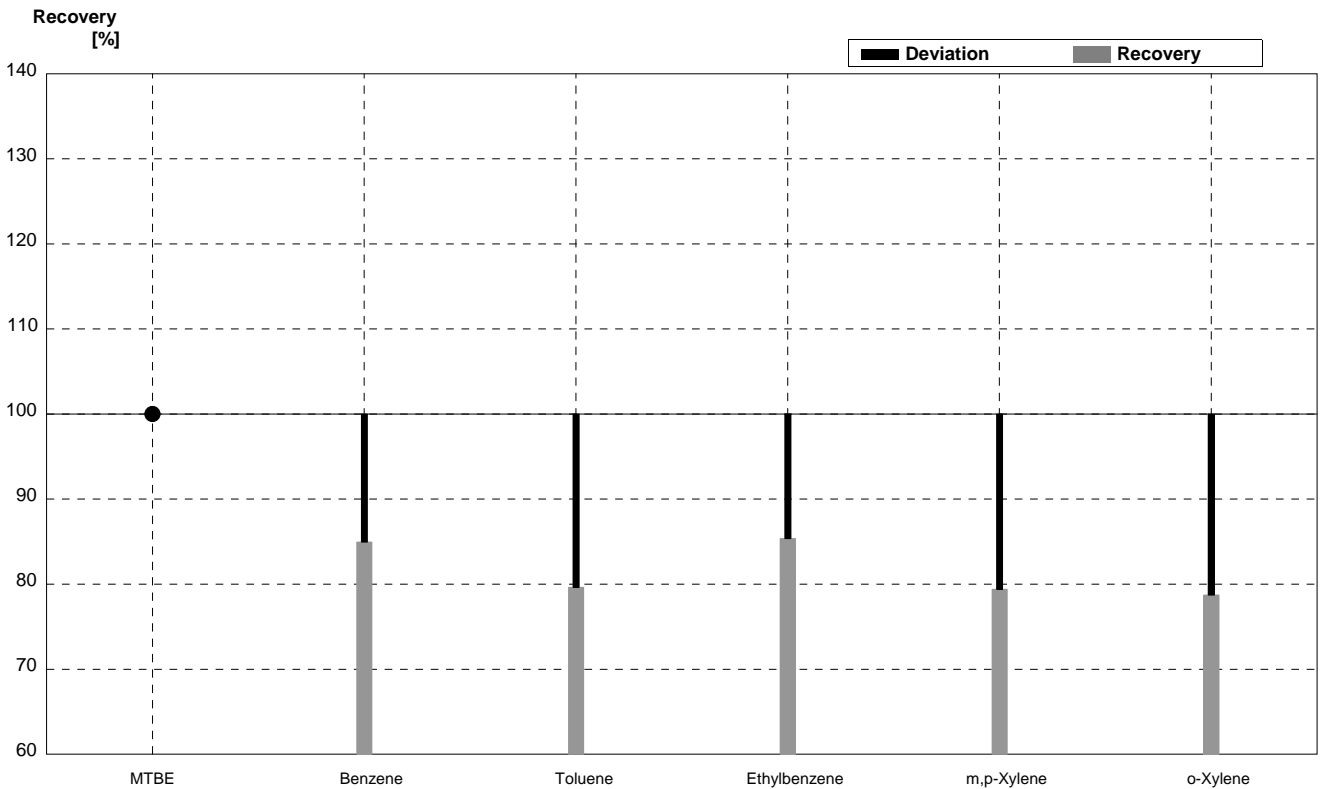
Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	2,10	0,11	1,62	0,01	$\mu\text{g/L}$	77%
Benzene	3,46	0,17	2,90	0,04	$\mu\text{g/L}$	84%
Toluene	5,90	0,30	4,85	0,01	$\mu\text{g/L}$	82%
Ethylbenzene	2,47	0,12	2,01	0,01	$\mu\text{g/L}$	81%
m,p-Xylene	0,85	0,04	0,61	0,01	$\mu\text{g/L}$	72%
o-Xylene	5,70	0,29	4,26	0,02	$\mu\text{g/L}$	75%





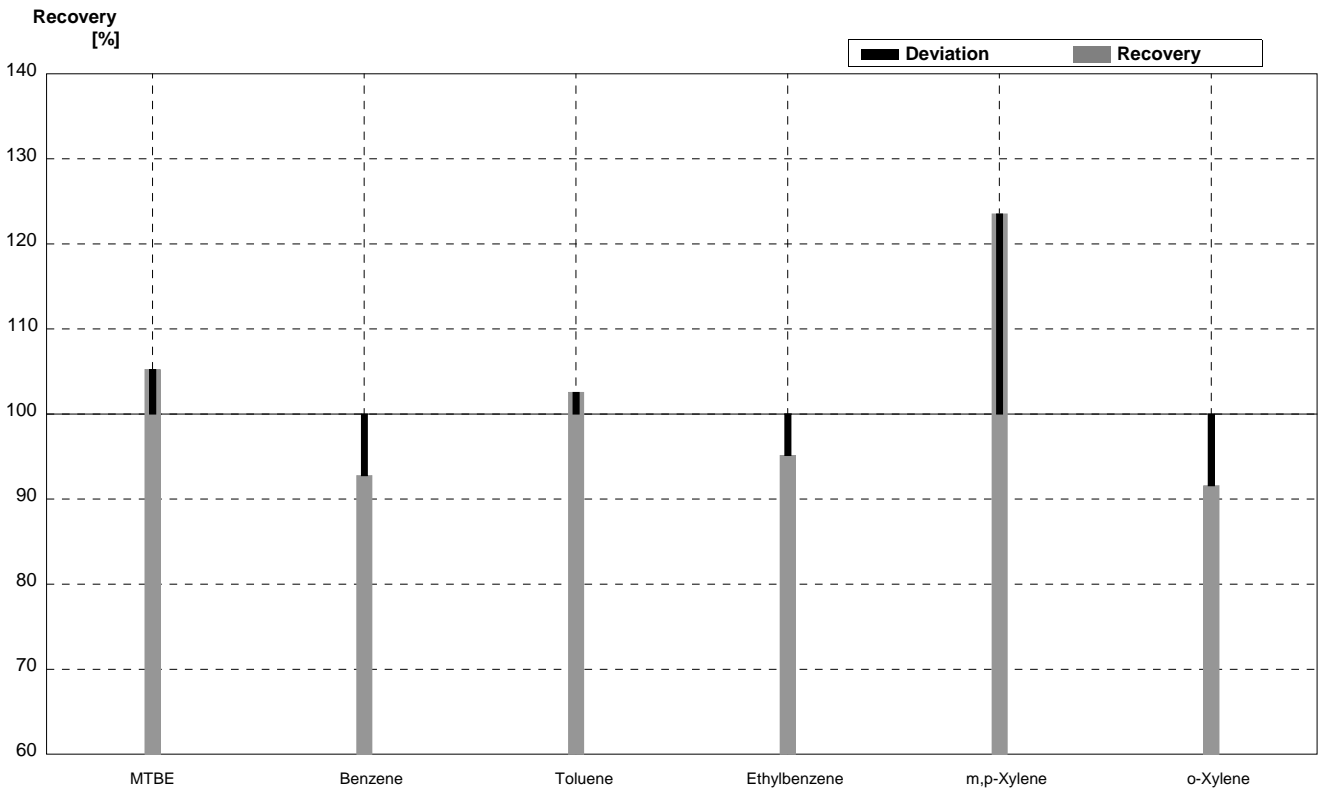
**Sample B8B**  
**Laboratory H**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	<0,2		<0,68		µg/L	•
Benzene	1,86	0,09	1,58	0,03	µg/L	85%
Toluene	2,16	0,11	1,72	0,01	µg/L	80%
Ethylbenzene	5,88	0,29	5,02	0,01	µg/L	85%
m,p-Xylene	4,42	0,35	3,51	0,02	µg/L	79%
o-Xylene	3,62	0,29	2,85	0,02	µg/L	79%



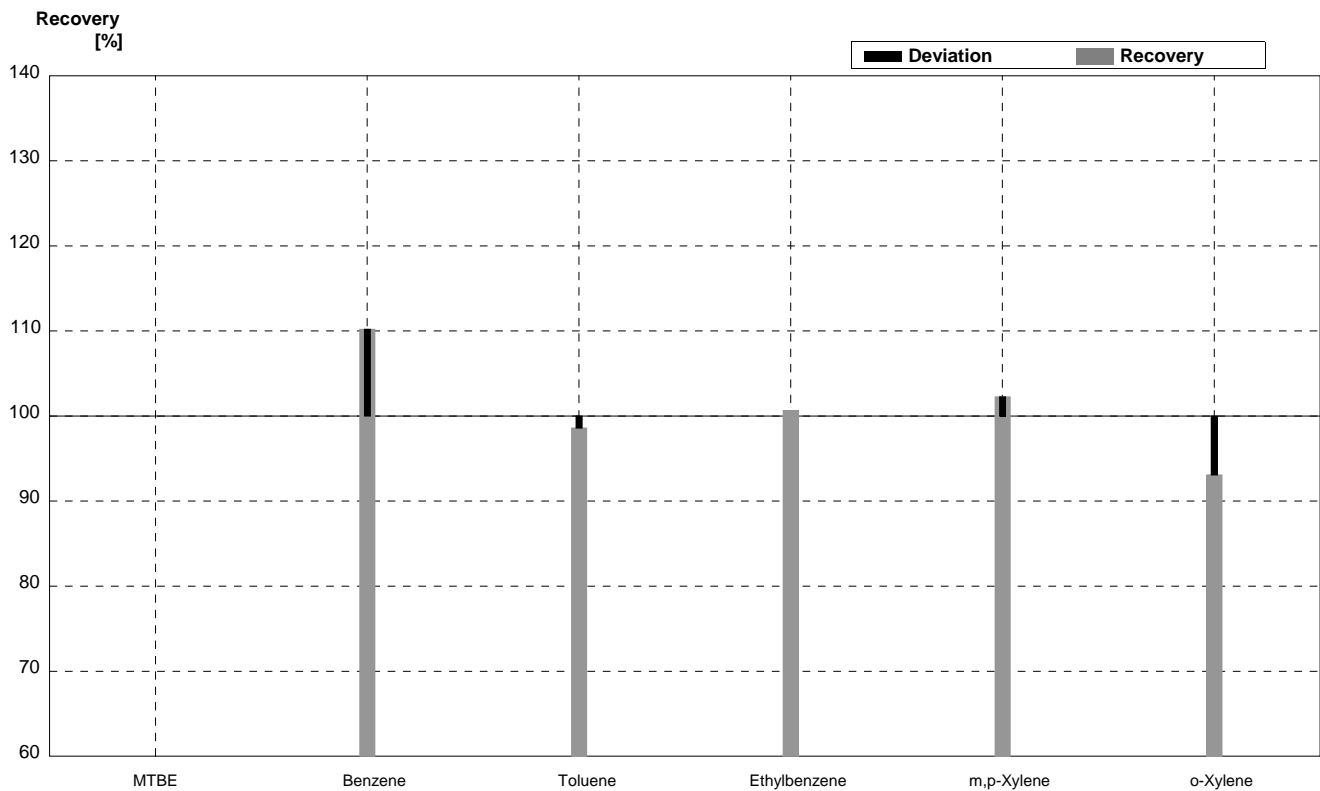
**Sample B8A**  
**Laboratory I**

Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	2,10	0,11	2,21	0,44	$\mu\text{g/L}$	105%
Benzene	3,46	0,17	3,21	0,64	$\mu\text{g/L}$	93%
Toluene	5,90	0,30	6,05	1,21	$\mu\text{g/L}$	103%
Ethylbenzene	2,47	0,12	2,35	0,47	$\mu\text{g/L}$	95%
m,p-Xylene	0,85	0,04	1,05	0,21	$\mu\text{g/L}$	124%
o-Xylene	5,70	0,29	5,22	1,04	$\mu\text{g/L}$	92%



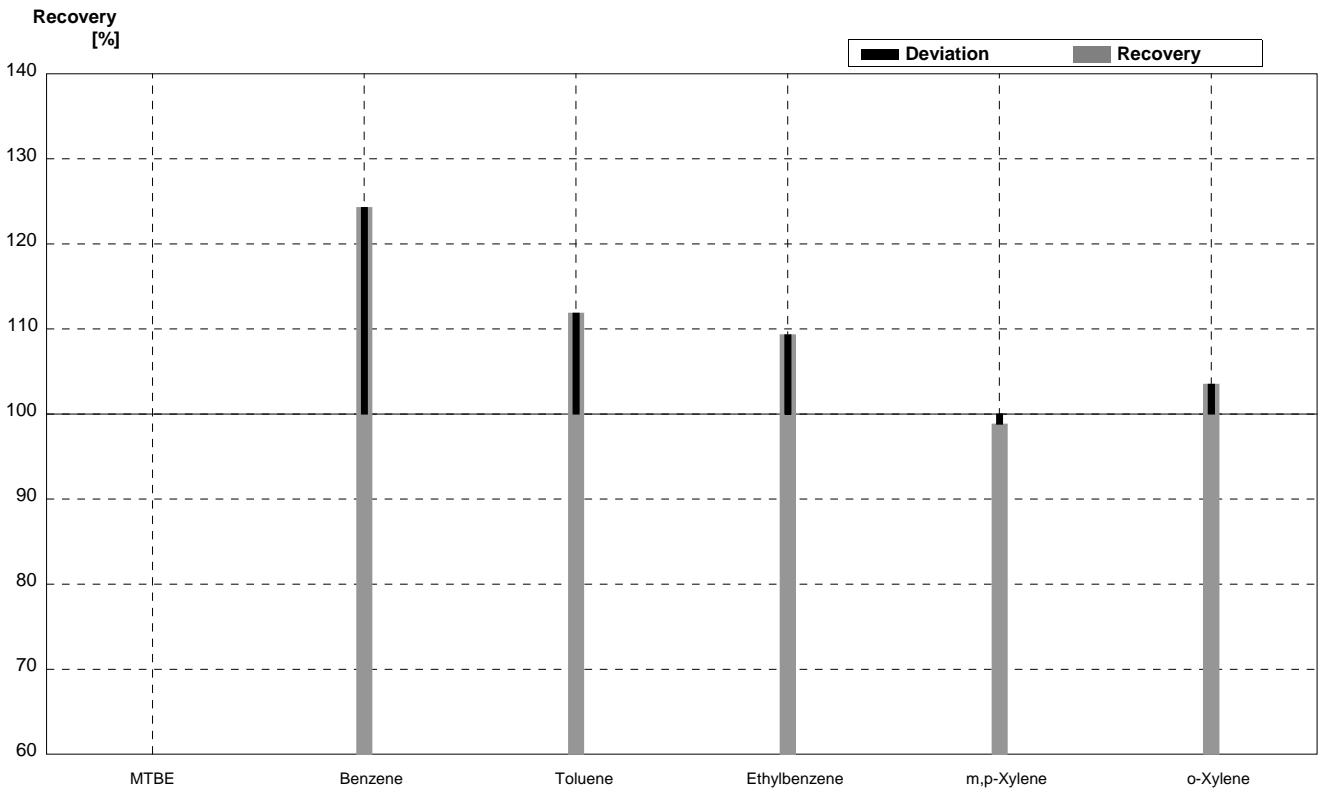
**Sample B8B**  
**Laboratory I**

Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	<0,2		n.d.		$\mu\text{g/L}$	
Benzene	1,86	0,09	2,05	0,41	$\mu\text{g/L}$	110%
Toluene	2,16	0,11	2,13	0,43	$\mu\text{g/L}$	99%
Ethylbenzene	5,88	0,29	5,92	1,18	$\mu\text{g/L}$	101%
m,p-Xylene	4,42	0,35	4,52	0,90	$\mu\text{g/L}$	102%
o-Xylene	3,62	0,29	3,37	0,67	$\mu\text{g/L}$	93%



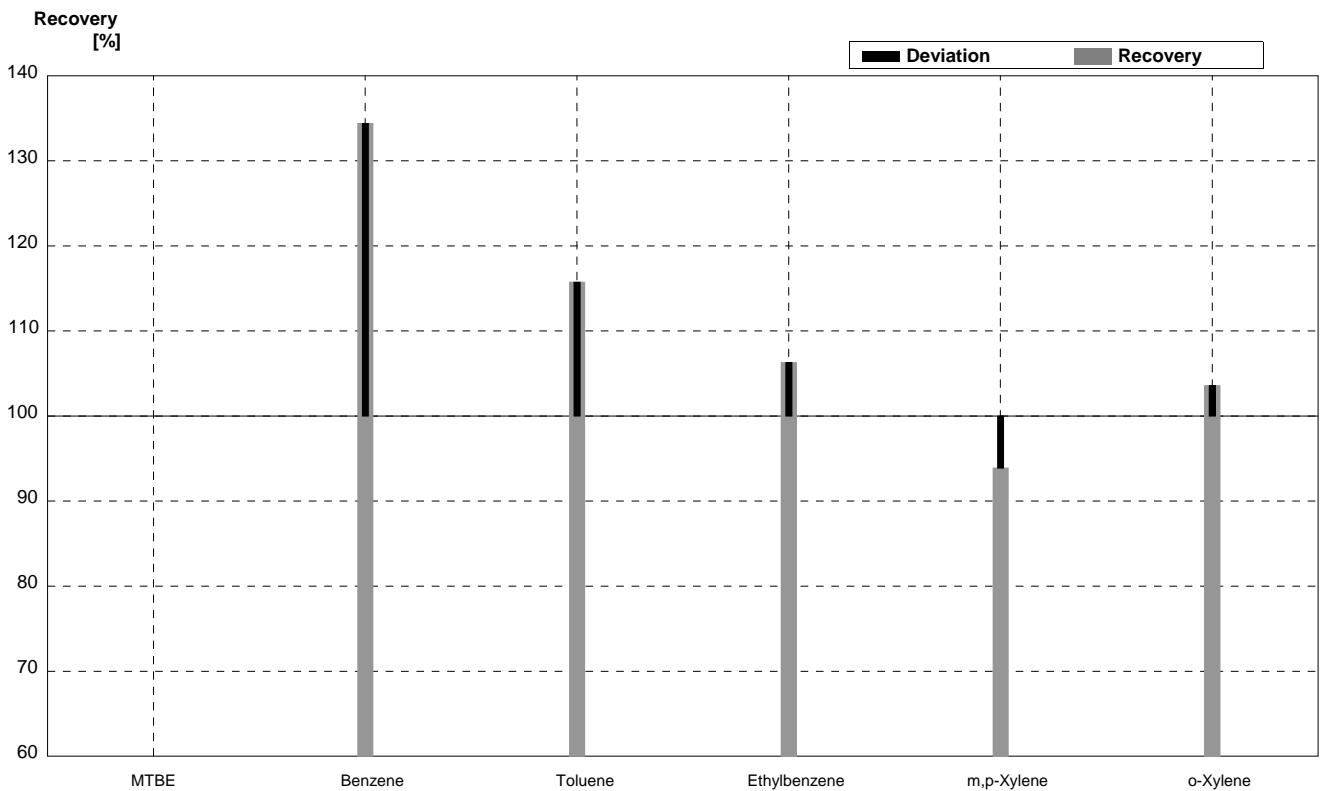
**Sample B8A**  
**Laboratory J**

Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	2,10	0,11			$\mu\text{g/L}$	
Benzene	3,46	0,17	4,3		$\mu\text{g/L}$	124%
Toluene	5,90	0,30	6,6		$\mu\text{g/L}$	112%
Ethylbenzene	2,47	0,12	2,7		$\mu\text{g/L}$	109%
m,p-Xylene	0,85	0,04	0,84		$\mu\text{g/L}$	99%
o-Xylene	5,70	0,29	5,9		$\mu\text{g/L}$	104%



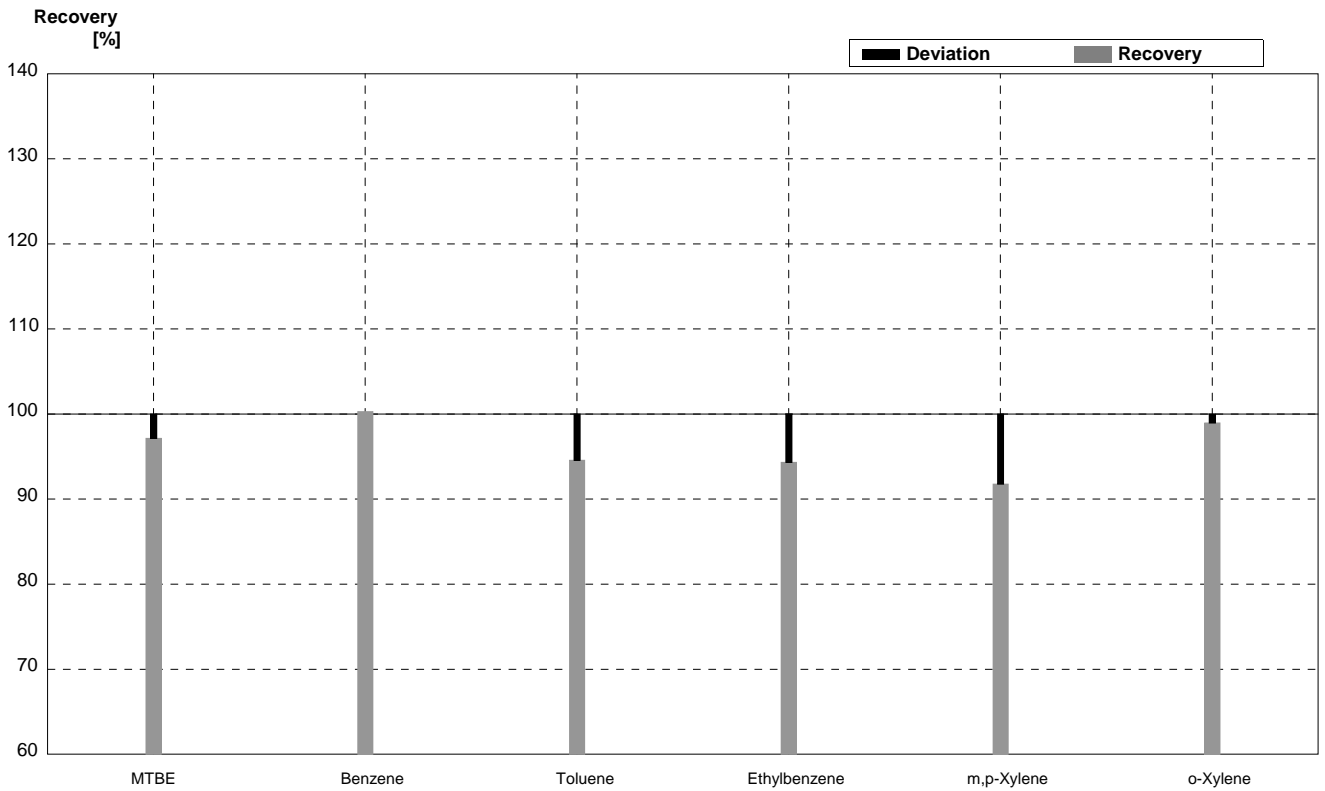
**Sample B8B**  
**Laboratory J**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	<0,2				µg/L	
Benzene	1,86	0,09	2,5		µg/L	134%
Toluene	2,16	0,11	2,5		µg/L	116%
Ethylbenzene	5,88	0,29	6,25		µg/L	106%
m,p-Xylene	4,42	0,35	4,15		µg/L	94%
o-Xylene	3,62	0,29	3,75		µg/L	104%



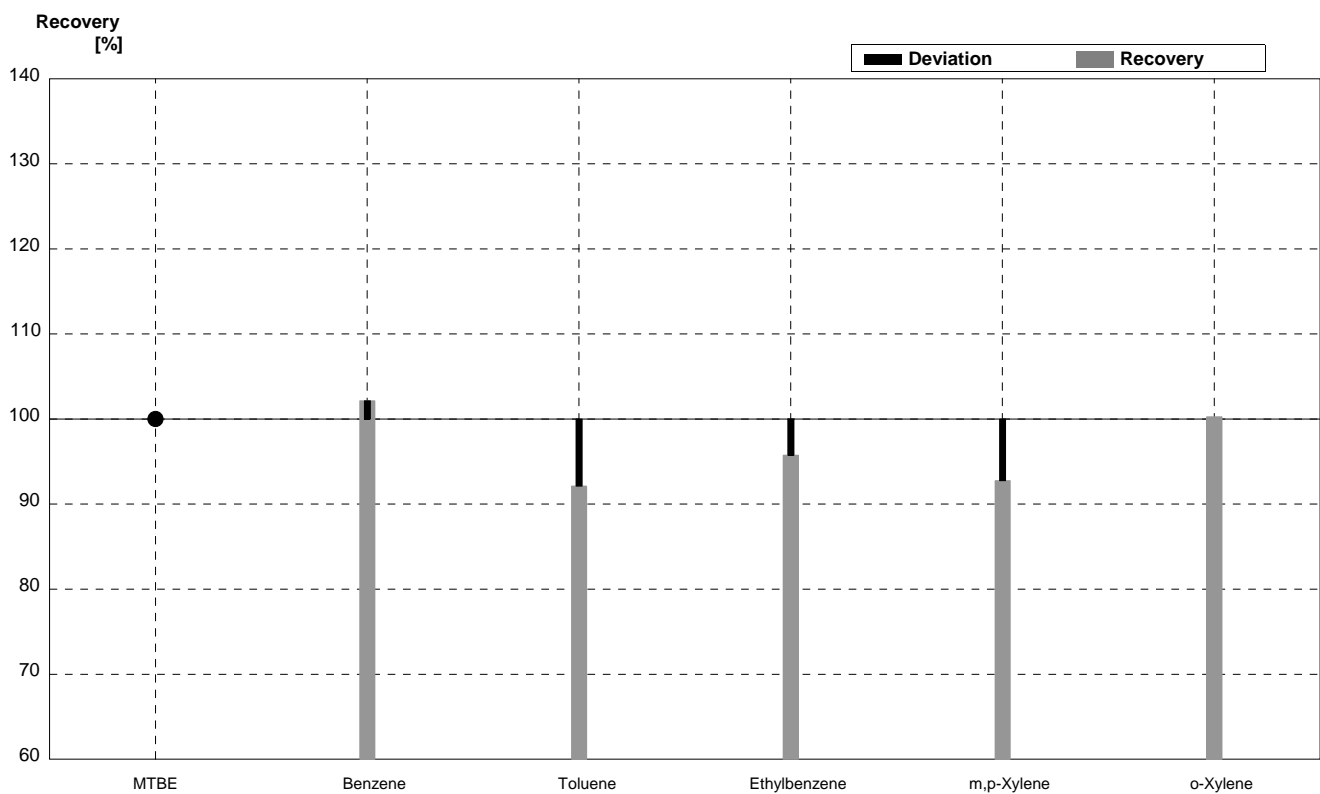
**Sample B8A**  
**Laboratory K**

Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	2,10	0,11	2,04	0,21	$\mu\text{g/L}$	97%
Benzene	3,46	0,17	3,47	0,37	$\mu\text{g/L}$	100%
Toluene	5,90	0,30	5,58	0,56	$\mu\text{g/L}$	95%
Ethylbenzene	2,47	0,12	2,33	0,25	$\mu\text{g/L}$	94%
m,p-Xylene	0,85	0,04	0,78	0,08	$\mu\text{g/L}$	92%
o-Xylene	5,70	0,29	5,64	0,57	$\mu\text{g/L}$	99%



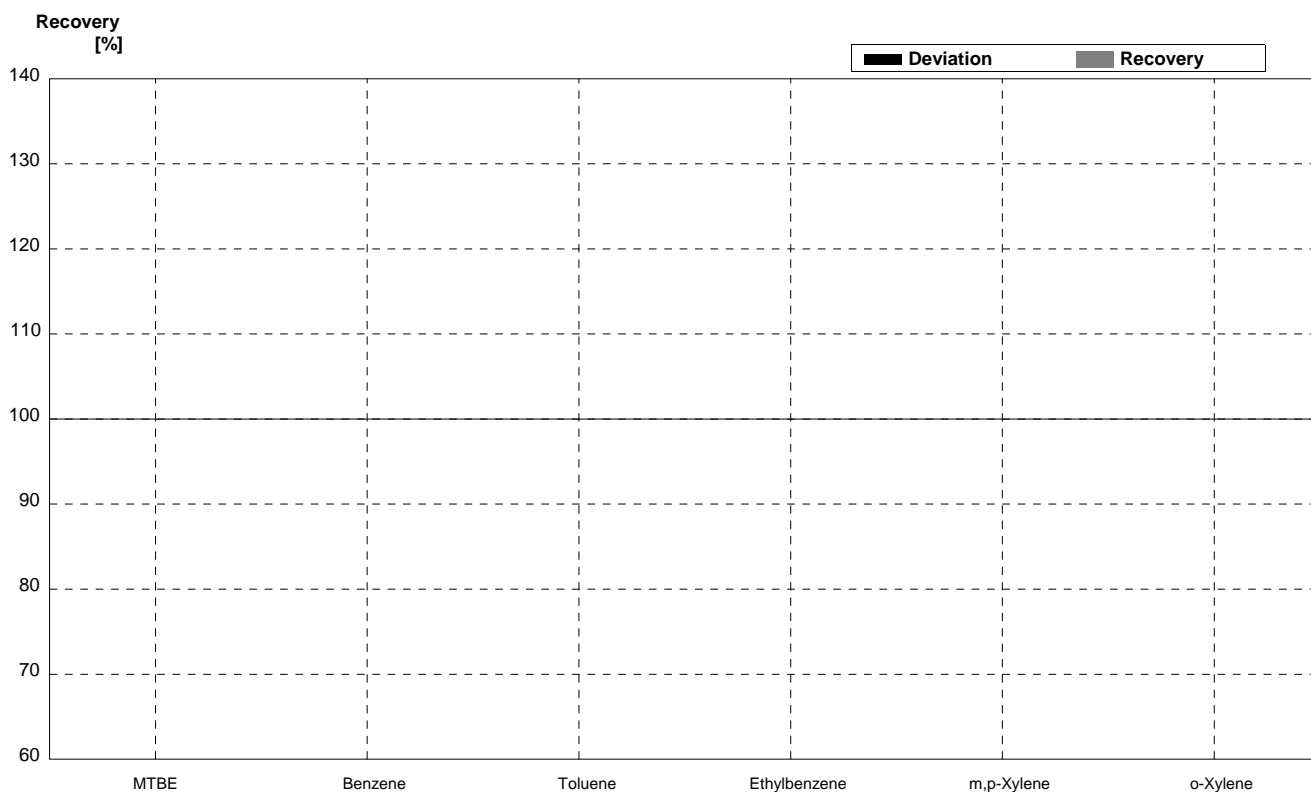
**Sample B8B**  
**Laboratory K**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	<0,2		<0,1		µg/L	•
Benzene	1,86	0,09	1,90	0,21	µg/L	102%
Toluene	2,16	0,11	1,99	0,20	µg/L	92%
Ethylbenzene	5,88	0,29	5,63	0,58	µg/L	96%
m,p-Xylene	4,42	0,35	4,10	0,42	µg/L	93%
o-Xylene	3,62	0,29	3,63	0,38	µg/L	100%



**Sample B8A**  
**Laboratory L**

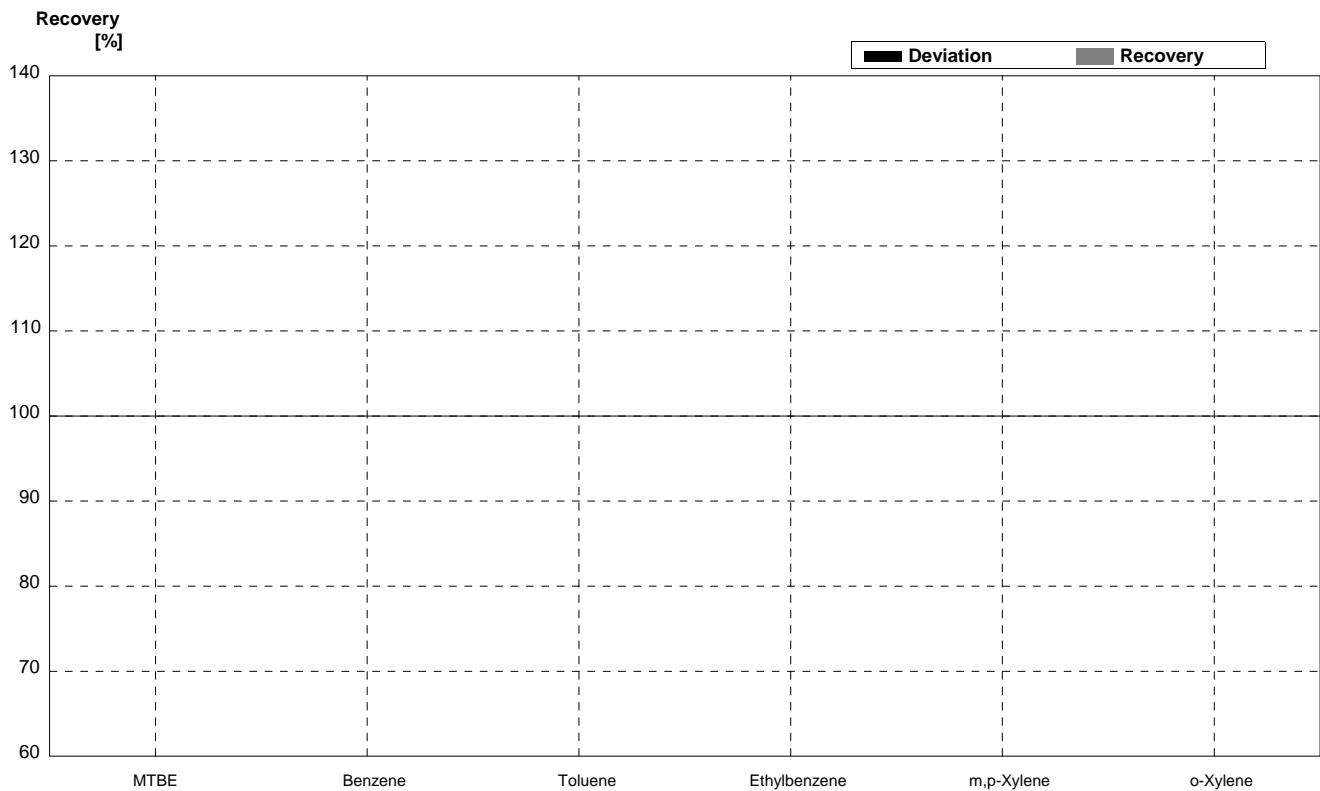
Parameter	Target value	$\pm U$ (k=2)	Result	$\pm$	Unit	Recovery
MTBE	2,10	0,11			$\mu\text{g/L}$	
Benzene	3,46	0,17			$\mu\text{g/L}$	
Toluene	5,90	0,30			$\mu\text{g/L}$	
Ethylbenzene	2,47	0,12			$\mu\text{g/L}$	
m,p-Xylene	0,85	0,04			$\mu\text{g/L}$	
o-Xylene	5,70	0,29			$\mu\text{g/L}$	





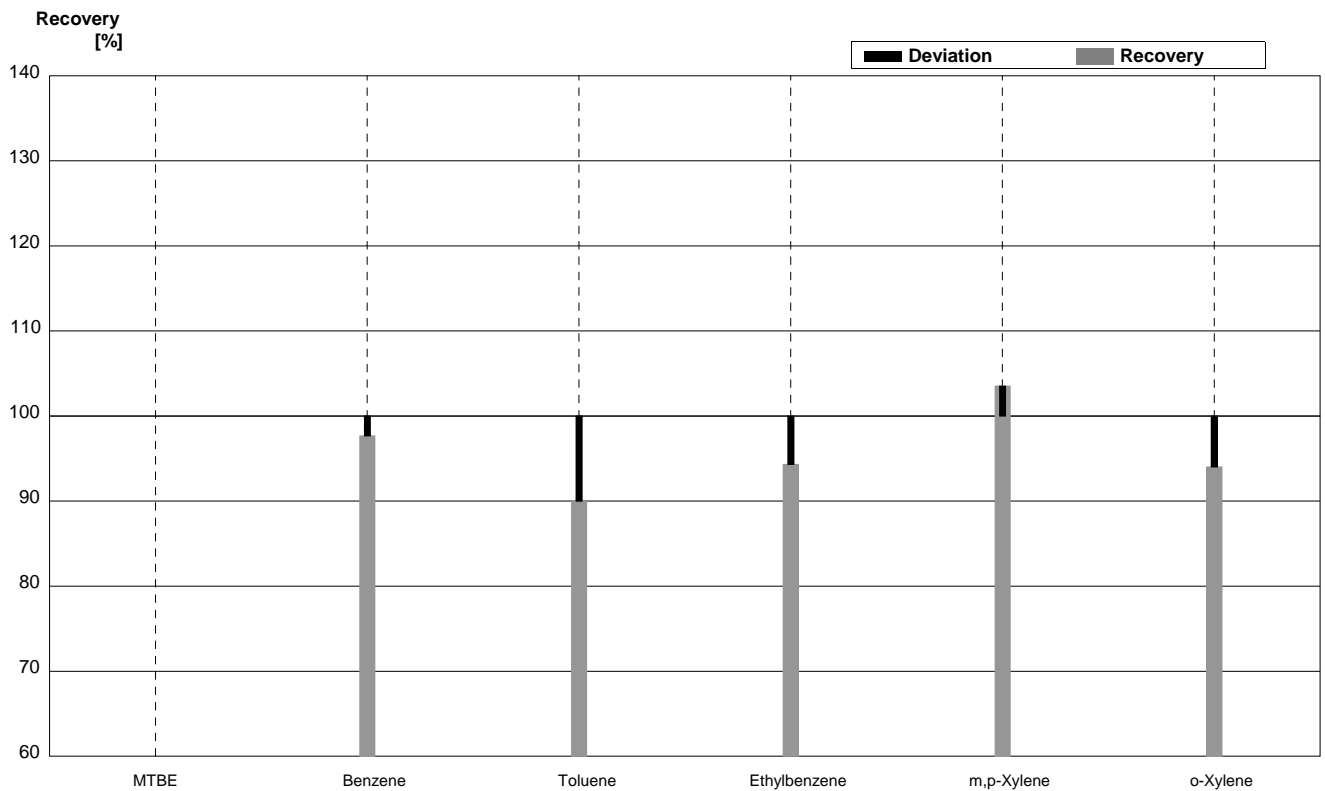
**Sample B8B**  
**Laboratory L**

Parameter	Target value	$\pm U$ (k=2)	Result	$\pm$	Unit	Recovery
MTBE	<0,2				$\mu\text{g/L}$	
Benzene	1,86	0,09			$\mu\text{g/L}$	
Toluene	2,16	0,11			$\mu\text{g/L}$	
Ethylbenzene	5,88	0,29			$\mu\text{g/L}$	
m,p-Xylene	4,42	0,35			$\mu\text{g/L}$	
o-Xylene	3,62	0,29			$\mu\text{g/L}$	



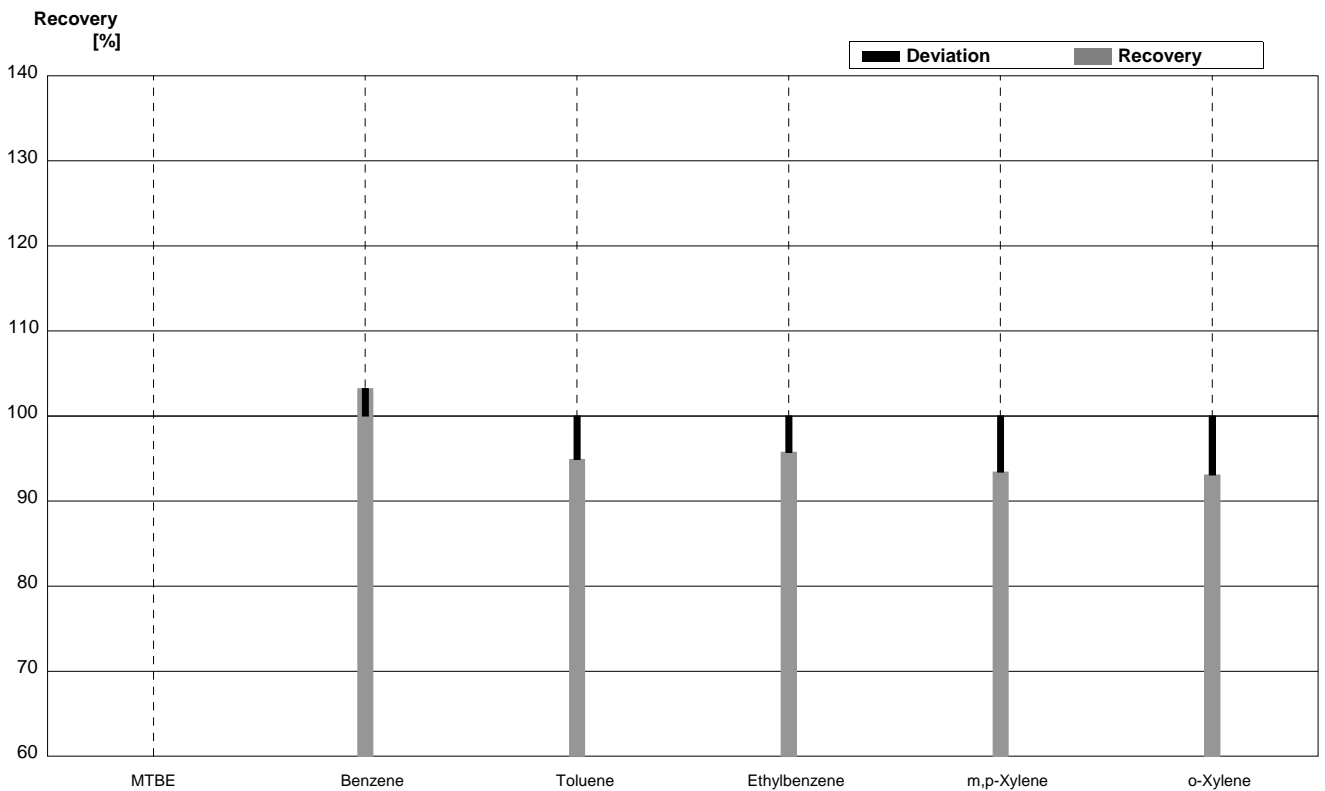
**Sample B8A**  
**Laboratory M**

Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	2,10	0,11			$\mu\text{g/L}$	
Benzene	3,46	0,17	3,38	0,20	$\mu\text{g/L}$	98%
Toluene	5,90	0,30	5,31	0,20	$\mu\text{g/L}$	90%
Ethylbenzene	2,47	0,12	2,33	0,20	$\mu\text{g/L}$	94%
m,p-Xylene	0,85	0,04	0,88	0,20	$\mu\text{g/L}$	104%
o-Xylene	5,70	0,29	5,36	0,20	$\mu\text{g/L}$	94%



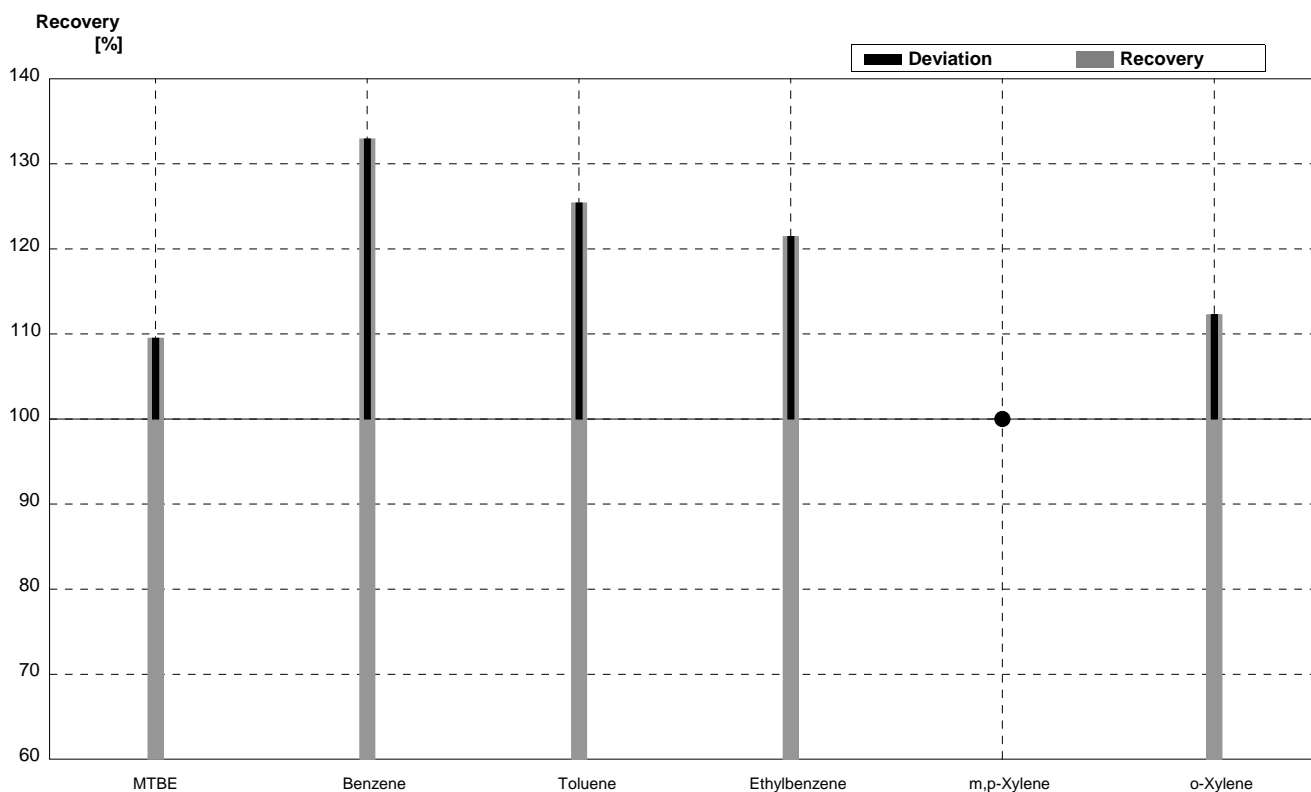
**Sample B8B**  
**Laboratory M**

Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	<0,2				$\mu\text{g/L}$	
Benzene	1,86	0,09	1,92	0,20	$\mu\text{g/L}$	103%
Toluene	2,16	0,11	2,05	0,20	$\mu\text{g/L}$	95%
Ethylbenzene	5,88	0,29	5,63	0,25	$\mu\text{g/L}$	96%
m,p-Xylene	4,42	0,35	4,13	0,20	$\mu\text{g/L}$	93%
o-Xylene	3,62	0,29	3,37	0,20	$\mu\text{g/L}$	93%



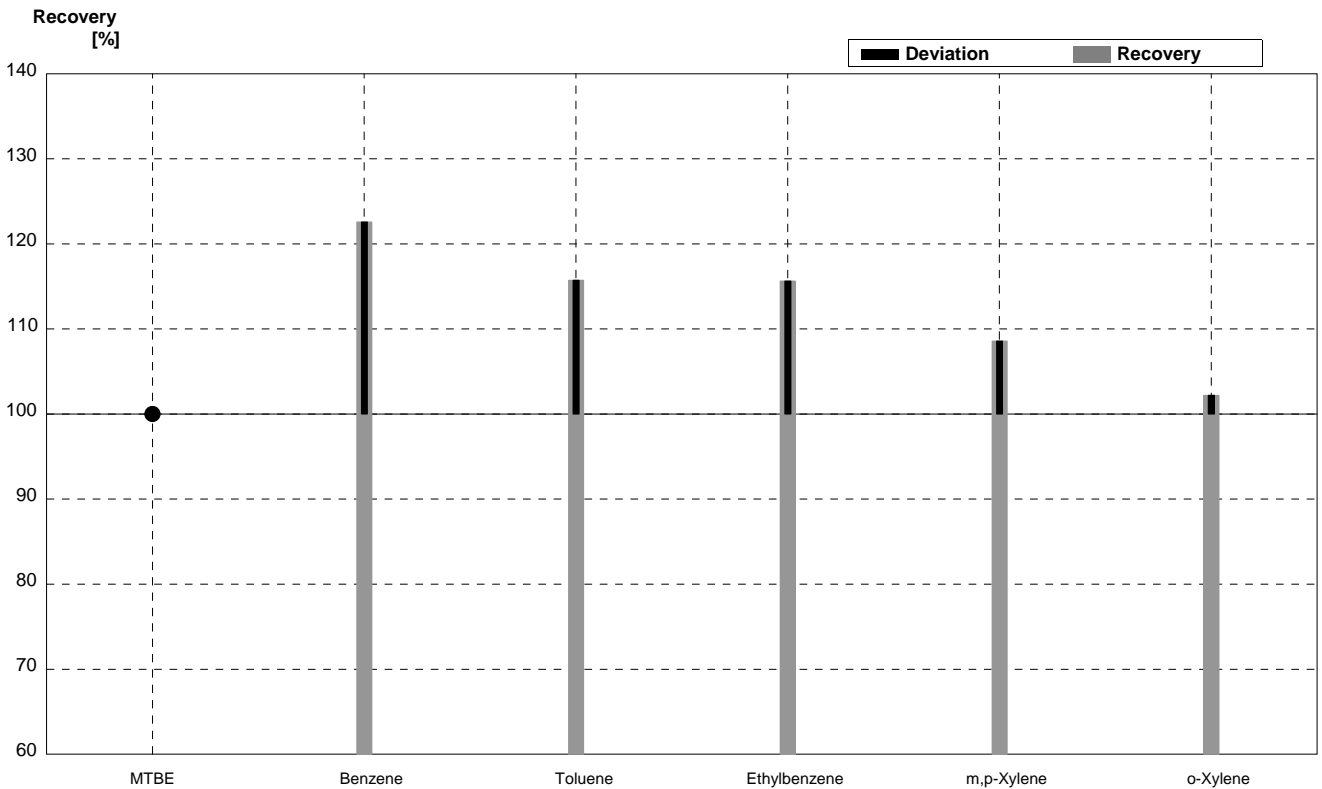
**Sample B8A**  
**Laboratory N**

Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	2,10	0,11	2,3	1,0	$\mu\text{g/L}$	110%
Benzene	3,46	0,17	4,6	1,9	$\mu\text{g/L}$	133%
Toluene	5,90	0,30	7,4	3,2	$\mu\text{g/L}$	125%
Ethylbenzene	2,47	0,12	3,0	1,3	$\mu\text{g/L}$	121%
m,p-Xylene	0,85	0,04	<1,1		$\mu\text{g/L}$	•
o-Xylene	5,70	0,29	6,4	2,7	$\mu\text{g/L}$	112%



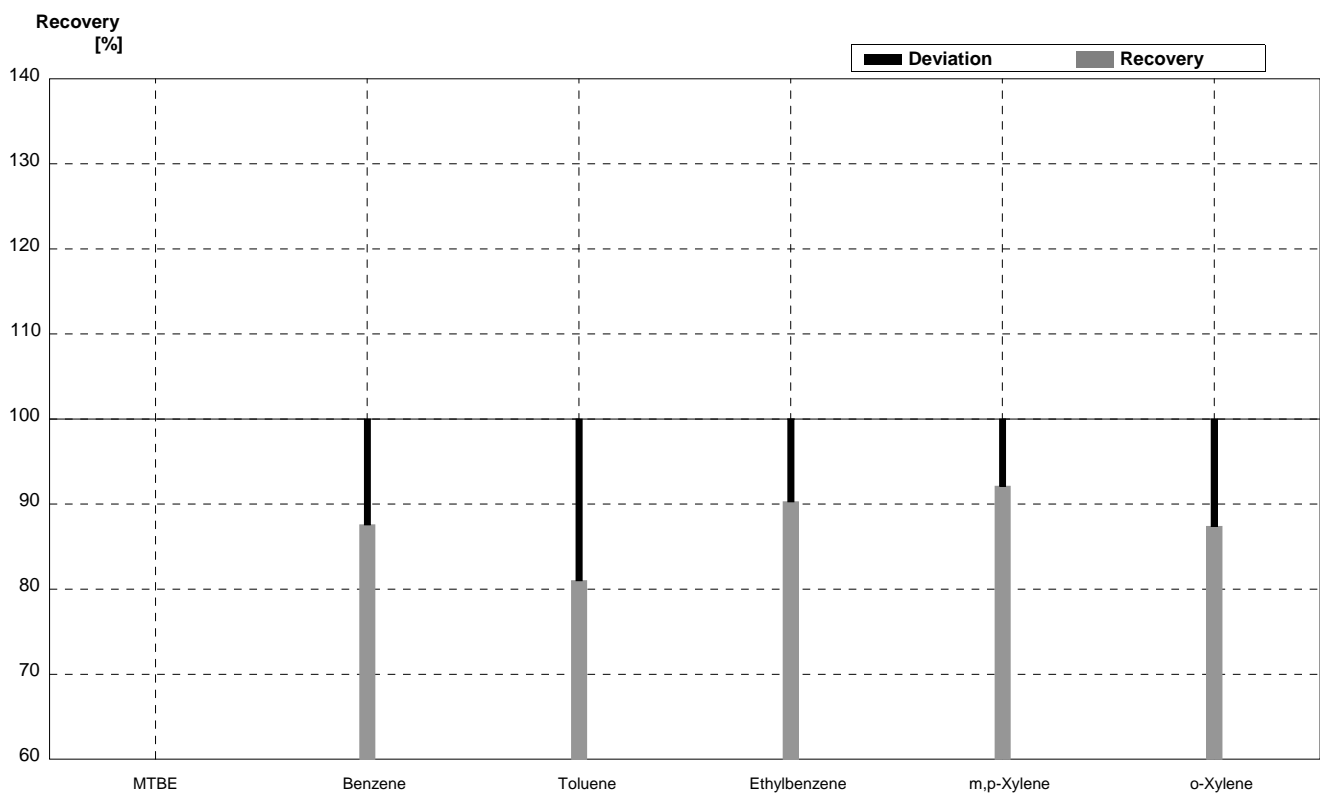
**Sample B8B**  
**Laboratory N**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	<0,2		<0,55		µg/L	•
Benzene	1,86	0,09	2,28	1,00	µg/L	123%
Toluene	2,16	0,11	2,5	1,1	µg/L	116%
Ethylbenzene	5,88	0,29	6,8	2,9	µg/L	116%
m,p-Xylene	4,42	0,35	4,8	2,1	µg/L	109%
o-Xylene	3,62	0,29	3,7	1,6	µg/L	102%



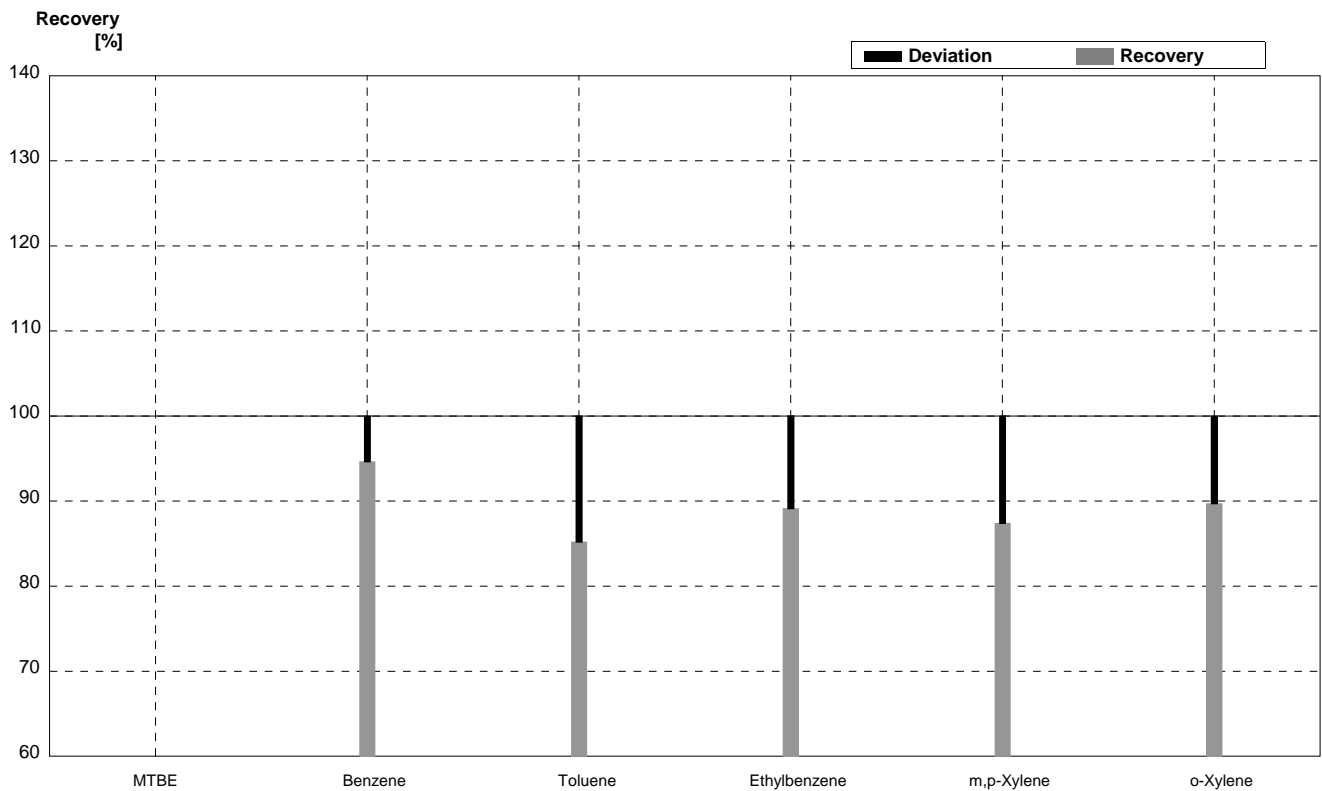
**Sample B8A**  
**Laboratory O**

Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	2,10	0,11			$\mu\text{g/L}$	
Benzene	3,46	0,17	3,03	0,194	$\mu\text{g/L}$	88%
Toluene	5,90	0,30	4,78	0,592	$\mu\text{g/L}$	81%
Ethylbenzene	2,47	0,12	2,23	0,112	$\mu\text{g/L}$	90%
m,p-Xylene	0,85	0,04	0,783	0,056	$\mu\text{g/L}$	92%
o-Xylene	5,70	0,29	4,981	0,359	$\mu\text{g/L}$	87%



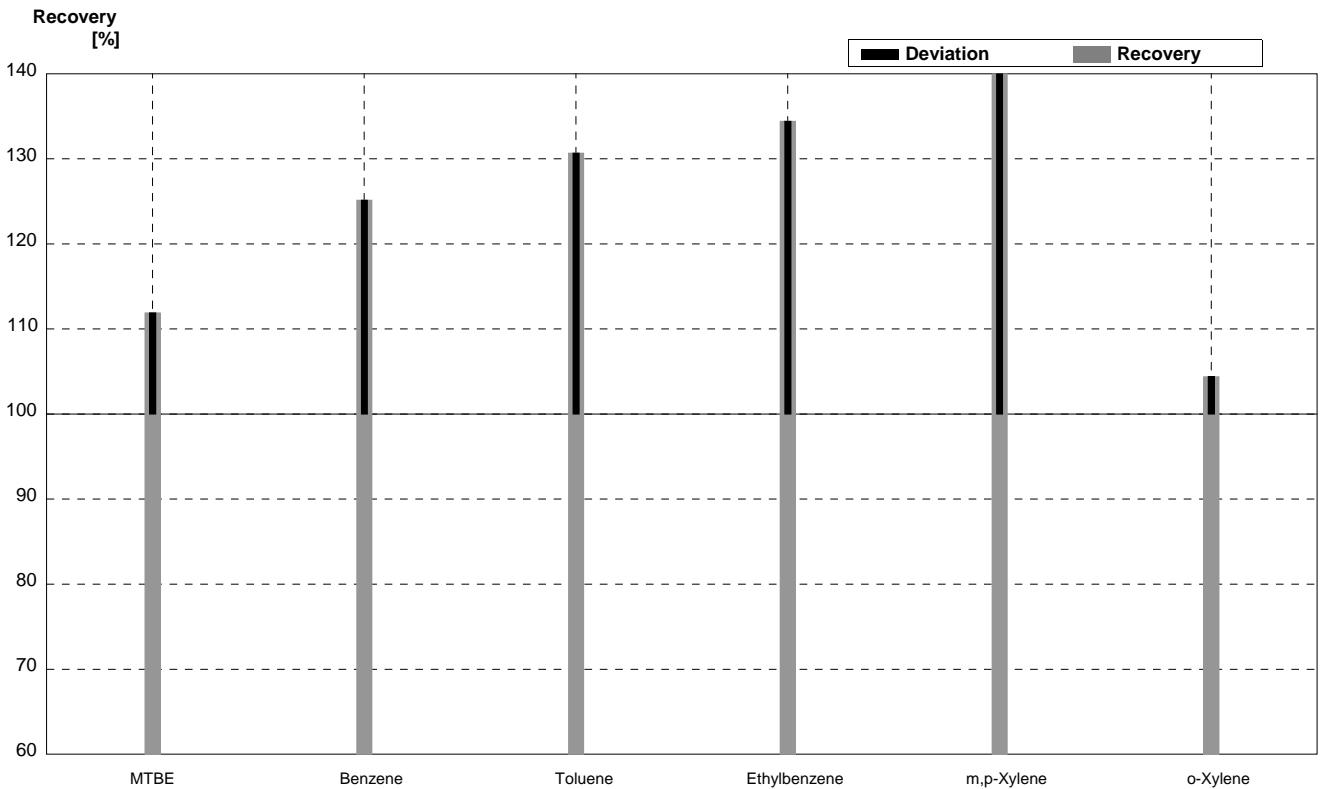
**Sample B8B**  
**Laboratory O**

Parameter	Target value	$\pm U$ (k=2)	Result	$\pm$	Unit	Recovery
MTBE	<0,2				$\mu\text{g/L}$	
Benzene	1,86	0,09	1,76	0,112	$\mu\text{g/L}$	95%
Toluene	2,16	0,11	1,84	0,228	$\mu\text{g/L}$	85%
Ethylbenzene	5,88	0,29	5,24	0,262	$\mu\text{g/L}$	89%
m,p-Xylene	4,42	0,35	3,862	0,278	$\mu\text{g/L}$	87%
o-Xylene	3,62	0,29	3,247	0,234	$\mu\text{g/L}$	90%



**Sample B8A**  
**Laboratory P**

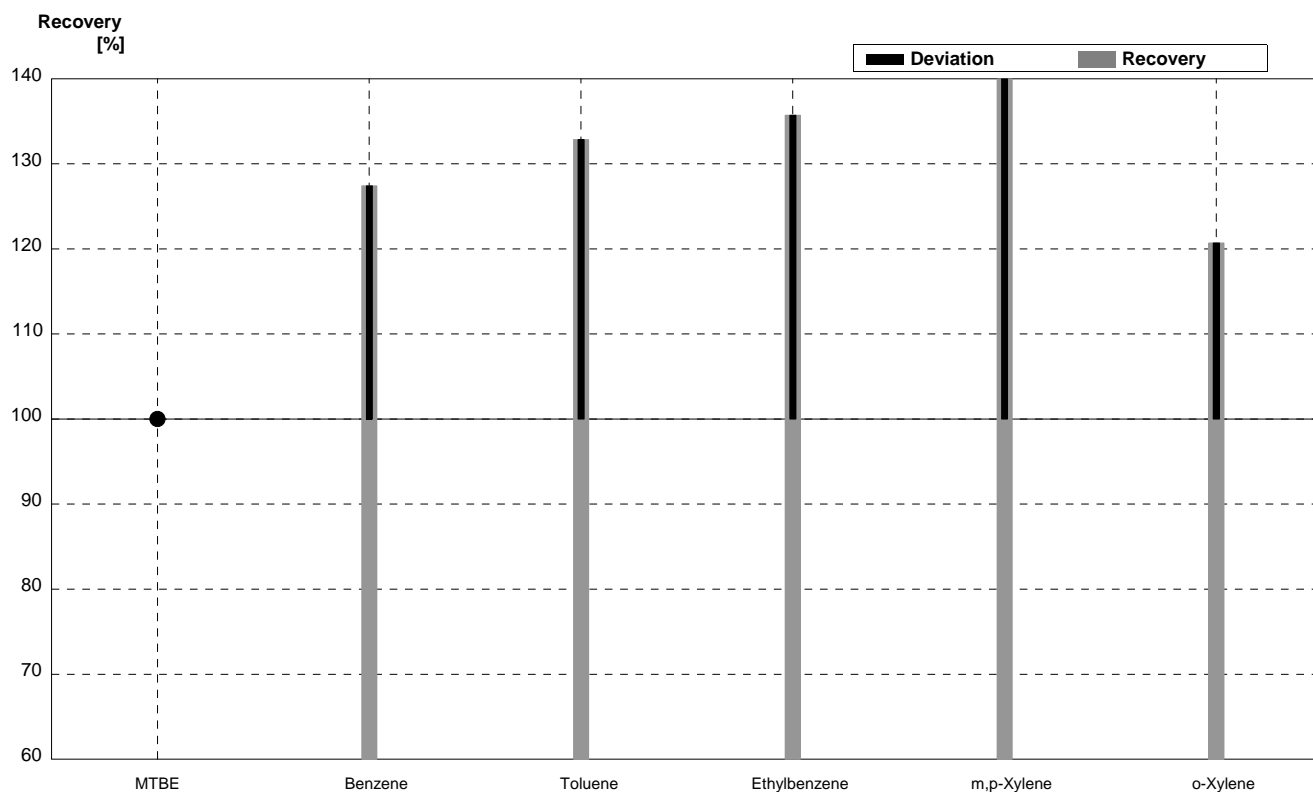
Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	2,10	0,11	2,35		$\mu\text{g/L}$	112%
Benzene	3,46	0,17	4,33		$\mu\text{g/L}$	125%
Toluene	5,90	0,30	7,71		$\mu\text{g/L}$	131%
Ethylbenzene	2,47	0,12	3,32		$\mu\text{g/L}$	134%
m,p-Xylene	0,85	0,04	1,46		$\mu\text{g/L}$	172%
o-Xylene	5,70	0,29	5,95		$\mu\text{g/L}$	104%





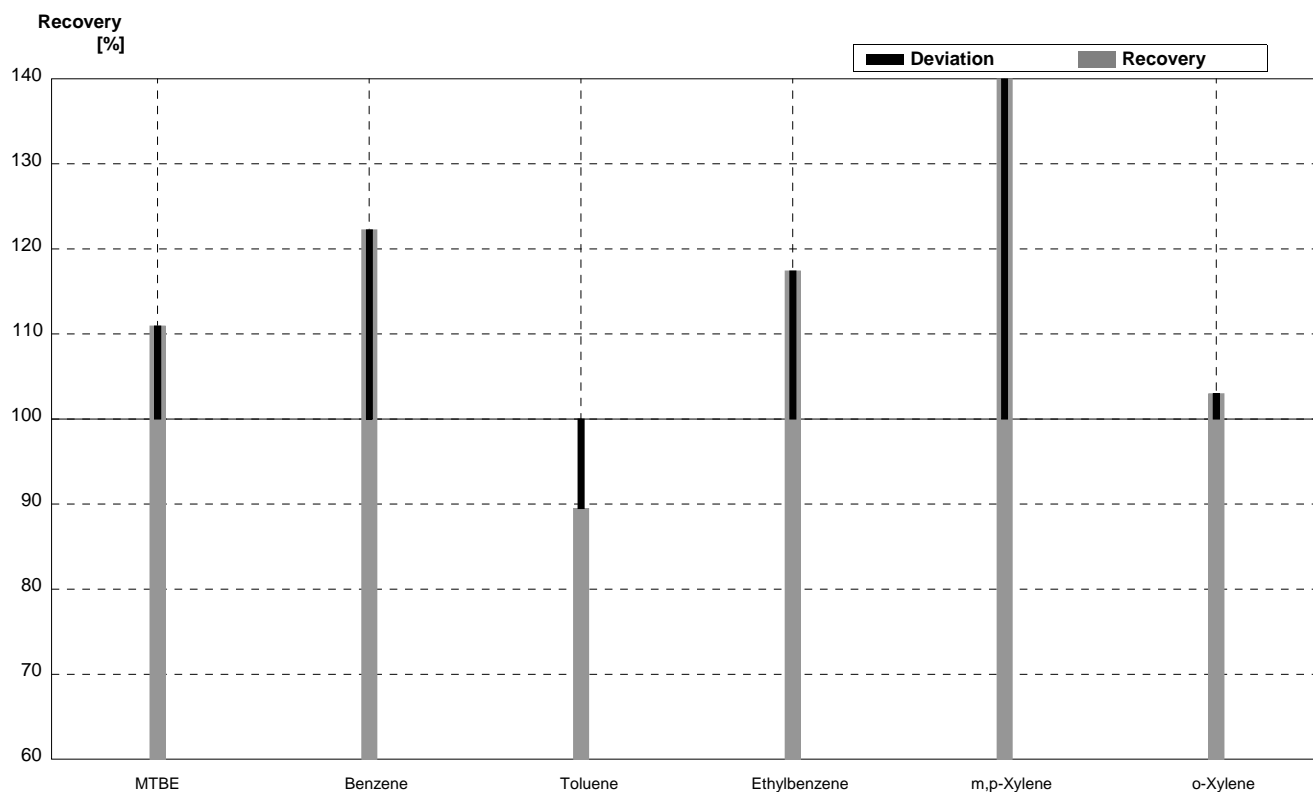
**Sample B8B**  
**Laboratory P**

Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	<0,2		<0,20		$\mu\text{g/L}$	•
Benzene	1,86	0,09	2,37		$\mu\text{g/L}$	127%
Toluene	2,16	0,11	2,87		$\mu\text{g/L}$	133%
Ethylbenzene	5,88	0,29	7,98		$\mu\text{g/L}$	136%
m,p-Xylene	4,42	0,35	6,26		$\mu\text{g/L}$	142%
o-Xylene	3,62	0,29	4,37		$\mu\text{g/L}$	121%



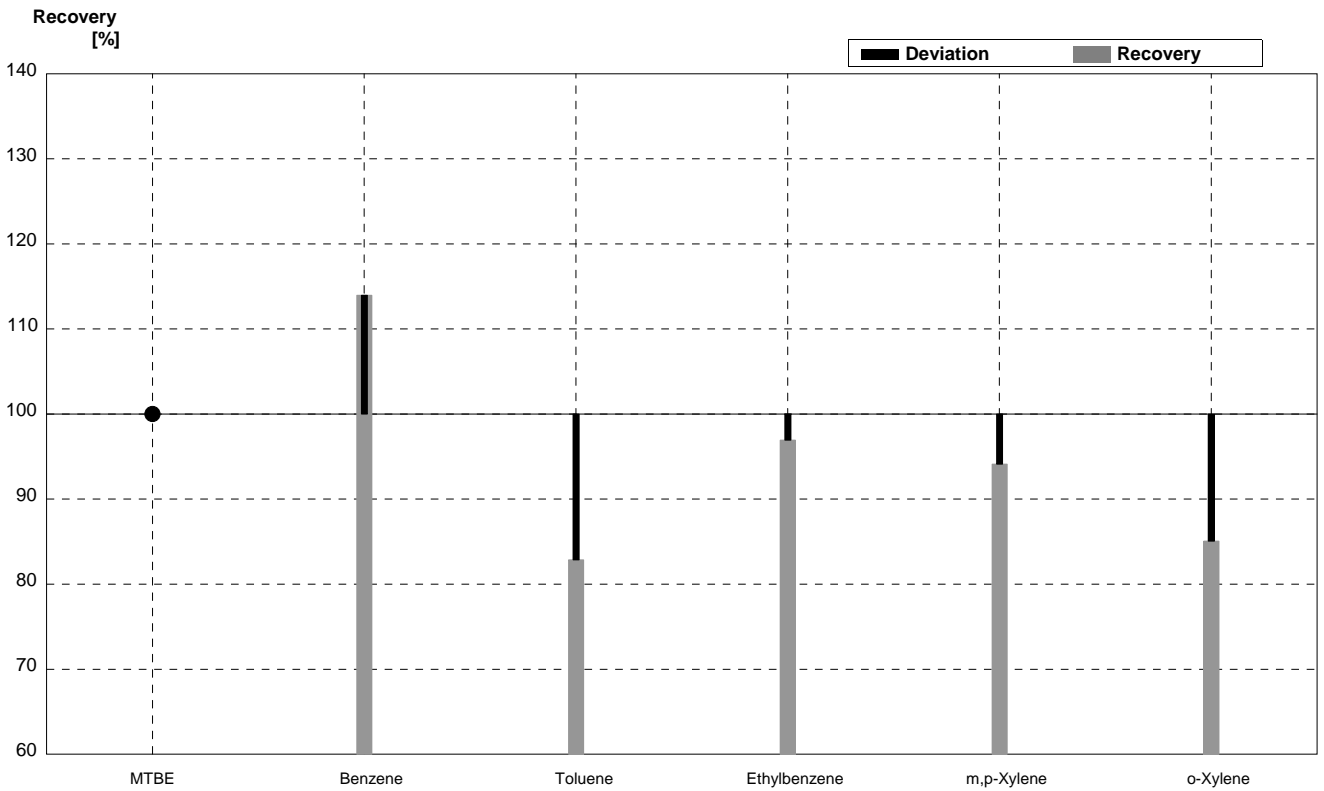
**Sample B8A**  
**Laboratory Q**

Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	2,10	0,11	2,33	0,35	$\mu\text{g/L}$	111%
Benzene	3,46	0,17	4,23	0,63	$\mu\text{g/L}$	122%
Toluene	5,90	0,30	5,28	0,79	$\mu\text{g/L}$	89%
Ethylbenzene	2,47	0,12	2,90	0,44	$\mu\text{g/L}$	117%
m,p-Xylene	0,85	0,04	1,33	0,20	$\mu\text{g/L}$	156%
o-Xylene	5,70	0,29	5,87	0,88	$\mu\text{g/L}$	103%



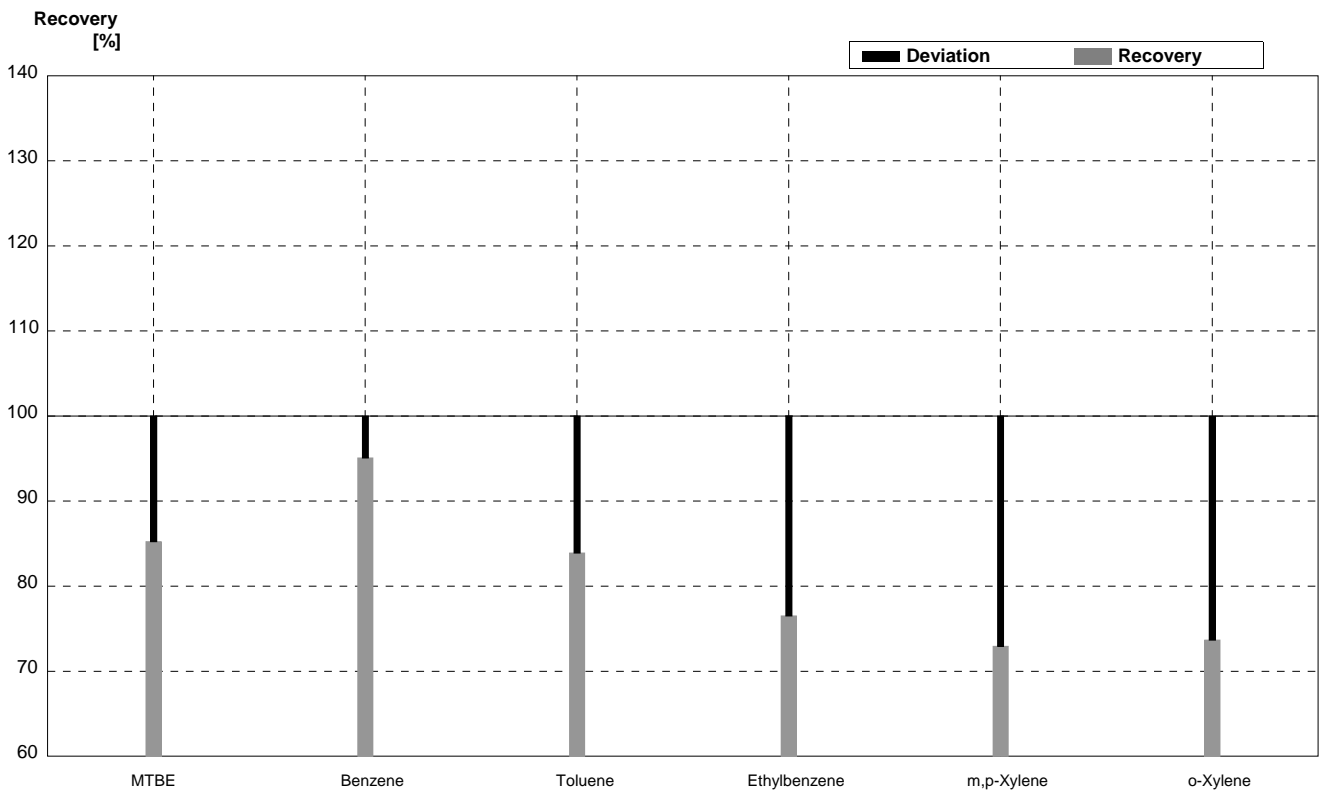
**Sample B8B**  
**Laboratory Q**

Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	<0,2		<0,05	0,01	$\mu\text{g/L}$	•
Benzene	1,86	0,09	2,12	0,32	$\mu\text{g/L}$	114%
Toluene	2,16	0,11	1,79	0,27	$\mu\text{g/L}$	83%
Ethylbenzene	5,88	0,29	5,70	0,86	$\mu\text{g/L}$	97%
m,p-Xylene	4,42	0,35	4,16	0,62	$\mu\text{g/L}$	94%
o-Xylene	3,62	0,29	3,08	0,46	$\mu\text{g/L}$	85%



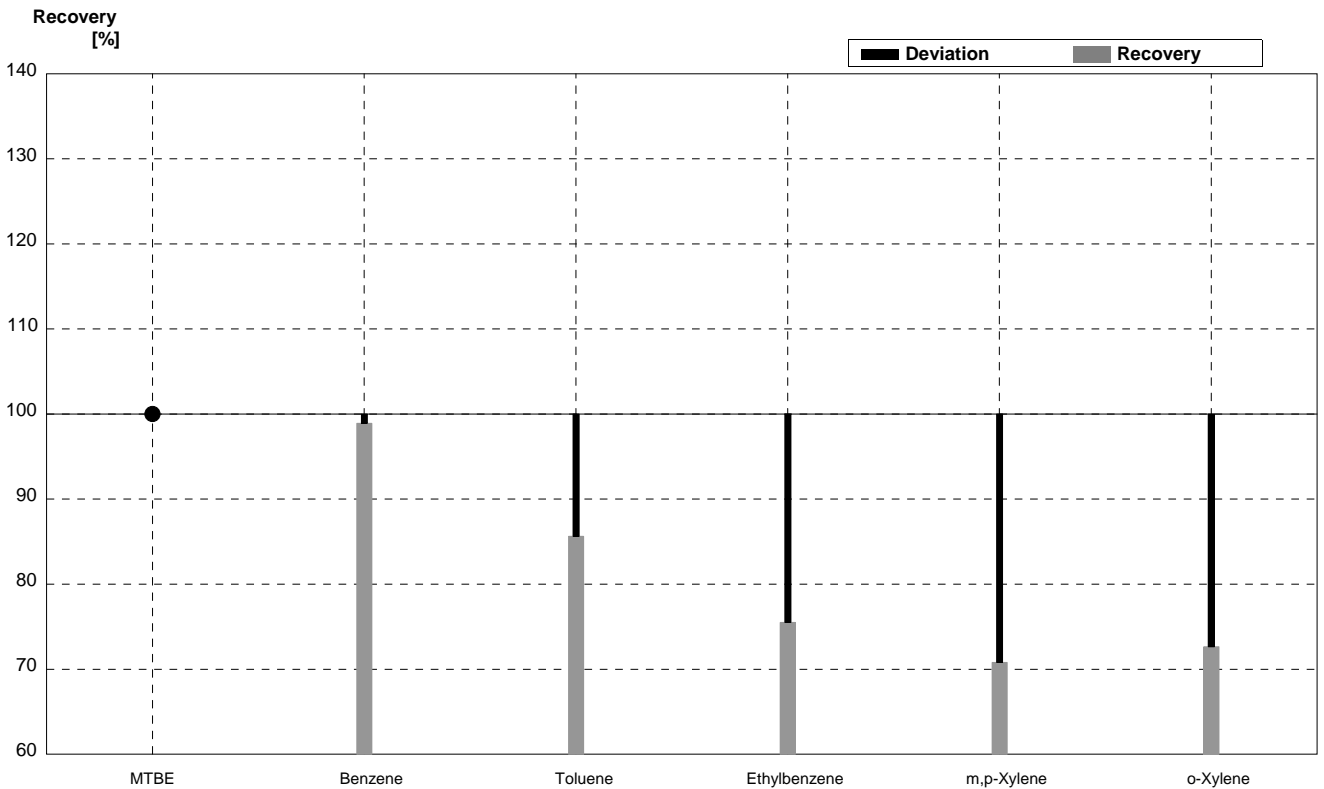
**Sample B8A**  
**Laboratory R**

Parameter	Target value	$\pm U$ (k=2)	Result	$\pm$	Unit	Recovery
MTBE	2,10	0,11	1,79	0,30	$\mu\text{g/L}$	85%
Benzene	3,46	0,17	3,29	0,66	$\mu\text{g/L}$	95%
Toluene	5,90	0,30	4,95	0,99	$\mu\text{g/L}$	84%
Ethylbenzene	2,47	0,12	1,89	0,38	$\mu\text{g/L}$	77%
m,p-Xylene	0,85	0,04	0,62	0,12	$\mu\text{g/L}$	73%
o-Xylene	5,70	0,29	4,20	0,84	$\mu\text{g/L}$	74%



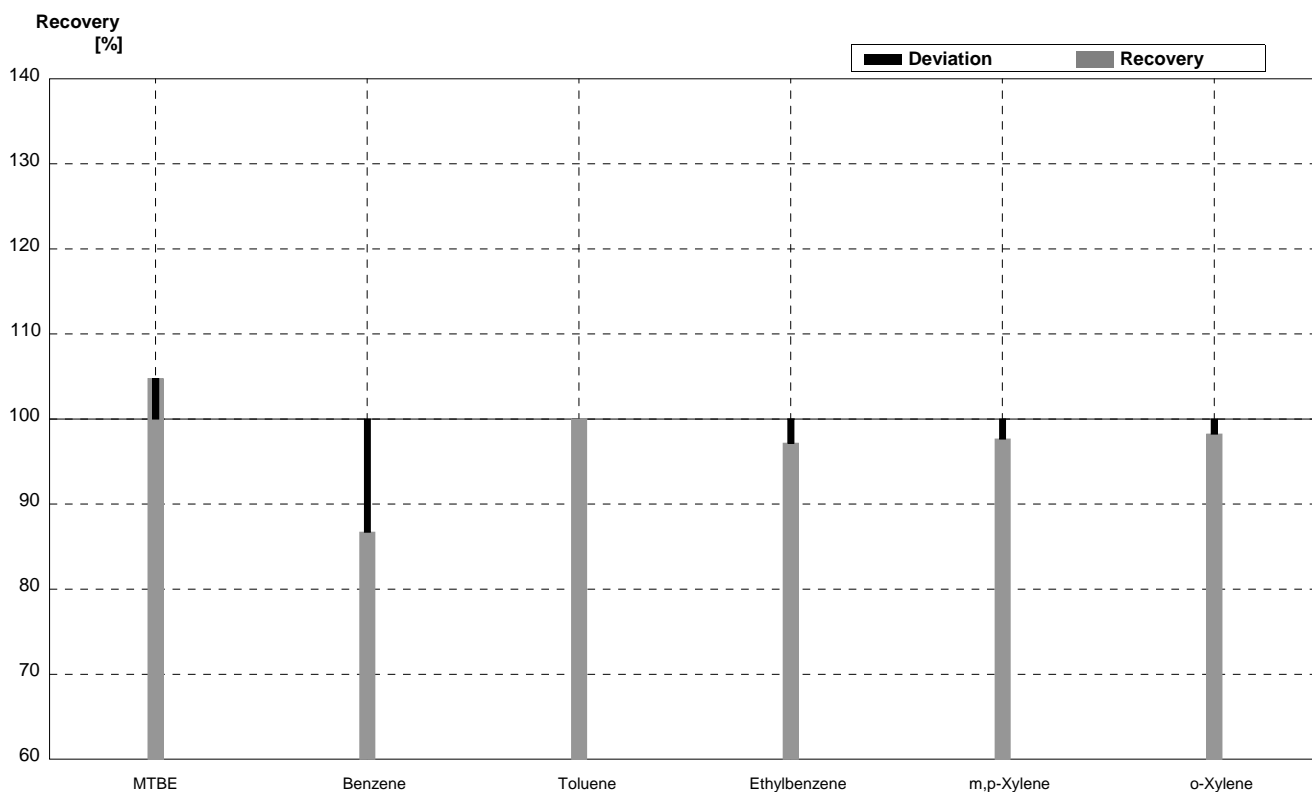
**Sample B8B**  
**Laboratory R**

Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	<0,2		<1		$\mu\text{g/L}$	•
Benzene	1,86	0,09	1,84	0,37	$\mu\text{g/L}$	99%
Toluene	2,16	0,11	1,85	0,37	$\mu\text{g/L}$	86%
Ethylbenzene	5,88	0,29	4,44	0,89	$\mu\text{g/L}$	76%
m,p-Xylene	4,42	0,35	3,13	0,63	$\mu\text{g/L}$	71%
o-Xylene	3,62	0,29	2,63	0,53	$\mu\text{g/L}$	73%



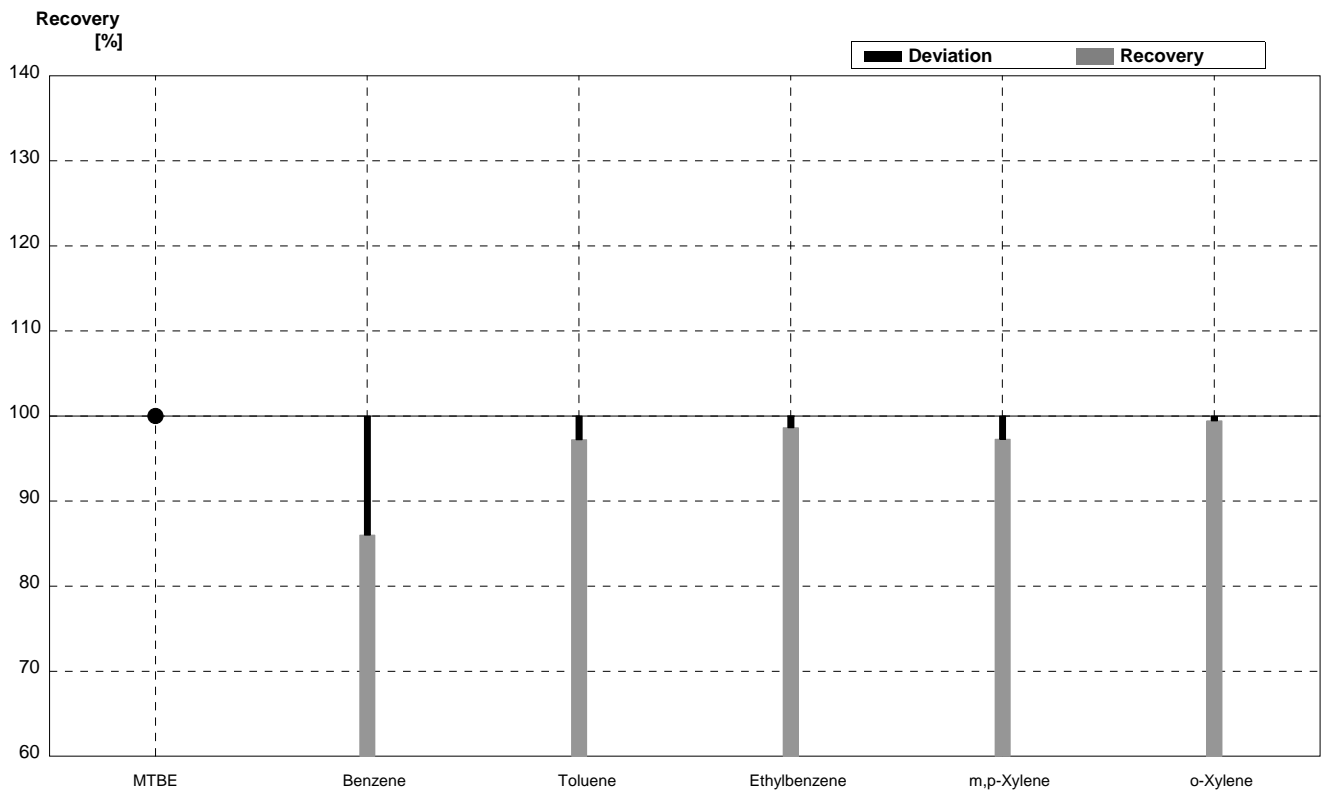
**Sample B8A**  
**Laboratory S**

Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	2,10	0,11	2,2	0,59	$\mu\text{g/L}$	105%
Benzene	3,46	0,17	3,0	0,79	$\mu\text{g/L}$	87%
Toluene	5,90	0,30	5,9	1,13	$\mu\text{g/L}$	100%
Ethylbenzene	2,47	0,12	2,4	0,39	$\mu\text{g/L}$	97%
m,p-Xylene	0,85	0,04	0,83	0,14	$\mu\text{g/L}$	98%
o-Xylene	5,70	0,29	5,6	1,23	$\mu\text{g/L}$	98%



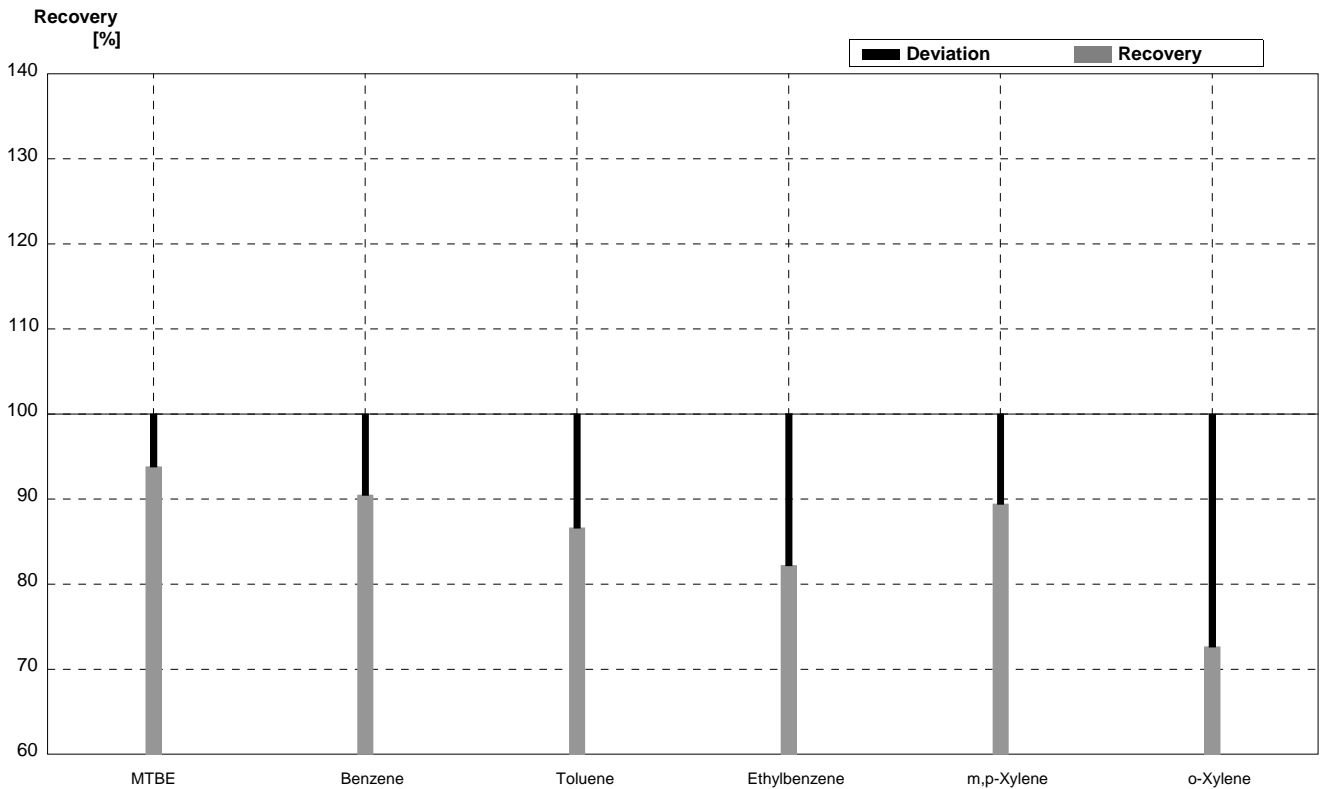
**Sample B8B**  
**Laboratory S**

Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	<0,2		<0,5		$\mu\text{g/L}$	•
Benzene	1,86	0,09	1,6	0,42	$\mu\text{g/L}$	86%
Toluene	2,16	0,11	2,1	0,41	$\mu\text{g/L}$	97%
Ethylbenzene	5,88	0,29	5,8	0,94	$\mu\text{g/L}$	99%
m,p-Xylene	4,42	0,35	4,3	0,75	$\mu\text{g/L}$	97%
o-Xylene	3,62	0,29	3,6	0,78	$\mu\text{g/L}$	99%



**Sample B8A**  
**Laboratory T**

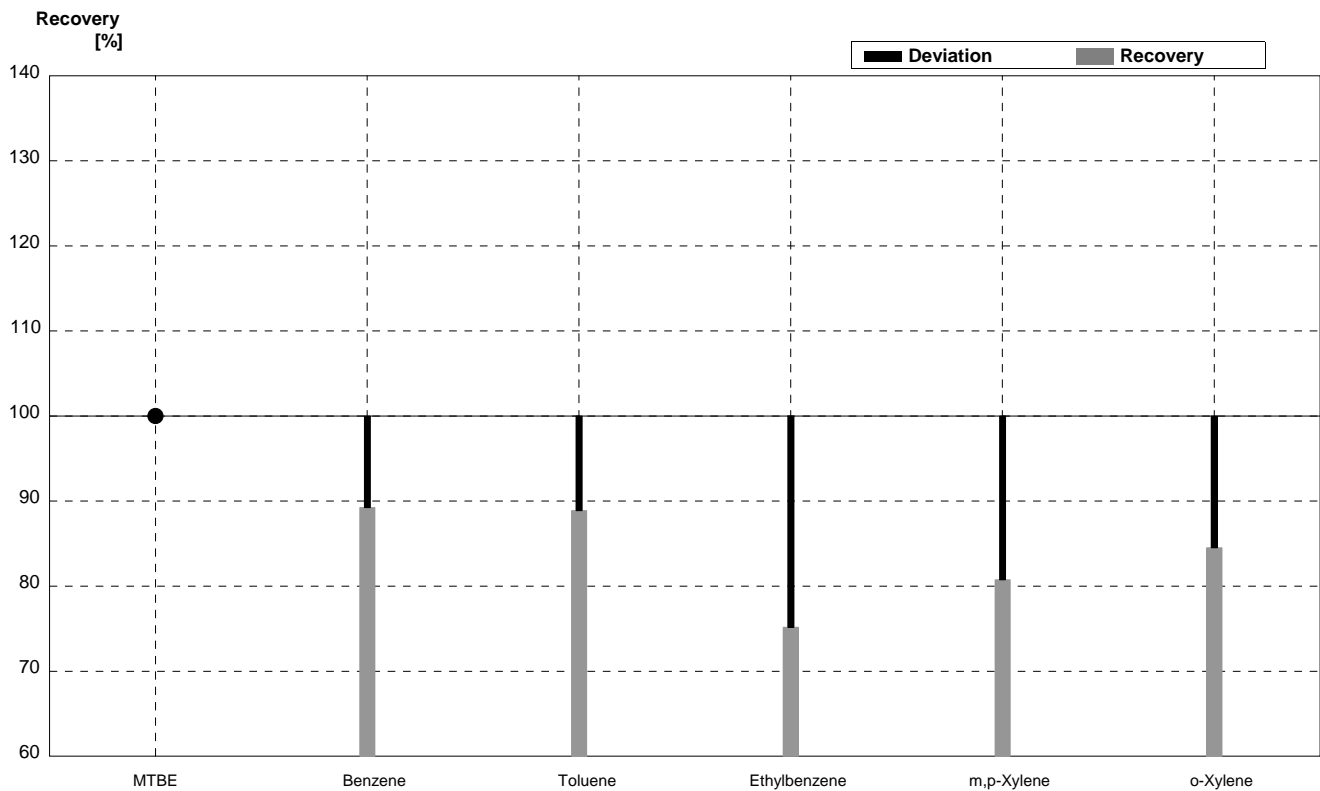
Parameter	Target value	$\pm U$ (k=2)	Result	$\pm$	Unit	Recovery
MTBE	2,10	0,11	1,97	0,354	$\mu\text{g/L}$	94%
Benzene	3,46	0,17	3,13	0,563	$\mu\text{g/L}$	90%
Toluene	5,90	0,30	5,11	0,920	$\mu\text{g/L}$	87%
Ethylbenzene	2,47	0,12	2,03	0,365	$\mu\text{g/L}$	82%
m,p-Xylene	0,85	0,04	0,76	0,137	$\mu\text{g/L}$	89%
o-Xylene	5,70	0,29	4,14	0,744	$\mu\text{g/L}$	73%





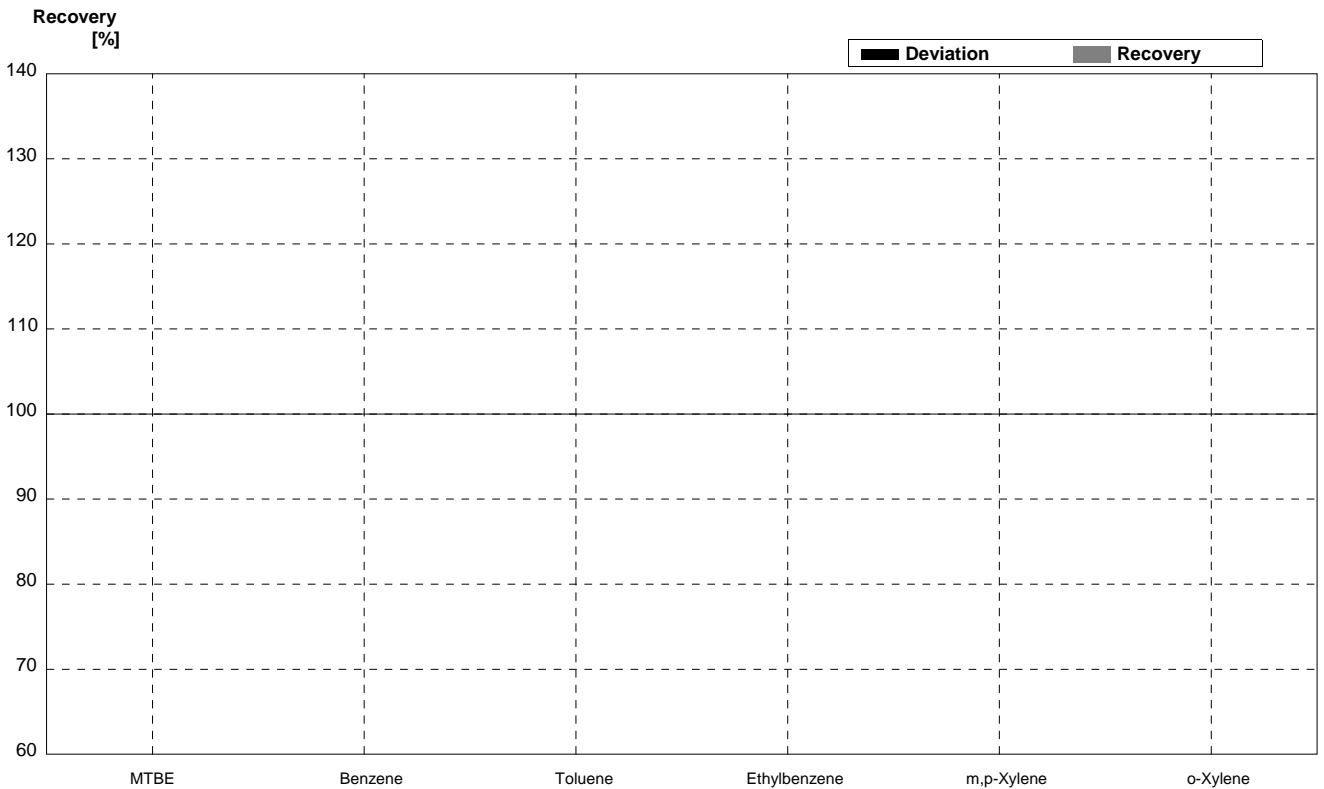
**Sample B8B**  
**Laboratory T**

Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	<0,2		<0,20		$\mu\text{g/L}$	•
Benzene	1,86	0,09	1,66	0,298	$\mu\text{g/L}$	89%
Toluene	2,16	0,11	1,92	0,345	$\mu\text{g/L}$	89%
Ethylbenzene	5,88	0,29	4,42	0,796	$\mu\text{g/L}$	75%
m,p-Xylene	4,42	0,35	3,57	0,643	$\mu\text{g/L}$	81%
o-Xylene	3,62	0,29	3,06	0,551	$\mu\text{g/L}$	85%



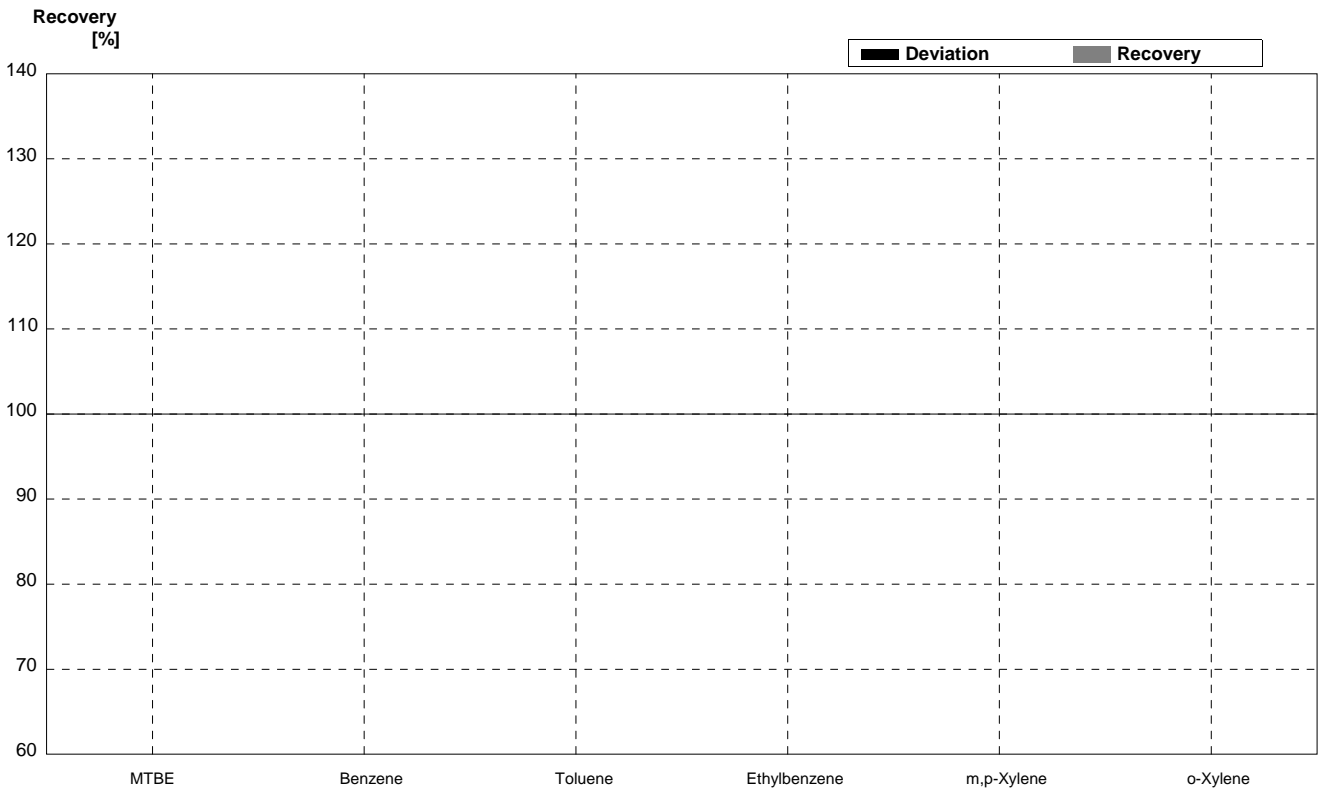
**Sample B8A**  
**Laboratory U**

Parameter	Target value	$\pm U$ (k=2)	Result	$\pm$	Unit	Recovery
MTBE	2,10	0,11			$\mu\text{g/L}$	
Benzene	3,46	0,17			$\mu\text{g/L}$	
Toluene	5,90	0,30			$\mu\text{g/L}$	
Ethylbenzene	2,47	0,12			$\mu\text{g/L}$	
m,p-Xylene	0,85	0,04			$\mu\text{g/L}$	
o-Xylene	5,70	0,29			$\mu\text{g/L}$	



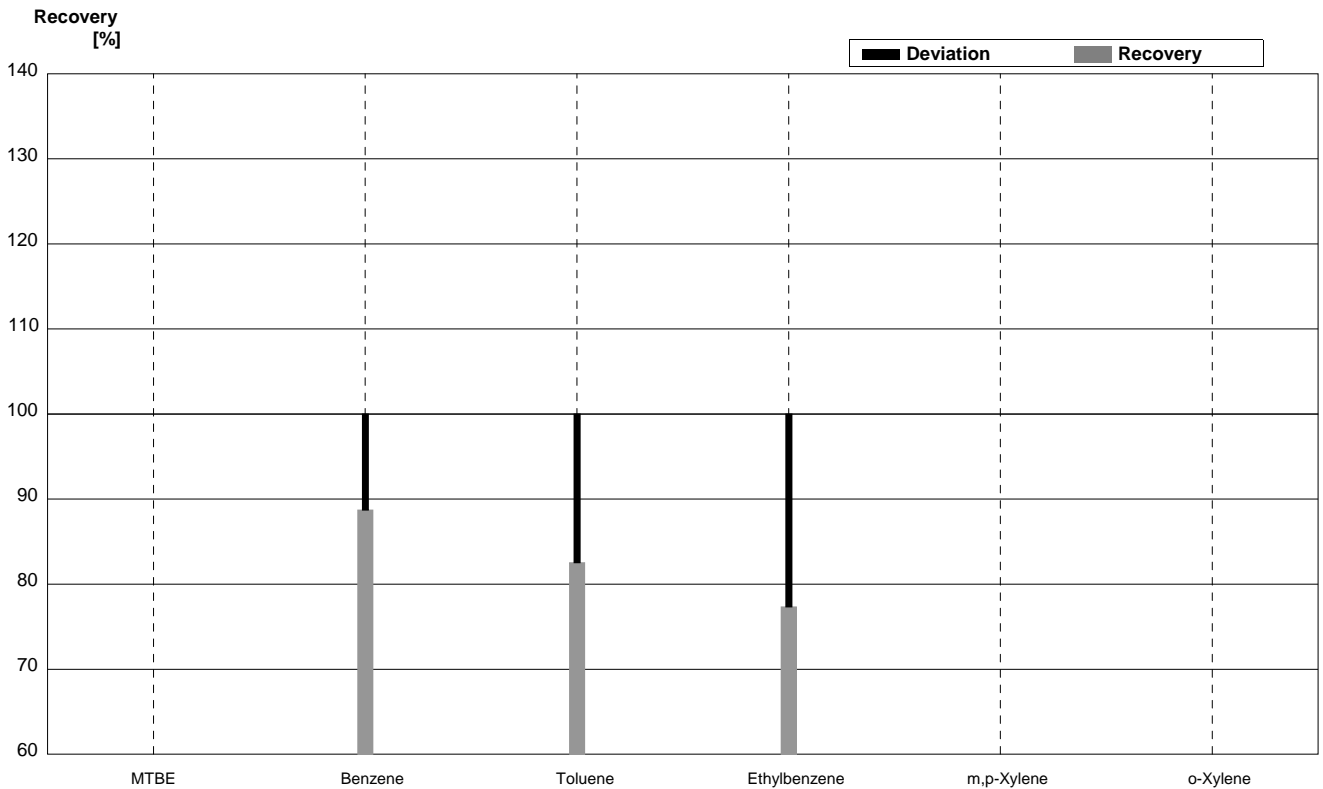
**Sample B8B**  
**Laboratory U**

Parameter	Target value	$\pm U$ (k=2)	Result	$\pm$	Unit	Recovery
MTBE	<0,2				$\mu\text{g/L}$	
Benzene	1,86	0,09			$\mu\text{g/L}$	
Toluene	2,16	0,11			$\mu\text{g/L}$	
Ethylbenzene	5,88	0,29			$\mu\text{g/L}$	
m,p-Xylene	4,42	0,35			$\mu\text{g/L}$	
o-Xylene	3,62	0,29			$\mu\text{g/L}$	



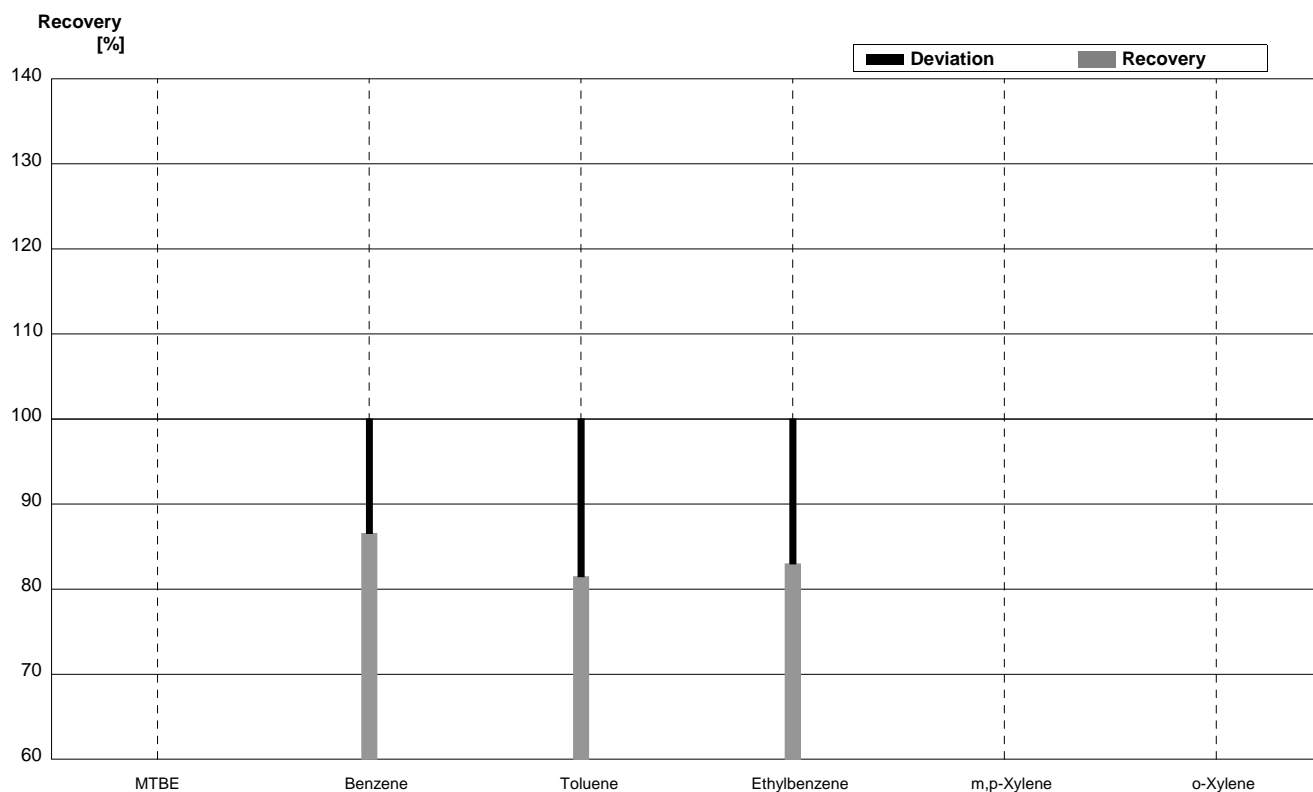
**Sample B8A**  
**Laboratory V**

Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	2,10	0,11			$\mu\text{g/L}$	
Benzene	3,46	0,17	3,07	0,6	$\mu\text{g/L}$	89%
Toluene	5,90	0,30	4,87	0,8	$\mu\text{g/L}$	83%
Ethylbenzene	2,47	0,12	1,91	0,2	$\mu\text{g/L}$	77%
m,p-Xylene	0,85	0,04			$\mu\text{g/L}$	
o-Xylene	5,70	0,29			$\mu\text{g/L}$	



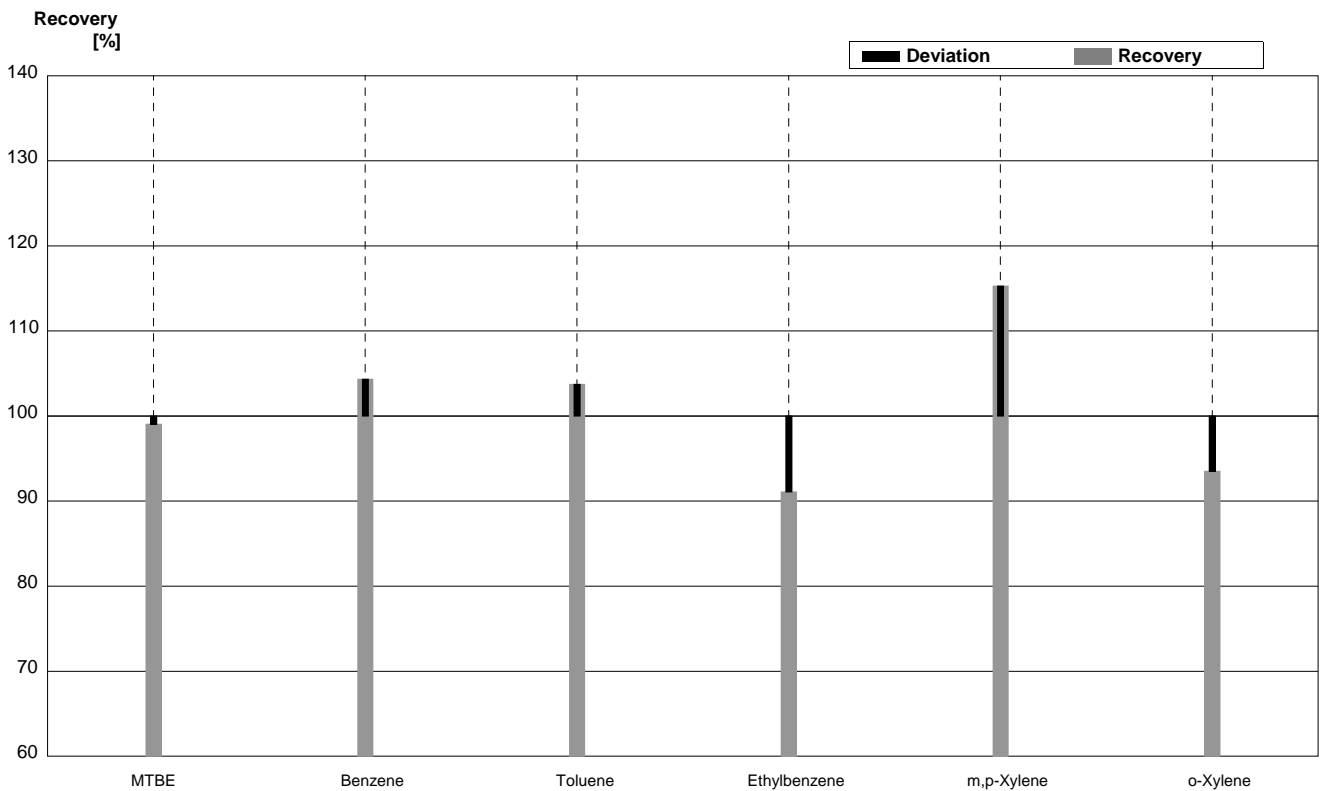
**Sample B8B**  
**Laboratory V**

Parameter	Target value	$\pm U$ (k=2)	Result	$\pm$	Unit	Recovery
MTBE	<0,2				$\mu\text{g/L}$	
Benzene	1,86	0,09	1,61	0,3	$\mu\text{g/L}$	87%
Toluene	2,16	0,11	1,76	0,3	$\mu\text{g/L}$	81%
Ethylbenzene	5,88	0,29	4,88	0,5	$\mu\text{g/L}$	83%
m,p-Xylene	4,42	0,35			$\mu\text{g/L}$	
o-Xylene	3,62	0,29			$\mu\text{g/L}$	



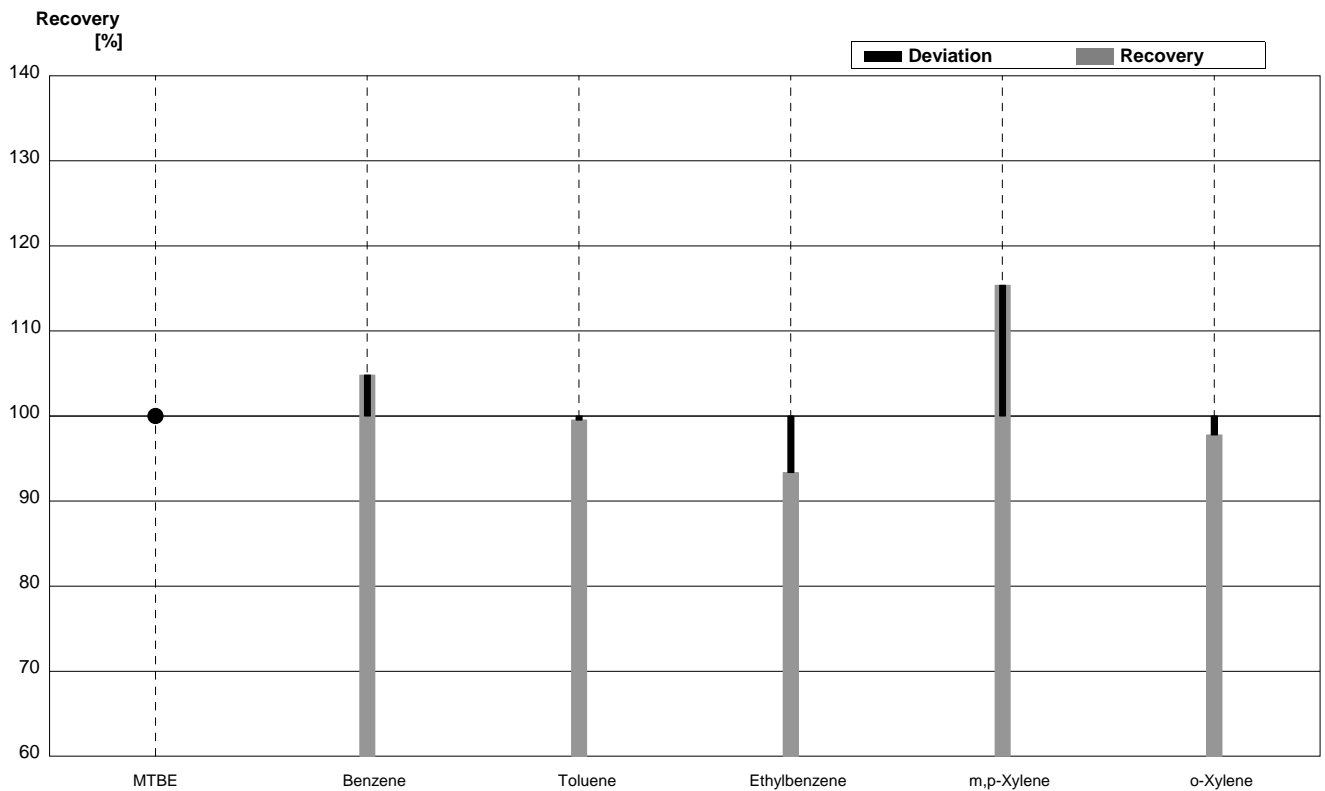
**Sample B8A**  
**Laboratory W**

Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	2,10	0,11	2,08	0,42	$\mu\text{g/L}$	99%
Benzene	3,46	0,17	3,61	0,72	$\mu\text{g/L}$	104%
Toluene	5,90	0,30	6,12	1,22	$\mu\text{g/L}$	104%
Ethylbenzene	2,47	0,12	2,25	0,45	$\mu\text{g/L}$	91%
m,p-Xylene	0,85	0,04	0,98	0,20	$\mu\text{g/L}$	115%
o-Xylene	5,70	0,29	5,33	1,07	$\mu\text{g/L}$	94%



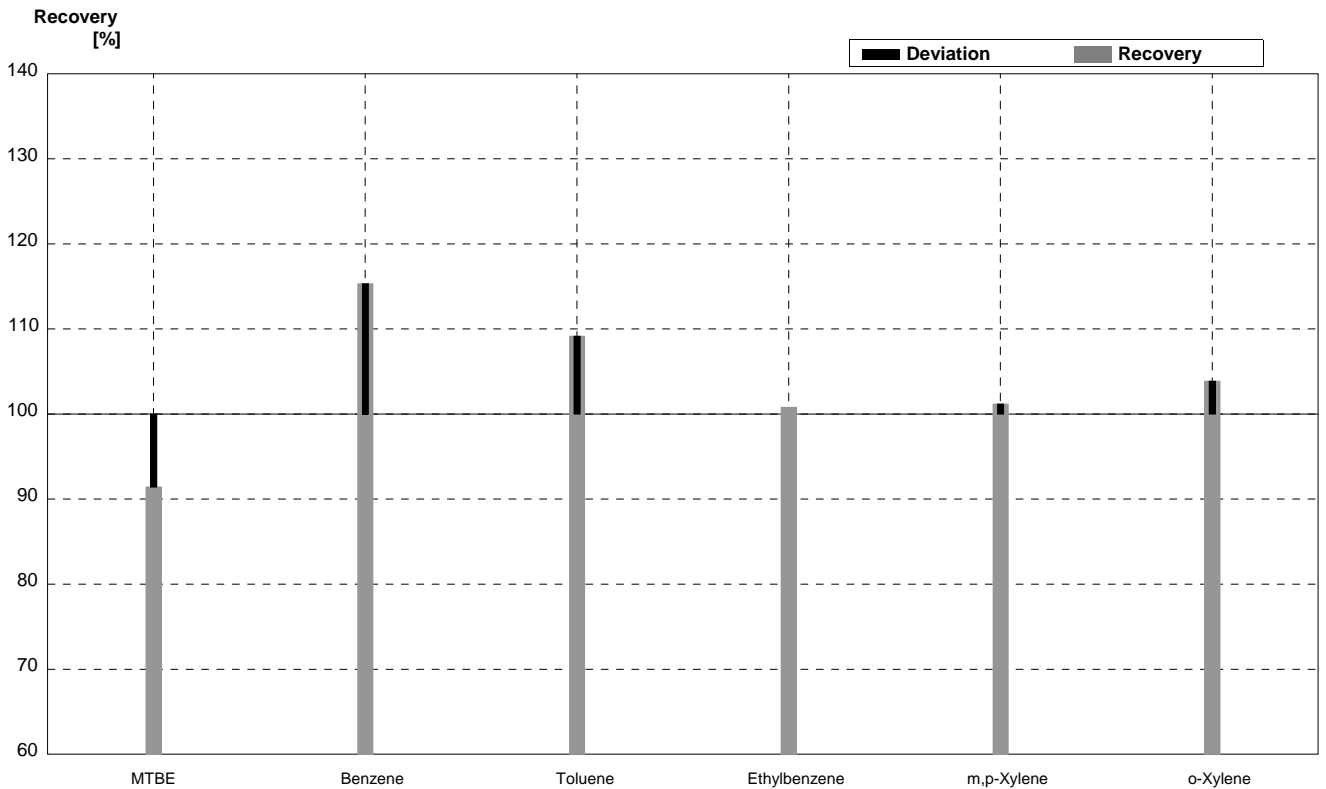
**Sample B8B**  
**Laboratory W**

Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	<0,2		<0,02		$\mu\text{g/L}$	•
Benzene	1,86	0,09	1,95	0,39	$\mu\text{g/L}$	105%
Toluene	2,16	0,11	2,15	0,43	$\mu\text{g/L}$	100%
Ethylbenzene	5,88	0,29	5,49	1,10	$\mu\text{g/L}$	93%
m,p-Xylene	4,42	0,35	5,10	1,02	$\mu\text{g/L}$	115%
o-Xylene	3,62	0,29	3,54	0,71	$\mu\text{g/L}$	98%



**Sample B8A**  
**Laboratory X**

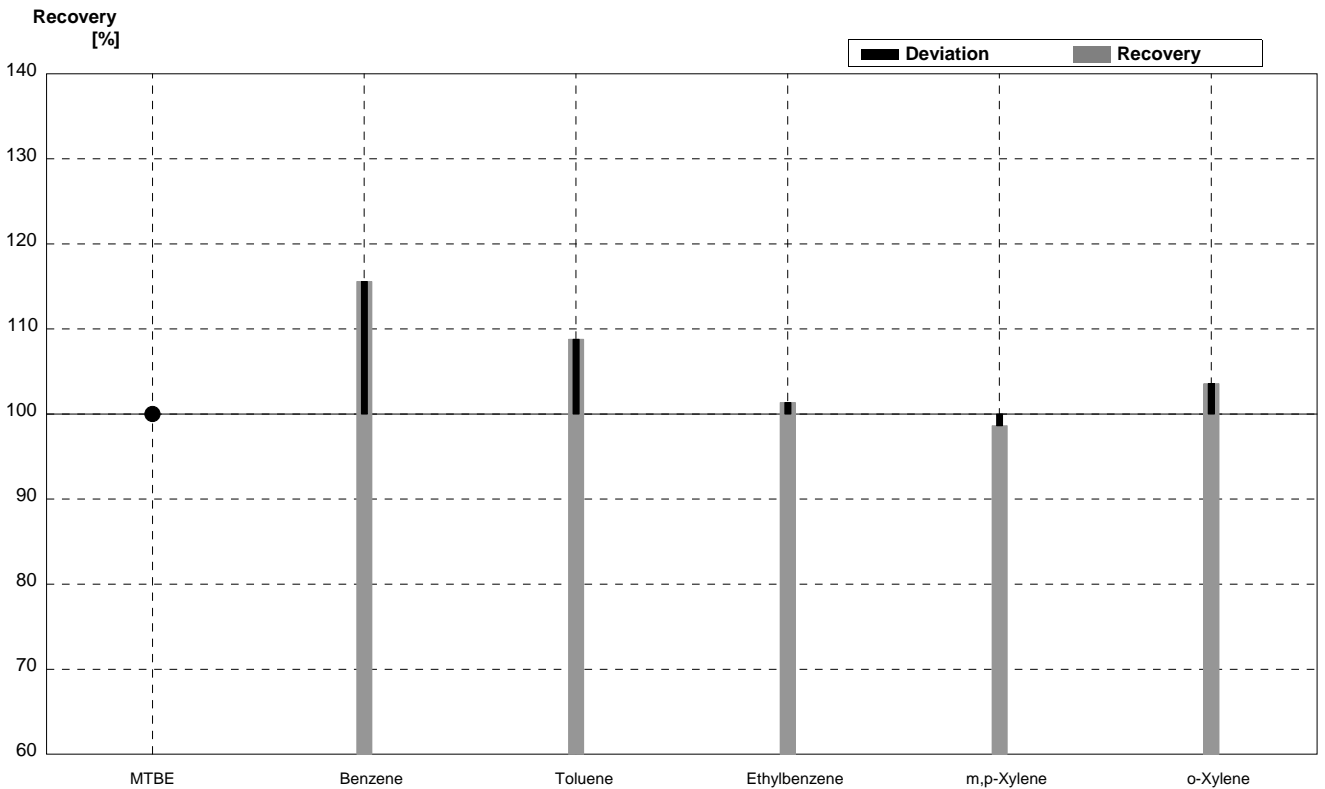
Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	2,10	0,11	1,92	0,31	$\mu\text{g/L}$	91%
Benzene	3,46	0,17	3,99	0,60	$\mu\text{g/L}$	115%
Toluene	5,90	0,30	6,44	1,22	$\mu\text{g/L}$	109%
Ethylbenzene	2,47	0,12	2,49	0,42	$\mu\text{g/L}$	101%
m,p-Xylene	0,85	0,04	0,86	0,15	$\mu\text{g/L}$	101%
o-Xylene	5,70	0,29	5,92	1,01	$\mu\text{g/L}$	104%





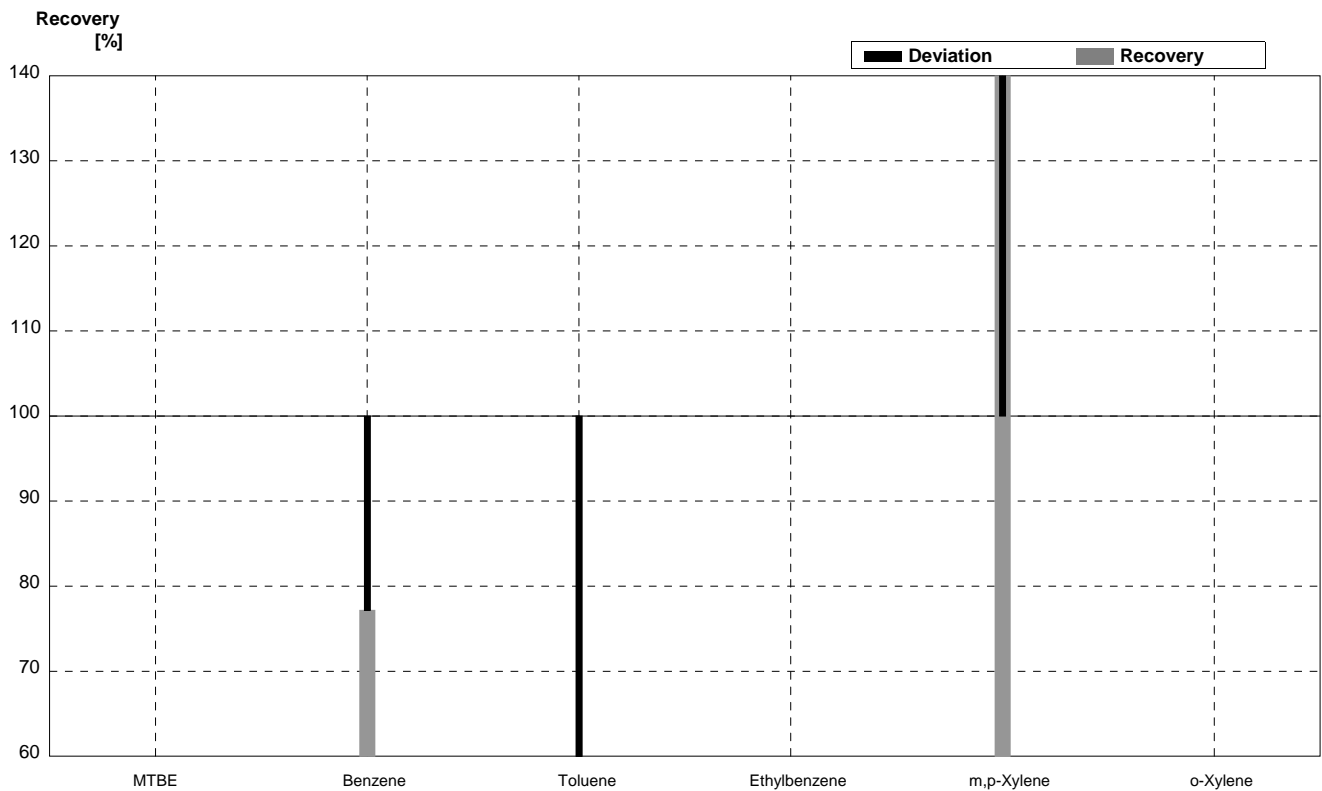
**Sample B8B**  
**Laboratory X**

Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	<0,2		<1		$\mu\text{g/L}$	•
Benzene	1,86	0,09	2,15	0,32	$\mu\text{g/L}$	116%
Toluene	2,16	0,11	2,35	0,45	$\mu\text{g/L}$	109%
Ethylbenzene	5,88	0,29	5,96	1,01	$\mu\text{g/L}$	101%
m,p-Xylene	4,42	0,35	4,36	0,78	$\mu\text{g/L}$	99%
o-Xylene	3,62	0,29	3,75	0,64	$\mu\text{g/L}$	104%



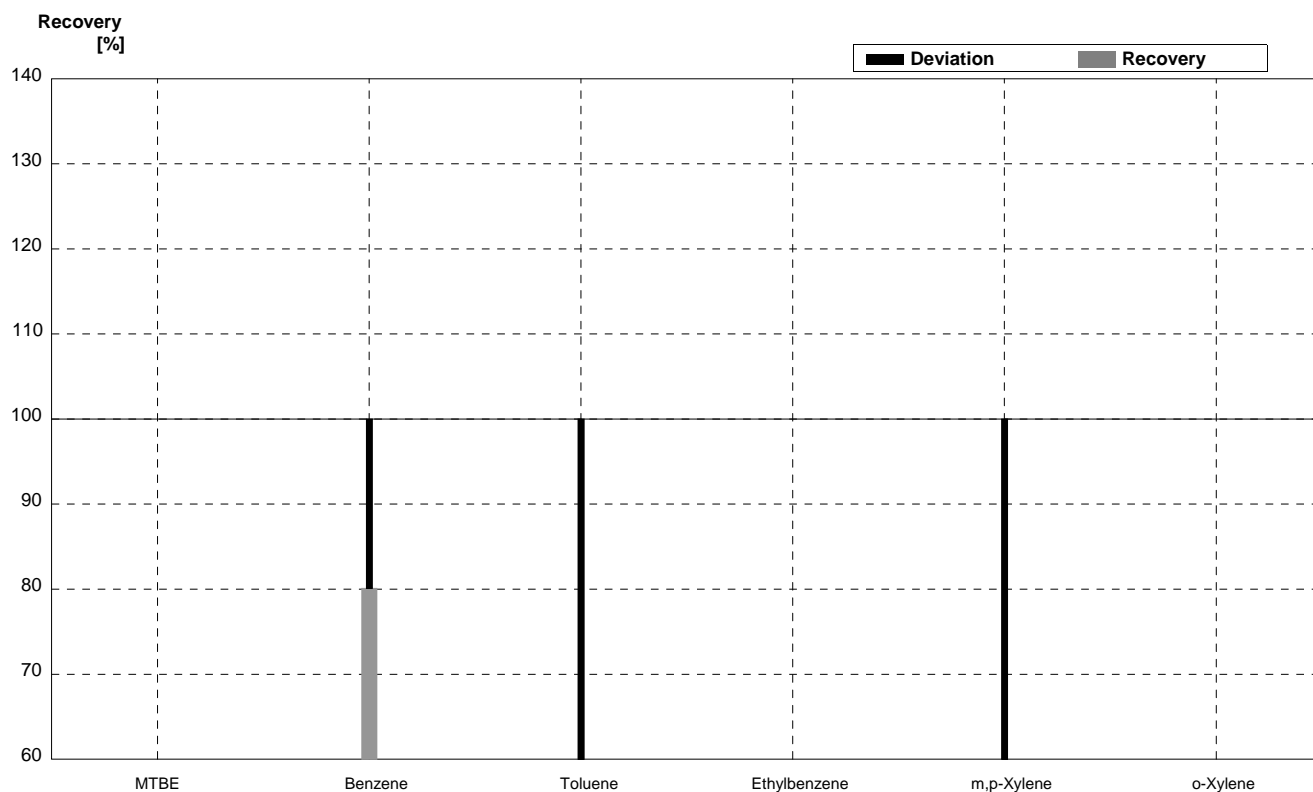
**Sample B8A**  
**Laboratory Y**

Parameter	Target value	$\pm U$ (k=2)	Result	$\pm$	Unit	Recovery
MTBE	2,10	0,11	n.b.		$\mu\text{g/L}$	
Benzene	3,46	0,17	2,67	0,1	$\mu\text{g/L}$	77%
Toluene	5,90	0,30	2,88	0,1	$\mu\text{g/L}$	49%
Ethylbenzene	2,47	0,12	n.b.		$\mu\text{g/L}$	
m,p-Xylene	0,85	0,04	3,73	0,1	$\mu\text{g/L}$	439%
o-Xylene	5,70	0,29	n.b.		$\mu\text{g/L}$	



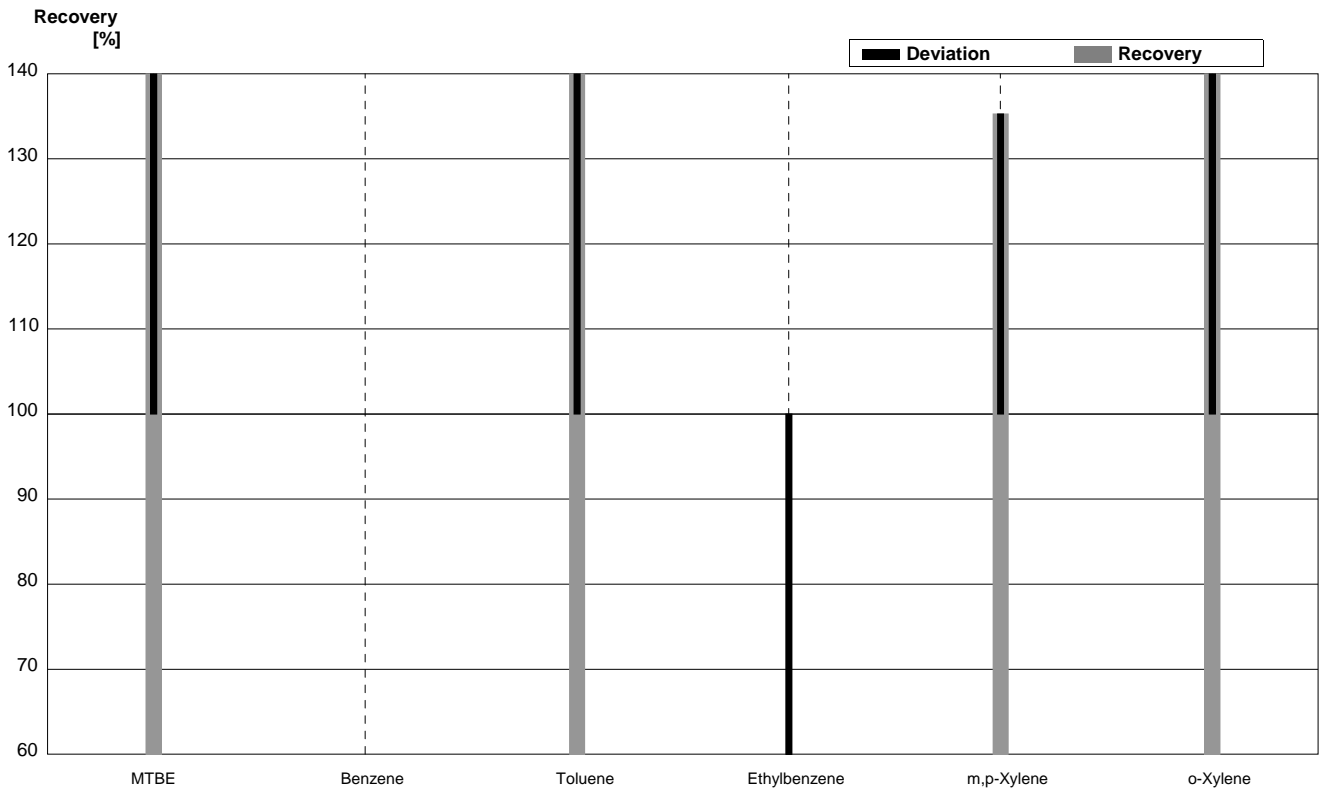
**Sample B8B**  
**Laboratory Y**

Parameter	Target value	$\pm U$ (k=2)	Result	$\pm$	Unit	Recovery
MTBE	<0,2		n.b.		$\mu\text{g/L}$	
Benzene	1,86	0,09	1,49	0,1	$\mu\text{g/L}$	80%
Toluene	2,16	0,11	1,19	0,1	$\mu\text{g/L}$	55%
Ethylbenzene	5,88	0,29	n.b.		$\mu\text{g/L}$	
m,p-Xylene	4,42	0,35	2,34	0,1	$\mu\text{g/L}$	53%
o-Xylene	3,62	0,29	n.b.		$\mu\text{g/L}$	



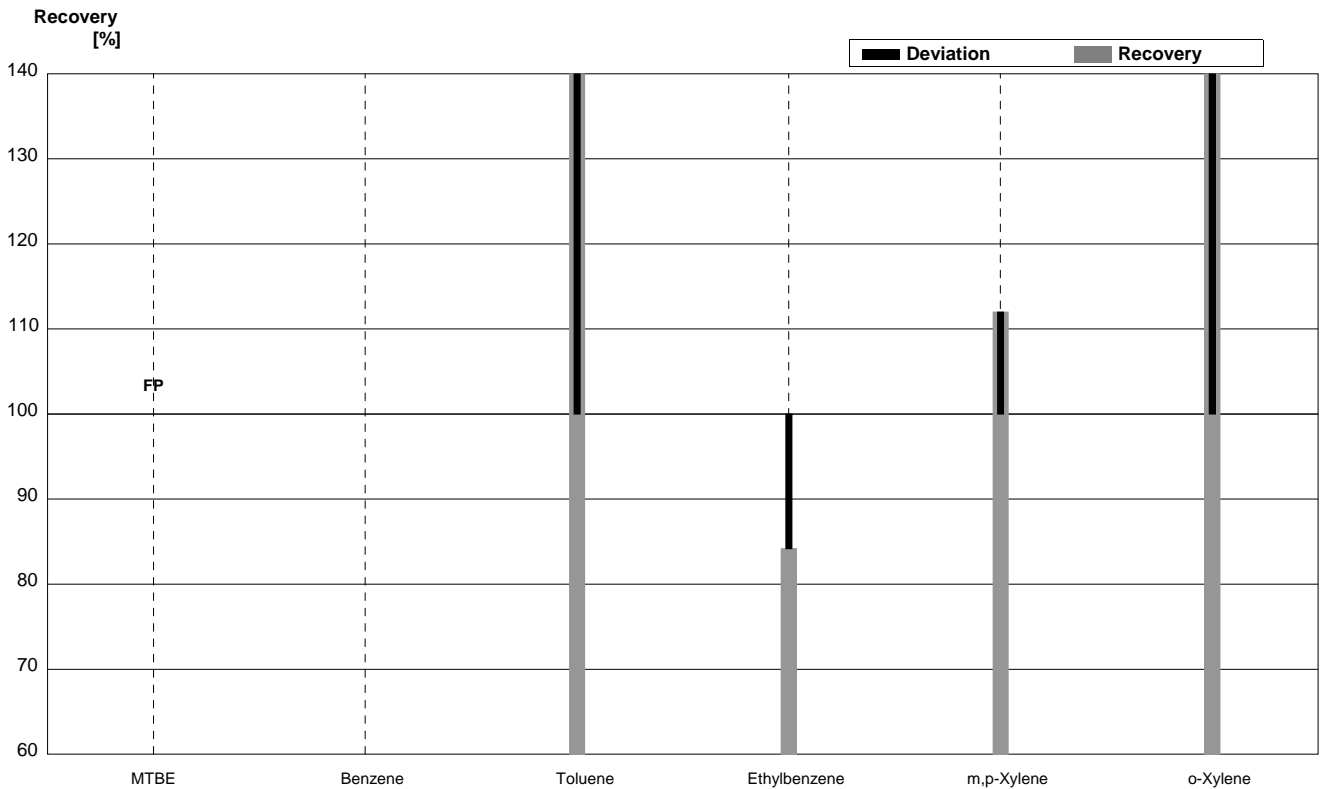
**Sample B8A**  
**Laboratory Z**

Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	2,10	0,11	64,45		$\mu\text{g/L}$	3069%
Benzene	3,46	0,17			$\mu\text{g/L}$	
Toluene	5,90	0,30	11,65		$\mu\text{g/L}$	197%
Ethylbenzene	2,47	0,12	0,95		$\mu\text{g/L}$	38%
m,p-Xylene	0,85	0,04	1,15		$\mu\text{g/L}$	135%
o-Xylene	5,70	0,29	11,05		$\mu\text{g/L}$	194%



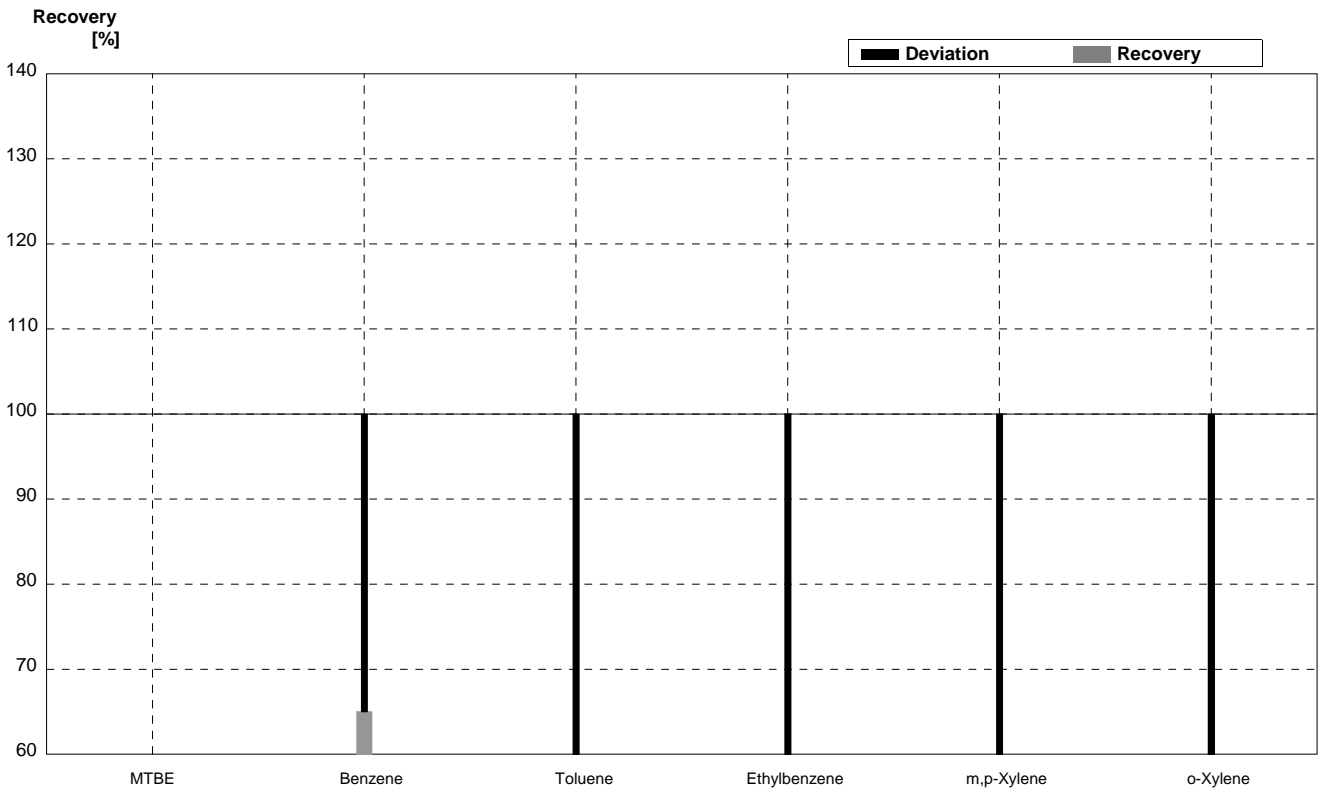
**Sample B8B**  
**Laboratory Z**

Parameter	Target value	$\pm U$ (k=2)	Result	$\pm$	Unit	Recovery
MTBE	<0,2		66,20		$\mu\text{g/L}$	FP
Benzene	1,86	0,09			$\mu\text{g/L}$	
Toluene	2,16	0,11	4,40		$\mu\text{g/L}$	204%
Ethylbenzene	5,88	0,29	4,95		$\mu\text{g/L}$	84%
m,p-Xylene	4,42	0,35	4,95		$\mu\text{g/L}$	112%
o-Xylene	3,62	0,29	7,45		$\mu\text{g/L}$	206%



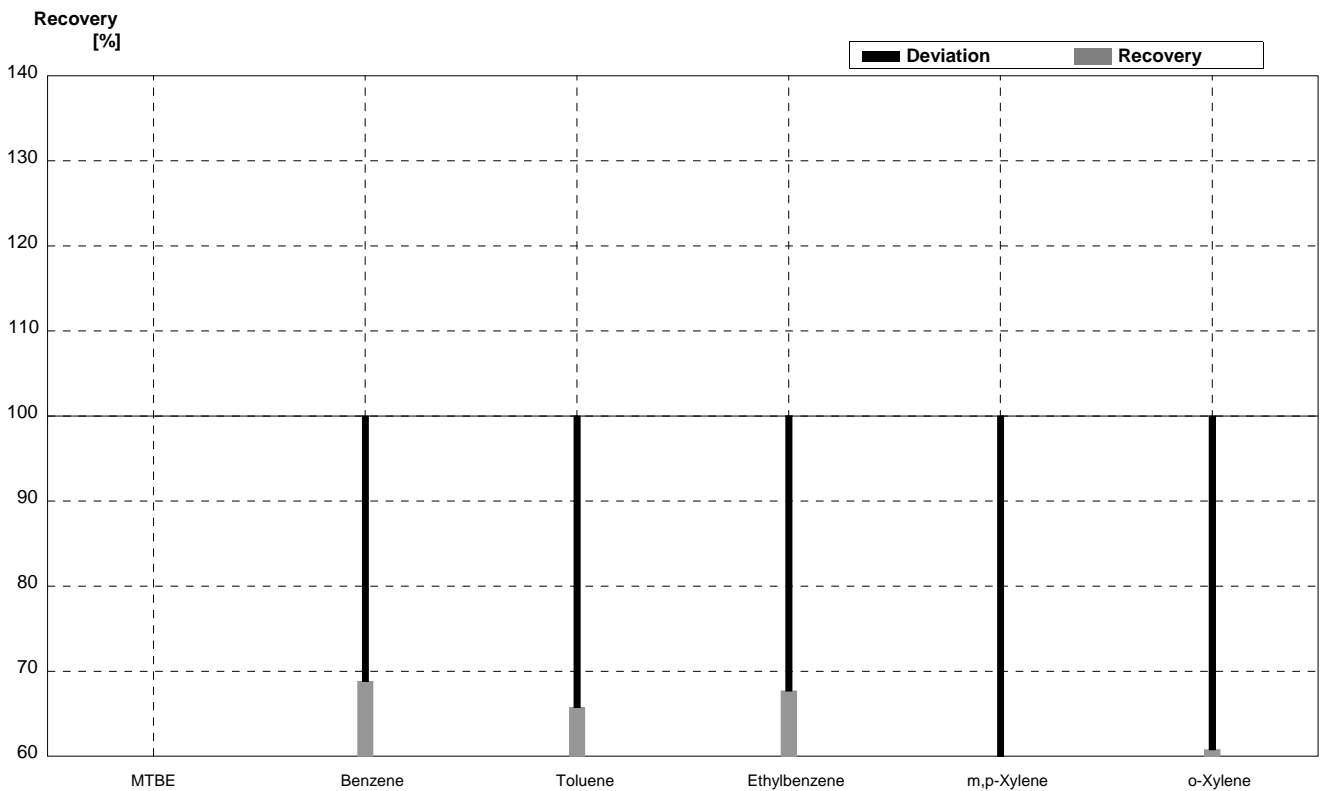
**Sample B8A**  
**Laboratory AA**

Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	2,10	0,11			$\mu\text{g/L}$	
Benzene	3,46	0,17	2,25	0,15	$\mu\text{g/L}$	65%
Toluene	5,90	0,30	3,52	0,3	$\mu\text{g/L}$	60%
Ethylbenzene	2,47	0,12	1,36	0,2	$\mu\text{g/L}$	55%
m,p-Xylene	0,85	0,04	0,25	0,1	$\mu\text{g/L}$	29%
o-Xylene	5,70	0,29	3,10	0,2	$\mu\text{g/L}$	54%



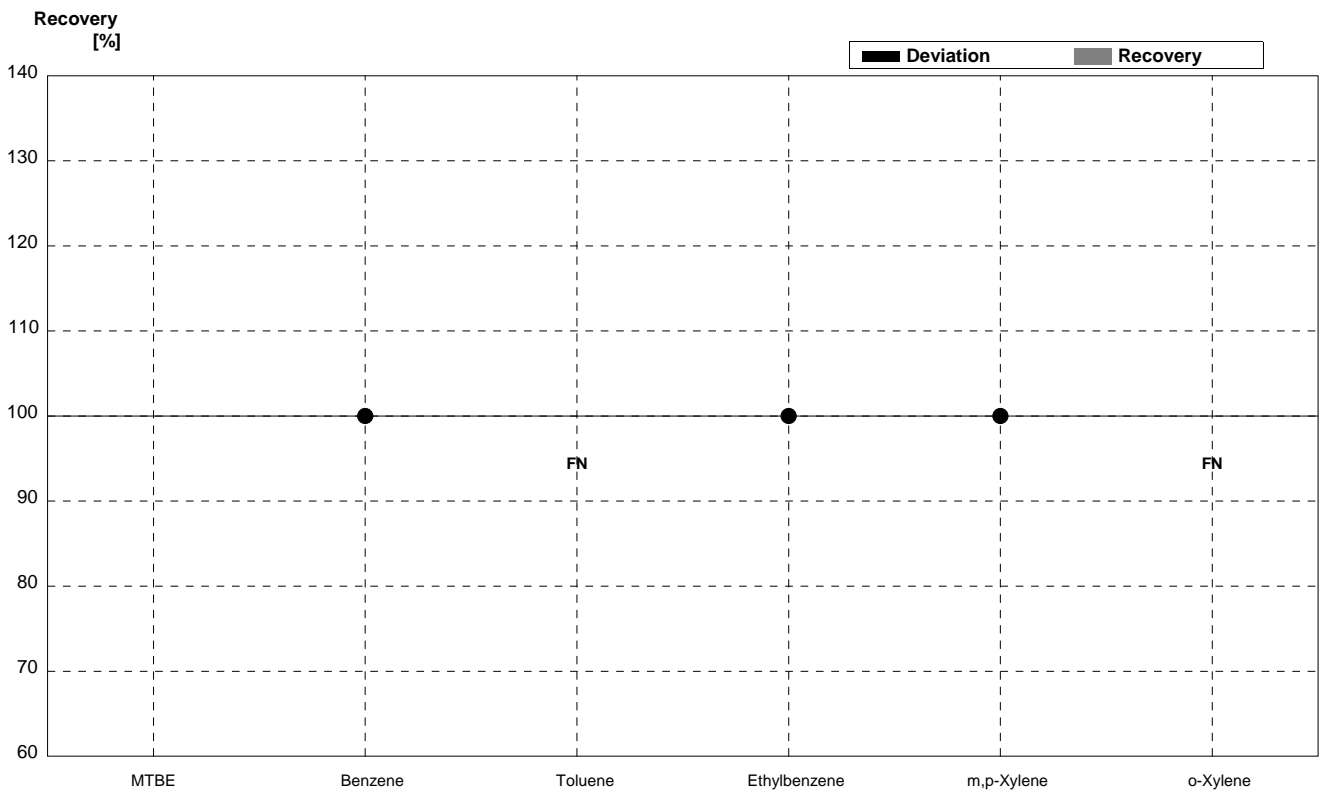
**Sample B8B**  
**Laboratory AA**

Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	<0,2				$\mu\text{g/L}$	
Benzene	1,86	0,09	1,28	0,03	$\mu\text{g/L}$	69%
Toluene	2,16	0,11	1,42	0,17	$\mu\text{g/L}$	66%
Ethylbenzene	5,88	0,29	3,98	0,02	$\mu\text{g/L}$	68%
m,p-Xylene	4,42	0,35	2,55	0,02	$\mu\text{g/L}$	58%
o-Xylene	3,62	0,29	2,2	0,02	$\mu\text{g/L}$	61%



**Sample B8A**  
**Laboratory AB**

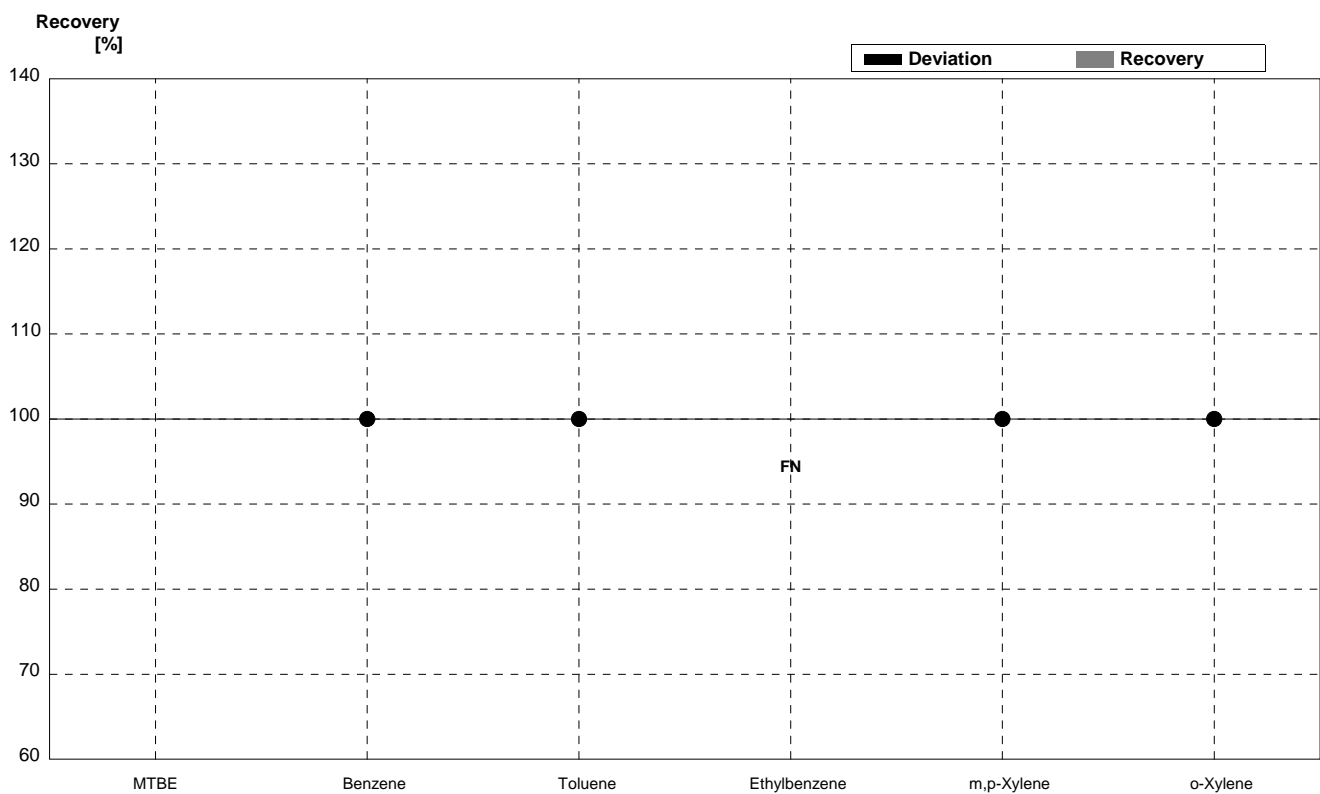
Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	2,10	0,11			$\mu\text{g/L}$	
Benzene	3,46	0,17	<5,0		$\mu\text{g/L}$	•
Toluene	5,90	0,30	<5,0		$\mu\text{g/L}$	FN
Ethylbenzene	2,47	0,12	<5,0		$\mu\text{g/L}$	•
m,p-Xylene	0,85	0,04	<5,0		$\mu\text{g/L}$	•
o-Xylene	5,70	0,29	<5,0		$\mu\text{g/L}$	FN





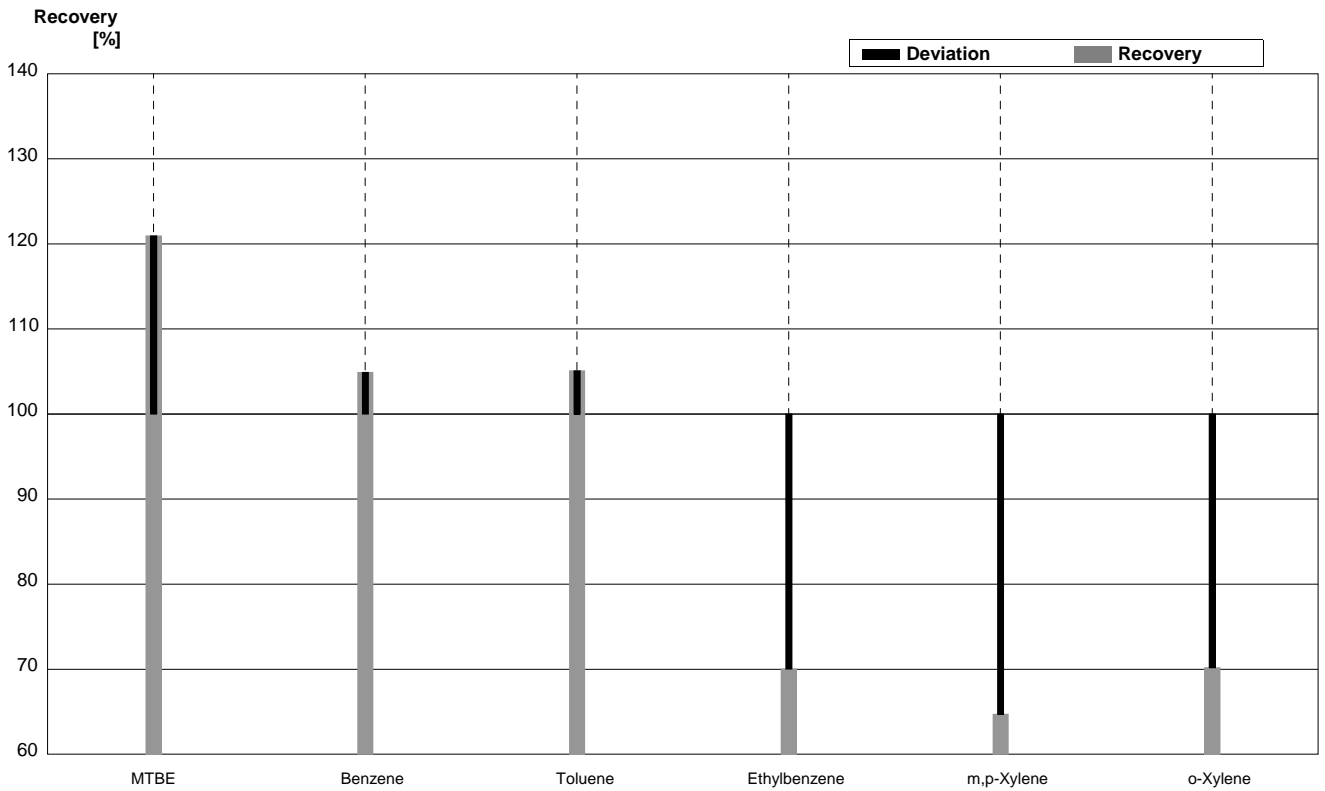
**Sample B8B**  
**Laboratory AB**

Parameter	Target value	$\pm U$ (k=2)	Result	$\pm$	Unit	Recovery
MTBE	<0,2				$\mu\text{g/L}$	
Benzene	1,86	0,09	<5,0		$\mu\text{g/L}$	•
Toluene	2,16	0,11	<5,0		$\mu\text{g/L}$	•
Ethylbenzene	5,88	0,29	<5,0		$\mu\text{g/L}$	FN
m,p-Xylene	4,42	0,35	<5,0		$\mu\text{g/L}$	•
o-Xylene	3,62	0,29	<5,0		$\mu\text{g/L}$	•



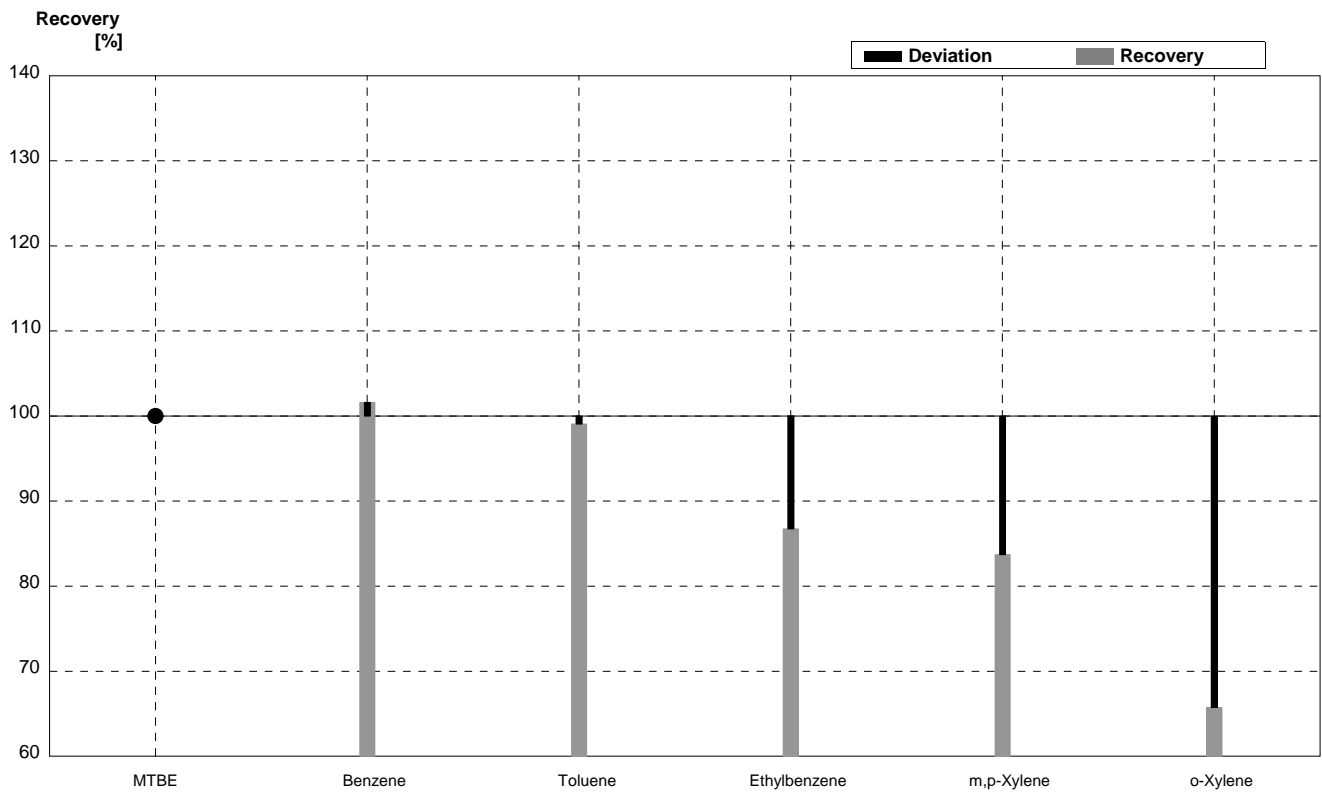
**Sample B8A**  
**Laboratory AC**

Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	2,10	0,11	2,54	0,59	$\mu\text{g/L}$	121%
Benzene	3,46	0,17	3,63	0,77	$\mu\text{g/L}$	105%
Toluene	5,90	0,30	6,2	1,7	$\mu\text{g/L}$	105%
Ethylbenzene	2,47	0,12	1,73	0,62	$\mu\text{g/L}$	70%
m,p-Xylene	0,85	0,04	0,55	0,37	$\mu\text{g/L}$	65%
o-Xylene	5,70	0,29	4	1,1	$\mu\text{g/L}$	70%



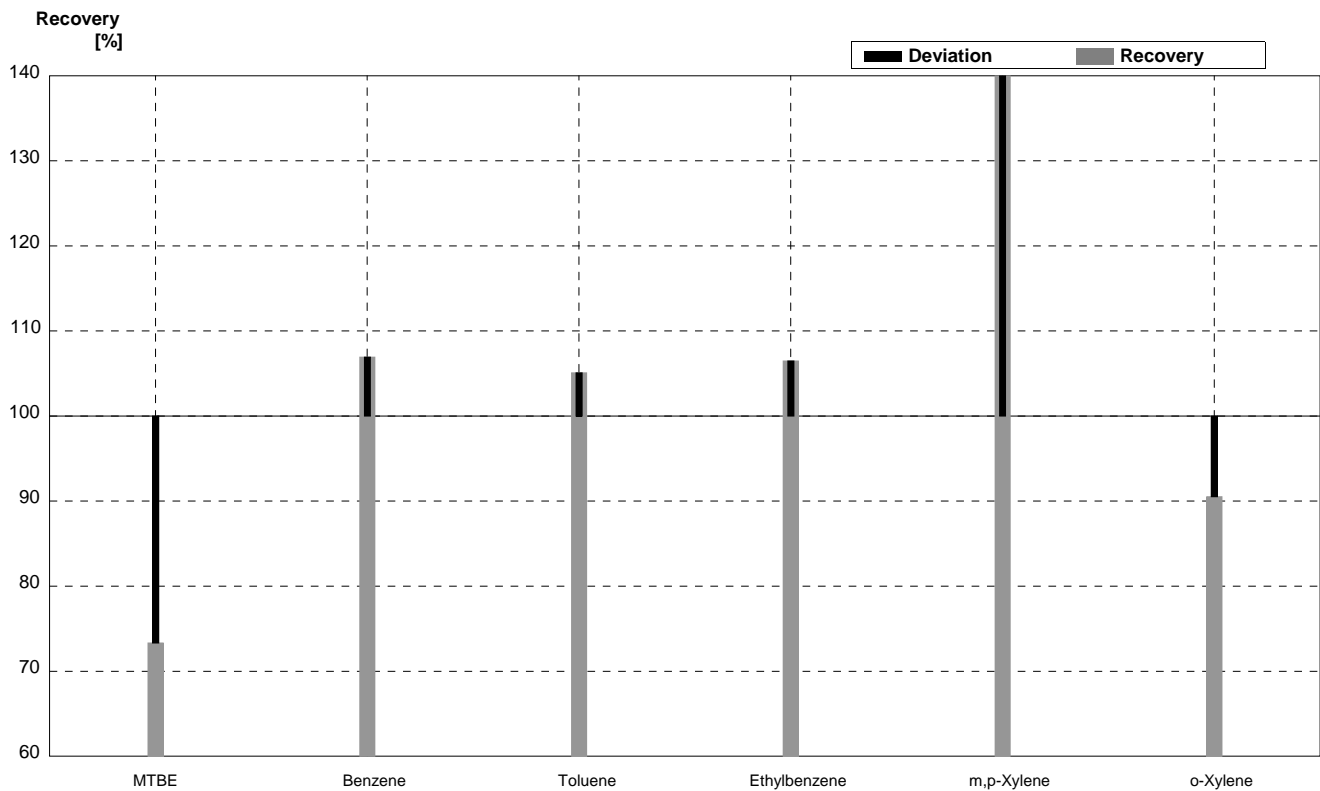
**Sample B8B**  
**Laboratory AC**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	<0,2		<0,05		µg/L	•
Benzene	1,86	0,09	1,89	0,5	µg/L	102%
Toluene	2,16	0,11	2,14	0,65	µg/L	99%
Ethylbenzene	5,88	0,29	5,1	1,6	µg/L	87%
m,p-Xylene	4,42	0,35	3,7	1	µg/L	84%
o-Xylene	3,62	0,29	2,38	0,7	µg/L	66%



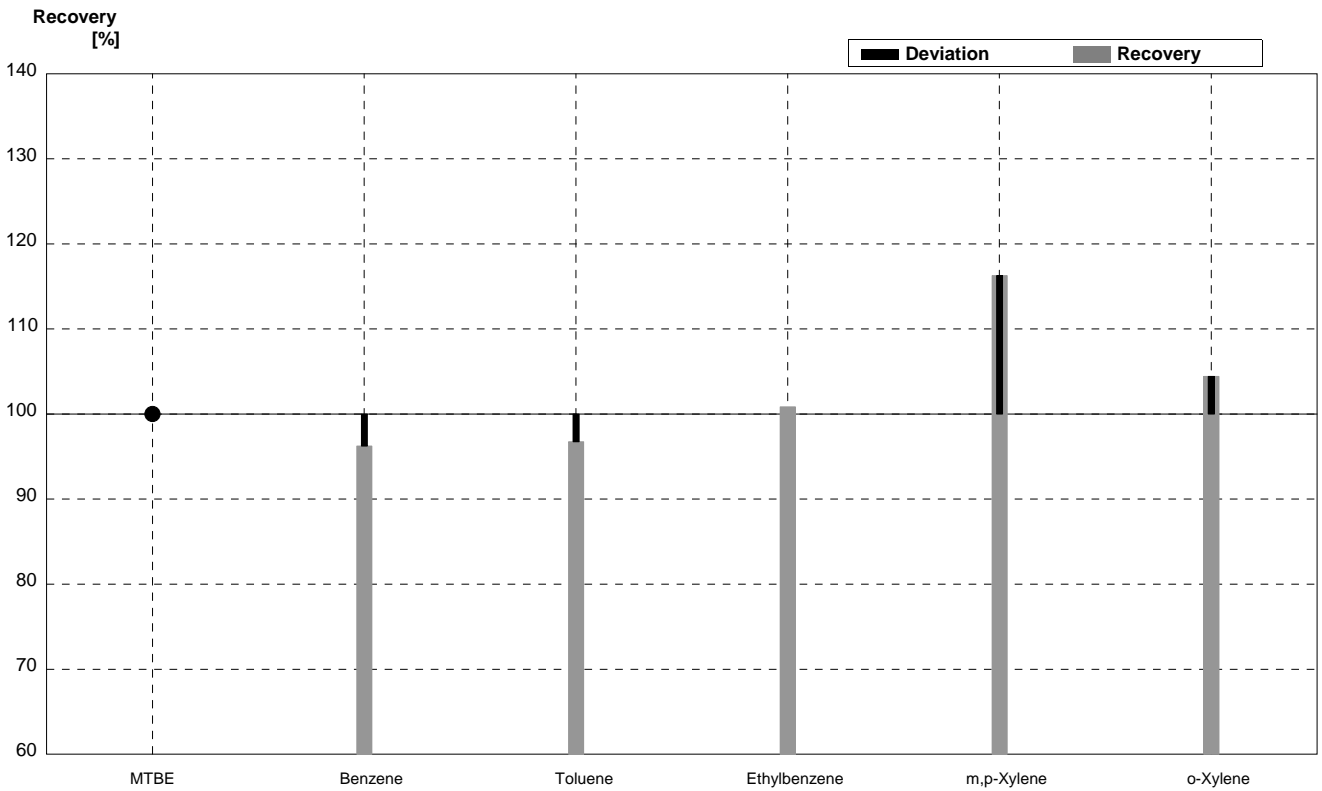
**Sample B8A**  
**Laboratory AD**

Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	2,10	0,11	1,54	0,23	$\mu\text{g/L}$	73%
Benzene	3,46	0,17	3,70	0,55	$\mu\text{g/L}$	107%
Toluene	5,90	0,30	6,20	0,93	$\mu\text{g/L}$	105%
Ethylbenzene	2,47	0,12	2,63	0,39	$\mu\text{g/L}$	106%
m,p-Xylene	0,85	0,04	1,78	0,27	$\mu\text{g/L}$	209%
o-Xylene	5,70	0,29	5,16	0,77	$\mu\text{g/L}$	91%



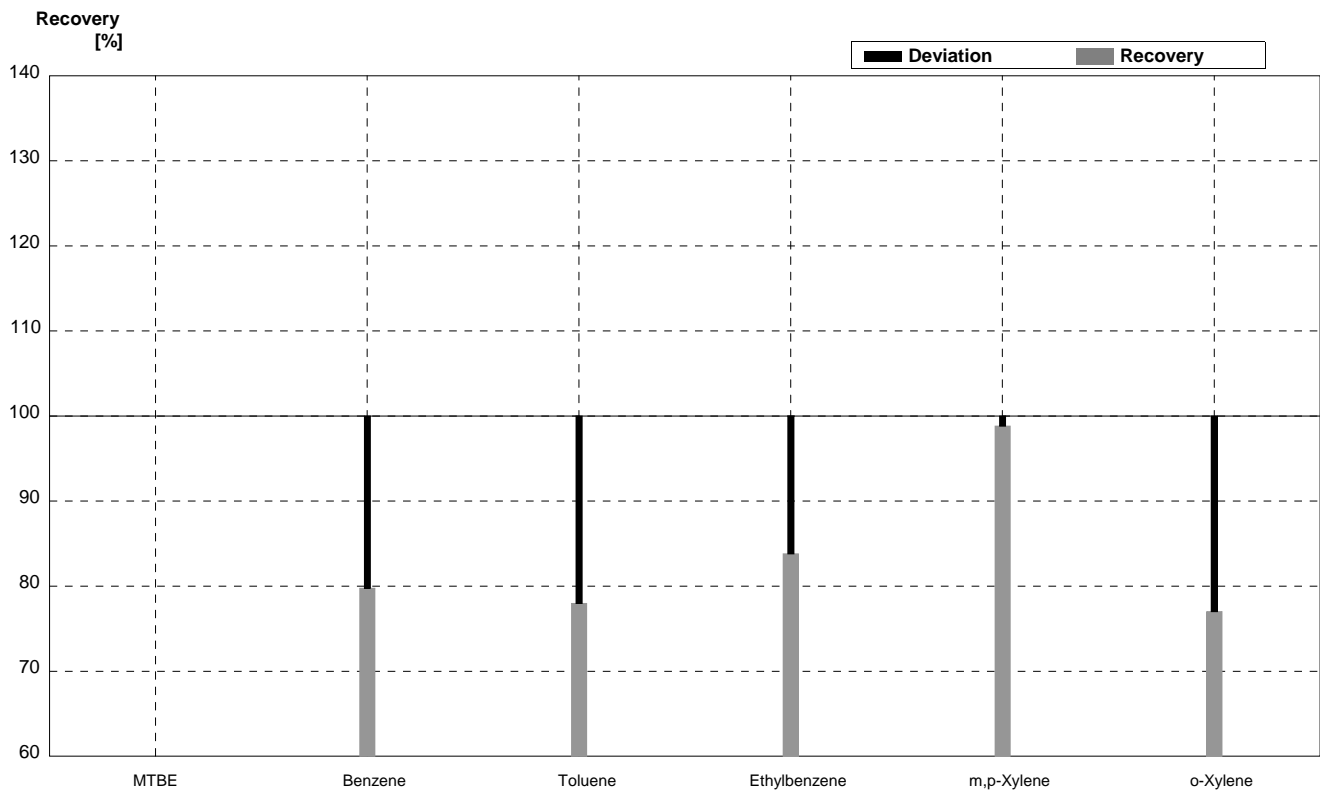
**Sample B8B**  
**Laboratory AD**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	<0,2		<0,2		µg/L	•
Benzene	1,86	0,09	1,79	0,27	µg/L	96%
Toluene	2,16	0,11	2,09	0,31	µg/L	97%
Ethylbenzene	5,88	0,29	5,93	0,89	µg/L	101%
m,p-Xylene	4,42	0,35	5,14	0,77	µg/L	116%
o-Xylene	3,62	0,29	3,78	0,57	µg/L	104%



**Sample B8A**  
**Laboratory AE**

Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	2,10	0,11			$\mu\text{g/L}$	
Benzene	3,46	0,17	2,76	0,55	$\mu\text{g/L}$	80%
Toluene	5,90	0,30	4,60	0,92	$\mu\text{g/L}$	78%
Ethylbenzene	2,47	0,12	2,07	0,41	$\mu\text{g/L}$	84%
m,p-Xylene	0,85	0,04	0,84	0,17	$\mu\text{g/L}$	99%
o-Xylene	5,70	0,29	4,39	0,88	$\mu\text{g/L}$	77%



**Sample B8B**  
**Laboratory AE**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	<0,2				µg/L	
Benzene	1,86	0,09	1,68	0,34	µg/L	90%
Toluene	2,16	0,11	1,91	0,38	µg/L	88%
Ethylbenzene	5,88	0,29	4,91	0,98	µg/L	84%
m,p-Xylene	4,42	0,35	3,74	0,75	µg/L	85%
o-Xylene	3,62	0,29	3,00	0,60	µg/L	83%

