

# Proficiency Testing Scheme for Water Analysis

Round B9 (BTEX and MTBE)

Sample Dispatch: 20 October 2014





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This report summarises the results of Round B9 “Volatile aromatic hydrocarbons and methyl *tert*-butyl ether (MTBE)” within the IFA-Test Systems Proficiency Testing Scheme for Water Analysis. 34 laboratories participated in this interlaboratory performance study. The samples B9A and B9B were distributed to the participants on 20 October 2014. Closing date for submission of results to the IFA-Tulln was the 14 November 2014. Results were received from 32 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 0.49  $\mu\text{g/L}$  to 6.20  $\mu\text{g/L}$ . 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 %).

The target concentration of toluene, which was not added to sample B9A, was set to  $< 0.5 \mu\text{g/L}$ , 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 mean values of outlier-corrected results were between 88.6 % (sum of m- and p-xylene in sample B9B) and 103.0 % (benzene in sample B9A). The between-laboratory coefficients of variation ranged from 9.5 % (o-xylene in sample B9A) to 19.3 % (sum of m- and p-xylene in sample B9B).

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 2003 to 2013. 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.

Parameter	z-Score-criteria (%)	Lower limit [ $\mu\text{g/l}$ ]
MTBE	15	0.1
Benzene	15	0.5
Toluene	13	1
Ethylbenzene	16	0.5
Sum of m- and p-xylene	18	3
o-Xylene	15	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 2003 to 2013.

## 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, 17 November 2014

**Sample C10B**  
**Parameter Dichloromethane**

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

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

Stability test ± U (k=2) 10,2 µg/l ± 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

Recovery of target value in percent

z-Score of the laboratory

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 ± 3,8	9,7 ± 1,6	µg/l
Recov. +/- CI (99%)	108,3 ± 36,3	93,6 ± 15,1	%
SD between labs	5,3	1,9	µg/l
RSD between labs	47,3	19,1	%
n for calculation	17	13	

Between laboratory standard deviation

Overall laboratory mean and recovery with corresponding confidence intervals (p=99%)

Number of data used for calculation of statistic parameters

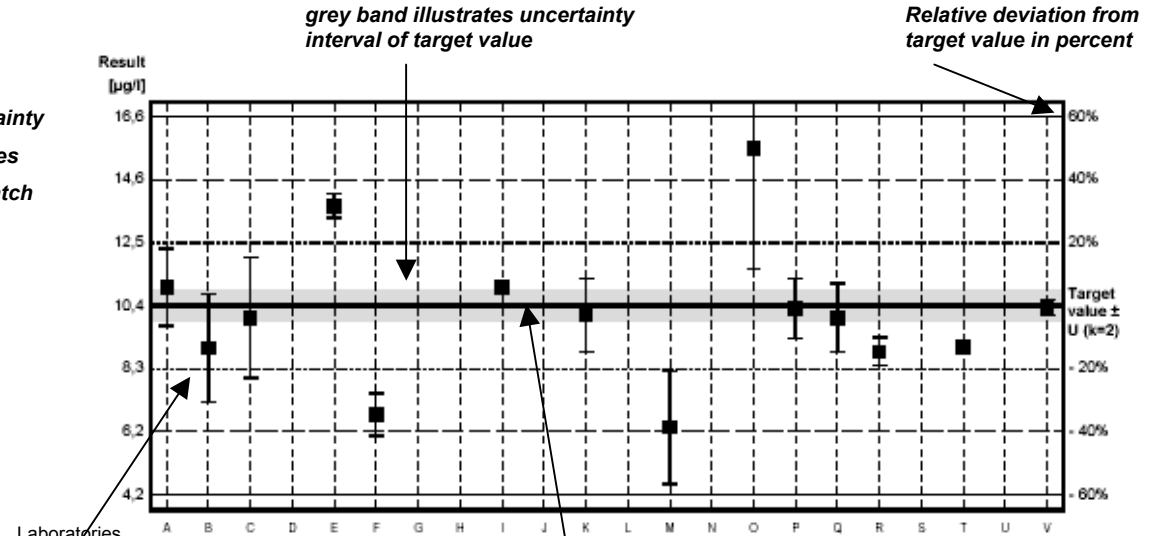
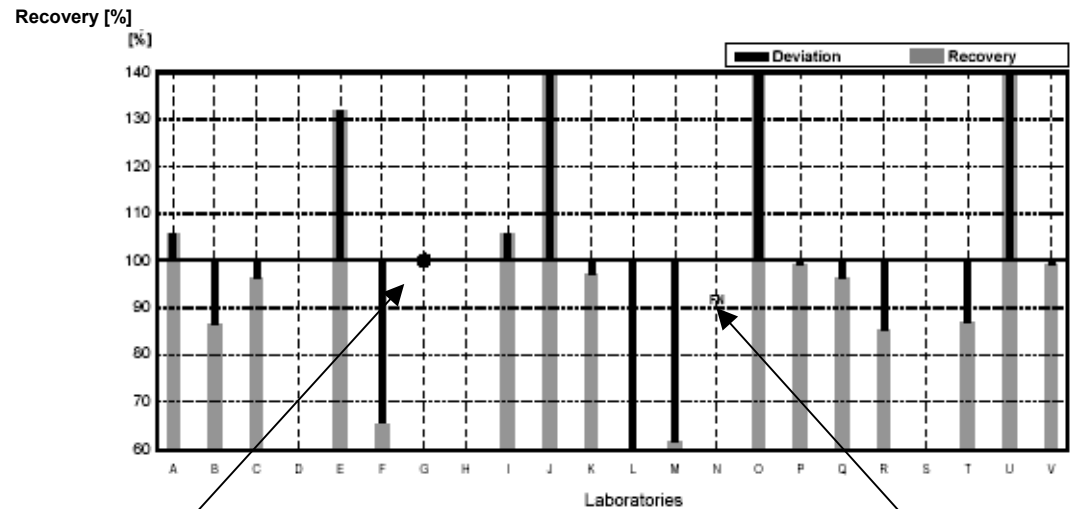


Diagram 1. Measurement results and corresponding uncertainty intervals

Result ± uncertainty as stated by participant

target value obtained from mass weight



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

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

Diagram 2. Recoveries and deviations from target values

EXPLANATION

# Illustration of Results Tables and Parameter Oriented Part

Round B9 BTEX and MTBE

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## Results Sample B9A

	MTBE	Benzene	Toluene	Ethylbenzene	m, p-Xylene	o-Xylene
Target value	0.49	0.60	<0.5	4.68	6.20	1.52
IFA result	0.51	0.60	<0.25	4.48	6.00	1.61
Stability test	0.51	0.60	<0.25	4.38	5.73	1.56
A		1.34	0.00	7.09	4.36	2.44
B	0.50	0.62	<0.10	3.25	4.95	1.24
C		0.57	<1	4.87	6.25	1.45
D	1.0	0.7	0.8	3.8	5.2	1.3
E	0.53	0.71	<0.1	4.64	5.52	1.57
F	0.523	0.612	<0.02	4.29	7.54	1.41
G		0.6	<0.5	4.6	4.9	1.4
H	0.55	0.53	<0.010	3.9	5.1	1.3
I		0.64	<0.50	4.80	6.40	1.64
J		0.61	0.00	4.53	6.13	1.28
K	<0.20	0.26	<0.20	2.04	3.23	0.69
L	0.48	0.69	<0.2	4.5	6.33	1.41
M		<0.50	0.51	3.65	5.41	1.42
N	0.48	0.53	<0.5	3.28	4.39	1.2
O	0.55	0.60	<1	3.95	5.30	1.42
P	0.33	0.70	<0.35	4.7	6.2	1.7
Q	0.445	0.430	<0.041	3.480	5.060	1.115
R	0.5	0.5	<0.5	3.6	4.7	1.5
S	0.50	0.62	<0.05	4.46	5.88	1.54
T		0.669	<0.10	4.46	5.48	1.42
U						
V	5.39	<4.00	<1.00	5.62	7.44	1.65
W		0.59	<0.5	4.37	5.79	1.54
X	0.6	0.7	<0.2	4.7	6.3	1.5
Y	0.55	0.55	<0.03	4.48	7.08	1.56
Z	nd	0.87	nd	6.51	3.85	2.03
AA		0.70	<0.5	4.75	6.19	1.53
AB	0.49	0.69	<0.2	5.12	6.56	1.56
AC	0.48	0.65	<0.30	4.25	5.66	1.35
AD						
AE	0.549	0.570	<0.100	4.48	5.73	1.46
AF	0.78	0.62	<0.5	4.86	6.39	1.53
AG	0.40	0.45	<0.2	4.43	5.97	1.42
AH	0.51	0.59	<0.05	4.54	5.57	1.42

All data in µg/L



## Uncertainties Sample B9A

	MTBE	Benzene	Toluene	Ethylbenzene	m, p-Xylene	o-Xylene
Target value	0.02	0.03		0.23	0.31	0.08
IFA result	0.08	0.09		0.67	0.90	0.24
Stability test	0.08	0.09		0.66	0.86	0.23
A		0.1	0	0.7	0.4	0.25
B	0.15	0.14		1.40	1.49	0.49
C		0.08		0.73	0.63	0.14
D	0.05	0.08	0.15	1.14	0.68	0.20
E	0.05	0.07		0.5	0.5	0.2
F	0.104	0.122		0.86	1.51	0.28
G		0.2	0.2	0.5	0.5	0.2
H	0.055	0.053	0.001	0.39	0.51	0.13
I		0.20		0.30	0.40	0.20
J		0.18	0.00	1.36	1.84	0.39
K						
L	0.08	0.10		0.77	1.14	0.24
M			0.05	0.37	0.54	0.14
N	0.087	0.095	0.091	0.59	0.789	0.216
O	0.21	0.14		0.93	1.25	0.34
P	0.066	0.14	0.069	0.94	1.2	0.33
Q	0.167	0.130		0.929	1.564	0.295
R	0.1	0.1		0.7	0.9	0.3
S	0.08	0.09		0.67	0.88	0.23
T		0.024		0.11	0.24	0.06
U						
V	1.00			0.50	0.50	0.50
W		0.18		0.87	1.16	0.31
X	0.2	0.2	0.1	1.4	1.9	0.4
Y	0.11	0.11		0.90	1.42	0.31
Z						
AA		0.1		0.4	0.6	0.2
AB	0.015	0.021		0.378	0.384	0.101
AC	0.20	0.13		0.85	1.13	0.27
AD						
AE	0.110	0.114		0.896	1.15	0.291
AF	0.078	0.062		0.486	0.639	0.153
AG	0.06	0.07		0.53	0.65	0.21
AH	0.10	0.12	0.01	0.91	1.11	0.28

All data in µg/L

## Results Sample B9B

	MTBE	Benzene	Toluene	Ethylbenzene	m, p-Xylene	o-Xylene
Target value	3.82	4.27	3.62	0.70	3.90	2.65
IFA result	3.73	4.15	3.51	0.71	3.45	2.52
Stability test	3.69	4.04	3.42	0.69	3.29	2.41
A		8.18	5.16	0.25	2.14	3.32
B	3.70	4.74	3.25	0.46	2.75	2.21
C		4.48	3.68	0.66	3.84	2.57
D	10.3	3.8	3.5	0.6	3.4	2.3
E	3.15	3.93	3.12	0.67	2.92	2.19
F	3.46	4.13	3.41	0.631	4.66	2.38
G		4.1	3.4	0.7	3.1	2.6
H	4.1	3.7	3.0	0.58	3.1	2.1
I		4.14	3.27	0.65	3.57	2.50
J		4.50	3.69	0.60	3.49	2.33
K	3.37	3.22	1.90	0.83	3.52	1.81
L	3.16	4.31	3.50	0.54	3.50	2.50
M		2.01	1.86	0.56	2.20	1.81
N	3.45	3.69	2.88	0.54	2.64	2.10
O	3.79	3.85	2.98	<1	3.12	2.14
P	3.7	4.6	3.8	0.67	3.9	2.7
Q	3.810	3.535	2.855	0.455	2.945	1.890
R	3.5	3.4	2.6	0.7	2.7	2.1
S	4.73	5.60	4.77	0.73	4.17	2.94
T		4.12	3.22	0.657	3.38	2.34
U						
V	6.69	5.92	5.23	1.54	4.79	2.87
W		4.22	3.46	0.69	3.66	2.50
X	4.7	4.5	3.9	0.8	4.3	2.6
Y	3.93	3.58	3.76	0.80	4.09	2.80
Z	6.17	5.95	4.46	1.01	2.44	3.56
AA		5.00	4.08	0.78	4.08	2.81
AB	3.55	4.60	3.76	0.69	3.52	2.52
AC	3.52	4.17	3.47	0.71	3.32	2.28
AD						
AE	4.28	4.07	3.58	0.654	3.59	2.42
AF	4.34	4.74	3.63	0.65	3.85	2.62
AG	3.08	3.91	3.21	0.57	3.41	2.27
AH	4.33	5.01	3.16	0.87	4.45	3.13

All data in µg/L

## Uncertainties Sample B9B

	MTBE	Benzene	Toluene	Ethylbenzene	m, p-Xylene	o-Xylene
Target value	0.19	0.21	0.18	0.04	0.31	0.21
IFA result	0.56	0.62	0.53	0.11	0.52	0.38
Stability test	0.55	0.61	0.51	0.10	0.49	0.36
A		0.8	0.5	0.03	0.2	0.3
B	1.11	1.09	1.14	0.20	0.83	0.88
C		0.67	0.37	0.10	0.38	0.26
D	0.1	0.84	1.0	0.1	1.2	0.44
E	0.3	0.4	0.3	0.07	0.3	0.2
F	0.69	0.83	0.68	0.126	0.93	0.48
G		0.4	0.4	0.2	0.4	0.3
H	0.41	0.37	0.30	0.058	0.31	0.21
I		0.20	0.20	0.20	0.30	0.20
J		1.35	1.11	0.18	1.05	0.70
K						
L	0.51	0.65	0.67	0.09	0.63	0.43
M		0.2	0.19	0.06	0.22	0.18
N	0.621	0.663	0.518	0.097	0.476	0.377
O	1.43	0.91	0.70		0.74	0.50
P	0.73	0.92	0.76	0.13	0.77	0.53
Q	1.429	1.068	0.999	0.121	0.910	0.501
R	0.7	0.7	0.5	0.1	0.5	0.4
S	0.71	0.84	0.72	0.11	0.63	0.44
T		0.067	0.06	0.01	0.11	0.06
U						
V	1.00	1.00	0.50	0.50	0.50	0.50
W		0.84	0.69	0.21	0.73	0.5
X	1.4	1.3	1.2	0.2	1.3	0.8
Y	0.79	0.72	0.75	0.16	0.82	0.56
Z						
AA		0.5	0.4	0.1	0.4	0.3
AB	0.137	0.142	0.170	0.039	0.181	0.095
AC	0.71	0.83	0.70	0.15	0.70	0.46
AD						
AE	0.856	0.814	0.716	0.131	0.718	0.484
AF	0.434	0.474	0.363	0.065	0.385	0.262
AG	0.41	0.47	0.39	0.07	0.45	0.29
AH	0.87	1.00	0.63	0.17	0.89	0.63

All data in µg/L

# Sample B9A

## Parameter MTBE

Target value  $\pm$  U (k=2) 0,49  $\mu\text{g/L}$   $\pm$  0,02  $\mu\text{g/L}$

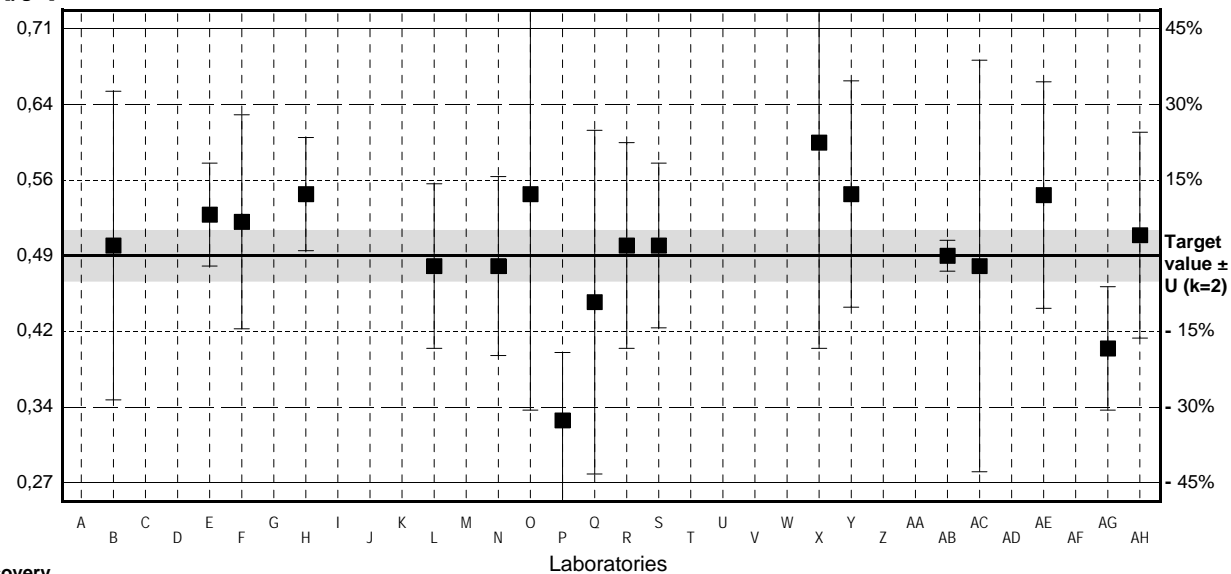
IFA result  $\pm$  U (k=2) 0,51  $\mu\text{g/L}$   $\pm$  0,08  $\mu\text{g/L}$

Stability test  $\pm$  U (k=2) 0,51  $\mu\text{g/L}$   $\pm$  0,08  $\mu\text{g/L}$

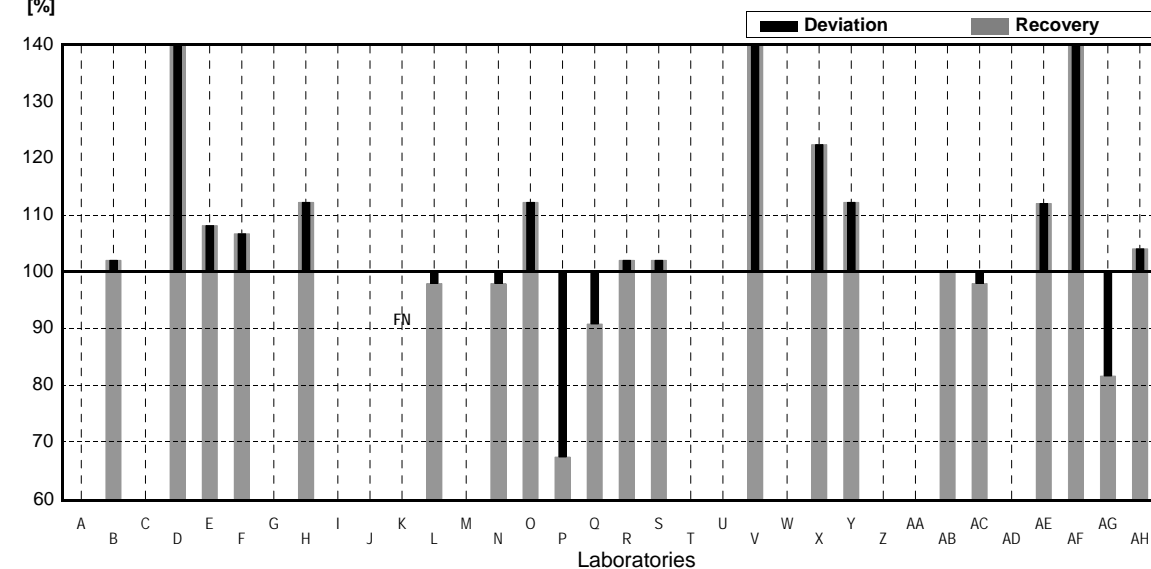
Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A			$\mu\text{g/L}$		
B	0,50	0,15	$\mu\text{g/L}$	102%	0,14
C			$\mu\text{g/L}$		
D	1,0 *	0,05	$\mu\text{g/L}$	204%	6,94
E	0,53	0,05	$\mu\text{g/L}$	108%	0,54
F	0,523	0,104	$\mu\text{g/L}$	107%	0,45
G			$\mu\text{g/L}$		
H	0,55	0,055	$\mu\text{g/L}$	112%	0,82
I			$\mu\text{g/L}$		
J			$\mu\text{g/L}$		
K	<0,20		$\mu\text{g/L}$	FN	
L	0,48	0,08	$\mu\text{g/L}$	98%	-0,14
M			$\mu\text{g/L}$		
N	0,48	0,087	$\mu\text{g/L}$	98%	-0,14
O	0,55	0,21	$\mu\text{g/L}$	112%	0,82
P	0,33	0,066	$\mu\text{g/L}$	67%	-2,18
Q	0,445	0,167	$\mu\text{g/L}$	91%	-0,61
R	0,5	0,1	$\mu\text{g/L}$	102%	0,14
S	0,50	0,08	$\mu\text{g/L}$	102%	0,14
T			$\mu\text{g/L}$		
U			$\mu\text{g/L}$		
V	5,39 *	1,00	$\mu\text{g/L}$	1100%	66,67
W			$\mu\text{g/L}$		
X	0,6	0,2	$\mu\text{g/L}$	122%	1,50
Y	0,55	0,11	$\mu\text{g/L}$	112%	0,82
Z	nd		$\mu\text{g/L}$		
AA			$\mu\text{g/L}$		
AB	0,49	0,015	$\mu\text{g/L}$	100%	0,00
AC	0,48	0,20	$\mu\text{g/L}$	98%	-0,14
AD			$\mu\text{g/L}$		
AE	0,549	0,110	$\mu\text{g/L}$	112%	0,80
AF	0,78 *	0,078	$\mu\text{g/L}$	159%	3,95
AG	0,40	0,06	$\mu\text{g/L}$	82%	-1,22
AH	0,51	0,10	$\mu\text{g/L}$	104%	0,27

	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	0,77 $\pm$ 0,66	0,50 $\pm$ 0,04	$\mu\text{g/L}$
Recov. $\pm$ CI(99%)	156,8 $\pm$ 135,5	101,7 $\pm$ 8,6	%
SD between labs	1,07	0,06	$\mu\text{g/L}$
RSD between labs	138,9	12,4	%
n for calculation	21	18	

Result [ $\mu\text{g/L}$ ]



Recovery [%]



# Sample B9B

## Parameter MTBE

Target value ± U (k=2) 3,82 µg/L ± 0,19 µg/L

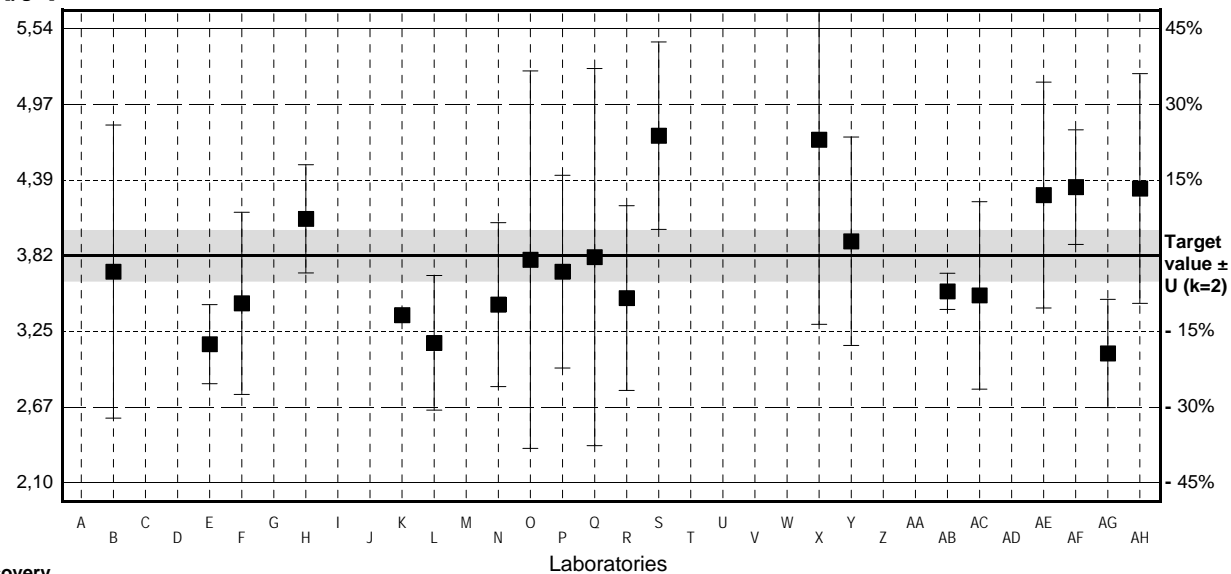
IFA result ± U (k=2) 3,73 µg/L ± 0,56 µg/L

Stability test ± U (k=2) 3,69 µg/L ± 0,55 µg/L

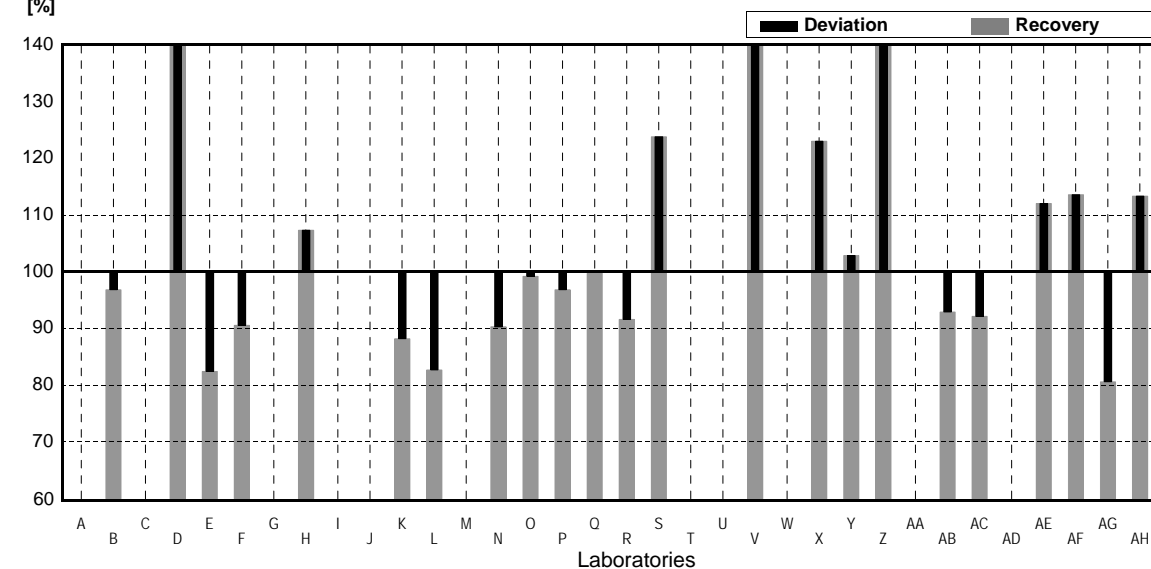
Lab Code	Result	±	Unit	Recovery	z-Score
A			µg/L		
B	3,70	1,11	µg/L	97%	-0,21
C			µg/L		
D	10,3 *	0,1	µg/L	270%	11,31
E	3,15	0,3	µg/L	82%	-1,17
F	3,46	0,69	µg/L	91%	-0,63
G			µg/L		
H	4,1	0,41	µg/L	107%	0,49
I			µg/L		
J			µg/L		
K	3,37		µg/L	88%	-0,79
L	3,16	0,51	µg/L	83%	-1,15
M			µg/L		
N	3,45	0,621	µg/L	90%	-0,65
O	3,79	1,43	µg/L	99%	-0,05
P	3,7	0,73	µg/L	97%	-0,21
Q	3,810	1,429	µg/L	100%	-0,02
R	3,5	0,7	µg/L	92%	-0,56
S	4,73	0,71	µg/L	124%	1,59
T			µg/L		
U			µg/L		
V	6,69 *	1,00	µg/L	175%	5,01
W			µg/L		
X	4,7	1,4	µg/L	123%	1,54
Y	3,93	0,79	µg/L	103%	0,19
Z	6,17 *		µg/L	162%	4,10
AA			µg/L		
AB	3,55	0,137	µg/L	93%	-0,47
AC	3,52	0,71	µg/L	92%	-0,52
AD			µg/L		
AE	4,28	0,856	µg/L	112%	0,80
AF	4,34	0,434	µg/L	114%	0,91
AG	3,08	0,41	µg/L	81%	-1,29
AH	4,33	0,87	µg/L	113%	0,89

	All results	Outliers excl.	Unit
Mean ± CI(99%)	4,30 ± 0,93	3,78 ± 0,31	µg/L
Recov. ± CI(99%)	112,5 ± 24,4	99,0 ± 8,2	%
SD between labs	1,58	0,49	µg/L
RSD between labs	36,9	13,0	%
n for calculation	23	20	

Result  
[µg/L]



Recovery  
[%]



# Sample B9A

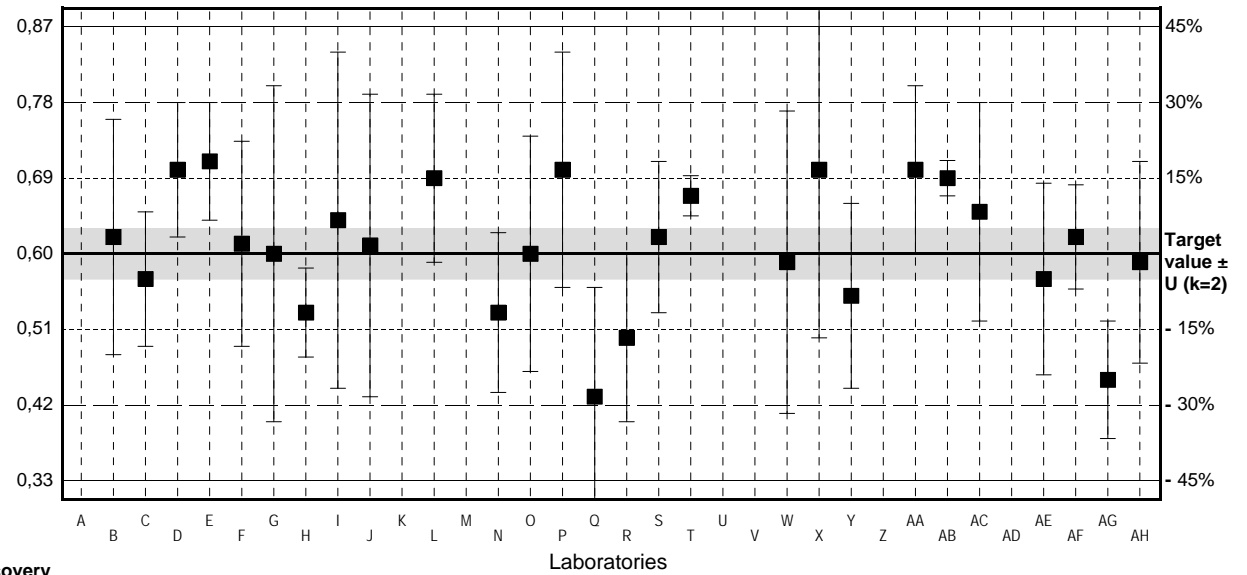
## Parameter Benzene

Target value  $\pm$  U (k=2) 0,60  $\mu\text{g/L}$   $\pm$  0,03  $\mu\text{g/L}$   
 IFA result  $\pm$  U (k=2) 0,60  $\mu\text{g/L}$   $\pm$  0,09  $\mu\text{g/L}$   
 Stability test  $\pm$  U (k=2) 0,60  $\mu\text{g/L}$   $\pm$  0,09  $\mu\text{g/L}$

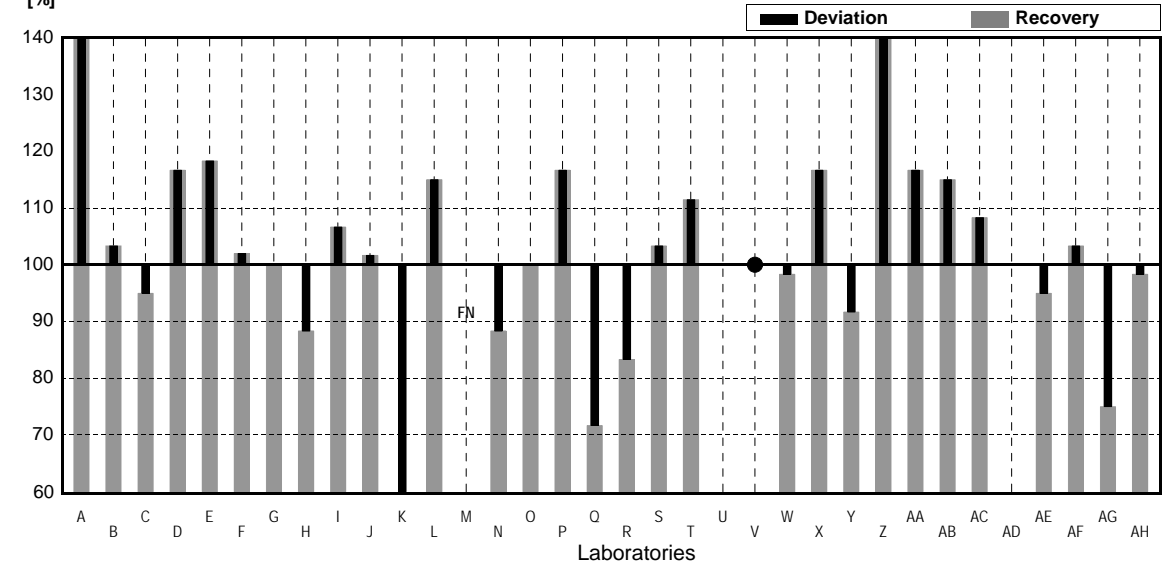
Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A	1,34 *	0,1	$\mu\text{g/L}$	223%	8,22
B	0,62	0,14	$\mu\text{g/L}$	103%	0,22
C	0,57	0,08	$\mu\text{g/L}$	95%	-0,33
D	0,7	0,08	$\mu\text{g/L}$	117%	1,11
E	0,71	0,07	$\mu\text{g/L}$	118%	1,22
F	0,612	0,122	$\mu\text{g/L}$	102%	0,13
G	0,6	0,2	$\mu\text{g/L}$	100%	0,00
H	0,53	0,053	$\mu\text{g/L}$	88%	-0,78
I	0,64	0,20	$\mu\text{g/L}$	107%	0,44
J	0,61	0,18	$\mu\text{g/L}$	102%	0,11
K	0,26 *		$\mu\text{g/L}$	43%	-3,78
L	0,69	0,10	$\mu\text{g/L}$	115%	1,00
M	<0,50		$\mu\text{g/L}$	FN	
N	0,53	0,095	$\mu\text{g/L}$	88%	-0,78
O	0,60	0,14	$\mu\text{g/L}$	100%	0,00
P	0,70	0,14	$\mu\text{g/L}$	117%	1,11
Q	0,430	0,130	$\mu\text{g/L}$	72%	-1,89
R	0,5	0,1	$\mu\text{g/L}$	83%	-1,11
S	0,62	0,09	$\mu\text{g/L}$	103%	0,22
T	0,669	0,024	$\mu\text{g/L}$	112%	0,77
U			$\mu\text{g/L}$		
V	<4,00		$\mu\text{g/L}$	•	
W	0,59	0,18	$\mu\text{g/L}$	98%	-0,11
X	0,7	0,2	$\mu\text{g/L}$	117%	1,11
Y	0,55	0,11	$\mu\text{g/L}$	92%	-0,56
Z	0,87		$\mu\text{g/L}$	145%	3,00
AA	0,70	0,1	$\mu\text{g/L}$	117%	1,11
AB	0,69	0,021	$\mu\text{g/L}$	115%	1,00
AC	0,65	0,13	$\mu\text{g/L}$	108%	0,56
AD			$\mu\text{g/L}$		
AE	0,570	0,114	$\mu\text{g/L}$	95%	-0,33
AF	0,62	0,062	$\mu\text{g/L}$	103%	0,22
AG	0,45	0,07	$\mu\text{g/L}$	75%	-1,67
AH	0,59	0,12	$\mu\text{g/L}$	98%	-0,11

	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	0,63 $\pm$ 0,09	0,62 $\pm$ 0,05	$\mu\text{g/L}$
Recov. $\pm$ CI(99%)	105,1 $\pm$ 14,5	103,0 $\pm$ 7,8	%
SD between labs	0,17	0,09	$\mu\text{g/L}$
RSD between labs	27,4	14,5	%
n for calculation	30	28	

Result [ $\mu\text{g/L}$ ]



Recovery [%]



# Sample B9B

## Parameter Benzene

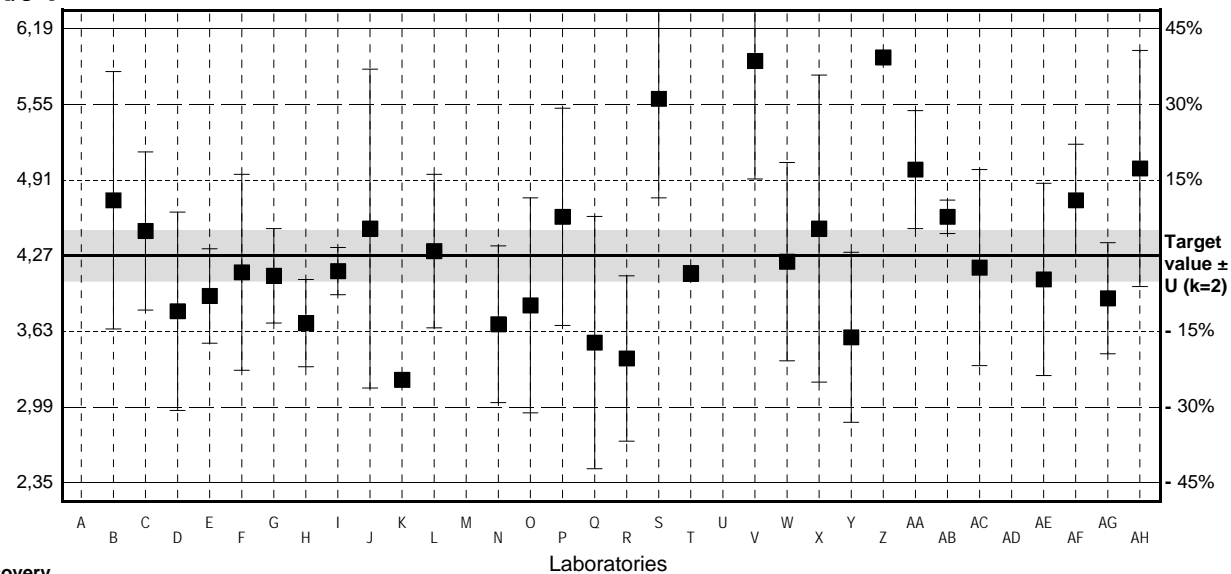
Target value ± U (k=2) 4,27 µg/L ± 0,21 µg/L

IFA result ± U (k=2) 4,15 µg/L ± 0,62 µg/L

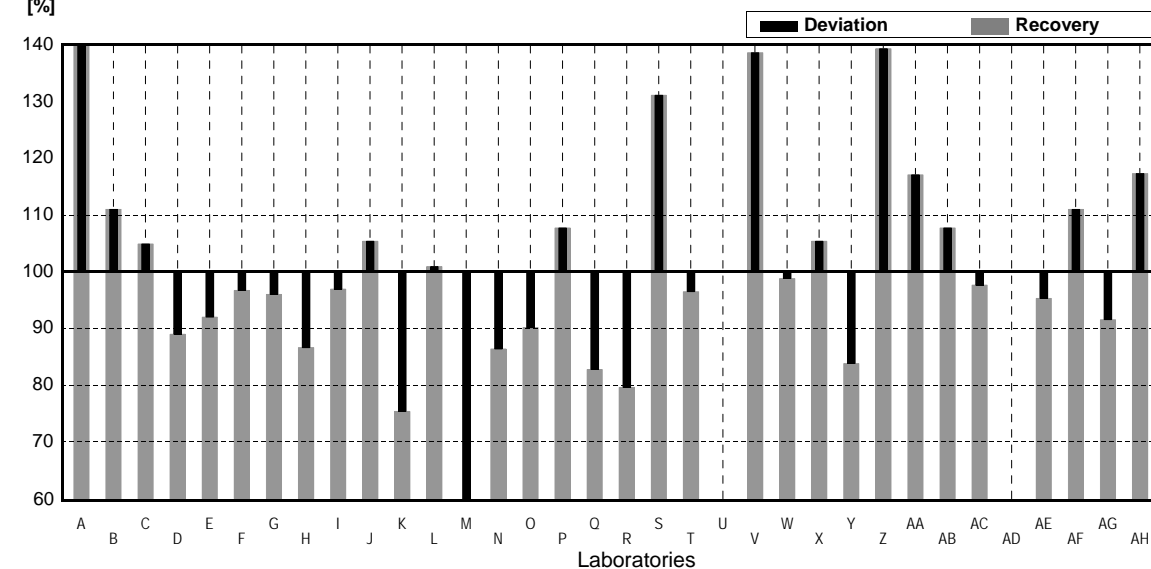
Stability test ± U (k=2) 4,04 µg/L ± 0,61 µg/L

Lab Code	Result	±	Unit	Recovery	z-Score
A	8,18 *	0,8	µg/L	192%	6,10
B	4,74	1,09	µg/L	111%	0,73
C	4,48	0,67	µg/L	105%	0,33
D	3,8	0,84	µg/L	89%	-0,73
E	3,93	0,4	µg/L	92%	-0,53
F	4,13	0,83	µg/L	97%	-0,22
G	4,1	0,4	µg/L	96%	-0,27
H	3,7	0,37	µg/L	87%	-0,89
I	4,14	0,20	µg/L	97%	-0,20
J	4,50	1,35	µg/L	105%	0,36
K	3,22		µg/L	75%	-1,64
L	4,31	0,65	µg/L	101%	0,06
M	2,01 *	0,2	µg/L	47%	-3,53
N	3,69	0,663	µg/L	86%	-0,91
O	3,85	0,91	µg/L	90%	-0,66
P	4,6	0,92	µg/L	108%	0,52
Q	3,535	1,068	µg/L	83%	-1,15
R	3,4	0,7	µg/L	80%	-1,36
S	5,60	0,84	µg/L	131%	2,08
T	4,12	0,067	µg/L	96%	-0,23
U			µg/L		
V	5,92	1,00	µg/L	139%	2,58
W	4,22	0,84	µg/L	99%	-0,08
X	4,5	1,3	µg/L	105%	0,36
Y	3,58	0,72	µg/L	84%	-1,08
Z	5,95		µg/L	139%	2,62
AA	5,00	0,5	µg/L	117%	1,14
AB	4,60	0,142	µg/L	108%	0,52
AC	4,17	0,83	µg/L	98%	-0,16
AD			µg/L		
AE	4,07	0,814	µg/L	95%	-0,31
AF	4,74	0,474	µg/L	111%	0,73
AG	3,91	0,47	µg/L	92%	-0,56
AH	5,01	1,00	µg/L	117%	1,16

Result  
[µg/L]



Recovery  
[%]



	All results	Outliers excl.	Unit
Mean ± CI(99%)	4,37 ± 0,51	4,32 ± 0,34	µg/L
Recov. ± CI(99%)	102,2 ± 11,9	101,1 ± 8,0	%
SD between labs	1,04	0,68	µg/L
RSD between labs	23,9	15,8	%
n for calculation	32	30	

# Sample B9A

## Parameter Toluene

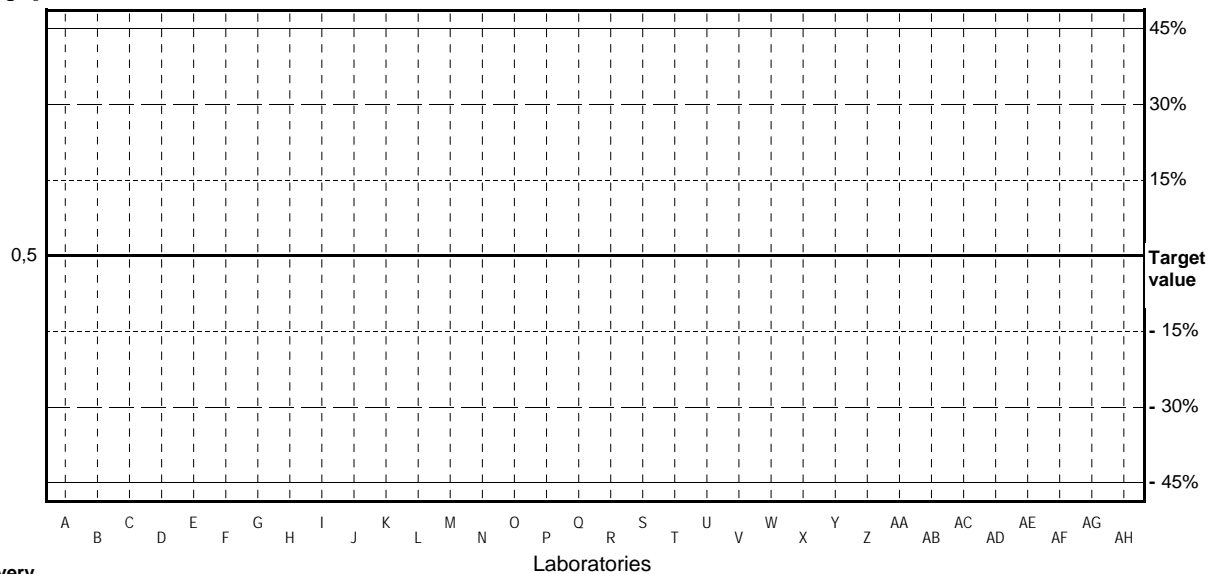
Target value <0,5 µg/L

IFA result <0,25 µg/L

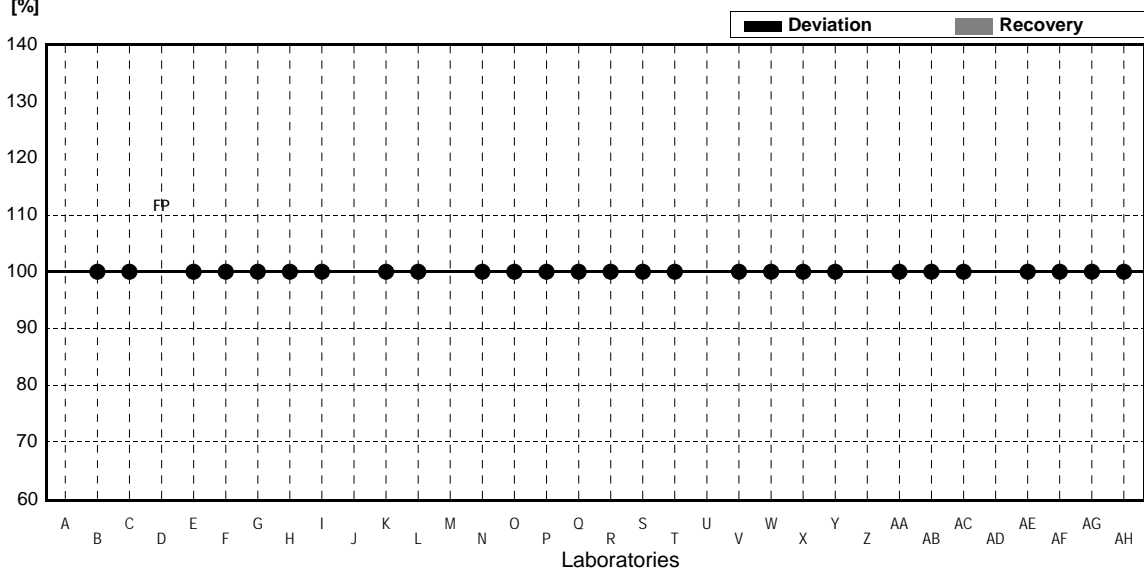
Stability test <0,25 µg/L

Lab Code	Result	±	Unit	Recovery	z-Score
A	0,00	0	µg/L		
B	<0,10		µg/L	•	
C	<1		µg/L	•	
D	0,8	0,15	µg/L	FP	
E	<0,1		µg/L	•	
F	<0,02		µg/L	•	
G	<0,5	0,2	µg/L	•	
H	<0,010	0,001	µg/L	•	
I	<0,50		µg/L	•	
J	0,00	0,00	µg/L		
K	<0,20		µg/L	•	
L	<0,2		µg/L	•	
M	0,51	0,05	µg/L		
N	<0,5	0,091	µg/L	•	
O	<1		µg/L	•	
P	<0,35	0,069	µg/L	•	
Q	<0,041		µg/L	•	
R	<0,5		µg/L	•	
S	<0,05		µg/L	•	
T	<0,10		µg/L	•	
U			µg/L		
V	<1,00		µg/L	•	
W	<0,5		µg/L	•	
X	<0,2	0,1	µg/L	•	
Y	<0,03		µg/L	•	
Z	nd		µg/L		
AA	<0,5		µg/L	•	
AB	<0,2		µg/L	•	
AC	<0,30		µg/L	•	
AD			µg/L		
AE	<0,100		µg/L	•	
AF	<0,5		µg/L	•	
AG	<0,2		µg/L	•	
AH	<0,05	0,01	µg/L	•	

Result [µg/L]



Recovery [%]



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

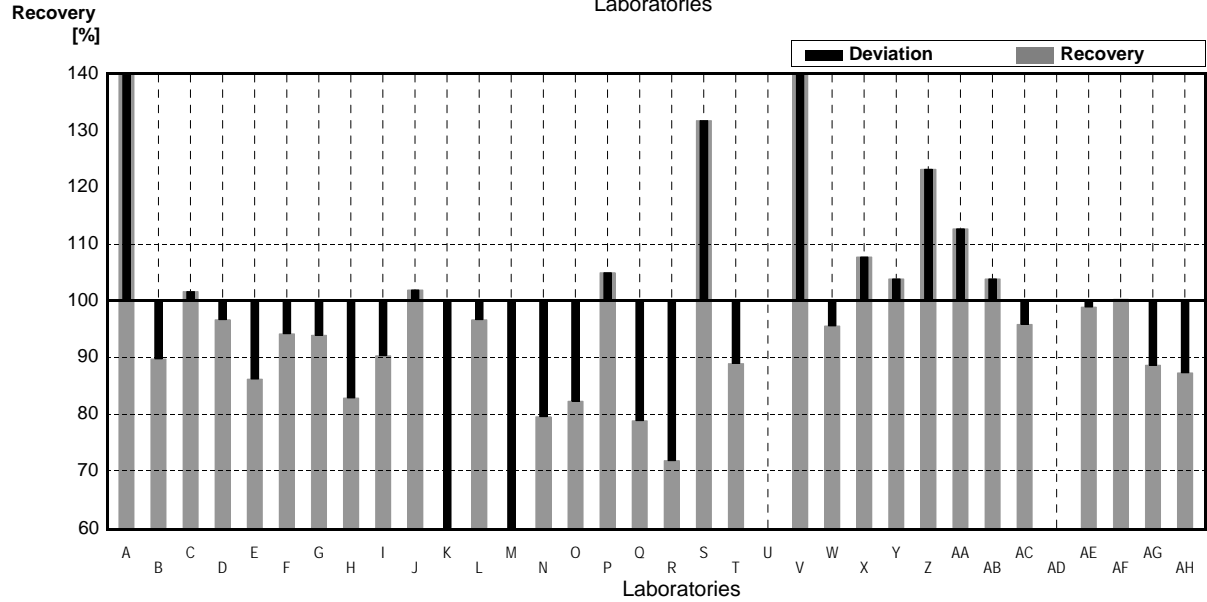
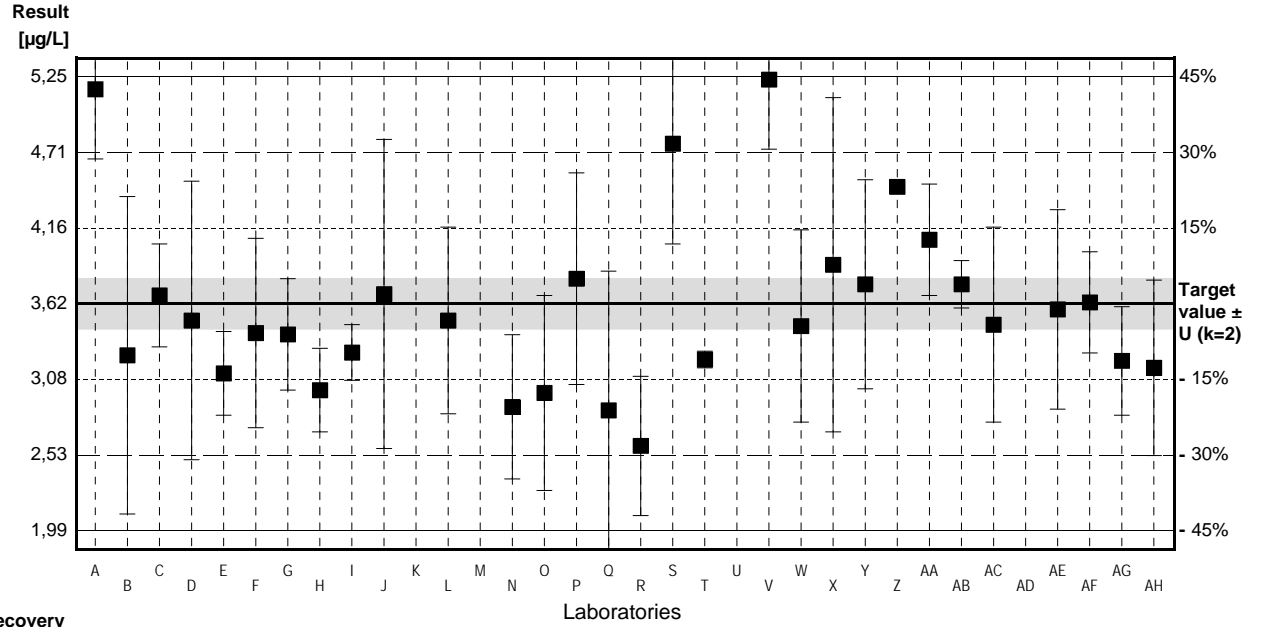


# Sample B9B

## Parameter Toluene

Target value ± U (k=2) 3,62 µg/L ± 0,18 µg/L  
 IFA result ± U (k=2) 3,51 µg/L ± 0,53 µg/L  
 Stability test ± U (k=2) 3,42 µg/L ± 0,51 µg/L

Lab Code	Result	±	Unit	Recovery	z-Score
A	5,16 *	0,5	µg/L	143%	3,27
B	3,25	1,14	µg/L	90%	-0,79
C	3,68	0,37	µg/L	102%	0,13
D	3,5	1,0	µg/L	97%	-0,25
E	3,12	0,3	µg/L	86%	-1,06
F	3,41	0,68	µg/L	94%	-0,45
G	3,4	0,4	µg/L	94%	-0,47
H	3,0	0,30	µg/L	83%	-1,32
I	3,27	0,20	µg/L	90%	-0,74
J	3,69	1,11	µg/L	102%	0,15
K	1,90 *		µg/L	52%	-3,65
L	3,50	0,67	µg/L	97%	-0,25
M	1,86 *	0,19	µg/L	51%	-3,74
N	2,88	0,518	µg/L	80%	-1,57
O	2,98	0,70	µg/L	82%	-1,36
P	3,8	0,76	µg/L	105%	0,38
Q	2,855	0,999	µg/L	79%	-1,63
R	2,6	0,5	µg/L	72%	-2,17
S	4,77	0,72	µg/L	132%	2,44
T	3,22	0,06	µg/L	89%	-0,85
U			µg/L		
V	5,23 *	0,50	µg/L	144%	3,42
W	3,46	0,69	µg/L	96%	-0,34
X	3,9	1,2	µg/L	108%	0,59
Y	3,76	0,75	µg/L	104%	0,30
Z	4,46		µg/L	123%	1,78
AA	4,08	0,4	µg/L	113%	0,98
AB	3,76	0,170	µg/L	104%	0,30
AC	3,47	0,70	µg/L	96%	-0,32
AD			µg/L		
AE	3,58	0,716	µg/L	99%	-0,08
AF	3,63	0,363	µg/L	100%	0,02
AG	3,21	0,39	µg/L	89%	-0,87
AH	3,16	0,63	µg/L	87%	-0,98



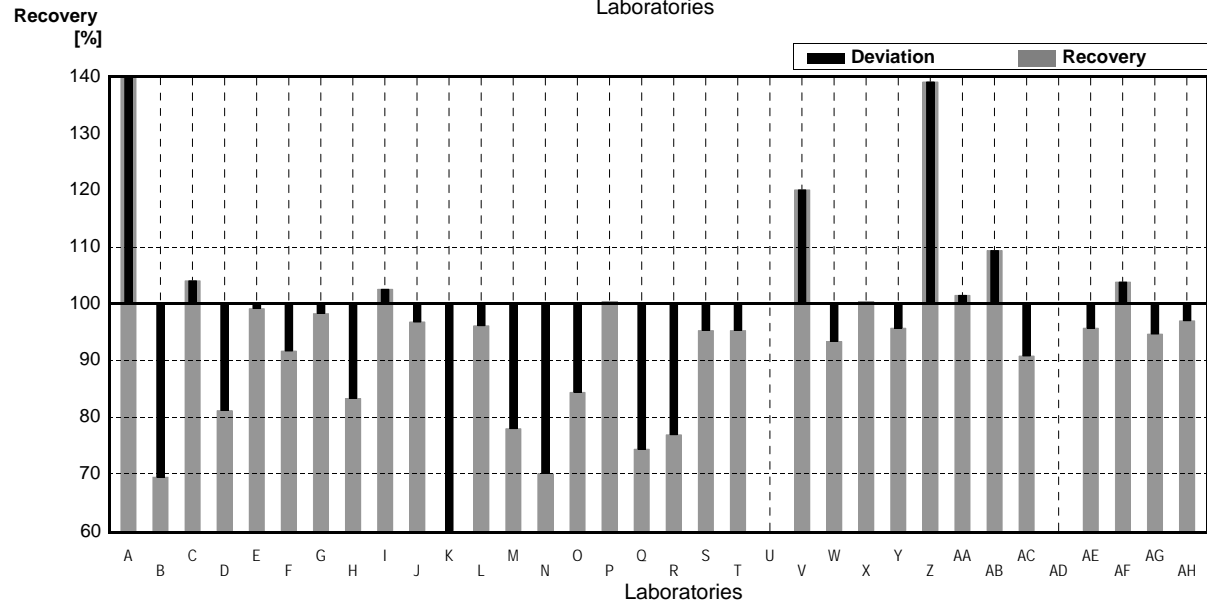
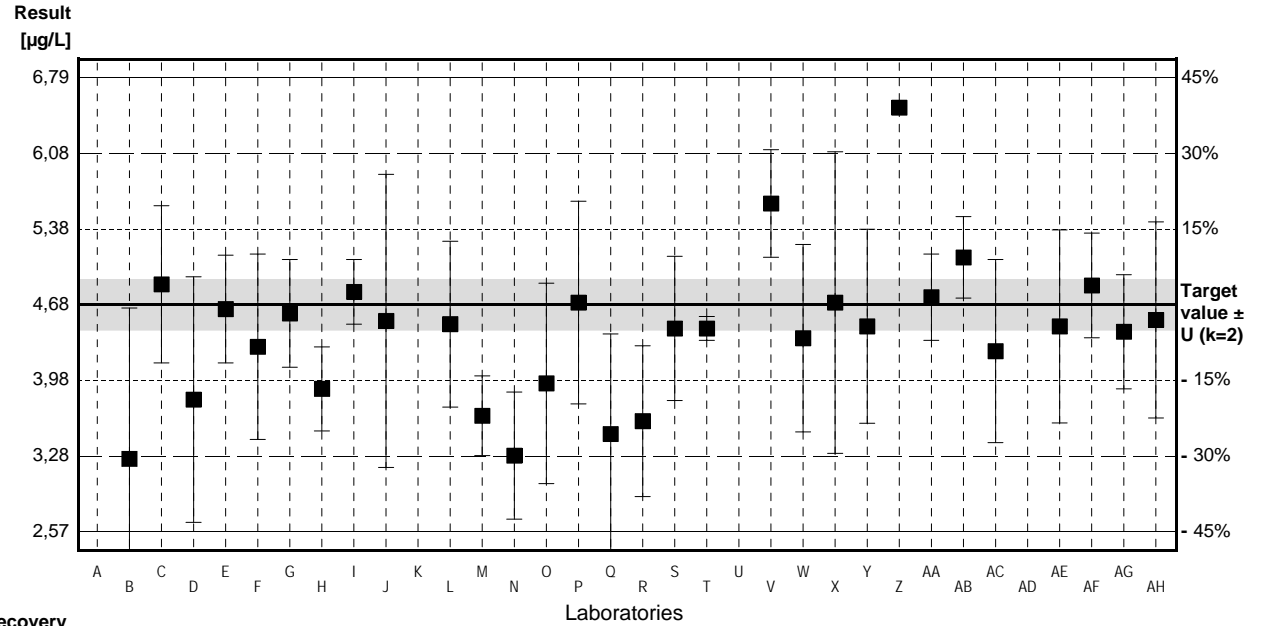
	All results	Outliers excl.	Unit
Mean ± CI(99%)	3,49 ± 0,36	3,48 ± 0,25	µg/L
Recov. ± CI(99%)	96,3 ± 10,0	96,1 ± 6,8	%
SD between labs	0,74	0,47	µg/L
RSD between labs	21,3	13,6	%
n for calculation	32	28	

# Sample B9A

## Parameter Ethylbenzene

Target value  $\pm$  U (k=2) 4,68  $\mu\text{g/L}$   $\pm$  0,23  $\mu\text{g/L}$   
 IFA result  $\pm$  U (k=2) 4,48  $\mu\text{g/L}$   $\pm$  0,67  $\mu\text{g/L}$   
 Stability test  $\pm$  U (k=2) 4,38  $\mu\text{g/L}$   $\pm$  0,66  $\mu\text{g/L}$

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A	7,09 *	0,7	$\mu\text{g/L}$	151%	3,22
B	3,25	1,40	$\mu\text{g/L}$	69%	-1,91
C	4,87	0,73	$\mu\text{g/L}$	104%	0,25
D	3,8	1,14	$\mu\text{g/L}$	81%	-1,18
E	4,64	0,5	$\mu\text{g/L}$	99%	-0,05
F	4,29	0,86	$\mu\text{g/L}$	92%	-0,52
G	4,6	0,5	$\mu\text{g/L}$	98%	-0,11
H	3,9	0,39	$\mu\text{g/L}$	83%	-1,04
I	4,80	0,30	$\mu\text{g/L}$	103%	0,16
J	4,53	1,36	$\mu\text{g/L}$	97%	-0,20
K	2,04 *		$\mu\text{g/L}$	44%	-3,53
L	4,5	0,77	$\mu\text{g/L}$	96%	-0,24
M	3,65	0,37	$\mu\text{g/L}$	78%	-1,38
N	3,28	0,59	$\mu\text{g/L}$	70%	-1,87
O	3,95	0,93	$\mu\text{g/L}$	84%	-0,97
P	4,7	0,94	$\mu\text{g/L}$	100%	0,03
Q	3,480	0,929	$\mu\text{g/L}$	74%	-1,60
R	3,6	0,7	$\mu\text{g/L}$	77%	-1,44
S	4,46	0,67	$\mu\text{g/L}$	95%	-0,29
T	4,46	0,11	$\mu\text{g/L}$	95%	-0,29
U			$\mu\text{g/L}$		
V	5,62	0,50	$\mu\text{g/L}$	120%	1,26
W	4,37	0,87	$\mu\text{g/L}$	93%	-0,41
X	4,7	1,4	$\mu\text{g/L}$	100%	0,03
Y	4,48	0,90	$\mu\text{g/L}$	96%	-0,27
Z	6,51 *		$\mu\text{g/L}$	139%	2,44
AA	4,75	0,4	$\mu\text{g/L}$	101%	0,09
AB	5,12	0,378	$\mu\text{g/L}$	109%	0,59
AC	4,25	0,85	$\mu\text{g/L}$	91%	-0,57
AD			$\mu\text{g/L}$		
AE	4,48	0,896	$\mu\text{g/L}$	96%	-0,27
AF	4,86	0,486	$\mu\text{g/L}$	104%	0,24
AG	4,43	0,53	$\mu\text{g/L}$	95%	-0,33
AH	4,54	0,91	$\mu\text{g/L}$	97%	-0,19



	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	4,44 $\pm$ 0,44	4,36 $\pm$ 0,28	$\mu\text{g/L}$
Recov. $\pm$ CI(99%)	94,8 $\pm$ 9,5	93,1 $\pm$ 6,0	%
SD between labs	0,91	0,55	$\mu\text{g/L}$
RSD between labs	20,5	12,6	%
n for calculation	32	29	

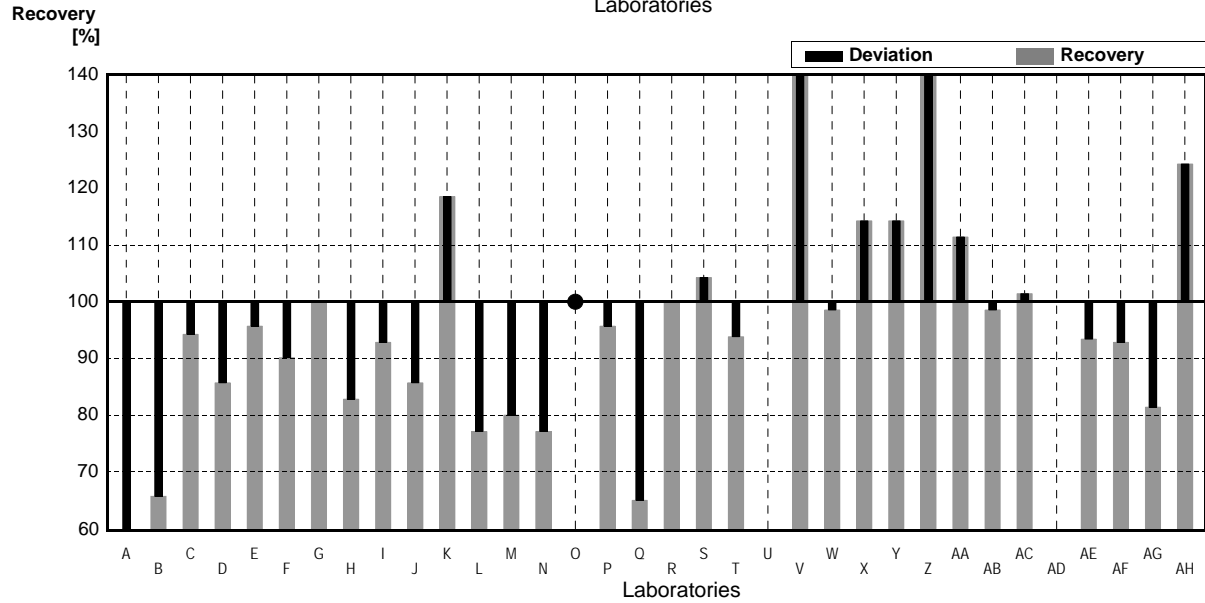
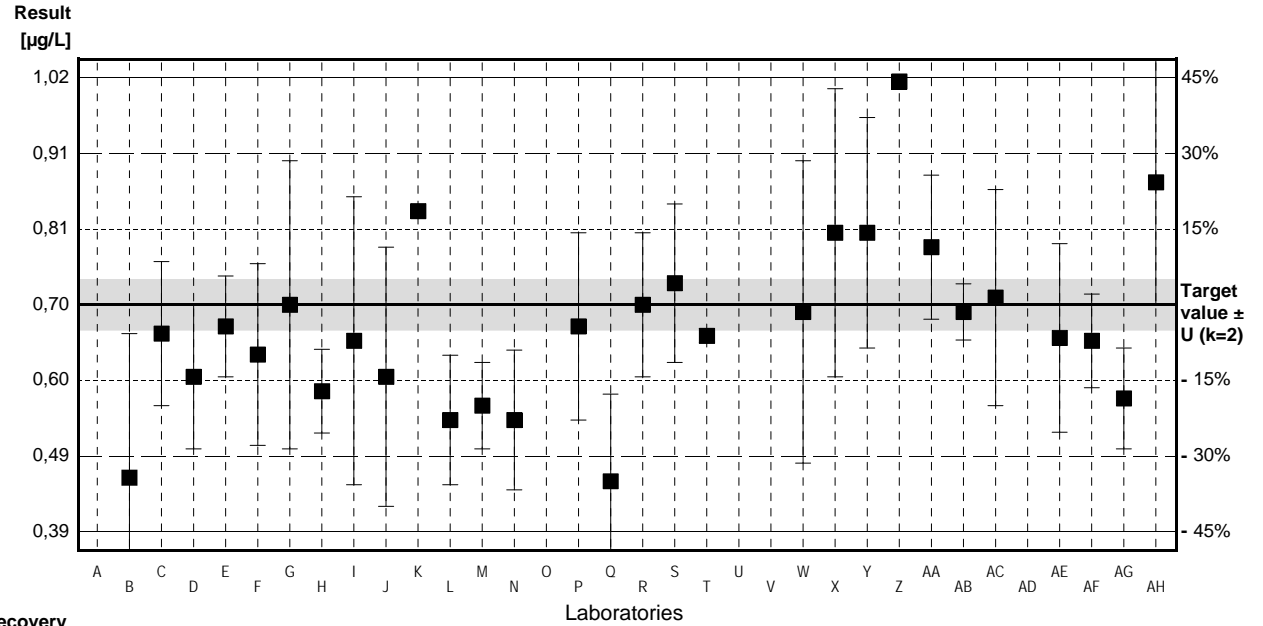
# Sample B9B

## Parameter Ethylbenzene

Target value  $\pm U$  (k=2) 0,70  $\mu\text{g/L}$   $\pm$  0,04  $\mu\text{g/L}$   
 IFA result  $\pm U$  (k=2) 0,71  $\mu\text{g/L}$   $\pm$  0,11  $\mu\text{g/L}$   
 Stability test  $\pm U$  (k=2) 0,69  $\mu\text{g/L}$   $\pm$  0,10  $\mu\text{g/L}$

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A	0,25 *	0,03	$\mu\text{g/L}$	36%	-4,02
B	0,46	0,20	$\mu\text{g/L}$	66%	-2,14
C	0,66	0,10	$\mu\text{g/L}$	94%	-0,36
D	0,6	0,1	$\mu\text{g/L}$	86%	-0,89
E	0,67	0,07	$\mu\text{g/L}$	96%	-0,27
F	0,631	0,126	$\mu\text{g/L}$	90%	-0,62
G	0,7	0,2	$\mu\text{g/L}$	100%	0,00
H	0,58	0,058	$\mu\text{g/L}$	83%	-1,07
I	0,65	0,20	$\mu\text{g/L}$	93%	-0,45
J	0,60	0,18	$\mu\text{g/L}$	86%	-0,89
K	0,83		$\mu\text{g/L}$	119%	1,16
L	0,54	0,09	$\mu\text{g/L}$	77%	-1,43
M	0,56	0,06	$\mu\text{g/L}$	80%	-1,25
N	0,54	0,097	$\mu\text{g/L}$	77%	-1,43
O	<1		$\mu\text{g/L}$	*	
P	0,67	0,13	$\mu\text{g/L}$	96%	-0,27
Q	0,455	0,121	$\mu\text{g/L}$	65%	-2,19
R	0,7	0,1	$\mu\text{g/L}$	100%	0,00
S	0,73	0,11	$\mu\text{g/L}$	104%	0,27
T	0,657	0,01	$\mu\text{g/L}$	94%	-0,38
U			$\mu\text{g/L}$		
V	1,54 *	0,50	$\mu\text{g/L}$	220%	7,50
W	0,69	0,21	$\mu\text{g/L}$	99%	-0,09
X	0,8	0,2	$\mu\text{g/L}$	114%	0,89
Y	0,80	0,16	$\mu\text{g/L}$	114%	0,89
Z	1,01 *		$\mu\text{g/L}$	144%	2,77
AA	0,78	0,1	$\mu\text{g/L}$	111%	0,71
AB	0,69	0,039	$\mu\text{g/L}$	99%	-0,09
AC	0,71	0,15	$\mu\text{g/L}$	101%	0,09
AD			$\mu\text{g/L}$		
AE	0,654	0,131	$\mu\text{g/L}$	93%	-0,41
AF	0,65	0,065	$\mu\text{g/L}$	93%	-0,45
AG	0,57	0,07	$\mu\text{g/L}$	81%	-1,16
AH	0,87	0,17	$\mu\text{g/L}$	124%	1,52

	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	0,69 $\pm$ 0,10	0,66 $\pm$ 0,05	$\mu\text{g/L}$
Recov. $\pm$ CI(99%)	97,9 $\pm$ 14,8	94,1 $\pm$ 7,7	%
SD between labs	0,21	0,10	$\mu\text{g/L}$
RSD between labs	30,7	15,5	%
n for calculation	31	28	

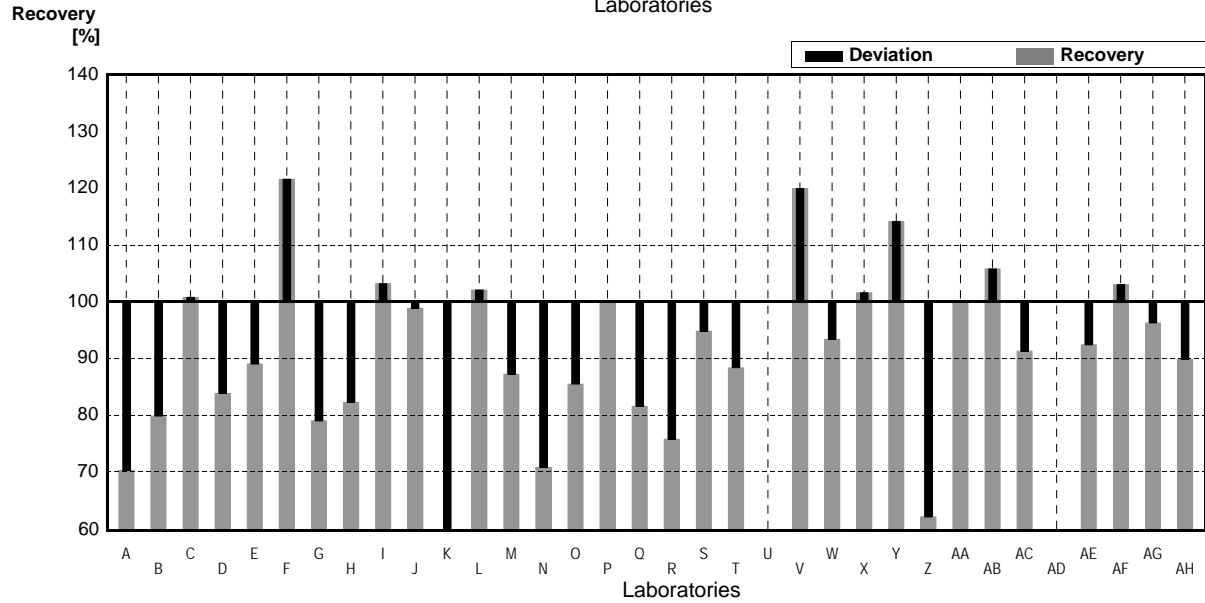
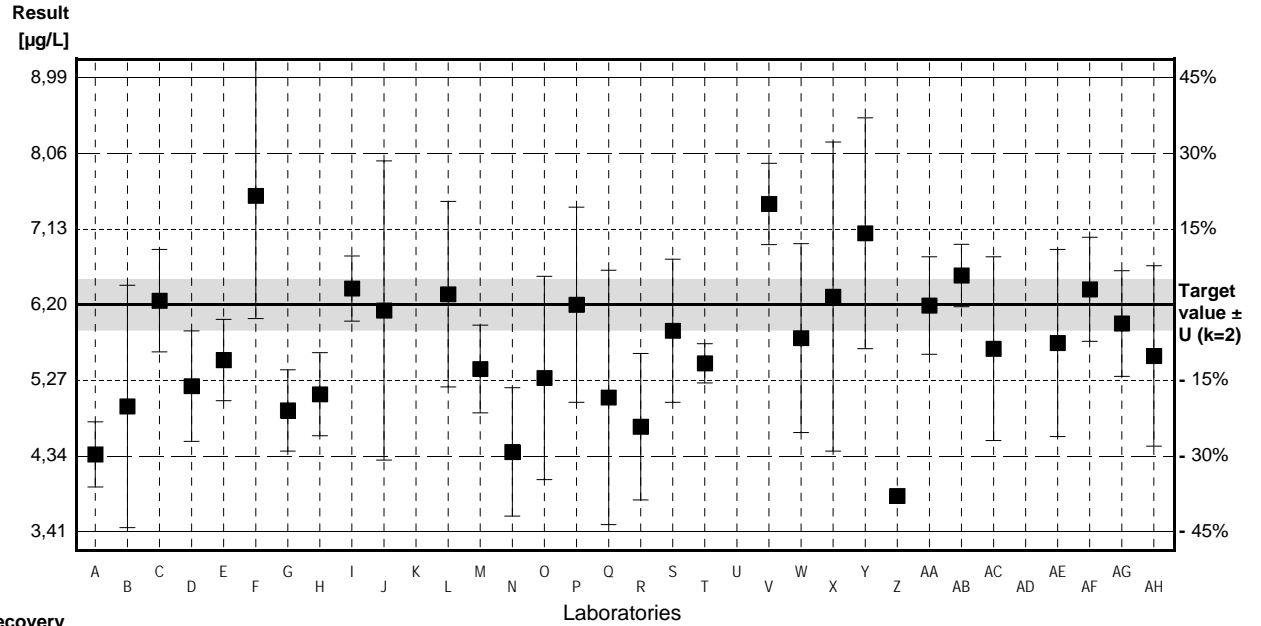


# Sample B9A

## Parameter m,p-Xylene

Target value ± U (k=2) 6,20 µg/L ± 0,31 µg/L  
 IFA result ± U (k=2) 6,00 µg/L ± 0,90 µg/L  
 Stability test ± U (k=2) 5,73 µg/L ± 0,86 µg/L

Lab Code	Result	±	Unit	Recovery	z-Score
A	4,36	0,4	µg/L	70%	-1,65
B	4,95	1,49	µg/L	80%	-1,12
C	6,25	0,63	µg/L	101%	0,04
D	5,2	0,68	µg/L	84%	-0,90
E	5,52	0,5	µg/L	89%	-0,61
F	7,54	1,51	µg/L	122%	1,20
G	4,9	0,5	µg/L	79%	-1,16
H	5,1	0,51	µg/L	82%	-0,99
I	6,40	0,40	µg/L	103%	0,18
J	6,13	1,84	µg/L	99%	-0,06
K	3,23		µg/L	52%	-2,66
L	6,33	1,14	µg/L	102%	0,12
M	5,41	0,54	µg/L	87%	-0,71
N	4,39	0,789	µg/L	71%	-1,62
O	5,30	1,25	µg/L	85%	-0,81
P	6,2	1,2	µg/L	100%	0,00
Q	5,060	1,564	µg/L	82%	-1,02
R	4,7	0,9	µg/L	76%	-1,34
S	5,88	0,88	µg/L	95%	-0,29
T	5,48	0,24	µg/L	88%	-0,65
U			µg/L		
V	7,44	0,50	µg/L	120%	1,11
W	5,79	1,16	µg/L	93%	-0,37
X	6,3	1,9	µg/L	102%	0,09
Y	7,08	1,42	µg/L	114%	0,79
Z	3,85		µg/L	62%	-2,11
AA	6,19	0,6	µg/L	100%	-0,01
AB	6,56	0,384	µg/L	106%	0,32
AC	5,66	1,13	µg/L	91%	-0,48
AD			µg/L		
AE	5,73	1,15	µg/L	92%	-0,42
AF	6,39	0,639	µg/L	103%	0,17
AG	5,97	0,65	µg/L	96%	-0,21
AH	5,57	1,11	µg/L	90%	-0,56



	All results	Outliers excl.	Unit
Mean ± CI(99%)	5,65 ± 0,47	5,65 ± 0,47	µg/L
Recov. ± CI(99%)	91,2 ± 7,5	91,2 ± 7,5	%
SD between labs	0,96	0,96	µg/L
RSD between labs	16,9	16,9	%
n for calculation	32	32	

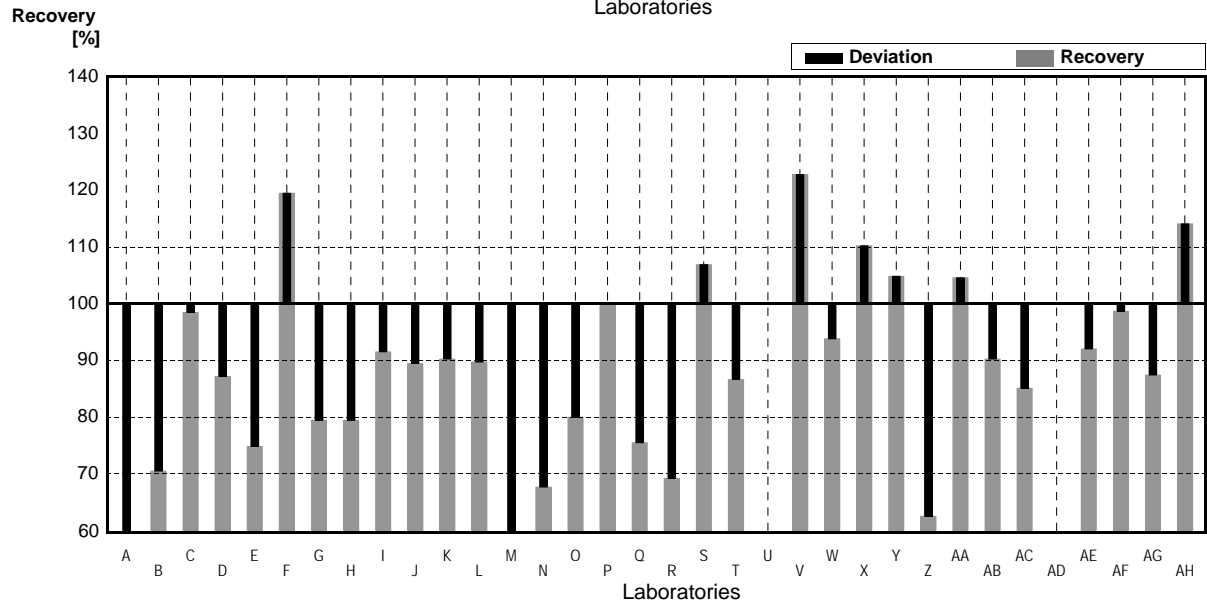
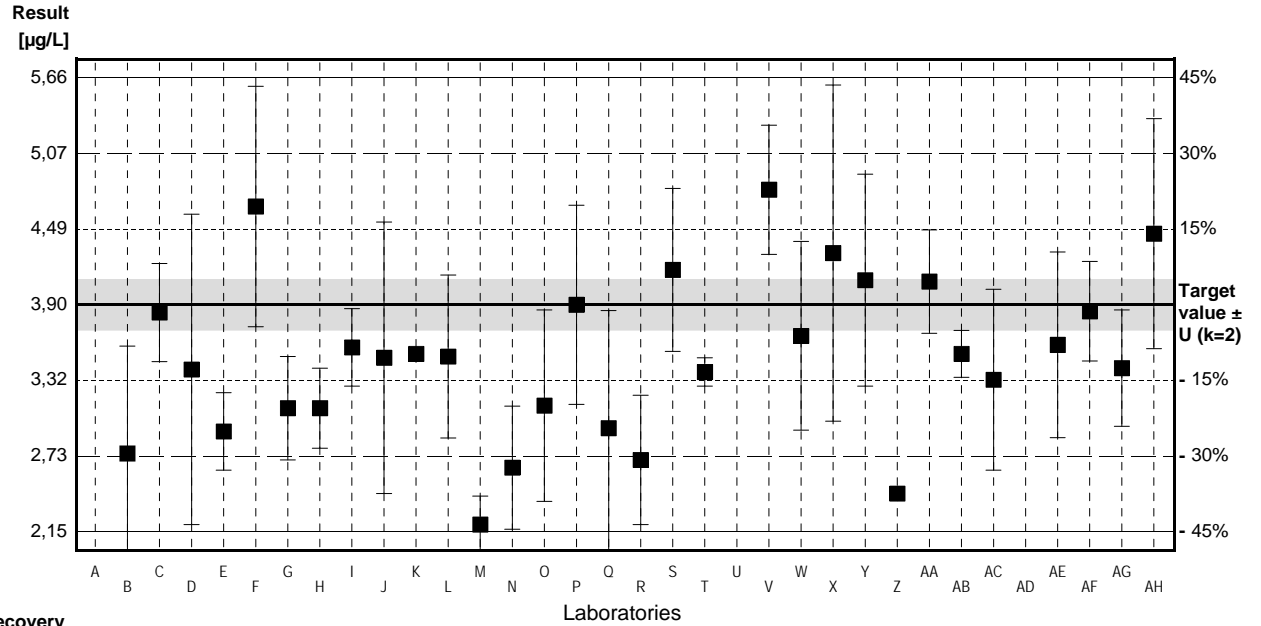
# Sample B9B

## Parameter m,p-Xylene

Target value  $\pm U$  (k=2) 3,90  $\mu\text{g/L}$   $\pm$  0,20  $\mu\text{g/L}$   
 IFA result  $\pm U$  (k=2) 3,45  $\mu\text{g/L}$   $\pm$  0,52  $\mu\text{g/L}$   
 Stability test  $\pm U$  (k=2) 3,29  $\mu\text{g/L}$   $\pm$  0,49  $\mu\text{g/L}$

Lab Code	Result	$\pm$	Unit	Recovery	z-Score
A	2,14	0,2	$\mu\text{g/L}$	55%	-2,51
B	2,75	0,83	$\mu\text{g/L}$	71%	-1,64
C	3,84	0,38	$\mu\text{g/L}$	98%	-0,09
D	3,4	1,2	$\mu\text{g/L}$	87%	-0,71
E	2,92	0,3	$\mu\text{g/L}$	75%	-1,40
F	4,66	0,93	$\mu\text{g/L}$	119%	1,08
G	3,1	0,4	$\mu\text{g/L}$	79%	-1,14
H	3,1	0,31	$\mu\text{g/L}$	79%	-1,14
I	3,57	0,30	$\mu\text{g/L}$	92%	-0,47
J	3,49	1,05	$\mu\text{g/L}$	89%	-0,58
K	3,52		$\mu\text{g/L}$	90%	-0,54
L	3,50	0,63	$\mu\text{g/L}$	90%	-0,57
M	2,20	0,22	$\mu\text{g/L}$	56%	-2,42
N	2,64	0,476	$\mu\text{g/L}$	68%	-1,79
O	3,12	0,74	$\mu\text{g/L}$	80%	-1,11
P	3,9	0,77	$\mu\text{g/L}$	100%	0,00
Q	2,945	0,910	$\mu\text{g/L}$	76%	-1,36
R	2,7	0,5	$\mu\text{g/L}$	69%	-1,71
S	4,17	0,63	$\mu\text{g/L}$	107%	0,38
T	3,38	0,11	$\mu\text{g/L}$	87%	-0,74
U			$\mu\text{g/L}$		
V	4,79	0,50	$\mu\text{g/L}$	123%	1,27
W	3,66	0,73	$\mu\text{g/L}$	94%	-0,34
X	4,3	1,3	$\mu\text{g/L}$	110%	0,57
Y	4,09	0,82	$\mu\text{g/L}$	105%	0,27
Z	2,44		$\mu\text{g/L}$	63%	-2,08
AA	4,08	0,4	$\mu\text{g/L}$	105%	0,26
AB	3,52	0,181	$\mu\text{g/L}$	90%	-0,54
AC	3,32	0,70	$\mu\text{g/L}$	85%	-0,83
AD			$\mu\text{g/L}$		
AE	3,59	0,718	$\mu\text{g/L}$	92%	-0,44
AF	3,85	0,385	$\mu\text{g/L}$	99%	-0,07
AG	3,41	0,45	$\mu\text{g/L}$	87%	-0,70
AH	4,45	0,89	$\mu\text{g/L}$	114%	0,78

	All results	Outliers excl.	Unit
Mean $\pm$ CI(99%)	3,45 $\pm$ 0,32	3,45 $\pm$ 0,32	$\mu\text{g/L}$
Recov. $\pm$ CI(99%)	88,6 $\pm$ 8,3	88,6 $\pm$ 8,3	%
SD between labs	0,67	0,67	$\mu\text{g/L}$
RSD between labs	19,3	19,3	%
n for calculation	32	32	



# Sample B9A

## Parameter o-Xylene

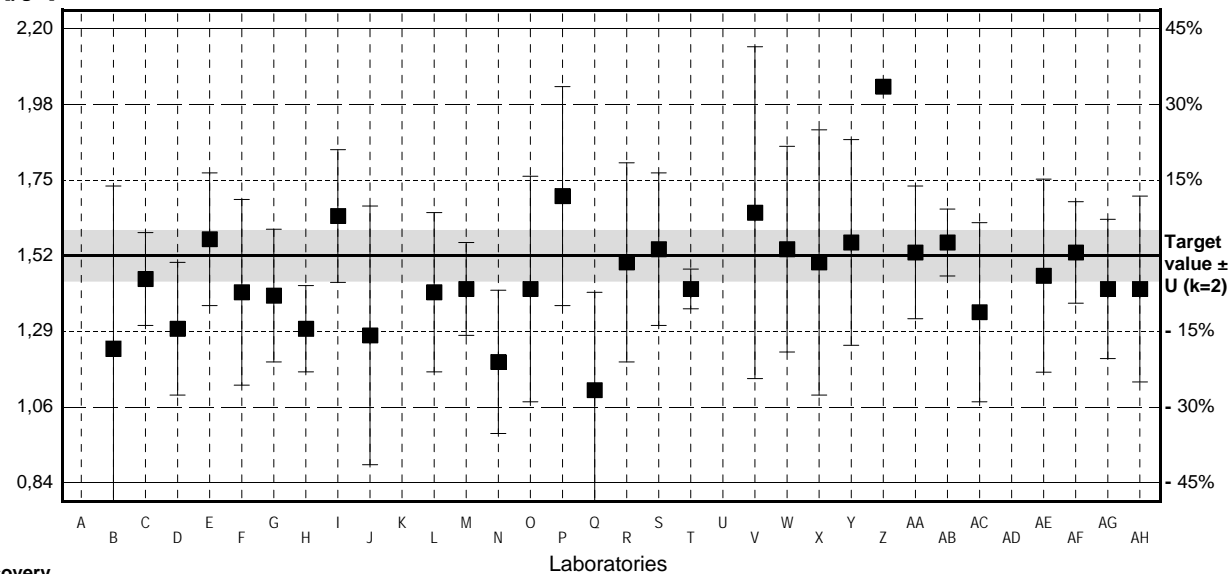
Target value ± U (k=2) 1,52 µg/L ± 0,08 µg/L

IFA result ± U (k=2) 1,61 µg/L ± 0,24 µg/L

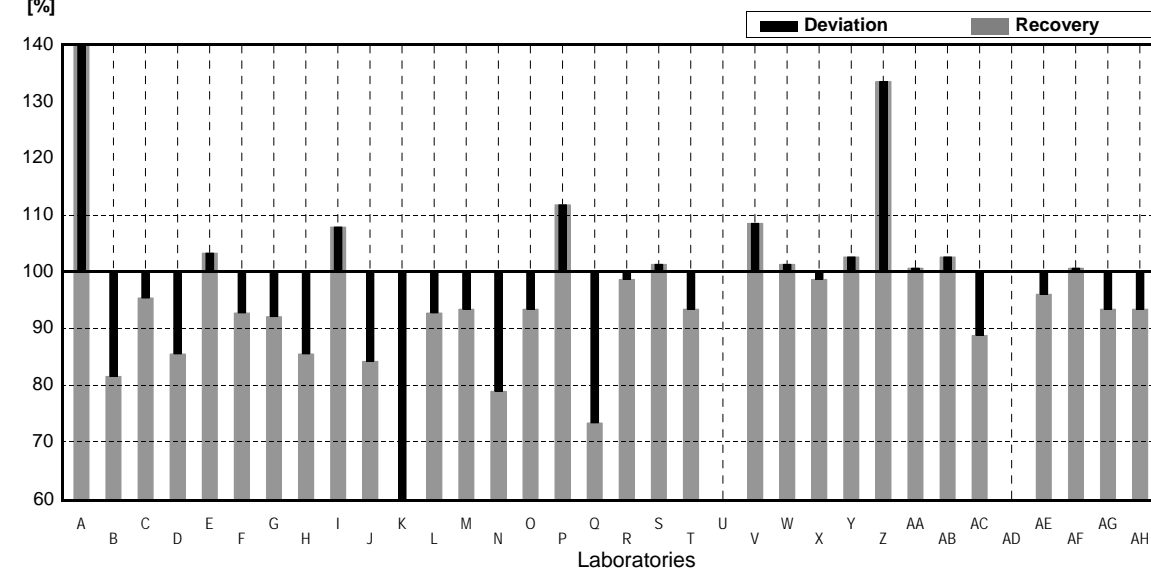
Stability test ± U (k=2) 1,56 µg/L ± 0,23 µg/L

Lab Code	Result	±	Unit	Recovery	z-Score
A	2,44 *	0,25	µg/L	161%	4,04
B	1,24	0,49	µg/L	82%	-1,23
C	1,45	0,14	µg/L	95%	-0,31
D	1,3	0,20	µg/L	86%	-0,96
E	1,57	0,2	µg/L	103%	0,22
F	1,41	0,28	µg/L	93%	-0,48
G	1,4	0,2	µg/L	92%	-0,53
H	1,3	0,13	µg/L	86%	-0,96
I	1,64	0,20	µg/L	108%	0,53
J	1,28	0,39	µg/L	84%	-1,05
K	0,69 *		µg/L	45%	-3,64
L	1,41	0,24	µg/L	93%	-0,48
M	1,42	0,14	µg/L	93%	-0,44
N	1,2	0,216	µg/L	79%	-1,40
O	1,42	0,34	µg/L	93%	-0,44
P	1,7	0,33	µg/L	112%	0,79
Q	1,115	0,295	µg/L	73%	-1,78
R	1,5	0,3	µg/L	99%	-0,09
S	1,54	0,23	µg/L	101%	0,09
T	1,42	0,06	µg/L	93%	-0,44
U			µg/L		
V	1,65	0,50	µg/L	109%	0,57
W	1,54	0,31	µg/L	101%	0,09
X	1,5	0,4	µg/L	99%	-0,09
Y	1,56	0,31	µg/L	103%	0,18
Z	2,03 *		µg/L	134%	2,24
AA	1,53	0,2	µg/L	101%	0,04
AB	1,56	0,101	µg/L	103%	0,18
AC	1,35	0,27	µg/L	89%	-0,75
AD			µg/L		
AE	1,46	0,291	µg/L	96%	-0,26
AF	1,53	0,153	µg/L	101%	0,04
AG	1,42	0,21	µg/L	93%	-0,44
AH	1,42	0,28	µg/L	93%	-0,44

Result  
[µg/L]



Recovery  
[%]



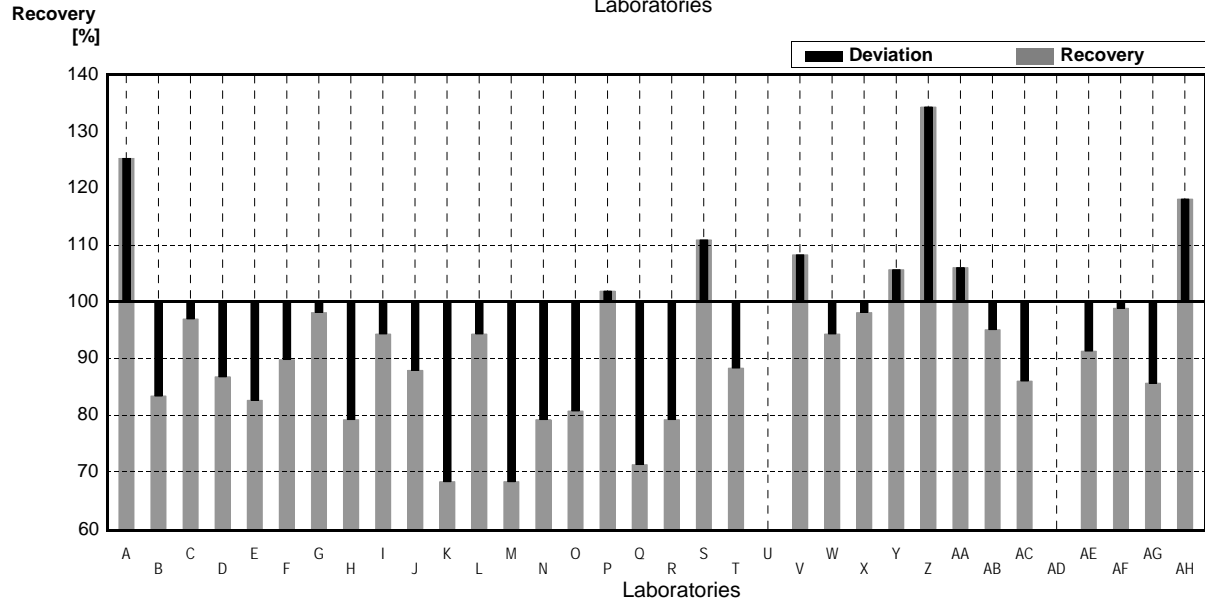
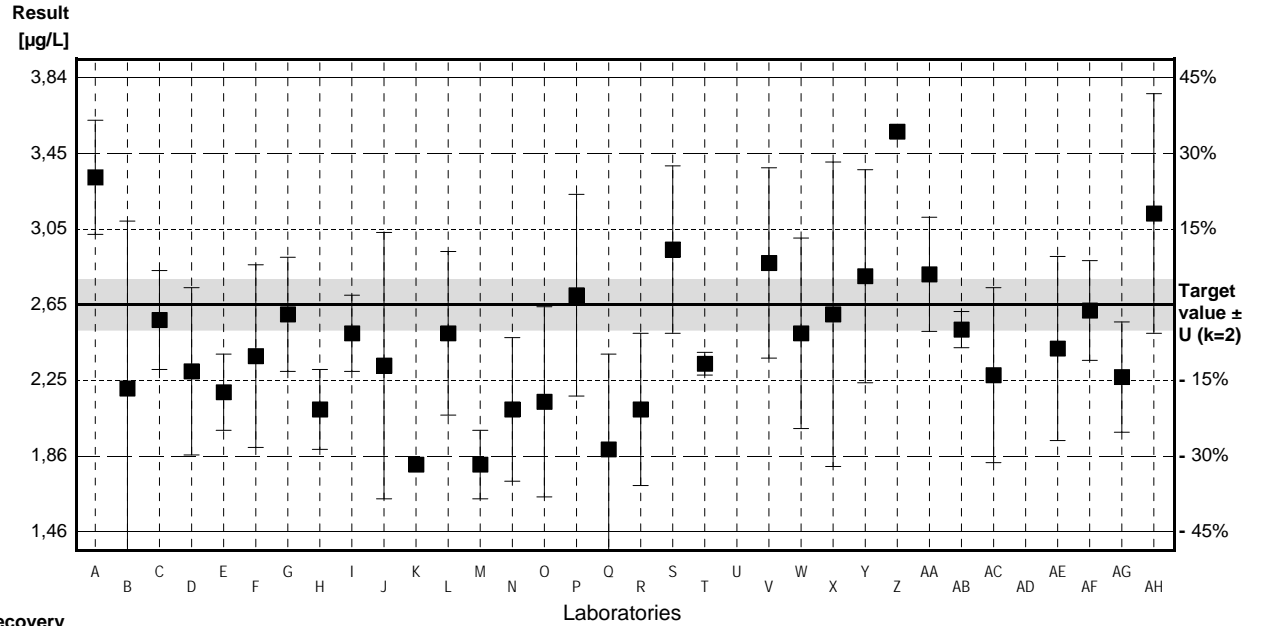
	All results	Outliers excl.	Unit
Mean ± CI(99%)	1,47 ± 0,14	1,44 ± 0,07	µg/L
Recov. ± CI(99%)	96,6 ± 8,9	94,9 ± 4,6	%
SD between labs	0,28	0,14	µg/L
RSD between labs	19,0	9,5	%
n for calculation	32	29	

# Sample B9B

## Parameter o-Xylene

Target value ± U (k=2) 2,65 µg/L ± 0,13 µg/L  
 IFA result ± U (k=2) 2,52 µg/L ± 0,38 µg/L  
 Stability test ± U (k=2) 2,41 µg/L ± 0,36 µg/L

Lab Code	Result	±	Unit	Recovery	z-Score
A	3,32	0,3	µg/L	125%	1,69
B	2,21	0,88	µg/L	83%	-1,11
C	2,57	0,26	µg/L	97%	-0,20
D	2,3	0,44	µg/L	87%	-0,88
E	2,19	0,2	µg/L	83%	-1,16
F	2,38	0,48	µg/L	90%	-0,68
G	2,6	0,3	µg/L	98%	-0,13
H	2,1	0,21	µg/L	79%	-1,38
I	2,50	0,20	µg/L	94%	-0,38
J	2,33	0,70	µg/L	88%	-0,81
K	1,81		µg/L	68%	-2,11
L	2,50	0,43	µg/L	94%	-0,38
M	1,81	0,18	µg/L	68%	-2,11
N	2,10	0,377	µg/L	79%	-1,38
O	2,14	0,50	µg/L	81%	-1,28
P	2,7	0,53	µg/L	102%	0,13
Q	1,890	0,501	µg/L	71%	-1,91
R	2,1	0,4	µg/L	79%	-1,38
S	2,94	0,44	µg/L	111%	0,73
T	2,34	0,06	µg/L	88%	-0,78
U			µg/L		
V	2,87	0,50	µg/L	108%	0,55
W	2,50	0,5	µg/L	94%	-0,38
X	2,6	0,8	µg/L	98%	-0,13
Y	2,80	0,56	µg/L	106%	0,38
Z	3,56		µg/L	134%	2,29
AA	2,81	0,3	µg/L	106%	0,40
AB	2,52	0,095	µg/L	95%	-0,33
AC	2,28	0,46	µg/L	86%	-0,93
AD			µg/L		
AE	2,42	0,484	µg/L	91%	-0,58
AF	2,62	0,262	µg/L	99%	-0,08
AG	2,27	0,29	µg/L	86%	-0,96
AH	3,13	0,63	µg/L	118%	1,21



	All results	Outliers excl.	Unit
Mean ± CI(99%)	2,48 ± 0,20	2,48 ± 0,20	µg/L
Recov. ± CI(99%)	93,4 ± 7,4	93,4 ± 7,4	%
SD between labs	0,41	0,41	µg/L
RSD between labs	16,4	16,4	%
n for calculation	32	32	





# Illustration of Results Laboratory Oriented Part

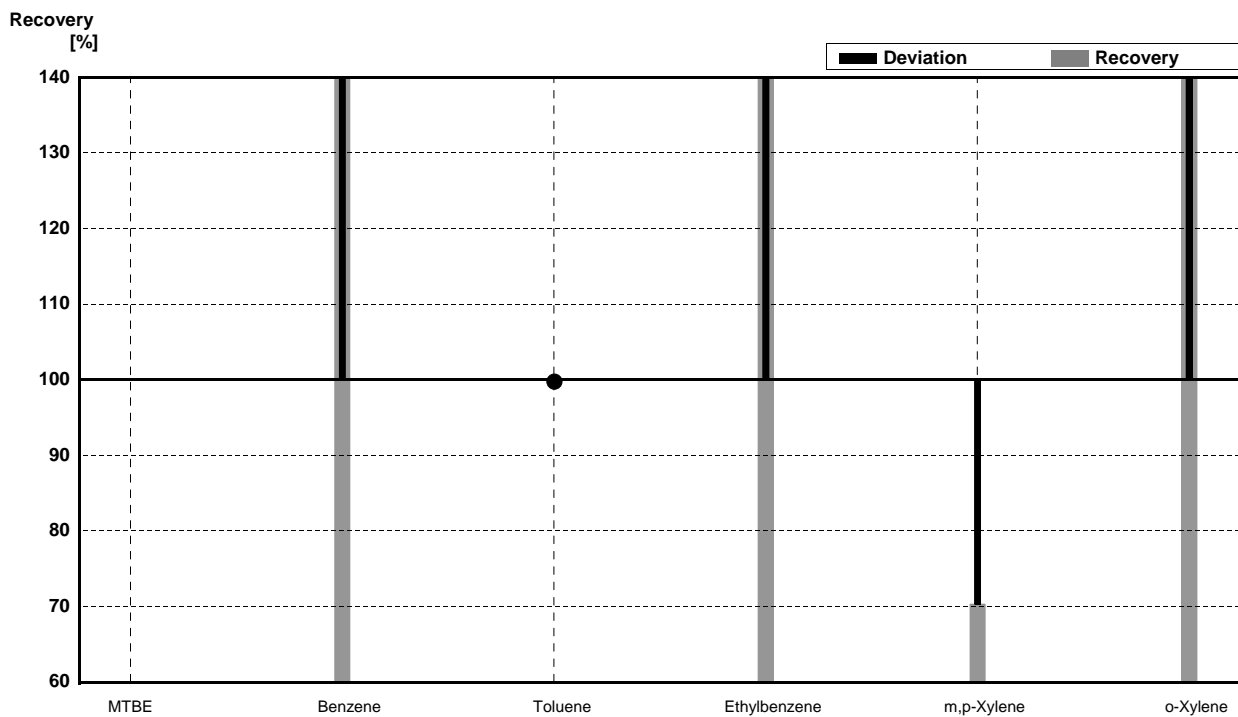
Round B9 (BTEX and MTBE)

Sample Dispatch: 20 October 2014



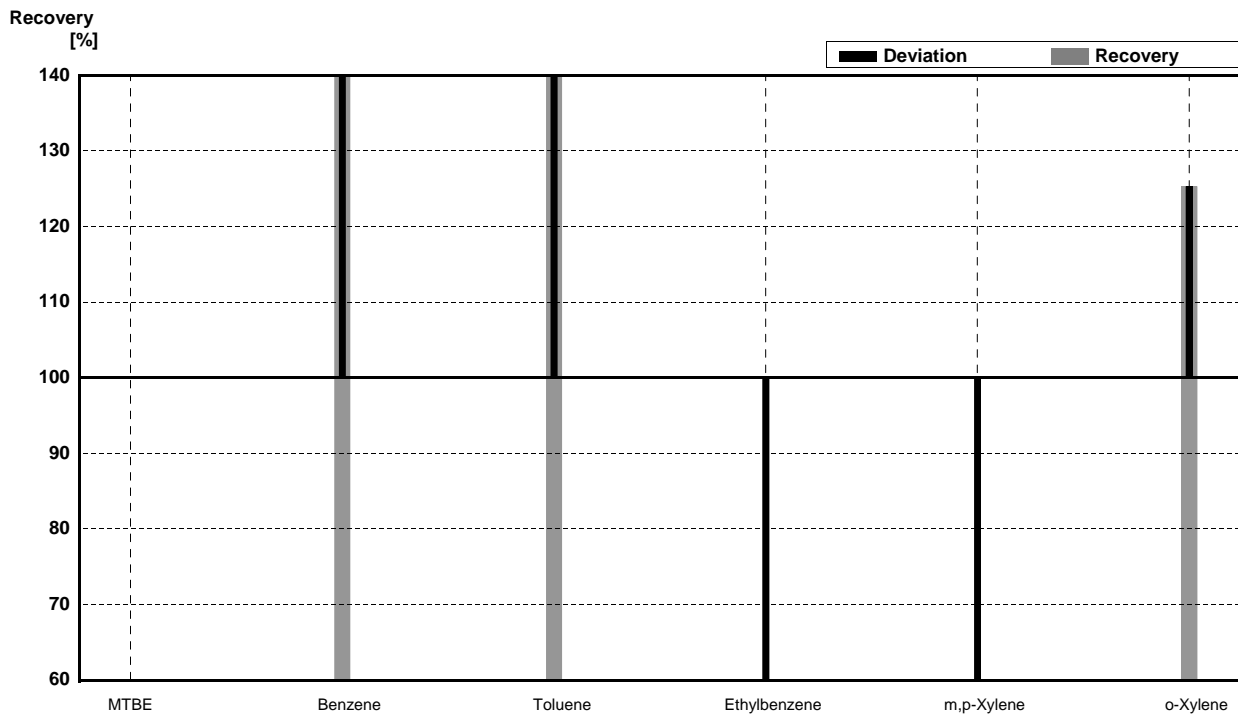
**Sample B9A**  
**Laboratory A**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	0,49	0,02			µg/L	
Benzene	0,60	0,03	1,34	0,1	µg/L	223%
Toluene	<0,5		0,00	0	µg/L	•
Ethylbenzene	4,68	0,23	7,09	0,7	µg/L	151%
m,p-Xylene	6,20	0,31	4,36	0,4	µg/L	70%
o-Xylene	1,52	0,08	2,44	0,25	µg/L	161%



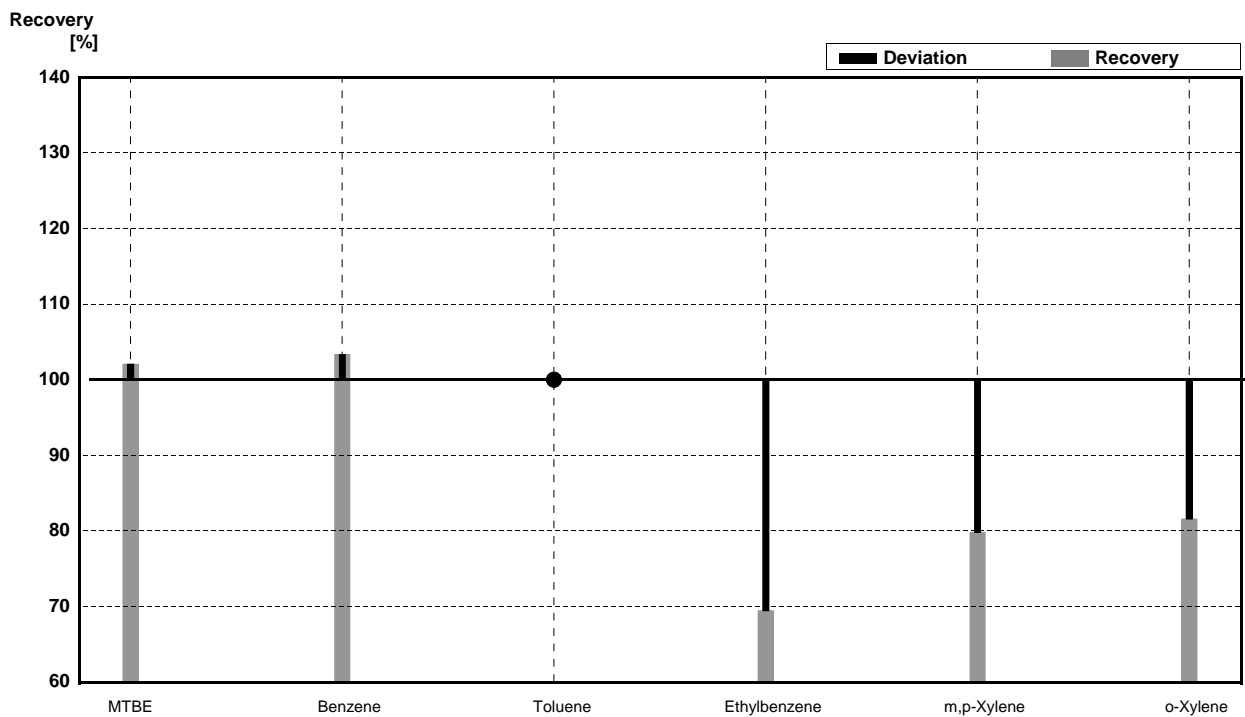
**Sample B9B**  
**Laboratory A**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	3,82	0,19			µg/L	
Benzene	4,27	0,21	8,18	0,8	µg/L	192%
Toluene	3,62	0,18	5,16	0,5	µg/L	143%
Ethylbenzene	0,70	0,04	0,25	0,03	µg/L	36%
m,p-Xylene	3,90	0,20	2,14	0,2	µg/L	55%
o-Xylene	2,65	0,13	3,32	0,3	µg/L	125%



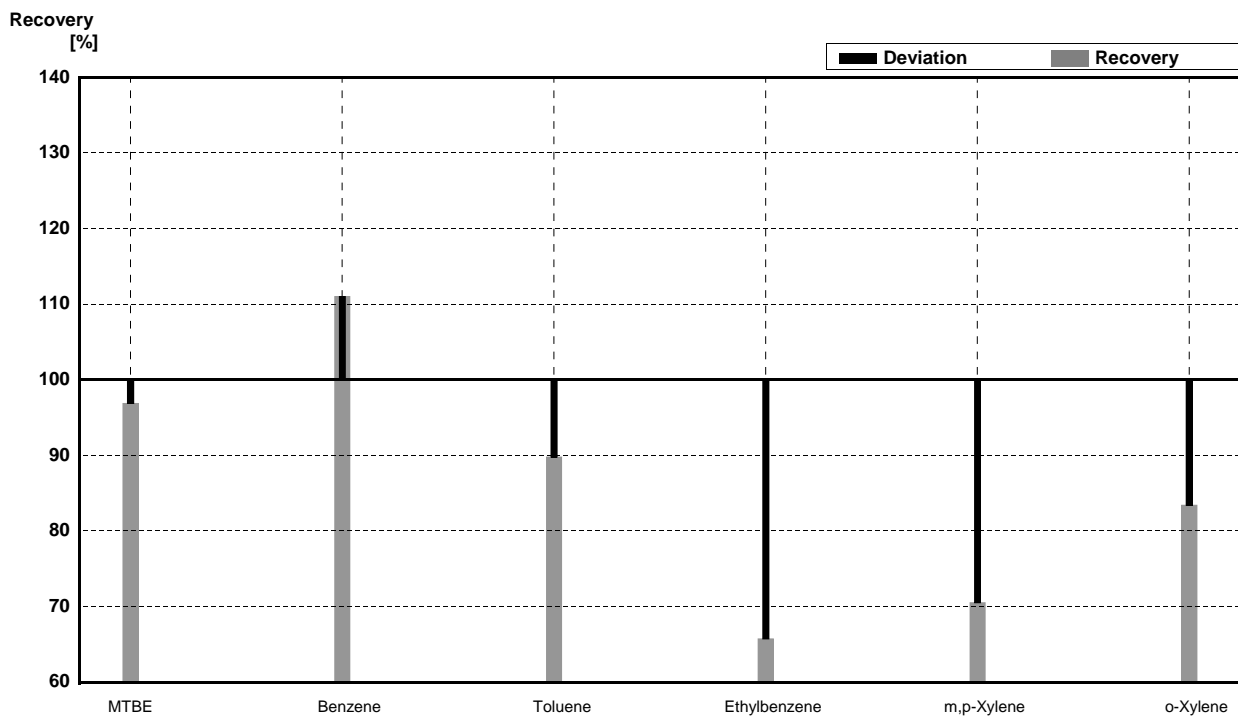
**Sample B9A**  
**Laboratory B**

Parameter	Target value	$\pm U$ (k=2)	Result	$\pm$	Unit	Recovery
MTBE	0,49	0,02	0,50	0,15	$\mu\text{g/L}$	102%
Benzene	0,60	0,03	0,62	0,14	$\mu\text{g/L}$	103%
Toluene	<0,5		<0,10		$\mu\text{g/L}$	•
Ethylbenzene	4,68	0,23	3,25	1,40	$\mu\text{g/L}$	69%
m,p-Xylene	6,20	0,31	4,95	1,49	$\mu\text{g/L}$	80%
o-Xylene	1,52	0,08	1,24	0,49	$\mu\text{g/L}$	82%



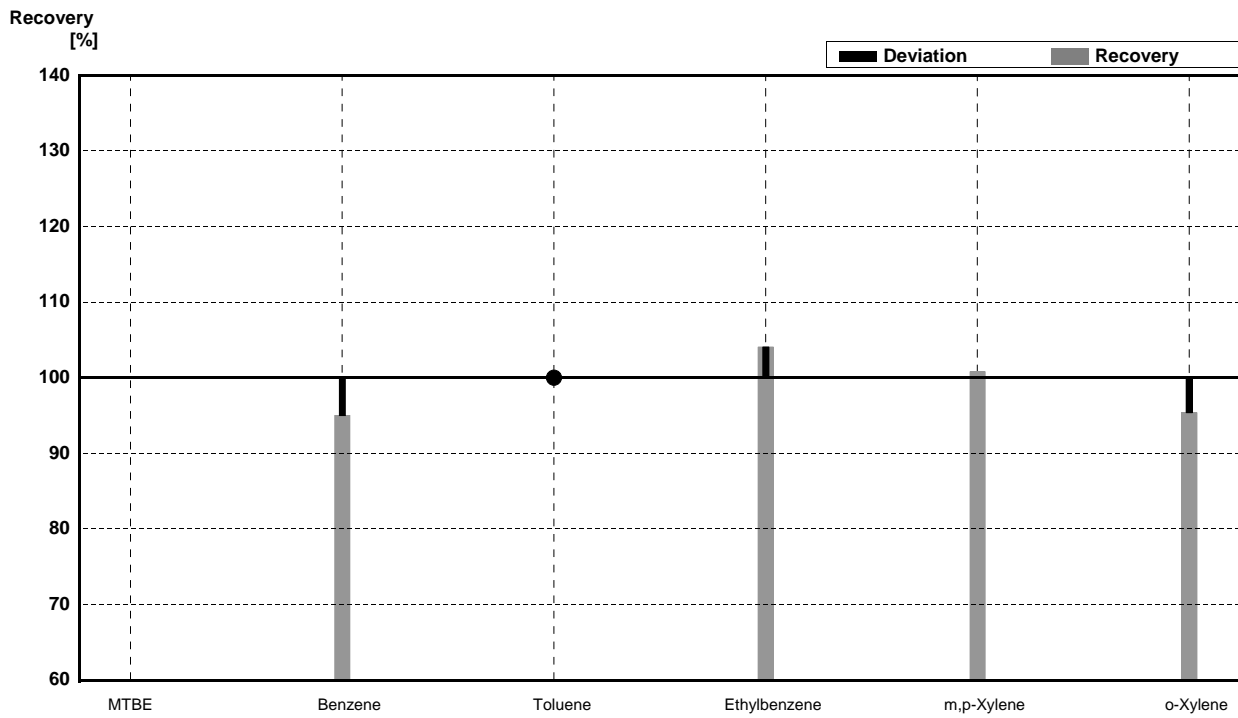
**Sample B9B**  
**Laboratory B**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	3,82	0,19	3,70	1,11	µg/L	97%
Benzene	4,27	0,21	4,74	1,09	µg/L	111%
Toluene	3,62	0,18	3,25	1,14	µg/L	90%
Ethylbenzene	0,70	0,04	0,46	0,20	µg/L	66%
m,p-Xylene	3,90	0,20	2,75	0,83	µg/L	71%
o-Xylene	2,65	0,13	2,21	0,88	µg/L	83%



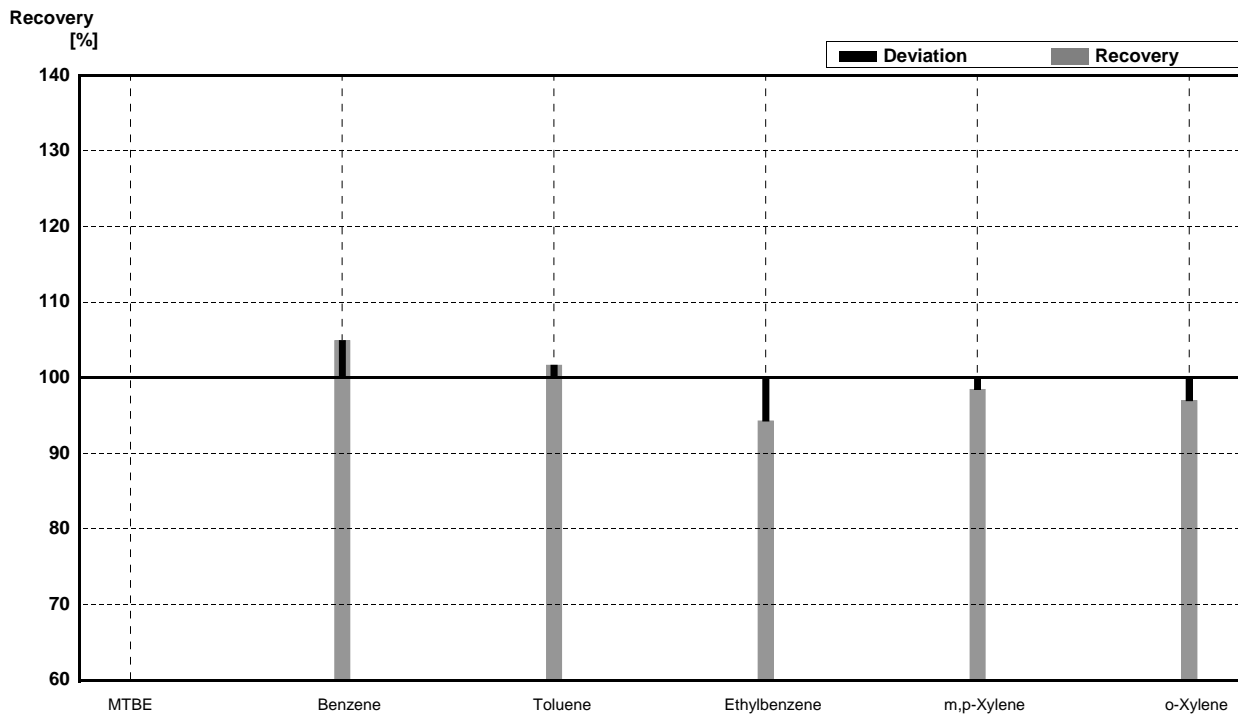
**Sample B9A**  
**Laboratory C**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	0,49	0,02			µg/L	
Benzene	0,60	0,03	0,57	0,08	µg/L	95%
Toluene	<0,5		<1		µg/L	•
Ethylbenzene	4,68	0,23	4,87	0,73	µg/L	104%
m,p-Xylene	6,20	0,31	6,25	0,63	µg/L	101%
o-Xylene	1,52	0,08	1,45	0,14	µg/L	95%



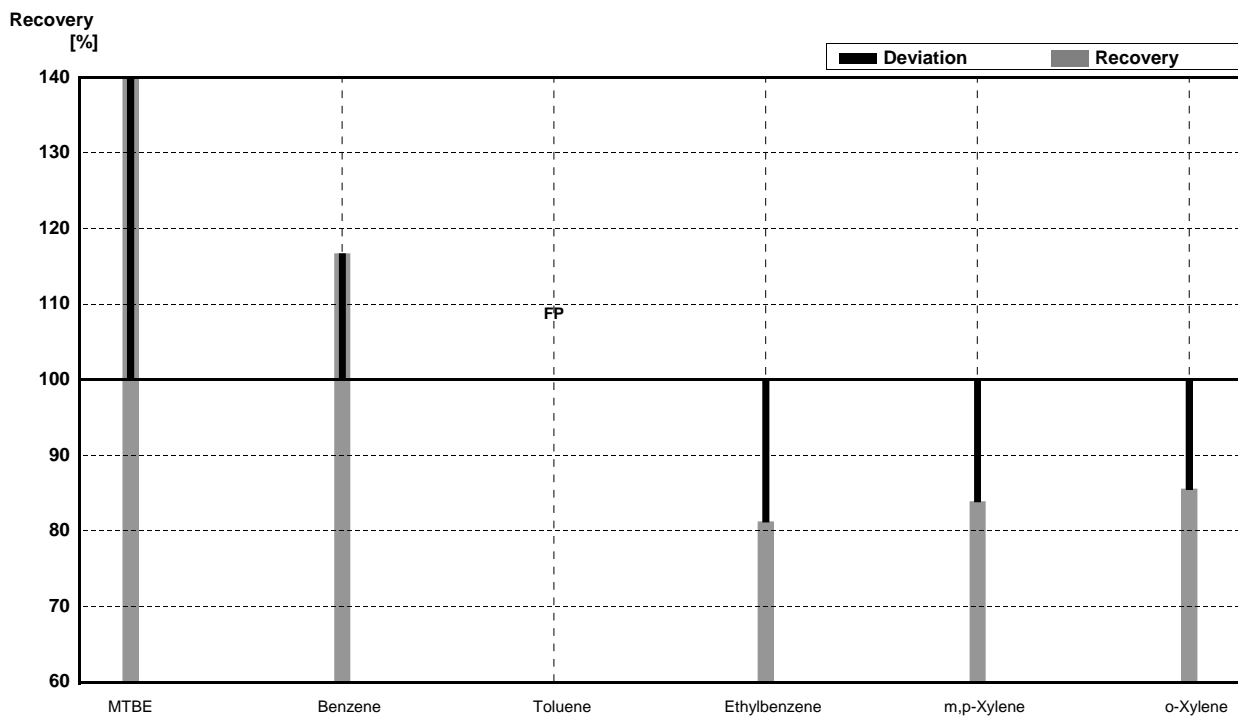
**Sample B9B**  
**Laboratory C**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	3,82	0,19			µg/L	
Benzene	4,27	0,21	4,48	0,67	µg/L	105%
Toluene	3,62	0,18	3,68	0,37	µg/L	102%
Ethylbenzene	0,70	0,04	0,66	0,10	µg/L	94%
m,p-Xylene	3,90	0,20	3,84	0,38	µg/L	98%
o-Xylene	2,65	0,13	2,57	0,26	µg/L	97%



**Sample B9A**  
**Laboratory D**

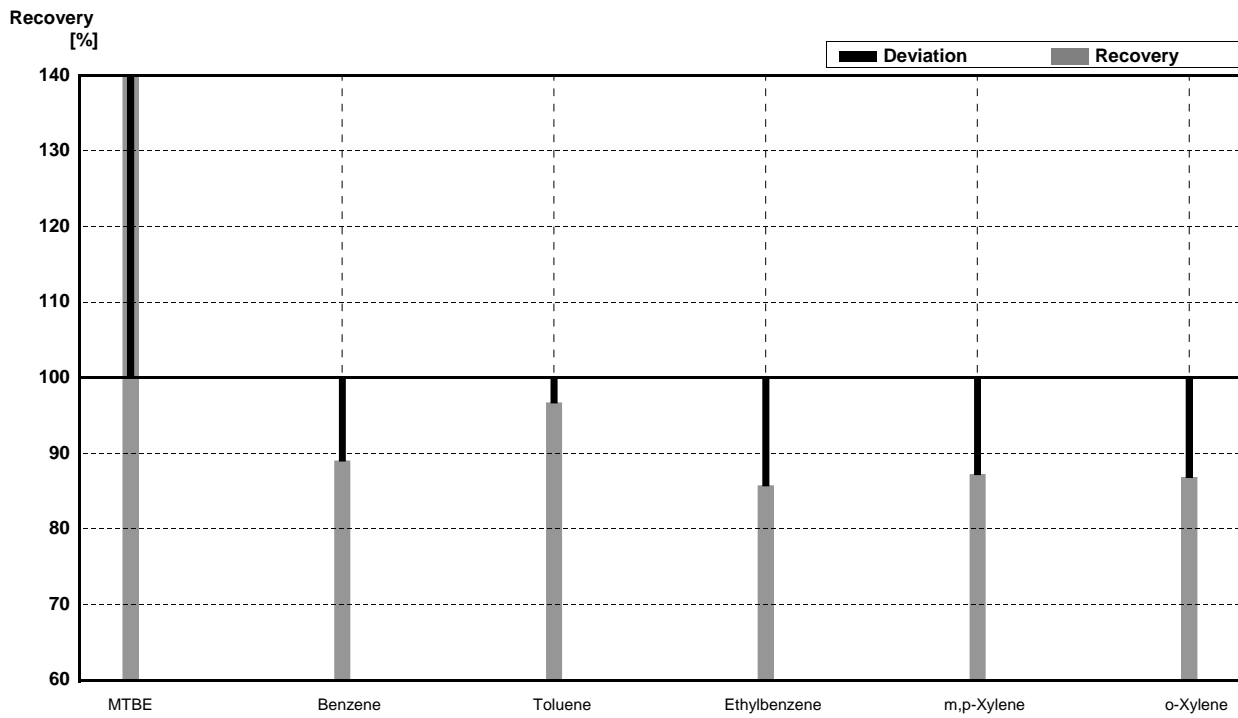
Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	0,49	0,02	1,0	0,05	µg/L	204%
Benzene	0,60	0,03	0,7	0,08	µg/L	117%
Toluene	<0,5		0,8	0,15	µg/L	FP
Ethylbenzene	4,68	0,23	3,8	1,14	µg/L	81%
m,p-Xylene	6,20	0,31	5,2	0,68	µg/L	84%
o-Xylene	1,52	0,08	1,3	0,20	µg/L	86%





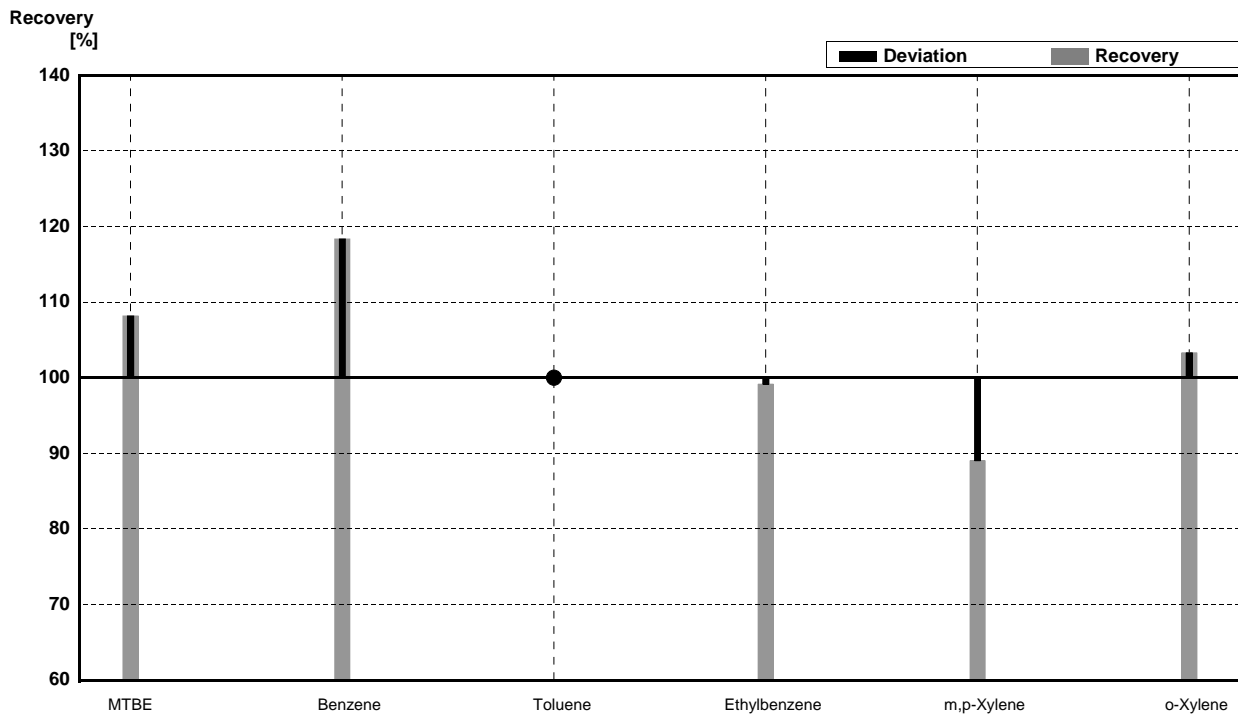
**Sample B9B**  
**Laboratory D**

Parameter	Target value	$\pm U$ (k=2)	Result	$\pm$	Unit	Recovery
MTBE	3,82	0,19	10,3	0,1	$\mu\text{g/L}$	270%
Benzene	4,27	0,21	3,8	0,84	$\mu\text{g/L}$	89%
Toluene	3,62	0,18	3,5	1,0	$\mu\text{g/L}$	97%
Ethylbenzene	0,70	0,04	0,6	0,1	$\mu\text{g/L}$	86%
m,p-Xylene	3,90	0,20	3,4	1,2	$\mu\text{g/L}$	87%
o-Xylene	2,65	0,13	2,3	0,44	$\mu\text{g/L}$	87%



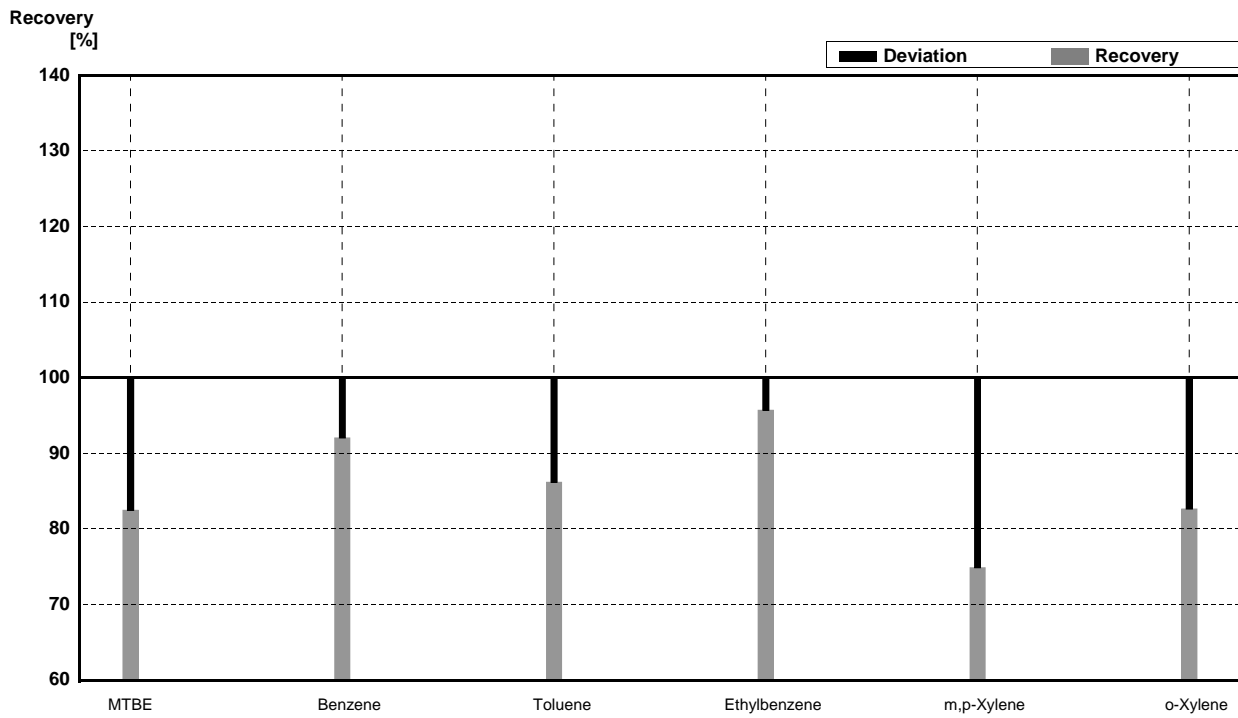
**Sample B9A**  
**Laboratory E**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	0,49	0,02	0,53	0,05	µg/L	108%
Benzene	0,60	0,03	0,71	0,07	µg/L	118%
Toluene	<0,5		<0,1		µg/L	•
Ethylbenzene	4,68	0,23	4,64	0,5	µg/L	99%
m,p-Xylene	6,20	0,31	5,52	0,5	µg/L	89%
o-Xylene	1,52	0,08	1,57	0,2	µg/L	103%



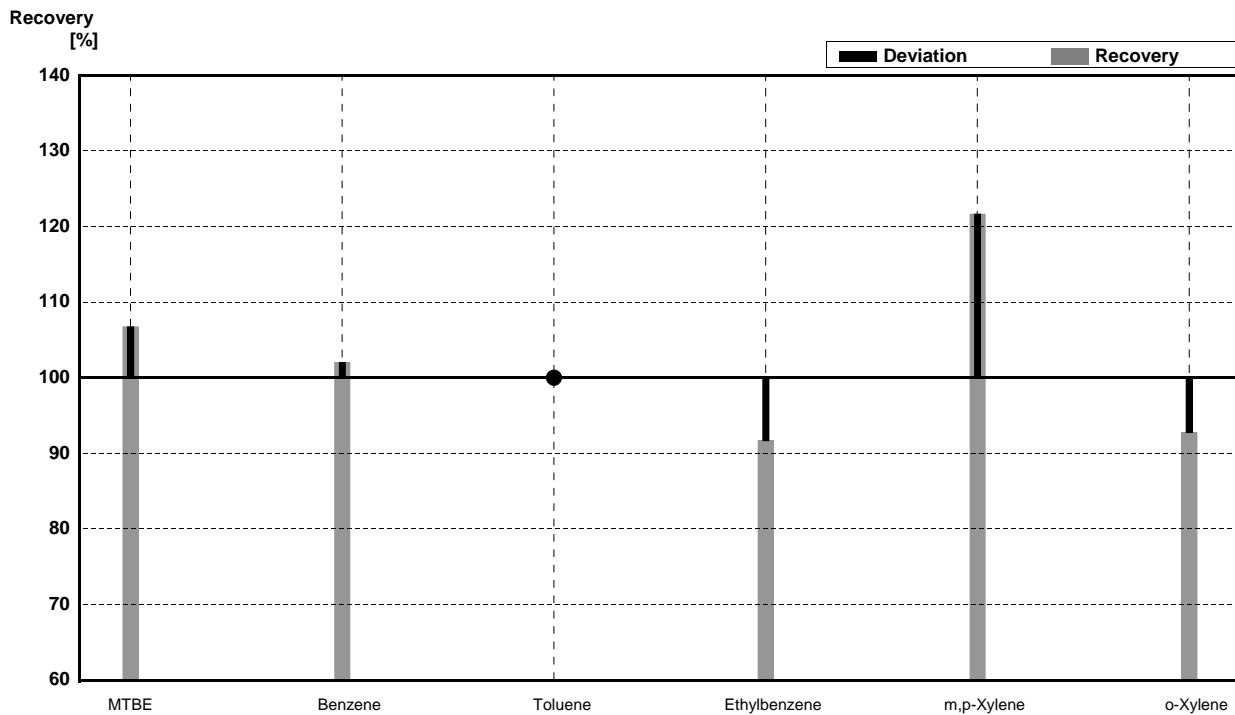
**Sample B9B**  
**Laboratory E**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	3,82	0,19	3,15	0,3	µg/L	82%
Benzene	4,27	0,21	3,93	0,4	µg/L	92%
Toluene	3,62	0,18	3,12	0,3	µg/L	86%
Ethylbenzene	0,70	0,04	0,67	0,07	µg/L	96%
m,p-Xylene	3,90	0,20	2,92	0,3	µg/L	75%
o-Xylene	2,65	0,13	2,19	0,2	µg/L	83%



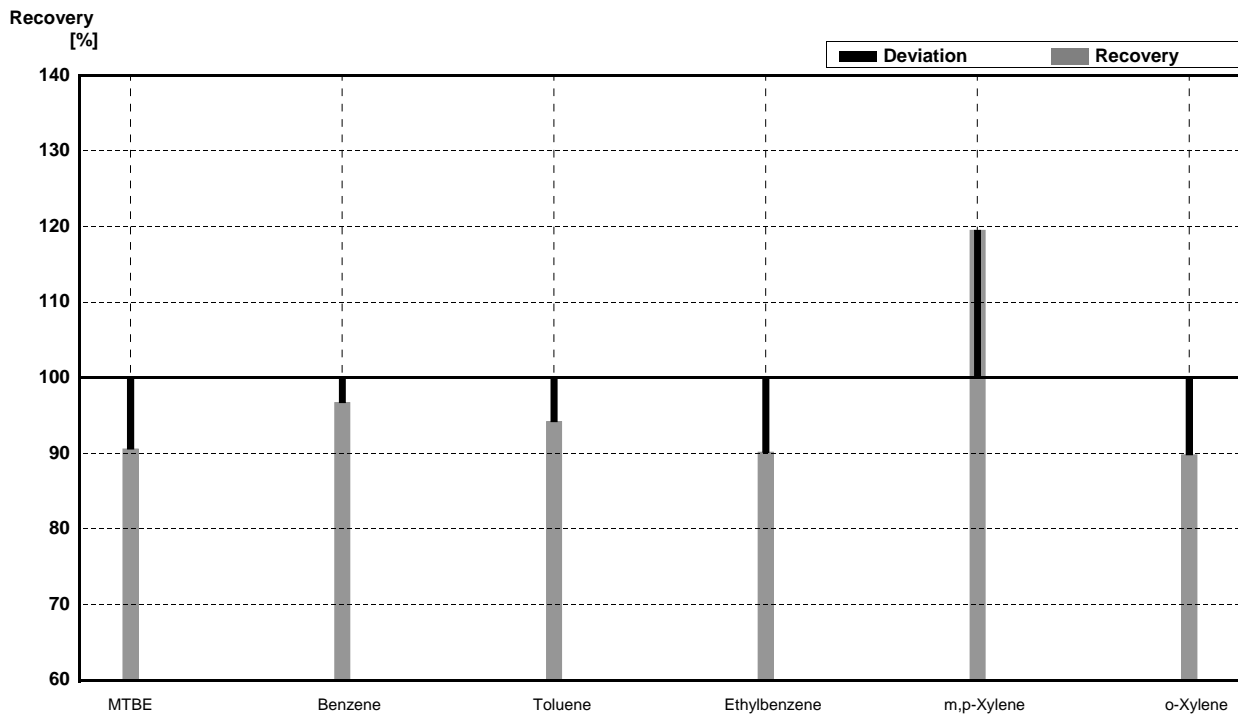
**Sample B9A**  
**Laboratory F**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	0,49	0,02	0,523	0,104	µg/L	107%
Benzene	0,60	0,03	0,612	0,122	µg/L	102%
Toluene	<0,5		<0,02		µg/L	•
Ethylbenzene	4,68	0,23	4,29	0,86	µg/L	92%
m,p-Xylene	6,20	0,31	7,54	1,51	µg/L	122%
o-Xylene	1,52	0,08	1,41	0,28	µg/L	93%



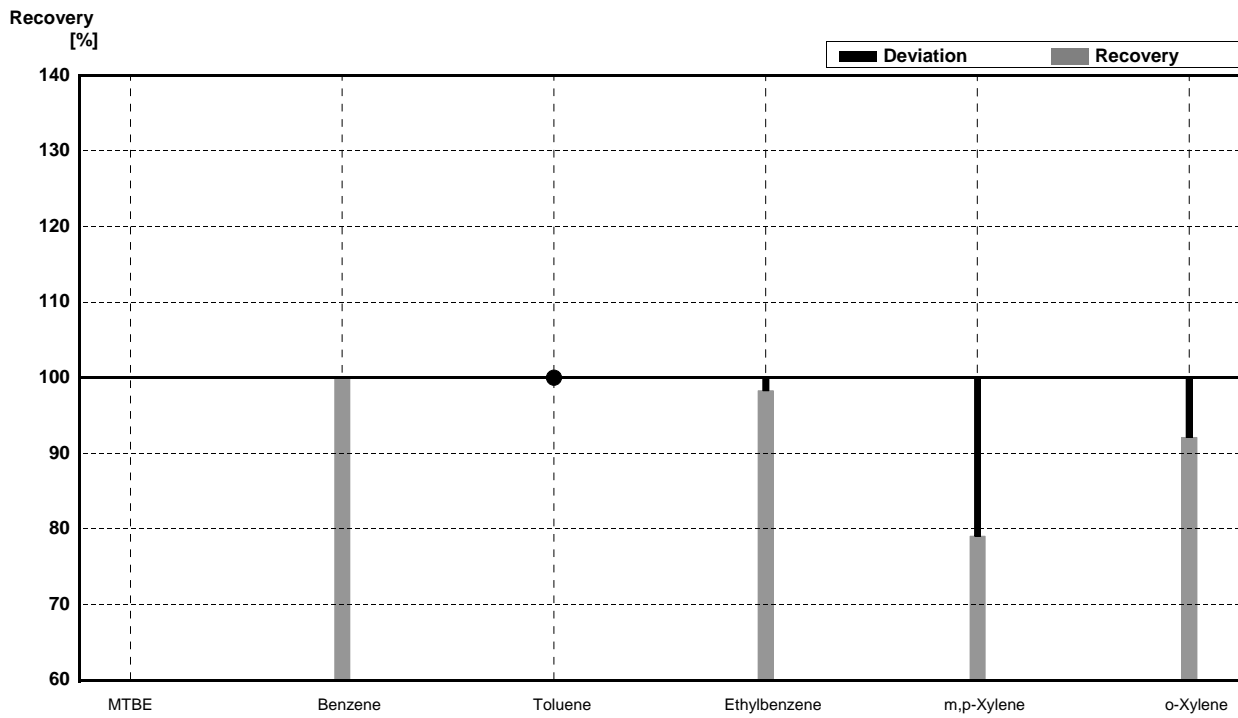
**Sample B9B**  
**Laboratory F**

Parameter	Target value	$\pm U$ (k=2)	Result	$\pm$	Unit	Recovery
MTBE	3,82	0,19	3,46	0,69	$\mu\text{g/L}$	91%
Benzene	4,27	0,21	4,13	0,83	$\mu\text{g/L}$	97%
Toluene	3,62	0,18	3,41	0,68	$\mu\text{g/L}$	94%
Ethylbenzene	0,70	0,04	0,631	0,126	$\mu\text{g/L}$	90%
m,p-Xylene	3,90	0,20	4,66	0,93	$\mu\text{g/L}$	119%
o-Xylene	2,65	0,13	2,38	0,48	$\mu\text{g/L}$	90%



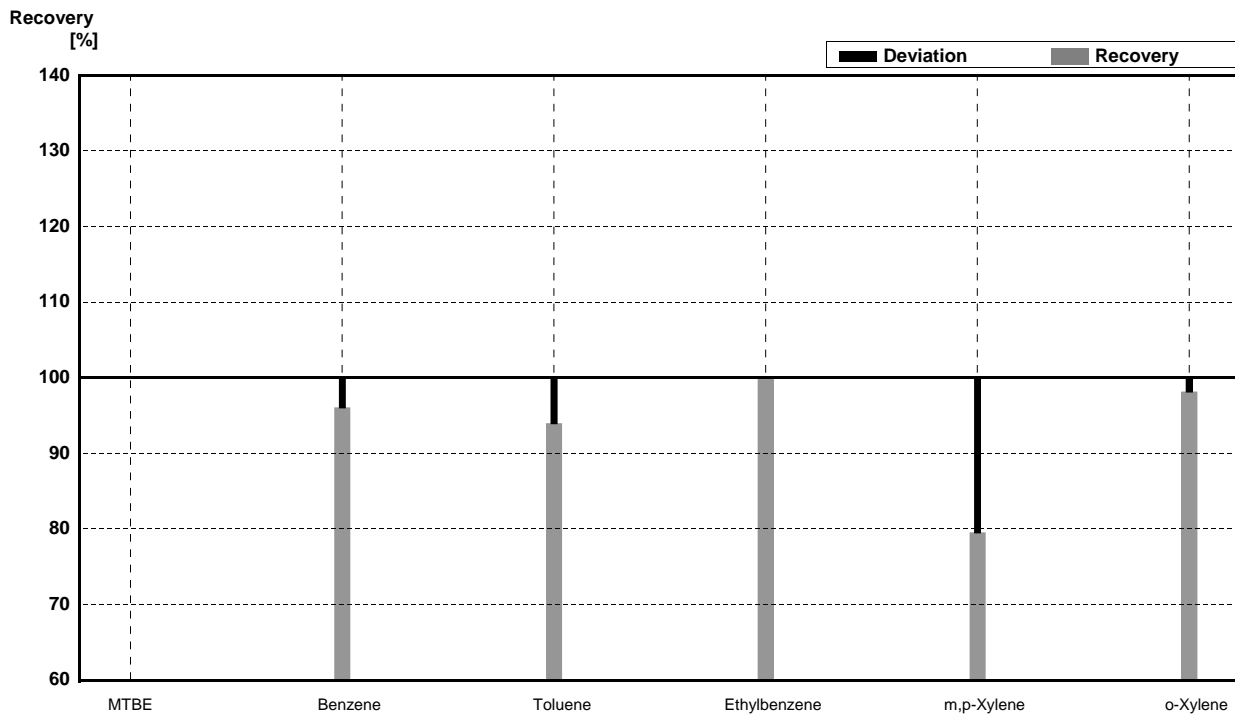
**Sample B9A**  
**Laboratory G**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	0,49	0,02			µg/L	
Benzene	0,60	0,03	0,6	0,2	µg/L	100%
Toluene	<0,5		<0,5	0,2	µg/L	•
Ethylbenzene	4,68	0,23	4,6	0,5	µg/L	98%
m,p-Xylene	6,20	0,31	4,9	0,5	µg/L	79%
o-Xylene	1,52	0,08	1,4	0,2	µg/L	92%



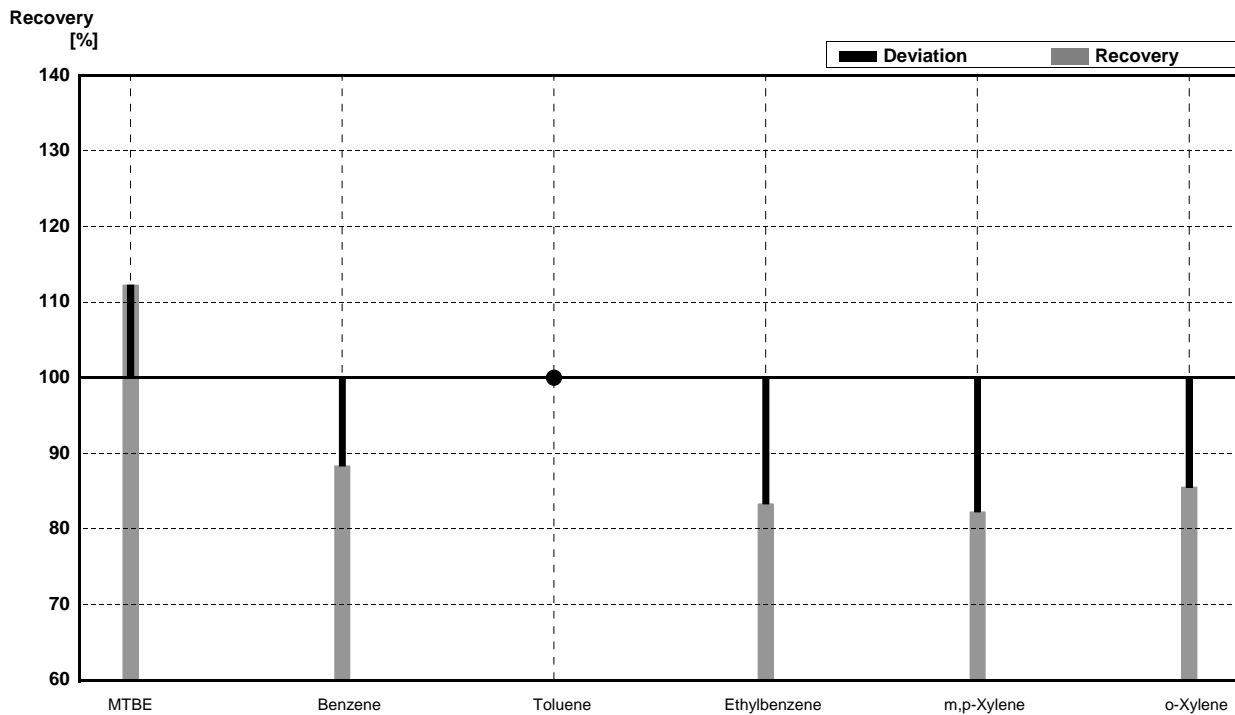
**Sample B9B**  
**Laboratory G**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	3,82	0,19			µg/L	
Benzene	4,27	0,21	4,1	0,4	µg/L	96%
Toluene	3,62	0,18	3,4	0,4	µg/L	94%
Ethylbenzene	0,70	0,04	0,7	0,2	µg/L	100%
m,p-Xylene	3,90	0,20	3,1	0,4	µg/L	79%
o-Xylene	2,65	0,13	2,6	0,3	µg/L	98%



**Sample B9A**  
**Laboratory H**

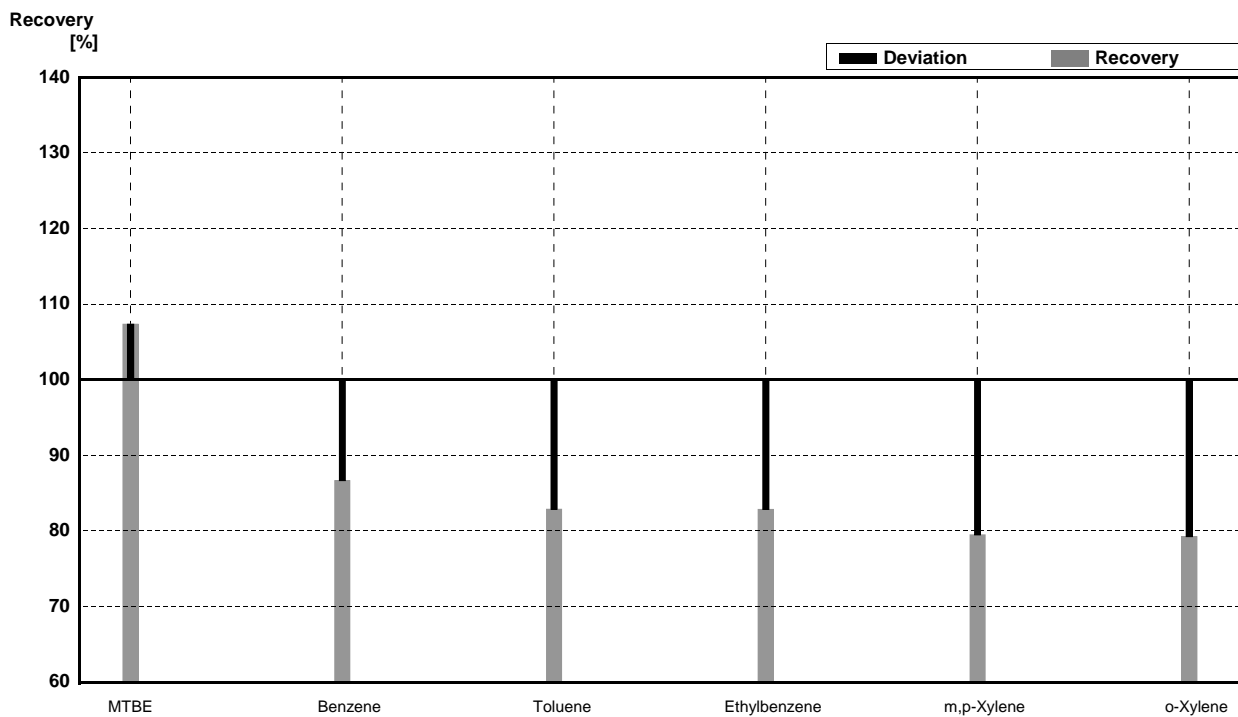
Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	0,49	0,02	0,55	0,055	µg/L	112%
Benzene	0,60	0,03	0,53	0,053	µg/L	88%
Toluene	<0,5		<0,010	0,001	µg/L	•
Ethylbenzene	4,68	0,23	3,9	0,39	µg/L	83%
m,p-Xylene	6,20	0,31	5,1	0,51	µg/L	82%
o-Xylene	1,52	0,08	1,3	0,13	µg/L	86%





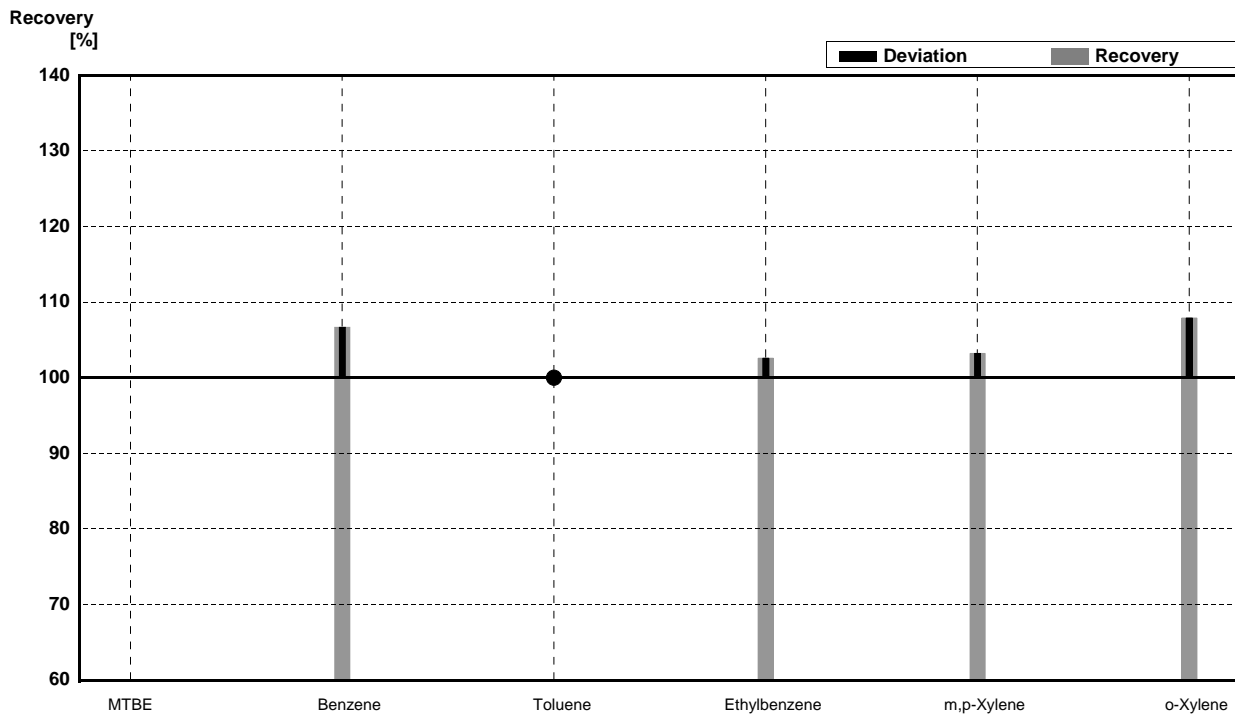
**Sample B9B**  
**Laboratory H**

Parameter	Target value	$\pm U$ (k=2)	Result	$\pm$	Unit	Recovery
MTBE	3,82	0,19	4,1	0,41	$\mu\text{g/L}$	107%
Benzene	4,27	0,21	3,7	0,37	$\mu\text{g/L}$	87%
Toluene	3,62	0,18	3,0	0,30	$\mu\text{g/L}$	83%
Ethylbenzene	0,70	0,04	0,58	0,058	$\mu\text{g/L}$	83%
m,p-Xylene	3,90	0,20	3,1	0,31	$\mu\text{g/L}$	79%
o-Xylene	2,65	0,13	2,1	0,21	$\mu\text{g/L}$	79%



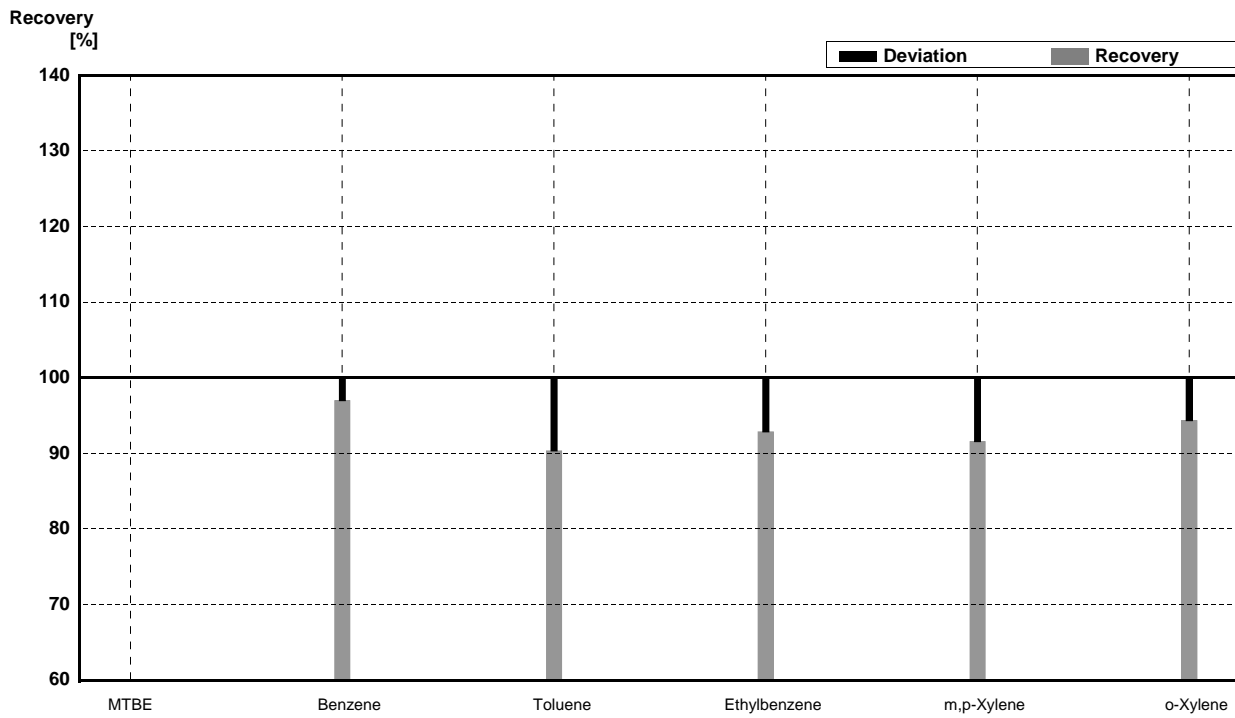
**Sample B9A**  
**Laboratory I**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	0,49	0,02			µg/L	
Benzene	0,60	0,03	0,64	0,20	µg/L	107%
Toluene	<0,5		<0,50		µg/L	•
Ethylbenzene	4,68	0,23	4,80	0,30	µg/L	103%
m,p-Xylene	6,20	0,31	6,40	0,40	µg/L	103%
o-Xylene	1,52	0,08	1,64	0,20	µg/L	108%



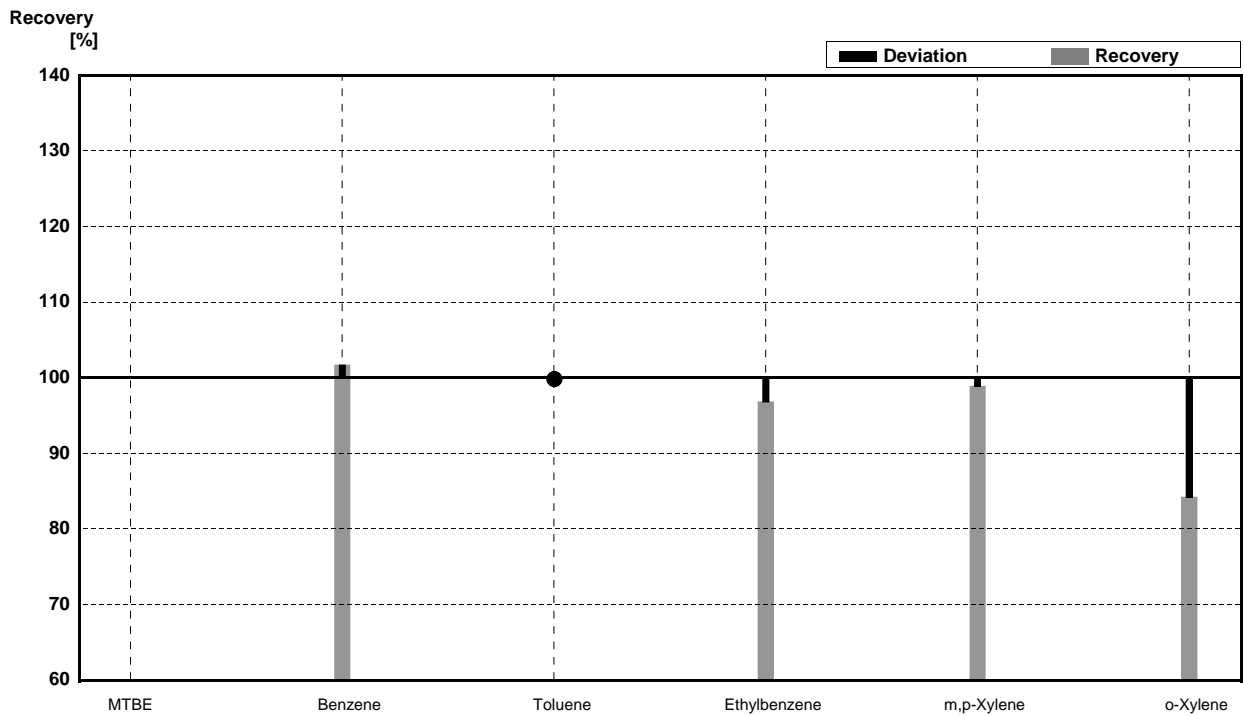
**Sample B9B**  
**Laboratory I**

Parameter	Target value	$\pm U$ (k=2)	Result	$\pm$	Unit	Recovery
MTBE	3,82	0,19			$\mu\text{g/L}$	
Benzene	4,27	0,21	4,14	0,20	$\mu\text{g/L}$	97%
Toluene	3,62	0,18	3,27	0,20	$\mu\text{g/L}$	90%
Ethylbenzene	0,70	0,04	0,65	0,20	$\mu\text{g/L}$	93%
m,p-Xylene	3,90	0,20	3,57	0,30	$\mu\text{g/L}$	92%
o-Xylene	2,65	0,13	2,50	0,20	$\mu\text{g/L}$	94%



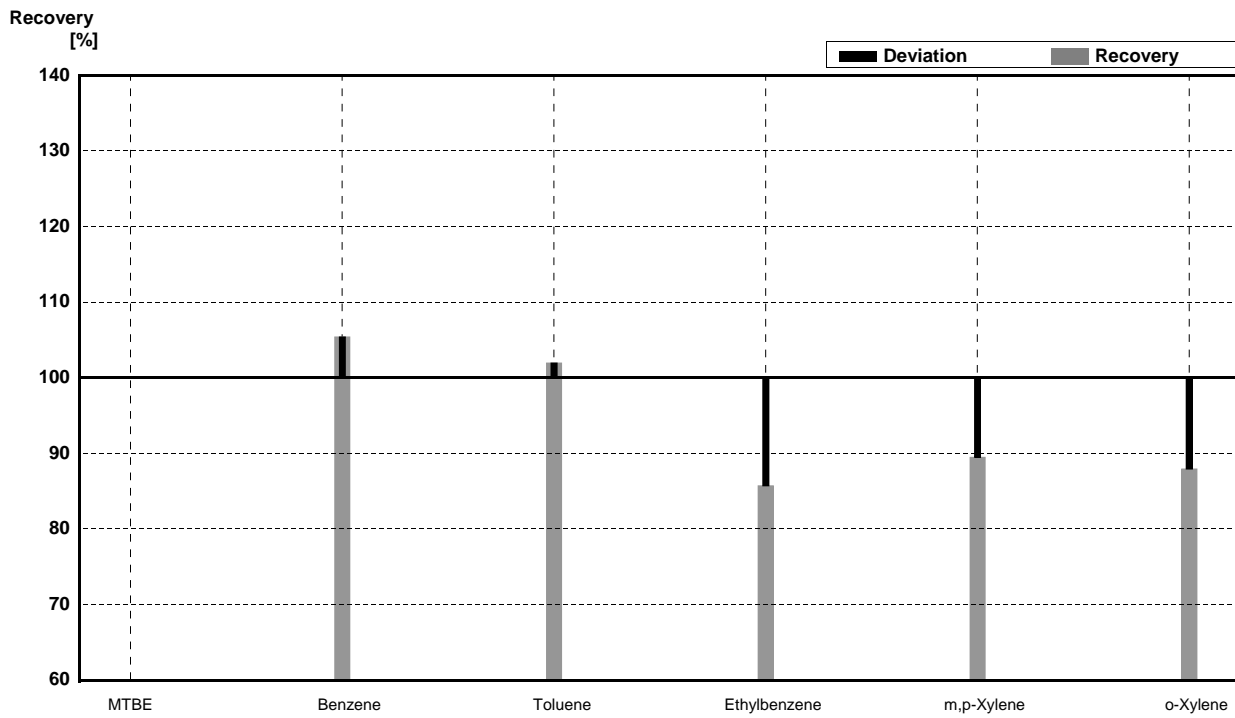
**Sample B9A**  
**Laboratory J**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	0,49	0,02			µg/L	
Benzene	0,60	0,03	0,61	0,18	µg/L	102%
Toluene	<0,5		0,00	0,00	µg/L	•
Ethylbenzene	4,68	0,23	4,53	1,36	µg/L	97%
m,p-Xylene	6,20	0,31	6,13	1,84	µg/L	99%
o-Xylene	1,52	0,08	1,28	0,39	µg/L	84%



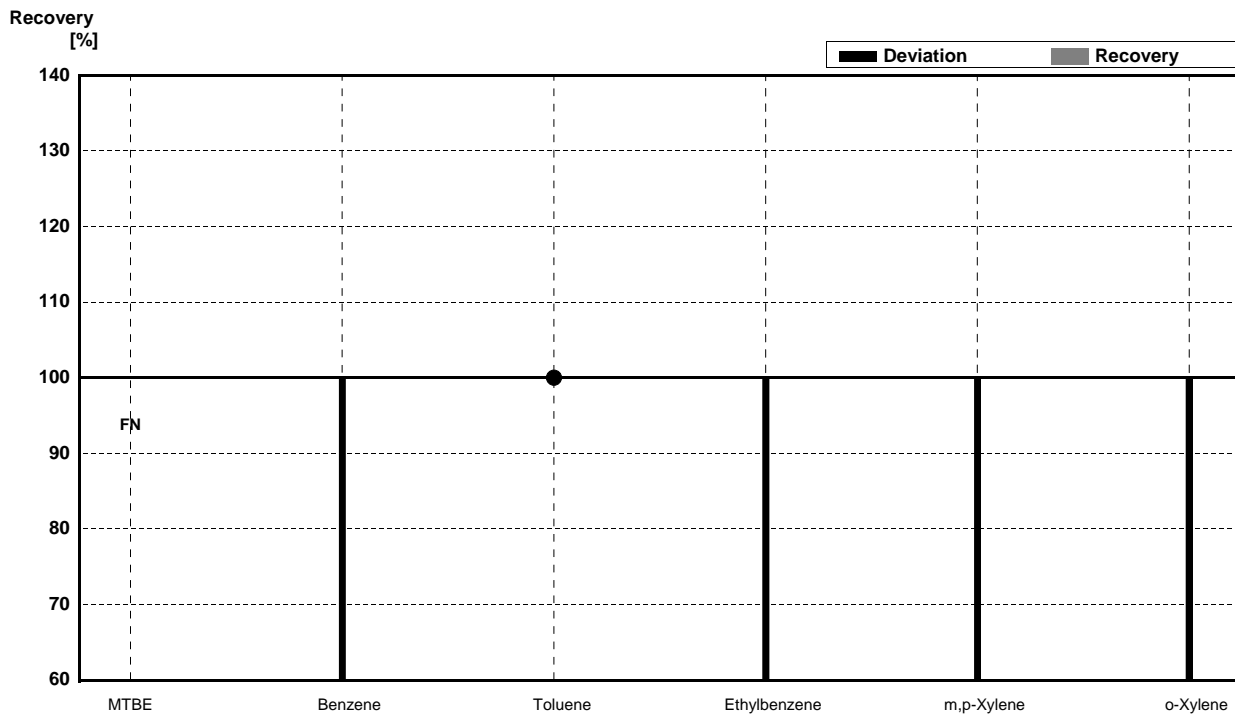
**Sample B9B**  
**Laboratory J**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	3,82	0,19			µg/L	
Benzene	4,27	0,21	4,50	1,35	µg/L	105%
Toluene	3,62	0,18	3,69	1,11	µg/L	102%
Ethylbenzene	0,70	0,04	0,60	0,18	µg/L	86%
m,p-Xylene	3,90	0,20	3,49	1,05	µg/L	89%
o-Xylene	2,65	0,13	2,33	0,70	µg/L	88%



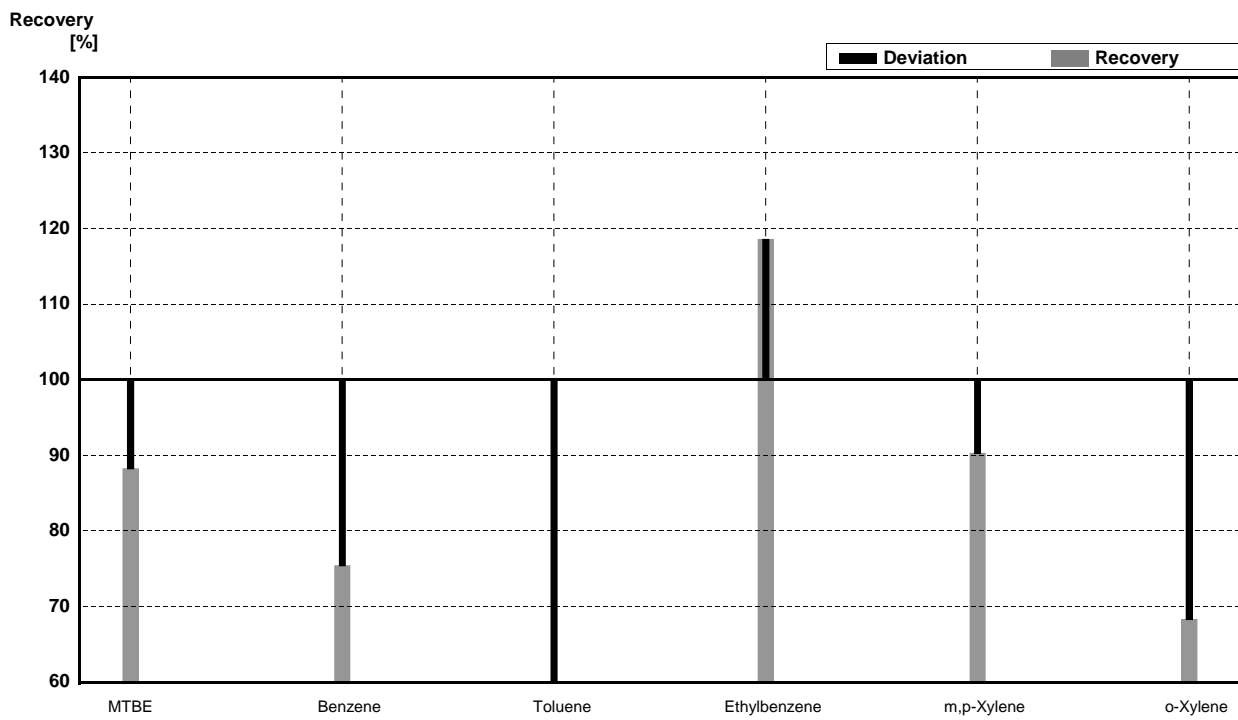
**Sample B9A**  
**Laboratory K**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	0,49	0,02	<0,20		µg/L	FN
Benzene	0,60	0,03	0,26		µg/L	43%
Toluene	<0,5		<0,20		µg/L	•
Ethylbenzene	4,68	0,23	2,04		µg/L	44%
m,p-Xylene	6,20	0,31	3,23		µg/L	52%
o-Xylene	1,52	0,08	0,69		µg/L	45%



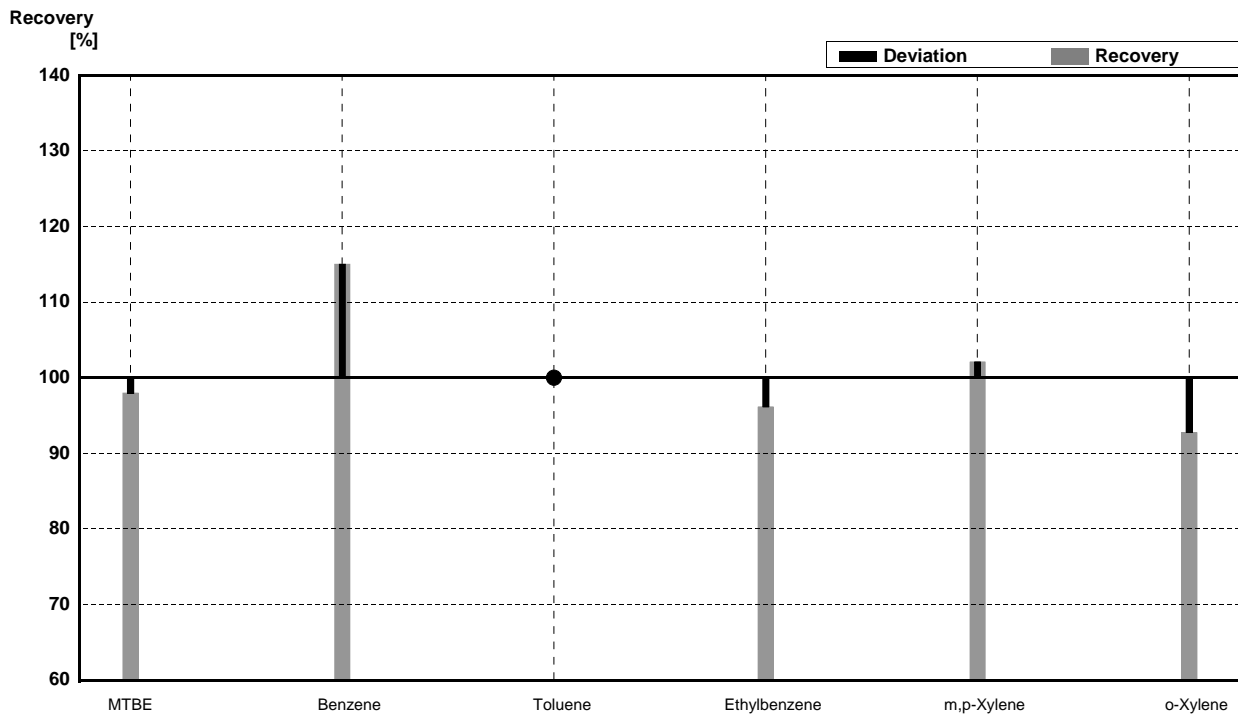
**Sample B9B**  
**Laboratory K**

Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	3,82	0,19	3,37		$\mu\text{g/L}$	88%
Benzene	4,27	0,21	3,22		$\mu\text{g/L}$	75%
Toluene	3,62	0,18	1,90		$\mu\text{g/L}$	52%
Ethylbenzene	0,70	0,04	0,83		$\mu\text{g/L}$	119%
m,p-Xylene	3,90	0,20	3,52		$\mu\text{g/L}$	90%
o-Xylene	2,65	0,13	1,81		$\mu\text{g/L}$	68%



**Sample B9A**  
**Laboratory L**

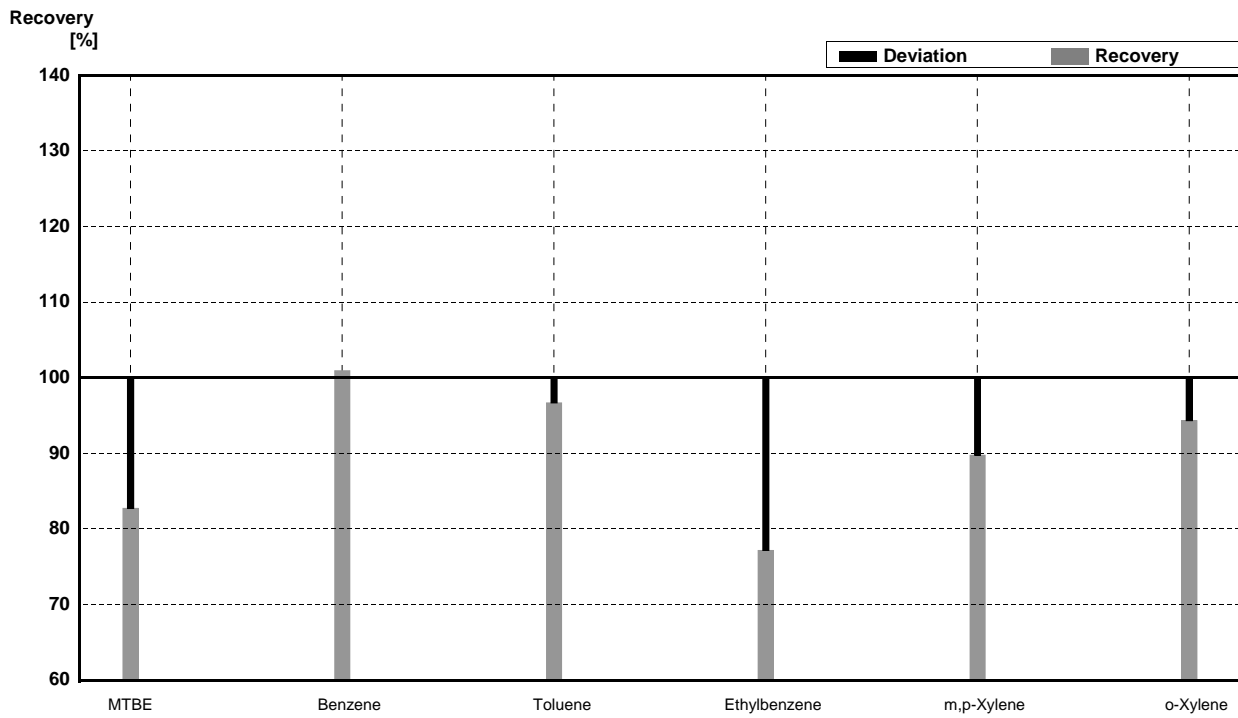
Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	0,49	0,02	0,48	0,08	µg/L	98%
Benzene	0,60	0,03	0,69	0,10	µg/L	115%
Toluene	<0,5		<0,2		µg/L	•
Ethylbenzene	4,68	0,23	4,5	0,77	µg/L	96%
m,p-Xylene	6,20	0,31	6,33	1,14	µg/L	102%
o-Xylene	1,52	0,08	1,41	0,24	µg/L	93%





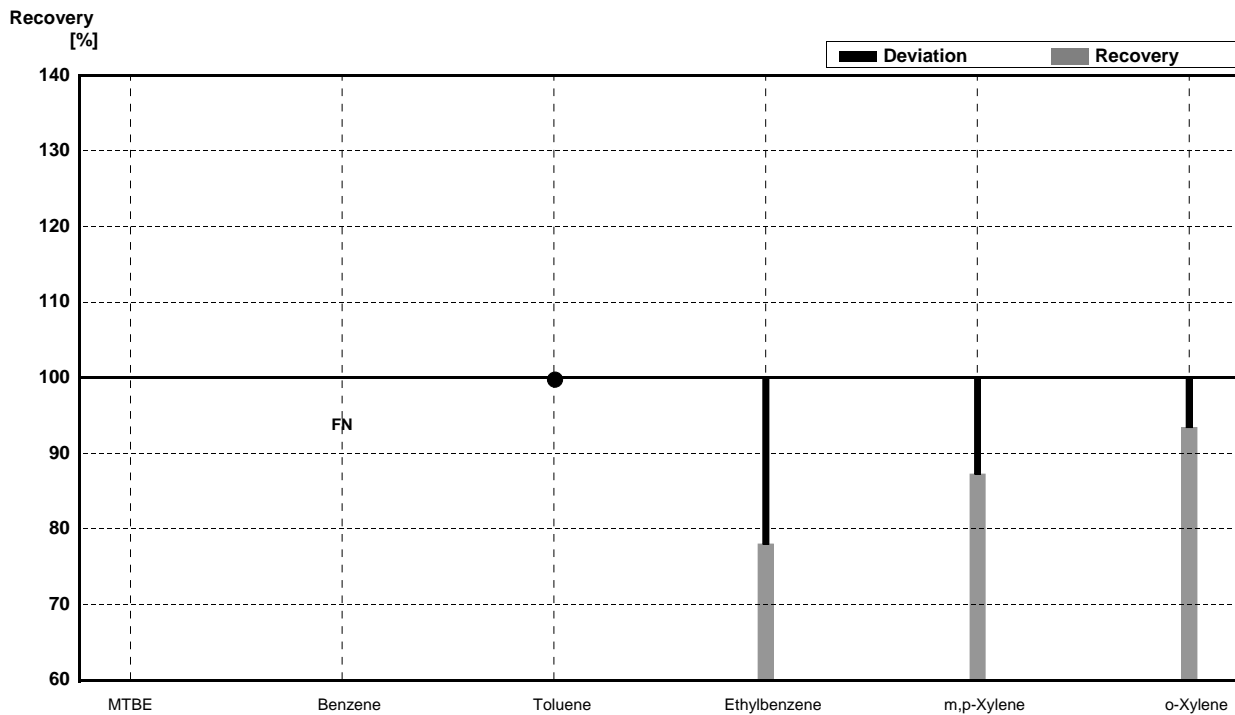
**Sample B9B**  
**Laboratory L**

Parameter	Target value	$\pm U$ (k=2)	Result	$\pm$	Unit	Recovery
MTBE	3,82	0,19	3,16	0,51	$\mu\text{g/L}$	83%
Benzene	4,27	0,21	4,31	0,65	$\mu\text{g/L}$	101%
Toluene	3,62	0,18	3,50	0,67	$\mu\text{g/L}$	97%
Ethylbenzene	0,70	0,04	0,54	0,09	$\mu\text{g/L}$	77%
m,p-Xylene	3,90	0,20	3,50	0,63	$\mu\text{g/L}$	90%
o-Xylene	2,65	0,13	2,50	0,43	$\mu\text{g/L}$	94%



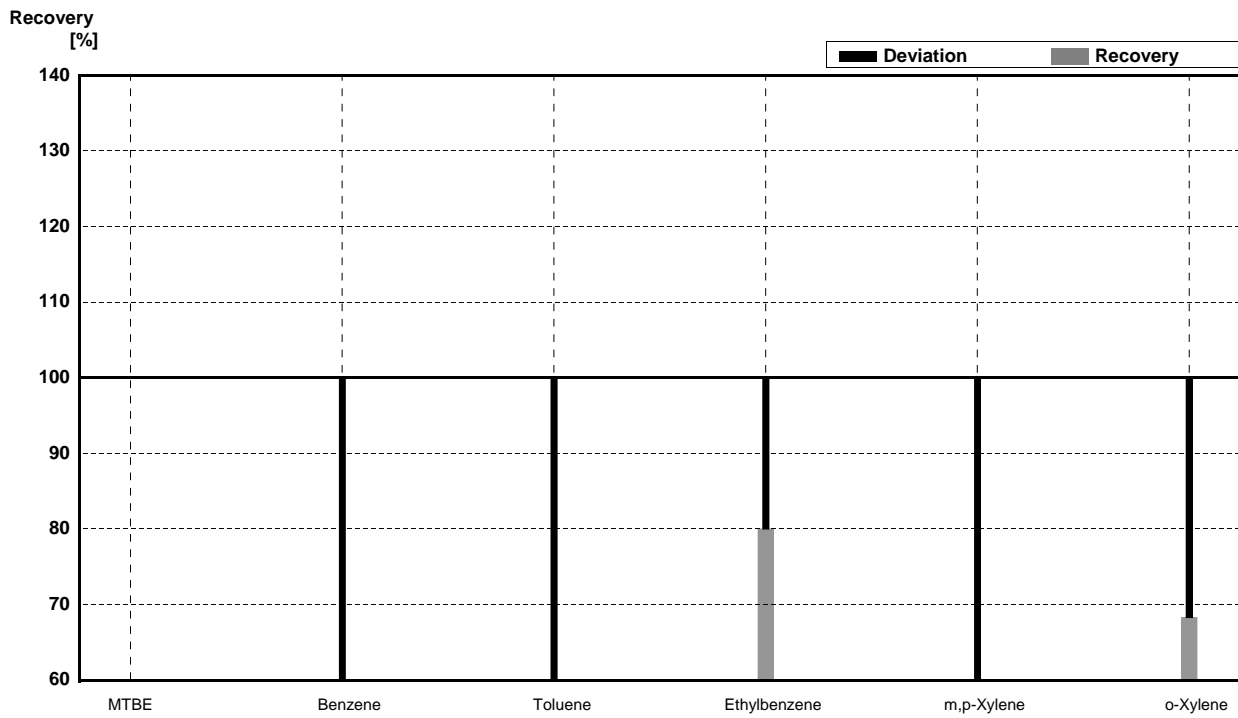
**Sample B9A**  
**Laboratory M**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	0,49	0,02			µg/L	
Benzene	0,60	0,03	<0,50		µg/L	FN
Toluene	<0,5		0,51	0,05	µg/L	•
Ethylbenzene	4,68	0,23	3,65	0,37	µg/L	78%
m,p-Xylene	6,20	0,31	5,41	0,54	µg/L	87%
o-Xylene	1,52	0,08	1,42	0,14	µg/L	93%



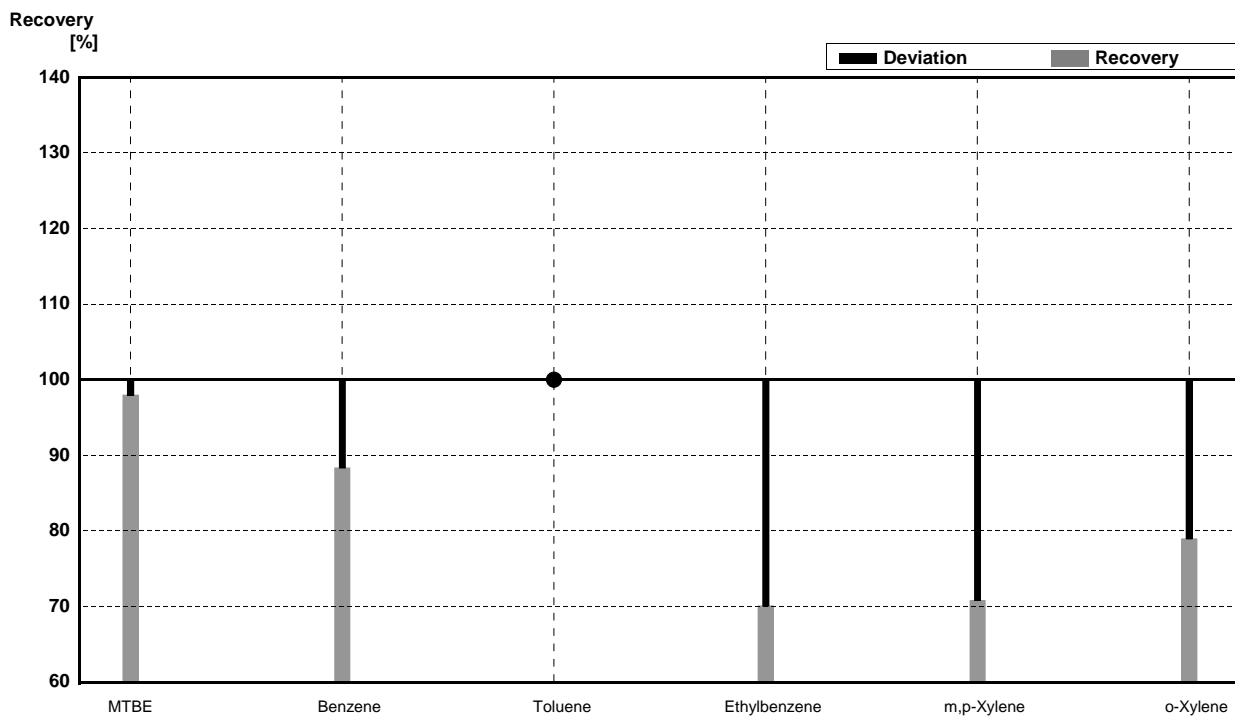
**Sample B9B**  
**Laboratory M**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	3,82	0,19			µg/L	
Benzene	4,27	0,21	2,01	0,2	µg/L	47%
Toluene	3,62	0,18	1,86	0,19	µg/L	51%
Ethylbenzene	0,70	0,04	0,56	0,06	µg/L	80%
m,p-Xylene	3,90	0,20	2,20	0,22	µg/L	56%
o-Xylene	2,65	0,13	1,81	0,18	µg/L	68%



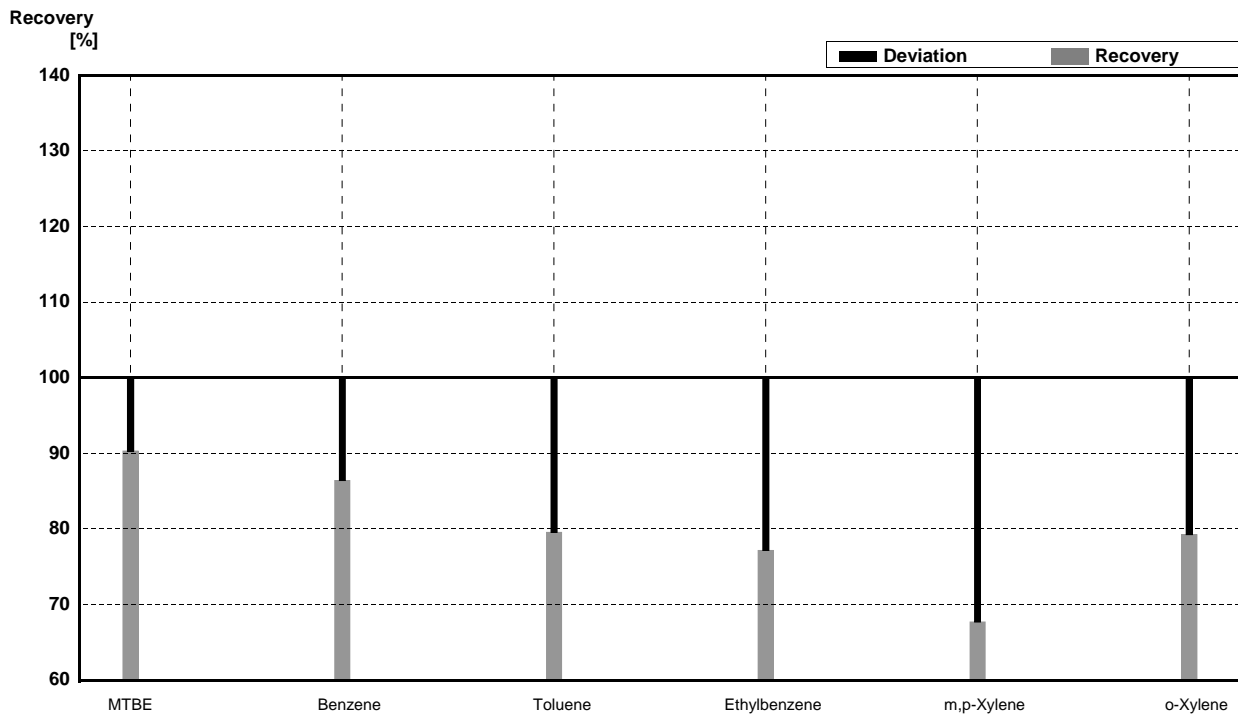
**Sample B9A**  
**Laboratory N**

Parameter	Target value	$\pm U$ (k=2)	Result	$\pm$	Unit	Recovery
MTBE	0,49	0,02	0,48	0,087	$\mu\text{g/L}$	98%
Benzene	0,60	0,03	0,53	0,095	$\mu\text{g/L}$	88%
Toluene	<0,5		<0,5	0,091	$\mu\text{g/L}$	•
Ethylbenzene	4,68	0,23	3,28	0,59	$\mu\text{g/L}$	70%
m,p-Xylene	6,20	0,31	4,39	0,789	$\mu\text{g/L}$	71%
o-Xylene	1,52	0,08	1,2	0,216	$\mu\text{g/L}$	79%



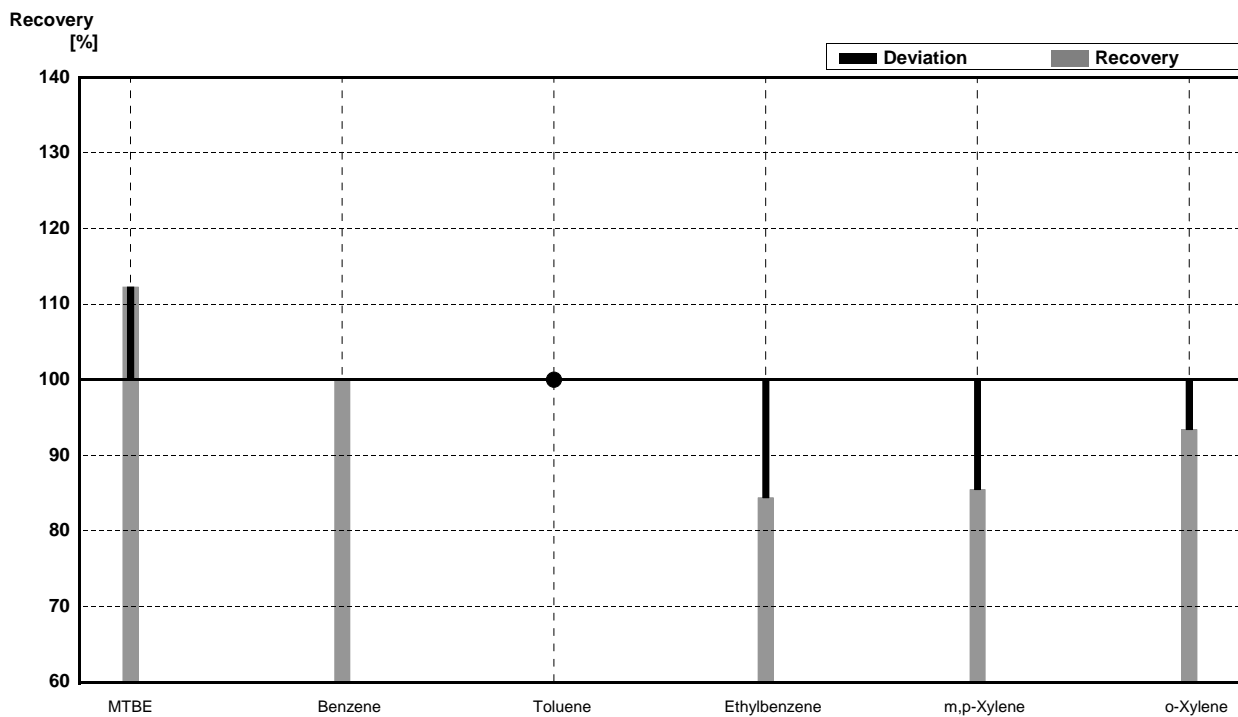
**Sample B9B**  
**Laboratory N**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	3,82	0,19	3,45	0,621	µg/L	90%
Benzene	4,27	0,21	3,69	0,663	µg/L	86%
Toluene	3,62	0,18	2,88	0,518	µg/L	80%
Ethylbenzene	0,70	0,04	0,54	0,097	µg/L	77%
m,p-Xylene	3,90	0,20	2,64	0,476	µg/L	68%
o-Xylene	2,65	0,13	2,10	0,377	µg/L	79%



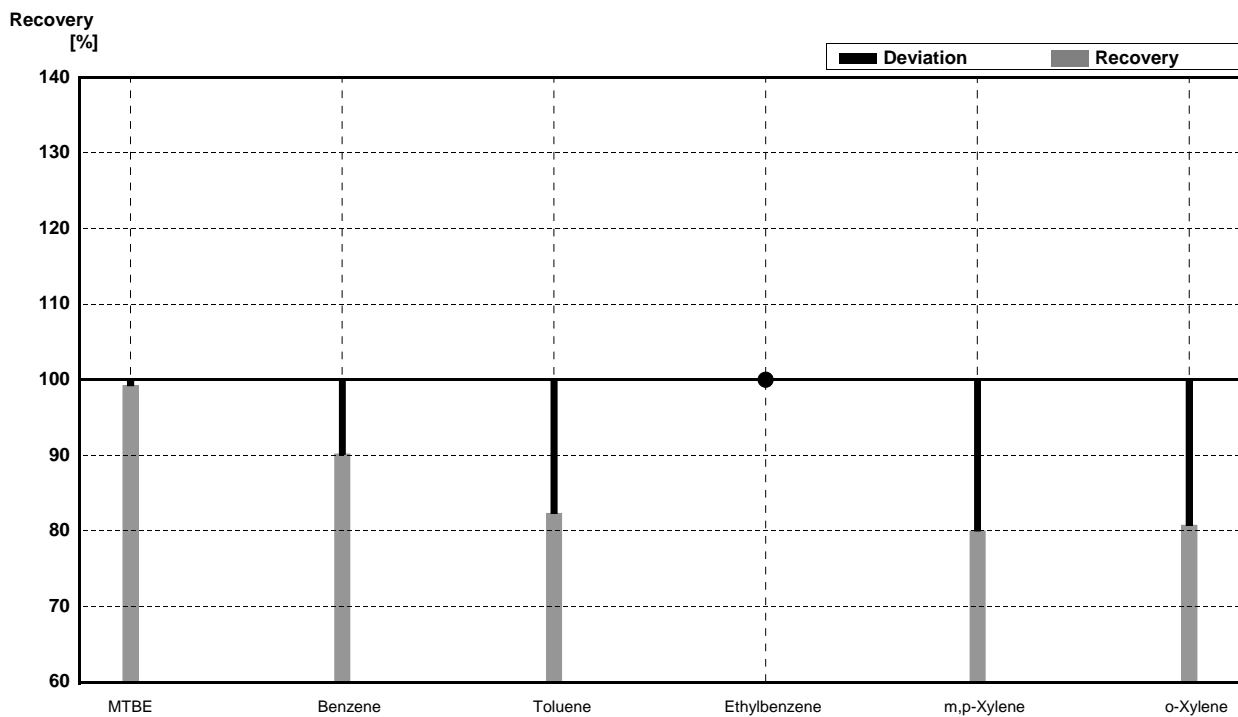
**Sample B9A**  
**Laboratory O**

Parameter	Target value	$\pm U$ (k=2)	Result	$\pm$	Unit	Recovery
MTBE	0,49	0,02	0,55	0,21	$\mu\text{g/L}$	112%
Benzene	0,60	0,03	0,60	0,14	$\mu\text{g/L}$	100%
Toluene	<0,5		<1		$\mu\text{g/L}$	•
Ethylbenzene	4,68	0,23	3,95	0,93	$\mu\text{g/L}$	84%
m,p-Xylene	6,20	0,31	5,30	1,25	$\mu\text{g/L}$	85%
o-Xylene	1,52	0,08	1,42	0,34	$\mu\text{g/L}$	93%



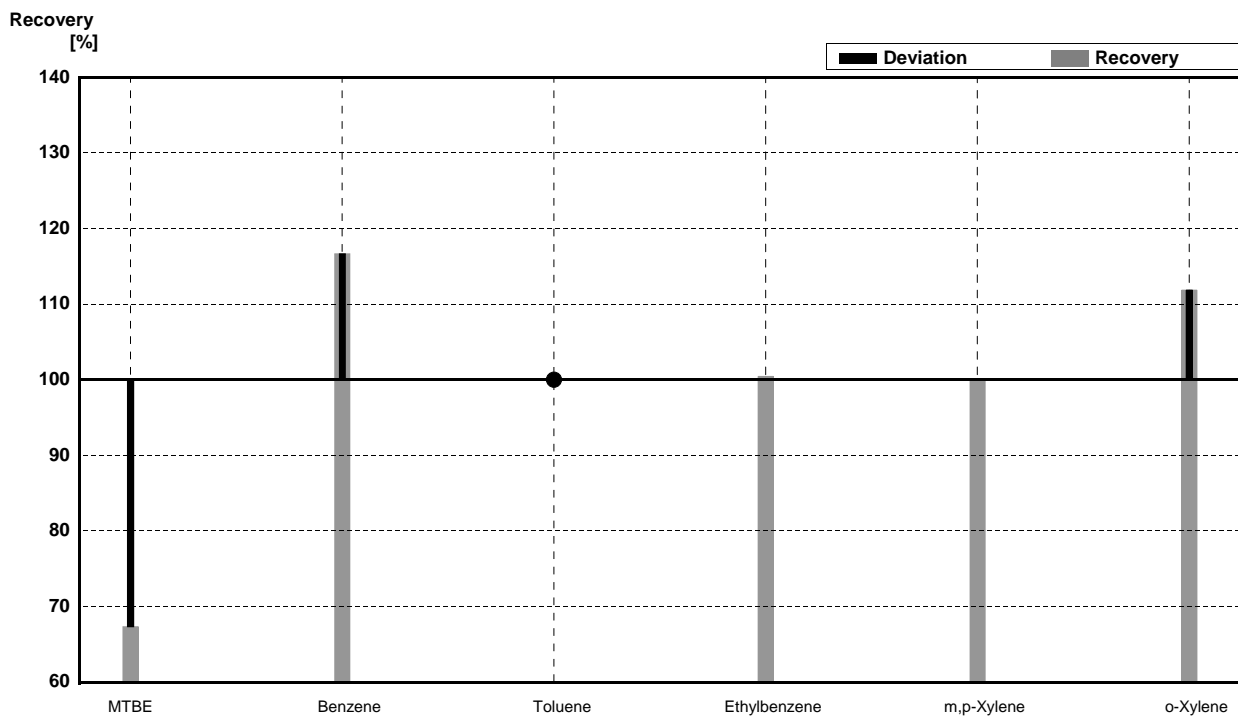
Sample **B9B**  
 Laboratory **O**

Parameter	Target value	$\pm U$ (k=2)	Result	$\pm$	Unit	Recovery
MTBE	3,82	0,19	3,79	1,43	$\mu\text{g/L}$	99%
Benzene	4,27	0,21	3,85	0,91	$\mu\text{g/L}$	90%
Toluene	3,62	0,18	2,98	0,70	$\mu\text{g/L}$	82%
Ethylbenzene	0,70	0,04	<1		$\mu\text{g/L}$	•
m,p-Xylene	3,90	0,20	3,12	0,74	$\mu\text{g/L}$	80%
o-Xylene	2,65	0,13	2,14	0,50	$\mu\text{g/L}$	81%



**Sample B9A**  
**Laboratory P**

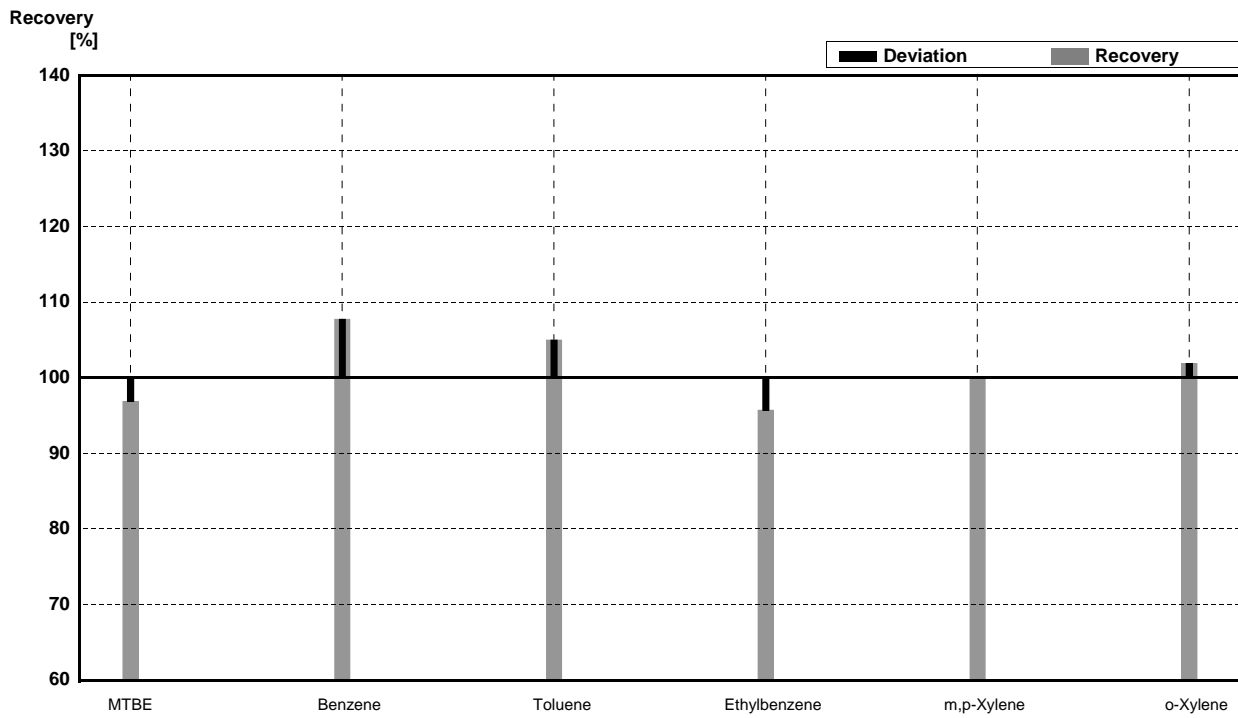
Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	0,49	0,02	0,33	0,066	$\mu\text{g/L}$	67%
Benzene	0,60	0,03	0,70	0,14	$\mu\text{g/L}$	117%
Toluene	<0,5		<0,35	0,069	$\mu\text{g/L}$	•
Ethylbenzene	4,68	0,23	4,7	0,94	$\mu\text{g/L}$	100%
m,p-Xylene	6,20	0,31	6,2	1,2	$\mu\text{g/L}$	100%
o-Xylene	1,52	0,08	1,7	0,33	$\mu\text{g/L}$	112%





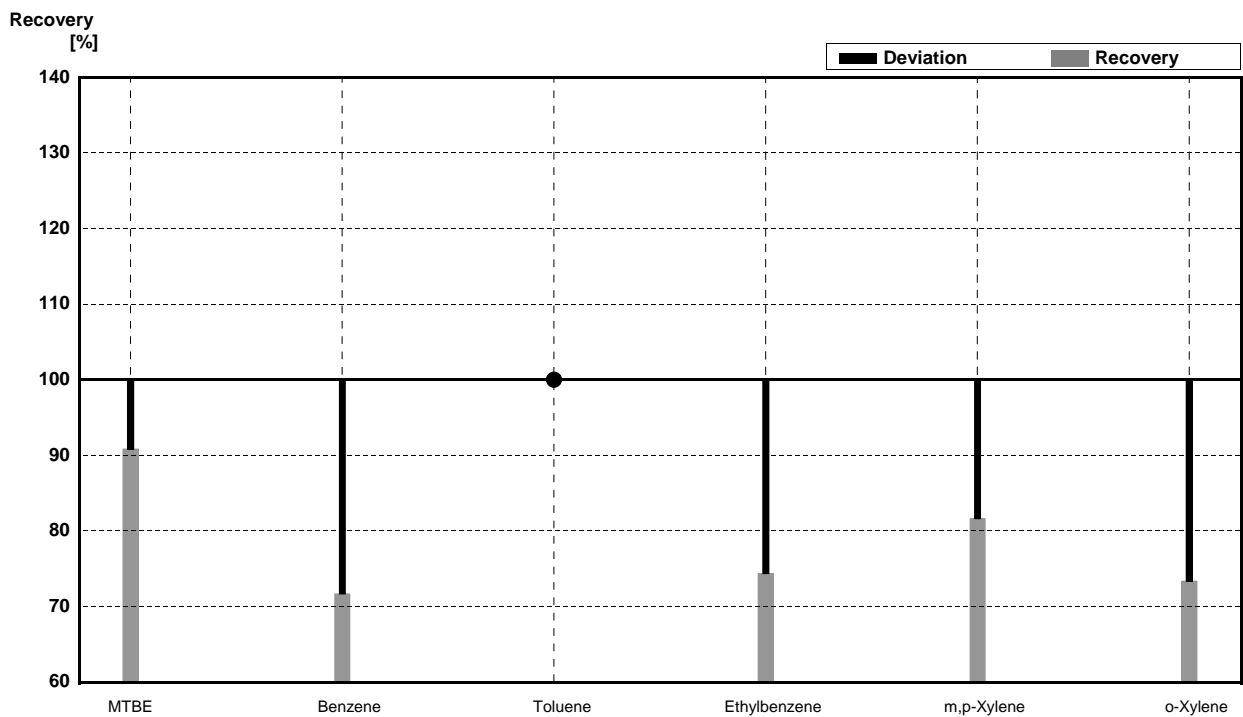
**Sample B9B**  
**Laboratory P**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	3,82	0,19	3,7	0,73	µg/L	97%
Benzene	4,27	0,21	4,6	0,92	µg/L	108%
Toluene	3,62	0,18	3,8	0,76	µg/L	105%
Ethylbenzene	0,70	0,04	0,67	0,13	µg/L	96%
m,p-Xylene	3,90	0,20	3,9	0,77	µg/L	100%
o-Xylene	2,65	0,13	2,7	0,53	µg/L	102%



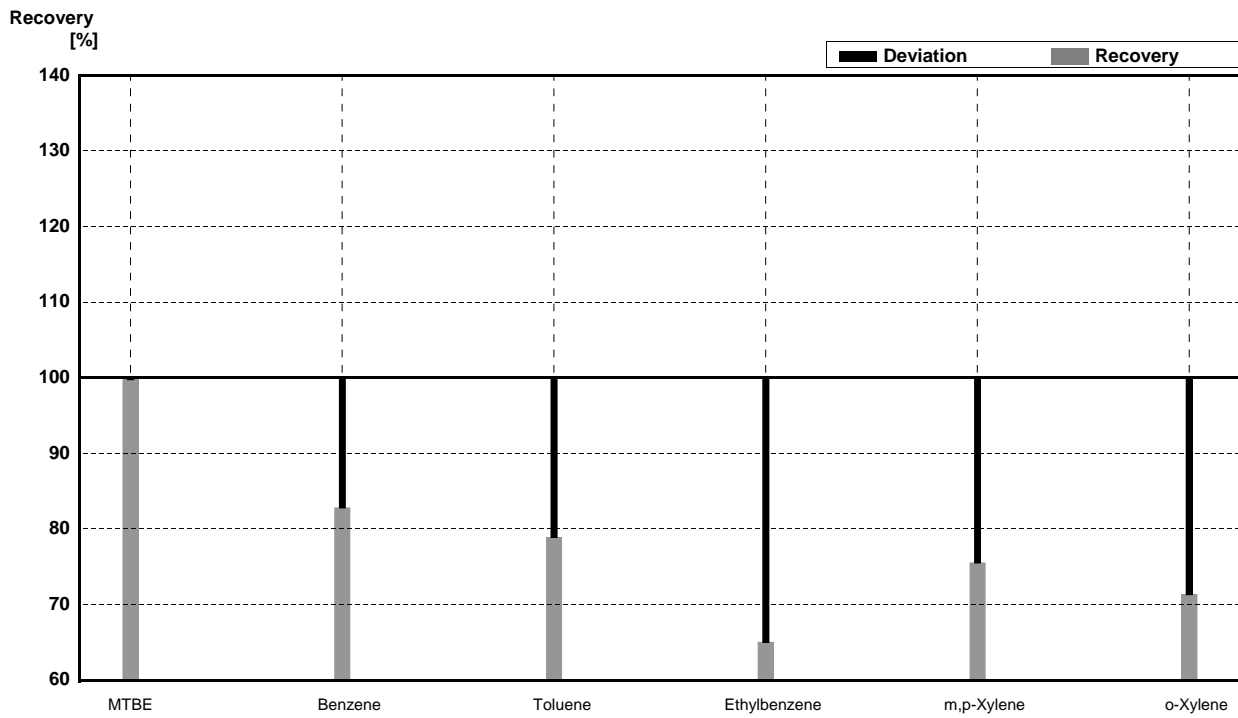
**Sample B9A**  
**Laboratory Q**

Parameter	Target value	$\pm U$ (k=2)	Result	$\pm$	Unit	Recovery
MTBE	0,49	0,02	0,445	0,167	$\mu\text{g/L}$	91%
Benzene	0,60	0,03	0,430	0,130	$\mu\text{g/L}$	72%
Toluene	<0,5		<0,041		$\mu\text{g/L}$	•
Ethylbenzene	4,68	0,23	3,480	0,929	$\mu\text{g/L}$	74%
m,p-Xylene	6,20	0,31	5,060	1,564	$\mu\text{g/L}$	82%
o-Xylene	1,52	0,08	1,115	0,295	$\mu\text{g/L}$	73%



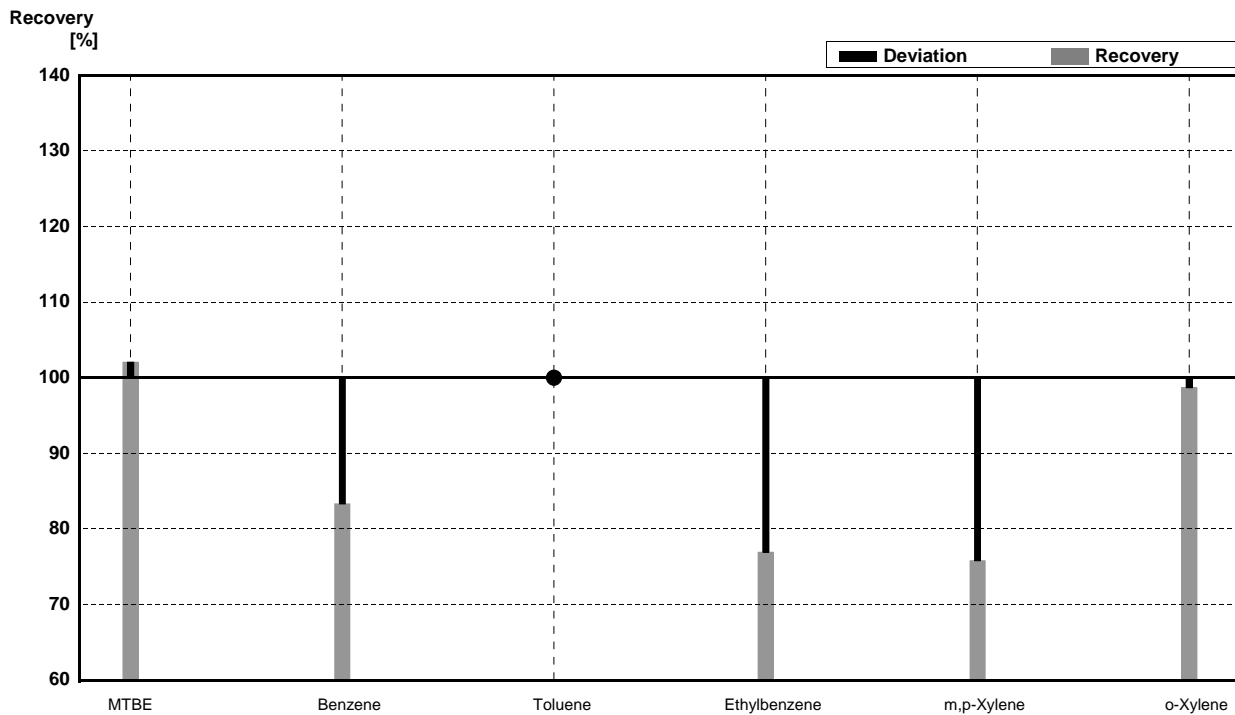
**Sample B9B**  
**Laboratory Q**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	3,82	0,19	3,810	1,429	µg/L	100%
Benzene	4,27	0,21	3,535	1,068	µg/L	83%
Toluene	3,62	0,18	2,855	0,999	µg/L	79%
Ethylbenzene	0,70	0,04	0,455	0,121	µg/L	65%
m,p-Xylene	3,90	0,20	2,945	0,910	µg/L	76%
o-Xylene	2,65	0,13	1,890	0,501	µg/L	71%



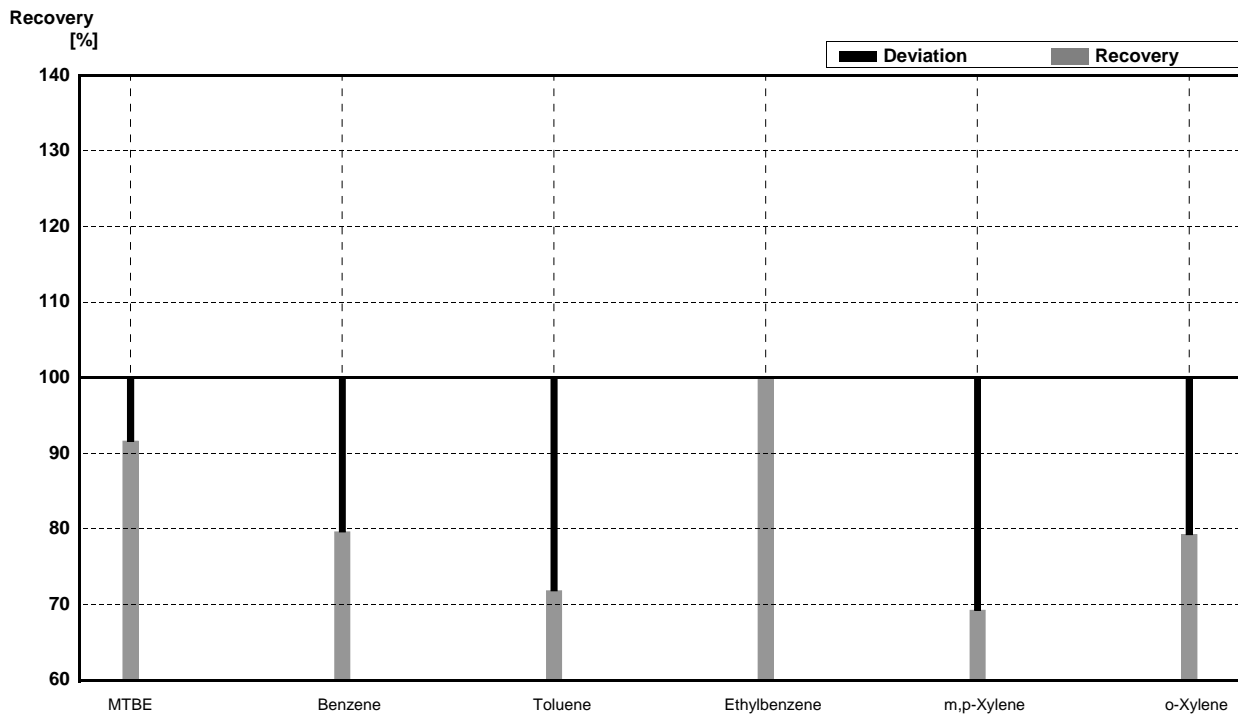
**Sample B9A**  
**Laboratory R**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	0,49	0,02	0,5	0,1	µg/L	102%
Benzene	0,60	0,03	0,5	0,1	µg/L	83%
Toluene	<0,5		<0,5		µg/L	•
Ethylbenzene	4,68	0,23	3,6	0,7	µg/L	77%
m,p-Xylene	6,20	0,31	4,7	0,9	µg/L	76%
o-Xylene	1,52	0,08	1,5	0,3	µg/L	99%



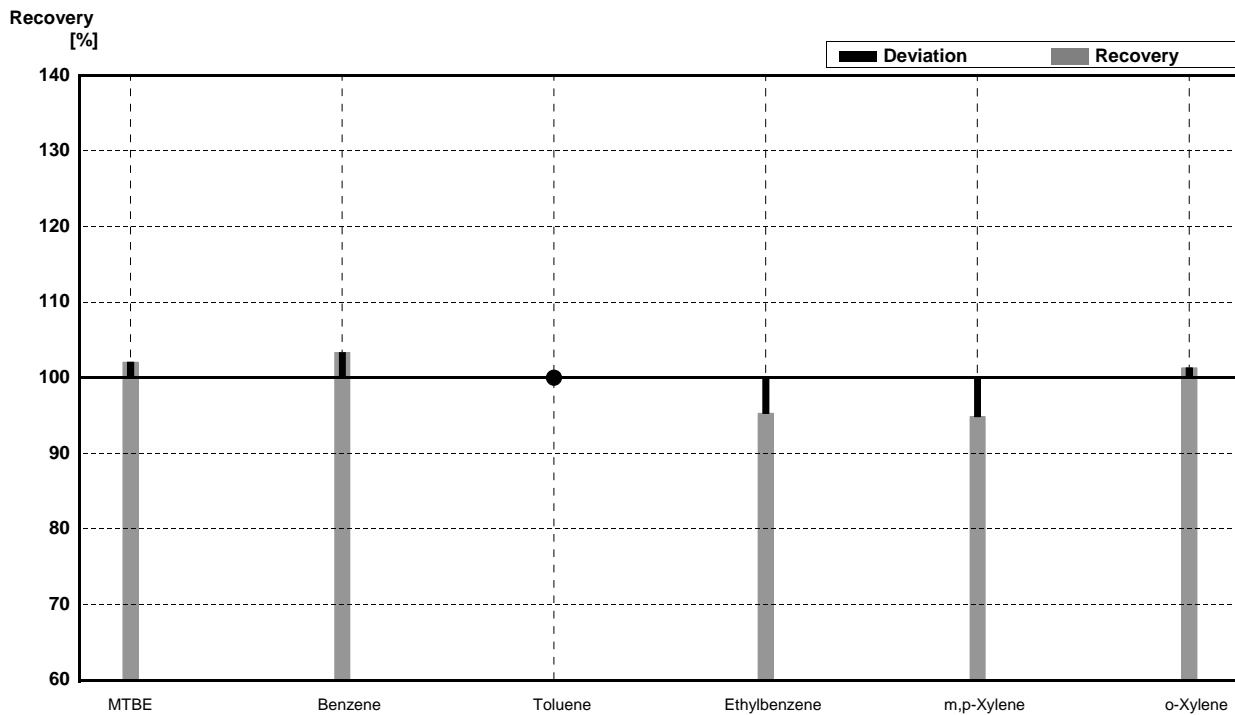
**Sample B9B**  
**Laboratory R**

Parameter	Target value	$\pm U$ (k=2)	Result	$\pm$	Unit	Recovery
MTBE	3,82	0,19	3,5	0,7	$\mu\text{g/L}$	92%
Benzene	4,27	0,21	3,4	0,7	$\mu\text{g/L}$	80%
Toluene	3,62	0,18	2,6	0,5	$\mu\text{g/L}$	72%
Ethylbenzene	0,70	0,04	0,7	0,1	$\mu\text{g/L}$	100%
m,p-Xylene	3,90	0,20	2,7	0,5	$\mu\text{g/L}$	69%
o-Xylene	2,65	0,13	2,1	0,4	$\mu\text{g/L}$	79%



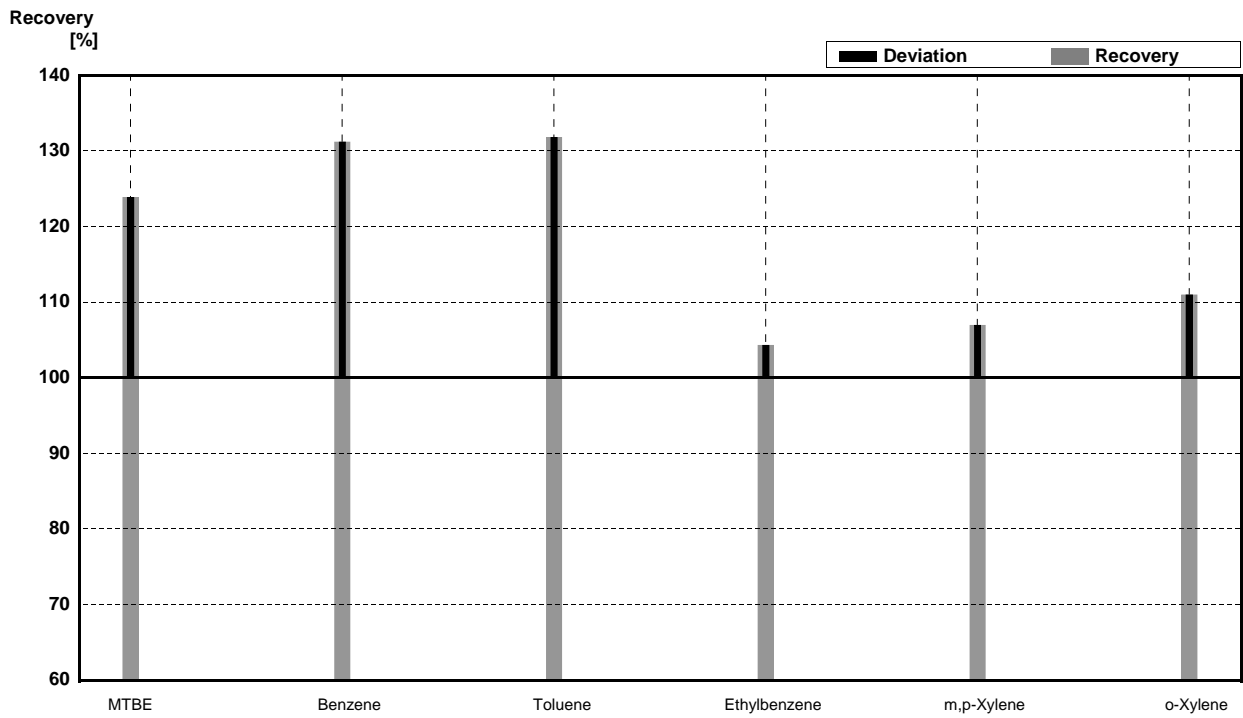
**Sample B9A**  
**Laboratory S**

Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	0,49	0,02	0,50	0,08	$\mu\text{g/L}$	102%
Benzene	0,60	0,03	0,62	0,09	$\mu\text{g/L}$	103%
Toluene	<0,5		<0,05		$\mu\text{g/L}$	•
Ethylbenzene	4,68	0,23	4,46	0,67	$\mu\text{g/L}$	95%
m,p-Xylene	6,20	0,31	5,88	0,88	$\mu\text{g/L}$	95%
o-Xylene	1,52	0,08	1,54	0,23	$\mu\text{g/L}$	101%



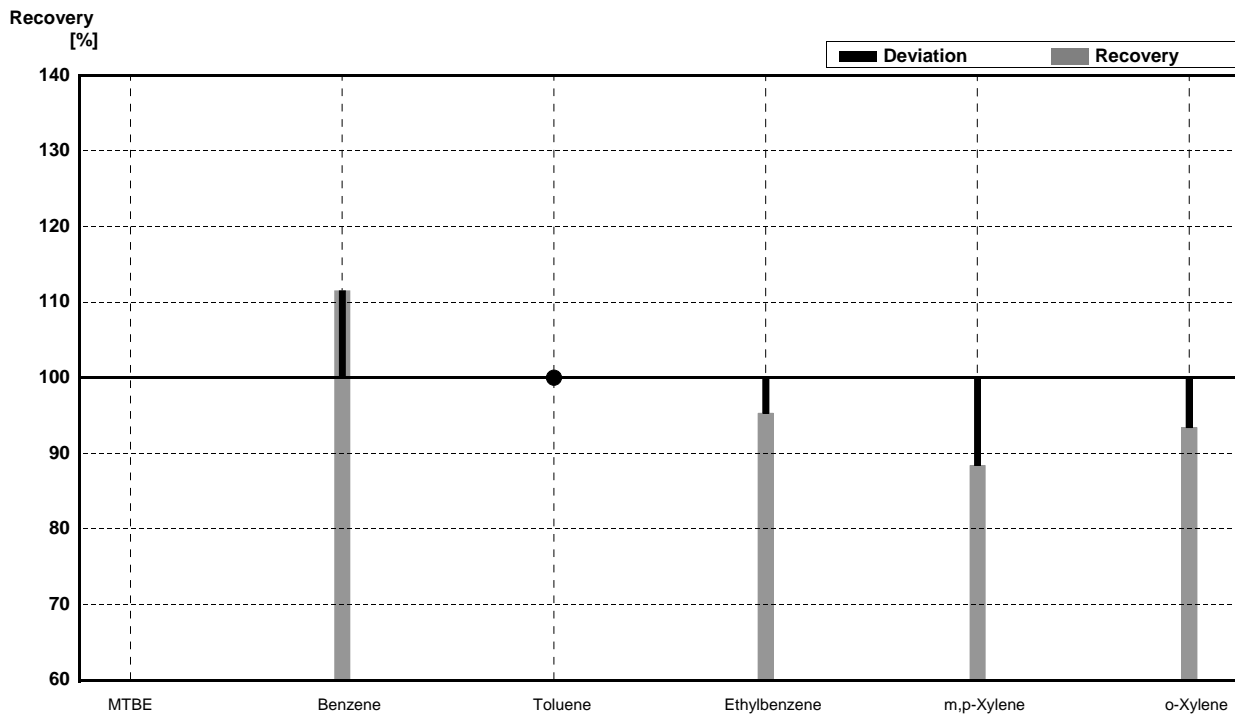
**Sample B9B**  
**Laboratory S**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	3,82	0,19	4,73	0,71	µg/L	124%
Benzene	4,27	0,21	5,60	0,84	µg/L	131%
Toluene	3,62	0,18	4,77	0,72	µg/L	132%
Ethylbenzene	0,70	0,04	0,73	0,11	µg/L	104%
m,p-Xylene	3,90	0,20	4,17	0,63	µg/L	107%
o-Xylene	2,65	0,13	2,94	0,44	µg/L	111%



**Sample B9A**  
**Laboratory T**

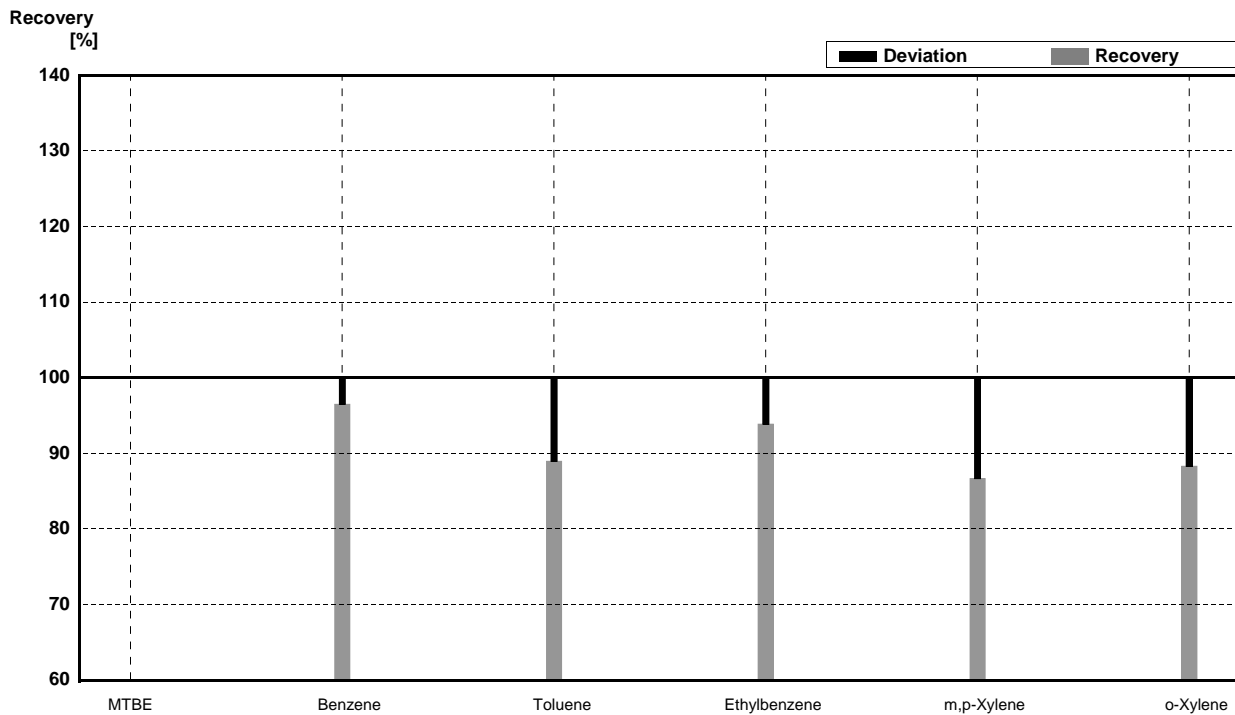
Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	0,49	0,02			µg/L	
Benzene	0,60	0,03	0,669	0,024	µg/L	112%
Toluene	<0,5		<0,10		µg/L	•
Ethylbenzene	4,68	0,23	4,46	0,11	µg/L	95%
m,p-Xylene	6,20	0,31	5,48	0,24	µg/L	88%
o-Xylene	1,52	0,08	1,42	0,06	µg/L	93%





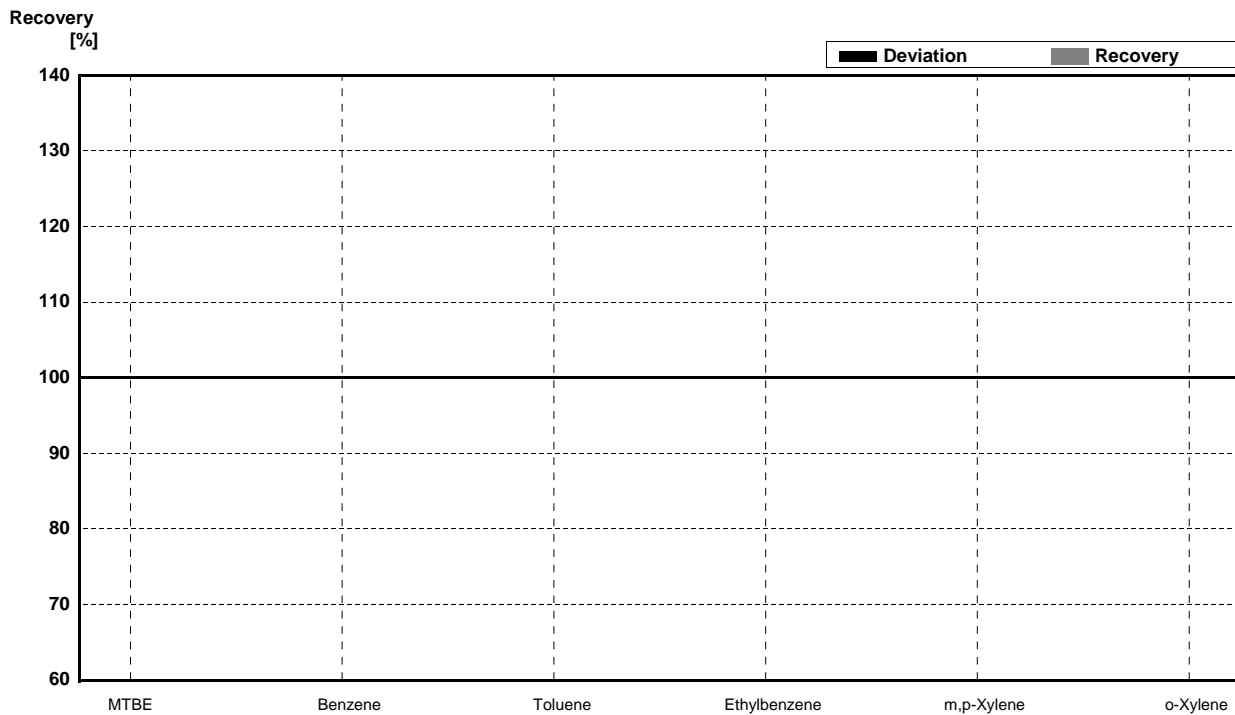
**Sample B9B**  
**Laboratory T**

Parameter	Target value	$\pm U$ (k=2)	Result	$\pm$	Unit	Recovery
MTBE	3,82	0,19			$\mu\text{g/L}$	
Benzene	4,27	0,21	4,12	0,067	$\mu\text{g/L}$	96%
Toluene	3,62	0,18	3,22	0,06	$\mu\text{g/L}$	89%
Ethylbenzene	0,70	0,04	0,657	0,01	$\mu\text{g/L}$	94%
m,p-Xylene	3,90	0,20	3,38	0,11	$\mu\text{g/L}$	87%
o-Xylene	2,65	0,13	2,34	0,06	$\mu\text{g/L}$	88%



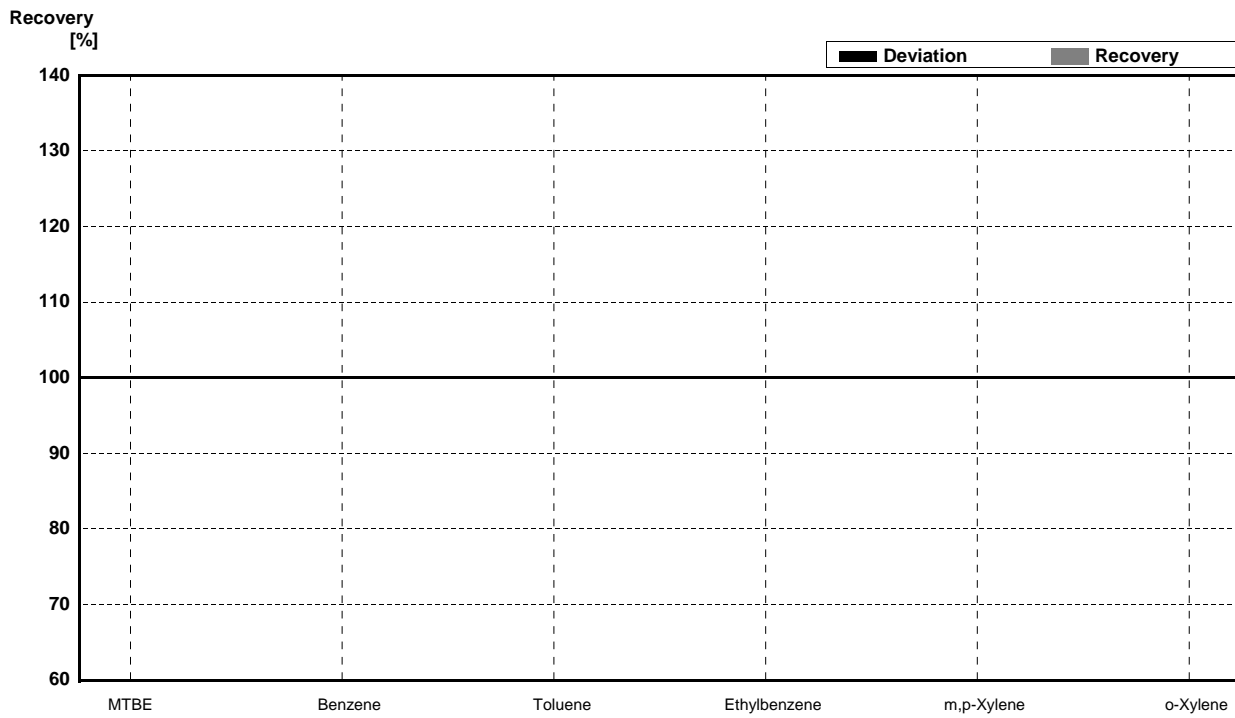
**Sample B9A**  
**Laboratory U**

Parameter	Target value	$\pm U$ (k=2)	Result	$\pm$	Unit	Recovery
MTBE	0,49	0,02			$\mu\text{g/L}$	
Benzene	0,60	0,03			$\mu\text{g/L}$	
Toluene	<0,5				$\mu\text{g/L}$	
Ethylbenzene	4,68	0,23			$\mu\text{g/L}$	
m,p-Xylene	6,20	0,31			$\mu\text{g/L}$	
o-Xylene	1,52	0,08			$\mu\text{g/L}$	



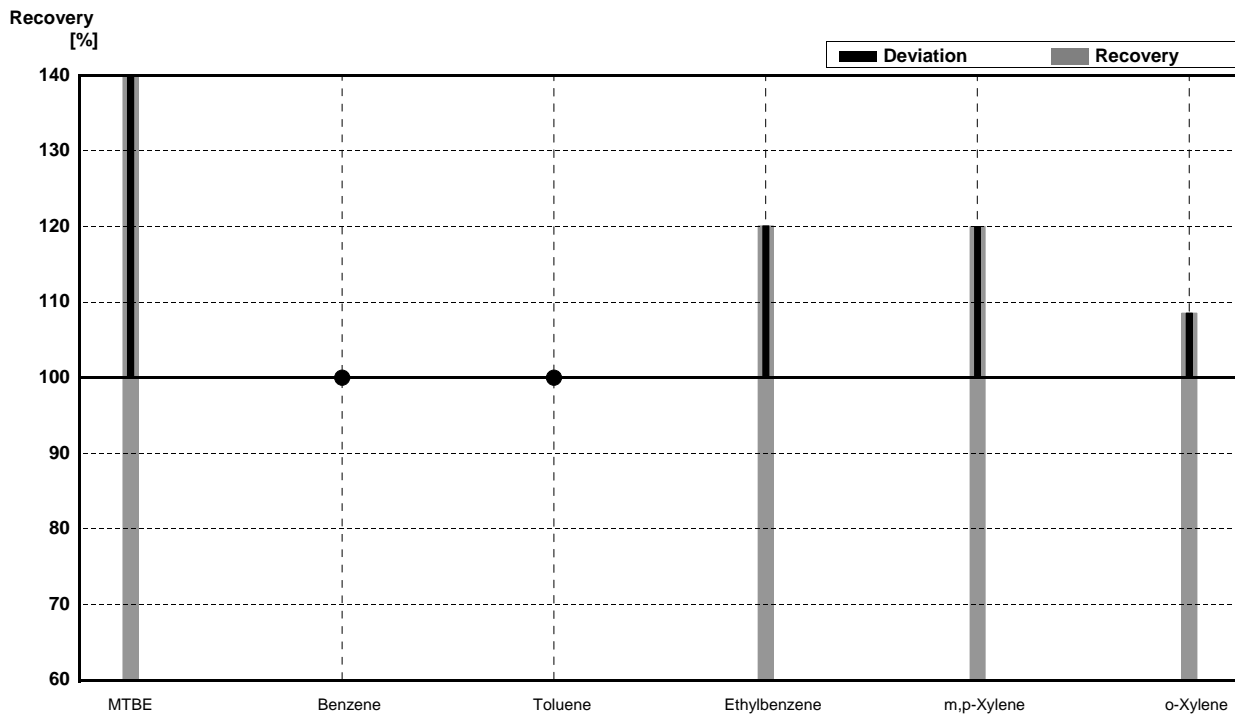
**Sample B9B**  
**Laboratory U**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	3,82	0,19			µg/L	
Benzene	4,27	0,21			µg/L	
Toluene	3,62	0,18			µg/L	
Ethylbenzene	0,70	0,04			µg/L	
m,p-Xylene	3,90	0,20			µg/L	
o-Xylene	2,65	0,13			µg/L	



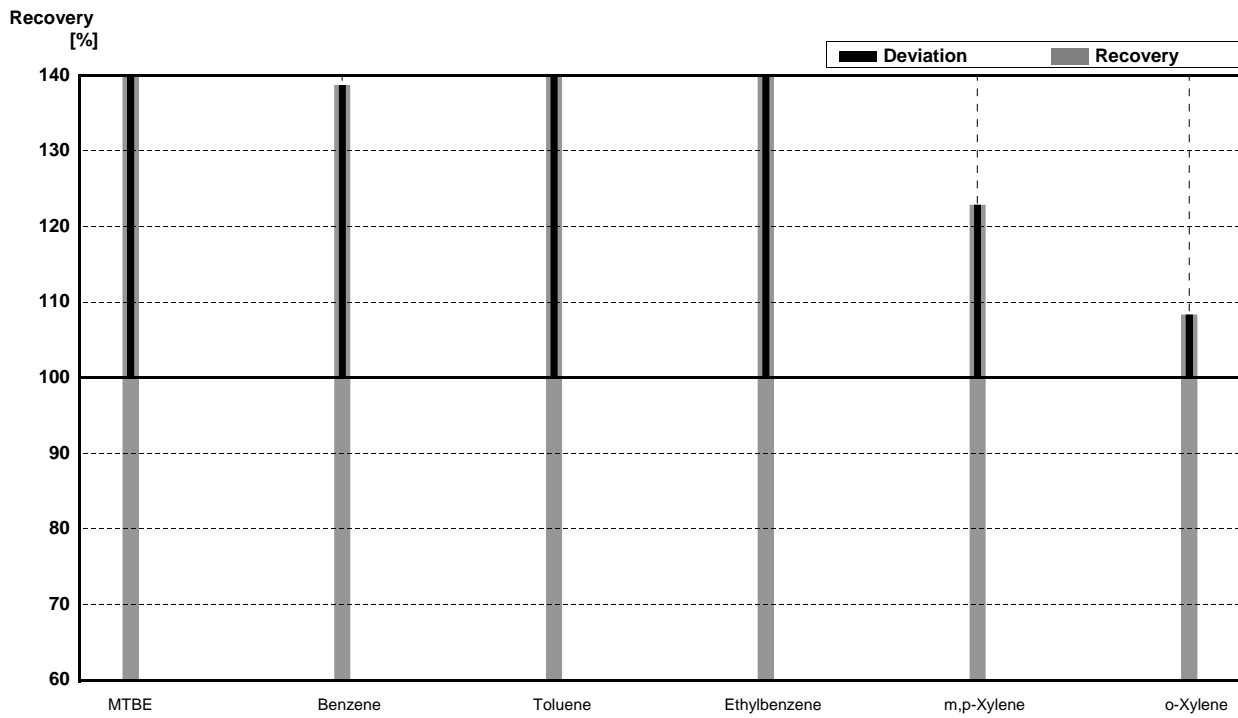
**Sample B9A**  
**Laboratory V**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	0,49	0,02	5,39	1,00	µg/L	1100%
Benzene	0,60	0,03	<4,00		µg/L	•
Toluene	<0,5		<1,00		µg/L	•
Ethylbenzene	4,68	0,23	5,62	0,50	µg/L	120%
m,p-Xylene	6,20	0,31	7,44	0,50	µg/L	120%
o-Xylene	1,52	0,08	1,65	0,50	µg/L	109%



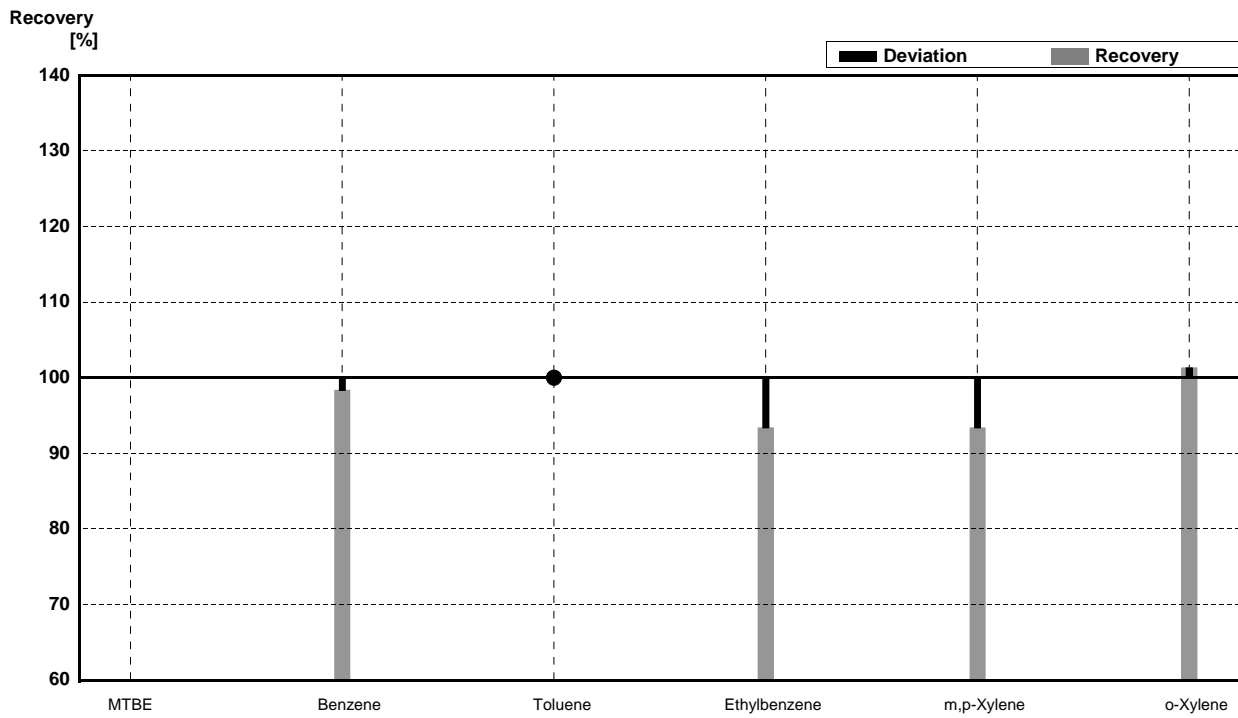
**Sample B9B**  
**Laboratory V**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	3,82	0,19	6,69	1,00	µg/L	175%
Benzene	4,27	0,21	5,92	1,00	µg/L	139%
Toluene	3,62	0,18	5,23	0,50	µg/L	144%
Ethylbenzene	0,70	0,04	1,54	0,50	µg/L	220%
m,p-Xylene	3,90	0,20	4,79	0,50	µg/L	123%
o-Xylene	2,65	0,13	2,87	0,50	µg/L	108%



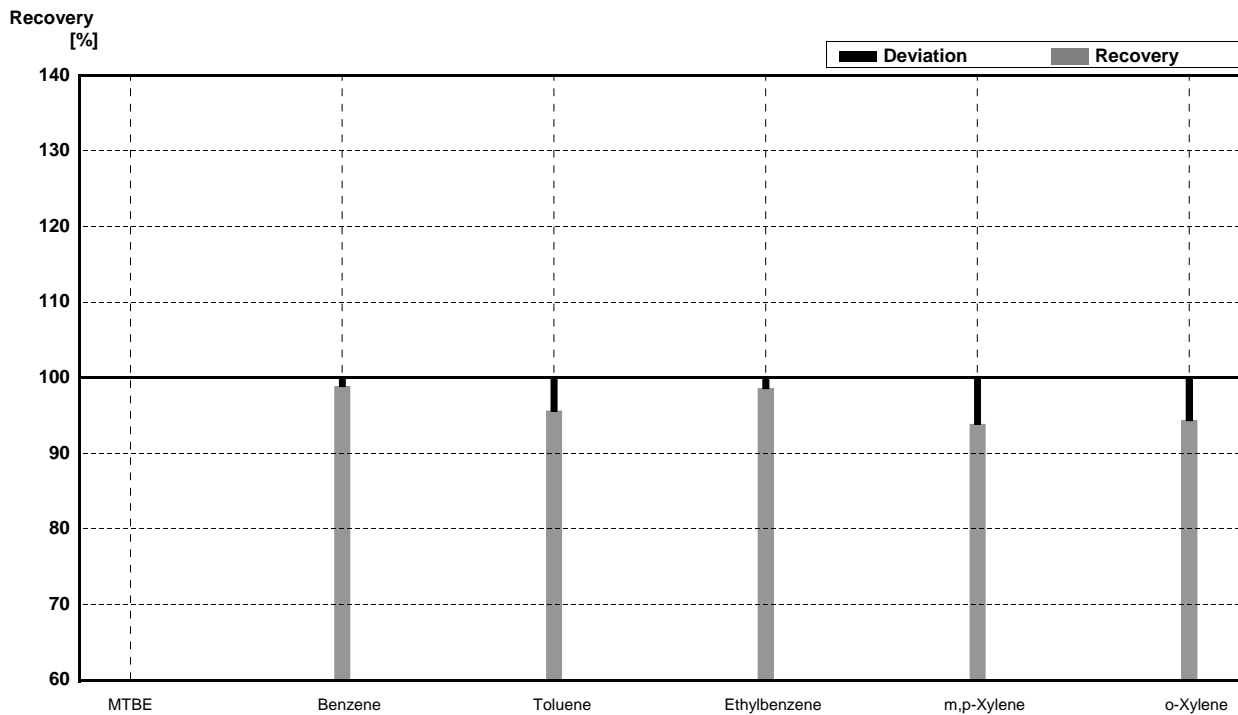
**Sample B9A**  
**Laboratory W**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	0,49	0,02			µg/L	
Benzene	0,60	0,03	0,59	0,18	µg/L	98%
Toluene	<0,5		<0,5		µg/L	•
Ethylbenzene	4,68	0,23	4,37	0,87	µg/L	93%
m,p-Xylene	6,20	0,31	5,79	1,16	µg/L	93%
o-Xylene	1,52	0,08	1,54	0,31	µg/L	101%



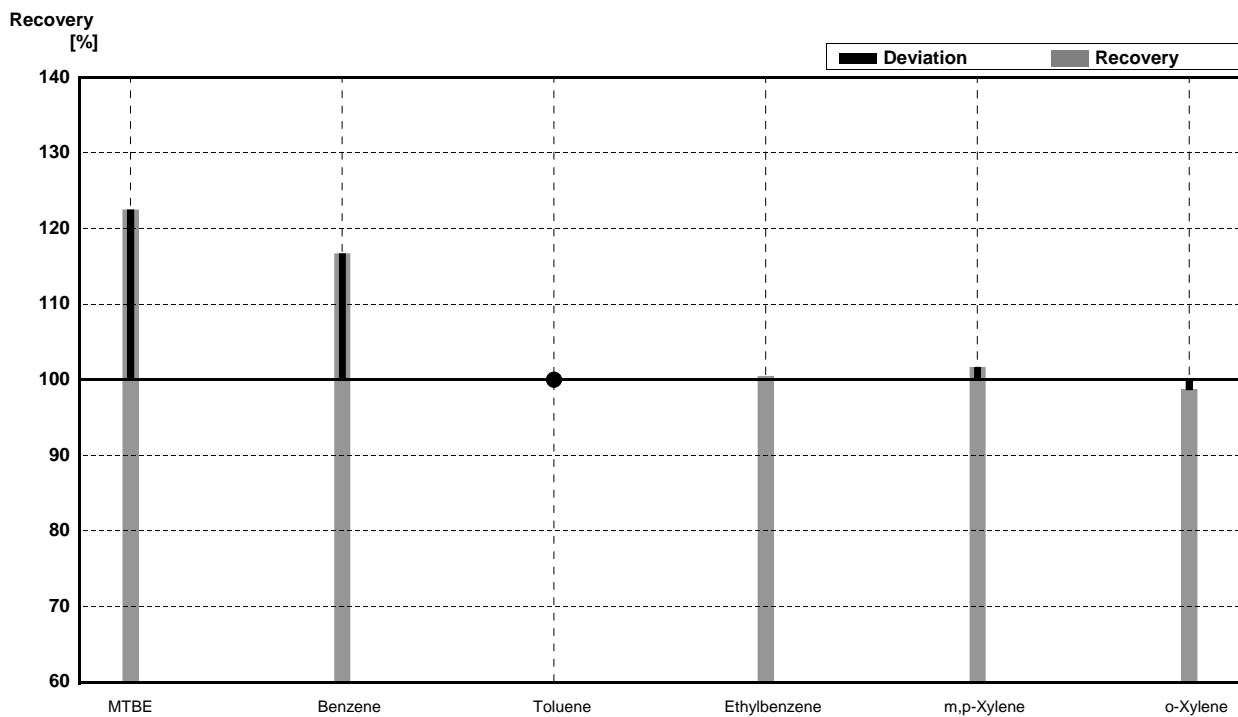
**Sample B9B**  
**Laboratory W**

Parameter	Target value	$\pm U$ (k=2)	Result	$\pm$	Unit	Recovery
MTBE	3,82	0,19			$\mu\text{g/L}$	
Benzene	4,27	0,21	4,22	0,84	$\mu\text{g/L}$	99%
Toluene	3,62	0,18	3,46	0,69	$\mu\text{g/L}$	96%
Ethylbenzene	0,70	0,04	0,69	0,21	$\mu\text{g/L}$	99%
m,p-Xylene	3,90	0,20	3,66	0,73	$\mu\text{g/L}$	94%
o-Xylene	2,65	0,13	2,50	0,5	$\mu\text{g/L}$	94%



**Sample B9A**  
**Laboratory X**

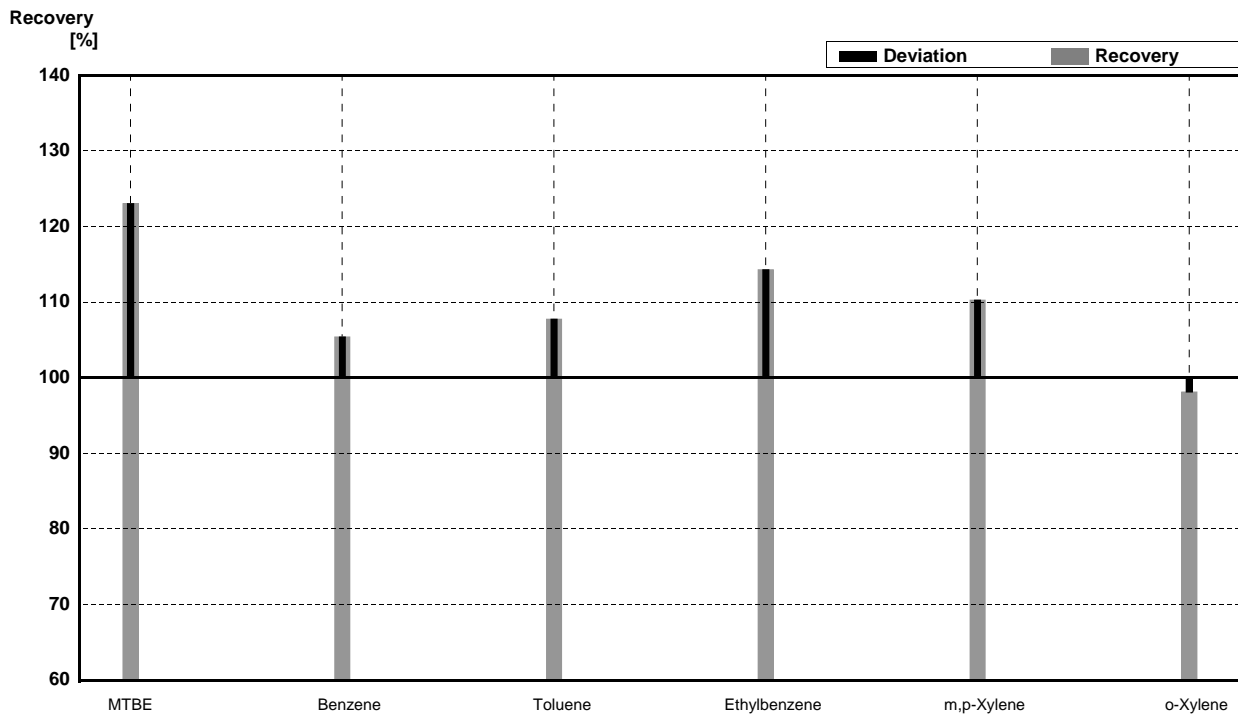
Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	0,49	0,02	0,6	0,2	$\mu\text{g/L}$	122%
Benzene	0,60	0,03	0,7	0,2	$\mu\text{g/L}$	117%
Toluene	<0,5		<0,2	0,1	$\mu\text{g/L}$	•
Ethylbenzene	4,68	0,23	4,7	1,4	$\mu\text{g/L}$	100%
m,p-Xylene	6,20	0,31	6,3	1,9	$\mu\text{g/L}$	102%
o-Xylene	1,52	0,08	1,5	0,4	$\mu\text{g/L}$	99%





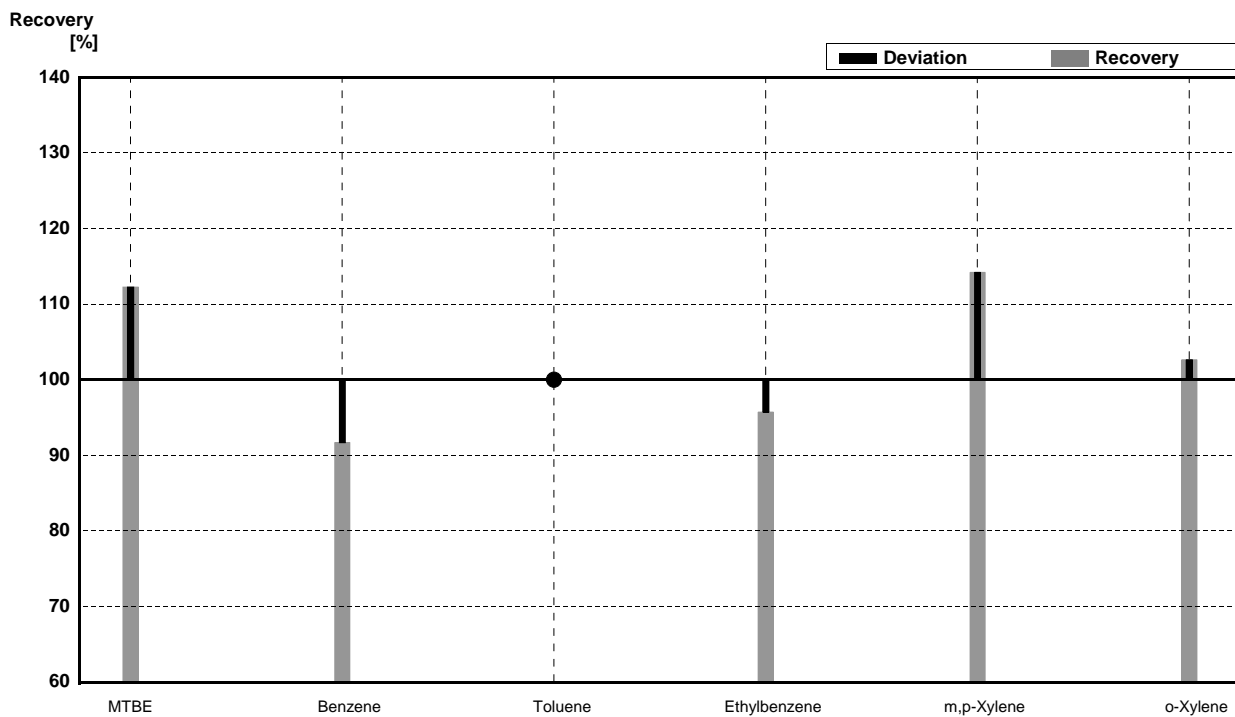
**Sample B9B**  
**Laboratory X**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	3,82	0,19	4,7	1,4	µg/L	123%
Benzene	4,27	0,21	4,5	1,3	µg/L	105%
Toluene	3,62	0,18	3,9	1,2	µg/L	108%
Ethylbenzene	0,70	0,04	0,8	0,2	µg/L	114%
m,p-Xylene	3,90	0,20	4,3	1,3	µg/L	110%
o-Xylene	2,65	0,13	2,6	0,8	µg/L	98%



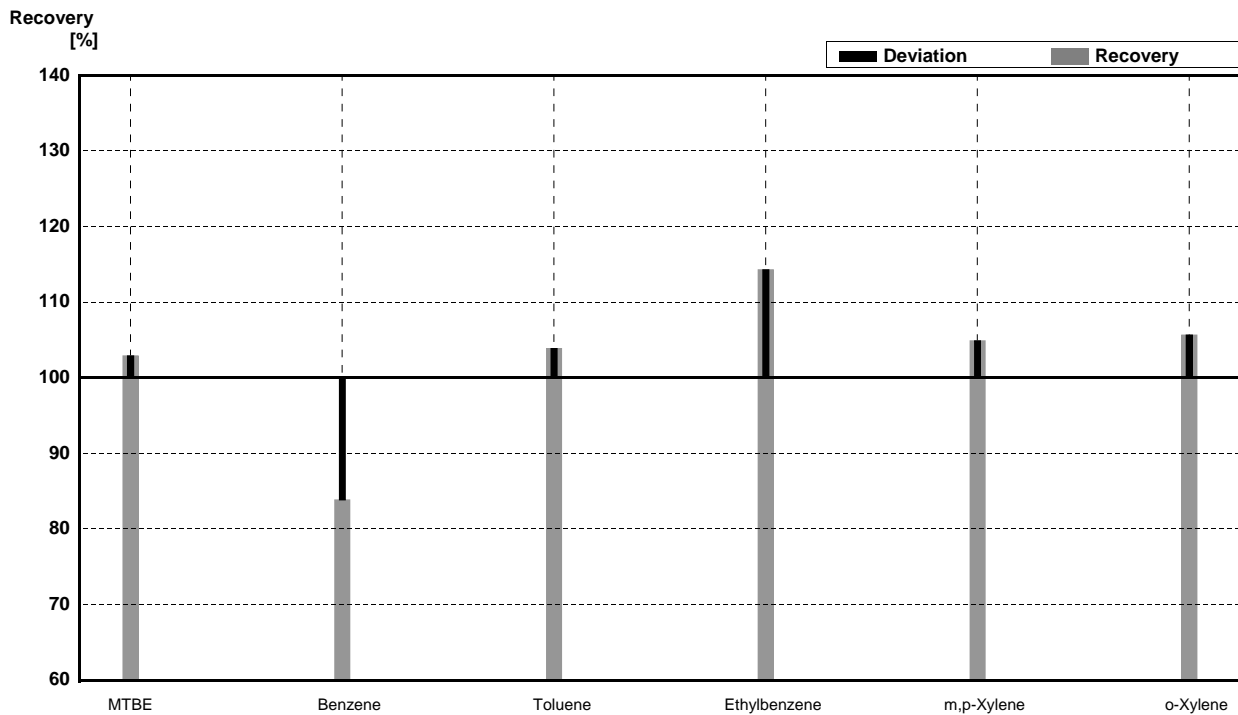
**Sample B9A**  
**Laboratory Y**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	0,49	0,02	0,55	0,11	µg/L	112%
Benzene	0,60	0,03	0,55	0,11	µg/L	92%
Toluene	<0,5		<0,03		µg/L	•
Ethylbenzene	4,68	0,23	4,48	0,90	µg/L	96%
m,p-Xylene	6,20	0,31	7,08	1,42	µg/L	114%
o-Xylene	1,52	0,08	1,56	0,31	µg/L	103%



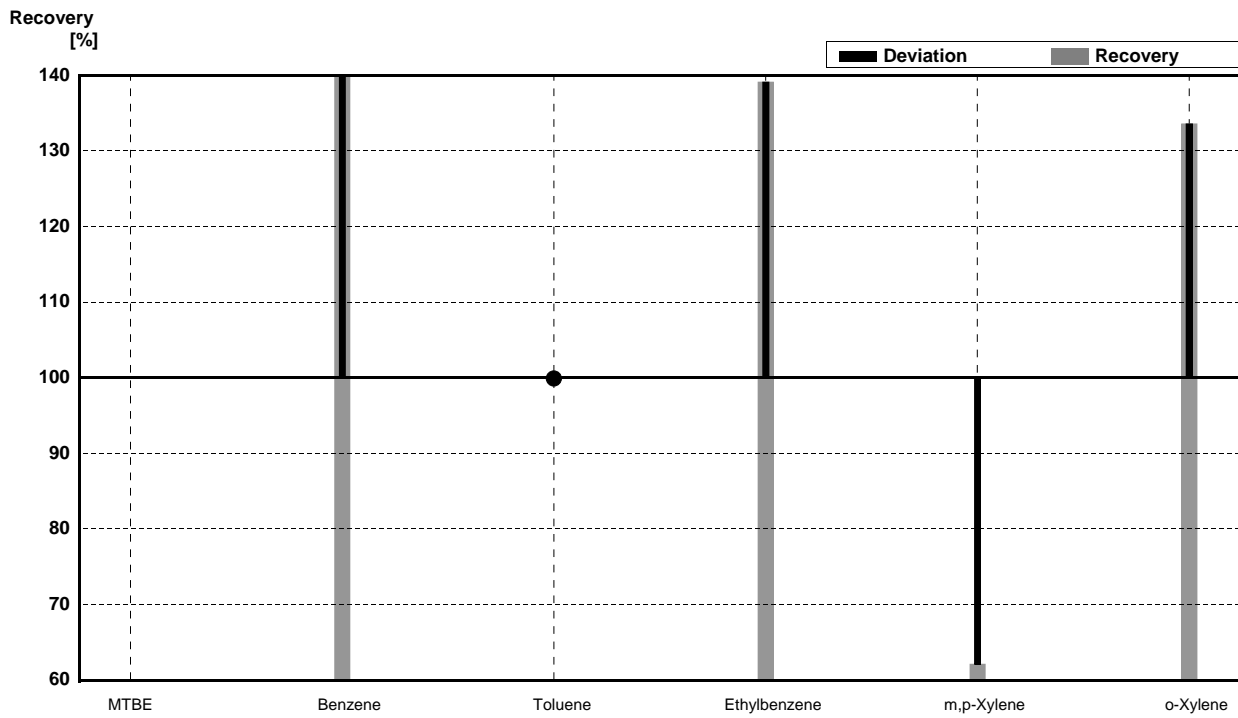
**Sample B9B**  
**Laboratory Y**

Parameter	Target value	$\pm U$ (k=2)	Result	$\pm$	Unit	Recovery
MTBE	3,82	0,19	3,93	0,79	$\mu\text{g/L}$	103%
Benzene	4,27	0,21	3,58	0,72	$\mu\text{g/L}$	84%
Toluene	3,62	0,18	3,76	0,75	$\mu\text{g/L}$	104%
Ethylbenzene	0,70	0,04	0,80	0,16	$\mu\text{g/L}$	114%
m,p-Xylene	3,90	0,20	4,09	0,82	$\mu\text{g/L}$	105%
o-Xylene	2,65	0,13	2,80	0,56	$\mu\text{g/L}$	106%



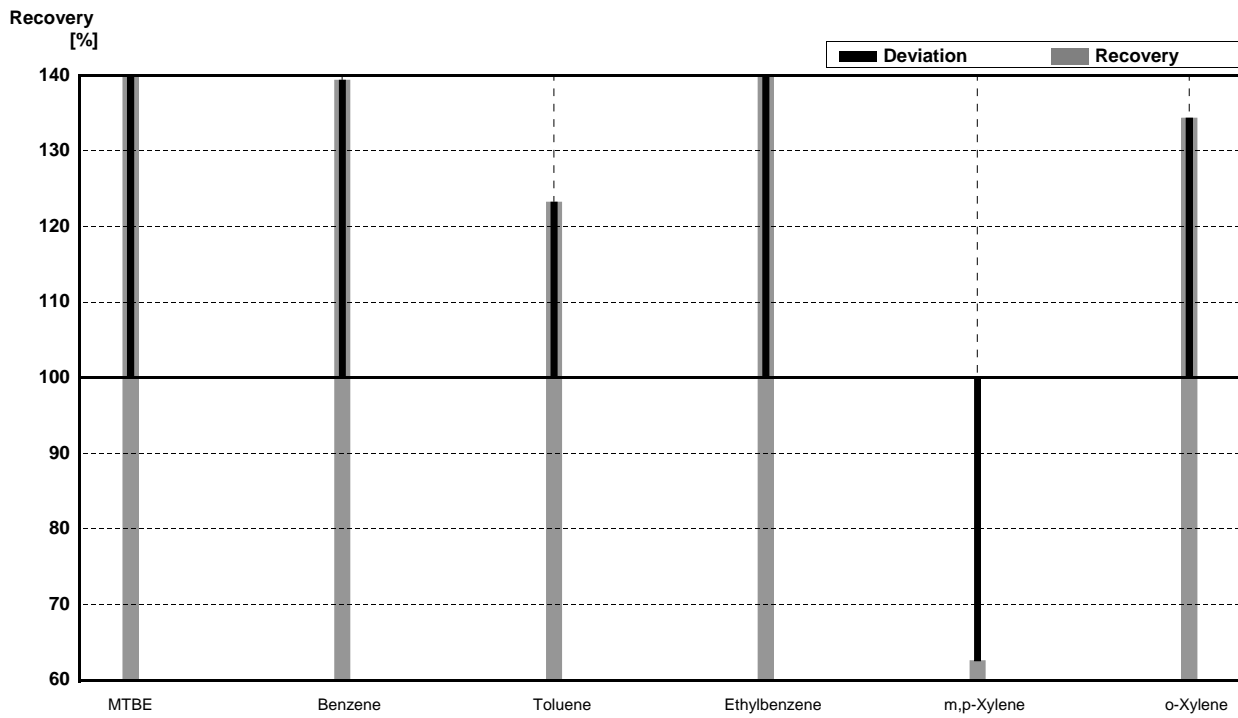
**Sample B9A**  
**Laboratory Z**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	0,49	0,02	nd		µg/L	
Benzene	0,60	0,03	0,87		µg/L	145%
Toluene	<0,5		nd		µg/L	•
Ethylbenzene	4,68	0,23	6,51		µg/L	139%
m,p-Xylene	6,20	0,31	3,85		µg/L	62%
o-Xylene	1,52	0,08	2,03		µg/L	134%



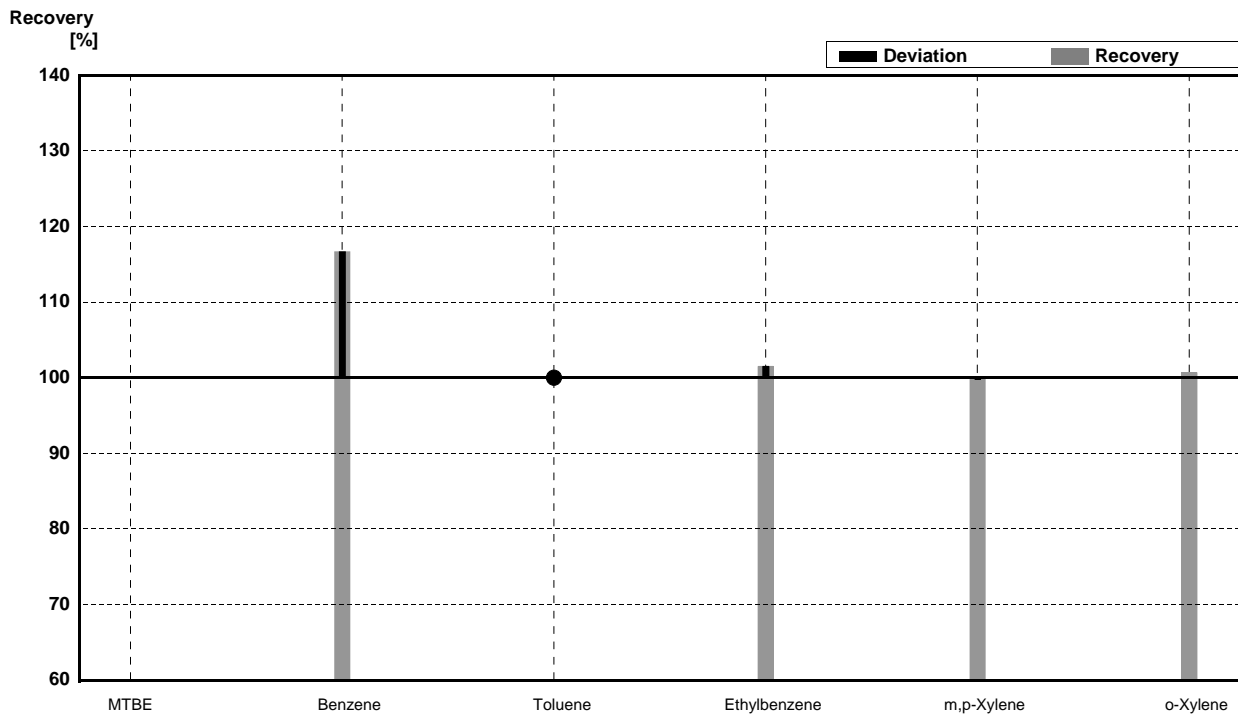
**Sample B9B**  
**Laboratory Z**

Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	3,82	0,19	6,17		$\mu\text{g/L}$	162%
Benzene	4,27	0,21	5,95		$\mu\text{g/L}$	139%
Toluene	3,62	0,18	4,46		$\mu\text{g/L}$	123%
Ethylbenzene	0,70	0,04	1,01		$\mu\text{g/L}$	144%
m,p-Xylene	3,90	0,20	2,44		$\mu\text{g/L}$	63%
o-Xylene	2,65	0,13	3,56		$\mu\text{g/L}$	134%



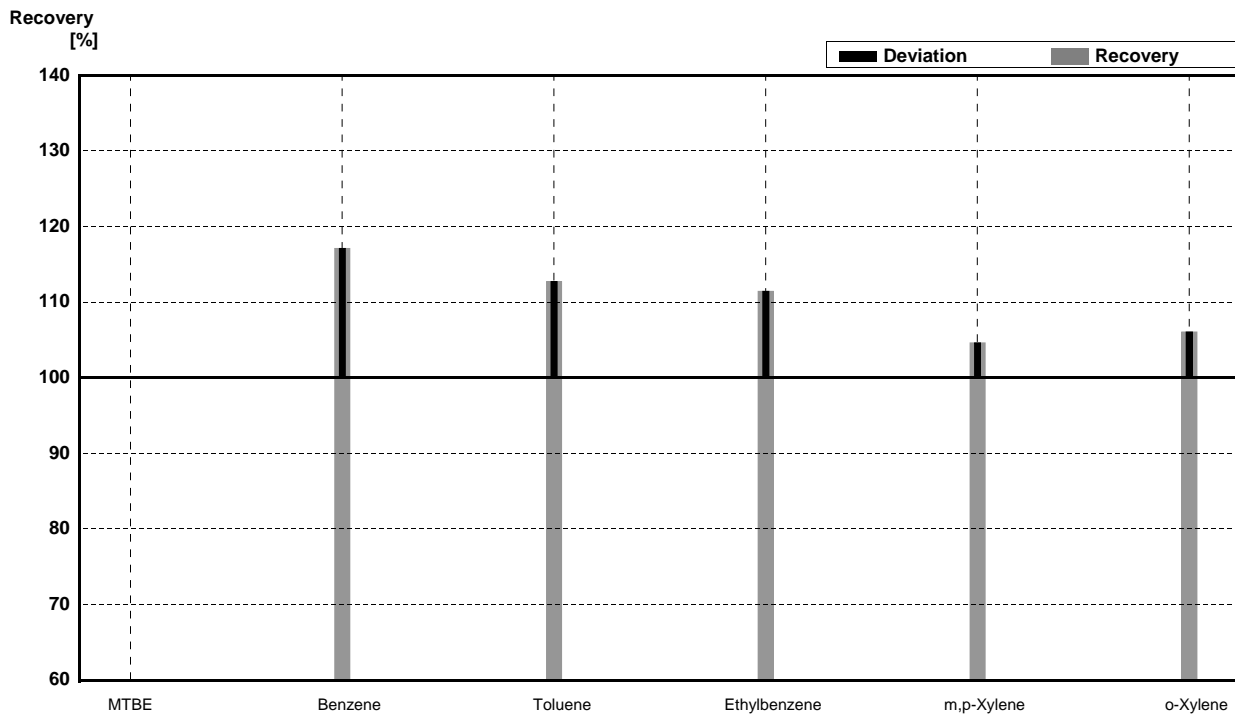
Sample **B9A**  
 Laboratory **AA**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	0,49	0,02			µg/L	
Benzene	0,60	0,03	0,70	0,1	µg/L	117%
Toluene	<0,5		<0,5		µg/L	•
Ethylbenzene	4,68	0,23	4,75	0,4	µg/L	101%
m,p-Xylene	6,20	0,31	6,19	0,6	µg/L	100%
o-Xylene	1,52	0,08	1,53	0,2	µg/L	101%



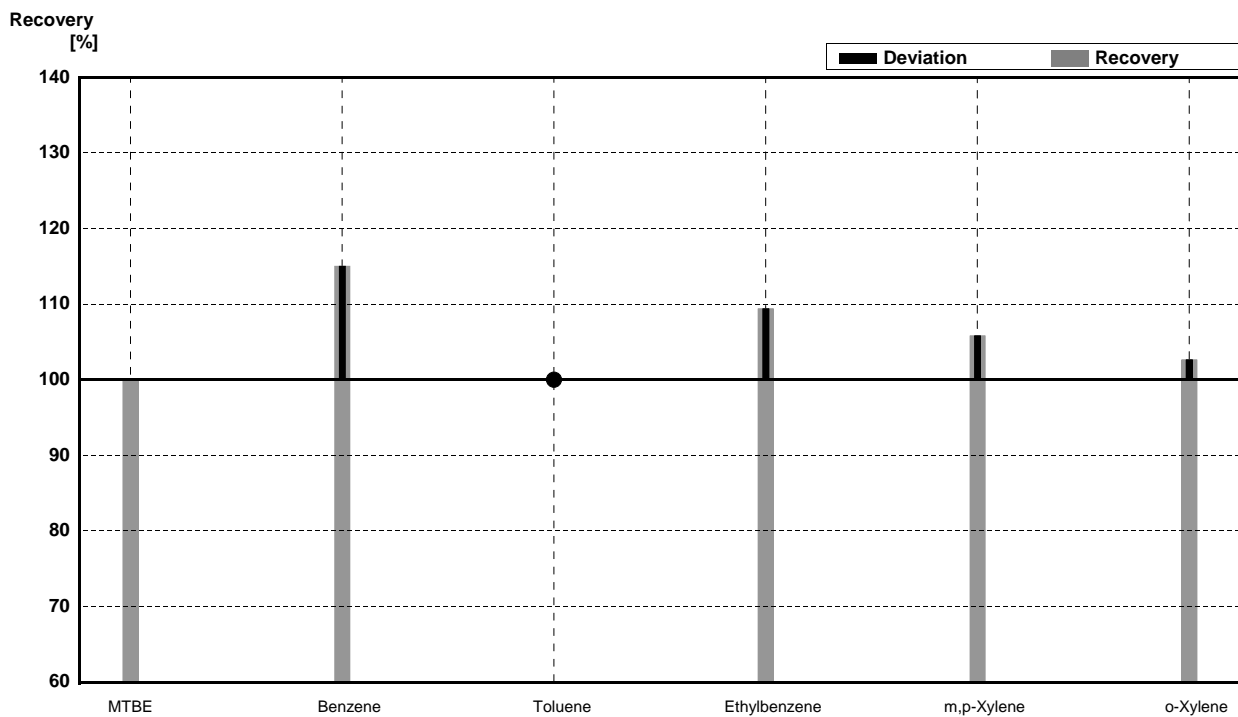
**Sample B9B**  
**Laboratory AA**

Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	3,82	0,19			$\mu\text{g/L}$	
Benzene	4,27	0,21	5,00	0,5	$\mu\text{g/L}$	117%
Toluene	3,62	0,18	4,08	0,4	$\mu\text{g/L}$	113%
Ethylbenzene	0,70	0,04	0,78	0,1	$\mu\text{g/L}$	111%
m,p-Xylene	3,90	0,20	4,08	0,4	$\mu\text{g/L}$	105%
o-Xylene	2,65	0,13	2,81	0,3	$\mu\text{g/L}$	106%



**Sample B9A**  
**Laboratory AB**

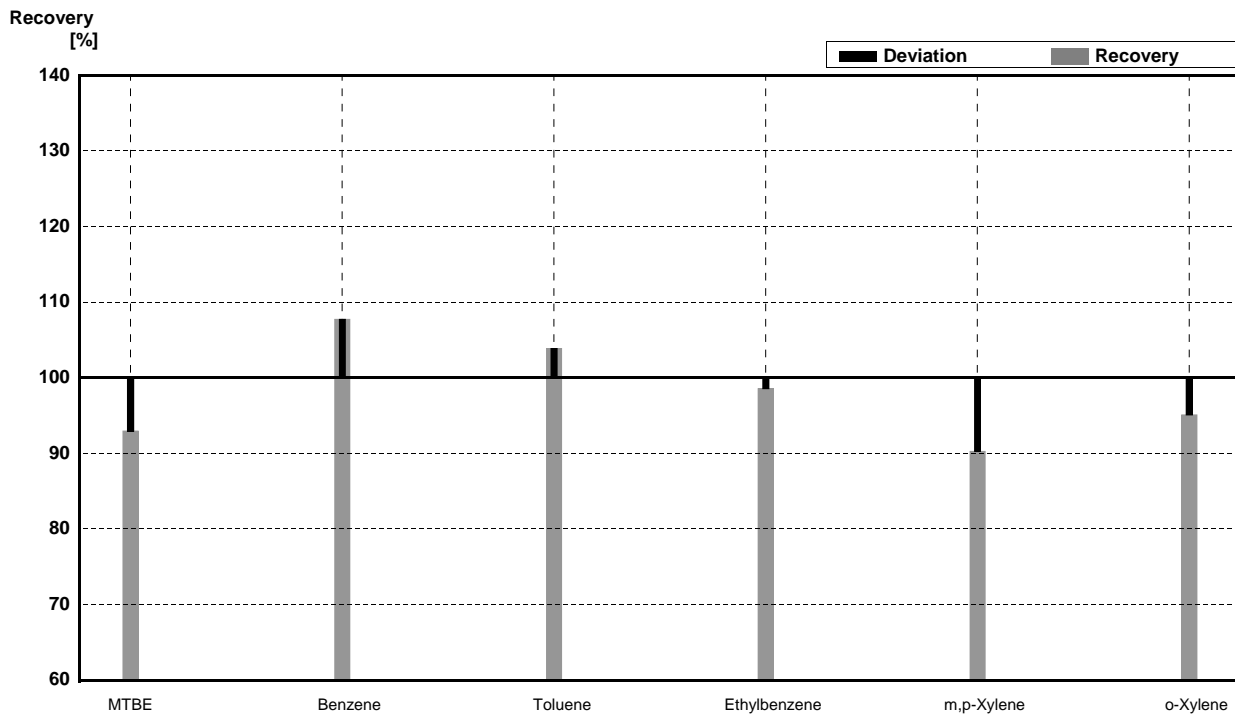
Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	0,49	0,02	0,49	0,015	µg/L	100%
Benzene	0,60	0,03	0,69	0,021	µg/L	115%
Toluene	<0,5		<0,2		µg/L	•
Ethylbenzene	4,68	0,23	5,12	0,378	µg/L	109%
m,p-Xylene	6,20	0,31	6,56	0,384	µg/L	106%
o-Xylene	1,52	0,08	1,56	0,101	µg/L	103%





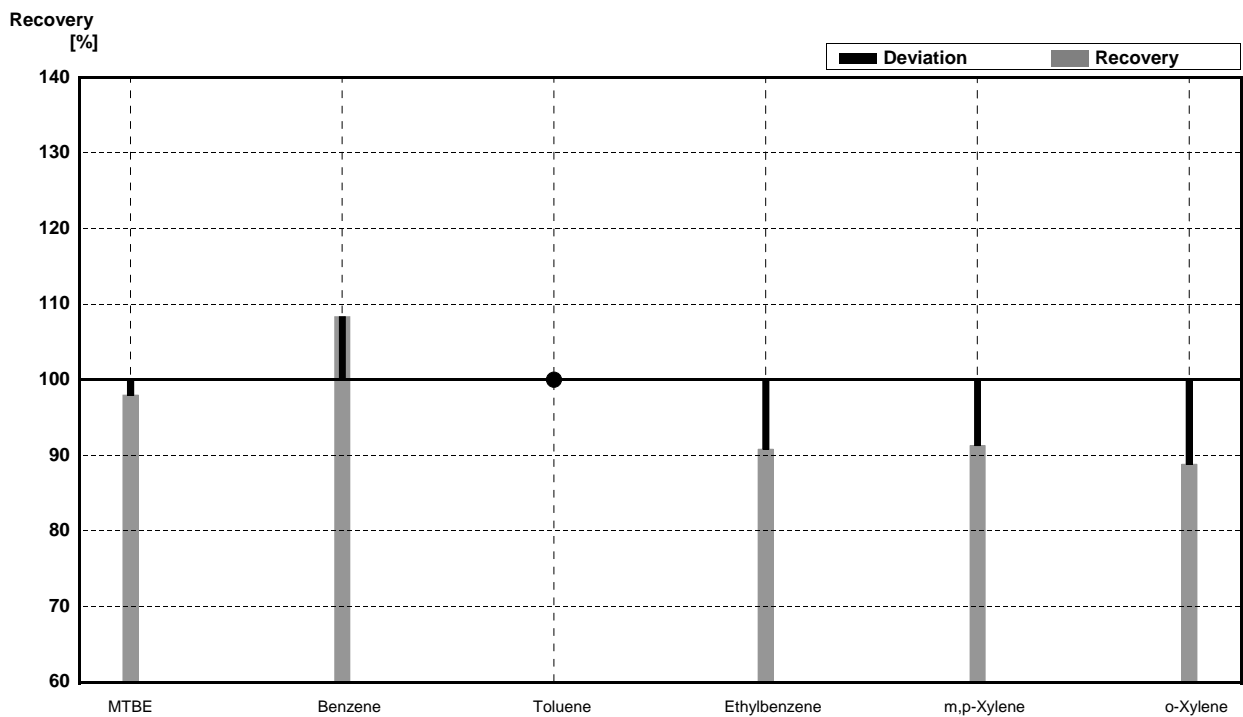
**Sample B9B**  
**Laboratory AB**

Parameter	Target value	$\pm U$ (k=2)	Result	$\pm$	Unit	Recovery
MTBE	3,82	0,19	3,55	0,137	$\mu\text{g/L}$	93%
Benzene	4,27	0,21	4,60	0,142	$\mu\text{g/L}$	108%
Toluene	3,62	0,18	3,76	0,170	$\mu\text{g/L}$	104%
Ethylbenzene	0,70	0,04	0,69	0,039	$\mu\text{g/L}$	99%
m,p-Xylene	3,90	0,20	3,52	0,181	$\mu\text{g/L}$	90%
o-Xylene	2,65	0,13	2,52	0,095	$\mu\text{g/L}$	95%



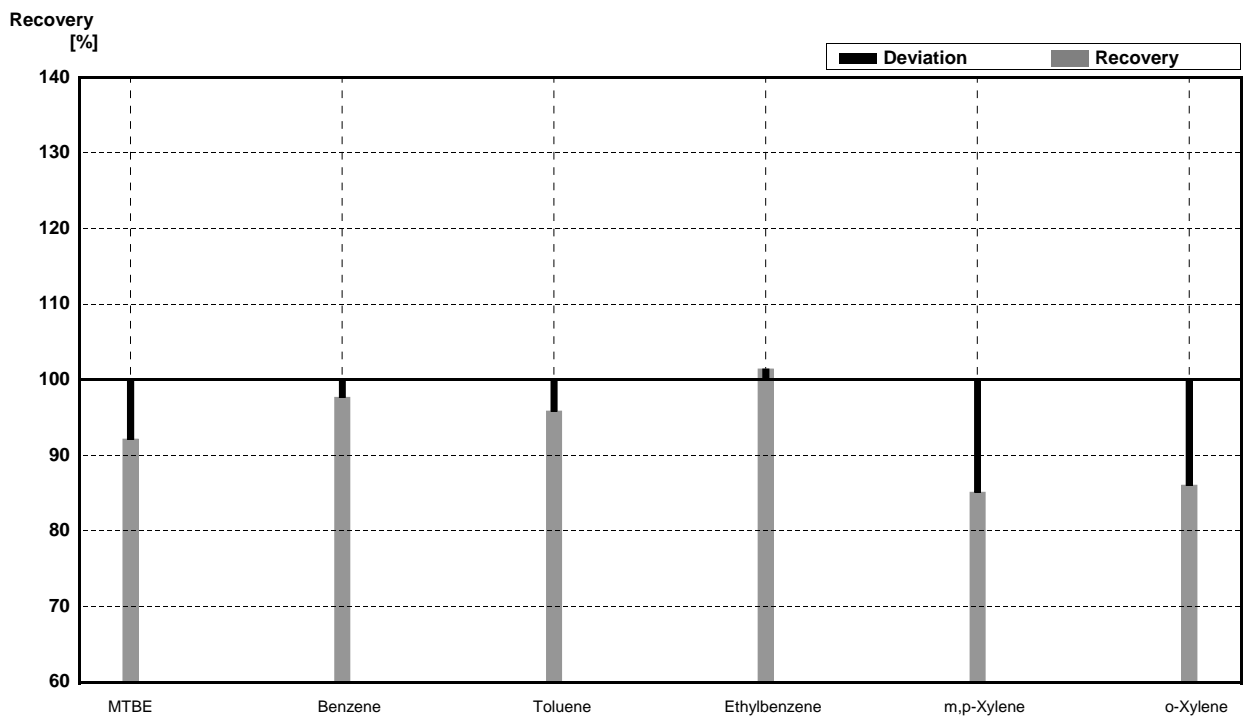
Sample **B9A**  
 Laboratory **AC**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	0,49	0,02	0,48	0,20	µg/L	98%
Benzene	0,60	0,03	0,65	0,13	µg/L	108%
Toluene	<0,5		<0,30		µg/L	•
Ethylbenzene	4,68	0,23	4,25	0,85	µg/L	91%
m,p-Xylene	6,20	0,31	5,66	1,13	µg/L	91%
o-Xylene	1,52	0,08	1,35	0,27	µg/L	89%



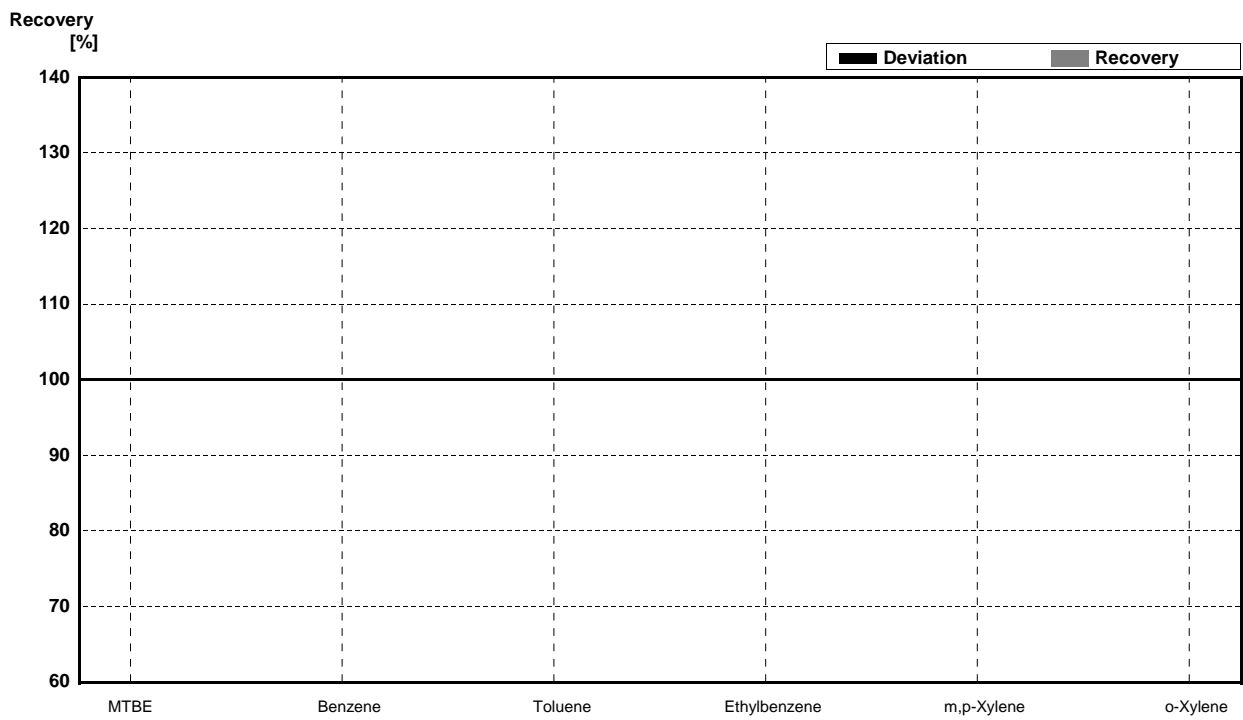
**Sample B9B**  
**Laboratory AC**

Parameter	Target value	$\pm U$ (k=2)	Result	$\pm$	Unit	Recovery
MTBE	3,82	0,19	3,52	0,71	$\mu\text{g/L}$	92%
Benzene	4,27	0,21	4,17	0,83	$\mu\text{g/L}$	98%
Toluene	3,62	0,18	3,47	0,70	$\mu\text{g/L}$	96%
Ethylbenzene	0,70	0,04	0,71	0,15	$\mu\text{g/L}$	101%
m,p-Xylene	3,90	0,20	3,32	0,70	$\mu\text{g/L}$	85%
o-Xylene	2,65	0,13	2,28	0,46	$\mu\text{g/L}$	86%



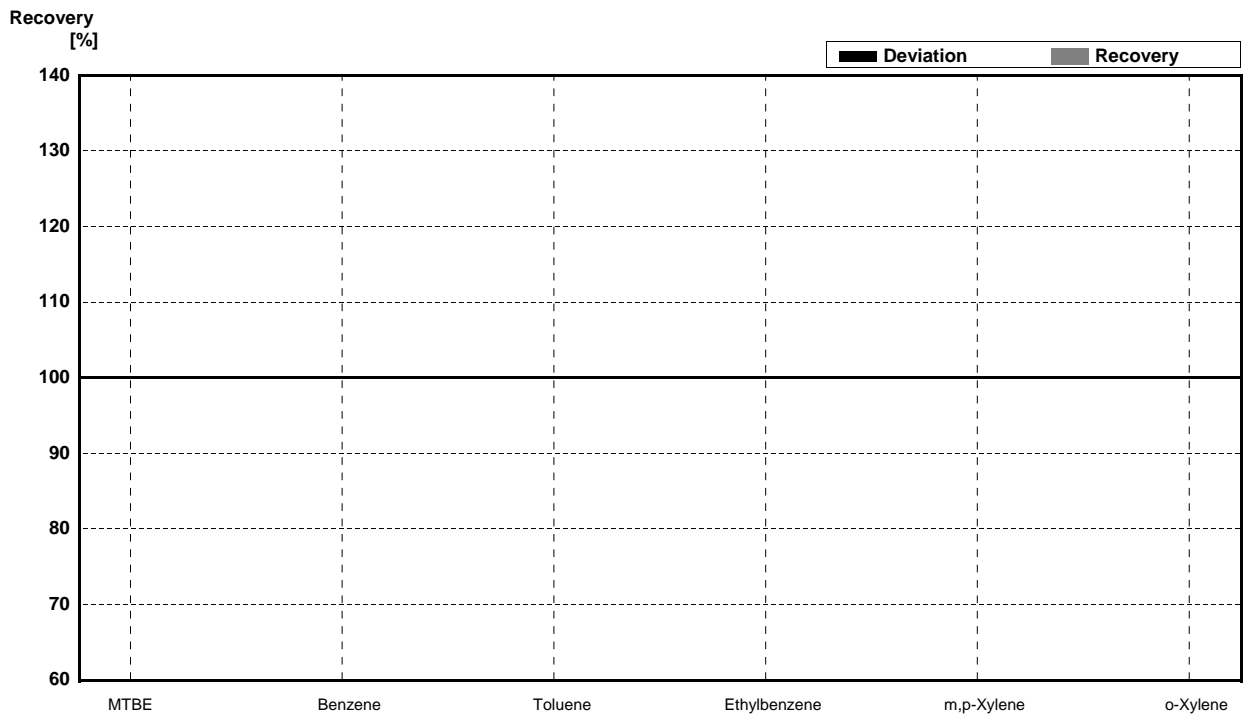
**Sample B9A**  
**Laboratory AD**

Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	0,49	0,02			$\mu\text{g/L}$	
Benzene	0,60	0,03			$\mu\text{g/L}$	
Toluene	<0,5				$\mu\text{g/L}$	
Ethylbenzene	4,68	0,23			$\mu\text{g/L}$	
m,p-Xylene	6,20	0,31			$\mu\text{g/L}$	
o-Xylene	1,52	0,08			$\mu\text{g/L}$	



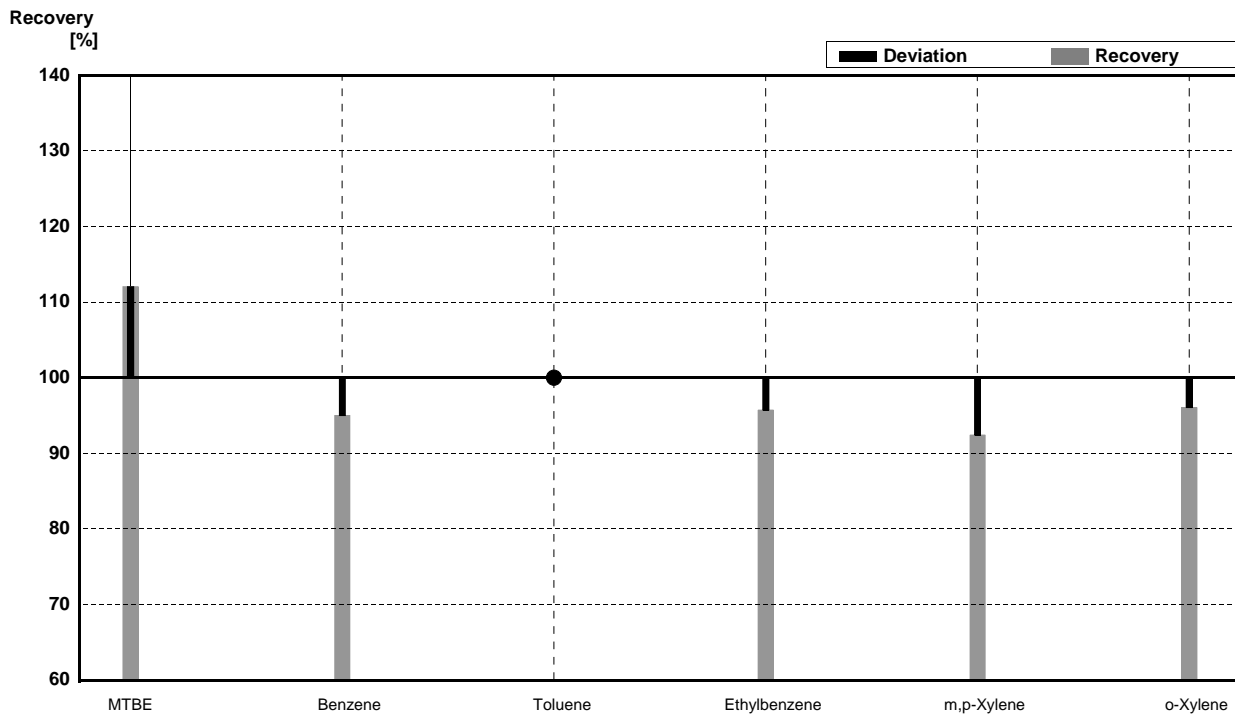
**Sample B9B**  
**Laboratory AD**

Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	3,82	0,19			$\mu\text{g/L}$	
Benzene	4,27	0,21			$\mu\text{g/L}$	
Toluene	3,62	0,18			$\mu\text{g/L}$	
Ethylbenzene	0,70	0,04			$\mu\text{g/L}$	
m,p-Xylene	3,90	0,20			$\mu\text{g/L}$	
o-Xylene	2,65	0,13			$\mu\text{g/L}$	



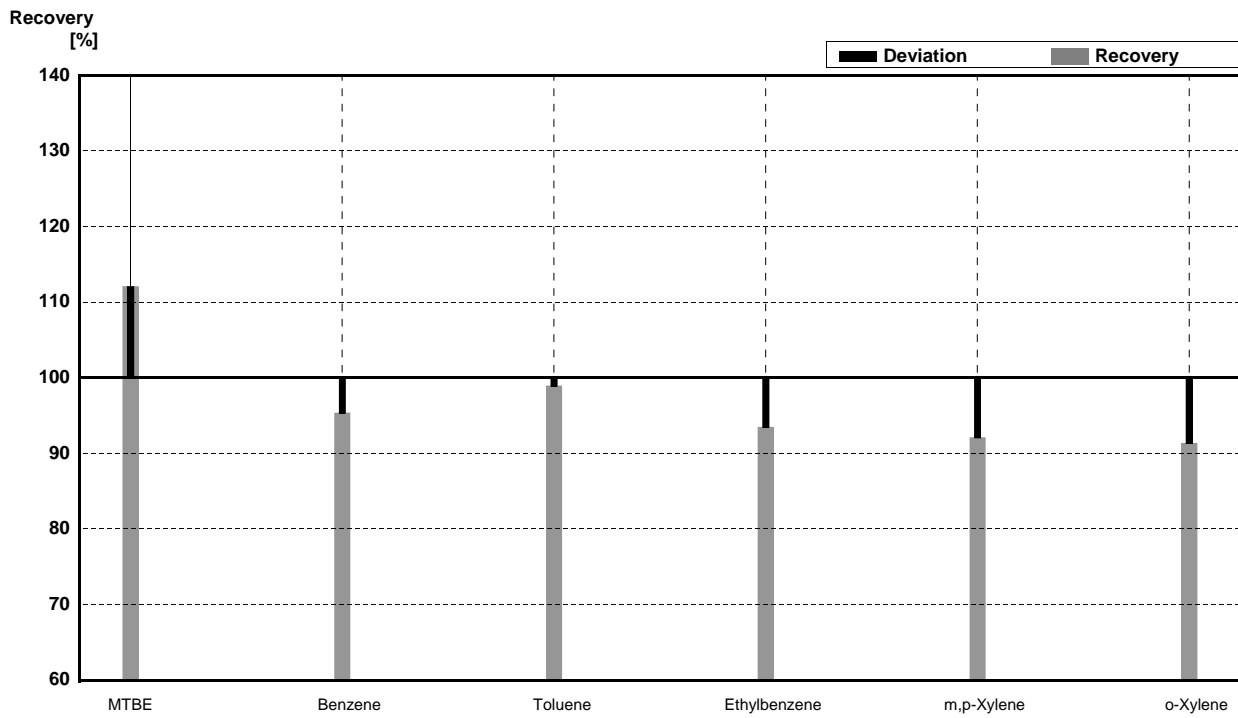
**Sample B9A**  
**Laboratory AE**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	0,49	0,02	0,549	0,110	µg/L	112%
Benzene	0,60	0,03	0,570	0,114	µg/L	95%
Toluene	<0,5		<0,100		µg/L	•
Ethylbenzene	4,68	0,23	4,48	0,896	µg/L	96%
m,p-Xylene	6,20	0,31	5,73	1,15	µg/L	92%
o-Xylene	1,52	0,08	1,46	0,291	µg/L	96%



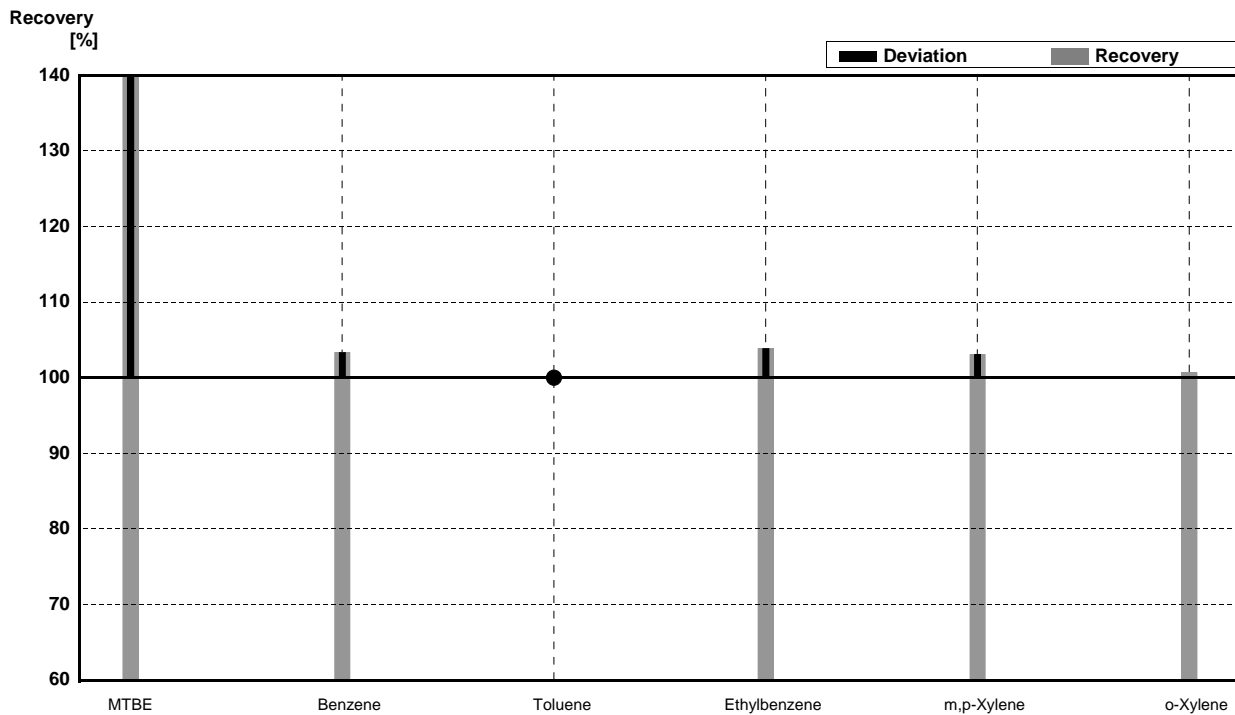
**Sample B9B**  
**Laboratory AE**

Parameter	Target value	$\pm U$ (k=2)	Result	$\pm$	Unit	Recovery
MTBE	3,82	0,19	4,28	0,856	$\mu\text{g/L}$	112%
Benzene	4,27	0,21	4,07	0,814	$\mu\text{g/L}$	95%
Toluene	3,62	0,18	3,58	0,716	$\mu\text{g/L}$	99%
Ethylbenzene	0,70	0,04	0,654	0,131	$\mu\text{g/L}$	93%
m,p-Xylene	3,90	0,20	3,59	0,718	$\mu\text{g/L}$	92%
o-Xylene	2,65	0,13	2,42	0,484	$\mu\text{g/L}$	91%



**Sample B9A**  
**Laboratory AF**

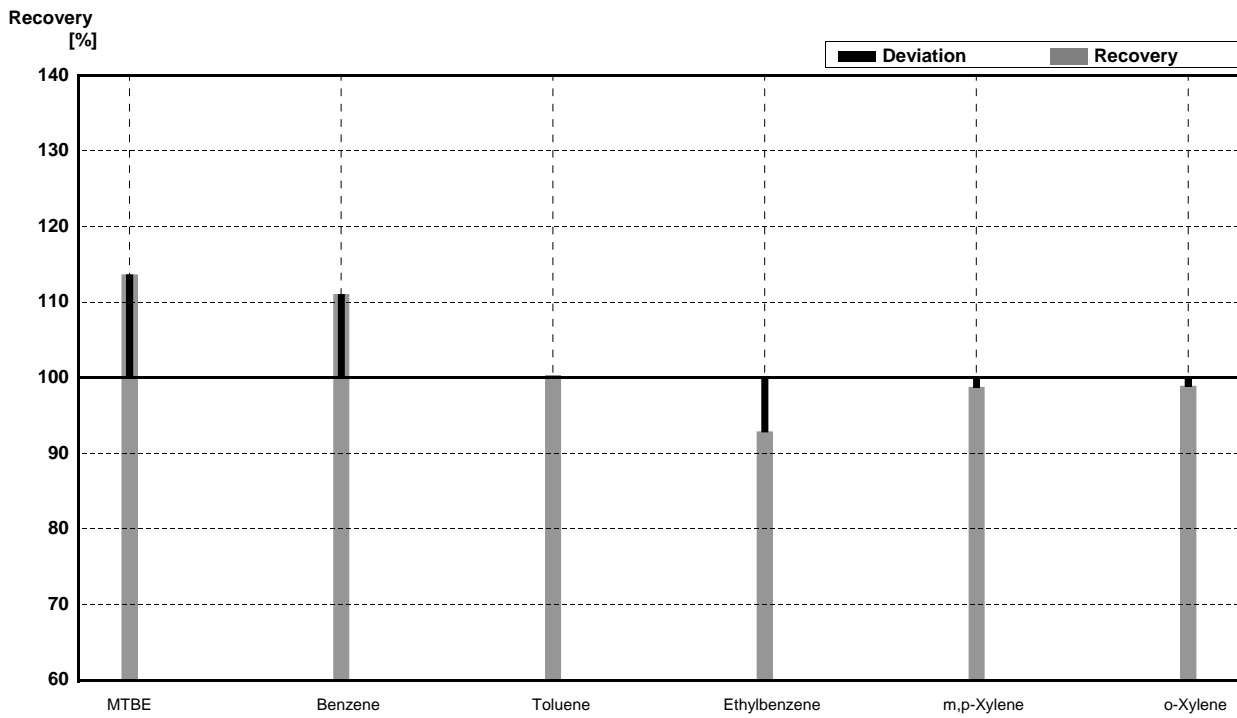
Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	0,49	0,02	0,78	0,078	µg/L	159%
Benzene	0,60	0,03	0,62	0,062	µg/L	103%
Toluene	<0,5		<0,5		µg/L	•
Ethylbenzene	4,68	0,23	4,86	0,486	µg/L	104%
m,p-Xylene	6,20	0,31	6,39	0,639	µg/L	103%
o-Xylene	1,52	0,08	1,53	0,153	µg/L	101%





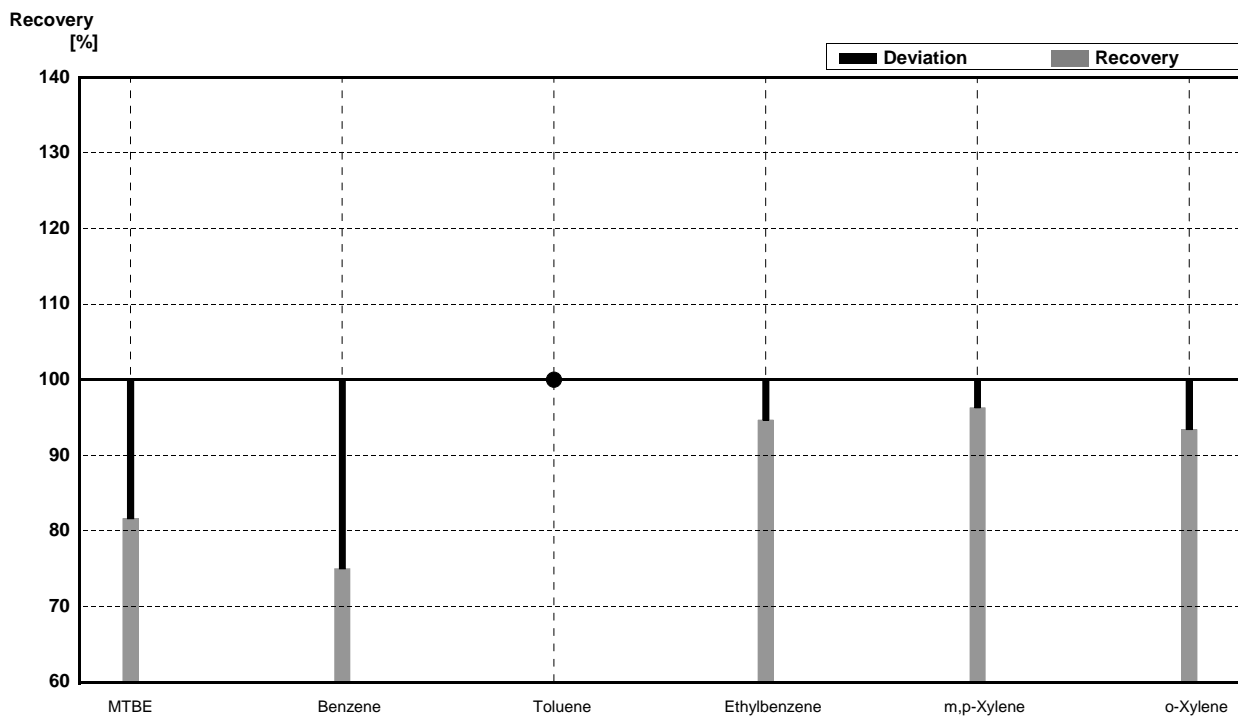
**Sample B9B**  
**Laboratory AF**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	3,82	0,19	4,34	0,434	µg/L	114%
Benzene	4,27	0,21	4,74	0,474	µg/L	111%
Toluene	3,62	0,18	3,63	0,363	µg/L	100%
Ethylbenzene	0,70	0,04	0,65	0,065	µg/L	93%
m,p-Xylene	3,90	0,20	3,85	0,385	µg/L	99%
o-Xylene	2,65	0,13	2,62	0,262	µg/L	99%



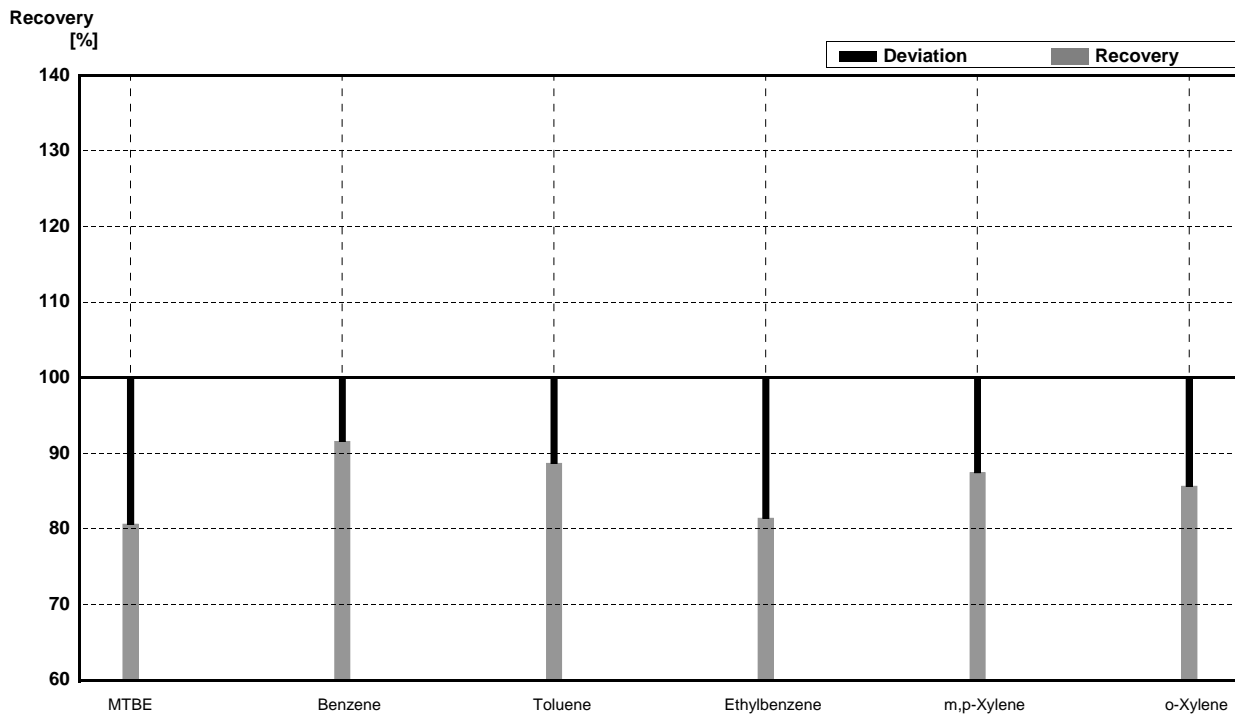
**Sample B9A**  
**Laboratory AG**

Parameter	Target value	± U (k=2)	Result	±	Unit	Recovery
MTBE	0,49	0,02	0,40	0,06	µg/L	82%
Benzene	0,60	0,03	0,45	0,07	µg/L	75%
Toluene	<0,5		<0,2		µg/L	•
Ethylbenzene	4,68	0,23	4,43	0,53	µg/L	95%
m,p-Xylene	6,20	0,31	5,97	0,65	µg/L	96%
o-Xylene	1,52	0,08	1,42	0,21	µg/L	93%



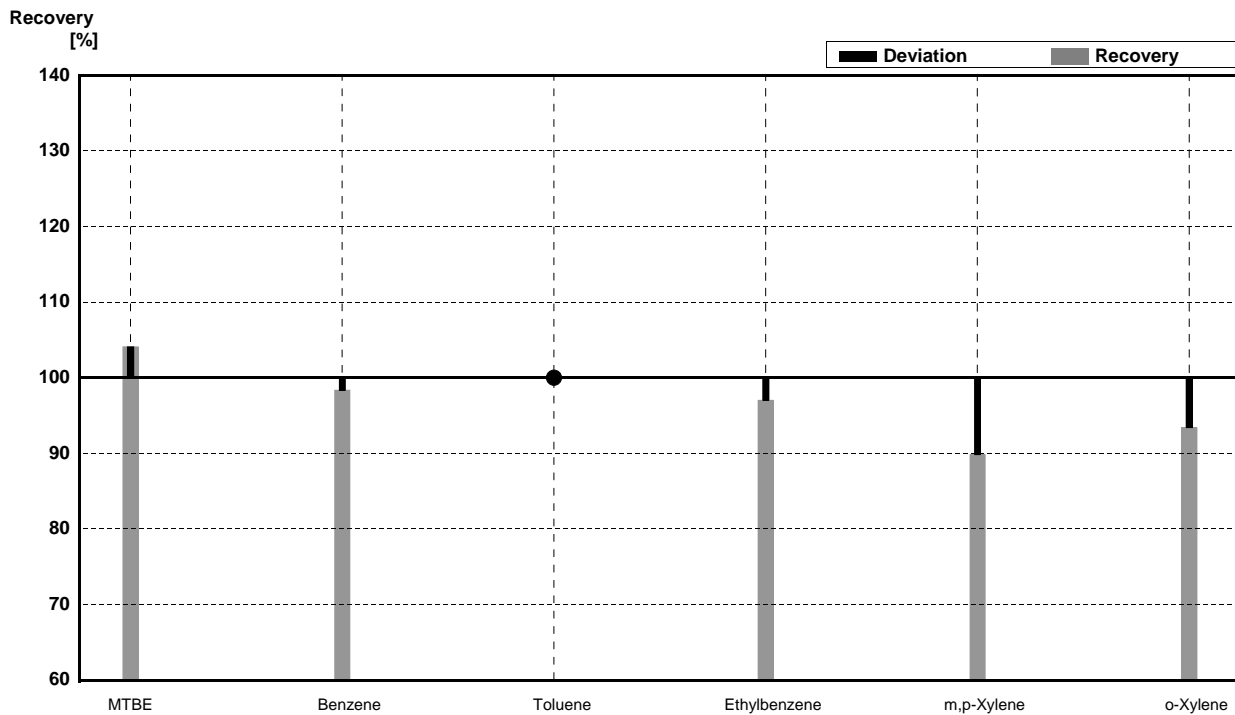
**Sample B9B**  
**Laboratory AG**

Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	3,82	0,19	3,08	0,41	$\mu\text{g/L}$	81%
Benzene	4,27	0,21	3,91	0,47	$\mu\text{g/L}$	92%
Toluene	3,62	0,18	3,21	0,39	$\mu\text{g/L}$	89%
Ethylbenzene	0,70	0,04	0,57	0,07	$\mu\text{g/L}$	81%
m,p-Xylene	3,90	0,20	3,41	0,45	$\mu\text{g/L}$	87%
o-Xylene	2,65	0,13	2,27	0,29	$\mu\text{g/L}$	86%



**Sample B9A**  
**Laboratory AH**

Parameter	Target value	$\pm U (k=2)$	Result	$\pm$	Unit	Recovery
MTBE	0,49	0,02	0,51	0,10	$\mu\text{g/L}$	104%
Benzene	0,60	0,03	0,59	0,12	$\mu\text{g/L}$	98%
Toluene	<0,5		<0,05	0,01	$\mu\text{g/L}$	•
Ethylbenzene	4,68	0,23	4,54	0,91	$\mu\text{g/L}$	97%
m,p-Xylene	6,20	0,31	5,57	1,11	$\mu\text{g/L}$	90%
o-Xylene	1,52	0,08	1,42	0,28	$\mu\text{g/L}$	93%



**Sample B9B**  
**Laboratory AH**

Parameter	Target value	$\pm U$ (k=2)	Result	$\pm$	Unit	Recovery
MTBE	3,82	0,19	4,33	0,87	$\mu\text{g/L}$	113%
Benzene	4,27	0,21	5,01	1,00	$\mu\text{g/L}$	117%
Toluene	3,62	0,18	3,16	0,63	$\mu\text{g/L}$	87%
Ethylbenzene	0,70	0,04	0,87	0,17	$\mu\text{g/L}$	124%
m,p-Xylene	3,90	0,20	4,45	0,89	$\mu\text{g/L}$	114%
o-Xylene	2,65	0,13	3,13	0,63	$\mu\text{g/L}$	118%

