Electronic Supplementary Material (ESI) for Analytical Methods.

Supplementary Data

Table S1. Concentration and recovery percentages for Mixture A compounds (10 mg/L), injected at different times after preparation

Concentration (mg/L)								
Time (hours)	**Benzene**	**Toluene**	**Ethylbenzene**	**o- Xylene**	**Indene**	**m/p-Xylene**	**Indane**	**Naphthalene**
1	10.74	10.65	10.51	10.25	9,97	10.88	10.48	10.52
2	10.56	10.52	10.44	10.20	9.93	10.58	10.34	10.39
6	10.81	10.75	10.62	10.59	10.27	10.45	10.44	10.47
12	9.12	9.56	9.60	9.59	9.53	9.69	9.91	9.98
24	6.55	7.62	7.96	8.02	7.65	8.25	8.63	8.80
Recovery (%)								
1	107	107	105	103	100	109	105	105
2	106	105	104	102	99	106	103	104
6	108	107	106	106	103	104	104	105
12	91	96	96	96	95	97	99	100
24	66	76	80	80	77	83	86	88

Table S2. Specific conditions of each detector used in this study

UV			
Wavelength (nm)	Bandwidth (nm)	ref Wavelength (nm)	ref Bandwidth (nm)
210	1	600	1
FLD			
Excitation (nm)	Emission (nm)	Sensitivity	Filter wheel
210	260	4	auto
260	330	2	auto
280	310	4	auto

For the UV detector, the data collection rate is 50 and the response time is 500 ms.

The FLD detector has a multichannel performance, where the collection data rate and response time can be defined itself. In this study, the standard option with a maximum of 4hz data collection rate and the response time is less than 250 ms was used. When the filter wheel is auto, the detector automatically selects a filter wheel position.

Table S3. T-test P-values at each concentration tested for the compounds in mixture A, in groundwater. Highlighted columns

	Mixture A							
Concentration	**B**	**T**	**E**	**o-X**	**m/p-X**	**IA**	**IE**	**N**
0.5 mg/L	0.429	0.868	0.678	0.669	< 0.001	0.609	0.477	0.124
1 mg/L	0.076	0.220	0.009	0.038	0.002	0.189	0.189	0.110
2.5 mg/L	0.116	0.238	0.159	0.150	0.002	0.017	0.078	0.380
5 mg/L	0.676	0.208	0.205	0.359	0.001	0.141	0.009	0.004
7.5 mg/L	0.850	0.423	0.390	0.278	0.002	0.986	0.070	0.001
10 mg/L	0.762	0.530	0.432	0.278	0.001	0.158	0.097	0.003

represent p-values < 0.05, indicating a significant matrix effect

B; benzene, **T;** toluene, **E;** ethylbenzene, **X;** xylene, **IA**; indane, **IE;** indene, **N;** naphthalene

Table S4. T-test P-values at each concentration tested for the compounds in mixture B, in medium. Highlighted columns

	Mixture B			
Concentration	**Benzene**	**Monochlorobenzene**	**1,2-DCB**	**1,4-DCB**
1 mg/L	0.055	0.031	0.276	0.059
2.5 mg/L	0.043	0.005	0.033	0.001
5 mg/L	0.007	0.020	0.062	0.017
7.5 mg/L	0.007	0.027	0.067	0.016
12 mg/L	0.020	0.016	0.017	0.053

represent p-values < 0.05, indicating a significant matrix effect

DCB; Dichlorobenzene

Table S5. Intercept, slope and R^2 values of the linear calibration line from the compounds of mixture A

	Mixture A							
Compounds	**B**	**T**	**E**	**o-X**	**m/p-X**	**IA**	**IE**	**N**
Intercept (a)	12116	59006	72661	62736	639601	200006	231467	200006
Slope (b)	2194	8707	9974	4655	81357	142190	35704	106999
R^2	0.998	0.9984	0.9988	0.9968	0.9986	0.9993	0.9988	0.9994

B; benzene, **T;** toluene, **E;** ethylbenzene**, X;** xylene, **IA**; indane, **IE;** indene, **N;** naphthalene

Table S6. Intercept, slope and R^2 values of the linear calibration line from the compounds of mixture B

	Mixture B			
Compounds	**Benzene**	**Monochlorobenzene**	**1,2-DCB**	**1,4-DCB**
Intercept (a)	0.8476	1.7032	1.4351	1.3978
Slope (b)	0.324	0.8452	0.9298	1.1396
R^2	0.9987	0.9971	0.9936	0.9916

DCB; Dichlorobenzene

Table S7. RSD values for each compound in mixture A, at different concentrations for the determination of intermediate precision of the method

Intermediate Precision (%)								
Concentration	**B**	**T**	**E**	**o-X**	**m/p-X**	**IA**	**IE**	**N**
0.5 mg/L	10.91	8.19	7.30	4.34	1.11	9.15	2.09	0.25
1 mg/L	14.39	10.35	7.29	5.88	0.25	9.24	0.59	2.22
2.5 mg/L	4.47	1.82	1.66	2.46	2.60	1.39	2.75	3.39
5 mg/L	1.78	3.88	2.64	2.18	0.96	13.22	2.39	3.05
7.5 mg/L	4.58	3.38	1.98	1.83	3.12	0.61	1.49	2.81
10 mg/L	7.78	6.14	3.55	3.14	3.53	12.64	2.86	2.74

B; benzene, **T;** toluene, **E;** ethylbenzene, **X;** xylene, **IA**; indane, **IE;** indene, **N;** naphthalene

Table S8. RSD values for each compound in mixture B, at different concentrations for the determination of intermediate precision of the method

Intermediate Precision (%)				
Concentration	**Benzene**	**Monochlorobenzene**	**1,2-DCB**	**1,4-DCB**
1 mg/L	2.88	0.68	2.56	3.51
2.5 mg/L	3.43	2.45	2.57	3.68
5 mg/L	3.67	4.01	1.48	3.46
7.5 mg/L	1.57	1.89	2.46	3.16
12 mg/L	1.60	1.58	3.00	3.65

DCB; Dichlorobenzene

Table S9. Recovery values and mean recovery percentages obtained at 10 mg/L for mixture A.

Recovery (10 mg/L)								
	B	**T**	**E**	**o-X**	**m/p-X**	**IA**	**IE**	**N**
Sample 1	8.70	10.31	10.05	10.09	10.19	10.18	10.31	10.64
Sample 2	8.88	10.89	11.24	11.63	10.98	10.85	10.89	11.36
Recovery (mean)	88%	106%	106%	109%	106%	105%	106%	110%

B; benzene, **T;** toluene, **E;** ethylbenzene, **X;** xylene, **IA**; indane, **IE;** indene, **N;** naphthalene

Table S10. Recovery values and mean recovery percentages obtained at 10 mg/L for mixture B.

Recovery (10 mg/L)				
	Benzene	**MCB**	**1,2-DCB**	**1,4-DCB**
Sample 1	8.33	10.62	9.49	9.35
Sample 2	8.01	10.23	9.32	9.50
Recovery (mean)	82%	104%	94%	94%

MCB; Monochlorobenzene, **DCB;** Dichlorobenzene