

METHOD STATEMENT



Determinand:

Extractable Hydrocarbons (EH) C6 - C40

Matrix:

Raw waters, waste waters, effluents, leachates and non-regulatory drinking water.

Principle of Method:

Extractable hydrocarbons are extracted from aqueous samples using n-Pentane and are quantified by capillary gas chromatography with flame ionisation detection.

Sampling and Sample Preparation:

250ml glass bottles should be used, fitted with PTFE lined screw caps.

Samples should be stored at 3 ± 2°C.

Samples must, if at all possible, be extracted in the sample bottles in which they were collected.

Samples are stable for 13 days (In-House Data) from sampling.

Interferences:

Any co-extracted material which has a retention time in the C6 to C40 range and which elicits a detector response will interfere.

Performance of Method:

The range of analysis is 10 - 20,000µg/l without dilution

Determinand	LOD µg/l	Low Std		High Std	
		RSD %	Bias %	RSD %	Bias %
>C6 - C8	0.8520	8.43	-	6.18	-
>C8 - C10	3.7935	6.96	-	5.95	-
>C10 - C12	4.6804	7.05	-	5.90	-
>C12 - C16	2.3295	6.67	-	5.47	-
>C16 - C21	2.4262	5.80	-	4.61	-
>C21 - C40	7.3410	5.28	-	4.42	-
>C10 - C16	5.2904	6.60	-	5.40	-
>C16 - C24	3.4857	5.57	-	4.31	-
>C24 - C40	6.4932	5.41	-	4.67	-
EH (>C6 - C40)	12.9901	5.95	8.39	5.54	13.04

Low Spikes (20%)

Determinand	Tap Water		Final Effluent		Trade Effluent		Soil Leachate	
	% Bias	% RSD	% Bias	% RSD	% Bias	% RSD	% Bias	% RSD
>C6 - C8	-	15.18	-	13.09	-	19.43	-	15.61
>C8 - C10	-	14.50	-	11.80	-	15.82	-	11.89
>C10 - C12	-	13.66	-	10.20	-	13.74	-	10.67
>C12 - C16	-	10.31	-	8.48	-	11.26	-	8.49
>C16 - C21	-	9.71	-	8.29	-	11.44	-	6.45
>C21 - C40	-	9.29	-	8.23	-	11.03	-	7.88
>C10 - C16	-	10.90	-	8.70	-	11.72	-	8.83
>C16 - C24	-	10.38	-	8.59	-	11.29	-	6.38
>C24 - C40	-	8.86	-	8.05	-	11.21	-	7.92
EH (>C6 - C40)	0.82	10.26	3.09	8.62	1.07	12.48	2.09	8.27

METHOD STATEMENT



High Spikes (80%)

Determinand	Tap Water		Final Effluent		Trade Effluent		Soil Leachate	
	% Bias	% RSD	% Bias	% RSD	% Bias	% RSD	% Bias	% RSD
>C6 - C8	-	12.32	-	13.97	-	13.78	-	15.22
>C8 - C10	-	10.87	-	10.95	-	10.39	-	11.72
>C10 - C12	-	10.40	-	12.67	-	11.38	-	11.70
>C12 - C16	-	8.37	-	10.70	-	10.05	-	10.74
>C16 - C21	-	8.77	-	11.13	-	11.14	-	11.01
>C21 - C40	-	8.54	-	10.64	-	10.71	-	11.08
>C10 - C16	-	8.74	-	11.07	-	10.27	-	10.89
>C16 - C24	-	9.02	-	10.94	-	10.76	-	11.13
>C24 - C40	-	8.40	-	10.77	-	10.92	-	11.03
EH (>C6 - C40)	3.66	9.35	2.63	11.58	6.85	10.86	2.73	11.71

Uncertainty of Measurement:

The reported uncertainty is an expanded uncertainty calculated using a coverage factor of 2, which gives a level of confidence of approximately 95%.

Determinand	Uncertainty of Measurement %
EH (>C6 - C40)	27.52%

References:

TNRCC method 1005 - TNRCC Method for Total Petroleum Hydrocarbons.

TNRCC method 1006 - Characterisation of C6 to C35 Petroleum Hydrocarbons in Environmental Samples