

METHOD STATEMENT



Determinand:

Suspended Solids, Volatile Matter and Ashed Solids

Matrix:

Raw waters, effluents, leachates and waste waters

Principle of Method:

Suspended matter is removed from a measured volume of sample by filtration under reduced pressure through a pre-treated, pre-weighed glass fibre filter paper and determined gravimetrically after washing and drying at 105 ± 5°C. For ashed solids this is followed by ignition at 450°C and weighing the residue.

Sampling and Sample Preparation:

Samples should be shaken before analysis to ensure that any subsample is as homogeneous as possible. Samples are stable for 7 days (In-House Data) from sampling.

Interferences:

Samples containing oil or other organic liquids require special treatment. Oil or other organic liquids may be retained on the filter and only partially volatilised on drying. The filtered, water-washed residue can be freed from oil by washing with methanol and petroleum ether, before drying. Samples containing high levels of dissolved solids also require special treatment. This can be confirmed by a very high EC result, for example, >20,000. Where a sample contains a high level of dissolved solids, a false high result may be obtained due to dissolved solids crystallising out on the filter paper during the filtration process. After filtration, as described in the method, the sample is washed with near to boiling deionised or distilled water. The same procedure is used for foamy samples.

Performance of Method:

Determinand: Suspended Solids
 Range of Application: up to 25mg of recovered material
 1.0mg/l - 125mg/l for 200ml volume
 Limit of Detection: 0.4989 mg/l
 Normal Reporting Limit: <1.0 mg/l

Determinand	Low Standard		High Standard	
	RSD %	Bias %	RSD %	Bias %
Suspended Solids	8.38	3.64	1.07	-0.22

Determinand	%	Finham FE		Trade Effluent		Crude Sewage	
		Low	High	Low	High	Low	High
Suspended Solids	Rec.	98.96	99.99	99.85	100.57	99.90	101.97
	RSD	3.31	0.98	9.89	1.71	4.12	3.03

Determinand	%	Soil Leachate		Ground Water	
		Low	High	Low	High
Suspended Solids	Rec.	93.64	97.61	102.95	104.03
	RSD	6.95	5.15	2.67	4.72

METHOD STATEMENT



Determinand: Ashed Solids
 Range of Application: 3 mg/l upwards
 Normal Reporting Level: 3 mg/l

Determinand	Final Effluent		Trade Effluent		Soil Leachate		Surface water	
	%RSD	%Rec	%RSD	%Rec	%RSD	%Rec	%RSD	%Rec
Ashed Solids	3.60	95.73	11.33	90.55	3.95	92.00	6.47	91.64

Determinand	Groundwater		Crude Effluent		Landfill Leachate	
	%RSD	%Rec	%RSD	%Rec	%RSD	%Rec
Ashed Solids	3.36	96.23	7.80	98.91	2.42	94.82

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 %
Suspended Solids	11.39
Ashed Solids	16.75

References:

Suspended, Settleable, and Total Dissolved Solids in Waters and Effluents 1980.

Methods for the Examination of Waters and Associated Materials. HMSO. ISBN 011 751957 x.

ISBN 0-87553-161-X, Standard Methods for the Examination of Water and Wastewater.