

METHOD STATEMENT



Determinand:

Determination of Suspended Solids.

Matrix:

Sample Types: Raw, Potable, Surface and Ground waters.

Principle of Method:

This method uses any suitable vacuum pump and filtration system.

Suspended solids are defined as those solids that are retained by a glass fibre filter paper. The weight of the recovered matter is determined gravimetrically after drying at a temperature of 105 ± 5 °C.

Sampling and Sample Preparation:

Samples are normally collected in 500 ml PET bottles. Other size PET bottles or glass bottles are also suitable.

No special preservation is required

If analysis cannot be immediately undertaken, samples should be stored at a temperature of 1 - 5°C until the day of analysis. Storage at this temperature reduces biodegradation of suspended matter. Analysis should be completed within 14 days of sampling.

Interferences

If oil or grease is present in the sample then it will remain on the filter paper after washing with deionised water and cause falsely high results. Oil or grease should not be found in potable water but if contamination has occurred and oil or grease can be visually seen or smelt in a sample then a solvent wash will be required.

If the sample has a high dissolved solids content it may also cause falsely high results as the dissolved solids may have only been partially removed from the filter paper when a 50 ml wash is used. The sample may require a greater volume of deionised water to be used as a wash to fully remove all dissolved solids from the filter paper.

Performance of Method:

Range of Application:

There is no upper range of application; only the LOQ applies to this method. If a sample has a result greater than 100 mg/l a visual check should be made on the sample to determine whether the result is due to suspended solids or due to any of the interferences listed.

The reporting limit is 3.7 mg/l.

Limit of Quantification:

3.6680 mg/l for 250 ml of sample

If a smaller volume is used the LOQ should be adjusted accordingly.

Recoveries of Compounds, Bias and Uncertainty of measurement:

Sample type	Mean sample result (mg/l)	Mean sample spike result (mg/l)	Conc. of spike (mg/l)	Spike recovery (%)	Bias (%)	% uncertainty
Soft- Langsett	0.018	79.327	80	99.14	-	4.98
Medium- Hooper	0.209	79.323	80	98.89	-	5.77
Hard- Haisthorpe	0.236	79.173	80	98.67	-	6.57
Raw - Derwent	24.150	82.000	80	96.42	-	14.15
Borehole - Cowick	0.223	79.214	80	98.74	-	5.83
20 mg/l Std	19.827		-		-0.86	13.31
80 mg/l Std	78.450		-		-1.94	6.98

References:

Suspended, Settleable and Total Dissolved Solids in Waters and Effluents 1980, Methods for the examination of Waters and Associated Materials. (HMSO) ISBN 011751957X