

# METHOD STATEMENT

**Determinand:**

Manual determination of Turbidity.

**Matrix:**

Sample Types: Raw and Potable waters.

**Principle of Method:**

This method uses a Hach Turbidimeter model 2100N.

Turbidity is an expression of the optical property of a liquid that causes light to be scattered and absorbed rather than transmitted in straight lines through the sample. Turbidity is the measure of particulate and colloidal matter suspended in a solution and is used to measure the clarity of water for public health and aesthetic reasons.

The Turbidity of a sample is measured nephelometrically and the units of measurement are Nephelometric Turbidity Units (NTU).

**Interferences:**

This is an empirical method. There are no classical matrix effects.

**Performance of the Method:**

***Range of Application:***

LOD – 4000 NTU (using five calibration standards).

Any sample result that exceeds 4000 NTU should be recorded as >4000 NTU as sample dilution is not appropriate for this method.

Asset 0205 : The reporting limit is 0.08 NTU

Asset 1119 : The reporting limit is 0.04 NTU

Asset 1111: The reporting limit is 0.04 NTU.

***Limit of Detection:***

Asset 0205 : 0.075 NTU

Asset 1119 : 0.036 NTU

Asset 1111: 0.040 NTU

***Recoveries of Compounds and Uncertainty of measurement:***

TURBIDITY METER 1 (Asset 0205)

<u>Sample type</u>	<u>Mean sample result (NTU)</u>	<u>Mean sample spike result (NTU)</u>	<u>Conc. of spike (NTU)</u>	<u>Spike recovery (%)</u>	<u>% uncertainty</u>
Potable. Bridgend tap (Soft)	0.127	3.91	4.00	94.5	± 8.7
Potable. Wakefield tap (Medium)	0.129	3.90	4.00	94.2	± 15.1
Potable. Coventry tap (Hard)	0.168	3.44	3.50	93.6	± 14.3
Derwent at Elvington (Raw)	0.884	4.60	4.00	92.9	± 10.4



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## TURBIDITY METER 2 (Asset 1119)

<u>Sample type</u>	<u>Mean sample result (NTU)</u>	<u>Mean sample spike result (NTU)</u>	<u>Conc. of spike (NTU)</u>	<u>Spike recovery (%)</u>	<u>% uncertainty</u>
Potable. Bridgend tap (soft)	0.140	4.27	4.00	103.3	± 5.4
Potable. Wakefield tap (medium)	0.198	4.30	4.00	102.6	± 4.8
Potable. Elvington treated (hard)	0.121	4.24	4.00	102.9	± 6.0
Raw. Tophill Low-River Hull	0.645	4.24	3.50	102.7	± 7.2

## TURBIDITY METER 3 (Asset No. 1111)

<b>Sample type</b>	<b>Mean sample result (NTU)</b>	<b>Mean sample spike result (NTU)</b>	<b>Conc. of spike (NTU)</b>	<b>Spike recovery (%)</b>	<b>% uncertainty</b>
Potable. Wakefield tap (medium)	0.149	4.03	4.00	100.07	± 2.36

### References:

Colour and Turbidity of Waters 1981(HMSO), Methods for the examination of Waters and Associated Materials. ISBN 0117579553

