

# Handling Samples with Particulate Matter

## Is the QBD1200 capable of handling samples containing particles?

The QBD1200 Total Organic Carbon Analyzer was designed for use in clean water applications; however, even “clean” water samples may sometimes contain particulate matter (e.g. influent from a drinking water treatment plant). Particles in a water sample are described by the turbidity measurement. In an effort to answer the above question, two samples were tested:

1. A 20 Nephelometric Turbidity Unit (NTU) standard was measured on a Hach® 2100AN Turbidimeter before and after passing through the QBD1200
2. A polymer microsphere suspension solution containing 100 µm polystyrene beads of an approximate concentration of 300 particles per milliliter was measured on the same turbidimeter before and after passing through the QBD1200.

The rationale for the approach is that the turbidity of the sample should decrease if particles in the solution are trapped by the instrument.

## Test Data

The test data clearly indicates that there is no decrease in turbidity observed:

Standard Solution	Turbidity reading before passing through QBD1200	Turbidity reading after passing through QBD1200
20 NTU	19.1	20.3
Polystyrene Microspheres	1.29	1.7
20 NTU	19.0	20.2
Polystyrene Microspheres	1.03	1.84
20 NTU	19.4	20.2
Polystyrene Microspheres	1.18	1.76

## Conclusion

The QBD1200 is capable of handling samples with particles.

## Caveat

Not all particles are equal. While some particles may pass through the instrument and cause no harm, it is possible that others could create a blockage. This will depend on many factors including its composition, density, surface tension, and shape.

*In the interest of improving and updating its equipment, Hach reserves the right to alter specifications to equipment at any time.*

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