**Drinking Water
Engineering and Science
Discussions**

Interactive comment on "Fluorescence spectroscopy as a tool for determination of organic matter removal efficiency at water treatment works" *by* M. Z. Bieroza et al.

Anonymous Referee #1

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The paper presents an evaluation of fluorescent spectroscopy for determination of organic matter in water samples collected at water treatment works after different stages of the treatment. The method is compared to total organic carbon measured by TOC analyser and to UV absorbance. The paper shows very interesting data, however the reader-friendliness is compromised somewhat due to the extensive use of abbreviations. There is also some confusion in the various terms used for the different measurements/calculations of the organic matter.

Specific comments: Page 6 line 17 - page 7 line 6: The information given in this section is highly relevant but should probably be placed in either "introduction" or "results and

discussion".

Page 7 line 20: What is the difference between non-purgable organic carbon and total organic carbon?

Page 8 line 11: The "OM" referred to it that the same as the same as the TOC referred to in the previous sentence or is it the direct measurement of NPOC or something third? Please be careful in using only one term for the same thing.

Page 10 line 19: In Figure 2 I do not see that the fluorescence intensities are higher for the final stage than for the chlorination stage. Please clarify.

Page 10 line 24: Are the TOC referring to something determined from the EEM or to the NPOC? If it is determined from EEM please specify how it was determined.

Page 11 line 2: Does the "Higher OM removal" refer to removal in percent? And is it also the case for your data?

Page 11 line 11: Are the TOC referring to something determined from the EEM or to the NPOC?

Page 12 line 14-17: I fail to see how you can extract this from your data.

Page 13 line 1-3: If this is what you have used for the determination of OM removal in the previous sections I would recommend that you move this to the front of the results chapter.

Page 14 line 1-2: Is this statement based on what your measurements shows or your knowledge of which kinds of organic matter are removed in the individual steps in the water treatment works?

Page 14 line 8: Which model are you referring to regarding UV absorbance?

Page 14 line 13-18: This is very interesting, can you please extrapolate to how this relates to your data?

Page 14 line 19 – page 15 line 18: If you want to present these models you should give more information about how they work, what the mathematics looks like or give a reference to another paper where this information can be obtained. As it is, it is of little use to the reader that you have a undisclosed model, which can describe your data. On the positive side I think that your paper is strong enough even without incorporating these models.

Page 16 line 5-7: I fail to see how this paper proves that fluorescent properties describes the degree of aromaticity and microbial DOM content as you have "control" measured neither of these properties.

Technical comments: Page 2 line 10: The abbreviation "UV" is defined on the next page.

Page 3 line 15: "TOC" is also defined in the abstract.

Page 3 line 25: The definition of "TOX" is unclear

Page 5 line 14: The "they" in the sentence seems to refer to Severn Trent Water Ltd. Is that the intention?

Page 8 line 6: post-GAC is not defined previously.

Page 8 line 11: The "pre-contact tank stage" does not match the stages mentioned above.

Page 11 line 3-5: The sentence is unclear, please rephrase.

Page 14 line 2-4: The sentence is unclear, please rephrase.

Interactive comment on Drink. Water Eng. Sci. Discuss., 2, 259, 2009.