

Anonymous Referee #2

First, the authors would like to thank the reviewer for taking valuable time to review and for the critical assessment of the paper.

Comment 1:

Does the paper address relevant scientific questions within the scope of DWES?

This paper addresses a relevant and interesting topic for DWES. Especially for the special CCWI 2016 issue, the application of online analyzers for advanced control and monitoring fits the scope.

Answer 1:

None

Comment 2:

Does the paper present novel concepts, ideas, tools, or data?

This paper presents a further refinement of the application of online analyzers for advanced control and monitoring. The application of online TOC measurements for advanced control for waste water treatment plants in the Netherlands is not yet widely spread. Especially the idea of applying online TOC measurements optimizing the amount of BOD available for the denitrification process in a waste water treatment plant is interesting. (As an addition to ammonium and nitrate analyzers)

Answer 2:

None

Comment 3:

Are substantial conclusions reached?

Based on the results conclusions can be reached; however the conclusions could be more specifically formulated. In the current version they are quite qualitative and not quantitative. For example: due to optimization with TOC, the original dosage can be reduced to approximately one third.

Answer 3:

It seems that Case 3 results, conclusion was not enough qualitative. It has been changed as follow to address that concern:

By having TOC analysis on-site and jar testing data with TOC and turbidity, plant operators did not have to wait for third party test results and could make immediate process decisions. The plant was able to save over \$100k in chemicals and disposal costs and shown in Table 2. They also realized that effective TOC removal does not always correlate to effective turbidity removal or vice versa, therefore TOC and turbidity levels must both be monitored.

Comment 4:

Are the scientific methods and assumptions valid and clearly outlined?

Improvements can be made for this aspect. First of all, the method for each case is not structured in a distinct subsection (further elaborated at aspect no. 10.). The method for each section is clearly explained, but it is not compared with methods from other studies. Also explicit references to other works are not present in these paragraphs. (See also aspect no. 7.)

Answer 4:

For each of the 3 case studies, an improvement was made by creating a separate section for "Method and objective". In this section, authors clarified the overall subject of study, the previous monitoring (or non-monitoring situation), as well as why those operators were limited with their current methods. Then, the purpose of the study is described, as well as the objectives that were looked for. An effort was made to put the study objectives in perspective

with the operators challenges, so the content presents the usefulness of the monitoring in the industry.

Comment 5:

Are the results sufficient to support the interpretations and conclusions?

The reason for a selected period of the results shown should be made clear. Are these results a specific selection of a period or are these the results of a whole dataset? Also here, just like with the methods, a critical comparison with the results of previous or other studies is not made. (See also aspect no. 7.).

Answer 5:

For Case 1 and 2, a selection of results of a whole dataset was made. It appeared to the authors that presenting results in this format, was providing ability to visualize clearly fluctuations of TOC, that is to say the weekly and daily variations upon human activity (Case 1) or influence of coagulant change (for Case 2).

Comment 6:

Is the description of experiments and calculations sufficiently complete and precise to allow their reproduction by fellow scientists (traceability of results)?

The applied methods and measurement instruments are sufficiently described.

Answer 6:

None

Comment 7:

Do the authors give proper credit to related work and clearly indicate their own new/original contribution?

No. This is the major improvement to be made in this paper. No citations or references to related work are made in the text. Also a critical comparison of the results with other works is not made. It is advised to rewrite this paper in such a way that also the broader discussion on this topic becomes clear and also the position of this paper in this discussion.

Answer 7:

Great remark from referee, since the paper was missing the citations and references. After rewrite, the paper is now referencing previous work in the text and the references are listed at the end. We moved from 5 references quoted to 18 quoted and used inside the text to support the data and information provided. See also answer 5 for further details.

Comment 8:

Does the title clearly reflect the contents of the paper?

Yes. It clearly reflects the contents of the paper.

Answer 8:

None

Comment 9:

Does the abstract provide a concise and complete summary?

Yes. It covers the contents of the paper.

Answer 9:

None

Comment 10:

Is the overall presentation well structured and clear?

The main structure of the paper is clear. However, the structure for each case can be improved. In the current structure, there is a distinction between objective and results. However, in the subsection about results, also the methods are included. For each case a clear distinction between methods and results should be made. Section 2: The first two paragraphs of 2.2 are not results but methods. I would suggest to make an extra subsection 2.2 Methods, and subsection 2.3 with Results, and subsection 2.4 with Outlook (or further investigation). Section 3: In this section the distinction between objective, methods, results and outlook is not clear. Also here I would like to suggest to make a strict distinction between these subsections. Section 4: Idem dito.

Answer 10:

The structure of the paper was revamped to address that comment. Now, each of the 3 case has the following structure, with clear distinction:

1 Method and objective (see answer 4 for further details)

2 Results and further investigations

It was highly considered to explain the results from study, how do they apply for the plant operators and what further investigations could be made. Finally a quantification of results was added where missing (see also answer 3).

Comment 11:

Is the language fluent and precise?

Yes. The language is fluent and precise.

Answer 11:

None

Comment 12:

Are mathematical formulae, symbols, abbreviations, and units correctly defined and used?

The following abbreviations are not further defined: abstract: OPEX; section 2.2: SUMO.

Answer 12:

Sumo is actually not an abbreviation, but a name of a simulation program.

OPEX was explicated in text (Operational Expenditure)

Comment 13:

Should any parts of the paper (text, formulae, figures, tables) be clarified, reduced, combined, or eliminated?

The captions of the tables should be placed on top of the tables and not below the tables

Answer 13:

The captions of the tables were placed on top of the tables.

Comment 14:

Are the number and quality of references appropriate?

The number of references is too low and should be increased. Even more important, there are not any explicit citations or references within in text. There is only a References section included at the end.

Answer 14:

Great remark from referee, since the paper was missing the citations and references. After rewrite, the paper is now referencing previous work in the text and the references are listed at the end. We moved from 5 references quoted to 18 quoted and used inside the text to support the data and information provided. See also answer 5 for further details.

Comment 15:

Is the amount and quality of supplementary material appropriate?
Not available

Answer 15:

None