

Oxygen Trial Data and Preliminary Report
September 17, 2018



*Georgia-Pacific Consumer Operations LLC
Consumer Products*

Crossett Paper Operations
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September 17, 2018

Robert E. Blanz, Chief Technical Officer
Office of the Director
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, AR 72118-5317

Reference: Georgia-Pacific Consumer Operations LLC - Crossett Paper Operations
NPDES Permit No. AR0001210 AFIN 02-00013
Oxygen Trial Data and Preliminary Report

Dear Mr. Blanz:

On July 27, 2017, Georgia-Pacific Consumer Operations LLC, Crossett Paper Operations (GP) was granted permission to run a 12 month trial to apply oxygen to the wastewater treatment system. On August 2, 2018, an additional 12 month extension was granted for this trial. At that time, the Department requested that the current data and a preliminary report, as discussed during the initial approval process be submitted.

The July 27, 2017 letter required that the following constituents be monitored:

1. Clarifier inflow
2. Dissolved oxygen(DO)
3. Dissolved sulfide
4. Gas Phase Hydrogen Sulfide (launder only)
5. Oxidation-Reduction Potential (ORP)
6. Temperature
7. pH

This data has been included as an attachment. The letter also requested that GP submit "a report detailing the results of the trial, including, but not limited to, a correlation between the hydraulic retention time(HRT) of the clarifier and the dissolved sulfide removal rate, the corresponding dissolved oxygen concentrations, and the pH." Given the relatively low

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inlet dissolved sulfide concentrations during much of this trial work, variability in the parameters, and limitations with the low level measurements in the field, making specific correlations from the raw data is difficult and may not be informative. The trial data has been summarized in the charts below for the clarifier and Thurman Road bridge location for correlation purposes.

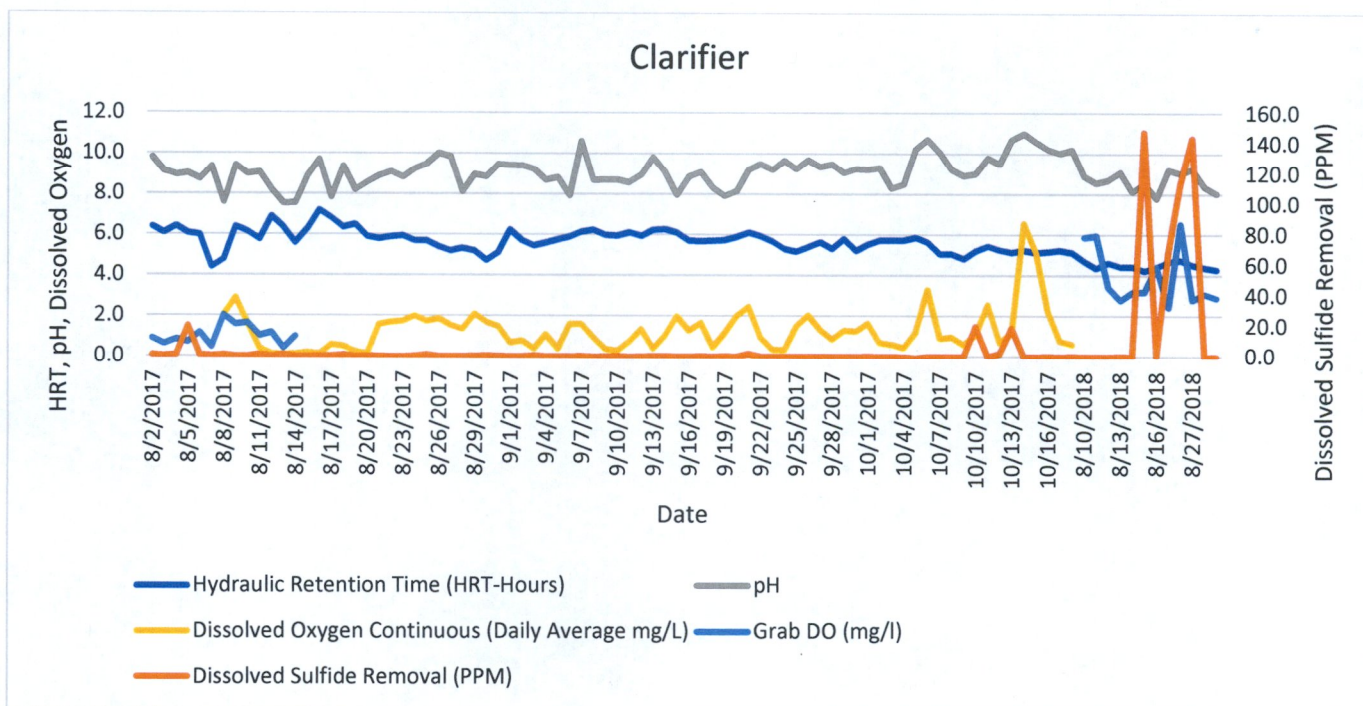


Figure 1: Clarifier graph

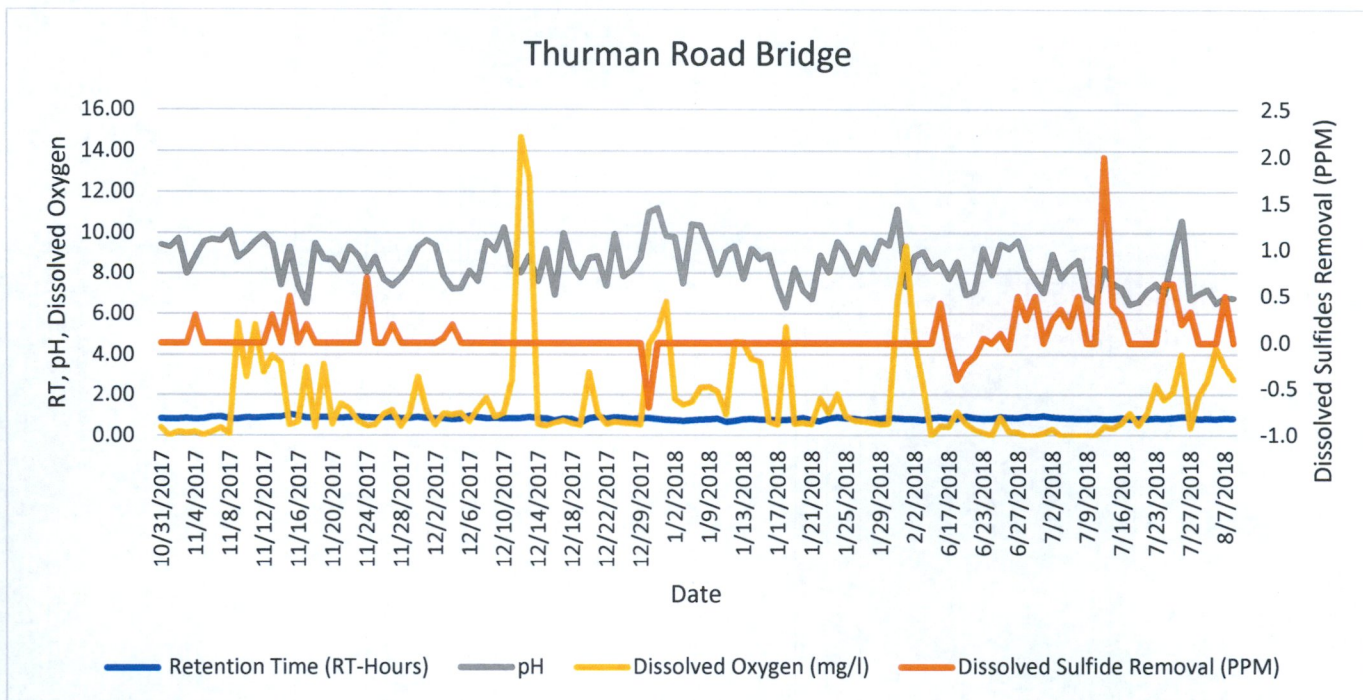


Figure 2: Thurman road bridge graph

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Under low sulfide loading conditions at the clarifier, the low removal or in some cases negative removal rates are a reflection of variability in timing the samples and/or measurement limitations rather than an indication that oxygen is not effective. However, at higher dissolved sulfide inlet loadings (e.g. 8/15/2018, 8/18/2018, and 8/27/2018) oxygen injection is effective in reducing dissolved sulfide and appears to be positively correlated.

The results of the oxygen addition trial at the Thurman road bridge are similar. However, GP still believes there is value in oxygen addition at this location because the oxygen is able to increase DO concentrations into the ASB and maintain a more aerobic environment. This benefit may not be fully reflected in the sulfide removal rate, but it promotes an environment where less sulfide is potentially generated and released. GP continues to evaluate the data and benefits of oxygen addition.

If you have any questions or need additional information prior to this, please feel free to contact me at (870) 567-8670 or by email at sarah.ross@gapac.com.

Sincerely,



Sarah M. Ross
Manager – Environmental Mill Services
Crossett Paper Operations

Attachment

CC: Loretta Reiber, P.E. via email



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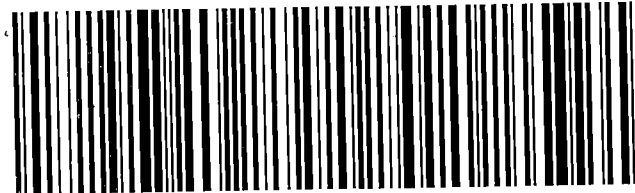
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