

Attachment D
Preliminary Evaluation of Consensus Report for IJC on RESPEC 2016 Report

Concern	Hall & Associates	Consensus Report	Comment
1.a	Use of periphytometers to measure periphyton does not reflect conditions in the river.	It was necessary to exclude the effects of high TSS which may alter the response of primary producers to elevated nutrients.	Does not address concern.
1.b	The biological metrics used to evaluate stressor response have not been shown to be thresholds of impairment.	The establishment of the proposed criteria relies on the partial redundancy analysis of taxonomic data and used nutrient concentrations associated with more desirable communities.	Does not address concern. Also, “more desirable” is not a threshold of impairment.
1.c	Chlorophyll-a levels were low throughout the river (using periphytometers that maximize growth) and are not considered impaired under MPCA regulations	Using data presented on page E1, simple relationships between periphyton chlorophyll-a and nutrient concentrations were explored for sites with TSS < 100 mg/L. Based on this evaluation, the proposed criteria are representative of more desirable conditions based on lower chlorophyll-a concentration.	Does not address concern. Ignores determination by MPCA that periphyton chlorophyll-a < 150 mg/m ² is in attainment of aquatic life uses.
2.a	No demonstration that TN control is necessary and is contrary to the MPCA River Eutrophication Standards	Cite literature that support TP and TN control as necessary.	Literature cites based on metrics that are not identified as impairment thresholds in the Red River.
2.b	The biological metrics used to evaluate the response to TN have not been shown to be thresholds of impairment	Reference response to Concern 1.b outlining the methodology which relied on multivariate analysis of community composition to group sites and identify minimally impacted sites.	Does not address concern. See response to 1b.

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3.a	Periphyton measurements from periphytometers do not reflect actual periphyton growth in the river.	Response does not address concern regarding level of periphyton growth that would occur in the river.	Does not address concern.
3.b	The conditions of periphytometer deployment maximized growth and are unrelated to actual periphyton growth in the river.	Response does not address concern regarding level of periphyton growth that would occur in the river.	Does not address concern.
4.a	None of the key components of EPA's Stressor-Response Guidance were considered in the development of the proposed nutrient targets.	The stressor-response approach is not extremely prescriptive and the approach was followed in general.	Response evades concerns.
4.b	Use impairment thresholds for the metrics used in the RESPEC Report were not determined.	The work used several response variables that would be reasonable.	Does not address concern.
4.c	Confounding factors were ignored in the development of the proposed nutrient targets.	Potentially confounding effects of TSS were identified in the conceptual model and address using statistical approaches.	Data collection and analysis based on minimizing the effect of suspended solids and turbidity on algal growth.

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4.d	The variance explained by the stressor-response model is not sufficient to provide any useful nutrient target.	The low r^2 associated with model fits (0.15 and 0.16) is a concern. However, a simple plotting of the data in Appendix E (Figure 1 & 2 here) shows the proposed TP and TN criteria from the RESPEC Report is a reasonable one.	Low r^2 at best confirms a positive relationship has been documented. Subsequent analysis of data (Figures 1 & 2 in the Consensus Report) is not consistent with EPA Stressor-Response Guidance. [Used periphyton chlorophyll-a data from periphytometers (See, response to comment 3.a, 3.b); Does not consider actual impairment threshold. The analysis does not show whether response is solely due to TP, TN, or something else.
5	The RESPEC Report did not account for the effect of adjacent land use characteristics in assessing biological response to nutrients	We do not see strong evidence for adjacent land use characteristics driving algal biomass at specific sites.	This response is contrary to the statements made in the RESPEC Report. For example, “the primary strength of the model’s high R^2 values was directly attributed to the percentage of open water in the subwatersheds with a small increase attributed to TN.” (at 63)