

CWWA Comments on New Health Canada Draft Water Quality Guideline for N-Nitrosodimethylamine (NDMA) in Drinking Water

The core proposal is:

The proposed maximum acceptable concentration (MAC) for N-nitrosodimethylamine (NDMA) in drinking water is 0.000 04 mg/L (0.04 µg/L).

Summary Comments by CWWA

CWWA supports Health Canada's proposed Guideline value. Our members have raised some concerns about some references within the supporting documentation.

In section 5.1, para 6, there is reference to a City in Alberta, which chloraminates and uses UV disinfection, having very high levels of NDMA (0.067 to 0.160 ug/L) (Charrois et al). Since Edmonton is the largest city in Alberta which chloraminates and uses UV disinfection (and cationic polymer), we would like it made clear that these results do not reflect the Edmonton situation.

In Section 7.3.1.1 you should note that the UV dose required for NDMA destruction is much higher (1000mJ/cm²) than the designed dose for UV systems installed for drinking water disinfection (usually in the 30-100 mJ/cm² range). Thus these installed disinfection systems are not effective for NDMA destruction.

The Chair of our Drinking Water Committee has also prepared the following comments based on the French text of the Guideline.

**CONSULTATION
ON
A TECHNICAL DOCUMENT
ABOUT
NDMA IN DRINKING WATER
PREPARED BY
THE DRINKING WATER COMMITTEE – HEALTH CANADA**

I – Background

The federal-provincial-territorial Committee on Drinking Water (CDW) requests comments on a new Guideline about NDMA in drinking water. The consultation period will end on June 30, 2010.

Being a member and Chair of the CWWA Drinking Water Committee, I have read the French version of the Guideline and I have prepared the present document to describe my comments and suggestions (1) on the Guideline itself as it has been published and (2) on the presentation of the Guideline.

II – Analysis

II – 1 The Guideline itself as it has been published

The approach chosen by the CDW to define the maximum acceptable concentration (MAC) is realistic, as the exposure to NDMA through drinking water is minor (<10%) when compared to other exposures, ambient air and food, for instance.

However, as I mentioned in the Table below, I think the Guideline could be improved by being more specific about a “plan approprié” (section 3.0, paragraph 2, after “Remarque”). When NDMA concentrations are above the limit for a short period of time, the Guideline should mention that the treatment process should be optimized to decrease the concentration of precursors and to decrease the formation of NDMA.

The Guideline should also be more precise about the meaning of the limit: is it a simple limit that applies anytime a new result is available or should it be considered as an locational running annual average, for instance, as it is the case for other DBPs (THMs for instance)?

II – 2 The presentation of the Guideline

While reading the Guideline, I have noted a very limited number of “weaknesses” that could be addressed and evaluated by the CDW to possibly improve the final version of

the Guideline. I will present them as they were seen in the PDF document and they will be identified accordingly (**Section, page, paragraph, line**, for example).

Some of the comments will be made only once although they apply in other sections of the PDF document. I will present the comments/suggestions and identify some examples, leaving to the CDW the task of adjusting the rest of the text if the comment/suggestion is accepted.

The attached table presents my comments/suggestions for all the Sections except Sections 8.0 and 9.0 which are outside of my field of expertise.

Finally, my comments/suggestions will be on the French version of the Guideline, since my usual language is French. In some instances, I will refer to the English version of the PDF document to explain and justify my comments/suggestions.

III – Conclusion

I agree with the approach chosen by Health Canada about NDMA in this draft Guideline. However, I hope Health Canada will be more specific about the plan that could be implemented when the limit is exceeded and about the meaning of that limit (locational running annual average as it is with with other DBPs?)

Pierre-André Côté, D. Sc., chimiste

June 7, 2010

Att (1)

TABLE OF COMMENTS AND SUGGESTIONS
ABOUT THE GUIDELINE ON NDMA IN DRINKING WATER

Section	Page	Parag.	Line	Comment/suggestion
2.3	6	1	8	...la quantité de NDMA
3.0	6	1	1	Les opérateurs de stations de traitement d'eau potable... see section 4.1. parag. 2, line 9, where « stations d'épuration des eaux usées » is used instead of « usines »; this suggestion could applied elsewhere in the text (pages, 7, 9, 11, etc.)
	6	2	4	Refer to Section 7.0 when speaking of a « plan approprié » and to « process optimization »
3.1	7			Does the CMA apply to any single measurement or to a locational running annual average?
4.1	8	1	5 and in the Table	physico-chimiques
4.1	9	last	2	Change « peut-être » for « possiblement »
4.2	10		13	...peut être sensiblement diminuée ...; the term « réduite » can be ambiguous since in the field of chemistry, « to be reduced » or « reduction » refers to the opposite of « oxidation »; that adjustment could be done elsewhere in the text
5.1	12	2	7	On s'attend...
			8	Why use « chloramine » instead of « chloramines » as it is elsewhere in the text
7.1	18	3	1 and 6	...chloration au-delà du point critique
7.3	18	2	1	...l'eau complètement traitée , il...
7.3.1	19	1	1	... pour diminuer la NDMA.. see preceding remark about « reduction » and « oxidation »
7.3.1.1	19	1	2	...permettant de diminuer ... Same as above