

Modeling Guidance 2 Final	Using dissolved metals translators in WLA calculations	
	Rule reference: OAC 3745-2-04 (F)	Revision 0, January 30, 1998

The rule allows for the use of dissolved metals in wasteload allocations (WLAs). This guidance illustrates a method to incorporate consideration of dissolved metals into the WLA process.

Difficulties in implementing dissolved metals criteria could arise for several reasons:

- only the aquatic life criteria are dissolved; it is necessary to evaluate the total recoverable criteria for human health, agricultural water supply, etc., as total recoverable, and make comparisons of the WLA results for all criteria
- permit limits will continue to be reported in the total recoverable form
- background quality data is typically expressed in the total recoverable form
- effluent data will be continue to be reported in the total recoverable form, so reporting WLA results as total recoverable would facilitate reasonable potential comparisons
- total maximum daily loads (TMDLs) must consider total recoverable metals to properly reflect nonpoint source metal loads.

The dissolved metal translator (DMT) can be used to convert a WLA calculated using dissolved criteria to a total recoverable WLA, as shown in the following equation:

$$WLA_{\text{total recoverable}} = WLA_{\text{dissolved}} * DMT \quad \text{[Equation 2-1]}$$

However, this approach addresses only some of the difficulties outlined above. Alternatively, the translator can be used to determine an *effective total recoverable criteria* for use in the WLA. In other words, a total recoverable criteria which accounts for the proportion of dissolved metal in the receiving water and, in application, maintains the dissolved criteria. The effective total recoverable criteria ($WQS_{\text{effective}}$) is determined by multiplying the dissolved criteria ($WQS_{\text{dissolved}}$) by the dissolved metals translator (DMT), as indicated in the following equation:

$$WQS_{\text{effective}} = WQS_{\text{dissolved}} * DMT \quad \text{[Equation 2-2]}$$

This greatly simplifies the allocation of dissolved metals criteria and addresses all the issues listed above. The result of the WLA is in the total recoverable form.

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