



**DEQ**

State of Oregon  
Department of  
Environmental  
Quality

## Memorandum

To: Jennifer Wigal, Manager, Water Quality Standards and Assessments;  
Neil Mullane, Water Quality Division Administrator

From: Debra Sturdevant, Water Quality Standards and Assessments

CC: File

Date: 4 November, 2008

Re: Iron and Manganese Criteria

---

The "water and fish ingestion" criteria listed on Table 20 (OAR 340-041) for iron and manganese, which are 300 and 50 µg/liter, respectively, were recommended by EPA based on aesthetics, such as taste and odor and laundry staining, not on toxic effects or human health (See EPA's 1986 "Gold Book"). They are not priority pollutants according to EPA. In 2004, DEQ adopted revised human health criteria. The iron and manganese criteria values did not change, but DEQ added a footnote to Tables 33A and 33B specifying that the iron and manganese criteria are to be applied as dissolved concentrations. EPA has not yet approved the 2004 criteria revisions, but they have not expressed concerns about iron or manganese. Rather, the delay in approval is related to concerns about the fish consumption rate used for human health criteria.

Because the revised criteria have not yet been approved by EPA, DEQ still applies the Table 20 criteria for metals. Table 20 does not specify whether iron and manganese are to be applied as dissolved or total recoverable concentrations. Rather, it refers to the gold book criteria for additional information. The gold book does not specify the test method for iron or manganese either, but points out that the criteria are based on aesthetic and not toxic effects, and identifies the use as "domestic water supplies (welfare)."

Given the following:

- DEQ adopted rules (2004) specifying that the human health criteria for iron and manganese are to be applied as dissolved concentrations,
- DEQ has the ability to choose which test method we apply under the currently effective criteria in Table 20,
- the iron and manganese criteria were established to protect domestic water supply (welfare) and during the process of delivering water through a domestic supply system much of the suspended sediment would be removed, and
- the "water and fish ingestion" criteria for iron and manganese are not a human health concern whether applied as dissolved or total recoverable;

DEQ interprets that the human health criteria for iron and manganese listed in Table 20 will be applied as dissolved concentrations. This rule interpretation is effective until EPA acts on DEQ's 2004 criteria for iron and manganese or future revisions to those criteria. The interpretation contained in this memo does not apply to the Table 20 "Fish Consumption Only" manganese criterion of 100 µg/l, which was established to protect human health and is based on the consumption of marine mollusks.

Approved:

Neil Mullane  
Neil Mullane, Water Quality Division Administrator

11/6/08  
Date