

**DEPARTMENT OF ENVIRONMENTAL QUALITY**  
**Chapter 340**  
**Proposed Rulemaking**  
**STATEMENT OF NEED AND FISCAL AND ECONOMIC IMPACT**

Amendments to Oregon Water Quality Standards for Arsenic, Iron and Manganese

<b>Title of Proposed Rulemaking</b>	Amending Oregon's Water Quality Standards: Revising Human Health Criteria for Arsenic, Iron and Manganese (OAR 340-041-0033, Table 20).
<b>Statutory Authority or other Legal Authority</b>	ORS 468B.010 and 468B.035, 468.020
<b>Statutes Implemented</b>	ORS 468B.048
<b>Need for the Rule(s)</b>	<p>Oregon's current human health criteria for arsenic, iron and manganese are not attainable in many Oregon waters due to natural geologic sources. Clean Water Act requirements for implementing these water quality standards have resulted and will continue to result in DEQ and other entities expending resources to address pollutants that are predominantly natural. In addition, Oregon's current arsenic criteria are not consistent with EPA's recommendation to express the criteria as inorganic arsenic, which is the toxic form of the metal. The proposed arsenic criteria will also address, in part, EPA's June 1, 2010 disapproval of Oregon's human health criteria due to concerns about the fish consumption rate value used to derive the criteria.</p> <p>The proposed criteria revisions address these issues for arsenic, iron and manganese by putting in place only those criteria needed to protect human health and by setting those criteria at levels that continue to protect human health while recognizing the natural occurrence of these metals in Oregon waters. The proposed rule amendment withdraws several of the human health criteria for iron and manganese. The proposed amendment also establishes numeric inorganic arsenic criteria based on a fish consumption rate of 175 grams per day. The revised arsenic criteria are less stringent than the existing criteria. Upon scientific review, DEQ finds that proposed criteria are sufficient to protect human health.</p> <p>Because natural concentrations of arsenic present a risk to human health that is higher than the risk level that the Environmental Quality Commission (EQC) ordinarily uses to establish human health criteria, DEQ also proposes that the EQC adopt an arsenic reduction policy and rule. The purpose of this policy is to ensure that any arsenic added to Oregon waters from known and significant anthropogenic sources is reduced to the maximum extent possible in order to keep human health risks associated with arsenic in drinking water source waters as low as possible. The proposed revisions will result in: 1) more appropriate identification of water quality impairments by DEQ, and 2) more environmentally meaningful use of resources by DEQ and other entities.</p>
<b>Documents Relied Upon for Rulemaking</b>	<p>The following documents are available at the websites listed or by contacting Debra Sturdevant at <a href="mailto:sturdevant.debra@de.state.or.us">sturdevant.debra@de.state.or.us</a> or at 503-229-6691.</p> <p><i>Water Quality Standards Review and Recommendations: Arsenic, Iron and Manganese.</i> Oregon DEQ, Water Quality Standards and Assessment Section, 2010.  (<a href="http://www.deq.state.or.us/wq/standards/review.htm">http://www.deq.state.or.us/wq/standards/review.htm</a>)</p> <p><i>Quality Criteria for Water.</i> EPA, 1986.  (<a href="http://www.epa.gov/waterscience/criteria/library/goldbook.pdf">http://www.epa.gov/waterscience/criteria/library/goldbook.pdf</a>)</p> <p><i>Water Quality Criteria.</i> EPA, 1976.  (<a href="http://www.epa.gov/waterscience/criteria/library/redbook.pdf">http://www.epa.gov/waterscience/criteria/library/redbook.pdf</a>)</p>
<b>Requests for Other Options</b>	Pursuant to ORS 183.335(2) (b) (G), DEQ requests public comment on whether other options should be considered for achieving the rule's substantive goals while reducing negative economic impact of the rule on business.

**Fiscal and Economic Impact, Statement of Cost Compliance**

**Overview**

The proposed arsenic, iron and manganese criteria revisions are shown in the table below. Because the proposed criteria are less stringent, the proposed rule amendments will provide an overall fiscal and economic benefit to both regulated parties and DEQ relative to meeting current criteria. Some permitted facilities will incur costs associated with developing and implementing an arsenic reduction plan. A significant amount of DEQ and permittee resources have been spent attempting to address high natural levels of arsenic throughout the state and without the proposed revisions, DEQ expects this will continue. As a result, DEQ expects that implementing the requirements contained in the arsenic reduction policy will be less costly than or perhaps, in a few cases, the same as implementing requirements associated with attaining the current criteria. In particular, the arsenic reduction policy requirements target significant measurable sources of arsenic and feasible reduction opportunities, resulting in a focused expenditure of resources in circumstances where anthropogenic contributions of arsenic are most likely to impact sources of drinking water.

In addition to decreasing costs to DEQ and permittees, the withdrawal of the “water + organism” criteria for iron and manganese is not expected to cause increase costs for water suppliers. Iron and manganese are naturally occurring earth metals generally present at levels below maximum contaminant levels (MCLs) for drinking water and have not historically presented problems for water suppliers. Should a situation arise in the future where a permitted discharge of iron or manganese causes a water supplier to incur treatment costs, DEQ has the authority through other existing water quality standards provisions to regulate that discharge. This would be a more efficient manner to address this rare circumstance than the current statewide numeric criteria.

Finally, DEQ does not expect the criteria changes to result in increased health risks or costs to the public from eating fish or drinking water for the reasons described in more detail in the following section.

<b>Proposed Human Health Criteria for Arsenic, Iron and Manganese (µg/l)</b>				
<b>Pollutant</b>	<b>Water + Fish Ingestion</b>		<b>Fish Consumption Only</b>	
	Current Criteria	Proposed Criteria	Current Criteria	Proposed Criteria
Arsenic	0.0022	2.3 inorganic arsenic	0.0175	2.7 inorganic arsenic
Iron	300	None	None	None
Manganese	50	None	100	100 marine waters

Note: Current criteria are currently effective criteria from OAR 340-041-0033, Table 20.

**Impacts on the General Public**

DEQ does not expect that the general public will incur direct fiscal or economic impacts as a result of the revised criteria because the general public is not directly regulated under the Clean Water Act. In addition, the revisions are not expected to significantly affect the human health risks or costs associated with eating fish or drinking water in Oregon. Impacts to municipal sewage treatment and drinking water treatment works are discussed in the section on local governments.

DEQ’s proposal to withdraw criteria for iron and manganese does not present a human health concern given the levels of these metals found in Oregon waters. EPA recommended these criteria to protect against potential taste and laundry staining impacts. There are other alternatives for controlling these affects should they be a problem for water suppliers in Oregon that are more targeted and efficient than retaining these statewide numeric criteria.

DEQ does not expect the public to incur costs associated with health impacts from the revised criteria for

	<p>arsenic because natural sources of arsenic are the primary source of arsenic in most waterbodies used as drinking water. Arsenic levels in Oregon waters commonly range from 1 to 3 µg/l. The risk associated with natural arsenic levels is not new; risk attributable to natural levels of arsenic has been present as long as people have been drinking Oregon water. To minimize any risks that could be associated with anthropogenic sources of arsenic, DEQ proposes an arsenic reduction policy rule. The purpose of this rule is to ensure that arsenic added to Oregon waters from known and significant anthropogenic sources is reduced to the maximum extent possible in order to keep any human health risk associated with arsenic in drinking water source waters as low as possible.</p>	
<p><b>Impacts to Small Business</b> (50 or fewer employees – ORS183.310(10))</p>	<p>DEQ does not expect small businesses to be negatively impacted by this rule. Most small businesses in Oregon discharge to a publicly owned treatment works (POTW). Because they do not typically discharge directly to a water body, most small businesses are not required to get an NPDES permit. A POTW with arsenic, iron or manganese limits in their NPDES permit may in turn place requirements on small businesses in order to limit the amount of arsenic, iron or manganese a business discharges to the public sewer system. However, because the proposed rule changes will make the water quality criteria for these metals less stringent, the rule change will not lead to additional requirements or limits to businesses that discharge to POTWs beyond what would be required under the existing criteria.</p>	
<p><b>Cost of Compliance on Small Business</b> (50 or fewer employees – ORS183.310(10))</p>	<p>a) Estimated number of small businesses subject to the proposed rule</p>	<p>Very few small businesses are directly subject to these water quality criteria because most small businesses do not have direct discharges to waters of the state and do not receive individual NPDES permits from DEQ. Most small businesses discharge to a POTW.</p> <p>Approximately 2700 permittees, many of whom would be small businesses, receive general NPDES permits from DEQ. The pollution control actions required under these permits will most likely not change as a result of the proposed revisions to the arsenic, iron and manganese criteria. In most cases, the actions address multiple pollutants, not just one of these three. If a permit does contain requirements specific to iron or manganese, those requirements may be able to be removed.</p> <p>Some businesses are subject to requirements from a POTW under their pretreatment program, including approximately 130 small businesses. DEQ does not have data indicating how many of these businesses receive limits for arsenic, iron or manganese. However, because the proposal will withdraw criteria for iron and manganese and make the arsenic criteria less stringent than current criteria, the number of small businesses subject to pretreatment requirements for these pollutants would either remain unchanged or be reduced.</p>
	<p>b) Types of businesses and industries with small businesses subject to the proposed rule</p>	<p>Wood treating facilities are known to have arsenic in their stormwater run-off. There are approximately 8 wood treating facilities that are required to meet specific permit limits or benchmarks in their NPDES permits for arsenic. The criteria value changes will not likely alter the actions these facilities take to control or treat arsenic in their discharge because those same actions will likely be needed to meet limits based on the revised criteria.</p>
	<p>c) Projected reporting, recordkeeping and other administrative activities required by small businesses for compliance with the proposed rule, including costs of professional services</p>	<p>The proposed criteria value changes are not likely to affect the reporting, recordkeeping or other administrative activities required of small businesses for compliance. If there is any impact, it would be that fewer businesses will be subject to requirements related to meeting water quality standards.</p>
	<p>d) The equipment, supplies, labor, and increased administration required by small businesses for compliance with the proposed rule</p>	<p>The proposed criteria value changes are not likely to affect equipment, labor, supplies or other expenses for small businesses related to compliance. If there is any impact, it would be that fewer businesses will be subject to requirements related to meeting water quality standards.</p>
	<p>e) A description of the</p>	<p>DEQ has met with and received input from a stakeholder workgroup</p>

	<p>manner in which DEQ involved small businesses in the development of this rulemaking</p>	<p>that included business representatives, but not specifically small businesses. A representative from Associated Oregon Industries has participated on this workgroup. In addition, DEQ informed a larger Toxics Stakeholder Group of our intention related to these revisions. That group includes the Oregon Forest Industries Council, the Oregon Farm Bureau, a representative of small woodlot owners, Tribal representatives, commercial fishermen and Oregonians for Food and Shelter.</p>
<p><b>Impacts on Large Business</b> (all businesses that are not “small businesses” under ORS183.310(10))</p>	<p>Large businesses that discharge directly to Oregon’s surface waters are directly regulated through DEQ’s water quality permitting program. These businesses must test their wastewater to determine what pollutant concentrations it contains. Businesses that have the potential to cause the water body to exceed water quality standards are subject to regulatory effluent limits that specify the maximum concentration of a pollutant that may be in their discharge.</p> <p>DEQ’s current criteria for arsenic are for total arsenic and the new criteria will be for inorganic arsenic. Inorganic arsenic testing is more expensive than total arsenic, so monitoring costs may increase for some businesses. However, only those businesses with the potential to cause an exceedance of the criterion are required to regularly monitor throughout their permit term. Under the proposed rule, fewer businesses will be in this category.</p> <p>At this time, no major industrial dischargers and 13 minor industrial dischargers in Oregon have effluent limits in their NPDES permits for arsenic, iron or manganese. Many permittees, however, are being required to collect data. As permits are renewed, DEQ expects that additional permittees would have difficulty meeting the current criteria, particularly those located on water bodies that are listed as water quality impaired for these pollutants, such as the Willamette and Columbia Rivers.</p> <p>The proposed criteria changes will reduce unnecessary restrictions on permittees that would not be able to meet iron or manganese criteria.</p> <p>The proposed arsenic criteria are less stringent than the current criteria and therefore, should be less costly to attain. The proposed arsenic reduction policy is a new requirement that will apply to some dischargers. Facilities that discharge to waters that have arsenic levels below the proposed criteria and are delineated by DEQ as a drinking water source protection area must evaluate their potential to affect arsenic concentrations in the source water. Dischargers that have the potential to increase the concentration of arsenic in their receiving water body will be required to develop a plan and implement measures to reduce the amount of arsenic added from their process as much as feasible. The purpose of this requirement is to minimize any potential additional risk from the discharge to a public drinking water supply and to minimize any potential human health risk from arsenic exposure through drinking water. There are 19 major industrial NPDES permittees in Oregon. Only a subset of these will be subject to the arsenic reduction policy, as described above. Although there will be costs associated with developing and implementing an arsenic reduction plan, these costs should be lower than the costs that would be incurred by the facility to comply with the current arsenic criteria. In addition, these costs will be targeted to reducing arsenic associated with the facilities’ processes (as opposed to reducing naturally-occurring arsenic) and achieving those reductions where the discharge may affect a public water supply.</p>	
<p><b>Impacts on Local Government</b></p>	<p>DEQ expects that compliance with the proposed criteria will be less costly for municipal dischargers than the current criteria for these three metals than under the current criteria. Some municipalities in areas of the state with high natural levels of arsenic may still find compliance with the revised criteria to be a challenge, particularly if there are groundwater inputs to their effluent. The revised criteria reduce that challenge, but do not eliminate it. DEQ is aware of the difficulties and intends to work with cities on compliance strategies where it will be infeasible for the facility to meet the arsenic criteria due to inflow and infiltration issues or the presence of arsenic in source water.</p> <p>Cities that exceed the MCL of 10 µg/l in their effluent will be required to develop arsenic reduction plans under DEQ’s program to address priority persistent pollutants (also known as Senate Bill 737).</p> <p>Because the proposed numeric criteria remain well below the arsenic MCL of 10µg/l, the proposed criteria will not cause drinking water suppliers to incur additional treatment costs in order to comply with the Safe Drinking Water Act.</p>	

<b>Impacts on State Agencies other than DEQ</b>	DEQ does not expect that the criteria revisions will have a fiscal or economic impact on other state agencies.
<b>Impacts on DEQ</b>	<p>The proposed criteria revisions will reduce the resources that would be required for DEQ to permit facilities that cannot feasibly meet the current water quality criteria for arsenic, iron or manganese. DEQ anticipates that some of those resources may be spent evaluating and incorporating arsenic reduction measures into permits; however due to the focused eligibility criteria, DEQ does not expect a large number of facilities to be subject to this requirement. The proposed criteria revisions together with the arsenic reduction plans will focus agency resources on ensuring actions are taken to reduce anthropogenic additions of arsenic and reduce the need for administrative remedies that may not yield any greater environmental results. The demand on DEQ resources to address toxics is growing and these revisions will help DEQ focus its efforts on other pollutants that need to be addressed.</p> <p>The proposed criteria revisions will also reduce the DEQ resource demands that would otherwise be required to address the 107 water body segments currently listed as impaired for arsenic, iron or manganese and in need of a TMDL. DEQ expects that very few of these listings will remain after they are re-evaluated and the impaired waters list is updated. Again, this will allow agency resources to address more important water quality problems and pollutants that have more potential for reduction. Due to the Agency's limited resources, it is important for DEQ to be able to align its resources to address those pollutants that are of concern and target areas where real environmental reductions can be achieved.</p>
<b>Assumptions</b>	<p>DEQ relied on the best available information to propose these amendments and is confident, based on the sources of information, that the data and information are reasonably true and accurate.</p> <p>DEQ concluded that it is in the interest of the public to expend public and private resources on actions that will result in measurable environmental benefits.</p>
<b>Housing Costs</b>	DEQ has determined that this proposed rulemaking will have no effect on the cost of development of a 6,000 square foot parcel and the construction of a 1,200 square foot detached single family dwelling on that parcel.
<b>Administrative Rule Advisory Committee</b>	DEQ assembled a Toxics Water Quality Standards Rulemaking Workgroup to assist us with the development and evaluation of the proposed rule. This group has been meeting since January, 2009 and will continue to work with DEQ on additional rule provisions until fall of this year.

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