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OFFICE OF
WATER AND
WATERSHEDS

MAY 10 2012

Mr. Barry Burnell
Water Quality Programs Administrator
Idaho Department of Environmental Quality
1410 North Hilton
Boise, Idaho 83706-1255

Re: EPA Disapproval of New and Revised Human Health Water Quality Criteria for Toxics, Idaho Docket 58-0102-0503

Dear Mr. Burnell:

The U.S. Environmental Protection Agency has completed its review of Idaho's new and revised human health water quality criteria for toxic pollutants and revisions to Footnotes b, c, d, and l that are applicable to certain human health criteria. These new and revised water quality standards (WQS) were adopted by the Idaho legislature in March, 2006. The WQS were submitted to the EPA for review under the Clean Water Act (CWA) on July 7, 2006.

Under CWA Section 303(c), 33 U.S.C. § 1313(c), and the Code of Federal Regulations (CFR) at 40 CFR 131, the EPA is disapproving 167 of Idaho's revised human health criteria for 88 toxic pollutants applicable to all surface waters of the State of Idaho. In addition, the EPA is not acting on Idaho's revisions to Footnotes b, c, d, and l because the changes are non-substantive. With respect to Idaho's revisions clarifying the existing mixing zone language and a new provision specifying the frequency and duration component for aquatic life criteria, which were contained in the July 7, 2006 submittal, the EPA will provide the Idaho Department of Environmental Quality (DEQ or the State) with our review and decision on these provisions in a subsequent letter.

## Background

Idaho announced it was updating the State's human health criteria for toxics in the Idaho Administrative Bulletin on April 5, 2005. DEQ held its first public meeting on the updates in Boise on April 28, 2005, and three additional meetings followed on May 20, June 22, and July 12, 2005. The public participation process resulted in a proposed rule, which was published in the September 7, 2005, Idaho Administrative Bulletin with a 30-day comment period. Following the comment period, the pending rule was adopted by the Idaho Board of Environmental Quality on November 16, 2005.

Revising Idaho's human health criteria for 88 toxic pollutants was a result of the State's incorporation of a revised fish consumption rate and newer information in the Integrated Risk Information System (IRIS) database on health effects. DEQ's basis for revising specific human health criteria for toxic pollutants was a change in the EPA's nationally recommended fish consumption rate from 6.5 grams per day (g/day) to 17.5 g/day. The fish consumption rate is one factor used in the calculation of toxic criteria. In addition, DEQ revised the human health criteria for the 88 toxic pollutants to reflect updated information on toxicity to humans contained in the EPA's IRIS database. These factors relate to the reference dose for non-carcinogenic chemicals or the cancer slope factor for carcinogens, as well as bio-concentration

rates. More detail about the development of toxic criteria is contained in the EPA's *Methodology for Deriving Ambient Water Quality Criteria for the Protections of Human Health 2000* (2000 Human Health Criteria Methodology).[1]

The final rule was approved by the Idaho Legislature in March 2006. By letter dated July 7, 2006, DEQ submitted the following revisions to the EPA for review and approval: new and revised human health criteria for 88 toxic pollutants, revisions to Footnotes b, c, d, and l that are applicable to certain human health criteria in Idaho's table of toxic criteria, clarification to the existing mixing zone language, and a new provision specifying the frequency and duration component for aquatic life criteria. While the submittal also included revisions to cadmium aquatic life criteria, the EPA approved these revisions on March 7, 2011. In the 2006 submittal to the EPA, DEQ stated that no information on Idaho specific fish consumption rates was available with which to calculate alternative human health criteria values. However, DEQ acknowledged that questions remained regarding the most appropriate fish consumption rate.

Under Section 303 of the CWA, 33 U.S.C § 1313, states are required to establish WQS and submit them to the EPA for approval or disapproval. Likewise, revisions to a state's WQS must also be submitted to the EPA for approval or disapproval. The EPA must review new and revised WQS under CWA § 303(c) and 40 CFR 131.5 to ensure that the designated uses for all affected waterbodies are protected and criteria are based on a sound scientific rationale.

WQS describe the desired condition of a waterbody and consist of three principle elements: (1) the "designated uses" of the state's waters, such as public water supply, recreation, propagation of fish, or navigation; (2) "criteria" specifying the amounts of various pollutants, in either numeric or narrative form, that may be present in those waters without impairing the designated uses; and (3) antidegradation requirements, providing for protection of existing water uses and limitations on degradation of high quality waters. The EPA's regulations at 40 CFR 131 describe the minimum requirements for each of these three elements of WQS.

In accordance with 40 CFR 131.11, the EPA must ensure that new or revised criteria are based on sound scientific rationale and contain sufficient parameters or constituents to protect designated uses. When establishing criteria, states should develop numerical criteria values based on (1) the EPA's CWA § 304(a) Guidance, (2) CWA § 304(a) Guidance modified to reflect site-specific conditions, or (3) other scientifically defensible methods.

Idaho's human health criteria were developed to protect human health from long-term exposure to toxic pollutants in drinking water and through eating fish containing pollutants. With respect to selection of a fish consumption rate utilized in calculating human health criteria, the EPA is aware that exposure patterns in general, and fish consumption in particular, varies substantially. The EPA understands that highly exposed populations may be widely distributed geographically throughout a given state or tribal area. The EPA recommends that priority be given to identifying and adequately protecting the most highly exposed population. Thus, if the state or tribe determines that a highly exposed population is at greater risk and would not be adequately protected by criteria based on the general population, and by the national 304(a) criteria in particular, the EPA recommends that the state or tribe adopt more stringent criteria using alternative exposure assumptions.

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[1] EPA. 2000. *Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health.* EPA-822-B-00-004. Available at: http://www.epa.gov/waterscience/criteria/humanhealth/method/complete.pdf

## EPA's Decision

The revisions addressed in this disapproval action are Idaho's 167 new and revised human health water quality criteria for 88 pollutants, (also known as toxic pollutants) at IDAPA 58.01.02.210.01., and the provision at IDAPA 58.01.02.210.05.b.i. specifying the fish consumption rate of 17.5 g/day. The EPA is disapproving Idaho's human health criteria for toxic pollutants because the criteria derivation does not demonstrate that the criteria protect Idaho's designated uses. Specifically, EPA is unable to ensure that the use of a fish consumption rate of 17.5 g/day in deriving statewide criteria is consistent with 40 CFR 131.11(a).

The EPA reviewed whether local and/or regional information on fish consumption was relevant and applicable when considering if the national default fish consumption rate is appropriate for calculating human health criteria for Idaho's waters. The EPA identified several sources of information on local and regional fish consumption, which Idaho did not consider before using the national default fish consumption rate. The information the EPA reviewed suggests that fish consumption among some Idaho population groups is greater than 17.5 g/day. Consequently, EPA cannot ensure that the criteria derived based on a fish consumption rate of 17.5 g/day are based on a sound scientific rationale consistent with 40 CFR 131.11(a) and protect Idaho's designated uses. Idaho must evaluate the relevance of available information, including the studies that the EPA identified, in assessing a fish consumption rate appropriate for protecting consumers of fish taken from state waters and use that information to ensure criteria are protective of designated uses.

The EPA is also disapproving IDAPA 58.01.02.210.05.b.i. that requires DEQ to use a fish consumption rate of 17.5 g/day when deriving water quality criteria to protect human health. With respect to revisions to footnotes to the toxic criteria, the EPA does not consider revisions to Footnotes b, c, d, and l to be substantive revisions to the WQS under Section 303(c) of the CWA; therefore, the EPA is not taking action on those footnotes. These footnotes remain in effect for CWA purposes. A detailed discussion of the rationale supporting the EPA's action is included in the enclosed Technical Support Document.

This action applies only to water bodies in the State of Idaho, and does not apply to waters that are within Indian Country, as defined in 18 U.S.C. Section 1151. In addition, nothing in this letter shall constitute an approved or disapproved water quality standard applying to waters within Indian Country. The EPA, or authorized Indian Tribes, as appropriate, will retain responsibilities for WQS for waters within Indian Country.

## Remedy to Address EPA's Disapproval

Under CWA § 303(c)(3) and the EPA's implementing regulations at 40 CFR 131.21 and 131.22, when the EPA disapproves a state's new or revised water quality standard, it must "specify the changes" necessary to meet the applicable requirements of the Act and the EPA's regulations. The CWA requires that this disapproval of the new and revised human health criteria for 88 toxic pollutants be addressed in a timely manner. The EPA prefers that Idaho address this disapproval under its regulatory development process. However, if the State does not adopt necessary changes, the EPA will promptly propose and promulgate appropriate human health criteria for Idaho.

To address this disapproval action, Idaho must evaluate local and regional fish consumption information to determine whether its statewide criteria are protective of designated uses. The EPA's 2000 Human Health Methodology advises states to develop criteria to protect highly exposed populations, such as

subsistence fishers, and to rely on local or regional fish consumption data in developing a fish consumption rate that is more representative of target populations.

The EPA relies on the 2000 Human Health Methodology both to develop new water quality criteria for additional pollutants and to revise existing water quality criteria. The 2000 Human Health Methodology also provides states and tribes flexibility in establishing WQS by providing scientifically valid options for developing their own criteria that consider local, state, or regional conditions. For example, states and authorized tribes should consider use of local data, use of data reflecting similar geography/population groups, use of data from national surveys, and use of the EPA's default intake rates (including a subsistence rate of 142 g/day).

Among the available and relevant information on fish consumption, the EPA believes that the Columbia River Inter-Tribal Fish Commission survey (CRITFC)[2] is particularly relevant for Idaho to consider in revising human health criteria. The CRITFC study is a well designed survey and is directly applicable to a population of people – i.e., the Nez Perce Tribe – fishing in state waters. There are also several other local and regional studies (including several that have been published since 2006) that are relevant when evaluating fish consumption rates in Idaho. These studies are listed in the enclosed Technical Support Document.

As the State reviews the available studies and determines what revisions to make to the human health criteria, there are other issues that the State should consider:

First, Idaho should evaluate how its revised human health criteria will protect recreational users and subsistence fishers in Idaho, as well as downstream WQS. During tribal consultation, the EPA heard from several tribes that they rely on fish and other resources in Idaho waters for subsistence and religious practices. In addition, some of the information the EPA reviewed suggests that recreational anglers in Idaho also consume fish at rates higher than the national default rate. With respect to downstream waters, the State should address 40 CFR 131.10(b), which provides (in pertinent part) that when setting water quality criteria a state shall take into consideration the water quality standards of downstream waters and shall ensure that its criteria provide for the attainment and maintenance of such standards.

Second, the EPA notes that in deriving the human health criteria for acrolein and phenol, Idaho utilized reference dose values that have since been superseded. Idaho utilized the reference dose (RfD) values in the EPA's IRIS database as of May 17, 2002. The RfD values for acrolein and phenol were subsequently updated in June 2003 and September 2002, respectively. The EPA integrated the updated IRIS values into its current § 304(a) criteria recommendations and published the recalculated criteria as the Agency's current national recommended criteria.[3] The current recommended criteria were finalized in 2009 and supersede any recommended criteria that the EPA previously published for acrolein and phenol. Idaho's revisions to the human health criteria must be based on a sound scientific rationale and must be protective of the State's designated uses. In keeping to these requirements, the EPA recommends (for acrolein and phenol) that Idaho derive revised criteria incorporating these updated RfD values.

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[2] CRITFC. 1994. *A Fish Consumption Survey of the Umatilla, Nez Perce, Yakama, and Warm Springs of the Columbia River Basin.* Columbia River Inter-Tribal Fish Commission, Portland, Oregon. Technical Report 94-3. Available at: http://www.critfc.org/tech/94-3report.pdf

[3] 74 FR 27535. Notice of Availability of National Recommended Water Quality Criteria for Acrolein and Phenol. June 10, 2009. Federal Register Vol . 74, No. 110, pp 27535 -27536

Finally, the EPA notes that Idaho does not a have human health criteria for copper. The EPA has a recommended human health "water + organism" criterion for copper. Since the human health risks from copper are primarily from drinking water, the criterion was established at the level of the EPA's drinking water criterion under the Safe Drinking Water Act, and therefore, does not utilize a fish consumption rate. The EPA suggests that Idaho also incorporate adoption of that criterion into any revisions to the State's WQS.

**Human Health Criteria Currently in Effect in Idaho**

Until Idaho develops and adopts and the EPA approves revisions to human health criteria for these 88 pollutants, the criteria applicable to the designated uses in Idaho that are effective for Clean Water Act purposes are the previous human health criteria for these 88 pollutants, which were approved in 1996. To the extent allowable under state and federal law, the EPA urges Idaho to continue to implement the criteria adopted pursuant to state law until such time as future revisions are adopted.

Idaho also may want to consider undertaking additional fish consumption surveys of high fish consuming populations within Idaho. If the State is interested in exploring work in this area, the EPA is available and interested in providing assistance.

The EPA looks forward to working with the State to revise Idaho's human health criteria to ensure protection of Idaho designated uses. If you have any questions regarding this letter please contact me at (206) 553-4198, or you may contact Lisa Macchio, Idaho WQS Coordinator, at (206) 553-1834.

Sincerely,

Michael A. Bussell, Director
Office of Water and Watersheds

Enclosure:

cc: Mr. Michael McIntyre, Surface Water Program Manager
Idaho Department of Environmental Quality

Mr. Don Essig, Water Quality Standards Manager
Idaho Department of Environmental Quality

U.S. ENVIRONMENTAL PROTECTION AGENCY – REGION 10

# Technical Support Document

## EPA Disapproval of the State of Idaho's Revised Human Health Water Quality Criteria for Toxics Submitted on July 7, 2006

May 10, 2012

# Technical Support Document

## EPA Disapproval of the State of Idaho's Revised Human Health Water Quality Criteria for Toxics Submitted on July 7, 2006

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# Technical Support Document EPA's Disapproval of the State of Idaho's Revised Human Health Water Quality Criteria for Toxics Submitted on July 7, 2006

## I. INTRODUCTION

On July 7, 2006, the Idaho Department of Environmental Quality (DEQ) submitted new and revised water quality standards (WQS)[1] to the U.S. Environmental Protection Agency (EPA or the "Agency") for review and approval. These new and revised WQS were adopted by the 2006 Idaho legislature effective April 11, 2006. Idaho's WQS are located in the Idaho Administrative Procedures Act 58, Title 01, Chapter 02 (IDAPA 58.01.02).

DEQ's submittal contained 167 new and revised human health criteria for eighty-eight (88) pollutants that are applicable to all surface waters of the state. By this action, EPA is disapproving these human health criteria for surface waters of the State of Idaho based on an evaluation of whether the above-described WQS revisions are protective and based on sound scientific rationale.

The revised WQS addressed in this action include new and revised human health criteria for 88 toxic pollutants (see Table 1, below), revisions to footnotes b, c, d, and l applicable to certain human health criteria contained in Idaho's table of toxic criteria, and a provision specifying the fish consumption rate to be utilized in calculating human health criteria. These WQS revisions were submitted to EPA on July 7, 2006. Included in the submission was a document entitled "*Technical Justification, Idaho Rulemaking Docket 58-0102-0503, Idaho Cadmium Aquatic Life Criteria and Update of Human Health Toxic Criteria*" prepared by DEQ staff. In this document, DEQ summarizes the changes and the bases for the new and revised human health criteria. In addition, DEQ stated they lacked information on Idaho specific fish consumption rates with which to calculate alternative human health criteria values.

The revisions addressed in today's disapproval action include Idaho's new and revised human health water quality criteria for all 88 pollutants, carcinogens and non-carcinogens, (also known as toxic pollutants) at IDAPA 58.01.02.210.01, and the provision at IDAPA 58.01.02.210.05.b.i specifying the fish consumption rate.

Part II of this document provides additional background information about Idaho's July 7, 2006 WQS submittal. Parts III, IV and V of this document provide the basis for this action under

[1] DEQ. 2006. Letter dated July 7, 2006, from Barry Burnell, Administrator, Water Quality Division, Idaho Department of Environmental Quality, Boise, Idaho, to Michael Gearheard, Office of Water, Region 10, U.S. Environmental Protection Agency, Seattle, Washington.

section (§) 303(c) of the Clean Water Act (CWA) and EPA implementing regulations found in the *Code of Federal Regulations* (CFR) at 40 CFR 131.1. Part VI of this document provides the basis for EPA's determination that revised footnotes b, c, d, and l, included in the submittal are non-substantive and, therefore, EPA is taking no action on these revisions.

While the July 7, 2006 submittal included revisions to the cadmium aquatic life criteria, EPA's approval under CWA § 303(c) of the revised cadmium WQS for aquatic life was finalized on March 7, 2011, and the cadmium criteria for aquatic life will not be addressed further in this document. With respect to the revisions clarifying the existing mixing zone language and a new provision specifying the frequency and duration component for aquatic life criteria, also included in the July 7, 2006 submittal, EPA will provide DEQ with our review and decision on these provisions in a subsequent letter.

# II. BACKGROUND

## A. *Clean Water Act Requirements for Water Quality Standards*

Under CWA § 303(c) and EPA implementing regulations at 40 CFR § 131.4, states have the primary responsibility for reviewing, establishing, and revising WQS, which consist of the designated uses of a waterbody or waterbody segment and the water quality criteria necessary to protect those designated uses. This regulatory framework allows states to work with local communities to adopt appropriate designated uses [40 CFR § 131.10(a)] and to adopt criteria to protect those designated uses [40 CFR § 131.11(a)].

CWA § 303(c)(2)(B) requires states to adopt water quality criteria for toxic pollutants listed pursuant to § 307(a)(1) for which EPA has published criteria under § 304(a) where the discharge or presence of these toxics could reasonably be expected to interfere with the designated uses adopted by the state. In adopting such criteria, states should establish numeric values based on one of the following: (1) § 304(a) criteria; (2) § 304(a) criteria modified to reflect site-specific conditions; or, (3) other scientifically defensible methods [40 CFR § 131.11(b)]. In addition, states can establish narrative criteria where numeric criteria cannot be determined.

From time to time, states are required to review applicable WQS, and as appropriate, modify and adopt these standards (40 CFR § 131.20). CWA § 303(c) also requires states to submit new or revised WQS to EPA for review, as EPA must ensure that any revisions to surface water designated uses are consistent with the CWA, and that any new or revised criteria protect the designated water uses. In addition, the state must follow its own legal procedures for adopting such standards [40 CFR § 131.5] and submit certification by the state's attorney general, or other appropriate legal authority within the state, that the WQS were duly adopted pursuant to state law [40 CFR § 131.6(e)].

## B. *Overview of Idaho's July 7, 2006 WQS Submission*

On April 5, 2005, DEQ published an announcement to update Idaho's human health water quality criteria for toxics through a negotiated rulemaking process in the Idaho Administrative

Bulletin. The rulemaking was also announced on DEQ's web page and in newspapers around the State.

The proposed rule revisions accounted for revised fish consumption rates (FCR) and updated information in the IRIS database[2] on health effects and several footnotes applicable to the human health criteria. DEQ's basis for revising specific human health criteria for toxic pollutants, as stated in background information to the rulemaking, was a change in EPA's nationally recommended FCR from 6.5 grams per day (g/day) to 17.5 g/day. The FCR is a factor in the calculation of criteria.[3] Other factors include updated information on toxicity to humans contained in EPA's IRIS database, which change the reference dose for non-carcinogenic chemicals or change the cancer slope factor for carcinogens, and provide new information on bio-concentration rates.

DEQ held its first public meeting addressing the rulemaking on April 28, 2005, in Boise, and three additional meetings followed on May 20, June 22, and July 12. A proposed rule was announced in the September 7, 2005 Idaho Administrative Bulletin along with a 30-day comment period. DEQ received no requests for a public hearing and none was held. Following the public comment period, DEQ sent the pending rule to the Idaho Board of Environmental Quality, which adopted it on November 16, 2005. The final rule was approved by the Idaho Legislature in March 2006.

In accordance with 40 CFR § 131.6(e), DEQ's July 7, 2006 WQS submission also included a letter from Doug Conde, Assistant Attorney General at the Idaho Department of Justice, certifying that the new and revised WQS were "duly adopted pursuant to state law."

# III. IDAHO'S NEW AND REVISED HUMAN HEALTH WATER QUALITY CRITERIA

In its revision to state WQS, Idaho stated that the update to its human health criteria for 88 toxic pollutants was to reflect the latest scientific information as well as EPA's 2002 CWA § 304(a) human health criteria recommendations.[4] The 2002 recommendations reflected EPA's thinking on establishing human health criteria for toxic pollutants and provided recommended criteria values derived using the default values in the *Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health* (2000 Human Health Methodology).[5]

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[2] EPA. Integrated Risk Information System (IRIS). U.S. Environmental Protection Agency, Office of Water, Washington, D.C. Available at: www.epa.gov/iris

[3] EPA. 2000. *Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health.* EPA-822-B-00-004. Available at: http://www.epa.gov/waterscience/criteria/humanhealth/method/complete.pdf

[4] IDEQ. 2006. *Technical Justification, Idaho Rulemaking Docket 58-0102-0503 Idaho Cadmium Aquatic Life Criteria and Update of Human Health Toxics Criteria.* July 7, 2006.

[5] EPA. 2000. *Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health.* U.S. Environmental Protection Agency, Office of Water, Washington, D.C. EPA-822-B-00-004. Available at: http://www.epa.gov/waterscience/criteria/humanhealth/method/complete.pdf

The 2000 Human Health Methodology accounts for the cancer potency or systemic toxicity of a pollutant, the exposure related to surface water exposure, and a risk characterization for a pollutant; and uses that information to develop criteria to protect humans from the adverse effects from chronic exposure to a pollutant through drinking water and/or from eating fish living in a water body.

In separate updates published in 2002 and 2003,[6, 7] EPA provided numeric values associated with each of its § 304(a) human health criteria recommendations. These values were calculated using the 2000 Human Health Methodology, default input variables provided in the methodology, current toxicological information in the IRIS database[8] and a $10^{-6}$ (1:1,000,000) cancer risk level for carcinogenic pollutants. EPA recommends that states evaluate these input variables consistent with the recommendations in the 2000 Human Health Methodology when developing criteria.

Idaho's 2006 new and revised human health WQS submittal included criteria changes to seventy-five (75) pollutants based on EPA's 2002 National Recommended Water Quality Criteria updates to recommended criteria since publication of National Toxics Rule (NTR) in 1992.[9, 10] Prior to Idaho's 2006 new and revised human health criteria submittal, the majority of Idaho's human health criteria were the same as those that EPA had promulgated under the NTR. The criteria changes to the thirteen (13) remaining pollutants were based on EPA recommendations published in Federal Register 68, page 75507 on Dec. 31, 2003.

Idaho's revisions included one hundred sixty-seven (167) new or revised human health criteria for 88 toxic pollutants. For nine (9) of the pollutants, the "organism only" criterion is unchanged because EPA has not revised the "organism only" criterion for these pollutants. Since they were not revised, they are not addressed in this action.

Idaho's human health criteria are included in a table found at IDAPA 58.01.02.210.01, Criteria for Toxic Substances. Idaho's new and revised criteria that are addressed in this action are listed in Table 1 below.

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[6] EPA. 2002. *Revision of National Recommended Water Quality Criteria.* U.S. Environmental Protection Agency, Office of Water, Washington, D.C. *Federal Register*, Volume: 67, Issue: 249, Page: 79091 (67 FR 79091), December 27, 2002. Available at: http://www.epa.gov/fedrgstr/EPA-WATER/2002/December/Day-27/w32770.htm.

[7] EPA. 2003. *National Recommended Water Quality Criteria for the Protection of Human Health.* U.S. Environmental Protection Agency, Office of Water, Washington, D.C. *Federal Register*, Volume: 68, Issue: 250, Page: 75507 (68 FR 75507), December 31, 2003. Available at: http://www.epa.gov/fedrgstr/EPA-WATER/2003/December/Day-31/w32211.htm.

[8] EPA. Integrated Risk Information System (IRIS). U.S. Environmental Protection Agency, Office of Water, Washington, D.C. Available at: www.epa.gov/iris.

[9] National Toxic Rule (NTR) 57 FR 60848. Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants; States' Compliance Final Rule.

[10] EPA. 2002. *National recommended water quality criteria: 2002.* U.S. Environmental Protection Agency, Office of Water. Washington, DC. EPA/822/R-02-047.

## A. *Human Health Criteria and Application to Idaho's Designated Uses*

Idaho's human health criteria were developed, for the most part, in accordance with EPA's 2000 Human Health Methodology to protect human health from long-term exposure to toxic pollutants in drinking water and through eating fish containing these pollutants. In Idaho, surface waters used for drinking water are designated as "Domestic Water Supply" (DWS). Surface waters used for consumption of fish are designated as "Primary or Secondary Contact Recreation" (PCR or SCR) and "Aquatic Life Use." Idaho's aquatic life uses include:

- Cold water communities (COLD);
- Salmonid Spawning (SS);
- Seasonal Cold Water Communities (SC)
- Warm Water Communities (WARM); and,
- Modified Communities (MOD).

Idaho's "water + organism" criteria (column C1 of the Table of Numeric Criteria for Toxic Substances contained in IDAPA 58.01.02.210.01) were established to limit the pollutant to levels that provide for the safe consumption of drinking water and fish. These criteria are applied where Idaho has designated DWS as a beneficial use. The "organism only" criteria (column C2 of the Table of Numeric Criteria for Toxic Substances contained in IDAPA 58.01.02.210.01) apply where Idaho has designated a recreational use, either PCR or SCR, and aquatic life uses, but not a DWS use. All waters in Idaho are designated for PCR/SCR and aquatic life use. The DWS designation is in addition to a recreational use designation. Therefore, the "organism only" criteria (column C2) apply to all surface waters of the State of Idaho. However, not all surface waters in Idaho are designated for protection of DWS; consequently, the "water + organism" criteria (column C1) apply only to a subset of surface waters of the State of Idaho.

Idaho's WQS designate beneficial uses for waters of the State for each subbasin by waterbody segment in IDAPA 58.01.02.110 through 160. For those waterbodies of the State not specifically identified in IDAPA 58.01.02.110 through 160, or those waterbodies that are included in these sections, but do not have designated uses assigned to them, Idaho's WQS specify the uses and criteria that apply to undesignated surface waters. The provision at IDAPA 58.01.02.101.01, entitled, "Undesignated Surface Waters", states "*...undesignated waters shall be protected for beneficial uses which includes all recreational use in and on the water and the protection and propagation of fish, shellfish and wildlife, wherever attainable.*" Further, IDAPA 58.01.02.101.01.b. specifies that IDEQ "*...will apply cold water aquatic life and primary or secondary contact recreation criteria to undesignated waters.*" Thus, the human health criteria in column C2 of the Table of Numeric Criteria for Toxic Substances contained in IDAPA 58.01.02.210.01 apply to these waters.

For human health protection, EPA recommends that states apply human health criteria for toxics to all waters with designated uses providing for public water supply protection (and therefore a potential water consumption exposure route), recreation, and/or aquatic life protection (and

therefore a potential fish consumption route).[11] Consistent with EPA's recommended approach, DEQ applies the "water + organism" human health criteria for toxics to waters designated as domestic water supply. This provides protection from a potential water exposure route. Also consistent with EPA's recommendations, DEQ applies the "organism only" human health criteria for toxics to recreational and aquatic life uses as these waters provide a potential fish consumption exposure route (i.e., fish or other aquatic life are being caught and consumed).

Idaho's 2006 human health criteria for toxic pollutants are developed, for the most part, pursuant to methods presented in EPA's 2000 Human Health Methodology.[12] These criteria take into consideration the cancer potency or systemic toxicity of a pollutant, the exposure related to surface water exposure and a risk characterization. The criteria calculations for non-carcinogens and carcinogens differ depending upon the exposure scenario for which the criteria are derived and are further described below.

EPA reviewed Idaho's 2006 revised human health criteria for toxic pollutants to assess whether they were consistent with the Clean Water Act and its implementing regulations. EPA's evaluation focused on whether the criteria were consistent with 40 CFR 131.11(a), which states that criteria must be based on sound scientific rationale and contain sufficient parameters or constituents to protect designated uses.

## B. *Criteria Methodology and Input Variables Used by Idaho*

Pursuant to CWA § 304(a), EPA has published recommended criteria for use by states in adopting and revising criteria.[13] For human health criteria, the values reflect the 'national default' values for the risk assessment parameters provided in the 2000 Human Health Methodology, the reference dose values (RfD) contained in IRIS at the time of publication, and the use of bioconcentration factors (BCFs) as opposed to site-specific bioaccumulations factors (BAFs). While the 2000 Human Health Methodology provides national default values, it also provides necessary guidance to adjust criteria to reflect local conditions and encourages states to use the guidance to appropriately reflect local conditions and/or protect identifiable subpopulations.[14] The revised human health criteria Idaho adopted were derived, for the most part, using EPA's 2000 Human Health Methodology and criteria updates published in 2002 and 2003.

The risk assessment-based procedures EPA puts forth in the 2000 Human Health Methodology are specific to whether the endpoint is cancer or noncancer. When using cancer as the critical

[11] EPA 1994. *Water Quality Standards Handbook.* U.S. Environmental Protection Agency, Office of Water, Washington, D.C., EPA-823-B-94-005a. August 1994.

[12] EPA. 2000. *Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health.* U.S. Environmental Protection Agency, Office of Water, Washington, D.C. EPA 822-B-00-004

[13] EPA National Recommend Ambient Water Quality Criteria for the Protection of Aquatic Life and Human Health. Published pursuant to section 304(a) of the Clean Water Act. Available at: http://www.epa.gov/waterscience/criteria/wqctable/index.html.

[14] EPA. 2000. *Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health.* U.S. Environmental Protection Agency, Office of Water, Washington, D.C. EPA 822-B-00-004. Pages iii, 1-11.

risk assessment endpoint, the criteria are presented as a range of concentrations associated with specified incremental lifetime risk levels. The following briefly provides the key features of each procedure. A simplified version of this equation is provided in Figure 1 below.

**Figure 1.** Simplified version of the equation used by Idaho in deriving the human health criteria for carcinogens.

$$AWQC = \frac{(Risk\ Level \bullet BW)}{[CSF \bullet (DI + (FCR \bullet BAF))]}$$

where:

| | | |
|---|---|---|
| AWQC | = | Ambient Water Quality Criterion (milligrams per liter) |
| Risk Level | = | Risk level (unitless) |
| CSF | = | Cancer slope factor (milligrams per kilogram per day) |
| BW | = | Human body weight (kilograms) |
| DI | = | Drinking water intake (liters per day) |
| FCR | = | Fish Consumption Rate (kilograms per day) |
| BAF | = | Bioaccumulation factor (liters per kilogram) |

*Note that criteria calculations for organism only criteria are not shown and can be derived by removing the drinking water intake (DI) term.

When using noncancer effects as the critical endpoint, the criteria reflect an assessment of a "no-effect" level. Criteria for non-carcinogenic pollutants are calculated through an equation that relies on pollutant-specific and general risk-assessment values for each parameter. A simplified version of this equation is provided in Figure 2 below.

**Figure 2.** Simplified version of the equation used by Idaho in deriving the human health criteria for non-carcinogens.

$$AWQC = RfD \bullet RSC \bullet \frac{(BW)}{[DI + (FCR \bullet BAF)]}$$

where:

| | | |
|---|---|---|
| AWQC | = | Ambient Water Quality Criterion (milligrams per liter) |
| RfD | = | Reference dose for noncancer effects (milligrams per kilogram per day) |
| RSC | = | Relative source contribution factor to account for non-water sources of exposure (unit less) |
| BW | = | Human body weight (kilograms) |
| DI | = | Drinking water intake (liters per day) |
| FCR | = | Fish Consumption Rate (kilograms per day) |
| BAF | = | Bioaccumulation factor (liters per kilogram) |

*Note that criteria calculations for organism only criteria are not shown and can be derived by removing the drinking water intake (DI) term.

Idaho's new and revised criteria were derived using the following input variables:

RfD: values recommended by EPA in the 2002 and 2003 § 304(a) criteria recommendations.[15, 16]

RSC: values recommended by EPA in the 2002 and 2003 CWA § 304(a) criteria recommendations.[17, 18]

BW: 70 kilograms[19]

DI: 2 liters per day

FCR: 17.5 grams per day[20]

BAF: values recommended by EPA in the 2002 and 2003 CWA § 304(a) criteria recommendations

Cancer risk level: $1 \times 10^{-6}$

CSF: values provide in EPA's Integrated Risk Information System (IRIS) database as of May 17, 2002

Further information regarding each of these variables is available in EPA's 2000 Human Health Methodology.

# IV. EPA's Review

As described above, Idaho's human health criteria are calculated using several exposure and risk variables. The criterion value is further determined by the level of risk found to be acceptable while still protecting the use – in this case, the level of protection provided to consumers of organisms and water taken from the state waters to which the criteria apply. In presenting the criteria to the Idaho Legislature, the Idaho Board of Environmental Quality, and stakeholders, DEQ stated that these criteria were consistent with EPA's national recommendations.[21, 22]

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[15] See: EPA. 2002. *National Recommended Water Quality Criteria 2002 – Human Health Criteria Calculation Matrix.* U.S. Environmental Protection Agency, Office of Water, Washington, D.C. EPA 822-R-02-012. Available at: http://www.epa.gov/waterscience/criteria/wqctable/hh_calc_matrix.pdf.

[16] See: EPA. 2003. *National Recommended Water Quality Criteria for the Protection of Human Health.* U.S. Environmental Protection Agency, Office of Water, Washington, D.C. *Federal Register*, Volume: 68, Issue: 250, Page: 75507 (68 FR 75507), December 31, 2003. Available at: http://www.epa.gov/fedrgstr/EPA-WATER/2003/December/Day-31/w32211.htm.

[17] See: EPA. 2002. *National Recommended Water Quality Criteria 2002 – Human Health Criteria Calculation Matrix.* U.S. Environmental Protection Agency, Office of Water, Washington, D.C. EPA 822-R-02-012. Available at: http://www.epa.gov/waterscience/criteria/wqctable/hh_calc_matrix.pdf.

[18] See: EPA. 2003. *National Recommended Water Quality Criteria for the Protection of Human Health.* U.S. Environmental Protection Agency, Office of Water, Washington, D.C. *Federal Register*, Volume: 68, Issue: 250, Page: 75507 (68 FR 75507), December 31, 2003. Available at: http://www.epa.gov/fedrgstr/EPA-WATER/2003/December/Day-31/w32211.htm.

[19] EPA. 2000. *Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health.* U.S. Environmental Protection Agency, Office of Water, Washington, D.C. EPA 822-B-00-004. Pages 4-18 to 4-19.

[20] EPA. 2000. *Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health.* U.S. Environmental Protection Agency, Office of Water, Washington, D.C. EPA 822-B-00-004. Page 4-24 to 4-25.

[21] Idaho DEQ. Presentation to 2nd Session of 58th Legislature, WQS Docket 58-0102-0503. 2005 Update to toxics criteria.(not dated)

[22] Idaho DEQ 2005. Presentation to DEQ Board on Docket 58-0102-0503, 2005 Update to toxics criteria, November 16, 2005

The water quality standards regulations at 40 CFR 131.11(a), state that new or revised criteria must be based on sound scientific rationale and contain sufficient parameters or constituents to protect designated uses. To ensure Idaho's criteria are consistent with this requirement, EPA evaluated the appropriateness of the exposure variables used by Idaho in deriving its criteria: specifically, whether these were based on sound science and led to criteria that would protect human health endpoints consistent with the designated uses of Idaho's waters.

As stated above, Idaho relied on EPA's 2000 Human Health Methodology to derive human health criteria, with the goal of basing the criteria on exposure and risk variables consistent with EPA's latest recommendations. With the exception of the fish consumption rate variable, the variables Idaho relied on for all pollutants except acrolein and phenol are consistent with EPA's recommendations for developing human health criteria, and therefore, are consistent with EPA's 304(a) criteria recommendations. With respect to acrolein and phenol, the RfD values for these pollutants were subsequently updated in June 2003 and September 2002, respectively. EPA integrated the updated IRIS values into its current § 304(a) criteria recommendations and published the recalculated criteria as the Agency's current national recommended criteria in 2009.[23]

The 2000 Human Health Methodology provides states and tribes flexibility in establishing WQS by providing scientifically valid options for developing their own criteria that consider local, State, or regional conditions. For example, states and authorized tribes should consider use of local data, use of data reflecting similar geography/population groups, use of data from national surveys, and use of EPA's default intake rates.

EPA recommends that a state consider the population that may be exposed to adverse health effects from consuming fish from the state's waters, and select a fish consumption rate that is appropriate to protect that population. The 2000 Human Health Methodology provides three default consumption rates: 17.5 g/day for the general population, 17.5 g/d for recreational fishers and 142.4 g/d for subsistence fishers. The rate recommended for protection of the general population represents an estimate of the 90$^{th}$ percentile consumption rate for the U.S. adult population based on the U.S. Department of Agriculture's Continuing Survey of Food Intake by Individuals (CSFII) 1994-96 data.[24]

As part of its review, EPA evaluated whether local, state, or regional data was available and relevant in developing human health criteria for Idaho's waters. EPA identified several sources of information that bear on the question of fish consumption but were not included in Idaho's rationale for selecting the 17.5 g/d national fish consumption rate. EPA has determined that a consideration of this information is necessary to a scientifically sound evaluation of the protectiveness of human health criteria in Idaho, such that the absence of such consideration from the 2006 revisions to Idaho human health criteria indicates that those revisions do not rest on a sound scientific rationale.

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[23] 74 FR 27535. Notice of Availability of National Recommended Water Quality Criteria for Acrolein and Phenol. June 10, 2009. Federal Register Vol . 74, No. 110, pp 27535 -27536

[24] USDA. 1998. U.S. Department of Agriculture. *1994-1996 Continuing Survey of Food Intakes by Individuals and 1994-1996 Diet and Health Knowledge Survey.* Agricultural Research Service, USDA. NTIS CD-ROM, Accession number PB98-500457.

## A. *Relevant and Available Local and Regional Fish Consumption Information*

As previously noted, when establishing WQS, states and authorized tribes should consider use of local data, use of data reflecting similar geography/population groups, use of data from national surveys, and use of EPA's default intake rates.

EPA's search for available and potentially relevant data and information on fish consumption rates in Idaho identified several sources of local, state and regional data. The following are several studies relevant to evaluating fish consumption in Idaho:

1. A Fish Consumption Survey of the Umatilla, Nez Perce, Yakama, and Warm Springs Tribes of the Columbia River Basin, CRITFC 1994.[25]
2. The Relationship of Human Levels of Lead and Cadmium to the Consumption of Fish Caught in and Around Lake Coeur D'Alene, Idaho, 1989.[26]
3. Consumption Patterns of Anglers Who Frequently Fish Lake Roosevelt Washington, 1997.[27]
4. Yakama Nation Exposure Scenario for Hanford Site Risk Assessment, Richland WA, 2007.[28]
5. Fish Consumption Survey Spokane River, Washington, 1998.[29]
6. Exposure Scenario for Confederated Tribes of the Umatilla Indian Reservation Traditional Subsistence Lifeways, 2004.[30]
7. The Spokane Tribe's Multipathway Subsistence Exposure Scenario and Screening Level RME, 2002. [31]
8. A Fish Consumption Survey of the Tulalip and Squaxin Island Tribes of the Puget Sound Region, 1996. [32]
9. Fish Consumption Survey of the Suquamish Indian Tribe of the Port Madison Indian Reservations, Puget Sound Region, 2000.[33]

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[25] CRITFC. 1994. A Fish Consumption Survey of the Umatilla, Nez Perce, Yakima, and Warm Springs Tribes of the Columbia River Basin. Columbia River Intertribal Fish Commission. Portland Oregon. CRITFC Technical Report No. 94-3. October 1994

[26] U.S Department of Health and Human Services Agency for Toxic Substances and Disease Registry (ATSDR) Division of Health Studies. 1989. The Relationship of Human Levels of Lead and Cadmium to the Consumption of Fish Caught in and Around Lake Coeur D'Alene, Idaho. September 1989.

[27] Washington State Department. of Health, Office of Environmental Health Assessments. 1997. Consumption Patterns of Anglers Who Frequently Fish Lake Roosevelt. September 1997.

[28] Ridolfi. 2007. Yakama Nation Exposure Scenario for Hanford Site Risk Assessment, Richland WA.

[29] Spokane Regional Health District, Assessment/Epidemiology Center. 1998. 1998 Fish Consumption Survey Spokane River, Washington. Survey Report, November 1998.

[30] Confederated Tribes of the Umatilla Indian Reservation. 2004. Exposure Scenario for CTUIR Traditional Subsistence Lifeways

[31] Harper, BL, Flett B, Harris S, Abeyta C, Kirschner F. 2002. The Spokane Tribe's Multipathway Subsistence Exposure Scenario and Screening Level RME. Society for Risk Analysis, Risk Analysis Vol 22. No. 3

[32] Toy KA, Polissar NL, Liao S, Mittelstaedt GD. 1996. A Fish Consumption Survey of the Tulalip and Squaxin Island Tribes of the Puget Sound region. Tulalip Tribes, Department of Environment, Marysville, WA.

10. Asian and Pacific Islander Seafood Consumption Study. 1999[34]

The materials provided to EPA by DEQ do not indicate that any of these sources of information were considered when Idaho decided to use the national default rate of 17.5 g/d to derive its new and revised human health criteria. Furthermore, DEQ stated that no such information was available at the time they adopted the revisions.

At the time Idaho re-evaluated its human health toxics criteria for protection of Idaho's waters, Idaho did not consider the available studies listed above. Furthermore, EPA believes that the use of the national default fish consumption rate as protective of Idaho's designated uses lacks a sound scientific basis unless it considers the information contained in the above-listed studies (i.e., including those studies published after Idaho acted in 2006). EPA, therefore, determines that the criteria derived using 17.5 g/day and submitted to EPA on July 7, 2006, are not based on a sound scientific rationale and thus are not consistent with 40 CRF 131.11(a).

EPA's preliminary review of the listed studies indicates that statewide human health criteria based on a fish consumption rate of 17.5 g/d would not be protective of the designated uses of Idaho waters.[35] In addition, these studies bolster EPA's recommendation that Idaho further evaluate levels of intake by recreational and subsistence fishers when evaluating the appropriate fish consumption rate for use in deriving criteria.

# V. EPA Disapproval of Idaho's New and Revised Human Health Criteria

In accordance with 40 CFR 131.11(a), EPA must ensure that new or revised criteria are based on sound scientific rationale and contain sufficient parameters or constituents to protect designated uses. As described above, EPA has found that DEQ did not consider the available information relevant to fish consumption when selecting a fish consumption rate utilized in calculation of Idaho's human health criteria. Therefore, these criteria are not based on a sound scientific rationale. Furthermore, EPA's preliminary analysis of available information suggests that a fish consumption rate of 17.5 g/d may not be representative of consumption from Idaho's waters and, therefore, may not be protective of Idaho's designated uses to the level identified by Idaho during their rule adoption process.

Based upon the above evaluation and in accordance with its CWA authority, 33U.S.C. § 1313(c)(3) and 40 CFR Part 131, EPA disapproves Idaho's new and revised "water + organism" and "organism only" human health criteria identified in Table 1.

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[33] Suquamish. 2000. Fish Consumption Survey of the Suquamish Indian Tribe of the Port Madison Indian Reservation, Puget Sound region. The Suquamish Tribe, Suquamish, WA.

[34] Sechena R, Nakano C, Liao S, Polissar N, Lorenzana R, Truong S, Fenske R. 1999. Asian and Pacific Islander Seafood Consumption Study. King County Washington. EPA 910/R-99-03. May 1999.

[35] Memo, Review of Fish Consumption Information Relevant to Development of Idaho AWQC, 5/8/12, Draft. Lon Kissinger, US EPA Region 10, Office of Environmental Assessment

**Table 1.** Idaho's July 7, 2006 submission of revised "water + organism" and "organism only" human health criteria which EPA disapproves and which are found at IDAPA 58.01.02.210.01

| Number | Number in Idaho's WQS Toxic Criteria Table | Pollutant | CAS Number | Carcinogen | Water + Organism (µg/L) | Organism Only (µg/L) |
|---|---|---|---|---|---|---|
| 1 | 10 | Selenium* | 7782492 | | 170 | 4200 |
| 2 | 12 | Thallium | 7440280 | | 0.24 | 0.47 |
| 3 | 14 | Cyanide | 57125 | | 140 | 140 |
| 4 | 16 | 2, 3, 7, 8-TCDD Dioxin | 1746016 | ✓ | 0.000000005 | 0.0000000051 |
| 5 | 17 | Acrolein | 107028 | | 190 | 290 |
| 6 | 18 | Acrylonitrile | 107131 | ✓ | 0.051 | 0.25 |
| 7 | 19 | Benzene | 71432 | ✓ | 2.2 | 51 |
| 8 | 20 | Bromoform | 75252 | ✓ | not revised | 140 |
| 9 | 21 | Carbon Tetrachloride | 56235 | ✓ | 0.23 | 1.6 |
| 10 | 22 | Chlorobenzene | 108907 | | 130 | 1600 |
| 11 | 23 | Chlorodibromomethane | 124481 | ✓ | 0.40 | 13 |
| 12 | 27 | Dichlorobromomethane | 75274 | ✓ | 0.55 | 17 |
| 13 | 29 | 1,2-Dichloroethane | 107062 | ✓ | not revised | 37 |
| 14 | 30 | 1,1-Dichloroethylene | 75354 | ✓ | 330 | 7100 |
| 15 | 31 | 1,2-Dichloropropane* | 78875 | ✓ | 0.50 | 15 |
| 16 | 32 | 1,3-Dichloropropene | 542756 | | 0.34 | 21 |
| 17 | 33 | Ethylbenzene | 100414 | | 530 | 2100 |
| 18 | 34 | Methyl Bromide | 74839 | | 47 | 1500 |
| 19 | 36 | Methylene Chloride | 75092 | ✓ | 4.6 | 590 |
| 20 | 37 | 1,1,2,2-Tetrachloroethane | 79345 | ✓ | not revised | 4.0 |
| 21 | 38 | Tetrachloroethylene | 127184 | ✓ | 0.69 | 3.3 |
| 22 | 39 | Toluene | 108883 | | 1300 | 15000 |
| 23 | 40 | 1,2-Trans-Dichloroethylene* | 156605 | | 140 | 10000 |
| 24 | 42 | 1,1,2-Trichloroethane | 79005 | ✓ | 0.59 | 16 |
| 25 | 43 | Trichloroethylene | 79016 | ✓ | 2.5 | 30 |
| 26 | 44 | Vinyl Chloride | 75014 | ✓ | 0.025 | 2.4 |
| 27 | 45 | 2-Chlorophenol* | 95578 | | 81 | 150 |
| 28 | 46 | 2,4-Dichlorophenol | 120832 | | 77 | 290 |
| 29 | 48 | 2-Methyl-4,6-Dinitrophenol | 534521 | | 13 | 280 |
| 31 | 49 | 2,4-Dinitrophenol | 51285 | | 69 | 5300 |
| 31 | 53 | Pentachlorophenol | 87865 | ✓ | 0.27 | 3.0 |
| 32 | 54 | Phenol | 108952 | | not revised | 1700000 |
| 33 | 55 | 2,4,6-Trichlorophenol | 88062 | ✓ | 1.4 | 2.4 |
| 34 | 56 | Acenaphthene* | 83329 | | 670 | 990 |
| 35 | 58 | Anthracene | 120127 | | 8300 | 40000 |
| 36 | 59 | Benzidine | 92875 | ✓ | 0.000086 | 0.00020 |

| Number | Number in Idaho's WQS Toxic Criteria Table | Pollutant | CAS Number | Carcinogen | Water + Organism (µg/L) | Organism Only (µg/L) |
|---|---|---|---|---|---|---|
| 37 | 60 | Benzo(a)Anthracene | 56553 | ✓ | 0.0038 | 0.018 |
| 38 | 61 | Benzo(a)Pyrene | 50328 | ✓ | 0.0038 | 0.018 |
| 39 | 62 | Benzo(b)Fluoranthene | 205992 | ✓ | 0.0038 | 0.018 |
| 40 | 64 | Benzo(k)Fluoranthene | 207089 | ✓ | 0.0038 | 0.018 |
| 41 | 66 | Bis(2-Chloroethyl)Ether | 111444 | ✓ | 0.030 | 0.53 |
| 42 | 67 | Bis(2-Chloroisopropyl)Ether | 108601 | | not revised | 6500 |
| 43 | 68 | Bis(2-Ethylhexyl)Phthalate | 117817 | ✓ | 1.2 | 2.2 |
| 44 | 70 | Butylbenzyl Phthalate* | 85687 | | 1500 | 1900 |
| 45 | 71 | 2-Chloronaphthalene* | 91587 | | 1000 | 1600 |
| 46 | 73 | Chrysene | 218019 | ✓ | 0.0038 | 0.018 |
| 47 | 74 | Dibenzo (a,h) Anthracene | 53703 | ✓ | 0.0038 | 0.018 |
| 48 | 75 | 1,2-Dichlorobenzene | 95501 | | 420 | 1300 |
| 49 | 76 | 1,3-Dichlorobenzene | 541731 | | 320 | 960 |
| 50 | 77 | 1,4-Dichlorobenzene | 106467 | | 63 | 190 |
| 51 | 78 | 3,3'-Dichlorobenzidine | 91941 | ✓ | 0.021 | 0.028 |
| 52 | 79 | Diethyl Phthalate | 84662 | | 17000 | 44000 |
| 53 | 80 | Dimethyl Phthalate | 131113 | | 270000 | 1100000 |
| 54 | 81 | Di-n-Butyl Phthalate | 84742 | | 2000 | 4500 |
| 55 | 82 | 2,4-Dinitrotoluene | 121142 | ✓ | not revised | 3.4 |
| 56 | 85 | 1,2-Diphenylhydrazine | 122667 | ✓ | 0.036 | 0.20 |
| 57 | 86 | Fluoranthene | 206440 | | 130 | 140 |
| 58 | 87 | Fluorene | 86737 | | 1100 | 5300 |
| 59 | 88 | Hexachlorobenzene | 118741 | ✓ | 0.00028 | 0.00029 |
| 60 | 89 | Hexachlorobutadiene | 87683 | ✓ | not revised | 18 |
| 61 | 90 | Hexachloro-cyclopentadiene | 77474 | | 40 | 1100 |
| 62 | 91 | Hexachloroethane | 67721 | ✓ | 1.4 | 3.3 |
| 63 | 92 | Ideno (1,2,3-cd) Pyrene | 193395 | ✓ | 0.0038 | 0.018 |
| 64 | 93 | Isophorone | 78591 | ✓ | 35 | 960 |
| 65 | 95 | Nitrobenzene | 98953 | | not revised | 690 |
| 66 | 96 | N-Nitrosodimethylamine | 62759 | ✓ | not revised | 3.0 |
| 67 | 97 | N-Nitrosodi-n-Propylamine* | 621647 | ✓ | 0.0050 | 0.51 |
| 68 | 98 | N-Nitrosodiphenylamine | 86306 | ✓ | 3.3 | 6.0 |
| 69 | 100 | Pyrene | 129000 | | 830 | 4000 |
| 70 | 101 | 1,2,4-Trichlorobenzene* | 120821 | | 35 | 70 |
| 71 | 102 | Aldrin | 309002 | ✓ | 0.000049 | 0.000050 |
| 72 | 103 | alpha-BHC | 319846 | ✓ | 0.0026 | 0.0049 |
| 73 | 104 | beta-BHC | 319857 | ✓ | 0.0091 | 0.017 |
| 74 | 105 | gamma-BHC (Lindane) | 58899 | ✓ | 0.98 | 1.8 |
| 75 | 107 | Chlordane | 57749 | ✓ | 0.00080 | 0.00081 |

| Number | Number in Idaho's WQS Toxic Criteria Table | Pollutant | CAS Number | Carcinogen | Water + Organism (µg/L) | Organism Only (µg/L) |
|---|---|---|---|---|---|---|
| 76 | 108 | 4,4'-DDT | 50293 | ✓ | 0.00022 | 0.00022 |
| 77 | 109 | 4,4'-DDE | 72559 | ✓ | 0.00022 | 0.00022 |
| 78 | 110 | 4,4'-DDD | 72548 | ✓ | 0.00031 | 0.00031 |
| 79 | 111 | Dieldrin | 60571 | ✓ | 0.000052 | 0.000054 |
| 80 | 112 | alpha-Endosulfan | 959988 | | 62 | 89 |
| 81 | 113 | beta-Endosulfan | 33213659 | | 62 | 89 |
| 82 | 114 | Endosulfan Sulfate | 1031078 | | 62 | 89 |
| 83 | 115 | Endrin | 72208 | | 0.059 | 0.060 |
| 84 | 116 | Endrin Aldehyde | 7421934 | | 0.29 | 0.30 |
| 85 | 117 | Heptachlor | 76448 | ✓ | 0.000079 | 0.000079 |
| 86 | 118 | Heptachlor Epoxide | 1024573 | ✓ | 0.000039 | 0.000039 |
| 87 | 119 | Polychlorinated Biphenyls PCBs | | ✓ | 0.000064 | 0.000064 |
| 88 | 120 | Toxaphene | 8001352 | ✓ | 0.00028 | 0.00028 |

Idaho also revised IDAPA 58.01.02.210.05.b.i., which specifies that when using EPA recommended criteria to derive water quality criteria to protect human health, a fish consumption rate of 17.5 grams per day shall be utilized. The following is that rule language:

IDAPA 58.01.02.210.05. *Development of Toxic Substance Criteria*

*b. Human Health Criteria*

"*i. When numeric criteria for the protection of human health are not identified in these rules for toxic substances, quantifiable criteria may be derived by the Department from the most recent recommended criteria defined in EPA's Integrated Risk Information System (IRIS). When using EPA recommended criteria to derive a water quality criteria to protect human health, a fish consumption rate of seventeen point five (17.5) grams/day, a water ingestion rate of two (2) liters/day and a cancer risk level of* $10^{-6}$ *shall be utilized.*"

As discussed above, EPA's preliminary analysis of available information suggests that a fish consumption rate of 17.5 grams per day may not be representative of the consumption from Idaho's waters and thus may not be protective of Idaho's designated uses to the level identified by Idaho during their rule adoption process.

Based upon the above evaluation and in accordance with its CWA authority, 33U.S.C.§ 1313(c)(3) and 40 CFR Part 131, EPA disapproves IDAPA 58.01.02.210.05.b.i.

# VI. NO ACTION ON REVISED FOOTNOTES

In addition to adopting revised human health criteria described in Part III and Part IV above, Idaho revised four (4) footnotes (b, c, d, and l) associated with numeric criteria for toxic substances at IDAPA 58.01.02.210.01. Revisions to these footnotes are provided below. Strikeout text indicates text that was removed, while underlined text indicates new wording.

### *A. Footnote "b"*

### 1. Description of Footnote

Idaho revised footnote b to the existing and unrevised column heading "CMC" and "CCC" of the table of numeric criteria for toxic substances in IDAPA 58.01.02.210.01. Footnote b refers to Idaho's definitions of acute and chronic criteria. The definitions were not changed, however, the section numbering for the definitions changed from IDAPA 58.01.02.003 to 010. Therefore footnote b was revised to refer to the revised numbering of the definitions section of Idaho's WQS. Footnote b states:

"b. See Definitions, Section ~~003~~ 010 of these rules."

### 2. EPA Review and Action

EPA does not consider the revisions to footnote b to be substantive revisions to the water quality standards under Section 303(c) of the CWA and, therefore, is taking no action. The footnote remains in effect for CWA purposes.

### *B. Footnote "c"*

### 1. Description of Footnote

Idaho revised footnote c to specify the revised date that Idaho obtained values from IRIS database used in the calculations of human health criteria. The previous date specified was December 22, 1992. Footnote c was revised to refer to the more recent date and informs the reader where the value came from and does not alter the underlying criteria. Footnote c states:

"c. This criterion has been revised to reflect The Environmental Protection Agency's q1* or RfD, as contained in the Integrated Risk Information System (IRIS) as of ~~December 22, 1992~~ May 17, 2002. The fish tissue bioconcentration factor (BCF) from the 1980 Ambient Water Quality Criteria document was retained in each case.

### 2. EPA Review and Action

EPA does not consider the revisions to footnote c to be substantive revisions to the water quality standards under Section 303(c) of the CWA and, therefore, is taking no action. The footnote remains in effect for CWA purposes.

### *C. Footnote "d"*

#### 1. Description of Footnote

Idaho revised footnote d to the existing human health criterion for arsenic. Footnote d was revised as follows:

"d. Inorganic form only. ~~The criterion for arsenic is the MCL in effect as of April 5, 2000."~~

#### 2. EPA Review and Action

Although Idaho did not revise the arsenic human health criteria in this submission, the state did revise the footnote applicable to this criterion. The underlying criterion for arsenic was unrevised and, therefore, EPA is not reviewing the underlying criterion as part of this action. Footnote d is only applicable to Idaho's existing human health criterion for arsenic. Idaho's revision deletes a reference to the MCL. This does not change the criteria; therefore, EPA does not consider the revisions to footnote d to be substantive revisions to the water quality standards under Section 303(c) of the CWA and, therefore, is taking no action. The footnote remains in effect for CWA purposes.

### *D. Footnote "l"*

#### 1. Description of Footnote

Idaho revised footnote l to the revised human health criteria for carcinogens. Footnote l was revised as follows:

"l. ~~EPA guidance allows states to choose a risk factor of 10-4 to 10-6.~~ Idaho has chosen to base ~~T~~this criterion ~~is based~~ on carcinogenicity of 10-6 risk."

#### 2. EPA Review and Action

Footnote l applies to all human health criteria that are carcinogens. Idaho's revision deletes a reference to EPA guidance and replaces it with a statement explicit to the risk level Idaho has chosen to apply. The risk level associated with the criteria ($10^{-6}$) was not changed, therefore, EPA does not consider the revisions to footnote l to be substantive revisions to the water quality standards under Section 303(c) of the CWA and, thus, is taking no action. The footnote remains in effect for CWA purposes.

### *E. Other Footnotes not Revised*

Idaho did not change any of the other footnotes included in IDAPA 58.01.02.210.01, Criteria for Toxic Substances of Idaho's WQS, applicable to human health criteria for toxics. Thus, EPA is not taking action on these previously approved footnotes. This is appropriate since these footnotes remain applicable to the pollutants with which they are associated, and this

applicability is not altered by any WQS revisions included in Idaho's July 7, 2006 submittal. These footnotes remain in effect for CWA purposes.