Summary of Changes in Idaho WQS made by Rule Docket 58-0102-1201

010 Definitions – harmonic mean

The definition is section 010.46 for harmonic mean flow was modified to become a generic definition of a harmonic mean of any measurements. This supports changes made in section 210.03.d.ii.

070 Application of Standards – protection of downstream water quality

A new section 070.08 was added providing a narrative statement based on EPA template language to provide protection of downstream water quality.

210.01 Criteria for Toxic Substances

The most significant changes made by this rule are to the criteria set for protection of human health specified in columns C1 and C2 of section 210.01. In this section there are 209 new or revised criteria for 105 toxic pollutants, including 11 new substances not previously listed.

The revisions incorporate an Idaho specific fish consumption rate of 66.5g/day. This is the mean fish consumption rate for the Nez Perce Tribe for Group 2 fish and comes from a 2015 survey (The Mountain-Whisper-Light Statistics, Pacific Market Research, and Ridolfi Inc. 2015). Group 2 is described as "near coastal, estuarine, freshwater and anadromous fish". In addition to salmon, which EPA categorized as 96% marine in their national 304(a) criteria and thus excluding that fraction, Group 2 includes several other species that are not found in Idaho waters, e.g. lobster, crab, shrimp, marine, clams or mussels, octopus and scallops.

Idaho's new criteria also incorporate changes to other criteria derivation inputs as well. The drinking water intake was increased from 2.0 to 2.4 L/day, and body weight increased from 70 to 80 Kg. Chemical specific inputs for toxicity, bioaccumulation and relative source contribution were also updated based on the latest information available from EPA's 2015 update of their 304(a) recommendations for human health criteria (EPA 2015). These inputs are detailed in the Idaho Human Health Criteria - Technical Support Document (DEQ 2015). Note that not all the revised criteria are based on EPA's methodology for derivation of human health criteria. In particular the copper criterion of 1,300 µg/L is based on EPA's drinking water MCL.

Other changes in section 210 include removal in 210.01.a of application of column C2 criteria for protection of aquatic life uses. Idaho views this as a correction of a previous misapplication of human health criteria not developed to protect aquatic life. In 210.01.b Idaho added that the

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C2 criteria (fish only) apply to water designated either primary or secondary contact recreation. This change was made to clarify that these criteria apply to all waters designated for recreation, regardless of whether primary or secondary. Primary contact recreation is inclusive of secondary contact recreation and thus includes fishing.

In addition to criteria changes the table itself includes a new column to identify which human criteria are based on carcinogenicity, added a missing "C" to the top of the column for the human heath criteria, and revised footnotes as appropriate. Also the word "organisms" was replaced with "fish" in the labeling of columns C1 and C2 to be consistent with the fact that throughout Idaho's rulemaking, as well as in EPA's human health methodology (EPA 2000), national 304 (a) criteria (EPA 2015), and national consumption report (EPA 2014), the term of common use is fish consumption not organism consumption.

Footnote c was modified to reference Idaho's Technical Support Document for Human Health Criteria Calculations – 2015, where Idaho's choice of input values is detailed, and to provide the equations used to calculate the criteria values. Footnote d was modified to correct a typographical error. Footnote l was modified to clarify that the cancer risk range is for the incremental increase in risk and to specify Idaho's choice of a 10^{-5} incremental increase. And Footnote q was added to clarify the basis of the added copper criterion as well as unchanged criteria for arsenic and asbestos.

210.03 Applicability

This section sets out several details in the application of toxics criteria.

Changes were made with regard to mixing zones and low flows to add clarity and consistency with EPA recommendations. In subsection 03 it is made clearer that mixing zones may be applied to toxic substances. In paragraph **a** it is clarified that criteria apply at the edge of any authorized mixing zone, or absent a mixing zone, then at the 'end-of-pipe'. In paragraph **b** the flow basis for water quality-based effluent limits is clarified. Use of harmonic mean flow for non-carcinogens as well as carcinogens is what EPA recommends.

In the title of paragraph **c** the words 'aquatic life' are added to be more specific.

A new paragraph **d** was created, to speak to the frequency and duration components of both aquatic life and human health criteria, the latter being new. Although human health criteria are based on lifetime exposures, waiting or accumulating 70 years of data to assess compliance is unreasonable. Much like shorter averaging periods are used in the application of aquatic life criteria than the length of the toxicity tests they are based upon, a one year mean for human

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health criteria was chosen. In particular the harmonic mean was chosen in order to be consistent with the flow basis for water quality-based effluent limits in 210.03.b.

210.04 National Pollutant Discharge Elimination System Permitting

A reference to EPA's 1991 TSD for water quality-based toxics control was added.

210.05 Development of Toxic Substance Criteria

In paragraph a.iii the outdated reference to EPA's ACQUIRE database was updated to the current ECOTOX database.

Paragraph b.i was expanded to focus on best available science for toxicity thresholds and allow consideration of peer-reviewed data that may not yet have made its way into IRIS. Paragraph b.ii was generalized to allow for flexibility in derivation of future human health criteria consistent with EPA's 2000 human health methodology yet based on newer data. This is done by not specifying particular numeric values for exposure inputs, such as a fish consumption rate of x g/day or drinking water intake of y L/day. This section is only for situations in which Idaho might develop a human health criterion for a substance lacking an EPA 304(a) criterion. Most likely existing exposure inputs would be used.

284.04 Application (of South Fork Coeur d'Alene site specific criteria)

Paragraphs **b** and **c** were changed, collapsed into one, to correct the fact the two paragraphs were redundant, and **c** in effect superseded **b.**

400.06 Intake Credits for Water Quality-Based Effluent Limits.

This section was added to make it clear that Idaho intends that intake credits for pollutants already present in a discharger's intake water may be used in deriving water quality-based effluent limits. Details as to how are left to the IPDES rules in IDAPA 58.01.25.

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References:

DEQ. 2015. *Idaho Human Health Criteria - Technical Support Document*. December 2015. 169 pages.

EPA. 2000. *Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health (2000).* EPA-822-B-00-004. U.S. 185 pages.

EPA. 2014. *Estimated Fish Consumption Rates for the U.S. Population and Selected Subpopulations (NHANES 2003-2010)* April 2014. EPA-820-R-14-002. 101 pages, exclusive of appendices.

EPA. 2015. 2015 *EPA Updated Ambient Water Quality Criteria for the Protection of Human Health*. https://www.epa.gov/wqc/human-health-water-quality-criteria Note there is not one document that provides all the information for EPA's 2015 updates. There is a link to the regulations.gov website where the individual chemical specific criteria documents can be looked for and downloaded. And there is a table summarizing input values for the 2015 update, that was not posted until March 24, 2016.

The Mountain-Whisper-Light Statistics, Pacific Market Research and Ridolfi Inc. 2015. *A Fish Consumption Survey of the Nez Perce Tribe.* September 30, 2015. 412 pages.

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