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DEPARTMENT OF ECOLOGY

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WATER QUALITY PROGRAM

Draft 2008 Water Quality Assessment: Proposed Category 5 PCB Listings on Spokane River

Dear Mr. Koch,

This letter contains the City of Spokane's comments on the proposal to carry forward various 2004 Category 5 PCB listings on the Spokane River into Category 5 of the 2008 Water Quality Assessment. The Listing IDs in question are 14400, 9033 and 14385. We understand that all these listings are carried forward from the 2004 Assessment and that the Department of Ecology has no new data for any of them. Thus, as indicated in the draft 2008 Assessment, each of these listings is based on one earlier study, and those earlier studies analyze samples collected between 9 and 15 years ago.¹ These does not appear to be sufficiently credible data to support a decision to maintain Category 5 listings. Accordingly, we request that Ecology reconsider the validity of these old listings in the context of the 2008 Assessment.

The Water Quality Data Act ("WQDA"), RCW 90.48.570 *et seq.*, unequivocally requires Ecology to use credible data in the 303(d) Assessment and listing process: "The department shall use credible data for ... determining whether any water of the state is to be placed on or removed from any section 303(d) list." Section 90.48.580(2)(a). Indeed, one of the primary legislative goals of the WQDA is to "ensure that credible water quality data is used as the basis for the assessment of the status of a water body relative to the surface water quality standards." RCW 90.48.570(2).

The three studies that support the listings in question appear to suffer from some fairly fundamental problems when measured against the thresholds for credible data. Under the WQDA (and the policy developed thereunder), data are considered credible if:

- Appropriate quality assurance and quality control procedures were followed and documented in collecting and analyzing water quality samples;

¹ Listing 9033 is based on Johnson, A. et al, 1994, "Results of 1993 Screening Survey on PCBs and Metals in the Spokane River," Wash. Dept. of Ecology, Olympia, WA, Pub. No. 94-e24 (and, in particular, on 1993 fillet samples of Rainbow Trout and Mountain Whitefish). Listing 14385 is based on Johnson, A., 1997, "Results on PCBs in Upper Spokane River Fish," Memorandum to C. Nuechterlein and D. Knight, Washington State Dept. of Ecology, Olympia, WA (and, in particular, on 1996 Rainbow Trout and Mountain Whitefish fillet samples). Listing 14400 is based on Johnson, A., 2000, "Results from Analyzing PCBs in 1999 Spokane River Fish and Crayfish Samples," Memorandum to J. Roland, Washington State Dept. of Ecology, Olympia, WA (and, in particular, on 1999 Mountain Whitefish, Largescale sucker and Rainbow Trout fillet samples).

- The samples or measurements are representative of water quality conditions at the time the data were collected;
- The data consists of an adequate number of samples based on the objectives of the sampling, the nature of the water in question, and the parameters being analyzed; and
- Sampling and laboratory analysis conform to methods and protocols generally acceptable in the scientific community as appropriate for use in assessing the condition of the water.

RCW 90.48.585; Washington Dept. of Ecology, “Ensuring Credible Data for Water Quality Management,” (“Credible Data Policy”) WQP Policy 1-11 (Sept. 2006) at 3. In addition, Ecology’s 303(d) Assessment Policy recognizes that data more than 10 years is a fall-back option only and warrants additional scrutiny: specifically, data that is 10+ years old is only to be used if there is nothing more recent, and it must be “compared against the current policy to make the assessment decision.” Washington Dept. of Ecology, “Assessment of Water Quality for the Clean Water Act Sections 303(d) and 305(b) Integrated Report,” Chapter 1, WQP Policy 1-11 (Sept. 2006) (“Assessment Policy”), at 15.

In this case, the age of the data raises serious questions about whether it can credibly be used to support a 303(d) listing in 2008. With respect to proposed listing 9033, it is fundamentally difficult to accept that samples collected 15 years ago provide a meaningful scientific basis for assessing the water quality conditions in 2008. Similarly, it is questionable that samples collected 12 and 9 years ago – and now used to support listings 14385 and 14400 respectively – are still representative of water quality conditions in the River today. The River is a dynamic environment and constantly changing. In addition, significant clean-up activities and positive operational changes in the relevant stretches of the Spokane River raise further questions regarding the applicability of historic data to current conditions.

In addition, significant advances in quality assurance procedures within the past 9-15 years compound issues concerning the credibility of data of this vintage. Sampling and analytical procedures have evolved considerably since this time and if present-day data were collected and analyzed in accordance with the historic procedures it would most likely be considered invalid. It is therefore difficult to see how the quality assurance procedures followed in decade old studies can be considered “appropriate” – especially in the context of 2008 listing decisions.

There are also some data and sampling credibility issues specific to each of the studies that support the three listings:

1994 Study – Listing 9033

There appear to be fundamental flaws in the 1994 report by A. Johnson et. al.² which is the sole study cited in support of listing 9033. Specifically, this study – and thus listing 9033 – is based on only a limited number of samples. Of particular concern, only four fish were used in the Rainbow Trout composite samples whereas Ecology's Assessment Policy expressly states that fin fish fillet composite tissue samples must be made up of at least five separate fish of the same species. Assessment Policy at 41. The 1994 study is self-described as a “screening rather than

² See footnote 1.

intensive survey.” A. Johnson, et. al, (1994) at p. 6; see also at p. 4 (“The reader should be aware that these conclusions are based on a limited number of samples...”).

1997 Study – Listing 14385

Listing 14385 is solely based on 1996 Rainbow Trout and Mountain Whitefish fillet samples from Nine-Mile Dam, which were analyzed in a 1997 report by Johnson.³ The 1997 report expressly raises questions about the representativeness of its underlying data and the adequacy of the sample size. It states that the results were likely to have been influenced by unusually high river flows in the preceding months. Johnson (1997) at 4. It also notes that the limited number of samples at each site mean that it is not possible to draw strong conclusions about trends.

There are also questions about whether the 1997 analysis conforms to protocols generally acceptable in the scientific community. Specifically, the precision of Whitefish data in the 1997 study appears to be questionable: there is an 18% relative difference in the range of duplicates as a percent of mean.

2000 Study – Listing 14400

Listing 14400 is solely based on 1999 Rainbow Trout, Largescale Sucker and Mountain Whitefish fillet samples from Seven-Mile Bridge, which were analyzed in a 2000 report by Johnson.⁴ Some of the samples in this study do not appear to be representative of water quality conditions at the time the data were collected. In particular, the study sampled only two wild trout at 7 Mile Bridge -- the other seven were hatchery fish. Given the inherent uncertainties about PCB levels in hatchery fish at the time of release, they cannot be considered as representative of water quality conditions in the River. In addition, the 2000 study relies on large proportion of J (or estimated) data for the 7 Mile Bridge samples, and the City doubts whether it is appropriate to base a 303(d) Category 5 listing on such a majority of estimated data.

Thank you very much for your consideration of our comments. The City of Spokane looks forward to continuing its efforts to improve water quality in the Spokane River, based on sound science and careful analytical work.

Sincerely,



Dale E. Arnold, Director
Wastewater Management

³ See footnote 1.

⁴ See footnote 1.