

Memorandum

From: Dave Dilks

Date: September 8, 2015

Project: SRRTTF3

To: SRRTTF

SUBJECT: 2014 Spokane River Synoptic Survey Data Usability Assessment

Introduction

The goal of the Spokane River Regional Toxics Task Force (SRRTTF) is to develop a comprehensive plan to reduce PCB inputs to the Spokane River and to bring the river into compliance with applicable water quality standards for PCBs. Existing studies have indicated that sources of PCBs are very diffuse throughout the watershed, such that more data will be needed to support development of a management plan with targeted control actions (LimnoTech, 2013). To accomplish its goal, the SRRTTF had determined that it needed to develop a clearer understanding of in-stream loadings and source contribution to the Spokane River between its headwaters at the outlet of Lake Coeur d'Alene and the Nine Mile Dam. A dry weather synoptic survey was conducted in August 2014 to begin to address this need.

This document contains the results of a Data Usability Assessment for the 2014 synoptic survey, as documented in the Quality Assurance Project Plan (QAPP; LimnoTech, 2014). The specific intent of this assessment is to evaluate the data within the context of the project goals, as defined the QAPP.

Audit Findings

Section 1.4 of the QAPP defined the data quality objectives necessary to ensure that the data collected were of acceptable quality to support the objectives of the project. Specific objectives were listed as follows:

- Support a semi-quantitative low-flow mass balance assessment
- Provide assessment of the seasonal variability of upstream loads
- Support an adaptive management approach, where results can be used to allow an improved monitoring plan for future phases of this work

An assessment of the data's suitability for meeting each objective is provided below.

Support a Semi-Quantitative Low-Flow Mass Balance Assessment

The primary goal of the 2014 monitoring was to collect data sufficient to support a semi-quantitative low-flow mass balance assessment capable of identifying previously unmonitored loads of PCBs to the Spokane River.

The collected data were sufficient for this objective, with the mass balance assessment identifying a significant source of PCBs between Barker Rd. and the Trent Avenue Bridge, as documented in the Phase 2 Technical Activities Report (LimnoTech, 2015). This mass balance assessment passed

an independent peer review during the Spokane River Toxics Workshop held in Spokane Valley on January 13th and 14th, 2015.

Provide Assessment of the Seasonal Variability of Upstream Loads

The second goal of the 2014 monitoring was to collect data sufficient to assess the seasonal variability PCB loads entering the Spokane River from Lake Coeur d'Alene. This was to be accomplished for three different seasonal flow regimes:

- Spring high flow
- Summer low flow
- Winter moderate flow

Suitable data have been collected for two of the three flow periods, spring high flow and summer low flow. The results of this monitoring are documented in the Phase 2 Technical Activities Report (LimnoTech, 2015). The consensus decision was reached at the Spokane River Toxics Workshop to defer sampling of winter moderate flow, as the smaller-than-usual snow pack present in early 2015 would result in unrepresentative conditions for assessing typical seasonal variability.

Support an Adaptive Management Approach

The final goal of the 2014 monitoring was to support an adaptive management approach, where grab sample results could be directly compared to results from other sampling methodologies to allow determination of an improved monitoring approach for future phases of this work. This was accomplished via the collection of PCB samples using a high volume sampling methodology at two locations in the Spokane River, the Lake Coeur d'Alene outlet and Nine Mile Dam. The high volume sampling data were compared to results from concurrently collected grab samples. This comparison showed similar concentrations between the two methods at the Nine Mile Dam station. The high volume method showed higher concentrations than standard grab samples at the Lake Coeur d'Alene outlet station. The cause of this discrepancy was traced to potential inadvertent contamination in the silicone tubing used in the high volume sampling device. This information will be useful in adapting future high volume sampling work to include medical grade silicone tubing, reducing the potential for inadvertent contamination.

Conclusions

All three project objectives, as defined in the QAPP, were achieved with the data collected during the 2014 synoptic survey. The objectives of: 1) Supporting a semi-quantitative low-flow mass balance assessment, and 2) Supporting an adaptive management approach were fully achieved. The third objective, Providing assessment of the seasonal variability of upstream loads, was partially achieved, as monitoring was successfully conducted for two of the three planned seasonal periods. Monitoring for the third seasonal period may be conducted in the future if normal winter flow periods are observed.

The usability of these data were confirmed by an independent peer review panel during the Spokane River Toxics Workshop held in Spokane Valley on January 13th and 14th, 2015.



References

LimnoTech, 2015. Spokane River Regional Toxics Task Force Phase 2 Technical Activities Report: Identification of Potential Unmonitored Dry Weather Sources of PCBs to the Spokane River. Prepared for Spokane River Regional Toxics Task Force, Spokane WA. August, 2015.

LimnoTech, 2014. Quality Assurance Project Plan: Spokane River Toxics Reduction Strategy Study. Prepared for Spokane River Regional Toxics Task Force, Spokane WA. July, 2014.

