

PMF Workgroup Update – February 27, 2019 SRRTTF Meeting

Project Summary

The purpose of this project is to utilize Positive Matrix Factorization (PMF) and other statistical techniques to analyze Spokane River Watershed PCB samples of various media (water column, effluent, groundwater, etc.) to determine sources of PCBs to the Spokane River, the spatial and temporal distribution of sources, and relative impacts on water column and fish tissue concentrations.

The project is split into two phases:

1. Study the effect of blank contamination on PMF analysis and determine if PMF is a suitable analysis at concentrations found in Spokane River water column data.
2. Utilize PMF and multiple linear regression analysis with the selected blank correction approach from Phase I on selected environmental compartments to conduct a wholistic analysis of sources of PCBs and spatial and temporal distribution and relative impacts on water column and fish tissue concentrations.

Project Update

The Phase I draft report is almost complete. Dr. Rodenburg is addressing a few remaining comments from the PMF workgroup. After the comments are addressed the draft final report will be distributed to the full SRRTTF. Dr. Rodenburg will provide a presentation of the Phase I findings at the April 27th SRRTTF meeting. Also, Dr. Rodenburg indicated that the Phase I results could be mapped for a visual representation of the spatial distribution of water column data with minimal effort. Limnotech indicated that this would be useful for the data synthesis work, therefore the workgroup recommends mapping as an early action item.

The PMF project is complimentary of the data synthesis work proposed for this spring. Phase II includes evaluation of data sets from various environmental compartments for suitability in PMF or multiple linear regression (MLR) analysis followed by selection of suitable datasets for analysis (note: project budget dependent on number of data sets selected). Limnotech advised that it would be useful to know what datasets are suitable for analysis while conducting the data synthesis work and developing recommendations, and selection of datasets could be informed by the conclusions of the data synthesis work. Therefore, the workgroup recommends conducting the data suitability review in conjunction with the data synthesis work and finalize the Phase II scope of work after the data synthesis is complete.

The workgroup recommends approval of a \$5,000 amendment to Dr. Rodenburg's contract to:

1. Map Phase I results,
2. Review suitability of data from various environmental compartments for PMF or MLR,
3. Coordinate with Limnotech on information related to PMF analysis during the data synthesis work.