

Potential Project Summaries

Groundwater Assessment in Gaining Reach Upgradient of Kaiser

Objective: Determine sources of PCB in groundwater that are hydraulically located upgradient of the Kaiser “background” groundwater monitoring wells in the Barker Road to Trent Bridge “gaining reach”. Data from these “background” monitoring wells show PCB levels that are significant relative to the estimated mass balance groundwater loading to the Barker Road to Trent Bridge reach of the river.

Potential Approach: It is currently unknown if groundwater monitoring wells in the shallow aquifer exist hydraulically upgradient of the Kaiser “background” monitoring wells. Based on whether any such monitoring wells exist, there are two approaches that can be taken. If there are existing shallow aquifer monitoring wells, a minimal number of new wells could be installed and monitored along with any existing wells to assist in identifying potential sources for PCB levels in groundwater. If there are no existing wells that meet the shallow aquifer criteria, a set for new monitoring wells could be installed based on past/current land uses. Monitoring for PCB with EPA Method 1668 would be conducted so that shallow aquifer PCB levels and locations could be better understood.

Cost Estimate: Potential costs range from \$70,000 to \$130,000 based on the existence of suitable wells in the shallow aquifer and the duration of monitoring.

Groundwater Assessment in Gaining Reach Not Upgradient of Kaiser

Objective: Determine sources of PCB in groundwater in the Barker Road to Trent Bridge “gaining reach” that are not hydraulically located upgradient of the Kaiser “background” groundwater monitoring wells. An analysis of the potential PCB contribution via groundwater into the Barker Road to Trent Bridge “gaining reach” that is not hydraulically upgradient of the Kaiser site may be significant relative to the estimated mass balance groundwater loading to the Barker Road to Trent Bridge reach of the river.

Potential Approach: It is currently unknown if groundwater monitoring wells in the shallow aquifer exist in areas that are not hydraulically upgradient of the Kaiser “background” monitoring wells. Based on whether any such monitoring wells exist, there are two approaches that can be taken. If there are existing shallow aquifer monitoring wells, a minimal number of new wells could be installed and monitored along with any existing wells to assist in identifying potential sources for PCB levels in groundwater. If there are no existing wells that meet the shallow aquifer criteria, a set for new monitoring wells could be installed based on past/current land uses. Monitoring for PCB with EPA Method 1668 would be conducted so that shallow aquifer PCB levels and locations could be better understood.

Cost Estimate: Potential costs range from \$55,000 to \$130,000 based on the existence of suitable wells in the shallow aquifer and the duration of monitoring.

Retrospective Stormwater Impact Analysis

Objective: Estimate stormwater PCB loadings in stormwater from the City of Spokane through the use of recent stormwater PCB concentration data and incremental estimated stormwater flow contribution from historic river flow data. An analysis of the likelihood of successfully being able to determine stormwater loading through river sampling deemed that it was unlikely that stormwater loading could be determined with any confidence.

Potential Approach: The City of Spokane has collected more recent PCB data from stormwater runoff. This data could be used to develop a best estimate for PCB concentration in storm events for the city. In parallel with the development of a best concentration estimate, a historic review of river flow data could be made to determine incremental flow from storm events. Using the concentration and flow data developed from this approach, estimates of stormwater loading could be generated.

Cost Estimate: Potential cost for this type of analysis is estimated to be \$7,500.

Hangman Creek Wet Weather

Objective: Measure PCB loading from Hangman Creek to the Spokane River during a wet weather season. During the August 2014 synoptic survey a significant increase in PCB concentration was documented along with an increase in flow. It is likely that this “pulse” of increased PCB concentration and creek flow may be attributable to a storm event in the drainage area.

Potential Approach: The collection of water samples for PCB analysis and the measurement of corresponding flow at the Hangman Creek gage could be carried out during a wet weather season to characterize loading from this tributary to the Spokane River.

Cost Estimate: Potential cost for this effort is estimated to be \$27,000.

Incidental Sampling

Barker Road to Trent Bridge Reach

Objective: In support of the groundwater assessment for the Barker Road to Trent Bridge “gaining reach”, conduct in river sampling for PCB in an effort to help focus the upgradient groundwater assessment in this reach of the river.

Potential Approach: Between the Barker Road and Trent Bridge gages dye tracing for flow measurements and river water sampling and analysis for PCB with EPA Method 1668 could be conducted in an effort to determine the actual beginning of the of the gaining reach and down river flow and concentration levels. This data could provide useful information for focusing the upgradient groundwater assessment work in this reach.

Cost Estimate:

Wet Weather Loading Estimates

Objective: Estimate river PCB loadings at operational gages (Post Falls, Greene Street, and Spokane) during a wet weather season (6 months).

Potential Approach: Collect monthly grab samples at operational gages (Post Falls, Greene Street, and Spokane) on the river to estimate wet weather PCB loadings in the river.

Cost Estimate: This effort would result in the collection and analysis by EPA Method 1668 of some 30 samples for PCB analysis over one wet weather season at an approximate cost of \$60,000.