Table 7-1. Potential Sources of Uncertainty

Potential Source	Effect	Discussion
Use of Chronic AWQC	Unknown	AWQC are conservative and may be overprotective. AWQC may not be appropriate indicators of toxicity for porewater.
Use of literature-based sediment screening values to estimate effects of COPCs on benthic invertebrate communities.	Unknown	PEC values are based on statistical probability of effect drawn from a large number of studies. PECs do not reflect site specific conditions or take into account possible synergistic effects between COPCs and other stressors (e.g., low DO).
Surface grab samples may not reflect actual exposure of benthic invertebrates to COPCs.	Unknown	Grab samples provides average COPC concentration in top ca. 6 inches of sediment. Actual concentrations in the highly bioactive surface layer may be higher or lower.
Use of estimated organic chemical concentrations in porewater	Unknown	Use of EqP to estimate porewater concentrations of PAHs and pesticides may not accurately reflect actual concentrations.
Use of trophic transfer assumptions to estimate tissue chemical concentrations in benthic invertebrates and fish	Unknown	Trophic transfer models may not accurately reflect bioavailability and uptake of chemicals from sediments
Use of 4.14 correction factor in calculation of ΣESGTU	Overestimate	Based on evaluation of data from samples where all 34 PAHs were analyzed, the use of the 4.14 safety factor is likely to overestimate the total PAH concentration.
Quantification of AVS/SEM is difficult. AVS-SEM vary seasonally.	Underestimate	Sampling was likely not conducted when AVS levels were at seasonal lows.
Lab-based toxicity tests may poorly represent actual effects in field.	Unknown	Test organisms may be more or less sensitive than organisms in the study area. Artifacts of lab testing such as ammonia may contribute to observed toxicity
Use of body residues (fish) to estimate effects.	Unknown	Data on adverse effects associated with contaminant body burden is limited. Linkages between laboratory data and field effects is limited.
TRVs used in the analysis were literature based “no observed adverse effects levels” (NOAELs).	Overestimate	Use of NOAELs is highly conservative. Use of lowest observed adverse effects levels (LOAELs) reported by Sample (1996) would reduce HQs by an order of magnitude.
Food chain modeling assumes that site use factor is 100%.	Overestimate	Conservative assumption. Foraging ranges of wildlife evaluated, especially the otter, may be large enough that they would rely on areas other than Fisherville Pond.