Supplemental Information for

**Risk associated with spatio-temporal variations in trace metals and a metalloid in a major freshwater reservoir of Pakistan**



Figure S1. Average and standard deviation of pH, DO, EC, TDS and chloride at different sites. The WHO acceptable limits are indicated by the horizontal lines.



Figure S2. Average and standard deviation of turbidity and temperature at different sites. The WHO acceptable limits are indicated by the horizontal lines.



Figure S3. Average concentrations (mg L-1) of As, Cd, Cr(III), Cr(VI) and Cu at different sites. The WHO and Pakistan acceptable limits are also indicated by the horizontal lines.



Figure S4. Average concentrations (mg L-1) of Fe, Mn, Ni and Pb at different sites. The WHO and Pakistan acceptable limits are also indicated by the horizontal lines.

Table S1: Pearson correlations, r of metals and metalloid concentrations with one another and distance from the lake inlet (a indicates *P* < 0.05, b indicates *P* < 0.001).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Dist | As | Cd | Cu | Total Cr | Fe | Mn | Ni | Pb | pH | DO | EC | Turb |
| As | -0.12a |  |  |  |  |  |  |  |  |  |  |  |  |
| Cd | NS | -0.13a |  |  |  |  |  |  |  |  |  |  |  |
| Cu | NS | NS | -0.31a  |  |  |  |  |  |  |  |  |  |  |
| Cr | NS | NS | -0.19a | 0.53b |  |  |  |  |  |  |  |  |  |
| Fe | -0.26b | NS | NS | 0.55b | 0.21b |  |  |  |  |  |  |  |  |
| Mn | NS | NS | NS | 0.55b  | 0.34b | 0.41b |  |  |  |  |  |  |  |
| Ni | NS | NS | NS | NS | NS | NS | NS |  |  |  |  |  |  |
| Pb | NS | -0.13a | NS | 0.13a | 0.18a | 0.25b | NS | 0.23 b |  |  |  |  |  |
| pH | 0.31b | NS | NS | NS | NS | -0.24b  | NS | NS | -0.19a |  |  |  |  |
| DO | NS | NS | NS | NS | NS | NS | NS | 0.33b | 0.18a | 0.25b  |  |  |  |
| EC | 0.13b | NS | NS | -0.24b  | -0.2b | NS | -0.27b | 0.19a | 0.22b | NS | 0.48b |  |  |
| Turb | -0.41b  | NS | NS | 0.36b | NS | 0.59b | 0.15a | NS | NS | -0.33b  | -0.27b | -0.37b |  |
| Cl- | NS | NS | NS | -0.13a | NS | NS | -0.19a | 0.13a | 0.22b | NS | 0.34b  | 0.86b | -0.31b |

NS Not significant