Geophysical Research Abstracts, Vol. 8, 03899, 2006
SRef-ID: 1607-7962/gra/EGU06-A-03899

Arsenic in wetlands in sulphidic shist areas in Northern Sweden

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Sulphidic shists cover an area of about 4 000 km^2 in the county of Västerbotten in N. Sweden. During soil formation there is accumulation of trace metals including arsenic in the B-horizon of the podsolic soils. Forest drainage has mobilised heavy metals, notably zinc. Reducing conditions in wetlands are mobilising iron and arsenic. When the groundwater discharges into ditches and streams the ferrous iron is re-oxidised and arsenic is adsorbed onto the precipitates. The pH of the streams ranges is slightly acidic while the adsorption of arsenic is efficient leaving only slightly elevated dissolved concentrations entering into larger streams and lakes. The content of arsenic in sandy sediments is in the range 100-300 mg/kg while ferric precipitates can have up to 0,5 % As. There are also elevated contents of arsenic in the benthic fauna and to some extent in the brown trout.