

Our Ref: Loirston070814
 Date: 15/08/07
 If calling please ask for Annette Ross

Dear All

Analysis of cyanobacteria samples – Loch Loirston

1 sample from Loch Loirston were taken on 14/8/07 (by Christine Brown, EHO) and brought in to the Aberdeen SEPA laboratory on 14/08/07.

Cyanobacteria species and abundance

Cyanobacteria cell counts were undertaken following SEPA procedures. The results are summarised below.

Site location (and NGR)	Date Sampled	Cyanobacteria present	Concentration
		YES	
Loch Loirston	14/08/07	Anabaena spp. and Oscillatoria spp.	25,380 cells/ml

Cell concentration is above the WHO guideline level- action required

> 20,000 cyanobacteria cells/ml, but less than 100, 000 cells/ml. The total number of cyanobacteria was found to be present in high abundance. Guidelines for safe-practice in managing recreational waters published by the World Health Organisation indicate that at cyanobacterial concentrations of 20,000 cyanobacterial cells /ml there may be short-term adverse health outcomes, eg skin irritations and gastrointestinal illness. The probability of adverse health outcomes is likely to increase as the cell concentrations increase towards 100, 000 cells/ml. The typical action is to post on-site risk advisory signs and to inform relevant authorities. This is further detailed in the Scottish Executive revised guidance document; [Blue-Green Algae \(Cyanobacteria\) in Inland and Inshore Waters: Assessment and Minimisation of Risks to Public Health: Revised Guidance](#)

Summary/additional text

The behaviour of cyanobacteria (blue-green algae) is erratic, with abundance able to fluctuate over a period of hours depending on weather conditions. It is often possible to see high abundance of cyanobacteria in the water with the naked eye, which may resemble fine grass cuttings, irregular or pinhead sized green clumps. Such high abundances are termed blooms, which may further concentrate on the water surface and be gently blown downwind forming thick scums at the waters edge. Such scums may be characteristically blue-green in colour, but may also be various shades of green, blue, red, black, and brown. There are other types of algae that may occasionally form surface scums which are not to be confused with cyanobacteria. The greatest risk to public and animal health is posed from these cyanobacterial scums, which may produce toxins harmful to the health of humans and

animals. Cyanobacterial toxicity may fluctuate rapidly at a given site, but experience has shown that there is a 60-70% chance of a particular bloom being toxic.

If additional samples are to be taken and sent to our laboratory for cyanobacterial identification, please ensure that you contact SEPA before they are collected, to allow planning for someone to receive and analyse them, otherwise there may be a delay in our response.

If you require any further details please feel free to contact me at the address below.

Regards
Nicola Seal

Cc: Aberdeen city council, SEPA internal, Grampian Health Board

Office address: Greyhope House,
Greyhope Rd,
Torry,
Aberdeen,
AB11 9RD

Switchboard: 01224 248338
Fax:01224 248591
www.sepa.org.uk