

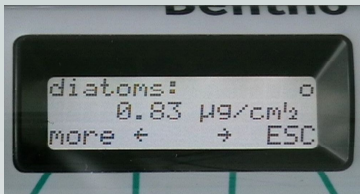
Customer Newsletter 4<sup>th</sup> Quarter 2010**A NEW HANDHELD INSTRUMENT FOR MEASUREMENT OF PHYTOBENTHOS CONCENTRATIONS:**

bbe's **NEW BenthosTorch** is a unique instrument which enables real-time measurement of benthic algae concentrations thus improving ecological status assessment (EU WFD criteria) and helping to optimise field sampling methods.

**Power up, place on substrate, measure!**

**Features:**

- measurement on different substrates:  
e.g. stones, sediments
- improved automatic background correction
- 0 – 10 µg/cm<sup>2</sup>
- measurement in under 20 seconds
- immediate display of results
- GPS sensor
- submersible down to 10 m
- datalogger and subsequent data download to PC
- internal rechargeable batteries



The BenthosTorch is a robust, portable field instrument which measures chlorophyll-a fluorescence. No sample preparation is necessary. It enables quick results within seconds, shown immediately after measurement on the internal display.

For the monitoring of river banks and estuaries, the bbe BenthosTorch is a cost-effective tool which eliminates the need for expensive random sample-taking and testing, and lengthy microscopic observation.

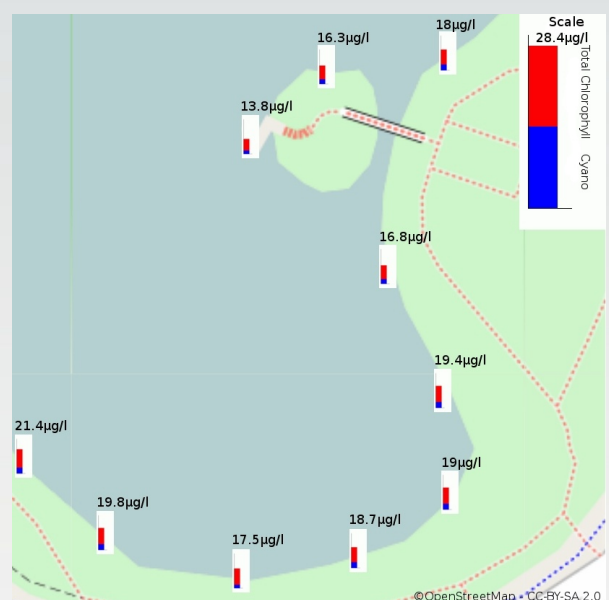
For more information, please go to: <http://www.bbe-moldaenke.de/chlorophyll/benthostorch/>

**BBE INSTRUMENTS NOW WITH GPS SENSORS:**

The new **BenthosTorch** has also been equipped with a GPS sensor to record site co-ordinates during spot measurements in the field. It is available in the **AlgaeTorch** as an option.

The GPS co-ordinates can be easily exported to various Internet map engines, e.g. Google Earth, to indicate measurement positions.

On the left is an example of measurement results shown in OpenStreetMap.



### NEW VIDEO FILMS OF BBE TORCH INSTRUMENTS

bbe has recently made two new video films introducing the functions and easy operation of the [AlgaeTorch](#) and [BenthoTorch](#) instruments.  
Please click on the links to view them.

### GERMAN TELEVISION BROADCAST ON BERLIN WATERWORKS' TOXPROTECT 64

The evening of the 20.11.10 in Germany saw a television broadcast about the Berlin Waterworks' (BWB) surveillance and security measures to protect the city's drinking water supply.

The broadcast, approximately 5 min long, showed how the BWB uses a ToxProtect 64 fish biomonitor to protect its drinking water supply from toxic pollutants caused by accidents, spills and terrorist attack.



The original broadcast (in German) can be viewed here:

[http://blog.rbb-online.de/roller/abendschaublog/entry/moderlieschen\\_posse\\_im\\_wasserwerk](http://blog.rbb-online.de/roller/abendschaublog/entry/moderlieschen_posse_im_wasserwerk)

### DETECTION OF GREEN SULPHUR BACTERIA IN DEEP LAKE LAYERS USING THE BBE FLUOROPROBE

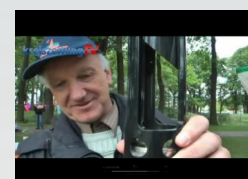
The determination of chlorophyll-a content from micro-algae by use of fluorescence measurement is rapid and common technique. The FluoroProbe III uses excitation spectra of algal pigments to distinguish different algal groups according to their pigment pattern.

Unusual results from deep profiling in Lake Kinneret (Israel) revealed the ability of the FluoroProbe to perform deep-layer screening for green sulphur bacteria (*Chlorobium phaeobacteroides*). Although this technique was not developed to quantify the biomass of *Chlorobium phaeobacteroides*, the measurement of fluorescence emission from photosynthetic bacteria is a helpful indicator of the existence of these concealed organisms.



### ALGAE TORCH IN THE DÜMMER MUSEUM

A bbe AlgaeTorch is being used by the Museum as part of its educational programmes to educate children about algae and chlorophyll measurements in the river. A local television station broadcast reported on the activities of the museum and the use of the AlgaeTorch in June 2010 at its "Neptune Festival".



A video (in German) of the report can be found here (advertisements before video):

<http://www.kreiszeitung.de/media/videos/index.html?bcpid=29474154001&bclid=29446791001&bctid=95628954001>

### LITERATURE

M. Twiss, C. Ulrich, S. A. Kring, J. Harold, M. R. Williams.

"Plankton dynamics along a 180 km reach of the St Lawrence River from its headwaters" in *Lake Ontario in St. Lawrence River—Great Lakes Ecosystems: An Ecological Overview*. Hydrobiologica, Jan. 2010.

Soldan, P.

Possible way to substantial improvement of early warning system in the International Odra (Oder) River Basin *Environmental Monitoring and Assessment*, Vol. 170, September 2010.