

INNOVATIVE APPROACH FOR HEAVY METAL MONITORING IN WATER BODIES



INTCATCH  2020



HEAVY METAL DETECTION

Principle

Simultaneous detection of **Pb** and **Cu** in water bodies by

Anodic Stripping Voltammetry method

using disposable **Screen Printed Electrodes**



Pre-concentration (reduction) of a metal ion on the electrode surface at negative potentials

and

selective stripping (oxidation) of each metal species during an anodic potential sweep

AUTOMATED SAMPLING

Sampling

Can be triggered by threshold values or range of T°, DO, EC, pH parameters or their combination

Geo referencing and **time stamp** of sampling points

AUTOMATED BOAT POSITIONING

Customized paths for automated boat driving

Variable boat speed possible

SYSTEM PERFORMANCE*

Limit Of Detection – LOD

Lowest value, significantly greater than zero that can be detected

Limit Of Quantification – LOQ

Lowest value that can be determined with an acceptable level of accuracy and precision

Lowest Detectable Change – LDC

Smallest significantly measurable difference between two measurements

	LOD µg/L	LOQ µg/L	LDC µg/L
Pb	4	14	4
Cu	7	22	10

INLET FILTER

Ensures proper analysis in real, particle-loaded samples through:

- Filter 1 with pore size: 180 µm
- Filter 2 with pore size: 80 µm

*Validated for Pb:Cu ratio 1:4

*These parameters are obtained under laboratory conditions. Results can be greatly affected by the sample nature and content

