

# IMO Developments for BWMS Commissioning Testing using Indicative Analysis

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Pacific Ballast Water Group Cal Maritime – Vallejo, CA 2 April 2019

#### Outline

- MEPC 73 development
  - Significance & challenges
- Looking ahead
  - Existing technology
  - Future standards development?



#### GUIDANCE FOR THE COMMISSIONING TESTING OF BALLAST WATER MANAGEMENT SYSTEMS

#### Context

- 1 The purpose of commissioning testing is to validate the installation of a ballast water management system (BWMS) by demonstrating that its mechanical, physical, chemical and biological processes are working properly. Commissioning testing is not intended to validate the design of type-approved BWMS that are approved by the Administration.
- For the purposes of this Guidance, commissioning testing refers to an operational test of the ballast water management system carried out based on the installation commissioning procedures referred to in...[Harmonized System of Survey and Certification (HSSC) Guidelines].
  - 4.3 the representative samples should be analyzed for all size classes included in the D-2 standard using indicative analysis methods listed...

## Indicative vs. Detailed Analysis

An *indicative analysis* means a compliance test that is a relatively quick indirect or direct measurement of a representative sample of the ballast water volume of interest:

A detailed analysis means a compliance test that is likely to be more complex than indicative analysis and is a direct measurement of a representative sample used to determine the viable organism concentration of a ballast water volume of interest. The result of such measurement:



















LuminUltra B-QUA

#### Indicative Analysis Instruments

12 Instrument
9 - fluores
Detect ≥5
Detect ≥1

Instruments available as of Jan. 2019
9 – fluorescence 3 – chemical / imagery

Detect ≥50 µm (zooplankton)

Detect ≥10 µm to ≤50 µm (phytoplankton)

Detect indicator microbes\*

## **Indicative Analysis Instruments**

B Detect 1 size class

3 Detect 2 size classes

Detects 3 size classes\*

#### Indicative Analysis Instruments

1 drop – 1.2 liters

Minimum sample size\*

1 minute - 24 hours Time to obtain results\*\*

<\$5,000

3 instruments

\$5,000 -\$10,000 2 instruments \$10,000 -\$20,000 1 instrument

>\$20,000

4 instruments

### **Looking Ahead**

Evaluation of current technology?





Standardized testing & verification?

Standardized sampling protocols specific to

indicative analysis?

 Representative sampling for indicative analysis?





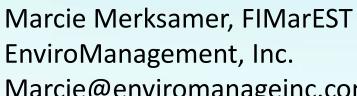
#### Success

Success



250000

what people think it looks like what it really looks like



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Thank you!

