



Ballast water compliance testing: the importance of testing for the organisms in the $\geq 50 \mu\text{m}$ size class

Compliance monitoring is carried out to determine whether a ship's discharge meets the IMO Ballast Water Management Convention. Because each ship's installation of a ballast water management system (BWMS) is different, type approval of the BWMS, by itself, does not ensure a ship will be compliant with all of the provisions of the BWM Convention.

Indeed, non-compliance of the discharged water is common, though it is expected to decrease over time (e.g., MEPC75/INF.11; MEPC76/INF.56). Such situations may originate from multiple factors, including shipboard installation issues or operational issues (including the implementation of contingency measures). Additionally, non-compliance may originate from the potential survival of resting stages, accumulation and regrowth of organisms in tanks if not properly managed as addressed in the Ballast Water Management Plan (BWMP). Global TestNet has recently shared this concern with the U.S. Environmental Protection Agency as part of the comments to the proposed standards of the Vessel Incidental Discharge Act (<https://www.regulations.gov/comment/EPA-HQ-OW-2019-0482-0672>)

Global TestNet supports ship-owners with testing regimes for compliance monitoring and, in total, has conducted testing of treated, discharge waters from more than 1,500 installed BWMS. Testing is carried out using appropriate methodologies and using representative volumes of discharged water to support the production of reliable results, which can then form the basis for actions in line with fully developed BWMPs. Failing to implement adequate testing regimes would increase risks to the shipping industry in its effort to implement the BWM Convention.

Notably, almost all of the non-compliance observed by the Global TestNet members has occurred in the size class $\geq 50 \mu\text{m}$ in minimum dimension (nominally zooplankton). Rarely are failures found in the $\geq 10 \mu\text{m}$ to $< 50 \mu\text{m}$ size class (nominally phytoplankton) or the indicator microbes. Therefore, based on these experiences, assessing compliance by *solely* testing organisms in the $\geq 10 \mu\text{m}$ to < 50



μm size class or testing indicator microbes *cannot ensure that the objectives of the BWM Convention are met.*

Testing for the $\geq 50 \mu\text{m}$ size class requires that a representative volume be sampled. That is defined as 3 m^3 in the BWM Code and 1 m^3 in the IMO commissioning Guidelines (BWM2/Circ.70/Rev.1). Once a representative sample is collected, it is crucial to use analytical methodologies approved by IMO (BWM.2/Circ.42/Rev.2). Further, these methodologies should not be more stringent than those used for type approval testing of BWMS.

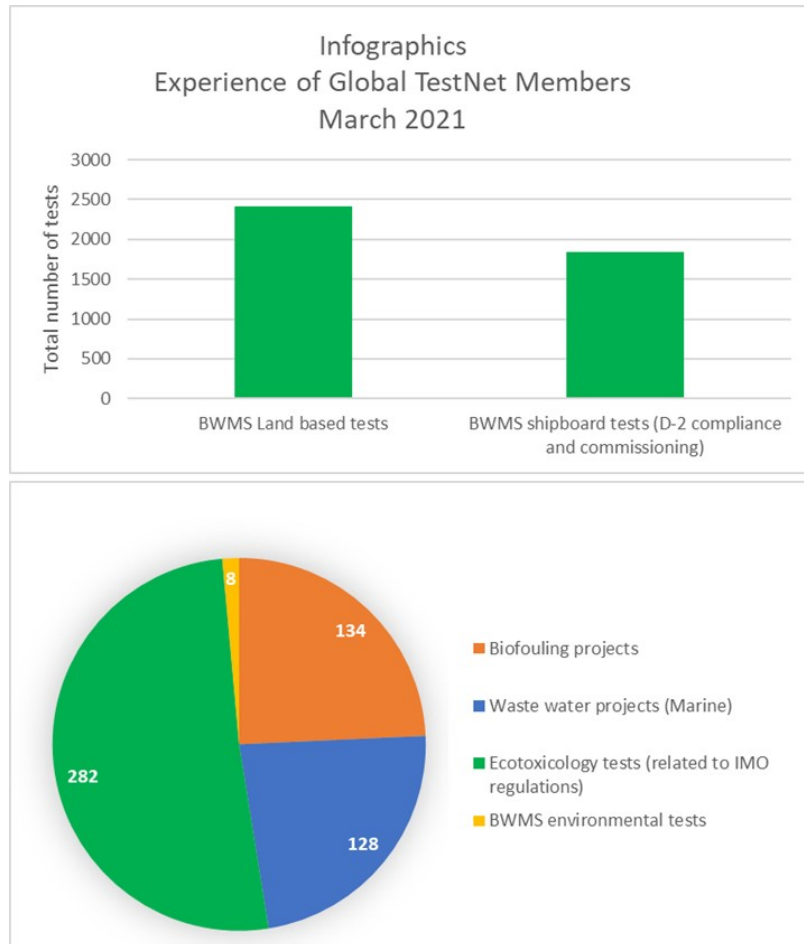


Figure 1. Experiences of Global TestNet Members as of March 2021. BWMS = ballast water management system.



About Global TestNet

Global TestNet promotes comparable and accurate test results on the performance evaluation of technologies to control the risk of introductions of invasive aquatic species via shipping. This occurs through an open exchange of information, transparency in methodologies, and advancing the science of testing. Regular compliance monitoring is encouraged through the existing network of accredited ballast water testing providers.