

4 ALBERT EMBANKMENT
LONDON SE1 7SR
Telephone: +44 (0)20 7735 7611 Fax: +44 (0)20 7587 3210

BWM.2/Circ.67/Rev.1
24 May 2019

**INTERNATIONAL CONVENTION FOR THE CONTROL AND MANAGEMENT
OF SHIPS' BALLAST WATER AND SEDIMENTS, 2004**

**Data gathering and analysis plan for the experience-building phase
associated with the BWM Convention**

- 1 The Marine Environment Protection Committee (MEPC), at its seventy-first session (3 to 7 July 2017), adopted resolution MEPC.290(71), establishing the experience-building phase associated with the BWM Convention, to allow the Marine Environment Protection Committee to monitor and improve the *International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004*.
- 2 MEPC 72 (9 to 13 April 2018) approved the *Data gathering and analysis plan for the experience-building phase associated with the BWM Convention (BWM.2/Circ.67)*.
- 3 MEPC 74 (13 to 17 May 2019) approved a revision of the circular in order to include a link to standard operating procedures for collection of treated ballast water samples, as agreed by PPR 6 (18 to 22 February 2019).
- 4 Member Governments and international organizations are encouraged to use the annexed plan to gather, prepare and submit data to the experience-building phase (EBP).
- 5 This circular revokes BWM.2/Circ.67.

ANNEX

DATA GATHERING AND ANALYSIS PLAN FOR THE EXPERIENCE-BUILDING PHASE ASSOCIATED WITH THE BWM CONVENTION

1 Overview of the experience-building phase

1.1 Resolution MEPC.290(71) established the experience-building phase associated with the BWM Convention (EBP). The annex to resolution MEPC.290(71) sets out the structure of the EBP, whose purpose is to allow the Marine Environment Protection Committee (the Committee) to monitor and improve the *International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004* (the Convention).

1.2 This data gathering and analysis plan for the experience-building phase associated with the BWM Convention (DGAP) supplements the annex to resolution MEPC.290(71) by setting out the specific arrangements for data gathering during the EBP, with regard to both the interfaces through which data may be submitted to the EBP and the specific data requirements for each interface. The DGAP also includes principles and organizational arrangements for analysing the data collected and sets out the timeline for the EBP. The DGAP is intended to be a living document, to be revised as needed by the Committee in light of developments and trends identified as the data gathering progresses.

1.3 The EBP consists of a data gathering stage, a data analysis stage and a convention review stage. The EBP begins with the entry into force of the Convention and ends with the entry into force of a package of priority amendments. The priority amendments are those that implement improvements to the Convention needed before the end of non-penalization measures specific to the EBP that are set out in resolution MEPC.290(71). A timeline for the stages of the EBP is set out below in section 6.

1.4 Aside from the non-penalization set out in resolution MEPC.290(71), the EBP does not alter the basic roles, responsibilities, obligations and recommendations under the Convention, its guidelines and relevant guidance.

1.5 The EBP includes the more specific "trial period" associated with methods for sampling and analysing ballast water during port State control (PSC).¹ The arrangements for the trial period have been updated and incorporated within the EBP (see section 5 below), and data associated with the trial period will be gathered and analysed in parallel with data concerning other aspects of the Convention.

2 Organizational arrangements

2.1 The EBP will be supported by the Secretariat, which will administer the data gathering and analysis stages on behalf of the Organization. Member States and other stakeholders are invited to make financial contributions in support of the Secretariat's work on data gathering and analysis. Consistent with the resources available, the Secretariat will undertake data handling and management, work with submitters to ensure the quality of data, make global data available to the Committee and its Ballast Water Review Group (BWRG) for consideration as appropriate, and manage the production of a data analysis report.

¹ See document BLG 17/18, annex 6, *Recommendations related to the trial period for reviewing, improving and standardizing the Guidance for ballast water sampling and analysis for trial use in accordance with the BWM Convention and Guidelines (G2)*. These recommendations were agreed in principle at MEPC 65.

2.2 The BWRG should meet at each session of the Committee during the EBP. During the data gathering stage, the BWRG will consider the global data in order to register any arising issues with the Convention and propose early actions to the Committee if appropriate. The BWRG will also consider the analysis report and will be the primary forum for discussion during the Convention review stage, preparing the necessary materials and recommendations for the Committee's consideration. The BWRG should also continue to undertake reviews in accordance with regulation D-5 of the Convention during the EBP.

3 Data gathering and data quality

3.1 Member States are encouraged to participate fully in the EBP in order to maximize the information available to the Committee. However, participation is voluntary and Member States may determine the areas in which they wish to provide data. Four different interfaces are provided for submitting data:

- .1 **Basic interface** – straightforward reports from port and flag States that summarize basic data that would normally be collected by these States:
 - .1 basic flag State interface report (see appendix A); and
 - .2 basic port State interface report (see appendix B);
- .2 **Supplementary interface** – reports on specific topics from port States and flag States that would require greater analysis and/or additional research work:
 - .1 ballast water analysis interface report (see appendix C);
- .3 **Trial period interface** – reports from port States on methods for sampling and analysis during PSC (see appendix D); and
- .4 **Stakeholder interface** – reports from all stakeholders on their perspectives and experience (e.g. shipowners, BWMS manufacturers, recognized organizations) (see appendix E).

3.2 The process of data gathering is as follows. The State determines which of the interfaces it wishes to participate in. It assembles the appropriate data and completes the appropriate common data template appended to this document. The State submits the completed template as a report to the Secretariat. The Secretariat includes the data provided by the State in the EBP, making the information available to the Committee and ultimately to the BWRG (figure 1).

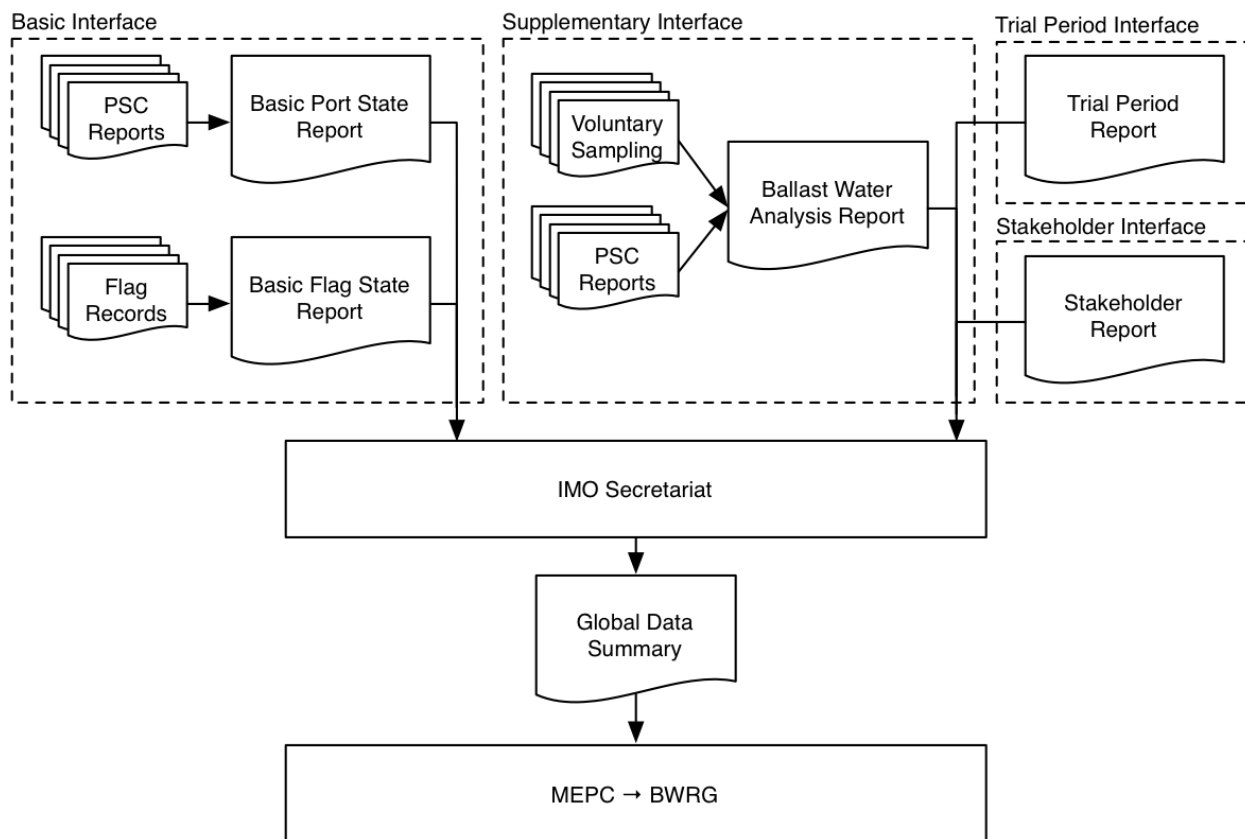


Figure 1: Flowchart of data gathering

3.3 States are particularly encouraged to submit basic reports, which impose the lowest administrative burden while contributing key information on the implementation of the Convention. It is understood that, in light of the additional effort involved, supplementary and trial period reports might be provided by a smaller number of States.

3.4 The EBP is intended to be inclusive and the stakeholder interface is provided to ensure that stakeholder perspectives are considered as the Convention is improved. For practical reasons, stakeholders are invited to provide their voluntary reports to a relevant Member State for aggregation and submission to this interface. In the case of shipowners, the relevant Member State is the flag State. States should ensure that any reports received are included in the EBP.

3.5 Commercial sensitivities will be protected through the use of aggregate reporting by port States and flag States. The EBP does not require ships or shipowners to be identified in data submissions.

3.6 Reports should be submitted in electronic format to the Secretariat, which will work with submitters to ensure that the data adheres to the DGAP, is in the correct format, and that the data quality of the EBP will be maintained when submissions are aggregated. The EBP will consider all data submitted by port States and flag States in accordance with the four interfaces and the report specifications set out in the appendices to this plan. States are requested to submit reports rather than raw data in order to manage the volume of information, and to ensure comparability between reports. Information submitted to the EBP will become part of the public domain.

3.7 The Secretariat, the Committee and the BWRG will maintain a consistent emphasis on data quality, recognizing that aggregating low-quality data with higher-quality data can diminish the usefulness of the product. This plan balances the need for high quality data with the need to achieve a straightforward process that maximizes participation in the EBP.

3.8 Member States are requested to pay particular attention to the accurate categorization of qualitative data, having regard to the report specifications. In the case of quantitative data, Member States are requested not to aggregate data gathered by multiple methods whose results are not comparable, and instead to submit multiple reports if necessary.

4 Data analysis

4.1 As opposed to the data gathering plan (which is highly structured so as to coordinate the input of many Member States), the plan for data analysis takes a more principles-based approach. This provides flexibility for relevant analysis and synthesis to be undertaken based on the data, taking into account emerging trends, and for conclusions to be conveyed in the most appropriate way to the Committee.

4.2 The analysis should shed light on specific provisions of the Convention and its guidelines, as well as on more general topics concerning the implementation itself, such as:

- .1 the progress of, and any challenges in, transitioning ships to the Convention;
- .2 the degree of compliance with regulations D-1 and D-2, and any systematic reasons for non-compliance;
- .3 whether compliance other than with regulations D-1 and D-2 is achievable or not;
- .4 any unforeseen operational, safety or environmental hazards associated with the methods used to comply with the Convention;
- .5 optional/additional actions taken by port States in implementing the Convention;
- .6 the outcome of the trial period on sampling and analysis; and
- .7 additional aspects of the Convention that require consideration during the analysis stage.

4.3 While the analysis will be based primarily on the data gathered through the EBP, it should also take into account any relevant information otherwise provided to the Organization pursuant to the Convention and its guidelines (e.g. notifications under regulation C-3 and BWMS type approval reports under Guidelines G8)).²

4.4 During the data analysis stage, the Secretariat will oversee the development of a final analysis report for the Committee and the BWRG. This report should convey the outcomes of data gathering, and provide deep insights into the Convention and any challenges associated with its implementation, such as those questions outlined above. The report should contain a separate chapter on the outcome of the trial period, including any recommendations for

² In the context of this circular, the Guidelines (G8) refer to the guidelines adopted by resolution MEPC.174(58), the 2016 Guidelines (G8) adopted by resolution MEPC.279(70) and the *Code for approval of ballast water management systems* adopted by resolution MEPC.300(72), as may be appropriate.

sampling and analysis methods for PSC as appropriate. A draft of the final analysis report should be provided to the Committee by the Secretariat for consideration and comment by the BWRG prior to completion of the report. The specific terms of reference for this report should be approved by the Committee towards the end of the data gathering stage. The terms of reference may direct the analysis, inter alia, to also:

- .1 take into account additional information accepted by the Committee that has come to light other than through the EBP;
- .2 undertake additional transparent research to identify reasons for patterns emerging within the data that cannot be gleaned from the data itself; and/or
- .3 make recommendations on specific aspects of the Convention approach for consideration by the BWRG and the Committee during the Convention review stage.

5 Trial period and other sampling and analysis

5.1 MEPC 65 approved the *Guidance on ballast water sampling and analysis for trial use in accordance with the BWM Convention and Guidelines (G2)* (BWM.2/Circ.42). This Guidance sets out recommended methodologies and approaches to sampling and analysis for testing compliance with the standards described in regulations D-1 and D-2 of the Convention. Member States and observers were encouraged to further develop sampling and analysis protocols towards later revisions of the Guidance. The Guidance was revised by MEPC 68 and subsequently disseminated as BWM.2/Circ.42/Rev.1.

5.2 Recognizing that many of the sampling and analysis methods in the Guidance had not been adequately validated, the methods in the Guidance were not fully integrated in the *Guidelines for port State control under the BWM Convention* (resolution MEPC.252(67)) (PSC Guidelines) and MEPC 65 agreed in principle with recommendations for a trial period for reviewing, improving and standardizing the Guidance (as set out in annex 6 to document BLG 17/18). These recommendations are being addressed through the present DGAP.

5.3 As an element of the EBP, the trial period is intended to gather and analyse data on the practical utility for PSC of the methodologies and approaches to sampling and analysis for compliance set out in BWM.2/Circ.42/Rev.1. Recognizing the non-mandatory nature of the Guidance and the Committee's encouragement that sampling and analysis protocols be further developed, the trial period is also intended to gather and analyse data on other sampling and analysis protocols in use by port States. It is to be noted that MEPC 64 agreed that sampling for PSC should be no more stringent than the sampling used for type approval of a BWMS.

5.4 Use of the standard operating procedures (SOPs) developed by the ICES/IOC/IMO Working Group on Ballast and Other Ship Vectors is recommended in order to support the comparable collection and analysis of samples.³ This would facilitate the trial period, as well as research studies during the EBP by groups studying the biological efficacy of ballast water management systems.

³ The procedures referred to are the Standard Operating Procedures – Collection of Treated Ballast Water Samples Using an Inline Sample Port available at: http://www.ices.dk/community/Documents/Expert%20Groups/WGBOSV/SOP_inline%20ballast%20water%20sampling.pdf

5.5 Data relating to the trial period should be analysed with regard to validity, practicability (e.g. cost-effectiveness, timeliness and general applicability with regard to ship type and geographic region) and effectiveness in assessing compliance (e.g. consistency with type approval sampling procedures). The Committee may revise BWM.2/Circ.42/Rev.1 during the EBP as appropriate.

5.6 During the EBP, port States should share the results of the sampling and analysis process in accordance with chapter 3 of the PSC Guidelines, making clear the trial nature of the procedure.

5.7 The goal at the end of the EBP is to have a suite of accepted procedures that can be used for sampling and analysing ballast water in a globally consistent way. The finalization of this suite of accepted procedures should be done during the Convention review stage, on the basis of the data gathered and analysed in accordance with this DGAP. At least one standard precise protocol for indicative and detailed analysis of organisms at each size class is desired.

5.8 Ballast water sampling and analysis during the EBP may be undertaken:

- .1 on a mandatory basis, by or under the authority of a PSC officer pursuant to article 9 of the Convention (in which case the inspection should be in accordance with the PSC Guidelines); or
- .2 independently of a PSC inspection with the voluntary participation of the ship (in which case the sampling may be undertaken by appropriate personnel of the port State, the flag State or another entity).

5.9 The ship should be advised of the context of sampling and whether participation is voluntary or mandatory before a sample is taken. Before voluntary sampling begins, the ship should be advised of any consequences that could follow if the ballast water is found to be non-compliant with the standards in regulations D-1 or D-2 (as appropriate).

5.10 Data derived from both voluntary and PSC-related sampling and analysis will be equally informative to the Committee concerning the effectiveness of BWMS in reaching the standard described in regulation D-2. Therefore, reports on the results of both voluntary and PSC-related sampling and analysis should be reported together through the supplementary EBP interface. Regardless of the voluntary or mandatory nature of any sampling and analysis, quality assurance and quality control should be ensured.

5.11 Only sampling and analysis done in association with PSC inspections will be informative to the Committee concerning the practicability and utility of particular sampling and analysis methods for PSC purposes. Therefore, only data derived from PSC inspections should be reported through the trial period interface.

6 Timeline

6.1 The timeline for the EBP should be short enough to ensure that the outcomes of the EBP are relevant to the Convention review stage, but long enough to generate a reasonable picture of the implementation of the Convention.

6.2 The EBP should unfold according to the following timeline:

- .1 a summary of any data received to date should be submitted by the Secretariat to MEPC 74;

- .2 an aggregate data report, reflecting submissions to the EBP through the second year of experience with the Convention, should be submitted by the Secretariat to MEPC 75, at which the Committee is also expected to take stock of this timeline;
- .3 the next aggregate data report, reflecting submissions to the EBP concerning the third year of experience with the Convention, should be submitted by the Secretariat to MEPC 76,⁴ at which the Committee should also finalize the draft terms of reference for the data analysis report;
- .4 the draft data analysis report should be submitted to MEPC 77;
- .5 the final data analysis report should be submitted to MEPC 78, at which the Committee should also agree to the prioritized evidence-based list of issues with the Convention; and
- .6 the package of amendments to the Convention should be submitted to MEPC 79.

Table 1: Summary of the EBP timeline

MEPC session	Timing	Milestone	EBP/MEPC action
73	Autumn 2018	Convention has been in force one year	
74	Spring 2019		First year of data available.
75	Spring 2020	Convention has been in force two years	Second year of data available, stocktaking of EBP timeline.
76	Autumn 2020	Convention has been in force three years	Partial third year of data available, enough to agree to data analysis report terms of reference.
77	Spring 2021		Full third year of data available, Draft analysis report received.
78	Spring 2022	Convention has been in force four years	Final analysis report received. Convention issues agreed.
79	Autumn 2022	Convention has been in force five years	Package of amendments submitted to the Parties.

⁴ This may reflect a partial year, recognizing that the deadline for document submission to the meeting would occur before the end of the third year that the Convention is in force. The complete data for the third year is expected to be available and taken into account during the preparation of the draft data analysis report.

APPENDIX A: BASIC INTERFACE: BASIC FLAG STATE REPORT TEMPLATE

Part 1: Fleet and its ballast water management plans			Response
Member State:			
Time period of report			
Date report prepared			
Ships to which Convention applies:	Total number of ships	Container ships	
		Bulk carriers	
		Tankers	
		Ferries	
		Cruise ships	
		Other (attach details)	
	Number currently subject to regulation D-2		
	Number fitted with BWMS	Electro-chlorination	
		Ozonation	
		Other chemical injection	
		Ultraviolet	
Other (attach details)			
Approved ballast water management plans	Total number of approved plans		
	Number of approved plans that include:	D-1 procedures	
		Contingency measures	
		Exemptions (regulation A-4)	
		Other methods (regulation B-3.7)	
		Use of reception facilities (regulation B-3.6)	
		Prototype BWMS (regulation D-4)	

Part 2: Outcome of ballast water surveys			Response
Number of surveys undertaken	Initial		
	Annual		
	Renewal		
	Intermediate		
Deficiencies noted during these surveys (even if later resolved)	Mechanical		
	Physical		
	Treatment process		
	Electrical		
	Piping		
	Location		
	Maintenance and cleaning		
	Sampling facilities		
	Other (attach details)		

Part 3: Reported accidents and defects			Response
Number of reports of accidents to the ship and/or defects (regulation E-1.7)	Originating outside the ship's ballast water system		
	Originating in the ship's ballast water system	BWMS treatment equipment	
		BWMS control and monitoring equipment	
		Other aspect of the ballasting system (attach details)	
Number of other safety incidents reported to the flag State that relate to the Convention	Associated with the ship's ballast water system	BWMS treatment equipment	
		BWMS control and monitoring equipment	
		Other aspect of the ballasting system (attach details)	
	Associated with the storage or handling of Active Substances (including neutralizers)		
	Associated with the use of ballast water to control trim, list, draught, stability or stresses of the ship (attach details)		
	Other (attach details)		

APPENDIX B: BASIC INTERFACE: BASIC PORT STATE REPORT TEMPLATE

Part 1: PSC inspection outcomes			Response
Member State:			
Time period of report			
Date report prepared			
Total number of inspections undertaken	With no ballast water sample		
	With a ballast water sample ⁵	Analysed with respect to regulation D-1	
		Analysed with respect to regulation D-2	
Number of PSC inspections by outcome	Satisfactory		
	Unsatisfactory	Valid certificate not on board	
		Approved ballast water management plan not on board	
		Deficiency in record book entries	
		Ship not in compliance with regulation D-1	
		Ship not in compliance with regulation D-2 (BWMS was installed, maintained and operated correctly)	
		Ship not in compliance with regulation D-2 (BWMS was not installed, maintained and operated correctly)	
		Maintenance issues	
		Crew not designated or unfamiliar with ballast water responsibilities	
		Unsanctioned changes to structure, equipment, fittings, arrangements or material	
		BWMS not used in accordance with operational instructions	
		BWMS and equipment not in good working order or treatment not fully operational	
		BWMS safety procedures not followed	
		BWMS has been bypassed	
Other (attach details)			

⁵ Results of sampling/analysis should be reported through the Supplementary Interface (together with the results of non-PSC sampling/analysis).

Part 2: Actions arising from unsatisfactory inspections (report number of actions)			
Action	Deficiency concerning regulation D-1	Deficiency concerning regulation D-2 or a BWMS	Deficiency concerning other aspect of the Convention
No action taken			
Information/advice provided			
Warning			
Sanction			
Detention			
Exclusion			
Other			

Part 3: Implications of unsatisfactory inspections for ballast water discharge (report number of discharges)				
Action		Deficiency concerning regulation D-1	Deficiency concerning regulation D-2 or a BWMS	Deficiency concerning other aspect of the Convention
Discharge permitted without contingency measure				
Discharge permitted following contingency measure	Ballast water exchange			
	Emergency treatment			
	Discharge ashore			
	Other (attach details)			
Discharge not permitted				
Other				

APPENDIX C: SUPPLEMENTARY INTERFACE: BALLAST WATER ANALYSIS REPORT TEMPLATE

Both port and flag States are invited to submit this report if they have engaged in ballast water sampling and analysis.

Report for submission

Part 1: Identification			Response
Member State:			
Time period of report			
Date report prepared			

Part 2: Summary of ballast water sampling and biological analysis***									
Method		Sample group					Results for group		
Sampling method *	Analysis method *	Purpose (PSC or other) **	Ballast water salinity (F/B/S) **	Ship ballast water management method **	BWMS type (if any) **	BWMS/ship issues Yes/No **	# of ships sampled	# fails per size class	Degree of failures per size class (mean and standard deviation)

- * These columns should reference attached details on sampling methods (including probe type and sampling device) and analysis methods (whether indicative or detailed).
- ** These columns should report standard categories.
- *** Information from samples should not be combined and reported on the same line unless the samples share all the same values for the blue columns.

Part 3: Summary of ballast water sampling and chemical analysis***								
Method		Sample group				Results for group		
Sampling method *	Analysis method *	Ballast water salinity (F/B/S) **	Ship ballast water management method **	BWMS type (if any) **	BWMS/ship issues Yes/No **	# of ships sampled	Residual TRO (mean and standard deviation)	Relevant Chemical concentrations (add columns for mean and standard deviation of each specific chemical considered)

* These columns should reference attached details on sampling methods (including probe type and sampling device) and analysis methods (whether indicative or detailed).

** These columns should report standard categories.

*** Information from samples should not be combined and reported on the same line unless the samples share all the same values for the blue columns.

Part 4: Information to be submitted concerning each ballast water sample analysed																									
Standard assessed (D1/D2)	Measurement type (e.g. ≥50 µm size class)	Measurement result (e.g. count/volume ± standard error)	Isokinetic sample collection (probe size, flow rates and location correct) (Y/N)	Total volume of water discharged from sampled tanks during sampling (m ³)	Volume of sample(s) collected (indicate L or m ³)	Was the sample(s) concentrated before analysis (Y/N)	Analysis method	Number of subsamples analysed	Analysis completed within standard holding time (Y/N)	Analysis completed by (affiliation)	Exchange conducted (Y/N)	BWMS utilized (Y/N)	BWMS manufacturer and model	Date BWMS installed	Duration BWMS in regular use (# treatment cycles)	Time since last calibration of BWMS sensor (months)	Ship reports difficulty with BWMS operation/maintenance in general (Y/N)	BWMS alarm occurred during sample treatment (Y/N)	BWMS maintenance up to date (Y/N)	Ballast water source location(s)	Age of ballast water (days)	Ballast water salinity at uptake/treatment (PSU)	Ballast water temperature at uptake/treatment (°C)	Maximum Allowable Discharge Concentration exceeded (Y/N)	Any other deficiencies during PSC inspection (Y/N)

APPENDIX D: TRIAL PERIOD INTERFACE: TRIAL PERIOD REPORT TEMPLATE

Part 1: Identification	Response
Member State:	
Time period of report	
Date report prepared	

Part 2: Sampling (provide one copy per sampling method used and attach relevant documentation)		Response
Sampling	Name of method/approach	
	Comments on validity	
	Comments on cost-effectiveness	
	Comments on timeliness	
	Comments on consistency with the type-approval sampling procedures in Guidelines (G8)*	

Part 3: Analysis (provide one copy per analysis method used, and attach relevant documentation)		Response
Analysis	Name of method/approach	
	Comments on validity	
	Comments on cost-effectiveness	
	Comments on timeliness	
	Comments on consistency with the type-approval sampling procedures in Guidelines (G8)*	

* In the context of this circular, the Guidelines (G8) refer to the guidelines adopted by resolution MEPC.174(58), the 2016 Guidelines (G8) adopted by resolution MEPC.279(70) and the *Code for approval of ballast water management systems* adopted by resolution MEPC.300(72), as may be appropriate.

APPENDIX E: STAKEHOLDER INTERFACE: STAKEHOLDER REPORT TEMPLATE

Instructions:

- Please categorize the stakeholder reports by type according to the table below, and submit a separate template for each type of report.
- Attach the text of the stakeholder reports (or a summary of the reports).
- Reports should be appropriately redacted in accordance with paragraph 3.5 of the data gathering and analysis plan.
- Duplicate reports should not be submitted. Reports from ships should be forwarded through the flag State of the ship.
- The reports submitted should pertain to specific aspects of the Convention and its implementation. Administrations are requested to review the reports and submit only information that is pertinent to the EBP.

Part 1: Identification	Response
Member State:	
Time period of report	
Date report prepared	

Part 2: Category of attached reports <i>(Please select only one category per submitted stakeholder report template)</i>		Mark one category below
Shipowner	Obtaining, fitting, commissioning and surveying BWMS	
	Maintaining and operating a BWMS	
	Regarding other aspects of the Convention	
	Other	
Recognized organization		
BWMS manufacturer		
Other (please identify category)		