

CEMP Guidelines for the assessment of dumping and placement[[1]](#footnote-2) of waste or other matter at sea

(OSPAR Agreement 2017-04)

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# 1 Introduction

1.1 Annex II of the OSPAR Convention on “The Prevention and Elimination of Pollution by Dumping or Incineration” regulates the dumping of waste or other matter within the OSPAR Maritime Area. This includes a requirement that “Each Contracting Party shall keep, and report to the Commission records of the nature and the quantities of wastes or other matter dumped…”. In 1986 OSPAR introduced guidelines to support the reporting on waste or other matter, e.g. dredged material, sewage sludge and fish waste. The use of these guidelines, together with existing OSPAR measures, has enabled reductions of contaminant load to the marine environment. While the dumping of sewage sludge was phased out in 1998, the guidelines on dumping of fish-waste were updated in 2010, and the guidelines for management of dredged material were most recently updated in 2014.

1.2 In general, dumping or placement of dredged material is managed by licences from national and local authorities. Many OSPAR Contracting Parties also have regulatory controls on contaminant levels in dredged material.

# 2 Monitoring

## 2.1 Purpose

2.1.1 In the CEMP, ‘monitoring’ of dredged material relates to the characterisation of dredged material for disposal at sea and beneficial uses, and the reporting of quantities disposed at sea and associated contamination loads.

2.1.2 OSPAR has collected data on material dumped at sea since 1986. OSPAR monitoring of dredged material is carried out in line with OSPAR Agreement 2014/06 Guidelines on Management of Dredged Material. Contracting Parties have set sediment quality criteria for the assessment of suitability of material for conventional dumping at sea, mainly in the form of action levels for contaminants in dredged material; samples of sediment are tested to assess the sediment against these action levels.

2.1.3 Contracting Parties report annually to OSPAR on quantities of material dumped, placed or reused, and on contaminant loads in the dredged material. These data are assessed by an Expert Assessment Panel (EAP), working under the EIHA Committee.

2.1.4 Data collected consists of:

* Amount of material dumped
* Locations of dumpsites
* Contaminant loads
* Quantities and locations of material dumped exceeding upper action levels.

## 2.2 Quantitative Objectives

2.2.1 The monitoring of contaminants in dredged material is for the management of dumping and placement activities and is not for environmental assessment. The objective is to ensure the contaminant levels do not exceed national action levels. However, the data can be used to indicate the overall temporal trends in levels of contaminants.

## 

## 2.3 Monitoring Strategy

2.3.1 Monitoring should be carried out in line with the [OSPAR Guidelines for the Management of Dredged Material](http://www.ospar.org/convention/agreements?q=OSPAR+Guidelines+for+the+Management+of+Dredged+Material+at+Sea&t=32281&a=&s=) (Agreement 2014-06). A survey of the area to be dredged should be carried out. The distribution and depth of sampling should reflect the size and depth of the area to be dredged, the amount to be dredged and the expected variability in the horizontal and vertical distribution of contaminants. Core samples should be taken where the depth of dredging and expected vertical distribution of contaminants suggest that this is warranted. In other circumstances, grab sampling will usually be sufficient. Sampling from deposit vessels or barges is not advisable for permitting purposes.

2.3.2 The following table gives an indication of the number of separate sampling stations required to obtain representative results, assuming a reasonably uniform sediment distribution in the area to be dredged:

|  |  |
| --- | --- |
| **Amount dredged (m3)** | **Number of Stations** |
| Up to 25 000 | 3 |
| 25 000 - 100 000 | 4 – 6 |
| 100 000 *-* 500 000 | 7 – 15 |
| 500 000- 2 000 000 | 16 – 30 |
| >2 000 000 | extra 10 per million m3 |

2.3.3 The number of sample stations can also be determined based on the area to be dredged. Contracting Parties are encouraged to use the Guidelines for the Sampling and Analysis of Dredged Material Intended for Disposal at Sea (IMO, 2005).

## 2.4 Sampling Strategy

2.4.1 Field sampling is carried out prior to dredging. Sampling guidance may be provided nationally and is also available in the OSPAR [JAMP Guidelines for Monitoring Contaminants in Sediment (Agreement 2002-16, updated 2015)](http://www.ospar.org/convention/agreements?q=JAMP+Guidelines+for+Monitoring+Contaminants+in+Sediments.+2015+Update&t=32281&a=&s=), in [OSPAR Guidelines for the Management of Dredged Material](http://www.ospar.org/convention/agreements?q=OSPAR+Guidelines+for+the+Management+of+Dredged+Material+at+Sea&t=32281&a=&s=), and in IMO Sampling and Analysis of Dredged Material at Sea, 2005 Edition.

2.4.2 Spatial and temporal sampling are carried out in accordance with [OSPAR Guidelines for the Management of Dredged Material](http://www.ospar.org/convention/agreements?q=OSPAR+Guidelines+for+the+Management+of+Dredged+Material+at+Sea&t=32281&a=&s=).

* Samples are pre-treated, as necessary, according to JAMP Guidelines for Monitoring Contaminants in Sediment Analytical.
* Sampling and analysis should be carried out in accordance with national guidance and with the OSPAR JAMP Guidelines for Monitoring Contaminants in Sediment, and its annexes.

## 2.5 Quality assurance/ Quality Control

2.5.1 Quality Assurance is carried out at several stages through the process from sampling, through to analysis, to final report.

1. Quality assurance of sampling and analysis techniques is usually implemented by Contracting Parties through their national guidelines;
2. Quality assurance of sample storage and integrity is provided in the JAMP Guideline, and may also be provided through national guidelines;
3. Analytical quality assurance of testing is carried out by the analytical laboratories through the use of appropriate Certified Reference Materials, in-house/externally accredited quality systems and participation in Inter-Laboratory Proficiency Testing Schemes, e.g. QUASIMEME;
4. Contacting Parties carry out QA on the compiled and calculated data report prior to submission to OSPAR; and
5. Quality assurance of final data, after submission by Contracting Parties, is carried out by the Secretariat and the EAP.

## 2.6 Data reporting, handling and management

2.6.1 Data are reported according to reporting format and guidance adopted by EIHA. The data is managed by the OSPAR Secretariat and is stored in access database and made available on an annual basis through the [OSPAR Data Portal](http://www.ospar.org/data), as both the database and a spatial layer. Annual data undergoes an initial quality control check by the Secretariat before it is considered by an Expert Assessment Panel and signed off by EIHA.

# 3 Assessment

## 3.1 Data acquisition

3.1.1 The CEMP assessment relates to consideration of long-term temporal changes in the quantities dumped and associated contaminant loads

3.1.2. Data on the on quantities of material dumped, placed or reused, and also on contaminant loads in the dredged material are held by the OSPAR Secretariat. These are available for download through the [OSPAR Data Portal](http://www.ospar.org/data).

## 3.2 Preparation of data

3.2.1 The OSPAR database contains the information required to undertake the assessment and has several built-in queries that provide the information for the various sections of the assessment. However, an additional check for outliers and erroneous data should be carried out before undertaking the assessment.

3.2.2 Due to differences in reporting and differences in the analytical approaches between Contracting Parties, integration and normalisation of the data is not deemed applicable. Rather than investigate trends and patterns in partial datasets, cadmium, lead, mercury and TBT have been selected as indicator contaminants for further analysis due to their presence on the OSPAR list of chemicals for priority action and the completeness of their datasets or continued widespread effects in the marine environment. In the future, additional contaminants might be added, when relevant.

3.2.3 Natural background concentrations, which may differ regionally, have not been excluded from the calculated contaminant load in this assessment, however this may be considered in future assessments.

3.2.4 The total amounts of material dredged and dumped or placed and subsequently the total loads of contaminants are subject to many external variables, including weather and economics. A trend in the total load is therefore not derived. The calculated average concentration is selected as an approximate proxy metric and calculated per Contracting Party and year. The average concentration is calculated, as a query in the dredged material database, based on the reported contaminant loads and amounts per deposit site, per CP. Sites where no contaminant load has been reported are not considered in this calculation. For every CP, the average concentration is then determined as the average of all calculated concentrations. As might be anticipated, this method produces occasional spurious results, even though the original reported data are considered sound. In these cases, the relevant datasets are excluded rather than misrepresented.

## 3.3 Assessment criteria

3.3.1 The calculated average concentrations and their trends are compared to values of previous periods. Datasets and calculated average concentrations from 2008 onwards are available in the OSPAR dredged material database. Information on concentrations and trends before 2008 are reported in the 2009 OSPAR JAMP Assessment.

3.3.2 No assessment values are used in the assessment as action levels vary significantly between CPs in both their values and their application thus hampering a quantitative approach.

## 3.4 Spatial Analysis and / or trend analysis

3.4.1 A statistical trend analysis is not possible not least because the data used as the basis for the assessment are not necessarily comparable across CPs due to differing analytical procedures, particle size fraction considered and treatment of contaminants below limits of detection. However, the data should be comparable within countries from year to year.

3.4.2 The OSPAR dredged material database can be queried to produce input data for graphs and figures. These are visually assessed for trends and best professional judgement by the EAP is applied to interpret results.

3.4.3 It is acknowledged that the assessment method is neither quantitative nor scientifically robust however it does allow for comparison with previous assessments and consideration of long term temporal changes.

## 3.5 Presentation of assessment results

3.5.1 The assessment focuses on the evolution of the average concentration of the contaminants, per CP and year. Per contaminant a line graphs should be developed to represent the evolution over the considered period (see example for 2008-2014 below). In addition to this, a graph with the total amounts for the contaminant should also be produced per contaminant.

3.5.2 As background information on the dredging and dumping process, graphs should be made for the total amounts dredged per Contracting Party and year. A map of the designated dumping sites, including the total tonnage per site and Contracting Party should be included in the report

# 4 Change Management

4.1 Requests for changes of the dredged material monitoring or assessment method should be raised through the Expert Assessment Panel on Dredged Material. Such requests will be discussed within the EAP before any changes are proposed to the Environmental Impact of Human Activities (EIHA) Committee for agreement.

1. Placement in this report only refers to dredged material, i.e. placement of dredged material for beneficial uses [↑](#footnote-ref-2)