

Eve O'Sullivan

Subject: DPC S0004-03 Maintenance
Attachments: Dublin 004-03 MI comments on chemistry.docx

From: Margot Cronin <margot.cronin@marine.ie>
Sent: Friday 8 July 2022 15:28
To: Alison McCarthy <A.McCarthy@epa.ie>
Subject: DPC S0004-03 Maintenance

Hi Alison,

Attached are my comments on the sediment quality for S0004-03 (maintenance dredging).

If you need clarification on anything, please give me a shout.

All the best, Margot

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To: Alison McCarthy, EPA

From: Margot Cronin, MI

RE: Dublin Port Company Dublin Harbour Dumping at Sea permit application

Date: 06/07/2022

Background

This application relates to maintenance dredging and dumping at sea of just under 4,000,000 tonnes of dredged material over a period of eight years, as per application to EPA. The depth of material to be removed averages 1- 2 m, with small areas down to 8 m around berths 46/47.

Discussion

Chemistry: The sediment quality is considered fairly clean. Most samples had concentrations of metals, PAH, TBT, PCB well below lower guidance levels. There were no exceedances of the upper guidance level. There were some results marginally above lower guidance levels for though all within or close to the lower quartile of Class 2 (details below). There was also one DDX result very slightly above the Effects Range Low (ERL), though well below any action lower levels set by other OSPAR Contracting Parties.

The results exceeding lower guidance levels are shown in the table below.

Determinand	Sample no/area	Comment
Copper	11, 24, 32, 1, 22, 3	All low Class 2
Lead	7, 8, 4, 1, 3	All low Class 2
US EPA PAH Σ 16	5	Class 2, ¹
ICES PCB Σ 7	8,31, 4, 5, 7, 1, 3, 20	All low Class 2
Σ DDX	1	Very low "Class 2" ²

Note, the results reported for cadmium demonstrated several samples above the lower action levels. These were associated with an issue with laboratory procedures, experienced at the time. The laboratory concerned has explained and resolved the issue in the meantime.

The areas with the most exceedances of the lower guidance level are:

1. The area to the west of Poolbeg Sailing Club

¹ Ireland does not have an upper action level for PAH, but the Effects Range Median for Σ US EPA16 = 29040 ug kg⁻¹

² Along with most OSPAR countries, Ireland does not have action levels for sum DDX. The ERL (an ecotoxicology measure, is 1.58 ug/kg, while the lowest OSPAR lower action level is 4 ug/kg)

2. North Quays Extension, Berths 21/22 and entrance to Alexander Basin West
3. Oil berth # 4

The material to be removed from Berths 21/22 is calculated to be approx. 250 m³. The material in the channel in that area is considered broadly uncontaminated. Area no. 1 is outside of the dredging pocket and Area no. 3 is due for infill.

Ecotoxicity: Aquatic Services Unit carried out ecotoxicity testing on seven samples of port sediment, including samples from the North Quays Extension, Alex basin entrance areas and the navigation channel in this area. Tests were ten-day Polychaete Bioassay with *Hediste diversicolor* and Microtox bioassay using *Vibrio fischerii*. Results showed no toxicity of the sediment on the polychaetes during the 10-Day polychaete bioassay. Exposure of the Microtox bacteria, *Vibrio fischeri*, to elutriate samples extracted from Dublin Port sediment samples did not produce any significant toxicity when compared to the test controls.

Conclusion

The sediment chemistry is broadly in line with previous results from the area, and would be considered quite reasonable quality for urban port sediment.

The chemistry of these samples would not preclude dumping at sea, in the absence of a feasible alternative.

The ecotoxicity of these samples would not preclude dumping at sea, in the absence of a feasible alternative.

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