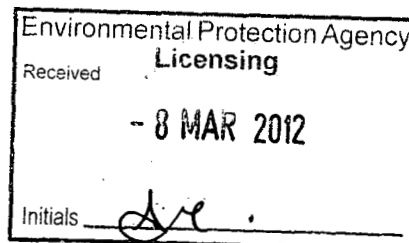


Marine Institute
Foras na Mara

Rinville
Oranmore
Co Galway
07 March 2012

Tara Higgins
Office of Climate Change, Licensing & Resource Use,
Environmental Protection Agency,
Johnstown Castle
Wexford



Dear Tara,

Re: Dumping at Sea permit application, reference S0016-01 – Rosslare Europort.

This application for an 8 year dumping at sea permit from Iarnród Éireann indicates quantities of up to 150 000m³ per year from the harbour and approaches to be dumped to the east of the Long Bank SAC. (I couldn't find reference to exactly how much was to be taken from the small boat harbour on an annual basis but I must assume it to be a relatively small quantity, given the design depth of 1m below CD, and the current depth of max 0.5m above CD, as far as I can establish.) The material to be dredged contains some gravel and coarse sand but is predominantly composed of fine sand / mud.

Results of chemical analysis of the material from the main harbour demonstrate concentrations of copper elevated above background at many stations (see summary of 2010 results, below). CRM results were checked and found to be approx 8% above the normal range at the time of analysis; a perfectly acceptable result. Even allowing for that, the copper concentrations can still be considered elevated above background. Past analyses of samples from the main harbour and approaches have shown no evidence of any copper contamination (see below for summary of results from 2003 and 2008). It is possible that these results may be attributable to sampling or analysis issues, but a precautionary approach is recommended nevertheless. While these sediments have nowhere near the contaminant load of the sediments from Arklow they do give slight cause for concern as they are intended for disposal in the same high energy environment, an estimated 200m from an SAC.

Bottom current velocities measured at the dumpsite are considered fast flowing - up to 1.5 ms⁻¹ on spring tides, up to 0.7 ms⁻¹ on neaps, in a generally north – south direction. Bottom sediment at the dumpsite consist of fine to coarse sand, with little mud or silt, again confirming the high energy environment. While it seems unlikely that the fine dredged material will reach the bottom at all, if it does it will undoubtedly be resuspended and dispersed to depositional areas. The results of the model study suggest sinks in either the Celtic Sea or Northern Irish Sea.

There are also nickel and arsenic concentrations marginally exceeding action level 1 but these are considered less of a concern; the action levels for As and Ni were derived from ERLs as insufficient

background data existed for Irish sediment. It is common enough to find nickel and arsenic concentrations in the low class 2 category and thus those concentrations are presumed to be natural background.

Previous sampling at the small boat harbour indicated elevated copper concentrations. Follow up sampling pointed towards much lower concentrations than previously determined.

Summary of Dec 2010 sample analysis:

Sample	Grain size	Metals	Organics	TBT
S01a	Mainly gravel 1.6% < 63um	As – low category 2 Cu – Category 2 Ni – v low Category 3 Zn – low Category 2	All ok.	Ok
S02a	Mainly fine mud / silt – 53% < 20um, 88% < 125um	As – low Category 2 Cu – Category 2 Ni – mid Category 2	All ok.	Ok.
S03a	Mainly fine sand / silt 36% < 20um 76% < 125um	Cu – v low Category 2 Ni – Category 2	All ok.	Ok.
S04a	Mainly fine sand / silt 23% < 63um 80% < 250um	Cu – Category 2 Ni – Category 2	All ok.	Ok.
S05a	Mainly fine sand / silt 32% < 20um 85% < 250um	As – low Category 2 Cu – v low Category 2 Ni – v low Category 3	All ok.	Ok.
S06a	Mainly fine sand / silt 23% < 20um 90% < 250um	As – low Category 2 Cu – high Category 2 Ni – high Category 2	All ok.	Ok.
S07a	Mainly fine sand / silt 50% < 20um 95% < 250um	As – low Category 2 Cu – high Category 2 Ni – Category 2	All ok.	Ok.
S08a	Mainly fine sand / silt 41% < 20um 95% < 250um	As – low Category 2 Cu – high Category 2 Ni – Category 2	All ok.	Ok.
S09a	Mainly gravel. 0% < 63um 91% > 8000um	As – Category 2 Ni – low Category 2	All ok.	Ok.
S010a	Mixed gravel / coarse sand / silt 41% < 63um 55% > 2000um	As – Category 2 Ni – high Category 2	All ok.	Ok.
S011a	Mainly coarse sand / gravel 0% < 63um 59% > 8000um	All ok	All ok.	Ok.
S012a	Mainly fine / med sand 7% < 63um 88% < 500um	Cu – Category 2	All ok.	Ok.

Summary of previous sample analyses (2003 – 2010):

Sample analysis, Harbour and Approaches, June 2003

- All copper concentrations were below action level 1.

- Some arsenic concentrations marginally above action level 1, but can be considered to be background for that area.
- All nickel concentrations were below action level 1
Sample analysis, Harbour and Approaches, May 2008
- All copper concentrations were below action level 1.
- About half of the samples had arsenic and nickel concentrations marginally above action level 1. Again, these can be considered natural background for the area.
Sample analysis, Small Boat Harbour, October 2008
- All three copper concentrations exceeded action level 1, while one also exceeded action level 2.
- All nickel concentrations exceeded action level 1.
- All arsenic concentrations were marginally above action level 1. Again, these can be considered natural background for the area.
Sample analysis, Small Boat Harbour, January 2010
- One of five copper concentrations marginally exceeded action level 1.
- Two samples had nickel concentrations marginally exceeding action level 1.
- Two samples had arsenic concentrations marginally exceeding action level 1. Again, these can be considered natural background for the area.

Comments / Recommendations:

Given the high energy environment in which the dumpsite proposed for disposal of these sediments lies, not to mention its proximity to an SAC, conditions for disposal should be attached to any permit that might be granted. As standard "dump first" procedures are unlikely to be effective due to the high current speeds of the dump site, a slightly different approach is suggested here as a precautionary measure.

- The dredging operation should be such that dredging alternates between areas with the higher concentrations and areas with normal background in order to reduce any possible copper loading of individual loads.
- Sediment should be dumped at periods close to slack water only. It should be noted that slack water does not coincide with high or low water at this site.
- Monitoring of the dumpsite should be carried out to assess its effectiveness as a dumpsite. It may be sensible to seek an alternative site in future.
- Continued testing of the material to be dredged should be carried out at suitable intervals in order to meet criteria suggested by OSPAR.

Should you require clarification on anything, please don't hesitate to contact me.

Yours sincerely,



Margot Cronin
Marine Environment Chemist

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