

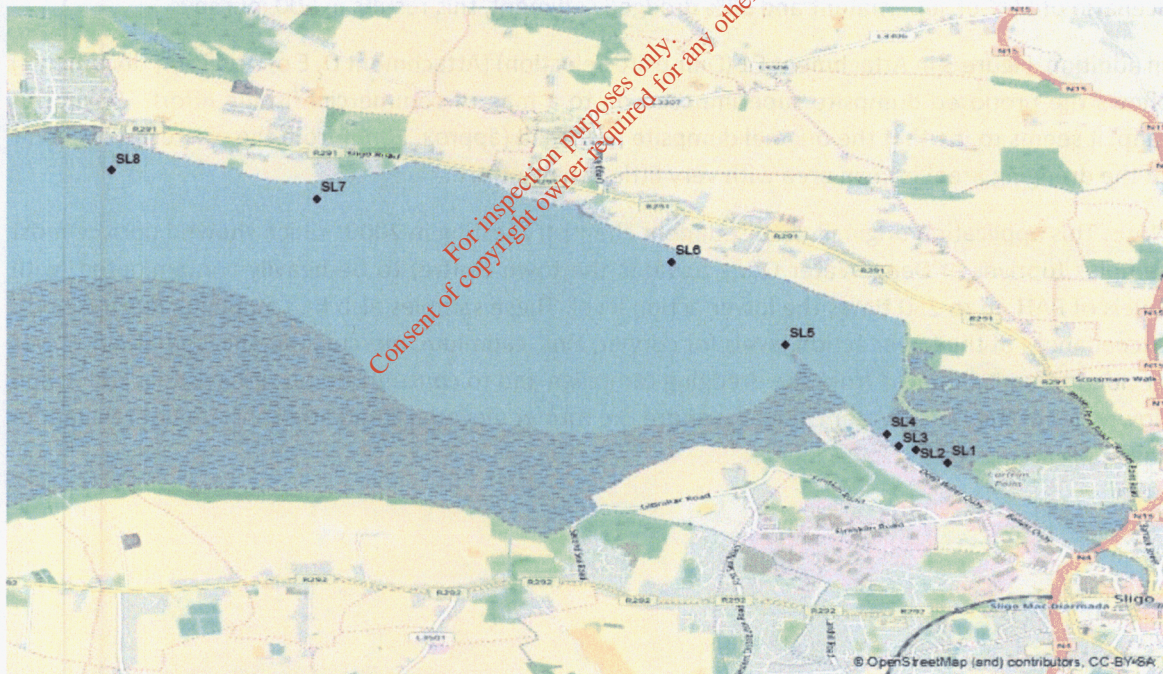
*Marine Institute*  
Foras na Mara

To: Suzanne Wylde & Ciara Maxwell, EPA  
From: Margot Cronin, MI  
RE: Sligo County Council, Dumping at Sea application, 2016  
Date: 03/03/2017

#### Sligo County Council (Sligo Harbour) S0023-01

This is an application to dump 5 500 tonnes of sediment through water injection dredging (WID) and 250 000 tonnes through conventional suction or backhoe dredging. WID is proposed for the sediment upstream beside the Deep Water Quay and conventional dredging for the remainder of the channel downstream.

A sampling and analyses plan was provided by Marine Institute, in 2016. Sample locations are shown in Figure 1, below.



**Figure 1.** Location of sample positions.

The results of the 2016 chemical analyses indicate a predominantly clean sediment but with concentrations of PAH indicating marginal to moderate contamination in samples SL1 – SL4, in the vicinity of the Deepwater Quay. Previously these elevated PAH concentrations had been seen at much higher levels in the 2009 analysis from samples upstream. It should be noted that these is currently no upper action level for PAH in dredged material in Ireland.

There is one marginally elevated cadmium concentration in one sample also in this area, however all other results for metals are clear. This is the area proposed for WID. In the case of Sligo, the training walls at the outer channel edges are likely to keep the hydro-dynamically entrained sediment within



the channel initially, where it may be picked up in the conventional dredging campaign, however, beyond the training walls, the material is likely to be dispersed.

I would caution against permitting WID without inclusion of mitigation conditions. Experiences elsewhere showed WID sediment transported well outside and beyond areas predicted by models and also by intuition. At a minimum, the WID Operators should be asked to provide a method statement showing how they will minimise the dispersion of the material beyond the channel areas.

The options presented by the Applicant in this case include piling of material onto the former landfill area at Finisklin (adjacent to the port) for land reclamation. Due to the PAH contamination in this area, I would favour this option for the material over the option to dredge by WID.

The remainder of the material in the channel can be categorised as clean. This is supported by analyses in previous years. As such, I have no objections to the conventional sea disposal of this material, however, I have reservations about the proposed dumpsite, based on the wider environmental costs.

Reiterating my comments from 2015, when this application was originally lodged, it seems to be a very environmentally extravagant proposal to ship clean dredged material more than 30nm to the dumpsite, located in more than 90m depth. A round journey of 60NM, at a rate of 6 kn will take at least 10 hours. With each barge holding just 1500 tonnes of dredged material, this would require a minimum of 166 journeys just for the solid dredged material. Using the Applicant's own worst case scenario of 66% of supernatant and 33% dredged sediment, this results in 500 journeys.

In addition, Figure 3 in Attachment E1 (Dumpsite Selection) (Attachment D, E of Applicant documents) shows the proposed dumpsite superimposed on to a map of commercial fishing effort. Using this map, it seems to me that the original dumpsite proposed (approx. 10nm from the westernmost point of the dredging area) is in an area with very little fishing effort.

Note: This application originally had sediment chemistry testing in 2009, which showed upriver-most samples (upriver of Deep Water Quay towards the town centre) to be heavily contaminated, with levels of PAH up to 250 times the lower action level. These samples also had marginal, but frequent, exceedances of the lower action levels for copper, zinc, cadmium, mercury, arsenic and nickel. It was decided to omit this area from the dredging campaign and to concentrate on sediment including and downriver of the Deep Water Quay, therefore the former elevated concentrations are not relevant to the application.