

**ONeill, Pat**

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**From:** Jimmy King [jimmy.king@cfb.ie]  
**Sent:** 22 October 2009 15:07  
**To:** O'Neill, Pat  
**Cc:** terry.mcmahon@marine.ie; brian.beckett@erfb.ie  
**Subject:** MLVC Arklow harbour dredging CONTD

Pat,

Comment on recent documents and corres re above.

Jimmy King

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emailed to MLVC. 22/10/09 (pm)

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**MARINE LICENCE VETTING COMMITTEE:**

**Re: Application for a Dumping at Sea Permit: Arklow Harbour – Arklow Harbour Commissioners**

**DAFF Ref E3/2/11 (?)**

*Request for observations from Mr. Pat O' Neill (DAFF) on foot of additional docs sent in June and August 2009 from Arup.*

As I understand things, a number of significant changes have occurred with this application since its submission, following a substantial consultation process with MLVC and others.

Initially, two dump sites were to be used – one for 'uncontaminated sediment and one for 'contaminated' sediment. The Arup document of 8.09 appears to identify a single dump site with all dredge material being disposed of to a pit, to be capped initially by 'uncontaminated' spoil and finally by the spoil dug in excavating the holding pit.

It would appear that virtually all dredge areas are considered as 'contaminated', with a small 'uncontaminated' area at the mouth of the harbour.

The Arup report of 6.09 lays out a clear dig methodology, using a 'contained' dredge bucket process that would minimise or eliminate 'runoff' from the dig bucket, both in the excavation process and in the subsequent 'placement' process at the dumping site. This strategy appears to be completely contradicted by the method statement for spoil removal and placement contained in correspondence from Irish Dredging Company Ltd of 7.8.09. This latter describes a suction dredge approach for both sediment removal from Arklow and for subsequent placement into the retaining pit. The Arup documentation of 6.09 gave the impression of large pieces of sediment material compressed, as a consequence of the digging or excavation process, and retaining an anaerobic environment for the removed sediment while minimising dispersal of dissolving or particulate matter into the overlying water of Arklow harbour. These large pieces of material would retain this 'solid' or compressed form when lifted into the receiving pit – the intention at all times being to retain the metal and other contaminant species in a state least likely to disperse into the overlying water column. The suction dredge approach differs dramatically from this approach. It envisages the excavated material being in the form of a 'slurry for pumping into the ships hold and for disgorgement into the retaining pit. The suction dredge would be capable of delivering the spoil directly and directionally into the receiving pit but the slurry form may be more susceptible to dispersal by water movement than the 'placement' of solid pieces of material via the backhoe approach.

The Arup document of 6.09 refers to monitoring for EPA-based 'Q' values in the Avoca river and to invertebrate monitoring of the sediment areas to be removed. I do not consider that there is much of value to be gained from any monitoring of 'Q' values. The tidal reaches of the R. Avoca extend a considerable distance above the bridge in the town of Arklow. In addition, the issue of ecological impact relates to the specific areas for

sediment removal and dumping. The Arup document of 8.09 refers to monitoring of sediment, for heavy metals primarily, post-works in both the harbour and at spoil disposal site. This monitoring is considered valuable. I would suggest that invertebrate or benthic monitoring be conducted, in addition to the metal analysis. Samples for both could be collected at same time. This would accommodate benthic monitoring proposed in Arup of 6.09 (Item 2.1.5.2). In all cases, it would be important to have sediment chemistry and benthic data for harbour and dump site prior to all works. The opinion of Dr. O' Beirn would be welcome in regard to the benthos proposal.

Shortcomings and discrepancies in the modelling process for sediment movement were identified by Mr. Williams of MLVC. Can the re-computed figures be now considered reliable? Is it possible/likely that velocity and current action at the sea bed in the vicinity of the dumpsite could cause scour to the extent that the capping material was eroded or undermined and contaminated material became activated into the marine ecology?

The original documentation referred to use of curtain or screening in the immediate area of excavation to prevent a wide dispersal of contaminated particulates in the water column. I see no further reference to this in subsequent reports.

If the modelling is now correct then the proposal to place all excavated sediment into a pit and cover this with uncontaminated capping material may represent an optimal method to achieve the dredging of Arklow harbour and disposal of the contaminated spoil.

Licence conditions should include the following:

- CLEARLY require an exact method statement for excavation of spoil and for filling of pit with this spoil
- Should list the monitoring requirements, to include sediment and benthic elements, the sediment chemistry to follow Chapter 4 of Arup 8.09 document.
- Environmental window for dredging in the harbour area must be mindful of downstream migration of salmon smolts (March – May) as well as downstream migration of recently-transformed anadromous lamprey (autumn – winter) and upstream movement of sea- and river lamprey adults to spawn. An optimal window for dredging might run from June – September. Agreement with the Eastern Regional Fisheries Board should be reached on this prior to commencement of works.

James. J. King  
12.10.2009

CC Terry Mc Mahon MLVC; Brian Beckett, ERFB