

I F.I

**MARINE LICENCE VETTING COMMITTEE:**

**Re: DECLG file ref FS006578 Foreshore Application, Aughinish Alumina Ltd**

***Request for observations from Mr. Danny O' Brien (DECLG) dated 31.5.2016***

**Overview:**

Maintenance Dredging will be undertaken by means of a bed leveller or plough dredger. Maintenance dredging could be undertaken three or four times per year depending on the accumulation of material on the sea bed, its location and its impact on navigation.

The dredging area is that immediately surrounding the existing berthing locations at the Aughinish facility.

Dredging events would typically be over a 4 to 5 day period and the volumes could vary between 1000m<sup>3</sup> and 6000m<sup>3</sup>.

The application relates to an annual maximum dredge volume of 8,000m<sup>3</sup> or 16,000 tonnes and is being requested for a period of 8 years.

The method of dredging proposed is plough dredging. With this method dredged material is moved on the bed and also raised in suspension in the water column. The heavier sand fraction will settle out locally and re distribute on the bed and the material in suspension will be dispersed within the wider estuary on the tidal cycle.

The dredge area and the wider estuary are in effect the dumpsite and as such selecting an alternative site does not arise. A dumpsite selection report has not been completed given the method of dredging proposed. For the purposes of application the dredge site is the dumpsite and co-ordinates of the dredge areas is included in attachment E.2. (II).

**Sediment content and contaminants:**

There was a 50% sand content in a series of 8 sediment samples taken.

The Sediment Transport Modelling Report analysis indicated that all the plough material from fine sand to silt is easily suspended and transported away with the tidal velocities on both spring and neap tides.

Due to the higher ebbing (outgoing) velocities the sediment Plume travels further westward than eastward. The simulations show the plume over a number of tidal excursions is transported up in to the lower Fergus Estuary where extensive mud flats already exist.

Sediment chemistry results indicated an exceedance of lower Irish limit for Arsenic and Nickel at one station and of the upper Irish limit by zinc at one stations, of the three sampled.

Lindane exceeded the upper Irish limit at the three stations examined and there was HCB exceedance of the lower Irish limit at the three sampling stations.

Chemical analysis found that all parameters except zinc were below the relevant upper Irish action limits.

Zinc was found to have exceeded the upper Irish action limit at station 1 but was found to be below the lower Irish action limits at stations 2 and 3 (Aquafact , 2016).

Consultation between Aquafact International Services Ltd. and Margot Cronin of the Marine Institute determined that in this instance, zinc concentrations are not expected to pose any significant risk to the receiving environment.

**In summary, bed material at the dredge sites is considered to be clean and therefore suitable for the proposed activity.**

**Mitigations proposed:**

- There will be no refuelling of the dredger at the site.
- Potential leaks from vessels/boats will be mitigated by contractually requiring the contractors to only operate/supply vessels/boats that are in good working order, up to date in servicing etc., and free of leaks
- The dredger will operate in an appropriate safe manner
- Short term dredge events will be undertaken at optimal times in the dredge cycle in order to minimise the volume and extent of plume and dispersal

**IFI observations:**

IFI notes that the proposed application involves a 'dispersal' of accumulated sediment via plough dredge from the berthing areas at Aughinish Alumina.

The dispersed sediment will be carried by sediment transport and re-distribute within the Shannon Estuary.

The elevated levels of zinc (above upper Irish limit) in one sample are not considered by expert opinion to be an issue for this application.

IFI notes and approves of proposed mitigation measures, which should be incorporated into any licence issued.

IFI notes that plough dredging operations may be staggered – presumably in a “little and often” manner. This would be a positive proposal from a fisheries viewpoint.

The documentation provided refers to potential impacts on SAC-qualifying species of fish – Atlantic salmon and lamprey species. Upstream migration of adults of both species occur in the Shannon Estuary, as well as downstream movement of young salmon (smolts) and recently-transformed sea and river lamprey. A further fish species of conservation importance is the smelt (*Osmerus eperlanus*) which is known to have spawning populations in the upper tidal areas around Limerick and Ennis. Prior work by the then-Shannon Regional Fisheries Board (now IFI Shannon RBD) indicated a widespread distribution of adult smelt throughout the Shannon estuary.

IFI does not envisage that the proposed application would have adverse effect on the fish species if the plough dredging is undertaken in the manner proposed in documents supplied with the application i.e.

- During daylight hours
- Dredge time totalling 4-5 days in any 'event' but actual dredging spaced over a longer number of days
- A 'little-and-often' dredge strategy in regard to the amounts to be dredged per annum

As an additional mitigation, IFI would propose, based on experience and on data provided by applicant, that dredging ceased approx. 1.5 to 2 hours before the turn of the tide i.e. prior to low tide and high tide – periods of least dispersal of sediments.

This submission parallels that prepared by IFI in respect of EPA DAS licencing for this project.

James J. King (IFI R&D) and Michael Fitzsimons (IFI Shannon RBD Limerick)  
Inland Fisheries Ireland  
14.6.2016



**Danny O'Brien - (DECLG)**

*DAFM*

**From:** OFlynn, Deirdre <Deirdre.OFlynn@agriculture.gov.ie>  
**Sent:** 17 June 2016 15:23  
**To:** Danny O'Brien - (DECLG)  
**Cc:** Power, Thomas; Hayes, Liz  
**Subject:** FS 6578 - Aughnish Alumina Ltd

Danny O'Brien  
Marine Planning – Foreshore Unit  
Department of Environment, Community & Local Government  
Newtown Road  
Wexford

**Your Ref:** FS 6578

**Our Ref:** FW/10/6

**Re:** Foreshore Licence Application on behalf of Aughnish Alumina Ltd for maintenance dredging at Aughnish Island.

Dear Danny,

Further to your email dated 31<sup>st</sup> May 2016, please find below observations from this Department.

There is a small oyster farm adjacent to this site. Oysters are filter feeders and are sensitive to decreasing water quality arising from increased sediment loading and turbidity and there could be an impact on the existing aquaculture site. It is recommended that no oyster harvesting takes place during dredging operations. To facilitate this the Department would request that it is a stipulation of any permission given that SFPA An Daingean (tel: +353 66 9152122, [dingle@sfpa.ie](mailto:dingle@sfpa.ie)) and the operator of the oyster farm are informed in advance of any dredging operations carried out at this site.

The Department would recommend that turbidity monitors with appropriate alarms be deployed between the works and the aquaculture activities. This will give confidence to any operators in the area and will also provide a record of suspended sediment levels in the event of any mortalities on the aquaculture sites during the works.

Any foreshore licence that may issue should include a condition that "prior to commencement of any activity on the foreshore the applicant should hold a valid Dumping at Sea Permit from the EPA".

Regards,

*Deirdre O'Flynn*

---

Deirdre O'Flynn  
Aquaculture & Foreshore Management Division  
Department of Agriculture, Food & the Marine  
National Seafood Centre  
Clonakilty  
Co Cork  
023-8859529

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Department of Agriculture, Food and the Marine

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An Roinn Talmhaíochta, Bia agus Mara

Tá an t-eolais san ríomhphost seo, agus in aon ceanglái leis, faoi phribhléid agus faoi rún agus le h-aghaidh an seolai amháin. D'fhéadfadh ábhar an seoladh seo bheith faoi phribhléid profisiúnta nó dlíthiúil. Mura tusa an seolai a bhí beartaithe leis an ríomhphost seo a fháil, tá cosc air, nó aon chuid de, a úsáid, a chóipeáil, nó a scaoileadh. Má tháinig sé chugat de bharr dearmad, téigh i dteagmháil leis an seoltóir agus scríos an t-ábhar ó do ríomhaire le do thoil.

**Danny O'Brien - (DECLG)**

S FPA

**From:** McGabhann, Declan <Declan.McGabhann@sfpa.ie>  
**Sent:** 31 May 2016 14:14  
**To:** Danny O'Brien - (DECLG)  
**Cc:** Quigley, Declan; terry.mcmahon@marine.ie  
**Subject:** RE: Urgent - Foreshore Licence Application FS 6578, Aughnish Alumina Ltd

Hello Danny,

Please note that the SFPA has no observations to make regarding the maintenance dredging submitted by Aughnish Alumina Ltd.

Kind regards,

Declan

Sea Fisheries Protection Authority  
Hawth Fisheries Harbour Centre  
West Pier  
Hawth  
Co. Dublin

Tel: +353 1 8321910  
Fax: +353 1 832 1911  
Mobile: +353 87 9294673

-----Original Message-----

**From:** Danny O'Brien - (DECLG) [mailto:Danny.O'Brien@environ.ie]  
**Sent:** 31 May 2016 11:17  
**To:** 'terry.mcmahon@marine.ie'; BarryMcDonald (ENVIRON); Jimmy King (Jimmy.King@fisheriesireland.ie); McGabhann, Declan; Manager Dau  
**Subject:** Urgent - Foreshore Licence Application FS 6578, Aughnish Alumina Ltd

All

Please see attached request for observations on the foreshore licence application submitted by Aughnish Alumina Ltd for maintenance dredging at Aughnish Island. Details of the application can be found at <http://www.environ.ie/planning/foreshore/applications/aughinish-alumina-ltd>, while the associated D.A.S. application can be found at <http://www.epa.ie/terminalfour/DaS/DaS-view.jsp?regno=S0026-01>

As the project is time bound your co-operation in replying as a matter of urgency would be greatly appreciated.

Regards

Danny O'Brien  
Marine Planning - Foreshore Unit  
Dept of Environment, Community &  
Local Government  
Newtown Road  
Wexford  
[Danny.O'Brien@environ.ie](mailto:Danny.O'Brien@environ.ie)  
053 9117366

-----Original Message-----

From: [Danny.O'Brien@environ.ie](mailto:Danny.O'Brien@environ.ie) [mailto:[Danny.O'Brien@environ.ie](mailto:Danny.O'Brien@environ.ie)]

Sent: 31 May 2016 11:01

To: Danny O'Brien - (DECLG)

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Sea-Fisheries Protection Authority

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Údarás Chosaint Iascaigh Mhara

Tá an t-eolais san ríomhphost seo, agus in aon ceanglaín leis, faoi phribhléid agus faoi rún agus le h-agmaigh an seolaí amháin. D'fhéadfadh ábhar an seoladh seo bheith faoi phribhléid profisiúnta nó dlíthiúil. Mura tusa an seolaí a bhí beartaithe leis an ríomhphost seo a fháil, tá cosc air, nó aon chuid de, a úsáid, a chóipeál, nó a scaoileadh. Má tháinig sé chugat de bharr dearmad, téigh i dteagmháil leis an seoltóir agus scríos an t-ábhar ó do ríomhaire le do thoil.



## Danny O'Brien - (DECLG)

---

MI

**From:** Terry McMahon <Terry.McMahon@Marine.ie>  
**Sent:** 31 May 2016 15:02  
**To:** Danny O'Brien - (DECLG)  
**Subject:** RE: Urgent - Foreshore Licence Application FS 6578, Aughinish Alumina Ltd

Danny

Aughinish Alumina Ltd. has submitted an application for a Foreshore Licence to facilitate maintenance dredging at the existing jetty at Aughinish, Co. Limerick.

The purpose of the proposed maintenance dredging is to maintain design and navigational depths for shipping and to allow for the full use of the length of the jetty structure and manoeuvring area with a new unloader being provided on the jetty structure

Currently there is a requirement for maintenance dredging as there are a number of "high points" where sediments are accumulating adjacent to the jetty in Area A, B and C as shown Drawing No. 17076- 5002, Rev A, dated 29.02.2016 and Drawing No 17076- 5007, Rev A dated 29.02.2016 submitted by the applicant. The total area of foreshore involved is 2.0385 Ha comprising of 1.026 Ha at Area A, 0.1875 Ha at Area B and 0.825 Ha at Area C. The areas to be dredged are within the existing Foreshore Lease area held by the applicant.

The dredging will be undertaken by means of a bed leveller or plough dredger. Plough dredging is defined as "dumping" under the Dumping at Sea Acts, 1996 to 2009 and thus a Dumping at Sea permit from the EPA is required to carry out the proposed activity. It is noted that an application for a Dumping at Sea permit has been submitted to the EPA by the applicant (EPA Reg. No. S0026 -01)

The proposed maintenance dredging could take place at different times of year depending on the opportunities for scheduled maintenance on the jetty and the navigational areas being free of shipping. The DAS permit application submitted to the EPA is based on a maximum annual dredging quantity of 8000m<sup>3</sup> (approximately 16,000tonnes). Dredging events would typically be over a 4 to 5 day period and the volumes could vary between 1000m<sup>3</sup> and 6000m<sup>3</sup>. An 8 -year maintenance dredging programme is being requested.

Samples of sediment in each of the proposed dredge area was collected for chemical analysis. The sample locations and the results of the analysis are provided in the presented in the the document entitled "Aughinish Baseline Characterisation Report", prepared by AquaFact International Services Ltd, dated February 2016. Arsenic and Nickel concentrations marginally exceeded the lower action level at Station 3, (Area A), Zinc exceeded the upper action level at Station 1 (Area B). All other results were below the lower action level.

The distribution and transport of resuspended sediment as result of the proposed dredging is presented in the report entitled "Sediment Transport Modelling of Proposed Maintenance Dredging of the Outer and Inner Berths at the Aughinish Marine Terminal, Shannon Estuary" prepared by Hydro Environmental Ltd, dated February 2016. During the 3 or 4 day dredge events there will be a localised increase in turbidity as the plough moves and mobilises material into the water column. This will generate a localised dredge plume in the immediate vicinity of the dredge vessel. The material in suspension or in the plume will disperse over a number of tidal cycles. The tidal currents are strong in this location and the Sediment transport model completed by Hydro Environmental shows how the material will disperse across the estuary. The simulations show the plume over a number of tidal excursions is transported up in to the lower Fergus Estuary where extensive mud flats already exist. The typical suspended sediment concentration in the dredge plume varies from 20 to 100 mg/l with an average concentration of approximately 40 to 60mg/l. Higher concentrations of 100 to 200mg/l are also present within in the plume path from the disposal site. As part of the Baseline Characterisation Report Aquafact undertook background turbidity and suspended sediment sampling. Background suspended sediment concentrations inferred from the Aquafact Survey indicate that the majority of existing levels are in the range 100 to 150mg/l, with some lower levels of 50mg/l and

some higher levels considerably in excess of 250mg/l. The sediment transport modelling results indicate that the likely worst case additional suspended sediments will be within 100% of the existing suspended sediment values. For the most part additional suspended sediment concentrations would be less than 50mg/l. The levels of increased turbidity and suspended sediment associated with dredge events would be typical of occasional spikes that occur in storm or high flow events where currents will naturally generate significant sediment in suspension and increased turbidity levels. These levels reflect the normal naturally high turbidity that exists in this estuary particularly in the middle and upper estuary reaches where mud flats are present and where the large river inflows and high turbulent tidal velocities mobilise such sediments.

On the basis of the above the Marine Institute is of the view that the dredging, as proposed, will not impact on water quality in the estuary. Results indicate turbidity levels would not be significantly above background levels and increases in turbidity would be of short duration.

Considering the above and the relatively small area of foreshore that would be directly impacted the Marine Institute has no objections to a foreshore licence being granted. It is recommended that the applicant be required to hold a valid Dumping at Sea permit from the EPA prior to the commencement of any dredging activity on the foreshore.

Terry

-----Original Message-----

From: Danny O'Brien - (DECLG) [mailto:Danny.O'Brien@environ.ie]

Sent: 31 May 2016 11:17

To: Terry McMahon; Barry McDonald - (DECLG); Jimmy King (Jimmy.King@fisheriesireland.ie);

Declan.McGabhann@sfpa.ie; Manager Dau

Subject: Urgent - Foreshore Licence Application FS 6578, Aughnish Alumina Ltd

All

Please see attached request for observations on the foreshore licence application submitted by Aughnish Alumina Ltd for maintenance dredging at Aughnish Island. Details of the application can be found at <http://www.environ.ie/planning/foreshore/applications/aughinish-alumina-ltd>, while the associated D.A.S. application can be found at <http://www.epa.ie/terminalfour/DaS/DaS-view.jsp?regno=S0026-01>

As the project is time bound your co-operation in replying as a matter of urgency would be greatly appreciated.

Regards

Danny O'Brien

Marine Planning - Foreshore Unit

Dept of Environment, Community &

Local Government

Newtown Road

Wexford

Danny.O'Brien@environ.ie

053 9117366

-----Original Message-----

From: Danny.O'Brien@environ.ie [mailto:Danny.O'Brien@environ.ie]

Sent: 31 May 2016 11:01

To: Danny O'Brien - (DECLG)

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**Danny O'Brien - (DECLG)**

*Nature*

**From:** Manager Dau  
**Sent:** 29 June 2016 12:34  
**To:** Danny O'Brien - (DECLG)  
**Subject:** RE: Urgent - Foreshore Licence Application FS 6578, Aughnish Alumina Ltd

Re: Foreshore Licence application FS6578 for the proposed dredging at Aughnish Alumina Ltd. Shannon Estuary, Co. Limerick.

A Chara,

On behalf of the Department of Arts, Heritage and the Gaeltacht, I refer to the above.

Outlined below please find the Nature Conservation observations.

The Department of Arts, Heritage and the Gaeltacht would note that the operation is unlikely to have a negative interaction with Natura 2000 nature conservation sites due to the nature of works.

It is recognised that an evaluation of the potential interaction with marine mammals is clearly presented in the documentation circulated by the Department of Environment, Community and Local Government. The proponent must ensure that the operational mitigation is compliant with "Guidance to Manage the Risk to Marine Mammals from Man-made Sound Sources in Irish Waters". The latest version of this document was published in January 2014 and is available to download from <http://www.npws.ie/marine/bestpracticeguidelines/>.

Mise le meas,

Sinéad O' Brien  
Development Applications Unit  
Department of Arts, Heritage and The Gaeltacht Newtown Road Wexford

Tel: (053) 9117528

-----Original Message-----

**From:** Danny O'Brien - (DECLG)  
**Sent:** 31 May 2016 11:17  
**To:** 'terry.mcmahon@marine.ie'; Barry McDonald - (DECLG); Jimmy King ([Jimmy.King@fisheriesireland.ie](mailto:Jimmy.King@fisheriesireland.ie)); [Declan.McGabhann@sfpa.ie](mailto:Declan.McGabhann@sfpa.ie); Manager Dau  
**Subject:** Urgent - Foreshore Licence Application FS 6578, Aughnish Alumina Ltd

All

Please see attached request for observations on the foreshore licence application submitted by Aughnish Alumina Ltd for maintenance dredging at Aughnish Island. Details of the application can be found at <http://www.environ.ie/planning/foreshore/applications/aughnish-alumina-ltd>, while the associated D.A.S. application can be found at <http://www.epa.ie/terminalfour/DaS/DaS-view.jsp?regno=S0026-01>

As the project is time bound your co-operation in replying as a matter of urgency would be greatly appreciated.

Regards

Danny O'Brien

Marine Planning – Foreshore Unit  
Dept of Environment, Community &  
Local Government  
Newtown Road  
Wexford  
[Danny.Obrien@environ.ie](mailto:Danny.Obrien@environ.ie)  
053 9117366

-----Original Message-----

From: [Danny.Obrien@environ.ie](mailto:Danny.Obrien@environ.ie) [mailto:[Danny.Obrien@environ.ie](mailto:Danny.Obrien@environ.ie)]  
Sent: 31 May 2016 11:01  
To: Danny O'Brien - (DECLG)  
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MSO

Marine Survey Office,  
Abbey View House,  
Ballyshannon,  
Co Donegal

Tel: 353-071-9822400

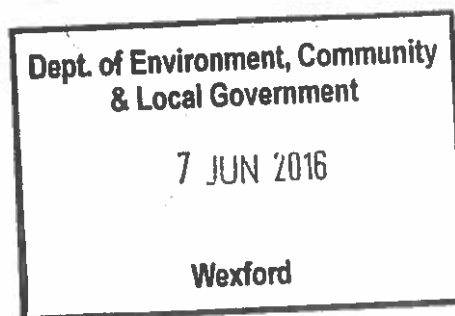
Fax: 071-9822439

Memorandum to	DECLG
Attention	Danny O'Brien
Fax No	6199408
From	Nick Cantwell
No of Pages	1
Date	31 May 2016
Reference	FS 6578 Dredging application at Aughinish Island. Co. Limerick
CC	

- This office has no objections from a navigational viewpoint to the above application.
- In order for charts and nautical publications to be updated **the applicant is required** to inform the British Admiralty Hydrographic Office at Taunton, UK, of the location and nature of the proposed works.  
(Fax: 0044 1823 284077, email: [hdc@hdc.hydro.gov.uk](mailto:hdc@hdc.hydro.gov.uk))
- **The applicant is required** to arrange the publication of a local marine notice. This local marine notice should give a general description of operations and approximate dates of commencement and completion. An advertisement in a locally read newspaper will suffice.
- **The applicant is required** liaise with the Harbour Master during all stages of the operation.
- All vessels engaged in the work should comply fully with certification requirements

Yours faithfully

*Nicholas W. Cantwell*  
N.W.Cantwell (Capt.)  
Nautical Surveyor



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Comhshaoil, Pobal agus Rialtas Áitiúil  
Environment, Community and Local Government



15/06/2015

File ref: FS 006578

**Engineering Report: Maintenance Dredging at Aughinish Alumina, Askeaton,  
Co. Limerick.**

Danny O'Brien, Marine Planning and Foreshore Unit.

Aughinish Alumina Ltd have made a Foreshore Licence application to conduct maintenance dredging to maintain charted depths at their deep water jetty and at their adjacent pilot berth on the Shannon Estuary at Askeaton, Co. Limerick.

The dredging will consist of plough dredging at three locations, two at the deep water jetty and one at the pilot berth. They are proposing an 8 year annual programme of maintenance with an annual maximum of 8,000m<sup>3</sup>.

The works are required to ensure the berths can accommodate the vessels that are essential to the working of the plant. As is the trend the size and draft of vessels is increasing all the time and so to ensure the plant is competitive to must be able to cater for larger draft vessels. These works are in the public interest.

**Recommendation**

I recommend approval of this Foreshore Licence application for the 8 year period subject to,

- The Foreshore Licence Map, Drg.No. 17076-5008 Rev. A, Drawn: 29/03/2016 shall be attached to and referenced in the licence document.
- The dredging works shall be conducted in accordance with documents submitted and specifically drawings,
  - Drg.No. 17076-5005 Rev. A, Drawn: 16/12/2015,
  - Drg.No. 17076-5006 Rev. A, Drawn: 16/12/2015,
- A valid Dumping At Sea Permit for the dredging works shall be in place and a copy of the permit shall be submitted to this department prior to the works proceeding.
- The Department shall be notified 2 weeks prior to any works proceeding.

Barry McDonald M.Eng. M.I.E.I.



## **Danny O'Brien - (DECLG)**

---

**From:** foreshore  
**Sent:** 21 June 2016 12:22  
**To:** Danny O'Brien - (DECLG)  
**Subject:** FW: Foreshore Licence application FS6578

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**From:** Foreshore EPA Marine  
**Sent:** 21 June 2016 12:22  
**To:** foreshore  
**Subject:** Foreshore Licence application FS6578

**Re: Foreshore Licence application FS6578 for the proposed dredging at Aughnish Alumina Ltd. Shannon Estuary, Co. Limerick.**

A Chara

On behalf of the Department of Arts, Heritage and the Gaeltacht, I refer to the above.

Outlined below please find the Underwater Archaeology observations.

Having considered the submitted Underwater Archaeological Impact Assessment (UAIA) Report to support the Foreshore Licence Application and Dumping at Sea Licence application, the following are the further recommendations of the Underwater Archaeology Unit of the Department.

### **Archaeological monitoring:**

1. The applicants shall engage the services of a suitably qualified **underwater** archaeologist to carry out the archaeological monitoring, under licence to this Department.
2. The monitoring archaeologist shall have the relevant experience in such work – i.e. the archaeological monitoring of marine dredging operations.
3. Provision shall be made by the applicant and their plant operators (including dredging plant and machinery operators) to accommodate the monitoring underwater archaeologist and their team to enable the full monitoring of all dredging operations.
4. It is acknowledged that the dredging will involve bed levelling, and thus there may be minimal opportunity for the archaeologist to visually inspect the dredge spoil/dredging distribution seabed material. Archaeology may only be identifiable if material is dislodged and floats to the surface. The archaeological monitoring methodology shall therefore be tailored, in consultation with both the applicant and dredged operators, to the work at hand to afford optimal opportunity to identify underwater cultural remains. Similarly, the monitoring strategy shall take account of the limitations and be tailored/scaled to include a common sense approach to the archaeological work to be carried out.
5. A dive survey licence shall be in place and thus a suitably qualified underwater archaeologist and their dive team to ensure that if potential archaeology is impacted during the course of the dredging works, that an archaeological dive inspection can take place immediately and thus ensure there is no delay in the dredging works.

6. In the event that potential archaeology is identified the monitoring archaeologist shall have the power to have dredging suspended in that area to allow for the full resolution of the archaeology. The Underwater Archaeology Unit shall be informed immediately and the applicant shall be prepared to be advised by the National Monuments Service in this regard.
7. A detailed monitoring methodology shall accompany the licence application by the engaged underwater archaeologist and shall be submitted for processing to the National Monuments Service's Licensing Section.
8. A finds retrieval strategy shall form part of the monitoring methodology.

Where archaeological material/features are shown to be present, this Department may make further archaeological recommendations. This may include preservation *in situ* (avoidance), preservation by record (archaeological excavation) or archaeological monitoring.

**Reason:** To ensure the continued preservation (either *in situ* or by record) of places, caves, sites, features or other objects of archaeological interest.

Mise le meas,

Simon Dolan  
Development Applications Unit  
Department of Arts, Heritage and The Gaeltacht  
Newtown Road  
Wexford

tel: 0539117377



**An Roinn  
Ealaíon, Oldhrachta agus Gaeltachta**  
**Department of  
Arts, Heritage and the Gaeltacht**