

Mr P Gowen

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19<sup>th</sup> April 2006

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Dear Mr Gowen

**Supplementary ES for Government View Application  
Extension of Licence Area 202 (Cross Sands) for a further 5 years**

This is to acknowledge receipt of your letter. My apologies for the delay in reply, but we have been collating the responses to the Environmental Statement update before replying individually to each respondent.

We note your concern that a press notice is apparently not necessarily required for an extension of an existing licence. As you will be aware, this application is for an extension of a licence that has already been the subject of a full Environmental Statement and public consultation, after which a favourable Government View was given.

We have the following responses to the issues raised in your letter.

**1. Proximity to the Shoreline.**

You claim that dredging licence Area 202 is '*claimed to be 9km but in fact only 4.7km off the Caistor coastline*'. We note that you regard our statement of the distance in the ES Update as '*an example of crass inaccuracy*'. Please note the following:-

- The ES Update clearly states the distance offshore to be 7km, not 9km as stated in your letter of objection.
- If you examine any nautical chart of the area, you will see that the meridian of longitude (the north-south axis) is marked in degrees and minutes of arc. One minute of arc on any meridian around the surface of the earth equals 1 nautical mile. You need merely to measure the distance of Area 202 from the coast and read off the distance in nautical miles on the meridian scale to confirm the distance. Were you to do this, you will find that the distance from the western limit of Area 202 to the coast is a minimum of 4.5 nautical miles or about 7km as stated in the ES Update (depending on what point of the coast is measured to and whether one measures from the centre of Area 202).

**2. Impact of Prior Dredging on the Seabed.**

We note your recommendation that '*it would have been far better to have studied the changes that have come about since the commencement of large scale commercial aggregate dredging during the late 1970's so as to relate the more meaningful and long term impact*'. Our response is that the techniques available for analysis of seabed topography including swath bathymetry have only recently become available. It is unlikely that the data from the 1970's would allow strict comparisons with monitoring survey data from 1995 onwards. In any event this relates to the more general question of dredging at sites that are unrelated to Area 202 which is the subject of the licence extension application.

We note your comments on the interpretation of the monitoring data. You will be aware that the information summarised in the ES update is based on a series of comprehensive bathymetric surveys carried out by leading experts in this field. The interpretation of the information was completed by HR Wallingford who were also responsible for preparation of the Coastal Impact

Study for the original licence application for Areas 202 & 436. They have recognised international expertise in the interpretation of these data, and in our view are unlikely to be in error. However, to assist you with your concerns, we have asked HR Wallingford to supply a separate response to the concerns expressed in your letter. This is enclosed.

### **3. Impact on Offshore Sandbanks.**

We note your comments on Scroby Sands. The issue is not whether such sandbank features have changed over time, but whether this is associated with aggregate dredging at Areas 436 and 202. The advice from HR Wallingford, based on the 5 year monitoring and extensive studies elsewhere including a major North Sea Sediment Transport Study is that the sandbank system is variable for reasons that are unrelated to aggregate dredging. We refer you to the HR Wallingford 5-year Review which is included in the ES Update, and to the additional letter from HR Wallingford that addresses your concerns.

### **4. Impact on the Shoreline.**

We note your comments on coastal erosion. Again, we do not doubt your concerns. These are entirely understandable to residents whose properties may be exposed to risk from coastal erosion. But it has been repeatedly shown that this is unrelated to offshore dredging for sand and gravel. The fact that coastal erosion is occurring is undeniable, but all advice indicates that this is not caused by dredging at sites located outside the sandbank system that characterises the coastal waters in this area. Again, we refer you to the original Environmental Statement for which a favourable Government View was given, and to the comprehensive 5-year Review carried out by HR Wallingford as part of the ES Update. This concludes with the following statement:- *'In our opinion, therefore, sediments within the dredging areas are very unlikely to "interact" with the sediments in the system of nearshore sandbanks, and even less so with the coastline itself.'*

### **5. Correlations of Offshore Dredging Levels with Coastal Losses.**

We note your graphical representation of offshore aggregate extraction with sea incursion and sand loss up to 1997. This appears to be a general point, rather than one related to extraction at Areas 202 and 436. You will no doubt be aware of the dangers of such 'correlations' and of interpreting these as 'cause-and-effect'. Sea incursion is related to relative changes in land and sea-level and reflects a complex balance between current rises in sea level and long term isostatic changes in the land. In recent years, sea levels have been rising at least in part as a result of global warming, whilst parts of the land-mass of the British Isles have been rising and others (including the coastline bordering the North Sea) falling. We consider that it would be superficial and a misinterpretation of the data to assume that an increase in incursion to the land on the east coast of Norfolk is a reflection of aggregate dredging in general, or activities within Areas 202 & 436 in particular.

### **6. Impact on Fishing and Biomass.**

The comments on an 80% loss of fish, the loss of biomass and other benthic species (eg., *Sabellaria spinulosa*) and the change from a more granular to more silt is a serious misinterpretation of what is stated in the ES Update. There has been no suggestion that dredging is associated with a loss of fish, although it is well-known that there has been a major decline in many commercially exploited fish species for reasons that are unrelated to aggregate dredging. Decline of commercial fish stocks is almost certainly related to serious over-exploitation by man, and is a widespread phenomenon that occurs in sea areas where no aggregate dredging takes place.

### **7. Destination and need of landed product.**

The requirement for aggregate is to meet established market needs, and was approved in the original application for a licence for Areas 202 & 436. The need and market requirements remain the same.

### **8. Cumulative Effect.**

The assumption that the material to be dredged at Area 202 'must have newly arrived' is incorrect. The application is for an extension of an existing licence to remove 1.5 million tonnes of sand and gravel that has already been approved and given a positive Government View following a full Environmental Impact Assessment and subsequent public consultation process.

The basis for objection namely 'that offshore marine aggregates dredging accelerates coastal erosion',.... 'is the main cause of beach draw-down'...and is 'exploitative of the natural longshore drift and the offshore/onshore sediment movement from offshore sand banks and natural sediment flows' is not supported by any of the evidence from extensive seabed sediment studies. The area has been the subject of a detailed Coastal Impact Study as part of the original licence application, and this has been updated with an analysis of the data from a comprehensive monitoring programme over 5 years. The results of this are reviewed in the ES Update and are included in full as Appendix 6 of the ES Update. The view of those with acknowledged international expertise is that removal of sand and gravel offshore does not have a connection with movement of material by longshore drift – which as its name implies, is associated with erosion and deposition processes that run parallel with the coastline.

### **9. Independent Evidence of the Impact of Dredging.**

Citation of cases from elsewhere, without proper supporting evidence is very misleading. The quotation from the EuroSION Project relates to potential sources of impact that have been specifically addressed in detail in both the original Coastal Impact Study and in the subsequent review of monitoring data 5-years post dredging. This review was carried out by HR Wallingford who have shown that there have not been significant changes in the offshore sandbank system that can be attributed to aggregate dredging, and that changes in wave refraction have not occurred at this site.

### **10. The Wider Impact.**

There is no evidence to show that the reported reduction in size of Scroby Sands is attributable to marine aggregate dredging in general, or to activities at Areas 202 & 436 in particular. The Coastal Impact Study Report carried out by HR Wallingford recognises the importance of offshore sandbanks, but the results of the detailed monitoring of the seabed and sandbanks adjacent to Areas 202 & 436 carried out over 5-years show no alteration that can be attributed to aggregate dredging. Indeed, the height of the sandbank immediately to the west of the dredging area has increased in height. It is recognised in the Report that such sandbank features do show some changes as a result of natural factors, and concludes that any minor changes recorded over the 5-years that monitoring has been carried out are unrelated to dredging.

### **11. Impact on Sediment Supply.**

The update of the Coastal Impact Study based on a review of the monitoring data 5-years post-dredging draws on the results of a comprehensive *Southern North Sea Seabed Sediment Study Phase 2* (HR Wallingford, 2002) commissioned by Great Yarmouth Borough Council. The relevant extracts are included in the ES Update and Appendix 1 of the HR Wallingford Report (Appendix 6 of the ES Update). The conclusions from this comprehensive study do not support the statements or conclusions in your letter. However, in an effort to meet your concerns, we have asked HR Wallingford to prepare a separate response to the points you raise, and have included this with our letter.

### **12. Shoreline Stability.**

All evidence from direct measurements of the settlement of material during dredging operations shows that particles settle very rapidly near to the site of dredging (even sand-sized particles settle within 300m). There is no evidence that sediment mobilised during the dredging process at Areas 202 & 436 has been transported from outside the offshore sandbanks onto the beaches, or that this material has resulted in a loss of 'shoreline stability' as stated. Again we refer you to the study by HR Wallingford on the Southern North Sea Seabed Sediment Study commissioned by Great Yarmouth Borough Council in 2002. This shows no such linkage. Relevant extracts from this report are included as Appendix 6 in the ES Update.

### **13. Sea Bed Cover.**

You refer to the *'binding plant root structures stabilising the seabed will be destroyed by dredging.'* This will not occur for the following reasons:-

- No seabed plants with roots occur in the offshore deposits off Great Yarmouth.
- Photosynthesis (by plants) occurs only where light penetration is sufficient. Generally this is in depths of <30m even in clear waters. In more turbid waters such as the North Sea, very little plant life occurs as depths >15m.
- Such algae as can occur at such depths do not have roots! They require a solid stable substratum (such as rocks) to which they attach by means of a 'holdfast'. Marine algae do not have 'binding root structures' and do not occur in the sandy gravels that characterise the deposits of Areas 202 & 436.

### **14. Sea Bed Recovery.**

The rate and type of 'recovery' is very dependent on deposit type. Some mobile organisms can recolonise sands and gravels very quickly, whereas others take longer. There is general agreement that 'recovery' can and does take place following cessation of dredging, but that the time required for restoration of species diversity and growth of the most slow-growing components can take several years, depending on the type of organisms that characterise the deposits.

### **15. Reduced Period of Dredging Activities.**

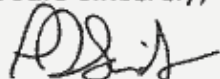
Your proposal for *'an immediate cessation of all offshore dredging operations along the Norfolk coastline'* is outside the remit of our Environmental Statement Update for Area 202. However we would remind you that the application for Area 202 is not for a new licence, but merely to extract the 1.5 million tonnes of sand and gravel from a small area of seabed of only 3.077km<sup>2</sup> for which a favourable Government View has already been given following presentation of a full Environmental Statement and consultation process in accordance with MMG 1.

### **16. Threat to the Public.**

Your presumed potential threat to the Public is based on your view that offshore aggregate dredging has caused a loss of offshore sandbanks and beach material that affords protection to the land on the Norfolk coast. The sources of potential direct and indirect impacts of marine aggregate dredging at Areas 202 & 436 on both the offshore sandbanks and the coastline have been carefully considered and reported in some detail both in the original Coastal Impact Study and in the subsequent Review of Monitoring 5-years post dredging carried out by HR Wallingford. They have acknowledged international expertise in this. We can only re-iterate that your views are not supported by either the evidence of the monitoring programme that formed a condition to the original consent, nor by the assessment of HR Wallingford. However we have asked HR Wallingford to comment further on specific points raised in your letter, and hope that this meets your concerns in an objective manner.

Thank you for your continued interest and assistance in this matter.

Yours sincerely,



Dr L.J. Seiderer  
Director  
Marine Ecological Surveys Limited.