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For the attention of: Mark Irvine, Principal Consultant, Environmental Resources Management,
Norloch House, 36 King's Stables Road, Edinburgh EH1 2EU.

Dear Mr. Irvine, Westminster Gravels Ltd : Aggregate Extraction, Area 457, Liverpool Bay.

I submit on behalf of MARINET, the Marine Issues and Information Network of Friends of the Earth Local Groups, our comments with regard to the licence application, subject to Government View, for aggregate extraction in Area 457, Liverpool Bay. Our comments are made with reference to the Environmental Statement prepared for Westminster Gravels Ltd by Environmental Resources Management (ERM) and the Coastal Impact Reports of June 2001 and April 2002 prepared by H. R. Wallingford. May we thank you for the provision of these documents.

There are four main areas on which we wish to focus our comments. The first deals with the commercial need for sand and gravel extraction from Area 457. The second deals with the impact on marine life, and in particular fish. The third deals with pollution. The fourth deals with the terms of the licence, should it be granted.

Need for Aggregate Extraction from Area 457.

We are not convinced that there is a commercial need for aggregate extraction, principally sand, from Area 457.

It is stated in the Environmental Statement (ref. Section 2.6.1, page 2-6):

“UK marine dredged sands and gravels are predominantly used in the construction industry, notably in the production of concrete and various other civil engineering activities such as beach nourishment and fill projects.”

And it is stated in the Environmental Statement that the mineral resource from Area 457 will be used for the following purposes (ref, Section 2.1 , page III):

“The resource is suitable for a wide range of end uses including the manufacture of concrete, general building and construction, beach nourishment, coastal defences and as fill for reclamation projects.”

The question, therefore, is whether there is a need for the minerals from Area 457 for these specific purposes ? In seeking to answer this question, we will deal with the manufacture of concrete and general building and construction purposes separately from beach nourishment, coastal defences and fill for reclamation projects.

In justification of the commercial need for “construction quality aggregates” the Environmental Statement states (ref. Section 2.6.3 , page 2-9):

“Marine aggregate from Area 457 will predominantly be used to meet the demand for construction quality aggregates for Lancashire and Merseyside. WGL market studies indicate that a local requirement exists in order to supplement diminishing land reserves. The material could also be used for beach nourishment and flood protection projects for the north Wales and Lancashire coastlines. Marine dredged material can closely match that which is found naturally on beaches and is therefore generally considered to be more suitable from an environmental, nature conservation, amenity and technical point of view than land won sand and gravel or other materials.”

Is there a need for marine sand and gravel from Area 457 to meet the demand for construction quality aggregate in Lancashire and Merseyside ?

The Environmental Statement cites the North West Regional Aggregates Working Party, produced by Cheshire County Council’s Environmental Planning Service (NWRAMP, 2000), as stating that “Increasingly the land based sources of fine aggregate are becoming scarce and the quality of product entering the market is becoming poor . . . [and] more sustainable methods of supply should seek to maximise the use of secondary and marine aggregates.” Ref. Section 2.6.3 , page 2-10.

With regard to terrestrial sources of supply, it is stated in Section 2.6.3 , pages 2-11 and 2-12, that in Lancashire “the Lancashire plan [Minerals and Waste Local Plan, Lancashire County Council,1999] envisages that prior to 2006 additional land for the extraction of approximately 3.2 million tonnes of high-grade sand will be required. Marine aggregates could supplement or replace this demand thereby reducing the requirement for new terrestrial sites.” In respect of Cheshire, it is stated that the “Cheshire Replacement Minerals Local Plan was adopted in June 1999. During 1999 the production of construction sand in Cheshire was 2,480,000 tonnes representing a 7.8% increase on 1998 levels (2,300,000 tonnes). However reserves of sand and gravel decreased on the previous year falling from 21,700,000 tonnes in 1998 to 19,300,000 tonnes in 1999. The landbank decreased slightly from 8.6 years in 1998 to eight years in 1999, although this still meets the MPG6 guidelines of seven years.” In respect of Cumbria, it is stated “During compilation of the plan [Minerals and Waste Local Plan, Cumbria County Council, 2000] there was no indication that marine aggregates will be landed in Cumbria and given the existing land resources it was not envisaged that material will be imported.”

Is there, therefore, a shortage of terrestrial resources of sand in the North West ?

The only area in which the Environmental Statement cites clear evidence of need (assuming no new terrestrial resources are developed) is in respect of Lancashire, all other areas having adequate resources at the present time.

Aggregate is currently extracted from marine sources in the north west by four companies (United Marine Dredging Ltd, Norwest Sand and Ballast Company, North West Aggregates Ltd and South Coast Shipping Company Ltd) from six licence areas (Area 331 to the north of the proposed licence area, Areas 392/393 to the south of the proposed licence area, and Areas 175/193/195 which are located in the mouth of the R. Mersey). The production yield from these six licensed sites is stated in the Environmental Statement (ref. Section 2.6.3 , page2-12) as:

“The total annual extraction for all sites combined is approximately 1,385,000 tonnes. In 2001 a total of 492,683 tonnes was dredged, however an additional 1,154,088 was also taken as contract fill. The aggregates dredged from these areas are used principally by the local construction industry with landings at wharves in the north west of England and the north coast of Wales.”

It would therefore appear that the total marine aggregate extraction figure for the north west during 2001 was 1,646,771 tonnes (492,683 tonnes + 1,154,088 tonnes), of which only 492,683 tonnes is recorded as having been landed at north west ports (ref. Table 2.4, page 2-7).

It must therefore be asked, what was the end use of this additional extracted tonnage of 1,154,088 tonnes in 2001 ? In short, what does the term “contract fill” exactly mean, and was this additional tonnage used by the construction industry for general building and construction purposes ? The Environmental Statement fails to address these questions.

Also, given that this additional tonnage is not being recorded in Table 2.4 for 2001, what is the case regarding *actual* extraction from the current six licensed sites during the years prior to 2001 ?

These would appear to be very pertinent questions, for it would appear that the *actual* tonnage being extracted from marine sources in the north west is greater than the figure being cited in the Environmental Statement.

If this is so, is there any need for an additional licensed area (Area 457) ?

In the Environmental Statement it is stated that the annual yield from Area 457 will be 1,200,000 tonnes per annum. This yield is very close to the figure of unrecorded yield from the six presently licensed sites during 2001 (1,154,088 tonnes).

This apparent discrepancy therefore suggests that there is no shortfall in meeting aggregate demand from marine sources at the present time, and that the only reason why Westminster Gravels Ltd is seeking an application for Area 457 is because it currently has no licensed extraction area in Liverpool Bay.

In short, there is no shortfall in supply from marine sources, either to meeting existing demand or to meet any anticipated future shortfall from terrestrial sources . And, the reason why Westminster Gravels Ltd want this licence is because they want to participate in a market from which they are currently excluded (by absence of a licence). Thus, the argument of true need has not been substantiated.

This position would appear to be confirmed by the statement in Section 2.6.4 , page 2-12 of the Environmental Statement:

“It is not practical or economic to transport relatively low value material, such as sand, long distances by road or sea. WGL consider that the location of the licence application site is ideally placed to serve local requirements and has not identified any other potential licence areas within the area with sources of this type and quality of material. WGL do not have another source of material in this area to provide for local markets”.

Therefore, we must assume that the unrecorded figure of 1,154,088 tonnes from the current six licensed sites for 2001 is being used to supply the north west market (for it is uneconomic to transport it outside the north west area); and, that Westminster Gravels Ltd admit that they currently hold no licence which permits them to access this market whose supply is, in reality, already being met by Westminster Gravels Ltd's competitors. Therefore, WGL's application is motivated solely by self-interest rather than the objective needs of the market.

WGL also state that sand from Area 457 could be supplied for the purposes of beach nourishment, and coastal/flood defences. In this regard, it should be noted:

1. The Environmental Statement provides no evidence of any coastal area in the north west requiring beach nourishment. This statement of need is therefore unsubstantiated and unproven.
2. H. R. Wallingford state in their June 2001 report "There remains the general concern that dredging is removing a valuable resource. It should be pointed out that dredging would remove material considerably coarser than the native beach material. It would be worth carrying out further monitoring of the beach and seabed sediments, to demonstrate that dredging will remove only a very small proportion of material in the beach sand size range." (Ref. Conclusion No. 7 , page 24). It is therefore clear that beach sand is different from the sand to be dredged from Area 457 and, thus, the argument of need based on ability to supply potential beach nourishment demand is invalid. Also, in addition to beach sand and dredged sand being different in type, it is also suggested that further monitoring is required to confirm that dredging will only remove a very small amount of the fine grained sand which is required for the natural/artificial regeneration of the north west's beaches. If the H. R. Wallingford hypothesis is correct, this would also invalidate the argument that dredging in Area 457 is required for artificial beach nourishment. The Environmental Statement provides no evidence of this additional recommended monitoring having been undertaken.
3. With regard to coastal defences, certain areas of the north west's coast are defended by naturally formed sand dunes. These sand dunes are generated by natural processes and sand movement within Liverpool Bay. Sand extraction from Area 457 can in no way contribute to the enhancement of these natural processes. At best it can be neutral, and there is a possibility that its contribution could be negative.
4. With regard to hard coastal/flood defences, the primary material required will be stone. Area 457 cannot contribute to this need.

Accordingly, with respect to the overall argument of need, we conclude that the case for mineral extraction from Area 457 is unproven and, in many important respects, unsubstantiated.

Impact on Marine Life.

Of particular concern to us regarding the proposal to licence Area 457 is the impact on fish and shellfish communities, particularly fish, in Liverpool Bay.

Commercial over-fishing in the Irish Sea has led to the near collapse of many commercial stocks (e.g. haddock, cod) and in order to preserve these commercial fisheries it is currently proposed (EU Common Fishery Policy) to cease commercial fishing of certain species for an

indefinite period. Therefore, any activity which will potentially damage these commercial fish stocks must be examined very carefully.

The Environmental Statement records (ref. Section 4.6.2): “A number of fish species spawn in Liverpool Bay throughout the year and use the area as a nursery ground. Figure 4.2 shows the main spawning areas and commercial target species within the bay. It can be seen that a number of species spawn directly within, or close to, the proposed licence area i.e. sprat, whiting, sole, cod and plaice. “

The Environmental Statement makes the further additional observations:

1. “ As discussed in Section 4.6.1 , Liverpool Bay is an important spawning and nursery area for a number of species of fish and shellfish. The relative importance of the proposed licence area within the wider Liverpool Bay spawning and nursery areas is unknown.” (ref. Section. 4.6.5 , page 4-16).

2. “Important commercial fish and shellfish i.e. sole and scallops, spawn in the area and their eggs will be at risk from smothering by sediment.” (ref. Section 5.2.10 , page 5-9).

The Environmental Statement therefore recognises that aggregate extraction in Area 457 will potentially have a significant impact on commercial fish stocks, primarily by damaging their spawning area and nursery. The extent of this potential damage remains unquantified.

It is to be noted that if this licence were to be granted, the period required for the extraction of 1,200,000 tonnes would be approximately three months per annum, and that the typical residence time of the dredger would be 84 days per annum (ref. Table 2, Operational Scenarios considered for Dredging in Liverpool Bay, Annex D, page 6).

It must therefore be asked (which, it must be noted, the Environmental Statements fails to do) whether there is an optimum period in the year for dredging to take place so as to minimise the impact on commercial fish spawning and nursery requirements ?

The answer to this question is, in fact, provided by Table 4.2. in the Environmental Statement.

Here it is shown that the optimum period (the period having least impact on the spawning and nursery periods of commercial fish species in Liverpool Bay) is from mid-September until late November. This is a period of nearly 2½ months and capable of providing the typical residence time required of 84 days.

We therefore recommend that, if the licence were to be granted, there should be an operational condition to the licence which requires dredging to be confined to the period from mid-September to late November.

Pollution Issues.

It is to be noted that Area 457 is adjacent to the dredged spoil dumping ground in Liverpool Bay (the dumping ground adjoins Area 457/3).

The Environmental Statement correctly observes that Liverpool Bay sediments contain elevated levels of metals.

These elevated levels of metals will be particularly evident in the sediments of the dumping ground adjacent to Area 457. However, it is to be noted that the Environmental Statement and its associated studies have not recorded the levels of these metals in the sediments of the dumping ground. Nor has the Environmental Statement sought to evaluate or record the level of these metals in Area 457, particularly with regard to areas of mud and silt within Area 457. In addition, those levels and figures which are provided by the Environmental Statement have ignored mercury and all the toxic *artificial chemicals* which have been discharged over many years by the chemical industry situated on the banks of the Mersey estuary, and which are known to contaminate Liverpool Bay sediments to a very high degree.

The record provided by the Environmental Statement of toxic substances and the level of these substances within the sediments of Area 457 is therefore seriously deficient. Without a proper record of the nature of these materials and the levels at which they are present within Area 457, it is wholly impossible to say that dredging will result in no adverse impact to the environment.

Adverse impact can arise by a number of means. Dredging will cause resuspension of seabed materials into the water column, and therefore these toxins may be redistributed throughout Liverpool Bay. Also, resuspension of these toxic materials will make them available for absorption by juvenile fish and other forms of marine life (some of which the juvenile fish may consume). As a result, the commercial fishery in Liverpool Bay may become seriously contaminated (over and above existing levels of contamination) by chemical toxins due to dredging activities in Area 457.

This issue has been given no serious evaluation in the Environmental Statement. It is a major deficiency and, until it is remedied and the evaluation supplies satisfactory answers to this issue of concern, it is our recommendation that the licence application be refused.

It is also to be noted that the Environmental Statement makes no mention at all of the contamination of Liverpool Bay sediments by radionuclides discharged into the Irish Sea over the past 50 years. The range of radionuclides includes the transuranic radionuclides (Americium and Plutonium), and levels are significant in seabed sediments in Liverpool Bay, particularly in areas of mud and silt. Resuspension of these sediments may cause considerable problems. Until the Environmental Statement has undertaken a full and proper assessment of this issue, it is our recommendation that the licence application be refused.

Of course, it should be noted that the Environmental Statement states (ref. Section 3.4.8 , page 3-10) “. . . the target source is clean sand and known areas of sediments containing high levels of mud or silt will actively be avoided thus further decreasing the potential re-suspension of fine material and organic matter.”

However, the accuracy of this statement is very doubtful. Not only does Figure C4.2 of the Environmental Statement (ref. Annex C) show that silt/clay is widely distributed throughout Area 457 and is present in the majority of the samples taken at the sampling stations (thus making avoidance of this material a practical impossibility), but also Table C4.5 (ref. Annex C , page C25) records that silt and clay constitutes 4.5% of the dredgeable material on the seabed of Area 457. Therefore, if 1,200,000 tonnes of material is dredged annually (as forecast by Westminster Gravels

Ltd), then a figure of over 50,000 tonnes of silt and clay will be dredged from the seabed of Area 457 annually.

This is a far from insignificant volume of silt and clay, especially given the elevated levels of metals, artificial chemicals and radionuclides which will be present in it. We believe that the dredging of this volume of silt/clay material reinforces our belief and recommendation that the licence application be refused until such time as these pollution issues have been properly addressed, and the question of their environmental impact is understood and can be safely resolved.

Terms of the Licence.

It is clear from our earlier observations that we do not believe the licence is justified by need and that we do not believe it should be granted until certain pollution issues are demonstrably resolved; and, if it were to be granted, that it should operate only between mid-September and late November in order to protect the spawning and nursery of commercial fish species.

However there is a further matter which concerns us, and whose consideration is largely absent from the Environmental Statement. This is the question of future monitoring of the dredged site should the licence be granted, and the nature and terms of that monitoring.

In any application of this nature, there is always a large unknown in terms of environmental impact. On occasion, the current Environmental Statement admits this; but, there are times when the Environmental Statement asserts that there will be no adverse impact and such an assertion is based on very slender evidence e.g. pollution issues.

Any decision in this matter (the determination of the licence) should be based on the precautionary principle. This principle states that a decision in favour should not be given if there are serious concerns about the environmental impact even though clear scientific evidence may not exist at the present time; and, if there are serious concerns and yet the decision does go in favour of granting the licence because of greater overriding imperatives, then there should be continuous evaluation of the decision to proceed in order to ensure that safety of the environment is assured.

The Environmental Statement offers no definitive statement concerning a future monitoring regime of mineral dredging in Area 457, other than to say that “a programme of environmental monitoring will be carried out by WGL. The scope of the monitoring will be agreed with the ODPM and DEFRA and will be specified in the licence conditions. It is likely to include bathymetric surveys, to ensure that extraction levels are within those specified in the licence conditions and to safeguard the integrity of other seabed structures such as pipelines and cables.” (ref. Section 2.7, page 2-14).

Given the serious possibility of damage to commercial fish species and environmental complications arising from toxic materials in the sediments it is essential to take a precautionary approach and, if a decision is taken to grant the licence, then it must mean that these concerns are continuously monitored during the operation of the licence. At the present time, none of these matters will be monitored as a condition of the licence.

It is imperative, in our opinion, that the well-being of the commercial fish species and the environmental impact of resuspension of toxins in the sedimentary materials are maintained under

close observation, and this monitoring requirement is made a clear condition of the licence. Further, should adverse consequences become apparent as a result of the monitoring, then a condition of the licence should be that dredging operations are terminated until such matters can be safely resolved.

Also, it is imperative that the records of this expanded monitoring regime are placed on the public record. Future applications to dredge sand and gravel from Liverpool Bay and other marine waters can only be properly assessed in terms of environmental impact if *existing* applications are comprehensively monitored and the results placed on public record. Failure to follow this principle is not only reprehensible practice, it is also contrary to the principle of sustainability which requires decisions to be evaluated in terms of their implications for future generations. If existing practices are not thoroughly monitored, then decisions about what is sustainable or unsustainable, both now and in the future, are impossible to determine.

We trust that these observations will be of assistance to you in determining how to progress the application to extract minerals from Area 457 of Liverpool Bay, and that they will form part of your consideration should you decide to submit the licence application in order to obtain a Government View.

Yours sincerely

S. D. Eades

On behalf of
MARINET
Friends of the Earth

