



Report on
Experimental Disposal of Material
in Poole Harbour
May – July 2008





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Following publication of the Poole Harbour Commissioners' Environmental Statement/ 'Poole Harbour Approach Channel Deepening and Beneficial Use of Material' published in November 2004, the Commissioners carried out a capital dredge of the approach channels to the port, completed in February 2006 under FEPA Licence No. 32691/05/1.

The Environmental Statement developed a Sediment Management Plan for Poole Harbour (Appendix 1) which works in conjunction with Poole Harbour Commissioners' Maintenance Dredging Policy, developed in June 2005 and due for review in 2011 (Appendix 2).

The Poole Harbour Maintenance Dredging Protocol (Appendix 3) was approved by the Board of Poole Harbour Commissioners in April 2008. PHC have signed up to the proposed Maintenance Dredging Protocol, as requested by Defra, (Appendix 4) and are at present developing the first draft, alongside Natural England.

As a result of the experiments carried out during the capital dredging process, the Sediment Management Plan was further developed, as outlined in the Monitoring Report of August 2007 (relevant extracts from Section 4 shown below)

- 4.2 It is a requirement of the approvals for the Harbour Deepening that the Harbour Commissioners' Sediment Management Plan is developed to minimise the amount of fine material taken to sea as a result of maintenance dredging within the Harbour.
- 4.3 The Sediment Management Plan explores the possibility of using agitation dredging to displace the silt fraction from the main shipping channels. It also suggests a system of allowing disposal of small amounts of fine material from third party dredging at a suitable location within the Harbour. These actions would reduce the total amount of fine material being lost from the Harbour.
- 4.4 Following monitoring and the findings of the agitation dredging experiment during the dredging works, this concept has been modified. HR Wallingford have carried out more detailed modelling of various potential disposal positions in the Harbour. Discussions are now taking place with the regulators on the concept of controlled placement at one or more of these positions, of silt dredged from the main shipping basin using the Commissioners' dredger *CH Horn*. This will be closely monitored, and the information used to develop a disposal regime which will allow most of the fine material dredged within the Harbour to be disposed of in a sustainable manner. It is expected that this process and the necessary approvals and monitoring regimes will take some time to develop.

On the basis of 4.4 above, and as indicated in the HR Wallingford Report of February 2005 (Appendix 5), Poole Harbour Commissioners received an experimental dumping licence (FEPA Ref 33952/08/0) to dispose of 10,000m³ of sediment on the Brownsea Island disposal site.

The Works

The Commissioners' grab dredger, *CH Horn*, disposed 9,600m³ of sediment during the period 20th May to 30th July 2008, at a maximum rate of 360m³ per 24 hour period. A summary of the disposal days is enclosed (Appendix 6)

The dredger dribble discharged, taking approximately 5 minutes to discharge each load as it travelled the length of the disposal site. Track plots over the dumping ground are shown (Appendix 7).

The Commissioners purchased two turbidity monitoring buoys before the experimental monitoring dredge commenced and these were placed throughout the duration of the works as shown in Appendix 8. The buoys were positioned as a result of studying the HR Wallingford report, reasonably close to the disposal ground, in an effort to measure a change in turbidity in the water. A typical day's printout is included as Appendix 9, showing very little registry of material. A third buoy, which includes a current meter, has now been purchased, and these three buoys are operating around the harbour with a live link being available at <http://www.triskelmarine.co.uk/cgi-bin/puboverview.cgi>. They are being positioned to enable the Commissioners to build up further information on the sediment activities within the harbour.

Poole Harbour Commissioners have carried out hydrographic surveying of the disposal site before and after the works. These are shown on Dwgs No. HS1528 and HS1529 respectively (Appendix 11).

The surrounding area of the harbour has been pre- and post-surveyed, and a colour chart showing the differences in levels on the disposal ground before and after the operation is enclosed (Appendix 10).

Conclusion

Monitoring of the operation shows no significant changes to the harbour, and has thus far not been of sufficient quantity or duration to have a quantifiable effect. The Commissioners have applied for a licence to continue the experiment for a second year in order to confirm the predictions of the HR Wallingford Report (Appendix 5). It is proposed that silt is taken from a wider location, as outlined in Dwg 210-219a (Appendix 12), and that a quantity of 20,000m³ is disposed over a full twelve month period. Chemical samples have been taken and sent for analysis to Cefas under the Commissioners' Maintenance Dredging FEPA Licence No. 33037/07/1.

List of Appendices:

1. Poole Harbour Approach Channel Deepening EIA: Sediment Management Plan (Royal Haskoning)
2. Poole Harbour Commissioners Maintenance Dredging Policy
3. Poole Harbour Maintenance Dredging Protocol
4. Acceptance letter to Defra agreeing to the Protocol
5. HR Wallingford Report on 'Dispersion Modelling of Sediment Recycling in Poole Harbour', dated 24 February 2005
6. CH Horn Disposal Logs
7. Track plots over Disposal Area
8. Position of 2 monitoring buoys 20th May – 30th July 2008
9. Typical turbidity buoy readings
10. Changes in Levels over Disposal Area
11. Before and After Hydrographic Survey of Disposal Area
12. Proposed Sediment Dredging Area, Dwg 210-219A

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