MONITORING DURING DREDGING OF RIVER FRONTAGES

Monitoring will use a combination of a boat following a defined pattern of transects and fixed monitors deployed from buoys.

The transect monitoring should be carried out four times over each tidal cycle: centred on the dredging position at slack water on each of low and high water and centred downtide of the dredging position at mid-flood and mid-ebb. The pattern is shown schematically overleaf. At slack water, this should be centred on a transect in line with the dredging. When the tide is running, this transect should be the uptide end of the monitoring pattern. The monitors should normally be set 1m below the water surface and should measure and record turbidity, dissolved oxygen and geographic position at an interval equivalent to a spacing of not more than 20m between successive reading positions.

The fixed monitors should be deployed 1m below surface from buoys close to the southern edge of the navigable channel (based on dredging occurring on the north side of the river) ~200m along channel from the dredging site. They should measure and record turbidity and dissolved oxygen at 15-minute intervals and transmit data or alarms to the dredger. If data are transmitted, alarms should be generated from them.

If four consecutive turbidity measurements from either fixed monitor exceed 25 FTU, an alarm shoud be triggered and a transect survey shall be undertaken. Dredging may continue but with particular care to minimise the release of sediment.

If a transect survey detects turbidity exceeding 50 FTU at any point nearer the southern bank than the centreline of the channel, the dredging effort must be reduced or otherwise modified to reduce the release of sediment. Reduced transect surveys to detect whether the zone in which turbidity exceeds 50 FTU extends to the south of the centreline of the channel should then be repeated at intervals not exceeding 30 minutes until two consecutive surveys demonstrate that it does not.

If four consecutive turbidity measurements from either fixed monitor exceed 50 FTU or four consecutive transect surveys detect turbidity exceeding 50 FTU at any point nearer the southern bank than the centreline of the channel, a further alarm should be triggered and dredging must cease until two consecutive turbidity measurements from that monitor are less than 25 FTU. Subsequent dredging effort must be reduced or otherwise modified to reduce the release of sediment.

If four consecutive dissolved oxygen measurements from either fixed monitor are lower than 5 mg/l, the dredging effort must be reduced or otherwise modified to reduce the release of sediment.

If the next four consecutive dissolved oxygen measurements from either fixed monitor are lower than 5 mg/l, dredging must cease until two consecutive dissolved oxygen measurements from that monitor exceed 5 mg/l. Subsequent dredging effort must be reduced or otherwise modified to reduce the release of sediment.

The Environment Agency acknowledges that natural sources may lead to higher background turbidity than the 25 FTU and 50 FTU or to dissolved oxygen concentration lower than 5 mg/l. If this is the case, the Agency will be prepared to discuss temporary relaxation of these thresholds.