

Note / Memo

HaskoningDHV UK Ltd.
Industry & Buildings

To: Marine Management Organisation
From: Royal HaskoningDHV
Date: 18 May 2022
Copy: Joshua Riley; Jamie Ellis; Paul Salmon; Matt Greaves; Blair Davies.
Our reference: PC1084-SB-EN-NT-EV-1124
Classification: Project related

Subject: South Bank Phase 1 (MLA/2020/00506) Updated Scheme of Monitoring – May 2022

1 Introduction

South Tees Development Limited (STDL) has a marine licence for Phase 1 of the South Bank Quay project (L/2021/00333/1).

Condition 5.2.7 of the marine licence states:

'The dredging activities approved by this licence may not commence until such a time as a scheme of monitoring has been submitted to, and approved in writing by, the Marine Management Organisation. This must be submitted at least 10 weeks prior to the commencement of activities. The scheme shall include:

- *Baseline assessment prior to commencement.*
- *Programme to monitor dissolved oxygen levels and turbidity (where appropriate)*
- *Programme of post-implementation monitoring. The scheme must be fully implemented and subsequently adhered to, in accordance with the timing/phasing arrangements embodied within the scheme, or any details as may be subsequently agreed, in writing by, the MMO.*

If it is deemed that any parts of this scheme are no longer required, written representation must be submitted to MMO for written confirmation prior to dredging works commencing.

Reason: To monitor impacts to water quality during dredging.

This Scheme of Monitoring has been prepared to discharge Condition 5.2.7 of the marine licence and to close out return 'MLA/2020/00506/R8' on the Marine Management Organisation's (MMO's) Marine Case Management System (MCMS).

2 Proposed monitoring

2.1 Environmental effects

The Environmental Impact Assessment (EIA) Report (Royal HaskoningDHV, 2020) predicted that during dredging associated with the South Bank Quay project that sediment suspended within the dredging plumes will fall to the riverbed, either soon after disturbance or spillage during the dredging operation (for coarser-grained sediment fractions), or at a point in time within a few minutes to a few hours after this if it

is carried in suspension by the prevailing currents (for finer-grained sediment fractions). Near surface predictions are presented in **Figure 2.1**. Note that near bed predictions are very similar, so are not presented separately here. It should also be noted that these predictions are for the cumulative effects of Phase 1 and Phase 2, therefore very much represent a worst case scenario.

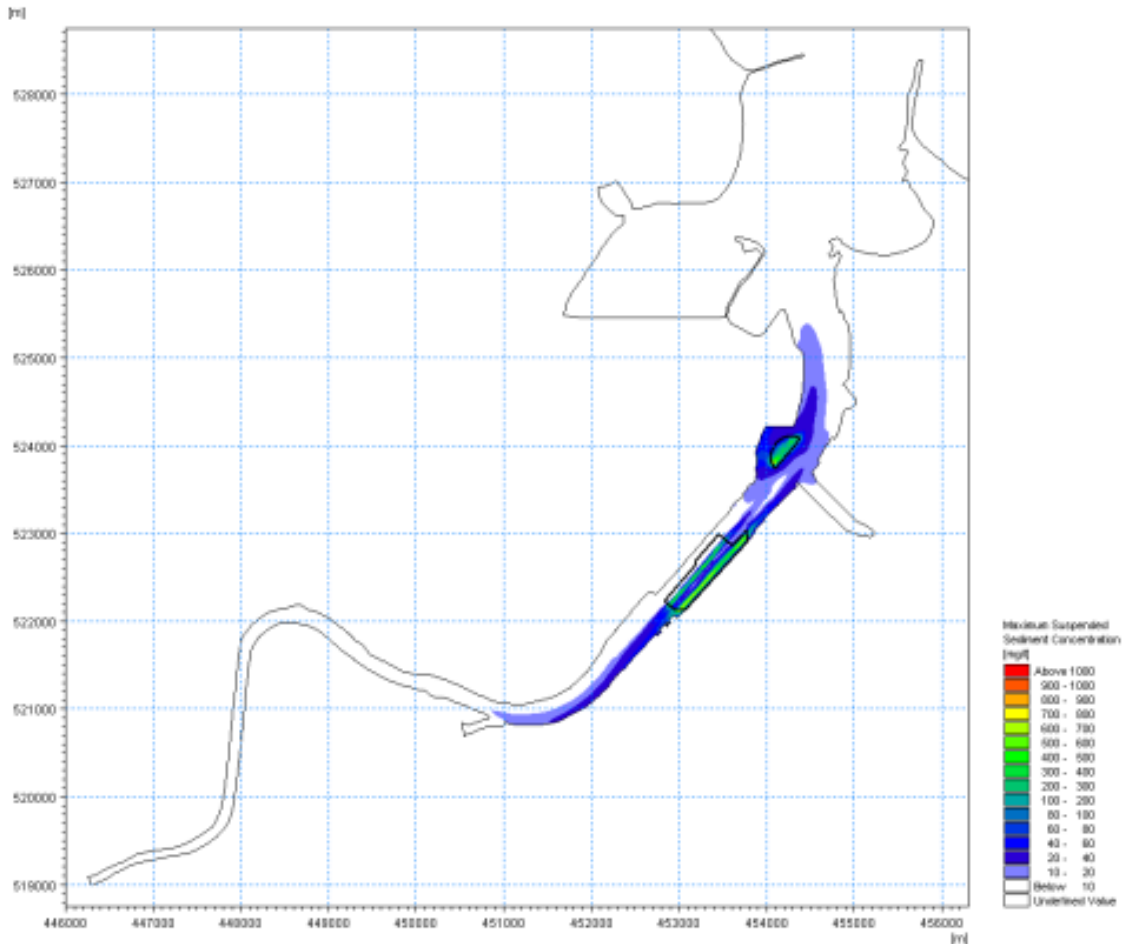


Figure 2.1 Maximum enhanced suspended solids concentrations (near surface layer) arising from dredging activities during Phase 1 and Phase 2 cumulatively (i.e. worst case)

2.2 Monitoring

Monitoring will be undertaken for the entire duration of dredge activities associated with Phase 1 of the South Bank Quay project, as required by condition 5.2.7 of the marine licence (L/2021/00333/1). Four monitoring buoys will be installed as soon as possible in advance of the proposed dredging works as shown in **Figure 2.2**. Indicative locations for the deployment of these monitoring buoys have been selected on the following basis, although the final placement of the monitoring buoys will be subject to agreement with PD Teesport (PDT) as the Harbour Authority:

- Site 1: Located outside the predicted zone of influence (to act as a control during dredging within the turning circle).
- Site 2: Located within the predicted plume associated with dredging in the turning circle.
- Site 3: Located within the predicted plume associated with dredging in the quay area.

- Site 4: Located outside of the predicted zone of influence (to act as a control during dredging within the quay area).

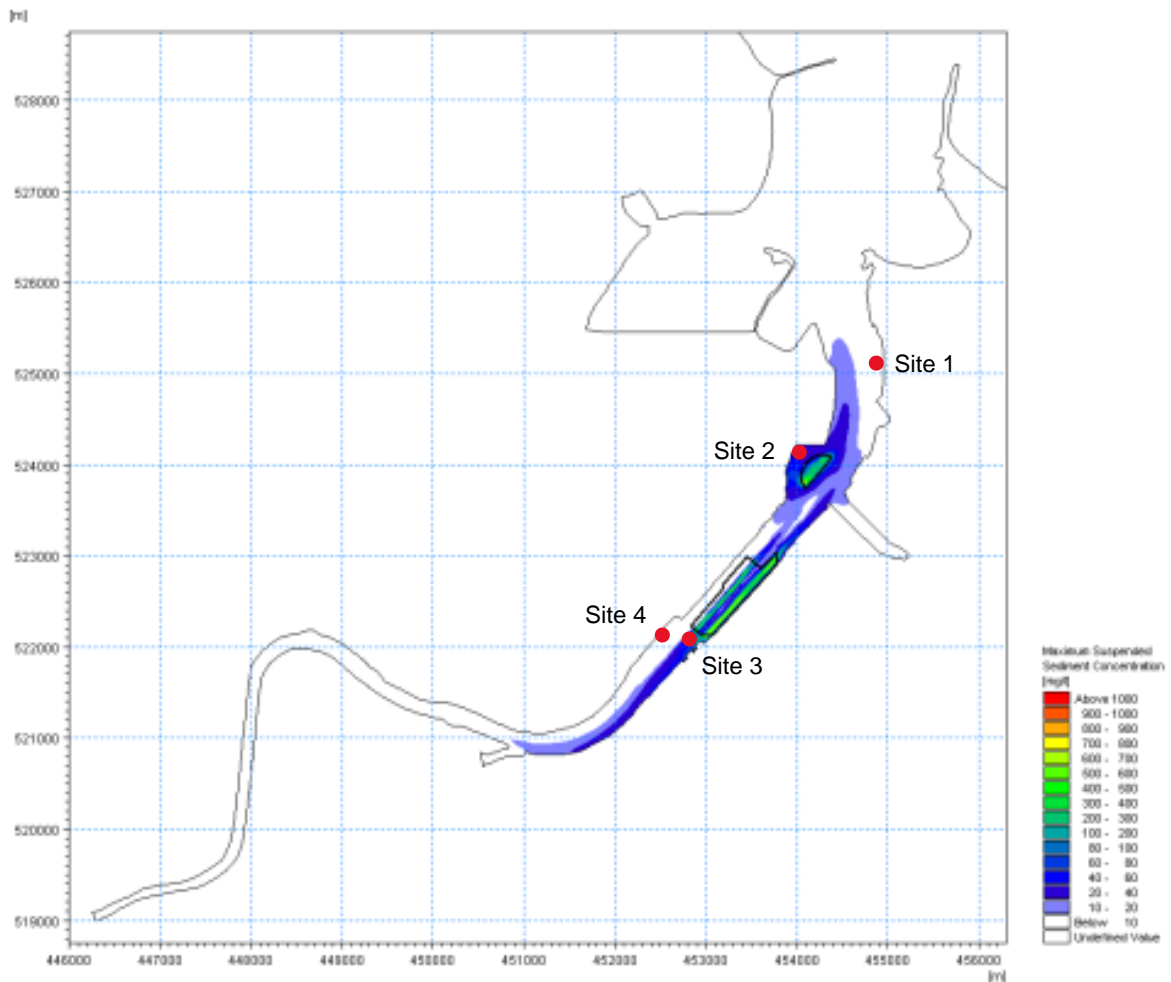


Figure 2.2 Proposed locations for monitoring buoys

Instruments fixed to the monitoring buoy chains will monitor dissolved oxygen, turbidity (in Formazin Turbidity Unit (FTU) – see **Section 2.3**), salinity and temperature at 1m above the estuary bed and 1m below the surface. It should be noted that it is not practicable to locate monitoring buoys within the dredge footprint as they would have to be removed to undertake the dredging works, therefore the locations of monitoring buoys are proposed to be located close to the boundaries of the dredge footprint (noting that ultimate locations will be determined through agreement with PDT).

2.3 Additional baseline information

PDT has a water quality monitoring buoy located at Tees Dock, approximately 10m upstream of the Harbour Master's Landing as shown in **Figure 2.3**. The coordinates of this monitoring buoy are:

- Latitude 54° 36.234'N, Longitude 1° 9.672'W
- British National Grid: Easting 454281.75, Northing 523513.77

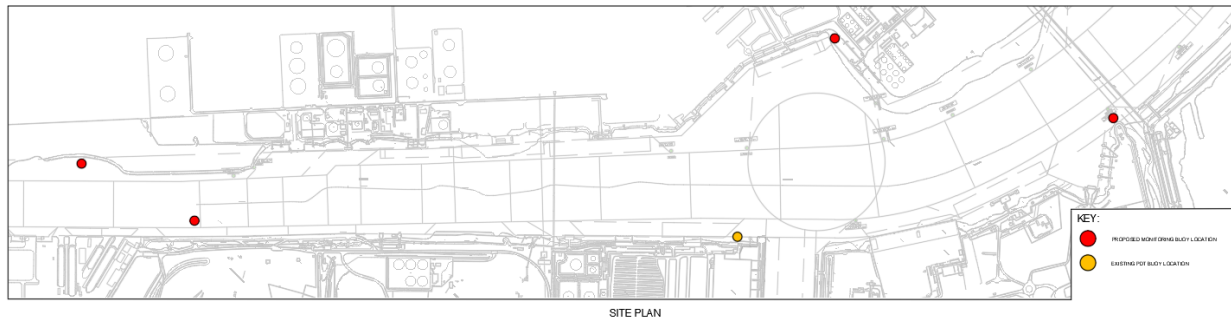


Figure 2.3 - PDT Teesport Monitoring Buoy Location (illustrated by the orange circle)

PDT's monitoring buoy records dissolved oxygen concentrations in mg/l and turbidity in FTUs.

The data that has been (and continues to be) recovered by PDT's monitoring buoy could provide additional information regarding the baseline in the estuary to supplement the baseline data collected by the four monitoring buoys to be installed. It is understood from discussions with PDT that the monitoring buoy has been in place for a number of years and therefore provides a longer-term dataset. STDL has consulted with PDT prior to submission of this Scheme of Monitoring, who have confirmed that the monitoring data can be utilised for the South Bank Quay project.

2.4 Timeframe

The monitoring buoys will be deployed a minimum of one week (seven consecutive days) prior to commencement of dredging and remain in place during the dredging, plus a minimum period of one week (seven consecutive days) after dredging operations have been completed. This timeframe is considered sufficient given that the modelling indicates the majority of the sediment will fall to the riverbed, either soon after disturbance or spillage within a few minutes to a few hours (Royal HaskoningDHV, 2020). As a result, one week of monitoring post-completion of the dredge is likely to be adequate to illustrate a return to baseline conditions.

3 Reporting

All recorded data will be collated and summarised in a short report alongside dredging activity logs. The report will include:

- Sampling methodology.
- Dredging activity logs.
- Any difficulties encountered during sampling and changes proposed as a result.
- All data produced by the four buoys.
- Cross-referencing of buoy data with fish-count data as recommended by the MMO.

Recorded data (i.e. data recovered from the monitoring buoys) will be shared with the Environment Agency upon completion of the licensed activities, no later than 10 working days after their completion. The MMO will also be sent a copy within seven days of the data being issued to the Environment Agency. The full data report will be provided within two months of dredging activities being completed.

4 References

Royal HaskoningDHV (2020). South Bank Quay EIA Report.