



# Marine Management Organisation

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**Your Reference:** TR030003  
**Our Planning Inspectorate  
Reference:** 20010091  
**Our Internal Reference:**  
DCO/2017/00001

## By email only

20 March 2018

Dear Panel,

### **RE: TILBURY2 – SECTION 89 AND THE INFRASTRUCTURE PLANNING (EXAMINATION RPROCEDURE) RULES 2010: EXAMINING AUTHORITY’S “RULE 8 LETTER”**

The Marine Management Organisation (MMO) has reviewed the Examining Authority’s (ExA) ‘Rule 8 Letter’ dated 26 February 2018.

The MMO is an interested party for the examination of Development Consent Order (DCO) applications for Nationally Significant Infrastructure Projects (NSIPs) in the marine area. The MMO received notification on 29 November 2017 stating that the Planning Inspectorate (PINS) (on behalf of the Secretary of State for Business, Energy and Industrial Strategy) has accepted an application from Port of Tilbury London Limited (the Applicant), for a DCO for the Tilbury2 port development.

The redevelopment of the Tilbury2 site itself will comprise the development of a new harbour facility in the form of an operational port. A number of key components are proposed within the port, with the two principal proposed uses being a Roll on Roll off (RoRo) terminal, located south of Substation Road, and a Construction Materials and Aggregates Terminal (CMAT) to the north of Substation Road.

The MMO has an interest in this project because the development contains the improvement and extensions to the existing river jetty and dredging of the River Thames within the tidal extent. The DCO application includes a deemed marine licence (DML) under Section 65 of the Marine and Coastal Access Act 2009 (MCAA 2009) and should consent be granted for the project, the MMO will be responsible for monitoring, compliance and enforcement of DML conditions. The DCO application also includes provisions changing the powers or duties of a harbour authority. Under article 145 of the Planning Act 2008 (as amended) (the 2008 Act), (5) a DCO may include provisions in relation to a harbour authority, in particular, (a) any provision which could be included in a harbour revision order under section 14 of the Harbours Act 1964 (the 1964 Act) by virtue of any provision under Schedule 2 of the 1964 Act. The MMO have delegated responsibility for



harbour orders under the 1964 Act and as such will also provide comments on these aspects.

Deadline 1 consists of:

- Comments on Relevant Representations (RRs)
- Summaries of all RR's exceeding 1500 words
- Written Representations (WRs)
- Summaries of all WRs exceeding 1500 words
- Local Impact Reports from any Local Authorities
- Statements of Common Ground (SoCG) requested by the Panel
- Comments on Applicant's updated and errata application documents
- Written summaries of oral representations provided in the February Issue Specific Hearing (ISH) on the dDCO and the OFHs
- Post hearing submissions including submissions of oral case from the February 2018 hearings
- Revised draft DCO from the Applicant
- Notification by Affected Parties of their wish to speak at the Compulsory Acquisition Hearing to be held on Friday 20 April 2018
- Notification by Interested Parties of their wish to make oral representations at the ISH on planning policy and environmental matters (Wednesday 18 April 2018) and/or the ISH on socio-economic, technical and other environmental matters (Thursday 19 April 2018)
- Notification of wish to speak at any future Open Floor Hearing
- Notification of wish to attend the Accompanied Site Inspection (or a part of it) which is to be held on Monday 16 April 2018 and Tuesday 17 April 2018
- Notification of locations or sites that are suggested by Interested Parties and Affected Persons for inclusion in an Accompanied Site Inspection
- Notification by statutory parties of wish to be considered an Interested Party
- Applicant's proposed revised draft itinerary for the Accompanied Site Inspection
- Responses to the Panels First Written Questions (FWQs)

Of these items, the MMO considers the following relevant matters in relation to:

- Comments on RR's
- Summary of WR's
- Comments on the Applicant's updated and errata application documents
- Post hearing submissions of oral case from February hearings; and
- Notification of attendance at the April hearings.

## 1. Comments on Relevant Representations (RRs)

### 1.1. The Environment Agency (EA)

1.1.1. The EA request that eel surveys are undertaken and that appropriate mitigation and/or compensatory measures for affected habitats be considered if required. The MMO understand that the current Ecological Mitigation and Compensation Plan (EMCP) does not include any measures below Mean High Water Springs (MHWS). If this changes, as a result of the suggested surveys, the MMO advise the Applicant that we must be consulted on the latest draft of the document as mitigation measures may need to be secured through the DML. If measures are required within the marine environment, the MMO would request the Applicant clearly differentiates what is considered mitigation and what is



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considered compensation in order for this to be reviewed. The MMO is in discussions with the EA on how best to incorporate this into the DCO or DML.

## **1.2. Natural England (NE)**

**1.2.1.** The MMO note NEs request for annual bird surveys and appropriate mitigation if identified. The MMO would like to advise that if this advice was received as part of a standard marine licence consultation, a condition would be added to ensure the Applicant follows the advice of NE. We would welcome engagement from NE if they would like to discuss this option in relation to this and/or any other matter within the remit of the MMO.

## **1.3. The Port of London Authority (PLA)**

**1.3.1.** The MMO note the PLAs comments on the proposed Harbour Powers. The MMO is working with the Applicant to ensure that the transfer of any powers is undertaken appropriately and any new powers being sought are included where it is appropriate to do so. In terms of dredging, the MMO understand that article 43 of the DCO is for “Powers to Dredge” which, as mentioned, are currently under the control of the PLA. It is the position of the MMO that the powers to undertake maintenance dredging are not appropriately placed in the DCO and instead should be removed as a “power” and solely cited within the DML as a licensable activity. The MMO welcome engagement from the PLA if this approach does not alleviate their concerns.

## **1.4. The Corporation of Trinity House of Deptford Strond**

**1.4.1.** The MMO recognise that Trinity House and the PLA have similar remits. Should any of the concerns raised by Trinity House not be covered within the role and remit of the PLA, the MMO advises that protective measures should be contained within protective provisions and/or the DML.

## **1.5. Maritime and Coastguard Agency (MCA)**

**1.5.1.** The MMO note the request by the MCA for notification to the UK Hydrographic Office for updates to nautical charts and to HM Coastguard for information. The MMO also requested these be contained within the DML and was advised by the Applicant that both notifications fall under the responsibility of the PLA as the Local Harbour Authority with the powers to do so. The MMO is of the opinion that should the DCO transfer the powers and responsibility for these notifications to the Port of Tilbury, as the statutory authority for the proposed port limits, the responsibility of notification falls to the Port of Tilbury and not the PLA. If the MCA require these notifications to be made by the Applicant then they can be included as conditions of the DML.

**1.5.2.** The MMO note the comment from paragraph 7.7 of the Guide to Good Practice and advise the Applicant to check that the powers they are requesting under the DCO are appropriate.

## **2. Summary of RRs exceeding 1500 words**

**2.1.** The MMO’s Relevant Representation dated 08 January 2018 exceeds 1500 words.

**2.2.** During pre-application engagement between the MMO and the Applicant, the MMO made comments on the draft Environmental Statement (ES), draft DCO and draft DML documents. Despite comments made by the MMO, the documents submitted to the Planning Inspectorate in support of the DCO application remain unchanged since the last consultation response issued by the MMO.

**2.3.** The MMO have concerns regarding the inclusion of Harbour Powers within the draft DCO that would, if a separate application was submitted, usually be made under



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the 1964 Act. The MMO is also concerned regarding the structure, wording and content of the DML.

- 2.4. The MMO advised of its concern regarding the certification of documents, including the Construction Environmental Management Plan, under the DCO and the process involved should changes be required to those during the course of the construction and operation.
- 2.5. The MMO provided comments on the draft chapters 11 and 17 of the ES provided by the Applicant on 02 October 2017. Whilst the MMO is of the opinion that the ES in general provides a thorough assessment of the potential impacts to the marine environment, more detailed responses on the final ES will be provided to the Applicant.
- 2.6. The MMOs comments on the draft ES include requests for clarification of a number of points; additional conditions as requested by the Centre for Environment, Fisheries and Aquaculture Science (Cefas) and the co-ordinates of a dredging exclusion zone.
- 2.7. The MMO provided details of the requested clarifications and amendments to conditions to the Applicant on 16 October 2018, as well as comments on the DCO itself.
- 2.8. We advise that the matters raised above, particularly those in relation to the DCO and DML, are addressed should the proposal be granted development consent via a DCO. In light of this, the MMO would welcome future engagement from the Applicant to ensure that the issues are resolved in a timely manner.

### 3. Written Representation (WR)

- 3.1. Since the submission of the MMOs RR on 08 January 2018 there have been discussions with the Applicant and progress on our concerns.
- 3.2. A meeting and site visit was held between the MMO and Applicant, on 15 February 2018, where concerns were discussed and some matters resolved.
- 3.3. The MMOs concerns regarding the structure, content and wording of the DML continue to be considered in discussion with the Applicant.
- 3.4. With regards to the inclusion of Harbour Powers, discussions are ongoing over how best to include these within the DCO and/or DML. The MMOs position, in relation to the powers to dredge, is that this should be included as maintenance dredging activities in the DML only and not as a “power” under the DCO. At present, the PLA retain jurisdiction to carry out dredging activities in the area of river within the order limits. This power was not transferred to the Port of Tilbury in the 1991 transfer order and, as such, the exemption under section 75 of the Marine and Coastal Access Act 2009 for certain dredging activities cannot be applied. The MMO has interpreted this exemption to relate to existing powers that were granted under section 14 or 16 of the 1964 Act. The wording of this exemption does not include powers granted through the 2008 Act under a DCO. Discussions with the Applicant on this point are ongoing.
- 3.5. The discussion around requested conditions and changes to the DML has progressed with agreements being made on most of those requested. It is the MMOs understanding that these changes will be reflected in the next draft DCO submitted by the Applicant. Further discussions are ongoing and the MMO will consider any revisions made to the draft DCO.
- 3.6. The further detailed comments on the final ES, mentioned in our RR, have been received from Cefas and provided to the Applicant for review and comment.



These comments were largely similar to the comments made on the draft chapters from October 2017 and discussions are ongoing.

**3.7.** The Statement of Common Ground will be updated as discussions progress and submitted at deadlines 3, 5 and 7 until a final version has been agreed.

**3.8.** Paragraph 7 of the MMOs RR states our concern over the certification of certain documents within the DCO. Having discussed this with the Applicant, the MMO advise that our concerns over the process for amendments remain, but we accept the certification as put forward by the Applicant.

#### **4. Summary of WRs exceeding 1500 words**

**4.1.** Not applicable.

#### **5. Comments on Applicant's updated and errata application documents**

**5.1.** The updated and errata documents submitted that are within the remit of the MMO are:

**5.1.1.** Environmental Statement Chapter 5

**5.1.1.1.** The MMO has reviewed this document and welcomes the added descriptions. These additions clarify some of the comments received from Cefas regarding the size and scale of the marine works, in particular, the piling works.

**5.1.2.** Marine Written Scheme of Investigations

**5.1.2.1.** Whilst this is within the remit of the MMO, comments on this document are deferred to Historic England.

**5.1.3.** Non-technical summary

**5.1.3.1.** The MMO welcome the additions made.

#### **6. Written summaries of oral cases made in February 2018 hearings**

**6.1.** The MMO initially advised that our primary concerns are drafting of the DML in terms of the conditions and the interpretation. It was also raised that the MMO had concerns about the inclusion of certain Harbour Provisions, in particular, the inclusion of Article 43 (Powers to dredge).

**6.2.** In response to the point raised in regards to dredging (Q15) that updates will be included in the DCO, the MMO advised that providing these changes were made we were satisfied at this time.

**6.3.** In response to Q23 (d) the MMO advised, for clarification, that we licence the construction/improvement of structures for the discharge of water, not the discharge of water itself. That is controlled by the EA and so the MMO would not need to be included in this.

**6.4.** In response to Q41 (b) the MMO confirmed that the wording is still under discussions.

**6.5.** The MMO advised of internal discussions regarding the Powers to Dredge and that as advised in paragraph 3.4 of this document dredging needs to be considered within the DML only and that an end date to maintenance dredging under the DML would need to be applied. The longest we currently licence maintenance dredging for is 10 years and after this time a new marine licence would be required. The MMO advised that discussions on this are ongoing with the Applicant.

**6.6.** In response to Q43, the MMO confirmed that following the meeting on the 15<sup>th</sup> February 2018 with the Applicant we are content with the wording of Article 50.



- 6.7. In response to Q48, following the Applicants update, the MMO agreed that this was indeed the case.
- 6.8. In regards to Schedule 1, the MMO advised on a point of observation that constructing in or over the marine environment is a licensable activity and as such if the link span bridge in Works No.1 (a) is over this area then this must be considered marine works also. The MMO also confirmed that clarification on the flood gate works would be welcomed.
- 6.9. In response to Q69, the MMO advised that discussions with the Applicant will be undertaken.
- 6.10. In response to the Applicants response that these restrictions will be confirmed within the method statement submitted under current conditions, the MMO confirmed that this is the case.
- 6.11. In response to Q87, the MMO confirmed that we are content with the approach to update the port limit plans to reflect the current Port of Tilbury limits.
- 6.12. In response to Q89, the MMO confirmed that discussions are ongoing and updates will be provided in due course.

## 7. Notification of attendance at April Hearings

- 7.1. The MMO wish to notify the Panel of its wish to attend both April Issue Specific Hearings (ISH) on 18<sup>th</sup> and 19<sup>th</sup> April. The MMO may wish to speak at the ISH on 18<sup>th</sup> April in relation to dredging matters or other matters within its remit. At the ISH on 19<sup>th</sup> April, the MMO may wish to speak in relation to construction and noise matters and also any other matters that arise that are within our remit.

## 8. Response to the Panels FWQs

- 8.1. Please see Annex I for a table containing the MMOs responses to the Panels FWQs.

## 9. Concluding Comments

- 9.1. Generally, as has been noted above, the MMO is largely in agreement with the proposal however, as detailed above, discussions are ongoing around the drafting of the DML and DCO.
- 9.2. The MMO has been working with the Applicant on the Statement of Common Ground and the MMO understands that updated versions of this will be uploaded at future deadlines as progress is made.
- 9.3. The MMO are aware that the Applicant has submitted a response to RR document. As responses to this are not required until deadline 2, the MMO will reserve providing any comments on that document until deadline 2.

If you would like to discuss any specific matter further or require additional clarity, please do not hesitate to contact me directly.

Yours Sincerely

[Redacted Signature]

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Annex I: Response to the Panels FWQs

<u>Question number</u>	<u>MMO response</u>
FWQ 1.2.4	Whilst this question was not directed at the MMO, we wish to reiterate the point made in paragraph 1.1.1 of this document in response to the EAs RR that should any mitigation measures be required below MHWS then additional conditions may be required in the DML.
FWQ 1.2.30	Whilst this question was not directed at the MMO, we would like to advise that once this seasonal restriction period has been confirmed it can be secured through an additional condition in the DML.
FWQ1.2.32	As above, mitigation measures can be secured through additional conditions in the DML.
FWQ1.9.1	As mentioned in paragraph 3.4 of this document, with regards to the inclusion of Harbour Powers, discussions are ongoing over how best to include these within the DCO and/or DML. The MMOs position, in relation to the powers to dredge, is that this should be included as maintenance dredging activities in the DML only and not as a “power” under the DCO. At present, the PLA retain jurisdiction to carry out dredging activities in the area of river within the order limits. This power was not transferred to the Port of Tilbury in the 1991 transfer order and, as such, the exemption under section 75 of the Marine and Coastal Access Act 2009 for certain dredging activities cannot be applied. The MMO has interpreted this exemption to relate to existing powers that were granted under section 14 or 16 of the 1964 Act. The wording of this exemption does not include powers granted through the 2008 Act under a DCO. Discussions with the Applicant on this point are ongoing.
FWQ1.9.3	With regards to WFD, the MMO defer comment to the EA. The need for dredging method statements has been agreed with the Applicant. Whilst there is not a specific condition requesting the submission of a capital dredge method statement, this is expected to be submitted as a construction method statement under current condition 6, as this activity is deemed to be part of the construction of the works. The MMO is open to inclusion of an additional condition in the DML that would require the submission of a WFD assessment prior to each maintenance dredge campaign at the same time that the method statement for the dredge is submitted. Having discussed this with the EA, this approach will be put forward to the Applicant as an addition to current condition 19.
FWQ1.9.4	Further comments have been received from Cefas and these have been shared with the Applicant. As mentioned in paragraph 3.6 of this document these were largely similar to the comments made in our RR. The table in Annex II gives a breakdown of the comments made and an update on progress to date. Additional comments are detailed below.



## Annex I: Response to the Panels FWQs

	<p>In section 5.12 of the ES it is stated that “Maintenance dredging will be needed, which has assumed to require the removal of up to 100,000 cubic metres of material per day”. The MMO assume that this should be “per annum” and, if so, this should be clarified.</p>
	<p>In section 11.165 it is stated that “intertidal and subtidal habitats and communities that are present near to Tilbury2 are not sensitive to contamination” however no justification is provided for this statement.</p>
	<p>Section 11.136. Further justification for the classification of the “intertidal community” receptor group being “negligible” value. While these organisms are widespread and are unlikely to contain any species of designatory importance, their functional importance cannot be overlooked. Invertebrate abundances within these intertidal areas have been shown to be high and it is likely that they provide an important food source for the qualifying features of national or European designatory sites. The MMO would consider, given this, that their value should be regarded as ‘low’ as a minimum. The implications of this as part of the associated risk assessment would need to be addressed.</p>
	<p>In accordance with the above statement, the MMO would suggest that the value of ‘subtidal habitat and communities’ also be regarded as ‘low’ as a minimum, regardless of their lack of designatory importance. Again, the implications of this for subsequent risk assessments would need to be considered.</p>
	<p>In Section 11.148, depth-averaged concentrations of suspended sediments are used to assess impacts. However, benthic invertebrates are likely to be exposed to bottom concentrations of suspended sediments which are likely to be much higher and thus, such values should be quoted and used as a basis for this assessment.</p>
	<p>Given the magnitude of impact in suspended sediments in the vicinity of the dredge area, the MMO would consider that the magnitude of effect on the receptor groups quoted in Table 11.18 to be too low. While the magnitude will undoubtedly vary as a diminishing gradient from the source of the dredge, the MMO would consider that impacts to benthic invertebrates to be at least minor. There will be a notable loss and/or reduction in such assemblages for a certain time post-dredging and the MMO do not consider that either negligible or low adequately reflect this.</p>
	<p>It is stated that the highly insoluble nature of perylene, which renders it permanently sediment-bound, limits the possibility of it being released through dredging and impacting water quality (Section 11.162). Can this statement be clarified as although sediment-bound, perylene may still possibly affect water quality?</p>
	<p>In Section 11.167 it is stated that ‘the benthic community is not sensitive to contaminants’ as the chemical analyses results were typical for the Thames Estuary. The chemical assessment is primarily undertaken to assess suitability for sea disposal following dredging and samples are taken below the sediment surface (to the dredge depth). As the observed chemical concentrations are based on samples taken to greater sediment depths than those which the opportunistic species in this region will inhabit, one must be careful when making direct links between the fauna and the results from chemical assessments. It is possible, for example, that they are exposed to concentrations lower</p>



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## Annex I: Response to the Panels FWQs

	<p>than those observed through the contamination assessment procedure.</p> <p>The statement that species may survive water injection dredging (Section 11.173) should be backed up by references otherwise it appears speculative. Moreover, should they survive this process, they are likely to be transported via hydrodynamic processes to areas away from the dredge site which would still constitute this impact as a 'loss' as opposed to a 'disturbance'.</p> <p>The Applicant has suggested that one pile per day would be installed, and they anticipate that marine piling works will take approximately 3 months. Based on calculations, under a mono-pile option, it will take almost 6 months, based on working 7 days a week, to install the 174 piles. For a multi-pile option, it will take over a year to install the 363 piles. Please can the Applicant provide a response or revised estimate of the expected duration of piling, based on the information provided in Table 5.3</p>
FWQ1.9.7	The MMO has recommended that a condition to reflect the use of extraction dredging, only within the exclusion zone, be added to the DML.
FWQ1.9.8	Whilst this question was not directed at the MMO, we would like to reiterate our comment in relation to Q1.9.4 and detailed in point 1.2 of the table in Annex II. Discussions on this are ongoing, the Applicant has advised that they may not need to dredge every year or even every 3 years. Further information is being obtained and whilst the area must be sampled every 3 years at a maximum, if dredging is anticipated to have longer than 3 years between campaigns then we may alter the wording of the subsequent condition.
FWQ1.9.9	The Panel is correct in saying that the reference should have been made to the Construction Environmental Management Plan and not the Construction Method Statement.
FWQ1.9.11	Whilst this question was not directed at the MMO, we would like to advise that we have recommended that the coordinates of all marine works are included in paragraph 3(3) of the DML.
FWQ1.9.17	Whilst this question was not directed to the MMO, it is worth noting that the MMO had requested this notification to be added as a condition in the DML (paragraph 9(a) of Annex II of the MMO RR). The Applicant has advised that this is within the responsibilities of the PLA but as this is not detailed anywhere in the DCO this condition is still considered to be required.
FWQ1.9.18	Whilst this question was not directed to the MMO, it is worth noting that in the process of a standard marine licence this would be included as a condition and so it may be appropriate for this to be included within the DML.
FWQ1.9.23 and 1.9.24	Whilst these questions were not directed to the MMO, it is worth referring to our comment in 7.2 of the table in Annex II of this document that the MMO will be recommending that a condition restricting dredging to the ebb tide and also one for the seasonal restriction be included in the DML.

## Annex I: Response to the Panels FWQs

FWQ1.14.23	Tilbury2 lies within the South East Marine Plan Area where there is currently no draft plan available. The second iteration of public workshops is currently being undertaken but it is highly unlikely that a draft plan will become available during the Examination period of this project. With regards to this, as there is no marine plan adopted the project should be assessed against the Marine Policy Statement.
FWQ1.19.22	The MMO defers comment on WFD to the EA and to NE on critical habitats as the Statutory Nature Conservation Body.



Annex II: MMO response to FWQ1.9.4

<b><u>Section 56 draft ES comment</u></b>	<b><u>Update</u></b>
1. <u>Benthic Comments</u>	
1.1. With respect to the assessment of impact, there is no guidance regarding how the 'value/sensitivity' of the receptor and 'magnitude of effect' of impact are used to derive an overall assessment of the 'significance' of impact.	Concern addressed
1.2. Have the ecological features of the seawall been assessed for impacts as part of the EIA?	This comment is still outstanding.
1.3. The spatial extent and magnitude of resuspension and sedimentation resulting from the dredging was ascertained subsequent to discussions regarding the appropriate scale for the baseline assessment. It is apparent that the spatial extent of this impact is far greater than the area encompassed by the intertidal and subtidal surveys. Is there any evidence to support that the notion that the habitats observed in the survey extend over the entire spatial area of impact resulting from the dredge? If not, it may be concluded that the baseline conditions of the full area of potential impact have not been adequately described.	This comment is still outstanding.
1.4. In section 11.151 it states that <i>"levels of suspended sediments are within background concentrations, apart from within a localised area of water injection dredging (WID), changes in dissolved oxygen levels are mostly predicted to be within baseline conditions"</i> . While increases resulting from the activity may be within background levels, the effects will be cumulative to background conditions, which raises the possibility for impacts. As such, this statement does not appear to be justified.	This comment is still outstanding.
2. <u>Dredging and Disposal Comments</u>	
2.1. Sediment samples were collected at eight sites at the surface, mid dredge depth and maximum dredge depth. The samples were analysed for trace metals, organotins, total hydrocarbons, polycyclic aromatic hydrocarbons, polychlorinated biphenyls and particle size analysis. The results show elevated levels of metals, polycyclic aromatic hydrocarbons and total hydrocarbons (above Cefas Action Level 1) and with the exception of station 8, are not a cause for concern. The organotins and polychlorinated biphenyls	No update required.



Annex II: MMO response to FWQ1.9.4

<p>were below Action Level 1 and therefore qualifies the material for disposal at sea. The results show that the material with the exception of station 8, is acceptable for disposal to sea as the results were all below Cefas Action Level 2.</p>											
<p>2.2. At the sampling station 8 elevated levels of mercury and hydrocarbons were recorded. Due to the high contamination levels found in the approach channel this material will not be suitable for disposal at sea. The Applicant has considered isolating the contaminated area by taking further samples. If further samples are taken then the conditions maybe reviewed, until then an exclusion zone must be placed around sample station 8, where the material should be dredged using backhoe dredging rather than WID and the material should not be disposed of at sea. This area must be added as an exclusion zone within the detail of the licensed works section of the DML. The coordinates that must be included within the DML have been provided below;</p> <table border="1" data-bbox="136 683 515 911"> <thead> <tr> <th>Longitude</th> <th>Latitude</th> </tr> </thead> <tbody> <tr> <td>51.451557</td> <td>0.39307969</td> </tr> <tr> <td>51.451523</td> <td>0.39473320</td> </tr> <tr> <td>51.450524</td> <td>0.39302565</td> </tr> <tr> <td>51.450490</td> <td>0.39467912</td> </tr> </tbody> </table>	Longitude	Latitude	51.451557	0.39307969	51.451523	0.39473320	51.450524	0.39302565	51.450490	0.39467912	<p>The applicant has agreed that the coordinates of the exclusion zone will be included in paragraph 3 (3) of the DML.</p>
Longitude	Latitude										
51.451557	0.39307969										
51.451523	0.39473320										
51.450524	0.39302565										
51.450490	0.39467912										
<p>1.1. The Applicant has stated that maintenance dredging of the area is to be included within the DML. This represents a long term licensable activity as such this must be detailed in the DML.</p>	<p>Maintenance dredging is covered by conditions under the DML part 4 and the Applicant has agreed to include this in paragraph 3 of the DML.</p>										
<p>1.2. In addition, the area to be dredged must be re-sampled every 3 years. This must be included as a condition of the DML:</p>	<p>Discussions on this are ongoing, the Applicant has advised that they may not need to dredge every year or even every 3 years and so further information is being obtained and whilst the area must be sampled every 3 years at a maximum, if dredging is anticipated to have longer than 3 years between campaigns then we</p>										

Annex II: MMO response to FWQ1.9.4

	may alter the wording of the subsequent condition.
1.2.1. <i>The licence holder must submit a sediment sampling plan at least 6 months prior to the end of every second year from 2017. The sediment sampling analysis must be completed by a laboratory validated by the MMO. The maintenance dredging activities must not recommence until written approval is provided by the MMO.</i>	As above
1.2.2. <i>The licence holder must not submit the relevant method statement mentioned in condition [XX] to the MMO until sediment sampling has been undertaken in accordance with the approved sediment sampling plan, unless otherwise agreed in writing by the MMO.</i>	In a draft DML received after submission to PINS this condition is included as condition 20 (2).
1.3. In addition to those conditions already discussed the MMO request that the following condition is added to the DML:	
1.3.1. <i>Any man-made material must be separated from the dredged material and disposed of to land.</i>	The Applicant has agreed to add “and that any other materials are screened out before disposal at this site” to condition 18(2).
1.4. With regards to methodology, the MMO support the use of WID with a backhoe dredger being used for the areas not suitable for disposal at sea. The Applicant may wish to consider the use of an enclosed bucket dredger for the collection of the dredged material reducing the amount of material that is re-suspended.	No update required
<b>2. Underwater Noise Comments</b>	
2.1. It was previously raised that the total number of piles to be installed / length of sheet pile wall and the method of installation for each should be clearly provided in the EIA. The MMO could not see where this has been addressed in the ES and could also not be expected to take place (specifically what months), this should be provided.	The errata chapter 5 of the ES outlines the number of piles and the length of these. The timings of the piling are still a concern, this is likely to be addressed through the submission of the method statement before commencement of this activity and the MMO will review the Applicants response to FWQ1.5.2 for an

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	update.
2.2. Although the assessment refers to 'fish and shellfish', it appears that the potential impacts on marine invertebrates have not been considered. The MMO would expect conclusions to be drawn from the peer-reviewed literature.	This comment is still outstanding.
3. Modelling report	
3.1. It is presumed that the source levels at 1 m (as shown on Figure 4-1) were calculated using measurements in the far field and back propagating, but this is not clear in the report.	This comment is still outstanding.
3.2. Regarding the additional conversion factor used to determine the equivalent SEL for a pile strike, the report should explain this link. There is no general relationship between single-strike SEL and peak SPL, although some empirical approximations have been made based on measurements. Lippert et al. (2015), for example, makes an empirical conversion between the SEL and the peak-to-peak SPL for impact pile driving.	This comment is still outstanding.
3.3. The Applicant has identified several appropriate mitigation measures to reduce the risk of impact, particularly on marine mammals. The mitigation measures are as follows:	See point 5 below
4. Fish and shellfish:	
4.1. It is anticipated that piles would take approximately 6-8 hours to install and 1 pile would be installed per day. The working hours during construction for noisy activities will be restricted to 08.00 to 18.00 Monday to Friday, and 08.00 to 16.00 on Saturdays and Sundays, thus providing a non-piling window of at least 14 hours per day when fish would be able to migrate past T2 without noise effects. As such, any delay to movement/migration caused by piling noise would only last a few hours and would only occur during the marine piling phase of the works which is anticipated to take approximately 3 months to complete.	No update required
4.2. The embedded mitigation of following the JNCC piling protocol which includes the mitigation of soft start procedures and a daily non-piling window is considered more appropriate than seasonal piling restrictions as key	No update required however the hours of working may be included as a condition for the piling, internal discussions are

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internationally designated species (e.g. Atlantic salmon and river lamprey) utilise the Thames Estuary year-round. Further, many nationally important fish species, including European eel, European smelt, twaite shad, whiting, sand goby and herring are present in the lower Thames year-round. Thus, daily non-piling windows will provide these species with regular noise-free periods to facilitate their movement/migration.	ongoing.
5. Marine mammals:	
5.1. As embedded mitigation within the scheme, piling will follow the JNCC protocol for piling. Following this protocol, measures will be put in place to reduce the potential impacts of piling. These include:	N/A
5.2. Undertaking a pre-piling search for marine mammals,	This is embedded mitigation but may be included as DML conditions, discussions on going.
5.3. Delaying the start of piling if marine mammals are detected in the search area,	This is embedded mitigation but may be included as DML conditions, discussions on going.
5.4. Undertaking sort start procedures on the commencement of all percussive piling,	This is embedded mitigation but may be included as DML conditions, discussions on going.
5.5. No piling at night when marine mammals might be hard to spot,	This is embedded mitigation but may be included as DML conditions, discussions on going.
5.6. Having breaks in piling activity	This is embedded mitigation but may be included as DML conditions, discussions on going.
5.7. Soft start will be used for percussive piling.	Soft start procedures are conditioned under condition 8.



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<p>5.8. The measures must be secured through conditions on the DML and implemented, to ensure the risk of significant impact on sensitive marine receptors remains low.</p>	<p>As above</p>
<p>5.9. It is presumed that the no piling at night when marine mammals might be hard to spot will include both percussive and vibratory piling, but it would be useful if the Applicant could confirm this.</p>	<p>Ch5 of the ES confirms the core working hours as having no night piling in the marine environment. Comment resolved.</p>
<p>6. <u>Plankton Comments</u></p>	
<p>6.1. The MMO note that the report states zooplankton and ichthyoplankton surveys undertaken at the site in 2007 and 2008 are considered to be representative of the present-day community. However, as this data is approximately 10 years old, it is recommended that this data be supplemented with more up-to-date information to support this conclusion.</p>	<p>This comment is still outstanding.</p>
<p>6.2. More information on the assigned “low” value/sensitivity of the plankton receptor is required. Although no protected zooplankton or phytoplankton species were identified, the larvae of two fish species of conservation concern were recorded in the area. These were smelt and European eel, a species that is currently in decline throughout Europe and has targets set by the EU relating to the return of adults to the catchment. Due to the conservation importance of these species, it is suggested that the value/sensitivity classification of plankton, or at least ichthyoplankton, is increased or further justification provided for not increasing the value/sensitivity.</p>	<p>This comment is still outstanding.</p>
<p>6.3. The report would benefit from the use of more recent data for the basis of the zooplankton assessment, as the most recent data used was from 2010. Although the MMO agree it is unlikely the species composition will have changed within the Thames area in this time, it is recommended that more recent data is obtained to support this conclusion.</p>	<p>This comment is still outstanding.</p>
<p>6.4. As the plankton receptor is classified as “low” value/sensitivity, the significance of this impact from the release of heavy metal contaminants is considered “minor”. In this case, the levels of these metals are below Cefas AL2 and therefore unlikely to cause a significant impact to the plankton community. However, it should be noted that even low concentrations of lead</p>	<p>This comment is still outstanding.</p>



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<p>can be toxic to phytoplankton (Cordero et al., 2005), and that bacteria and phytoplankton have both been found to accumulate metals (Rossi and Jamet, 2008), which is detrimental to food-webs.</p>	
<p>6.5. The report states that plankton in the Thames are resilient to change, and therefore classified as “low” sensitivity. However, no indication is made as to how that conclusion was formed.</p>	<p>This comment is still outstanding.</p>
<p><u>7. Fisheries and fish ecology comments</u></p>	
<p>7.1. Simultaneous piling has not been assessed and so the report should clarify whether simultaneous piling is likely to occur or include an assessment of simultaneous piling within the ES.</p>	<p>20. Section 11.268 of the revised Marine Ecology chapter states that only 1 pile will be installed per day. But the Applicant is still to clarify.</p>
<p>7.2. The MMO support the inclusion of further mitigation which will be employed to reduce impacts to marine ecology receptors from dredging impacts (Table 11-55). This includes restricting dispersive dredging techniques upstream from Tilbury to occur outside the months of June to August, restricting WID techniques to only be employed on the ebb tide. As stated above the measures must be secured through conditions on the DML and implemented, to ensure the risk of significant impact on sensitive marine receptors remains low.</p>	<p>The MMO will be recommending that a condition restricting dredging to the ebb tide be included in the DML. The same will be recommended for the seasonal restriction.</p>
<p>7.3. The underwater noise assessment modelling is based on fish that have a swim bladder which is involved in hearing (Popper et al., 2014) and in my opinion, this does constitute the worst-case and should be used for the EIA noise assessment. The width of the River Thames at the Tilbury2 site is approximately 900m and the predicted noise TTS impact ranges for a 3.5m pile extend for a maximum distance of 3330 m (east modelled position at Mean High Water Springs), which is beyond the width of the river channel. Therefore, potentially, for some of the underwater noise modelling scenarios presented in the ES an acoustic barrier may occur during piling activities and this could cause temporary and behavioural effects on fish receptors. As the TTS threshold is applicable to fish without a swim bladder and fish which have a swim bladder that is not involved in hearing, fish receptors present in the</p>	<p>This comment is still outstanding.</p>

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<p>vicinity of the piling works may be impacted and affected during some piling operations. Consequently, the significance of the potential impact of underwater noise construction effects on fish receptors is unlikely to be negligible. This should be addressed.</p>	
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